

QoS-1000

RF Layer Monitoring Receiver

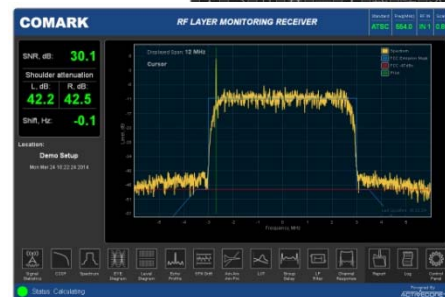
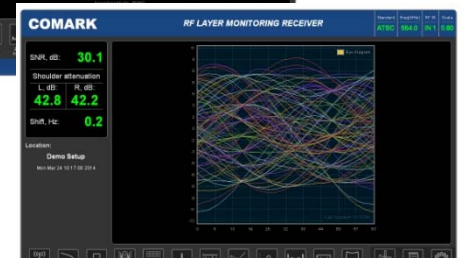
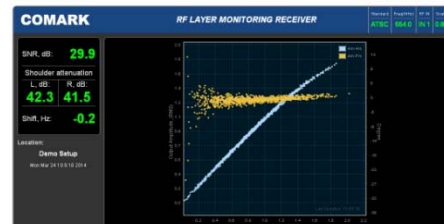
The **QoS-1000** is an extremely cost effective solution for Quality of Service (QoS) monitoring of any transmitter RF output.

Hitachi-Comark provides high performance and award winning television transmitters that are backed by more than 40 years of leadership in broadcast technologies.

The **QoS-1000** allows engineers to cost-effectively monitor the digital transmitter system performance of any transmitter or repeater site. The **QoS-1000** utilizes a 1RU chassis and accepts an RF sample signal; the unit is powered via standard 110-250VAC, 50/60Hz line voltage. It's ideally suited for remote monitoring applications of a transmitter system or can even be used as a stand-alone unit during design verification and production tests.

Using high precision demodulation and signal processing, the **QoS-1000** analyzes the RF signal and provides near-real time user metrics including Symbol and Constellation diagrams as well as RF spectrum, RF shoulders, MER/SNR, and frequency response / group delay. The **QoS-1000** includes an event and alarm log with user defined parameters and thresholds.

QoS-1000 has a built-in web server that hosts user-friendly Graphical User Interface (GUI) providing a window into the heart of the RF signal. Local or remote interface to the unit is via a built-in Ethernet port. The **QoS-1000** is available in multiple versions to support ATSC, DVB-T, or ISDB-T worldwide DTV standards.

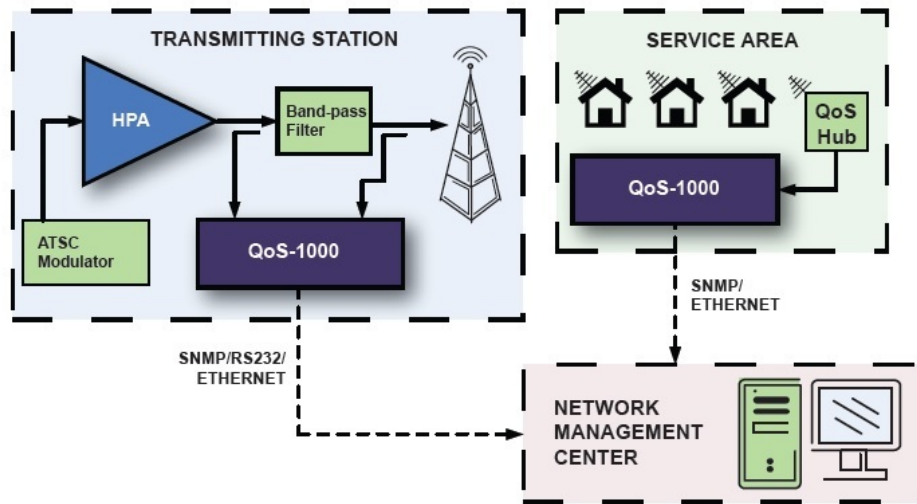


QoS-1000 ~ Rear Panel View

KEY FEATURES

- ▶ User-friendly GUI displays:
 - ✓ RF Spectrum / FCC Mask
 - ✓ Constellation and Eye diagrams
 - ✓ Frequency resp. / Group delay
 - ✓ IMD & SNR versus time
- ▶ Simple to use; cost effective alternative to test equipment
- ▶ -20dBm nominal input level, via type N female connector
- ▶ Ethernet local / remote monitoring
- ▶ VHF/UHF compatible, with 10Hz tuning steps
- ▶ ≥ 50MHz analyzed bandwidth
- ▶ Dry loop contacts via DB-9
- ▶ 0 – 50 degrees C temp. range

QOS-1000 USAGE BLOCK DIARAM



SPECIFICATIONS

General:

Signal: PAR, RMS
 Spectral: Bandwidth, Frequency shift, Peak-to-Average Power, Shoulder Attenuation

ATSC Standard Specific:

- Spectral mask compliance;
- SNR/EVM/MER;
- 8VSB Pilot Amp. & Phase Errors;
- Signal Amplitude/Phase errors;
- Group Delay

Main signal input "RF input":

Connector: 50Ω, N-type
 Level: 0 to -50dBm, -20 dBm optimum
 Frequency range: 50 to 1000 MHz
 Frequency tuning step: 10Hz
 Analyzed bandwidth: ≥ 50MHz

Reference frequency:

1PPS: LVTTTL, BNC
 10MHz: 50Ω, BNC, 1Vp-p, sine

Control and Monitor Ports:

Ethernet: RJ45, 10/100/1000 Fast Ethernet
 Serial: RS232, DB9M

Relay Control (x2):

Dry Contacts, DB9F

Power Supply:

110-250V, 50/60Hz AC

Operating temperature:

0 to 50, °C

Form factor:

1U stand-alone unit: 19" x 13" x 1.75"

Distortions:

Non-linear:
 Linear:

- AM-AM, AM-PM curves;
- Output complex LUT array is available for
- Amplitude and Phase response;
- Output complex FIR coefficients are available for DAP
- Spectrum shoulder levels/mask
- Signal MER/SNR;
- Frequency Shift.

Default set of alarms:

User-defined set of parameters and their thresholds

Parameter update rate:

≤ 15 sec

Available plots and data logs:

- Constellation;
- Eye diagram;
- AM-AM, AM-PM;
- Channel Amplitude and Phase responses;
- CCDF;
- SFN impulse response/CIR;
- SNR/MER/EVM variation history;
- Shoulder attenuation history;
- Event and Alarm log
- WEB GUI
- host based GUI (PC GUI)
- SNMP agent
- Email

Software interfaces:

ORDERING INFORMATION

Please contact your authorized Hitachi-Comark representative.
 US Sales 1-800-288-8364 or 413-998-1100
 Hitachi Kokusai Electric Comark LLC
 104 Feeding Hills Road
 Southwick, MA 01077

- QoS-1000ATSC → RF Rx/Mon, System ATSC
- ATSC 3.0 U/G → Upgrade QoS for ATSC 3.0
- QoS-1000DVB → RF Rx/Mon, System DVB-T
- QoS-1000ISDB → RF Rx/Mon, System ISDB-T

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