

ENGINEERING STATEMENT  
APPLICATION FOR LICENSE  
AUTHORIZED BY OUTSTANDING  
CONSTRUCTION PERMIT  
(FCC FILE NO. BDFCDTL-20090616ABI)  
WFND-LP, FINDLAY, OHIO  
CHANNEL 22 15 KW MAX DA ERP 331.3 METERS RC/AMSL

JANUARY 2013

COHEN, DIPPELL AND EVERIST, P.C.  
CONSULTING ENGINEERS  
RADIO AND TELEVISION  
WASHINGTON, D.C.

COHEN, DIPPELL AND EVERIST, P. C.

City of Washington            )  
  ) ss  
District of Columbia         )

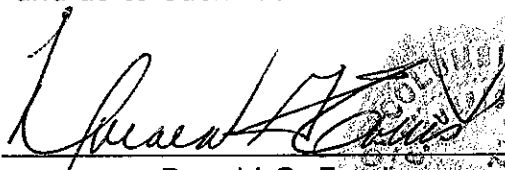
Donald G. Everist, being duly sworn upon his oath, deposes and states that:

He is a graduate electrical engineer, a Registered Professional Engineer in the District of Columbia, and is President, Secretary and Treasurer of Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1420 N Street, N.W., Suite One, Washington, D.C. 20005;

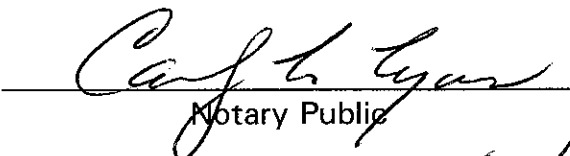
That his qualifications are a matter of record in the Federal Communications Commission;

That the attached engineering report was prepared by him or under his supervision and direction and

That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true.

  
\_\_\_\_\_  
Donald G. Everist  
District of Columbia  
Professional Engineer  
Registration No. 5714

Subscribed and sworn to before me this 10<sup>th</sup> day of January, 2013.

  
\_\_\_\_\_  
Notary Public

My Commission Expires: 2/28/2013



Introduction

This engineering statement has been prepared on behalf of West Central Ohio Broadcasting, Inc., licensee of low-power television station WFND-LP, Findlay, Ohio. This statement supports the licensee's request to license the operation authorized by the outstanding construction permit (FCC File No. BDFCDTL-20090616ABI) with a DTV effective radiated power ("ERP") of 15 kW directional at a radiation center above mean sea level ("RCAMSL") of 331.3 meters.

There is no change in transmitter site. The geographic coordinates of the site follow below.

North Latitude: 41° 06' 40"

West Longitude: 83° 38' 54"

NAD-27

The Antenna Structure Registration Number ("ASRN") for the existing tower is 1047246.

Elevation Data

Elevation of site above mean sea level	245.3 meters (805 feet)
Center of radiation of antenna above ground level	86 meters (282 feet)
Center of radiation of antenna above mean sea level	331.3 meters (1087 feet)
Overall antenna structure height above ground level	91.4 meters (300 feet)

Overall antenna structure height above mean sea level	336.7 meters (1105 feet)
--	-----------------------------

Note: slight height differences may result due to conversion to/from metric.

#### Equipment Data

Transmitter:	Type-approved
Transmission Line:	Dielectric, FLEXLine, 1-5/8", 107 meters (350 feet) with 63.4% efficiency
Antenna:	Dielectric, TLP-8M with maximum gain of 15.2 and 1.5° electrical beam tilt (see Exhibit E-1)

#### Power Data

Transmitter:	1.56 kW	1.93 dBk
Transmission Line Loss:	63.4%	1.98 dB
Input Into Antenna:	0.99 kW	-0.06 dBk
Antenna Gain:	15.2	11.82 dB
ERP:	15 kW	11.76 dBk

As indicated above, the transmitter with typical power output of 1.56 kW will deliver 0.99 kW to the input of the antenna. The antenna, having a maximum gain of 15.2 and an electrical beam tilt of 1.5° will produce maximum ERP of 15 kW.

Cohen, Dippell and Everist, P.C.

EXHIBIT E-1

ANTENNA MANUFACTURER DATA

WFND-LP, FINDLAY, OHIO



Exhibit No.

Date

11 Jun 2009

Call Letters

Channel 22

Location

Customer

Antenna Type

TLP-8M

### AZIMUTH PATTERN

Gain

1.90 (2.79 dB)

Frequency

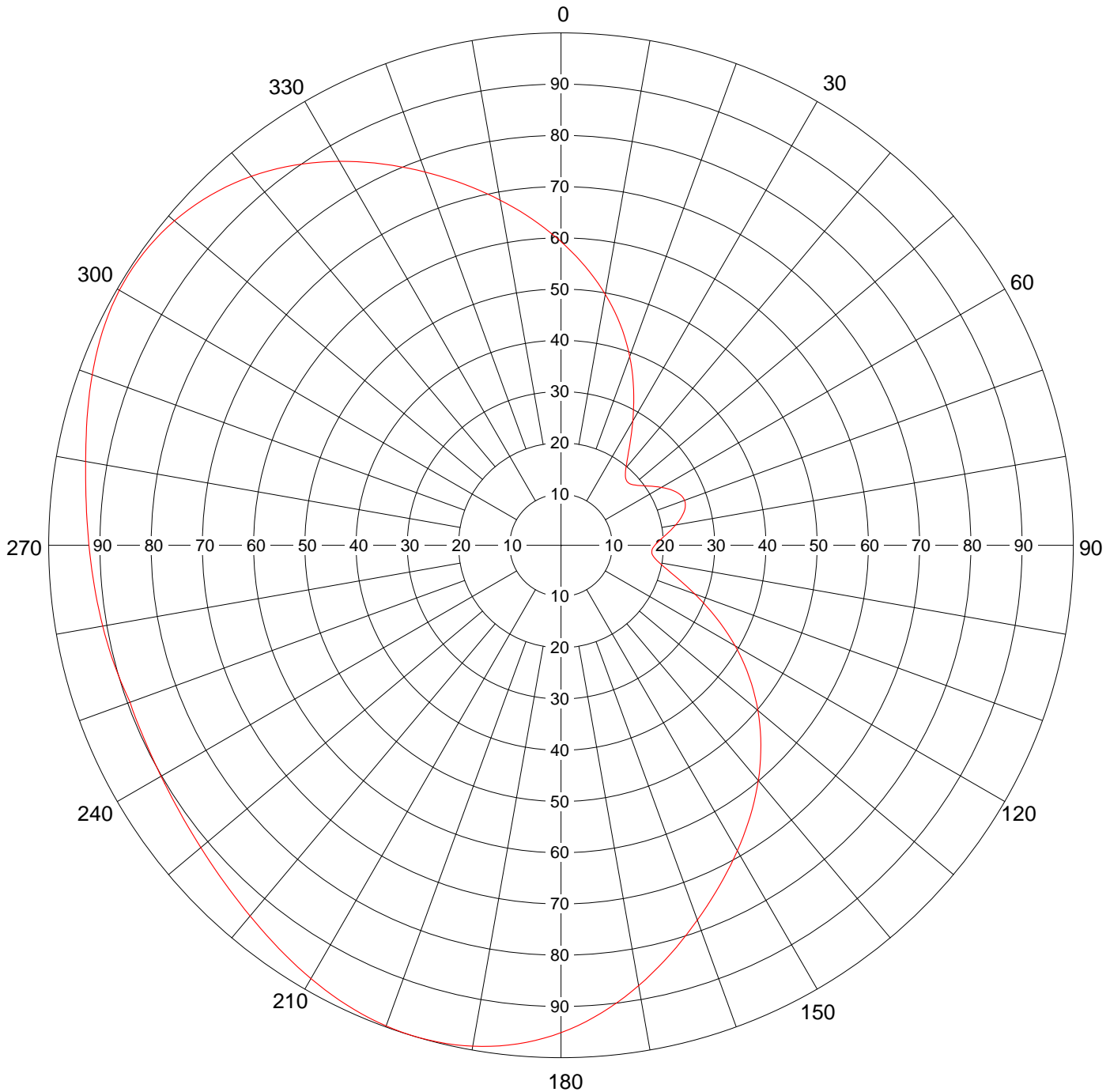
521 MHz

Calculated / Measured

Calculated

Drawing #

TLP-M



Remarks:


Date **11 Jun 2009**

Call Letters

Channel **22**

Location

Customer

Antenna Type **TLP-8M**

## TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing # **TLP-M**

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

Remarks:



Date

11 Jun 2009

Call Letters

Channel 22

Location

Customer

Antenna Type

TLP-8M

**ELEVATION PATTERN**

RMS Gain at Main Lobe

**8.0 (9.03 dB)**

Beam Tilt

**1.50 Degrees**

RMS Gain at Horizontal

**6.8 (8.33 dB)**

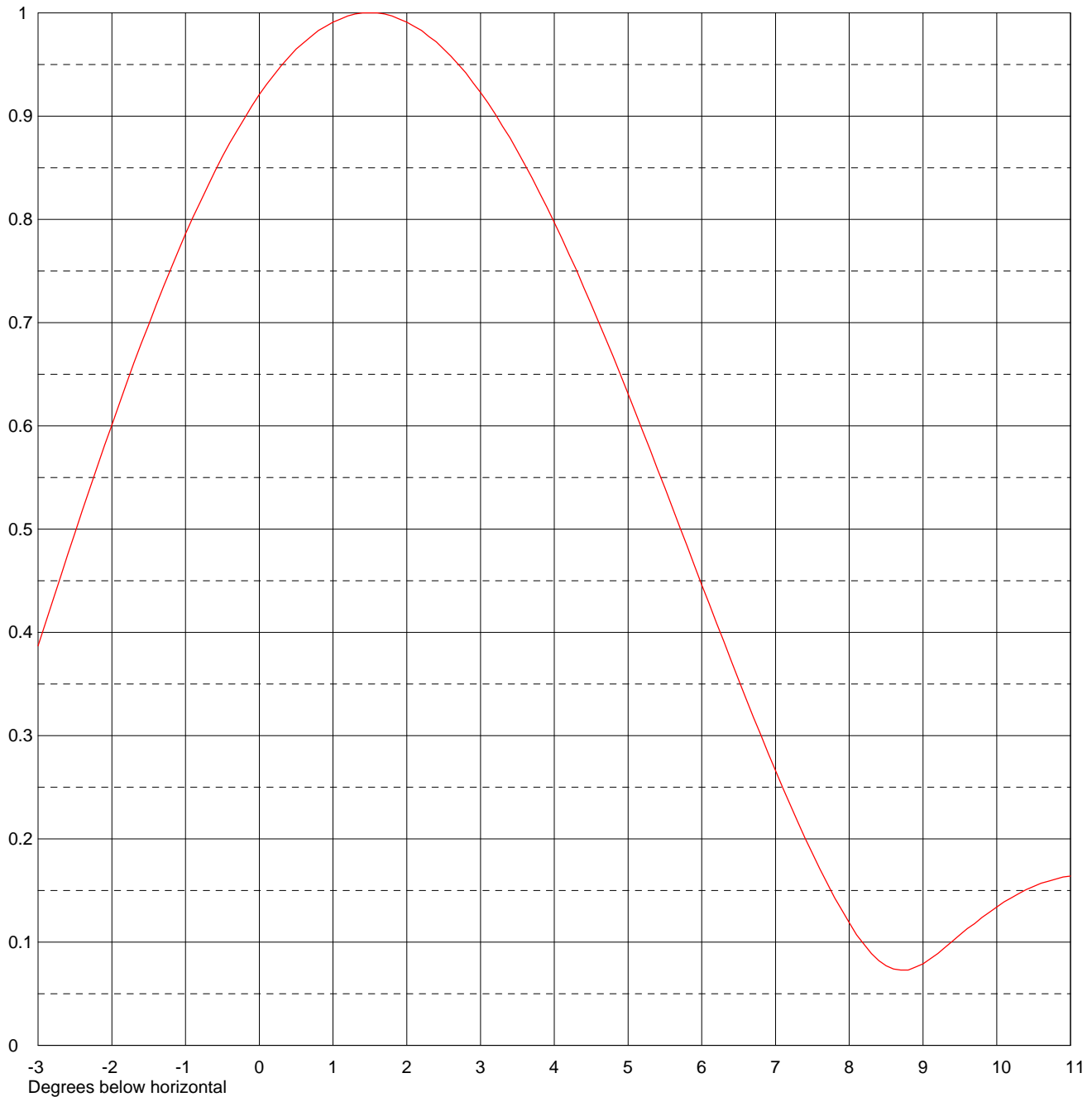
Frequency

**521.00 MHz**

Calculated / Measured

**Calculated**

Drawing #

**08L080150**

Remarks:





Date

11 Jun 2009

Call Letters

Channel 22

Location

Customer

Antenna Type

TLP-8M

**ELEVATION PATTERN**

RMS Gain at Main Lobe

**8.0 (9.03 dB)**

Beam Tilt

**1.50 Degrees**

RMS Gain at Horizontal

**6.8 (8.33 dB)**

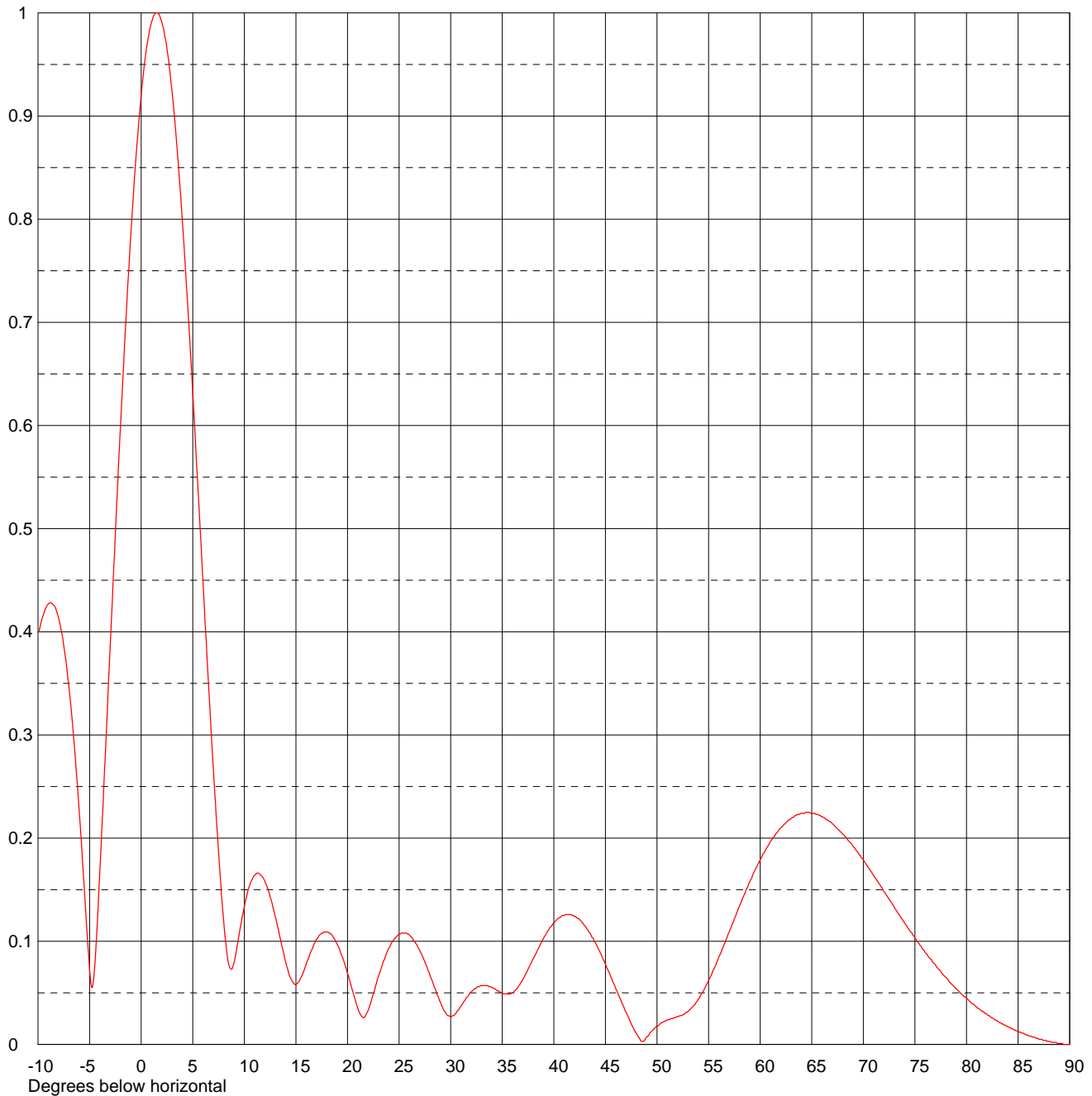
Frequency

**521.00 MHz**

Calculated / Measured

**Calculated**

Drawing #

**08L080150-90**

Remarks:


Date **11 Jun 2009**

Call Letters

Channel **22**

Location

Customer

Antenna Type **TLP-8M**

## TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing # **08L080150-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.396	2.4	0.972	10.6	0.157	30.5	0.030	51.0	0.024	71.5	0.156
-9.5	0.416	2.6	0.958	10.8	0.161	31.0	0.037	51.5	0.025	72.0	0.148
-9.0	0.427	2.8	0.942	11.0	0.164	31.5	0.045	52.0	0.027	72.5	0.141
-8.5	0.426	3.0	0.923	11.5	0.165	32.0	0.051	52.5	0.029	73.0	0.133
-8.0	0.413	3.2	0.902	12.0	0.158	32.5	0.055	53.0	0.032	73.5	0.125
-7.5	0.386	3.4	0.879	12.5	0.143	33.0	0.057	53.5	0.037	74.0	0.118
-7.0	0.346	3.6	0.853	13.0	0.124	33.5	0.057	54.0	0.044	74.5	0.110
-6.5	0.292	3.8	0.826	13.5	0.102	34.0	0.055	54.5	0.052	75.0	0.103
-6.0	0.225	4.0	0.797	14.0	0.080	34.5	0.052	55.0	0.062	75.5	0.096
-5.5	0.149	4.2	0.766	14.5	0.064	35.0	0.050	55.5	0.073	76.0	0.089
-5.0	0.072	4.4	0.734	15.0	0.058	35.5	0.049	56.0	0.085	76.5	0.083
-4.5	0.076	4.6	0.701	15.5	0.065	36.0	0.050	56.5	0.097	77.0	0.077
-4.0	0.169	4.8	0.667	16.0	0.078	36.5	0.055	57.0	0.109	77.5	0.071
-3.5	0.276	5.0	0.631	16.5	0.091	37.0	0.063	57.5	0.122	78.0	0.065
-3.0	0.387	5.2	0.595	17.0	0.102	37.5	0.073	58.0	0.134	78.5	0.059
-2.8	0.431	5.4	0.558	17.5	0.108	38.0	0.083	58.5	0.146	79.0	0.054
-2.6	0.475	5.6	0.521	18.0	0.109	38.5	0.093	59.0	0.158	79.5	0.049
-2.4	0.518	5.8	0.484	18.5	0.106	39.0	0.103	59.5	0.169	80.0	0.045
-2.2	0.560	6.0	0.446	19.0	0.097	39.5	0.111	60.0	0.179	80.5	0.040
-2.0	0.601	6.2	0.409	19.5	0.085	40.0	0.118	60.5	0.188	81.0	0.036
-1.8	0.641	6.4	0.372	20.0	0.069	40.5	0.123	61.0	0.197	81.5	0.032
-1.6	0.680	6.6	0.336	20.5	0.052	41.0	0.125	61.5	0.204	82.0	0.029
-1.4	0.717	6.8	0.301	21.0	0.035	41.5	0.126	62.0	0.210	82.5	0.026
-1.2	0.752	7.0	0.266	21.5	0.026	42.0	0.124	62.5	0.215	83.0	0.023
-1.0	0.786	7.2	0.233	22.0	0.033	42.5	0.121	63.0	0.219	83.5	0.020
-0.8	0.817	7.4	0.201	22.5	0.049	43.0	0.115	63.5	0.222	84.0	0.017
-0.6	0.847	7.6	0.171	23.0	0.066	43.5	0.108	64.0	0.224	84.5	0.015
-0.4	0.874	7.8	0.143	23.5	0.081	44.0	0.099	64.5	0.225	85.0	0.013
-0.2	0.898	8.0	0.119	24.0	0.093	44.5	0.089	65.0	0.224	85.5	0.011
0.0	0.921	8.2	0.098	24.5	0.102	45.0	0.078	65.5	0.223	86.0	0.009
0.2	0.940	8.4	0.082	25.0	0.107	45.5	0.066	66.0	0.221	86.5	0.007
0.4	0.957	8.6	0.074	25.5	0.108	46.0	0.054	66.5	0.218	87.0	0.005
0.6	0.971	8.8	0.073	26.0	0.106	46.5	0.043	67.0	0.214	87.5	0.004
0.8	0.983	9.0	0.079	26.5	0.100	47.0	0.031	67.5	0.209	88.0	0.003
1.0	0.991	9.2	0.089	27.0	0.091	47.5	0.020	68.0	0.204	88.5	0.002
1.2	0.997	9.4	0.101	27.5	0.080	48.0	0.011	68.5	0.198	89.0	0.001
1.4	1.000	9.6	0.113	28.0	0.067	48.5	0.003	69.0	0.192	89.5	0.000
1.6	1.000	9.8	0.124	28.5	0.054	49.0	0.007	69.5	0.186	90.0	0.000
1.8	0.997	10.0	0.134	29.0	0.041	49.5	0.013	70.0	0.179		
2.0	0.991	10.2	0.143	29.5	0.031	50.0	0.018	70.5	0.171		
2.2	0.983	10.4	0.151	30.0	0.027	50.5	0.021	71.0	0.164		

Remarks: