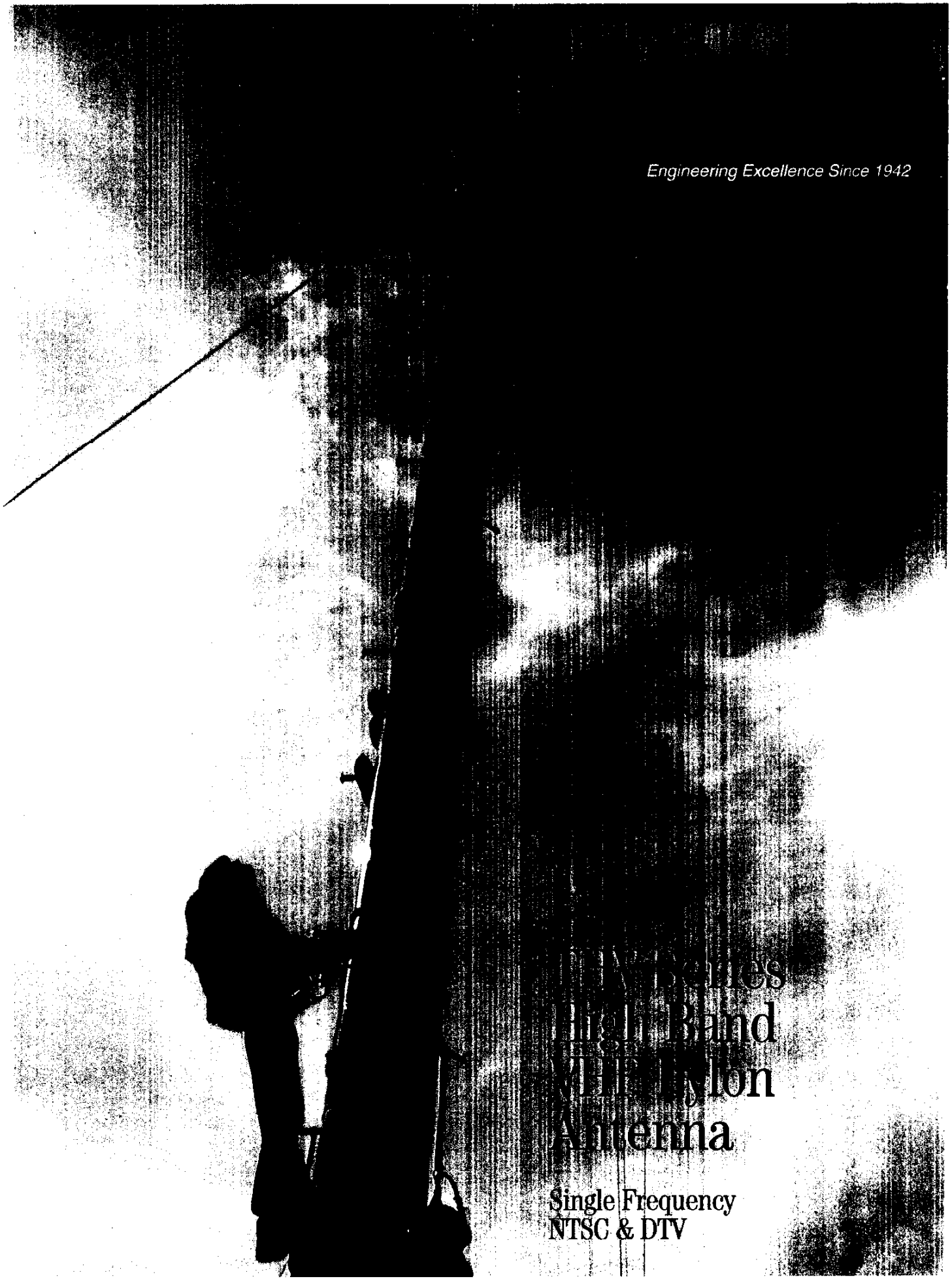


High Band
Antenna

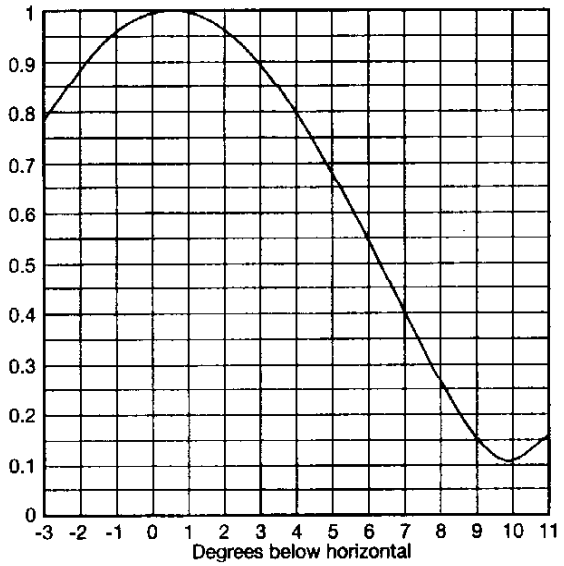
Single Frequency
NTSC & DTV

Standard Elevation Patterns

THV-6A

RMS Gain at Main Lobe 6.0 (7.78 dB)
RMS Gain at Horizontal 5.9 (7.71 dB)
Calculated / Measured Calculated

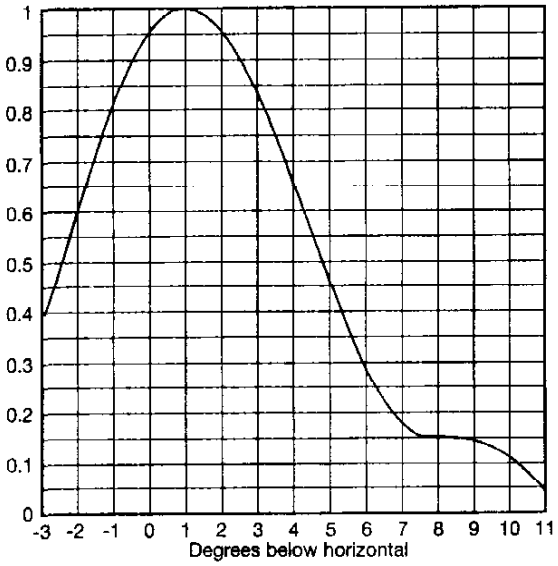
Beam Tilt 0.50 Degrees
Drawing # 06V060050



THV-10A

RMS Gain at Main Lobe 10.0 (10.00 dB)
RMS Gain at Horizontal 9.1 (9.59 dB)
Calculated / Measured Calculated

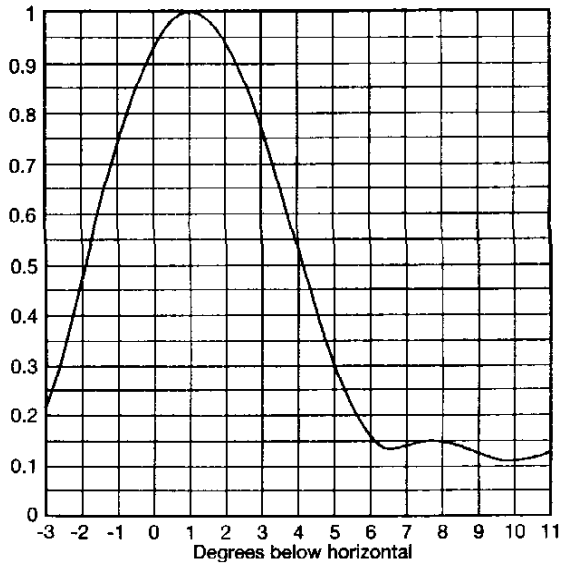
Beam Tilt 1.00 Degrees
Drawing # 10V100100



THV-12A

RMS Gain at Main Lobe 12.0 (10.79 dB)
RMS Gain at Horizontal 10.4 (10.17 dB)
Calculated / Measured Calculated

Beam Tilt 1.00 Degrees
Drawing # 12V120100



Mechanical Specifications

Cardioid Pattern

NOTE: Typical loads for Cardioid Pattern
x = Channel number
R = Radomed

H2 - Overall height without lightning protection
H3 - Centerline of radiation
H4 - Overall height with lightning protection

Side Mount

			RS-222-C		TIA/EIA-222-F	
	Channel	H2 (ft)	H3 (ft)	W (lbs)	A (ft^2)	CaAc (ft^2)
THV-6Ax-R	7	44.0	24.2	1600	56	102
	8	42.6	23.4	1550	54	99
	9	41.3	22.6	1510	52	96
	10	40.1	21.9	1470	51	93
	11	38.9	21.3	1440	49	90
	12	37.9	20.7	1400	48	88
	13	36.8	20.1	1370	47	85
THV-10Ax-R	7	61.7	30.8	2180	84	154
	8	59.8	29.9	2110	81	149
	9	58.0	29.0	2060	79	144
	10	56.3	28.1	2000	77	140
	11	54.7	27.4	1950	74	136
	12	53.2	26.6	1900	72	132
	13	51.8	25.9	1860	70	129
THV-12Ax-R	7	72.8	36.4	2530	100	183
	8	70.5	35.3	2460	97	177
	9	68.4	34.2	2390	94	171
	10	66.4	33.2	2330	91	166
	11	64.5	32.3	2270	88	161
	12	62.7	31.4	2210	86	157
	13	61.1	30.5	2160	83	153

Top Mount

						RS-222-C		TIA/EIA-222-F		
	Channel	H4 (ft)	H2 (ft)	H3 (ft)	W (lbs)	A (ft^2)	D1 (ft)	CaAc (ft^2)	D1 (ft)	Limits
THV-6Ax-R	7	48.0	44.0	24.2	7900	58	23.9	55	24.3	120 psf
	8	46.6	42.6	23.4	7660	57	23.2	54	23.6	or
	9	45.3	41.3	22.6	7440	55	22.5	52	22.9	135 mph
	10	44.1	40.1	21.9	7230	53	21.8	51	22.3	bws
	11	42.9	38.9	21.3	7030	52	21.2	49	21.7	
	12	41.9	37.9	20.7	6850	51	20.7	48	21.1	
	13	40.8	36.8	20.1	6670	49	20.1	47	20.5	
THV-10Ax-R	7	65.7	61.7	30.8	10870	87	31.8	82	32.0	50 psf
	8	63.8	59.8	29.9	10550	84	30.9	79	31.1	or
	9	62.0	58.0	29.0	10240	81	30.0	77	30.2	90 mph
	10	60.3	56.3	28.1	9960	79	29.1	75	29.3	bws
	11	58.7	54.7	27.4	9690	77	28.3	73	28.5	
	12	57.2	53.2	26.6	9430	75	27.6	71	27.8	
	13	55.8	51.8	25.9	9190	73	26.9	69	27.1	
THV-12Ax-R	7	76.8	72.8	36.4	12760	102	37.4	96	37.6	75 mph
	8	74.5	70.5	35.3	12370	99	36.2	93	36.4	bws
	9	72.4	68.4	34.2	12010	96	35.2	91	35.4	
	10	70.4	66.4	33.2	11670	93	34.2	88	34.4	
	11	68.5	64.5	32.3	11350	91	33.2	86	33.4	
	12	66.7	62.7	31.4	11050	88	32.3	83	32.5	
	13	65.1	61.1	30.5	10180	86	31.5	81	31.7	

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COMMUNICATIONS

Engineering Excellence Since 1942

Low Windload, Economical

VHF Antenna for single frequency high band operations

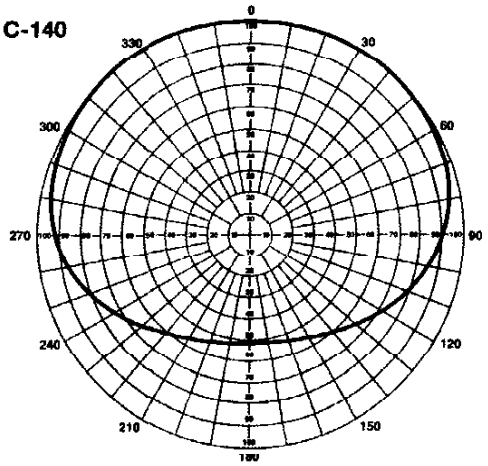
- Top or Side Mounting Options
- Low Windload/Economical Design
- Available in Directional Configurations with custom azimuth patterns available
- Elevation Gains from 6.0 (7.78dB) to 12.0 (10.79dB)
- Peak Gains to 22.8 (13.58dB)
- Full Lexan® Radome Standard
- High Input Power Handling
- Ideal for NTSC and DTV Applications
- Custom azimuth patterns available

The THV antenna is designed for directional high-band VHF applications in both top and side-mounted configurations. The THV utilizes the simplicity and reliability of pylon technology. This antenna combines high power handling, pattern diversity (elevation and azimuth), and Dielectric's conservative design approach to produce a superior product for single frequency high band operations.

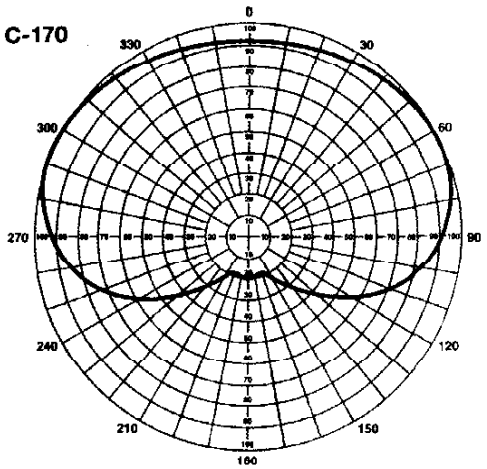
The THV azimuth pattern can be custom designed to fit a variety of applications, catering to facilities proposing maximization for DTV, those with protection requirements or those wishing to focus the energy towards the market of interest.

Typical Azimuth Patterns

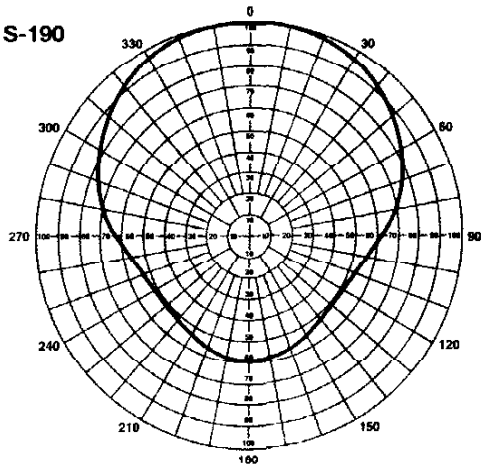
C-140



C-170



S-190



Proposal Number	**DCA-9794**		
Date	**18-Jan-02**		
Call Letters	**WBNA-DT**	Channel	**8**
Location	**Louisville, KY**		
Customer	**Paxson**		
Antenna Type	**THV-6A8-R S170**		

SYSTEM SUMMARY

Antenna:

			H Pol	
Type:	**THV-6A8-R S170**	ERP:	**27 kW**	**(14.31 dBk)**
Channel:	**8**	Peak Gain*:	**10.2**	**(10.09 dB)**
Location:	**Louisville, KY**	Input Power:	**2.6 kW**	**(4.23 dBk)**

Transmission Line:

Type:	**EIA/DCA**	Attenuation:		**0.60 dB**
Size:	**3-1/8 in**	Efficiency:	**87.1%**	
Impedance:	**50 ohm**			
Length:	**450 ft**	**137.2 m**		

Transmitter:

Power Required:	**3.0 kW**	**(4.83 dBk)**

* Gain is with respect to half wave dipole.

Proposal #: **DCA-9794** Antenna Type: **THV-6A8-R S170** Channel: **8 DTV**

Call Letters: **WBNA-DT** Location: **Louisville, KY**

Electrical Specifications		Value Ratio	Value dB	Remarks
RMS Gain at Main Lobe over Halfwave Dipole	Hpol	6.0	7.78	
	Vpol			
RMS Gain at Horizontal over Halfwave Dipole	Hpol	5.9	7.71	
	Vpol			
Peak Directional Gain over Halfwave Dipole	Hpol	10.2	10.09	
	Vpol			
Peak Directional Gain at Horizontal over Halfwave Dipole	Hpol	10.0	10.00	
	Vpol			
Circularity		dB		
Axial Ratio		dB		
Beam Tilt		0.75 deg		
Average Power DTV		30 kW	14.77 dBk	
Antenna Input T/L		3-1/8 in	50.0 ohm	Type: EIA/DCA
Maximum Antenna Input VSWR		Channel	1.08 : 1	
Patterns	Azimuth	THV-S170-8		
	Elevation	06V600075	06V600075-90	

Mechanical Specifications		Metric	English		Input Tee
Height with Lightning Protector	H4	m	ft	**Side mounted**	
Height Less Lightning Protector	H2	13.0 m	42.6 ft		10.0 ft
Height of Center of Radiation	H3	7.1 m	23.4 ft		
Basic Wind Speed	V	128.7 km/h	80 mi/h	TIA/EIA-222-F.	
Force Coeff. x Projected Area	CaAc	6.91 m^2	74.4 ft^2	Excludes Mounts	9.2 ft^2
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	1,400 lbs	Excludes Mounts	125 lbs
Radome					

Antenna designed in accordance with AISC specifications for design of structural steel for building as prescribed by TIA/EIA-222-F.

NOTE:

Prepared By : SWB RMS Approved By : AJS

Original Date : 18-Jan-02

Proposal Number	**DCA-9794**
Date	**18-Jan-02**
Call Letters	**WBNA-DT** Channel **8**
Location	**Louisville, KY**
Customer	**Paxson**
Antenna Type	**THV-6A8-R S170**

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #: **THV-S170-8**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.668	45	0.610	90	0.670	135	0.895	180	1.000	225	0.895	270	0.670	315	0.610
1	0.668	46	0.609	91	0.675	136	0.900	181	1.000	226	0.891	271	0.666	316	0.612
2	0.668	47	0.608	92	0.679	137	0.904	182	1.000	227	0.887	272	0.662	317	0.613
3	0.668	48	0.606	93	0.683	138	0.908	183	0.999	228	0.882	273	0.658	318	0.615
4	0.667	49	0.605	94	0.688	139	0.912	184	0.999	229	0.877	274	0.654	319	0.616
5	0.667	50	0.604	95	0.693	140	0.916	185	0.999	230	0.873	275	0.650	320	0.618
6	0.667	51	0.603	96	0.698	141	0.920	186	0.998	231	0.868	276	0.646	321	0.620
7	0.666	52	0.603	97	0.702	142	0.924	187	0.997	232	0.863	277	0.643	322	0.621
8	0.665	53	0.602	98	0.707	143	0.928	188	0.997	233	0.858	278	0.639	323	0.623
9	0.665	54	0.601	99	0.712	144	0.932	189	0.996	234	0.853	279	0.636	324	0.625
10	0.664	55	0.601	100	0.717	145	0.935	190	0.995	235	0.848	280	0.633	325	0.627
11	0.663	56	0.600	101	0.722	146	0.939	191	0.993	236	0.843	281	0.630	326	0.629
12	0.662	57	0.600	102	0.728	147	0.942	192	0.992	237	0.838	282	0.627	327	0.630
13	0.661	58	0.600	103	0.733	148	0.946	193	0.991	238	0.833	283	0.624	328	0.632
14	0.660	59	0.600	104	0.738	149	0.949	194	0.989	239	0.828	284	0.621	329	0.634
15	0.659	60	0.600	105	0.743	150	0.952	195	0.988	240	0.823	285	0.619	330	0.636
16	0.658	61	0.600	106	0.748	151	0.955	196	0.986	241	0.818	286	0.617	331	0.638
17	0.656	62	0.600	107	0.754	152	0.958	197	0.984	242	0.812	287	0.614	332	0.639
18	0.655	63	0.601	108	0.759	153	0.961	198	0.983	243	0.807	288	0.612	333	0.641
19	0.654	64	0.602	109	0.764	154	0.964	199	0.981	244	0.802	289	0.611	334	0.643
20	0.652	65	0.603	110	0.770	155	0.967	200	0.979	245	0.796	290	0.609	335	0.644
21	0.651	66	0.603	111	0.775	156	0.969	201	0.976	246	0.791	291	0.607	336	0.646
22	0.649	67	0.605	112	0.780	157	0.972	202	0.974	247	0.786	292	0.606	337	0.648
23	0.648	68	0.606	113	0.786	158	0.974	203	0.972	248	0.780	293	0.605	338	0.649
24	0.646	69	0.607	114	0.791	159	0.976	204	0.969	249	0.775	294	0.603	339	0.651
25	0.644	70	0.609	115	0.796	160	0.979	205	0.967	250	0.770	295	0.603	340	0.652
26	0.643	71	0.611	116	0.802	161	0.981	206	0.964	251	0.764	296	0.602	341	0.654
27	0.641	72	0.612	117	0.807	162	0.983	207	0.961	252	0.759	297	0.601	342	0.655
28	0.639	73	0.614	118	0.812	163	0.984	208	0.958	253	0.754	298	0.600	343	0.656
29	0.638	74	0.617	119	0.818	164	0.986	209	0.955	254	0.748	299	0.600	344	0.658
30	0.636	75	0.619	120	0.823	165	0.988	210	0.952	255	0.743	300	0.600	345	0.659
31	0.634	76	0.621	121	0.828	166	0.989	211	0.949	256	0.738	301	0.600	346	0.660
32	0.632	77	0.624	122	0.833	167	0.991	212	0.946	257	0.733	302	0.600	347	0.661
33	0.630	78	0.627	123	0.838	168	0.992	213	0.942	258	0.728	303	0.600	348	0.662
34	0.629	79	0.630	124	0.843	169	0.993	214	0.939	259	0.722	304	0.600	349	0.663
35	0.627	80	0.633	125	0.848	170	0.995	215	0.935	260	0.717	305	0.601	350	0.664
36	0.625	81	0.636	126	0.853	171	0.996	216	0.932	261	0.712	306	0.601	351	0.665
37	0.623	82	0.639	127	0.858	172	0.997	217	0.928	262	0.707	307	0.602	352	0.665
38	0.621	83	0.643	128	0.863	173	0.997	218	0.924	263	0.702	308	0.603	353	0.666
39	0.620	84	0.646	129	0.868	174	0.998	219	0.920	264	0.698	309	0.603	354	0.667
40	0.618	85	0.650	130	0.873	175	0.999	220	0.916	265	0.693	310	0.604	355	0.667
41	0.616	86	0.654	131	0.877	176	0.999	221	0.912	266	0.688	311	0.605	356	0.667
42	0.615	87	0.658	132	0.882	177	0.999	222	0.908	267	0.683	312	0.606	357	0.668
43	0.613	88	0.662	133	0.887	178	1.000	223	0.904	268	0.679	313	0.608	358	0.668
44	0.612	89	0.666	134	0.891	179	1.000	224	0.900	269	0.675	314	0.609	359	0.668

Proposal Number **DCA-9794**
Date **18-Jan-02**
Call Letters **WBNA-DT** Channel **8**
Location **Louisville, KY**
Customer **Paxson**
Antenna Type **THV-6A8-R S170**

TABULATION OF ELEVATION PATTERN

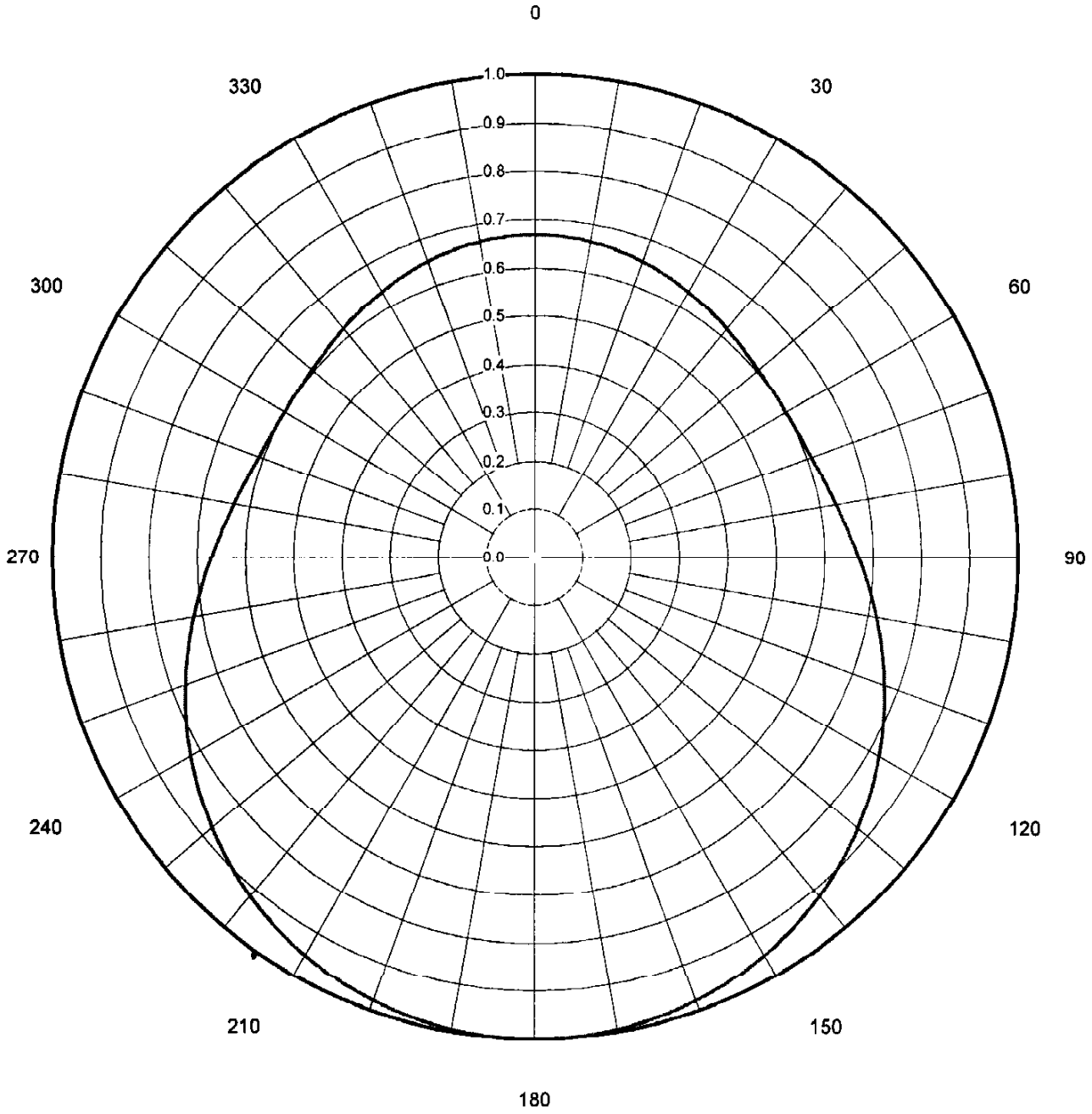
Elevation Pattern Drawing #: **06V600075-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.168	2.4	0.951	10.6	0.126	30.5	0.015	51.0	0.153	71.5	0.137
-9.5	0.124	2.6	0.939	10.8	0.134	31.0	0.034	51.5	0.149	72.0	0.134
-9.0	0.076	2.8	0.925	11.0	0.144	31.5	0.052	52.0	0.144	72.5	0.132
-8.5	0.036	3.0	0.910	11.5	0.172	32.0	0.069	52.5	0.137	73.0	0.129
-8.0	0.061	3.2	0.894	12.0	0.200	32.5	0.085	53.0	0.130	73.5	0.126
-7.5	0.122	3.4	0.877	12.5	0.224	33.0	0.100	53.5	0.121	74.0	0.122
-7.0	0.191	3.6	0.858	13.0	0.244	33.5	0.112	54.0	0.112	74.5	0.119
-6.5	0.262	3.8	0.839	13.5	0.259	34.0	0.123	54.5	0.102	75.0	0.115
-6.0	0.336	4.0	0.818	14.0	0.268	34.5	0.132	55.0	0.091	75.5	0.111
-5.5	0.411	4.2	0.797	14.5	0.271	35.0	0.138	55.5	0.080	76.0	0.106
-5.0	0.486	4.4	0.775	15.0	0.268	35.5	0.142	56.0	0.069	76.5	0.102
-4.5	0.559	4.6	0.751	15.5	0.260	36.0	0.144	56.5	0.057	77.0	0.097
-4.0	0.629	4.8	0.727	16.0	0.248	36.5	0.144	57.0	0.045	77.5	0.093
-3.5	0.696	5.0	0.703	16.5	0.231	37.0	0.142	57.5	0.033	78.0	0.088
-3.0	0.759	5.2	0.677	17.0	0.210	37.5	0.137	58.0	0.022	78.5	0.083
-2.8	0.782	5.4	0.651	17.5	0.186	38.0	0.131	58.5	0.014	79.0	0.078
-2.6	0.805	5.6	0.625	18.0	0.160	38.5	0.123	59.0	0.014	79.5	0.074
-2.4	0.826	5.8	0.598	18.5	0.133	39.0	0.113	59.5	0.022	80.0	0.069
-2.2	0.847	6.0	0.571	19.0	0.104	39.5	0.102	60.0	0.033	80.5	0.064
-2.0	0.866	6.2	0.543	19.5	0.076	40.0	0.091	60.5	0.043	81.0	0.059
-1.8	0.884	6.4	0.515	20.0	0.048	40.5	0.079	61.0	0.053	81.5	0.055
-1.6	0.901	6.6	0.487	20.5	0.024	41.0	0.067	61.5	0.063	82.0	0.050
-1.4	0.917	6.8	0.459	21.0	0.018	41.5	0.057	62.0	0.073	82.5	0.046
-1.2	0.931	7.0	0.431	21.5	0.036	42.0	0.050	62.5	0.082	83.0	0.041
-1.0	0.944	7.2	0.404	22.0	0.057	42.5	0.047	63.0	0.090	83.5	0.037
-0.8	0.956	7.4	0.376	22.5	0.076	43.0	0.051	63.5	0.098	84.0	0.033
-0.6	0.967	7.6	0.349	23.0	0.091	43.5	0.058	64.0	0.105	84.5	0.029
-0.4	0.976	7.8	0.322	23.5	0.104	44.0	0.069	64.5	0.113	85.0	0.025
-0.2	0.984	8.0	0.296	24.0	0.113	44.5	0.080	65.0	0.119	85.5	0.022
0.0	0.990	8.2	0.270	24.5	0.119	45.0	0.092	65.5	0.124	86.0	0.018
0.2	0.994	8.4	0.246	25.0	0.122	45.5	0.104	66.0	0.128	86.5	0.015
0.4	0.998	8.6	0.222	25.5	0.121	46.0	0.115	66.5	0.132	87.0	0.012
0.6	1.000	8.8	0.200	26.0	0.117	46.5	0.125	67.0	0.135	87.5	0.009
0.8	1.000	9.0	0.179	26.5	0.110	47.0	0.133	67.5	0.137	88.0	0.006
1.0	0.999	9.2	0.161	27.0	0.100	47.5	0.141	68.0	0.139	88.5	0.004
1.2	0.996	9.4	0.145	27.5	0.088	48.0	0.147	68.5	0.140	89.0	0.002
1.4	0.992	9.6	0.133	28.0	0.074	48.5	0.151	69.0	0.141	89.5	0.001
1.6	0.987	9.8	0.128	28.5	0.058	49.0	0.155	69.5	0.141	90.0	0.000
1.8	0.980	10.0	0.121	29.0	0.041	49.5	0.156	70.0	0.141		
2.0	0.972	10.2	0.119	29.5	0.023	50.0	0.157	70.5	0.140		
2.2	0.962	10.4	0.121	30.0	0.004	50.5	0.155	71.0	0.138		

Proposal Number	**DCA-9794**		
Date	**18-Jan-02**		
Call Letters	**WBNA-DT**	Channel	**8**
Location	**Louisville, KY**		
Customer	**Paxson**		
Antenna Type	**THV-6A8-R S170**		

AZIMUTH PATTERN

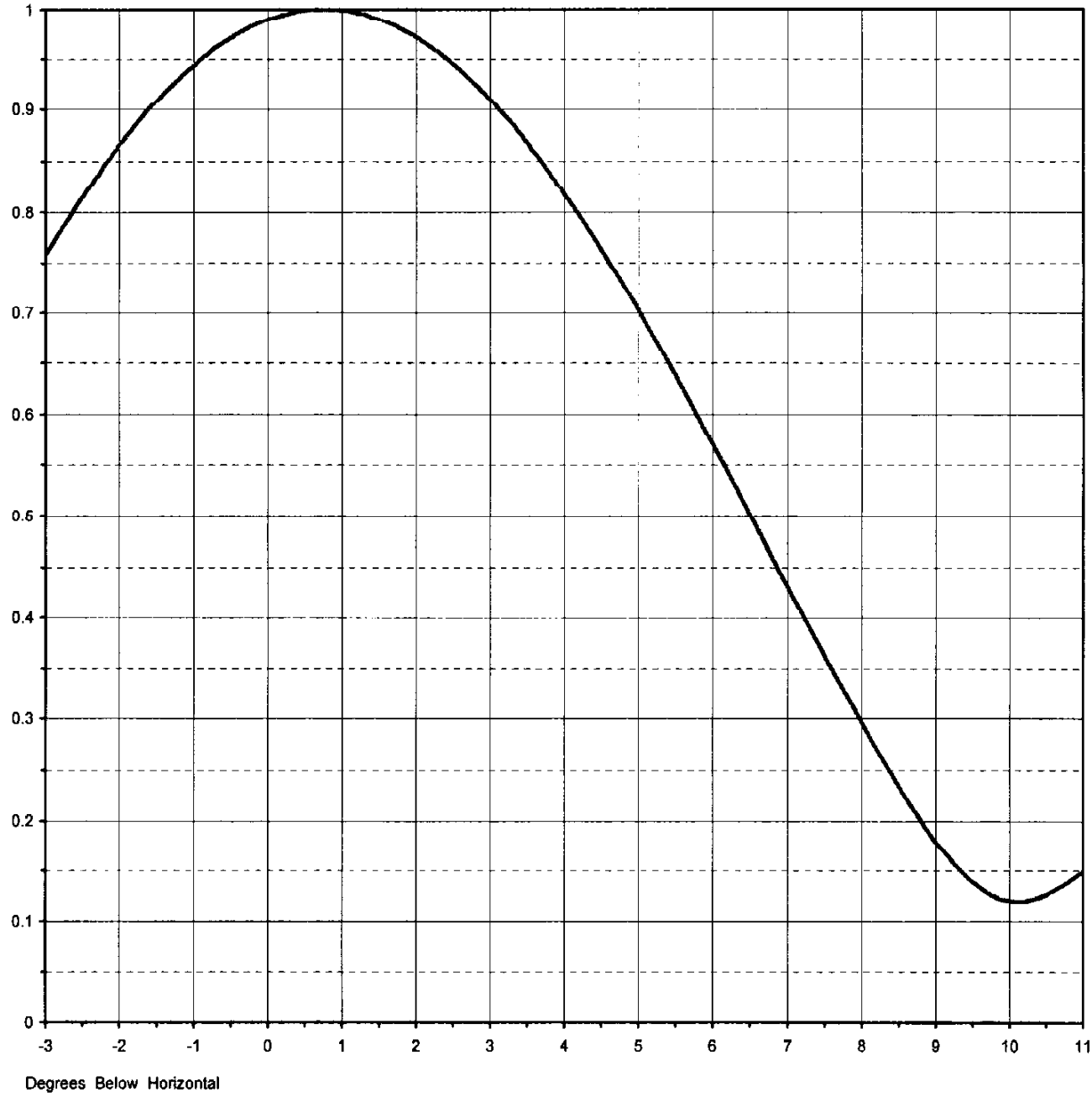
Gain	**1.70**	**(2.30 dB)**	Frequency	**183.00 MHz**
Calculated / Measured	**Calculated**		Drawing #	**THV-S170-8**



Proposal Number	**DCA-9794**		
Date	**18-Jan-02**		
Call Letters	**WBNA-DT**	Channel	**8**
Location	**Louisville, KY**		
Customer	**Paxson**		
Antenna Type	**THV-6A8-R S170**		

ELEVATION PATTERN

RMS Gain at Main Lobe	**6.00**	**(7.78 dB)**	Beam Tilt **0.75 deg**
RMS Gain at Horizontal	**5.90**	**(7.71 dB)**	Frequency **183.00 MHz**
Calculated / Measured	**Calculated**		Drawing # **06V600075**



Proposal Number	**DCA-9794**		
Date	**18-Jan-02**		
Call Letters	**WBNA-DT**	Channel	**8**
Location	**Louisville, KY**		
Customer	**Paxson**		
Antenna Type	**THV-6A8-R S170**		

ELEVATION PATTERN

RMS Gain at Main Lobe	**6.00**	**(7.78 dB)**	Beam Tilt **0.75 deg**
RMS Gain at Horizontal	**5.90**	**(7.71 dB)**	Frequency **183.00 MHz**
Calculated / Measured	**Calculated**		Drawing # **06V600075-90**