

From: Martin Coons <martin_coons@raytheon.com>
To: Carl Huie <CHUIE@fcc.gov>
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Subject: Amendment

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Transmitter Sweep Test

Purpose - To check for electromagnetic compatibility (EMC) between aircraft communication transmitters and various aircraft systems.

Background - The traditional method of source/victim test involved manually transmitting on several frequencies spaced throughout the transmitter's frequency range and checking for electromagnetic incompatibilities. However, with the new 8.33 kHz spacing in the VHF band and the multitude of HF frequencies the manual method can only cover a small fraction of the licensed frequencies without spending an inordinate amount of time. Raytheon Aircraft proposes that a computer controlled signal source and amplifier combination connected to the aircraft's antennas be used to simulate the aircraft's transmitters.

Test Method - The computer controlled test setup will step through the frequencies for which the aircraft's transmitter is licensed. The controlling program checks for availability of the frequency for several seconds before transmitting. The program will also block out any frequencies that are set aside for emergencies or are in use by any local communication facility. After the program ascertains that a given frequency is clear the setup will transmit a CW and or modulated signal for less than 5 seconds. If the program determines that a frequency is in use it will skip to the next frequency. This cycle will repeat for each available frequency.

Power Level - Option 1: The test setup will transmit at either the transmitter's rated power + 3 dB.

Option 2: The measured power of the transmitter.

Transmitter Systems - HF and VHF communication 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).