

EXHIBIT –CP APPLICATION FOR AUXILIARY FACILITY  
BACKGROUND AND TECHNICAL DETAILS

KRMA-TV  
DENVER, COLORADO  
FCC FACILITY ID 14040  
April 3, 2020

Background

As part of the FCC TV Band Repack, KRMA TV was required to change channels from Channel 18 to Channel 33. The station obtained a Channel 33 antenna capable of 500 kW ERP that was used under STA to provide interim service while the station's main antenna was being replaced. The STA expired once the replacement main antenna was installed in 2019. With this application KRMA TV proposes to license the interim antenna as an auxiliary facility.

Technical Details

The transmitting antenna will be a Micronetixx Model SFN-2030-5645-16 mounted on the ice bridge of an existing FCC registered tower. The transmitter site elevation is at 2,343 m AMSL. The antenna center of radiation will be located at 12 meters above ground level and 2,255 meters AMSL. The facility will operate on Channel 33 with a maximum directional average ERP of 26.99 dBk (500 kW).

The proposed facility provides minimum 48 dBu coverage of Denver, Colorado in compliance with Section 73.625(a)(1) of the FCC rules. Figure 2 in this exhibit is a map depicting the predicted coverage contours of the proposed facility.

The existing structure is registered with the FCC with antenna structure registration number 1023484. There will be no change in the overall height of the antenna structure as a result of this proposal.

The proposed KRMA-DT Channel 33 facility will meet the FCC's requirements for predicted interference to other existing facilities.

## Environmental Considerations

In June of 2019 the applicant conducted power density measurements throughout the transmitter site area to confirm compliance with the FCC specified guidelines for human exposure to RF energy. A complete set of measurements was made by Pericle Communications Company while the proposed antenna was operated at the 500 kW ERP power level under STA, confirming compliance. The applicant will continue to cooperate with the site owner in insuring that MPE compliance is maintained during future periods of operation with the proposed auxiliary facility.

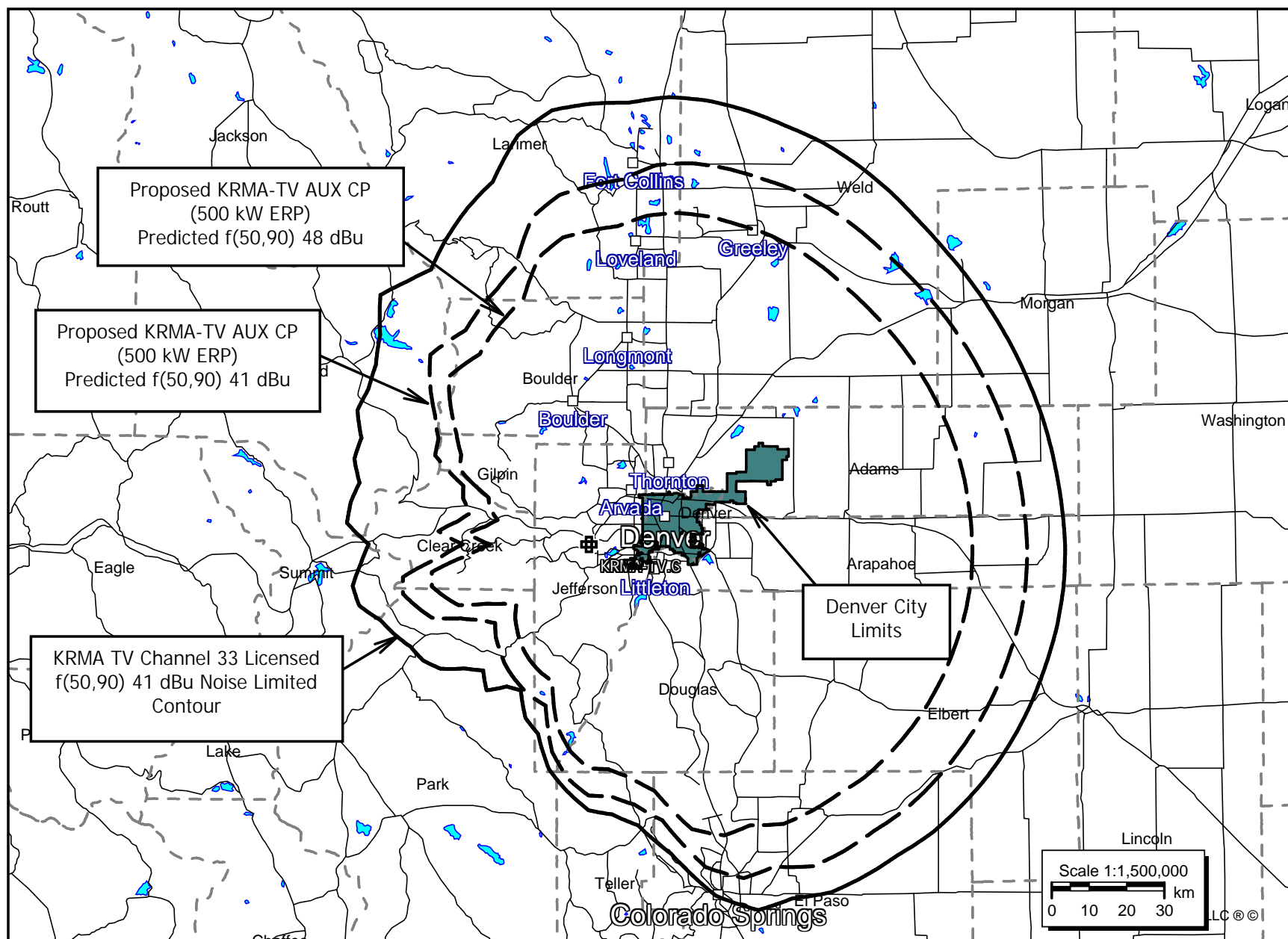
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Figure 1: Technical Specifications

Channel/Frequency	33/584-590 MHz
Site Coordinates (NAD 27)	39°40'17.4" North Latitude 105°13'8.0" West Longitude
Site Elevation	2,343 m AMSL
Overall Height of Existing Structure	84 m AGL
Overall Height of Support Structure	83 m AGL
Height of Antenna Radiation Center	12 m AGL / 2,355 m AMSL
Antenna Radiation Center HAAT	331 m
Proposed Operation	
Transmitter Power Output	10.79 dBk (12.0 kW)
Transmission Line Loss	.5 dB
Antenna Input Power	10.29 dBk (10.69 kW)
Antenna Maximum Gain (Micronetixx SFN-3020-5456-16)	16.70 dB
Maximum Directional ERP	26.99 dBk (500 kW)

FIGURE 2: PREDICTED COVERAGE CONTOURS

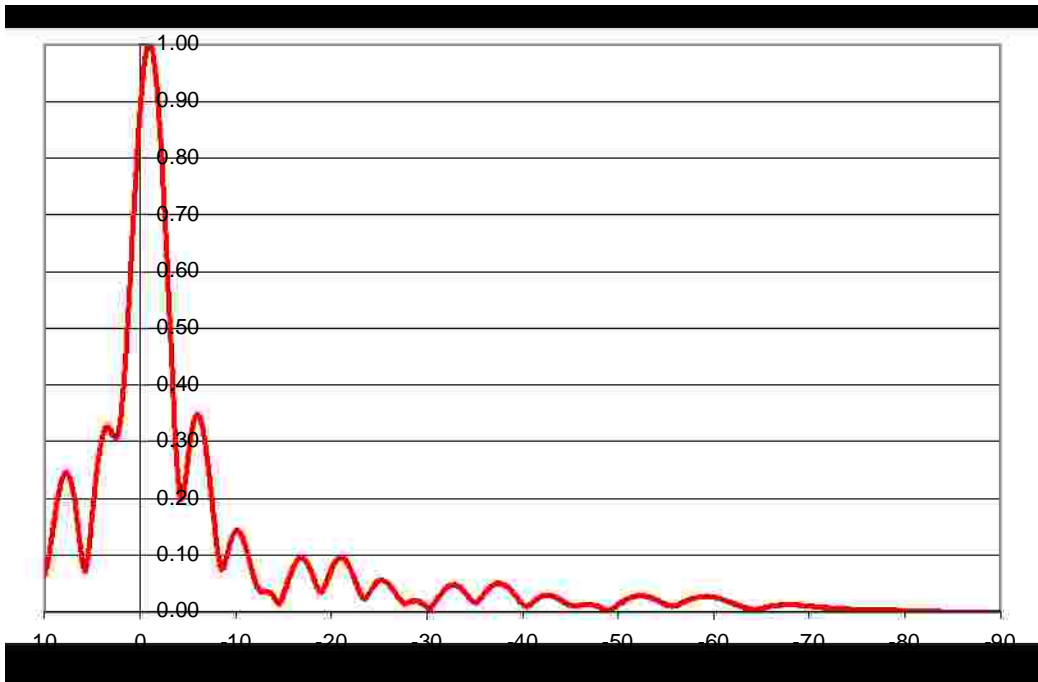


**FIGURE 3**

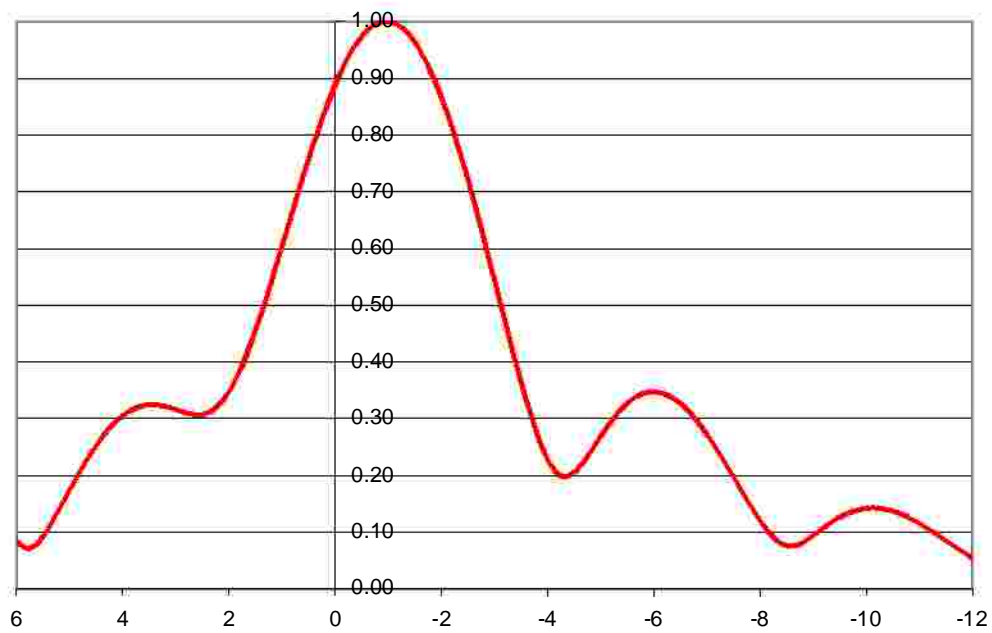
**Technical Description of the Channel 33 antenna**

<b>Antenna Model:</b>	<b>SFN-2030-5645-16</b>
<b>Number of Elements:</b>	<b>32 - Half Wave Spaced</b>
<b>Channel:</b>	<b>US – Channel 33</b>
<b>Azimuth Pattern:</b>	<b>5645 – Reduced Rear Cardioid</b>
<b>Azimuth Gain:</b>	<b>2.85 (4.55 dB)</b>
<b>Elevation Gain:</b>	<b>16.40 (12.15 dB)</b>
<b>Total Gain:</b>	<b>46.74 (16.70 dB)</b>
<b>Null Fill:</b>	<b>20% First Null @ -4.25 dgs.</b>
<b>Beam Tilt:</b>	<b>1.0 degrees electrical</b>
<b>Input Power Rating:</b>	<b>12.5 kW Average</b>
<b>Maximum ERP:</b>	<b>584 kW (27.66 dBk)</b>
<b>V.S.W.R:</b>	<b>1.10:1 or better over channel</b>
<b>Differential Group Delay:</b>	<b>less than 7nS over channel</b>
<b>Feed Point:</b>	<b>Center Fed - Horizontal</b>
<b>RF Input Connection:</b>	<b>3” EIA Flange</b>
<b>Antenna Length:</b>	<b>33 –1/2 feet</b>
<b>Weight:</b>	<b>340 lbs.</b>
<b>Wind Load Area:</b>	<b>39 Square Feet</b>
<b>Wind Speed Rating:</b>	<b>125 M.P.H. Basic</b>
<b>Brackets:</b>	<b>Included – mounts to 4” OD Outrigged pole</b>
<b>Radomes:</b>	<b>Included – White</b>



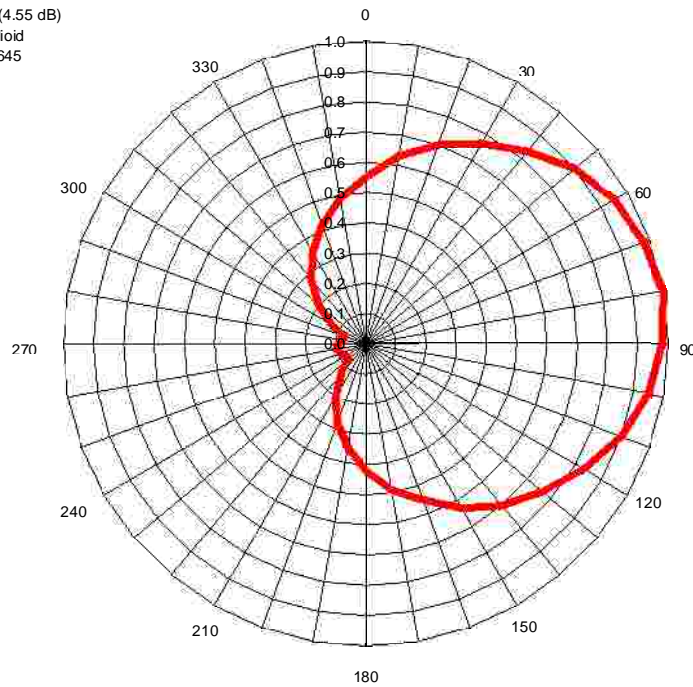


**16 Bay Elevation pattern -10 to -90 degree plot**



**16 Bay Elevation pattern - 6 to -12 degree plot**

Azimuth Gain = 2.85 (4.55 dB)  
Pattern: Special Cardioid  
Pattern Designator: 5645  
Rotation: 80 degrees



## Special pattern 5645 Azimuth Pattern Plot – 120 degree cardioid – Gain 2.85 (4.55 dB)

### Estimated Channel 33 System Performance Calculations

Station ERP:	115 kW (20.60 dBk)
Peak Antenna Gain:	46.47(16.70 dB)
Antenna Input Power:	2.47 kW (3.93 dBk)
Line Loss (200' 3''):	-0.72 dB
TPO Needed:	2.91 kW (4.65 dBk)