

INSTRUCTION MANUAL



**OMNI-DIRECTIONAL
WIDEBAND ANTENNA
MODEL EM-6853**

300 MHz - 40 GHz

INSTRUCTION MANUAL

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OMNI-DIRECTIONAL WIDEBAND ANTENNA

300 MHz - 40 GHz

ELECTRO-METRICS

MODEL EM-6853

SERIAL NO: TYPICAL

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WARRANTY

This Model EM-6853 Omni-Directional Wideband Antenna is warranted for a period of 12 months (USA only) from date of shipment against defective materials and workmanship. This warranty is limited to the repair of or replacement of defective parts and is void if unauthorized repair or modification is attempted. Repairs for damage due to misuse or abnormal operating conditions will be performed at the factory and will be billed at our commercial hourly rates. Our estimate will be provided before the work is started.

**DESCRIPTION AND USE
ELECTRO-METRICS MODEL EM-6853
OMNI-DIRECTIONAL, WIDEBAND ANTENNA**



1.0 Description

The Model EM-6853 Omni-directional Wideband Antenna is a vertically-polarized broadband antenna operating from 300 MHz to 40 GHz and above. The antenna is capable of operating as either a transmitting or receiving antenna with a flat frequency, omni-directional response for over 99.5% of the stated frequency range.

The EM-6853 consists of two elements connected to form asymmetric antenna elements. The center conductor of a rigid coaxial cable is connected to the upper element while the shield is connected to the lower element. The cable connects to a Type "K" (female) connector fastened to a fiberglass base plate. An ABS plastic shield encloses the elements to protect them from damage and the environment.

The antenna can be ceiling mounted using the holes located on the shield. It can also be purchased with an optional mount that allows the antenna to be mounted vertically on a wall. In addition, custom mounts are also available.

With nominal gains of 0 dBi or higher over 98.9% of the antenna coverage frequency range, this antenna is the perfect device for IPMS or any other application where a small, high performance passive antenna is required. The EM-6853 can be used as either a receiving or transmitting antenna and is rated for a maximum power level of 5 W.

2.0 Specifications

2.1 Electrical

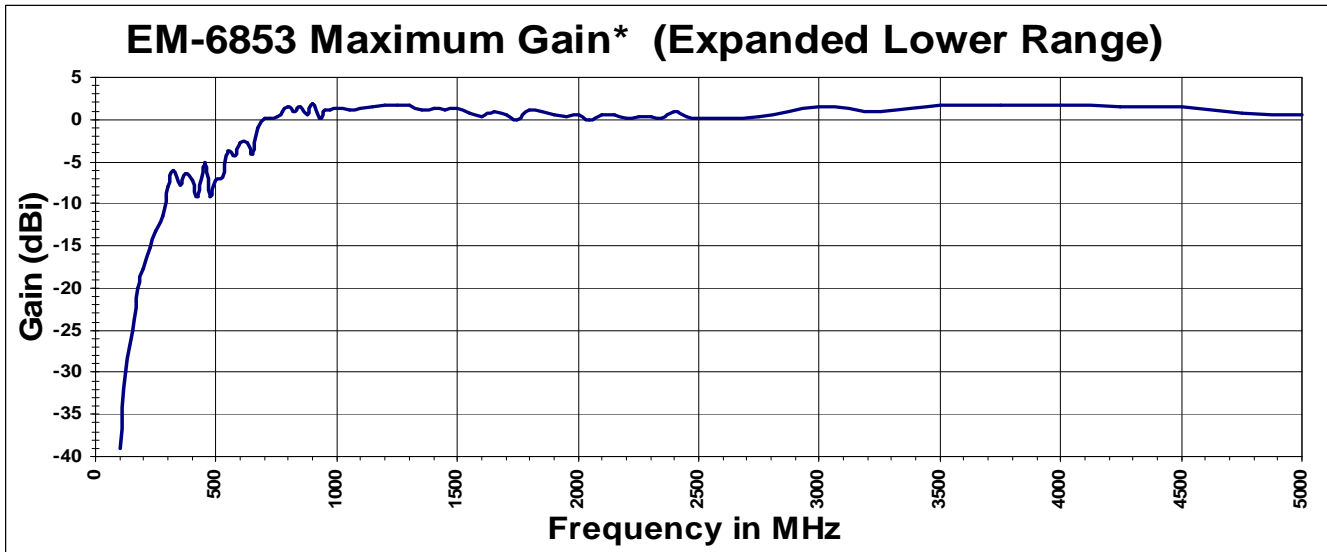
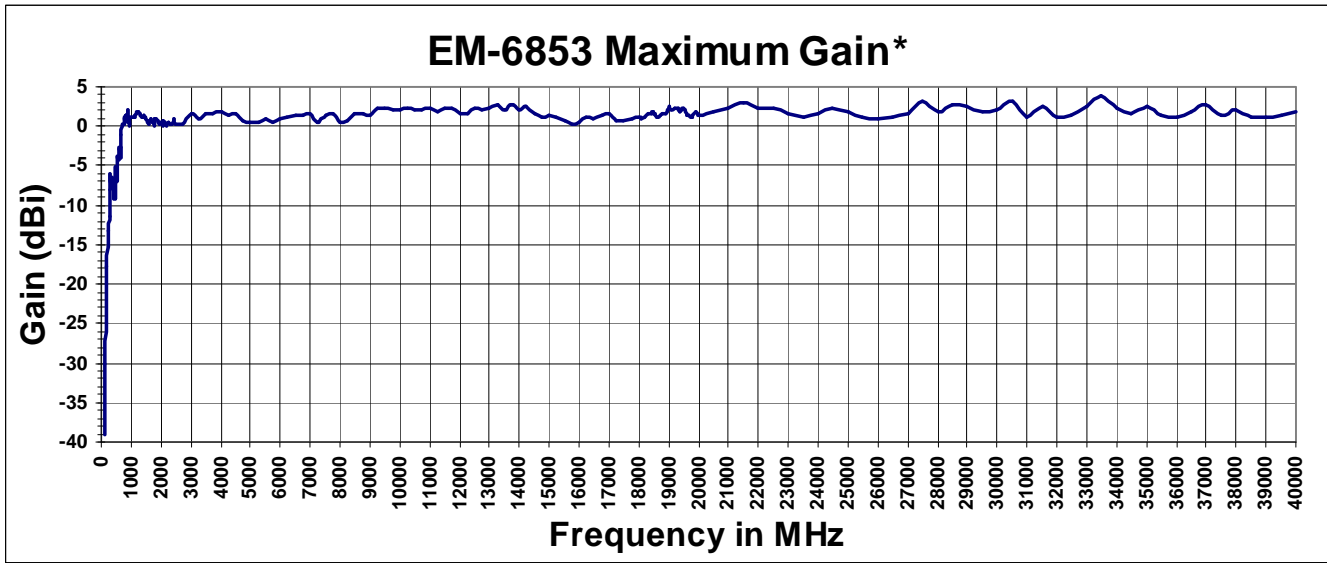
Frequency Range:	300 MHz to 40 GHz.
Polarization:	Vertical.
Output Impedance:	50Ω, nominal.
Gain:	700 MHz - 40 GHz @ 100 MHz @ 300 MHz
	Nominal 0dBi or Greater Nominal – 40 dBi Nominal –7 dBi
Continuous Power:	5 W.
Connector:	Type "K" Female.

2.2 Mechanical

Diameter:	203.2 mm (8.0").
Height:	114.3 mm (4.5").
With connector:	123.8 mm (4.875")
Weight:	496 g (1.1 lbs).

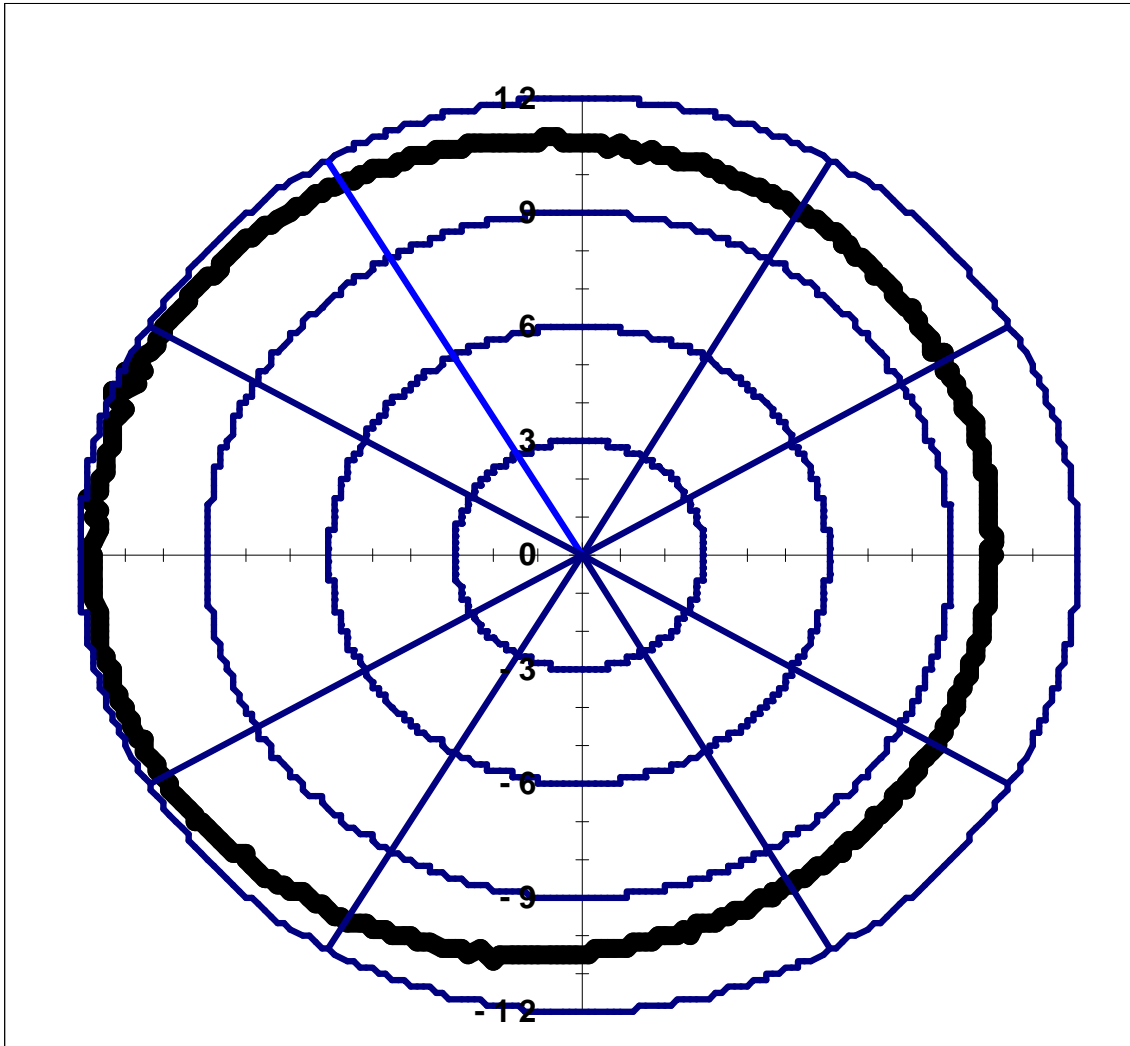
3.0 Typical Performance Data

The Electro-Metrics Model EM-6853 Omni-directional Wideband Antenna can be calibrated at 1 meter, when purchased with optional calibration. Typical performance data for the EM-6853 is presented on the following pages and is to be used for reference only. Use of the data shown here to obtain accurate signal level determination is not recommended. Each individual antenna will have variations in performance from the typical data, and errors in the measured signal level may occur if typical data is used.



* Maximum Gain determined from scans at all radiation angles and elevations.

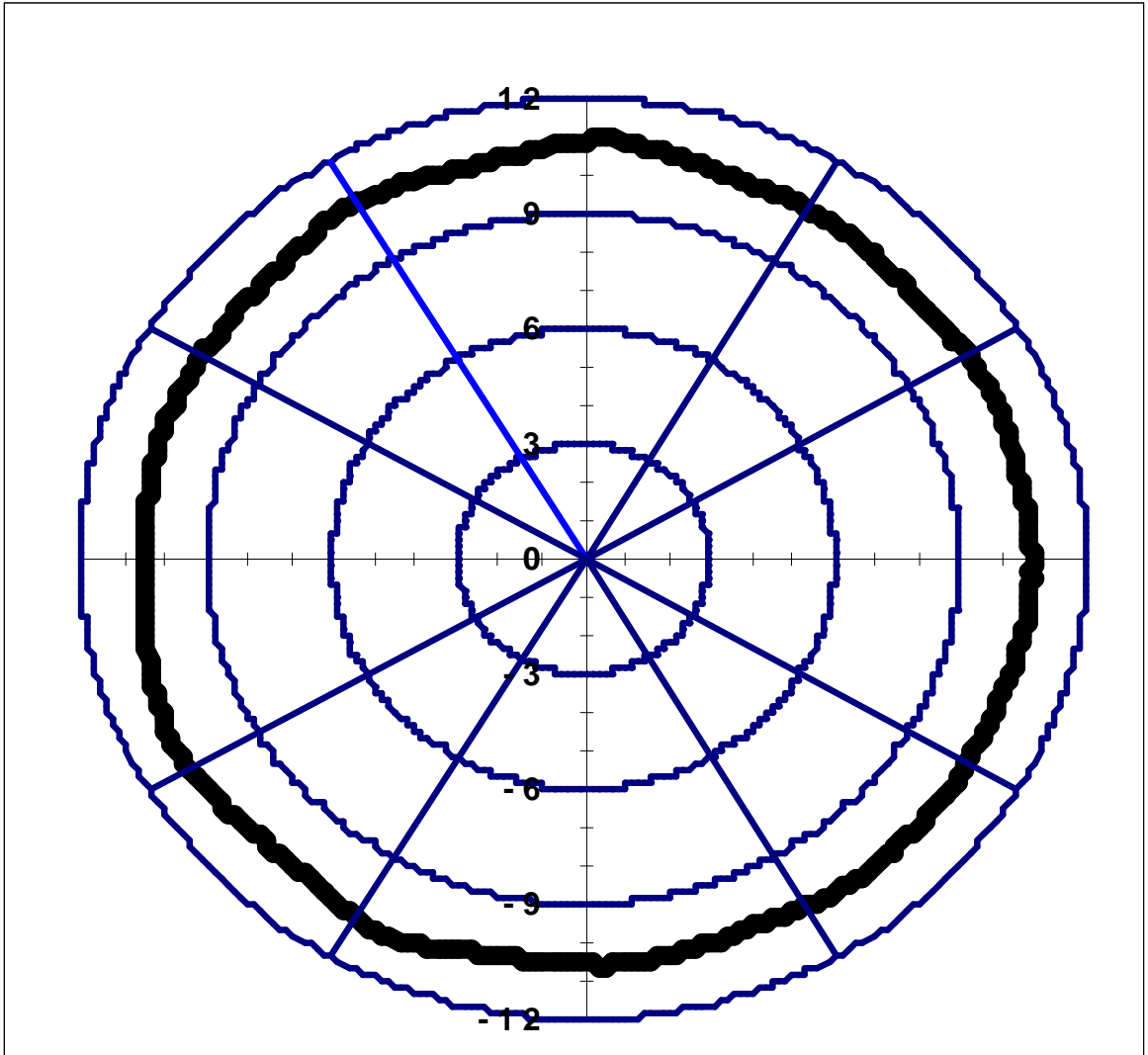
Figure 1
Model EM-6853 Omni-Directional Wideband Antenna
Typical Maximum Gain Curves



Frequency = 300 MHz

Figure 2A

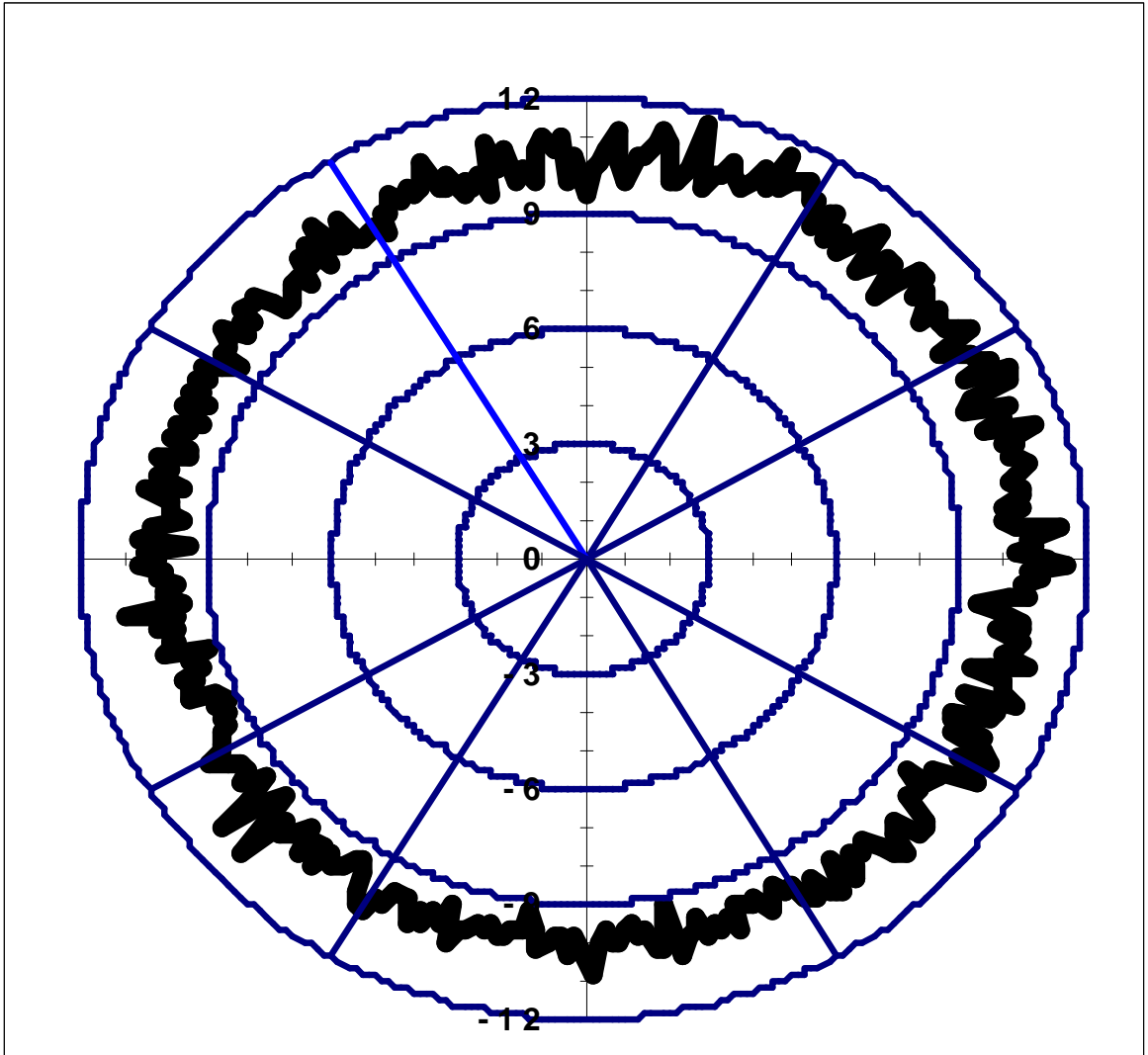
Model EM-6853 Omni-Directional Wideband Antenna
Typical Antenna Patterns @ 300 MHz



Frequency = 6 GHz

Figure 2B

Model EM-6853 Omni-Directional Wideband Antenna
Typical Antenna Patterns @ 6 GHz



Frequency = 40 GHz

Figure 2C

Model EM-6853 Omni-Directional Wideband Antenna
Typical Antenna Patterns @ 40 GHz