

Comprehensive Engineering Exhibit

Minor Modification to BPFT-20130715AEC

Facility ID No. 966, K280DD

This exhibit is for the minor change modification application of translator K280DD seeking to relocate onto the antenna mast of the Stratosphere Tower in Las Vegas, Nevada, and to become a fill-in facility for station KWNR.

Antenna Location

The proposed antenna is to be mounted on the existing lattice antenna mast of the Stratosphere Tower, radiation center at 339.8 meters above ground, using a directional antenna having the emissivity pattern of Figure 1, with a maximum effective radiated power of 250 watts.

Below as Figure 2 is an overlap and spacing study, incorporating the antenna pattern, from which it can be determined that this proposal is within the protected contour of second adjacent channel stations KISF and KFRH. Section 74.1204(d) states that *“The provisions of this section concerning prohibited overlap will not apply where the area of such overlap lies entirely over water. In addition, an application otherwise precluded by this section will be accepted if it can be demonstrated that no actual interference will occur due to intervening terrain, lack of population or such other factors as may be applicable.”*

We will demonstrate that a lack of population and/or other factors allow this proposal to be compliant with 74.1204. The process commonly called “Living Way”¹, allows for the use of U/D Analysis, also known as “signal strength ratio methodology” to be utilized. In this instant case the facilities to be protected are second adjacent and are to be afforded protection from signals 40 dB stronger than they present in the location of the proposed antenna location.

Figure 3 is a map showing the predicted signal contours of KISF and KFRH more than 500 meters beyond the proposed antenna location utilizing the FCC F50:50 curve. KISF has a much stronger signal in the area of this proposed location than KFRH. Thus, protection of the KFRH 84.5 dBu contour from a signal produced by this proposal exceeding 124.5 is required, and by protecting this “weaker” signal compared to KFRH, the protection requirements are demonstrated.

The proposed antenna location is 339.8 meters above ground level, other than an amusement ride vertical extension; the highest known habitable space at the Stratosphere Tower is the “roof” of the structure that forms the “floor” of the amusement ride queue area, approximately 299 meters above ground level. Please refer to Figure 4.

¹ As recently described in FCC 08-242 in connection with BPFT-19981001TA

Utilizing the line of sight equation² it has been determined that a 124.5 dBu signal developed by 250 watts, emitted by the proposed antenna, does not reach the “floor” area at 299 meters above ground level, as demonstrated in Figure 5. The provisions of the rules section concerning prohibited overlap will not apply as it has been demonstrated that no actual interference will occur due to a lack of population and other factors as applied in this instant proposal.

A map of the proposed and licensed 60 dBu contours is given in Figure 6, demonstrating compliance with the contour overlap requirement for minor change applications.

² $ReachDistMeters = 106.92 - (20 * (\log_{10}[DistMeters]/1000)) + [ERP_{in} \text{ dBk}]$

Figure 2. Spacing Study

K2800D Mod of BPFT-20130715AEC to Stratosphere 11-3-2014

REFERENCE CH# 280D - 103.9 MHz, Pwr= 0.25 kW DA, HAAT= 304.2 M, COR= 960.1 M DISPLAY DATES
 36 08 55.0 N. Average Protected F(50-50)= 22.71 km DATA 11-03-14
 115 09 15.0 W. Standard Directional SEARCH 11-03-14

CH CITY	CALL	TYPE STATE	ANT	AZI <--	DIST FILE #	LAT LNG	PWR(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
278C Las Vegas	KISF	LIC _CN NV		139.4 319.5	20.55 BLH19890310KD	36 00 29.0 115 00 20.0	100.000 353	12.3 1042	84.3 Univision Radio License Co	-16.9*	-71.2*
280D Riviera, Etc.	K2800D	LIC DC_ AZ		154.3 334.5	55.02 BLFT20130710ADD	35 42 06.0 114 53 24.0	0.250 618	100.7 1500	37.0 Advance Ministries, Inc. D	-69.7*	-54.2
282C North Las Vegas	KFRH	LIC _CN NV		237.3 57.0	37.22 BLH19961122KB	35 58 02.0 115 30 06.0	24.500 1128	10.0 2593	95.9 Silver State Broadcasting	7.3	-64.7*
280C Toquerville	AL9633	VAC ___N UT		53.1 234.2	207.31 RM9603	37 15 12.0 113 17 00.0	100.000 600	216.6 1919	102.6 Mountain West Broadcasting	-32.3*	33.6
280C Toquerville substituted by 246C.	R15376	DEL ___ UT		53.1 234.2	207.31	37 15 12.0 113 17 00.0	100.000 600	216.6 1919	102.6 Jer Licenses, LLC	-32.3*	33.6
280C Toquerville to 280C.	R16423	DEL ___ UT		53.1 234.2	207.31	37 15 12.0 113 17 00.0	100.000 600	216.6 1919	102.6 Canyon Media Group, LLC	-32.3*	33.6
280D Essex Accepted by Mexico as Class B	950921MK	VAC ___N CA		183.1 3.0	156.87 930112	34 44 12.0 115 14 48.0	50.000 150	145.2 837	71.2	-10.8	0.1
280D Crystal	K280GF	LIC _V_ NV		41.7 222.1	87.80 BLFT20140804AAX	36 44 10.0 114 29 53.0	0.250	63.3 779	20.7 Community Education Founda	3.5	0.8
226C Las Vegas	KPLV	LIC _CN NV		237.3 57.0	37.22 BLH19941228KD	35 58 02.0 115 30 06.0	24.000 1141	0.0 2606	0.0 Citicasters Licenses, Inc.	29.0R	8.2M
281C Toquerville alternate channel to one in NPRM.	R16423	ADD ___ UT		53.1 234.2	207.31	37 15 12.0 113 17 00.0	100.000 600	149.0 1919	102.6 Canyon Media Group, LLC	35.3	69.7

 Terrain database is NGDC 30 SEC , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM
 Contour distances are on direct line to and from reference station. Reference zone= , Co to 3rd adjacent.
 Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)
 "*"affixed to 'IN' or 'OUT' values = site inside protected contour.

Figure 3. Contour Map

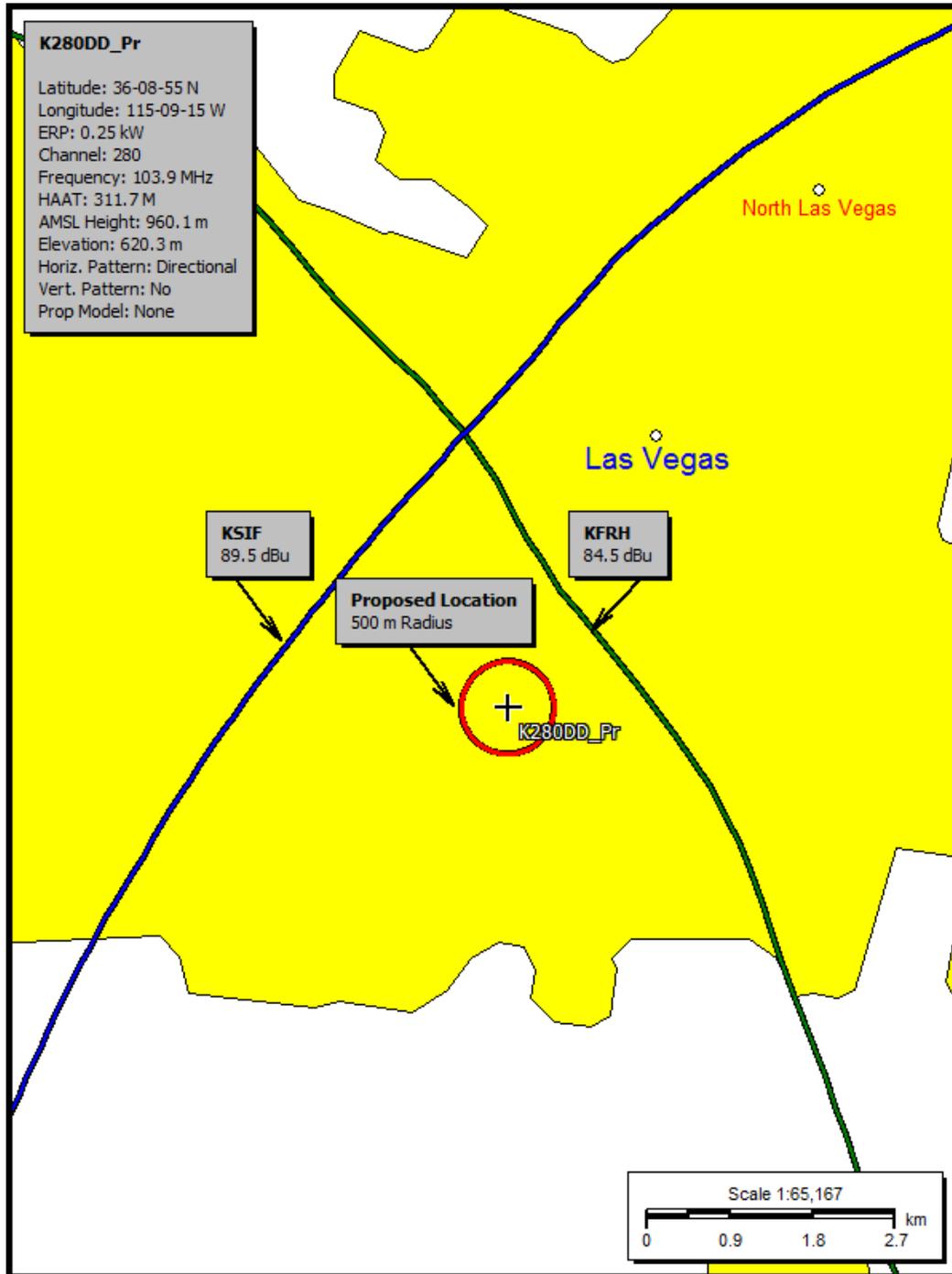


Figure 4. View of Antenna Location.

Overall View



Close in View



Figure 5. Distance to Signal Level Table.

Proposed Antenna:		ERI LP 2 bay half wave							
Proposed Power:		0.25	kW						
Antenna Height AGL:		339.8	meters						
Interference Contour:		124.5	dBu f(50:10)						
Artificial Rcv Antenna Height:		299	meters						
Distance (Free Space) Equation:		$=(10^{((106.92-[desired\ dBu]+[ERP\ in\ dBk])/20)}) * 1000$							
Field Strength (dBu) Equation		$"=106.92-(20*(LOG10[DistMeters]/1000)))+[ERP\ in\ dBk]$							
Depression				Distance					
Angle	Antenna			from Ant.	Distance	Field Strength	Distance	Field Strength	
Below	Relative	ERP	ERP	to Interf	from Ant. to	in dBu @	from Ant.	in dBu @	
Horizon	Field	in kW	in dBk	Contour	Artificial Plane	Artificial Plane	to Ground Level	Ground Level	
0°	1.000	0.250	-6.02	66.06 m	infinite	---	infinite	---	
-5°	0.984	0.242	-6.16	65.01 m	468.13 m	107.35 dBu	3898.77 m	88.94 dBu	
-10°	0.938	0.220	-6.58	61.97 m	234.96 m	112.92 dBu	1956.83 m	94.51 dBu	
-15°	0.865	0.187	-7.28	57.15 m	157.64 m	115.69 dBu	1312.89 m	97.28 dBu	
-20°	0.772	0.149	-8.27	51.00 m	119.29 m	117.12 dBu	993.51 m	98.71 dBu	
-25°	0.665	0.111	-9.56	43.93 m	96.54 m	117.66 dBu	804.04 m	99.25 dBu	
-30°	0.553	0.076	-11.17	36.53 m	81.60 m	117.52 dBu	679.60 m	99.11 dBu	
-35°	0.442	0.049	-13.11	29.20 m	71.13 m	116.77 dBu	592.42 m	98.36 dBu	
-40°	0.339	0.029	-15.42	22.40 m	63.47 m	115.45 dBu	528.63 m	97.04 dBu	
-45°	0.248	0.015	-18.13	16.38 m	57.70 m	113.56 dBu	480.55 m	95.15 dBu	
-50°	0.165	0.007	-21.67	10.90 m	53.26 m	110.72 dBu	443.58 m	92.31 dBu	
-55°	0.112	0.003	-25.04	7.40 m	49.81 m	107.94 dBu	414.82 m	89.53 dBu	
-60°	0.068	0.001	-29.37	4.49 m	47.11 m	104.09 dBu	392.37 m	85.68 dBu	
-65°	0.040	0.000	-33.98	2.64 m	45.02 m	99.87 dBu	374.93 m	81.46 dBu	
-70°	0.018	0.000	-40.92	1.19 m	43.42 m	93.25 dBu	361.61 m	74.84 dBu	
-75°	0.007	0.000	-49.12	0.46 m	42.24 m	85.29 dBu	351.79 m	66.88 dBu	
-80°	0.002	0.000	-60.00	0.13 m	41.43 m	74.57 dBu	345.04 m	56.16 dBu	
-85°	0.001	0.000	-66.02	0.07 m	40.96 m	68.65 dBu	341.10 m	50.24 dBu	
-90°	0.000	0.000	-86.02	0.01 m	40.80 m	48.69 dBu	339.80 m	30.27 dBu	

Figure 6 Map of Licensed and Proposed 60 dBu

K280DD at Stratosphere 9-5-2014
60 dBu Overlap of Licensed and Proposed

FMCommander Single Allocation Study - 09-05-2014 - NGDC 30 SEC
K280DD_Pr's Overlaps (In= -69.7 km, Out= -54.15 km)

K280DD_Pr CH 280 D DA
Lat= 36 08 55.0, Lng= 115 09 15.0
0.25 kW 304.2 M HAAT, 960.1 M COR
Prot.= 60 dBu, Intef.= 40 dBu

K280DD CH 280 D DA BLFT20130710ADD
Lat= 35 42 06.0, Lng= 114 53 24.0
0.25 kW 617.6 M HAAT, 1500 M COR
Prot.= 60 dBu, Intef.= 40 dBu

