

SmartClass

VDSL Tester
(Conexant/Accelity chipset)

User's Guide

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Federal Communications Commission (FCC) Notice This product was tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial or residential environment. This product generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

The authority to operate this product is conditioned by the requirements that no modifications be made to the equipment unless the changes or modifications are expressly approved by JDSU.

Industry Canada Requirements This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

EMC Directive Compliance This product was tested and conforms to the EMC Directive, 89/336/EEC as amended by 92/31/EEC and 93/68/EEC for electromagnetic compatibility.

Low Voltage Directive Compliance

This product was tested and conforms to the Low Voltage Directive, 73/23/EEC as amended by 93/68/EEC. Conformity with this directive is based upon compliance with the harmonized safety standard, UL61010-1.

WEEE and Battery Directive Compliance

JDSU has established processes in compliance with the Waste Electrical and Electronic Equipment (WEEE) Directive, 2002/96/EC, and the Battery Directive, 2006/66/EC.

This product, and the batteries used to power the product, should not be disposed of as unsorted municipal waste and should be collected separately and disposed of according to your national regulations. In the European Union, all equipment and batteries purchased from JDSU after 2005-08-13 can be returned for disposal at the end of its useful life. JDSU will ensure that all waste equipment and batteries returned are reused, recycled, or disposed of in an environmentally friendly manner, and in compliance with all applicable national and international waste legislation.

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Instructions for returning waste equipment and batteries to JDSU can be found in the Environmental section of JDSU's web site at www.jdsu.com. If you have questions concerning disposal of your equipment or batteries, contact JDSU's WEEE Program Management team at WEEE.EMEA@jdsu.com.

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About this Guide

This chapter describes how to use this guide. Topics discussed in this chapter include the following:

- [“Purpose and scope” on page viii](#)
- [“Assumptions” on page viii](#)
- [“Safety and compliance information” on page viii](#)
- [“Conventions” on page viii](#)

Purpose and scope

The purpose of this guide is to help you successfully use the features and capabilities of the SmartClass's VDSL Testing option.

This guide includes task-based instructions that describe how to configure, use, and troubleshoot the general functions of the SmartClass. Additionally, this guide provides a description of JDSU's warranty.

Assumptions

This guide is intended for novice, intermediate, and experienced users who want to use the SmartClass effectively and efficiently. We are assuming that you have basic computer experience and are familiar with basic telecommunication concepts, terminology, and safety.

Safety and compliance information

Safety and compliance information are contained in a separate guide and are provided in printed format with the product.

Conventions

This symbols and safety terms used in this guide are described in the following tables.

Table 1 Symbol conventions



This symbol represents a general hazard.



This symbol represents a risk of electrical shock.



This symbol represents a risk of explosion



This symbol represents a Note indicating related information or tip.



This symbol, located on the equipment or its packaging indicates that the equipment must not be disposed of in a land-fill site or as municipal waste, and should be disposed of according to your national regulations.

Table 2 Safety definitions

| | |
|----------------|---|
| DANGER | Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. |
| WARNING | Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury. |
| CAUTION | Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. |

Getting Started

1

This chapter provides a general description of the SmartClass VDSL Services Tester. Topics discussed in this chapter include the following:

- [“Ship list” on page 2](#)
- [“Features and capabilities” on page 2](#)
- [“Preparation for use” on page 2](#)

Ship list

The VDSL Services Tester typically ships in anti-static packing material to stabilize the unit inside the box. The following items ship standard with the SmartClass VDSL Services Tester:

- SmartClass VDSL Services Tester unit
- Universal Power Adapter — A power adapter designed specifically for the SmartClass Tester is included. When supplying power to the SmartClass Tester using an adapter, you must use this adapter. Additional AC line plug adapters are also included.
- Carrying Bag
- Rechargeable NiMH Battery Pack (installed)
- Bed-of-Nails Cable
- Documentation CD. The User's Guide is included as a PDF on the CD. Safety information is provided separately, in printed format.

When unpacking the unit, verify that each of the standard items, and any optional items you ordered, are included in the package.

Features and capabilities

Features and capabilities of the SmartClass VDSL Services Tester include the following:

- Qualification of VDSL access service
- Terminate Mode testing
- Through Mode testing

Preparation for use

This section explains how to start using your VDSL Services Tester.

General preparation

When you unpack the VDSL Services Tester, do the following:

- Inspect the tester for damage.
- If undamaged, save the box and packing materials in case you need to ship the tester in the future.

Before using the VDSL Services Tester for the first time, do the following:

- Turn the unit ON, and then verify that it is operating properly by navigating through a few menus.
- If the Batt. LED is red, re-charge or replace the battery pack.

Changing the AC line plug fitting

The VDSL Services Tester's AC Adapter/Charger allows different AC line plug fittings.

To change the AC line plug fitting

- 1 If an AC line plug fitting is already installed, do the following:
- 2 Press and hold the button just below the fitting.
- 3 Slide the fitting out of the slot.
- 4 Select the appropriate AC line plug adapter.
- 5 Slide the AC line plug adapter into the slot.
You will hear a click when the fitting is fully inserted.

The AC Adapter/Charger is ready for use.

Quick Tour

2

This chapter introduces the keypad, LEDs, connectors, and graphical user interface. Topics discussed in this chapter include the following:

- [“Exploring the front panel” on page 6](#)
- [“Exploring the connector panel” on page 7](#)
- [“Exploring the bottom panel” on page 8](#)
- [“Navigating the user interface” on page 8](#)
- [“Using the keypad” on page 10](#)

Exploring the front panel

The controls and LEDs on the SmartClass front panel, shown in [Figure 1](#), are used to operate the unit, set up tests, and view data.



Figure 1 SmartClass VDSL Services Tester front panel

The following paragraphs describe each of the controls and LEDs on the front panel.

Status LEDs These indicators report the status of the unit. The function of each LED is described in [“LEDs” on page 20](#).

LCD The LCD is a 240 x 160 pixel transfective black and white display with contrast control and backlight.

Cancel key Use the Cancel key to exit a menu without changing your settings, or to return to the previous menu.

OK key Use OK to accept a changed setting or to proceed to the next menu.

Arrow keys Use the arrow keys to navigate through menu selections.

Keypad Use the keypad to enter numbers, make menu selections, enter alphabetic characters, and so on. Throughout the menus, the numbers associated with each function provide a quick way to perform tests with simple number sequences.

Backlight key Use the backlight key to turn the LCD backlight on or off.

Power key Use the power key to turn the unit power on or off. Press and hold for 1 second to turn on or off.

Exploring the connector panel

The SmartClass connector panel is used to connect the VDSL Services Tester to the line under test. [Figure 2](#) shows the connector panel.

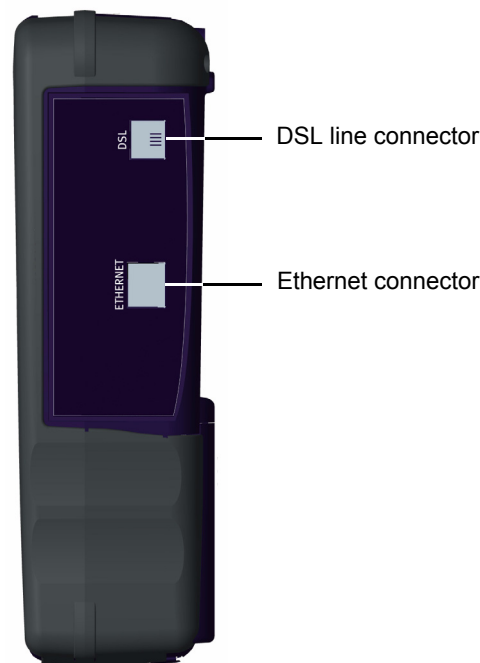


Figure 2 SmartClass VDSL Services Tester connector panel

Use the 6-pin modular **DSL** jack when connecting to VDSL circuits. If you are testing in through mode, connect an Ethernet cable to the **Ethernet** jack.



WARNING: ELECTRICAL SHOCK

Electrical shock may result in serious injury or death. Use care when connecting to telecommunications circuits, to be sure that you do not come in contact with exposed conductors or power mains. Connect TNV signals to TNV ports only.



CAUTION: FIRE HAZARD

To reduce the risk of fire, use only 26 AWG or larger telecommunications line cord between the DSL jack and the wall.



NOTE: ELECTROSTATIC DISCHARGE IMMUNITY

When using an Ethernet crossover cable, JDSU recommends using a shielded crossover cable for the best immunity to electrostatic discharge (ESD).

Exploring the bottom panel

The SmartClass' AC Adapter/charger and USB connector are located on the bottom panel. The USB connector is used when running reports from a remote device (typically a PC or laptop) or updating the software.



Figure 3 SmartClass bottom panel

Navigating the user interface

The user interface of the SmartClass is designed to be intuitive and easy to use. Using the LCD and keypad, you can view test results, set up the unit, and configure test parameters. This section describes the user interface, and explains how to navigate through the menus and screens.

When you power up the SmartClass VDSL Services Tester, the user interface appears (see [Figure 4](#)).



Figure 4 SmartClass user interface (example)

There are 3 types of screens on the user interface:

- Menu screens
- Data entry screens
- Results screens

Menu screens Figure 6 illustrates a typical Menu screen.

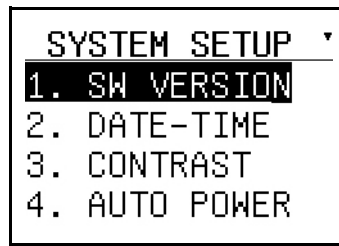


Figure 5 SmartClass Menu screen (example)

Menus screens provide a series of selections that take you to another menu screen, a data entry screen, or a results screen.

Data entry screens Figure 6 illustrates Data entry screens.

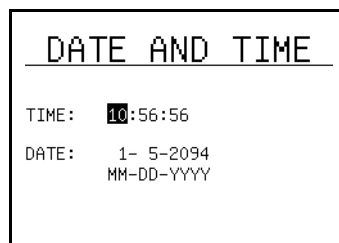
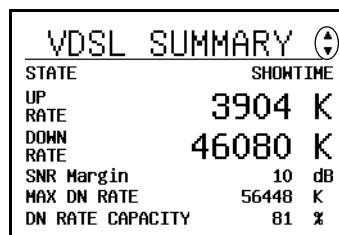


Figure 6 SmartClass Data entry screen (example)

Data entry screens provide you selections to either choose from a list of options, or enter data using the keypad (as in example above).

Result screens Figure 7 illustrates a Result screen.



These arrows indicate more items are available by pressing the up or down arrow key.

Figure 7 SmartClass Result screen (example)

These screens display error logs or test results. The results are split into categories. Press the arrow keys to navigate among the results categories (screens).

Using the keypad

Use the keypad to enter alpha-numeric values, or to navigate to different screens by specifying the menu number corresponding to the screen.

Selecting a menu option

There are two ways to select a menu option.

- Use the arrow keys to scroll to the desired option then press the OK key.
- Press the number associated with the menu option.

Specifying On/Off or Yes/No values

On a data entry screen you enter data or specify values. There are two ways to specify on/off or yes/no values.

- Use the arrow keys to scroll to the desired option then press the OK key to toggle the value on or off.
- Press the number associated with the menu option to toggle the value on or off.

Entering numeric values

To enter numeric values

- 1 Use the arrow keys to scroll to and highlight the setting you want to specify.
- 2 Press OK.
- 3 Use the keypad to type the numeric value.
- 4 If you want to move to the next field, either wait one second for the cursor to jump, or use the right arrow key.

Typing text

To type text

- 1 Use the arrow keys to scroll to and highlight the setting you want to specify.
- 2 Press OK.
- 3 Use the keypad to type the text.

Repeated presses scroll through the selections for that key. For example, repeatedly pressing the 2 key will scroll through A, B, C and 2.

To enter special characters, press the asterisk(*) or pound/hash (#) key until the desired character appears.

To toggle upper/lower case, press the up arrow.

Use the down arrow to delete one character to the left.

To move to the next field, either wait one second for the cursor to jump, or use the right arrow key.

If you move the cursor between characters, typing characters will insert new characters at that location. To append characters, position the cursor at the end of your text, after the last character.

Instrument Settings

3

This chapter describes how to configure the basic settings of the instrument. Topics discussed in this chapter include the following:

- [“Viewing software versions” on page 12](#)
- [“Setting the date and time” on page 12](#)
- [“Adjusting the contrast” on page 13](#)
- [“Specifying the auto power down setting” on page 13](#)
- [“Setting the language” on page 14](#)
- [“Restoring factory defaults” on page 14](#)

Viewing software versions

There are two screens that report software versions.

- one reports the unit's software version
- the other reports the software version of the internal modem

To view the unit's software version

- 1 Select **SYSTEM SETUP** from the Main Menu.
- 2 Select **SW VERSION**.
The software version appears.

To view the software version of the modem

- 1 Select **VDSL TEST** from the Main Menu.
- 2 Select **MODEM INFO**.
The software version of the modem appears.

Setting the date and time

The VDSL Services Tester has an internal clock that you can set to provide accurate time stamps for test results. The clock uses a 24-hour format.

The following procedure describes how to set the time.

To set the time

- 1 Select **SYSTEM SETUP** from the Main Menu.
- 2 Select **DATE-TIME**.
- 3 Enter the current hour, minutes, and seconds.
Use the arrow keys to move among each field.
- 4 Press the **OK** key.

The time is set.

The following procedure describes how to set the date.

To set the date

- 1 Select **SYSTEM SETUP** from the Main Menu.
- 2 Select **DATE-TIME**.
- 3 Scroll down to the **DATE**.
- 4 Enter the current month, day, and year in numerical form. For example, the date April 1, 2004 would be 4/1/2004.
- 5 Press the **OK** key.

The date is set.

Changing the date format

Using the Date and Time menu, you can change the format of the date. You can specify either MM/DD/YYYY or DD/MM/YYYY formats.

To change the date format

- 1 Select **SYSTEM SETUP** from the Main Menu.
- 2 Select **DATE-TIME**.
- 3 Scroll down to the date format.
- 4 Press the left or right arrow key to toggle between the two formats.

The date format is set.

Adjusting the contrast

The following procedure describes how to adjust the contrast.

To adjust the contrast

- 1 Select **SYSTEM SETUP** from the Main Menu.
- 2 Select **CONTRAST**.
- 3 Change the contrast level using the up or down arrow key.
- 4 Press the **OK** key.

The contrast is set.

Specifying the auto power down setting

This menu allows you to select whether to automatically power down the unit to conserve battery life, and set the time to wait before power down. The following procedure describes how to control auto power down.

NOTE:

The VDSL Services Tester will not automatically power down when connected to a charger.

To specify the auto power down setting

- 1 Select **SYSTEM SETUP** from the Main Menu.
- 2 Select **AUTO POWER**.
- 3 Use the left or right arrow keys to move among the selections:
 - OFF - never automatically power down
 - 5, 10, or 15 Minutes - the amount of time to wait (in minutes) after a keypress or no line activity before power down.
- 4 Press the **OK** key.

The auto power down setting is specified.

Setting the language

The LANGUAGE menu allows you to change the language of the user interface.

To set the language

- 1 Select **LANGUAGE** from the Main Menu.
- 2 Select the desired language.

The user interface changes to the specified language.

Restoring factory defaults

The following procedure describes how to reset the VDSL Services Tester to factory default settings.

NOTE:

Restoring factory defaults resets test application settings and system settings (such as contrast and language).

To reset to factory defaults

- 1 Select **SYSTEM SETUP** from the Main Menu.
- 2 Select **FACTORY DEFS**.
You may have to scroll to find the FACTORY DEFS selection.
A confirmation menu appears.
- 3 Press the **OK** key to reset the defaults or **Cancel** to keep the current settings

VDSL Testing

4

This chapter provides task-based instructions for gathering VDSL statistics and verifying connectivity. Topics discussed in this chapter include the following:

- [“Specifying modem settings” on page 16](#)
- [“Verifying connectivity” on page 16](#)
- [“Running a VDSL quick test” on page 17](#)
- [“SELT Termination” on page 17](#)

Specifying modem settings

Before you begin testing, make sure the modem settings are appropriate for your situation.

To specify modem settings

- 1 Select **SYSTEM SETUP** from the Main Menu.
- 2 Select **MODEM SETUP**.
- 3 Specify the Modem Power Save settings.
 - a Select **MODEM POWER**.

This specifies whether to automatically power down the modem to conserve battery life, and set the time to wait before power down.
 - b Use the left or right arrow keys to move among the selections:
 - **OFF** - never automatically power down
 - **1–5 Minutes** - the amount of time to wait (in minutes) after a keypress or no line activity before power down.
 - c Press the **OK** key.
- 4 Specify the Capacity equation.
 - a Select **CAPACITY EQ**.

This specifies the method used to calculate the Capacity result.
 - b Use the left or right arrow keys to choose whether to divide the downstream connect rate (DN CONN RATE) by the max attainable **user** rate (MAX ATT USER RATE) or the max attainable **line** rate (MAX ATT LINE RATE)
 - c Press the **OK** key.

The modem settings are specified.

Verifying connectivity

To verify that you can connect to the far end, run a connectivity test.

To verify connectivity

- 1 If the tester is not on, press the Power key to turn it on.
- 2 Connect a cable from the line to the **DSL** jack on the right side of the VDSL Services Tester.
- 3 Select VDSL TEST.

The modems begin to synchronize. Modem synchronization may take a few minutes.

After the modems have achieved synchronization, the Sync light turns green. This verifies connectivity.

Running a VDSL quick test

Run a VDSL quick test when you want to connect to the far end of the circuit and gather statistics.

To run a VDSL quick test

- 1 If the tester is not on, press the Power key to turn it on.
- 2 Connect a cable from the line to the **DSL** jack on the right side of the VDSL Services Tester.
- 3 Select VDSL TEST, and then VDSL RESULTS.

The VDSL SUMMARY results screen appears.

The modems begin to synchronize. Modem synchronization may take a few minutes.

After the modems have achieved synchronization, statistics are gathered and displayed.

For more information on the results, see [Chapter 5 “Interpreting Test Results”](#).

SELT Termination

Single End Loop Test (SELT) is used to test a copper loop when there is no equipment installed at the far end. It is typically used for pre-qualification, that is, testing whether a loop is capable of supporting DSL service. In some cases, SELT testing is aided by placing a termination at the far end of the line. This test sets the VDSL modem to provide a line termination where the modem is idle and not transmitting.

To enable SELT Termination

- 1 If the tester is not on, press the Power key to turn it on.
- 2 Connect a cable from the line to the **DSL** jack on the right side of the VDSL Services Tester.
- 3 Select VDSL TEST, and then SELT TERM.

After initializing the modem, the SELT verification screen is displayed.

The timer indicates the time until the next restart.

The modem must periodically reset (every 3 minutes) to maintain the termination.

The far end technician can continue testing.

Interpreting Test Results

5

This chapter describes the test results that are gathered when running a test. Topics in this chapter include the following:

- [“LEDs” on page 20](#)
- [“VDSL Summary results” on page 20](#)
- [“Saving results” on page 21](#)

About VDSL results

After the SmartClass VDSL Services Tester synchronizes with the DSLAM, the unit immediately displays results on the LCD. You can view many additional results by pressing the arrow keys.

LEDs

These status LEDs report the status of the unit. The function of each LED is described in [Table 3](#)

Table 3 Status LEDs

| LED | Function |
|-------|--|
| Sync | Reports the status of modem synchronization. <ul style="list-style-type: none">– Flashing green indicates that the modems are training.– Solid green indicates that the modems are synchronized. |
| Frame | Not used. |
| Error | <ul style="list-style-type: none">– Reports error and alarm conditions. Solid red indicates:<ul style="list-style-type: none">– LOS (Loss of Signal)– CRC (Cyclical Redundancy Check) Upstream or Downstream– HEC (Header error correction) Upstream or Downstream |
| Batt | A multi-color LED that indicates the battery status. <ul style="list-style-type: none">– Solid green indicates that an external source is powering the unit.– Solid red indicates a low battery.– Solid amber indicates the battery is charging. |

VDSL Summary results

This category provides a summary of the most frequently used test results. [Table 4](#) describes the Modem Summary results.

Table 4 Modem Summary results

| Result | Description | Range |
|-------------|--|-------------------------------|
| Modem state | The current operational state for the modem. | HANDSHAKE, TRAINING, SHOWTIME |
| UP RATE | Current upstream connection rate | 13–26 Mbps |
| DOWN RATE | Current downstream connection rate | 13–52 Mbps |
| SNR MARGIN | Noise margin | 0–63.5 dB |
| MAX DN RATE | Maximum downstream connection rates | 13–52 Mbps |

Table 4 Modem Summary results (Continued)

| Result | Description | Range |
|----------------------|--|-----------|
| DN RATE CAPACITY | The percentage of total bandwidth currently used by the actual downstream connect rate. | 0–100% |
| UP INTERLEAVED DELAY | Upstream interleaved delay, specified in ms. | N/A |
| DN INTERLEAVED DELAY | Downstream interleaved delay, specified in ms. | N/A |
| US TX POWER | Power level, in dB, of the VDSL signal upstream (transmitted by the SmartClass). | N/A |
| ATTENUATION | The degradation of signal strength in dB upstream and downstream. It is the difference in Tx power from the transmitter to receiver. | 0–63.5 dB |
| EST LOOP LENGTH | The estimated loop length. | N/A |
| FEC ERRORS | Forward Error Correction Errors. | N/A |
| CRC ERRORS | Cyclical redundancy check upstream and downstream | N/A |
| SEF | Severely errored frames. | N/A |
| LOS | Loss of Signal Errors. Number of errors due to loss of signal. | N/A |

Saving results

After running a test, you can save the results, and then view, print, or import them into Excel at a later time.

You can store up to 16 sets of results.

To save test results

- 1 After your test is finished, press the **Cancel** key to go back to the MODEM TEST menu.
- 2 Select **RESULT STORE**.
- 3 Scroll to the desired location number.
- 4 Press the **1** key.
- 5 Enter the file name.
- 6 Press the **OK** key.

The test results are stored.

For more information on downloading the results to Excel, see the instructions provided with the Download Manager utility.

Maintaining the Batteries

6

This chapter describes how to maintain the VDSL Services Tester's batteries. Topics discussed in this chapter include the following:

- [“Prolonging battery life” on page 24](#)
- [“Recharging the battery” on page 24](#)
- [“Replacing the battery pack” on page 25](#)

Prolonging battery life

The SmartClass Tester uses a rechargeable NiMH battery pack. To prolong the life span of any batteries, follow the guidelines below:

- When not connected to the unit, store the batteries in a cool, dry, and clean environment. Do not leave the batteries in a car or truck, particularly during extremely hot or cold weather.
- The first time you use the SmartClass Tester, or after prolonged storage, use the AC adapter to power the unit.
- If the battery capacity is depleted or if the batteries have been stored for a prolonged period, charge the batteries before use.
- If charging the batteries while they are in the unit, use the JDSU AC adapter to charge the batteries. Do not use an un-approved charger.
- The charger will not charge the batteries when it is extremely hot or cold.
- Always carry fully charged spare batteries.
- Always dispose of batteries properly.

The following section describes how to recharge and replace the batteries.

Recharging the battery

When the Batt LED lights red, the battery should be charged or replaced.

NOTE:

You can test a circuit and recharge the batteries at the same time. If you do not want to interrupt the current test, you may leave the power on and connect the AC power adaptor.

To charge the battery

- 1 Connect one end of the AC adapter to the connector on the bottom of the VDSL Services Tester.
- 2 Connect the other end of the AC adapter to an AC power supply.



WARNING: ELECTRICAL SHOCK

Electrical shock may result in serious injury or death. Be sure the AC Adapter is connected to the correct voltage mains. Do not use outdoors or in wet locations. Use only the AC Adapter supplied with the test set.

- 3 Let the SmartClass charge for 5 hours for a fast charge; for maximum capacity, allow the SmartClass to (trickle) charge overnight.

The charging time will be the same whether the power is on or off.

The **Batt** LED is amber when the unit is fast charging. The SmartClass will trickle charge at other times when the charger is connected and the Batt LED is green.

After the Batt LED turns green (fast charge is complete), allow the unit to trickle charge overnight for maximum performance.

Charging the batteries is complete.

Replacing the battery pack

The battery compartment is located on the back of the unit, as shown in Figure 8.



Figure 8 Back of SmartClass VDSL Services Tester

The following procedure describes how to replace the battery pack.

To replace the battery pack

- 1 Turn the power off.



CAUTION: INSTRUMENT DAMAGE

Failure to turn the power off before removing the batteries from the VDSL Services Tester could damage internal components and/or corrupt the software. Always power down the unit before removing the batteries.

- 2 Remove the battery compartment door by pressing down and pushing toward the bottom end.
- 3 Replace the battery pack.
- 4 Replace the battery compartment door.

Replacing the batteries is complete.

Troubleshooting

7

This chapter describes how to identify and correct problems related to the SmartClass VDSL Services Tester. Topics discussed in this chapter include the following:

- [“Getting Technical Assistance” on page 28](#)
- [“Additional information” on page 28](#)
- [“Resolving problems” on page 28](#)

Getting Technical Assistance

If you need assistance or have questions related to the use of this product, use the information in [Table 5](#) to contact JDSU's Technical Assistance Center (TAC) for customer support. For the latest TAC contact information, go to www.jdsu.com or contact your local sales office for assistance. The regional sales office phone numbers are listed on the back of this manual.

Table 5 Technical assistance centers

| Region | Phone Number | |
|------------------------------|---|--|
| Americas | 1-866-JDSU 1-866-228-3762 301-353-1550 | tac@jdsu.com |
| Europe, Africa, and Mid-East | +49 (0) 7121 86 1345 (JDSU Germany) | hotline.europe@jdsu.com |
| Asia and the Pacific | +852 2892 0990 (Hong Kong) +8610 6833 7477 (Beijing-China) | |

During off-hours, you can request assistance by doing one of the following: leave a voice message at the TAC for your region; email the North American TAC (tac@jdsu.com); submit your question using our online Technical Assistance request form at www.jdsu.com.

Additional information

For additional information, visit the SmartClass VDSL section of the following web page:

http://www.jdsu.com/test_and_measurement/products/access/index.html

Resolving problems

If you are having trouble with the VDSL Services Tester, the following sections describe common problems and solutions. You should verify whether your problem is listed here before contacting technical assistance.

The following section addresses questions that may be asked about completing tests with the SmartClass. There are two sections included:

- General
- VDSL tests

General testing The following section addresses questions about testing in general using SmartClass Testers.

Issue

Inconsistent test results.

Resolution

Verify that your test leads are good and are connected properly for the test you are performing.

VDSL testing The following section addresses questions about VDSL testing.

Issue

The modem cannot achieve synchronization with the Central Office (CO).

Resolution

Inability to sync can have many causes. Perform the following steps to troubleshoot:

Disconnect the customer's VDSL modem.

Verify you are connected to the correct pair.

Isolate the premise wiring.

Check for a premise alarm system.

Verify that the copper pair is provisioned for VDSL at the CO.

Try testing at the CO/Exchange on the customer pair.

Check the DSLAM modem vendor and software version.

Issue

The modem gets sync with the CO, but the rate is lower than expected.

Resolution

Verify that you are on a VDSL line.

Check whether the max rate on the DSLAM is limited.

Check for a premise alarm system on the same pair.

Check the attenuation.

Make sure that you are connected on pins 3 and 4 instead of 2 and 5.

Verify the noise margin.

Specifications

A

This appendix contains specifications for the VDSL Services Tester. Topics discussed in this appendix include the following:

- [“Connector specifications” on page 32](#)
- [“Environmental specifications” on page 32](#)
- [“Power specifications” on page 32](#)
- [“Warranty information” on page 33](#)

Connector specifications

[Table 6](#) provides the connector specifications.

Table 6 Connector specifications

| Connector | Specification |
|-----------|-----------------------|
| DSL | 6-pin modular (RJ-11) |
| Ethernet | 8-pin modular (RJ-45) |
| USB | USB 2.0 |

Environmental specifications

[Table 7](#) provides the environmental specifications.

Table 7 Environmental specifications

| Parameter | Specification |
|-----------------------|--------------------------------|
| Operating Temperature | -5° to +50° C (23° to +120° F) |
| Storage Temperature | -30° to 60° C (-22° to 140° F) |
| Humidity | 10% to 80% RHNC |

Power specifications

Although battery life varies, depending on the type of test, [Table 8](#) provides specifications for the battery life and the specifications for the AC adapter.

Table 8 Power specifications

| Parameter | Specification |
|---------------------|---|
| Operating time | Approximately 20 on/off cycles and tests on a full charge, depending on usage and conditions. |
| Charging time | 5 hours for a fast charge; for a full charge, allow to trickle charge overnight |
| Power supply input | 100 to 240 VAC, 50/60 Hz, autosensing |
| Power supply output | 12 V, 1.25 Amp |

Warranty information

The warranties described herein shall apply to all commercially available JDSU Communications Test and Measurement products. Any additional or different warranties shall apply only if agreed to by JDSU in writing. These warranties are not transferable without the express written consent of JDSU.

Hardware Warranty — JDSU warrants that Hardware Product sold to customer shall, under normal use and service, be free from defects in materials and workmanship. Information regarding the specific warranty period for this product can be obtained by contacting your local JDSU Customer Service Representative, or at our web site www.jdsu.com. The warranty period shall begin upon shipment to Customer. Hereafter these periods of time shall be collectively referred to as the “Initial Warranty Period.”

JDSU’s obligation and customer’s sole remedy under this Hardware Warranty is limited to the repair or replacement, at JDSU’s option, of the defective product. JDSU shall have no obligation to remedy any such defect if it can be shown: (a) that the Product was altered, repaired, or reworked by any party other than JDSU without JDSU’s written consent; (b) that such defects were the result of customer’s improper storage, mishandling, abuse, or misuse of Product; (c) that such defects were the result of customer’s use of Product in conjunction with equipment electronically or mechanically incompatible or of an inferior quality; or (d) that the defect was the result of damage by fire, explosion, power failure, or any act of nature.

JDSU performed repairs shall be warranted from defective material and workmanship for a period of ninety (90) days, or until the end of the Initial Warranty Period, whichever is longer. Risk of loss or damage to Product returned to JDSU for repair or replacement shall be borne by customer until delivery to JDSU. Upon delivery of such product, JDSU shall assume the risk of loss or damage until that time that the product being repaired or replaced is returned and delivered to customer. Customer shall pay all transportation costs for equipment or software shipped to JDSU for repair or replacement. JDSU shall pay all transportation costs associated with returning repaired or replaced product to customer.

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