



***FCC TECHNICAL REPORT
FOR THE GROUND DATA LINK (GDL)
AIRCRAFT SEGMENT
& GROUND SEGMENT***

Test Report Addendum



TABLE OF CONTENTS

<u>Para. No.</u>	<u>Title</u>	<u>Page</u>
1	MODULAR APPROVAL	1
2	FCC TESTING.....	3
3	MEASURED OUTPUT POWER	4

List of Figures

<u>Figure No.</u>	<u>Title</u>	<u>Page</u>
Figure 1.1:	GDL Aircraft Unit showing Compliance Label	2
Figure 1.2:	Access Point.....	2
Figure 2.1:	FCC Testing was performed with the modular transmitter in a stand-alone configuration.....	3
Figure 2.2:	FCC Test Configuration used to test the FCC ID OMLGDL-002 GDL transmitter as a module.....	4



1 MODULAR APPROVAL

GE Harris Aviation Information Solutions is seeking modular approval on the FCC ID OMLGDL-002 modular transceiver. The FCC ID OMLGDL-002 modular transceiver consists of an already approved FCC modular transmitter, FCC ID LOZ102035, tethered to an external Low Noise Amplifier (LNA)/Power Amplifier (PA) assembly. GE Harris Aviation recognizes that the equipment grant applies to the FCC ID LOZ102035 transmitter and the LNA/PA used in conjunction and that neither can be used independently nor changed in any way without voiding the equipment grant.

The approved FCC modular transmitter, FCC ID LOZ102035, satisfies the following modular transmitter requirements:

1. It has its own RF shielding
2. It has buffered modulation/data inputs
3. It has its own power supply regulation
4. It is labeled with its own FCC ID number

The FCC ID OMLGDL-002 modular transceiver is used with two different omni-directional antennas. The make, model number, and gain for the antennas used are:

Equipment Configuration	Antenna Manufacturer	Model Number	Antenna Gain
Aircraft	Comant Industries	CI 150-32-L	5.15 dBi
Ground	Cushcraft/Signals	S2403B	5.15 dBi

All equipment is professionally installed under GE Harris Aviation direction in commercial aircraft and at fixed ground locations at airports. The nature of the business relationship between GE Harris Aviation and their customers protects against unauthorized changes to the system baseline that would affect its compliance to FCC regulations. GE Harris Aviation has taken the appropriate design and installation measures to assure that the system will remain intact once it is professionally installed.

The FCC ID OMLGDL-002 modular transceiver is installed in two different devices. The devices in which the modular transmitter is installed are labeled with the FCC ID of the enclosed modular transmitter. The two devices that contain the FCC ID OMLGDL-002 modular transceiver are shown in Figure 1.1 and 1.2.



Figure 1.1: GDL Aircraft Unit showing Compliance Label

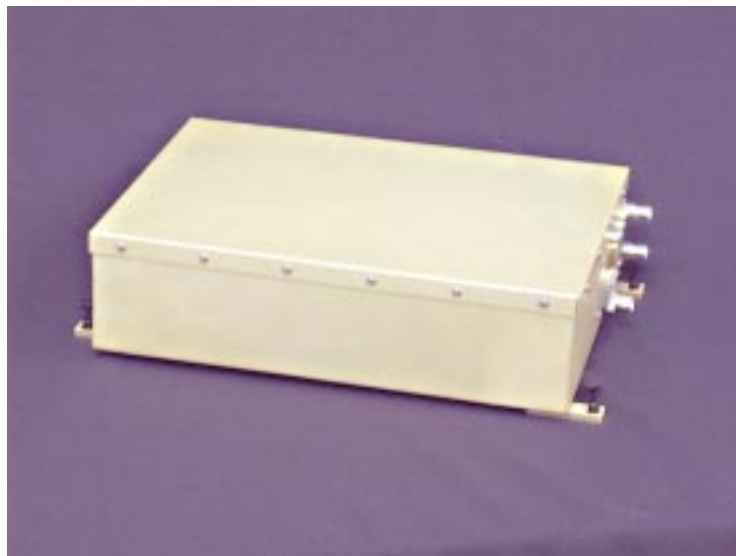


Figure 1.2: Access Point

2 FCC TESTING

The FCC ID OMLGDL-002 modular transceiver was tested in a stand-alone configuration. The antenna, dc power and data input/output lines were connected to the module, but the module was not inside another case during testing. Figure 2.1 is a photograph taken during the testing of the FCC ID OMLGDL-002 modular transceiver at Rubicom Systems, Inc. It shows that the approved FCC modular transmitter, FCC ID LOZ102035, was mounted on an extender card connected to a laptop PC and was powered off of an external dc power supply. As can be seen in the photo, the modular transmitter was tested in a stand-alone configuration and was not inside another case during testing.



Figure 2.1: FCC Testing was performed with the modular transmitter in a stand-alone configuration

Figure 2.2 shows the test setup used to perform Radiated Spurious Emissions testing. The configuration of the equipment under test shown, i.e., the modular transmitter consisting of the approved transmitter module FCC ID LOZ102035 and the external LNA/PA assembly was the same for all of the testing performed.

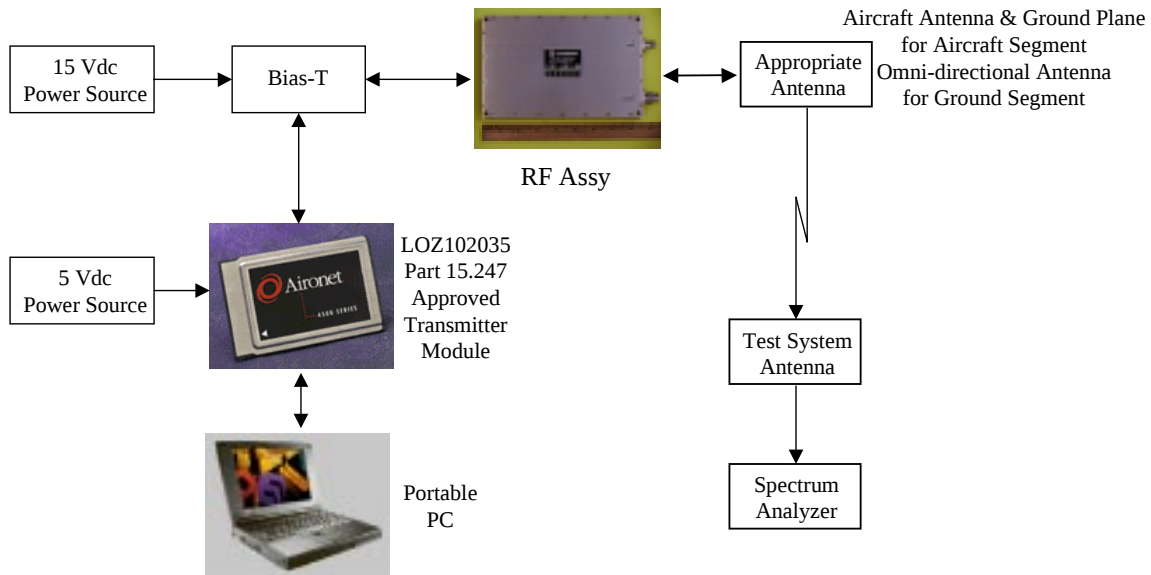


Figure 2.2: FCC Test Configuration used to test the FCC ID OMLGDL-002 GDL transmitter as a module

3 MEASURED OUTPUT POWER

The external PA contains an automatic level control circuit that assures constant transmit output power as long as the transmit power from the transceiver is within the input dynamic range of the power amplifier. The output power of the external PA is 21-24 dBm (typically 23 dBm) provided the input power is between 0-10 dBm. If the transmit power from the transceiver is below the minimum required to switch from receive to transmit, the LNA/PA remains in the receive mode. The output power of the FCC ID LOZ102035 transmitter is programmable. Three different transmitter output power settings (100 mW, 50 mW, and 20 mW) are used to compensate for varying RF cable losses that result from installation in various types of aircraft or ground locations. During the FCC Testing performed, the output power of the FCC ID LOZ102035 transmitter was set to 100 mW, which presents the PA in the RF Assembly with the worst case spurious emissions' test signal. An appropriate length of RF coaxial cable (75 feet) was used to assure that the power into the PA was within its input dynamic range. In actual system deployment, the 50 mW and 20 mW power settings may be utilized in installations requiring shorter interconnecting cables.