

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 $\text{ReachDistMeters} = 106.92 - (20 * (\text{LOG10}[\text{DistMeters}] / 1000)) + [\text{ERP in dBk}]$

Figure 1. Antenna Pattern

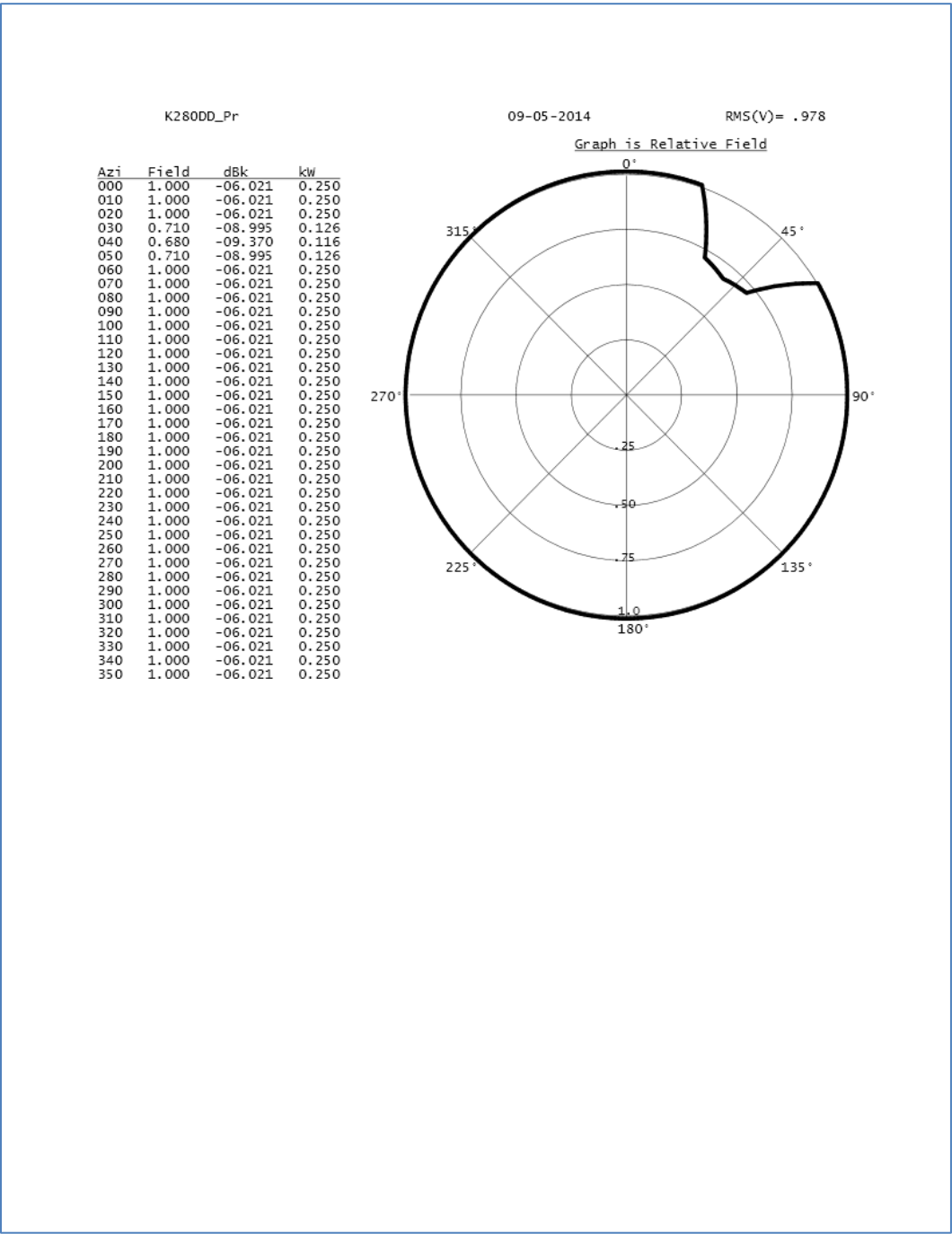


Figure 2. Spacing Study

| 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 | CALL | TYPE | ANT | AZI | DIST | LAT | PWR(kw) | INT(km) | PRO(km) | *IN* | *OUT* |
| CITY | STATE | | | <-- | # | LNG | HAAT(M) | COR | LICENSEE | (Overlap in km) | |
| 278C KISF | LIC _CN | 139.4 | 20.55 | | | 36 00 29.0 | 100.000 | 12.3 | 84.3 | -16.9* | -71.2* |
| Las Vegas | NV | 319.5 | BLH19890310KD | | | 115 00 20.0 | 353 | 1042 | Univision Radio | License Co | |
| 2800 K2800D | LIC DC_ | 154.3 | 55.02 | | | 35 42 06.0 | 0.250 | 100.7 | 37.0 | -69.7* | -54.2 |
| Riviera, Etc. | AZ | 334.5 | BLFT20130710ADD | | | 114 53 24.0 | 618 | 1500 | Advance Ministries, | Inc. D | |
| 282C KFRH | LIC _CN | 237.3 | 37.22 | | | 35 58 02.0 | 24.500 | 10.0 | 95.9 | 7.3 | -64.7* |
| North Las Vegas | NV | 57.0 | BLH19961122KB | | | 115 30 06.0 | 1128 | 2593 | Silver State Broadcasting | | |
| 280C AL9633 | VAC _N | 53.1 | 207.31 | | | 37 15 12.0 | 100.000 | 216.6 | 102.6 | -32.3* | 33.6 |
| Toquerville | UT | 234.2 | RM9603 | | | 113 17 00.0 | 600 | 1919 | Mountain West Broadcasting | | |
| 280C R15376 | DEL _ | 53.1 | 207.31 | | | 37 15 12.0 | 100.000 | 216.6 | 102.6 | -32.3* | 33.6 |
| Toquerville | UT | 234.2 | | | | 113 17 00.0 | 600 | 1919 | Jer Licenses, Llc | | |
| substituted by 246C. | | | | | | | | | | | |
| 280C R16423 | DEL _ | 53.1 | 207.31 | | | 37 15 12.0 | 100.000 | 216.6 | 102.6 | -32.3* | 33.6 |
| Toquerville | UT | 234.2 | | | | 113 17 00.0 | 600 | 1919 | Canyon Media Group, Llc | | |
| to 280C. | | | | | | | | | | | |
| 280B 950921MK | VAC _N | 183.1 | 156.87 | | | 34 44 12.0 | 50.000 | 145.2 | 71.2 | -10.8 | 0.1 |
| Essex | CA | 3.0 | | | | 115 14 48.0 | 150 | 837 | | | |
| Accepted by Mexico as Class B 930112 | | | | | | | | | | | |
| 280D K280GF | LIC _V_ | 41.7 | 87.80 | | | 36 44 10.0 | 0.250 | 63.3 | 20.7 | 3.5 | 0.8 |
| Crystal | NV | 222.1 | BLFT20140804AAX | | | 114 29 53.0 | | 779 | Community Education Founda | | |
| 226C KPLV | LIC _CN | 237.3 | 37.22 | | | 35 58 02.0 | 24.000 | 0.0 | 0.0 | 29.0R | 8.2M |
| Las Vegas | NV | 57.0 | BLH19941228KD | | | 115 30 06.0 | 1141 | 2606 | Citlicasters Licenses, Inc. | | |
| 281C R16423 | ADD _ | 53.1 | 207.31 | | | 37 15 12.0 | 100.000 | 149.0 | 102.6 | 35.3 | 69.7 |
| Toquerville | UT | 234.2 | | | | 113 17 00.0 | 600 | 1919 | Canyon Media Group, Llc | | |
| alternate channel to one in NPRM. | | | | | | | | | | | |
| ----- | | | | | | | | | | | |
| 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

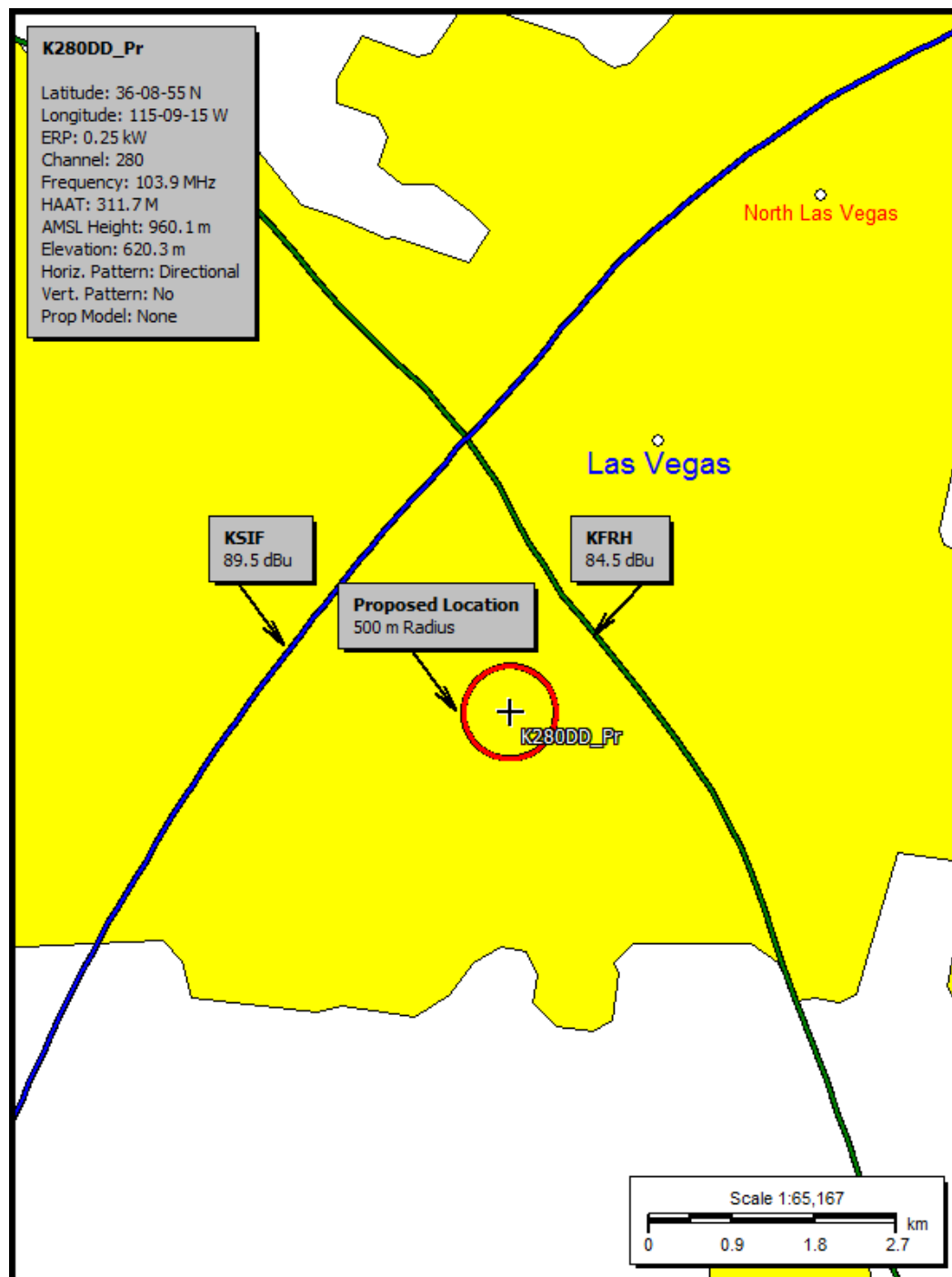


Figure 4. View of Antenna Location.

Overall View



Close in View



Figure 5. Distance to Signal Level Table.

| <div> <div> 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 </div> <div>Fill in "yellow" cells</div> </div> <div> Distance (Free Space) Equation: $=(10^{((106.92-[\text{desired dBu}]+[\text{ERP in dBk}])/20))})*1000$ </div> <div> Field Strength (dBu) Equation: $"=106.92-(20*(\text{LOG10}[\text{DistMeters}]/1000)))+[\text{ERPin dBk}]$ </div> | | | | | | | | |
|--|----------|-------|--------|-----------|------------------|------------------|-----------------|----------------|
| 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

