

## STATEMENT OF JOHN E. HIDLE, P.E. IN SUPPORT OF AN APPLICATION TO AMEND A PENDING APPLICATION FOR CONSTRUCTION PERMIT BMPEDT-20000501AEU KMBH-DT- HARLINGEN, TEXAS DTV - CH. 38 - 1000 kW - 345.5 M HAAT

Prepared for: RGV Educational Broadcasting, Inc.

I am a Consulting Engineer, an employee in the firm of Carl T. Jones Corporation, with offices located in Springfield, Virginia. My education and experience are a matter of record with the Federal Communications Commission. I am a registered Professional Engineer in the Commonwealth of Virginia, Registration No. 7418, and in the State of New York, Registration No. 63418.

#### **GENERAL**

This office has been authorized by RGV Educational Broadcasting, Inc., licensee of KMBH(TV), channel 60, Harlingen, Texas, and applicant for modification of construction permit for the paired Digital Television Allotment for KMBH-DT, channel 38, to prepare this statement, FCC Form 301, Sections III and III-D, and the associated exhibits in support of an application to amend its pending application for modification of construction permit, BMPEDT-20000501AEU. It is herein proposed to substitute a directional antenna for the currently proposed omni-directional antenna, and change the antenna Height Above Average Terrain in order to accommodate the DTV station on the existing support structure. The instant application is therefore necessary to enable the applicant to implement its digital facility on DTV channel 38.

It is proposed herein to install a new Andrew type ATW20H4-HSPX-38H directional antenna to be used by KMBH-DT. The new antenna is to be side-mounted on the existing tower support structure located at 27E 7' 14" N latitude, 97E 49' 18" W longitude. The existing structure is registered in the FCC 's tower registration database, # 1046272. In order to install the proposed DTV antenna, while maintaining the structure's registered overall height above mean sea level and not disrupting, or otherwise modifying, the licensed operation of KMBH(TV) on channel 60, the applicant proposes to side-mount the DTV antenna on the tower structure below KMBH's existing antenna.

## PROPOSED DIRECTIONAL ANTENNA

It is proposed to install a new directional antenna, an Andrew ATW20H4-HSPX-38H for use by KMBH-DT on the existing tower currently used by KMBH(TV). The proposed directional transmitting antenna shall employ an electrical beam tilt of 1.00 degrees below the horizontal plane. The antenna manufacturer's horizontal plane azimuth radiation pattern, illustrating the proposed antenna's directional pattern characteristics is shown in Exhibit 2, and tabulated in Exhibit 3. The manufacturer's vertical plane radiation pattern, illustrating the proposed antenna's radiation characteristics above and below the horizontal plane, is shown in Exhibit 4, and is tabulated in Exhibit 5. A Vertical Plan Antenna Sketch is provided in Exhibit 1.

## PREDICTED COVERAGE CONTOURS

The predicted coverage contours were calculated in accordance with the method described in Section 73.684 of the Rules, utilizing the appropriate F(50,90) propagation curves (47 CFR Section 73.699, Figure 9), power, and antenna height above average terrain as determined for each profile radial. The average terrain on the eight cardinal radials from 3 kilometers to 16 kilometers from the site, was determined using the National Geophysical Data Center Thirty Second Point Database (TPG-0050) as prescribed in the FCC Rules. The antenna site elevation and coordinates were determined from FCC antenna registration data. The predicted principal community (48 dBu) contour completely encompasses the principal community of license, shown in Exhibit 6, as required by Section 73.625(a) of the Commission's rules. The predicted 41 dBu contour is also shown in Exhibit 6.

## **ALLOCATION CONSIDERATIONS**

## **NTSC Allocation Considerations**

An interference study was performed, using the Commission's application analysis program, tv\_process, to ensure that the proposed DTV facility is in compliance with the Commission's *de minimis* interference requirement contained in Section 73.623(c)(2) of the Commission's rules. The study showed that the DTV facility proposed herein is predicted to cause no increase in the interference population in excess of the Commission's *de minimis* criteria to any authorized or proposed NTSC television facility.

#### **DTV Allocation Considerations**

The same study was evaluated to determine if the proposed modification of KMBH-DT is predicted to cause any level of new prohibited interference to other authorized DTV facilities, including other DTV stations, DTV expansion construction permits, DTV allotments or pending DTV applications. The study results indicate that the instant proposal is predicted to cause no unacceptable level of new interference to the populations served by any other relevant DTV facility, and thereby is in compliance with the *de minimis* interference criteria contained in Section 73.623(c)(2) of the Commission's Rules.

## **Class A Television Allocation Considerations**

As required in Section 73.623(c)(5) of the FCC's Rules, a study of interference contour overlap was performed, based on the KMBH-DT facility proposed herein, to establish compliance with the protection requirements contained therein. The tv\_process study reveals that KMBH-DT's facility as proposed in its pending application is located inside the protected service area of Class A LPTV station KTFN-LP, La Feria, Texas. Such a condition is permitted since KMBH-DT's pending maximization application was submitted prior to May 1, 2000, and predates the requirement to protect the Class A LPTV service. As shown in exhibit 7, KMBH-DT's predicted interference contour in relation to the required minus 41 dBu D/U ratio does not overlap the protected service contour of KTFN-LP, therefore, no interference is expected to exist. As a result of the instant proposal the predicted conditions improve; and, when compared to the pending application, results in

a substantial reduction in the total area within KMBH-DT's predicted 115 dBu interference contour. The instant proposal can only act to improve any interference relationship which might exist between KMBH-DT and KTFN-LP. The interference study shows that, as a result of the changes proposed herein, no increase in prohibited contour overlap is predicted to occur with KTFN-LP, or any other LPTV station which has achieved class A license protected status.

## **BLANKETING AND INTERMODULATION INTERFERENCE**

A number of broadcast and non-broadcast facilities are located within 10 km of the proposed KMBH-DT transmitter/antenna site. The applicant recognizes its responsibility to remedy complaints of interference created by this proposal in accordance with applicable Rules.

# **ENVIRONMENTAL CONSIDERATIONS**

## **GENERAL**

The proposal described herein meets the criteria specified in Section 1.1306 of the FCC Rules and Regulations as an action, which is categorically excluded from environmental processing. The proposed TV facility involves neither a site location specified under Section 1.1307(a)(1)-(7) of the Rules nor high intensity lighting as specified in Section 1.1307(a)(8).

#### RADIO FREQUENCY IMPACT

Effective October 15, 1997, the FCC adopted new guidelines and procedures for evaluating environmental effects of radio frequency (RF) emissions. The guidelines are generally based on recommendations by the National Council on Radiation Protection and Measurements (NCRP) in <u>NCRP Report No. 86 (1986)</u>, and by the American National Standards Institute and the Institute of Electrical and Electronic Engineers, LLC (IEEE) in ANSI/IEEE C95.1-1992 (IEEE C95.1-1991). The guidelines provide a maximum permissible exposure (MPE) level for occupational or "controlled" situations that apply in cases that affect the general public. The FCC Office of Engineering and Technology's technical bulletin No. 65 entitled, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields" (Edition 97-01, August 1997), provides assistance in the determination of whether FCC-regulated transmitting facilities, operations or devices comply with guideline limits for human exposure to radio frequency electromagnetic fields as adopted by the Commission in 1996. Bulletin No. 65 contains the technical information necessary to evaluate compliance with the FCC's policies and guidelines.

The FCC Maximum Permitted Exposure (MPE) level for "uncontrolled" environments is derived from the formula, (frequency/1500), for UHF TV stations. The MPE level for UHF stations in a "controlled" environment is derived from the formula, (frequency/300). The predicted emissions of KMBH-DT channel 38 must be considered, along with the

predicted emissions from other proposed and existing stations at the current site. For KMBH-DT, which will operate on television Channel 38 (617 MHz), the MPE is 0.411 milliwatts per centimeter squared (mW/cm<sup>2</sup>) in an "uncontrolled" environment and 2.050 mW/cm<sup>2</sup> in a "controlled" environment. The proposed KMBH-DT facility will operate with a maximum ERP of 1000 kW from a horizontally polarized directional transmitting antenna with a centerline height of 342.5 meters above ground level (AGL). Considering a very conservative vertical plane relative field factor of 0.3, the KMBH-DT facility produces a predicted power density at two meters above ground level of .02563 mW/cm<sup>2</sup>, which is 6.23% of the FCC guideline value for "uncontrolled" environments, and 1.25% of the FCC guideline value for "sontrolled" environments (see Appendix A). The total percentage of the ANSI value at the proposed site, considering the cumulative radiation of all stations at the site, is only 82.64% of the limit for "uncontrolled" environments, and 16.53% of the limit for "controlled" environments.

#### **OCCUPATIONAL SAFETY**

The licensee of KMBH(TV) is committed to the protection of station personnel and/or tower contractors working in the vicinity of the KMBH-DT antenna. The applicant is committed to reducing power and/or ceasing operation during times of service or maintenance of the transmission systems, when necessary, to ensure protection to personnel. In light of the above, the proposed KMBH-DT facility should be categorically excluded from RF environmental processing under Section 1.1307(b) of the Commission's Rules.

## SUMMARY

It is submitted that the proposal to amend the pending application for construction permit for KMBH-DT as described herein complies with the Rules and Regulations of the Federal Communications Commission. This statement, FCC Form 301, and the attached exhibits were prepared by me or under my direct supervision and are believed to be true and correct to the best of my knowledge and belief.

DATED: February 27, 2003





ANDRE	<b>W</b> ERN				
CH38AZ-H-FINAL-PX					
Numeric	dBd				
2.903	( 4.63)				
Horizo	ontal				
38 ((Digital)					
Harlingen, TX					
	ANDRE MUTH PATT CH38AZ-H-H Numeric 2.903 Horizo 38 ((Dig Harlinge				





# **TABULATED DATA FOR AZIMUTH PATTERN TYPE :** CH38AZ-H-FINAL-PX

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
0	0.258	-11.78	110	0.518	-5.71	220	0.474	-6.48	330	0.531	-5.49
2	0.260	-11.71	112	0.496	-6.08	222	0.515	-5.77	332	0.499	-6.04
4	0.262	-11.63	114	0.471	-6.53	224	0.559	-5.05	334	0.468	-6.60
6	0 268	-11 45	116	0 448	-6.97	226	0 598	-4 46	336	0 438	-7 18
8	0.200	-11 23	118	0.478	-7 37	220	0.550	-3.84	338	0.407	-7.81
10	0.275	-10.87	120	0.420	-7.79	220	0.045	-3.37	340	0.707	-8 40
12	0.200	-10.07	120	0.700	-8.73	230	0.070	-7.87	340	0.355	-8 00
11	0.299	-10.49	124	0.300	-8.64	232	0.722	-2.02	344	0.333	-0.55
16	0.310	-10.01	124	0.370	-8.04	234	0.733	-2.44	246	0.332	-10.06
10	0.334	-9.52	120	0.333	-0.33	230	0.700	-2.07	240	0.314	-10.00
20	0.355	-9.04	120	0.343	-9.30	230	0.010	-1.75	250	0.290	-10.52
20	0.374	-0.55	130	0.332	-9.50	240	0.042	-1.49	350	0.205	-10.90
22	0.395	-8.07	132	0.324	-9.79	242	0.805	-1.20	352	0.275	-11.22
24	0.415	-7.04	134	0.319	-9.92	244	0.885	-1.00	354	0.207	-11.40
20	0.435	-7.24	130	0.319	-9.94	240	0.900	-0.92	350	0.262	-11.65
28	0.448	-6.97	138	0.321	-9.87	248	0.912	-0.80	358	0.259	-11.75
30	0.468	-6.59	140	0.327	-9.72	250	0.920	-0.73	360	0.258	-11.78
32	0.483	-6.31	142	0.333	-9.54	252	0.927	-0.66			
34	0.497	-6.08	144	0.342	-9.32	254	0.930	-0.63			
36	0.509	-5.86	146	0.348	-9.16	256	0.932	-0.61			
38	0.520	-5.68	148	0.356	-8.98	258	0.933	-0.60			
40	0.529	-5.53	150	0.360	-8.87	260	0.936	-0.58			
42	0.537	-5.41	152	0.365	-8.75	262	0.929	-0.64			
44	0.541	-5.33	154	0.368	-8.67	264	0.931	-0.63			
46	0.543	-5.31	156	0.371	-8.62	266	0.932	-0.62			
48	0.541	-5.34	158	0.373	-8.57	268	0.931	-0.62			
50	0.535	-5.43	160	0.374	-8.54	270	0.936	-0.57			
52	0.525	-5.60	162	0.376	-8.50	272	0.941	-0.52			
54	0.515	-5.77	164	0.377	-8.48	274	0.947	-0.47			
56	0.500	-6.02	166	0.376	-8.49	276	0.955	-0.40			
58	0.487	-6.25	168	0.375	-8.52	278	0.960	-0.35			
60	0.474	-6.49	170	0.372	-8.59	280	0.968	-0.29			
62	0.463	-6.68	172	0.367	-8.72	282	0.976	-0.21			
64	0.453	-6.88	174	0.359	-8.89	284	0.984	-0.14			
66	0.446	-7.01	176	0.351	-9.10	286	0.993	-0.06			
68	0.443	-7.08	178	0.339	-9.39	288	0.996	-0.03			
70	0.441	-7.11	180	0.326	-9.73	290	0.999	-0.00			
72	0.444	-7.05	182	0.313	-10.08	292	0.998	-0.01			
74	0.450	-6.94	184	0.300	-10.45	294	1.000	0.00			
76	0.460	-6.75	186	0.286	-10.87	296	0.991	-0.08			
78	0.473	-6.50	188	0.274	-11.24	298	0.983	-0.15			
80	0.490	-6.20	190	0.260	-11.69	300	0.973	-0.24			
82	0.503	-5,98	192	0.248	-12.11	302	0.959	-0,37			
84	0.526	-5,58	194	0,235	-12.58	304	0.941	-0,52			
86	0.541	-5.34	196	0.222	-13.05	306	0.920	-0.72			
88	0.557	-5.08	198	0.212	-13.45	308	0.898	-0.94			
90	0.570	-4.88	200	0.206	-13.74	310	0.874	-1.17			
92	0.580	-4.73	202	0.206	-13.73	312	0.841	-1.50			
94	0.587	-4,63	204	0.214	-13,39	314	0.814	-1.79			
96	0.590	-4,59	206	0.234	-12.62	316	0.779	-2.17			
98	0.591	-4.57	208	0.253	-11.93	318	0.743	-2.58			
100	0.588	-4,61	210	0.277	-11.16	320	0.710	-2.98			
102	0.581	-4,72	212	0.309	-10.20	322	0.673	-3.44			
102	0 571	-4 87	212	0.366	-8 73	374	0.636	-3 97			
104	0 557	-5 08	214	0.300	-8 18	324	0.602	-4 40			
100	0 530	-5 37	210	0 434	-7 26	378	0 567	-4 93			
108	0.539	-3.3/	210	0.434	-/.20	<u> </u>	0.30/	-4.95			





# TABULATED DATA FOR ELEVATION PATTERN TYPE : ATW20H4H

Angle Field dB	Angle Field dB	Angle Field dB	Angle Field dB
-5 To 10	10 To 90		
In 0.25 Increments	In 0.5 Increments		
-5.00 0.129-17.78	8.75 0.103-19.78	35.00 0.023-32.72	62.50 0.035 - 29.18
-4.75 0.104-19.64	9.00 0.100-20.03	35.50 0.029-30.61	63.00 0.027-31.52
-4.50 0.082-21.72	9.25 0.107-19.44	36.00 0.039-28.18	63.50 0.017-35.14
-4.25 0.082-21.75	9.50 0.118-18.58	36.50 0.044 - 27.17	64.00 0.011 - 39.19
-4.00 0.111-19.10	9.75 0.128-17.87	37.00 0.042 - 27.64	64.50 0.014 - 37.10
	$10.00\ 0.133\ -17.51$	37.50 0.033 - 29.80	65.00 0.023 - 32.93
-3.50 0.197-14.12	$10.50\ 0.125 - 18.03$	38.00 0.023 - 32.83	66 00 0 039 - 38 20
-3.00 0 258-11 77	11 50 0 076 - 22 42	39.000.022 - 33.03	66 50 0 044 - 27 04
-2 75 0 267-11 47	12 00 0 082-21 73	39 50 0 040 - 28 02	67 00 0 048-26 41
-2 50 0 258 - 11 77	12 50 0 100 - 20 00	40 00 0 043-27 34	67 50 0 049 - 26 23
-2.25 0.231-12.71	13.00 0.105 - 19.61	40.50 0.040 - 28.05	68.00 0.048-26.46
-2.00 0.191-14.36	13.50 0.090 - 20.88	41.00 0.031 - 30.15	68.50 0.044 - 27.11
-1.75 0.153-16.31	14.00 0.068-23.37	41.50 0.022-33.14	69.00 0.039-28.20
-1.50 0.154-16.27	14.50 0.061 - 24.35	42.00 0.022-33.23	69.50 0.032-29.85
-1.25 0.217-13.28	15.00 0.074 -22.57	42.50 0.031-30.29	70.00 0.024-32.24
-1.00 0.318 -9.94	15.50 0.086 -21.32	43.00 0.039-28.13	70.50 0.016-35.80
-0.75 0.436 -7.21	16.00 0.082-21.68	43.50 0.043-27.31	71.00 0.009-41.02
-0.50 0.558 -5.07	16.50 0.066-23.66	44.00 0.041-27.73	71.50 0.008-42.10
-0.25 0.675 -3.41	17.00 0.050-26.08	44.50 0.034-29.41	72.00 0.014-36.92
0.00 0.782 -2.14	17.50 0.053-25.48	45.00 0.024-32.23	72.50 0.022-33.24
0.25 0.871 -1.20	18.00 0.067 - 23.49	45.50 0.020-33.89	73.00 0.029-30.79
0.50 0.940 -0.54	18.50 0.072-22.81	46.00 0.026-31.57	73.50 0.035 - 29.09
0.75 0.983 -0.15	19.00 0.064 -23.83	46.50 0.036 - 28.93	74.00 0.040-27.89
1.00 1.000 0.00	19.50 0.048 - 26.37	47.00 0.042-27.45	74.50 0.044 - 27.06
1.25 0.990 -0.08	20.00 0.039-28.08	47.50 0.044 - 27.11	75.00 0.047 - 26.50
	20.50 0.049 - 28.23	48.00 0.040 - 27.87	75.50 0.049 - 28.18
	21.00 0.080 - 24.43	48.50 0.032 - 29.78	76.00 0.050-28.08
2 25 0 736 -2 66	22.00 0 051-25.82	49.00 0.023-32.73	77.00.0.048-26.31
2 50 0 644 -3 82	22 50 0 037 - 28 59	50 00 0 025 - 32 12	77 50 0 046 - 26 66
2.75 0.555 -5.11	23.00 0.035 - 29.08	50.50 0.034 - 29.41	78.00 0.044-27.14
3.00 0.478 -6.41	23.50 0.046 - 26.65	51.00 0.041 - 27.79	78.50 0.041 - 27.76
3.25 0.420 -7.54	24.00 0.055 - 25.15	51.50 0.043-27.23	79.00 0.038-28.51
3.50 0.384 -8.32	24.50 0.054 - 25.34	52.00 0.041-27.65	79.50 0.034 - 29.39
3.75 0.368 -8.69	25.00 0.044 - 27.19	52.50 0.035 - 29.08	80.00 0.030-30.40
4.00 0.363 -8.81	25.50 0.032-29.84	53.00 0.026-31.66	80.50 0.026-31.56
4.25 0.359 -8.89	26.00 0.034 - 29.45	53.50 0.018-34.89	81.00 0.023-32.87
4.50 0.350 -9.11	26.50 0.045 - 26.96	54.00 0.018-34.89	81.50 0.019-34.35
4.75 0.333 -9.56	27.00 0.052-25.64	54.50 0.026-31.71	82.00 0.016-36.02
5.00 0.305 - 10.30	27.50 0.050 - 25.94	55.00 0.035 - 29.17	82.50 0.013 - 37.92
5.25 0.271-11.35	28.00 0.041-27.80	55.50 0.041-27.71	83.00 0.010-40.10
5.50 0.232-12.67	28.50 0.030-30.36	56.00 0.044 -27.16	83.50 0.007-42.64
5.75 0.197-14.13	29.00 0.032 - 30.01	56.50 0.042 - 27.45	84.00 0.005 - 45.67
6.00 0.170-15.38	29.50 0.042 - 27.58	57.00 0.037 - 28.80	84.50 0.003 - 49.44
6.25 0.157-15.78	30.00 0.049-28.21	57.50 0.029-30.75	85.00 0.002 - 54.48
6 75 0 173-15 25	31 00 0 039 - 28 08	58 50 0 014 - 37 35	86 00 0 001 -60 00
7.00 0.183-14 73	31.50 0.029 - 30.78	59.00 0.017 - 35.17	86.50 0.001 - 59 88
7.25 0.188-14.50	32.00 0.028 - 31.19	59.50 0.026 - 31.58	87.00 0.001 - 57.50
7.50 0.186-14.62	32.50 0.037 - 28.73	60.00 0.035 - 29.15	87.50 0.001 - 56.75
7.75 0.175-15.14	33.00 0.045 - 27.00	60.50 0.041 - 27.72	88.00 0.001 - 57.12
8.00 0.158-16.05	33.50 0.046 - 26.76	61.00 0.044 - 27.07	88.50 0.001 - 58.56
8.25 0.137-17.29	34.00 0.040 - 28.03	61.50 0.044 - 27.10	89.00 0.001 -60.00
8.50 0.116-18.69	34.50 0.029 - 30.73	62.00 0.041 - 27.78	89.50 0.001 -60.00



## PREDICTED COVERAGE CONTOURS KMBH - HARLINGEN, TEXAS DTV CHANNEL 38 1000 kW - 345.5 m HAAT

KMBH-DT - 48 dBu - F(50,90) PRINCIPAL COMMUNITY CONTOUR

KMBH-DT - 41 dBu - F(50,90) NOISE LIMITED CONTOUR





# PREDICTED COVERAGE and INTERFERENCE CONTOURS KFTN-LP - LA FERIA, TEXAS KMBH - HARLINGEN, TEXAS

KFTN-LP - LICENSED 74 dBu CLASS A PREDICTED PROTECTED SERVICE CONTOUR CH. 30 - 30.3 kW - 159 m HAAT KMBH-DT - PENDING DTV APPLICATION PREDICTED INTERFERENCE CONTOUR CH. 38 - 1000 kW - 347 m HAAT 115 dBu F(50,10) CONTOUR D/U RATIO = -41 dB

KMBH-DT - INSTANT DTV PROPOSAL PREDICTED INTERFERENCE CONTOUR CH. 38 - 1000 kW (DA-MAX) - 345.5 m HAAT 115 dBu F(50,10) CONTOUR D/U RATIO = -41 dB



#### APPENDIX A

# SUMMARY OF RADIOFREQUENCY RADIATION STUDY

## KMBH-DT, HARLINGEN, TEXAS CHANNEL 38, 1000 kW ERP, 345.5 m HAAT FEBRUARY, 2003

							VERT.		FCC	
					ANTENNA		RELATIVE	PREDICTED	UNCONTROLLED	PERCENT OF
					HEIGHT **	ERP	FIELD	POWER DENSITY	LIMIT	UNCONTROLLED
<u>CALL</u>	SERVICE	<u>CHANNEL</u>	FREQUENCY	POLARIZATION	<u>mAGL</u>	<u>(kW)</u>	FACTOR	<u>(mW/cm²)</u>	<u>(mW/cm²)</u>	LIMIT
KMBH-DT	DT	38	617	Н	342.5	1000.000	0.300	0.02563	0.411	6.23%
KMBH(TV)	TV	60	749	Н	371.2	5000.000	0.300	0.05456	0.499	10.93%
KGBT-FM	FM	253	98.5	H & V	301	100.000	1.000	0.07375	0.200	36.88%
KTEX-FM	FM	262	100.3	H & V	340	99.000	1.000	0.05722	0.200	28.61%
	1 111	202	100.0	TT G V	0-0	33.000	1.000	0.00122	0.200	20.0170

## TOTAL PERCENTAGE OF ANSI VALUE= 82.64%

\*\* The antenna heights indicated above are 2 meters less than the actual antenna heights so that the predicted power densities consider the 2 meter human height allowance.