Compliance with NTIA requirement

This installation will comply with all requirements stated in section 8.3.27 of the NTIA "Manual of Regulations and Procedures for Federal Radio Frequency Management (Redbook)", Sept 2017 Revision of the Sept 2015 edition:

a. Individual authorization is for indoor use only, and is required for each device at a specific site.
Operation will only be conducted indoors at the location identified above and as the station location in the application form 422.

b. Applications for frequency assignment should be applied for as an XT station class with a note indicating the device is to be used as an "Experimental RNSS Test Equipment for the purpose of testing GPS receivers" and describing how the device will be used.
YES – SEE EXHIBIT 1.

c. Approved applications for frequency assignment will be entered in the GMF.
YES.

d. The maximum length of the assignment will be two years, with possible renewal.
YES.

e. The area of potential interference to GPS reception (e.g., military or contractor facility) has to be under the control of the user. Areas beyond the range for potential interference are protected by the maximum power calculation described in f. below, and thus no further record notes are required for frequency assignments.
YES – SEE EXHIBIT 2.

f. The equivalent isotropically radiated power (EIRP) must be such that the 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 calculation for maximum EIRP shall be based on free space propagation with no allowance for additional attenuation (e.g., building attenuation) as shown below.

$P_{Tmax} = P_R + 20 \log_{10} f + 20 \log_{10}(30 + d) - 27.55$

Where:

P_{Tmax} is the maximum permissible EIRP in dBm
P_R is the power received at 30 meters from the building (i.e. -140 dBm/24 MHz)
f is frequency in MHz (i.e. 1575.42 for L1, 1227.60 for L2, 1176.45 for L5)
d is the distance between the radiator and the closest exterior wall of the building in meters.

P_{Tmax} can then be converted to picowatts by using the formula: $P_{Tmax(pW)} = 10^{(PTmax/10)+9}$

Applications requesting power greater than the P_{Tmax} calculated at d = 0 meters (i.e. 39.3 pW for L1, 23.8pW for L2, and 21.9 pW for L5) must provide the distance from the transmit antenna to the nearest exterior wall so that reviewing agencies can determine if the requested power meets the maximum EIRP described above.
SEE EXHIBIT 2.

g. GPS users in the area of potential interference to GPS reception must be notified that GPS information may be impacted for periods of time.
YES

h. The use is limited to activity for the purpose of testing RNSS equipment/systems.
YES

i. A "Stop Buzzer" point of contact for the authorized device must be identified and available at all times during GPS re-radiator operations.
Stop buzzer contacts are as below

Primary Stop Buzzer:
Douglas Blodgett
Global Functional Test Lead
Ph: 248-904-7428
doug.blodgett@gm.com

Secondary Stop Buzzer:
Bryce Molzon
Ph: 248-520-5873
bryce.molzon@gm.com