150 MHz – 3000 MHz Log Periodic Measurement Antenna

1 Introduction

The TBMA7 is an affordable logarithmic-periodic measurement antenna, targeting radiated noise EMC pre-compliance testing.
The TBMA7 is characterized from 150 MHz to 3000 MHz and has VSWR and antenna factor values typical for logarithmic-periodic measurement antennas.

2 Product overview

The TBMA7 is an average sized logarithmic-periodic antenna, with its radiating elements and supporting booms made from aluminum alloy. It is equipped with a standard female N-connector and comes together with an antenna bracket and a mounting adapter. A standard ¼" thread on the bottom of the mounting adapter makes it easy to connect it to most standard tripods.

The TBMA7 is shipped in a robust carrying case, as pictured above.

2 Technical Specifications

Type	logarithmic periodic
Frequency range	150 MHz– 3000 MHz
VSWR	< 2.1:1 over the entire frequency range ; 1.3:1 average
Isotropic gain at 3m spacing	1.5 …. 8 dBi
Antenna factor at 3m spacing	10 … 34 dB/m
Maximum continuous input RF power	130W
Nominal impedance	50 Ω
RF Connector	N type female
Mounting	Tiltable adapter at center of gravity with ¼" tripod thread 22 mm diameter mounting shaft (tube)
Mechanical Dimensions	L x W x H: 1133 mm x 940 mm x 100 mm (44,6" x 37" x 3.94")
Weight	2.9 kg (6.39 lbs)

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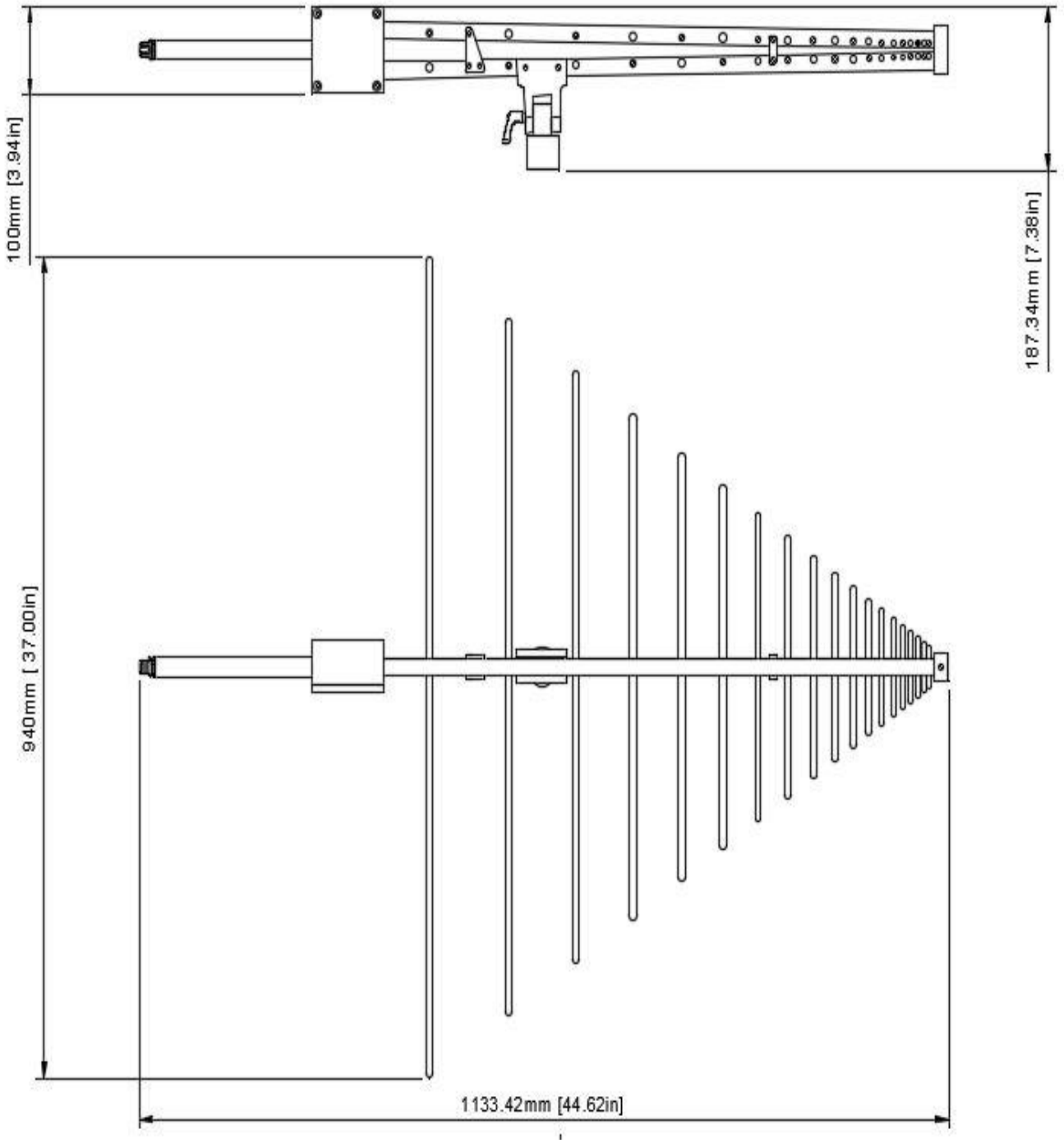

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3 TBMA7 Antenna Characterisation

3.1 Gain & Antenna Factor versus frequency

Frequency	Gain Isotropic (10m_Antenna Center)	Antenna Factor (10m_Antenna Center)	Gain Isotropic (3m_Antenna Center)	Antenna Factor (3m_Antenna Center)	Gain Isotropic (1m_Antenna Tip)	Antenna Factor (1m_Antenna Tip)
MHz	dBi	dB/m	dBi	dB/m	dBi	dB/m
150	2.27	11.47	1.50	12.24	-1.55	15.29
155	3.33	10.70	2.34	11.68	-0.50	14.53
160	4.07	10.23	3.15	11.15	0.35	13.95
165	4.70	9.87	3.92	10.65	1.12	13.45
170	5.23	9.60	4.60	10.23	1.78	13.05
175	5.66	9.42	5.12	9.96	2.22	12.86
180	5.95	9.38	5.46	9.87	2.57	12.75
185	6.08	9.49	5.60	9.96	2.78	12.78
190	6.13	9.66	5.63	10.16	2.89	12.90
200	6.05	10.19	5.55	10.69	3.03	13.21
210	5.69	10.98	5.56	11.10	2.83	13.83
220	5.34	11.73	5.30	11.76	2.42	14.64
230	4.81	12.64	5.37	12.09	2.79	14.66
240	4.77	13.06	5.71	12.11	3.25	14.58
250	5.84	12.34	5.83	12.34	3.30	14.88
260	5.81	12.71	5.94	12.58	3.37	15.15
270	6.00	12.84	6.06	12.79	3.59	15.26
280	6.20	12.96	6.25	12.92	3.86	15.30
290	6.31	13.16	6.33	13.14	4.02	15.45
300	6.28	13.48	6.32	13.44	3.96	15.81
325	6.18	14.28	6.29	14.17	4.09	16.36
350	6.25	14.85	6.38	14.72	4.27	16.83
375	6.32	15.38	6.42	15.28	4.22	17.48
400	5.54	16.72	6.19	16.07	4.12	18.14
425	6.04	16.75	6.33	16.45	4.36	18.43
450	6.00	17.29	6.45	16.83	4.59	18.70
475	5.94	17.81	6.32	17.43	4.46	19.29
500	5.41	18.79	6.11	18.08	4.37	19.83
550	5.48	19.54	6.22	18.81	4.49	20.53
600	4.89	20.89	6.45	19.34	4.80	20.98
650	6.41	20.07	6.63	19.84	5.01	21.47
700	4.95	22.17	6.57	20.55	4.99	22.13
750	5.96	21.76	6.84	20.88	5.33	22.39
800	6.46	21.82	6.96	21.32	5.42	22.86
850	6.04	22.76	6.97	21.83	5.51	23.30
900	5.59	23.71	6.70	22.60	5.30	24.01
950	6.20	23.57	7.06	22.72	5.49	24.29
1000	6.40	23.82	7.21	23.01	5.84	24.38
1050	7.72	22.92	7.55	23.10	6.00	24.64
1100	8.53	22.52	7.34	23.71	6.01	25.04
1150	8.08	23.35	7.04	24.39	5.79	25.65
1200	8.07	23.73	7.58	24.22	6.08	25.73
1300	7.99	24.51	7.58	24.92	6.18	26.32
1400	8.26	24.88	7.51	25.64	6.06	27.08
1500	8.82	24.92	7.68	26.06	6.41	27.34
1600	8.19	26.11	7.39	26.91	6.35	27.96
1700	8.84	25.98	7.79	27.04	6.55	28.28
1800	8.41	26.92	7.33	27.99	5.82	29.51
1900	8.28	27.51	7.49	28.31	6.08	29.72
2000	8.97	27.27	8.29	27.95	6.98	29.26
2100	8.44	28.23	7.45	29.21	5.96	30.70

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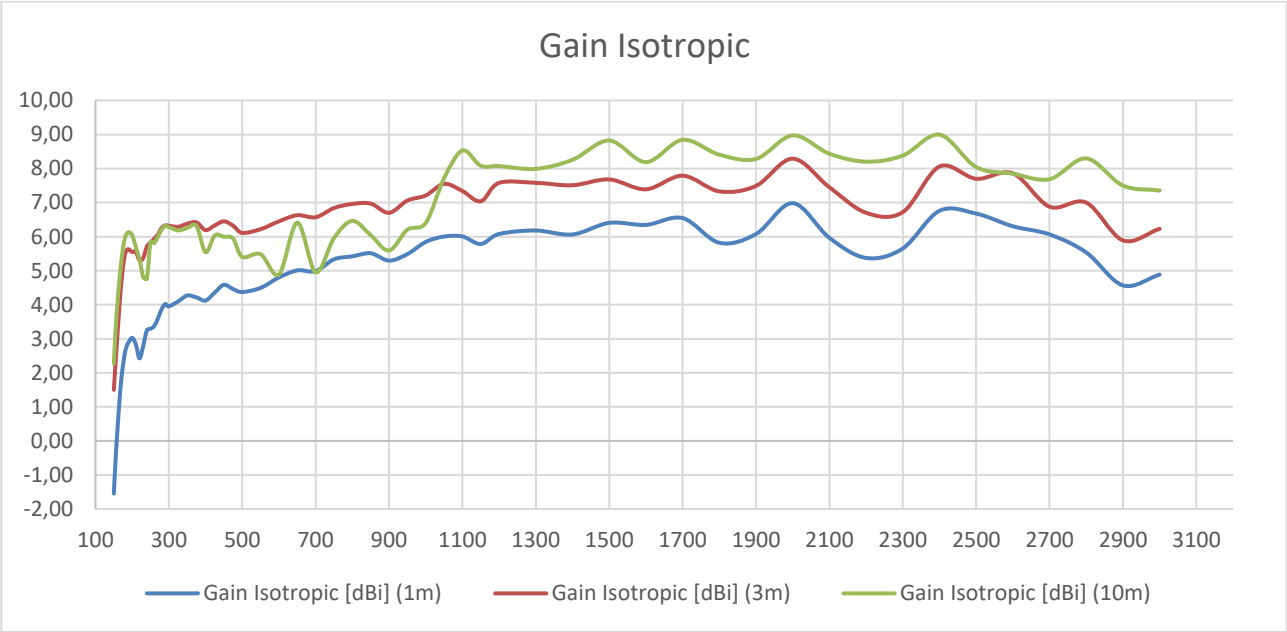
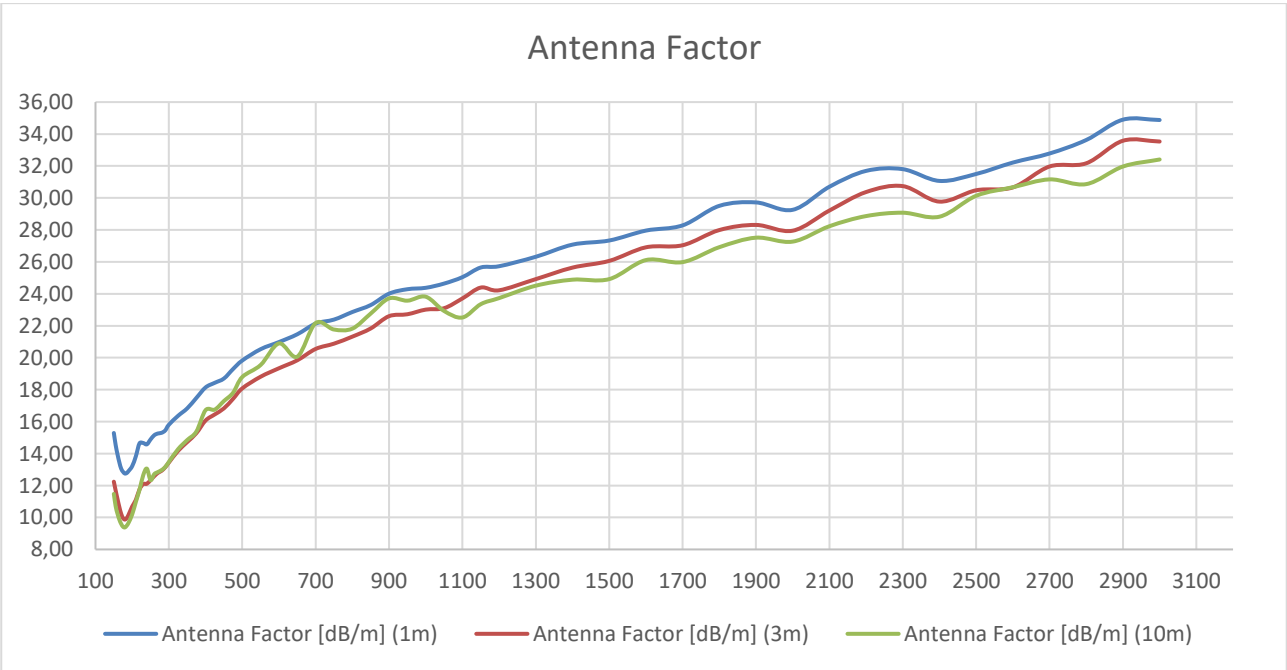
2200	8.20	28.87	6.70	30.37	5.37	31.69
2300	8.38	29.07	6.72	30.74	5.65	31.80
2400	9.00	28.83	8.06	29.77	6.76	31.07
2500	8.04	30.14	7.70	30.48	6.68	31.50
2600	7.85	30.67	7.86	30.66	6.30	32.21
2700	7.69	31.16	6.88	31.97	6.06	32.78
2800	8.30	30.86	7.00	32.17	5.54	33.63
2900	7.50	31.97	5.89	33.58	4.57	34.90
3000	7.36	32.41	6.23	33.53	4.89	34.88



150 MHz … 3000 MHz, Isotropic Gain of TBMA7



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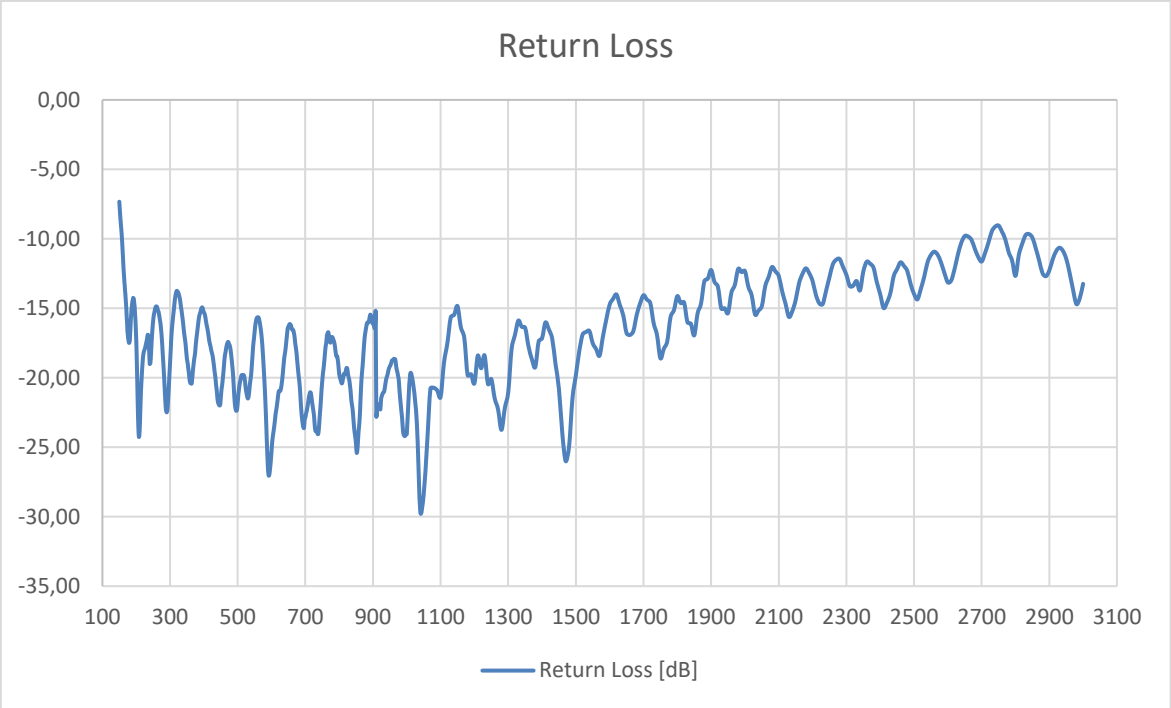
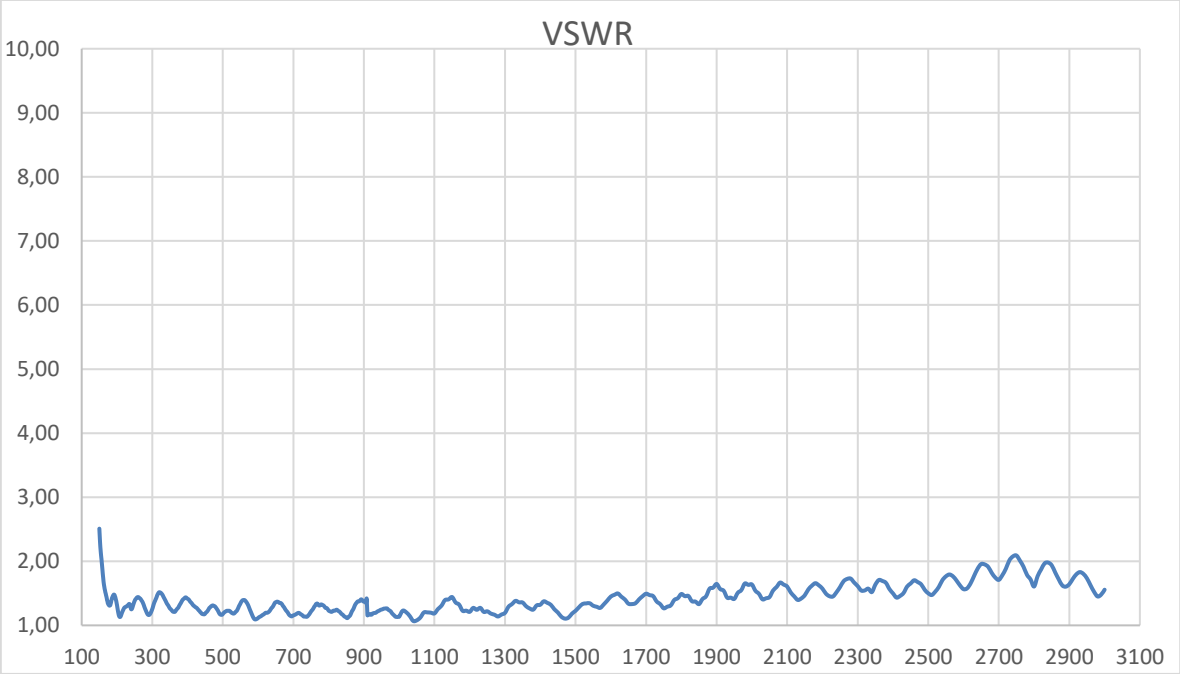
150 MHz … 3000 MHz, Antenna Factor of TBMA7

3.2 TBMA7 Return Loss / VSWR



TBMA7, S11, 150 MHz … 3000 MHz



TBMA7, VSWR, 150 MHz … 3000 MHz

Detailed test reports from Seibersdorf Laboratories can be downloaded from our website

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4 Ordering Information

Part Number	Description
TBMA7	150 – 3000 MHz logarithmic-periodic measurement antenna; mounting adapter, carrying case

5 History

Version	Date	Author	Changes
V1.0	04.11.2024	Mayerhofer	Creation of the document