Rockwell Collins

Washington Office

October 10, 2002

Mr. Carl Huie
Federal Communications Commission
Office of Engineering and Technology
445 12th Street, SW
Washington DC, 20554

Dear Mr. Huie,

Attached is an explanation of our antenna and frequency information regarding our experimental license application:

Antenna:

The antenna is directional. The maximum beamwidth required by Inmarsat is +/- 45 deg at the 13 dB down point. The horizontal and vertical orientation varies depending on where the aircraft is located. The Inmarsat satellites are geosynchronous. The aircraft provides location information to the SATCOM system which in turn provides steering information to the antenna system such that the antenna is always pointing at a satellite. Note, this antenna steering is not new to the HST-900 installation. The HST-900 shares the existing installation of the FCC certified Rockwell Collins SAT-906 Inmarsat satellite communication system with respect to the antenna. The SAT-906 provides antenna steering information unchanged with the addition of an HST-900.

1. Will the antenna extend more than 6 meters above the ground or above an existing building? Will the proposed antenna be mounted on an existing structure other than a building?

   The test bed for the HST-900 is an aircraft. The antenna used is mounted on the aircraft. This antenna is the same antenna used with the FCC certified Rockwell Collins SAT-906 Inmarsat satellite communication system.

   Frequency Information: For <u>each</u> antenna, the following information is needed.

Frequency Range: Transmit frequencies cover 1626.5 – 1660.5 MHz.

Power Output: The maximum RF power at the transmitter terminals is 22 dBm

Effective Radiated Power: The maximum ERP from the antenna is 22.5 dBW Mean Power.

Tolerance: The tolerance is +/- 1 dB.

Emission Designator: There are three emission designators which will be utilized during our experiment - D1D (data only), D1E (voice only), and D1W (both data and voice). The HST-900 is capable of supporting data and/or voice, depending on the particular installation.

Modulating Signal: There are two types of modulating signals: a 134.4k bits/sec 16-QAM data signal, and a 3.0k bits/sec BPSK setup signal..

Necessary Bandwidth: Bandwidth is 40 kHz. Calculated per Section 87.135(a) guidelines.

Thank you for your consideration of this matter. If you have any questions, please feel free to contact me at 703-516-8213.

Sincerely,

Joseph Cramer