Host Integration Test Report

Prepared for: Icom America, Inc

Model: IP740D

Description: Two Way Radio

FCC ID: AFJ418001
ISED ID: 202D-418001

To

Part 90
Part 15.247
RSS-119
RSS-247

Date of Issue: March 18, 2024

Test Result: PASS

On the behalf of the applicant:	**Icom America, Inc** **12421 Willows Rd NE** **Kirkland, Washington 98304**
Attention of:	**Masaaki Takahashi** **Ph: (425) 450-98034** **E-Mail: MasaakiTakahashi@IcomAmerica.com**

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Project No: p23c0010

Greg Corbin
Project Test Engineer

Test Result Summary

Specification	Test Name	Pass, Fail, N/A	Comments
Part 90 / 15.247 RSS-119 / RSS-247 Host Integration	Radiated Spurious Emissions	Pass	

Statements of conformity are reported as:

- Pass - the measured value is below the acceptance limit, *acceptance limit = test limit*.
- Fail - the measured value is above the acceptance limit, *acceptance limit = test limit*.

Test Report Revision History

Revision	Date	Revised By	Reason for Revision
1.0	3/8/2024	Greg Corbin	Original Document
2.0	4/8/2024	Greg Corbin	Updated HVIN on page 6. Added ISED contact information to page 6

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ANAB

Compliance Testing, LLC, has been accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to the joint ISO-ILAC-IAF Communiqué dated January 2009).

The tests results contained within this test report all fall within our scope of accreditation, unless noted below.

Please refer to http://www.compliancetesting.com/labscope.html for current scope of accreditation.

FCC Site Reg. #349717

IC Site Reg. #2044A-2

Test and Measurement Data

All tests and measurement data shown were performed in accordance with FCC Rules and Regulations, Volume II, Part 2, Subpart J, Sections 2.947, 2.1033(c), 2.1041, 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057, ANSI C63.26-2015, Part 90, RSS-119, RSS-247, RSS-GEN.

Standard Test Conditions and Engineering Practices

Except as noted herein, the following conditions and procedures were observed during the testing.

In accordance with ANSI/TIA 603C, and unless otherwise indicated in the specific measurement results, the ambient temperature of the actual EUT was maintained within the range of 10° to 40°C (50° to 104°F) unless the particular equipment requirements specified testing over a different temperature range. Also, unless otherwise indicated, the humidity levels were in the range of 10% to 90% relative humidity.

Environmental Conditions		
Temp (ºC)	**Humidity (%)**	**Pressure (mbar)**
21.2 – 22.6	35.8 – 40.7	964.45 – 907.15

Measurement results, unless otherwise noted, are worst-case measurements.

EUT Description
Model: IP740D
Description: Two Way Radio
Firmware: N/A
Serial Number: modified production unit
HVIN: 418001-02
PMN: IP740D
ISED Applicant information:
ICOM Canada
Jim Backeland
#150-6165 Highway 17A
Delta, BC V4K-5B8
Office 425-586-6387

Additional Information:
The EUT is a 2-way radio.

The EUT contains an LTE and BT module.
The manufacturer replaced the original BT module with a new pre-certified BT module.
The radio hardware and LTE module remains the same (no design or component changes).
The new BT module is integrated consistent with all OEM instructions.

This test report is to support Host Integration of the new BT module.

Module	FCC ID	ISED ID	Status
LTE	UDV-201606	223761-8PYA003	No change
BT (original module)	VIYHRM1016	7305A-HRM1016	Replaced with new module
BT(new module)	AFJ387300	202D-387300	New pre-certified module

EUT Operation during Tests
The EUT was powered by an internal battery.
The EUT was tested under normal operating conditions.

Radiated Spurious emissions were measured with the LMR radio and BT operating separately and simultaneously.
The BT radio was controlled by a customer supplied GUI.
The channels tested are shown in the following table.

LMR and BT Channel Selection

LMR CH	BT channels														
	0, 2402					39, 2441					78, 2480				
	30 - 1000 MHz			1 - 18 GHz		30 - 1000 MHz			1 - 18 GHz		30 - 1000 MHz			1 - 18 GHz	
MHz	BT	LMR - D	LMR + BT	BT	LMR + BT	BT	LMR - N	LMR + BT	BT	LMR + BT	BT	LMR - W	LMR + BT	BT	LMR + BT
400.025	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
460.025		X	X		X		X	X		X		X	X		X
519.975		X	X		X		X	X		X		X	X		X

Radiated Spurious Emissions

Engineer: Greg Corbin

Test Date: 3/7/2024

Measurement Procedure

The radiated emissions testing was limited to host integration testing due to the BT module being replaced with a new pre-certified BT module.
The EUT was tested up to the 5th harmonic of the BT radio frequency.

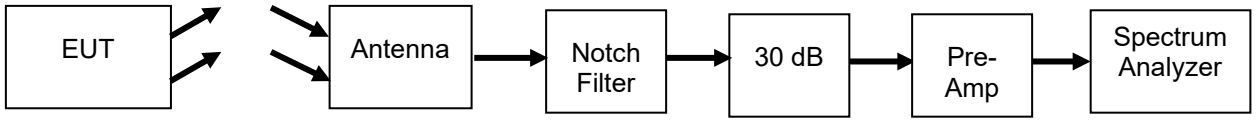
The EUT was tested in a semi-anechoic chamber with the turntable set 3m from the receiving antenna. A spectrum analyzer was used to verify that the EUT met the requirements for fundamental output power. The EUT was tested by rotating it 360 degrees with the antenna in both the vertical and horizontal orientation while raised from 1 to 4 meters to ensure that the signal levels were maximized. All cable and antenna correction factors were input into the spectrum analyzer before recording final data.

The RBW was set to 100 kHz for measurements below 1 GHz and 1 MHz for measurements above 1 GHz.
The VBW was set to 3 times the RBW.

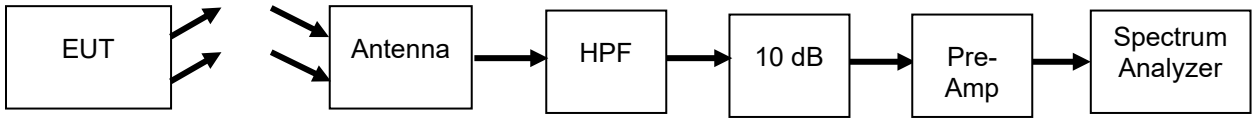
No additional spurious emissions were observed when testing both the LMR and BT simultaneously.
The only emissions over the limit line in the graphs are the fundamental emissions which are exempt from the spurious emission limit.

Radiated Emissions Test Setups

30 – 1000 MHz



1 – 13 GHz



Refer to Annex A for the Spurious Emissions test data.

Test Equipment Utilized

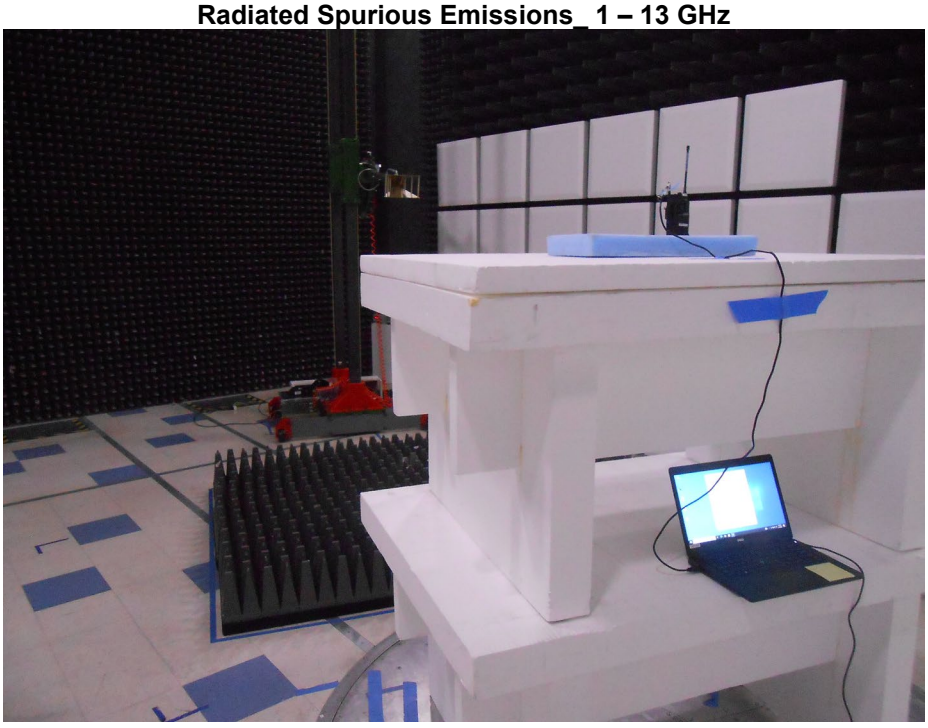
Description	Manufacturer	Model #	CT Asset #	Last Cal Date	Cal Due Date
Tunable Notch Filter	Eagle	TNF-1-(250-850MHz)	i00124	Verified on: 3/7/24	
Horn Antenna	ARA	DRG-118/A	i00271	8/11/22	8/11/24
Bi-Log Antenna	Schaffner	CBL 6111D	i00349	2/7/23	2/7/25
3 Meter Semi-Anechoic Chamber	Panashield	3 Meter Semi-Anechoic Chamber	i00428	6/27/23	6/27/24
Highpass Filter (1 GHz)	K&L	7IH40-980/T6000-O/O	i00432	Verified on: 3/7/24	
MXE EMI receiver	Keysight	N9038A	i00552	2/23/23	2/23/24
Preamplifier	RF Lambda	RLNA00M45GA	i00555	Verified on: 2/19/24	
Preamplifier	Eravant	SBB-0115034019-2F2F-E3	i00722	Verified 2/14/24	

In addition to the equipment listed above standard RF connectors and cables were utilized in the testing of the described equipment. Prior to testing these components were tested to verify proper operation.

Test Set-up Photos

Radiated Spurious Emissions_ 30 – 1000 MHz

Radiated Spurious Emissions_ 1 – 13 GHz



END OF TEST REPORT