



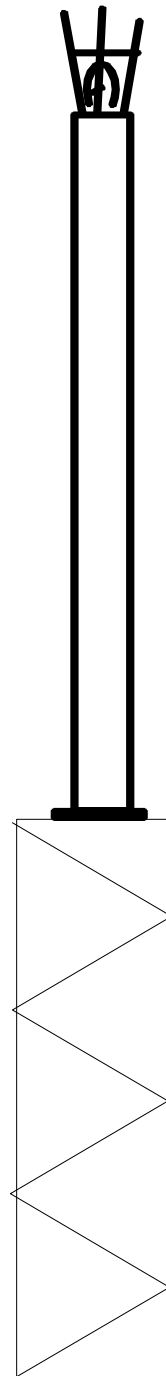
Proposal #: **C-02064-1** Antenna Type: **TFU-20ETT/VP-R 4C220** Channel: **26 DTV**
 Call Letters: **WKMG-DT** Location: **Orlando, FL**

Electrical Specifications		Value		Remarks	
		Ratio	dBd		
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	32.5	15.12		
	Vpol	10.0	10.00		
Peak Directional Gain at Horizontal over Halfwave Dipole	Hpol	26.2	14.18		
	Vpol	8.1	9.08		
Circularity Directional		dB			
Axial Ratio		dB			
Beam Tilt		0.75 deg			
Average Power	DTV	30 kW	14.77 dBk		
Antenna Input:	T/L	6 1/8 in	75.0 ohm	Type:	EIA/DCA
Maximum Antenna Input VSWR				Notes: 5 psi dry air or Nitrogen required.	
		Channel 1.08 : 1			
Patterns	Azimuth	4C220-26	4C270-VP-26		
	Elevation	20E185075	20E185075-90		
Mechanical Specifications		Metric	English		Preliminary
Height with Lightning Protector	H4	13.9 m	45.6 ft		
Height Less Lightning Protector	H2	12.7 m	41.6 ft		
Height of Center of Radiation	H3	6.0 m	20.8 ft		
Basic Wind Speed	V	193.1 km/h	120 mi/h		
Structure Class	II	Exposure Category	C	Topographic Category	1
Effective Projected Area	(EPA)s	4.6 m²	49.0 ft²	Above base flange	
Moment Arm	D1	6.9 m	22.6 ft	Above base flange	
Effective Projected Area	(EPA)s	m²	ft²		
Moment Arm	D3	m	ft		
Pole Bury Length	D2	m	ft		
Weight	W	3.5 t	7,800 lbs		
Radome					
Antenna designed in accordance with AISC specifications for design of structural steel for building as prescribed by TIA/EIA-222-G.					

NOTE:

Prepared By : **SWB** TLB Approved By : **JLS**
 Original Date : **24-Oct-07** **Revision: 1** **Rev. Date: 25-Oct-07** **SWB**

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Mechanical Specifications

TIA/EIA-222-G. @ 120 mi/h (193.1 km/h)

(EPA)s = 49 ft²(4.6 m²)

D1 = 22.6 ft(6.89 m)

W = 7800 lbs(3.5 t)

TFU-20ETT/VP-R 4C220

Channel: D26

Structure Class =II

Exposure Category = C

Topographic Category = 1

SWB-071026-4

Not to Scale

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Proposal Number	C-02064	Revision:	1
Date	25-Oct-07		
Call Letters	WKMG-DT	Channel	26
Location	Orlando, FL		
Customer			
Antenna Type	TFU-20ETT/VP-R 4C220		

SYSTEM SUMMARY

Antenna:

Type:	TFU-20ETT/VP-R 4C220	ERP:	1000 kW (30.00 dBk)	308 kW (24.89 dBk)
Channel:	26	Peak Gain*:	32.5 (15.12 dB)	10.0 (10.01 dB)
Location:	Orlando, FL	Input Power:	30.7 kW (14.88 dBk)	

Transmission Line:

Type:	EIA/DCA	Attenuation:	1.76 dB
Size:	7-3/16 in	Efficiency:	66.7%
Impedance:	75 ohm		
Length:	1,800 ft		548.6 m

Transmitter:

Power Required: **46.1 kW (16.63 dBk)**

* Gain is with respect to half wave dipole.

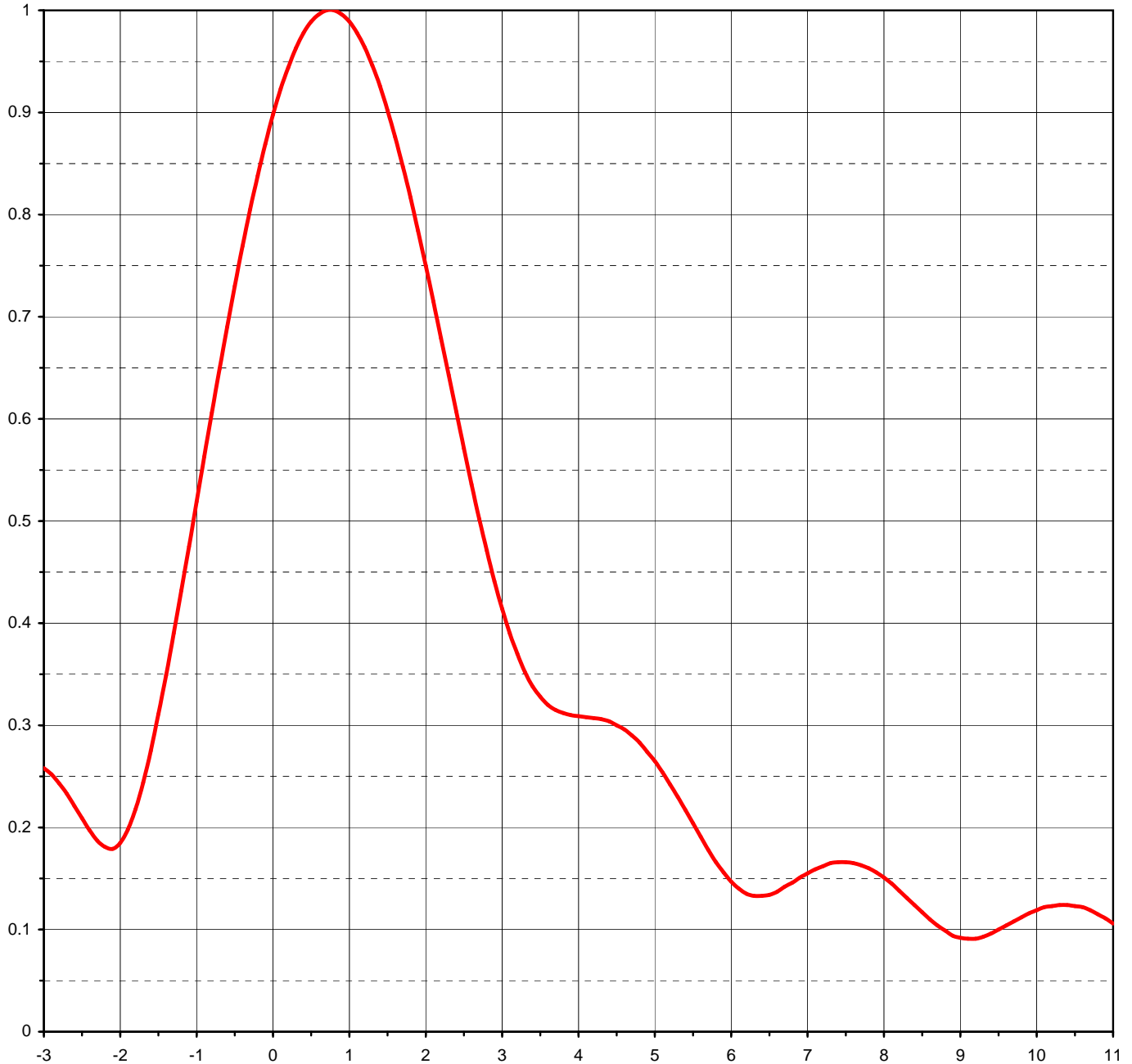
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Date	25-Oct-07		
Call Letters	WKMG-DT	Channel	26
Location	Orlando, FL		
Customer			
Antenna Type	TFU-20ETT/VP-R 4C220		

ELEVATION PATTERN

RMS Gain at Main Lobe	18.50 (12.67 dB)	Beam Tilt	0.75 deg
RMS Gain at Horizontal	14.90 (11.73 dB)	Frequency	545.00 MHz
Calculated / Measured	Calculated	Drawing #	20E185075



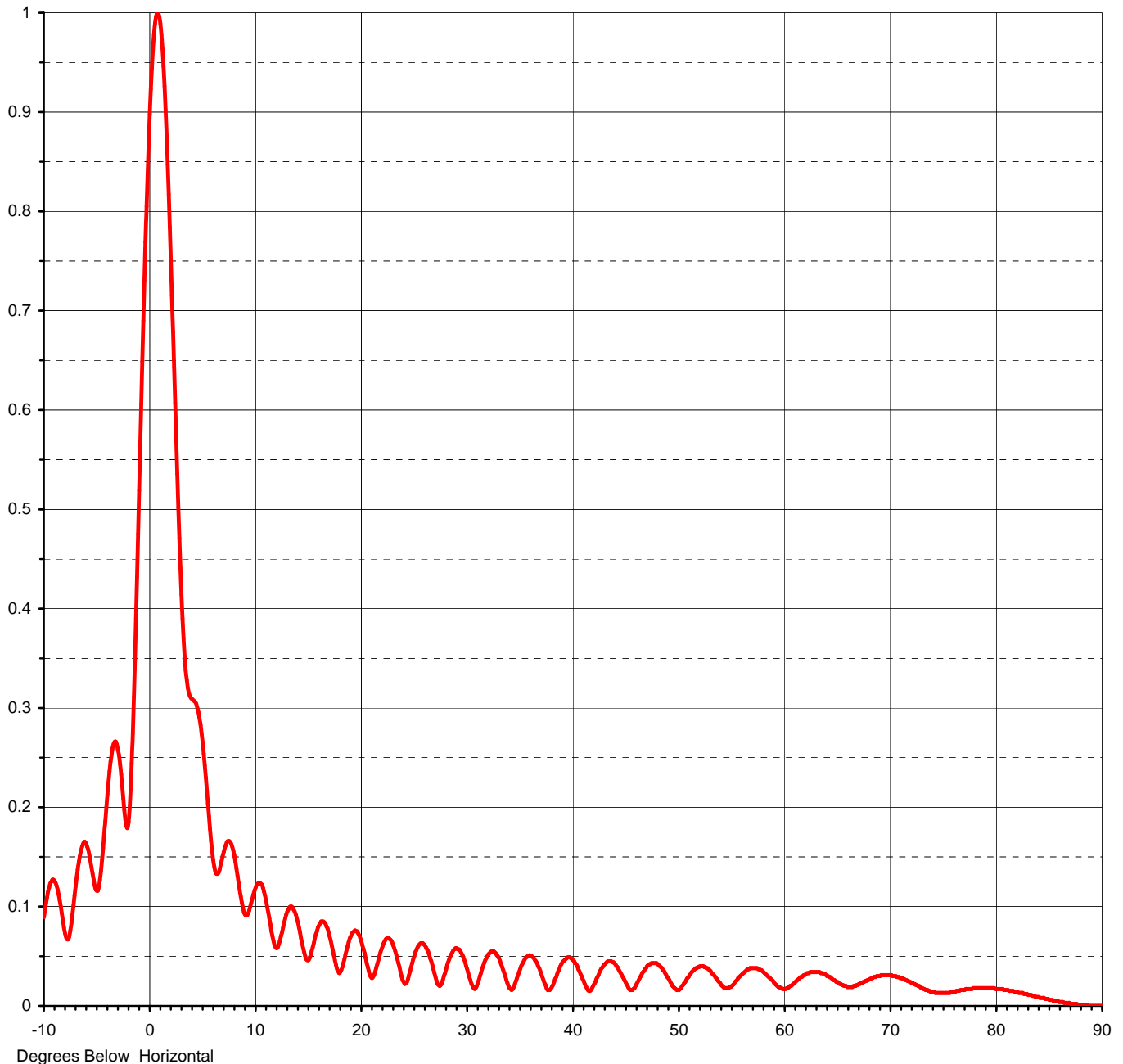
Degrees Below Horizontal



Proposal Number	C-02064	Revision:	1
Date	25-Oct-07		
Call Letters	WKMG-DT	Channel	26
Location	Orlando, FL		
Customer			
Antenna Type	TFU-20ETT/VP-R 4C220		

ELEVATION PATTERN

RMS Gain at Main Lobe	18.50 (12.67 dB)	Beam Tilt	0.75 deg
RMS Gain at Horizontal	14.90 (11.73 dB)	Frequency	545.00 MHz
Calculated / Measured	Calculated	Drawing #	20E185075-90



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Proposal Number **C-02064** Revision: **1**
Date **25-Oct-07**
Call Letters **WKMG-DT** Channel **26**
Location **Orlando, FL**
Customer
Antenna Type **TFU-20ETT/VP-R 4C220**

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **20E185075-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.089	2.4	0.607	10.6	0.123	30.5	0.022	51.0	0.029	71.5	0.026
-9.5	0.119	2.6	0.536	10.8	0.119	31.0	0.020	51.5	0.036	72.0	0.023
-9.0	0.126	2.8	0.471	11.0	0.111	31.5	0.037	52.0	0.039	72.5	0.021
-8.5	0.106	3.0	0.414	11.5	0.082	32.0	0.050	52.5	0.039	73.0	0.018
-8.0	0.073	3.2	0.370	12.0	0.059	32.5	0.055	53.0	0.036	73.5	0.016
-7.5	0.076	3.4	0.338	12.5	0.070	33.0	0.050	53.5	0.030	74.0	0.014
-7.0	0.120	3.6	0.320	13.0	0.092	33.5	0.036	54.0	0.023	74.5	0.013
-6.5	0.156	3.8	0.312	13.5	0.100	34.0	0.020	54.5	0.018	75.0	0.013
-6.0	0.163	4.0	0.309	14.0	0.088	34.5	0.019	55.0	0.019	75.5	0.013
-5.5	0.139	4.2	0.307	14.5	0.063	35.0	0.034	55.5	0.025	76.0	0.014
-5.0	0.116	4.4	0.304	15.0	0.046	35.5	0.046	56.0	0.031	76.5	0.015
-4.5	0.147	4.6	0.296	15.5	0.059	36.0	0.051	56.5	0.036	77.0	0.016
-4.0	0.213	4.8	0.283	16.0	0.079	36.5	0.046	57.0	0.038	77.5	0.017
-3.5	0.260	5.0	0.265	16.5	0.085	37.0	0.035	57.5	0.038	78.0	0.018
-3.0	0.258	5.2	0.242	17.0	0.074	37.5	0.021	58.0	0.035	78.5	0.018
-2.8	0.243	5.4	0.217	17.5	0.051	38.0	0.017	58.5	0.030	79.0	0.018
-2.6	0.221	5.6	0.191	18.0	0.033	38.5	0.029	59.0	0.025	79.5	0.018
-2.4	0.197	5.8	0.166	18.5	0.047	39.0	0.042	59.5	0.019	80.0	0.017
-2.2	0.181	6.0	0.147	19.0	0.068	39.5	0.048	60.0	0.017	80.5	0.017
-2.0	0.185	6.2	0.135	19.5	0.076	40.0	0.047	60.5	0.019	81.0	0.016
-1.8	0.218	6.4	0.133	20.0	0.068	40.5	0.040	61.0	0.023	81.5	0.015
-1.6	0.275	6.6	0.137	20.5	0.048	41.0	0.027	61.5	0.028	82.0	0.014
-1.4	0.349	6.8	0.146	21.0	0.029	41.5	0.016	62.0	0.031	82.5	0.013
-1.2	0.432	7.0	0.155	21.5	0.038	42.0	0.020	62.5	0.034	83.0	0.011
-1.0	0.519	7.2	0.162	22.0	0.057	42.5	0.031	63.0	0.034	83.5	0.010
-0.8	0.606	7.4	0.166	22.5	0.068	43.0	0.041	63.5	0.033	84.0	0.009
-0.6	0.690	7.6	0.165	23.0	0.064	43.5	0.045	64.0	0.031	84.5	0.008
-0.4	0.769	7.8	0.160	23.5	0.047	44.0	0.043	64.5	0.027	85.0	0.006
-0.2	0.838	8.0	0.151	24.0	0.026	44.5	0.035	65.0	0.024	85.5	0.005
0.0	0.898	8.2	0.138	24.5	0.027	45.0	0.025	65.5	0.021	86.0	0.004
0.2	0.944	8.4	0.124	25.0	0.047	45.5	0.016	66.0	0.019	86.5	0.003
0.4	0.978	8.6	0.110	25.5	0.061	46.0	0.020	66.5	0.020	87.0	0.002
0.6	0.996	8.8	0.099	26.0	0.062	46.5	0.030	67.0	0.022	87.5	0.002
0.8	1.000	9.0	0.092	26.5	0.052	47.0	0.038	67.5	0.024	88.0	0.001
1.0	0.989	9.2	0.091	27.0	0.033	47.5	0.043	68.0	0.027	88.5	0.001
1.2	0.964	9.4	0.096	27.5	0.020	48.0	0.043	68.5	0.029	89.0	0.000
1.4	0.926	9.6	0.104	28.0	0.033	48.5	0.038	69.0	0.030	89.5	0.000
1.6	0.876	9.8	0.108	28.5	0.050	49.0	0.029	69.5	0.031	90.0	0.000
1.8	0.817	10.0	0.116	29.0	0.058	49.5	0.020	70.0	0.031		
2.0	0.750	10.2	0.122	29.5	0.054	50.0	0.016	70.5	0.030		
2.2	0.679	10.4	0.124	30.0	0.040	50.5	0.021	71.0	0.028		

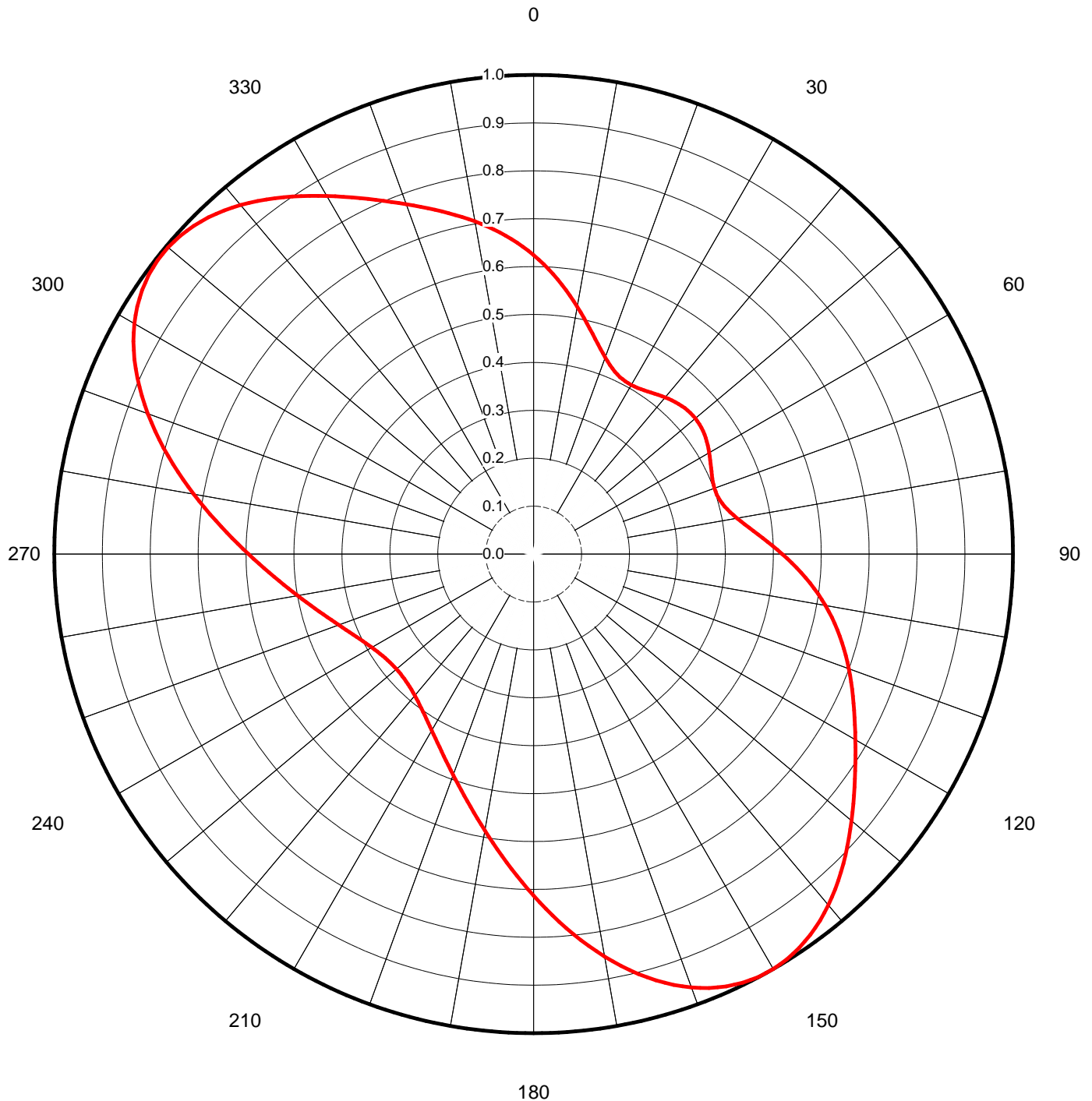
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Proposal Number	C-02064	Revision:	1
Date	25-Oct-07		
Call Letters	WKMG-DT	Channel	26
Location	Orlando, FL		
Customer			
Antenna Type	TFU-20ETT/VP-R 4C220		

AZIMUTH PATTERN

Gain **2.20** **(3.42 dB)**
Calculated / Measured **Calculated**

Frequency **545.00 MHz**
Drawing # **4C220-26**





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Date	25-Oct-07		
Call Letters	WKMG-DT	Channel	26
Location	Orlando, FL		
Customer			
Antenna Type	TFU-20ETT/VP-R 4C220		

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #: **4C220-26**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.624	45	0.437	90	0.519	135	0.914	180	0.713	225	0.376	270	0.595	315	0.981
1	0.614	46	0.439	91	0.529	136	0.923	181	0.699	226	0.375	271	0.606	316	0.977
2	0.605	47	0.439	92	0.539	137	0.932	182	0.685	227	0.374	272	0.618	317	0.971
3	0.595	48	0.440	93	0.549	138	0.941	183	0.672	228	0.374	273	0.630	318	0.965
4	0.585	49	0.440	94	0.560	139	0.949	184	0.659	229	0.373	274	0.642	319	0.958
5	0.575	50	0.441	95	0.570	140	0.957	185	0.646	230	0.373	275	0.654	320	0.951
6	0.565	51	0.440	96	0.580	141	0.964	186	0.633	231	0.374	276	0.667	321	0.943
7	0.555	52	0.439	97	0.590	142	0.971	187	0.621	232	0.374	277	0.680	322	0.935
8	0.545	53	0.438	98	0.599	143	0.976	188	0.609	233	0.376	278	0.693	323	0.927
9	0.534	54	0.437	99	0.609	144	0.982	189	0.597	234	0.377	279	0.706	324	0.918
10	0.524	55	0.435	100	0.618	145	0.987	190	0.586	235	0.378	280	0.720	325	0.909
11	0.514	56	0.433	101	0.627	146	0.991	191	0.575	236	0.380	281	0.734	326	0.900
12	0.504	57	0.431	102	0.636	147	0.994	192	0.564	237	0.382	282	0.747	327	0.891
13	0.494	58	0.428	103	0.645	148	0.997	193	0.554	238	0.384	283	0.761	328	0.881
14	0.485	59	0.426	104	0.653	149	0.999	194	0.544	239	0.387	284	0.775	329	0.872
15	0.476	60	0.423	105	0.661	150	1.000	195	0.534	240	0.390	285	0.789	330	0.863
16	0.467	61	0.420	106	0.669	151	1.000	196	0.525	241	0.393	286	0.803	331	0.854
17	0.459	62	0.417	107	0.677	152	0.999	197	0.516	242	0.396	287	0.817	332	0.844
18	0.451	63	0.415	108	0.685	153	0.997	198	0.507	243	0.400	288	0.830	333	0.835
19	0.444	64	0.412	109	0.692	154	0.995	199	0.499	244	0.404	289	0.843	334	0.826
20	0.437	65	0.409	110	0.700	155	0.991	200	0.491	245	0.408	290	0.857	335	0.818
21	0.431	66	0.407	111	0.707	156	0.988	201	0.483	246	0.412	291	0.869	336	0.809
22	0.425	67	0.405	112	0.714	157	0.982	202	0.475	247	0.417	292	0.882	337	0.801
23	0.421	68	0.403	113	0.722	158	0.977	203	0.468	248	0.422	293	0.893	338	0.793
24	0.417	69	0.402	114	0.729	159	0.970	204	0.461	249	0.427	294	0.905	339	0.785
25	0.414	70	0.401	115	0.736	160	0.963	205	0.455	250	0.433	295	0.916	340	0.777
26	0.411	71	0.402	116	0.744	161	0.954	206	0.448	251	0.438	296	0.927	341	0.769
27	0.409	72	0.402	117	0.751	162	0.945	207	0.442	252	0.444	297	0.936	342	0.762
28	0.408	73	0.403	118	0.759	163	0.936	208	0.436	253	0.450	298	0.946	343	0.755
29	0.408	74	0.405	119	0.767	164	0.926	209	0.431	254	0.457	299	0.954	344	0.747
30	0.407	75	0.408	120	0.775	165	0.914	210	0.425	255	0.463	300	0.962	345	0.740
31	0.408	76	0.410	121	0.783	166	0.903	211	0.420	256	0.470	301	0.968	346	0.733
32	0.409	77	0.415	122	0.792	167	0.891	212	0.415	257	0.477	302	0.975	347	0.726
33	0.411	78	0.419	123	0.800	168	0.879	213	0.411	258	0.484	303	0.980	348	0.719
34	0.412	79	0.425	124	0.809	169	0.866	214	0.406	259	0.492	304	0.985	349	0.712
35	0.414	80	0.431	125	0.818	170	0.853	215	0.402	260	0.500	305	0.989	350	0.705
36	0.417	81	0.438	126	0.827	171	0.840	216	0.398	261	0.508	306	0.992	351	0.698
37	0.419	82	0.445	127	0.837	172	0.826	217	0.395	262	0.516	307	0.994	352	0.690
38	0.422	83	0.453	128	0.846	173	0.812	218	0.391	263	0.525	308	0.995	353	0.683
39	0.424	84	0.461	129	0.856	174	0.798	219	0.388	264	0.534	309	0.996	354	0.675
40	0.427	85	0.470	130	0.866	175	0.784	220	0.386	265	0.544	310	0.996	355	0.667
41	0.429	86	0.479	131	0.875	176	0.770	221	0.383	266	0.553	311	0.994	356	0.659
42	0.432	87	0.489	132	0.885	177	0.755	222	0.381	267	0.563	312	0.992	357	0.650
43	0.434	88	0.498	133	0.895	178	0.741	223	0.379	268	0.573	313	0.989	358	0.642
44	0.436	89	0.509	134	0.904	179	0.727	224	0.377	269	0.584	314	0.986	359	0.633

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Date	25-Oct-07		
Call Letters	WKMG-DT	Channel	26
Location	Orlando, FL		
Customer			
Antenna Type	TFU-20ETT/VP-R 4C220		

AZIMUTH PATTERN/VERTICAL POLARIZATION

Gain	2.70	(4.31 dB)
Calculated / Measured		Calculated

Frequency	545.00 MHz
Drawing #	4C270-VP-26

