



Proposal #: **DCA-11245** Antenna Type: **TFU-28JSC-R S200** Channel: **47 DTV**
 Call Letters: **WUPV-DT** Location: **Ashland, VA**

Electrical Specifications		Value		Remarks
		Ratio	dB	
RMS Gain at Main Lobe over Halfwave Dipole	Hpol	27.0	14.31	
	Vpol			
RMS Gain at Horizontal over Halfwave Dipole	Hpol	22.3	13.48	
	Vpol			
Peak Directional Gain over Halfwave Dipole	Hpol	54.0	17.32	
	Vpol			
Peak Directional Gain at Horizontal over Halfwave Dipole	Hpol	44.6	16.49	
	Vpol			
Circularity		dB		
Axial Ratio		dB		
Beam Tilt		0.50 deg		
Average Power	DTV	35 kW	15.44 dBk	
Antenna Input:	T/L	6 1/8 in	75.0 ohm	Type: EIA/DCA
Maximum Antenna Input VSWR		Channel 1.08 : 1		
Patterns	Azimuth	TFU-S200-47		
	Elevation	28Y270050	28Y270050-90	
Mechanical Specifications		Metric	English	Preliminary
Height with Lightning Protector	H4	m	ft	Side mounted
Height Less Lightning Protector	H2	14.0 m	46.0 ft	
Height of Center of Radiation	H3	7.0 m	23.0 ft	
Basic Wind Speed	V	128.7 km/h	80 mi/h	TIA/EIA-222-F.
Force Coeff. x Projected Area	CaAc	7.04 m ²	75.8 ft ²	Excludes Mounts
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	0.5 t	1,080 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.				

NOTE:

Prepared By : **SWB** Approved By : **JLS**
 Original Date : **28-Oct-05**



SIDE MOUNTED ANTENNA
TFU-28JSC-R S200
WUPV-DT: Ashland, VA

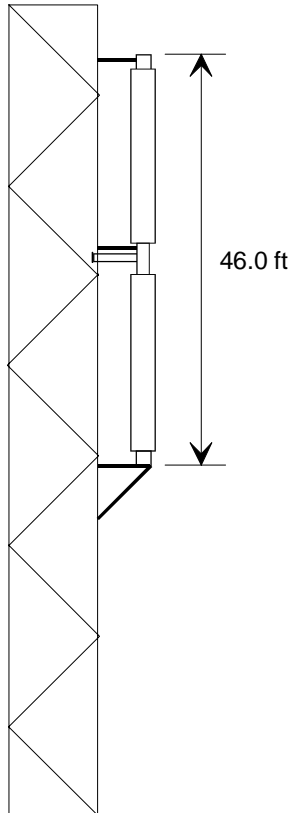
MECHANICAL DATA

CaAc = 75.8 ft² Excludes Mounts

Center of Radiation = 23.0 ft

Weight = 1080 lbs Excludes Mounts

EIA-222-F Specification
(80 mph basic wind speed)



CH d47
TFU-28JSC-R S200



Proposal Number
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DCA-11245
28-Oct-05
WUPV-DT Channel **47**
Ashland, VA
TFU-28JSC-R S200

SYSTEM SUMMARY

Antenna:

Type:	TFU-28JSC-R S200	ERP:	1000 kW	H Pol	(30.00 dBk)
Channel:	47	Peak Gain*:	54.0		(17.32 dB)
Location:	Ashland, VA	Input Power:	18.5 kW		(12.68 dBk)

Transmission Line:

Type:	EIA/DCA	Attenuation:	1.15 dB
Size:	6-1/8 in	Efficiency:	76.8%
Impedance:	75 ohm		
Length:	900 ft		274.3 m

Transmitter:

Power Required: **24.1 kW (13.82 dBk)**

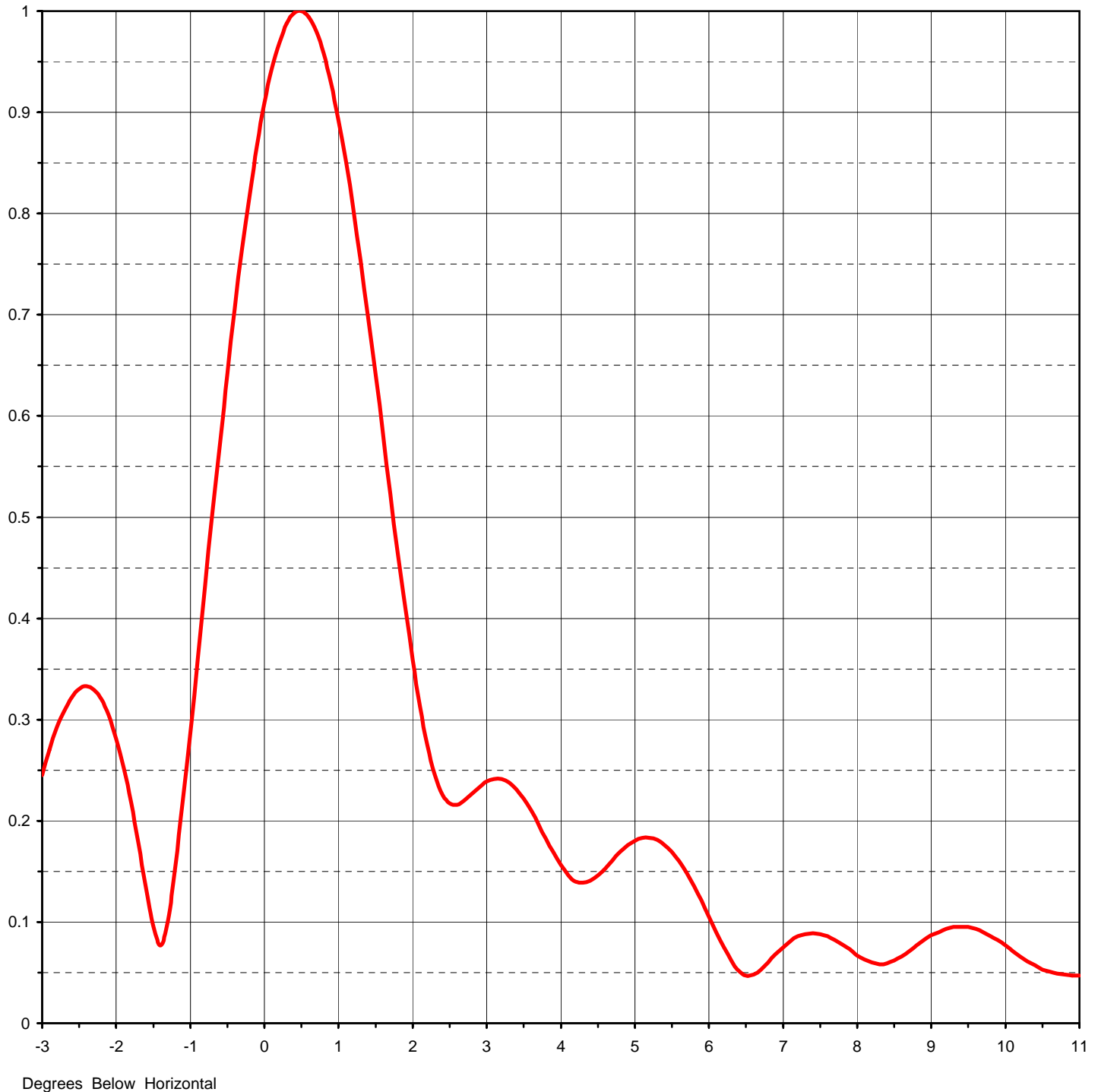
* Gain is with respect to half wave dipole.



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ELEVATION PATTERN

RMS Gain at Main Lobe	27.00 (14.31 dB)	Beam Tilt	0.50 deg
RMS Gain at Horizontal	22.30 (13.48 dB)	Frequency	671.00 MHz
Calculated / Measured	Calculated	Drawing #	28Y270050



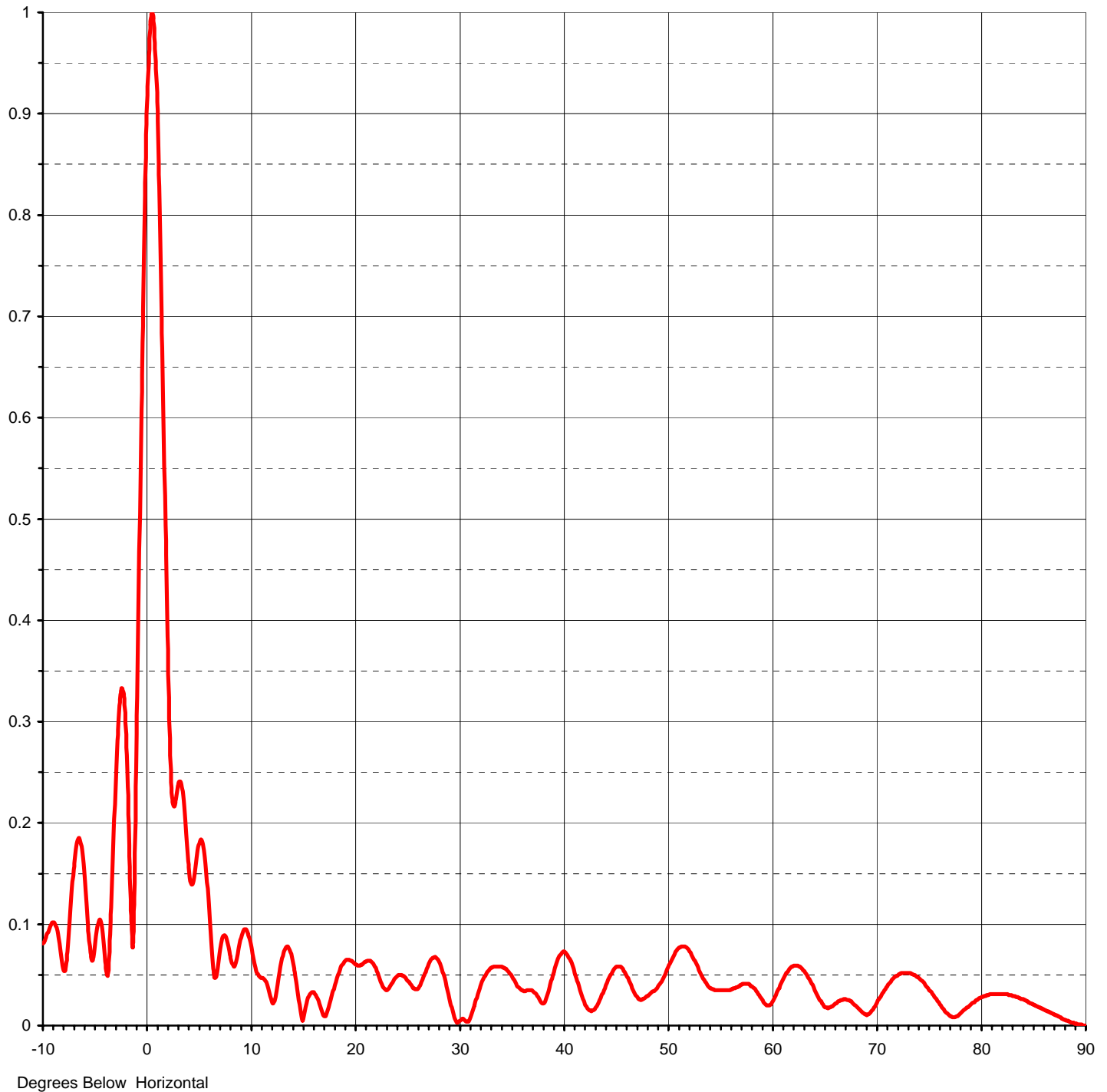


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Antenna Type	TFU-28JSC-R S200	

ELEVATION PATTERN

RMS Gain at Main Lobe	27.00 (14.31 dB)
RMS Gain at Horizontal	22.30 (13.48 dB)
Calculated / Measured	Calculated

Beam Tilt	0.50 deg
Frequency	671.00 MHz
Drawing #	28Y270050-90





Proposal Number **DCA-11245**

Date **28-Oct-05**

Call Letters **WUPV-DT**

Channel **47**

Location **Ashland, VA**

Customer

Antenna Type **TFU-28JSC-R S200**

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **28Y270050-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.081	2.4	0.226	10.6	0.053	30.5	0.006	51.0	0.076	71.5	0.046
-9.5	0.092	2.6	0.216	10.8	0.049	31.0	0.006	51.5	0.078	72.0	0.050
-9.0	0.102	2.8	0.227	11.0	0.047	31.5	0.020	52.0	0.075	72.5	0.052
-8.5	0.087	3.0	0.239	11.5	0.043	32.0	0.037	52.5	0.066	73.0	0.052
-8.0	0.055	3.2	0.241	12.0	0.026	32.5	0.049	53.0	0.055	73.5	0.050
-7.5	0.093	3.4	0.231	12.5	0.034	33.0	0.056	53.5	0.045	74.0	0.047
-7.0	0.160	3.6	0.210	13.0	0.064	33.5	0.058	54.0	0.038	74.5	0.042
-6.5	0.185	3.8	0.182	13.5	0.078	34.0	0.058	54.5	0.035	75.0	0.035
-6.0	0.148	4.0	0.156	14.0	0.066	34.5	0.056	55.0	0.035	75.5	0.028
-5.5	0.078	4.2	0.140	14.5	0.036	35.0	0.050	55.5	0.035	76.0	0.021
-5.0	0.079	4.4	0.141	15.0	0.005	35.5	0.041	56.0	0.035	76.5	0.014
-4.5	0.104	4.6	0.153	15.5	0.026	36.0	0.035	56.5	0.037	77.0	0.009
-4.0	0.063	4.8	0.169	16.0	0.033	36.5	0.035	57.0	0.040	77.5	0.008
-3.5	0.103	5.0	0.180	16.5	0.025	37.0	0.035	57.5	0.041	78.0	0.012
-3.0	0.245	5.2	0.183	17.0	0.010	37.5	0.029	58.0	0.039	78.5	0.017
-2.8	0.292	5.4	0.176	17.5	0.018	38.0	0.022	58.5	0.034	79.0	0.021
-2.6	0.322	5.6	0.160	18.0	0.036	38.5	0.031	59.0	0.027	79.5	0.025
-2.4	0.333	5.8	0.135	18.5	0.052	39.0	0.050	59.5	0.020	80.0	0.028
-2.2	0.320	6.0	0.105	19.0	0.063	39.5	0.066	60.0	0.023	80.5	0.030
-2.0	0.281	6.2	0.075	19.5	0.065	40.0	0.073	60.5	0.033	81.0	0.031
-1.8	0.218	6.4	0.052	20.0	0.061	40.5	0.068	61.0	0.044	81.5	0.031
-1.6	0.135	6.6	0.048	20.5	0.059	41.0	0.056	61.5	0.053	82.0	0.031
-1.4	0.077	6.8	0.060	21.0	0.063	41.5	0.039	62.0	0.058	82.5	0.031
-1.2	0.155	7.0	0.075	21.5	0.064	42.0	0.024	62.5	0.059	83.0	0.029
-1.0	0.288	7.2	0.086	22.0	0.057	42.5	0.015	63.0	0.055	83.5	0.028
-0.8	0.432	7.4	0.089	22.5	0.043	43.0	0.016	63.5	0.047	84.0	0.026
-0.6	0.574	7.6	0.086	23.0	0.035	43.5	0.025	64.0	0.038	84.5	0.023
-0.4	0.706	7.8	0.078	23.5	0.040	44.0	0.037	64.5	0.025	85.0	0.021
-0.2	0.819	8.0	0.067	24.0	0.048	44.5	0.049	65.0	0.018	85.5	0.018
0.0	0.909	8.2	0.060	24.5	0.050	45.0	0.057	65.5	0.018	86.0	0.016
0.2	0.969	8.4	0.059	25.0	0.045	45.5	0.058	66.0	0.022	86.5	0.013
0.4	0.998	8.6	0.066	25.5	0.039	46.0	0.051	66.5	0.025	87.0	0.011
0.6	0.994	8.8	0.077	26.0	0.036	46.5	0.040	67.0	0.026	87.5	0.008
0.8	0.958	9.0	0.087	26.5	0.045	47.0	0.029	67.5	0.024	88.0	0.006
1.0	0.893	9.2	0.093	27.0	0.058	47.5	0.025	68.0	0.019	88.5	0.004
1.2	0.804	9.4	0.095	27.5	0.067	48.0	0.029	68.5	0.014	89.0	0.002
1.4	0.698	9.6	0.093	28.0	0.065	48.5	0.033	69.0	0.010	89.5	0.001
1.6	0.582	9.8	0.090	28.5	0.051	49.0	0.037	69.5	0.015	90.0	0.000
1.8	0.465	10.0	0.082	29.0	0.031	49.5	0.045	70.0	0.023		
2.0	0.359	10.2	0.071	29.5	0.010	50.0	0.056	70.5	0.032		
2.2	0.275	10.4	0.061	30.0	0.004	50.5	0.067	71.0	0.039		

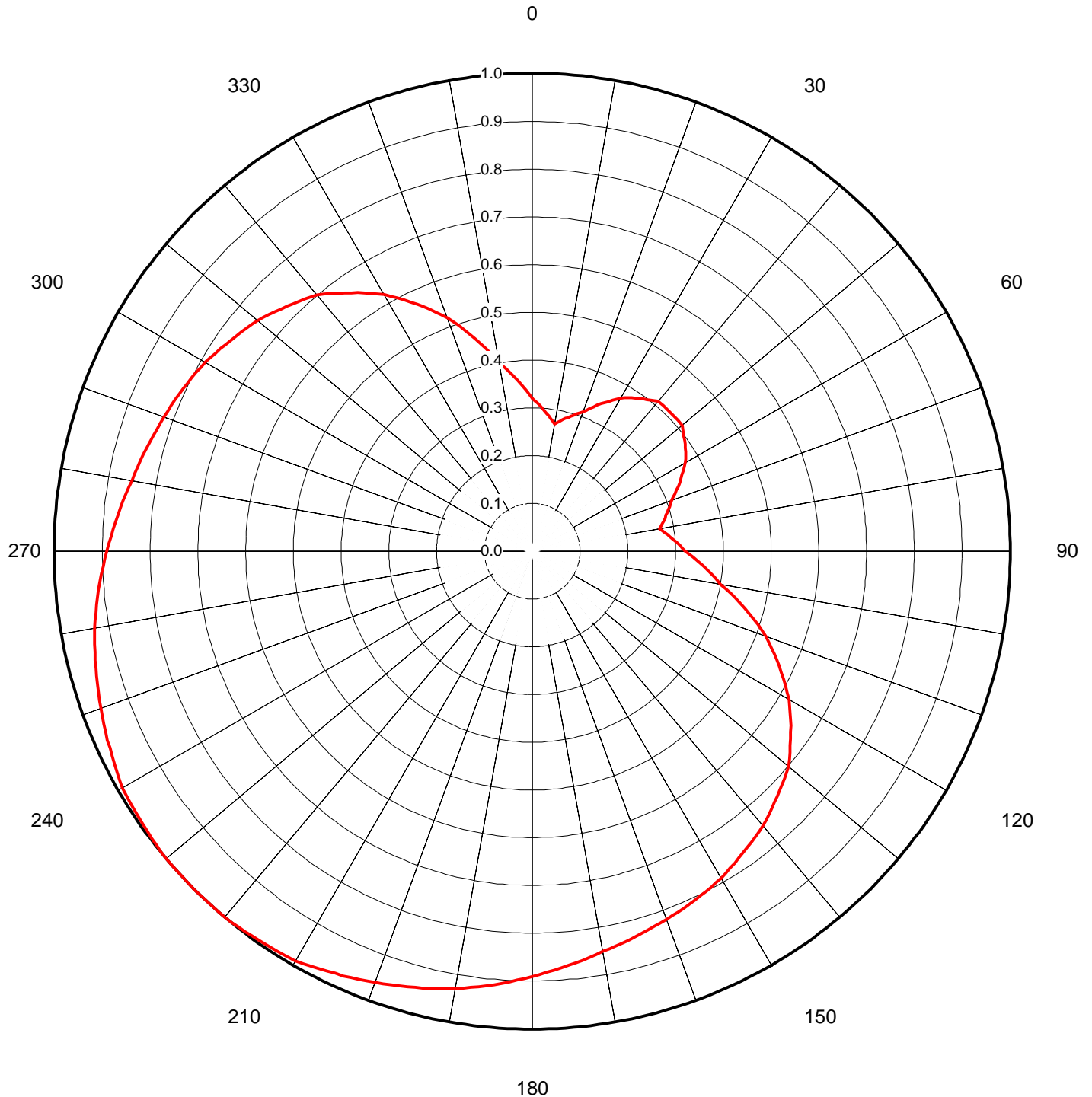


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Location	Ashland, VA		
Customer			
Antenna Type	TFU-28JSC-R S200		

AZIMUTH PATTERN

Gain	2.00	(3.01 dB)
Calculated / Measured	Calculated	

Frequency	671.00 MHz
Drawing #	TFU-S200-47





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TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #: **TFU-S200-47**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.320	45	0.410	90	0.320	135	0.725	180	0.890	225	1.000	270	0.890	315	0.725
1	0.315	46	0.410	91	0.328	136	0.730	181	0.894	226	1.000	271	0.886	316	0.720
2	0.310	47	0.410	92	0.336	137	0.735	182	0.898	227	1.000	272	0.882	317	0.715
3	0.305	48	0.410	93	0.344	138	0.740	183	0.902	228	1.000	273	0.878	318	0.710
4	0.300	49	0.410	94	0.352	139	0.745	184	0.906	229	1.000	274	0.874	319	0.705
5	0.295	50	0.410	95	0.360	140	0.750	185	0.910	230	1.000	275	0.870	320	0.700
6	0.290	51	0.406	96	0.368	141	0.754	186	0.914	231	0.999	276	0.866	321	0.692
7	0.285	52	0.402	97	0.376	142	0.758	187	0.918	232	0.998	277	0.862	322	0.684
8	0.280	53	0.398	98	0.384	143	0.762	188	0.922	233	0.997	278	0.858	323	0.676
9	0.275	54	0.394	99	0.392	144	0.766	189	0.926	234	0.996	279	0.854	324	0.668
10	0.270	55	0.390	100	0.400	145	0.770	190	0.930	235	0.995	280	0.850	325	0.660
11	0.274	56	0.386	101	0.412	146	0.774	191	0.933	236	0.994	281	0.847	326	0.652
12	0.278	57	0.382	102	0.424	147	0.778	192	0.936	237	0.993	282	0.844	327	0.644
13	0.282	58	0.378	103	0.436	148	0.782	193	0.939	238	0.992	283	0.841	328	0.636
14	0.286	59	0.374	104	0.448	149	0.786	194	0.942	239	0.991	284	0.838	329	0.628
15	0.290	60	0.370	105	0.460	150	0.790	195	0.945	240	0.990	285	0.835	330	0.620
16	0.294	61	0.364	106	0.472	151	0.793	196	0.948	241	0.987	286	0.832	331	0.610
17	0.298	62	0.358	107	0.484	152	0.796	197	0.951	242	0.984	287	0.829	332	0.600
18	0.302	63	0.352	108	0.496	153	0.799	198	0.954	243	0.981	288	0.826	333	0.590
19	0.306	64	0.346	109	0.508	154	0.802	199	0.957	244	0.978	289	0.823	334	0.580
20	0.310	65	0.340	110	0.520	155	0.805	200	0.960	245	0.975	290	0.820	335	0.570
21	0.316	66	0.334	111	0.530	156	0.808	201	0.963	246	0.972	291	0.817	336	0.560
22	0.322	67	0.328	112	0.540	157	0.811	202	0.966	247	0.969	292	0.814	337	0.550
23	0.328	68	0.322	113	0.550	158	0.814	203	0.969	248	0.966	293	0.811	338	0.540
24	0.334	69	0.316	114	0.560	159	0.817	204	0.972	249	0.963	294	0.808	339	0.530
25	0.340	70	0.310	115	0.570	160	0.820	205	0.975	250	0.960	295	0.805	340	0.520
26	0.346	71	0.306	116	0.580	161	0.823	206	0.978	251	0.957	296	0.802	341	0.508
27	0.352	72	0.302	117	0.590	162	0.826	207	0.981	252	0.954	297	0.799	342	0.496
28	0.358	73	0.298	118	0.600	163	0.829	208	0.984	253	0.951	298	0.796	343	0.484
29	0.364	74	0.294	119	0.610	164	0.832	209	0.987	254	0.948	299	0.793	344	0.472
30	0.370	75	0.290	120	0.620	165	0.835	210	0.990	255	0.945	300	0.790	345	0.460
31	0.374	76	0.286	121	0.628	166	0.838	211	0.991	256	0.942	301	0.786	346	0.448
32	0.378	77	0.282	122	0.636	167	0.841	212	0.992	257	0.939	302	0.782	347	0.436
33	0.382	78	0.278	123	0.644	168	0.844	213	0.993	258	0.936	303	0.778	348	0.424
34	0.386	79	0.274	124	0.652	169	0.847	214	0.994	259	0.933	304	0.774	349	0.412
35	0.390	80	0.270	125	0.660	170	0.850	215	0.995	260	0.930	305	0.770	350	0.400
36	0.394	81	0.275	126	0.668	171	0.854	216	0.996	261	0.926	306	0.766	351	0.392
37	0.398	82	0.280	127	0.676	172	0.858	217	0.997	262	0.922	307	0.762	352	0.384
38	0.402	83	0.285	128	0.684	173	0.862	218	0.998	263	0.918	308	0.758	353	0.376
39	0.406	84	0.290	129	0.692	174	0.866	219	0.999	264	0.914	309	0.754	354	0.368
40	0.410	85	0.295	130	0.700	175	0.870	220	1.000	265	0.910	310	0.750	355	0.360
41	0.410	86	0.300	131	0.705	176	0.874	221	1.000	266	0.906	311	0.745	356	0.352
42	0.410	87	0.305	132	0.710	177	0.878	222	1.000	267	0.902	312	0.740	357	0.344
43	0.410	88	0.310	133	0.715	178	0.882	223	1.000	268	0.898	313	0.735	358	0.336
44	0.410	89	0.315	134	0.720	179	0.886	224	1.000	269	0.894	314	0.730	359	0.328