

# RADIO TEST REPORT

Report ID:

**REP013519**

Project number:

**PRJ0039147**

Type of assessment:

**Modular transmitter integration**

Applicant:

**Tektelic Communications**

Product:

**IotaComm Dual-Band Gateway**

Model:

**T0007752**

Model variant:

**T0007754**

Contains FCC ID:

**2ALEPT0008765**

Contains IC Registration number:

**22504-T0008765****N7NEM7455****2417C-EM7455**

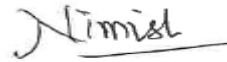
Specifications:

- ◆ FCC 47 CFR Part 15 Subpart C, §15.247
- ◆ FCC 47 CFR Part 27, Subpart C
- ◆ FCC 47 CFR Part 90, Subpart I
- ◆ RSS-119, Issue 12, May 2015
- ◆ RSS-130 Issue 2, February 130
- ◆ RSS-247, Issue 2, Feb 2017, Section 5

Date of issue: August 3, 2023

**Nimish Kapoor, EMC/RF Specialist**

Tested by



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Reviewed by



Signature

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ANAB File Number: AT-3195 (Ottawa/Almonte); AT-3193 (Pointe-Claire); AT-3194 (Cambridge)





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	Test site identifier	<b>Organization</b>	<b>Ottawa/Almonte</b>	<b>Montreal</b>
	FCC:	CA2040	CA2041	CA0101
	ISED:	2040A-4	2040G-5	24676
Website	<a href="http://www.nemko.com">www.nemko.com</a>			

## Limits of responsibility

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Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.

This test report has been completed in accordance with the requirements of ISO/IEC 17025. All results contained in this report are within Nemko Canada's ISO/IEC 17025 accreditation.

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## Section 1 Report summary

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### 1.1 Test specifications

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FCC 47 CFR Part 15, Subpart C, Clause 15.247	Operation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–585 MHz
FCC 47 CFR Part 27, Subpart C, Clause 27.53	Miscellaneous wireless communications services
FCC 47 CFR Part 90, Subpart I	Private land mobile radio services. General technical standards
RSS-119 Issue 12, May 2015	Land Mobile and Fixed Equipment Operating in the Frequency Range 27.41–960 MHz
RSS-130 Issue 2, February 2019	Equipment Operating in the Frequency Bands 617–652 MHz, 663–698 MHz, 698–756 MHz and 777–787 MHz
RSS-247, Issue 2, Feb 2017, Section 5	Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices

### 1.2 Test methods

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558074 D01 15.247 Meas Guidance v05r02 (April 2, 2019)	Guidance for compliance measurements on digital transmission system, frequency hopping spread spectrum system, and hybrid system devices operating under section 15.247 of the FCC rules.
662911 D01 Multiple Transmitter Output v02r01 (October 31, 2013)	Emissions Testing of Transmitters with Multiple Outputs in the Same Band
DA 00-705, Released March 30, 2000	Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems
KDB 996369 D04 Module Integration Guide v02	MODULAR TRANSMITTER INTEGRATION GUIDE GUIDANCE FOR HOST PRODUCT MANUFACTURERS
ANSI C63.10 v2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
RSS-102, Issue 5, March 19, 2015 ANSI C63.26 v2015	Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands) American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

### 1.3 Exclusions

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The evaluation was done to ensure there are no additional radiated spurious emissions generated due to simultaneous-transmission operations compared to single transmitter operations testing, and to ensure compliance with the applicable FCC/ISED rules for the transmitters operating individually and simultaneously. This includes compliance for the summation of all emissions from all outputs occupying the same or overlapping frequency ranges, as defined by the applicable rules. All other requirements are excluded from the scope of this report.

## 1.4 Statement of compliance

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In the configuration tested, the EUT was found compliant.

Testing was performed against all relevant requirements of the test standard except as noted in section 1.3 above. Results obtained indicate that the product under test complies in full with the requirements tested. The test results relate only to the items tested.

See “Summary of test results” for full details.

## 1.5 Test report revision history

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**Table 1.5-1: Test report revision history**

Revision #	Date of issue	Details of changes made to test report
REP013519	August 3, 2023	Original report issued

## Section 2 Engineering considerations

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### 2.1 Modifications incorporated in the EUT for compliance

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There were no modifications performed to the EUT during this assessment.

### 2.2 Technical judgment

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The EUT Consists of three RF Modules: 1. Tektelic Communications Module for Antenna 1, FCC ID: 2ALEPT0008765 and IC ID: 22504-T0008765. 2. Tektelic Communications Module for Antenna 0, FCC ID: 2ALEPT0008774 and IC ID: 22504-T0008774. 3. Sierra Wireless Module for Cellular, FCC ID: N7NEM7455 and IC ID: 2417C-EM7455. The sampled transmitter frequencies combination was as follows:  
3G/4G Module was transmitting at 782 MHz and the Antenna 0 and Antenna 1 Module were transmitting on middle channel.

### 2.3 Model variant declaration

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As declared by the applicant, the EUT model T0007752 has been chosen to be representative for both models. The model family, and the description of the variations, are as follows:.

The EUT model T0007752 contains a cellular modem to support 3G/4G while variant T0007754 does not contain cellular modem

### 2.4 Deviations from laboratory tests procedures

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No deviations were made from laboratory procedures.

## Section 3 Test conditions

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### 3.1 Atmospheric conditions

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Temperature	15 °C – 35 °C
Relative humidity	20 % – 75 %
Air pressure	86 kPa (860 mbar) – 106 kPa (1060 mbar)

When it is impracticable to carry out tests under these conditions, a note to this effect stating the ambient temperature and relative humidity during the tests shall be recorded and stated.

### 3.2 Power supply range

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The normal test voltage for equipment to be connected to the mains shall be the nominal mains voltage. For the purpose of the present document, the nominal voltage shall be the declared voltage, or any of the declared voltages  $\pm 5\%$ , for which the equipment was designed.

## Section 4 Information provided by the applicant

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### 4.1 Disclaimer

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This section contains information provided by the applicant and has been utilized to support the test plan. Inaccurate information provided by the applicant can affect the validity of the results contained within this test report. Nemko accepts no responsibility for the information contained within this section and the impact it may have on the test plan and resulting measurements.

### 4.2 Applicant/Manufacturer

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Name	Tektelic Communications
Address	7657 10 St NE, Calgary, AB T2E 8X2

### 4.3 EUT information

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Product name	IotaComm Dual-Band Gateway
Model / HVIN	T0007752
Model variant(s)	T0007754
Serial number	2327K0001
Power supply requirements	55 V <sub>DC</sub> (via external PoE powered by 100-240 V <sub>AC</sub> , 50/60 Hz power adapter) or DC: 48 V
Product description and theory of operation	Custom dual-band gateway for Iota Communications Inc. Supports 900 MHz ISM band LoRa and 800 MHz PLMR band FSK.
Software details	BSP 5.0.5

### 4.4 Radio technical information, Antenna 0

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Category of Wideband Data Transmission equipment	Other types of Wideband Data Transmission equipment (e.g. DSSS, OFDM, etc.).
Frequency band	902–928 MHz
Frequency Min (MHz)	923.3 MHz
Frequency Max (MHz)	927.5 MHz
Type of modulation	LoRa
Emission classification	F1D
Antenna information	Type: Omnidirectional, manufacturer: L-Com, model: HGV-906U, gain: 6 dBi



#### 4.5 Radio technical information, Antenna 1

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Frequency band	854-862 MHz
Frequency Min (MHz)	854.0125 MHz
Frequency Max (MHz)	861.9875 MHz
Type of modulation	FSK
Emission classification	F1D
Antenna information	Type: Omnidirectional, manufacturer: L-Com, model: HGV-906U, gain: 6 dBi

#### 4.6 Radio technical information, Cellular

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Frequency band	777-787 MHz
Frequency Min	782 MHz
Type of modulation	QPSK, 16QAM
Emission classification	G7D, W7D
Antenna information	Type: Omnidirectional, manufacturer: Tektelic Communications, Part Number: T0005195, gain: 2 dBi

#### 4.7 EUT setup details

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##### 4.7.1 Radio exercise details

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Operating conditions	Tx Tests: Sending modulated packets of 98.5% duty cycle on Ant0 and Ant1 ports at the rated output power. Sending modulated packets of 100% duty cycle on the cellular port at nominal output power of 23.0 dBm
Transmitter state	Ant 0 and Ant 1 Transmitter set into 98.5% duty cycle and Cellular Transmitter set into continuous mode.

4.7.2 EUT setup configuration

**Table 4.7-1: EUT sub assemblies**

Description	Brand name	Model, Part number, Serial number, Revision level
IotaComm Dual-Band Gateway	Tektelic Communications	MN : T0007752, SN: 2327K0001, Rev. B1

**Table 4.7-2: EUT interface ports**

Description	Qty.
GPS	1
DC Input	1
Ant 0	1
Ant 1	1
3G/4G	1
Ethernet (For Power as well)	1

**Table 4.7-3: Support equipment**

Description	Brand name	Model, Part number, Serial number, Revision level
Laptop	Dell	MN: Latitude E7470, SN: FHV3NC2
Router	LinkSys	MN: BEFSR41, SN: C2181HB03069, Rev. 4.3
Termaline Coaxial Load Resistor (2500 W)	Bird Electronic Corporation	MN: 8890-300, SN: 113
Cellular Antenna	Tektelic Communications	PN: T0005195
PoE Adapter	Planet	MN: POE-163, SN: AF004120301882 (008), Rev. V2
800/900 MHz Antenna	L-Com	MN: HGV-906U
300 W Load	Sierra	MN: 160B300, SN: 2759

**Table 4.7-4: Inter-connection cables**

Cable description	From	To	Length (m)
Cat 5e	EUT	PoE Adapter	2
RF Cable	Ant 0 (EUT)	800/900 MHz Antenna	Directly Connected
RF Cable	Ant 1 (EUT)	Termaline Coaxial Load Resistor (2500 W)	4
RF Cable	3G/4G (EUT)	Cellular Antenna	Directly Connected

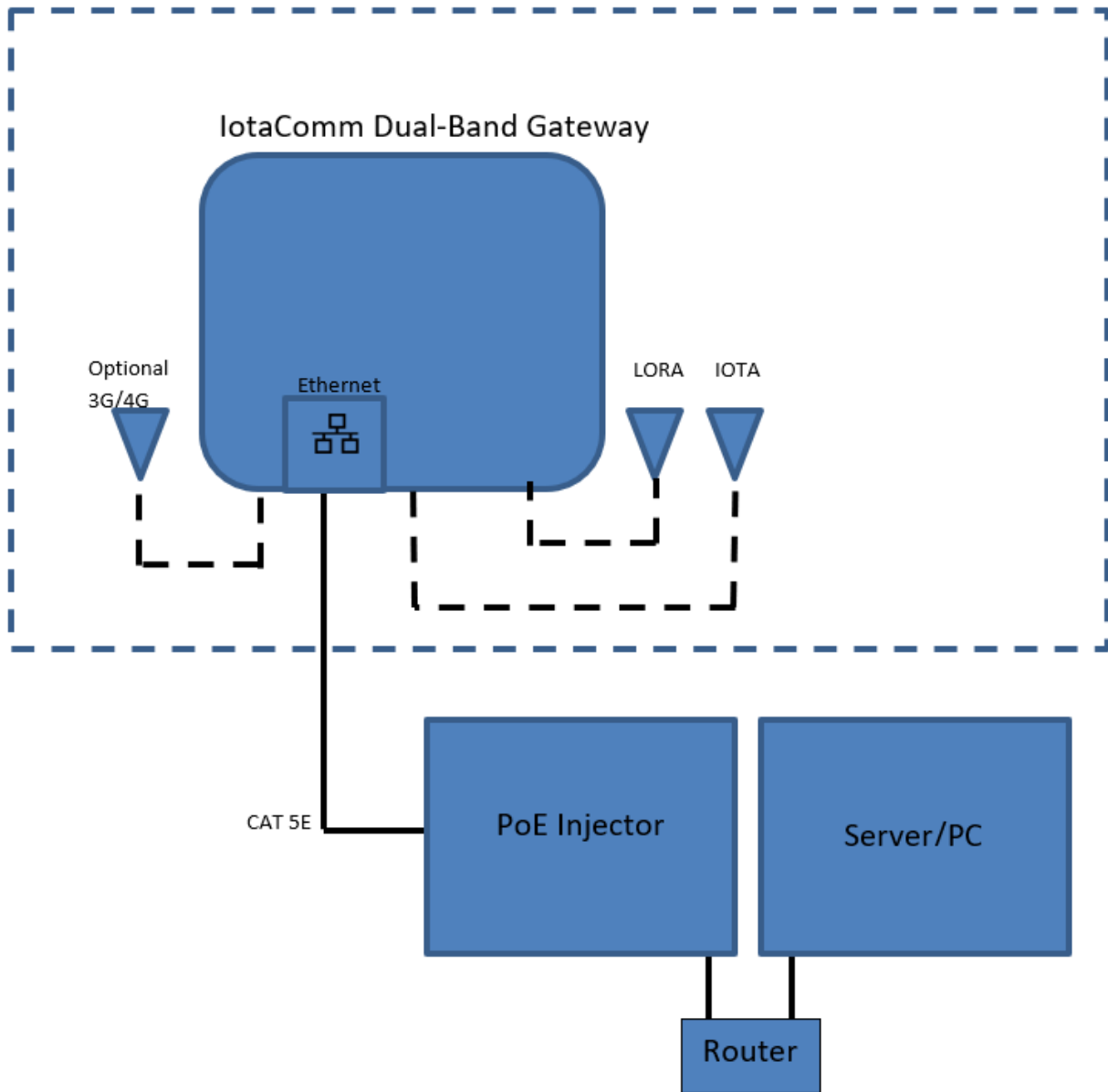


Figure 4.7-1: Block diagram

## Section 5 Summary of test results

### 5.1 Testing period

Test start date	July 17, 2023	Test end date	July 17, 2023
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### 5.2 Sample information

Receipt date	July 10, 2023	Nemko sample ID number(s)	PRJ00391470001
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### 5.3 FCC test results

**Table 5.3-1: FCC requirements results**

Part	Test description	Verdict
§15.247(d)	Spurious emissions	Pass
§27.53	Emissions limits	Pass
§90.210	Spurious emissions	Pass

Notes: Only radiated spurious emissions assessment was done as part of transmitter co-location assessment.

### 5.4 ISED test results

**Table 5.4-1: ISED RSS requirements results**

Part	Test description	Verdict
ISED RSS-119, 5.8	Transmitter Unwanted Emissions	Pass
ISED RSS-130, 4.7	Transmitter Unwanted Emissions	Pass
ISED RSS-247, 5.5	Unwanted emissions	Pass

Notes: Only radiated spurious emissions assessment was done as part of transmitter co-location assessment.

## Section 6 Test equipment

### 6.1 Test equipment list

**Table 6.1-1: Equipment list**

Equipment	Manufacturer	Model no.	Asset no.	Cal cycle	Next cal.
3 m EMI test chamber	TDK	SAC-3	FA002047	1 year	January 19, 2024
Flush mount turntable	Sunol	FM2022	FA002082	—	NCR
Controller	Sunol	SC104V	FA002060	—	NCR
Antenna mast	Sunol	TLT2	FA002061	—	NCR
61505 AC source	Chroma	61509	FA003036	—	VOU
Receiver/spectrum analyzer	Rohde & Schwarz	ESU 40	FA002071	1 year	March 2, 2024
Horn (1–18 GHz)	ETS Lindgren	3117	FA002840	1 year	March 7, 2024
Preamp (1–18 GHz)	ETS Lindgren	124334	FA002873	1 year	August 16, 2023
Bilog antenna (20–3000 MHz)	Sunol	JB3	FA002108	1 year	March 7, 2024
High pass filter (3-18 GHz)	Thilithic Inc.	6HC3000/18000-1.3-KK	FA002231	1 year	June 9, 2024
50 Ω coax cable	Carlisle	WHU18-1818-072	FA002391	1 year	October 17, 2023

Notes: NCR - no calibration required, VOU - verify on use

**Table 6.1-2: Automation software details**

Test description	Manufacturer of Software	Details
Radiated spurious emissions	Rohde & Schwarz	EMC32, Software for EMC Measurements, Version 11.20.00

**Table 6.1-3: Measurement uncertainty calculations based on equipment list**

Measurement	Measurement uncertainty, ±dB
Radiated spurious emissions (30 MHz to 1 GHz)	5.8
Radiated spurious emissions (1 GHz to 6 GHz)	4.7
Radiated spurious emissions (6 GHz to 18 GHz)	5.0

Notes: UKAS Lab 34, TIA-603 and ETSI TR 100 028-1&2 have been used as guidance for measurement uncertainty reasonable estimations with regards to previous experience and validation of data. Nemko Canada Inc. follows these test methods in order to satisfy ISO/IEC 17025 requirements for estimation of uncertainty of measurement for wireless products. Measurement uncertainty calculations assume a coverage factor of K = 2 with 95% certainty.



## Section 7 Testing data

### 7.1 Transmitter unwanted emissions

#### 7.1.1 References, definitions and limits

**FCC §90.210:**

Except as indicated elsewhere in this part, transmitters used in the radio services governed by this part must comply with the emission masks outlined in this section. Unless otherwise stated, per paragraphs (d)(4), (e)(4), and (o) of this section, measurements of emission power can be expressed in either peak or average values provided that emission powers are expressed with the same parameters used to specify the unmodulated transmitter carrier power. For transmitters that do not produce a full power unmodulated carrier, reference to the unmodulated transmitter carrier power refers to the total power contained in the channel bandwidth. Unless indicated elsewhere in this part, the table in this section specifies the emission masks for equipment operating under this part.

*Table 7.1-1: Applicable Emission Masks*

Frequency band, MHz	Mask for equipment with audio low pass filter	Mask for equipment without audio low pass filter
809-824/854-869 <sup>1 and 2</sup>	B, D	D, G

Notes: <sup>1</sup> Equipment used in this licensed to EA or non-EA systems shall comply with the emission mask provisions of § 90.691.

<sup>2</sup> Equipment designed to operate on 25 kilohertz bandwidth channels must meet the requirements of either Emission Mask B or G, whichever is applicable, while equipment designed to operate on 12.5 kilohertz bandwidth channels must meet the requirements of Emission Mask D. Equipment designed to operate on 25 kilohertz bandwidth channels may alternatively meet the Adjacent Channel Power limits of § 90.221.

(d) **Emission Mask G**—For transmitters that are not equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power (P) as follows:

- (1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 10 kHz, but no more than 250 percent of the authorized bandwidth: At least  $116 \log (fd/6.1)$  dB, or  $50 + 10 \log (P)$  dB, or 70 dB, whichever is the lesser attenuation;
- (2) On any frequency removed from the center of the authorized bandwidth by more than 250 percent of the authorized bandwidth: At least  $43 + 10 \log (P)$  dB.

**FCC §15.247:**

- (d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

**FCC §27.53:**

The power of any emission shall be attenuated outside the band below the transmitter power (P) by at least  $43 + 10 \log (P)$  dB;

References, definitions and limits, continued

**RSS-119**

- 5.8 The authorized bandwidth is defined as the maximum width of the band of frequencies used to derive spectrum masks and is not necessarily equivalent to the bandwidth found on radio and spectrum licences.

**Table 7.1-2: Spectrum Masks**

Frequency band, MHz	Channel Bandwidth (kHz)	Authorized Bandwidth (kHz)	Mask for equipment with audio low pass filter	Mask for equipment without audio low pass filter
806-821/851-866 and 821-824/866-869	25.00	20.00	B	G
		22.00	Y	Y
	12.50	11.25	D	D
	6.25	6.00	E	E

The spectrum plots of the unwanted emissions shall comply with the masks specified in tables below.

The term displacement frequency,  $f_d$ , used in these sections refers to the difference between the channel frequency and the emission component frequency expressed in kilohertz, and  $p$  is the transmitter output power in Watts.

**5.8.6 Emission Mask G for Transmitters not Equipped With an Audio Low-Pass Filter**

The power of any emission shall be attenuated below the transmitter output power  $P$  (dBW) as specified in Table below:

**Table 7.1-3: Emission Mask G**

Displacement Frequency, $f_d$ (kHz)	Minimum Attenuation (dB)	Resolution Bandwidth (Hz)
$10 < f_d \leq 50$	Whichever is the lesser: $70$ or $116 \times \text{Log}_{10}(f_d/6.11)$ or $50 + 10 \times \text{Log}_{10}(p)$	300
$f_d > 50$	$43 + 10 \times \text{Log}_{10}(p)$	Specified in Section 4.2.1

**RSS-130:**

- 4.7.1 The unwanted emissions in any 100 kHz bandwidth on any frequency outside the low frequency edge and the high frequency edge of each frequency block range(s), shall be attenuated below the transmitter power,  $P$  (dBW), by at least  $43 + 10 \log_{10} p$  (watts), dB. However, in the 100 kHz band immediately outside of the equipment's frequency block range, a resolution bandwidth of 30 kHz may be employed.

**RSS-247**

- 5.5 In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

**RSS-Gen:**

- 8.9 Except where otherwise indicated in the applicable RSS, radiated emissions shall comply with the field strength limits shown in table below.
- 8.10 Restricted frequency bands are designated primarily for safety-of-life services (distress calling and certain aeronautical activities), certain satellite downlinks, radio astronomy and some government uses. The following conditions related to the restricted frequency bands apply:
- The transmit frequency, including fundamental components of modulation, of licence-exempt radio apparatus shall not fall within the restricted frequency bands.
  - Unwanted emissions that fall into restricted frequency bands listed in table 7 shall comply with the limits specified in table below.
  - Unwanted emissions that do not fall within the restricted frequency bands shall comply either with the limits specified in the applicable RSS or with those specified in table below.

References, definitions and limits, continued

**Table 7.1-4: FCC §15.209 and RSS-Gen – Radiated emission limits**

Frequency, MHz	Field strength of emissions		Measurement distance, m
	µV/m	dBµV/m	
0.009–0.490	2400/F	67.6 – 20 × log <sub>10</sub> (F)	300
0.490–1.705	24000/F	87.6 – 20 × log <sub>10</sub> (F)	30
1.705–30.0	30	29.5	30
30–88	100	40.0	3
88–216	150	43.5	3
216–960	200	46.0	3
above 960	500	54.0	3

Notes: In the emission table above, the tighter limit applies at the band edges.  
 For frequencies above 1 GHz the limit on peak RF emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test.

**Table 7.1-5: ISED restricted frequency bands**

MHz	MHz	MHz	GHz
0.090–0.110	12.57675–12.57725	399.9–410	7.25–7.75
0.495–0.505	13.36–13.41	608–614	8.025–8.5
2.1735–2.1905	16.42–16.423	960–1427	9.0–9.2
3.020–3.026	16.69475–16.69525	1435–1626.5	9.3–9.5
4.125–4.128	16.80425–16.80475	1645.5–1646.5	10.6–12.7
4.17725–4.17775	25.5–25.67	1660–1710	13.25–13.4
4.20725–4.20775	37.5–38.25	1718.8–1722.2	14.47–14.5
5.677–5.683	73–74.6	2200–2300	15.35–16.2
6.215–6.218	74.8–75.2	2310–2390	17.7–21.4
6.26775–6.26825	108–138	2483.5–2500	22.01–23.12
6.31175–6.31225	149.9–150.05	2655–2900	23.6–24.0
8.291–8.294	156.52475–156.52525	3260–3267	31.2–31.8
8.362–8.366	156.7–156.9	3332–3339	36.43–36.5
8.37625–8.38675	162.0125–167.17	3345.8–3358	
8.41425–8.41475	167.72–173.2	3500–4400	
12.29–12.293	240–285	4500–5150	Above 38.6
12.51975–12.52025	322–335.4	5350–5460	

Note: Certain frequency bands listed in Table 7.1-5 and above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to related devices are set out in the 200 and 300 series of RSSs.



References, definitions and limits, continued

**Table 7.1-6: FCC restricted frequency bands**

MHz	MHz	MHz	GHz
0.090–0.110	16.42–16.423	399.9–410	4.5–5.15
0.495–0.505	16.69475–16.69525	608–614	5.35–5.46
2.1735–2.1905	16.80425–16.80475	960–1240	7.25–7.75
4.125–4.128	25.5–25.67	1300–1427	8.025–8.5
4.17725–4.17775	37.5–38.25	1435–1626.5	9.0–9.2
4.20725–4.20775	73–74.6	1645.5–1646.5	9.3–9.5
6.215–6.218	74.8–75.2	1660–1710	10.6–12.7
6.26775–6.26825	108–121.94	1718.8–1722.2	13.25–13.4
6.31175–6.31225	123–138	2200–2300	14.47–14.5
8.291–8.294	149.9–150.05	2310–2390	15.35–16.2
8.362–8.366	156.52475–156.52525	2483.5–2500	17.7–21.4
8.37625–8.38675	156.7–156.9	2690–2900	22.01–23.12
8.41425–8.41475	162.0125–167.17	3260–3267	23.6–24.0
12.29–12.293	167.72–173.2	3332–3339	31.2–31.8
12.51975–12.52025	240–285	3345.8–3358	36.43–36.5
12.57675–12.57725	322–335.4	3600–4400	Above 38.6
13.36–13.41			

7.1.2 Test summary

Verdict	Pass		
Test date	July 17, 2023	Temperature	22 °C
Tested by	Nimish Kapoor	Air pressure	1002 mbar
Test location	Ottawa	Relative humidity	56 %

7.1.3 Observations, settings and special notes

- Only radiated spurious emissions within were evaluated.
- The spectral plots within this section are a summation of vertical and horizontal scans. The spectral plots within this section have been corrected with all relevant transducer factors.
- As part of the current assessment, the test range of 9 kHz to 10<sup>th</sup> harmonic has been fully considered and compared to the actual frequencies utilized within the EUT. Since the EUT contains a transmitter in the 750-950 MHz range, the EUT has been deemed compliant without formal testing in the 9 kHz to 30 MHz test range, therefore formal test results (tabular data and/or plots) are not provided within this test report.
- EUT was set to transmit with 100 % duty cycle. The EUT was transmitting on both MIMO chains simultaneously.
- Radiated measurements were performed at a distance of 3 m.
- Licensed bands' limit of -13 dBm EIRP was converted to a theoretical field strength equivalent of 82.23 dBµV/m. It was decided that the more stringent unlicensed bands limit applies for the product of simultaneous transmission of two transmitters, therefore only one limit line (unlicensed) appears on the spectral plots.
- DTS emissions in restricted frequency bands test was performed as per KDB 558074, section 8.6 with reference to ANSI C63.10 subclause 11.12.

Spectrum analyser settings

Resolution bandwidth:	Measurements below 1 GHz: 120 kHz Q-Peak, Measurements above 1 GHz: 1 MHz
Video bandwidth:	Measurements below 1 GHz: 300 kHz, Measurements above 1 GHz: 3 MHz
Detector mode:	Peak
Trace mode:	Max Hold

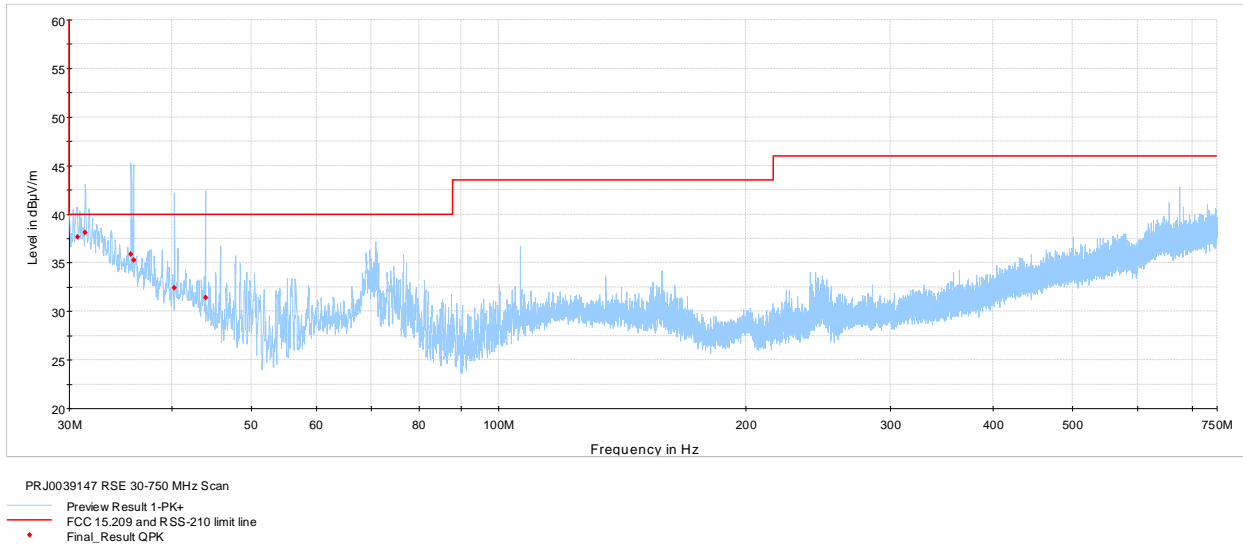
7.1.4 Test data

**Table 7.1-7: Radiated field strength measurement results**

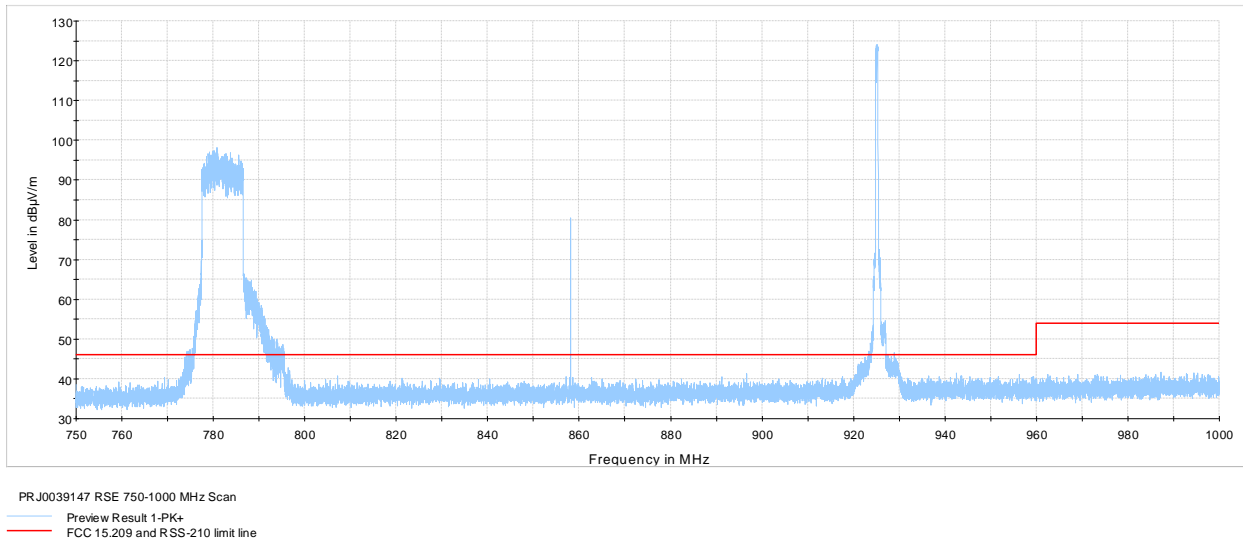
Frequency, MHz	Quasi-Peak Field strength, dBµV/m		Margin, dB
	Measured	Limit	
30.6840	37.64	40.00	2.36
31.6380	38.11	40.00	1.89
35.6520	35.85	40.00	4.15
35.9040	35.25	40.00	4.75
40.2960	32.39	40.00	7.61
43.9320	31.40	40.00	8.60

Notes:      Field strength includes correction factor of antenna, cable loss, amplifier, and attenuators where applicable.  
                 Correction factor = antenna factor ACF (dB) + cable loss (dB)  
                 Sample calculation: 37.5 dBµV/m (field strength) = 21.3 dBµV (receiver reading) + 16.2 dB (Correction factor)

Test data, continued

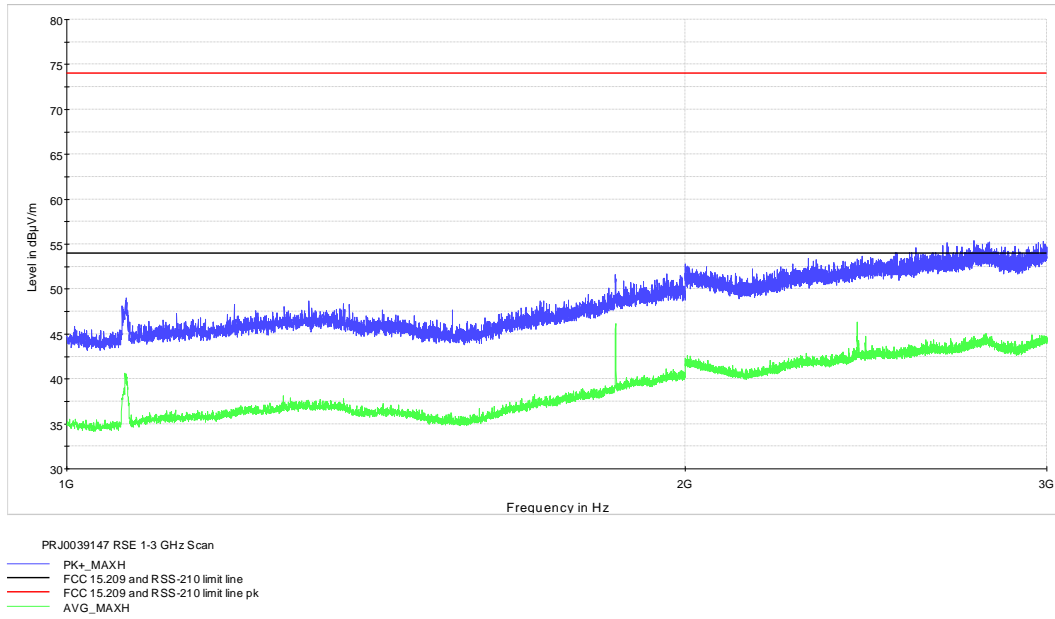


**Figure 7.1-1:** Radiated spurious emissions [30-750 MHz]

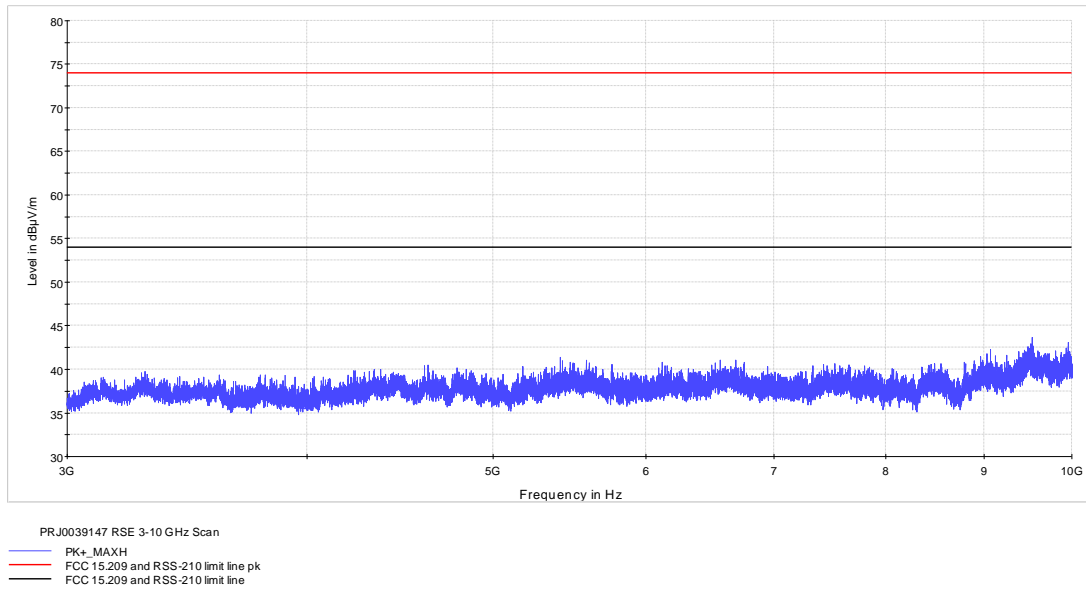


**Figure 7.1-2:** Radiated spurious emissions [750-1000 MHz]

Test data, continued



**Figure 7.1-3: Radiated spurious emissions [1-3 GHz]**



**Figure 7.1-4: Radiated spurious emissions on [3-18 GHz]**

## Section 8 EUT photos

### 8.1 External photos

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*Figure 8.1-1: Front view photo*



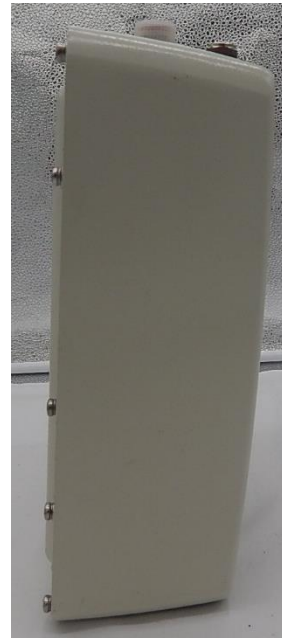
*Figure 8.1-2: Rear view photo*

External photos continued

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**Figure 8.1-3:** Side view photo



**Figure 8.1-4:** Side view photo

External photos continued

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Figure 8.1-5: Top view photo



Figure 8.1-6: Bottom view photo

End of the test report