0272-EX-ST-2000

Raytheon

Raytheon Aircraft Company
Wade Davis
P O Box 85
M/S 960-B86
Wichita KS 67201-0085
316 676 6702

May 19, 2000

To: FCC Representative:

The EME Test Facility at Raytheon Aircraft is requesting authorization from the FCC to perform ground level radiated and conducted RF interference testing. The particulars of this request are as follows:

1) **Name and address:**
Wade L. Davis
Raytheon Aircraft
P.O. Box 85
Mailstop 965-B86
Wichita, KS 67201-0085
Phone: (316) 676-6702

2) **Need for special action:**
Special consideration is requested to satisfy partial requirements for certifying Raytheon's Premier 1 aircraft.

3) **Type of operation to be conducted:**
Radiated and Conducted Susceptibility Testing (to 100 V/m) per RTCA DO-160D is intended to be performed by subjecting the equipment to a continuous frequency sweep (at two minutes per frequency decade) over the ranges of 100 MHz to 18 GHz for radiated susceptibility, and 10 kHz to 400 MHz for conducted susceptibility.

4) **Purpose of operation:**
These tests will determine whether the aircraft equipment will operate within performance specifications when the equipment and its interconnecting wiring are exposed to RF modulated power, by either a radiated RF field, or by injection probe induction, onto the power lines and interface circuit wiring.

5) **Time and date of proposed operation:**
Testing will be conducted during the 7:00 PM to 7:00 AM timeframe and is presently planned for mid-June 2000.

6) **Class of station, call sign of station, and nature of service:**
Electromagnetic Effects (EME) Test Facility - Raytheon Aircraft

7) **Location of proposed operation:**
Testing will be conducted within the EME Test Facility hangar located in the southeast corner of the square mile at Raytheon Aircraft, 9707 E. Central, Wichita, KS. The test facility hangar does have up to 20 dB shielding effectiveness at certain frequencies.

8) **Equipment to be used, including name of manufacturer, and model:**

ITEM	MANUFACTURER	MODEL	SERIAL NUMBER
Current Probe	Tegem	915501-1	10634
Current Probe	Tegem	94111-1	10827
Current Probe (Inj)	Tegem	95242-1	11589
Current Probe (Inj)	Tegem	95236-1	11541
Modulation Analyzer	Hewlett-Packard	8901B	49-5018
Amplifier	Amplifier Research	150L	49-4931
Amplifier	MCL	10631	49-6813
Amplifier	Amplifier Research	100W1000M7	11833
Antenna	EMCO	3106	41-6970
LISN (2)	Solar Electronics	72251	N/A
Field Strength Meter	IFI	EFS-3	639-B
Generator	Hewlett-Packard	3325B	49-4950
Generator	Hewlett-Packard	8673D	49-5017
Leveling Amplifier	IFI	LPA-5C	49-5410
Spectrum Analyzer	Hewlett-Packard	70000	49-4489K
Spectrum Analyzer	Hewlett-Packard	70908A	3021A00743
Antenna	Emco	3109	41-6970
Field Strength Monitor	Narda	8716	49-4955
50 Ohm Load	Bird	81B	49-0156
Directional Coupler	Amplifier Research	DC2000	49-5333
Directional Coupler	Narda	3040B-30	22046
Calibration Fixture	Eaton	95241-1	0117130-7
Power Supply	Hewlett-Packard	6653A	49-5877

9) **Frequency Ranges desired:**
Radiated Susceptibility Test – 100 MHz to 18 GHz
Conducted Susceptibility Test – 10 kHz to 400 MHz

10) **Plate power input to final radio frequency stage:**
Due to the broad band of frequencies required, the power will vary with frequency and may range from 1 - 200 watts for providing the 100 V/m requirement. [redacted]

11) Types of emissions:
Emissions will be from 10 kHz to 18 GHz at 100 volts/meter, and will be applied with both, continuous wave, and amplitude modulation (1kHz square wave @ 90% modulation).

12) Overall height of antenna structure above ground:

The maximum height of antennas during testing will be approximately 18 feet above ground.

The primary objective is to simultaneously expose the equipment and interface harness to specified RF levels.

The results of these tests are to assign a category defining the RF test level of the equipment, and to use the results as evidence for demonstrating compliance with FAR's 23.1301, 23.1309, and 23.1431.

Two test procedures are proposed: 1) From 10 kHz to 400 MHz, the equipment under test is subjected to RF signals coupled by means of injection probes onto its cable bundles; and 2) from 100 MHz to 18 GHz, the equipment under test is subjected to antenna-generated RF fields.

Sincerely,

Wade L Davis, Sr. Engineer
EME Test Facility
Raytheon Aircraft