BROADCAST TOOL

Model DB45

DSP-Based FM Radio Receiver and Modulation Analyzer

Maintaining the high standards of the DEVA product range, the DB45 model is the very definition of reliable monitoring of the FM signal. With a compact and practical design, it incorporates a variety of features spelling accurate and dependable measuring of the signal parameters, including the RF level, MPX deviation, MPX power, Left & Right audio levels, RDS, and Pilot injection levels.

The DB45 boasts a fully DSP-based core and guarantees round-the-clock operation. Upon demodulation of the FM signal, the RF signal is digitalized by the SDR FM tuner and all signal processing is achieved through calculations. The precision of this tool's digital filters means that the FM Multiplex signal's components can be accurately and repeatedly reproduced from one device to another, i.e. the same signal applied to two devices would give the same result. All measurement can be refreshed simultaneously and synchronously so that detailed readings of the Multiplex FM signal components can be obtained.

The DB45 supports TCP/IP and optional GSM connectivity, allowing for easy monitoring of the channel status and listening to real-time audio no matter where you are - all that is required is a mobile phone. Another impressive feature of this tool is the built-in audio streamer which gives users the opportunity to listen to and record the audio from any station.

The DB45 model provides an RDS/RBDS decoder with BER meter, as well as adjustable alarms for RF, deviation, Pilot and RDS signal via email, SMS and SNMP, while the WEB interface makes for easy set-up and control of your unit.

The DB45 is an indispensable piece of equipment when it comes to accuracy and reliability. Coupled with an affordable price, all its features contrive to produce an impeccable monitoring performance.



FEATURES

- MPX Power measurement with data history
- Remote Listening via optional GSM modem
- Selectable De-emphasis – 50µs and 75µs
- Up to 90dBµV direct RF Antenna Input
- Alarm dispatch via E-mail, SMS, SNMP
- RDS and RBDS decoder with BER meter
- Real Time Audio Program Streaming
- Parameters Factory Restore Option
- MPX, PILOT & RDS deviation meters
- Channel status reporting via SMS
- Intuitive Application Interface
- Easy Installation and Setup
- RF and RDS Measurements
- Headphones audio output
- Fully DSP based core
- Date & Time Settings with various formats
- Firmware update for future-proof operation
- FM Band 87 - 108 MHz Basic Spectrum Analyzer
- LEFT and RIGHT demodulated audio level meters
- Built-in Stereo Decoder; Stereo Presence Detection
- Proved and reliable hardware for 24/7/365 operating
- Attractive price and very good price-performance ratio
- LAN port for full TCP/IP remote control and monitoring
- SNTP for automatic synchronization of the built-in clock
- Adjustable alarms for RF, Deviation, Pilot and RDS signal
- Built-in Oscilloscope allowing Left, Right and MPX display
- Compact and Robust Aluminum Case for high RF immunity
- MPX Spectrum analyzer for Left, Right and MPX measurements
- Very Intuitive Embedded WEB server for interactive supervision
- RF Spectrum analyzer allowing to check the RF Carrier parameters

DEVA BROADCAST

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

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SPECIFICATIONS

RF Input	
Tuning Range	User selectable, 87.1-107.9 MHz (CCIR), 65-74 MHz (OIRT), 76-95 MHz (Japan)
Tuning Step	10, 20, 50, 100 kHz
Tuner Sensitivity	30 dBµV
Antenna Port	BNC Connector, 50Ω
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
Dynamic range	90 dB

Stereo Decoder	
Freq. Response	(L&R) ±0.1 dB, 10 Hz to 15 kHz
SNR (Stereo)	60 dB, 50 µs de-emphasis
THD	0.1%, 10 Hz to 15 kHz, 50 µs de-emph.
Separation	50 dB, 50 Hz to 10 kHz, 50 µs de-emph.
Crosstalk	52 dB

FFT Spectrum Analysis	
Input	Composite MPX, Audio
Dynamic Range	80 dB
FFT Length	1024
Sampling Rate	256 kHz - Composite, 64 kHz - Audio

Scope Analysis	
Input	Composite MPX, Audio
Trigger Mode	Auto, Fall
Dynamic Range	±120 kHz
Sampling Rate	256 kHz - Composite, 64 kHz - Audio

Outputs	
Audio stream	Icecast/Shoutcast compatible audio stream
Alarms	E-mail, SMS, SNMP
Headphone	1/8" (3.5mm) Phone Jack

Power	
Voltage	External, 12V/1A
Power Consumption	12VA
Connector	Power Jack 5.5mm

RDS Decoder	
Standards	European RDS CENELEC; United States RBDS NRSC
Error Correction & Counting	Yes
AF, CT, PI, PTY, DI, MS, TA/TP	Yes
RT (Radio Text), RT+	Yes
PS (Program Service name)	Yes
ODA	Yes
Group & BER Analyzer	Yes
Group Sequence Display	Yes
RDS RAW Data Display	Yes

Metering Accuracy	
RF Level	±1 dB, 0 to 100 dBµV
Multipath	0 to 100%; accuracy - ±1%
MPX Deviation	±2 kHz, 10 to 100 kHz, 1 kHz resolution
MPX Power	±12 dBr; resolution - 0.1dBr, 10 sec. integration; accuracy - ±0.2 dBr
Pilot Level	±0.5 kHz, 1 to 12 kHz, 0.2 kHz resolution
RDS Level	±0.5 kHz, 1 to 12 kHz, 0.2 kHz resolution
Audio Level	±1 dB, +10.0 to -55.0 dB, 0.1 dB resolution

User Interface	
Web interface	Full monitoring and control; Interactive and easy to use
Indicators	3 LEDs (on front panel)

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

Measurement Storage	
Storage	2GB Build-in Memory Card
Data format	Text, CSV

Operating Conditions	
Temperature	-15°C to 55°C
Humidity	< 95%, non-condensing
Altitude	0 to 5000m above sea level
EMC Immunity	6V/m

Size and Weight	
Dimensions (W;H;D)	125 x 31 x 160 mm
Shipping Weight	270 x 54 x 230 mm / 1.1kg



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