

CLI-1450 / CLI-1750

Combination Signal Level/Leakage Meters



Finding the Egress Helps Find and Fix the Ingress.

RF signals leaking out of your system can also indicate RF signals leaking in. Repairing any potential points of ingress/egress will reduce or eliminate unwanted incoming and outgoing interfering RF signals. This not only translates to compliance with government or system leakage (egress) regulation, but also translates to reducing ingress noise that can affect reverse path services.

WWG has embraced the "Find and Fix" concept in the design of the CLI-1450/ CLI-1750 Combination Signal Level and Leakage Meter. A frequency agile leakage mode makes quick work of finding and fixing leakage sources. The Ingress Scan feature iden-

tifies ingress problems from the tap to the drop. In addition, the same reliable signal level meter functions found in the MicroStealth are in the CLI products, eliminating the need to carry multiple meters.

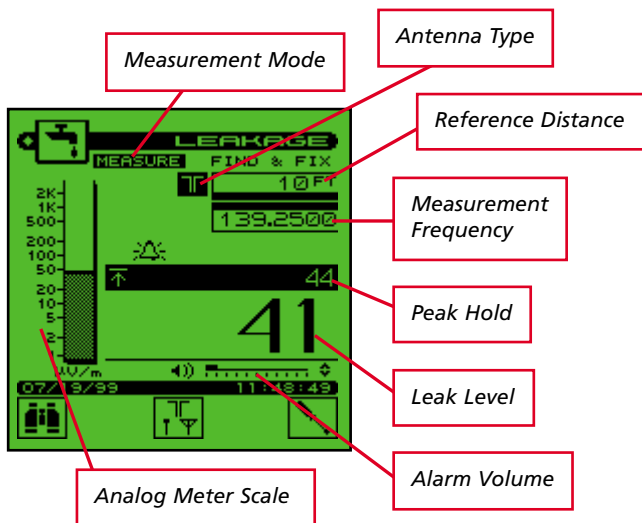
Faster "Find and Fix."

The CLI design enables installers to do their jobs faster and easier. First, all meters are lightweight and easy to carry, yet durable and water-resistant. Second, all have a user-friendly, icon-based user-interface. The simple icons are used in all CLI meters, and all other WWG field meters. This means less training and less downtime for field techs & installers. Finally, the user interface is also available in international languages, allowing for ease of use throughout the world.

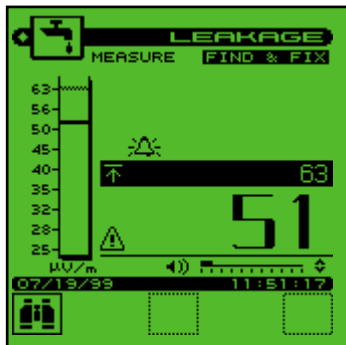
- *Frequency agile leakage detection and measurement*
- *Headend video tagging option differentiates leaks in over-build systems*
- *Vehicle docking station option for quick vehicle antenna and powering connections*
- *Combination signal level and leakage meter, all in one box*
- *95% of all forward and reverse ingress and interference is located in the distribution and home network. Advanced ingress spectrum scan helps you locate the source fast and easy*
- *Meeting every feature and requirement needed in CLI combination meters*
- *User-friendly icon-based user interface used throughout the entire WWG product line; multi-language operator screens available*
- *Complete digital measurement solution for DTV and cable modem signals. digiCheck™ average power measurement including auto limit check*



Leakage Measurement. The flexible configuration menu allows customization of all leakage parameters. Frequency agility lets the user select any test signal from 115-140 MHz. Leakage alert threshold limits can be set for system or regulatory standards. Visual and audible alarms can be enabled to alert the operator when threshold limits are exceeded. When used with the LT1000 Leakage Tagger, a special tag alarm can be programmed for use in overbuild situations.



The **Measurement Mode** is used for "ride-out" driving applications, calibrated leaks, and FCC/CENELEC testing. A numeric read-out and audible alarm quickly alert the user when leakage threshold limits have been exceeded. The leakage measurement is performed on active (unscrambled) video carriers. This mode is more accurate but less sensitive than the Find & Fix mode.



This fast mode is used for drop-to-subscriber and inside the home applications. The fast **Find & Fix Mode** assists in quickly guiding the technician towards the leak source. The large numeric readout is able to quickly update the leakage signal strength. The graph will do an auto rescale in the "find and fix" mode providing a graphical view of the leak response.

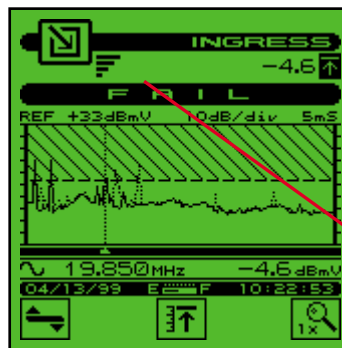
LT-1000 Leakage Tagger.

The distinctive signal tagging from the LT-1000 assures the technician that detected leaks are not being generated from competing systems in overbuild situations. The Leakage Tagger modulates the video signal under test at user programmable rates, and improves detection sensitivity in noisy environments.



Ingress Scan. The innovative ingress scan mode finds forward and reverse ingress problems from the tap to the drop. Start/stop frequencies, resolution, and dwell time are programmable in the set-up menu. The operator can also set a limit threshold for simple identification of problem drops. To check for intermittent ingress, the meter can be adjusted to the peak hold mode to capture transient signals. Ingress scan displays can be saved for later printing or uploading to StealthWare software.

Testing the reverse path spectrum for sub-band signals being generated in the drop system improves the effectiveness of finding ingress sources and common path distortions.



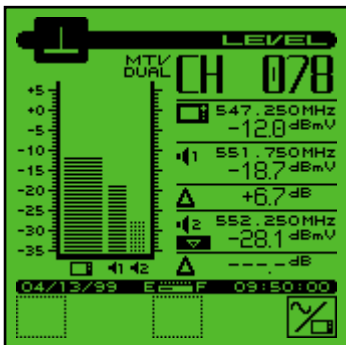
A display of the spectrum with clear pre-set limits allows the installer to easily identify ingress. All intermittent ingress is detected through flexible dwell-time setup.

Intermittent ingress captured by peak hold.

Frequency Range	CLI-1450	CLI-1750
Standard Frequency Range	45-550 MHz	5-890 MHz
Optional Frequency Range	5-890 MHz	N/A



Level Measurement. CLI products provide a comprehensive single-channel display and a multi-channel display with pass/fail indicators. This quickly and clearly indicates if all channels are being received at the subscriber's drop at appropriate system design levels.



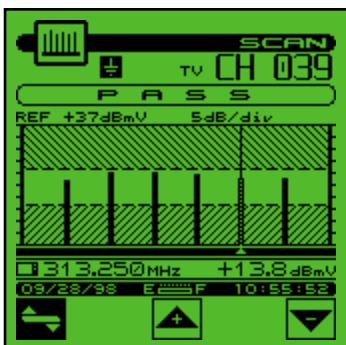
The single channel display shows the video and audio carrier levels and the difference between levels. Compatible with dual sound and NICAM.



Installation Check. Pressing the “✓” key provides an installation status check which allows users to verify that all levels are within user-defined limits. Up to four different limits can be configured: tap, ground block, subscriber drop, and custom. This feature can be used to determine if a subscriber connection meets cable networks or government specifications.



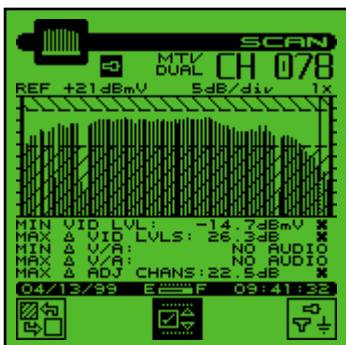
The results are displayed in a list indicating which parameters are out of tolerance. If all levels are within limits, a “✓” will be in the right far column. If any parameter is out of tolerance an “x” will be shown.



The six-channel scan shows six different user-defined video carriers, with pass/fail indicator for user-defined limits.



Pressing the “cycle” soft key provides more detail by bringing up a list of all channels. Passing channels have a “✓” in the right hand column.



The Full Scan display shows all user-defined video carriers. The unique limit check feature quickly checks the results against user-defined analog and digital limits.

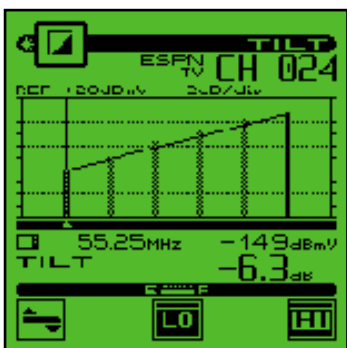


Pressing the “cycle” soft key provides a detailed view of what specific error is on the specific channel.

These results can be printed or downloaded into the PC for report generation using StealthWare™ Data Analysis Software.



Tilt Mode. Tilt measurement is a fast and effective method to balance line extenders and in-home amplifiers.



The tilt display provides a display of six channels that updates in less than a second.



Auto Test. To certify that the network termination and home network are within the specifications, or for proof-of-performance compliance data, an auto-test can be performed. Tests can be executed immediately or scheduled over a period of time. When configuring an Auto Test, you can record information about the location at which the test is being performed. Files can be created for commonly tested locations so you need only enter the information once. You can print a test report for each interval, or a comprehensive 24 hour report that summarizes data collected from up to four intervals.



Auto Test results are time, date, and temperature stamped and can be stored, viewed, printed, or uploaded to StealthWare™ software.



Customized Channel Plans

Channel plans can be built, stored, and edited. This is convenient if you use the meter for more than one plant. You can quickly select the correct channel plan at which you are working. It's only necessary to build a channel plan once. A "cloning" function makes it possible to easily transfer channel plans from one field instrument to the other. StealthWare™ software enables you to upload and download channel plans from your PC to the meter.

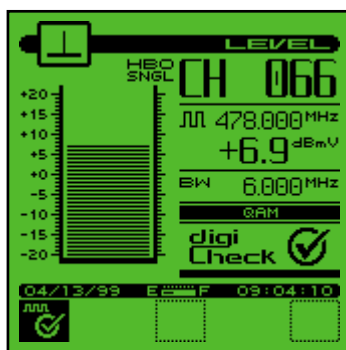


digiCheck™ Digital Signal Measurement.

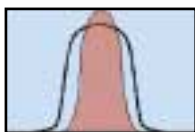
Making accurate digital average power and performance measurements are addressed with the digiCheck™ measurement function. The digiCheck™ average power measurement takes small slices of the integrated RF-energy, summing them together to provide one total power reading. It takes into account the channel flatness of the digital carrier itself.



Digital-TV and forward cable modem signal

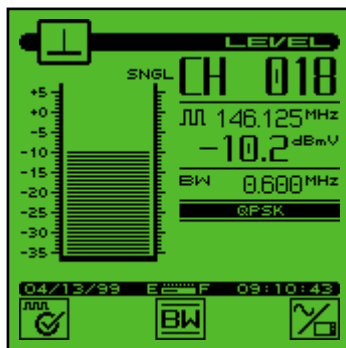


The digiCheck™ method of measuring the total integrated RF-power under the haystack is very reliable and accurate. All level readings are fully compensated for by the correct occupied bandwidth.



"Small-band" digital signals are like cable telephone carriers.

"Small-band" digital carriers, like cable telephony, require a different measurement technique. For that purpose, the digiCheck™ feature offers a time average as well. Even in this case, all level readings are fully compensated for by the correct occupied bandwidth.



- **Single Channel Display and Six Channel Scan** have Pass/Fail indicators for quick performance
- **Installation Check:** ensures FCC and CEN-ELEC compliance, reducing subscriber call-backs
- **Scan Mode:** shows all channel levels at once, graphically identifying problems quickly and easily
- **Channel Plans:** can be stored, built, edited
- **Ingress Scan Mode:** allows users to find forward and reverse ingress problems from the tap to the drop
- **digiCheck™ Digital Signal Measurement:** measures DVB, Digital TV, Cable Modem, Internet, and Telephony on-cable services
- **International Languages:** available on the LCD screen allowing the user to learn and read the meter in their local language:
 - ~ Portuguese
 - ~ Italian
 - ~ Spanish
 - ~ German
 - ~ French
 - ~ Dutch

Dotted line indicates trim. Do not print?



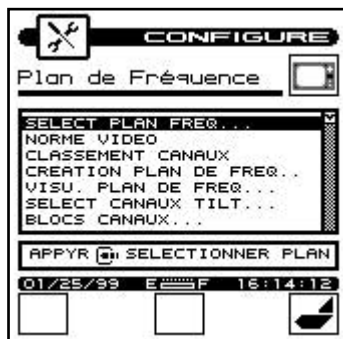
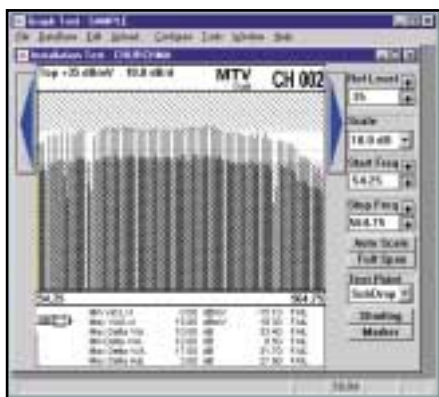
Digital and Analog Limits.

Cable networks have analog and digital carriers. The levels of analog and digital signal measurements are different according to standards and regulations. Digital signals are typically 6-14 dB below analog signals. Users can enter minimum and maximum digital channel level limits separately from analog limits. Scan Mode, Installation Check, and Auto Test will accurately measure both digital and analog signals. This allows easy identification of the pass/fail condition of both channel limits sets.



Limit sets for analog channels and a limit set for digital channels.

StealthWare™ Software: Signal level measurements can be uploaded for storing, viewing, and printing. StealthWare™ allows you to build channel plans and test locations which can be downloaded to the field meter.



Multi-Lingual LCD Screen.

The user interface is now fully converted in the international language requested: French, Portuguese, German, Spanish, Italian, and Dutch.



Mini-Sweep and Fault Locator.

When paired with the CLI-1750, the optional model LST-1700 Transmitter adds 5-862 MHz Mini-Sweep and FDR Fault Locator for qualifying in-home wiring. The CLI-1450 can be upgraded for full compatibility with the LST-1700.

Ordering Information

Options and Accessories

Model CLI-1450 / CLI-1750

Includes a battery cartridge, one charger/AC adapter, a near field probe antenna, and an operating manual.

LT1000

Leakage Tagger Differentiates leaks in overbuilt systems, increases detection range, and limits false alarms

DS-1: Vehicle mount "Docking Station" for quick antenna and auxiliary power connection in vehicle

DS-ARM: Adjustable arm mount for docking station to enable viewing of display from driver's seat

VMA-3: Magnetic vehicle mount 1/4λ whip antenna

LD-3: Dipole antenna with telescoping fiberglass extension pole, fully extendible to the FCC measurement distance of 10 feet (3 meters)

MBC-6: 6-bay battery cartridge charger (U.S. only)

MBC-4: 4-bay battery cartridge charger (CE compliant)

MSCLI Printer: Portable serial thermal fusion printer kit

StealthWare: Data management and analysis software (includes 1019-00-0469, CLI to PC cable)

1019-00-0476: Durable padded carrying case

1019-00-0479: Battery cartridge

3010-16-0025: Near field probe antenna

4010-00-0119: Charger/Adapter, 120VAC to 12VDC

1019-00-0554: European Charger/Adapter (CE Compliant)

1019-00-0558: Charger/Adapter universal input, 12VDC output

1019-00-0557: Cigarette lighter adapter

1019-00-0467: MSCLI printer cable

1019-00-0468: Generic serial printer cable; CLI to 25 pin male connector

1019-00-0469: CLI to PC cable

1019-00-0470: RS232 interconnect cable (included with LST1700)

Specifications

Frequency

Range CLI-1450 45 to 559 MHz
 45 to 890 MHz option
 5 to 45 MHz sub-band option
Range CLI-1750 5 to 890 MHz
Accuracy 10 ppm @ 25°C (77°F);
 20 ppm over temp.
Tuning Resolution 25 kHz

Level Measurement

Range -20 to +50 dBmV
Resolution 0.1 dB
Accuracy ±0.75 dB Flatness,
 ±0.75 dB Linearity @ 25°C (77°F)
Digital Average Power (optional) ± 2.0 dB (typical)

Scan Mode

Number of Channels 120
Scan Rate Approximately 6 carriers/second

Leakage Mode

Level Measurement
Input Sensitivity (with LD-3 dipole or VMA-3 mag mount)
 Video Detection From 1 µV with LT1000
 Leakage Tagger activated
 (121 to 133.2625 MHz).
 CW Detection From 0.5 µV typical with LT1000
 Leakage Tagger activated
 (121 to 133.2625 MHz).
 Measurement From 1.4 µV (115 to 140 MHz).

Range 0.5 to 2,000 µV (at input connector)
Accuracy
 Measurement ±1.5 dB @ 25°C (77°F)
 Find & Fix ±2.25 dB @ 25°C (77°F)
Tuning Carrier
Frequency Range 115 to 140 MHz range (Video)
Accuracy 10 ppm @ 25°C (77°F);
 20 ppm over temp.
Resolution 25 kHz

General

Dimensions 4.25" (W) x 10" (H) x 2.5" (D)
Weight 1.3 kg (2.9 lb.)
Operating
Temp. Range -10 to +50°C (14 to 122°F);
 ±3 dB drift, -10 to +50°C
Water Resistance Meets or exceeds MIL-STD-810D
 (Method 506.2)

Power

Battery Life 2.25 hours continuous (backlight off)
 2.25 hours continuous (backlight off) in leakage mode
 replaceable battery cartridge
Charge Time 16 hour charge with unit "off"

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