Key Benefits

- Fast Spectrum Analysis (4 ~ 1220 MHz)
- Integrated DOCSIS 3.0 Cable Modem
- Integrated Upstream Signal Generator (no FEC)
- Supports ITU-T J.83 Annex A/B/C
- Error Vector Spectrum: identifies interference signals under QAM carriers, with no break in service
- Auto Test

Overview

Integrating multiple functions in a single handheld instrument, the DS2580C is a powerful Digital TV QAM Analyzer with a comprehensive measurement suite specifically designed for HFC network testing, troubleshooting, and maintenance.

The DS2580C's main functions include Enhanced Spectrum Analysis, Analog & Digital TV analysis, DOCSIS 3.0 analysis, Upstream Signal Generation, Ethernet testing, and Auto Test. The revolutionary EVS function enables users to detect coherent distortions hiding under QAM carriers - without interrupting service. The DS2580C supports Deviser's PC software toolkit, included with each unit, to make data transfer a snap.
Fast Spectrum Analysis Function
The DS2580C offers enhanced spectrum analysis performance, with a frequency range from 4MHz ~ 1220MHz and sensitivity down to -55dBmV (@300KHz).

Figure 1: Spectrum Analysis

The spectrogram provides a scrolling three-dimensional display, allowing users to track frequency and level over time - excellent for analyzing intermittent signals.

Figure 2: Spectrogram

DVB-C Signal Analysis
The DS2580C supports the ITU-T J.83 Annex A/B/C standard, providing Channel Power, MER, BER, and Constellation tests.

Figure 3: DVB-C Channel Measurement

The DS2580C also offers Digital HUM distortion measurements, from the fundamental frequency to 4th harmonic components.

Figure 4: Digital HUM

Figure 5: Constellation Display

Figure 6: MER & BER Statistical Analysis
EVS In-Service Interference Detection
The Error Vector Spectrum feature can find interference signals under a QAM carrier without service interruptions.

Upstream Signal Generator
The DS2580C can generate a CW carrier or QAM signal. Sweep mode is also available.

Cable Modem Measurement
The DS2580C incorporates a standard DOCSIS 3.0 cable modem, compatible with DOCSIS 1.X, 2.0 & 3.0. The built-in modem supports 8x DS and 4x US bonded carriers. Figure 8 (below) shows the CM statistical info screen — including downstream signal level, modulation type, bandwidth, symbol rate, MER, BER, upstream signal level, symbol rate, & UCD (Upstream Channel Descriptor).

Users can select the desired DOCSIS mode, downstream channel, and UCD. Basic network test tools include Ping, Traceroute, PPPoE, FTP, and a web browser.

Auto Test
The DS2580C comes equipped with a wide range of region-standard channel plans spanning (in part) North America, Asia, and Europe, as well as several sets of limit profiles — allowing users to design automatic tests. Tasks that can be automated include Analog TV, Digital TV and Cable Modem testing. Once the analyzer completes an auto test, all items in the test results will indicate Pass or Fail according to the limit profile. Results are automatically saved for later analysis.

Figure 7: The EVS mode finds narrow-band interference signals with supreme clarity and ease.

Figure 8: DOCSIS 3.0 Statistical Information Display

Figure 9: Upstream Signal Generator

Figure 10: Auto Test Project
### Specifications

#### Analog TV Measurement
- **Supported Standards**: B/G; I/D/K/L/L'; M/N
- **Color Standards**: NTSC, PAL, SECAM
- **Frequency Step**: 10kHz
- **Power Level Range**: -40 ~ +60dBmV
- **Accuracy**: < ±1dB @ 25 ± 5°C (typical); S/N >30dB
- **Level Resolution**: 0.1dB
- **Resolution Bandwidth**: 300kHz
- **CCN**: >51dB (@ +10dBmV carrier level)
- **CTB/CSO**: ≥ 61dB; accurate to within ±2dB
- **HUM Measurement**: 1 ~ 15%: ±5%; 1 ~ 5%: ±1.0%; 5 ~ 20%: ±2.0%
- **Tilt**: Up to 16 channels
- **Attenuation**: Automatic, 40dB
- **Pre-amplifier**: Automatic, 18dB gain

#### Cable Modem Measurement
- **Downstream**
  - **Supported Standards**: DOCSIS 1.1, 2.0, 3.0; EuroDOCSIS 1.0, 1.1, 2.0, 3.0
  - **Demodulation**: 64 / 256 QAM
  - **Frequency Range**: >91 MHz (US); >100 MHz (EU)
  - **Max Speed**:
    - 6 MHz BW: Up to 304 Mbps
    - 8 MHz BW: Up to 400 Mbps
  - **Channel Bonding**: Up to 8 channels
  - **Bandwidth**: 6 MHz / 8 MHz
  - **Input Level Range**: -15 ~ +15dBmV

- **Upstream**
  - **Frequency Range**: 4 ~ 85 MHz
  - **Signal Bandwidth (TDMA)**: 200 / 400 / 800 / 1600 / 3200 / 6400kHz
  - **Signal Bandwidth (CDMA)**: 1600 / 3200 / 6400kHz
  - **Channel Bonding**: Up to 4 channels
  - **Bandwidth**: 6 MHz / 8 MHz
  - **Input Level Range**: -15 ~ +15dBmV

#### Digital TV Measurement
- **Frequency Range**: 46 ~ 1000 MHz
- **Power Level Range**: -30 ~ +50dBmV
- **Level Resolution**: 0.1dB
- **Accuracy**: < ±5dB @ 25 ± 5°C (typical); C/N >20dB
- **Modulation Type**: J.83 Ax. A/C; J.83 Ax. B
- **Interleave Depth**: J.83 Ax. A/C: (12, 17); J.83 Ax. B: (128, 1) ~ (128, 4)
- **Symbol Rate**: 4.0 ~ 7.0 MS/s
- **MER**: >41dB; accurate to within ±2dB
- **BER**: 1E-3 ~ 1E-9
- **Constellation**: 16 / 32 / 64 / 128 / 256 QAM
### Specifications (cont’d)

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<thead>
<tr>
<th>General</th>
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<tbody>
<tr>
<td>RF Input</td>
<td>75Ω F-type connector</td>
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<tr>
<td>USB</td>
<td>USB 1.1</td>
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<tr>
<td>LAN</td>
<td>RJ45, 10/100T Ethernet</td>
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<tr>
<td>Display</td>
<td>4.3” 480x272 TFT LCD</td>
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<tr>
<td>Power Adapter</td>
<td>AC 100<del>240V/ 50</del>60 Hz</td>
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<td>DC 12V / 3A</td>
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<td>Battery</td>
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<tr>
<td>Charging Time</td>
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<td>Operation Time</td>
<td>&gt;6 hours</td>
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<tr>
<td>Storage Temperature</td>
<td>-20 ~ +60°C</td>
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<tr>
<td>Operation Temperature</td>
<td>-10 ~ +50°C</td>
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<tr>
<td>Dimensions (LxWxH)</td>
<td>9.6” x 5.1” x 2.4” (245mm x 130mm x 60mm)</td>
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<tr>
<td>Weight</td>
<td>3.3 lbs (~1.5kg)</td>
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### Ordering Information

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<thead>
<tr>
<th>DS2580C Base Model</th>
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<tbody>
<tr>
<td>DS2580C Digital Cable TV QAM Analyzer, 4 ~ 1220 MHz, 75Ω or BNC</td>
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<thead>
<tr>
<th>Options</th>
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<tbody>
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<td>DOCSIS 3.0 8x4 Cable Modem and Upstream Signal Generator (no FEC)</td>
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<td>SYNCOR Asset Management</td>
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<td>SYNCOR Certificate</td>
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<td>ATSC (8VSB) Measurement</td>
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<td>2-Prong Power Cord plus Ground (Europe except UK)</td>
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<td>3-Prong Power Cord plus Ground (US)</td>
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<td>3-Prong Power Cord plus Ground (Australia)</td>
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<td>English Instruction Manual (hard copy)</td>
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<td>Toko Type F(f) to F(f) Connector</td>
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