

QoS-1000RT

Real-Time RF Layer Monitoring Receiver

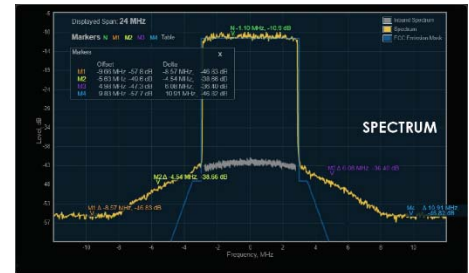
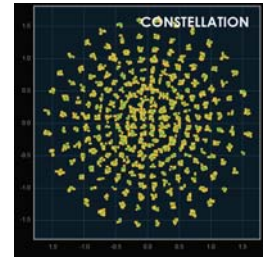
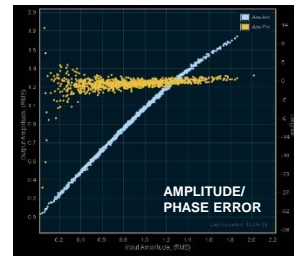
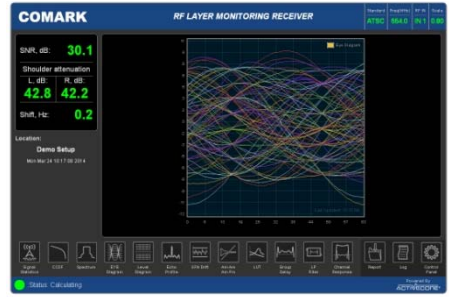
The **QoS-1000RT** is an extremely cost effective solution for Quality of Service (QoS) monitoring of any transmitter RF output.

Hitachi-Comark provides high performance and award winning television transmitters that are backed by more than 45 years of leadership in broadcast technologies.

The **QoS-1000RT** allows engineers to cost-effectively monitor the ATSC system performance of any DTV transmitter or repeater site. The **QoS-1000RT** utilizes a 1RU chassis and accepts an RF sample signal; the unit is powered via standard 110VAC, 60Hz line voltage. It comes preloaded for use with ATSC 1.0 signals and a simple software upgrade is available for ATSC 3.0 monitoring. A portable version of the QoS-1000RT is also available for engineers on the go.

Using high precision demodulation and signal processing, the **QoS-1000RT** analyzes the RF signal and provides Real-Time ($\leq 1S$ refresh rate) user metrics including Symbol and Constellation diagrams as well as RF spectrum, RF shoulders, MER/SNR, and frequency response / group delay. The **QoS-1000RT** includes an event and alarm log with user defined parameters and thresholds.

QoS-1000RT 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.

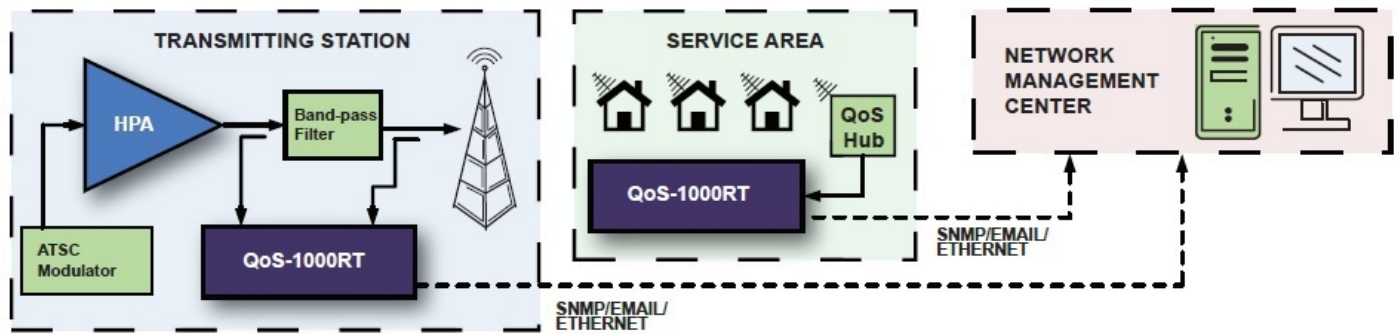


QoS-1000RT ~ Rear Panel View

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
- ▶ Real-time (<1S) screen refresh
- ▶ ATSC 1.0; upgradeable for 3.0
- ▶ VHF/UHF compatible, with 10Hz tuning steps
- ▶ ≥ 50 MHz analyzed bandwidth

QOS-1000 USAGE BLOCK DIARAM



SPECIFICATIONS

Supported Standards: (1) ATSC 1.0, ATSC 3.0 (optional)
Main signal input "RF input": (2)
 Connector: 50Ω, N-type
 Level: +5 to -70dBm
 Frequency range: 50 to 1000 MHz
 Frequency tuning step: 10Hz
 Analyzed bandwidth: ≥ 50MHz
Reference frequency:
 External: 1PPS: LVTTTL, BNC
 10MHz: 50Ω, BNC, 1Vp-p, sine
 Internal: Integrated GPS/GLONASS receiver (3)
 antenna connector F-type, 75Ω

Control and Monitor Ports:
 Ethernet: RJ45, 10/100/1000 Mbps
 WiFi (4) WLAN 802.11n

Relay Control (x2): Dry Contacts, DB9F
Power Supply: 110-250V, 50/60Hz AC (for 1RU)

Operating temperature: 0 to 50, °C

Form factor:
 1RU stand-alone unit: 19" x 16" x 1.75"
 Portable unit: 13.8" x 10.2" x 2.6"

Software interfaces:
 - WEB GUI
 - SNMP agent
 - Email

General Parameters:
 - MER/SNR;
 - Signal PAR;
 - Bandwidth;
 - Frequency and Sampling rate shifts;
 - Shoulder attenuation;
 - Emission/Spectral mask compliance;
 - Amplitude and Phase response;
 - Group Delay across bandwidth
ATSC 3.0 Standard Specific:
 - MER for Bootstrap, L1 and selected PLP
 - ATSC3.0 frame structure;
 - Bootstrap, L1D and L1B signaling info;
 - LDPC BER for L1 and selected PLP

Default set of alarms:
 - Input signal level;
 - Spectrum shoulder levels/mask;
 - Signal MER;
 - SFN Echo profile variation;
 - Frequency Shift
Application-specific alarm events: (3) User-defined set of parameters and their thresholds
Parameter update rate: ≤ 1 sec
Available plots and data logs:
 - Spectrum of the main lobe and in-band interference;
 - ATSC 3.0 Bootstrap, L1 constellation
 - ATSC 3.0 Selected PLP constellation;
 - Channel Amplitude/Phase and Impulse responses;
 - CCDF;
 - SFN drift;
 - Constellation Diagram for ATSC 1.0;
 - Eye Diagram for ATSC 1.0;
 - Echo profile;
 - Decoded Bootstrap and L1 info;
 - Main parameters internal log;
 - Report for remote downloading;
 - Event and Alarm log



QoS-1000RTM ~ Portable Unit

(1) Subject to licensing, software switchable
 (2) Optional: 2nd RF Input
 (3) Set of alarms can be tailored to Customer's application specifics
 (4) Optional WiFi module

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

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QoS-1000RT	→	RF Rx/Mon, ATSC 1.0, 1RU
QoS-1000RTM	→	RF Rx/Mon, ATSC 1.0, Portable
OPT-QoS-RFIN2	→	Optional 2 nd RF Input
OPT-QoS-GPSRx	→	Optional Internal GPS Rx
OPT-QoS-WiFi	→	Optional WiFi Module
ATSC 3.0 U/G	→	Upgrade QoS for ATSC 3.0