Dielectric

Date	**13 Oct 2017**
Call Letters	**WMUM** Channel **9**
Location	**Cochran, GA**
Customer	
Antenna Type	

AZIMUTH PATTERN

Gain	**1.9 (2.79 dB)**	Frequency	**189 MHz**
Calculated / Measured	**Calculated**	Drawing #	**THV-S190**
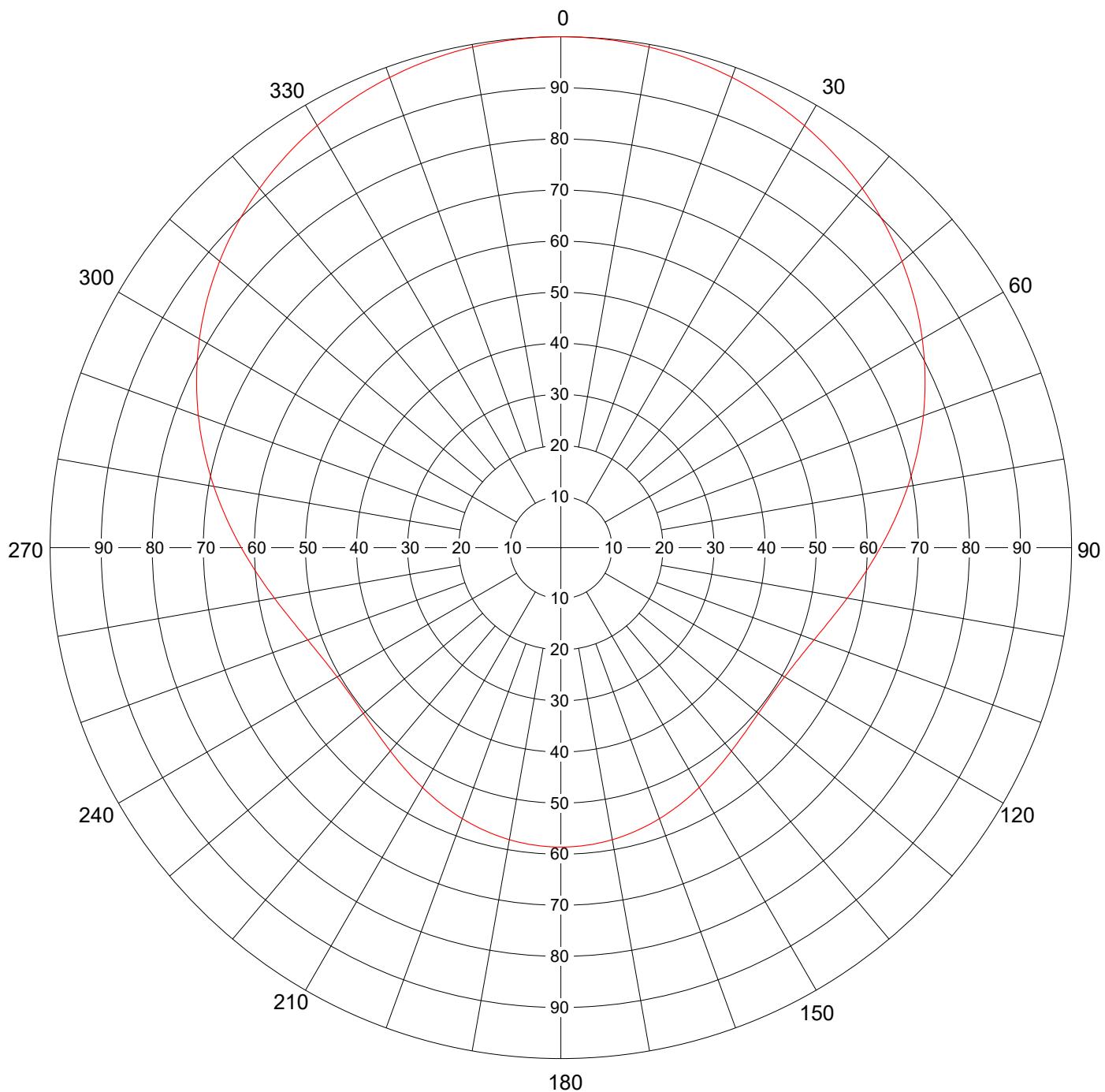
Remarks:

Dielectric

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TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #   **THV-S190**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	1.000	45	0.896	90	0.626	135	0.511	180	0.586	225	0.511	270	0.626	315	0.896
1	1.000	46	0.892	91	0.620	136	0.512	181	0.586	226	0.509	271	0.632	316	0.901
2	1.000	47	0.887	92	0.614	137	0.514	182	0.586	227	0.508	272	0.638	317	0.905
3	0.999	48	0.882	93	0.608	138	0.516	183	0.585	228	0.507	273	0.645	318	0.910
4	0.999	49	0.877	94	0.602	139	0.518	184	0.585	229	0.506	274	0.651	319	0.914
5	0.999	50	0.872	95	0.596	140	0.519	185	0.585	230	0.505	275	0.657	320	0.918
6	0.998	51	0.867	96	0.590	141	0.522	186	0.584	231	0.504	276	0.664	321	0.922
7	0.997	52	0.862	97	0.585	142	0.524	187	0.583	232	0.503	277	0.670	322	0.926
8	0.997	53	0.856	98	0.580	143	0.526	188	0.582	233	0.503	278	0.677	323	0.930
9	0.996	54	0.851	99	0.574	144	0.528	189	0.581	234	0.503	279	0.683	324	0.934
10	0.995	55	0.846	100	0.569	145	0.530	190	0.580	235	0.503	280	0.690	325	0.937
11	0.994	56	0.840	101	0.564	146	0.533	191	0.579	236	0.503	281	0.696	326	0.941
12	0.993	57	0.834	102	0.560	147	0.535	192	0.578	237	0.504	282	0.703	327	0.944
13	0.991	58	0.829	103	0.555	148	0.537	193	0.576	238	0.504	283	0.710	328	0.948
14	0.990	59	0.823	104	0.550	149	0.540	194	0.575	239	0.505	284	0.716	329	0.951
15	0.988	60	0.817	105	0.546	150	0.542	195	0.573	240	0.506	285	0.723	330	0.954
16	0.987	61	0.811	106	0.542	151	0.544	196	0.572	241	0.507	286	0.729	331	0.957
17	0.985	62	0.805	107	0.538	152	0.547	197	0.570	242	0.508	287	0.736	332	0.960
18	0.983	63	0.799	108	0.534	153	0.549	198	0.568	243	0.510	288	0.742	333	0.963
19	0.982	64	0.793	109	0.531	154	0.551	199	0.566	244	0.512	289	0.749	334	0.965
20	0.980	65	0.787	110	0.528	155	0.554	200	0.564	245	0.514	290	0.755	335	0.968
21	0.977	66	0.781	111	0.525	156	0.556	201	0.562	246	0.516	291	0.762	336	0.971
22	0.975	67	0.774	112	0.522	157	0.558	202	0.560	247	0.519	292	0.768	337	0.973
23	0.973	68	0.768	113	0.519	158	0.560	203	0.558	248	0.522	293	0.774	338	0.975
24	0.971	69	0.762	114	0.516	159	0.562	204	0.556	249	0.525	294	0.781	339	0.977
25	0.968	70	0.755	115	0.514	160	0.564	205	0.554	250	0.528	295	0.787	340	0.980
26	0.965	71	0.749	116	0.512	161	0.566	206	0.551	251	0.531	296	0.793	341	0.982
27	0.963	72	0.742	117	0.510	162	0.568	207	0.549	252	0.534	297	0.799	342	0.983
28	0.960	73	0.736	118	0.508	163	0.570	208	0.547	253	0.538	298	0.805	343	0.985
29	0.957	74	0.729	119	0.507	164	0.572	209	0.544	254	0.542	299	0.811	344	0.987
30	0.954	75	0.723	120	0.506	165	0.573	210	0.542	255	0.546	300	0.817	345	0.988
31	0.951	76	0.716	121	0.505	166	0.575	211	0.540	256	0.550	301	0.823	346	0.990
32	0.948	77	0.710	122	0.504	167	0.576	212	0.537	257	0.555	302	0.829	347	0.991
33	0.944	78	0.703	123	0.504	168	0.578	213	0.535	258	0.560	303	0.834	348	0.993
34	0.941	79	0.696	124	0.503	169	0.579	214	0.533	259	0.564	304	0.840	349	0.994
35	0.937	80	0.690	125	0.503	170	0.580	215	0.530	260	0.569	305	0.846	350	0.995
36	0.934	81	0.683	126	0.503	171	0.581	216	0.528	261	0.574	306	0.851	351	0.996
37	0.930	82	0.677	127	0.503	172	0.582	217	0.526	262	0.580	307	0.856	352	0.997
38	0.926	83	0.670	128	0.503	173	0.583	218	0.524	263	0.585	308	0.862	353	0.997
39	0.922	84	0.664	129	0.504	174	0.584	219	0.522	264	0.590	309	0.867	354	0.998
40	0.918	85	0.657	130	0.505	175	0.585	220	0.519	265	0.596	310	0.872	355	0.999
41	0.914	86	0.651	131	0.506	176	0.585	221	0.518	266	0.602	311	0.877	356	0.999
42	0.910	87	0.645	132	0.507	177	0.585	222	0.516	267	0.608	312	0.882	357	0.999
43	0.905	88	0.638	133	0.508	178	0.586	223	0.514	268	0.614	313	0.887	358	1.000
44	0.901	89	0.632	134	0.509	179	0.586	224	0.512	269	0.620	314	0.892	359	1.000

Remarks:

Dielectric

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Call Letters	**WMUM** Channel **9**
Location	**Cochran, GA**
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Antenna Type	

ELEVATION PATTERN

RMS Gain at Main Lobe	**8.0**	**(9.03 dB)**	Beam Tilt	**0.50 Degrees**
RMS Gain at Horizontal	**7.8**	**(8.92 dB)**	Frequency	**189.00 MHz**
Calculated / Measured	**Calculated**		Drawing #	**08S080050-90**
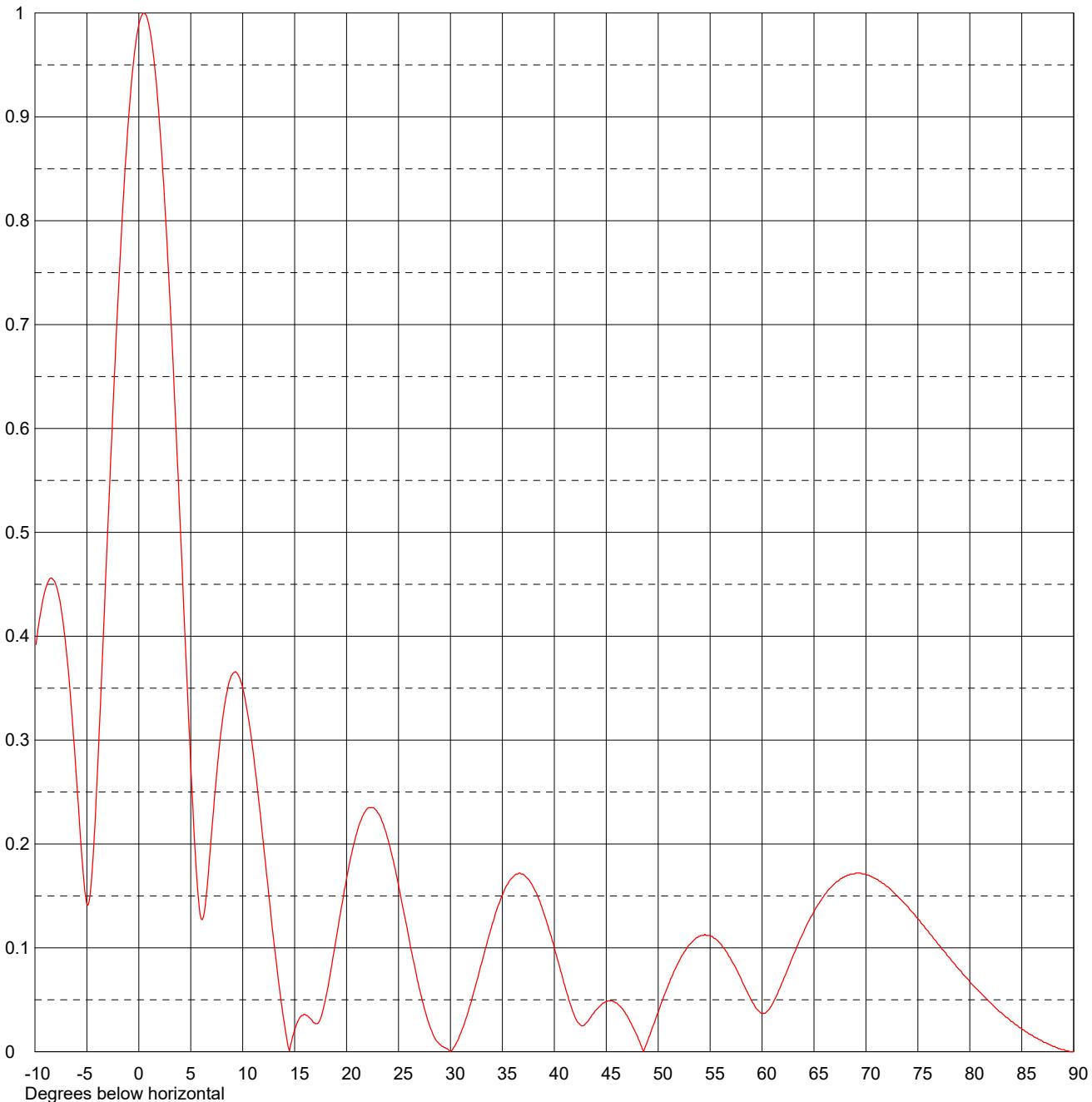
Degrees below horizontal

Remarks:

Dielectric

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #   **08S080050-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.384	2.4	0.833	10.6	0.318	30.5	0.007	51.0	0.065	71.5	0.163
-9.5	0.420	2.6	0.799	10.8	0.304	31.0	0.018	51.5	0.077	72.0	0.159
-9.0	0.445	2.8	0.762	11.0	0.289	31.5	0.032	52.0	0.087	72.5	0.155
-8.5	0.456	3.0	0.723	11.5	0.246	32.0	0.048	52.5	0.096	73.0	0.150
-8.0	0.450	3.2	0.682	12.0	0.200	32.5	0.067	53.0	0.103	73.5	0.145
-7.5	0.428	3.4	0.639	12.5	0.152	33.0	0.085	53.5	0.108	74.0	0.140
-7.0	0.388	3.6	0.595	13.0	0.106	33.5	0.104	54.0	0.111	74.5	0.134
-6.5	0.332	3.8	0.550	13.5	0.064	34.0	0.122	54.5	0.113	75.0	0.128
-6.0	0.263	4.0	0.504	14.0	0.028	34.5	0.138	55.0	0.112	75.5	0.122
-5.5	0.190	4.2	0.458	14.5	0.001	35.0	0.151	55.5	0.109	76.0	0.116
-5.0	0.142	4.4	0.411	15.0	0.021	35.5	0.161	56.0	0.104	76.5	0.109
-4.5	0.173	4.6	0.365	15.5	0.033	36.0	0.168	56.5	0.097	77.0	0.103
-4.0	0.266	4.8	0.320	16.0	0.036	36.5	0.171	57.0	0.089	77.5	0.097
-3.5	0.381	5.0	0.276	16.5	0.032	37.0	0.171	57.5	0.080	78.0	0.091
-3.0	0.501	5.2	0.235	17.0	0.027	37.5	0.166	58.0	0.070	78.5	0.085
-2.8	0.548	5.4	0.197	17.5	0.032	38.0	0.158	58.5	0.059	79.0	0.079
-2.6	0.594	5.6	0.164	18.0	0.052	38.5	0.147	59.0	0.049	79.5	0.073
-2.4	0.640	5.8	0.140	18.5	0.079	39.0	0.133	59.5	0.041	80.0	0.067
-2.2	0.683	6.0	0.128	19.0	0.109	39.5	0.117	60.0	0.037	80.5	0.062
-2.0	0.725	6.2	0.129	19.5	0.139	40.0	0.100	60.5	0.039	81.0	0.057
-1.8	0.765	6.4	0.141	20.0	0.167	40.5	0.082	61.0	0.046	81.5	0.052
-1.6	0.802	6.6	0.161	20.5	0.191	41.0	0.064	61.5	0.056	82.0	0.047
-1.4	0.837	6.8	0.185	21.0	0.211	41.5	0.047	62.0	0.068	82.5	0.042
-1.2	0.868	7.0	0.210	21.5	0.226	42.0	0.033	62.5	0.080	83.0	0.038
-1.0	0.897	7.2	0.234	22.0	0.234	42.5	0.026	63.0	0.093	83.5	0.033
-0.8	0.922	7.4	0.257	22.5	0.235	43.0	0.027	63.5	0.104	84.0	0.029
-0.6	0.944	7.6	0.279	23.0	0.230	43.5	0.033	64.0	0.115	84.5	0.026
-0.4	0.963	7.8	0.298	23.5	0.220	44.0	0.040	64.5	0.126	85.0	0.022
-0.2	0.978	8.0	0.315	24.0	0.204	44.5	0.045	65.0	0.135	85.5	0.019
0.0	0.989	8.2	0.330	24.5	0.184	45.0	0.048	65.5	0.143	86.0	0.016
0.2	0.996	8.4	0.342	25.0	0.160	45.5	0.049	66.0	0.151	86.5	0.013
0.4	1.000	8.6	0.352	25.5	0.135	46.0	0.047	66.5	0.157	87.0	0.010
0.6	0.999	8.8	0.359	26.0	0.110	46.5	0.042	67.0	0.162	87.5	0.008
0.8	0.995	9.0	0.363	26.5	0.085	47.0	0.035	67.5	0.166	88.0	0.005
1.0	0.987	9.2	0.365	27.0	0.061	47.5	0.025	68.0	0.169	88.5	0.003
1.2	0.976	9.4	0.365	27.5	0.041	48.0	0.015	68.5	0.171	89.0	0.002
1.4	0.960	9.6	0.362	28.0	0.025	48.5	0.002	69.0	0.172	89.5	0.001
1.6	0.941	9.8	0.357	28.5	0.013	49.0	0.011	69.5	0.172	90.0	0.000
1.8	0.919	10.0	0.350	29.0	0.007	49.5	0.025	70.0	0.171		
2.0	0.893	10.2	0.341	29.5	0.004	50.0	0.038	70.5	0.169		
2.2	0.865	10.4	0.330	30.0	0.000	50.5	0.052	71.0	0.166		

Remarks: