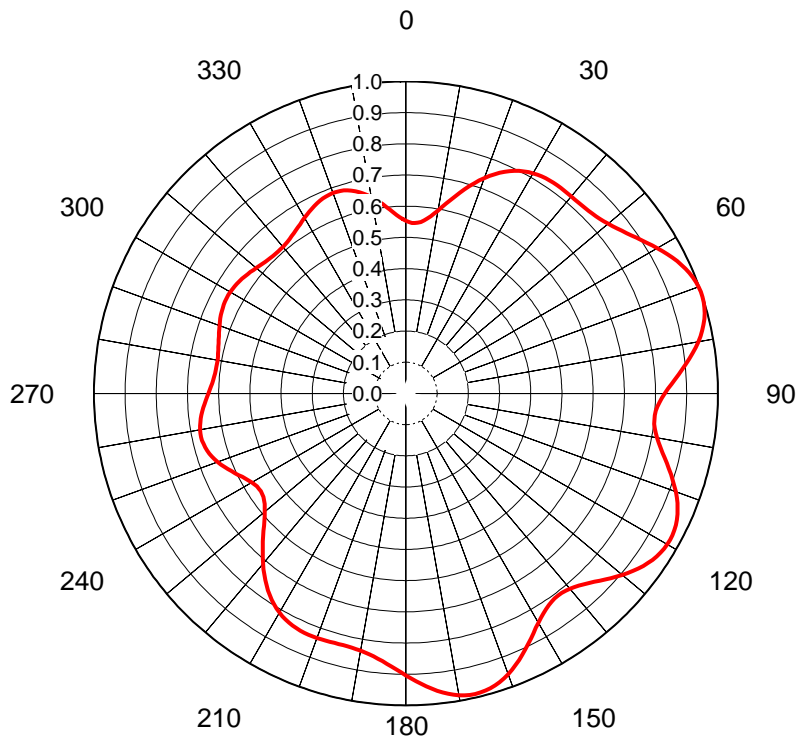


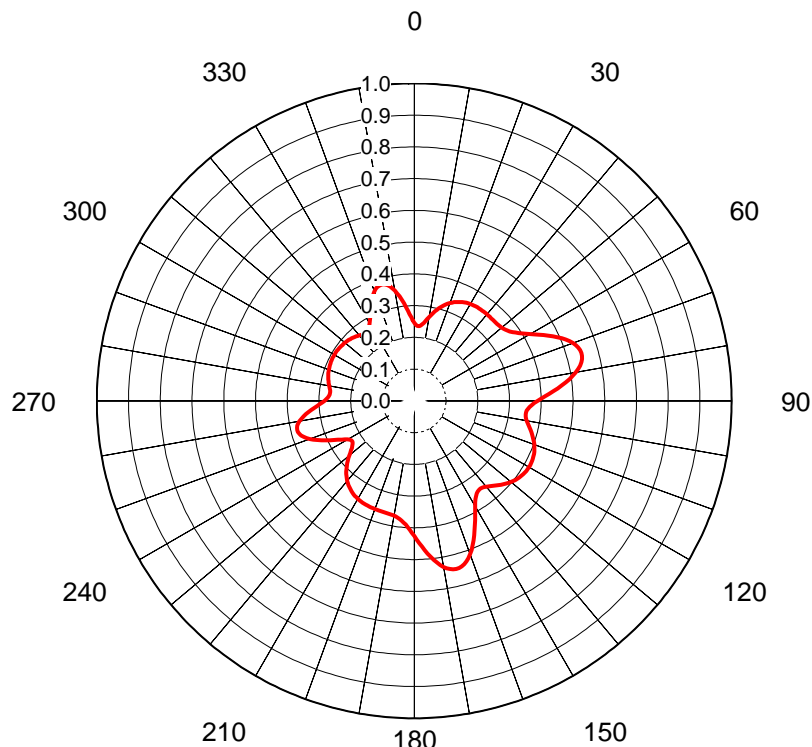
AZIMUTH PATTERN Horizontal Polarization



Proposal No. **C-70638-3**
 Date **22-May-17**
 Call Letters **WAVE**
 Channel **36**
 Frequency **605 MHz**
 Antenna Type **TUM30-AP-S4-14/56H-R-2-T**
 Gain **1.65 (2.17dB)**
 Calculated

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.553	36	0.825	72	1.000	108	0.900	144	0.812	180	0.904	216	0.760	252	0.654	288	0.630
1	0.549	37	0.825	73	0.998	109	0.910	145	0.814	181	0.894	217	0.749	253	0.659	289	0.633
2	0.547	38	0.825	74	0.996	110	0.921	146	0.819	182	0.885	218	0.737	254	0.663	290	0.636
3	0.547	39	0.825	75	0.992	111	0.930	147	0.824	183	0.877	219	0.725	255	0.666	291	0.639
4	0.548	40	0.824	76	0.986	112	0.939	148	0.831	184	0.869	220	0.712	256	0.669	292	0.641
5	0.552	41	0.824	77	0.979	113	0.946	149	0.840	185	0.862	221	0.699	257	0.670	293	0.644
6	0.557	42	0.825	78	0.971	114	0.953	150	0.849	186	0.855	222	0.686	258	0.671	294	0.646
7	0.565	43	0.825	79	0.962	115	0.958	151	0.859	187	0.849	223	0.673	259	0.671	295	0.648
8	0.574	44	0.826	80	0.951	116	0.963	152	0.870	188	0.845	224	0.660	260	0.670	296	0.649
9	0.584	45	0.828	81	0.940	117	0.966	153	0.882	189	0.840	225	0.647	261	0.668	297	0.650
10	0.596	46	0.830	82	0.928	118	0.968	154	0.894	190	0.837	226	0.634	262	0.665	298	0.651
11	0.609	47	0.833	83	0.916	119	0.968	155	0.905	191	0.835	227	0.622	263	0.662	299	0.651
12	0.622	48	0.837	84	0.903	120	0.968	156	0.917	192	0.833	228	0.611	264	0.659	300	0.650
13	0.636	49	0.841	85	0.890	121	0.966	157	0.928	193	0.832	229	0.600	265	0.655	301	0.649
14	0.651	50	0.846	86	0.877	122	0.963	158	0.939	194	0.831	230	0.590	266	0.651	302	0.648
15	0.665	51	0.852	87	0.864	123	0.959	159	0.949	195	0.831	231	0.582	267	0.646	303	0.646
16	0.680	52	0.859	88	0.852	124	0.954	160	0.958	196	0.832	232	0.575	268	0.642	304	0.644
17	0.695	53	0.866	89	0.840	125	0.947	161	0.966	197	0.832	233	0.569	269	0.637	305	0.641
18	0.708	54	0.874	90	0.830	126	0.940	162	0.973	198	0.833	234	0.565	270	0.633	306	0.638
19	0.722	55	0.883	91	0.821	127	0.932	163	0.979	199	0.834	235	0.562	271	0.629	307	0.635
20	0.735	56	0.892	92	0.813	128	0.924	164	0.983	200	0.834	236	0.561	272	0.625	308	0.632
21	0.747	57	0.901	93	0.807	129	0.914	165	0.986	201	0.834	237	0.561	273	0.622	309	0.629
22	0.758	58	0.911	94	0.803	130	0.905	166	0.988	202	0.834	238	0.563	274	0.619	310	0.626
23	0.768	59	0.921	95	0.801	131	0.895	167	0.989	203	0.833	239	0.566	275	0.617	311	0.623
24	0.778	60	0.931	96	0.801	132	0.884	168	0.988	204	0.832	240	0.570	276	0.615	312	0.620
25	0.786	61	0.940	97	0.802	133	0.874	169	0.986	205	0.831	241	0.576	277	0.614	313	0.618
26	0.794	62	0.950	98	0.806	134	0.864	170	0.982	206	0.828	242	0.582	278	0.613	314	0.616
27	0.800	63	0.959	99	0.811	135	0.854	171	0.978	207	0.825	243	0.589	279	0.613	315	0.614
28	0.806	64	0.967	100	0.817	136	0.845	172	0.972	208	0.821	244	0.596	280	0.613	316	0.613
29	0.811	65	0.975	101	0.825	137	0.837	173	0.966	209	0.816	245	0.604	281	0.614	317	0.612
30	0.815	66	0.982	102	0.834	138	0.829	174	0.958	210	0.811	246	0.612	282	0.615	318	0.612
31	0.818	67	0.988	103	0.844	139	0.823	175	0.950	211	0.804	247	0.620	283	0.617	319	0.612
32	0.821	68	0.992	104	0.855	140	0.818	176	0.942	212	0.797	248	0.628	284	0.619	320	0.613
33	0.822	69	0.996	105	0.866	141	0.814	177	0.932	213	0.789	249	0.635	285	0.622	321	0.615
34	0.824	70	0.999	106	0.877	142	0.812	178	0.923	214	0.780	250	0.642	286	0.624	322	0.617
35	0.824	71	1.000	107	0.889	143	0.811	179	0.913	215	0.770	251	0.649	287	0.627	323	0.620

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AZIMUTH PATTERN Vertical Polarization

Proposal No. **C-70638-3**
 Date **22-May-17**
 Call Letters **WAVE**
 Channel **36**
 Frequency **605 MHz**
 Antenna Type **TUM30-AP-S4-14/56H-R-2-T**
 Gain **2.24 (3.5dB)**
 Calculated

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.246	36	0.356	72	0.543	108	0.395	144	0.347	180	0.426	216	0.343	252	0.367	288	0.284
1	0.241	37	0.356	73	0.546	109	0.399	145	0.349	181	0.416	217	0.340	253	0.373	289	0.285
2	0.237	38	0.356	74	0.548	110	0.402	146	0.352	182	0.406	218	0.337	254	0.377	290	0.286
3	0.236	39	0.356	75	0.547	111	0.405	147	0.357	183	0.398	219	0.333	255	0.379	291	0.287
4	0.236	40	0.356	76	0.545	112	0.408	148	0.365	184	0.391	220	0.329	256	0.380	292	0.288
5	0.239	41	0.356	77	0.540	113	0.411	149	0.373	185	0.385	221	0.324	257	0.379	293	0.288
6	0.243	42	0.356	78	0.534	114	0.413	150	0.384	186	0.379	222	0.319	258	0.376	294	0.289
7	0.248	43	0.356	79	0.526	115	0.415	151	0.395	187	0.375	223	0.314	259	0.372	295	0.289
8	0.254	44	0.356	80	0.517	116	0.416	152	0.408	188	0.372	224	0.308	260	0.367	296	0.290
9	0.261	45	0.356	81	0.506	117	0.417	153	0.422	189	0.369	225	0.302	261	0.360	297	0.290
10	0.268	46	0.356	82	0.494	118	0.418	154	0.436	190	0.367	226	0.296	262	0.352	298	0.291
11	0.275	47	0.356	83	0.481	119	0.418	155	0.450	191	0.366	227	0.289	263	0.344	299	0.291
12	0.282	48	0.357	84	0.468	120	0.418	156	0.464	192	0.365	228	0.282	264	0.335	300	0.291
13	0.289	49	0.358	85	0.454	121	0.417	157	0.478	193	0.364	229	0.274	265	0.325	301	0.291
14	0.296	50	0.359	86	0.440	122	0.416	158	0.491	194	0.364	230	0.267	266	0.316	302	0.290
15	0.302	51	0.361	87	0.426	123	0.415	159	0.503	195	0.363	231	0.260	267	0.307	303	0.290
16	0.308	52	0.364	88	0.413	124	0.414	160	0.514	196	0.363	232	0.253	268	0.298	304	0.289
17	0.314	53	0.368	89	0.400	125	0.412	161	0.524	197	0.363	233	0.246	269	0.290	305	0.289
18	0.319	54	0.372	90	0.389	126	0.410	162	0.532	198	0.363	234	0.241	270	0.283	306	0.288
19	0.323	55	0.378	91	0.379	127	0.407	163	0.538	199	0.363	235	0.237	271	0.278	307	0.287
20	0.328	56	0.384	92	0.370	128	0.404	164	0.542	200	0.363	236	0.234	272	0.273	308	0.287
21	0.332	57	0.392	93	0.364	129	0.401	165	0.545	201	0.362	237	0.233	273	0.270	309	0.286
22	0.335	58	0.401	94	0.359	130	0.397	166	0.546	202	0.362	238	0.234	274	0.268	310	0.285
23	0.338	59	0.411	95	0.355	131	0.393	167	0.545	203	0.362	239	0.238	275	0.267	311	0.284
24	0.341	60	0.421	96	0.354	132	0.389	168	0.542	204	0.362	240	0.243	276	0.266	312	0.283
25	0.344	61	0.433	97	0.354	133	0.385	169	0.537	205	0.361	241	0.250	277	0.267	313	0.282
26	0.346	62	0.445	98	0.355	134	0.380	170	0.531	206	0.360	242	0.259	278	0.268	314	0.280
27	0.348	63	0.457	99	0.357	135	0.375	171	0.524	207	0.360	243	0.270	279	0.270	315	0.279
28	0.350	64	0.469	100	0.360	136	0.370	172	0.515	208	0.359	244	0.281	280	0.272	316	0.277
29	0.351	65	0.482	101	0.364	137	0.366	173	0.505	209	0.357	245	0.293	281	0.274	317	0.275
30	0.352	66	0.494	102	0.368	138	0.361	174	0.494	210	0.356	246	0.306	282	0.276	318	0.273
31	0.353	67	0.505	103	0.373	139	0.357	175	0.483	211	0.355	247	0.318	283	0.277	319	0.271
32	0.354	68	0.515	104	0.377	140	0.353	176	0.471	212	0.353	248	0.329	284	0.279	320	0.269
33	0.355	69	0.524	105	0.382	141	0.350	177	0.459	213	0.351	249	0.340	285	0.281	321	0.267
34	0.355	70	0.532	106	0.386	142	0.347	178	0.448	214	0.349	250	0.350	286	0.282	322	0.266
35	0.356	71	0.539	107	0.391	143	0.346	179	0.436	215	0.346	251	0.359	287	0.283	323	0.264

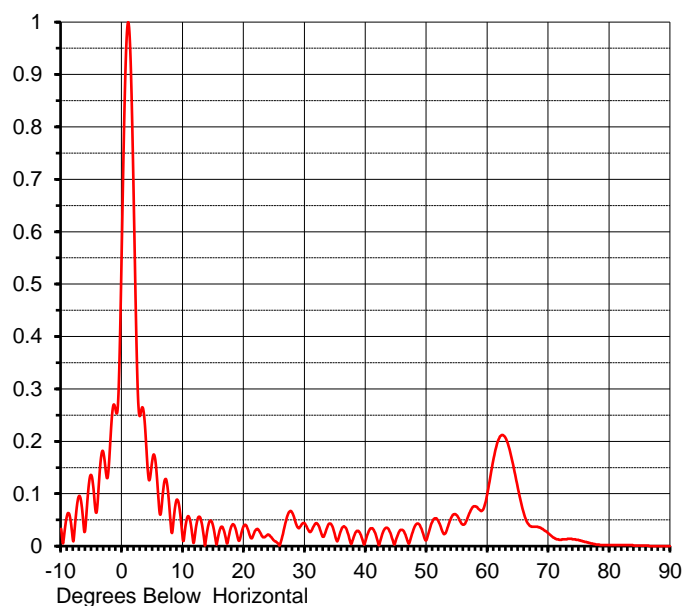
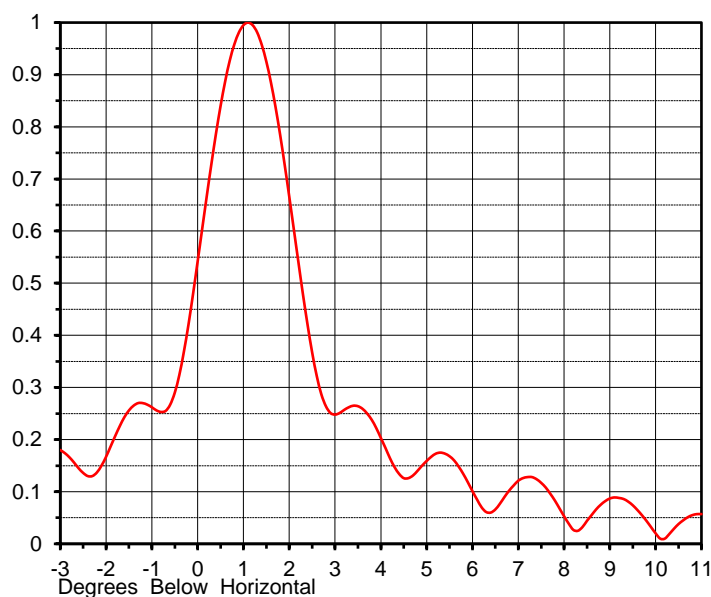
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ELEVATION PATTERN

Proposal No. **C-70638-3**
 Date **22-May-17**
 Call Letters **WAVE**
 Channel **36**
 Frequency **605 MHz**
 Antenna Type **TUM30-AP-S4-14/56H-R-2-T**

RMS Directivity at Main Lobe **27.6 (14.41 dB)**
 RMS Directivity at Horizontal **10.1 (10.04 dB)**
Calculated

Beam Tilt **1.00 deg**
 Pattern Number **14U276100**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.033	10.0	0.010	30.0	0.043	50.0	0.013	70.0	0.024
-9.0	0.060	11.0	0.055	31.0	0.028	51.0	0.049	71.0	0.015
-8.0	0.009	12.0	0.025	32.0	0.043	52.0	0.045	72.0	0.012
-7.0	0.096	13.0	0.047	33.0	0.018	53.0	0.024	73.0	0.013
-6.0	0.038	14.0	0.031	34.0	0.043	54.0	0.054	74.0	0.013
-5.0	0.134	15.0	0.035	35.0	0.018	55.0	0.058	75.0	0.011
-4.0	0.086	16.0	0.030	36.0	0.032	56.0	0.041	76.0	0.008
-3.0	0.174	17.0	0.016	37.0	0.026	57.0	0.063	77.0	0.005
-2.0	0.187	18.0	0.039	38.0	0.017	58.0	0.076	78.0	0.003
-1.0	0.256	19.0	0.015	39.0	0.026	59.0	0.067	79.0	0.002
0.0	0.605	20.0	0.039	40.0	0.012	60.0	0.104	80.0	0.002
1.0	1.000	21.0	0.019	41.0	0.034	61.0	0.169	81.0	0.002
2.0	0.603	22.0	0.032	42.0	0.007	62.0	0.209	82.0	0.002
3.0	0.251	23.0	0.019	43.0	0.031	63.0	0.205	83.0	0.002
4.0	0.184	24.0	0.022	44.0	0.026	64.0	0.164	84.0	0.001
5.0	0.167	25.0	0.010	45.0	0.014	65.0	0.108	85.0	0.001
6.0	0.085	26.0	0.006	46.0	0.031	66.0	0.060	86.0	0.001
7.0	0.126	27.0	0.053	47.0	0.005	67.0	0.038	87.0	0.000
8.0	0.039	28.0	0.062	48.0	0.037	68.0	0.037	88.0	0.000
9.0	0.089	29.0	0.034	49.0	0.036	69.0	0.033	89.0	0.000
								90.0	0.000

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