

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

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 | 15 Increments (25kHz - 157kHz, Auto) |
| 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 |

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

| Power Supply | |
|--------------|------------------|
| Voltage | External, 12V/1A |

| 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 |

| Operating Conditions | |
|----------------------|-------------|
| Temperature | 10° to 60°C |
| 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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