



June 9, 2020

by e-mail: billruck@earthlink.net

Mr. Bill Ruck

Chairman, Northern California Frequency Coordinating Committee

P.O. Box 22456

San Francisco, CA 94122

Re: 2 GHz EESS uplink E200663, FCC file number SES-LIC-20200224-00200

Mr. Ruck:

This letter is to state the commitment of X2nSat Inc. to create no harmful interference to the existing television station users of the S band frequency of 2025-2110 MHz.

As part of the normal frequency search, several potential interference targets were identified. In subsequent meetings with the Northern California Frequency Coordinating Committee (NCFCC) and Engineers for the Integrity of Broadcast Auxiliary Services Spectrum (EIBASS), the intentions and use cases for the 2050 and 2067 MHz frequencies in questions were discussed.

Upon a shared understanding of the system to be installed by X2nSat, several options were discussed that would create sufficient blockage to the X2nSat transmissions and thus change the character of our use from frequency sharing to frequency re-use. To be clear, the blockage to be created by X2nSat would prevent interference between the X2nSat uplink and existing San Francisco Bay Area fixed electronic news gathering receive only (ENG-RO) sites.

Specific measures:

1) The uplink main beam minimum elevation angle for transmitting will be increased from 5° to 10° within $\pm 10^\circ$ of the direction to five ENG-RO sites, as follows:

- a. Mt. St. Helena, 6°T
- b. Mt. Allison, 111°T
- c. Monument Peak, 112°T
- d. Mt. Diablo, 124°T
- e. Big Rock, 168°T

Thus, the 10° minimum elevation arcs are 356°T to 16°T; 101°T to 134°T, and 158°T to 178°T. Other ENG-RO sites such as Mt. Vaca (72°T), Walnut Grove (90°T), Sutro Tower (162°T), and Mt. Tamalpais (170°T) have sufficient terrain obstruction blockage so as to not need the higher minimum elevation angle.

2) The main beam EIRP will be reduced from 82.5 dBm to 67.5 dBm.

3) The use of radar absorbing material (RAM) inside the radome, and/or reduction of the side lobes of the Sea Tel Model 3700 antenna, any mix of which may be used, to further reduce emissions by at least 15 dB in the direction of the five identified ENG-RO sites with either insufficient terrain obstruction losses or no terrain obstruction losses. This will result in the proposed uplink causing no greater than a 0.5 dB noise threshold degradation to the receivers at ENG-RO sites, thus meeting the protection criteria adopted in the April 30, 2009, Memorandum of Understanding between the Society of Broadcast Engineers, Inc. and the Department of Defense (SBE-DoD MOU) for DoD Space Ground Link System (SGLS) uplinks.

4) A 'Stop - Buzzer' telephone number (i.e. phone number of a local technician 24x7) will be provided in the event interference is detected such that X2nSat can mute transmitter operations.

Although a final design has not been established for the RAM shielding and/or dish side lobe reductions, X2nSat will share that design with NCFCC and EIBASS for feedback before implementation. In any case, should the X2nSat antenna create harmful interference to an ENG-RO site, changes will immediately be put into place to correct the situation and protect the use of the frequency band by the broadcasters.

This letter will be uploaded as an additional exhibit to the pending X2nSat E200663 application for an EESS 2 GHz S-band uplink.

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