



Seeker HL
Source Transmitter
User Guide



Notice

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Chapter 1

General Information

Ordering Information

For additional information about our products and services, contact your local VIAVI representative or visit <https://www.viavisolutions.com/en-us/how-buy>.

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, “Introduction & Operation” introduces what the Seeker HL Source Transmitter is and what it does. This chapter discusses the practical application, connections and controls of the Seeker HL Source Transmitter.
- Chapter 3, “Appendix” shows the technical specifications and warranty information of the Seeker HL Source Transmitter.

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*.



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.

Precautions



Do not use the Seeker HL Source Transmitter in any manner not recommended by the manufacturer.



A strong electromagnetic field may affect the measurement accuracy of the Seeker HL Source Transmitter.

Periodic Calibration

The chosen frequency must closely match that of the leakage detector or leaks will not be detected properly. If the Seeker HL Source Transmitter appears to be out of calibration, the unit must be returned to VIAVI or an authorized repair center for re-calibration.

Chapter 2

Introduction & Operation

What is the Seeker HL Source Transmitter?

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 Approach

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.

Equipment Supplied with the Seeker HL Source

The Seeker HL Source Transmitter comes with the following:

- Seeker HL Source Transmitter
- One Built-In Li-Ion Battery
- AC to DC Power Adapter & Battery Charger

Replacement Parts

The following replacement parts are available for the Seeker HL Source Transmitter:

Part Number	Description
0090061000	Li-ION Replacement Battery (Replacement Requires 1 Battery)
0610198000	AC to DC Power Adapter & Battery Charger
0190197000	AC US Power Cable

Field Accessories

The following accessories are available for the Seeker HL Source Transmitter:

Part Number	Description
2071527048	Precision RF Coaxial Test Cable (I/O-15)
2072097000A	Vehicle Power Adapter
0190322000	AC Euro Power Cable

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 Source Transmitter

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.

Front View

RF Output Connector

Power Indicator LED

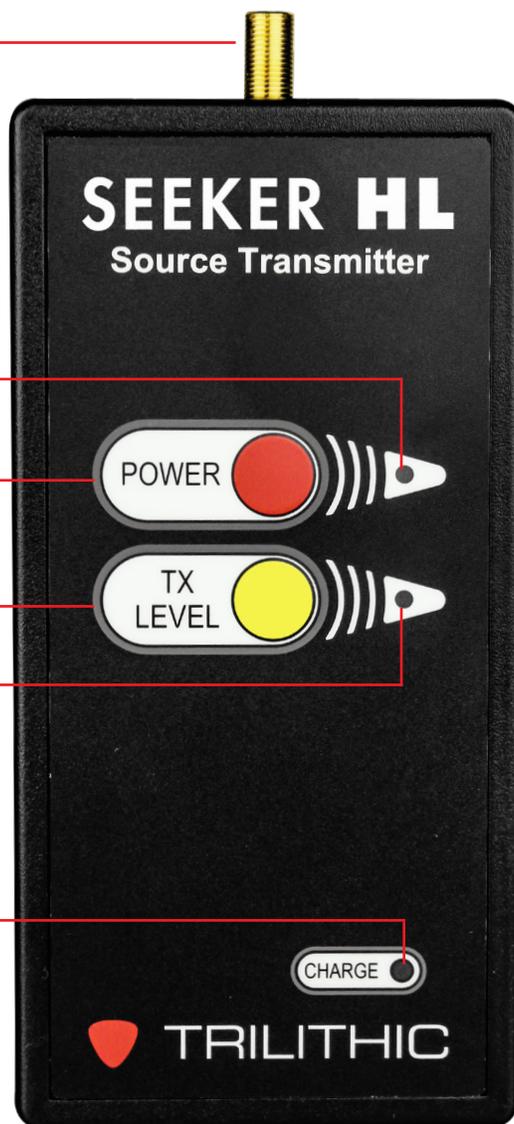
Power Button

Transmit Level Button

Transmit Level Indicator LED

DC Charge Port
with Protective
Rubber Door

Battery Charge Indicator LED



Rear View

RF Output Connector

LED Legend



Left Side View

RF Output Connector



DC Charge Port
with Protective
Rubber Door



NOTE

In the image above, the DC charge port protective rubber door is in the closed position for illustrative purposes. This door should remain closed when not using this port.

Battery Charging

Before you can use your instrument, you will need to charge its battery. Your instrument's battery pack provides approximately 8 to 10 hours of power during continuous operation.

The instrument comes with a AC to DC Power Adapter & Battery Charger which can be used to charge the battery in approximately 3 hours or to trickle charge the battery while the instrument is in use.

Plug the power adapter & battery charger into the DC charge port of the Seeker HL Source Transmitter on the left side of the instrument under a protective cover.

Your instrument is equipped with a “smart” battery charging circuit so that the charging method (fast or trickle) is an auto function. Fast Charge is used to charge the battery quickly. Trickle Charge is used to keep the battery fully charged.

Every time your instrument is plugged into the charging cube, it starts charging automatically via the Trickle Charge method. If the unit determines Fast Charge is necessary, it defaults to the Fast Charge method.

Battery Charge Indicator LED

The **Battery Charge Indicator** LED is located on the front panel of the Seeker HL Source Transmitter. This LED indicator represents the status of the internal battery and its charging status.

The LED will illuminate when the Seeker HL Source Transmitter is connected to the charger and the following conditions are met:

- A solid Green LED is displayed when the battery is fully charged.
- A solid Red LED is displayed when the battery is charging.
- A flashing Red LED is displayed when the battery or charging circuit has a fault. In this case, the meter will need to be serviced by a VIAVI Certified Repair Center. Before sending in the unit for repair, contact us for an RMA.
- The LED is not displayed when there is no power supplied to the charger.

Operation

Once the instrument's battery is charged, you may startup the Seeker HL Source Transmitter by pressing the **ON/OFF** button on the front of the device. To shutdown the Seeker HL Source Transmitter, simply press and hold the power button for two seconds.

If the Seeker HL Source Transmitter has been powered on and idle for 30 minutes, the device will shutdown automatically to conserve battery power.

Power Indicator LED

The **Power Indicator** LED is located on the front panel of the Seeker HL Source Transmitter. This LED indicator represents the status of the instrument and will illuminate when the Seeker HL Source Transmitter is powered ON and the following conditions are met:

- A solid Green LED is displayed when the battery charge is full and the device is operating normally.
- A solid Red LED is displayed when the battery charge is low. When the battery charge drops to this level, it is recommended that the battery is charged soon.
- A flashing Red LED is displayed when the battery charge is very low. When the battery charge drops to this level, it is recommended that the battery is charged immediately.
- The LED is not displayed when the Seeker HL Source Transmitter is shutdown.

Transmit Level Adjustment

The **Transmit Level Indicator** LED will illuminate when the Seeker HL Source Transmitter is powered ON. To change the output level, simply press and release the **Transmit Level** button.

This LED indicator will illuminate as follows for the transmit level that is currently selected:

- A solid Green LED is displayed when the transmit level is set to 40 dBmV.
- A solid Red LED is displayed when the transmit level is set to 60 dBmV.
- A flashing LED is displayed when the transmit signal circuit has a fault which can lead to an unreliable source output. In this case, the meter will need to be serviced by a VIAVI Certified Repair Center. Before sending in the unit for repair, contact us for an RMA.

Chapter 3

Appendix

Specifications

Operation Specifications

Source Frequencies	Low Band: 138 MHz High Band: 757.5 MHz
Modes of Operation	User selectable High or Low Output via front panel controls
Launch Amplitude	High Output: 60 dBmV Low Output: 40 dBmV
Level Stability	±2 dB at 25° C, stable over operating temperature

Physical Specifications

Construction	Plastic housing
Control	Front panel keypad constructed from water resistant membrane
Indicators	Front panel ON/OFF, Output Level & Charge LEDs
Dimensions (H x W x D)	7.50 x 3.25 x 1.50 in (191 x 83 x 38 mm)
Weight	0.85 lbs (380 grams)

Available Interface Types

RF Output Port	F-Type connector
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Battery & Power Specifications

Operating Time	8 hours plus, dependent on use
Charge Time	4 hours
Battery	Single 2600 mAh @ 7.2V Li-Ion internal battery, factory replaceable
Power Adapter	Input: 100 to 240 VAC ~ 47 to 63 Hz, 1.1A Max Output: 15 VDC, 3.3A

Environmental Specifications

Storage & Operating Temperature	Storage: -40° to +70° C (-40° to 158° F) Operating: -20° to +50° C (-4° to 122° F)
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Limited Warranty

For the latest warranty information, visit

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



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