

RADIO TEST REPORT

Report ID

REP110313

Project ID

PRJ0081916

Type of assessment:

Class II Permissive Change

Applicant:

Geotab Inc.

Product:

Asset Tracker

Model:

GATAA1

Contains FCC ID:

FCC ID: 2AAGMGC02SA

Contains IC Registration number:

IC: 12732A-GC02SA

Specifications:

- ◆ FCC 47 CFR Part 24, Subpart E
- ◆ FCC 47 CFR Part 27, Subpart C
- ◆ RSS-133 Issue 7, July 2024
- ◆ RSS-139 Issue 4, October 2022

Date of issue: August 22, 2025

Alvin Liu, EMC/RF Specialist

Tested by



Signature

Tarek Elkholy, EMC/RF Engineer

Reviewed by



Signature

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

Lab and test locations

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Website	www.nemko.com

Limits of responsibility

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

1.1 Test specifications

FCC 47 CFR Part 24, Subpart E	Broadband Personal Communications Services (PCS)
FCC 47 CFR Part 27, Subpart C	Miscellaneous wireless communications services
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

1.2 Test methods

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

Partial testing was performed on the product with the transmitter operating to confirm that the host product meets the FCC and ISSED 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

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

Table 1.5-1: Test report revision history

Revision #	Date of issue	Details of changes made to test report
REP110313	August 22, 2025	Original report issued

Section 2 Engineering considerations

2.1 Modifications incorporated in the EUT for compliance

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

2.2 Technical judgment

The EUT consists of an LTE module (GC02S1-NA2, FCC ID: 2AAGMGC02SA, IC: 12732A-GC02SA, originally certified by Sequans Communications). The EUT incorporates a custom antenna design to support the combined radio system of the product. The antenna gains: 1.9 dBi (sub-1 GHz) and 4 dBi (above 1 GHz). The new antenna gain is lower than the original sub-1 GHz and 1.6 dB higher than the original above 1 GHz.

To verify compliance of the final host product with the new antenna, radiated spurious emissions above 1 GHz were 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, the representative scenario was selected for transmitting test as below,

- Band 2, 15 MHz BW, QPSK, Mid Channel, 1880.0 MHz
- Band 66, 5 MHz BW, QPSK, Low Channel, 1712.5 MHz

2.3 Model variant declaration

There were no model variants declared by the applicant.

2.4 Deviations from laboratory tests procedures

No deviations were made from laboratory procedures.

Section 3 Test conditions

3.1 Atmospheric conditions

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

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

4.1 Disclaimer

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

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

Product description	Asset Tracker
Model / HVIN	GATAA1
Serial number	None
Power supply requirements	12–24 V _{DC} , or Internal Battery: 3.6 V _{DC}
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

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"> – EUT was powered up using DC power supply. – EUT was in cellular link mode via callbox.
Transmitter state	Transmitter was set into continuous transmitting mode at selected Band: B2, 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	MN: GRP-3060D
Wideband Radio Communication Tester	Rohde & Schwarz	SN: 107499, MN: CMW500, FA003156

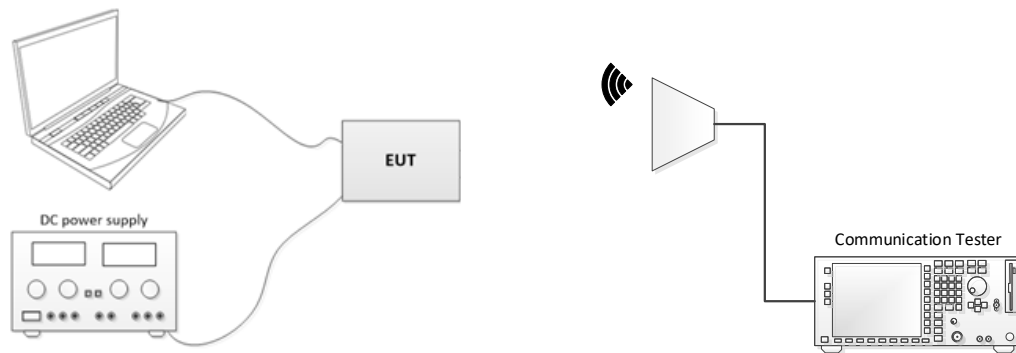


Figure 4.5-1: Radiated testing block diagram

Section 5 Summary of test results

5.1 Testing period

Test start date	August 12, 2025	Test end date	August 12, 2025
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5.2 Sample information

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

Table 5.3-1: FCC Test results

Part	Test description	Verdict
§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 above 1 GHz were evaluated.

Table 5.3-2: ISED Test results

Part	Test description	Verdict
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 above 1 GHz 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	FA002969	1 year	May 28, 2026
Bilog antenna (30–2000 MHz)	Sunol	JB3	FA002108	1 year	April 8, 2026
Horn antenna (1–18 GHz)	EMCO	3117	FA002911	1 year	June 2, 2026
Preamplifier (1–18 GHz)	ETS Lindgren	124334	FA002956	1 year	April 11, 2026
Horn antenna (18–40 GHz)	EMCO	3116B	FA002948	3 year	May 3, 2027
Preamplifier (18–40 GHz)	None	None	FA003323	1 year	April 11, 2026
High pass filter (3–18 GHz)	Microwave circuits	H3G020G8	FA003026	—	NCR
50 Ω coax cable	Huber + Suhner	None	FA003047	1 year	August 5, 2026
50 Ω coax cable	Huber + Suhner	None	FA003402	1 year	August 5, 2026
50 Ω SMA coax cable	Huber + Suhner	None	FA003056	1 year	August 5, 2026

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, \pm 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
Radiated spurious emissions (18 GHz to 26 GHz)	4.47

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 Radiated spurious (unwanted) emissions

7.1.1 References, definitions and limits

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-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	August 12, 2025	Temperature	24 °C
Tested by	Alvin Liu	Air pressure	980 mbar
Test location	Cambridge	Relative humidity	50 %

7.1.3 Observations, settings and special notes

- As part of the current assessment, the test range of 9 kHz to 10th 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.
- All measurements were performed as per ANSI C63.26.
- All measurements were performed at the distance of 3 m for measurements below 18 GHz, and the distance of 1 m for measurements above 18 GHz.

Spectrum analyser settings

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

7.1.4 Test data

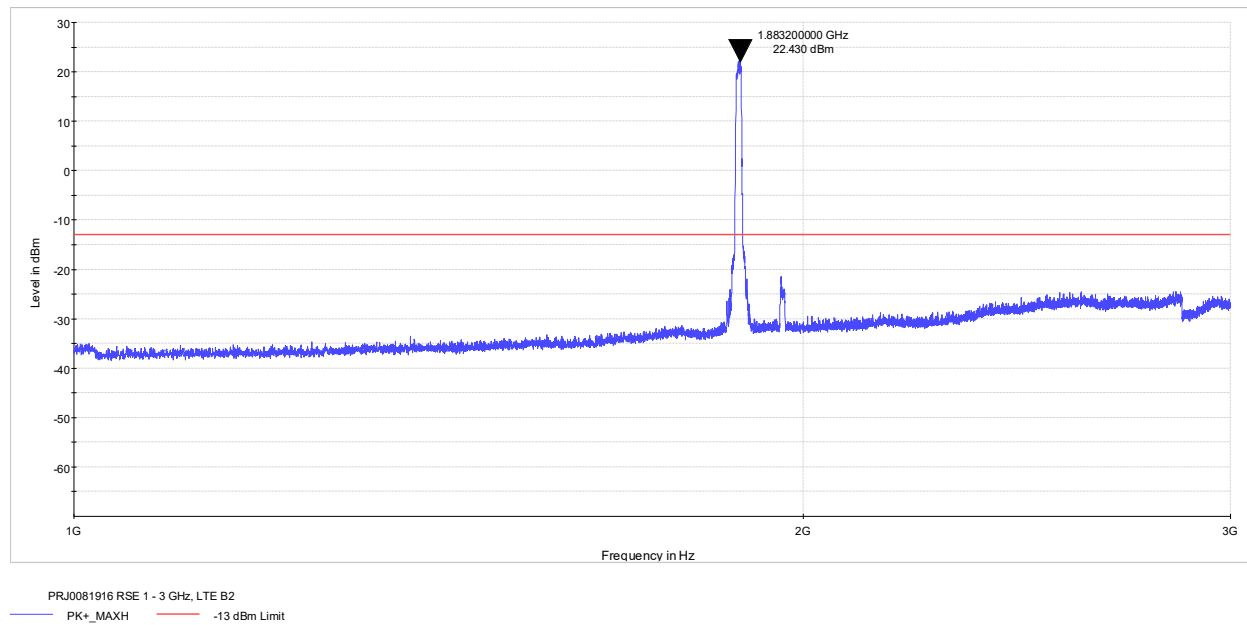


Figure 7.1-1: Radiated spurious emissions 1 – 3 GHz, Band 2

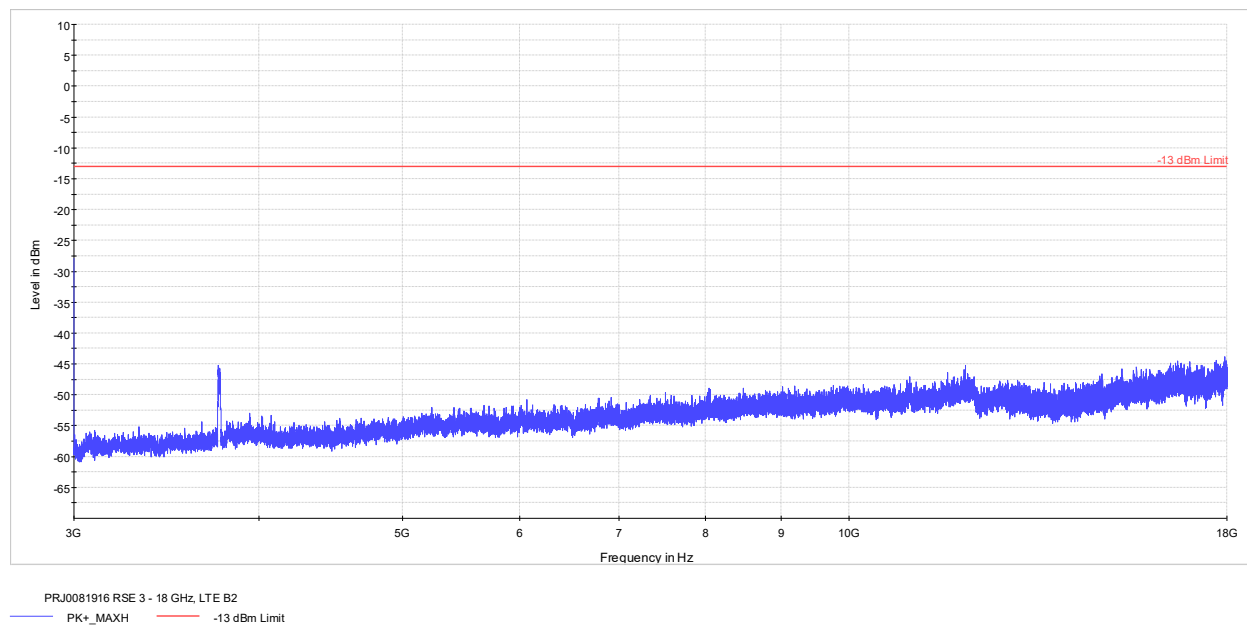


Figure 7.1-2: Radiated spurious emissions 3 – 18 GHz, Band 2

Test data, continued

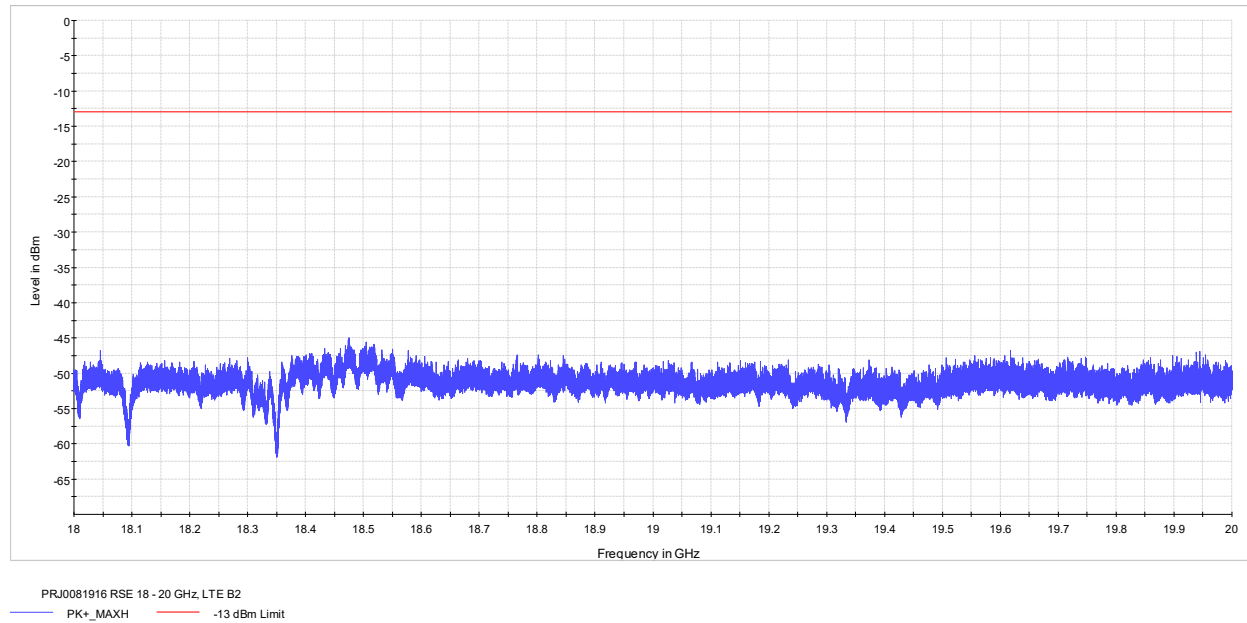


Figure 7.1-3: Radiated spurious emissions 18 – 20 GHz, Band 2

Test data, continued

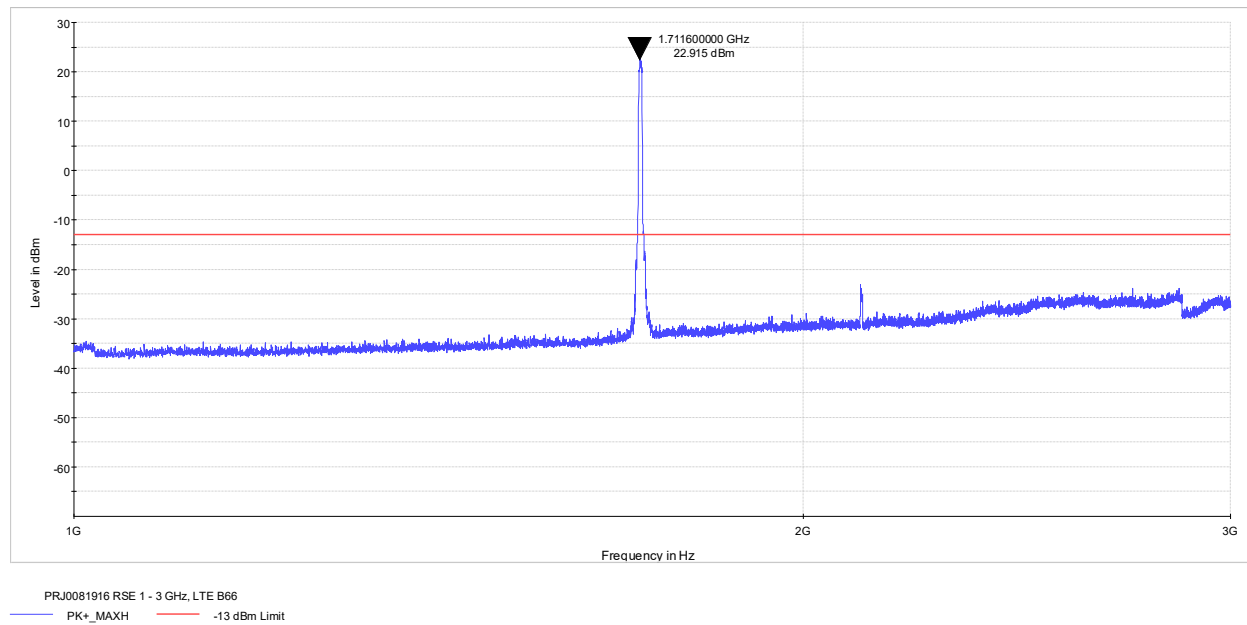


Figure 7.1-4: Radiated spurious emissions 1 – 3 GHz, Band 66

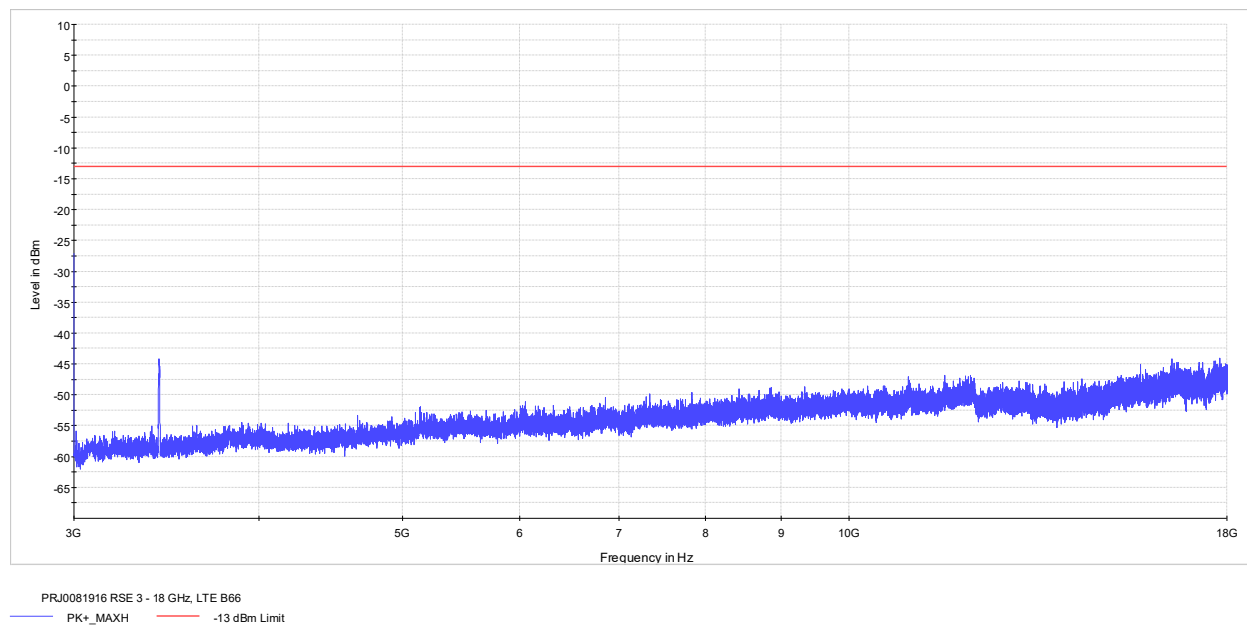


Figure 7.1-5: Radiated spurious emissions 3 – 18 GHz, Band 66

End of the test report