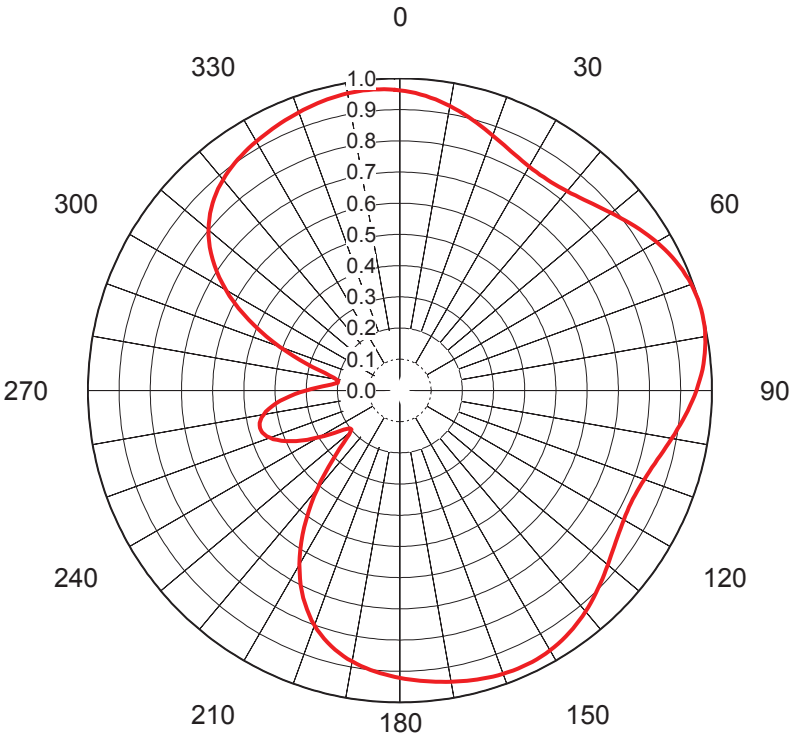
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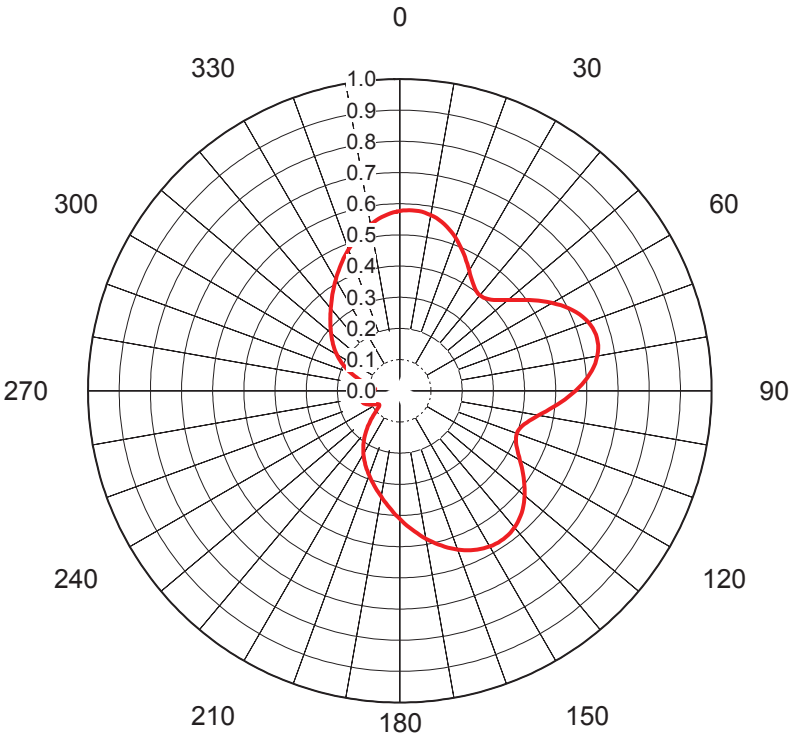


AZIMUTH PATTERN
Horizontal Polarization

Proposal No.	**C-70151**
Date	**13-Feb-17**
Call Letters	**WDBB 14**
Frequency	**473 MHz**
Antenna Type	**TFU-24ETT/VP-R CT160**
Gain	**1.55 (1.9dB) Calculated**
Directional Drawing #	**TFU-CT160-17/18**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.962	36	0.825	72	0.998	108	0.841	144	0.944	180	0.921	216	0.510	252	0.456	288	0.361	324	0.901
1	0.960	37	0.826	73	0.999	109	0.837	145	0.948	181	0.918	217	0.486	253	0.461	289	0.386	325	0.905
2	0.957	38	0.828	74	1.000	110	0.834	146	0.951	182	0.915	218	0.461	254	0.463	290	0.411	326	0.908
3	0.954	39	0.830	75	1.000	111	0.831	147	0.954	183	0.912	219	0.436	255	0.464	291	0.436	327	0.912
4	0.951	40	0.834	76	1.000	112	0.828	148	0.957	184	0.908	220	0.411	256	0.463	292	0.461	328	0.915
5	0.948	41	0.837	77	0.999	113	0.826	149	0.960	185	0.905	221	0.386	257	0.461	293	0.486	329	0.918
6	0.944	42	0.841	78	0.998	114	0.825	150	0.962	186	0.901	222	0.361	258	0.456	294	0.510	330	0.921
7	0.940	43	0.845	79	0.996	115	0.824	151	0.964	187	0.897	223	0.336	259	0.451	295	0.535	331	0.924
8	0.935	44	0.850	80	0.994	116	0.824	152	0.966	188	0.892	224	0.312	260	0.443	296	0.558	332	0.927
9	0.930	45	0.855	81	0.991	117	0.824	153	0.967	189	0.887	225	0.289	261	0.435	297	0.581	333	0.930
10	0.925	46	0.860	82	0.988	118	0.826	154	0.968	190	0.882	226	0.268	262	0.424	298	0.602	334	0.933
11	0.920	47	0.866	83	0.985	119	0.827	155	0.968	191	0.877	227	0.247	263	0.413	299	0.624	335	0.935
12	0.915	48	0.872	84	0.981	120	0.829	156	0.969	192	0.870	228	0.231	264	0.399	300	0.644	336	0.938
13	0.910	49	0.878	85	0.977	121	0.831	157	0.969	193	0.864	229	0.215	265	0.386	301	0.664	337	0.941
14	0.904	50	0.885	86	0.972	122	0.834	158	0.968	194	0.857	230	0.207	266	0.370	302	0.682	338	0.943
15	0.898	51	0.891	87	0.967	123	0.837	159	0.968	195	0.849	231	0.199	267	0.354	303	0.700	339	0.946
16	0.893	52	0.898	88	0.962	124	0.841	160	0.967	196	0.841	232	0.200	268	0.336	304	0.717	340	0.948
17	0.887	53	0.905	89	0.956	125	0.845	161	0.966	197	0.832	233	0.201	269	0.319	305	0.733	341	0.951
18	0.881	54	0.912	90	0.950	126	0.850	162	0.964	198	0.822	234	0.210	270	0.301	306	0.748	342	0.953
19	0.876	55	0.918	91	0.944	127	0.854	163	0.963	199	0.812	235	0.219	271	0.283	307	0.763	343	0.955
20	0.870	56	0.925	92	0.938	128	0.859	164	0.961	200	0.801	236	0.234	272	0.266	308	0.776	344	0.957
21	0.865	57	0.932	93	0.932	129	0.865	165	0.959	201	0.789	237	0.248	273	0.248	309	0.789	345	0.959
22	0.859	58	0.938	94	0.925	130	0.870	166	0.957	202	0.776	238	0.266	274	0.234	310	0.801	346	0.961
23	0.854	59	0.944	95	0.918	131	0.876	167	0.955	203	0.763	239	0.283	275	0.219	311	0.812	347	0.963
24	0.850	60	0.950	96	0.912	132	0.881	168	0.953	204	0.748	240	0.301	276	0.210	312	0.822	348	0.964
25	0.845	61	0.956	97	0.905	133	0.887	169	0.951	205	0.733	241	0.319	277	0.201	313	0.832	349	0.966
26	0.841	62	0.962	98	0.898	134	0.893	170	0.948	206	0.717	242	0.336	278	0.200	314	0.841	350	0.967
27	0.837	63	0.967	99	0.891	135	0.898	171	0.946	207	0.700	243	0.354	279	0.199	315	0.849	351	0.968
28	0.834	64	0.972	100	0.885	136	0.904	172	0.943	208	0.682	244	0.370	280	0.207	316	0.857	352	0.968
29	0.831	65	0.977	101	0.878	137	0.910	173	0.941	209	0.664	245	0.386	281	0.215	317	0.864	353	0.969
30	0.829	66	0.981	102	0.872	138	0.915	174	0.938	210	0.644	246	0.399	282	0.231	318	0.870	354	0.969
31	0.827	67	0.985	103	0.866	139	0.920	175	0.935	211	0.624	247	0.413	283	0.247	319	0.877	355	0.968
32	0.826	68	0.988	104	0.860	140	0.925	176	0.933	212	0.602	248	0.424	284	0.268	320	0.882	356	0.968
33	0.824	69	0.991	105	0.855	141	0.930	177	0.930	213	0.581	249	0.435	285	0.289	321	0.887	357	0.967
34	0.824	70	0.994	106	0.850	142	0.935	178	0.927	214	0.558	250	0.443	286	0.312	322	0.892	358	0.965
35	0.824	71	0.996	107	0.845	143	0.940	179	0.924	215	0.535	251	0.451	287	0.336	323	0.897	359	0.964

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AZIMUTH PATTERN
Vertical Polarization

Proposal No.	**C-70151**
Date	**13-Feb-17**
Call Letters	**WDBB 14**
Frequency	**473 MHz**
Antenna Type	**TFU-24ETT/VP-R CT160**
Gain	**2.38 (3.77dB) Calculated**
Directional Drawing #	**TFU-CT160V D14**

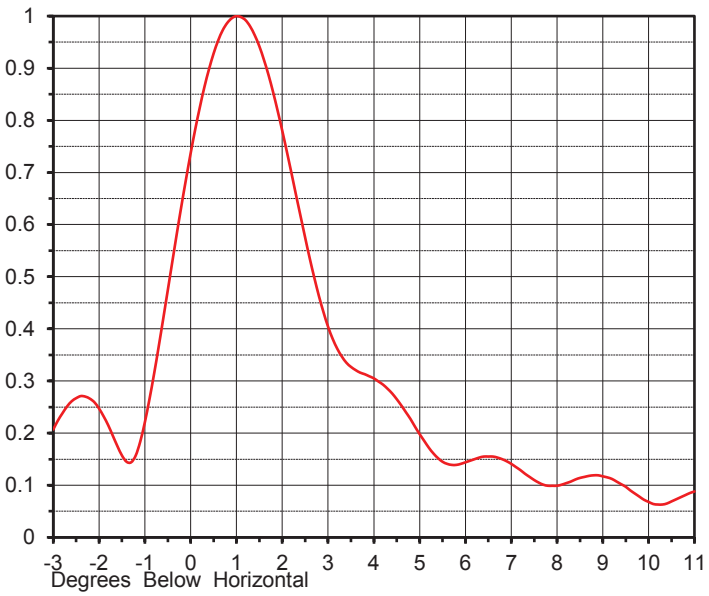
Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.577	36	0.408	72	0.651	108	0.402	144	0.579	180	0.411	216	0.196	252	0.124	288	0.153	324	0.370
1	0.578	37	0.405	73	0.653	109	0.400	145	0.580	181	0.404	217	0.189	253	0.125	289	0.160	325	0.377
2	0.579	38	0.402	74	0.654	110	0.400	146	0.580	182	0.397	218	0.182	254	0.126	290	0.167	326	0.384
3	0.580	39	0.400	75	0.655	111	0.400	147	0.580	183	0.390	219	0.175	255	0.126	291	0.175	327	0.390
4	0.580	40	0.400	76	0.654	112	0.402	148	0.579	184	0.384	220	0.167	256	0.126	292	0.182	328	0.397
5	0.580	41	0.400	77	0.653	113	0.405	149	0.578	185	0.377	221	0.160	257	0.125	293	0.189	329	0.404
6	0.579	42	0.402	78	0.651	114	0.408	150	0.577	186	0.370	222	0.153	258	0.124	294	0.196	330	0.411
7	0.578	43	0.405	79	0.648	115	0.413	151	0.575	187	0.364	223	0.145	259	0.123	295	0.202	331	0.418
8	0.577	44	0.409	80	0.644	116	0.418	152	0.573	188	0.357	224	0.138	260	0.120	296	0.209	332	0.425
9	0.575	45	0.414	81	0.639	117	0.424	153	0.570	189	0.351	225	0.130	261	0.118	297	0.215	333	0.433
10	0.572	46	0.420	82	0.633	118	0.431	154	0.567	190	0.345	226	0.123	262	0.115	298	0.222	334	0.440
11	0.569	47	0.427	83	0.627	119	0.438	155	0.563	191	0.339	227	0.116	263	0.112	299	0.228	335	0.447
12	0.566	48	0.435	84	0.620	120	0.445	156	0.560	192	0.333	228	0.109	264	0.108	300	0.234	336	0.454
13	0.562	49	0.443	85	0.612	121	0.453	157	0.556	193	0.327	229	0.103	265	0.105	301	0.239	337	0.461
14	0.558	50	0.453	86	0.603	122	0.461	158	0.551	194	0.321	230	0.097	266	0.101	302	0.245	338	0.468
15	0.553	51	0.463	87	0.594	123	0.469	159	0.547	195	0.315	231	0.092	267	0.097	303	0.251	339	0.475
16	0.548	52	0.474	88	0.584	124	0.477	160	0.542	196	0.310	232	0.088	268	0.093	304	0.256	340	0.482
17	0.542	53	0.484	89	0.574	125	0.485	161	0.537	197	0.304	233	0.084	269	0.089	305	0.262	341	0.488
18	0.536	54	0.496	90	0.564	126	0.493	162	0.531	198	0.299	234	0.081	270	0.086	306	0.267	342	0.495
19	0.530	55	0.507	91	0.553	127	0.501	163	0.526	199	0.293	235	0.080	271	0.083	307	0.272	343	0.502
20	0.523	56	0.519	92	0.541	128	0.508	164	0.520	200	0.288	236	0.079	272	0.081	308	0.278	344	0.508
21	0.516	57	0.530	93	0.530	129	0.516	165	0.514	201	0.283	237	0.080	273	0.080	309	0.283	345	0.514
22	0.508	58	0.541	94	0.519	130	0.523	166	0.508	202	0.278	238	0.081	274	0.079	310	0.288	346	0.520
23	0.501	59	0.553	95	0.507	131	0.530	167	0.502	203	0.272	239	0.083	275	0.080	311	0.293	347	0.526
24	0.493	60	0.564	96	0.496	132	0.536	168	0.495	204	0.267	240	0.086	276	0.081	312	0.299	348	0.531
25	0.485	61	0.574	97	0.484	133	0.542	169	0.488	205	0.262	241	0.089	277	0.084	313	0.304	349	0.537
26	0.477	62	0.584	98	0.474	134	0.548	170	0.482	206	0.256	242	0.093	278	0.088	314	0.310	350	0.542
27	0.469	63	0.594	99	0.463	135	0.553	171	0.475	207	0.251	243	0.097	279	0.092	315	0.315	351	0.547
28	0.461	64	0.603	100	0.453	136	0.558	172	0.468	208	0.245	244	0.101	280	0.097	316	0.321	352	0.551
29	0.453	65	0.612	101	0.443	137	0.562	173	0.461	209	0.239	245	0.105	281	0.103	317	0.327	353	0.556
30	0.445	66	0.620	102	0.435	138	0.566	174	0.454	210	0.234	246	0.108	282	0.109	318	0.333	354	0.560
31	0.438	67	0.627	103	0.427	139	0.569	175	0.447	211	0.228	247	0.112	283	0.116	319	0.339	355	0.563
32	0.431	68	0.633	104	0.420	140	0.572	176	0.440	212	0.222	248	0.115	284	0.123	320	0.345	356	0.567
33	0.424	69	0.639	105	0.414	141	0.575	177	0.433	213	0.215	249	0.118	285	0.130	321	0.351	357	0.570
34	0.418	70	0.644	106	0.409	142	0.577	178	0.425	214	0.209	250	0.120	286	0.138	322	0.357	358	0.573
35	0.413	71	0.648	107	0.405	143	0.578	179	0.418	215	0.202	251	0.123	287	0.145	323	0.364	359	0.575

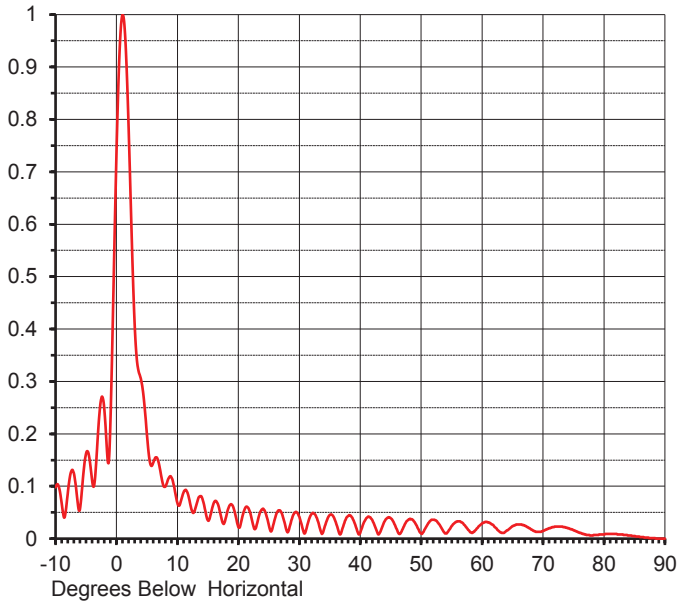
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ELEVATION PATTERN

Proposal No.	**C-70151**
Date	**13-Feb-17**
Call Letters	**WDBB 14**
Frequency	**473 MHz**
Antenna Type	**TFU-24ETT/VP-R CT160**

RMS Directivity at Main Lobe	**22.50 (13.52 dB)**	Beam Tilt	**1.00 deg**
RMS Directivity at Horizontal	**12.20 (10.86 dB)**	Drawing Number	**24E225100**
	Calculated		





Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.098	10.0	0.068	30.0	0.042	50.0	0.010	70.0	0.015
-9.0	0.068	11.0	0.088	31.0	0.012	51.0	0.026	71.0	0.020
-8.0	0.086	12.0	0.072	32.0	0.047	52.0	0.036	72.0	0.023
-7.0	0.125	13.0	0.060	33.0	0.035	53.0	0.027	73.0	0.023
-6.0	0.056	14.0	0.079	34.0	0.016	54.0	0.010	74.0	0.020
-5.0	0.162	15.0	0.035	35.0	0.045	55.0	0.024	75.0	0.016
-4.0	0.111	16.0	0.069	36.0	0.031	56.0	0.033	76.0	0.011
-3.0	0.207	17.0	0.050	37.0	0.016	57.0	0.027	77.0	0.008
-2.0	0.247	18.0	0.042	38.0	0.043	58.0	0.013	78.0	0.006
-1.0	0.221	19.0	0.064	39.0	0.032	59.0	0.017	79.0	0.007
0.0	0.737	20.0	0.022	40.0	0.011	60.0	0.029	80.0	0.008
1.0	1.000	21.0	0.055	41.0	0.039	61.0	0.031	81.0	0.009
2.0	0.780	22.0	0.047	42.0	0.035	62.0	0.023	82.0	0.009
3.0	0.404	23.0	0.026	43.0	0.008	63.0	0.012	83.0	0.008
4.0	0.305	24.0	0.057	44.0	0.033	64.0	0.015	84.0	0.006
5.0	0.198	25.0	0.026	45.0	0.039	65.0	0.024	85.0	0.005
6.0	0.144	26.0	0.038	46.0	0.018	66.0	0.027	86.0	0.003
7.0	0.141	27.0	0.051	47.0	0.019	67.0	0.025	87.0	0.002
8.0	0.099	28.0	0.013	48.0	0.037	68.0	0.018	88.0	0.001
9.0	0.117	29.0	0.045	49.0	0.030	69.0	0.013	89.0	0.000
								90.0	0.000

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