

Memorandum

Date: 13MAY10
By: Farrelly, Justin N
For: FCC – See Below
Project: VL-07-006-RDS
Copied To: Mike Scott
File

Subject: Response to correspondence from the FCC
Applicant: Vercét LLC
LLC File Number: 0231-EX-PL-2010
Correspondence Reference Number: 10916
Date of Original Email: 05/13/2010

Confidentiality: None
Other:

Dear Leann Nguyen,

In response to your correspondence we reply as below:

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.
Per our form 442 application, there will be one fixed device, installed as described, at our 1700 Surveyor Blvd, Carrollton Texas premises.
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.
We would appreciate you correctly applying the above station class and annotation to our application.
3. Approved applications for frequency assignment will be entered in the GMF.
We believe this is complied with by means of form 442.
4. The maximum length of the assignment will be two years, with possible renewal.
The period for which we apply is two years, per our application.
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 total area is under the direct control of Vercét LLC and its lab staff.

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.)

Please see the attached page for this calculation. It is based on the actual length of coax used, the minimum distance from the antenna to the first outer wall of the building axial with the centre line of the radiating antenna, and on the maximum gain to be used from the coupled radiator. It is very probable the gain setting of the repeater amplifier will be considerably lower than that portrayed in this link budget calculation.

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.

No identified users of GPS service other than those within our facility and the range of the antenna are impacted by this installation. Vercét shall be posting clear placards within the area indicating GPS signals may be materially affected by the use of the unit.

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

Vercét LLC agrees and shall comply.

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.

The unit will not be operated unless one of the following people is present and accountable to the use of the unit.

Contact Details as follows:

Justin Farrelly (justin@vercet.com) or

Mike Scott (mike@vercet.com) or

Paul Vogel (pvogel@vercet.com)

Phone 281-201-0018 or email as above.

GPS Source, Inc. Repeater Budget Calculator

Change the values in the yellow
boxes to calculate required readings

-140 dBm at 100 feet from the building 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	Total Signal Power @ Range in Watts
35	-6.1	28	3	189	-141.72	6.7e-18
GPS Carrier Frequency (MHz)		Free Space loss with Isotropic Antennas	Total System Gain	Range in Miles	Effective Radiated Power dBm	Effective Radiated Power (dBW)
1575		71.62	56.9	0.04	-72.25	-102.25
Avg Receive Power in dBm North America		Reference Dipole Gain	Transmitted Power (W)	Range in Kilometers	Effective Isotropic Radiated Power (dBm)	Effective Isotropic Radiated Power (dBW)
-130		2.15	3.0e-11	0.06	-70.10	-100.10
Typical value @ L1: -130.0 dBm @ L2: -127.5 dBm				Range in Meters 57.6072		Effective Radiated Power (W) 6.0e-11