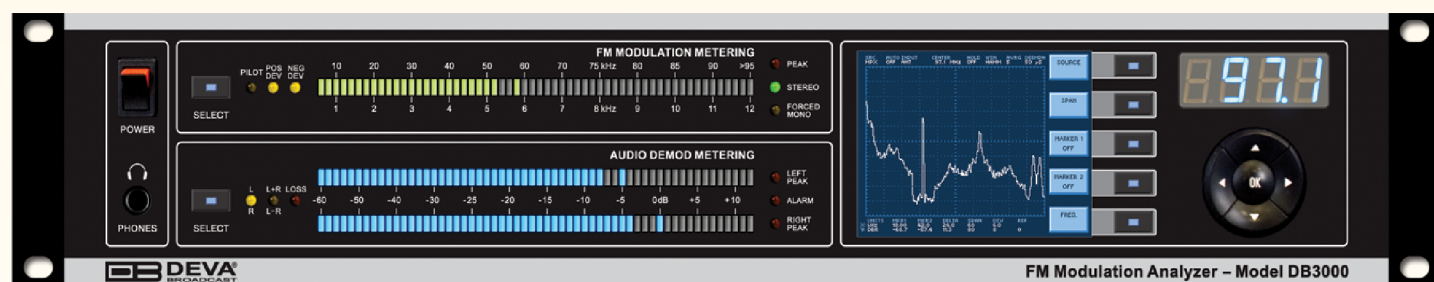## HIGH PERFORMANCE DSP-BASED FM MODULATION ANALYZER

The DB3000 FM Modulation Analyzer is a digital FM demodulator and modulation analyzer. The RF (IF) and MPX signal is digitalized as soon as it enters the device, and all signal processing is then made through calculations. Digitizing in this way, at the input gives the equipment measurement reproducibility over time. Digital filters' accuracy, used in this equipment, enables the FM multiplex signal's components to be accurately and repeatedly reproduced from one device to another, i.e. same signal applied to two devices will give the same result. The processing power in this equipment enables all measurements to be refreshed simultaneously and synchronously, thereby allowing for detailed readings of all the Multiplex FM signal components.

DB3000 incorporates easy to read, high-resolution bargraph displays that allow reading the main signal parameters at a glance. The built-in DB3000 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. Similarly to the Oscilloscope mode, Spectrum analyzer is a mode for spectral analysis of the input signal and part of DB3000 features. Spectral components of the selected signal are determined on the base of Fast Fourier Transform. MPX Power measurement, supporting measurement history data is yet another DB3000's great feature. In addition to the list of DB3000 features, RDS information that is contained in the processed MPX signal is easily visualized and represented as RDS/RBDS Data and RDS/RBDS Statistics.
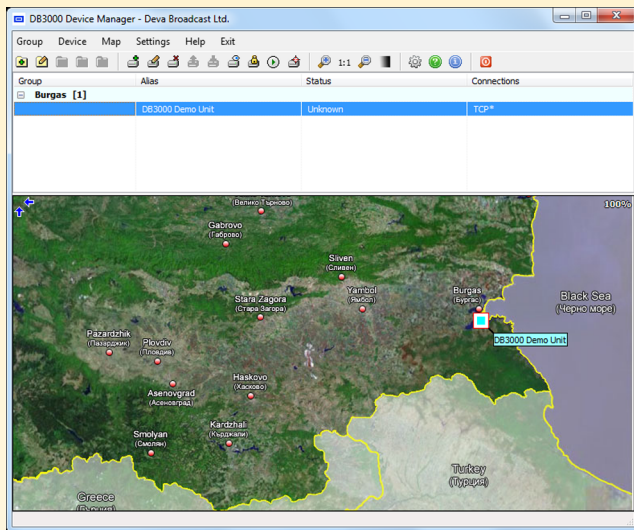
Adjustable Alarms enable Alarm Signal for the most important signals and signal components and parameters to be generated and fed to the Rear Panel Alarm Terminal for remote alarm notification. DB3000 is designed to support RS232, USB and LAN communication interfaces, allowing flexibility in remote connection and control of the unit. Dependable off-air monitoring lets you keep an eye on other stations in the market as well as measuring the important parameters of your own signal.

Incorporating all the necessary features at a very affordable price, DB3000 is the best FM Mod-Monitor and measurement tool ever made.
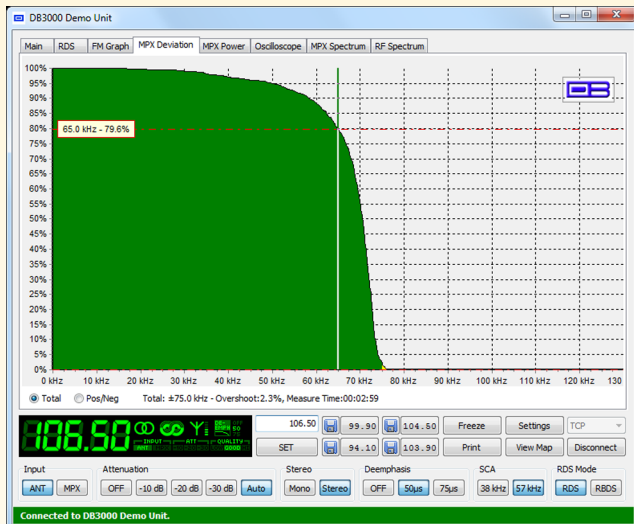
Model DB3000

FEATURES

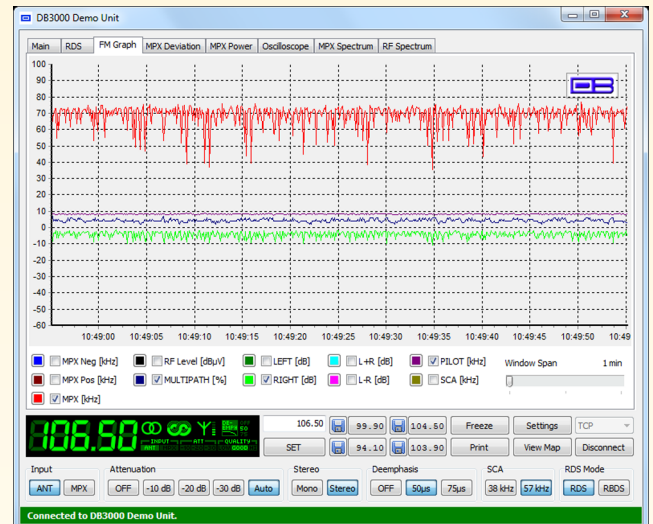| |
|---|
| Fully DSP based core |
| Bright, accurate bargraph LED metering of the Modulation and Pilot Levels |
| Total and independent Positive and Negative deviation bargraph |
| Left, Right, L+R, L-R bargraph LED audio level meters |
| Accurate "floating dot" program peak marker |
| Easy to ready LED display for selected frequency |
| Very Intuitive Navigational Menu |
| Built-in Oscilloscope allowing IF, MPX, Pilot, Subcarriers, Left, Right, Left+Right and Left–Right display |
| MPX Power measurement with data history |
| RF Spectrum analyzer allowing to check the RF Carrier parameters |
| MPX Spectrum analyzer for Pilot, SCA, L/R, L+R and L–R measurements |
| Direct MPX Input for external composite signal measurement |
| Selectable De-emphasis – Off, 50µs and 75µs |
| Quick Station access via 15 Presets |
| Built-in Stereo Decoder and Selectable Forced Mono mode |
| Protected access to the device settings |
| Date & Time Settings with various formats |
| Level Adjustable Balanced Analog Audio Outputs on XLR Connectors |
| Professional AES/EBU Digital audio output on XLR connector |
| LAN port for full TCP/IP remote control and monitoring |
| Headphone output with front panel level control |
| Up to 90dBµV direct RF Antenna Input |
| Adjustable MIN/MAX alarms for Carrier Loss, Multipath, Deviation, Pilot signal, Subcarriers, Analog Audio Loss |
| USB, and RS232 communication interfaces |
| Alarm tally outputs for remote fault indicators |
| Easy and intuitive Windows Application |
| Firmware update for future-proof operation |
| Parameters Factory Restore option |
| Operating voltage range 110-120V or 220-250V AC |
| 19" Professional Case for high RF immunity |

ALL IN ONE TOOL

Model DB3000

Main Application View
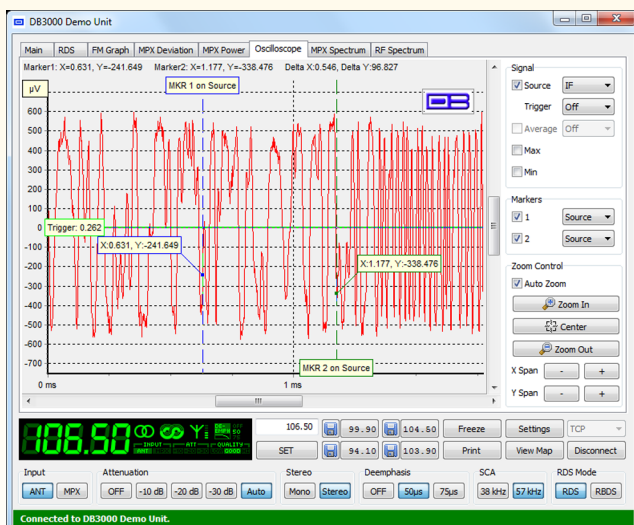**with Device List and User Defined Map**

Main Device View
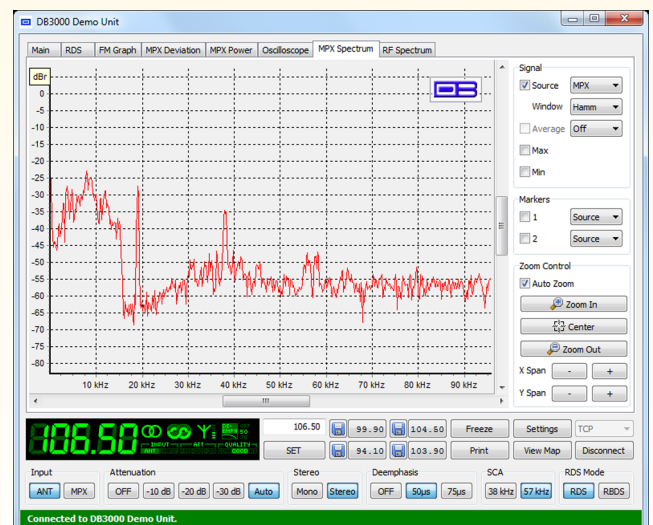**with all mandatory parameters as LED readings**

MPX Deviation Overshoot

FM Graph with selectable readings

Oscilloscope

MPX Spectrum FFT

DEVA BROADCAST

SPECIFICATIONS

RF Input

Frequency range	88.0 to 108.0 MHz, Frequency Agile
Step increment	100 kHz
Antenna Input	30 dBμV sensitivity, 50 Ω BNC Connector
Internal attenuator	0, 10, 20 and 30 dB
Dynamic range	0 to 100 dBμV

MPX Input

Frequency Range	10 Hz to 200 kHz, 1 BNC Connector
Impedance	10 kΩ
Sensitivity	3.5 Vp-p @ 75kHz

FM Demod

Frequency Response	±0.1 dB, 10 Hz to 96 kHz
SCA filter	38 kHz and 57 kHz selectable
MPX power	±12 dBr, 20 sec. integration

Stereo Decoder

Frequency Response (L & R)	±0.1 dB, 10 Hz to 15 kHz
SNR (Stereo)	80 dB, 50 μs de-emphasis
Distortion	0.02%, 10 Hz to 15 kHz 50 μs de-emphasis

Separation

L to R, R to L	50 dB, 50 Hz to 10 kHz, 50 μs de-emphasis

Crosstalk

L+R to L-R	55 dB min
L-R to L+R	55 dB min

Computer Interface

RS-232	9-pin Male D-Sub Connector
USB	B-type Connector
Ethernet	10/100 Base –T RJ-45 Connector

Power Requirements

Power Supply	40 Watts, 115/230V, 50/60 Hz
Connector	IEC320

FFT Spectrum Analysis (RF, Composite, Audio)

Display Modes	Realtime, Average, Min Hold, Max Hold
Dynamic range	90 dB
FFT length	2048
Sampling rate	572 kHz - IF, 192 kHz - Composite, 48 kHz - Audio

Scope Analysis (RF, Composite, Audio)

Display Modes	Realtime, Average, Min Hold, Max Hold
Trigger mode	Rise, Fall, Off
Dynamic range	90 dB
Sampling rate	572 kHz - IF, 192 kHz - Composite, 48 kHz - Audio

Metering Accuracy

RF Level	±1 dB, 10 to 90 dBμV
MPX Power	±0.2 dBr, -12 to 12 dBr, 0.1 dBr res.
Total, Pos, Neg	±2 kHz, 10 to 100 kHz, 1 kHz res.
Pilot	±0.5 kHz, 1 to 12 kHz, 0.2 kHz res.
SCA	±0.5 kHz, 1 to 6.5 kHz, 0.2 kHz res.
L, R, L+R, L-R	±1 dB, +10.0 to -70.0 dB, 0.1 dB res.

Outputs

Composite	3.5 Vp-p @ 75kHz, 75 Ω unbalanced BNC Connector
Audio (L, R)	+6 dBm, 600 Ω balanced XLR Connector
AES3 (L, R)	5.0 Vp-p, 110 Ω balanced XLR Connector
Alarms	dedicated terminals on rear panel, optoisolated
Headphone	1/4" Phone Jack

Size and Weight

Dimensions (W;H;D)	(482mm;89mm;300mm) (19";3.5";11.8"), 19" Rack Unit;
Shipping Weight	6 kg

Included Accessories:
Power cable, User's manual, CD-ROM with DB3000 Device Manager Software for MS WINDOWS®