

NORTHROP GRUMMAN SYSTEMS CORPORATION

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July 7, 2005

Federal Communications Commission
Experimental Radio Services
P.O. Box 358320
Pittsburgh, PA 15251-5320

Dear Sir or Madam:

Northrop Grumman Corporation ("Northrop Grumman") hereby requests modification and an 180 day extension of the grant of Special Temporary Authority ("STA") under Call Sign WC9XAJ to add additional fixed and airborne mobile experimental radio facilities to the STA. The modified STA is required to support an internal research and development project, in which Northrop Grumman is testing an electronically scanned phased array antenna. In the future, Northrop Grumman may receive orders for this equipment from the United States government. Northrop Grumman respectfully requests grant of the modified STA request on or before July 15, 2005 so it can begin its testing in the second half of July 2005. Northrop Grumman will be submitting an application for an experimental license to cover these the modified facilities, which it plans to operate for a two year period.

First, Northrop Grumman requests modification of the STA to add the following rectangular zones for operation of experimental airborne mobile transmitter flight tests:

- Zone 1. The area within NAD-83 coordinates: 39-17-26 N, 076-43- 40 W; 39-53-06 N, 075-35-47 W; 39-43-59 N, 075-24-48 W; and 39-08-29 N, 076-32-33 W (excluding restricted airspace).
- Zone 2. The area within NAD-83 coordinates: 39-09-37 N, 076-34-15 W; 39-09-37 N, 075-20-48 W; 38-51-56 N, 075-20-48 W; and 38-51-58 N, 076-34-19 W (excluding restricted airspace).
- Zone 3. The area within NAD-83 coordinates: 38-34-18 N, 075-53-17 W; 39-48-31 N, 074-44-12 W; 39-26-35 N, 073-59-01 W; and 38-12-58 N, 075-08-06 W (excluding restricted airspace).

The experimental transmissions listed above in Zones 1, 2 and 3 will involve a Northrop Grumman transmitter that will produce 12.8W of average power while transmitting at a

frequency range of 16.5 GHz with a bandwidth of 1200 MHz. The antenna has a gain of 31.6dBi. The pulse repetition frequency (PRF) is 7 to 11 kHz, the pulse width is 30 µSec, and emission designator is 1G20M0N.

Second, Northrop Grumman requests modification of the STA to add the following area of operation of experimental airborne mobile transmitter flight tests:

- Zone 4. The area within a 320 km radius around the counterpoint of NAD-83 coordinates: 39-11-08 N, 076-42-11 W (excluding restricted airspace).

The experimental transmissions listed above in Zone 4 will involve a Northrop Grumman transmitter that will produce 12.8W of average power while transmitting at a frequency range of 16.5 GHz with a bandwidth of 600 MHz. The antenna has a gain of 31.6dBi. The pulse repetition frequency (PRF) is 7 to 11 kHz, the pulse width is 30 µSec, and emission designator is 600M0M0N.

The flight tests in Zones 1, 2, 3 and will occur at intervals of approximately 2 weeks, and each flight will have a duration of around 2 hours. Transmissions will occur intermittently during a flight in Zone 4, and will always be within a 320 km radius of around the counterpoint of NAD-83 coordinates: 39-11-08 N, 076-42-11 W. Transmissions in Zones 1, 2 and 3 will have very short durations and will be strictly limited to the three rectangular zones identified above. No operations in Zones 1, 2 and 3 will occur within 10 km of any ASDE3 system (i.e., Baltimore Washington International Airport).

Third, Northrop Grumman requests modification of the STA to add an experimental fixed transmitter at Linthicum (Ann Arundel County), Maryland (NAD-83 coordinates: 39-11-08 N, 076-42-11 W). These experimental transmissions will continue to involve a Northrop Grumman transmitter that will produce 12.8W of average power while transmitting at a frequency range of 16.5 GHz with bandwidths of 60 and 180 MHz. The antenna has a gain of 25dBi. The pulse repetition frequency (PRF) is 7 to 11 kHz, the pulse width is 30 µSec, and emission designators are 60M0M0N and 60M0M0N.

Fourth, Northrop Grumman requests that it be permitted to continue to operate a fixed/base and airborne mobile experimental radio systems within a radius of 20 nautical miles around the following location: Sussex County Airport, Georgetown (Sussex County), Delaware (NAD-83 coordinates 38-41-34 N and 075-21-53 W). These experimental transmissions will continue to involve a Northrop Grumman transmitter that will produce 12.8W of average power while transmitting at a frequency range of 16.5 GHz with a bandwidth of 1200 MHz. The antenna has a gain of 31.6dBi. The pulse repetition frequency (PRF) is 7 to 11 kHz, the pulse width is 30 µSec, and emission designator is 1G20M0N. In conjunction with this airborne transmitter, a ground based target generator having the same frequency range and bandwidth as the airborne unit will be used to create a complete system. The target generator will produce 20W of average power. The antenna has a gain of 7dBi and an emission designator of 1G20M0N.

I certify that I am an authorized employee of Northrop Grumman Systems Corporation.

Respectfully submitted,
NORTHROP GRUMMAN SYSTEMS CORPORATION

By: \s\ Jan E. Sochurek
Jan E. Sochurek
Spectrum Licensing Specialist