

Exhibit 2 – Supplemental Information
Quest Aircraft Company (0735-EX-ST-2013)

1. Purpose

This exhibit provides supplemental Information in support of the application for Special Temporary Authorization (STA).

2. Applicable HIRF Directives

This STA is required to conduct testing necessary to support aircraft certification for High Intensity Radiated Fields (HIRF). The test data will be used to assure compliance with HIRF requirements as specified by the following directives.

2.1. Applicable Code of Federal Regulations (CFR)

14 CFR 23.1308 High-intensity Radiated Fields (HIRF) Protection

2.2. FAA Guidance

AC 20-158 The Certification of Electrical and Electronic Systems for Operation In The High Intensity Radiated Fields (HIRF) Environment.

2.3. Industry Guidance

RTCA/DO-160(G) Environmental Conditions and Test Procedures for Airborne Equipment
SAE ARP5583A Guide to Certification of Aircraft in a High Intensity Radiated Field (HIRF) Environment.

3. Equipment Information

All primary field generation and monitoring equipment is listed in Table 1 below.

Table 1 - Equipment List

Description	Manufacturer	Model¹	# of Units	Experimental?
Horn Antenna (1-18 GHz)	AH Systems	SAS-571	2	N
Signal Generator (GHz output)	Rhode & Schwarz	SMF 100A	1	N
Linear Dipole Antennas ² (1MHz to 25MHz)	ERA	N/A 15m long for Horizontal 7.5m long for Vertical	4 (2 ea)	Y ⁴
Bi-Log Antenna ² (25 MHz to 400 MHz)	Chase	CBL 6111	2	N
Power Amplifier ² (1.5 to 400MHz)	ENI	5100L	1	N
Spectrum Analyser ² (9kHz to 30GHz, CW output)	Rohde & Schwarz	FSP 30	1	N

Note 1: Equivalent equipment may be substituted as necessary.
Note 2: Used during LLSC tests.
Note 3: Used during LLSF tests.
Note 4: Common dipoles made for the purpose of this kind of testing.

4. Transmitted Signal Information (LLSC and LLSF tests)

4.1. LLSC

The transmitted signal will be generated using the tracking generator fitted to a Rhode & Schwarz FSP 30 spectrum analyser (CW output) and amplified with a ENI 5100L amplifier. This will be routed to the antennas using coaxial cable. The antennas will be:

- ERA-manufactured linear dipole antennas from 1MHz to 25MHz (15 m long for horizontal and 7.5 m for vertical)
- Chase Bilog CBL 6111 antennas from 25MHz to 400MHz

4.2. LLSF

The transmitted signal will be generated using the tracking generator fitted to a Rohde & Schwarz FSP 30 spectrum analyser (GHz output) for frequencies between 100MHz and 3GHz and from a Rohde & Schwarz SMF100A signal generator (GHz output) for frequencies between 3GHz and 18GHz.

These signals will be amplified using a pre-amplifier with a maximum output power of +20dBm at the antenna input. The antennas will be as follows:

- Chase Bilog CBL 6111 antenna from 100GHz to 1GHz
- AH Systems SAS-571 antenna from 1GHz to 18GHz

5. Frequency and Power Information (LLSC and LLSF tests)

5.1. Frequency

The HIRF directives referenced in Section 2 herein provide guidance as to how to perform Low-Level Coupling (LLC) testing. This guidance specifies the use of a signal generator and receiver system setup in a tracking generator configuration such that the test frequency is swept continuously across a specified frequency band. Testing using swept frequencies rather than widely spaced discrete frequencies allows for more accurate measurement of aircraft and wiring resonant frequencies. This method also simplifies the test setup and minimizes frequency dwell time. The effective dwell time at each swept frequency is very short, as can be seen in section 5.4 below. We request permission to perform swept frequency testing across all approved test frequency bands as listed in the application. Frequencies reserved for emergency services or local aircraft control will be omitted from the test.

5.2. Modulation

All testing is performed using a Continuous Wave (CW) signal (i.e. no modulation). Therefore, no actual data is being transmitted during the test.

5.3. Power

Transmitted power must be high enough to allow accurate monitoring using a sensitive receiver system. All transmitted power levels will remain less than the specified band specific Effective Radiated Power (ERP) as specified in the application.

The power levels requested are for maximum Effective Isotropic Radiated Power (EIRP) at the transmitter and for the lower frequency emissions, this will be about 16W. Coordination with the local FCC and FAA can be accomplished as necessary.

5.4. LLSC

All test frequencies are linearly swept using the following bands:

- 1MHz to 5MHz
 - Antenna input power ~50W
 - six sweeps per measurement
 - each sweep takes approximately 1.25 seconds
- 5MHz to 25MHz
 - Antenna input power ~50W
 - three sweeps per measurement
 - each sweep takes approximately 0.5 seconds
- 25MHz to 400MHz
 - Antenna input power ~10W
 - one sweep per measurement
 - each sweep takes approximately 0.1 seconds

5.5. LLSF

All test frequencies are linearly swept using the following bands:

- 100MHz to 18GHz
 - Antenna input power 0.1W
 - four sweeps per measurement
 - each sweep takes approximately 1.25 seconds

6. Antenna Information (height, type, etc.)

Antennas are detailed above. The antenna center is 3.7m above ground for LLSC and ~2m above ground for LLSF.

7. Contacts

The following contacts can be contacted at any time to stop the test in case of an interference conflict.

Jamie Slippy

Principal Engineer

(208) 263-1111 (desk)

(208) 610-3156 (cell)