# VIAVI CT 4

## DIGITAL CHANNEL TAGGER


The CT-4 is a Digital Channel Tagger that is used as a system with the Seeker D Digital Leakage Detector to detect leaks in the Aeronautical and LTE frequency bands and eliminate all 'false alarm' triggers by providing proprietary dual CW carriers at two locations.

- Generates Proprietary Dual CW Carriers for use with the Seeker D Digital Leakage Detector
- Operates in both the Aeronautical (135 to 139 MHz) & LTE (610.5 to 615 MHz) Frequency Bands
- Adjustable Output from 10 to 30 dBmV
- Carriers Injected at ~30 dB Below Adjacent Digital Carriers Eliminating the Risk of Affecting Digital Services
- Unsurpassed Sensitivity from 2 to 2000 uV/m

The new 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.

When several CATV systems operate in the same area, it is often difficult to determine which system is the source of a detected leak. The CT-4 is designed to deal with the problem of leakage identification in dual cable or overbuilt situations.

Used as a system with Trilithic's leakage receivers, the CT-4 eliminates all "false alarm" triggers and increase leak detection sensitivity by four times over un-tagged systems.

**Digital Tagging**
The CT-4™ works in conjunction with the new Seeker D™ Digital Leakage Detector to accurately detect and measure signal leakage within the LTE and aeronautical frequency bands.

The Seeker D detects the proprietary signal from the CT-4 with an unsurpassed sensitivity of 2 to 2000 uV/m with measurements that are scaled to an analog or QAM carrier of your choice.

Consequently, readings taken from the existing Seeker meter and the new Seeker D meter produce similar results in the aeronautical band if the low band correlation of the Seeker D is set to analog.

Whether testing for leaks in both digital and analog systems, or monitoring aeronautical bands or LTE, the CT-4 used in conjunction with the Seeker D provides all of the capability to find and fix leaks quickly, accurately, and effectively.

**Traditional Channel Tagging**
The new CT-4 can also act as a traditional CT-2 or CT-3 analog tagger. When used with legacy Trilithic leakage detectors, 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™ solves this problem by tagging the system video carrier (CT-2 operation mode) or an integrated carrier (CT-3 operation mode) with a low-frequency modulation.

With the tag function switched on, the Searcher Plus GT, Super Plus, Seeker Lite, Seeker Lite², Seeker and Seeker SE leakage detectors are immune to false alarming.

These leakage detectors all contain special circuitry that is sensitive only to the tagged signal from the CT-4 and rejects any signals that do not contain it.

### Warbling Identifier Tone

Searcher Plus, Searcher Plus GT, or Super Plus analog leakage detectors generate an audible tone that varies in pitch with leak strength. A leak that has been tagged using the CT-2 or CT-3 operation mode of the CT-4 causes the audible tone to "warble," rising and falling in pitch at the rate of three oscillations per second. If the distinctive warbling sound is not detected, the operator can be sure that the leak did not originate in his system.

### Easy to Install

The CT-4 is very simple to install where RF signals reside. When being used in either the CT-4 or CT-3 operation modes, the CT-4 is simply installed in a rack location near a combiner. Otherwise, the CT-4 can be used with any type modulator in the CT-2 operation mode by simply feeding the analog carrier through the CT-2 and then out to the combiner.

### Options

120 to 240 VAC Power Input
-48 VDC Power Input

## CT 4 SPECIFICATIONS

| GENERAL SPECIFICATIONS | |
|---|---|
| Input / Output Impedance | 75 Ω (nominal) |
| Controls | Front Panel Select and Enter Buttons |
| Display | Two-Line LCD, 16 Characters per Line |
| Communication | 10/100 Base-T Ethernet (for factory use only) |
| Power | AC Power: 90 to 370 VAC, 47-440 Hz, 0.75 A<br>or<br>DC Power: -36.8 to -74.9 VDC, 3 A |
| Size | 1U (1.75") Rack Enclosure |
| Operating Temperature | 50 to 104 °F (10 to 40 °C) |
| **CT-2 OPERATION MODE** | |
| Compatibility | Searcher Plus, Searcher Plus GT, Super Plus, Seeker Lite², Seeker and Seeker SE Leakage Detectors |
| Modulation Type | Sine Wave |
| Tag Modulation Frequency | 3 Hz Warble Tone, 10 to 23 Hz (excluding 16 Hz) |
| 3 Hz Tag Depth of Modulation | 0.0 to 3.0 dB |
| Input Return Loss | > 15 dB from 100 to 160 MHz |
| Output Return Loss | > 13 dB from 100 to 160 MHz |
| **CT-3 OPERATION MODE** | |
| Compatibility | Searcher Plus GT, Super Plus, Seeker Lite², Seeker and Seeker SE Leakage Detectors |
| Carrier Type | Sine Wave |
| Tag Modulation Frequency | 3 Hz Warble Tone, ±0.1 Hz<br>10 to 23 Hz (excluding 16 Hz), ±0.1 Hz |
| 3 Hz Tag Depth of Modulation | 0.0 to 3.0 dB, ±0.2 dB |
| Carrier Frequency | 107.0000 to 157.5000 MHz, ±2.5 ppm<br>Adjustable in 3.125 kHz Steps |
| Carrier Output Level | 40.00 to 60.00 dBmV, ±2 dB |
| Spurious Outputs | -60 dBc Minimum |
| Output Return Loss | > 13 dB from 100 to 160 MHz |
| **CT-4 OPERATION MODE** | |
| Compatibility | Seeker D and Seeker D Lite Leakage Detectors |
| Carrier Type | Proprietary Dual CW for Low and High Bands |
| Tag Signatures | 8 available carrier spacings |
| Carrier Frequency | Low Band: 135–139 MHz<br>High Band: 610.5–615 MHz<br>Adjustable in 12.5 kHz Steps |
| Carrier Output Level | 10.00 to 30.00 dBmV, ±2 dB |
| Low Band Offset | -15.00 to 10.00 dB from High Band, ±1 dB |
| Spurious Outputs | -40 dBc Minimum |
| Output Return Loss | > 12 dB from 50 to 1000 MHz<br>18 dB typical @ 138 MHz<br>14 dB typical @ 612 MHz |

## ORDERING INFORMATION

| INCLUDES THE FOLLOWING | PART NUMBER |
|---|---|
| CT-4 with 120 to 240 VAC Power Supply and AC Power Cable | TRI-LKG-CT4 |
| CT-4 with -48 VDC Power Input | TRI-LKG-CT4-48V |
| **RELATED PRODUCTS** | **PART NUMBER** |
| Seeker D Digital Leakage Detector | TRI-LKG-SKR-D-W-MOUNT |
| Seeker D Lite In-Home Leakage Detector | TRI-LKG-SEEKER-D-LITE |
| Seeker MCA III | TRI-LKG-SEEKER-MCA-WIFI |
| LAW Integrated Server Package | TRI-LKG-LAW-SERVER-W-SW |