

## RSAM-5800

### Analog QAM RF and MPEG Video Probe



#### Key Features

- Monitor and troubleshoot analog and digital video as well as DOCSIS® services
- Web-based access to live and historical MPEG and RF measurements
- Simple network management protocol (SNMP) trap forwarding to up to five destinations
- Monitor MPEG stream errors (TR 101 290 Priority 1, 2, and 3) and drill down to analyze individual program performance
- Easily access performance history (RF, QAM, and MPEG) stored in MySQL relational database

#### Applications

- Segments problems to a master headend, local headend/hub, or outside plant by comparing RF and MPEG trends from a common edge device or across multiple headends/hubs
- Monitors TR 101 290 MPEG parameters for both DVB and ATSC providing worldwide support
- Remotely troubleshoots problems using Web-based access to live and historical RF and MPEG measurements

#### Benefits

- Eliminate truck rolls to segment RF and video problems
- Ensure that required truck rolls are deployed to the right place with the right personnel and equipment
- Increase network availability using notification of forward path degradation before service is disrupted
- Intelligently filter alarms based on severity to appropriately alert local operations and NOC personnel

The JDSU RSAM-5800 Remote Service Analyzer Module provides remote analysis of forward path digital and analog signals. It is specifically designed for deployment in remote, unmanned hub sites or headend locations.

The RSAM-5800 combines the extensive knowledge of JDSU in both radio frequency (RF) and Moving Picture Experts Group (MPEG) analysis to quickly identify real customer-affecting issues down to the individual program without having to deploy specialists to remote hub sites. The RSAM RF and MPEG probes provide remote monitoring and analysis with detailed views of channel performance to the field, headend, and network operations center (NOC) technicians using Windows® Internet Explorer®.

Simply viewing the QAM (quadrature amplitude modulation) stack with a spectrum analyzer or measuring and monitoring MER and BER (modulation and bit error rates) on QAM carriers provides absolutely no insight into MPEG video payloads. It is critical for cable network operators to have system-wide visibility into the underlying content or MPEG protocol layer to ensure the quality of programming content and other MPEG parameters such as PCR jitter (timing) and continuity count for both digital video broadcasting (DVB) and Advanced Television Systems Committee (ATSC).

The award winning RSAM-5800 helps segment video problems in minutes—not hours—by proactively monitoring video, voice over Internet Protocol (VoIP), and high-speed data (HSD) carriers for RF and MPEG impairments.

## Specifications

### Frequency

Range	50 to 1,000 MHz
Accuracy	±10 ppm at 25°C (77°F)
Tuning resolution	Analog 10 kHz, Digital 50 kHz
Channel bandwidth	RSAM-5800A 8 MHz RSAM-5800B 6 MHz

### Level Measurement, Analog

Signal types	CW, Video, and Single and Dual Audio (NTSC, PAL and SECAM)
Range	-40 to +60 dBmV <sup>1</sup>
Resolution	0.1 dB
Resolution bandwidth	280 kHz
Accuracy <sup>2</sup>	±1.5 dB typical @ 25°C

### Level Measurement, Digital

Modulation types	QPSK, QAM (16, 64, 256) DVB/ACTS
Range	-20 to +50 dBmV <sup>1</sup>
Resolution	0.1 dB
Resolution bandwidth	280 kHz
Accuracy <sup>2</sup>	±2.0 dB typical @ 25°C

### Downstream QAM Demodulation

Modulation types	64 and 256 QAM, ITU-T J.83
Input range (lock range)	-15 to +50 dBmV total for 256 QAM
MER <sup>3</sup>	Range 256 QAM: 28 to 35 dB Range 64 QAM: 21 to 35 dB
Accuracy	±2.0 dB typical

EVM <sup>3</sup>	Range 64 QAM: 1.2 to 5.8%
Accuracy	±0.5% (1.2 to 2.0%) ±1.0% (2.1 to 4.0%) ±1.4% (4.1 to 5.8%)
Range	256 QAM: 1.1 to 2.4%
Accuracy	±0.6%
Symbol rate	Annex A: 5.057 to 6.952 Msps for 64 and 256 QAM Annex B: 5.057 Msps for 64 QAM; 5.361 Msps for 256 QAM Annex C: 5.274 Msps for 64 QAM; 5.361 Msps for 256 QAM

### Standards Compliance

Shock and vibration	IEC 60068
Drop	IEC 61010
Handle stress	IEC 61010
Safety—emissions	EN 55022
Safety—immunity	EN 61000

### Interfaces

RF	75Ω, F81 or BNC option Max. sustained voltage 100 VAC, 140 VDC Standard via DB-9
RS232	Standard via DB-9
Ethernet	Supports RJ45, 10BaseT, TCP/IP, and UDP
AUX	TTL-compatible output for controlling accessories

### General

Dimensions	48.3 x 34.3 x 8.9 cm (19 x 13.5 x 3.5 in)
Weight	3.4 kg (7 lb 7oz)

Operating temperature range	5 to +45°C (41 to 113°F)
Storage temperature range	-20 to +50°C (0 to 120°F)
Power supply input	47–63 Hz, ~110 VA, 100–265 VAC

### MPEG TR101-290 Measurements

#### Priority 1

- Synch loss error
- Synch byte error
- PAT error
- Continuity count error
- PMT error
- Referenced PID error

#### Priority 2

- Transport error
- CRC error
- PCR repetition error
- PCR discontinuity error
- PCR accuracy error
- PTS error
- CAT error

#### Priority 3

- Unreferenced PID error
- Program and system integration protocol (PSIP) error (ATSC)
- SI error (DVB)

<sup>1</sup> Typical detectable range

<sup>2</sup> Accuracy for levels between -20 to 55 dBmV; additional uncertainty ±0.5 dB across

<sup>3</sup> Accuracy and behavior from 50 to 1,000 MHz for levels between 0 to 50 dBmV (typical)

## Ordering Information

Model	Part Number	Description
RSAM-5800A	RSAM5800A	Remote Service Analyzer Module—RF Video Probe—Rack-mounted RF/QAM analyzer (8 MHz tuner), including RF monitoring. This unit is field upgradeable to add MPEG.
RSAM-5800B	RSAM5800B	Remote Service Analyzer Module—RF Video Probe—Rack-mounted RF/QAM analyzer (6 MHz tuner), including RF monitoring. This unit is field upgradeable to add MPEG.
RSAM-MPEG	RSAM-MPEG	Factory installed—Add MPEG capability for RSAM-5800 at time of purchase.
RSAMMPEG-UG-FLD	RSAMMPEG-UG-FLD	Field upgrade—Add MPEG capability in the field for RSAM-5800, does not include calibration.
ISS-5116	1010-00-0906	16x1 RF Input Selector Switch for RSAM—20 MHz to 1 GHz
PVM Server Software	PVM-SERVER	PathTrak™ Video Monitoring (PVM) Server and Client software includes 5 client licenses. Provides Web access for live troubleshooting and displaying performance history.
PVM Client Software	PVM-CLIENT	PathTrak Video Monitoring (PVM) Client software—Supports configuration and access to RSAM-5700 and RSAM-5800 probes.
<b>Hardware Upgrades</b>		
RSAM-5600B to RSAM-5700B	RSM5700B-UG-FAC	Upgrade RSAM-5600B to RSAM-5700B for RF monitoring applications. Includes calibration and deep interleave upgrade (factory upgrade).
RSAM-5800A-UPGX	RSAM58ARFUPGX56	Exchange RSAM-5600A for an RSAM-5800A with RF ONLY (without the MPEG option).
RSAM-5800B-UPGX	RSAM5800BUPGX56	Exchange RSAM-5700B for an RSAM-5800B with the MPEG option.
RSAM-5800A-UPGX	RSAM5800AUPGX56	Exchange RSAM-5600A for an RSAM-5800A with the MPEG option.
RSAM-5800B-UPGX	RSAM5800BUPGX56	Exchange RSAM-5600B for an RSAM-5800B with the MPEG option.

## Test & Measurement Regional Sales

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