

## Horizontal Polarization AZIMUTH PATTERN

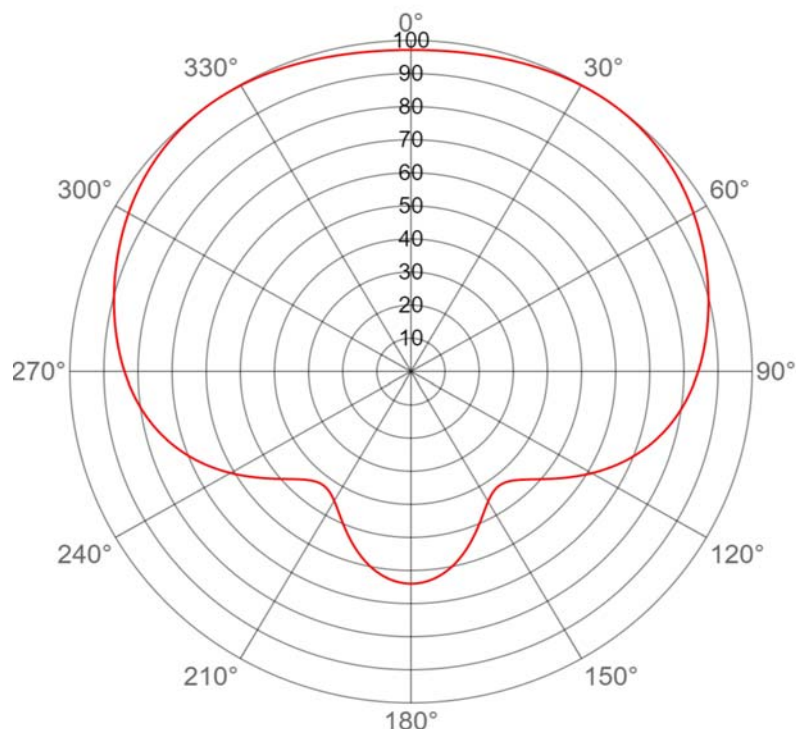


Exhibit No.  
Date **11 Feb 2019**  
Call Letters **WBMM**  
Channel **22**  
Antenna Type **TFU-8WB**  
Location **Tuskegee, AL**  
Customer **Interim Antenna**

Gain **1.6 (1.90 dB)**  
Calculated  
Drawing # **WB-C160H**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.971	36	1.000	72	0.914	108	0.730	144	0.430	180	0.640	216	0.428	252	0.728	288	0.913	324	1.000
1	0.971	37	1.000	73	0.910	109	0.721	145	0.432	181	0.640	217	0.428	253	0.736	289	0.916	325	1.000
2	0.972	38	1.000	74	0.906	110	0.713	146	0.434	182	0.639	218	0.429	254	0.744	290	0.920	326	0.999
3	0.972	39	0.999	75	0.902	111	0.703	147	0.438	183	0.637	219	0.430	255	0.752	291	0.924	327	0.999
4	0.972	40	0.998	76	0.899	112	0.694	148	0.442	184	0.635	220	0.433	256	0.759	292	0.928	328	0.999
5	0.973	41	0.998	77	0.895	113	0.685	149	0.447	185	0.632	221	0.436	257	0.766	293	0.931	329	0.998
6	0.973	42	0.997	78	0.891	114	0.675	150	0.452	186	0.628	222	0.441	258	0.773	294	0.935	330	0.998
7	0.974	43	0.996	79	0.887	115	0.665	151	0.459	187	0.624	223	0.446	259	0.780	295	0.939	331	0.997
8	0.975	44	0.995	80	0.883	116	0.655	152	0.465	188	0.620	224	0.452	260	0.786	296	0.942	332	0.996
9	0.975	45	0.993	81	0.880	117	0.644	153	0.473	189	0.615	225	0.459	261	0.792	297	0.946	333	0.995
10	0.976	46	0.992	82	0.876	118	0.634	154	0.481	190	0.609	226	0.467	262	0.798	298	0.949	334	0.994
11	0.977	47	0.990	83	0.872	119	0.623	155	0.489	191	0.603	227	0.475	263	0.804	299	0.953	335	0.993
12	0.978	48	0.988	84	0.868	120	0.612	156	0.497	192	0.596	228	0.484	264	0.810	300	0.956	336	0.992
13	0.979	49	0.986	85	0.864	121	0.601	157	0.506	193	0.589	229	0.493	265	0.815	301	0.959	337	0.991
14	0.981	50	0.984	86	0.859	122	0.590	158	0.515	194	0.582	230	0.503	266	0.820	302	0.962	338	0.990
15	0.982	51	0.982	87	0.855	123	0.579	159	0.524	195	0.574	231	0.513	267	0.825	303	0.965	339	0.989
16	0.983	52	0.979	88	0.851	124	0.568	160	0.533	196	0.566	232	0.523	268	0.830	304	0.968	340	0.987
17	0.984	53	0.977	89	0.847	125	0.557	161	0.542	197	0.557	233	0.534	269	0.835	305	0.971	341	0.986
18	0.986	54	0.974	90	0.842	126	0.546	162	0.550	198	0.548	234	0.545	270	0.840	306	0.974	342	0.985
19	0.987	55	0.972	91	0.837	127	0.535	163	0.559	199	0.540	235	0.556	271	0.844	307	0.977	343	0.984
20	0.988	56	0.969	92	0.833	128	0.524	164	0.567	200	0.531	236	0.567	272	0.849	308	0.979	344	0.983
21	0.989	57	0.966	93	0.828	129	0.514	165	0.575	201	0.522	237	0.578	273	0.853	309	0.982	345	0.981
22	0.990	58	0.963	94	0.823	130	0.504	166	0.583	202	0.513	238	0.589	274	0.857	310	0.984	346	0.980
23	0.992	59	0.960	95	0.817	131	0.494	167	0.590	203	0.504	239	0.600	275	0.862	311	0.986	347	0.979
24	0.993	60	0.956	96	0.812	132	0.485	168	0.597	204	0.495	240	0.611	276	0.866	312	0.988	348	0.978
25	0.994	61	0.953	97	0.806	133	0.476	169	0.604	205	0.487	241	0.622	277	0.870	313	0.990	349	0.977
26	0.995	62	0.950	98	0.801	134	0.468	170	0.610	206	0.478	242	0.632	278	0.874	314	0.991	350	0.976
27	0.996	63	0.946	99	0.795	135	0.461	171	0.616	207	0.470	243	0.643	279	0.878	315	0.993	351	0.975
28	0.997	64	0.943	100	0.788	136	0.454	172	0.621	208	0.463	244	0.653	280	0.882	316	0.994	352	0.974
29	0.998	65	0.939	101	0.782	137	0.448	173	0.625	209	0.456	245	0.663	281	0.886	317	0.996	353	0.974
30	0.998	66	0.936	102	0.775	138	0.442	174	0.629	210	0.450	246	0.673	282	0.889	318	0.997	354	0.973
31	0.999	67	0.932	103	0.768	139	0.438	175	0.632	211	0.444	247	0.683	283	0.893	319	0.997	355	0.972
32	0.999	68	0.928	104	0.761	140	0.435	176	0.635	212	0.440	248	0.693	284	0.897	320	0.998	356	0.972
33	1.000	69	0.925	105	0.754	141	0.432	177	0.637	213	0.435	249	0.702	285	0.901	321	0.999	357	0.972
34	1.000	70	0.921	106	0.746	142	0.431	178	0.639	214	0.432	250	0.711	286	0.905	322	0.999	358	0.971
35	1.000	71	0.917	107	0.738	143	0.430	179	0.640	215	0.430	251	0.720	287	0.909	323	0.999	359	0.971

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## ELEVATION PATTERN

Exhibit No.

Date

**11 Feb 2019**

Call Letters

**WBMM**

Channel

**22**

Antenna Type

**TFU-8WB**

Location

**Tuskegee, AL**

Customer

**Interim Antenna**

RMS Gain at Main Lobe

**8.0 (9.03 dB)**

Beam Tilt

**1.05 Degrees**

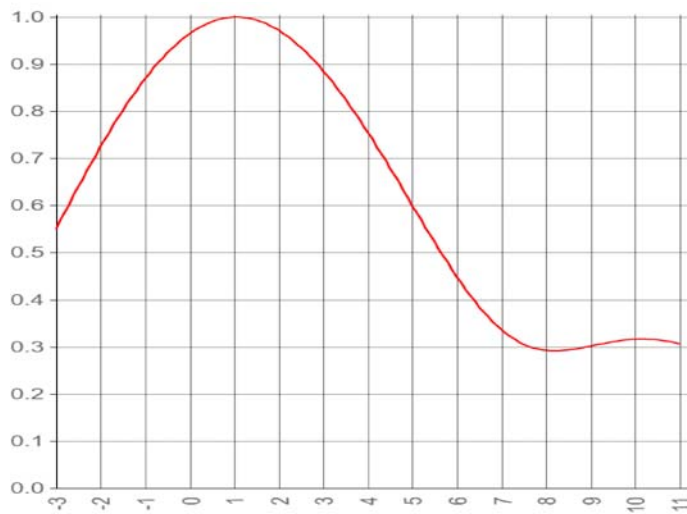
RMS Gain at Horizontal

**7.4 (8.72 dB)**

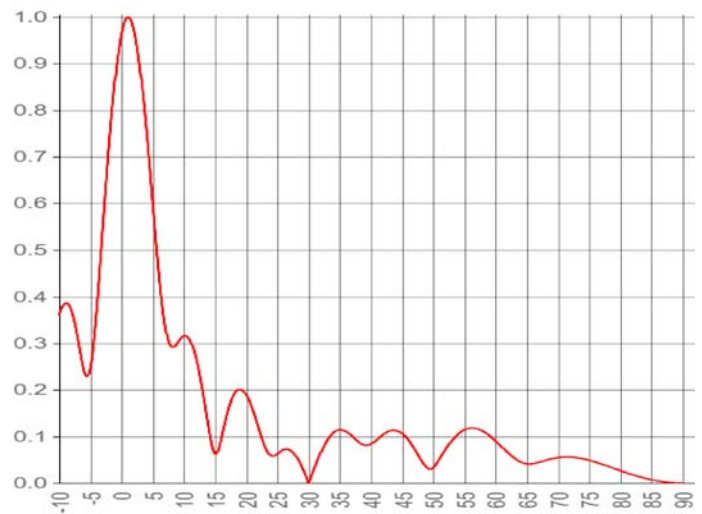
Drawing #

**08I080105**

**Calculated**



Degrees below horizontal



Degrees below horizontal

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10	0.360	10	0.316	30	0.000	50	0.034	70	0.055
-9	0.386	11	0.306	31	0.035	51	0.052	71	0.056
-8	0.368	12	0.265	32	0.067	52	0.073	72	0.056
-7	0.310	13	0.197	33	0.093	53	0.092	73	0.055
-6	0.242	14	0.118	34	0.109	54	0.106	74	0.052
-5	0.248	15	0.063	35	0.115	55	0.115	75	0.049
-4	0.373	16	0.097	36	0.111	56	0.118	76	0.045
-3	0.549	17	0.153	37	0.100	57	0.117	77	0.041
-2	0.724	18	0.189	38	0.088	58	0.111	78	0.036
-1	0.869	19	0.201	39	0.082	59	0.102	79	0.031
0	0.965	20	0.189	40	0.084	60	0.090	80	0.027
1	1.000	21	0.158	41	0.094	61	0.077	81	0.022
2	0.972	22	0.118	42	0.105	62	0.065	82	0.018
3	0.885	23	0.079	43	0.112	63	0.054	83	0.014
4	0.754	24	0.059	44	0.113	64	0.045	84	0.010
5	0.599	25	0.063	45	0.106	65	0.042	85	0.007
6	0.448	26	0.072	46	0.093	66	0.042	86	0.005
7	0.336	27	0.071	47	0.073	67	0.045	87	0.003
8	0.293	28	0.057	48	0.051	68	0.049	88	0.001
9	0.302	29	0.032	49	0.033	69	0.052	89	0.000

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