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**Engineering Statement
CP Modification for K36MU-D
Channel 36 at Texarkana, AR
March 2021**

I. Background

This Engineering Statement has been prepared on behalf of HC2 Station Group, Inc. ("HC2"), the permittee of low power digital station K36MU-D at Texarkana, Arkansas. This material has been prepared in connection with an application for minor modification of construction permit.

II. Interference Study

Study has been made of all cochannel and adjacent-channel facilities in the vicinity of the proposed operation, including a detailed Longley-Rice interference study to demonstrate that the proposed operation will not cause interference to any authorized or pending proposed facilities. This study was performed using the Commission's TVStudy software.

The results of this study indicate that the proposed facility is predicted to cause zero additional interference to any of the listed stations. Based on the foregoing interference study, it is believed that the proposed facility can operate without risk of interference to other stations.

Study created: 2021.03.09 14:33:10

Study build station data: LMS TV 2021-02-27

Proposal: K36MU-D D36 LD APP TEXARKANA, AR
File number: K36MU-418488
Facility ID: 188811
Station data: User record
Record ID: 1162
Country: U.S.

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

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	K35KU-D	D35	LD	CP	EL DORADO, AR	BNPDTL20100510ADD	110.7 km
No	KRAH-CD	D35	DC	LIC	PARIS, AR	BLANK00000127224	183.7
Yes	KLFI-CD	D35	DC	LIC	TEXARKANA, AR	BLANK0000008204	38.8
No	KPKN-LD	D35	LD	LIC	TYLER, TX	BLANK00000118572	183.7
No	KLMB-CD	D36z	DC	CP	EL DORADO, AR	BLANK00000134310	110.7
No	KFFS-CD	D36	DC	LIC	FAYETTEVILLE, AR	BLANK0000055356	283.5
Yes	KKAP	D36	DT	APP	LITTLE ROCK, AR	BLANK0000036057	173.4
Yes	KKAP	D36	DT	LIC	LITTLE ROCK, AR	BLEDT20090522AFW	173.4
No	KBTR-CD	D36	DC	LIC	BATON ROUGE, LA	BLANK00000107947	428.5
No	KADO-CD	D36	DC	LIC	SHREVEPORT, LA	BLANK0000072191	125.7
No	KBNS-CD	D36	DC	LIC	BRANSON, MO	BLDTL20100315ADB	349.2
No	K36II-D	D36	LD	LIC	JOPLIN, MO	BLDTL20101022ACG	379.2
No	K36NJ-D	D36	LD	LIC	MONETT, MO	BLANK0000058924	368.7
No	K38HE-D	D36	LD	LIC	WEST PLAINS, MO	BLANK0000059299	386.9
No	W36EV-D	D36	LD	CP	GREENVILLE, MS	BLANK0000036201	254.0
No	WMAV-TV	D36	DT	LIC	OXFORD, MS	BLEDT20090612AAK	379.0
No	WLOO	D36	DT	LIC	VICKSBURG, MS	BLANK0000063959	350.0
No	K36KE-D	D36	LD	LIC	ARDMORE, OK	BLDTT20130911ABZ	321.6
No	KDOR-TV	D36	DT	LIC	BARTLESVILLE, OK	BLANK0000067842	370.9
No	K36LS-D	D36	LD	CP	MULDROW, OK	BNPDTL20100505AJX	215.2
No	KUOK-CD	D36	DC	CP	OKLAHOMA CITY, OK	BLANK0000035680	398.8
No	KUIL-LD	D36	LD	LIC	BEAUMONT, TX	BLANK0000016333	381.9
No	K36LD-D	D36	LD	CP	COLLEGE STATION, TX	BNPDTL20100119AEB	411.9
No	KXTX-TV	D36	DT	LIC	DALLAS, TX	BLANK0000074968	322.2
No	KLGV-LD	D36	LD	LIC	LONGVIEW, TX	BLDTL20140325AGH	159.8
No	K36QA-D	D36	LD	CP	LUFKIN, TX	BLANK0000072175	276.8
No	KTPN-LD	D36	LD	CP	TYLER, TX	BLANK0000054451	200.2

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D36
Mask: Stringent
Latitude: 33 37 25.40 N (NAD83)
Longitude: 93 44 13.60 W
Height AMSL: 180.4 m
HAAT: 0.0 m
Peak ERP: 15.0 kW
Antenna: Omnidirectional
Elev Pattn: Generic

50.9 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	15.0 kW	66.2 m	38.1 km
45.0	15.0	88.4	41.4
90.0	15.0	86.5	41.2
135.0	15.0	78.5	40.0
180.0	15.0	102.9	43.2
225.0	15.0	103.2	43.3
270.0	15.0	99.0	42.8
315.0	15.0	78.0	40.0

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Database HAAT does not agree with computed HAAT
Database HAAT: 0 m Computed HAAT: 88 m

Distance to Canadian border: 1308.7 km

Distance to Mexican border: 827.3 km

Conditions at FCC monitoring station: Kingsville TX
Bearing: 211.1 degrees Distance: 793.4 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 308.6 degrees Distance: 1249.1 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 K36MU-418488 ----

**MX with BLANK0000036057 APP scenario 1, 9.90% interference received
Proposal receives 7.61% interference from scenario 2

III. RF Exposure Study

The power density calculations shown below were made using the techniques outlined in OET Bulletin No. 65. "Ground level" calculations in this report have been made at a reference height of 2 meters above ground to provide a worst-case estimate of exposure for persons standing on the ground in the vicinity of the tower. The equation shown below was used to calculate the ground level power density figures from each antenna.

$$S(\mu W / cm^2) = \frac{33.40981 \times AdjERP(Watts)}{D^2}$$

Where: *AdjERP(Watts)* is the maximum lobe effective radiated power times the element pattern factor times the array pattern factor.

D is the distance in meters from the center of radiation to the calculation point.

Power density levels produced by the proposed facility were calculated for an elevation of 2 meters above ground using the manufacturer's vertical plane pattern for the circularly-polarized ERI ALP8L3 antenna proposed in this application. The highest calculated power density from the proposed antenna alone occurs at a point 34 meters from the base of the antenna support structure. At this point the power density from the proposed facility is calculated to be 7.3 $\mu W/cm^2$, which is 1.8% of 401.3 $\mu W/cm^2$ (the FCC maximum for uncontrolled environments at the Channel 36 frequency).

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed operation alone is less than 5% of the applicable FCC exposure limit at all locations between 1 and 500 meters from the base of the antenna support structure. Section 1.1307(b)(3) of the Commission's Rules excludes applications for new facilities or modifications to existing facilities from the requirement of preparing an environmental assessment when the calculated emissions from the applicant's proposed facility are predicted to be less than 5% of the applicable FCC exposure limit. Therefore, the proposed facility is in compliance with Section 1.1301 *et seq* and no further analysis of RF exposure at this site is required in this application.

Pursuant to OET Bulletin No. 65, all station personnel and contractors are required to follow appropriate safety procedures before any work is commenced on the antenna tower, including reduction in power or discontinuance of operation before any maintenance work is undertaken. The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency exposure in excess of FCC guidelines.

March 9, 2021

Erik C. Swanson, P.E.

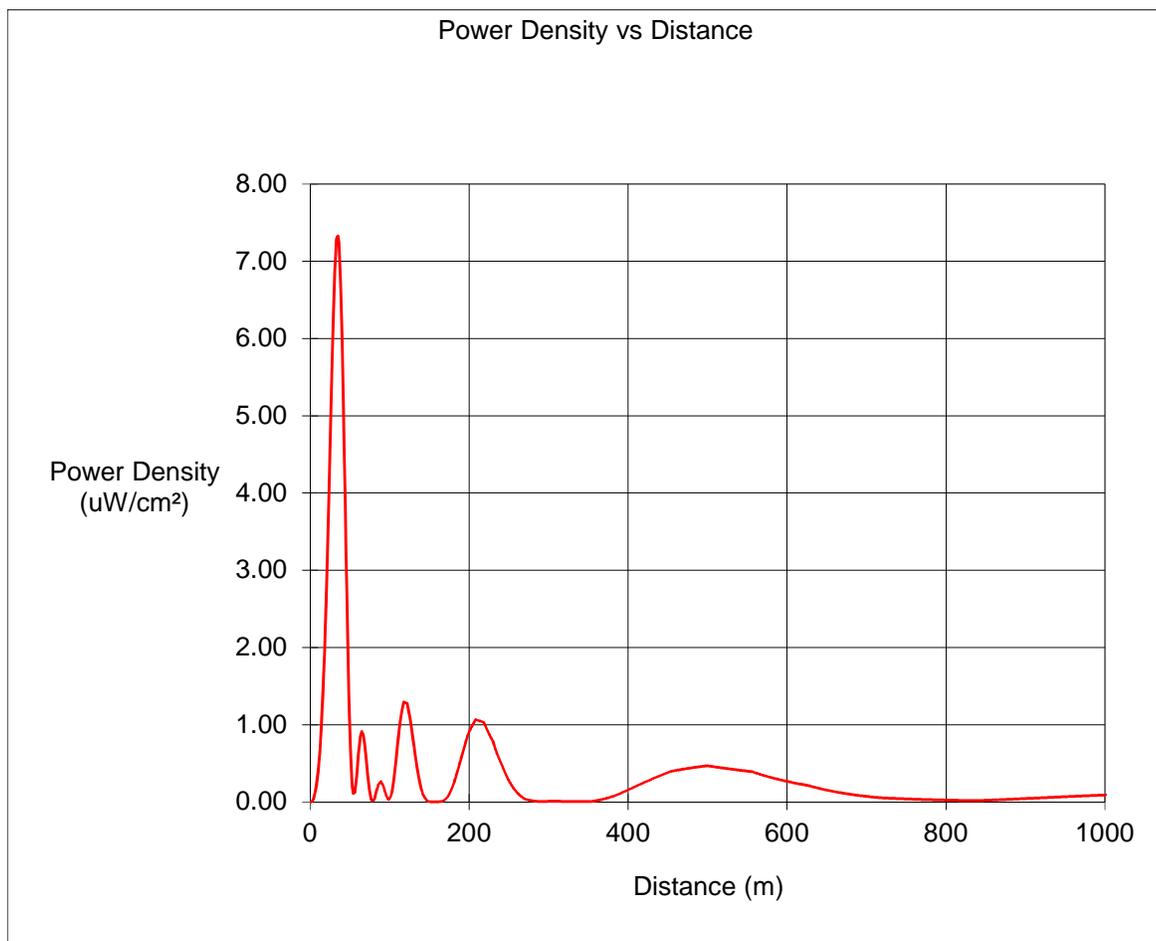
K36MU-D Texarkana

Ground-Level Power Density Calculations

Using Manufacturer's Vertical Plane Pattern

Antenna	ERI ALP8L3		
ERP	15,000	Watts H (avg)	
	15,000	Watts V (avg)	
Antenna AGL	89.9	meters less 2m is	87.9 meters above the reference plane
MBT	0	degrees	

Calculated
Maximum is 7.3 $\mu\text{W}/\text{cm}^2$ at 34 meters from the tower



**K36MU-D Texarkana
Ground-Level Power Density Calculations
Using Manufacturer's Vertical Plane Pattern**

Distance From Tower (meters)	Hypotenuse (meters)	Depression Angle (with MBT adjust) (degrees)	Interpolated Rel Field	Adjusted ERP (watts)	Power Density uW/cm ²
0	87.90	90.00	0.000	0.0	0.00
1	87.91	89.35	0.006	1.0	0.00
2	87.92	88.70	0.011	3.9	0.02
3	87.95	88.05	0.017	8.3	0.04
4	87.99	87.39	0.023	15.9	0.07
5	88.04	86.74	0.029	25.8	0.11
6	88.10	86.10	0.035	37.1	0.16
7	88.18	85.45	0.042	51.7	0.22
8	88.26	84.80	0.048	69.7	0.30
9	88.36	84.15	0.055	91.8	0.39
10	88.47	83.51	0.063	118.6	0.51
11	88.59	82.87	0.071	150.1	0.64
12	88.72	82.23	0.079	187.5	0.80
13	88.86	81.59	0.088	231.2	0.98
14	89.01	80.95	0.097	280.5	1.18
15	89.17	80.32	0.106	334.4	1.41
16	89.34	79.68	0.115	395.0	1.65
17	89.53	79.05	0.124	462.7	1.93
18	89.72	78.43	0.134	540.0	2.24
19	89.93	77.80	0.144	625.1	2.58
20	90.15	77.18	0.155	719.9	2.96
21	90.37	76.56	0.165	820.9	3.36
22	90.61	75.95	0.176	927.4	3.77
23	90.86	75.34	0.186	1033.6	4.18
24	91.12	74.73	0.195	1144.8	4.61
25	91.39	74.12	0.205	1261.0	5.04
26	91.66	73.52	0.214	1376.0	5.47
27	91.95	72.92	0.223	1491.6	5.89
28	92.25	72.33	0.231	1596.6	6.27
29	92.56	71.74	0.238	1693.4	6.60
30	92.88	71.16	0.243	1778.0	6.89
31	93.21	70.57	0.248	1844.9	7.10
32	93.54	70.00	0.252	1905.3	7.27
33	93.89	69.42	0.254	1931.4	7.32
34	94.25	68.85	0.255	1948.5	7.33
35	94.61	68.29	0.254	1939.9	7.24
36	94.99	67.73	0.252	1906.6	7.06
37	95.37	67.17	0.248	1848.2	6.79
38	95.76	66.62	0.242	1763.4	6.42
39	96.16	66.07	0.236	1669.3	6.03
40	96.57	65.53	0.227	1540.0	5.52
41	96.99	64.99	0.217	1410.8	5.01
42	97.42	64.46	0.205	1255.8	4.42
43	97.85	63.93	0.192	1107.2	3.86
44	98.30	63.41	0.177	944.6	3.27

45	98.75	62.89	0.162	790.9	2.71
46	99.21	62.38	0.145	634.3	2.15
47	99.68	61.87	0.128	494.1	1.66
48	100.15	61.36	0.111	367.5	1.22
49	100.64	60.86	0.093	259.7	0.86
50	101.13	60.37	0.075	169.8	0.55
51	101.62	59.88	0.059	102.9	0.33
52	102.13	59.39	0.045	60.7	0.19
53	102.64	58.91	0.034	34.9	0.11
54	103.16	58.44	0.035	35.8	0.11
55	103.69	57.97	0.036	38.4	0.12
56	104.22	57.50	0.047	64.9	0.20
57	104.76	57.04	0.057	97.9	0.30
58	105.31	56.58	0.068	137.2	0.41
59	105.87	56.13	0.078	182.6	0.54
60	106.43	55.68	0.086	222.3	0.66
61	106.99	55.24	0.093	260.3	0.76
62	107.57	54.80	0.098	290.4	0.84
63	108.15	54.37	0.101	308.5	0.88
64	108.73	53.94	0.104	323.4	0.91
65	109.32	53.52	0.103	315.5	0.88
66	109.92	53.10	0.101	307.8	0.85
67	110.52	52.68	0.097	283.5	0.78
68	111.13	52.27	0.092	255.5	0.69
69	111.75	51.87	0.086	223.1	0.60
70	112.37	51.47	0.078	181.7	0.48
71	112.99	51.07	0.069	144.9	0.38
72	113.62	50.68	0.060	106.7	0.28
73	114.26	50.29	0.050	73.7	0.19
74	114.90	49.91	0.039	46.1	0.12
75	115.55	49.53	0.028	23.2	0.06
76	116.20	49.15	0.017	8.2	0.02
77	116.86	48.78	0.013	5.1	0.01
78	117.52	48.42	0.015	6.7	0.02
79	118.18	48.05	0.017	8.4	0.02
80	118.85	47.69	0.025	18.2	0.04
81	119.53	47.34	0.034	33.7	0.08
82	120.21	46.99	0.042	53.4	0.12
83	120.89	46.64	0.048	68.3	0.16
84	121.58	46.30	0.053	84.9	0.19
85	122.28	45.96	0.058	101.7	0.23
86	122.97	45.63	0.060	108.9	0.24
87	123.67	45.29	0.062	116.2	0.25
88	124.38	44.97	0.064	122.1	0.26
89	125.09	44.64	0.062	114.8	0.25
90	125.80	44.32	0.060	107.8	0.23
91	126.52	44.01	0.058	101.1	0.21
92	127.24	43.69	0.053	83.7	0.17
93	127.97	43.39	0.048	67.8	0.14
94	128.70	43.08	0.042	53.8	0.11
95	129.43	42.78	0.037	40.1	0.08
96	130.16	42.48	0.031	28.0	0.06