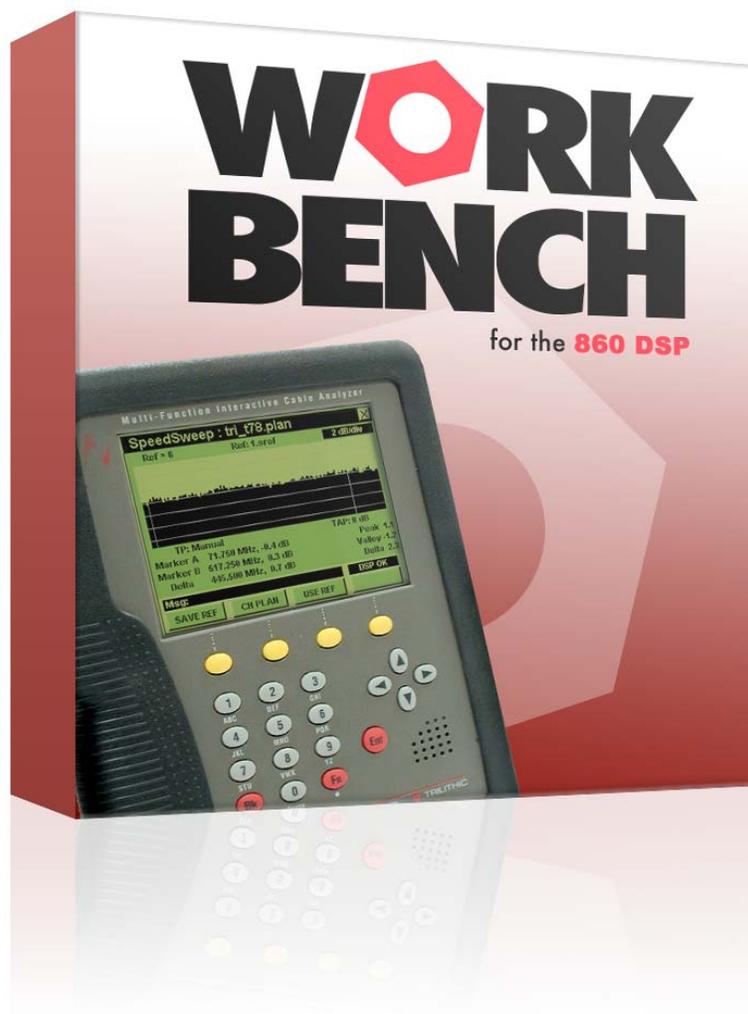


WorkBench Software

(and WorkBench Lite Software)

for the 860 DSP, 860 DSPi, 860 DSPh, 860 DSPr, and 8300 FST

Operation Manual



think ahead.

 TRILITHIC

Trilithic Company Profile

Trilithic is a privately held manufacturer founded in 1986 as an engineering and assembly company that built and designed customer-directed products for telecommunications, military, and industrial customers. From its modest beginnings as a two-man engineering team, Trilithic grew over the years and broadened its offerings of RF and microwave components by adding broadband solutions to its product line. This was accomplished with the acquisition of components manufacturer Cir-Q-Tel and instruments manufacturer Texscan.

Today, Trilithic is an industry leader providing telecommunications solutions for major broadband, RF, and microwave markets around the world. As an ISO 9000:2001 certified company with over 40 years of collective expertise in engineering and custom assembly, Trilithic is dedicated to providing quality products, services, and communications solutions that exceed customer expectations.

Trilithic is comprised of five major divisions:

- **Broadband Instruments and Systems**
Offers test, analysis, and quality management solutions for the major cable television systems worldwide.
- **Telecom Solutions**
Offers affordable, easy-to-use instruments for testing and measurement of Telecom networks.
- **RF Microwave Components**
Provides components and custom subsystems for companies specializing in cellular, military, and other wireless applications.
- **Emergency Alert Systems**
Leading supplier of government-mandated emergency alert systems used by broadcast TV, cable TV, IPTV, DBS, and radio stations.
- **XFTP**
Offers a specialty line of field technical products for cable operators and technicians, as well as a line of products for installing electronics in the home of the future.

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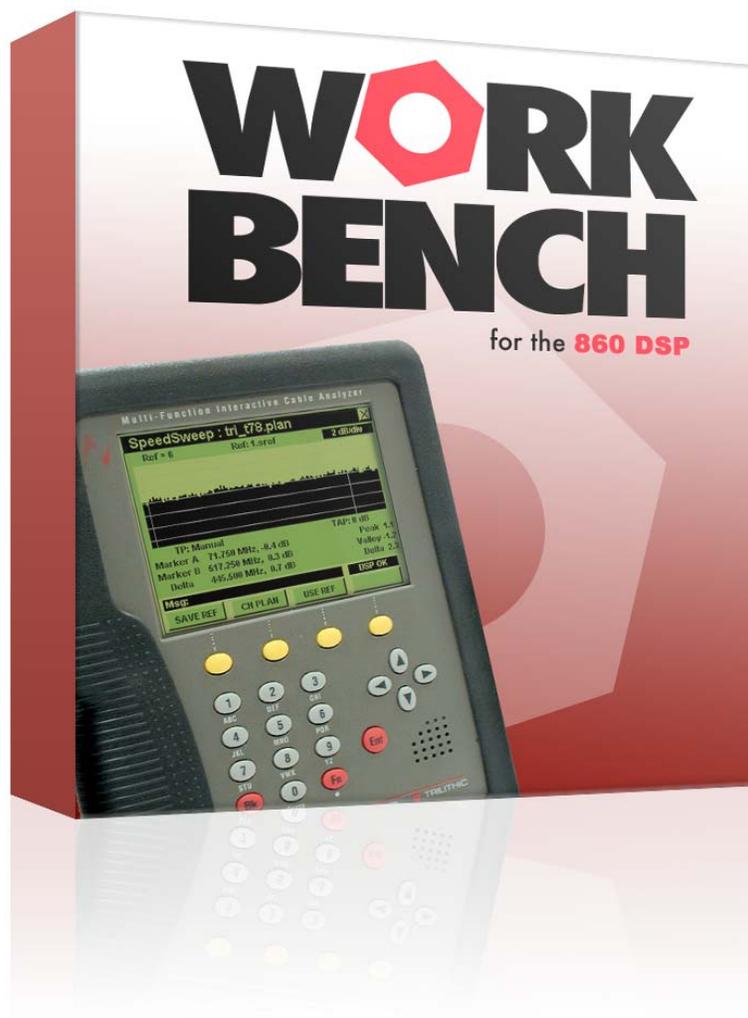
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WorkBench Software

(and WorkBench Lite Software)

for the 860 DSP, 860 DSPi, 860 DSPh, 860 DSPr, and 8300 FST

Section I: The Basics



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Chapter 1

General Information

Helpful Website

The following website contains general information which may be of interest to you:

<http://www.trilithic.com>

Trilithic's website contains product specifications and information, tips, release information, marketing information, Frequently Asked Questions (FAQs), bulletins and other technical information. You can also check this website for product updates.

Where to Get Technical Support

Trilithic technical support is available Monday through Friday from 8:00AM to 5:00PM EST. Callers in North America can dial 1-317-895-3600 or 1-800-344-2412 (toll free). International callers should dial 1-317-895-3600 or fax questions to 1-317-895-3613. You can also email technical support at techsupport@trilithic.com.

For quicker support response when calling or sending email, please provide the following information:

- Your name and your company name
- The technical point of contact (name, phone number, email)
- The version number of the WorkBench software (this appears in the **Help** menu **About WorkBench...** selection)
- The version number of the Windows software (including any service packs and patches)
- The database that you are using
- A detailed description of the problem you are having, including any error or information messages

How this Manual is Organized

Thank you for choosing Trilithic's WorkBench Software. This manual is provided with the WorkBench Software to help the user become better acquainted with the software and to become productive faster. This manual is divided into the following sections:

- **Section I: The Basics** - provides Trilithic contact information, describes how this Operation Manual is structured, provides installation and registration instructions, and gives an overview of the WorkBench Software and its basic features. Before using the WorkBench Software, it is recommended that the user read this section for an overview of features, setup, basic commands and other important details.
- **Section II: Managing Devices and Data** - provides details on how to connect to the 860 DSP, 860 DSPi, 860 DSPh or 8300 FST as well as how to import and export data to and from the devices. This section also includes information on how to analyze the data collected from these devices.
- **Section III: Configuration Files** - provides information on how to configure Channel Plans, Locations, Auto-Test Macros, Task Sheets and Text Files.
- **Section IV: Managing Configurations** - provides details on how to create configuration packages for the 860 DSP, 860 DSPi, or 860 DSPh.
- **Section V: Trilithic Data Manager (TDM) Component** - provides information on how to configure and use the TDM component of WorkBench to send and receive information to and from the 860 DSP and 860 DSPi remotely over the internet.

Conventions Used in this Manual

This manual has several standard conventions for presenting information.

- Connections, Menus, menu options, and user entered text and commands appear in **bold**.
- Section names, Web and email addresses appear in *italics*.



A **NOTE** is information that will be of assistance to you related to the current step or procedure.



A **CAUTION** alerts you to any condition that could cause a mechanical failure or potential loss of data.



A **WARNING** alerts you to any condition that could cause personal injury.

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Chapter 2

Introduction

Overview

WorkBench is the Windows-based companion software for 860 DSP series devices and the 8300 FST. It is a Web-linked application that supports and augments the many functions and features of Trilithic's 860 DSP Interactive Cable Analyzers and 8300 FST Forward SpeedSweep Transmitter.

The 860 DSP performs most of its functions through Digital Signal Processing technology rather than dedicated hardware, making it easy to keep the 860 DSP current with changing applications and conditions. WorkBench lets you install and configure continuous feature updates quickly and easily. You can also expand the features available to you on your 860 DSPs by purchasing additional performance options, downloading them from the Trilithic Web site, and installing them at your convenience.

Features

You can use the WorkBench software to do the following:

- Customize your device to meet your specific needs and preferences by configuring the navigation menus
- Choose and edit channel plans, locations, auto-test macros, and configuration packages
- Set a wide variety of device measurement options, test mode options, and performance limits for auto-test functions
- Analyze and report on data collected from your device, including performance to user-set limits such as analog signal amplitudes, digital signal power, signal quality, carrier/noise ratios, MER and other measures of digital performance, and key return path measurements
- Identify and download firmware updates and new options from the Trilithic Web site that can then be stored in WorkBench until it is convenient for you to load them into your device
- Install and configure firmware updates to enhance existing features and add new capabilities
- Receive announcements of new features and functions, firmware revisions and updates, new product options, and other performance enhancements by clicking the banner at the bottom of the WorkBench Navigator window

With WorkBench, you can create the most effective menu structure and set all of your devices to have uniform features, settings, and configurations. Your technicians won't have to spend time reconfiguring or relearning how to use individual units; they can instead get right to work with no lost effort. You'll soon see that the WorkBench software is a powerful adjunct to Trilithic's devices that makes configuring, maintaining, and customizing any number of devices a snap.

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Chapter 3

Software Installation

Once you have made sure that your system meets the minimum requirements, you're ready to install the WorkBench software.



NOTE

Be sure to check the CD for release notes that may affect the installation and configuration process!

WorkBench System Requirements

To install the WorkBench software, your computer must meet the following minimum requirements:

- 200 MHz Pentium-II
- 64 MB RAM
- 100 MB free disk space
- Windows NT 4.0, 2000, XP, or Vista
- Color monitor running at 256 colors or higher, 800 x 600 minimum screen resolution
- Windows-compatible mouse
- Standard 9-pin serial port and/or Ethernet adapter (860 DSP Ethernet interface is optional)
- Trilithic 9-pin to 1/8" stereo connector cable (included)

It is also strongly recommended that you have an Internet connection for using the WorkBench software's online feature, which lets you get the latest updates and newest features.

Installation Instructions

To install the WorkBench software, do the following:

1. Depending on the operating system you are installing the WorkBench software on, you may need to log on as the local administrator.



NOTE

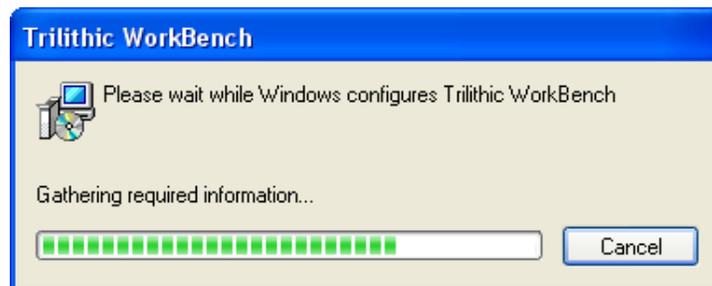
Check with your network or systems administrator if you're not sure about your current login account permissions.

2. Insert the WorkBench software CD in the appropriate drive.

3. If you have Autorun enabled for the CD-ROM drive, the WorkBench software setup program will start automatically. Otherwise, click **Start**, then click **Run**, and type [drive]:\setup.exe, then click **OK**. (Substitute the appropriate drive path in the command.)
4. If a previous version of the WorkBench software is found the following screen will appear. Select Yes to remove the previous version of the WorkBench software.



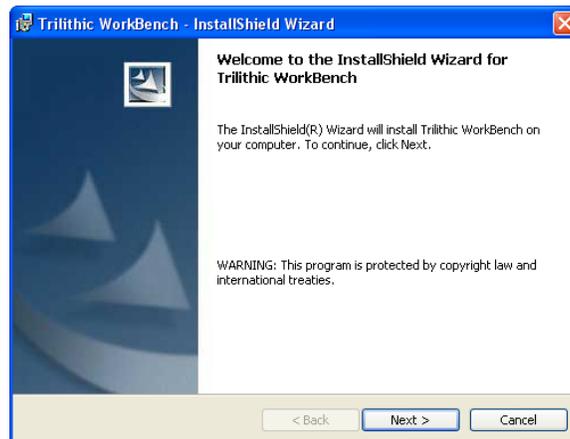
5. The “Preparing to install...” screen appears.



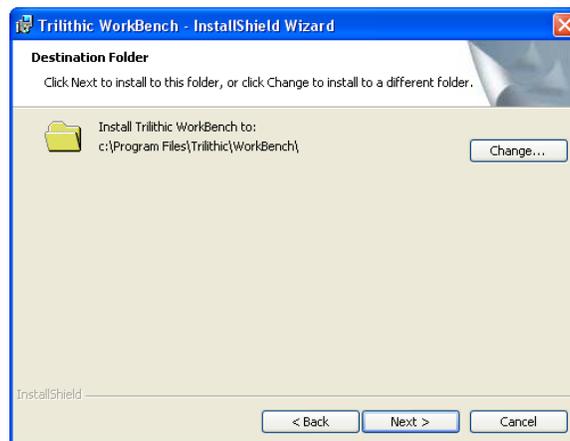
 **NOTE**

The setup program examines your system for the Microsoft DAC and Microsoft .NET Framework components before installation. If either of these components are missing from your system, the installer will install them for you before continuing with the WorkBench setup.

6. After a moment, the “Welcome to the InstallShield Wizard for Trilithic WorkBench” screen appears. Select the **Next>** button to continue.



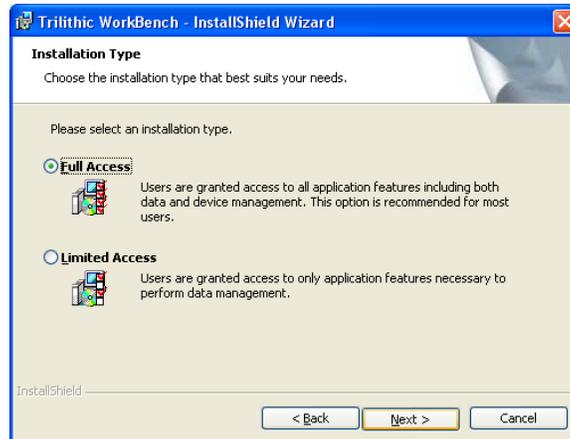
7. The “Destination Folder” screen appears. Enter information on this screen as follows:



Folder: By default, the installation procedure installs WorkBench in the C:\Program Files\Trilithic\WorkBench\ folder. You can select a different location by selecting the **Browse** button.

Select the **Next>** button to continue.

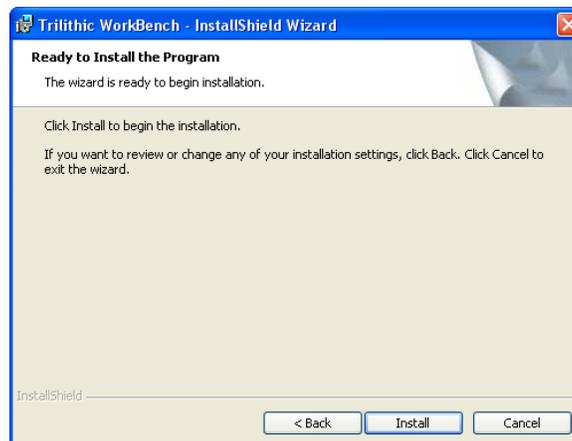
8. The “Installation Type” screen appears.



Select the **Full Access** radio button if you want the users of this application to have access to all features including both data and device management. This is the default option and is recommended for most users.

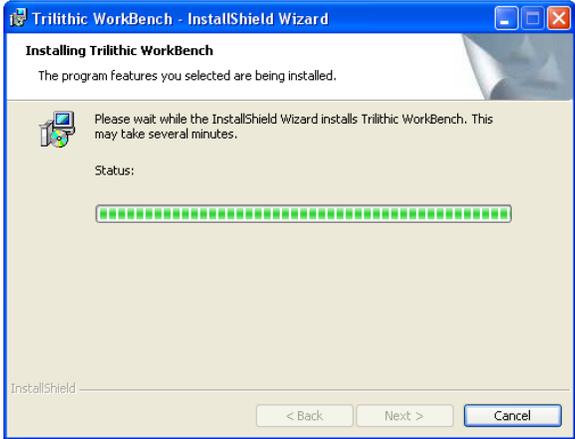
Select the **Limited Access** radio button if you want the users of this application to have access to only those features necessary to perform data management. All features that assist in device configuration will be inaccessible.

9. When you are satisfied with your entries, click the **Next>** button. The “Ready to Install the Application” screen appears.

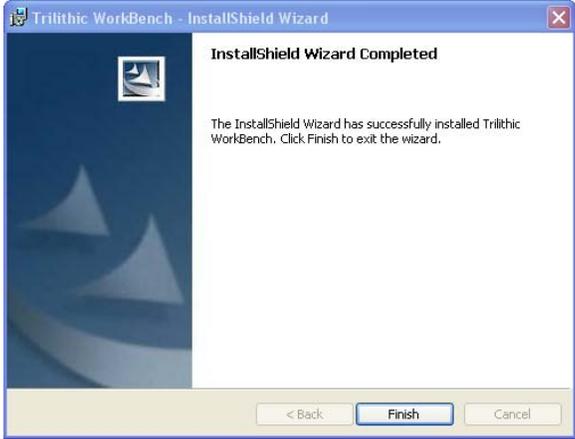


If you want to change the installation settings, select the **<Back** button; otherwise, select the **Install** button.

10. The WorkBench installation procedure installs the files and the Trilithic WorkBench icon on your desktop. The “Installing Trilithic WorkBench” screen appears to display the status of the installation.



11. When installation is complete, the “InstallShield Wizard Completed” screen appears. Select the **Finish** button



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Registering WorkBench

Overview

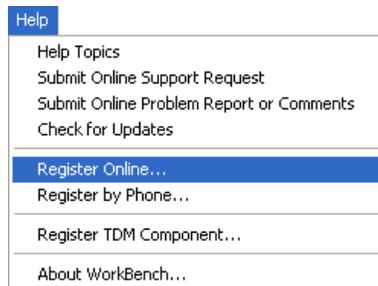
WorkBench is a fully-functional software package and all features of the program are accessible once the program has been installed and registered. WorkBench Lite includes the same features as WorkBench, however the Datalog functions of the program will be automatically disabled 30 after WorkBench Lite is installed. You can register the software online or by telephone.



Registering Online

To register WorkBench online, perform the following steps:

1. From the **Help** menu, select **Register Online...**



2. The WorkBench Registration Form screen appears. Enter information in the fields as follows:

First Name: Enter the registrant's first name. (Required field.)

Last Name: Enter the registrant's last name. (Required field.)

Postal / Zip Code: Enter the zip or postal code. (Required field.)

Country: Select the country from the drop-down list. (Required field.)

Address: Enter the first line of the company address. (Required field.)

City: Enter the city. (Required field.)

State / Province: Enter the state or province. (Required field.)

Telephone: Enter the phone number. (Required field.)

Email Address: Enter the registrant's email address. (Required field.)

Company: Enter the company name. (Required field.)

Job Title: Enter the registrant's title.

Product Key: Enter the product code that accompanied your software. (Required field.) The product code is located on the back of the WorkBench software's CD sleeve.

License Key: This display-only field contains the license key that uniquely identifies the computer on which the software is installed.

Serial Number: Enter the serial number that accompanied your software. (Required field.) The serial number is located on the back of the WorkBench software's CD sleeve.

WORK BENCH
for the 360 550

Register Workbench

Personal Information

First Name: *

Last Name: *

Contact Information

Postal / Zip Code: *

Country: *

Address: *

City: *

State / Province: *

Telephone: *

Email Address: *

Company Information

Company: *

Job Title:

Product Information

Product Key: *

License Key: *

Serial Number: *

* Fields marked with asterisks are required.

[Get Activation Code](#)

3. When you are satisfied with your entries, select the **Get Activation Code** button. WorkBench connects to a Trilithic server via the Internet and registers the software. The Registration Confirmation screen shows that the registration was successful. Be sure to copy the activation code for your records.



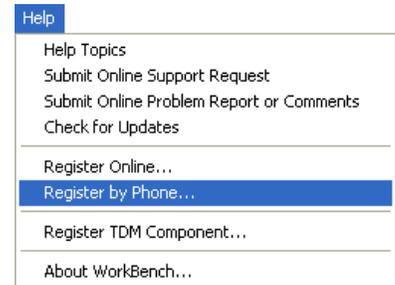
NOTE

The WorkBench software is licensed on a per-machine basis. Once the software has been registered, any attempt to register the same product code on additional computers will be unsuccessful. To move the WorkBench software to a different computer, please contact Trilithic customer support for assistance in transferring the license.

Registering By Phone

If you prefer, you can register WorkBench by phone. This is done by calling Trilithic and obtaining a registration key for your software, then entering the information in the WorkBench software, as follows:

1. Call Trilithic from 8:00am to 5:00pm (Eastern time) Monday through Friday at 1-800-344-2412 to request a registration key. Write this key down.
2. From the **Help** menu, select **Register by Phone....**

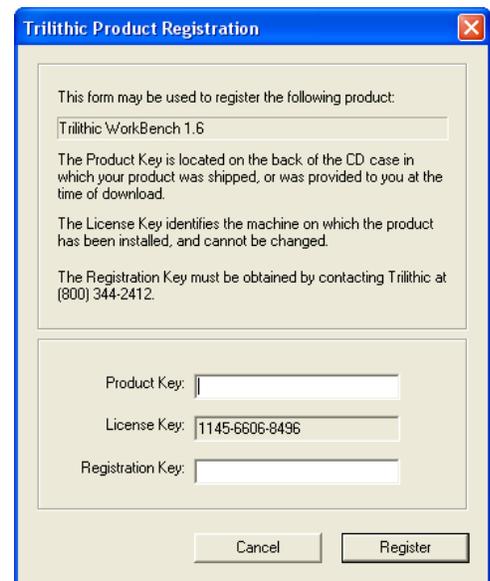


3. The Trilithic Product Registration screen appears. Enter information in the fields as follows:

Product Key: Enter the product code that accompanied your software. (This is a required field.)

License Key: This display-only field contains the license key that uniquely identifies the computer on which the software is installed.

Registration Key: Enter the registration key you received from Trilithic. (This is a required field.)

A screenshot of the 'Trilithic Product Registration' dialog box. The dialog has a blue title bar with the text 'Trilithic Product Registration' and a close button. The main content area is light beige and contains the following text: 'This form may be used to register the following product:' followed by a text box containing 'Trilithic WorkBench 1.6'. Below this, there are three paragraphs of instructions: 'The Product Key is located on the back of the CD case in which your product was shipped, or was provided to you at the time of download.', 'The License Key identifies the machine on which the product has been installed, and cannot be changed.', and 'The Registration Key must be obtained by contacting Trilithic at (800) 344-2412.' At the bottom of the dialog, there are three input fields: 'Product Key:' (empty), 'License Key:' (containing '1145-6606-8496'), and 'Registration Key:' (empty). Below the input fields are two buttons: 'Cancel' and 'Register'.

4. When you are satisfied with your entries, select the **Register** button. The Trilithic Product Registration screen appears, confirming the registration.



 NOTE

The WorkBench software is licensed on a per-machine basis. Once the software has been registered, any attempt to register the same product code on additional computers will be unsuccessful. To move the WorkBench software to a different computer, please contact Trilithic customer support for assistance in transferring the license.

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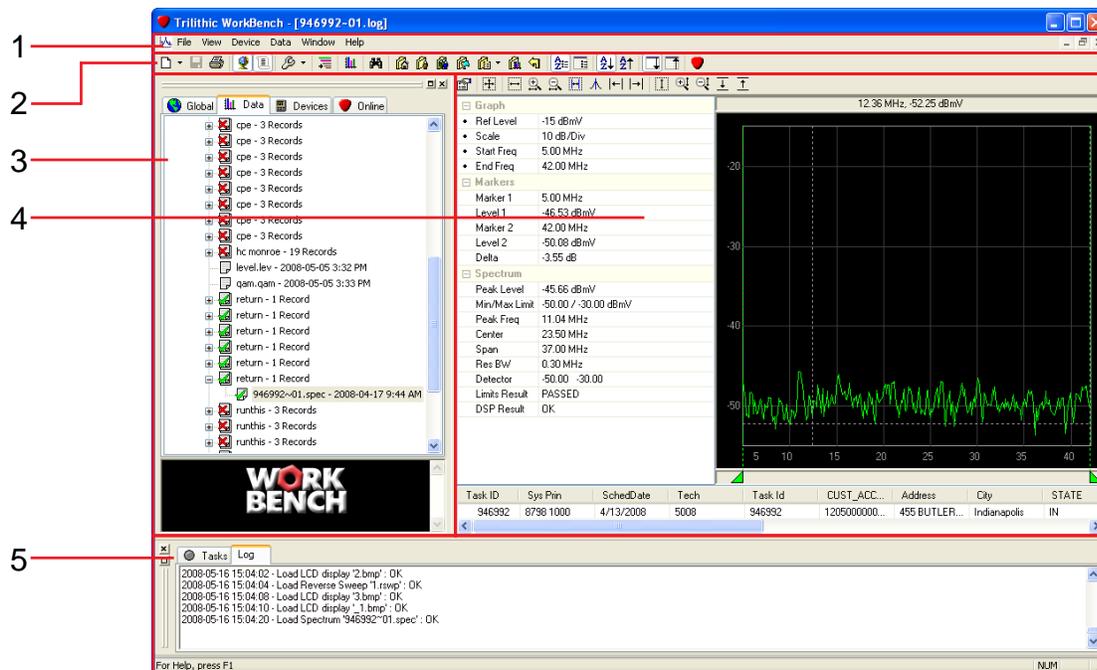
Guided Tour of WorkBench

WorkBench versus WorkBench Lite

WorkBench is a fully-functional software package and all features of the program are accessible once the program has been installed and registered. WorkBench Lite includes the same features as WorkBench, however the Datalog functions of the program will be automatically disabled 30 after WorkBench Lite is installed. The software online or by telephone, and the upgrade from WorkBench Lite to WorkBench can be configured at that time. **Refer to Chapter 4: Registering WorkBench** for additional information.

Overview

Once you have installed the WorkBench software, you're ready to learn your way around. Start WorkBench by double-clicking the Trilithic WorkBench icon on your desktop.



- 1. Command Menu** - This area is contains the commands to access files, change view settings, connect and retrieve data from devices, arrange open windows, and access support and help information.
- 2. Toolbar** - This area is used as a shortcut to most commands that are accessible through the Command Menu.
- 3. Navigator Window** - This area is used to organize and access all of the data created and managed by the WorkBench software.

4. **Data Window** - This area is used to display channels plans, device data, graphs, and Internet browser pages.
5. **Event Log and Task Window** - This area is used to display a log of events that take place in WorkBench and tasks that need to be completed.

Command Menu

Main Menus

The Command Menu has six basic menus, as described in the following table.

Menu	Commands
File	Setup new channel plans, locations, macros, task sheets (TDM Component Required), text files, configuration packages, and connections Import and export channel plans, locations, macros, tasks and task sheets (TDM Component Required), data logs, and screen captures Setup printer settings Setup general, database and device options Exit WorkBench
View	Show or hide the toolbar, status bar, navigator, log/tasks, and refresh the current view
Device	Start the Configuration Wizard, set individual configuration settings for each type of device, set the date/time of devices to match PC system time, re-boot devices, and apply firmware guides to devices
Data	Start the Data Collection Wizard for collecting data from 860 DSPs and start the Data Query Wizard for searching and analyzing data collected from 860 DSPs
Window	Change the configuration of open windows in WorkBench and arrange the WorkBench icons
Help	Open help topics, submit online support requests, submit online problem reports and comments, check for software updates, register WorkBench online or by phone, register the TDM Component (TDM Component Required), and view the current software version of WorkBench

File Menu

Menu	Commands
New	Setup new channel plans, locations, macros, task sheets, text files, configuration packages, and connections
Close	Close the current document
Save	Save the current modified document
Import	Import channel plans, locations, macros, task/task sheets, data logs, and screen captures
Export	Export channel plans, locations, macros, task/task sheets, data logs, and screen captures
Print	Prints the active document or screen
Print Preview	Lets the user preview the document that is about to be printed
Print Setup	Setup printer settings
Options	Setup general, database and device options
Exit	Exit WorkBench

View Menu

Menu	Commands
Toolbar	Show or hide the toolbar
Status Bar	Show or hide the status bar
Navigator	Show or hide the navigator window
Log	Show or hide the event log and task window
Refresh	Refresh the current view

Device Menu

Menu	Commands
Configuration Wizard	Starts the device configuration wizard
860 DSP	Configure the following settings for the 860 DSP & 860 DSPi Field Analyzers; General, Level, Scan, Depth of Modulation, CSO/CTB, Forward Sweep, QAM, Web Browser, Network Test, Return Test, VoIP, Telemetry Search Set, Navigation Menus, and Limits
860 DSPh	Configure the following settings for the 860 DSPh Headend Analyzer; General, Network, Measurement, SNMP, and Inputs
860 DSPr	Configure the following settings for the 860 DSPr Headend Analyzer; General, Level, Scan, Scan Limits, Depth of Modulation, CSO/CTB, Forward Sweep, QAM, Web Browser, Network, Network Test, Return, VoIP, Telemetry Search, FDR, and Navigation
8300 FST	Configure the following settings for the 8300 FST Forward SpeedSweep Transmitter; General and Network
Set Date/Time	Sets the date/time of devices to match PC system date/time
Re-Boot	Re-Boots devices after configuration
Apply Firmware Upgrade	Applies firmware upgrades to devices

Data Menu

Menu	Commands
Data Collection Wizard	Starts the Data Collection Wizard for collecting data from the 860 DSP & 860 DSPi Field Analyzers
Data Query Wizard	Starts the Data Query Wizard for searching and analyzing data collected from 860 DSP & 860 DSPi Field Analyzers

Window Menu

Menu	Commands
Cascade	Cascades the open windows in WorkBench
Tile	Tiles the open windows in WorkBench
Arrange Icons	Arranges the icons in WorkBench

Help Menu

Menu	Commands
Help Topics	Goes to the main help screen
Submit Online Support Request	Displays the WorkBench online technical support request web page
Submit Online Problem Report or Comments	Displays the WorkBench online customer response web page
Check for Updates	Displays the WorkBench software update web page
Register Online	Displays the WorkBench online software registration web page
Register by Phone	Displays the WorkBench window for entering a WorkBench Software Registration Key that is obtained over the phone
Register TDM Component	Displays the WorkBench window for entering a Trilithic Data Management Registration Key that is obtained over the phone
About WorkBench	Displays information about the version of the WorkBench software

Toolbar Icons

The WorkBench toolbar provides a quick way to access a number of convenient commands and features.

Icon	Description
	Start a new channel plan, location, macro, text file, configuration package, or connection (same as the File/New command)
	Save the current modified document (same as the File/Save command)
	Prints the active document or screen (same as the File/Print command)
	Show or hide the Navigator Window (same as the View/Navigator command)
	Show or hide the Event Log and Task Window (same as the View/Log command)
	Configure device parameters (context varies based on which type of device is selected)
	Launches the Trilithic Data Manager (TDM) Report Console.
	Collect data from the 860 DSP logs (same as the Data/Data Collection Wizard command)
	Query saved data logs (same as the Data/Data Query Wizard command)
	Group data by Company Name (same as the right-click menu on the Data Tab of the Navigator Window)

Icon	Description
	Group data by Operator Name (same as the right-click menu on the Data Tab of the Navigator Window)
	Group data by Workgroup Name (same as the right-click menu on the Data Tab of the Navigator Window)
	Group data by Location Name (same as the right-click menu on the Data Tab of the Navigator Window)
	Group data by Task Information (same as the right-click menu on the Data Tab of the Navigator Window)
	Group data by Type (same as the right-click menu on the Data Tab of the Navigator Window)
	Resets all data grouping to default settings (turns off grouping)
	Do a primary sort of data by log name (same as the right-click menu on the Data Tab of the Navigator Window)
	Do a primary sort of data by log type (same as the right-click menu on the Data Tab of the Navigator Window)
	Sort by log name in ascending order (same as the right-click menu on the Data Tab of the Navigator Window)
	Sort by log name in descending order (same as the right-click menu on the Data Tab of the Navigator Window)

Icon	Description
	Sort by log date in ascending order (same as the right-click menu on the Data Tab of the Navigator Window)
	Sort by log date in descending order (same as the right-click menu on the Data Tab of the Navigator Window)
	Displays the contact screen for problem reports (same as the Help/Submit Online Problem Report or Comments command)



NOTE

The toolbar icon and Help menu item for problem reports and comments is intended to provide Trilithic with feedback relating to the stability and function of the WorkBench software. Please note that this form is not intended to provide technical support—a reply will not be sent. For technical support, please follow the steps outlined previously in this manual.

Navigator Window

The Navigator window is used to organize and access all of the data created and managed by the WorkBench software.

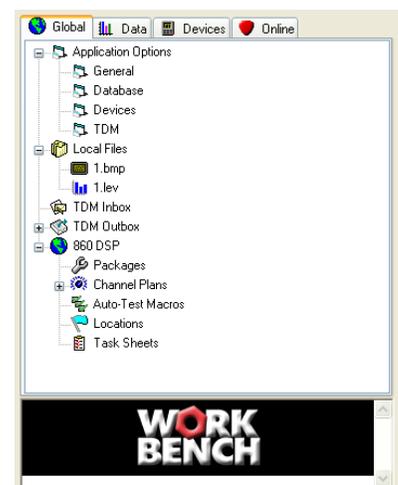
When WorkBench first starts, the Navigator window appears to the left of the WorkBench screen.

The Navigator Window has four tabs, as described in the following table.

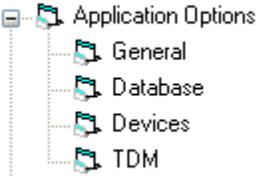
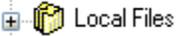
Tab	Description
 Global	Displays channels plans, locations, macros, text files, configuration packages, and provides a quick link to the application options
 Data	Displays the various queries and data sets in the WorkBench software
 Devices	Displays the devices that have been set up in the WorkBench software
 Online	Links to the Trilithic web site for additional information, notes, bulletins, and firmware upgrades

Global Tab

When the WorkBench software opens, the Navigator Window will default to the  Global tab as shown to the right.

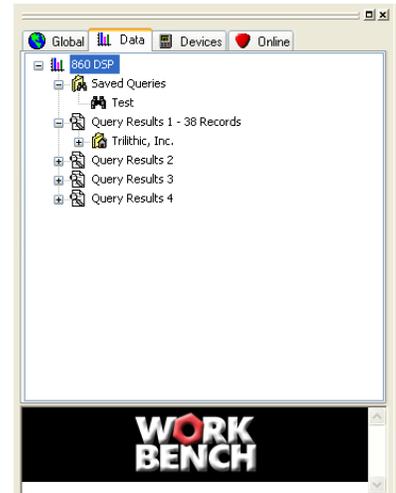


From the  Global tab, the following options are available:

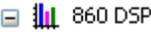
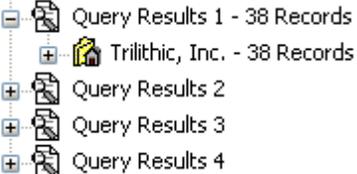
Option	Description
	<p>Double-clicking this option opens the Application Options Window to the General Tab (this is the same as selecting the File/Options command)</p> <p>Selecting the plus (+) sign next to Application Options will display the General, Databases, Devices, and TDM Options (TDM Component Required); double-clicking any of these options will open the Application Options Window to the selected option tab</p> <p>For more information on configuring TDM Options, see <u>Section VI: Trilithic Data Manager (TDM) Component</u></p>
	<p>Double-clicking this option or selecting the plus (+) sign next to Local Files will display a list of all the text files in WorkBench</p> <p>Using this option is described in the Creating and Maintaining Text Files Section</p>
	<p>The Trilithic Data Manager (TDM) Component is required to use this option</p> <p>For more information on using this option, see <u>Section VI: Trilithic Data Manager (TDM) Component</u></p>
	<p>The Trilithic Data Manager (TDM) Component is required to use this option</p> <p>For more information on using this option, see <u>Section VI: Trilithic Data Manager (TDM) Component</u></p>
	<p>Double-clicking this option or selecting the plus (+) sign next to the 860 DSP will display a list of the Packages, Channel Plans, Auto-Test Macros, Locations, and Task Sheets (TDM Component Required) in WorkBench</p> <p>Using this option is described in the Creating and Maintaining a Configuration Package Section For more information on using Task Sheets, see <u>Section VI: Trilithic Data Manager (TDM) Component</u></p>

Data Tab

The  Data tab is displayed as shown to the right.

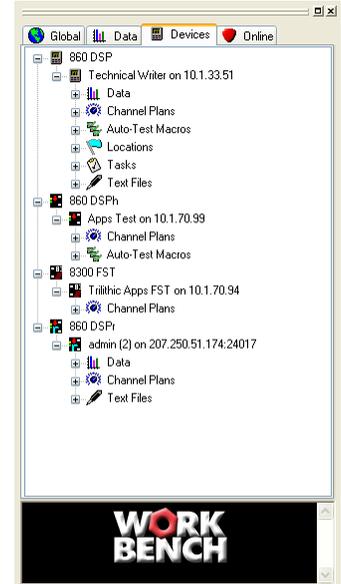


From the  Data tab the following options are available:

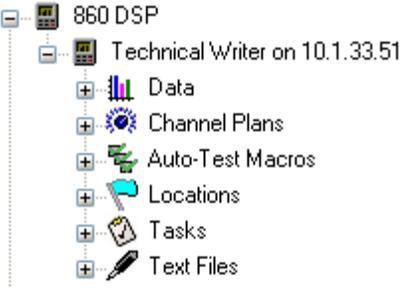
Option	Description
 860 DSP	<p>Double-clicking this option or selecting the plus (+) sign next to</p> <p>860 DSP will display the Saved Queries and Query Results tree options</p>
 Saved Queries Test	<p>Selecting the plus (+) sign next to Saved Queries will display all of the queries saved in WorkBench</p> <p>Double-clicking any of the saved queries will start the Data Query Wizard with the saved query parameters already selected</p>
 Query Results 1 - 38 Records Trilithic, Inc. - 38 Records Query Results 2 Query Results 3 Query Results 4	<p>Selecting the plus (+) sign next to Query Results # will start the Data Query Wizard if no query is defined (same as the Data/Data Query Wizard command)</p> <p>Double-clicking any of the query results or selecting the plus (+) sign next to Query Results # will display all of the data that was returned when the query was executed</p> <p>Double-clicking on any of the data that was returned when the query was executed will display the data in the Data Window</p>

Devices Tab

The  Devices tab is displayed as shown below.



From the  Devices tab the following options are available:

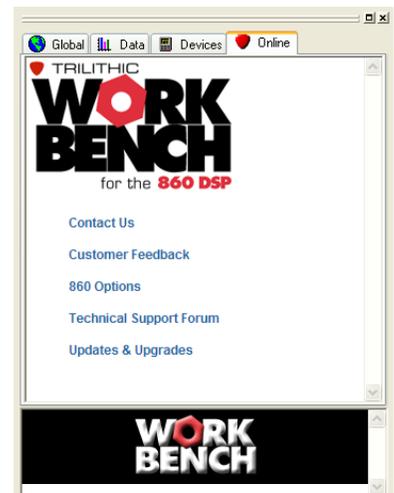
Option	Description
	<p>Right-clicking this option will display a menu to create a new connection to a 860 DSP or to show offline 860 DSPs</p> <p>Double-clicking this option or selecting the plus (+) sign next to 860 DSP will display a list of the 860 DSPs that are connected to WorkBench; double-clicking any of 860 DSPs from this list will display a list of the Channel Plans, Auto-Test Macros, Locations, and Text Files associated with that 860 DSP</p>
	<p>Right-clicking this option will display a menu to create a new connection to a 860 DSPPh or to show offline 860 DSPPhs</p> <p>Double-clicking this option or selecting the plus (+) sign next to 860 DSPPh will display a list of the 860 DSPPhs that are connected to WorkBench; double-clicking any of 860 DSPPhs from this list will display a list of the Channel Plans and Auto-Test Macros associated with that 860 DSPPh</p>

Option	Description
	<p>Right-clicking this option will display a menu to create a new connection to an 860 DSPr or to show offline 860 DSPr's</p> <p>Double-clicking this option or selecting the plus (+) sign next to the 860 DSPr will display a list of the 860 DSPr's that are connected to WorkBench; double-clicking any of the 860 DSPr's from this list will display a list of the Channel Plans associated with that 860 DSPr</p>
	<p>Right-clicking this option will display a menu to create a new connection to an 8300 FST or to show offline 8300 FSTs</p> <p>Double-clicking this option or selecting the plus (+) sign next to 8300 FST will display a list of the 8300 FSTs that are connected to WorkBench; double-clicking any of 8300 FSTs from this list will display a list of the Channel Plans associated with that 8300 FST</p>

Online Tab

The  Online tab will allow WorkBench to be connected to the Internet, and once connected, provides up-to-date access to information and tasks such as checking for software and firmware updates, inquiring about the latest products and options available for the 860 DSP, and requesting technical assistance for your WorkBench software or 860 DSP units.

The information in the Online tab is updated periodically with new options. Click on any of the links in the Online Tab to go to the appropriate section of the 860 DSP Web site.



Chapter 6

Configuring WorkBench

General and Database Settings

To configure the general settings of the WorkBench software, perform the following steps:

1. The first time that the WorkBench software is started, the general settings need to be configured. From the **File** menu, select **Options**, the **Application Options** Window appears with the **General** tab displayed.
2. Enter general settings in the following fields:

Company Name: Enter the company name.

Address 1: Enter the first line of the company address.

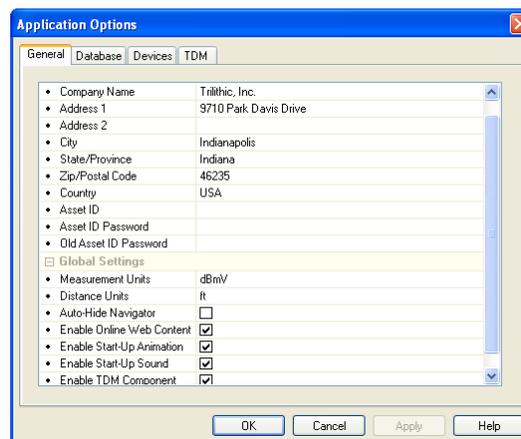
Address 2: Enter the second line of the company address.

City: Enter the city.

State/Province: Enter the state or province.

Zip/Postal Code: Enter the zip or postal code.

Country: Enter the country.



NOTE

The company name and address information are displayed on the header of printed reports.

Asset ID: Enter the asset ID or security message you wish to be displayed on the 860 DSP splash screen during start up.

Asset ID Password: Enter a password to prevent unauthorized changes to the asset ID or security message that is displayed on the 860 DSP screen.

Old Asset ID Password: When you wish to change your Asset ID Password, enter the new password in the Asset ID Password field and then enter the old password in this field

Measurement Units: Select the measurement unit from the drop-down list. The options available to select from are dBmV, dBuV, or dBm.



NOTE

The measurement unit selected in this field is used for measurements throughout the WorkBench software. This affects the various data wizards and the data logs.

Distance Units: Select the distance unit from the drop-down list. The options available to select from are feet (ft) and meters (m).

Auto-Hide Navigator: Select this check box to hide the Navigator Window automatically when you view data in the Data Window. When the Data Window is closed, the Navigator Window is automatically displayed again.

Enable Online Web Content: Select this check box to enable the Online Tab in the Navigator Window to display the information from the WorkBench Online Web site.

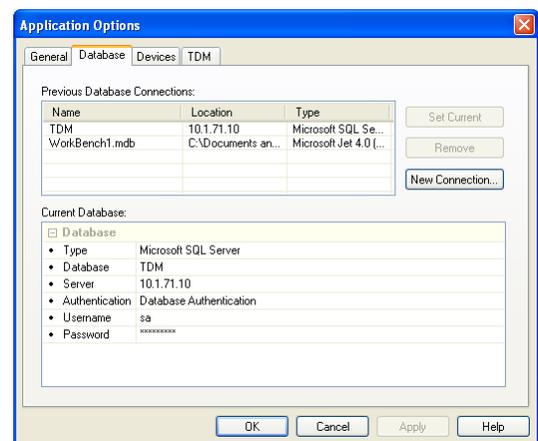
Enable Start-Up Animation: Select this check box to enable the start-up splash screen animation.

Enable Start-Up Sound: Select this check box to enable the start-up sounds.

Enable TDM Component: Select this check box to enable the TDM Component (TDM Component Required). For more information about the Trilithic Data Manager Component, see **Section VI: Trilithic Data Manager (TDM) Component**.

3. When done configuring the general settings, select the Database Tab.
4. The Database tab appears, enter database settings in the following fields:

Type: Select the type of database. The default database is set to the Microsoft Jet 4.0 database engine (this database engine is used by Access 2000 and Access XP). The Microsoft Jet 3.5 database engine (used by Access 97), or Microsoft SQL Server can also be selected.





NOTE

Give consideration to where the data from TDM is stored. To prevent the loss of data, consider storing this data on a centralized server that is backed up regularly.



NOTE

To facilitate the sorting and retrieval of saved data, consider creating a separate database that contains only data from a specific group of technicians or from a particular job function as opposed to a single database for all records.



NOTE

If using WorkBench with the TDM Component, the SQL Server must be selected. The SQL Server will need to be purchased separately and installed on the TDM server. Otherwise, simply accept the defaults by selecting the OK button. The Jet 4.0 and Jet 3.5 database engines are included with the WorkBench software and need no additional configuration.



NOTE

Use the Microsoft Windows Data Link Properties wizard to make and verify a database connection by selecting the New Connection... button.



NOTE

If the selected database does not already exist, it will be created and initialized after selecting the OK/Apply button.



NOTE

The database holds the data gathered from the 860 DSPs, configuration package information, and other data. The WorkBench software sets up a default Jet 4.0 database when installing the software. This database will be acceptable for most installations without and further configurations.

Server: This option is used only if the Microsoft SQL Server option is selected in the Type field. Enter the name of the server on which the SQL Server database resides. The default for this field is (local) for the computer on which the WorkBench software is installed.

Authentication: This option is used only if the Microsoft SQL Server option is selected in the Type field. Select Windows NT/2000/XP Authentication to use the operating system's built-in user accounts, or Database Authentication to use SQL Server user authentication when signing in to the server.

Username: This option is used only if the Microsoft SQL Server option is selected in the Type field and Database Authentication is selected as the login method. Enter the username for the server.

Password: This option is used only if the Microsoft SQL Server option is selected in the Type field and Database Authentication is selected as the login method. Enter the password for the server.

Set Current: Set the currently selected connection in the Previous Database Connections list as the current database.

Remove: Remove the currently selected connection from the list. This will not delete the database from disk.

New Connection...: Make and/or verify a database connection.

5. When done configuring the database settings, select the **OK** button. WorkBench is now configured.

Chapter 7

Online Services

Overview

You may need to interact with Trilithic to do any of the following:

- Provide general feedback
- Submit a report on a problem
- Request a new feature or a change to an existing feature
- Get product support

You can submit feedback directly to Trilithic:

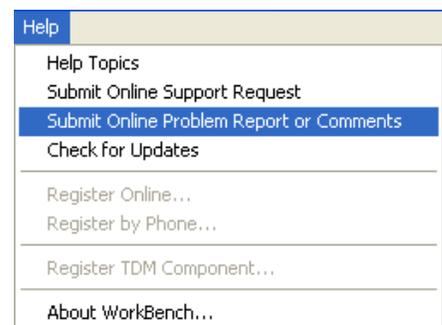
Trilithic, Inc.
9710 Park Davis Drive
Indianapolis, IN 46235 USA
(317) 895-3600 or (800) 344-2412
(317) 895-3613 (fax)
support@trilithic.com

You can also submit feedback or requests for product support through WorkBench.

Online Customer Feedback

To submit online feedback, do the following:

1. From the **Help** menu, select **Submit Online Problem Report or Comments**.



NOTE

The online customer feedback can also be displayed by selecting the Trilithic logo  on the WorkBench toolbar.

2. The Customer Feedback web page appears. Select the product to submit feedback on WorkBench or 860 DSP and enter feedback information in the following fields:

OS: Enter the operating system that WorkBench is running on.

Software Version: Enter the WorkBench software version.

Product Key: Enter the product key that came with this version of WorkBench. Enter “unregistered” if no product key is available. (Required field.)

First Name: Enter the user’s first name. (Required field.)

Last Name: Enter the user’s last name. (Required field.)

Postal / Zip Code: Enter the zip or postal code. (Required field.)

Country: Select the country from the drop-down list. (Required field.)

Address: Enter the company address. (Required field.)

City: Enter the city. (Required field.)

State / Province: Select the state or province from the drop-down list. (Required field.)

Telephone: Enter the phone number. (Required field.)

Email Address: Enter your email address. (Required field.)

Company: Enter your company name. (Required field.)

Job Title: Enter the user’s job title.

Comments: Enter your description of the problem or the change request.

WORK BENCH
for the 860 DSP

Customer Feedback

If you would like to provide feedback or are experiencing a problem with your software or instrument, please fill out and submit the following form. When you submit your feedback, it will be entered into our database for tracking purposes and we may contact you for further investigation.

Periodically we will post notices regarding updates available to fix bugs reported by our customers on the Updates page. You may also want to check our list of Frequently Asked Questions for known problems and tips or workarounds.

Product Information

Product: Workbench
 860 DSP

OS: (please select an OS)

Software Version:

Product Key: *
Type "unregistered" if you don't have a Product Key

Personal Information

First Name: *

Last Name: *

Contact Information

Postal / Zip Code: *

Country: United States *

Address: *

City: *

State / Province: Please select a state or province *

Telephone: *

Email Address: *

Company Information

Company: *

Job Title:

Comments

Please be as specific as possible when describing the problem. If the problem is reproducible, please list the steps required to cause it, leaving a blank line between steps.

If the problem is not reproducible (only happened once, or occasionally for no apparent reason), please describe the circumstances in which it occurred and the symptoms observed.

* Fields marked with asterisks are required.

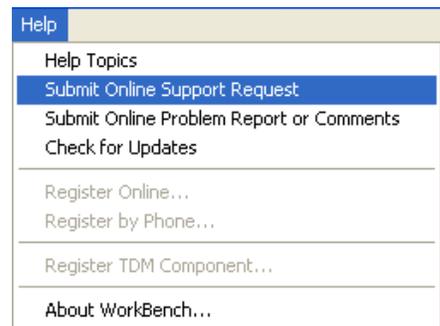
- When done entering the feedback information, select the **Submit** button. The user information and comments are sent to Trilithic where they will be reviewed.

 **NOTE** *When submitting feedback, a reply will not be sent. Information collected from WorkBench users is used by Trilithic to provide continuous improvement to its products and services.*

Online Support Request

To submit a support request, do the following:

- From the **Help** menu, select **Submit Online Support Request**.



- The Trilithic Online Support Forum redirect web page opens in WorkBench. The Trilithic Online Support Forum web page will open in a separate Internet browser window. If the separate web page does not open, select the hyperlink from the redirect web page in WorkBench.



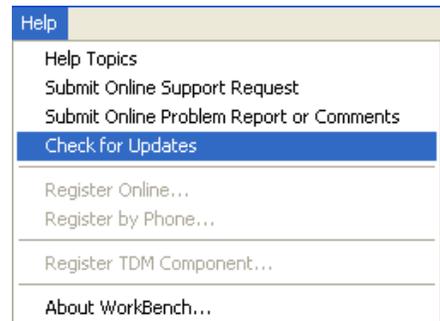
- Select the WorkBench Technical Support Forum and review the existing posts for an answer the WorkBench problem or create a new post that will be reviewed and answered by a Trilithic moderator.

Device Firmware Upgrades

Trilithic periodically issues updates to 860 DSP, 860 DSPh, and 8300 FST firmware. These updates are posted on the Firmware update page for downloading to the user's computer.

To update the firmware:

1. From the **Help** menu, select **Check for Updates**.



2. The appears WorkBench software update web page opens. Follow the instructions on the web page to update the WorkBench software or perform a firmware upgrade of the 860 DSP, 860 DSPh, and 8300 FST.



3. If you have not already done so, connect the 860 DSP(s) you want to update.
4. If more than one 860 DSP is connected, select one or more devices from the list shown on the Devices tab.
5. From the 860 DSP menu, select Apply 860 DSP Upgrade. The standard File Open dialog box appears.
6. Select the firmware patch you want to apply and click Open. (You can only apply a single patch at a time, so if you have several patches to apply, you'll need to apply them individually.)
7. The WorkBench software downloads the firmware patch to the 860 DSP(s) you have connected to the computer.
8. When the update process is complete, the 860 DSP(s) will reboot to apply the changes.

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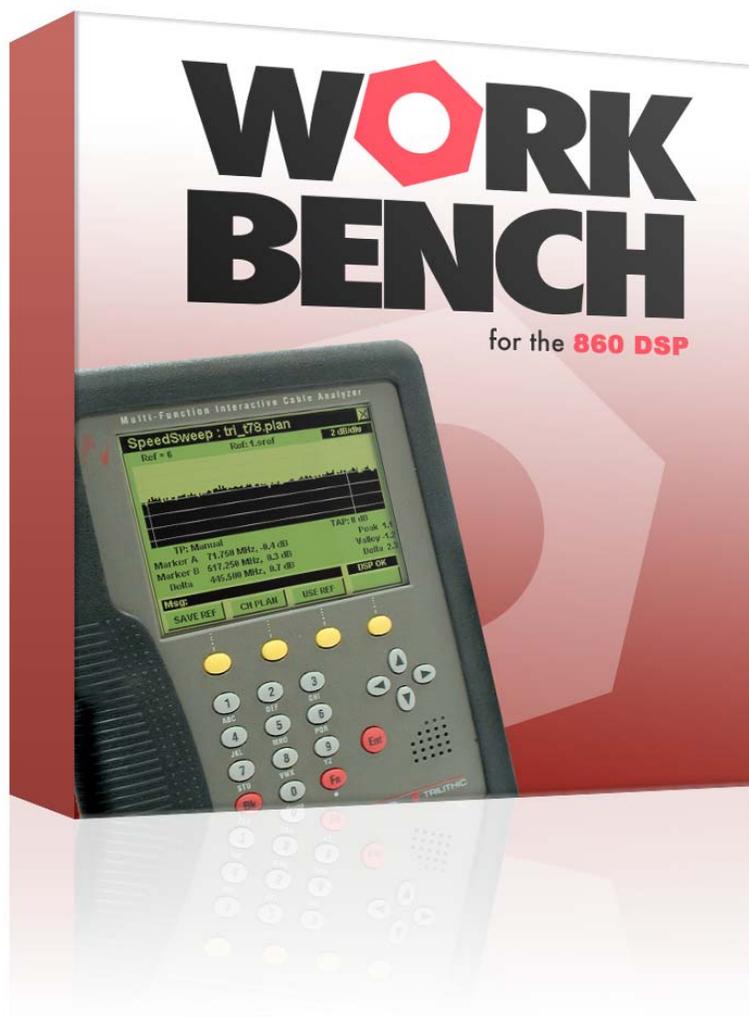
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WorkBench Software

(and WorkBench Lite Software)

for the 860 DSP, 860 DSPi, 860 DSPh, 860 DSPr, and 8300 FST

Section II: Managing Devices and Data



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Chapter 1

Introduction

Overview

Once the WorkBench program has been installed, you can begin managing devices. The WorkBench application is capable of managing all configuration parameters for the following devices:

- 860 DSP
- 860 DSPi
- 860 DSPh
- 860 DSPr
- 8300 FST

In addition to configuration management, WorkBench allows complete management of data files for a variety of tests and measurements.

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Chapter 2

Managing Devices

Overview

Now that the installation and configuration of WorkBench is complete, the next step is to connect WorkBench with the 860 DSP, 860 DSPi, 860 DSPh, 860 DSPr, or 8300 FST. You can add new devices to WorkBench or maintain connections with devices that are already known or polled by WorkBench. In this section we discuss how to add new devices, disconnect devices, and manage device connections.

Connecting To Devices

To add a new device to WorkBench perform the following steps:

1. Perform one of the following steps to create a new connection:

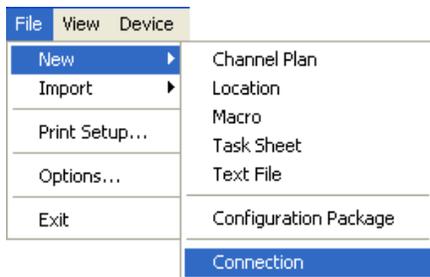
From the **File** menu hover over **New**, and then select **Connection**.

OR

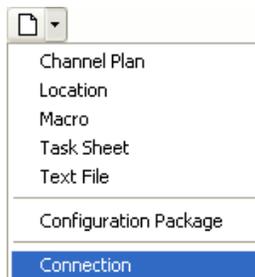
From the Toolbar click on the  icon and then select **Connection**.

OR

From the  **Devices** tab, right-click on the type of device you wish to add, and then select **New 860 DSP connection**, **New 860 DSPh Connection**, **New 860 DSPr Connection**, or **New 8300 FST Connection**.



File Menu



Toolbar



Devices Tab

2. The **Connect To a Device** window will appear. From this window you will choose how to connect to a device. Perform one of the following steps based on your device connection type:

Connect to a device on a local serial port - Select this option if you wish to connect to a device via a serial port. From the **Serial Port** drop-down list select the serial port to which your device is connected, see the figure below.

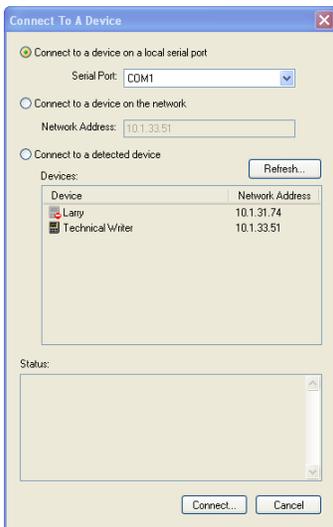
OR

Connect to a device on the network - Select this option if you want to establish a network connection to the device. Enter the IP address and specific communications port of the device (i.e. 192.168.1.1:24010) in the **Network Address** field, see the figure below.

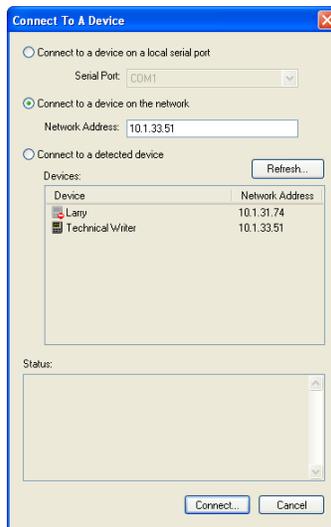
OR

Connect to a detected device - Select this option if you want to connect to a detected device on the network, see the figure below.

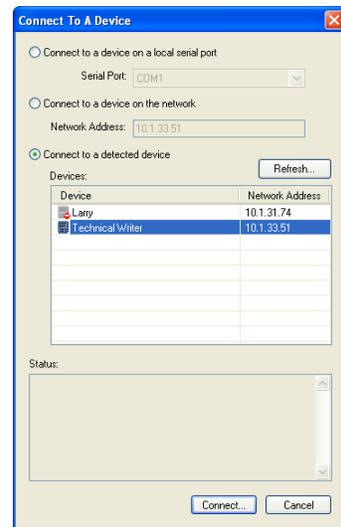
 **NOTE** Select the  button to rediscover any devices connected to the network.



Serial Port



Network Device

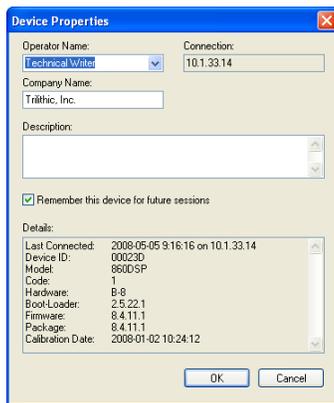


Detected Device

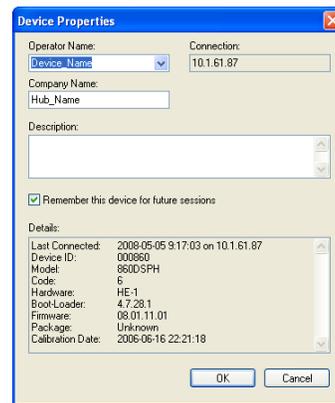
- When you have completed entering the connection information, select the **Connect...** button. The WorkBench software will poll the serial port or IP address to connect with your device.

 **NOTE** *The Status field is a read-only area of the window that displays the status of the device connection when trying to connect to a device.*

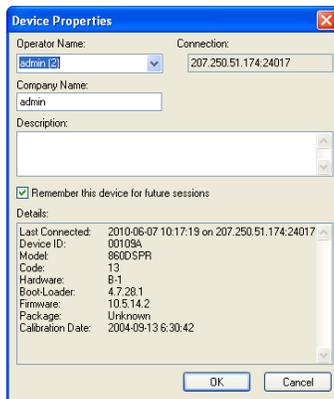
- When WorkBench makes a connection with your device, the software will display the **Device Properties** window specific to the connected device as shown below.



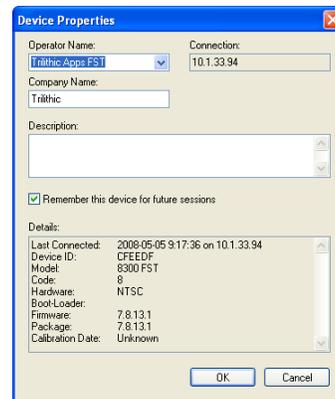
860 DSP or 860 DSPi



860 DSPH



860 DSPr



8300 FST

 **NOTE** *The Operator Name pull down list is not functional in the 860 DSPH or 8300 FST Device Properties windows.*

5. Enter the following information into the corresponding fields in the **Device Properties** window:

Operator Name - Enter the name of the device or the operator name. For the 860 DSP, 860 DSPi, and 860 DSPr, the **Operator Name** field is a pull-down list that allows as many as three operator names to be entered and edited.

Company Name - Enter the company name or location of the device.

Description - Enter any description desired to help remember important aspects of this device.

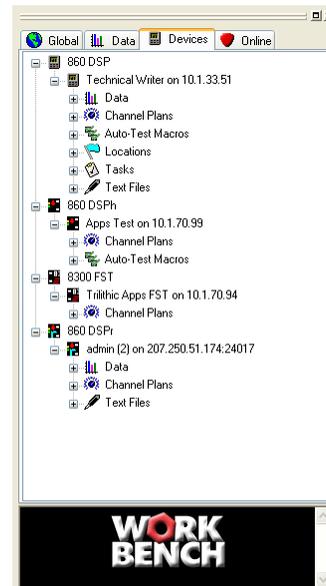
Remember this device for future sessions - Select this check-box (selected by default if auto-connecting) if you would like WorkBench to remember this device in the future.



NOTE

The Details and Connections fields are a read-only area of the window that are provided for information purposes only.

6. When you have completed entering the information in the **Device Properties** window, select the  button. The new device will now appear in the list of devices in the  **Devices** tab of the **Navigator Window** as shown to the right.
7. You can repeat this process as necessary to add more devices to WorkBench.

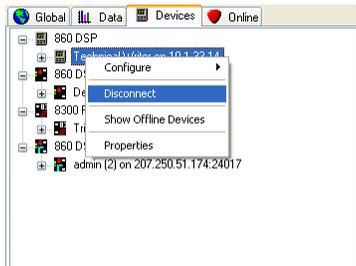


NOTE

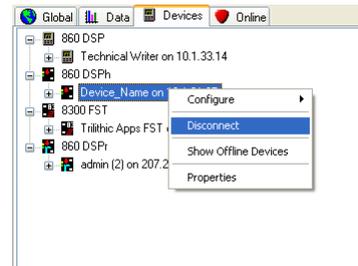
*You can show all of the devices that WorkBench knows about, whether they are connected to WorkBench or not, by right-clicking any type of device from the Navigator Window and selecting **Show Offline Devices** from the right-click menu. Devices that are not connected will appear with their icons and names grayed out.*

Disconnecting Devices

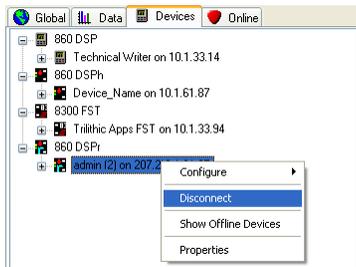
To disconnect a device from WorkBench, from the **Devices** tab of the **Navigator** window right-click the device that you want to disconnect and select **Disconnect** from the right-click menu. To reconnect any device, follow the steps that are outlined in the **Connecting to Devices** section.



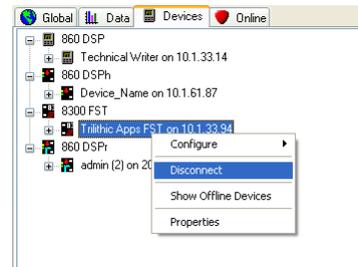
860 DSP or 860 DSPi



860 DSPh



860 DSPr



8300 FST

Maintaining Device Connections

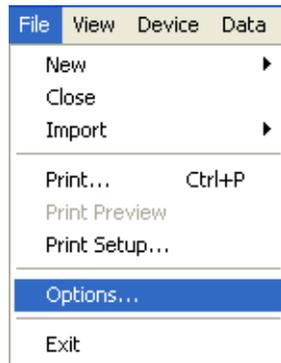
You can modify which devices WorkBench remembers and auto-connects to when detected, as well as, maintain which serial ports and IP addresses are polled for the 860 DSP, 860 DSPi, 860 DSPh, and 8300 FST from the WorkBench software as follows:

1. Perform one of the following steps to create a new connection:

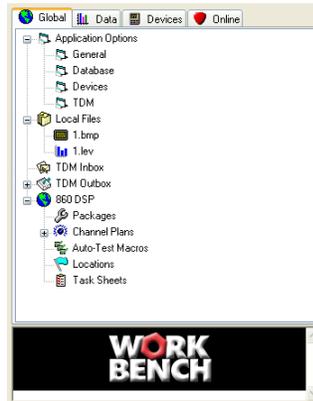
From the **File** menu select **Options**, see the figure below.

OR

From the  **Global** tab, double-click on **Application Options**, see the figure below.

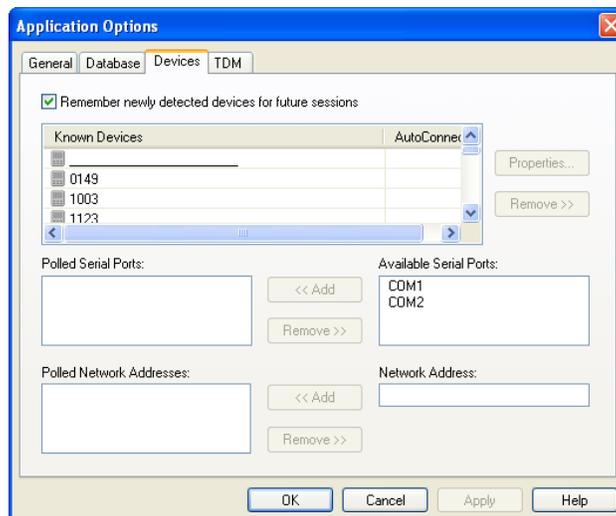


File Menu



Global Tab

2. From the **Application Options** window, select the **Devices** tab.



3. Enter the following information into the corresponding fields in the **Devices** tab of the **Application Options** window:

Remember newly detected devices for future sessions: Select this check-box if you want WorkBench to remember connected devices.

Known Devices: Select a device from the devices shown in this field.

- You can display the **Device Properties** window (and change names and descriptions) by selecting the **Properties...** button.
- You can delete the device from the WorkBench software entirely by selecting the **Remove >>** button.
- You can elect to auto-connect to a device when detected by selecting the **AutoConnect** field.

Polled Serial Ports: This field contains the serial ports that the WorkBench software polls.

- You can remove a serial port by clicking on the port and selecting the **Remove >>** button.
- You can add a serial port to this list by clicking on an available serial port in the **Available Serial Ports** field and selecting the **<< Add** button.

Polled Network Addresses: This field contains the IP addresses that the WorkBench software checks for a device.

- You can remove an IP address by clicking on the address and selecting the **Remove >>** button.
- You can add an IP address by entering the IP address in the **Network Address:** field and selecting the **<< Add** button.

4. When you are satisfied with your entries, select the **OK** button to exit and save or select the **Cancel** button to exit without saving.

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Chapter 3

Managing Data

Overview

In addition to performing a variety of tests and functions, the 860 DSP, DSPi, and DSPr can save data to be transferred to WorkBench for analysis and reporting. This chapter shows you how to transfer data logs from a connected 860 DSP, DSPi, or DSPr to WorkBench. You'll also see how to create custom queries as well as how to import and export data using WorkBench.

Data Log Types

Data logs are viewed through the **Devices** tab of the **Navigator** window or using a custom query in the **Data** tab of the **Navigator** window.

Depending on their features and options, the 860 DSP, DSPi, or DSPr can upload many different types of data logs as shown below.

Data Icon	Data Type	File Extension	Report Types
	Bit Error Ratio	ber	Text and Graphics
	CM Stats	stat	Text Only
	Carrier Second Order / Triple Beat CSO/CTB	cso	Text and Graphics
	Carrier-To-Noise	c2n	Text Only
	Depth of Modulation	dom	Text Only
	FDR	fdr	Graphics Only
	FM Deviation	fm	Text Only
	Forward Sweep	fswp	Graphics Only
	Hum	hum	Text Only



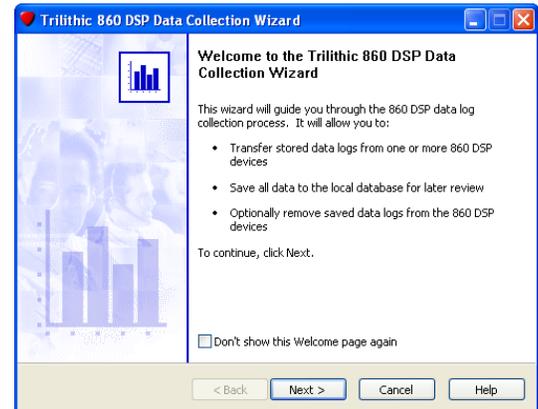
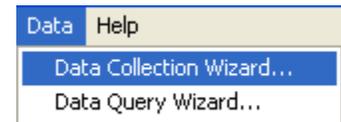
If you are running WorkBench Lite, the data logging features of the program will be disabled after 30 days. To continue using the data features, register the WorkBench software.

Data Icon	Data Type	File Extension	Report Types
	LCD Screen Capture	lcd, bmpz	Graphics Only
	Leakage	leak	Text Only
	Level	lev	Text Only
	Ping	ping	Text Only
	QAM	qam	Text and Graphics
	QAM EVS	qevs	Graphics Only
	QAM Lite	qaml	Text Only
	Return Sweep Analysis	rsa	Text and Graphics
	Reverse Sweep	rswp	Text and Graphics
	Reverse Test	rtst	Text and Graphics
	Scan	scan	Text and Graphics
	Spectrum Analyzer	spec	Graphics Only
	Throughput	thru	Text Only
	Tilt	tilt	Text and Graphics
	Trace Route	rout	Text Only
	Traffic Control	traf	Text and Graphics
	VITS	vits	Graphics Only
	VoIP	vrtp	Text Only
	Web Log	wlog	Text Only
	Wi-Fi	wifi	Text Only

Using the Data Collection Wizard

To transfer data from an 860 DSP or 860 DSPi to the WorkBench software, perform the following steps:

1. Connect the 860 DSP or 860 DSPi to the WorkBench computer using the steps outlined in **Chapter 2: Managing Devices**, *Connecting to Devices*.
2. Select the  icon or from the **Data** menu, select **Data Collection Wizard**.
3. The **Welcome to the Trilithic 860 DSP Data Collection Wizard** screen appears. Select the  button.



NOTE

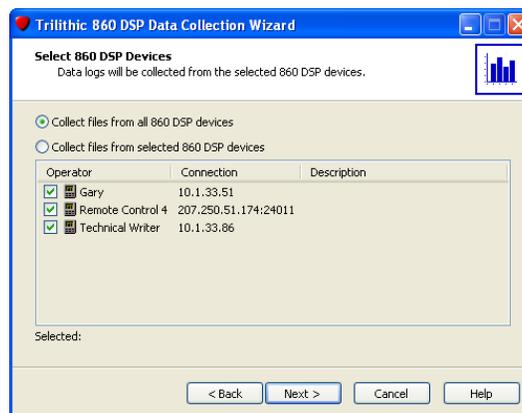
Although it will normally be desirable to store all of your data logs in the WorkBench database (using the Data Collection Wizard), you can also open data logs directly from an 860 DSP by locating the desired data log on the Devices tab, right-clicking on the file, and selecting Open from the pop-up window. This method is convenient if you need to generate a report quickly.

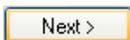
4. If more than one 860 DSP(s) is connected, the **Select 860 DSP Devices** screen appears. You must choose from one of the two options described below before selecting the

 button:

Collect files from all 860 DSP devices - Select this option (the default) to read data from all connected devices

Collect files from selected 860 DSP devices - Select this option to read the data from only the devices that you choose.



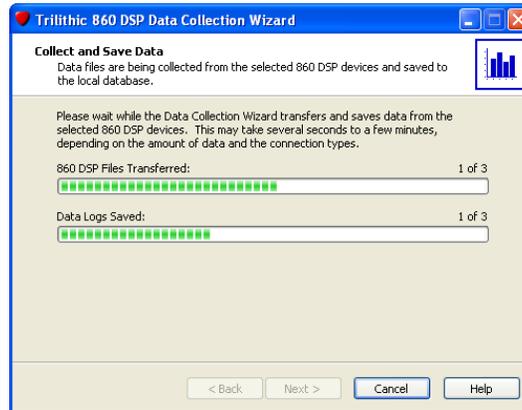
5. The **Remove 860 DSP Files** screen appears. You must choose from one of the two options described below before selecting the  button:

Yes, remove data logs from 860 DSP devices (Recommended) - Select this option (the default) to read data from the device, save the information to the database, and then delete the logs on the device. This frees up storage space on the device.

No, do not delete files - Read the data from the device but do not delete the data logs.



- When you are satisfied with your entries, select the **Next >** button. The **Collect and Save Data** screen appears to indicated the progress of the data collection as the wizard reads the data and saves it to the database.



- If you have multiple devices connected, the **Select Additional Devices** screen appears prompting you to select one or more devices from which data will be uploaded. You must choose from one of the following two options before selecting the **Next >** button.

No, I'm ready to complete the wizard Select this option if you have collected data from all the devices and are ready to complete the wizard.

Yes, continue collecting data from additional 860 DSP devices Select this option if you wish to collect data from another device.



8. When you are satisfied with your entries, select the **Next >** button.
- If you selected **Yes** in the **Select Additional Devices** screen, the wizard lets you select other devices and then collects the data from each of them. At the end of the data collection process, the wizard then displays the **Select Additional Devices** screen again.
 - When you select **No** in this screen and select the **Next >** button, the **Trilithic 860 DSP Data Collection Wizard Complete** screen appears and displays a list of the data files collected. Select the **Finish** button to close the Data Collection Wizard.

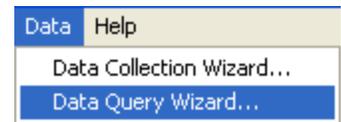


Using the Data Query Wizard

To perform a query into the data collected by the Data Collection Wizard, perform the following steps:

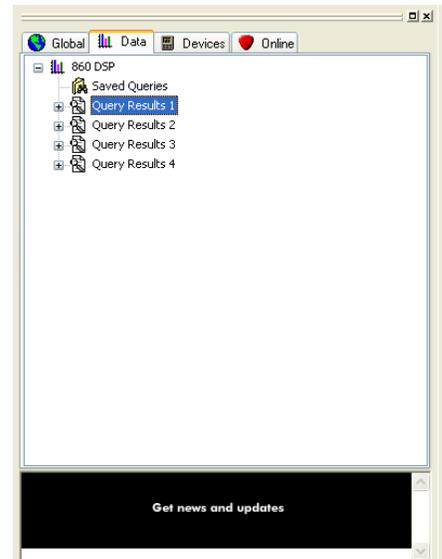
1. Connect the 860 DSP or 860 DSPi to the WorkBench computer using the steps outlined in **Chapter 2: Managing Devices**, *Connecting to Devices*.
2. Perform one of the following steps to create a new data query:

From the **Data** menu, select **Data Query Wizard**, see the figure to the right. Proceed to step 3.

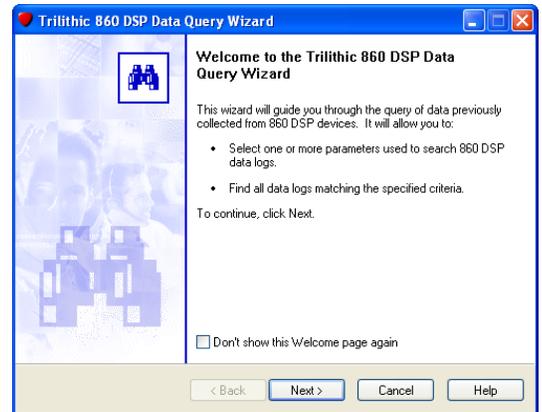


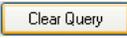
OR

From the  **Data** tab, double-click **Query Results #** or select the plus (+) sign next to **Query Results #**, see the figure to the right. Skip to step 4.



- If you select **Data Query Wizard** from the **Data** menu, the **Welcome to the Trilithic 860 DSP Data Query Wizard** screen appears. Select the  button.

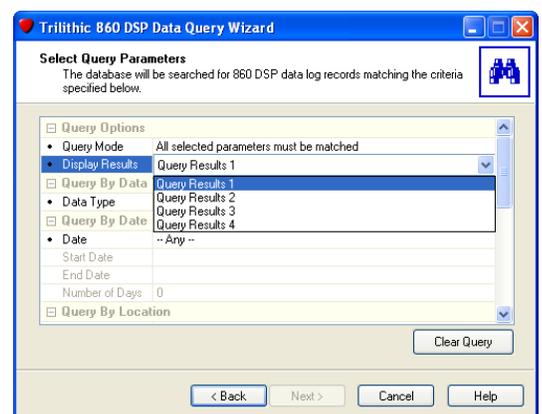
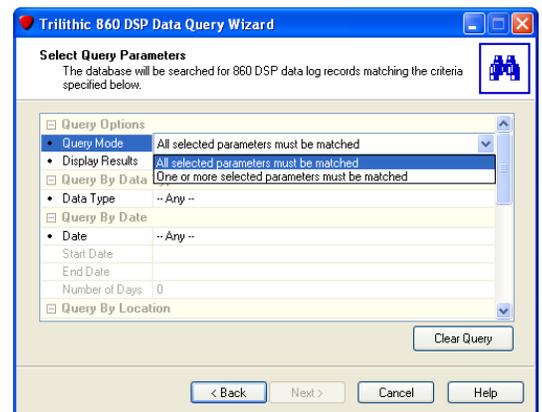


- The **Select Query Parameters** screen appears. You must select the Query Mode and then enter the criteria used to perform the query before selecting the  button. To reset the query criteria to the default values, select the  button.

Query Options

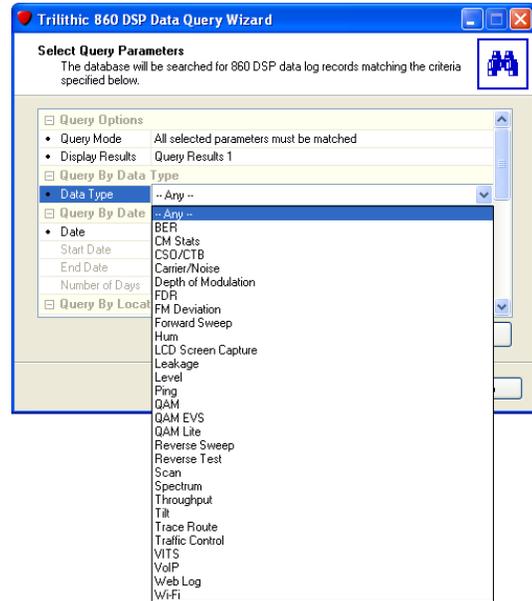
Query Mode - Select either “All selected parameters must be matched” or “One or more selected parameters must be matched” from the drop-down list.

Display Results - Select the name to display the Query Results as (This option is only selectable if the mode was entered via the Data Query Wizard).



Query By Data Type

Data Type - To search by any of the data logs described earlier in this chapter, select the data log name from the drop-down list.



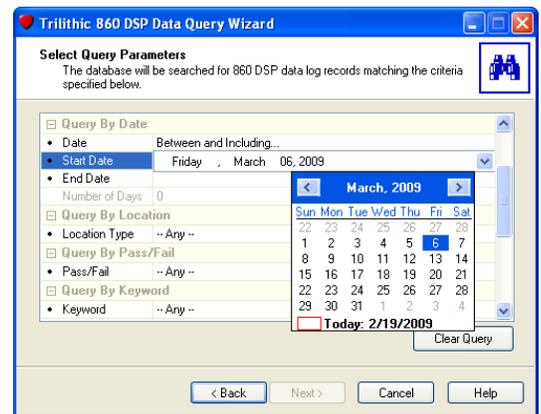
Query By Date

Date - Select either "--Any--" or "Between and Including...", "On or After...", "On or Before...", or "Within Last" from the drop-down list.

Start Date - To enter the start date, select the Month, Day, or Year and use the up and down arrow keys to adjust the values or select the down arrow at the right hand side of the field to select the date from a calendar. This field is only available when the **Date** field is set to "Between and Including..." or "On or After...".

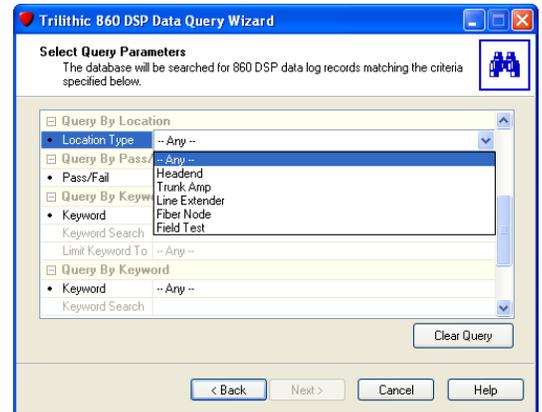
End Date - To enter the end date, select the Month, Day, or Year and use the up and down arrow keys to adjust the values or select the down arrow at the right hand side of the field to select the date from a calendar. This field is only available when the **Date** field is set to "On or Before...".

Number of Days - To enter the number of days, select the field and enter the number of days using your keyboard. This field is only available when the **Date** field is set to "Within Last".



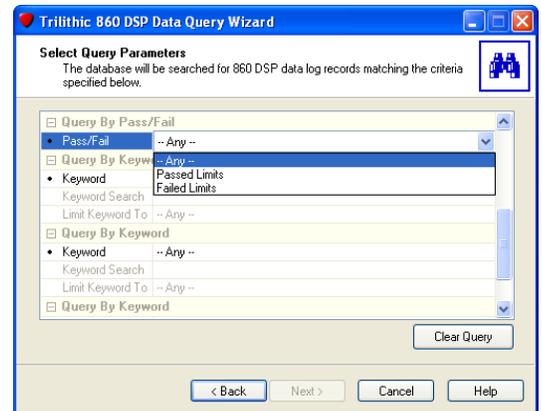
Query By Location

Location Type - Select "--Any--", "Headend", "Trunk Amp", "Line Extender", "Fiber Node", or "Field Test" from the drop-down list.



Query By Pass/Fail

Pass/Fail - Select "--Any--", "Passed Limits", or "Failed Limits" from the drop-down list.



Query By Keyword

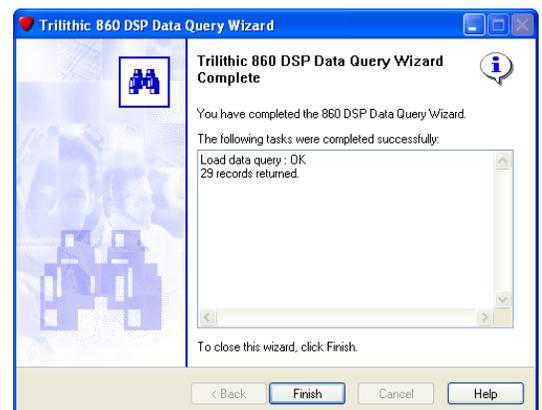
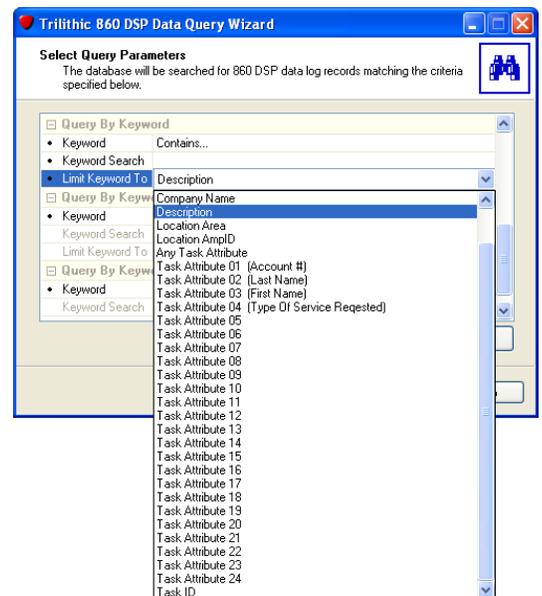
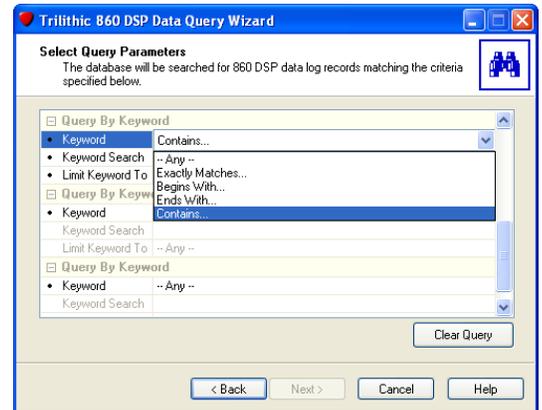
You may choose from one to three distinct keywords or phrases to search. Perform the following steps for which keyword search you wish to perform;

Keyword - Select "--Any--", "Exactly Matches...", "Begins With...", "Ends With...", or "Contains..." from the drop-down list.

Keyword Search - Enter the keyword to search.

Limit Keyword To - Select "--Any--", "Log Name", "Operator Name", "Company Name", "Description", "Location Area", "Location AmpID", "Any Task Attribute", "Task Attribute #", or "Task ID" from the drop down list.

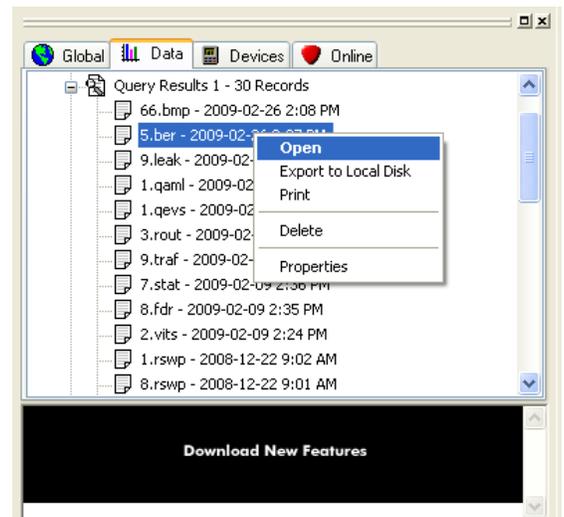
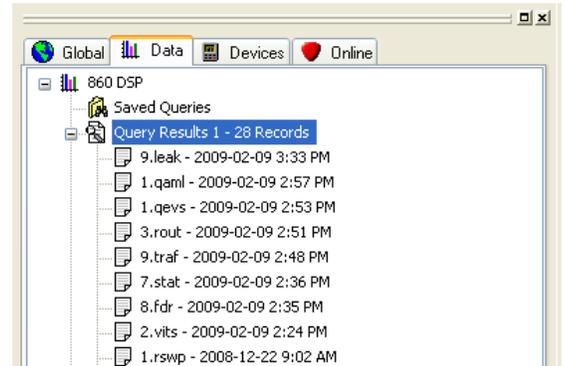
- Once you have selected all of the criteria for your data query, select the  button to perform the query. The **Trilithic 860 DSP Data Query Wizard Complete** screen will appear, select the  button to exit the Query Wizard.



Viewing Data Query Results

To view the data logs that match your query criteria perform the following steps.

1. From the **Data** tab of the **Navigator** window, perform one of the following actions;
 - Select the plus (+) sign next to the **Query Results #**.
 - Double-click **Query Results #**.
2. The data logs included in the query results will be displayed. Select the data log that you would like to display by clicking on the name of the data log.
3. To open the selected data log, perform one of the following actions;
 - Double-click the data log name.
 - Right-click the data log name and select **Open** from the pop-up menu.
4. The selected data log will open in the Data window.



Your view may differ depending on how you have chosen to group your data logs. You may need to open additional group folders to access the data log that you desire.



For more information on how to analyze specific data logs, see Chapter 4: Analyzing Data.

Grouping Data Query Results

To allow you to more easily find the data you're looking for, you may choose to group your data logs. To group your data logs, perform one of the following actions;

Select **Query Results #** and choose the corresponding grouping toolbar icon as described below.

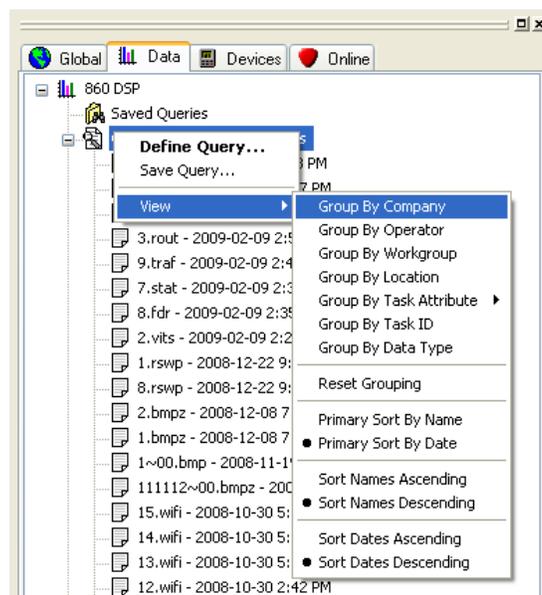


OR

Right-click on **Query Results #** and hover over **View** and then select the grouping that you desire.

The following types of data log grouping are available and can be set using either method described above:

-  Group By Company
-  Group By Operator
-  Group By Workgroup
-  Group By Location
-  Group By Task Attribute or Task ID
-  Group By Data Type



You may select more than one type of grouping at a time by repeating the procedure above for each of the types of data grouping that you desire.



To reset your grouping to the default settings (all grouping off), select the Reset All Grouping  button or select Reset Grouping from the right-click menu.

Sorting Data Query Results

To allow you to more easily find the data you're looking for, you may choose to sort your data logs by ascending / descending name and date. To sort your data logs, perform one of the following actions;

Select **Query Results #** and choose the corresponding sorting toolbar icon as described below.



OR

Right-click on **Query Results #** and hover over **View** and then select the sorting that you desire.

To sort names or dates by either ascending or descending order, select the corresponding toolbar icon or select the sorting you desire from the right-click menu.



Primary Sort by Name



Secondary Sort Ascending



Secondary Sort Descending



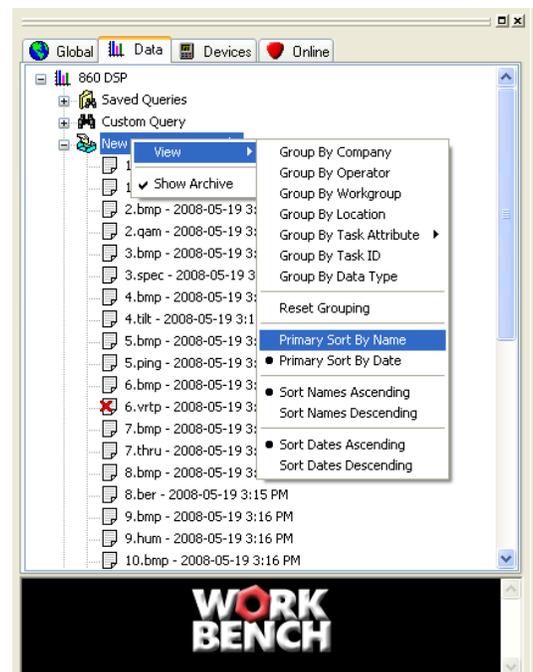
Primary Sort by Date



Secondary Sort Ascending



Secondary Sort Descending



NOTE

You cannot sort by name and date at the same time. Only one can be chosen at a time. The corresponding ascending/descending setting will then be used to determine the final sort order.

Saving Data Logs to a Local File

You can save data logs to your local drive to allow you to move data from one WorkBench software installation to other WorkBench software installations within your company.

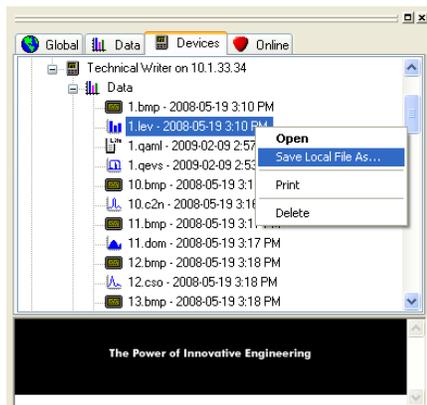
Perform the following steps to save a local copy of any of the data logs described earlier in this chapter:

1. Perform one of the following steps to select the data log(s) to save:

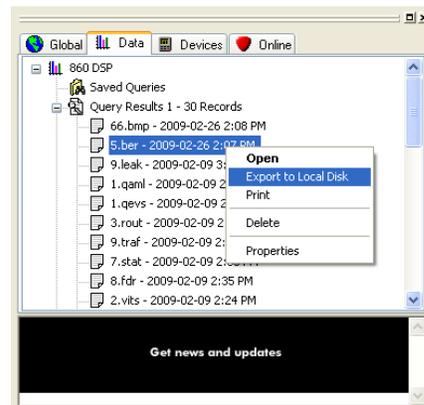
After connecting to a device or using the Data Collection Wizard, from the  **Devices** tab, right-click on the desired data log(s) to save, and then select **Save Local File As...**

OR

After using the Data Query Wizard, from the  **Data** tab, right click on the desired data log(s) to save, and then select **Export to Local Disk**.



Devices Tab

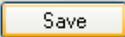


Data Tab



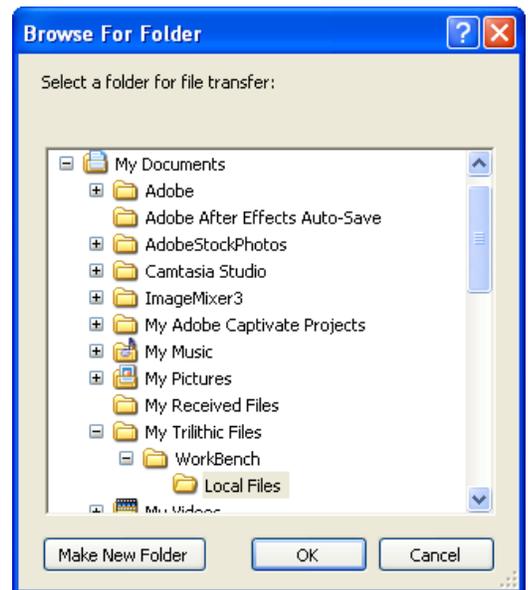
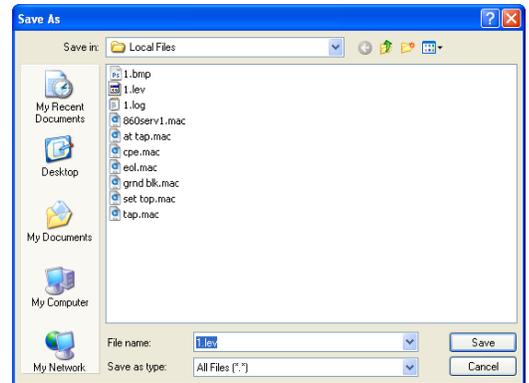
To select more than one data log at once for batch processing, select the first data log that you would like to save, and then hold the CTRL key on your keyboard while using your mouse to select the other data logs.

2. Perform one of the following steps to save the local data log file(s):

If you selected only one file to save, The **Save** window will appear. From this window you will choose the location and name of the data log to save and then select the  button.

OR

If you selected more than one file to save, The **Browse For Folder** window will appear. From this window you will choose the location to save the data logs to and then select the  button.

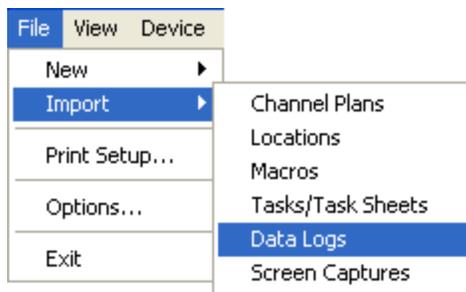


Importing Data Logs from a Local File

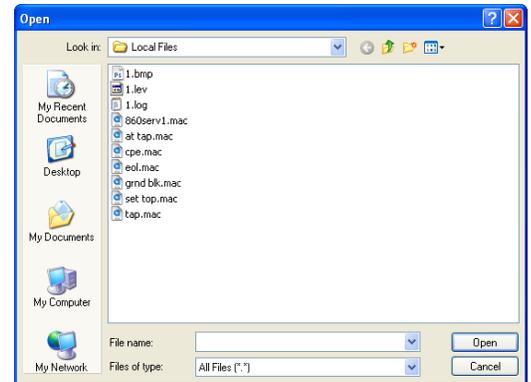
You can import data logs to allow you to move data from one WorkBench software installation to other WorkBench software installations within your company.

Perform the following steps to import any of the data logs described earlier in this chapter;

1. From the **File** menu hover over **Import**, and then select **Data Logs**.



2. The **Open** window will appear. From this window you will choose which data log(s) to import and then select the  button.



Opening and Closing Data Logs

Once you have collected the data from your 860 DSP, DSPi, or DSPr, you can use WorkBench to view the data. To open any data log, perform one of the following actions:

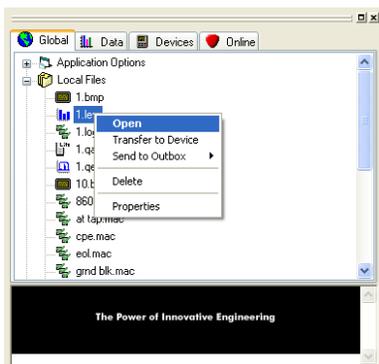
After saving a data log to a local file, from the  **Global** tab, right-click on the desired data log(s) to open, and then select **Open**.

OR

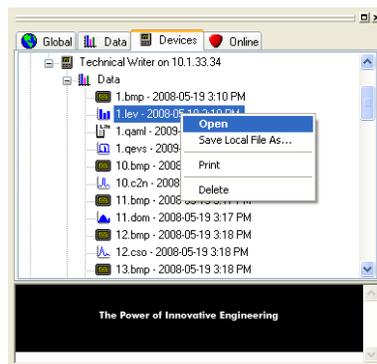
After using the Data Collection Wizard, from the  **Devices** tab, right-click on the desired data log(s) to open, and then select **Open**.

OR

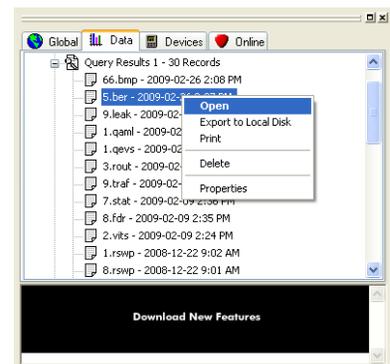
After using the Data Query Wizard, from the  **Data** tab, right click on the desired data log(s) to open, and then select **Open**.



Global Tab



Devices Tab



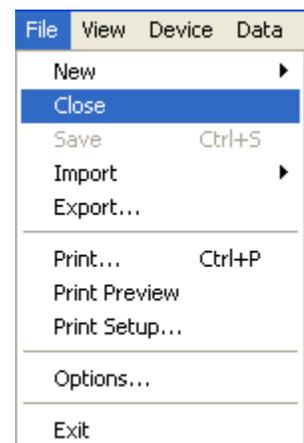
Data Tab

To close any data log, perform one of the following actions:

From the **File** menu, select **Close**.

OR

Select the gray "X" in the upper right corner of the **Data** window.



Saving Screen Captures to a Local File

You can save screen captures to your local drive to allow you to move screen captures from one WorkBench software installation to other WorkBench software installations within your company.

1. Perform the following steps to save a local copy of a screen capture:

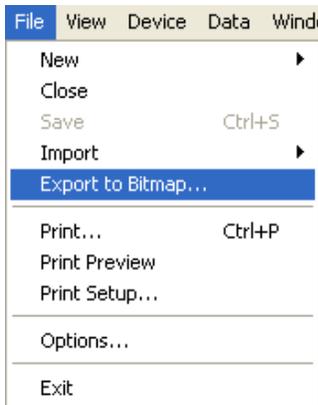
After opening a screen capture using the steps described in the previous section, from the **File** menu select **Export to Bitmap**.

OR

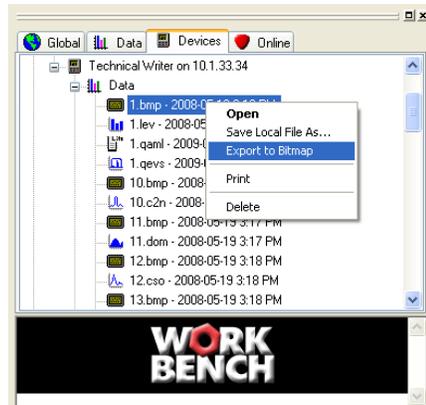
After using the Data Collection Wizard, from the  **Devices** tab, right-click on the desired screen capture(s) to save, and then select **Export to Bitmap**.

OR

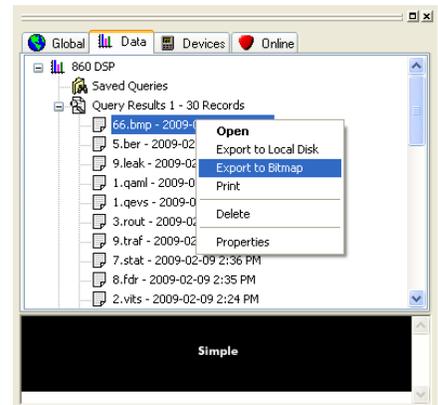
After using the Data Query Wizard, from the  **Data** tab, right click on the desired screen capture(s) to save, and then select **Export to Bitmap**.



File Menu



Devices Tab

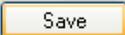


Data Tab



To select more than one screen capture at once for batch processing, select the first screen capture that you would like to save, and then hold the CTRL key on your keyboard while using your mouse to select the other screen captures.

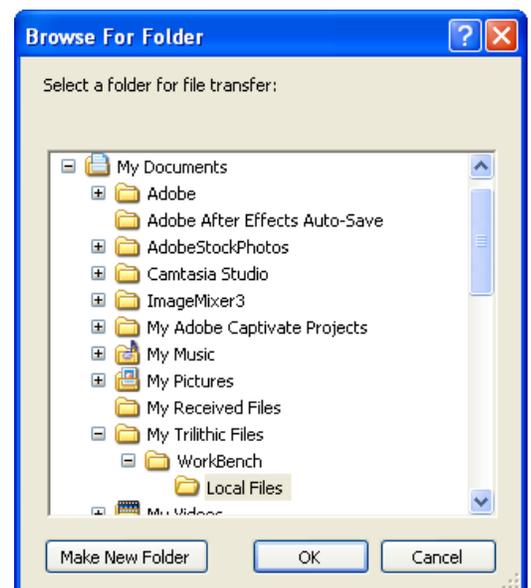
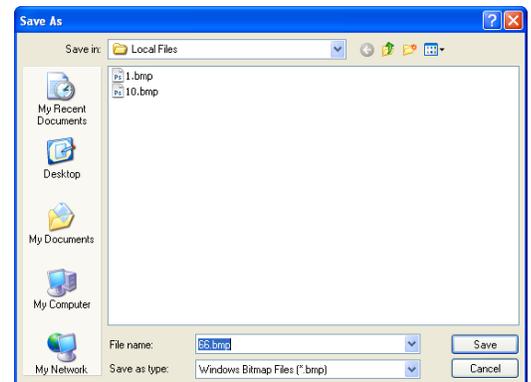
2. Perform one of the following steps to save the local screen capture file(s):

If you selected only one file to save, The **Save** window will appear. From this window you will choose the location and name of the data log to save and then select the  button.

OR

If you selected more than one file to save, The **Browse For Folder** window will appear. From this window you will choose the location to save the screen captures to and then select the

 button.

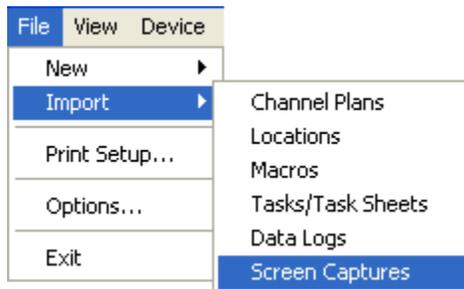


Importing Screen Captures from a Local File

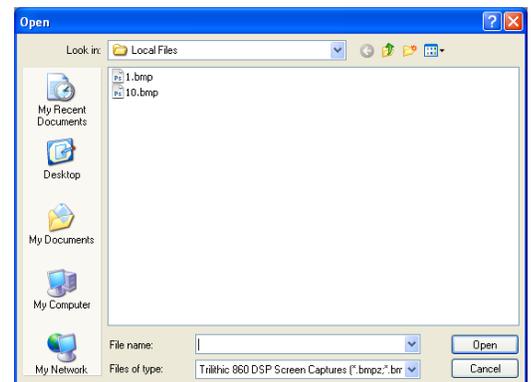
You can import screen captures to allow you to move screen captures from one WorkBench software installation to other WorkBench software installations within your company.

Perform the following steps to import a screen capture:

1. From the **File** menu hover over **Import**, and then select **Screen Captures**.



2. The **Open** window will appear. From this window you will choose which screen capture(s) to import and then select the **Open** button.



Exporting Proof-Of-Performance (POP) Data Files

POP is a Proof of Performance software utility from FamilyWare, Inc. used by many cable companies for reporting FCC proof test results. WorkBench is capable of exporting several of the 860 DSP data log types to the TSD file format used by the POP software. The table below shows the POP data types supported by WorkBench, and the corresponding 860 DSP data log types.

Data Icon	860 Data Type	POP Data Type
	Scan	VSL (Visual Signal Level)
	Tilt	
	Level	
	Carrier Second Order / Triple Beat CSO/CTB	CCD (Carrier to Coherent Disturbances)
	Carrier-To-Noise	C/N (Carrier to Noise)
	Hum	Text only



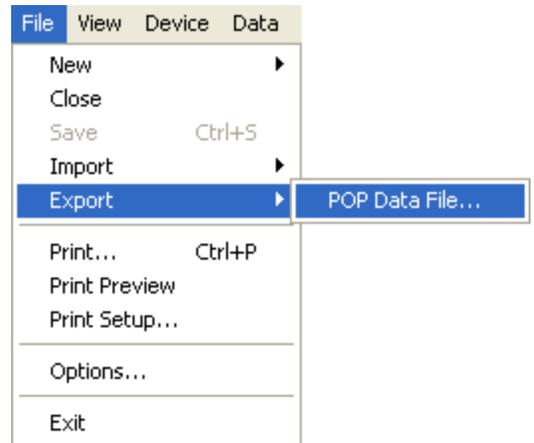
NOTE

The POP software requires that a VSL measurement be previously imported corresponding to the channel of every C/N, HUM, or CCD measurement. If you are using WorkBench to create a TSD file that includes these measurements, you must export the corresponding VSL data from a Scan, Tilt, or Level data log prior to appending the C/N, HUM, or CCD data.

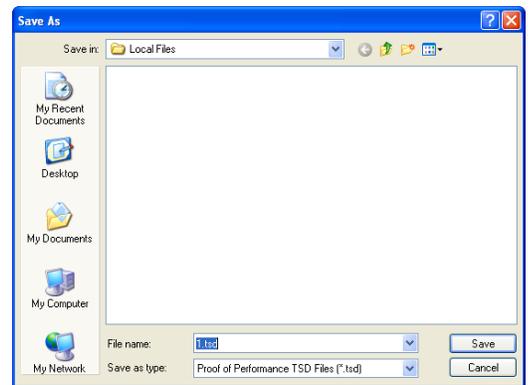
Perform the following steps to export a data log to a POP (TSD) file:

1. Follow the procedure described in [Opening and Closing Data logs](#) earlier in this section to open any of the data log types listed above.

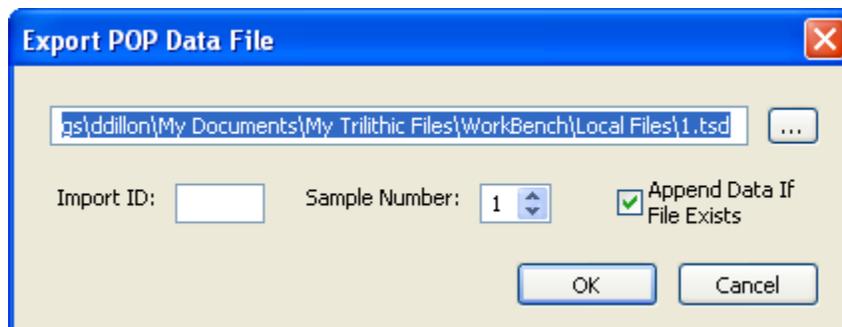
- From the **File** menu, hover over **Export**, and then select **POP Data File**.



- The **Save As** window will appear. From this window you will choose the location and name of the POP data file to save and then select the  button.



- The **Export POP Data File** window will appear as shown below.



- To change the file name or location in which to save the file, simply enter the path and file name in the area provided or select the button to the right to make the **Save As** window reappear.

6. Enter the POP **Import ID** code that identifies the test point location from which the data was taken. This is a four digit alphanumeric identifier, and is required by the POP software.
7. If exporting VSL data from a Scan, Tilt or Level data log, you must enter a **Sample Number** identifying which of the four measurement samples of a 24 hour test this data represents.
8. If you have selected an existing file for export, the **Append Data If File Exists** check-box is used to specify whether WorkBench will append the new data to the existing data, or overwrite the existing file.



If this check-box is not enabled, any existing data in the selected file will be overwritten and lost.

9. Once you have finished making changes, select the button to export the file.



For more information on importing TSD files into the POP software, refer to your POP software documentation.

Printing Reports

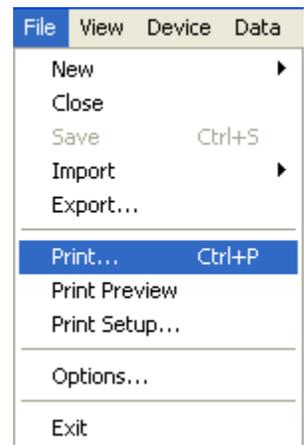


Before printing you may want to setup your printer by first selecting *Printer Setup...* from the **File Menu. WorkBench will use the settings of your default Windows printer if you choose to skip this step.**

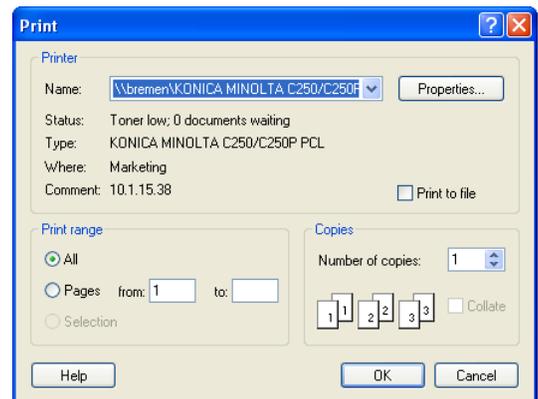
Printing Without Preview

To print any data log that is open without a preview, perform the following steps:

1. Press the Ctrl+P keys on your keyboard or from the **File** menu, select **Print**.



2. The **Print** window will appear.
3. If you wish to change any printer settings do so at this point.
4. Once you are satisfied with you printer settings, select the **OK** button to print the document or select the **Cancel** button to exit without printing.



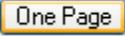
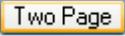
Printing With Preview

To print any data log that is open with a preview, perform the following steps:

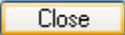
1. From the **File** menu, select **Print Preview**.
2. A new print preview window will appear in the **Data** window. You can then use the buttons at the top of the print preview screen as follows:

 - Use this button to print the document.

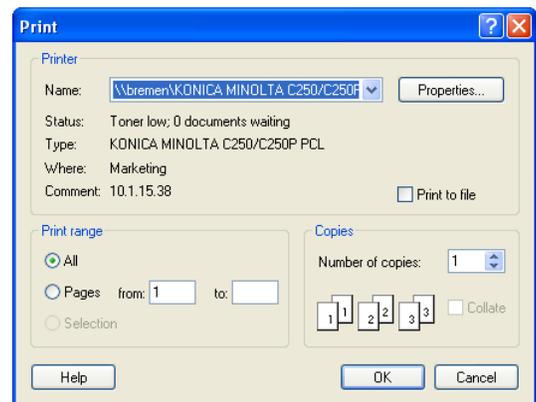
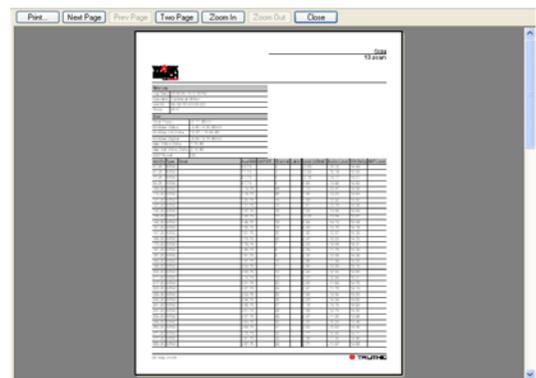
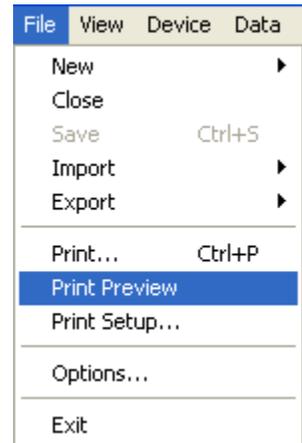
 or  - Use these buttons to scroll through multiple page data logs.

 or  - Use these buttons to change the view from one page to two pages.

 or  - Use these buttons to zoom in and out on the document.

 - Use this button to close without printing.

3. After you have selected the  button, the **Print** window will appear.
4. If you wish to change any printer settings do so at this point.
5. Once you are satisfied with you printer settings, select the  button to print the document or select the  button to exit without printing.



Data Log Properties

After a data log has been opened, the Data Log Properties of the test set can be displayed by selecting the  button from the toolbar at the top of the **Data** window. An example of the BER Data log Properties is shown to the right.

The fields displayed in the **Data Log Properties** window are as follows:

Name: Displays the file name of the data log.

Description: Displays the file name, device name, and IP address of the device in which the data log was retrieved from.

Data Type: Displays the test type, in this case BER.

Data Version: Displays the WorkBench data type and WorkBench uses this value to determine how to display the test data. This value is not user configurable and may change as individual tests are modified to include new data that has not been shown previously.

Log Date: Displays the date that the test was performed.

Calibration Date: Displays the date that the device was last calibrated.

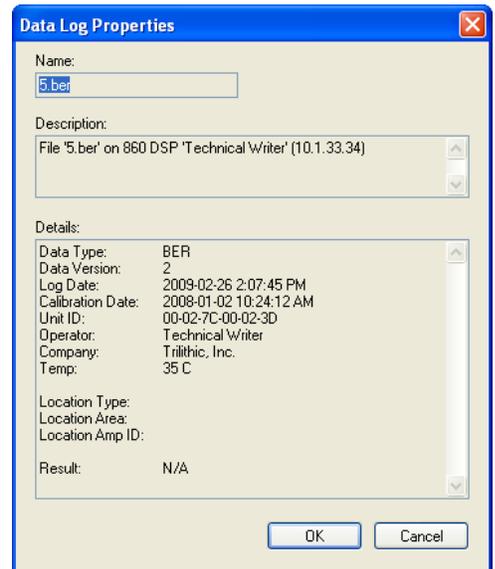
Unit ID: Displays the CPE MAC address of the test device.

Operator and Company: This is the name of the operator who conducted the test and the company in which the test was performed for. This is a user configurable field that can be setup as shown in **Section III: Managing Configurations, *Chapter 7: 860 DSP and 860 DSPi Configuration Packages***.

Temperature: Displays the internal temperature of the device when the test was performed.

Location Type, Location Area, and Location Amp ID: Displays the location that the test was conducted. These fields are user configurable and can be setup as shown in **Section III: Managing Configurations, *Chapter 3: Locations***.

Result: This displays the Pass Fail results for tests that were conducted as part of an Autotest Macro. This field will display N/A if the test was conducted outside of an Autotest Macro.



Switching Between Text and Graphic Views

WorkBench can display reports in both a text view and a graphics view for the following data logs:

Data Icon	Data Type
	Bit Error Ratio
	Carrier Second Order / Triple Beat CSO/CTB
	Return Sweep
	Reverse Sweep
	Reverse Test
	Scan
	Tilt
	Traffic Control

To switch your view between the text and graphics views, perform the following actions:

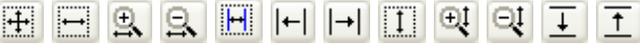
- To display the text view of the report, select the  button from the toolbar at the top of the **Data** window or press the **T** key on your keyboard.
- To display the graphic view of the report, select the  button from the toolbar at the top of the **Data** window or press the **G** key on your keyboard.

Using the Zoom Tools

You can zoom to view graphic report information in a variety of ways using the toolbar buttons or the appropriate shortcut keys. Zoom and position values appear on the report's summary pane.

Available Zoom Tools For Each Type of Report

The specific toolbar buttons for the zoom options vary slightly from report to report as follows:

Data Icon	Data Type	Available Zoom Tools
	Forward Sweep	
	QAM	
	QAM EVS	
	Return Sweep	
	Reverse Sweep	
	Reverse Test	
	Scan	
	Spectrum Analyzer	
	Tilt	
	Traffic Control	

Zoom Toolbar Buttons and Shortcut Keys

The following table provides a description of the each of the zoom tool buttons and their corresponding keyboard shortcut keys.

Button	Keyboard Shortcut	Description
	F	Zoom Out Full – Best Fit Vertical and Horizontal
	X	Zoom Out Full Span – Best Fit Horizontal
	M	Zoom to Markers – Horizontal Zoom to Current Marker Locations
	1	Single Channel Zoom to Marker 1 – Horizontal Zoom to show One Channel
	5	Five Channel Zoom – Horizontal Zoom to show Five Channels (Marker 1 at Center)
	9	Nine Channel Zoom – Horizontal Zoom to show Nine Channels (Marker 1 at Center)
	Y	Zoom Full Scale – Best Fit Vertical
	Shift + [Up]	Zoom In Span – One Channel to the Right, One Channel to the Left
	Shift + [Down]	Zoom Out Span – One Channel to the Right, One Channel to the Left
---	Ctrl + Shift + [Left]	Previous Start Channel - Zoom Left Side Out
---	Ctrl + Shift + [Right]	Next Start Channel – Zoom Left Side In
---	Alt + Shift + [Left]	Previous Start Channel - Zoom Right Side Out
---	Alt + Shift + [Right]	Next Start Channel – Zoom Right Side In
	Ctrl + Alt + [Left]	Frame Left – Move Frame 1 Channel Left (Number of Visible Channels Does Not Change)
	Ctrl + Alt + [Right]	Frame Right – Move Frame 1 Channel Right (Number of Visible Channels Does Not Change)

Button	Keyboard Shortcut	Description
	[Up]	Frame Up – Move Reference Level Up 1 dB
	[Down]	Frame Down – Move Reference Level Down 1 dB
	Ctrl + [Up]	Zoom Out Scale – Increase Vertical Scale (Available Values are 1, 2, 5, and 10 dB per Division)
	Ctrl + [Down]	Zoom In Scale – Decrease Vertical Scale (Available Values are 1, 2, 5, and 10 dB per Division)

Viewing Coordinate Values

When you move the mouse cursor over the graphical display, a crosshair will appear. This will display the coordinate values of the crosshair location at the top of the graph.

Selecting Channels

For **Scan**, **Forward Sweep**, and **Tilt** data logs, you may select any channel within the measurement range as follows:

- From the channel plan that is displayed in the bottom portion of the **Data** window, you may select the desired channel within the selected data log.
- Use your mouse to select the markers located at the bottom of the graphical display in the **Data** window and then move your mouse to drag the marker to select the desired channel.

Marker Tools

You can use WorkBench to set and adjust markers on a graphic report. Marker values and levels appear on the report's summary pane.

Setting Markers

You can set markers by performing one of the following actions:

- To set the left marker, move the mouse cursor over the graphical display and then select the left mouse button.
- To set the right marker, move the mouse cursor over the graphical display and then select the right mouse button.
- For **Scan**, **Forward Sweep**, and **Tilt** data logs, select a channel from the channel plan that is displayed at the bottom portion of the Data Window. When selecting channels from the channel plan, select the left mouse button to set the left marker or select the right mouse button to set the right marker.
- For **QAM EVS** and **Spectrum Analyzer** data logs, select the  button to set the markers to the peak value that is displayed.
- For **BER**, **CSO/CTB** and **FDR** data logs, you can select the up or down arrow to the right of the **Marker 1** or **Marker 2** fields shown in the report's summary pane.

Moving Markers

You can move the markers by performing one of the following actions:

- Use your mouse to select and drag the triangle-shaped “grips” at the bottom of the graph
- For **Scan**, **Forward Sweep**, and **Tilt** data logs, select a channel from the channel plan that is displayed at the bottom portion of the Data Window. When selecting channels from the channel plan, select the left mouse button to move the left marker or select the right mouse button to move the right marker.
- For **BER**, **CSO/CTB** and **FDR** data logs, you can select the up or down arrow to the right of the **Marker 1** or **Marker 2** fields shown in the report’s summary pane.

The following table provides a description of the each of the marker tool keyboard shortcut keys.

Keyboard Shortcut	Description
[Left]	Move Both Markers Left One Channel, or One Carrier in Carrier Mode
[Right]	Move Both Markers Right One Channel, or One Carrier in Carrier Mode
Ctrl + [Left]	Move Marker 1 Left by One Channel/Carrier
Ctrl + [Right]	Move Marker 1 Right by One Channel/Carrier
Alt + [Left]	Move Marker 2 Left by One Channel/Carrier
Alt + [Right]	Move Marker 2 Right by One Channel/Carrier

Location Data in Reports



NOTE

To add location data to your test reports, you must first enable location data to be added to the data log as shown in Section III: Managing Configurations, Chapter 7: 860 DSP and 860 DSPi Configuration Packages.

The Location fields will be displayed in a report's summary pane as follows:

Type: This displays the type of location where the test was performed from.

Area: This displays the area of the cable system that the location belongs to.

Amplifier ID: This displays the name of the amplifier being tested.

Power: This displays the power setting for this location (**In**, **Out**, or **Through**).

Voltage: This displays the voltage setting (**Low**, **Medium**, or **High**).

Feeder: This displays the feeder line that the test was performed from (**1 - 9**).

Reverse Pad: This displays the value of the reverse pad being used in **dB**.

Reverse EQ: This displays the value of the reverse EQ being used in **dB**.

Forward Pad: This displays the value of the forward pad being used in **dB**.

Forward EQ: This displays the value of the forward EQ being used in **dB**.

Trunk Termination: This displays whether the location was a trunk termination (**Yes** or **No**).



NOTE

The Location Fields shown above are user configurable fields that can be setup as shown in Section III: Managing Configurations, Chapter 3: Locations.

Chapter 5

Example Data Logs

Bit Error Ratio (BER Mode)

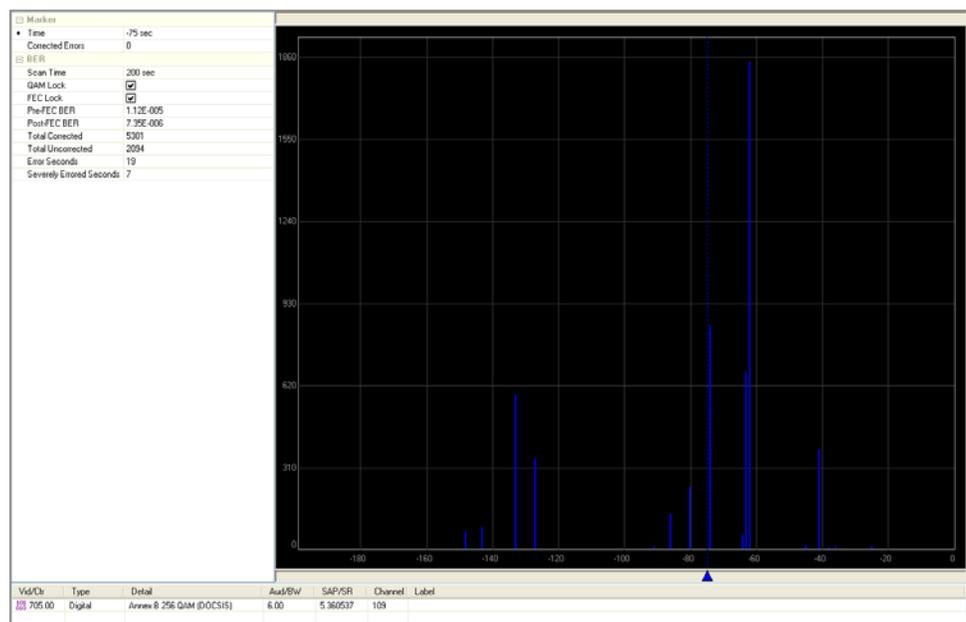
The BER data log is a report in text and graphic formats that shows the number of bit errors occurring during the test period.

- The channel number for which the test was conducted will be displayed in the channel table at the bottom of the Data window.
- When in the Corrected Errors or Uncorrected Errors Graph Views, the measurement results will be displayed in the BER report's summary panel at the left side of the Data window.
- The coordinate values (Time, Errors) of the mouse cursor will be displayed at the top of the Data window above the graph.

Corrected Errors Graph View

To view the BER Corrected Errors Graph, select the  button or press the **C** key on your keyboard.

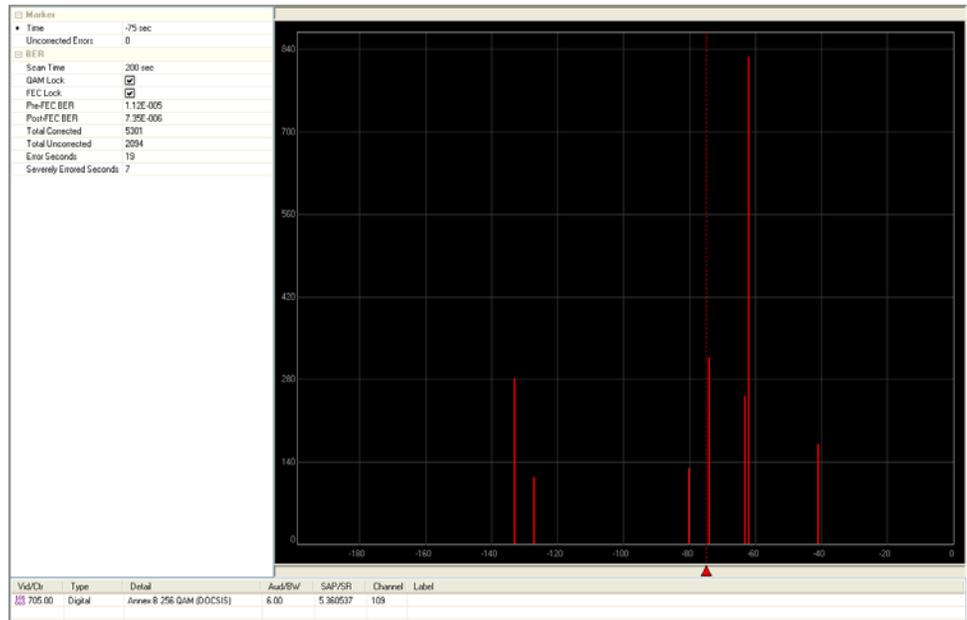
An example of the BER Corrected Errors Graph is shown to the right.



Uncorrected Errors Graph View

To view the BER Uncorrected Errors Graph, select the  button or press the **U** key on your keyboard.

An example of the BER Uncorrected Errors Graph is shown to the right.



Text Data View

To view the BER Text Data, select the  button or press the **T** key on your keyboard.

An example of the BER Text Data is shown to the right.

Vid/Ch	Type	Detail	Aud/SW	SAP/PSR	Channel	Label
705.00	Digital	Annex B 256 QAM (DOCSIS)	6.00	5.360537	109	

Measurement Results

The fields displayed in the BER report's summary pane are as follows:

Marker (Displayed in Corrected and Uncorrected Views Only)

Time: Displays the time at the location of the marker.

Corrected Errors or Uncorrected Errors: Displays the total number of corrected or uncorrected errors at the location of the current marker.

BER

Scan Time: The total number of seconds the test required.

QAM Lock: This box is checked if the chipset has locked onto a QAM channel.

FEC Lock: This box is checked if the forward error correction routine has locked onto a QAM channel.

Pre-FEC BER: The bit error rate prior to forward error correction.

Post-FEC BER: The bit error rate after to forward error correction.

Total Corrected: The number of code words corrected by forward error correction.

Total Uncorrected: The number of code words not correctable by forward error correction.

Error Seconds: The number of seconds that had at least one code word that was corrected.

Severely Errored Seconds: The number of seconds that had at least one code word that was uncorrectable.

Markers

For the Corrected Errors Graph and the Uncorrected Errors Graph, you can set a single marker at any time within the measurement range. The number of corrected or uncorrected code words that correspond to the time that the marker was set to will be displayed in the summary pane. To set a marker perform one of the following actions:

- Move the mouse cursor over the graphical display and then select the left mouse button.
- Select the up or down arrows to the right of the Time field to change the time in 1 second increments.

Marker	
• Time	0 sec
Corrected Errors	0

CM Stats (CM Stat Mode)

The CM Stats data log is a report in text format that shows the upstream and downstream cable modem test results.

An example of the CM Stats Text Data is shown to the right.

The fields displayed in the CM Stats report are as follows:

CM Statistics Measurements

Downstream Annex: This displays the downstream DOCSIS Annex (**A** or **B**) used by the cable modem.

DOCSIS Mode: This displays the DOCSIS Mode (**1.1**, **2.0**, **3.0**, etc.) used by the cable modem.

MAC Address #: This displays a sequential number assigned to reference and identify the MAC address assigned to the cable modem.

MAC Address: This field displays the MAC address assigned to the cable modem.

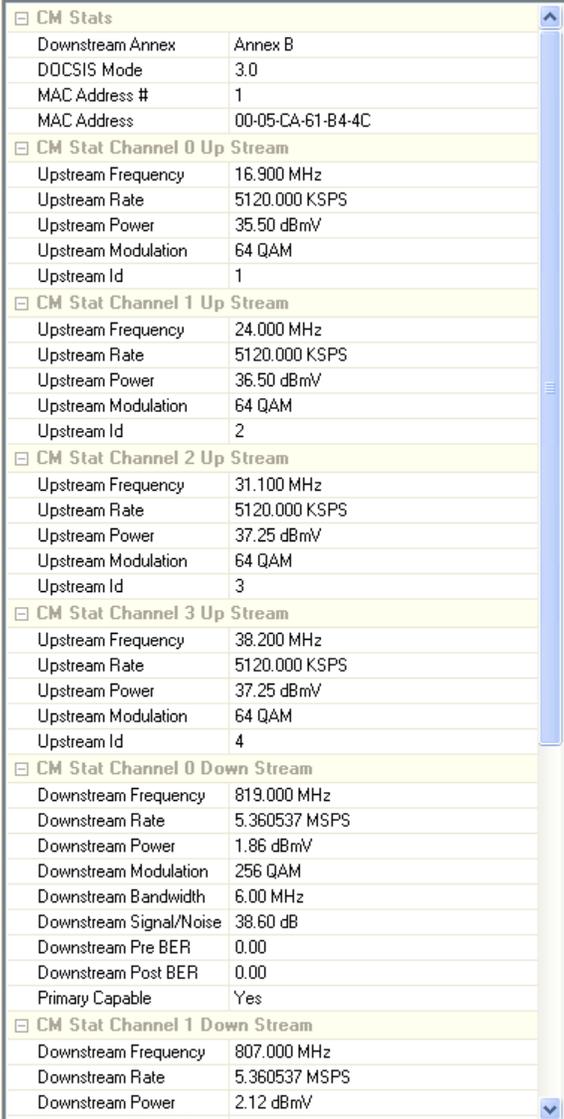
Upstream Measurements

Upstream Frequency: This displays the upstream frequency in **MHz** used by the cable modem.

Upstream Rate: This displays the upstream symbol rate in **KSPS** used by the cable modem.

Upstream Power: This displays the upstream transmit level in **dBmV** used by the cable modem.

Upstream ID: This displays the channel descriptor used by the cable modem (**1** to **16**).



CM Stats	
Downstream Annex	Annex B
DOCSIS Mode	3.0
MAC Address #	1
MAC Address	00-05-CA-61-B4-4C
CM Stat Channel 0 Up Stream	
Upstream Frequency	16.900 MHz
Upstream Rate	5120.000 KSPS
Upstream Power	35.50 dBmV
Upstream Modulation	64 QAM
Upstream Id	1
CM Stat Channel 1 Up Stream	
Upstream Frequency	24.000 MHz
Upstream Rate	5120.000 KSPS
Upstream Power	36.50 dBmV
Upstream Modulation	64 QAM
Upstream Id	2
CM Stat Channel 2 Up Stream	
Upstream Frequency	31.100 MHz
Upstream Rate	5120.000 KSPS
Upstream Power	37.25 dBmV
Upstream Modulation	64 QAM
Upstream Id	3
CM Stat Channel 3 Up Stream	
Upstream Frequency	38.200 MHz
Upstream Rate	5120.000 KSPS
Upstream Power	37.25 dBmV
Upstream Modulation	64 QAM
Upstream Id	4
CM Stat Channel 0 Down Stream	
Downstream Frequency	819.000 MHz
Downstream Rate	5.360537 MSPS
Downstream Power	1.86 dBmV
Downstream Modulation	256 QAM
Downstream Bandwidth	6.00 MHz
Downstream Signal/Noise	38.60 dB
Downstream Pre BER	0.00
Downstream Post BER	0.00
Primary Capable	Yes
CM Stat Channel 1 Down Stream	
Downstream Frequency	807.000 MHz
Downstream Rate	5.360537 MSPS
Downstream Power	2.12 dBmV

Downstream Measurements

Downstream Frequency: This displays the downstream frequency in **MHz** used by the cable modem.

Downstream Rate: This displays the downstream symbol rate in **MSPS** used by the cable modem.

Downstream Power: This displays the downstream receive level in **dBmV** used by the cable modem.

Downstream Modulation: This displays the downstream QAM type used by the cable modem.

Downstream Bandwidth: This displays the downstream channel bandwidth in **MHz** used by the cable modem.

Downstream Signal/Noise: This displays the downstream MER or SNR in **dB** used by the cable modem.

Primary Capable: This displays the channel that has been designated as the primary carrying DOCSIS 3.0 timing information. By designating a primary channel, DOCSIS 2.0 modems can log on to a DOCSIS 3.0 system.

Carrier Second Order / Triple Beat (CSO/CTB Mode)

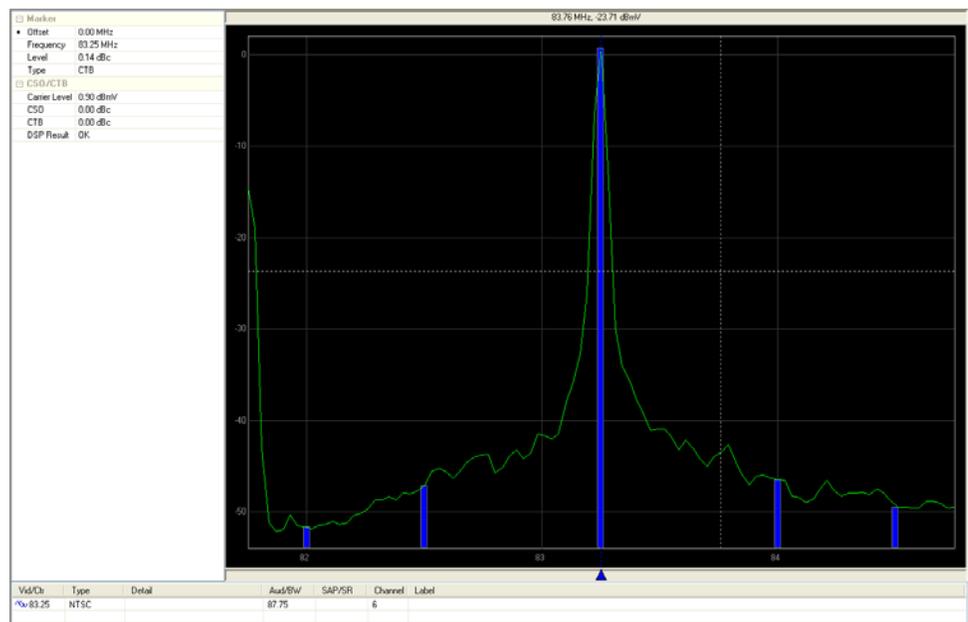
The CSO/CTB data log is a report in text and graphics formats that shows the amplitude of two common intermodulation products, CSO (Composite Second Order) and CTB (Composite Triple Beat), present within a selected analog video channel.

- The channel number for which the test was conducted will be displayed in the channel table at the bottom of the Data window.
- When in the Graph View, the measurement results will be displayed in the CSO/CTB report's summary panel at the left side of the Data window.
- The coordinate values (Frequency, Carrier Level) of the mouse cursor will be displayed at the top of the Data window above the graph.

Graph View

To view the CSO/CTB Graph, select the  button from the toolbar at the top of the **Data** window or press the **G** key on your keyboard.

An example of the CSO/CTB Graph is shown to the right.



For more information on how to use the Zoom Tools that are located in the toolbar at the top of this data log report, see Chapter 2: Analyzing Data, Using the Zoom Tools.

CSO/CTB

Carrier Level: This displays the measured carrier level in **dBmV**.

CSO: This displays the CSO (Carrier Second Order) level in **dBc**.

CTB: This displays the CTB (Carrier Triple Beat) level in **dBc**.

DSP Result: Shows that the 860 DSP or 860 DSPi hardware worked successfully during the test. This field can be ignored unless it displays a result other than **OK**. If the field displays an error code, contact Trilithic for support.

Markers

For the Graph view, you can set a single marker at any CSO or CTB for the measured channel. The **Offset**, **Frequency**, **Level**, and **Type** that correspond to the current marker location will be displayed in the summary pane. To set a marker perform one of the following actions:

- Move the mouse cursor over the graphical display and then select the left mouse button on any of the Offset Frequencies.
- Select the up or down arrows to the right of the **Offset** field to chose from a Frequency Offset Value of **-1.25**, **-0.75**, **0.00**, **0.75**, or **1.25 MHz**.

Carrier-to-Noise (C/N Mode)

The Carrier-to-Noise data log is a text only report that displays the carrier-to-noise ratios for a single channel.

An example of the Carrier-to-Noise Text Data is shown to the right.

The channel number for which the test was conducted will be displayed in the channel table at the bottom of the Data window.

Carrier/Noise						
Carrier	-0.66 dBmV					
Noise	-40.89 dBmV					
C/N	40.23 dB					
DSP Result	OK					
Vid/Ctr	Type	Detail	Aud/BW	SAP/SR	Channel	Label
61.25	NTSC		65.75		3	

Measurement Results

The fields displayed in the Carrier-to-Noise report are as follows:

Carrier: This displays the measured carrier level in **dBmV**.

Noise: The measured noise level in the specified Noise Bandwidth in **dBmV**.

C/N: The difference between the carrier level and the noise level in **dB**.

Limit Results: This displays the **Pass** or **Fail** results for tests that were conducted as part of an Autotest Macro. This field is not displayed if the test was conducted outside of an Autotest Macro.

DSP Result: Shows that the 860 DSP or 860 DSPi hardware worked successfully during the test. This field can be ignored unless it displays a result other than **OK**. If the field displays an error code, contact Trilithic for support.

Depth of Modulation (MOD Mode)

The Depth of Modulation data log is a text only report that displays the depth of modulation.

An example of the Depth of Modulation Text Data is shown to the right.

The channel number for which the test was conducted will be displayed in the channel table at the bottom of the Data window.

Depth/Modulation						
Depth of Modulation		87.88 %				
DSP Result		OK				
Vid/Ctr	Type	Detail	Aud/BW	SAP/SR	Channel	Label
61.25	NTSC		65.75		3	

Measurement Results

The fields displayed in the Depth of Modulation report are as follows:

Depth of Modulation: This displays the percentage of depth of modulation.

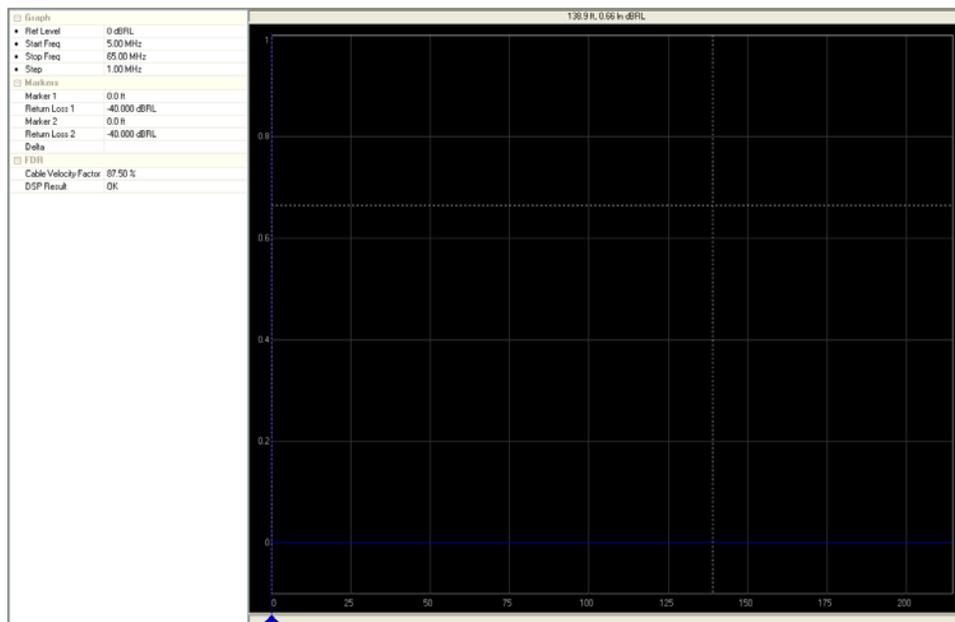
Limit Results: This displays the **Pass** or **Fail** results for tests that were conducted as part of a Autotest Macro. This field is not displayed if the test was conducted outside of an Autotest Macro.

DSP Result: Shows that the 860 DSP or 860 DSPi hardware worked successfully during the test. This field can be ignored unless it displays a result other than **OK**. If the field displays an error code, contact Trilithic for support.

Frequency Domain Reflectometer (FDR Mode)

The Frequency Domain Reflectometer data log is a graphics only report that displays the measurement results as shown below.

- The measurement results will be displayed in the FDR report's summary panel at the left side of the Data window.
- The coordinate values (Distance, Return Loss) of the mouse cursor will be displayed at the top of the Data window above the graph.



Measurement Results

The fields displayed in the Frequency Domain Reflectometer report's summary pane are as follows:

Graph

Ref Level: This displays the user adjustable Reference Level. Select the up or down arrows to the right of the field to adjust the Reference Level in **1 dBmV** increments.

Start Freq: This displays the user adjustable Start Frequency in **MHz**. Select the up or down arrows to the right of the field to adjust the Start Frequency by the Channel Spacing defined in the instrument configuration.

Stop Freq: This displays the user adjustable Stop Frequency in **MHz**. Select the up or down arrows to the right of the field to adjust the Stop Frequency by the Channel Spacing defined in the instrument configuration.



The Channel Spacing is a user configurable field that can be setup as shown in Section III: Managing Configurations, Chapter 7: 860 DSP and 860 DSPi Configuration Packages.

Step: This displays the user adjustable Step. Select the up or down arrows to the right of the field to adjust the Step in **1 MHz** increments.

Markers

Marker 1: This displays the distance to the location of Marker 1 in **ft**.

Return Loss 1: This displays the return loss from the location of Marker 1 in **dBRL**.

Marker 2: This displays the distance to the location of Marker 2 in **ft**.

Return Loss 2: This displays the return loss from the location of Marker 2 in **dBRL**.

Delta: This displays the difference in distance between Marker 1 and Marker 2 in **dB**.

FDR

Cable Velocity Factor: Shows the cable velocity factor that is selected on the 860 DSP at the time the test is performed.

DSP Result: Shows that the 860 DSP or 860 DSPi hardware worked successfully during the test. This field can be ignored unless it displays a result other than **OK**. If the field displays an error code, contact Trilithic for support.

Markers

For the Graph view, you can set markers at any distance from the device. The Distance and Return Loss that correspond to the marker location will be displayed in the summary pane. To set a marker perform one of the following actions:

- Move the mouse cursor over the graphical display and then select the left (left marker) or right (right) mouse button.
- Select the up or down arrows to the right of the **Marker 1** or **Marker 2** field to choose from a Frequency Offset Value of **-1.25**, **-0.75**, **0**, **0.75**, or **1.25**.

FM Deviation (FM DEV Mode)

The FM Deviation data log is a text only report that shows the instantaneous and peak FM deviation of the selected audio frequency.

An example of the FM Deviation Text Data is shown to the right.

The channel number for which the test was conducted will be displayed in the channel table at the bottom of the Data window.

FM Deviation						
FM Deviation		15.7 kHz				
Peak FM Deviation		27.7 kHz				
DSP Result		OK				
Vid/Ctr	Type	Detail	Aud/BW	SAP/SR	Channel	Label
83.25	NTSC		87.75		6	

Measurement Results

The fields displayed in the FM Deviation report are as follows:

FM Deviation: This displays the instantaneous FM Deviation in **kHz**.

Peak FM Deviation: This displays the peak FM Deviation in **kHz**.

DSP Result: Shows that the 860 DSP or 860 DSPi hardware worked successfully during the test. This field can be ignored unless it displays a result other than **OK**. If the field displays an error code, contact Trilithic for support.

Forward Sweep (Sweep Mode)

The Forward Sweep data log is a graphics only report that shows the various configurations of the test points you encounter when you perform a sweep test.

- The channel numbers for which the test was conducted will be displayed in the channel table at the bottom of the Data window.
- The measurement results will be displayed in the Forward Sweep report's summary panel at the left side of the Data window.
- The coordinate values (Frequency, Level) of the mouse cursor will be displayed at the top of the Data window above the graph.

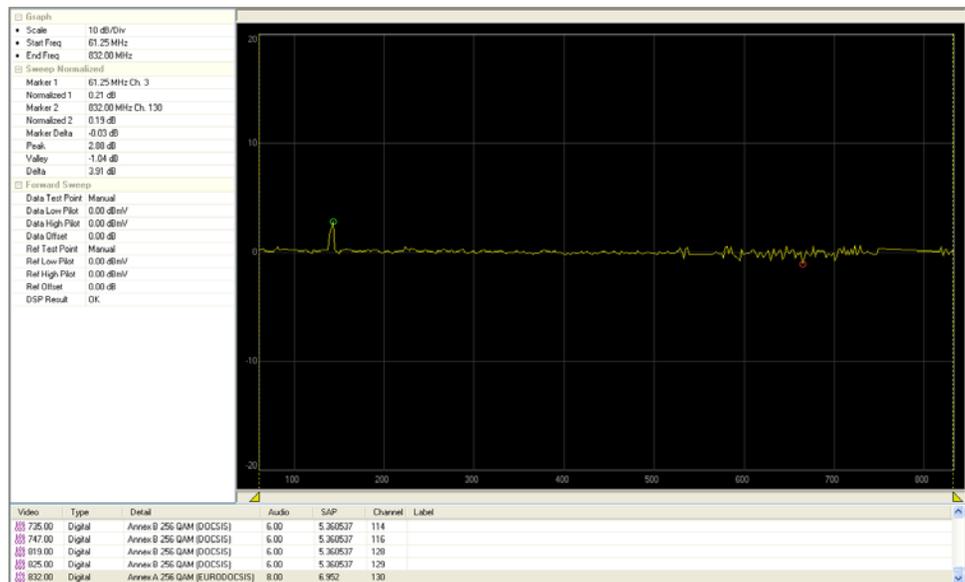
Normalized Sweep View

To view the Normalized Sweep Graph, select the  button from the toolbar at the top of the **Data** window or press the **N** key on your keyboard.

An example of the Normalized Sweep Graph is shown to the right.

The Normalized Sweep Graph shows the difference

between a stored reference and the current levels (may be the same test point at a different time, or a different test point down the line in the network).



NOTE

For more information on how to use the Zoom Tools that are located in the toolbar at the top of this data log report, see [Chapter 2: Analyzing Data, Using the Zoom Tools](#).

Scan Data View

To view the Scan Data View Graph, select the  button from the toolbar at the top of the **Data** window or press the **D** key on your keyboard.

An example of the Scan Data View is shown to the right.



The Scan Data View Graph compares the levels at two different points in the cable system. In this view, the light blue line is a plot of the measured scan of all channels. The dark blue line is a reference scan that was previously taken at a different place on the cable network and stored for reference purposes.

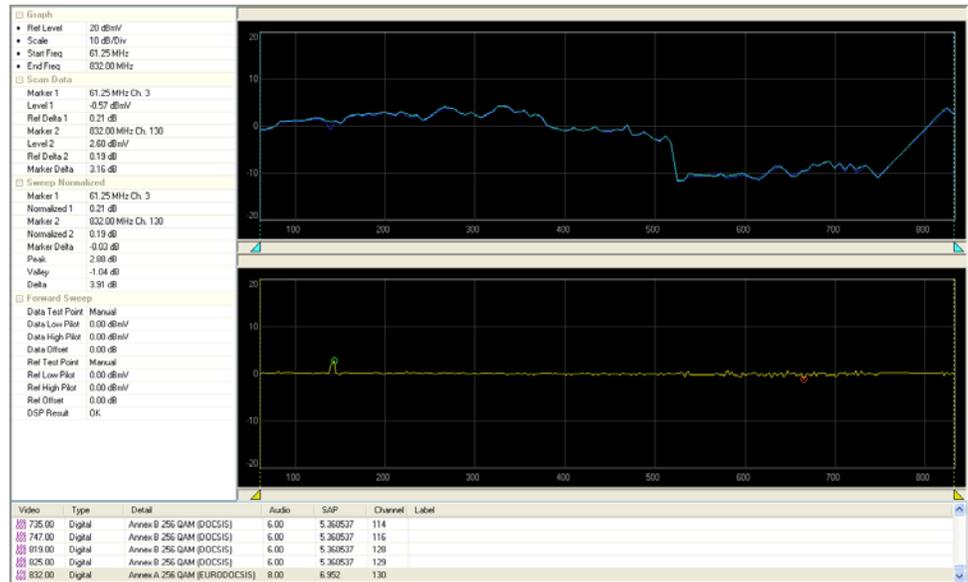


For more information on how to use the Zoom Tools that are located in the toolbar at the top of this data log report, see [Chapter 2: Analyzing Data, Using the Zoom Tools](#).

Split View

To view the Split View Graph, select the  button from the toolbar at the top of the **Data** window or press the **S** key on your keyboard.

An example of the Split View is shown to the right.



The Split View Graph shows both the Scan Data View (Top) and the Normalized Data View (Bottom) on the same graph.



For more information on how to use the Zoom Tools that are located in the toolbar at the top of this data log report, see [Chapter 2: Analyzing Data, Using the Zoom Tools](#).

Measurement Results

The fields displayed in the Forward Sweep report's summary pane are as follows:

Graph

Ref Level: This displays the user adjustable Reference Level. Select the up or down arrows to the right of the field to adjust the Reference Level in **1 dBmV** increments. This field is not displayed in the **Normalized Sweep View**.

Scale: This displays the user adjustable Vertical Scale. Select the up or down arrows to the right of the field to choose the Vertical Scale to a value of **1, 2, 5, or 10 dB/Div**

Start Freq: This displays the user adjustable Start Frequency in **MHz**. Select the up or down arrows to the right of the field to adjust the Start Frequency by the Channel Spacing defined in the instrument configuration.

End Freq: This displays the user adjustable End Frequency in **MHz**. Select the up or down arrows to the right of the field to adjust the End Frequency by the Channel Spacing defined in the instrument configuration.



NOTE

The Channel Spacing is a user configurable field that can be setup as shown in Section III: Managing Configurations, Chapter 7: 860 DSP and 860 DSPi Configuration Packages.

Scan Data (Displayed in Scan Data and Split Views Only)

Marker 1: This displays the frequency in **MHz** and channel number at the location of Marker 1.

Level 1: This displays the level in **dBmV** of the data trace (not the reference trace) at the location of Marker 1.

Ref Delta 1: This displays the difference in **dB** between the reference trace and the data trace at the location of Marker 2.

Marker 2: This displays the frequency in **MHz** and channel number at the location of Marker 2.

Level 2: This displays the level in **dBmV** of the data trace (not the reference trace) at the location of Marker 2.

Ref Delta 2: This displays the difference in **dB** between the reference trace and the data trace at the location of Marker 2.

Ref Delta 2: This displays the difference in **dB** between Level 1 and Level 2.



NOTE

For more information on how to adjust Markers in this data log report, see Chapter 2: Analyzing Data, Marker Tools.

Sweep Normalized (Displayed in Normalized Data and Split Views Only)

Marker 1: This displays the frequency in **MHz** and channel number at the location of Marker 1.

Normalized 1: This displays the difference in level between the reference level between the reference trace and the data trace at the location of Marker 1.

Marker 2: This displays the frequency in **MHz** and channel number at the location of Marker 2.

Normalized 2: This displays the difference in level between the reference level between the reference trace and the data trace at the location of Marker 2.

Marker Delta: This displays the difference in **dB** between Normalized 1 and Normalized 2.



NOTE

For more information on how to adjust Markers in this data log report, see [Chapter 2: Analyzing Data](#), [Marker Tools](#).

Forward Sweep

Data Test Point: This displays the name of the data test point.

Data Low Pilot: This displays the expected carrier level in **dBmV** of the lowest tilt enabled frequency. This is used in conjunction with the Data High Pilot to remove tilt from the Data Trace.

Data High Pilot: This displays the expected carrier level in **dBmV** of the highest tilt enabled frequency. This is used in conjunction with the Data Low Pilot to remove tilt from the Data Trace.

Data Offset: The value of the tap in **dB** at the test point used to measure the Data Trace. This value is added to all data measured by the instrument.

Ref Test Point: This displays the name of the reference test point.

Ref Low Pilot: This displays the expected carrier level in **dBmV** of the lowest tilt enabled frequency. This is used in conjunction with the Ref High Pilot to remove tilt from the Reference Trace.

Ref High Pilot: This displays the expected carrier level in **dBmV** of the highest tilt enabled frequency. This is used in conjunction with the Ref Low Pilot to remove tilt from the Reference Trace.

Ref Offset: The value of the tap in **dB** at the test point used to measure the Reference Trace. This value is added to all data measured by the instrument.

DSP Result: Shows that the 860 DSP or 860 DSPi hardware worked successfully during the test. This field can be ignored unless it displays a result other than **OK**. If the field displays an error code, contact Trilithic for support.



NOTE

The Forward Sweep Fields shown above are user configurable fields that can be setup as shown in Section III: Managing Configurations, Chapter 7: 860 DSP and 860 DSPi Configuration Packages.

HUM (HUM Mode)

The HUM data log is a text only report that shows the detected HUM on the channel.

An example of the HUM Text Data is shown to the right.

The channel number for which the test was conducted will be displayed in the channel table at the bottom of the Data window.

Hum	
60 Hz	0.3 %
120 Hz	0.3 %
< 1 kHz	2.2 %
DSP Result	OK

Vid/Ctr	Type	Detail	Aud/BW	SAP/SR	Channel	Label
61.25	NTSC		65.75		3	

Measurement Results

The fields displayed in the HUM report are as follows:

60 Hz: Displays the percentage of 60 Hz HUM on the channel.

120 Hz: Displays the percentage of 120 Hz HUM on the channel.



NOTE

50 Hz and 100 Hz will be displayed if you selected 50/100 Hz instead of 60/120 Hz in the Level Mode Parameters Screen as shown in Section III: Managing Configurations, Chapter 7: 860 DSP and 860 DSPi Configuration Packages.

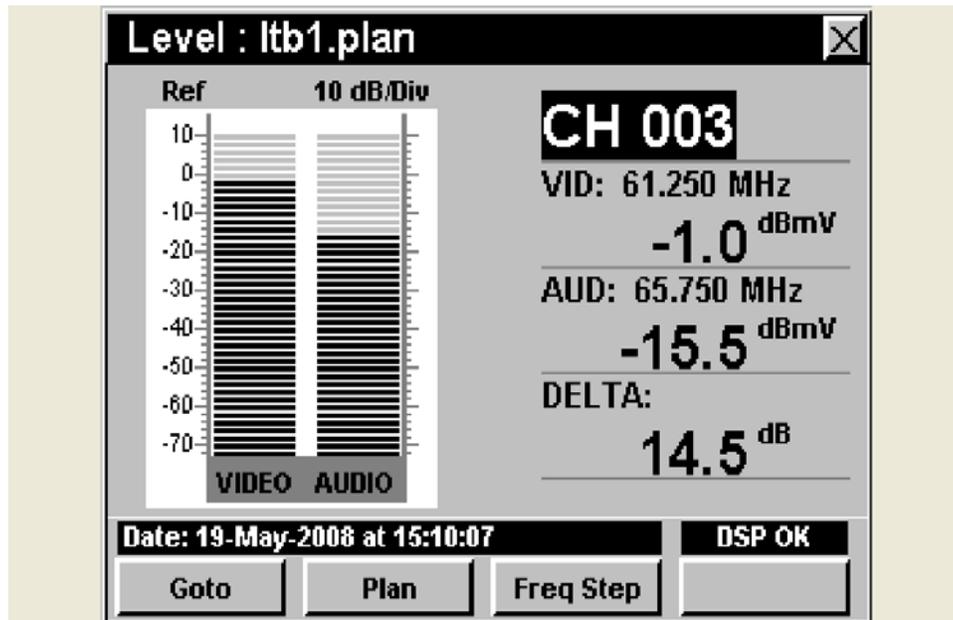
< 1 kHz: Displays the percentage of HUM below 1 kHz on the channel.

Limit Results: This displays the **Pass** or **Fail** results for tests that were conducted as part of an Autotest Macro. This field is not displayed if the test was conducted outside of an Autotest Macro.

DSP Result: Shows that the 860 DSP or 860 DSPi hardware worked successfully during the test. This field can be ignored unless it displays a result other than **OK**. If the field displays an error code, contact Trilithic for support.

LCD Screen Capture

The LCD Screen Capture report is slightly different from the other reports available in WorkBench. No data is analyzed, the report is simply a screen capture from instrument's screen as shown below. Captured screens can be useful for identifying specific instances of tests, menu structures, and recording configuration information.



Leakage (Leak Mode)

The Leakage data log is a text only report that shows the leakage level that was recorded.

An example of the Leakage Text Data is shown to the right.

Leakage	
Level	6 uV/meter

Measurement Results

The fields displayed in the Leakage report are as follows:

Level: Displays the measured leakage value in $\mu\text{V}/\text{meter}$.

Limit Results: This displays the **Pass** or **Fail** results for tests that were conducted as part of a Autotest Macro. This field is not displayed if the test was conducted outside of an Autotest Macro.

Level (Level Mode)

The Level data log is a text only report that shows the video and audio levels on a channel.

An example of the Level Text Data is shown to the right.

The channel number for which the test was conducted will be displayed in the channel table at the bottom of the Data window.

Level						
Video	-0.72 dBmV					
Audio	-15.39 dBmV					
V/A Delta	14.67 dB					
DSP Result	OK					
Vid/Ctr	Type	Detail	Aud/BW	SAP/SR	Channel	Label
61.25	NTSC		65.75		3	

Measurement Results

The fields displayed in the Level report are as follows:

Video: Displays the measured level in **dBmV** of the video signal.

Audio: Displays the measured level in **dBmV** of the audio signal.

V/A Delta: Displays the delta in **dB** between the measured levels of the video and audio signals.



If the Level report is of a digital channel then the fields Video, Audio, and V/A Delta are replaced with Digital, which shows the measured level of the digital carrier.

DSP Result: Shows that the 860 DSP or 860 DSPi hardware worked successfully during the test. This field can be ignored unless it displays a result other than **OK**. If the field displays an error code, contact Trilithic for support.

Ping (PING Mode)

The Ping data log is a text only report that shows the results of a network PING test.

An example of the PING Text Data is shown to the right.

Ping	
Host Name	
IP Address	10.1.1.3
Packet Delay	100 msec
Packet Size	256 bytes
Launch Level	Not Tested
Packets Sent	87
Packets Received	87
Packets Lost	0
LPR	0.00E+000
LPR (%)	0.0 %
Min Ping Time	1 msec
Avg Ping Time	2 msec
Max Ping Time	7 msec
Latency	62 msec
Jitter	2 msec

Measurement Results

The fields displayed in the Ping report are as follows:

Host Name: Displays the name of the remote machine that was contacted.

IP Address: Displays the network IP Address of the remote machine that was contacted.

Packet Delay: Displays the time in **milliseconds** between the sending of each packet.

Packet Size: Displays the actual payload size of the packet in **bytes**.

Packets Sent: Displays the number of ping packets that the instrument attempted to send.

Packets Received: Displays the number of ping packets successfully returned to the instrument.

Packets Lost: Displays the number of packets that did not get echoed back.

LPR: Displays the ratio of packets lost to packets sent.

LPR (%): The LPR stated as a percentage.

Packet Errors: Displays the number of packets that could not be transmitted.

Min Ping Time: Displays the minimum time, in milliseconds, taken by a successful round trip transmission/receipt of a ping packet.

Avg Ping Time: Displays the average time, in milliseconds, taken by a successful round trip transmission/receipt of a ping packet.

Max Ping Time: Displays the maximum time, in milliseconds, taken by a successful round trip transmission/receipt of a ping packet.

Latency: Displays the average round trip packet time divided by two (2), plus any CODEC and Buffer delays from the setup.

Jitter: Displays the remainder of the maximum adjacent packet delay less the minimum adjacent packet delay, then divided by two (2).

Limit Results: This displays the **Pass** or **Fail** results for tests that were conducted as part of a Autotest Macro. This field is not displayed if the test was conducted outside of an Autotest Macro.

QAM (QAM Mode)

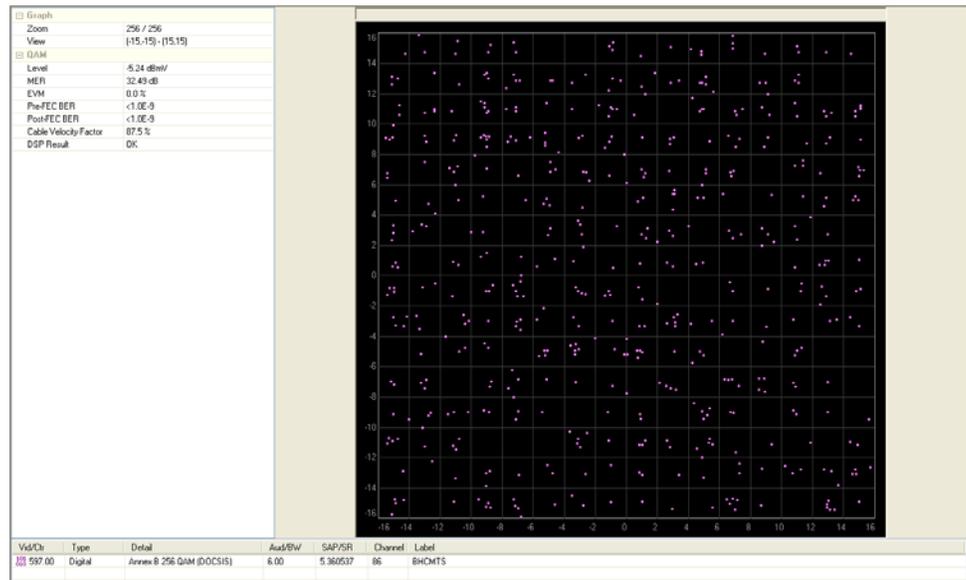
The QAM data log is a report in text and graphics formats that shows the signal qualities of a QAM modulated channel.

- The channel number for which the test was conducted will be displayed in the channel table at the bottom of the Data window.
- When in the Graph View, the measurement results will be displayed in the QAM report's summary panel at the left side of the Data window.
- The coordinate values [Constellation Graph (I, Q), EQ Taps Graph (Time, Level), BER Corrected Errors (Time, Corrected Errors), or BER Uncorrected Errors (Time, Uncorrected Errors) of the mouse cursor will be displayed at the top of the Data window above the graph.

Constellation View

To view the Constellation Graph, select the  button from the toolbar at the top of the **Data** window or press the **Q** key on your keyboard.

An example of the Constellation Graph is shown to the right.

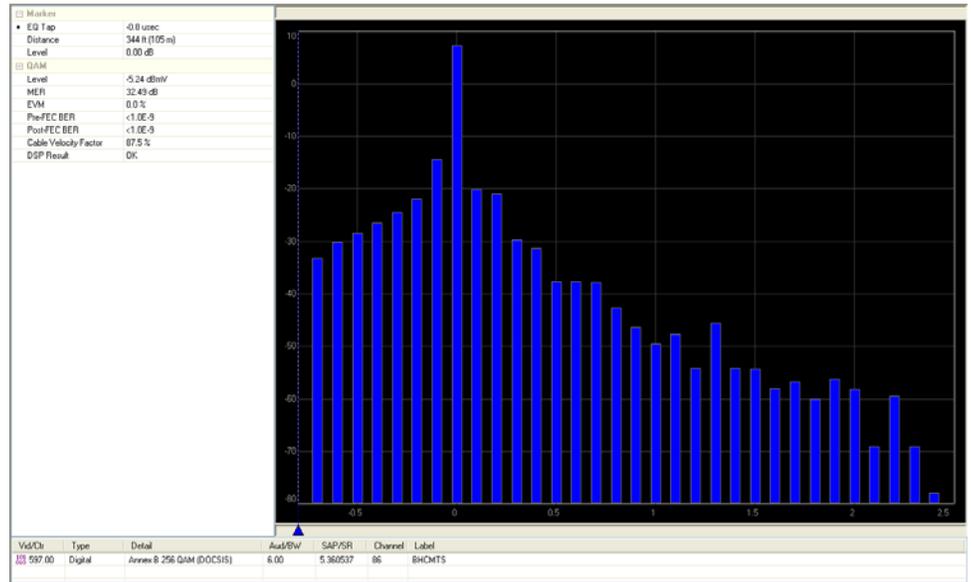


For more information on how to use the Zoom Tools that are located in the toolbar at the top of this data log report, see [Chapter 2: Analyzing Data, Using the Zoom Tools](#).

EQ Taps View

To view the EQ Taps Graph, select the  button from the toolbar at the top of the **Data** window or press the **E** key on your keyboard.

An example of the EQ Taps Graph is shown to the right.



EQ Taps Text Data View

To view the EQ Taps Text Data, select the  button from the toolbar at the top of the **Data** window or press the **T** key on your keyboard.

An example of the EQ Taps Text Data is shown to the right.

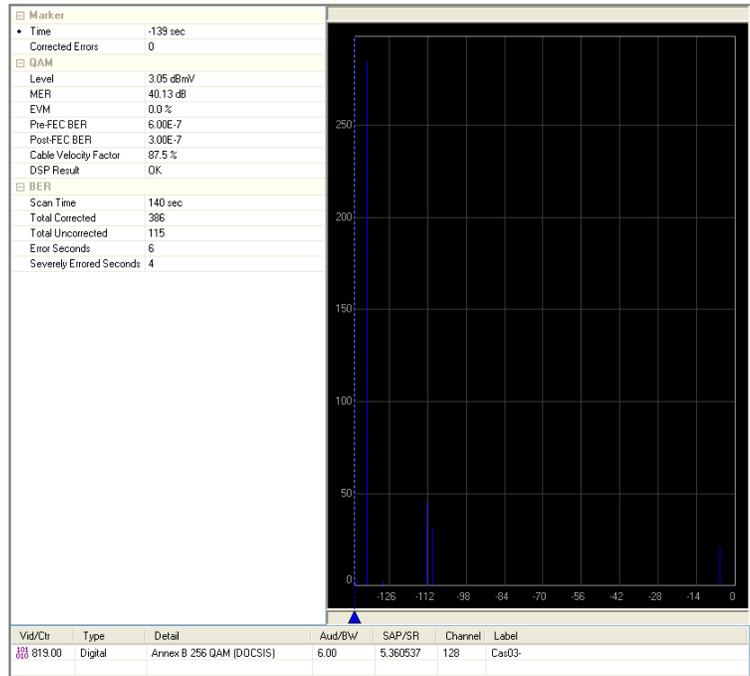
QAM		Time (sec)	Corrected	Uncorrected
Level	3.05 dBmV	-139	0	0
MER	40.13 dB	-138	3	0
EVM	0.0%	-137	0	0
Pre-FEC BER	6.00E-7	-136	0	0
Post-FEC BER	3.00E-7	-134	284	82
Cable Velocity Factor	87.5%	-133	0	0
DSP Result	OK	-132	0	0
BER		-131	0	0
Scan Time	140 sec	-130	0	0
Total Corrected	386	-129	0	0
Total Uncorrected	115	-127	2	0
Error Seconds	6	-126	0	0
Severely Errored Seconds	4	-125	0	0
		-124	0	0
		-123	0	0
		-122	0	0
		-121	0	0
		-120	0	0
		-119	0	0
		-118	0	0
		-117	0	0
		-116	0	0
		-115	0	0
		-114	0	0
		-113	0	0
		-112	45	23
		-111	0	0
		-110	31	6
		-109	0	0
		-108	0	0
		-107	0	0
		-106	0	0
		-105	0	0
		-104	0	0
		-103	0	0
		-102	0	0
		-101	0	0
		-100	0	0
		-99	0	0
		-98	0	0
		-97	0	0
		-96	0	0
		-95	0	0
		-94	0	0
		-93	0	0
		-92	0	0

Vid/Ctr	Type	Detail	Aud/BW	SAP/SR	Channel	Label
819.00	Digital	Annex B 256 QAM (DOCSIS)	6.00	5.360537	128	Cas03-

BER Corrected Errors View

To view the BER Corrected Errors Graph, select the  button from the toolbar at the top of the **Data** window.

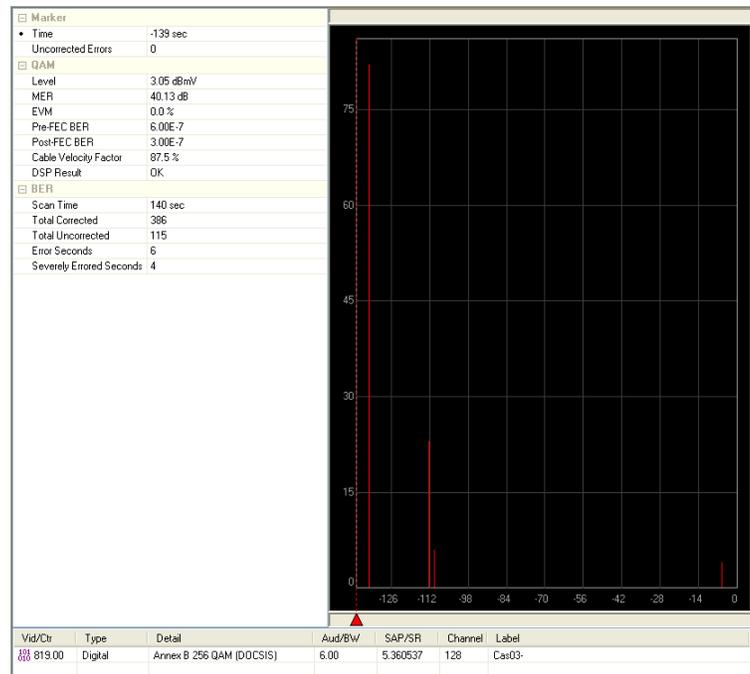
An example of the BER Corrected Errors Graph is shown to the right.



BER Uncorrected Errors View

To view the BER Uncorrected Errors Graph, select the  button from the toolbar at the top of the **Data** window.

An example of the BER Uncorrected Errors Graph is shown to the right.



BER Text Data View

To view the BER Text Data View, select the  button from the toolbar at the top of the **Data** window.

An example of the BER Text Data is shown to the right.

Measurement Results

Graph (Constellation Graph View Only)

Zoom: This displays the number of squares of data that are visible on the graph.

View: This displays the size of the data block being displayed.

QAM		Time (sec)	Corrected	Uncorrected
Level	3.05 dBmV	-139	0	0
MER	40.13 dB	-138	3	0
EVM	0.0 %	-137	0	0
Pre-FEC BER	6.00E-7	-136	0	0
Post-FEC BER	3.00E-7	-135	0	0
Cable Velocity Factor	87.5 %	-134	284	82
DSP Result	OK	-133	0	0
BER		-132	0	0
Scan Time	140 sec	-131	0	0
Total Corrected	386	-130	0	0
Total Uncorrected	115	-129	0	0
Error Seconds	6	-128	2	0
Severely Errored Seconds	4	-127	0	0
		-126	0	0
		-125	0	0
		-124	0	0
		-123	0	0
		-122	0	0
		-121	0	0
		-120	0	0
		-119	0	0
		-118	0	0
		-117	0	0
		-116	0	0
		-115	0	0
		-114	0	0
		-113	0	0
		-112	45	23
		-111	0	0
		-110	31	6
		-109	0	0
		-108	0	0
		-107	0	0
		-106	0	0
		-105	0	0
		-104	0	0
		-103	0	0
		-102	0	0
		-101	0	0
		-100	0	0
		-99	0	0
		-98	0	0
		-97	0	0
		-96	0	0
		-95	0	0
		-94	0	0
		-93	0	0
		-92	n	n

Vid/Ctr	Type	Detail	Aud/Bw	SAP/SR	Channel	Label
819.00	Digital	Annex B 256 QAM (DOCSIS)	6.00	5.360537	128	Cas03

Marker

EQ Tap: This displays the time in **µSec** that the current marker is set to. This is displayed in the **EQ Taps** Graph View Only.

Distance: This displays the distance represented by the EQ Tap at the location of the current marker. This is displayed in the **EQ Taps** Graph View Only.

Level: This displays the level in **dB** at the EQ Tap at the location of the current marker. This is displayed in the **EQ Taps** Graph View Only.

Time: This displays the time that the current marker is set to. This is displayed in the **BER Corrected Errors** and **BER Uncorrected Errors** Graph Views Only.

Corrected Errors: This displays the corrected errors at the location of the current marker. This is displayed in the **BER Corrected** Graph View Only.

Uncorrected Errors: This displays the uncorrected errors at the location of the current marker. This is displayed in the **BER Uncorrected** Graph View Only.

QAM

Level: This displays the level in **dBmV** of the QAM modulated channel.

MER: This displays the Modulation Error Ratio of the QAM modulated channel.

EVM: This displays the Error Vector Magnitude percentage .

Pre-FEC BER: This displays the amount of errors before Forward Error Correction.

Post-FEC BER: This displays the amount of errors after Forward Error Correction.

Cable Velocity Factor: This displays the cable velocity factor of the cable being tested.

Limit Results: This displays the **Pass** or **Fail** results for tests that were conducted as part of a Autotest Macro. This field is not displayed if the test was conducted outside of an Autotest Macro.

DSP Result: Shows that the 860 DSP, DSPi, or DSPr hardware worked successfully during the test. This field can be ignored unless it displays a result other than **OK**. If the field displays an error code, contact Trilithic for support.

BER

Scan Time: This displays the BER scan time.

Total Corrected: This displays the total corrected errors.

Total Uncorrected: This displays the total uncorrected errors.

Error Seconds: This displays the amount of errored seconds.

Severely Errored Seconds: This displays the amount of severely errored seconds.

Markers

For the **EQ Taps**, **BER Corrected Errors**, and **BER Uncorrected Errors** Graph views, you can set markers. To set a marker perform one of the following actions:

- Move the mouse cursor over the graphical display and then select the left mouse button.
- For the **EQ Taps** Graph View, select the up or down arrows to the right of the **EQ Tap** field to change the value in **0.1 μ sec** increments. The distance from the device and the level at the specified tap will be displayed in the EQ Taps report's summary pane.
- For the **BER Corrected Errors** Graph View, select the up or down arrows to the right of the **Time** field to change the value in **1 sec** increments. The corrected errors at the specified time will be displayed in the BER Corrected Errors report's summary pane.
- For the **BER Uncorrected Errors** Graph View, select the up or down arrows to the right of the **Time** field to change the value in **1 sec** increments. The uncorrected errors at the specified time will be displayed in the BER Corrected Errors report's summary pane.

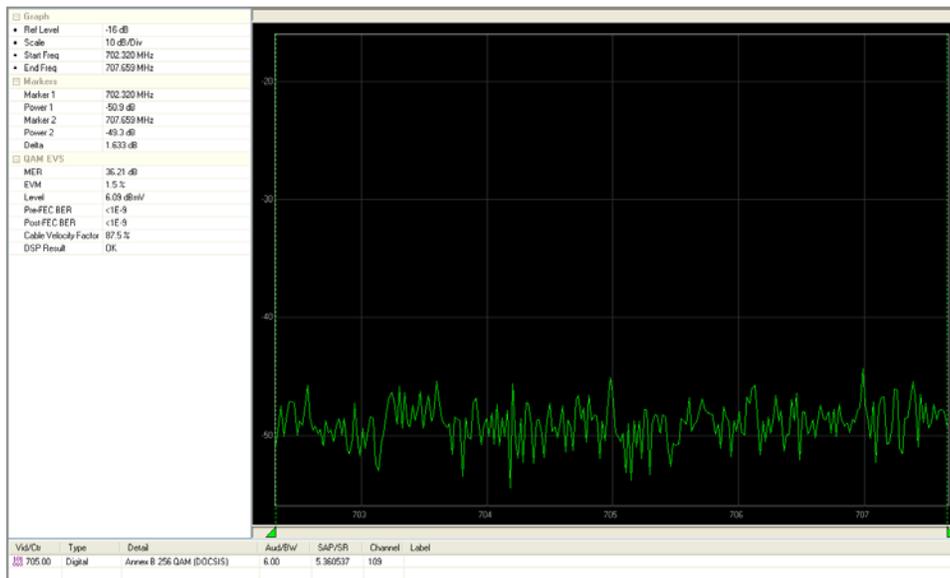
QAM EVS (QAM EVS Mode)

The QAM EVS data log is a report in graphics format that shows the test results of a QAM Error Vector Spectrum test performed by the 860 DSP, DSPi, or DSPr.

- The channel number for which the test was conducted will be displayed in the channel table at the bottom of the Data window.
- When in the Graph View, the measurement results will be displayed in the QAM EVS report's summary panel at the left side of the Data window.
- The coordinate values (Frequency, Level) of the mouse cursor will be displayed at the top of the Data window above the graph.

Graph View

An example of the QAM EVS graph view is shown below:



For more information on how to use the Zoom Tools that are located in the toolbar at the top of this data log report, see Chapter 2: Analyzing Data, Using the Zoom Tools.

Peak Value Markers

For **QAM EVS** data logs, select the  button to set the markers to the peak value that is displayed.



For more information on how to adjust Markers in this data log report, see Chapter 2: Analyzing Data, Marker Tools.

Measurement Results

The fields displayed in the QAM EVS report's summary pane are as follows:

Graph

Ref Level: This displays the user adjustable Reference Level. Select the up or down arrows to the right of the field to adjust the Reference Level in **1 dBmV** increments.

Scale: This displays the user adjustable Vertical Scale. Select the up or down arrows to the right of the field to chose the Vertical Scale to a value of **1, 2, 5, or 10 dB/Div**.

Start Freq: This displays the user adjustable Start Frequency. Select the up or down arrows to the right of the field to adjust the Start Frequency in **0.021 MHz** increments.

End Freq: This displays the user adjustable End Frequency. Select the up or down arrows to the right of the field to adjust the End Frequency in **0.021 MHz** increments.

Markers

Marker 1: This displays the frequency in **MHz** at the location of Marker 1.

Power 1: This displays the power in **dB** at the location of Marker 1.

Marker 2: This displays the frequency in **MHz** at the location of Marker 2.

Power 2: This displays the power in **dB** at the location of Marker 2.

Delta: This displays the difference in **dB** between Marker 1 and Marker 2.

QAM EVS

MER: This displays the Modulation Error Ratio of the digital channel.

EVM: This displays the Error Vector Magnitude percentage.

Level: This displays the level of the Error Vector Magnitude in **dBmV**.

Pre-FEC BER: This displays the amount of errors before Forward Error Correction.

Post-FEC BER: This displays the amount of errors after Forward Error Correction.

Cable Velocity Factor: This displays the cable velocity factor of the cable being tested.

DSP Result: Shows that the 860 DSP, DSPi, or DSPr hardware worked successfully during the test. This field can be ignored unless it displays a result other than **OK**. If the field displays an error code, contact Trilithic for support.

QAM Lite (QAM Lite Mode)

The QAM Lite data log is a report in text format that shows the signal qualities of QAM Modulated channels.

An example of the QAM Lite Text Data is shown to the right.

The channel number for which the test was conducted will be displayed in the channel table at the bottom of the Data window.

QAM Lite	
Level	6.09 dBmV
MER	36.64 dB
EVM	0.00 %
Pre-FEC BER	<1.0E-9
Post-FEC BER	<1.0E-9
Cable Velocity Factor	87.50 %
DSP Result	OK

Vid/Ctr	Type	Detail	Aud/BW	SAP/SR	Channel	Label	
101/810	705.00	Digital	Annex B 256 QAM (DOCSIS)	6.00	5.360537	109	

Measurement Results

QAM Lite

Level: This displays the level in **dBmV** of the QAM modulated channel.

MER: This displays the Modulation Error Ratio of the QAM modulated channel.

EVM: This displays the Error Vector Magnitude percentage.

Pre-FEC BER: This displays the amount of errors before Forward Error Correction.

Post-FEC BER: This displays the amount of errors after Forward Error Correction.

Cable Velocity Factor: This displays the cable velocity factor of the cable being tested.

DSP Result: Shows that the 860 DSP, DSPi, or DSPr hardware worked successfully during the test. This field can be ignored unless it displays a result other than **OK**. If the field displays an error code, contact Trilithic for support.

RSA (Return Sweep Analysis Mode)

The Return Sweep data log is a report in text and graphic formats. Return Sweeping is used to locate micro reflections and narrow suck-outs.

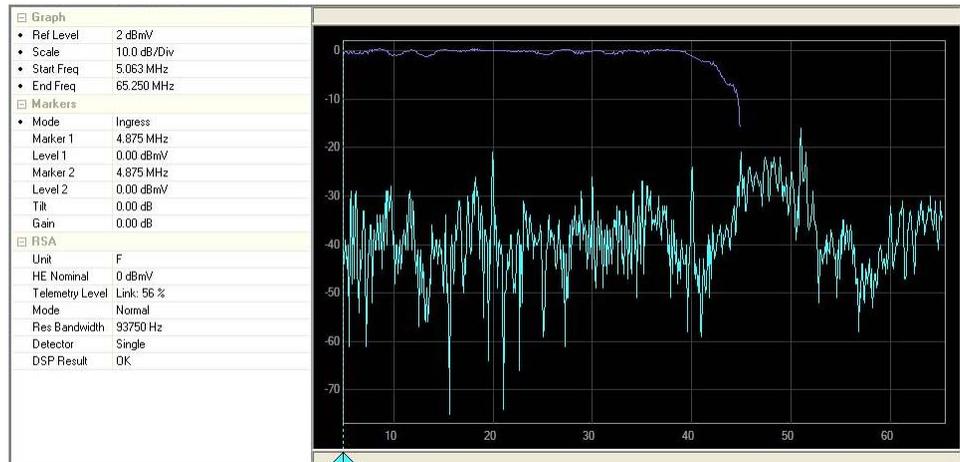
- When in the Graph View, the measurement results will be displayed in the Return SpeedSweep Analysis report summary panel at the left side of the Data window.
- The coordinate values (Frequency, Level) of the mouse cursor will be displayed at the top of the Data window above the graph.

Graph View

The Return Sweep is displayed as a graph, by default.

An example of the Return Sweep graph is shown to the right.

There are two different modes of return sweep report: sweep and compare. The report mode is selected on the 860 DSP at the time the test is performed. The sweep graph has a light blue ingress trace and the sweep trace has a dark blue line.



NOTE

For more information on how to use the Zoom Tools that are located in the toolbar at the top of this data log report, see Chapter 2: Analyzing Data, Using the Zoom Tools.

Marker Mode Settings

For Return Sweep data logs you can select the Marker Mode by performing one of the following actions:

- From the Scan Report Summary Pane, select the Marker Mode from the **Mode** drop-down list as shown to the right, or
- Use one of the keyboard shortcuts shown in the table below.

Markers	
• Mode	Ingress
Marker 1	Sweep
Level 1	Ingress
Marker 2	4.875 MHz
Level 2	0.00 dBmV
Tilt	0.00 dB
Gain	-30.00 dB

Keyboard Shortcut	Name	Description
S	Sweep Marker Mode	This mode causes the markers to show the level of the local sweep trace taken by the 860 DSP or 860 DSPi.
I	Ingress Marker Mode	This mode causes the markers to show the level of the ingress trace received from the 8310 RSA.



NOTE

For more information on how to adjust Markers in this data log report, see [Chapter 2: Analyzing Data, Marker Tools](#).

Measurement Results

The fields displayed in the Return Sweep report's summary pane are as follows:

Graph

Ref Level: This displays the user adjustable Reference Level. Select the up or down arrows to the right of the field to adjust the Reference Level in **1 dBmV** increments.

Scale: This displays the user adjustable Vertical Scale. Select the up or down arrows to the right of the field to chose the Vertical Scale to a value of **1, 2, 5, or 10 dB/Div**.

Start Freq: This displays the user adjustable Start Frequency in **MHz**. Select the up or down arrows to the right of the field to adjust the Start Frequency by the Channel Spacing defined in the instrument configuration.

End Freq: This displays the user adjustable End Frequency in **MHz**. Select the up or down arrows to the right of the field to adjust the End Frequency by the Channel Spacing defined in the instrument configuration.



NOTE

The Channel Spacing is a user configurable field that can be setup as shown in Section III: Managing Configurations, Chapter 7: 860 DSP and 860 DSPi Configuration Packages.

Markers

Mode: This displays the user adjustable Marker Mode. See the previous section on instructions on how to set the Marker Mode.

Marker 1: This displays the frequency in **MHz** at the current location of Marker 1.

Level 1: This displays the level in **dBmV** of either the ingress trace from the SST (**Ingress** Mode) or the local ingress trace taken by the 860 DSP or 860 DSPi (**SSR** Mode), at the location of Marker 1.

Marker 2: This displays the frequency in **MHz** at the current location of Marker 2.

Level 2: This displays the level in **dBmV** of either the ingress trace from the SST (**Ingress** Mode) or the local ingress trace taken by the 860 DSP or 860 DSPi (**SSR** Mode), at the location of Marker 2.

Tilt: This displays the frequency in **MHz** between Marker 2 and Marker 1 (M2 - M1).

Gain: This displays the frequency in **MHz** between Marker 2 and the headend nominal frequency (M2 - value of the dashed line).



NOTE

For more information on how to adjust Markers in this data log report, see Chapter 2: Analyzing Data, Marker Tools.

RSA

Unit: The Unit ID (**A - F**) of the 860 DSP or 860 DSPi. This is used by the 8310 RSA or 9581 SST to identify the 860 DSP or 860 DSPi.

HE Nominal: This displays the headend nominal level in **dBmV** of the 8310 RSA that the 860 DSP or 860 DSPi was communicating with.

Telemetry Level: This displays the signal strength of the telemetry signal received by the 860 DSP or 860 DSPi.

Mode: This displays the mode (**Normal**, **Fast**, or **Zoom**) of the 8310 RSA that the 860 DSP or 860 DSPi was communicating with.

Res Bandwidth: This displays the resolution bandwidth (375 kHz or 525 kHz) of the 8310 RSA that the 860 DSP or 860 DSPi was communicating with.

Detector: This displays the detector mode (**Single**, **Peak**, **Avg**, or **Traffic**) of the 8310 RSA that the 860 DSP or 860 DSPi was communicating with.

DSP Result: Shows that the 860 DSP or 860 DSPi hardware worked successfully during the test. This field can be ignored unless it displays a result other than **OK**. If the field displays an error code, contact Trilithic for support.

Reverse Sweep (SSR Mode)

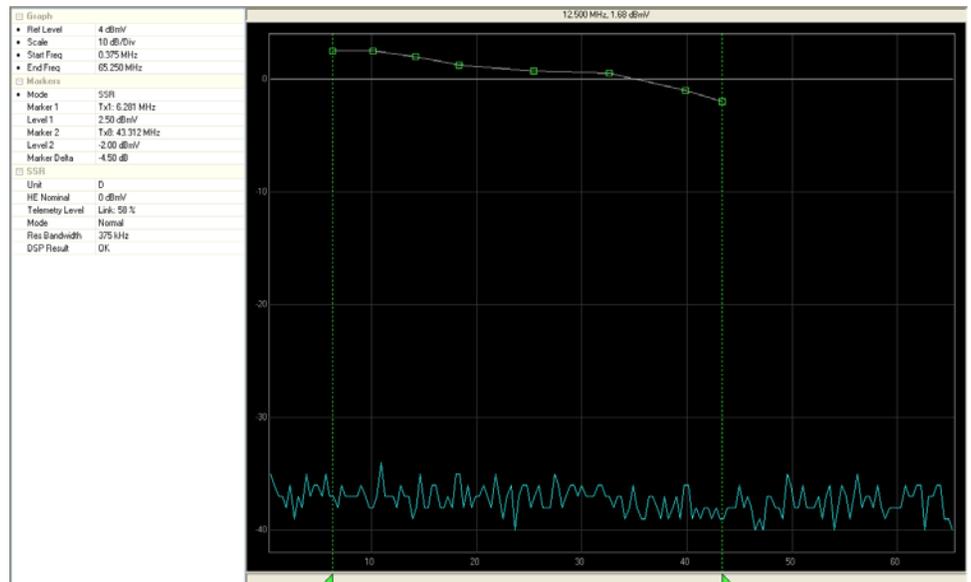
The Reverse Sweep data log is a report in text and graphics formats. Reverse sweeping is used to adjust the gain and tilt of reverse distribution amplifiers. The 860 DSP's sweep function transmits a set of up to eight reverse test carriers to the SST in the hub for analysis.

- When in the Graph View, the measurement results will be displayed in the Reverse Sweep report's summary panel at the left side of the Data window.
- The coordinate values (Frequency, Level) of the mouse cursor will be displayed at the top of the Data window above the graph.

Graph View

To view the Reverse Sweep Graph, select the  button from the toolbar at the top of the **Data** window or press the **G** key on your keyboard.

An example of the Reverse Sweep Graph is shown to the right.



There are two different modes of reverse sweep report: sweep and compare. The report mode is selected on the 860 DSP at the time the test is performed. The sweep graph has a light blue ingress trace and a sweep graph with up to eight green squares or red X's connected by a white line. The compare graph has two ingress line graphs (light and dark blue).



For more information on how to use the Zoom Tools that are located in the toolbar at the top of this data log report, see [Chapter 2: Analyzing Data, Using the Zoom Tools.](#)

Text Data View

To view the Reverse Sweep Text Data, select the  button from the toolbar at the top of the **Data** window or press the **T** key on your keyboard.

An example of the Reverse Sweep Text Data is shown to the right.

SSR		Tx Freq (MHz)	Sweep Level (dBmV)
Unit	D	Tx1: 6.281	2.50
HE Nominal	0 dBmV	Tx2: 10.124	2.50
Telemetry Level	Link: 58 %	Tx3: 14.156	2.00
Mode	Normal	Tx4: 18.281	1.25
Res Bandwidth	375 kHz	Tx5: 25.406	0.75
DSP Result	OK	Tx6: 32.624	0.50
		Tx7: 39.843	-1.00
		Tx8: 43.312	-2.00

Marker Mode Settings

For Return Sweep data logs you can select the Marker Mode by performing one of the following actions:

- From the Scan Report Summary Pane, select the Marker Mode from the **Mode** drop-down list as shown to the right.
- Use one of the keyboard shortcuts shown in the table below.

Markers	
• Mode	SSR
Marker 1	SSR
Level 1	Ingress
Marker 2	Tx0: 0.750 MHz
Level 2	0.00 dBmV
Marker Delta	

Keyboard Shortcut	Name	Description
S	SSR Marker Mode	This mode causes the markers to show the level of the local ingress trace taken by the 860 DSP or 860 DSPi.
I	Ingress Marker Mode	This mode causes the markers to show the level of the ingress trace received from the 9580 SST or 9581 SST.



NOTE

When the Marker Mode is set to SSR, you will not be able to adjust the location of either marker. You must first select Ingress Mode to change the position of the marker(s). The marker location will appear at the same location in each mode.



NOTE

For more information on how to adjust Markers in this data log report, see [Chapter 2: Analyzing Data](#), [Marker Tools](#).

Measurement Results

The fields displayed in the Forward Sweep report's summary pane are as follows:

Graph

Ref Level: This displays the user adjustable Reference Level. Select the up or down arrows to the right of the field to adjust the Reference Level in **1 dBmV** increments.

Scale: This displays the user adjustable Vertical Scale. Select the up or down arrows to the right of the field to chose the Vertical Scale to a value of **1, 2, 5, or 10 dB/Div**. This field is not displayed in the **Normalized Sweep View**.

Start Freq: This displays the user adjustable Start Frequency in **MHz**. Select the up or down arrows to the right of the field to adjust the Start Frequency by the Channel Spacing defined in the instrument configuration.

End Freq: This displays the user adjustable End Frequency in **MHz**. Select the up or down arrows to the right of the field to adjust the End Frequency by the Channel Spacing defined in the instrument configuration.



NOTE

The Channel Spacing is a user configurable field that can be setup as shown in Section III: Managing Configurations, Chapter 7: 860 DSP and 860 DSPi Configuration Packages.

Compare Offset: This displays the user adjustable comparison offset. This field only appears on the compare version of the report.

Markers

Mode: This displays the user adjustable Marker Mode. See the previous section on instructions on how to set the Marker Mode.

Marker 1: This displays the frequency in **MHz** at the current location of Marker 1.

Level 1: This displays the level in **dBmV** of either the ingress trace from the SST (**Ingress Mode**) or the local ingress trace taken by the 860 DSP or 860 DSPi (**SSR Mode**), at the location of Marker 1.

Compare Delta 1: This displays the difference in level between the ingress trace from the SST and the local ingress trace taken by the 860 DSP or 860 DSPi, or vice versa if the mode is set to SSR Mode, at the current location of Marker 1.

Marker 2: This displays the frequency in **MHz** at the current location of Marker 2.

Level 2: This displays the level in **dBmV** of either the ingress trace from the SST (**Ingress** Mode) or the local ingress trace taken by the 860 DSP or 860 DSPi (**SSR** Mode), at the location of Marker 2.

Compare Delta 2: This displays the difference in level between the ingress trace from the SST and the local ingress trace taken by the 860 DSP or 860 DSPi, or vice versa if the mode is set to SSR Mode, at the current location of Marker 2.

Marker Delta: This displays the difference in level between Marker 1 and Marker 2.



For more information on how to adjust Markers in this data log report, see [Chapter 2: Analyzing Data, Marker Tools](#).

NOTE

SSR

Unit: The Unit ID (**A - F**) of the 860 DSP or 860 DSPi. This is used by the 9580 SST or 9581 SST to identify the 860 DSP or 860 DSPi.

HE Nominal: This displays the headend nominal level in **dBmV** of the 9580 SST or 9581 SST that the 860 DSP or 860 DSPi was communicating with.

Telemetry Level: This displays the signal strength of the telemetry signal received by the 860 DSP or 860 DSPi.

Mode: This displays the mode (**Normal**, **Fast**, or **Zoom**) of the 9580 SST or 9581 SST that the 860 DSP or 860 DSPi was communicating with.

Res Bandwidth: This displays the resolution bandwidth (375 kHz or 525 kHz) of the 9580 SST or 9581 SST that the 860 DSP or 860 DSPi was communicating with.

Detector: This displays the detector mode (**Single**, **Peak**, **Avg**, or **Traffic**) of the 9580 SST or 9581 SST that the 860 DSP or 860 DSPi was communicating with.

DSP Result: Shows that the 860 DSP or 860 DSPi hardware worked successfully during the test. This field can be ignored unless it displays a result other than **OK**. If the field displays an error code, contact Trilithic for support.

Reverse Test (RSVP Mode)

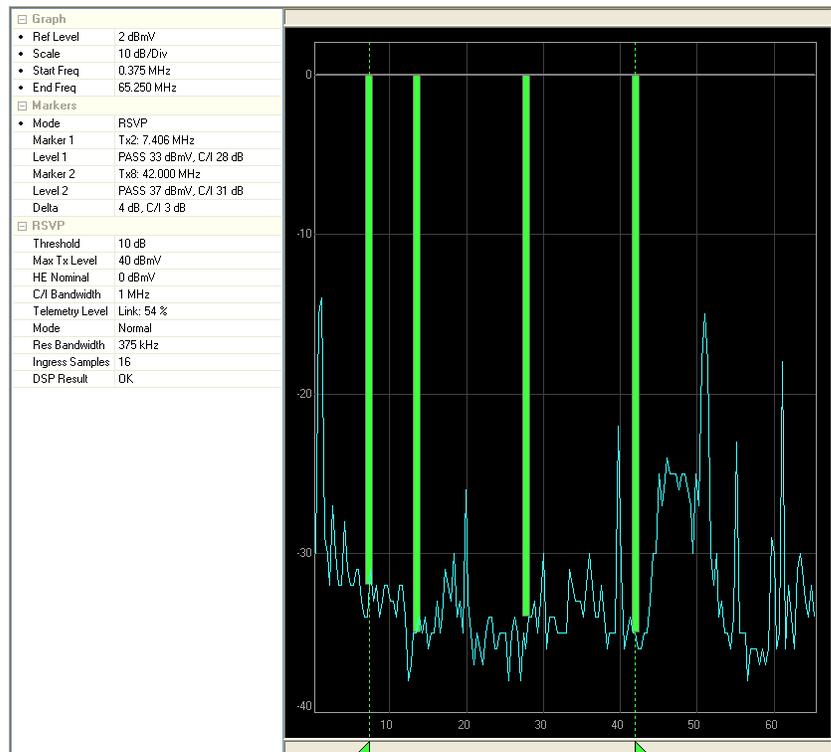
The Reverse Test data log is a report in text and graphics formats that shows the results of the RSVP test on the 860 DSP or 860 DSPi. In this test, the 860 DSP or 860 DSPi sends test carriers to the 9580 SST or 9581 SST, which then responds with the level of the received signal.

- When in the Graph View, the measurement results will be displayed in the Reverse Test report's summary panel at the left side of the Data window.
- The coordinate values (Frequency, Level) of the mouse cursor will be displayed at the top of the Data window above the graph.

Graph View

To view the Reverse Test Graph, select the  button from the toolbar at the top of the **Data** window or press the **G** key on your keyboard.

An example of the Reverse Test Graph is to the right.



NOTE

For more information on how to use the Zoom Tools that are located in the toolbar at the top of this data log report, see [Chapter 2: Analyzing Data, Using the Zoom Tools.](#)

Text Data View

To view the Reverse Test Text Data, select the  button from the toolbar at the top of the **Data** window or press the **T** key on your keyboard.

An example of the Reverse Test Text Data is shown to the right.

RSVP		Tx Freq (MHz)	Status	Level (dBmV)	C/I (dB)
Threshold	10 dB	Tx1:			
Max Tx Level	40 dBmV	Tx2: 7.406	PASS	33	28
HE Nominal	0 dBmV	Tx3:			
C/I Bandwidth	1 MHz	Tx4: 13.594	PASS	34	31
Telemetry Level	Link: 54 %	Tx5:			
Mode	Normal	Tx6: 27.750	PASS	34	30
Res Bandwidth	375 kHz	Tx7:			
Ingress Samples	16	Tx8: 42.000	PASS	37	31
DSP Result	OK				

Marker Mode Settings

For Reverse Sweep data logs you can select the Marker Mode by performing one of the following actions:

- From the Reverse Test Report Summary Pane, select the Marker Mode from the **Mode** drop-down list as shown to the right.
- Use one of the keyboard shortcuts shown in the table below.

Markers	
• Mode	RSVP
Marker 1	RSVP
Level 1	Ingress
Marker 2	42.000 MHz
Level 2	0.00 dBmV
Delta	0.00 dB

Keyboard Shortcut	Name	Description
S	SSR Marker Mode	This mode causes the markers to show the level of the local ingress trace taken by the 860 DSP or 860 DSPi.
I	Ingress Marker Mode	This mode causes the markers to show the level of the ingress trace received from the 9580 SST or 9581 SST.



NOTE

For more information on how to adjust Markers in this data log report, see [Chapter 2: Analyzing Data, Marker Tools](#).

Measurement Results

The fields displayed in the Forward Sweep report's summary pane are as follows:

Graph

Ref Level: This displays the user adjustable Reference Level. Select the up or down arrows to the right of the field to adjust the Reference Level in **1 dBmV** increments.

Scale: This displays the user adjustable Vertical Scale. Select the up or down arrows to the right of the field to chose the Vertical Scale to a value of **1, 2, 5, or 10 dB/Div**.

Start Freq: This displays the user adjustable Start Frequency in **MHz**. Select the up or down arrows to the right of the field to adjust the Start Frequency by the Channel Spacing defined in the instrument configuration.

End Freq: This displays the user adjustable End Frequency in **MHz**. Select the up or down arrows to the right of the field to adjust the End Frequency by the Channel Spacing defined in the instrument configuration.



NOTE

The Channel Spacing is a user configurable field that can be setup as shown in Section III: Managing Configurations, Chapter 7: 860 DSP and 860 DSPi Configuration Packages.

Compare Offset: This displays the user adjustable comparison offset. This field only appears on the compare version of the report.

Markers

Mode: This displays the user adjustable Marker Mode. See the previous section on instructions on how to set the Marker Mode.

Marker 1: This displays the frequency at the current location of Marker 1. If the mode is set to RSVP, this field also displays the carrier number.

Level 1: This displays the level at the location of Marker 1. If this mode is set to RSVP, this field shows if the carrier pointed to by Marker 1 passed or failed the RSVP test, as well as the Carrier-to-Ingress Ratio.

Marker 2: This displays the frequency at the current location of Marker 2. If the mode is set to RSVP, this field also displays the carrier number.

Level 2: This displays the level at the location of Marker 2. If this mode is set to RSVP, this field shows if the carrier pointed to by Marker 2 passed or failed the RSVP test, as well as the Carrier-to-Ingress Ratio.

Delta: This displays the difference in level between Level 1 and Level 2.



NOTE

For more information on how to adjust Markers in this data log report, see [Chapter 2: Analyzing Data](#), [Marker Tools](#).

RSVP

Threshold: This displays the threshold in **dB** that the Carrier-to-Ingress Ratio (C/I) must be greater than for the RSVP test to pass.

Max Tx Level: This displays the maximum level in **dBmV** that the 860 DSP or 860 DSPi is allowed to transmit at during the RSVP test.

HE Nominal: This displays the headend nominal level of the 9580 SST or 9581 SST that the 860 DSP or 860 DSPi was communicating with.

C/I Bandwidth: This displays the noise bandwidth in **MHz** used by the 860 DSP or 860 DSPi to compute the Carrier-to-Ingress (C/I) Ratio.

Telemetry Level: This displays the strength of the telemetry signal received by the 860 DSP or 860 DSPi.

Mode: This displays the mode (**Normal**, **Fast**, or **Zoom**) of the 9580 SST or 9581 SST that the 860 DSP or 860 DSPi was communicating with.

Ingress Samples: This displays the number of ingress samples taken by the 860 DSP or 860 DSPi to compute the Carrier-to-Ingress (C/I) Ratio.



The Threshold, Max Tx Level, C/I Bandwidth, and Ingress Sample Fields shown above are user configurable fields that can be setup as shown in Section III: Managing Configurations, Chapter 7: 860 DSP and 860 DSPi Configuration Packages.

Scan (Scan Mode)

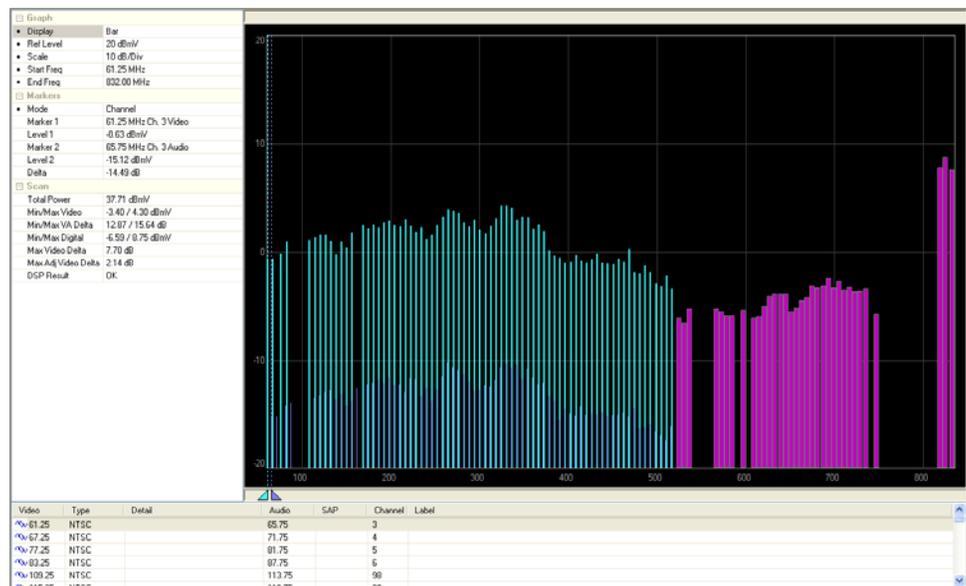
The Scan data log is a report in text and graphics formats that shows the test results of a channel plan scan performed by the 860 DSP or 860 DSPi.

- The channel numbers for which the test was conducted will be displayed in the channel table at the bottom of the Data window.
- When in the Graph View, the measurement results will be displayed in the Scan report's summary panel at the left side of the Data window.
- The coordinate values (Frequency, Level) of the mouse cursor will be displayed at the top of the Data window above the graph.

Graph View

To view the Scan Graph, select the  button from the toolbar at the top of the **Data** window or press the **G** key on your keyboard.

An example of the Scan Graph in the Bar Display is shown to the right.

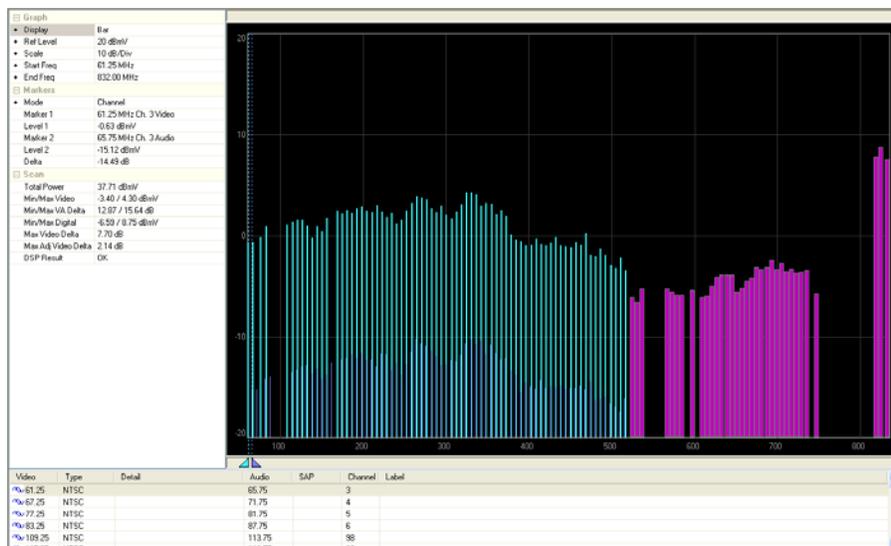


For more information on how to use the Zoom Tools that are located in the toolbar at the top of this data log report, see [Chapter 2: Analyzing Data, Using the Zoom Tools](#).

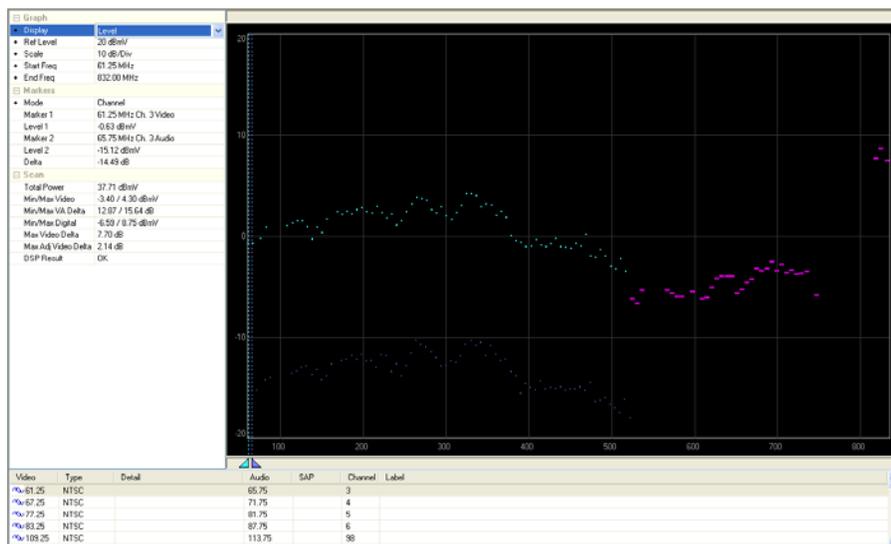
Graphic Display Settings

For Scan data logs you can choose from the following types of Graphic Display Settings; **Bar**, **Level**, or **Level/Fill**.

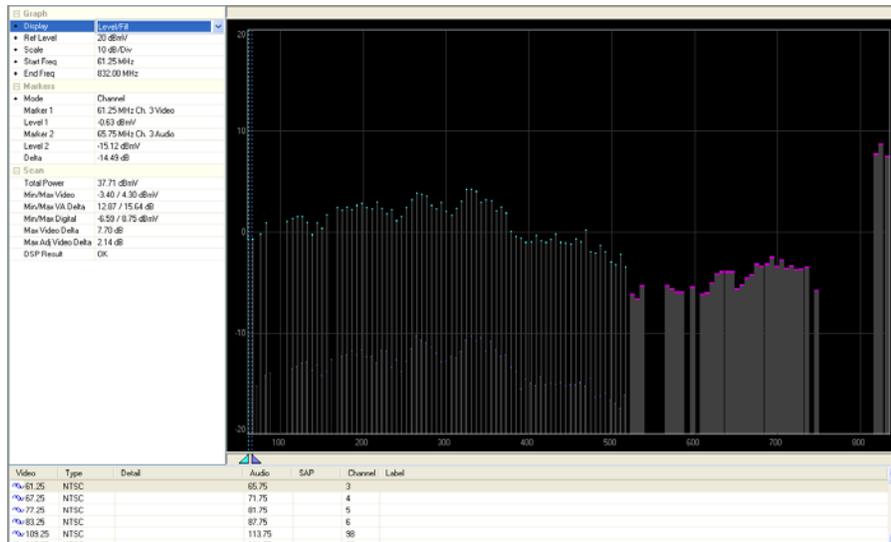
To adjust the Graphic Display Settings, from the Scan Report Summary Pane, select the Display Setting from the **Display** drop-down list as shown to the right.



Bar Display



Level Display



Level/Fill Display

Text Data View

To view the Scan Text Data, select the  button from the toolbar at the top of the Data window or press the T key on your keyboard.

An example of the Scan Test Text Data is shown to the right.

Scan		Video (MHz)	Channel	Level (dBmV)	Audio Level	V/A Delta	SAP Level
Total Power	37.71 dBmV	61.25	3	-0.63	-15.12	14.49	
Min/Max Video	-3.40 / 4.30 dBmV	67.25	4	-0.64	-15.18	14.54	
Min/Max VA Delta	12.87 / 15.64 dB	77.25	5	-0.16	-14.17	14.01	
Min/Max Digital	-6.59 / 8.75 dBmV	83.25	6	0.95	-13.98	14.93	
Max Video Delta	7.70 dB	109.25	98	1.13	-13.47	14.59	
Max Adj Video Delta	2.14 dB	115.25	99	1.40	-13.23	14.64	
DSP Result	OK	121.25	14	1.58	-12.92	14.50	
		127.25	15	1.61	-12.78	14.39	
		133.25	16	1.05	-13.59	14.64	
		139.25	17	-0.22	-13.09	12.87	
		145.25	18	0.95	-14.13	15.08	
		151.25	19	0.43	-13.75	14.18	
		157.25	20	1.82	-12.57	14.39	
		163.25	22	2.47	-12.23	14.70	
		175.25	7	2.23	-12.08	14.31	
		181.25	8	2.59	-11.75	14.34	
		187.25	9	2.30	-12.09	14.39	
		193.25	10	2.68	-11.58	14.25	
		199.25	11	2.90	-12.29	15.19	
		205.25	12	2.45	-12.20	14.65	
		211.25	13	2.37	-12.94	15.31	
		217.25	23	3.05	-11.64	14.70	
		223.25	24	2.41	-11.72	14.13	
		229.25	25	1.90	-13.30	15.20	
		235.25	26	2.25	-12.98	14.83	
		241.25	27	1.18	-13.75	14.93	
		247.25	28	1.56	-12.75	14.30	
		253.25	29	2.47	-11.50	13.96	
		259.25	30	3.25	-10.24	13.49	
		265.25	31	3.93	-10.63	14.56	
		271.25	32	3.77	-10.95	14.71	
		277.25	33	3.56	-11.30	14.86	
		283.25	34	2.71	-11.97	14.68	
		289.25	35	2.36	-12.80	15.17	
		295.25	36	2.94	-12.70	15.64	
		301.25	37	2.07	-12.32	14.98	
		307.25	38	1.74	-12.45	14.19	

Vid/Ctr	Type	Detail	Aud/BW	SAP/SR	Channel	Label
61.25	NTSC		65.75		3	
67.25	NTSC		71.75		4	
77.25	NTSC		81.75		5	
83.25	NTSC		87.75		6	
109.25	NTSC		113.75		98	

Marker Mode Settings

For Scan data logs you can select the Marker Mode by performing one of the following actions:

- From the Scan Report Summary Pane, select the Marker Mode from the **Mode** drop-down list as shown to the right.
- Use one of the keyboard shortcuts shown in the table below.

Markers	
• Mode	Carrier
Marker 1	Channel
Level 1	Video/Digital
Marker 2	Audio
Level 2	Carrier
Delta	-15.12 dBmV

Keyboard Shortcut	Name	Description
C	Channel Marker Mode	This mode locks the left marker on a video or digital carrier and locks the right marker to the audio carrier (if present) on the same channel.
V	Video/Digital Marker Mode	This mode locks to the video carrier. Left and right markers may be moved independently.
A	Audio Marker Mode	This mode locks to the audio carrier. Left and right markers may be moved independently.
Alt + C	Carrier Marker Mode	This mode allows markers to lock to any type of carrier. Left and right markers may be moved independently.



For more information on how to adjust Markers in this data log report, see [Chapter 2: Analyzing Data](#), [Marker Tools](#).

Measurement Results

The fields displayed in the Scan report's summary pane are as follows:

Graph

Display: This displays the user adjustable Graphic Display Settings. See [*Graphic Display Settings*](#) earlier in this section for instructions on how to set the Graphic Display Settings.

Ref Level: This displays the user adjustable Reference Level. Select the up or down arrows to the right of the field to adjust the Reference Level in **1 dBmV** increments.

Scale: This displays the user adjustable Vertical Scale. Select the up or down arrows to the right of the field to choose the Vertical Scale to a value of **1, 2, 5, or 10 dB/Div**.

Start Freq: This displays the user adjustable Start Frequency in **MHz**. Select the up or down arrows to the right of the field to adjust the Start Frequency by the Channel Spacing defined in the instrument configuration.

End Freq: This displays the user adjustable End Frequency in **MHz**. Select the up or down arrows to the right of the field to adjust the End Frequency by the Channel Spacing defined in the instrument configuration.



NOTE

The Channel Spacing is a user configurable field that can be setup as shown in Section III: Managing Configurations, Chapter 7: 860 DSP and 860 DSPi Configuration Packages.

Markers

Mode: This displays the user adjustable Marker Mode. See [Marker Mode Settings](#) earlier in this section for instructions on how to set the Marker Mode.

Marker 1: This displays the frequency in **MHz** at the current location of Marker 1.

Level 1: This displays the level in **dBmV** at the location of Marker 1.

Marker 2: This displays the frequency in **MHz** at the current location of Marker 2.

Level 2: This displays the level in **dBmV** at the location of Marker 2.

Delta: This displays the difference in level between Level 1 and Level 2.



NOTE

For more information on how to adjust Markers in this data log report, see [Chapter 2: Analyzing Data, Marker Tools](#).

Scan

Total Power: This displays the sum of the calculated power in **dBmV** for each channel in the scan.

Min/Max Video: This displays the minimum and maximum video signal strength in **dBmV** measured in the scan.

Min/Max VA Delta: This displays the minimum and maximum video level to audio level delta in **dB** measured in the scan.

Min/Max Digital: This displays the minimum and maximum digital signal strength in **dBmV** measured in the scan.

Maximum Video Delta: This displays the difference between the minimum and maximum video signal strengths in **dB** measured in the scan.

Max Adj Video Delta: This displays the maximum difference in level between two adjacent video carriers in **dB**.

Limit Results: This displays the **Pass** or **Fail** results for tests that were conducted as part of an Autotest Macro. This field is not displayed if the test was conducted outside of an Autotest Macro.

DSP Results: Shows that the 860 DSP or 860 DSPi hardware worked successfully during the test. This field can be ignored unless it displays a result other than OK. If the field displays an error code, contact Trilithic for support.

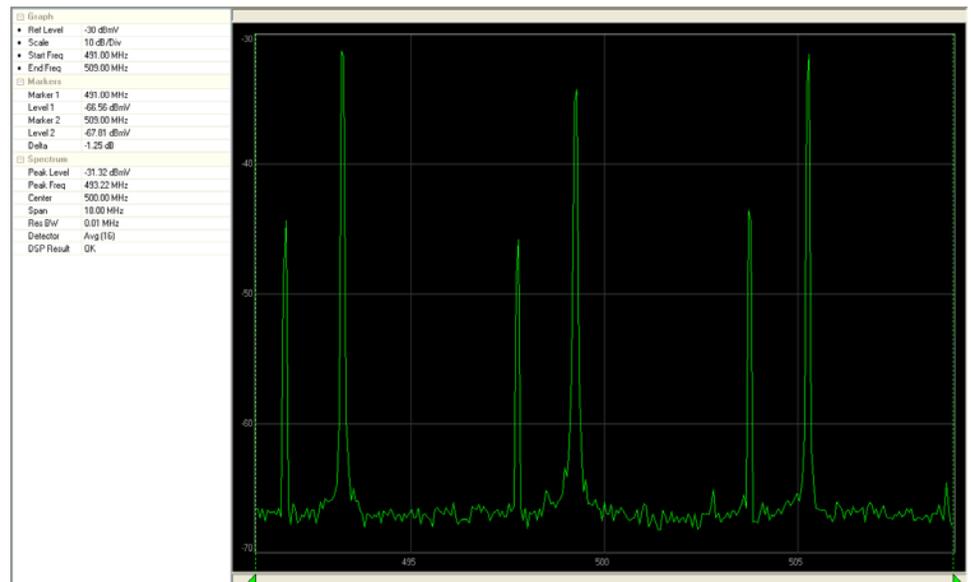
Spectrum Analyzer (Spectrum Analyzer Mode)

The Spectrum Analyzer data log is a report in graphics format that shows the test results of a either a Spectrum Scan or a Zero Scan performed by the 860 DSP or 860 DSPi.

- When in the Graph View, the measurement results will be displayed in the Spectrum Analyzer report's summary panel at the left side of the Data window.
- There are two modes of spectrum analysis: Spectrum (spectrum power vs. frequency range) and Zero Span (level of a given frequency over time). The report mode is selected on the 860 DSP or 860 DSPi at the time the test is performed.
- The coordinate values [Spectrum Scan (Frequency, Level) or Zero Span (Time, Level)] of the mouse cursor will be displayed at the top of the Data window above the graph.

Spectrum Scan View

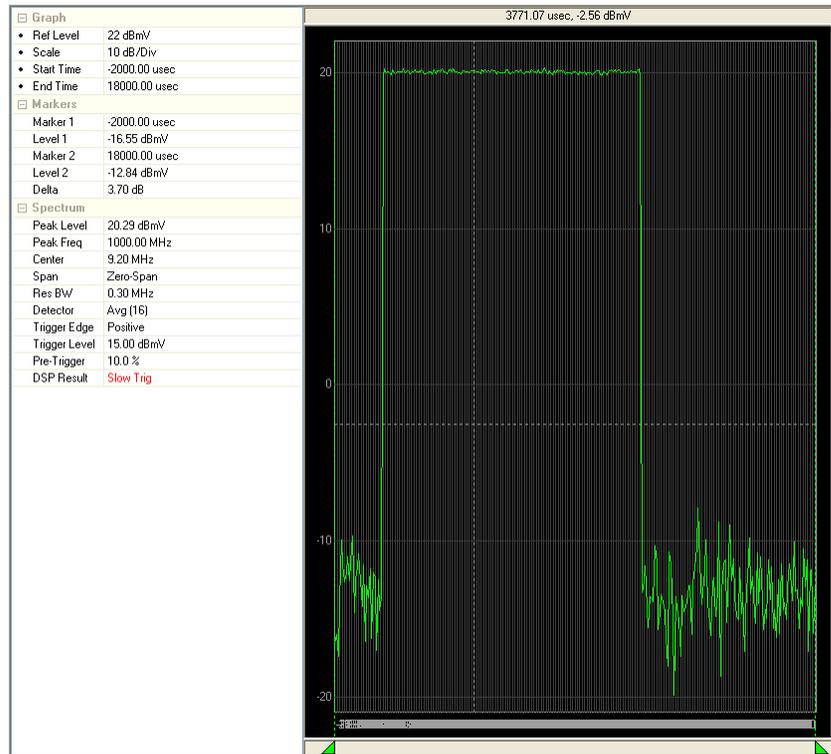
An example of the Spectrum Scan is shown to the right.



For more information on how to use the Zoom Tools that are located in the toolbar at the top of this data log report, see Chapter 2: Analyzing Data, Using the Zoom Tools.

Zero Span View

An example of the Zero Span spectrum analysis is shown to the right.



For more information on how to use the Zoom Tools that are located in the toolbar at the top of this data log report, see [Chapter 2: Analyzing Data, Using the Zoom Tools](#).

Peak Value Markers

For **Spectrum Analyzer** data logs, select the  button to set the markers to the peak value that is displayed.



For more information on how to adjust Markers in this data log report, see [Chapter 2: Analyzing Data, Marker Tools](#).

Measurement Results

The fields displayed in the Spectrum Analyzer report's summary pane are as follows:

Graph

Ref Level: This displays the user adjustable Reference Level. Select the up or down arrows to the right of the field to adjust the Reference Level in **1 dBmV** increments.

Scale: This displays the user adjustable Vertical Scale. Select the up or down arrows to the right of the field to chose the Vertical Scale to a value of **1, 2, 5,** or **10 dB/Div.**

Start

Freq: When in Spectrum Scan View, this displays the user adjustable Start Frequency. Select the up or down arrows to the right of the field to adjust the Start Frequency in **0.06 MHz** increments.

Time: When in Zero Span View, this displays the user adjustable Start Time. Select the up or down arrows to the right of the field to adjust the Start Time in **33333.33 µSec** increments. This value is time zero, which by convention is time zero.

End

Freq: When in Spectrum Scan View, this displays the user adjustable End Frequency. Select the up or down arrows to the right of the field to adjust the End Frequency in **0.06 MHz** increments.

Time: When in Zero Span View, this displays the user adjustable End Time. Select the up or down arrows to the right of the field to adjust the End Time in **33333.33 µSec** increments. This value is the end time of the Zero Span measurement relative to the trigger point, which by convention is time zero.

Markers

Marker 1: This displays the frequency in **MHz** (Spectrum Scan View) or time in **μsec** (Zero Span View) at the current location of Marker 1.

Level 1: This displays the level in **dBmV** at the location of Marker 1.

Marker 2: This displays the frequency in **MHz** (Spectrum Scan View) or time in **μsec** (Zero Span View) at the current location of Marker 2.

Level 2: This displays the level in **dBmV** at the location of Marker 2.

Delta: This displays the difference in level between Level 1 and Level 2.



NOTE

For more information on how to adjust Markers in this data log report, see [Chapter 2: Analyzing Data, Marker Tools](#).

Spectrum

Peak Level: This displays the peak level in **dBmV** of the spectrum analysis for the given span.

Peak Frequency: This displays the frequency in **MHz** at which the peak level was measured.

Center: This displays the center frequency in **MHz** of the spectrum analysis.

Span: This displays the span in **MHz** of the **Spectrum Scan View** or the text **Zero-Span** in Zero Span View.

Res BW: This displays the resolution bandwidth in **MHz** of the spectrum analysis. This determines how close together in frequency two signals can be and still be represented individually on the spectrum display. The default for the 860 DSP or 860 DSPi is **300 kHz**. Narrow resolutions are most useful for tests run at narrow frequency spans, such as hunting for spurious or reverse ingress, particularly at frequencies near RF carriers.

Detector: This displays the detector mode used by the 860 DSP or 860 DSPi for the displayed measurement. The field will display **Norm, Max Hold, Min Hold, Avg 2, Avg 4, Avg 8, Avg 16, Avg 32, Avg 64, or Avg 128** based on the settings of the device. Averaging smooths out noise “jitter” on the display averaging a succession of spectrum scans (similar to a video filter). Higher averages produce the smoothest display but the least sensitivity to impulse noise. Lower averages allow the peaks of signals and impulses to be measured more accurately but give the noisiest displays. This field is only displayed in the **Spectrum Scan View**.

Trigger Edge: This displays whether there is an **Auto, Positive, or Negative** Trigger. This field is only displayed in the **Zero Span View**.

Trigger Level: This displays the trigger level in **dBmV** that was selected on the 860 DSP or 860 DSPi at the time the test was performed. This field is only displayed in the **Zero Span View**.

Pre-Trigger: This displays the percentage of time to display before the incoming signal triggers the 860 DSP or 860 DSPi based on the **Trigger Level** and **Trigger Edge**. This field is only displayed in the **Zero Span View**.

Limit Results: This displays the **Pass** or **Fail** results for tests that were conducted as part of a Autotest Macro. This field is not displayed if the test was conducted outside of an Autotest Macro.

DSP Result: Shows that the 860 DSP or 860 DSPi hardware worked successfully during the test. This field can be ignored unless it displays a result other than OK. If the field displays an error code, contact Trilithic for support.

Throughput (Thru Put Mode)

The Throughput data log is a text only report that shows the transfer rate capabilities of the network connection.

An example of the Throughput Text Data is shown to the right.

[-] Throughput	
Server IP	10.1.33.148
Upstream Rate	3.99 Mbits/sec
Downstream Rate	4.49 Mbits/sec
[-] Upstream Parameters	
Upstream File	00_35_8d.dat
Upstream File Size	1048576 Bytes
Upstream Time	2100 Msec
[-] Downstream Parameters	
Downstream File	860.DAT
Downstream File Size	1683456 Bytes
Downstream Time	3000 Msec



NOTE

In order to use the Throughput mode with the ACTS software, the latest version of ACTS must be installed.

Measurement Results

The fields displayed in the Throughput report's summary pane are as follows:

Throughput

Server IP: This displays the IP address of the server to retrieve or send files to.

Upstream Rate: This displays the average number of kilobits per second achieved when sending the last file.

Downstream Rate: This displays the average number of kilobits per second achieved when reading the last file.

Limit Results: This displays the **Pass** or **Fail** results for tests that were conducted as part of a Autotest Macro. This field is not displayed if the test was conducted outside of an Autotest Macro.

DSP Result: Shows that the 860 DSP or 860 DSPi hardware worked successfully during the test. This field can be ignored unless it displays a result other than **OK**. If the field displays an error code, contact Trilithic for support.

Upstream Parameters

Upstream File: This displays the fixed name of a 1 MB file to send from the meter.

Upstream File Size: This displays the file size in **Bytes** of the file to send.



The upstream throughput calculations are based on this file being 1 MB. If you use a file with a different file size, the calculations will produce incorrect results.

Upstream Time: This displays the time in **Msec** it takes to send the file to the server.

Downstream Parameters

Downstream File: This displays the user-supplied file name to read from the server.

Downstream File Size: This displays the size in **Bytes** of the file read. The file size can be from 10 kB to 130 MB.

Downstream Time: This displays the time in **Msec** it takes to read the file from the server.

Tilt (Tilt Mode)

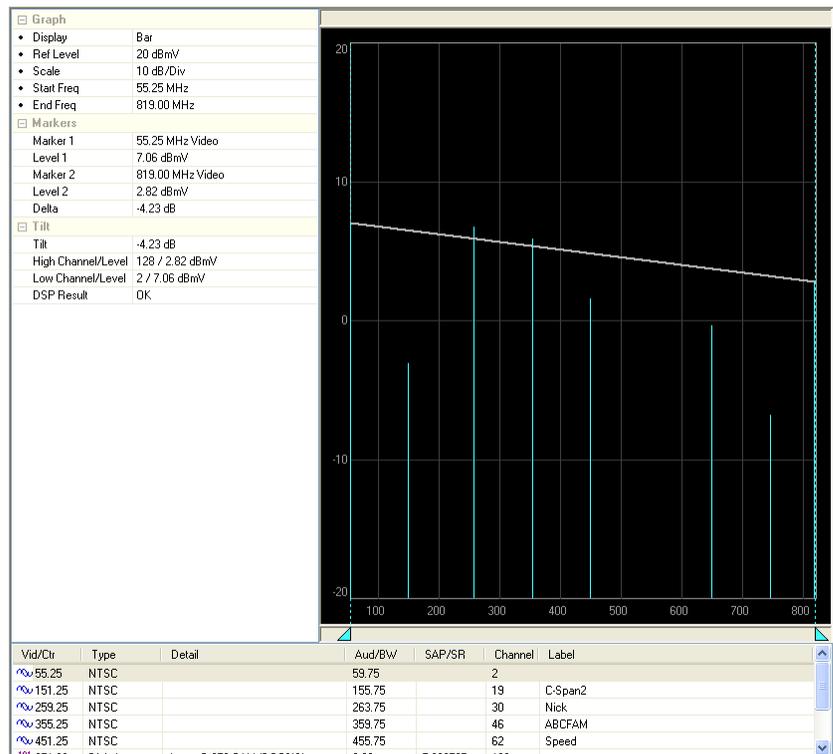
The Tilt data log is a report in text and graphic formats that shows the amplitudes of a preselected group of carriers. It also shows the difference in amplitude between two selectable channels in the group.

- The channel numbers for which the test was conducted will be displayed in the channel table at the bottom of the Data window.
- When in the Graph View, the measurement results will be displayed in the Tilt report's summary panel at the left side of the Data window.
- The coordinate values (Frequency, Carrier Level) of the mouse cursor will be displayed at the top of the Data window above the graph.

Graph View

To view the Tilt Graph, select the  button from the toolbar at the top of the **Data** window or press the **G** key on your keyboard.

An example of the Tilt Graph is shown to the right.

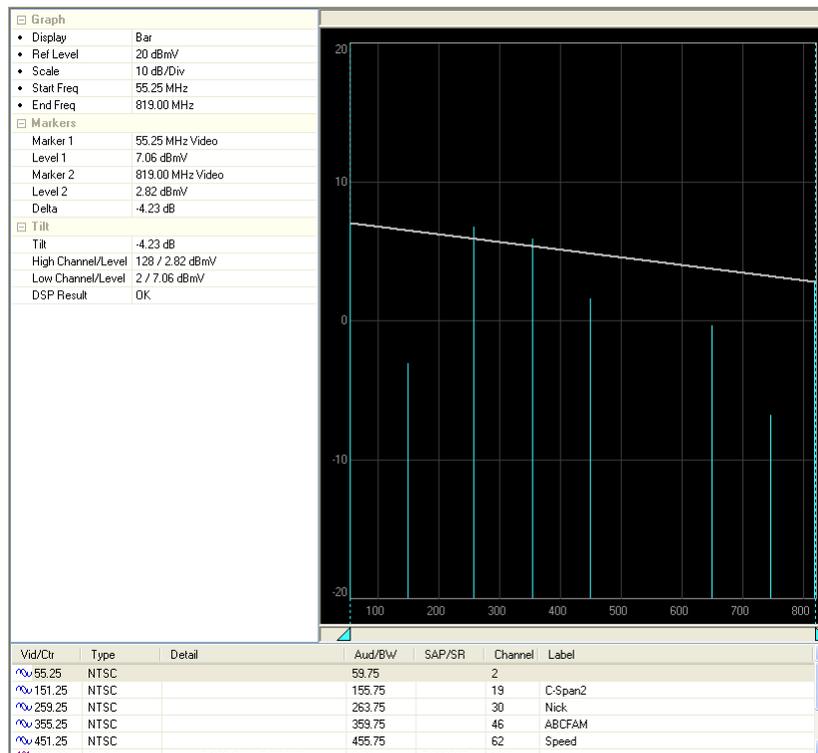
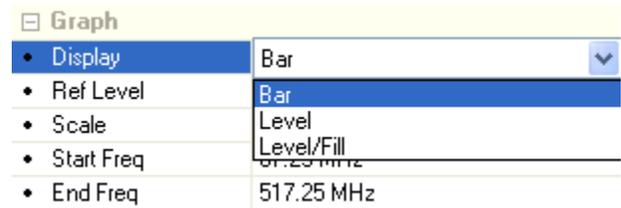


For more information on how to use the Zoom Tools that are located in the toolbar at the top of this data log report, see [Chapter 2: Analyzing Data, Using the Zoom Tools](#).

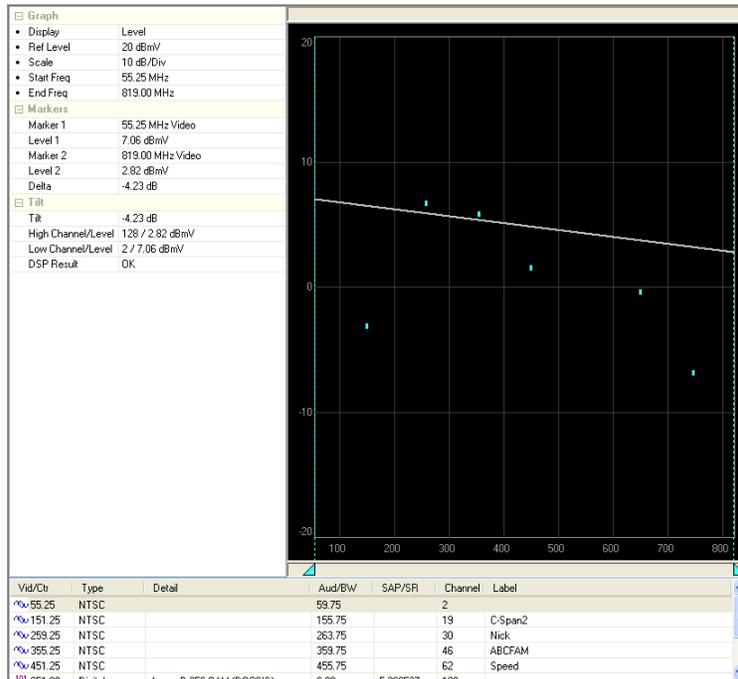
Graphic Display Settings

For Tilt data logs you can choose from the following types of Graphic Display Settings; **Bar**, **Level**, or **Level/Fill**.

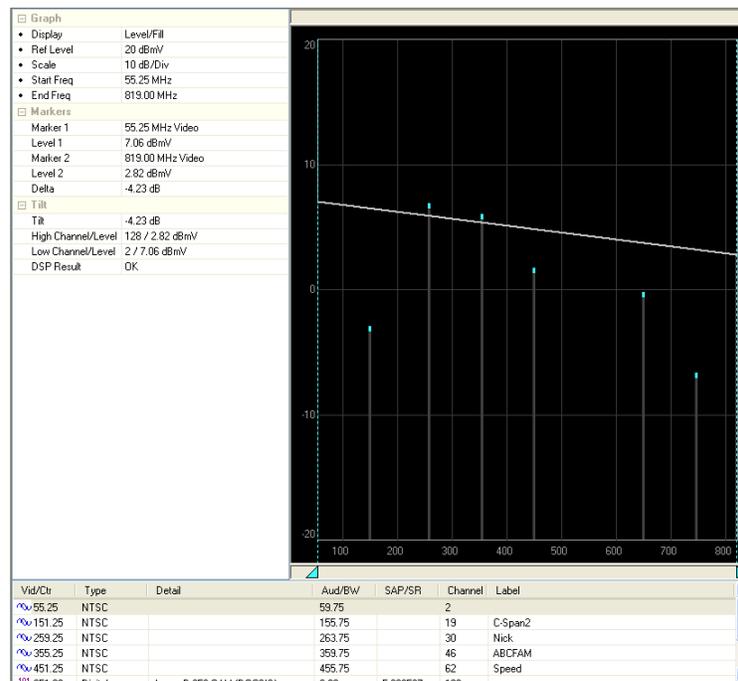
To adjust the Graphic Display Settings, from the Tilt Report Summary Pane, select the Display Setting from the **Display** drop-down list as shown to the right.



Bar Display



Level Display



Level/Fill Display

Text Data View

To view the Tilt Text Data, select the  button from the toolbar at the top of the **Data** window or press the **T** key on your keyboard.

An example of the Tilt Text Data is shown to the right.

Tilt		Video (MHz)	Channel	Level (dBmV)
Tilt	-4.23 dB	55.25	2	7.06
High Channel/Level	128 / 2.82 dBmV	151.25	19	-3.03
Low Channel/Level	2 / 7.06 dBmV	259.25	30	6.80
DSP Result	OK	355.25	46	5.92
		451.25	62	1.61
		651.00	100	-0.32
		747.00	116	-6.76
		819.00	128	2.82

Vid/Ctr	Type	Detail	Aud/BW	SAP/SR	Channel	Label
55.25	NTSC		59.75		2	
151.25	NTSC		155.75		19	C-Span2
259.25	NTSC		263.75		30	Nick
355.25	NTSC		359.75		46	ABCFAM
451.25	NTSC		455.75		62	Speed
651.00	Digital	A B-PS-2AM (DPS-2)	655.75	5-200F37	100	

Measurement Results

The fields displayed in the Tilt report's summary pane are as follows:

Graph

Display: This displays the user adjustable Graphic Display Settings. See the previous section on instructions on how to set the Graphic Display Settings.

Ref Level: This displays the user adjustable Reference Level. Select the up or down arrows to the right of the field to adjust the Reference Level in **1 dBmV** increments.

Scale: This displays the user adjustable Vertical Scale. Select the up or down arrows to the right of the field to choose the Vertical Scale to a value of **1, 2, 5, or 10 dB/Div**.

Start Freq: This displays the user adjustable Start Frequency in **MHz**. Select the up or down arrows to the right of the field to adjust the Start Frequency to the next/previous Tilt Channel as defined in the Channel Plan.

End Freq: This displays the user adjustable End Frequency in **MHz**. Select the up or down arrows to the right of the field to adjust the End Frequency to the next/previous Tilt Channel as defined in the Channel Plan.



NOTE

The Tilt Channels are a user configurable and can be selected as shown in Section III: Managing Configurations, Chapter 2: Channel Plans.

Markers

Marker 1: This displays the frequency in **MHz** at the current location of Marker 1.

Level 1: This displays the level in **dBmV** at the location of Marker 1.

Marker 2: This displays the frequency in **MHz** at the current location of Marker 2.

Level 2: This displays the level in **dBmV** at the location of Marker 2.

Delta: This displays the difference in level between Level 1 and Level 2.



NOTE

For more information on how to adjust Markers in this data log report, see Chapter 2: Analyzing Data, Marker Tools.

Tilt

Tilt: This displays the tilt level measurement in **dB**.

High Channel/Level: This displays the highest channel in the channel plan that is selected for tilt measurement and the corresponding level measurement in **dBmV**.

Low Channel/Level: This displays the lowest channel in the channel plan that is selected for tilt measurement and the corresponding level measurement in **dBmV**.

Limit Results: This displays the **Pass** or **Fail** results for tests that were conducted as part of an Autotest Macro. This field is not displayed if the test was conducted outside of an Autotest Macro.

DSP Result: Shows that the 860 DSP or 860 DSPi hardware worked successfully during the test. This field can be ignored unless it displays a result other than **OK**. If the field displays an error code, contact Trilithic for support.

TraceRoute (Trace Rt Mode)

The Trace Route data log is a report in text format that shows the results of an internet route trace.

An example of the TraceRoute Text Data is shown to the right.

Measurement Results

The fields displayed in the Trace Route report's summary pane are as follows:

Trace Route

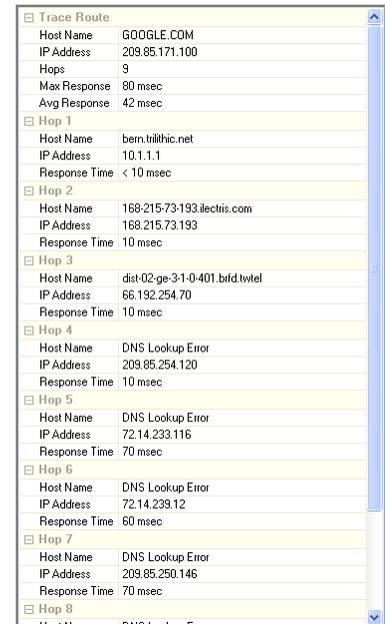
Host Name: This displays the host name of the destination site to route the test to.

IP Address: This displays the IP address of the destination site to route the test to.

Hops: This displays the number of sites that the test was routed through to reach the destination site.

Max Response: This displays the maximum response time in **msec** of all of the sites that the test was routed through.

Avg Response: This displays the average response time in **msec** of all of the sites that the test was routed through.



Trace Route	
Host Name	GOOGLE.COM
IP Address	209.85.171.100
Hops	9
Max Response	80 msec
Avg Response	42 msec
Hop 1	
Host Name	ber.trilithic.net
IP Address	10.1.1.1
Response Time	< 10 msec
Hop 2	
Host Name	168-215-73-193.lectris.com
IP Address	168.215.73.193
Response Time	10 msec
Hop 3	
Host Name	dist-02-ge-3-1-0-401.blfd.twtel
IP Address	66.192.254.70
Response Time	10 msec
Hop 4	
Host Name	DNS Lookup Error
IP Address	209.85.254.120
Response Time	10 msec
Hop 5	
Host Name	DNS Lookup Error
IP Address	72.14.233.116
Response Time	70 msec
Hop 6	
Host Name	DNS Lookup Error
IP Address	72.14.239.12
Response Time	60 msec
Hop 7	
Host Name	DNS Lookup Error
IP Address	209.85.250.146
Response Time	70 msec
Hop 8	
Host Name	DNS Lookup Error
IP Address	
Response Time	

Hop 1 through #

Host Name: This displays the host name of each site that the test was routed through.

IP Address: This displays the IP address of each site that the test was routed through.

Response Time: This displays the response time in **msec** of the site that the test was routed through.



NOTE

The information shown above will be listed for each site that the test was routed through.

TraffiControl (TraffiControl Mode)

The TraffiControl data log is a report in text and graphic formats that shows the ingress that is present underneath an upstream cable modem channel.

- When in the Graph View, the measurement results will be displayed in the TraffiControl report's summary panel at the left side of the Data window.
- The coordinate values (Frequency, Carrier Level) of the mouse cursor will be displayed at the top of the Data window above the graph.

Graph View

To view the TraffiControl Graph, select the  button from the toolbar at the top of the **Data** window.

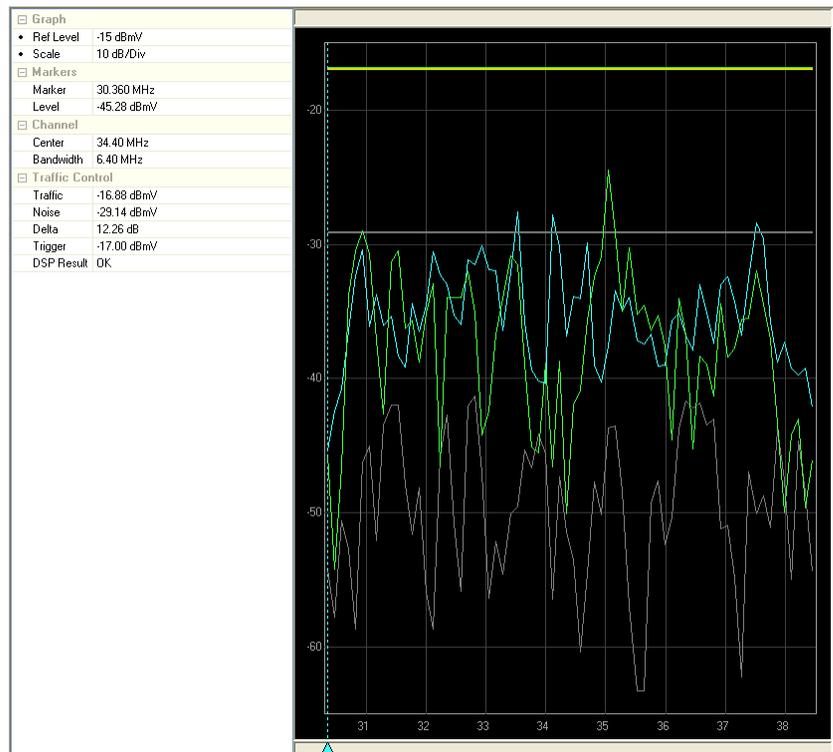
An example of the TraffiControl Graph is shown to the right.

The TraffiControl graphs shows three traces as follows:

Traffic (Green): This trace shows the last captured signal containing traffic.

Live Noise (Gray): This trace shows the last captured signal without traffic.

Peak Noise (Blue): This trace shows a persistent peak hold of the noise trace.



For more information on how to use the Zoom Tools that are located in the toolbar at the top of this data log report, see [Chapter 2: Analyzing Data, Using the Zoom Tools](#).

Text Data View

To view the TrafficControl Text Data, select the  button from the toolbar at the top of the **Data** window.

An example of the TrafficControl Text Data is shown to the right.

	Offset (MHz)	Frequency (MHz)	Traffic (dBmV)	Noise (dBmV)	Peak No...
Markers					
Marker	30.360 MHz				
Level	-45.28 dBmV				
Channel					
Center	34.40 MHz				
Bandwidth	6.40 MHz				
Traffic Control					
Traffic	-16.88 dBmV				
Noise	-29.14 dBmV				
Delta	12.26 dB				
Trigger	-17.00 dBmV				
DSP Result	OK				
	-4.04	30.36	-45.70	-54.22	-45.28
	-3.32	30.48	-54.22	-57.75	-42.42
	-3.81	30.59	-46.55	-50.57	-40.74
	-3.69	30.71	-33.84	-52.69	-36.38
	-3.57	30.83	-30.50	-58.69	-32.35
	-3.45	30.95	-29.00	-46.25	-30.42
	-3.34	31.06	-30.71	-45.00	-36.07
	-3.22	31.18	-37.13	-52.07	-33.75
	-3.10	31.30	-42.65	-43.46	-36.00
	-2.99	31.41	-31.29	-41.99	-35.40
	-2.87	31.53	-30.48	-41.96	-38.30
	-2.75	31.65	-36.23	-47.93	-39.16
	-2.63	31.77	-35.68	-51.61	-34.38
	-2.52	31.88	-38.80	-48.14	-36.44
	-2.40	32.00	-35.17	-55.93	-34.52
	-2.28	32.12	-32.91	-58.69	-30.56
	-2.16	32.23	-46.49	-45.77	-32.25
	-2.05	32.35	-33.95	-42.72	-33.02
	-1.93	32.47	-33.97	-50.62	-35.29
	-1.81	32.59	-33.98	-55.84	-35.96
	-1.70	32.70	-32.03	-42.07	-31.14
	-1.58	32.82	-35.05	-41.31	-31.52
	-1.46	32.94	-44.17	-47.00	-30.08
	-1.34	33.06	-42.42	-56.33	-31.90
	-1.23	33.17	-36.70	-52.16	-31.93
	-1.11	33.29	-34.00	-54.55	-36.41
	-0.99	33.41	-30.82	-50.07	-32.07
	-0.88	33.52	-31.48	-49.52	-27.60
	-0.76	33.64	-38.92	-45.32	-35.84
	-0.64	33.76	-45.08	-46.64	-39.38
	-0.52	33.88	-45.54	-44.10	-40.20
	-0.41	33.99	-38.82	-45.61	-40.36
	-0.29	34.11	-46.60	-56.42	-27.83
	-0.17	34.23	-38.68	-47.31	-30.18
	-0.06	34.34	-50.03	-51.39	-36.86
	0.06	34.45	-41.96	-53.48	-33.85
	0.18	34.58	-40.86	-60.33	-34.05
	0.30	34.70	-35.70	-54.49	-29.86
	0.41	34.81	-32.40	-47.65	-38.99
	0.53	34.93	-30.94	-50.15	-40.26
	0.65	35.05	-24.45	-43.70	-37.57
	0.76	35.16	-29.14	-43.55	-33.40
	0.88	35.28	-35.02	-49.35	-34.93
	1.00	35.40	-30.26	-56.93	-33.97
	1.12	35.52	-35.21	-63.23	-37.14
	1.23	35.63	-34.57	-63.23	-37.41
	1.35	35.75	-36.38	-49.26	-36.68
	1.47	35.87	-35.28	-47.59	-39.04
	1.59	35.98	-37.57	-52.32	-39.02
	1.70	36.10	-44.54	-50.37	-35.67
	1.82	36.22	-34.02	-43.75	-35.14
	1.94	36.34	-36.78	-41.64	-36.81

Measurement Results

The fields displayed in the TrafficControl report's summary pane are as follows:

Graph (Graph View Only)

Ref Level: This displays the user adjustable Reference Level. Select the up or down arrows to the right of the field to adjust the Reference Level in **1 dBmV** increments.

Scale: This displays the user adjustable Vertical Scale. Select the up or down arrows to the right of the field to chose the Vertical Scale to a value of **1, 2, 5, or 10 dB/Div**.

Markers

Marker: This displays the frequency in **MHz** at the location of the marker.



For more information on how to adjust Markers in this data log report, see [Chapter 2: Analyzing Data, Marker Tools](#).

Channel

Center: This displays the center frequency in **MHz** of the upstream cable modem channel that was selected on the 860 DSP or 860 DSPi at the time the test was performed.

Bandwidth: This displays the bandwidth in **MHz** of the of the upstream cable modem channel. This field will display **0.2, 0.4, 0.8, 1.6, 3.2, or 6.4 MHz** based on the settings of the device.

Traffic Control

Traffic: This displays the level in **dBmV** of the upstream cable modem traffic. This value corresponds to the green horizontal line shown in the graph view.

Noise: This displays the level in **dBmV** of the peak noise trace. This value corresponds to the gray horizontal line shown in the graph view.

Delta: This displays the difference in **dB** between the total power of traffic and the total power for noise in the last measurement.

Trigger: This displays the trigger level in **dBmV** that was selected on the 860 DSP or 860 DSPi at the time that the test was performed. This value corresponds to the yellow horizontal line shown in the graph view.

DSP Result: Shows that the 860 DSP or 860 DSPi hardware worked successfully during the test. This field can be ignored unless it displays a result other than **OK**. If the field displays an error code, contact Trilithic for support.

VITS (VITS Mode)

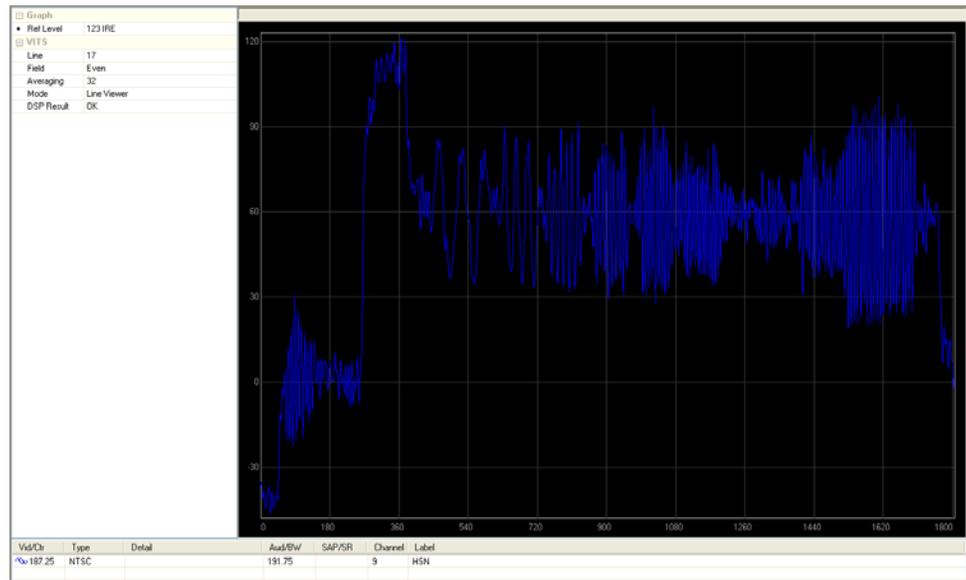
The VITS data log is a report in graphics format that shows the results of a Vertical Interval Test Signal (VITS) Channel.

- The channel number for which the test was conducted will be displayed in the channel table at the bottom of the Data window.
- When in the Graph View, the measurement results will be displayed in the VITS report's summary panel at the left side of the Data window.
- The coordinate values (IRE, IREI) of the mouse cursor will be displayed at the top of the Data window above the graph.

Graph View

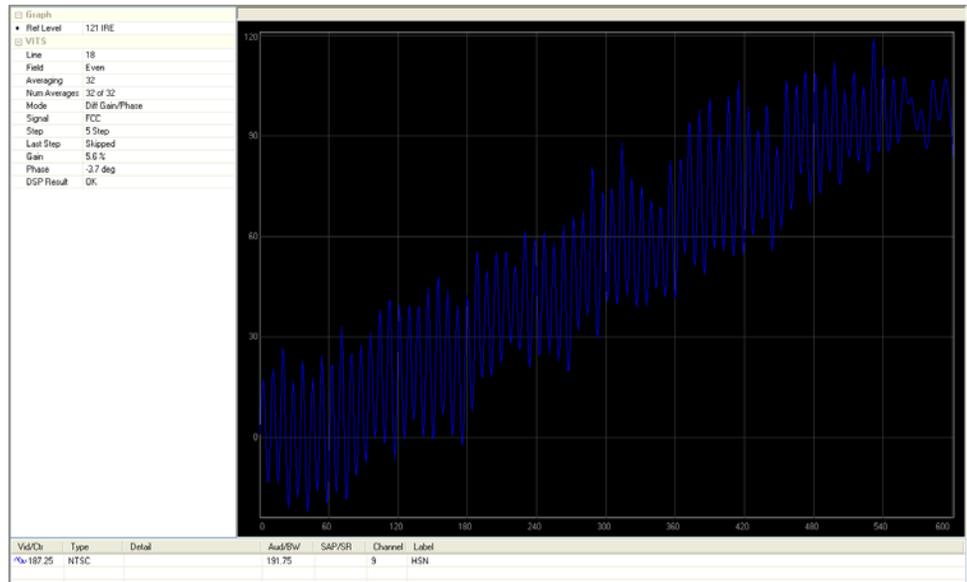
Line Viewer Graph View

The **Line Viewer** Graph View will be displayed as shown to the right when the measurement mode is set to **Line Viewer** on the device.



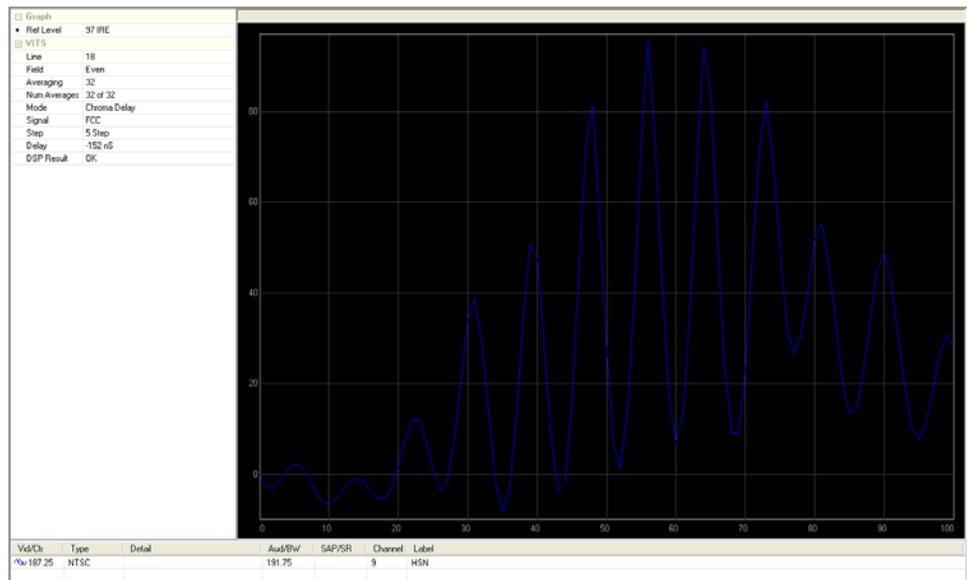
Differential Gain/Phase Graph View

The **Differential Gain/Phase** Graph View will be displayed as shown to the right when the measurement mode is set to **Diff Gain/Phase** on the device.



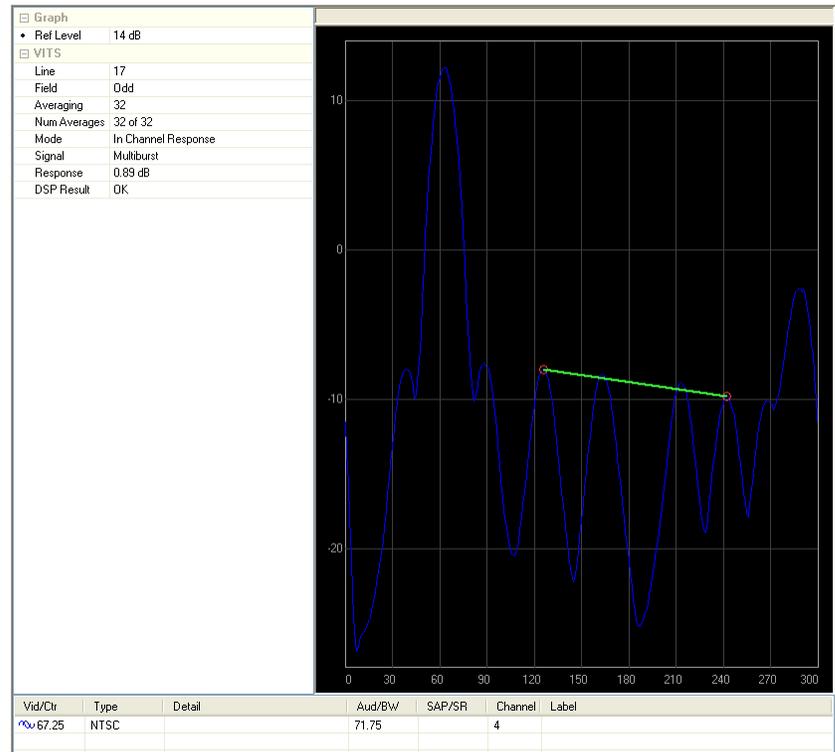
Chroma Delay Graph View

The **Chroma Delay** Graph View will be displayed as shown to the right when the measurement mode is set to **Chroma Delay** on the device.



In Channel Response Graph View

The **In Channel Response** Graph View will be displayed as shown to the right when the measurement mode is set to **In Channel Response** on the device.



Measurement Results

The fields displayed in the VITS report's summary pane are as follows:

Graph

Ref Level: This displays the user adjustable Reference Level. Select the up or down arrows to the right of the field to adjust the Reference Level in **1 IRE** or **1 dB** (In Channel Response) increments.

VITS

Line: This displays the line that the test was performed on. The line is selected on the 860 DSP or 860 DSPi at the time the test is performed.

Field: This displays whether the field is **Even** or **Odd**. The field is selected on the 860 DSP or 860 DSPi at the time the test is performed.

Averaging: This displays the detector mode used by the 860 DSP or 860 DSPi for the displayed measurement. The field will display **Avg 16, Avg 32, Avg 64, Avg 128, or AVG 256** based on the settings of the device. Averaging smooths out noise “jitter” on the display averaging a succession of spectrum scans (similar to a video filter). Higher averages produce the smoothest display but the least sensitivity to impulse noise. Lower averages allow the peaks of signals and impulses to be measured more accurately but give the noisiest displays. This field is not adjustable and is always set to **Avg 32** in the **Line Viewer** Graph View.

Num Averages: This displays the actual number of times the average was taken. This field does not appear in the **Line Viewer** Graph View.

Mode: This displays the measurement mode used by the 860 DSP or 860 DSPi for the displayed measurement. The field will display **Line Viewer, Diff Gain/Phase, Chroma Delay, or In Channel Response** based on the settings of the device.

Signal: This displays the signal type used by the 860 DSP or 860 DSPi for the displayed measurement. This will display the following based on the mode that is set in the device;

Diff Gain/Phase: FCC or NTC7.

Chroma Delay: FCC or NTC7.

In Channel Response: Multiburst or GhostCancelRef.

This field does not appear in the **Line Viewer** Graph View.

Last Step: This field is not adjustable and always displays **Skipped** for the **Diff Gain/Phase** Graph View.

Gain: This displays the differential gain measurement for the **Diff Gain/Phase** Graph View.

Phase: This displays the differential phase measurement for the **Diff Gain/Phase** Graph View.

Delay: This displays the chroma response measurement for the **Chroma Delay** Graph View.

Response: This displays the in channel response measurement for the **In Channel Response** Graph View.

DSP Results: Shows that the 860 DSP, DSPi, or DSPr hardware worked successfully during the test. This field can be ignored unless it displays a result other than OK. If the field displays an error code, contact Trilithic for support.

VoIP (VoIP Mode)

The VoIP data log is a report in text format that shows test results for call and connectivity quality.

Measurement Results

This first screen of the VoIP report is displayed as shown to the right.

The fields displayed in the first page of the VoIP report are as follows:

VoIP

Server IP: This displays the server's IP Address.

Remote Receive Port: This displays the port on which the remote data was received.

Local Receive Port: This displays the port on which the local data was received.

Call Length: This displays the length of the call in seconds.

Packet Count: This displays the number of packets that should have been sent.

Packets Sent: This displays the number of packets that were actually sent.

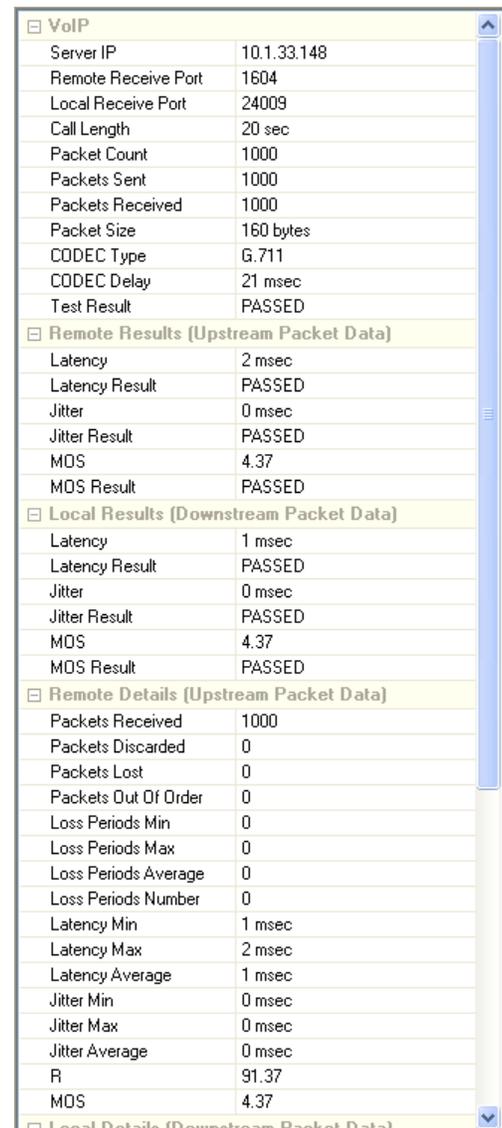
Packets Received: This displays the number of packets received.

Packets Size: This displays the size of the packets.

CODEC Type: This displays the CODEC that was used during the test.

CODEC Delay: This displays the delay for the CODEC that was used during the test.

Test Result: This displays the **Pass** or **Fail** results for test.



VoIP	
Server IP	10.1.33.148
Remote Receive Port	1604
Local Receive Port	24009
Call Length	20 sec
Packet Count	1000
Packets Sent	1000
Packets Received	1000
Packet Size	160 bytes
CODEC Type	G.711
CODEC Delay	21 msec
Test Result	PASSED
Remote Results (Upstream Packet Data)	
Latency	2 msec
Latency Result	PASSED
Jitter	0 msec
Jitter Result	PASSED
MOS	4.37
MOS Result	PASSED
Local Results (Downstream Packet Data)	
Latency	1 msec
Latency Result	PASSED
Jitter	0 msec
Jitter Result	PASSED
MOS	4.37
MOS Result	PASSED
Remote Details (Upstream Packet Data)	
Packets Received	1000
Packets Discarded	0
Packets Lost	0
Packets Out Of Order	0
Loss Periods Min	0
Loss Periods Max	0
Loss Periods Average	0
Loss Periods Number	0
Latency Min	1 msec
Latency Max	2 msec
Latency Average	1 msec
Jitter Min	0 msec
Jitter Max	0 msec
Jitter Average	0 msec
R	91.37
MOS	4.37
Local Details (Downstream Packet Data)	

Remote Results (Upstream Packet Data)

This section displays information about the packets sent from the field to the head end.

Latency: This displays the maximum delay in **msec** between packets.

Latency Result: This displays the **Pass** or **Fail** results for test.

Jitter: This displays the largest delay in **msec** between adjacent packets.

Jitter Result: This displays the **Pass** or **Fail** results for test.

MOS: This displays the Mean Opinion Score (the quality of the phone call scale).

MOS Result: This displays the **Pass** or **Fail** results for test.

Local Results (Downstream Packet Data)

This section displays information about the packets sent from the head end to the field.

Latency: This displays the maximum delay in **msec** between packets.

Latency Result: This displays the **Pass** or **Fail** results for test.

Jitter: This displays the largest delay in **msec** between adjacent packets.

Jitter Result: This displays the **Pass** or **Fail** results for test.

MOS: This displays the Mean Opinion Score (the quality of the phone call scale).

MOS Result: This displays the **Pass** or **Fail** results for test.

This second screen of the VoIP report is displayed as shown to the right.

The fields displayed in the second page of the VoIP report's summary pane are as follows:

Remote Details (Upstream Packet Data)

Packets Received: This displays the number of packets received.

Packets Discarded: This displays the number of packets discarded because jitter exceeded the jitter buffer length.

Packets Lost: This displays the number of packets lost.

Packets Out Of Order: This displays the number of packets received out of order.

Loss Periods: This is the time periods where no packets are received.

Loss Periods Min: The minimum time for a loss period.

Loss Periods Max: The maximum time for a loss period.

Loss Periods Average: The average time lost for a period.

Loss Periods Number: The number of loss periods.

Latency Min: This displays the minimum latency in **msec** for packets from the field to the head end.

Latency Max: This displays the maximum latency in **msec** for packets sent from the field to the head end.

MOS Result	PASSED
Local Results (Downstream Packet Data)	
Latency	1 msec
Latency Result	PASSED
Jitter	0 msec
Jitter Result	PASSED
MOS	4.37
MOS Result	PASSED
Remote Details (Upstream Packet Data)	
Packets Received	1000
Packets Discarded	0
Packets Lost	0
Packets Out Of Order	0
Loss Periods Min	0
Loss Periods Max	0
Loss Periods Average	0
Loss Periods Number	0
Latency Min	1 msec
Latency Max	2 msec
Latency Average	1 msec
Jitter Min	0 msec
Jitter Max	0 msec
Jitter Average	0 msec
R	91.37
MOS	4.37
Local Details (Downstream Packet Data)	
Packets Received	1000
Packets Discarded	0
Packets Lost	0
Packets Out Of Order	0
Loss Periods Min	0
Loss Periods Max	0
Loss Periods Average	0
Loss Periods Number	0
Latency Min	0 msec
Latency Max	1 msec
Latency Periods Average	0 msec
Jitter Min	0 msec
Jitter Max	0 msec
Jitter Average	0 msec
R	91.40
MOS	4.37
Average Receive Rate	19.98 msec

Latency Average: This displays the average latency in **msec** for packets sent from the field to the head end.

Jitter Min: This displays the minimum delay in **msec** between adjacent packages.

Jitter Max: This displays the maximum delay in **msec** between adjacent packages.

Jitter Average: This displays the average delay in **msec** between adjacent packets.

R: This displays the R value computed according to the ITU-T G.107 E model.

MOS: This displays the Mean Opinion Score when computed according to the ITU-T G.107 E model.

Remote Details (Downstream Packet Data)

Packets Received: This displays the number of packets received.

Packets Discarded: This displays the number of packets discarded because jitter exceeded the jitter buffer length.

Packets Lost: This displays the number of packets lost.

Packets Out Of Order: This displays the number of packets received out of order.

Loss Periods: This is the time periods where no packets are received.

Loss Periods Min: The minimum time for a loss period.

Loss Periods Max: The maximum time for a loss period.

Loss Periods Average: The average time lost for a period.

Loss Periods Number: The number of loss periods.

Latency Max: This displays the maximum latency in **msec** for packets sent from the head end to the field.

Latency Average: This displays the average latency in **msec** for packets sent from the head end to the field.

Jitter Min: This displays the minimum delay in **msec** between adjacent packages.

Jitter Max: This displays the maximum delay in **msec** between adjacent packages.

Jitter Average: This displays the average delay in **msec** between adjacent packets.

R: This displays the R value computed according to the ITU-T G.107 E model.

MOS: This displays the Mean Opinion Score when computed according to the ITU-T G.107 E model.

Web Log

The Web Log data log is a report in text format that shows the results of a web server based test.

An example of the Web Log Text Data is shown to the right.

Measurement Results

The fields displayed in the Web Log report are as follows:

Web Log

Name: This displays the type or name of the web server based test.

Company: This displays the name of the company that created and/or performed the test.

Description: This displays a description of the test being performed.

Status: This displays the overall results of the test.

Test # Results

Header: This displays the test definition or other identifier.

Value: This displays the resultant data in **msec** of the test.

Pass/Fail: This displays the **Pass** or **Fail** results of the test.

Comment: This displays any details to describe the test or the results of the test.

Web Log	
Name	EMTA TEST
Company	Trilithic, Inc.
Description	Basic EMTA Acceptance Test
Status	PASS
Test 1 Results	
Header	Ping
Value	5 msec
Pass/Fail	PASS
Comment	Limit is 20
Test 2 Results	
Header	Dial Tone
Value	YES
Pass/Fail	PASS
Comment	present
Test 3 Results	
Header	Quality
Value	4.21 MOS
Pass/Fail	PASS
Comment	Limit is 4.00
Test 4 Results	
Header	Power
Value	51 dBmV
Pass/Fail	PASS
Comment	Limit is 55
Location	
Type	Field Test
Area	Area
Amplifier ID	AmplID
Power	In
Voltage	Low
Feeder	1
Reverse Pad	0 dB
Reverse EQ	0 dB
Forward Pad	0 dB
Forward EQ	0 dB
Trunk Termination	<input checked="" type="checkbox"/>

Wi-Fi (WiFi Mode)

The Wi-Fi data log is a report in text format that shows the results of a Wi-Fi access point survey.

An example of the Wi-Fi Text Data is shown to the right.

Measurement Results

The fields displayed in the Wi-Fi report are as follows:

Wi-Fi

Access Points: This displays the number of Wi-Fi access points that are available.

Connected To: This displays the name of the Wi-Fi access point that was connected at the time of the test.

Access Point #

SSID: This displays the Service Set Identifier (SSID) value of the Wi-Fi access point.

MAC Address: This displays the MAC address of the Wi-Fi access point.

Network Type: This displays the type of network infrastructure associated with the Wi-Fi access point.

Channel: This displays the radio channel of the Wi-Fi access point.

Security: This displays the type of security associated with the Wi-Fi access point.

Signal Level: This displays the signal level in **dBm** of the Wi-Fi access point.

Noise Level: This displays the noise level in **dBm** of the Wi-Fi access point.

Wi-Fi	
Access Points	2
Connected To	Not Connected
Access Point 1	
SSID	ZWIRE959
MAC Address	00-21-7C-A0-30-A1
Network Type	Infrastructure Mode
Channel	10
Security	Private
Signal Level	-87.00 dBm
Noise Level	N/A
Access Point 2	
SSID	Teague s
MAC Address	00-1C-DF-8C-FD-5A
Network Type	Infrastructure Mode
Channel	6
Security	Private
Signal Level	-89.00 dBm
Noise Level	N/A

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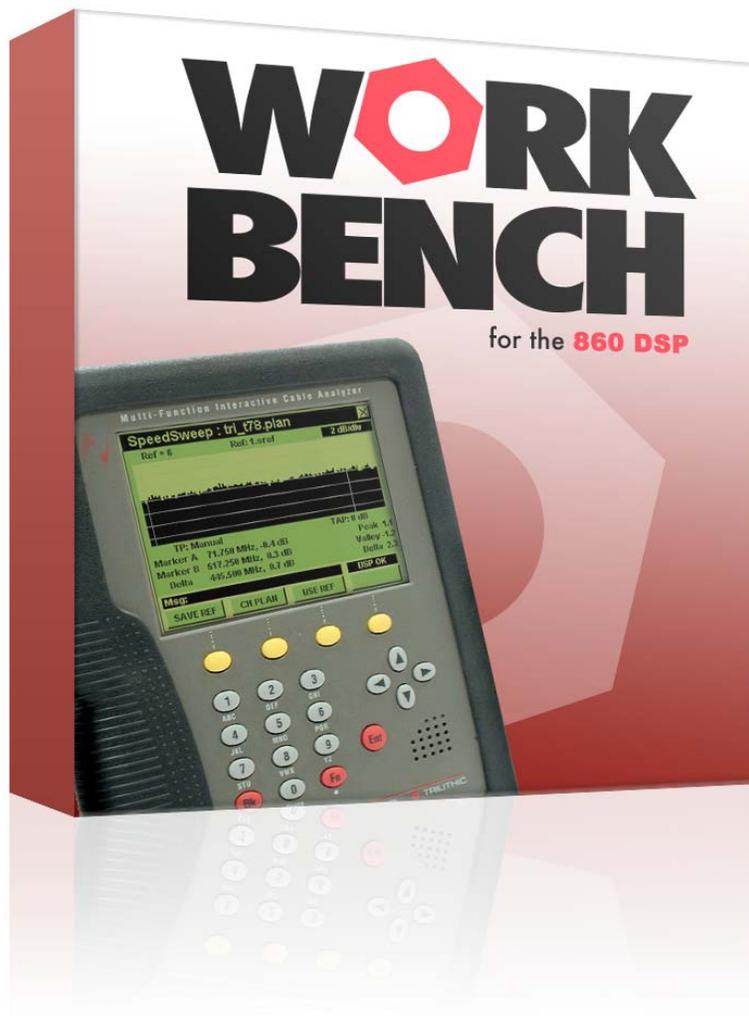
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WorkBench Software

(and WorkBench Lite Software)

for the 860 DSP, 860 DSPi, 860 DSPh, 860 DSPr, and 8300 FST

Section III: Configuration Files



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Chapter 1

Introduction

Overview

WorkBench can be used to manage the configuration parameters of the following devices:

- 860 DSP
- 860 DSPi
- 860 DSPh
- 860 DSPr
- 8300 FST

These configuration parameters control multiple tuning and measurement attributes. WorkBench allows for custom configuration files to be created, edited, and stored for loading to analyzers for accurate, repeatable measurements in the field.

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Chapter 2

Channel Plans

Overview

This chapter shows you how to create and maintain channel plans.

A channel plan is a list of channels, frequencies, and other parameters. You will likely have a variety of channel plans for your 860 DSP or 860 DSPi, depending on the cable packages and options offered to your users.

You can create a new channel plan or create a channel plan from an existing channel plan.

Creating a Channel Plan

To create a channel plan, perform the following steps:

1. Perform one of the following steps to create a new channel plan:

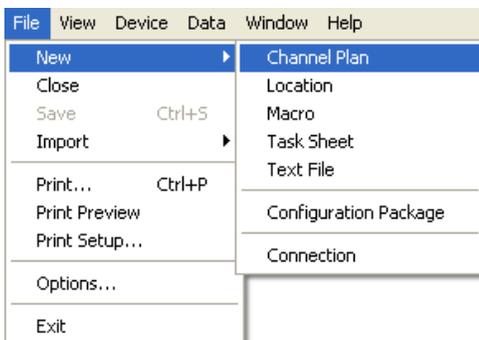
From the **File** menu, hover over **New**, and then select **Channel Plan**.

OR

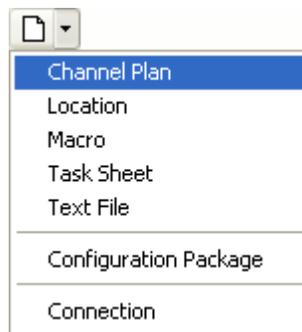
From the Toolbar click on the  button and then select **Channel Plan**.

OR

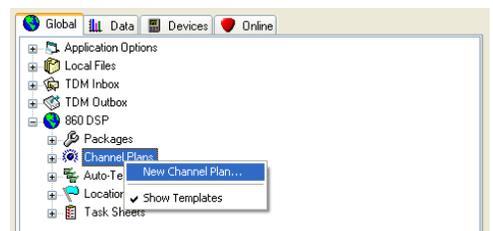
From the  Global tab, right-click on **Channel Plans**, and then select **New Channel Plan**.



File Menu



Toolbar



Global Tab

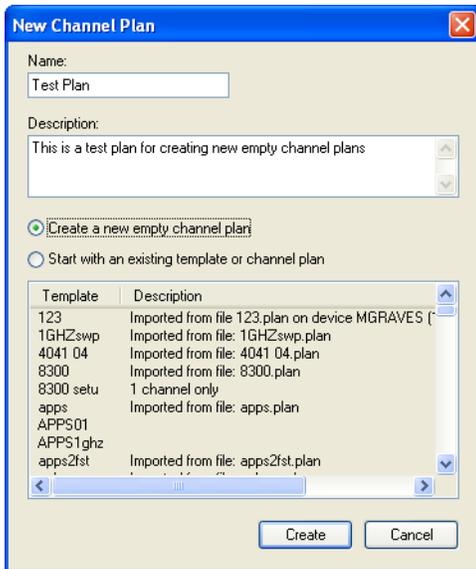
2. The **New Channel Plan** window will appear.
3. Enter the **Name** of the channel plan. This can be up to 9 alphanumeric characters.
4. Enter a **Description** of the channel plan. This can be up to 254 alphanumeric characters.

5. Perform one of the following steps to select the type of channel plan to create:

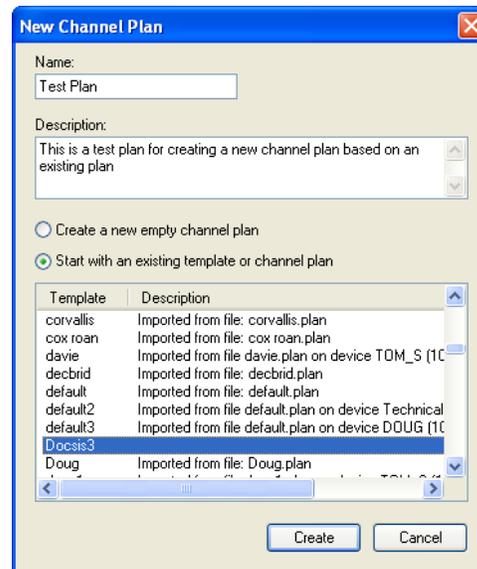
Create a new empty channel plan - Select this option to create a new channel plan with no information in it.

OR

Start with an existing template or channel plan - Select this option to create a new channel plan based on an existing channel plan. You must also select the name of the channel plan that you wish to replicate and revise from the list at the bottom of the **New Channel Plan** window.



Empty Channel Plan



Existing Channel Plan

- When you have completed the steps above, select the  button to create the channel plan, or select the  button to exit without creating a new channel plan.
- The new channel plan will be displayed.



In order to see the entire channel plan, you can hide the Navigator window by selecting the  button from the toolbar.



For more information on setting up the channels in the channel plan, see the following section.



After making changes to a channel plan, you must select the  button from the toolbar or Save from the File menu before closing the channel plan. Otherwise, if you try to close the channel plan before saving, WorkBench will prompt you to save the channel plan.

Channel Plan Settings

The following types of channels and tests can be included in a Channel Plan:

Type	Detail	Test Types
Custom NTSC PAL B, D, G, H, I, K, M & N SECAM B, D, G, H, I, K & L Single	(Normal)	Tilt Carrier-to-Noise Hum Depth of Modulation FM Deviation
	Sync Suppressed	
	Sync Suppressed – Drop Field	
	Sync Suppressed – Drop Vertical	
	Split Sync – No Suppression	
Digital	Annex A QPSK (USER)	Tilt MER BER Pulse
	Annex A 16 QAM (USER)	
	Annex A 32 QAM (USER)	
	Annex A 64 QAM (USER)	
	Annex A 128 QAM (USER)	
	Annex A 256 QAM (USER)	
	Annex A QPSK (USER)	
	Annex C 64 QAM (USER)	
	Annex B 64 QAM (DOCSIS)	
	Annex B 256 QAM (DOCSIS)	
	Annex A 64 QAM (EURODOCSIS)	
	Annex A 256 QAM (EURODOCSIS)	
	Annex D 8 VSB (ATSC)	
	Annex A 16 QAM (1.740 msps)	
	Annex A 16 QAM (3.480 msps)	
	Annex A 16 QAM (6.840 msps)	
	Annex A 64 QAM (1.740 msps)	
	Annex A 64 QAM (3.420 msps)	
	Annex A 64 QAM (6.890 msps)	
Annex A 64 QAM (6.925 msps)		
Annex A 256 QAM (6.925 msps)		

Channel Settings

You can modify the following fields for each channel in a channel plan:

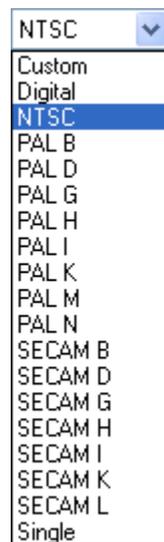
Vid/Ctr: Enter the carrier frequency of the channel in this field.

Type: Enter the type of channel in this field by performing one of the following steps:

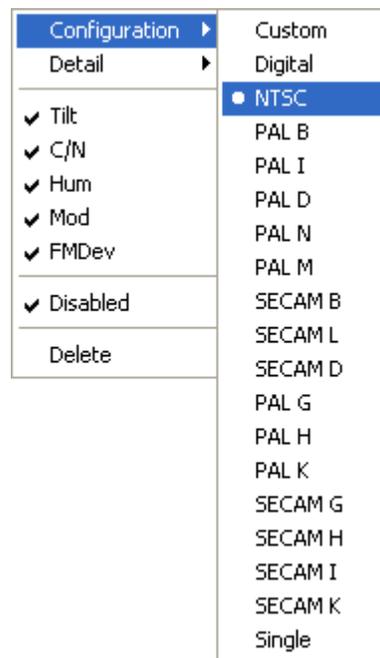
Select the channel you wish to modify and from the drop-down list select the channel type.

OR

Right-click on the channel you wish to modify, hover over **Configuration**, and then select the type from the list that appears.



Drop-Down List



Right-Click Menu



NOTE

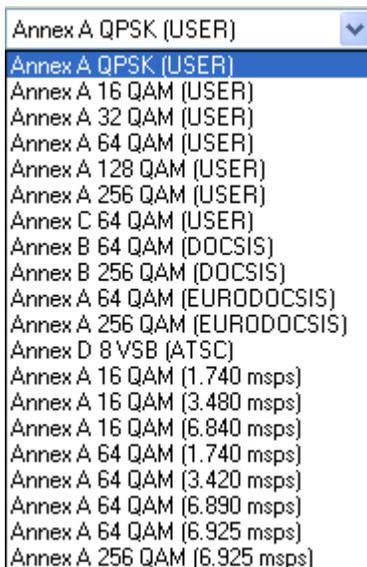
When digital channels are selected in the channel plan, the carrier frequency will default to the center frequency. Also, the label for the Vid/Ctr field will change to Video.

Detail: Enter the modulation details of the channel in this field by performing one of the following steps:

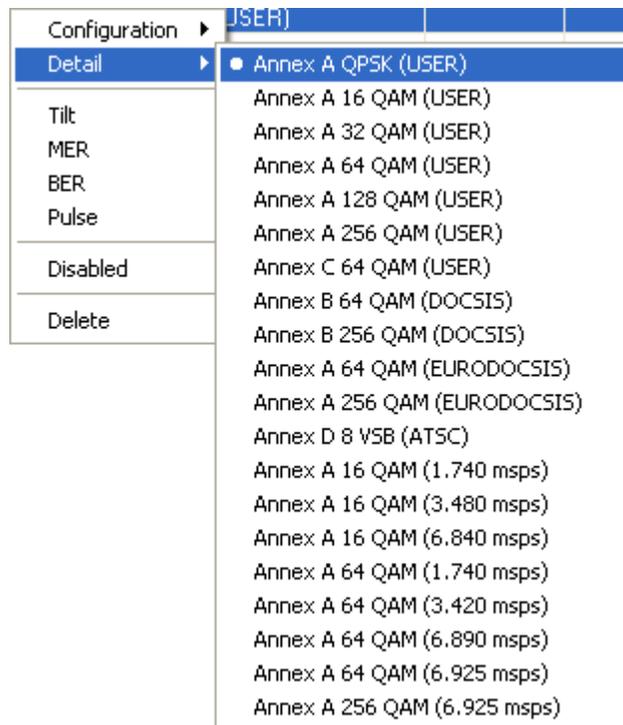
Select the channel you wish to modify and from the drop-down list select the modulation details.

OR

Right-click on the channel you wish to modify, hover over **Details**, and then select the modulation details from the list that appears.



Drop-Down List



Right-Click Menu

Aud/BW: Enter the audio frequency in this field by performing one of the following steps:

If **Type** is set to any analog channel type, the audio channel frequency is based on the modulation details of the channel and cannot be changed.

OR

If **Type** is set to **Digital**, enter a bandwidth between **2.00 MHz** and **8.00 MHz** in this field.

OR

If **Type** is set to **Custom**, enter a bandwidth between **5.00 MHz** and **1000.00 MHz** in this field.

OR

If **Type** is set to **Single**, this field is disabled.



NOTE

When digital channels are selected in the channel plan, the carrier frequency will default to the center frequency. Also, the label for the Aud/BW field will change to BW.

SAP/SR: Enter the auxiliary audio frequency of the channel in this field. If **Type** is set to **Single**, this field is disabled.

Channel: Enter the channel lineup number in this field.

Label: Enter the channel name in this field. This field allows upper and lower case alphanumeric characters as well as a variety of non-alphanumeric characters.



NOTE

You can enter another channel in the channel plan by pressing the Tab key on your keyboard or by clicking the first field in the next line.

Test Settings

Enable any of the tests shown below by performing one of the following steps:

Select the check-box in the corresponding channel plan column.

OR

Right-click on the channel you wish to modify, and then select the type of test to enable from the list that appears.

The following test are available in the channel plan:

Tilt: Select this field to include the selected channel in a system tilt measurement.

C/N: Select this field to enable Carrier-to-Noise measurements for analog channels.

Hum: Select this field to enable Hum measurements for analog channels.

Mod: Select this field to enable Depth of Modulation measurements for analog channels.

MER: Select this field to enable MER measurements for digital channels.

FM Dev: Select this field to enable FM Deviation measurements for analog channels.

BER: Select this field to enable BER measurements for digital channels.

Pulse: Select this field to enable an 8300 FST pulse channel for the digital channel.

Disabling Channels

To disable a channel in the channel plan, select the corresponding check-box in the **Disable** column.



CAUTION

After making changes to a channel plan, you must select the  button from the toolbar or Save from the File menu before closing the channel plan. Otherwise, if you try to close the channel plan before saving, WorkBench will prompt you to save the channel plan.

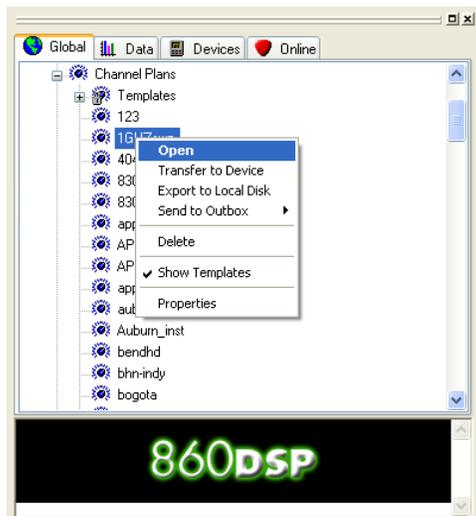
Opening and Closing Channel Plans

You can use the WorkBench software to open any of the included channel plan templates or any channel plans that you have created. To open any channel plan, perform one of the following actions:

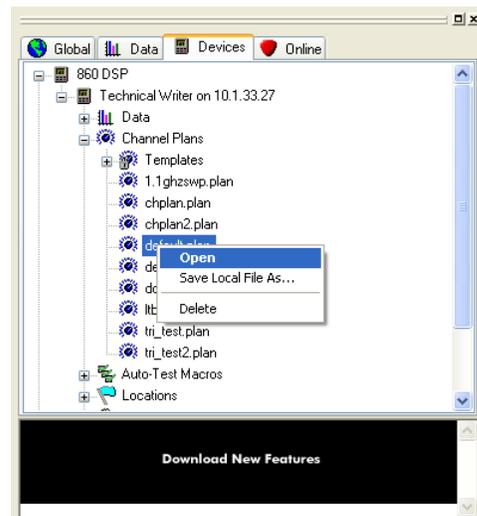
From the  Global tab, right-click on the channel plan(s) to open, and then select **Open**.

OR

From the  Devices tab, right-click on the channel plan(s) to open, and then select **Open**.



Global Tab



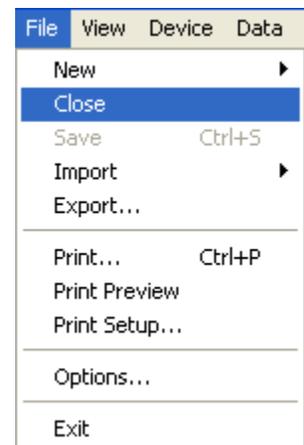
Devices Tab

To close any channel plan that is open, perform one of the following actions:

From the **File** menu, select **Close**.

OR

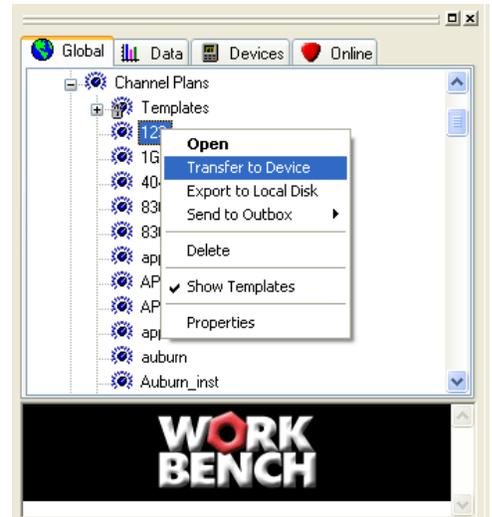
Select the gray "X" in the upper right corner of the **Data** window.



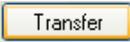
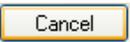
Transferring Channel Plans to Devices

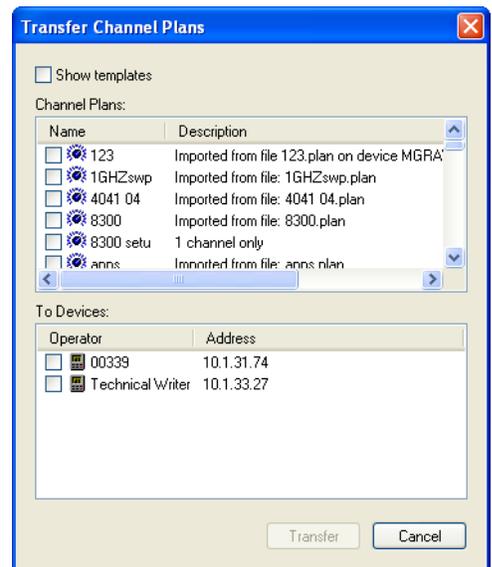
You can use the WorkBench software to transfer any channel plan templates or channel plan to a connected device. To transfer any channel plan, perform the following actions:

1. From the  Global tab, right-click on the desired channel plan(s) to transfer, and then select **Transfer to Device**.



If only one device is connected, the channel plan will automatically be transferred to the device without any other user interaction.

2. If more than one device is connected the **Transfer Channel Plans** window will appear.
3. Select the channel plans you wish to send.
4. Select the device(s) to which you wish to send the selected channel plans.
5. Select the  **Transfer** button to transfer the channel plans or select the  **Cancel** button to exit without transferring.



Saving Channel Plans to a Local File

You can save channel plans to your local drive to allow you to move data from one WorkBench software installation to other WorkBench software installations within your company.

Perform the following steps to save a local copy of any of the channel plans described earlier in this chapter:

1. Perform one of the following steps to select the channel plan(s) to save:

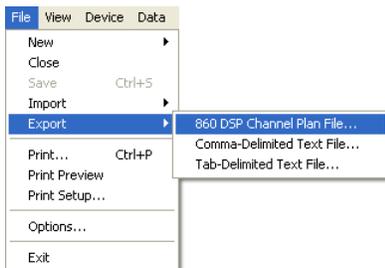
After opening a channel plan, from the **File** menu hover over **Export**, and then select **860 DSP Channel Plan File**.

OR

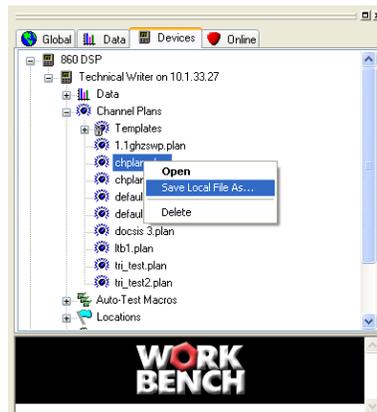
After connecting to a device, from the **Devices** tab, right-click on the desired channel plan(s) to save, and then select **Save Local File As**.

OR

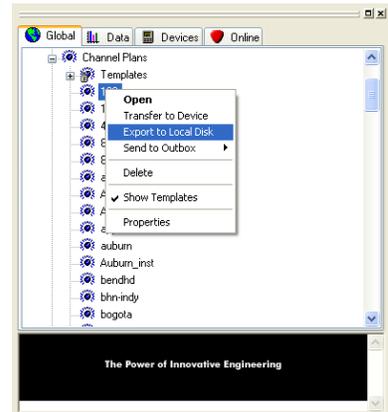
From the **Global** tab, right-click on the desired channel plan(s) to save, and then select **Export to Local Disk**.



File Menu



Devices Tab



Global Tab



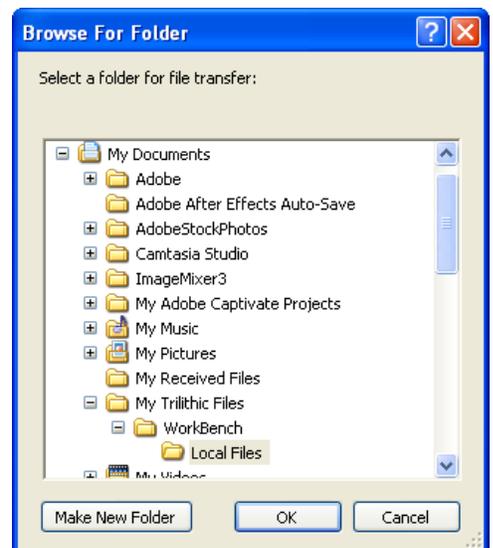
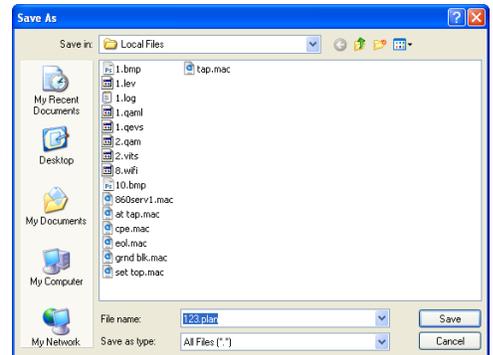
To select more than one channel plan at once for batch processing, select the first channel plan that you would like to save, and then hold the CTRL key on your keyboard while using your mouse to select the other channel plans.

2. Perform one of the following steps to save the local channel plan file(s):

If you selected only one file to save, the **Save** window will appear. From this window choose the location and name of the channel plan to save and then select the  button.

OR

If you selected more than one file to save, the **Browse For Folder** window will appear. From this window choose the location to save the channel plans to and then select the  button.

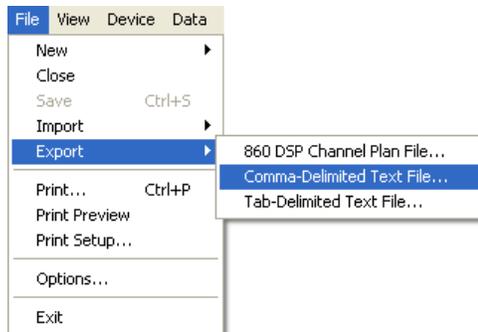


Exporting Channel Plans to a Text File

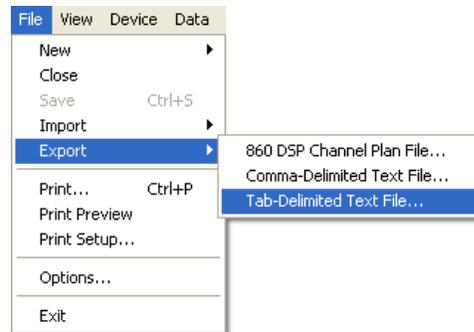
You can export channel plans to text files for use outside of WorkBench.

Perform the following steps to export any of the channel plans described earlier in this chapter:

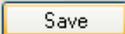
1. Open the channel plan that you wish to export.
2. From the **File** menu hover over **Export**, and then select either of the following options **Comma-Delimited Text File** or **Tab-Delimited Text File**.

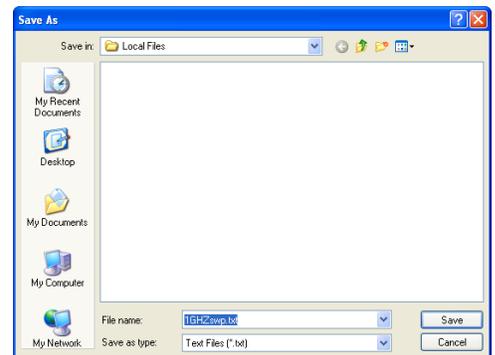


Comma-Delimited



Tab-Delimited

3. The **Save As** window will appear. From this window choose the location and name of the channel plan to save and then select the  button.

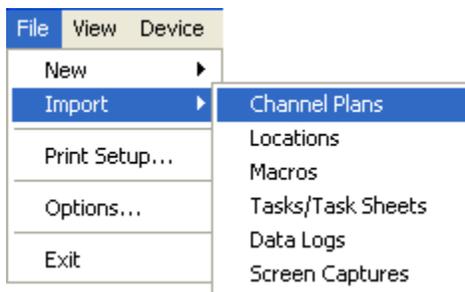


Importing Channel Plans from a Local File

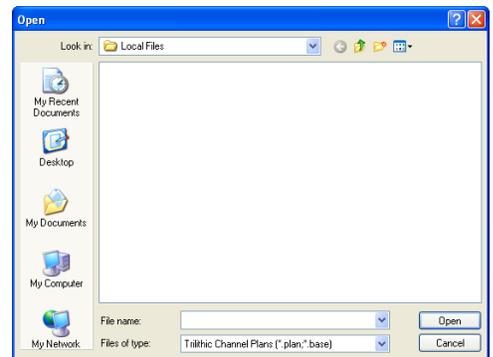
You can import channel plans to allow you to move data from one WorkBench software installation to other WorkBench software installations within your company.

Perform the following steps to import any of the channel plans described earlier in this chapter:

1. From the **File** menu hover over **Import**, and then select **Channel Plans**.



2. The **Open** window will appear. From this window choose which channel plan(s) to import and then select the  button.



Deleting Channel Plans

You can delete channel plans that are no longer needed.

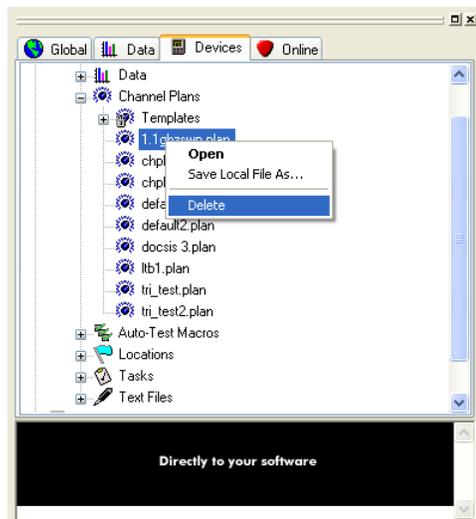
Perform the following steps to delete any of the channel plans described earlier in this chapter:

1. Perform one of the following steps to select the channel plan(s) to delete:

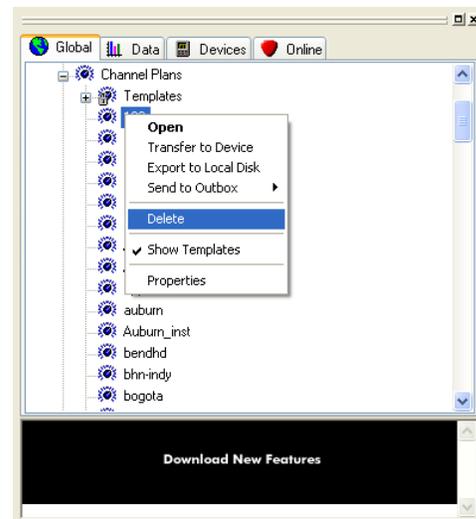
From the  **Devices** tab, right-click on the desired channel plan(s) to delete, and then select **Delete**.

OR

From the  **Global** tab, right-click on the desired channel plan(s) to delete, and then select **Delete**.



Devices Tab



Global Tab



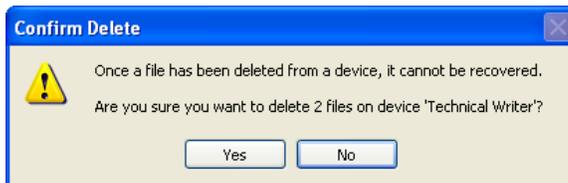
To select more than one channel plan at once for batch processing, select the first channel plan that you would like to delete, and then hold the CTRL key on your keyboard while using your mouse to select the other channel plans.

2. The **Confirm Delete** window will appear based on how you choose to delete the channel plan(s) as shown below:

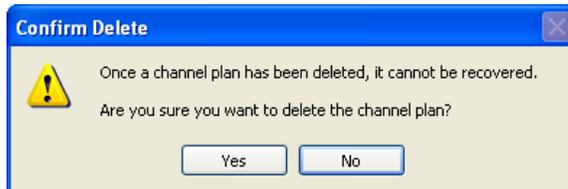
- Devices Tab - Single File Selected



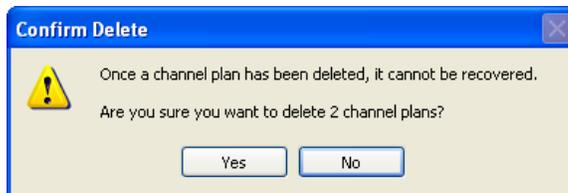
- Devices Tab - Multiple Files Selected

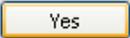
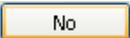


- Global Tab - Single File Selected



- Global Tab - Multiple Files Selected



3. From this window you will confirm whether to delete the channel plan(s) by selecting the  button, or you can exit without deleting the channel plan(s) by selecting the  button.



CAUTION *Be very careful when deleting files. Once a file has been deleted the file cannot be recovered.*

Channel Plan Properties

After a channel plan has been opened, the Channel Plan Properties can be displayed by selecting the  button from the toolbar at the top of the Data window or from the  Global tab, right-click the Location, and then select **Properties**. An example of the **Channel Plan Properties** window is shown to the right.

The fields displayed in the **Channel Plan Properties** window are as follows:

Name: Displays the file name of the channel plan.

Template: This check-box will be checked when opening a template file

Description: Displays the file name, device name, and IP address of the device from which the channel plan was retrieved or the name of the channel plan that was imported.

Last Modified: Displays the date that the channel plan was last modified.

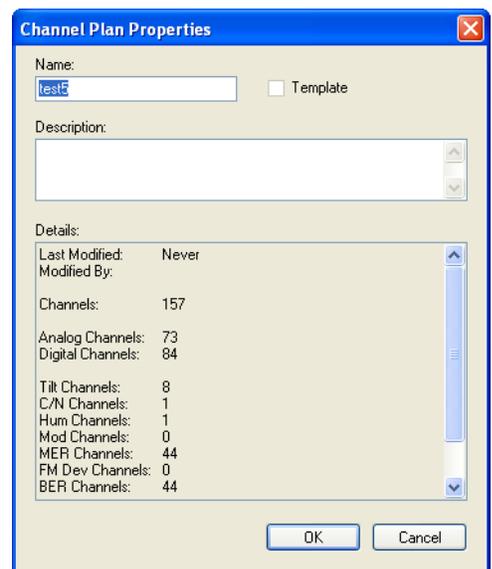
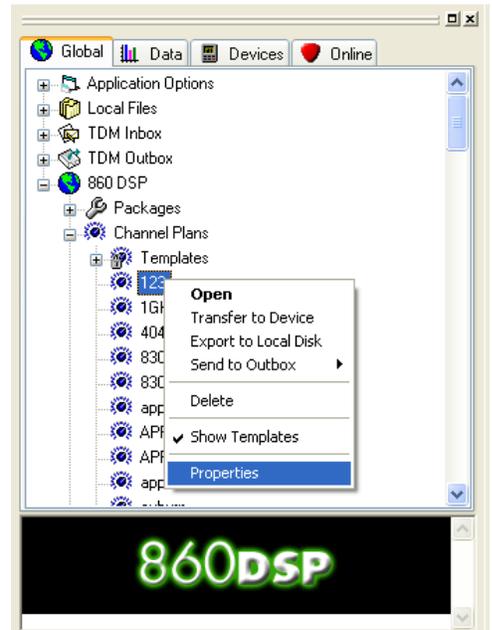
Modified By: Displays the name of the user that last modified the channel plan.

Channels: Displays the total number of channels in the channel plan.

Analog Channels: Displays the total number of analog channels in the channel plan.

Digital Channels: Displays the total number of digital channels in the channel plan.

Tilt Channels: Displays the total number of tilt test channels in the channel plan.



C/N Channels: Displays the total number of C/N test channels in the channel plan.

Hum Channels: Displays the total number of Hum test channels in the channel plan.

Mod Channels: Displays the total number of Mod test channels in the channel plan.

MER Channels: Displays the total number of MER test channels in the channel plan.

FM Dev Channels: Displays the total number of FM Dev test channels in the channel plan.

BER Channels: Displays the total number of BER test channels in the channel plan.

Pulse Channels: Displays the total number of 8300 FST Pulse channels in the channel plan.

Disabled Channels: Displays the total number of disabled channels in the channel plan.

Printing Channel Plans

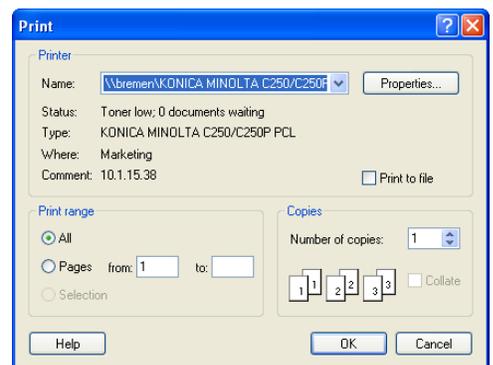
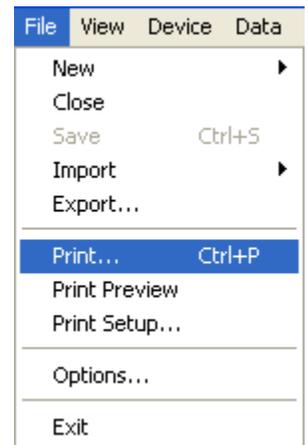


Before printing you may want to setup your printer by first selecting *Printer Setup...* from the File Menu. WorkBench will use the settings of your default Windows printer if you choose to skip this step.

Printing Without Preview

To print any channel plan that is open without a preview, perform the following steps:

1. Press the Ctrl+P keys on your keyboard or from the **File** menu, select **Print**.
2. The **Print** window will appear.
3. If you wish to change any printer settings do so at this point.
4. Once you are satisfied with you printer settings, select the **OK** button to print the document or select the **Cancel** button to exit without printing.



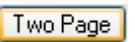
Printing With Preview

To print any channel plan that is open with a preview, perform the following steps:

1. From the **File** menu, select **Print Preview**.
2. A new print preview window will appear in the **Data** window. You can then use the buttons at the top of the print preview screen as follows:

 - Use this button to print the document.

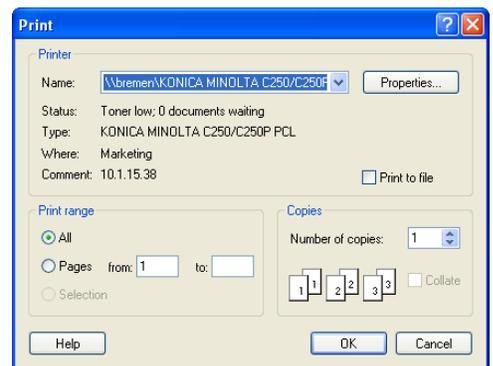
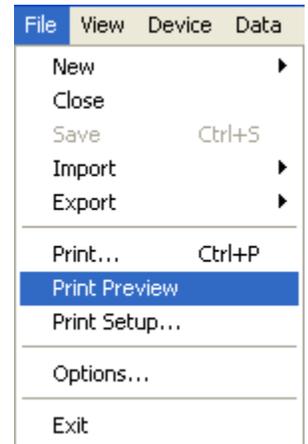
 or  - Use these buttons to scroll through multiple page channel plans.

 or  - Use these buttons to change the view from one page to two pages.

 or  - Use these buttons to zoom in and out on the document.

 - Use this button to close without printing.

3. After you have selected the  button, the **Print** window will appear.
4. If you wish to change any printer settings do so at this point.
5. Once you are satisfied with you printer settings, select the  button to print the document or select the  button to exit without printing.



Chapter 3

Locations

Overview

This chapter shows you how to create and maintain locations.

A location identifies a service area and the specific feeder, power, and tolerances. You will likely have a variety of locations for your 860 DSP or 860 DSPi, depending on the areas being served and the equipment options that serve them.

You can create a new location or create a location from an existing location.

Creating a Location

To create a location, perform the following steps:

1. Perform one of the following steps to create a new location:

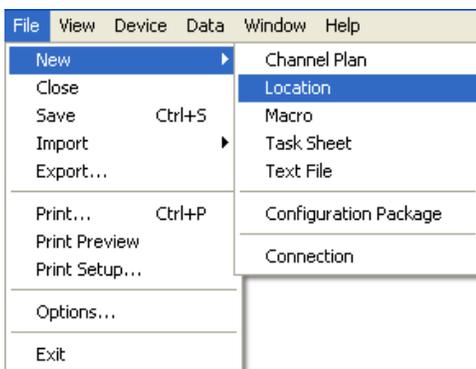
From the **File** menu, hover over **New**, and then select **Location**.

OR

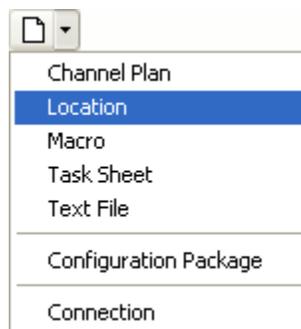
From the Toolbar click on the  button and then select **Location**.

OR

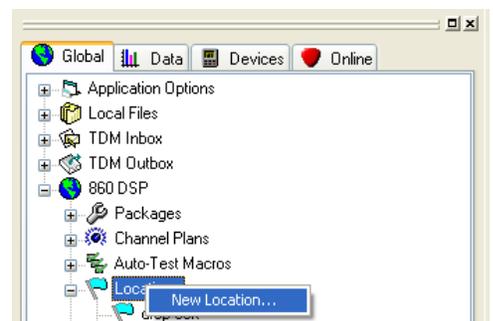
From the  Global tab, right-click on **Locations**, and then select **New Location**.



File Menu



Toolbar



Global Tab

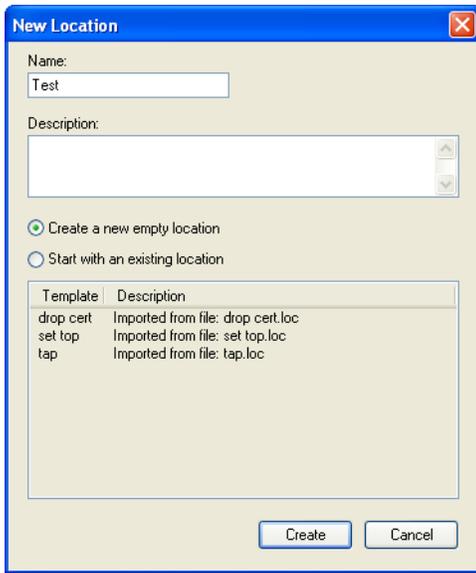
2. The **New Location** window will appear.
3. Enter the **Name** of the location. This can be up to 9 alphanumeric characters.
4. Enter a **Description** of the location. This can be up to 254 alphanumeric characters.

5. Perform one of the following steps to select the type of location to create:

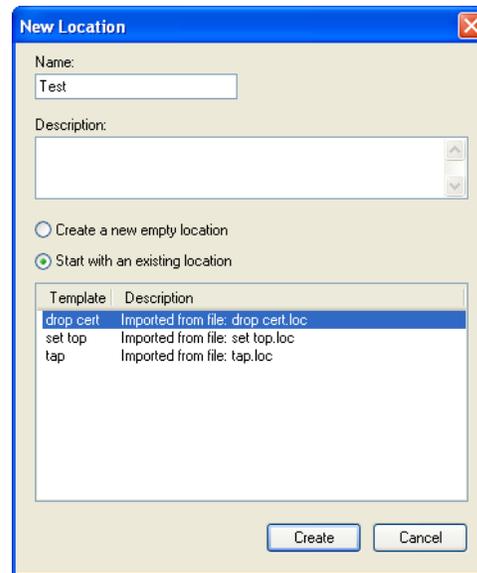
Create a new empty location - Select this option to create a new location starting with no information in it.

OR

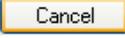
Start with an existing location - Select this option to create a new location by modifying the settings of an existing location. You must also select the name of the location that you wish to replicate and revise from the list at the bottom of the **New Location** window.



Empty Location



Existing Location

- When you have completed the steps above, select the  button to create the location, or select the  button to exit without creating a new location.
- The new location will be displayed.



For more information on setting up the location, see the following section.



After making changes to a location, you must select the  button from the toolbar or Save from the File menu before closing the location. Otherwise, if you try to close the location before saving, WorkBench will prompt you to save the location.

Location Settings

The following types of location information can be included in a location:

Location Settings

You can modify the following fields to describe the location:

Type: Select a location type of “Headend”, “Trunk Amp”, “Line Extender”, “Fiber Node”, “Field Test”, or “Other” from the drop-down list.

Area: Enter the type of area that describes the location.

Amplifier ID: Enter the amplifier ID of the location.

Configuration Settings

You can modify the following fields to configure the settings of the location:

Power: Enter a power type of **In**, **Out**, or **Thru** at this location.

Voltage: Enter a voltage level of **Low**, **Medium**, or **High** at this location.

Feeder: Enter the feeder number (**1 - 9**) at this location using the up or down arrows to the right of this field.

Reverse Pad: Enter the level in **dB (0 - 99)** of the Reverse Pad at this location using the up or down arrows to the right of this field.

Reverse EQ: Enter the level in **dB (0 - 99)** of the Reverse EQ at this location using the up or down arrows to the right of this field.

Forward Pad: Enter the level in **dB (0 - 99)** of the Forward Pad at this location using the up or down arrows to the right of this field.

Forward EQ: Enter the level in **dB (0 - 99)** of the Forward EQ at this location using the up or down arrows to the right of this field.

Trunk Termination: Select this check-box to indicate that this location is at a trunk termination.



After making changes to a location, you must select the  button from the toolbar or Save from the File menu before closing the location. Otherwise, if you try to close the location before saving, WorkBench will prompt you to save the location.

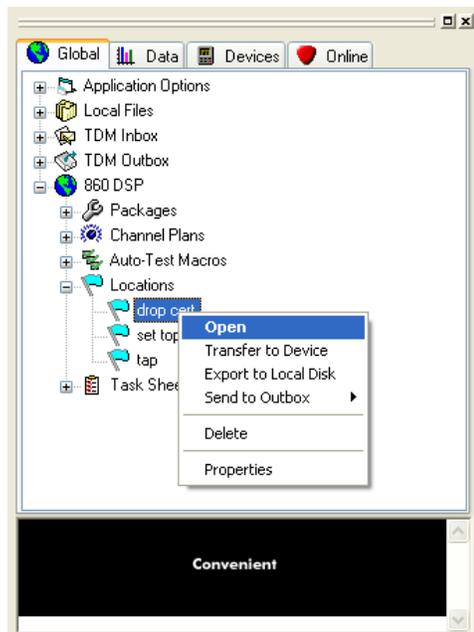
Opening and Closing Locations

You can use the WorkBench software to open any of the included location templates or any locations that you have created. To open any location, perform one of the following actions:

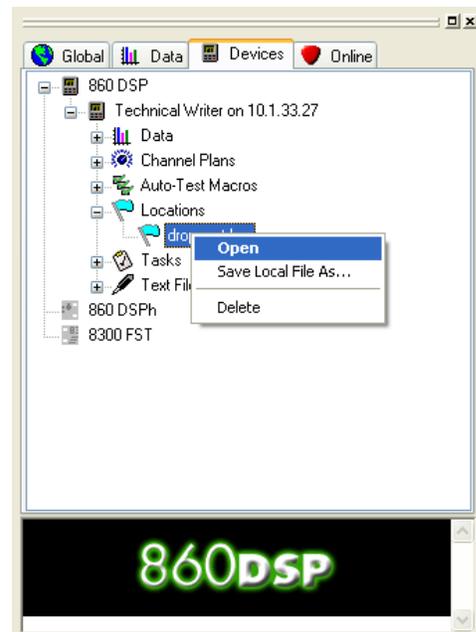
From the  **Global** tab, right-click on the desired location(s) to open, and then select **Open**.

OR

From the  **Devices** tab, right-click on the desired location(s) to open, and then select **Open**.



Global Tab



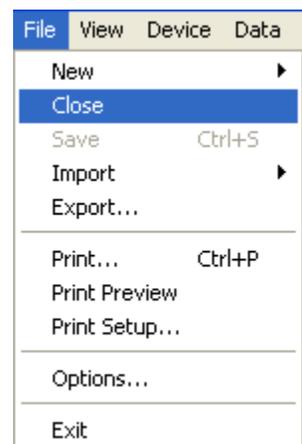
Devices Tab

To close any location that is open, perform one of the following actions:

From the **File** menu, select **Close**.

OR

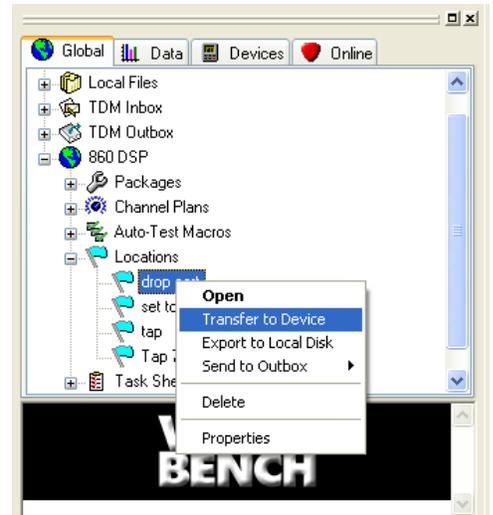
Select the gray "X" in the upper right corner of the **Data** window.



Transferring Locations to Devices

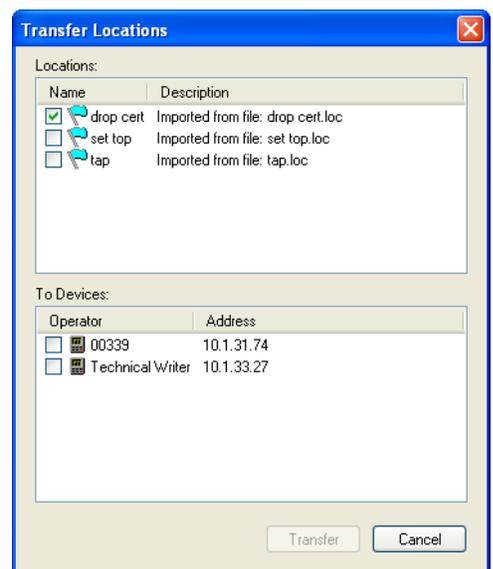
You can use the WorkBench software to transfer any location templates or locations to a connected device. To transfer any location, perform the following actions:

1. From the  Global tab, right-click on the desired location(s) to transfer, and then select **Transfer to Device**.



If only one device is connected, the location will automatically be transferred to the device without any other user interaction.

2. If more than one device is connected the **Transfer Locations** window will appear.
3. Select the locations you wish to send.
4. Select the device(s) to which you wish to send the selected locations.
5. Select the  button to transfer the locations or select the  button to exit without transferring.



Saving Locations to a Local File

You can save locations to your local drive to allow you to move data from one WorkBench software installation to other WorkBench software installations within your company.

Perform the following steps to save a local copy of any of the locations described earlier in this chapter:

1. Perform one of the following steps to select the location(s) to save:

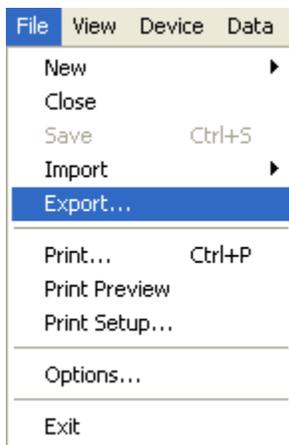
After opening a location, from the **File** menu select **Export**.

OR

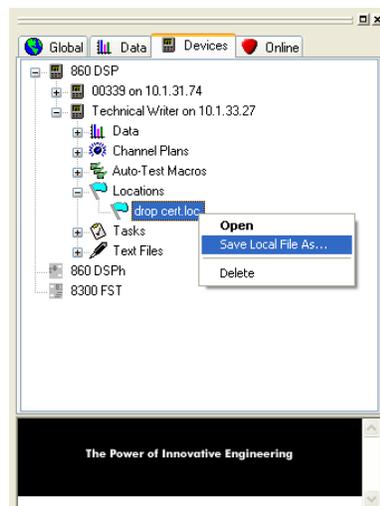
After connecting to a device, from the **Devices** tab, right-click on the desired location(s) to save, and then select **Save Local File As**.

OR

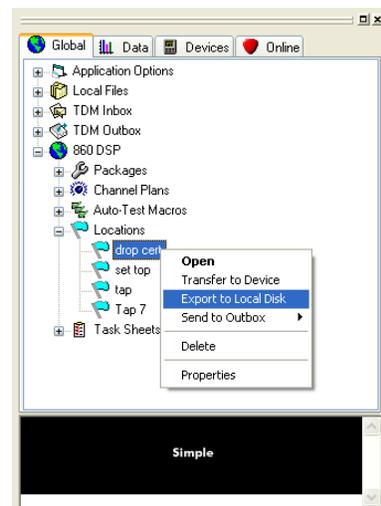
From the **Global** tab, right-click on the desired location(s) to save, and then select **Export to Local Disk**.



File Menu



Devices Tab

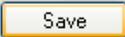


Global Tab



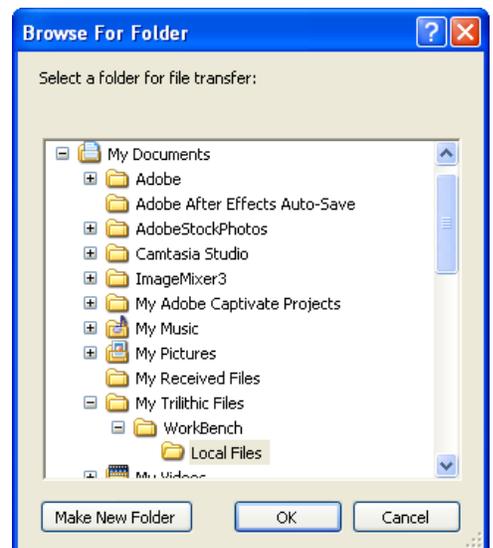
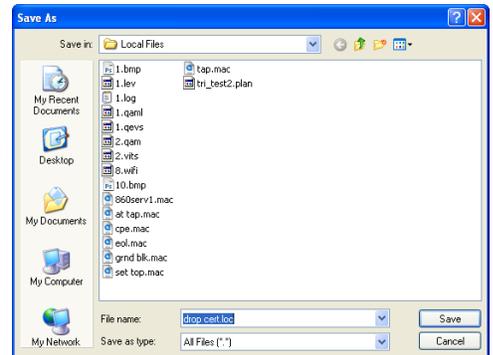
To select more than one location at once for batch processing, select the first location that you would like to save, and then hold the CTRL key on your keyboard while using your mouse to select the other location.

2. Perform one of the following steps to save the local location file(s):

If you selected only one file to save, The **Save** window will appear. From this window you will choose the location and name of the location to save and then select the  button.

OR

If you selected more than one file to save, The **Browse For Folder** window will appear. From this window you will choose the location to save the locations to and then select the  button.

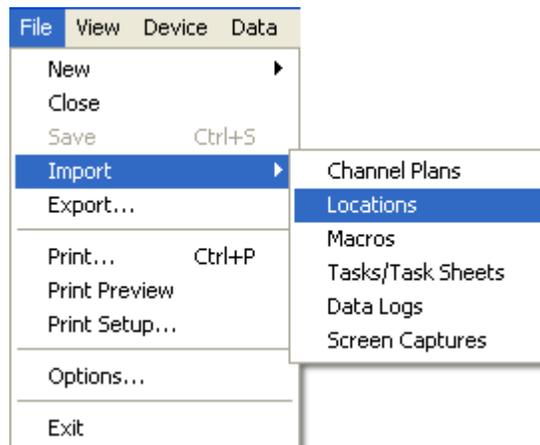


Importing Locations from a Local File

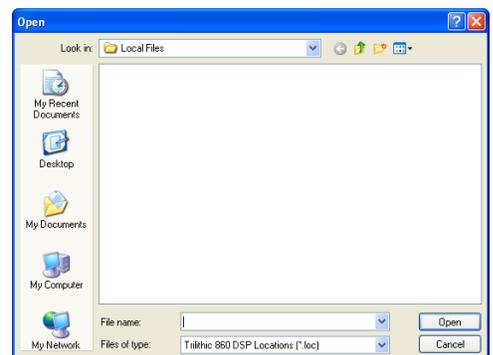
You can import locations to allow you to move data from one WorkBench software installation to other WorkBench software installations within your company.

Perform the following steps to import any of the locations described earlier in this chapter:

1. From the **File** menu hover over **Import**, and then select **Locations**.



2. The **Open** window will appear. From this window you will choose which location(s) to import and then select the **Open** button.



Deleting Locations

You can delete locations that are no longer needed.

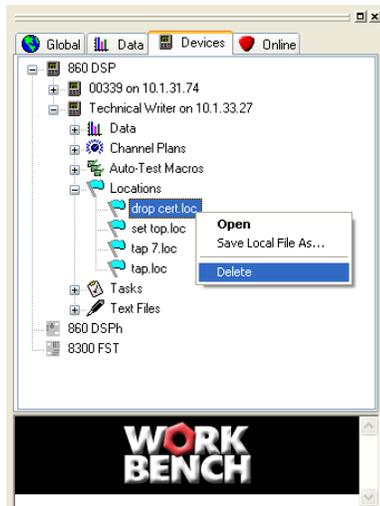
Perform the following steps to delete any of the locations described earlier in this chapter:

1. Perform one of the following steps to select the location(s) to delete:

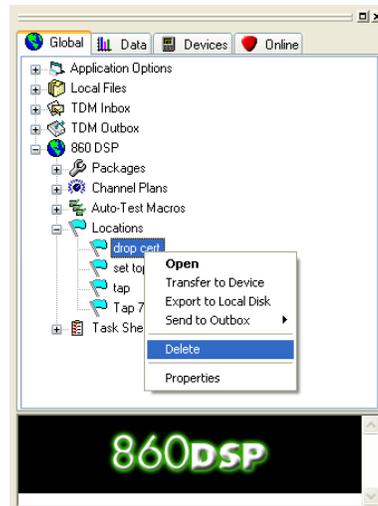
From the  **Devices** tab, right-click on the desired location(s) to delete, and then select **Delete**.

OR

From the  **Global** tab, right-click on the desired location(s) to delete, and then select **Delete**.



Devices Tab



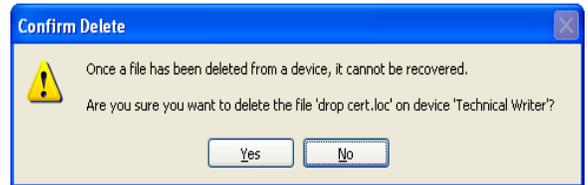
Global Tab



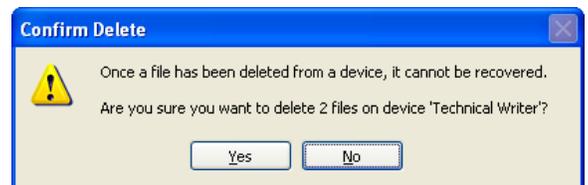
To select more than one location at once for batch processing, select the first location that you would like to delete, and then hold the CTRL key on your keyboard while using your mouse to select the other location.

2. The **Confirm Delete** window will appear based on how you choose to delete the location(s) as shown below:

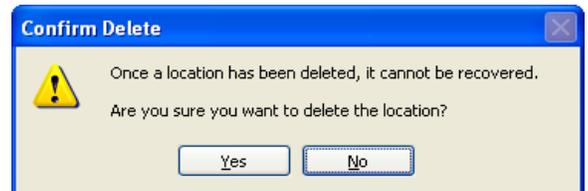
- Devices Tab - Single File Selected



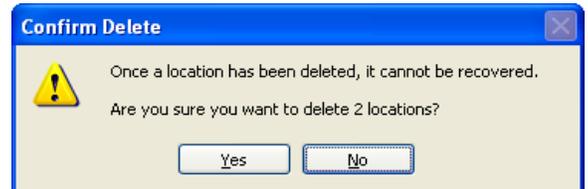
- Devices Tab - Multiple Files Selected

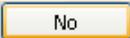


- Global Tab - Single File Selected



- Global Tab - Multiple Files Selected



3. From this window you will confirm whether to delete the location(s) by selecting the  button, or you can exit without deleting the location(s) by selecting the  button.



CAUTION *Be very careful when deleting files. Once a file has been deleted the file cannot be recovered.*

Location Properties

After a location has been opened, the Location Properties can be displayed by selecting the  button from the toolbar at the top of the **Data** window or from the  Global tab, right-click the Location, and then select **Properties**. An example of the **Location Properties** window is shown to the right.

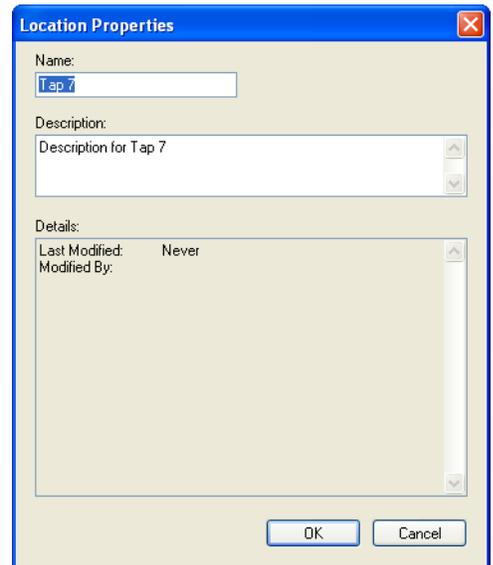
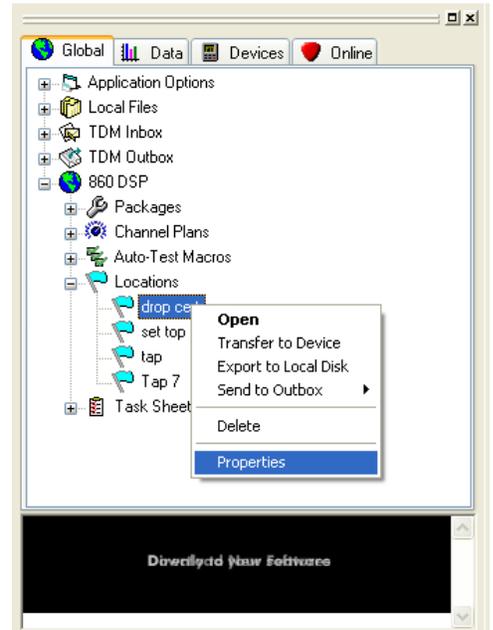
The fields displayed in the **Location Properties** window are as follows:

Name: Displays the file name of the location.

Description: Displays the description given to the location when created.

Last Modified: Displays the date that the location was last modified.

Modified By: Displays the name of the user that last modified the location.



Printing Locations



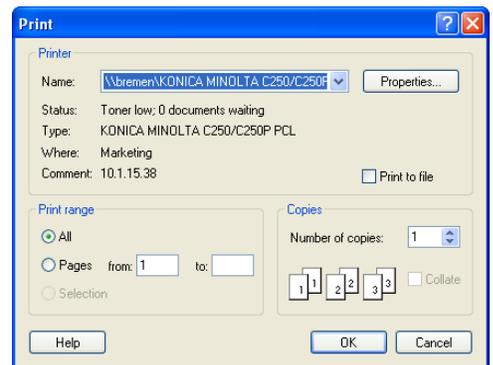
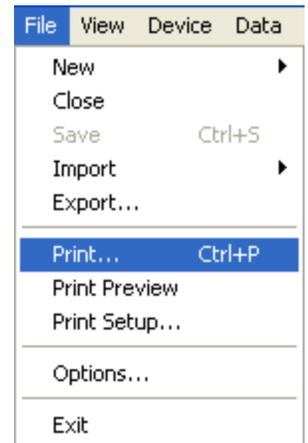
NOTE

Before printing you may want to setup your printer by first selecting **Printer Setup...** from the **File** Menu. WorkBench will use the settings of your default Windows printer if you choose to skip this step.

Printing Without Preview

To print any location that is open without a preview, perform the following steps:

1. Press the Ctrl+P keys on your keyboard or from the **File** menu, select **Print**.
2. The **Print** window will appear.
3. If you wish to change any printer settings do so at this point.
4. Once you are satisfied with the printer settings, select the **OK** button to print the document or select the **Cancel** button to exit without printing.



Printing With Preview

To print any location that is open with a preview, perform the following steps:

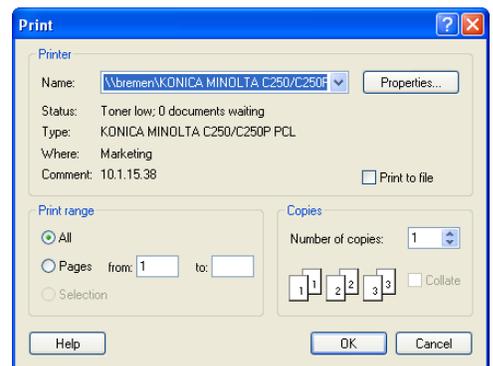
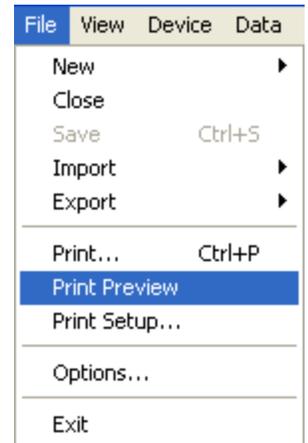
1. From the **File** menu, select **Print Preview**.
2. A new print preview window will appear in the **Data** window. You can then use the buttons at the top of the print preview screen as follows:

 - Use this button to print the document.

 or  - Use these buttons to zoom in and out on the document.

 - Use this button to close without printing.

3. After you have selected the  button, the **Print** window will appear.
4. If you wish to change any printer settings do so at this point.
5. Once you are satisfied with you printer settings, select the  button to print the document or select the  button to exit without printing.



Chapter 4

Auto-Test Macros

Overview

This chapter shows you how to create and maintain auto-test macros.

An auto-test macro is a pre-programmed set of tests and ranges. You will likely have a variety of macros for your 860 DSP or 860 DSPi, depending on the number and types of tests you need to run in the field.

You can create a new auto-test macro or create an auto-test macro from an existing auto-test macro.

Creating a Macro

To create a macro, perform the following steps:

1. Perform one of the following steps to create a new macro:

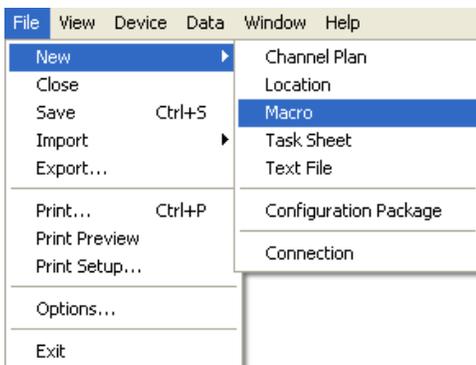
From the **File** menu, hover over **New**, and then select **Macro**.

OR

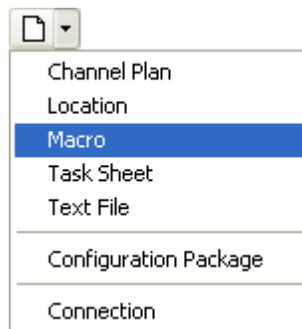
From the Toolbar click on the  button and then select **Macro**.

OR

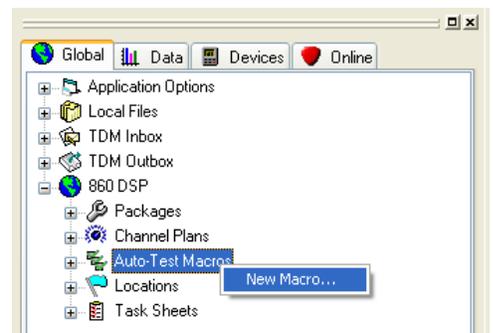
From the  Global tab, right-click on **Auto-Test Macros**, and then select **New Macro**.



File Menu



Toolbar



Global Tab

2. The **New Macro** window will appear.
3. Enter the **Name** of the macro. This can be up to 9 alphanumeric characters.
4. Enter a **Description** of the macro. This can be up to 254 alphanumeric characters.

5. Perform one of the following steps to select the type of macro to create:

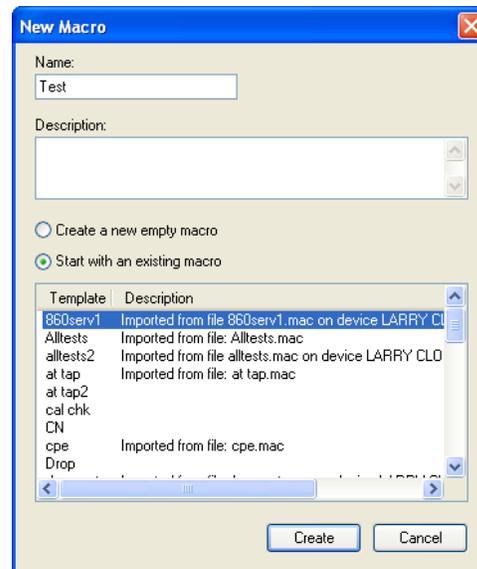
Create a new empty macro - Select this option to create a new macro starting with no information in it.

OR

Start with an existing macro - Select this option to create a new macro based on an existing macro. You must also select the name of the macro that you wish to replicate and revise from the list at the bottom of the **New Macro** window.



Empty Macro



Existing Macro

6. Once you are satisfied with you macro settings, select the **Create** button to create the macro or select the **Cancel** button to exit without creating the macro.

 **CAUTION**

After making changes to a macro, you must select the  button from the toolbar or Save from the File menu before closing the macro. Otherwise, if you try to close the macro before saving, WorkBench will prompt you to save the macro.

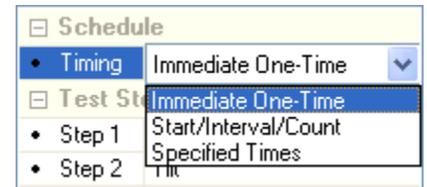
Macro Schedule Settings

You can select the type of schedule to use when executing the macro by selecting one of the following options from the **Timing** drop-down list:

Immediate One-Time: This creates a macro that is designed to be run immediately but only one time.

Start/Interval/Count: This creates a macro that is designed to be run multiple times starting on a specific date and time with a time interval between tests.

Specified Times: This creates a macro that is designed to be run up to four different times at four different dates and times.



When the Timing field is set to Start/Interval/Count or Specified Times, you will be prompted to enter the date, time, and/or test interval time when executing the macro on the 860 DSP.

Macro Test Steps Settings

You can select the type of test to include when executing the macro by selecting one of the following options from the **Step #** drop-down list:

Scan	Ping
Tilt	Throughput
Hum	Spectrum
Carrier to Noise	VoIP RTP
Depth of Modulation	Modem Stats
MER/BER	Leakage
QAM + Constellation	



After making changes to a macro, you must select the  button from the toolbar or Save from the File menu before closing the macro. Otherwise, if you try to close the macro before saving, WorkBench will prompt you to save the macro.

Scan Settings

You can modify the following fields to configure the settings of the scan test:

Check All Channels (Scan)

First, you must select the channel plan to use for this test from the **Channel Plan** drop-down list.

Limits

Adjust the value of any of the following fields by entering the value, or by selecting the up or down arrow to the right of the field.

Minimum Video Level: Enter a minimum video level in **dBmV**.

Maximum Video Level: Enter a maximum video level in **dBmV**.

Minimum Video/Audio Delta: Enter a minimum video/audio delta in **dB**.

Maximum Video/Audio Delta: Enter a maximum video/audio delta in **dB**.

Minimum Digital Level: Enter a minimum digital level in **dBmV**.

Maximum Digital Level: Enter a maximum digital level in **dBmV**.

Maximum Video Delta: Enter a maximum video delta in **dB**.

Maximum Adjacent Video Delta: Enter a maximum adjacent video delta in **dB**.

☐ Step 1 - Check All Channels (Scan)	
• Channel Plan	-- Active Channel Plan --
☐ Limits	
• Minimum Video Level	0 dBmV
• Maximum Video Level	0 dBmV
• Minimum Video/Audio Delta	0 dB
• Maximum Video/Audio Delta	0 dB
• Minimum Digital Level	0 dBmV
• Maximum Digital Level	0 dBmV
• Maximum Video Delta	0 dB
• Maximum Adjacent Video Delta	0 dB

Tilt Settings

You can modify the following fields to configure the settings of the tilt test:

Check Tilt

First, you must select the channel plan to use for this test from the **Channel Plan** drop-down list.

☐ Step 2 - Check Tilt	
• Channel Plan	-- Active Channel Plan --
☐ Limits	
• Minimum Tilt	0 dB
• Maximum Tilt	0 dB

Limits

Adjust the value of any of the following fields by entering the value, or by selecting the up or down arrow to the right of the field.

Minimum Tilt: Enter a minimum tilt level in **dB**.

Maximum Tilt: Enter a maximum tilt level in **dB**.

Hum Settings

You can modify the following fields to configure the settings of the hum test:

Check Hum

First, you must select the channel plan to use for this test from the **Channel Plan** drop-down list.

☐ Step 3 - Check Hum	
• Channel Plan	-- Active Channel Plan --
☐ Limits	
• Maximum Hum	0 %
☐ Parameters	
• Hum Type	50/60 Hz Value

Limits

Enter the value of the Hum % in

Maximum Hum field by entering the value, or by selecting the up or down arrow to the right of the field.

Parameters

Select a hum type of “50/60 Hz Value”, “100/120 Hz Value”, “< 1 kHz Value” from the **Hum Type** drop-down list.

Carrier to Noise Settings

You can modify the following fields to configure the settings of the Carrier to Noise test:

Check Carrier to Noise

First, you must select the channel plan to use for this test from the **Channel Plan** drop-down list.

Step 4 - Check Carrier to Noise	
• Channel Plan	-- Active Channel Plan --
Limits	
• Minimum Carrier to Noise	10 dB

Limits

Enter the value of the minimum carrier to noise level in **dB** by entering the value directly, or by selecting the up or down arrow to the right of the field.

Depth of Modulation Settings

You can modify the following fields to configure the settings of the Depth of Modulation test:

Check Depth of Modulation

First, you must select the channel plan to use for this test from the **Channel Plan** drop-down list.

Step 5 - Check Depth of Modulation	
• Channel Plan	-- Active Channel Plan --
Limits	
• Minimum Depth of Modulation	0 %
• Maximum Depth of Modulation	0 %

Limits

Adjust the value of any of the following fields by entering the value directly, or by selecting the up or down arrow to the right of the field.

Minimum Depth of Modulation: Enter a minimum depth of modulation in %.

Maximum Depth of Modulation: Enter a maximum depth of modulation in %.

MER/BER Settings

You can modify the following fields to configure the settings of the MER/BER test:

Check MER/BER

First, you must select the channel plan to use for this test from the **Channel Plan** drop-down list.

Limits

Adjust the value of any of the following fields by entering the value directly, or by selecting the up or down arrow to the right of the field.

Minimum Digital Level: Enter a minimum digital level in **dBmV**.

Maximum Digital Level: Enter a maximum digital level in **dBmV**.

Minimum Digital MER: Enter a minimum digital MER in **dB**.

Maximum Digital EVM: Enter a maximum digital EVM in **%**.

Maximum Digital Pre BER: Enter a maximum digital pre BER.

Maximum Digital Post BER: Enter a maximum digital post BER.

☐ Step 1 - Check All Channels (Scan)	
• Channel Plan	-- Active Channel Plan --
☐ Limits	
• Minimum Video Level	0 dBmV
• Maximum Video Level	0 dBmV
• Minimum Video/Audio Delta	0 dB
• Maximum Video/Audio Delta	0 dB
• Minimum Digital Level	0 dBmV
• Maximum Digital Level	0 dBmV
• Maximum Video Delta	0 dB
• Maximum Adjacent Video Delta	0 dB



NOTE

All of these limits except Maximum Pre/Post BER can also be entered directly, as an alternative to using the up/down arrow to adjust the values.

QAM + Constellation Settings

You can modify the following fields to configure the settings of the QAM + Constellation test:

Check QAM + Constellation

First, you must select the channel plan to use for this test from the **Channel Plan** drop-down list.

Limits

Adjust the value of any of the following fields by selecting the up or down arrow to the right of the field.

Minimum Digital Level: Enter a minimum digital level in **dBmV**.

Maximum Digital Level: Enter a maximum digital level in **dBmV**.

Minimum Digital MER: Enter a minimum digital MER in **dB**.

Maximum Digital EVM: Enter a maximum digital EVM in **%**.

Maximum Digital Pre BER: Enter a maximum digital pre BER.

Maximum Digital Post BER: Enter a maximum digital post BER.

☐ Step 7 - Check QAM + Constellation	
• Channel Plan	-- Active Channel Plan --
☐ Limits	
• Minimum Digital Level	0 dBmV
• Maximum Digital Level	0 dBmV
• Minimum Digital MER	Don't Test MER
• Maximum Digital EVM	Don't Test EVM
• Maximum Digital Pre BER	Don't Test Pre BER
• Maximum Digital Post BER	Don't Test Post BER

Ping Settings

You can modify the following fields to configure the settings of the Ping test:

Ping a Server

First, you must enter the IP address to ping for this test in the **IP Address** field.

Parameters

Adjust the value of any of the following fields by selecting the up or down arrow to the right of the field.

Packet Delay: Enter the packet delay in **msec**.

Packet Size: Enter the packet size in **Bytes**.

Packets to Send: Enter the number of packets to send.

CODEC Delay: Enter the CODEC delay in **msec**.

Buffer Delay: Enter the buffer delay in **msec**.

Limits

Adjust the value of any of the following fields by entering the value directly, or by selecting the up or down arrow to the right of the field.

Minimum Launch Level: Enter a minimum launch level in **dBmV**.

Maximum Launch Level: Enter a maximum launch level in **dBmV**.

Maximum Lost Packets: Enter the maximum number of lost packets.

Maximum Percent Lost: Enter the maximum percentage of lost packets.

Maximum Transit Time: Enter a maximum transit time in **msec**.

Maximum Latency: Enter a maximum latency in **msec**.

Maximum Jitter: Enter a maximum jitter in **msec**.

Step 8 - Ping a Server	
• IP Address	10.1.33.23
Parameters	
• Packet Delay	100 msec
• Packet Size	1024 Bytes
• Packets To Send	100 Pkts
• Codec Delay	21 msec
• Buffer Delay	20 msec
Limits	
• Minimum Launch Level	40 dBmV
• Maximum Launch Level	55 dBmV
• Maximum Lost Packets	10 Pkts
• Maximum Percent Lost	1 %
• Maximum Transit Time	50 msec
• Maximum Latency	150 msec
• Maximum Jitter	40 msec

Throughput Settings

You can modify the following fields to configure the settings of the Throughput test:

Check Throughput

First, you must enter the file name and IP address for this test in the **Filename** and **IP Address** fields.

Parameters

Adjust the value of any of the following fields by selecting the up or down arrow to the right of the field.

File Transfer: Select the file transfer protocol “TFTP Upstream Test”, “TFTP Downstream Test”, “HTTP Upstream Test”, “HTTP Downstream Test”, “UDP Ustream Test”, or “UDP Downstream Test” from the drop-down list.

Transfer Rate: Enter the transfer rate in **Bits/Sec** by entering the value directly, or by selecting the up or down arrow to the right of the field.

Limits

Enter the minimum transfer rate in Bits/Sec in the Minimum Transfer Rate field by entering the value directly, or by selecting the up or down arrow to the right of the field.

☐ Step 9 - Check Throughput	
• File Name	
• IP Address	10.1.33.23
☐ Parameters	
• File Transfer	UDP Downstream Test
• Transfer Rate	40000000 Bits/Sec
☐ Limits	
• Minimum Transfer Rate	1000000 Bits/Sec

Leakage Settings

You can modify the following fields to configure the settings of the Leakage test:

Limits

Enter the maximum leakage level in **μV/meter** in the Maximum Level field by entering the value directly, or by selecting the up or down arrow to the right of the field.

☐ Step 13 - Check Leakage	
☐ Limits	
• Maximum Level	0 uV/meter

Spectrum Settings

You can modify the following fields to configure the settings of the Spectrum test:

Parameters

Start Frequency: Enter the start frequency in **MHz** by entering the value directly, or by selecting the up or down arrow to the right of the field.

Stop Frequency: Enter the stop frequency in **MHz** by entering the value directly, or by selecting the up or down arrow to the right of the field.

Resolution Bandwidth: Select the resolution bandwidth of “1 kHz”, “3 kHz”, “10 kHz”, “30 kHz”, “100 kHz”, or “300 kHz” from the drop-down list.

Sampling Level: Select the sampling level of “1”, “2”, “4”, “8”, “16”, “32”, “64”, “128”, or “256” by selecting the up or down arrow to the right of the field.

Reference Level: Enter the reference level in **dBmV** by entering the value directly, or by selecting the up or down arrow to the right of the field.

Hold Setting: Select the hold setting of “None”, “Max”, or “Min” from the drop-down list.

☐ Step 10 - Check Spectrum	
☐ Parameters	
• Start Frequency	4.000 MHz
• Stop Frequency	4.000 MHz
• Resolution Bandwidth	10 KHz
• Detector Mode	Average/Normal Detector
• Sampling Level	Single Sample
• Reference Level	0 dBmV
• Hold Setting	None
☐ Limits	
• Minimum Level	0 dBmV
• Maximum Level	0 dBmV

Limits

Minimum Level: Enter the minimum level in **dBmV** by entering the value directly, or by selecting the up or down arrow to the right of the field.

Maximum Level: Enter the maximum level in **dBmV** by entering the value directly, or by selecting the up or down arrow to the right of the field.

VoIP RTP Settings

You can modify the following fields to configure the settings of the VoIP RTP test:

Check VoIP RTP

First, you must enter IP address for this test in the **IP Address** field.

Parameters

CODEC Type: Select the CODEC type of “G.711” or “G.711 (restore default values)” from the drop-down list.

CODEC Delay: This is a read-only field that is automatically adjusted based on the settings of the **Packet Rate** and **Packet Size** fields.

Packet Rate: Enter the packet rate in **msec** by entering the value directly, or by selecting the up or down arrow to the right of the field.

Packet Size: Enter the packet size in **msec** by entering the value directly, or by selecting the up or down arrow to the right of the field.

Jitter Buffer Delay: Enter the jitter buffer delay in **msec** by entering the value directly, or by selecting the up or down arrow to the right of the field.

Call Length: Enter the call length in **sec** by entering the value directly, or by selecting the up or down arrow to the right of the field.

Limits

Maximum Latency: Enter the maximum latency in **msec** by entering the value directly, or by selecting the up or down arrow to the right of the field.

Maximum Jitter: Enter the maximum jitter in **msec** by entering the value directly, or by selecting the up or down arrow to the right of the field.

Minimum MOS: Enter the minimum MOS value by entering the value directly, or by selecting the up or down arrow to the right of the field.

Step 10 - Check Spectrum	
Parameters	
• Start Frequency	4.000 MHz
• Stop Frequency	4.000 MHz
• Resolution Bandwidth	10 KHz
• Detector Mode	Average/Normal Detector
• Sampling Level	Single Sample
• Reference Level	0 dBmV
• Hold Setting	None
Limits	
• Minimum Level	0 dBmV
• Maximum Level	0 dBmV

Modem Stats Settings

You can modify the following fields to configure the settings of the Modem Stats test:

Parameters

Modem MAC: Select the modem MAC address of “Use Setup Menu”, “MAC #1”, or “MAC #2” from the drop-down list.

Downstream Frequency: Enter the downstream frequency in **MHz** by entering the value directly, or by selecting the up or down arrow to the right of the field.

Modem Mode: Select the modem mode of “Use Setup Menu”. “DOCSIS 1.0”, “DOCSIS 2.0”, “DOCSIS 2.1” or “DOCSIS 3.0” from the drop-down list.

Annex Type: Select the annex type of “Use Setup Menu”. “Annex A” or “Annex B” from the drop-down list.

Upstream ID: Enter the upstream ID by entering the value directly, or by selecting the up or down arrow to the right of the field.

Step 12 - Check Modem Stats	
Parameters	
• Modem MAC	Use Setup Menu
• Downstream Frequency	Use Setup Menu
• Modem Mode	Use Setup Menu
• Annex Type	Use Setup Menu
• Upstream Id	Use Setup Menu
Limits	
• Minimum Launch Level	0 dBmV
• Maximum Launch Level	0 dBmV
• Minimum Receive Level	0 dBmV
• Maximum Receive Level	0 dBmV

Limits

Minimum Launch Level: Enter the minimum launch level in **dBmV** by entering the value directly, or by selecting the up or down arrow to the right of the field.

Maximum Launch Level: Enter the maximum launch level in **dBmV** by entering the value directly, or by selecting the up or down arrow to the right of the field.

Minimum Receive Level: Enter the minimum receive level in **dBmV** by entering the value directly, or by selecting the up or down arrow to the right of the field.

Maximum Receive Level: Enter the maximum receive level in **dBmV** by entering the value directly, or by selecting the up or down arrow to the right of the field.

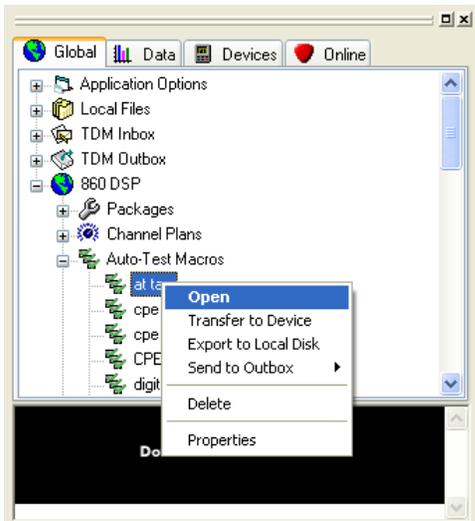
Opening and Closing Macros

You can use the WorkBench software to open the macros that you have created. To open any macro, perform one of the following actions:

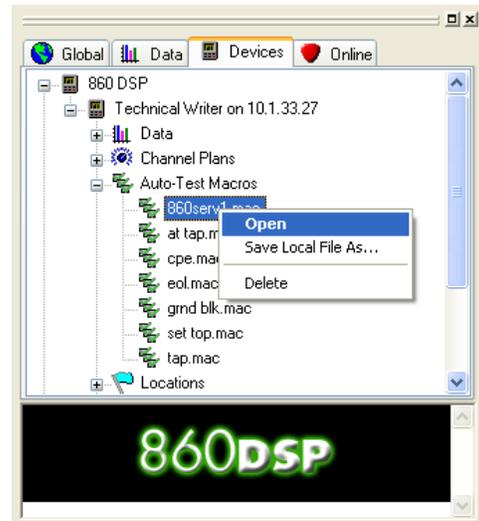
From the  **Global** tab, right-click on the desired macro(s) to open, and then select **Open**.

OR

From the  **Devices** tab, right-click on the desired macro(s) to open, and then select **Open**.



Global Tab



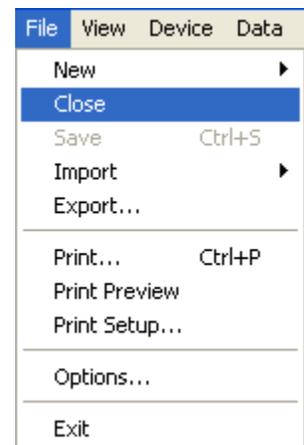
Devices Tab

To close any macro that is open, perform one of the following actions:

From the **File** menu, select **Close**.

OR

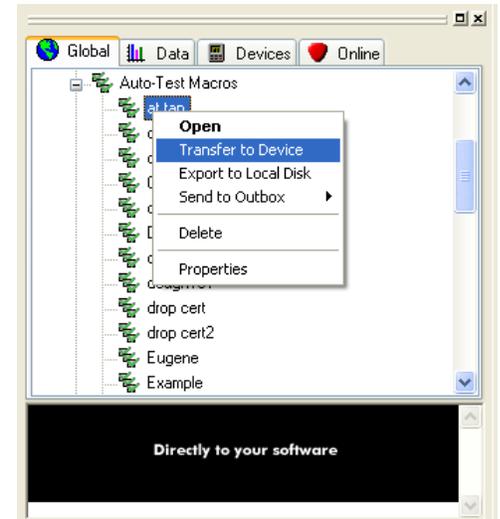
Select the gray "X" in the upper right corner of the **Data** window.



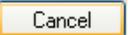
Transferring Macros to Devices

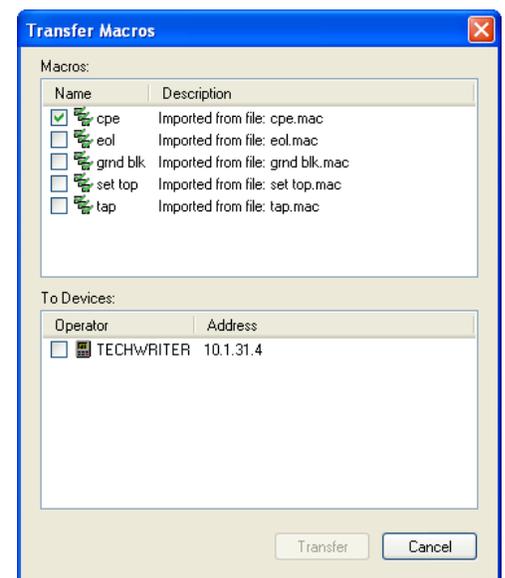
You can use the WorkBench software to transfer macros to a connected device. To transfer any macro, perform the following actions:

1. From the  Global tab, right-click on the desired macro(s) to transfer, and then select **Transfer to Device**.



If only one device is connected, the macro will automatically be transferred to the device without any other user interaction.

2. If more than one device is connected the **Transfer Macros** window will appear.
3. Select the macros you wish to send.
4. Select the device(s) to which you wish to send the selected macros.
5. Select the  Transfer button to transfer the macros or select the  Cancel button to exit without transferring.



Saving Macros to a Local File

You can save macros to your local drive to allow you to move data from one WorkBench software installation to other WorkBench software installations within your company.

Perform the following steps to save a local copy of any of the macros described earlier in this chapter:

1. Perform one of the following steps to select the macro(s) to save:

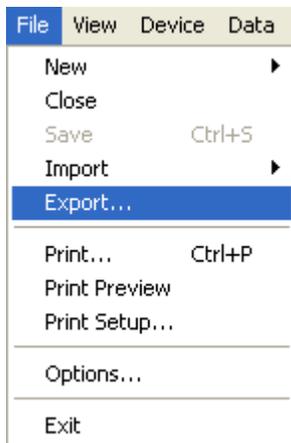
After opening a macro, from the **File** menu select **Export**.

OR

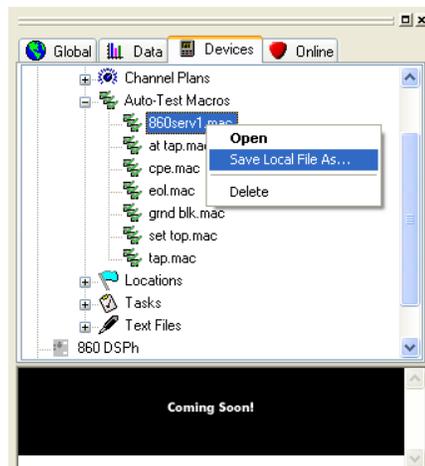
After connecting to a device, from the  **Devices** tab, right-click on the desired macro(s) to save, and then select **Save Local File As**.

OR

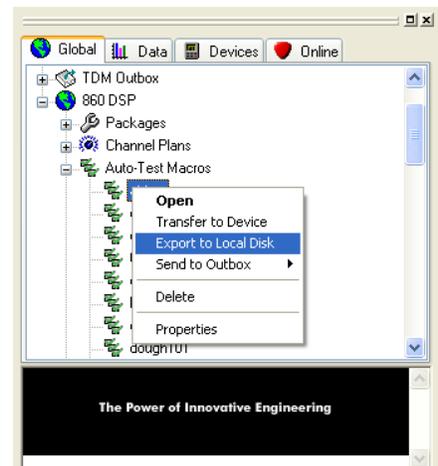
From the  **Global** tab, right-click on the desired macro(s) to save, and then select **Export to Local Disk**.



File Menu



Devices Tab

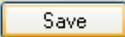


Global Tab

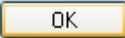


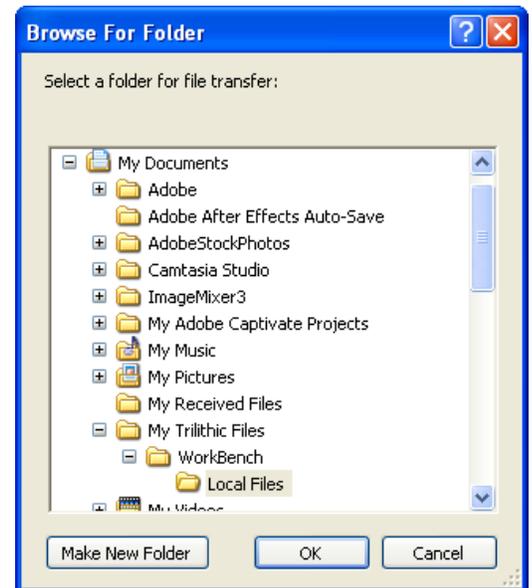
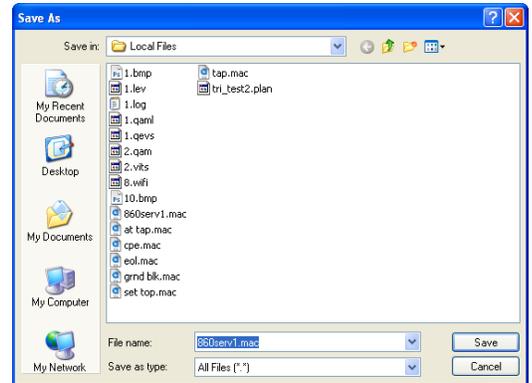
To select more than one macro at once for batch processing, select the first macro that you would like to save, and then hold the CTRL key on your keyboard while using your mouse to select the other macro.

2. Perform one of the following steps to save the local macro file(s):

If you selected only one file to save, The **Save** window will appear. From this window you will choose the location and name of the macro to save and then select the  button.

OR

If you selected more than one file to save, The **Browse For Folder** window will appear. From this window you will choose the location to save the macros to and then select the  button.

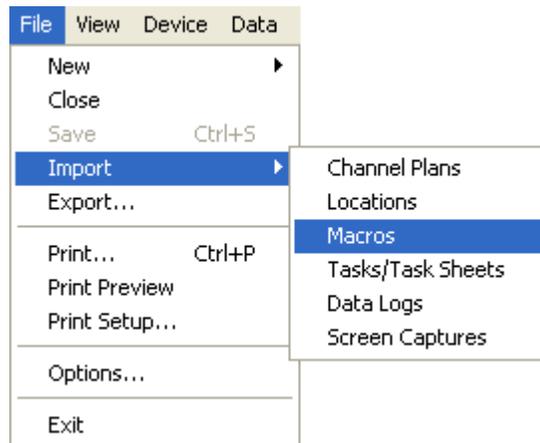


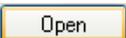
Importing Macros from a Local File

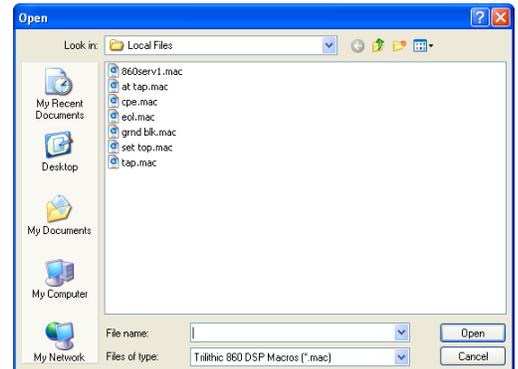
You can import macros to allow you to move data from one WorkBench software installation to other WorkBench software installations within your company.

Perform the following steps to import any of the macros described earlier in this chapter:

1. From the **File** menu hover over **Import**, and then select **Macros**.



2. The **Open** window will appear. From this window you will choose which macro(s) to import and then select the  button.



Deleting Macros

You can delete macros that are no longer needed.

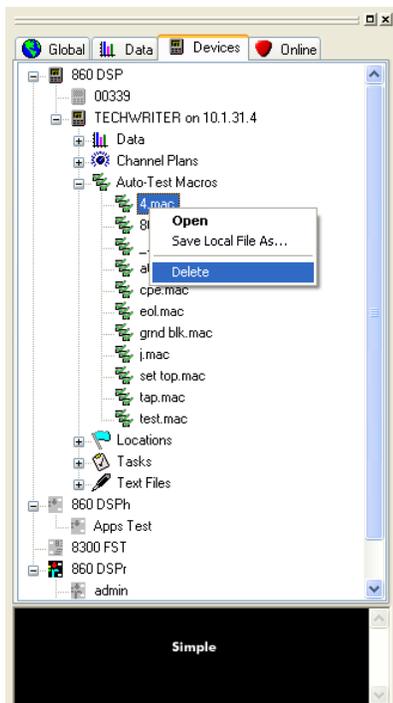
Perform the following steps to delete any of the macros described earlier in this chapter:

1. Perform one of the following steps to select the macro(s) to delete:

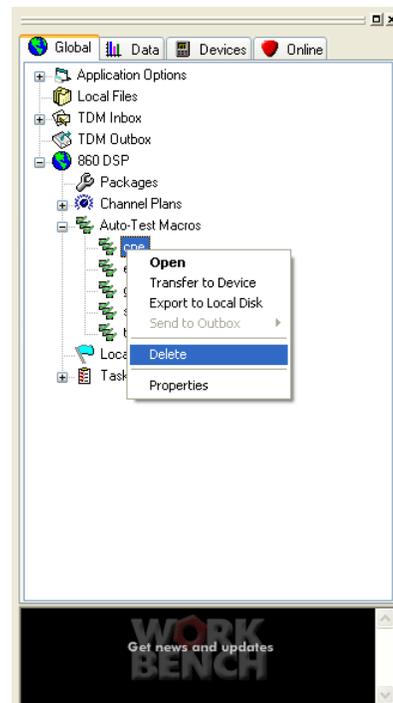
From the  **Devices** tab, right-click on the desired macro(s) to delete, and then select **Delete**.

OR

From the  **Global** tab, right-click on the desired macro(s) to delete, and then select **Delete**.



Devices Tab



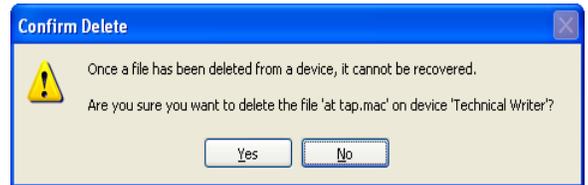
Global Tab



To select more than one macro at once for batch processing, select the first macro that you would like to delete, and then hold the CTRL key on your keyboard while using your mouse to select the other macros.

2. The **Confirm Delete** window will appear based on how you choose to delete the macro(s) as shown below:

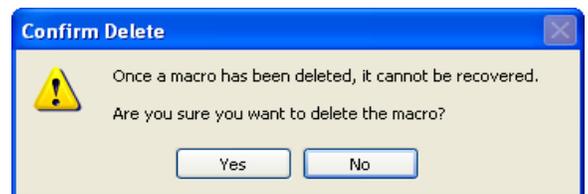
- Devices Tab - Single File Selected



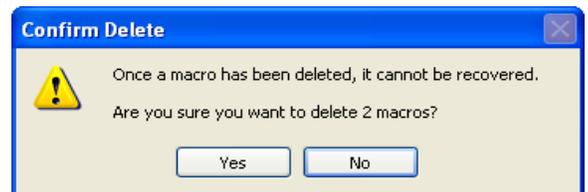
- Devices Tab - Multiple Files Selected



- Global Tab - Single File Selected



- Global Tab - Multiple Files Selected



3. From this window you will confirm whether to delete the macro(s) by selecting the button, or you can exit without deleting the macro(s) by selecting the button.



CAUTION *Be very careful when deleting files. Once a file has been deleted the file cannot be recovered.*

Macro Properties

After a macro has been opened, the Macro Properties can be displayed by selecting the  button from the toolbar at the top of the **Data** window or from the  Global tab, right-click the macro, and then select **Properties**. An example of the **Macro Properties** window is shown to the right.

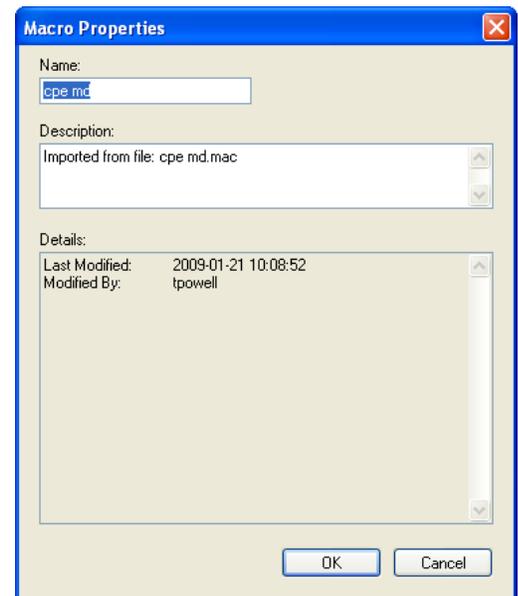
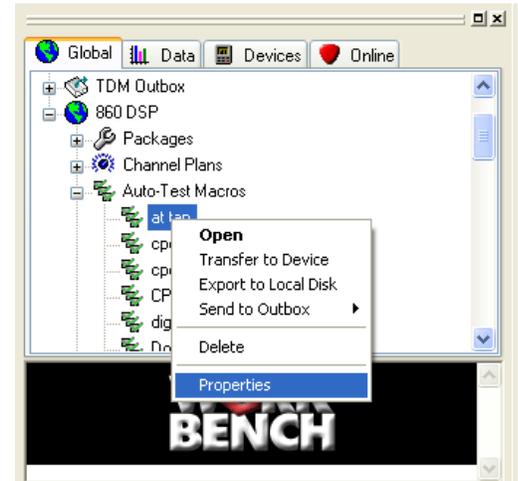
The fields displayed in the **Macro Properties** window are as follows:

Name: Displays the file name of the macro.

Description: Displays the description given to the macro when created.

Last Modified: Displays the date that the macro was last modified.

Modified By: Displays the name of the user that last modified the macro.



Printing Macros

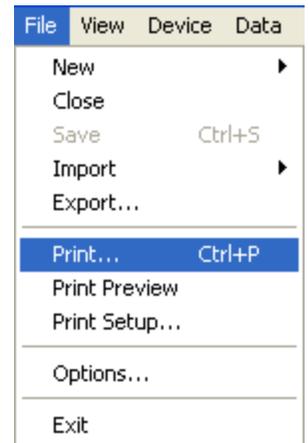


Before printing you may want to setup your printer by first selecting *Printer Setup...* from the File Menu. WorkBench will use the settings of your default Windows printer if you choose to skip this step.

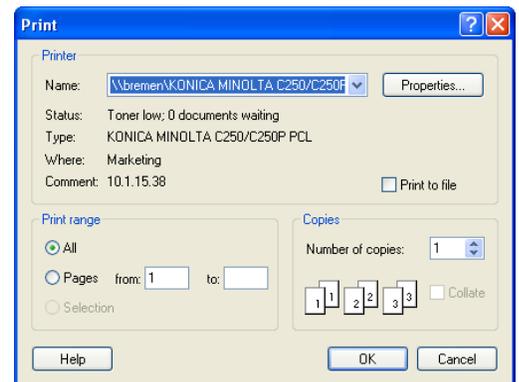
Printing Without Preview

To print any macro that is open without a preview, perform the following steps:

1. Press the Ctrl+P keys on your keyboard or from the **File** menu, select **Print**.



2. The **Print** window will appear.
3. If you wish to change any printer settings do so at this point.
4. Once you are satisfied with the printer settings, select the **OK** button to print the document or select the **Cancel** button to exit without printing.



Printing With Preview

To print any macro that is open with a preview, perform the following steps:

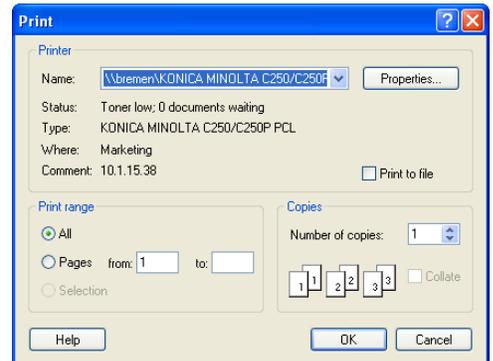
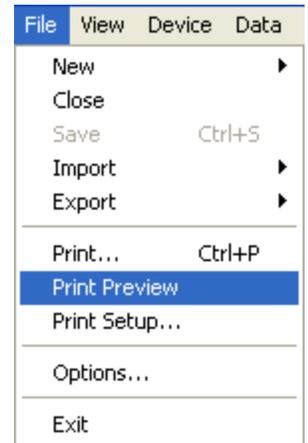
1. From the **File** menu, select **Print Preview**.
2. A new print preview window will appear in the **Data** window. You can then use the buttons at the top of the print preview screen as follows:

 - Use this button to print the document.

 or  - Use these buttons to zoom in and out on the document.

 - Use this button to close without printing.

3. After you have selected the  button, the **Print** window will appear.
4. If you wish to change any printer settings do so at this point.
5. Once you are satisfied with the printer settings, select the  button to print the document or select the  button to exit without printing.



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Chapter 5

Task Sheets and Tasks

Overview

This chapter shows you how to create and maintain task sheets.

A task sheet is a template that organizes and defines individual tasks (work orders) or trouble tickets. Task sheets allow you to group technicians or types of tasks that share a common set of work parameters or attributes.

Once a task sheet is defined, you can use it create new tasks, assign tasks to technicians and also view the current status and history of tasks. These work orders can be created for use with the Trilithic Data Manager (TDM), CSG Workforce Express, or other third party workforce management systems.

Creating a Task Sheet

To create a task sheet, perform the following steps:

1. Perform one of the following steps to create a new task sheet:

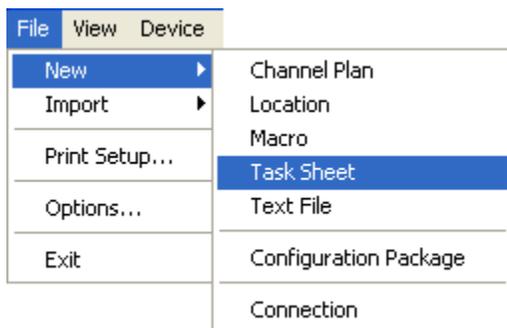
From the **File** menu, hover over **New**, and then select **Task Sheet**.

OR

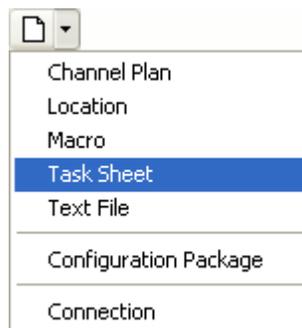
From the Toolbar click on the  button and then select **Task Sheet**.

OR

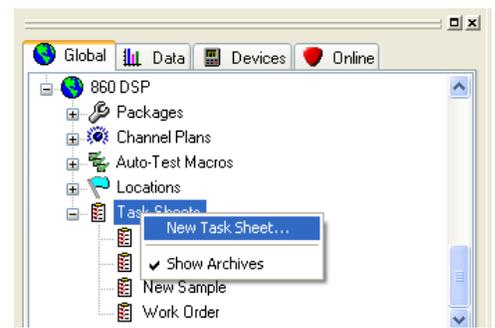
From the  Global tab, right-click on **Task Sheets**, and then select **New Task Sheet**.



File Menu



Toolbar



Global Tab

2. The **New Task Sheet** window will appear.
3. Enter the **Name** of the task sheet. This can be up to 9 alphanumeric characters.
4. Enter a **Description** of the task sheet. This can be up to 254 alphanumeric characters.
5. Each **Attribute ##** field represents a custom column that will appear on the task sheet. Each task sheet can have up to 24 user-defined attributes. Enter the custom attributes of the task sheet as follows:

Header - Enter the label that will appear as the column header in this field.

Value ## - If you want users to choose from a drop-down box in the task sheet, enter each possible value for the associated header. Repeat for each value possible for the corresponding header. Leave this field blank to be able to enter any value (up to 255 characters) for the corresponding header.

6. Repeat **Step 5** for each column that you wish to appear in the task sheet.
7. Once you have finished adding the custom attributes, select the **Create** button to create a new task sheet or select the **Cancel** button to exit without creating a new task sheet.
8. A new blank task sheet will appear that includes the custom attributes setup in the previous steps.

 **NOTE** *Once a task sheet has been created, attribute columns cannot be created or deleted.*

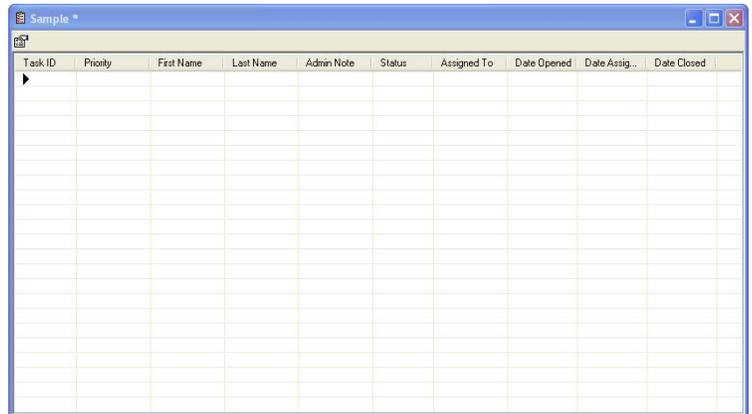
 **CAUTION** *After making changes to a task sheet, you must select the  button from the toolbar or Save from the File menu before closing the task sheet. Otherwise, if you try to close the task sheet before saving, WorkBench will prompt you to save the task sheet.*

Entering Tasks into Task Sheets

Once you have created a task sheet, you will then need to create tasks within the task sheet.

To create a task, perform the following steps:

1. Enter a unique **Task ID**. This can be up to 6 alphanumeric characters. Task IDs for all open tasks must be unique. The tasks that they represent will later be attached by 860 DSPi operators to data logs for record keeping purposes.



Task ID	Priority	First Name	Last Name	Admin Note	Status	Assigned To	Date Opened	Date Assign...	Date Closed
---------	----------	------------	-----------	------------	--------	-------------	-------------	----------------	-------------

2. Enter or select from the drop down box the appropriate information in each custom column. If an attribute has a drop down box, an arrow will appear when the field is selected. You cannot type information into attributes with drop down lists.

3. The following columns are automatically included in every task sheet:

Admin Note - This field allows you to enter any additional admin notes.

Status - This field is assigned automatically. The three states are Open, Assigned, and Closed.

Assigned To - This field is automatically updated when the task is sent to an individual outbox or imported from an individual inbox.

Date Opened - Automatically filled in when the task is created.

Date Assigned - Automatically filled in when the task is sent to an individual inbox.

Date Closed - Automatically filled in once the technician closes the task on the 860 DSPi or when the task administrator right-clicks on the task and chooses Close from the drop down box.



Tasks can be sorted by selecting the column headers. For example, if you want to sort the task sheet alphabetically by last name, select the Last Name column header.

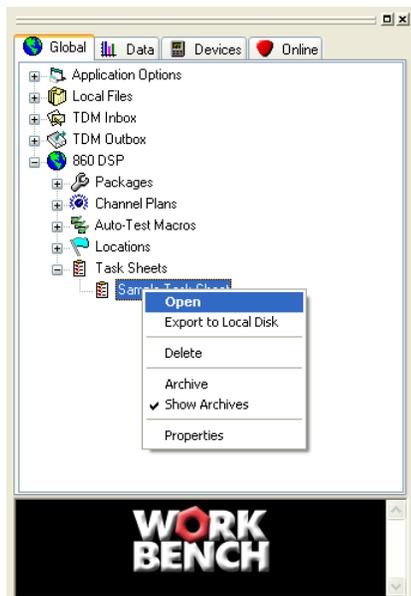
Opening and Closing Task Sheets

You can use the WorkBench software to open any of the task sheets that you have created. To open any task sheet, perform one of the following actions:

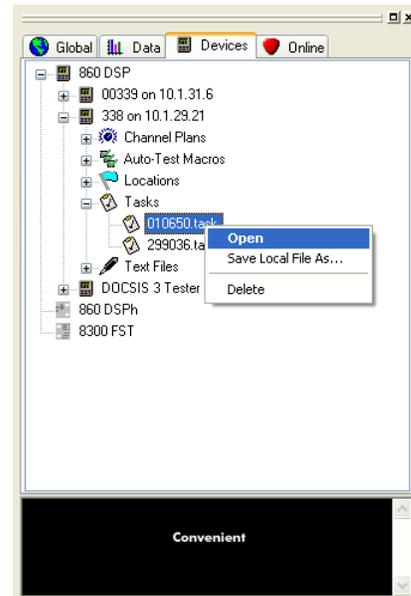
From the  Global tab, right-click on the desired task sheet(s) to open, and then select **Open**.

OR

From the  Devices tab, right-click on the desired task sheet(s) to open, and then select **Open**.



Global Tab



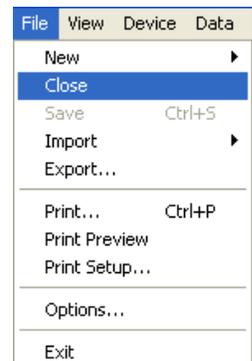
Devices Tab

To close any task sheet that is open, perform one of the following actions:

From the **File** menu, select **Close**.

OR

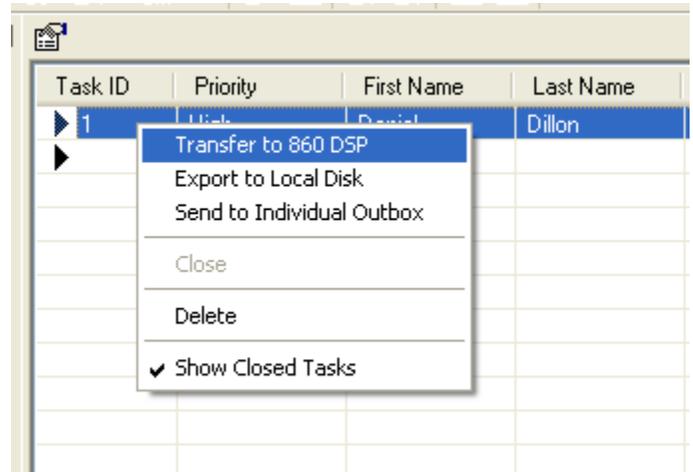
Select the gray "X" in the upper right corner of the **Data** window.



Transferring Tasks to Devices

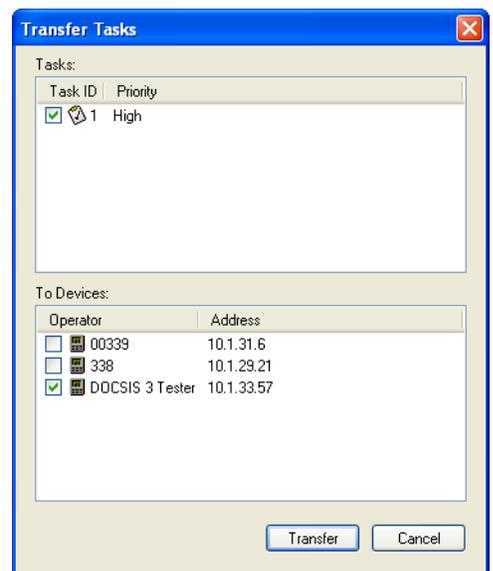
You can use the WorkBench software to transfer macros to a connected device. To transfer any macro, perform the following actions:

1. From the task sheet, right-click on the desired task(s) to transfer, and then select **Transfer to 860 DSP**.



If only one device is connected, the task will automatically be transferred to the device without any other user interaction.

2. If more than one device is connected the **Transfer Tasks** window will appear.
3. Select the tasks you wish to send.
4. Select the device(s) that you wish to send the selected tasks to.
5. Select the **Transfer** button to transfer the tasks or select the **Cancel** button to exit without transferring.



Saving Task Sheets to a Local File

You can save task sheets and tasks to your local drive to allow you to move data from one WorkBench software installation to other WorkBench software installations within your company.

Perform the following steps to save a local copy of a task sheet:

1. Perform one of the following steps to select the task sheet or task(s) to save:

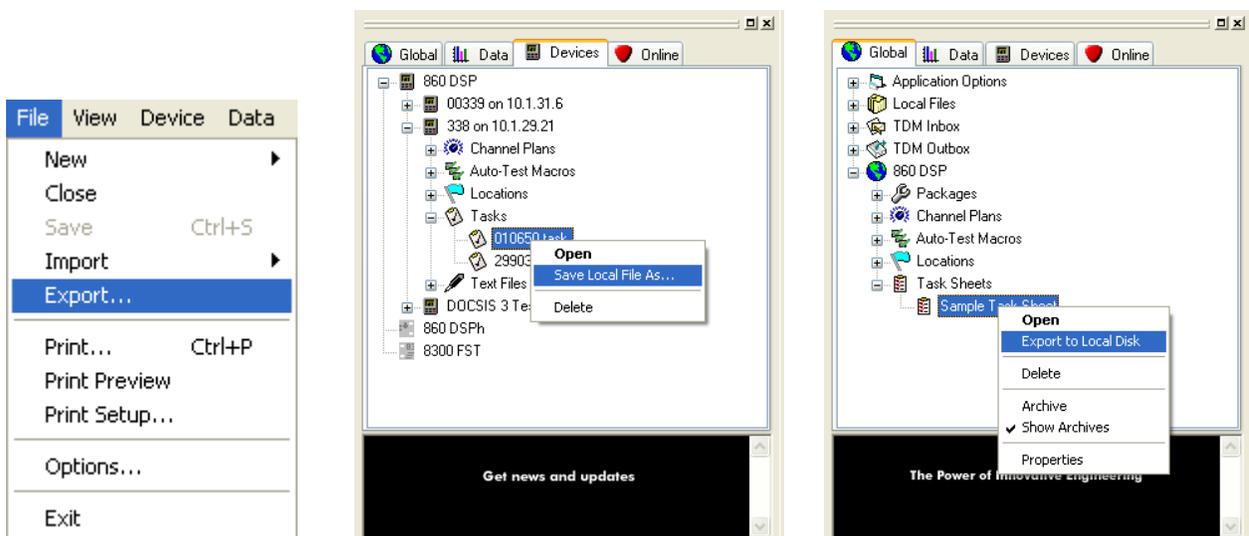
After opening a task sheet, from the **File** menu select **Export**.

OR

After connecting to a device, from the **Devices** tab, right-click on the desired macro(s) to save, and then select **Save Local File As**.

OR

From the **Global** tab, right-click on the desired macro(s) to save, and then select **Export to Local Disk**.



File Menu

Devices Tab

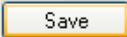
Global Tab



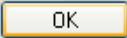
NOTE

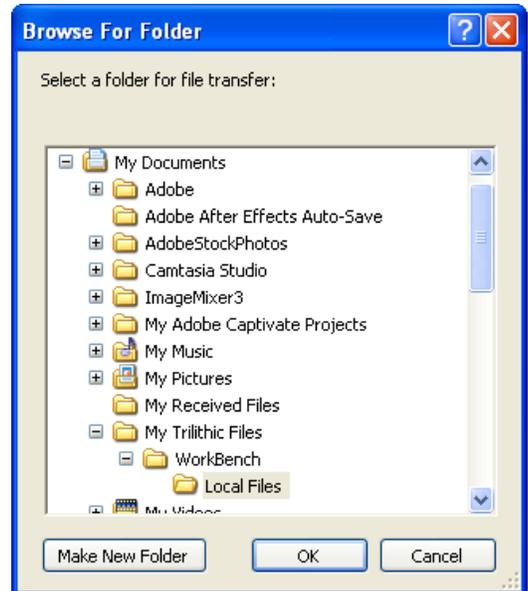
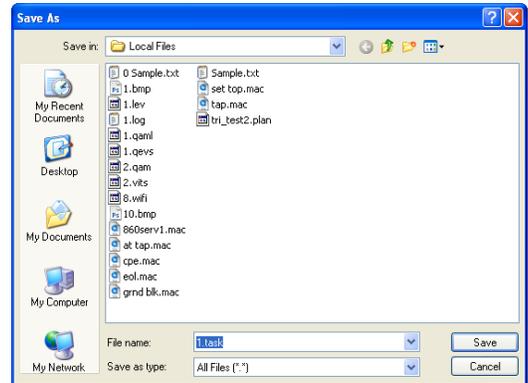
To select more than one task sheet at once for batch processing, select the first task sheet that you would like to save, and then hold the CTRL key on your keyboard while using your mouse to select the other task sheet.

2. Perform one of the following steps to save the local task sheet file(s):

If you selected only one file to save, the **Save** window will appear. From this window choose the location and name of the task sheet to save and then select the  button.

OR

If you selected more than one file to save, the **Browse For Folder** window will appear. From this window choose the location to save the task sheets to and then select the  button.

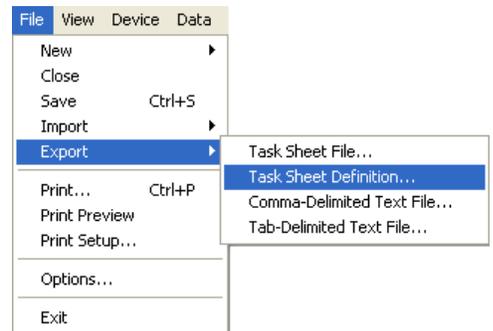


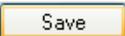
Exporting Task Sheets to a Template File

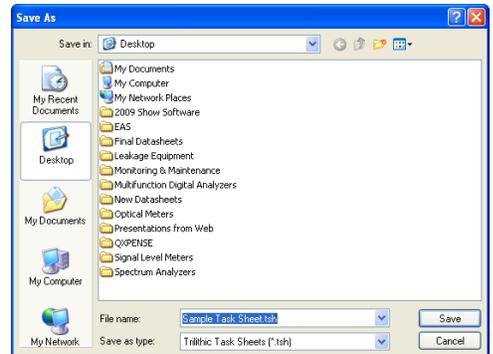
You can export task sheets to definition files for use as a template inside of WorkBench. Exporting a task sheet definition recreates the structure and attributes of an existing task sheet into a definition file. This file can later be imported and used to create the exact same task sheet. This option helps provide a consistency when multiple administrators use the same task sheet.

Perform the following steps to export any of the task sheets described earlier in this chapter:

1. Open the task sheet that you wish to export.
2. From the **File** menu hover over **Export**, and then select **Task Sheet Definition**.



3. The **Save As** window will appear. From this window choose the location and name of the task sheet template to save and then select the  button.

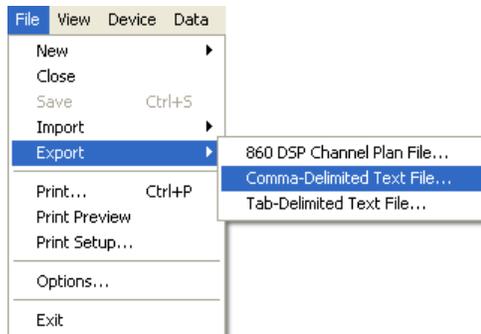


Exporting Task Sheets to a Text File

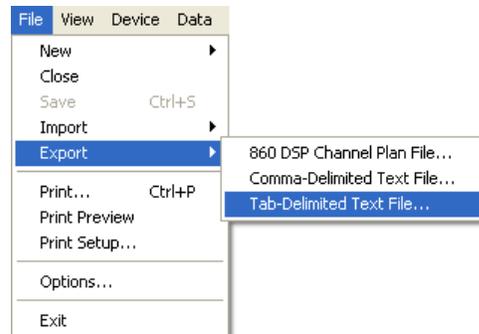
You can export task sheets to text files for use outside of WorkBench.

Perform the following steps to export any of the task sheets described earlier in this chapter:

1. Open the task sheet that you wish to export.
2. From the **File** menu hover over **Export**, and then select one either of the following options **Comma-Delimited Text File** or **Tab-Delimited Text File**.

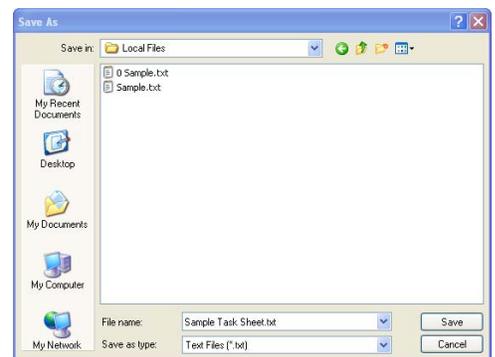


Comma-Delimited



Tab-Delimited

3. The **Save As** window will appear. From this window choose the location and name of the task sheet text file to save and then select the  button.

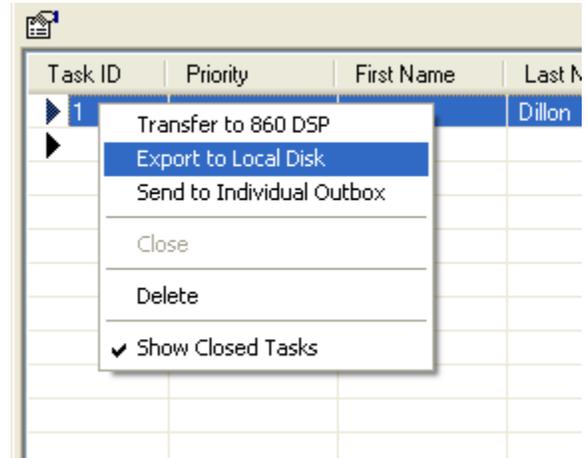


Exporting Tasks to a Local File

You can export task sheets to text files for use outside of WorkBench.

Perform the following steps to export any of the task sheets described earlier in this chapter:

1. Open the task sheet and select the task(s) that you wish to export.
2. Right-click on the task(s), and then select **Export to Local Disk**.



NOTE

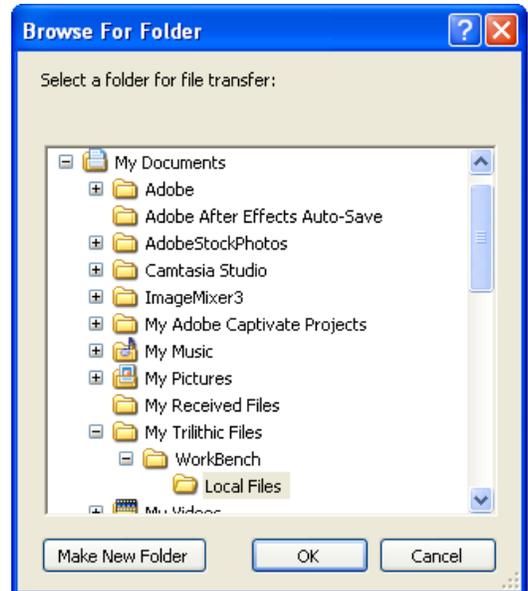
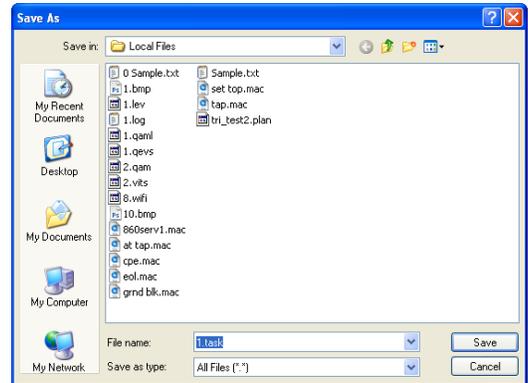
To select more than one task sheet at once for batch processing, select the first task sheet that you would like to save, and then hold the CTRL key on your keyboard while using your mouse to select the other task sheet.

3. Perform one of the following steps to save the local task file(s):

If you selected only one file to save, the **Save** window will appear. From this window choose the location and name of the task to save and then select the  button.

OR

If you selected more than one file to save, the **Browse For Folder** window will appear. From this window choose the location to save the tasks to and then select the  button.

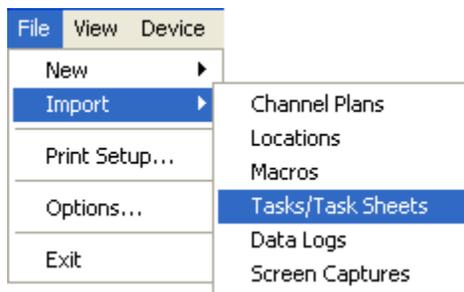


Importing Task Sheets from a Local File

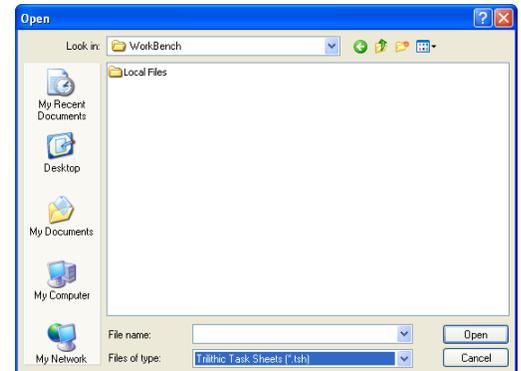
You can import task sheets to allow you to move data from one WorkBench software installation to other WorkBench software installations within your company.

Perform the following steps to import any of the task sheets described earlier in this chapter:

1. From the **File** menu hover over **Import**, and then select **Tasks/Task Sheets**.



2. The **Open** window will appear. From this window you will choose which task sheet(s) to import and then select the **Open** button. A task sheet's file type is *.tsh.

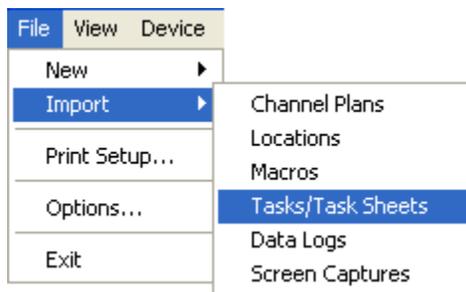


Importing Tasks from a Local File

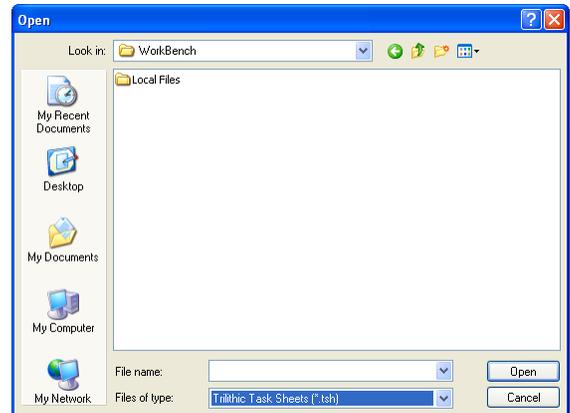
You can import tasks to allow you to move data from one WorkBench software installation to other WorkBench software installations within your company.

Perform the following steps to import task files:

1. From the **File** menu hover over **Import**, and then select **Tasks/Task Sheets**.



2. The **Open** window will appear. From this window you will choose which task(s) to import and then select the **Open** button. A task file's file type can be either *.clsd (closed task) or *.task (open task).



CAUTION

If you are importing data logs and their associated task file(s) from a local disk, you must first import the task file(s) before importing the data logs. Failure to do so will break the associative link between the task(s) and data log(s).

Deleting Task Sheets

You can delete task sheets that are no longer needed.

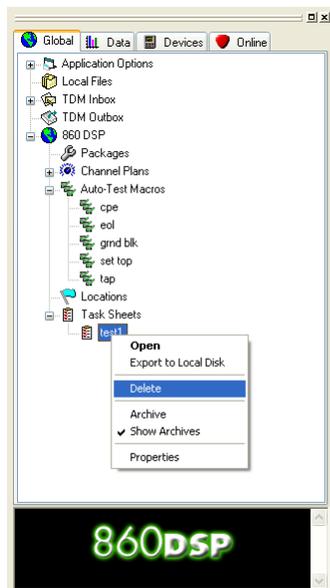
Perform the following steps to delete any of the task sheets described earlier in this chapter:

1. Perform one of the following steps to select the task sheet(s) to delete:

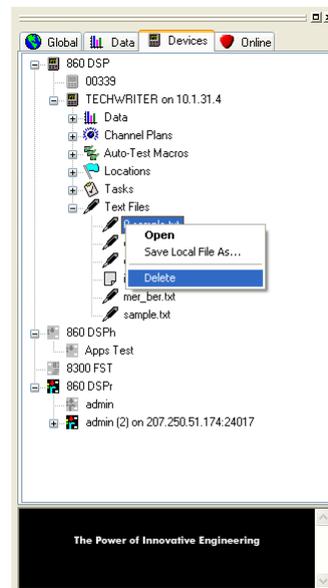
From the  **Devices** tab, right-click on the desired task sheet(s) to delete, and then select **Delete**.

OR

From the  **Global** tab, right-click on the desired task sheet(s) to delete, and then select **Delete**.



Devices Tab



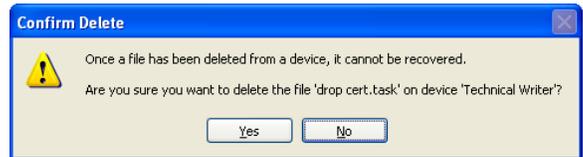
Global Tab



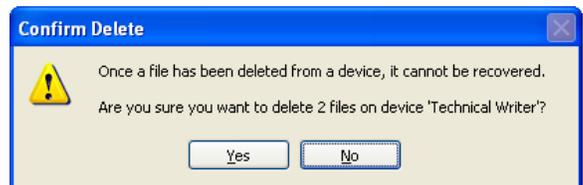
To select more than one task sheet at once for batch processing, select the first task sheet that you would like to delete, and then hold the CTRL key on your keyboard while using your mouse to select the other task sheet.

2. The **Confirm Delete** window will appear based on how you choose to delete the task sheet(s) as shown below:

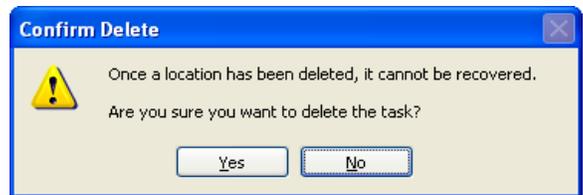
- Devices Tab - Single File Selected



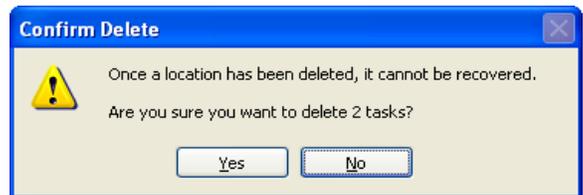
- Devices Tab - Multiple Files Selected

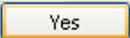
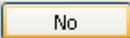


- Global Tab - Single File Selected



- Global Tab - Multiple Files Selected



3. From this window you will confirm whether to delete the location(s) by selecting the  button, or you can exit without deleting the location(s) by selecting the  button.



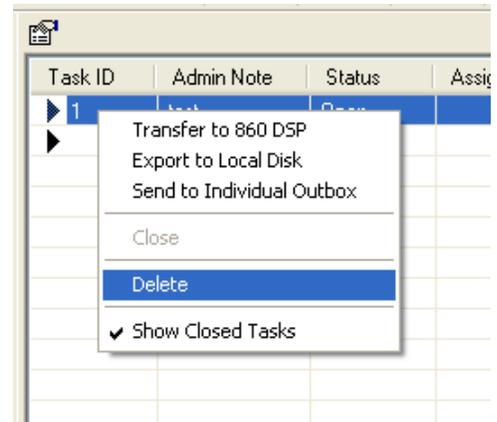
CAUTION *Be very careful when deleting files. Once a file has been deleted the file cannot be recovered.*

Deleting Tasks

You can delete tasks that are no longer needed. When an open or assigned task is deleted it is permanently removed from the task sheet. A closed task cannot be deleted.

Perform the following steps to delete a task:

1. Open the task sheet and select the task(s) that you wish to delete.
2. Right-click on the task(s), and then select **Delete**.

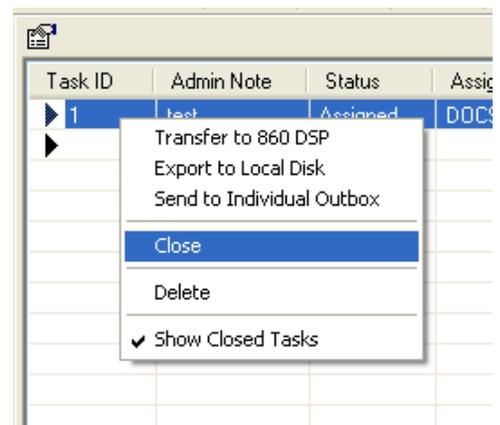


Closing Tasks

Normally tasks are closed by a technician via an 860 DSPi. If this does not happen, tasks can also be closed manually in the task sheet. Closed tasks remain in the task sheet, but are hidden from view.

Perform the following steps to close a task:

1. Open the task sheet and select the task(s) that you wish to close.
2. Right-click on the task(s), and then select **Close**.



To view closed tasks, select Show Closed Tasks from the right-click menu.

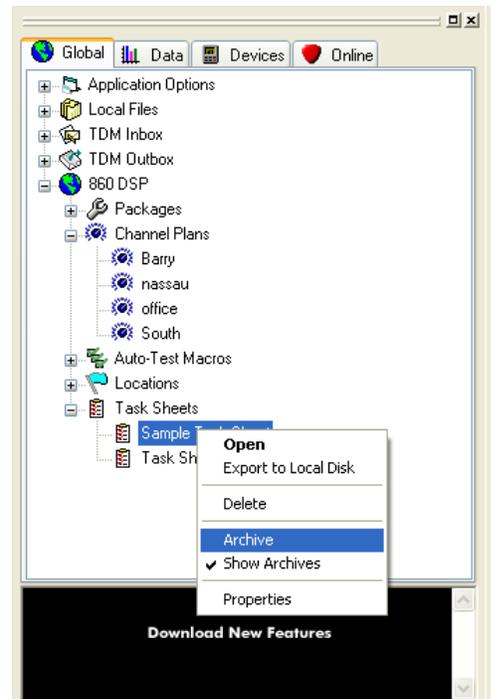
NOTE

Archiving Task Sheets

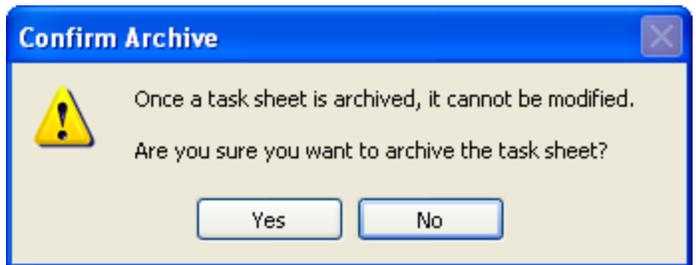
Archiving a task sheet is useful if you want to keep a historical record of tasks contained in a task sheet that is no longer in active use. Closed task sheets remain in WorkBench, but are hidden from view.

To archive a task sheet, perform the following steps:

1. From the  Global tab, right-click on the desired task sheet(s) to archive, and then select **Archive**.



2. The **Confirm Archive** window appears, select the **Yes** button to confirm the archive or select the **No** button to exit without archiving.



To view archived task sheets, select Show Archives from the right-click menu.

Task Sheet Properties

After a task sheet has been opened, the Task Sheet Properties can be displayed by selecting the  button from the toolbar at the top of the **Data** window or from the  Global tab, right-click the task sheet, and then select **Properties**. An example of the **Task Sheet Properties** window is shown to the right.

The fields displayed in **General** tab of the **Task Sheet Properties** window are as follows:

Name: Displays the file name of the task sheet.

Description: Displays the description given to the task sheet when created.

Details: Displays the properties of the currently selected task sheet.

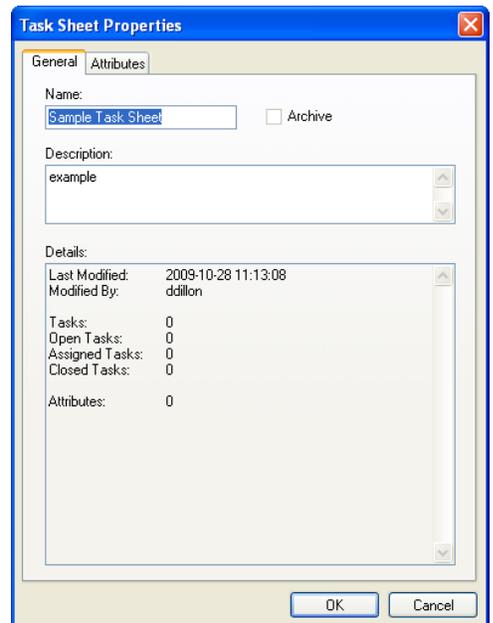
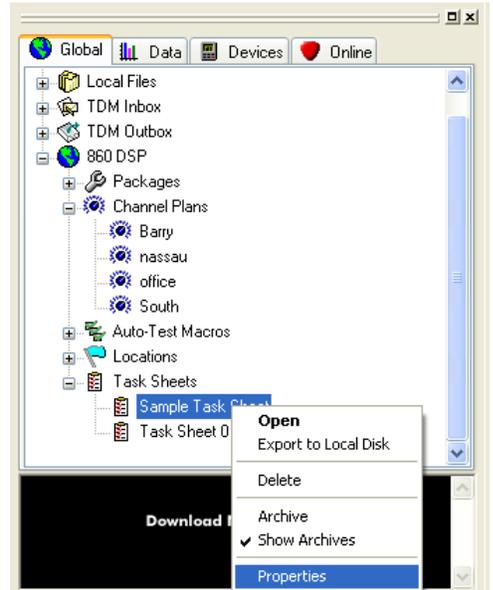
Modified By: Displays the name of the user that last modified the location.

The fields displayed in **Attributes** tab of the **Task Sheet Properties** window are as follows:

Header: This value can be edited but not deleted.

Values: These values can be edited but not deleted.

Attribute: Once a task sheet is created, attribute columns cannot be created or deleted.



Printing Task Sheets

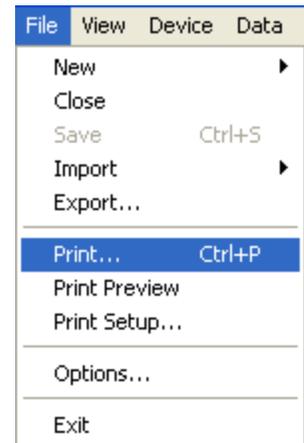


Before printing you may want to setup your printer by first selecting Printer Setup... from the File Menu. WorkBench will use the settings of your default Windows printer if you choose to skip this step.

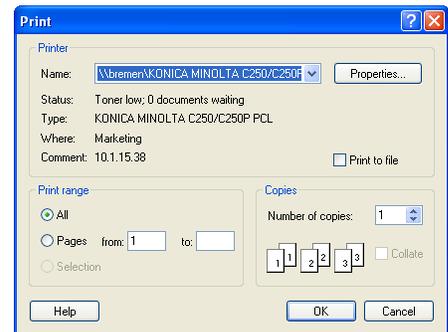
Printing Without Preview

To print any task sheet that is open without a preview, perform the following steps:

1. Press the Ctrl+P keys on your keyboard or from the **File** menu, select **Print**.



2. The **Print** window will appear.
3. If you wish to change any printer settings do so at this point.
4. Once you are satisfied with the printer settings, select the  button to print the document or select the  button to exit without printing.



Printing With Preview

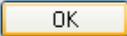
To print any task sheet that is open with a preview, perform the following steps:

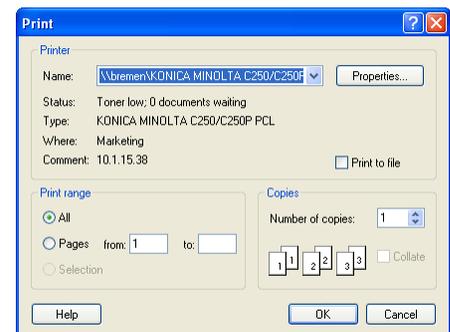
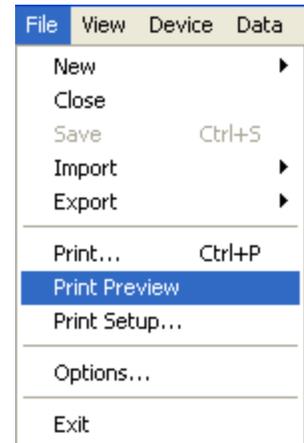
1. From the **File** menu, select **Print Preview**.
2. A new print preview window will appear in the **Data** window. You can then use the buttons at the top of the print preview screen as follows:

 - Use this button to print the document.

 or  - Use these buttons to zoom in and out on the document.

 - Use this button to close without printing.

3. After you have selected the  button, the **Print** window will appear.
4. If you wish to change any printer settings do so at this point.
5. Once you are satisfied with the printer settings, select the  button to print the document or select the  button to exit without printing.



Chapter 6

Text Files

Overview

This chapter shows you how to create and maintain text files. Text files have many uses on the 860 DSP and 860 DSPi, including:

- Detailed notes on channel plans, locations, or macros.
- Bulletins on service conditions.
- Step-by-step procedures for addressing certain technical conditions.
- Contact Information.
- Recommended testing procedures.

Creating a Text File

To create a text file, perform the following steps:

1. Perform one of the following steps to create a new text file:

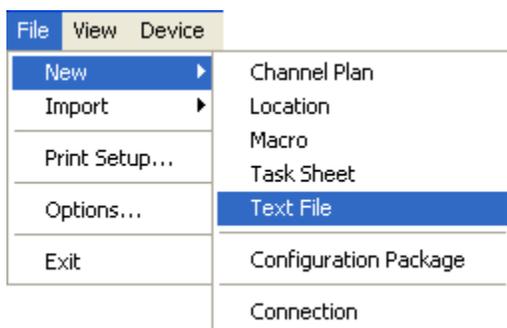
From the **File** menu, hover over **New**, and then select **Text File**.

OR

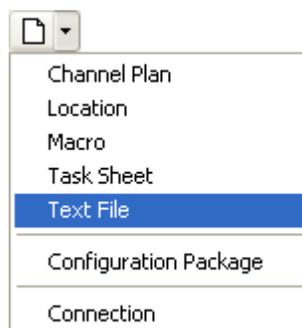
From the Toolbar click on the  button and then select **Text File**.

OR

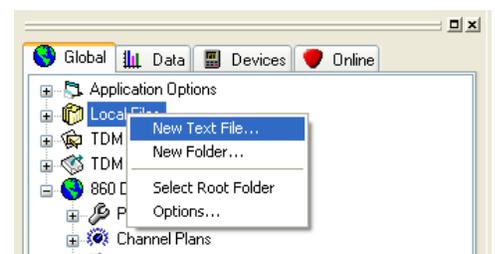
From the  Global tab, right-click on **Local Data**, and then select **New Text File**.



File Menu

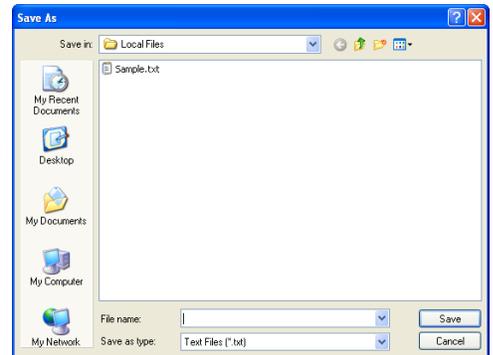


Toolbar



Global Tab

2. The **Save As** window will appear. From this window you will choose the location and name of the text file to save and then select the  button.
3. A new blank text file will appear in the data window. Text can be entered or posted from another document. Note that there is no “word wrap” for posted text.



After making changes to a text file, you must select the  button from the toolbar or Save from the File menu before closing the text file. Otherwise, if you try to close the text file before saving, WorkBench will prompt you to save the text file.

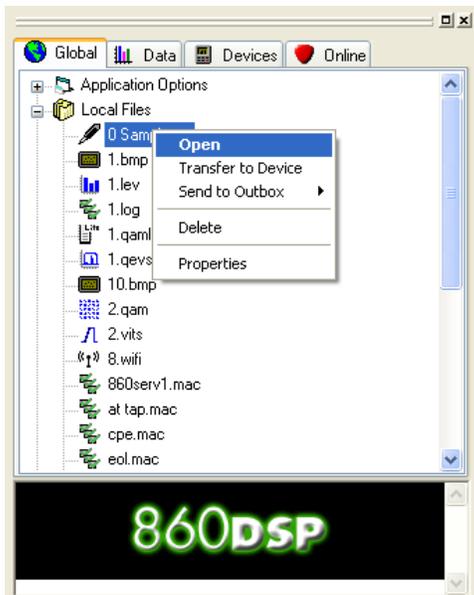
Opening and Closing Text File

You can use the WorkBench software to open the text files that you have created. To open any text files, perform one of the following actions:

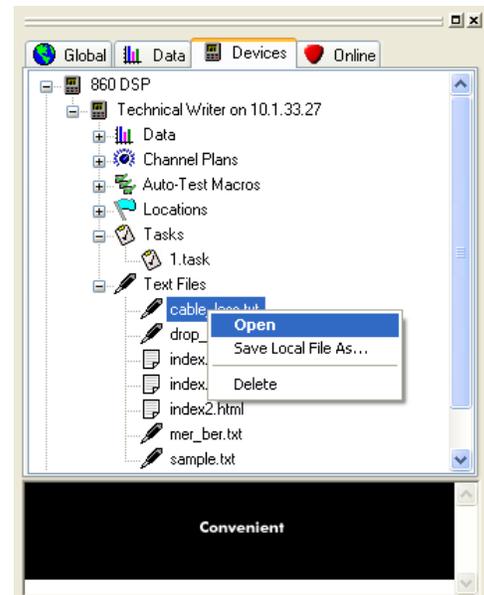
From the  Global tab, right-click on the desired text file(s) to open, and then select **Open**.

OR

From the  Devices tab, right-click on the desired text file(s) to open, and then select **Open**.



Global Tab



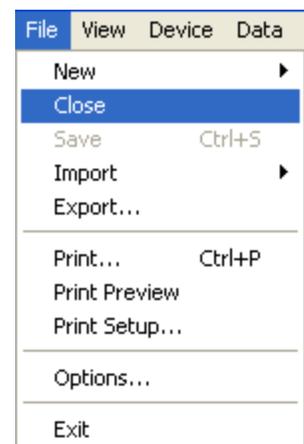
Devices Tab

To close any text file that is open, perform one of the following actions:

From the **File** menu, select **Close**.

OR

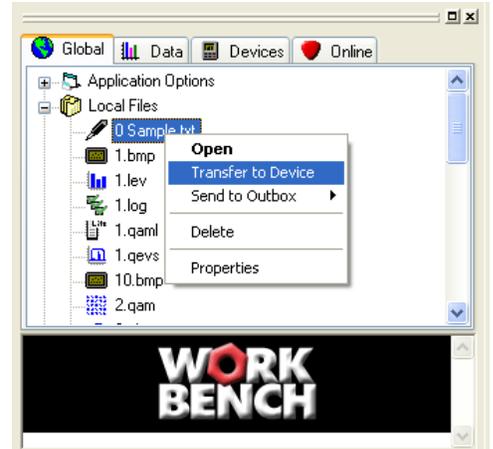
Select the gray "X" in the upper right corner of the **Data** window.



Transferring Text Files to Devices

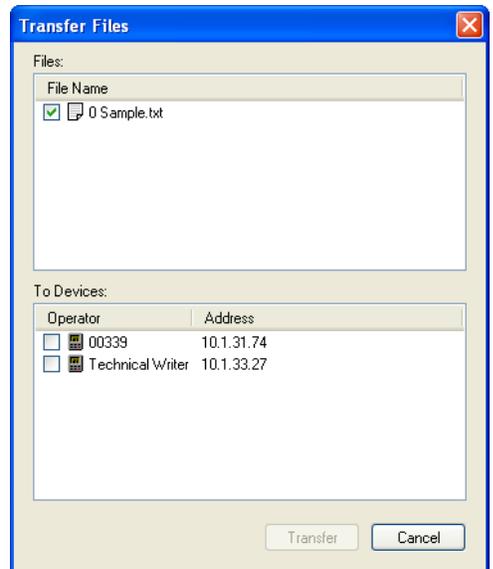
You can use the WorkBench software to transfer text files to a connected device. To transfer any text file, perform the following actions:

1. From the  Global tab, right-click on the desired text file(s) to transfer, and then select **Transfer to Device**.



If only one device is connected, the text file will automatically be transferred to the device without any other user interaction.

2. If more than one device is connected the **Transfer Files** window will appear.
3. Select the text files you wish to send.
4. Select the device(s) that you wish to send the selected text files to.
5. Select the  **Transfer** button to transfer the text files or select the  **Cancel** button to exit without transferring.

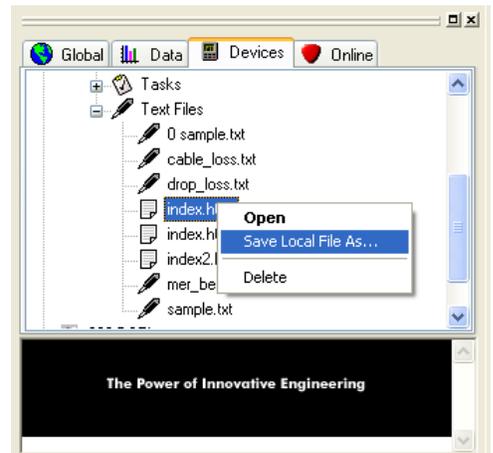


Saving Text Files to a Local File

You can save text files from the 860 DSP or 860 DSPi to your local drive to allow you to move data from one WorkBench software installation to other WorkBench software installations within your company.

Perform the following steps to save a local copy of any of the text files described earlier in this chapter:

1. After connecting to a device, from the  **Devices** tab, right-click on the desired text file(s) to save, and then select **Save Local File As**.



NOTE

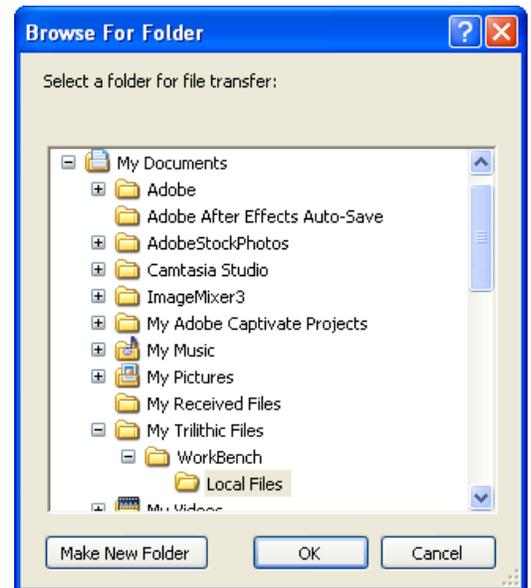
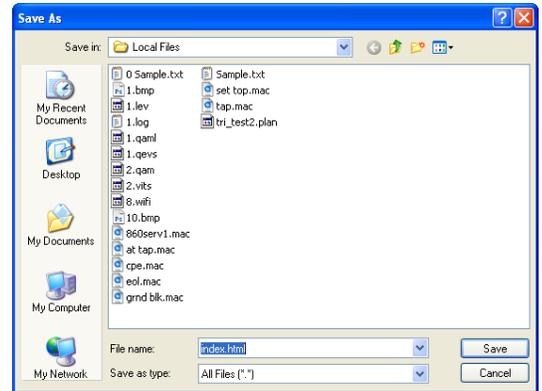
To select more than one text file at once for batch processing, select the first text file that you would like to save, and then hold the CTRL key on your keyboard while using your mouse to select the other text file.

2. Perform one of the following steps to save the local text file(s):

If you selected only one file to save, the **Save** window will appear. From this window choose the location and name of the text file to save and then select the **Save** button.

OR

If you selected more than one file to save, the **Browse For Folder** window will appear. From this window choose the location to save the text file(s) to and then select the **OK** button.



Deleting Text Files

You can delete text files that are no longer needed.

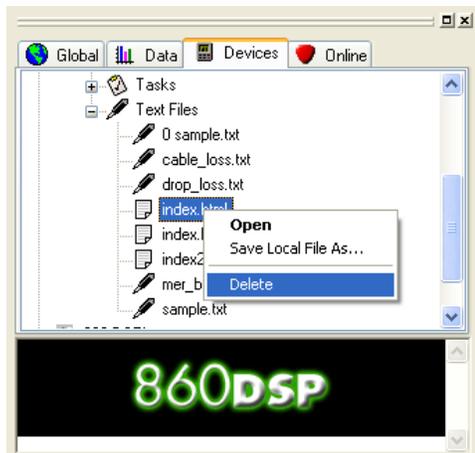
Perform the following steps to delete any of the text files described earlier in this chapter:

1. Perform one of the following steps to select the text file(s) to delete:

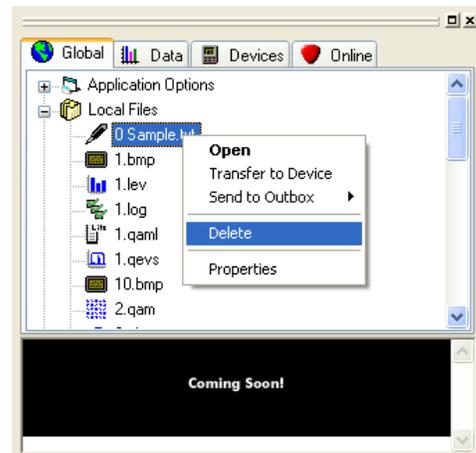
From the  **Devices** tab, right-click on the desired text file(s) to delete, and then select **Delete**.

OR

From the  **Global** tab, right-click on the desired text file(s) to delete, and then select **Delete**.



Devices Tab



Global Tab



To select more than one text file at once for batch processing, select the first text file that you would like to delete, and then hold the CTRL key on your keyboard while using your mouse to select the other text file.

Printing Text Files

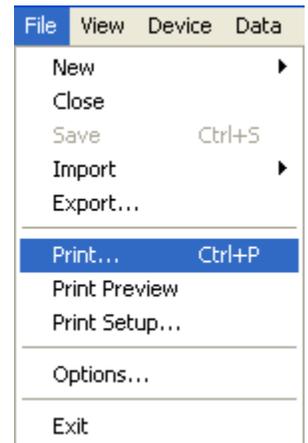


Before printing you may want to setup your printer by first selecting *Printer Setup...* from the File Menu. WorkBench will use the settings of your default Windows printer if you choose to skip this step.

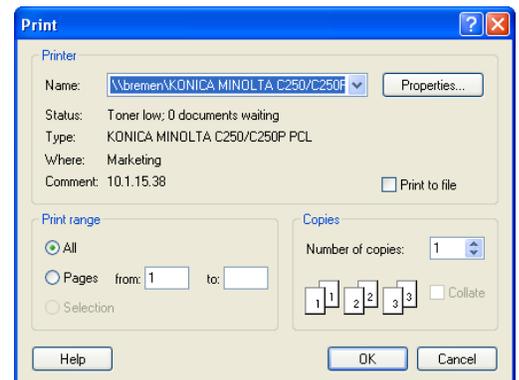
Printing Without Preview

To print any text file that is open without a preview, perform the following steps:

1. Press the Ctrl+P keys on your keyboard or from the **File** menu, select **Print**.



2. The **Print** window will appear.
3. If you wish to change any printer settings do so at this point.
4. Once you are satisfied with the printer settings, select the **OK** button to print the document or select the **Cancel** button to exit without printing.



Printing With Preview

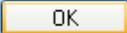
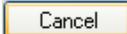
To print any text file that is open with a preview, perform the following steps:

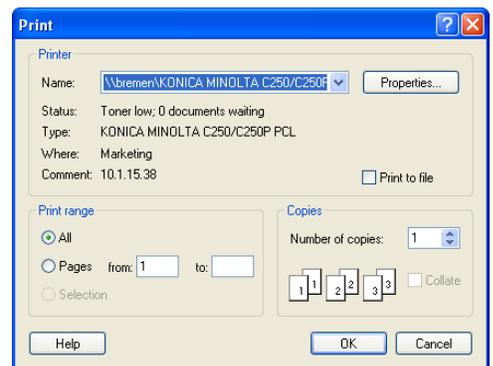
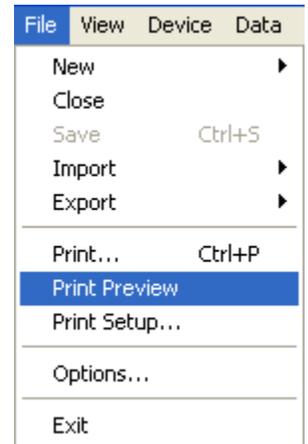
1. From the **File** menu, select **Print Preview**.
2. A new print preview window will appear in the **Data** window. You can then use the buttons at the top of the print preview screen as follows:

 - Use this button to print the document.

 or  - Use these buttons to zoom in and out on the document.

 - Use this button to close without printing.

3. After you have selected the  button, the **Print** window will appear.
4. If you wish to change any printer settings do so at this point.
5. Once you are satisfied with the printer settings, select the  button to print the document or select the  button to exit without printing.



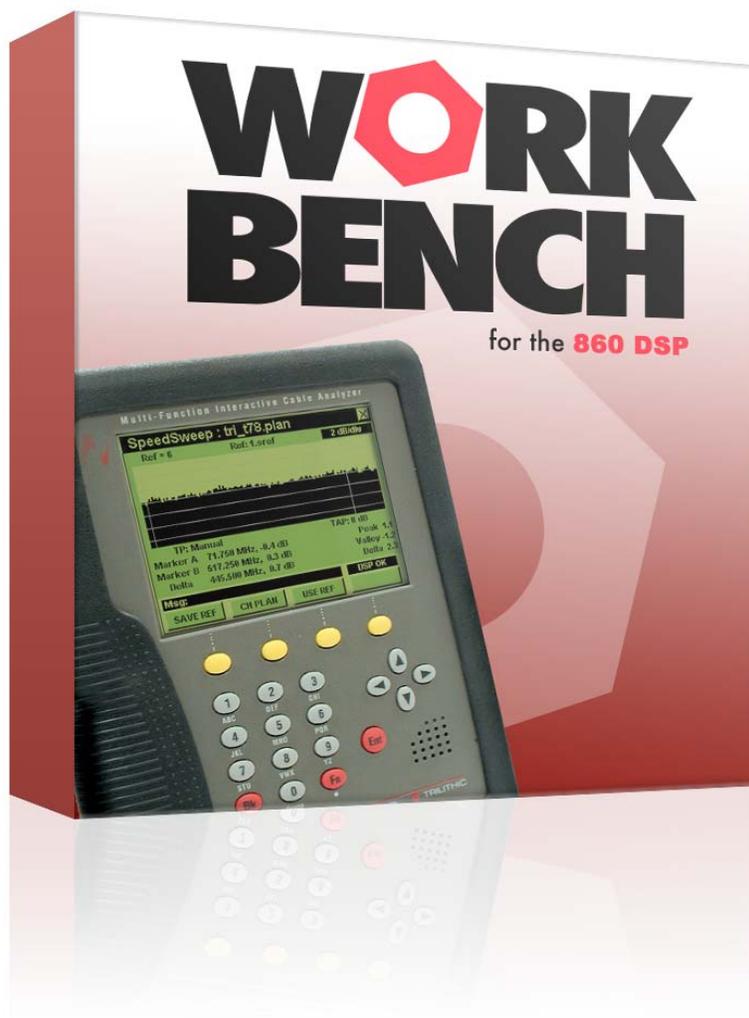
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WorkBench Software

(and WorkBench Lite Software)

for the 860 DSP, 860 DSPi, 860 DSPh, 860 DSPr, and 8300 FST

Section IV: Configuration Packages



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Chapter 1

Introduction

Overview

Once you have used the WorkBench program to create configuration files, you can begin creating, editing, and managing configuration packages. A configuration package is a combination of one or more channel plans, locations, macros, and text files, and a wide variety of individual configuration parameters. You can use a configuration package as a quick and easy way to install a suite of channel plans and other information on the following analyzers:

- 860 DSP
- 860 DSPi
- 860 DSPh
- 860 DSPr
- 8300 FST

Within each configuration package, you can customize your analyzers to meet your specific testing requirements by configuring the following parameters:

- Navigation menus
- Channel plans
- Locations
- Auto-test macros
- Measurement options
- Test mode options
- Performance limits

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Chapter 2

Creating Configuration Packages

Overview

You can create a new configuration package or create a configuration package from an existing configuration package. Once you have created a configuration package, you can modify or delete them, directly modify the configuration of an 860 DSP, DSPi, DSPh, or DSPr, or download individual files to an 860 DSP, DSPi, DSPh, or DSPr.



NOTE

In the following procedures, there are minor differences in some of the screen options and the screens that appear, depending on whether you have multiple, one, or no 860 DSP's connected to the system.

Creating a New Configuration Package

The WorkBench Configuration Wizard is used to create a configuration package.



NOTE

You cannot create and save configuration packages for the 8300 FST Forward Speed Sweep Transmitter as shown in this chapter. See Chapter 6: Configuring an 8300 FST for more information on how to create custom configurations for the 8300 FST.



NOTE

It is not necessary to create a complete configuration package. You can create a configuration package that will add specific features to an existing configuration then use the Add Selected Items option on the Package Transfer Mode screen (shown later in this procedure) to download the configuration information without deleting any existing configuration information on the 860 DSP.

To create a configuration package, perform the following steps:

1. Perform one of the following steps to create a new configuration package:

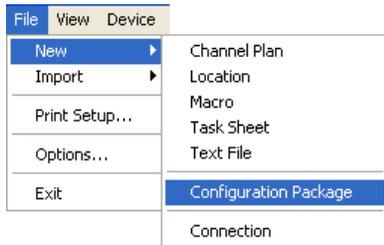
From the **File** menu, hover over **New**, and then select **Configuration Package**.

OR

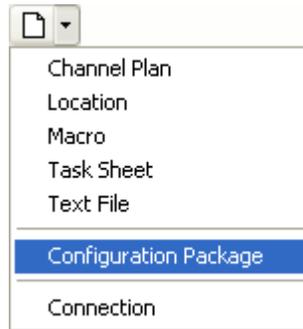
From the Toolbar click on the  button and then select **Configuration Package**.

OR

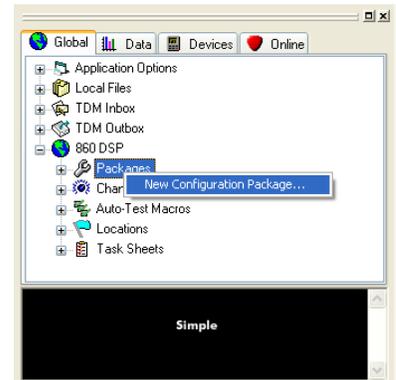
From the  Global tab, right-click on **Packages**, and then select **New Configuration Packages**.



File Menu



Toolbar



Global Tab

2. The **Trilithic Device Configuration Wizard** window will appear.
3. Click  button to display the **Trilithic Device Configuration Wizard Getting Started** screen.



4. Perform one of the following steps to create a configuration package, and then click the  button:

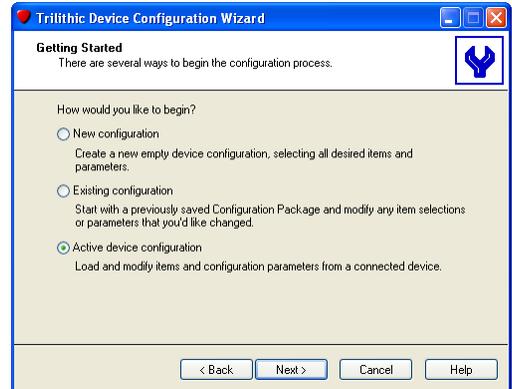
New configuration - Select this option to create a new empty device configuration, selecting all desired items and parameters.

OR

Existing configuration - Select this option to start with a previously saved configuration package and modify any item selections or parameters that you would like to change.

OR

Active device configuration - Select this option to load and modify items and configuration parameters from a selected device.



NOTE

If one or more devices are connected, the Active Device Configuration option is active.



NOTE

You can select the Active Device Configuration option to load the configuration from the specified device then modify the specified device's information and/or download it to another device. If an existing device configuration is to be used to configure other devices, you may find it easiest to create your main configuration package(s) with this method.

5. If you selected the **New configuration** option from the previous step, proceed to *Step 7*. Otherwise, proceed to the next step.
6. Perform one of the following steps to choose which device or existing configuration package to use to create the new configuration package, and then click the  button:

If you selected the **Existing configuration** option from Step 4, select the name of the configuration package to use as the basis of the new configuration package.

OR

If you selected the **Active device configuration** option from Step 4, select the name of the device to use as the basis of the new configuration package.



**Existing
Configuration**



**Active Device
Configuration**

 **NOTE** *Before you can continue, You will need to know the type(s) of devices for which you want to create configuration packages.*

7. Perform one of the following steps to select the type of device with which the configuration package is to be used:

860 DSP/DSPi hand-held device - Select this option to create a device configuration for the 860 DSP or 860 DSPi.

OR

860 DSPh rack-mounted device - Select this option to create a device configuration for the 860 DSPh.

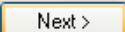
OR

All 860 DSP devices - Select this option to create a device configuration that includes channel plans, locations, auto-test macros, and text files that is compatible with the 860 DSP, DSPi, and DSPh.



NOTE

The 860 DSPr and 8300 FST are not shown in the Device Selection Wizard window. To create a new configuration package for the 860 DSPr or the 8300 FST, manually connect to the device then right-click on the device name and select “Configure, Configuration Wizard” from the menu.

8. Once you have chosen the type of device that the configuration package is to be used with, click the  button and then see the following:

If you selected the **860 DSP/DSPi hand-held device** option, proceed to Chapter 2 to view the available configuration parameters for the 860 DSP and 860 DSPi and then return to Step 9 to continue creating the configuration package.

OR

If you selected the **860 DSPh rack-mounted device** option, proceed to Chapter 3 to view the available configuration parameters for the 860 DSPh and then return to Step 9 to continue creating the configuration package.

OR

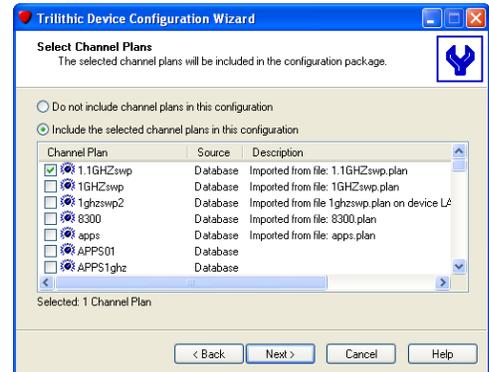
If you selected the **All 860 DSP devices** option, proceed to Step 9 to continue creating the configuration package.

9. After proceeding through the available configuration parameters for your selected device, the **Select Channel Plans** window will appear. Perform one of the following steps to select the channel plans to include in the configuration, and then click the **Next >** button:

Do not include channel plans in this configuration - Select this option to exclude channel plans from this configuration package.

OR

Include the selected channel plans in this configuration - Select this option to include the selected channel plans in this configuration package, and then from the list select the channel plans to include.

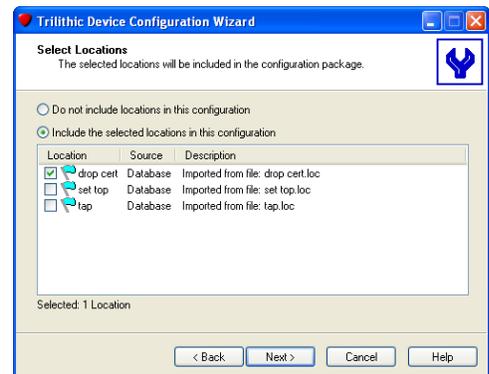


10. The **Select Locations** window will appear. Perform one of the following steps to select the locations to include in the configuration, and then click the **Next >** button:

Do not include locations in this configuration - Select this option to exclude locations from this configuration package.

OR

Include the selected locations in this configuration - Select this option to include the selected locations in this configuration package, and then from the list select the locations to include.



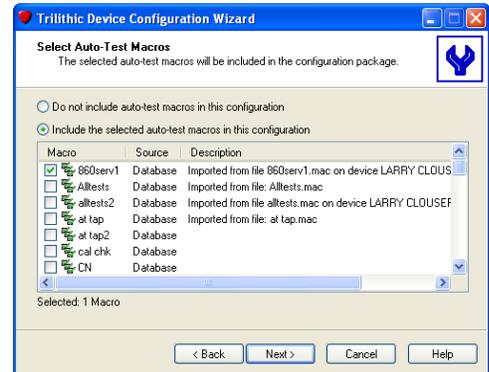
This step ONLY applies to the 860 DSP or 860 DSPi. Proceed to Step 13 to continue creating the 860 DSPh configuration package.

11. The **Select Auto-Test Macros** window will appear. Perform one of the following steps to select the auto-test macros to include in the configuration, and then click the  button:

Do not include auto-test macros in this configuration - Select this option to exclude auto-test macros from this configuration package.

OR

Include the selected auto-test macros in this configuration - Select this option to include the selected auto-test macros in this configuration package, and then from the list select the auto-test macros to include.





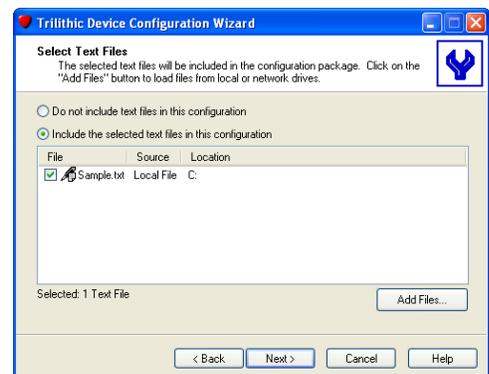
NOTE *This step **ONLY** applies to the 860 DSP or 860 DSPi. Proceed to Step 13 to continue creating the 860 DSPh configuration package.*

12. The **Select Text Files** window will appear. Perform one of the following steps to select the text files to include in the configuration, and then click the  button:

Do not include text files in this configuration - Select this option to exclude text files from this configuration package.

OR

Include the selected text files in this configuration - Select this option to include the selected text files in this configuration package, and then from the list select the text files to include.



13. The **Package Transfer Mode** window will appear. Perform one of the following steps to determine how to apply the configuration package to the target device, and then click the

 button:

Add Selected Items - Select this option to transfer the selected items to the device and leave all of its existing items unchanged.

OR

Include Selected Items and Delete All Other Items - Select this option to transfer the selected items to the device and delete all existing items. This device will only contain only those items selected in this configuration package.



CAUTION

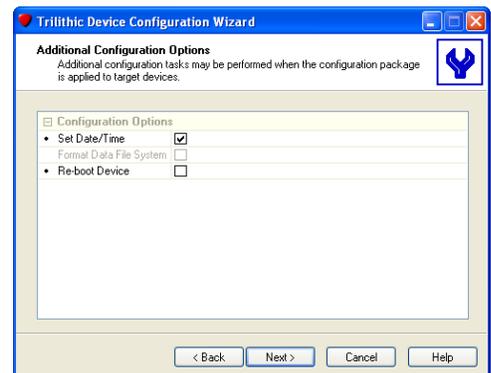
Selecting the second option may cause the channel plan, location, macro, and text data to be deleted from the selected devices.

14. The **Additional Configuration Options** window will appear. Select from the following additional configuration tasks to be performed when the configuration package is applied to the selected devices, and then click the  button:

Set Date/Time - Select this option to transfer the date and time of the PC running the WorkBench software to the selected devices.

Format Data File System - Not available for selection at this time.

Reboot Device - Select this option to reboot the selected devices after the transfer of the configuration package is complete.



NOTE

If editing a configuration package directly from a connected device, proceed directly to Step 17.

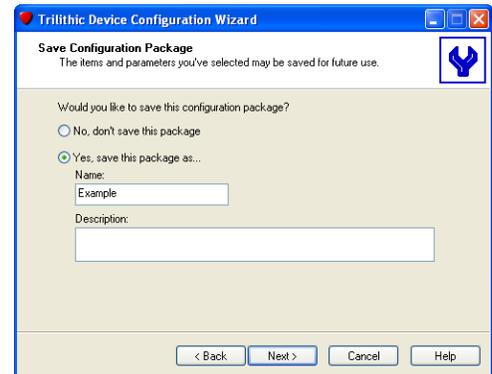
15. The **Save Configuration Package** window will appear. Perform one of the following steps to select whether you would like to save this configuration package, and then click the

 button:

No, don't save this package - Select this option to not save the configuration package.

OR

Yes, save this package - Select this option to save this configuration package, and then enter a name and description of the configuration package.



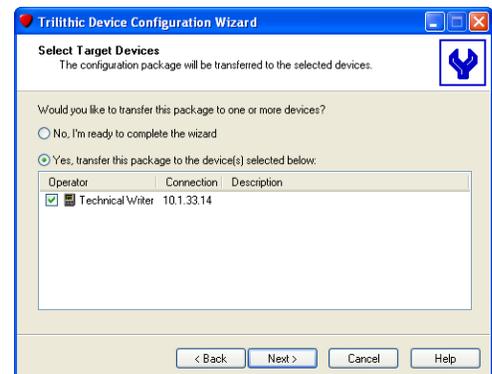
This step does not apply when editing a configuration package directly from a connected device, proceed directly to Step 17.

16. The **Select Target Devices** window will appear. Perform one of the following steps to select whether you would like to transfer this configuration package to a connected device, and then click the  button:

No, I'm ready to complete the wizard - Select this option to exit the configuration wizard without transferring the configuration package to any devices.

OR

Yes, transfer this package to the device(s) selected below - Select this option to transfer the configuration package to the selected devices, and then from the list select the devices to transfer to configuration package to.



This step does not apply when editing a configuration package directly from a connected device, proceed directly to Step 17.

17. The **Trilithic Device Configuration Wizard Complete** window will appear. Once the transfer process is complete and you have reviewed the actions completed by the configuration wizard click the  button.

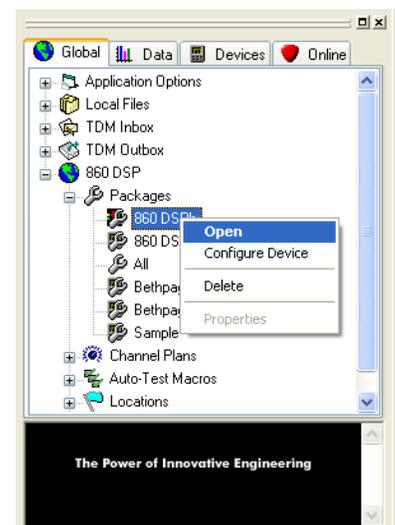


Opening an Existing Configuration Package

Once a configuration package has been created, it can be opened for editing.

To open an existing configuration package, perform the following steps:

1. Click the **Global** tab in the Navigator window.
2. Expand the **860 DSP** menu tree option, then expand the **Packages** menu option. All available configuration packages will be displayed.
3. Right-click on the configuration package to be opened, then click **Open** in the floating menu.
4. The **Trilithic Device Configuration Wizard** window will open. The configuration package will be opened. Follow the standard configuration package process to view or modify the individual parameters of a configuration package.



Creating a Configuration Package from an Existing Package

Once you have created one configuration package, you can use it as the basis for creating additional configuration packages.

To create a new configuration package from an existing package, perform the following steps:

1. Perform one of the following steps to create a new configuration package:

From the **File** menu, hover over **New**, and then select **Configuration Package**.

OR

From the Toolbar click on the  button and then select **Configuration Package**.

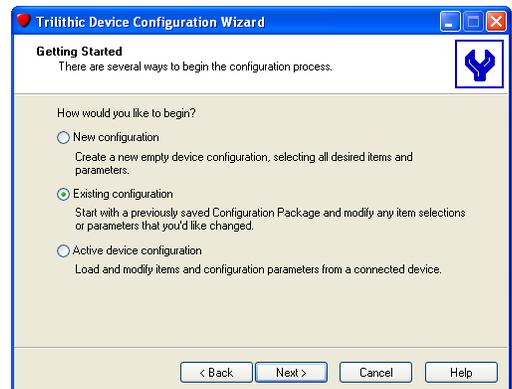
OR

From the  Global tab, right-click on **Packages**, and then select **New Configuration Package**.

2. Click the **Next** button to display the Device Configuration Wizard Getting Started screen.



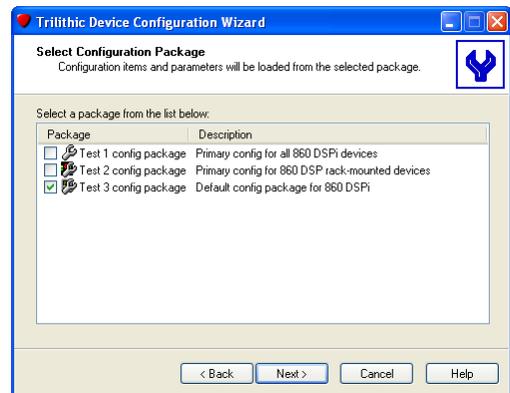
3. Select the radio button corresponding to **Existing configuration** then click the **Next** button.



Configuration packages are defined by the following icons:

Option	Description
	The configuration package contains no device parameters and therefore may be applied to all devices.
	The configuration package contains device parameters relevant only to 860 DSP and 860 DSPi hand-held devices.
	The configuration package contains device parameters relevant only to rack-mounted devices.

4. Select the configuration package from which to load information and click **Next**.





NOTE *You may load information applicable for all devices (such as channel plans) from any configuration package (device specific or not) to create a new configuration package (device specific or not).*

5. Enter information in the fields as follows:

860 DSP/DSPi hand-held device: Select this option to create a configuration package including device parameters applicable to only 860 DSP(i) hand-held devices.

860 DSPh rack-mounted device: Select this option to create a configuration package including device parameters applicable to only 860 DSPh rack-mounted devices.

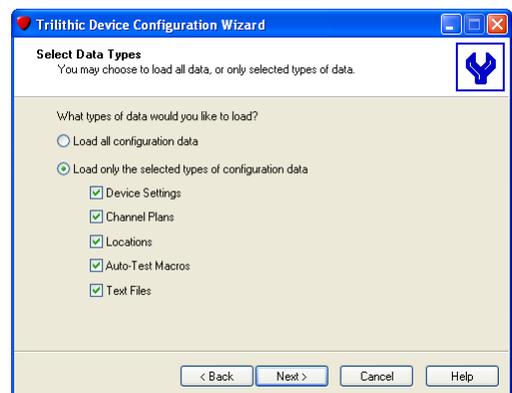
All 860 DSP devices: Select this option to create a configuration package excluding device parameters that is applicable to all 860 DSP devices.



6. Enter information in the fields as follows:

Load all configuration data: Select this option (the default) to load all the configuration data—files and parameters—from the selected configuration package.

Load only the selected types of configuration data: Select this option if you want to load only certain types of information from the configuration package. Check the box for each category you wish to include. All other parameter information in the Configuration Wizard will be set to the standard defaults.



 **NOTE** *If configuration packages are being created across different types of devices (such as from an 860 DSPi to an 860 DSPh), the Load All Configuration Data option and the Device Settings option will not be available.*

7. When you are satisfied with your entries, click **Next**. The 860 DSP Configuration Wizard continues with the creation process as described earlier for either 860 DSP(i) hand-held devices or 860 DSPh rack-mounted devices.

Modifying a Configuration Package

You can modify a configuration package as follows:

1. Click the **Global** tab on the Navigator window. The configuration packages for the selected device will be shown in the display tree.
2. Double-click the configuration package to be modified.
3. Follow the standard configuration package process to modify a configuration package.



NOTE

The configuration package that is being modified can be saved with a new file name to create a new configuration package.

Deleting a Configuration Package

To delete a configuration package, do the following:

1. Click the **Global** tab on the Navigator window. The configuration packages for the selected device will be shown in the display tree.
2. Select the Configuration Packages icon then right-click the configuration package to be deleted.
3. Select **Delete** from the floating menu. WorkBench asks you to confirm your deletion. Click **Yes** to delete the configuration package.

Directly Modifying the Configuration of a Device

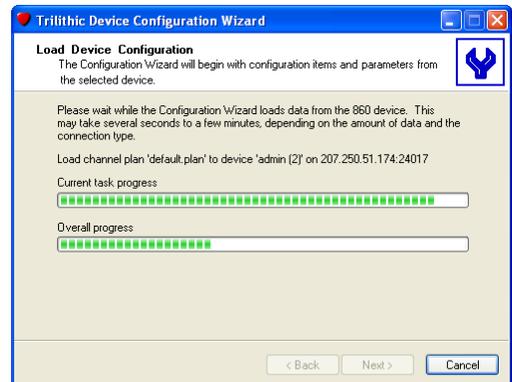
You can make a modification directly to the configuration of an 860 DSP as follows:

1. Connect the 860 DSP to the WorkBench computer. If more than one 860 DSP is connected to the WorkBench computer, select the desired device from the list of available devices shown on the Devices tab.



If you have multiple devices connected, the Configuration Wizard toolbar button and the menu items will be grayed out until a single device has been selected on the Devices tab.

2. Right-click on the 860 DSP in the **Devices** menu, select **Configure**, then select **Configuration Wizard** from the sub-menu. (You can also start the Configuration Wizard by right-clicking a device name in the Devices tab of the Navigator window and then selecting **Configure** from the floating menu and then **Configuration Wizard** from the sub-menu.) The WorkBench software uploads the configuration information from the 860 DSP.



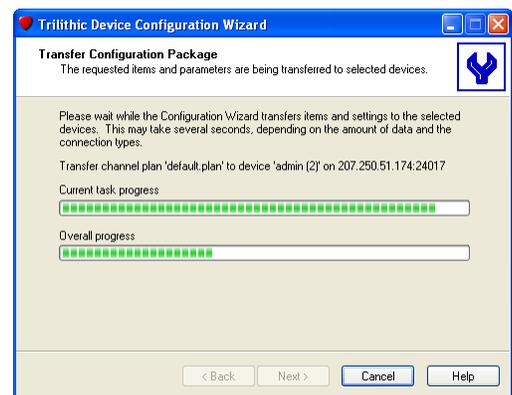
If you want to examine and change only a few items, from the device's menu, select the individual parameter group to modify. You can also synchronize the device's date and time with the WorkBench computer or reboot the connected device.

3. When the Configuration Wizard is done uploading information from the 860 DSP, you see the General Device Parameters screen as usual. The defaults are taken from the configuration of the 860 DSP.
4. Follow the standard configuration package process to modify a configuration package.

5. At the end of the process WorkBench will download the configuration information to the selected device.



6. When the file transfer is completed, WorkBench will display a window indicating that the Configuration Wizard has completed the file transfer.
7. Click the **Finish** button to close the Configuration Wizard window.

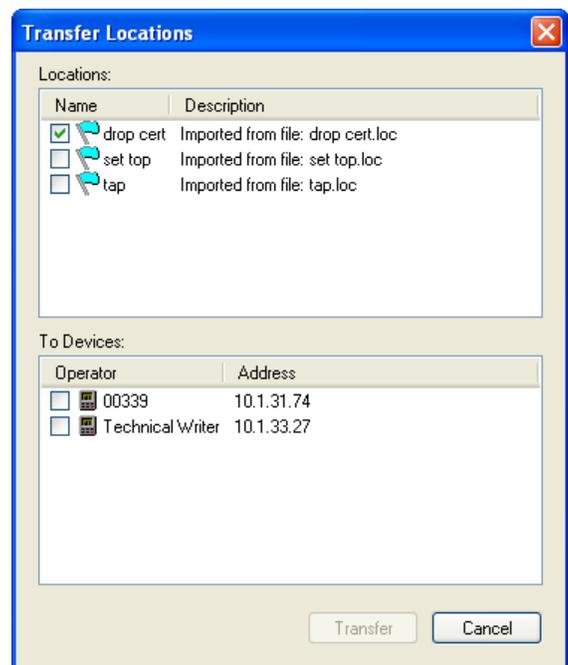


Downloading Individual Files to a Device

You can download individual channel plans, locations, macros, and text files to a device. This is very convenient if you need to do a quick addition to an device's configuration and do not need to or want to create or modify an entire configuration package.

To download individual files to a device, do the following:

1. Click the **Global** tab on the Navigator window.
2. Select the file(s) you want to download in the **Local Files** branch of the file tree.
3. Right-click the file and select **Transfer to Device** from the floating menu.
4. If only one device is connected, the file is downloaded immediately. If there is more than one device connected, the appropriate Transfer window will appear (a sample Transfer Locations window is shown below).
5. Select the check box(es) corresponding to the files to be transferred, and select the check box(es) corresponding to the devices to transfer the files to.
6. Click the **Transfer** button to transfer the selected file(s) from WorkBench to the selected device(s).



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860 DSP and 860 DSPi Configuration Parameters

Overview

The configuration parameters shown in this chapter apply to any 860 DSP or 860 DSPi. These settings are presented in same order in which they would be configured while creating a configuration package with the Configuration Wizard.

The 860 DSP or 860 DSPi can be configured with various tuning and measurement parameters that match the particular characteristics of your cable network. WorkBench simplifies this process using the familiar user interface of your PC. The configuration packages can be stored and transferred to multiple 860 DSP or 860 DSPi field analyzers so every field service technician has the same correct configuration package.

Editing Configuration Packages

Perform the following steps to modify the current configuration package on any connected 860 DSP or 860 DSPi:

1. Select the name of the connected 860 DSP or 860 DSPi from the  **Devices** tab.
2. Perform one of the following steps to edit the configuration package on the selected 860 DSP or 860 DSPi:

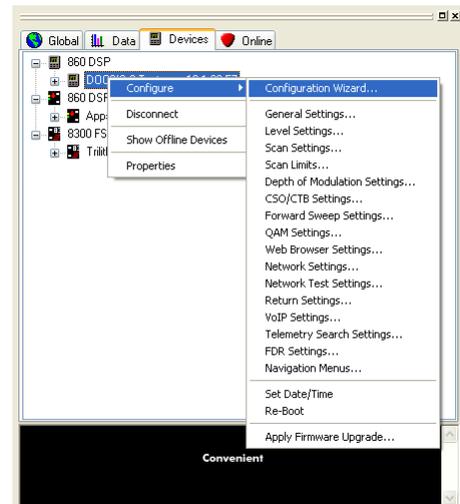
From the Toolbar click on the down arrow next to the  button and then select **Configuration Wizard**.

OR

From the  **Devices** tab, right-click on the name of the connected device, hover over **Configure**, and then click on **Configuration Wizard**.



Toolbar



Devices Tab

3. WorkBench will now load the existing configuration from the connected 860 DSP or 860 DSPi and will then display the **General Device Parameters** window.
4. Edit the configuration parameters for the 860 DSP and 860 DSPi as shown later in this chapter and then return to Step 9 in **Chapter 1: Creating Configuration Packages, Creating a New Configuration Package** for instruction on how to complete the configuration package.

Editing Configuration Parameters

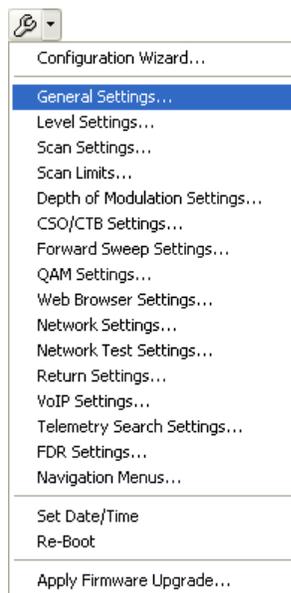
Each of the configuration parameters shown in this chapter can be edited individually from any connected 860 DSP or 860 DSPi as follows:

1. Select the name of the connected 860 DSP or 860 DSPi from the  **Devices** tab.
2. Perform one of the following steps to edit individual configuration parameters on the selected 860 DSP or 860 DSPi:

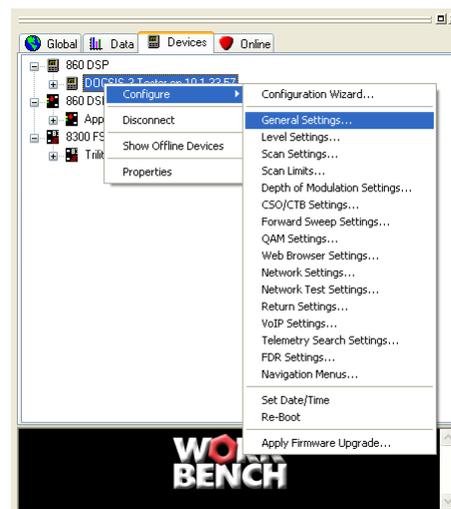
From the Toolbar click on the down arrow next to the  button and then select the configuration parameter that you wish to edit.

OR

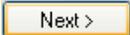
From the  **Devices** tab, right-click on the name of the connected device, hover over **Configure**, and then select the configuration parameter that you wish to edit.



Toolbar



Devices Tab

3. The corresponding configuration parameter window will appear, make any desired changes and then select the  button to send the configuration parameter that you chose to modify to the connected 860 DSP or 860 DSPi or select the  button to exit without changing the configuration parameter.
4. After the transfer process is complete, select the  button.

General Device Parameters

General device parameters are global settings that affect the general operation and display of the 860 DSP or 860 DSPi. To modify the parameters for this section, select the radio button corresponding to **Modify general device parameters as defined below** in the Configuration Wizard window then enter information in the fields as follows:

Global Parameters

Active Channel Plan: Select the active channel plan from the drop-down list.

Language: Select the language for the unit. (This option displays the list of languages currently loaded in WorkBench. If no languages are loaded, the selection is normally grayed out.)



To obtain the most current language files, check for updates on the 860 DSP website.

NOTE

Screen Capture Format: Select the file format in which to save screen captures (either .bmp, .bmpz or .lcd).

Sound: Check the box to enable sound on the 860 DSP or 860 DSPi.

Web Server Port: Enter the port to check for the device.

Lock Out Setup Changes: Check this box to disable any unauthorized configuration changes to the device.

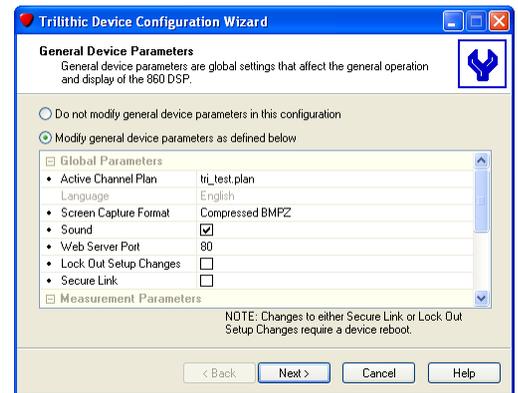
Secure Link: Check this box to enable Secure860Link (S8L) on the 860 DSP or 860 DSPi.

Measurement Parameters

Temperature Units: Select the temperature units from the drop-down list.

Measurement Units: Select the measurement units from the drop-down list.

Distance Units: Enter the measurement units for distance from the drop-down list.



Analog Noise Bandwidth: Enter the analog video noise bandwidth in MHz.

Cable Velocity Factor: Enter the cable velocity factor used for QAM equalizer and Sweep displays.

Testpoint Compensation On: Check this box to toggle testpoint compensation.

Testpoint Compensation: Enter the testpoint compensation value in dB.

Probe Compensation: Enter the probe compensation value in dB.

Data Log Attachments: Select the attachments to associate with a data log (either none, only locations, only tasks, or both locations and tasks).

When you are satisfied with your entries, click **Next** to continue with the Level Mode parameters.

Level Mode Parameters

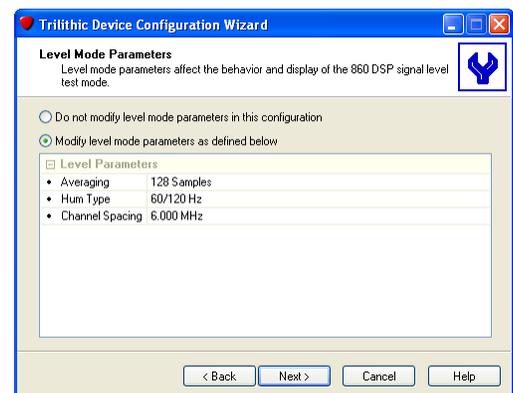
Level mode parameters affect the behavior of the 860 DSP or 860 DSPi signal level test mode. To modify the parameters for this section, select the radio button corresponding to **Modify level mode parameters as defined below** in the Configuration Wizard window then enter information in the fields as follows:

Averaging: Select the number of samples per averaged reading from the drop-down list.

Hum Type: Select the hum type (either 50/100Hz or 60/120Hz) from the drop-down list.

Channel Spacing: Enter the channel spacing in MHz.

When you are satisfied with your entries, click **Next** to continue with the Scan Mode parameters.



Scan Mode Parameters

Scan mode parameters affect the behavior of the 860 DSP or 860 DSPi channel scan test mode. To modify the parameters for this section, select the radio button that corresponds to **Modify scan mode parameters as defined below** in the Configuration Wizard window then enter information in the fields as follows:

Averaging: Select the number of samples per averaged reading from the drop-down list.

When you are satisfied with your entries, click **Next** to continue with the Scan Limits parameters.



Scan Limits

Scan limits are used to validate the results of 860 DSP or 860 DSPi channel scan operations. To modify the parameters for this section, select the radio button corresponding to **Modify scan limits as defined below** in the Configuration Wizard window then enter information in the fields for the Tap, Block, Set, and User scan limits as follows:

Minimum Video Level: Enter the minimum video level.

Maximum Video Level: Enter the maximum video level.

Minimum Video/Audio Delta: Enter the minimum video/audio delta (in dB).

Maximum Video/Audio Delta: Enter the maximum video/audio delta (in dB).

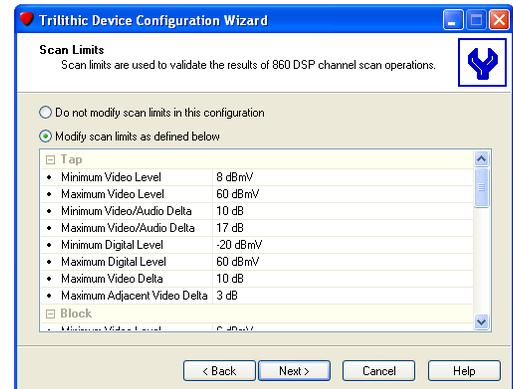
Minimum Digital Level: Enter the minimum digital level.

Maximum Digital Level: Enter the maximum digital level.

Maximum Video Delta: Enter the maximum video delta (in dB).

Maximum Adjacent Video Delta: Enter the maximum adjacent video delta (in dB).

When you are satisfied with your entries, click **Next** to continue with the Depth of Modulation Mode parameters.

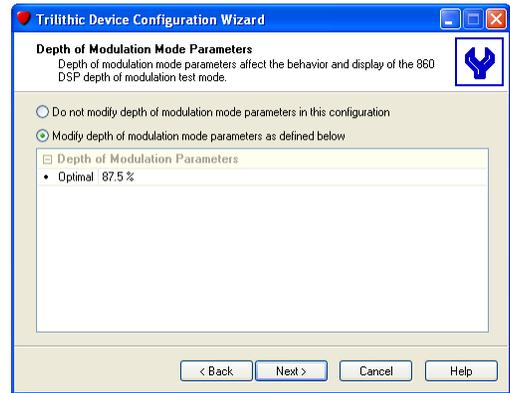


Depth of Modulation Mode Parameters

The depth of modulation mode parameters affect the behavior and display of the 860 DSP or 860 DSPi depth of modulation test mode. To modify the parameters for this section, select **Modify depth of modulation mode parameters as defined below**, then enter information in the fields as follows:

Optimal: Enter the optimal depth of modulation percentage.

When you are satisfied with your entries, click **Next** to continue with the CSO/CTB Mode parameters.



CSO/CTB Mode Parameters

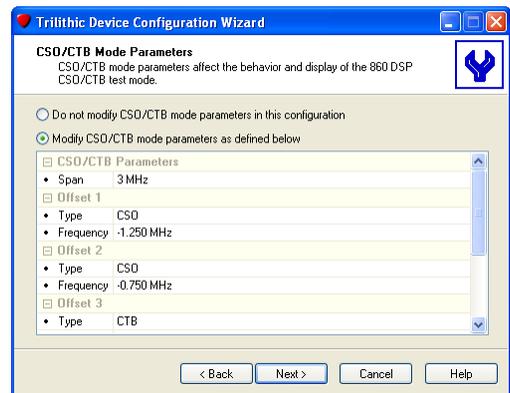
The CSO/CTB mode parameters affect the behavior and display of the 860 DSP or 860 DSPi CSO/CTB test mode. To modify the parameters for this section, select the radio button corresponding to **Modify CSO/CTB mode parameters as defined below** in the Configuration Wizard window then enter information in the fields as follows:

Span: Enter the span frequency (in MHz).

Type: Select the type from the drop-down list for Offset 1 through Offset 5.

Frequency: Enter the frequency (in MHz) for Offset 1 through Offset 5.

When you are satisfied with your entries, click **Next** to continue with the Forward Sweep Mode parameters.



The span frequency should be wide enough to include all offsets.

Forward Sweep Mode Parameters

The forward sweep mode parameters affect the behavior and display of the 860 DSP or 860 DSPi forward sweep test mode. To modify the parameters for this section, select the radio button corresponding to **Modify forward sweep mode parameters as defined below** in the configuration window then enter information in the fields as follows:

Averaging: Select the number of samples per averaged reading from the drop-down list.

8300 FST Channels: Select this check box to incorporate the headend transmitter into the sweep.

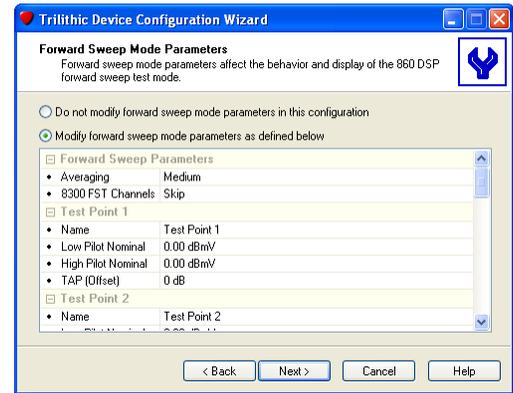
Name: Enter the name for Test Points 1 through 9. The name can be up to 30 characters.

Low Pilot Nominal: Enter the low pilot nominal parameter for Test Points 1 through 9.

High Pilot Nominal: Enter the high pilot nominal parameter for Test Points 1 through 9.

TAP (Offset): Enter the offset (in dB) for Test Points 1 through 9.

When you are satisfied with your entries, click **Next** to continue with the QAM Mode parameters.



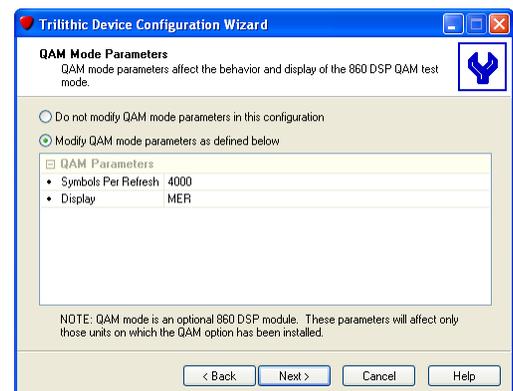
QAM Mode Parameters

The QAM mode parameters affect the behavior and display of the 860 DSP or 860 DSPi QAM test mode. To modify the parameters for this section, select the radio button corresponding to **Modify QAM mode parameters as defined below** in the Configuration Wizard then enter information in the fields as follows:

Symbols Per Refresh: Enter the number of symbols to display on the 860 DSP or 860 DSPi screen at one time. The symbols will appear darker with higher numbers, but the screen will refresh less frequently.

Display: Select the display mode from the drop-down list. MER is Modulation Error Ratio and is shown in dB. EVM is Error Vector Magnitude and is shown in %.

When you are satisfied with your entries, click **Next** to continue with the Web Browser parameters.



Web Browser Parameters

The web browser parameters affect the behavior and display of the 860 DSP or 860 DSPi web content viewer. To modify the parameters for this section, select the radio button corresponding to **Modify web browser parameters as defined below** in the Configuration Wizard window then enter information in the fields as follows:

Home Page: Enter the URL for the browser home page (the page that appears when the browser is started). This is also the page that's loaded when **Browser Home** is pressed on the 860 DSP or 860 DSPi.

Link Title: Up to six user-defined web site titles are shown on the default web page.

Link Address: Up to six user-defined web sites are loaded when the link title is pressed on the default web page.

Save Cookies: Select this option to retain web page cookies.

Display URL Bar: Select this option to display the URL bar on the browser.

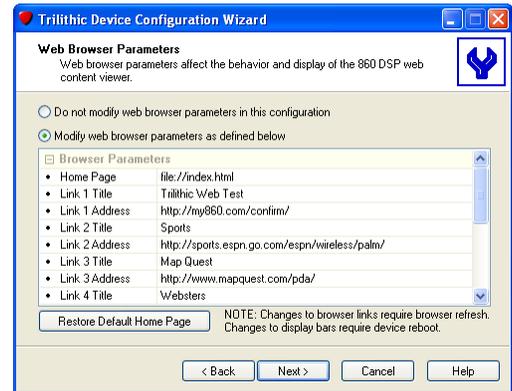
Display Status Bar: Select this option to display the status bar on the browser.

Display Softkey Bar: Select this option to display the softkey bar on the browser.

Display Title Bar: Select this option to display the title bar on the browser.

Restore Default Home Page: Click this button to restore the Trilithic default home page in the **Home Page** field.

When you are satisfied with your entries, click **Next** to continue with the Network Test parameters.



Network Parameters

The network test parameters configure the connectivity of the 860 DSP or 860 DSPi. To modify the parameters for this section, select the radio button corresponding to **Modify network parameters as defined below** in the Configuration Wizard window then enter information in the fields as follows:

Connectivity Parameters

Network Port: The 860 DSP or DSPi only has one network interface card (NIC). You must select which physical port to connect the NIC to for communication.

IP Address: Enter the IP address of the 860 DSP or 860 DSPi.

Subnet Mask: Enter the subnet mask of the 860 DSP or 860 DSPi.

Default Gateway: Enter the gateway the 860 DSP or 860 DSPi needs to use.

Preferred DNS Server: Enter the preferred DNS server's IP address. (This field is required if trap destinations are set as text instead of IP addressed.)

Alternate DNS Server: Enter the alternate DNS server's IP address. (This field is required if trap destinations are set as text instead of IP addressed.)

Wi-Fi Parameters

Enter the following parameters for Wi-Fi Zones 1 through 3:

SSID: Enter the name of the Wi-Fi access point.

Network Type: Select from **Infrastructure** (normal routing) or **Ad Hoc** (point-to-point routing).

Ad Hoc Channel: When in Ad Hoc network mode, select the wireless channel (1 through 11).

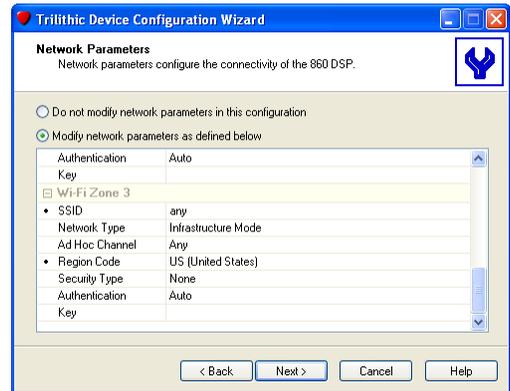
Region Code: Select the region (country) where the 860 DSP or 860 DSPi will be used.

Security Type: Set the Security Type to match your Wi-Fi access point's security settings.

Authentication: Set the Authentication to match your Wi-Fi access point's security settings.

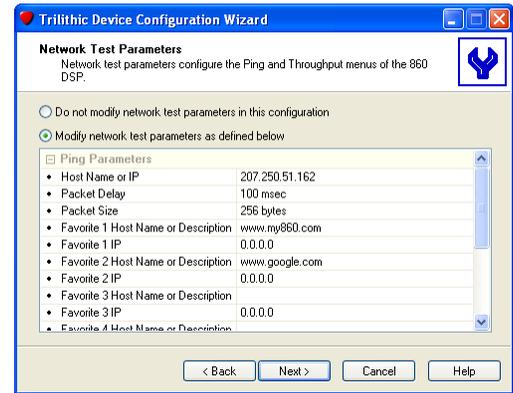
Key: Set the Key to match your Wi-Fi access point's security settings.

When you are satisfied with your entries, click **Next** to continue with the Network Test parameters.



Network Test Parameters

The network test parameters configure the Ping and Throughput menus of the 860 DSP or 860 DSPi. To modify the parameters for this section, select the radio button corresponding to **Modify network test parameters as defined below** in the Configuration Wizard window then enter information in the fields as follows:



Ping Parameters

Host Name or IP: Enter the server IP address to ping.

Packet Delay: Enter the time between the start of the query packets being transmitted.

Packet Size: Enter the size of the payload in each packet.

Favorite Host Name or Description: Up to four user-defined servers are listed to ping. Enter the host name of the server (or a description when entering an IP address).

Favorite IP: Up to four user-defined servers are listed to ping. Enter the IP address of the server.



NOTE *Only a valid host name or a valid IP address is required. When using an IP address, you can enter an optional description of the server.*

Throughput Parameters

Server IP: Enter the server IP address to transfer a file from.

Downstream File: Enter the name of the file to download from the server.

HTTP Port: Enter the connection port on the Test Server to measure throughput.

TFTP Port: Enter the connection port on the Test Server to measure throughput.

UDP Port: Enter the connection port on the Test Server to measure throughput.

When you are satisfied with your entries, click **Next** to continue with the Return parameters.

Return Parameters

The return parameters configure the SSR and RSVP menus of the 860 DSP or 860 DSPi. To modify the parameters for this section, select the radio button corresponding to **Modify return parameters as defined below** in the Configuration Wizard window then enter information in the fields as follows:

SSR Parameters

Tx Level: Enter the return test carrier level.

Link Frequency: Enter the telemetry stream data carrier frequency from the SST.

Sweep Carrier: Select any combination of the eight carriers to use.

Gain/Tilt Frequency: Select the two carriers to be used for gain and tilt value calculations.

Unit ID: Enter the unit ID. (Any SST can handle six units at the same time. Each unit must have a unique ID.)

Local Input: Select the input (Reverse/Both or SLM/Forward) to be used when measuring local ingress. (This is used in compare mode only.)

RSVP Parameters

Tx Level: Enter the maximum return carrier level.

Link Frequency: Enter the telemetry stream data carrier frequency from the SST.

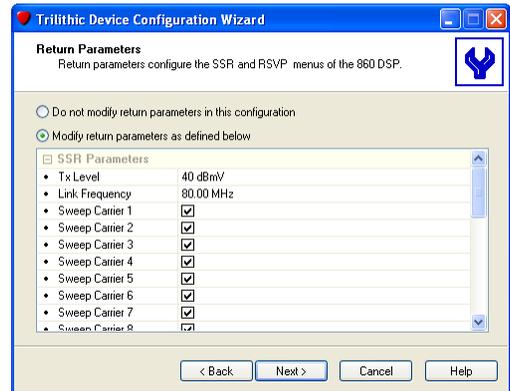
Test Carrier: Select any combination of the eight carriers to use.

C/I Threshold: Enter the minimum-carrier-to-ingress ratio to pass the test.

C/I Bandwidth: Enter the bandwidth used for the carrier-to-ingress calculation.

C/I Samples: Enter the number of ingress scans for the carrier-to-ingress calculation.

When you are satisfied with your entries, click **Next** to continue with the VoIP parameters.



VoIP Parameters

The VoIP parameters affect the behavior of the 860 DSP or 860 DSPi VoIP test mode. To modify the parameters for this section, select the radio button corresponding to **Modify VoIP parameters as defined below** in the Configuration Wizard window then enter information in the fields as follows:

Server IP: Enter the IP address of the Trilithic VoIP (ACTS) server.

CODEC Type: Enter the type of codec used for your VoIP traffic, such as G.711.

CODEC Delay: This display-only field shows the fixed delay using the selected codec.

CODEC Bit Rate: This display-only field shows the raw bit rate required to send voice data using the selected codec.

CODEC Pkt Rate: Enter the rate that voice packets will be transmitted.

CODEC Pkt Size: Enter the size of each voice packet. (**Note:** Packet size in bits * Packet rate = Bit rate.)

Jitter Buffer Delay: Enter the length of the jitter buffer in milliseconds to be used by voice receivers.

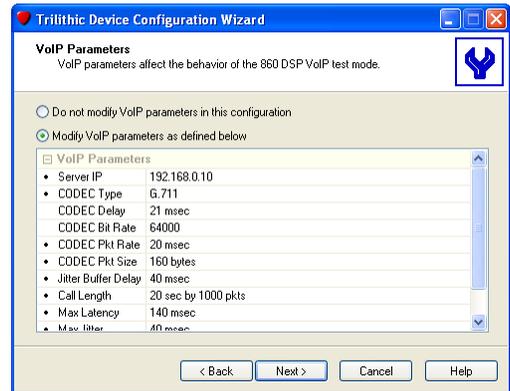
Call Length: Enter the length (in seconds) of the call in seconds to establish.

Max Latency: Enter the maximum allowable latency required for the test to pass.

Max Jitter: Enter the maximum allowable jitter required for the test to pass.

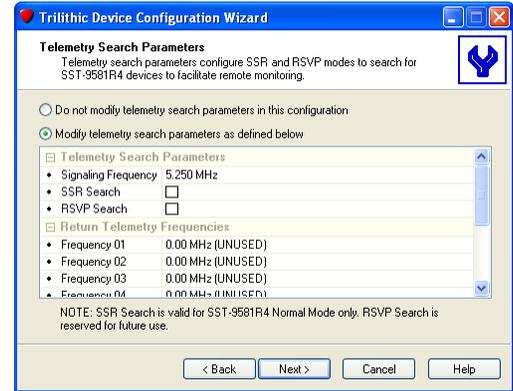
Min MOS: Enter the minimum MOS required for the test to pass.

When you are satisfied with your entries, click **Next** to continue with the Telemetry Search parameters.



Telemetry Search Parameters

Telemetry search parameters configure SSR and RSVP modes to search for SST-9581R4 devices to facilitate remote monitoring. To modify the parameters for this section, select the radio button corresponding to **Modify telemetry search parameters as defined below** in the Configuration Wizard window then enter information in the fields as follows:



Telemetry Search Parameters

Signaling Frequency: Enter the frequency used to determine the connected headend unit.

SSR Search: Check the box to enable searching the Return Telemetry Frequencies in SSR mode.

 **NOTE** *SSR Search is valid for SST-9581 R4 Normal Mode only.*

RSVP Search: Check the box to enable searching the Return Telemetry Frequencies in RSVP mode.

 **NOTE** *RSVP Search is not currently used and is reserved for future use.*

Return Telemetry Frequencies

Frequency: Enter up to ten frequencies to search for SST-9581R4 devices.

When you are satisfied with your entries, click **Next** to continue with the FDR Mode parameters.

FDR Mode Parameters

Frequency domain reflectometer (FDR) parameters allow the velocity of propagation (VOP) to be set for each type of cable when in FDR mode. To modify the parameters for this section, select the radio button corresponding to **Modify FDR mode parameters as defined below** in the Configuration Wizard window then enter information in the fields as follows:

RG-59: Enter the velocity of propagation, as a percentage, for the tested RG-59 cable.

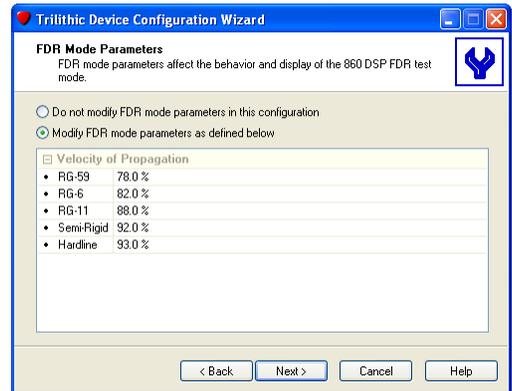
RG-6: Enter the velocity of propagation, as a percentage, for the tested RG-6 cable.

RG-11: Enter the velocity of propagation, as a percentage, for the tested RG-11 cable.

Semi-Rigid: Enter the velocity of propagation, as a percentage, for the tested semi-rigid cable.

Hardline: Enter the velocity of propagation, as a percentage, for the tested hardline cable.

When you are satisfied with your entries, click **Next** to continue with the Navigation Menus.

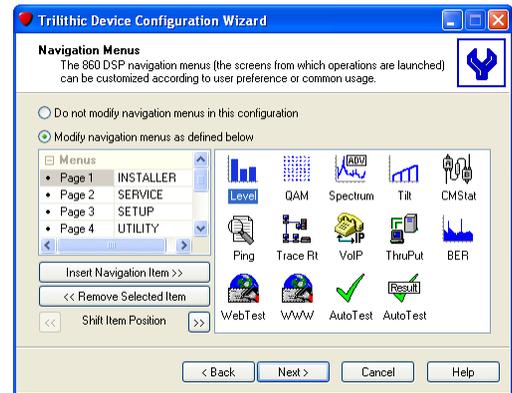


Navigation Menu

You can customize the 860 DSP or 860 DSPi navigation menus to better fit the way your field technicians operate. To modify the parameters for this section, select **Modify navigation menus as defined below**, then enter information in the fields as follows:

Menu

Select the page of the menu that appears on the 860 DSP 860 DSPi. The right pane of the screen shows the items that will appear on the navigation menu for that page.



Insert Navigation Item: Click this to display a list of the options that can be displayed on the menu. Items that are already displayed on the menu are grayed out.

Remove Selected Item: Click this to remove the highlighted item in the right pane of the screen from that navigation menu.

Shift Item Position: Click the previous and next buttons to shift the position of the highlighted item.

You can add and remove items from each menu. You cannot have the same item on multiple pages. The menu options will appear on the 860 DSPr on the pages and in the order you specify.



This feature can be very powerful for customizing the 860 DSP or 860 DSPi for a particular application or set of installation options. Although the default menus are good for most general applications, you may be able to save time and effort by creating customized navigation menus for the 860 DSP or 860 DSPi that most accurately reflect the needs of your users.

Macro Shortcuts

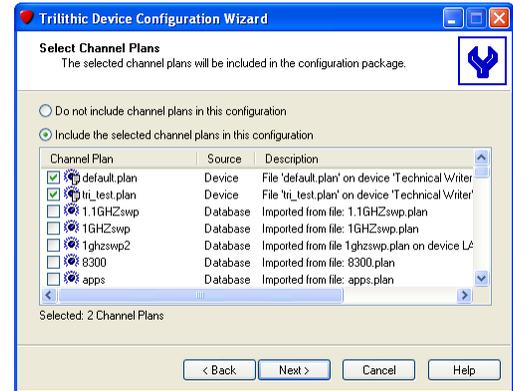
Shortcut: Five user-defined shortcuts to quickly launch an auto-test macro directly from a menu.

When you are satisfied with your entries, click **Next** to continue with Select Channel Plans.

Select Channel Plans

You use this screen to select the channel plans that will be included in the configuration package for downloading to the 860 DSP or 860 DSPi. To modify the parameters for this section, select **Include the selected channel plans in this configuration**, then check the boxes for the channel plans you want to include.

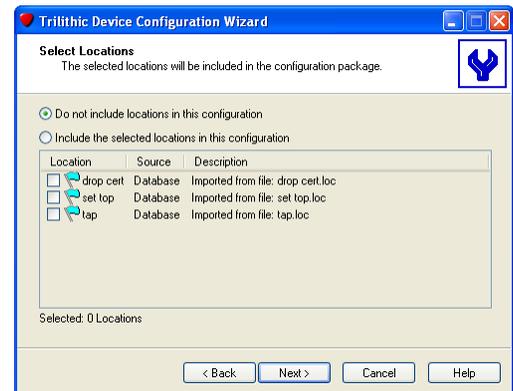
When you are satisfied with your entries, click **Next** to continue with Select Locations.



Select Locations

You use this screen to select the locations that will be included in the configuration package for downloading to the 860 DSP or 860 DSPi. To modify the parameters for this section, select **Include the selected locations in this configuration**, then check the boxes for the locations you want to include.

When you are satisfied with your entries, click **Next** to continue with Select Auto-Test Macros.



Select Auto-Test Macros

You use this screen to select the macros that will be included in the configuration package for downloading to the 860 DSP or 860 DSPi. To modify the parameters for this section, select **Include the selected auto-test macros in this configuration**, then check the boxes for the macros you want to include.

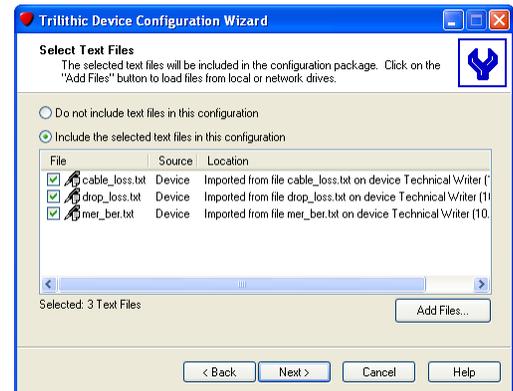
When you are satisfied with your entries, click **Next** to continue with Select Text Files.



Select Text Files

You use this screen to select the text files that will be included in the configuration package for downloading to the 860 DSP or 860 DSPi. To modify the parameters for this section, select **Include the selected text files in this configuration**, then check the boxes for the text files you want to include.

When you are satisfied with your entries, click **Next** to continue with Package Transfer Mode.



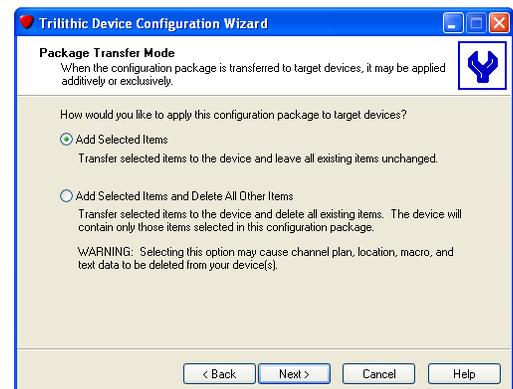
Package Transfer Mode

You use this screen to tell WorkBench how to transfer information to the 860 DSP or 860 DSPi. Select one of the two following options to transfer files and information in the configuration package to the 860 DSP or 860 DSPi:

Add Selected Items - Select this option (the default) to transfer the files and information in the configuration package without deleting existing files. Files with the same name will be overwritten, but files that are not included in the configuration package will not be deleted.

Add Selected Items and Delete All Other Items -

Select this option to transfer the information in the configuration package to the 860 DSP or 860 DSPi and delete any other files on the 860 DSP or 860 DSPi. At the end of the transfer process, the only files and information on the 860 DSP or 860 DSPi will be the files and information contained in the configuration package. This option is useful for ensuring that 860 DSP's or 860 DSPi's are configured to a standard and that no unauthorized or unacceptable files are included on them.



Selecting the second option may delete information from the 860 DSP or DSPi. Ensure that the files in the 860 DSP or DSPi are backed up and that the configuration package being loaded is complete.

When you are satisfied with your entries, click **Next** to continue with the Additional Configuration Options.

Additional Configuration Options

This screen lets you perform a few additional configuration tasks when you download the configuration package to the 860 DSP or 860 DSPi. To modify the parameters for this section, enter information in the fields as follows:

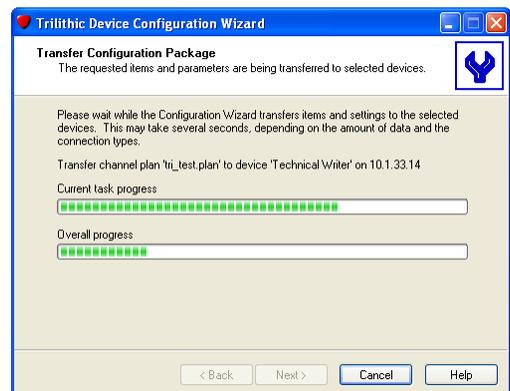
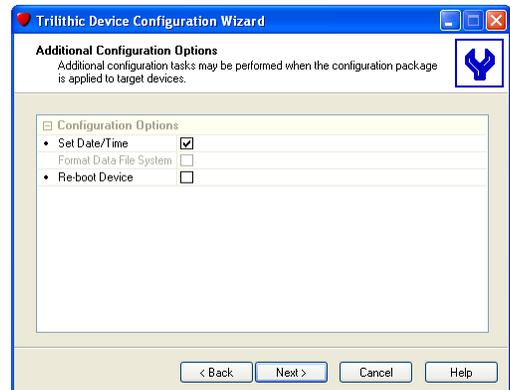
Set Date/Time: Check this box to synchronize the 860 DSP or 860 DSPi's clock to the clock on the WorkBench computer.

Format Data File System: Check this box to reformat the 860 DSP's flash disk prior to transferring the selected files. This option may be desired for periodic maintenance, but is not necessary (and probably should not be performed) each time a device is configured. This option is only available if you have selected Add Selected Items and Delete All Other Items on the Packet Mode Transfer screen shown in the previous step.

Reboot Device: Check this box to reboot the 860 DSP or 860 DSPi after the configuration package has been downloaded. Some options require the 860 DSP or 860 DSPi to be rebooted for the options to be applied.

When you are satisfied with your entries, click **Next** to transfer the configuration package to the selected 860 DSP or 860 DSPi.

The Transfer Configuration Package window will appear, indicating the progress of the configuration transfer to the connected 860 DSP or 860 DSPi.



After the configuration package has been transferred to the 860 DSP or 860 DSPi, the Device Configuration Wizard Complete window will be displayed.

Click the **Finish** button to close the Configuration Wizard.



Chapter 4

860 DSPh Configuration Parameters

Overview

The configuration parameters shown in this chapter apply to any 860 DSPh. These settings are presented in same order in which they would be configured while creating a configuration package with the Configuration Wizard.

The 860 DSPh is configured to tune and measure according to the particular characteristics at the location in which it is installed. WorkBench simplifies this process using a familiar, intuitive user interface. To save programming and configuration time, the configuration package can be saved, edited, and transferred to other 860 DSPh analyzers.

Editing Configuration Parameters

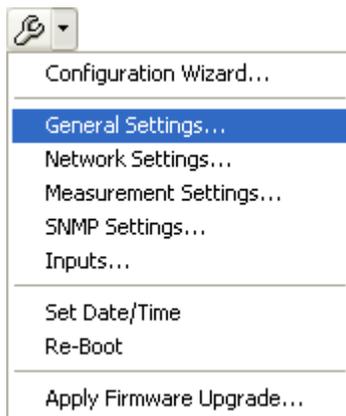
Each of the configuration parameters shown in this chapter can be edited individually from any connected 860 DSPh as follows:

1. Select the name of the connected 860 DSPh from the  **Devices** tab.
2. Perform one of the following steps to edit individual configuration parameters on the selected 860 DSPh:

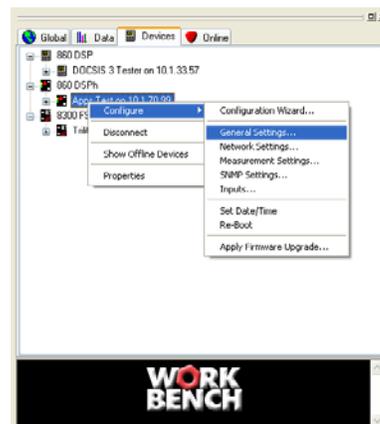
From the Toolbar click on the down arrow next to the  button and then select the configuration parameter that you wish to edit.

OR

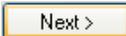
From the  **Devices** tab, right-click on the name of the connected device, hover over **Configure**, and then select the configuration parameter that you wish to edit.



Toolbar



Devices Tab

3. The corresponding configuration parameter window will appear, make any desired changes and then select the  button to send the configuration parameter that you chose to modify to the connected 860 DSPh or select the  button to exit without changing the configuration parameter.
4. After the transfer process is complete, select the  button.

Editing Configuration Packages

Perform the following steps to modify the current configuration package on any connected 860 DSPh:

1. Select the name of the connected 860 DSPh from the  **Devices** tab.
2. Perform one of the following steps to edit the configuration package on the selected 860 DSPh:

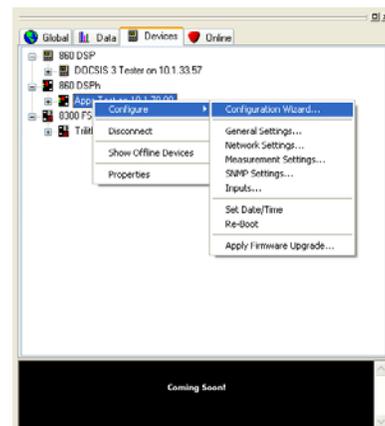
From the Toolbar click on the down arrow next to the  button and then select **Configuration Wizard**.

OR

From the  **Devices** tab, right-click on the name of the connected device, hover over **Configure**, and then click on **Configuration Wizard**.



Toolbar



Devices Tab

3. WorkBench will now load the existing configuration from the connected 860 DSPh and will then display the **General Device Parameters** window, proceed to the following section to edit the configuration packages.

General Device Parameters

The general device parameters are global settings that affect the general operation and display of the 860 DSPh. To modify the parameters for this section, select the radio button corresponding to **Modify general parameters as defined below** in the Configuration Wizard window then enter information in the fields as follows:

Beeps: Check this box to turn SNMP trap beeps on or off.

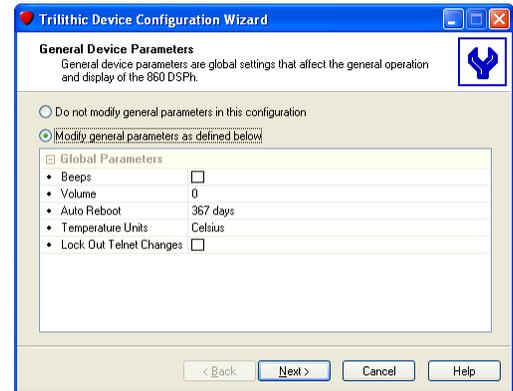
Volume: Enter the volume from 0 to 9 (0 = off; 9 = maximum) for FM Deviation measurements.

Auto Reboot: Enter the number of days the unit will operate for before automatically rebooting. (Enter 0 to turn off automatic rebooting.)

Temperature Units: Select Celsius or Fahrenheit.

Lock Out Telnet Changes: Select this check box to disable change to the device configuration via a Telnet connection.

When you are satisfied with your entries, click **Next** to continue with the Network parameters.



The screenshot shows the 'General Device Parameters' window of the Trilithic Device Configuration Wizard. The window title is 'Trilithic Device Configuration Wizard' and the subtitle is 'General Device Parameters'. Below the subtitle, it says 'General device parameters are global settings that affect the general operation and display of the 860 DSPh.' There are two radio buttons: 'Do not modify general parameters in this configuration' (unselected) and 'Modify general parameters as defined below' (selected). Below the radio buttons is a section titled 'Global Parameters' with a list of settings: 'Beeps' (checkbox), 'Volume' (text field with '0'), 'Auto Reboot' (text field with '367 days'), 'Temperature Units' (text field with 'Celsius'), and 'Lock Out Telnet Changes' (checkbox). At the bottom of the window are buttons for '< Back', 'Next >', 'Cancel', and 'Help'.

Network Parameters

The network parameters configure the connectivity of the 860 DSPh. To modify the parameters for this section, select the radio button corresponding to **Modify network parameters as defined below** in the Configuration Wizard window then enter information in the fields as follows:

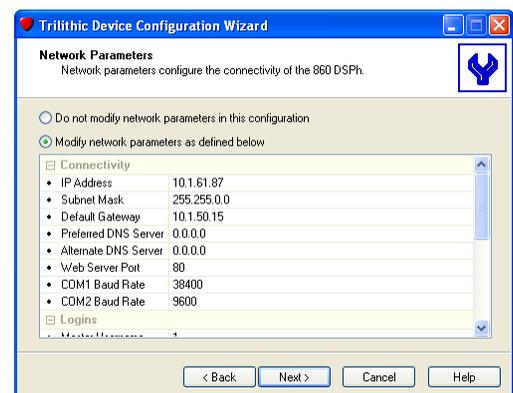
Connectivity

IP Address: Enter the IP address of the 860 DSPh.

Subnet Mask: Enter the subnet mask of the 860 DSPh.

Default Gateway: Enter the gateway the 860 DSPh needs to use.

Preferred DNS Server: Enter the preferred DNS server's IP address. (This field is required if trap destinations are set as text instead of IP addressed.)



The screenshot shows the 'Network Parameters' window of the Trilithic Device Configuration Wizard. The window title is 'Trilithic Device Configuration Wizard' and the subtitle is 'Network Parameters'. Below the subtitle, it says 'Network parameters configure the connectivity of the 860 DSPh.' There are two radio buttons: 'Do not modify network parameters in this configuration' (unselected) and 'Modify network parameters as defined below' (selected). Below the radio buttons is a section titled 'Connectivity' with a list of settings: 'IP Address' (text field with '10.1.61.87'), 'Subnet Mask' (text field with '255.255.0.0'), 'Default Gateway' (text field with '10.1.50.15'), 'Preferred DNS Server' (text field with '0.0.0.0'), 'Alternate DNS Server' (text field with '0.0.0.0'), 'Web Server Port' (text field with '80'), 'CDM1 Baud Rate' (text field with '38400'), and 'CDM2 Baud Rate' (text field with '9600'). Below the 'Connectivity' section is a section titled 'Logins' with a list of settings: 'Master Username' (text field with 'admin'). At the bottom of the window are buttons for '< Back', 'Next >', 'Cancel', and 'Help'.

Alternate DNS Server: Enter the alternate DNS server's IP address. (This field is required if trap destinations are set as text instead of IP addressed.)

Web Server Port: Enter the remote control network port (the default port is 80.)

COM1 Baud Rate: Select the COM1 baud rate.

COM2 Baud Rate: Select the COM2 baud rate.

Logins

Master Username: Enter the master username.

Master Password: Enter the master password.

Web Username: Enter the web browser username.

Web Password: Enter the web browser password.

Telnet Username: Enter the telnet username.

Telnet Password: Enter the telnet password.

User 1 Username: Enter the User1 username.

User 1 Password: Enter the User1 password.

User 2 Username: Enter the User2 username.

User 2 Password: Enter the User2 password.

User 3 Username: Enter the User3 username.

User 3 Password: Enter the User3 password.

When you are satisfied with your entries, click **Next** to continue with the Measurement parameters.

Measurement Parameters

The measurement parameters affect the behavior and display of acquired data by the 860 DSPh. To modify the parameters for this section, select the radio button corresponding to **Modify measurement parameters as defined below** from the Configuration Wizard window then enter information in the fields as follows:

Measurement Units: Select the measurement unit from the drop-down list. You can select dBmV, dBuV, or dBm.

Analog Noise Bandwidth: Enter the bandwidth used for carrier-to-noise calculations.

Averaging: Select from the drop-down list the number of times data is averaged before reading (1 to 1024).

Optimal Depth of Modulation: Enter the percentage for the optimal depth of modulation.

Hum Type: Select the hum type (either 50/100Hz or 60/120Hz) from the drop-down list.

When you are satisfied with your entries, click **Next** to continue with the SNMP Parameters.

The screenshot shows the 'Measurement Parameters' window of the Trilithic Device Configuration Wizard. The window title is 'Trilithic Device Configuration Wizard' and the subtitle is 'Measurement Parameters'. Below the subtitle, it states 'Measurement parameters affect the behavior and display of acquired data by the 860 DSPh.' There are two radio buttons: 'Do not modify measurement parameters in this configuration' (unselected) and 'Modify measurement parameters as defined below' (selected). Below the radio buttons is a table with the following parameters:

Measurement Parameters	
• Measurement Units	dBmV
• Analog Noise Bandwidth	4.00 MHz
• Averaging	16 Samples
• Optimal Depth of Modulation	87.5 %
• Hum Type	60/120 Hz

At the bottom of the window are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'.

SNMP Parameters

The SNMP parameters configure trap receiving and MIB browsing of the 860 DSPh. To modify the parameters for this section, select **Modify SNMP parameters as defined below**, then enter information in the fields as follows:

SNMP Parameters

System Contact: Enter the name of the person responsible for this device.

System Name: Enter the name of the system.

System Location: Enter the location of the system.

Trap Resend: Enter the time between resending of alarms in case the packets are being lost on the network. This is also the time between the unit sending "Hello, I'm alive" messages.

The screenshot shows the 'SNMP Parameters' window of the Trilithic Device Configuration Wizard. The window title is 'Trilithic Device Configuration Wizard' and the subtitle is 'SNMP Parameters'. Below the subtitle, it states 'SNMP parameters configure trap receiving and MIB browsing of the 860 DSPh.' There are two radio buttons: 'Do not modify SNMP parameters in this configuration' (unselected) and 'Modify SNMP parameters as defined below' (selected). Below the radio buttons is a table with the following parameters:

SNMP Parameters	
• System Contact	Cable Co Cool Guy
• System Name	Cable Co Inc
• System Location	Headend
• Trap Resend	300 sec
User 1	
• Version	SNMPV1
• Name/Community	public
• Authorization Type	None
• Authorization Password	
• Privacy Type	None

At the bottom of the window are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'.

User 1 to 8

There are eight identical groups of fields for setting up users. Each user can set up their parameters for accessing the SNMP data as well as the format of the SNMP trap.

Version: Select the SNMP option (SNMPV1, SNMPV2c, or SNMPV3_USM) used by the SNMP monitoring software from the drop-down list. Unused User (the default) identifies that this is not an active user.



NOTE

The 860 DSPh only ships from the factory with SNMPV1. SNMPV2c and SNMPV3_USM require a firmware update, contact the Trilithic Applications department to obtain this optional firmware.

Name/Community: Enter the user or community name.

Authorization Type: Select the authorization type from the drop-down list. (Authorization and privacy options are used for secure SNMP access.)

Authorization Password: Enter the authorization password for this user.

Privacy Type: Select the privacy type from the drop-down list.

Privacy Password: Enter the privacy password for this user.

Read Only: Select this check box to make the SNMP values read only for this user

Trap Destination: Enter IP address of the trap destination.

When you are satisfied with your entries, click **Next** to continue with the Input parameters.



NOTE

SNMP MIB is available for your SNMP Management Software, if needed contact the Trilithic Applications department .

Input Parameters

The input parameters define the testing procedures of the 860 DSP. To modify the parameters for this section, select **Modify input parameters as defined below**, then enter information in the fields as follows:

Input

Select the measurement input for which you want to set test limits. The right pane of the screen shows the limits defined for the selected input.

Name: Enter the name of the input.

Channel Plan: Enter the name of the channel plan used for this input.

Compensation: Enter the test point loss value in this input is connected through a test point or pad.

Limits

The following options are related to analog channels:

Video Min: Enter the minimum acceptable video level.

Video Max: Enter the maximum acceptable video level.

Video Delta: Enter the video level drift.

Video/Audio Min Delta: Enter the minimum acceptable video-to-audio difference.

Video/Audio Max Delta: Enter the maximum acceptable video-to-audio difference.

The following options are related to digital channels:

Digital Min: Enter the minimum acceptable digital carrier level.

Digital Max: Enter the maximum acceptable digital carrier level.

Digital Delta: Enter the maximum.

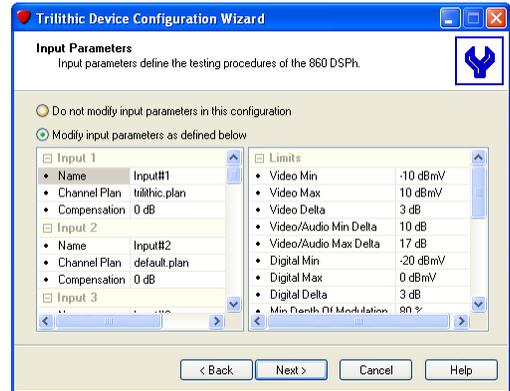
The following options are used for analog channels:

Min Depth Of Modulation: Enter the minimum depth of modulation.

Max Depth Of Modulation: Enter the maximum depth of modulation.

Max Hum: Enter the maximum allowable hum.

Min C/N: Enter the minimum carrier-to-noise ratio.



The following options are used for digital channels:

QAM4 Min MER: Enter the QAM4 minimum modulation error ratio.

QAM16 Min MER: Enter the QAM16 minimum modulation error ratio.

QAM32 Min MER: Enter the QAM32 minimum modulation error ratio.

QAM64 Min MER: Enter the QAM64 minimum modulation error ratio.

QAM128 Min MER: Enter the QAM128 minimum modulation error ratio.

QAM256 Min MER: Enter the QAM256 minimum modulation error ratio.

VS8 Min MER: Enter the ATSC (8 VSB) minimum modulation error ratio.

Max BER: Enter the maximum allowable bit error rate.

The following options are used for analog channels:

Min FM Deviation: Enter the minimum FM deviation.

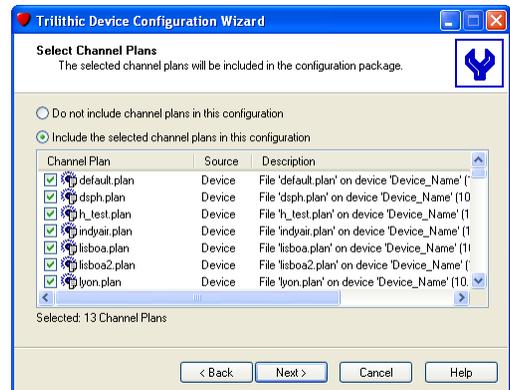
Max FM Deviation: Enter the maximum FM deviation.

When you are satisfied with your entries, click **Next** to continue with the Select Channel parameters.

Select Channel Plans

You use this screen to select the channel plans that will be included in the configuration package for downloading to the 860 DSP. To modify the parameters for this section, select **Include the selected channel plans in this configuration**, then check the boxes for the channel plans you want to include.

When you are satisfied with your entries, click **Next** to continue with Package Transfer Mode.



Package Transfer Mode

You use this screen to tell WorkBench how to transfer information to the 860 DSP. Select one of the two following options to transfer files and information in the configuration package to the 860 DSP:

Add Selected Items - Select this option (the default) to transfer the files and information in the configuration package without deleting existing files. Files with the same name will be overwritten, but files that are not included in the configuration package will not be deleted.

Add Selected Items and Delete All Other Items -

Select this option to transfer the information in the configuration package to the 860 DSP and deletes any other files on the 860 DSP. At the end of the transfer process, the only files and information on the 860 DSP will be the files and information contained in the configuration package. This option is useful for ensuring that 860 DSP's are configured to a standard and that no unauthorized or unacceptable files are included on them.



Selecting the second option may delete information from the 860 DSP. Ensure that the files in the 860 DSP are backed up and that the configuration package being loaded is complete.

When you are satisfied with your entries, click **Next** to continue with the Additional Configuration Options.

Additional Configuration Options

This screen lets you perform a few additional configuration tasks when you download the configuration package to the 860 DSPh. To modify the parameters for this section, enter information in the fields as follows:

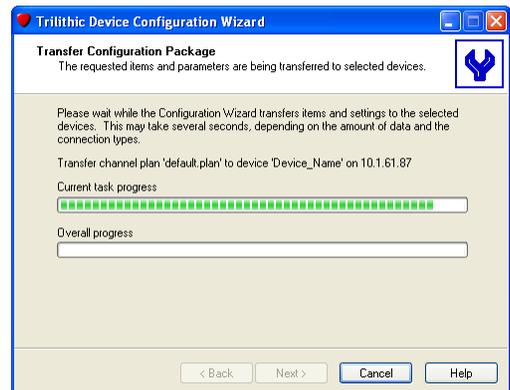
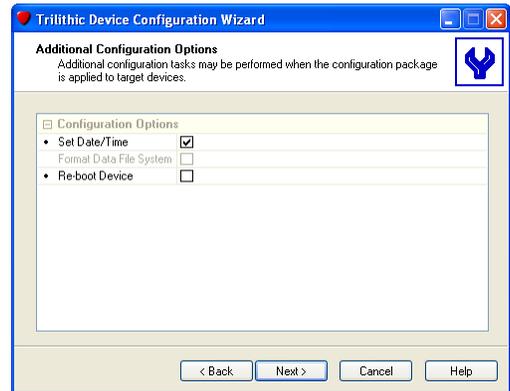
Set Date/Time: Check this box to synchronize the 860 DSPh's clock to the clock on the WorkBench computer.

Format Data File System: Check this box to reformat the 860 DSPh's flash disk prior to transferring the selected files. This option may be desired for periodic maintenance, but is not necessary (and probably should not be performed) each time a device is configured. This option is only available if you have selected Add Selected Items and Delete All Other Items on the Packet Mode Transfer screen shown in the previous step.

Reboot Device: Check this box to reboot the 860 DSPh after the configuration package has been downloaded. Some options require the 860 DSPh to be rebooted for the options to be applied.

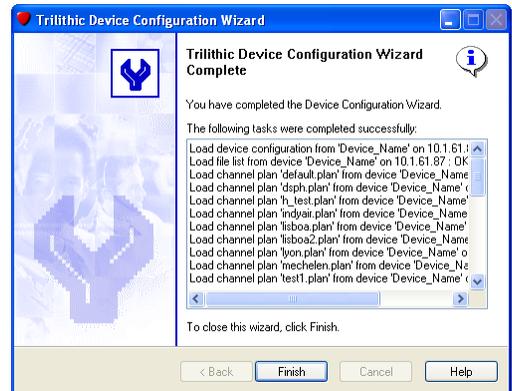
When you are satisfied with your entries, click **Next** to transfer the configuration package to the selected 860 DSPh.

The Transfer Configuration Package window will appear, indicating the progress of the configuration transfer to the connected 860 DSPh.



After the configuration package has been transferred to the 860 DSPh, the Device Configuration Wizard Complete window will be displayed.

Click the **Finish** button to close the Configuration Wizard.



Chapter 5

860 DSPr Configuration Parameters

Overview

The configuration parameters shown in this chapter apply to any 860 DSPr. These settings are presented in same order in which they would be configured while creating a configuration package with the Configuration Wizard.

The 860 DSPr is configured to tune and measure according to the particular characteristics at the location in which it is installed. WorkBench simplifies this process using a familiar, intuitive user interface. To save programming and configuration time, the configuration package can be saved, edited, and transferred to other 860 DSPr analyzers.

Editing Configuration Packages

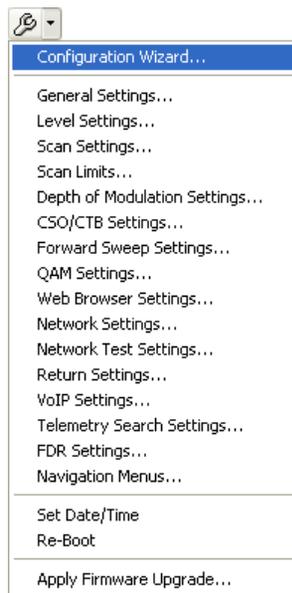
Perform the following steps to modify the current configuration package on any connected 860 DSPr:

1. Select the name of the connected 860 DSPr from the  **Devices** tab.
2. Perform one of the following steps to edit the configuration package on the selected 860 DSPr:

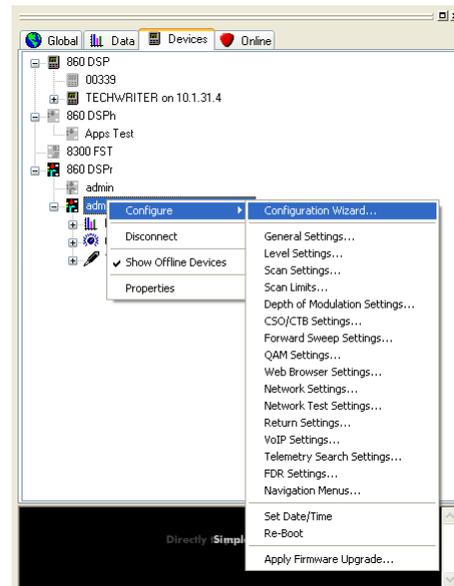
From the Toolbar click on the down arrow next to the  button and then select **Configuration Package**.

OR

From the  **Devices** tab, right-click on the name of the connected device, hover over **Configure**, and then click on **Configuration Wizard**.



Toolbar



Devices Tab

3. WorkBench will now load the existing configuration from the connected 860 DSPr and will then display the **General Device Parameters** window.
4. Edit the configuration parameters for the 860 DSPr as shown later in this chapter and then return to Step 9 in **Chapter 1: Creating Configuration Packages**, *Creating a New Configuration Package* for instruction on how to complete the configuration package.

Editing Configuration Parameters

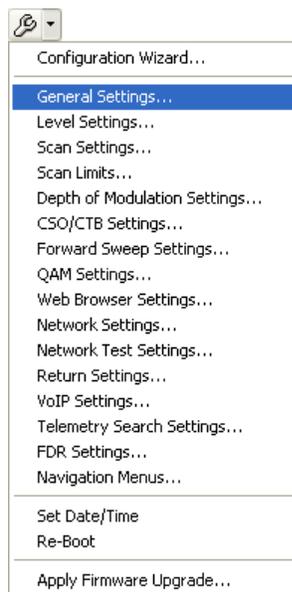
Each of the configuration parameters shown in this chapter can be edited individually from any connected 860 DSPr as follows:

1. Select the name of the connected 860 DSPr from the  **Devices** tab.
2. Perform one of the following steps to edit individual configuration parameters on the selected 860 DSPr:

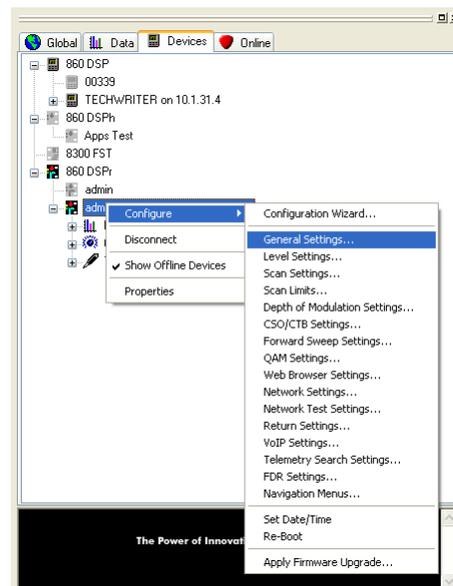
From the Toolbar click on the down arrow next to the  button and then select the configuration parameter that you wish to edit.

OR

From the  **Devices** tab, right-click on the name of the connected device, hover over **Configure**, and then select the configuration parameter that you wish to edit.



Toolbar



Devices Tab

3. The corresponding configuration parameter window will appear. Make any desired changes and then select the  button to send the configuration parameter that you chose to modify to the connected 860 DSPr or select the  button to exit without changing the configuration parameter.
4. After the transfer process is complete, select the  button.

General Device Parameters

General device parameters are global settings that affect the general operation and display of the 860 DSPr. To modify the parameters for this section, select the radio button corresponding to **Modify general device parameters as defined below** in the Configuration Wizard window then enter information in the fields as follows:

Global Parameters

Active Channel Plan: Select the active channel plan from the drop-down list.

Language: Select the language for the unit. (This option displays the list of languages currently loaded in WorkBench. If no languages are loaded, the selection is normally grayed out.)



NOTE

To obtain the most current language files, check for updates on the 860 DSP website.

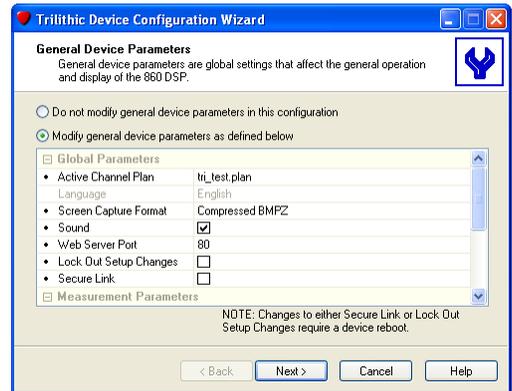
Screen Capture Format: Select the file format to save screen captures in (either .bmp, .bmpz or .lcd).

Sound: Check the box to enable sound on the 860 DSPr.

Web Server Port: Enter the port to check for the device.

Lock Out Setup Changes: Check this box to disable any unauthorized configuration changes to the device.

Secure Link: Check this box to enable Secure860Link (S8L) on the 860 DSP or 860 DSPi.



Measurement Parameters

Temperature Units: Select the temperature units from the drop-down list.

Measurement Units: Select the measurement units from the drop-down list.

Distance Units: Enter the measurement units for distance from the drop-down list.

Analog Noise Bandwidth: Enter the analog video noise bandwidth in MHz.

Cable Velocity Factor: Enter the cable velocity factor used for QAM equalizer and Sweep displays.

Testpoint Compensation On: Check this box to toggle testpoint compensation.

Testpoint Compensation: Enter the testpoint compensation value in dB.

Probe Compensation: Enter the probe compensation value in dB.

Data Log Attachments: Select the attachments to associate with a data log (either none, only locations, only tasks, or both locations and tasks).

When you are satisfied with your entries, click **Next** to continue with the Level Mode parameters.

Level Mode Parameters

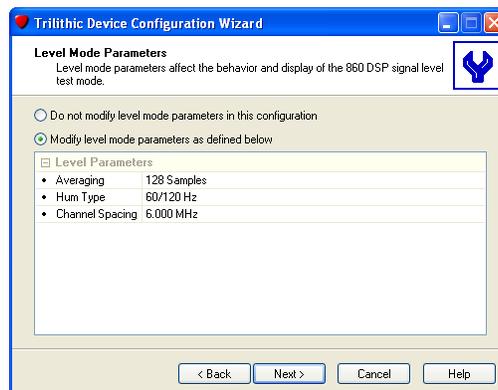
Level mode parameters affect the behavior of the 860 DSPr signal level test mode. To modify the parameters for this section, select the radio button corresponding to **Modify level mode parameters as defined below** in the Configuration Wizard window then enter information in the fields as follows:

Averaging: Select the number of samples per averaged reading from the drop-down list.

Hum Type: Select the hum type (either 50/100Hz or 60/120Hz) from the drop-down list.

Channel Spacing: Enter the channel spacing in MHz.

When you are satisfied with your entries, click **Next** to continue with the Scan Mode parameters.



Scan Mode Parameters

Scan mode parameters affect the behavior of the 860 DSPr channel scan test mode. To modify the parameters for this section, select the radio button that corresponds to **Modify scan mode parameters as defined below** in the Configuration Wizard window then enter information in the fields as follows:

Averaging: Select the number of samples per averaged reading from the drop-down list.

When you are satisfied with your entries, click **Next** to continue with the Scan Limits parameters.



Scan Limits

Scan limits are used to validate the results of 860 DSPr channel scan operations. To modify the parameters for this section, select the radio button corresponding to **Modify scan limits as defined below** in the Configuration Wizard window then enter information in the fields for the Tap, Block, Set, and User scan limits as follows:

Minimum Video Level: Enter the minimum video level.

Maximum Video Level: Enter the maximum video level.

Minimum Video/Audio Delta: Enter the minimum video/audio delta (in dB).

Maximum Video/Audio Delta: Enter the maximum video/audio delta (in dB).

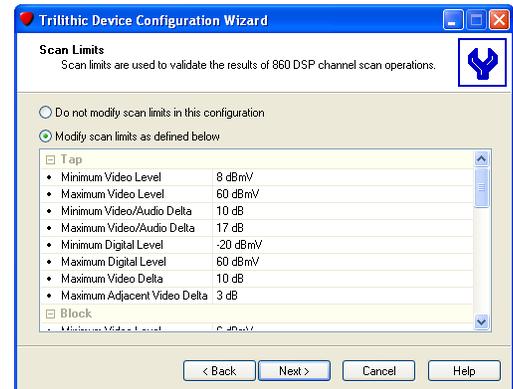
Minimum Digital Level: Enter the minimum digital level.

Maximum Digital Level: Enter the maximum digital level.

Maximum Video Delta: Enter the maximum video delta (in dB).

Maximum Adjacent Video Delta: Enter the maximum adjacent video delta (in dB).

When you are satisfied with your entries, click **Next** to continue with the Depth of Modulation Mode parameters.

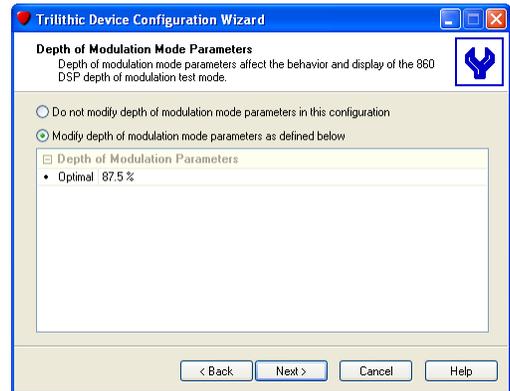


Depth of Modulation Mode Parameters

The depth of modulation mode parameters affect the behavior and display of the 860 DSPr depth of modulation test mode. To modify the parameters for this section, select **Modify depth of modulation mode parameters as defined below**, then enter information in the fields as follows:

Optimal: Enter the optimal depth of modulation percentage.

When you are satisfied with your entries, click **Next** to continue with the CSO/CTB Mode parameters.



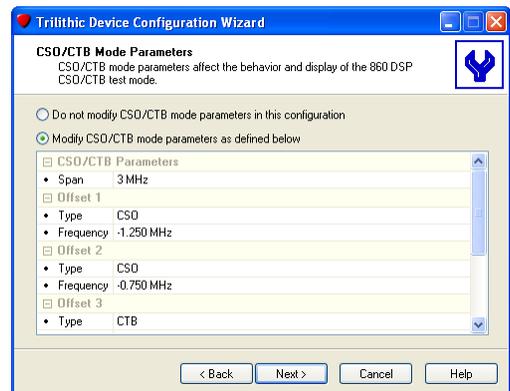
CSO/CTB Mode Parameters

The CSO/CTB mode parameters affect the behavior and display of the 860 DSPr CSO/CTB test mode. To modify the parameters for this section, select the radio button corresponding to **Modify CSO/CTB mode parameters as defined below** in the Configuration Wizard window then enter information in the fields as follows:

Span: Enter the span frequency (in MHz).

Type: Select the type from the drop-down list for Offset 1 through Offset 5.

Frequency: Enter the frequency (in MHz) for Offset 1 through Offset 5.



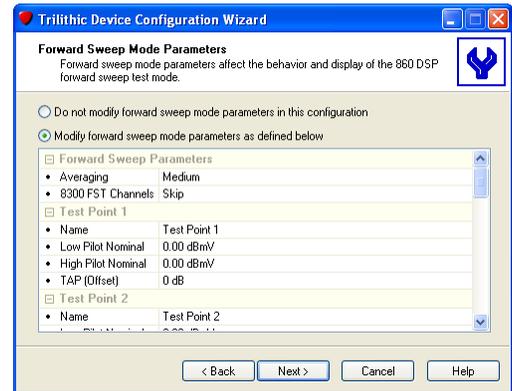
When you are satisfied with your entries, click **Next** to continue with the Forward Sweep Mode parameters.



The span frequency should be wide enough to include all offsets.

Forward Sweep Mode Parameters

Click **Next** to continue with the QAM Mode parameters.



The Forward Sweep Parameters configuration is a carry-over feature from the 860 DSP and 860 DSPi field analyzer, and as such, is not applicable to the 860 DSPr headend analyzer configuration.

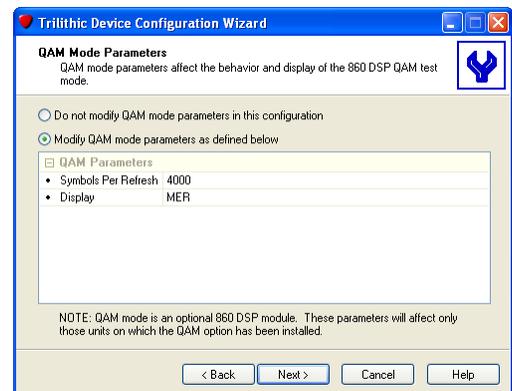
QAM Mode Parameters

The QAM mode parameters affect the behavior and display of the 860 DSPr QAM test mode. To modify the parameters for this section, select the radio button corresponding to **Modify QAM mode parameters as defined below** in the Configuration Wizard then enter information in the fields as follows:

Symbols Per Refresh: Enter the number of symbols to display on the 860 DSP screen at one time. The symbols will appear darker with higher numbers, but the screen will refresh less frequently.

Display: Select the display mode from the drop-down list. MER is Modulation Error Ratio and is shown in dB. EVM is Error Vector Magnitude and is shown in %.

When you are satisfied with your entries, click **Next** to continue with the Web Browser parameters.



Web Browser Parameters

The web browser parameters affect the behavior and display of the 860 DSPr web content viewer. To modify the parameters for this section, select the radio button corresponding to **Modify web browser parameters as defined below** in the Configuration Wizard window then enter information in the fields as follows:

Home Page: Enter the URL for the browser home page (the page that appears when the browser is started). This is also the page that's loaded when **Browser Home** is pressed on the 860 DSPr.

Link Title: Up to six user-defined web site titles are shown on the default web page.

Link Address: Up to six user-defined web sites are loaded when the link title is pressed on the default web page.

Save Cookies: Select this option to retain web page cookies.

Display URL Bar: Select this option to display the URL bar on the browser.

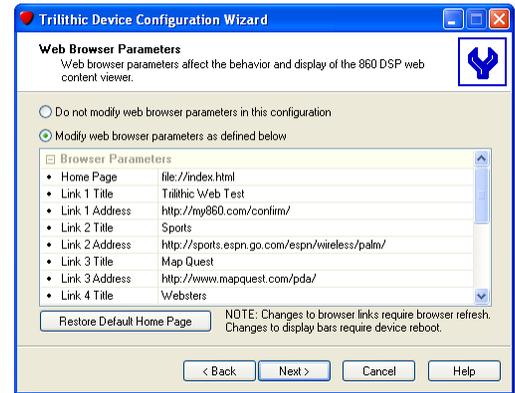
Display Status Bar: Select this option to display the status bar on the browser.

Display Softkey Bar: Select this option to display the softkey bar on the browser.

Display Title Bar: Select this option to display the title bar on the browser.

Restore Default Home Page: Click this button to restore the Trilithic default home page in the **Home Page** field.

When you are satisfied with your entries, click **Next** to continue with the Network Test parameters.



Network Parameters

The network test parameters configure the connectivity of the 860 DSPr. To modify the parameters for this section, select the radio button corresponding to **Modify network parameters as defined below** in the Configuration Wizard window then enter information in the fields as follows:

Connectivity Parameters

Network Port: The 860 DSPr only has one network interface card (NIC). You must select which physical port to connect the NIC to for communication.

IP Address: Enter the IP address of the 860 DSPr.

Subnet Mask: Enter the subnet mask of the 860 DSPr.

Default Gateway: Enter the gateway the 860 DSPr needs to use.

Preferred DNS Server: Enter the preferred DNS server's IP address. (This field is required if trap destinations are set as text instead of IP addressed.)

Alternate DNS Server: Enter the alternate DNS server's IP address. (This field is required if trap destinations are set as text instead of IP addressed.)

Wi-Fi Parameters

When you are satisfied with your entries, click **Next** to continue with the Network Test parameters.

Parameter	Value
Authentication	Auto
Key	
Wi-Fi Zone 3	Expanded
• SSID	any
Network Type	Infrastructure Mode
Ad Hoc Channel	Any
• Region Code	US (United States)
Security Type	None
Authentication	Auto
Key	



NOTE

The Wi-Fi Parameters configuration is a carry-over feature from the 860 DSP and 860 DSPi field analyzer, and as such, is not applicable to the 860 DSPr headend analyzer configuration.

Network Test Parameters

The network test parameters configure the Ping and Throughput menus of the 860 DSPr. To modify the parameters for this section, select the radio button corresponding to **Modify network test parameters as defined below** in the Configuration Wizard window then enter information in the fields as follows:

Ping Parameters

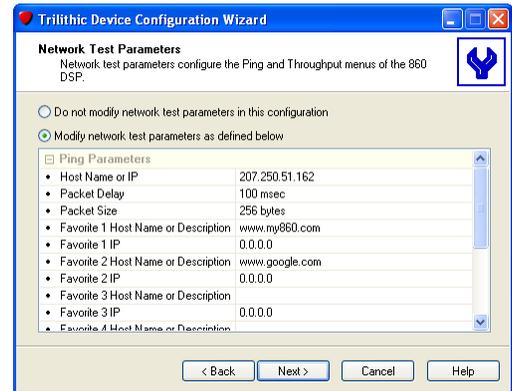
Host Name or IP: Enter the server IP address to ping.

Packet Delay: Enter the time between the start of the query packets being transmitted.

Packet Size: Enter the size of the payload in each packet.

Favorite Host Name or Description: Up to four user-defined servers are listed to ping. Enter the host name of the server (or a description when entering an IP address).

Favorite IP: Up to four user-defined servers are listed to ping. Enter the IP address of the server.



Only a valid host name or a valid IP address is required. When using an IP address, you can enter an optional description of the server.

Throughput Parameters

Click **Next** to continue with the Return parameters.



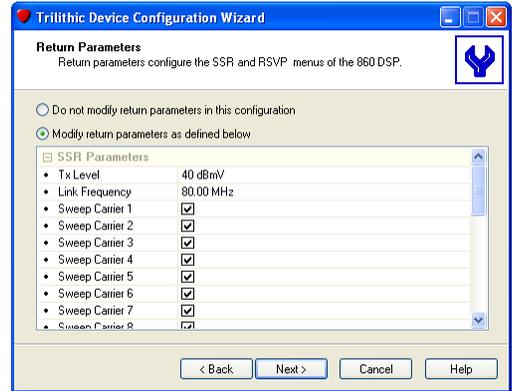
The Throughput Parameters configuration is a carry-over feature from the 860 DSP and 860 DSPi field analyzer, and as such, is not applicable to the 860 DSPr headend analyzer configuration.

Return Parameters

SSR Parameters

RSVP Parameters

Click **Next** to continue with the VoIP parameters.



The Return Parameters configuration is a carry-over feature from the 860 DSP and 860 DSPi field analyzer, and as such, is not applicable to the 860 DSPr headend analyzer configuration.

VoIP Parameters

The VoIP parameters affect the behavior of the 860 DSPr VoIP test mode. To modify the parameters for this section, select the radio button corresponding to **Modify VoIP parameters as defined below** in the Configuration Wizard window then enter information in the fields as follows:

Server IP: Enter the IP address of the Trilithic VoIP server.

CODEC Type: Enter the type of codec used for your VoIP traffic, such as G.711.

CODEC Delay: This display-only field shows the fixed delay using the selected codec.

CODEC Bit Rate: This display-only field shows the raw bit rate required to send voice data using the selected codec.

CODEC Pkt Rate: Enter the rate that voice packets will be transmitted.

CODEC Pkt Size: Enter the size of each voice packet. (**Note:** Packet size in bits * Packet rate = Bit rate.)

Jitter Buffer Delay: Enter the length of the jitter buffer in milliseconds to be used by voice receivers.

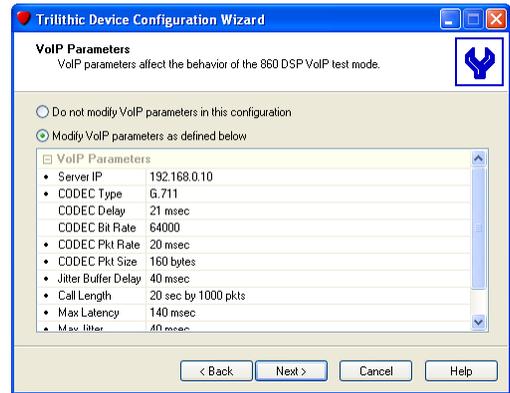
Call Length: Enter the length of the call in seconds to establish.

Max Latency: Enter the maximum allowable latency required for the test to pass.

Max Jitter: Enter the maximum allowable jitter required for the test to pass.

Min MOS: Enter the minimum MOS required for the test to pass.

When you are satisfied with your entries, click **Next** to continue with the Telemetry Search parameters.

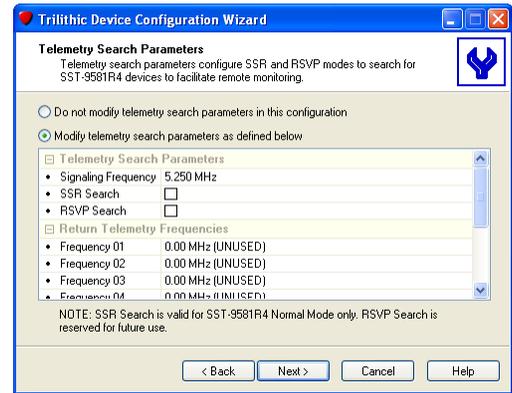


Telemetry Search Parameters

Telemetry Search Parameters

Return Telemetry Frequencies

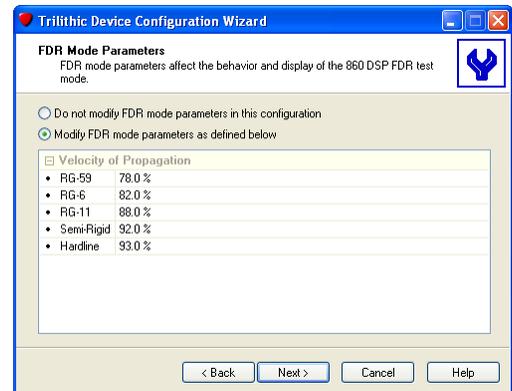
Click **Next** to continue with the FDR Mode parameters.



The Telemetry Search Parameters configuration is a carry-over feature from the 860 DSP and 860 DSPi field analyzer, and as such, is not applicable to the 860 DSPr headend analyzer configuration.

FDR Mode Parameters

Click **Next** to transfer the configuration parameters to the 860 DSPr.



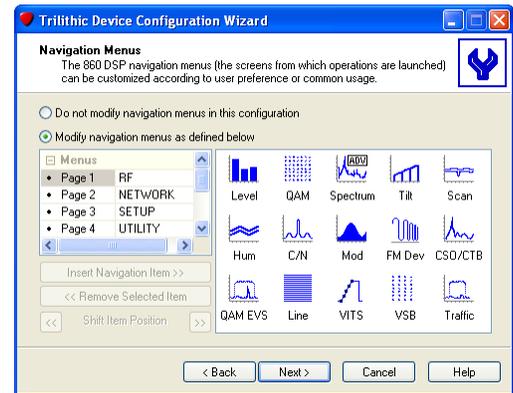
The FDR Mode Parameters configuration is a carry-over feature from the 860 DSP and 860 DSPi field analyzer, and as such, is not applicable to the 860 DSPr headend analyzer configuration.

Navigation Menu

You can customize the 860 DSPr navigation menus to better fit the way your field technicians operate. To modify the parameters for this section, select **Modify navigation menus as defined below**, then enter information in the fields as follows:

Menu

Select the page of the menu that appears on the 860 DSPr. The right pane of the screen shows the items that will appear on the navigation menu for that page.



Insert Navigation Item: Click this to display a list of the options that can be displayed on the menu. Items that are already displayed on the menu are grayed out.

Remove Selected Item: Click this to remove the highlighted item in the right pane of the screen from that navigation menu.

Shift Item Position: Click the previous and next buttons to shift the position of the highlighted item.

You can add and remove items from each menu. You cannot have the same item on multiple pages. The menu options will appear on the 860 DSPr on the pages and in the order you specify.



NOTE

This feature can be very powerful for customizing the 860 DSPr for a particular application or set of installation options. Although the default menus are good for most general applications, you may be able to save time and effort by creating customized navigation menus for the 860 DSPr that most accurately reflect the needs of your users.

Macro Shortcuts

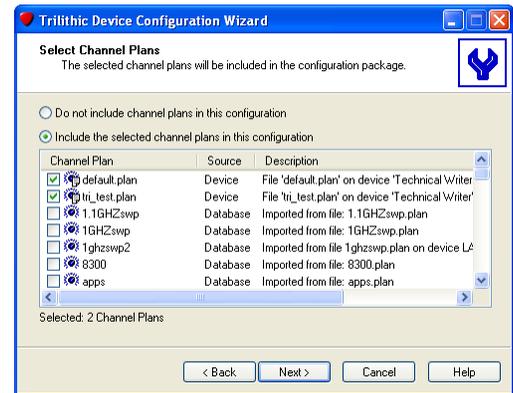
Shortcut: Five user-defined shortcuts to quickly launch an auto-test macro directly from a menu.

When you are satisfied with your entries, click **Next** to continue with Select Channel Plans.

Select Channel Plans

You use this screen to select the channel plans that will be included in the configuration package for downloading to the 860 DSPr. To modify the parameters for this section, select **Include the selected channel plans in this configuration**, then check the boxes for the channel plans you want to include.

When you are satisfied with your entries, click **Next** to continue with Select Locations.



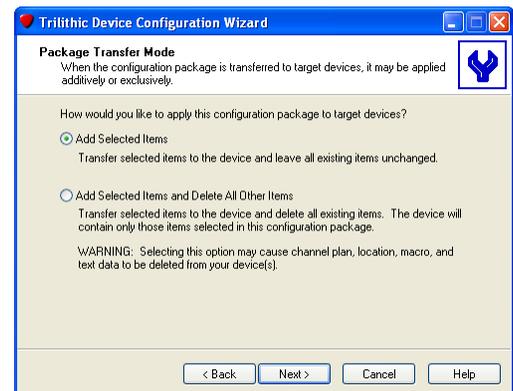
Package Transfer Mode

You use this screen to tell WorkBench how to transfer information to the 860 DSPr. Select one of the two following options to transfer files and information in the configuration package to the 860 DSPr:

Add Selected Items - Select this option (the default) to transfer the files and information in the configuration package without deleting existing files. Files with the same name will be overwritten, but files that are not included in the configuration package will not be deleted.

Add Selected Items and Delete All Other Items -

Select this option to transfer the information in the configuration package to the 860 DSPr and delete any other files on the 860 DSPr. At the end of the transfer process, the only files and information on the 860 DSPr will be the files and information contained in the configuration package. This option is useful for ensuring that 860 DSPr's are configured to a standard and that no unauthorized or unacceptable files are included on them.



Selecting the second option may delete information from the 860 DSPr. Ensure that the files in the 860 DSPr are backed up and that the configuration package being loaded is complete.

When you are satisfied with your entries, click **Next** to continue with the Additional Configuration Options.

Additional Configuration Options

This screen lets you perform a few additional configuration tasks when you download the configuration package to the 860 DSPr. To modify the parameters for this section, enter information in the fields as follows:

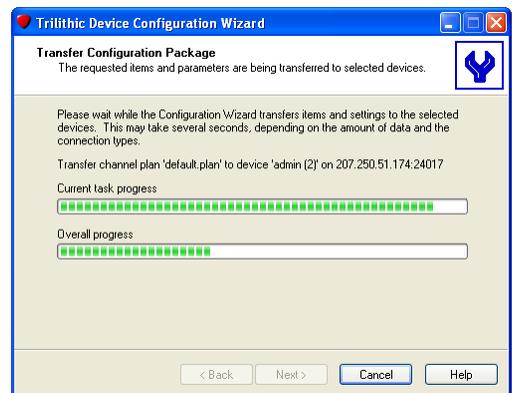
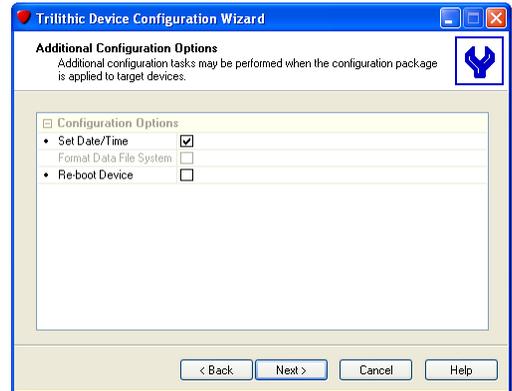
Set Date/Time: Check this box to synchronize the 860 DSPr's clock to the clock on the WorkBench computer.

Format Data File System: Check this box to reformat the 860 DSPr's flash disk prior to transferring the selected files. This option may be desired for periodic maintenance, but is not necessary (and probably should not be performed) each time a device is configured. This option is only available if you have selected Add Selected Items and Delete All Other Items on the Packet Mode Transfer screen shown in the previous step.

Reboot Device: Check this box to reboot the 860 DSPr after the configuration package has been downloaded. Some options require the 860 DSPr to be rebooted for the options to be applied.

When you are satisfied with your entries, click **Next** to transfer the configuration package to the selected 860 DSPr.

The Transfer Configuration Package window will appear, indicating the progress of the configuration transfer to the connected 860 DSPr.



After the configuration package has been transferred to the 860 DSPr, the Device Configuration Wizard Complete window will be displayed.

Click the **Finish** button to close the Configuration Wizard.



Chapter 6

Configuring an 8300 FST

Overview

The configuration parameters shown in this chapter apply to any 8300 FST. These settings are presented in same order in which they would be configured while creating a configuration package with the Configuration Wizard.



You cannot save configuration packages for the 8300 FST Forward Speed Sweep Transmitter. You can only edit the configuration package that is on the device.

Editing Configuration Packages

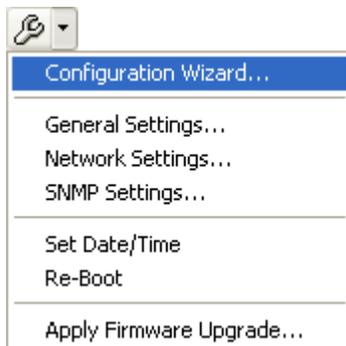
Perform the following steps to modify the current configuration package on any connected 8300 FST:

1. Select the name of the connected 8300 FST from the  **Devices** tab.
2. Perform one of the following steps to edit the configuration package on the selected 8300 FST:

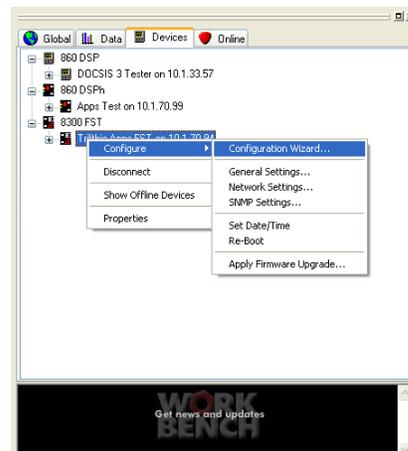
From the Toolbar click on the down arrow next to the  button and then select **Configuration Wizard**.

OR

From the  **Devices** tab, right-click on the name of the connected device, hover over **Configure**, and then click on **Configuration Wizard**.



Toolbar



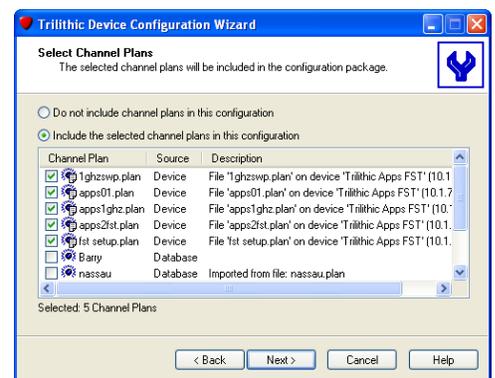
Devices Tab

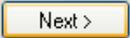
- WorkBench will now load the existing configuration from the connected 8300 FST and will then display the **General Device Parameters** window.
- Edit the configuration parameters for the 8300 FST as shown later in this chapter and then return to Step 5 to complete the configuration package.
- After proceeding through the available configuration parameters for your selected device, the **Select Channel Plans** window will appear. Perform one of the following steps to select the channel plans to include in the configuration, and then click the  button:

Do not include channel plans in this configuration - Select this option to exclude channel plans from this configuration package.

OR

Include the selected channel plans in this configuration - Select this option to include the selected channel plans in this configuration package, and then from the list select the channel plans to include.



- The **Package Transfer Mode** window will appear. Perform one of the following steps to determine how to apply the configuration package to the target device, and then click the  button:

Add Selected Items - Select this option to transfer the selected items to the device and leave all of its existing items unchanged.

OR

Include Selected Items and Delete All Other Items - Select this option to transfer the selected items to the device and delete all existing items. This device will only contain only those items selected in this configuration package.



Selecting the second option may cause the channel plan, location, macro, and text data to be deleted from the selected devices.

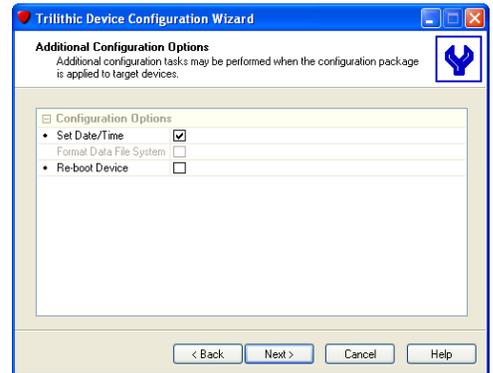
7. The **Additional Configuration Options** window will appear. Select from the following additional configuration tasks to be performed when the configuration package is applied to the selected devices, and then click the  button:

Set Date/Time - Select this option to transfer the date and time of the PC running the WorkBench software to the selected devices.

Format Data File System - Not available for selection at this time.

Reboot Device - Select this option to reboot the selected devices after the transfer of the configuration package is complete.

8. The **Trilithic Device Configuration Wizard Complete** window will appear. Once the transfer process is complete and you have reviewed the actions completed by the configuration wizard click the  button.



Editing Configuration Parameters

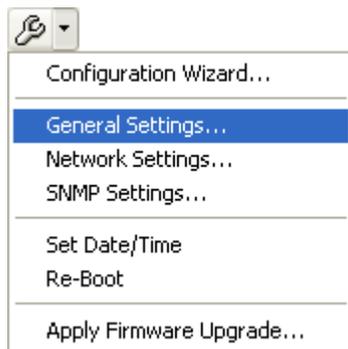
Each of the configuration parameters shown in this chapter can be edited individually from any connected 8300 FST as follows:

1. Select the name of the connected 8300 FST from the  **Devices** tab.
2. Perform one of the following steps to edit individual configuration parameters on the selected 8300 FST:

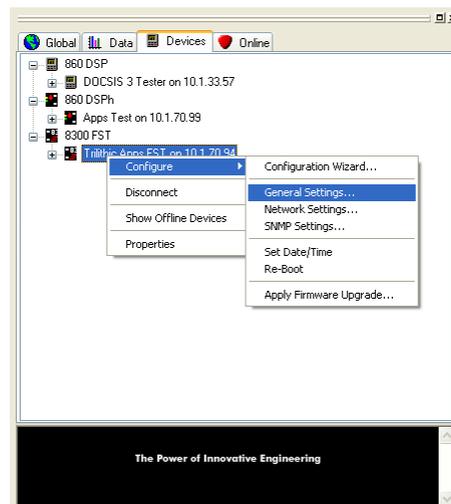
From the Toolbar click on the down arrow next to the  button and then select the configuration parameter that you wish to edit.

OR

From the  **Devices** tab, right-click on the name of the connected device, hover over **Configure**, and then select the configuration parameter that you wish to edit.



Toolbar



Devices Tab

3. The corresponding configuration parameter window will appear, make any desired changes and then select the  button to send the configuration parameter that you chose to modify to the connected 8300 FST or select the  button to exit without changing the configuration parameter.
4. After the transfer process is complete, select the  button.

General Device Parameters

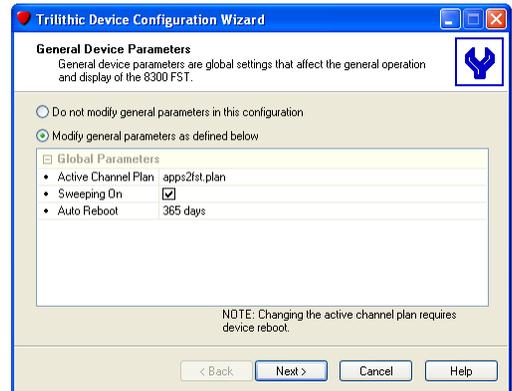
General device parameters are global settings that affect the general operation and display of the 8300 FST. To modify the parameters for this section, select the radio button corresponding to **Modify general device parameters as defined below** in the Configuration Wizard window then enter information in the fields as follows:

Active Channel Plan: Select the active channel plan from the drop-down list.

Sweeping On: Select this check box to turn on forward sweeping for the 8300 FST.

Auto Reboot: Set the frequency, in days, with which the 8300 FST will automatically reboot.

When you are satisfied with your entries, click **Next** to continue with the Network parameters.



Network Parameters

The network test parameters configure the connectivity of the 8300 FST. To modify the parameters for this section, select the radio button corresponding to **Modify network parameters as defined below** in the Configuration Wizard window then enter information in the fields as follows:

Connectivity Parameters

IP Address: Enter the IP address of the 8300 FST.

Subnet Mask: Enter the subnet mask of the 8300 FST.

Default Gateway: Enter the gateway the 8300 FST needs to use.

Preferred DNS Server: Enter the preferred DNS server's IP address. (This field is required if trap destinations are set as text instead of IP addressed.)

Alternate DNS Server: Enter the alternate DNS server's IP address. (This field is required if trap destinations are set as text instead of IP addressed.)

Login Parameters

Master Username: Enter the username you will use to log in to the 8300 FST via the built-in web server.

Master Password: Enter the username you will use to log in to the 8300 FST via the built-in web server.

When you are satisfied with your entries, click **Next** to continue with the SNMP parameters.

Trilithic Device Configuration Wizard

Network Parameters
Network parameters configure the connectivity of the 8300 FST.

Do not modify network parameters in this configuration

Modify network parameters as defined below

Connectivity

- IP Address 10.1.33.94
- Subnet Mask 255.255.0.0
- Default Gateway 10.1.1.1
- Preferred DNS Server 0.0.0.0
- Alternate DNS Server 0.0.0.0

Login

- Master Username admin
- Master Password admin

< Back Next > Cancel Help

SNMP Parameters

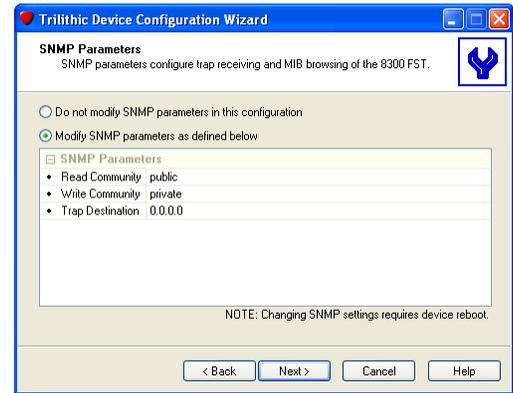
The SNMP parameters configure the accessibility of the 8300 FST. To modify the parameters for this section, select the radio button corresponding to **Modify SNMP parameters as defined below** in the Configuration Wizard window then enter information in the fields as follows:

Read Community: Enter the SNMP password for reading data.

Write Community: Enter the SNMP password for writing data.

Trap Destination: Enter the IP address of the SNMP management program server that WorkBench will communicate with.

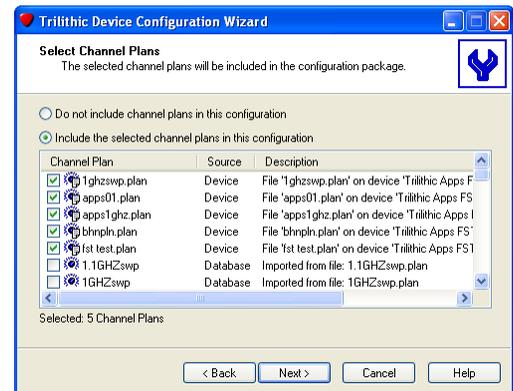
When you are satisfied with your entries, click **Next** to continue with Select Channel Plans.



Select Channel Plans

You use this screen to select the channel plans that will be included in the configuration package for downloading to the 8300 FST. To modify the parameters for this section, select **Include the selected channel plans in this configuration**, then check the boxes for the channel plans you want to include.

When you are satisfied with your entries, click **Next** to continue with Package Transfer Mode.



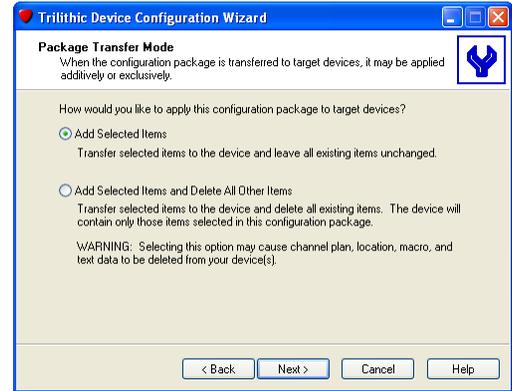
Package Transfer Mode

You use this screen to tell WorkBench how to transfer information to the 8300 FST. Select one of the two following options to transfer files and information in the configuration package to the 8300 FST:

Add Selected Items - Select this option (the default) to transfer the files and information in the configuration package without deleting existing files. Files with the same name will be overwritten, but files that are not included in the configuration package will not be deleted.

Add Selected Items and Delete All Other Items -

Select this option to transfer the information in the configuration package to the 8300 FST and delete any other files on the 8300 FST. At the end of the transfer process, the only files and information on the 8300 FST will be the files and information contained in the configuration package. This option is useful for ensuring that 8300 FSTs are configured to a standard and that no unauthorized or unacceptable files are included on them.



Selecting the second option may delete information from the 8300 FST. Ensure that the files in the 8300 FST are backed up and that the configuration package being loaded is complete.

When you are satisfied with your entries, click **Next** to continue with the Additional Configuration Options.

Additional Configuration Options

This screen lets you perform a few additional configuration tasks when you download the configuration package to the 8300 FST. To modify the parameters for this section, enter information in the fields as follows:

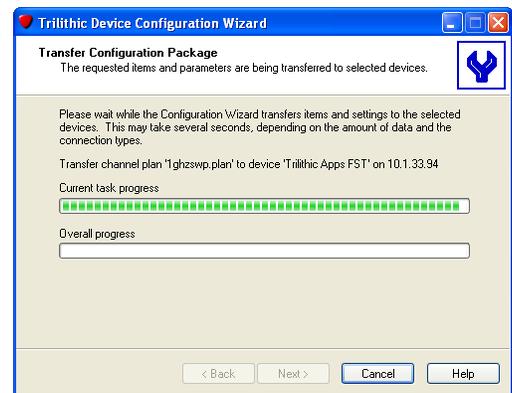
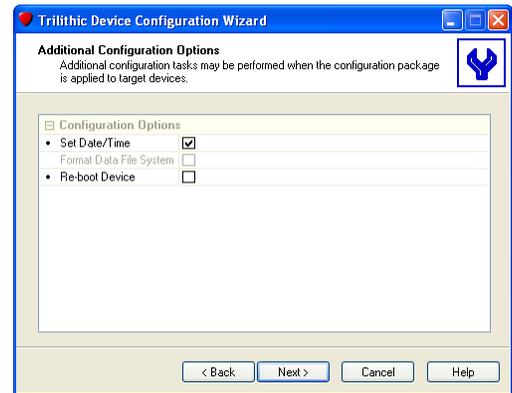
Set Date/Time: Check this box to synchronize the 8300 FST's clock to the clock on the WorkBench computer.

Format Data File System: Check this box to reformat the 8300 FST's flash disk prior to transferring the selected files. This option may be desired for periodic maintenance, but is not necessary (and probably should not be performed) each time a device is configured. This option is only available if you have selected Add Selected Items and Delete All Other Items on the Packet Mode Transfer screen shown in the previous step.

Reboot Device: Check this box to reboot the 8300 FST after the configuration package has been downloaded. Some options require the 8300 FST to be rebooted for the options to be applied.

When you are satisfied with your entries, click **Next** to transfer the configuration package to the selected 8300 FST.

The Transfer Configuration Package window will appear, indicating the progress of the configuration transfer to the connected 8300 FST.



After the configuration package has been transferred to the 8300 FST, the Device Configuration Wizard Complete window will be displayed.

Click the **Finish** button to close the Configuration Wizard.



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WorkBench Software

(and WorkBench Lite Software)

for the 860 DSP, 860 DSPi, 860 DSPh, 860 DSPr, and 8300 FST

Section V: Trilithic Data Manager (TDM) Component



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Chapter 1

TDM Introduction

This chapter:

- Defines TDM's purpose
- Provides the following diagrams
 - TDM-to-860 DSP or 860 DSPi system overview
 - Sample network configuration diagram
 - TDM port and protocol diagram
- Provides instructions in using TDM with a secure socket layer
- Lists the minimum system requirements

What is Trilithic Data Manager (TDM)?

TDM (Trilithic Data Manager) is an optional component for WorkBench. It allows field technicians to use the Internet to remotely send and receive information to/from their 860 DSP or 860 DSPi. Before the availability of TDM, field technicians had to physically bring their meter into the home office for information transfers.

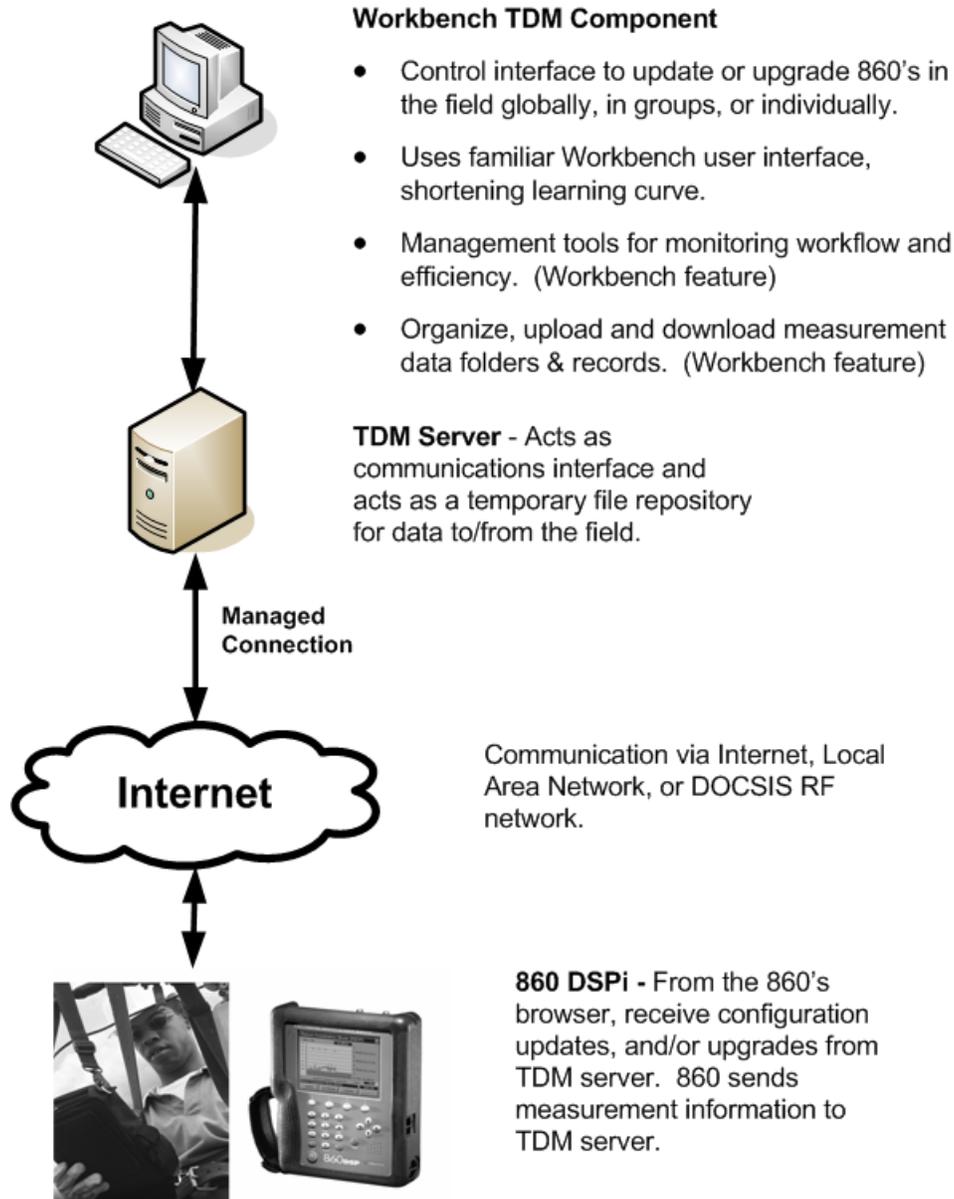
Information received by the 860 DSP or 860 DSPi via TDM include:

- Device configuration files
- Firmware upgrades
- Updated channel plans
- Locations
- Tasks (work orders)
- Macros
- Web mail

Information send from the 860 DSP or 860 DSPi via TDM include:

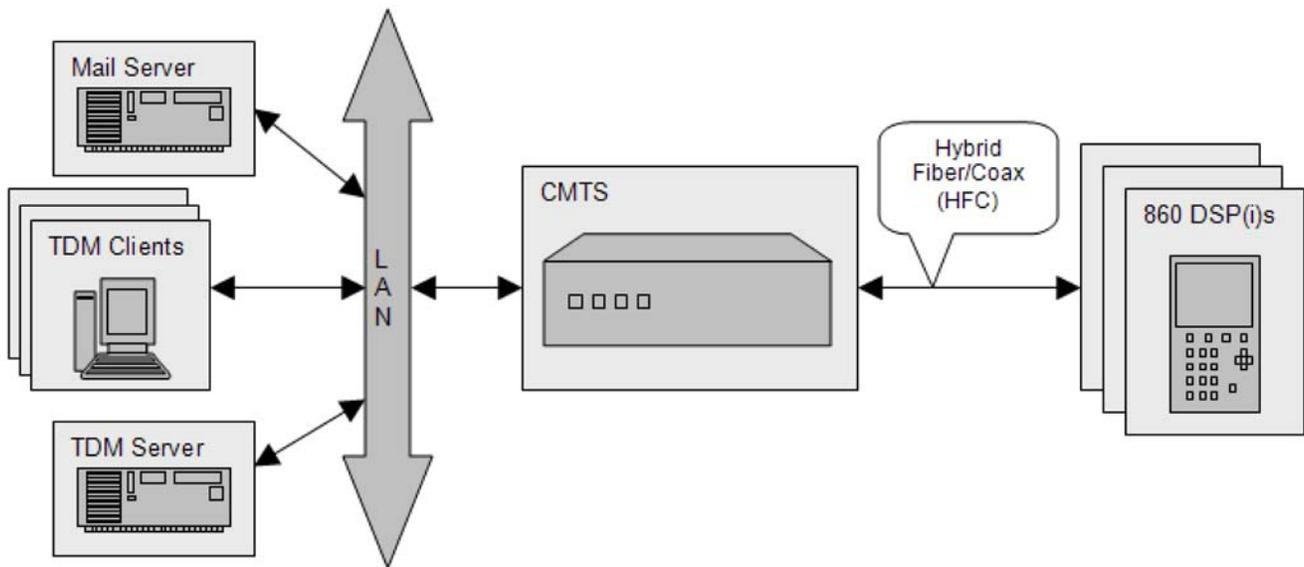
- Field data
- Tasks (work orders)
- Screen captures
- Web mail

TDM and 860 DSPi System Overview Diagram



TDM Network Configuration Diagram

Following is a general view of the components in the TDM network:

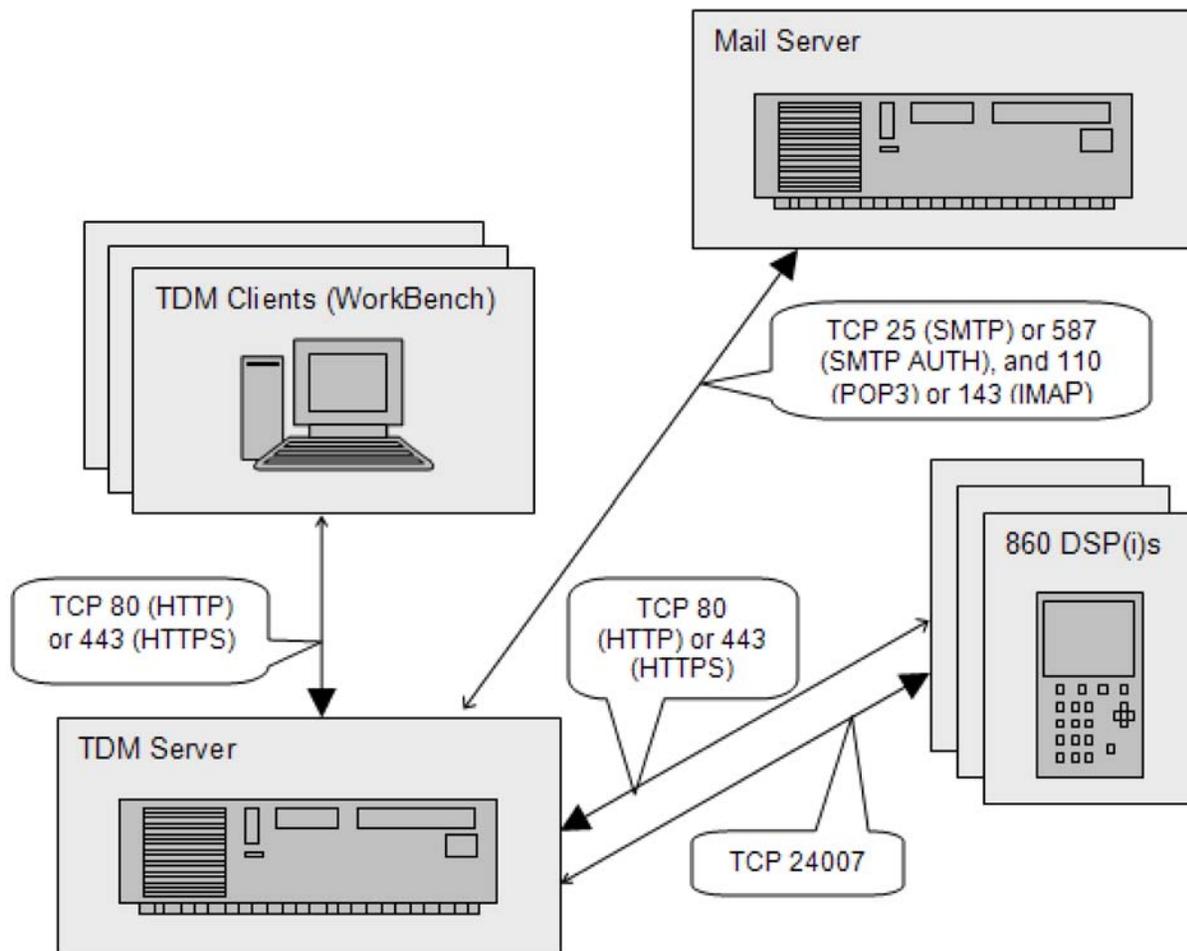


TDM Ports and Protocols Diagram

The following diagram shows the ports and protocols that are used by the TDM network components. If you have a firewall, it is important to make sure the ports named below are open. For information on component requirements, refer to **Chapter 2: TDM Server Installation, TDM Server System Requirements** in this manual.



TDM is not provided with email server software. TDM provides a web interface that allows the 860 DSP or 860 DSPi to interface with an email server.



Using TDM with a Secure Socket Layer (SSL)

It is possible to use a secure sockets layer (SSL) to access TDM. This can help prevent sensitive TDM data from being intercepted.



Before configuring an 860 DSP or 860 DSPi to use an SSL, the device's firmware must be changed from the factory default. To obtain the SSL-enabling firmware, contact Trilithic at 317-895-3600 or 800-344-2414 for assistance.

To access TDM using SSL:

1. Obtain an SSL certificate for your TDM server's default web site. Consult your company's IT department for detailed instructions in obtaining an SSL certificate.
2. In the **Administrative Tools Control Panel**, open **Internet Information Services**.
3. Navigate to the following folder: *local computer => Web Sites => Default Web Site*.
4. Right-click on the **TDM** folder, then click on **Properties**.
5. Click on the **Directory Security** tab.
6. In the Secure communications section, click on **Edit**.
7. Place a check in the **Require secure channel (SSL)** check box. You may then wish to place a check in the **Require 128-bit encryption** check box as well. Click the **OK** button, then click the **OK** button again.
8. In the **Inheritance Overrides** dialog box that appears, click on **Select All**, and then click the **OK** button.
9. Repeat steps 4 through 8, but for the *TrilithicWebServices => TrilithicDataManager* folder instead of the **TDM** folder.
10. In WorkBench, click the **Global** tab, expand the **Application Options** tree, then double-click on the **TDM** label. The **Application Options** dialog box will appear with the **TDM** tab displayed.
11. Place a check in the **Use SSL** check box, then click the **OK** button. You will be returned to the main WorkBench window.

12. Modify the Web browser settings for each 860 DSP by editing its TDM home page link as follows:

- a. Right-click on the 860 DSP, click on **Configure**, then click on **Web Browser Settings**.
- b. In the Trilithic **860 DSP Configuration Wizard** dialog box that appears, change the TDM home page from:

http://TDM server hostname or IP address/TDM/860Pages.html

TO

https://TDM server hostname or IP address/TDM/860Pages.html

- c. Click on **Next**. WorkBench will update the 860 DSP with the new link and then display a Trilithic 860 DSP Configuration Wizard Complete message.
- d. Click the **Finish** button. You will be returned to the main WorkBench window.

Chapter 2

TDM Server Installation

This chapter provides instruction in:

- Installing the TDM application
- Logging in to the TDM Administration
- Registering the TDM application

System Requirements

To operate the TDM software, your system must meet the following minimum requirements:

WorkBench for the 860 DSP

- 200 MHz Pentium-II
- 64 MB RAM
- 100 MB free disk space
- Microsoft Windows NT 4.0, 2000 or XP
- Color monitor running at 256 colors or higher, 800 x 600 minimum screen resolution
- Windows compatible keyboard and mouse

WorkBench TDM Component

- WorkBench for the 860 DSP v1.5 or higher
- Internet connection

TDM Server

- 1 GHz Pentium-III
- 256 MB RAM
- 2 GB free disk space
- Microsoft Windows XP (10 concurrent connection limit) or Windows Server 2003
- Microsoft SQL Server 2000 with Service Pack 3a
- Color monitor running at 256 colors or higher, 800 x 600 minimum screen resolution
- Windows compatible keyboard and mouse
- Private Network Security
 - NAT (firewall, router or computer) with TCP port 80 mapped to TDM server and TCP port 24007 open for outgoing packets
- Static IP Address

860 DSP or 860 DSPi with web browser capabilities (v6.1.1.1 or higher)

TDM Mail Server (Not supplied by Trilithic)

- Incoming email server using POP3 or IMAP
- Outgoing email server using SMTP or SMTP-AUTH
- Email servers must be accessible via TCP/IP from the TDM server

Installation Instructions

If TDM Server has already been installed, proceed to **Step 2: Grant Others Permission to Access TDM Administration**.



Check the software installation CD for release notes that may affect the installation and configuration process.

NOTE

Step 1: Install TDM Server

To install TDM:

1. Log onto your server as the local Administrator, or as a user that is a member of the local Administrators group.
2. Insert the TDM installation CD into your CD-ROM drive.
3. **If you have Autorun enabled for the CD-ROM drive**, the TDM setup program will start automatically.

If you DO NOT have Autorun enabled for the CD-ROM drive,

- a. Click **Start** (which is found on the lower left-hand side of your screen).
 - b. Select **Run** from the pop-up window.
 - c. Type *D:\setup.exe* (substitute the appropriate drive path if D is not your CD-ROM drive).
 - d. Click the **OK** button.
4. To complete the installation, follow the on-screen directions.

Step 2: Grant Others Permission to Access TDM Administration

By default, only the Windows user who is the Administrator of the computer on which TDM is installed will have access to the TDM administration web interface.

To grant other individuals permission to access the TDM administration web pages, perform either of the following procedures:

Microsoft Windows XP

- Go to the Windows **Control Panel** > **User Accounts** (then click on the **Advanced** tab)
- In Advanced User Management category click on the **Advanced** button (Local Users and Groups) > **Groups** folder
- Double-click the **TDM Administrators** menu choice and add the appropriate names

Microsoft Windows 2003

- Go to the Windows **Control Panel** > **Administrative Tools** > **Computer Management** then click **System Tools** to expand the menu tree
- Click the **Local Users and Groups** menu choice to expand the menu tree
- Double-click the **Groups** menu selection to open the **Groups** folder
- Double-click the **TDM Administrators** menu choice and add the appropriate names

Step 3: Log In to TDM Administration

There are two ways to log into TDM Administration:

From Workbench (with the TDM component enabled)

Right click on either the **TDM Inbox** or **TDM Outbox** and select **TDM Administration** from the drop down menu.

Note: To log in, you must have TDM administrative access to the computer on which TDM is installed.

OR

From a web browser (i.e. Microsoft Internet Explorer)

You can also access TDM Administration by typing your TDM server's administration home page URL into any internet browser.

If you are not using SSL, the URL will be in the following format:

<http://insert host name or IP address of the TDM server here/TDM/AdminPages.html>

If you are using SSL, the URL will be in the following format:

<https://insert host name or IP address of the TDM server here/TDM/AdminPages.html>

Step 4: Register the TDM Application

Before registering the TDM component, you must log in to TDM. In the WorkBench program, perform the following procedure to log in to TDM:

1. On the Global tab, right-click on either the **TDM Inbox** or the **TDM Outbox**.
2. Select TDM administration from the floating menu.

Once you have logged into the TDM Component of WorkBench, you can register the TDM component. Perform the following procedure to register the component:

1. Click the **Main Menu** link.
2. On the following page, click the registration link: **Have You Registered?**
3. Enter the **Product Key**.
4. Enter the **Registration Key**.
5. Click the **OK** button.
6. Click the **Main Menu** link to return to the TDM Administration menu.

If the **Trilithic Product Activation** dialog box shown in steps 3 through 5 does not appear, follow the instructions displayed in the TDM browser window.

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Chapter 3

TDM Component Setup

This chapter:

- Provides step-by-step instructions in setting up the TDM Component of WorkBench

Prerequisites

Before you can access the TDM feature within the WorkBench application:

- The TDM Server software must have previously been installed. For installation instructions, refer to **Chapter 2: TDM Server Installation** in this manual.

Before you can use the TDM Component of WorkBench to make configuration changes on the 860 DSP or 860 DSPi:

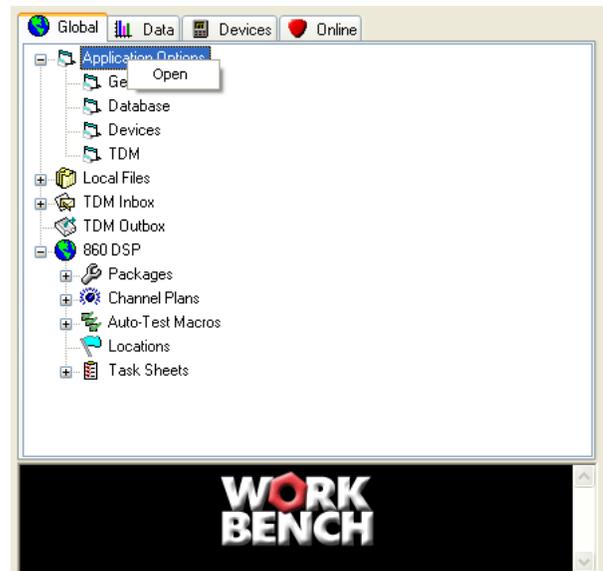
- WorkBench must have been installed with the Full Access option enabled. If WorkBench was installed with Limited Access enabled, you will not be able to perform any functions associated with the TDM Outbox or Task Sheets.
- You will not be allowed to configure an 860 DSP or 860 DSPi to point to TDM.

Before you can configure WorkBench to point to the TDM server:

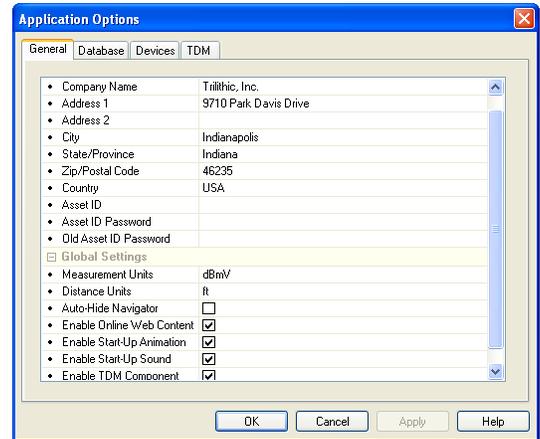
- You must know the Host Name or IP Address of the TDM server.

Enable the TDM Component in WorkBench

1. Open the WorkBench program.
2. Select the **Global** tab.
3. Right-click on the **Application Options** menu choice then select **Open** from the floating menu.



4. Select the **General** tab from the pop-up Application Options window.
5. Select the check box corresponding to **Enable TDM Component**.
6. Click the **Apply** button.
7. You may be prompted to register the TDM Component if you have not yet done so. Click the **OK** button to continue.



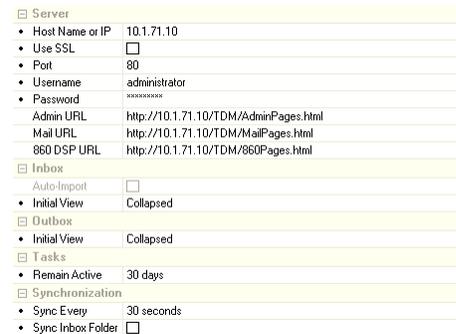
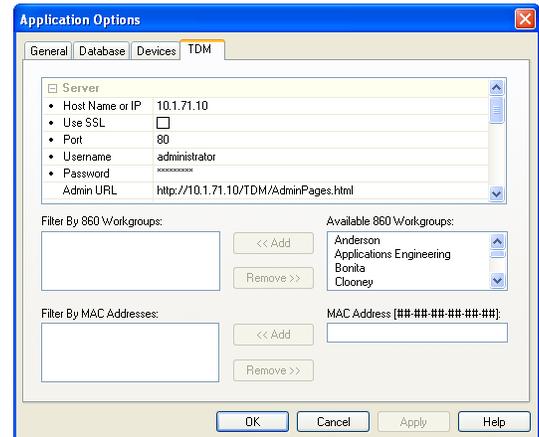
The TDM Inbox and Outbox menu options will now appear in the Navigator Window, under the Global tab. A TDM option will appear under Application Options on the Global tab, and a TDM tab will also appear after the Devices tab.



To register the TDM Component, click the Help menu then select Register TDM Component. The software registration screen will prompt you to provide the Product Key (included with the original software disk) and the Registration Key (obtained by calling Trilithic at 800-344-2412 during normal business hours.

Configuring WorkBench to Point to the TDM Server

1. Click the **TDM** tab.
2. Click the mouse pointer in the **Host Name or IP** field then enter the host name or IP address of the TDM server (if you do not know the host name or IP address, contact your IT administrator). Press the **Enter** key on the keyboard.
3. Select the check box corresponding to **Use SSL** if secure socket layer encryption is used.
4. The default **Port** will be 80 for non-SSL communications and 443 for SSL communications.
5. Scroll down in the Configuration window and select the display mode for the TDM Inbox and TDM Outbox when WorkBench is first opened. Left-click in the **Initial View** field then select the appropriate option from the drop-down window.



For detailed instructions in creating a work group, refer to the TDM for Administrators operation manual.

NOTE

You can now choose which specific work groups to subscribe to. This allows you to filter which of the 860 DSP's or 860 DSPi's will receive and send data. Only set subscriptions if you do not want to send and receive data from all available 860 DSP's and 860 DSPi's on the TDM network.

For additional information in setting subscriptions, continue to step 1 in the next section, **[Subscribing to 860 Work Groups](#)**.

If the subscription service is not needed, proceed to step 2 in the next section, **[Subscribing to 860 Work Groups](#)**.

Subscribing to 860 Work Groups

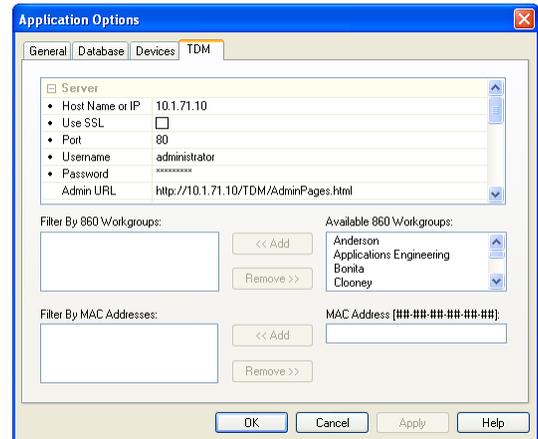
1. To subscribe to a specific work group or work groups, left-click to select the work group(s) then click the **Add** button.

To unsubscribe from a specific work group, left-click to select the work group(s) then click the **Remove** button.

2. To subscribe a specific (or multiple) 860 DSP or 860 DSPi which are not members of a work group, enter the MAC Address of the 860 DSP(s) or 860 DSPi(s) then click the Add button.

To unsubscribe a specific (or multiple) 860 DSP or 860 DSPi left-click to select the 860 DSP(s) or 860 DSPi(s) then click the **Remove** button.

3. Click the **OK** button to close the Application Options window and configure the TDM Inbox and TDM Outbox.



NOTE

It may take several minutes for the TDM Inbox and TDM Outbox to appear in the navigator window, as WorkBench requires time to synchronize with the TDM server.

Each 860 DSP or 860 DSPi included in the TDM network will have its own inbox and outbox which are displayed under the TDM Inbox and TDM Outbox headings in the navigator window.

The TDM Outbox will contain a Global outbox as well as any work group outboxes.

Set Up the 860 DSP or DSPi to Connect to the TDM Server

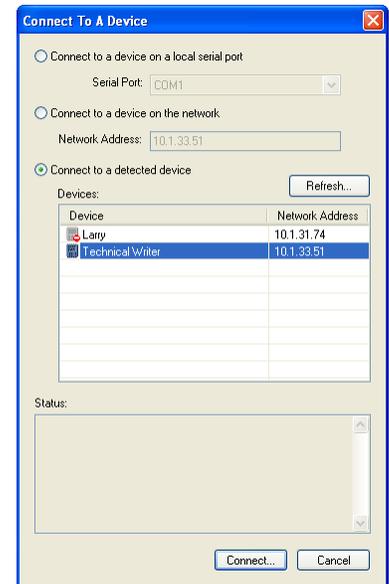
In **Chapter 3: TDM Component Setup, Configuring WorkBench to Point to the TDM Server**, the procedure for configuring WorkBench to the TDM server was performed. Following the WorkBench configuration, the 860 DSP or DSPi must also be configured to point to the TDM server. Perform the following procedure to configure the 860 DSP or DSPi to point to the TDM server:

1. Click the **Devices** tab.
2. Right-click on the **860 DSP** menu choice then select **New Connection** from the floating menu.



3. In the pop-up Connect 860 DSP window, continue to create new connections as described in WorkBench's help menu.

Click the **Help** menu, then select the **Help Topics** menu



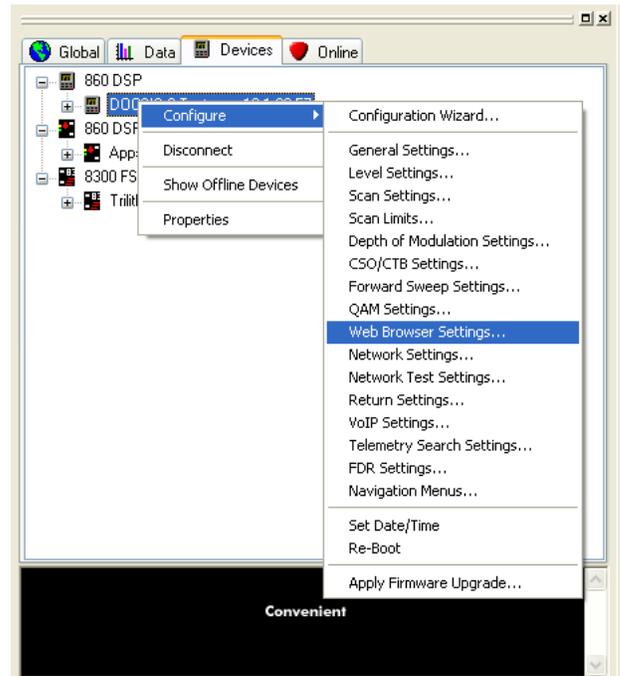
choice. Click the **Search** tab then select the **Adding and Maintaining 860 DSPs** help topic.

Once an 860 DSP or 860 DSPi has been connected to WorkBench, a web link must be created which allows the 860 DSP or 860 DSPi to access the TDM network through its web browser.

4. On the **Devices** tab, right-click the 860 DSP or 860 DSPi that was just connected to WorkBench.
5. From the floating menu, select the **Configure** menu option then select the **Web Browser Settings** menu option from the second floating menu.

To make TDM the home page that is displayed when you select the WWW icon in the 860 DSP or 860 DSPi, go to step 6.

To make TDM a selectable link under the WWW menu on the 860 DSP or 860 DSPi, go to step 7.

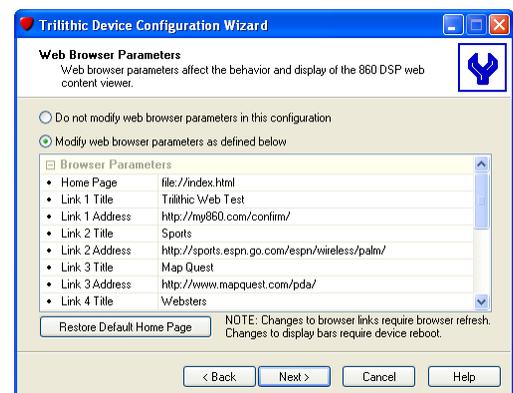


6. To set TDM as the 860 DSP's or 860 DSPi's home page, right-click the 860 DSP or 860 DSPi in the Navigator window. From the floating menu, select **Configure**, then select **Web Browser Parameters**.

From the pop-up Web Browser Parameters window, set the **Home Page** value to be the same as the 860 DSP URL address shown on the TDM tab, under Application Options.

7. To create a link that the 860 DSP or 860 DSPi will use to access the TDM network via the WWW application, enter the name of the link in the **Line 2 Title** field.

Enter the web address for the 860 DSP or 860 DSPi home page on the TDM server in the **Link 2 Address** field. This address is the same as the 860 DSP URL address shown on the TDM tab, under Application Options.



Chapter 4

TDM Administration Pages

This Chapter:

- Provides an overview of TDM Administration and its features
- Describes how to log in to the TDM Administration application
- Explains how to access the Administration pages in TDM's main menu
- Provides a description of TDM Administration's features
- Provides instruction in using TDM Administration's features

Overview

TDM Administration serves as a headquarters for managing the functions and features of the TDM application. TDM Administration performs the following tasks:

860 DSP Maintenance

- Lists details about any 860 DSP or DSPi in the TDM network
- List, add, and delete 860 DSP's or DSPi's in the TDM network

TDM Inbox and Outbox Maintenance

- List, download, and delete files from TDM inboxes and outboxes

Email Maintenance

- Add, edit, or remove email users from the TDM network
- Select and configure servers that will be used to send and receive TDM email
- Add or remove email groups and their members
- Set up address books for individual users, groups, and for global use

Field Data File Type, Transaction History, and Web Link Maintenance

- List, add, and delete field data type extensions
- List date-specific activity, including file transfers and account maintenance
- Add and delete web links that can be accessed by the 860 DSPs in the TDM network

Logging in to TDM Administration

Two methods are available to log in to TDM Administration; through the WorkBench software (with the TDM component enabled) or from an internet web browser.

Logging in from WorkBench

Right-click on **TDM Inbox** or **TDM Outbox** then select TDM Administration from the floating menu.



To log in, you must have TDM administrative access to the computer TDM is installed on.

NOTE

Logging in from a Web Browser

You can access the TDM Administration by typing you TDM server's administration URL into the address bar of an internet browser.

If you are not using SSL, the URL will be in the following format:

<http://insert host name or IP address of the TDM server here/TDM/AdminPages.html>

If you are using SSL, the URL will be in the following format:

<https://insert host name or IP address of the TDM server here/TDM/AdminPages.html>

Guided Tour of the TDM Administration Pages

Initial Setup Instructions

When TDM Administration is first set up, the following menu order must be followed in order to ensure proper configuration:

- **860 DSPs** - Add the 860 DSP's or DSPi's you want to access the TDM network
- **Work Groups** - Create groups of 860 DSP's or DSPi's
- **Work Group Members** - Assign work group members
- **Field Data File Types** - Make sure all needed field data file types are listed

To set up TDM email, the following menu order must be followed in order to ensure proper configuration:

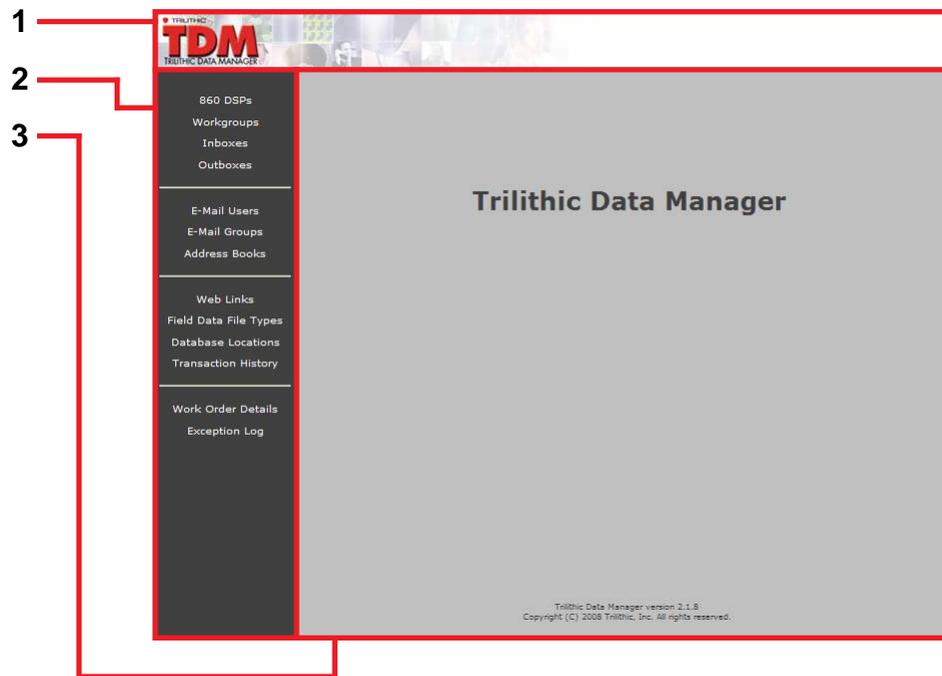
- **Email Site Configuration** - Select and configure the server that will be used to send and receive TDM email
- **Email Users** - Add users you want to have email access
- **Email Address Books** - Setup address books for individual users, groups and for global use
- **Email Groups** - Add email groups
- **Database Locations** - View and manage test data archived in multiple databases

The following administration menus are not necessary for initial setup, and can be used on an as-needed basis:

- **Web Links** - Add web links you want to be accessed by the 860 DSP's or DSPi's in your TDM network
- **860 DSP Details** - View details about any 860 DSP or DSPi in your TDM network
- **Inboxes** - Manage TDM Inboxes
- **Outboxes** - Manage TDM Outboxes
- **Transaction History** - View date-specific activity
- **Work Order Details** - View specific details about assigned work orders
- **Exception Log** - View and edit exceptions noted by TDM

Overview

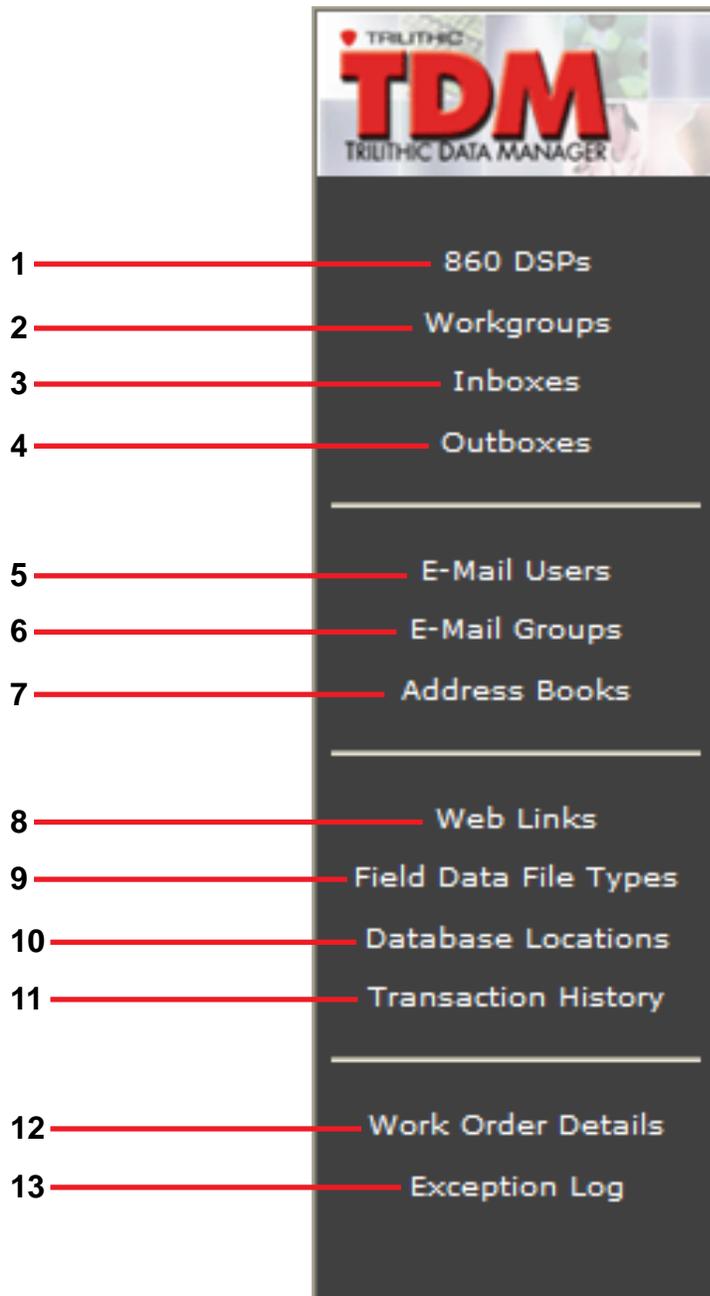
The TDM Administration screen is divided into three sections. Following is an explanation of the layout of the TDM screen.



1. **Title bar** - the TDM Administration title bar indicates the name of the program. This title bar is static and will not change while the TDM Administration application is used.
2. **Main menu** - The main menu includes hyperlinks to all of the TDM Administration pages. Each of the links is explained in detail in the following sections of this chapter.
3. **Data window** - Each of the functions that correspond to the hyperlinks in the main menu will be displayed in the data window. The content of the data window will change, depending on which hyperlinks are selected from the main menu.

TDM Administration Menu

A brief explanation of each of the main menu hyperlinks is on the following page.



1. Displays all 860 DSP's or DSPi's included in the TDM network. You can add new 860 DSP's or DSPi's you want to access the TDM network and delete ones you don't.
2. Go here to create and delete groups of 860 DSP's or DSPi's.
3. View, download and delete files from inboxes.
4. View, add and delete files from outboxes.
5. Add, edit or remove email users from the TDM network.
6. Add, edit or remove groups of email users on the TDM network.
7. Setup address books for individual users, groups and also for global use.
8. Add and delete web links that can be accessed by the 860 DSP's or DSPi's in the TDM network.
9. Lists file extensions for all known types of field data. You can add new file types and delete those that are obsolete.
10. Create additional databases for archiving historical data uploaded from 860 DSP's or DSPi's.
11. Use this to view date specific activity including file transfers and account maintenance.
12. View specific details about work orders that have been assigned to 860 DSP or DSPi users in the TDM network.
13. Use this menu to display records of when an exception is noted by TDM.

Using the TDM Administration Pages

860 DSP's and DSPi's

Use this menu to view all 860 DSP's and DSPi's included in the TDM network. You can also add new 860 DSP's or DSPi's to the TDM network and delete 860 DSPs or DSPi's you no longer want to have access. An 860 DSP's or DSPi's properties can be edited here as well.



When a new 860 DSP or DSPi first attempts to connect with the TDM server it is automatically added to this list with a “No” in the Authorized column. Before a new 860 DSP or DSPi is allowed to connect to the TDM server, you must authorize it by changing the “No” to “Yes.”

The screenshot displays the '860 DSPs' management interface. At the top, there are filter options for 'Workgroup' and 'Authorization', both set to '[ALL]'. Below the filters is a table with the following columns: DSP MAC Address, Operator Name, Member of Workgroup, Last Connected, Auto-Login Username, Authorized, and a 'Select' checkbox. The table contains four rows of data. The first three rows have 'Authorized' set to 'No', and the fourth row has 'Authorized' set to 'Yes'. Below the table is a form to 'Add an 860 DSP' with fields for MAC Address, Operator Name (optional), Auto-Login Username, and Workgroup. A sidebar on the left contains navigation links for various system components.

DSP MAC Address	Operator Name	Member of Workgroup	Last Connected	Auto-Login Username	Authorized	Select
00-02-7C-FF-FF-FD	2398				No	<input type="checkbox"/>
00-02-7C-FF-FF-FF	5399				No	<input type="checkbox"/>
00-02-7C-FF-FF-FE	8400				No	<input type="checkbox"/>
00-02-7C-00-77-40	BrettXE3	work1	07/06/2010 12:56:20 PM		Yes	<input type="checkbox"/>

1. Takes you to that 860 DSP's or DSPi's details page.
2. To add a new 860 DSP or DSPi to the TDM network, type in the 860 DSP's or DSPi's **Mac Address**.
3. If desired, type in the **Operator Name**. This is a short name you can use to identify your 860 DSP or DSPi.



The Operator Name field will update automatically when an 860 DSP or DSPi connects to TDM.

860 DSPs

Filter By Workgroup: [ALL] Filter By Authorization: [ALL]

DSP MAC Address	Operator Name	Member of Workgroup	Last Connected	Auto-Login Username	Authorized		Select
00-02-7C-FF-FF-FD	2398				No	Details Edit	<input type="checkbox"/>
00-02-7C-FF-FF-FF	5399				No	Details Edit	<input type="checkbox"/>
00-02-7C-FF-FF-FE	8400				No	Details Edit	<input type="checkbox"/>
00-02-7C-00-77-40	BrettXE3	work1	07/06/2010 12:56:20 PM		Yes	Details Edit	<input type="checkbox"/>

Add an 860 DSP

MAC Address: 00 - 02 - 7C - - -

Operator Name (optional):

Auto-Login Username: (no auto-login)

Workgroup: (None)

Add

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4. If you want the 860 DSP or DSPi to log into TDM email automatically, choose what user name the 860 DSP or DSPi will log in as.
5. Select the appropriate option from the drop down to add a DSP to an existing work group.
6. Click the **Add** button.



If a user name is deleted from TDM, the Auto-Login feature for the deleted name will not function.

To authorize or unauthorize an 860 DSP or DSPi on the TDM network:

The screenshot displays the '860 DSPs' management page in Trilithic Data Manager. The page includes a sidebar with navigation options like '860 DSPs', 'Workgroups', 'Inboxes', and 'Outboxes'. The main content area features a table with the following data:

DSP MAC Address	Operator Name	Member of Workgroup	Last Connected	Auto-Login Username	Authorized	Select
00-02-7C-FF-FF-FD	2398				No	<input type="checkbox"/>
00-02-7C-FF-FF-FF	5399				No	<input type="checkbox"/>
00-02-7C-FF-FF-FE	8400				No	<input type="checkbox"/>
00-02-7C-00-77-40	BrettXE3	work1	07/06/2010 12:56:20 PM		Yes	<input type="checkbox"/>

Below the table, there is a form to 'Add an 860 DSP' with the following fields:

- MAC Address: 00 - 02 - 7C - - - -
- Operator Name (optional):
- Auto-Login Username: (no auto-login)
- Workgroup: (None)

Red arrows on the right side of the screenshot indicate the following steps:

- 7: Select the appropriate 860 DSP or DSPi by putting a check in the correct box under the **Select** column.
- 8: Click the **Flip Auth** button.
- 10: Click the **Delete** button.

7. Select the appropriate 860 DSP or DSPi by putting a check in the correct box under the **Select** column.
8. Click the **Flip Auth** button.

To delete an 860 DSP or DSPi from the TDM network:

9. Select the unwanted 860 DSP or DSPi by putting a check in the correct box under the **Select** column.
10. Click the **Delete** button.

To edit an 860 DSP's or DSPi's properties:

860 DSPs

Filter By Workgroup: [ALL] Filter By Authorization: [ALL]

DSP MAC Address	Operator Name	Member of Workgroup	Last Connected	Auto-Login Username	Authorized		<input type="checkbox"/> Select
00-02-7C-FF-FF-FD	2398				No	Details Edit	<input type="checkbox"/>
00-02-7C-FF-FF-FF	5399				No	Details Edit	<input type="checkbox"/>
00-02-7C-FF-FF-FE	8400				No	Details Edit	<input type="checkbox"/>
00-02-7C-00-77-40	BrettXE3	work1	07/06/2010 12:56:20 PM		Yes	Details Edit	<input type="checkbox"/>

To edit 860 DSP "BrettXE3", make changes and click "Save".

Edit 860 DSP: BrettXE3

MAC Address: 00 - 77 - 7C - 40 - 77 - 00

Operator Name (optional): BrettXE3

Auto-Login Username: (no auto-login)

Workgroup: work1

[Save](#) [Cancel](#)

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11. Click the **Edit** button for the appropriate 860 DSP or DSPi.
12. Edit the properties as necessary. You may need to scroll down to reach the editing section.
13. Click the **Save** button.

Work Groups

Use this menu to create and delete groups of 860 DSP's or DSPi's. A work group is a collection of 860 DSP's or DSPi's that have something in common, such as the type of work the technicians do or their geographical location. Using work groups, changes can be applied to several 860 DSP's or DSPi's at once instead of individually.

The screenshot displays the 'Workgroups' section of the Trilithic Data Manager. It features a table with the following data:

Workgroup	Member of Workgroup	Description	Members	Edit	Select
Anderson	South Harbor	South Harbor Senior Manager	Members	Edit	<input type="checkbox"/>
Applications Engineering	Trilithic	Trilithic	Members	Edit	<input type="checkbox"/>
Bonita	Morgan	Santa Maria Super	Members	Edit	<input type="checkbox"/>
Clooney	Smith	San Domingo Super	Members	Edit	<input type="checkbox"/>
Comcast		New Jersey	Members	Edit	<input type="checkbox"/>
Cuen	Morgan	Santa Maria Super	Members	Edit	<input type="checkbox"/>
Delta Valley			Members	Edit	<input type="checkbox"/>
Delta Valley Concourse			Members	Edit	<input type="checkbox"/>
Delta Valley Livingston			Members	Edit	<input type="checkbox"/>
East Harbor			Members	Edit	<input type="checkbox"/>

Below the table is a form titled 'Add a Workgroup' with the following fields:

- Name:
- Description:
- User Name:
- Password:
- Add this Workgroup to the following workgroup:
- Add:

Red lines with numbers 1 through 6 point to the following elements:

- Name field
- Description field
- User Name field
- Password field
- Dropdown menu
- Add button

1. To add a work group, enter the name of the work group in the **Name** field, and a brief description of the work group in the **Description** field. Enter the user name and password used to access the work group's parameters in the **User Name** and **Password** fields.
2. If the new work group and its members are to be added to an existing work group, select the existing work group from the pull down list.
3. Click the **Add** button.
4. To delete a work group, select the check box corresponding to the work group to be deleted.
5. Click the **Delete** button.

- To add or delete 860 DSP's or DSPi's to or from a specific work group, click the **Members** link. The **Work Group Members** page for the selected work group will load.

To add users to or delete 860 DSP's or DSPi's from a work group:

Workgroup Members

work1

0 of 1 Selected

MAC Address	Operator Name ▲	<input type="checkbox"/> Select
00-02-7C-00-77-40	BrettXE3	<input type="checkbox"/>

Selected DSPs added successfully to the workgroup.

Add 860 DSPs
(to the currently selected workgroup)

0 of 3 Selected

MAC Address	Operator Name ▲	Member Of Workgroup	<input type="checkbox"/> Select
00-02-7C-FF-FF-FD	2398		<input type="checkbox"/>
00-02-7C-FF-FF-FF	5399		<input type="checkbox"/>
00-02-7C-FF-FF-FE	8400		<input type="checkbox"/>

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- Select the work group whose members will be edited using the drop-down list, then click the **Display** button.
- Select the check box corresponding to the 860 DSP or DSPi to be removed from the work group.
- Click the **Remove** button.
- Select the check box corresponding to the 860 DSP or DSPi to be added to the selected work group.
- Click the **Add** button.

Workgroups

Workgroup	Member of Workgroup	Description	Members	Edit
work1		work1		<input type="button" value="Edit"/>

To edit workgroup "work1", make changes and click "Save"

Edit Workgroup: work1

Name: work1

Description: work1

User Name: work1

Password: work1

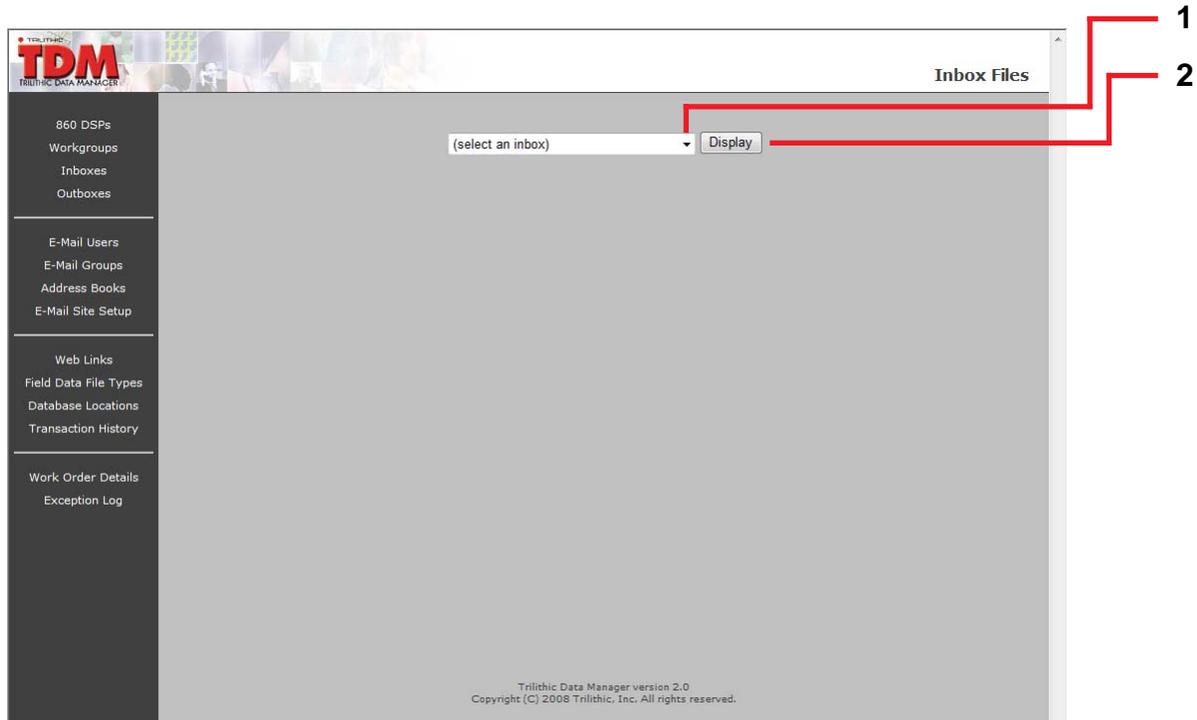
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9. To edit a work group, click the **Edit** button for the appropriate work group.
10. You may need to scroll down to reach the editing section. Edit the properties as necessary.
11. Click the **Save** button.

Inboxes

This menu provides an alternate way to view the contents of your TDM Inbox and should only be used if WorkBench is not available. Use this menu to view, download and delete files from your TDM Inboxes. Changes made in the Inbox will be reflected in WorkBench.

The TDM Inbox contains data logs that have been received from an 860 DSP or DSPi. Data logs imported from the TDM Inbox go into the WorkBench database.



1. Select an inbox from the drop down list.
2. Click the **Display** button to refresh this screen.

Once an inbox has been selected, the following screen will be displayed.

Inbox Files

Doug Swank [00-02-7C-00-2B-EE] Display

Filename	Date Catalogued	Date Modified	Download	Select
_.log	7/14/2010 2:32:38 PM	5/13/2010 11:31:48 AM	Download	<input type="checkbox"/>
123456.task	7/14/2010 2:32:39 PM	3/12/2010 8:53:40 AM	Download	<input type="checkbox"/>
123546.task	7/14/2010 2:32:37 PM	12/3/2009 2:32:57 PM	Download	<input type="checkbox"/>
123546~00.log	7/14/2010 2:32:39 PM	7/1/2010 4:06:08 PM	Download	<input type="checkbox"/>
5.log	7/14/2010 2:32:37 PM	5/13/2010 11:25:55 AM	Download	<input type="checkbox"/>
5.rsa	7/14/2010 2:32:39 PM	6/7/2010 3:11:24 PM	Download	<input type="checkbox"/>
5.rswp	7/14/2010 2:32:39 PM	6/7/2010 2:27:09 PM	Download	<input type="checkbox"/>
553766.task	7/14/2010 2:32:39 PM	3/12/2010 9:25:00 AM	Download	<input type="checkbox"/>
555585.task	7/14/2010 2:32:39 PM	1/13/2010 11:11:40 AM	Download	<input type="checkbox"/>
6.log	7/14/2010 2:32:37 PM	5/13/2010 11:27:31 AM	Download	<input type="checkbox"/>

< Previous Next >

Delete

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3. To choose another inbox, select the appropriate Inbox from the drop down list.
4. Click the **Display** button to refresh this screen.
5. To delete a file from an inbox, choose the unwanted file by selecting its check box.
6. Click the **Delete** button.
7. To download a file from an inbox, click the **Download** link.



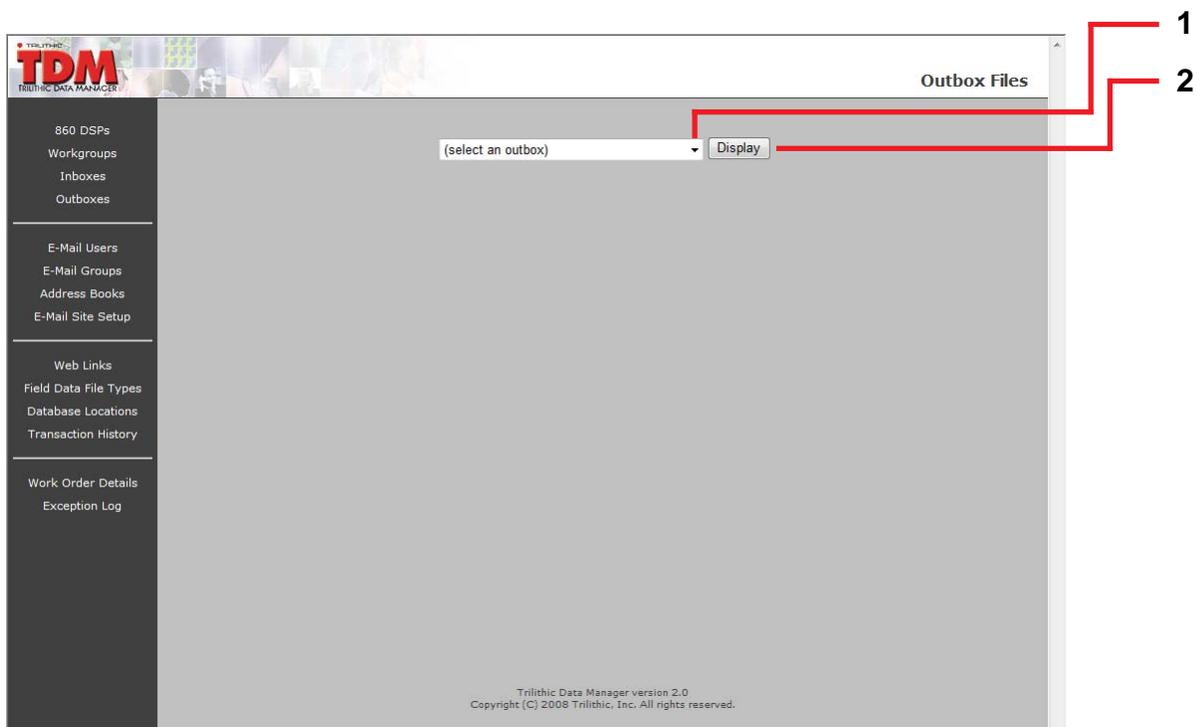
NOTE *Only a copy of the file will be downloaded. Using TDM Administration to download a file from an inbox does not delete it from that inbox.*

8. Click either **Previous** or **Next** to move back and forth in the list of inbox files.

Outboxes

This menu provides an alternate way to view the contents of your TDM Outbox and should only be used if WorkBench is not available. Use this menu to view, upload and delete files from your Outboxes. Files added to or deleted from the Outbox will be reflected in WorkBench.

The TDM Outbox houses the Global outbox, work group outboxes and individual 860 DSP outboxes. An outbox stores the data that will be sent to its respective 860 DSP or DSPi. Among the data types that can be stored in outboxes are firmware upgrades, updated channel plans, locations, macros, tasks (work orders) and device configurations.



1. Select an outbox from the drop down list.
2. Click the **Display** button to refresh this screen.

Once an outbox has been selected, the following screen will be displayed.

TDM
TRILITHIC DATA MANAGER

860 DSPs
Workgroups
Inboxes
Outboxes

E-Mail Users
E-Mail Groups
Address Books

Web Links
Field Data File Types
Database Locations
Transaction History

Work Order Details
Exception Log

Outbox Files

PPP [00-02-7C-00-2B-EE]

Filename	Date Catalogued	Date Sent	Select
south amp.mac	10/6/2009 5:24:53 PM	10/6/2009 5:24:53 PM	<input type="checkbox"/>

< Previous Next >

Upload a File
(to the currently selected outbox)

Filename:

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3. To choose another outbox, select the appropriate Outbox from the drop down list.
4. Click the **Display** button to refresh this screen.
5. To delete a file from an outbox, choose the unwanted file by selecting its check box.
6. Click the **Delete** button.
7. To upload a file to an outbox, click the **Browse** button, then locate and select the file.
8. Click the **Upload** button.
9. Click either **Previous** or **Next** to move back and forth in the list of outbox files.

Email Users

TDM allows 860 DSP's or DSPi's to send and receive email messages. Use this menu to add, edit or remove email users from the TDM network.

The screenshot shows the 'E-Mail Users' interface in Trilithic Data Manager. It features a table of existing users and a 'Create a New User' form. Red lines with numbers 1 through 7 point to specific elements: 1 points to the 'Username' field, 2 to the 'User's Full Name' field, 3 to the 'E-Mail Address' field, 4 to the 'Password' field, 5 to the 'Add this user to the global address book' checkbox, 6 to the 'Add this user to the following e-mail groups' section, and 7 to the 'Add' button.

Username	User's Full Name	E-Mail Address	Authorized	Select
new1	new user	new1@user.com	No	<input type="checkbox"/> Edit <input type="checkbox"/>
				Flip Auth Delete

< Previous Next >

Create a New User

Username:

User's Full Name:

E-Mail Address:

Password:

Add this user to the global address book.

Add this user to the following e-mail groups:

group1

Add this user to the address books for the selected groups.

Add

1. To add an email user, enter the name of the user in the **Username** field, and the user's full name in the **User's Full Name** field. Enter the email address and password that the user will use to access their account in the **E-Mail Address** and **Password** fields.
2. If the new email user is to be added to the global address book, select the check box corresponding to the **Global Address Book** option.
3. Choose the email group(s) to like to add the user to by putting a check in the box next to the appropriate group name.
4. Place a check here to automatically add this user to the address books for the email groups you selected in the previous step.
5. Click the **Add** button.
6. To delete an email user, select the check box corresponding to the user to be deleted.
7. Click the **Delete** button.

The screenshot shows the 'E-Mail Users' page in the Trilithic Data Manager. At the top left is the TDM logo. A sidebar on the left contains navigation links such as '860 DSPs', 'Workgroups', 'Inboxes', 'Outboxes', 'E-Mail Users', 'E-Mail Groups', 'Address Books', 'Web Links', 'Field Data File Types', 'Database Locations', 'Transaction History', 'Work Order Details', and 'Exception Log'. The main content area features a table with the following data:

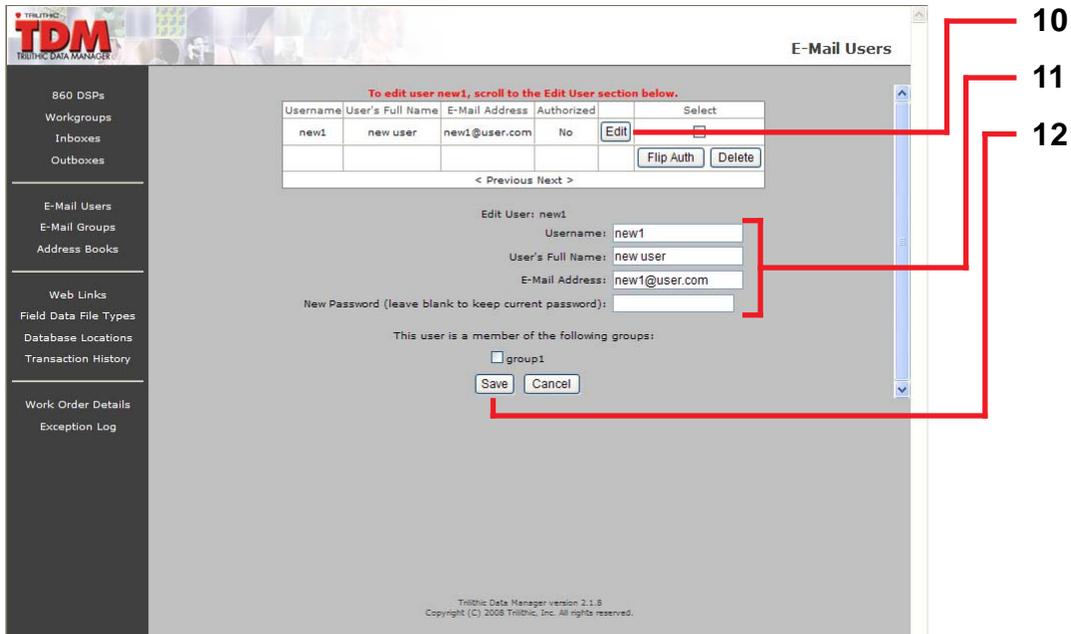
Username	User's Full Name	E-Mail Address	Authorized	Select
new1	new user	new1@user.com	No	<input type="checkbox"/> Edit
				Flip Auth Delete

Below the table is a 'Create a New User' form with the following fields and options:

- Username:
- User's Full Name:
- E-Mail Address:
- Password:
- Add this user to the global address book.
- Add this user to the following e-mail groups:
 - group1
- Add this user to the address books for the selected groups.

At the bottom of the page, it says 'Trilithic Data Manager version 2.1.8 Copyright (C) 2008 Trilithic, Inc. All rights reserved.'

8. To authorize or unauthorize an email user, select the appropriate user by putting a check in the correct box under the **Select** column.
9. Click the **Flip Auth** button.

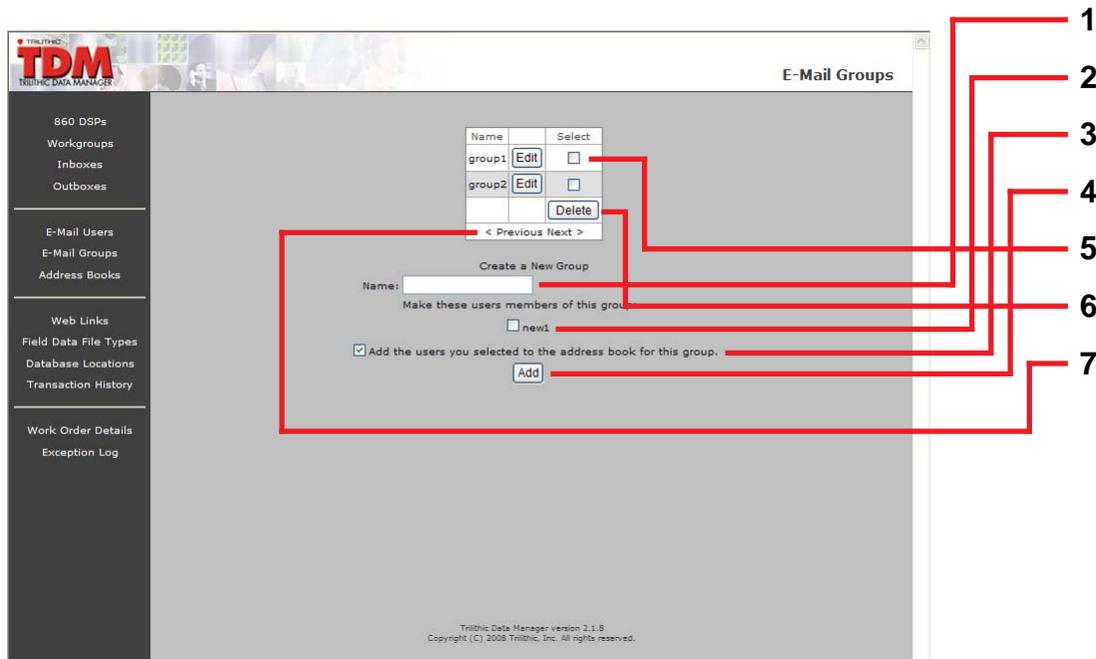


10. To edit an email user, click the **Edit** button for the appropriate email user.
11. Edit the user properties as necessary. You may need to scroll down to reach the editing section.
12. Click the **Save** button.

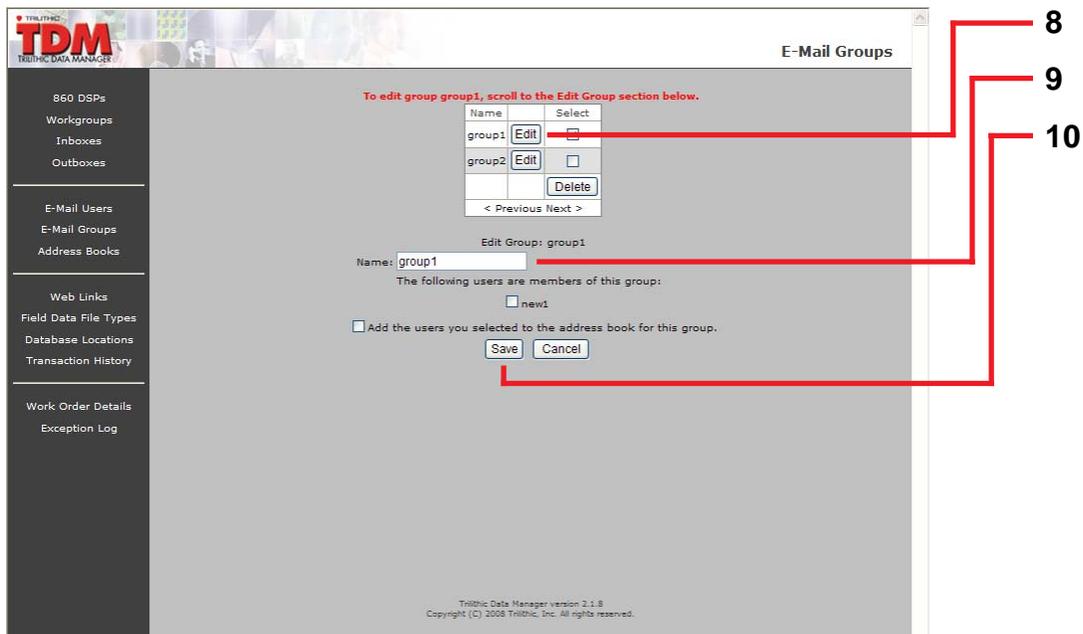
Email Groups

Use this menu to add or delete email groups or add or delete individual email users from an email group.

Email groups are a way to classify email users. For example, you can create one email group for maintenance technicians and another for installation technicians.



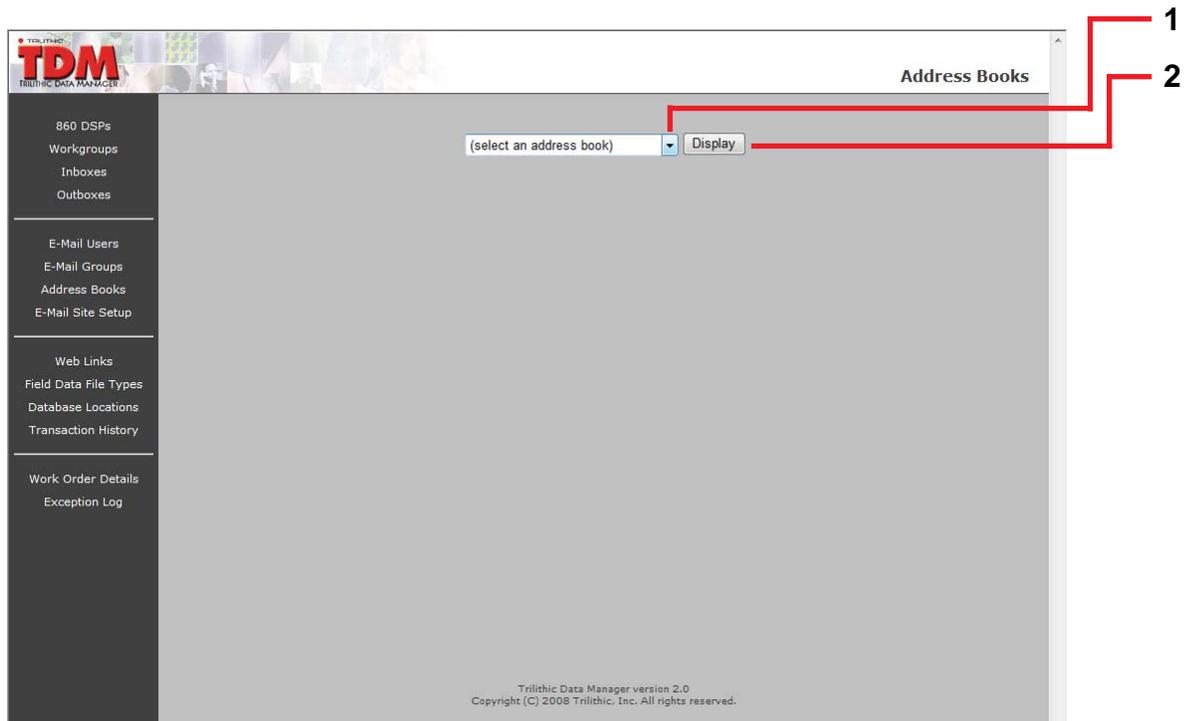
1. To add an email group, enter the name of the group in the **Name** field.
2. To add email users to the new group, select the check box corresponding to the users that will be added to the new group.
3. If the users in the new email group are to be added to the address book for the new group, select the check box corresponding to the **Address Book** option.
4. Click the **Add** button.
5. To delete an email group, place a check in the box next to the email group you want to remove.
6. Click the **Delete** button.
7. Click either **Previous** or **Next** to move back and forth in the list of email groups.



8. To edit an email group, click the **Edit** button for the appropriate email group.
9. Edit the group properties as necessary. You may need to scroll down to reach the editing section.
10. Click the **Save** button.

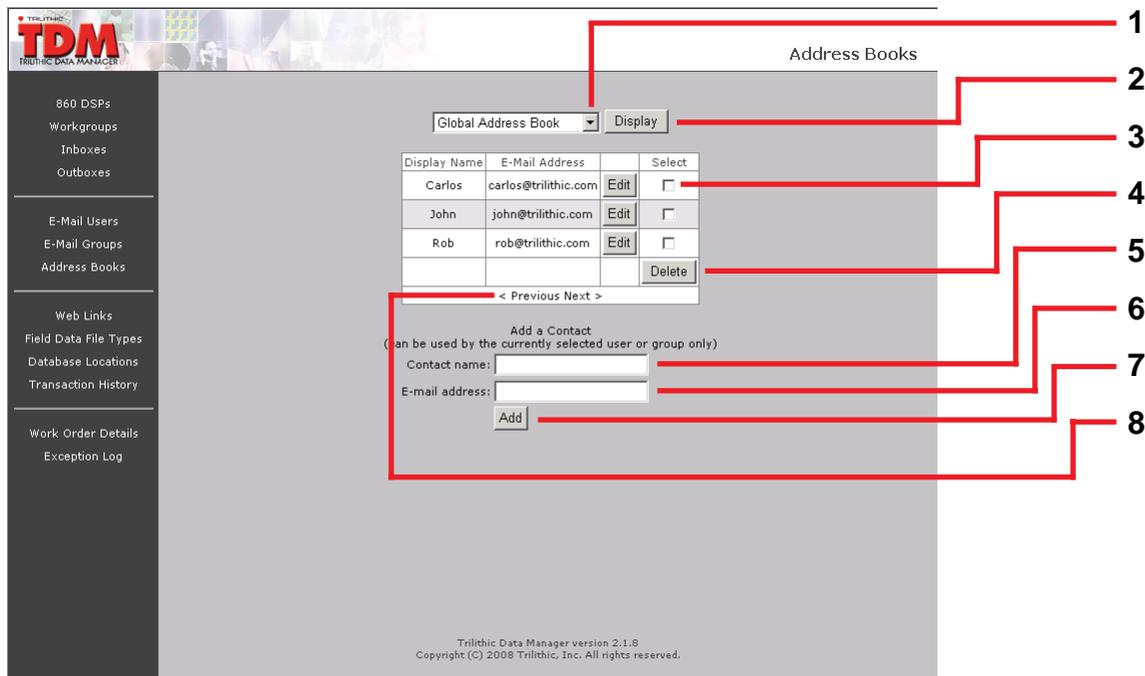
Address Books

Use this menu to set -up address books for individual users, groups and also for global use.



1. Select an email address book from the drop down list.
2. Click the **Display** button to refresh this screen.

Once an outbox has been selected, the following screen will be displayed.



1. To choose another email address book, select the appropriate email address book from the drop down list.
2. Click the **Display** button to refresh this screen.
3. To delete a member from an email address book, place a check in the box next to the member you want to remove.
4. Click the **Delete** button.
5. To add a new member to an email address book, type in the name you want displayed.
6. Type in the **Email address**.
7. Click the **Add** button.
8. Click either **Previous** or **Next** to move back and forth in the list of email addresses.

Address Books

To edit address "Carlos" (carlos@trilithic.com), scroll to the Edit Address section below.

Global Address Book Display

Display Name	E-Mail Address	Edit	Select
Carlos	carlos@trilithic.com	Edit	<input type="checkbox"/>
John	john@trilithic.com	Edit	<input type="checkbox"/>
Rob	rob@trilithic.com	Edit	<input type="checkbox"/>
			Delete

< Previous Next >

Edit Contact: "Carlos" (carlos@trilithic.com)
 (can be used by the currently selected user or group only)

Contact name: Carlos

E-mail address: carlos@trilithic.com

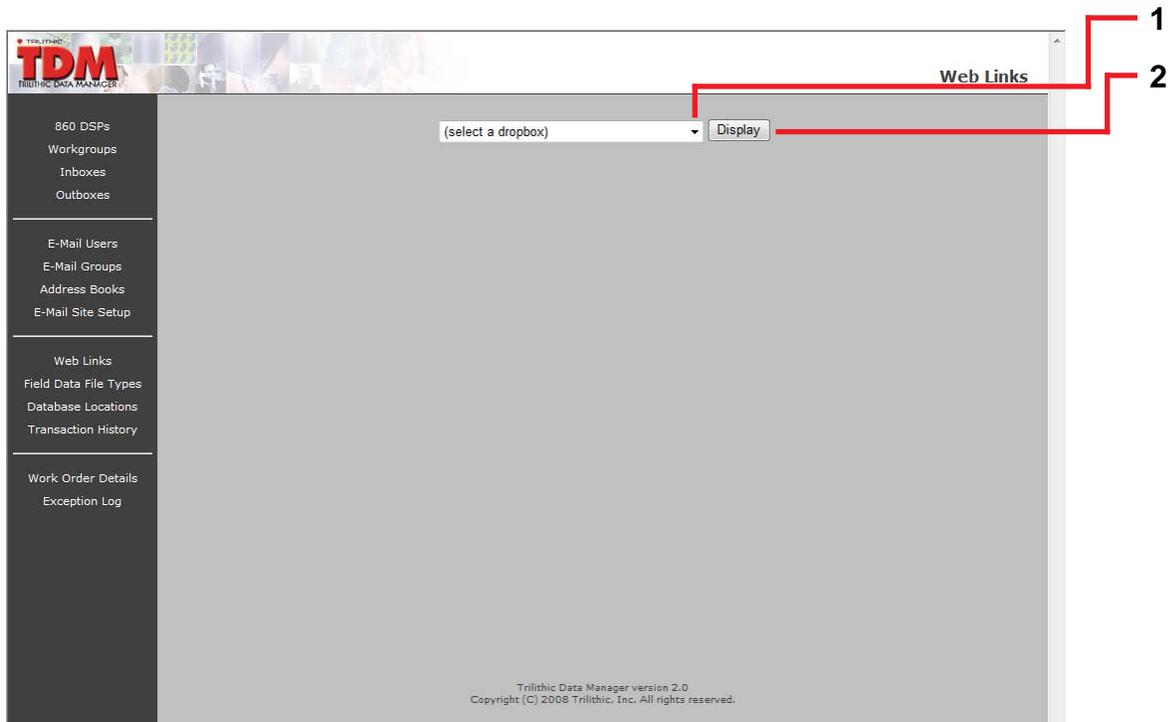
Save Cancel

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9. To edit an email address within an address book, click the **Edit** button for the appropriate email address.
10. Edit the email address properties as necessary. You may need to scroll down to reach the editing section.
11. Click the **Save** button.

Web Links

Use this menu to add or delete Web links (for search engines, vendor websites, intranet sites, etc.) that can be accessed by the 860 DSP's or DSPi's in the TDM network. You can assign links globally, by work group, or by individual 860 DSP or DSPi.



1. Select a drop box from the drop down list.
2. Click the **Display** button to refresh this screen.

Once a drop box has been selected, the following screen will be displayed.

The screenshot shows the 'Web Links' section of the Trilithic Data Manager. On the left is a sidebar with navigation links. The main area contains a table of web links and an 'Add a Web Link' form. Red lines and numbers 1-8 indicate the following steps:

Link Text	URL	Select
Google	www.google.com	<input type="checkbox"/>
MSN	www.msn.com	<input type="checkbox"/>
Trilithic	www.trilithic.com	<input type="checkbox"/>

Below the table is a 'Delete' button and '< Previous Next >' navigation. Below that is the 'Add a Web Link' form with fields for 'Link Text' and 'URL', and an 'Add' button.

1. To choose another drop box, select the appropriate drop box from the drop down list.
2. Click the **Display** button to refresh this screen.
3. To delete a web link, select the unwanted web link by putting a check in the box.
4. Click the **Delete** button.
5. To add a new web link, type in the web link's name.
6. Type in the URL.
7. Click the **Add** button.
8. Click either **Previous** or **Next** to move back and forth in the list of web links.

Field Data File Types

Use this menu to define the field data file types that can be received from an 860 DSP or DSPi. File extensions for all known types of field data can be listed here. You can also add new field data file types and delete obsolete ones.

Field data file types not on the list are not recognized by TDM. These field data files will remain on the 860 DSP or DSPi and will not be received by TDM.

The screenshot shows the 'Field Data File Types' window in the Trilithic Data Manager (TDM) software. The window contains a table of file types and a form to add new ones. Red lines with numbers 1 through 6 point to specific elements in the interface:

File Extension	Description	Select
ber	BER Data Log	<input type="checkbox"/>
bmp	BMP Screen Capture	<input type="checkbox"/>
bmpz	BMPZ Screen Capture	<input type="checkbox"/>
c2n	C/N Data Log	<input type="checkbox"/>
clsd	Closed Task	<input type="checkbox"/>
cso	CSO/CTB Data Log	<input type="checkbox"/>
dom	MOD Data Log	<input type="checkbox"/>
fm	FM Deviation Data Log	<input type="checkbox"/>
fswp	Sweep Data Log	<input type="checkbox"/>
hum	Hum Data Log	<input type="checkbox"/>

Below the table are navigation buttons: '< Previous', 'Next >', and 'Delete'. Below that is the 'Add New File Type' section with two text boxes: 'File Extension' and 'Description', followed by an 'Add' button.

Numbered callouts in the image:

- 1: Points to the 'File Extension' text box.
- 2: Points to the 'Description' text box.
- 3: Points to the 'Add' button.
- 4: Points to the 'Select' checkbox in the table.
- 5: Points to the 'Delete' button.
- 6: Points to the 'Next >' button.

1. To add a new file type, enter the file extension in the **File Extension** text box.
2. Enter a description of the file type in the **Description** text box.
3. Click the **Add** button.
4. To delete an obsolete file type, select the unwanted file type(s) by putting a check in the box.
5. Click the **Delete** button.
6. Click either **Previous** or **Next** to move back and forth in the list of field data file types.

Database Locations

Use this menu to view archived test data. This menu allows two or more databases to be maintained; one database for current data and a separate database (or databases) for archive data. This feature is rarely used and will not be included with future versions of TDM.

The screenshot shows the 'Database Locations' form in the TDM interface. The form has four input fields: 'Host' (containing 'localhost'), 'Database' (containing 'TrilithicDataManager'), 'Username' (containing 'sa'), and 'Password' (containing 'cableguys'). There is an 'Add' button to the right of the password field. Red lines with numbers 1 through 5 point to each of these elements: 1 points to the Host field, 2 to the Database field, 3 to the Username field, 4 to the Password field, and 5 to the Add button.

1. Enter the IP address for the new database in the **Host** field.
2. Enter the name of the new database in the **Database** field.
3. Enter the user name with which the new database will be accessed in the **Username** field.
4. Enter the password with which the new database will be accessed in the **Password** field.
5. Click the **Add** button.

Transaction History

Use this menu to view date specific activity including file transfers and account maintenance.

The screenshot shows the 'Transaction History' page in the Trilithic Data Manager. The page has a dark sidebar on the left with a menu of options. The main content area is light gray and contains a search form. The form has three input fields: 'From Date: 5/1/2008', 'To Date: 5/1/2008', and 'DSP: (select a DSP)'. Below the DSP dropdown is a 'Display' button. Red lines and numbers 1, 2, and 3 point to the 'From Date' field, the 'To Date' field, and the 'Display' button respectively.

1. To view a specific 860 DSP's or DSPi's transaction history, choose a date range to view. Click each calendar icon and select a starting (**From Date:**) date and ending (**To Date:**) date.
2. Select an 860 DSP or DSPi from the drop down list.
3. Click the **Display** button to refresh this screen.

Once a drop box has been selected, the following screen will be displayed.

Transaction History

From Date: 7/12/2009
 To Date: 7/12/2010
 DSP: (all DSPs)
 Display

Date	Type	Item	Detail
7/12/2010 11:33:06 AM	EmailGroupAdded	group2	
7/12/2010 10:51:35 AM	EmailGroupAdded	group1	
7/12/2010 10:22:30 AM	EmailUserAddedByAdmin	new1	From name = new user, From address = new1@user.com
7/12/2010 9:42:52 AM	WorkgroupAdded	work2	description = work2
7/9/2010 4:40:01 PM	WorkgroupMemberAdded	00-02-7C-00-77-40	work1
7/9/2010 4:01:45 PM	WorkgroupAdded	work1	description = work1
7/6/2010 12:56:20 PM	T860Login		
7/6/2010 12:56:20 PM	UnitStateSaved	00-02-7C-00-77-40	
7/6/2010 12:54:33 PM	T860Login		
7/6/2010 12:54:33 PM	UnitStateSaved	00-02-7C-00-77-40	

< Previous Next >

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4. To view the transaction history for a different set of dates, choose a date range you'd like to view.
5. Select an 860 DSP or DSPi from the drop down list.
6. Click the **Display** button to refresh this screen.
7. The transaction history for the selected 860 DSP or DSPi is displayed.
8. Click either **Previous** or **Next** to move back and forth in the list of transactions.

Work Order Details

Use this menu to view specific details about work orders that have been assigned to 860 DSP or DSPi users in the TDM network.

The screenshot shows the 'Work Order Details' search interface in the TDM (Trilithic Data Manager) application. The interface includes a left-hand navigation menu with various options such as '860 DSPs', 'Workgroups', 'Inboxes', 'Outboxes', 'E-Mail Users', 'E-Mail Groups', 'Address Books', 'E-Mail Site Setup', 'Web Links', 'Field Data File Types', 'Database Locations', 'Transaction History', 'Work Order Details', and 'Exception Log'. The main content area contains search criteria fields: 'Work Order:', 'Tech ID:', 'Start Date:', and 'End Date:', each followed by a text input field. A 'Search...' button is located below these fields. Red lines with numbers 1 through 4 point to the input fields for 'Work Order:', 'Tech ID:', 'Start Date:', and 'End Date:' respectively. The footer of the application window displays 'Trilithic Data Manager version 2.0 Copyright (C) 2008 Trilithic, Inc. All rights reserved.'

1. Enter the work order number to search for in the **Work Order** field, or
2. Enter the technician's identification to search for in the **Tech ID** field, or
3. Enter the starting and ending date with which to search for work orders in the **Start Date** and **End Date** fields. The date must be entered in **MM/DD/YYYY** (month, date, year) format.
4. Click the **Search** button to refresh the screen.

Once the work order search criteria has been selected, the following screen will be displayed.

Work Order Details

Work Order:
 Tech ID:
 Start Date: 4/2/2008
 End Date: 5/1/2008

270 Matching records found.

	Work Order	Tech ID	Type	Date	Macros	Address	City
Detail	122991	5008	AS	4/16/2008		657 LINDEN AVE	Indianapolis
Detail	122991	5008	AS	4/16/2008		657 LINDEN AVE	Indianapolis
Detail	122991	5008	AS	4/16/2008		657 LINDEN AVE	Indianapolis
Detail	122991	5008	AS	4/16/2008		657 LINDEN AVE	Indianapolis
Detail	122991	5008	AS	4/16/2008		657 LINDEN AVE	Indianapolis
Detail	122991	5008	AS	4/16/2008		657 LINDEN AVE	Indianapolis
Detail	122991	5008	AS	4/16/2008		657 LINDEN AVE	Indianapolis
Detail	122991	5008	AS	4/16/2008		657 LINDEN AVE	Indianapolis
Detail	122991	5008	AS	4/16/2008	2		
Detail	122991	5008	AS	4/16/2008		657 LINDEN AVE	Indianapolis
Detail	122991	5008	AS	4/16/2008		657 LINDEN AVE	Indianapolis

≥ >>>

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5. The work order records matching the search criteria are displayed.
6. Click either **Previous** or **Next** to move back and forth in the list of work orders.

Exception Log

Use this menu to display records of when an exception is noted by TDM. When a task assigned to a technician is completed by a different technician and the data uploaded from the 860 DSP or DSPi to TDM, the TDM application will make note of the exception. This menu can be used to search for exceptions, which can then be reassigned to the original technician.

The screenshot shows the 'Exceptions Log' page in the TDM application. On the left is a navigation menu with categories like '860 DSPs', 'E-Mail Users', 'Web Links', and 'Work Order Details'. The main content area contains a search form with the following fields: 'From Date' (5/1/2008), 'To Date' (5/1/2008), and 'DSP' (all dropboxes). A 'Display' button is located below the DSP dropdown. The search results area is empty, displaying 'No Exceptions.' Red lines and numbers 1, 2, and 3 point to the 'From Date', 'To Date', and 'Display' fields respectively.

1. Enter the starting and ending date with which to search for exceptions in the **From Date** and **To Date** fields. The date must be entered in **MM/DD/YYYY** (month, date, year) format.
2. Select the 860 DSP or 860 DSPi for which exceptions will be searched.
3. Click the **Search** button to refresh the screen.

Exceptions Log

From Date: 7/13/2009
 To Date: 7/13/2010
 DSP: (all dropboxes) [v]
 [Display]

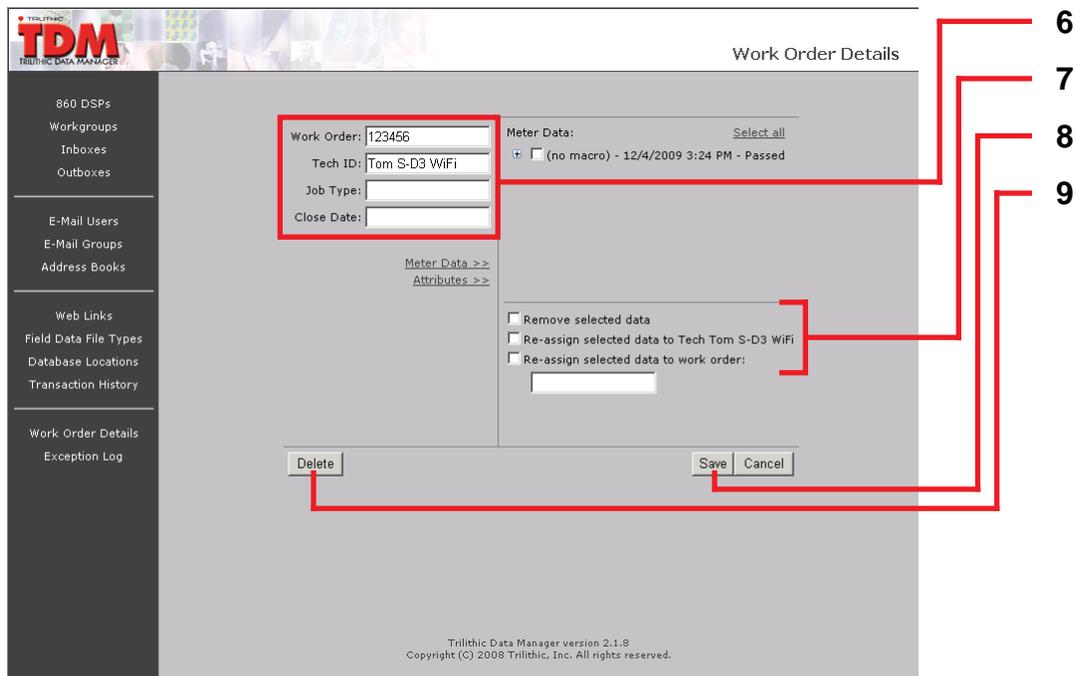
Date	Description	Data Log	Task ID	Dropbox	<input type="checkbox"/>
7/8/2010 11:23:11 AM	Task assigned to another tech (JOEL)	122334~00.log	122334	2222	<input type="checkbox"/>
3/25/2010 3:53:33 PM	Task assigned to another tech ()	123546~01.log	123546	DOUG	<input type="checkbox"/>
12/10/2009 10:35:53 AM	Task assigned to another tech (Tom S-D3 WiFi)	123456~00.lev	123456	TOMS_D3_WIFI	<input type="checkbox"/>

[Delete]

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4. The exceptions matching the search criteria will be displayed.
5. To view details for a specific exception and to edit the exception, click the **Task ID** number.

The following screen will be displayed.



6. The details for the selected exception are displayed.
7. Select the appropriate check box to assign the task to a different TDM user, or enter a work order number to assign the task to.
8. Click the **Save** button to save changes made to the task.
9. Click the **Delete** button to permanently remove the task from TDM.

To delete a noted task exception:

Exceptions Log

From Date: 7/13/2009
To Date: 7/13/2010
DSP: (all dropboxes) [v]
Display

Date	Description	Data Log	Task ID	Dropbox	<input type="checkbox"/>
7/8/2010 11:23:11 AM	Task assigned to another tech (JOEL)	122334~00.log	122334	2222	<input type="checkbox"/>
3/25/2010 3:53:33 PM	Task assigned to another tech (-)	123546~01.log	123546	DOUG	<input type="checkbox"/>
12/10/2009 10:35:53 AM	Task assigned to another tech (Tom S-D3 WiFi)	123456~00.lev	123456	TOMS_D3_WIFI	<input type="checkbox"/>

Delete

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10. Select the check box corresponding to the task exception to be deleted.

11. Click the **Delete** button.

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Using the TDM Component

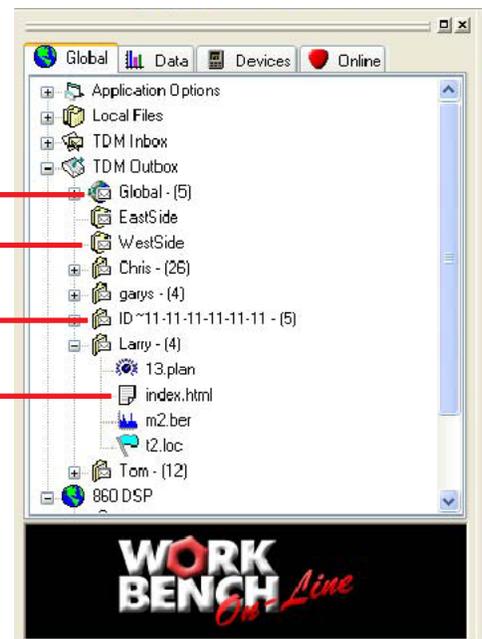
This chapter discusses:

- The TDM Outbox
- The TDM Inbox
- Task Sheets

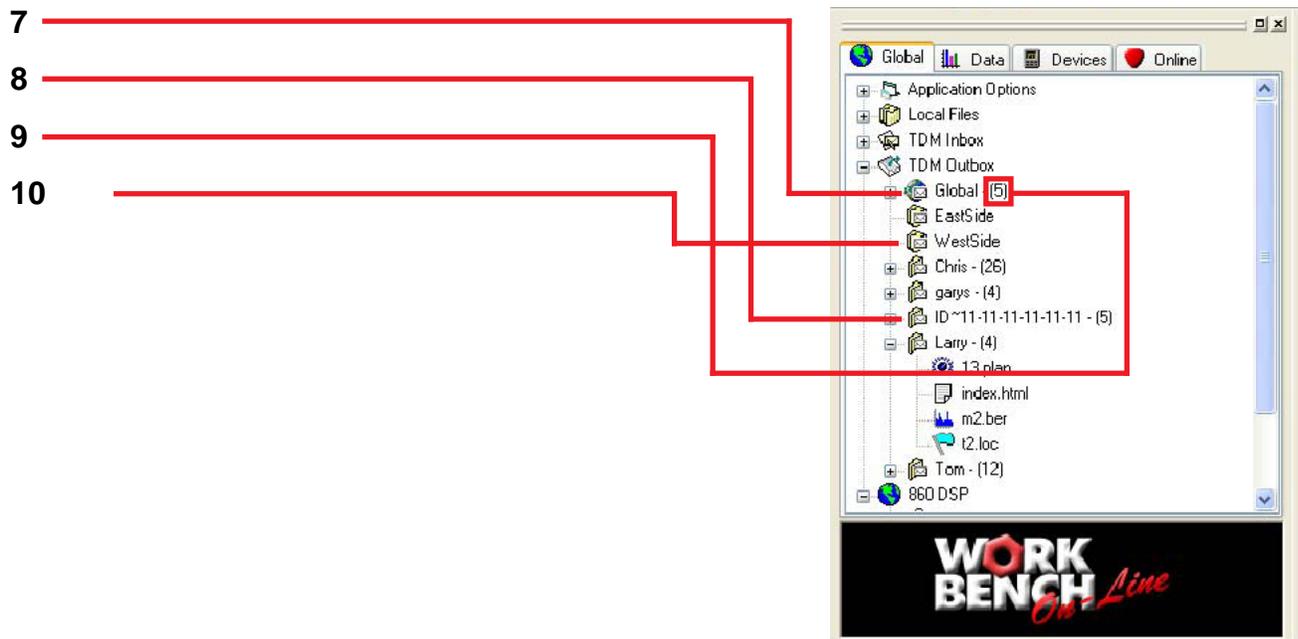
TDM Outbox

The TDM Outbox houses the Global outbox, work group outboxes and individual 860 DSP and DSPi outboxes. All outboxes store data that will be sent to an 860 DSP or DSPi. Among the data types that can be stored in outboxes are firmware upgrades, updated channel plans, locations, macros, tasks (work orders) and device configurations.

- 1
- 2
- 3
- 4, 5, 6



1. The **Global Outbox** icon shows an envelope in front of a globe.
2. **Work Group** outbox icons show an envelope in front of multiple folders.
3. **Individual** outbox icons show an envelope in front of one folder.
4. **To delete an outbox item**, right-click on it and pick **Remove from Outbox** from the drop down menu. You can also highlight the item and press **Delete** on your keyboard.
5. To delete more than one outbox **at time**, highlight the appropriate items by holding down the **CTRL** button on your keyboard and then left-clicking on them. Then, right-click on any of the highlighted items and select **Remove from Outbox** from the drop down menu. You can also highlight the items and then press your keyboard's **Delete** key.
6. To open an outbox **item**, double-click on it or right-click on the item and select **Open** from the drop down menu.

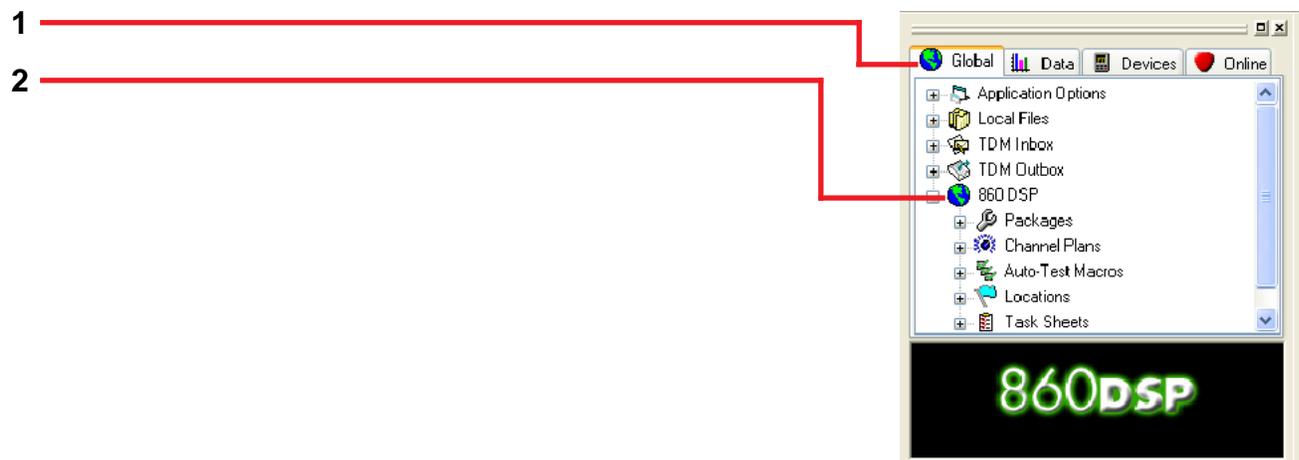


7. Placing an item into the Global outbox automatically sends it to ALL of your outboxes. All items placed in the Global outbox need to be manually deleted if you:
 - a. no longer want them after they have been received by all outboxes
 - b. don't want them sent to the outboxes of 860 DSP's or DSPi's that are added in the future
 - c. do not subscribe to any work groups
8. You can place an item in an individual 860 DSP or DSPi outbox if you don't want that item to be shared with other 860 DSP's or DSPi's. Individual 860 DSP or DSPi outboxes automatically empty after items are sent to the 860 DSP or DSPi.
9. The numbers in the () indicate how many undelivered items are in an outbox.
10. You can place an item in a work group outbox if you only want it to go to the 860 DSP's or DSPi's that are work group members. Work group outboxes automatically empty after items are distributed to the work group members.

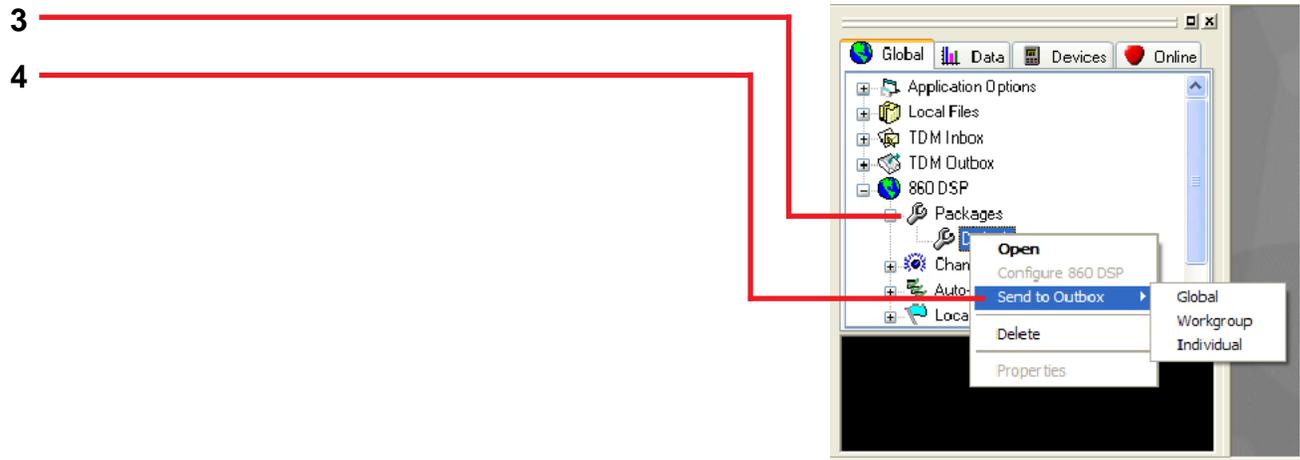
Sending Packages to an Outbox

A (configuration) package is a combination of one or more channel plans, locations, macros, and text files, as well as a wide variety of device parameters. You can use a configuration package as a quick and easy way to install a suite of plans and other information on an 860 DSP or DSPi.

To learn more about Packages, go to WorkBench's **Help** menu and select **Help Topics** from the drop down list. Then go to the **Search** tab and look for the **Setting Up Configuration Packages** topic.



1. Choose the **Global** tab.
2. Go to **Packages** and find the item you want to send to an outbox.



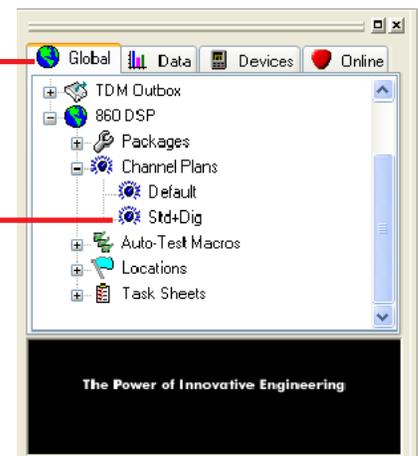
3. Right-click on the name of the package(s) you want to send and select **Send to Outbox** from the drop down menu.
4. Select your desired outbox category from the next drop down menu and proceed by selecting the appropriate options and then clicking **Send**.

Sending Channel Plans to an Outbox

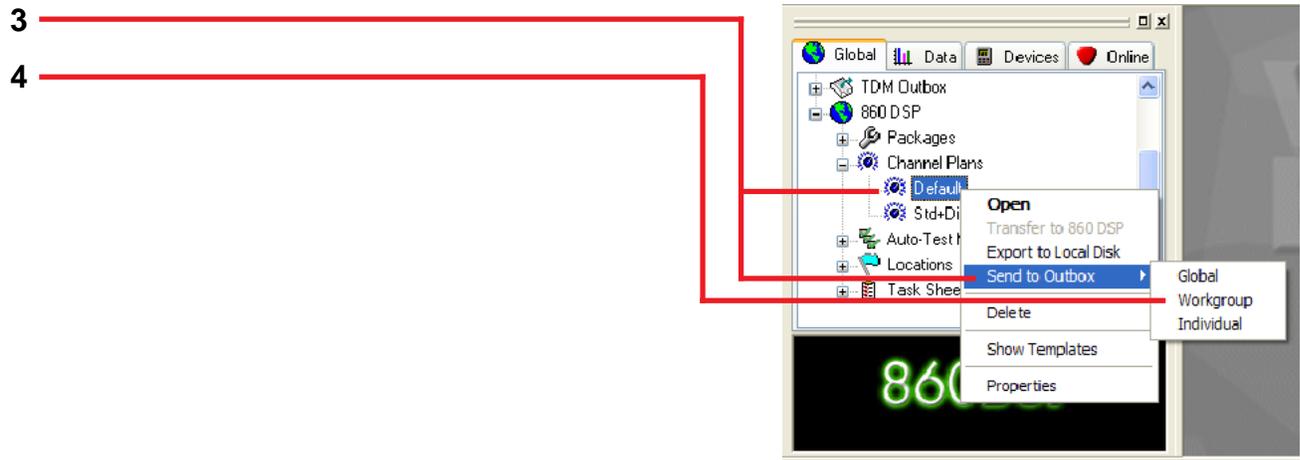
A channel plan is a list of channels, frequencies, and other device parameters. Depending on your cable network, you may have a variety of channel plans for your 860 DSP's or DSPi's.

To learn more about Channel Plans, go to WorkBench's **Help** menu and select **Help Topics** from the drop down list. Then go to the **Search** tab and look for the **Creating and Maintaining Channel Plans** topic.

- 1
- 2



1. Choose the **Global** tab.
2. Go to **Channel Plans** and find the item you want to send to an outbox.



3. Right-click on the name of the channel plan(s) you want to send and select **Send to Outbox** from the drop down menu.
4. Select your desired outbox category from the next drop down menu and proceed by selecting the appropriate options and then clicking **Send**.

Sending Auto-Test Macros to an Outbox

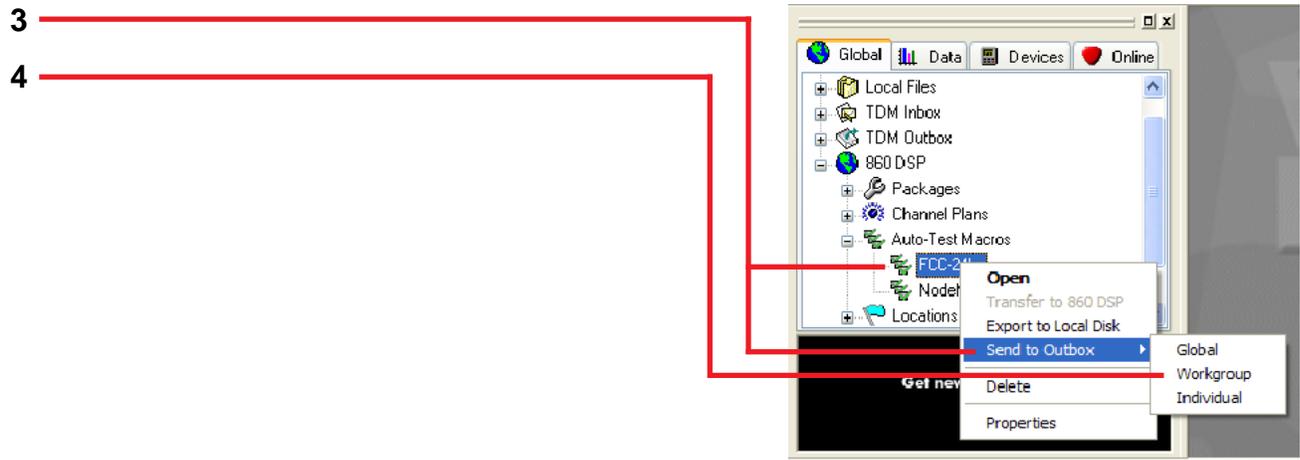
An auto-test macro (or simply macro for short) is a pre-programmed set of tests and ranges. Each 860 DSP or DSPi can store a maximum of 9 macros. Each macro can contain up to 16 steps.

To learn more about Macros, go to WorkBench's **Help** menu and select **Help Topics** from the drop down list. Then go to the **Search** tab and look for the **Creating and Maintaining Macros** topic.

- 1
- 2



1. Choose the **Global** tab.
2. Go to **Auto-Test Macros** and find the item you want to send to an outbox.

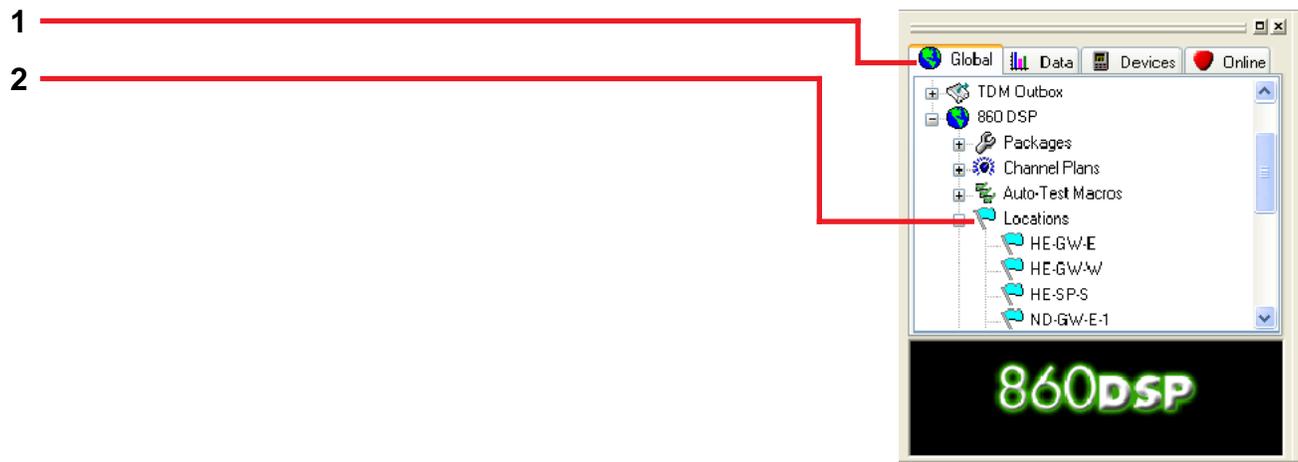


3. Right-click on the name of the macro(s) you want to send to an outbox and select **Send to Outbox** from the drop down menu.
4. Select your desired outbox category from the next drop down menu and proceed by selecting the appropriate options and then clicking **Send**.

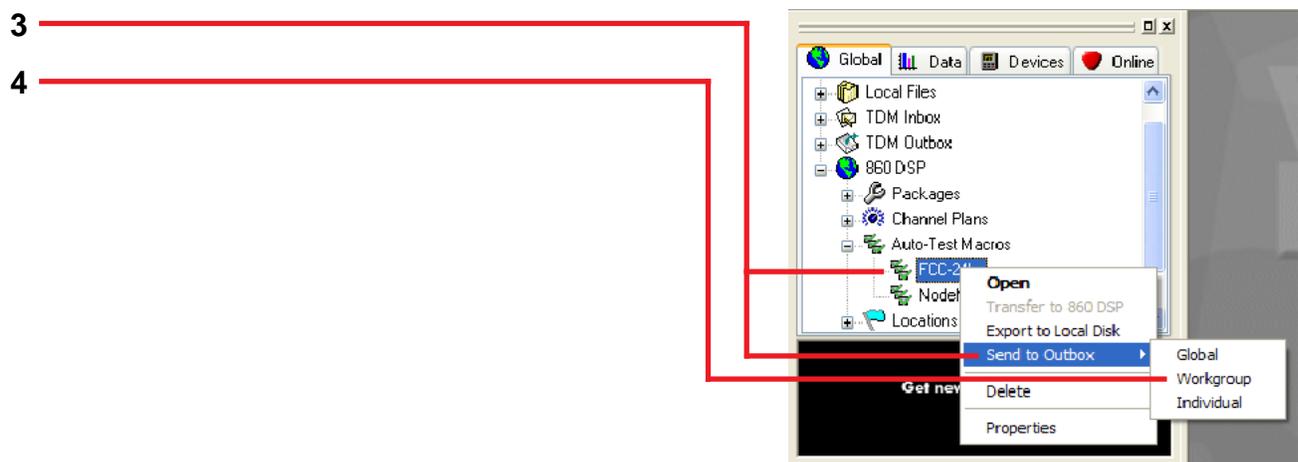
Sending Locations to an Outbox

A location provides a method to tag data with information about where that data was taken.

To learn more about Locations, go to WorkBench's **Help** menu and select **Help Topics** from the drop down list. Then go to the **Search** tab and look for the **Creating and Maintaining Locations** topic.



1. Choose the **Global** tab.
2. Go to **Locations** and find the item you want to send to an outbox.



3. Right-click on the name of the location(s) you want to send to an outbox and select **Send to Outbox** from the drop down menu.
4. Select your desired outbox category from the next drop down menu and proceed by selecting the appropriate options and then clicking **Send**.

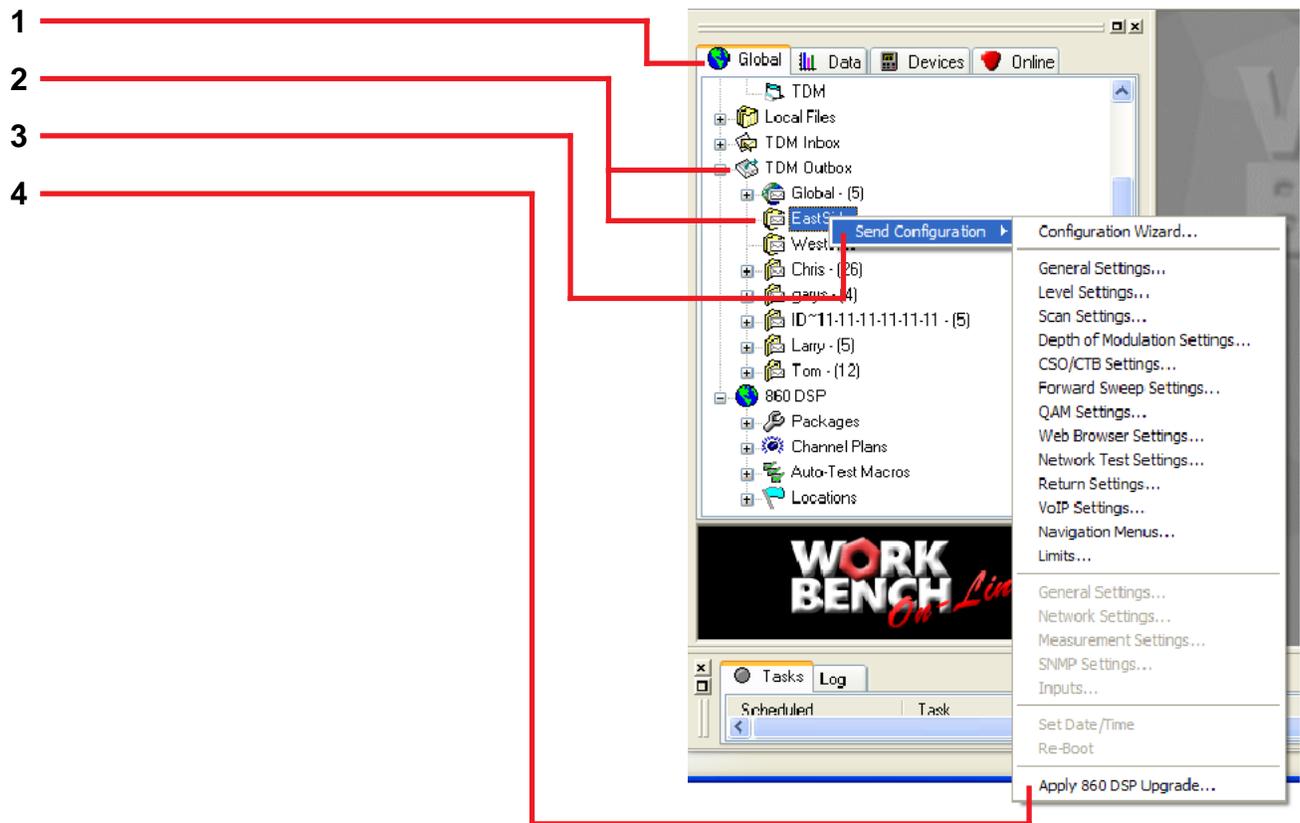


3. Right-click on the name of the location(s) you want to send to an outbox and select **Send to Outbox** from the drop down menu.
4. Select your desired outbox category from the next drop down menu and proceed by selecting the appropriate options and then clicking **Send**.

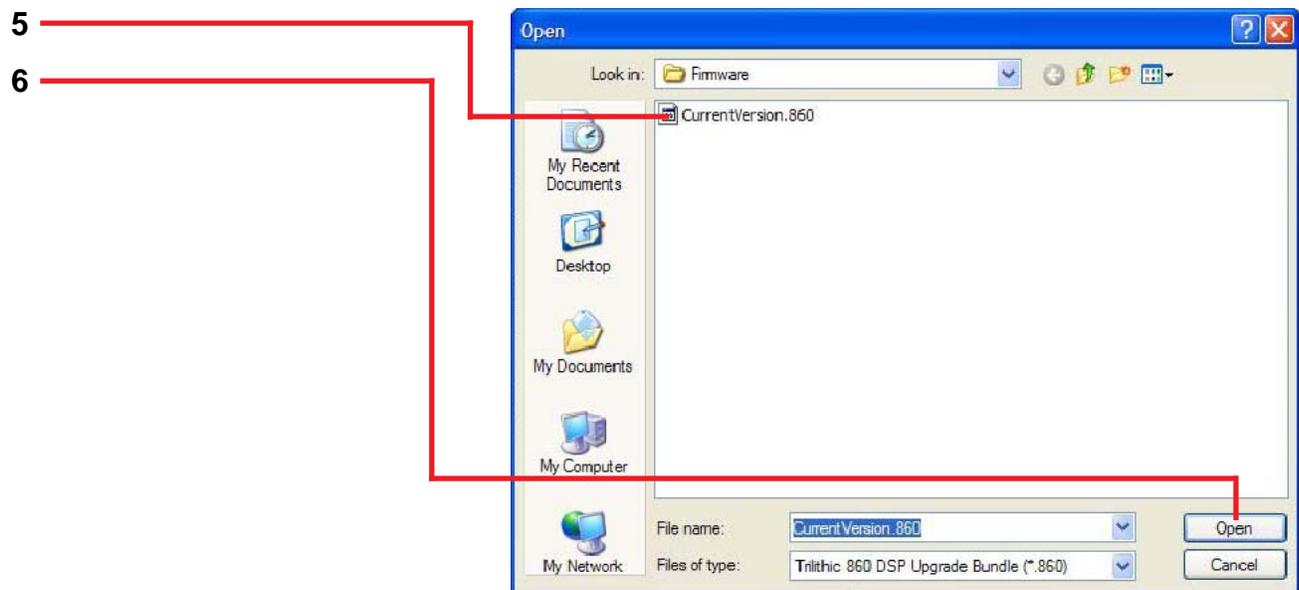
Sending Firmware Upgrades to an Outbox

Trilithic periodically issues updates to the 860 DSP or DSPi firmware. These are posted on the 860 DSP website (<http://www.860DSP.com>) for downloading to your computer.

You can also check for updates by going to WorkBench's **Help** menu and selecting **Check for Updates**. After the new firmware has been downloaded:



1. Choose the **Global** tab.
2. Go to the **TDM Outbox** and right-click on the global, work group, or individual outbox to which you'd like to install the upgrade.
3. Select **Send Configuration** from the drop down menu.
4. Select **Apply 860 DSP Upgrade...** from the next drop down menu.



5. Choose the correct upgrade file from your hard drive.

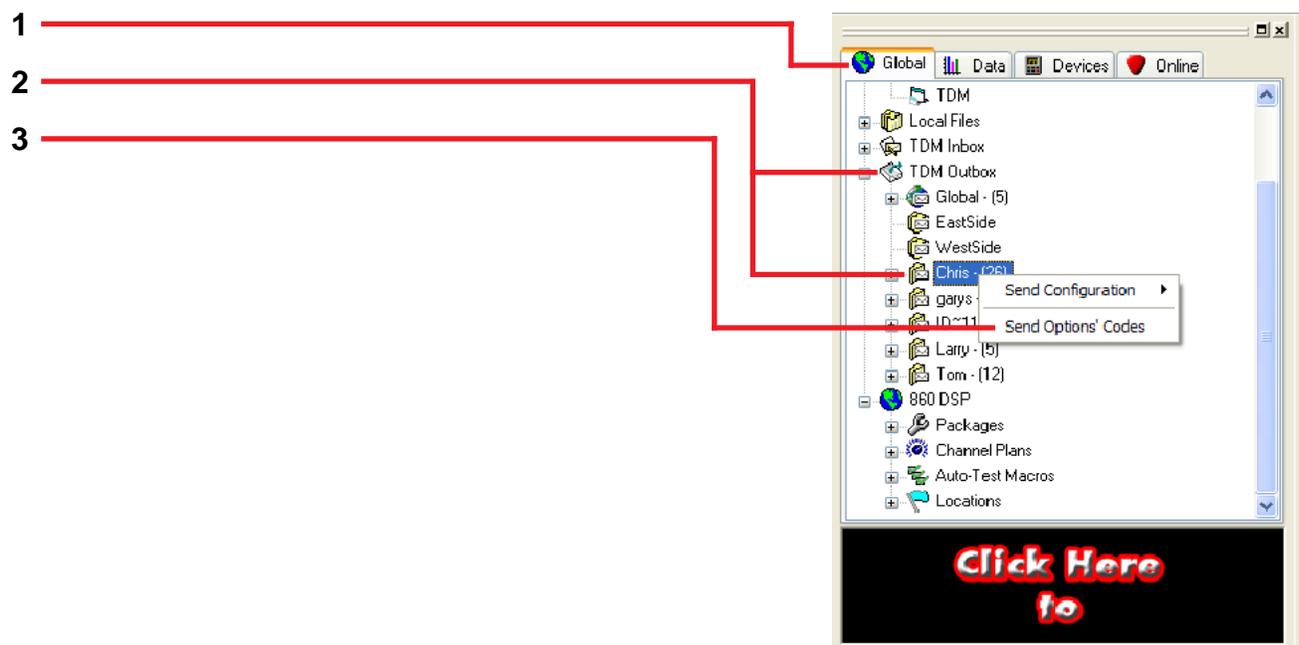
Note: If you have more than one upgrade file stored in your directory, be sure to use the one with the most recent date in its name.

6. Select **Open**.

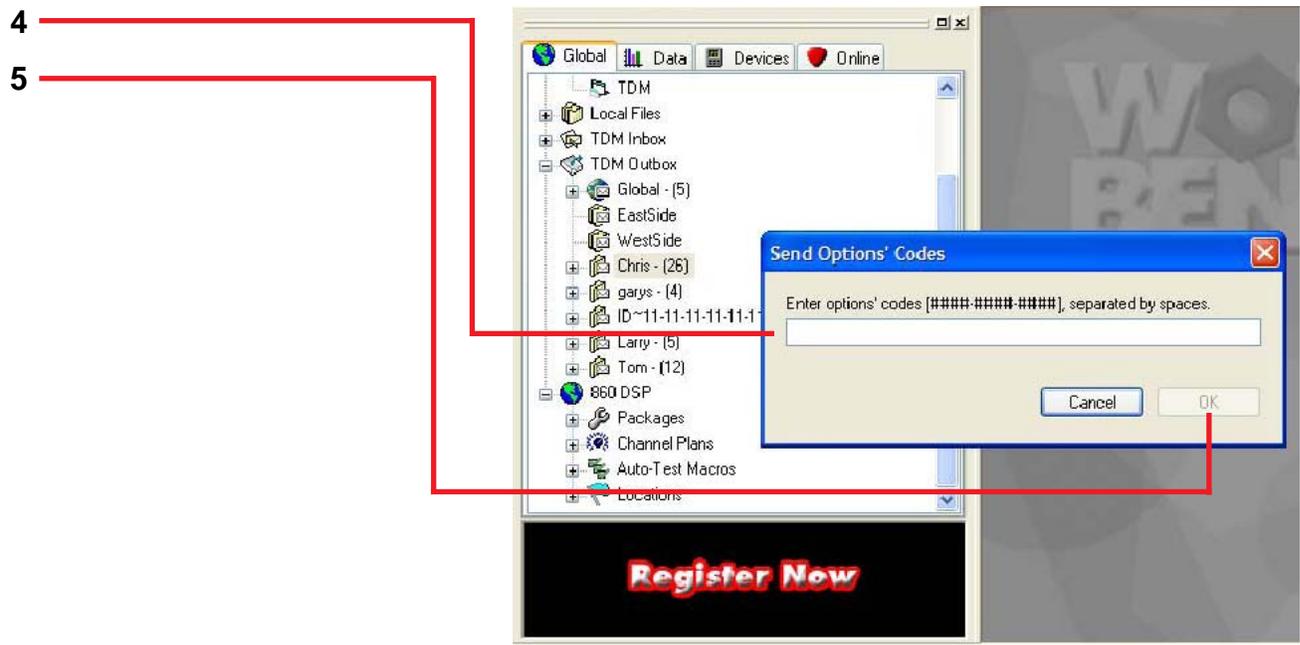
Sending Option Codes to an Individual Outbox

Send option codes allows you to remotely enable a purchased option on an 860 DSP or DSPi. Examples of purchased options include: Power Pack, QAM Option QA-2, Spectrum Analyzer Option SA-1, Return Sweep Receiver Option SR-1, and Return Tester Option VP-1.

Option codes come from Trilithic and are specific to a particular 860 DSP or DSPi.



1. Choose the **Global** tab.
2. Go to the **TDM Outbox** and right-click on the outbox of the 860 DSP on which you'd like to install the new option(s).
3. Select **Send Options' Codes** from the drop down menu.

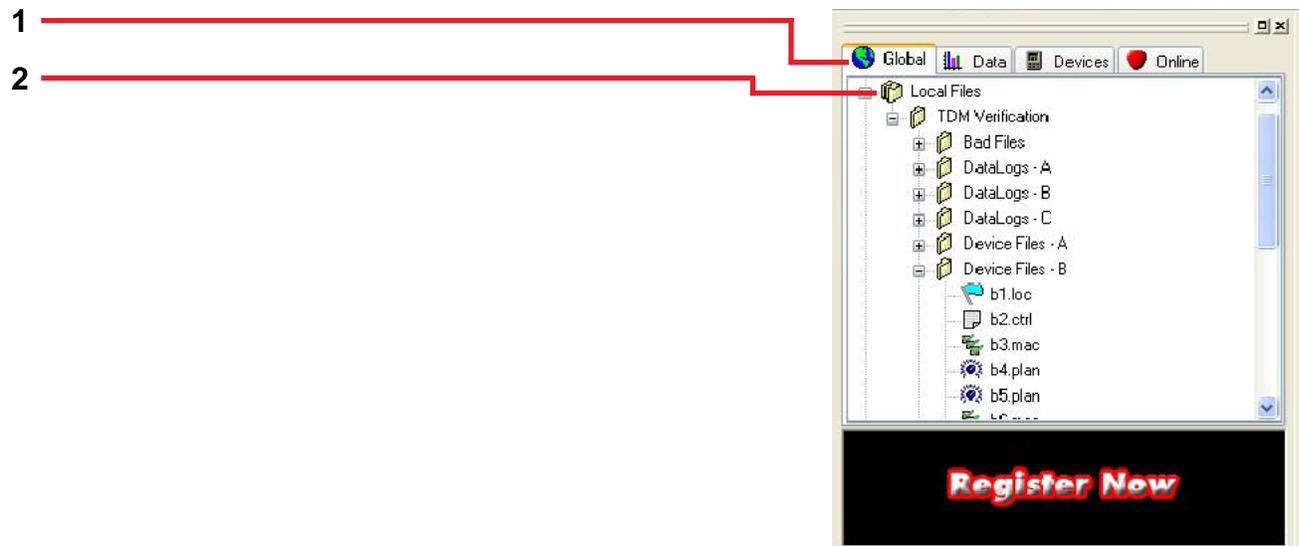


4. Enter the code for the option(s) using the same format as shown.
Note: Trilithic will send you this code when you purchase the option(s).
5. Click the **OK** button.

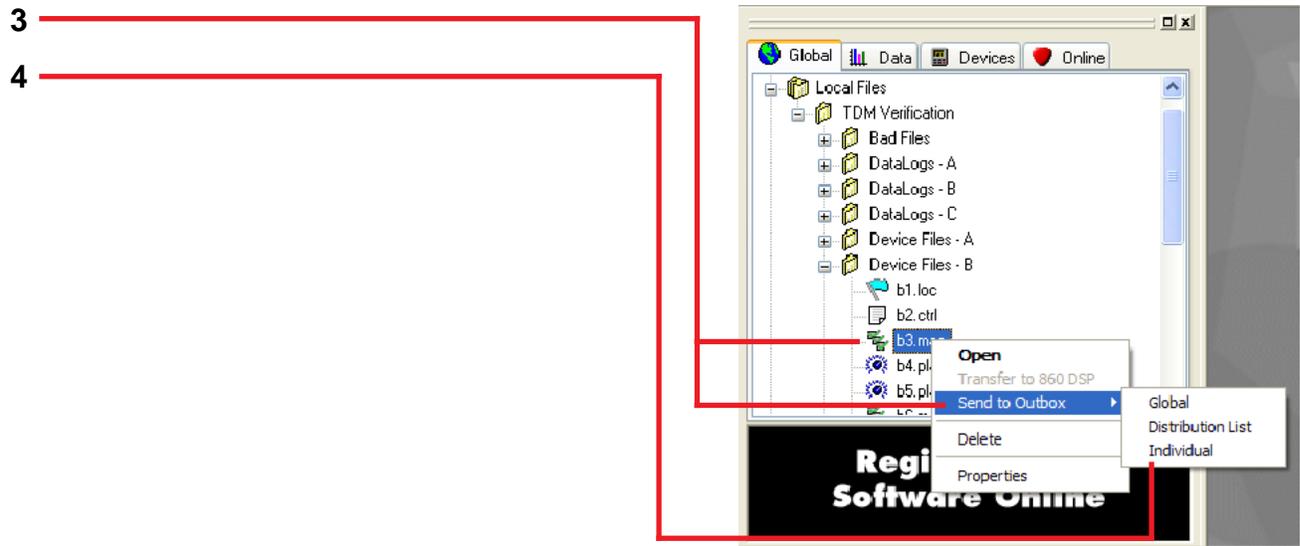
Sending Local Files to an Outbox

This feature is used to send files stored on your local hard drive to an 860 DSP or DSPi.

Note: Normally, files sent to an Outbox come from your server and not your local hard drive.



1. Choose the **Global** tab.
2. Go to **Local Files** and find the file you want to send to an outbox.



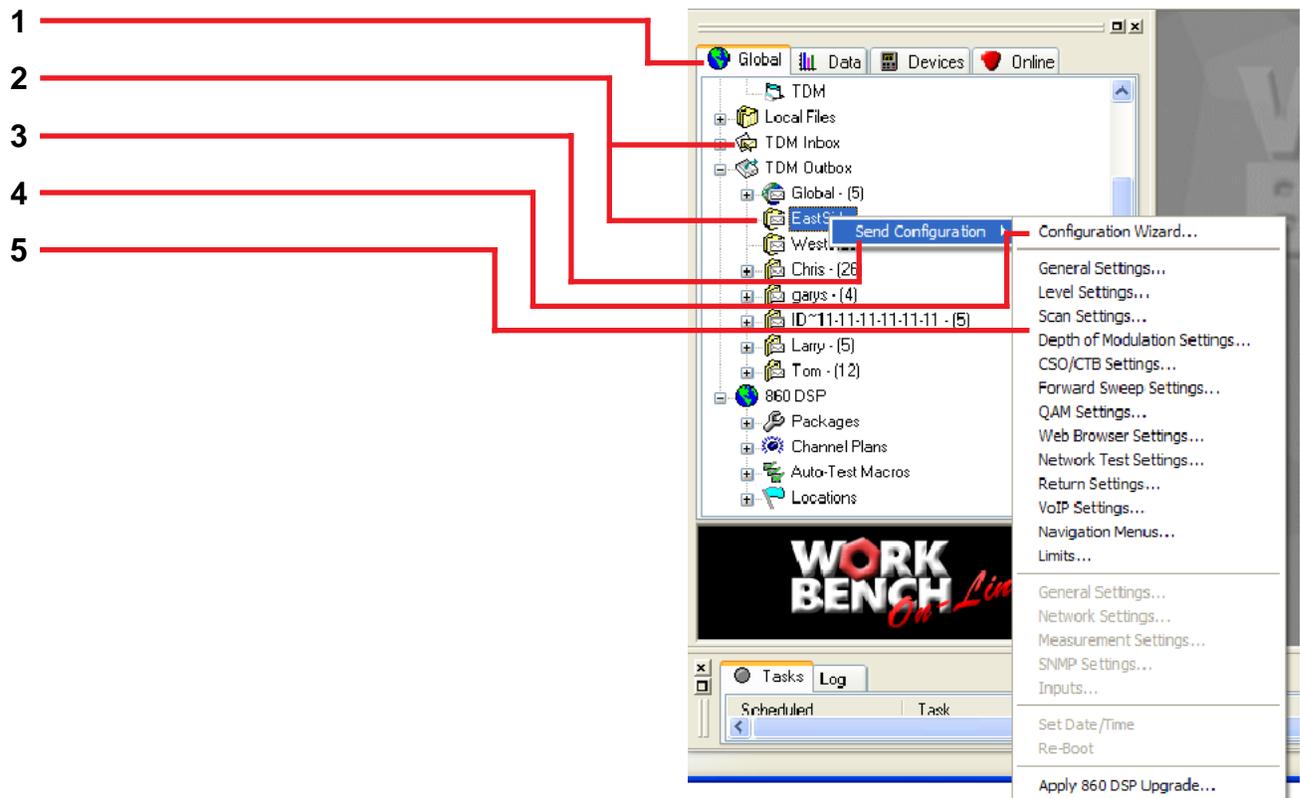
3. Right-click on the file you want to send and select **Send to Outbox** from the drop down menu.
4. Select your desired Outbox category from the next drop down menu and proceed by selecting the appropriate options and then clicking on **Send**.

Sending Configurations to an Outbox

The send configuration is feature is used to send a new or updated device configuration to an 860 DSP or DSPi.

 ***It is not recommend that modifications be made this way because your configuration changes will not be tracked. It is better to use packages instead.***

NOTE



1. Choose the **Global** tab.
2. Go to the **TDM Outbox** and right-click on the outbox of the 860 DSP to which you'd like to send a new configuration.

3. Choose **Send Configuration** from the drop down menu and continue by selecting the appropriate configuration option.



NOTE

Right-click on the Global outbox to send the same new configuration to all individual 860 DSP outboxes at once.

4. For a walk through of the entire configuration **process**, choose **Configuration Wizard...** from the drop down menu. Continue by selecting the appropriate options.

For step-by-step instructions on using the configuration wizard, go to WorkBench's Help menu and select Help Topics from the drop down menu.

Then go to the **Search** tab and look for the **Creating a New Configuration Package** topic.

5. To configure only a **specific setting**, select it from the drop down menu. Continue by selecting the appropriate options.

Task Sheets

A task sheet is a template that organizes and defines individual tasks (work orders) or trouble tickets. Task sheets allow you to group technicians or types of tasks that share a common set of work parameters or attributes. Once a task sheet is defined, you can use it to create new tasks, assign tasks to technicians and also view the current status and history of tasks.

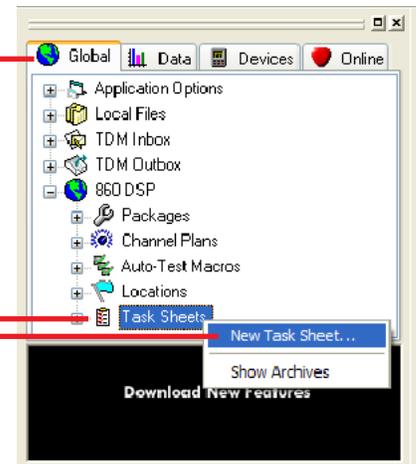


Once a task is sent to an 860 DSP, it can be accessed on the 860 DSP by selecting the TASKS icon. Besides being viewed, a data log can also be associated with a task to provide tracking information.

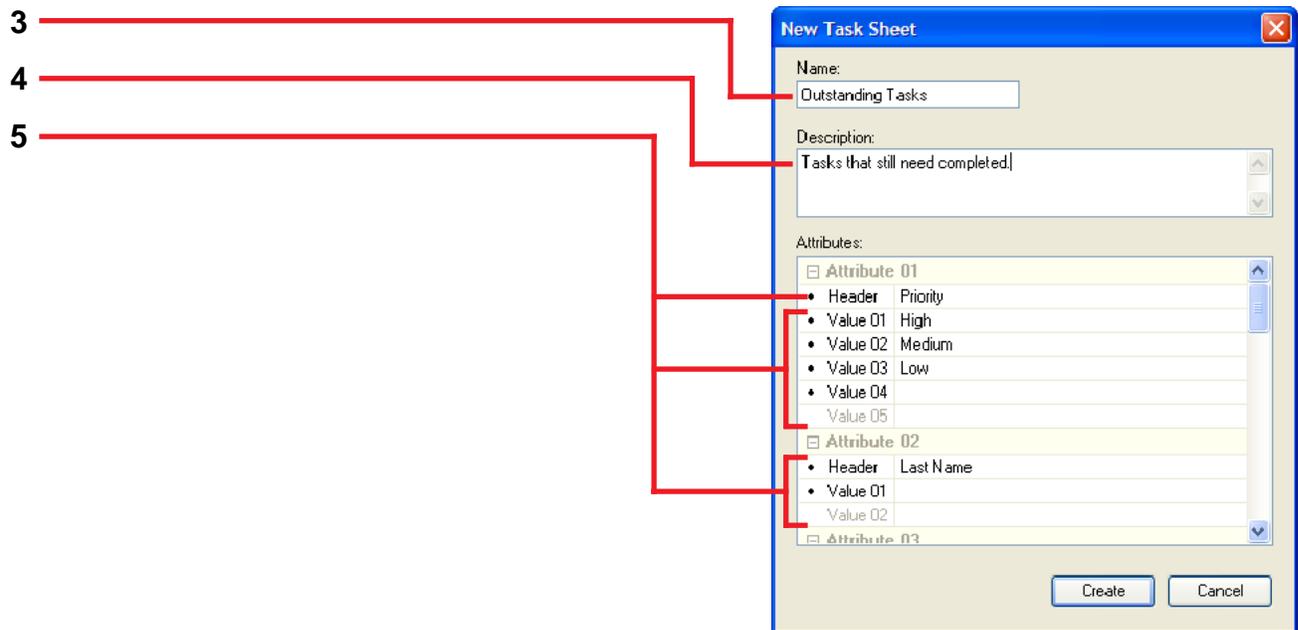
Creating New Task Sheets

To create a new task sheet, perform the following procedure.

- 1
- 2



1. Choose the **Global** tab.
2. Right-click on **Task Sheets** and select **New Task Sheet...** from the drop down menu.



3. Type in a **Name** for your new task sheet.
4. Type in a **Description** for your new task sheet (this step is optional).
5. Each **Attribute** represents a column that will appear on your task sheet. Each task sheet can have up to 12 user-defined attributes.

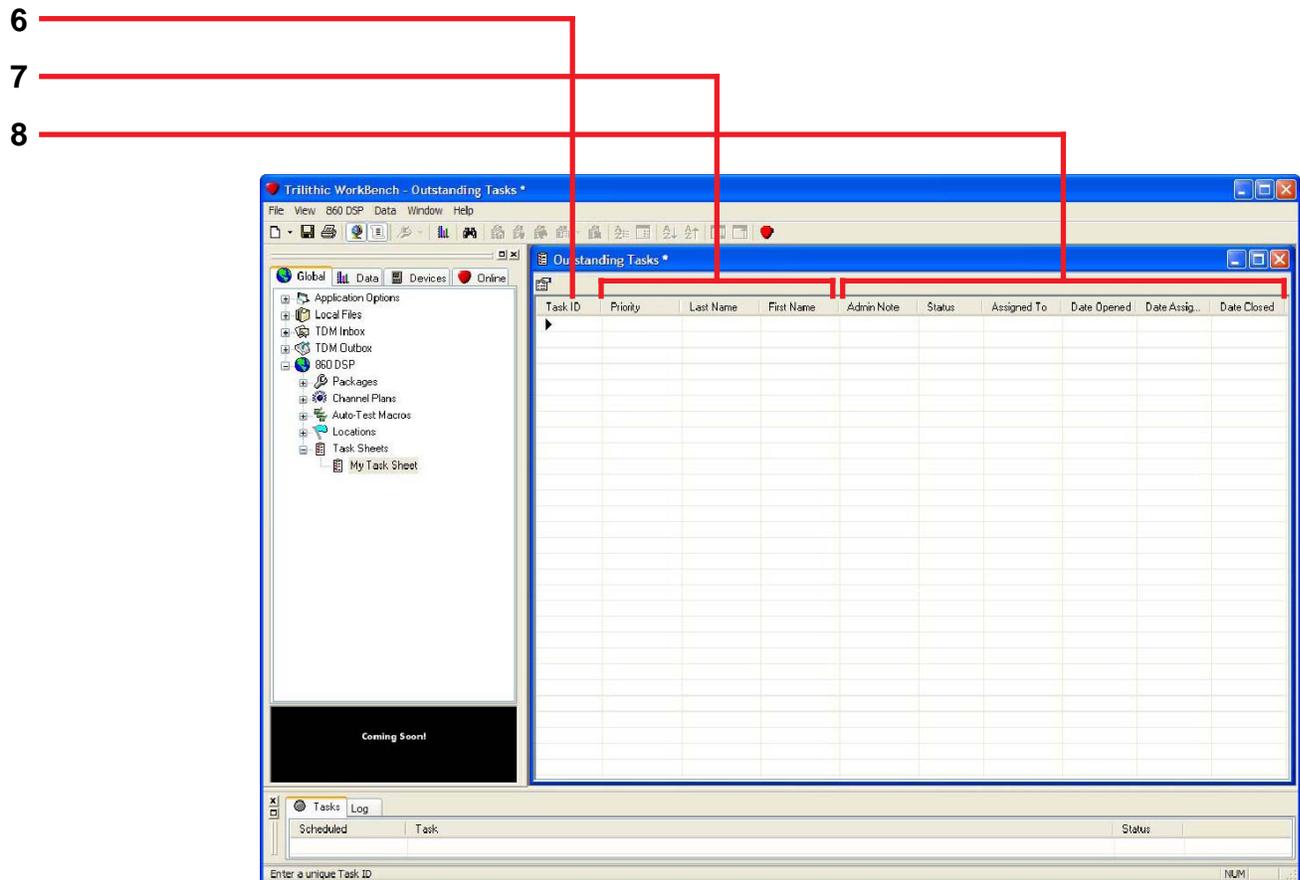
Type in a **Header** (title) for each column.

You now need to decide how you want the information in this column to be entered.

If you want users to choose from specific drop down list options, type in a **Value** for each option.

If you don't enter values, users may type free-form text (up to 255 characters) under that column header in the task sheet.

Your task sheet is now created. Start entering individual tasks as shown on the following page.



6. Type in a unique **Task ID**. The Task ID can consist of letters or numbers and can be up to six characters long.

Task IDs for all open tasks must be unique. The tasks they represent will later be attached by 860 DSP or DSPi operators to data logs for record keeping purposes.

7. The **Priority**, **Last Name**, and **First Name** columns are the attributes you entered earlier in step 5. Type in or select from the drop down list the appropriate information.



If an attribute has a drop down list, an arrow will appear when that field is selected. You cannot type information into attributes with drop down lists.

8. The **Admin Note**, **Status**, **Assigned To**, **DateOpened**, **Date Assigned** and **Date Closed** columns are automatically included in every task sheet.

Admin Note = Type in any extra information.

Status = Assigned automatically. The three states are Open, Assigned and Closed.

Assigned To = Automatically updated when the task is sent to an individual outbox or imported from an individual inbox. (For detailed instructions on assigning tasks, see the **To Send a Task to an Individual Outbox** section of this manual.)

Date Opened = Automatically filled in when the task is created.

Date Assigned = Automatically filled in when the task is sent to an individual inbox.

Date Closed = Automatically filled in once the technician closes the task on his 860 DSP or DSPi or when the task administrator right-clicks on the task and chooses **Close** from the drop down menu.

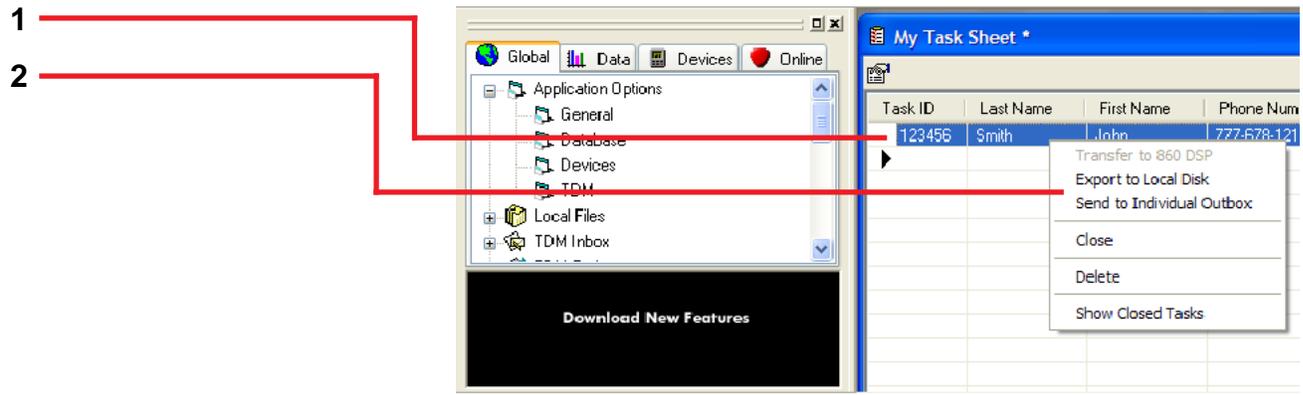


NOTE

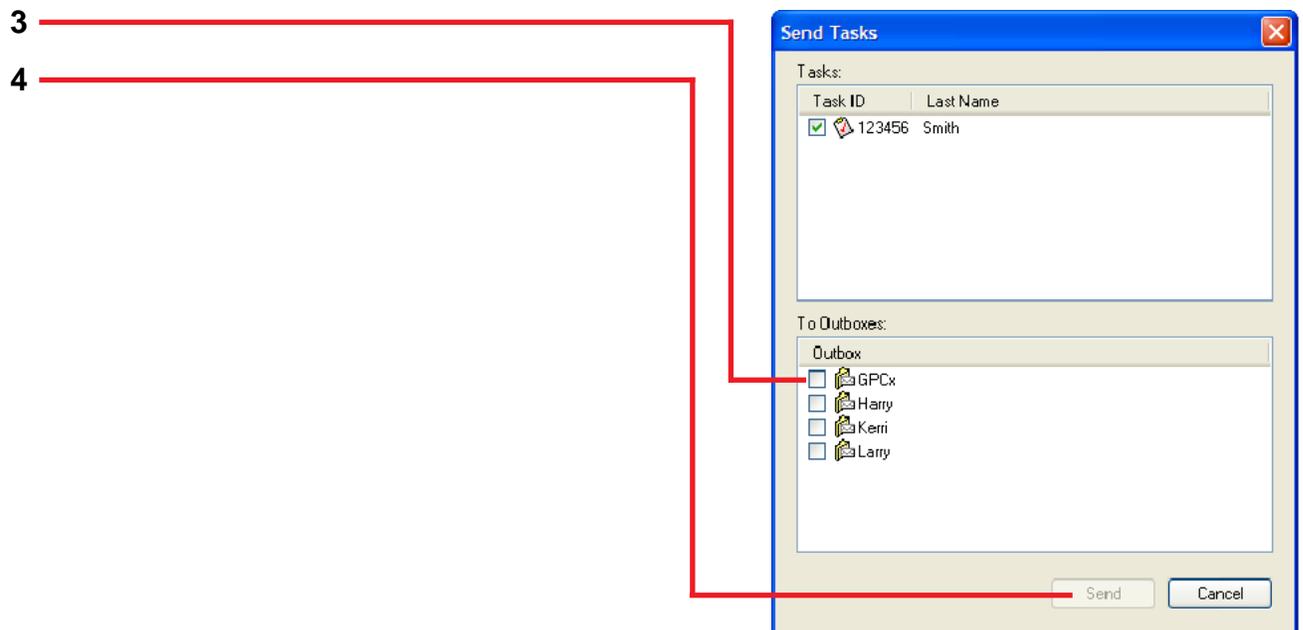
Tasks can be sorted by clicking on the column headers. Using the task sheet above as an example, if you want to sort the task sheet alphabetically by Last Name, click on the Last Name column header.

Sending a Task to an Individual Outbox

To send a task to an individual outbox, perform the following procedure.



1. Highlight the task(s) you want to send.
2. Right-click on the highlighted task(s) and select **Send to Individual Outbox** from the drop down menu.



3. Place a check next to the **Outbox(es)** to which you'd like to send the task.
4. Click the **Send** button.

Sending a Task to an Individual 860 DSP or 860 DSPi



Only use this method to send a task when the TDM server is not available.

If the 860 DSP or DSPi you want to send a task to is **NOT** currently connected to WorkBench, go to step 1.

If the 860 DSP or DSPi you want to send a task to **IS** currently connected to WorkBench, go to step 4.

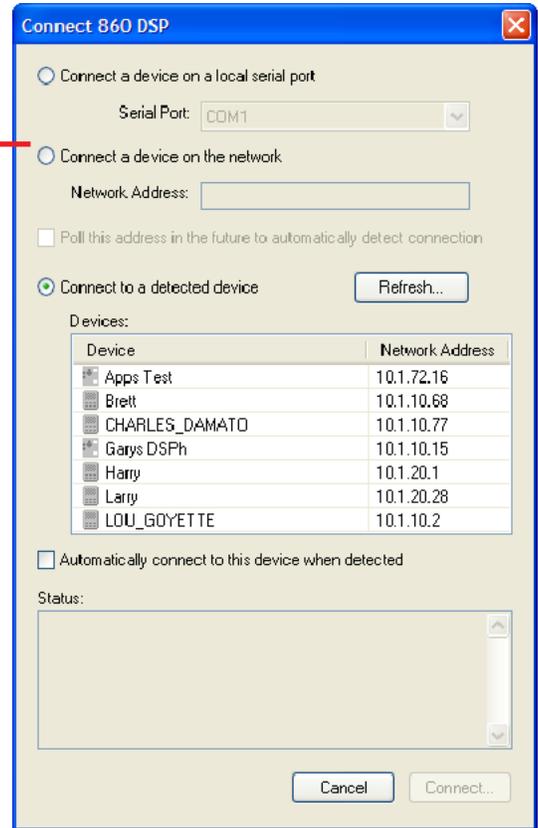
1

2



1. Select the **Devices** tab.
2. Right-click on 860 DSP and select **New Connection...** from the drop down menu.

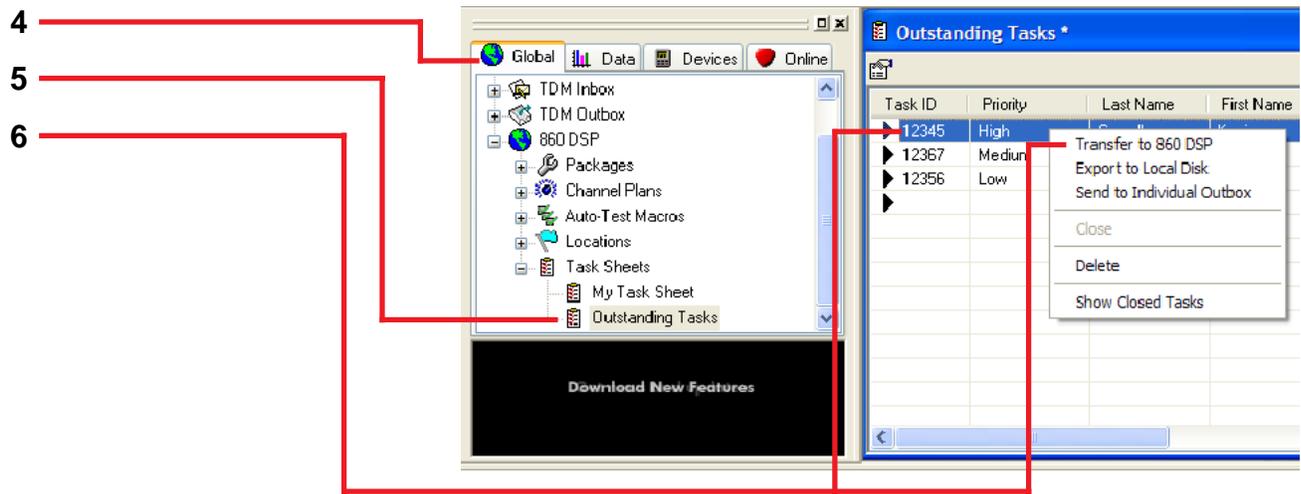
3



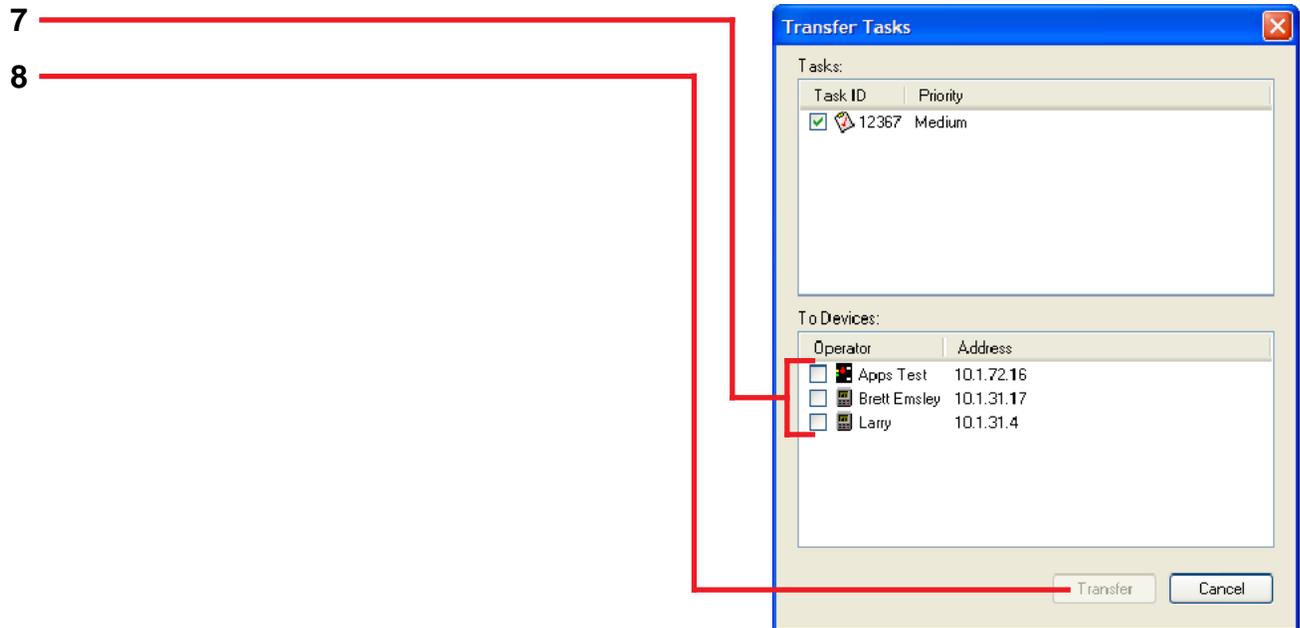
3. Continue creating a new connection by selecting the appropriate options.

 **NOTE**

For step-by-step instructions on creating a new connection, go to WorkBench’s Help menu and select Help Topics from the drop down list. Then go to the Search tab and look for the Adding and Maintaining 860 DSPs topic.



4. Continue creating a new connection by selecting the appropriate options.
5. Open the task sheet with the task you want to send to an 860 DSP or DSPi.
6. Right-click on the task you want to send and select **Transfer to 860 DSP** from the drop down menu.



7. Select the 860 DSP or DSPi to send the task to by placing a check in the appropriate box.

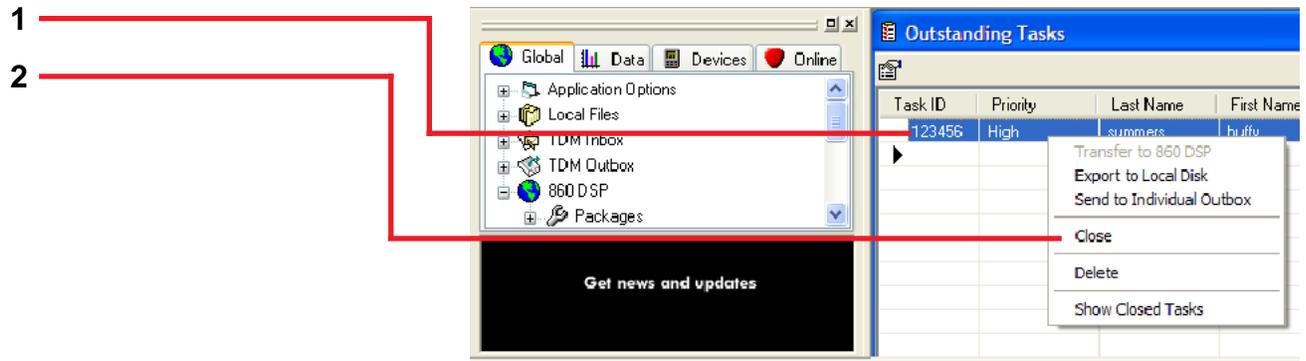
 ***This screen will not appear if only one 860 DSP or DSPi is currently connected to WorkBench.***

NOTE

8. After making your selection, click on **Transfer**.

Manually Closing Tasks

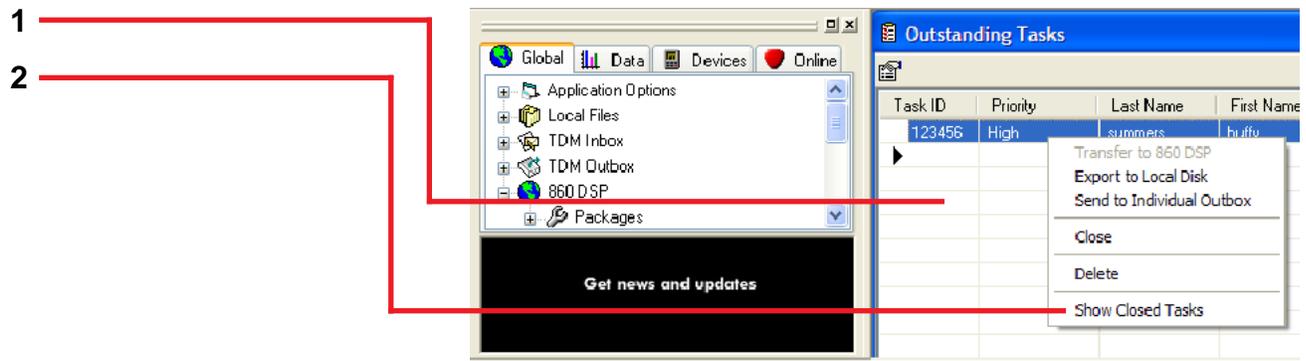
Tasks are normally closed by a technician via an 860 DSP or DSPi. If this does not happen, tasks can also be closed manually in the task sheet. Closed tasks remain in the task sheet, but are hidden from view. To manually close a task, perform the following procedure.



1. Right-click on the task(s) you want to close.
2. Select **Close** from the drop down menu.

Showing Closed Tasks

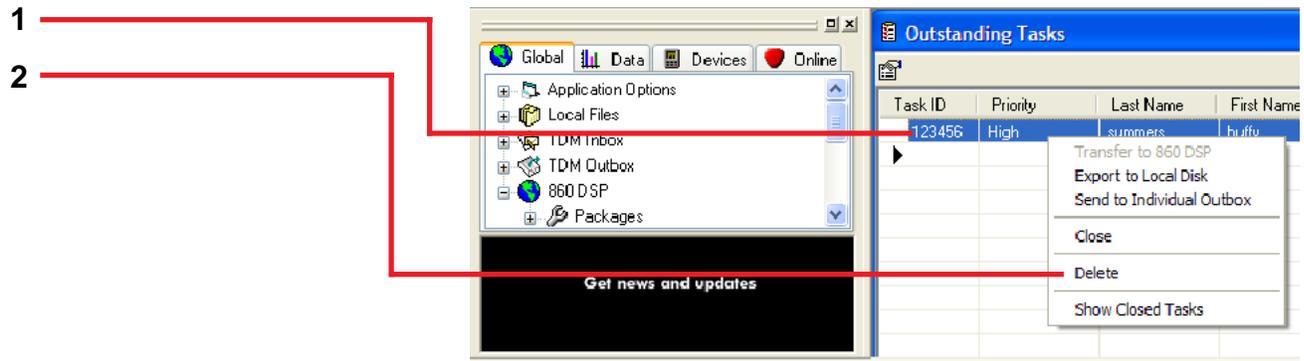
Normally, when tasks are closed they are automatically hidden within the task sheet. If you want closed tasks to remain visible, follow the steps below.



1. Right-click anywhere in the task sheet.
2. Select **Show Closed Tasks** from the drop down menu.

Deleting a Task

When an open or assigned task is deleted it is permanently removed from the task sheet. A closed task cannot be deleted. To delete a task, perform the following procedure.



1. Right-click on the task(s) you want to delete.
2. Select **Delete** from the drop down menu.

Deleting a Task Sheet

When a task sheet is deleted it is permanently removed from WorkBench. To delete a task, perform the following procedure.

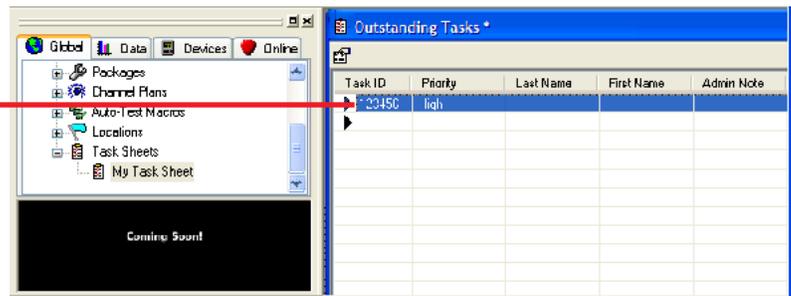


1. Right-click on the task sheet you want to delete and select **Delete** from the drop down menu.

Editing a Task Sheet

To edit a task sheet, perform the following procedure.

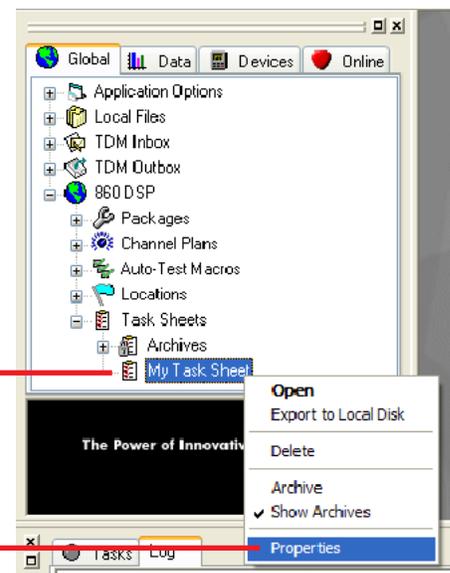
1



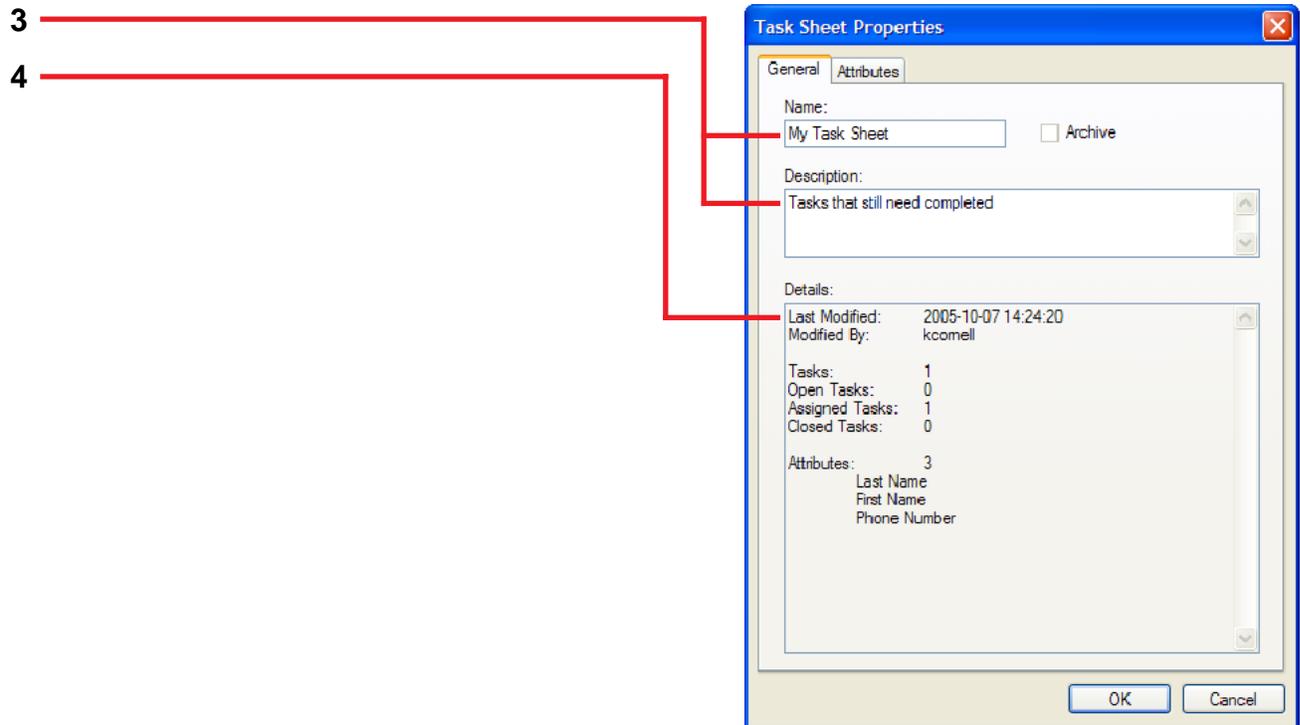
1. If the task sheet is open, left-click on the **Properties** icon.

OR

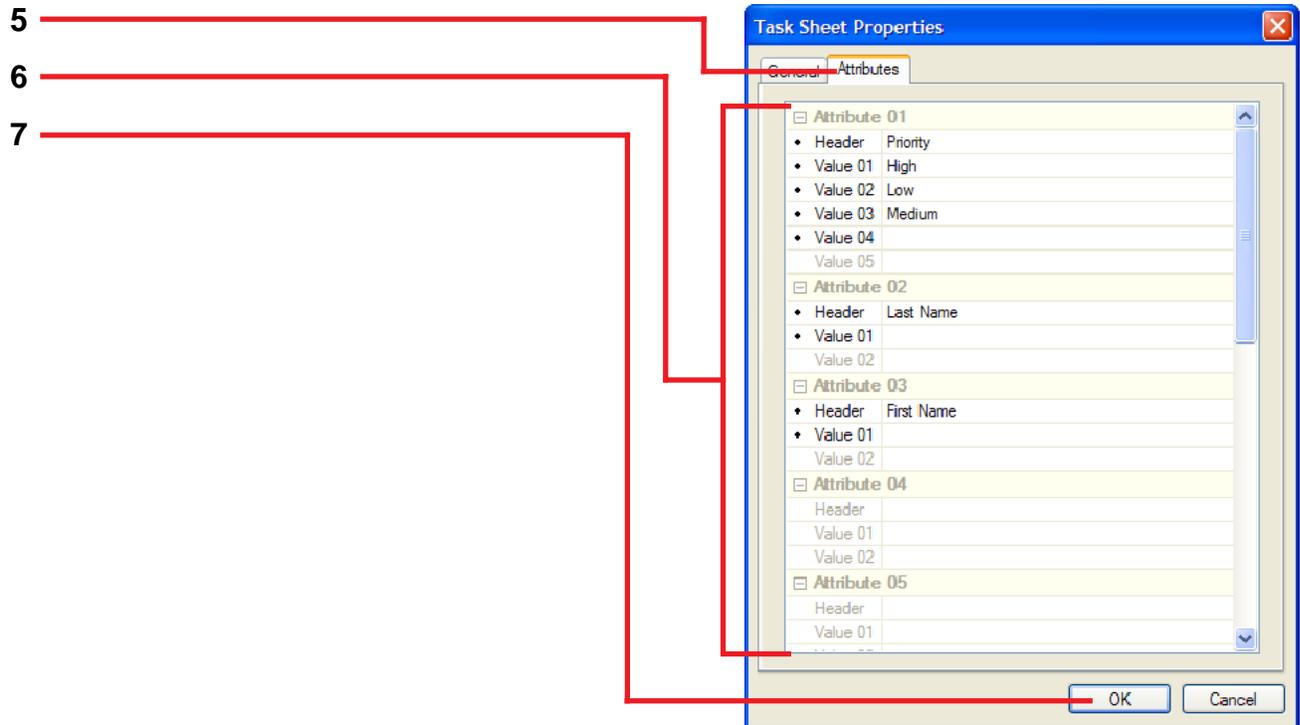
2



2. If the task sheet is closed, right-click on it and select **Properties** from the drop down menu.



3. If necessary, edit the **Name** or **Description** on the Task Sheet Properties window that appears.
4. The properties of the currently-selected task sheet are shown in the Details window.



5. Select the **Attributes** tab.
6. Make the appropriate changes to the **Header** or **Value** fields. Headers can be modified but not deleted, and values can be added, deleted or modified.

 **NOTE** *Once a task sheet is created, attribute columns cannot be created or deleted.*

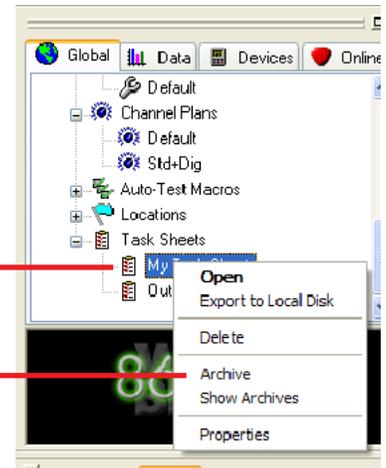
7. After finishing your edits, click the **OK** button.

Archiving a Task Sheet

Archiving a task sheet is useful if you want to keep a historical record of tasks contained in a task sheet that is no longer in active use. To archive a task sheet, perform the following procedure.

1

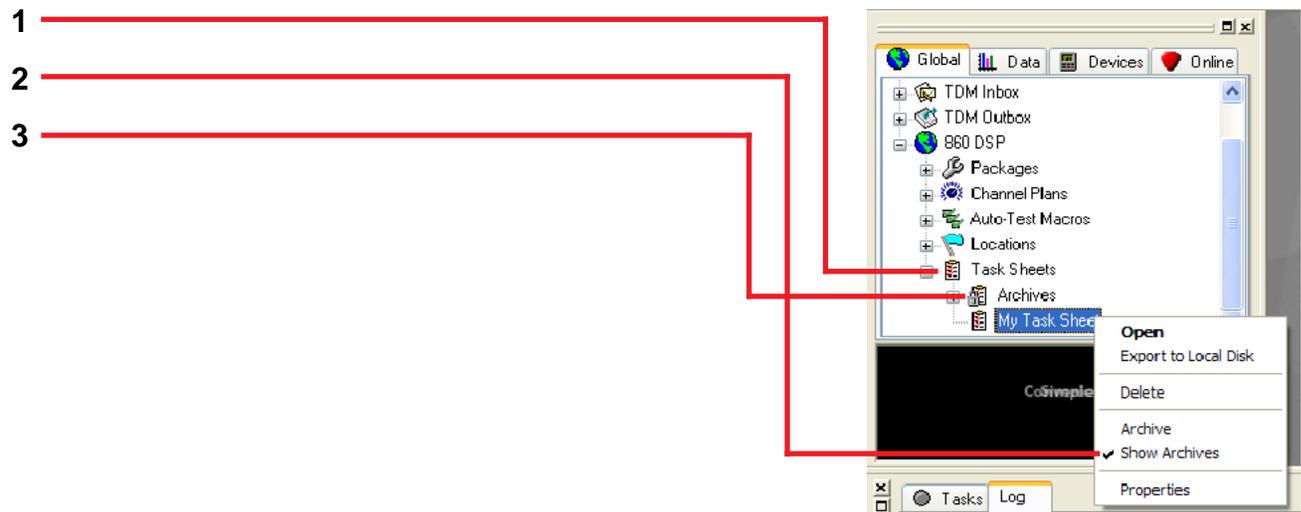
2



1. Right-click on the task sheet you want to archive.
2. Select **Archive** from the drop down menu.

Viewing Archived Task Sheets

Select this option if you want to view a list of archived task sheets and/or their tasks. To view an archived task sheet, perform the following procedure.

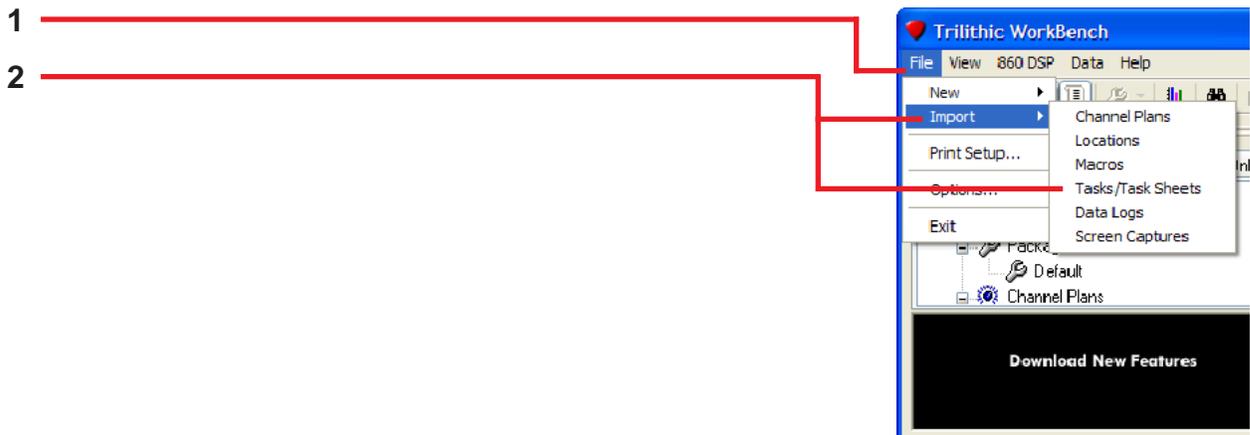


1. Right-click on **Task Sheets**.
2. Select **Show Archives** from the drop down menu.
3. This **Archives** folder will appear. All archived task sheets are stored here.

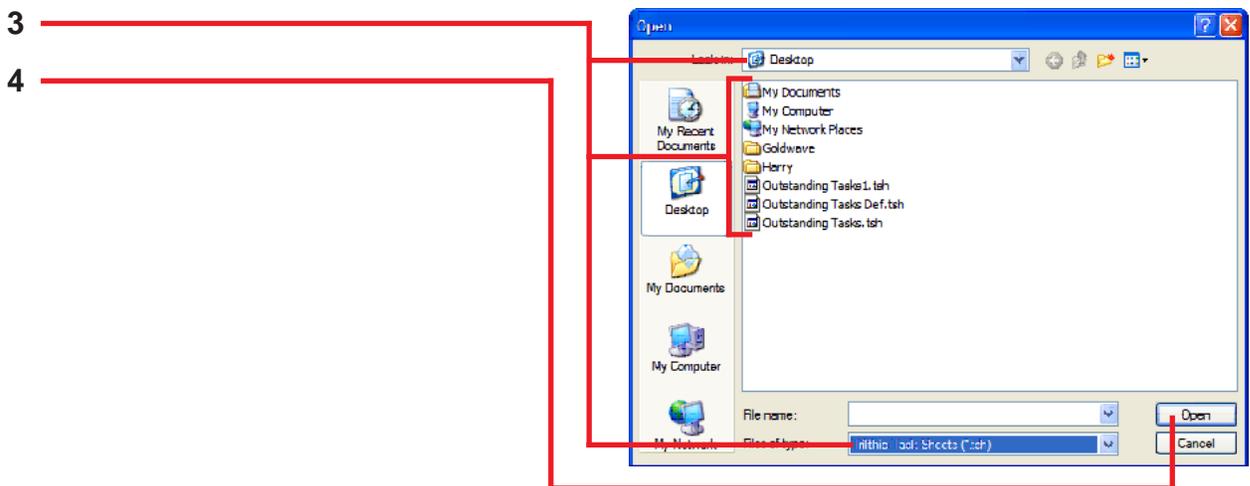
Importing Tasks and Task Sheets

Importing Task Sheet Definitions from a Local Disk

A task sheet definition serves as a template. Importing a task sheet definition file recreates the structure and attributes of an existing task sheet into a new task sheet. To import a task sheet definition, perform the following procedure.



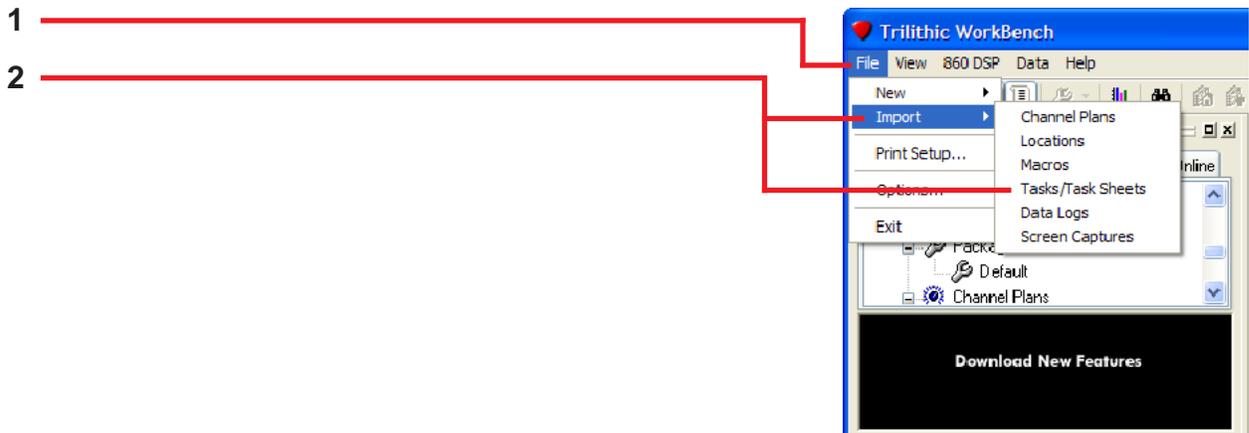
1. Go to **File**.
2. Select **Import** and then **Tasks/Task Sheets** from the drop down menu.



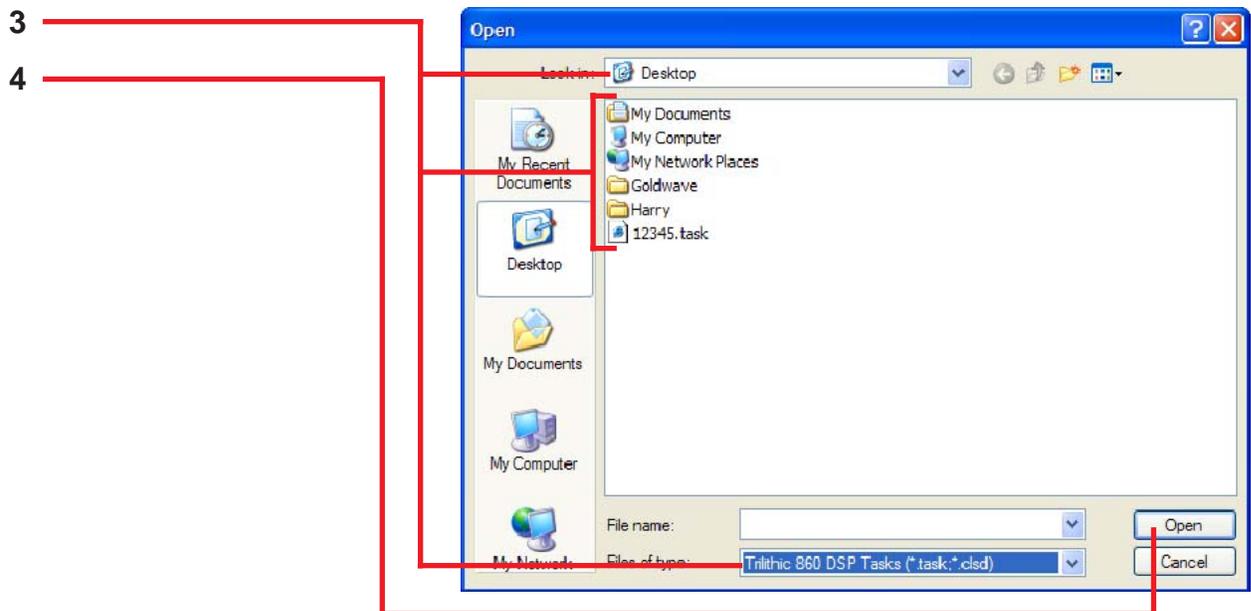
3. Locate the task sheet file to import. A task sheet definition's file type is *.tsh.
4. Click the **Open** button.

Importing Individual Tasks from a Local Disk

If you are importing data logs and their associated task file(s) from a local disk, you must first import the task file(s) before importing the data logs. Failure to do so will break the associative link between the task(s) and the data log(s). To import an individual task, perform the following procedure.



1. Go to **File**.
2. Select **Import** and then **Tasks/Task Sheets** from the drop down menu.

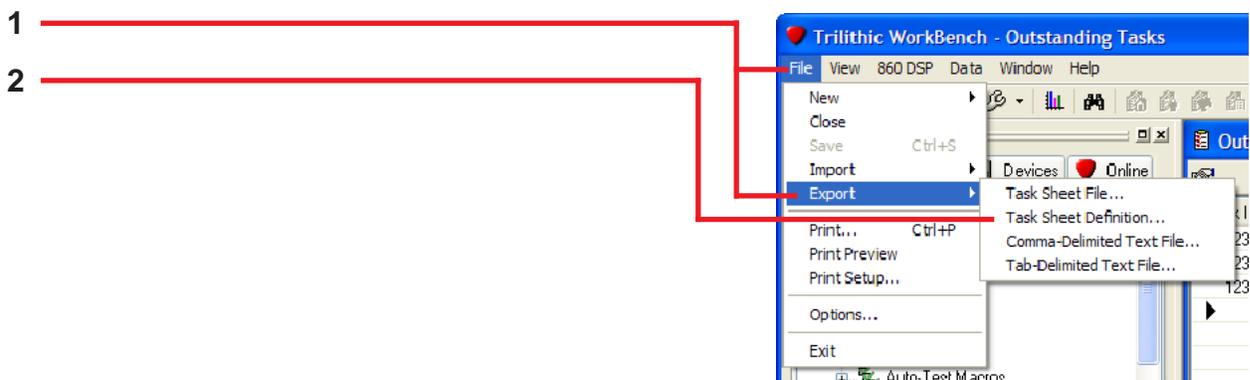


3. Locate the task you'd like to import. A task file's file type can be either .clsd (closed task) or .task (open task).
4. Click on **Open**.

Exporting Task and Task Sheets

Exporting Task Sheet Definitions to a Local Disk

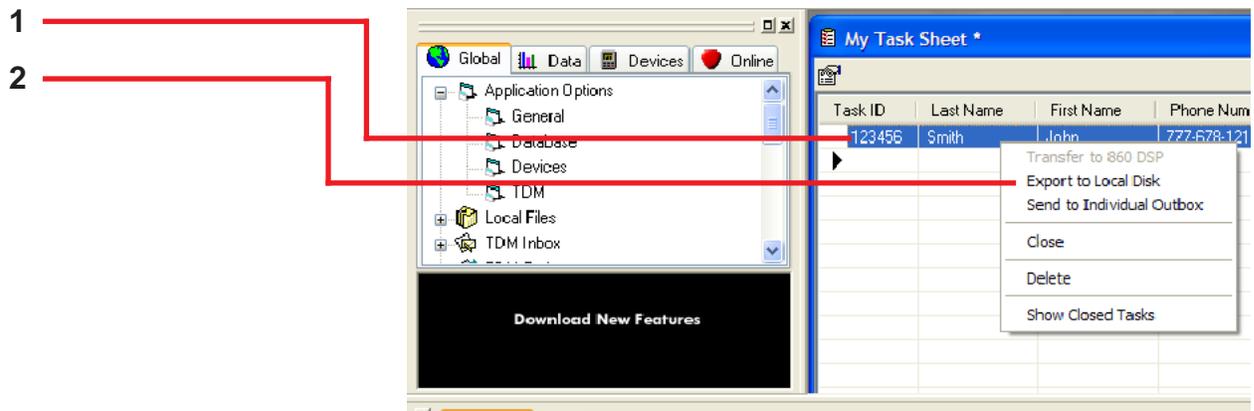
A task sheet definition serves as a template. Exporting a task sheet definition recreates the structure and attributes of an existing task sheet into a definition file. This file can later be imported and used to recreate the exact same task sheet. This option helps provide consistency when multiple administrators use the same task sheet. To export a task sheet definition, perform the following procedure.



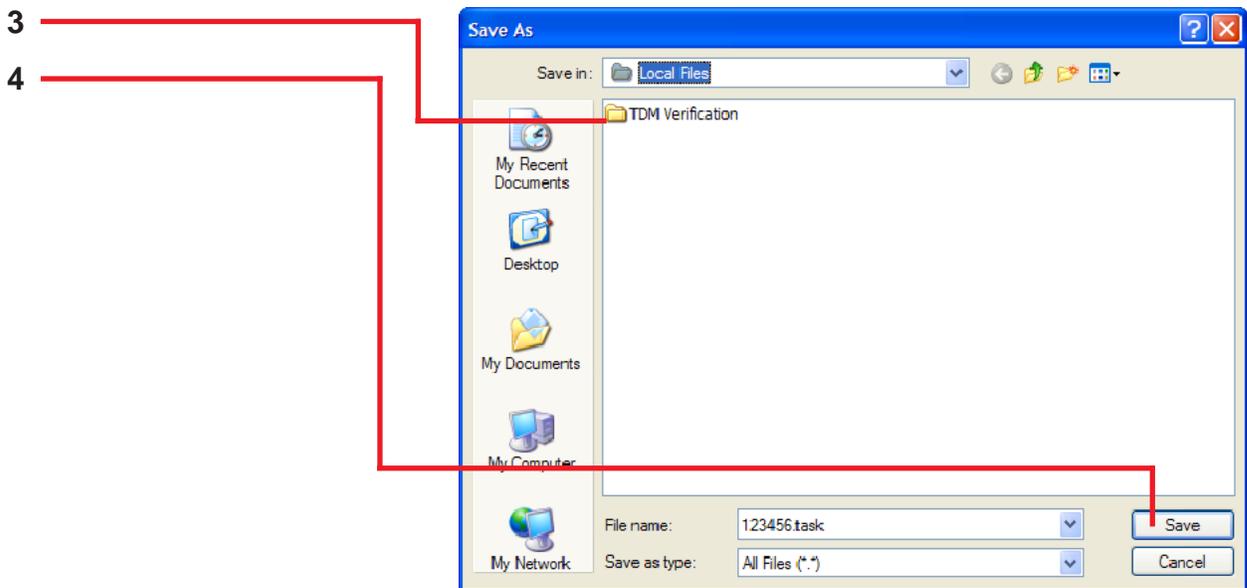
1. Make sure the task sheet whose definition you want to export is open. Go to **File** and select **Export**.
2. Select **Task Sheet Definition...** from the drop down menu.

Exporting Individual Tasks to a Local Disk

Use this option to store a task or tasks on a server or hard drive. To export an individual task, perform the following procedure.



1. Highlight the individual task(s) you want to export.
2. Right-click on the highlighted task(s) and select **Export to Local Disk** from the drop down menu.



3. Select a location to save the file.
4. After selecting a location, click on **Save**.

 **NOTE** *If you exported more than one task, each task will export into its own separate file. For example, three tasks will export into three different files.*

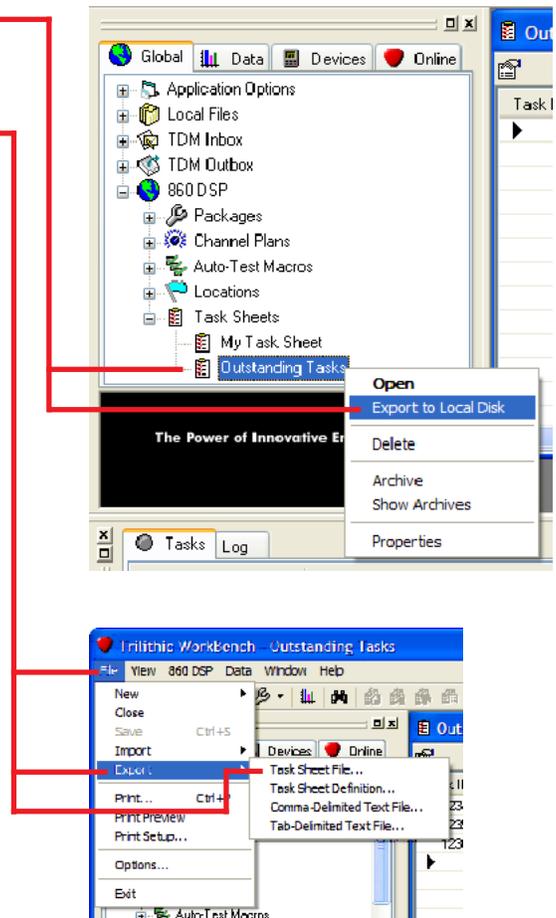
Exporting a Task Sheet to a Local Disk

Use this option if you'd like to store a task sheet on a server or hard drive. To export a task sheet, perform the following procedure.

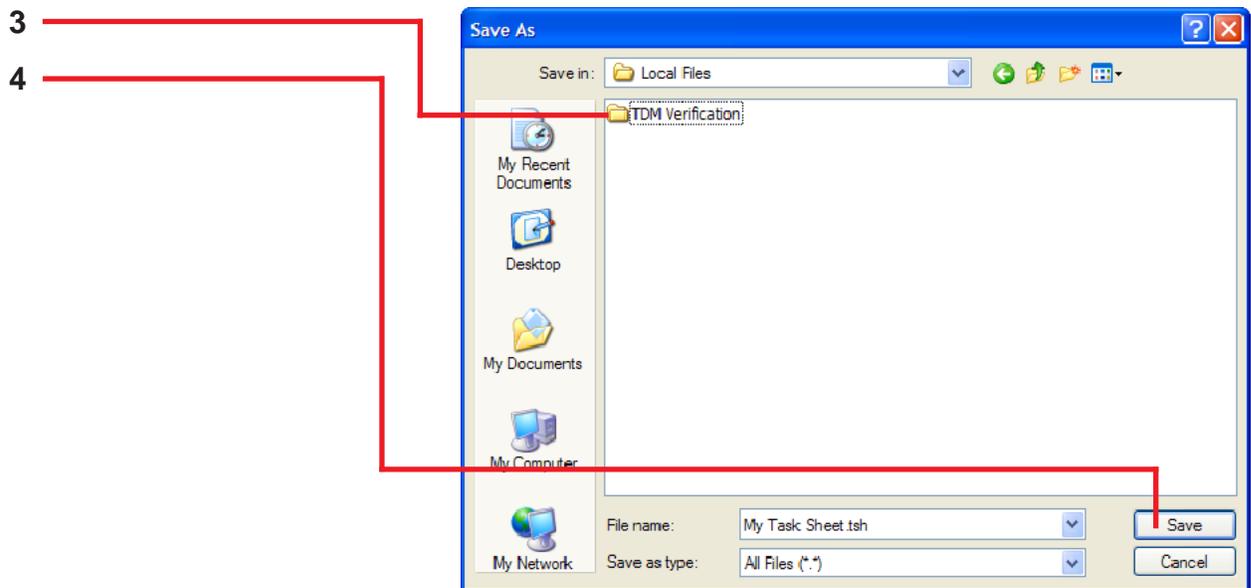
1

OR

2



1. Right-click on the task sheet you want to export and highlight **Export to Local Disk** from the drop down menu.
2. Open the task sheet you wish to export and then go to **File** and select **Export**. Now, select **Task Sheet File...** from the drop down menu.



3. Select a location to save the file.
4. After selecting a location, click on **Save**.

TDM Reports

Overview

Following is a brief explanation of the different reports available in TDM, with a brief description. More detailed explanations of these reports are in following sections.

At-Tap Node History - Shows all records within specified date range for selected macro, organized by node.

Calibration Check - Shows all records within specified date range for selected macro. Shows percentage of pass/fail.

House History - Shows all records for selected address, organized by descending work date. Searchable by city or street address.

Meter Inventory - Displays operator name, model, firmware, last calibration date and options.

Set Top Compliance Details - Shows all records within specified date range for “set top” macro.

Set Top Compliance Summary - Same as Set Top Compliance Details report but not expandable down to macro results. Better for larger date ranges.

Technician Compliance - Shows degree of technician compliance based on TDM Compliance Matrix.

At-Tap Node History

Introduction

The At Tap Node History report provides information on macros run in the field, listed by node. This can be useful for tracking problem areas of the outside plant. Typically, this report is used to track escalated service calls by listing failed macros run at the tap by the installation technician.

This report can also be used to display pass/fail percentages for any macro listed by node, city, zip code, etc.

Report Parameters

The report parameters are defined as follows:

Comments: Text entered in this field will be displayed on the report.

Date Range: Limits results displayed to specified date range.

Work Group Depth: Displays depth of work group hierarchy listed on report **Expand to:** Denotes level of report detail. Choices are work group, node, work order, macro and data log.

Show Failed Only: If checked, displays only failed macro results.

Order Nodes By: Denotes how nodes are organized. Choices are Node Name, Number, Fail, and Percent Fail.

Node Attribute: Organizes results according to node name, city, zip code, etc. Entries in this field must match flat file headers for desired field.

Macro Name Expression: Defines name of macro. Wild card in the form of *%Macro Name%*.

The screenshot shows a software interface for configuring reports. The title bar is 'Reports'. Below it are icons for a folder, a document, and a green arrow. A dropdown menu shows 'At-tap Node History'. Below the dropdown is a description: 'Reports work history by node for all at-tap field data'. The interface is divided into sections: 'General', 'Report Options', and 'Advanced Options'. Each section contains a list of parameters and their values.

General	
Comments	Application Note Te
Start Date	9/24/2009
End Date	9/28/2009

Report Options	
Work Group Depth	3
Expand To	Macro
Show Failed Only	<input type="checkbox"/>
Order Nodes By	Node Name

Advanced Options	
Node Attribute	Node
Macro Name Expression	%at tap%

Explanation of the Report

Below is an example of an At Tap Node History report expanded to the macro level:

Work Groups	Node	Work Order			Address	Data Log		
		Fail	% Fail	Type Technician		Run	% Pass	Date/Time
Report Totals	2	5	83 %			25	60 %	
? Level 3	2	5	83 %			25	60 %	
? Level 2	2	5	83 %			25	60 %	
App Engineers	2	5	83 %			25	60 %	
AA1Z2	2	5	67 %		(Multiple Addresses)	13	69 %	
		020409	AE 1111		123 Main, Indy	5	60 %	9/26/2009
					at tap	5	60 %	9/26/2009
		076479	AE 1111		1524 B St, Lawrence	4	100 %	9/28/2009
					at tap	4	100 %	9/28/2009
		037024	AE 2222		45 Dawn, Franklin	4	50 %	9/28/2009
					at tap	4	0 %	9/28/2009
					at tap	4	50 %	9/28/2009
AB2X3	3	3	100 %		(Multiple Addresses)	12	50 %	
		021964	AE 1111		234 Ash, Indy	4	75 %	9/28/2009
					at tap	5	80 %	9/28/2009
		004227	AE 1111		88 Center, Lawrence	4	75 %	9/28/2009
					at tap	4	75 %	9/28/2009
		082597	AE 2222		50 Morning, Franklin	4	0 %	9/28/2009
					at tap	4	0 %	9/28/2009

The sample above displays the name of the report, the date and time the report was generated, the specified date range for the report, and the text entered in the Comments field (Application Note Test Comment).



NOTE

A green check mark beside the work order number denotes the macro has passed. A red X indicates that one or more steps in the macro has failed. If a yellow triangle with an explanation mark appears, this indicates there is no job type information for that work order.

The report headers are defined as follows:

Work Groups - Displays the hierarchy of work groups, displays the names of the specific work groups.

Node - Displays the total number of nodes for each work group hierarchy. Displays results organized by node name (as in this example) or by city, zip code, etc. This is determined by the Node Attribute field in the report parameters.

Work Order - Displays number and percentage of failed macros for each node, as well as throughout work group hierarchy. Also displays work order number, job type, and technician for each macro run.

Address - Displays the address of the work order. The macros run are listed under this header.

Data Log - Displays the number of macros run and the percentage of those that passed for each node and throughout the work group hierarchy. The date of the macro is listed as well. If the macro name is expanded the individual steps of the macro and the time run will be listed.

Below is the same At Tap Node History report, this time organized by city and with one macro expanded to the data log:

TRILITHIC
TDM

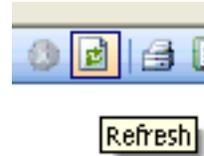
At-tap Node History
9/28/2009 11:23:35 AM

Starting: Thursday, September 24, 2009
Ending: Monday, September 28, 2009
Application Note: Test Comment

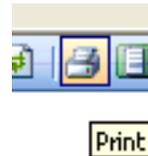
Work Groups	Node	Work Order			Address	Data Log			
		Total	Fail	% Fail		Type	Technician	Run	% Pass
Report Totals									
	3	5		83 %			25	80 %	
[-] ? Level 3	3	5		83 %			25	80 %	
[-] ? Level 2	3	5		83 %			25	80 %	
[-] App Engineers	3	5		83 %			25	80 %	
[-] Franklin	2	100 %			(Multiple Addresses)		8	25 %	
	[-] 037024	AE	2222		45 Davern, Franklin		4	50 %	9/28/2009
					[-] @ tap		4	0 %	9/28/2009
					[-] @ tap		4	50 %	9/28/2009
					[-] Scan				8:48:42 AM
					[-] GAMLite				8:48:48 AM
					[-] GAMLite				8:50:06 AM
					[-] GAMLite				8:50:10 AM
	[-] 082597	AE	2222		50 Morning, Franklin		4	0 %	9/28/2009
					[-] @ tap		4	0 %	9/28/2009
[-] Indy	2	100 %			(Multiple Addresses)		9	87 %	
	[-] 020409	AE	1111		123 Main, Indy		5	80 %	9/28/2009
					[-] @ tap		5	80 %	9/28/2009
	[-] 021964	AE	1111		234 Ash, Indy		4	75 %	9/28/2009
					[-] @ tap		5	80 %	9/28/2009
					[-] @ tap		4	75 %	9/28/2009
[-] Lawrence	1	50 %			(Multiple Addresses)		6	88 %	
	[-] 078478	AE	1111		1524 B St, Lawrence		4	100 %	9/28/2009
					[-] @ tap		4	100 %	9/28/2009
	[-] 004227	AE	1111		86 Center, Lawrence		4	75 %	9/28/2009
					[-] @ tap		4	75 %	9/28/2009

At the top of the report there are some additional options. These are defined as follows:

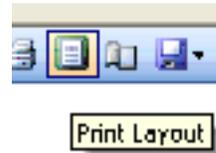
Refresh - Refreshes the current report if parameters are changed



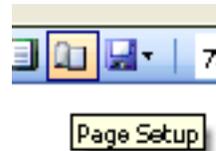
Print - Enables option to print the report



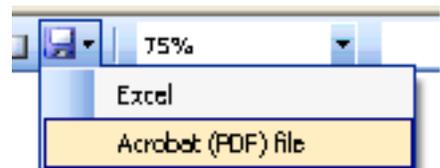
Print Layout - Print preview



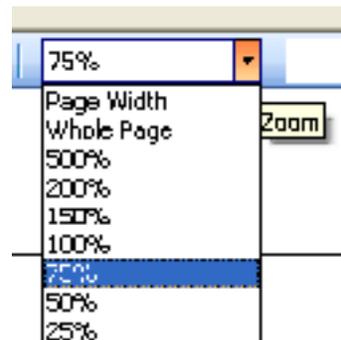
Page Setup - Defines the page layout for printing



Save - Allows saving of the report in Excel or PDF format



Zoom - Adjusts the displayed size of the report



Calibration Check

Introduction

In some companies, the technicians are required to run a macro to verify that the meter is measuring signal levels accurately. This macro (typically a Scan test) would be run at a test point with known levels and would have narrow limits for a pass/fail result. The typical macro name for this test is “cal chk” and TDM has a report to display the results of this test.

Report Parameters

The report parameters are defined as follows:

Comments - Text entered in this box will be displayed in report.

Date Range - Limits results displayed to specified date range.

Work Group Depth - Displays pass/fail numbers for work group hierarchy.

Expand to - Denotes level of report detail. Choices are work group, technician, macro and data log.

Macro Name - Defines name of macro. Wild card in the form of *%Macro Name%*.

Technician - Limits results to specific user defined technician or technicians.

Work Group - Limits results to user defined work group or work groups.

Show Passed - If checked, displays technicians with passing results. Otherwise only failed results are displayed.

The screenshot shows a software window titled 'Reports'. At the top, there are icons for a document, a folder, and a green arrow. Below that is a dropdown menu with 'Calibration Check' selected. Underneath, it says 'Report on Cal Check Macro Compliance'. The window is divided into two sections: 'General' and 'Report Options'. The 'General' section includes fields for 'Comments', 'Start Date' (9/19/2009), and 'End Date' (10/1/2009). The 'Report Options' section includes 'Work Group Depth' (3), 'Expand To' (Technician), 'MacroName' (%cal chk%), 'Technician', 'Workgroup', and 'Show Passed' (checked).

General	
Comments	
Start Date	9/19/2009
End Date	10/1/2009

Report Options	
Work Group Depth	3
Expand To	Technician
MacroName	%cal chk%
Technician	
Workgroup	
Show Passed	<input checked="" type="checkbox"/>



NOTE

In the Technician and Work Group fields, multiple technicians or work groups can be selected. Separate the values in this field with a comma. For example, if “1234, 2345” was entered in the Technician field the report would display only the results for technicians 1234 and 2345.

Explanation of the Report

Below is an example of the Calibration Check report expanded to the Data Log level:

Work Groups	Technician	Cal Check Compliance			Test Results			Meter
		Total	Failed	No Data	Passed	Run	Passed	Date/Time
Report Totals	7	0	5	2	2	2		
[-] ? Level 3	7	0	5	2	2	2		
[-] ? Level 2	7	0	5	2	2	2		
[-] App Engineers	2	0	0	2	2	2		
<input checked="" type="checkbox"/> 1111				1	1	1	9/26/2009	7/25/2006
<input checked="" type="checkbox"/> cal chk				1	1	1	9/26/2009	8/20/2005
<input checked="" type="checkbox"/> Scan							9:38:24 AM	
<input checked="" type="checkbox"/> 2222				1	1	1	9/26/2009	8/20/2005
<input checked="" type="checkbox"/> cal chk				1	1	1	9/26/2009	8/20/2005
<input checked="" type="checkbox"/> Scan							9:34:18 AM	
[-] Sales Engineers	4	0	4	0	0	0		
<input checked="" type="checkbox"/> 1B:00-02-7C-00-89-82			1	0	0	0	N/A	Unknown
<input checked="" type="checkbox"/> Larry Clouser D3			1	0	0	0	N/A	Unknown
<input checked="" type="checkbox"/> Mike_H_De mo_1			1	0	0	0	N/A	8/22/2008
<input checked="" type="checkbox"/> Randy Ferry			1	0	0	0	N/A	Unknown
[-] TWMilwaukee	1	0	1	0	0	0		
<input checked="" type="checkbox"/> 12345			1	0	0	0	N/A	7/20/2007

The sample above displays the name of the report, the date and time the report was generated, the specified date range for the report, and the text entered in the Comments field (Application Note Test Report).

The report headers are defined as follows:

Work Groups: Displays the hierarchy of work groups, displays the names of the specific work groups.

Technician Total: Displays the total number of technicians in the specific work groups and their hierarchy. The technician names are the operator names of the meter when the test was performed. If an operator name is not listed in the meter, the meter's CPE MAC address is listed.

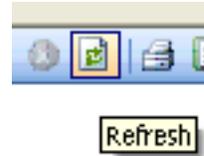
Cal Check Compliance: Displays the number of failed macros, no data (no macro was run), and passed macros for each work group and hierarchy. If technician is expanded (click on + sign) a link to the macro will be displayed. This link will generate a Macro Summary Report listing the details of the macro.

Test Results: Displays the number of tests run and the number of tests passed as well as the date/time the macro was run. If the macro link for the technician is expanded, a link to the data log will appear. This can only be viewed with the Workbench program and gives specific details and results of the macro.

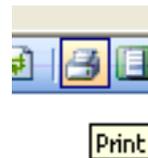
Meter Calibration Date: Displays the calibration date of the meter as it was recorded the last time the meter connected to the TDM server.

At the top of the report there are some additional options. These are defined as follows:

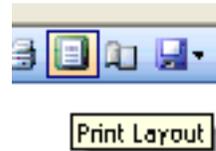
Refresh - Refreshes the current report if parameters are changed



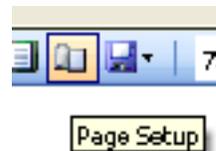
Print - Enables option to print the report



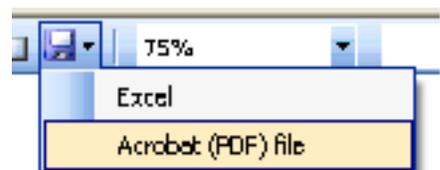
Print Layout - Print preview



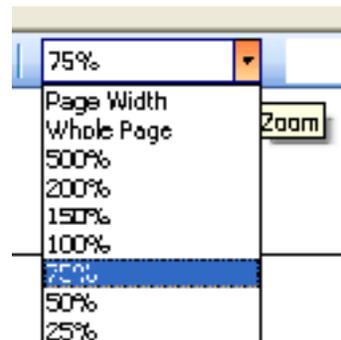
Page Setup - Defines the page layout for printing



Save - Allows saving of the report in Excel or PDF format



Zoom - Adjusts the displayed size of the report



House History

Introduction

The house history report shows all records for the selected address, organized by the date of each work order. The house history report is searchable by city or street address and is typically used for viewing of “problem” houses. The house history report displays work orders and macros for each searched address. The report allows the operator to view a house’s service calls and the outcome of each call.

Report Parameters

The report parameters are defined as follows:

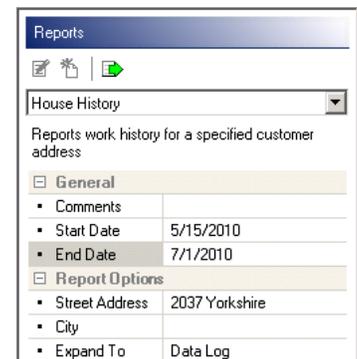
Comments - Text entered in this box will be displayed in report.

Date Range - Limits results displayed to specified date range.

Street Address - Search house history report data for the specified address.

City - Search house history report data for the specified city.

Expand To - Denotes level of report detail. Choices are work groups, technician, work order, macro and data log. Report can be manually expanded.



The screenshot shows a software interface titled "Reports". It features a dropdown menu set to "House History" and a sub-header "Reports work history for a specified customer address". Below this, there are two expandable sections: "General" and "Report Options".

General	
Comments	
Start Date	5/15/2010
End Date	7/1/2010

Report Options	
Street Address	2037 Yorkshire
City	
Expand To	Data Log

Explanation of the Report

Below is a sample of a House History report. The report will list the work order number, the technician who was assigned to the work order, the macros that were run, the date the macros were run, and the pass or fail status of each macro.

TRILITHIC
TDM

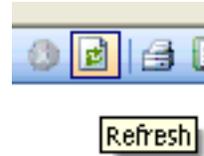
House History Report
7/15/2010 12:58:57 PM

Starting: Saturday, May 15, 2010
Ending: Thursday, July 01, 2010
Address: 2037 YORKSHIRE AVE APT 204, INDIANAPOLIS

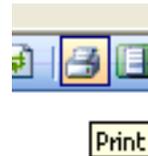
	Work Order			Technician	Macro Compliance			Data Log Compliance		
	Total	% Pass	Type		Res Codes	Run	Req	% Comp	Run	% Pass
Report Totals	1	100 %			1	1	100 %	14	100 %	
<input checked="" type="checkbox"/> 737028			SV	301 2502	1	1	100 %	14	100 %	6/7/2010
<input checked="" type="checkbox"/> cpe_baker								14	100 %	6/7/2010
<input checked="" type="checkbox"/> Scan										1:33:14 PM
<input checked="" type="checkbox"/> QAM Lite										1:33:47 PM
<input checked="" type="checkbox"/> QAM Lite										1:34:20 PM
<input checked="" type="checkbox"/> QAM Lite										1:34:51 PM
<input checked="" type="checkbox"/> QAM Lite										1:35:20 PM
<input checked="" type="checkbox"/> QAM Lite										1:35:49 PM
<input checked="" type="checkbox"/> QAM Lite										1:36:18 PM
<input checked="" type="checkbox"/> C_N										1:36:27 PM
<input checked="" type="checkbox"/> C_N										1:36:34 PM
<input checked="" type="checkbox"/> HUM										1:36:42 PM
<input checked="" type="checkbox"/> HUM										1:36:48 PM
<input checked="" type="checkbox"/> HUM										1:36:54 PM
<input checked="" type="checkbox"/> Ping										1:38:04 PM
<input checked="" type="checkbox"/> CM.Stat										1:38:11 PM

At the top of the report there are some additional options. These are defined as follows:

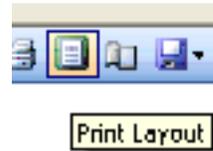
Refresh - Refreshes the current report if parameters are changed



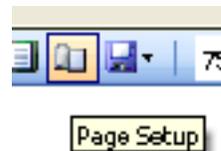
Print - Enables option to print the report



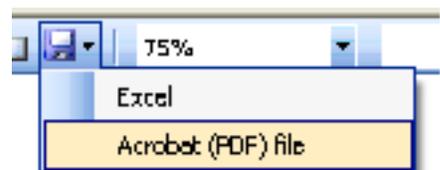
Print Layout - Print preview



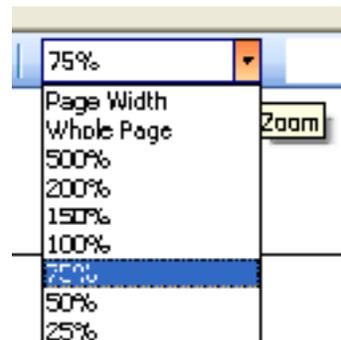
Page Setup - Defines the page layout for printing



Save - Allows saving of the report in Excel or PDF format



Zoom - Adjusts the displayed size of the report



The report headers are defined as follows:

Work Order - Displays the number of completed (passed) macros, failed macros, number of total installs (jobs requiring the macro), and percentage completed (number of jobs passed over total number of jobs). If the macro name is expanded the report will list the individual tests that were performed and indicate pass or fail for each test.

Technician - Displays the technician assigned to the work order.

Macro Compliance - Displays number of macros run by technician, number of macros required by the Job Compliance Matrix, and the percentage of those run to those required for the current work order. If the macro name is expanded, the report will display the individual tests run as part of the marco. Clicking on the macro name will generate a Macro Summary Report.

Data Log Compliance - Displays total number of macro steps run and the percentage of those that passed. Displays the date the macro was run and if the macro is expanded, will list the individual macro steps and the times they were run. If a macro step is clicked on the data log can be viewed. Remember, the Workbench software must be installed and open on the machine viewing the reports to view a data log.

Meter Inventory

Introduction

The Meter Inventory Report is simply a detailed listing of all the 860 DSP and DSPi meters recorded on the TDM server.

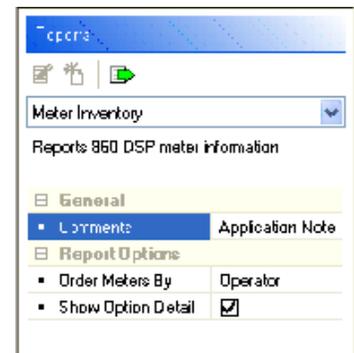
Report Parameters

The report parameters are defined as follows:

Comments - Text entered in this field will be displayed on the report.

Order Meters By - Drop down menu. Choices are Operator, Model, Firmware, Last Connection and Calibration Date. Defines how results are listed.

Show Option Detail - If checked, report displays options enabled on each meter.

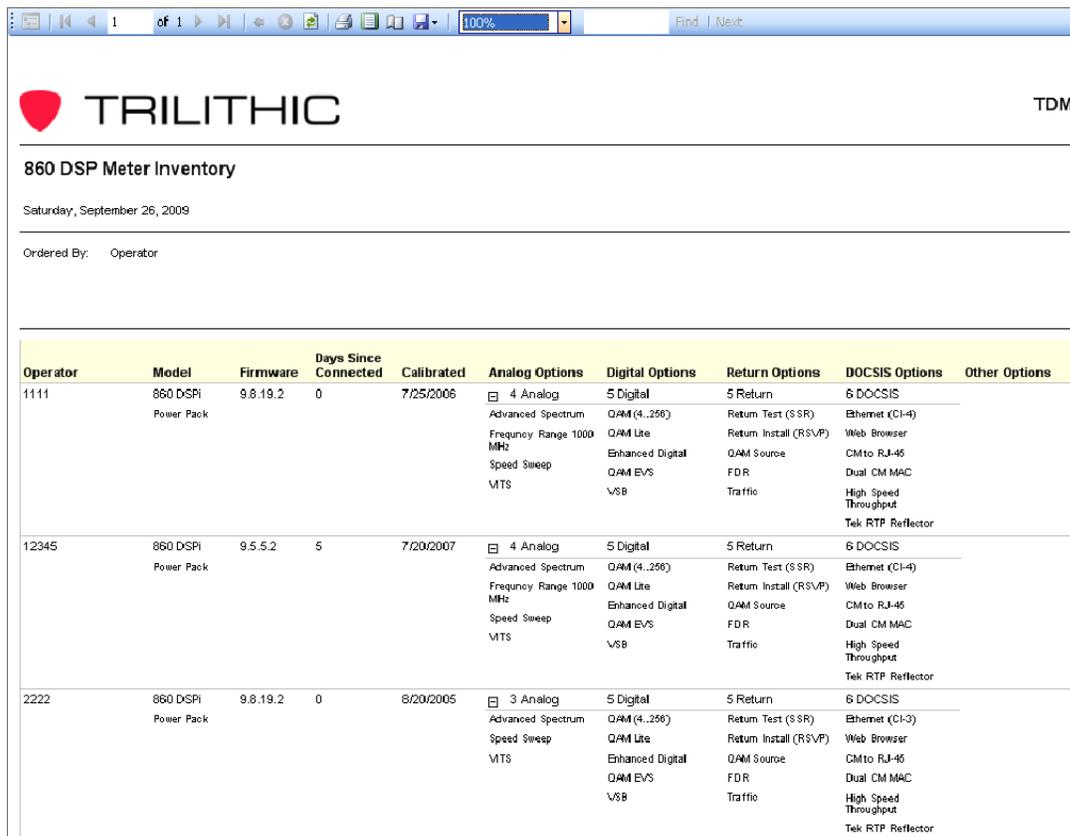


CCRS	
Meter Inventory	
Reports 860 DSP meter information	
General	
Comments	Application Note
Report Options	
Order Meters By	Operator
Show Option Detail	<input checked="" type="checkbox"/>

Explanation of the Report

Below is a sample of a Meter Inventory Report. The report will list the name of the report, the date the report was generated, and how the report is displayed (Ordered by).

The report headers list the operator name of the meter, the model, the firmware version, days since the meter last connected to the TDM server, the calibration date, and if selected the various options installed on each meter.

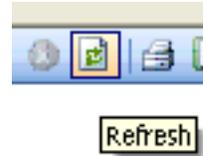


The screenshot shows a web browser window with the Trilithic logo and 'TDM' in the top right. The report title is '860 DSP Meter Inventory' and it was generated on 'Saturday, September 26, 2009'. The report is ordered by 'Operator'. The main table lists three meters with their respective specifications and options.

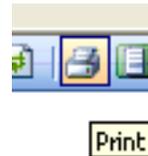
Operator	Model	Firmware	Days Since Connected	Calibrated	Analog Options	Digital Options	Return Options	DOCSIS Options	Other Options
1111	860 DSPi Power Pack	9.8.19.2	0	7/25/2006	<input type="checkbox"/> 4 Analog Advanced Spectrum Frequency Range 1000 MHz Speed Sweep MTS	<input type="checkbox"/> 5 Digital QAM (4..256) QAM Lite Enhanced Digital QAM EVS VSB	<input type="checkbox"/> 5 Return Return Test (S SR) Return Install (RSVP) QAM Source FDR Traffic	<input type="checkbox"/> 6 DOCSIS Ethernet (CI-4) Web Browser CM to RJ-45 Dual CM MAC High Speed Throughput Tek RTP Reflector	
12345	860 DSPi Power Pack	9.5.5.2	5	7/20/2007	<input type="checkbox"/> 4 Analog Advanced Spectrum Frequency Range 1000 MHz Speed Sweep MTS	<input type="checkbox"/> 5 Digital QAM (4..256) QAM Lite Enhanced Digital QAM EVS VSB	<input type="checkbox"/> 5 Return Return Test (S SR) Return Install (RSVP) QAM Source FDR Traffic	<input type="checkbox"/> 6 DOCSIS Ethernet (CI-4) Web Browser CM to RJ-45 Dual CM MAC High Speed Throughput Tek RTP Reflector	
2222	860 DSPi Power Pack	9.8.19.2	0	8/20/2005	<input type="checkbox"/> 3 Analog Advanced Spectrum Speed Sweep MTS	<input type="checkbox"/> 5 Digital QAM (4..256) QAM Lite Enhanced Digital QAM EVS VSB	<input type="checkbox"/> 5 Return Return Test (S SR) Return Install (RSVP) QAM Source FDR Traffic	<input type="checkbox"/> 6 DOCSIS Ethernet (CI-3) Web Browser CM to RJ-45 Dual CM MAC High Speed Throughput Tek RTP Reflector	

At the top of the report there are some additional options. These are defined as follows:

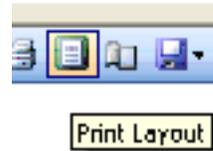
Refresh - Refreshes the current report if parameters are changed



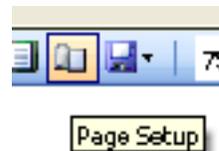
Print - Enables option to print the report



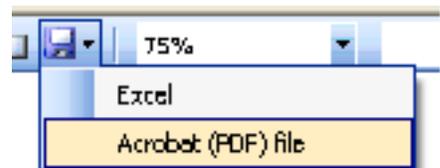
Print Layout - Print preview



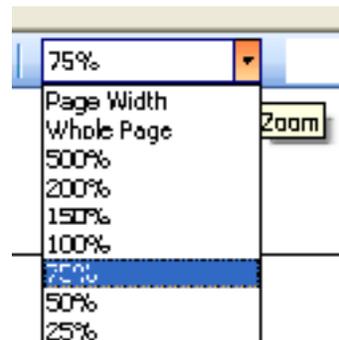
Page Setup - Defines the page layout for printing



Save - Allows saving of the report in Excel or PDF format



Zoom - Adjusts the displayed size of the report



Set Top Compliance Details

Introduction

The Set Top Compliance Details report could also be named the Macro Compliance Details Report. Originally designed to provide technician compliance for the “set top” macro, this report can be used to provide technician compliance for any macro listed on the TDM Job Compliance Matrix. The “set top” macro would typically be a macro run at the set top box to ensure the technician was leaving the job with satisfactory measurements at the customers TV set.

Report Parameters

The report parameters are defined as follows:

Comments - Text entered in this box will be displayed in report.

Date Range - Limits results displayed to specified date range.

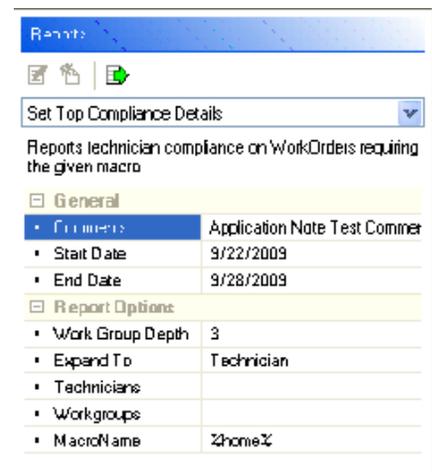
Work Group Depth - Displays depth of work group hierarchy listed on report.

Expand To - Denotes level of report detail. Choices are work groups, technician, work order, macro and data log. Report can be manually expanded.

Technicians - Specific tech IDs can be entered. If left blank all technicians will be listed.

Work Groups - Specific work groups can be entered. If left blank all work groups will be listed.

Macro Name - Defines name of macro. Wild card in the form of %Macro Name%. Macro name must match macro name used in compliance matrix.



The screenshot shows a software window titled "Reports" with a dropdown menu set to "Set Top Compliance Details". Below the dropdown, there is a description: "Reports technician compliance on WorkOrders requiring the given macro". The window is divided into two main sections: "General" and "Report Options".

General	
Comments	Application Note Test Comm
Start Date	9/22/2009
End Date	9/28/2009

Report Options	
Work Group Depth	3
Expand To	Technician
Technicians	
Workgroups	
MacroName	%home%



NOTE

In the Technician and Work Group fields, multiple technicians or work groups can be selected. Separate the values in this field with a comma. For example, if “1234, 2345” was entered in the Technician field the report would display only the results for technicians 1234 and 2345.

Explanation of the Report

Below is a sample of a Set Top Compliance Details report for the macro “home” with one technician’s work order expanded to the data log level:

Work Groups	Technician	Work Orders				Macro Compliance			Data Log Compliance		
		Completed	Failed	Installs	% Comp	Run	Req	% Comp	Run	% Pass	Date/Time
Report Totals	3	4	13	17	24 %	10	17	84 %	88	85 %	
1 Level 3	3	4	13	17	24 %	10	17	84 %	88	85 %	
1 Level 2	3	4	13	17	24 %	10	17	84 %	88	85 %	
App Engineers	2	4	11	15	27 %	14	15	93 %	55	57 %	
1111		4	3	7	57 %	5	7	86 %	24	82 %	
020408	AE		1	1	100 %	4	4	100 %	4	75 %	9/26/2009
021954	AE		0	1	0 %	0	1	0 %	0	0 %	9/28/2009
076470	AE		1	1	100 %	4	4	100 %	4	100 %	9/28/2009
home heal			4	4	100 %	4	4	100 %	4	100 %	9/28/2009
Scan											9:34:20 AM
QAM Lite											9:34:32 AM
QAM Lite											9:34:41 AM
QAM Lite											9:34:49 AM
004227	AE		1	1	100 %	4	4	100 %	4	100 %	9/29/2009
020408	AE		1	1	100 %	4	4	100 %	4	75 %	9/29/2009
076470	AE		1	1	100 %	4	4	100 %	4	100 %	9/29/2009
004227	AE		1	1	100 %	4	4	100 %	4	100 %	9/29/2009
2232		0	8	8	0 %	8	8	100 %	32	31 %	
TVM Results	1	0	2	2	0 %	2	2	100 %	42	78 %	
12345		0	2	2	0 %	2	2	100 %	42	78 %	

The sample above displays the name of the report, the date and time the report was generated, the specified date range for the report, and the text entered in the Comments field (Application Note Test Comments).



NOTE

A green check beside the work order indicates all the tests in the macro have passed. A red X indicates one or more steps have failed.

The report headers are defined as follows:

Work Groups - Displays the hierarchy of work groups, displays the names of the specific work groups.

Technician - Displays the number of technicians in the work group hierarchy. Lists the individual technicians according to work group. The plus sign beside the technician will expand the report to the specific work orders for that technician.

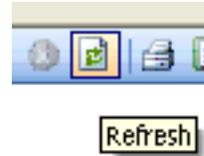
Work Orders - Displays the number of completed (passed) macros, failed macros, number of total installs (jobs requiring the macro), and percentage completed (number of jobs passed over total number of jobs) for each technician up through the work group hierarchy. If the technician is expanded the report will list the individual job numbers and indicate pass or fail.

Macro Compliance - Displays number of macros run by technician, number of macros required by the Job Compliance Matrix, and the percentage of those run to those required for the individual technician up through the work group hierarchy. If the job number is expanded, the report will display the macro name. Clicking on the macro name will generate a Macro Summary Report.

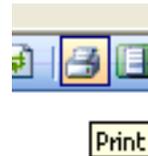
Data Log Compliance - Displays total number of macro steps run and the percentage of those that passed for individual technician up through the work group hierarchy. Displays the date the macro was run and if the macro is expanded, will list the individual macro steps and the times they were run. If a macro step is clicked on the data log can be viewed. Remember, the Workbench software must be installed and open on the machine viewing the reports to view a data log.

At the top of the report there are some additional options. These are defined as follows:

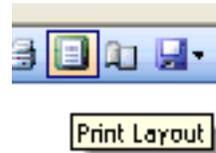
Refresh - Refreshes the current report if parameters are changed



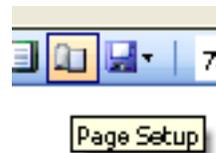
Print - Enables option to print the report



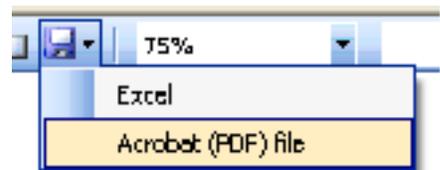
Print Layout - Print preview



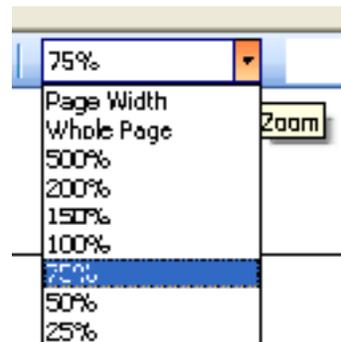
Page Setup - Defines the page layout for printing



Save - Allows saving of the report in Excel or PDF format



Zoom - Adjusts the displayed size of the report



Set Top Compliance Summary

Introduction

The Set Top Compliance Summary Report could also be named the Macro Compliance Summary Report. Originally designed for the “set top” macro, this report can be used to display compliance results for any macro used in the TDM Job Compliance Matrix. Similar to the Set Top Compliance Details Report, this report shows only the results for the work group hierarchy. This report is not expandable to the technician or any lower level. The advantage of this report is that on systems with large TDM databases, this report will generate quickly and give management an overview of work group macro compliance.

Report Parameters

The report parameters are defined as follows:

Comments - Text entered in this box will be displayed in report.

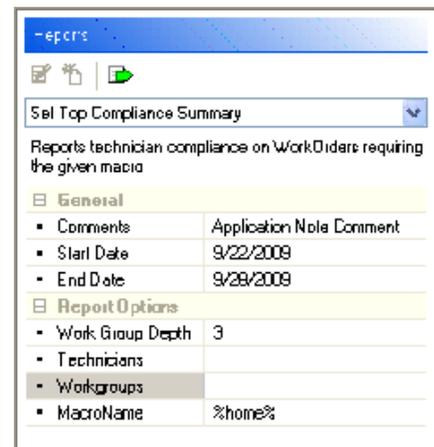
Date Range - Limits results displayed to specified date range.

Work Group Depth - Displays depth of work group hierarchy listed on report.

Technicians - Best left blank. Will give results for specific tech if desired.

Work Groups - Specific work groups can be entered. If left blank all work groups will be listed.

Macro Name - Defines name of macro. Wild card in the form of %Macro Name%. Macro name must match macro name used in compliance matrix.



The screenshot shows a software window titled "reports" with a dropdown menu set to "Set Top Compliance Summary". Below the dropdown is a description: "Reports technician compliance on WorkOrders requiring the given macro". The window is divided into two sections: "General" and "Report Options".

General	
Comments	Application Note Comment
Start Date	9/22/2009
End Date	9/28/2009

Report Options	
Work Group Depth	3
Technicians	
Workgroups	
MacroName	%home%

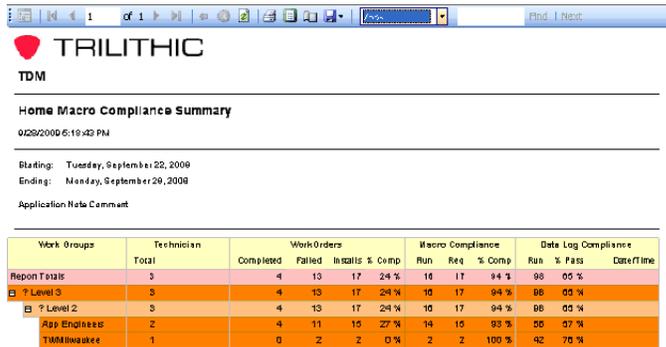


NOTE

In the Technician and Work Group fields, multiple technicians or work groups can be selected. Separate the values in this field with a comma. For example, if “1234, 2345” was entered in the Technician field the report would display only the results for technicians 1234 and 2345.

Explanation of the Report

Below is an example of a Set Top Compliance Summary report for the “home” macro:



The screenshot shows a web browser window displaying a report from Trilithic TDM. The report title is 'Home Macro Compliance Summary' and it was generated on 02/29/2009 at 6:19:43 PM. The report covers the period from Tuesday, September 22, 2009, to Monday, September 29, 2009. There is an 'Application Note Comment' field which is currently empty. Below the header is a table with the following data:

Work Groups	Technician		Work Orders				Macro Compliance			Data Log Compliance		
	Total		Completed	Failed	Installs	% Comp	Run	Req	% Comp	Run	% Pass	Date/Time
Report Totals	3		4	13	17	24 %	16	17	94 %	98	95 %	
Level 3	3		4	13	17	24 %	16	17	94 %	98	95 %	
Level 2	3		4	13	17	24 %	16	17	94 %	98	95 %	
App Engineers	2		4	11	15	27 %	14	15	93 %	95	97 %	
TMMilwaukee	1		0	2	2	0 %	2	2	100 %	92	78 %	

The sample above displays the name of the report, the date and time the report was generated, the specified date range for the report, and the text entered in the Comments field (Application Note Comment).

The report headers are defined as follows:

Work Groups - Displays the hierarchy of work groups, displays the names of the specific work groups.

Technician - Displays the number of technicians in the work group hierarchy.

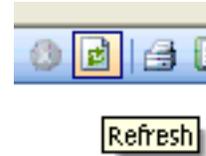
Work Orders - Displays the number of completed (passed) macros, failed macros, number of total installs (jobs requiring the macro), and percentage completed (number of jobs passed over total number of jobs) for each work group and the work group hierarchy.

Macro Compliance - Displays number of macros run by technicians, number of macros required by the Job Compliance Matrix, and the percentage of those run to those required for the individual work groups up through the work group hierarchy.

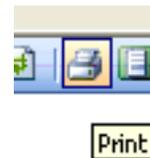
Data Log Compliance - Displays total number of macro steps run and the percentage of those that passed for individual work groups up through the work group hierarchy.

At the top of the report there are some additional options. These are defined as follows:

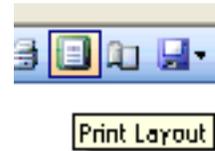
Refresh - Refreshes the current report if parameters are changed



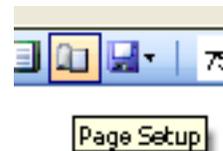
Print - Enables option to print the report



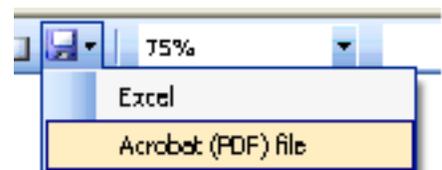
Print Layout - Print preview



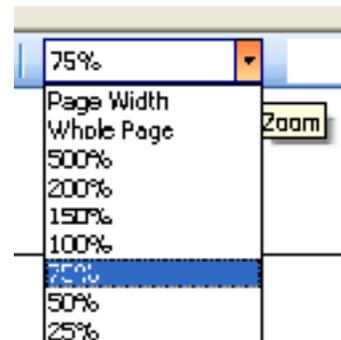
Page Setup - Defines the page layout for printing



Save - Allows saving of the report in Excel or PDF format



Zoom - Adjusts the displayed size of the report



Technician Compliance

Introduction

Probably the most commonly used TDM report is the Technician Compliance Report. This report is at the heart of TDM's workforce management capabilities. With this report, management can determine the answer to two basic questions: Did the technician run the tests we want him to run for the particular job type, and did he leave the customer's home with passing results for those tests? This report can be used to grade technician performance over time, as well as identify problem technicians.

Report Parameters

The report parameters are defined as follows:

Comments - Text entered in this box will be displayed in report.

Date Range - Limits results displayed to specified date range. Date ranges longer than seven days automatically generate a summary report.

Work Group Depth - Displays depth of work group hierarchy listed on report.

Expand To - Denotes level of report detail. Choices are work group, technician, work order, and macro. Report can be manually expanded.

Summary Only - If checked, will display non-expandable report at technician level only.

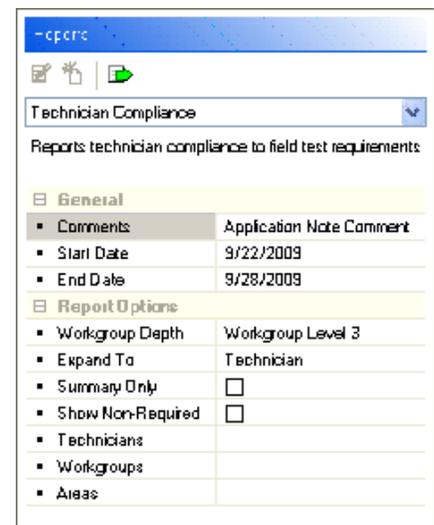
Show Non-Required - If checked, will display all macros uploaded for work order, regardless of whether or not they are required.

Technicians - Specific technicians can be entered. If left blank all technicians will be listed.

Work Groups - Specific work groups can be entered. If left blank all work groups will be listed.

Areas - Leave blank. Used for specific contractor version of TDM.

As stated above, if the date range is set to a period longer than seven days the report generated will be a non-expandable summary report. The reason for this is that on larger systems, the amount of requested data is so large that the report would take several minutes to generate.



The screenshot shows a software window titled "Technician Compliance" with a subtitle "Reports technician compliance to field test requirements". The window contains a tree view with two main sections: "General" and "Report Options".

General	
Comments	Application Note Comment
Start Date	9/22/2009
End Date	9/28/2009

Report Options	
Workgroup Depth	Workgroup Level 3
Expand To	Technician
Summary Only	<input type="checkbox"/>
Show Non-Required	<input type="checkbox"/>
Technicians	
Workgroups	
Areas	



NOTE

In the Technician and Work Group fields, multiple technicians or work groups can be selected. Separate the values in this field with a comma. For example, if “1234, 2345” was entered in the Technician field the report would display only the results for technicians 1234 and 2345.

Explanation of the Report

Below is an example of a Technician Compliance Report with one technician’s work order expanded to the macro level:

Workgroups	Technician	Work Order			Macro Compliance			Data Log Compliance		
		Total	% Pass	Type	Run	Req	% Comp	Run	% Pass	Date
Report Totals		3	23	17 %	17	42	40 %	58	69 %	
? Level 3		3	23	17 %	17	42	40 %	58	69 %	
? Level 2		3	23	17 %	17	42	40 %	58	69 %	
App Engineers		2	10	40 %	15	16	94 %	36	64 %	
1111			5	60 %	7	8	88 %	16	94 %	
123456					0	0	100 %	0	0 %	9/26/2009
020409				AE	2	2	100 %	5	80 %	9/28/2009
021964				AE	1	2	50 %	1	100 %	9/28/2009
076479				AE	2	2	100 %	5	100 %	9/28/2009
spec								1	100 %	9/28/2009
home heal								4	100 %	9/28/2009
004227				AE	2	2	100 %	5	100 %	9/28/2009
2222			5	20 %	8	8	100 %	20	40 %	
TVMilwaukee		1	13	0 %	2	26	8 %	22	77 %	
12345			13	0 %	2	26	8 %	22	77 %	



NOTE

A green check mark beside the work order number denotes a passing job. A red X indicates a job where one or more macro steps have failed, or a required macro was not run. A yellow triangle indicates there is no flat file information for that job number. A mistyped work order number (task number) in the technicians meter is a common cause for this.

The report headers are defined as follows:

Work Groups - Displays the hierarchy of work groups, displays the names of the specific work groups.

Technician - Displays the number of technicians in the work group hierarchy. Lists the individual technicians according to work group. The plus sign beside the technician will expand the report to the specific work orders for that technician.

Work Orders - Displays the total number of work orders for each technician up through the work group hierarchy. Displays the percentage of those work orders that had passing results (all steps in all required macros passed). Lists the job type as determined by the flat file.

Macro Compliance - Displays number of macros run by technician, number of macros required by the Job Compliance Matrix, and the percentage of those run to those required for the individual technician up through the work group hierarchy. If the job number is expanded, the report will display the macro name. Clicking on the macro name will generate a Macro Summary Report. From this report the individual data logs can be accessed. To open a data log, the Workbench software must be installed and open on the local machine.

Data Log Compliance - Displays total number of macro steps run and the percentage of those that passed for individual technician up through the work group hierarchy. Displays the date the macro was run.

Report Analysis

In the example above, if we look at the values in the horizontal fields for tech 1111 we can see that this tech had 5 work orders. Of those 5, 60% fully passed. He ran 7 of the 8 required macros for a compliance percentage of 88%. In the data log compliance field we see that of the 16 macro steps run 94% passed. This indicates that, with a few exceptions, this tech is running the required macros and leaving the job with passing results.

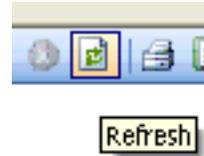
If we look at tech 2222 we see that of the 5 work orders he had only 20% passed. He was fully compliant regarding the number of macros run (100%), however the data log compliance shows that of the 20 macro steps run only 40% passed. This indicates that the tech is running the required macros but leaving the job with mostly failed results.

Based on these two technicians, the analysis shows that tech 2222 is likely to have more service callbacks than tech 1111. If technician 2222's performance can be improved, repeat visits to the customer's home can be reduced. This will lower costs due to fewer truck rolls and improve overall customer satisfaction.

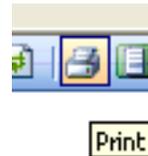
The Technician Compliance Report is a powerful tool to help identify technicians that need additional training or supervision and work groups that may need attention due to poor performance.

At the top of the report there are some additional options. These are defined as follows:

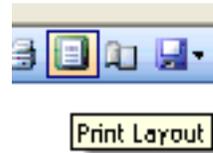
Refresh - Refreshes the current report if parameters are changed



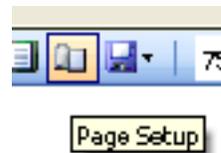
Print - Enables option to print the report



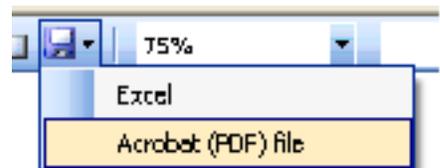
Print Layout - Print preview



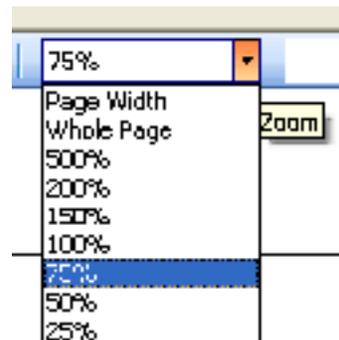
Page Setup - Defines the page layout for printing



Save - Allows saving of the report in Excel or PDF format



Zoom - Adjusts the displayed size of the report



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