

***COMPREHENSIVE TECHNICAL EXHIBIT  
APPLICATION FOR LICENSE***

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FM Translator Station K262DM  
0.145 kW ERP / 100.3 MHz  
Fort Smith, Arkansas

Community Broadcasting, Inc.

September 2019

## *APPLICATION FOR LICENSE*

The following engineering statement has been prepared for **Community Broadcasting, Inc.** ("CBI"), permittee of FM translator station K262DM at Fort Smith, Arkansas, and is in support of their application for license to cover authorized modifications to that facility.<sup>1</sup> The modifications to the facility were authorized under the construction permit assigned BPFT-20190820AAP as its FCC file number.

K262DM is authorized to operate with a maximum effective radiated power of 145 Watts at a center of radiation of 272 meters above mean sea level, 103 meters above ground, utilizing a non-directional antenna. The construction of the facility pursuant to the terms of the construction permit has been completed. The above referenced construction permit authorized changes to the channel of operation and the maximum effective radiated power. No change to the licensed antenna elevation was proposed or made.

The construction permit as issued by the Commission lists two special condition or restrictions. CBI is in compliance with both of these conditions. Each condition will be specifically discussed in this engineering statement.

The first of the special conditions pertains to radiofrequency radiation safety at the site. Under this condition, CBI is required to coordinate with 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. CBI certifies that it will undertake necessary coordination activities

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<sup>1</sup> The Facility ID for K278CQ at Fort Smith, Arkansas is 139221.

JEREMY RUCK & ASSOCIATES, INC.

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under this condition, which may include, but are not necessarily limited to, a reduction in transmitter power or cessation of operation.

The second special condition requires this application for license to be on file prior to the commencement of program tests. CBI will commence operation following the submission of this license application. In advance of the submission of this application, CBI has performed limited equipment tests.

The specified transmitter power achieves the authorized effective radiated power. The authorized antenna is a Nicom BKG77/1 single-bay, which has a manufacturer specified power gain of -3.03 dB, or 0.4977. The input power to the antenna to achieve the authorized effective radiated power is 291.3 Watts.

Preceding the antenna is a jumper cable assembly, which consists of 6 feet of RFS super-flexible foam-dielectric coaxial cable with a nominal diameter of one-half inch. The efficiency of this cable assembly is 98.39 percent. The input power to the jumper to achieve the authorized effective radiated power is 296.1 Watts.

Ahead of this tower top jumper is the main run of transmission line. This run consists of 390 feet of RFS LCF78-50JA-A0, which is a semi-flexible foam-dielectric coaxial cable with a nominal diameter of 7/8 inches. The efficiency of the main run of line, based on manufacturer data, including connectors, is 72.60 percent. The input power to the main run of transmission line to achieve the authorized effective radiated power is 407.4 Watts.

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Preceding the main run of transmission line is a second jumper, identical to the previously described jumper. The efficiency of this jumper is 98.39 percent. The input power to the jumper to achieve the authorized effective radiated power is 414.0 Watts.

Ahead of this jumper is a Polyphaser lightning protection device. This device has a nominal insertion loss of 0.1 dB, which corresponds to an efficiency of 97.72 percent. The input power to this device to achieve the authorized effective radiated power is 423.7 Watts.

Between the Polyphaser and the output of the transmitter is a third jumper, identical to the other two. The efficiency of this jumper is 98.39 percent. The input power to the jumper to achieve the authorized effective radiated power is 430.6 Watts, which rounds to 431 Watts. The input to the jumper is the output of the transmitter, thus the specified transmitter power output achieves the authorized effective radiated power.

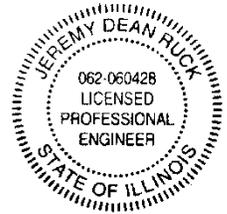
The facility utilizes a non-directional antenna. This antenna has been installed in accordance with the instructions of the manufacturer.

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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.



Above signature is digitized copy of actual signature  
License Expires November 30, 2021

**Jeremy D. Ruck, PE**  
**September 19, 2019**

**JEREMY RUCK & ASSOCIATES, INC.**

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