



**INSTRUCTION MANUAL**

**OMNI-DIRECTIONAL**

**WIDEBAND ANTENNA**

**MODEL EM-6855**

**4.5 GHz - 40 GHz**

# INSTRUCTION MANUAL

**THIS INSTRUCTION MANUAL AND ITS ASSOCIATED INFORMATION IS PROPRIETARY. UNAUTHORIZED REPRODUCTION IS FORBIDDEN.**

**© 2016 ELECTRO-METRICS CORP.**

**OMNI-DIRECTIONAL**

**WIDEBAND ANTENNA**

**4.5 GHz - 40 GHz**

**ELECTRO-METRICS**

**MODEL EM-6855**

**SERIAL NO:**

**ELECTRO-METRICS CORPORATION**

**231 Enterprise Road, Johnstown, New York 12095**

**Phone: (518) 762-2600**

**Fax: (518) 762-2812**

**EMAIL: [info@emihq.com](mailto:info@emihq.com)**

**WEB: <http://www.electro-metrics.com>**

**MANUAL REV. NO: EM66855-0116**

**ISSUE DATE: JANUARY 04, 2016**

## **WARRANTY**

**This 6855 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-6855  
OMNI-DIRECTIONAL, WIDEBAND ANTENNA**

## **1.0 Description**

The Model EM-6855 Omni-directional Wideband Antenna is a vertically-polarized broadband antenna operating from 4.5 GHz to 40 GHz and greater. 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-6855 consists of a precision machined conical monopole antenna element. The output is a Type "k" (female) connector fastened to an aluminum base plate. A plastic enclosure shields the element for protection from damage and the environment.

The antenna can be mounted to any flat surface using the two 10-32 mounting screws. Additionally, a series of optional mounts are available to provides a means of mounting the antenna to a threaded 1/4-20 female tripod stud.

With nominal gains of 0 dBi or higher over the majority of the antenna coverage frequency range, this antenna is the perfect device for any application where a small, high performance passive antenna is required.

The EM-6855 can be optionally calibrated at 1 meter with the calibration data included as gain and antenna factors vs frequency. The EM-6855 can be used as either a receiving or transmitting antenna and is rated for a maximum power level of 20 W.

**NOTE:** When performing signal amplitude measurements using the EM-6855, always include the attenuation within the measurement system plus coaxial cable losses. This, in addition to the antenna factors, will determine the signal level being measured. The antenna is calibrated at 1 meter with the calibration data included in the manual as gain and antenna factors vs frequency. The EM-6855 can handle a maximum power level of 20 W.

## 2.0 Specifications

### 2.1 Electrical

|                        |                        |
|------------------------|------------------------|
| Frequency Range:       | 4.5 GHz to 40 GHz.     |
| Polarization:          | Vertical.              |
| Output Impedance:      | 50 $\Omega$ , nominal. |
| Gain: 4.5 GHz - 40 GHz | Nominal 0dBi           |
| Continuous Power:      | 20 W.                  |
| Connector:             | Type "k" Female.       |

### 2.2 Mechanical

|           |                      |
|-----------|----------------------|
| Diameter: | 57.2 mm (2.25").     |
| Height:   | 57.2 mm (2.25").     |
| Mount:    | 2 ea. # 10-32 screws |
| Weight:   | 114 g (0.25 lbs).    |

## 3.0 Typical Performance Data

The Electro-Metrics Model EM-6855 Omni-directional Wideband Antenna can be individually calibrated, if purchased with optional calibration. The data presented on the following pages is typical performance data, 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

Figure 1

Model EM-6855 Omni-Directional Wideband Antenna  
Typical Gain Curve

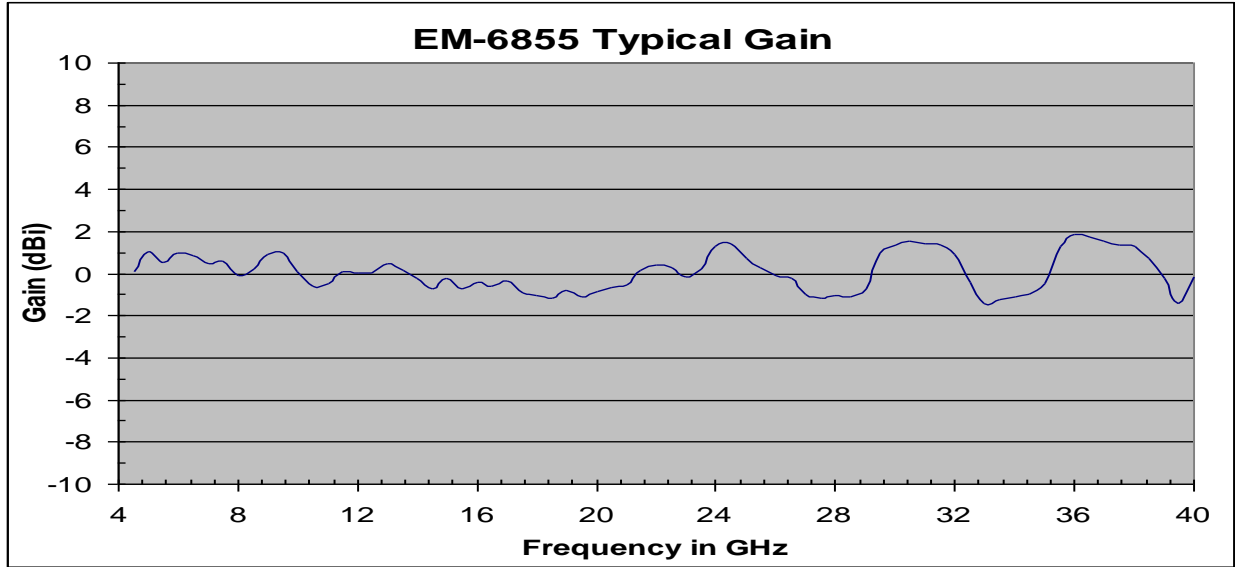


Figure 2

Model EM-6855 Omni-Directional Wideband Antenna  
Typical Antenna Factors

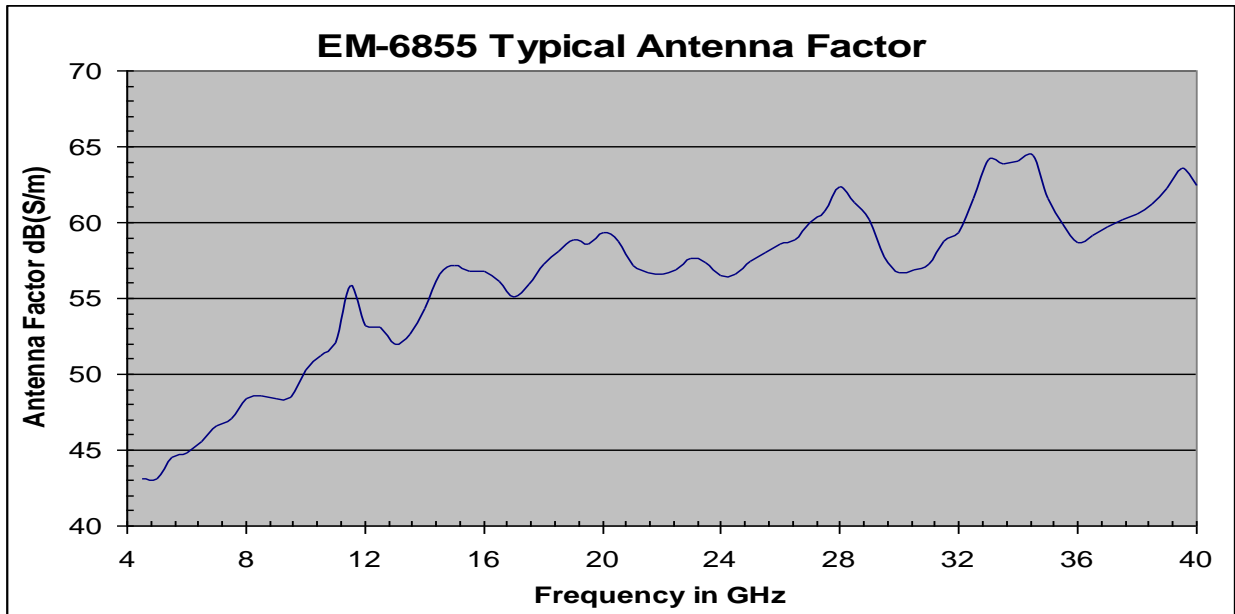


Figure 3

Model EM-6855 Omni-Directional Wideband Antenna  
Typical VSWR Curve

