

## AZIMUTH PATTERN Horizontal Polarization

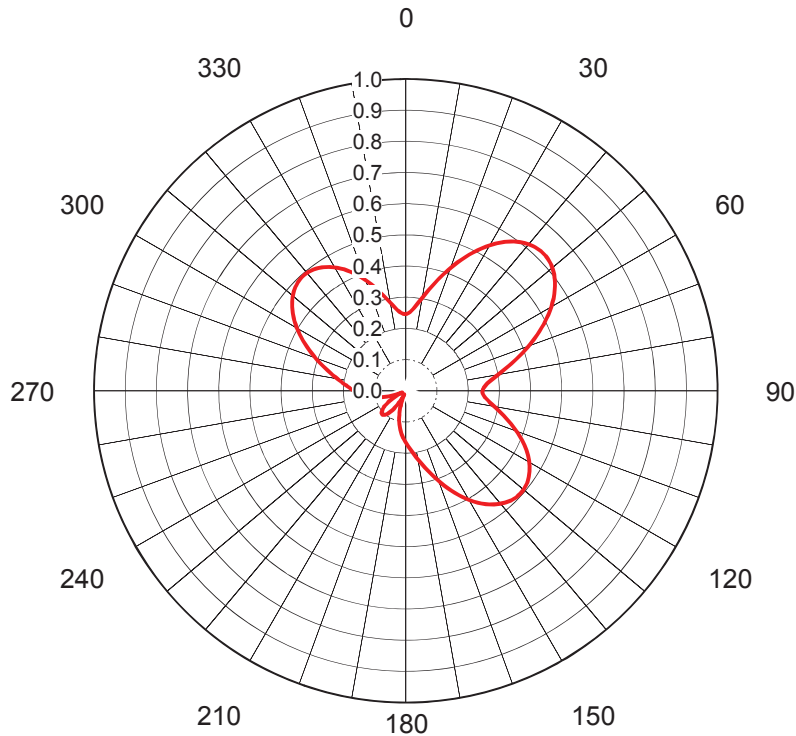
Proposal No. **C-70055**  
 Date **10-Feb-17**  
 Call Letters **WJAR 25**  
 Frequency **539 MHz**  
 Antenna Type **TFU-18ETT/VP-R 4C160**

Gain **1.57 (1.96dB)**  
**Calculated**

Drawing #

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.843	36	0.988	72	0.915	108	0.805	144	0.930	180	0.617	216	0.517	252	0.473	288	0.853
1	0.847	37	0.990	73	0.911	109	0.805	145	0.932	181	0.603	217	0.520	253	0.473	289	0.863
2	0.850	38	0.992	74	0.906	110	0.805	146	0.932	182	0.590	218	0.522	254	0.476	290	0.872
3	0.854	39	0.994	75	0.902	111	0.806	147	0.932	183	0.577	219	0.524	255	0.478	291	0.881
4	0.857	40	0.996	76	0.898	112	0.807	148	0.931	184	0.565	220	0.526	256	0.483	292	0.889
5	0.861	41	0.997	77	0.893	113	0.808	149	0.930	185	0.553	221	0.528	257	0.487	293	0.896
6	0.865	42	0.998	78	0.889	114	0.810	150	0.928	186	0.543	222	0.529	258	0.493	294	0.902
7	0.869	43	0.999	79	0.885	115	0.812	151	0.926	187	0.532	223	0.530	259	0.498	295	0.909
8	0.873	44	1.000	80	0.881	116	0.814	152	0.922	188	0.523	224	0.530	260	0.506	296	0.914
9	0.877	45	1.000	81	0.877	117	0.817	153	0.918	189	0.514	225	0.530	261	0.514	297	0.918
10	0.881	46	1.000	82	0.873	118	0.820	154	0.914	190	0.506	226	0.530	262	0.523	298	0.922
11	0.885	47	0.999	83	0.869	119	0.823	155	0.909	191	0.498	227	0.530	263	0.532	299	0.926
12	0.889	48	0.998	84	0.865	120	0.827	156	0.902	192	0.493	228	0.529	264	0.543	300	0.928
13	0.893	49	0.997	85	0.861	121	0.831	157	0.896	193	0.487	229	0.528	265	0.553	301	0.930
14	0.898	50	0.996	86	0.857	122	0.835	158	0.889	194	0.483	230	0.526	266	0.565	302	0.931
15	0.902	51	0.994	87	0.854	123	0.840	159	0.881	195	0.478	231	0.524	267	0.577	303	0.932
16	0.906	52	0.992	88	0.850	124	0.845	160	0.872	196	0.476	232	0.522	268	0.590	304	0.932
17	0.911	53	0.990	89	0.847	125	0.849	161	0.863	197	0.473	233	0.520	269	0.603	305	0.932
18	0.915	54	0.988	90	0.843	126	0.855	162	0.853	198	0.473	234	0.517	270	0.617	306	0.930
19	0.920	55	0.985	91	0.840	127	0.860	163	0.843	199	0.472	235	0.514	271	0.630	307	0.929
20	0.924	56	0.982	92	0.837	128	0.865	164	0.832	200	0.472	236	0.511	272	0.644	308	0.927
21	0.929	57	0.979	93	0.833	129	0.870	165	0.821	201	0.473	237	0.508	273	0.659	309	0.925
22	0.934	58	0.975	94	0.830	130	0.876	166	0.809	202	0.474	238	0.504	274	0.673	310	0.921
23	0.938	59	0.972	95	0.827	131	0.881	167	0.797	203	0.476	239	0.501	275	0.687	311	0.918
24	0.943	60	0.968	96	0.825	132	0.886	168	0.784	204	0.478	240	0.497	276	0.702	312	0.914
25	0.947	61	0.964	97	0.822	133	0.892	169	0.771	205	0.481	241	0.494	277	0.716	313	0.910
26	0.951	62	0.960	98	0.819	134	0.897	170	0.758	206	0.484	242	0.490	278	0.730	314	0.906
27	0.956	63	0.956	99	0.817	135	0.901	171	0.744	207	0.487	243	0.487	279	0.744	315	0.901
28	0.960	64	0.951	100	0.815	136	0.906	172	0.730	208	0.490	244	0.484	280	0.758	316	0.897
29	0.964	65	0.947	101	0.813	137	0.910	173	0.716	209	0.494	245	0.481	281	0.771	317	0.892
30	0.968	66	0.943	102	0.811	138	0.914	174	0.702	210	0.497	246	0.478	282	0.784	318	0.886
31	0.972	67	0.938	103	0.809	139	0.918	175	0.687	211	0.501	247	0.476	283	0.797	319	0.881
32	0.975	68	0.934	104	0.808	140	0.921	176	0.673	212	0.504	248	0.474	284	0.809	320	0.876
33	0.979	69	0.929	105	0.806	141	0.925	177	0.659	213	0.508	249	0.473	285	0.821	321	0.870
34	0.982	70	0.924	106	0.806	142	0.927	178	0.644	214	0.511	250	0.472	286	0.832	322	0.865
35	0.985	71	0.920	107	0.805	143	0.929	179	0.630	215	0.514	251	0.472	287	0.843	323	0.860

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## AZIMUTH PATTERN Vertical Polarization

Proposal No. **C-70055**  
 Date **10-Feb-17**  
 Call Letters **WJAR 25**  
 Frequency **539 MHz**  
 Antenna Type **TFU-18ETT/VP-R 4C160**  
  
 Gain **3.1 (4.91dB)**  
**Calculated**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.246	36	0.592	72	0.394	108	0.359	144	0.450	180	0.167	216	0.083	252	0.058	288	0.290
1	0.247	37	0.598	73	0.381	109	0.368	145	0.443	181	0.162	217	0.088	253	0.066	289	0.299
2	0.249	38	0.604	74	0.369	110	0.378	146	0.436	182	0.157	218	0.092	254	0.073	290	0.308
3	0.253	39	0.609	75	0.357	111	0.387	147	0.428	183	0.152	219	0.096	255	0.081	291	0.318
4	0.257	40	0.614	76	0.345	112	0.396	148	0.420	184	0.147	220	0.100	256	0.088	292	0.328
5	0.262	41	0.617	77	0.334	113	0.405	149	0.412	185	0.142	221	0.102	257	0.095	293	0.338
6	0.269	42	0.620	78	0.322	114	0.413	150	0.404	186	0.137	222	0.105	258	0.102	294	0.347
7	0.276	43	0.622	79	0.312	115	0.421	151	0.395	187	0.132	223	0.106	259	0.108	295	0.357
8	0.284	44	0.623	80	0.302	116	0.429	152	0.386	188	0.126	224	0.107	260	0.115	296	0.367
9	0.292	45	0.624	81	0.292	117	0.437	153	0.376	189	0.121	225	0.107	261	0.121	297	0.376
10	0.302	46	0.623	82	0.284	118	0.444	154	0.367	190	0.115	226	0.107	262	0.126	298	0.386
11	0.312	47	0.622	83	0.276	119	0.451	155	0.357	191	0.108	227	0.106	263	0.132	299	0.395
12	0.322	48	0.620	84	0.269	120	0.457	156	0.347	192	0.102	228	0.105	264	0.137	300	0.404
13	0.334	49	0.617	85	0.262	121	0.463	157	0.338	193	0.095	229	0.102	265	0.142	301	0.412
14	0.345	50	0.614	86	0.257	122	0.469	158	0.328	194	0.088	230	0.100	266	0.147	302	0.420
15	0.357	51	0.609	87	0.253	123	0.474	159	0.318	195	0.081	231	0.096	267	0.152	303	0.428
16	0.369	52	0.604	88	0.249	124	0.478	160	0.308	196	0.073	232	0.092	268	0.157	304	0.436
17	0.381	53	0.598	89	0.247	125	0.482	161	0.299	197	0.066	233	0.088	269	0.162	305	0.443
18	0.394	54	0.592	90	0.246	126	0.485	162	0.290	198	0.058	234	0.083	270	0.167	306	0.450
19	0.407	55	0.584	91	0.246	127	0.488	163	0.280	199	0.050	235	0.078	271	0.171	307	0.457
20	0.419	56	0.576	92	0.247	128	0.490	164	0.271	200	0.042	236	0.072	272	0.176	308	0.463
21	0.432	57	0.568	93	0.249	129	0.492	165	0.263	201	0.034	237	0.066	273	0.181	309	0.468
22	0.445	58	0.559	94	0.252	130	0.493	166	0.254	202	0.026	238	0.059	274	0.186	310	0.473
23	0.457	59	0.549	95	0.256	131	0.494	167	0.246	203	0.019	239	0.052	275	0.192	311	0.478
24	0.470	60	0.539	96	0.261	132	0.494	168	0.238	204	0.014	240	0.045	276	0.198	312	0.482
25	0.482	61	0.528	97	0.267	133	0.493	169	0.230	205	0.013	241	0.037	277	0.203	313	0.485
26	0.494	62	0.517	98	0.273	134	0.492	170	0.223	206	0.017	242	0.030	278	0.210	314	0.488
27	0.506	63	0.506	99	0.280	135	0.490	171	0.216	207	0.023	243	0.023	279	0.216	315	0.490
28	0.517	64	0.494	100	0.288	136	0.488	172	0.210	208	0.030	244	0.017	280	0.223	316	0.492
29	0.528	65	0.482	101	0.296	137	0.485	173	0.203	209	0.037	245	0.013	281	0.230	317	0.493
30	0.539	66	0.470	102	0.304	138	0.482	174	0.198	210	0.045	246	0.014	282	0.238	318	0.494
31	0.549	67	0.457	103	0.313	139	0.478	175	0.192	211	0.052	247	0.019	283	0.246	319	0.494
32	0.559	68	0.445	104	0.322	140	0.473	176	0.186	212	0.059	248	0.026	284	0.254	320	0.493
33	0.568	69	0.432	105	0.331	141	0.468	177	0.181	213	0.066	249	0.034	285	0.263	321	0.492
34	0.576	70	0.419	106	0.340	142	0.463	178	0.176	214	0.072	250	0.042	286	0.271	322	0.490
35	0.584	71	0.407	107	0.350	143	0.457	179	0.171	215	0.078	251	0.050	287	0.280	323	0.488

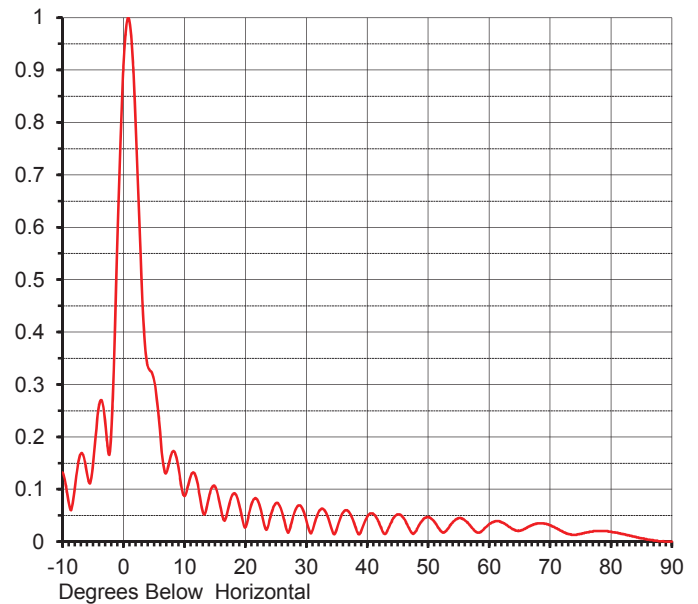
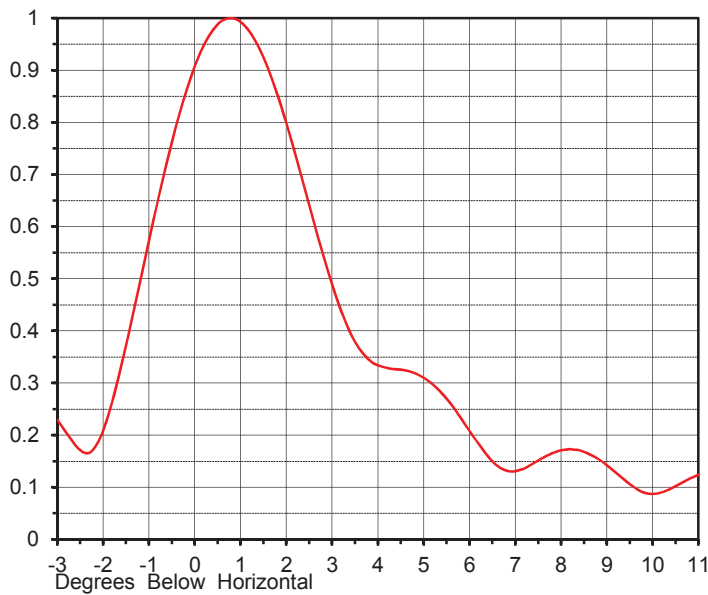
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## ELEVATION PATTERN

Proposal No. **C-70055**  
 Date **10-Feb-17**  
 Call Letters **WJAR 25**  
 Frequency **539 MHz**  
 Antenna Type **TFU-18ETT/VP-R 4C160**

RMS Directivity at Main Lobe **17.00 ( 12.30 dB )**  
 RMS Directivity at Horizontal **14.00 ( 11.46 dB )**  
**Calculated**

Beam Tilt **0.80 deg**  
 Drawing Number **18E170080**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.132	10.0	0.087	30.0	0.041	50.0	0.047	70.0	0.031
-9.0	0.075	11.0	0.124	31.0	0.021	51.0	0.038	71.0	0.026
-8.0	0.102	12.0	0.119	32.0	0.056	52.0	0.021	72.0	0.020
-7.0	0.168	13.0	0.057	33.0	0.060	53.0	0.021	73.0	0.015
-6.0	0.131	14.0	0.083	34.0	0.030	54.0	0.036	74.0	0.013
-5.0	0.147	15.0	0.105	35.0	0.024	55.0	0.045	75.0	0.015
-4.0	0.260	16.0	0.062	36.0	0.055	56.0	0.041	76.0	0.017
-3.0	0.229	17.0	0.053	37.0	0.057	57.0	0.029	77.0	0.019
-2.0	0.208	18.0	0.091	38.0	0.030	58.0	0.018	78.0	0.020
-1.0	0.572	19.0	0.070	39.0	0.020	59.0	0.022	79.0	0.020
0.0	0.907	20.0	0.027	40.0	0.048	60.0	0.033	80.0	0.019
1.0	0.993	21.0	0.071	41.0	0.053	61.0	0.039	81.0	0.017
2.0	0.799	22.0	0.079	42.0	0.034	62.0	0.037	82.0	0.014
3.0	0.489	23.0	0.037	43.0	0.015	63.0	0.031	83.0	0.012
4.0	0.334	24.0	0.042	44.0	0.038	64.0	0.023	84.0	0.009
5.0	0.310	25.0	0.073	45.0	0.052	65.0	0.021	85.0	0.006
6.0	0.208	26.0	0.057	46.0	0.044	66.0	0.025	86.0	0.004
7.0	0.131	27.0	0.017	47.0	0.022	67.0	0.031	87.0	0.002
8.0	0.171	28.0	0.054	48.0	0.020	68.0	0.035	88.0	0.001
9.0	0.142	29.0	0.069	49.0	0.040	69.0	0.035	89.0	0.000
								90.0	0.000

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