Overview

The DS2460Q is a multi-functional instrument that supports digital QAM and analog signals in CATV networks. It is the ideal tool for initial network installations, service, and troubleshooting tasks. The ruggedized design includes an outer chassis protector, while the icon-based GUI features programmable preset pass/fail limits. The easy-flowing menus are designed for increased efficiency and productivity for all levels of technicians.

Other features - including return path & forward spectrum scan, 12 favorite tilt frequencies, AC line voltage test, HUM and DC voltage measurements, combined with complete data logging and management software - make the DS2460Q a versatile tool for cable installations.

MER, Pre-Post BER measurements, and statistics features allow quick verification of loose connections, generally related to pixelated pictures or slow DS internet data flow. The digital measurement functions also help identify mismatches caused by open coaxial lines or impedance mismatch.

Key Benefits

- Comprehensive tool for installation and maintenance of cable networks
- Fast spectrum analysis, 5~1220 MHz
- 5~1052MHz (Analog TV), 46~1052MHz (Digital TV)
- Digital TV measurements include: Average Power, MER, BER, BER Statistics, Constellation
- Analog TV measurements include: Level, V/A, HUM, C/N
- Auto-generates and saves up to 20 custom channel plans from a cable drop
- Auto test with pass/fail limits speeds up tests and simplifies results interpretation
- Client-based Toolbox management software for quick unit configuration
- USB Micro 2.0 port for PC data transfer
- Ethernet port for Ping function
- Optical Power Measurement and VFL (Visual Fault Location) available by option
DS2460Q QAM Analysis Meter

Figure 1: MER, Pre-BER, Post-BER & Constellation

Figure 2: BER

Figure 3: Return Path Spectrum (5-210MHz)

Figure 4: Channel Scan

Figure 5: Tilt (Max 12 Channels)

Figure 6: Forward Spectrum

Figure 7: Normal Spectrum Analysis

Figure 8: Optical Power Meter Function
Up to 20 Stored Channel Plans

For technicians and contractors who work in multiple HFC networks, having a choice of different channel plans is a must. The DS2460Q can learn a selection of up to twenty (20) different channel plans. When connected to an RF drop, the DS2460Q learns analog/digital channels and custom frequencies through the built-in automated channel plan learning tool - or downloads them via Deviser's Toolbox PC software. The user can select up to 12 channels in each of the 20 user-defined plans and assign them to a favorite tilt/channel plan.

QAM Analysis & Channel Measurements

The DS2460Q measures and analyzes channel power, MER, and Pre-Post BER, including constellation display. It is compatible with 16/32/64/128/256 QAM modulation, and can also provide power measurements for QPSK and COFDM digital carriers.

Spectrum Analysis & Measurements

The DS2460Q offers three distinct spectrum analysis modes: normal, fast, and return path. Fast spectrum analysis allows technicians to view a frequency range of 5~1220MHz; while normal spectrum analysis optimizes amplitude accuracy at a lower sweep speed. For troubleshooting upstream problems, the unit can display frequency spans of 5~65 MHz, providing an additional tool to technicians dealing with upstream data signals. All modes have access to the Marker and Max Hold features, making it easy to capture and analyze transient anomalies.

Full Spectrum Scans & Marker Feature

The DS2460Q can scan 160 channels, allowing users to quickly and efficiently measure flatness and amplitude of the HFC network. Using markers, technicians can quickly identify mismatch-related anomalies caused by poor grounding or damaged transmission lines.

HUM Measurement

The HUM measurement helps technicians identify and troubleshoot anomalies that may result from defective capacitors, faulty line splitters, or overloaded couplers (caused by weather conditions or excessive current). Both 60 & 120 Hz tests are performed @400Hz LPF measurements.

Auto Diagnostic User-defined Limit Test

The auto test simplifies the technician's work by displaying pass/fail results. End users can set limits on Power Level, MER, Pre-Post BER, Spectrum Analysis, Tilt, and HUM measurements. With the simple Save function, the technician no longer must manually record results, saving more time for installations and service calls in a day. In addition, measurement data is saved instantly to ensure performance accountability for each location - and to reduce the need to return to previously tested sites.

File Management - Test Data Storage

Multiple test data files can be saved and stored as analog carriers or frequencies, QAM carriers or digital frequencies, channel scan, tilt, frequency spectrum measurements, and/or HUM. Results are saved to the File Directory by timestamp. Records can be uploaded to a PC via the Toolbox software for report generation, printing, and analysis.

Voltage Measurement

The DS2460Q measures battery voltage, trunk, & distribution line voltage of the cable system, accurately identifying AC or DC anomalies. The smart power management system enables approximately 5 hours' continuous operation from battery on a full charge.
Specifications

Normal Spectrum Analysis
- Frequency Range: 45 MHz ~ 1052 MHz
- Span: 2.5 MHz; 6.25 MHz; 12.5 MHz; 25 MHz; 62.5 MHz; Full Span

Fast Spectrum Analysis
- Frequency Range: 5MHz ~ 1220MHz
- Span: 12.5MHz, 25MHz, 62.5MHz, Full Span

Return path Spectrum Analysis
- Frequency Range: 5~210MHz

Channel Scan
- Number of Channels: 160 channels max
- Scale: 1,2,5,10dB/div
- Zoom: 1X,2X,3X,4X,5X five levels

Analog TV Measurement
- Supported Standards: PAL, NTSC and FM Radio (Single Frequency)
- Level Measurement: Range: -30dBmV to +60dBmV; Accuracy: ±2dB; Resolution: 0.1dB
- Frequency: Range: 5M-1052M; Accuracy: ±50ppm; Resolution: 10KHz
- Resolution Bandwidth: 280KHz
- C/N: >50dB
- HUM Measurement Range: 2% to 5%

Digital TV
- Power Level: Range: -30dBmV to +60dBmV; Accuracy: ±2dB; Resolution: 0.1dB
- Frequency: Range: 46MHz to 1052MHz; Accuracy: ±2dB; Resolution: 0.1dB
- Supported Standards: ITU-T J.83 Annex A, B and C
- QAM Demodulation Type: Annex A: QAM 16/32/64/128/256, Annex B&C: QAM64/256
- Interleave Depth: 128x1~128x4(J.83B);12x17(J.83A/C)
- Symbol Rate Range: 4MS/sec to 7MS/sec
- MER: 41dB; Accuracy±2dB
- BER: 1E-3 to 1E-9
- Constellation Display Mode: 64/256 QAM with zoom capability

Line Voltage Measurement
- Range: 0V to 100V [AC/DC] with accuracy ±2V

Optical Power Measurement
- Accuracy: ±0.23dB(±5%)
- Detector Type: InGaAs@300μm
- Range: -50dBm ~ +27dBm
- Linearity: 0.07dB/10dB
- Resolution: 0.01dBm, mW, μW, nW
- Wavelength: 850 nm, 980 nm, 1300 nm, 1310nm, 1490 nm, 1550nm, 1610 nm
- Interface: FC/SC/ST Universal Connector Interface Adapter

VFL (Visual Fault Location)
- Output Power: 10mW
- Output Wavelenght: 650±10nm
- Interface: FC/PC

Miscellaneous
- RF Input: 75Ω
- USB: USB Micro B 2.0
- Ethernet: 10/100M
- Display: 2.8” 320x240 TFT LCD
- AC/DC Adapter: AC 100V to 240V 50-60Hz ,DC 15V/0.9A
- Battery: 7.4V 2.5Ah Lithium Battery
- Charge Time/ Working Time: 5 hours / >5hours
- Dimension (W×H×L): 200mm x 106mm x 54mm (7.9” x 4.2” x 2.1”)
- Weight: About 600 grams (1.3 lbs)
- Work/ Storage Temperature: -10 ~ +40°C/-20 ~ +70°C

©2017 Deviser Instruments Incorporated. 780 Montague Expressway, Suite 701, San Jose, CA 95131. All rights reserved. Specifications subject to change without notice. All product and company names are trademarks of their respective corporations. Deviser Instruments manufacturing facilities are ISO 9001 certified. Do not reproduce, redistribute, or repost without written permission from Deviser Instruments. 170202

www.deviserinstruments.com