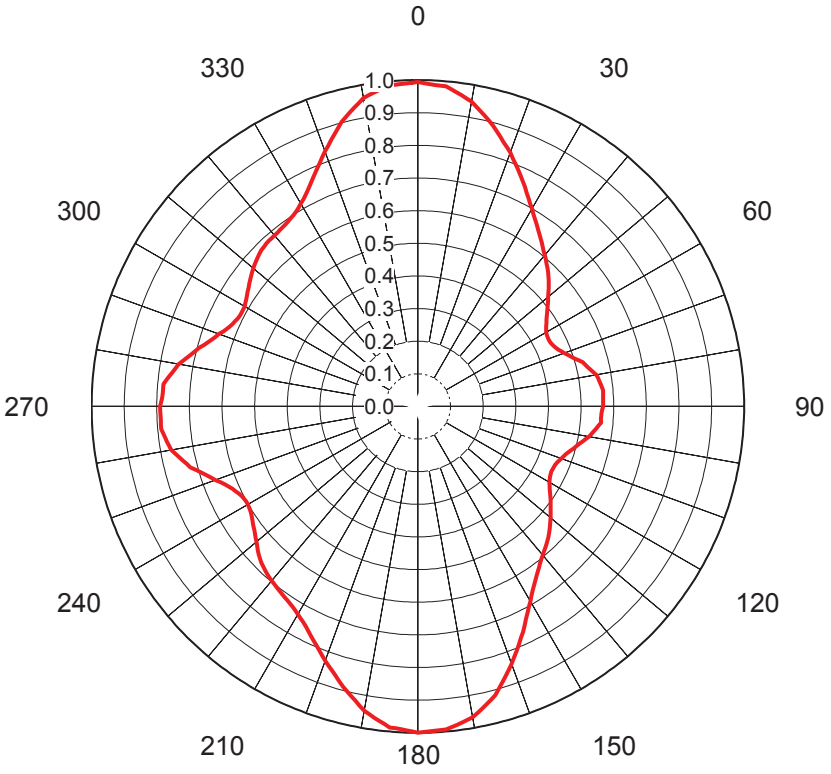
Dielectric®



AZIMUTH PATTERN
Horizontal Polarization

Proposal No.	**C-70629**
Date	**21-Apr-17**
Call Letters	**WPBN**
Channel	**35**
Frequency	**599 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	0.493	108	0.476	144	0.625	180	1.000	216	0.709	252	0.681	288	0.663	324	0.690
1	0.991	37	0.630	73	0.502	109	0.471	145	0.634	181	0.996	217	0.706	253	0.694	289	0.656	325	0.693
2	0.988	38	0.621	74	0.512	110	0.468	146	0.644	182	0.993	218	0.703	254	0.707	290	0.649	326	0.696
3	0.986	39	0.613	75	0.523	111	0.463	147	0.654	183	0.991	219	0.700	255	0.722	291	0.640	327	0.700
4	0.985	40	0.605	76	0.529	112	0.460	148	0.665	184	0.989	220	0.697	256	0.730	292	0.633	328	0.704
5	0.985	41	0.597	77	0.535	113	0.457	149	0.677	185	0.988	221	0.694	257	0.738	293	0.627	329	0.710
6	0.977	42	0.589	78	0.541	114	0.456	150	0.689	186	0.979	222	0.690	258	0.748	294	0.622	330	0.717
7	0.970	43	0.582	79	0.548	115	0.455	151	0.703	187	0.971	223	0.687	259	0.757	295	0.618	331	0.725
8	0.963	44	0.574	80	0.556	116	0.455	152	0.716	188	0.963	224	0.682	260	0.768	296	0.614	332	0.734
9	0.956	45	0.566	81	0.559	117	0.457	153	0.731	189	0.955	225	0.678	261	0.772	297	0.613	333	0.743
10	0.949	46	0.557	82	0.561	118	0.459	154	0.746	190	0.947	226	0.672	262	0.776	298	0.612	334	0.754
11	0.936	47	0.548	83	0.564	119	0.462	155	0.762	191	0.934	227	0.666	263	0.781	299	0.612	335	0.767
12	0.925	48	0.539	84	0.567	120	0.465	156	0.777	192	0.922	228	0.660	264	0.785	300	0.613	336	0.778
13	0.913	49	0.530	85	0.570	121	0.471	157	0.792	193	0.910	229	0.653	265	0.790	301	0.616	337	0.791
14	0.902	50	0.521	86	0.569	122	0.477	158	0.808	194	0.899	230	0.646	266	0.789	302	0.620	338	0.804
15	0.891	51	0.513	87	0.568	123	0.483	159	0.824	195	0.889	231	0.640	267	0.789	303	0.625	339	0.817
16	0.877	52	0.505	88	0.568	124	0.490	160	0.840	196	0.875	232	0.634	268	0.789	304	0.629	340	0.832
17	0.864	53	0.497	89	0.568	125	0.497	161	0.855	197	0.863	233	0.628	269	0.789	305	0.634	341	0.845
18	0.852	54	0.490	90	0.568	126	0.503	162	0.870	198	0.851	234	0.623	270	0.790	306	0.639	342	0.859
19	0.839	55	0.483	91	0.565	127	0.510	163	0.885	199	0.840	235	0.617	271	0.787	307	0.644	343	0.873
20	0.828	56	0.476	92	0.563	128	0.517	164	0.900	200	0.830	236	0.613	272	0.784	308	0.649	344	0.888
21	0.814	57	0.470	93	0.562	129	0.524	165	0.916	201	0.818	237	0.609	273	0.783	309	0.654	345	0.903
22	0.800	58	0.464	94	0.563	130	0.531	166	0.926	202	0.807	238	0.605	274	0.782	310	0.658	346	0.914
23	0.787	59	0.459	95	0.564	131	0.538	167	0.936	203	0.796	239	0.603	275	0.783	311	0.663	347	0.925
24	0.774	60	0.455	96	0.557	132	0.545	168	0.947	204	0.786	240	0.601	276	0.775	312	0.667	348	0.936
25	0.762	61	0.452	97	0.551	133	0.552	169	0.957	205	0.776	241	0.602	277	0.767	313	0.671	349	0.948
26	0.748	62	0.450	98	0.545	134	0.559	170	0.968	206	0.766	242	0.603	278	0.759	314	0.675	350	0.960
27	0.735	63	0.450	99	0.539	135	0.566	171	0.973	207	0.757	243	0.606	279	0.752	315	0.678	351	0.965
28	0.723	64	0.451	100	0.533	136	0.572	172	0.978	208	0.749	244	0.610	280	0.745	316	0.680	352	0.971
29	0.711	65	0.453	101	0.524	137	0.578	173	0.983	209	0.742	245	0.616	281	0.733	317	0.681	353	0.976
30	0.699	66	0.456	102	0.516	138	0.584	174	0.989	210	0.735	246	0.622	282	0.722	318	0.682	354	0.982
31	0.688	67	0.460	103	0.508	139	0.589	175	0.994	211	0.730	247	0.629	283	0.712	319	0.683	355	0.988
32	0.677	68	0.465	104	0.502	140	0.595	176	0.995	212	0.725	248	0.638	284	0.702	320	0.684	356	0.989
33	0.667	69	0.471	105	0.496	141	0.602	177	0.996	213	0.720	249	0.648	285	0.694	321	0.685	357	0.990
34	0.658	70	0.478	106	0.488	142	0.609	178	0.997	214	0.716	250	0.660	286	0.683	322	0.686	358	0.991
35	0.648	71	0.485	107	0.481	143	0.617	179	0.998	215	0.713	251	0.670	287	0.672	323	0.688	359	0.993

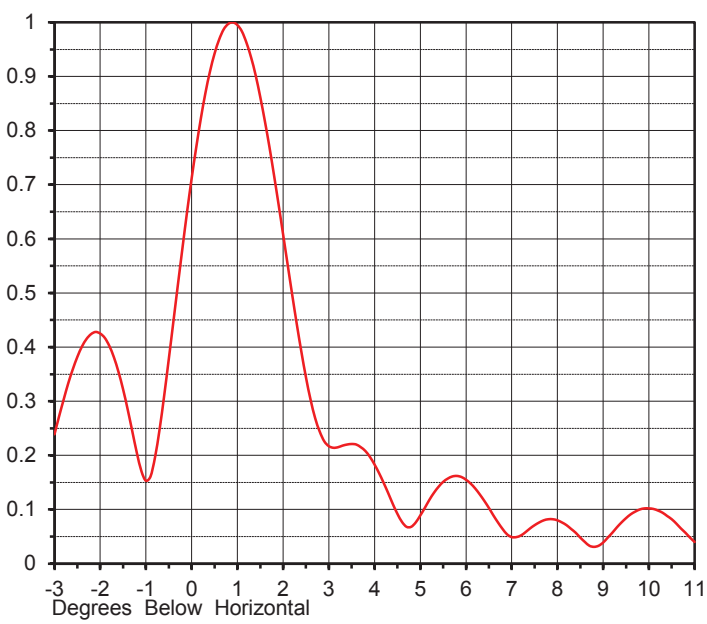
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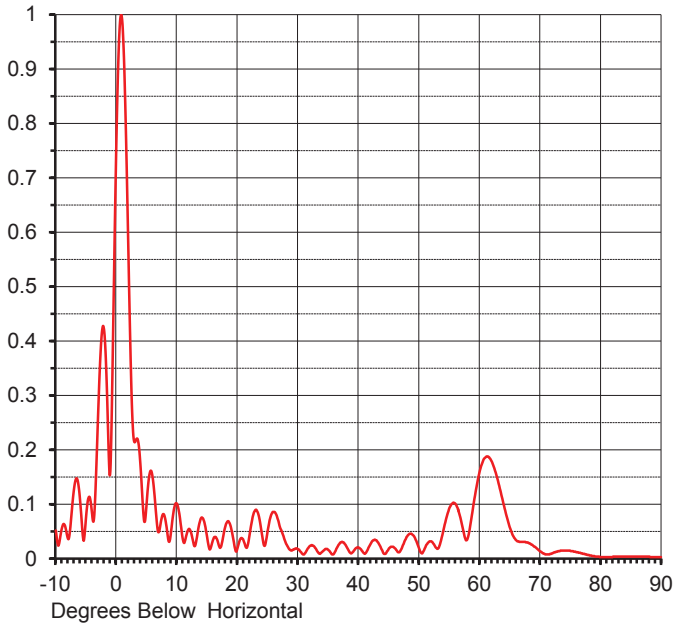
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ELEVATION PATTERN

Proposal No.	**C-70629**
Date	**21-Apr-17**
Call Letters	**WPBN**
Channel	**35**
Frequency	**599 MHz**
Antenna Type	**TUF-P4-12/48H-1**

RMS Directivity at Main Lobe	**24.5 (13.89 dB)**	Beam Tilt	**0.80 deg**
RMS Directivity at Horizontal	**14.5 (11.61 dB)**	Pattern Number	**12U245080**
	Calculated		





Angle	Field
-10.0	0.052
-9.0	0.056
-8.0	0.037
-7.0	0.128
-6.0	0.108
-5.0	0.078
-4.0	0.081
-3.0	0.272
-2.0	0.417
-1.0	0.161
0.0	0.769
1.0	0.983
2.0	0.552
3.0	0.214
4.0	0.167
5.0	0.103
6.0	0.148
7.0	0.049
8.0	0.076
9.0	0.048

Angle	Field
10.0	0.101
11.0	0.034
12.0	0.055
13.0	0.024
14.0	0.075
15.0	0.038
16.0	0.036
17.0	0.022
18.0	0.060
19.0	0.053
20.0	0.020
21.0	0.033
22.0	0.045
23.0	0.090
24.0	0.047
25.0	0.053
26.0	0.086
27.0	0.058
28.0	0.028
29.0	0.016

Angle	Field
30.0	0.017
31.0	0.008
32.0	0.024
33.0	0.017
34.0	0.013
35.0	0.016
36.0	0.011
37.0	0.030
38.0	0.022
39.0	0.012
40.0	0.020
41.0	0.009
42.0	0.028
43.0	0.033
44.0	0.012
45.0	0.019
46.0	0.019
47.0	0.017
48.0	0.041
49.0	0.043

Angle	Field
50.0	0.018
51.0	0.021
52.0	0.032
53.0	0.018
54.0	0.053
55.0	0.094
56.0	0.100
57.0	0.065
58.0	0.038
59.0	0.103
60.0	0.162
61.0	0.187
62.0	0.178
63.0	0.143
64.0	0.097
65.0	0.056
66.0	0.034
67.0	0.031
68.0	0.029
69.0	0.022

Angle	Field
70.0	0.013
71.0	0.008
72.0	0.010
73.0	0.014
74.0	0.015
75.0	0.014
76.0	0.012
77.0	0.009
78.0	0.007
79.0	0.004
80.0	0.003
81.0	0.003
82.0	0.004
83.0	0.004
84.0	0.004
85.0	0.004
86.0	0.004
87.0	0.004
88.0	0.004
89.0	0.003
90.0	0.003

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Summary

Proposal No.	**C-70629**
Date	**21-Apr-17**
Call Letters	**WPBN**
Channel	**35**
Frequency	**599 MHz**
Antenna Type	**TUF-P4-12/48H-1**

Antenna

		Hpol
ERP:	**398 kW**	**(26.00 dBk)**
Peak Gain*	47.32	(16.75 dB)

Antenna Input Power **8.4 kW** **(9.25 dBk)**

Transmission Line

Type:	**Rigid**	Attenuation:	**(1.20 dB)**
Size:	**6-1/8"**	Efficiency:	**75.9%**
Impedance:	**75 Ohm**		
Length:	**1000 ft**	**304.8 m**	

Combiner Losses

Attenuation		(0.50 dB)
Efficiency	89.1%	

Combiner Input

12.4 kW **(10.94 dBk)**

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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