



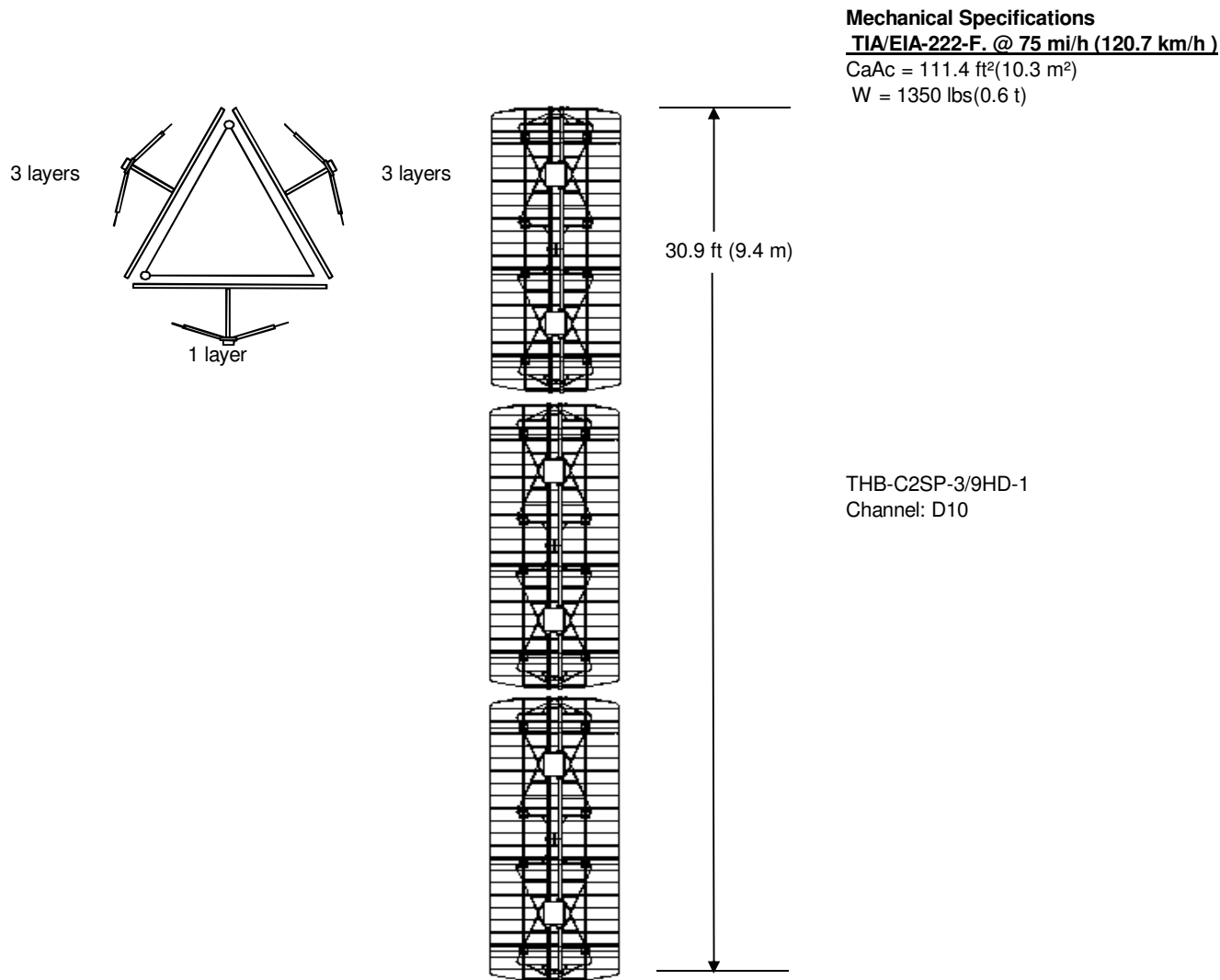
Proposal #: **C-03754-2** Antenna Type: **THB-C2SP-3/9HD-1** Channel: **10 DTV**
 Call Letters: **WWTO-DT** Location: **LaSalle, IL**

Electrical Specifications		Value		Remarks
		Ratio	dBd	
RMS Gain at Main Lobe over Halfwave Dipole	Hpol	6.6	8.20	
	Vpol			
RMS Gain at Horizontal over Halfwave Dipole	Hpol	6.4	8.06	
	Vpol			
Peak Directional Gain over Halfwave Dipole	Hpol	13.1	11.17	
	Vpol			
Peak Directional Gain at Horizontal over Halfwave Dipole	Hpol	12.8	11.07	
	Vpol			
Circularity Directional		dB		
Axial Ratio		dB		
Beam Tilt		0.80 deg		
Average Power		10 kW	10.00 dBk	
Antenna Input: T/L		3-1/8 in	50.0 ohm	Type: EIA/DCA
Maximum Antenna Input VSWR		Channel	1.10 : 1	Notes:
Patterns	Azimuth	3BP270		
	Elevation	03H066080	03H066080-90	
Mechanical Specifications		Metric	English	Preliminary
Height with Lightning Protector	H4	m	ft	Side mounted
Height Less Lightning Protector	H2	9.4 m	30.9 ft	TIA/EIA-222-F.
Height of Center of Radiation	H3	5.0 m	15.5 ft	
Basic Wind Speed	V	120.7 km/h	75 mi/h	
Force Coeff. x Projected Area	CaAc	10.3 m ²	111.4 ft ²	Excludes Mounts
Moment Arm	D1	m	ft	
Force Coeff. x Projected Area	CaAc	m ²	ft ²	
Moment Arm	D3	m	ft	
Pole Bury Length	D2	m	ft	
Weight	W	0.6 t	1,350 lbs	Excludes Mounts
Antenna designed in accordance with AISC specifications for design of structural steel for building as prescribed by TIA/EIA-222-F. Mechanical Loads Exclude Mounts				

NOTE:

Prepared By : **SWB** RMS Approved By : **KLP**
 Original Date : **31-Aug-09** **Revision: 2** **Rev. Date: 2-Sep-10** RMS

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SWB-090902-2

Not to Scale

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Proposal Number	C-03754	Revision:	2
Date	2-Sep-10		
Call Letters	WWTO-DT	Channel	10
Location	LaSalle, IL		
Customer	Trinity Broadcast Network		
Antenna Type	THB-C2SP-3/9HD-1		

SYSTEM SUMMARY

Antenna:

Type:	THB-C2SP-3/9HD-1	ERP:	80 kW	H Pol (19.03 dBk)
Channel:	10	Peak Gain*:	13.1	(11.16 dB)
Location:	LaSalle, IL	Input Power:	6.1 kW	(7.87 dBk)

Transmission Line:

Type:	EIA/DCA	Attenuation:	1.97 dB
Size:	3-1/8 in	Efficiency:	63.5%
Impedance:	50 ohm		
Length:	1,430 ft		435.9 m

Transmitter:

Power Required: **9.6 kW** (9.84 dBk)

* Gain is with respect to half wave dipole.

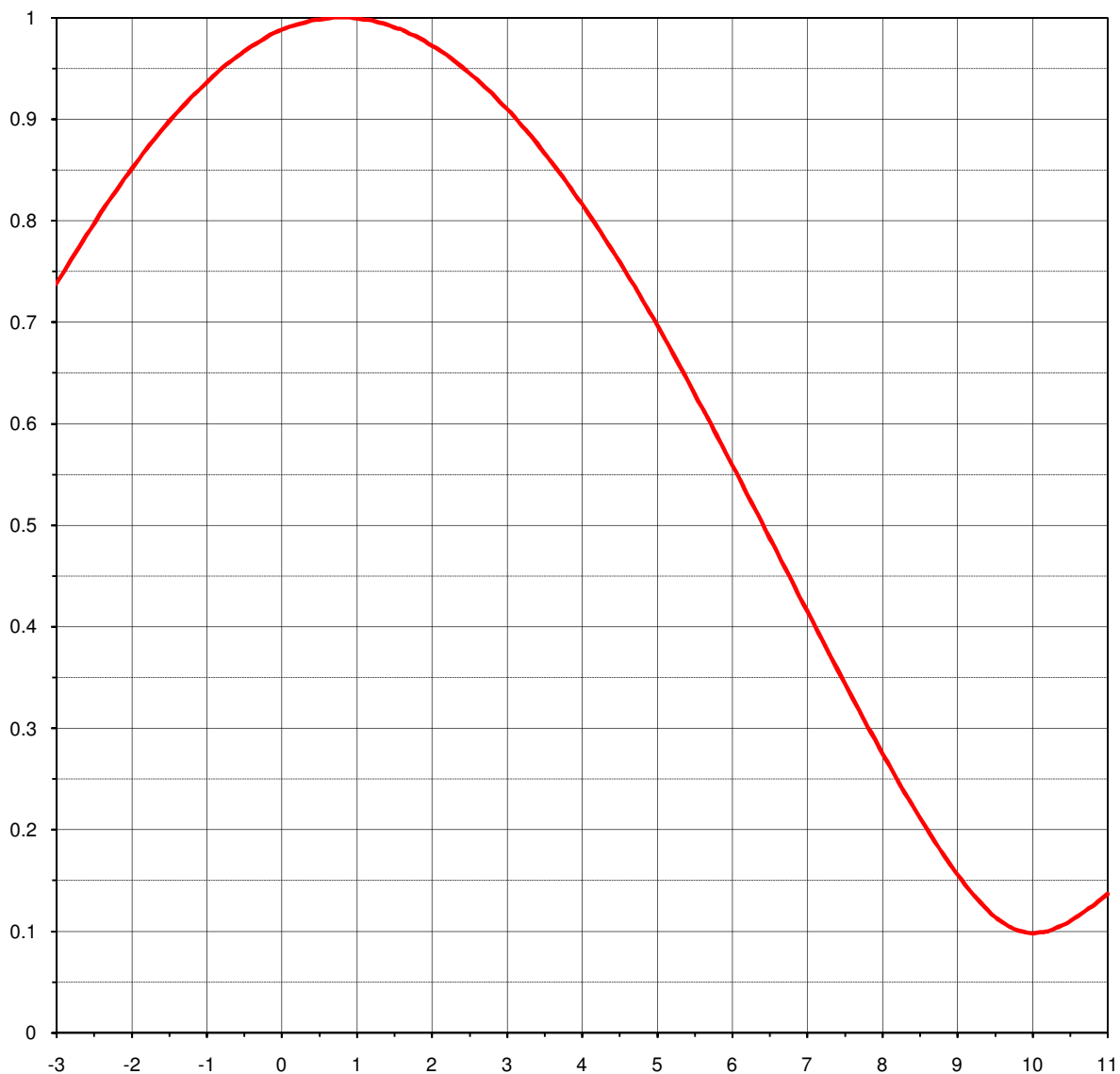
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Antenna Type	THB-C2SP-3/9HD-1		

ELEVATION PATTERN

RMS Gain at Main Lobe	6.60 (8.20 dB)	Beam Tilt	0.80 deg
RMS Gain at Horizontal	6.40 (8.06 dB)	Frequency	195.00 MHz
Calculated / Measured	Calculated	Drawing #	03H066080



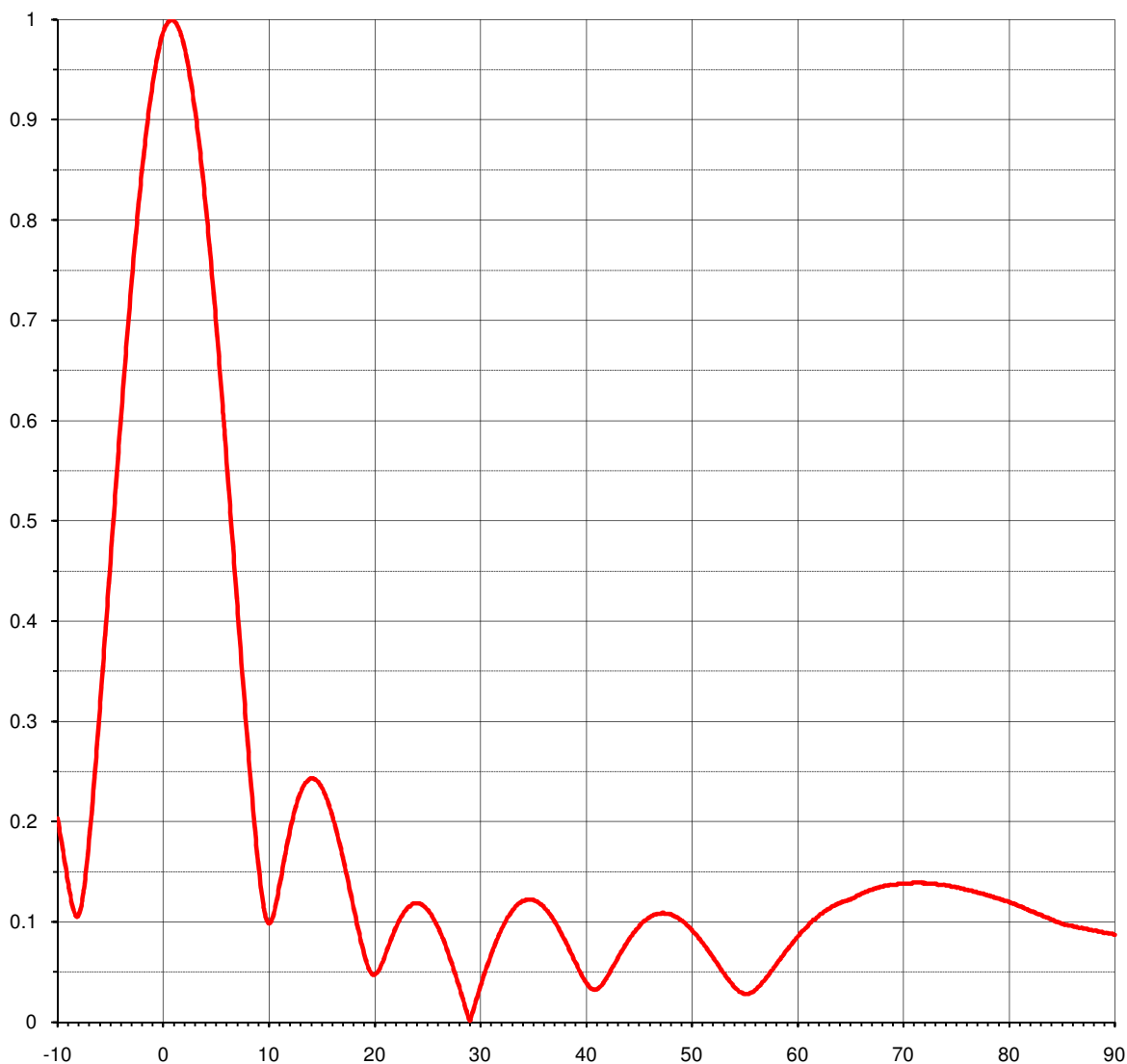
Degrees Below Horizontal



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ELEVATION PATTERN

RMS Gain at Main Lobe	6.60 (8.20 dB)	Beam Tilt	0.80 deg
RMS Gain at Horizontal	6.40 (8.06 dB)	Frequency	195.00 MHz
Calculated / Measured	Calculated	Drawing #	03H066080-90





Proposal Number **C-03754** Revision: **2**
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Call Letters **WWTO-DT** Channel **10**
Location **LaSalle, IL**
Customer **Trinity Broadcast Network**
Antenna Type **THB-C2SP-3/9HD-1**

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **03H066080-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.203	2.4	0.951	10.6	0.110	30.5	0.049	51.0	0.080	71.5	0.139
-9.5	0.171	2.6	0.939	10.8	0.120	31.0	0.064	51.5	0.073	72.0	0.139
-9.0	0.139	2.8	0.925	11.0	0.131	31.5	0.078	52.0	0.066	72.5	0.138
-8.5	0.112	3.0	0.910	11.5	0.160	32.0	0.090	52.5	0.058	73.0	0.138
-8.0	0.107	3.2	0.893	12.0	0.187	32.5	0.101	53.0	0.050	73.5	0.137
-7.5	0.133	3.4	0.876	12.5	0.210	33.0	0.109	53.5	0.043	74.0	0.136
-7.0	0.183	3.6	0.857	13.0	0.227	33.5	0.116	54.0	0.036	74.5	0.135
-6.5	0.245	3.8	0.837	13.5	0.238	34.0	0.120	54.5	0.031	75.0	0.134
-6.0	0.313	4.0	0.816	14.0	0.243	34.5	0.122	55.0	0.028	75.5	0.133
-5.5	0.385	4.2	0.794	14.5	0.242	35.0	0.122	55.5	0.028	76.0	0.132
-5.0	0.459	4.4	0.771	15.0	0.236	35.5	0.120	56.0	0.031	76.5	0.131
-4.5	0.532	4.6	0.747	15.5	0.224	36.0	0.116	56.5	0.036	77.0	0.129
-4.0	0.604	4.8	0.722	16.0	0.209	36.5	0.110	57.0	0.042	77.5	0.128
-3.5	0.673	5.0	0.697	16.5	0.189	37.0	0.102	57.5	0.049	78.0	0.126
-3.0	0.738	5.2	0.670	17.0	0.168	37.5	0.093	58.0	0.056	78.5	0.125
-2.8	0.762	5.4	0.643	17.5	0.144	38.0	0.083	58.5	0.063	79.0	0.123
-2.6	0.786	5.6	0.615	18.0	0.119	38.5	0.072	59.0	0.071	79.5	0.121
-2.4	0.809	5.8	0.587	18.5	0.094	39.0	0.061	59.5	0.077	80.0	0.120
-2.2	0.830	6.0	0.559	19.0	0.072	39.5	0.050	60.0	0.084	80.5	0.118
-2.0	0.851	6.2	0.530	19.5	0.054	40.0	0.041	60.5	0.090	81.0	0.115
-1.8	0.871	6.4	0.502	20.0	0.047	40.5	0.034	61.0	0.095	81.5	0.113
-1.6	0.889	6.6	0.473	20.5	0.052	41.0	0.032	61.5	0.101	82.0	0.111
-1.4	0.906	6.8	0.444	21.0	0.064	41.5	0.036	62.0	0.105	82.5	0.109
-1.2	0.922	7.0	0.415	21.5	0.078	42.0	0.043	62.5	0.109	83.0	0.107
-1.0	0.936	7.2	0.386	22.0	0.092	42.5	0.053	63.0	0.113	83.5	0.104
-0.8	0.950	7.4	0.358	22.5	0.103	43.0	0.062	63.5	0.116	84.0	0.102
-0.6	0.961	7.6	0.330	23.0	0.111	43.5	0.071	64.0	0.118	84.5	0.100
-0.4	0.972	7.8	0.302	23.5	0.116	44.0	0.080	64.5	0.121	85.0	0.098
-0.2	0.981	8.0	0.275	24.0	0.118	44.5	0.088	65.0	0.122	85.5	0.097
0.0	0.988	8.2	0.249	24.5	0.117	45.0	0.094	65.5	0.125	86.0	0.096
0.2	0.993	8.4	0.224	25.0	0.113	45.5	0.100	66.0	0.128	86.5	0.094
0.4	0.997	8.6	0.200	25.5	0.106	46.0	0.104	66.5	0.130	87.0	0.093
0.6	0.999	8.8	0.177	26.0	0.096	46.5	0.107	67.0	0.132	87.5	0.092
0.8	1.000	9.0	0.156	26.5	0.084	47.0	0.108	67.5	0.134	88.0	0.091
1.0	0.999	9.2	0.137	27.0	0.070	47.5	0.108	68.0	0.135	88.5	0.090
1.2	0.997	9.4	0.121	27.5	0.055	48.0	0.108	68.5	0.136	89.0	0.089
1.4	0.993	9.6	0.109	28.0	0.038	48.5	0.105	69.0	0.137	89.5	0.088
1.6	0.988	9.8	0.104	28.5	0.021	49.0	0.102	69.5	0.138	90.0	0.087
1.8	0.981	10.0	0.099	29.0	0.003	49.5	0.098	70.0	0.138		
2.0	0.972	10.2	0.099	29.5	0.015	50.0	0.093	70.5	0.138		
2.2	0.963	10.4	0.103	30.0	0.032	50.5	0.087	71.0	0.139		

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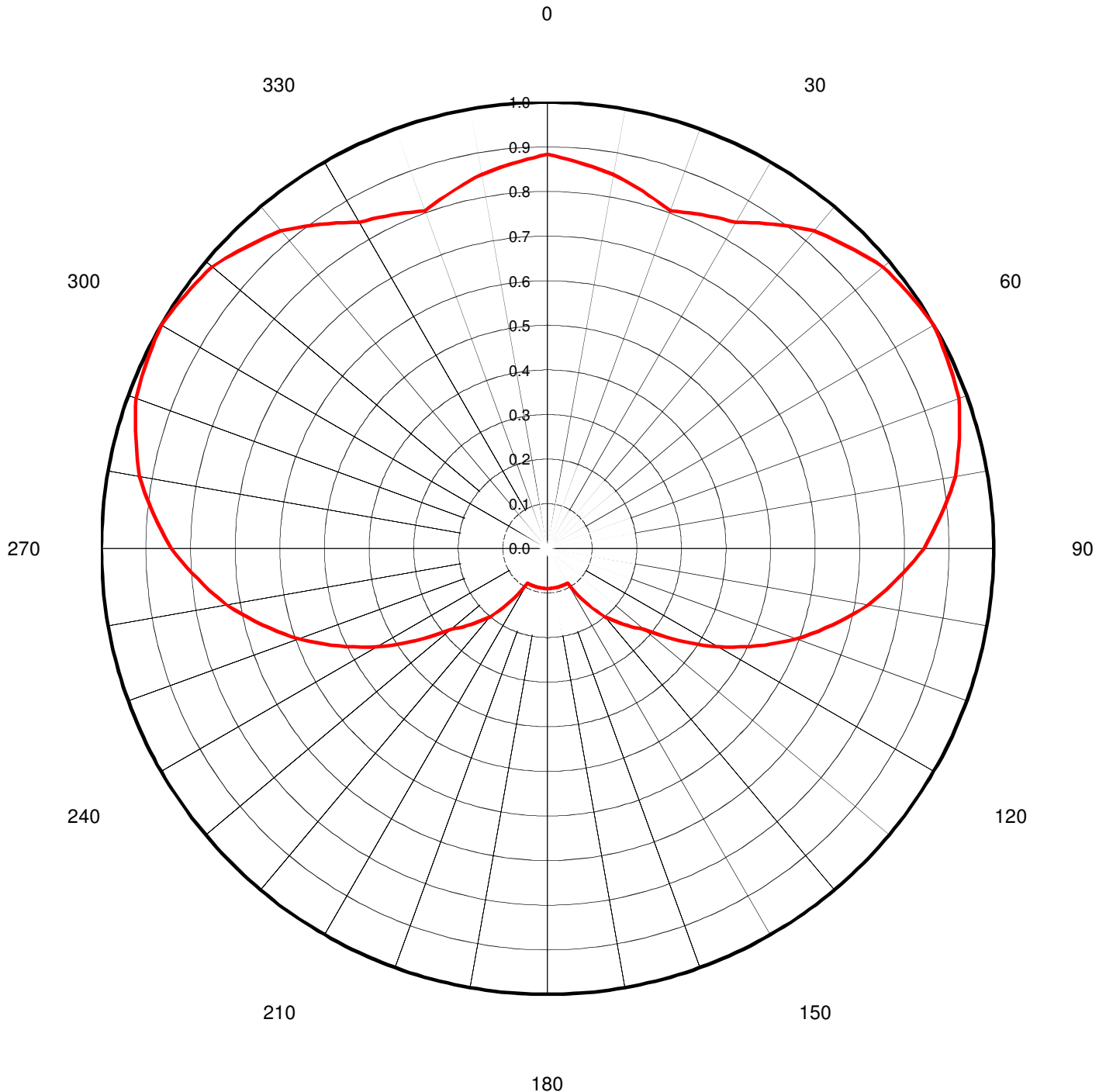
AZIMUTH PATTERN

Gain **1.98**
Calculated / Measured

(2.97 dB)
Calculated

Frequency
Drawing #

195.00 MHz
3BP270





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TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #: **3BP270**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.883	45	0.956	90	0.844	135	0.241	180	0.090	225	0.241	270	0.844	315	0.956
1	0.880	46	0.961	91	0.833	136	0.233	181	0.090	226	0.249	271	0.853	316	0.950
2	0.877	47	0.966	92	0.821	137	0.225	182	0.090	227	0.257	272	0.861	317	0.945
3	0.873	48	0.971	93	0.810	138	0.216	183	0.090	228	0.266	273	0.869	318	0.940
4	0.870	49	0.977	94	0.798	139	0.208	184	0.090	229	0.274	274	0.878	319	0.934
5	0.867	50	0.982	95	0.787	140	0.200	185	0.090	230	0.282	275	0.887	320	0.929
6	0.864	51	0.984	96	0.776	141	0.189	186	0.090	231	0.298	276	0.895	321	0.920
7	0.861	52	0.986	97	0.764	142	0.178	187	0.090	232	0.314	277	0.904	322	0.912
8	0.857	53	0.987	98	0.753	143	0.167	188	0.090	233	0.330	278	0.912	323	0.904
9	0.854	54	0.989	99	0.741	144	0.156	189	0.090	234	0.346	279	0.920	324	0.895
10	0.851	55	0.991	100	0.730	145	0.145	190	0.090	235	0.361	280	0.929	325	0.887
11	0.846	56	0.993	101	0.716	146	0.134	191	0.090	236	0.377	281	0.934	326	0.878
12	0.842	57	0.995	102	0.703	147	0.123	192	0.090	237	0.393	282	0.940	327	0.869
13	0.837	58	0.996	103	0.689	148	0.112	193	0.090	238	0.409	283	0.945	328	0.861
14	0.833	59	0.998	104	0.676	149	0.101	194	0.090	239	0.425	284	0.950	329	0.853
15	0.828	60	1.000	105	0.662	150	0.090	195	0.090	240	0.441	285	0.956	330	0.844
16	0.823	61	0.998	106	0.648	151	0.090	196	0.090	241	0.456	286	0.961	331	0.840
17	0.819	62	0.996	107	0.635	152	0.090	197	0.090	242	0.472	287	0.966	332	0.836
18	0.814	63	0.995	108	0.621	153	0.090	198	0.090	243	0.487	288	0.971	333	0.832
19	0.810	64	0.993	109	0.608	154	0.090	199	0.090	244	0.502	289	0.977	334	0.828
20	0.805	65	0.991	110	0.594	155	0.090	200	0.090	245	0.517	290	0.982	335	0.825
21	0.809	66	0.989	111	0.579	156	0.090	201	0.090	246	0.533	291	0.984	336	0.821
22	0.813	67	0.987	112	0.563	157	0.090	202	0.090	247	0.548	292	0.986	337	0.817
23	0.817	68	0.986	113	0.548	158	0.090	203	0.090	248	0.563	293	0.987	338	0.813
24	0.821	69	0.984	114	0.533	159	0.090	204	0.090	249	0.579	294	0.989	339	0.809
25	0.825	70	0.982	115	0.517	160	0.090	205	0.090	250	0.594	295	0.991	340	0.805
26	0.828	71	0.977	116	0.502	161	0.090	206	0.090	251	0.608	296	0.993	341	0.810
27	0.832	72	0.971	117	0.487	162	0.090	207	0.090	252	0.621	297	0.995	342	0.814
28	0.836	73	0.966	118	0.472	163	0.090	208	0.090	253	0.635	298	0.996	343	0.819
29	0.840	74	0.961	119	0.456	164	0.090	209	0.090	254	0.648	299	0.998	344	0.823
30	0.844	75	0.956	120	0.441	165	0.090	210	0.090	255	0.662	300	1.000	345	0.828
31	0.853	76	0.950	121	0.425	166	0.090	211	0.101	256	0.676	301	0.998	346	0.833
32	0.861	77	0.945	122	0.409	167	0.090	212	0.112	257	0.689	302	0.996	347	0.837
33	0.869	78	0.940	123	0.393	168	0.090	213	0.123	258	0.703	303	0.995	348	0.842
34	0.878	79	0.934	124	0.377	169	0.090	214	0.134	259	0.716	304	0.993	349	0.846
35	0.887	80	0.929	125	0.361	170	0.090	215	0.145	260	0.730	305	0.991	350	0.851
36	0.895	81	0.920	126	0.346	171	0.090	216	0.156	261	0.741	306	0.989	351	0.854
37	0.904	82	0.912	127	0.330	172	0.090	217	0.167	262	0.753	307	0.987	352	0.857
38	0.912	83	0.904	128	0.314	173	0.090	218	0.178	263	0.764	308	0.986	353	0.861
39	0.920	84	0.895	129	0.298	174	0.090	219	0.189	264	0.776	309	0.984	354	0.864
40	0.929	85	0.887	130	0.282	175	0.090	220	0.200	265	0.787	310	0.982	355	0.867
41	0.934	86	0.878	131	0.274	176	0.090	221	0.208	266	0.798	311	0.977	356	0.870
42	0.940	87	0.869	132	0.266	177	0.090	222	0.216	267	0.810	312	0.971	357	0.873
43	0.945	88	0.861	133	0.257	178	0.090	223	0.225	268	0.821	313	0.966	358	0.877
44	0.950	89	0.853	134	0.249	179	0.090	224	0.233	269	0.833	314	0.961	359	0.880

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