

## DOCSIS SIGNAL LEVEL METER

All Tests Compatible with DOCSIS 3.0 Systems



- **Modem Return Level**  
Built-in DOCSIS modem displays return level to CMTS
- **MER, BER & C/N**  
Quality measurements of digital & analog channels
- **Leakage & Ingress Detection**  
Verify proper shielding and tight connections
- **Analog, QAM, QPSK & 8VSB**  
Power measurements of analog and digital formats
- **1000 MHz. Tuning Range**

### Product Description

The DisplayMax 5000 provides a complete test solution for today's installation workforce. The 5000 series measures analog and digital channel power as well as quality measurements such as MER, BER and C/N. Return levels are measured using a built-in DOCSIS modem, insuring sufficient headroom for reliable modem operation. Finally, shielding is verified by measuring Leakage and Ingress. All these tests from a single, low cost and easy to use field instrument. The DisplayMax 5000 is the only meter your installers need.

### Field Rugged and Accurate

The DisplayMax 5000 has a rugged aluminum housing, weather proof keypad, protected LCD display, virtually unbreakable F-connector bushings and comes in a padded nylon case. In addition to the rugged mechanical design, it has a built-in white noise source that acts as a calibration reference. Before each reading, the meter adjusts its calibration, making the 5000 series not only rugged, but also extremely accurate. The auto-calibration feature eliminates the need for annual calibration.

### Return Levels

Measuring return levels not only verifies a connection with the CMTS, but also insures sufficient headroom for reliable modem operation. With the press of a single button, DisplayMax 5000 displays the return level on a large easy to read display. If levels are too high, the installer can take measurements at various locations to pinpoint and fix the source of the problem.

### MER, BER & C/N

Quality measurements are necessary to insure reliable performance of the customer's equipment. MER and BER measure signal quality of a digital channel, while C/N measures signal quality of an analog channel.

### Leakage and Ingress

Leakage and Ingress are essential tests to verify good shielding properties of the home and drop cable as well as any component attached to the cable. An installation that is free from ingress and leakage will provide reliable service to the customer – both today and in the future.

## SPECIFICATIONS

**AVAILABLE OPTIONS:** *order any combination*

**OPT-01 Ingress Detection:**

Detect unwanted ingress signals in the drop and home wiring. Meter automatically scans the return path and checks for ingress down to -40 dBmV. A Pass / Fail message is displayed along with the frequency and level of the highest ingress signal.

**OPT-02 Leakage Detection:**

Detect forward channels leaking from the drop and home wiring. Leakage detection is the fastest way to find the source of Ingress; simply attach the rubber duck antenna and search for "hot spots". Shutting down a source of Leakage shuts down a source of Ingress.

**OPT-03 MER, BER & C/N:**

Add three quality measurements with one option. MER (modulation error ratio) and BER (bit error rate) are digital channel quality tests that indicate not only the quality but also the reliability of a digital channel. C/N (carrier to noise ratio) is a similar test for analog channels.

**OPT-04 Modem Return Level:**

This option adds a DOCSIS modem chip-set to your meter. Qualify the return path by establishing a connection with the CMTS (cable modem termination system) and verify healthy margins by viewing the modem's return level.

**OPT-05 1 GHz. Tuning:**

Extend the upper tuning range from 872 MHz to 1000 MHz. (1 GHz).

**SIGNAL LEVEL METER (BASE MODEL)**

Frequency Range: 5 to 872 MHz

Channel Plans: EIA, HRC, IRC, AIR, PAL-BG

(custom plans on request)

Tuning Resolution: 125 KHz

Tuning Bandwidth: 280 KHz

Analog Power Range: -30 to +60 dBmV

Digital Power Range: -23 to +67 dBmV

Level Resolution: 0.1 dB

Level Units: dBmV, dBuV

**Typical Accuracy: +/- 0.5 dB**

Max Additional Error at 70° F: +/- 0.5 dB

Typical Accuracy from 0 to 120° F: +/- 1.0 dB

Max Additional Error from 0 to 120° F: +/- 1.0 dB

Digital Error: additional +/- 0.5 dB

**INGRESS DETECTOR (OPT-01)**

Frequency Range: 5 to 872 MHz.

Default Frequency Range: 5 to 40 MHz.

Return Sensitivity: -40 dBmV (5 to 40 MHz)

Forward Sensitivity: -30 dBmV (40 to 872 MHz)

Level Units: dBmV, dBuV

Tuning Resolution: 250 KHz

Tuning Bandwidth: 280 KHz

Detector Mode: Peak

Accuracy: Same as base model digital channel

**LEAKAGE DETECTOR (OPT-02)**

Frequency Range: 110 to 140 MHz.

Sensitivity: 2 uV/m, with duck antenna 3ft from leak

Level units: uV/m

Tuning Resolution: 125 KHz

Tuning Bandwidth: 280 KHz

**LEAKAGE DETECTOR (OPT-02) CONT.**

Detector Mode: Peak

Responds only to video signals (rejects non-cable signals)

Audio: Outputs tone; pitch varies with level

Accuracy: Same as base model analog channel

**QUALITY MEASUREMENTS (OPT-03)**

Digital BER Range: 1 E -4 to 1 E -9

Digital MER Range: 24 to 40dB

MER & BER: min input -15dBmV

Analog C/N: max 50dB (min input 0dBmV)

Displayed as a function of system noise

**MODEM LEVEL (OPT-04)**

DOCSIS Version: 2.0

Downstream Locking Range: -15 to +20dBmV

Upstream Max Level: 58dBmV

**1 GHz. Tuning (OPT-05)**

Extends max tuning range from 872 MHz to 1000 MHz

All other specs same as base model

**GENERAL**

Battery life: 7 hrs. (5 hrs with 25% modem use)

Battery Charge: 12 hours

Audio: Water sealed speaker with volume control

Weight and Dimensions: 3 lbs, L 8.2" x W 4.0" x D 2.5"

Supplied Accessories: Nylon case (CASE007), 110V wall charger

(T70), duck antenna (ANT01), Ni-MH battery (BAT09), manual

Optional Accessories: Car charger (CH04), 220V wall charger,

(T70E), dipole antenna (ANT02), monopole antenna (ANT03)

specifications subject to change without notice