Federal Communications Commission (FCC)
Experimental Radio service

Subject: Request for Special Temporary Authorization (STA) in support of High Intensity Radiated Fields (HIRF) Testing at Quest Aircraft Company LLC in Sandpoint, ID.

Reference: 0735-EX-ST-2013 (Current Project)

This request for a Special Temporary Authorization (STA) is submitted in accordance with Title 47 CFR 5.61. The purpose of this STA is to obtain FCC authorization for the Quest Aircraft Company to perform Low Level Swept Coupling (LLSC) and Low Level Swept Field (LLSF) testing on a KODIAK® 100 airplane, which is a Title 14 CFR Part 23 aircraft, for the purpose of aircraft threat development for a High Intensity Radiated Field (HIRF) environment. The threat development determines the required equipment bench test levels. This test is required to satisfy the HIRF certification directives found in Exhibit 2. Further details are provided below.

Name and Address of Applicant
Quest Aircraft Company LLC
1200 Turbine Drive
Sandpoint, ID 83864
Attn: Jamie Slippy, Engineering

Need for special action:

The HIRF Aircraft-Level Verification shall be accomplished by performing aircraft Low-Level Coupling (LLC) type tests on a KODIAK® 100 airplane provisioned with the Garmin GFC 700 Automatic Flight Control System (AFCS) in order to demonstrate compliance with the HIRF Code of Federal Regulations (CFR) set forth in Title 14 CFR 23.1308. The aircraft LLC tests involve measuring the airframe attenuation and transfer functions, so that the internal HIRF electric fields (E-fields) and currents can be compared to the Garmin GFC 700 AFCS integrated system test levels previously demonstrated by Garmin. The tests to be conducted include the use of swept frequencies from 2.19MHz to 18GHz with the exception of prohibited frequency bands. The proposed testing will include the following:

The HIRF Aircraft-Level Verification shall consist of a combination of Low Level Swept Current (LLSC) and Low Level Swept Fields (LLSF) tests (open field). The LLSC tests measure and evaluate the amount of current induced on selected internal cable bundles while exposing the KODIAK® 100 airplane to low level HIRF. Similarly, the LLSF tests measure and evaluate the resulting onboard E-fields during the low level HIRF exposure.

LLSC Test Procedure (2.19MHz to 400MHz) - This LLSC test involves illuminating the airplane with a low-level external HIRF field in order to measure the transfer function between the external field and the airplane and equipment wire bundle currents.

LLSF Test Procedure (100MHz to 18GHz) - This LLSF test involves illuminating the airplane with a low-level external HIRF field in order to measure the transfer function relating airplane external RF fields to the internal RF fields.

Test Dates: These HIRF tests are planned to occur between 10/08/2013 and 12/31/2013.

Test Location: These proposed HIRF tests shall occur in the vicinity of the Quest Aircraft Company LLC manufacturing facility, which is at the Sandpoint Airport (SZT) in Sandpoint, ID [Lat: 48° 17' 57", Lng: -116° 33' 58"].

Field Generation and Monitoring Test Equipment

Reference Exhibit 2 for equipment information.

Frequency Bands and Power:

Reference Exhibit 2 for further supplemental information on test frequency, modulation, and Effective Radiated Power (ERP).

If you require additional information, please contact Jamie Slippy at (208) 263-1111 or via email jslippy@questaircraft.com.

Best Regards,

Jamie Slippy
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