

Monitoring Electromagnetic Fields

EMD-100 EM Field Monitor



- 100 kHz to 3 GHz Range
- Complete Field Meter Unit for System Implementation
- Excellent Sensitivity
- Patented Auto-Zero Circuit
- Reliable Performance at Attractive Price

GENERAL

The Narda EMD-100 is a complete monitoring unit consisting of a field meter and a fully isotropic E-field probe. The meter is designed to be integrated in a remote-operation system and has no display elements other than a status LED.

Applications for the EMD-100 range from Area Monitor Systems for continuous field monitoring to low cost field measurement setups.

The EMD-100 offers a flat frequency response ranging from 100 kHz to 3 GHz. The sensitivity and measurement range are specifically optimized for low and moderate field strength levels.

The patented auto-zero routine significantly reduces the influence of temperature changes when used in outside installations. The design assures reliable results under various ambient conditions. Stable, accurate measurements are achieved even with the weakest signals.

The small size and rugged housing of the EMD-100 allows easy integration into new or existing systems, such as environmental test setups. If operated in an outside location, the unit should be weather-protected by the system's case.

DATA ACQUISITION

The field strength is continuously monitored. Several modes are available (e.g., instantaneous or adjustable, time-averaged detection). The data are transferred to the user's computer via a three-wire, serial communication interface (RS-232).

OPERATION

An external power supply is required and is usually available in any customer-implemented system. The Narda EMD-100 electronics offers low power consumption and allows operation even from an external battery.

A complete set of remote control commands can be programmed to provide the most flexible capabilities.

SPECIFICATIONS ^a

	Electrical (E-) Field
Sensor	Diode Based System
Directivity	Tri-Axial (Isotropic)
Readout Mode	Combined Three-Axis (RSS)
Frequency Range: Broadband (-3 dB)	100 kHz to 3 GHz
Flatness	±1 dB (1 MHz to 1 GHz) -1 / +2 dB (1 MHz to 2.7 GHz) -3 / +2 dB (100 kHz to 3 GHz)
Calibration Uncertainty	±0.5 dB (27.12 MHz, 6 V/m)
Measurement Range (CW)	0.25 V/m to 600 V/m
Measurement Range (true RMS)	0.25 V/m to 20 V/m
Damage Level	1600 V/m (CW) 70 W/cm ² (pulse: 1µsec, 1:100)
Ellipse Ratio ^b	±0.6 dB (approx.)
Units ^c	V/m, A/m, mW/cm ² , W/m ²
Resolution	0.01 V/m
Mode, Selectable	Instantaneous, Average
Average Time, Selectable	0.8 sec to 16 min
Zero Adjust ^d	Automatically (period adjustable: 2 min to 60 min), Single or Disabled
Probe	EMD-Series
Alarm	None
Result Update Rate	5 / sec
Result and Status Display	Via External Computer
Interface	RS-232 (19200 baud, 8n1, Xon/Xoff), 3-Wire, Earphone Plug Style
Temperature Range (Operation)	-10 °C to +50 °C
Humidity Range (Operation)	<85 % (30° C) or <26 g/m ³ , Occasional Brief Condensation
Power Supply (External)	3 V DC, 30 mA (approx.)
Operating Elements	Switch ON/ OFF, Status LED
Calibration Interval	24 Months recommended
Dimensions (wxhxd) in mm	420x85x60, w/o Probe: 120x85x35 (approx.)
Weight, with probe	350 g (approx.)
"Probe Tools" software (included)	
System Check	Sensor Operation (by Field Strength Measurement)

^a Unless noted otherwise specifications apply at reference condition: device in far-field of source, ambient temperature 23±3 °C, relative air humidity 40% to 60%, sinusoidal signal and probe oriented in the analytic angle

^b At 27.12 MHz and 20 V/m

^c Based on calculation assuming far-field ($Z_0=377$ Ohms)

^d Adjustment to zero in any field by patented auto-zero circuit

ORDERING INFORMATION

EMD-100: EM Field Monitor

2138/01

Accessories Supplied: E-Field Probe, Certificate of Calibration, "Probe Tools" Software, Operating / Programming Manual

OPTIONAL ACCESSORIES: Serial Interface Cable (length 2 m) - Earphone / DB9 **2260/90.50**



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