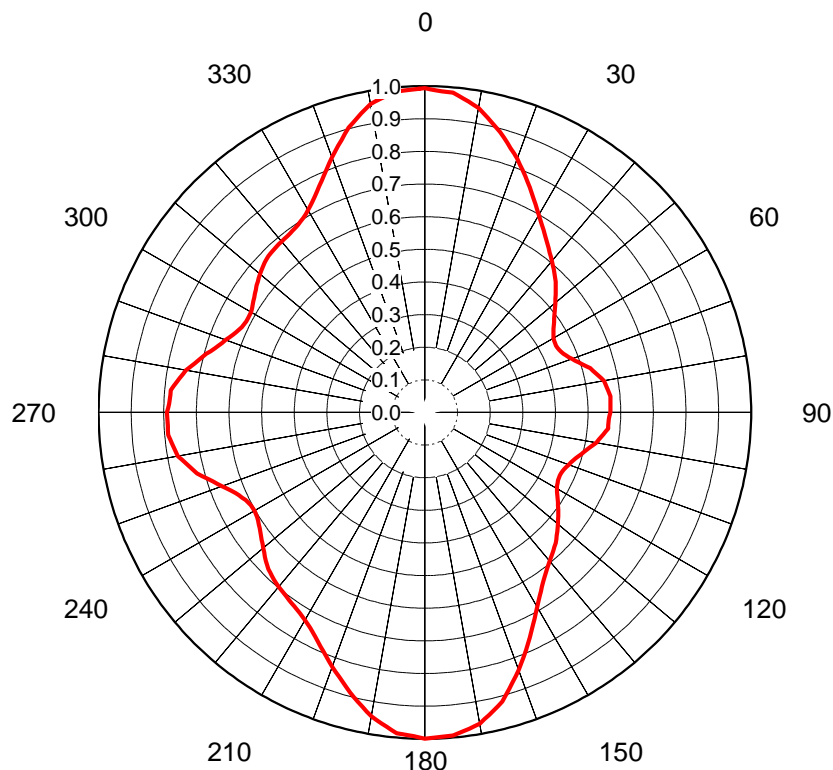


## AZIMUTH PATTERN Horizontal Polarization

Proposal No. **C-70629**  
 Date **21-Apr-17**  
 Call Letters **WCMV**  
 Channel **34**  
 Frequency **593 MHz**  
 Antenna Type **TUF-P4-12/48H-1**  
 Gain **1.93 (2.86dB)**  
 Calculated



Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.994	36	0.639	72	0.495	108	0.477	144	0.624	180	1.000	216	0.709	252	0.683	288	0.664	324	0.689
1	0.991	37	0.630	73	0.505	109	0.473	145	0.633	181	0.996	217	0.706	253	0.696	289	0.657	325	0.691
2	0.988	38	0.622	74	0.514	110	0.469	146	0.642	182	0.993	218	0.703	254	0.709	290	0.650	326	0.694
3	0.986	39	0.613	75	0.525	111	0.465	147	0.653	183	0.990	219	0.700	255	0.723	291	0.642	327	0.698
4	0.985	40	0.606	76	0.531	112	0.461	148	0.664	184	0.988	220	0.697	256	0.731	292	0.634	328	0.703
5	0.984	41	0.598	77	0.537	113	0.459	149	0.676	185	0.987	221	0.694	257	0.740	293	0.628	329	0.709
6	0.977	42	0.590	78	0.543	114	0.457	150	0.689	186	0.978	222	0.691	258	0.749	294	0.623	330	0.716
7	0.969	43	0.582	79	0.551	115	0.456	151	0.702	187	0.970	223	0.687	259	0.759	295	0.619	331	0.724
8	0.962	44	0.575	80	0.558	116	0.457	152	0.716	188	0.962	224	0.683	260	0.769	296	0.616	332	0.733
9	0.955	45	0.567	81	0.560	117	0.458	153	0.730	189	0.954	225	0.678	261	0.773	297	0.614	333	0.742
10	0.948	46	0.558	82	0.563	118	0.460	154	0.746	190	0.946	226	0.672	262	0.777	298	0.614	334	0.754
11	0.936	47	0.549	83	0.565	119	0.463	155	0.762	191	0.934	227	0.666	263	0.781	299	0.614	335	0.766
12	0.924	48	0.540	84	0.568	120	0.467	156	0.777	192	0.922	228	0.660	264	0.785	300	0.615	336	0.778
13	0.912	49	0.531	85	0.571	121	0.473	157	0.792	193	0.910	229	0.653	265	0.790	301	0.618	337	0.790
14	0.901	50	0.522	86	0.570	122	0.479	158	0.808	194	0.899	230	0.646	266	0.789	302	0.622	338	0.803
15	0.890	51	0.513	87	0.569	123	0.485	159	0.824	195	0.888	231	0.640	267	0.789	303	0.627	339	0.817
16	0.877	52	0.505	88	0.569	124	0.492	160	0.840	196	0.875	232	0.634	268	0.789	304	0.631	340	0.832
17	0.864	53	0.498	89	0.569	125	0.498	161	0.855	197	0.863	233	0.629	269	0.789	305	0.636	341	0.845
18	0.851	54	0.490	90	0.569	126	0.505	162	0.870	198	0.851	234	0.623	270	0.790	306	0.641	342	0.859
19	0.839	55	0.483	91	0.566	127	0.512	163	0.886	199	0.840	235	0.618	271	0.787	307	0.646	343	0.873
20	0.827	56	0.477	92	0.564	128	0.518	164	0.901	200	0.830	236	0.614	272	0.784	308	0.650	344	0.888
21	0.814	57	0.470	93	0.563	129	0.525	165	0.917	201	0.818	237	0.610	273	0.782	309	0.655	345	0.904
22	0.800	58	0.465	94	0.563	130	0.532	166	0.927	202	0.806	238	0.606	274	0.782	310	0.659	346	0.914
23	0.787	59	0.460	95	0.564	131	0.539	167	0.937	203	0.795	239	0.604	275	0.782	311	0.664	347	0.926
24	0.774	60	0.456	96	0.557	132	0.546	168	0.948	204	0.785	240	0.603	276	0.774	312	0.668	348	0.937
25	0.761	61	0.453	97	0.551	133	0.553	169	0.958	205	0.775	241	0.603	277	0.766	313	0.672	349	0.948
26	0.748	62	0.452	98	0.545	134	0.560	170	0.968	206	0.766	242	0.605	278	0.758	314	0.675	350	0.960
27	0.735	63	0.451	99	0.539	135	0.567	171	0.973	207	0.757	243	0.607	279	0.751	315	0.678	351	0.965
28	0.722	64	0.452	100	0.533	136	0.572	172	0.979	208	0.749	244	0.612	280	0.744	316	0.680	352	0.971
29	0.710	65	0.454	101	0.524	137	0.578	173	0.984	209	0.741	245	0.618	281	0.732	317	0.681	353	0.976
30	0.699	66	0.457	102	0.516	138	0.583	174	0.989	210	0.735	246	0.624	282	0.722	318	0.682	354	0.982
31	0.688	67	0.461	103	0.509	139	0.589	175	0.994	211	0.729	247	0.631	283	0.712	319	0.683	355	0.987
32	0.677	68	0.466	104	0.502	140	0.595	176	0.995	212	0.724	248	0.640	284	0.702	320	0.683	356	0.988
33	0.667	69	0.473	105	0.496	141	0.601	177	0.996	213	0.720	249	0.650	285	0.694	321	0.684	357	0.989
34	0.658	70	0.480	106	0.489	142	0.608	178	0.997	214	0.716	250	0.661	286	0.683	322	0.685	358	0.991
35	0.648	71	0.487	107	0.482	143	0.616	179	0.998	215	0.713	251	0.672	287	0.673	323	0.687	359	0.992

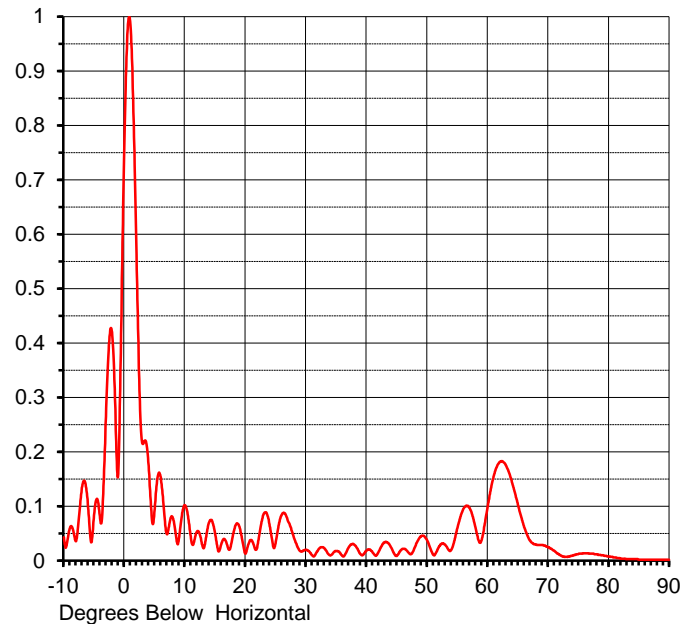
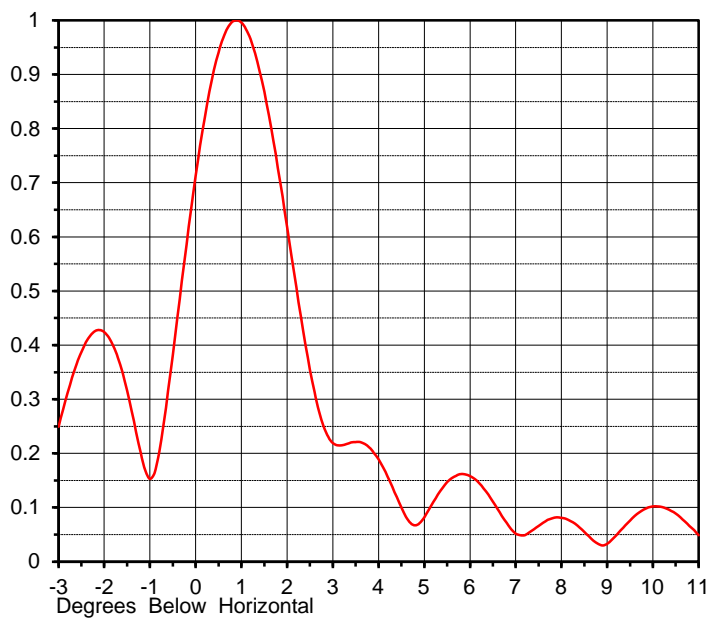
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## ELEVATION PATTERN

Proposal No. **C-70629**  
 Date **21-Apr-17**  
 Call Letters **WCMV**  
 Channel **34**  
 Frequency **593 MHz**  
 Antenna Type **TUF-P4-12/48H-1**

RMS Directivity at Main Lobe **24.3 ( 13.86 dB )**  
 RMS Directivity at Horizontal **14.4 ( 11.58 dB )**  
**Calculated**

Beam Tilt **0.80 deg**  
 Pattern Number **12U243080**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.043	10.0	0.102	30.0	0.020	50.0	0.037	70.0	0.025
-9.0	0.060	11.0	0.041	31.0	0.010	51.0	0.011	71.0	0.018
-8.0	0.036	12.0	0.054	32.0	0.020	52.0	0.027	72.0	0.010
-7.0	0.134	13.0	0.024	33.0	0.023	53.0	0.029	73.0	0.007
-6.0	0.100	14.0	0.071	34.0	0.010	54.0	0.021	74.0	0.010
-5.0	0.084	15.0	0.048	35.0	0.018	55.0	0.061	75.0	0.013
-4.0	0.077	16.0	0.031	36.0	0.009	56.0	0.096	76.0	0.014
-3.0	0.281	17.0	0.028	37.0	0.024	57.0	0.097	77.0	0.013
-2.0	0.414	18.0	0.051	38.0	0.029	58.0	0.059	78.0	0.012
-1.0	0.164	19.0	0.062	39.0	0.012	59.0	0.039	79.0	0.010
0.0	0.769	20.0	0.013	40.0	0.019	60.0	0.102	80.0	0.008
1.0	0.984	21.0	0.038	41.0	0.015	61.0	0.157	81.0	0.006
2.0	0.563	22.0	0.029	42.0	0.017	62.0	0.182	82.0	0.004
3.0	0.215	23.0	0.086	43.0	0.034	63.0	0.175	83.0	0.003
4.0	0.174	24.0	0.064	44.0	0.025	64.0	0.144	84.0	0.003
5.0	0.096	25.0	0.035	45.0	0.009	65.0	0.102	85.0	0.002
6.0	0.153	26.0	0.085	46.0	0.022	66.0	0.062	86.0	0.002
7.0	0.049	27.0	0.073	47.0	0.014	67.0	0.037	87.0	0.002
8.0	0.079	28.0	0.042	48.0	0.026	68.0	0.030	88.0	0.002
9.0	0.040	29.0	0.018	49.0	0.045	69.0	0.029	89.0	0.002
								90.0	0.002

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## Summary

Proposal No.	<b>C-70629</b>
Date	<b>21-Apr-17</b>
Call Letters	<b>WCMV</b>
Channel	<b>34</b>
Frequency	<b>593 MHz</b>
Antenna Type	<b>TUF-P4-12/48H-1</b>

## Antenna

		Hpol
ERP:	<b>493 kW</b>	<b>( 26.93 dBk )</b>
Peak Gain*	46.97	( 16.72 dB )

<b>Antenna Input Power</b>	<b>10.5 kW</b>	<b>( 10.21 dBk )</b>
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## Transmission Line

Type:	<b>Rigid</b>	Attenuation:	<b>( 1.19 dB )</b>
Size:	<b>6-1/8"</b>	Efficiency:	<b>76.0%</b>
Impedance:	<b>75 Ohm</b>		
Length:	<b>1000 ft</b>	<b>304.8 m</b>	

## Transmitter Output

<b>13.8 kW</b>	<b>( 11.40 dBk )</b>
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Transmitter filter losses not included

\* Directivity and Gain are with respect to half wave dipole. The gain includes feed system losses

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