

17-Oct-06

Question 7: Purpose of Experiment

- a) The equipment to be tested is aircraft UHF COM radios operating in the 225-400 MHz band. The radios are installed in general aviation aircraft developed and produced by Cessna Aircraft Company, which are sold to customers such as US Federal Agencies who are authorized to own and operate the radios.

The UHF radios being tested are certified for, and routinely used by Federal Agencies and DoD. Typical examples include the Bendix-King KTR-909B, Collins AN/ARC-210 and Wulfsberg RT-5000. The antennas are $\frac{1}{4}$ wave monopole aircraft blade antennas. Effective Radiated Power will always be less than 20 W mean. Modulating frequency and frequency stability can vary slightly between make and models of transmitters.

- b) The test is required by 14 CFR 25.1301(d), 25.1353(a) 25.1461(c) to certify that transmissions from the UHF radio will not interfere with GPS NAV systems on board the aircraft. Certification tests are required for each new configuration involving a UHF Com radio and GPS NAV system. We anticipate two to three tests per year with a maximum of ten to twelve possible. The test procedure is as follows:

Test for interference from UHF 6th harmonic (worst case) to the GPS L1 (1575.42 MHz) receiver. All tests are conducted on the ground. The aircraft must be outside and locked onto GPS satellites. **Transmit 20 seconds only** on 262.575 MHz and watch the status page for loss of satellites. Repeat on adjacent channel 262.600 MHz.

- c) As stated previously, this test is required by Federal Rules & Regulations. It will be repeated periodically. Our current STA, WC9XSD will expire in a few days. We are seeking to reduce the time and effort expended by ourselves, DoD and the FCC to coordinate and process authorizations for these tests. For that reason we are requesting a license in lieu of a Special Temporary Authority (STA). Cessna is reasonably certain that we will need to perform these tests for many years to come. We are requesting a license term of 5 years, but even a 2 year term would save considerable time as compared to frequently repeated STAs. The DoD coordination is attached as a separate exhibit to this application. We would like to add emission designator 16K0F3E in addition to 6K00A3E for future projects.

Very Respectfully,

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Cessna Aircraft Company