

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).

1. Individual authorization is for indoor use only, and is required for each device at a specific site.

A single GPS re-radiating device will be installed at our indoor test laboratory

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.

Purpose of application is for the purpose of testing GPS receivers.

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

Understood, approved application will appear in the GMF.

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

Understood, the application will need to be resubmitted/reviewed after two years.

5. The area of potential interference to GPS reception (e.g., military or contractor facility) has to be

under the control of the user.

The area where the GPS signal is to be re-radiated (Fargo, ND test lab) is under the operational control of Appareo Systems.

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.)

L1 Avg. RX power: -130dBm

Cable insertion loss: -5dBm

RX Ant. Gain : +38dBm

Repeater Ant. Gain: +25dBm

Free Space Loss (100' lab space+100' outside building): -72dBm

Signal Strength 100' outside building: $-130\text{dBm} - 5\text{dBm} + 38\text{dBm} + 25\text{dBm} - 72\text{dBm} = -144\text{dBm}$

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.

Users in the area will be notified of the presence of the GPS re-radiating equipment.

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

Use will be limited to functional monitoring/testing of RNSS equipment

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.

Appareo Systems contacts for this purpose include:

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