

DS2800

Handheld Digital TV Spectrum Analyzer

Key Benefit

- Fast Spectrum Analysis: 4 - 1220 MHz, 4 - 2150 MHz
- Digital options: OPM, VFL, and fiber scope
- ITU-T J.83 Annex A/B/C/D, QAM/8VSB; auto-detects channel parameters
- Spectrum Persistence Analysis: any frequency band, max span 206 MHz
- Downstream & Upstream Spectrum Analysis covers DOCSIS 3.1 frequency band
- Integrated DOCSIS 3.0 cable modem
- Integrated Upstream Signal Generator (J.83A/B-FEC)
- Forward/Reverse Path Sweep
- TS Analysis
- TR 101 290 Monitoring, auto-generated program lists, and program-channel mapping
- Error Vector Spectrum identifies interference under QAM carriers with no interruptions in service
- Gated Measurements: in-service C/N, CSO, CTB, CLDI, DG/DP, DOM, ICR tests
- Auto Test
- Asset and Test Data management software



A host of new applications help HE/HUB and field engineers perform in-service measurements and locate interference. Upstream Spectrum Analysis mode offers a persistence mode (any frequency band, max span 206 MHz) that will show interference under bursty signaling.

In the Analog TV mode, when VITS signals are inserted, gated C/N, CSO, CTB, CLDI, DG-DP, DoM, and ICR measurements allow in-service channel testing; the DS2800 can also perform non-intrusive measurements.

For DVB-C and CMTS downstream signals, the revolutionary Frequency & Time EVS function enables users to detect coherent distortions hiding under QAM carriers like LTE – without interrupting service. The DS2800 also supports Transport Stream Analysis, showing reactive bandwidth usage, basic TS structure, TR 101 290, PiD view, PCR, PSiP, PAT, and PMT tables.

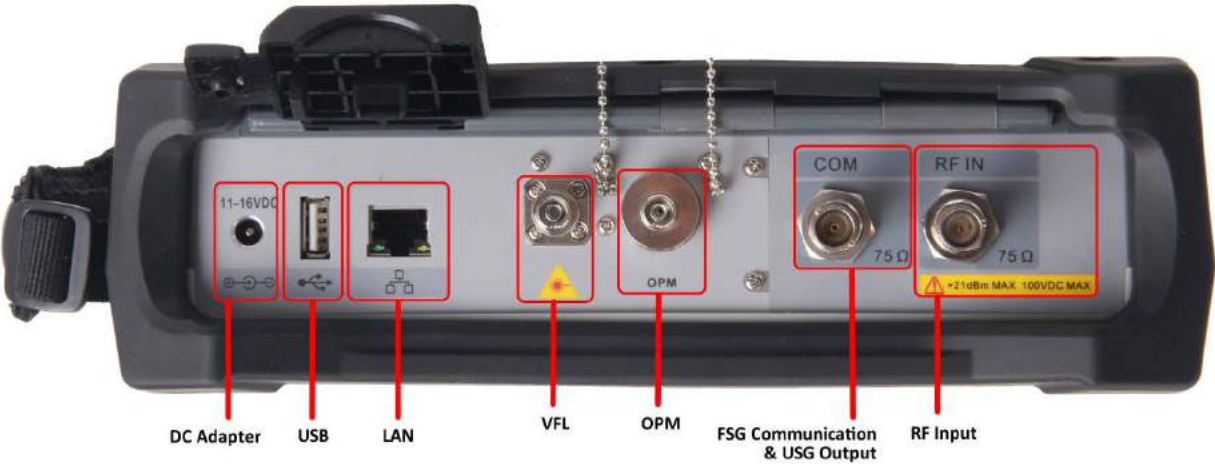
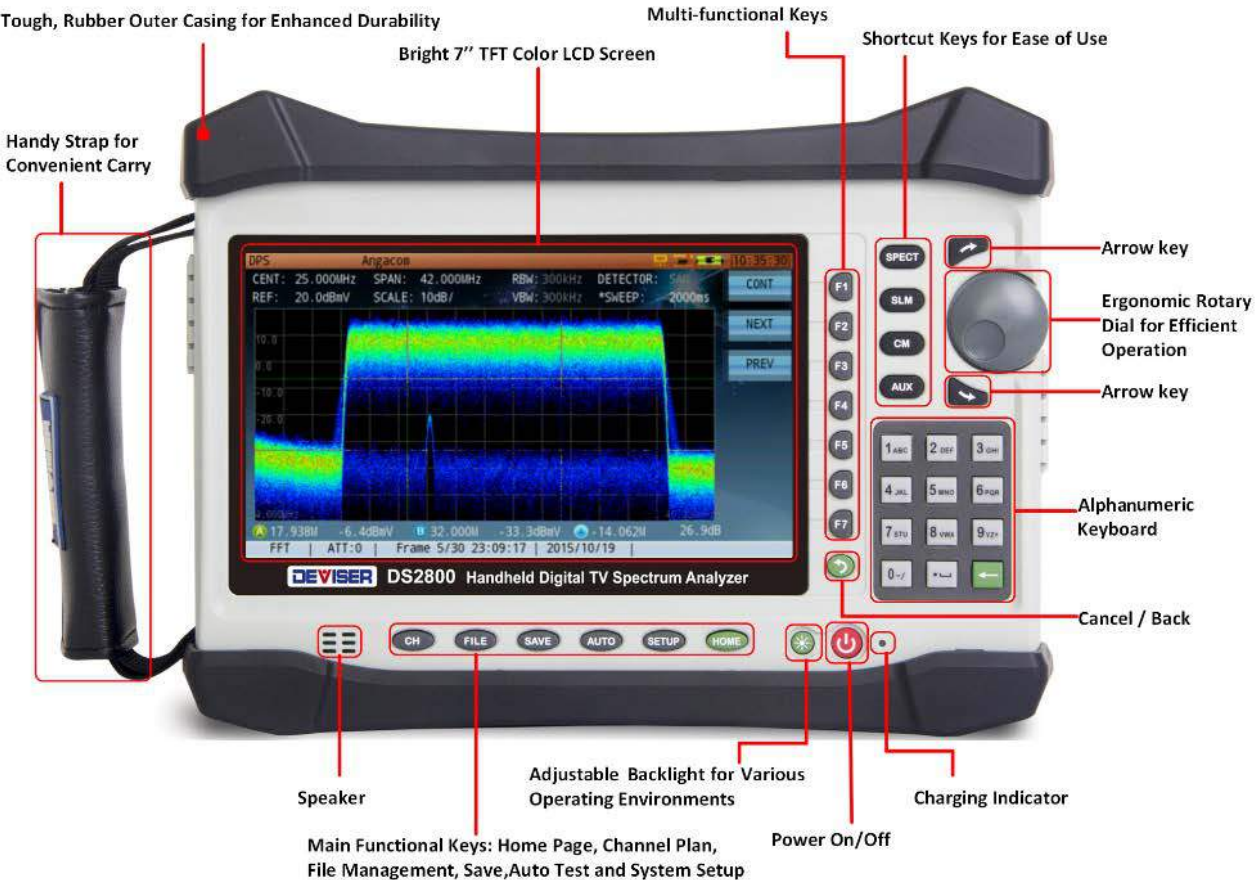
The DS2800 supports the Toolbox PC software for small-scale applications. The SYNCOR platform manages asset and test data for larger applications. As fiber-optic technology continues to expand into the CATV network space, the DS2800's optical measurement options – including an optical power meter, visual fault location, and a fiber inspection scope – are newly offered.

Overview

Integrating multiple functions in a very small portable instrument, the DS2800 is a new-generation Digital TV Spectrum Analyzer with a comprehensive measurement suite specifically designed for HFC network testing, troubleshooting, and maintenance.

The DS2800's main functions include Analog TV and Digital TV analysis, DOCSIS 3.0 analysis, Spectrum Analysis, Forward/Return Path Sweep, Upstream Signal Generation, simple Ethernet and Wi-Fi testing, and Auto Test.

With the latest in miniaturized technology, the DS2800 affording outstanding performance to the CATV engineer. Its RF features are based on a handheld spectrum analyzer, with 80dB of dynamic range.



Fast Spectrum Analysis

The Deviser DS2800 offers enhanced spectrum analysis performance, with a frequency range of 4MHz ~ 1220MHz (optionally expandable to 4MHz ~ 2150MHz) and 80dB of dynamic range.

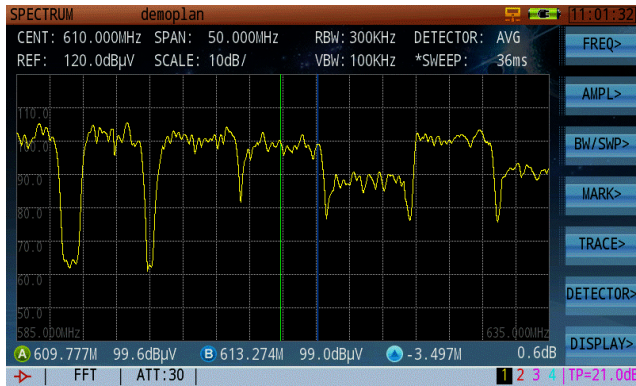


Figure 1: Spectrum Analysis

Simultaneous Spectrum & QAM Display

The DS2800 supports both spectrum analysis and QAM analysis, with the ability to display both measurements at once. Users can observe multiple signal characteristics and identify faults without switching applications.

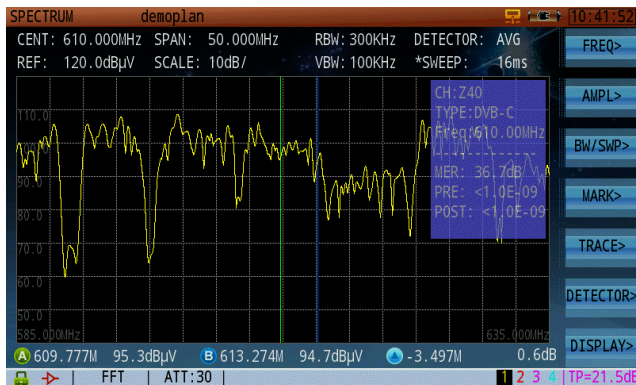


Figure 3: Simultaneous Spectrum and QAM Analysis

Spectrogram

The spectrogram provides a scrolling three-dimensional display, allowing users to track frequency and level over time - excellent for analyzing intermittent signals. Users can analyze the stability of a signal, or identify intermittent interference signals in a communications system.

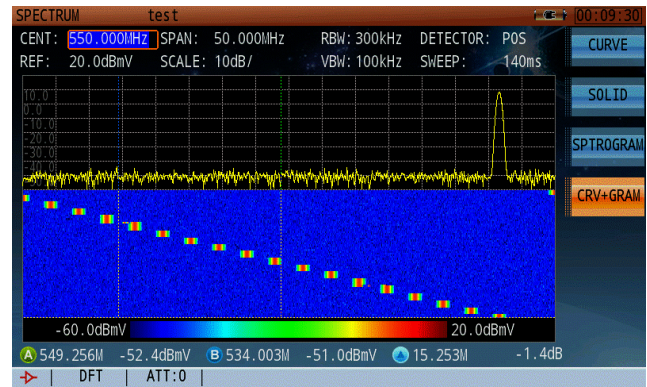


Figure 3: Spectrogram

Upstream Spectrum Persistence

Traditionally, the task of troubleshooting upstream signal involves using free regions of the upstream spectrum to measure the noise floor and monitor for interference. But in DOCSIS 3.0 systems, the upstream spectrum becomes too crowded for this approach; ordinary analyzers cannot distinguish communication signals from interference. Deviser's Spectrum Persistence analysis technology, newly available on the DS2800, enables users to locate bursty signals hiding under QAM carriers (e.g. LTE) - **without interrupting service.**

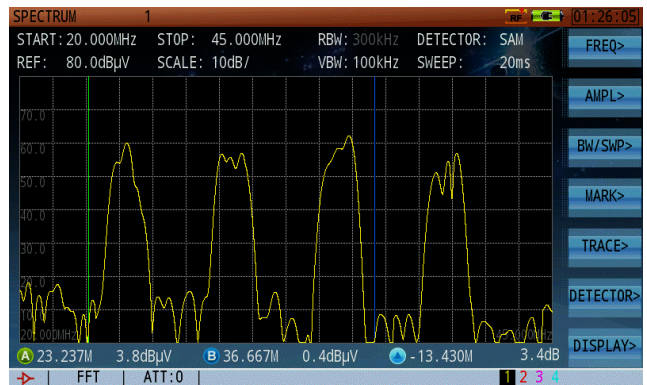


Figure 4: Spectrum Analysis - Low-Level Signal Covered by High-Level Signal

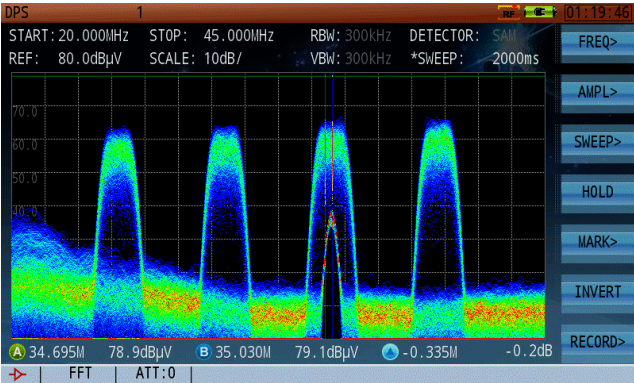


Figure 5: Persistence Shows Ingress Signal Under DOCSIS Upstream Signal (REPLACE PER BERNIE)

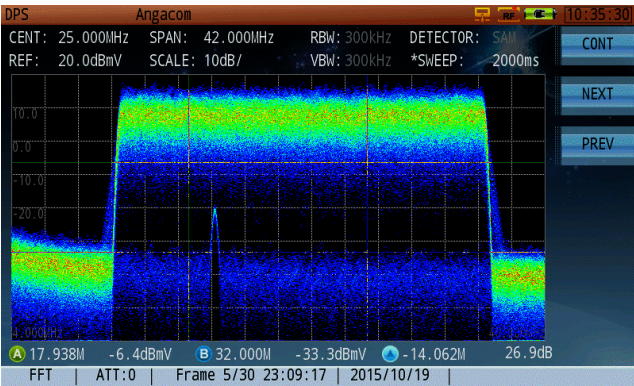


Figure 6: Replaying Recorded Persistence File

Analogue TV Gated Measurement

The DS2800's suite of Analogue TV tests includes the Gated measurement function. This mode supports in-service C/N, CSO, CTB, CLDI, DG/DP, DoM, and ICR measurements.

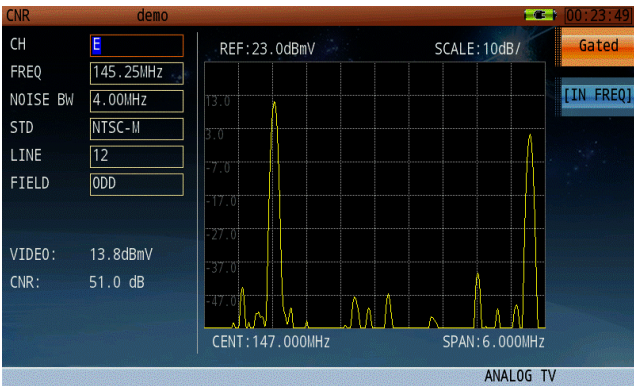


Figure 7: Analogue TV Gated Measurement

Use VITS signal and gated measurements to find analogue TV video parameters in-service.

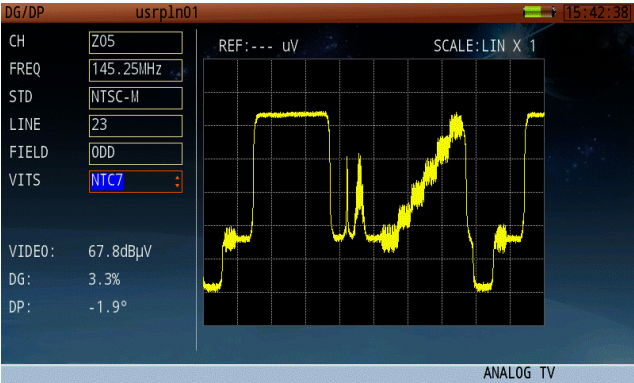


Figure 8: Analogue TV Gated Measurement: Video Parameters

DVB-C Signal Analysis

The DS2800 supports the ITU-T J.83 Annex A/B/C standard, providing Channel Power, SNR, MER, BER, Constellation, Digital HUM, Equalizer, and TS Analysis measurements. It also supports fundamental frequency to 4th-harmonic components, and QAM signal parameter searching.

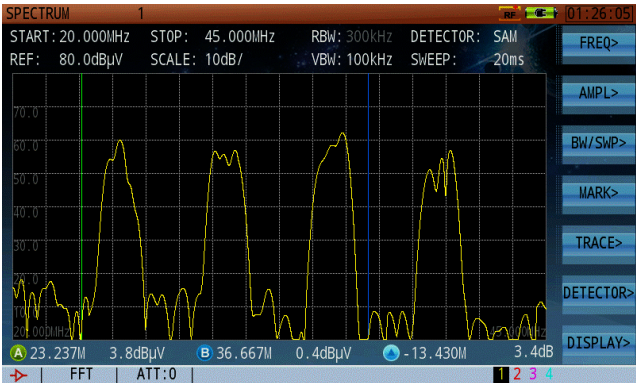


Figure 9: DVB-C Channel Measurement

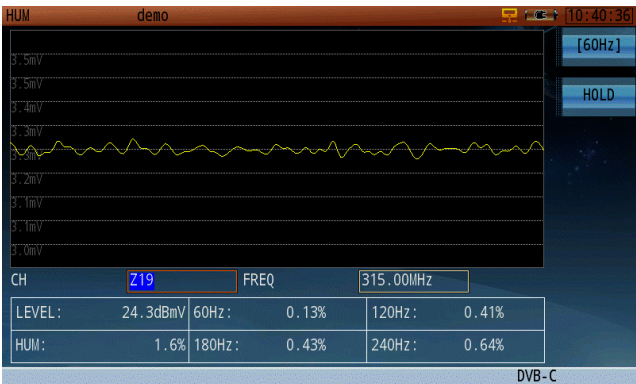


Figure 10: Digital HUM

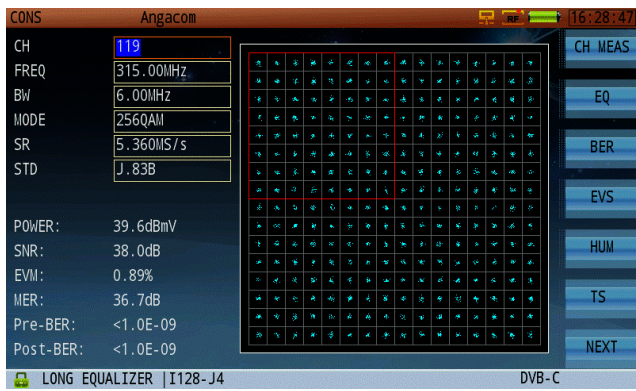


Figure 11: Constellation Display

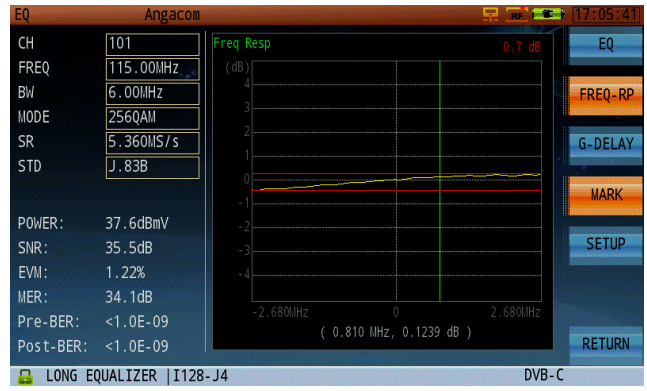


Figure 14: Frequency Response

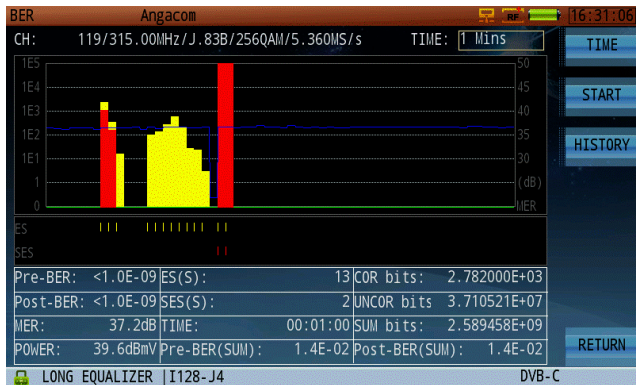


Figure 12: BER and MER Statistical Analysis



Figure 15: Group Delay

Equalizer, Frequency Response, and Group Delay Analysis

In a cable TV network, most impairments to signal quality stem from impedance mismatch and filter. Impedance mismatch can cause serious micro-reflections that overlay the initial transmission, harming signal quality. In addition, liner distortions may introduce micro-reflection, amplitude ripple/tilt, and group delay variation issues. The DS2800's Adaptive Equalizer, Frequency Response and Group Delay analysis tools are targeted to identify and solve these distortions for crystal-clear signal transmission.

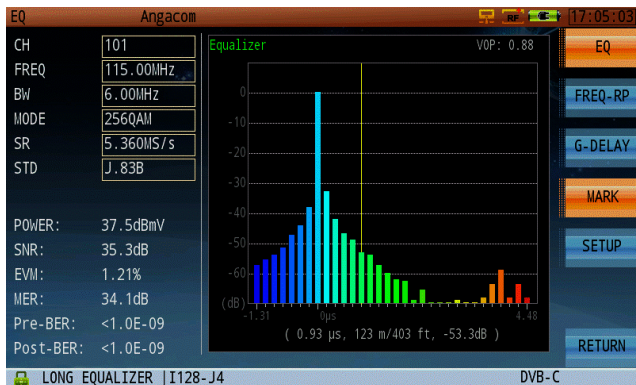


Figure 13: Adaptive Equalizer

EVS In-Service Interference Detection

The Error Vector Spectrum feature can find interference signals under a QAM carrier without service interruptions.

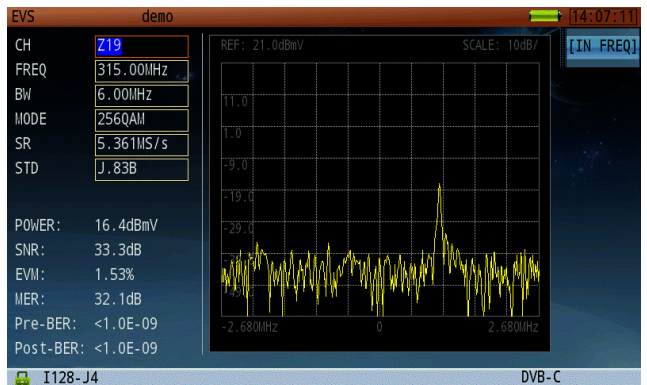


Figure 16: EVS Locating Narrow-Band Interference Signal

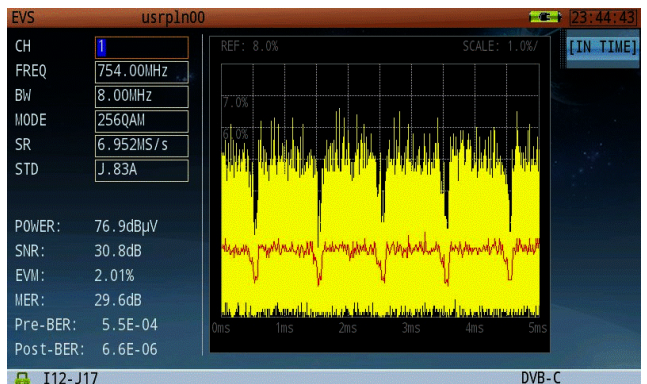


Figure 17: EVS Locating BroadBand LTE Interference

8VSB Measurement

Additional measurements include 8VSB (ITU-T J.83 Annex D) for signal demodulation testing.



Figure 18: 8VSB Signal Demodulation

MPEG-2 Transport Stream Analysis

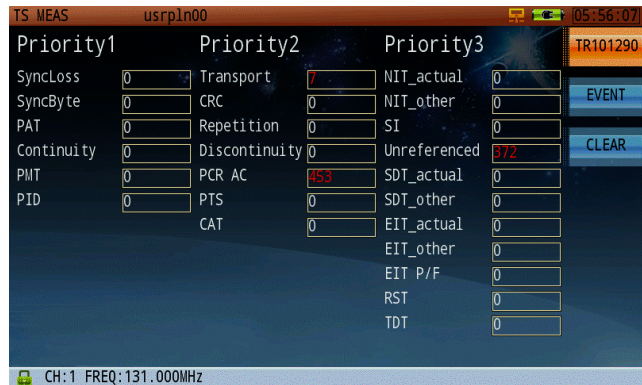


Figure 19: TR 101 290 Monitoring

Cable Modem Measurement

The DS2800 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 20 (top, right) shows the CM statistical info screen - with downstream signal level, modulation type, bandwidth, symbol rate, MER, BER, upstream signal level, symbol rate, & UCD (Upstream Channel Descriptor), and more.

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

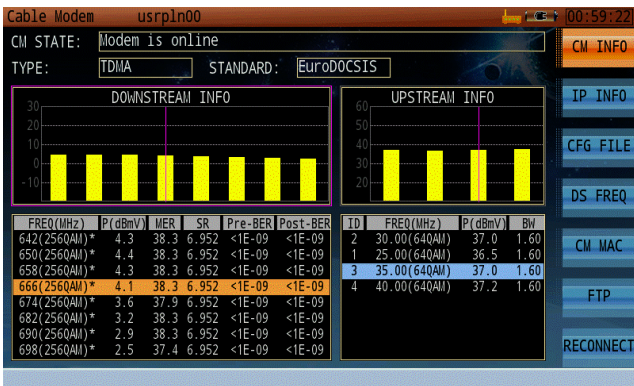


Figure 20: DOCSIS 3.0 Statistical Information Display

Upstream Signal Generator

The Upstream Signal Generator function can generate sine wave and QAM signals. This option supports Annex A and Annex B FEC coding, and a frequency sweep mode.

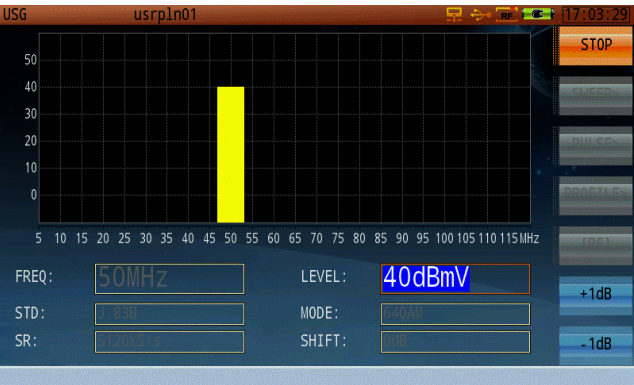


Figure 21: Upstream Signal Generator

Loopback

The DS2800's Loopback function (available only with advanced Upstream Signal Generator option) is effective for testing network or network equipment attenuation and gain from 5 - 120MHz. It can measure both CW and QAM signal frequency and sweep frequency.



Figure 22: Loopback Measurement

Reverse Path Sweep and Upstream Spectrum Measurement

When equipped with a FSK communication module and connected to a broadband network monitor system (such as Deviser's DS1610), the DS2800 can perform forward and reverse path sweep operations. By synchronizing upstream RF burst signals and test data, the DS2800 can calculate the frequency response curve, noting its own position (Field) in relation to the broadband network monitor system's position (Headend). This feature employs an FSK connection to smooth the network frequency response, maximizing the success rate of customers' transmissions.

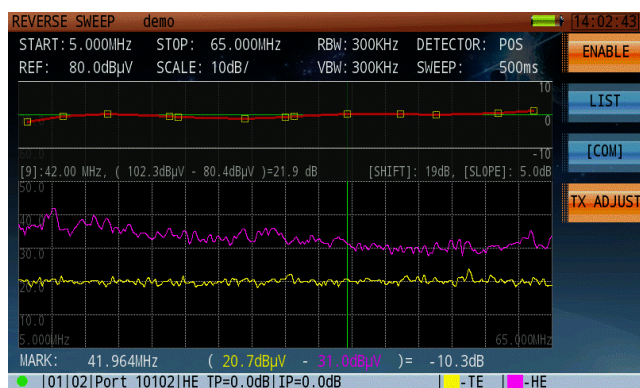


Figure 23: Reverse Path Sweep

WiFi Analysis

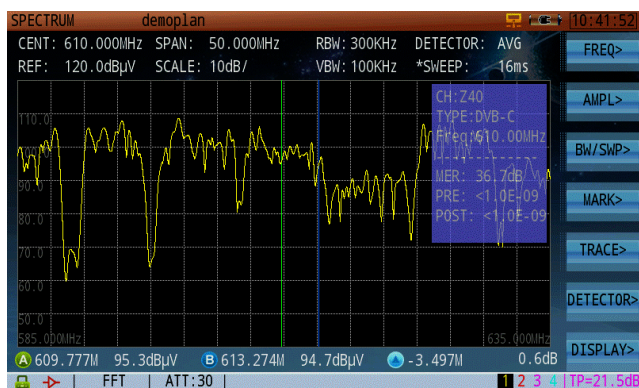


Figure 24: WiFi Analysis

Auto Test

The DS2600C 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.

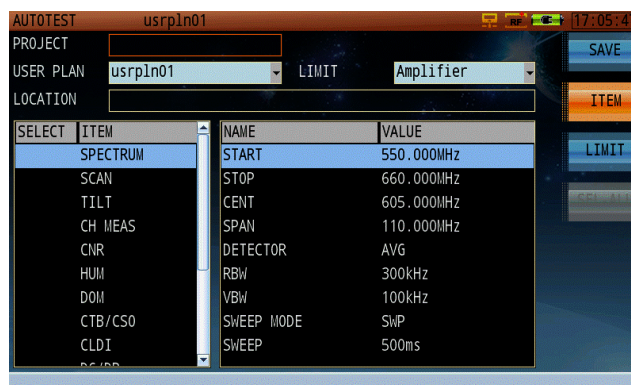


Figure 25: Auto Test Project

Optical Fiber Measurement

New to the DS2800 are Deviser's suite of optical fiber test functions, including the Optical Power Meter, Visual Fault Locator, and Fiber Inspection Scope. With the rapid growth of fiber-optic transmissions, proper equipment maintenance is a top priority for any CATV engineer.



Figure 26: Optical Power Meter

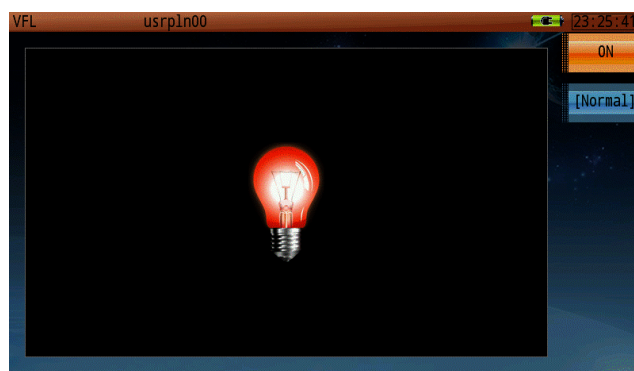


Figure 27: Visual Fault Location

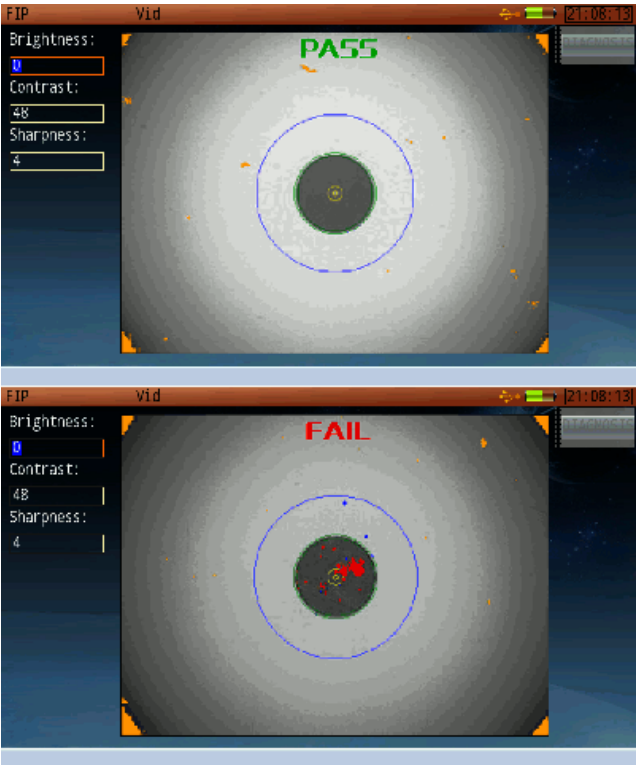


Figure 28: Fiber Inspection Scope

Asset and Test Data Management

Deviser is proud to provide the asset and test-data management software SYNCOR with the DS2800. This PC-based toolkit can significantly enhance your test & analysis efficiency: generating and editing channel plans, transmitting work orders, receiving and managing test results from multiple devices, and more.

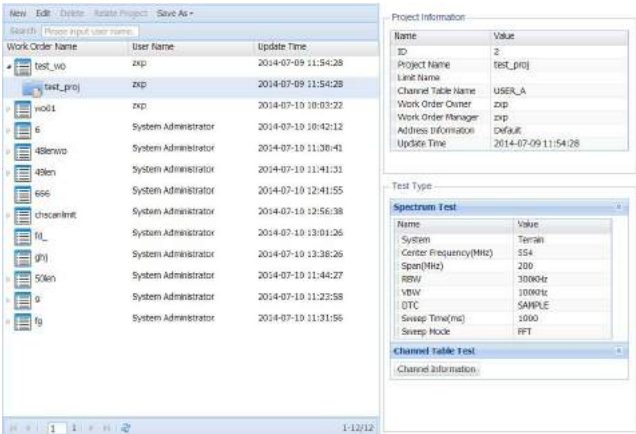


Figure 29: SYNCOR Work Order Management

| STANDARD LIMIT PLAN | | | |
|---------------------|------------------------|-------|------|
| Item | Item | Value | Unit |
| Ground Block | MIN VIDEO LEVEL | 05 | dBμV |
| Ground Block | MAX VIDEO LEVEL | 85 | dBμV |
| Tap Check | MAX VIDEO AUI | 3 | dB |
| Tap Check | MAX VIDEO TLT | 10 | dB |
| Set-Top | MAX VIDEO DELTA | 10 | dB |
| Set-Top | MIN DELTA V/A | 10 | dB |
| High Speed Data | MAX DELTA V/A | 17 | dB |
| High Speed Data | MAX ANALOG HUM | 5 | % |
| Line Extender | MAX ANALOG ICR | 2 | dB |
| Line Extender | MIN ANALOG CNR | 42 | dB |
| Amplifier | MIN ANALOG CSO | 53 | dB |
| Amplifier | MIN ANALOG CTB | 53 | dB |
| Node | MAX ANALOG CLDI | 300 | % |
| Node | MAX VIDEO FREQ ERROR | 10 | kHz |
| End-of-Line | MAX V/A FREQ ERROR | 5 | Hz |
| End-of-Line | MIN Differential Gain | 0 | % |
| Headend | MAX Differential Gain | 100 | % |
| Headend | MIN Differential Phase | -10 | Deg |
| User | MAX Differential Phase | 10 | Deg |
| UserLimit | MIN ANALOG DOM | 80 | % |

Figure 30: SYNCOR Limit Plan Editor

Specifications

| Downstream Spectrum Analysis | |
|----------------------------------|--|
| Frequency Range | 4~1220 MHz; 4~2150 MHz (by option) |
| Frequency Stability | ±1 PPM (0 °C ~50 °C / 32~122°F) |
| Frequency Step | 1 Hz |
| Resolution Bandwidth (-3dB) | 1kHz, 3kHz, 10kHz, 30kHz, 100kHz, 300kHz, 1 MHz, 3 MHz |
| Video Bandwidth (-3dB) | 30 Hz, 100 Hz, 300 Hz, 1kHz, 3kHz, 10kHz, 30kHz, 100kHz, 300 kHz, 1 MHz, 3 MHz |
| Display Scale / Range | 1, 2, 5, 10, 20dB/div; 8 vertical divisions |
| Sweep Time | 20ms ~ 25s |
| Input Level Range | -60 ~ +60dBmV |
| Dynamic Range | 80dB (30kHz RBW) |
| Sensitivity | -60dBmV (100kHz RBW, preamp on) |
| Attenuation | 0 ~ 30dB in 1dB steps |
| Accuracy of Measurements | < ±1.0dB @ +25 ±5°C (typical) |
| Detector Modes | Positive Peak; Negative Peak; Sample; Average; RMS |
| Reference Level | -80 ~ +70dBmV |
| Markers | 2 vertical markers |
| Analog TV Measurement | |
| Standards | B/G, I, D/K, L/L', M/N |
| Color Standards | NTSC, PAL, SECAM |
| Frequency Steps | 10kHz |
| Level Measurement Range | -40 ~ +60dBmV |
| Accuracy | <±1.0dB @ +25 ±5 °C (S/N > 30dB) |
| Level Resolution | 0.1dB |
| Resolution Bandwidth | 300kHz |
| C/N (>53dB, 0dB attenuation) | Optimum input range: 32 ~ 37dBmV (preamp off); 12 ~ 17dBmV (preamp on) Max input range: 60dB ±1.0dB; 65dB ±3.0dB |
| CTB/CSO (>53dB, 0dB attenuation) | Optimum input range: 22 ~ 67dBmV (preamp off); 2 ~ 7dBmV (preamp on) Max input range: 63dB w/ ±1.5dB accuracy & 78 channels 70dB w/ ±4.0dB accuracy & 78 channels |
| HUM Measurement | 1~20%; ±0.5% (1~5%); ±1.0% (5~20%) |
| Depth of Modulation Range | 40~95%, ±1.5% (C/N>dB) |
| Tilt Measurement | Up to 16 channels |
| Pre-Amplifier | Automatic, 18dB gain |
| Attenuator | Automatic, 30dB |
| Persistence | |
| 0 ~ 7 MHz | 100% POI; minimum signal duration 2.5ms |
| 4 ~ 46 MHz | 100% POI; minimum signal duration 4.5ms |
| 4 ~ 68 MHz | 100% POI; minimum signal duration 4.64ms |
| 4 ~ 88 MHz | 100% POI; minimum signal duration 5.3ms |
| 4 ~ 120 MHz | 100% POI; minimum signal duration 6.3ms |
| 4 ~ 210 MHz | 100% POI; minimum signal duration 10.6ms |

| Upstream Spectrum Analysis | |
|-----------------------------|--|
| Frequency Range | 4 ~ 46 MHz (DOCSIS) 4 ~ 68 MHz (Euro DOCSIS 2.0) 4 ~ 88 MHz (Euro DOCSIS 3.0) 4 ~ 120 MHz upstream, 4 ~ 210 MHz downstream (DOCSIS 3.1) |
| Frequency Span | 42 / 64 / 84 / 116 / 206 MHz, zero span |
| Resolution Bandwidth (-3dB) | 100kHz, 300kHz |
| Video Bandwidth | 30 Hz, 100 Hz, 300 Hz, 1kHz, 3kHz, 10kHz, 30kHz, 100kHz, 300kHz, 1 MHz, 3 MHz |
| Display Scale / Range | 1, 2, 5, 10, 20dB/div |
| Sweep Time | 20ms ~ 25s |
| Input Level Range | -60 ~ +60dBmV |
| Attenuation | Automatic, 0 ~ 30dB |
| Pre-Amplifier | Manual, 18dB gain |
| Accuracy of Measurements | < ±1.0dB @ +25 ±5°C (typical) |
| Detector Modes | Positive Peak; Negative Peak; Sample; Average |
| Markers | 2 vertical markers |
| Digital TV Measurement | |
| Frequency Range | 7 ~ 1200 MHz |
| Power Level Range | -30 ~ +50dBmV |
| Accuracy | <±1.5dB @ +25 ±5°C (C/N > 20dB) |
| Level Resolution | 7 ~ 1200 MHz |
| Pre-Amplifier | -30 ~ +50dBmV |
| Attenuator | <±1.5dB @ +25 ±5°C (C/N > 20dB) |
| Modulation Type | 16, 32, 64, 128, 256 QAM (J.83 Annex A, C) 64, 256 QAM (J.83 Annex B) |
| Interleave Depth | 128 x 1 ~ 128 x 4 (J.83B) 12 x 27 (J.83A,C) |
| Symbol Rate | 1.0 ~ 7.0 MS/s |
| SNR | >45dB; Accuracy ±2.0dB |
| MER | >45dB; Accuracy ±2.0dB |
| EVM | >0.36% |
| BER | 1E-3 ~ 1E-9 |
| Constellation | 16, 32, 64, 128, 256 QAM |

Specifications, cont'd.

| Cable Modem Measurements | |
|---|--|
| Supported Standards | DOCSIS 1.1, 2.0, 3.0; EuroDOCSIS 1.0, 1.1, 2.0, 3.0 |
| Downstream Demodulation | 64, 256 QAM |
| Downstream Freq. Range | >91 MHz (5 ~ 65 MHz US); >100 MHz (5 ~ 85 MHz EU) |
| Downstream Bandwidth | 6 MHz / 8 MHz |
| Downstream Max Speed | Up to 304 Mbps (6 MHz); 400 Mbps (8 MHz) |
| Downstream Chan. Bonding | Up to 8 channels |
| DS Input Signal Level | 20ms ~ 25s |
| Upstream Freq. Range | -60 ~ +60dBmV |
| Upstream Signal Bandwidth | TDMA: 200 / 400 / 800 / 1600 / 3200 / 6400kHz S-CDMA: 1600 / 3200 / 6400kHz |
| Upstream Max Speed | 120 Mbps |
| Upstream Chan. Bonding | Up to 4 channels |
| US Output Signal Level | QAM level range: 17 ~ 58dBmV; QPSK: 17 ~ 61dBmV |
| Upstream Signal Generator | |
| Signal Modulation | CW, QPSK, 16 / 64 / 256 QAM |
| Symbol Rate | 1.28 MS/s; 2.56 MS/s; 5.12 MS/s |
| MER | >38dB; Accuracy ± 2.0 dB |
| Frequency Range | 5 ~ 85 MHz |
| Frequency Adjustable Steps | 1 MHz |
| Signal Level Range | 8 ~ 58dBmV (CW, QPSK) |
| Level Adjustable Step | 1dB |
| Advanced Upstream Signal Generator (Option) | |
| Signal Modulation | CW, QPSK, 16 / 64 / 256 QAM, Annex A & B |
| FEC | RS (204, 188) J.83A; RS (128, 122) J.83B |
| Symbol Rates | 1 ~ 7 MS/s |
| MER | >40dB; Accuracy ± 2.0 dB |
| BER | <1E-9 |
| Frequency Range | 5 ~ 120 MHz |
| Frequency Adjustable Steps | 10kHz |
| Phase Noise | 100dBc @ 10kHz; 115dBc @ 100kHz (CW @ 50 MHz) |
| Frequency Accuracy | 2ppm |
| Settling Time | 2ms |
| Signal Level Range | 0 ~ 60dBmV |
| Level Accuracy | ± 1.5 dB (CW); ± 2.0 dB (QAM) |
| Level Adjustable Steps | 0.1dB |
| DS1615 | |
| Size | 1U Standard Rack |
| FSK Tx Frequency | 42 ~ 120 MHz |
| FSK Tx Level | 25 ~ 50dBmV |
| Modulation Type | FSK |
| Baud Rate | 38.4kbps |

| Transport Stream Analysis | |
|-----------------------------|---|
| Real-Time Analysis | Real-time transport stream info, including service name, ID, provider info, video/audio PIDs. Detailed audio/video data for unencrypted programs. |
| TR 101 290 Priority 1, 2, 3 | TR 101 290 Priority 1, 2, 3 real-time testing & monitoring. |
| Basic Information | Various TS details, including data type % breakdown; transmission speed; packet length; network info. |
| PID List | Displays PIDs in current stream w/ type, symbol rate, and % of each. |
| PCR Monitor | Calculates PCR interval / accuracy; real-time dynamic graph of results; max/min interval / accuracy data. |
| PSI/SI List | Displays PSI/SI info (PAT, PMT, CAT, NIT, SDT, TDT, EIT) in tree view. |
| Program List (EPG Info) | Transport stream EPG, including program #, service name & ID, carrier frequency, provider info, modulation type & symbol rate. |
| Reverse Path Sweep | |
| FSK Tx Frequency | 5 ~ 65 MHz |
| FSK Tx Amplitude | 10 ~ 50dBmV |
| FSK Rx Frequency | 42 ~ 120 MHz |
| FSK Rx Sensitivity | -40dBmV |
| Pilot Frequency | 5 ~ 65 MHz |
| Pilot Frequency Amplitude | 10 ~ 50dBmV |
| Tx Test Signal Amplitude | 0 ~ 60dBmV |
| Tx Test Signal Frequency | 5 ~ 65 MHz |
| Tx Test Frequency Point | 1 ~ 16 frequency points |
| DS2800 Units Supported (HE) | DS1610 supports up to 4 units |
| FSK Tx Amplitude | 5 ~ 65 MHz |
| FSK Rx Frequency | 10 ~ 50dBmV |
| WiFi | |
| Frequency | 2.4G, 5G |
| Supported Standards | 802.11 a/b/g/n |
| Security Mode | WPA / WPA2 / WPA-PSK / WPA2-PSK |
| Encryption | WEP / AES / TKIP |
| Test Parameters | SSID, Level, Channel |
| Miscellaneous | |
| RF Input | 75 Ω F |
| USB | USB 1.1 |
| Ethernet | RJ45, 10/100T Ethernet |
| Display | 7" TFT LCD, 800x480 pixels |
| AC/DC Adapter | AC 100 ~ 240V / 50 ~ 60Hz DC 12V / 5A |
| Battery | Li-ion, 7.4V / 10Ah |
| Charge Time | ~4 hrs. |
| Working Time | 8 hrs. |
| Dimensions (WxHxL) | 245mm x 155mm x 60mm (9.6" x 6.1" x 2.4") |
| Weight | ~2.2kg (4.9 lbs) |
| Working Temperature | -10 ~ +50 °C |
| Storage Temperature | -20 ~ +60 °C |

Ordering Information

| Model No. | Description | Order No. |
|--------------|--|--------------|
| DS2800-002 | DS2800 Handheld Digital TV Spectrum Analyzer (Option RPS and USG with FEC enabled) | 0110.2800.02 |
| SFL10-KK | TOKO F-F Connector | 6190.0500.01 |
| DS2800-003 | CD (Toolbox Software and User Guide) | 6190.0600.70 |
| DS2800-004 | Quick Start Guide | 6190.0600.71 |
| FSP060-DBAE1 | AC/DC Adapter | 6290.0700.01 |
| DS2800-008 | Soft Carrying Case | 6110.0600.14 |
| DS2800-010 | Carabiness Red Deviser Logo | 6110.0600.17 |
| DS2800-011 | Carabiness Blue Deviser Logo | 6110.0600.18 |
| DS2800-012 | Played Key Ring | 6110.0600.19 |
| DS2800-013 | DS2800 Inspection Certificate | 6110.0600.32 |
| DS2800-700 | Extended Spectrum (1220 ~ 2150 MHz) | 2110.2800.27 |
| DS2800-702 | ATSC (8VSB) Measurement | 2110.2800.36 |
| DS2800-800 | DPS (Digital Persistence Spectrum) | 2110.2800.28 |
| DS2800-801 | C/N, CSO, CTB, Gated Measurements | 2110.2800.29 |
| DS2800-802 | Analog Video Parameters Measurement (DG/DP, CLDI, ICR, DOM) | 2110.2800.30 |
| DS2800-803 | EVS (Error Vector Spectrum) | 2110.2800.31 |
| DS2800-804 | TS (Transport Stream) Analysis | 2110.2800.32 |
| DS2800-805 | Wifi Analysis | 2110.2800.33 |
| DS2800-806 | Reverse Path Sweep | 2110.2800.34 |
| DS2800-212 | DS2800 FSK Unit | 2110.2800.06 |
| DS2800-807 | Upstream Signal Generator with FEC | 2110.2800.35 |
| DS2800-808 | SYNCOR Certificate | 2110.2800.37 |
| DS2800-810 | SYNCOR Asset Management | 2110.2800.00 |
| CDA-20360 | Built-in DOCSIS 3.0 8x4 Cable Modem | 5110.0000.13 |
| DS2800-809 | DOCSIS 3.0 8x4 Cable Modem | 2110.2800.38 |
| DS2800-811 | Passive Sweep | 2110.2800.01 |
| OPM | Optical Power Meter and VFL Module | 2130.7000.29 |
| DS2800-204 | Visual Fault Locator | 2110.2800.02 |
| DS2800-210 | OPM (Optical Power Meter) | 2110.2800.03 |
| DI-1000 | DI-1000 LightTel Fiber Inspection Scope | 6250.0900.11 |
| DS2800-812 | FIP (Fiber Inspection Probe) | 2110.2800.05 |
| DS2800-211 | GPS | 2110.2800.04 |
| DS2800-005 | DS2800 User Guide hard copy | 6190.0600.75 |
| AE4000-733 | 2-Prong Power Cord plus Ground (Europe except UK) | 6290.0500.03 |
| AE4000-734 | 3-Prong Power Cord plus Ground (US) | 6290.0500.04 |
| AE4000-735 | 3-Prong Power Cord plus Ground (UK) | 6290.0500.05 |
| AE4000-736 | 3-Prong Power Cord plus Ground (Australia) | 6290.0500.06 |

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