AZIMUTH PATTERN
Horizontal Polarization
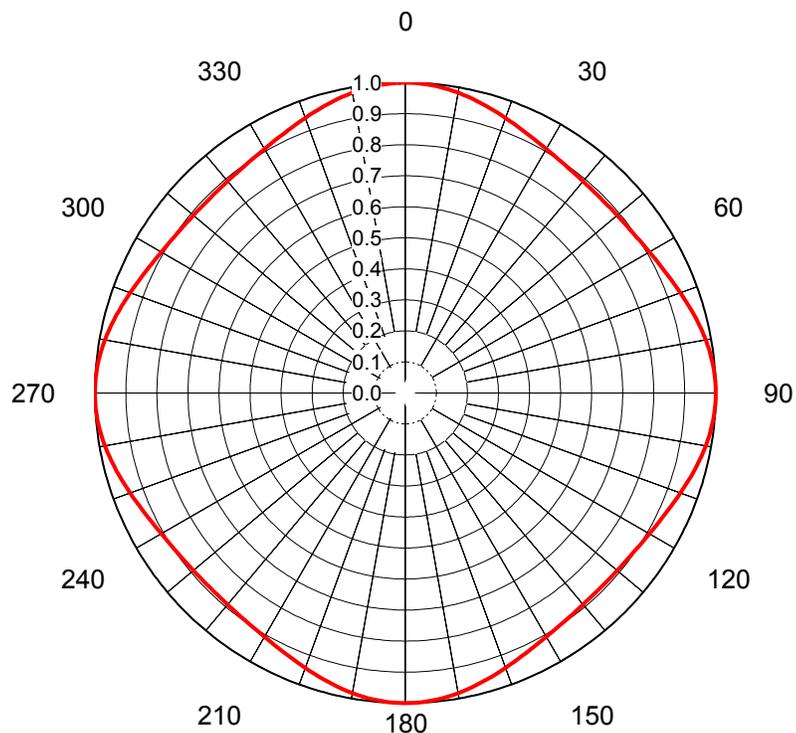
Proposal No.	**C-70598-4**
Date	**15-Sep-17**
Call Letters	**KWHB**
Channel	**16**
Frequency	**485 MHz**
Antenna Type	**TFU-16GTH/VP-R O4**
Gain	**1.13 (0.54dB)**
	Calculated
Circularity	**+/- 1.0 dB**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	1.000	36	0.895	72	0.951	108	0.951	144	0.895	180	1.000	216	0.895	252	0.951	288	0.951	324	0.895
1	1.000	37	0.894	73	0.956	109	0.947	145	0.897	181	1.000	217	0.894	253	0.956	289	0.947	325	0.897
2	0.999	38	0.893	74	0.960	110	0.943	146	0.899	182	0.999	218	0.893	254	0.960	290	0.943	326	0.899
3	0.998	39	0.892	75	0.964	111	0.939	147	0.901	183	0.998	219	0.892	255	0.964	291	0.939	327	0.901
4	0.997	40	0.891	76	0.968	112	0.935	148	0.903	184	0.997	220	0.891	256	0.968	292	0.935	328	0.903
5	0.995	41	0.890	77	0.972	113	0.931	149	0.905	185	0.995	221	0.890	257	0.972	293	0.931	329	0.905
6	0.993	42	0.889	78	0.976	114	0.927	150	0.908	186	0.993	222	0.889	258	0.976	294	0.927	330	0.908
7	0.991	43	0.889	79	0.979	115	0.924	151	0.911	187	0.991	223	0.889	259	0.979	295	0.924	331	0.911
8	0.989	44	0.889	80	0.983	116	0.920	152	0.914	188	0.989	224	0.889	260	0.983	296	0.920	332	0.914
9	0.986	45	0.889	81	0.986	117	0.917	153	0.917	189	0.986	225	0.889	261	0.986	297	0.917	333	0.917
10	0.983	46	0.889	82	0.989	118	0.914	154	0.920	190	0.983	226	0.889	262	0.989	298	0.914	334	0.920
11	0.979	47	0.889	83	0.991	119	0.911	155	0.924	191	0.979	227	0.889	263	0.991	299	0.911	335	0.924
12	0.976	48	0.889	84	0.993	120	0.908	156	0.927	192	0.976	228	0.889	264	0.993	300	0.908	336	0.927
13	0.972	49	0.890	85	0.995	121	0.905	157	0.931	193	0.972	229	0.890	265	0.995	301	0.905	337	0.931
14	0.968	50	0.891	86	0.997	122	0.903	158	0.935	194	0.968	230	0.891	266	0.997	302	0.903	338	0.935
15	0.964	51	0.892	87	0.998	123	0.901	159	0.939	195	0.964	231	0.892	267	0.998	303	0.901	339	0.939
16	0.960	52	0.893	88	0.999	124	0.899	160	0.943	196	0.960	232	0.893	268	0.999	304	0.899	340	0.943
17	0.956	53	0.894	89	1.000	125	0.897	161	0.947	197	0.956	233	0.894	269	1.000	305	0.897	341	0.947
18	0.951	54	0.895	90	1.000	126	0.895	162	0.951	198	0.951	234	0.895	270	1.000	306	0.895	342	0.951
19	0.947	55	0.897	91	1.000	127	0.894	163	0.956	199	0.947	235	0.897	271	1.000	307	0.894	343	0.956
20	0.943	56	0.899	92	0.999	128	0.893	164	0.960	200	0.943	236	0.899	272	0.999	308	0.893	344	0.960
21	0.939	57	0.901	93	0.998	129	0.892	165	0.964	201	0.939	237	0.901	273	0.998	309	0.892	345	0.964
22	0.935	58	0.903	94	0.997	130	0.891	166	0.968	202	0.935	238	0.903	274	0.997	310	0.891	346	0.968
23	0.931	59	0.905	95	0.995	131	0.890	167	0.972	203	0.931	239	0.905	275	0.995	311	0.890	347	0.972
24	0.927	60	0.908	96	0.993	132	0.889	168	0.976	204	0.927	240	0.908	276	0.993	312	0.889	348	0.976
25	0.924	61	0.911	97	0.991	133	0.889	169	0.979	205	0.924	241	0.911	277	0.991	313	0.889	349	0.979
26	0.920	62	0.914	98	0.989	134	0.889	170	0.983	206	0.920	242	0.914	278	0.989	314	0.889	350	0.983
27	0.917	63	0.917	99	0.986	135	0.889	171	0.986	207	0.917	243	0.917	279	0.986	315	0.889	351	0.986
28	0.914	64	0.920	100	0.983	136	0.889	172	0.989	208	0.914	244	0.920	280	0.983	316	0.889	352	0.989
29	0.911	65	0.924	101	0.979	137	0.889	173	0.991	209	0.911	245	0.924	281	0.979	317	0.889	353	0.991
30	0.908	66	0.927	102	0.976	138	0.889	174	0.993	210	0.908	246	0.927	282	0.976	318	0.889	354	0.993
31	0.905	67	0.931	103	0.972	139	0.890	175	0.995	211	0.905	247	0.931	283	0.972	319	0.890	355	0.995
32	0.903	68	0.935	104	0.968	140	0.891	176	0.997	212	0.903	248	0.935	284	0.968	320	0.891	356	0.997
33	0.901	69	0.939	105	0.964	141	0.892	177	0.998	213	0.901	249	0.939	285	0.964	321	0.892	357	0.998
34	0.899	70	0.943	106	0.960	142	0.893	178	0.999	214	0.899	250	0.943	286	0.960	322	0.893	358	0.999
35	0.897	71	0.947	107	0.956	143	0.894	179	1.000	215	0.897	251	0.947	287	0.956	323	0.894	359	1.000

AZIMUTH PATTERN
Vertical Polarization
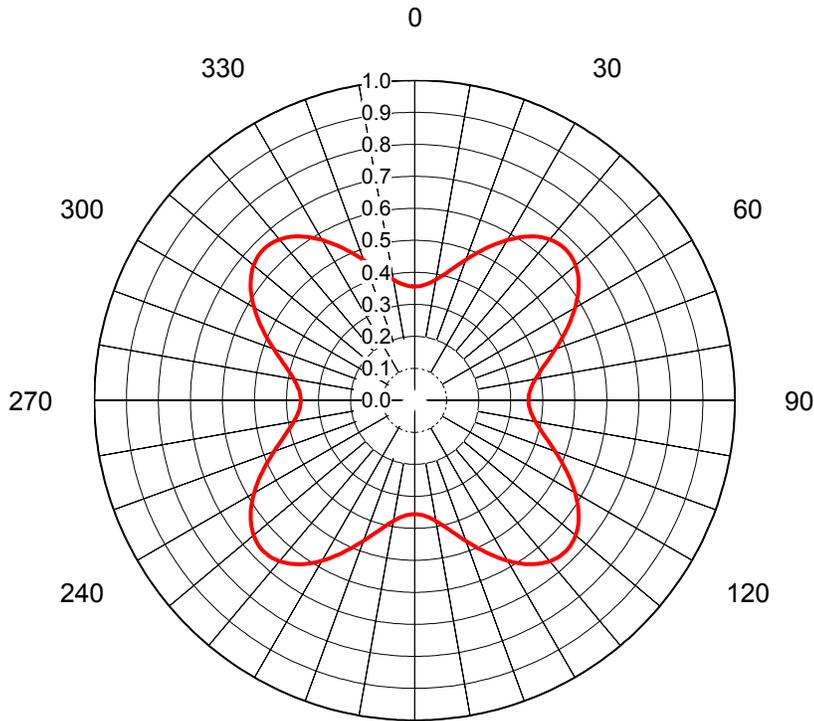
Proposal No.	C-70598-4
Date	15-Sep-17
Call Letters	KWHB
Channel	16
Frequency	485 MHz
Antenna Type	TFU-16GTH/VP-R O4
Gain	1.68 (2.25dB)
	Calculated
Circularity	+/- 3.0 dB

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.356	36	0.633	72	0.447	108	0.447	144	0.633	180	0.356	216	0.633	252	0.447	288	0.447	324	0.633
1	0.356	37	0.640	73	0.437	109	0.457	145	0.625	181	0.356	217	0.640	253	0.437	289	0.457	325	0.625
2	0.357	38	0.646	74	0.428	110	0.467	146	0.617	182	0.357	218	0.646	254	0.428	290	0.467	326	0.617
3	0.358	39	0.651	75	0.419	111	0.478	147	0.608	183	0.358	219	0.651	255	0.419	291	0.478	327	0.608
4	0.360	40	0.656	76	0.410	112	0.489	148	0.599	184	0.360	220	0.656	256	0.410	292	0.489	328	0.599
5	0.362	41	0.660	77	0.403	113	0.500	149	0.589	185	0.362	221	0.660	257	0.403	293	0.500	329	0.589
6	0.365	42	0.663	78	0.396	114	0.512	150	0.579	186	0.365	222	0.663	258	0.396	294	0.512	330	0.579
7	0.369	43	0.665	79	0.389	115	0.523	151	0.568	187	0.369	223	0.665	259	0.389	295	0.523	331	0.568
8	0.373	44	0.667	80	0.383	116	0.535	152	0.557	188	0.373	224	0.667	260	0.383	296	0.535	332	0.557
9	0.378	45	0.667	81	0.378	117	0.546	153	0.546	189	0.378	225	0.667	261	0.378	297	0.546	333	0.546
10	0.383	46	0.667	82	0.373	118	0.557	154	0.535	190	0.383	226	0.667	262	0.373	298	0.557	334	0.535
11	0.389	47	0.665	83	0.369	119	0.568	155	0.523	191	0.389	227	0.665	263	0.369	299	0.568	335	0.523
12	0.396	48	0.663	84	0.365	120	0.579	156	0.512	192	0.396	228	0.663	264	0.365	300	0.579	336	0.512
13	0.403	49	0.660	85	0.362	121	0.589	157	0.500	193	0.403	229	0.660	265	0.362	301	0.589	337	0.500
14	0.410	50	0.656	86	0.360	122	0.599	158	0.489	194	0.410	230	0.656	266	0.360	302	0.599	338	0.489
15	0.419	51	0.651	87	0.358	123	0.608	159	0.478	195	0.419	231	0.651	267	0.358	303	0.608	339	0.478
16	0.428	52	0.646	88	0.357	124	0.617	160	0.467	196	0.428	232	0.646	268	0.357	304	0.617	340	0.467
17	0.437	53	0.640	89	0.356	125	0.625	161	0.457	197	0.437	233	0.640	269	0.356	305	0.625	341	0.457
18	0.447	54	0.633	90	0.356	126	0.633	162	0.447	198	0.447	234	0.633	270	0.356	306	0.633	342	0.447
19	0.457	55	0.625	91	0.356	127	0.640	163	0.437	199	0.457	235	0.625	271	0.356	307	0.640	343	0.437
20	0.467	56	0.617	92	0.357	128	0.646	164	0.428	200	0.467	236	0.617	272	0.357	308	0.646	344	0.428
21	0.478	57	0.608	93	0.358	129	0.651	165	0.419	201	0.478	237	0.608	273	0.358	309	0.651	345	0.419
22	0.489	58	0.599	94	0.360	130	0.656	166	0.410	202	0.489	238	0.599	274	0.360	310	0.656	346	0.410
23	0.500	59	0.589	95	0.362	131	0.660	167	0.403	203	0.500	239	0.589	275	0.362	311	0.660	347	0.403
24	0.512	60	0.579	96	0.365	132	0.663	168	0.396	204	0.512	240	0.579	276	0.365	312	0.663	348	0.396
25	0.523	61	0.568	97	0.369	133	0.665	169	0.389	205	0.523	241	0.568	277	0.369	313	0.665	349	0.389
26	0.535	62	0.557	98	0.373	134	0.667	170	0.383	206	0.535	242	0.557	278	0.373	314	0.667	350	0.383
27	0.546	63	0.546	99	0.378	135	0.667	171	0.378	207	0.546	243	0.546	279	0.378	315	0.667	351	0.378
28	0.557	64	0.535	100	0.383	136	0.667	172	0.373	208	0.557	244	0.535	280	0.383	316	0.667	352	0.373
29	0.568	65	0.523	101	0.389	137	0.665	173	0.369	209	0.568	245	0.523	281	0.389	317	0.665	353	0.369
30	0.579	66	0.512	102	0.396	138	0.663	174	0.365	210	0.579	246	0.512	282	0.396	318	0.663	354	0.365
31	0.587	67	0.500	103	0.403	139	0.660	175	0.362	211	0.589	247	0.500	283	0.403	319	0.660	355	0.362
32	0.599	68	0.489	104	0.410	140	0.656	176	0.360	212	0.599	248	0.489	284	0.410	320	0.656	356	0.360
33	0.608	69	0.478	105	0.419	141	0.651	177	0.358	213	0.608	249	0.478	285	0.419	321	0.651	357	0.358
34	0.617	70	0.467	106	0.428	142	0.646	178	0.357	214	0.617	250	0.467	286	0.428	322	0.646	358	0.357
35	0.625	71	0.457	107	0.437	143	0.640	179	0.356	215	0.625	251	0.457	287	0.437	323	0.640	359	0.356

Trusted for Decades. Ready for Tomorrow.

ELEVATION PATTERN

Proposal No.	**C-70598-4**
Date	**15-Sep-17**
Call Letters	**KWHB**
Channel	**16**
Frequency	**485 MHz**
Antenna Type	**TFU-16GTH/VP-R O4**

RMS Directivity at Main Lobe **14.6 (11.64 dB)** Beam Tilt **0.75 deg**
RMS Directivity at Horizontal **13.4 (11.27 dB)** Pattern Number **16G146075**
Calculated
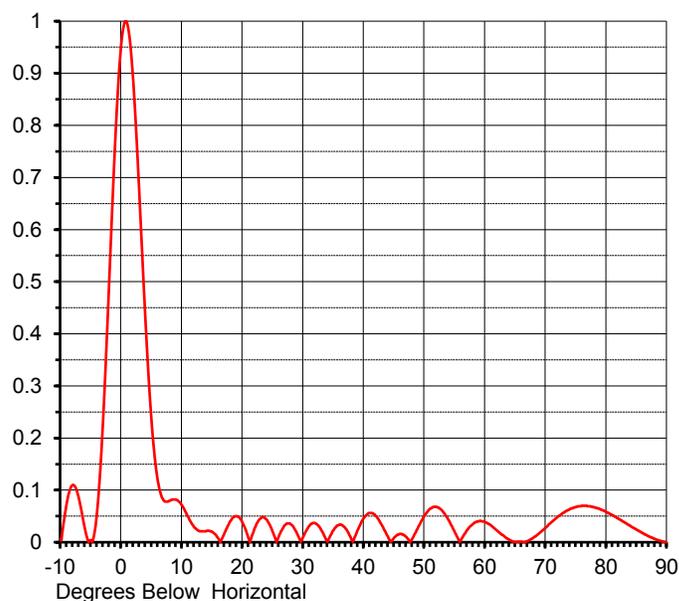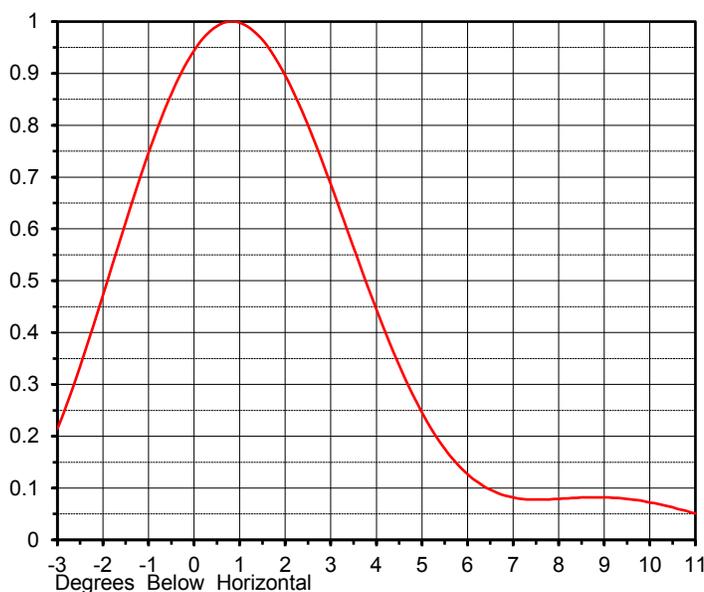
Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.006	10.0	0.071	30.0	0.010	50.0	0.051	70.0	0.028
-9.0	0.075	11.0	0.049	31.0	0.031	51.0	0.065	71.0	0.039
-8.0	0.110	12.0	0.029	32.0	0.036	52.0	0.068	72.0	0.049
-7.0	0.084	13.0	0.021	33.0	0.023	53.0	0.059	73.0	0.057
-6.0	0.026	14.0	0.021	34.0	0.001	54.0	0.042	74.0	0.064
-5.0	0.004	15.0	0.020	35.0	0.023	55.0	0.019	75.0	0.068
-4.0	0.058	16.0	0.007	36.0	0.034	56.0	0.004	76.0	0.070
-3.0	0.236	17.0	0.017	37.0	0.026	57.0	0.023	77.0	0.069
-2.0	0.500	18.0	0.041	38.0	0.004	58.0	0.035	78.0	0.067
-1.0	0.771	19.0	0.050	39.0	0.024	59.0	0.040	79.0	0.063
0.0	0.957	20.0	0.037	40.0	0.046	60.0	0.039	80.0	0.058
1.0	0.994	21.0	0.007	41.0	0.056	61.0	0.032	81.0	0.052
2.0	0.879	22.0	0.027	42.0	0.050	62.0	0.022	82.0	0.045
3.0	0.662	23.0	0.046	43.0	0.032	63.0	0.013	83.0	0.038
4.0	0.422	24.0	0.043	44.0	0.010	64.0	0.005	84.0	0.031
5.0	0.230	25.0	0.019	45.0	0.009	65.0	0.000	85.0	0.024
6.0	0.119	26.0	0.012	46.0	0.016	66.0	0.001	86.0	0.017
7.0	0.080	27.0	0.033	47.0	0.010	67.0	0.002	87.0	0.011
8.0	0.080	28.0	0.034	48.0	0.007	68.0	0.009	88.0	0.006
9.0	0.082	29.0	0.016	49.0	0.030	69.0	0.018	89.0	0.002
								90.0	0.000