VIAVI

Seeker HL

In-Home Leakage Detector

User's Guide

Notice

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General Information

Ordering Information

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Where to Get Technical Support

Phone US: +1-844-GO-VIAVI or +1-844-468-4284

Outside US: +1-855-275-5378

Email: **Trilithic.support@viavisolutions.com**

Website: **https://support.viavisolutions.com/welcome**

How this Manual is Organized

This manual is divided into the following chapters:

- Chapter 1, "General Information" provides contact information and describes how this operation manual is structured.

- Chapter 2, "Seeker HL Introduction" introduces what the Seeker HL is and what it does. This chapter discusses the practical application, connections and controls of the Seeker HL. Finally, this chapter discusses the battery of the Seeker HL and how to update your firmware.

- Chapter 3, "Seeker HL Operation" describes how to configure and operate the Seeker HL.

- Chapter 4, "Leakage Testing" describes the steps needed to perform leakage testing using the Seeker HL.

- Chapter 5, "Appendix" shows the technical specifications of the Seeker HL as well as any error codes that may appear on the display screen of the Seeker HL.

Optional Software

Although the Seeker HL comes preconfigured and ready to use from the factory, the following software is required for advanced configuration of the Seeker HL:

- **Seeker Setup** is used to configure the Seeker HL, enabling the operator to assemble files containing channel frequencies, squelch levels, and other settings. Users can efficiently download configurations to one or more leakage detectors.

- **Leakage Analysis Workshop (LAW)** is software that manages the storage and retrieval of leakage information collected by vehicle mounted Seeker GPS systems. Installed on a server, it receives leakage data uploads via the Internet/LAN, Wi-Fi access point, or cellular connection. Data stored in LAW server may be displayed on maps or as text, used to generate leakage work orders, or downloaded to other VIAVI or third-party applications.

  Data acquired by the Seeker HL must be manually entered into LAW, as the Seeker HL does not communicate directly to LAW.

Conventions Used in this Manual

This manual has several standardized conventions for presenting information:

- Connections, menus, menu options, and user-entered text and commands appear in **bold**.

- Section names, web, and e-mail addresses appear in *italics*.

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

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

> **WARNING**
> *A <u>WARNING</u> alerts you to any condition that could cause personal injury.*

Precautions

> **WARNING**
> *Do not use the Seeker HL in any manner not recommended by the manufacturer.*

> **CAUTION**
> *A strong electromagnetic field may affect the measurement accuracy of the Seeker HL.*

> **CAUTION**
> *Use only the battery charger supplied with the Seeker HL.*

> **NOTE**
> *All spent batteries should be disposed of according to local laws and guidelines.*

What is the Seeker HL?

Overview

Mitigation of signal leakage within the subscriber premise is essential for the successful operation of the subscriber's cable and cellular services. To thoroughly evaluate the potential for interference to subscriber services, VIAVI has developed a patent pending approach to signal leakage measurement which will comprehensively test the Aeronautical and LTE bands in both fully digital and analog cable systems.

Historically, signal leakage detectors have required high levels of sensitivity to measure signal leakage radiating from the CATV system. Measurement within the subscriber premise and the migration to all digital services places even greater sensitivity requirements upon the leakage detector combined with a new requirement to simultaneously monitor for signal leakage in both the aeronautical and LTE bands.

In laboratory experiments signal leakage measurements as low as 0.1 uV/m have proven sufficient to allow LTE signals to enter the subscriber network and disrupt cable services. Achieving a measurement sensitivity of 0.1 uV/m is beyond the measurement range of conventional signal leakage detectors and requires a new approach to leakage detection within the subscriber premise.

Testing with the Seeker HL Source Transmitter

To meet the new measurement and sensitivity requirements, the Seeker HL monitors 138 MHz and 757.5 MHz simultaneously, supporting testing in both the Aeronautical and LTE frequency bands. The Seeker HL Source Transmitter replaces the cable service with two high-output test carriers which pressurize the subscriber cabling, revealing any damage which may lead to service interruption from ingressing LTE carriers.

The Seeker HL Source Transmitter has two output levels: a +60 dBmV for home certification and a +40 dBmV output level should the subscriber network prove too porous for pinpointing the location of a leak at the higher transmit level.

The displayed leakage levels are normalized by the Seeker HL receiver to reflect the value of the leak at nominal systems levels within the subscriber premise. The normalization of the measured and displayed leakage levels simplifies the evaluation of leakage severity and provides consistency for documentation of leakage levels in accordance with established industry practices.

When utilizing the higher +60 dBmV transmit level the Seeker HL is able to locate signal leakage down to a normalized leakage level of 0.1 uV/m with a single flexible antenna; making it possible to locate and repair signal leakage levels far beyond the measurement range of conventional leakage detectors.

Seeker HL Features

Easy Configuration

The Seeker Setup software simplifies the configuration process. Instead of going to the factory to make hardware modifications, you can use the Seeker Setup software to adjust settings.

> **NOTE**
>
> *For the sake of this manual, the term "low frequency" refers to 138 MHz and "high frequency" refers to 757.5 MHz.*

Squelch Operation

Squelch level is the RF signal threshold that the Seeker HL uses to determine the validity of the signal. The signal "breaks squelch" when the RF leakage is greater than the squelch level and tag qualifiers are met as well. The receiver will not alarm for signals below the squelch level.

The squelch level has a factory default of 5 µV/m. However, it can be reconfigured using the Seeker Setup software.

Source Localization

The Seeker HL emits an audible tone to help you pinpoint the leakage source. The tone frequency increases proportional to signal strength. As you move closer to the leak, the frequency of the tone will increase.

> **NOTE** **Common leakage areas are around the tap, drop cable, ground block, CPE, and any connection of the cable to other devices.**

Seeker HL User's Guide

Getting to Know Your Seeker HL

Overview

Before using your instrument take a few minutes to familiarize yourself with the instrument, its basic conventions and its navigational tools. This section provides a brief overview of the instrument's features, buttons, and controls.

Equipment Supplied with the Seeker HL

The Seeker HL comes with the following:

- Seeker HL Leakage Detector
- Dual-Band Frequency Matched Rubber Duck Antenna
- Near Field Probe (NFP-1)
- AC to DC Power Adapter & Battery Charger
- USB Charge & Data Cable (Mini-B to Standard-A Male)
- Protective Carrying Case
- Shoulder Strap

Replacement Parts

The following replacement parts are available for the Seeker HL:

Part Number	Description
0610169006	AC to DC Power Adapter & Battery Charger with USB Charge/Data Cable
0610169002	AC to DC Power Adapter & Battery Charger without USB Charge/Data Cable
2071585004	USB Charge & Data Cable
2131597000	Seeker HL Protective Carrying Case
0090048000	Seeker HL Battery
2072350001	Dual-Band Frequency Matched Rubber Duck Antenna
2010477000	Near Field Probe (NFP-1)

To place an order, contact your local VIAVI representative, call 1-844-GO-VIAVI, or visit **https://www.viavisolutions.com/en-us/how-buy**.

Field Accessories

The following accessories are available for the Seeker HL:

Part Number	Description
0610169007	Vehicle Power Adapter with USB Cable (CL-9)
0610169004	Vehicle Power Adapter without USB Cable (CL-9)
2071585004	USB Charge & Data Cable
0610169012	Euro Power Adapter
0610169013	UK Power Adapter
0610169014	Australian Power Adapter

To place an order, contact your local VIAVI representative, call 1-844-GO-VIAVI, or visit **https://www.viavisolutions.com/en-us/how-buy**.

A Guided Tour of Your Seeker HL

Front View

DISTANCE button

Press this button to change the distance from value from 1 to 9 meters. 3 meters is normal operation; 1 meter is near-field mode.

VOLUME button

Press this button to change the speaker volume of the leakage tone. Brief presses increase the volume to maximum and then it rolls over to the minimum volume.

SNAPSHOT button

This button stores the current leakage value.

ON/OFF button

Press and hold this button to turn the Seeker HL on or off. Also, when the meter is on, briefly press this button to activate the display's backlight for approximately 60 seconds.

CHANGE button

Toggles or alters the current display selection.

SELECT button

Press to advance to the next display mode.

Right Side View

Mini-USB connection

The Mini-USB connection is used to connect the charger to the Seeker HL and/or to connect a PC or laptop computer to the Seeker HL using the mini-USB charge / data cable.
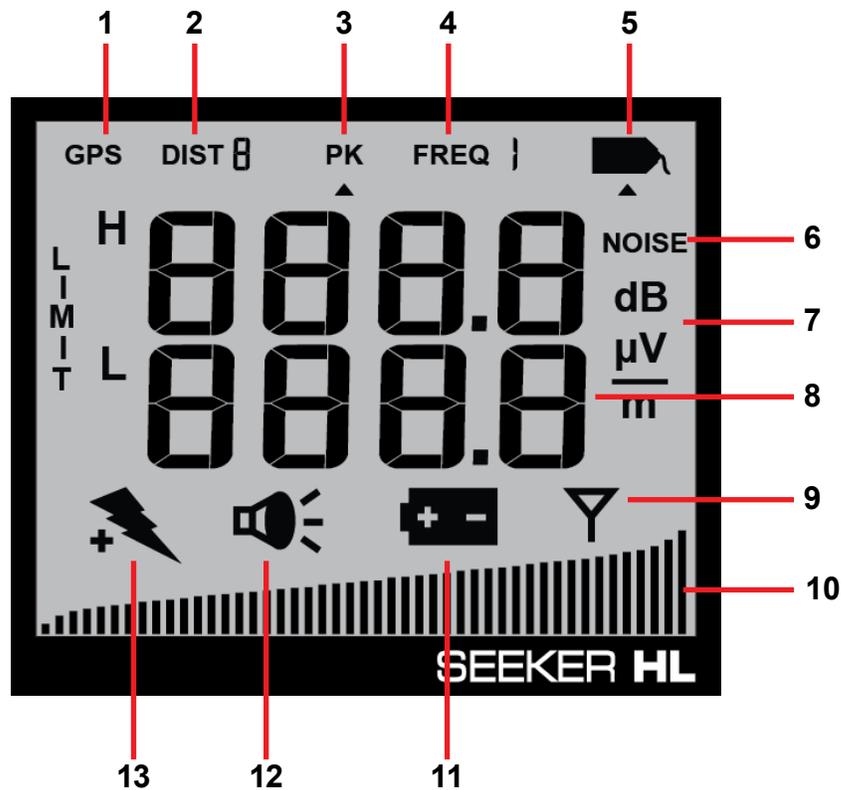
Protective Carrying Case

The Seeker HL includes a protective carrying case with the following features:

- Enough area to carry the Seeker HL, Seeker HL Source Transmitter, rubber duck antenna, and near field probe

- Removable shoulder strap (not shown)

- Metal D-rings for shoulder strap or line hook with reinforced stitching throughout

Display Screen

1. **GPS** – Not used on this meter.

2. **DIST** – Indicates the distance from 1 to 9 meters. 3 meters is normal operation; 1 meter is near-field mode.

3. **PK** – Not used on this meter.

4. **FREQ** – Not used on this meter.

5. **Tag** – Shown when tagged signal leakage is detected.

6. **NOISE** – Not used on this meter.

7. **Measurement units** – Indicates leakage measurement units as selected in Seeker Setup.

8. **Main display** – Shows various parameters, and its function depends on the current display mode selection.

9. **Antenna** – Flashes when the signal mode is selected. This is the normal mode for leakage detection.

10. **Bar graph** – Shows the level of various Seeker HL parameters, and its function depends on the current display mode selection.

11. **Battery** – Flashes when the battery mode is selected. The icon will stay on when the battery needs to be recharged.

12. **Speaker** – Flashes when the Speaker Volume Level mode is selected.

13. **Charge** – Flashes when the battery is being charged, or when the Battery Charge Level screen is displayed.

If you see any of the following messages on your display:

- **The word "Err" along with a number –** Please call VIAVI Technical Support at +1-844-GO-VIAVI.

- **PC** – Appears when the Seeker HL is connected to a PC and is in PC Communications mode.

- **CH** – Appears when the Seeker HL is connected to a battery charger and is in Charge mode.

- **LO** – Appears when the Seeker HL battery is too low for the meter to function.

About the Battery of Your Seeker HL

The Seeker HL uses a Lithium-Ion battery. The battery is charged during manufacture and should be ready to use as long as it has not been stored for a long period of time.

Lithium-Ion batteries operate differently than Nickel-Cadmium batteries. They should be charged daily, and should not be deeply discharged, as this could damage the battery. There is no memory effect, so there is no concern for frequent charging.

USB Charging

You can charge the Seeker HL using either of the following USB charging methods:

- Connecting the Mini-USB cable and charger from an AC power source to the Seeker HL. The Mini-USB charge / data cable and charger must be connected to both the Seeker HL and a working power outlet before AC charging can begin.

- Connecting the Mini-USB charge / data cable from a PC or laptop computer to the Seeker HL. The Mini-USB charge / data cable must be connected to both the Seeker HL and a PC or laptop computer that is ON before USB charging can begin.

The following conditions apply when charging the Seeker HL via USB:

- When the Seeker HL is off and it is charging, the device will go into background charging and nothing will be shown on the display screen.

- If the Seeker HL is on when it is connected to a to a PC, laptop computer, or working power outlet, the device will automatically turn off.

- If the Seeker HL is turned back on when USB charging, the Measurement mode is disabled while the Seeker HL is USB charging.

- When the Seeker HL is on and is charging, the screen shown in the image to the right will be displayed, the Charge icon will flash, and the on-screen bar graph will show the charging progress.

Seeker HL Operation

Available Configuration Settings

You must configure the settings of the Seeker HL using the Seeker Setup software. The Seeker HL comes from the factory with default settings, but they may need to be customized for your application. Detailed instructions can be found in the Seeker Setup Software Operation Manual.

Feature	Available Values	Default Value	Device	Software
Display & Notification Settings				
Set Display Units	uV/m, dBuV, dBuV/m	uV/m	NO	YES
Squelch	0.1 to 1000 uV/m	5 uV/m	NO	YES
Enable Meter Entry	Disabled or Enabled	Disabled	NO	YES
Input Level	60 or 40 dBmV	40 dBmV	YES	YES
Offset (dB)	20 to 80 dB	20 dB	YES	YES
Limit uV/m	0.1 to 1000 uV/m	0.1	NO	YES
Device Management				
Technician ID	Custom Alphanumeric	trilithi	NO	YES
Update Firmware	N/A	N/A	NO	YES

Basic Operation

Power On/Off

Press and hold the red **ON/OFF** button until you hear three ascending tones. Within a few moments your Seeker HL will startup into the RF Signal Measurement Mode.

Low Battery Warning

A very low battery may cause the Seeker HL not to turn on. When the battery is too low for your Seeker HL to function, the screen shown to the right will appear. The battery must be charged for a few minutes before using again.

Low Battery Warning

PC Communications Mode

This mode is used by the Seeker Setup software to send and retrieve configuration parameters from your Seeker HL. To enter this mode, connect the Seeker HL to a PC or laptop computer using a mini-USB charge / data cable and then open the Seeker Setup software to communicate with the Seeker HL. The screen shown to the right will be displayed while your Seeker HL is in this mode.

PC Communication Mode

RF Signal Measurement Mode

The RF Signal Measurement Mode is the default display mode for leakage testing and is used to accurately determine the strength of a leak, pinpoint its location, and provide a leakage value for documentation. Measured RF leakage values can range from 0.1 to 1000 µV/m and are displayed in large, easy-to-read numbers. A bar graph at the bottom of the display illuminates proportionally to the signal strength of the leak.

Additionally, an audible tone will sound if the measured signal breaks squelch. The signal breaks squelch when the RF leakage is greater than the squelch level and tag qualifiers are also met. This tone can be used to help locate the source of the leak and, perhaps more importantly, the potential source of ingress.

The image displayed to the right represents the leakage detector measurement mode with no signal detected. Notice how no values are displayed and the bar graph at the bottom of the screen remains blank.

Within the leakage detector measurement mode, the antenna icon in the lower right side of the screen flashes to indicate that the leakage detector is currently taking measurements.
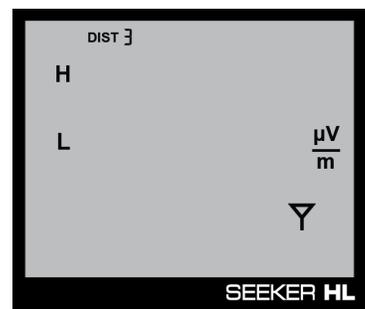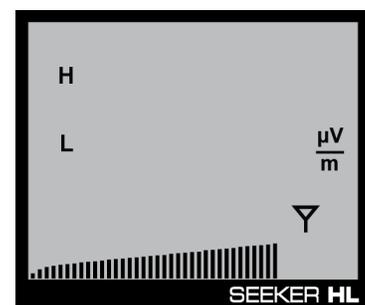
No Signal Detected

The image displayed to the right indicates detected leakage values of 174 uV/m at 757.5 MHz and 23 uV/m at 138 MHz. The bar graph at the bottom of the screen will display the relative signal level of the detected signal.

Additionally, when the show noise setting is turned off, the tag icon will be displayed in the upper right corner of the display to indicated that the leakage detector is receiving the tagged signal from the Seeker HL Source Transmitter.
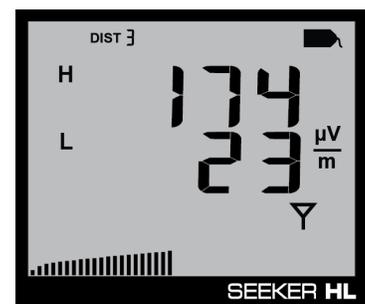
Tagged Signal Detected (High Frequency)

If the tag icon is not displayed along with the signal level, the show noise setting is turned on. In this mode, the signal levels that are displayed will also include non-tagged noise that is received by the leakage detector.

Untagged Signal Detected

Distance Settings

The image displayed to the right represents the leakage detector set to near-field measurement mode, as indicated by "DIST 1".

The **Distance** button (upper left) is used to select the desired distance. "DIST 1" through "DIST 9" equates to 1 meter to 9 meters respectively.

The image displayed to the right represents the normal measurement mode of the leakage detector set to 3 meters, as indicated by "DIST 3".

Offset Level Settings

The image displayed to the right shows the offset levels for both the high and low frequencies. These values are used to normalize the leakage readings to typical system levels.

Example: If the transmitter is injecting 60 dBmV at the ground block and typical system level is 0 dBmV, with a 60 dB offset, the leakage readings will reflect what the leakage values would be as if the launch level at the house were 0 dBmV.
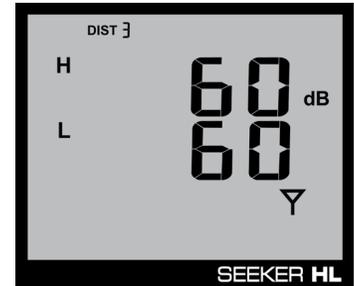
If the "Enable Meter Entry" checkbox is checked within the Seeker Setup software during configuration, these levels are adjustable on the leakage detector.

We recommend to uncheck this setting so that these values are not visible on the leakage detector and can only be adjusted in Seeker Setup.

Press the **SELECT** button (middle right) once to view the offset level settings. The first digit of the high-frequency offset levels will begin to flash. To adjust the value of the selected digit upward, press the **CHANGE** button (upper right).

Press the **SELECT** button (middle right) again to move the selection to the next digit and continue this process until you are finished entering the offset values. The offset value for both the high and low frequencies can be set anywhere from 20 to 80 dB.

Input Level Settings

The image displayed to the right shows the input level setting that should match the transmit level of the Seeker HL Source Transmitter. The source transmitter operates at two different output levels of 60 dBmV (120 dBuV) and 40 dBmV (100 dBuV), as indicated on the label on the back of the device.

Example: If the output level of the transmitter is set to 60 dBmV (120 dBuV), the input level of the leakage detector should be set to 120 dBuV.

Within the input level setting mode, the PK icon in the upper middle side of the screen flashes.

If the "Enable Meter Entry" checkbox is checked within the Seeker Setup software during configuration, this level is adjustable on the leakage detector.

Press the **SELECT** button (middle right) five times to view the input level setting. The input level setting will begin to flash. To adjust the value of the input level, press the **CHANGE** button (upper right). The input level value can be set to 120 dBuV or 100 dBuV.

Device Information & Settings

While testing for leaks, you will need to view the information shown by the Seeker's display modes.

- Use the **SELECT** button to toggle through its display modes. As you toggle, the display modes will appear in the same order in which they are discussed in this section.

- Use the **CHANGE** button to adjust the settings of some display modes.
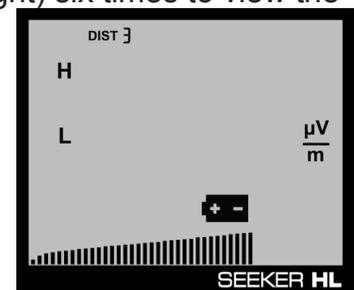

Viewing the Battery Charge Level

To check the battery level, turn your Seeker HL on and press the **SELECT** button (middle right) once.

If the "Enable Meter Entry" checkbox is checked within the Seeker Setup software during configuration, you will need to press the **SELECT** button (middle right) six times to view the battery level.

- When the Battery Charge Level display is selected, the Battery icon flashes.

- The bar graph will indicate the amount of battery charge available. As long as there are at least a few bars left, your Seeker HL has enough charge to operate. If the battery meter shows less than 50%, the Seeker HL should be charged.
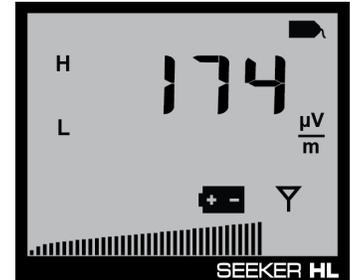

Battery Charge Level

> **NOTE**
> *The display will revert to the Signal Level display after a few seconds in the Battery Charge Level display (without any action by the user).*

Low Battery Alert

If the battery is getting low and needs to be recharged soon, the battery icon is displayed constantly on all screens.

In this example, the antenna icon will still flash in measurement mode, as shown in the image to the right.

Low Battery Alert

Firmware Version

When you are in the Battery Charge Level display, pressing the **CHANGE** button will display the following information:

- The Battery icon will continue to flash and the bar graph will continue to indicate the relative battery charge level

- The screen first displays the application firmware version number. In this example, the version is 1.11, as shown here.

Application Firmware

> **NOTE**
>
> *The display will revert to the Battery Charge Level display after a few seconds in the Firmware Version display (without any action by the user).*

Ambient Noise Level Measurement

This measurement is used to find ambient noise sources that may be emmiting RF signals at the currently selected leakage frequency. This provides a useful tool for troubleshooting noise issues that may occur in and around the house.

The image to the right shows the noise setting screen which allows the operator to toggle the tag icon off temporarily to show ambient noise. Press the **SELECT** button (middle right) two times to view the show noise setting.

**Ambient Level Measurement Enabled**

- When the Tag icon is selected, pressing the **CHANGE** button will enable/disable the Ambient Noise Level Measurement function.

- When this display is selected, the following will occur:

    - If the Ambient Noise Level Measurement function is currently disabled, only the arrow below the Tag icon will flash, as shown in the image above.

    - If the Ambient Noise Level Measurement function is currently enabled, the Tag icon will flash a few times prior to turning off (with the arrow below the icon).

- When the Ambient Noise Level Measurement function is enabled, the following will occur in the Signal Level display:

> **NOTE**
>
> *After a few seconds in the Ambient Noise Level Measurement display without any action by the user, the display will revert to the Signal Level display.*

1. The bar graph will indicate the relative signal level of the ambient noise.

2. The RF signal level of the ambient noise will be displayed numerically.
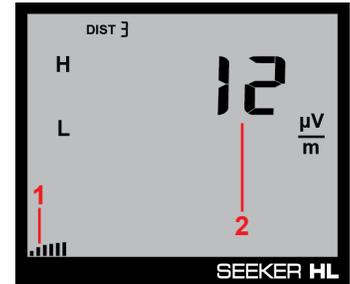
Signal Level Display

NOTE	***Notice there is no Tag icon during this process, indicating there is ambient noise present.***

NOTE	***After approximately 1 minute, the display will revert to the normal Signal Level display.***

Speaker Volume Level

While testing for leaks, you may need to adjust the volume of the leakage tone.

- Use the **VOLUME** button to adjust the speaker volume. The bar graph will indicate the speaker volume level as shown in the image to the right.

Adjusting the Speaker Volume

To check the volume level, turn your Seeker HL on and press the **VOLUME** button once.

- When the Speaker Volume Level display is selected, the Speaker icon is continuously displayed as indicated in the following image.

- When this display is selected, the following will occur:

  1. The bar graph will indicate the speaker volume.

  2. The numerical display will continue to display the RF signal level.

- Press the **VOLUME** button again to increase the speaker volume of the leakage tone. Brief presses increase the volume to maximum and then it rolls over to the minimum volume.

Speaker Volume

> **NOTE** *After a few seconds in the Speaker Volume Level display without any action by the user, the display will revert to the Signal Level display.*

> **NOTE** *The speaker volume does not change during adjustment, but is instead indicated by the bar graph. When leaks are found, you will hear the volume change in the leakage tone.*

Leakage Testing

Before You Begin Leakage Testing

- A low battery may cause the Seeker HL to NOT turn on. Try charging your battery for 3 hours to see if that fixes the problem.

- The Seeker HL will retain the setup from when the meter was last shut off. For example, if you were testing with the distance set to the near-field probe setting and then turned off your Seeker HL, when you turned it back on again the meter would automatically begin testing that same distance.

Testing For Leaks

The Seeker HL and Seeker HL Source Transmitter should be configured with the Seeker Setup software before beginning leakage testing.

1. **Turn on the Seeker HL**

   Press the red **ON/OFF** button until you hear 3 ascending tones. The Seeker HL will power up in RF Level Measurement Mode.

2. **Confirm the Seeker is in the RF Level Measurement mode**

   The Antenna icon on the display should be flashing for the RF Level Measurement mode. If necessary, use the **SELECT** button to move to the Measurement mode (or let it time out and return to Measurement mode automatically).

   > **NOTE**
   >
   > **If the "Enable Meter Entry" checkbox is checked within the Seeker Setup software during configuration, the following levels are adjustable on the leakage detector.**
   >
   > **If this checkbox is unchecked, these settings cannot be adjusted on the meter. Skip to Step 5.**

3. **Confirm the desired offset levels are selected**

   These values are used to normalize the leakage readings to typical system levels.

   Press the **SELECT** button (middle right) once to view the offset level settings. The first digit of the high-frequency offset levels will begin to flash. To adjust the value of the selected digit upward, press the **CHANGE** button (upper right).

   Press the **SELECT** button (middle right) again to move the selection to the next digit and continue this process until you are finished entering the offset values. The offset value for both the high and low frequencies can be set anywhere from 20 to 60 dB.

4. **Confirm the desired input level settings are selected**

   The input level setting should match the transmit level of the Seeker HL Source Transmitter. The source transmitter operates at two different output levels of 60 dBmV (120 dBuV) and 40 dBmV (100 dBuV), as indicated on the label on the back of the device.

   Press the **Select** button (middle right) five times to view the input level setting. The input level setting will begin to flash. To adjust the value of the input level, press the **CHANGE** button (upper right). The input level value can be set to 120 dBuV or 100 dBuV.

5. **Begin leakage testing**

   Move the Seeker HL around the test area. If the detected leakage level exceeds the squelch levels, the Seeker HL will alarm.

   The frequency of the alarm tone will increase as the detected signal strength increases. Continue to move the Seeker HL in the direction producing the highest tone frequency to locate the source of the leak.

6. **Turn OFF the Seeker HL**

   When testing is complete, turn off the Seeker HL by holding down the red **ON/OFF** button until you hear 3 descending tones.

Appendix

Specifications

Operation Specifications

Monitored Frequencies	**Low:** 138 MHz **High:** 757.5 MHz
Calibrated Level Range	0.1 to 1000 µV/m @ 60 dBmV Transmit Level

Physical Specifications

Construction	Plastic housing, with rubber overmold
Control	Front panel rubber keypad
Display	Dual numerical readout of detected low and high-frequency leakage within sensitivity range
Speaker	Tone is present if leakage amplitude exceeds squelch setting Pitch is proportional to strength of leak
Dimensions (H x W x D)	7.50 x 3.25 x 1.50 in (191 x 83 x 38 mm)
Weight	1.0 lbs (454 grams)

Available Interface Types

Antenna	BNC Type connector with dual-band antenna
USB	Mini-B Port for charging & configuration using Seeker Setup Software

Battery & Power Specifications10

Operating Time	8 hours plus, dependent on use
Charge Time	10 hours
Battery	Single 2600 mAh @ 3.7V Li-Ion internal battery, factory replaceable
Power Adapter	**Input:** 100 to 240 VAC ~ 50 to 60 Hz, 0.3A Max **Output:** 5 VDC, 1.0A

Environmental Specifications

Storage & Operating Temperature	**Storage:** -40˚ to +70˚ C (-40˚ to 158˚ F) **Operating:** -20˚ to +50˚ C (-4˚ to 122˚ F)
Power Adapter	**Input:** 100 to 240 VAC ~ 50 to 60 Hz, 0.3A Max **Output:** 5 VDC, 1.0A

Environmental Specifications

Storage & Operating Temperature	**Storage:** -10˚ to +70˚ C (-40˚ to 158˚ F) **Operating:** -20˚ to +50˚ C (-4˚ to 122˚ F)

Display Messages & Error Codes

Seeker HL Error Codes

The codes shown below are displayed on the Seeker HL display screen as "E##" to indicate errors.

"E##" Code	Error Description	Solution
01	The checksum is not valid for this area or the calibration date for this area is not set.	If a power cycle does not fix this, return to the factory for recalibration.
02	The checksum is not valid for this area or the calibration date for this area is not set.	If a power cycle does not fix this, return to the factory for recalibration.
08	The flash ID read did not correspond to approved devices.	If a power cycle does not fix this, return to the factory for repair.
17	Error in stored unit serial number.	If a power cycle does not fix this, return to the factory for repair.

Limited Warranty

For the latest warranty information, visit

https://www.viavisolutions.com/literature/viavi-solutions-inc-general-terms-en.pdf

VIAVI

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English