

## VIAVI Seeker HL

### IN-HOME LEAKAGE EVALUATION KIT

The Seeker HL In-Home Leakage Evaluation System is a low-cost digital leakage solution that includes a dual-frequency tagged signal source, with a selectable output level and a discriminating leakage receiver that is designed to be extremely sensitive to leakage in both the Aeronautical and LTE Frequency Bands.



- Dual-Band Leakage Receiver for Both Aeronautical and LTE Frequencies
- Sensitivity Up to 0.1  $\mu\text{V}/\text{m}$  at 138 MHz and 0.4  $\mu\text{V}/\text{m}$  at 757.5 MHz
- Tagged Signal Source Combined with a Discriminating Leakage Receiver
- Audible Tone Increases Proportionally in Pitch as Technician Moves Closer to the Source of Leakage

#### 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, Trilithic 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  $\mu\text{V}/\text{m}$  have proven sufficient to allow LTE signals to enter the subscriber network and disrupt cable services. Achieving a measurement sensitivity of 0.1  $\mu\text{V}/\text{m}$  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 Home monitors 138 MHz and 757.5 MHz simultaneously, supporting testing in both the Aeronautical and LTE frequency bands. The Seeker Home Signal Source 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 Home Signal Source 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 Home 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 Home is able to locate signal leakage down to a normalized leakage level of .1  $\mu\text{V}/\text{m}$  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 SPECIFICATIONS

OPERATION SPECIFICATIONS	
Monitored Frequencies	Low Band: 138 MHz High Band: 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 band 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 SPECIFICATIONS	
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)

## SEEKER HL SOURCE TRANSMITTER 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	Replaceable F-Type connector
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)

## ORDERING INFORMATION

AVAILABLE SOFTWARE	PART NUMBER
Available Software Seeker Setup Configuration Software	TRI-LKG-SW-SEEKER-PC
OPTIONAL ACCESSORIES	PART NUMBER
CL-9 Vehicle Power Adapter with USB cable	TRI-ACCY-USBPWR-VEH-WCBL
Euro Power Adapter	TRI-ACCY-USBPWR-EUR-PLUG
UK Power Adapter	TRI-ACCY-USBPWR-UK-PLUG
Australian Power Adapter	TRI-ACCY-USBPWR-AUS-PLUG