

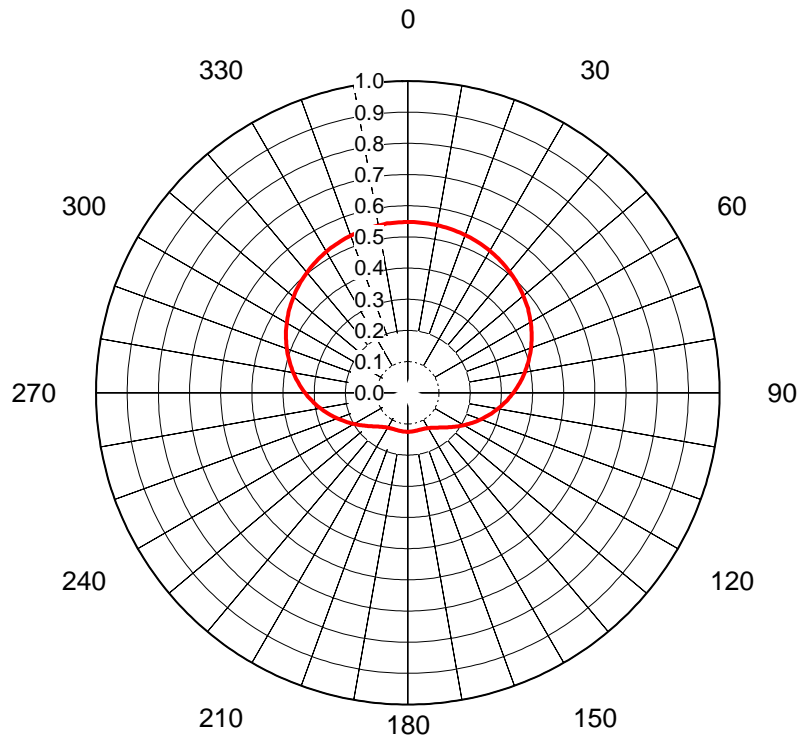
## AZIMUTH PATTERN Horizontal Polarization

In Free Space

Proposal No. **C-70531-4**  
Date **26-Jan-18**  
Call Letters **KNIC-CD**  
Channel **27**  
Frequency **551 MHz**  
Antenna Type **TLP-12B/VP**  
Gain **1.69 (2.28dB)**  
Calculated

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	1.000	36	0.935	72	0.765	108	0.621	144	0.632	180	0.676	216	0.635	252	0.617	288	0.755
1	1.000	37	0.931	73	0.760	109	0.619	145	0.633	181	0.676	217	0.633	253	0.619	289	0.760
2	1.000	38	0.928	74	0.755	110	0.617	146	0.635	182	0.676	218	0.632	254	0.621	290	0.765
3	1.000	39	0.924	75	0.750	111	0.615	147	0.637	183	0.676	219	0.630	255	0.623	291	0.770
4	1.000	40	0.920	76	0.744	112	0.614	148	0.639	184	0.675	220	0.628	256	0.625	292	0.776
5	0.999	41	0.916	77	0.739	113	0.613	149	0.640	185	0.675	221	0.627	257	0.627	293	0.781
6	0.999	42	0.912	78	0.734	114	0.612	150	0.642	186	0.675	222	0.625	258	0.630	294	0.786
7	0.998	43	0.908	79	0.729	115	0.611	151	0.644	187	0.674	223	0.623	259	0.632	295	0.791
8	0.997	44	0.904	80	0.724	116	0.610	152	0.646	188	0.674	224	0.622	260	0.635	296	0.797
9	1.000	45	0.899	81	0.719	117	0.609	153	0.648	189	0.673	225	0.620	261	0.638	297	0.802
10	0.996	46	0.895	82	0.714	118	0.608	154	0.649	190	0.672	226	0.619	262	0.641	298	0.807
11	0.995	47	0.891	83	0.710	119	0.608	155	0.651	191	0.672	227	0.617	263	0.644	299	0.812
12	0.993	48	0.886	84	0.705	120	0.608	156	0.653	192	0.671	228	0.616	264	0.647	300	0.818
13	0.992	49	0.881	85	0.700	121	0.608	157	0.654	193	0.670	229	0.615	265	0.651	301	0.823
14	0.991	50	0.877	86	0.695	122	0.608	158	0.656	194	0.669	230	0.614	266	0.654	302	0.828
15	0.989	51	0.872	87	0.691	123	0.608	159	0.657	195	0.668	231	0.613	267	0.658	303	0.833
16	0.988	52	0.867	88	0.686	124	0.608	160	0.659	196	0.667	232	0.612	268	0.662	304	0.838
17	0.986	53	0.863	89	0.682	125	0.608	161	0.660	197	0.666	233	0.611	269	0.665	305	0.843
18	0.984	54	0.858	90	0.678	126	0.609	162	0.662	198	0.664	234	0.610	270	0.669	306	0.848
19	0.982	55	0.853	91	0.674	127	0.609	163	0.663	199	0.663	235	0.609	271	0.674	307	0.853
20	0.980	56	0.848	92	0.669	128	0.610	164	0.664	200	0.662	236	0.609	272	0.678	308	0.858
21	0.978	57	0.843	93	0.665	129	0.611	165	0.666	201	0.660	237	0.608	273	0.682	309	0.863
22	0.976	58	0.838	94	0.662	130	0.612	166	0.667	202	0.659	238	0.608	274	0.686	310	0.867
23	0.974	59	0.833	95	0.658	131	0.613	167	0.668	203	0.657	239	0.608	275	0.691	311	0.872
24	0.971	60	0.828	96	0.654	132	0.614	168	0.669	204	0.656	240	0.608	276	0.695	312	0.877
25	0.969	61	0.823	97	0.651	133	0.615	169	0.670	205	0.654	241	0.608	277	0.700	313	0.881
26	0.966	62	0.818	98	0.647	134	0.616	170	0.671	206	0.653	242	0.608	278	0.705	314	0.886
27	0.964	63	0.812	99	0.644	135	0.617	171	0.672	207	0.651	243	0.608	279	0.710	315	0.891
28	0.961	64	0.807	100	0.641	136	0.619	172	0.672	208	0.649	244	0.608	280	0.714	316	0.895
29	0.958	65	0.802	101	0.638	137	0.620	173	0.673	209	0.648	245	0.609	281	0.719	317	0.899
30	0.955	66	0.797	102	0.635	138	0.622	174	0.674	210	0.646	246	0.610	282	0.724	318	0.904
31	0.952	67	0.791	103	0.632	139	0.623	175	0.674	211	0.644	247	0.611	283	0.729	319	0.908
32	0.949	68	0.786	104	0.630	140	0.625	176	0.675	212	0.642	248	0.612	284	0.734	320	0.912
33	0.945	69	0.781	105	0.627	141	0.627	177	0.675	213	0.640	249	0.613	285	0.739	321	0.916
34	0.942	70	0.776	106	0.625	142	0.628	178	0.675	214	0.639	250	0.614	286	0.744	322	0.920
35	0.938	71	0.770	107	0.623	143	0.630	179	0.676	215	0.637	251	0.615	287	0.750	323	0.924

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## AZIMUTH PATTERN Vertical Polarization

In Free Space

Proposal No. **C-70531-4**  
 Date **26-Jan-18**  
 Call Letters **KNIC-CD**  
 Channel **27**  
 Frequency **551 MHz**  
 Antenna Type **TLP-12B/VP**  
 Gain **2.23 (3.48dB)**  
 Calculated

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.548	36	0.516	72	0.413	108	0.258	144	0.139	180	0.125	216	0.136	252	0.249	288	0.405
1	0.548	37	0.514	73	0.409	109	0.254	145	0.137	181	0.125	217	0.137	253	0.254	289	0.409
2	0.548	38	0.512	74	0.405	110	0.249	146	0.136	182	0.125	218	0.139	254	0.258	290	0.413
3	0.548	39	0.510	75	0.401	111	0.245	147	0.134	183	0.125	219	0.140	255	0.263	291	0.417
4	0.547	40	0.508	76	0.397	112	0.241	148	0.133	184	0.125	220	0.142	256	0.267	292	0.420
5	0.547	41	0.506	77	0.394	113	0.236	149	0.132	185	0.125	221	0.144	257	0.271	293	0.424
6	0.547	42	0.504	78	0.389	114	0.232	150	0.131	186	0.125	222	0.146	258	0.276	294	0.428
7	0.547	43	0.501	79	0.385	115	0.228	151	0.130	187	0.125	223	0.148	259	0.280	295	0.431
8	0.546	44	0.499	80	0.381	116	0.224	152	0.129	188	0.125	224	0.150	260	0.285	296	0.435
9	0.546	45	0.497	81	0.377	117	0.220	153	0.128	189	0.125	225	0.153	261	0.289	297	0.438
10	0.546	46	0.494	82	0.373	118	0.216	154	0.128	190	0.125	226	0.155	262	0.294	298	0.442
11	0.545	47	0.492	83	0.369	119	0.212	155	0.127	191	0.125	227	0.158	263	0.298	299	0.445
12	0.545	48	0.489	84	0.365	120	0.208	156	0.127	192	0.125	228	0.160	264	0.303	300	0.448
13	0.544	49	0.487	85	0.360	121	0.204	157	0.126	193	0.125	229	0.163	265	0.307	301	0.452
14	0.544	50	0.484	86	0.356	122	0.200	158	0.126	194	0.125	230	0.166	266	0.312	302	0.455
15	0.543	51	0.481	87	0.352	123	0.196	159	0.125	195	0.125	231	0.169	267	0.316	303	0.458
16	0.542	52	0.479	88	0.347	124	0.192	160	0.125	196	0.125	232	0.172	268	0.321	304	0.461
17	0.541	53	0.476	89	0.343	125	0.189	161	0.125	197	0.125	233	0.175	269	0.325	305	0.464
18	0.540	54	0.473	90	0.339	126	0.185	162	0.125	198	0.125	234	0.179	270	0.330	306	0.467
19	0.539	55	0.471	91	0.334	127	0.182	163	0.125	199	0.125	235	0.182	271	0.334	307	0.470
20	0.538	56	0.467	92	0.330	128	0.179	164	0.125	200	0.125	236	0.185	272	0.339	308	0.473
21	0.537	57	0.464	93	0.325	129	0.175	165	0.125	201	0.125	237	0.189	273	0.343	309	0.476
22	0.536	58	0.461	94	0.321	130	0.172	166	0.125	202	0.125	238	0.192	274	0.347	310	0.479
23	0.535	59	0.458	95	0.316	131	0.169	167	0.125	203	0.125	239	0.196	275	0.352	311	0.481
24	0.534	60	0.455	96	0.312	132	0.166	168	0.125	204	0.126	240	0.200	276	0.356	312	0.484
25	0.533	61	0.452	97	0.307	133	0.163	169	0.125	205	0.126	241	0.204	277	0.360	313	0.487
26	0.532	62	0.448	98	0.303	134	0.160	170	0.125	206	0.127	242	0.208	278	0.365	314	0.489
27	0.530	63	0.445	99	0.298	135	0.158	171	0.125	207	0.127	243	0.212	279	0.369	315	0.492
28	0.529	64	0.442	100	0.294	136	0.155	172	0.125	208	0.128	244	0.216	280	0.373	316	0.494
29	0.527	65	0.438	101	0.289	137	0.153	173	0.125	209	0.128	245	0.220	281	0.377	317	0.497
30	0.526	66	0.435	102	0.285	138	0.150	174	0.125	210	0.129	246	0.224	282	0.381	318	0.499
31	0.524	67	0.431	103	0.280	139	0.148	175	0.125	211	0.130	247	0.228	283	0.385	319	0.501
32	0.523	68	0.428	104	0.276	140	0.146	176	0.125	212	0.131	248	0.232	284	0.389	320	0.504
33	0.521	69	0.424	105	0.271	141	0.144	177	0.125	213	0.132	249	0.236	285	0.394	321	0.506
34	0.519	70	0.420	106	0.267	142	0.142	178	0.125	214	0.133	250	0.241	286	0.397	322	0.508
35	0.518	71	0.417	107	0.263	143	0.140	179	0.125	215	0.134	251	0.245	287	0.401	323	0.510

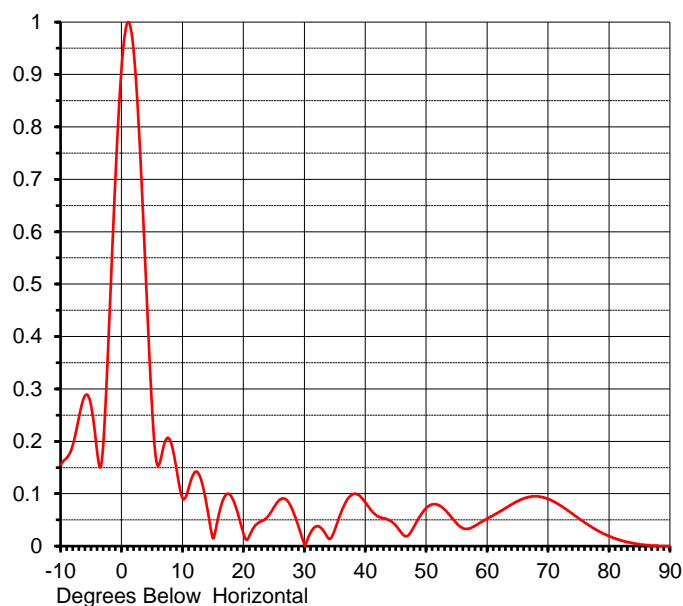
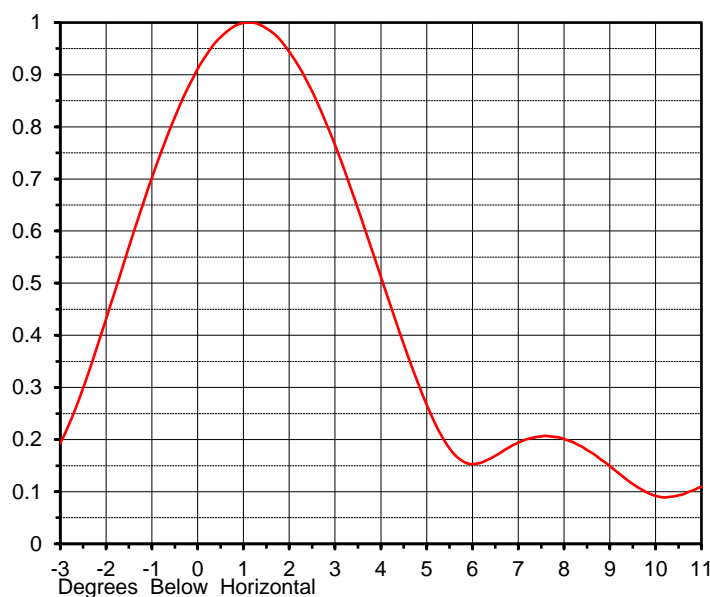
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## ELEVATION PATTERN

Proposal No. **C-70531-4**  
 Date **26-Jan-18**  
 Call Letters **KNIC-CD**  
 Channel **27**  
 Frequency **551 MHz**  
 Antenna Type **TLP-12B/VP**

RMS Directivity at Main Lobe **12.5 ( 10.97 dB )**  
 RMS Directivity at Horizontal **10.7 ( 10.29 dB )**  
**Calculated**

Beam Tilt **1.00 deg**  
 Pattern Number **12L125100**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.156	10.0	0.090	30.0	0.000	50.0	0.074	70.0	0.090
-9.0	0.170	11.0	0.114	31.0	0.027	51.0	0.080	71.0	0.084
-8.0	0.197	12.0	0.142	32.0	0.038	52.0	0.078	72.0	0.077
-7.0	0.250	13.0	0.125	33.0	0.030	53.0	0.069	73.0	0.069
-6.0	0.288	14.0	0.070	34.0	0.014	54.0	0.056	74.0	0.061
-5.0	0.262	15.0	0.015	35.0	0.034	55.0	0.042	75.0	0.052
-4.0	0.171	16.0	0.066	36.0	0.066	56.0	0.034	76.0	0.044
-3.0	0.211	17.0	0.097	37.0	0.090	57.0	0.034	77.0	0.037
-2.0	0.459	18.0	0.093	38.0	0.100	58.0	0.039	78.0	0.030
-1.0	0.727	19.0	0.062	39.0	0.096	59.0	0.046	79.0	0.024
0.0	0.926	20.0	0.021	40.0	0.082	60.0	0.053	80.0	0.019
1.0	1.000	21.0	0.022	41.0	0.067	61.0	0.059	81.0	0.014
2.0	0.931	22.0	0.041	42.0	0.057	62.0	0.066	82.0	0.010
3.0	0.742	23.0	0.048	43.0	0.053	63.0	0.073	83.0	0.008
4.0	0.486	24.0	0.058	44.0	0.048	64.0	0.080	84.0	0.005
5.0	0.247	25.0	0.076	45.0	0.038	65.0	0.086	85.0	0.003
6.0	0.154	26.0	0.089	46.0	0.023	66.0	0.091	86.0	0.002
7.0	0.198	27.0	0.088	47.0	0.021	67.0	0.094	87.0	0.001
8.0	0.198	28.0	0.068	48.0	0.039	68.0	0.095	88.0	0.000
9.0	0.142	29.0	0.035	49.0	0.059	69.0	0.093	89.0	0.000
								90.0	0.000

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