

Horizontal Polarization AZIMUTH PATTERN

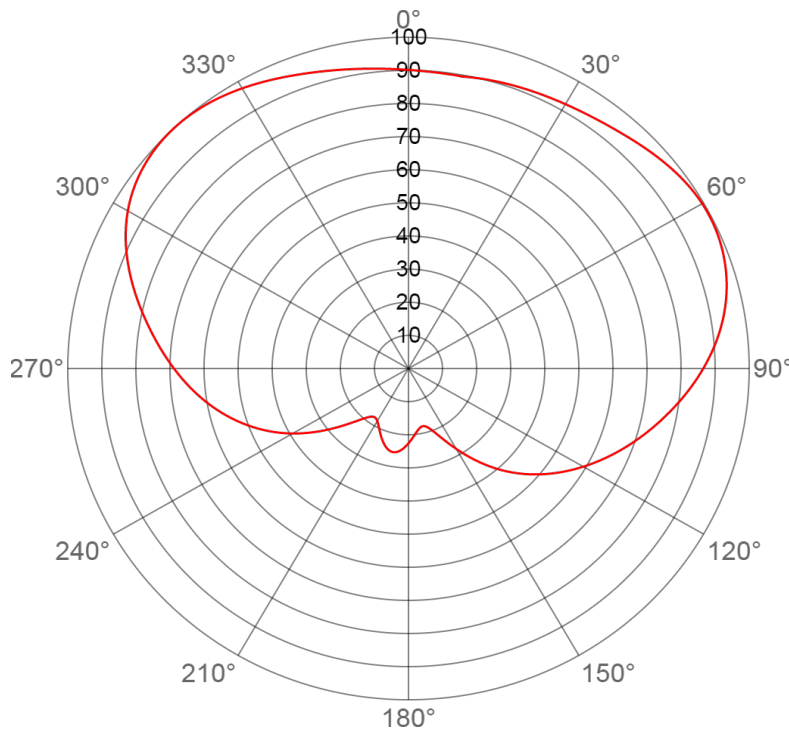


Exhibit No.

Date **15 Jun 2017**

Call Letters **WJWN**

Channel **33**

Antenna Type **TLP-32M (C)**

Location **SAN SEBASTIAN, PR**

Customer

Gain **1.9 (2.79 dB)**
Calculated

Drawing # **TLP-M**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.901	36	0.932	72	0.979	108	0.702	144	0.347	180	0.226	216	0.180	252	0.522	288	0.854	324	0.992
1	0.900	37	0.935	73	0.975	109	0.693	145	0.335	181	0.231	217	0.182	253	0.532	289	0.863	325	0.990
2	0.899	38	0.937	74	0.971	110	0.684	146	0.324	182	0.235	218	0.185	254	0.542	290	0.873	326	0.987
3	0.899	39	0.940	75	0.967	111	0.675	147	0.313	183	0.240	219	0.189	255	0.552	291	0.882	327	0.985
4	0.898	40	0.942	76	0.962	112	0.666	148	0.302	184	0.244	220	0.194	256	0.561	292	0.890	328	0.982
5	0.897	41	0.945	77	0.957	113	0.657	149	0.291	185	0.247	221	0.200	257	0.571	293	0.899	329	0.979
6	0.897	42	0.948	78	0.952	114	0.648	150	0.280	186	0.250	222	0.206	258	0.580	294	0.907	330	0.976
7	0.896	43	0.951	79	0.946	115	0.639	151	0.270	187	0.253	223	0.214	259	0.590	295	0.916	331	0.973
8	0.896	44	0.954	80	0.940	116	0.630	152	0.260	188	0.255	224	0.221	260	0.599	296	0.923	332	0.970
9	0.896	45	0.958	81	0.934	117	0.620	153	0.250	189	0.256	225	0.229	261	0.608	297	0.931	333	0.967
10	0.895	46	0.961	82	0.927	118	0.611	154	0.241	190	0.257	226	0.238	262	0.617	298	0.938	334	0.964
11	0.897	47	0.964	83	0.920	119	0.602	155	0.232	191	0.256	227	0.248	263	0.626	299	0.945	335	0.960
12	0.898	48	0.967	84	0.913	120	0.593	156	0.224	192	0.255	228	0.257	264	0.635	300	0.951	336	0.957
13	0.900	49	0.971	85	0.906	121	0.583	157	0.216	193	0.253	229	0.267	265	0.644	301	0.957	337	0.954
14	0.901	50	0.974	86	0.898	122	0.574	158	0.209	194	0.251	230	0.278	266	0.653	302	0.963	338	0.951
15	0.902	51	0.977	87	0.890	123	0.565	159	0.203	195	0.248	231	0.289	267	0.662	303	0.968	339	0.947
16	0.904	52	0.980	88	0.882	124	0.555	160	0.197	196	0.245	232	0.300	268	0.671	304	0.972	340	0.944
17	0.905	53	0.983	89	0.874	125	0.546	161	0.192	197	0.241	233	0.311	269	0.680	305	0.977	341	0.941
18	0.906	54	0.985	90	0.865	126	0.536	162	0.188	198	0.236	234	0.322	270	0.688	306	0.981	342	0.938
19	0.907	55	0.988	91	0.857	127	0.527	163	0.184	199	0.232	235	0.334	271	0.697	307	0.984	343	0.935
20	0.908	56	0.990	92	0.848	128	0.517	164	0.182	200	0.227	236	0.346	272	0.706	308	0.987	344	0.933
21	0.910	57	0.992	93	0.839	129	0.507	165	0.180	201	0.222	237	0.357	273	0.715	309	0.990	345	0.930
22	0.911	58	0.993	94	0.830	130	0.497	166	0.179	202	0.217	238	0.369	274	0.724	310	0.993	346	0.927
23	0.912	59	0.994	95	0.821	131	0.487	167	0.179	203	0.212	239	0.381	275	0.733	311	0.995	347	0.925
24	0.913	60	0.995	96	0.812	132	0.477	168	0.180	204	0.207	240	0.393	276	0.742	312	0.996	348	0.922
25	0.914	61	0.996	97	0.803	133	0.467	169	0.182	205	0.202	241	0.404	277	0.751	313	0.998	349	0.920
26	0.916	62	0.996	98	0.794	134	0.457	170	0.184	206	0.198	242	0.415	278	0.760	314	0.999	350	0.918
27	0.917	63	0.996	99	0.784	135	0.446	171	0.187	207	0.194	243	0.427	279	0.769	315	1.000	351	0.916
28	0.918	64	0.996	100	0.775	136	0.436	172	0.190	208	0.190	244	0.438	280	0.778	316	1.000	352	0.914
29	0.920	65	0.995	101	0.766	137	0.425	173	0.194	209	0.186	245	0.449	281	0.788	317	1.000	353	0.912
30	0.921	66	0.993	102	0.757	138	0.414	174	0.198	210	0.183	246	0.460	282	0.797	318	1.000	354	0.910
31	0.923	67	0.992	103	0.748	139	0.403	175	0.202	211	0.181	247	0.470	283	0.807	319	0.999	355	0.908
32	0.925	68	0.990	104	0.739	140	0.392	176	0.207	212	0.179	248	0.481	284	0.816	320	0.998	356	0.907
33	0.926	69	0.988	105	0.730	141	0.381	177	0.211	213	0.178	249	0.491	285	0.826	321	0.997	357	0.905
34	0.928	70	0.985	106	0.720	142	0.370	178	0.216	214	0.178	250	0.502	286	0.835	322	0.996	358	0.904
35	0.930	71	0.982	107	0.711	143	0.358	179	0.221	215	0.178	251	0.512	287	0.845	323	0.994	359	0.903

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ELEVATION PATTERN

Exhibit No.

Date

15 Jun 2017

Call Letters

WJWN

Channel

33

Antenna Type

TLP-32M (C)

Location

SAN SEBASTIAN, PR

Customer

RMS Gain at Main Lobe

31.0 (14.91 dB)

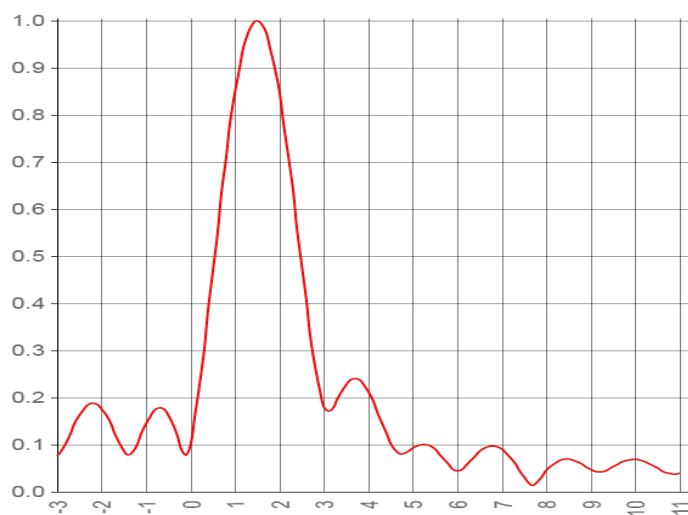
Beam Tilt

1.5 Degrees

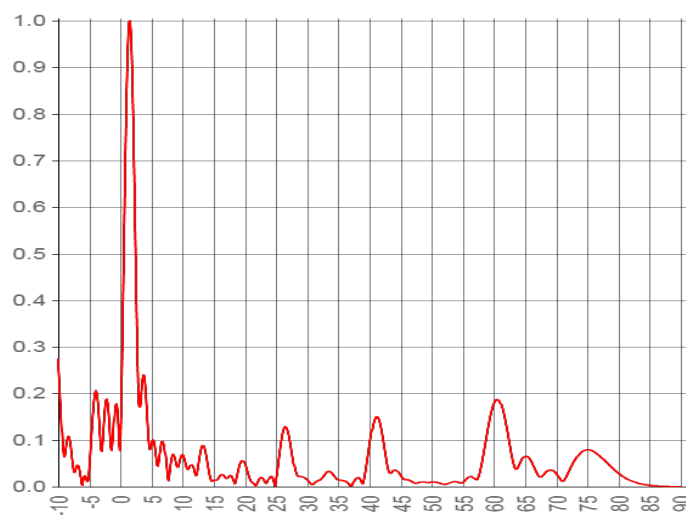
RMS Gain at Horizontal

0.3 (-4.83 dB)

Drawing #

32L310150
Calculated


Degrees below horizontal



Degrees below horizontal

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10	0.275	10	0.069	30	0.015	50	0.010	70	0.028
-9	0.064	11	0.039	31	0.005	51	0.009	71	0.012
-8	0.088	12	0.027	32	0.014	52	0.005	72	0.032
-7	0.045	13	0.083	33	0.029	53	0.009	73	0.057
-6	0.009	14	0.051	34	0.029	54	0.010	74	0.074
-5	0.045	15	0.014	35	0.015	55	0.009	75	0.079
-4	0.205	16	0.024	36	0.012	56	0.021	76	0.076
-3	0.076	17	0.018	37	0.001	57	0.016	77	0.066
-2	0.177	18	0.019	38	0.019	58	0.049	78	0.053
-1	0.144	19	0.038	39	0.008	59	0.123	79	0.040
0	0.103	20	0.049	40	0.088	60	0.178	80	0.029
1	0.845	21	0.011	41	0.149	61	0.181	81	0.020
2	0.846	22	0.008	42	0.116	62	0.128	82	0.013
3	0.182	23	0.016	43	0.038	63	0.056	83	0.008
4	0.212	24	0.020	44	0.035	64	0.045	84	0.005
5	0.092	25	0.016	45	0.024	65	0.065	85	0.003
6	0.044	26	0.111	46	0.015	66	0.053	86	0.002
7	0.090	27	0.114	47	0.010	67	0.026	87	0.001
8	0.045	28	0.040	48	0.009	68	0.026	88	0.001
9	0.047	29	0.022	49	0.010	69	0.036	89	0.000

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System Summary

Exhibit No.	
Date	15 Jun 2017
Call Letters	WJWN
Channel	33
Antenna Type	TLP-32M (C)
Location	SAN SEBASTIAN, PR
Customer	

Antenna

ERP:	621.0 kW (27.93 dBk)
Peak Gain*:	58.9 (17.70 dB)

Antenna Input Power:	10.5 kW
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Transmission Line

Type:	Transmission Line		
Size:	6-1/8" 75 ohm		
Impedance:	75 ohm		
Length:	270 ft (82.3 m)	Attenuation:	0.3 dB
		Efficiency:	92.91 %

Transmitter Output

11.3 kW (10.55 dBk)

* Gain is with respect to half wave dipole.

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Mechanicals

Exhibit No.

Date **15 Jun 2017**

Call Letters **WJWN**

Channel **33**

Antenna Type **TLP-32M (C)**

Location **SAN SEBASTIAN, PR**

Customer

Preliminary Specifications

Side Mounted

Mechanical Specification without ice TIA-222-F

Basic Wind Speed 100 mph

Mechanical Specifications

Height less Lightning Protector	(H2)	62.2 ft (18.9 m)
Center of Radiation	(H3)	31.1 ft (9.5 m)
Effective Projected Area	(EPA)s	129.8 ft ² (39.6 m ²)
Weight	W	556.6 lbs

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