

From: Jason BeHanna

To: Behnam Ghaffari
Date: August 30, 2008

Subject: FCC File No. 0372-EX-PL-2008

Message:

NTIA Questions

? In great detail please explain the purpose of your request.

The purpose of this request is to have the ability of repeating GPS signals in our building for testing the EARS and SWATS project manufactured by The Millennia Group. Before purchasing a GPS repeater kit, GPS Source Inc. requests that The Millennia Group obtain an Experimental FCC License.

Government Project is:
EARS and SWATS Project

Agency issuing contract is:
US Army RDECOM ACQ CTR
4118 Susquehanna Avd
Aberdeen Proving Ground, MD 21005-3013

Contract number is:
W91CRB-08-P-0167

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

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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

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

Yes

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

Yes, at least two years with possible renewal.

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

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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.)

Calculations used at web site below:
<http://www.gpssource.com/Repeaterlinkcalculations.htm>

RESULTS:

GPS Source, Inc. Repeater Budget Calculator

Range in Feet	50100	150		
Receive Ant Gain		3535	35	
Ant Cable Insertion Loss	-5.3	-5.3	-5.3	
Repeater Amp Gain		3030	30	
Repeater Ant Gain Best Case	3	3	3	
GPS Carrier Frequency MHz		1575	1575	1575
Avg Receive Power L1 dBm North America	-130	-130	-130	
Repeated Signal Power @ Range In dBm	-127.37	-133.39	-136.91	
Total Signal Power @ Range in Watts		1.80E-16	4.60E-17	2.00E-17
Radiated Power dBm	-67.3	-67.3	-67.3	
Transmitted Power (W)	9.30E-11	9.30E-11	9.30E-11	
Effective Radiated Power (W)		1.90E-10	1.90E-10	1.90E-10
Effective Radiated Power (dBW)	-97.3	-97.3	-97.3	

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

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

Yes

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, The Millennia Group - Jason BeHanna