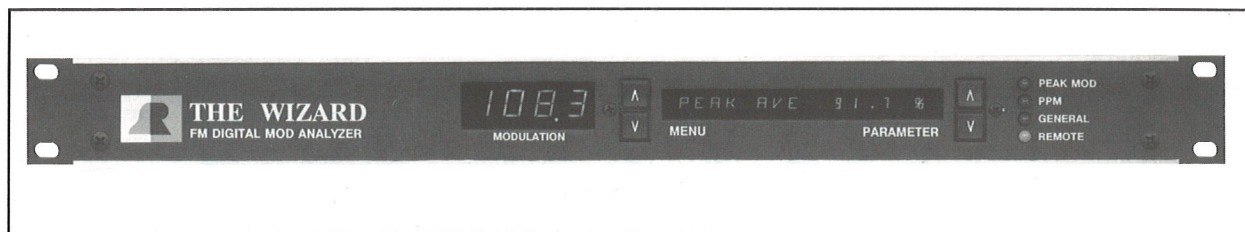


BELAR "THE WIZARD" PRECISION DIGITAL FM MODULATION MONITOR/ANALYZER

FMMA-1



DESCRIPTION

The Wizard is a microprocessor controlled, digital baseband FM modulation monitor/analyzer that precisely measures peak modulation, peaks per minute, average peak modulation, modulation density, and more. The Wizard can operate with an existing modulation monitor, or it can be configured to replace an existing baseband modulation monitor. The Wizard Software (included with The Wizard) and an IBM compatible personal computer enable real-time graphing, logging, and remote operation.

The Wizard features user-defined parameters and settings for maximum flexibility. The two large UP/DOWN menu keys are used to cycle the 16 digit alphanumeric display to the desired menu; the UP/DOWN parameter keys are then used to select the desired setting. The configuration can be saved to non-volatile memory in the unit in the event of a power loss.

Two Composite Loop-thru's permit you to "touch up" your modulation levels remotely through the RS-232 port. For example, you could run the output of your stereo generator through loop-through 1, then through your composite clipper (if applicable), then through Loop 2. You now have the ability to raise or lower the modulation going into the clipper, and to raise or lower the modulation coming out of the clipper - remotely, if desired.

A built-in Audio Sentry audio failure alarm alerts you to loss of modulation.

When installed at the transmitter, Option 02 measures RF level, AM Noise, and Synchronous AM noise, eliminating the need for a separate AM Noise detector.

SOFTWARE

The Wizard Software allows the Wizard to be accessed and controlled remotely using either a direct RS-232 connection, or a pair of modems and a dial-up telephone circuit. The front panels of the Wizard and all associated units may be simultaneously displayed and independently controlled on the PC screen. In the graphing mode, a moving window in time shows modulation levels over the preceding adjustable time window. Peak, average, minimum, and density of modulation may all be displayed in the time windows, with the readings scrolling across the PC screen, as well as in color bar-graphs. Modulation histograms, calculated using either a sliding or an infinite-length window, are also available. All collected data may be logged to disk for future reference and comparison. The Wizard software is fully password protected with three levels of security.

When used for off-air monitoring with the RFA-4 Frequency Agile FM RF Amplifier, The Wizard Software can be used to control the RFA-4, enabling the operator to select among the 10 preset stations or direct dial the desired frequency. The RFA-4's programmed call letters will appear on the computer screen for easy identification of the station you are measuring.

Specifications are subject to change without prior notice.



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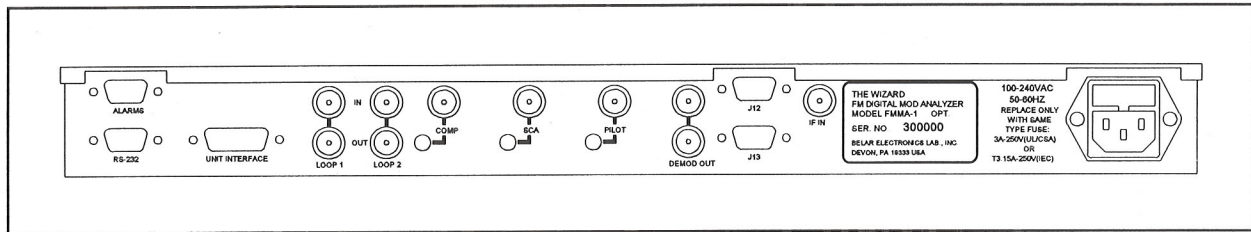
119 LANCASTER AVENUE • P.O. BOX 76
DEVON, PA 19333-0076 USA • (610) 687-5550 • FAX (610) 687-2686
WEB: <http://www.belar.com/> • E-mail: sales@belar.com

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Manufactured in the U.S.A.

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FMMA-1



MEASUREMENTS

- Total Peak Modulation in Percent
- Peak Modulation expressed in kHz Deviation
- Peaks-per-Minute Count
- Loop-thru #1 Modulation
- Loop-thru #2 Modulation
- Peak Average Modulation
- Average/Peak Modulation Ratio
- Peak Minimum Modulation
- AM Noise (with Option 02)
- Synchronous AM Noise (with Option 02)
- RF Level (with Option 02)
- Pilot Modulation (requires FMS-2 or other source of filtered pilot)
- Pilot Injection (requires FMS-2 or other source of filtered pilot)
- SCA Injection (requires SCM-2 or other source of filtered SCA)

SETTABLE PARAMETERS

- Hold Time
- Peak Modulation Indicator
- Peaks-per-Minute Indicator
- Display Hold
- Display Blanking
- Peaks-per-Minute Duration
- Remote Enable
- Audio Failure Alarm - Time & Modulation
- Loop-thru #1 Gain (+20% Modulation Max)
- Loop-thru #2 Gain (+20% Modulation Max)
- Display Resolution (0.1% or 1%)
- Time Mode (Real/Past)
- Peak Weighting (8 time constants)
- Precision Modulation Calibrator (with Option 01)

SPECIFICATIONS

Accuracy: 0.1%
Display: ... Large 4 digit LED for Total Modulation,
16 segment alphanumeric LED display
for menus and parameters
Input: Composite
Serial Interface RS-232
Remote Alarms relays for Peak Modulation,
Peaks-Per-Minute, Remote, General
Dimensions 1 EIA Rack unit
1.75"D x 14"D x 19"W
Power Requirements 15 Watts, 100-240 VAC
50-60Hz
Shipping Weight 12 lbs

Option 01: Precision FM Demodulator with Calibrator

Input: (From RFA-4, 1A, DC-4, or Option 02)
Output: Two 75 ohm buffered, composite
Audio Output (mono) 600 Ω balanced,
2.5 Vrms unbalanced, 9-pin D-connector
Signal/Noise: > 95dB
Distortion (IM): < 0.003%
Distortion (THD): Unmeasurable (< 0.01%)

Option 02: Down Converter and Synchronous AM Noise Detector

Frequency Range: 88 to 108 MHz Std.
(Specify frequency)
Input: 1-10 volts rms, 50 ohms, BNC connector
Outputs: 9-pin D connector and BNC, to Wizard
Signal/Noise: > 95 dB
AM Noise Range: -17 to -80 dB
Synchronous AM Noise Range: -17 to -80 dB

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