

Antena setorial MIMO na faixa de 410 a 512 Mhz Aplicações •
Redes privadas LTE e NR na faixa de 450 MHz •
Radiocomunicação profissional e sistemas de missão crítica •
Telemetria, SCADA, utilities e infraestrutura crítica • Estações
fixas, repetidoras e cobertura ponto-multiponto



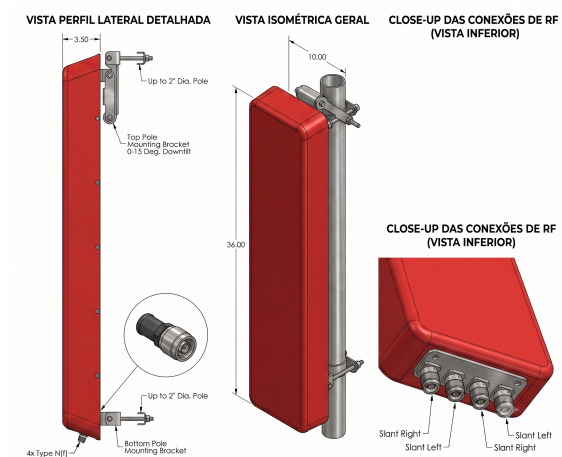
Características elétricas

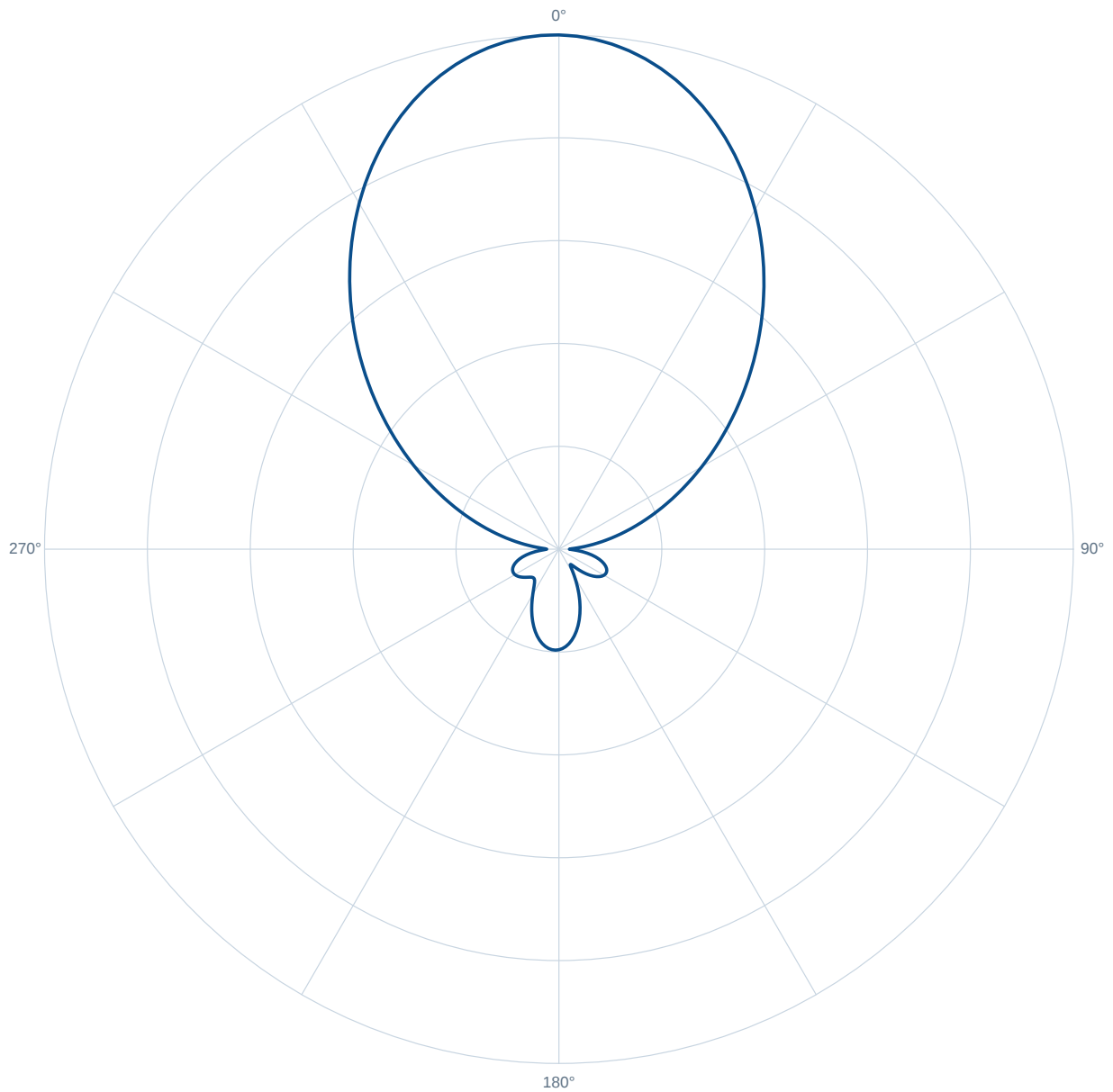
Item	Valor
Ganho cadastrado (referência)	12.00 dBd
HPBW horizontal	68.83°
HPBW vertical	85.53°
Faixa de frequência	410.00 – 512.00 MHz
Polarização	Slant +- 45 graus
Fabricante	EFTX Broadcast & Telecom
Categoria	Telecom



Validar autenticidade · 1.0

Página 1 · Código 791E317E





Parâmetros da configuração

HPBW HORIZONTAL

68.83°

GANHO

12.00 dBd

FRENTE/COSTAS

14.14 dB

RIPPLE

5.84 dB

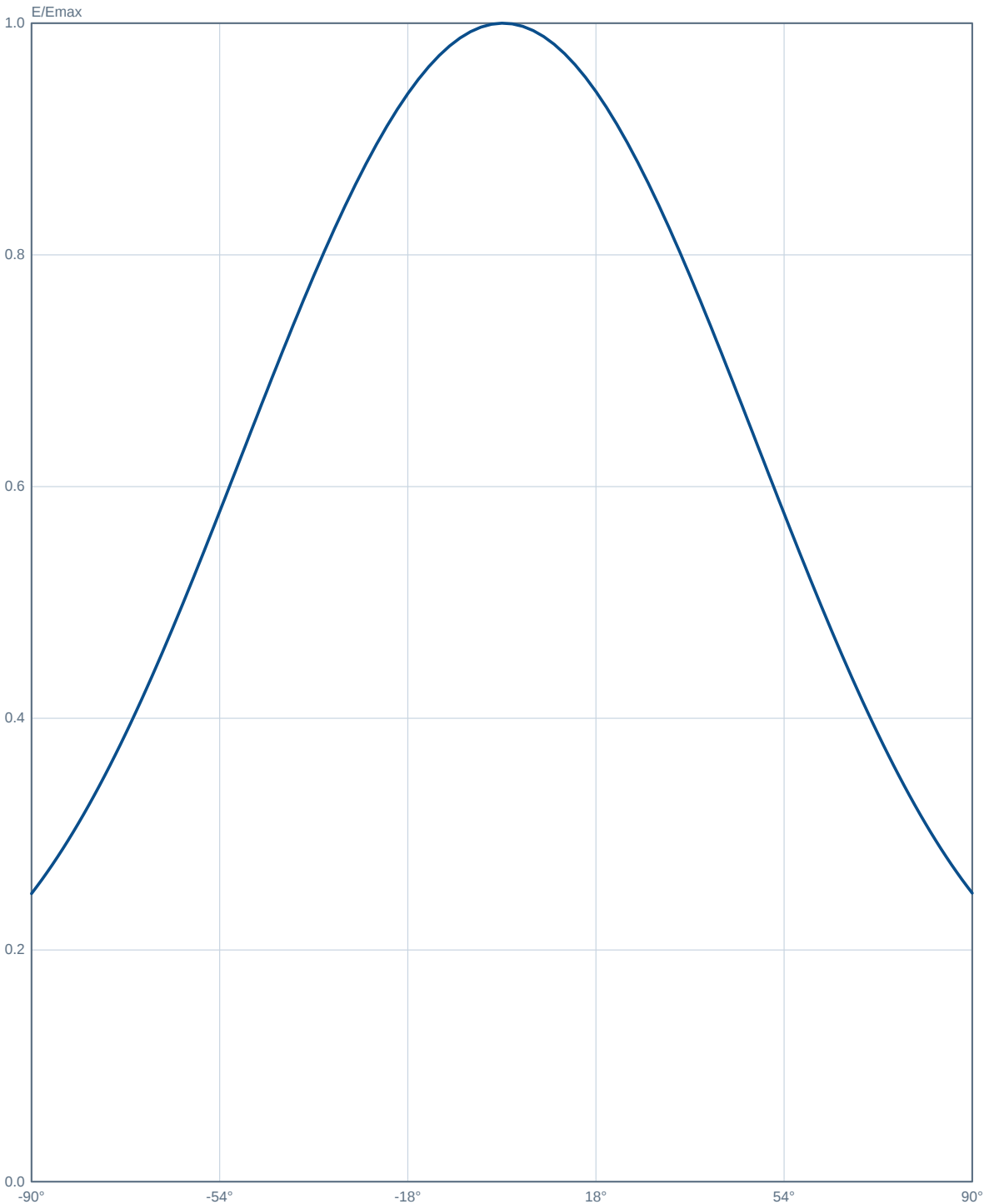
Tabela completa - Azimute



APTM-450-G0-CONF · Azimute

Ângulo	E/E _{max}	Aten. dB	Ângulo	E/E _{max}	Aten. dB	Ângulo	E/E _{max}	Aten. dB	Ângulo	E/E _{max}	Aten. dB	Ângulo	E/E _{max}	Aten. dB
0°	1.0000	-0.00	73°	0.1574	16.06	146°	0.0415	27.65	219°	0.0758	22.41	292°	0.2187	13.20
1°	0.9990	0.01	74°	0.1466	16.68	147°	0.0452	26.90	220°	0.0748	22.52	293°	0.2312	12.72
2°	0.9981	0.02	75°	0.1355	17.36	148°	0.0493	26.15	221°	0.0747	22.54	294°	0.2444	12.24
3°	0.9960	0.03	76°	0.1252	18.05	149°	0.0541	25.34	222°	0.0746	22.55	295°	0.2573	11.79
4°	0.9939	0.05	77°	0.1146	18.82	150°	0.0594	24.53	223°	0.0752	22.47	296°	0.2709	11.35
5°	0.9907	0.08	78°	0.1048	19.59	151°	0.0649	23.76	224°	0.0759	22.40	297°	0.2842	10.93
6°	0.9875	0.11	79°	0.0946	20.48	152°	0.0709	22.99	225°	0.0771	22.26	298°	0.2982	10.51
7°	0.9832	0.15	80°	0.0855	21.37	153°	0.0767	22.30	226°	0.0783	22.12	299°	0.3119	10.12
8°	0.9788	0.19	81°	0.0758	22.40	154°	0.0831	21.61	227°	0.0799	21.95	300°	0.3262	9.73
9°	0.9734	0.23	82°	0.0673	23.44	155°	0.0891	21.00	228°	0.0815	21.77	301°	0.3403	9.36
10°	0.9681	0.28	83°	0.0583	24.69	156°	0.0955	20.40	229°	0.0833	21.59	302°	0.3550	9.00
11°	0.9616	0.34	84°	0.0505	25.94	157°	0.1016	19.86	230°	0.0851	21.40	303°	0.3694	8.65
12°	0.9552	0.40	85°	0.0424	27.46	158°	0.1080	19.33	231°	0.0869	21.22	304°	0.3843	8.31
13°	0.9478	0.47	86°	0.0356	28.98	159°	0.1140	18.86	232°	0.0887	21.05	305°	0.3990	7.98
14°	0.9404	0.53	87°	0.0293	30.65	160°	0.1202	18.40	233°	0.0903	20.88	306°	0.4142	7.66
15°	0.9320	0.61	88°	0.0242	32.32	161°	0.1260	17.99	234°	0.0920	20.72	307°	0.4291	7.35
16°	0.9236	0.69	89°	0.0222	33.09	162°	0.1320	17.59	235°	0.0935	20.59	308°	0.4446	7.04
17°	0.9143	0.78	90°	0.0203	33.85	163°	0.1375	17.24	236°	0.0949	20.45	309°	0.4596	6.75
18°	0.9051	0.87	91°	0.0228	32.84	164°	0.1431	16.88	237°	0.0961	20.35	310°	0.4752	6.46
19°	0.8949	0.96	92°	0.0256	31.83	165°	0.1482	16.58	238°	0.0973	20.24	311°	0.4905	6.19
20°	0.8849	1.06	93°	0.0300	30.46	166°	0.1535	16.28	239°	0.0981	20.17	312°	0.5062	5.91
21°	0.8739	1.17	94°	0.0351	29.09	167°	0.1582	16.02	240°	0.0989	20.10	313°	0.5215	5.65
22°	0.8630	1.28	95°	0.0399	27.97	168°	0.1630	15.76	241°	0.0993	20.06	314°	0.5373	5.40
23°	0.8513	1.40	96°	0.0454	26.86	169°	0.1672	15.54	242°	0.0997	20.03	315°	0.5526	5.15
24°	0.8398	1.52	97°	0.0502	25.99	170°	0.1715	15.32	243°	0.0996	20.03	316°	0.5684	4.91
25°	0.8274	1.65	98°	0.0554	25.13	171°	0.1751	15.13	244°	0.0996	20.03	317°	0.5837	4.68
26°	0.8152	1.77	99°	0.0599	24.45	172°	0.1788	14.95	245°	0.0991	20.08	318°	0.5995	4.44
27°	0.8022	1.91	100°	0.0647	23.78	173°	0.1819	14.81	246°	0.0986	20.12	319°	0.6147	4.23
28°	0.7894	2.05	101°	0.0688	23.25	174°	0.1850	14.66	247°	0.0976	20.21	320°	0.6303	4.01
29°	0.7759	2.20	102°	0.0731	22.72	175°	0.1874	14.55	248°	0.0967	20.29	321°	0.6454	3.80
30°	0.7626	2.35	103°	0.0768	22.30	176°	0.1898	14.43	249°	0.0952	20.43	322°	0.6608	3.60
31°	0.7486	2.52	104°	0.0806	21.87	177°	0.1916	14.35	250°	0.0937	20.56	323°	0.6756	3.41
32°	0.7348	2.68	105°	0.0837	21.54	178°	0.1934	14.27	251°	0.0918	20.75	324°	0.6908	3.21
33°	0.7204	2.85	106°	0.0870	21.21	179°	0.1945	14.22	252°	0.0898	20.93	325°	0.7054	3.03
34°	0.7063	3.02	107°	0.0897	20.95	180°	0.1956	14.17	253°	0.0873	21.18	326°	0.7202	2.85
35°	0.6916	3.20	108°	0.0924	20.69	181°	0.1960	14.15	254°	0.0849	21.42	327°	0.7344	2.68
36°	0.6772	3.39	109°	0.0945	20.49	182°	0.1964	14.14	255°	0.0819	21.73	328°	0.7489	2.51
37°	0.6621	3.58	110°	0.0967	20.29	183°	0.1961	14.15	256°	0.0790	22.05	329°	0.7626	2.35
38°	0.6475	3.78	111°	0.0982	20.15	184°	0.1959	14.16	257°	0.0755	22.44	330°	0.7767	2.20
39°	0.6323	3.98	112°	0.0998	20.01	185°	0.1949	14.20	258°	0.0721	22.84	331°	0.7899	2.05
40°	0.6174	4.19	113°	0.1008	19.93	186°	0.1940	14.24	259°	0.0681	23.33	332°	0.8034	1.90
41°	0.6021	4.41	114°	0.1019	19.84	187°	0.1924	14.32	260°	0.0644	23.83	333°	0.8160	1.77
42°	0.5871	4.63	115°	0.1023	19.80	188°	0.1908	14.39	261°	0.0599	24.45	334°	0.8289	1.63
43°	0.5717	4.86	116°	0.1028	19.76	189°	0.1886	14.49	262°	0.0557	25.08	335°	0.8409	1.50
44°	0.5566	5.09	117°	0.1027	19.77	190°	0.1864	14.59	263°	0.0509	25.87	336°	0.8531	1.38
45°	0.5412	5.33	118°	0.1026	19.78	191°	0.1836	14.72	264°	0.0465	26.66	337°	0.8644	1.27
46°	0.5262	5.58	119°	0.1019	19.84	192°	0.1808	14.85	265°	0.0415	27.65	338°	0.8759	1.15
47°	0.5108	5.84	120°	0.1012	19.89	193°	0.1775	15.02	266°	0.0370	28.64	339°	0.8864	1.05
48°	0.4958	6.09	121°	0.1000	20.00	194°	0.1742	15.18	267°	0.0324	29.78	340°	0.8971	0.94
49°	0.4805	6.37	122°	0.0988	20.10	195°	0.1704	15.37	268°	0.0284	30.92	341°	0.9068	0.85
50°	0.4656	6.64	123°	0.0970	20.26	196°	0.1666	15.57	269°	0.0259	31.72	342°	0.9165	0.76
51°	0.4505	6.93	124°	0.0953	20.42	197°	0.1624	15.79	270°	0.0237	32.51	343°	0.9253	0.67
52°	0.4358	7.21	125°	0.0930	20.63	198°	0.1583	16.01	271°	0.0251	31.99	344°	0.9342	0.59
53°	0.4208	7.52	126°	0.0907	20.84	199°	0.1537	16.27	272°	0.0267	31.46	345°	0.9420	0.52
54°	0.4063	7.82	127°	0.0879	21.12	200°	0.1492	16.52	273°	0.0314	30.06	346°	0.9499	0.45
55°	0.3915	8.15	128°	0.0852	21.39	201°	0.1444	16.81	274°	0.0369	28.65	347°	0.9568	0.38
56°	0.3772	8.47	129°	0.0820	21.73	202°	0.1397	17.09	275°	0.0434	27.24	348°	0.9636	0.32
57°	0.3627	8.81	130°	0.0788	22.06	203°	0.1348	17.41	276°	0.0511	25.83	349°	0.9694	0.27
58°	0.3487	9.15	131°	0.0752	22.48	204°	0.1300	17.72	277°	0.0587	24.62	350°	0.9753	0.22
59°	0.3345	9.51	132°	0.0717	22.89	205°	0.1250	18.06	278°	0.0675	23.41	351°	0.9800	0.18
60°	0.3208	9.87	133°	0.0678	23.38	206°	0.1202	18.40	279°	0.0760	22.38	352°	0.9847	0.13
61°	0.3069	10.26	134°	0.0640	23.87	207°	0.1153	18.76	280°	0.0856	21.35	353°	0.9883	0.10
62°	0.2936	10.64	135°	0.0599	24.45	208°	0.1106	19.12	281°	0.0948	20.46	354°	0.9920	0.07
63°	0.2800	11.06	136°	0.0561	25.02	209°	0.1060	19.49	282°	0.1050	19.57	355°	0.9944	0.05
64°	0.2671	11.47	137°	0.0521	25.66	210°	0.1016	19.86	283°	0.1149	18.80	356°	0.9969	0.03
65°	0.2539	11.91	138°	0.0484	26.31	211°	0.0974	20.23	284°	0.1256	18.02	357°	0.9983	0.02
66°	0.2413	12.35	139°	0.0450	26.94	212°	0.0933	20.60	285°	0.1361	17.32	358°	0.9996	0.00
67°	0.2285	12.82	140°	0.0418	27.58	213°	0.0897	20.94	286°	0.1474	16.63	359°	0.9998	0.00
68°	0.2163	13.30	141°	0.0396	28.04	214°	0.0863	21.28	287°	0.1584	16.01	360°	1.0000	-0.00
69°	0.2039	13.81	142°	0.0376	28.50	215°	0.0834	21.58	288°	0.1702	15.38			
70°	0.1922	14.32	143°	0.0374	28.53	216°	0.0807	21.87	289°	0.1817	14.81			
71°	0.1802	14.88	144°	0.0373	28.57	217°	0.0787	22.08	290°	0.1940	14.25			
72°	0.1690	15.44	145°	0.0393	28.11	218°	0.0768	22.29	291°	0.2060	13.72			

E/E_{max} de campo normalizado · atenuação positiva em dB



Parâmetros da configuração			
ELEMENTOS	HPBW VERTICAL	GANHO	PRIMEIRO NULO
N/D	85.53°	12.00 dBd	N/D

Tabela completa - Elevação



APTM-450-G0-CONF · Elevação

Ângulo	E/E _{max}	Aten. dB	Ângulo	E/E _{max}	Aten. dB	Ângulo	E/E _{max}	Aten. dB	Ângulo	E/E _{max}	Aten. dB	Ângulo	E/E _{max}	Aten. dB
-90°	0.2487	12.09	-53.5°	0.5841	4.67	-17°	0.9453	0.49	19.5°	0.9309	0.62	56°	0.5540	5.13
-89.5°	0.2517	11.98	-53°	0.5899	4.59	-16.5°	0.9484	0.46	20°	0.9275	0.65	56.5°	0.5483	5.22
-89°	0.2547	11.88	-52.5°	0.5957	4.50	-16°	0.9514	0.43	20.5°	0.9238	0.69	57°	0.5426	5.31
-88.5°	0.2577	11.78	-52°	0.6015	4.42	-15.5°	0.9542	0.41	21°	0.9201	0.72	57.5°	0.5370	5.40
-88°	0.2608	11.67	-51.5°	0.6072	4.33	-15°	0.9569	0.38	21.5°	0.9164	0.76	58°	0.5314	5.49
-87.5°	0.2640	11.57	-51°	0.6130	4.25	-14.5°	0.9597	0.36	22°	0.9127	0.79	58.5°	0.5258	5.58
-87°	0.2672	11.46	-50.5°	0.6188	4.17	-14°	0.9624	0.33	22.5°	0.9088	0.83	59°	0.5202	5.68
-86.5°	0.2704	11.36	-50°	0.6246	4.09	-13.5°	0.9648	0.31	23°	0.9048	0.87	59.5°	0.5147	5.77
-86°	0.2737	11.25	-49.5°	0.6304	4.01	-13°	0.9672	0.29	23.5°	0.9008	0.91	60°	0.5092	5.86
-85.5°	0.2771	11.15	-49°	0.6361	3.93	-12.5°	0.9697	0.27	24°	0.8969	0.95	60.5°	0.5036	5.96
-85°	0.2805	11.04	-48.5°	0.6419	3.85	-12°	0.9721	0.25	24.5°	0.8926	0.99	61°	0.4981	6.05
-84.5°	0.2840	10.93	-48°	0.6478	3.77	-11.5°	0.9742	0.23	25°	0.8884	1.03	61.5°	0.4927	6.15
-84°	0.2874	10.83	-47.5°	0.6535	3.70	-11°	0.9762	0.21	25.5°	0.8841	1.07	62°	0.4873	6.24
-83.5°	0.2910	10.72	-47°	0.6592	3.62	-10.5°	0.9783	0.19	26°	0.8799	1.11	62.5°	0.4819	6.34
-83°	0.2946	10.61	-46.5°	0.6650	3.54	-10°	0.9804	0.17	26.5°	0.8754	1.16	63°	0.4765	6.44
-82.5°	0.2983	10.51	-46°	0.6708	3.47	-9.5°	0.9821	0.16	27°	0.8709	1.20	63.5°	0.4713	6.53
-82°	0.3020	10.40	-45.5°	0.6765	3.39	-9°	0.9838	0.14	27.5°	0.8664	1.25	64°	0.4660	6.63
-81.5°	0.3058	10.29	-45°	0.6822	3.32	-8.5°	0.9855	0.13	28°	0.8620	1.29	64.5°	0.4607	6.73
-81°	0.3096	10.18	-44.5°	0.6880	3.25	-8°	0.9872	0.11	28.5°	0.8572	1.34	65°	0.4554	6.83
-80.5°	0.3135	10.08	-44°	0.6937	3.18	-7.5°	0.9886	0.10	29°	0.8525	1.39	65.5°	0.4503	6.93
-80°	0.3173	9.97	-43.5°	0.6993	3.11	-7°	0.9900	0.09	29.5°	0.8478	1.43	66°	0.4451	7.03
-79.5°	0.3213	9.86	-43°	0.7050	3.04	-6.5°	0.9913	0.08	30°	0.8431	1.48	66.5°	0.4400	7.13
-79°	0.3253	9.75	-42.5°	0.7107	2.97	-6°	0.9927	0.06	30.5°	0.8381	1.53	67°	0.4349	7.23
-78.5°	0.3294	9.64	-42°	0.7164	2.90	-5.5°	0.9937	0.06	31°	0.8332	1.59	67.5°	0.4298	7.33
-78°	0.3335	9.54	-41.5°	0.7219	2.83	-5°	0.9946	0.05	31.5°	0.8283	1.64	68°	0.4248	7.44
-77.5°	0.3377	9.43	-41°	0.7274	2.76	-4.5°	0.9956	0.04	32°	0.8234	1.69	68.5°	0.4199	7.54
-77°	0.3419	9.32	-40.5°	0.7330	2.70	-4°	0.9966	0.03	32.5°	0.8182	1.74	69°	0.4149	7.64
-76.5°	0.3462	9.21	-40°	0.7387	2.63	-3.5°	0.9972	0.02	33°	0.8131	1.80	69.5°	0.4100	7.74
-76°	0.3505	9.11	-39.5°	0.7441	2.57	-3°	0.9978	0.02	33.5°	0.8080	1.85	70°	0.4052	7.85
-75.5°	0.3548	9.00	-39°	0.7495	2.50	-2.5°	0.9985	0.01	34°	0.8029	1.91	70.5°	0.4004	7.95
-75°	0.3592	8.89	-38.5°	0.7550	2.44	-2°	0.9991	0.01	34.5°	0.7976	1.96	71°	0.3955	8.06
-74.5°	0.3637	8.79	-38°	0.7606	2.38	-1.5°	0.9993	0.01	35°	0.7923	2.02	71.5°	0.3908	8.16
-74°	0.3682	8.68	-37.5°	0.7659	2.32	-1°	0.9995	0.00	35.5°	0.7871	2.08	72°	0.3861	8.27
-73.5°	0.3727	8.57	-37°	0.7712	2.26	-0.5°	0.9998	0.00	36°	0.7818	2.14	72.5°	0.3815	8.37
-73°	0.3773	8.47	-36.5°	0.7766	2.20	0°	1.0000	-0.00	36.5°	0.7764	2.20	73°	0.3769	8.48
-72.5°	0.3820	8.36	-36°	0.7819	2.14	0.5°	0.9999	0.00	37°	0.7709	2.26	73.5°	0.3723	8.58
-72°	0.3866	8.25	-35.5°	0.7871	2.08	1°	0.9997	0.00	37.5°	0.7655	2.32	74°	0.3678	8.69
-71.5°	0.3914	8.15	-35°	0.7923	2.02	1.5°	0.9996	0.00	38°	0.7601	2.38	74.5°	0.3634	8.79
-71°	0.3961	8.04	-34.5°	0.7975	1.97	2°	0.9994	0.01	38.5°	0.7545	2.45	75°	0.3589	8.90
-70.5°	0.4009	7.94	-34°	0.8027	1.91	2.5°	0.9989	0.01	39°	0.7490	2.51	75.5°	0.3546	9.01
-70°	0.4058	7.83	-33.5°	0.8078	1.85	3°	0.9983	0.01	39.5°	0.7435	2.57	76°	0.3502	9.11
-69.5°	0.4107	7.73	-33°	0.8128	1.80	3.5°	0.9978	0.02	40°	0.7380	2.64	76.5°	0.3459	9.22
-69°	0.4156	7.63	-32.5°	0.8178	1.75	4°	0.9973	0.02	40.5°	0.7323	2.71	77°	0.3417	9.33
-68.5°	0.4206	7.52	-32°	0.8229	1.69	4.5°	0.9964	0.03	41°	0.7266	2.77	77.5°	0.3375	9.43
-68°	0.4256	7.42	-31.5°	0.8277	1.64	5°	0.9955	0.04	41.5°	0.7210	2.84	78°	0.3333	9.54
-67.5°	0.4307	7.32	-31°	0.8325	1.59	5.5°	0.9945	0.05	42°	0.7154	2.91	78.5°	0.3293	9.65
-67°	0.4357	7.22	-30.5°	0.8374	1.54	6°	0.9936	0.06	42.5°	0.7096	2.98	79°	0.3252	9.76
-66.5°	0.4409	7.11	-30°	0.8423	1.49	6.5°	0.9923	0.07	43°	0.7039	3.05	79.5°	0.3212	9.86
-66°	0.4461	7.01	-29.5°	0.8469	1.44	7°	0.9910	0.08	43.5°	0.6982	3.12	80°	0.3173	9.97
-65.5°	0.4512	6.91	-29°	0.8516	1.40	7.5°	0.9897	0.09	44°	0.6925	3.19	80.5°	0.3134	10.08
-65°	0.4564	6.81	-28.5°	0.8562	1.35	8°	0.9885	0.10	44.5°	0.6867	3.26	81°	0.3095	10.19
-64.5°	0.4617	6.71	-28°	0.8609	1.30	8.5°	0.9868	0.12	45°	0.6809	3.34	81.5°	0.3058	10.29
-64°	0.4671	6.61	-27.5°	0.8653	1.26	9°	0.9851	0.13	45.5°	0.6752	3.41	82°	0.3020	10.40
-63.5°	0.4724	6.51	-27°	0.8697	1.21	9.5°	0.9835	0.14	46°	0.6695	3.49	82.5°	0.2983	10.51
-63°	0.4777	6.42	-26.5°	0.8742	1.17	10°	0.9818	0.16	46.5°	0.6636	3.56	83°	0.2947	10.61
-62.5°	0.4831	6.32	-26°	0.8786	1.12	10.5°	0.9798	0.18	47°	0.6578	3.64	83.5°	0.2911	10.72
-62°	0.4886	6.22	-25.5°	0.8828	1.08	11°	0.9777	0.20	47.5°	0.6520	3.71	84°	0.2875	10.83
-61.5°	0.4940	6.13	-25°	0.8870	1.04	11.5°	0.9757	0.21	48°	0.6463	3.79	84.5°	0.2841	10.93
-61°	0.4994	6.03	-24.5°	0.8912	1.00	12°	0.9737	0.23	48.5°	0.6404	3.87	85°	0.2806	11.04
-60.5°	0.5050	5.93	-24°	0.8954	0.96	12.5°	0.9713	0.25	49°	0.6346	3.95	85.5°	0.2772	11.14
-60°	0.5105	5.84	-23.5°	0.8993	0.92	13°	0.9689	0.27	49.5°	0.6288	4.03	86°	0.2739	11.25
-59.5°	0.5161	5.75	-23°	0.9032	0.88	13.5°	0.9665	0.30	50°	0.6231	4.11	86.5°	0.2706	11.35
-59°	0.5216	5.65	-22.5°	0.9071	0.85	14°	0.9642	0.32	50.5°	0.6172	4.19	87°	0.2674	11.46
-58.5°	0.5272	5.56	-22°	0.9111	0.81	14.5°	0.9614	0.34	51°	0.6114	4.27	87.5°	0.2642	11.56
-58°	0.5329	5.47	-21.5°	0.9147	0.77	15°	0.9587	0.37	51.5°	0.6056	4.36	88°	0.2611	11.67
-57.5°	0.5385	5.38	-21°	0.9184	0.74	15.5°	0.9560	0.39	52°	0.5999	4.44	88.5°	0.2580	11.77
-57°	0.5441	5.29	-20.5°	0.9220	0.70	16°	0.9533	0.42	52.5°	0.5941	4.52	89°	0.2550	11.87
-56.5°	0.5498	5.20	-20°	0.9257	0.67	16.5°	0.9502	0.44	53°	0.5882	4.61	89.5°	0.2520	11.97
-56°	0.5555	5.11	-19.5°	0.9291	0.64	17°	0.9471	0.47	53.5°	0.5825	4.69	90°	0.2491	12.07
-55.5°	0.5612	5.02	-19°	0.9324	0.61	17.5°	0.9441	0.50	54°	0.5768	4.78			
-55°	0.5669	4.93	-18.5°	0.9358	0.58	18°	0.9410	0.53	54.5°	0.5711	4.87			
-54.5°	0.5727	4.84	-18°	0.9392	0.54	18.5°	0.9376	0.56	55°	0.5653	4.95			
-54°	0.5784	4.75	-17.5°	0.9422	0.52	19°	0.9342	0.59	55.5°	0.5596	5.04			

E/E_{max} de campo normalizado · atenuação positiva em dB