AVQ1020
ActiveCore™

Multistandard Monitoring Receiver

Based on ActiveCore™ Platform, AVQ1020 is a monitoring receiver and signal analyzer for all major digital broadcasting standards including proprietary modulation schemes. It has been designed as an easy-to-use and cost-effective solution for monitoring digital transmitter system performance. The receiver can be integrated into a transmitter system for remote monitoring applications or used as a stand-alone unit during design verification and production tests.

In the context where broadcasters are more and more concerned about reducing their network OPEX costs and at the same time limiting impact on the environment, it becomes important that the repeater networks are designed to be as reliable as possible in terms of the provided QoS.

Parameters are measured by the receiver and can be requested by a remote host or Repeater System Management Centre in remote applications. The receiver allows not only monitoring broadcasting signal parameters but it also can be used for estimation of performance of the transmitter system - distortions introduced by the amplification and filtering chains. The unique functionality allows the receiver to be used for estimation of critical parameters of high power amplifier performance using real broadcasting signals - signal compression (peak clipping), amplifier and phase non-linearity, memory effects, etc. Another application of the receiver is analyzing signal propagation environment including multi-echo path and air-channel influence.

The ActiveCore monitoring receiver is available as a stand-alone unit (1U), OEM module or PCIe card in an instrumental PC.

Features:
- OFDM and single carrier broadcasting signals Monitoring Receiver;
- Universal broadcasting signal analyzer supporting all major broadcasting standards: RAVIS, ISDB-T, ATSC, DTMF, CMMB, DAB, DVB-T/H, DVB-T2, HD Radio, etc.;
- Signal analyzer for proprietary modulation schemes used in hybrid “satellite-terrestrial” digital broadcasting;
- Can be used in remote applications, in-field diagnostics, design verification and production testing;
- Broadcasting standard dependable signal physical layer analyzer: MER, SNR, constellation, signal bandwidth, FFT size, guard interval length, standard specific parameters, i.e. scrambling sequence, time slot, etc.;
- Spectrum width, energy leakage estimation;
- Estimation of In, Out-of-band, linear and non-linear distortions;
- Channel estimation based on real broadcasting signals;
- Multipath echo detection, estimation and visualization;
- Rich plotting capabilities supported with a host GUI;
- Suitable for installing as a PCIe card in an instrumental PC;
- Can be used as an integral part of development and test equipment.
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Technical specification:

Main signal input RF in: -50.0d Bm; 470.862 MHz (standard), analyzed bandwidth up to 50 MHz
Supporting standards: ISDB-T, ATSC, DTMB, CMMB, DAB, DVB-T/H, DVB-T2, RAVIS, HDRadio, etc.
Proprietary modulation schemes;

Interfaces:
- a) hardware: Ethernet, USB, CAN, PCIe, RS232
- b) software: WEB GUI, host based GUI (PC GUI), SNMP, simplified machine-to-machine protocol

Power supply:
- 5A@12V DC (OEM module)
- 110-250V, 50/60Hz AC (1U unit)

Form factors:
- Full size PCIe card;
- 1U stand-alone unit;
- OEM module.

Operating temperature range: 0..50, °C

Applications:
- Remote monitoring for broadcasting repeater system network;
- Digital transmitter/repeater performance monitor;
- Test and design verification equipment;
- Signal analyzer for a wide variety of applications including military and medicine;
- DSP technology R&D;
- In-field and production testing.

Monitoring Capabilities:
- Transmitted signal quality:
  * Spectrum Quality (shoulder level);
  * Central Frequency;
  * Signal Bandwidth;
  * MER, etc.
- Signal propagation:
  * Multipath Echo;
  * SFN.
- Broadcasting standard physical layer parameters:
  * Constellation;
  * Symbol and Guard Interval Duration;
  * Standard Specifics, etc.
- General transmitter operating functionality.

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