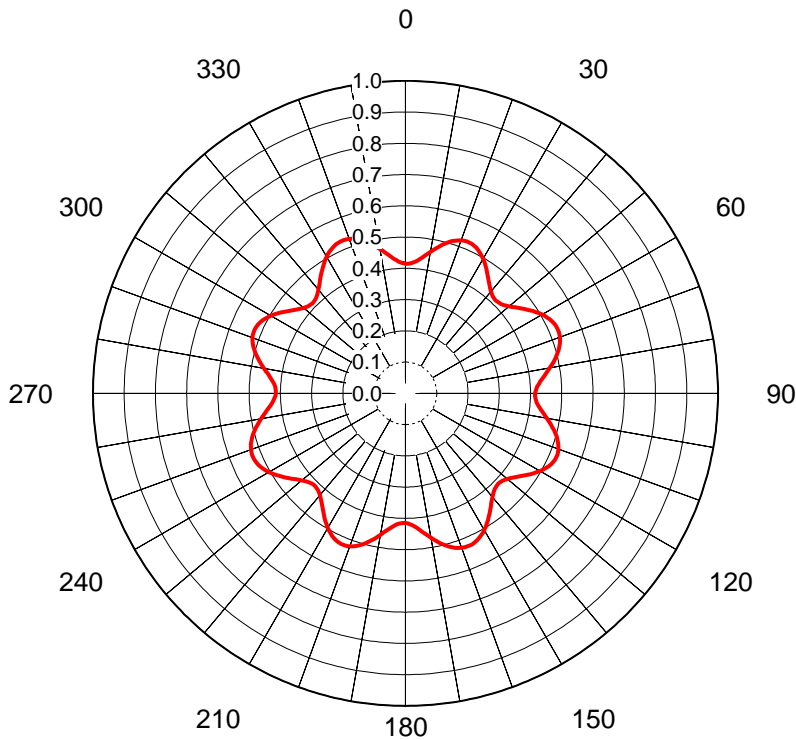


## AZIMUTH PATTERN Horizontal Polarization

Proposal No. **C-71902-3**  
 Date **24-Feb-23**  
 Call Letters **KBOI**  
 Channel **20**  
 Frequency **509 MHz**  
 Antenna Type **TFU-32GTQ/VP-R 08 BB**  
 Gain **1.11 (0.45dB)**  
 Calculated  
 Circularity **+/- 1.0 dB**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.920	36	0.950	72	0.951	108	0.993	144	0.930	180	0.920	216	0.950	252	0.951	288	0.993
1	0.921	37	0.945	73	0.950	109	0.996	145	0.933	181	0.921	217	0.945	253	0.950	289	0.996
2	0.923	38	0.940	74	0.948	110	0.998	146	0.935	182	0.923	218	0.940	254	0.948	290	0.998
3	0.926	39	0.936	75	0.945	111	0.999	147	0.938	183	0.926	219	0.936	255	0.945	291	0.999
4	0.929	40	0.932	76	0.943	112	1.000	148	0.941	184	0.929	220	0.932	256	0.943	292	1.000
5	0.932	41	0.929	77	0.941	113	1.000	149	0.943	185	0.932	221	0.929	257	0.941	293	1.000
6	0.936	42	0.926	78	0.938	114	0.999	150	0.945	186	0.936	222	0.926	258	0.938	294	0.999
7	0.940	43	0.923	79	0.935	115	0.998	151	0.948	187	0.940	223	0.923	259	0.935	295	0.998
8	0.945	44	0.921	80	0.933	116	0.996	152	0.950	188	0.945	224	0.921	260	0.933	296	0.996
9	0.950	45	0.920	81	0.930	117	0.993	153	0.951	189	0.950	225	0.920	261	0.930	297	0.993
10	0.955	46	0.919	82	0.928	118	0.989	154	0.953	190	0.955	226	0.919	262	0.928	298	0.989
11	0.961	47	0.919	83	0.925	119	0.986	155	0.954	191	0.961	227	0.919	263	0.925	299	0.986
12	0.966	48	0.920	84	0.923	120	0.981	156	0.954	192	0.966	228	0.920	264	0.923	300	0.981
13	0.971	49	0.921	85	0.922	121	0.976	157	0.955	193	0.971	229	0.921	265	0.922	301	0.976
14	0.976	50	0.922	86	0.921	122	0.971	158	0.955	194	0.976	230	0.922	266	0.921	302	0.971
15	0.981	51	0.923	87	0.920	123	0.966	159	0.954	195	0.981	231	0.923	267	0.920	303	0.966
16	0.986	52	0.925	88	0.919	124	0.961	160	0.954	196	0.986	232	0.925	268	0.919	304	0.961
17	0.989	53	0.928	89	0.919	125	0.955	161	0.953	197	0.989	233	0.928	269	0.919	305	0.955
18	0.993	54	0.930	90	0.920	126	0.950	162	0.951	198	0.993	234	0.930	270	0.920	306	0.950
19	0.996	55	0.933	91	0.921	127	0.945	163	0.950	199	0.996	235	0.933	271	0.921	307	0.945
20	0.998	56	0.935	92	0.923	128	0.940	164	0.948	200	0.998	236	0.935	272	0.923	308	0.940
21	0.999	57	0.938	93	0.926	129	0.936	165	0.945	201	0.999	237	0.938	273	0.926	309	0.936
22	1.000	58	0.941	94	0.929	130	0.932	166	0.943	202	1.000	238	0.941	274	0.929	310	0.932
23	1.000	59	0.943	95	0.932	131	0.929	167	0.941	203	1.000	239	0.943	275	0.932	311	0.929
24	0.999	60	0.945	96	0.936	132	0.926	168	0.938	204	0.999	240	0.945	276	0.936	312	0.926
25	0.998	61	0.948	97	0.940	133	0.923	169	0.935	205	0.998	241	0.948	277	0.940	313	0.923
26	0.996	62	0.950	98	0.945	134	0.921	170	0.933	206	0.996	242	0.950	278	0.945	314	0.921
27	0.993	63	0.951	99	0.950	135	0.920	171	0.930	207	0.993	243	0.951	279	0.950	315	0.920
28	0.989	64	0.953	100	0.955	136	0.919	172	0.928	208	0.989	244	0.953	280	0.955	316	0.919
29	0.986	65	0.954	101	0.961	137	0.919	173	0.925	209	0.986	245	0.954	281	0.961	317	0.919
30	0.981	66	0.954	102	0.966	138	0.920	174	0.923	210	0.981	246	0.954	282	0.966	318	0.920
31	0.976	67	0.955	103	0.971	139	0.921	175	0.922	211	0.976	247	0.955	283	0.971	319	0.921
32	0.971	68	0.955	104	0.976	140	0.922	176	0.921	212	0.971	248	0.955	284	0.976	320	0.922
33	0.966	69	0.954	105	0.981	141	0.923	177	0.920	213	0.966	249	0.954	285	0.981	321	0.923
34	0.961	70	0.954	106	0.986	142	0.925	178	0.919	214	0.961	250	0.954	286	0.986	322	0.925
35	0.955	71	0.953	107	0.989	143	0.928	179	0.919	215	0.955	251	0.953	287	0.989	323	0.928

This document contains proprietary and confidential information of Dielectric. It is to be used solely for the purpose for which it is provided. No disclosure, reproduction, or use of this document or any part of it may be made without the written permission of Dielectric.



## AZIMUTH PATTERN Vertical Polarization

Proposal No. **C-71902-3**  
 Date **24-Feb-23**  
 Call Letters **KBOI**  
 Channel **20**  
 Frequency **509 MHz**  
 Antenna Type **TFU-32GTQ/VP-R 08 BB**  
 Gain **1.24 (0.95dB)**  
 Calculated  
 Circularity **+/- 2.0 dB**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.415	36	0.452	72	0.520	108	0.514	144	0.461	180	0.415	216	0.452	252	0.520	288	0.514	324	0.461
1	0.415	37	0.444	73	0.515	109	0.518	145	0.469	181	0.415	217	0.444	253	0.515	289	0.518	325	0.469
2	0.416	38	0.437	74	0.510	110	0.521	146	0.477	182	0.416	218	0.437	254	0.510	290	0.521	326	0.477
3	0.418	39	0.431	75	0.505	111	0.523	147	0.484	183	0.418	219	0.431	255	0.505	291	0.523	327	0.484
4	0.421	40	0.426	76	0.498	112	0.524	148	0.491	184	0.421	220	0.426	256	0.498	292	0.524	328	0.491
5	0.426	41	0.421	77	0.491	113	0.524	149	0.498	185	0.426	221	0.421	257	0.491	293	0.524	329	0.498
6	0.431	42	0.418	78	0.484	114	0.523	150	0.505	186	0.431	222	0.418	258	0.484	294	0.523	330	0.505
7	0.437	43	0.416	79	0.477	115	0.521	151	0.510	187	0.437	223	0.416	259	0.477	295	0.521	331	0.510
8	0.444	44	0.415	80	0.469	116	0.518	152	0.515	188	0.444	224	0.415	260	0.469	296	0.518	332	0.515
9	0.452	45	0.415	81	0.461	117	0.514	153	0.520	189	0.452	225	0.415	261	0.461	297	0.514	333	0.520
10	0.459	46	0.416	82	0.454	118	0.509	154	0.523	190	0.459	226	0.416	262	0.454	298	0.509	334	0.523
11	0.467	47	0.419	83	0.446	119	0.503	155	0.526	191	0.467	227	0.419	263	0.446	299	0.503	335	0.526
12	0.475	48	0.423	84	0.439	120	0.497	156	0.528	192	0.475	228	0.423	264	0.439	300	0.497	336	0.528
13	0.483	49	0.427	85	0.433	121	0.490	157	0.529	193	0.483	229	0.427	265	0.433	301	0.490	337	0.529
14	0.490	50	0.433	86	0.427	122	0.483	158	0.529	194	0.490	230	0.433	266	0.427	302	0.483	338	0.529
15	0.497	51	0.439	87	0.423	123	0.475	159	0.528	195	0.497	231	0.439	267	0.423	303	0.475	339	0.528
16	0.503	52	0.446	88	0.419	124	0.467	160	0.526	196	0.503	232	0.446	268	0.419	304	0.467	340	0.526
17	0.509	53	0.454	89	0.416	125	0.459	161	0.523	197	0.509	233	0.454	269	0.416	305	0.459	341	0.523
18	0.514	54	0.461	90	0.415	126	0.452	162	0.520	198	0.514	234	0.461	270	0.415	306	0.452	342	0.520
19	0.518	55	0.469	91	0.415	127	0.444	163	0.515	199	0.518	235	0.469	271	0.415	307	0.444	343	0.515
20	0.521	56	0.477	92	0.416	128	0.437	164	0.510	200	0.521	236	0.477	272	0.416	308	0.437	344	0.510
21	0.523	57	0.484	93	0.418	129	0.431	165	0.505	201	0.523	237	0.484	273	0.418	309	0.431	345	0.505
22	0.524	58	0.491	94	0.421	130	0.426	166	0.498	202	0.524	238	0.491	274	0.421	310	0.426	346	0.498
23	0.524	59	0.498	95	0.426	131	0.421	167	0.491	203	0.524	239	0.498	275	0.426	311	0.421	347	0.491
24	0.523	60	0.505	96	0.431	132	0.418	168	0.484	204	0.523	240	0.505	276	0.431	312	0.418	348	0.484
25	0.521	61	0.510	97	0.437	133	0.416	169	0.477	205	0.521	241	0.510	277	0.437	313	0.416	349	0.477
26	0.518	62	0.515	98	0.444	134	0.415	170	0.469	206	0.518	242	0.515	278	0.444	314	0.415	350	0.469
27	0.514	63	0.520	99	0.452	135	0.415	171	0.461	207	0.514	243	0.520	279	0.452	315	0.415	351	0.461
28	0.509	64	0.523	100	0.459	136	0.416	172	0.454	208	0.509	244	0.523	280	0.459	316	0.416	352	0.454
29	0.503	65	0.526	101	0.467	137	0.419	173	0.446	209	0.503	245	0.526	281	0.467	317	0.419	353	0.446
30	0.497	66	0.528	102	0.475	138	0.423	174	0.439	210	0.497	246	0.528	282	0.475	318	0.423	354	0.439
31	0.490	67	0.529	103	0.483	139	0.427	175	0.433	211	0.490	247	0.529	283	0.483	319	0.427	355	0.433
32	0.483	68	0.529	104	0.490	140	0.433	176	0.427	212	0.483	248	0.529	284	0.490	320	0.433	356	0.427
33	0.475	69	0.528	105	0.497	141	0.439	177	0.423	213	0.475	249	0.528	285	0.497	321	0.439	357	0.423
34	0.467	70	0.526	106	0.503	142	0.446	178	0.419	214	0.467	250	0.526	286	0.503	322	0.446	358	0.419
35	0.459	71	0.523	107	0.509	143	0.454	179	0.416	215	0.459	251	0.523	287	0.509	323	0.454	359	0.416

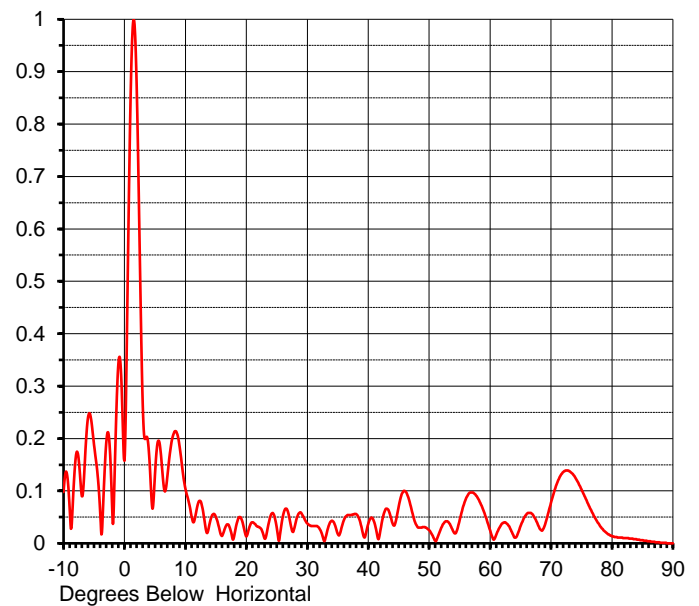
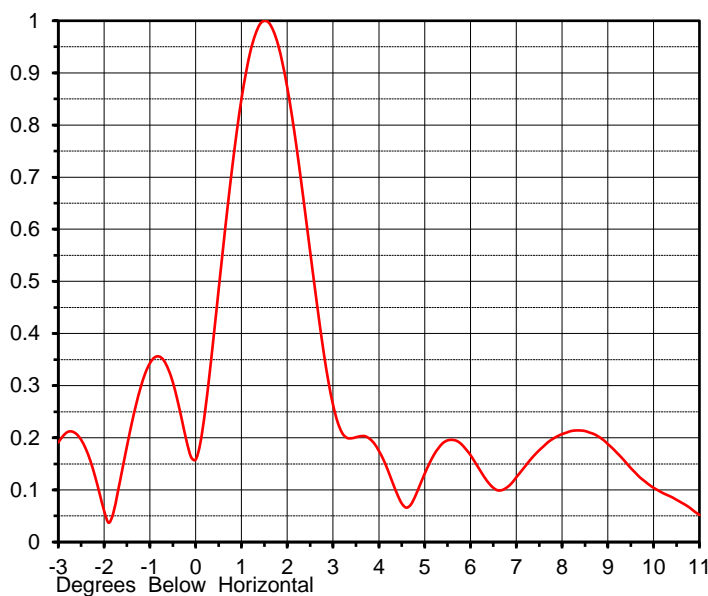
This document contains proprietary and confidential information of Dielectric. It is to be used solely for the purpose for which it is provided. No disclosure, reproduction, or use of this document or any part of it may be made without the written permission of Dielectric.

## ELEVATION PATTERN

Proposal No. **C-71902-3**  
 Date **24-Feb-23**  
 Call Letters **KBOI**  
 Channel **20**  
 Frequency **509 MHz**  
 Antenna Type **TFU-32GTQ/VP-R O8 BB**

RMS Directivity at Main Lobe **26.1 ( 14.17 dB )**  
 RMS Directivity at Horizontal **0.7 -( 1.55 dB )**  
**Calculated**

Beam Tilt **1.50 deg**  
 Pattern Number **32SP261150**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.098	10.0	0.104	30.0	0.038	50.0	0.025	70.0	0.078
-9.0	0.067	11.0	0.052	31.0	0.033	51.0	0.005	71.0	0.115
-8.0	0.164	12.0	0.073	32.0	0.028	52.0	0.030	72.0	0.136
-7.0	0.090	13.0	0.053	33.0	0.011	53.0	0.042	73.0	0.138
-6.0	0.239	14.0	0.039	34.0	0.043	54.0	0.022	74.0	0.125
-5.0	0.188	15.0	0.050	35.0	0.018	55.0	0.044	75.0	0.103
-4.0	0.061	16.0	0.014	36.0	0.044	56.0	0.084	76.0	0.077
-3.0	0.191	17.0	0.036	37.0	0.054	57.0	0.097	77.0	0.053
-2.0	0.060	18.0	0.014	38.0	0.056	58.0	0.086	78.0	0.034
-1.0	0.343	19.0	0.050	39.0	0.025	59.0	0.060	79.0	0.021
0.0	0.158	20.0	0.013	40.0	0.037	60.0	0.025	80.0	0.014
1.0	0.850	21.0	0.040	41.0	0.040	61.0	0.016	81.0	0.011
2.0	0.872	22.0	0.031	42.0	0.025	62.0	0.038	82.0	0.010
3.0	0.263	23.0	0.009	43.0	0.066	63.0	0.034	83.0	0.009
4.0	0.175	24.0	0.053	44.0	0.038	64.0	0.011	84.0	0.008
5.0	0.131	25.0	0.029	45.0	0.070	65.0	0.033	85.0	0.006
6.0	0.167	26.0	0.052	46.0	0.100	66.0	0.056	86.0	0.004
7.0	0.124	27.0	0.052	47.0	0.070	67.0	0.055	87.0	0.003
8.0	0.207	28.0	0.035	48.0	0.033	68.0	0.032	88.0	0.001
9.0	0.188	29.0	0.058	49.0	0.031	69.0	0.035	89.0	0.000
								90.0	0.000

This document contains proprietary and confidential information of Dielectric. It is to be used solely for the purpose for which it is provided. No disclosure, reproduction, or use of this document or any part of it may be made without the written permission of Dielectric.