

ACTIVECORE® AVQ1020ATSC (2nd gen.) RF LAYER MONITORING RECEIVER FOR DAB/DAB+



FEATURES:

- ▶ In-Band interference detection and visualization
- ▶ A comprehensive set of analyzed parameters and plots
- ▶ A rich selection of tools for remote monitoring
- ▶ IP Transport Stream output

Description

Based on ActiveCore® Platform, **AVQ1020DAB (2nd Gen)** is an embedded RF layer monitoring receiver and signal analyzer for **DAB** and **DAB+** digital standards. It has been designed as an easy-to-use and cost-effective solution for remote monitoring digital transmitter system performance and transmitted signal quality and, therefore, ensuring consistent Quality of Service (QoS) of the network. **AVQ1020DAB (2nd Gen)** features a comprehensive alarm system that can be accessed via multiple interfaces. Additionally, with its extensive set of tools for monitoring and analyzing RF and COFDM, the receiver is versatile for signal verification during production tests at a transmitter manufacturing facility.

Technical Specification

Supported standards⁽¹⁾:	DAB/DAB+	DAB/DAB+:	
Main signal input "RF in":		Channel bandwidth:	1.5MHz DAB block
Connectors:	Two 50Ω, N-type	Transmission modes:	I, II, III, IV
Reported power range:	-35 ... +5 dBm	Control and Monitor Ports:	
Working power range:	-50 ... 0 dBm, -20 dBm optimum	Ethernet:	RJ45 10/100/1000
Frequency range:	100 ... 1000 MHz	Transport Stream Output:	Selected DAB/DAB+ Audio service streaming over HTTP (RJ45)
Frequency tuning step:	1kHz	Form factor:	1U: 48.3cm x 33cm x 4.3cm (19" x 13" x 1.7")
10MHz Reference:	50Ω, BNC, 1Vp-p, sine	Operating temperature:	0 .. 50, °C
		Power Supply:	110 - 250V, 50/60Hz AC

⁽¹⁾ Additional standards can be supported. Subject to licensing. Software switchable.

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 (ETSI EN300401); - 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; - Channel Impulse Response / Echo profile; - AM-AM/ AM-PM curves 	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; - CIR / 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 DAB transmitter site;
- ▶ 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.

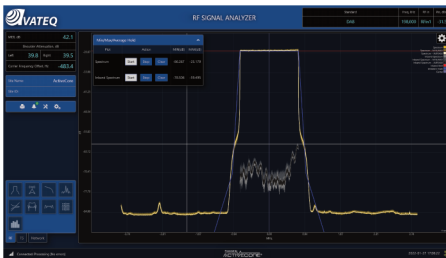
Applications

- ▶ DAB/DAB+ transmitter performance monitor;
- ▶ Research and development;
- ▶ In-field and production testing.

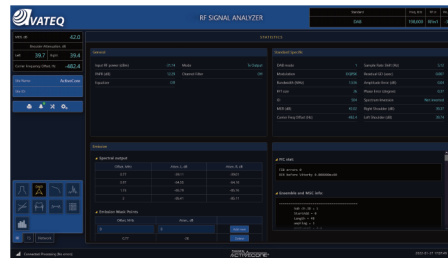
Plot tools and accessories

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

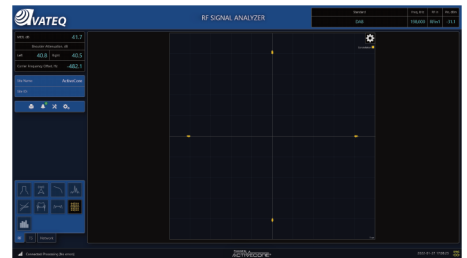
Samples of Reported Parameters and Plots



DAB/DAB+ Spectrum with In-Band



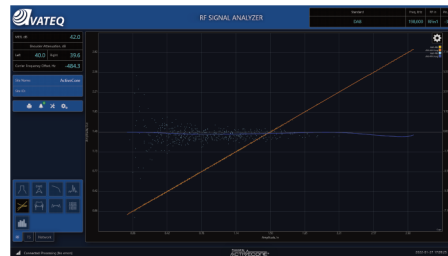
DAB/DAB+ Statistics



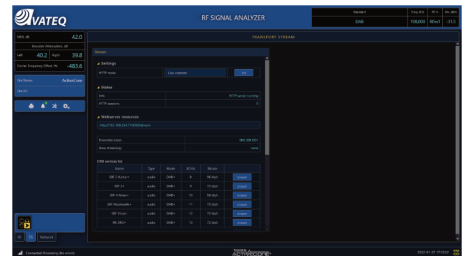
DAB/DAB+ Constellation



DAB/DAB+ CIR profile with TIIs

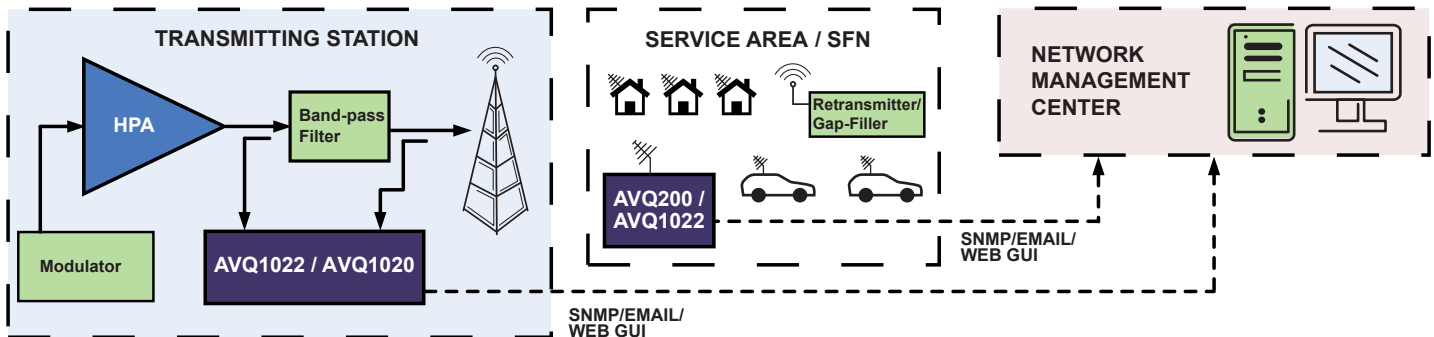


DAB/DAB+ AM-AM/AM-PM Curves



DAB/DAB+ Services and IP Transport Stream

Application Block-Diagram



Contact Information

AVATEQ CORP.
3555 - 14th Ave., Unit 18
Markham, ON L3R 0H5
Canada

Phone: **1.416.342.0761**
Fax: **1.416.342.0608**
E-mail: **info@avateq.com**
Web: **www.avateq.com**

