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. Complementing 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.

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
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Model DB4004

Main View with all mandatory parameters as LED readings

Spectral analysis of the MPX signal, determined on the basis of Fast Fourier Transform
Model DB4004

**ALL IN ONE TOOL**

- **MPX Deviation Overshoot and MPX Power measurement history data**

- **Band Analyzer presenting an overview of RF Level vs. the Frequency**
## Model DB4004

### 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
- **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 dB, 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)**: +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

#### Size and Weight
- **Dimensions (W:H:D)**: 485 x 44 x 180 mm
- **Shipping Weight**: 3 kg

#### RDS Decoder
- **Standards**: European RDS CENELEC
- **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 (LF), 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 dB, -12 to 12 dB, 0.1 dB 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 (LF), 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 / 25W
- **Connector**: IEC320

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“We never spare efforts and resources to turn our ideas into successful products.”