

- High-Performance, GPS-Based Leakage Management System that Accurately Monitors Leakage in All Digital Systems or Mixed Digital and Analog Systems with Unsurpassed Sensitivity from 2 uV/m to 2000 uV/m
- Near Real-Time Vehicle Tracking via LAW, Leakage Record Upload and Firmware Upgrades via WiFi, Ethernet, or Cellular
- Optional Garmin Interface Provides Turn-by-Turn Directions to Leak Locations
- Cost-Effective Solution Utilizing the Majority of Existing Seeker GPS Installation and Equipment



Ideal for drive-outs, leak documentation, and troubleshooting

Overview

With the new Seeker D™ and Seeker MCA III along with existing Seeker analog leakage detectors, Trilithic's Seeker GPS System provides the complete leakage solution. This means no investment for special drive-out vehicles is required, and every truck in the operator's fleet can identify leakage outbreaks with GPS precision.

Digital Leakage Detection

Trilithic's new Seeker D leakage detector accurately detects and measures signal leakage near the LTE and aeronautical frequency bands and features an unsurpassed sensitivity from 2 to 2000 uV/m.

The Seeker D works in conjunction with the new CT-4™ Channel Tagger. The CT-4 is a 1U rack mounted unit that is located in the head end that provides an

uncompromising tagging solution for active analog or digital systems.

In the NAV band, the Seeker D detects the proprietary signal from the CT-4 and scales it to be similar to leakage readings taken from an analog carrier. Consequently, readings taken from the Seeker meter and Seeker D meter produce similar results in the aeronautical band. In fact, this system provides the flexibility to scale the reading to analog or digital, your choice.

Whether testing for leaks in both digital and analog systems, or monitoring aeronautical bands or LTE, Seeker D provides all of the capability to find and fix leaks quickly, accurately, and effectively.

The Seeker D leakage detector and the included mobile mount allows you to utilize your existing LAW Server, and Garmin

GPS receiver, while keeping your plant technologically ready to meet tomorrow's leakage monitoring needs.

Advanced Channel Tagging

The new CT-4 can act as a traditional CT-2™ or CT-3™ and can insert Trilithic's proprietary tagged signals in both the aeronautical range and the LTE range at the same time. This feature provides the ability to detect tagged leaks and ignore untagged leaks, saving time from false alarms from signals not originating in your system.

The CT-4 eliminates the risk of affecting any adjacent digital channels by injecting an adjustable signal from 10 to 30 dBmV, targeting approximately 30 dB below the chosen digital carriers.

innovative technology to keep you a *step ahead*

Next-Generation Mobile Support

The Seeker MCA III offers high-performance GPS location recording and documentation when monitoring only the aeronautical bands with existing Seeker leakage detectors or monitoring both the aeronautical and LTE bands with the new Seeker D leakage detector. This device also allows you to daisy chain the mobile mounts of the Seeker and Seeker D units together in order to log data from multiple units mounted in the same vehicle.

While driving to a location or to work, the technician leaves the Seeker in the mobile mount, where it's connected to vehicle power, an antenna, and a GPS receiver. The Seeker MCA III automatically monitors leakage outbreaks and records the data with a time/date stamp and the leak's GPS location.

The operator has several options for providing the GPS receiver/antenna to link with the Seeker GPS system. If there is no existing unit, one can be obtained from Trilithic. If the vehicle is already equipped with a fleet management system using a GPS receiver, in many cases the Seeker GPS system can make use of it.

Uploading data records to a server can be fully automated, occurring whenever the MCA III detects any one of 10 possible operator-controlled Wi-Fi hotspots.

Remote upgrade capabilities via the LAW server provide users with the ability to update firmware without physically connecting to the Seeker MCA III. This feature also provides the ability to perform remote firmware upgrades on the Seeker D when it is placed in the included mobile mount.

Operators can observe near real-time vehicle tracking via LAW with a one-minute refresh interval.

Early Detection Notifications

When a set threshold level within the Seeker has been surpassed, Trilithic's Leakage Analysis Workshop™ (LAW) will email an EDN (Early Detection Notification) to insure that large leaks will be identified immediately. This automatic process helps keep the technician from being distracted while driving or working.

AVAILABLE SEEKER D MODELS:

- Seeker D Leakage Detector without Mobile Mount
P/N 2011655000
- Seeker D Leakage Detector with Mobile Mount
P/N 2011655001

AVAILABLE SEEKER MCA III MODELS:

- Seeker MCA III with Wi-Fi
P/N 2011655000
- Seeker MCA III with Wi-Fi & Cellular
P/N 2011655001

SEEKER D SPECIFICATIONS

Frequency Range	Low band: 135–139 MHz High band: 610.5–615 MHz Adjustable in 12.5 kHz Steps via Seeker Setup Software
Frequency Settings	10 user-adjustable operating frequencies, selectable on front panel Set using the configuration methods listed below
Calibrated Level Range	Low band: 2 to 2000 $\mu\text{V/m}$ scaled to match an analog carrier with an AFS-2/4 Handheld Dipole or AVM-3 Vehicle Mounted Whip Antenna High band: 2 to 2000 $\mu\text{V/m}$ scaled to match an analog carrier with an AFS-7 Handheld Yagi antenna OR 4 to 2000 $\mu\text{V/m}$ scaled to match an analog carrier with an AVM-4 Vehicle Mounted Colinear Array Antenna
Level Accuracy	± 2.0 dB
Numerical Display	Readout of any detected leakage within sensitivity range
Audible Tone	Tone is present if leakage amplitude exceeds squelch setting and digital tag is detected Pitch is proportional to strength of leak
Automatic Noise and Overbuild Discrimination	Internal circuitry discriminates between leaks and noise Overbuild discrimination provided by CT-4 channel tagger installed in hub or head-end
Power	Internal battery with eight hours of operation per charge OR Vehicle power of 12 VDC while in Mobile Mount
Configuration Method	USB connection from Leakage Detector to local PC running Seeker Setup Software OR Ethernet or Wi-Fi connection from Seeker MCA III to the LAW Server while the Leakage Detector is located in the Mobile Mount

SEEKER MCA III SPECIFICATIONS

Ethernet Communications	10/100 RJ45 connection to fleet management systems
Wi-Fi Communications	Type: Wi-Fi (802.11 a/b/g/n) to operator-controlled and configured hot-spot Security: WPA-PSK (TKIP), WEP (128-bit) or WPA2-PSK (AES)
Cellular Communications	Optional GSM/GPRS cellular connection to operator-provided cellular carrier
Early Detection Notification (EDN)	Email notification of threshold exceeding leaks

SEEKER D INCLUDES:

Seeker D Leakage Detector
Mobile Mount, Vehicle Power Cable & Wiring Protection Kit (optional)
Low Band Rubber Duck Antenna
High Band Rubber Duck Antenna
AC Travel Charger & USB Cable
Printed Quick Start Installation Checklist & Guide

MCA III INCLUDES:

Seeker MCA III
Seeker MCA III to Mobile Mount Power and Data Cable
2.4 & 5 GHz Wi-Fi antenna
Shielded ethernet cable (10ft)
Cellular antenna (optional)

DIGITAL CHANNEL TAGGER:

CT-4 Channel Tagger
P/N 2011632000

AVAILABLE SOFTWARE:

Seeker Setup Configuration Software
P/N 0930109002
LAW Integrated Server Package
P/N 2011190200
LAW SaaS Subscription
P/N 9980002000

LOW BAND ANTENNAS:

AFS-2 dipole antenna (138 MHz)
P/N 2010436000
APM-3 permanent mount, vertical quarter-wave whip antenna (138 MHz)
P/N 2010650000
AVM-3 magnetic base, vertical quarter-wave whip antenna (138 MHz)
P/N 2010379000

HIGH BAND ANTENNAS:

AFS-7 YAGI handheld antenna (580 to 640 MHz)
P/N 2011644000
AVM-4 magnetic base, whip antenna (600 to 700 MHz)
P/N 2011645000
APM-4 permanent mount, whip antenna (600 to 700 MHz)
P/N 2011646000

OPTIONAL ACCESSORIES:

Garmin® GPS receiver for Seeker MCA II & Seeker MCA III
P/N 2071707004
Industrial-grade Wi-Fi access point
P/N 2011222000
CL-9 vehicle power adapter
P/N 0610169007
Garmin FMI Cable (FMI-40)
P/N 2071585025
Garmin FMI Cable (FMI-40 Euro)
P/N 2071585027
Garmin FMI Cable (FMI-15)
P/N 2071585026
Seeker MCA II or MCA III to Wireless Matrix or SageQuest Data Cable
P/N 2071585030

REPLACEMENT PARTS:

Shielded ethernet cable (10ft)
P/N 2072213010
Seeker MCA III to Mobile Mount Power and Data Cable
P/N 2071585029
2.4 & 5 GHz Wi-Fi antenna
P/N 2071677004
Cellular antenna (international pentaband)
P/N 2072195002