

# 130 MHz – 6000 MHz Logarithmic Periodic Measurement Antenna

## 1 Introduction

The TBMA11 is an affordable logarithmic-periodic measurement antenna for radiated emission measurements.

The TBMA11 is characterized from 130 MHz to 6000 MHz and has VSWR and antenna factor values typical for logarithmic-periodic measurement antennas.



## 2 Product overview

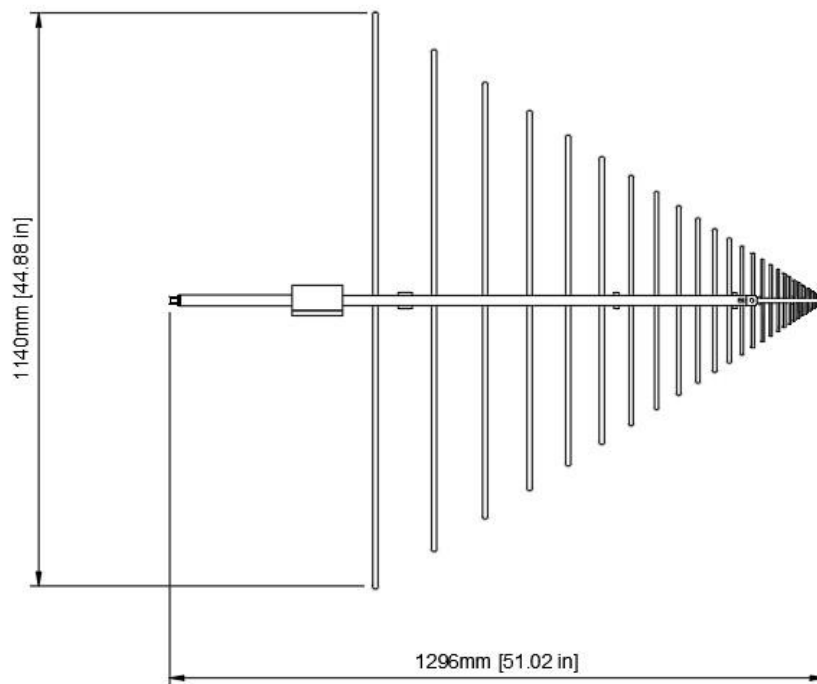
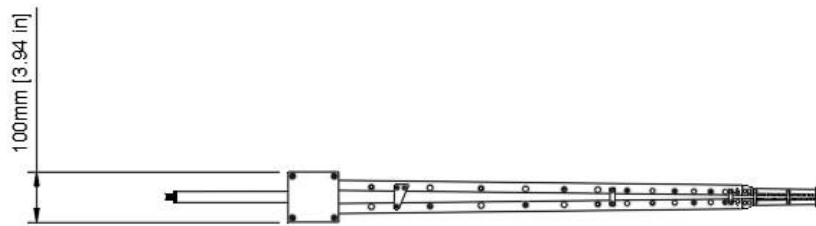
The TBMA11 is an average sized logarithmic periodic antenna, with its radiating elements and supporting booms made from aluminium. It is equipped with a standard female N-connector. The antenna provides a 22mm diameter mounting shaft. A suitable fiberglass tripod, model TBTP5 and mounting adapter TBMA8-PAT are available as optional accessories.

The TBMA11 is shipped in a robust carrying case.

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### 3 Technical Specifications

|                                   |   |
|-----------------------------------|---|
| Type                              | logarithmic periodic  |
| Frequency range                   | 130 MHz– 6000 MHz   |
| VSWR                              | < 2.1:1 over the entire frequency range ; 1.45:1 average        |
| Isotropic gain at 3m spacing      | 4 .... 8.5 dBi  |
| Antenna factor at 3m spacing      | 7... 41 dB/m  |
| Maximum continuous input RF power | 130W  |
| Nominal impedance                 | 50 $\Omega$   |
| RF Connector                      | N type female   |
| Mounting                          | 22 mm diameter mounting shaft (tube)                            |
| Mechanical Dimensions             | L x W x H: 1296 mm x 1140 mm x 100 mm (51.02" x 44.88" x 3.94") |
| Weight                            | 3.3 kg (7.27 lbs)   |



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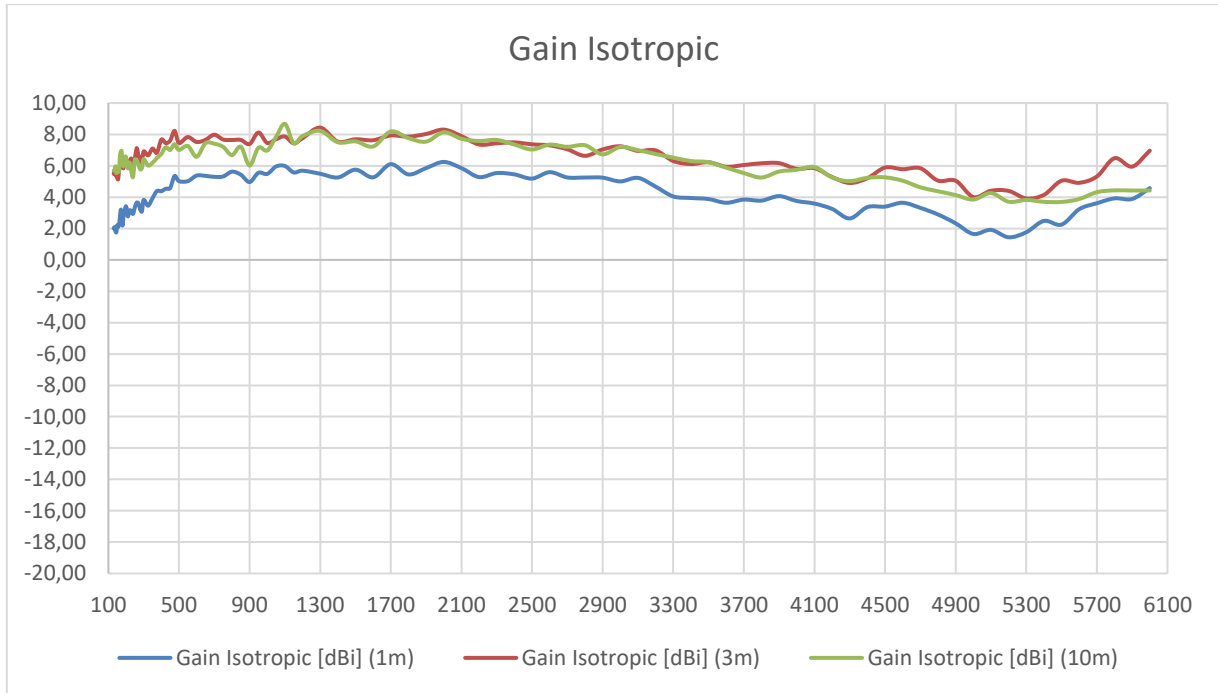
## 4 Gain & Antenna Factor versus frequency

| Frequency<br>MHz | Isotropic Gain<br>(10m, ref. to<br>Antenna Center)<br>dBi | Antenna Factor<br>(10m, ref. to<br>Antenna Center)<br>dB/m | Isotropic Gain<br>(3m, ref. to Antenna<br>Center)<br>dBi | Antenna Factor<br>(3m, ref. to Antenna<br>Center)<br>dB/m | Isotropic Gain<br>(1m, ref to Antenna<br>Tip)<br>dBi | Antenna Factor<br>(1m, ref to Antenna<br>Tip)<br>dB/m |
|------------------|---|--|--|---|--|---|
| 130              | 5.69  | 6.81   | 5.49   | 7.01  | 2.01   | 10.49   |
| 135              | 5.71  | 7.11   | 5.64   | 7.19  | 2.08   | 10.75   |
| 140              | 5.97  | 7.18   | 5.42   | 7.72  | 1.83   | 11.31   |
| 145              | 5.54  | 7.90   | 5.35   | 8.10  | 1.75   | 11.69   |
| 150              | 5.65  | 8.09   | 5.22   | 8.53  | 2.21   | 11.54   |
| 155              | 5.60  | 8.42   | 5.14   | 8.89  | 2.09   | 11.93   |
| 160              | 5.66  | 8.64   | 5.66   | 8.64  | 2.23   | 12.07   |
| 165              | 6.57  | 7.99   | 5.99   | 8.57  | 2.69   | 11.88   |
| 170              | 6.89  | 7.93   | 6.27   | 8.56  | 3.20   | 11.63   |
| 175              | 6.95  | 8.13   | 6.22   | 8.86  | 3.11   | 11.97   |
| 180              | 6.15  | 9.18   | 5.95   | 9.38  | 2.18   | 13.14   |
| 185              | 5.97  | 9.59   | 5.84   | 9.73  | 2.71   | 12.85   |
| 190              | 6.53  | 9.26   | 6.05   | 9.74  | 3.00   | 12.79   |
| 200              | 6.57  | 9.67   | 6.17   | 10.08   | 3.42   | 12.82   |
| 210              | 5.84  | 10.83  | 6.29   | 10.37   | 2.78   | 13.89   |
| 220              | 6.21  | 10.85  | 6.20   | 10.87   | 3.15   | 13.91   |
| 230              | 5.64  | 11.81  | 6.46   | 11.00   | 3.10   | 14.35   |
| 240              | 5.29  | 12.53  | 5.72   | 12.10   | 2.93   | 14.89   |
| 250              | 6.40  | 11.78  | 6.42   | 11.76   | 3.35   | 14.82   |
| 260              | 6.31  | 12.21  | 7.12   | 11.40   | 3.65   | 14.87   |
| 270              | 6.10  | 12.74  | 6.69   | 12.16   | 3.61   | 15.23   |
| 280              | 5.77  | 13.40  | 6.43   | 12.73   | 3.22   | 15.95   |
| 290              | 5.85  | 13.62  | 6.18   | 13.29   | 3.09   | 16.38   |
| 300              | 6.42  | 13.34  | 6.92   | 12.85   | 3.82   | 15.94   |
| 325              | 6.02  | 14.44  | 6.66   | 13.79   | 3.46   | 17.00   |
| 350              | 6.19  | 14.91  | 7.10   | 14.00   | 3.94   | 17.17   |
| 375              | 6.50  | 15.20  | 6.83   | 14.87   | 4.39   | 17.31   |
| 400              | 6.76  | 15.51  | 7.67   | 14.59   | 4.38   | 17.88   |
| 425              | 7.19  | 15.60  | 7.45   | 15.34   | 4.54   | 18.25   |
| 450              | 7.01  | 16.27  | 7.61   | 15.68   | 4.58   | 18.70   |
| 475              | 7.38  | 16.37  | 8.23   | 15.52   | 5.35   | 18.41   |
| 500              | 7.01  | 17.19  | 7.46   | 16.74   | 5.02   | 19.18   |
| 550              | 7.26  | 17.76  | 7.83   | 17.19   | 5.02   | 20.01   |
| 600              | 6.57  | 19.21  | 7.52   | 18.26   | 5.38   | 20.41   |
| 650              | 7.44  | 19.04  | 7.66   | 18.82   | 5.36   | 21.12   |
| 700              | 7.41  | 19.71  | 7.98   | 19.14   | 5.29   | 21.83   |
| 750              | 7.21  | 20.51  | 7.68   | 20.05   | 5.32   | 22.40   |
| 800              | 6.68  | 21.60  | 7.65   | 20.64   | 5.62   | 22.66   |
| 850              | 7.21  | 21.59  | 7.65   | 21.16   | 5.43   | 23.37   |
| 900              | 6.02  | 23.29  | 7.39   | 21.91   | 4.96   | 24.34   |
| 950              | 7.15  | 22.62  | 8.12   | 21.65   | 5.55   | 24.22   |
| 1000             | 6.98  | 23.24  | 7.45   | 22.77   | 5.48   | 24.74   |
| 1050             | 7.84  | 22.80  | 7.70   | 22.95   | 5.96   | 24.69   |
| 1100             | 8.67  | 22.37  | 7.87   | 23.18   | 5.99   | 25.06   |
| 1150             | 7.43  | 24.00  | 7.43   | 24.00   | 5.58   | 25.86   |
| 1200             | 7.89  | 23.91  | 7.76   | 24.05   | 5.69   | 26.12   |
| 1300             | 8.23  | 24.27  | 8.43   | 24.06   | 5.49   | 27.01   |
| 1400             | 7.50  | 25.64  | 7.54   | 25.60   | 5.26   | 27.89   |

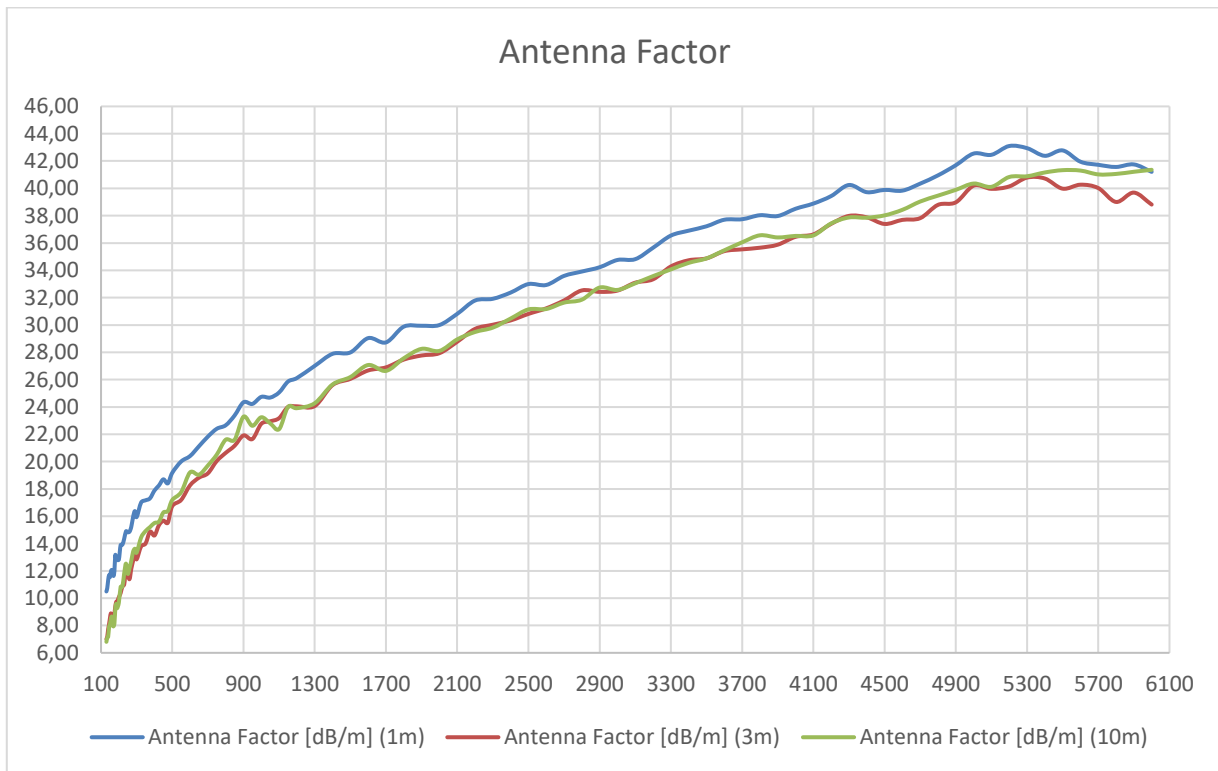
## 130 MHz – 6000 MHz Logarithmic Periodic Measurement Antenna

| Frequency<br>MHz | Isotropic Gain<br>(10m, ref. to<br>Antenna Center)<br>dBi | Antenna Factor<br>(10m, ref. to<br>Antenna Center)<br>dB/m | Isotropic Gain<br>(3m, ref. to Antenna<br>Center)<br>dBi | Antenna Factor<br>(3m, ref. to Antenna<br>Center)<br>dB/m | Isotropic Gain<br>(1m, ref to Antenna<br>Tip)<br>dBi | Antenna Factor<br>(1m, ref to Antenna<br>Tip)<br>dB/m |
|------------------|---|--|--|---|--|---|
| 1500             | 7.56  | 26.19  | 7.69   | 26.05   | 5.75   | 27.99   |
| 1600             | 7.23  | 27.07  | 7.63   | 26.67   | 5.26   | 29.04   |
| 1700             | 8.19  | 26.64  | 7.93   | 26.89   | 6.10   | 28.72   |
| 1800             | 7.76  | 27.56  | 7.86   | 27.47   | 5.45   | 29.88   |
| 1900             | 7.54  | 28.25  | 8.03   | 27.77   | 5.85   | 29.94   |
| 2000             | 8.14  | 28.10  | 8.31   | 27.93   | 6.25   | 29.99   |
| 2100             | 7.72  | 28.94  | 7.89   | 28.77   | 5.85   | 30.81   |
| 2200             | 7.58  | 29.49  | 7.36   | 29.71   | 5.28   | 31.79   |
| 2300             | 7.65  | 29.81  | 7.44   | 30.02   | 5.54   | 31.92   |
| 2400             | 7.36  | 30.47  | 7.49   | 30.33   | 5.45   | 32.37   |
| 2500             | 7.04  | 31.14  | 7.37   | 30.81   | 5.18   | 32.99   |
| 2600             | 7.35  | 31.17  | 7.30   | 31.22   | 5.59   | 32.93   |
| 2700             | 7.21  | 31.64  | 7.05   | 31.79   | 5.26   | 33.59   |
| 2800             | 7.31  | 31.85  | 6.63   | 32.53   | 5.25   | 33.91   |
| 2900             | 6.73  | 32.74  | 7.05   | 32.42   | 5.24   | 34.23   |
| 3000             | 7.20  | 32.57  | 7.24   | 32.52   | 5.00   | 34.76   |
| 3100             | 7.00  | 33.05  | 6.95   | 33.10   | 5.23   | 34.82   |
| 3200             | 6.75  | 33.57  | 6.98   | 33.34   | 4.67   | 35.65   |
| 3300             | 6.52  | 34.07  | 6.31   | 34.28   | 4.05   | 36.54   |
| 3400             | 6.30  | 34.55  | 6.11   | 34.74   | 3.95   | 36.90   |
| 3500             | 6.23  | 34.87  | 6.23   | 34.87   | 3.88   | 37.22   |
| 3600             | 5.88  | 35.47  | 5.94   | 35.40   | 3.64   | 37.70   |
| 3700             | 5.53  | 36.05  | 6.05   | 35.54   | 3.84   | 37.74   |
| 3800             | 5.25  | 36.56  | 6.16   | 35.66   | 3.78   | 38.03   |
| 3900             | 5.63  | 36.41  | 6.17   | 35.88   | 4.07   | 37.98   |
| 4000             | 5.74  | 36.52  | 5.81   | 36.45   | 3.75   | 38.51   |
| 4100             | 5.92  | 36.55  | 5.85   | 36.63   | 3.59   | 38.89   |
| 4200             | 5.25  | 37.43  | 5.28   | 37.40   | 3.25   | 39.43   |
| 4300             | 5.02  | 37.87  | 4.90   | 37.98   | 2.64   | 40.25   |
| 4400             | 5.24  | 37.85  | 5.21   | 37.88   | 3.37   | 39.72   |
| 4500             | 5.26  | 38.02  | 5.89   | 37.40   | 3.40   | 39.89   |
| 4600             | 5.05  | 38.43  | 5.78   | 37.69   | 3.64   | 39.83   |
| 4700             | 4.63  | 39.04  | 5.84   | 37.82   | 3.32   | 40.35   |
| 4800             | 4.38  | 39.47  | 5.05   | 38.79   | 2.89   | 40.95   |
| 4900             | 4.13  | 39.89  | 5.05   | 38.98   | 2.33   | 41.69   |
| 5000             | 3.85  | 40.35  | 4.01   | 40.19   | 1.65   | 42.55   |
| 5100             | 4.26  | 40.11  | 4.41   | 39.97   | 1.91   | 42.46   |
| 5200             | 3.71  | 40.83  | 4.40   | 40.14   | 1.44   | 43.10   |
| 5300             | 3.82  | 40.89  | 3.92   | 40.79   | 1.76   | 42.94   |
| 5400             | 3.70  | 41.16  | 4.15   | 40.72   | 2.49   | 42.38   |
| 5500             | 3.69  | 41.33  | 5.05   | 39.98   | 2.25   | 42.78   |
| 5600             | 3.88  | 41.30  | 4.92   | 40.27   | 3.23   | 41.95   |
| 5700             | 4.32  | 41.02  | 5.32   | 40.02   | 3.61   | 41.72   |
| 5800             | 4.43  | 41.06  | 6.48   | 39.01   | 3.92   | 41.57   |
| 5900             | 4.42  | 41.21  | 5.95   | 39.69   | 3.88   | 41.75   |
| 6000             | 4.43  | 41.36  | 6.97   | 38.81   | 4.58   | 41.21   |

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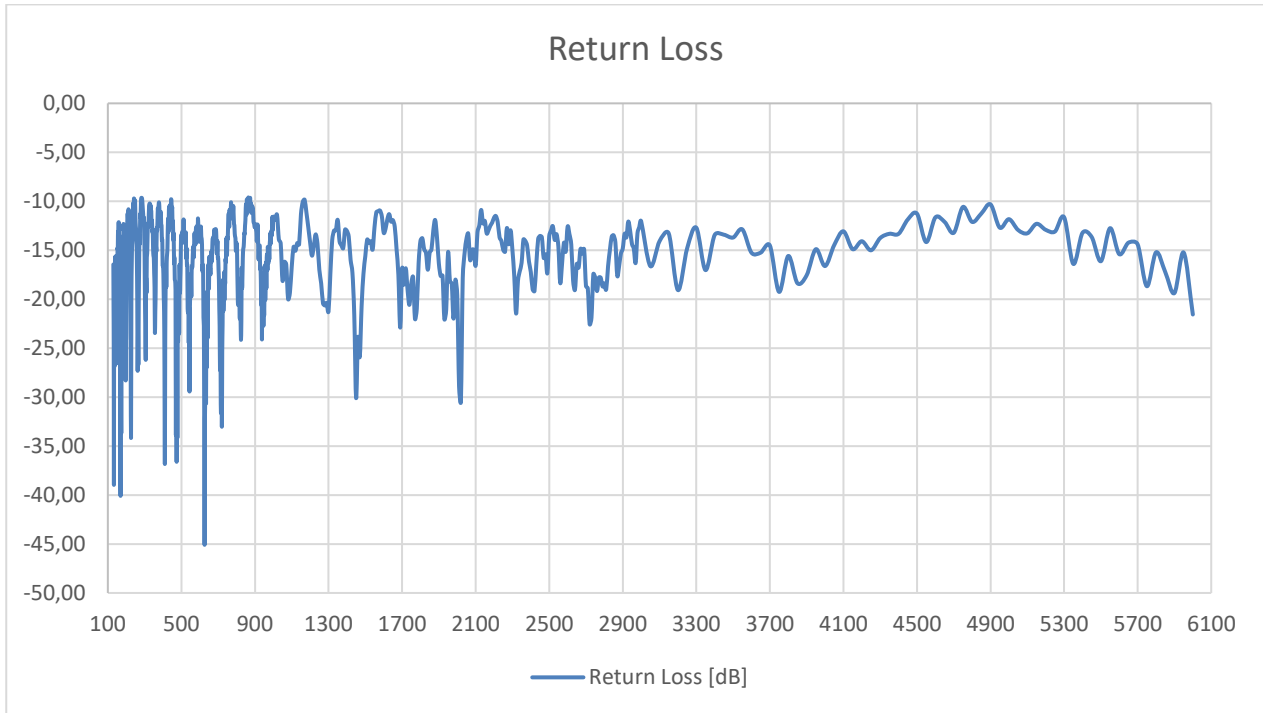
130 MHz ... 6000 MHz, Isotropic Gain of TBMA11



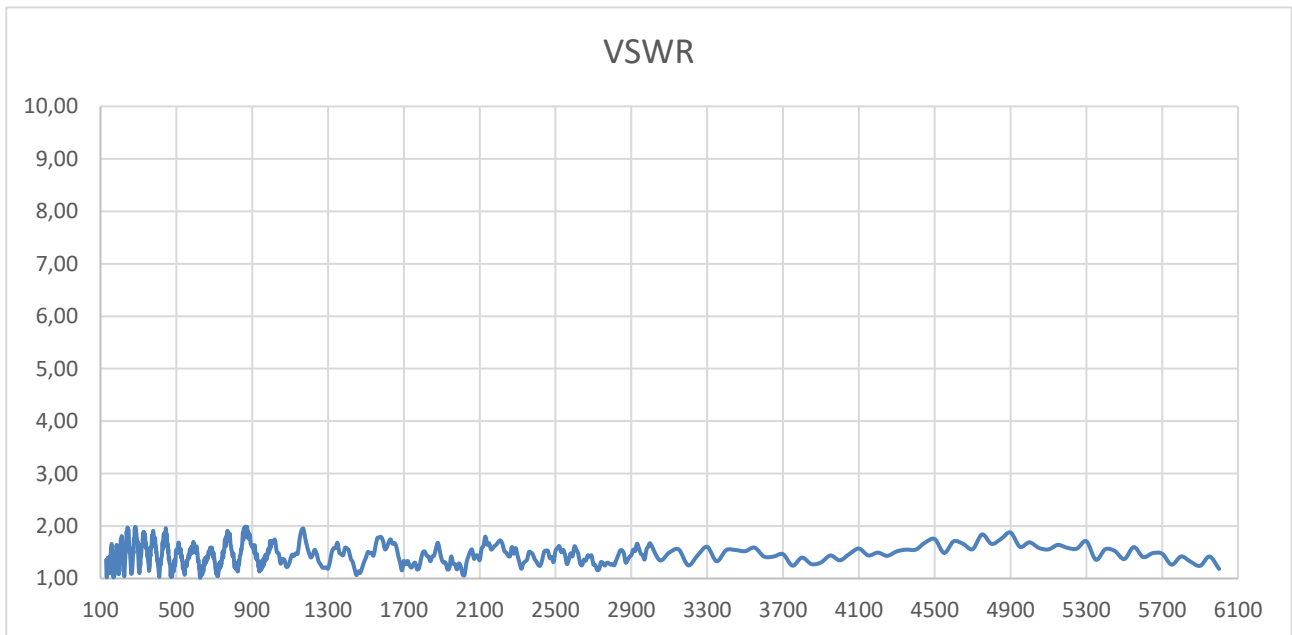
130 MHz ... 6000 MHz, Antenna Factor of TBMA11

# 130 MHz – 6000 MHz Logarithmic Periodic Measurement Antenna

## 5 TBMA12 Return Loss / VSWR



TBMA11, S11, 130 MHz ... 6000 MHz



TBMA11, VSWR, 130 MHz ... 6000 MHz

VSWR, Gain and AF in tabular form is provided on our website.

## 130 MHz – 6000 MHz Logarithmic Periodic Measurement Antenna

### 4 Optional Tripods and mounting brackets



*TBMA11 on TBTP5 tripod; using TBMA8-PAT mounting bracket*

### 5 Ordering Information

| Part Number | Description   |
|-------------|---|
| TBMA11      | 30 – 6000 MHz log periodic measurement antenna , carrying case, individual factory calibration using NIST traceable equipment |

#### Accessories

| Part Number | Description   |
|-------------|---|
| TBTP5       | Fiberglass tripod   |
| TBMA8-PAT   | Mounting bracket for TBMA12, TBMA11, TBMA8, TBMA7; for 22 mm antenna shafts, clamps sideways to 30 mm tripod shafts |

## 130 MHz – 6000 MHz Logarithmic Periodic Measurement Antenna

### 6 History

| Version | Date       | Author     | Changes                  |
|---------|------------|------------|--------------------------|
| V1.0    | 23.04.2026 | Mayerhofer | Creation of the document |
|         |            |            |                          |
|         |            |            |                          |