Seeker D with MCA III

Digital Leakage Management Solution

- 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 Remote Programming via WiFi, Ethernet, or USB

- Optional Garmin Interface Provides Turn-by-Turn Directions to Leak Locations and Ability to Close-Out Leaks from Compatible Garmin Navigation Devices

- Cost Effective Solution Utilizing the Majority of Existing Seeker GPS Installation and Equipment

IDEAL FOR DRIVE-OUTS, LEAK DOCUMENTATION, AND TROUBLESHOOTING

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 within the LTE and aeronautical frequency bands and features and 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.

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.

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 vehicle enters a base location, via an operator-controlled Wi-Fi hotspot.

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.

FUTURE CAPABILITIES

At product release, the Seeker MCA III will include all of the same features of the previous Seeker MCA II. But, with a simple free firmware update, the Seeker MCA III will also be able to perform even more including:

- Remote programming and firmware upgrade capabilities via the LAW server that provide users with the ability to update setup and firmware without physically connecting to the Seeker MCA III. This feature also provides the ability to perform remote programming and firmware upgrades on the Seeker D when it is placed in the included mobile mount.
- Programming and firmware upgrade capabilities via USB flash drive that provide users with the ability to update setup and firmware by physically connecting to the Seeker MCA III.
- Near real-time vehicle tracking via LAW with a one minute refresh interval
- Fleet Management Interface (FMI) that is used to communicate with compatible Garmin navigation devices. The FMI feature also provides the ability to; automatically send Point Of Interest files to the navigation device for turn-by-turn directions to the latitude and longitude of the leak, close out leaks from the navigation device and send direct messages to a technician in the field.
- Hard coded serial numbers in the Seeker D and Seeker MCA III for reporting in LAW.
- Advanced troubleshooting event logs will be stored internally and exported as a data file to be read on a PC for diagnostics.
- The display screen will be used to show additional information such as the current activity of the device in order to improve cognizance of data logging, Wi-Fi association, SSID, and uploads.

SEEKER D SPECIFICATIONS

Frequency Range	**Low band:** 136 to 139 MHz, ±2.5 ppm **High band:** 610.5 to 615 MHz, ±2.5 ppm 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 µV/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 µV/m scaled to match an analog carrier with an AFS-7 Handheld Yagi antenna OR 4 to 2000 µV/m scaled to match an analog carrier with an AVM-4 Vehicle Mounted Colinear Array Antenna
Level Accuracy	±2.0 dB
Leakage Sampling	Dynamic Auto-Sensing & Adjusting
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

Standard Communications Interfaces	10/100 RJ45 connection to fleet management systems Wi-Fi (802.11 a/b/g/n) to operator-controlled and configured hot-spot
Early Detection Notification (EDN)	Email notification of threshold exceeding leaks

TRILITHIC

SEEKER D INCLUDES:

Seeker D leakage detector
P/N 2011655001

Low Band Rubber Duck Antenna

High Band Rubber Duck Antenna

Seeker D Mobile Mount

Mobile Mount Power Cable

AC Travel Charger & USB Cable

Printed Quick Start Installation Checklist & Guide

Operation Manual on CD

SEEKER MCA III INCLUDES:

MCA III
P/N 2011690000

Seeker MCA III to Mobile Mount Power and Data Cable

2.4 & 5 GHz Wi-Fi antenna

Shielded ethernet cable (10ft)

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

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