

AZIMUTH PATTERN Horizontal Polarization

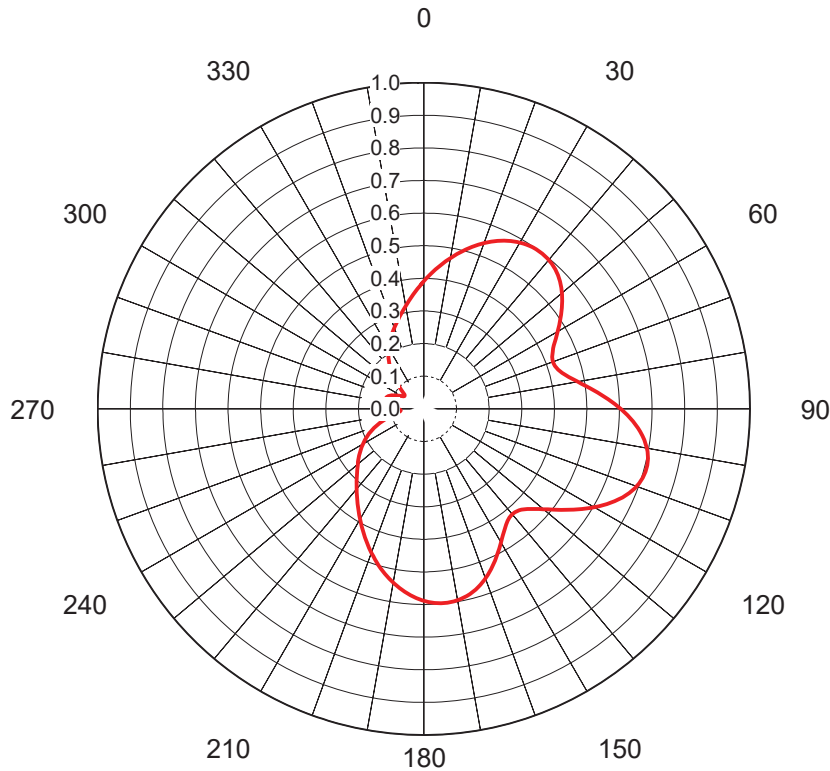
Proposal No. **C-70192-1**
 Date **21-Feb-17**
 Call Letters **WHNS 17**
 Frequency **491 MHz**
 Antenna Type **TFU-21ETT/VP-R CT3 (SP)**
 Gain **1.55 (1.9dB)**
Calculated

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.971	36	0.935	72	0.844	108	0.981	144	0.833	180	0.951	216	0.917	252	0.418	288	0.360
1	0.975	37	0.930	73	0.847	109	0.978	145	0.833	181	0.955	217	0.910	253	0.398	289	0.352
2	0.980	38	0.926	74	0.850	110	0.975	146	0.833	182	0.959	218	0.902	254	0.377	290	0.343
3	0.983	39	0.921	75	0.853	111	0.972	147	0.834	183	0.963	219	0.894	255	0.356	291	0.332
4	0.987	40	0.916	76	0.857	112	0.968	148	0.835	184	0.966	220	0.885	256	0.335	292	0.321
5	0.990	41	0.912	77	0.862	113	0.965	149	0.836	185	0.970	221	0.876	257	0.313	293	0.308
6	0.992	42	0.907	78	0.866	114	0.961	150	0.837	186	0.973	222	0.867	258	0.292	294	0.295
7	0.994	43	0.903	79	0.872	115	0.957	151	0.839	187	0.976	223	0.857	259	0.271	295	0.281
8	0.996	44	0.898	80	0.877	116	0.952	152	0.840	188	0.979	224	0.847	260	0.252	296	0.267
9	0.998	45	0.894	81	0.883	117	0.948	153	0.843	189	0.981	225	0.837	261	0.234	297	0.254
10	0.999	46	0.889	82	0.888	118	0.943	154	0.845	190	0.983	226	0.826	262	0.219	298	0.241
11	0.999	47	0.885	83	0.895	119	0.937	155	0.847	191	0.985	227	0.815	263	0.206	299	0.229
12	1.000	48	0.881	84	0.901	120	0.932	156	0.850	192	0.987	228	0.803	264	0.196	300	0.218
13	1.000	49	0.877	85	0.907	121	0.926	157	0.853	193	0.988	229	0.791	265	0.190	301	0.208
14	1.000	50	0.873	86	0.913	122	0.920	158	0.856	194	0.989	230	0.779	266	0.187	302	0.201
15	0.999	51	0.869	87	0.919	123	0.914	159	0.860	195	0.990	231	0.766	267	0.189	303	0.196
16	0.998	52	0.865	88	0.925	124	0.908	160	0.863	196	0.990	232	0.753	268	0.193	304	0.193
17	0.997	53	0.862	89	0.931	125	0.902	161	0.867	197	0.990	233	0.740	269	0.201	305	0.193
18	0.996	54	0.858	90	0.937	126	0.896	162	0.871	198	0.989	234	0.726	270	0.211	306	0.197
19	0.994	55	0.855	91	0.943	127	0.890	163	0.875	199	0.988	235	0.712	271	0.223	307	0.203
20	0.992	56	0.852	92	0.948	128	0.884	164	0.879	200	0.987	236	0.697	272	0.237	308	0.213
21	0.990	57	0.850	93	0.953	129	0.879	165	0.883	201	0.986	237	0.683	273	0.251	309	0.225
22	0.987	58	0.847	94	0.958	130	0.873	166	0.888	202	0.984	238	0.667	274	0.266	310	0.239
23	0.985	59	0.845	95	0.962	131	0.868	167	0.892	203	0.981	239	0.652	275	0.281	311	0.256
24	0.982	60	0.843	96	0.966	132	0.863	168	0.897	204	0.979	240	0.636	276	0.295	312	0.273
25	0.979	61	0.841	97	0.970	133	0.859	169	0.901	205	0.976	241	0.620	277	0.309	313	0.292
26	0.975	62	0.840	98	0.973	134	0.854	170	0.906	206	0.972	242	0.603	278	0.322	314	0.312
27	0.972	63	0.838	99	0.976	135	0.850	171	0.910	207	0.968	243	0.586	279	0.333	315	0.332
28	0.968	64	0.838	100	0.978	136	0.847	172	0.915	208	0.964	244	0.569	280	0.343	316	0.353
29	0.964	65	0.837	101	0.981	137	0.844	173	0.920	209	0.960	245	0.551	281	0.352	317	0.373
30	0.960	66	0.837	102	0.983	138	0.841	174	0.924	210	0.955	246	0.533	282	0.360	318	0.394
31	0.956	67	0.837	103	0.985	139	0.839	175	0.929	211	0.949	247	0.515	283	0.365	319	0.414
32	0.952	68	0.838	104	0.987	140	0.837	176	0.934	212	0.944	248	0.496	284	0.368	320	0.434
33	0.948	69	0.839	105	0.990	141	0.836	177	0.938	213	0.938	249	0.477	285	0.370	321	0.454
34	0.944	70	0.840	106	0.987	142	0.835	178	0.942	214	0.931	250	0.458	286	0.369	322	0.474
35	0.939	71	0.842	107	0.983	143	0.834	179	0.947	215	0.924	251	0.438	287	0.365	323	0.493

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AZIMUTH PATTERN Vertical Polarization

Proposal No. **C-70192-1**
 Date **21-Feb-17**
 Call Letters **WHNS 17**
 Frequency **491 MHz**
 Antenna Type **TFU-21ETT/VP-R CT3 (SP)**
 Gain **2.63 (4.2dB)**
Calculated



Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.391	36	0.599	72	0.423	108	0.703	144	0.432	180	0.589	216	0.347	252	0.143	288	0.119
1	0.399	37	0.599	73	0.426	109	0.699	145	0.438	181	0.585	217	0.340	253	0.136	289	0.117
2	0.407	38	0.599	74	0.430	110	0.694	146	0.444	182	0.582	218	0.333	254	0.129	290	0.115
3	0.415	39	0.598	75	0.436	111	0.689	147	0.450	183	0.578	219	0.327	255	0.122	291	0.112
4	0.422	40	0.596	76	0.442	112	0.683	148	0.458	184	0.573	220	0.320	256	0.115	292	0.109
5	0.430	41	0.594	77	0.450	113	0.675	149	0.465	185	0.569	221	0.314	257	0.108	293	0.106
6	0.438	42	0.592	78	0.459	114	0.667	150	0.473	186	0.564	222	0.308	258	0.102	294	0.102
7	0.446	43	0.589	79	0.468	115	0.658	151	0.482	187	0.558	223	0.302	259	0.095	295	0.098
8	0.454	44	0.585	80	0.479	116	0.649	152	0.490	188	0.553	224	0.296	260	0.089	296	0.094
9	0.462	45	0.581	81	0.490	117	0.638	153	0.498	189	0.547	225	0.290	261	0.084	297	0.090
10	0.470	46	0.576	82	0.502	118	0.627	154	0.507	190	0.541	226	0.285	262	0.080	298	0.086
11	0.477	47	0.571	83	0.514	119	0.616	155	0.515	191	0.534	227	0.280	263	0.076	299	0.082
12	0.485	48	0.566	84	0.527	120	0.604	156	0.523	192	0.528	228	0.274	264	0.073	300	0.078
13	0.492	49	0.560	85	0.540	121	0.591	157	0.531	193	0.521	229	0.269	265	0.071	301	0.075
14	0.500	50	0.553	86	0.553	122	0.579	158	0.539	194	0.514	230	0.264	266	0.071	302	0.073
15	0.507	51	0.546	87	0.566	123	0.566	159	0.546	195	0.507	231	0.259	267	0.071	303	0.071
16	0.514	52	0.539	88	0.579	124	0.553	160	0.553	196	0.500	232	0.255	268	0.073	304	0.071
17	0.521	53	0.531	89	0.591	125	0.540	161	0.560	197	0.492	233	0.250	269	0.075	305	0.071
18	0.528	54	0.523	90	0.604	126	0.527	162	0.566	198	0.485	234	0.245	270	0.078	306	0.073
19	0.534	55	0.515	91	0.616	127	0.514	163	0.571	199	0.477	235	0.240	271	0.082	307	0.076
20	0.541	56	0.507	92	0.627	128	0.502	164	0.576	200	0.470	236	0.235	272	0.086	308	0.080
21	0.547	57	0.498	93	0.638	129	0.490	165	0.581	201	0.462	237	0.231	273	0.090	309	0.084
22	0.553	58	0.490	94	0.649	130	0.479	166	0.585	202	0.454	238	0.226	274	0.094	310	0.089
23	0.558	59	0.482	95	0.658	131	0.468	167	0.589	203	0.446	239	0.221	275	0.098	311	0.095
24	0.564	60	0.473	96	0.667	132	0.459	168	0.592	204	0.438	240	0.216	276	0.102	312	0.102
25	0.569	61	0.465	97	0.675	133	0.450	169	0.594	205	0.430	241	0.210	277	0.106	313	0.108
26	0.573	62	0.458	98	0.683	134	0.442	170	0.596	206	0.422	242	0.205	278	0.109	314	0.115
27	0.578	63	0.450	99	0.689	135	0.436	171	0.598	207	0.415	243	0.199	279	0.112	315	0.122
28	0.582	64	0.444	100	0.694	136	0.430	172	0.599	208	0.407	244	0.194	280	0.115	316	0.129
29	0.585	65	0.438	101	0.699	137	0.426	173	0.599	209	0.399	245	0.188	281	0.117	317	0.136
30	0.589	66	0.432	102	0.703	138	0.423	174	0.599	210	0.391	246	0.182	282	0.119	318	0.143
31	0.591	67	0.428	103	0.705	139	0.422	175	0.598	211	0.384	247	0.176	283	0.120	319	0.150
32	0.594	68	0.425	104	0.707	140	0.422	176	0.597	212	0.376	248	0.170	284	0.121	320	0.156
33	0.596	69	0.423	105	0.707	141	0.423	177	0.596	213	0.369	249	0.163	285	0.121	321	0.163
34	0.597	70	0.422	106	0.707	142	0.425	178	0.594	214	0.361	250	0.156	286	0.121	322	0.170
35	0.598	71	0.422	107	0.705	143	0.428	179	0.591	215	0.354	251	0.150	287	0.120	323	0.176

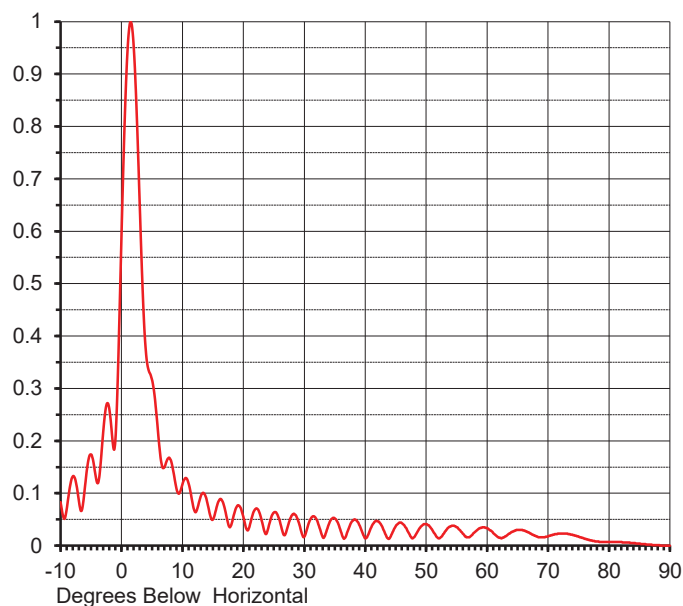
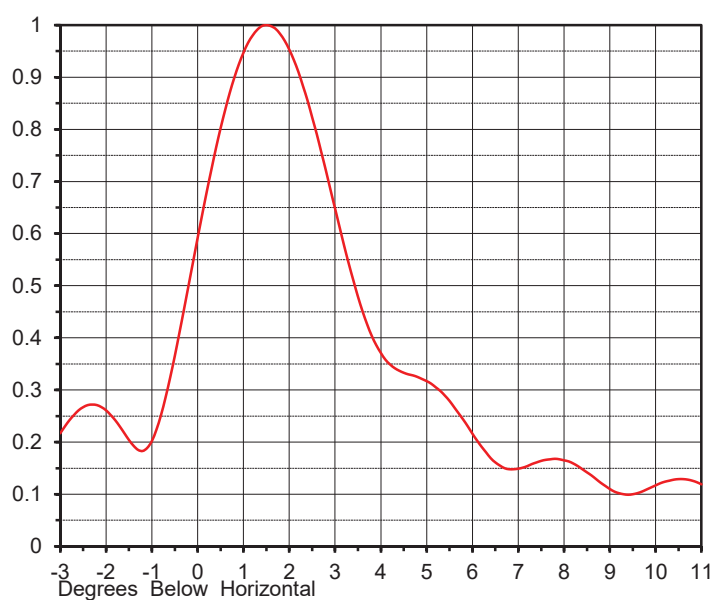
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ELEVATION PATTERN

Proposal No. **C-70192-1**
 Date **21-Feb-17**
 Call Letters **WHNS 17**
 Frequency **491 MHz**
 Antenna Type **TFU-21ETT/VP-R CT3 (SP)**

RMS Directivity at Main Lobe **19.30 (12.86 dB)**
 RMS Directivity at Horizontal **6.80 (8.33 dB)**
Calculated

Beam Tilt **1.50 deg**
 Drawing Number **21E193150**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.083	10.0	0.117	30.0	0.017	50.0	0.041	70.0	0.018
-9.0	0.069	11.0	0.119	31.0	0.050	51.0	0.030	71.0	0.021
-8.0	0.132	12.0	0.066	32.0	0.050	52.0	0.014	72.0	0.023
-7.0	0.086	13.0	0.094	33.0	0.017	53.0	0.025	73.0	0.023
-6.0	0.112	14.0	0.086	34.0	0.040	54.0	0.037	74.0	0.021
-5.0	0.174	15.0	0.050	35.0	0.052	55.0	0.035	75.0	0.017
-4.0	0.120	16.0	0.086	36.0	0.027	56.0	0.023	76.0	0.013
-3.0	0.217	17.0	0.068	37.0	0.024	57.0	0.016	77.0	0.010
-2.0	0.261	18.0	0.039	38.0	0.048	58.0	0.026	78.0	0.008
-1.0	0.202	19.0	0.076	39.0	0.040	59.0	0.034	79.0	0.007
0.0	0.592	20.0	0.055	40.0	0.014	60.0	0.033	80.0	0.007
1.0	0.947	21.0	0.036	41.0	0.035	61.0	0.024	81.0	0.007
2.0	0.953	22.0	0.070	42.0	0.047	62.0	0.015	82.0	0.007
3.0	0.648	23.0	0.048	43.0	0.030	63.0	0.018	83.0	0.006
4.0	0.371	24.0	0.030	44.0	0.014	64.0	0.026	84.0	0.005
5.0	0.317	25.0	0.063	45.0	0.037	65.0	0.030	85.0	0.004
6.0	0.216	26.0	0.046	46.0	0.043	66.0	0.029	86.0	0.003
7.0	0.149	27.0	0.025	47.0	0.027	67.0	0.024	87.0	0.002
8.0	0.165	28.0	0.058	48.0	0.016	68.0	0.018	88.0	0.001
9.0	0.110	29.0	0.047	49.0	0.034	69.0	0.016	89.0	0.000
								90.0	0.000

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