TECHNICAL EXHIBIT
APPLICATION FOR LICENSE

FM Translator Station K298BM
0.250 kW ERP / 107.5 MHz
Cedar Rapids, Iowa

KZIA, INC.

December 2019

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APPLICATION FOR LICENSE

The following engineering statement has been prepared for **KZIA, Inc.** ("KZIA"), licensee of FM translator station K298BM at Cedar Rapids, Iowa, and is in support of their application for license to cover authorized changes to that facility.[1] This application seeks to cover the modifications to the facility authorized under FCC File No. BPFT-20181003AJV.

Under that construction permit, K298BM is authorized to operate on FM channel 298 with a maximum effective radiated power of 250 Watts at a center of radiation of 388 meters above mean sea level, 140 meters above ground, utilizing a non-directional antenna. K298BM utilizes a combined antenna system shared with co-located and co-owned FCM translator station K272GB.[2] The construction activities for K298BM, which involved a change in the antenna, have been completed pursuant to the terms of the construction permit.

The construction permit as issued by the Commission lists three (3) special conditions or restrictions. KZIA is in compliance with each of these conditions. Each condition will be specifically addressed in this engineering statement.

The first special condition pertains to radiofrequency radiation safety at the transmitter site. Under this condition, KZIA is required to coordinate with all other users of the site to ensure that workers and other personnel are not exposed to levels of radiofrequency radiation in excess of the applicable safety standards. KZIA certifies that it will perform necessary coordination activities,

[1] The Facility ID for K298BM at Cedar Rapids, Iowa is 152290.
[2] The Facility ID for K272GB at Cedar Rapids, Iowa is 202139.

which may include, but are not necessarily limited to, a reduction in transmitter power or cessation of operation as necessary to protect workers and other personnel.

The second restriction requires that this application for license be on file prior to the commencement of program tests. KZIA will operate under the provisions of automatic program test authority upon submission of this license application.

The third special condition pertains to spurious emission testing due to the use of a combined antenna system at the site. These measurements were performed by the undersigned engineer on October 21, 2019, and demonstrate compliance with Sections 73.317(b)-(d) of the Commission's Rules. Similar measurements are to be submitted with the corresponding application for license for K298BM. In both cases, the same exhibit will be submitted as an amendment to both license applications.

The specified transmitter power output achieves the authorized effective radiated power. The antenna authorized and used is a Bext TFC2K-4-HW. The specified power gain of this antenna is 1.349. The input power to the antenna to achieve the authorized effective radiated power is 185.3 Watts.

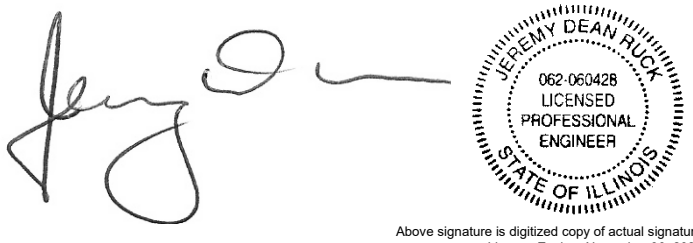
Preceding the antenna is the main run of transmission line, which consists of 518 feet of Andrew/Commscope AVA5-50FX. This is a foam dielectric semi-flexible coaxial cable with a nominal diameter of 7/8 inches. Manufacturer data for this run of cable indicates that the insertion loss is 1.906 dB, which corresponds to an efficiency of 64.47 percent. Input power to this run of line to achieve the authorized effective radiated power is 287.4 Watts.

Ahead of the main run of transmission line is the combiner. On site measured data indicates that the insertion loss of the combiner at the K298BM frequency of operation is 0.6086 dB, which is equivalent to an efficiency of 86.92 percent. The input power to the combiner to achieve the authorized effective radiated power is 330.7 Watts.

Between the transmitter and the combiner is a jumper cable consisting of six feet of Andrew/Commscope LDF4-50. The efficiency of this cable is 98.31 percent at the frequency of operation based on manufacturer data. The input power to the jumper to achieve the authorized effective radiated power is 336.4 Watts, which rounds to 336 Watts. The input to the jumper is the output of the transmitter, thus the specified transmitter power output achieves the authorized effective radiated power.

The facility utilizes a non-directional antenna. This antenna has been installed in accordance with the instructions of the manufacturer.

The preceding statement has been prepared by me, or under my direction, and is true and accurate to the best of my belief and knowledge.



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License Expires November 30, 2021

Jeremy D. Ruck, PE
December 17, 2019

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