

## AZIMUTH PATTERN Horizontal Polarization

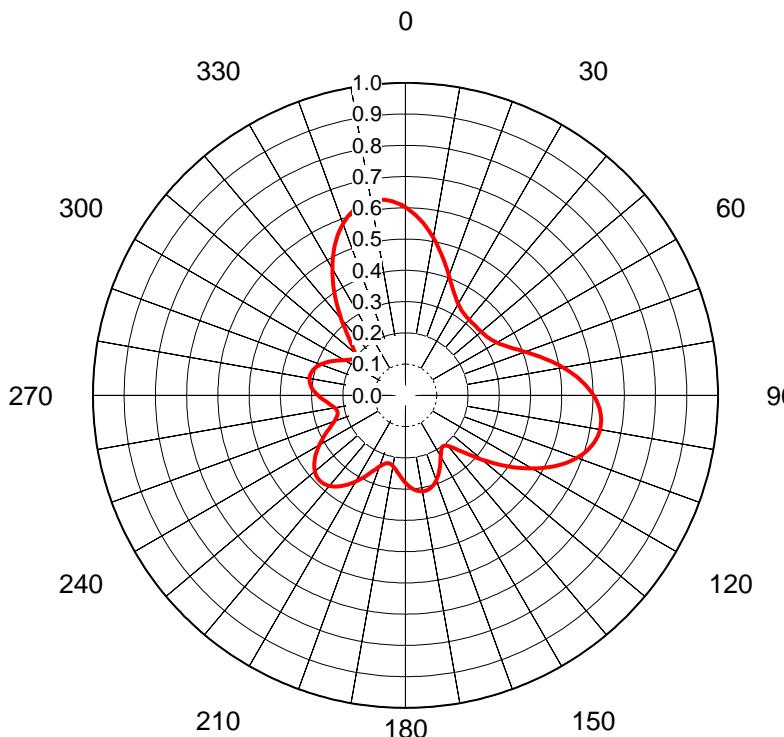
In Free Space

Proposal No.	<b>C-71772-1</b>
Date	<b>30-Nov-21</b>
Call Letters	<b>WEDW</b>
Channel	<b>21</b>
Frequency	<b>515 MHz</b>
Antenna Type	<b>TFU-12EST/VP-R 3S180</b>
Gain	<b>1.76 (2.47dB)</b>

Calculated

Deg	Value																		
0	0.953	36	0.993	72	0.999	108	0.903	144	0.652	180	0.545	216	0.414	252	0.457	288	0.523	324	0.764
1	0.956	37	0.992	73	0.999	109	0.898	145	0.642	181	0.543	217	0.412	253	0.463	289	0.521	325	0.772
2	0.960	38	0.992	74	0.999	110	0.894	146	0.631	182	0.542	218	0.410	254	0.469	290	0.520	326	0.780
3	0.963	39	0.991	75	0.998	111	0.889	147	0.621	183	0.541	219	0.408	255	0.474	291	0.522	327	0.788
4	0.966	40	0.990	76	0.998	112	0.885	148	0.611	184	0.539	220	0.405	256	0.480	292	0.525	328	0.797
5	0.969	41	0.990	77	0.998	113	0.880	149	0.601	185	0.538	221	0.405	257	0.486	293	0.527	329	0.805
6	0.973	42	0.989	78	0.998	114	0.875	150	0.591	186	0.537	222	0.405	258	0.492	294	0.530	330	0.813
7	0.976	43	0.989	79	0.997	115	0.871	151	0.584	187	0.535	223	0.405	259	0.498	295	0.532	331	0.818
8	0.979	44	0.989	80	0.997	116	0.866	152	0.578	188	0.534	224	0.405	260	0.504	296	0.535	332	0.824
9	0.983	45	0.988	81	0.995	117	0.862	153	0.571	189	0.533	225	0.404	261	0.507	297	0.537	333	0.829
10	0.986	46	0.988	82	0.993	118	0.857	154	0.565	190	0.532	226	0.404	262	0.511	298	0.540	334	0.834
11	0.987	47	0.988	83	0.990	119	0.852	155	0.559	191	0.526	227	0.404	263	0.515	299	0.542	335	0.840
12	0.989	48	0.988	84	0.988	120	0.848	156	0.552	192	0.521	228	0.404	264	0.519	300	0.545	336	0.845
13	0.990	49	0.987	85	0.986	121	0.841	157	0.546	193	0.516	229	0.404	265	0.523	301	0.553	337	0.851
14	0.992	50	0.987	86	0.984	122	0.835	158	0.539	194	0.511	230	0.403	266	0.527	302	0.562	338	0.856
15	0.993	51	0.988	87	0.982	123	0.829	159	0.533	195	0.506	231	0.404	267	0.531	303	0.570	339	0.861
16	0.994	52	0.988	88	0.979	124	0.822	160	0.527	196	0.500	232	0.405	268	0.535	304	0.579	340	0.867
17	0.996	53	0.989	89	0.977	125	0.816	161	0.526	197	0.495	233	0.406	269	0.539	305	0.587	341	0.871
18	0.997	54	0.989	90	0.975	126	0.809	162	0.526	198	0.490	234	0.406	270	0.543	306	0.596	342	0.876
19	0.999	55	0.990	91	0.971	127	0.803	163	0.526	199	0.485	235	0.407	271	0.542	307	0.604	343	0.880
20	1.000	56	0.991	92	0.967	128	0.797	164	0.526	200	0.479	236	0.408	272	0.542	308	0.613	344	0.884
21	1.000	57	0.991	93	0.964	129	0.790	165	0.526	201	0.474	237	0.408	273	0.541	309	0.621	345	0.889
22	1.000	58	0.992	94	0.960	130	0.784	166	0.526	202	0.469	238	0.409	274	0.541	310	0.630	346	0.893
23	0.999	59	0.992	95	0.956	131	0.775	167	0.526	203	0.464	239	0.410	275	0.541	311	0.640	347	0.898
24	0.999	60	0.993	96	0.952	132	0.766	168	0.526	204	0.459	240	0.410	276	0.540	312	0.650	348	0.902
25	0.999	61	0.994	97	0.948	133	0.756	169	0.526	205	0.453	241	0.414	277	0.540	313	0.660	349	0.907
26	0.999	62	0.994	98	0.945	134	0.747	170	0.526	206	0.448	242	0.417	278	0.539	314	0.670	350	0.911
27	0.999	63	0.995	99	0.941	135	0.738	171	0.527	207	0.443	243	0.421	279	0.539	315	0.681	351	0.915
28	0.998	64	0.996	100	0.937	136	0.729	172	0.529	208	0.438	244	0.424	280	0.539	316	0.691	352	0.919
29	0.998	65	0.996	101	0.933	137	0.720	173	0.531	209	0.433	245	0.428	281	0.537	317	0.701	353	0.924
30	0.998	66	0.997	102	0.928	138	0.711	174	0.533	210	0.427	246	0.431	282	0.535	318	0.711	354	0.928
31	0.997	67	0.998	103	0.924	139	0.702	175	0.535	211	0.425	247	0.435	283	0.533	319	0.722	355	0.932
32	0.996	68	0.999	104	0.920	140	0.693	176	0.537	212	0.423	248	0.438	284	0.531	320	0.732	356	0.936
33	0.996	69	0.999	105	0.915	141	0.682	177	0.539	213	0.421	249	0.442	285	0.529	321	0.740	357	0.940
34	0.995	70	1.000	106	0.911	142	0.672	178	0.541	214	0.419	250	0.445	286	0.527	322	0.748	358	0.945
35	0.994	71	1.000	107	0.907	143	0.662	179	0.543	215	0.416	251	0.451	287	0.525	323	0.756	359	0.949

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## AZIMUTH PATTERN Vertical Polarization

In Free Space

Proposal No.	C-71772-1
Date	30-Nov-21
Call Letters	WEDW
Channel	21
Frequency	515 MHz
Antenna Type	TFU-12EST/VP-R 3S180
Gain	2.59 (4.14dB)

Calculated

Deg	Value																		
0	0.602	36	0.321	72	0.427	108	0.600	144	0.202	180	0.280	216	0.360	252	0.232	288	0.298	324	0.379
1	0.595	37	0.319	73	0.437	109	0.593	145	0.204	181	0.275	217	0.366	253	0.229	289	0.294	325	0.394
2	0.587	38	0.318	74	0.447	110	0.584	146	0.206	182	0.269	218	0.370	254	0.226	290	0.289	326	0.410
3	0.579	39	0.317	75	0.458	111	0.575	147	0.210	183	0.263	219	0.375	255	0.224	291	0.283	327	0.424
4	0.571	40	0.317	76	0.469	112	0.566	148	0.214	184	0.258	220	0.378	256	0.224	292	0.278	328	0.439
5	0.562	41	0.316	77	0.480	113	0.555	149	0.220	185	0.252	221	0.381	257	0.224	293	0.272	329	0.454
6	0.553	42	0.316	78	0.490	114	0.545	150	0.225	186	0.247	222	0.384	258	0.225	294	0.265	330	0.468
7	0.543	43	0.315	79	0.501	115	0.533	151	0.232	187	0.242	223	0.386	259	0.227	295	0.259	331	0.482
8	0.533	44	0.315	80	0.512	116	0.521	152	0.238	188	0.237	224	0.387	260	0.230	296	0.252	332	0.495
9	0.522	45	0.315	81	0.522	117	0.508	153	0.245	189	0.233	225	0.387	261	0.233	297	0.245	333	0.508
10	0.512	46	0.315	82	0.533	118	0.495	154	0.252	190	0.230	226	0.387	262	0.237	298	0.238	334	0.521
11	0.501	47	0.315	83	0.543	119	0.482	155	0.259	191	0.227	227	0.386	263	0.242	299	0.232	335	0.533
12	0.490	48	0.316	84	0.553	120	0.468	156	0.265	192	0.225	228	0.384	264	0.247	300	0.225	336	0.545
13	0.480	49	0.316	85	0.562	121	0.454	157	0.272	193	0.224	229	0.381	265	0.252	301	0.220	337	0.555
14	0.469	50	0.317	86	0.571	122	0.439	158	0.278	194	0.224	230	0.378	266	0.258	302	0.214	338	0.566
15	0.458	51	0.317	87	0.579	123	0.424	159	0.283	195	0.224	231	0.375	267	0.263	303	0.210	339	0.575
16	0.447	52	0.318	88	0.587	124	0.409	160	0.289	196	0.226	232	0.370	268	0.269	304	0.206	340	0.584
17	0.437	53	0.319	89	0.595	125	0.394	161	0.294	197	0.229	233	0.366	269	0.275	305	0.204	341	0.593
18	0.427	54	0.321	90	0.602	126	0.379	162	0.298	198	0.232	234	0.360	270	0.280	306	0.202	342	0.600
19	0.417	55	0.323	91	0.608	127	0.364	163	0.302	199	0.237	235	0.354	271	0.285	307	0.202	343	0.607
20	0.407	56	0.325	92	0.613	128	0.349	164	0.305	200	0.242	236	0.348	272	0.290	308	0.204	344	0.613
21	0.398	57	0.327	93	0.618	129	0.334	165	0.308	201	0.248	237	0.341	273	0.294	309	0.207	345	0.618
22	0.389	58	0.330	94	0.623	130	0.320	166	0.310	202	0.255	238	0.334	274	0.298	310	0.211	346	0.622
23	0.381	59	0.334	95	0.626	131	0.305	167	0.311	203	0.262	239	0.326	275	0.302	311	0.217	347	0.626
24	0.373	60	0.338	96	0.629	132	0.292	168	0.312	204	0.270	240	0.318	276	0.305	312	0.225	348	0.629
25	0.366	61	0.342	97	0.631	133	0.278	169	0.312	205	0.277	241	0.310	277	0.308	313	0.233	349	0.631
26	0.359	62	0.347	98	0.632	134	0.266	170	0.312	206	0.286	242	0.302	278	0.310	314	0.243	350	0.632
27	0.353	63	0.353	99	0.632	135	0.254	171	0.311	207	0.294	243	0.294	279	0.311	315	0.254	351	0.632
28	0.347	64	0.359	100	0.632	136	0.243	172	0.310	208	0.302	244	0.286	280	0.312	316	0.266	352	0.632
29	0.342	65	0.366	101	0.631	137	0.233	173	0.308	209	0.310	245	0.277	281	0.312	317	0.278	353	0.631
30	0.338	66	0.373	102	0.629	138	0.225	174	0.305	210	0.318	246	0.270	282	0.312	318	0.292	354	0.629
31	0.334	67	0.381	103	0.626	139	0.217	175	0.302	211	0.326	247	0.262	283	0.311	319	0.305	355	0.626
32	0.330	68	0.389	104	0.622	140	0.211	176	0.298	212	0.334	248	0.255	284	0.310	320	0.320	356	0.623
33	0.327	69	0.398	105	0.618	141	0.207	177	0.294	213	0.341	249	0.248	285	0.308	321	0.334	357	0.618
34	0.325	70	0.407	106	0.613	142	0.204	178	0.290	214	0.348	250	0.242	286	0.305	322	0.349	358	0.613
35	0.323	71	0.417	107	0.607	143	0.202	179	0.285	215	0.354	251	0.237	287	0.302	323	0.364	359	0.608

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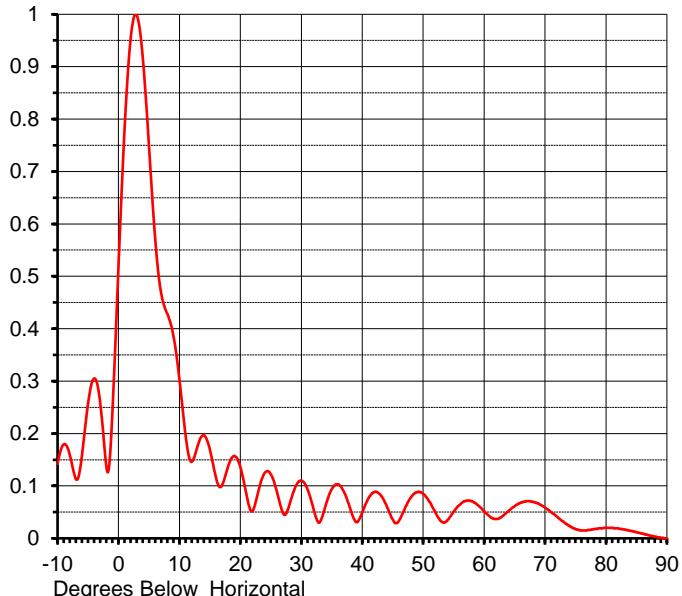
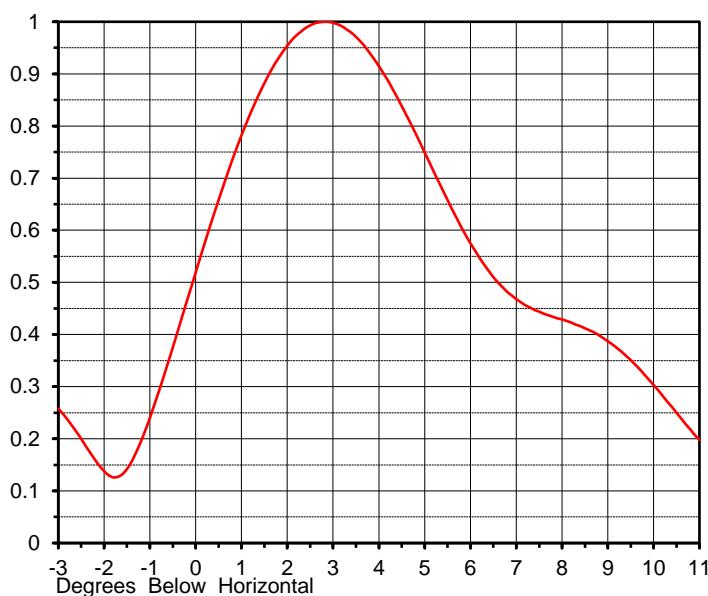
## ELEVATION PATTERN

Proposal No. C-71772-1  
 Date 30-Nov-21  
 Call Letters WEDW  
 Channel 21  
 Frequency 515 MHz  
 Antenna Type TFU-12EST/VP-R 3S180

RMS Directivity at Main Lobe  
 RMS Directivity at Horizontal

**10.0 ( 10.00 dB )**  
**2.7 ( 4.31 dB )**  
 Calculated

Beam Tilt 2.80 deg  
 Pattern Number 12E100280



### Angle Field

-10.0	0.142
-9.0	0.179
-8.0	0.159
-7.0	0.113
-6.0	0.158
-5.0	0.257
-4.0	0.305
-3.0	0.258
-2.0	0.138
-1.0	0.240
0.0	0.519
1.0	0.782
2.0	0.954
3.0	0.998
4.0	0.915
5.0	0.749
6.0	0.575
7.0	0.468
8.0	0.429
9.0	0.387

### Angle Field

10.0	0.303
11.0	0.198
12.0	0.146
13.0	0.177
14.0	0.197
15.0	0.169
16.0	0.116
17.0	0.101
18.0	0.138
19.0	0.157
20.0	0.136
21.0	0.084
22.0	0.052
23.0	0.092
24.0	0.125
25.0	0.122
26.0	0.089
27.0	0.048
28.0	0.062
29.0	0.097

### Angle Field

30.0	0.110
31.0	0.094
32.0	0.056
33.0	0.030
34.0	0.063
35.0	0.094
36.0	0.103
37.0	0.089
38.0	0.058
39.0	0.031
40.0	0.049
41.0	0.076
42.0	0.088
43.0	0.083
44.0	0.062
45.0	0.036
46.0	0.033
47.0	0.057
48.0	0.078
49.0	0.088

### Angle Field

50.0	0.085
51.0	0.070
52.0	0.050
53.0	0.032
54.0	0.035
55.0	0.051
56.0	0.064
57.0	0.071
58.0	0.071
59.0	0.063
60.0	0.052
61.0	0.041
62.0	0.037
63.0	0.042
64.0	0.052
65.0	0.061
66.0	0.068
67.0	0.071
68.0	0.070
69.0	0.066

### Angle Field

70.0	0.059
71.0	0.050
72.0	0.041
73.0	0.032
74.0	0.024
75.0	0.018
76.0	0.015
77.0	0.016
78.0	0.017
79.0	0.019
80.0	0.020
81.0	0.020
82.0	0.019
83.0	0.017
84.0	0.014
85.0	0.012
86.0	0.009
87.0	0.006
88.0	0.003
89.0	0.001
90.0	0.000

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