ALL IN ONE TOOL

Model DB4005

SDR-Based FM Radio Modulation Analyzer and Monitoring Receiver

DB4005 is DEVA Broadcast's third-generation digital FM Radio modulation analyzer and receiver, the result of long years of experience and a desire to always provide intelligent near-perfect solutions, while keeping pace with the very latest technological developments and trends.

With this product, upon demodulation of the FM signal, the RF signal is digitalized by the SDR FM tuner and all signal processing is achieved through sophisticated DSP algorithms. The high precision of the powerful digital filters used in this equipment enables the FM signal to be accurately and repeatedly analyzed with each device. An important asset to the DB4005 is the MPX input, which allows you to monitor external composite signals, regardless of whether they are from a composite STL receiver/stereo FM encoder, or from an off-air source. As this is a tool of great processing power, it provides detailed readings of all the multiplex FM signal components, while all measurements are refreshed simultaneously and synchronously.

Another useful feature of the DB4005 is the Loudness Meter, which allows for measurements to be shown as defined by ITU BS.1770-4 and EBU R128 recommendations, as the product supports both standards.

The DB4005 has an 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 oscilloscope represents the observed signal change over time and helps you visualize the most important signals participating in the process of demodulating and stereo decoding. Complementing the Oscilloscope mode, the Spectrum analyzer mode allows for spectral analysis of the input signal. 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. Additionally, RDS information contained in the processed MPX signal is easily visualized and represented as RDS/RBDS Data and detailed RDS/RBDS Statistics.

FEATURES

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

DEVA BROADCAST®

P.O.Box 353, 8000 Bourgas, Bulgaria
Phone: +359 56 820027, Fax: +359 56 836700
www.devabroadcast.com, info@devabroadcast.com

ALL IN ONE TOOL

Model DB4005

SPECIFICATIONS

RF Input	
Tuning Range	87.1-108 MHz, 65-74 MHz, 76-95 MHz
Tuning Step	10, 20, 50, 100 kHz
Tuner Sensitivity	30 dBµV
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

FM Demod	
IF Filter Bandwidth	50kHz to 314kHz overall; ±25kHz to ±157kHz; 15 Increments
Frequency Response	±0.1 dB, 10 Hz to 86 kHz
MPX Power	±12 dBr, 20 sec. integration
Dynamic range	90 dB

MPX (Composite) Input	
Connector	BNC on rear panel; Impedance 10 kΩ
Frequency Range	10 - 70 kHz; ±0.01 dB, 100 - 60 kHz;
Sensitivity	3.5 Vp-p @ 100%

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	
Audio (L, R)	+12 dBm, 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

Power	
Voltage	100-240V / 50-60 Hz / 25W
Power Consumption	20VA
Connector	IEC320, Fused and EMI-suppressed

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

Operating conditions	
Temperature	-15°C to 55°C
Humidity	< 95%, non-condensing
Altitude	0 to 5000m above sea level

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

DEVA BROADCAST

P.O.Box 353, 8000 Bourgas, Bulgaria
Phone: +359 56 820027, Fax: +359 56 836700
www.devabroadcast.com, info@devabroadcast.com