

TEST REPORT

Test report no.: 1-2255-26-01-02_TR1-R01



Deutsche
Akkreditierungsstelle
D-PL-12047-01-00

Testing laboratory

cetecom advanced GmbH

Untertuerkheimer Strasse 6 – 10

66117 Saarbruecken / Germany

Phone: + 49 681 5 98 - 0

Fax: + 49 681 5 98 - 9075

Internet: <https://cetecomadvanced.com>

e-mail: mail@cetecomadvanced.com

Accredited Testing Laboratory:

The testing laboratory (area of testing) is accredited according to DIN EN ISO/IEC 17025 (2018-03) by the Deutsche Akkreditierungsstelle GmbH (DAkkS).

The accreditation is valid for the scope of testing procedures as stated in the accreditation certificate with the registration number:

D-PL-12047-01-00.

ISED Testing Laboratory Recognized Listing Number: DE0001

FCC designation number: DE0002

Applicant

SAGEMCOM BROADBAND SAS

4 allée des Messageries

92270 Bois-Colombes / FRANCE

Phone: -/-

Contact: Benjamin Murindangabo

e-mail: benjamin.murindangabo-ext@sagemcom.com

Manufacturer

SAGEMCOM BROADBAND SAS

4 allée des Messageries

92270 Bois-Colombes / FRANCE

Test standard/s

FCC - Title 47 CFR Part 22 FCC - Title 47 of the Code of Federal Regulations; Chapter I; Part 22 - Public mobile services

FCC - Title 47 CFR Part 24 FCC - Title 47 of the Code of Federal Regulations; Chapter I; Part 24 - Personal communications services

FCC - Title 47 CFR Part 27 FCC - Title 47 of the Code of Federal Regulations; Chapter I; Part 27 - Miscellaneous wireless communications services

For further applied test standards please refer to section 3 of this test report.

Test Item

Kind of test item: 5GNR CPE Router

Model name: FAST 5984

FCC ID: VW3F5984

Frequency: LTE bands 2, 5, 12, 14 and 66

Technology tested: LTE

Antenna: Integrated antenna

Power supply: 12.0 V DC by AC/DC adapter

Temperature range: 0°C to +41.7°C

This test report is electronically signed and valid without handwritten signature. For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

Test report authorized:

cn=Marco Bertolino, o=cetecom advanced
GmbH, ou=BTL-251205,
email=Marco.Bertolino@cetecomadvanced.com,
c=DE
2026.02.10 10:54:21 +01'00'

Marco Bertolino
Supervisor Radio Lab
Regulatory Services Radio

Test performed:

cn=Alexander Becker, o=cetecom advanced
GmbH, ou=BCK-230601,
email=alexander.becker@cetecomadvanced.com,
c=DE
2026.02.10 10:00:40 +01'00'

Alexander Becker
Lab Manager
Regulatory Services Radio

1 Table of contents

1	Table of contents.....	2
2	General information.....	3
2.1	Notes and disclaimer.....	3
2.2	Application details.....	3
2.3	Test laboratories sub-contracted.....	3
3	Test standard/s, references and accreditations.....	4
4	Reporting statements of conformity – decision rule.....	5
5	Test environment.....	6
6	Test item.....	6
6.1	General description.....	6
6.2	Additional information.....	6
7	Description of the test setup.....	7
7.1	Shielded semi anechoic chamber.....	8
7.2	Shielded fully anechoic chamber.....	9
7.3	Radiated measurements > 18 GHz.....	11
7.4	Conducted measurements.....	12
8	Sequence of testing.....	13
8.1	Sequence of testing radiated spurious 9 kHz to 30 MHz.....	13
8.2	Sequence of testing radiated spurious 30 MHz to 1 GHz.....	14
8.3	Sequence of testing radiated spurious 1 GHz to 18 GHz.....	15
8.4	Sequence of testing radiated spurious above 18 GHz.....	16
9	Measurement uncertainty.....	17
10	Additional information and comments.....	18
11	Summary of measurement results.....	19
12	Results Output power (conducted and radiated).....	20
13	Cabinet radiation.....	23
14	Glossary.....	32
15	Document history.....	33

2 General information

2.1 Notes and disclaimer

The test results of this test report relate exclusively to the test item specified in this test report. cetecom advanced GmbH does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item.

The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of cetecom advanced GmbH.

The testing service provided by cetecom advanced GmbH has been rendered under the current "General Terms and Conditions for cetecom advanced GmbH".

cetecom advanced GmbH will not be liable for any loss or damage resulting from false, inaccurate, inappropriate or incomplete product information provided by the customer.

Under no circumstances does the cetecom advanced GmbH test report include any endorsement or warranty regarding the functionality, quality or performance of any other product or service provided.

Under no circumstances does the cetecom advanced GmbH test report include or imply any product or service warranties from cetecom advanced GmbH, including, without limitation, any implied warranties of merchantability, fitness for purpose, or non-infringement, all of which are expressly disclaimed by cetecom advanced GmbH.

All rights and remedies regarding vendor's products and services for which cetecom advanced GmbH has prepared this test report shall be provided by the party offering such products or services and not by cetecom advanced GmbH.

In no case this test report can be considered as a Letter of Approval.

This test report is electronically signed and valid without handwritten signature. For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

2.2 Application details

Date of receipt of order:	2026-01-19
Date of receipt of test item:	2026-01-22
Start of test:*	2026-01-22
End of test:*	2026-02-05
Person(s) present during the test:	-/-

*Date of each measurement, if not shown in the plot, can be requested. Dates are stored in the measurement software.

2.3 Test laboratories sub-contracted

None

3 Test standard/s, references and accreditations

Test standard	Date	Description
FCC - Title 47 CFR Part 22	-/-	FCC - Title 47 of the Code of Federal Regulations; Chapter I; Part 22 - Public mobile services
FCC - Title 47 CFR Part 24	-/-	FCC - Title 47 of the Code of Federal Regulations; Chapter I; Part 24 - Personal communications services
FCC - Title 47 CFR Part 27	-/-	FCC - Title 47 of the Code of Federal Regulations; Chapter I; Part 27 - Miscellaneous wireless communications services
FCC – Title 47 CFR Part 90	-/-	FCC - Title 47 of the Code of Federal Regulations; Chapter I; Part 90 - Private Land Mobile Radio Services

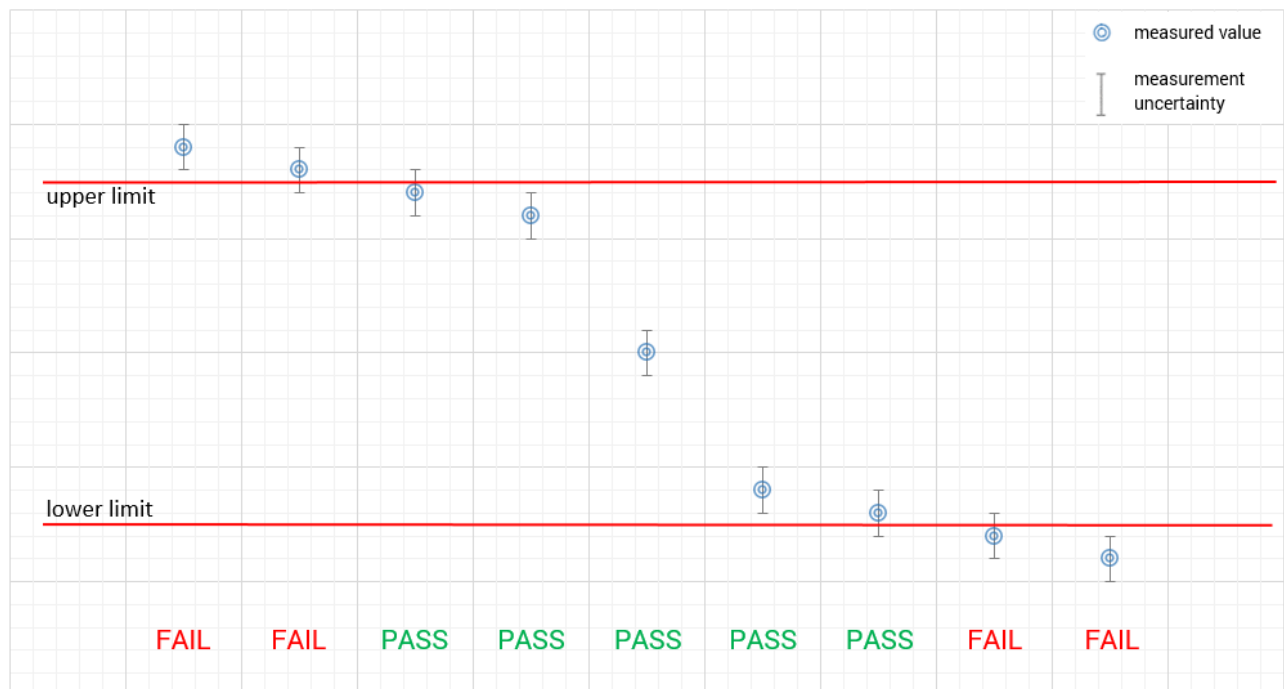
Guidance	Version	Description
ANSI C63.4a-2017	-/-	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
ANSI C63.26-2015	-/-	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services
Power Meas License Systems: KDB 971168 D01	v03r01	Measurement Guidance for Certification of Licensed Digital Transmitters

4 Reporting statements of conformity – decision rule

Only the measured values related to their corresponding limits will be used to decide whether the equipment under test meets the requirements of the test standards listed in chapter 3.

The measurement uncertainty is mentioned in this test report, see chapter 9, but is not taken into account - neither to the limits nor to the measurement results. Measurement results with a smaller margin to the corresponding limits than the measurement uncertainty have a potential risk of more than 5% that the decision might be wrong."

measured value, measurement uncertainty, verdict



5 Test environment

Temperature	:	T_{nom} T_{max} T_{min}	+22 °C during room temperature tests No tests under extreme environmental conditions performed. No tests under extreme environmental conditions performed.
Relative humidity content	:		50 %
Barometric pressure	:		1018 hpa
Power supply	:	V_{nom} V_{max} V_{min}	12.0 V DC by AC/DC adapter No tests under extreme environmental conditions performed. No tests under extreme environmental conditions performed.

6 Test item

6.1 General description

Kind of test item	:	5G NR CPE Router
Model name	:	FAST 5984
S/N serial number	:	Rad. L99BA5TD00001 Cond. L99BA5TD00002
Hardware status	:	v1.1
Software status	:	SGPA612015-1.0.4C
Firmware status	:	FDE2.F0.2.0.1.5.AT.006
Frequency band	:	LTE bands 2, 5, 12, 14 and 66
Type of radio transmission	:	Modulated carrier
Use of frequency spectrum	:	
Type of modulation	:	QPSK, 16-QAM, 64-QAM, 256-QAM
Antenna	:	Integrated antenna
Power supply	:	12.0 V DC by AC/DC adapter
Temperature range	:	0°C to +41.7°C

6.2 Additional information

The content of the following annexes is defined in the QA. It may be that not all of the listed annexes are necessary for this report, thus some values in between may be missing.

Test setup and EUT photos are included in test report: 1-2255-26-01-01_TR1-A101-R01
 1-2255-26-01-01_TR1-A103-R01

7 Description of the test setup

Typically, the calibrations of the test apparatus are commissioned to and performed by an accredited calibration laboratory. The calibration intervals are determined in accordance with the DIN EN ISO/IEC 17025. In addition to the external calibrations, the laboratory executes comparison measurements with other calibrated test systems or effective verifications. Weekly chamber inspections and range calibrations are performed. Where possible, RF generating and signaling equipment as well as measuring receivers and analyzers are connected to an external high-precision 10 MHz reference (GPS-based or rubidium frequency standard).

In order to simplify the identification of the equipment used at some special tests, some items of test equipment and ancillaries can be provided with an identifier or number in the equipment list below (Lab/Item).

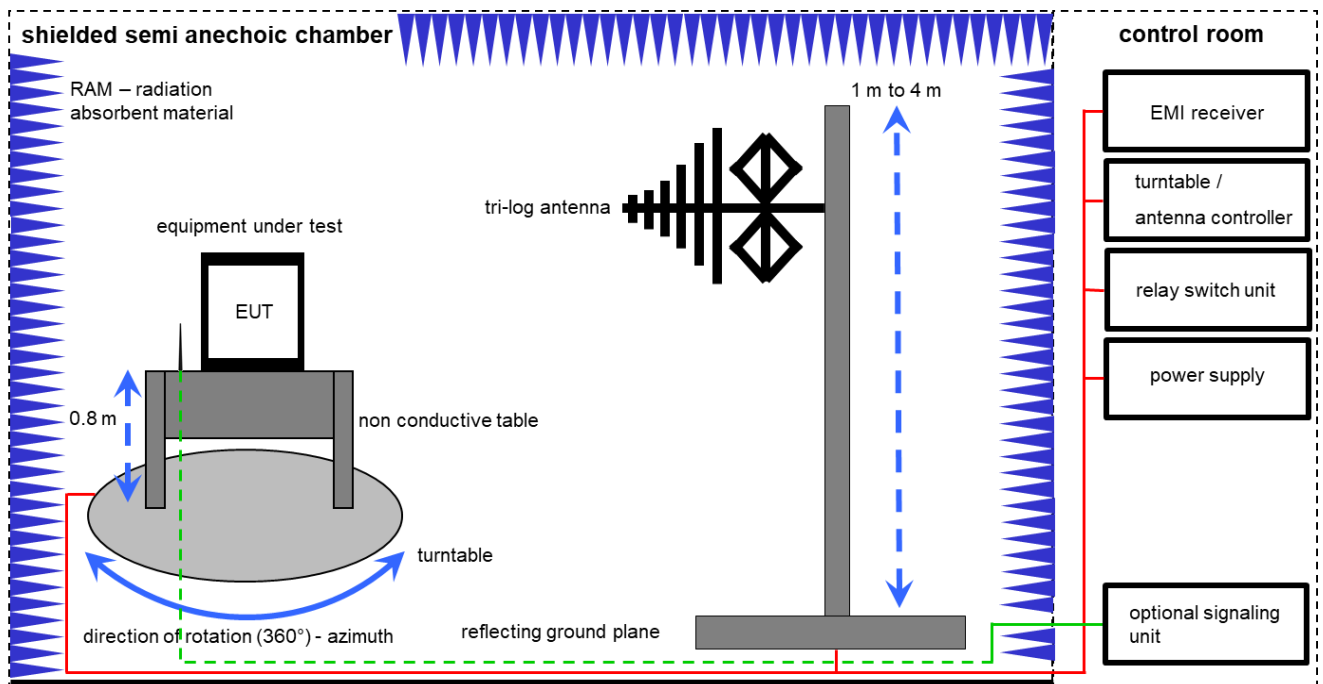
Each block diagram listed can contain several test setup configurations. All devices belonging to a test setup are identified with the same letter syntax. For example: Column Setup and all devices with an A.

Agenda: Kind of Calibration

k/cal	calibration / calibrated	EK	limited calibration
Ne/cnn	not required (k, ev, izw, zw not required)	zw	cyclical maintenance (external cyclical maintenance)
Ev/chk	periodic self verification	izw	internal cyclical maintenance
Ve	long-term stability recognized	g	blocked for accredited testing
vlk!	Attention: extended calibration interval		
NK!	Attention: not calibrated	*)	next calibration ordered / currently in progress
cpu	check prior usage		

7.1 Shielded semi anechoic chamber

The radiated measurements are performed in vertical and horizontal plane in the frequency range from 30 MHz to 1 GHz in semi-anechoic chambers. The EUT is positioned on a non-conductive support with a height of 0.80 m above a conductive ground plane that covers the whole chamber. The receiving antennas are conform to specifications ANSI C63. These antennas can be moved over the height range between 1.0 m and 4.0 m in order to search for maximum field strength emitted from EUT. The measurement distances between EUT and receiving antennas are indicated in the test setups for the various frequency ranges. For each measurement, the EUT is rotated in all three axes until the maximum field strength is received. The wanted and unwanted emissions are received by spectrum analyzers where the detector modes and resolution bandwidths over various frequency ranges are set according to requirement ANSI C63.



Measurement distance: tri-log antenna 10 meter; EMC32 software version: 10.59.00

FS = UR + CL + AF

(FS-field strength; UR-voltage at the receiver; CL-loss of the cable; AF-antenna factor)

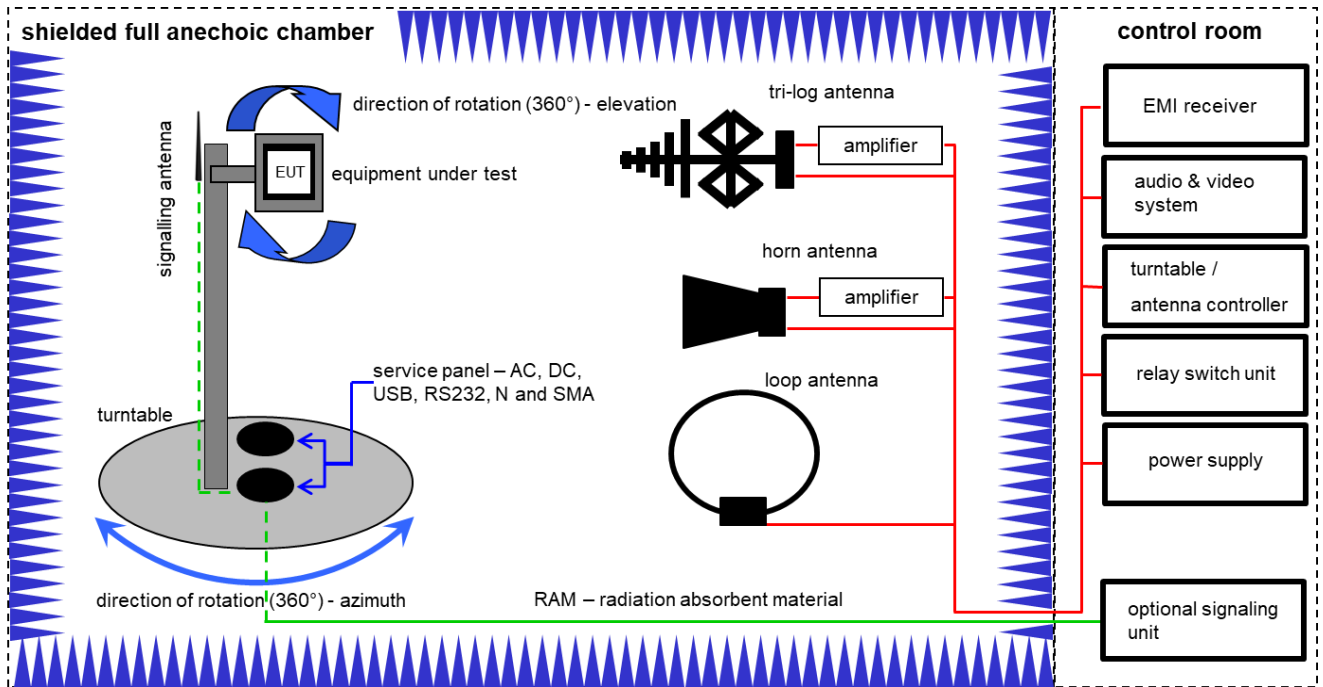
Example calculation:

FS [dBμV/m] = 12.35 [dBμV] + 1.90 [dB] + 16.80 [dB/m] = 31.05 [dBμV/m] (35.69 μV/m)

Equipment table:

No.	Setup	Equipment	Type	Manufacturer	Serial No.	INV. No.	Kind of Calibration	Last Calibration	Next Calibration
1	A	Semi anechoic chamber	Semi anechoic chamber 3000023	MEC Import: MWB AG	-/-	40797	cnn	-/-	-/-
2	A	TRILOG Broadband Antenna	TRILOG Broadband Antenna VULB9163	Schwarzbeck Mess-Elektronik OHG Schönau	371	40798	cal	11.07.2024	31.07.2026
3	A	Turntable	Turntable 2089-4.0	EMCO Elektronik GmbH Gilching	-/-	40799	cnn	-/-	-/-
4	A	Antenna Tower	Antenna Tower 2175	ETS-Lindgren GmbH Taufkirchen	64762	50279	cnn	-/-	-/-
5	A	EMI Test Receiver	EMI Test Receiver ESR3 9kHz-3.6GHz	Rohde & Schwarz Messgerätebau GmbH Memmingen	102587	50417	cal	08.12.2025	31.12.2026
6	A	Wideband Radio Communication Tester	Wideband Radio Communication Tester CMW500	Rohde & Schwarz Messgerätebau GmbH Memmingen	170615	40220	cal	04.12.2025	31.12.2027

7.2 Shielded fully anechoic chamber



Measurement distance: tri-log antenna and horn antenna 3 meter; loop antenna 3 meter

$$OP = AV + D - G + CA$$

(OP-radiated output power; AV-analyzer value; D-free field attenuation of measurement distance; G-antenna gain+amplifier gain; CA-loss signal path)

Example calculation:

$$OP \text{ [dBm]} = -65.0 \text{ [dBm]} + 50 \text{ [dB]} - 20 \text{ [dBi]} + 5 \text{ [dB]} = -30 \text{ [dBm]} (1 \text{ }\mu\text{W})$$

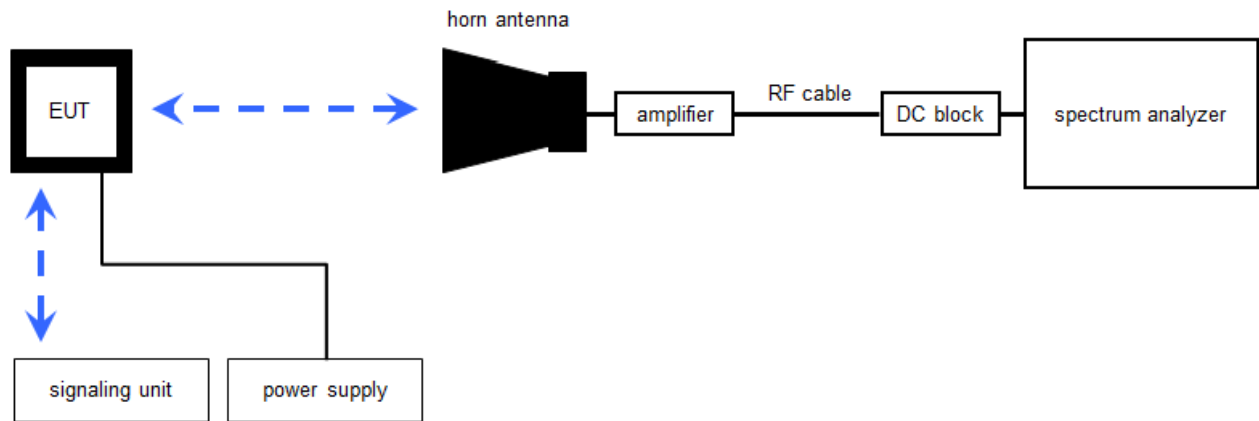
Equipment table:

No.	Setup	Equipment	Type	Manufacturer	Serial No.	INV. No.	Kind of Calibration	Last Calibration	Next Calibration
1	A, B	Signal- and Spectrum Analyzer	Signal- and Spectrum Analyzer FSW26	Rohde & Schwarz Messgerätebau GmbH Memmingen	101455	40114	cal	08.12.2025	31.12.2026
2	A	Double-Ridged Waveguide Horn Antenna	Double-Ridged Waveguide Horn Antenna 3115	EMCO Elektronik GmbH Gilching	8812-3089	40344	cal	09.07.2024	31.07.2026
3	A	Highpass Filter	Highpass Filter WHK1.1/15G-10SS	Wainwright Instruments GmbH Andechs	37	40362	cnn	-/-	-/-
4	A	Band Reject Filter	Band Reject Filter WRCG1850/1910-1835/1925-40/8SS	Wainwright Instruments GmbH Andechs	23	40363	cnn	-/-	-/-
5	A	Band Reject Filter	Band Reject Filter WRCG1710/1755-1690/1775-90/14SS	Wainwright Instruments GmbH Andechs	7	40368	cpu	-/-	-/-
6	A	Broadband Amplifier 0.5-18 GHz	Broadband Amplifier 0.5-18 GHz CBLU5184540	MEC Import: CERNEX	22050	40374	cpu	-/-	-/-
7	A, B	4U RF Switch Platform	4U RF Switch Platform L4491A	Agilent Technologies Deutschland GmbH Böblingen	MY50000032	40376	cnn	-/-	-/-
8	A	Highpass Filter	Highpass Filter WHKX2.6/18G-10SS	Wainwright Instruments GmbH Andechs	12	40377	cnn	-/-	-/-
9	A	Channel Notch Filter (1900)	Channel Notch Filter (1900) WRCD 1879.5/1880.5-5EE	Wainwright Instruments GmbH Andechs	33	40378	cnn	-/-	-/-

10	A	Channel Notch Filter (850)	Channel Notch Filter (850) WRCT 837-0.2/50-8EE	Wainwright Instruments GmbH Andechs	1	40381	cnn	-/-	-/-
11	A, B	NEXIO EMV-Software	NEXIO EMV-Software BAT EMC V2022.0.32.0	MEC Import: Nexio	-/-	40383	cnn	-/-	-/-
12	A, B	Anechoic chamber	Anechoic chamber	MEC Import: TDK	-/-	40385	cnn	-/-	-/-
13	B	Active Loop Antenna	Active Loop Antenna 6502	EMCO Elektronik GmbH Gilching	2210	50044	cal	07.07.2025	31.07.2027
14	A, B	Wideband Radio Communication Tester	Wideband Radio Communication Tester CMW500	Rohde & Schwarz Messgerätebau GmbH Memmingen	170615	40220	cal	04.12.2025	31.12.2027

7.3 Radiated measurements > 18 GHz

Radiated measurements > 18 GHz



Measurement distance: horn antenna 50 cm

$$OP = AV + D - G + CA$$

(OP-radiated output power; AV-analyzer value; D-free field attenuation of measurement distance; G-antenna gain+amplifier gain; CA-loss signal path)

Example calculation:

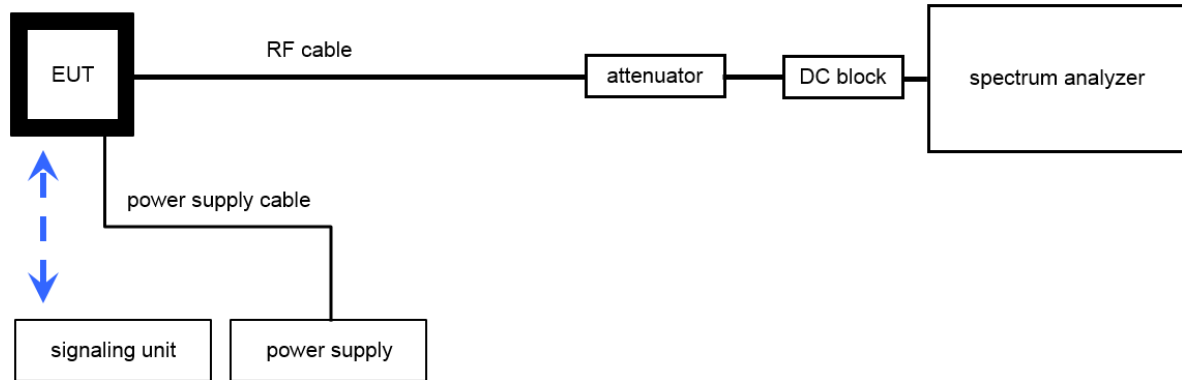
$$OP \text{ [dBm]} = -65.0 \text{ [dBm]} + 50.0 \text{ [dB]} - 20.0 \text{ [dBi]} + 5.0 \text{ [dB]} = -30 \text{ [dBm]} \text{ (1 } \mu\text{W)}$$

Equipment table:

No.	Setup	Equipment	Type	Manufacturer	Serial No.	INV. No.	Kind of Calibration	Last Calibration	Next Calibration
1	A	Signal analyzer	Signal analyzer FSV40	Rohde & Schwarz Messgerätebau GmbH Memmingen	101042	40292	cal	08.01.2026	31.01.2027
2	A	Switch Matrix	Switch Matrix USM	cetecom advanced GmbH Saarbrücken	C001	40340	cnn	-/-	-/-
3	A	RF-Cable	RF-Cable ST18/SMAM/SMAM /60	Huber & Suhner GmbH Unterhaching	Batch no. 606844	40386	cpu	-/-	-/-
4	A	RF-Cable	RF-Cable ST18/SMAM/SMAM /72	Huber & Suhner GmbH Unterhaching	Batch no. 699714	40389	cpu	-/-	-/-
5	A	DC-Blocker 0.1-40 GHz	DC-Blocker 0.1-40 GHz 8141A	MEC Import: Inmet	-/-	40390	cpu	-/-	-/-
6	A	Broadband LNA 18-50 GHz	Broadband LNA 18-50 GHz CBL18503070PN	MEC Import: CERNEX	25240	40073	chk	22.04.2024	22.04.2026
7	A	Std. Gain Horn Antenna 18.0-26.5 GHz	Std. Gain Horn Antenna 18.0-26.5 GHz 638	Narda Microwave	8205	40085	cal	16.01.2026	31.01.2028
8	A	Wideband Radio Communication Tester	Wideband Radio Communication Tester CMW500	Rohde & Schwarz Messgerätebau GmbH Memmingen	170615	40220	cal	04.12.2025	31.12.2027

7.4 Conducted measurements

Conducted measurements normal conditions



OP = AV + CA
(OP-output power; AV-analyzer value; CA-loss signal path)

Example calculation:

OP [dBm] = 6.0 [dBm] + 11.7 [dB] = 17.7 [dBm] (58.88 mW)

Equipment table:

No.	Setup	Equipment	Type	Manufacturer	Serial No.	INV. No.	Kind of Calibration	Last Calibration	Next Calibration
1	A	Signal analyzer	Signal analyzer FSV40	Rohde & Schwarz Messgerätebau GmbH Memmingen	101042	40292	cal	08.01.2026	31.01.2027
2	A	Switch Matrix	Switch Matrix USM	cetecom advanced GmbH Saarbrücken	C001	40340	cnn	-/-	-/-
3	A	RF-Cable	RF-Cable ST18/SMAM/SMAM /60	Huber & Suhner GmbH Unterhaching	Batch no. 606844	40386	cpu	-/-	-/-
4	A	DC-Blocker 0.1-40 GHz	DC-Blocker 0.1-40 GHz 8141A	MEC Import: Inmet	-/-	40390	cpu	-/-	-/-
5	A	Wideband Radio Communication Tester	Wideband Radio Communication Tester CMW500	Rohde & Schwarz Messgerätebau GmbH Memmingen	170615	40220	cal	04.12.2025	31.12.2027

8 Sequence of testing

8.1 Sequence of testing radiated spurious 9 kHz to 30 MHz

Setup

- The equipment is set up to simulate normal operation mode as described in the user manual or defined by the manufacturer.
- If the EUT is a tabletop system, it is placed on a table with 0.8 m height.
- If the EUT is a floor standing device, it is placed directly on the turn table.
- Auxiliary equipment and cables are positioned to simulate normal operation conditions as described in ANSI C 63.4.
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- Measurement distance is 3 m (see ANSI C 63.4) – see test details.
- EUT is set into operation.

Premeasurement*

- The turntable rotates from 0° to 315° using 45° steps.
- The antenna height is 1 m.
- At each turntable position the analyzer sweeps with positive-peak detector to find the maximum of all emissions.

Final measurement

- Identified emissions during the pre-measurement are maximized by the software by rotating the turntable from 0° to 360°.
- Loop antenna is rotated about its vertical axis for maximum response at each azimuth about the EUT. (For certain applications, the loop antenna plane may also need to be positioned horizontally at the specified distance from the EUT)
- The final measurement is done in the position (turntable and elevation) causing the highest emissions with quasi-peak (as described in ANSI C 63.4).
- Final levels, frequency, measuring time, bandwidth, turntable position, correction factor, margin to the limit and limit will be recorded. A plot with the graph of the premeasurement and the limit is stored.

*)Note: The sequence will be repeated three times with different EUT orientations.

8.2 Sequence of testing radiated spurious 30 MHz to 1 GHz

Setup

- The equipment is set up to simulate normal operation mode as described in the user manual or defined by the manufacturer.
- If the EUT is a tabletop system, a table with 0.8 m height is used, which is placed on the ground plane.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables are positioned to simulate normal operation conditions as described in ANSI C 63.4.
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- Measurement distance is 10 m or 3 m (see ANSI C 63.4) – see test details.
- EUT is set into operation.

Premeasurement

- The turntable rotates from 0° to 315° using 45° steps.
- The antenna is polarized vertical and horizontal.
- The antenna height changes from 1 m to 3 m.
- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

Final measurement

- The final measurement is performed for at least six highest peaks according to the requirements of the ANSI C63.4.
- Based on antenna and turntable positions at which the peak values are measured the software maximize the peaks by changing turntable position $\pm 45^\circ$ and antenna height between 1 and 4 m.
- The final measurement is done with quasi-peak detector (as described in ANSI C 63.4).
- Final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit are recorded. A plot with the graph of the premeasurement with marked maximum final results and the limit is stored.

8.3 Sequence of testing radiated spurious 1 GHz to 18 GHz

Setup

- The equipment is set up to simulate normal operation mode as described in the user manual or defined by the manufacturer.
- If the EUT is a tabletop system, a 2-axis positioner with 1.5 m height is used.
- If the EUT is a floor standing device, it is placed directly on the turn table.
- Auxiliary equipment and cables are positioned to simulate normal operation conditions as described in ANSI C 63.4.
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- Measurement distance is 3 m (see ANSI C 63.4) – see test details.
- EUT is set into operation.

Premeasurement

- The turntable rotates from 0° to 315° using 45° steps.
- The antenna is polarized vertical and horizontal.
- The antenna height is 1.5 m.
- At each turntable position and antenna polarization the analyzer sweeps with positive peak detector to find the maximum of all emissions.

Final measurement

- The final measurement is performed for at least six highest peaks according to the requirements of the ANSI C63.4.
- Based on antenna and turntable positions at which the peak values are measured the software maximizes the peaks by rotating the turntable from 0° to 360°. This measurement is repeated for different EUT-table positions (0° to 150° in 30°-steps) and for both antenna polarizations.
- The final measurement is done in the position (turntable, EUT-table and antenna polarization) causing the highest emissions with Peak and RMS detector (as described in ANSI C 63.4).
- Final levels, frequency, measuring time, bandwidth, turntable position, EUT-table position, antenna polarization, correction factor, margin to the limit and limit are recorded. A plot with the graph of the premeasurement with marked maximum final results and the limit is stored.

8.4 Sequence of testing radiated spurious above 18 GHz

Setup

- The equipment is set up to simulate normal operation mode as described in the user manual or defined by the manufacturer.
- Auxiliary equipment and cables are positioned to simulate normal operation conditions as described in ANSI C 63.4.
- The AC power port of the EUT (if available) is connected to a power outlet.
- The measurement distance is as appropriate (e.g. 0.5 m).
- The EUT is set into operation.

Premeasurement

- The test antenna is handheld and moved carefully over the EUT to cover the EUT's whole sphere and different polarizations of the antenna.

Final measurement

- The final measurement is performed at the position and antenna orientation causing the highest emissions with Peak and RMS detector (as described in ANSI C 63.4).
- Final levels, frequency, measuring time, bandwidth, correction factor, margin to the limit and limit are recorded. A plot with the graph of the premeasurement and the limit is stored.

9 Measurement uncertainty

Measurement uncertainty		
Test case	Uncertainty	
Antenna gain	± 3 dB	
99 % bandwidth	$\pm$ RBW	
-26 dB bandwidth	$\pm$ RBW	
Frequency stability	10^{-6}	
Maximum output power conducted	± 1.56 dB	
Block edge compliance	± 1.56 dB	
Spurious emissions conducted	> 3.6 GHz	± 1.56 dB
	> 7 GHz	± 1.56 dB
	> 18 GHz	± 2.31 dB
	≥ 40 GHz	± 2.97 dB
Spurious emissions radiated below 30 MHz	± 3 dB	
Spurious emissions radiated 30 MHz to 1 GHz	± 3 dB	
Spurious emissions radiated 1 GHz to 12.75 GHz	± 3.7 dB	
Spurious emissions radiated above 12.75 GHz	± 4.5 dB	

10 Additional information and comments

Reference documents: 1-2255-26-01-02_TR1-A201-R01.pdf

Special test descriptions: The device contains a pre-certified module with the FCC ID: 2AQ68T99W651.
The purpose of this test report is to show that the LTE RF performance of the DUT is the same as in the module reports.

Configuration descriptions: None

EUT selection:

- ☒ Only one device available
- ☐ Devices selected by the customer
- ☐ Devices selected by the laboratory (Randomly)

11 Summary of measurement results

☐	No deviations from the technical specifications were ascertained
☐	There were deviations from the technical specifications ascertained
☒	This test report is only a partial test report. The content and verdict of the performed test cases are listed below.

TC identifier	Description	verdict	date	Remark
RF-Testing	FCC: CFR Parts 2, 22, 24, 27, 90	See table	2026-02-10	Partial tests

Test Case	temperature conditions	power source voltages	C	NC	NA	NP	Remark
RF Output Power conducted and radiated	Nominal	Nominal	☒	☐	☐	☐	-/-
Frequency Stability	Extreme	Extreme	☐	☐	☐	☒	-/-
Cabinet radiation	Nominal	Nominal	☒	☐	☐	☐	-/-
Spurious Emissions Conducted	Nominal	Nominal	☐	☐	☐	☒	-/-
Block Edge Compliance	Nominal	Nominal	☐	☐	☐	☒	-/-
Occupied Bandwidth	Nominal	Nominal	☐	☐	☐	☒	-/-
Peak-to-average ratio	Nominal	Nominal	☐	☐	☐	☒	-/-

Notes:

C	Compliant	NC	Not compliant	NA	Not applicable	NP	Not performed
----------	-----------	-----------	---------------	-----------	----------------	-----------	---------------

12 Results Output power (conducted and radiated)

The EUT was set to transmit the maximum power.

Description:

This paragraph contains conducted average power.

Measurement:

The mobile was set up for the maximum output power with pseudo random data modulation.

Measurement parameters	
Detector:	Average
Resolution bandwidth:	40 MHz
Used equipment:	See chapter 7.4 setup A
Measurement uncertainty:	see chapter 9

Limits:

FCC
§2.1046, §22.913 (a)(5), §27.50 (c)(10), §27.50 (d)(4), §90.542 (a)(7), § 24.232(c)
LTE band 2: 33 dBm EIRP LTE band 5: 38.45 dBm ERP LTE band 12: 34.77 dBm ERP LTE band 14: 34.77 dBm ERP LTE band 66: 30 dBm EIRP

Results: Conducted, Extracted from 1-2255-26-01-02_TR1-A201-R01.pdf

Average Output Power (dBm)						
Band	Frequency	Bandwidth (MHz)	Frequency (MHz)	RB	Modulation	Result
2	Mid	5	1880.0	RB_1_mid	QPSK	24.35
2	High	15	1902.5	RB_1_mid	16-QAM	23.71
5	Low	3	825.5	RB_1_high	QPSK	23.86
5	Low	5	826.5	RB_1_low	16-QAM	23.3
12	High	5	713.5	RB_1_low	QPSK	24.32
12	High	5	713.5	RB_1_mid	16-QAM	23.74
14	Mid	5	793.0	RB_1_low	QPSK	23.66
14	Low	5	790.5	RB_1_low	16-QAM	23.27
66	Mid	5	1745	RB_1_high	QPSK	24.47
66	High	1.4	1779.3	RB_1_mid	16-QAM	23.72

Results: Conducted, Module test report FG522653A

Average Output Power (dBm)						
Band	Frequency	Bandwidth (MHz)	Frequency (MHz)	RB	Modulation	Result
2	Mid	5	1880.0	RB_1_mid	QPSK	24.23
2	High	15	1902.5	RB_1_mid	16-QAM	23.48
5	Low	3	825.5	RB_1_high	QPSK	23.91
5	Low	5	826.5	RB_1_low	16-QAM	23.32
12	High	5	713.5	RB_1_low	QPSK	24.17
12	High	5	713.5	RB_1_mid	16-QAM	23.46
14	Mid	5	793.0	RB_1_low	QPSK	23.91
14	Low	5	790.5	RB_1_low	16-QAM	23.39
66	Mid	5	1745	RB_1_high	QPSK	24.0
66	High	1.4	1779.3	RB_1_mid	16-QAM	23.35

Conclusion: The conducted power verification was performed in QPSK and 16-QAM modulation. The maximum values of the EUT do match the module values in the same configurations. Therefore all other module results from the module report are representative for the EUT.

Antenna gain:

Peak antenna gain [dBi]	
Band 2	4.0
Band 5	2.8
Band 12	0.5
Band 14	1.6
Band 66	2.0

Results: Radiated

Radiated Average Output Power (dBm)						
Band	Frequency	Bandwidth (MHz)	Frequency (MHz)	RB	Modulation	Result
2	Mid	5	1880.0	RB_1_mid	QPSK	28.35
2	High	15	1902.5	RB_1_mid	16-QAM	27.71
5	Low	3	825.5	RB_1_high	QPSK	23.66
5	Low	5	826.5	RB_1_low	16-QAM	26.1
12	High	5	713.5	RB_1_low	QPSK	24.82
12	High	5	713.5	RB_1_mid	16-QAM	24.24
14	Mid	5	793.0	RB_1_low	QPSK	25.26
14	Low	5	790.5	RB_1_low	16-QAM	24.87
66	Mid	5	1745	RB_1_high	QPSK	26.47
66	High	1.4	1779.3	RB_1_mid	16-QAM	25.72

13 Cabinet radiation

Description:

Cabinet radiation was measured for each LTE band on middle channel and QPSK modulation. 10 MHz bandwidth, 1 RB and 0 RB offset was used for all tests.

Measurement:

Measurement parameters	
Detector:	Prescan: Peak Final emission: Peak/AVG
Sweep time:	2 ms/MHz
Resolution bandwidth:	Below 150 kHz: 200 Hz Between 150 kHz and 30 MHz: 9 kHz Above 30 MHz: 1 MHz
Video bandwidth:	Below 150 kHz: 1 kHz Between 150 kHz and 30 MHz: 100 kHz Above 30 MHz: 3 MHz
Trace mode:	Max Hold
Used equipment:	See chapter 7.1 setup A & 7.2 setup A+B
Measurement uncertainty:	See chapter 9

Limits:

FCC	
§2.1053, §22.917 (a), §24.238 (a), §27.53 (g), §27.53 (h), §90.543 (e)(3), §90.543 (f)	
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB.	
LTE band 14: For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559–1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.	
-13 dBm -40 dBm/MHz in 1559-1610 MHz (LTE band 14 only)	

Results:**QPSK:** LTE band 2

SPURIOUS EMISSION LEVEL					
LOWEST CHANNEL		MIDDLE CHANNEL		HIGHEST CHANNEL	
Spurious emissions	Level [dBm]	Spurious emissions	Level [dBm]	Spurious emissions	Level [dBm]
NP		-/-	-/-	NP	

QPSK: LTE band 5

SPURIOUS EMISSION LEVEL					
LOWEST CHANNEL		MIDDLE CHANNEL		HIGHEST CHANNEL	
Spurious emissions	Level [dBm]	Spurious emissions	Level [dBm]	Spurious emissions	Level [dBm]
NP		1664	-44.5	NP	

QPSK: LTE band 12

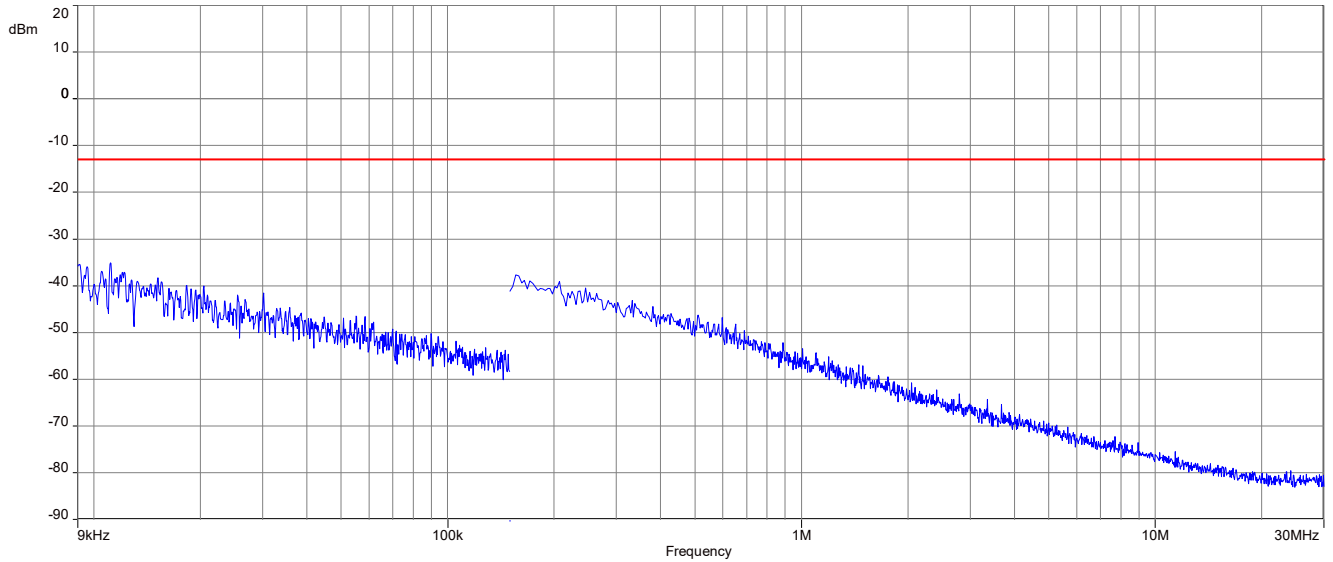
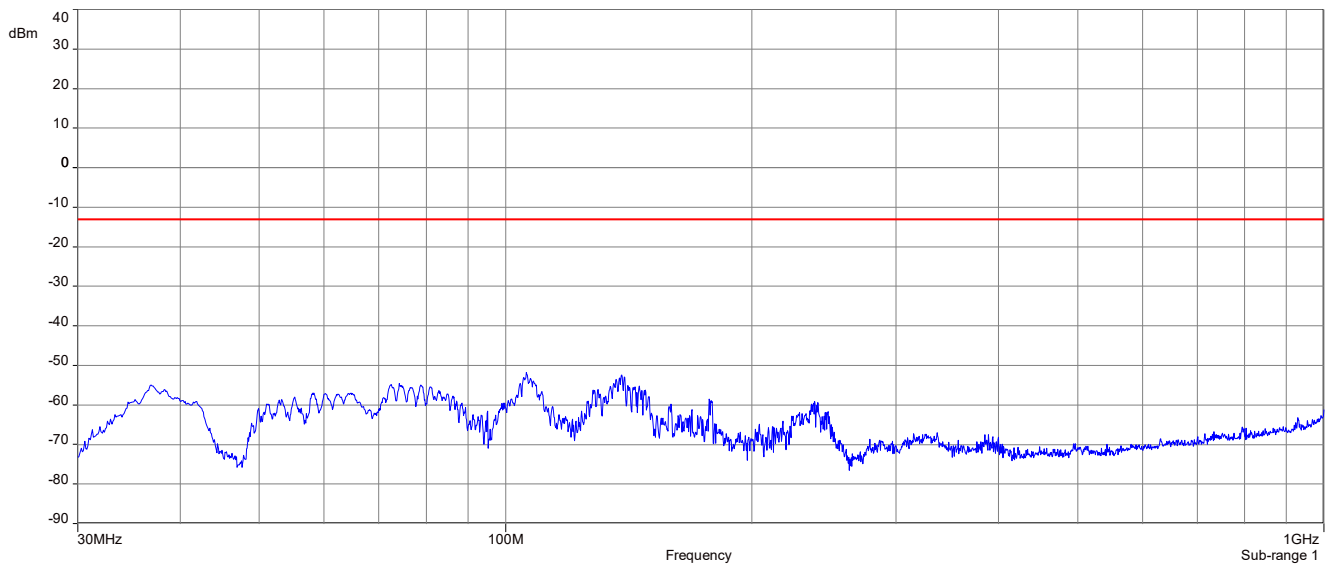
SPURIOUS EMISSION LEVEL					
LOWEST CHANNEL		MIDDLE CHANNEL		HIGHEST CHANNEL	
Spurious emissions	Level [dBm]	Spurious emissions	Level [dBm]	Spurious emissions	Level [dBm]
NP		-/-	-/-	NP	

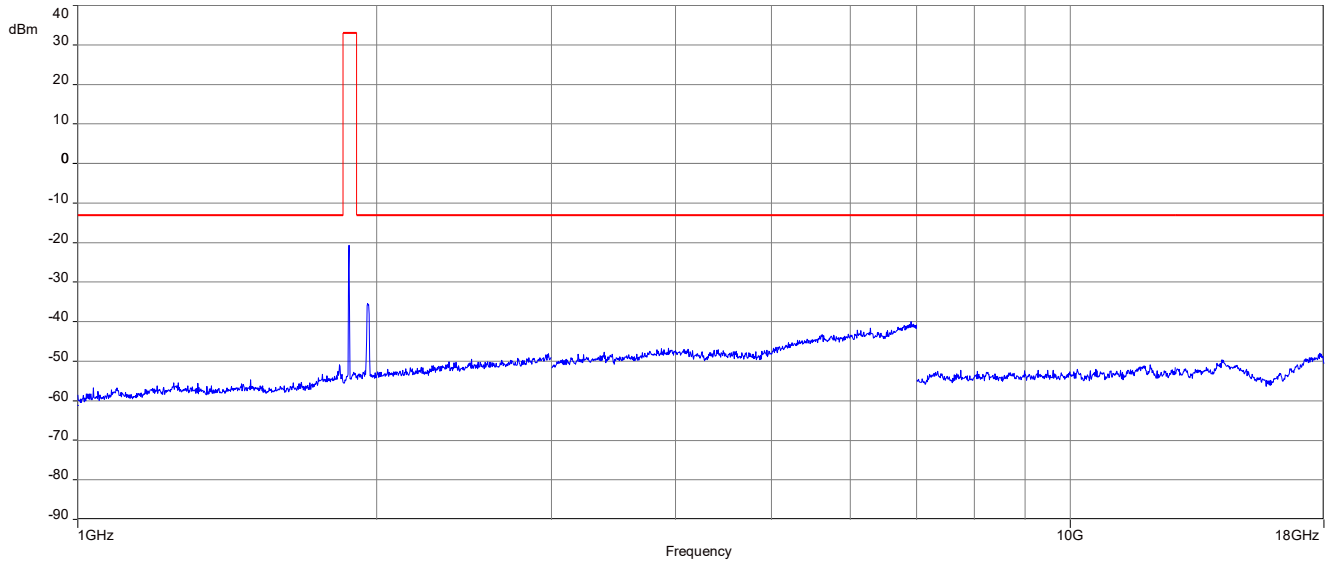
QPSK: LTE band 14

SPURIOUS EMISSION LEVEL					
LOWEST CHANNEL		MIDDLE CHANNEL		HIGHEST CHANNEL	
Spurious emissions	Level [dBm]	Spurious emissions	Level [dBm]	Spurious emissions	Level [dBm]
NP		1586	-52.8	NP	

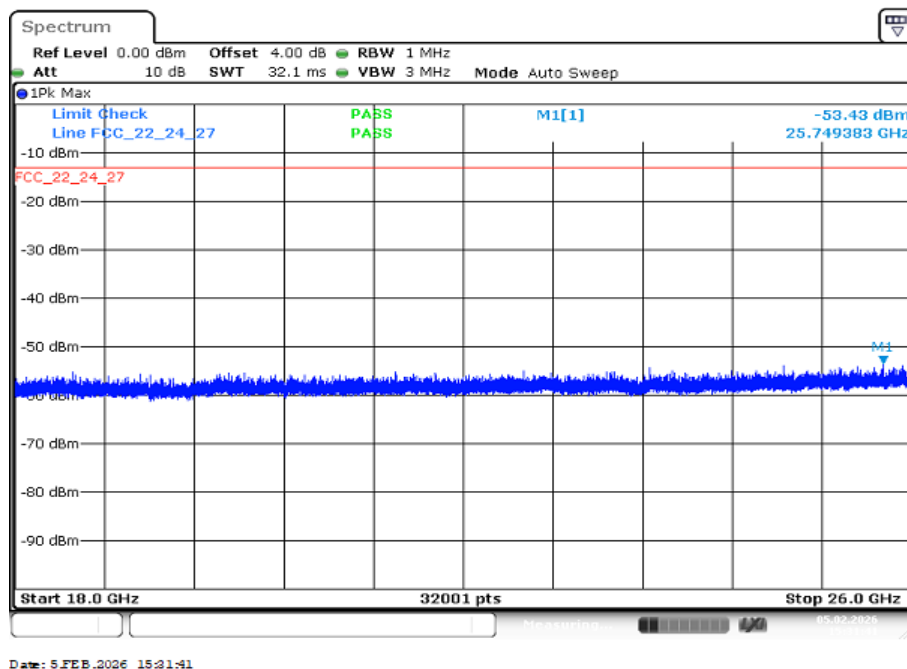
QPSK: LTE band 66

SPURIOUS EMISSION LEVEL					
LOWEST CHANNEL		MIDDLE CHANNEL		HIGHEST CHANNEL	
Spurious emissions	Level [dBm]	Spurious emissions	Level [dBm]	Spurious emissions	Level [dBm]
NP		-/-	-/-	NP	

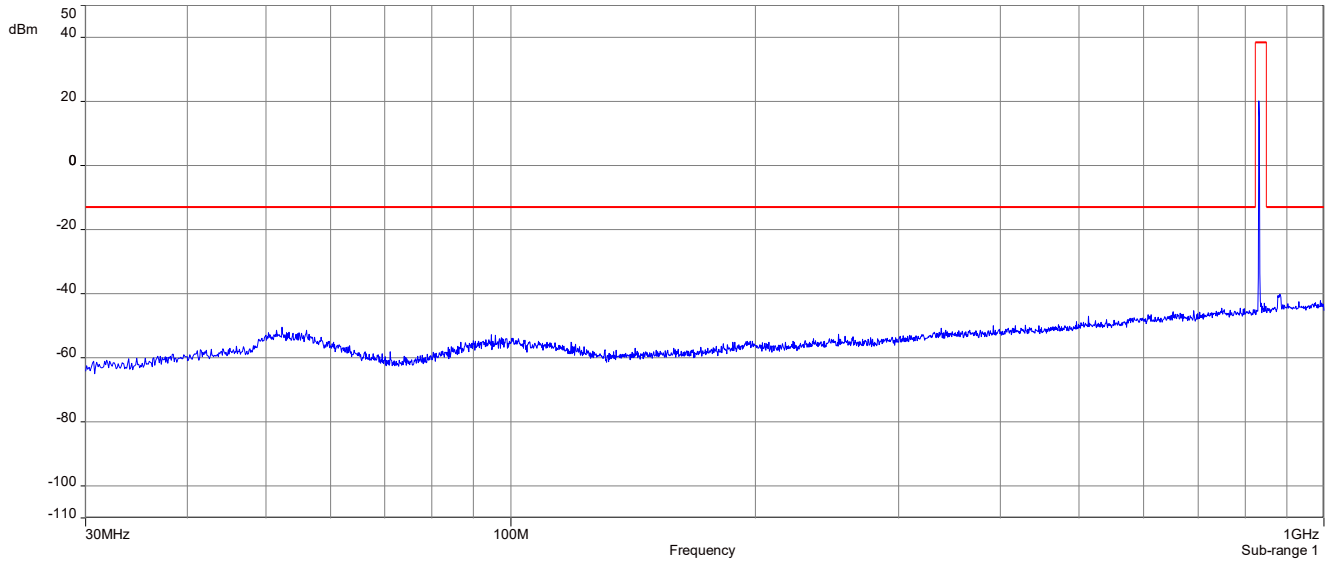
Plots (QPSK):**Plot 1:** Middle channel (9 kHz - 30 MHz), worst case for all LTE bands**Plot 2:** Middle channel (30 MHz – 1 GHz), LTE band 2

Plot 3: Middle channel (1 GHz – 18 GHz) , LTE band 2

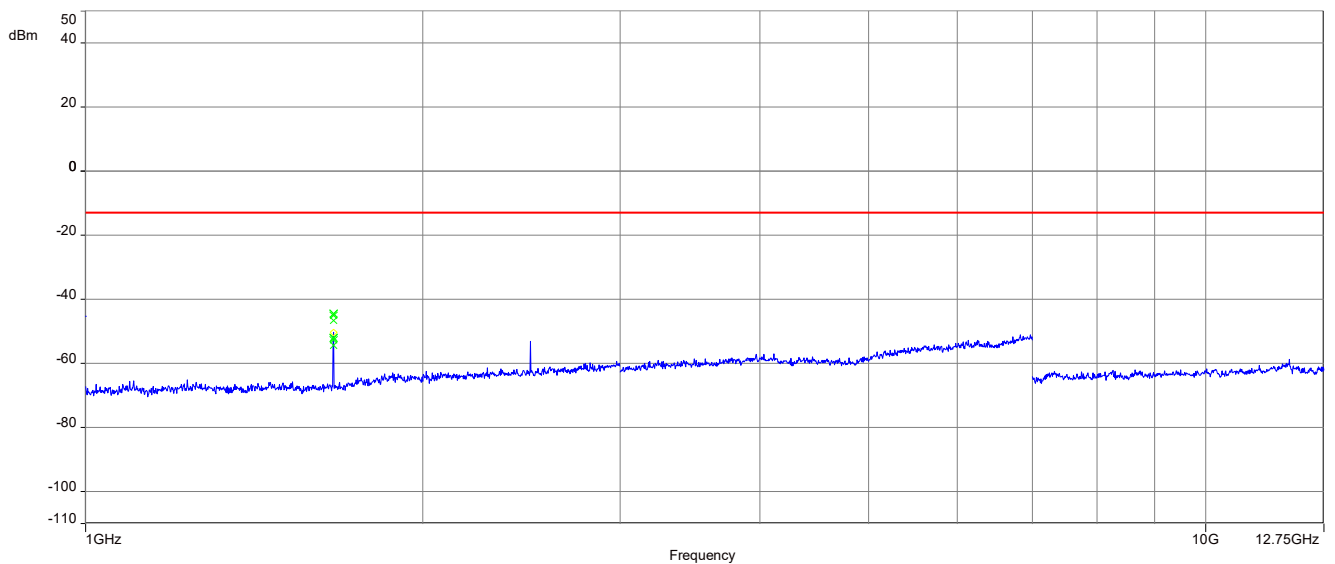
NOTE: The carrier signal is notched.

Plot 4: Middle channel (18 GHz – 26 GHz) , LTE band 2

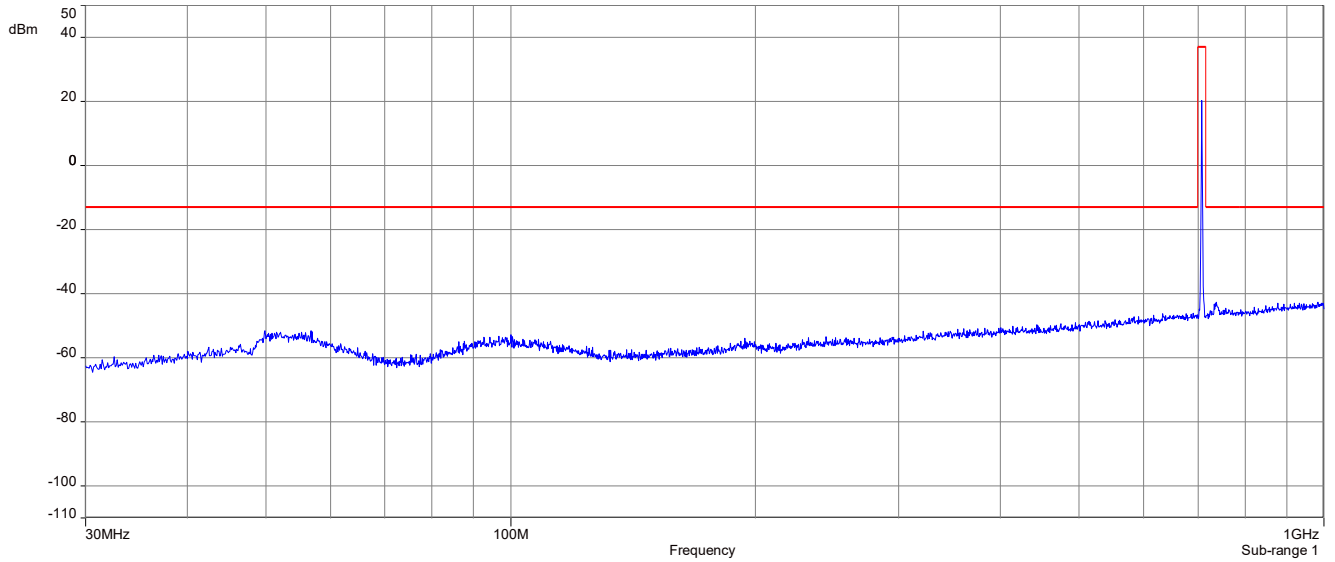
Plot 5: Middle channel (30 MHz – 1 GHz), LTE band 5



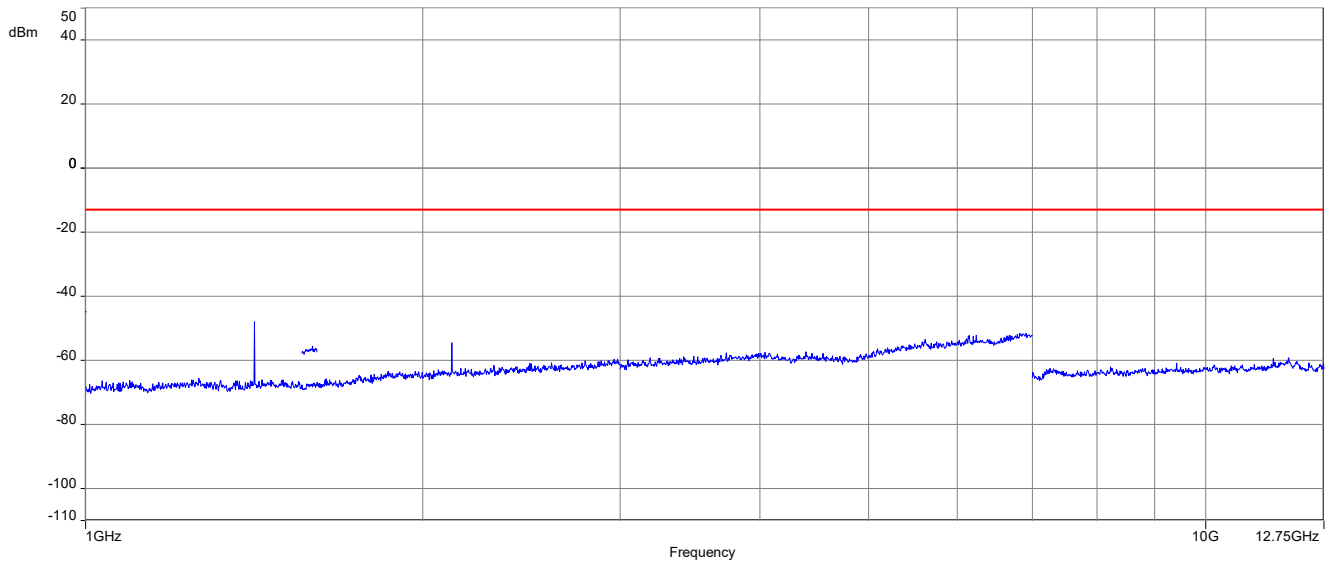
Plot 6: Middle channel (1 GHz – 12.75 GHz), LTE band 5



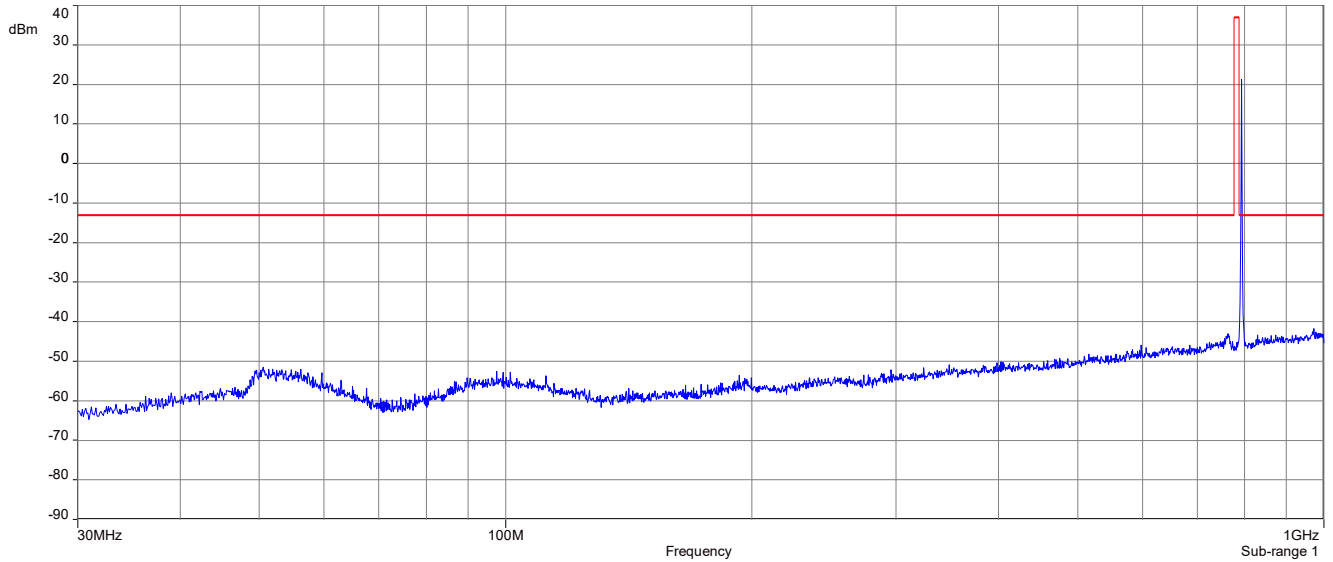
Plot 7: Middle channel (30 MHz – 1 GHz), LTE band 12



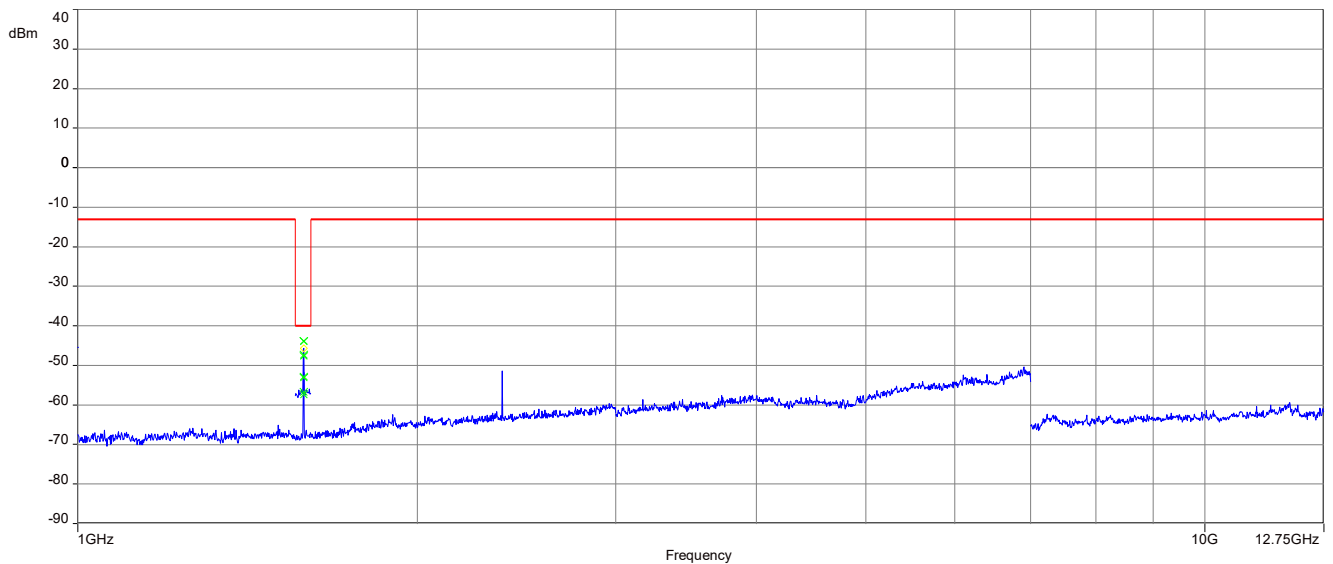
Plot 8: Middle channel (1 GHz – 12.75 GHz), LTE band 12

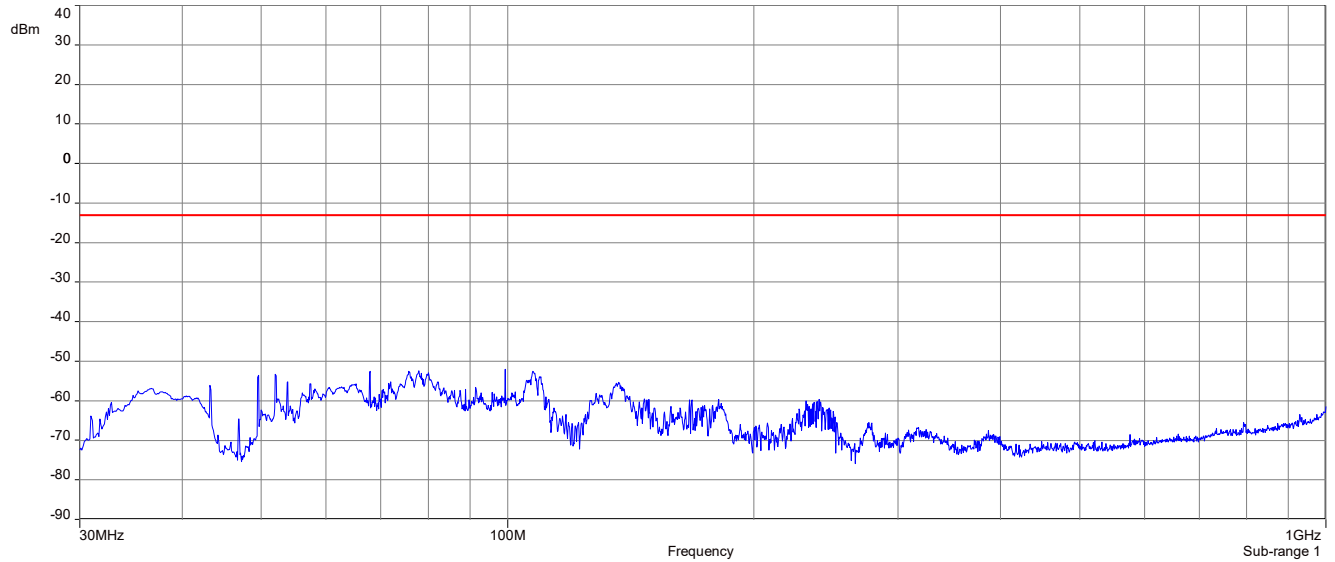
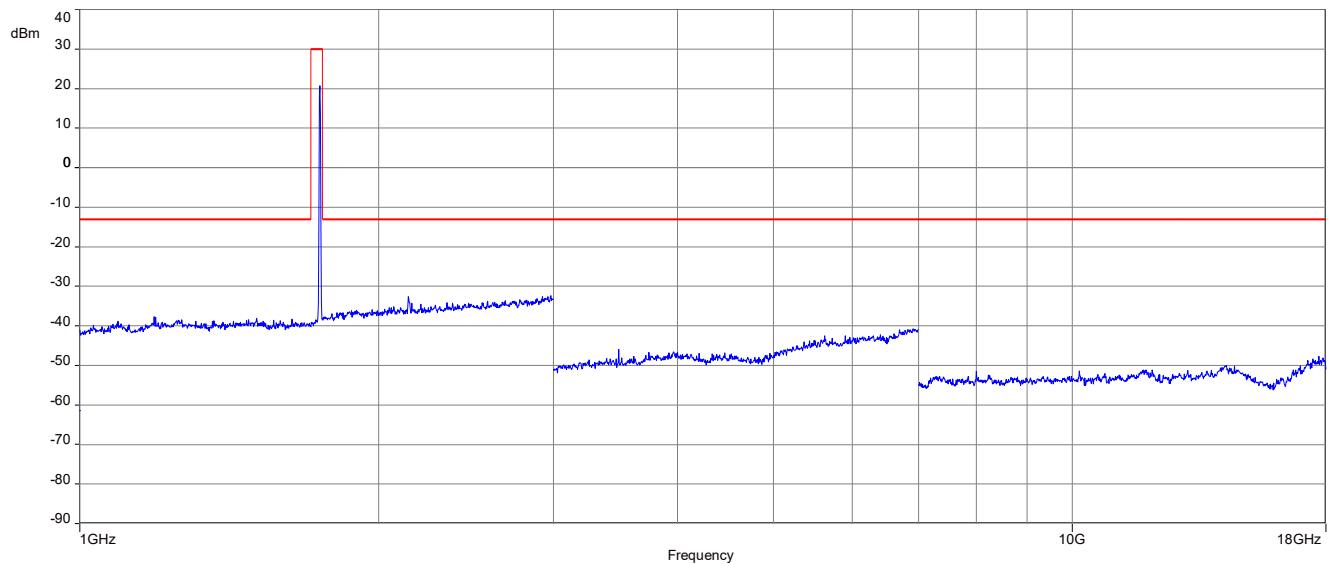


Plot 9: Middle channel (30 MHz – 1 GHz), LTE band 14



Plot 10: Middle channel (1 GHz – 12.75 GHz), LTE band 14



Plot 11: Middle channel (30 MHz – 1 GHz), LTE band 66**Plot 12:** Middle channel (1 GHz – 18 GHz), LTE band 66

14 Glossary

AVG	Average
C	Compliant
C/N₀	Carrier to noise-density ratio, expressed in dB-Hz
CAC	Channel availability check
CW	Clean wave
DC	Duty cycle
DFS	Dynamic frequency selection
DSSS	Dynamic sequence spread spectrum
DUT	Device under test
EN	European Standard
ETSI	European Telecommunications Standards Institute
EMC	Electromagnetic Compatibility
EUT	Equipment under test
FCC	Federal Communications Commission
FCC ID	Combination of Grantee Code and Equipment Product Code
FHSS	Frequency hopping spread spectrum
FVIN	Firmware version identification number
GNSS	Global Navigation Satellite System
GUE	GNSS User Equipment
HMN	Host marketing name
HVIN	Hardware version identification number
HW	Hardware
ISED	Innovation, Science and Economic Development Canada
Inv. No.	Inventory number
MC	Modulated carrier
NA	Not applicable
NC	Not compliant
NOP	Non occupancy period
NP	Not performed
OBW	Occupied bandwidth
OC	Operating channel
OCW	Operating channel bandwidth
OFDM	Orthogonal frequency division multiplexing
OOB	Out of band
OP	Occupancy period
PER	Packet error rate
PMN	Product marketing name
PP	Positive peak
QP	Quasi peak
RLAN	Radio local area network
S/N or SN	Serial number
SW	Software
UUT	Unit under test
WLAN	Wireless local area network

15 Document history

Version	Applied changes	Date of release
R01	Initial release	2026-02-10

END OF TEST REPORT