



Specifications #: **842:7:110918** Antenna Type: **THA-C3-5H/15H-1**
 Call Letters: **KSWK** Location: **Lakin, KS**

Channel: **8 DTV**

Electrical Specifications		Value		Remarks	
		Ratio	dB		
RMS Gain at Main Lobe over Halfwave Dipole	Hpol				
	Vpol				
RMS Gain at Horizontal over Halfwave Dipole	Hpol				
	Vpol				
Peak Directional Gain over Halfwave Dipole	Hpol	10.2	10.09		
	Vpol				
Peak Directional Gain at Horizontal over Halfwave Dipole	Hpol	10.1	10.04		
	Vpol				
Circularity Directional		dB			
Axial Ratio		dB			
Beam Tilt		0.50 deg			
Average Power	DTV	25 kW	13.98 dBk	pressurize to 5 psi with dry air or Nitrogen	
Antenna Input:	T/L	3-1/8 in	50.0 ohm	Type:	EIA/DCA
Maximum Antenna Input VSWR		Channel 1.10 : 1			
Patterns	Azimuth	THA-C3			
	Elevation	5H060050	5H060050-90		
Mechanical Specifications		Metric	English		1/2" ICE
Height with Lightning Protector	H4	m	ft	Side mounted	
Height Less Lightning Protector	H2	8.9 m	29.3 ft		
Height of Center of Radiation	H3	4.5 m	14.7 ft		
Basic Wind Speed	V	136.8 km/h	85 mi/h	TIA/EIA-222-F.	
Force Coeff. x Projected Area	CaAc	11.06 m²	119 ft²	Includes Mounts	206 ft²
Moment Arm	D1	m	ft		
Force Coeff. x Projected Area	CaAc	m²	ft²		
Moment Arm	D3	m	ft		
Pole Bury Length	D2	m	ft		
Weight	W	1.1 t	2,450 lbs	Includes Mounts	4,400 lbs
Antenna designed in accordance with AISC specifications for design of structural steel for building as prescribed by TIA/EIA-222-F. For mechanical details see Installation drawing, P939-5212-399					

NOTE:

Prepared By : SRR
 Original Date : 5-Sep-02

Approved By : RN
 Rev. Date: 14-Nov-02



Specifications Number	842:7:110918	1	1
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Call Letters	KSWK	Channel	8
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Antenna Type	THA-C3-5H/15H-1		

SYSTEM SUMMARY

Antenna:

Type:	THA-C3-5H/15H-1	ERP:	100 kW	H Pol	(20.00 dBk)
Channel:	8	Gain*:	10.2		(10.09 dB)
Location:	Lakin, KS	Input Power:	9.8 kW		(9.91 dBk)

Transmission Line:

Type:	Flexible	Attenuation:	0.88 dB
Size:	4 in	Efficiency:	81.6%
Impedance:	50 ohm		
Length:	550 ft		167.6 m

Transmitter:

Power Required: 12.0 kW (10.80 dBk)

* Gain is with respect to half wave dipole.

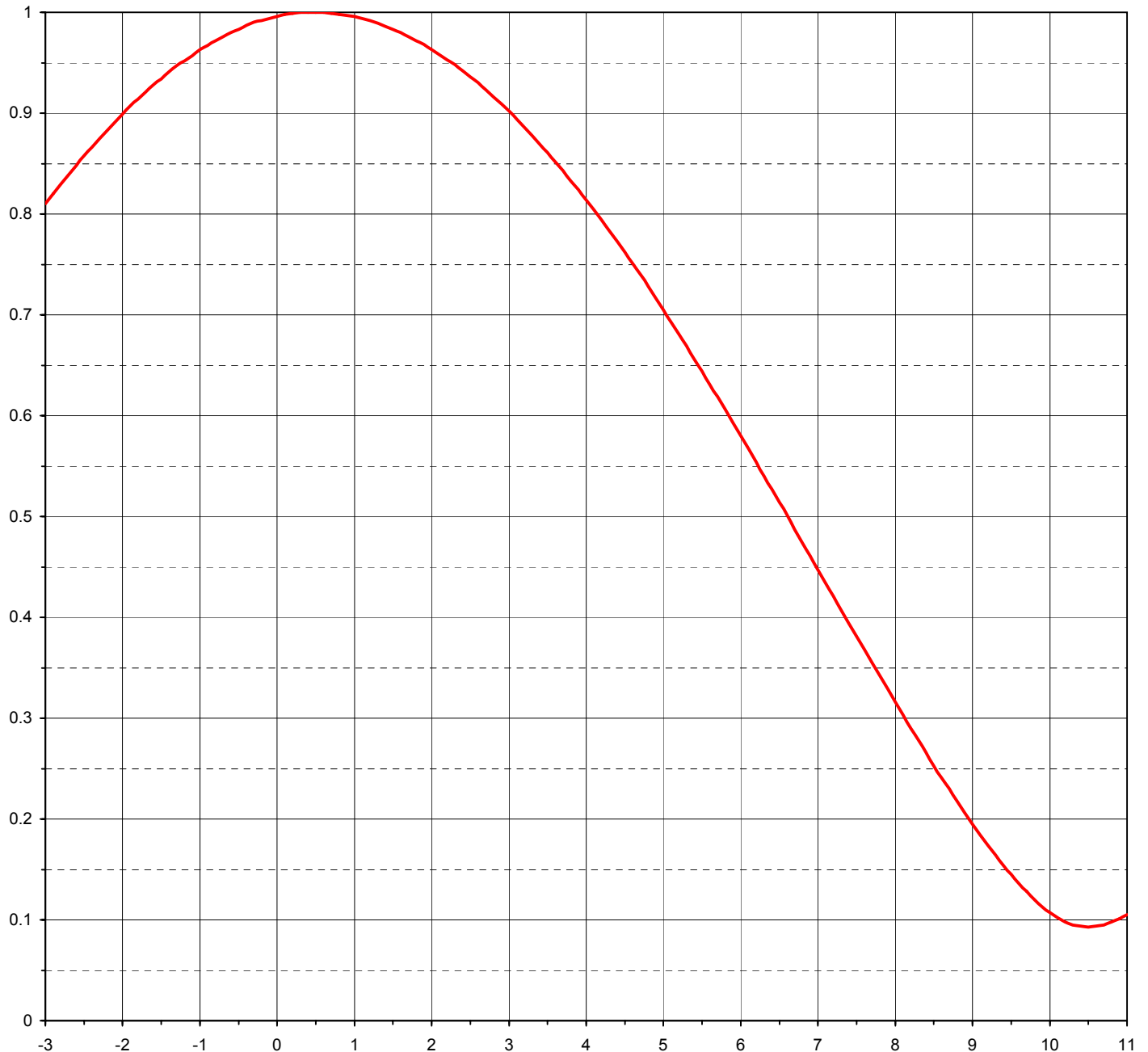


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ELEVATION PATTERN

RMS Gain at Main Lobe	6.00	(7.78 dB)
RMS Gain at Horizontal	5.90	(7.71 dB)
Calculated / Measured	Calculated	

Beam Tilt	0.50 deg
Frequency	183.00 MHz
Drawing #	5H060050



Degrees Below Horizontal

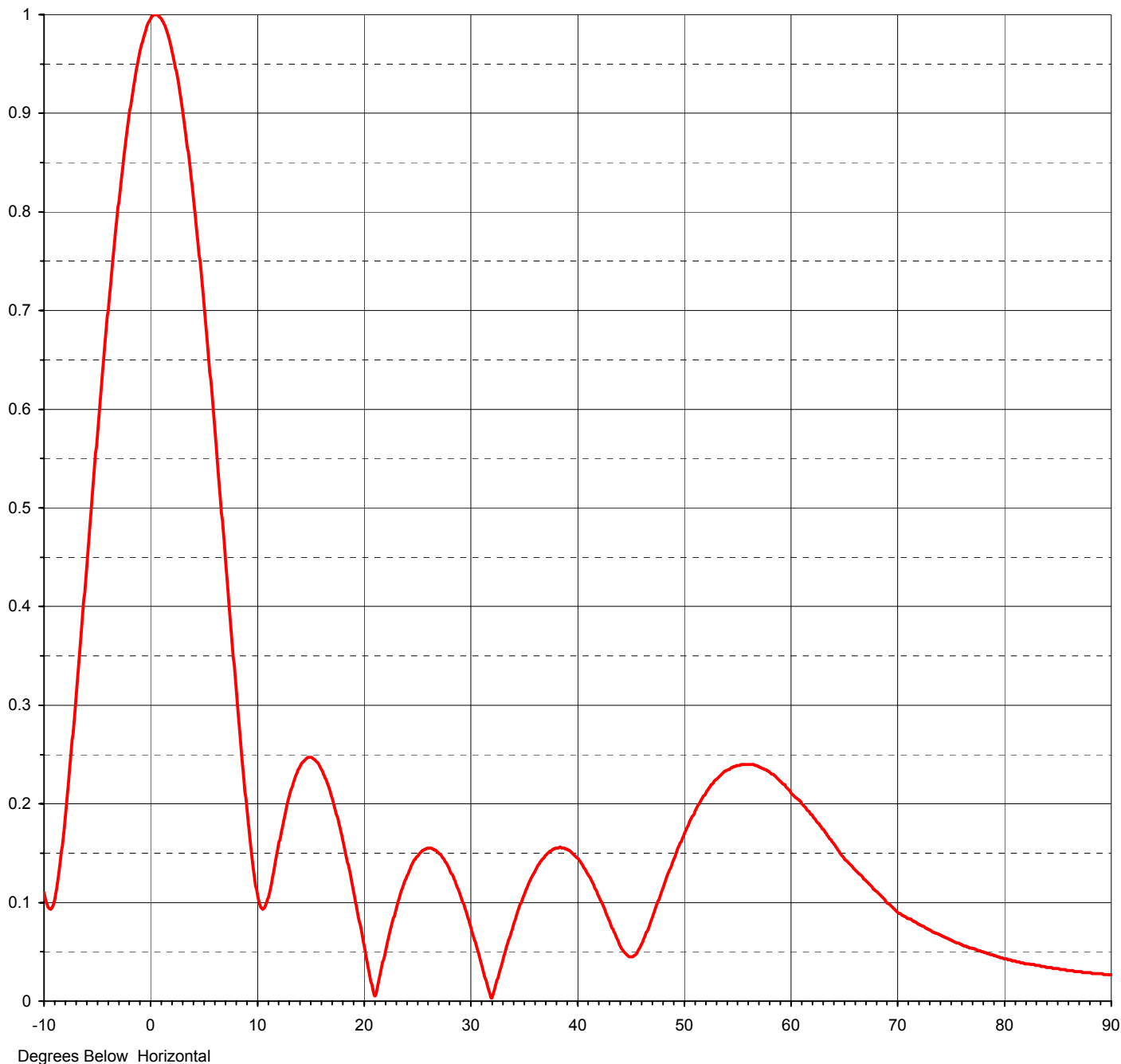


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ELEVATION PATTERN

RMS Gain at Main Lobe	6.00	(7.78 dB)
RMS Gain at Horizontal	5.90	(7.71 dB)
Calculated / Measured	Calculated	

Beam Tilt	0.50 deg
Frequency	183.00 MHz
Drawing #	5H060050-90





Specifications Number **842:7:110918** 1 **1**
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 Customer **Smoky Hills Public TV**
 Antenna Type **THA-C3-5H/15H-1**

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **5H060050-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.110	2.4	0.942	10.6	0.093	30.5	0.060	51.0	0.190	71.5	0.081
-9.5	0.094	2.6	0.930	10.8	0.095	31.0	0.041	51.5	0.200	72.0	0.078
-9.0	0.103	2.8	0.916	11.0	0.101	31.5	0.021	52.0	0.209	72.5	0.075
-8.5	0.138	3.0	0.902	11.5	0.125	32.0	0.003	52.5	0.217	73.0	0.072
-8.0	0.188	3.2	0.886	12.0	0.153	32.5	0.019	53.0	0.224	73.5	0.069
-7.5	0.246	3.4	0.869	12.5	0.180	33.0	0.038	53.5	0.229	74.0	0.067
-7.0	0.309	3.6	0.852	13.0	0.204	33.5	0.057	54.0	0.233	74.5	0.064
-6.5	0.374	3.8	0.833	13.5	0.223	34.0	0.074	54.5	0.237	75.0	0.062
-6.0	0.441	4.0	0.814	14.0	0.236	34.5	0.091	55.0	0.239	75.5	0.059
-5.5	0.509	4.2	0.794	14.5	0.244	35.0	0.106	55.5	0.240	76.0	0.057
-5.0	0.575	4.4	0.773	15.0	0.247	35.5	0.119	56.0	0.240	76.5	0.055
-4.5	0.639	4.6	0.751	15.5	0.244	36.0	0.130	56.5	0.240	77.0	0.053
-4.0	0.700	4.8	0.728	16.0	0.237	36.5	0.139	57.0	0.238	77.5	0.051
-3.5	0.757	5.0	0.705	16.5	0.225	37.0	0.147	57.5	0.236	78.0	0.050
-3.0	0.810	5.2	0.681	17.0	0.209	37.5	0.152	58.0	0.233	78.5	0.048
-2.8	0.830	5.4	0.656	17.5	0.190	38.0	0.155	58.5	0.229	79.0	0.046
-2.6	0.848	5.6	0.631	18.0	0.168	38.5	0.156	59.0	0.224	79.5	0.045
-2.4	0.866	5.8	0.606	18.5	0.143	39.0	0.154	59.5	0.219	80.0	0.043
-2.2	0.883	6.0	0.580	19.0	0.117	39.5	0.151	60.0	0.213	80.5	0.042
-2.0	0.899	6.2	0.554	19.5	0.089	40.0	0.146	60.5	0.207	81.0	0.041
-1.8	0.914	6.4	0.527	20.0	0.061	40.5	0.139	61.0	0.202	81.5	0.039
-1.6	0.928	6.6	0.501	20.5	0.033	41.0	0.130	61.5	0.196	82.0	0.038
-1.4	0.941	6.8	0.474	21.0	0.007	41.5	0.120	62.0	0.189	82.5	0.037
-1.2	0.952	7.0	0.447	21.5	0.022	42.0	0.108	62.5	0.182	83.0	0.036
-1.0	0.963	7.2	0.421	22.0	0.046	42.5	0.096	63.0	0.175	83.5	0.035
-0.8	0.972	7.4	0.394	22.5	0.070	43.0	0.083	63.5	0.168	84.0	0.034
-0.6	0.980	7.6	0.368	23.0	0.090	43.5	0.070	64.0	0.161	84.5	0.033
-0.4	0.987	7.8	0.342	23.5	0.109	44.0	0.058	64.5	0.152	85.0	0.033
-0.2	0.992	8.0	0.316	24.0	0.124	44.5	0.049	65.0	0.144	85.5	0.032
0.0	0.996	8.2	0.290	24.5	0.137	45.0	0.045	65.5	0.139	86.0	0.031
0.2	0.999	8.4	0.266	25.0	0.146	45.5	0.047	66.0	0.133	86.5	0.030
0.4	1.000	8.6	0.241	25.5	0.152	46.0	0.056	66.5	0.128	87.0	0.030
0.6	1.000	8.8	0.218	26.0	0.155	46.5	0.068	67.0	0.122	87.5	0.029
0.8	0.998	9.0	0.195	26.5	0.154	47.0	0.082	67.5	0.117	88.0	0.029
1.0	0.996	9.2	0.174	27.0	0.151	47.5	0.097	68.0	0.111	88.5	0.028
1.2	0.992	9.4	0.154	27.5	0.145	48.0	0.112	68.5	0.106	89.0	0.028
1.4	0.986	9.6	0.136	28.0	0.136	48.5	0.127	69.0	0.100	89.5	0.027
1.6	0.980	9.8	0.128	28.5	0.124	49.0	0.141	69.5	0.095	90.0	0.027
1.8	0.972	10.0	0.113	29.0	0.111	49.5	0.155	70.0	0.090		
2.0	0.963	10.2	0.102	29.5	0.095	50.0	0.167	70.5	0.087		
2.2	0.953	10.4	0.095	30.0	0.078	50.5	0.179	71.0	0.084		

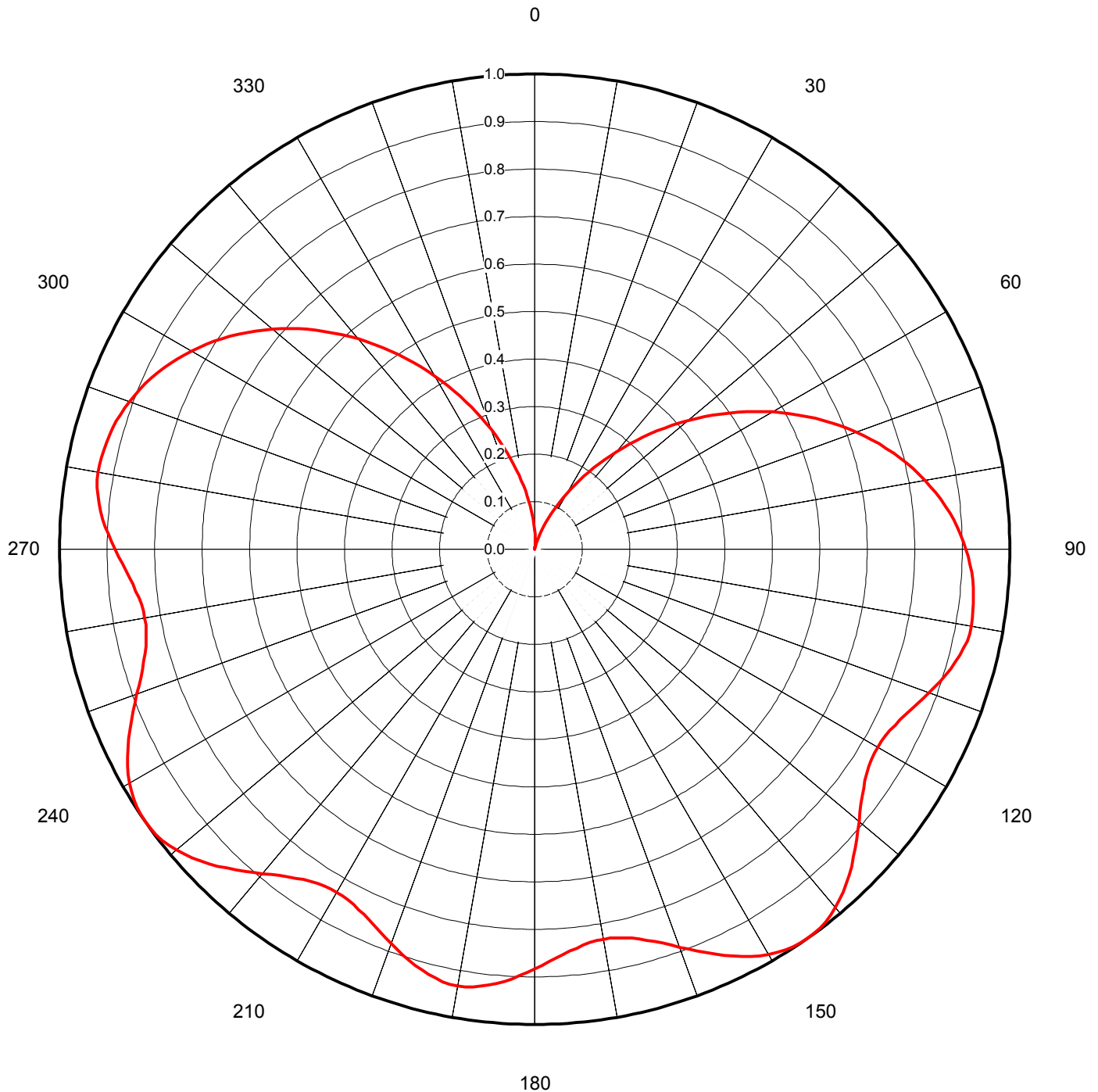


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AZIMUTH PATTERN

Gain **1.70** **(2.30 dB)**
Calculated / Measured **Calculated**

Frequency **183.00 MHz**
Drawing # **THA-C3**





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 Location **Lakin, KS**
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TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #: **THA-C3**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.040	45	0.343	90	0.908	135	0.943	180	0.883	225	0.943	270	0.883	315	0.652
1	0.033	46	0.359	91	0.913	136	0.953	181	0.891	226	0.953	271	0.891	316	0.637
2	0.027	47	0.374	92	0.917	137	0.962	182	0.898	227	0.962	272	0.898	317	0.623
3	0.021	48	0.390	93	0.921	138	0.970	183	0.905	228	0.970	273	0.905	318	0.608
4	0.016	49	0.405	94	0.924	139	0.978	184	0.911	229	0.978	274	0.911	319	0.593
5	0.012	50	0.421	95	0.927	140	0.984	185	0.917	230	0.984	275	0.917	320	0.577
6	0.008	51	0.437	96	0.929	141	0.990	186	0.922	231	0.990	276	0.922	321	0.562
7	0.005	52	0.453	97	0.931	142	0.994	187	0.927	232	0.994	277	0.927	322	0.547
8	0.002	53	0.468	98	0.932	143	0.997	188	0.930	233	0.997	278	0.930	323	0.531
9	0.001	54	0.484	99	0.933	144	0.999	189	0.932	234	0.999	279	0.932	324	0.516
10	0.000	55	0.500	100	0.933	145	1.000	190	0.933	235	1.000	280	0.933	325	0.500
11	0.001	56	0.516	101	0.932	146	0.999	191	0.932	236	0.999	281	0.933	326	0.484
12	0.002	57	0.531	102	0.930	147	0.997	192	0.930	237	0.997	282	0.932	327	0.468
13	0.005	58	0.547	103	0.927	148	0.994	193	0.927	238	0.994	283	0.931	328	0.453
14	0.008	59	0.562	104	0.922	149	0.990	194	0.922	239	0.990	284	0.929	329	0.437
15	0.012	60	0.577	105	0.917	150	0.984	195	0.917	240	0.984	285	0.927	330	0.421
16	0.016	61	0.593	106	0.911	151	0.978	196	0.911	241	0.978	286	0.924	331	0.405
17	0.021	62	0.608	107	0.905	152	0.970	197	0.905	242	0.970	287	0.921	332	0.390
18	0.027	63	0.623	108	0.898	153	0.962	198	0.898	243	0.962	288	0.917	333	0.374
19	0.033	64	0.637	109	0.891	154	0.953	199	0.891	244	0.953	289	0.913	334	0.359
20	0.040	65	0.652	110	0.883	155	0.943	200	0.883	245	0.943	290	0.908	335	0.343
21	0.047	66	0.666	111	0.876	156	0.933	201	0.876	246	0.933	291	0.902	336	0.328
22	0.055	67	0.680	112	0.868	157	0.923	202	0.868	247	0.923	292	0.897	337	0.313
23	0.064	68	0.693	113	0.861	158	0.912	203	0.861	248	0.912	293	0.890	338	0.298
24	0.072	69	0.707	114	0.855	159	0.901	204	0.855	249	0.901	294	0.884	339	0.283
25	0.082	70	0.720	115	0.849	160	0.891	205	0.849	250	0.891	295	0.877	340	0.268
26	0.092	71	0.733	116	0.844	161	0.881	206	0.844	251	0.881	296	0.869	341	0.254
27	0.102	72	0.746	117	0.839	162	0.872	207	0.839	252	0.872	297	0.861	342	0.239
28	0.113	73	0.758	118	0.836	163	0.863	208	0.836	253	0.863	298	0.852	343	0.225
29	0.124	74	0.770	119	0.834	164	0.855	209	0.834	254	0.855	299	0.844	344	0.212
30	0.135	75	0.782	120	0.833	165	0.849	210	0.833	255	0.849	300	0.834	345	0.198
31	0.147	76	0.793	121	0.834	166	0.843	211	0.834	256	0.843	301	0.825	346	0.185
32	0.159	77	0.804	122	0.836	167	0.839	212	0.836	257	0.839	302	0.814	347	0.172
33	0.172	78	0.814	123	0.839	168	0.836	213	0.839	258	0.836	303	0.804	348	0.159
34	0.185	79	0.825	124	0.843	169	0.834	214	0.843	259	0.834	304	0.793	349	0.147
35	0.198	80	0.834	125	0.849	170	0.833	215	0.849	260	0.833	305	0.782	350	0.135
36	0.212	81	0.844	126	0.855	171	0.834	216	0.855	261	0.834	306	0.770	351	0.124
37	0.225	82	0.852	127	0.863	172	0.836	217	0.863	262	0.836	307	0.758	352	0.113
38	0.239	83	0.861	128	0.872	173	0.839	218	0.872	263	0.839	308	0.746	353	0.102
39	0.254	84	0.869	129	0.881	174	0.844	219	0.881	264	0.844	309	0.733	354	0.092
40	0.268	85	0.877	130	0.891	175	0.849	220	0.891	265	0.849	310	0.720	355	0.082
41	0.283	86	0.884	131	0.901	176	0.855	221	0.901	266	0.855	311	0.707	356	0.072
42	0.298	87	0.890	132	0.912	177	0.861	222	0.912	267	0.861	312	0.693	357	0.064
43	0.313	88	0.897	133	0.923	178	0.868	223	0.923	268	0.868	313	0.680	358	0.055
44	0.328	89	0.902	134	0.933	179	0.876	224	0.933	269	0.876	314	0.666	359	0.047