



ENGINEERING STATEMENT

**In support of an
Application for Construction Permit
For Digital Channel 13
KCOS-DT El Paso, TX
4.5 kW ERP 259 m HAAT**

PURPOSE

MARSAND, INC. has been retained by El Paso Public Television Foundation, the Licensee of KCOS analog Channel 13 of El Paso, TX, to prepare this engineering statement in support of an Application for Construction Permit (CP) for post-transition digital service on KCOS-DT Channel 13. There is a License for the paired transitional digital Channel 30 (BLEDT-20060728AC), but a form 382 was filed electing to return to the existing, licensed analog Channel 13 (BLET-19800321KF). Subsequently, the Federal Communications Commission (the "Commission") established Channel 13 for KCOS's post-transition operation in its release of the Seventh Report and Order in MB Docket No. 87-258 Appendix B ("Appendix B"). In this application, KCOS-DT seeks authorization for post-transitional digital operation on its Channel 13 at 4.5 kW Effective Radiated Power (ERP) and 259 m Height Above Average Terrain (HAAT) utilizing the existing, analog non-directional antenna.

DISCUSSION

KCOS-DT proposes to use the existing, licensed analog Channel 13 antenna, upgrade its analog transmitter for digital service, and install a new digital RF filter. Since the predicted 36 dBu F(50,90) contour of the proposed digital facilities would fall outside of the predicted DTV F(50,90) service grade contour (see **Figure 1**) of the allotted digital facility specified in Appendix B, KCOS-DT requests a waiver of the DTV Filing Freeze as permitted in Paragraph 151 of the Third Periodic Review Report and Order. The predicted contour of the proposed

digital facility does not extend more than 5 miles in any azimuth more than the predicted contour of the allotted facility in Appendix B (See "Contour Comparison – Proposed vs. Appendix B" in the appendix of this document). Furthermore, an interference study using the TV Process by Techware (a software program which is familiar to the Commission that is written in Fortran and run on a Sun Microsystems workstation and employs the methods outlined in the OET 69 Bulletin), confirms that the proposed facility would not exceed 0.5% new interference to any other station listed in Appendix B. A summary of the interference study is listed in **Table 2**.

The predicted F(50,90) 43 dBu contour would encompass the principal community, El Paso, TX, entirely as shown in **Figure 1**. A population study under the 36 dBu contour predicts service to 816,317 people or 96% of the population specified in the new DTV Table Appendix B.

There is no additional predicted interference to others based on the DTV Table Appendix B. The proposal is clear of any FCC monitoring stations, quiet zones, and Table Mountain. It is also further than 3.2 km from the nearest AM station. However, the proposal is 3.4 km from the Mexican Border, and, if required, international coordination is requested.

CONCLUSION

It is respectfully requested that the Commission grant this request for CP for the proposed transmission facility as indicated in the accompanying TECH BOX.

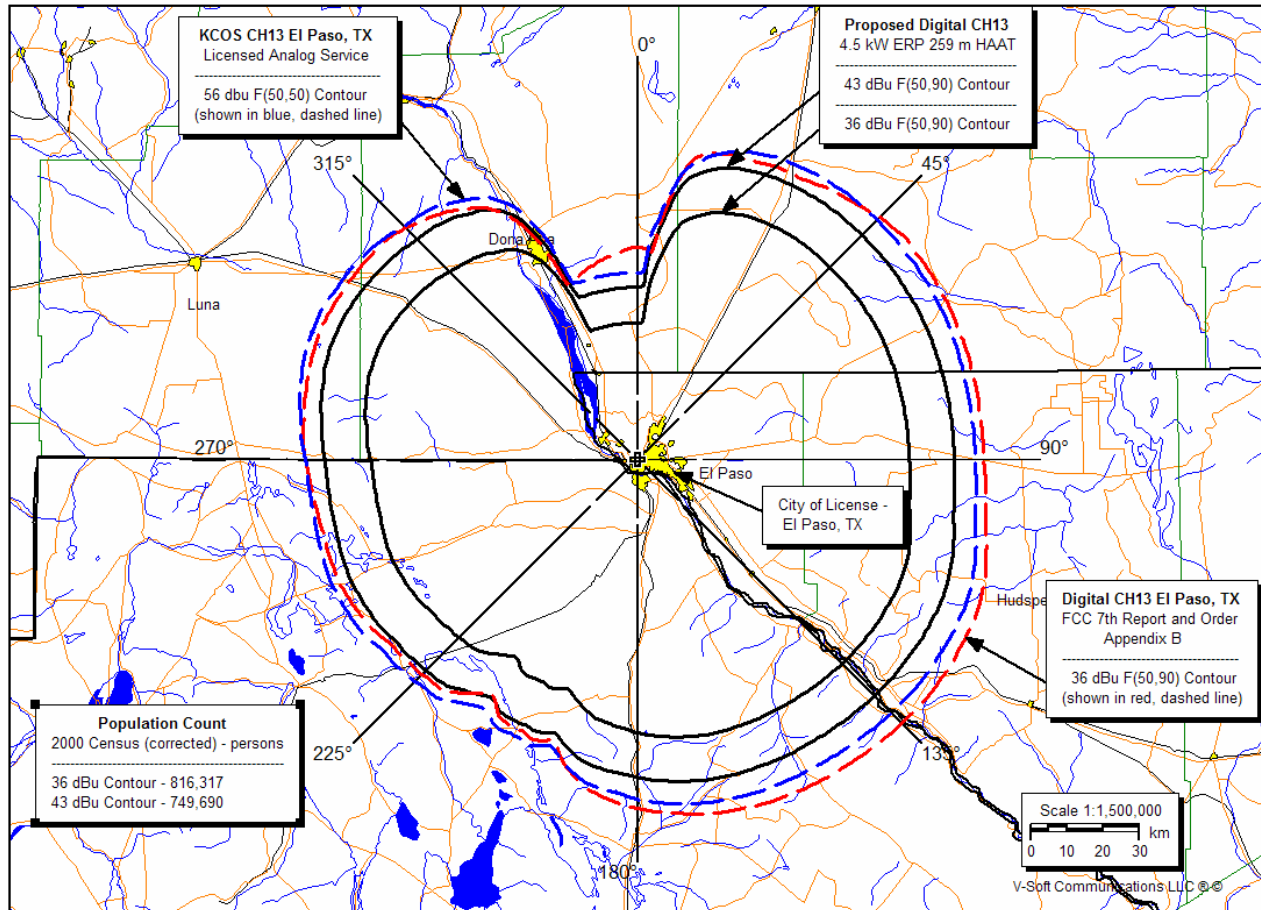


Figure 1 – Coverage Map of the Proposal

Stations Potentially Affected by Proposal	Interference	
	Existing	New
KOBG-TV Silver City, NM	(See Note 2)	
KRQE Albuquerque, NM	0.00%	0.0032%

Notes:

1. Proposed Station is beyond the site to the nearest cell
2. Proposal causes no interference.

Table 1 – Summary of Interference Analysis of the Proposal



MARSAND, INC.

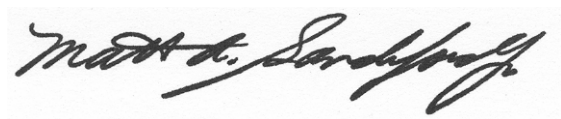
Matthew A. Sanderford, Jr., P.E.

DECLARATION

Matthew A. Sanderford, Jr., P.E., declares and states that he is a graduate Electrical Engineer with a Bachelor of Science Degree in Electrical Engineering from the University of Texas at El Paso, a Licensed Professional Engineer in the State of Texas, and his qualifications are known to the Federal Communications Commission, and that he is President of MARSAND, INC., a Registered Professional Engineering firm in the State of Texas, and that firm has been retained by El Paso Public Broadcasting Foundation, to perform the engineering support as contained in this report.

All facts contained herein are true of his own knowledge except where stated to be on information or belief provided by El Paso Public Broadcasting Foundation, and as to those facts, he believes them to be true.

I declare under penalty of perjury that the foregoing is true and correct.



Matthew A. Sanderford, Jr., P.E.

President - MARSAND, INC.

Executed this 14th day of April, 2008

State of Texas

Appendix

Contour Comparison - Proposed vs. Appendix B			
36 dBu F(50,90) Contours - 3 second US Terrain			
Bearing (deg)	Proposed Facility Distance (km)	Appendix B Allotted Facility Distance (km)	Difference (km)
0	47.1	58.1	-11
1	47.1	57.8	-10.7
2	47.5	57.5	-10
3	53.8	57.3	-3.5
4	58.7	57	1.7
5	61.5	60.8	0.7
6	64.9	66.7	-1.8
7	68.8	71.5	-2.7
8	72.2	75.6	-3.4
9	75.4	79.3	-3.9
10	77.5	82.1	-4.6
11	78.8	83.9	-5.1
12	79.6	84.9	-5.3
13	80.5	85.7	-5.2
14	81.3	86.1	-4.8
15	82	86.4	-4.4
16	82.7	86.7	-4
17	83.3	87	-3.7
18	83.8	87.1	-3.3
19	84.1	87.1	-3
20	84.4	86.9	-2.5
21	84.6	87.2	-2.6
22	84.8	87.6	-2.8
23	85	87.9	-2.9
24	85.2	88.1	-2.9
25	85.4	88.3	-2.9
26	85.5	88.4	-2.9
27	85.7	88.5	-2.8
28	85.8	88.6	-2.8
29	85.9	88.6	-2.7
30	86	88.7	-2.7
31	86.1	89.1	-3
32	86.2	89.4	-3.2
33	86.3	89.7	-3.4
34	86.3	90	-3.7
35	86.4	90.4	-4
36	86.5	90.7	-4.2
37	86.5	90.9	-4.4
38	86.6	91.2	-4.6
39	86.6	91.5	-4.9
40	86.6	91.7	-5.1
41	86.7	92.1	-5.4
42	86.7	92.4	-5.7
43	86.7	92.8	-6.1
44	86.7	93.1	-6.4

45	86.7	93.4	-6.7
46	86.7	93.7	-7
47	86.8	94	-7.2
48	86.8	94.3	-7.5
49	86.8	94.6	-7.8
50	86.8	94.9	-8.1
51	86.8	94.9	-8.1
52	86.8	94.9	-8.1
53	86.8	94.9	-8.1
54	86.8	94.9	-8.1
55	86.8	94.9	-8.1
56	86.8	94.9	-8.1
57	86.8	94.9	-8.1
58	86.8	94.9	-8.1
59	86.8	94.9	-8.1
60	86.8	94.9	-8.1
61	86.8	94.9	-8.1
62	86.8	94.9	-8.1
63	86.8	94.8	-8
64	86.8	94.8	-8
65	86.8	94.8	-8
66	86.8	94.8	-8
67	86.8	94.8	-8
68	86.7	94.8	-8.1
69	86.7	94.7	-8
70	86.6	94.7	-8.1
71	86.6	94.7	-8.1
72	86.6	94.7	-8.1
73	86.5	94.6	-8.1
74	86.5	94.6	-8.1
75	86.5	94.6	-8.1
76	86.5	94.6	-8.1
77	86.4	94.5	-8.1
78	86.4	94.5	-8.1
79	86.4	94.5	-8.1
80	86.4	94.5	-8.1
81	86.4	94.5	-8.1
82	86.4	94.5	-8.1
83	86.4	94.5	-8.1
84	86.4	94.5	-8.1
85	86.4	94.5	-8.1
86	86.4	94.5	-8.1
87	86.5	94.5	-8
88	86.5	94.5	-8
89	86.5	94.5	-8
90	86.6	94.5	-7.9
91	86.6	94.7	-8.1
92	86.7	94.9	-8.2
93	86.7	95.1	-8.4
94	86.8	95.3	-8.5
95	86.9	95.5	-8.6

96	87.1	95.7	-8.6
97	87.2	95.9	-8.7
98	87.3	96.1	-8.8
99	87.5	96.4	-8.9
100	87.7	96.6	-8.9
101	88	96.9	-8.9
102	88.3	97.3	-9
103	88.7	97.7	-9
104	89.1	98.2	-9.1
105	89.4	98.6	-9.2
106	89.7	99	-9.3
107	90.1	99.5	-9.4
108	90.4	100	-9.6
109	90.6	100.3	-9.7
110	90.8	100.7	-9.9
111	91	100.9	-9.9
112	91.2	101.2	-10
113	91.4	101.4	-10
114	91.5	101.6	-10.1
115	91.6	101.7	-10.1
116	91.6	101.8	-10.2
117	91.6	101.9	-10.3
118	91.7	102	-10.3
119	91.7	102	-10.3
120	91.7	102.1	-10.4
121	91.7	102.2	-10.5
122	91.7	102.2	-10.5
123	91.8	102.3	-10.5
124	91.8	102.3	-10.5
125	91.8	102.3	-10.5
126	91.8	102.4	-10.6
127	91.8	102.4	-10.6
128	91.8	102.4	-10.6
129	91.8	102.4	-10.6
130	91.8	102.4	-10.6
131	91.7	102.4	-10.7
132	91.7	102.3	-10.6
133	91.6	102.3	-10.7
134	91.6	102.2	-10.6
135	91.5	102.2	-10.7
136	91.5	102.1	-10.6
137	91.4	102.1	-10.7
138	91.3	102	-10.7
139	91.3	101.9	-10.6
140	91.2	101.8	-10.6
141	91.1	101.8	-10.7
142	91.1	101.7	-10.6
143	91	101.6	-10.6
144	91	101.5	-10.5
145	90.9	101.4	-10.5
146	90.9	101.4	-10.5

147	90.8	101.3	-10.5
148	90.8	101.2	-10.4
149	90.7	101.2	-10.5
150	90.7	101.1	-10.4
151	90.7	101	-10.3
152	90.6	101	-10.4
153	90.6	100.9	-10.3
154	90.6	100.8	-10.2
155	90.5	100.7	-10.2
156	90.5	100.6	-10.1
157	90.4	100.6	-10.2
158	90.4	100.5	-10.1
159	90.3	100.4	-10.1
160	90.3	100.3	-10
161	90.2	100.2	-10
162	90.2	100	-9.8
163	90.1	99.9	-9.8
164	90.1	99.7	-9.6
165	90	99.6	-9.6
166	89.9	99.4	-9.5
167	89.8	99.2	-9.4
168	89.6	99	-9.4
169	89.5	98.7	-9.2
170	89.3	98.4	-9.1
171	89.1	98.1	-9
172	88.9	97.8	-8.9
173	88.7	97.5	-8.8
174	88.5	97.2	-8.7
175	88.3	96.9	-8.6
176	88	96.6	-8.6
177	87.8	96.3	-8.5
178	87.6	96.1	-8.5
179	87.3	95.8	-8.5
180	87.1	95.5	-8.4
181	86.6	95.1	-8.5
182	86.2	94.6	-8.4
183	85.9	94.1	-8.2
184	85.7	93.8	-8.1
185	85.6	93.4	-7.8
186	85.2	92.7	-7.5
187	85	92.1	-7.1
188	84.8	91.5	-6.7
189	84.5	90.7	-6.2
190	84	89.6	-5.6
191	83.3	88.4	-5.1
192	82.7	87.5	-4.8
193	81.8	86.2	-4.4
194	80.8	84.9	-4.1
195	79.8	83.4	-3.6
196	78.6	81.2	-2.6
197	78.2	80.3	-2.1

198	78.6	80.9	-2.3
199	79	81.3	-2.3
200	79.3	81.6	-2.3
201	79.5	81.9	-2.4
202	78.9	80.9	-2
203	78.8	80.5	-1.7
204	78.9	80.6	-1.7
205	78.8	80.4	-1.6
206	78.9	80.4	-1.5
207	79	80.4	-1.4
208	78.7	79.8	-1.1
209	78.2	78.9	-0.7
210	77.3	77.2	0.1
211	76.5	75.8	0.7
212	76.4	75.6	0.8
213	76.9	76.4	0.5
214	77.5	77.3	0.2
215	78	78.2	-0.2
216	78.5	79	-0.5
217	79.1	79.9	-0.8
218	79.7	80.9	-1.2
219	80.4	81.8	-1.4
220	80.9	82.3	-1.4
221	81.1	82.6	-1.5
222	81.2	82.6	-1.4
223	81.2	82.7	-1.5
224	81.4	82.8	-1.4
225	81.7	83.2	-1.5
226	81.9	83.4	-1.5
227	81.9	83.4	-1.5
228	81.9	83.4	-1.5
229	82.3	83.8	-1.5
230	82.5	84	-1.5
231	82.6	84.1	-1.5
232	82.6	84.2	-1.6
233	82.6	84.2	-1.6
234	82.9	84.6	-1.7
235	83.2	85	-1.8
236	83.5	85.4	-1.9
237	83.7	85.7	-2
238	84	86.1	-2.1
239	84.2	86.4	-2.2
240	84.3	86.7	-2.4
241	84.4	86.9	-2.5
242	84.5	87.1	-2.6
243	84.6	87.3	-2.7
244	84.7	87.5	-2.8
245	84.8	87.7	-2.9
246	84.9	87.9	-3
247	85	88.1	-3.1
248	85	88.2	-3.2

249	85	88.2	-3.2
250	84.9	88.2	-3.3
251	84.9	88.2	-3.3
252	84.8	88.2	-3.4
253	84.8	88.2	-3.4
254	84.8	88.2	-3.4
255	84.7	88.2	-3.5
256	84.7	88.2	-3.5
257	84.7	88.3	-3.6
258	84.7	88.4	-3.7
259	84.7	88.4	-3.7
260	84.7	88.6	-3.9
261	84.7	88.7	-4
262	84.7	88.8	-4.1
263	84.8	89	-4.2
264	84.8	89.2	-4.4
265	84.9	89.5	-4.6
266	85	89.7	-4.7
267	85	89.9	-4.9
268	85.1	90.2	-5.1
269	85.2	90.4	-5.2
270	85.3	90.7	-5.4
271	85.6	91	-5.4
272	85.9	91.3	-5.4
273	86.1	91.4	-5.3
274	86.3	91.6	-5.3
275	86.5	91.6	-5.1
276	86.6	91.7	-5.1
277	86.8	91.8	-5
278	87	91.9	-4.9
279	87.5	92.2	-4.7
280	87.7	92.3	-4.6
281	87.9	92.4	-4.5
282	88	92.4	-4.4
283	88.2	92.6	-4.4
284	88.3	92.7	-4.4
285	88.6	92.9	-4.3
286	88.9	93.1	-4.2
287	89	93.2	-4.2
288	89.1	93.3	-4.2
289	89.1	93.3	-4.2
290	89.2	93.4	-4.2
291	89.2	93.4	-4.2
292	89.3	93.4	-4.1
293	89.3	93.4	-4.1
294	89.3	93.4	-4.1
295	89.2	93.3	-4.1
296	89.1	93.2	-4.1
297	88.9	93	-4.1
298	88.7	92.8	-4.1
299	88.6	92.7	-4.1

300	88.5	92.6	-4.1
301	88.3	92.5	-4.2
302	88.1	92.4	-4.3
303	87.9	92.2	-4.3
304	87.8	92.1	-4.3
305	87.5	92	-4.5
306	87.3	91.9	-4.6
307	87.1	91.7	-4.6
308	86.9	91.6	-4.7
309	86.7	91.5	-4.8
310	86.4	91.4	-5
311	86.2	91.1	-4.9
312	85.9	90.7	-4.8
313	85.7	90.3	-4.6
314	85.4	89.9	-4.5
315	85.2	89.4	-4.2
316	84.9	88.8	-3.9
317	84.7	88.3	-3.6
318	84.5	87.8	-3.3
319	84.2	87.3	-3.1
320	84	86.7	-2.7
321	83.7	86.2	-2.5
322	83.3	85.6	-2.3
323	82.9	85	-2.1
324	82.3	84.2	-1.9
325	81.7	83.5	-1.8
326	81.1	82.7	-1.6
327	80.7	82	-1.3
328	80.1	81.2	-1.1
329	79.4	80	-0.6
330	78.7	78.8	-0.1
331	77.9	77.5	0.4
332	76.6	75.4	1.2
333	74.9	73.3	1.6
334	72.8	71	1.8
335	69.9	67.6	2.3
336	66.7	63.9	2.8
337	63.1	58.4	4.7
338	59	51.6	7.4
339	50.8	51.7	-0.9
340	47.1	51.9	-4.8
341	47.1	52.3	-5.2
342	47.1	52.7	-5.6
343	47.1	53	-5.9
344	47.1	53.4	-6.3
345	47.1	53.7	-6.6
346	47.1	54.1	-7
347	47.1	54.4	-7.3
348	47.1	54.7	-7.6
349	47.1	55	-7.9
350	47.1	55.3	-8.2

351	47.1	55.6	-8.5
352	47.1	55.9	-8.8
353	47.1	56.2	-9.1
354	47.1	56.5	-9.4
355	47.1	56.8	-9.7
356	47.1	57	-9.9
357	47.1	57.3	-10.2
358	47.1	57.6	-10.5
359	47.1	57.8	-10.7

Note: A Difference > 8 km would exceed the 5 mile
Limitation.



Proposal #: **C-01839**
 Call Letters: **KCOS**

Antenna Type: **TF-12HT**
 Location: **El Paso, TX**

Channel: **13**

Electrical Specifications		Value		Remarks	
		Ratio	dBd		
RMS Gain at Main Lobe over Halfwave Dipole	Hpol	11.8	10.72		
	Vpol				
RMS Gain at Horizontal over Halfwave Dipole	Hpol	11.3	10.53		
	Vpol				
Peak Directional Gain over Halfwave Dipole	Hpol				
	Vpol				
Peak Directional Gain at Horizontal over Halfwave Dipole	Hpol				
	Vpol				
Circularity		+/- 2.0 dB			
Axial Ratio		dB			
Beam Tilt		0.50 deg			
Peak TV Power + 10% Aural		30 kW	14.77 dBk		
Antenna Input: T/L		3 1/8 in	50.0 ohm	Type: EIA/DCA	
Maximum Antenna Input VSWR				Notes: 5 psi dry air or Nitrogen required.	
		Channel 1.10 : 1			
Patterns	Azimuth	TF-0			
	Elevation	12S118050	12S118050-90		
Mechanical Specifications		Metric	English		Preliminary
Height with Lightning Protector	H4	23.1 m	75.9 ft		
Height Less Lightning Protector	H2	22.2 m	72.9 ft	TIA/EIA-222-F.	
Height of Center of Radiation	H3	11.0 m	36.5 ft		
Basic Wind Speed	V	112.7 km/h	70 mi/h		
Force Coeff. x Projected Area	CaAc	10.8 m²	116.0 ft²	Above base flange	
Moment Arm	D1	10.1 m	33.2 ft	Above base flange	
Force Coeff. x Projected Area	CaAc	m²	ft²		
Moment Arm	D3	m	ft		
Pole Bury Length	D2	3.5 m	11.5 ft		
Weight	W	4.2 t	9,175 lbs		
Antenna designed in accordance with AISC specifications for design of structural steel for building as prescribed by TIA/EIA-222-F.					

NOTE:

Prepared By : **SWB**
 Original Date : **21-Aug-07**

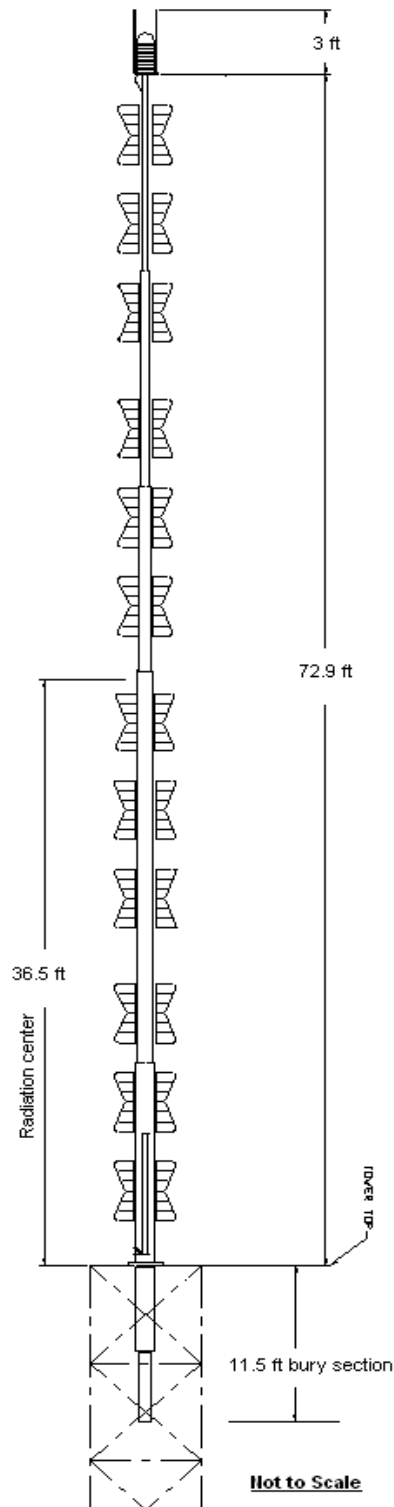
Approved By : **JLS**

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Mechanical Specifications
TIA/EIA-222-F. @ 70 mi/h (112.7 km/h)

CaAc = 116 ft²(10.8 m²)
D1 = 33.2 ft(10.12 m)
D2 = 11.5 ft(3.5 m)
W = 9175 lbs(4.2 t)

TF-12HT
Channel: 13



SWB-070822-2SK

Not to Scale

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Proposal Number	C-01839	
Date	21-Aug-07	
Call Letters	KCOS	Channel 13
Location	El Paso, TX	
Customer		
Antenna Type	TF-12HT	

SYSTEM SUMMARY

Antenna:

Type:	TF-12HT		H Pol
Channel:	13	ERP:	24.4 kW (13.87 dBk)
Location:	El Paso, TX	RMS Gain*:	11.8 (10.72 dB)
		Input Power:	2.1 kW (3.15 dBk)

Transmission Line:

Type:	EIA/DCA	Attenuation:	0.39 dB
Size:	3-1/8 in	Efficiency:	91.4%
Impedance:	50 ohm		
Length:	270 ft		82.3 m

Transmitter:

Power Required: **2.30 kW (3.54 dBk)**

* Gain is with respect to half wave dipole.

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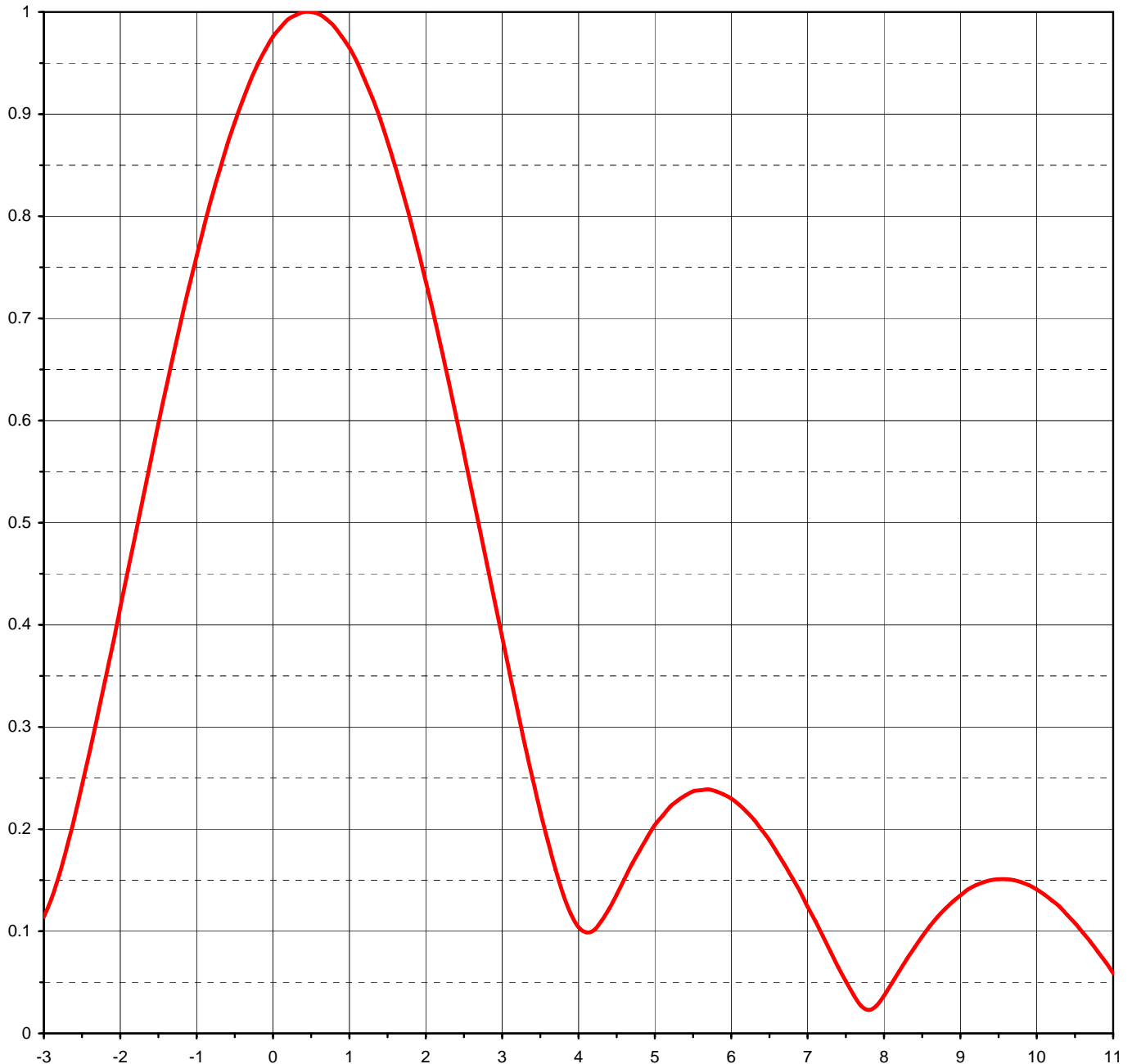
Proposal Number **C-01839**
Date **21-Aug-07**
Call Letters **KCOS**
Location **El Paso, TX**
Customer
Antenna Type **TF-12HT**

Channel **13**

ELEVATION PATTERN

RMS Gain at Main Lobe **11.81 (10.72 dB)**
RMS Gain at Horizontal **11.30 (10.53 dB)**
Calculated / Measured **Calculated**

Beam Tilt **0.50 deg**
Frequency **213.00 MHz**
Drawing # **12S118050**



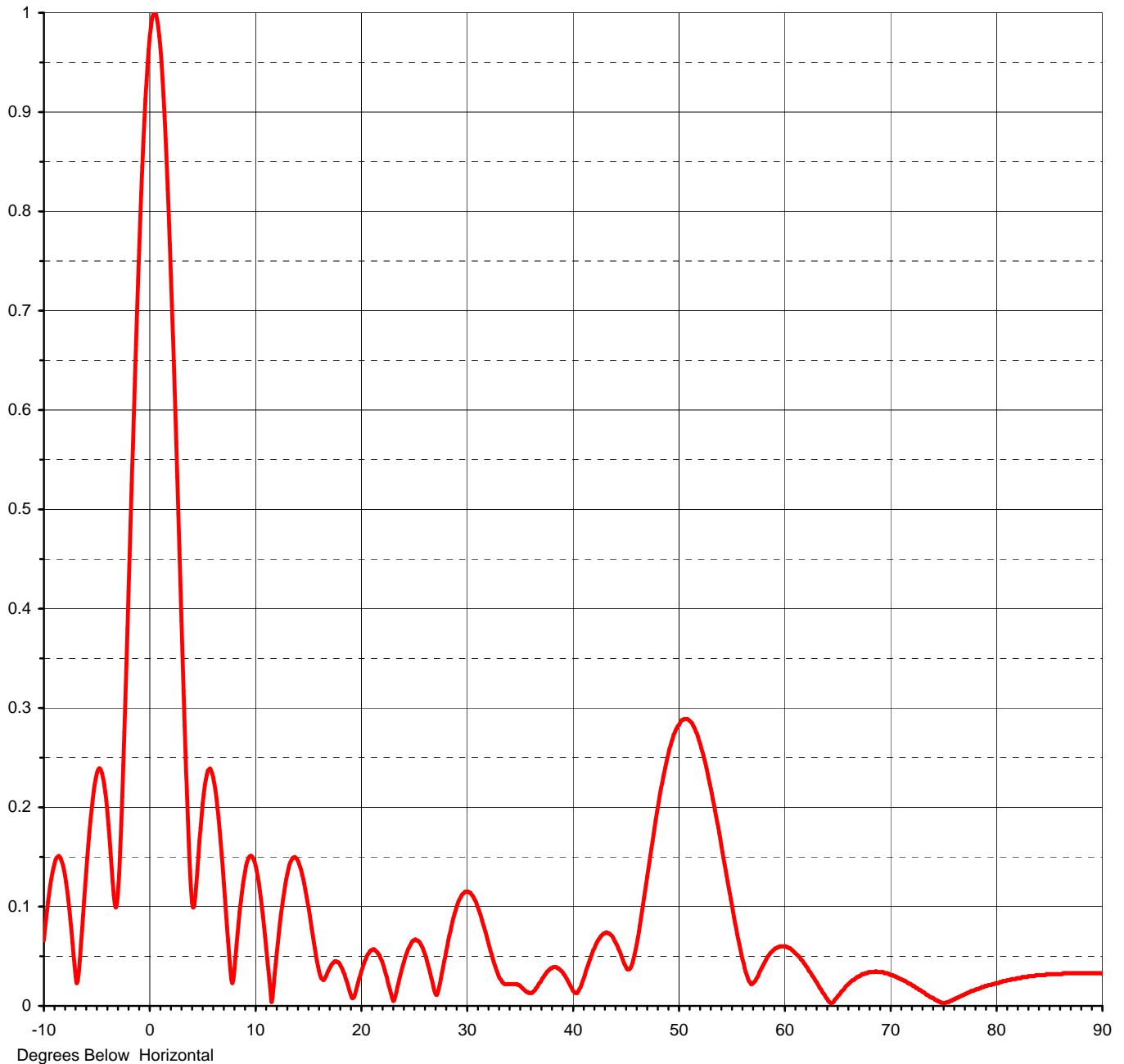
Degrees Below Horizontal



Proposal Number	C-01839	
Date	21-Aug-07	
Call Letters	KCOS	Channel 13
Location	El Paso, TX	
Customer		
Antenna Type	TF-12HT	

ELEVATION PATTERN

RMS Gain at Main Lobe	11.81 (10.72 dB)	Beam Tilt	0.50 deg
RMS Gain at Horizontal	11.30 (10.53 dB)	Frequency	213.00 MHz
Calculated / Measured	Calculated	Drawing #	12S118050-90





Proposal Number **C-01839**
Date **21-Aug-07**
Call Letters **KCOS**
Location **El Paso, TX**
Customer
Antenna Type **TF-12HT**

Channel **13**

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **12S118050-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.066	2.4	0.603	10.6	0.108	30.5	0.112	51.0	0.288	71.5	0.024
-9.5	0.113	2.6	0.532	10.8	0.090	31.0	0.102	51.5	0.281	72.0	0.021
-9.0	0.143	2.8	0.460	11.0	0.070	31.5	0.086	52.0	0.267	72.5	0.018
-8.5	0.150	3.0	0.388	11.5	0.015	32.0	0.067	52.5	0.248	73.0	0.014
-8.0	0.131	3.2	0.317	12.0	0.042	32.5	0.048	53.0	0.224	73.5	0.011
-7.5	0.087	3.4	0.249	12.5	0.092	33.0	0.032	53.5	0.197	74.0	0.008
-7.0	0.030	3.6	0.188	13.0	0.128	33.5	0.023	54.0	0.168	74.5	0.005
-6.5	0.062	3.8	0.136	13.5	0.147	34.0	0.022	54.5	0.137	75.0	0.003
-6.0	0.135	4.0	0.104	14.0	0.148	34.5	0.022	55.0	0.107	75.5	0.004
-5.5	0.197	4.2	0.101	14.5	0.132	35.0	0.021	55.5	0.078	76.0	0.007
-5.0	0.234	4.4	0.122	15.0	0.105	35.5	0.016	56.0	0.052	76.5	0.009
-4.5	0.234	4.6	0.151	15.5	0.071	36.0	0.013	56.5	0.031	77.0	0.012
-4.0	0.194	4.8	0.179	16.0	0.040	36.5	0.016	57.0	0.022	77.5	0.014
-3.5	0.125	5.0	0.204	16.5	0.026	37.0	0.024	57.5	0.029	78.0	0.016
-3.0	0.114	5.2	0.222	17.0	0.036	37.5	0.032	58.0	0.040	78.5	0.018
-2.8	0.155	5.4	0.233	17.5	0.044	38.0	0.038	58.5	0.050	79.0	0.020
-2.6	0.211	5.6	0.238	18.0	0.043	38.5	0.039	59.0	0.056	79.5	0.021
-2.4	0.276	5.8	0.237	18.5	0.032	39.0	0.035	59.5	0.059	80.0	0.023
-2.2	0.345	6.0	0.230	19.0	0.014	39.5	0.027	60.0	0.060	80.5	0.024
-2.0	0.417	6.2	0.217	19.5	0.012	40.0	0.017	60.5	0.058	81.0	0.026
-1.8	0.489	6.4	0.199	20.0	0.031	40.5	0.013	61.0	0.054	81.5	0.027
-1.6	0.561	6.6	0.177	20.5	0.047	41.0	0.025	61.5	0.049	82.0	0.028
-1.4	0.632	6.8	0.152	21.0	0.056	41.5	0.041	62.0	0.042	82.5	0.029
-1.2	0.699	7.0	0.124	21.5	0.055	42.0	0.056	62.5	0.034	83.0	0.030
-1.0	0.761	7.2	0.095	22.0	0.046	42.5	0.067	63.0	0.025	83.5	0.030
-0.8	0.819	7.4	0.065	22.5	0.029	43.0	0.073	63.5	0.017	84.0	0.031
-0.6	0.870	7.6	0.038	23.0	0.008	43.5	0.073	64.0	0.008	84.5	0.031
-0.4	0.913	7.8	0.023	23.5	0.019	44.0	0.066	64.5	0.003	85.0	0.032
-0.2	0.949	8.0	0.037	24.0	0.040	44.5	0.055	65.0	0.010	85.5	0.032
0.0	0.976	8.2	0.061	24.5	0.057	45.0	0.041	65.5	0.016	86.0	0.032
0.2	0.993	8.4	0.084	25.0	0.066	45.5	0.038	66.0	0.022	86.5	0.033
0.4	1.000	8.6	0.105	25.5	0.065	46.0	0.057	66.5	0.026	87.0	0.033
0.6	0.998	8.8	0.122	26.0	0.055	46.5	0.088	67.0	0.030	87.5	0.033
0.8	0.986	9.0	0.135	26.5	0.037	47.0	0.123	67.5	0.032	88.0	0.033
1.0	0.965	9.2	0.145	27.0	0.015	47.5	0.159	68.0	0.034	88.5	0.033
1.2	0.934	9.4	0.150	27.5	0.022	48.0	0.194	68.5	0.034	89.0	0.033
1.4	0.896	9.6	0.151	28.0	0.049	48.5	0.224	69.0	0.034	89.5	0.033
1.6	0.849	9.8	0.150	28.5	0.075	49.0	0.250	69.5	0.033	90.0	0.032
1.8	0.796	10.0	0.145	29.0	0.096	49.5	0.269	70.0	0.031		
2.0	0.736	10.2	0.136	29.5	0.110	50.0	0.282	70.5	0.029		
2.2	0.672	10.4	0.124	30.0	0.115	50.5	0.288	71.0	0.027		

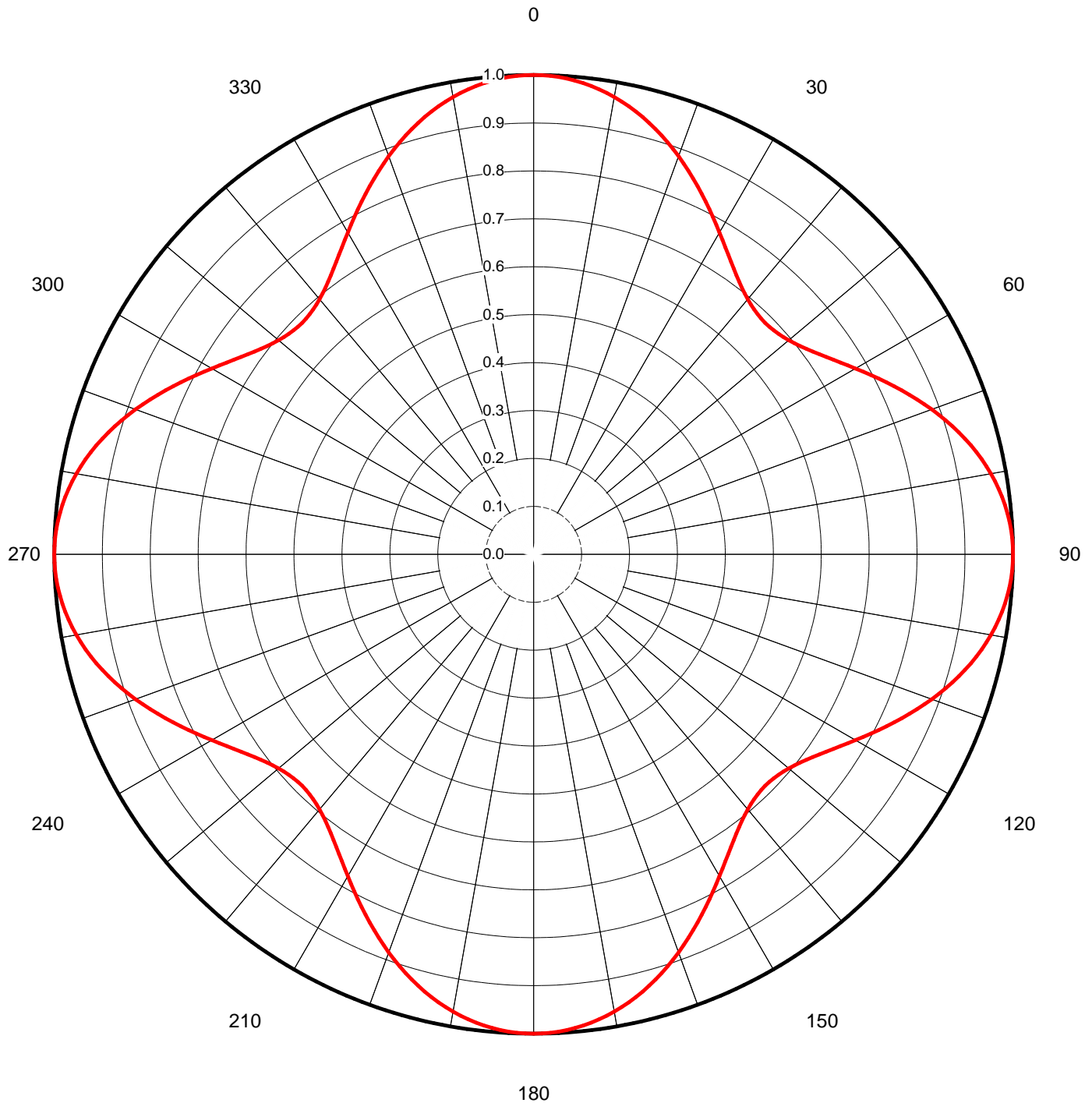
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Proposal Number	C-01839	
Date	21-Aug-07	
Call Letters	KCOS	Channel 13
Location	El Paso, TX	
Customer		
Antenna Type	TF-12HT	

AZIMUTH PATTERN

Gain	1.36	(1.34 dB)
Calculated / Measured		Calculated

Frequency	213.00 MHz
Drawing #	TF-0





Proposal Number **C-01839**
Date **21-Aug-07**
Call Letters **KCOS**
Location **El Paso, TX**
Customer
Antenna Type **TF-12HT**

Channel

13

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #: **TF-0**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	1.000	45	0.683	90	1.000	135	0.683	180	1.000	225	0.683	270	1.000	315	0.683
1	1.000	46	0.683	91	1.000	136	0.683	181	1.000	226	0.683	271	1.000	316	0.683
2	0.999	47	0.685	92	0.999	137	0.685	182	0.999	227	0.685	272	0.999	317	0.685
3	0.997	48	0.687	93	0.997	138	0.687	183	0.997	228	0.687	273	0.997	318	0.687
4	0.995	49	0.691	94	0.995	139	0.691	184	0.995	229	0.691	274	0.995	319	0.691
5	0.992	50	0.695	95	0.992	140	0.695	185	0.992	230	0.695	275	0.992	320	0.695
6	0.989	51	0.700	96	0.989	141	0.700	186	0.989	231	0.700	276	0.989	321	0.700
7	0.984	52	0.706	97	0.984	142	0.706	187	0.984	232	0.706	277	0.984	322	0.706
8	0.980	53	0.712	98	0.980	143	0.712	188	0.980	233	0.712	278	0.980	323	0.712
9	0.975	54	0.720	99	0.975	144	0.720	189	0.975	234	0.720	279	0.975	324	0.720
10	0.969	55	0.728	100	0.969	145	0.728	190	0.969	235	0.728	280	0.969	325	0.728
11	0.962	56	0.736	101	0.962	146	0.736	191	0.962	236	0.736	281	0.962	326	0.736
12	0.955	57	0.745	102	0.955	147	0.745	192	0.955	237	0.745	282	0.955	327	0.745
13	0.948	58	0.755	103	0.948	148	0.755	193	0.948	238	0.755	283	0.948	328	0.755
14	0.940	59	0.765	104	0.940	149	0.765	194	0.940	239	0.765	284	0.940	329	0.765
15	0.932	60	0.775	105	0.932	150	0.775	195	0.932	240	0.775	285	0.932	330	0.775
16	0.923	61	0.786	106	0.923	151	0.786	196	0.923	241	0.786	286	0.923	331	0.786
17	0.914	62	0.797	107	0.914	152	0.797	197	0.914	242	0.797	287	0.914	332	0.797
18	0.904	63	0.808	108	0.904	153	0.808	198	0.904	243	0.808	288	0.904	333	0.808
19	0.894	64	0.819	109	0.894	154	0.819	199	0.894	244	0.819	289	0.894	334	0.819
20	0.884	65	0.830	110	0.884	155	0.830	200	0.884	245	0.830	290	0.884	335	0.830
21	0.873	66	0.841	111	0.873	156	0.841	201	0.873	246	0.841	291	0.873	336	0.841
22	0.863	67	0.852	112	0.863	157	0.852	202	0.863	247	0.852	292	0.863	337	0.852
23	0.852	68	0.863	113	0.852	158	0.863	203	0.852	248	0.863	293	0.852	338	0.863
24	0.841	69	0.873	114	0.841	159	0.873	204	0.841	249	0.873	294	0.841	339	0.873
25	0.830	70	0.884	115	0.830	160	0.884	205	0.830	250	0.884	295	0.830	340	0.884
26	0.819	71	0.894	116	0.819	161	0.894	206	0.819	251	0.894	296	0.819	341	0.894
27	0.808	72	0.904	117	0.808	162	0.904	207	0.808	252	0.904	297	0.808	342	0.904
28	0.797	73	0.914	118	0.797	163	0.914	208	0.797	253	0.914	298	0.797	343	0.914
29	0.786	74	0.923	119	0.786	164	0.923	209	0.786	254	0.923	299	0.786	344	0.923
30	0.775	75	0.932	120	0.775	165	0.932	210	0.775	255	0.932	300	0.775	345	0.932
31	0.765	76	0.940	121	0.765	166	0.940	211	0.765	256	0.940	301	0.765	346	0.940
32	0.755	77	0.948	122	0.755	167	0.948	212	0.755	257	0.948	302	0.755	347	0.948
33	0.745	78	0.955	123	0.745	168	0.955	213	0.745	258	0.955	303	0.745	348	0.955
34	0.736	79	0.962	124	0.736	169	0.962	214	0.736	259	0.962	304	0.736	349	0.962
35	0.728	80	0.969	125	0.728	170	0.969	215	0.728	260	0.969	305	0.728	350	0.969
36	0.720	81	0.975	126	0.720	171	0.975	216	0.720	261	0.975	306	0.720	351	0.975
37	0.712	82	0.980	127	0.712	172	0.980	217	0.712	262	0.980	307	0.712	352	0.980
38	0.706	83	0.984	128	0.706	173	0.984	218	0.706	263	0.984	308	0.706	353	0.984
39	0.700	84	0.989	129	0.700	174	0.989	219	0.700	264	0.989	309	0.700	354	0.989
40	0.695	85	0.992	130	0.695	175	0.992	220	0.695	265	0.992	310	0.695	355	0.992
41	0.691	86	0.995	131	0.691	176	0.995	221	0.691	266	0.995	311	0.691	356	0.995
42	0.687	87	0.997	132	0.687	177	0.997	222	0.687	267	0.997	312	0.687	357	0.997
43	0.685	88	0.999	133	0.685	178	0.999	223	0.685	268	0.999	313	0.685	358	0.999
44	0.683	89	1.000	134	0.683	179	1.000	224	0.683	269	1.000	314	0.683	359	1.000

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DTV

Call letters: **KCOS** DT Date: **4/14/2008**
 Location: **El Paso, TX**
 Channel: **13** DTV FCC Dsgn **30**
 Frequency: **213 MHz Mid-Band** Pilot Freq: **210.31**
 Antenna: **Dielectric TF-12HT**

Transmitter Power Output (**Hor TPO**): **0.4 kW avg. -3.799075 dBk Hor**
 Filter Loss: **0 dB**
 TPO into Xmsn Line: **0.4 kW pk. -3.80 dBk Hor**
 Transmission Line: **EIA/DCA 3-1/8" Rigid**
 Loss per 100 ft.: **0.144 dB Vert 0.144 dB Hor**
 Line Length: **200 ft. Vert 70 ft. Hor**
 Total Line Loss: **-0.389 dB -0.39 dB**

Antenna Input Power: **0.38 kW -4.19 dBk**

TPO Average: **0.4 KW avg w/ V & H**

Efficiency: **91.437 %**

Vertical Pol % = **0 %**

Elevation Antenna Gain -

Horizontal -

Vert. Polarization - 1.00 Gain 0.00 dB

Hor. Polarization - 11.30 Gain 10.53 dB

Maximum -

Vert. Polarization - 1.00 Gain 0.00 dB

Hor. Polarization - 11.80 Gain 10.72 dB

Azimuthal Antenna Gain -

Vert. Polarization - 1.00 Gain 0.00 dB

Hor. Polarization - 1.00 Gain 0.00 dB

Horizontal ERP -

Vertical Polarization: 0.00 kW 0.00 dBk

Horizontal Polarization: 4.3 kW 6.3 dBk

Maximum ERP -

Vertical Polarization: 0.00 kW 0.00 dBk

Horizontal Polarization: 4.5 kW 6.53 dBk

V TPO = 0.00 kW p

DTV Xmtr Power Average: 0.42 kW

kc0s-dt_4.5kw_nondir.txt

Census data selected 2000

Post Transition Data Base Selected
/space/software/cdbs/tvdb.sff_B
TV INTERFERENCE and SPACING ANALYSIS PROGRAM

Date: 04-14-2008 Time: 01:18:26

Record Selected for Analysis

KCOS-DT USERRECORD-01 EL PASO TX US
Channel 13 ERP 4.5 kW HAAT 262. m RCAMSL 01500 m
Latitude 031-47-15 Longitude 0106-28-47
Status APP Zone 2 Border
Last update Cutoff date Docket
Comments
Applicant

Cell Size for Service Analysis 2.0 km/side

Distance Increments for Longley-Rice Analysis 1.00 km

Facility meets maximum height/power limits

Azimuth (Deg)	ERP (kW)	HAAT (m)	36.0 dBu F(50, 90) (km)
0.0	4.500	33.0	48.5
45.0	4.500	307.6	86.8
90.0	4.500	304.6	86.6
135.0	4.500	372.1	91.5
180.0	4.500	311.8	87.1
225.0	4.500	213.9	81.6
270.0	4.500	280.8	85.4
315.0	4.500	277.5	85.2

Evaluation toward Class A Stations

No Spacing violations or contour overlap to Class A stations

Class A Evaluation Complete

SPACING VIOLATION FOUND BETWEEN STATION

KCOS-DT 13 EL PASO TX USERRECORD01

and station

SHORT TO: KCOS 13 EL PASO TX BDTV 1535
31 -47-15 106 -28-47
Req. separation 273.6 Actual separation 0.0 Short 273.6 km
Page 1

Proposed facility OK to FCC Monitoring Stations

Proposed facility OK toward West Virginia quiet zone

Proposed facility OK toward Table Mountain

Proposed facility is beyond the Canadian coordination distance

Proposed facility is within the Mexican coordination distance
Distance to border = 3.4km

Proposed station is OK toward AM broadcast stations

Start of Interference Analysis

Channel	Proposed Station	ARN
13	Call City/State KCOS-DT EL PASO TX	USERRECORD01

Stations Potentially Affected by Proposed Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
12	KOBG-TV	SILVER CITY NM	204.1	LIC	BDTV	-1097
13	KRQE	ALBUQUERQUE NM	380.5	LIC	BDTV	-1071

%%%

Analysis of Interference to Affected Station 1

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
12	KOBG-TV	SILVER CITY NM	BDTV	-1097

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
12	KPNX	MESA AZ	359.7	LIC	BDTV	-0099
12	KOBF	FARMINGTON NM	425.9	LIC	BDTV	-1083
13	KCOS-DT	EL PASO TX	204.1	APP	USERRECORD-01	

Proposal causes no interference

#####

Analysis of Interference to Affected Station 2

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
13	KRQE	ALBUQUERQUE NM	BDTV	-1071

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
13	KREY-TV	MONTROSE CO	388.1	LIC	BDTV	-0259
13	KCOS-DT	EL PASO TX	380.5	APP	USERRECORD-01	

Total scenarios = 1

Result key: 1
 Scenario 1 Affected station 2
 Before Analysis

Results for: 13A NM ALBUQUERQUE BDTV 1071 LIC
 HAAT 1287.0 m, ATV ERP 7.0 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	960238	47731.6
not affected by terrain losses	925581	43548.7
lost to NTSC IX	0	0.0
lost to additional IX by ATV	0	0.0
lost to ATV IX only	0	0.0
lost to all IX	0	0.0

Potential Interfering Stations Included in above Scenario 1

After Analysis

Results for: 13A NM ALBUQUERQUE BDTV 1071 LIC
 HAAT 1287.0 m, ATV ERP 7.0 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	960238	47731.6
not affected by terrain losses	925581	43548.7
lost to NTSC IX	0	0.0
lost to additional IX by ATV	30	4.0
lost to ATV IX only	30	4.0
lost to all IX	30	4.0

Potential Interfering Stations Included in above Scenario 1

13A TX EL PASO USERRECORD01 APP

Percent new IX = 0.0032%

Worst case new IX 0.0032% Scenario 1

#####

Analysis of Interference to Affected Station 3

Analysis of current record

Channel	Call	City/State	Application Ref. No.
13	KCOS-DT	EL PASO TX	USERRECORD-01

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application Ref. No.
12	KOBG-TV	SILVER CITY NM	204.1	LIC	BDTV -1097
13	KRQE	ALBUQUERQUE NM	380.5	LIC	BDTV -1071

Total scenarios = 1

Result key: 2
 Scenario 1 Affected station 3
 Before Analysis

Results for: 13A TX EL PASO USERRECORD01 APP
 HAAT 262.0 m, ATV ERP 4.5 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	842206	21987.7
not affected by terrain losses	842200	19964.8
lost to NTSC IX	0	0.0
lost to additional IX by ATV	0	0.0
lost to ATV IX only	0	0.0
lost to all IX	0	0.0

Potential Interfering Stations Included in above Scenario 1

#####

FINISHED FINISHED FINISHED FINISHED FINISHED FINISHED

Call Letters: KCOS-DT (Appendix B)
 File Number:
 Latitude: 31-47-15 N
 Longitude: 106-28-47 W
 ERP: 24.40 kW
 Channel: 13
 Frequency: 213.0 MHz
 AMSL Height: 1467.0 m
 Elevation: 1373.99 m
 HAAT: 265.0 m
 Horiz. Antenna Pattern: Directional
 Vert. Elevation Pattern: Yes
 Electrical Beam Tilt: 0.0

Type of contour: FCC
 Location Variability: 50.0 %
 Time Variability: 90.0 %
 # of Radials Calculated: 360
 Field Strength: 36.00 dBuV/m

Primary Terrain: V-Soft 3 Second US Terrain

Bearing (deg)	Distance (km)	HAAT (m)
0.0	58.1	-35.5
1.0	57.8	-18.4
2.0	57.5	-2.2
3.0	57.3	12.1
4.0	57.0	26.3
5.0	60.8	38.3
6.0	66.7	54.1
7.0	71.5	73.8
8.0	75.6	93.0
9.0	79.3	112.4
10.0	82.1	128.7
11.0	83.9	142.7
12.0	84.9	154.3
13.0	85.7	166.1
14.0	86.1	176.3
15.0	86.4	185.9
16.0	86.7	195.9
17.0	87.0	205.7
18.0	87.1	214.0
19.0	87.1	220.3
20.0	86.9	225.8
21.0	87.2	231.4
22.0	87.6	236.4
23.0	87.9	241.5
24.0	88.1	246.2
25.0	88.3	249.9
26.0	88.4	253.1
27.0	88.5	256.0
28.0	88.6	258.5
29.0	88.6	260.5
30.0	88.7	262.4
31.0	89.1	264.1
32.0	89.4	265.6
33.0	89.7	267.1
34.0	90.0	268.5
35.0	90.4	269.7
36.0	90.7	270.7
37.0	90.9	271.5
38.0	91.2	272.2

kcot-dt 36db contour - appendix b.txt

39.0	91.5	272.7
40.0	91.7	273.1
41.0	92.1	273.4
42.0	92.4	273.6
43.0	92.8	273.8
44.0	93.1	274.0
45.0	93.4	274.2
46.0	93.7	274.6
47.0	94.0	274.7
48.0	94.3	274.9
49.0	94.6	275.0
50.0	94.9	275.1
51.0	94.9	275.3
52.0	94.9	275.4
53.0	94.9	275.5
54.0	94.9	275.7
55.0	94.9	275.7
56.0	94.9	275.8
57.0	94.9	275.8
58.0	94.9	275.8
59.0	94.9	275.7
60.0	94.9	275.7
61.0	94.9	275.7
62.0	94.9	275.6
63.0	94.8	275.6
64.0	94.8	275.6
65.0	94.8	275.6
66.0	94.8	275.4
67.0	94.8	274.8
68.0	94.8	274.1
69.0	94.7	273.6
70.0	94.7	273.1
71.0	94.7	272.6
72.0	94.7	272.0
73.0	94.6	271.4
74.0	94.6	270.9
75.0	94.6	270.6
76.0	94.6	270.2
77.0	94.5	269.7
78.0	94.5	269.6
79.0	94.5	269.5
80.0	94.5	269.5
81.0	94.5	269.5
82.0	94.5	269.5
83.0	94.5	269.5
84.0	94.5	269.7
85.0	94.5	269.8
86.0	94.5	269.9
87.0	94.5	270.2
88.0	94.5	270.7
89.0	94.5	271.2
90.0	94.5	271.9
91.0	94.7	272.6
92.0	94.9	273.4
93.0	95.1	274.6
94.0	95.3	275.9
95.0	95.5	277.5
96.0	95.7	279.2
97.0	95.9	280.8
98.0	96.1	282.4
99.0	96.4	284.9
100.0	96.6	287.9
101.0	96.9	291.6

kcot-dt 36db contour - appendix b.txt

102.0	97.3	296.5
103.0	97.7	301.7
104.0	98.2	306.3
105.0	98.6	310.5
106.0	99.0	314.6
107.0	99.5	319.5
108.0	100.0	323.8
109.0	100.3	326.8
110.0	100.7	329.6
111.0	100.9	332.3
112.0	101.2	334.8
113.0	101.4	337.2
114.0	101.6	338.7
115.0	101.7	339.7
116.0	101.8	340.2
117.0	101.9	340.5
118.0	102.0	340.9
119.0	102.0	341.1
120.0	102.1	341.4
121.0	102.2	341.7
122.0	102.2	342.0
123.0	102.3	342.3
124.0	102.3	342.6
125.0	102.3	342.7
126.0	102.4	342.8
127.0	102.4	342.8
128.0	102.4	342.6
129.0	102.4	342.7
130.0	102.4	342.3
131.0	102.4	341.7
132.0	102.3	341.1
133.0	102.3	340.4
134.0	102.2	339.7
135.0	102.2	339.0
136.0	102.1	338.1
137.0	102.1	337.3
138.0	102.0	336.4
139.0	101.9	335.5
140.0	101.8	334.6
141.0	101.8	333.7
142.0	101.7	332.8
143.0	101.6	332.0
144.0	101.5	331.3
145.0	101.4	330.7
146.0	101.4	330.1
147.0	101.3	329.5
148.0	101.2	328.9
149.0	101.2	328.4
150.0	101.1	327.8
151.0	101.0	327.4
152.0	101.0	326.9
153.0	100.9	326.5
154.0	100.8	326.0
155.0	100.7	325.4
156.0	100.6	324.9
157.0	100.6	324.3
158.0	100.5	323.7
159.0	100.4	323.1
160.0	100.3	322.5
161.0	100.2	321.9
162.0	100.0	321.2
163.0	99.9	320.4
164.0	99.7	319.5

kcot-dt 36db contour - appendix b.txt

165.0	99.6	318.4
166.0	99.4	317.1
167.0	99.2	315.8
168.0	99.0	314.0
169.0	98.7	311.8
170.0	98.4	309.5
171.0	98.1	307.0
172.0	97.8	304.4
173.0	97.5	301.7
174.0	97.2	299.0
175.0	96.9	295.9
176.0	96.6	292.6
177.0	96.3	289.7
178.0	96.1	286.3
179.0	95.8	282.9
180.0	95.5	279.1
181.0	95.1	273.0
182.0	94.6	266.4
183.0	94.1	259.6
184.0	93.8	257.2
185.0	93.4	253.4
186.0	92.7	246.2
187.0	92.1	240.8
188.0	91.5	235.2
189.0	90.7	228.5
190.0	89.6	218.1
191.0	88.4	205.5
192.0	87.5	196.5
193.0	86.2	183.4
194.0	84.9	169.4
195.0	83.4	156.6
196.0	81.2	140.6
197.0	80.3	135.8
198.0	80.9	141.2
199.0	81.3	145.6
200.0	81.6	149.7
201.0	81.9	152.5
202.0	80.9	145.1
203.0	80.5	143.4
204.0	80.6	145.0
205.0	80.4	143.7
206.0	80.4	144.7
207.0	80.4	145.3
208.0	79.8	142.0
209.0	78.9	136.2
210.0	77.2	126.9
211.0	75.8	120.3
212.0	75.6	119.4
213.0	76.4	123.9
214.0	77.3	128.8
215.0	78.2	134.4
216.0	79.0	139.8
217.0	79.9	147.1
218.0	80.9	155.7
219.0	81.8	164.5
220.0	82.3	171.2
221.0	82.6	174.6
222.0	82.6	175.1
223.0	82.7	175.6
224.0	82.8	177.7
225.0	83.2	182.5
226.0	83.4	185.3
227.0	83.4	185.4

kc0s-dt 36db contour - appendix b.txt

228.0	83.4	185.7
229.0	83.8	190.9
230.0	84.0	194.3
231.0	84.1	194.6
232.0	84.2	194.9
233.0	84.2	195.5
234.0	84.6	199.7
235.0	85.0	205.0
236.0	85.4	208.9
237.0	85.7	213.2
238.0	86.1	217.9
239.0	86.4	221.3
240.0	86.7	223.8
241.0	86.9	226.3
242.0	87.1	229.3
243.0	87.3	231.2
244.0	87.5	233.2
245.0	87.7	235.3
246.0	87.9	237.3
247.0	88.1	239.6
248.0	88.2	240.7
249.0	88.2	240.1
250.0	88.2	239.0
251.0	88.2	237.8
252.0	88.2	236.7
253.0	88.2	235.7
254.0	88.2	235.0
255.0	88.2	234.2
256.0	88.2	233.4
257.0	88.3	232.9
258.0	88.4	232.9
259.0	88.4	233.2
260.0	88.6	233.6
261.0	88.7	233.9
262.0	88.8	234.2
263.0	89.0	234.8
264.0	89.2	235.9
265.0	89.5	237.6
266.0	89.7	239.5
267.0	89.9	241.1
268.0	90.2	243.2
269.0	90.4	244.8
270.0	90.7	248.1
271.0	91.0	253.8
272.0	91.3	260.3
273.0	91.4	264.3
274.0	91.6	267.7
275.0	91.6	270.4
276.0	91.7	272.7
277.0	91.8	274.7
278.0	91.9	278.9
279.0	92.2	285.4
280.0	92.3	288.8
281.0	92.4	290.9
282.0	92.4	292.6
283.0	92.6	294.9
284.0	92.7	296.9
285.0	92.9	300.3
286.0	93.1	303.6
287.0	93.2	305.7
288.0	93.3	306.8
289.0	93.3	307.5
290.0	93.4	308.4

kcot-dt 36db contour - appendix b.txt

291.0	93.4	308.7
292.0	93.4	309.4
293.0	93.4	309.4
294.0	93.4	309.1
295.0	93.3	308.2
296.0	93.2	306.5
297.0	93.0	303.9
298.0	92.8	301.7
299.0	92.7	300.0
300.0	92.6	298.3
301.0	92.5	296.1
302.0	92.4	293.7
303.0	92.2	291.3
304.0	92.1	288.9
305.0	92.0	285.9
306.0	91.9	282.8
307.0	91.7	279.8
308.0	91.6	276.7
309.0	91.5	273.6
310.0	91.4	270.0
311.0	91.1	265.8
312.0	90.7	260.9
313.0	90.3	255.4
314.0	89.9	249.9
315.0	89.4	244.2
316.0	88.8	237.9
317.0	88.3	232.7
318.0	87.8	228.1
319.0	87.3	222.6
320.0	86.7	217.3
321.0	86.2	211.8
322.0	85.6	206.3
323.0	85.0	199.6
324.0	84.2	191.4
325.0	83.5	182.8
326.0	82.7	174.7
327.0	82.0	168.3
328.0	81.2	161.0
329.0	80.0	151.2
330.0	78.8	142.6
331.0	77.5	132.9
332.0	75.4	120.7
333.0	73.3	108.6
334.0	71.0	96.3
335.0	67.6	79.8
336.0	63.9	63.1
337.0	58.4	45.5
338.0	51.6	27.6
339.0	51.7	4.9
340.0	51.9	-16.0
341.0	52.3	-32.9
342.0	52.7	-52.9
343.0	53.0	-73.2
344.0	53.4	-90.9
345.0	53.7	-110.1
346.0	54.1	-124.5
347.0	54.4	-137.4
348.0	54.7	-162.2
349.0	55.0	-191.4
350.0	55.3	-218.8
351.0	55.6	-240.8
352.0	55.9	-268.9
353.0	56.2	-273.4

kcot-dt 36db contour - appendix b.txt

354.0	56.5	-230.0
355.0	56.8	-177.8
356.0	57.0	-139.4
357.0	57.3	-111.0
358.0	57.6	-76.6
359.0	57.8	-53.1

Average HAAT for radial s shown: 226.8 m

kc0s-dt 36db contour - proposed.txt

Call Letters: KCOS-DT (Proposed)

File Number: BLET19800321KF

Latitude: 31-47-15 N

Longitude: 106-28-47 W

ERP: 4.50 kW

Channel: 13

Frequency: 213.0 MHz

AMSL Height: 1500.1 m

Elevation: 1421.3 m

HAAT: 258.53 m

Horiz. Antenna Pattern: Omni

Vert. Elevation Pattern: Yes

Electrical Beam Tilt: 0.5

Type of contour: FCC

Location Variability: 50.0 %

Time Variability: 90.0 %

of Radials Calculated: 360

Field Strength: 36.00 dBuV/m

Primary Terrain: V-Soft 3 Second US Terrain

Bearing (deg)	Distance (km)	HAAT (m)
0.0	47.1	-2.4
1.0	47.1	14.7
2.0	47.5	30.9
3.0	53.8	45.2
4.0	58.7	59.4
5.0	61.5	71.4
6.0	64.9	87.2
7.0	68.8	106.9
8.0	72.2	126.1
9.0	75.4	145.5
10.0	77.5	161.8
11.0	78.8	175.8
12.0	79.6	187.4
13.0	80.5	199.2
14.0	81.3	209.4
15.0	82.0	219.0
16.0	82.7	229.0
17.0	83.3	238.8
18.0	83.8	247.1
19.0	84.1	253.4
20.0	84.4	258.9
21.0	84.6	264.5
22.0	84.8	269.5
23.0	85.0	274.6
24.0	85.2	279.3
25.0	85.4	283.0
26.0	85.5	286.2
27.0	85.7	289.1
28.0	85.8	291.6
29.0	85.9	293.6
30.0	86.0	295.5
31.0	86.1	297.2
32.0	86.2	298.7
33.0	86.3	300.2
34.0	86.3	301.6
35.0	86.4	302.8
36.0	86.5	303.8
37.0	86.5	304.6
38.0	86.6	305.3

kcot-dt 36db contour - proposed.txt

39.0	86.6	305.8
40.0	86.6	306.2
41.0	86.7	306.5
42.0	86.7	306.7
43.0	86.7	306.9
44.0	86.7	307.1
45.0	86.7	307.3
46.0	86.7	307.7
47.0	86.8	307.8
48.0	86.8	308.0
49.0	86.8	308.1
50.0	86.8	308.2
51.0	86.8	308.4
52.0	86.8	308.5
53.0	86.8	308.6
54.0	86.8	308.8
55.0	86.8	308.8
56.0	86.8	308.9
57.0	86.8	308.9
58.0	86.8	308.9
59.0	86.8	308.8
60.0	86.8	308.8
61.0	86.8	308.8
62.0	86.8	308.7
63.0	86.8	308.7
64.0	86.8	308.7
65.0	86.8	308.7
66.0	86.8	308.5
67.0	86.8	307.9
68.0	86.7	307.2
69.0	86.7	306.7
70.0	86.6	306.2
71.0	86.6	305.7
72.0	86.6	305.1
73.0	86.5	304.5
74.0	86.5	304.0
75.0	86.5	303.7
76.0	86.5	303.3
77.0	86.4	302.8
78.0	86.4	302.7
79.0	86.4	302.6
80.0	86.4	302.6
81.0	86.4	302.6
82.0	86.4	302.6
83.0	86.4	302.6
84.0	86.4	302.8
85.0	86.4	302.9
86.0	86.4	303.0
87.0	86.5	303.3
88.0	86.5	303.8
89.0	86.5	304.3
90.0	86.6	305.0
91.0	86.6	305.7
92.0	86.7	306.5
93.0	86.7	307.7
94.0	86.8	309.0
95.0	86.9	310.6
96.0	87.1	312.3
97.0	87.2	313.9
98.0	87.3	315.5
99.0	87.5	318.0
100.0	87.7	321.0
101.0	88.0	324.7

kc0s-dt 36db contour - proposed.txt

102.0	88.3	329.6
103.0	88.7	334.8
104.0	89.1	339.4
105.0	89.4	343.6
106.0	89.7	347.7
107.0	90.1	352.6
108.0	90.4	356.9
109.0	90.6	359.9
110.0	90.8	362.7
111.0	91.0	365.4
112.0	91.2	367.9
113.0	91.4	370.3
114.0	91.5	371.8
115.0	91.6	372.8
116.0	91.6	373.3
117.0	91.6	373.6
118.0	91.7	374.0
119.0	91.7	374.2
120.0	91.7	374.5
121.0	91.7	374.8
122.0	91.7	375.1
123.0	91.8	375.4
124.0	91.8	375.7
125.0	91.8	375.8
126.0	91.8	375.9
127.0	91.8	375.9
128.0	91.8	375.7
129.0	91.8	375.8
130.0	91.8	375.4
131.0	91.7	374.8
132.0	91.7	374.2
133.0	91.6	373.5
134.0	91.6	372.8
135.0	91.5	372.1
136.0	91.5	371.2
137.0	91.4	370.4
138.0	91.3	369.5
139.0	91.3	368.6
140.0	91.2	367.7
141.0	91.1	366.8
142.0	91.1	365.9
143.0	91.0	365.1
144.0	91.0	364.4
145.0	90.9	363.8
146.0	90.9	363.2
147.0	90.8	362.6
148.0	90.8	362.0
149.0	90.7	361.5
150.0	90.7	360.9
151.0	90.7	360.5
152.0	90.6	360.0
153.0	90.6	359.6
154.0	90.6	359.1
155.0	90.5	358.5
156.0	90.5	358.0
157.0	90.4	357.4
158.0	90.4	356.8
159.0	90.3	356.2
160.0	90.3	355.6
161.0	90.2	355.0
162.0	90.2	354.3
163.0	90.1	353.5
164.0	90.1	352.6

kcot-dt 36db contour - proposed.txt

165.0	90.0	351.5
166.0	89.9	350.2
167.0	89.8	348.9
168.0	89.6	347.1
169.0	89.5	344.9
170.0	89.3	342.6
171.0	89.1	340.1
172.0	88.9	337.5
173.0	88.7	334.8
174.0	88.5	332.1
175.0	88.3	329.0
176.0	88.0	325.7
177.0	87.8	322.8
178.0	87.6	319.4
179.0	87.3	316.0
180.0	87.1	312.2
181.0	86.6	306.1
182.0	86.2	299.5
183.0	85.9	292.7
184.0	85.7	290.3
185.0	85.6	286.5
186.0	85.2	279.3
187.0	85.0	273.9
188.0	84.8	268.3
189.0	84.5	261.6
190.0	84.0	251.2
191.0	83.3	238.6
192.0	82.7	229.6
193.0	81.8	216.5
194.0	80.8	202.5
195.0	79.8	189.7
196.0	78.6	173.7
197.0	78.2	168.9
198.0	78.6	174.3
199.0	79.0	178.7
200.0	79.3	182.8
201.0	79.5	185.6
202.0	78.9	178.2
203.0	78.8	176.5
204.0	78.9	178.1
205.0	78.8	176.8
206.0	78.9	177.8
207.0	79.0	178.4
208.0	78.7	175.1
209.0	78.2	169.3
210.0	77.3	160.0
211.0	76.5	153.4
212.0	76.4	152.5
213.0	76.9	157.0
214.0	77.5	161.9
215.0	78.0	167.5
216.0	78.5	172.9
217.0	79.1	180.2
218.0	79.7	188.8
219.0	80.4	197.6
220.0	80.9	204.3
221.0	81.1	207.7
222.0	81.2	208.2
223.0	81.2	208.7
224.0	81.4	210.8
225.0	81.7	215.6
226.0	81.9	218.4
227.0	81.9	218.5

kcot-dt 36db contour - proposed.txt

228.0	81.9	218.8
229.0	82.3	224.0
230.0	82.5	227.4
231.0	82.6	227.7
232.0	82.6	228.0
233.0	82.6	228.6
234.0	82.9	232.8
235.0	83.2	238.1
236.0	83.5	242.0
237.0	83.7	246.3
238.0	84.0	251.0
239.0	84.2	254.4
240.0	84.3	256.9
241.0	84.4	259.4
242.0	84.5	262.4
243.0	84.6	264.3
244.0	84.7	266.3
245.0	84.8	268.4
246.0	84.9	270.4
247.0	85.0	272.7
248.0	85.0	273.8
249.0	85.0	273.2
250.0	84.9	272.1
251.0	84.9	270.9
252.0	84.8	269.8
253.0	84.8	268.8
254.0	84.8	268.1
255.0	84.7	267.3
256.0	84.7	266.5
257.0	84.7	266.0
258.0	84.7	266.0
259.0	84.7	266.3
260.0	84.7	266.7
261.0	84.7	267.0
262.0	84.7	267.3
263.0	84.8	267.9
264.0	84.8	269.0
265.0	84.9	270.7
266.0	85.0	272.6
267.0	85.0	274.2
268.0	85.1	276.3
269.0	85.2	277.9
270.0	85.3	281.2
271.0	85.6	286.9
272.0	85.9	293.4
273.0	86.1	297.4
274.0	86.3	300.8
275.0	86.5	303.5
276.0	86.6	305.8
277.0	86.8	307.8
278.0	87.0	312.0
279.0	87.5	318.5
280.0	87.7	321.9
281.0	87.9	324.0
282.0	88.0	325.7
283.0	88.2	328.0
284.0	88.3	330.0
285.0	88.6	333.4
286.0	88.9	336.7
287.0	89.0	338.8
288.0	89.1	339.9
289.0	89.1	340.6
290.0	89.2	341.5

kcot-dt 36db contour - proposed.txt

291.0	89.2	341.8
292.0	89.3	342.5
293.0	89.3	342.5
294.0	89.3	342.2
295.0	89.2	341.3
296.0	89.1	339.6
297.0	88.9	337.0
298.0	88.7	334.8
299.0	88.6	333.1
300.0	88.5	331.4
301.0	88.3	329.2
302.0	88.1	326.8
303.0	87.9	324.4
304.0	87.8	322.0
305.0	87.5	319.0
306.0	87.3	315.9
307.0	87.1	312.9
308.0	86.9	309.8
309.0	86.7	306.7
310.0	86.4	303.1
311.0	86.2	298.9
312.0	85.9	294.0
313.0	85.7	288.5
314.0	85.4	283.0
315.0	85.2	277.3
316.0	84.9	271.0
317.0	84.7	265.8
318.0	84.5	261.2
319.0	84.2	255.7
320.0	84.0	250.4
321.0	83.7	244.9
322.0	83.3	239.4
323.0	82.9	232.7
324.0	82.3	224.5
325.0	81.7	215.9
326.0	81.1	207.8
327.0	80.7	201.4
328.0	80.1	194.1
329.0	79.4	184.3
330.0	78.7	175.7
331.0	77.9	166.0
332.0	76.6	153.8
333.0	74.9	141.7
334.0	72.8	129.4
335.0	69.9	112.9
336.0	66.7	96.2
337.0	63.1	78.6
338.0	59.0	60.7
339.0	50.8	38.0
340.0	47.1	17.1
341.0	47.1	0.2
342.0	47.1	-19.8
343.0	47.1	-40.1
344.0	47.1	-57.8
345.0	47.1	-77.0
346.0	47.1	-91.4
347.0	47.1	-104.3
348.0	47.1	-129.1
349.0	47.1	-158.3
350.0	47.1	-185.7
351.0	47.1	-207.7
352.0	47.1	-235.8
353.0	47.1	-240.3

	kcos-dt 36db contour - proposed.txt	
354.0	47.1	-196.9
355.0	47.1	-144.7
356.0	47.1	-106.3
357.0	47.1	-77.9
358.0	47.1	-43.5
359.0	47.1	-20.0

Average HAAT for radials shown: 259.9 m

kc0s-dt 43db contour - proposed.txt

Call Letters: KC0S-DT (Proposed)
 File Number: BLET19800321KF
 Latitude: 31-47-15 N
 Longitude: 106-28-47 W
 ERP: 4.50 kW
 Channel: 13
 Frequency: 213.0 MHz
 AMSL Height: 1500.1 m
 Elevation: 1421.3 m
 HAAT: 258.53 m
 Horiz. Antenna Pattern: Omni
 Vert. Elevation Pattern: Yes
 Electrical Beam Tilt: 0.5

Type of contour: FCC
 Location Variability: 50.0 %
 Time Variability: 90.0 %
 # of Radials Calculated: 360
 Field Strength: 43.00 dBuV/m

Primary Terrain: V-Soft 3 Second US Terrain

Bearing (deg)	Distance (km)	HAAT (m)
0.0	37.4	-2.4
1.0	37.4	14.7
2.0	37.8	30.9
3.0	43.4	45.2
4.0	48.0	59.4
5.0	50.7	71.4
6.0	54.0	87.2
7.0	57.4	106.9
8.0	60.1	126.1
9.0	62.7	145.5
10.0	64.7	161.8
11.0	66.1	175.8
12.0	67.0	187.4
13.0	67.8	199.2
14.0	68.5	209.4
15.0	69.1	219.0
16.0	69.8	229.0
17.0	70.4	238.8
18.0	70.9	247.1
19.0	71.3	253.4
20.0	71.6	258.9
21.0	71.9	264.5
22.0	72.2	269.5
23.0	72.5	274.6
24.0	72.7	279.3
25.0	72.9	283.0
26.0	73.1	286.2
27.0	73.3	289.1
28.0	73.4	291.6
29.0	73.6	293.6
30.0	73.7	295.5
31.0	73.8	297.2
32.0	73.9	298.7
33.0	74.0	300.2
34.0	74.1	301.6
35.0	74.1	302.8
36.0	74.2	303.8
37.0	74.3	304.6
38.0	74.3	305.3

kcot-dt 43db contour - proposed.txt

39.0	74.3	305.8
40.0	74.4	306.2
41.0	74.4	306.5
42.0	74.4	306.7
43.0	74.4	306.9
44.0	74.4	307.1
45.0	74.4	307.3
46.0	74.5	307.7
47.0	74.5	307.8
48.0	74.5	308.0
49.0	74.5	308.1
50.0	74.5	308.2
51.0	74.5	308.4
52.0	74.5	308.5
53.0	74.5	308.6
54.0	74.5	308.8
55.0	74.6	308.8
56.0	74.6	308.9
57.0	74.6	308.9
58.0	74.6	308.9
59.0	74.6	308.8
60.0	74.5	308.8
61.0	74.5	308.8
62.0	74.5	308.7
63.0	74.5	308.7
64.0	74.5	308.7
65.0	74.5	308.7
66.0	74.5	308.5
67.0	74.5	307.9
68.0	74.4	307.2
69.0	74.4	306.7
70.0	74.4	306.2
71.0	74.3	305.7
72.0	74.3	305.1
73.0	74.3	304.5
74.0	74.2	304.0
75.0	74.2	303.7
76.0	74.2	303.3
77.0	74.1	302.8
78.0	74.1	302.7
79.0	74.1	302.6
80.0	74.1	302.6
81.0	74.1	302.6
82.0	74.1	302.6
83.0	74.1	302.6
84.0	74.1	302.8
85.0	74.1	302.9
86.0	74.2	303.0
87.0	74.2	303.3
88.0	74.2	303.8
89.0	74.2	304.3
90.0	74.3	305.0
91.0	74.3	305.7
92.0	74.4	306.5
93.0	74.5	307.7
94.0	74.6	309.0
95.0	74.7	310.6
96.0	74.8	312.3
97.0	74.9	313.9
98.0	75.0	315.5
99.0	75.2	318.0
100.0	75.4	321.0
101.0	75.7	324.7

kcot-dt 43db contour - proposed.txt

102.0	76.1	329.6
103.0	76.5	334.8
104.0	76.8	339.4
105.0	77.1	343.6
106.0	77.4	347.7
107.0	77.8	352.6
108.0	78.1	356.9
109.0	78.3	359.9
110.0	78.5	362.7
111.0	78.6	365.4
112.0	78.8	367.9
113.0	79.0	370.3
114.0	79.1	371.8
115.0	79.1	372.8
116.0	79.2	373.3
117.0	79.2	373.6
118.0	79.2	374.0
119.0	79.2	374.2
120.0	79.2	374.5
121.0	79.3	374.8
122.0	79.3	375.1
123.0	79.3	375.4
124.0	79.3	375.7
125.0	79.3	375.8
126.0	79.3	375.9
127.0	79.3	375.9
128.0	79.3	375.7
129.0	79.3	375.8
130.0	79.3	375.4
131.0	79.3	374.8
132.0	79.2	374.2
133.0	79.2	373.5
134.0	79.1	372.8
135.0	79.1	372.1
136.0	79.0	371.2
137.0	79.0	370.4
138.0	78.9	369.5
139.0	78.9	368.6
140.0	78.8	367.7
141.0	78.7	366.8
142.0	78.7	365.9
143.0	78.6	365.1
144.0	78.6	364.4
145.0	78.5	363.8
146.0	78.5	363.2
147.0	78.5	362.6
148.0	78.4	362.0
149.0	78.4	361.5
150.0	78.3	360.9
151.0	78.3	360.5
152.0	78.3	360.0
153.0	78.3	359.6
154.0	78.2	359.1
155.0	78.2	358.5
156.0	78.1	358.0
157.0	78.1	357.4
158.0	78.1	356.8
159.0	78.0	356.2
160.0	78.0	355.6
161.0	77.9	355.0
162.0	77.9	354.3
163.0	77.8	353.5
164.0	77.8	352.6

kcot-dt 43db contour - proposed.txt

165.0	77.7	351.5
166.0	77.6	350.2
167.0	77.5	348.9
168.0	77.4	347.1
169.0	77.2	344.9
170.0	77.0	342.6
171.0	76.9	340.1
172.0	76.7	337.5
173.0	76.5	334.8
174.0	76.3	332.1
175.0	76.0	329.0
176.0	75.8	325.7
177.0	75.6	322.8
178.0	75.3	319.4
179.0	75.1	316.0
180.0	74.8	312.2
181.0	74.4	306.1
182.0	73.9	299.5
183.0	73.5	292.7
184.0	73.4	290.3
185.0	73.1	286.5
186.0	72.7	279.3
187.0	72.4	273.9
188.0	72.1	268.3
189.0	71.7	261.6
190.0	71.2	251.2
191.0	70.4	238.6
192.0	69.8	229.6
193.0	69.0	216.5
194.0	68.0	202.5
195.0	67.1	189.7
196.0	65.9	173.7
197.0	65.5	168.9
198.0	66.0	174.3
199.0	66.4	178.7
200.0	66.7	182.8
201.0	66.9	185.6
202.0	66.3	178.2
203.0	66.2	176.5
204.0	66.3	178.1
205.0	66.2	176.8
206.0	66.3	177.8
207.0	66.3	178.4
208.0	66.1	175.1
209.0	65.5	169.3
210.0	64.5	160.0
211.0	63.7	153.4
212.0	63.6	152.5
213.0	64.1	157.0
214.0	64.7	161.9
215.0	65.3	167.5
216.0	65.9	172.9
217.0	66.5	180.2
218.0	67.1	188.8
219.0	67.7	197.6
220.0	68.1	204.3
221.0	68.4	207.7
222.0	68.4	208.2
223.0	68.4	208.7
224.0	68.6	210.8
225.0	68.9	215.6
226.0	69.1	218.4
227.0	69.1	218.5

kcot-dt 43db contour - proposed.txt

228.0	69.1	218.8
229.0	69.5	224.0
230.0	69.7	227.4
231.0	69.7	227.7
232.0	69.7	228.0
233.0	69.8	228.6
234.0	70.0	232.8
235.0	70.4	238.1
236.0	70.6	242.0
237.0	70.9	246.3
238.0	71.1	251.0
239.0	71.3	254.4
240.0	71.5	256.9
241.0	71.6	259.4
242.0	71.8	262.4
243.0	71.9	264.3
244.0	72.0	266.3
245.0	72.1	268.4
246.0	72.2	270.4
247.0	72.4	272.7
248.0	72.4	273.8
249.0	72.4	273.2
250.0	72.3	272.1
251.0	72.3	270.9
252.0	72.2	269.8
253.0	72.1	268.8
254.0	72.1	268.1
255.0	72.1	267.3
256.0	72.0	266.5
257.0	72.0	266.0
258.0	72.0	266.0
259.0	72.0	266.3
260.0	72.0	266.7
261.0	72.0	267.0
262.0	72.1	267.3
263.0	72.1	267.9
264.0	72.2	269.0
265.0	72.3	270.7
266.0	72.4	272.6
267.0	72.4	274.2
268.0	72.6	276.3
269.0	72.7	277.9
270.0	72.8	281.2
271.0	73.2	286.9
272.0	73.6	293.4
273.0	73.8	297.4
274.0	74.0	300.8
275.0	74.2	303.5
276.0	74.3	305.8
277.0	74.5	307.8
278.0	74.8	312.0
279.0	75.2	318.5
280.0	75.5	321.9
281.0	75.7	324.0
282.0	75.8	325.7
283.0	75.9	328.0
284.0	76.1	330.0
285.0	76.4	333.4
286.0	76.6	336.7
287.0	76.8	338.8
288.0	76.8	339.9
289.0	76.9	340.6
290.0	77.0	341.5

kcot-dt 43db contour - proposed.txt

291.0	77.0	341.8
292.0	77.0	342.5
293.0	77.0	342.5
294.0	77.0	342.2
295.0	76.9	341.3
296.0	76.8	339.6
297.0	76.6	337.0
298.0	76.5	334.8
299.0	76.3	333.1
300.0	76.2	331.4
301.0	76.0	329.2
302.0	75.9	326.8
303.0	75.7	324.4
304.0	75.5	322.0
305.0	75.3	319.0
306.0	75.1	315.9
307.0	74.8	312.9
308.0	74.6	309.8
309.0	74.4	306.7
310.0	74.2	303.1
311.0	73.9	298.9
312.0	73.6	294.0
313.0	73.3	288.5
314.0	72.9	283.0
315.0	72.6	277.3
316.0	72.3	271.0
317.0	72.0	265.8
318.0	71.7	261.2
319.0	71.4	255.7
320.0	71.1	250.4
321.0	70.8	244.9
322.0	70.4	239.4
323.0	70.0	232.7
324.0	69.5	224.5
325.0	68.9	215.9
326.0	68.4	207.8
327.0	67.9	201.4
328.0	67.4	194.1
329.0	66.8	184.3
330.0	66.1	175.7
331.0	65.2	166.0
332.0	63.7	153.8
333.0	62.2	141.7
334.0	60.6	129.4
335.0	58.4	112.9
336.0	55.7	96.2
337.0	52.3	78.6
338.0	48.3	60.7
339.0	40.6	38.0
340.0	37.4	17.1
341.0	37.4	0.2
342.0	37.4	-19.8
343.0	37.4	-40.1
344.0	37.4	-57.8
345.0	37.4	-77.0
346.0	37.4	-91.4
347.0	37.4	-104.3
348.0	37.4	-129.1
349.0	37.4	-158.3
350.0	37.4	-185.7
351.0	37.4	-207.7
352.0	37.4	-235.8
353.0	37.4	-240.3

	kcos-dt 43db contour - proposed.txt	
354.0	37.4	-196.9
355.0	37.4	-144.7
356.0	37.4	-106.3
357.0	37.4	-77.9
358.0	37.4	-43.5
359.0	37.4	-20.0

Average HAAT for radials shown: 259.9 m