# RSAM-5600
## Remote Service Analyzer Module



**Key Features**

- **Remote, Web Browser interface - Saves time daily by eliminating driving to hubs and headends**
- **Quick comparison of field to headend results - isolates network problems, determines the source of errors and reduces unnecessary truck rolls**
- **Instant access to remote sites - speeds up analysis for headend and field technicians**
- **Daily Digital Quick Check of system performance at the press of a button - ensures revenue stream by proactively testing and analyzing the VOD, HSD, and analog physical layer**
- **Designed and priced to meet the needs of remote hub sites – can affordably be deployed in all remote hubs**
- **Continuous monitoring with SNMP threshold alarming integrates with OSS and NMS - helps find and fix problems before customers complain**

With the rapid deployment of services such as VOD, high-speed data, and VoIP, daily system checks are often times overlooked. Additionally, with unmanned hubs and headends, problems in the field are often left unresolved or unnecessarily delayed while technicians try to determine the origin of the problem.

Enter the JDSU RSAM-5600 Remote Service Analyzer Module — providing remote analysis of forward path digital and analog signals and specifically designed for deployment in remote, un-manned hub sites or headend locations. In conjunction with JDSU's RAS-100 Remote Analysis Software, the RSAM-5600 provides remote analysis and views of channel performance to the field, headend, and NOC technicians using JDSU's DSAM workforce automation (WFA) browser or any standard Internet browser. With the performance and price needs for deployment in multiple remote hub sites or headend locations the RSAM-5600 can eliminate technicians driving to various sites to verify the status and integrity of services. Better still network problems can be quickly resolved and closed with technicians focusing on deploying the new services — faster.

The RSAM-5600 Remote Service Analyzer Module also complements the wealth of JDSU's existing cable networks solutions with the SDA forward and reverse sweep, PathTrak™ Reverse Path Monitoring, and DTS MPEG analysis.

## More Efficient Technicians

With the RSAM-5600, technicians can focus their efforts on the business priorities. JDSU's RSAM-5600 allows technicians to quickly analyze un-manned hub and headend sites remotely. A quick check of the RSAM data can identify and locate the problem eliminating wasted time driving to remote sites to check system levels. Additionally, isolating network problems can easily be accomplished quickly from the field by providing technicians the ability to view the quality of the originating source.

## Solve Problems before they occur

Proactively analyze multiple downstream channels from your PC identifying potential problems BEFORE they happen ensuring customer satisfaction and keeping your revenue streams flowing. Quickly test and report systems performance against multiple limits sets for predictive analysis. The RSAM-5600 will monitor system performance and trigger SNMP events upon critical threshold violations. SNMP event notification from the RSAM can even be integrated into your existing OSS or NMS systems. Technicians can then remotely diagnose the problem from their web browser or be dispatched to correct a potential failure.

Whether you use the DSAM Browser or a standard Internet web browser, instant access to the RSAM data and proactive analysis ensures a higher level of customer service. The ability to view originating source quality in the field increases your time to resolution and increases your customer satisfaction.

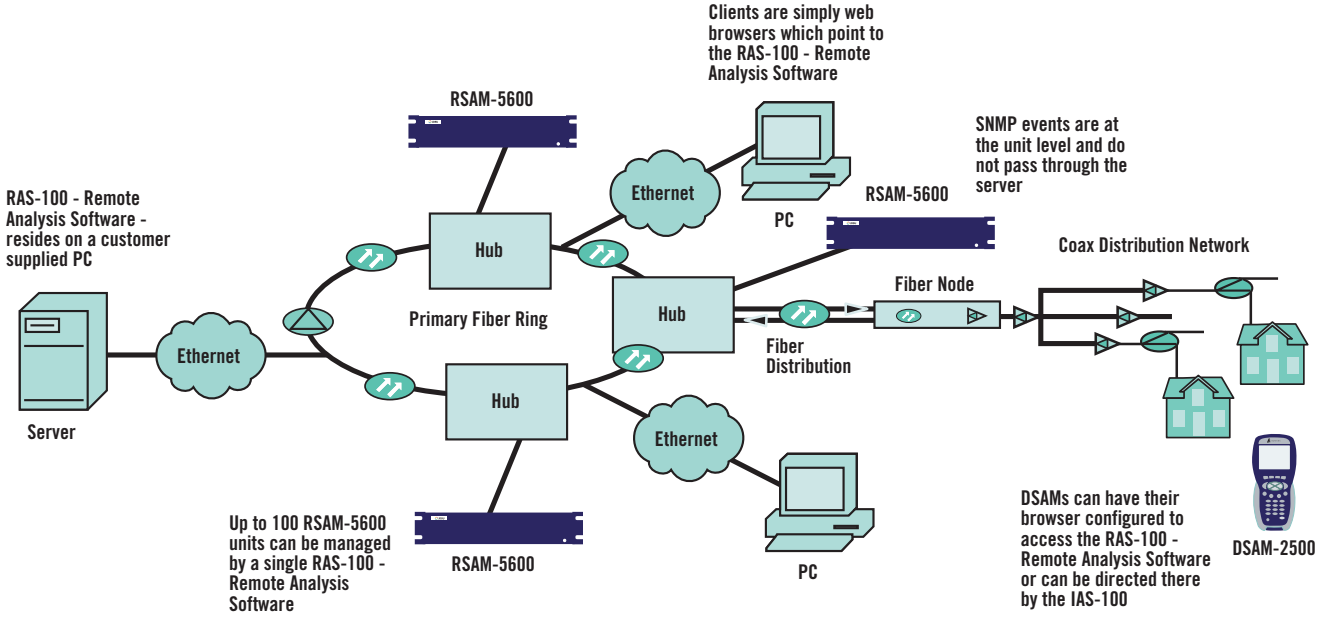



Figure 1: Typical instalation

## Integrated solution

The RSAM is configured using the JDSU FDM-100 Field Data Management software. Easily set-up, maintain and update channel plans and limits. The FDM-100 interface is common between DSAM field meters and the RSAM-5600 and even provides asset management of your RSAM-5600 deployments.

Accessing RSAM measurement is accomplished via the RAS-100 Remote Analysis Software. The RAS-100 provides a browser compatible interface via a web server which services measurement requests to individual RSAM units. There are no clients to purchase or install in your system. View the results 24/7 from anywhere—including over an RF network on the DSAM. The RAS-100 Remote Analysis Software responds to requests and formats the web page appropriately for the DSAM WFA web browser or a standard Internet web browser.

## On Demand Reporting Full Scan

From a PC web browser, a technician can quickly analyze system levels using the Full Scan report. This report graphically depicts the analog video levels and average digital power levels across the channel lineup. The user can then quickly compare the levels to the 4 different thresholds to determine the systems health. From the field, a user equipped with a DSAM with the WFA Browser option can also remotely view the full scan.

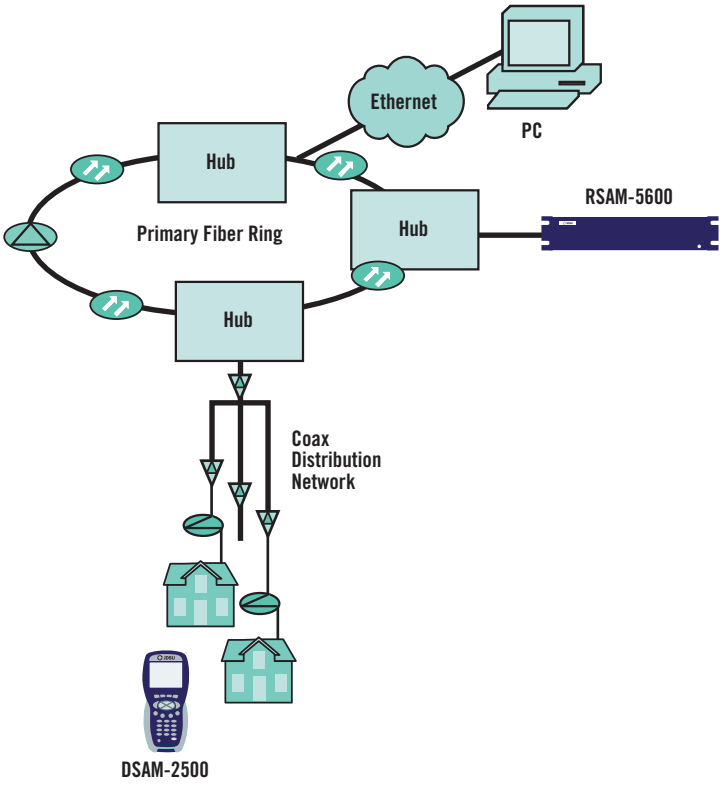
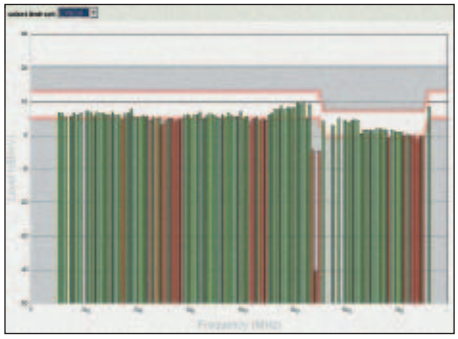
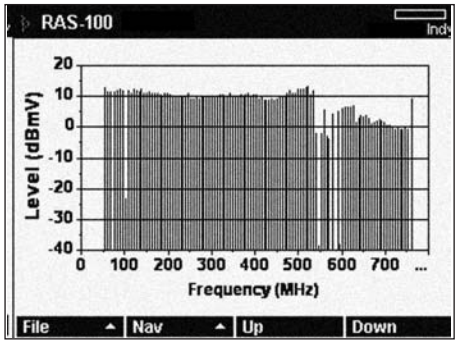



Figure 2: Remote service analysis



Remote view of Scan Graph on PC Internet Browser




Remote view of Scan Graph on a DSAM

## Test All Channels

Eliminate driving to remote hubsites to perform system checks. With the all channels report, detailed analysis of system performance is just one mouse click away. The All Channels Report provides channel by channel details including Video level, Audio Level, delta V/A, digital power level, MER, and compares the results against four user defined limit sets. The reports are presented in a tabular format that can then be printed for recording the remote systems performance.

## Single Channel

In depth analysis and detailed troubleshooting of individual channels with the Single Channel Report provides measurement results on a per channel basis. Identify performance issues on digital channels such as average power level, MER, and BER. The user interface provides quick graphical feedback of the pass/fail status of the test. Access to single channel test is also available in the field using the DSAM WFA-Browser option allowing field technicians to determine if the problem is from the source or caused by network conditions without calling a headend technician.

## Performance Monitoring and SNMP Events

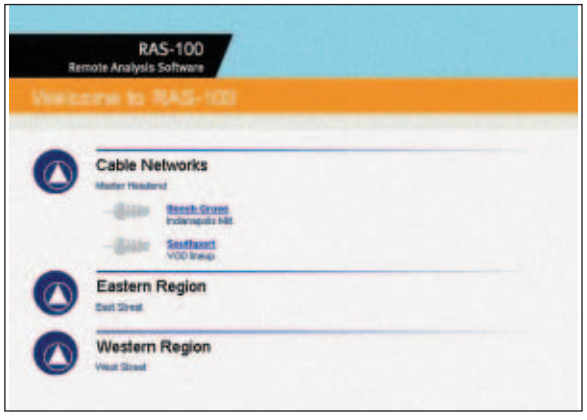
The RSAM-5600 will be continuously performing the All Channels Test in the background regardless of a users request. While performing the test, the RSAM will compare the measurements against the "critical" limit set. Using SNMP traps, the RSAM will send notification of events when measurements violate the limit thresholds. The SNMP events are generated at the RSAM and can be filtered and consolidated using an OSS or network management system.




Single Channel Report of a digital channel



All Channels Report of analog channels




Custom build hierarchies to fit your network




On Demand Report from remote sites

## Specifications (preliminary)

### Frequency

| | |
|---|---|
| Range | 4 to 1,000 MHz |
| Accuracy | ±10 ppm at 77°F (25°C) |
| Tuning resolution | Analog 10 KHz |
| | Digital 50 KHz |
| Channel bandwidth | RSAM-5600A 8 MHz |
| | RSAM-5600B 6 MHz |

### Level measurement, analog

| | |
|---|---|
| Signal types | CW, video and audio |
| | (NTSC, PAL, and SECAM) |
| Range | –40 to +60 dBmV(1) |
| Resolution | 0.1 dB |
| Resolution bandwidth | 330 KHz |
| Accuracy(2) | ±1.5 dB typical @ 25°C |

### Level measurement, digital

| | |
|---|---|
| Modulation types | QPSK, QAM (DVB/ACTS) |
| Range | –40 to +60 dBmV(1) |
| Resolution | 0.1 dB |
| Resolution bandwidth | 330 kHz |
| Accuracy(2) | ±2.0 dB typical @ 25°C |

### Downstream QAM demodulation

| | |
|---|---|
| Modulation type | 64 and 256 QAM, ITU-T J.83 |
| | Annex A, B or C (selectable) |
| Input range (lock range) | –15 to +50 dBmV total |
| | integrated power(3) from 55 to 1000 MHz |
| BER(4) | Pre- and Post-FEC 10-4 to 10-9 |
| MER(4) | Range 64 QAM: 21 to 35 dB |
| | Accuracy ±2 dB (typical) |
| | Range 256 QAM: 28 to 35 dB |
| | Accuracy ±2 dB (typical) |
| EVM(4) | 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 and 5.361 Msps for 256 QAM |
| | Annex C, 5.274 Msps for 64 QAM and 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 | 75 ohm, F81 or BNC option |
| | Max. sustained voltage 100 VAC, 140 VDC |
| RS232 | Standard via DB9 |
| Ethernet | RJ45, 10 base T, TCP/IP and UDP supported |
| AUX | TTL compatible output for controlling accessories |

### General

| | |
|---|---|
| Dimensions | 19 x 13.5 x 3.5 in ( 48.3 x 34.3 x 8.9 cm) |
| Weight | 7 lb 7 oz (3.4 kg) |
| Operating temperature range | 32 to 120°F; 0 to +50°C |
| Storage temperature range | 0 to 120°F; -20 to +50°C |
| Power supply input | 47-63 Hz, ~110VA, 100-265 VAC |

(1) Typical, detectable range
(2) Accuracy for levels between –20 to 60 dBmV
Additional uncertainty ±0.5 dB across –20°C to 50°C
Additional uncertainty ±1.0 dB from 4 MHz to 15 MHz
(3) At 64 QAM
(4) Accuracy and behavior from 100 MHz to 1000 MHz for levels between –5 to 50 dBmV (typical)

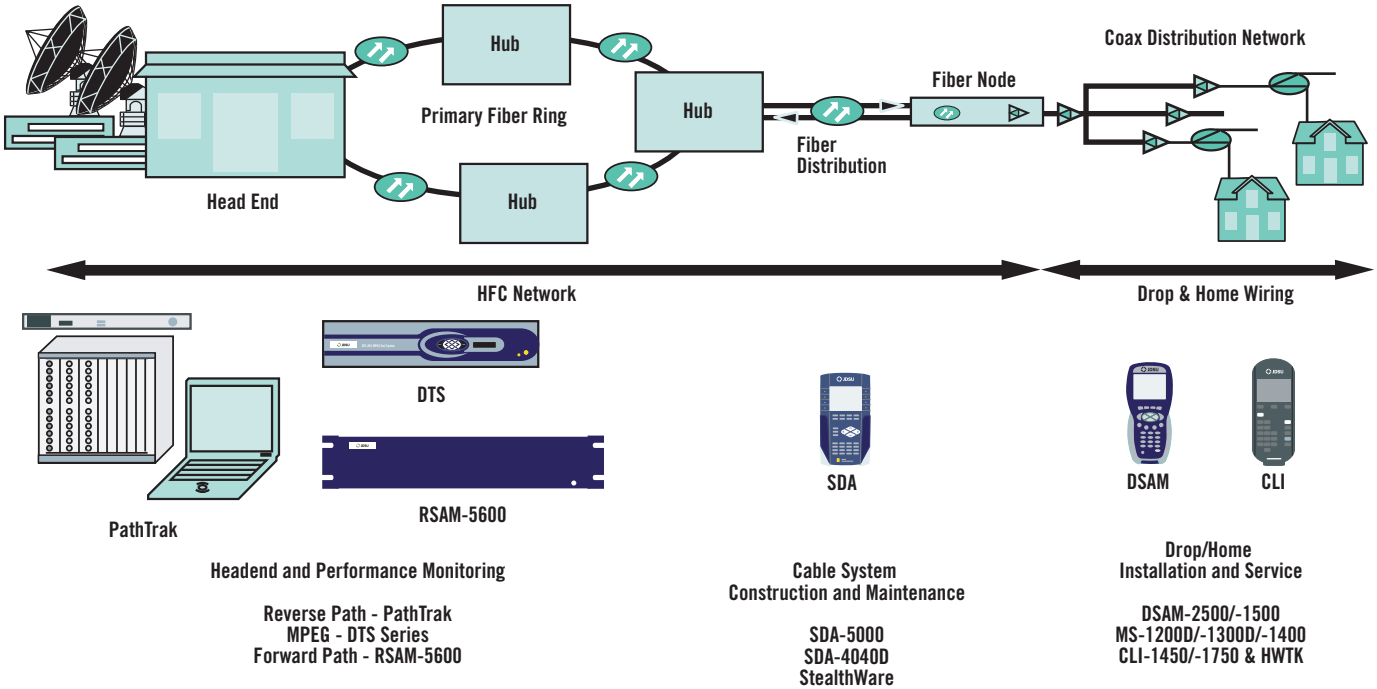



Figure 3: RSAM - Complements the cable solution

## Ordering Info

| Models | Part number | Description |
|---|---|---|
| RSAM-5600A | 1010-00-0892 | Remote Service Analyzer Module, 4 to 1000 MHz, 8 MHz channel spacing |
| RSAM-5600B | 1010-00-0893 | Remote Service Analyzer Module, 4 to 1000 MHz, 6 MHz channel spacing |
| RAS-100 | 1010-00-0891 | JDSU RAS-100 Remote Analysis Software, PC Based Web Server for controlling and viewing Remote RSAM-5600 measurements. Includes one copy of FDM-100 for configuring and managing RSAM's One License controls up to 100 RSAM-5600 units. |
| **Optional** | | |
| BNC-connection | 1019-00-1455 | Substitute 75-ohm BNC connection |
| IAS-100 | 1010-00-0878 | IAS-100 Instrument Application Software, a TechSync solution. Works in conjunction with the DSAM WFA browser option. |

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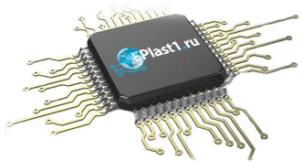
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