

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

FM Translator Station K227CX
0.250 kW ERP / 93.3 MHz
Manhattan, Kansas

Manhattan Broadcasting Company, Inc.

September, 2015

APPLICATION FOR LICENSE

The following engineering statement has been prepared for **Manhattan Broadcasting Company, Inc.** ("Manhattan"), permittee of FM translator station K227CX at Manhattan, Kansas, and is in support of their application for license to cover initial construction of that facility.¹ This application covers construction of the facility authorized under FCC File No. BMPFT-20150811AAZ.

K227CX is authorized to operate with a maximum effective radiated power of 250 Watts at a center of radiation of 497 meters above mean sea level, 107 meters above ground, utilizing a non-directional antenna. The antenna proposed and utilized by the facility is a circularly polarized Electronics Research, Inc. ("ERI") model LPX-1E. This particular antenna is a single bay model. Construction of the facility pursuant to the terms of the underlying construction permit has been completed.

The construction permit as issued by the Commission listed two special conditions. Manhattan is in compliance with each of these special conditions.

The first of the special conditions pertains to radiofrequency radiation safety at the site. Under this condition, Manhattan 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 standard. Manhattan certifies that it will undertake necessary coordination

¹ The Facility ID for K227CX at Manhattan, Kansas is 142250.

JEREMY RUCK & ASSOCIATES, INC.

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

The second special condition requires this license application to be on file prior to the commencement of program tests. Upon submission of this application for license, Manhattan will commence program test operation of the authorized facility.

The specified transmitter power output achieves the authorized effective radiated power. The antenna utilized by the facility is an ERI LPX-1E. This antenna has a power gain of 0.461 as specified by the manufacturer. The input power to the antenna to achieve the authorized effective radiated power is 542.3 Watts.

The transmission line run for the facility consists of 380 feet of Andrew/Commscope HJ5-50, which is an air-dielectric semi-flexible coaxial cable with a nominal diameter of 7/8". Data from the manufacturer of this transmission line indicates that the efficiency of this length is 72.70 percent. Therefore, the input power to the transmission line is 745.9 Watts.

Additionally, the system also contains a Shively Labs 2916-2 bandpass cavity filter. This filter has an insertion loss of 0.345 dB, which corresponds to an efficiency of 92.36 percent. The input power to the filter to achieve the authorized effective radiated power is 808 Watts. The input to the filter is the output of the transmitter, thus the specified transmitter power output achieves the authorized effective radiated power.

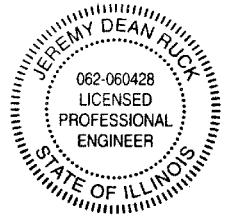
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As previously stated, the facility utilizes a non-directional antenna. The antenna utilized was installed in accordance with the instructions of the manufacturer.

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.



Above signature is digitized copy of actual signature
License Expires November 30, 2015

Jeremy D. Ruck, PE
September 17, 2015

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