# 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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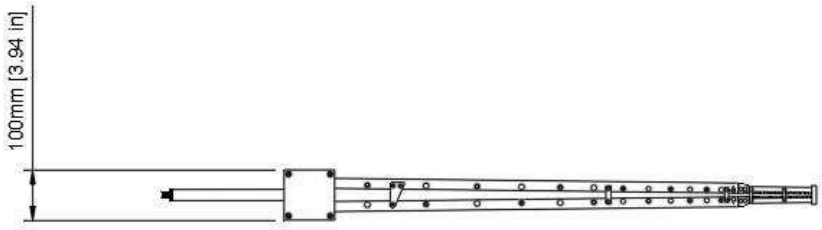
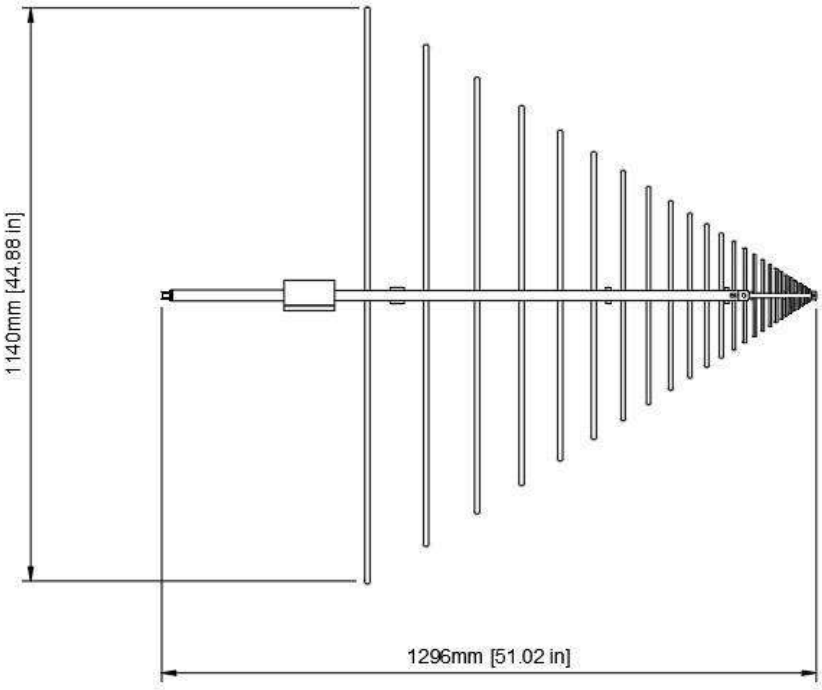
## 3 Technical Specifications

| | |
|---|---|
| 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 Ω |
| 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 | Isotropic Gain (10m, ref. to Antenna Center) | Antenna Factor (10m, ref. to Antenna Center) | Isotropic Gain (3m, ref. to Antenna Center) | Antenna Factor (3m, ref. to Antenna Center) | Isotropic Gain (1m, ref to Antenna Tip) | Antenna Factor (1m, ref to Antenna Tip) |
|---|---|---|---|---|---|---|
| MHz | dBi | dB/m | dBi | dB/m | dBi | 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 |

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|---|---|---|---|---|---|---|
| MHz | dBi | dB/m | dBi | dB/m | dBi | 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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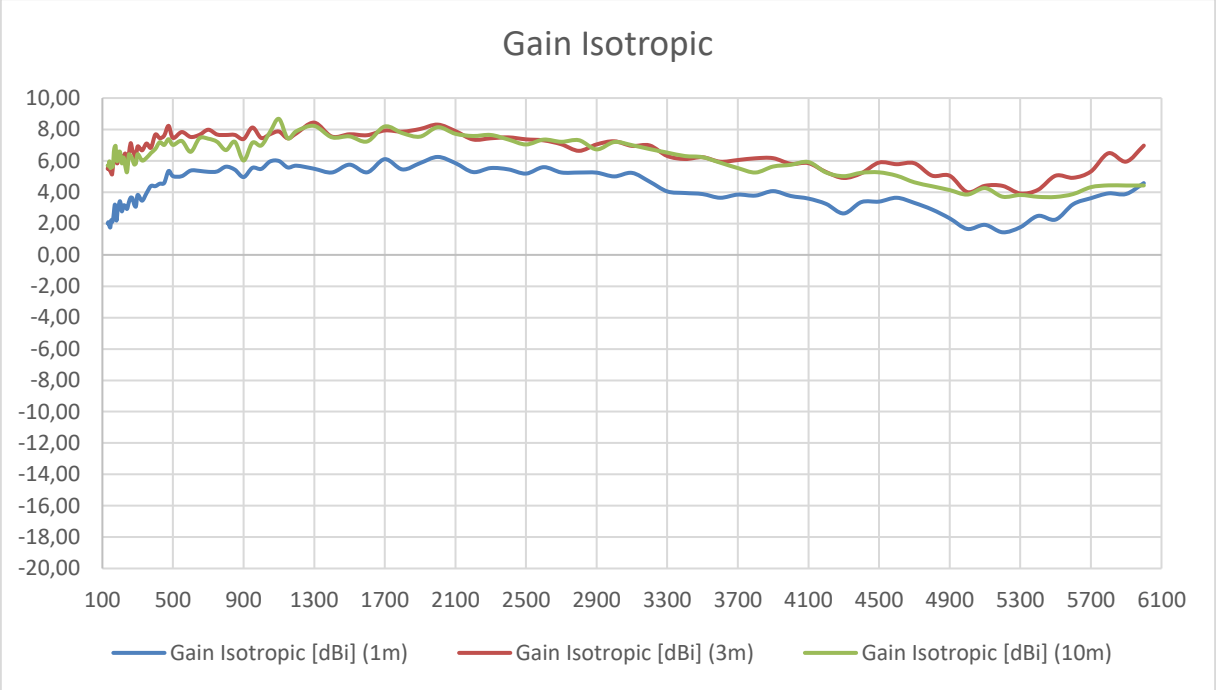
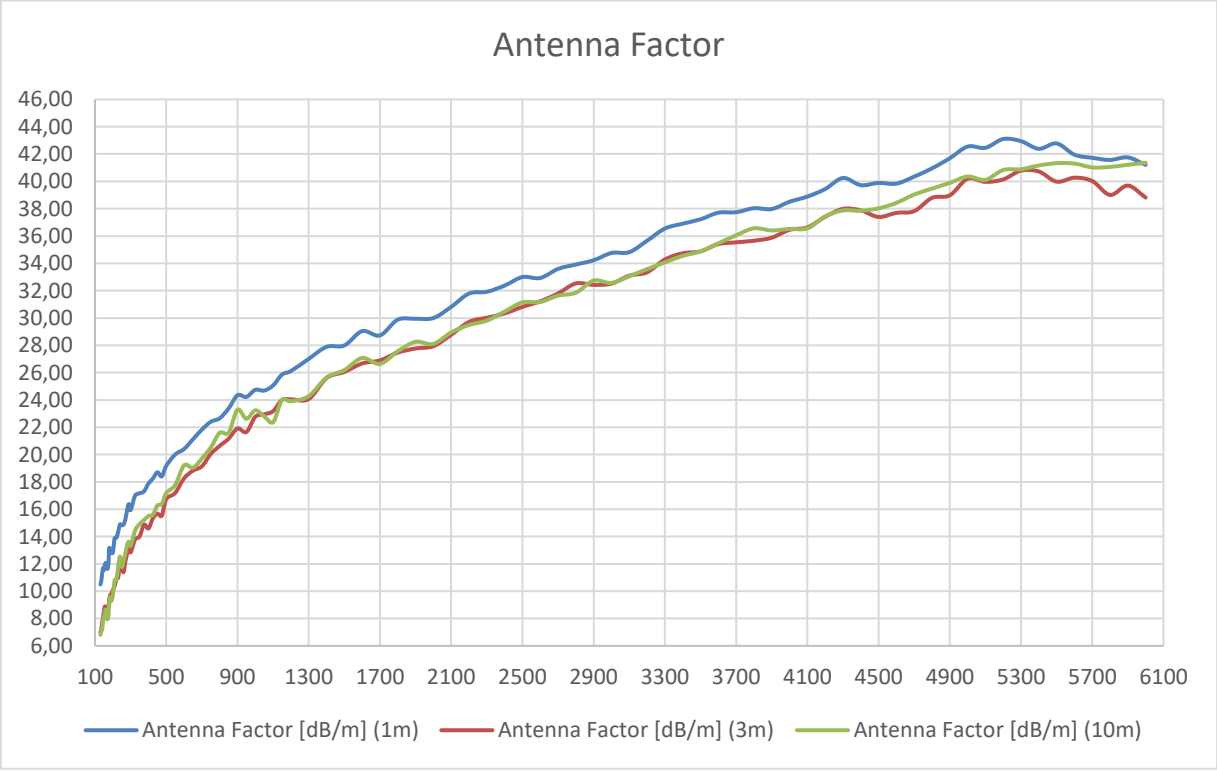
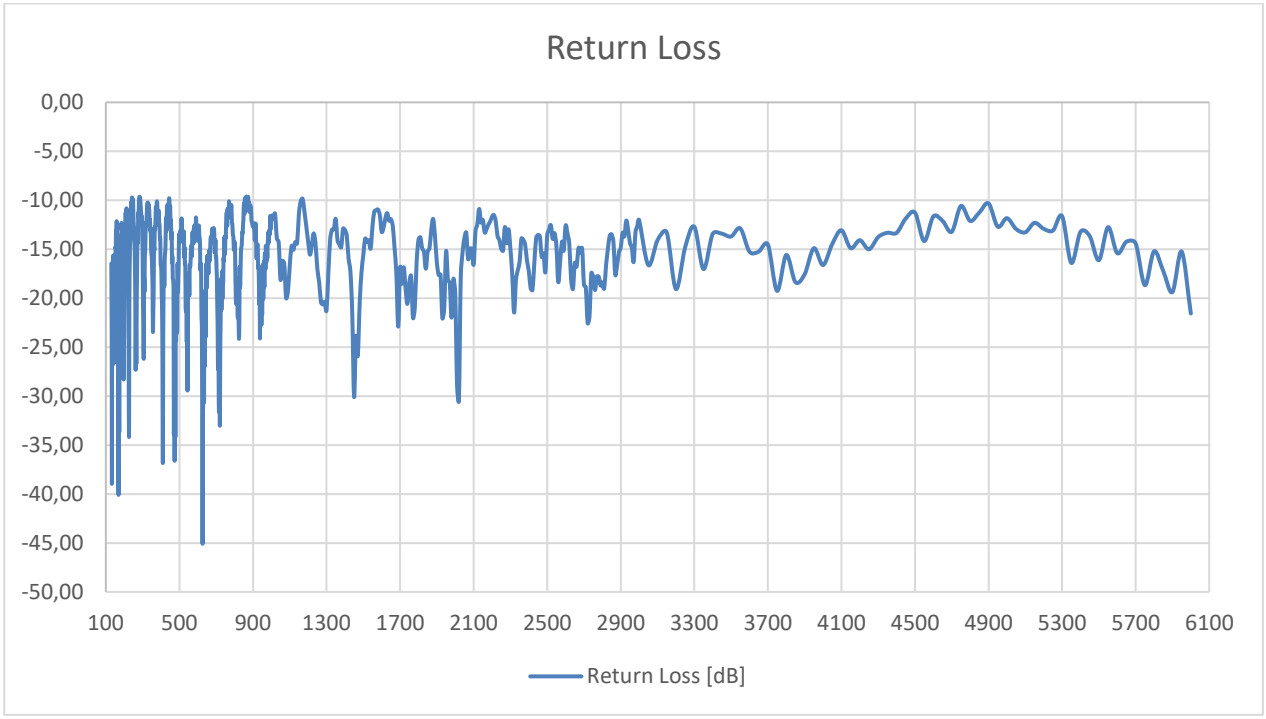



*130 MHz … 6000 MHz, Isotropic Gain of TBMA11*

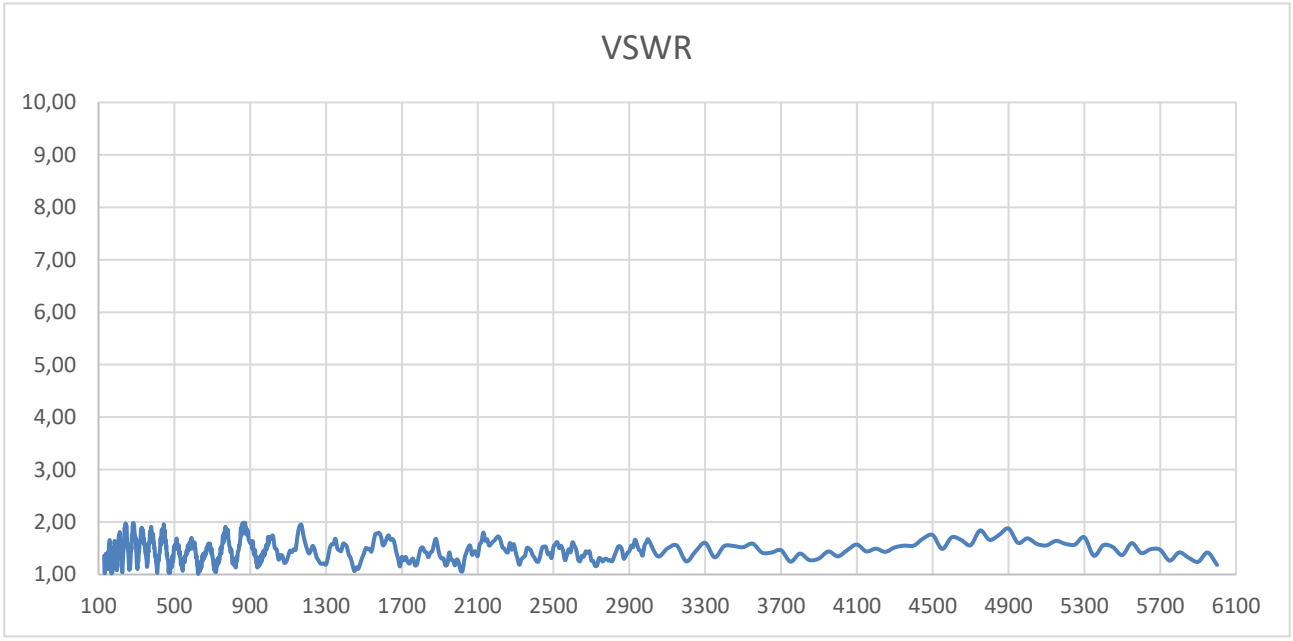



*130 MHz … 6000 MHz, Antenna Factor of TBMA11*

## 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.

## 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 |

# 6 History

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