

# RADIO TEST REPORT

Report ID

**REP101861**

Project ID

**PRJ0081916**

Type of assessment:

**Modular transmitter integration verification**

Applicant:

**Geotab Inc.**

Product:

**Asset Tracker**

Model:

**GATAA1**

FCC ID:

**FCC ID: 2AV57GATAA1**

ISED Certification number:

**IC: 11140A-GATAA1**

Original module FCC ID:

**FCC ID: 2AAGMGC02SA**

Original module ISED Certification number:

**IC: 12732A-GC02SA**

FCC Specifications:

**FCC 47 CFR Part 22, Subpart H**

ISED Canada Specifications:

**RSS-130 Issue 2, February 2019****FCC 47 CFR Part 24, Subpart E****RSS-132 Issue 4, January 2023****FCC 47 CFR Part 27, Subpart C****RSS-133 Issue 7, July 2024****FCC 47 CFR Part 90, Subpart R****RSS-139 Issue 4, October 2022****RSS-140 Issue 1, April 2018**Date of issue: **July 28, 2025**

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**Alvin Liu, EMC/RF Specialist**

Tested by



Signature

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**David Duchesne, EMC/RF Lab Manager**

Reviewed by



Signature

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

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**Lab and test locations**

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<b>Test site identifier</b>	<ul style="list-style-type: none"><li>– CA2040 (Ottawa)</li><li>– CA2041 (Montreal)</li><li>– CA0101 (Cambridge)</li></ul>		
<b>Website</b>	<a href="http://www.nemko.com">www.nemko.com</a>		

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**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 22, Subpart H	Public Mobile Services
FCC 47 CFR Part 24, Subpart E	Broadband Personal Communications Services (PCS)
FCC 47 CFR Part 27, Subpart C	Miscellaneous wireless communications services
FCC 47 CFR Part 90, Subpart R	Regulations Governing the Licensing and Use of Frequencies in the 763-775 and 793-805 MHz Bands
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-132 Issue 4, January 2023	Cellular Systems Operating in the Bands 824-849 MHz and 869-894 MHz
RSS-133 Issue 7, July 2024	Personal Communications Service Equipment Operating in the Bands 1850-1915 MHz and 1930-1995 MHz
RSS-139 Issue 4, October 2022	Advanced Wireless Services (AWS) Equipment Operating in the Bands 1710-1780 MHz and 2110-2200 MHz
RSS-140 Issue 1, April 2018	Equipment Operating in the Public Safety Broadband Frequency Bands 758-768 MHz and 788-798 MHz

### 1.2 Test methods

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KDB 996369 D04 Module Integration Guide v02	Modular Transmitter Integration Guide. Guidance For Host Product Manufacturers
ANSI C63.26-2015	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

### 1.3 Exclusions

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Partial testing was performed on the product with the transmitter operating to confirm that the host product meets the FCC and ISED requirements. This investigation of the final product was done by spot checking emissions from the device while operating the host as a composite system. This testing was performed with the host product configured in typical operational modes to check the spurious emissions for compliance with all the applicable rules.

### 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
REP101861	July 28, 2025	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 contains an LTE module (GC02S1-NA2, FCC ID: 2AAGMGC02SA, IC: 12732A-GC02SA, originally certified by Sequans Communications).

To verify compliance of the final host product, radiated spurious emissions testing was conducted with the cellular module active and transmitting within the EUT. The transmit parameters (frequencies, channel bandwidth, and power levels) used during these tests were configured in accordance with the specifications provided in the module's original certification documentation. Based on the maximum transmitting output power and associated antenna gain, the representative scenario was selected for transmitting test at LTE Band 2, Band 5 and Band 66.

### 2.3 Model variant declaration

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There were no model variants declared by the applicant.

### 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/Manufacture

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Applicant name	Geotab Inc.
Applicant address	2440 Winston Park Drive, Oakville, Ontario, Canada, L6H 7V2
Manufacturer name	Same as applicant
Manufacturer address	Same as applicant

### 4.3 EUT information

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Product description	Asset Tracker
Model / HVIN	GATAA1
Serial number	None
Power supply requirements	12–24 V <sub>DC</sub> , or Internal Battery: 3.6 V <sub>DC</sub>
Product description and theory of operation	The GO Anywhere 2 asset tracker (model GATAA1) is an advanced asset tracker specifically engineered for tractor-trailers, non-powered equipment (trolleys, roll-off bins), and powered equipment (generators, yellow iron) within the transportation sector. This device offers robust global connectivity and detailed track-and-trace capabilities, superseding its predecessor with an expanded feature set. It provides critical insights into asset utilization, location, and potential misuse through features like impact and tamper detection, aiming for high reliability and cost-effectiveness in high-volume deployments. The product also continues to serve existing GO Anywhere markets such as construction, agriculture, and stolen vehicle recovery.

### 4.4 Transmitter info

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Wireless technology	LTE
Frequency band	Bands supported: 2, 4, 5, 12, 13, 14, 17, 25, 66
Manufacturer	Sequans Communications
Model	GC02S1-NA2
Modulation	QPSK, 16-QAM
Antenna information	Manufacturer: Kyocera Model: Part No. 1005981, 1005992 Type: LDS antenna Peak Gain: 1.9 (698–900 MHz), 4.0 (1710–2200 MHz) Connection: Spring Contact

## 4.5 EUT setup details

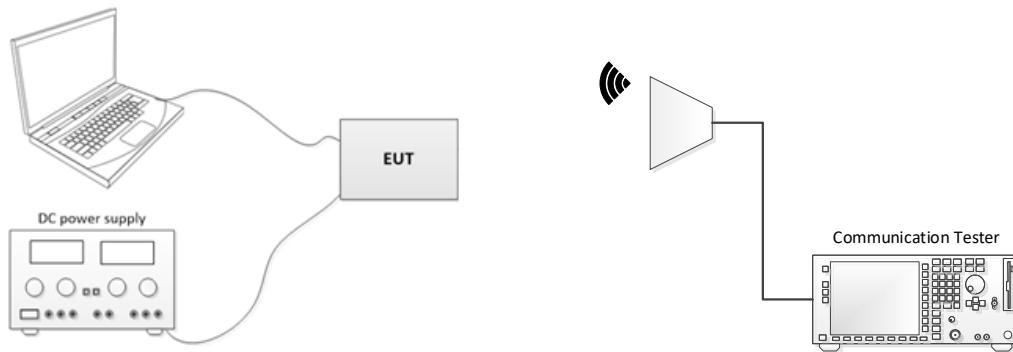
### 4.5.1 Radio exercise details

Operating conditions	<ul style="list-style-type: none"><li>– EUT was powered up using DC power supply.</li><li>– EUT was in cellular link mode via callbox.</li></ul>
Transmitter state	Transmitter was set into continuous transmitting mode at selected Band: B2, B5, B66.

### 4.5.2 EUT setup configuration

**Table 4.5-1: Support equipment**

Description	Brand name	Serial number, Part number, Model, Revision level
Laptop	DELL	MN: LATITUDE E6440, FA003070
DC power supply	GWINSTEK	GRP-3060D
Wideband Radio Communication Tester	Rohde & Schwarz	SN: 107499, MN: CMW500, FA003156



**Figure 4.5-1: Radiated testing block diagram**

## Section 5 Summary of test results

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### 5.1 Testing period

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Test start date	June 11, 2025	Test end date	June 11, 2025
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### 5.2 Sample information

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Receipt date	June 9, 2025	Nemko sample ID number	PRJ00819160001
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### 5.3 Test results

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

Part	Test description	Verdict
§22.917(a)	Emission limitations for cellular equipment	Pass
§24.238(a)	Field strength of spurious radiation	Pass
§27.53	Radiated spurious emissions	Pass

Notes: As per scope of this report, only radiated emissions were evaluated.

**Table 5.3-2: ISED Test results**

Part	Test description	Verdict
RSS-130, 4.7	Transmitter Unwanted Emissions	Pass
RSS-132, 5.5	Transmitter Unwanted Emissions	Pass
RSS-133, 5.6	Unwanted emission limits	Pass
RSS-139, 5.6	Unwanted emission limits	Pass

Notes: As per scope of this report, only radiated emissions were evaluated.

## 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	FA003012	1 year	March 9, 2026
Flush mount turntable	SUNAR	FM2022	FA003006	—	NCR
Controller	SUNAR	SC110V	FA002976	—	NCR
Antenna mast	SUNAR	TLT2	FA003007	—	NCR
Receiver/spectrum analyzer	Rohde & Schwarz	ESR26	101833	2 years	December 19, 2025
Bilog antenna (30–2000 MHz)	Sunol	JB3	FA002108	1 year	April 8, 2026
Horn antenna (1–18 GHz)	EMCO	3115	FA000649	1 year	April 16, 2026
Preamp (1–18 GHz)	ETS Lindgren	124334	FA002956	1 year	April 11, 2026
High pass filter (1.2–12 GHz)	Microwave circuits	H1G212G1	FA003031	—	NCR
High pass filter (3–18 GHz)	Microwave circuits	H3G020G8	FA003026	—	NCR
50 Ω coax cable	Huber + Suhner	None	FA003047	1 year	July 29, 2025
50 Ω coax cable	Huber + Suhner	None	FA003402	1 year	July 29, 2025
50 Ω SMA coax cable	Huber + Suhner	None	FA003056	1 year	July 29, 2025

Notes: NCR - no calibration required

All equipment related to the contribution of measurement has been included in this list. Such items include, but are not limited to, cables, attenuators, directional couplers, and pre-amps.

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

Test description	Manufacturer of Software	Details
EMC/Radio test software	Rohde & Schwarz	EMC32, Software for EMC Measurements, Version 10.60.00

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

Measurement	Measurement uncertainty, ±dB
Radiated spurious emissions (30 MHz to 1 GHz)	4.27
Radiated spurious emissions (1 GHz to 6 GHz)	4.74
Radiated spurious emissions (6 GHz to 18 GHz)	5.04

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

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### 7.1 Radiated spurious (unwanted) emissions

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#### 7.1.1 References, definitions and limits

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##### FCC §22.917:

(a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

##### FCC §24.238:

(a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.

##### FCC §27.53:

(h) AWS emission limits

(1) General protection levels. Except as otherwise specified below, for operations in the 1695–1710 MHz, 1710–1755 MHz, 1755–1780 MHz, 1915–1920 MHz, 1995–2000 MHz, 2000–2020 MHz, 2110–2155 MHz, 2155–2180 MHz, and 2180–2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log_{10} (P)$  dB.

##### RSS-130, Clause 4.7:

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-132, Clause 5.5:

(i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least  $43 + 10 \log_{10} p$  (watts).

(ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least  $43 + 10 \log_{10} p$  (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.

##### RSS-133, Clause 5.6:

For all equipment, the TRP or total conducted power (sum of conducted power across all antenna connectors), where applicable, of the unwanted emissions outside the frequency block or frequency block group shall not exceed the limits shown in the table below.

##### RSS-139, Clause 5.6:

For all equipment, the TRP or total conducted power (sum of conducted power across all antenna connectors) of the unwanted emissions outside the frequency block or frequency block group shall not exceed the limits shown in table below.

**Table 7.1-1: Unwanted emission limits**

Offset from the edge of the frequency block group (MHz)	Unwanted emission limit
≤ 1	-13 dBm/(1% of OBW)
> 1	-13 dBm/MHz

#### 7.1.2 Test summary

Verdict	Pass		
Test date	June 11, 2025	Temperature	24 °C
Tested by	Alvin Liu	Air pressure	980 mbar
Test location	Cambridge	Relative humidity	44 %

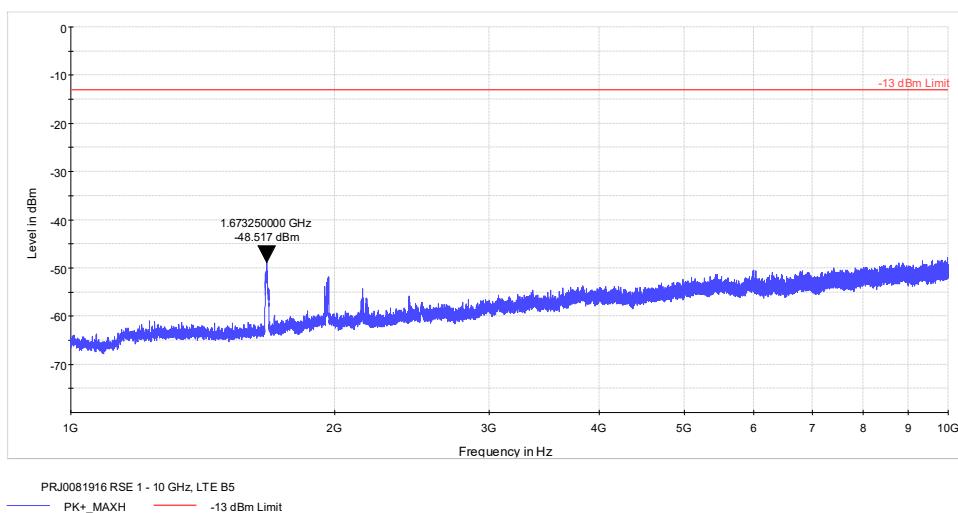
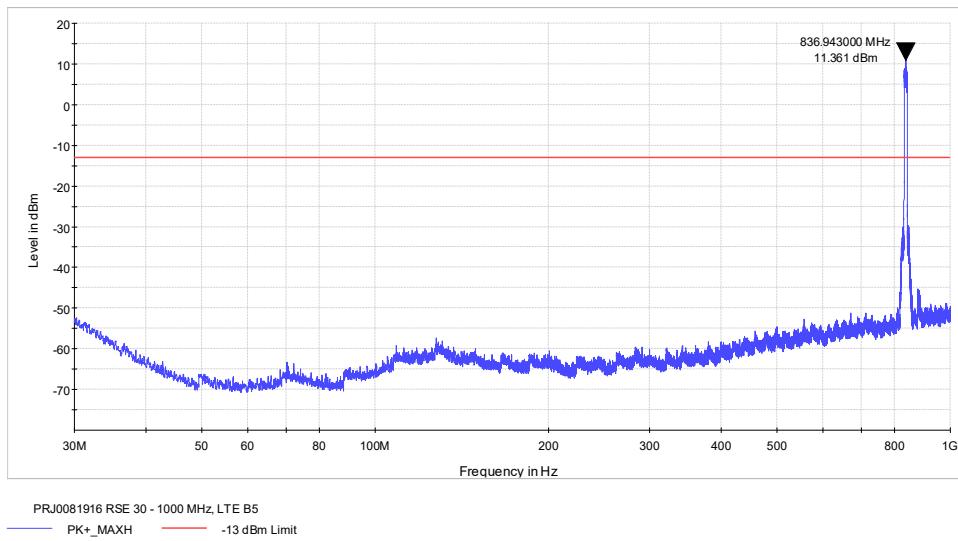
#### 7.1.3 Observations, settings and special notes

- As part of the current assessment, the test range of 9 kHz to 5<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 GHz 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.
- Where tabular data has not been provided, no emissions were observed within 10 dB of the specified limit when measured with the appropriate detector. Additionally, where less than 6 measurements per detector have been provided, fewer than 6 emissions were observed within 10 dB of the specified limit when measured with the appropriate detector.
- All measurements were performed as per ANSI C63.26.
- All measurements were performed at the distance of 3 m.

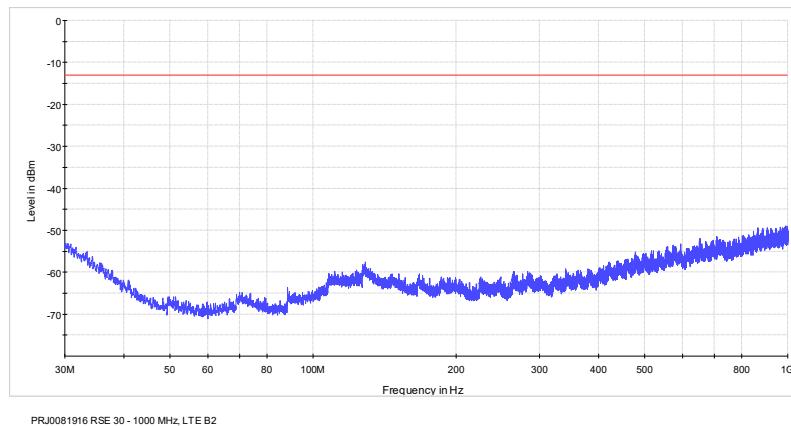
##### Spectrum analyser settings

Resolution bandwidth:	Measurements below 1 GHz: 100 kHz Peak <b>or</b> 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 <b>or</b> Q-Peak
Trace mode:	Max Hold

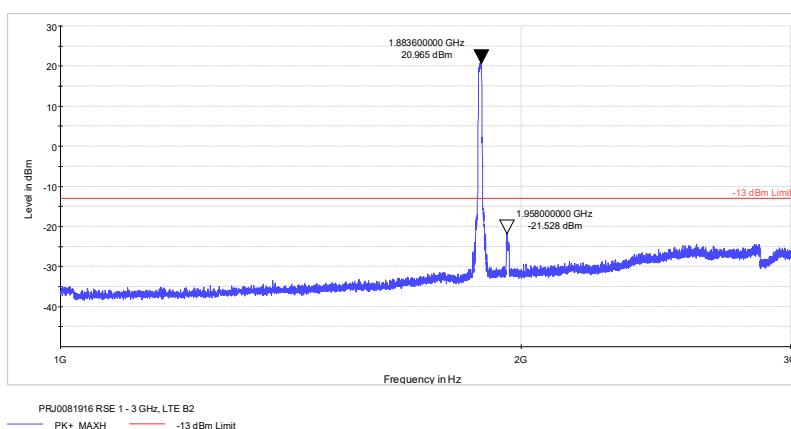
#### 7.1.4 Test data



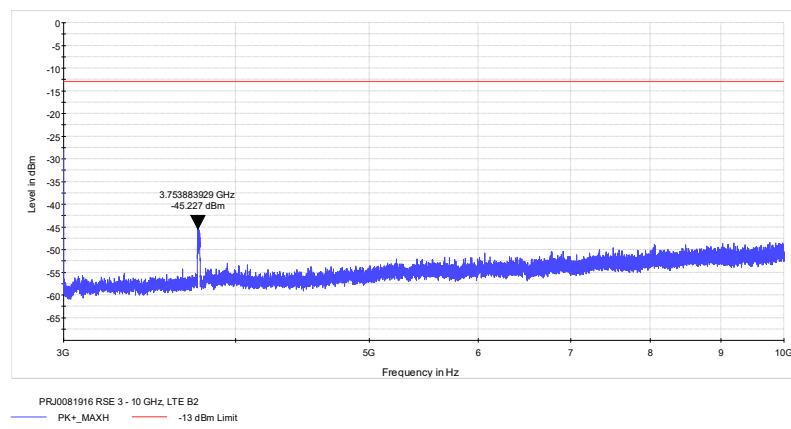
Test data, continued



**Figure 7.1-3: Radiated spurious emissions 30 – 1000 MHz, Band 2**

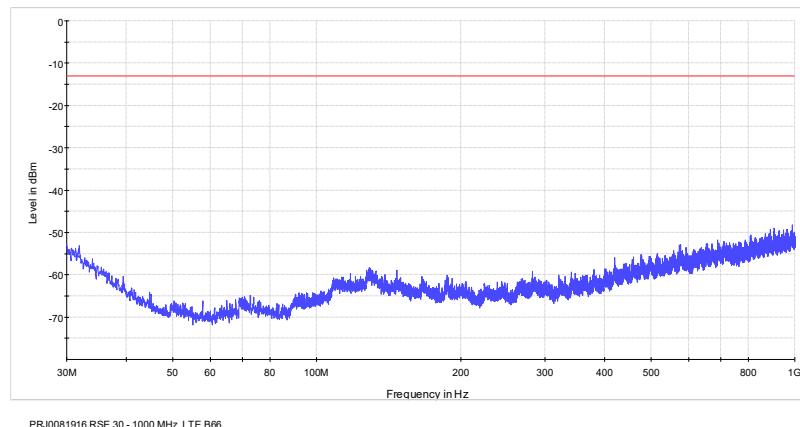


**Figure 7.1-4: Radiated spurious emissions 1 – 3 GHz, Band 2**

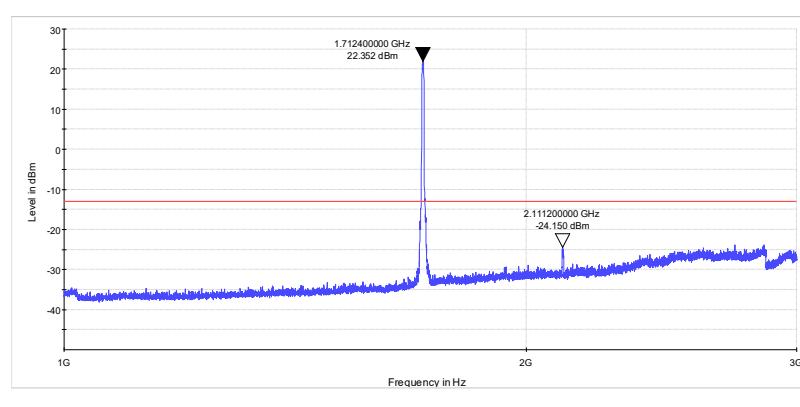


**Figure 7.1-5: Radiated spurious emissions 3 – 10 GHz, Band 2**

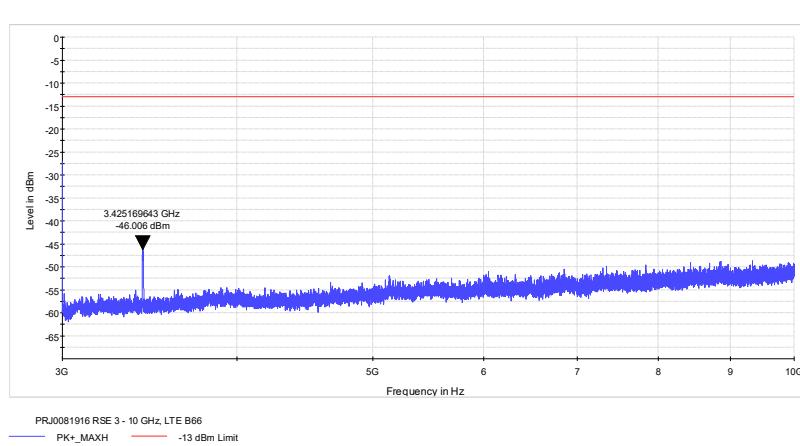
Test data, continued



**Figure 7.1-6: Radiated spurious emissions 30 – 1000 MHz, Band 66**



**Figure 7.1-7: Radiated spurious emissions 1 – 3 GHz, Band 66**



**Figure 7.1-8: Radiated spurious emissions 3 – 10 GHz, Band 66**

**End of the test report**