Dielectric

Proposal #: **C-02596** Antenna Type: **TFU-26JSC-R CT150SP** Channel: **43 DTV**

Call Letters: **WIPR-DT** Location: **San Juan, PR**

Electrical Specifications		**Value** Ratio	**Value** dBd	**Remarks**
RMS Gain at Main Lobe over Halfwave Dipole	Hpol	24.0	13.80	
	Vpol			
RMS Gain at Horizontal over Halfwave Dipole	Hpol	4.3	6.33	
	Vpol			
Peak Directional Gain over Halfwave Dipole	Hpol	36.0	15.56	
	Vpol			
Peak Directional Gain at Horizontal over Halfwave Dipole	Hpol	6.4	8.06	
	Vpol			
Circularity Directional		dB		
Axial Ratio		dB		
Beam Tilt		1.50 deg		
Average Power DTV		50 kW	16.99 dBk	
Antenna Input: T/L		6-1/8 in	75.0 ohm	Type: EIA/DCA
Maximum Antenna Input VSWR		Channel	1.08 : 1	Notes: 5 psi dry air or Nitrogen required.
Patterns	Azimuth	TFU-CT150		
	Elevation	26Y240150	26Y240150-90	

Mechanical Specifications		**Metric**	**English**	**Preliminary**
Height with Lightning Protector	H4	m	ft	**Side mounted**
Height Less Lightning Protector	H2	14.0 m	45.8 ft	TIA/EIA-222-F.
Height of Center of Radiation	H3	7.0 m	22.9 ft	
Basic Wind Speed	V	193.1 km/h	120 mi/h	
Force Coeff. x Projected Area	CaAc	8.5 m²	91.7 ft²	Excludes Mounts
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	0.6 t	1,310 lbs	Excludes Mounts
Radome				

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 Steve Brower Digitally signed by Steve Brower DN: CN = Steve Brower, C = US, OU = Dielectric Date: 2008.05.12 13:24:15 -04'00'

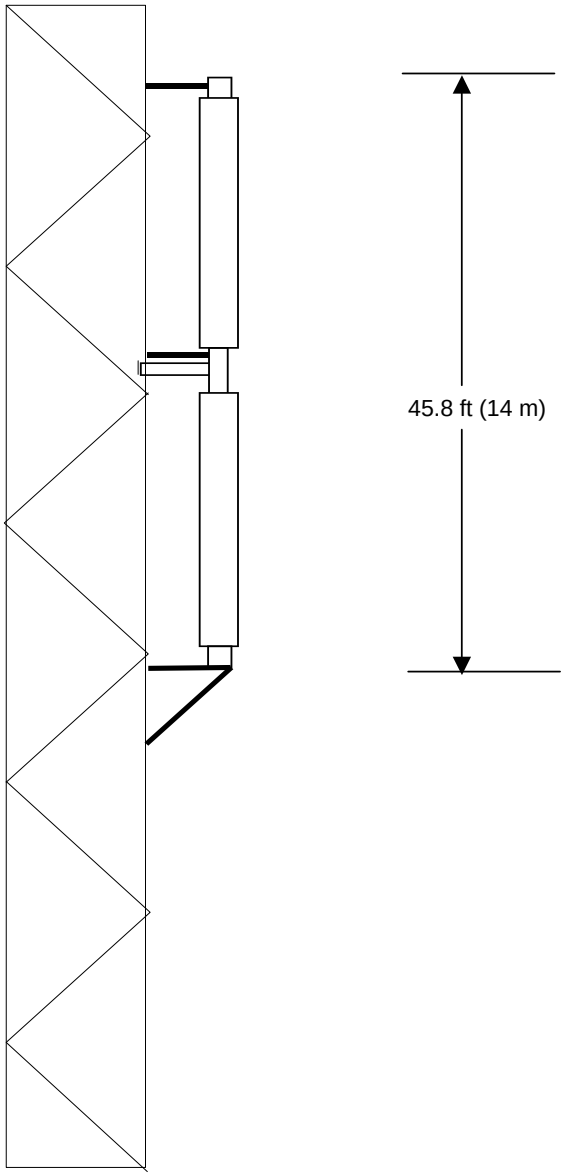
Original Date : 12-May-08

Approved By : JLS Digitally signed by jls DN: CN = jls, C = US Date: 2008.05.13 09:08:06 -04'00'

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Proposal #:	C-02596	Antenna Type:	TFU-26JSC-R CT150SP	Channel:	43 DTV
Call Letters:	WIPR-DT	Location:	San Juan, PR		



Mechanical Specifications
TIA/EIA-222-F. @ 120 mi/h (193.1 km/h)

CaAc = 91.7 ft²(8.5 m²)
W = 1310 lbs(0.6 t)

TFU-26JSC-R CT150SP
Channel: D43

SWB-080512-1

Not to Scale

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Proposal Number	**C-02596**		
Date	**12-May-08**		
Call Letters	**WIPR-DT**	Channel	**43**
Location	**San Juan, PR**		
Customer			
Antenna Type	**TFU-26JSC-R CT150SP**		

SYSTEM SUMMARY

Antenna:

			H Pol	
Type:	**TFU-26JSC-R CT150SP**	ERP:	**791 kW**	**(28.98 dBk)**
Channel:	**43**	Peak Gain*:	**36.0**	**(15.56 dB)**
Location:	**San Juan, PR**	Input Power:	**22.0 kW**	**(13.42 dBk)**

Transmission Line:

Type:	**EIA/DCA**	Attenuation:		**0.86 dB**
Size:	**7-3/16 in**	Efficiency:	**82.0%**	
Impedance:	**75 ohm**			
Length:	**800 ft**	**243.8 m**		

Share Line Te	DCA	Attenuation:		0.20 dB
		Efficiency:	95.5%	

Combiner Input:

Power Required: **28.0 kW** **(14.48 dBk)**

* Gain is with respect to half wave dipole.

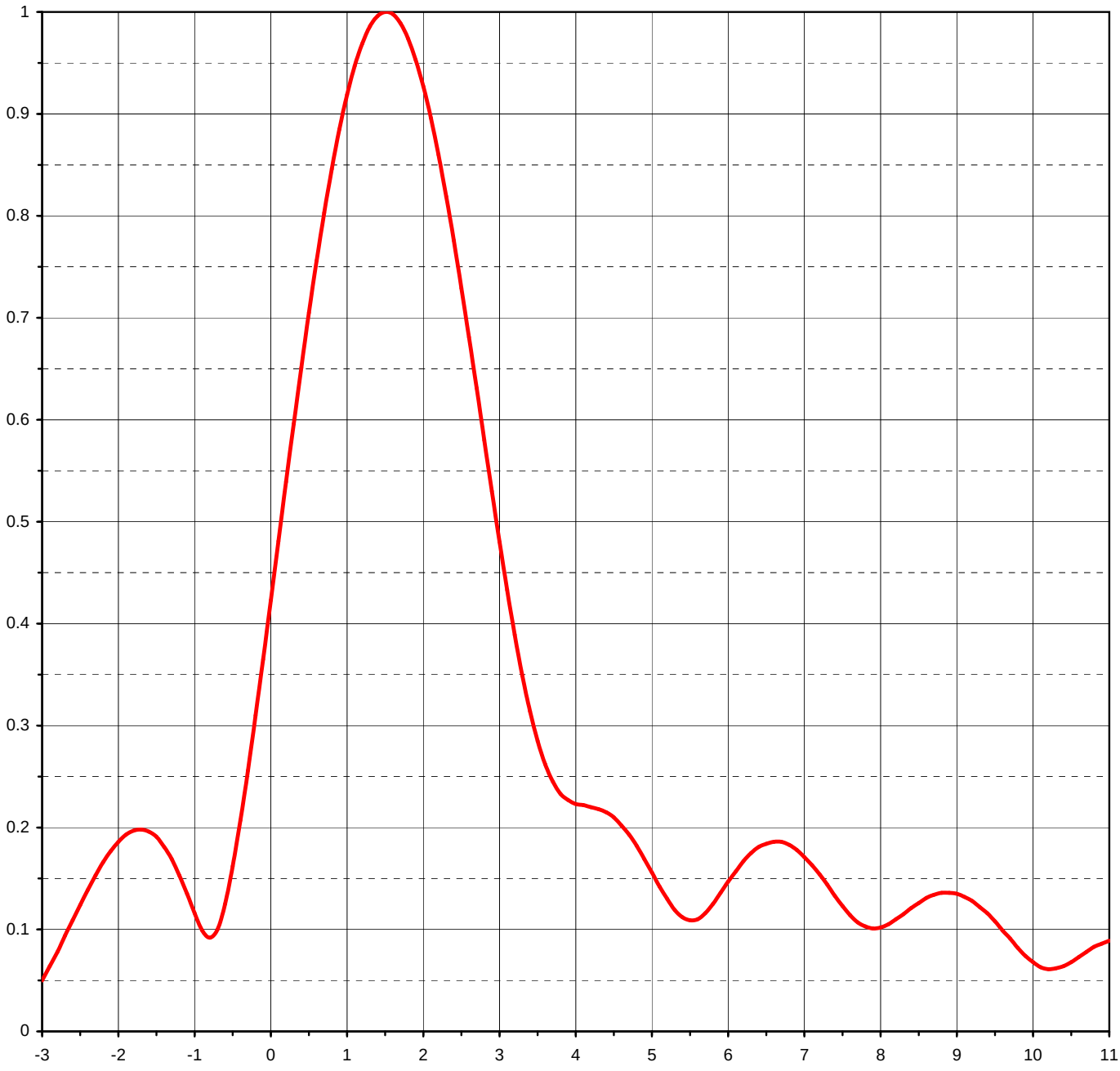
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Proposal Number	**C-02596**		
Date	**12-May-08**		
Call Letters	**WIPR-DT**	Channel	**43**
Location	**San Juan, PR**		
Customer			
Antenna Type	**TFU-26JSC-R CT150SP**		

ELEVATION PATTERN

RMS Gain at Main Lobe	**24.00 (13.80 dB)**	Beam Tilt	**1.50 deg**
RMS Gain at Horizontal	**4.30 (6.33 dB)**	Frequency	**647.00 MHz**
Calculated / Measured	**Calculated**	Drawing #	**26Y240150**



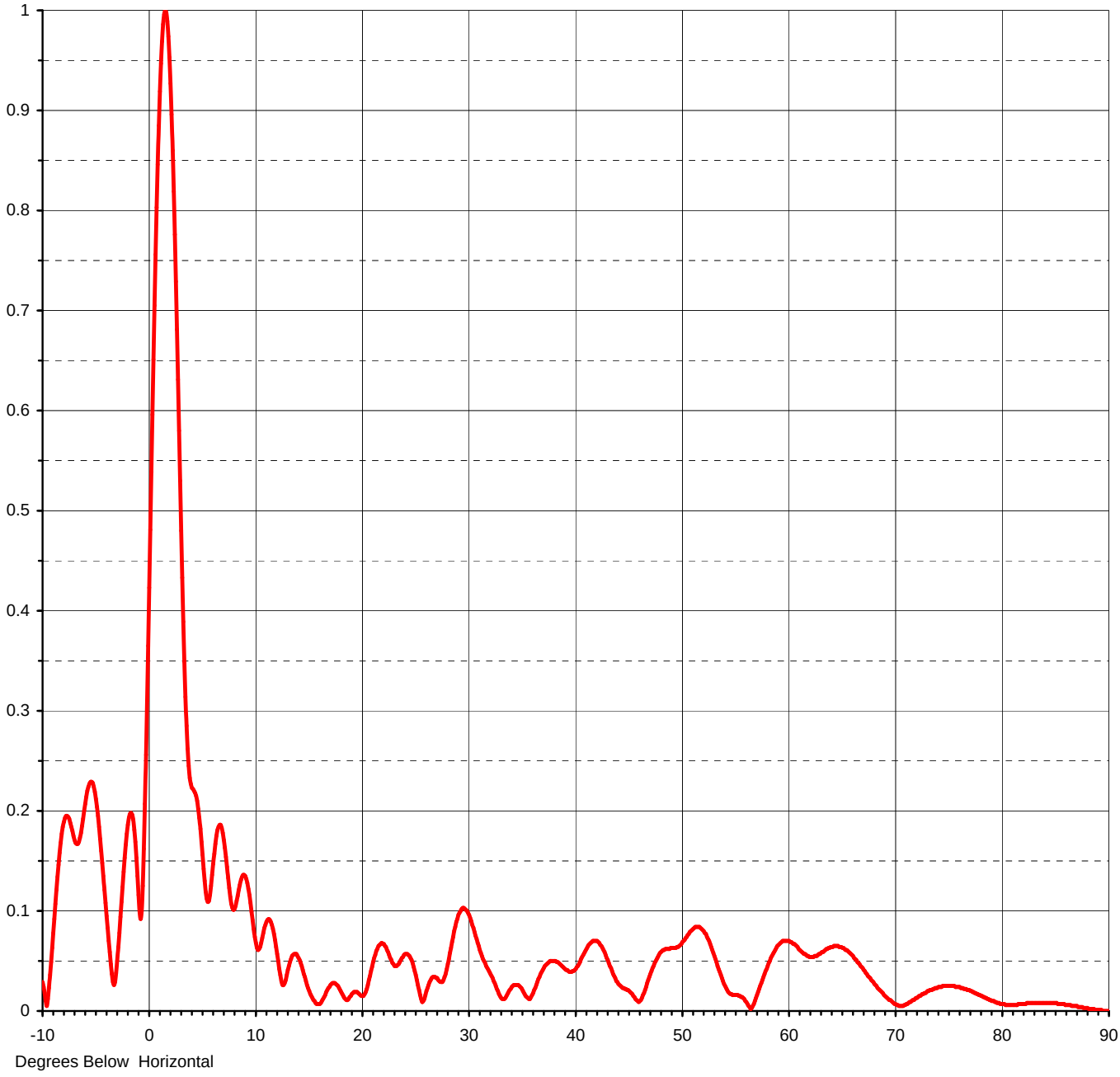
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Proposal Number	**C-02596**		
Date	**12-May-08**		
Call Letters	**WIPR-DT**	Channel	**43**
Location	**San Juan, PR**		
Customer			
Antenna Type	**TFU-26JSC-R CT150SP**		

ELEVATION PATTERN

RMS Gain at Main Lobe	**24.00 (13.80 dB)**	Beam Tilt	**1.50 deg**
RMS Gain at Horizontal	**4.30 (6.33 dB)**	Frequency	**647.00 MHz**
Calculated / Measured	**Calculated**	Drawing #	**26Y240150-90**



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Proposal Number	**C-02596**		
Date	**12-May-08**		
Call Letters	**WIPR-DT**	Channel	**43**
Location	**San Juan, PR**		
Customer			
Antenna Type	**TFU-26JSC-R CT150SP**		

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **26Y240150-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.029	2.4	0.776	10.6	0.068	30.5	0.083	51.0	0.081	71.5	0.010
-9.5	0.012	2.6	0.681	10.8	0.078	31.0	0.065	51.5	0.084	72.0	0.013
-9.0	0.078	2.8	0.580	11.0	0.086	31.5	0.050	52.0	0.081	72.5	0.017
-8.5	0.146	3.0	0.480	11.5	0.089	32.0	0.039	52.5	0.072	73.0	0.020
-8.0	0.189	3.2	0.389	12.0	0.064	32.5	0.028	53.0	0.058	73.5	0.022
-7.5	0.192	3.4	0.314	12.5	0.030	33.0	0.015	53.5	0.042	74.0	0.024
-7.0	0.171	3.6	0.262	13.0	0.036	33.5	0.013	54.0	0.027	74.5	0.025
-6.5	0.173	3.8	0.233	13.5	0.055	34.0	0.022	54.5	0.018	75.0	0.025
-6.0	0.207	4.0	0.223	14.0	0.055	34.5	0.026	55.0	0.016	75.5	0.025
-5.5	0.229	4.2	0.220	14.5	0.041	35.0	0.023	55.5	0.015	76.0	0.024
-5.0	0.212	4.4	0.215	15.0	0.023	35.5	0.014	56.0	0.010	76.5	0.022
-4.5	0.160	4.6	0.202	15.5	0.011	36.0	0.016	56.5	0.002	77.0	0.020
-4.0	0.095	4.8	0.182	16.0	0.007	36.5	0.029	57.0	0.013	77.5	0.018
-3.5	0.037	5.0	0.156	16.5	0.014	37.0	0.041	57.5	0.028	78.0	0.015
-3.0	0.050	5.2	0.130	17.0	0.024	37.5	0.048	58.0	0.042	78.5	0.013
-2.8	0.078	5.4	0.112	17.5	0.028	38.0	0.050	58.5	0.055	79.0	0.010
-2.6	0.109	5.6	0.110	18.0	0.021	38.5	0.048	59.0	0.065	79.5	0.008
-2.4	0.139	5.8	0.125	18.5	0.012	39.0	0.043	59.5	0.070	80.0	0.007
-2.2	0.166	6.0	0.147	19.0	0.015	39.5	0.039	60.0	0.070	80.5	0.006
-2.0	0.186	6.2	0.167	19.5	0.019	40.0	0.041	60.5	0.067	81.0	0.006
-1.8	0.197	6.4	0.181	20.0	0.015	40.5	0.049	61.0	0.062	81.5	0.007
-1.6	0.196	6.6	0.186	20.5	0.022	41.0	0.060	61.5	0.057	82.0	0.007
-1.4	0.181	6.8	0.183	21.0	0.044	41.5	0.068	62.0	0.054	82.5	0.008
-1.2	0.153	7.0	0.171	21.5	0.062	42.0	0.070	62.5	0.055	83.0	0.008
-1.0	0.116	7.2	0.154	22.0	0.067	42.5	0.065	63.0	0.057	83.5	0.008
-0.8	0.092	7.4	0.133	22.5	0.059	43.0	0.053	63.5	0.061	84.0	0.008
-0.6	0.125	7.6	0.114	23.0	0.047	43.5	0.040	64.0	0.064	84.5	0.008
-0.4	0.207	7.8	0.103	23.5	0.047	44.0	0.029	64.5	0.065	85.0	0.008
-0.2	0.310	8.0	0.102	24.0	0.056	44.5	0.023	65.0	0.063	85.5	0.007
0.0	0.423	8.2	0.110	24.5	0.055	45.0	0.021	65.5	0.060	86.0	0.006
0.2	0.539	8.4	0.121	25.0	0.040	45.5	0.015	66.0	0.055	86.5	0.005
0.4	0.651	8.6	0.131	25.5	0.016	46.0	0.009	66.5	0.048	87.0	0.005
0.6	0.756	8.8	0.136	26.0	0.016	46.5	0.018	67.0	0.041	87.5	0.004
0.8	0.846	9.0	0.135	26.5	0.031	47.0	0.034	67.5	0.034	88.0	0.003
1.0	0.919	9.2	0.128	27.0	0.033	47.5	0.048	68.0	0.027	88.5	0.002
1.2	0.969	9.4	0.116	27.5	0.029	48.0	0.058	68.5	0.021	89.0	0.001
1.4	0.996	9.6	0.099	28.0	0.042	48.5	0.062	69.0	0.015	89.5	0.000
1.6	0.998	9.8	0.091	28.5	0.069	49.0	0.063	69.5	0.011	90.0	0.000
1.8	0.974	10.0	0.074	29.0	0.092	49.5	0.063	70.0	0.007		
2.0	0.927	10.2	0.063	29.5	0.103	50.0	0.067	70.5	0.005		
2.2	0.860	10.4	0.062	30.0	0.098	50.5	0.074	71.0	0.007		

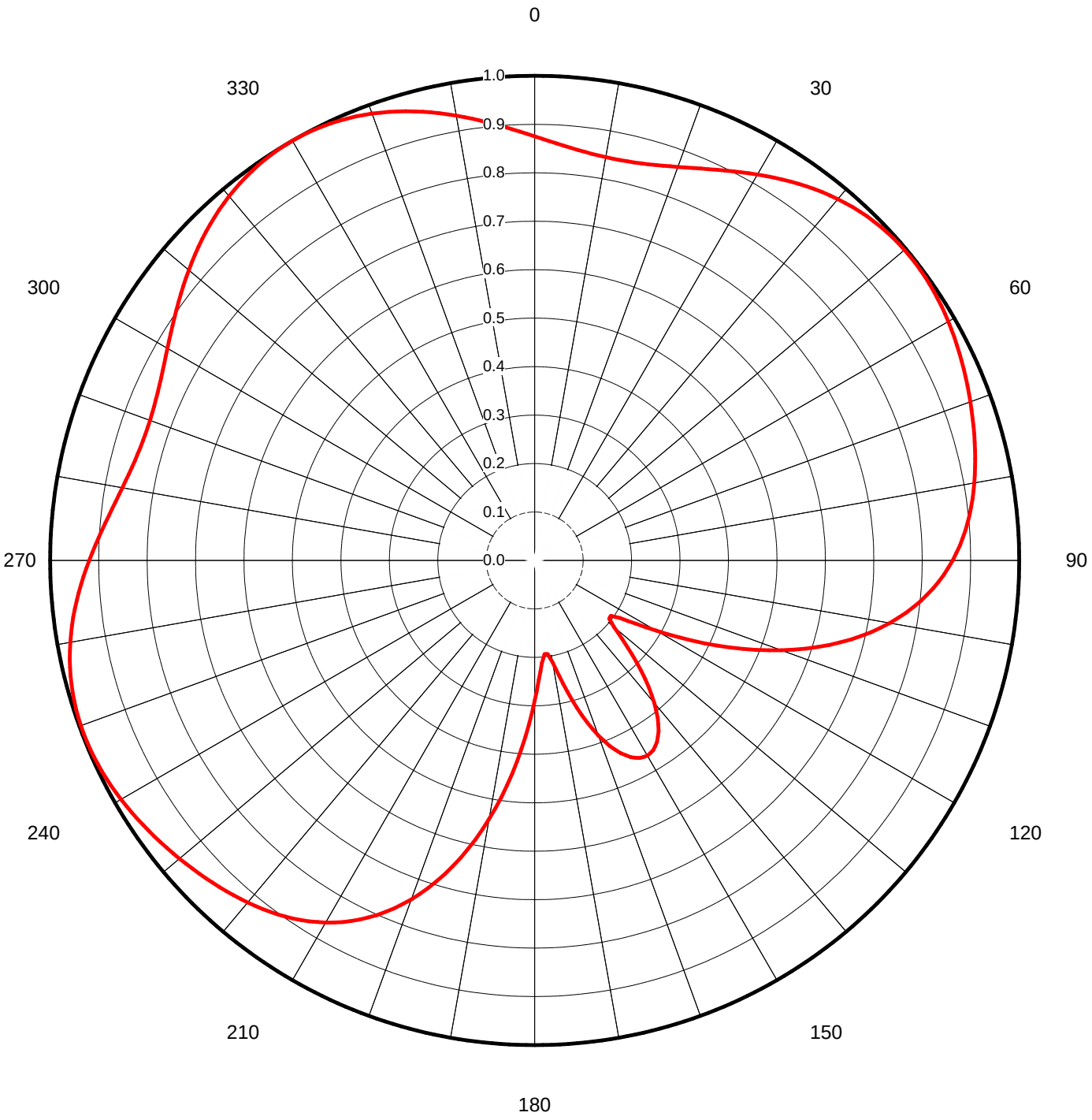
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Date	**12-May-08**		
Call Letters	**WIPR-DT**	Channel	**43**
Location	**San Juan, PR**		
Customer			
Antenna Type	**TFU-26JSC-R CT150SP**		

AZIMUTH PATTERN

Gain	**1.50**	**(1.76 dB)**	Frequency	**647.00 MHz**
Calculated / Measured		**Calculated**	Drawing #	**TFU-CT150**



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Call Letters	**WIPR-DT**	Channel	**43**
Location	**San Juan, PR**		
Customer			
Antenna Type	**TFU-26JSC-R CT150SP**		

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #: **TFU-CT150**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.875	45	0.989	90	0.863	135	0.298	180	0.289	225	0.940	270	0.919	315	0.959
1	0.870	46	0.992	91	0.854	136	0.316	181	0.314	226	0.944	271	0.913	316	0.964
2	0.866	47	0.993	92	0.845	137	0.334	182	0.338	227	0.947	272	0.907	317	0.969
3	0.862	48	0.995	93	0.835	138	0.352	183	0.364	228	0.950	273	0.901	318	0.973
4	0.858	49	0.996	94	0.825	139	0.368	184	0.390	229	0.954	274	0.895	319	0.977
5	0.855	50	0.997	95	0.813	140	0.384	185	0.416	230	0.957	275	0.889	320	0.981
6	0.852	51	0.997	96	0.801	141	0.398	186	0.442	231	0.960	276	0.884	321	0.984
7	0.849	52	0.997	97	0.788	142	0.412	187	0.467	232	0.963	277	0.878	322	0.988
8	0.847	53	0.996	98	0.774	143	0.424	188	0.493	233	0.966	278	0.873	323	0.990
9	0.846	54	0.996	99	0.759	144	0.435	189	0.517	234	0.969	279	0.869	324	0.993
10	0.845	55	0.995	100	0.744	145	0.443	190	0.542	235	0.972	280	0.864	325	0.995
11	0.845	56	0.993	101	0.727	146	0.452	191	0.565	236	0.975	281	0.860	326	0.997
12	0.845	57	0.992	102	0.711	147	0.457	192	0.589	237	0.978	282	0.856	327	0.998
13	0.845	58	0.990	103	0.692	148	0.462	193	0.611	238	0.981	283	0.853	328	0.999
14	0.846	59	0.988	104	0.673	149	0.463	194	0.633	239	0.983	284	0.850	329	1.000
15	0.848	60	0.986	105	0.653	150	0.465	195	0.653	240	0.986	285	0.848	330	1.000
16	0.850	61	0.983	106	0.633	151	0.463	196	0.673	241	0.988	286	0.846	331	1.000
17	0.853	62	0.981	107	0.611	152	0.462	197	0.692	242	0.990	287	0.845	332	0.999
18	0.856	63	0.978	108	0.589	153	0.457	198	0.711	243	0.992	288	0.845	333	0.998
19	0.860	64	0.975	109	0.565	154	0.452	199	0.727	244	0.993	289	0.845	334	0.997
20	0.864	65	0.972	110	0.542	155	0.443	200	0.744	245	0.995	290	0.845	335	0.995
21	0.869	66	0.969	111	0.517	156	0.435	201	0.759	246	0.996	291	0.846	336	0.993
22	0.873	67	0.966	112	0.493	157	0.424	202	0.774	247	0.996	292	0.847	337	0.990
23	0.878	68	0.963	113	0.467	158	0.412	203	0.788	248	0.997	293	0.849	338	0.988
24	0.884	69	0.960	114	0.442	159	0.398	204	0.801	249	0.997	294	0.852	339	0.984
25	0.889	70	0.957	115	0.416	160	0.384	205	0.813	250	0.997	295	0.855	340	0.981
26	0.895	71	0.954	116	0.390	161	0.368	206	0.825	251	0.996	296	0.858	341	0.977
27	0.901	72	0.950	117	0.364	162	0.352	207	0.835	252	0.995	297	0.862	342	0.973
28	0.907	73	0.947	118	0.338	163	0.334	208	0.845	253	0.993	298	0.866	343	0.969
29	0.913	74	0.944	119	0.314	164	0.316	209	0.854	254	0.992	299	0.870	344	0.964
30	0.919	75	0.940	120	0.289	165	0.298	210	0.863	255	0.989	300	0.875	345	0.959
31	0.925	76	0.937	121	0.268	166	0.279	211	0.870	256	0.987	301	0.880	346	0.954
32	0.932	77	0.933	122	0.246	167	0.261	212	0.878	257	0.984	302	0.885	347	0.949
33	0.937	78	0.929	123	0.229	168	0.244	213	0.885	258	0.981	303	0.891	348	0.943
34	0.943	79	0.925	124	0.212	169	0.229	214	0.891	259	0.977	304	0.897	349	0.938
35	0.949	80	0.921	125	0.203	170	0.214	215	0.897	260	0.973	305	0.902	350	0.932
36	0.954	81	0.917	126	0.194	171	0.204	216	0.903	261	0.969	306	0.908	351	0.926
37	0.959	82	0.913	127	0.195	172	0.195	217	0.908	262	0.964	307	0.914	352	0.920
38	0.964	83	0.908	128	0.195	173	0.195	218	0.913	263	0.959	308	0.920	353	0.914
39	0.969	84	0.903	129	0.204	174	0.194	219	0.917	264	0.954	309	0.926	354	0.908
40	0.973	85	0.897	130	0.214	175	0.203	220	0.921	265	0.949	310	0.932	355	0.902
41	0.977	86	0.891	131	0.229	176	0.212	221	0.925	266	0.943	311	0.938	356	0.897
42	0.981	87	0.885	132	0.244	177	0.229	222	0.929	267	0.937	312	0.943	357	0.891
43	0.984	88	0.878	133	0.261	178	0.246	223	0.933	268	0.932	313	0.949	358	0.885
44	0.987	89	0.870	134	0.279	179	0.268	224	0.937	269	0.925	314	0.954	359	0.880

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