

ACTIVECORE®

AVQ200DAB RF SIGNAL INSPECTOR™ for DAB/DAB+ off-air monitoring



FEATURES:

- ▶ In-Band interference detection and visualization
- ▶ Rich set of tools for remote monitoring
- ▶ IP Transport Stream output

Description

AVQ200DAB RF Signal Inspector™ is an embedded RF signal analyzer for **DAB** and **DAB+** digital broadcasting standards. **AVQ200** is an extension of Avateq's line of products designed for remote off-air signal monitoring. Along with extensive RF measurements, **AVQ200** features an advanced web-based user interface with unique interference monitoring tools, a report generator, and a user-defined alarm engine. This combination of functionality and available set of measurements makes **AVQ200** an efficient tool for on-site or remote signal quality monitoring in the service area.

Technical Specification

Supported standards¹⁾:	DAB/DAB+	Transmission modes:	I, II, III, IV
Main signal input "RF in":		Control and Monitor Ports:	
Connector:	50Ω, SMA	Ethernet:	RJ45 10/100/1000
Level:	-80 .. +5 dBm	Transport Stream Output:	Selected DAB/DAB+ Audio service streaming over HTTP (RJ45)
Frequency range:	42 .. 1000 MHz	Form factor:	205mm x 105mm x 50mm (8.1" x 4.1" x 2")
Frequency tuning step:	1kHz	Operating temperature:	0 .. 50, °C
10MHz Reference:	MCX, 1Vp-p, sine	Power Supply:	12VDC, 4 Amp
DAB/DAB+:			
Channel bandwidth:	1.5MHz DAB block		

Monitored Parameters

General parameters:	<ul style="list-style-type: none"> - MER; - Signal PAPR; - Bandwidth; - Frequency and Sampling rate shifts; - Shoulder attenuation; - Emission/Spectral mask compliance; - Amplitude and Phase response; - Group Delay across bandwidth. 	<ul style="list-style-type: none"> - TII info; - FIB CRC errors and BER before Viterby;
General plots:	<ul style="list-style-type: none"> - Spectrum of the main lobe and in-band interference; - Channel Amplitude/Phase and Impulse responses; - CCDF; - Constellation; - Echo profile; 	Default set of alarms:
DAB/DAB+ specific:	<ul style="list-style-type: none"> - MER per Symbol; - Amplitude/Phase signal errors; 	<ul style="list-style-type: none"> - Input Signal level; - Spectrum shoulder levels; - Signal MER; - SFN Echo profile variation; - Frequency shift.
		Data logging and reporting:
		<ul style="list-style-type: none"> - Detailed report with data and plots; - Event and alarm log; - Main parameters internal log.
		Software interfaces:
		<ul style="list-style-type: none"> - Web GUI; - SNMP agent; - Email.

Measurements and Metrics

- ▶ A comprehensive set of tools for remote monitoring of RF and COFDM at any point in a DAB network;
- ▶ Echo profile pattern monitoring for SFN applications;
- ▶ Frequency spectrum, shoulder attenuation;
- ▶ In-band interference power spectral density;
- ▶ Central frequency shift;
- ▶ Signal statistic: MER for a number of OFDM symbols, signal RMS, PAPR, signal CCDF;
- ▶ DAB/DAB+ frame structure - Mode, FFT, and GI interval;
- ▶ TII reporting;
- ▶ Effects of the transmission system non-linearity in terms of AM-AM/AM-PM curves measured on the broadcasted DAB/DAB+ signal;
- ▶ Numerical estimation for the signal Amplitude and Phase errors;
- ▶ Linear distortions found in the output RF signal - signal-group delay and frequency response.

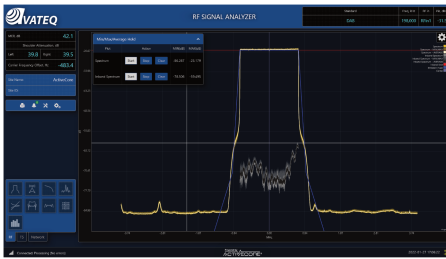
Applications

- ▶ DAB/DAB+ coverage area 24/7 QoS monitor;
- ▶ Remote monitoring for broadcasting repeater system network;
- ▶ SFN/Echo profile monitor;
- ▶ In-field and production testing.

Plot tools and accessories

- ▶ Normal and Delta markers;
- ▶ Min/Max hold;
- ▶ Manual scale adjustment;
- ▶ Cross bar;
- ▶ Thresholds for SFN profile and in-band interference level.

Samples of Reported Parameters and Plots



DAB/DAB+ Spectrum with In-Band



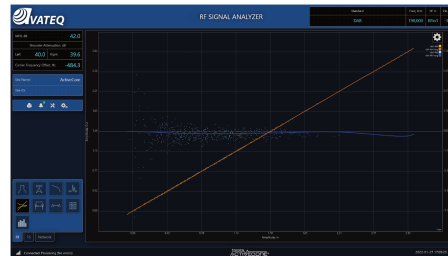
DAB/DAB+ Statistics



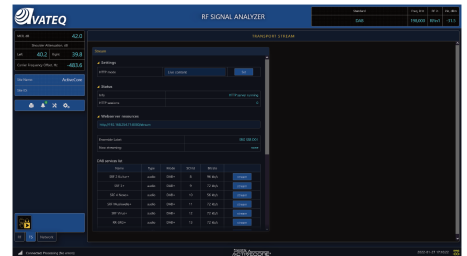
DAB/DAB+ Constellation



DAB/DAB+ SFN / Echo profile with TII

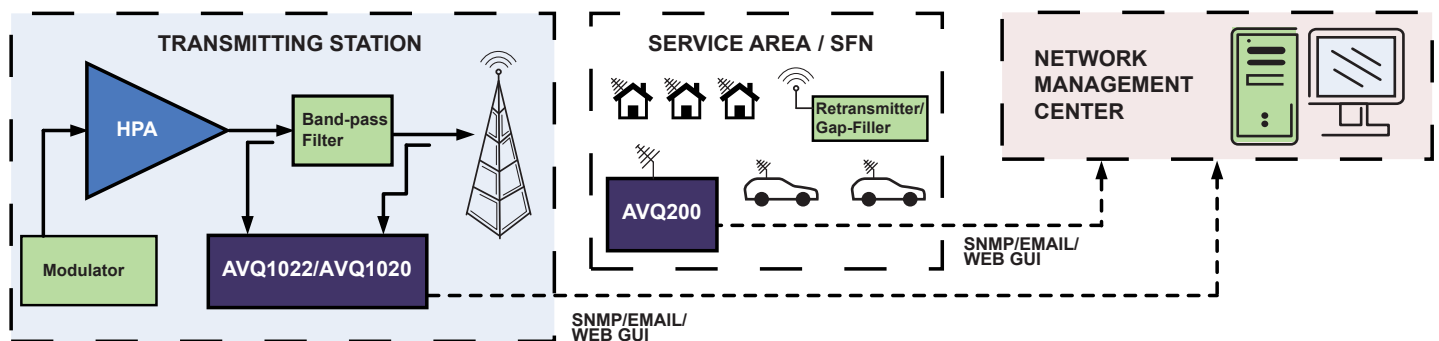


DAB/DAB+ AM-AM/AM-PM Curves



DAB/DAB+ Services and IP Transport Stream

Application Block-Diagram



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