

## DS8831Q & DS8853Q Spectrum Analyzer Series

### Key Benefits

- Portable, high performance spectrum analyzer with up to 3 GHz range
- Enables user to quickly repair and troubleshoot problems by identifying impairments
- Detect interference from sources such as microwaves, phones, satellite and wifi to maintain HFC network at optimal performance
- Remotely configure and perform tests from anywhere, anytime through Ethernet or SCPI
- Verify terrestrial digital tv (air) channels with 8VSB-ATSC modulation
- One-button automated, analog and digital FCC proof-of-performance test
- Convenient data storage data and instrument upgrade through USB
- Validate components with tracking generator



### Key Features

#### CATV Analysis:

- Level, HUM, Depth of Modulation, C/N, CSO/CTB, Cross Modulation, In-Channel Frequency Response Differential Phase/Gain, Chrominance to Luminance Delay Inequality, etc.

#### DVB-C Analysis:

- Constellation, Power Level, MER, Pre & Post BER, EVM, EVS, MER/BER Statistical Analysis, etc.

#### Spectrum Analysis:

- Real-time Sweep, Fine adjustable RBW/VBW, High Accuracy, etc.

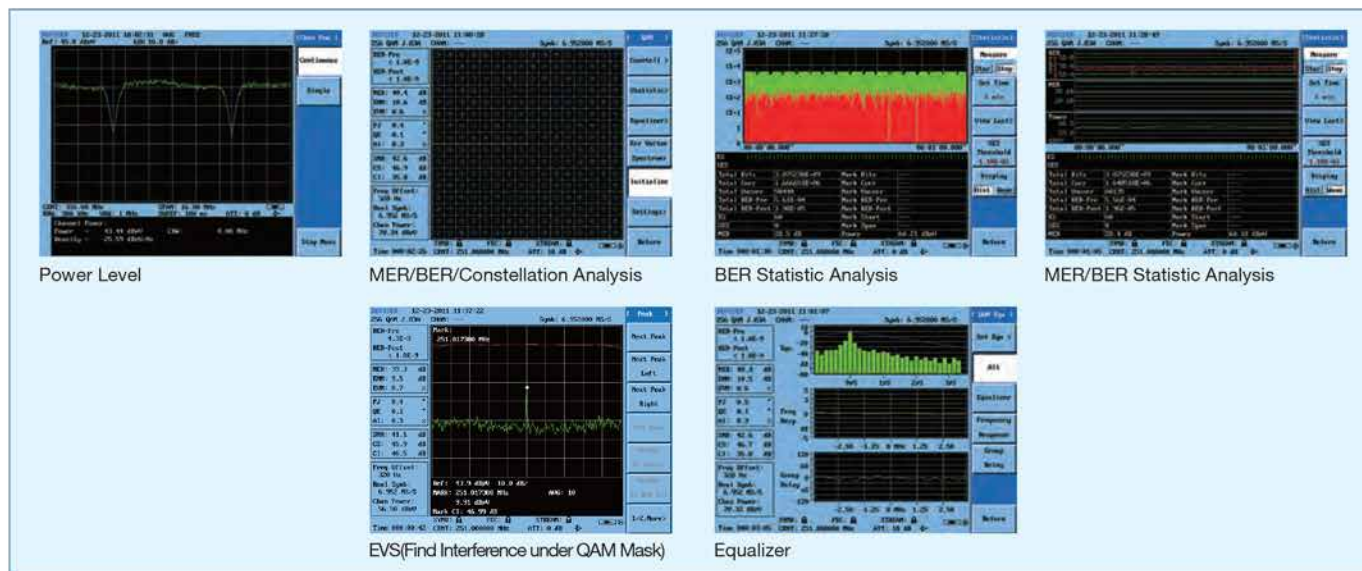
The DS8853Q/8831Q is a versatile portable QAM/Spectrum analyzer series, featuring extensive analog and digital RF signal analysis capabilities, necessary on today's modern HFC networks. With the migration towards fully digital CATV plants and the constant challenges of new services potentially interfering with HFC networks, the modern CATV maintenance technician requires easy-to-use, high performance test equipment allowing him to keep the network running at optimal performance.

The DS8853Q/8831Q series provides a familiar, intuitive user interface allowing the technician to actually troubleshoot and run tests, rather than figuring out how to run the instrument.

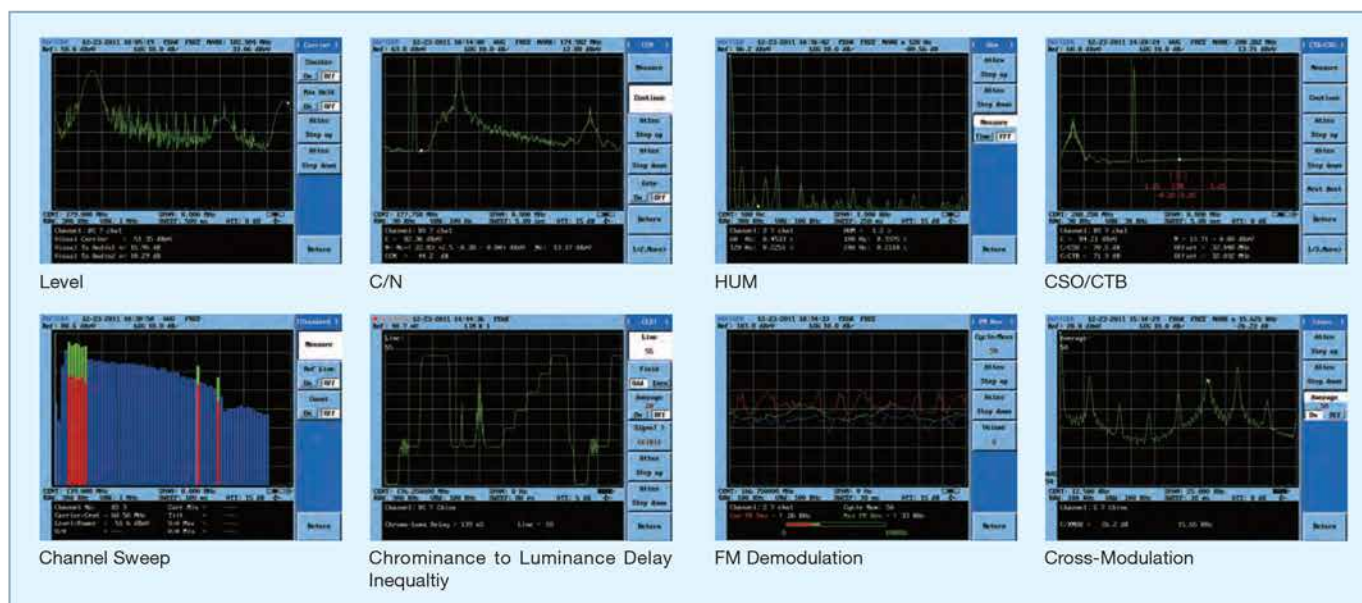
Model	DS8853Q 3G	DS8831Q
Spectrum Analysis	●	●
Workbench-PC Management Software	●	●
CATV	●	●
DVB-C	●	●
ASI Output	●	✕
8VSB	○	✕
Tracking Generator-3 GHz	○	✕
Tracking Generator-1 GHz	✕	○
30/100/300 Hz RBW	○	○
Spectrum Monitoring	○	○

● standard configuration ✕ not available ○ optional

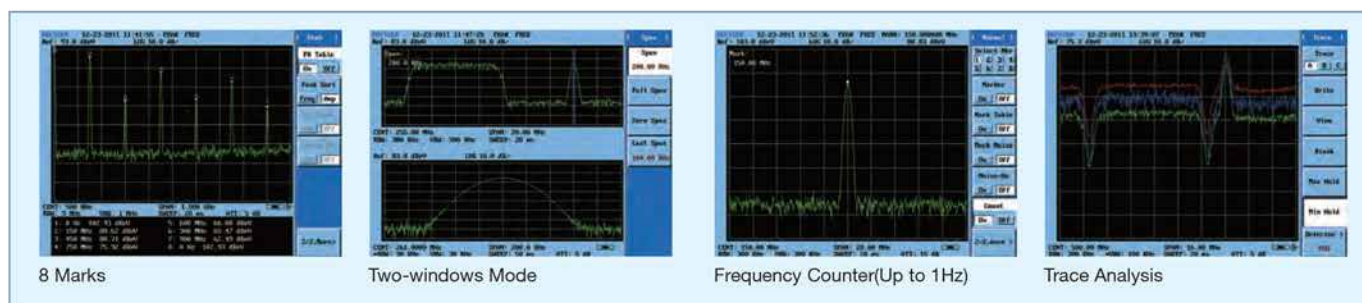
## DVB-C Analysis



## CATV Analysis

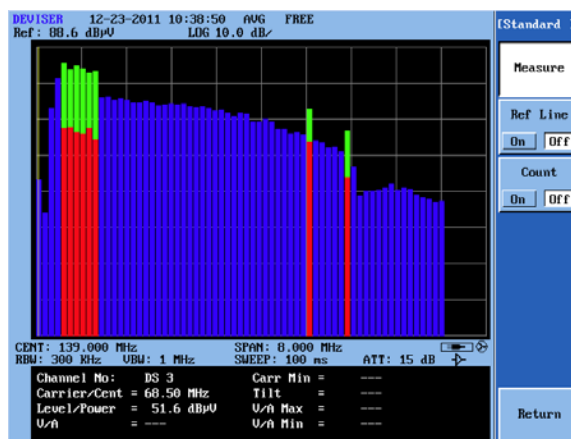
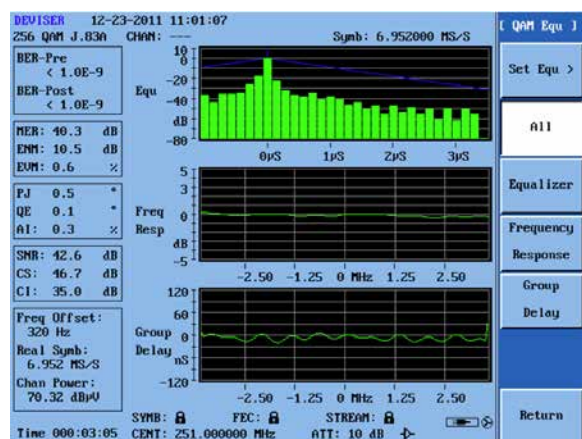
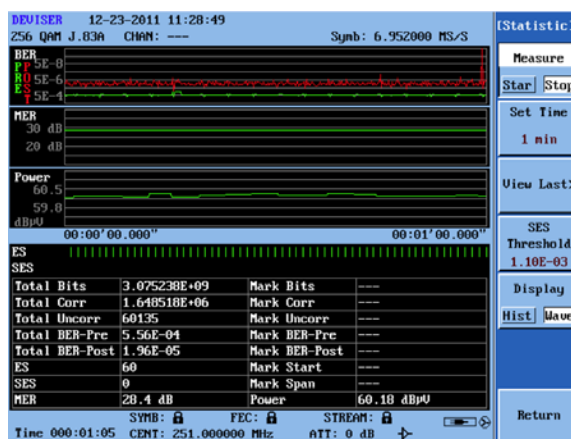
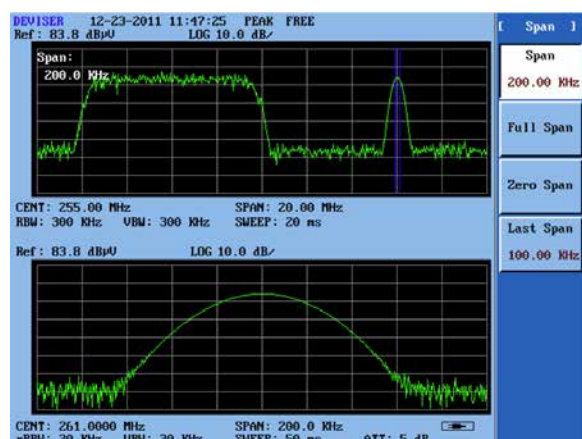
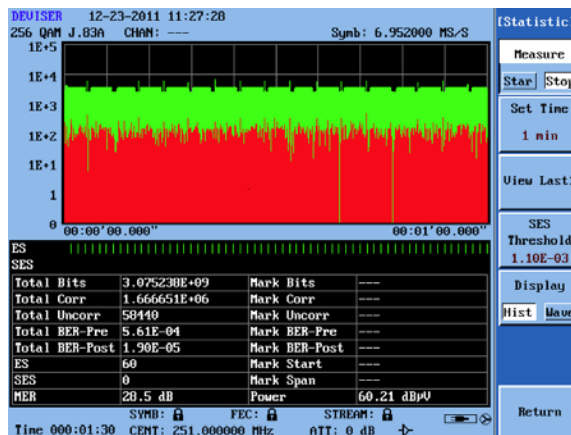
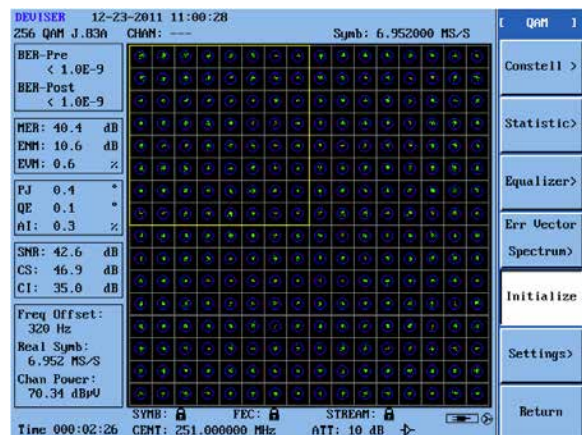


## Spectrum Analysis





## Work Bench - PC Management Software



- The Workbench is a data management application used to establish network communication between a PC or laptop computer and with the DS8853Q/8831Q series. Easily manage all data, tests applications and test data results.
- It performs the following tasks:
  - Communication and remote control of the DS8853Q/8831Q series via Ethernet
  - Create, edit, upload and download Channel Plan
  - Download and review the screen captures
  - Transfer and save



## Specifications

Model	DS8831Q	DS8853Q
Frequency		
Frequency Range	1 MHz to 1GHz	500 kHz to 3 GHz
Frequency Stability	+/- 2 ppm	+/- 2 ppm
Frequency Resolution	10 Hz	1 Hz
Counter Resolution	1 Hz	1Hz
Sweep range	0 Hz (0 span), 1 kHz, 1000 MHz	0 Hz (0 span), 1kHz, 3000 MHz
Sweep range	20 ms to 500 sec. (span > 0 Hz), 20 us to 500 sec. (span = 0 span)	20 ms to 250 sec. (span > 0 Hz), 20 us to 500 sec. (span = 0 span)
RBW	1 kHz to 3 MHz (1-3 Step)	1 kHz to 3 MHz (1-3 Step)
VBW	30 Hz to 1 MHz (1-3 Step)	30 Hz to 1 MHz (1-3 Step)
Phase Noise Stability	< -120 dBc/Hz @ 100 kHz offset from CW signal < -95 dBc/Hz @ 10 kHz offset from CW signal	< -120 dBc/Hz @ 100 kHz offset from CW signal < -100 dBc/Hz @ 10 kHz offset from CW signa
Amplitude		
Measurement Range	Displayed Average Noise Level to Maximum Safe Input Level	
Accuracy	±1 dB @ +25°C ±5 °C	±1 dB @ +25°C ±5°C
Resolution	0.01 dB	±1 dB @ +25°C ±5 °C
Amplifier Frequency Range	0 dB to 55 dB, 5 dB Step	0 dB to 50 dB, 5 dB Step
Range	1 MHz to 1000 MHz	500 kHz to 3000 MHz
Amplifier Gain	20 dB	15 dB
Amplifier Noise Figure	4 dB	4 dB
Max Safe Input	+68 dBmV, 100 V DC	+78 dBmV, 100 V DC
Display		
Logarithm Scale	0.1 to 1 dB/div in 0.1 dB step 1 to 40 dB/div in 1 dB step	
Linear Scale	10 divisions	
Vertical Scale Unit of Measure	dBm, dBmV, dBµV, mV	
Marker Readout Resolution	0.03 dB for log scale; 0.03% of ref level for linear scale	
Trace Detector	Normal, Average, Sample, Positive-Peak, Negative-Peak	
Reference Level	-98 dBmV to +29 dBmV	
Resolution Bandwidth Tolerance	< ±0.1 dB	
Input Attenuator Tolerance	< ±0.3 dB (typical)	
Amplitude Flatness	±1.0 dB	
Amplitude Range	40 dBmV to +65 dBmV, ±1.0 dB @ +25 °C , ±5 °C (S/N > 30 dB)	
HUM/LFI		
Range	1% to 20%	
Accuracy	±0.5% from 1% to 5%, ±1% from 5% to 20%	
Depth of Modulation		
Range	40% to 95%	
Resolution	0.1%	
Accuracy	±1.5% (C/N > 40 dB)	
CC/N		
Optimum Input Level	32 dBmV to 37 dBmV 0 dB Attenuation, Amplifier Off, 12 dBmV to 17 dBmV 0 dB Attenuation, Amplifier On	
Maximum	60 dB with ±1 dB Accuracy; 65 dB with ±3 dB Accuracy	
Resolution	0.1 dB	
CTB/CSO		
Optimum Input Level	22 dBmV to 27 dBmV, 0 dB Attenuation w/ Amplifier Off, 2 dBmV to 7 dBmV, 0 dB Attenuation w/ Amplifier On	
Maximum Range	63 dB ±1.5 dB Accuracy (78 channels), 70 dB ±4.0 dB Accuracy (78 channels)	
Resolution	0.1 dB	
Range	-45 dB to -65 dB	
Accuracy	± 2.0 dB for Cross Modulation @ < 55 dB, CCN > 40 dB, ± 4.5 dB for Cross Modulation @ < 60 dB, CCN > 40 dB	
Resolution	0.1 dB	
In Chn. Freq Resp		
Range	±12 dB	
Accuracy	±0.2 dB	
Resolution	0.1 dB	
Differential Phase Accuracy	±2%	
Differential Gain Accuracy	±3 °	
Chrominance to Luminance Delay Accuracy	±40 ns	

Model	DS8831Q	DS8853Q
QAM/DVB-C		
Modulation Types	16/32/64/128/256 QAM, QPSK (ITU-T J.83 Annex A/B/C)	
Interleaving	Up to 128 × 4 in Annex B, 12 × 17 in Annex A/C	
Constellation Display	QPSK, 16/32/64/128/256 QAM with Zoom capability	
Adaptive Equalizer Display	8 FFE taps, 24 DFE taps	
Digital Chn. Power		
Amplitude Range	-30 dBmV to +60 dBmV	
Resolution	0.1 dB	
Accuracy	±1.0 dB @ (25 °C ±5 °C, C/N > 20 dB) Typical	
Measurement Bandwidth	200 kHz to 999 MHz	
MER		
Range	>43 dB	
Accuracy	±0.5 dB (22 to 30 dB); ±1.0 dB (30 to 35 dB); ±1.8 dB (35 to 43dB)	
BER	2 × 10E-3 to 1 × 10E-12	
Error Vector Magnitude	< 0.65%	
Statistical Mode	1 to 4320 Minutes	
Symbol Rate	1 to 7 Ms/Sec	
Power Supply		
Battery Type	14.8 V / 6 Ah Rechargeable Lithium-Ion	14.8 V / 8 Ah Rechargeable Lithium-Ion
External AC Adapter	19 VDC / 3.42 A	
Charge Time	5 Hours	6 Hours
Operational Time	>3 Hours; >2.5 Hours (Including Optional Tracking Generator)	
General		
Operating Temperature	0 to 50 °C (32 to 122 °F)	
Storage Temperature	-20 to +55 °C (-4 to 131 °F)	
Dimension (W×H×L)	360 mm × 180 mm × 350 mm	360 mm × 180 mm × 360 mm
Weight (With Battery)	9 kg	10 kg
Display	16 cm (6.4 inches) TFT Color LCD	19 cm (7.5 inches) TFT Color LCD
Displav Resolution	640 X 480 Pixels	

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