

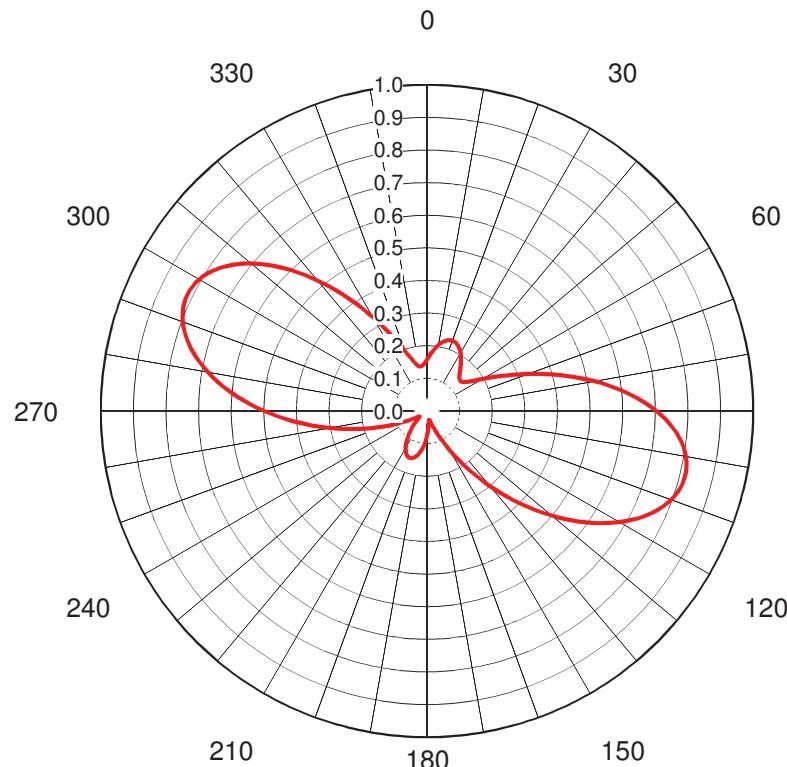
AZIMUTH PATTERN Horizontal Polarization

Proposal No. C-70054
 Date 8-Mar-17
 Call Letters WFGX
 Channel 14
 Frequency 473 MHz
 Antenna Type TFU-19ETT/VP-R 4C170
 Gain 1.67 (2.22dB)
 Calculated

Drawing # TFU-4C170HP-6890

Deg	Value																						
0	0.898	36	0.914	72	0.786	108	0.995	144	0.648	180	0.416	216	0.457	252	0.555	288	0.973	324	0.820				
1	0.899	37	0.914	73	0.789	109	0.992	145	0.632	181	0.421	217	0.453	253	0.572	289	0.977	325	0.813				
2	0.900	38	0.914	74	0.793	110	0.989	146	0.616	182	0.426	218	0.449	254	0.589	290	0.981	326	0.807				
3	0.901	39	0.914	75	0.799	111	0.985	147	0.599	183	0.430	219	0.444	255	0.606	291	0.985	327	0.801				
4	0.902	40	0.913	76	0.805	112	0.981	148	0.583	184	0.435	220	0.440	256	0.623	292	0.988	328	0.796				
5	0.902	41	0.912	77	0.812	113	0.976	149	0.567	185	0.439	221	0.435	257	0.640	293	0.990	329	0.792				
6	0.902	42	0.910	78	0.820	114	0.971	150	0.550	186	0.443	222	0.430	258	0.657	294	0.992	330	0.789				
7	0.902	43	0.908	79	0.828	115	0.966	151	0.534	187	0.447	223	0.425	259	0.673	295	0.994	331	0.787				
8	0.902	44	0.906	80	0.837	116	0.960	152	0.519	188	0.451	224	0.420	260	0.689	296	0.995	332	0.786				
9	0.901	45	0.903	81	0.847	117	0.954	153	0.503	189	0.454	225	0.414	261	0.705	297	0.995	333	0.785				
10	0.901	46	0.900	82	0.857	118	0.947	154	0.488	190	0.457	226	0.409	262	0.721	298	0.995	334	0.786				
11	0.900	47	0.896	83	0.867	119	0.940	155	0.474	191	0.460	227	0.404	263	0.736	299	0.994	335	0.788				
12	0.900	48	0.892	84	0.877	120	0.933	156	0.460	192	0.463	228	0.399	264	0.751	300	0.993	336	0.790				
13	0.899	49	0.887	85	0.887	121	0.925	157	0.448	193	0.466	229	0.395	265	0.765	301	0.991	337	0.793				
14	0.899	50	0.882	86	0.898	122	0.917	158	0.436	194	0.468	230	0.391	266	0.778	302	0.989	338	0.797				
15	0.899	51	0.877	87	0.908	123	0.909	159	0.425	195	0.470	231	0.387	267	0.792	303	0.985	339	0.801				
16	0.899	52	0.871	88	0.917	124	0.900	160	0.415	196	0.472	232	0.384	268	0.805	304	0.982	340	0.806				
17	0.898	53	0.865	89	0.927	125	0.891	161	0.406	197	0.473	233	0.382	269	0.817	305	0.977	341	0.811				
18	0.898	54	0.858	90	0.936	126	0.882	162	0.398	198	0.475	234	0.381	270	0.829	306	0.972	342	0.817				
19	0.899	55	0.851	91	0.945	127	0.872	163	0.391	199	0.476	235	0.381	271	0.840	307	0.966	343	0.823				
20	0.899	56	0.844	92	0.953	128	0.862	164	0.386	200	0.477	236	0.382	272	0.851	308	0.960	344	0.829				
21	0.899	57	0.838	93	0.960	129	0.851	165	0.382	201	0.478	237	0.384	273	0.862	309	0.953	345	0.835				
22	0.900	58	0.831	94	0.967	130	0.840	166	0.379	202	0.478	238	0.388	274	0.872	310	0.946	346	0.841				
23	0.901	59	0.824	95	0.974	131	0.829	167	0.377	203	0.478	239	0.393	275	0.882	311	0.938	347	0.847				
24	0.901	60	0.817	96	0.979	132	0.818	168	0.376	204	0.478	240	0.399	276	0.891	312	0.929	348	0.853				
25	0.902	61	0.811	97	0.984	133	0.806	169	0.376	205	0.478	241	0.406	277	0.900	313	0.921	349	0.858				
26	0.903	62	0.805	98	0.989	134	0.793	170	0.377	206	0.478	242	0.415	278	0.908	314	0.912	350	0.864				
27	0.905	63	0.799	99	0.992	135	0.780	171	0.379	207	0.477	243	0.425	279	0.916	315	0.902	351	0.869				
28	0.906	64	0.794	100	0.995	136	0.767	172	0.382	208	0.476	244	0.436	280	0.924	316	0.893	352	0.873				
29	0.907	65	0.790	101	0.997	137	0.754	173	0.385	209	0.474	245	0.449	281	0.931	317	0.883	353	0.878				
30	0.908	66	0.787	102	0.999	138	0.740	174	0.389	210	0.473	246	0.462	282	0.938	318	0.873	354	0.882				
31	0.909	67	0.784	103	1.000	139	0.725	175	0.393	211	0.471	247	0.476	283	0.945	319	0.864	355	0.886				
32	0.911	68	0.782	104	1.000	140	0.710	176	0.397	212	0.469	248	0.491	284	0.951	320	0.854	356	0.889				
33	0.912	69	0.782	105	1.000	141	0.695	177	0.402	213	0.466	249	0.506	285	0.957	321	0.845	357	0.892				
34	0.913	70	0.782	106	0.999	142	0.680	178	0.406	214	0.463	250	0.522	286	0.963	322	0.836	358	0.894				
35	0.913	71	0.783	107	0.997	143	0.664	179	0.411	215	0.460	251	0.538	287	0.968	323	0.828	359	0.896				

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AZIMUTH PATTERN Vertical Polarization

Proposal No. C-70054
 Date 8-Mar-17
 Call Letters WFGX
 Channel 14
 Frequency 473 MHz
 Antenna Type TFU-19ETT/VP-R 4C170
 Gain 3.78 (5.77dB)
 Calculated

Drawing # TFU-4C170V D14

Deg	Value																
0	0.157	36	0.177	72	0.367	108	0.808	144	0.229	180	0.078	216	0.100	252	0.166	288	0.781
1	0.162	37	0.172	73	0.386	109	0.803	145	0.212	181	0.083	217	0.095	253	0.180	289	0.789
2	0.167	38	0.167	74	0.405	110	0.797	146	0.196	182	0.089	218	0.089	254	0.196	290	0.797
3	0.172	39	0.162	75	0.424	111	0.789	147	0.180	183	0.095	219	0.083	255	0.212	291	0.803
4	0.177	40	0.157	76	0.444	112	0.781	148	0.166	184	0.100	220	0.078	256	0.229	292	0.808
5	0.182	41	0.153	77	0.463	113	0.772	149	0.151	185	0.106	221	0.072	257	0.246	293	0.812
6	0.187	42	0.149	78	0.483	114	0.762	150	0.138	186	0.111	222	0.067	258	0.264	294	0.814
7	0.192	43	0.146	79	0.503	115	0.750	151	0.125	187	0.116	223	0.061	259	0.282	295	0.816
8	0.197	44	0.143	80	0.523	116	0.738	152	0.113	188	0.121	224	0.056	260	0.301	296	0.816
9	0.201	45	0.141	81	0.543	117	0.725	153	0.101	189	0.126	225	0.052	261	0.320	297	0.816
10	0.206	46	0.139	82	0.562	118	0.711	154	0.091	190	0.130	226	0.047	262	0.339	298	0.814
11	0.210	47	0.138	83	0.581	119	0.697	155	0.081	191	0.135	227	0.043	263	0.359	299	0.811
12	0.214	48	0.138	84	0.600	120	0.681	156	0.072	192	0.138	228	0.039	264	0.379	300	0.806
13	0.217	49	0.138	85	0.619	121	0.665	157	0.064	193	0.142	229	0.036	265	0.399	301	0.801
14	0.220	50	0.139	86	0.637	122	0.649	158	0.057	194	0.145	230	0.033	266	0.419	302	0.794
15	0.223	51	0.141	87	0.655	123	0.632	159	0.050	195	0.147	231	0.031	267	0.439	303	0.787
16	0.225	52	0.144	88	0.672	124	0.614	160	0.044	196	0.149	232	0.029	268	0.459	304	0.778
17	0.227	53	0.148	89	0.688	125	0.596	161	0.040	197	0.151	233	0.028	269	0.479	305	0.768
18	0.228	54	0.152	90	0.703	126	0.577	162	0.036	198	0.152	234	0.028	270	0.499	306	0.757
19	0.229	55	0.157	91	0.718	127	0.558	163	0.032	199	0.153	235	0.029	271	0.519	307	0.745
20	0.229	56	0.163	92	0.732	128	0.539	164	0.030	200	0.153	236	0.030	272	0.539	308	0.732
21	0.229	57	0.170	93	0.745	129	0.519	165	0.029	201	0.153	237	0.032	273	0.558	309	0.718
22	0.228	58	0.178	94	0.757	130	0.499	166	0.028	202	0.152	238	0.036	274	0.577	310	0.703
23	0.227	59	0.186	95	0.768	131	0.479	167	0.028	203	0.151	239	0.040	275	0.596	311	0.688
24	0.225	60	0.195	96	0.778	132	0.459	168	0.029	204	0.149	240	0.044	276	0.614	312	0.672
25	0.223	61	0.205	97	0.787	133	0.439	169	0.031	205	0.147	241	0.050	277	0.632	313	0.655
26	0.220	62	0.216	98	0.794	134	0.419	170	0.033	206	0.145	242	0.057	278	0.649	314	0.637
27	0.217	63	0.228	99	0.801	135	0.399	171	0.036	207	0.142	243	0.064	279	0.665	315	0.619
28	0.214	64	0.241	100	0.806	136	0.379	172	0.039	208	0.138	244	0.072	280	0.681	316	0.600
29	0.210	65	0.254	101	0.811	137	0.359	173	0.043	209	0.135	245	0.081	281	0.697	317	0.581
30	0.206	66	0.268	102	0.814	138	0.339	174	0.047	210	0.130	246	0.091	282	0.711	318	0.562
31	0.201	67	0.283	103	0.816	139	0.320	175	0.052	211	0.126	247	0.101	283	0.725	319	0.543
32	0.197	68	0.299	104	0.816	140	0.301	176	0.056	212	0.121	248	0.113	284	0.738	320	0.523
33	0.192	69	0.315	105	0.816	141	0.282	177	0.061	213	0.116	249	0.125	285	0.750	321	0.503
34	0.187	70	0.332	106	0.814	142	0.264	178	0.067	214	0.111	250	0.138	286	0.762	322	0.483
35	0.182	71	0.349	107	0.812	143	0.246	179	0.072	215	0.106	251	0.151	287	0.772	323	0.463

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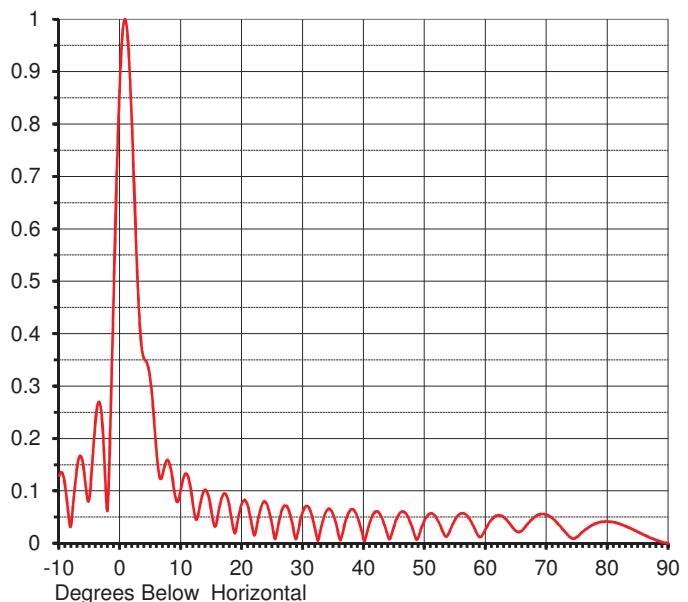
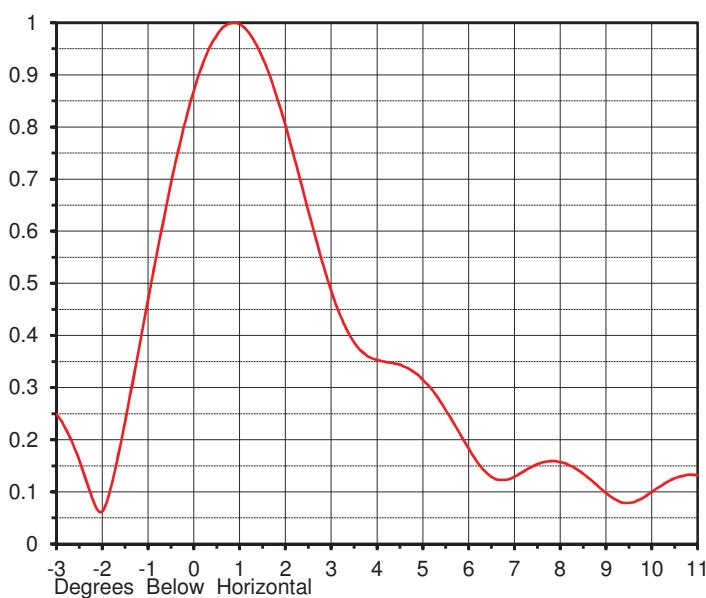
ELEVATION PATTERN

Proposal No. C-70054
 Date 8-Mar-17
 Call Letters WFGX
 Channel 14
 Frequency 473 MHz
 Antenna Type TFU-19ETT/VP-R 4C170

RMS Directivity at Main Lobe
 RMS Directivity at Horizontal

18.0 (12.55 dB)
13.6 (11.34 dB)
Calculated

Beam Tilt 0.75 deg
 Drawing Number 75



Angle	Field								
-10.0	0.129	10.0	0.106	30.0	0.062	50.0	0.045	70.0	0.054
-9.0	0.106	11.0	0.131	31.0	0.067	51.0	0.057	71.0	0.047
-8.0	0.041	12.0	0.070	32.0	0.026	52.0	0.046	72.0	0.035
-7.0	0.151	13.0	0.066	33.0	0.032	53.0	0.021	73.0	0.022
-6.0	0.142	14.0	0.102	34.0	0.064	54.0	0.021	74.0	0.010
-5.0	0.092	15.0	0.058	35.0	0.053	55.0	0.046	75.0	0.012
-4.0	0.241	16.0	0.051	36.0	0.009	56.0	0.057	76.0	0.023
-3.0	0.237	17.0	0.095	37.0	0.043	57.0	0.051	77.0	0.031
-2.0	0.081	18.0	0.065	38.0	0.065	58.0	0.032	78.0	0.038
-1.0	0.515	19.0	0.025	39.0	0.048	59.0	0.012	79.0	0.041
0.0	0.898	20.0	0.078	40.0	0.005	60.0	0.028	80.0	0.042
1.0	0.991	21.0	0.068	41.0	0.041	61.0	0.046	81.0	0.040
2.0	0.772	22.0	0.015	42.0	0.061	62.0	0.053	82.0	0.037
3.0	0.460	23.0	0.065	43.0	0.047	63.0	0.049	83.0	0.032
4.0	0.351	24.0	0.076	44.0	0.011	64.0	0.036	84.0	0.027
5.0	0.306	25.0	0.030	45.0	0.035	65.0	0.023	85.0	0.021
6.0	0.169	26.0	0.039	46.0	0.059	66.0	0.025	86.0	0.016
7.0	0.134	27.0	0.072	47.0	0.055	67.0	0.039	87.0	0.010
8.0	0.155	28.0	0.049	48.0	0.027	68.0	0.050	88.0	0.006
9.0	0.091	29.0	0.013	49.0	0.014	69.0	0.056	89.0	0.002
						90.0	0.000		

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