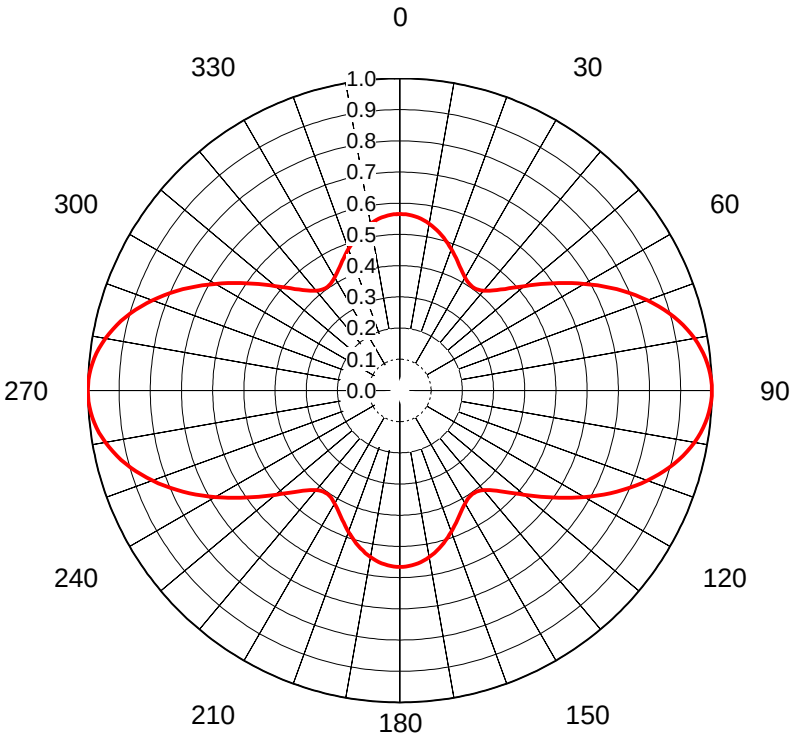


AZIMUTH PATTERN
Horizontal Polarization

In Free Space

Proposal No.	**C-70708**
Date	**9-May-17**
Call Letters	**WQTO**
Channel	**19**
Frequency	**503 MHz**
Antenna Type	**TFU-22DSC-R P230**
Gain	**2.3 (3.63dB)**
	Calculated

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.566	36	0.406	72	0.872	108	0.872	144	0.406	180	0.566	216	0.406	252	0.872	288	0.872	324	0.406
1	0.565	37	0.407	73	0.885	109	0.858	145	0.405	181	0.565	217	0.407	253	0.885	289	0.858	325	0.405
2	0.565	38	0.409	74	0.898	110	0.844	146	0.406	182	0.565	218	0.409	254	0.898	290	0.844	326	0.406
3	0.563	39	0.413	75	0.909	111	0.830	147	0.408	183	0.563	219	0.413	255	0.909	291	0.830	327	0.408
4	0.562	40	0.417	76	0.921	112	0.815	148	0.411	184	0.562	220	0.417	256	0.921	292	0.815	328	0.411
5	0.560	41	0.423	77	0.931	113	0.799	149	0.414	185	0.560	221	0.423	257	0.931	293	0.799	329	0.414
6	0.557	42	0.430	78	0.941	114	0.783	150	0.418	186	0.557	222	0.430	258	0.941	294	0.783	330	0.418
7	0.554	43	0.438	79	0.950	115	0.767	151	0.423	187	0.554	223	0.438	259	0.950	295	0.767	331	0.423
8	0.551	44	0.447	80	0.959	116	0.751	152	0.428	188	0.551	224	0.447	260	0.959	296	0.751	332	0.428
9	0.547	45	0.457	81	0.966	117	0.734	153	0.434	189	0.547	225	0.457	261	0.966	297	0.734	333	0.434
10	0.542	46	0.468	82	0.973	118	0.717	154	0.440	190	0.542	226	0.468	262	0.973	298	0.717	334	0.440
11	0.538	47	0.480	83	0.980	119	0.700	155	0.447	191	0.538	227	0.480	263	0.980	299	0.700	335	0.447
12	0.533	48	0.493	84	0.985	120	0.683	156	0.454	192	0.533	228	0.493	264	0.985	300	0.683	336	0.454
13	0.527	49	0.506	85	0.990	121	0.666	157	0.461	193	0.527	229	0.506	265	0.990	301	0.666	337	0.461
14	0.522	50	0.520	86	0.993	122	0.649	158	0.468	194	0.522	230	0.520	266	0.993	302	0.649	338	0.468
15	0.515	51	0.535	87	0.996	123	0.632	159	0.475	195	0.515	231	0.535	267	0.996	303	0.632	339	0.475
16	0.509	52	0.550	88	0.998	124	0.615	160	0.482	196	0.509	232	0.550	268	0.998	304	0.615	340	0.482
17	0.503	53	0.566	89	1.000	125	0.599	161	0.489	197	0.503	233	0.566	269	1.000	305	0.599	341	0.489
18	0.496	54	0.582	90	1.000	126	0.582	162	0.496	198	0.496	234	0.582	270	1.000	306	0.582	342	0.496
19	0.489	55	0.599	91	1.000	127	0.566	163	0.503	199	0.489	235	0.599	271	1.000	307	0.566	343	0.503
20	0.482	56	0.615	92	0.998	128	0.550	164	0.509	200	0.482	236	0.615	272	0.998	308	0.550	344	0.509
21	0.475	57	0.632	93	0.996	129	0.535	165	0.515	201	0.475	237	0.632	273	0.996	309	0.535	345	0.515
22	0.468	58	0.649	94	0.993	130	0.520	166	0.522	202	0.468	238	0.649	274	0.993	310	0.520	346	0.522
23	0.461	59	0.666	95	0.990	131	0.506	167	0.527	203	0.461	239	0.666	275	0.990	311	0.506	347	0.527
24	0.454	60	0.683	96	0.985	132	0.493	168	0.533	204	0.454	240	0.683	276	0.985	312	0.493	348	0.533
25	0.447	61	0.700	97	0.980	133	0.480	169	0.538	205	0.447	241	0.700	277	0.980	313	0.480	349	0.538
26	0.440	62	0.717	98	0.973	134	0.468	170	0.542	206	0.440	242	0.717	278	0.973	314	0.468	350	0.542
27	0.434	63	0.734	99	0.966	135	0.457	171	0.547	207	0.434	243	0.734	279	0.966	315	0.457	351	0.547
28	0.428	64	0.751	100	0.959	136	0.447	172	0.551	208	0.428	244	0.751	280	0.959	316	0.447	352	0.551
29	0.423	65	0.767	101	0.950	137	0.438	173	0.554	209	0.423	245	0.767	281	0.950	317	0.438	353	0.554
30	0.418	66	0.783	102	0.941	138	0.430	174	0.557	210	0.418	246	0.783	282	0.941	318	0.430	354	0.557
31	0.414	67	0.799	103	0.931	139	0.423	175	0.560	211	0.414	247	0.799	283	0.931	319	0.423	355	0.560
32	0.411	68	0.815	104	0.921	140	0.417	176	0.562	212	0.411	248	0.815	284	0.921	320	0.417	356	0.562
33	0.408	69	0.830	105	0.909	141	0.413	177	0.563	213	0.408	249	0.830	285	0.909	321	0.413	357	0.563
34	0.406	70	0.844	106	0.898	142	0.409	178	0.565	214	0.406	250	0.844	286	0.898	322	0.409	358	0.565
35	0.405	71	0.858	107	0.885	143	0.407	179	0.565	215	0.405	251	0.858	287	0.885	323	0.407	359	0.565

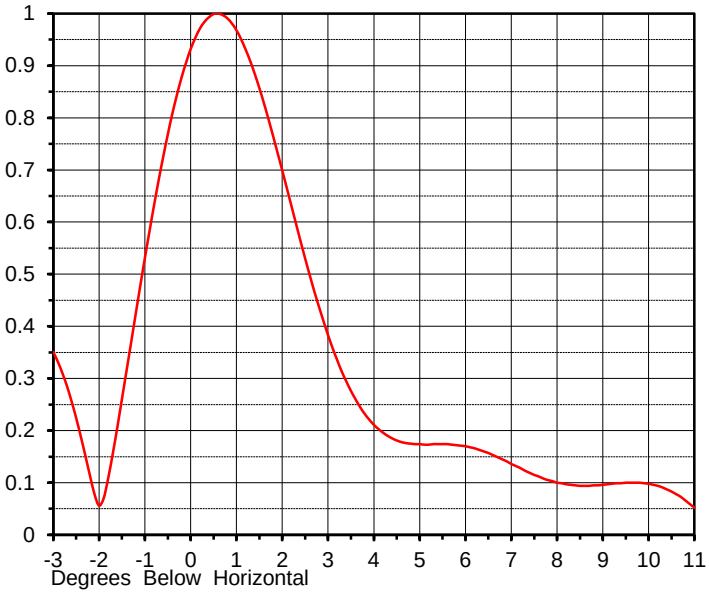
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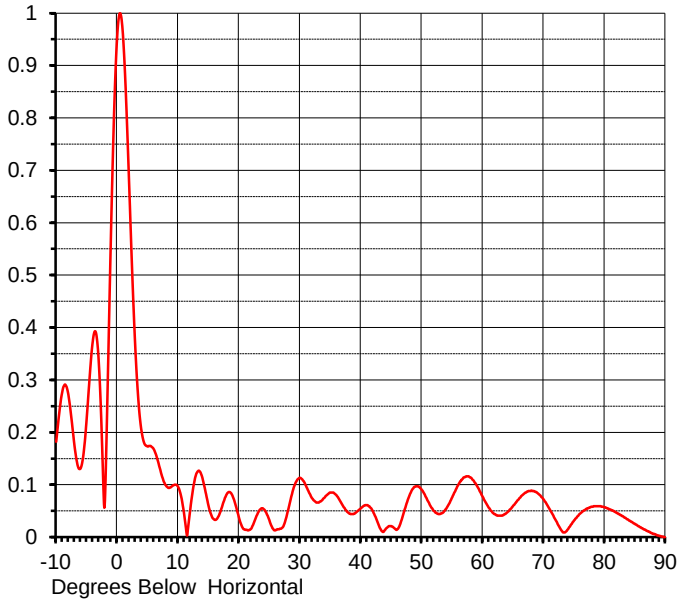
ELEVATION PATTERN

Proposal No.	**C-70708**
Date	**9-May-17**
Call Letters	**WQTO**
Channel	**19**
Frequency	**503 MHz**
Antenna Type	**TFU-22DSC-R P230**

RMS Directivity at Main Lobe	**16.0 (12.04 dB)**	Beam Tilt	**0.50 deg**
RMS Directivity at Horizontal	**14.5 (11.61 dB)**	Pattern Number	**22Q160050**

Calculated





Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.182	10.0	0.096	30.0	0.113	50.0	0.090	70.0	0.072
-9.0	0.277	11.0	0.044	31.0	0.098	51.0	0.069	71.0	0.053
-8.0	0.272	12.0	0.052	32.0	0.074	52.0	0.050	72.0	0.032
-7.0	0.175	13.0	0.121	33.0	0.066	53.0	0.044	73.0	0.012
-6.0	0.131	14.0	0.113	34.0	0.075	54.0	0.054	74.0	0.015
-5.0	0.225	15.0	0.060	35.0	0.085	55.0	0.076	75.0	0.032
-4.0	0.373	16.0	0.033	36.0	0.080	56.0	0.100	76.0	0.045
-3.0	0.332	17.0	0.050	37.0	0.061	57.0	0.114	77.0	0.054
-2.0	0.070	18.0	0.082	38.0	0.046	58.0	0.114	78.0	0.058
-1.0	0.582	19.0	0.077	39.0	0.045	59.0	0.099	79.0	0.059
0.0	0.953	20.0	0.037	40.0	0.055	60.0	0.077	80.0	0.057
1.0	0.951	21.0	0.014	41.0	0.061	61.0	0.056	81.0	0.052
2.0	0.665	22.0	0.016	42.0	0.049	62.0	0.044	82.0	0.046
3.0	0.358	23.0	0.043	43.0	0.021	63.0	0.041	83.0	0.040
4.0	0.203	24.0	0.054	44.0	0.014	64.0	0.047	84.0	0.032
5.0	0.173	25.0	0.032	45.0	0.021	65.0	0.060	85.0	0.025
6.0	0.168	26.0	0.013	46.0	0.015	66.0	0.074	86.0	0.018
7.0	0.132	27.0	0.017	47.0	0.045	67.0	0.085	87.0	0.012
8.0	0.099	28.0	0.049	48.0	0.080	68.0	0.089	88.0	0.006
9.0	0.097	29.0	0.095	49.0	0.097	69.0	0.084	89.0	0.002
								90.0	0.000

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WQTO Proposed Ch. 19 DTS Site 1 Facility

		Maxima:	
Parameters:		N090E	28.43 dBk
ERP:	697.0 kW	N270E	28.43 dBk
RCAMSL:	681.1 m	**Minima:**	
HAAT:	310.0 m	N040E	20.84 dBk
		N140E	20.84 dBk
		N220E	20.84 dBk
		N320E	20.84 dBk

Directional Antenna dBk Table

Bearing	Pattern Azimuth	Relative Field	ERP (dBk)	Distance to Noise-Limited Contour (km)
N000E	0	0.566	23.49	52.5
	10	0.542	23.11	
	20	0.482	22.09	
	30	0.418	20.86	
	40	0.417	20.84	
N045E	45	0.457	21.63	50.9
	50	0.520	22.75	
	60	0.683	25.12	
	70	0.844	26.96	
	80	0.959	28.07	
N090E	90	1.000	28.43	109.9
	100	0.959	28.07	
	110	0.844	26.96	
	120	0.683	25.12	
	130	0.520	22.75	
N135E	135	0.457	21.63	105.4
	140	0.417	20.84	
	150	0.418	20.86	
	160	0.482	22.09	
	170	0.542	23.11	
N180E	180	0.566	23.49	112.5
	190	0.542	23.11	
	200	0.482	22.09	
	210	0.418	20.86	
	220	0.417	20.84	
N225E	225	0.457	21.63	106.3
	230	0.520	22.75	
	240	0.683	25.12	
	250	0.844	26.96	
	260	0.959	28.07	
N270E	270	1.000	28.43	111.9
	278	0.973	28.19	
	280	0.959	28.07	
	290	0.844	26.96	
	300	0.683	25.12	
	310	0.520	22.75	
N315E	315	0.457	21.63	63.1
	320	0.417	20.84	
	330	0.418	20.86	
	340	0.482	22.09	
	350	0.542	23.11	