DS8831H Rack Mount
Spectrum Analyzer Series

Key Benefits

- Perfect companion to the "KingStone" CATV monitoring system (DS1610 - DS1616)
- High-performance rack mount spectrum analyzer with up to 1 GHz frequency range
- Quickly troubleshoot and repair problems by remotely identifying impairments and detecting interference
- Remotely configure and perform tests anywhere, anytime, through any web browser
- Convenient data storage and instrument upgrade through USB
- Validate components with tracking generator
- Compatible with WebSA POP software, allowing connection with up to 1,024 different RF test points (with NO loss of level)

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, Noise and Digital Compression measurements, etc.

Spectrum Analysis:

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

The DS8831H is the versatile rack mount version of our QAM/Spectrum analyzer series. The DS8831H provides identical performance characteristics as our DS8831Q portable version, at a more competitive price. It is ideal for remote head end or hub applications where access is impractical.

Specifications

Frequency	
Frequency Range	1 MHz to 1GHz
Frequency Stability	+/- 2 ppm
Frequency Resolution	10 Hz
Counter Resolution	1 Hz
Sweep range	1 mS to 500 sec (span > 0 Hz), 20 uS to 500 sec (span = 0 Hz)
Accuracy	< +/- 1%
Trigger Types	Free run, Single, Video, TV channel
RBW	1 kHz to 3 MHz (1-3-10 Sequence)
Accuracy	< +/- 15%
Selectivity	< 5:1 (3dB/60db RBW)
VBW	10Hz to 1 MHz (1-3-10 Sequence)
Phase Noise Stability	< -120 dBc/Hz @ 100 kHz offset from CW signal, < -95 dBc/Hz @ 10 kHz offset from CW signal
Amplitude	
Measurement Range	Displayed Average Noise Level to Max.Safe Input Level
Attenuator	55dB
Internal Amplifier	
Frequency Range	1 MHz to 1000 MHz
Gain	20 dB (typical)
Max Safe Input	+68 dBmV (peak power/input attenuation >15 dB) 100 V DC
Gain Compression	0.5 dB@39 dBmV (attenuator= 0 dB and preamp off), 0.5 dB@ 19 dBmV (attenuator= 0 db and preamp on)
Displayed Average Noise level (Input Terminated, 0 dB Attenuator, 30 kHz RBW, 100 Hz VBW, Sample Det)	< -95 dBmV/Hz with preamp Off (Typical) < -105 dBmV/Hz with preamp On (Typical)
Distortion	
2nd order Spurious Distortions	< -68 dBc for +29 dBmV signal at input mixer and preamp OFF
3rd order Intermodulation Distortions	<-68 dBc for +29 dBmV signal at input mixer with 1 Mhz separation and preamp OFF
Residual Responses (Input Terminated and 0 dB Attenuator)	< -55 dBmV, 1 MHz to 1000 MHz
Level Accuracy	< +/- 1 dB @ 20 °C
Resolution Bandwidth Tolerance	< ± 0.1 dB
Input Attenuator Tolerance	< ± 0.3 dB (Typical)
Response Flatness	± 1.0 dB. 1 MHz to 1000 MHz
Analog CATV Measurements	
Channel Selection	Frequency and Channel
Channel Plans	NTSC, PAL, and Custom Plans
TV Channel Amplitude Range	-40 dBmV to +65 dBmV, ±1.0 dB @ 20 °C, for S/N > 30 dB
Channels Scans	50 Analog channels, approx. 6 seconds, 50 Digital channels, approx. 15 seconds
Multi-Channel View	Selectable, up to 8 channels
Single-Channel Mode	With Spectrum Display
Tuning Range	5 MHz to 1000 Mhz
TV Visual Frequency	
Accuracy	Carrier Frequency ± 2ppm
Resolution	1 Hz
Visual/Aural Delta	
Accuracy	± 200 Hz
Resolution	1 Hz
Amplitude	± 1 dB, S/N > 30 dB
FM Deviation Range	100 kHz
Hum/Low Frequency Distortions	
Modes	CW or Modulated
Range	1% to 20%
Accuracy	±0.5% from 1 to 5%, ±1% from 5 to 20%
Depth of Modulation	
Amplitude Modulation Range	40% to 90%
Resolution	0.1%
Accuracy	±1.5% (CCN > 40dB)
Signal Type	VITS line with white reference

Specifications (continued)

Carrier to Composite Noise	
Optimum Input Level	+5 dBmV
Maximum CCN Measurement	> 55 dB ±2 dB, > 60 dB ± 3 dB
Resolution	0.1 dB
CSO/CTB	
Optimum Input Level	+5 dBmV
Maximum CSO/CTB Measurement	> 63 dBc with ± 1.5 dB (78 channels) > 70 dBc with ± 4.0 dB (78 Channels)
Resolution	0.01 dB
Cross Modulation	
Range	- 45 dB to -65 dB
Resolution	0.1 dB
Accuracy	± 2.0 dB for Xmod < 55 dB, CCN > 40 dBc± 4.5 dB for Xmod < 60 dB, CCN > 40 dBc
In-Channel Frequency Response	
Test Signal Type	Multiburst, or GCR VITS Signal
Range	± 10 dB
Resolution	0.1 dB
Accuracy	±0.25 dB
Differential Phase Accuracy	±2%
Differential Gain Accuracy	±3°
Chrominance to Luminance Delay Accuracy	±40 ns
QAM/DVB-C	
Modulation Types	16/32/64/128/256 QAM, QPSK (ITU-T J.83 Annex A/B/C) QPSK (ITU-T J.83 Annex A/B/C)
Interleaving	Up to128 × 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 Channel Power	
Amplitude Range	-30 dBmV to +60 dBmV
Resolution	0.01 dB
Accuracy	±1.0 dB @ 20 °C ±5 °C, (C/N > 20 dB) Typical
Measurement Bandwidth	200 kHz to 999 MHz
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	1.0 x 10E-9 to 2 x 10E-3
Error Vector Magnitude	< 0.65%
Statistical Mode	1 to 4320 Minutes
Power Specifications	
Input Range	90 to 240 VAC
Frequency	47 to 240Hz
General	
RF Input	BNC or F-Type connector (75 ohm), N-Type (50 ohm)
Input VSWR	> 14dB, 10-1000 MHz (w/10dB input attenuation)
Operating Temperature	0°C to +50°C
Storage Temperature	-10°C to +50°C
Dimensions	19" x 1.25" (1RU) x 15.75"
Weight	3 kg
USB Port	USB 1.1
Ethernet	10/100 MB/s
COM	RS-232 Serial Port

Ordering Information

Carrier to Composite Noise	
DS8831Q	Cable TV Spectrum Analyzer, DVB-C, 1 MHz ~ 1 GHz, 43dB MER, 75Ω F, 6.4" TFT LCD, 1000Base-T LAN, USB, RS-242, SCPI, 14.8V/6Ah Li-ion battery >3 hours operation, 14.17" x 7.08" x 13.78", 19.84 lbs.
DS8853Q	Cable TV Spectrum Analyzer, DVB-C, 500kHz ~ 3 GHz, 43dB MER, 75Ω F, 7.5" TFT LCD, 1000Base-T LAN, USB, RS-242, SCPI, 14.8V/8Ah Li-ion battery >3 hours operation, 14.17" x 7.08" x 14.17", 22.05 lbs.
DS8831H	Cable TV Spectrum Analyzer 1U Rack Mount, DVB-C, 1 MHz ~ 1 GHz, 43dB MER, 75Ω F, 6.4" TFT LCD, 1000Base-T LAN, USB, RS-242, SCPI, 14.8V/6Ah Li-ion battery >3 hours operation, 19" x 1.25" x 15.75", 6.61 lbs.
DS1500-16	1x16 RF Multiplexing Switch, 1MHz to 1GHz, Daisy Chain Max. 256 Nodes, 16 x 75Ω F or BNC, RJ-45, RS-232, 19" x 1.25" x 11.97", 6.61 lbs, AC/DC Adapter, Quick Reference Guide, CD with Instruction Manual.
DS8831Q-TG	Tracking Generator (75Ω F) (DS8831Q Only)
DS8853Q-TG	Tracking Generator (75Ω F) (DS8853Q Only)
30/100/300 Hz	30/100/300Hz Resolution Bandwidth (DS8853Q Only)
AE4000-733	2-Prong Power Cord plus Ground (Europe except UK)
AE4000-734	3-Prong Power Cord plus Ground (US)
AE4000-735	3-Prong Power Cord plus Ground (UK)
AE4000-736	3-Prong Power Cord plus Ground (Australia)