From: Don Motter

To: Hung Le
Date: April 02, 2020

Subject: Request for Info - File # 0263-EX-CN-2020

Message:

Distances on diagram are based on a directional antenna mounted in a corner and propagating maximum gain to nearest far wall 99 feet away.

The antenna is mounted in a corner and aimed away from this corner but is mounted no closer than 12 feet in from the nearest of the two corner walls behind with a maximum of 2dB of gain directed towards those closest walls. Therefore: Free space loss at operating frequency to the inside wall distance of 12 feet = -47.68 dB. Lowering repeater amp gain to 25dB, calculated radiated power (Avg receive power L1 North America + Total Sys gain) = -73 dBm

Repeated signal power at inside wall 12 feet away from TX antenna = -120.68 dBm

Going beyond the wall and out 100 feet:
=-1*(36.6+(20*LOG10(((12+100)/5280)*1575)))+(-73) = -140.07729 dBm

Per NTIA 8.3.28, 6. The maximum equivalent isotropically radiated power (EIRP) must be such that the calculated emissions are no greater than -140 dBm/24 MHz as received by an isotropic antenna at a distance of 100 feet (30 meters) from the building where the test is being conducted. The calculations showing compliance with this requirement must be provided with the application for frequency assignment and should be based on free space propagation with no allowance for additional attenuation (e.g., building attenuation.)

Use of this Experimental RNSS Test Equipment will be limited to the purpose of testing GPS receivers on aircraft that are undergoing repairs and recertification.