

## AZIMUTH PATTERN Horizontal Polarization

Proposal No. **C-70397**  
 Date **7-Mar-17**  
 Call Letters **WQPX**  
 Channel **33**  
 Frequency **587 MHz**  
 Antenna Type **TFU-22GTH/VP-R C170 (SP)**  
 Gain **1.7 (2.31dB)**  
**Calculated**

Drawing # **TFU-C170-33**

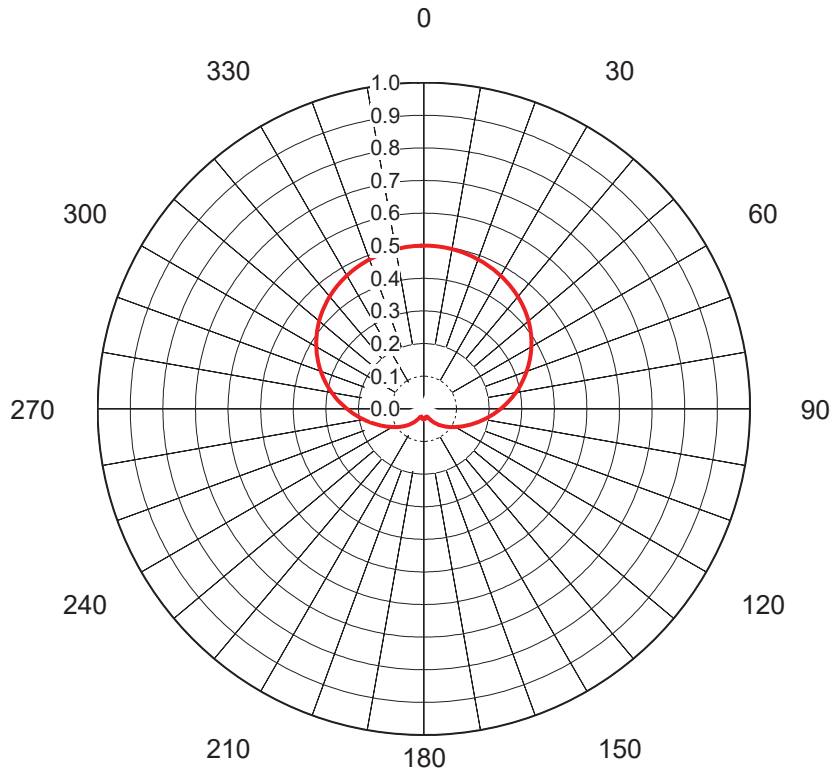
Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.899	36	0.928	72	1.000	108	0.760	144	0.260	180	0.245	216	0.260	252	0.760	288	1.000
1	0.899	37	0.930	73	0.999	109	0.747	145	0.251	181	0.244	217	0.269	253	0.773	289	1.000
2	0.899	38	0.932	74	0.998	110	0.733	146	0.243	182	0.244	218	0.280	254	0.785	290	1.000
3	0.899	39	0.934	75	0.997	111	0.720	147	0.235	183	0.243	219	0.290	255	0.797	291	1.000
4	0.899	40	0.936	76	0.996	112	0.706	148	0.229	184	0.242	220	0.302	256	0.809	292	0.999
5	0.900	41	0.939	77	0.994	113	0.692	149	0.223	185	0.241	221	0.313	257	0.821	293	0.998
6	0.900	42	0.941	78	0.992	114	0.677	150	0.218	186	0.240	222	0.326	258	0.832	294	0.997
7	0.900	43	0.944	79	0.990	115	0.663	151	0.214	187	0.238	223	0.338	259	0.843	295	0.996
8	0.900	44	0.946	80	0.987	116	0.648	152	0.210	188	0.236	224	0.352	260	0.854	296	0.995
9	0.900	45	0.949	81	0.984	117	0.634	153	0.207	189	0.234	225	0.365	261	0.864	297	0.993
10	0.900	46	0.952	82	0.981	118	0.619	154	0.206	190	0.232	226	0.379	262	0.874	298	0.992
11	0.901	47	0.954	83	0.977	119	0.604	155	0.204	191	0.229	227	0.393	263	0.883	299	0.990
12	0.901	48	0.957	84	0.973	120	0.588	156	0.204	192	0.227	228	0.407	264	0.893	300	0.988
13	0.901	49	0.960	85	0.968	121	0.573	157	0.204	193	0.224	229	0.422	265	0.901	301	0.986
14	0.902	50	0.963	86	0.963	122	0.558	158	0.205	194	0.222	230	0.437	266	0.910	302	0.983
15	0.902	51	0.965	87	0.958	123	0.543	159	0.206	195	0.219	231	0.451	267	0.918	303	0.981
16	0.903	52	0.968	88	0.952	124	0.527	160	0.207	196	0.216	232	0.466	268	0.925	304	0.978
17	0.903	53	0.971	89	0.946	125	0.512	161	0.209	197	0.214	233	0.482	269	0.933	305	0.976
18	0.904	54	0.973	90	0.940	126	0.497	162	0.211	198	0.211	234	0.497	270	0.940	306	0.973
19	0.905	55	0.976	91	0.933	127	0.482	163	0.214	199	0.209	235	0.512	271	0.946	307	0.971
20	0.905	56	0.978	92	0.925	128	0.466	164	0.216	200	0.207	236	0.527	272	0.952	308	0.968
21	0.906	57	0.981	93	0.918	129	0.451	165	0.219	201	0.206	237	0.543	273	0.958	309	0.965
22	0.907	58	0.983	94	0.910	130	0.437	166	0.222	202	0.205	238	0.558	274	0.963	310	0.963
23	0.908	59	0.986	95	0.901	131	0.422	167	0.224	203	0.204	239	0.573	275	0.968	311	0.960
24	0.909	60	0.988	96	0.893	132	0.407	168	0.227	204	0.204	240	0.588	276	0.973	312	0.957
25	0.910	61	0.990	97	0.883	133	0.393	169	0.229	205	0.204	241	0.604	277	0.977	313	0.954
26	0.911	62	0.992	98	0.874	134	0.379	170	0.232	206	0.206	242	0.619	278	0.981	314	0.952
27	0.912	63	0.993	99	0.864	135	0.365	171	0.234	207	0.207	243	0.634	279	0.984	315	0.949
28	0.914	64	0.995	100	0.854	136	0.352	172	0.236	208	0.210	244	0.648	280	0.987	316	0.946
29	0.915	65	0.996	101	0.843	137	0.338	173	0.238	209	0.214	245	0.663	281	0.990	317	0.944
30	0.917	66	0.997	102	0.832	138	0.326	174	0.240	210	0.218	246	0.677	282	0.992	318	0.941
31	0.918	67	0.998	103	0.821	139	0.313	175	0.241	211	0.223	247	0.692	283	0.994	319	0.939
32	0.920	68	0.999	104	0.809	140	0.302	176	0.242	212	0.229	248	0.706	284	0.996	320	0.936
33	0.922	69	1.000	105	0.797	141	0.290	177	0.243	213	0.235	249	0.720	285	0.997	321	0.934
34	0.924	70	1.000	106	0.785	142	0.280	178	0.244	214	0.243	250	0.733	286	0.998	322	0.932
35	0.926	71	1.000	107	0.773	143	0.269	179	0.244	215	0.251	251	0.747	287	0.999	323	0.930

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## AZIMUTH PATTERN Vertical Polarization

Proposal No. **C-70397**  
 Date **7-Mar-17**  
 Call Letters **WQPX**  
 Channel **33**  
 Frequency **587 MHz**  
 Antenna Type **TFU-22GTH/VP-R C170 (SP)**  
 Gain **2.67 (4.26dB)**  
**Calculated**

Drawing # **CT170-33-V**



Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.500	36	0.459	72	0.327	108	0.154	144	0.050	180	0.032	216	0.050	252	0.154	288	0.327
1	0.500	37	0.457	73	0.322	109	0.150	145	0.048	181	0.032	217	0.052	253	0.158	289	0.331
2	0.500	38	0.454	74	0.317	110	0.146	146	0.046	182	0.032	218	0.055	254	0.162	290	0.336
3	0.500	39	0.452	75	0.312	111	0.142	147	0.043	183	0.032	219	0.057	255	0.166	291	0.341
4	0.499	40	0.449	76	0.307	112	0.138	148	0.041	184	0.032	220	0.059	256	0.170	292	0.346
5	0.499	41	0.446	77	0.302	113	0.135	149	0.039	185	0.031	221	0.062	257	0.174	293	0.350
6	0.499	42	0.444	78	0.297	114	0.131	150	0.037	186	0.031	222	0.064	258	0.179	294	0.355
7	0.498	43	0.441	79	0.292	115	0.128	151	0.036	187	0.030	223	0.067	259	0.183	295	0.359
8	0.498	44	0.438	80	0.287	116	0.125	152	0.034	188	0.030	224	0.069	260	0.188	296	0.364
9	0.497	45	0.435	81	0.281	117	0.121	153	0.032	189	0.029	225	0.072	261	0.192	297	0.368
10	0.497	46	0.432	82	0.276	118	0.118	154	0.031	190	0.029	226	0.074	262	0.197	298	0.373
11	0.496	47	0.429	83	0.271	119	0.115	155	0.029	191	0.028	227	0.076	263	0.202	299	0.377
12	0.495	48	0.426	84	0.266	120	0.112	156	0.028	192	0.028	228	0.079	264	0.206	300	0.381
13	0.495	49	0.422	85	0.261	121	0.109	157	0.027	193	0.027	229	0.082	265	0.211	301	0.385
14	0.494	50	0.419	86	0.256	122	0.106	158	0.027	194	0.026	230	0.084	266	0.216	302	0.389
15	0.493	51	0.415	87	0.251	123	0.103	159	0.026	195	0.026	231	0.087	267	0.221	303	0.393
16	0.492	52	0.412	88	0.246	124	0.100	160	0.026	196	0.026	232	0.089	268	0.226	304	0.397
17	0.491	53	0.408	89	0.241	125	0.097	161	0.025	197	0.025	233	0.092	269	0.231	305	0.401
18	0.490	54	0.405	90	0.236	126	0.095	162	0.025	198	0.025	234	0.095	270	0.236	306	0.405
19	0.489	55	0.401	91	0.231	127	0.092	163	0.025	199	0.025	235	0.097	271	0.241	307	0.408
20	0.487	56	0.397	92	0.226	128	0.089	164	0.026	200	0.026	236	0.100	272	0.246	308	0.412
21	0.486	57	0.393	93	0.221	129	0.087	165	0.026	201	0.026	237	0.103	273	0.251	309	0.415
22	0.485	58	0.389	94	0.216	130	0.084	166	0.026	202	0.027	238	0.106	274	0.256	310	0.419
23	0.483	59	0.385	95	0.211	131	0.082	167	0.027	203	0.027	239	0.109	275	0.261	311	0.422
24	0.482	60	0.381	96	0.206	132	0.079	168	0.028	204	0.028	240	0.112	276	0.266	312	0.426
25	0.480	61	0.377	97	0.202	133	0.076	169	0.028	205	0.029	241	0.115	277	0.271	313	0.429
26	0.479	62	0.373	98	0.197	134	0.074	170	0.029	206	0.031	242	0.118	278	0.276	314	0.432
27	0.477	63	0.368	99	0.192	135	0.072	171	0.029	207	0.032	243	0.121	279	0.281	315	0.435
28	0.475	64	0.364	100	0.188	136	0.069	172	0.030	208	0.034	244	0.125	280	0.287	316	0.438
29	0.474	65	0.359	101	0.183	137	0.067	173	0.030	209	0.036	245	0.128	281	0.292	317	0.441
30	0.472	66	0.355	102	0.179	138	0.064	174	0.031	210	0.037	246	0.131	282	0.297	318	0.444
31	0.470	67	0.350	103	0.174	139	0.062	175	0.031	211	0.039	247	0.135	283	0.302	319	0.446
32	0.468	68	0.346	104	0.170	140	0.059	176	0.032	212	0.041	248	0.138	284	0.307	320	0.449
33	0.466	69	0.341	105	0.166	141	0.057	177	0.032	213	0.043	249	0.142	285	0.312	321	0.452
34	0.463	70	0.336	106	0.162	142	0.055	178	0.032	214	0.046	250	0.146	286	0.317	322	0.454
35	0.461	71	0.331	107	0.158	143	0.052	179	0.032	215	0.048	251	0.150	287	0.322	323	0.457

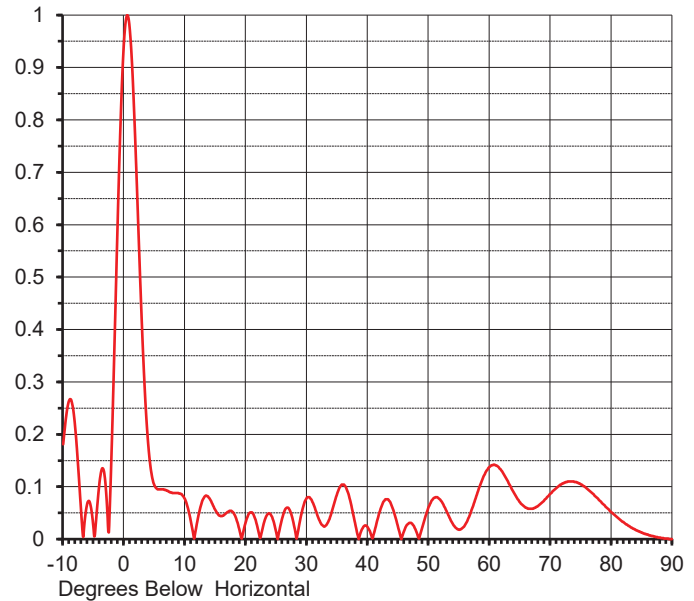
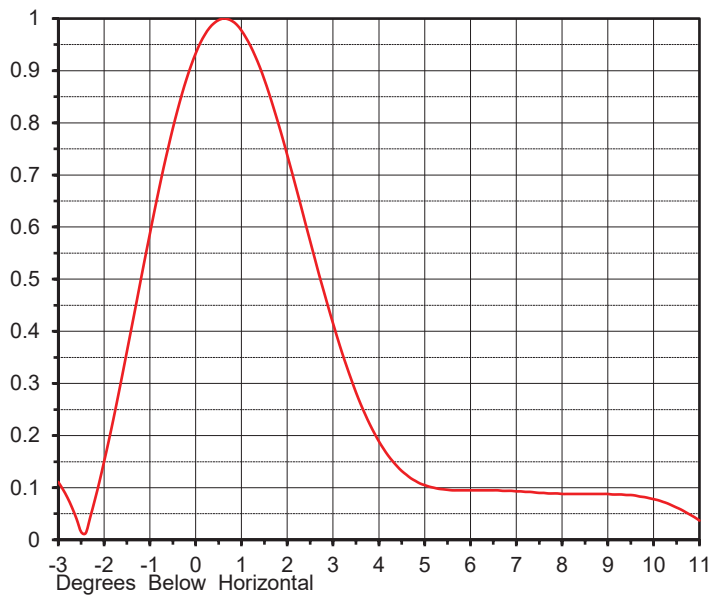
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## ELEVATION PATTERN

Proposal No. **C-70397**  
 Date **7-Mar-17**  
 Call Letters **WQPX**  
 Channel **33**  
 Frequency **587 MHz**  
 Antenna Type **TFU-22GTH/VP-R C170 (SP)**

RMS Directivity at Main Lobe **18.0 ( 12.55 dB )**  
 RMS Directivity at Horizontal **15.7 ( 11.96 dB )**  
**Calculated**

Beam Tilt **0.50 deg**  
 Drawing Number **22G180050**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.181	10.0	0.076	30.0	0.079	50.0	0.062	70.0	0.087
-9.0	0.265	11.0	0.031	31.0	0.069	51.0	0.079	71.0	0.098
-8.0	0.209	12.0	0.033	32.0	0.037	52.0	0.073	72.0	0.106
-7.0	0.043	13.0	0.077	33.0	0.025	53.0	0.051	73.0	0.110
-6.0	0.070	14.0	0.078	34.0	0.049	54.0	0.028	74.0	0.109
-5.0	0.018	15.0	0.055	35.0	0.088	55.0	0.018	75.0	0.104
-4.0	0.112	16.0	0.044	36.0	0.104	56.0	0.028	76.0	0.096
-3.0	0.097	17.0	0.052	37.0	0.078	57.0	0.055	77.0	0.086
-2.0	0.189	18.0	0.049	38.0	0.025	58.0	0.089	78.0	0.074
-1.0	0.631	19.0	0.014	39.0	0.018	59.0	0.120	79.0	0.062
0.0	0.953	20.0	0.034	40.0	0.022	60.0	0.138	80.0	0.051
1.0	0.963	21.0	0.051	41.0	0.011	61.0	0.141	81.0	0.041
2.0	0.706	22.0	0.017	42.0	0.054	62.0	0.130	82.0	0.032
3.0	0.386	23.0	0.033	43.0	0.076	63.0	0.110	83.0	0.024
4.0	0.175	24.0	0.048	44.0	0.061	64.0	0.088	84.0	0.017
5.0	0.102	25.0	0.011	45.0	0.021	65.0	0.070	85.0	0.012
6.0	0.095	26.0	0.042	46.0	0.017	66.0	0.060	86.0	0.008
7.0	0.093	27.0	0.059	47.0	0.031	67.0	0.058	87.0	0.005
8.0	0.088	28.0	0.020	48.0	0.013	68.0	0.064	88.0	0.003
9.0	0.087	29.0	0.043	49.0	0.025	69.0	0.075	89.0	0.001
								90.0	0.000

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