

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

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 dB μ V |
| Antenna Ports | Dual, 2 x BNC Connectors, 50 Ω |
| Antenna Ports Isolation | > 40 dB |
| Internal Attenuator | 0, 10, 20 and 30 dB |
| Dynamic range | 100 dB |

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

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

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

| Outputs | |
|----------------|--|
| Composite | 3.5 Vp-p @ 75kHz, 75 Ω , unbal. BNC |
| Audio (L, R) | +12 dBm, 600 Ω balanced XLR Connector |
| AES3 (L, R) | 5.0 Vp-p, 110 Ω , balanced XLR Connector |
| SPDIF (L, R) | 3.0 Vp-p, 110 Ω , 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 | \pm 1 dB, 0 to 100 dB μ V |
| MPX Power | \pm 0.2 dBr, -12 to 12 dBr, 0.1 dBr resolution |
| Total, Pos, Neg | \pm 2 kHz, 10 to 100 kHz, 1 kHz resolution |
| Pilot, RDS | \pm 0.5 kHz, 1 to 12 kHz, 0.2 kHz resolution |
| Audio | \pm 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 | |
|-------------------|----------------------------------|
| Voltage | 100-240V / 50-60 Hz / 25W |
| Power Consumption | 20VA |
| Connector | IEC320, Fused and EMI-suppressed |



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