

DSP-BASED FM RADIO MONITORING RECEIVER WITH TCP/IP CONNECTIVITY

The DB4004 is our second generation digital FM Radio Modulation Analyzer. It combines our long term experience in FM Radio Monitoring and FM radio measurement "know how." The RF (IF) signal is digitalized as soon as it enters the device and all signal processing is then made through DSP algorithms. Digitizing the signal in this way, at the input, gives the equipment measurement reproducibility over time. The powerful accuracy of the digital filters used in this equipment enables the FM multiplex signals components to be accurately and repeatedly reproduced from one device to another. The incredible processing power in the device enables all measurements to be refreshed simultaneously and synchronously, thereby allowing for detailed readings of all the Multiplex FM signal components. The DB4004 has easy to read, high-resolution OLED graphical display and ultra-bright bargraph LED 60 segment indicators that allow reading the main signal parameters at a glance. The built-in DB4004 Oscilloscope representing the observed signal change over time enables you to visualize the most important signals participating in the process of demodulating and stereo decoding. Complimenting the Oscilloscope mode, the Spectrum analyzer mode allows spectral analysis of the input signal and part of DB4004 features. Spectral components of the selected signal are determined on the basis of Fast Fourier Transform. MPX Power and all other level measurements are supported by measurement history data. In addition to the list of DB4004 features, RDS information contained in the processed MPX signal is easily visualized and represented as RDS/RBDS Data and detailed RDS/RBDS Statistics.

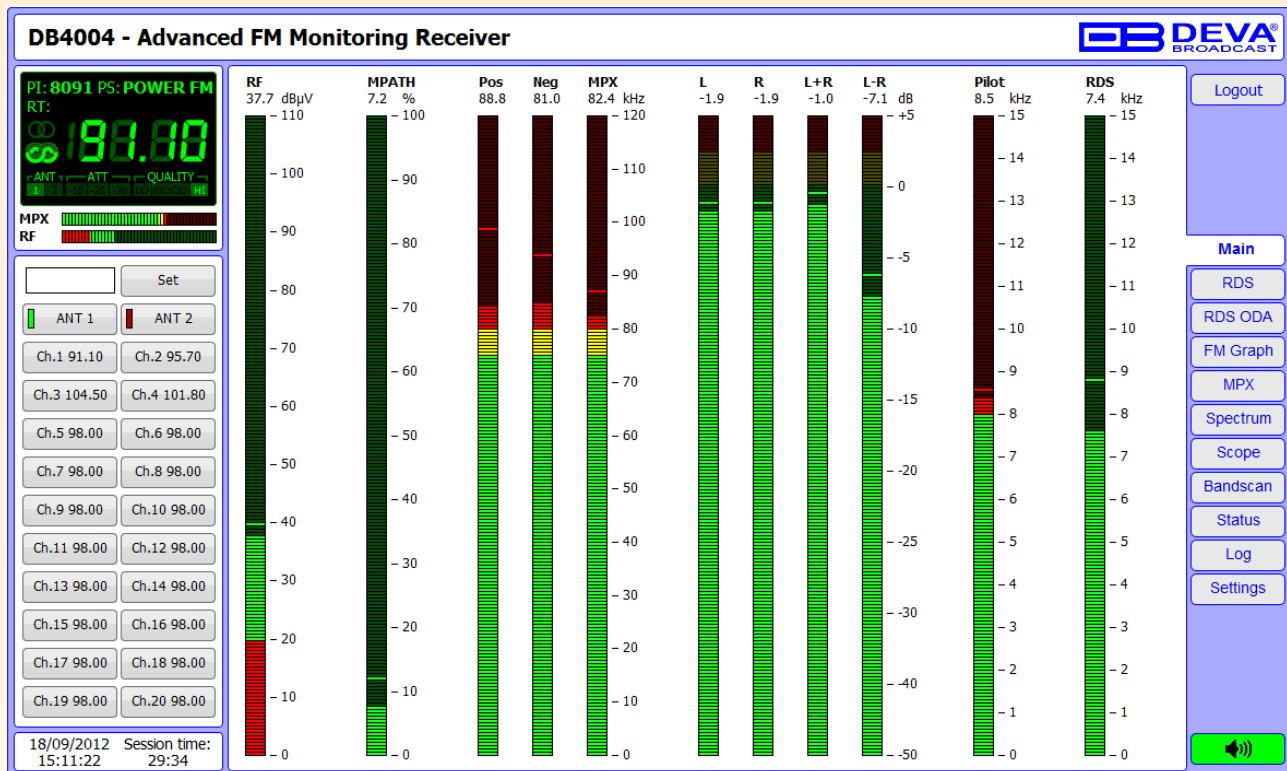


The Ultimate Award Winner

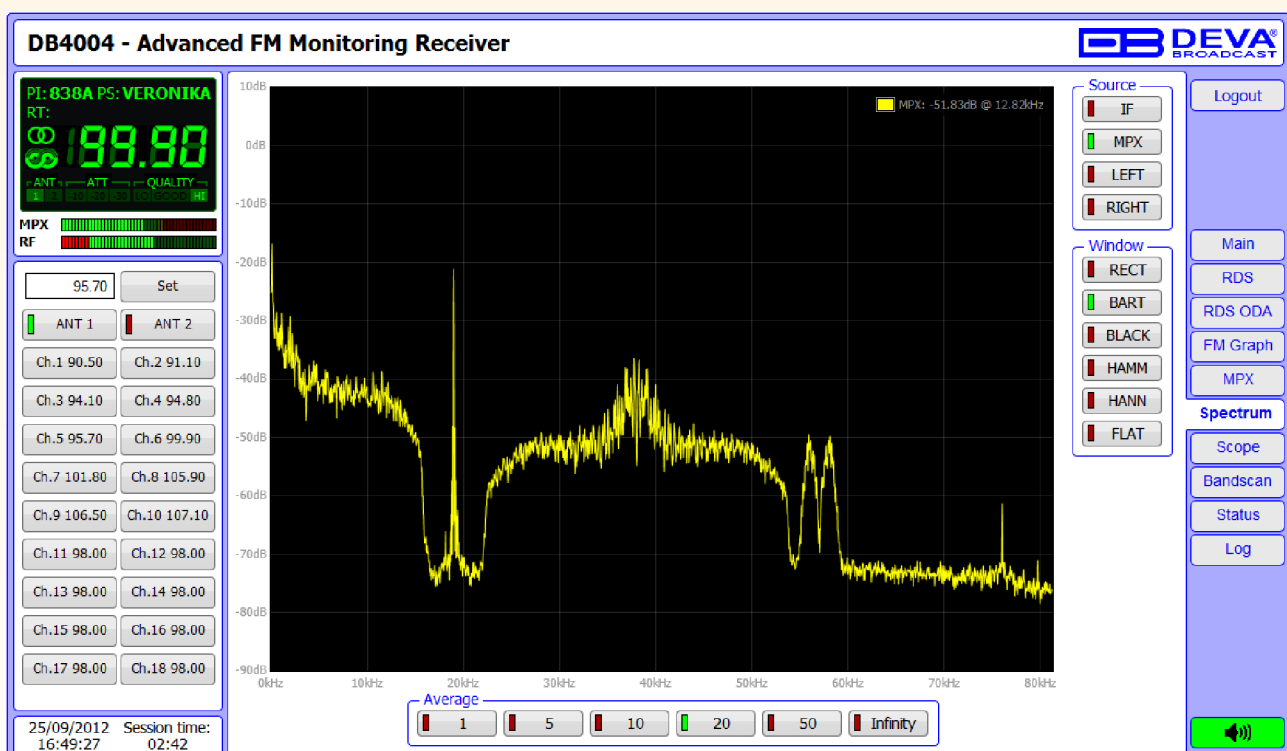


FEATURES

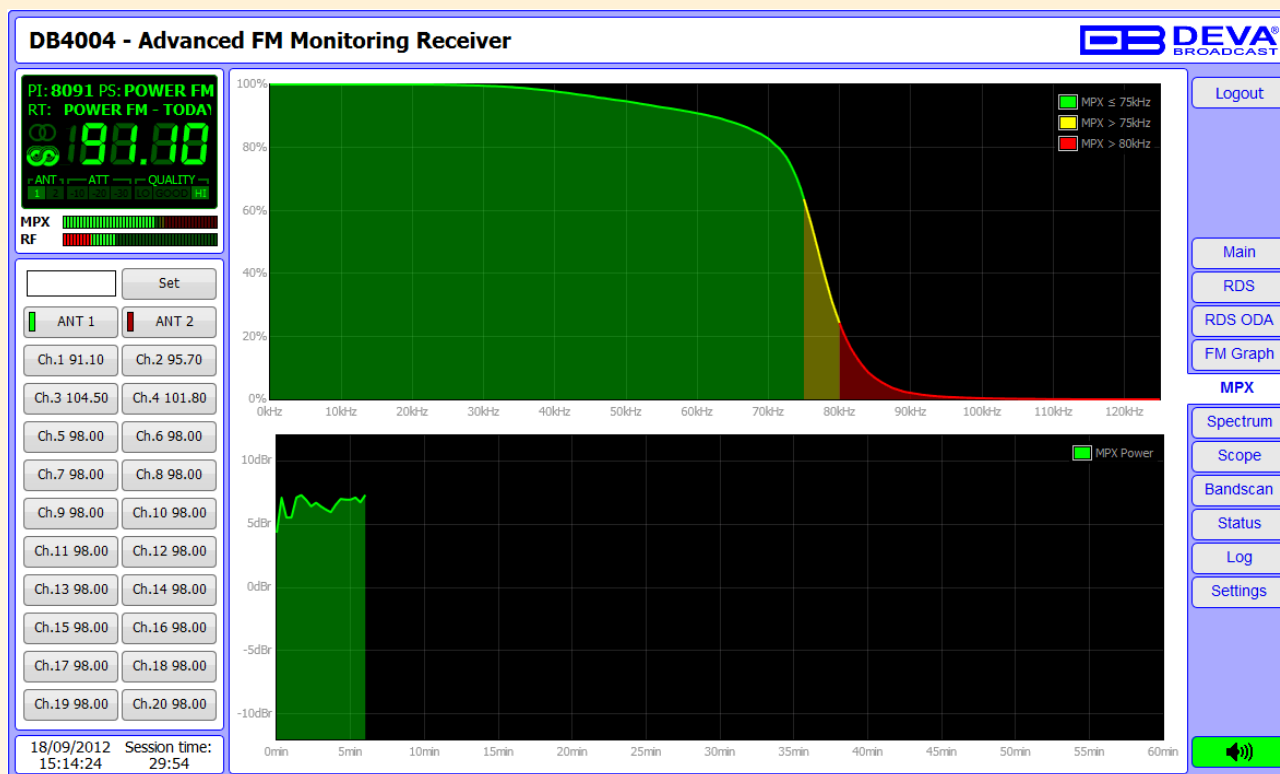
- Accurate front-panel metering for local use
- Wide operating voltage range: 100-240V AC
- Selectable wide range IF filter bandwidth
- RDS and RBDS decoder with BER meter
- Up to 100 dBμV direct RF Antenna Input
- Easy and intuitive Windows Application
- Protected access to the device settings
- Levels measurement with data history
- Wide angle, easy to read OLED display
- Real Time Audio Program Streaming
- Apple and Android devices support
- Restore Factory Parameters option
- Quick Station access via 4 Presets
- Very Intuitive Navigational Menu
- Built-in 50 channel Data logger
- Built-in WEB and FTP server
- Easy Installation and Setup
- Easy to use WEB interface
- Built-in Stereo Decoder
- Fully DSP based core
- Remote Listening via optional GSM modem
- 19" Professional Case for high RF immunity
- Selectable De-emphasis - Off, 50μs and 75μs
- Dual antenna ports with built-in RF attenuator
- Headphone output with front panel level control
- Alarm dispatch via E-mail, SMS, SNMP and GPO
- Firmware updates will ensure improved operation
- USB communication interface for local connectivity
- Left, Right, L+R, L-R bar graph LED audio level meters
- LAN port for full TCP/IP remote control and monitoring
- SNTP for automatic synchronization of the built-in clock
- Complete status reporting with SMS via optional GSM modem
- Professional AES/EBU, SPDIF and Optical Digital audio outputs
- Spectrum analyzer allowing checking of the RF Carrier and MPX
- Total and independent Positive and Negative deviation bar graph
- Level Adjustable, Balanced Analog Audio Outputs on XLR Connectors
- User selectable, 87.1-108 MHz (CCIR), 65-74 MHz (OIRT), 76-95 MHz (Japan)
- Bright, accurate bar graph LED metering of the Modulation and Pilot Levels
- Adjustable MIN/MAX alarms for RF, MPX, MPX Power, Pilot, RDS, Audio
- Built-in Oscilloscope for IF, MPX, Pilot, Subcarriers, Left, Right, L+R and L-R display



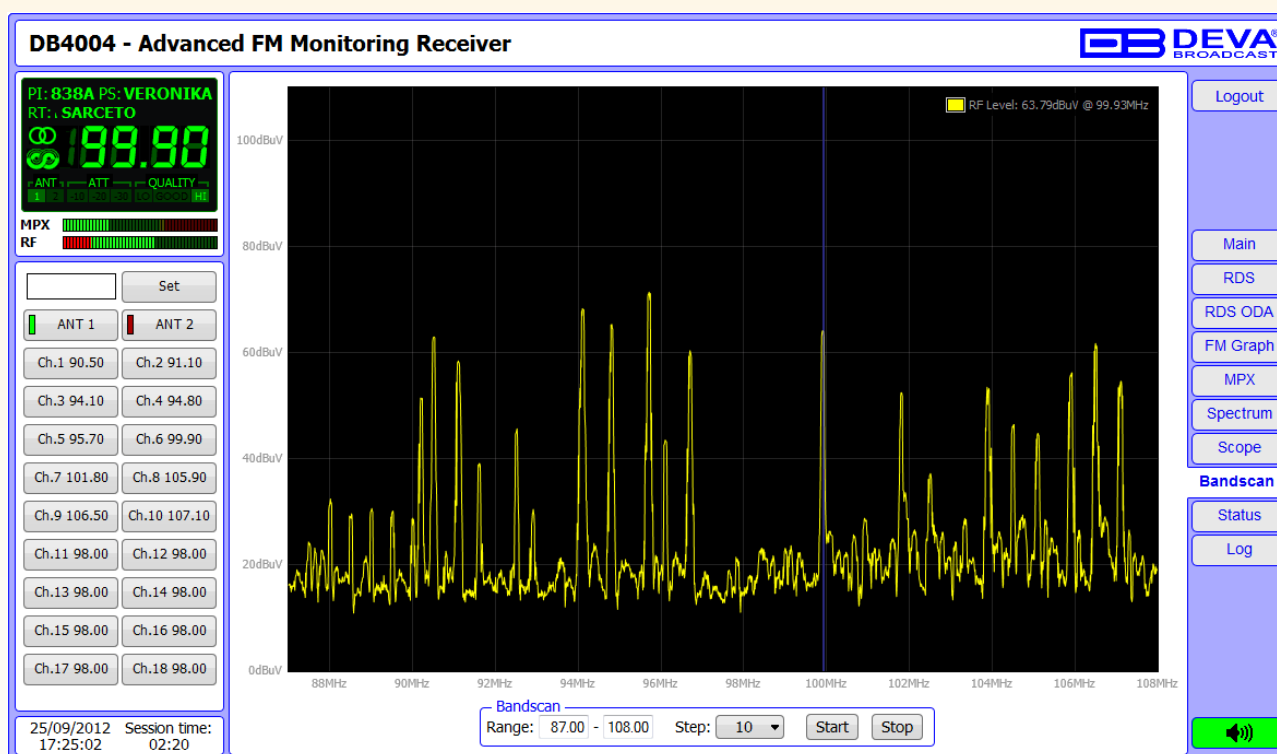
Main View with all mandatory parameters as LED readings



Spectral analysis of the MPX signal, determined on the basis of Fast Fourier Transform



MPX Deviation Overshoot and MPX Power measurement history data



Band Analyzer presenting an overview of RF Level vs. the Frequency

SPECIFICATIONS

RF Input	
Tuning Range	65 to 108 MHz
Tuning Step	10, 20, 50, 100 kHz
Tuner Sensitivity	30 dBμV
Input Level	0.5V to 2V - with connected additional external attenuator (suitable for the power range required)
Antenna Ports	Dual, 2 x BNC Connectors, 50Ω
Antenna Ports Isolation	> 40 dB
Internal Attenuator	0, 10, 20 and 30 dB
Dynamic range	100 dB
Amplitude/Frequency response	<0.3dB in the audio band

FM Demod	
IF Filter Bandwidth	15 Increments (25kHz - 157kHz, Auto)
Frequency Response	±0.1 dB, 10 Hz to 86 kHz
MPX Power	±12 dBr, 20 sec. integration
Dynamic range	90 dB

Stereo Decoder	
Frequency Response (L&R)	±0.1 dB, 10 Hz to 15 kHz
SNR (Stereo)	60 dB, 50 μs de-emphasis
THD	0.15% @1kHz, 0.4% @10Hz-15kHz, 50μs dmph
Separation	50 dB, 50 Hz to 10 kHz, 50μs de-emphasis
Crosstalk	52 dB

Outputs	
Composite	3.5 Vp-p @ 75kHz, 75Ω, unbalanced BNC Connector
Audio (L, R)	+6 dBu, 600Ω balanced XLR Connector
AES3 (L, R)	5.0 Vp-p, 110Ω, balanced XLR Connector
SPDIF (L, R)	3.0 Vp-p, 110Ω, unbalanced BNC Connector
Optical (L, R)	Transmitter, TOSLINK
Alarms	Programmable terminals on rear panel, optoisolated
Headphone	6,3mm (1/4") Phone Jack, +12dBm maximum

Size and Weight	
Dimensions (W;H;D)	485 x 44 x 180 mm
Shipping Weight	540 x 115 x 300 mm / 2.700 kg

RDS Decoder	
Standards	European RDS CENELEC United States RBDS NRSC
Error Correction & Counting	Yes
AF, CT	Yes
TA/TP	Yes
PI, PTY, DI, MS	Yes
PS, RT, RT+	Yes
TMC, ODA	Yes
Group Analyzer	Yes
BER Analyzer	Yes
Group Sequence Display	Yes
RDS RAW Data Display	Yes

Scope Analysis (RF, Composite, Audio)	
Signal Sources	RF (IF), MPX, Pilot, RDS, Main, Sub, L, R
Record length	4096 points
Dynamic range	90 dB

Metering Accuracy	
RF Level	±1 dB, 0 to 100 dBμV
MPX Power	±0.2 dBr, -12 to 12 dBr, 0.1 dBr resolution
Total, Pos, Neg	±2 kHz, 10 to 100 kHz, 1 kHz resolution
Pilot, RDS	±0.5 kHz, 1 to 12 kHz, 0.2 kHz resolution
Audio	±1 dB, +10.0 to -55.0 dB, 0.1 dB resolution

FFT Spectrum Analysis (RF, Composite, Audio)	
Signal Sources	RF (IF), MPX, Left, Right
FFT length	2048 points
Dynamic range	90 dB

Communication Interfaces	
USB	B-type Connector
Ethernet 10/100 Base-T	RJ45 Connector
GSM Modem	15 pin Male D-Sub Connector

Power	
Supply	100-240V / 50-60 Hz / 20VA
Connector	IEC320, Fused and EMI-suppressed



WE NEVER SPARE EFFORTS AND RESOURCES TO TURN OUR IDEAS INTO SUCCESSFUL PRODUCTS