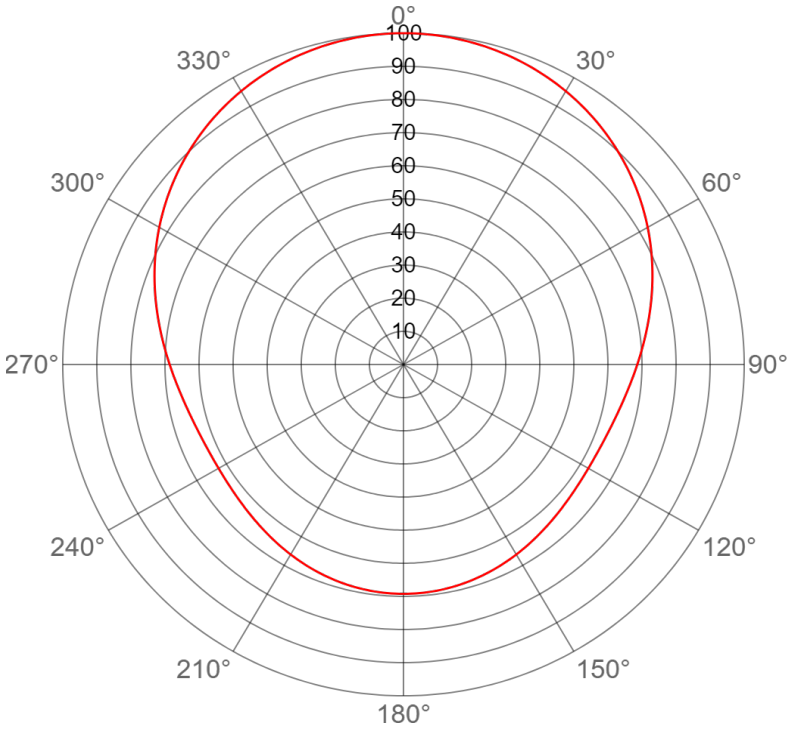


Horizontal Polarization
AZIMUTH PATTERN

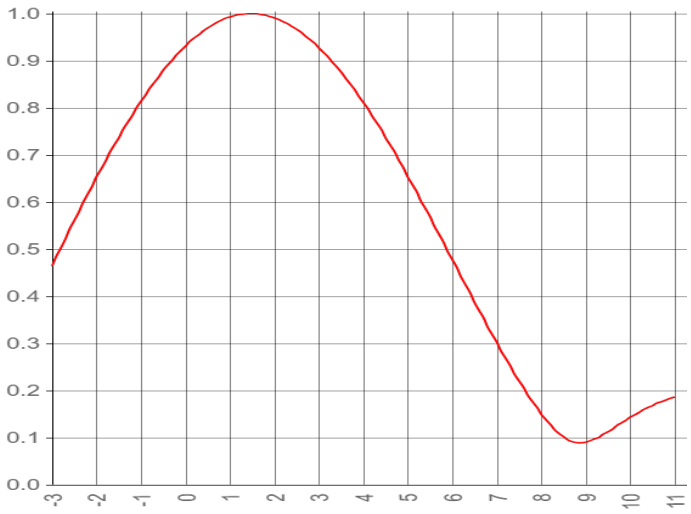
Exhibit No.	
Date	**24 Apr 2018**
Call Letters	**WMUB-LD**
Channel	**31**
Antenna Type	**DLP-8B**
Location	**Warner Robins, GA**
Customer	**The Corporation Of Mercer University**
Gain	**1.7 (2.30 dB)**
	Calculated
Drawing #	**b-pattern**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	1.000	36	0.933	72	0.768	108	0.636	144	0.652	180	0.692	216	0.652	252	0.636	288	0.768	324	0.933
1	1.000	37	0.929	73	0.763	109	0.635	145	0.654	181	0.692	217	0.650	253	0.638	289	0.773	325	0.936
2	1.000	38	0.925	74	0.758	110	0.633	146	0.655	182	0.692	218	0.649	254	0.639	290	0.778	326	0.940
3	0.999	39	0.922	75	0.753	111	0.632	147	0.657	183	0.692	219	0.647	255	0.641	291	0.783	327	0.943
4	0.999	40	0.918	76	0.748	112	0.631	148	0.659	184	0.692	220	0.646	256	0.643	292	0.788	328	0.946
5	0.999	41	0.914	77	0.743	113	0.630	149	0.661	185	0.691	221	0.644	257	0.646	293	0.793	329	0.950
6	0.998	42	0.910	78	0.738	114	0.629	150	0.662	186	0.691	222	0.642	258	0.648	294	0.798	330	0.953
7	0.997	43	0.906	79	0.734	115	0.628	151	0.664	187	0.690	223	0.641	259	0.651	295	0.803	331	0.956
8	0.997	44	0.902	80	0.729	116	0.628	152	0.666	188	0.690	224	0.639	260	0.653	296	0.808	332	0.959
9	0.996	45	0.897	81	0.724	117	0.627	153	0.667	189	0.689	225	0.638	261	0.656	297	0.813	333	0.962
10	0.995	46	0.893	82	0.720	118	0.627	154	0.669	190	0.689	226	0.637	262	0.659	298	0.818	334	0.964
11	0.993	47	0.889	83	0.715	119	0.627	155	0.670	191	0.688	227	0.635	263	0.662	299	0.823	335	0.967
12	0.992	48	0.884	84	0.711	120	0.627	156	0.672	192	0.687	228	0.634	264	0.665	300	0.828	336	0.970
13	0.991	49	0.880	85	0.707	121	0.627	157	0.673	193	0.686	229	0.633	265	0.668	301	0.833	337	0.972
14	0.990	50	0.875	86	0.702	122	0.627	158	0.675	194	0.685	230	0.632	266	0.672	302	0.837	338	0.974
15	0.988	51	0.871	87	0.698	123	0.627	159	0.676	195	0.684	231	0.631	267	0.675	303	0.842	339	0.977
16	0.986	52	0.866	88	0.694	124	0.628	160	0.678	196	0.683	232	0.630	268	0.679	304	0.847	340	0.979
17	0.985	53	0.861	89	0.690	125	0.628	161	0.679	197	0.682	233	0.629	269	0.682	305	0.852	341	0.981
18	0.983	54	0.857	90	0.686	126	0.629	162	0.680	198	0.680	234	0.629	270	0.686	306	0.857	342	0.983
19	0.981	55	0.852	91	0.682	127	0.629	163	0.682	199	0.679	235	0.628	271	0.690	307	0.861	343	0.985
20	0.979	56	0.847	92	0.679	128	0.630	164	0.683	200	0.678	236	0.628	272	0.694	308	0.866	344	0.986
21	0.977	57	0.842	93	0.675	129	0.631	165	0.684	201	0.676	237	0.627	273	0.698	309	0.871	345	0.988
22	0.974	58	0.837	94	0.672	130	0.632	166	0.685	202	0.675	238	0.627	274	0.702	310	0.875	346	0.990
23	0.972	59	0.833	95	0.668	131	0.633	167	0.686	203	0.673	239	0.627	275	0.707	311	0.880	347	0.991
24	0.970	60	0.828	96	0.665	132	0.634	168	0.687	204	0.672	240	0.627	276	0.711	312	0.884	348	0.992
25	0.967	61	0.823	97	0.662	133	0.635	169	0.688	205	0.670	241	0.627	277	0.715	313	0.889	349	0.993
26	0.964	62	0.818	98	0.659	134	0.637	170	0.689	206	0.669	242	0.627	278	0.720	314	0.893	350	0.995
27	0.962	63	0.813	99	0.656	135	0.638	171	0.689	207	0.667	243	0.627	279	0.724	315	0.897	351	0.996
28	0.959	64	0.808	100	0.653	136	0.639	172	0.690	208	0.666	244	0.628	280	0.729	316	0.902	352	0.997
29	0.956	65	0.803	101	0.651	137	0.641	173	0.690	209	0.664	245	0.628	281	0.734	317	0.906	353	0.997
30	0.953	66	0.798	102	0.648	138	0.642	174	0.691	210	0.662	246	0.629	282	0.738	318	0.910	354	0.998
31	0.950	67	0.793	103	0.646	139	0.644	175	0.691	211	0.661	247	0.630	283	0.743	319	0.914	355	0.999
32	0.946	68	0.788	104	0.643	140	0.646	176	0.692	212	0.659	248	0.631	284	0.748	320	0.918	356	0.999
33	0.943	69	0.783	105	0.641	141	0.647	177	0.692	213	0.657	249	0.632	285	0.753	321	0.922	357	0.999
34	0.940	70	0.778	106	0.639	142	0.649	178	0.692	214	0.655	250	0.633	286	0.758	322	0.925	358	1.000
35	0.936	71	0.773	107	0.638	143	0.650	179	0.692	215	0.654	251	0.635	287	0.763	323	0.929	359	1.000

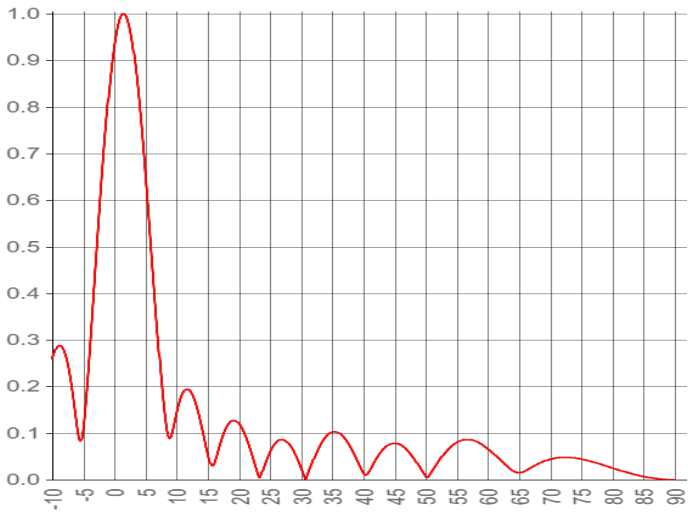
ELEVATION PATTERN

Exhibit No.	
Date	**24 Apr 2018**
Call Letters	**WMUB-LD**
Channel	**31**
Antenna Type	**DLP-8B**
Location	**Warner Robins, GA**
Customer	**The Corporation Of Mercer University**

RMS Gain at Main Lobe	**8.0 (9.03 dB)**	Beam Tilt	**1.5 Degrees**
RMS Gain at Horizontal	**6.9 (8.42 dB)**	Drawing #	
	Calculated		



Degrees below horizontal



Degrees below horizontal

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10	0.258	10	0.143	30	0.025	50	0.007	70	0.044
-9	0.287	11	0.186	31	0.010	51	0.018	71	0.047
-8	0.273	12	0.193	32	0.044	52	0.038	72	0.048
-7	0.213	13	0.166	33	0.073	53	0.056	73	0.048
-6	0.117	14	0.115	34	0.093	54	0.070	74	0.047
-5	0.111	15	0.056	35	0.102	55	0.080	75	0.044
-4	0.271	16	0.034	36	0.101	56	0.085	76	0.041
-3	0.464	17	0.078	37	0.088	57	0.086	77	0.038
-2	0.652	18	0.112	38	0.068	58	0.083	78	0.034
-1	0.814	19	0.127	39	0.041	59	0.076	79	0.029
0	0.932	20	0.120	40	0.015	60	0.066	80	0.025
1	0.993	21	0.095	41	0.020	61	0.055	81	0.021
2	0.991	22	0.058	42	0.044	62	0.042	82	0.017
3	0.928	23	0.015	43	0.063	63	0.030	83	0.013
4	0.811	24	0.027	44	0.074	64	0.019	84	0.010
5	0.655	25	0.060	45	0.078	65	0.015	85	0.007
6	0.478	26	0.080	46	0.075	66	0.019	86	0.004
7	0.301	27	0.086	47	0.064	67	0.027	87	0.003
8	0.150	28	0.077	48	0.048	68	0.034	88	0.001
9	0.090	29	0.055	49	0.028	69	0.040	89	0.000

System Summary

Exhibit No.	
Date	**24 Apr 2018**
Call Letters	**WMUB-LD**
Channel	**31**
Antenna Type	**DLP-8B**
Location	**Warner Robins, GA**
Customer	**The Corporation Of Mercer University**

Antenna

ERP:	15.0 kW (11.76 dBk)
Peak Gain*:	13.6 (11.34 dB)

Antenna Input Power:

1.1 kW

Transmission Line

Type:	Flexline Air		
Size:	2-1/4"		
Impedance:	50 ohm		
Length:	660 ft (201.2 m)	Attenuation:	2.9 dB
		Efficiency:	51.85 %

Transmitter Output

2.1 kW (3.28 dBk)

* Gain is with respect to half wave dipole.

Mechanicals

Exhibit No.	
Date	**24 Apr 2018**
Call Letters	**WMUB-LD**
Channel	**31**
Antenna Type	**DLP-8B**
Location	**Warner Robins, GA**
Customer	**The Corporation Of Mercer University**

Preliminary Specifications

Side Mounted

Mechanical Specification without ice TIA-222-G

Basic Wind Speed	90 mph

Mechanical Specification with ice TIA-222-G

Ice Design:	0.5 in.
Basic Wind Speed	40 mph
Structure Class	II
Exposure Category	C
Topography Category	1

Mechanical Specifications		**without ice**	**with ice**
Height less Lightning Protector	(H2)	15.9 ft (4.9 m)	
Center of Radiation	(H3)	9.0 ft (2.7 m)	
Effective Projected Area	(EPA)s	8.4 ft² (2.5 m²)	16.4 ft² (5.0 m²)
Weight	W	60.0 lbs	180.3 lbs