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Engineering Statement
Minor Modification Application for KDMD(DT)
Channel 33 at Anchorage, Alaska
October 2021

This Engineering Statement has been prepared on behalf of Ketchikan TV, LLC ("KTV"), licensee of television station KDMD at Anchorage, Alaska. This application specifies a minor change of the licensed facilities, to implement a power increase on the licensed antenna system.

I. Allocation Study

An interference study has been conducted using the Commission's TVStudy software. The results of the study demonstrate that this proposal will have no additional interference impact on other stations (licenses, permits, and applications) beyond the nominal 0.5% value as permitted by the FCC Rules.

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Study created: 2021.10.09 10:12:56

Study build station data: LMS TV 2021-10-05

    Proposal: KDMD D33 DT APP ANCHORAGE, AK
 File number: KDMD-2KWTPO
 Facility ID: 25221
Station data: User record
   Record ID: 1316
     Country: U.S.
        Zone: II

No protected stations found.

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

     Channel: D33
    Latitude:  61 20  8.80 N (NAD83)
   Longitude: 149 30 56.20 W
Height AMSL: 627.9 m
        HAAT: 300.2 m
    Peak ERP: 68.6 kW
     Antenna: SCA-K723147 ARRAY (ID 102633) 0.0 deg
Elev Pattrn: Generic
  Elec Tilt: 0.50

40.6 dBu contour:
Azimuth       ERP       HAAT    Distance
  0.0 deg   54.6 kW    597.0 m    95.1 km
 45.0        33.2       18.6      43.0
 90.0        0.255    -430.6      21.6
135.0        0.155     473.2      49.9
180.0        13.6       17.9      39.3
225.0        65.7      516.0      91.7
270.0        26.7      599.1      89.2
315.0        6.05      599.6      77.4

Database HAAT does not agree with computed HAAT
Database HAAT: 300 m   Computed HAAT: 299 m

Distance to Canadian border: 452.6 km

Distance to Mexican border: 3934.4 km

Conditions at FCC monitoring station: Kenai AK
Bearing: 236.1 degrees   Distance: 119.3 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 107.8 degrees   Distance: 3786.7 km


Study cell size: 2.00 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%

No IX check failures found.
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Hatfield & Dawson Consulting Engineers
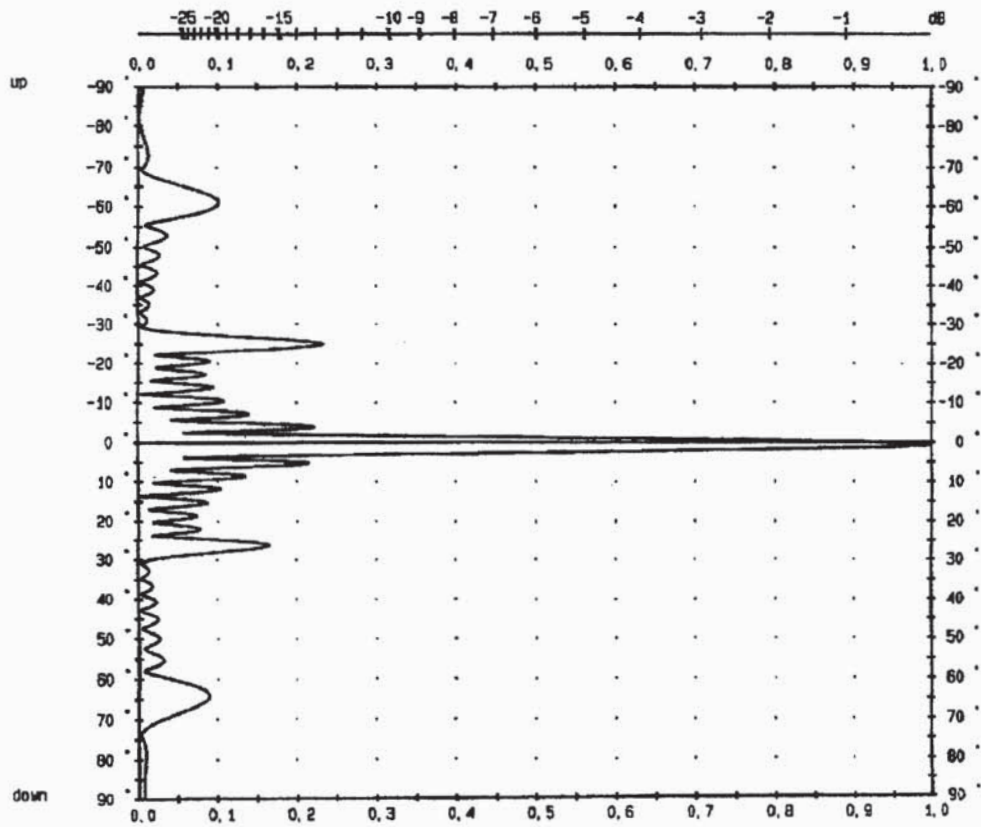
II. RF Exposure Study

The power density calculations shown below were made using the techniques and formulas outlined in the OET Bulletin 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.

"Worst case" power density levels produced by the proposed facility were calculated for an elevation of 2 meters above ground (24 meters below the antenna radiation center). The worst case power density levels occur at depression angles between 45 and 90 degrees below the horizontal. The calculations in this report assume a worst-case relative field value of 0.100 at these angles. This value occurs at a depression angle of 65 degrees, as shown on the manufacturer's vertical plane pattern for the horizontally-polarized Kathrein 8X2 K723147 panel antenna array proposed in this application. This relative field value yields a worst-case adjusted effective radiated power of 685 watts at depression angles between 45 and 90 degrees below the horizontal. Assuming this worst-case effective radiated power and the shortest distance between the antenna radiation center and 2 meters above ground level (i.e. straight down), the highest calculated power density from the proposed antenna alone occurs at the base of the antenna support structure. At this point the power density is calculated to be 9.9 μW/cm² , which is 2.5% of 389.3 μW/cm² (the FCC maximum for uncontrolled environments at the Channel 33 frequency).

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 radiation in excess of FCC guidelines.
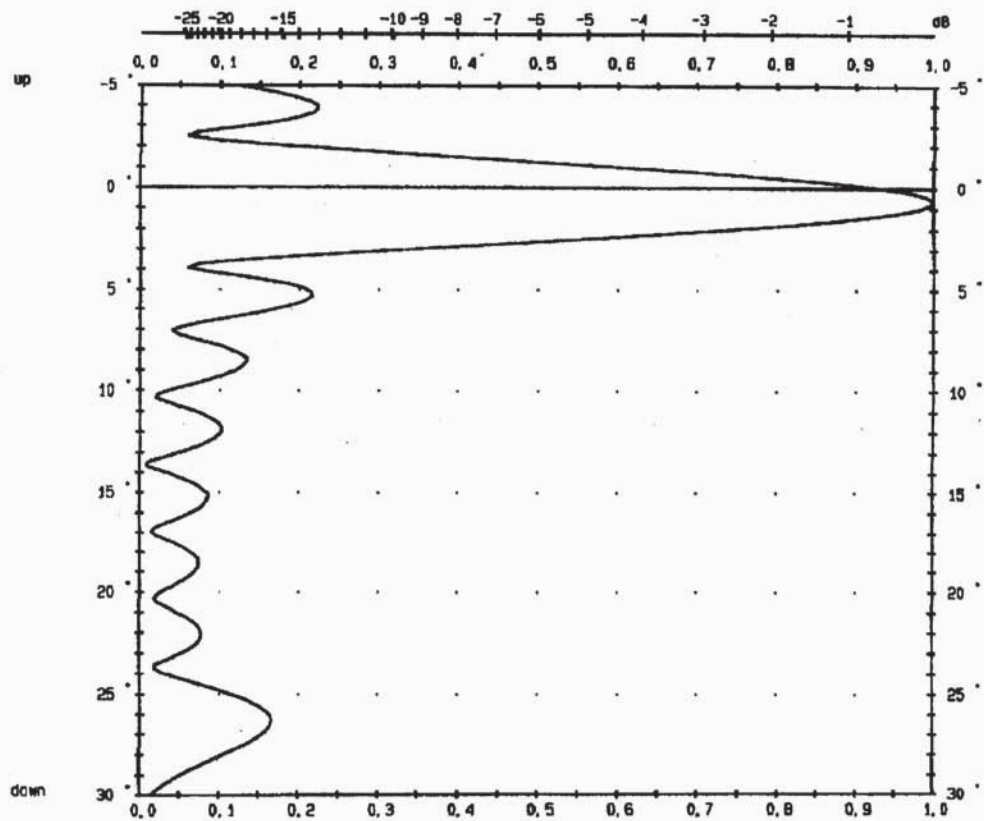
October 11, 2021
Erik C. Swanson, P.E.

Hatfield & Dawson Consulting Engineers

frequency in MHz 585.250
azimut in °   15.0
omni-dir in dBd   13.00

Maximum signal shown = 18.2dBK

SCALA Medford Oregon	8 x 2 K723147	Typ Nr.
NB 23.6. 3 15:35	Ch: 33.	Bl.:

frequency in MHz 585.250
azimut in ° 15.0
omni-dir in dBd

Maximum signal shown = 18.2dBK

S C A L A Medford Oregon	8 x 2 K723147	Typ Nr.
MB 23.6. 3 15:37	Ch: 33.	Bl.: