

AZIMUTH PATTERN Horizontal Polarization

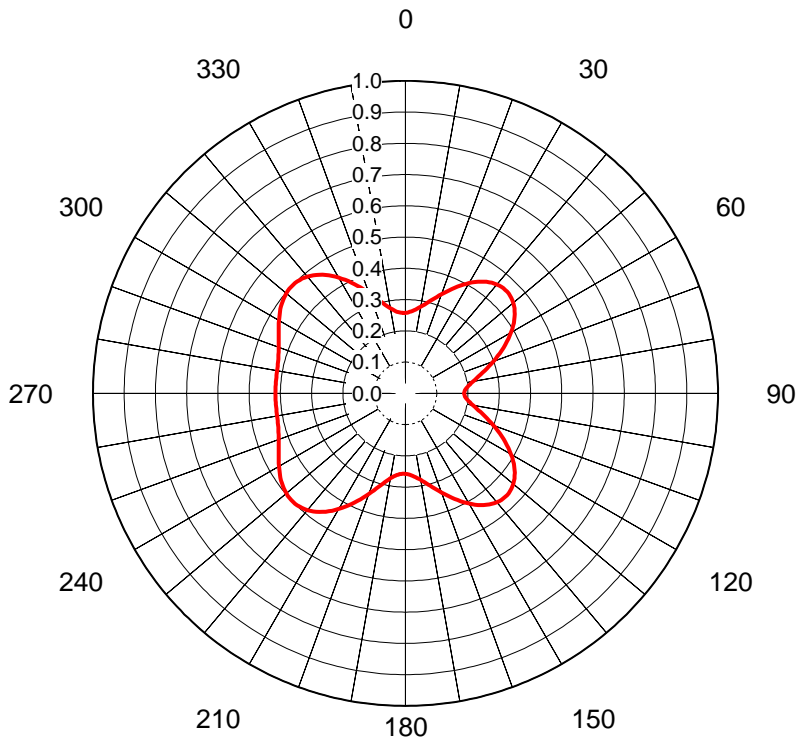
Proposal No. **C-71585-2**
 Date **10-Nov-20**
 Call Letters **KTUL**
 Channel **14**
 Frequency **473 MHz**
 Antenna Type **TFU-29ETT/VP-R 4C130**
 Gain **1.33 (1.25dB)**
 Calculated

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.974	36	0.903	72	0.675	108	0.675	144	0.903	180	0.974	216	0.800	252	0.943	288	0.943
1	0.977	37	0.897	73	0.671	109	0.679	145	0.908	181	0.971	217	0.798	253	0.949	289	0.937
2	0.980	38	0.891	74	0.667	110	0.684	146	0.914	182	0.967	218	0.797	254	0.954	290	0.932
3	0.982	39	0.885	75	0.664	111	0.688	147	0.919	183	0.963	219	0.797	255	0.959	291	0.926
4	0.984	40	0.878	76	0.660	112	0.693	148	0.925	184	0.959	220	0.797	256	0.964	292	0.919
5	0.986	41	0.872	77	0.657	113	0.699	149	0.930	185	0.954	221	0.797	257	0.969	293	0.913
6	0.987	42	0.866	78	0.655	114	0.704	150	0.935	186	0.950	222	0.798	258	0.973	294	0.907
7	0.988	43	0.859	79	0.652	115	0.710	151	0.940	187	0.945	223	0.799	259	0.977	295	0.901
8	0.989	44	0.852	80	0.650	116	0.716	152	0.944	188	0.939	224	0.801	260	0.981	296	0.894
9	0.990	45	0.845	81	0.648	117	0.722	153	0.949	189	0.934	225	0.803	261	0.985	297	0.888
10	0.990	46	0.839	82	0.646	118	0.728	154	0.953	190	0.928	226	0.805	262	0.988	298	0.882
11	0.989	47	0.832	83	0.644	119	0.734	155	0.957	191	0.922	227	0.808	263	0.991	299	0.876
12	0.989	48	0.825	84	0.643	120	0.741	156	0.961	192	0.917	228	0.811	264	0.993	300	0.870
13	0.988	49	0.818	85	0.642	121	0.747	157	0.965	193	0.911	229	0.814	265	0.995	301	0.864
14	0.987	50	0.811	86	0.641	122	0.754	158	0.968	194	0.904	230	0.818	266	0.997	302	0.858
15	0.986	51	0.803	87	0.640	123	0.761	159	0.971	195	0.898	231	0.822	267	0.998	303	0.852
16	0.984	52	0.796	88	0.640	124	0.768	160	0.974	196	0.892	232	0.827	268	0.999	304	0.847
17	0.982	53	0.789	89	0.640	125	0.775	161	0.977	197	0.886	233	0.831	269	1.000	305	0.841
18	0.980	54	0.782	90	0.639	126	0.782	162	0.980	198	0.879	234	0.836	270	1.000	306	0.836
19	0.977	55	0.775	91	0.640	127	0.789	163	0.982	199	0.873	235	0.841	271	1.000	307	0.831
20	0.974	56	0.768	92	0.640	128	0.796	164	0.984	200	0.867	236	0.847	272	0.999	308	0.827
21	0.971	57	0.761	93	0.640	129	0.803	165	0.986	201	0.861	237	0.852	273	0.998	309	0.822
22	0.968	58	0.754	94	0.641	130	0.811	166	0.987	202	0.855	238	0.858	274	0.997	310	0.818
23	0.965	59	0.748	95	0.642	131	0.818	167	0.988	203	0.849	239	0.864	275	0.995	311	0.814
24	0.961	60	0.741	96	0.643	132	0.825	168	0.989	204	0.844	240	0.870	276	0.993	312	0.811
25	0.957	61	0.734	97	0.644	133	0.832	169	0.989	205	0.839	241	0.876	277	0.991	313	0.808
26	0.953	62	0.728	98	0.646	134	0.839	170	0.990	206	0.833	242	0.882	278	0.988	314	0.805
27	0.949	63	0.722	99	0.648	135	0.845	171	0.990	207	0.829	243	0.888	279	0.985	315	0.803
28	0.944	64	0.716	100	0.650	136	0.852	172	0.989	208	0.824	244	0.894	280	0.981	316	0.801
29	0.940	65	0.710	101	0.652	137	0.859	173	0.988	209	0.820	245	0.901	281	0.977	317	0.799
30	0.935	66	0.704	102	0.655	138	0.866	174	0.987	210	0.816	246	0.907	282	0.973	318	0.798
31	0.930	67	0.699	103	0.657	139	0.872	175	0.986	211	0.812	247	0.913	283	0.969	319	0.797
32	0.925	68	0.693	104	0.660	140	0.878	176	0.984	212	0.809	248	0.919	284	0.964	320	0.797
33	0.919	69	0.688	105	0.664	141	0.885	177	0.982	213	0.806	249	0.926	285	0.959	321	0.797
34	0.914	70	0.684	106	0.667	142	0.891	178	0.980	214	0.803	250	0.932	286	0.954	322	0.797
35	0.908	71	0.679	107	0.671	143	0.897	179	0.977	215	0.801	251	0.937	287	0.949	323	0.798

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AZIMUTH PATTERN Vertical Polarization

Proposal No. **C-71585-2**
 Date **10-Nov-20**
 Call Letters **KTUL**
 Channel **14**
 Frequency **473 MHz**
 Antenna Type **TFU-29ETT/VP-R 4C130**
 Gain **1.69 (2.27dB)**
 Calculated



Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.258	36	0.441	72	0.281	108	0.281	144	0.441	180	0.258	216	0.469	252	0.427	288	0.427	324	0.469
1	0.258	37	0.445	73	0.272	109	0.290	145	0.436	181	0.257	217	0.474	253	0.425	289	0.429	325	0.463
2	0.259	38	0.449	74	0.264	110	0.300	146	0.431	182	0.258	218	0.479	254	0.423	290	0.432	326	0.457
3	0.261	39	0.452	75	0.255	111	0.309	147	0.426	183	0.258	219	0.484	255	0.421	291	0.434	327	0.450
4	0.263	40	0.455	76	0.247	112	0.318	148	0.420	184	0.259	220	0.488	256	0.420	292	0.437	328	0.443
5	0.265	41	0.457	77	0.240	113	0.328	149	0.414	185	0.261	221	0.491	257	0.419	293	0.441	329	0.435
6	0.267	42	0.459	78	0.233	114	0.337	150	0.407	186	0.263	222	0.494	258	0.418	294	0.444	330	0.428
7	0.270	43	0.460	79	0.226	115	0.346	151	0.401	187	0.265	223	0.496	259	0.417	295	0.448	331	0.419
8	0.274	44	0.460	80	0.219	116	0.356	152	0.394	188	0.268	224	0.498	260	0.417	296	0.452	332	0.411
9	0.277	45	0.460	81	0.214	117	0.365	153	0.387	189	0.272	225	0.499	261	0.417	297	0.455	333	0.403
10	0.281	46	0.459	82	0.208	118	0.373	154	0.380	190	0.276	226	0.500	262	0.416	298	0.459	334	0.394
11	0.286	47	0.458	83	0.204	119	0.382	155	0.373	191	0.281	227	0.500	263	0.416	299	0.463	335	0.385
12	0.290	48	0.456	84	0.199	120	0.390	156	0.366	192	0.286	228	0.500	264	0.416	300	0.467	336	0.377
13	0.295	49	0.454	85	0.196	121	0.398	157	0.358	193	0.291	229	0.499	265	0.416	301	0.471	337	0.368
14	0.300	50	0.450	86	0.193	122	0.406	158	0.351	194	0.298	230	0.498	266	0.416	302	0.475	338	0.359
15	0.306	51	0.447	87	0.191	123	0.413	159	0.344	195	0.304	231	0.496	267	0.416	303	0.479	339	0.351
16	0.312	52	0.442	88	0.189	124	0.420	160	0.337	196	0.311	232	0.494	268	0.416	304	0.482	340	0.342
17	0.318	53	0.438	89	0.188	125	0.426	161	0.331	197	0.318	233	0.492	269	0.416	305	0.486	341	0.334
18	0.324	54	0.432	90	0.188	126	0.432	162	0.324	198	0.326	234	0.489	270	0.416	306	0.489	342	0.326
19	0.331	55	0.426	91	0.188	127	0.438	163	0.318	199	0.334	235	0.486	271	0.416	307	0.492	343	0.318
20	0.337	56	0.420	92	0.189	128	0.442	164	0.312	200	0.342	236	0.482	272	0.416	308	0.494	344	0.311
21	0.344	57	0.413	93	0.191	129	0.447	165	0.306	201	0.351	237	0.479	273	0.416	309	0.496	345	0.304
22	0.351	58	0.406	94	0.193	130	0.450	166	0.300	202	0.359	238	0.475	274	0.416	310	0.498	346	0.298
23	0.358	59	0.398	95	0.196	131	0.454	167	0.295	203	0.368	239	0.471	275	0.416	311	0.499	347	0.291
24	0.366	60	0.390	96	0.199	132	0.456	168	0.290	204	0.377	240	0.467	276	0.416	312	0.500	348	0.286
25	0.373	61	0.382	97	0.204	133	0.458	169	0.286	205	0.385	241	0.463	277	0.416	313	0.500	349	0.281
26	0.380	62	0.373	98	0.208	134	0.459	170	0.281	206	0.394	242	0.459	278	0.416	314	0.500	350	0.276
27	0.387	63	0.365	99	0.214	135	0.460	171	0.277	207	0.403	243	0.455	279	0.417	315	0.499	351	0.272
28	0.394	64	0.356	100	0.219	136	0.460	172	0.274	208	0.411	244	0.452	280	0.417	316	0.498	352	0.268
29	0.401	65	0.346	101	0.226	137	0.460	173	0.270	209	0.419	245	0.448	281	0.417	317	0.496	353	0.265
30	0.407	66	0.337	102	0.233	138	0.459	174	0.267	210	0.428	246	0.444	282	0.418	318	0.494	354	0.263
31	0.414	67	0.328	103	0.240	139	0.457	175	0.265	211	0.435	247	0.441	283	0.419	319	0.491	355	0.261
32	0.420	68	0.318	104	0.247	140	0.455	176	0.263	212	0.443	248	0.437	284	0.420	320	0.488	356	0.259
33	0.426	69	0.309	105	0.255	141	0.452	177	0.261	213	0.450	249	0.434	285	0.421	321	0.484	357	0.258
34	0.431	70	0.300	106	0.264	142	0.449	178	0.259	214	0.457	250	0.432	286	0.423	322	0.479	358	0.258
35	0.436	71	0.290	107	0.272	143	0.445	179	0.258	215	0.463	251	0.429	287	0.425	323	0.474	359	0.257

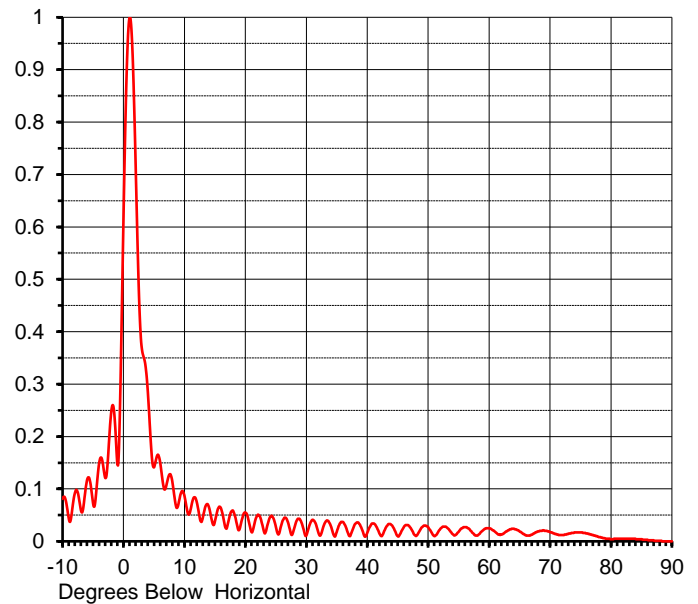
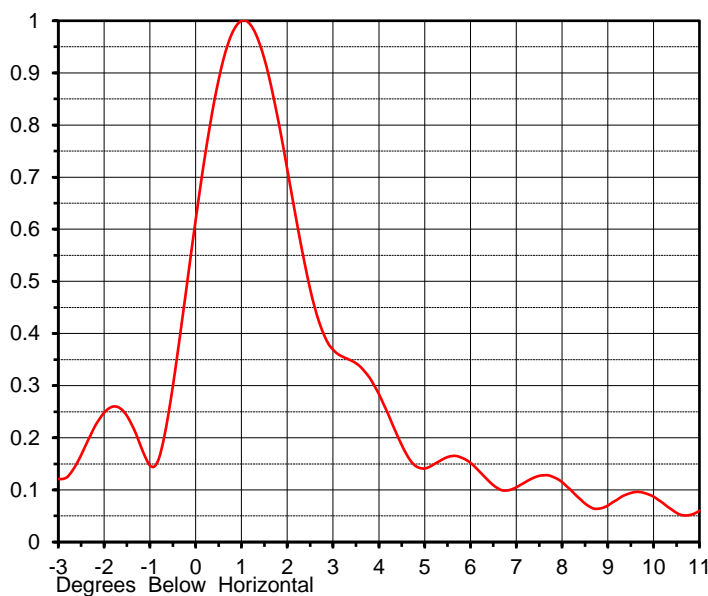
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ELEVATION PATTERN

Proposal No. **C-71585-2**
 Date **10-Nov-20**
 Call Letters **KTUL**
 Channel **14**
 Frequency **473 MHz**
 Antenna Type **TFU-29ETT/VP-R 4C130**

RMS Directivity at Main Lobe **26.8 (14.28 dB)**
 RMS Directivity at Horizontal **10.2 (10.09 dB)**
Calculated

Beam Tilt **1.05 deg**
 Pattern Number **105**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.081	10.0	0.087	30.0	0.011	50.0	0.027	70.0	0.018
-9.0	0.045	11.0	0.060	31.0	0.041	51.0	0.010	71.0	0.014
-8.0	0.091	12.0	0.076	32.0	0.016	52.0	0.024	72.0	0.012
-7.0	0.060	13.0	0.044	33.0	0.034	53.0	0.027	73.0	0.014
-6.0	0.116	14.0	0.066	34.0	0.030	54.0	0.014	74.0	0.017
-5.0	0.073	15.0	0.038	35.0	0.018	55.0	0.018	75.0	0.017
-4.0	0.149	16.0	0.063	36.0	0.037	56.0	0.027	76.0	0.015
-3.0	0.121	17.0	0.027	37.0	0.011	57.0	0.020	77.0	0.012
-2.0	0.248	18.0	0.058	38.0	0.033	58.0	0.011	78.0	0.008
-1.0	0.147	19.0	0.022	39.0	0.027	59.0	0.021	79.0	0.006
0.0	0.618	20.0	0.055	40.0	0.016	60.0	0.025	80.0	0.004
1.0	1.000	21.0	0.018	41.0	0.034	61.0	0.018	81.0	0.005
2.0	0.715	22.0	0.050	42.0	0.015	62.0	0.013	82.0	0.005
3.0	0.369	23.0	0.021	43.0	0.025	63.0	0.020	83.0	0.005
4.0	0.284	24.0	0.045	44.0	0.031	64.0	0.024	84.0	0.005
5.0	0.141	25.0	0.028	45.0	0.010	65.0	0.019	85.0	0.004
6.0	0.152	26.0	0.035	46.0	0.027	66.0	0.012	86.0	0.003
7.0	0.105	27.0	0.036	47.0	0.027	67.0	0.013	87.0	0.002
8.0	0.115	28.0	0.024	48.0	0.010	68.0	0.019	88.0	0.001
9.0	0.070	29.0	0.041	49.0	0.027	69.0	0.021	89.0	0.000
								90.0	0.000

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