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*Broadcast Technology
Associates, Inc.*

**Proof of Performance Measurement
FOR
KPCL (FM), Farmington, New Mexico
And
KTGW (FM), Kirtland, New Mexico**

Station Information

Station	Frequency	C.P. File Number	License File Number	Facility ID No.
KPCL (FM)	95.7 MHz	BPH-20180827AAC	BPH-20121105ALT	70444
KTGW (FM)	91.7 MHz	PBED-20180827AAD	BLED-20100920ABT	89170

Introduction. The two stations mentioned above operate into a combined antenna system at a common facility utilizing a Dielectric Antenna Model DCR-C-12C, fed by a Starpoint combiner manufactured by Dielectric Inc. designed and engineered for the two frequencies.

To assure the proper operation and assure that any intermodulation products that can be produced when inadequate port to port filtering exists, measurements contained herein were made to verify compliance with Federal Communications Commission Rules and Regulations section 73.317,b,c,d.

Process. For measurement purposes, a coaxial sample port line section was installed in the output port of the Combiner system, this sample port was utilized to sample the signals being applied to the feedline and antenna system. Using a recently calibrated properly operating spectrum analyzer, the total signals from the sample port was connected through a series of step attenuators to set the carrier level, taking care not to overload the input of the analyzer.

After the gain of the measurement system was established, a Trilithic adjustable VHF band pass filter was utilized to sweep the band of frequencies from 90 MHz to 1 GHz, with the output feeding the spectrum analyzer to reduce the desired signals by at least 30 dB, assuring that there was no unwanted mixing in the input stages of the analyzer, and to allow examination of the band area where calculated and expected second order products might exist.

Station	Carrier Frequency	Calculated TPO	Operating ERP	Notes
KPCL (FM)	95.7 mHz	16,475 KW	100 KW	
KTGW (FM)	91.77 mHz	2.06 KW	12 KW	

The span of frequencies between 50 MHz and 600 MHz were checked for any evidence of intermod products resulting from the 2 stations transmitters being combined into one output, there were no spurious signals detected. In the FM band plot there were other signals, however every signal indication could be associated with other station's signals and not attributable to the 2 subject stations under test.

In addition to the expected frequencies shown above, a scan of frequencies from 50 MHz to 600 MHz was made, the results showed no abnormal spurious signals, and those signals that did show up were not attributable to the subject stations.

Based on the above measurements made at the time, it can be concluded that the above described transmission system is operating in accordance with Federal Communications Rules and Regulations.

KPCL (FM) and KTGW (FM)
IM Report 12/14/2018
PG-2

Engineer's Certification. I, James R. Burt, Principal Engineer for BTA, Inc., a Company providing technical service to the Broadcast Industry, and having been involved in the field of radio engineering for more than 25 years, and hold FCC General Radio Telephone License number PG-15-6264, am familiar with the requirements and procedures for making RF Intermodulation Product measurements.

I hereby certify that the measurements discussed above were made by myself or under my supervision on December 14, 2018, and that all representations contained herein are true and accurate to the best of my knowledge.

DATE: 12/14/2018

A handwritten signature in black ink, appearing to read "James R. Burt", written over a horizontal line.

BY:

James R. Burt