# Seeker D Lite

# Source Transmitter

## User's Guide

## Notice

Every effort was made to ensure that the information in this manual was accurate at the time of printing. However, information is subject to change without notice, and VIAVI reserves the right to provide an addendum to this manual with information not available at the time that this manual was created.

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# 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 D Lite Source Transmitter is and what it does. This chapter discusses the practical application, connections and controls of the Seeker D Lite Source Transmitter.
- Chapter 3, “Appendix” shows the technical specifications and warranty information of the Seeker D Lite 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 D Lite Source Transmitter in any manner not recommended by the manufacturer.***


***A strong electromagnetic field may affect the measurement accuracy of the Seeker D Lite 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 D Lite 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 D Lite Source Transmitter?

### Overview

Mitigation of signal leakage within the subscriber premise is essential for the successful operation of services both inside and outside of the coaxial cable network. 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 network. Measurement within the subscriber premise and the migration to all digital networks 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.

While these new requirements are a necessity to detect the potential for interference between CATV and LTE services, the cost of designing, manufacturing and deploying this new generation of leakage detectors has risen significantly. As an industry leader in the design and manufacture of signal leakage equipment, VIAVI has studied this application model very carefully to develop a new and affordable method of signal leakage detection within the subscriber's premise.

### Testing Approach

To overcome the high design and manufacturing cost associated with improvements in instrument sensitivity, this system uses the Seeker D Lite Source Transmitter high output signal source to replace the cable service at the subscriber's ground block. The higher levels transmitted by the Seeker D Lite Source Transmitter will increase the field strength of the signals radiating out of the subscriber network allowing a lower cost receiver to be used for measurement purposes.

The Seeker D Lite Source Transmitter injects two carriers into the subscriber network, one at 135–139 MHz and another at 611–615 MHz, supporting testing in both the Aeronautical and LTE bands. The user may set the output level to 43 dBmV for home certification, but also has the option to reduce the level to 23 dBmV should the subscriber network prove to be too porous for pinpointing the location of a leak at the higher transmit level.

The Seeker D Lite provides both a visual readout of the measured levels in uV/m and a tone proportional to signal strength. To prevent false triggering this system utilizes Trilithic's channel tagging technique. To provide constancy with leakage levels typically found within the subscriber's premise in home cert mode, the levels displayed by the Seeker D Lite have been normalized to represent the value of a leak at typical system levels. This correlation between measured and displayed levels will assist the technician in evaluating the severity and recording of a leak based upon established industry practices.

## Equipment Supplied with the Seeker D Lite Source

The Seeker D Lite Source Transmitter comes with the following:

- Seeker D Lite 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 D Lite 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 D Lite Source Transmitter:

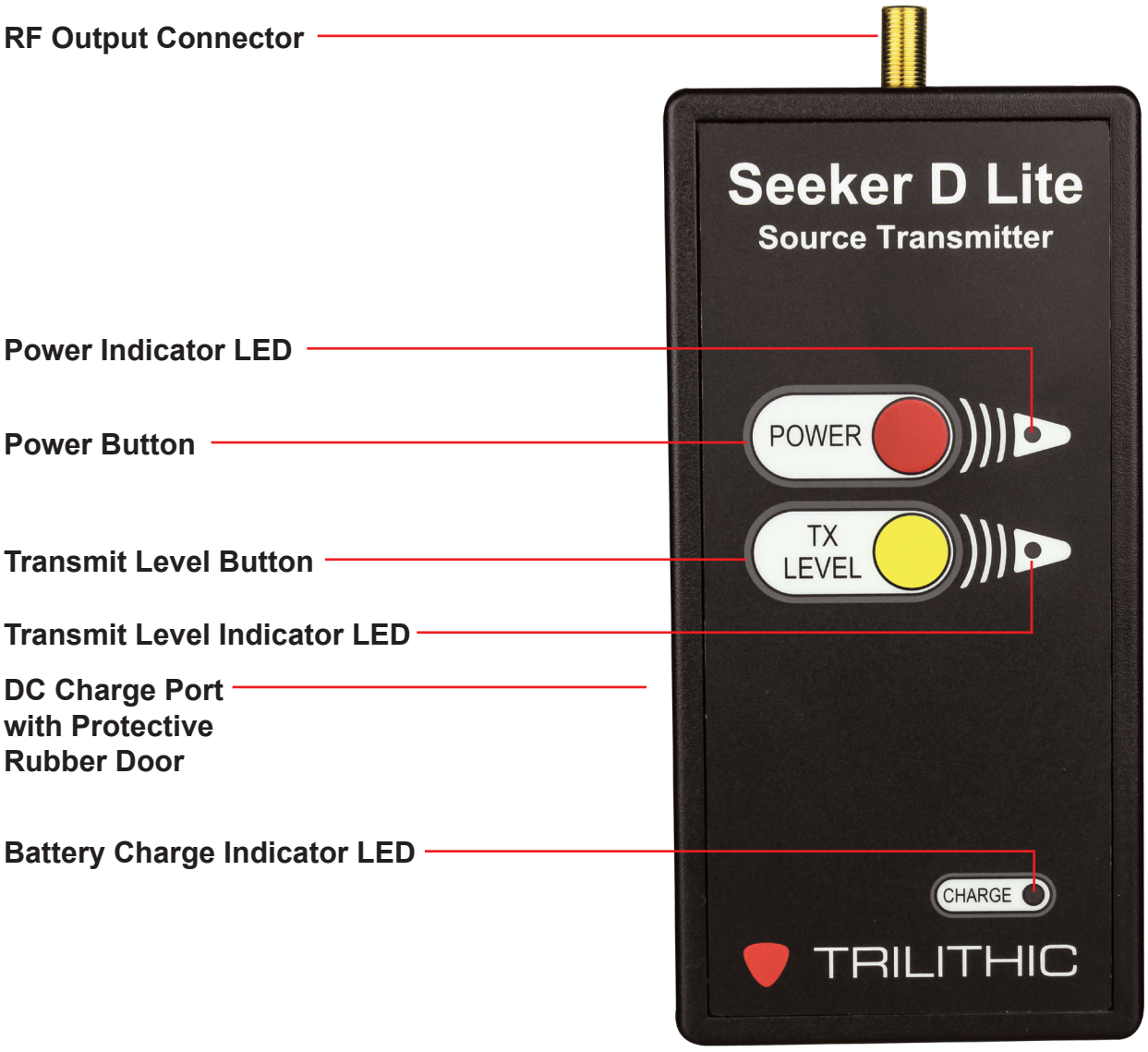
| Part Number | Description |
|---|---|
| **2071527048** | Precision RF Coaxial Test Cable (I/O-15) |
| **2072097000A** | Vehicle Power Adapter |
| **0190322000** | AC Euro Power Cable |

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 D Lite 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.

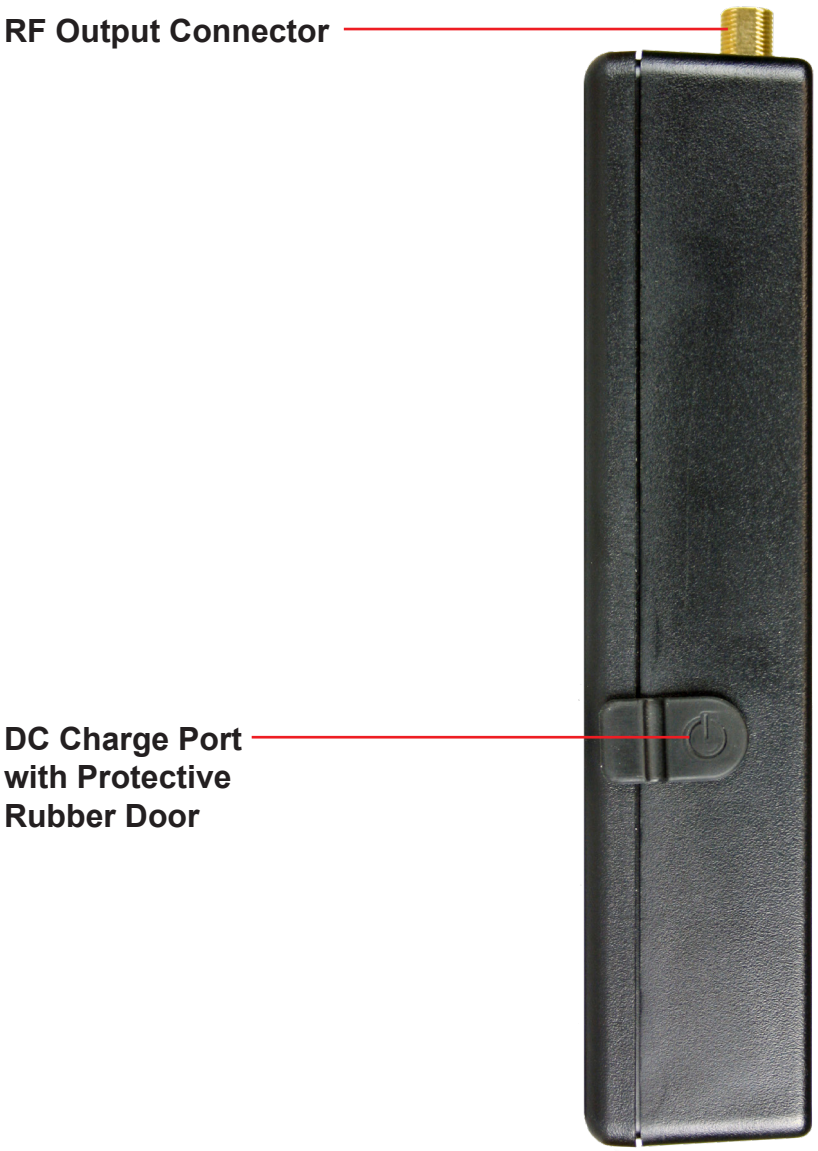
## Front View



# Rear View


RF Output Connector
LED Legend
LED Legend
TRILITHIC
Power
Green = Normal
Red = Low Battery
Blink Red = Very Low Battery
Level
Green = Normal
Red = Maximum
Blink Red & Green = Device Error
Charge
Green = Done
Red = Charging
ACN: 003 314 510
RoHS

## Left Side View




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 D Lite 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 D Lite Source Transmitter. This LED indicators represent the status of the internal battery and its charging status.

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

- A solid Green LED is displayed when the batteries is fully charged.
- A solid Red LED is displayed when the batteries 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 D Lite Source Transmitter by pressing the **ON/OFF** button on the front of the device. To shutdown the Seeker D Lite Source Transmitter, simply press and hold the power button for two seconds.

If the Seeker D Lite Source Transmitter has been powered on and idle for ten (10) 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 D Lite Source Transmitter. This LED indicator represent the status of the instrument and will illuminate when the Seeker D Lite 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 D Lite Source Transmitter is shutdown.

## Transmit Level Adjustment

The **Transmit Level Indicator** LED will illuminate when the Seeker D Lite 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 23 dBmV.
- A solid Red LED is displayed when the transmit level is set to 43 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:** 135–139 MHz<br>**High Band:** 611–615 MHz |
| **Modes of Operation** | High Output<br>Low Output |
| **Low Output Mode Launch Amplitude** | **Low Band:** -3.25 dBmV<br>**High Band:** -4.25 dBmV |
| **High Output Mode Launch Amplitude** | **Low Band:** 16.75 dBmV<br>**High Band:** 15.75 dBmV |
| **Level Stability** | ±1.5 dB over entire temperature range |

**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** | Replaceable F-Type connector |
| **USB** | Mini-B Port for charging |

**Battery & Power Specifications**

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

**Environmental Specifications**

| | |
|---|---|
| **Storage & Operating Temperature** | **Storage:** -40° to +70° C (-40° to 158° F)<br>**Operating:** -20° to +50° C (-4° to 122° F) |

# Limited Warranty

For the latest warranty information, visit

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

**Rev. 2, May 2018**
**English**

**VIAVI Solutions**

| | |
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