

NARRATIVE STATEMENT

By this application, the Electronic Systems Division of Raytheon Company ("Raytheon") is seeking authorization to test a 900 MHz data link for use to exchange aircraft position, equipment performance data, and control signals between the fixed ground station and a mobile aircraft station. This link is part of a project to develop wideband high-speed digital telecommunication systems operating in the 27.5 GHz to 40 GHz frequency range and used in future low earth satellite and stratospheric telecommunication systems.

Raytheon recognizes that the proposed operation must not cause harmful interference to authorized facilities. It therefore will coordinate its activities with all licensed users in the proposed band. Should such interference occur, Raytheon will take reasonable steps to resolve the interference, including, if necessary, arranging for the discontinuance of operation.

The equipment is capable of station identification pursuant to Section 5.115 of the Commission's Rules and will be labeled as follows:

FCC STATEMENT

Permission to operate this device has been granted under experimental authority issued by the Federal Communications Commission to Raytheon Company is strictly temporary and may be cancelled at any time. Operation is subject to the condition that it not cause harmful interference. This device has not been approved by the FCC and is not, and may not be, offered for sale or sold until the approval of the FCC has been obtained. Thus, the user does not hold a property right in the device and may be required to return the device.

The modulation will be BPSK/QPSK direct sequence, programmable, asynchronous modulation up to 32 kbps, $\frac{1}{2}$ rate convolution encoder modulated with a 4.6 mbps pseudo random code.

The bandwidth is 10 MHz measured. It was determined as follows:

Chip Rate: 4.6 mbps
Code Expansion: 2
Modulation Efficiency: 1.08
Bandwidth = Chip Rate x Code Expansion x Efficiency
 = $4.6 \times 2 \times 1.08$
 = 9.936 MHz

Raytheon submits that grant of this application is in the public interest, convenience, and necessity, as it will help Raytheon in developing advanced telecommunication systems.