ENGINEERING STATEMENT

IN SUPPORT OF

APPLICATION FOR MINOR MODIFICATION OF A LICENSED FACILITY

K22OG-D

FARGO, ND

Background

Major Market Broadcasting of North Dakota, Inc. (MMBND), is seeking, in its instant application, to move K22OG-D to a new transmit location.

Proposed Parameters

MMBND is proposing the following parameters for the K22OG-D digital operation on Ch. 22:

Coordinates:	47° 08' 42.5" N (NAD83) 96° 58' 19.0" W
ASR#	1208726
ERP:	6.9 kW
RCAMSL:	320.0m
RCAGL:	50.0m
Antenna:	Scala K723147
Mask:	Full-Service

Interference

An interference study was conducted of the proposed facility parameters using the FCC TVStudy software (Version 2.2.5) with the default parameters. The results of the study (copy attached hereto) show that potential interference from the proposed facility is not predicted to exceed 0.49% to any full-service DTV or Class A stations or 1.99% to any low power stations as required by the Commission's Rules.

Environmental/RFR

This report addresses only the conditions specified in 47CFR1.1307 that deal with Radio Frequency Radiation. Any other non-RFR conditions that might require the preparation of an EA are beyond the scope of this report; since the structure is existing and registered, such conditions should not be an issue requiring further consideration.

The location of the proposed facility is a multi-user site and it is assumed to currently be "in compliance" with FCC guidelines for human exposure to RFR (as defined in OET-65). The worst-case ground level RFR contributed to the site by this proposal is calculated to be 0.006253 mW/cm^2 at 2m AGL, assuming a worst-case 100% relative field at downward elevation angles. The calculated RFR is less than 5% of the maximum permissible exposure (MPE) for public areas (0.347333 mW/cm^2) at Ch. 22 (518-524 MHz). Per Section 1.1307(b) of the FCC Rules, the proposed operation would be categorically excluded from taking corrective action in areas with levels above the MPE limit where the contribution to the RFR from the proposed facility is less than 5%.

MMBND agrees to comply with the Commission's requirements regarding power adjustments or cessation of operation as may be necessary to ensure a compliant environment for worker access.

Certification

I hereby certify that the foregoing report or statement was prepared by me but may include work performed by others under my supervision or direction. The statements of fact contained therein are believed to be true and correct based on personal knowledge, information and belief unless otherwise stated; with respect to facts not known of my own personal knowledge, I believe them to be true and correct based on their origin from sources known to me to be generally reliable and accurate. I have prepared this document with due care and in accordance with applicable standards of professional practice.

Benjamin Pidek, P.E.
April 27, 2023

Attached:
TVStudy Interference Check Report for Proposed K22OG-D Facility
Antenna Azimuth and Elevation Pattern Plots and Tabulations

TVStudy TV Interference Check Report for Proposed K22OG-D Facility on Ch. 22

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Study created: 2023.04.27 21:34:03

Study build station data: LMS TV 2023-04-26

    Proposal: K22OG-D D22 LD LIC FARGO, ND
 File number: K22OG_1208726_7kW
 Facility ID: 188581
Station data: User record
   Record ID: 330
     Country: U.S.

Build options:
Protect pre-transition records not on baseline channel

Search options:
Non-U.S. records included

Stations potentially affected by proposal:

IX   Call      Chan       Svc Status  City, State               File Number            Distance
No   K21GN-D   D21        LD  LIC     ALEXANDRIA, MN            BLDTL20120312ACI       178.1 km
No   WDAY-TV   D21        DT  LIC     FARGO, ND                 BLCDT20061222ABH        23.1
No   K48DV-D   D22        LD  LIC     ALEXANDRIA, MN            BLANK0000063271        178.1
No   K47NW-D   D22        LD  LIC     INTERNATIONAL FALLS, MN   BLANK0000063841        315.0
No   WUCW      D22        DT  CP      MINNEAPOLIS, MN           BLANK0000185669        375.2
No   WUCW      D22        DT  LIC     MINNEAPOLIS, MN           BLCDT20060405AAI       375.2
No   K49LO-D   D22        LD  LIC     RED LAKE, MN              BLANK0000068192        164.6
No   K22KU-D   D22        LD  LIC     REDWOOD FALLS, MN         BLDTT20120604AAW       327.6
No   K22MR-D   D22-       LD  LIC     VIRGINIA, MN              BLANK0000073048        337.5
No   K47JC-D   D22        LD  CP      WADENA, MN                BLANK0000195640        163.5
No   K22ND-D   D22        LD  LIC     WILLMAR, MN               BLANK0000060754        265.4
No   KBME-TV   D22        DT  LIC     BISMARCK, ND              BLEDT20020122AAD       297.4
No   KCPM-LP   D23+       LD  APP     FARGO, ND                 BLANK0000151969         33.5

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

    Channel: D22
       Mask: Full Service
   Latitude:  47  8 42.50 N (NAD83)
  Longitude:  96 58 19.00 W
Height AMSL: 320.0 m
       HAAT: 0.0 m
   Peak ERP: 6.90 kW
    Antenna: KAT-K723147 (ID 1008973) 155.0 deg
Elev Pattrn: Generic

49.6 dBu contour:
Azimuth      ERP       HAAT   Distance
  0.0 deg  0.011 kW    49.7 m    7.6 km
 45.0      0.025       53.7      9.8
 90.0      0.334       52.8     18.6
135.0       5.22       51.4     31.8
180.0       4.36       48.7     30.3
225.0      0.177       41.5     13.7
270.0      0.025       38.1      8.1
315.0      0.017       42.9      7.9
```

Database HAAT does not agree with computed HAAT
Database HAAT: 0 m Computed HAAT: 47 m

Proposal 24.56 dBu contour does not cross Canadian border
Distance to Canadian border: 206.2 km

Distance to Mexican border: 1889.9 km

Conditions at FCC monitoring station: Grand Island NE
Bearing: 190.1 degrees Distance: 701.3 km

Proposal is not within the West Virginia quiet zone area

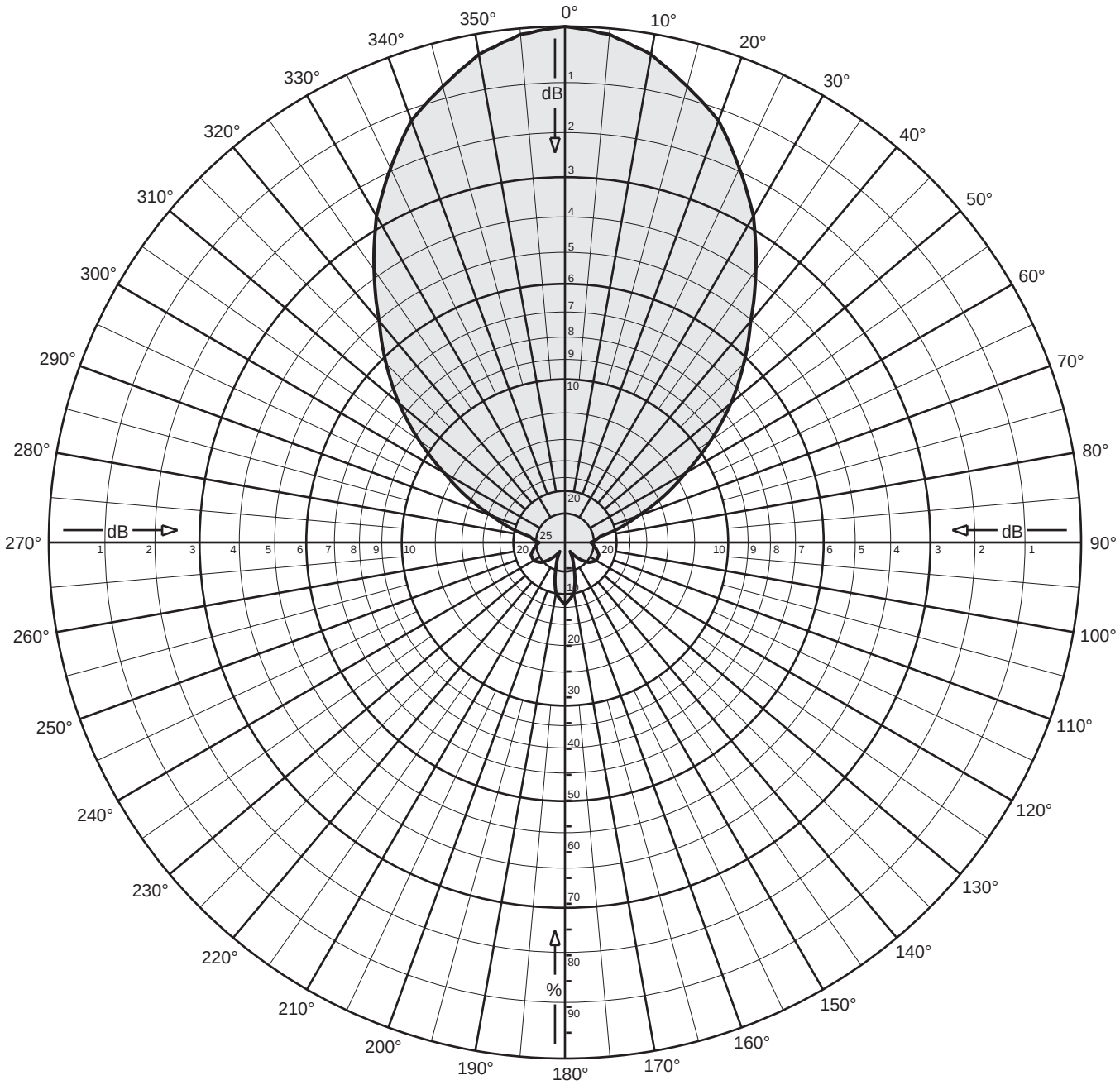
Conditions at Table Mountain receiving zone:
Bearing: 223.4 degrees Distance: 1020.9 km

Study cell size: 1.00 km
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

---- Below is IX received by proposal K22OG_1208726_7kW ----

Proposal receives 40.91% interference from scenario 1
No IX check failures found.



K723147
500 MHz
Maximum gain: 9.7 dBd
Horizontal polarization
Horizontal plane pattern

KATHREIN
USA

Kathrein Scala K723147 - Ch. 22

TABULATED DATA FOR AZIMUTH PATTERN

ANGLE	FIELD
0	1.000
1	0.998
2	0.995
3	0.993
4	0.990
5	0.989
6	0.982
7	0.977
8	0.971
9	0.966
10	0.961
11	0.951
12	0.942
13	0.933
14	0.924
15	0.915
16	0.906
17	0.897
18	0.888
19	0.879
20	0.870
21	0.856
22	0.842
23	0.828
24	0.814
25	0.800
26	0.786
27	0.772
28	0.758
29	0.744
30	0.730
31	0.713
32	0.696
33	0.679
34	0.662
35	0.645
36	0.628
37	0.611
38	0.594
39	0.577
40	0.560
41	0.546
42	0.532
43	0.518
44	0.504
45	0.490
46	0.476
47	0.462
48	0.448
49	0.434
50	0.420
51	0.405

ANGLE	FIELD
52	0.390
53	0.375
54	0.360
55	0.345
56	0.330
57	0.315
58	0.300
59	0.285
60	0.270
61	0.258
62	0.246
63	0.234
64	0.222
65	0.210
66	0.198
67	0.186
68	0.174
69	0.162
70	0.150
71	0.142
72	0.134
73	0.126
74	0.118
75	0.110
76	0.102
77	0.094
78	0.086
79	0.078
80	0.070
81	0.068
82	0.066
83	0.064
84	0.062
85	0.060
86	0.058
87	0.056
88	0.054
89	0.052
90	0.050
91	0.051
92	0.052
93	0.053
94	0.054
95	0.055
96	0.056
97	0.057
98	0.058
99	0.059
100	0.060
101	0.061
102	0.062
103	0.063

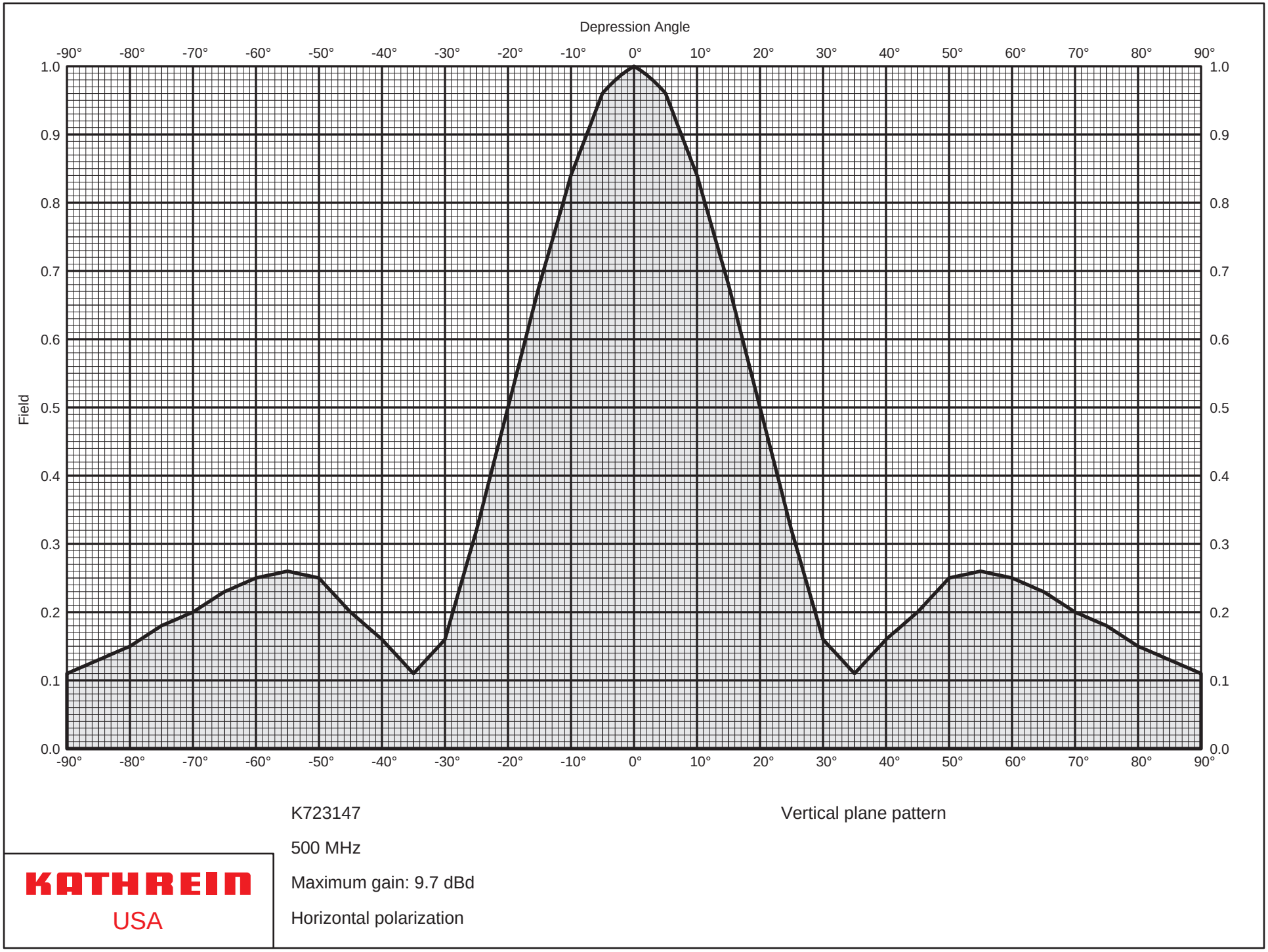
ANGLE	FIELD
104	0.064
105	0.065
106	0.066
107	0.067
108	0.068
109	0.069
110	0.070
111	0.070
112	0.070
113	0.070
114	0.070
115	0.070
116	0.070
117	0.070
118	0.070
119	0.070
120	0.070
121	0.069
122	0.068
123	0.067
124	0.066
125	0.065
126	0.064
127	0.063
128	0.062
129	0.061
130	0.060
131	0.058
132	0.056
133	0.054
134	0.052
135	0.050
136	0.048
137	0.046
138	0.044
139	0.042
140	0.040
141	0.038
142	0.036
143	0.034
144	0.032
145	0.030
146	0.028
147	0.026
148	0.024
149	0.022
150	0.020
151	0.023
152	0.026
153	0.029
154	0.032
155	0.035

ANGLE	FIELD
156	0.038
157	0.041
158	0.044
159	0.047
160	0.050
161	0.055
162	0.060
163	0.065
164	0.070
165	0.075
166	0.080
167	0.085
168	0.090
169	0.095
170	0.100
171	0.102
172	0.104
173	0.106
174	0.108
175	0.110
176	0.112
177	0.114
178	0.116
179	0.118
180	0.120
181	0.118
182	0.116
183	0.114
184	0.112
185	0.110
186	0.108
187	0.106
188	0.104
189	0.102
190	0.100
191	0.095
192	0.090
193	0.085
194	0.080
195	0.075
196	0.070
197	0.065
198	0.060
199	0.055
200	0.050
201	0.047
202	0.044
203	0.041
204	0.038
205	0.035
206	0.032
207	0.029

ANGLE	FIELD
208	0.026
209	0.023
210	0.020
211	0.022
212	0.024
213	0.026
214	0.028
215	0.030
216	0.032
217	0.034
218	0.036
219	0.038
220	0.040
221	0.042
222	0.044
223	0.046
224	0.048
225	0.050
226	0.052
227	0.054
228	0.056
229	0.058
230	0.060
231	0.061
232	0.062
233	0.063
234	0.064
235	0.065
236	0.066
237	0.067
238	0.068
239	0.069
240	0.070
241	0.070
242	0.070
243	0.070
244	0.070
245	0.070
246	0.070
247	0.070
248	0.070
249	0.070
250	0.070
251	0.069
252	0.068
253	0.067
254	0.066
255	0.065
256	0.064
257	0.063
258	0.062
259	0.061

ANGLE	FIELD
260	0.060
261	0.059
262	0.058
263	0.057
264	0.056
265	0.055
266	0.054
267	0.053
268	0.052
269	0.051
270	0.050
271	0.052
272	0.054
273	0.056
274	0.058
275	0.060
276	0.062
277	0.064
278	0.066
279	0.068
280	0.070
281	0.078
282	0.086
283	0.094
284	0.102
285	0.110
286	0.118
287	0.126
288	0.134
289	0.142
290	0.150
291	0.162
292	0.174
293	0.186
294	0.198
295	0.210
296	0.222
297	0.234
298	0.246
299	0.258
300	0.270
301	0.285
302	0.300
303	0.315
304	0.330
305	0.345
306	0.360
307	0.375
308	0.390
309	0.405
310	0.420
311	0.434

ANGLE	FIELD
312	0.448
313	0.462
314	0.476
315	0.490
316	0.504
317	0.518
318	0.532
319	0.546
320	0.560
321	0.577
322	0.594
323	0.611
324	0.628
325	0.645
326	0.662
327	0.679
328	0.696
329	0.713
330	0.730
331	0.744
332	0.758
333	0.772
334	0.786
335	0.800
336	0.814
337	0.828
338	0.842
339	0.856
340	0.870
341	0.879
342	0.888
343	0.897
344	0.906
345	0.915
346	0.924
347	0.933
348	0.942
349	0.951
350	0.961
351	0.966
352	0.971
353	0.977
354	0.982
355	0.989
356	0.990
357	0.993
358	0.995
359	0.998



K723147

Vertical plane pattern

500 MHz

Maximum gain: 9.7 dBd

Horizontal polarization

KATHREIN

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