



Engineering Solutions & Electromagnetic Compatibility Services

FCC Part 25 & IC RSS-170 Class 2 Permissive Change Report

Test Lab: Rhein Tech Laboratories, Inc. Phone: 703-689-0368 360 Herndon Parkway Fax: 703-689-2056 Suite 1400 Web: www.rheintech.com Herndon, VA 20170 Email: atcinfo@rheintech.com		Applicant: Iridium Satellite LLC Phone: 703-287-7400 1750 Tysons Blvd., Suite 1400 McLean, VA 22102 Contact: Donna Bethea-Murphy	
FCC ID/IC:	Q639602 4629A-9602	Test Report Date	October 12, 2011
Platform	BriarTek CerberLink	RTL Work Order Number	2011131
Model #	9602	RTL Quote Number	QRTL11-191
FCC Classification(s)	TNB - Licensed Non-Broadcast Station Transmitter		
FCC Rule Part(s)	Part 25 (10-01-10): Satellite Communications		
IC Rule Part(s)	RSS-170 Issue 2: Mobile Earth Stations and Ancillary Terrestrial Component Equipment Operating in the Mobile-Satellite Service Bands		
Frequency Range (MHz)	Output Power (W)	Frequency Tolerance (ppm)	Emission Designator
1616.0 – 1626.5	1.4	1.0	41K6Q7W

I, the undersigned, hereby declare that the equipment tested and referenced in this report conforms to the identified standard(s) as described in this test report. No modifications were made to the equipment during testing in order to achieve compliance with these standards. Furthermore, there was no deviation from, additions to, or exclusions from, the applicable parts of FCC Part 2, FCC Part 25, ANSI C63.4, and Industry Canada RSS-170.

Signature: 

Date: October 12, 2011

Typed/Printed Name: Desmond A. Fraser

Position: President

This report may not be reproduced, except in full, without the written approval of Rhein Tech Laboratories, Inc. and Iridium Satellite LLC. The test results relate only to the item(s) tested.

These tests are accredited and meet the requirements of ISO/IEC 17025 as verified by ANSI-ASQ National Accreditation Board/ACLASS. Refer to certificate and scope of accreditation AT-1445.

Table of Contents

1	General Information	3
1.1	Scope	3
1.2	Modifications	3
1.3	Test Facility	3
1.4	Related Submittal(s)/Grant(s)	3
1.5	Requested Grant Notes	3
2	Test Information	4
2.1	Test Justification and Exercising the EUT	4
2.2	Test Result Summary.....	4
2.3	Test System Details	4
2.4	Configuration of Tested System.....	5
3	Collocation Radiated Emissions	5
4	Conclusion	7

Table Index

Table 2-1:	Test Result Summary with FCC/IC Rules and Regulations.....	4
Table 2-2:	Equipment under Test (EUT)	4
Table 4-1:	Collocation Radiated Emissions Test Equipment	6

Figure Index

Figure 2-1:	Worst Case Configuration of System under Test.....	5
-------------	--	---

Appendix Index

Appendix A:	Test Photographs	8
-------------	------------------------	---

Photograph Index

Photograph 1:	Radiated Emissions - Front View	8
Photograph 2:	Radiated Emissions - Rear View.....	9

1 General Information

1.1 Scope

FCC Rules Part 25 (10-01-10): Satellite Communications

RSS-170 Issue 2: Mobile Earth Stations and Ancillary Terrestrial Component Equipment Operating in the Mobile-Satellite Service Bands

The purpose of this Class 2 Permissive Change application is to modify the original Iridium Satellite LLC model 9602 modular grant to allow the specific BriarTek portable host configuration as shown in the SAR report included with this filing. Testing was also performed to show collocation compliance with the BlueGiga Technologies Inc. Bluetooth module FCC ID: QOQWT12 / IC ID: 5123A-BGTWT12A

1.2 Modifications

None

1.3 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located at Rhein Tech Laboratories (RTL), 360 Herndon Parkway, Suite 1400, Herndon, Virginia 20170. This site has been fully described in a report and approved by the Federal Communications Commission to perform AC line conducted and radiated emissions testing (ANSI C63.4 2003).

1.4 Related Submittal(s)/Grant(s)

This is a Class 2 Permissive Change application for Iridium Satellite LLC Model: 9602, FCC ID: Q639602, IC: 4629A-9602; the original certifications were granted on April 12, 2010, and April 19, 2010, respectively.

1.5 Requested Grant Notes

Modular Transmitter. Power Output listed is conducted. The antenna gain, including cable loss, must not exceed 4 dBi (antennas for use with this module are listed in the product manual and are provided as an exhibit with this submission). The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter, ***except for the specific portable host configuration and collocation with BlueGiga Technologies Inc. Bluetooth module FCC ID: QOQWT12 as shown in this permissive change filing.*** Antenna configurations with higher gains than above are addressed at time of licensing. The final product operating with this transmitter must include operating instructions and applicable warnings for end users and installers to satisfy RF exposure compliance requirements. OEM integrators must be informed of the specific requirements.

** the bold, italicized portion is the additional grant note requested as a result of this Class 2 Permissive Change filing*

2 Test Information

2.1 Test Justification and Exercising the EUT

The EUT was tested in all three orthogonal planes in order to determine worst-case emissions. The Iridium and BlueGiga Bluetooth modules were set to simultaneously continuously transmit. Emissions were investigated with the Iridium module transmitting on the low, middle and high channels, with the Bluetooth operating in both a fixed frequency mode and separately in a continuous hopping mode.

2.2 Test Result Summary

Table 2-1: Test Result Summary with FCC/IC Rules and Regulations

FCC Standard	IC Standard	Test	Pass/Fail or N/A
2.1053	RSS-170	Radiated Collocation Emissions	Pass

2.3 Test System Details

The test sample was received on September 28, 2011. The FCC Identifiers for all equipment, plus descriptions of all cables used in the tested system, are shown in the table below.

Table 2-2: Equipment under Test (EUT)

Part	Manufacturer	Model	Serial Number	FCC ID	Cable Description	RTL Bar Code
CerberLink (portable host for the modules)	BriarTek with Iridium Satellite LLC module and BlueGiga Technologies module	CerberLink including Iridium 9602 and BlueGiga WT12-A module	N/A	Q639602	N/A	20428

2.4 Configuration of Tested System

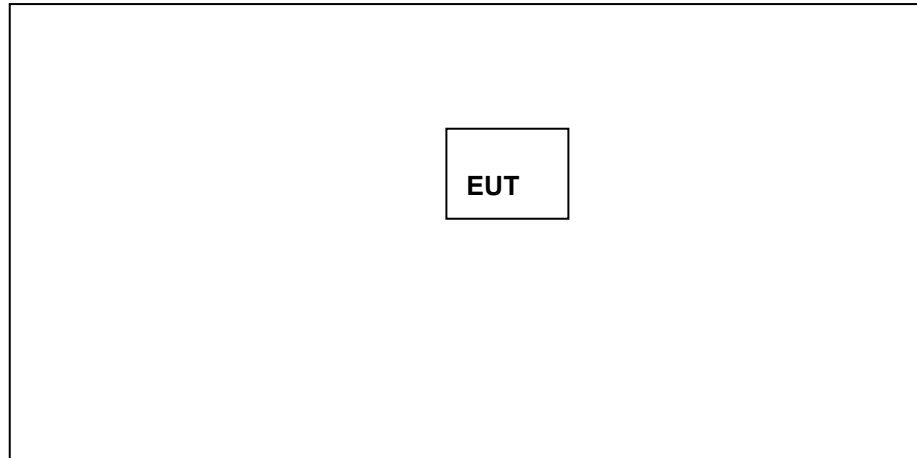


Figure 2-1: Worst Case Configuration of System under Test

3 Collocation Radiated Emissions

Simultaneous, collocation emissions were tested using the test modes described in section 2.1. Per FCC/IC guidance, the FCC does not require data for collocation emissions testing, **solely a statement that all spurious and any inter-mod emissions detected were found to be compliant.**

Testing demonstrated that all emissions were found to be compliant.

Table 4-1: Collocation Radiated Emissions Test Equipment

Part Type	Manufacturer	Model	Serial Number	RTL Asset#	Calibration Due Date
Amplifier (20 MHz - 2 GHz)	Rhein Tech Laboratories, Inc.	PR-1040	900905	900905	4/10/2012
Bilog Periodic Antenna (25 MHz - 2 GHz)	Schaffner Chase	CBL6112	2099	900791	12/12/2012
EMI Receiver RF Section (9 kHz - 6.5 GHz)	Hewlett Packard	85462A	3325A00159	900913	8/17/2012
RF Filter Section (100 kHz - 6.5 GHz)	Hewlett Packard	85460A	3330A00107	900914	8/17/2012
Amplifier (1 GHz - 26.4 GHz)	Rhein Tech Laboratories, Inc.	PR-1042	1003	901364	3/31/2012
Horn Antenna (2.0 - 4.0 GHz)	EMCO	3161-02	9804-1044	900772	6/13/2012
Horn Antenna (4.0 - 8.2 GHz)	EMCO	3161-03	9508-1020	900321	6/13/2012
Horn Antenna (8.2 - 12.4 GHz)	EMCO	3160-07	9605-1054	900323	7/31/2012
Spectrum Analyzer Display Section	Hewlett Packard	85662A	3144A20839	900930	9/13/2012
Spectrum Analyzer (100 Hz - 22 GHz)	Hewlett Packard	8566B	3138A07771	900931	9/13/2012

Test Personnel:

Jon Wilson Test Engineer	 Signature	September 29-30, October 3-4, 2011 Dates of Test
-----------------------------	--	---

Rhein Tech Laboratories, Inc.
360 Herndon Parkway
Suite 1400
Herndon, VA 20170
<http://www.rheintech.com>

Client: Iridium Satellite 9602
Model: 9602
Standards: FCC 25/IC RSS-170
ID's: Q639602/4629A-9602
Report #: 2011131

4 Conclusion

The data in this measurement report shows that Iridium Satellite LLC module 9602; FCC ID: Q639602, IC: 4629A-9602, complies with all the applicable requirements of FCC Parts 2 and 25 and Industry Canada RSS-170.