

**Antenna Model:****THV-9A8-R 04**

Proposal Number: C-70542
Date: 15-Mar-17
Customer: Morris
Location: Chattanooga, TN

Electrical Specifications

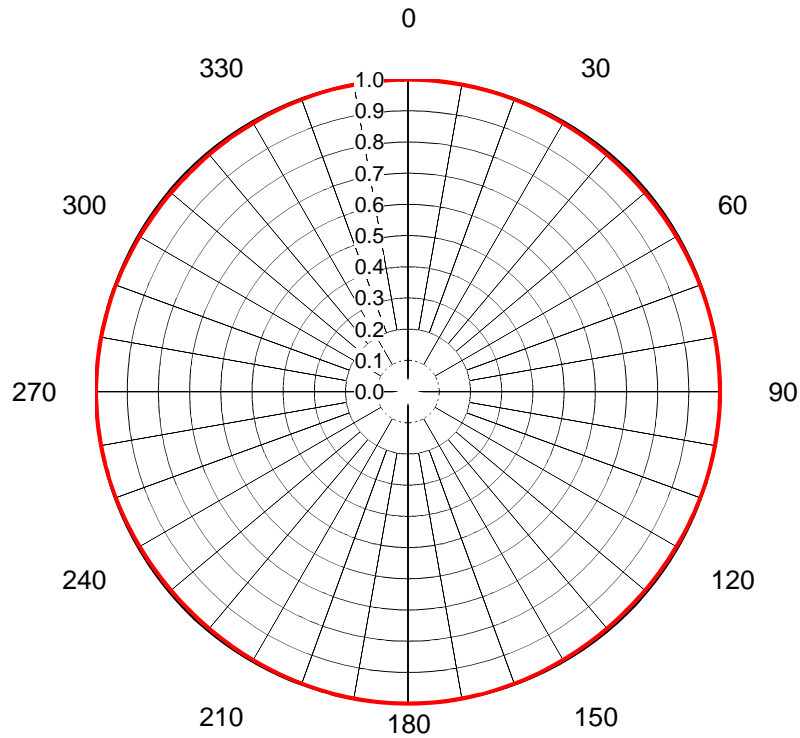
Polarization: Horizontal
Azimuth Pattern: Omni
Antenna Input: 3-1/8" 50 Ohm EIA/DCA
VSWR: Channel 1.08 : 1
Bandwidth: 6 MHz
Rated Input Power: 15 kW (11.76 dBk) Maximum Average Power

Mechanical Specifications

Mounting: Top Mounted
Environmental Protection: Full Radome
Height: 54.4 ft (16.6m) less Lightning Protector 58.4 ft (17.8m) with Lightning Protector
Weight: 6170 lb (2.8t)
Effective Projected Area: 81.9 ft² (7.6m²) TIA/EIA-222-F **Basic Wind Speed:** 70 m/h (112.7 km/h)

Channel Specifications

Call	CH	Freq	Hpol ERP	TPO	RMS Main Lobe Hpol Gain	RMS at Horizontal Hpol Gain
WDEF	8	183 MHz	26.0 kW (14.15 dBk)	3.5 kW (5.50 dBk)	9.00 (9.54dB)	8.70 (9.39dB)



AZIMUTH PATTERN Horizontal Polarization

Proposal No. **C-70542**
 Date **15-Mar-17**
 Call Letters **WDEF**
 Channel **8**
 Frequency **183 MHz**
 Antenna Type **THV-9A8-R 04**
 Gain **1.01 (0.04dB)**
 Calculated
 Circularity **+/- 1.0 dB**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	1.000	36	0.992	72	0.997	108	0.997	144	0.992	180	1.000	216	0.992	252	0.997	288	0.997	324	0.992
1	1.000	37	0.992	73	0.997	109	0.997	145	0.992	181	1.000	217	0.992	253	0.997	289	0.997	325	0.992
2	1.000	38	0.992	74	0.998	110	0.996	146	0.992	182	1.000	218	0.992	254	0.998	290	0.996	326	0.992
3	1.000	39	0.992	75	0.998	111	0.996	147	0.993	183	1.000	219	0.992	255	0.998	291	0.996	327	0.993
4	1.000	40	0.991	76	0.998	112	0.996	148	0.993	184	1.000	220	0.991	256	0.998	292	0.996	328	0.993
5	1.000	41	0.991	77	0.998	113	0.995	149	0.993	185	1.000	221	0.991	257	0.998	293	0.995	329	0.993
6	1.000	42	0.991	78	0.999	114	0.995	150	0.993	186	1.000	222	0.991	258	0.999	294	0.995	330	0.993
7	0.999	43	0.991	79	0.999	115	0.995	151	0.994	187	0.999	223	0.991	259	0.999	295	0.995	331	0.994
8	0.999	44	0.991	80	0.999	116	0.995	152	0.994	188	0.999	224	0.991	260	0.999	296	0.995	332	0.994
9	0.999	45	0.991	81	0.999	117	0.994	153	0.994	189	0.999	225	0.991	261	0.999	297	0.994	333	0.994
10	0.999	46	0.991	82	0.999	118	0.994	154	0.995	190	0.999	226	0.991	262	0.999	298	0.994	334	0.995
11	0.999	47	0.991	83	0.999	119	0.994	155	0.995	191	0.999	227	0.991	263	0.999	299	0.994	335	0.995
12	0.999	48	0.991	84	1.000	120	0.993	156	0.995	192	0.999	228	0.991	264	1.000	300	0.993	336	0.995
13	0.998	49	0.991	85	1.000	121	0.993	157	0.995	193	0.998	229	0.991	265	1.000	301	0.993	337	0.995
14	0.998	50	0.991	86	1.000	122	0.993	158	0.996	194	0.998	230	0.991	266	1.000	302	0.993	338	0.996
15	0.998	51	0.992	87	1.000	123	0.993	159	0.996	195	0.998	231	0.992	267	1.000	303	0.993	339	0.996
16	0.998	52	0.992	88	1.000	124	0.992	160	0.996	196	0.998	232	0.992	268	1.000	304	0.992	340	0.996
17	0.997	53	0.992	89	1.000	125	0.992	161	0.997	197	0.997	233	0.992	269	1.000	305	0.992	341	0.997
18	0.997	54	0.992	90	1.000	126	0.992	162	0.997	198	0.997	234	0.992	270	1.000	306	0.992	342	0.997
19	0.997	55	0.992	91	1.000	127	0.992	163	0.997	199	0.997	235	0.992	271	1.000	307	0.992	343	0.997
20	0.996	56	0.992	92	1.000	128	0.992	164	0.998	200	0.996	236	0.992	272	1.000	308	0.992	344	0.998
21	0.996	57	0.993	93	1.000	129	0.992	165	0.998	201	0.996	237	0.993	273	1.000	309	0.992	345	0.998
22	0.996	58	0.993	94	1.000	130	0.991	166	0.998	202	0.996	238	0.993	274	1.000	310	0.991	346	0.998
23	0.995	59	0.993	95	1.000	131	0.991	167	0.998	203	0.995	239	0.993	275	1.000	311	0.991	347	0.998
24	0.995	60	0.993	96	1.000	132	0.991	168	0.999	204	0.995	240	0.993	276	1.000	312	0.991	348	0.999
25	0.995	61	0.994	97	0.999	133	0.991	169	0.999	205	0.995	241	0.994	277	0.999	313	0.991	349	0.999
26	0.995	62	0.994	98	0.999	134	0.991	170	0.999	206	0.995	242	0.994	278	0.999	314	0.990	350	0.999
27	0.994	63	0.994	99	0.999	135	0.991	171	0.999	207	0.994	243	0.994	279	0.999	315	0.991	351	0.999
28	0.994	64	0.995	100	0.999	136	0.991	172	0.999	208	0.994	244	0.995	280	0.999	316	0.990	352	0.999
29	0.994	65	0.995	101	0.999	137	0.991	173	0.999	209	0.994	245	0.995	281	0.999	317	0.991	353	0.999
30	0.993	66	0.995	102	0.999	138	0.991	174	1.000	210	0.993	246	0.995	282	0.999	318	0.991	354	1.000
31	0.993	67	0.995	103	0.998	139	0.991	175	1.000	211	0.993	247	0.995	283	0.998	319	0.991	355	1.000
32	0.993	68	0.996	104	0.998	140	0.991	176	1.000	212	0.993	248	0.996	284	0.998	320	0.991	356	1.000
33	0.993	69	0.996	105	0.998	141	0.992	177	1.000	213	0.993	249	0.996	285	0.998	321	0.992	357	1.000
34	0.992	70	0.996	106	0.998	142	0.992	178	1.000	214	0.992	250	0.996	286	0.998	322	0.992	358	1.000
35	0.992	71	0.997	107	0.997	143	0.992	179	1.000	215	0.992	251	0.997	287	0.997	323	0.992	359	1.000

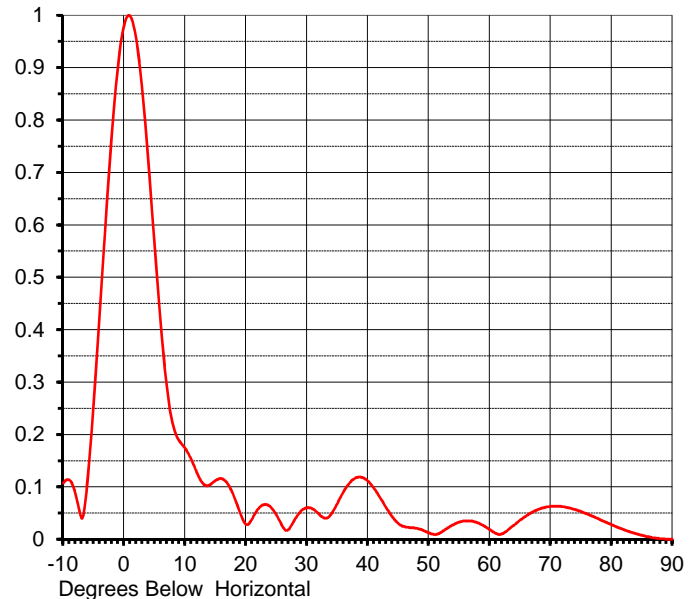
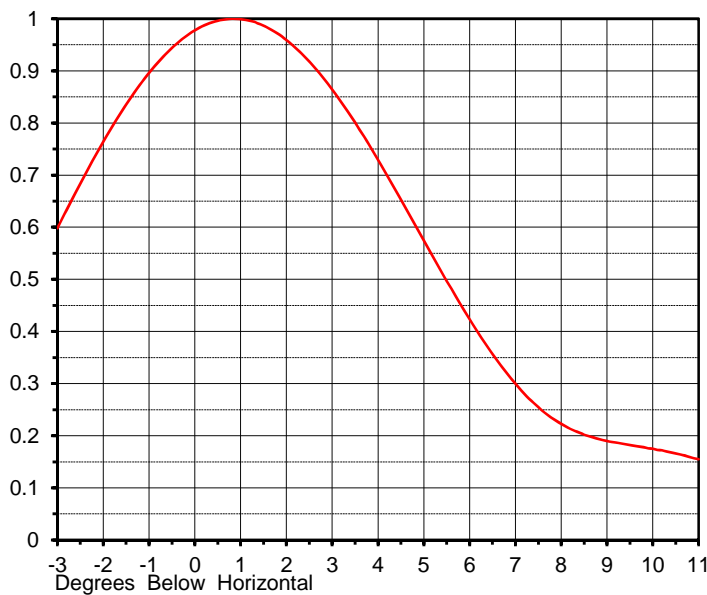
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ELEVATION PATTERN

Proposal No. **C-70542**
 Date **15-Mar-17**
 Call Letters **WDEF**
 Channel **8**
 Frequency **183 MHz**
 Antenna Type **THV-9A8-R 04**

RMS Directivity at Main Lobe **9.0 (9.54 dB)**
 RMS Directivity at Horizontal **8.6 (9.34 dB)**
Calculated

Beam Tilt **0.75 deg**
 Pattern Number **09V090075**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.107	10.0	0.173	30.0	0.060	50.0	0.012	70.0	0.063
-9.0	0.113	11.0	0.152	31.0	0.057	51.0	0.009	71.0	0.063
-8.0	0.087	12.0	0.125	32.0	0.048	52.0	0.013	72.0	0.062
-7.0	0.040	13.0	0.105	33.0	0.040	53.0	0.021	73.0	0.060
-6.0	0.116	14.0	0.104	34.0	0.049	54.0	0.028	74.0	0.057
-5.0	0.263	15.0	0.112	35.0	0.069	55.0	0.033	75.0	0.053
-4.0	0.437	16.0	0.116	36.0	0.091	56.0	0.035	76.0	0.048
-3.0	0.616	17.0	0.105	37.0	0.108	57.0	0.035	77.0	0.043
-2.0	0.779	18.0	0.082	38.0	0.117	58.0	0.031	78.0	0.038
-1.0	0.907	19.0	0.051	39.0	0.118	59.0	0.026	79.0	0.033
0.0	0.983	20.0	0.028	40.0	0.111	60.0	0.018	80.0	0.028
1.0	0.998	21.0	0.039	41.0	0.097	61.0	0.011	81.0	0.023
2.0	0.952	22.0	0.058	42.0	0.079	62.0	0.010	82.0	0.018
3.0	0.852	23.0	0.066	43.0	0.060	63.0	0.018	83.0	0.014
4.0	0.714	24.0	0.062	44.0	0.043	64.0	0.027	84.0	0.011
5.0	0.559	25.0	0.046	45.0	0.030	65.0	0.037	85.0	0.007
6.0	0.409	26.0	0.024	46.0	0.024	66.0	0.045	86.0	0.005
7.0	0.290	27.0	0.019	47.0	0.022	67.0	0.052	87.0	0.003
8.0	0.218	28.0	0.038	48.0	0.021	68.0	0.057	88.0	0.001
9.0	0.188	29.0	0.054	49.0	0.017	69.0	0.061	89.0	0.000
								90.0	0.000

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MECHANICAL SPECIFICATIONS

Proposal No.	C-70542
Date	15-Mar-17
Call Letters	WDEF
Channel	8
Frequency	183 MHz
Antenna Type	THV-9A8-R 04

Preliminary Specifications

Top Mounted

Without ice TIA/EIA-222-F

Height AGL	560 ft (170.7 m)
Basic Wind Speed	70 m/h (112.7 km/h)

Mechanical Specifications

Height with Lightning Protector	H4	58.4 ft (17.8m)
Height less Lightning Protector	H2	54.4 ft (16.6m)
Height of Center of Radiation	H3	27.2 ft (8.3m)
Force Coeff. x Projected Area	CaAc	81.9 ft ² (7.6m ²)
Moment Arm	D1	28.6 ft (8.7m)

Weight	W	6170 lb (2.8t)
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Antenna designed in accordance with AISC specifications for design of structural steel as prescribed by TIA/EIA-222-F

Prepared by:	KLP	Date:	15-Mar-17	ME:	EE:
	jls	Date:	16-Mar-17		

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Summary

Proposal No.	C-70542
Date	15-Mar-17
Call Letters	WDEF
Channel	8
Frequency	183 MHz
Antenna Type	THV-9A8-R 04

Antenna

		Hpol
ERP:	26.0 kW	(14.15 dBk)
RMS Gain*	9.00	(9.54 dB)

Antenna Input Power	2.9 kW	(4.61 dBk)
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Transmission Line

Type:	Rigid	Attenuation:	(0.89 dB)
Size:	3-1/8"	Efficiency:	81.5%
Impedance:	50 Ohm		
Length:	665 ft	202.7 m	

Transmitter Output

3.5 kW	(5.50 dBk)
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Transmitter filter losses not included

* Directivity and Gain are with respect to half wave dipole. The gain includes feed system losses

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