

ELECTROMAGNETIC COMPATIBILITY TEST REPORT

PREPARED FOR Intrinsic Technologies Corporation
BY QAI LABORATORIES



RF Exposure Evaluation for 15407 (NII) and 15.247 Devices

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Product Tested FCC ID: 2AFDI-ITCOQ626S
Product Tested ISED: 9049A-ITCOQ626S
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Laboratory Accreditations (per ISO/IEC 17025:2005):



American Association for Laboratory Accreditation Certificate Number: 3657.02

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Applicable Test Standards:

- CFR 47 FCC Part 15, Subpart E - 15.407 *Radio Frequency Devices - Subpart E - Unlicensed National Information Infrastructure Devices - §15.407 - General technical requirements.*
- CFR 47 FCC Part 15, Subpart C - 15.247 *Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices*
- RSS-247 Issue 2 *Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices*
- RSS-Gen Issue 5 *General Requirements for Compliance of Radio Apparatus*



Equipment Tested: Open-Q 626(TM) SOM 802.11a/b/g/n/ac WiFi + BT/BLE
Model Number: 2AFDI-ITCOQ626S/9049A-ITCOQ626S
Manufacturer: Intrinsic Technologies Corporation

REVISION HISTORY

Date	Report Number	Revision	Description	By
2019 Apr 30	E10702-1803B	1.0	Initial Release	BB

All previous versions of this report have been superseded by the latest dated revision as listed in the above table. Please dispose of all previous electronic and paper printed revisions accordingly.

REPORT AUTHORIZATION

The data documented in this report is for the equipment '2AFDI-ITCOQ626S/9049A-ITCOQ626S Open-Q 626(TM) SOM 802.11a/b/g/n/ac WiFi + BT/BLE' provided by Intrinsyc Technologies Corporation. Tests were performed on the sample equipment as requested by Intrinsyc Technologies Corporation for the purpose of demonstrating compliance with CFR 47 FCC Part 15, Subpart C - 15.247, CFR 47 FCC Part 15, Subpart E - 15.407, CFR 47 FCC Part 15, Subpart B, RSS-247 Issue 2, RSS-Gen Issue 5, ICES-003 Issue 6 as agreed upon by Intrinsyc Technologies Corporation as per quotation 18SH05146R1.

Intrinsyc Technologies Corporation is responsible for the tested product configuration, continued product compliance, and for the appropriate auditing of subsequent products as required. This report may comprise a partial list of tests that are required for FCC, ISED and/or CE Mark Declaration of Conformity and can only be reproduced by the manufacturer.

This is to certify the following report true and correct to the best of our knowledge.

Tested by Bruce Balston
EMC Engineer

Written by Bruce Balston
Technical Writer

Approved by Raj Atwal
EMC Lab Manager

Reviewed by Parminder Singh
Director of EMC Services

3.11 RF Exposure Evaluation

This requirement ensures the Equipment Under Test (EUT) complies with the RF exposure requirements of CFR 47 FCC Part 1.131, RSS-102 Issue 5, Annex A, 9(d).

FCC Part 1.1310 defines radio frequency radiation exposure limits for General Population/Uncontrolled Exposure within frequency range 1500 - 100,000 MHz: as 1.0 mW/cm².

RSS-102 Section 2.5.2 defines RF exposure evaluation as required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates at or above 300 MHz and below 6 GHz, the source-based, time-averaged maximum EIRP of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834} \text{ W}$ (adjusted for tune-up tolerance), where f is in MHz. In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the EIRP was derived.

RF Exposure Limits

Band	Worst-Case (Lowest) Frequency in Band MHz	RSS-102-2.5.2 Power Density Limit at 20 cm mW/cm ²	CFR 47 FCC 1.1310 Power Density Limit at 20 cm mW/cm ²
2G4	2400	2.7	1.0
UNII-1	5150	4.5	1.0
UNII-2A	5250	4.6	1.0
UNII-2C	5470	4.7	1.0
UNII-3	5725	4.8	1.0

RF Exposure Evaluation

$$\text{Power Density (mW/cm}^2\text{)} = \text{EIRP(mW)} / (4 * \text{PI} * \text{r}^2)$$

Band	Highest Measured Conducted Power dBm	Antenna Gain dBi	EIRP mW	Power Density at 20 cm mW/cm ²
2G4	20.8	3.32	259.1	0.052
UNII-1	20.1	6.11	421.2	0.084
UNII-2A	20.1	6.11	421.2	0.084
UNII-2C	20.1	6.11	421.2	0.084
UNII-3	20.1	6.11	421.2	0.084

In all cases, the Power Density reported is significantly less than the applicable limits.

The measurements and calculations for RF Exposure were performed on March 5, 2019 and the EUT complies with CFR 47 FCC Part 1.131 and RSS-102 Issue 5, Annex A, 9(d).