

**Government Contract and Information and NTIA Compliance**

Northrop Grumman Systems Corporation (“NGSC”) hereby requests authorization to operate a fixed experimental radio station facility, as detailed below and in the attached Form 442 application, beginning on September 1, 2009. Under the Air Force Global Hawk and Naval Unmanned Combat Vehicle (“N-UCV”) programs (pursuant to contract numbers FA8620-07-C-4015 and N00019-07-C-0055, respectively) NGSC is developing systems in an indoor, shielded area for the Department of Defense to conduct pre-flight testing of avionics on unmanned combat air vehicles. The authorization requested herein is necessary to allow NGSC to test the Global Hawk and N-UCV systems’s GPS receiver and external antenna within a shielded area within NGSC’s facilities located at Air Force Plant 42, Site 3 in Palmdale (Los Angeles County), California (NAD83: NL 34-34-18.125; WL 118-04-34.104).

The fixed experimental radio station facilities utilize a GPS Networking Model L1L2 HNRRKIT repeater kit, comprised of a roof receiver antenna located on the exterior of the building that is cabled to a transmit antenna mounted inside a shielded area within the building, which re-radiates the GPS signal. The area of potential interference to GPS reception is within NGSC’s control, and GPS users in that area will be notified that GPS information may be impacted for periods of time. The repeater kit re-radiates GPS frequencies L1 at 1575.42 MHz and L2 at 1227.60 MHz, with an emission designator of 20M4M1D and a power of -84.1 dBm and -84.4 dBm EIRP, respectively. Please refer to the table below for the link budget analysis to compute the EIRP at a 100 foot distance from the radiating element.

|                            | <b>L1</b> | <b>L2</b> |
|----------------------------|-----------|-----------|
| Received Power on Earth    | -136.2dBm | -136.2dBm |
| Receive Antenna Gain       | 38.0dBic  | 38.0dBic  |
| Losses in 10 ft./LMR-400   | -4.9dB    | -5.2dB    |
| Connector Losses           | -1.0dB    | -1.0dB    |
| Amplifier Gain             | 20.0dB    | 20.0dB    |
| Power to Re-rad Antenna    | -84.1dBm  | -84.4dBm  |
| Gain of Re-rad antenna     | 3.0dBm    | 3.0dBm    |
| Re-rad eirp                | -81.1dBic | -81.4dBic |
| Free Space loss at 100 ft. | -63.9dBm  | -63.9dBm  |
| RF Power Level at 100 ft.  | -145.0dBm | -148.3dBm |

The repeater kit is to be used exclusively as Experimental RNSS Test Equipment for the purpose of testing GPS receivers. If this application for frequency assignment is approved, it will be entered in the GMF. NGSC has requested a one year assignment, with possible renewal. The stop buzzer contact to terminate operations for the program is Mr. Fred Berrong, (661) 272-7033.