

SECTION 8.3.28 RESPONSES

8.3.28 Use of Fixed Devices That Re-Radiate Signals Received from the Global Positioning System Except as otherwise authorized under Part 7.14, federal agencies and departments may, under the following conditions, operate fixed devices that re-radiate signals received from the Global Positioning System (GPS). As indicated, the instant proposal is consistent with each of these requirements.

1. Individual authorization is for indoor use only and is required for each device at a specific site. **Yes - See Exhibit 1**

2. 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**

3. Approved applications for frequency assignment will be entered in the GMF. **Understood**

4. The maximum length of the assignment will be two years, with possible renewal. **Yes - See Form 442**

5. The area of potential interference to GPS reception (e.g., military or contractor facility) has to be under the control of the user. **Yes - See Exhibit 1**

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.) **Yes - See Attached Link Budget**

7. 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 - See Exhibit 1**

8. The use is limited to activity for the purpose of testing RNSS equipment/systems. **Yes - See Exhibit 1**

9. A "Stop Buzzer" point of contact for the authorized device must be identified and available at all times during GPS re-radiation operation of the device under any condition. **Yes - See Exhibit 2**



GPS Networking Link Budget Calculator

Change the values in the yellow boxes to calculate required readings

-140 or less at a range of 100 feet to meet NTIA regulations

Receive Ant Gain	Ant Cable Insertion Loss	Repeater Amp Gain	Repeater Ant Gain Best Case	Range in Feet	Repeated Signal Power @ Range In dBm
38	-12	20	3	114	-148.23

GPS Carrier Frequency MHz
1575.42

Total System Gain
49

Range in Miles
0.02

Total Signal Power @ Range in Watts
1.5E-18

Avg Receive Power L1 dBm North America
-130

Range in Meters
35.53

Radiated Power dBm
-81

Free Space loss with Isotropic Antennas
-67.23

Range in Kilometers
0.04

Transmitted Power (W)
4.0E-12

Effective Radiated Power (W)
7.9E-12

Effective Radiated Power (dBW)
-111