

From: Kenneth Eack

To: Anthony Serafini

Date: June 21, 2013

Subject:

Message:

I received a request from the FCC dated June 4, 2013 on how our experimental system will avoid interference with licensees in the 1 to 20 MHz band where the ionosonde will be operating in. During a measurement, the ionosonde will sweep through a preprogrammed frequency sequence (between 1 and 20 MHz) in about 3 minutes. During non-thunderstorm periods, only one measurement per hour is planned. During thunderstorms, between 4 and 10 cycles per hour are desired.

Even though the dwell time on any particular frequency will be short and the mean power transmitted is 12.5 watts, the PEP power of 600 W may cause undesirable interference. The frequency sequence transmitted can be easily programmed to avoid transmission on or near (within 50 kHz) the frequencies of nearby licensees. We chose the 50 kHz buffer since the transmitter is measured to have a -3dB emission bandwidth of 26.2 kHz, and a -20dB bandwidth of 225kHz.

Our plan to minimize interference is to avoid operation on licensed frequencies used within 100 miles of our transmitter site. Using the FCC database, 36 mass-media users/sites and 41 ULS users/sites were identified, with 37 unique frequencies that were identified to avoid in our transmission plan.

Please contact me at the address below, by email at keack@nmt.edu or by phone at 575-835-5427 if there are any additional questions or concerns.