FCC RADIO TEST REPORT

FCC ID	:	**LHJ-LNADVW**
Equipment	:	**LNADVW**
Brand Name	:	**Continental Automotive Systems**
Model Name	:	**LNADVW**
Applicant	:	**Continental Automotive Systems, Inc.** **21440 W Lake Cook Rd., Deer Park, IL 60010, USA**
Manufacturer	:	**Continental Automotive Systems, Inc.** **21440 W Lake Cook Rd., Deer Park, IL 60010, USA**
Standard	:	**FCC 47 CFR Part 2, 22(H), 24(E), 27**

The product was received on Aug. 30, 2024 and testing was performed from Sep. 18, 2024 to Dec. 10, 2024. We, Sporton International Inc. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval from Sporton International Inc. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Louis Wu

Approved by: Louis Wu

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History of this test report

Report No.	Version	Description	Issue Date
FG483110B	01	Initial issue of report	Nov. 05, 2024
FG483110B	02	Revise Product Specification of Equipment Under Test, Test Mode and appendix A. This report is an updated version, replacing the report issued on Nov. 05, 2024.	Dec. 10, 2024

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.2	§2.1046	Conducted Output Power	Pass	-
	§22.913 (a)(5)	Effective Radiated Power (Band 5)	Pass	
	§27.50 (c)(10)	Effective Radiated Power (Band 17)		
	§24.232 (c)	Equivalent Isotropic Radiated Power (Band 2)		
	§27.50 (d)(4)	Equivalent Isotropic Radiated Power (Band 4)		
3.3	§24.232 (d) §27.50 (d)(5)	Peak-to-Average Ratio	Pass	-
3.4	§2.1049	Occupied Bandwidth	Pass	-
3.5	§2.1051 §22.917 (a) §24.238 (a) §27.53 (g) §27.53 (h)	Conducted Band Edge Measurement (Band 2) (Band 4) (Band 5) (Band 17)	Pass	-
3.6	§2.1051 §22.917 (a) §24.238 (a) §27.53 (g) §27.53 (h)	Conducted Spurious Emission (Band 2) (Band 4) (Band 5) (Band 17)	Pass	-
3.7	§2.1055 §22.355 §24.235 §27.54	Frequency Stability Temperature & Voltage	Pass	-
4.2	§2.1053 §22.917 (a) §24.238 (a) §27.53 (g) §27.53 (h)	Radiated Spurious Emission (Band 2) (Band 4) (Band 5) (Band 17)	Pass	18.44 dB under the limit at 3701.00 MHz

Conformity Assessment Condition:

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the section “Measurement Uncertainty”.

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: Yun Huang

Report Producer: Lucy Wu

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	LNADVW
Brand Name	Continental Automotive Systems
Model Name	LNADVW
FCC ID	LHJ-LNADVW
Installed into the Host	Equipment name: StrLnk2 Brand name: Continental Automotive Systems Model name: LNADVW
EUT supports Radios application	WCDMA/HSPA/LTE/GNSS WLAN 11b/g/n HT20 WLAN 11a/n HT20/HT40
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer.

Support band and evaluated information	
Supported band	B2, B4, B5, B17
Evaluated and Tested band	B2, B4, B5, B17

Power Class		
	PC3	**PC2**
B2	V	
B4	V	
B5	V	
B17	V	

1.2 Product Specification of Equipment Under Test

Product Specification is subject to this standard	
Tx Frequency	LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1785 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 17: 704 MHz ~ 716 MHz
Rx Frequency	LTE Band 2: 1930 MHz ~ 1990 MHz LTE Band 4: 2110 MHz ~ 2155 MHz LTE Band 5: 869 MHz ~ 894 MHz LTE Band 17: 734 MHz ~ 746 MHz
Bandwidth	LTE Band 2: 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 4: 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 5: 1.4MHz / 3MHz / 5MHz / 10MHz LTE Band 17: 5MHz / 10MHz
Maximum Output Power to Antenna	LTE Band 2 : 23.62 dBm LTE Band 4 : 23.57 dBm LTE Band 5 : 24.55 dBm LTE Band 17 : 23.44 dBm
Antenna Type	Dipole Antenna
Antenna Gain	LTE Band 2 : 1.52 dBi LTE Band 4 : 0.68 dBi LTE Band 5 : 0.82 dBi LTE Band 17 : 0.62 dBi
Type of Modulation	QPSK / 16QAM

Remark: The EUT's information above is declared by manufacturer. Please refer to Disclaimer in report summary.

1.3 Modification of EUT

No modifications made to the EUT during the testing.

1.4 Testing Location

Test Site	Sporton International Inc. EMC & Wireless Communications Laboratory
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	**Sporton Site No.**
	TH03-HY
Test Engineer	Cotty Hsu
Temperature (℃)	21.3~23.5
Relative Humidity (%)	50.6~55.4

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	**Sporton Site No.**
	03CH11-HY (TAF Code: 3786)
Test Engineer	Kevin Hsu, Fu Chen and Troye Hsieh
Temperature (℃)	20.1~21.9
Relative Humidity (%)	51.2~65.7
Remark	The Radiated Spurious Emission test item subcontracted to Sporton International Inc. Wensan Laboratory.

Note: The test site complies with ANSI C63.4 2014 requirement.

FCC Designation No.: TW1190 and TW3786

1.5 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ANSI C63.26-2015
- FCC 47 CFR Part 2, 22(H), 24(E), 27
- FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01
- FCC KDB 414788 D01 Radiated Test Site v01r01.

Remark:

1. All the test items were validated and recorded in accordance with the standards without any modification during the testing.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.
3. The TAF code is not including all the FCC KDB listed without accreditation.

2 Test Configuration of Equipment Under Test

2.1 Test Mode

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas. License Digital Systems v03r01 with maximum output power.

For radiated measurement, the measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT and EUT antenna in two degrees (degree 0 and degree 90), and adjusting the measurement antenna orientation, following C63.26 exploratory test procedures and only the worst case emissions were reported in this report..

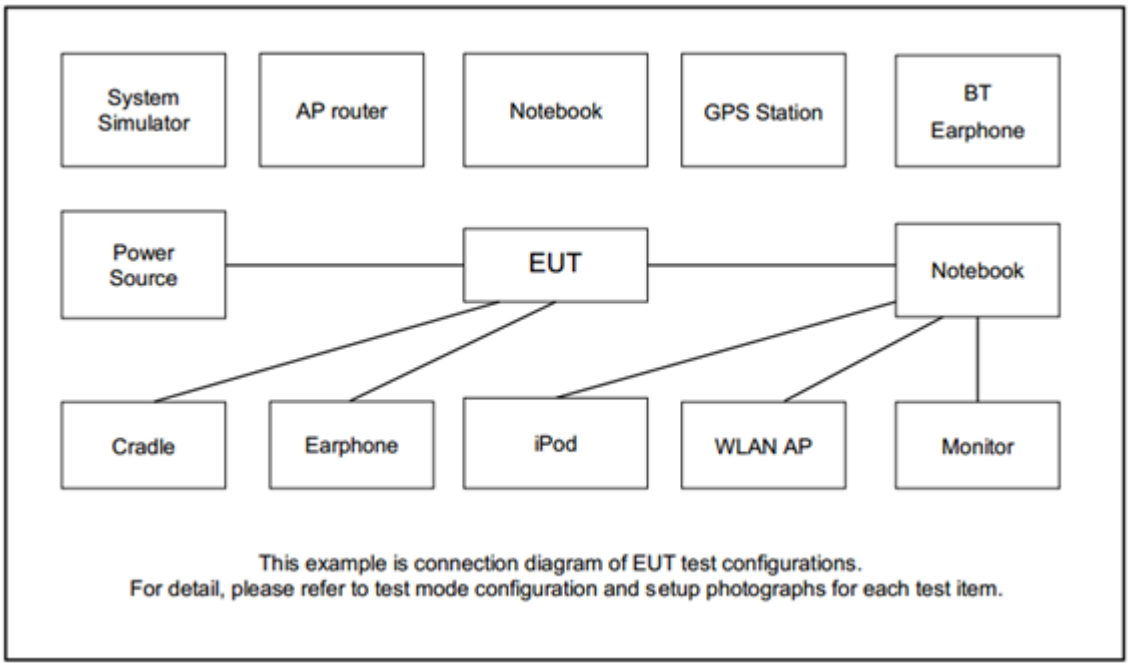
Modulation Type	Modulation
A	QPSK
B	16QAM

Test Item	Modulation Type	Bandwidth	RB Size	Channel
Conducted Power	A, B	All	1, Half, Full	L, M, H
ERP / EIRP	A, B	All	1, Half, Full	L, M, H
PAR	A, B	10 MHz or 20 MHz	Full	M
Bandwidth	A, B	All	Full	M
CBE	A, B	All	1RB Full	L, H
CSE	A	All	1RB	L, M, H
Frequency Stability	A	10 MHz	Full	M
RSE	A	10 MHz	1RB	L, M, H

Remark:

1. Evaluated all the transmitter signal and reporting worst-case configuration among all modulation types.
2. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under dif

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	TP LoadBox	Continental	Subaru T19	N/A	N/A	N/A
3.	DC Power Supply	GW Instek	GPE-2323	N/A	N/A	N/A
4.	Notebook	Dell	Latitude 3400	N/A	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m

2.4 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

Example :

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

= 4.2 + 10 = 14.2 (dB)

2.5 Frequency List of Low/Middle/High Channels

LTE Band 2 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
20	Channel	18700	18900	19100
	Frequency	1860	1880	1900
15	Channel	18675	18900	19125
	Frequency	1857.5	1880	1902.5
10	Channel	18650	18900	19150
	Frequency	1855	1880	1905
5	Channel	18625	18900	19175
	Frequency	1852.5	1880	1907.5
3	Channel	18615	18900	19185
	Frequency	1851.5	1880	1908.5
1.4	Channel	18607	18900	19193
	Frequency	1850.7	1880	1909.3

LTE Band 4 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
20	Channel	20050	20175	20300
	Frequency	1720	1732.5	1745
15	Channel	20025	20175	20325
	Frequency	1717.5	1732.5	1747.5
10	Channel	20000	20175	20350
	Frequency	1715	1732.5	1750
5	Channel	19975	20175	20375
	Frequency	1712.5	1732.5	1752.5
3	Channel	19965	20175	20385
	Frequency	1711.5	1732.5	1753.5
1.4	Channel	19957	20175	20393
	Frequency	1710.7	1732.5	1754.3

LTE Band 5 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
10	Channel	20450	20525	20600
	Frequency	829	836.5	844
5	Channel	20425	20525	20625
	Frequency	826.5	836.5	846.5
3	Channel	20415	20525	20635
	Frequency	825.5	836.5	847.5
1.4	Channel	20407	20525	20643
	Frequency	824.7	836.5	848.3

LTE Band 17 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
10	Channel	23780	23790	23800
	Frequency	709	710	711
5	Channel	23755	23790	23825
	Frequency	706.5	710	713.5

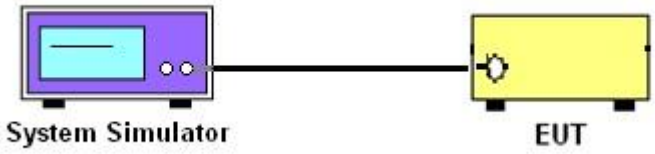
3 Conducted Test Items

3.1 Measuring Instruments

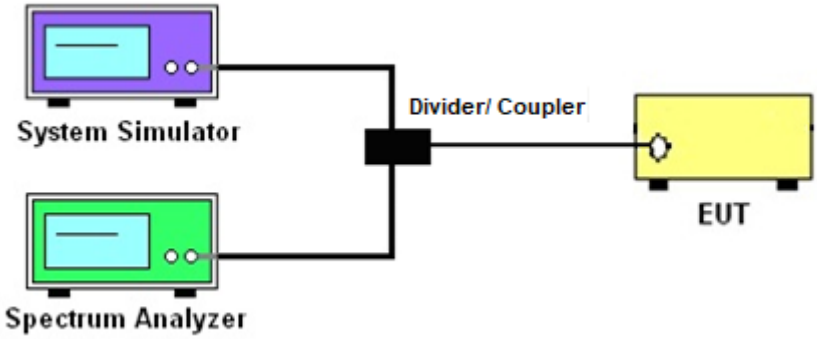
See list of measuring instruments of this test report.

3.1.1 Test Setup

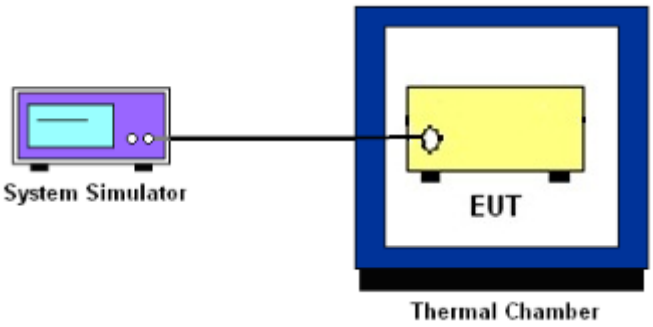
3.1.2 Conducted Output Power



3.1.3 Peak-to-Average Ratio, Occupied Bandwidth ,Conducted Band-Edge and Conducted Spurious Emission



3.1.4 Frequency Stability



3.1.5 Test Result of Conducted Test

Please refer to Appendix A.

3.2 Conducted Output Power and ERP/EIRP

3.2.1 Description of the Conducted Output Power Measurement and ERP/EIRP Measurement

A system simulator was used to establish communication with the EUT. Its parameters were set to force the EUT transmitting at maximum output power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

The ERP of mobile transmitters must not exceed 7 Watts for LTE Band 5

The ERP of mobile transmitters must not exceed 3 Watts for LTE Band 17

The EIRP of mobile transmitters must not exceed 2 Watts for LTE Band 2

The EIRP of mobile transmitters must not exceed 1 Watts for LTE Band 4

According to KDB 412172 D01 Power Approach,

EIRP = $P_T + G_T – L_C$, ERP = EIRP -2.15, where

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

L_C = signal attenuation in the connecting cable between the transmitter and antenna in dB

3.2.2 Test Procedures

1. The transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through the system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure and record the power level from the system simulator.

3.3 Peak-to-Average Ratio

3.3.1 Description of the PAR Measurement

Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks of a digitally modulated signal on a statistical basis. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level. Most contemporary measurement instrumentation include the capability to produce CCDF curves for an input signal provided that the instrument's resolution bandwidth can be set wide enough to accommodate the entire input signal bandwidth. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

3.3.2 Test Procedures

The testing follows ANSI C63.26-2015 Section 5.2.6

1. The EUT was connected to spectrum and system simulator via a power divider.
2. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
3. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
4. Record the deviation as Peak to Average Ratio.

3.4 Occupied Bandwidth

3.4.1 Description of Occupied Bandwidth Measurement

The occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean transmitted power.

The 26 dB emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

3.4.2 Test Procedures

The testing follows ANSI C63.26-2015 Section 5.4.3 (26dB) and Section 5.4.4 (99OB)

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be between two and five times the anticipated OBW.
3. The nominal resolution bandwidth (RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.
4. Set the detection mode to peak, and the trace mode to max hold.
5. Determine the reference value: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace.
   (this is the reference value)
6. Determine the “-26 dB down amplitude” as equal to (Reference Value – X).
7. Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “–X dB down amplitude” determined in step 6. If a marker is below this “-X dB down amplitude” value it shall be placed as close as possible to this value. The OBW is the positive frequency difference between the two markers.
8. Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

3.5 Conducted Band Edge

3.5.1 Description of Conducted Band Edge Measurement

22.917(a)

For operations in the 824 – 849 MHz band, the FCC limit is 43 + 10log10(P[Watts]) dB below the transmitter power P(Watts) in a 100kHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

24.238 (a)

For operations in the 1850-1910 and 1930-1990 MHz band, the FCC limit is 43 + 10log10(P[Watts]) dB below the transmitter power P(Watts) in a 1MHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

27.53 (g)

For operations in the 600MHz band and 698-746 MHz band, the FCC limit is 43 + 10log10(P[Watts]) dB below the transmitter power P(Watts) in a 100 kHz bandwidth. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

27.53 (h)

For operations in the 1710 – 1755 MHz band, 1755-1780 MHz, the FCC limit is 43 + 10log10(P[Watts]) dB below the transmitter power P(Watts) in a 1 MHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

3.5.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 6.1.

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The band edges of low and high channels for the highest RF powers were measured.
3. Set RBW >= 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
4. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.
5. Set spectrum analyzer with RMS detector.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
7. Checked that all the results comply with the emission limit line.
   The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)

3.6 Conducted Spurious Emission

3.6.1 Description of Conducted Spurious Emission Measurement

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10^{th} harmonic.

3.6.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 6.1.

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. The conducted spurious emission for the whole frequency range was taken.
4. Make the measurement with the spectrum analyzer's RBW = 100 kHz if the authorized frequency band/block is at or below 1 GHz and 1 MHz if the authorized frequency band/block is above 1 GH, VBW = 3 * RBW.
5. Set spectrum analyzer with RMS detector.
6. Taking the record of maximum spurious emission.
7. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.7 Frequency Stability

3.7.1 Description of Frequency Stability Measurement

22.355

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5ppm) of the center frequency.

24.235 & 27.54

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

3.7.2 Test Procedures for Temperature Variation

The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.

1. The EUT was set up in the thermal chamber and connected with the system simulator.
2. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
3. With power OFF, the temperature was raised in 10°C step up to 50°C. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

3.7.3 Test Procedures for Voltage Variation

The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.

1. The EUT was placed in a temperature chamber at 20±5° C and connected with the system simulator.
2. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
3. The variation in frequency was measured for the worst case.

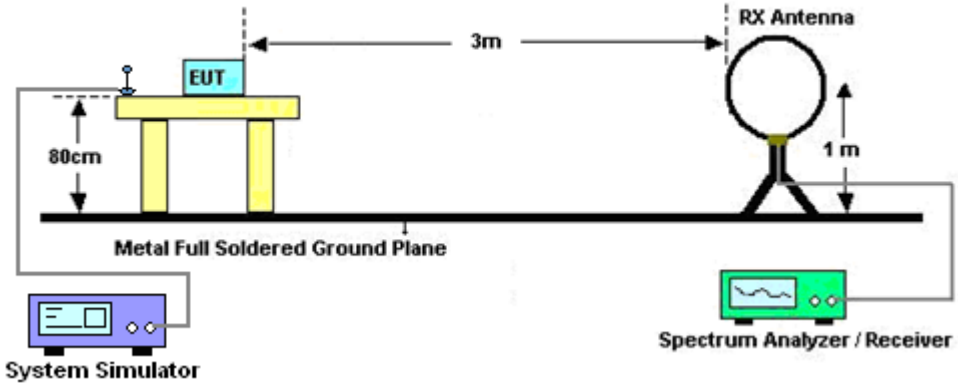
4 Radiated Test Items

4.1 Measuring Instruments

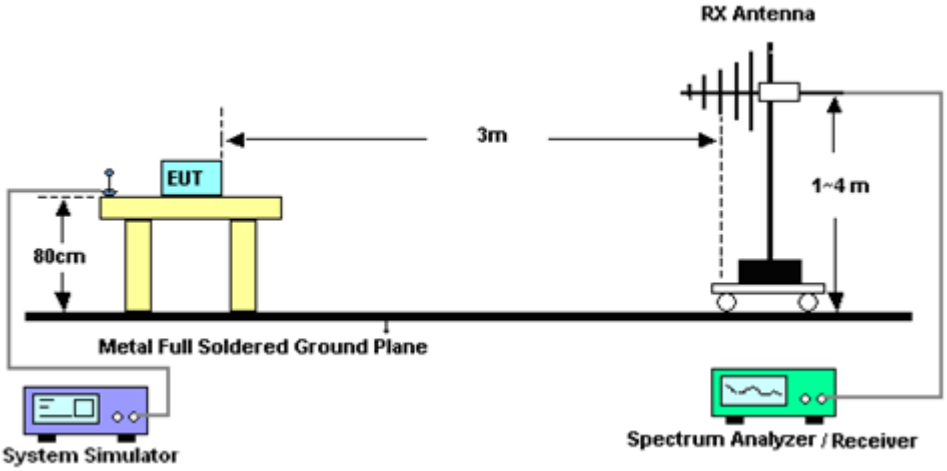
See list of measuring instruments of this test report.

4.1.1 Test Setup

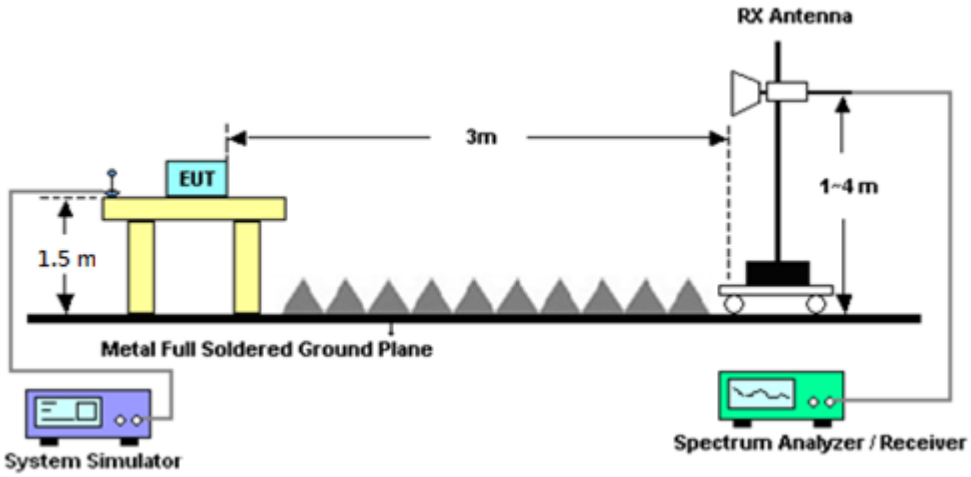
For radiated test below 30MHz



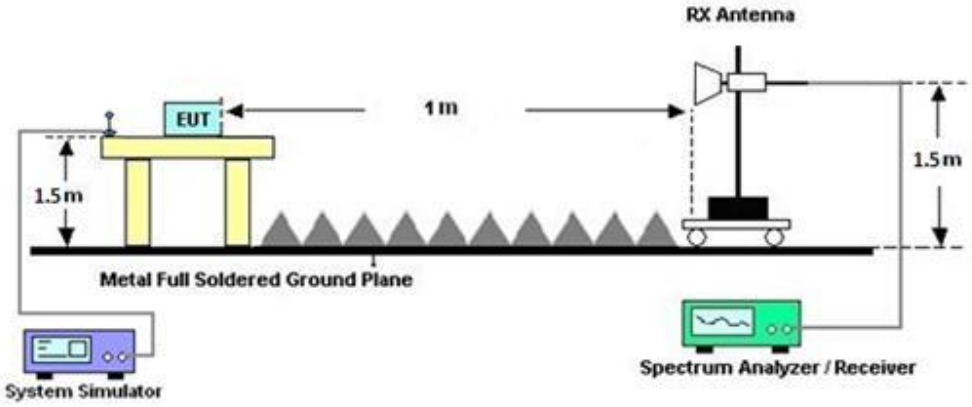
For radiated test from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



4.1.2 Test Result of Radiated Test

Please refer to Appendix B.

Note:

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is adequate comparison measurement of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.

4.2 Radiated Spurious Emission Measurement

4.2.1 Description of Radiated Spurious Emission Measurement

The radiated spurious emission was measured by substitution method according to ANSI C63.26-2015.

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.

The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

4.2.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 7 and ANSI C63.26-2015 section 5.5.4 Radiated measurement using the field strength method.

1. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
6. To convert spectrum reading E(dBuV/m) to EIRP(dBm)

   EIRP(dBm) = Level (dBuV/m) + 20log(d) -104.77,

   where d is the distance at which filed strength limit is specified in the rules
7. Field Strength Level (dBm) = Spectrum Reading (dBm) + Antenna Factor + Cable Loss + Read Level - Preamp Factor.
8. ERP (dBm) = EIRP (dBm) - 2.15
9. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

5 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Bilog Antenna	TESEQ	CBL 6111D & N-6-06	35414 & AT-N0602	30MHz~1GHz	Oct. 07, 2023	Sep. 23, 2024~ Sep. 26, 2024	Oct. 06, 2024	Radiation (03CH11-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Aug. 29, 2024	Sep. 23, 2024~ Sep. 26, 2024	Aug. 28, 2025	Radiation (03CH11-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-01620	1GHz~18GHz	Aug. 28, 2024	Sep. 23, 2024~ Sep. 26, 2024	Aug. 27, 2025	Radiation (03CH11-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	1223	18GHz~40GHz	Jun. 24, 2024	Sep. 23, 2024~ Sep. 26, 2024	Jun. 23, 2025	Radiation (03CH11-HY)
Amplifier	SONOMA	310N	187312	9kHz~1GHz	Dec. 08, 2023	Sep. 23, 2024~ Sep. 26, 2024	Dec. 07, 2024	Radiation (03CH11-HY)
Preamplifier	Keysight	83017A	MY53270080	1GHz~26.5GHz	Mar. 25, 2024	Sep. 23, 2024~ Sep. 26, 2024	Mar. 24, 2025	Radiation (03CH11-HY)
Preamplifier	Jet-Power	JPA0118-55-303	1710001800055007	1GHz~18GHz	Jun. 13, 2024	Sep. 23, 2024~ Sep. 26, 2024	Jun. 12, 2025	Radiation (03CH11-HY)
Preamplifier	EMEC	EM18G40G	060801	18GHz~40GHz	May 27, 2024	Sep. 23, 2024~ Sep. 26, 2024	May 26, 2025	Radiation (03CH11-HY)
Spectrum Analyzer	Keysight	N9010A	MY54200486	10Hz~44GHz	Oct. 05, 2023	Sep. 23, 2024~ Sep. 26, 2024	Oct. 04, 2024	Radiation (03CH11-HY)
EMI Test Receiver	Keysight	N9038A(MXE)	MY55420170	20MHz~8.4GHz	Jul. 19, 2024	Sep. 23, 2024~ Sep. 26, 2024	Jul. 18, 2025	Radiation (03CH11-HY)
Controller	EMEC	EM 1000	N/A	Control Turn table & Ant Mast	N/A	Sep. 23, 2024~ Sep. 26, 2024	N/A	Radiation (03CH11-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1~4m	N/A	Sep. 23, 2024~ Sep. 26, 2024	N/A	Radiation (03CH11-HY)
Turn Table	EMEC	TT 2000	N/A	0~360 Degree	N/A	Sep. 23, 2024~ Sep. 26, 2024	N/A	Radiation (03CH11-HY)
Software	Audix	E3 6.2009-8-24	RK-001053	N/A	N/A	Sep. 23, 2024~ Sep. 26, 2024	N/A	Radiation (03CH11-HY)
Hygrometer	TECPEL	DTM-303B	TP140325	N/A	Dec. 08, 2023	Sep. 23, 2024~ Sep. 26, 2024	Dec. 07, 2024	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	804013/2	30M~40G	May 23, 2024	Sep. 23, 2024~ Sep. 26, 2024	May 22, 2025	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY2859/2	30MHz~40GHz	Mar. 06, 2024	Sep. 23, 2024~ Sep. 26, 2024	Mar. 05, 2025	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803951/2	9K~30M	Mar. 06, 2024	Sep. 23, 2024~ Sep. 26, 2024	Mar. 05, 2025	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803951/2	30M~40G	Mar. 06, 2024	Sep. 23, 2024~ Sep. 26, 2024	Mar. 05, 2025	Radiation (03CH11-HY)
Filter	Wainwright	WHKX12-900-1000-15000-60SS	SN12	1GHz High Pass Filter	Sep. 10, 2024	Sep. 23, 2024~ Sep. 26, 2024	Sep. 09, 2025	Radiation (03CH11-HY)
Filter	Wainwright	WHKX12-2700-3000-18000-60SS	SN3	3GHz High Pass Filter	Sep. 10, 2024	Sep. 23, 2024~ Sep. 26, 2024	Sep. 09, 2025	Radiation (03CH11-HY)

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Radio Communication Analyzer	Anritsu	MT8821C	6262025353	LTE FDD/TDD LTE-2CC DLCA/ULCA	Oct. 01, 2024	Sep. 18, 2024~ Dec. 10, 2024	Sep. 30, 2025	Conducted (TH03-HY)
Thermal Chamber	ESPEC	SH-641	92013720	-40℃ ~90℃	Sep. 06, 2024	Sep. 18, 2024~ Dec. 10, 2024	Sep. 05, 2025	Conducted (TH03-HY)
DC Power Supply	GW Instek	GPP-2323	GES906037	0V~64V : 0A~6A	Nov. 28, 2023	Sep. 18, 2024~ Nov. 26, 2024	Nov. 27, 2024	Conducted (TH03-HY)
DC Power Supply	GW Instek	GPP-2323	GES906037	0V~64V : 0A~6A	Nov. 27, 2024	Nov. 27, 2024~ Dec. 10, 2024	Nov. 26, 2025	Conducted (TH03-HY)
Coupler+10dB+ RFcable	Warison + WoKen + E-Instument	20dB 25W SMA Directional Coupler+ 10dB 18GHz_5W+S FL405_1.5M	#A+#1+#1+#7	1-18GHz	Jan. 02, 2024	Sep. 18, 2024~ Dec. 10, 2024	Jan. 01, 2025	Conducted (TH03-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV40	101905	10Hz~40GHz	Jul. 11, 2024	Sep. 18, 2024~ Dec. 10, 2024	Jul. 10, 2025	Conducted (TH03-HY)
Software	Sporton	LTE Conducted Test Tools	N/A	Conducted Test Item	N/A	Sep. 18, 2024~ Dec. 10, 2024	N/A	Conducted (TH03-HY)
Hygrometer	TECPEL	DTM-303B	TP210073	-10 ~ 50°C / 20 ~ 95%RH	Jun. 05, 2024	Sep. 18, 2024~ Dec. 10, 2024	Jun. 04, 2025	Conducted (TH03-HY)

6 Measurement Uncertainty

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.290 dB**

Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.076 dB**

Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.082 dB**

Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power & ERP/EIRP)

LTE Band 2 Maximum Average Power [dBm] (GT - LC = 1.52 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
20	1	0	QPSK	23.12	23.48	23.46	25.06	0.3206
20	1	49		23.32	23.48	23.51		
20	1	99		23.54	23.52	23.33		
20	50	0		22.05	22.33	22.28		
20	50	24		22.13	22.39	22.21		
20	50	50		22.24	22.34	22.25		
20	100	0		22.12	22.39	22.18		
20	1	0	16-QAM	22.24	22.38	22.37	24.17	0.2612
20	1	49		22.30	22.65	22.42		
20	1	99		22.61	22.61	22.30		
20	50	0		21.08	21.31	21.36		
20	50	24		21.23	21.36	21.21		
20	50	50		21.34	21.31	21.31		
20	100	0		21.21	21.42	21.39		
Limit	EIRP < 2W			Result			Pass	

LTE Band 2 Maximum Average Power [dBm] (GT - LC = 1.52 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
15	1	0	QPSK	23.14	23.48	23.45	25.10	0.3236
15	1	37		23.27	23.57	23.39		
15	1	74		23.49	23.58	23.27		
15	36	0		22.18	22.30	22.35		
15	36	20		22.25	22.39	22.18		
15	36	39		22.25	22.48	22.16		
15	75	0		22.21	22.45	22.25		
15	1	0	16-QAM	22.19	22.53	22.48	24.21	0.2636
15	1	37		22.47	22.69	22.24		
15	1	74		22.51	22.64	22.13		
15	36	0		21.12	21.36	21.42		
15	36	20		21.21	21.46	21.25		
15	36	39		21.25	21.44	21.26		
15	75	0		21.18	21.42	21.32		
Limit	EIRP < 2W			Result			Pass	

LTE Band 2 Maximum Average Power [dBm] (GT - LC = 1.52 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
10	1	0	QPSK	23.12	23.51	23.44	25.03	0.3184
10	1	25		23.24	23.45	23.32		
10	1	49		23.40	23.43	23.25		
10	25	0		22.09	22.37	22.34		
10	25	12		22.31	22.42	22.10		
10	25	25		22.31	22.45	22.33		
10	50	0		22.15	22.37	22.24		
10	1	0	16-QAM	22.28	22.58	22.52	24.12	0.2582
10	1	25		22.39	22.60	22.39		
10	1	49		22.38	22.51	22.16		
10	25	0		21.07	21.43	21.19		
10	25	12		21.29	21.51	21.20		
10	25	25		21.27	21.43	21.35		
10	50	0		21.16	21.34	21.22		
Limit	EIRP < 2W			Result			Pass	

LTE Band 2 Maximum Average Power [dBm] (GT - LC = 1.52 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
5	1	0	QPSK	23.24	23.62	23.39	25.14	0.3266
5	1	12		23.07	23.49	23.36		
5	1	24		23.24	23.48	23.16		
5	12	0		22.20	22.51	22.42		
5	12	7		22.17	22.60	22.37		
5	12	13		22.23	22.64	22.30		
5	25	0		22.16	22.53	22.33		
5	1	0	16-QAM	22.21	22.50	22.28	24.20	0.2630
5	1	12		22.08	22.68	22.28		
5	1	24		22.30	22.60	22.19		
5	12	0		21.29	21.54	21.40		
5	12	7		21.18	21.58	21.45		
5	12	13		21.29	21.62	21.39		
5	25	0		21.14	21.52	21.32		
Limit	EIRP < 2W			Result			Pass	

LTE Band 2 Maximum Average Power [dBm] (GT - LC = 1.52 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
3	1	0	QPSK	23.24	23.49	23.48	25.01	0.3170
3	1	8		23.15	23.48	23.27		
3	1	14		23.26	23.44	23.17		
3	8	0		22.24	22.59	22.44		
3	8	4		22.25	22.60	22.35		
3	8	7		22.18	22.65	22.33		
3	15	0		22.17	22.63	22.29		
3	1	0	16-QAM	22.17	22.59	22.30	24.11	0.2576
3	1	8		22.26	22.55	22.35		
3	1	14		22.32	22.58	22.09		
3	8	0		21.27	21.54	21.37		
3	8	4		21.20	21.49	21.32		
3	8	7		21.22	21.48	21.24		
3	15	0		21.27	21.51	21.32		
Limit	EIRP < 2W			Result			Pass	

LTE Band 2 Maximum Average Power [dBm] (GT - LC = 1.52 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
1.4	1	0	QPSK	23.18	23.49	23.25	25.09	0.3228
1.4	1	3		23.18	23.57	23.28		
1.4	1	5		23.24	23.57	23.20		
1.4	3	0		23.19	23.50	23.31		
1.4	3	1		23.22	23.51	23.26		
1.4	3	3		23.23	23.52	23.18		
1.4	6	0		22.24	22.63	22.25		
1.4	1	0	16-QAM	22.19	22.39	22.37	24.14	0.2594
1.4	1	3		22.25	22.53	22.23		
1.4	1	5		22.13	22.49	22.23		
1.4	3	0		22.29	22.60	22.34		
1.4	3	1		22.23	22.62	22.31		
1.4	3	3		22.25	22.56	22.29		
1.4	6	0		21.31	21.70	21.39		
Limit	EIRP < 2W			Result			Pass	

LTE Band 4 Maximum Average Power [dBm] (GT - LC = 0.68 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
20	1	0	QPSK	23.40	23.35	23.35	24.24	0.2655
20	1	49		23.40	23.43	23.51		
20	1	99		23.55	23.56	23.54		
20	50	0		22.30	22.19	22.31		
20	50	24		22.25	22.20	22.41		
20	50	50		22.19	22.39	22.40		
20	100	0		22.34	22.29	22.37		
20	1	0	16-QAM	22.19	22.41	22.46	23.35	0.2163
20	1	49		22.49	22.43	22.67		
20	1	99		22.52	22.64	22.49		
20	50	0		21.25	21.19	21.29		
20	50	24		21.20	21.27	21.37		
20	50	50		21.27	21.38	21.34		
20	100	0		21.30	21.31	21.33		
Limit	EIRP < 1W			Result			Pass	

LTE Band 4 Maximum Average Power [dBm] (GT - LC = 0.68 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
15	1	0	QPSK	23.35	23.35	23.50	24.24	0.2655
15	1	37		23.41	23.53	23.52		
15	1	74		23.48	23.56	23.50		
15	36	0		22.38	22.35	22.45		
15	36	20		22.35	22.35	22.41		
15	36	39		22.30	22.42	22.27		
15	75	0		22.30	22.30	22.28		
15	1	0	16-QAM	22.23	22.41	22.37	23.27	0.2123
15	1	37		22.42	22.38	22.50		
15	1	74		22.51	22.59	22.40		
15	36	0		21.31	21.23	21.40		
15	36	20		21.29	21.42	21.42		
15	36	39		21.25	21.38	21.35		
15	75	0		21.27	21.26	21.28		
Limit	EIRP < 1W			Result			Pass	

LTE Band 4 Maximum Average Power [dBm] (GT - LC = 0.68 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
10	1	0	QPSK	23.34	23.44	23.56	24.24	0.2655
10	1	25		23.46	23.38	23.53		
10	1	49		23.52	23.54	23.46		
10	25	0		22.38	22.38	22.51		
10	25	12		22.43	22.41	22.37		
10	25	25		22.47	22.42	22.38		
10	50	0		22.28	22.31	22.31		
10	1	0	16-QAM	22.20	22.59	22.62	23.30	0.2138
10	1	25		22.54	22.61	22.48		
10	1	49		22.51	22.51	22.38		
10	25	0		21.34	21.26	21.48		
10	25	12		21.38	21.38	21.35		
10	25	25		21.33	21.43	21.39		
10	50	0		21.23	21.21	21.28		
Limit	EIRP < 1W			Result			Pass	

LTE Band 4 Maximum Average Power [dBm] (GT - LC = 0.68 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
5	1	0	QPSK	23.25	23.46	23.45	24.17	0.2612
5	1	12		23.41	23.43	23.45		
5	1	24		23.46	23.49	23.46		
5	12	0		22.39	22.47	22.49		
5	12	7		22.44	22.46	22.41		
5	12	13		22.44	22.49	22.43		
5	25	0		22.40	22.42	22.38		
5	1	0	16-QAM	22.40	22.54	22.51	23.26	0.2118
5	1	12		22.50	22.41	22.36		
5	1	24		22.51	22.58	22.29		
5	12	0		21.35	21.53	21.47		
5	12	7		21.50	21.45	21.51		
5	12	13		21.52	21.50	21.42		
5	25	0		21.36	21.38	21.36		
Limit	EIRP < 1W			Result			Pass	

LTE Band 4 Maximum Average Power [dBm] (GT - LC = 0.68 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
3	1	0	QPSK	23.38	23.45	23.36	24.25	0.2661
3	1	8		23.43	23.47	23.39		
3	1	14		23.37	23.57	23.42		
3	8	0		22.48	22.54	22.51		
3	8	4		22.56	22.57	22.41		
3	8	7		22.50	22.53	22.48		
3	15	0		22.49	22.51	22.46		
3	1	0	16-QAM	22.41	22.42	22.46	23.14	0.2061
3	1	8		22.42	22.38	22.36		
3	1	14		22.46	22.38	22.35		
3	8	0		21.40	21.40	21.43		
3	8	4		21.47	21.38	21.44		
3	8	7		21.38	21.40	21.37		
3	15	0		21.49	21.50	21.44		
Limit	EIRP < 1W			Result			Pass	

LTE Band 4 Maximum Average Power [dBm] (GT - LC = 0.68 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
1.4	1	0	QPSK	23.36	23.52	23.33	24.22	0.2642
1.4	1	3		23.42	23.44	23.34		
1.4	1	5		23.36	23.54	23.40		
1.4	3	0		23.35	23.48	23.37		
1.4	3	1		23.36	23.49	23.38		
1.4	3	3		23.36	23.48	23.36		
1.4	6	0		22.39	22.50	22.45		
1.4	1	0	16-QAM	22.35	22.51	22.46	23.25	0.2113
1.4	1	3		22.40	22.57	22.43		
1.4	1	5		22.26	22.56	22.43		
1.4	3	0		22.36	22.51	22.41		
1.4	3	1		22.43	22.53	22.45		
1.4	3	3		22.48	22.49	22.36		
1.4	6	0		21.40	21.56	21.52		
Limit	EIRP < 1W			Result			Pass	

LTE Band 5 Maximum Average Power [dBm] (GT - LC = 0.82 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP (W)
10	1	0	QPSK	24.39	24.26	24.52	23.19	0.2084
10	1	25		24.30	24.40	24.27		
10	1	49		24.41	24.49	24.35		
10	25	0		23.33	23.37	23.27		
10	25	12		23.42	23.41	23.43		
10	25	25		23.28	23.36	23.35		
10	50	0		23.23	23.32	23.23		
10	1	0	16-QAM	23.44	23.30	23.35	22.11	0.1626
10	1	25		23.43	23.26	23.28		
10	1	49		23.20	23.29	23.39		
10	25	0		22.36	22.36	22.29		
10	25	12		22.46	22.40	22.35		
10	25	25		22.25	22.30	22.30		
10	50	0		22.21	22.19	22.28		
Limit	ERP < 7W			Result			Pass	

LTE Band 5 Maximum Average Power [dBm] (GT - LC = 0.82 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP (W)
5	1	0	QPSK	24.42	24.30	24.55	23.22	0.2099
5	1	12		24.55	24.40	24.38		
5	1	24		24.28	24.41	24.39		
5	12	0		23.50	23.41	23.39		
5	12	7		23.54	23.47	23.48		
5	12	13		23.55	23.45	23.38		
5	25	0		23.43	23.40	23.28		
5	1	0	16-QAM	23.35	23.31	23.43	22.24	0.1675
5	1	12		23.57	23.37	23.29		
5	1	24		23.30	23.34	23.36		
5	12	0		22.53	22.38	22.44		
5	12	7		22.59	22.40	22.35		
5	12	13		22.49	22.42	22.44		
5	25	0		22.37	22.36	22.35		
Limit	ERP < 7W			Result			Pass	

LTE Band 5 Maximum Average Power [dBm] (GT - LC = 0.82 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP (W)
3	1	0	QPSK	24.46	24.35	24.29	23.20	0.2089
3	1	8		24.50	24.31	24.33		
3	1	14		24.53	24.30	24.32		
3	8	0		23.55	23.37	23.43		
3	8	4		23.43	23.37	23.37		
3	8	7		23.55	23.41	23.42		
3	15	0		23.54	23.39	23.38		
3	1	0	16-QAM	23.48	23.27	23.38	22.18	0.1652
3	1	8		23.43	23.40	23.43		
3	1	14		23.51	23.32	23.31		
3	8	0		22.42	22.34	22.37		
3	8	4		22.39	22.36	22.40		
3	8	7		22.55	22.33	22.37		
3	15	0		22.41	22.37	22.37		
Limit	ERP < 7W			Result			Pass	

LTE Band 5 Maximum Average Power [dBm] (GT - LC = 0.82 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP (W)
1.4	1	0	QPSK	24.37	24.22	24.35	23.12	0.2051
1.4	1	3		24.39	24.36	24.26		
1.4	1	5		24.45	24.38	24.35		
1.4	3	0		24.42	24.36	24.43		
1.4	3	1		24.38	24.37	24.40		
1.4	3	3		24.33	24.35	24.35		
1.4	6	0		23.39	23.50	23.45		
1.4	1	0	16-QAM	23.47	23.52	23.26	22.19	0.1656
1.4	1	3		23.36	23.45	23.22		
1.4	1	5		23.41	23.31	23.41		
1.4	3	0		23.40	23.48	23.42		
1.4	3	1		23.46	23.45	23.40		
1.4	3	3		23.45	23.46	23.46		
1.4	6	0		22.50	22.43	22.46		
Limit	ERP < 7W			Result			Pass	

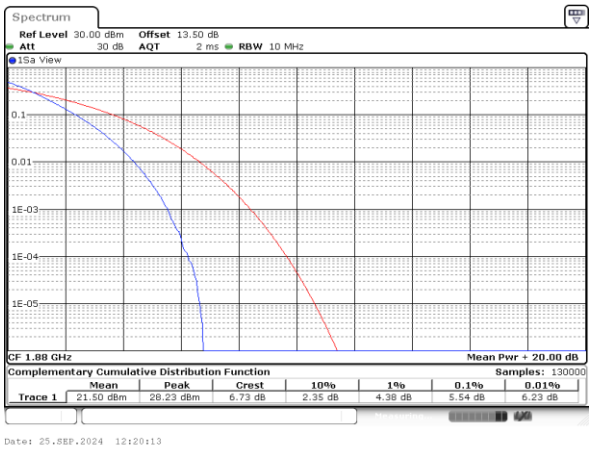
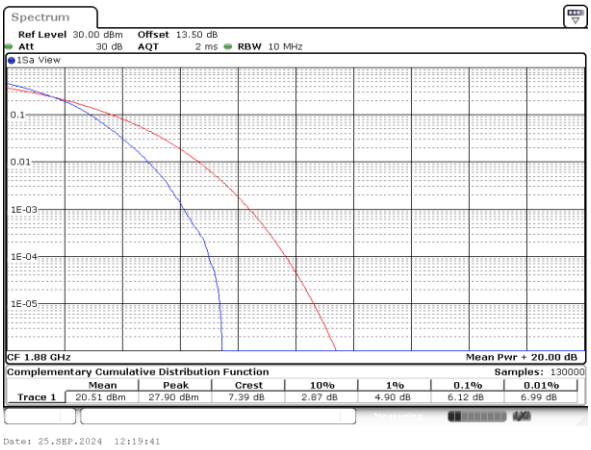
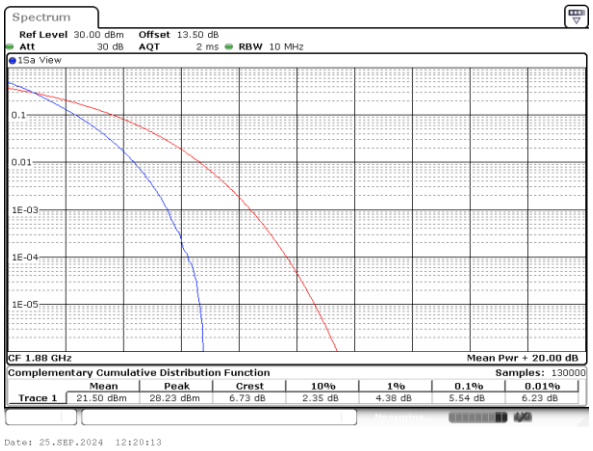
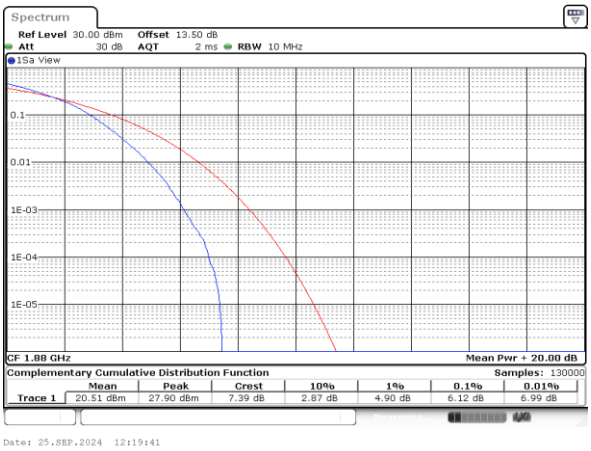
LTE Band 17 Maximum Average Power [dBm] (GT - LC = 0.62 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP (W)
10	1	0	QPSK	23.14	23.05	23.12	21.85	0.1531
10	1	25		23.20	23.24	23.21		
10	1	49		23.23	23.20	23.38		
10	25	0		22.07	22.21	22.37		
10	25	12		22.29	22.30	22.08		
10	25	25		22.17	22.14	22.00		
10	50	0		22.24	22.14	21.97		
10	1	0	16-QAM	22.06	22.17	22.04	20.82	0.1208
10	1	25		22.35	22.34	22.16		
10	1	49		22.11	22.18	22.30		
10	25	0		21.07	21.21	21.26		
10	25	12		21.30	21.21	21.09		
10	25	25		21.17	21.13	20.97		
10	50	0		21.23	21.14	21.07		
Limit	ERP < 3W			Result			Pass	

LTE Band 17 Maximum Average Power [dBm] (GT - LC = 0.62 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP (W)
5	1	0	QPSK	22.99	23.19	23.30	21.91	0.1552
5	1	12		23.14	23.32	23.13		
5	1	24		23.23	23.33	23.44		
5	12	0		22.07	22.28	22.32		
5	12	7		22.14	22.35	22.22		
5	12	13		22.20	22.14	22.24		
5	25	0		22.09	22.16	22.05		
5	1	0	16-QAM	21.96	22.28	22.38	20.85	0.1216
5	1	12		22.09	22.36	22.09		
5	1	24		22.23	22.15	22.27		
5	12	0		21.13	21.28	21.29		
5	12	7		21.18	21.35	21.17		
5	12	13		21.21	21.16	21.32		
5	25	0		21.08	21.18	21.12		
Limit	ERP < 3W			Result			Pass	

LTE Band 2

Peak-to-Average Ratio

Mode	LTE Band 2 / 10MHz		LTE Band 2 / 20MHz		
Mod.	QPSK	16QAM	QPSK	16QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Full RB	Result
Middle CH	5.54	6.12	5.54	6.12	PASS

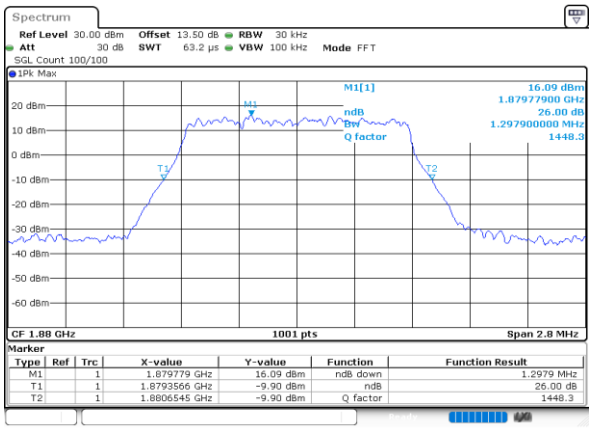
LTE Band 2 / 10MHz / QPSK	LTE Band 2 / 10MHz / 16QAM
Middle Channel / Full RB	Middle Channel / Full RB
	
LTE Band 2 / 20MHz / QPSK	LTE Band 2 / 20MHz / 16QAM
Middle Channel / Full RB	Middle Channel / Full RB
	

26dB Bandwidth

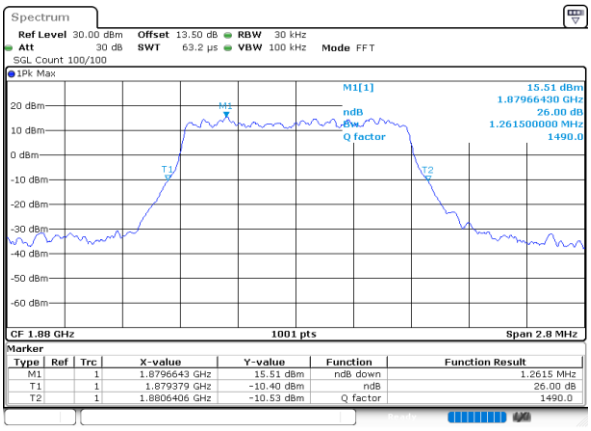
Mode	LTE Band 2 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	1.29	1.26	3.08	3.03	5.08	4.94	9.66	9.81	14.50	14.62	19.18	19.38

LTE Band 2

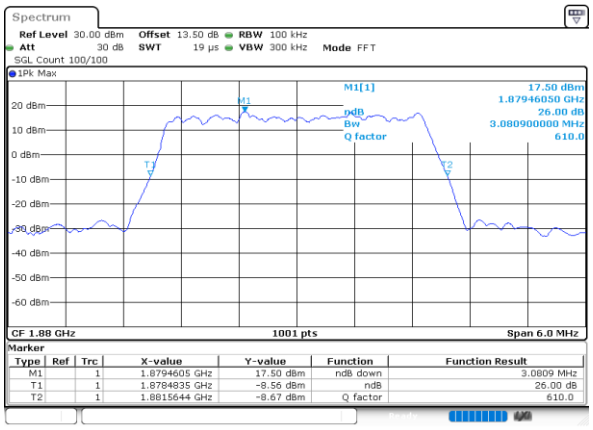
Middle Channel / 1.4MHz / QPSK



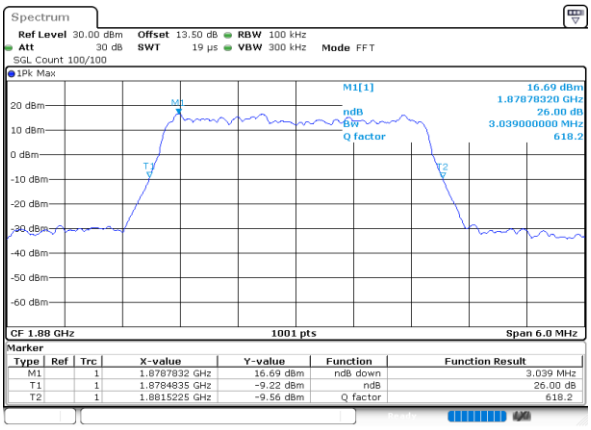
Middle Channel / 1.4MHz / 16QAM



Middle Channel / 3MHz / QPSK

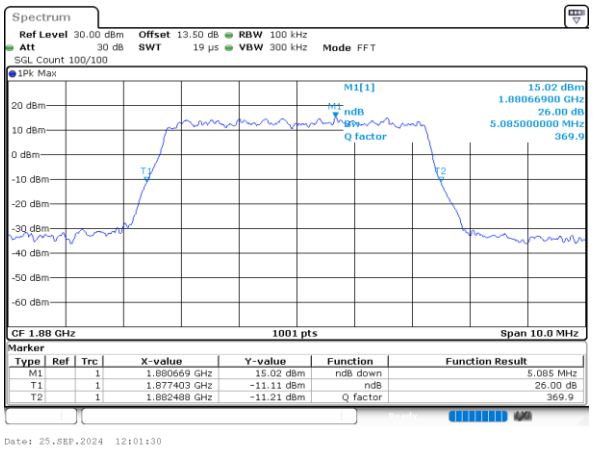


Middle Channel / 3MHz / 16QAM

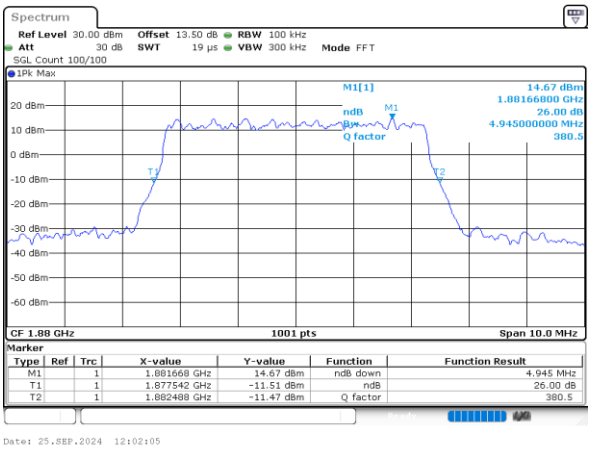


LTE Band 2

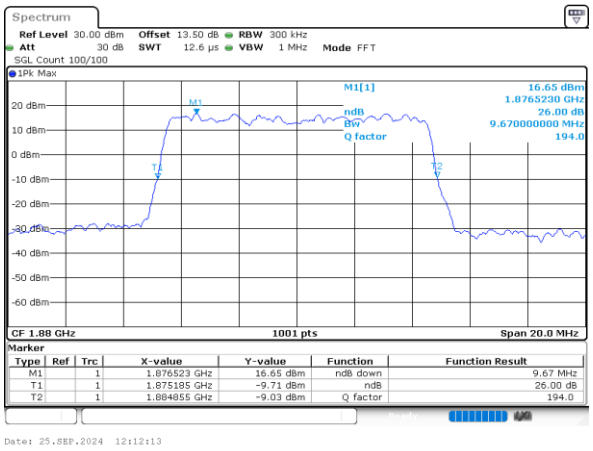
Middle Channel / 5MHz / QPSK



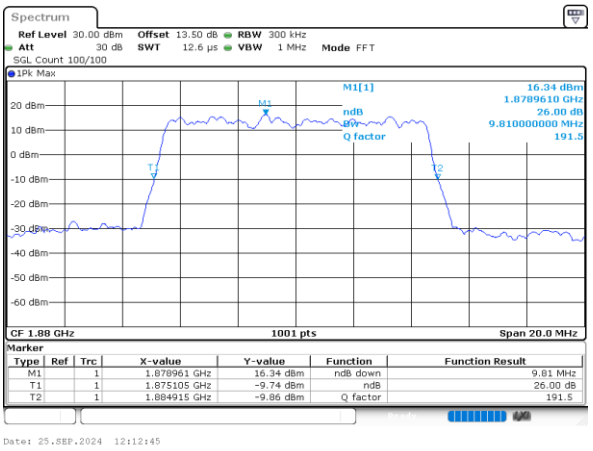
Middle Channel / 5MHz / 16QAM



Middle Channel / 10MHz / QPSK

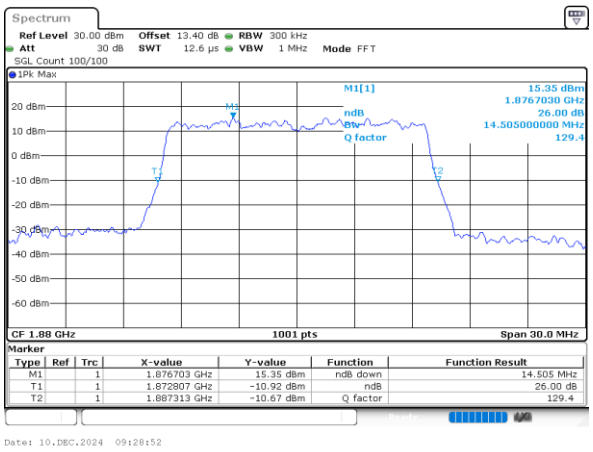


Middle Channel / 10MHz / 16QAM

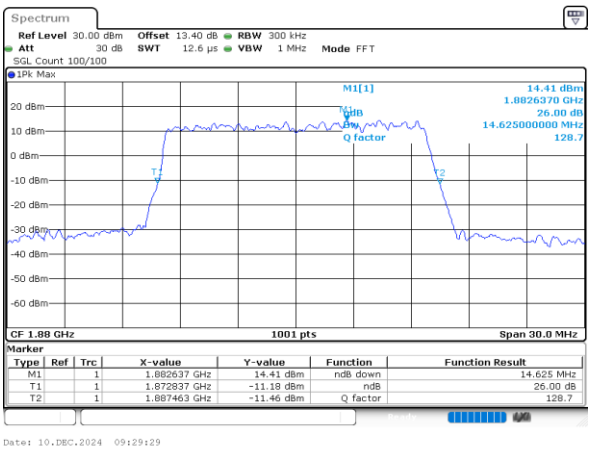


LTE Band 2

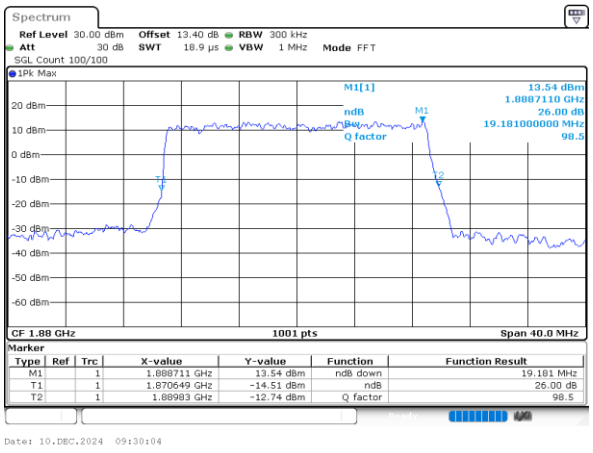
Middle Channel / 15MHz / QPSK



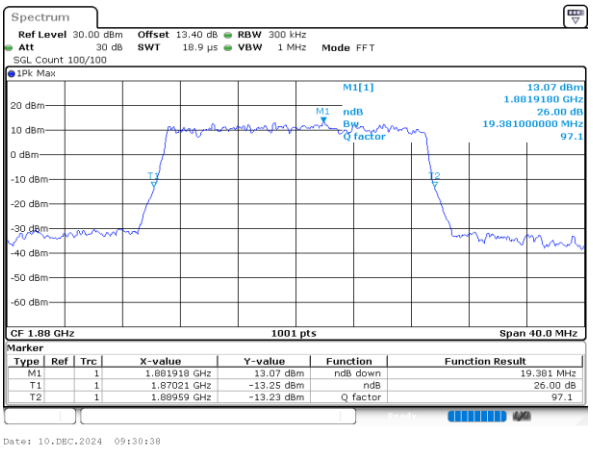
Middle Channel / 15MHz / 16QAM



Middle Channel / 20MHz / QPSK



Middle Channel / 20MHz / 16QAM

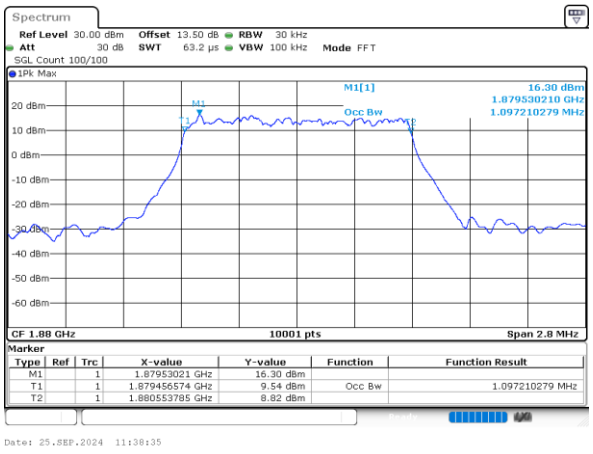


Occupied Bandwidth

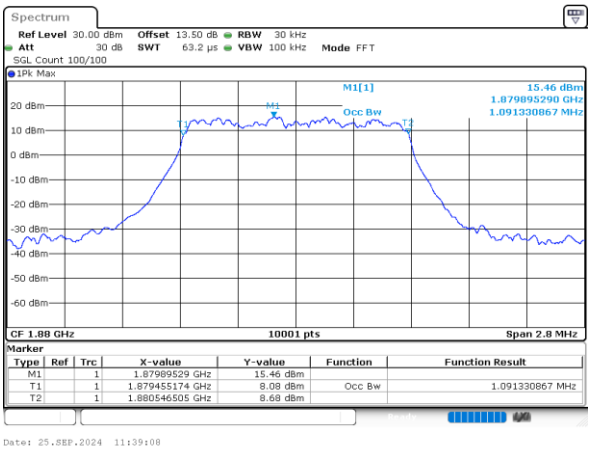
Mode	LTE Band 2 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	1.09	1.09	2.72	2.73	4.48	4.47	9.06	8.95	13.44	13.43	17.87	17.86

LTE Band 2

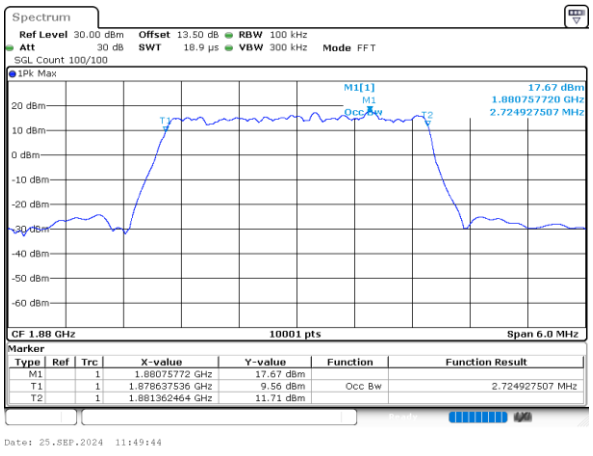
Middle Channel / 1.4MHz / QPSK



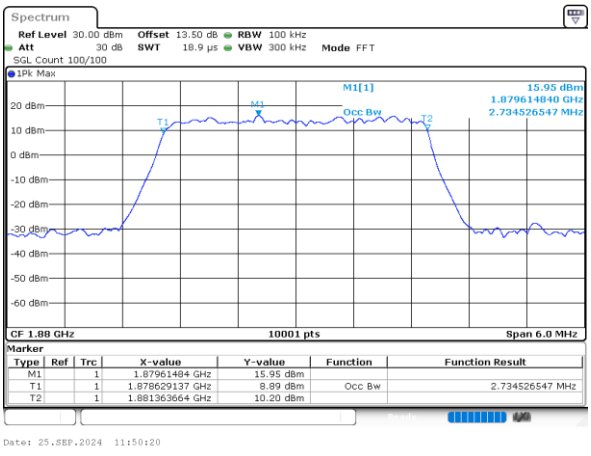
Middle Channel / 1.4MHz / 16QAM



Middle Channel / 3MHz / QPSK

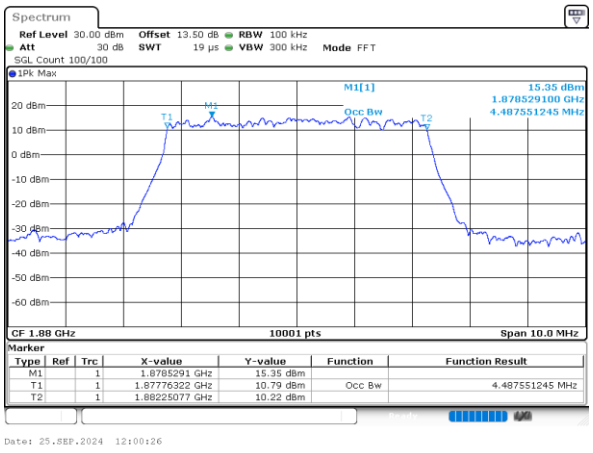


Middle Channel / 3MHz / 16QAM

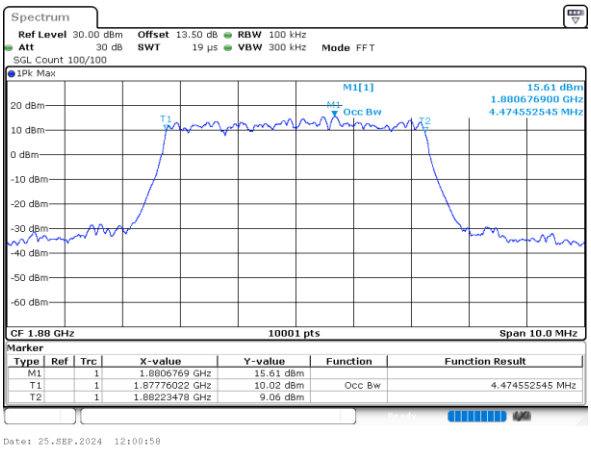


LTE Band 2

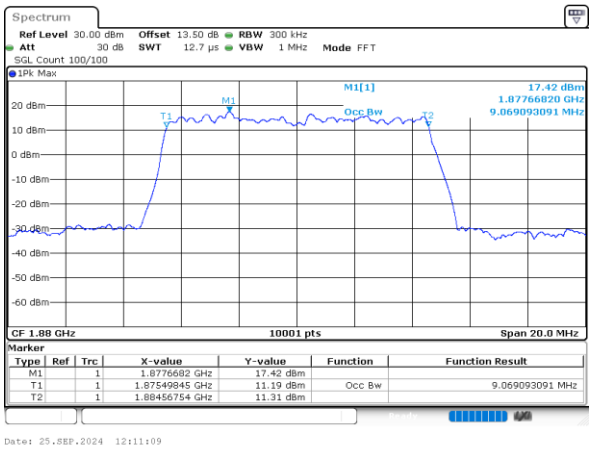
Middle Channel / 5MHz / QPSK



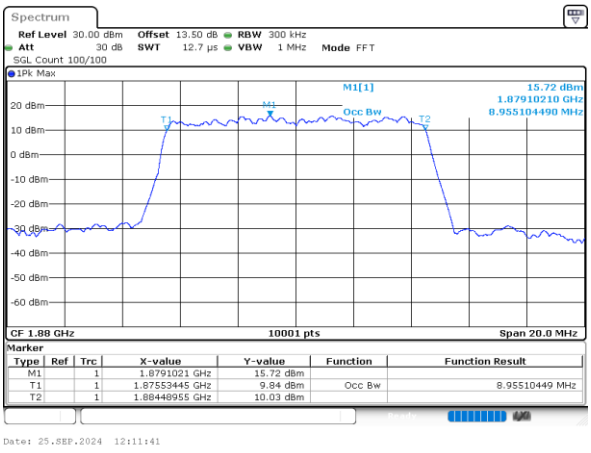
Middle Channel / 5MHz / 16QAM



Middle Channel / 10MHz / QPSK

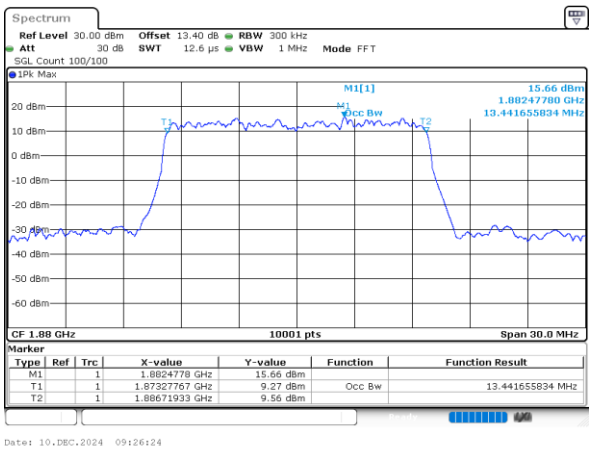


Middle Channel / 10MHz / 16QAM

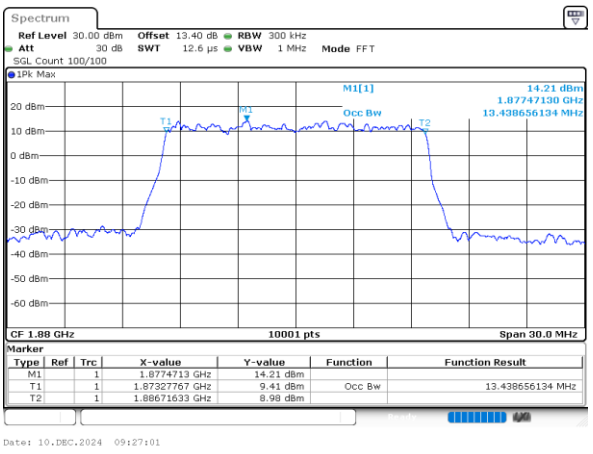


LTE Band 2

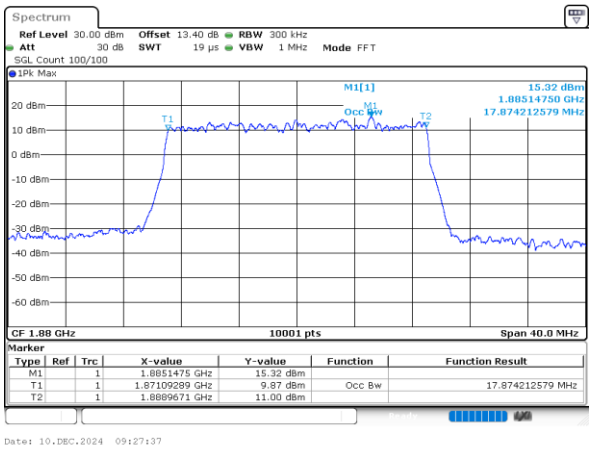
Middle Channel / 15MHz / QPSK



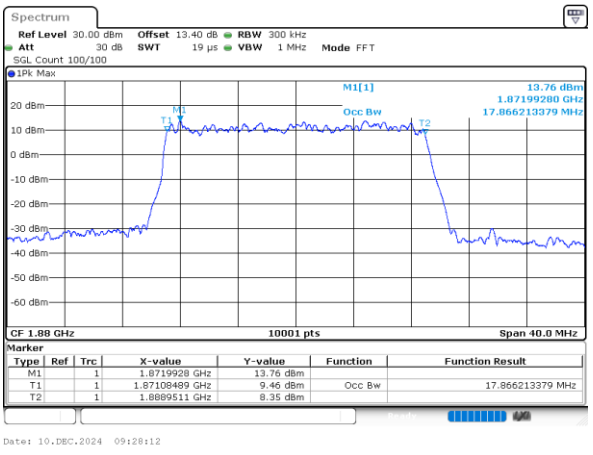
Middle Channel / 15MHz / 16QAM



Middle Channel / 20MHz / QPSK



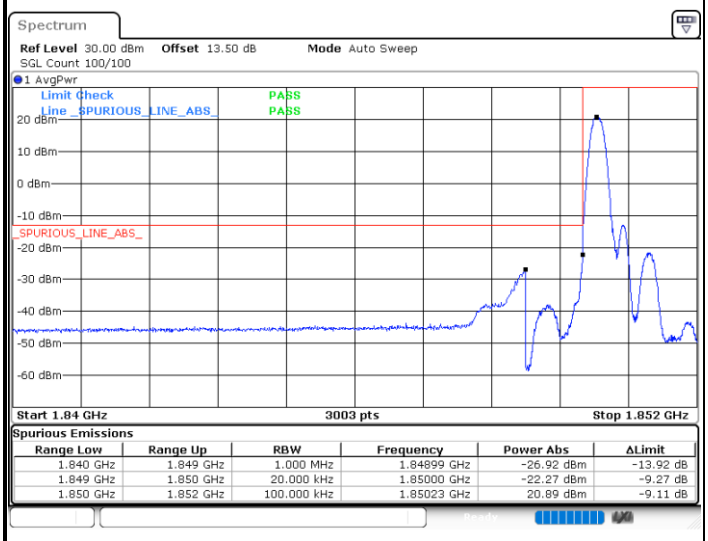
Middle Channel / 20MHz / 16QAM



Conducted Band Edge

LTE Band 2 / 1.4MHz / QPSK

Lowest Band Edge / 1RB

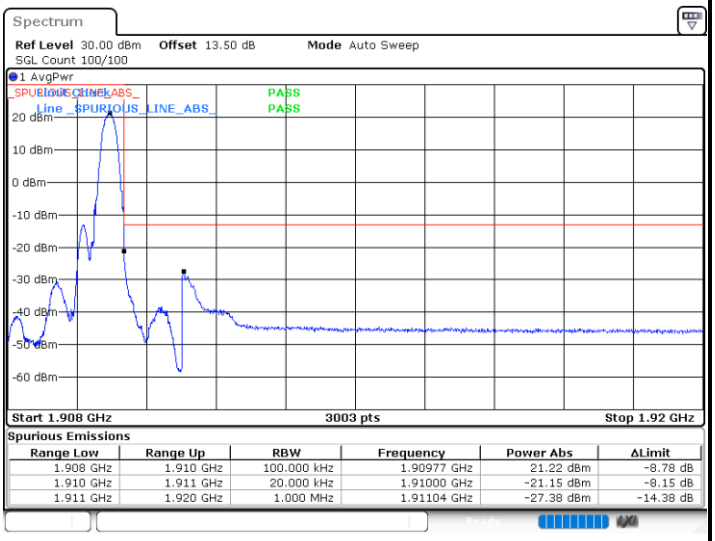


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84899 GHz	-26.92 dBm	-13.92 dB
1.849 GHz	1.850 GHz	20.000 kHz	1.85000 GHz	-22.27 dBm	-9.27 dB
1.850 GHz	1.852 GHz	100.000 kHz	1.85023 GHz	20.89 dBm	-9.11 dB

Date: 25.SEP.2024 11:33:27

Highest Band Edge / 1RB

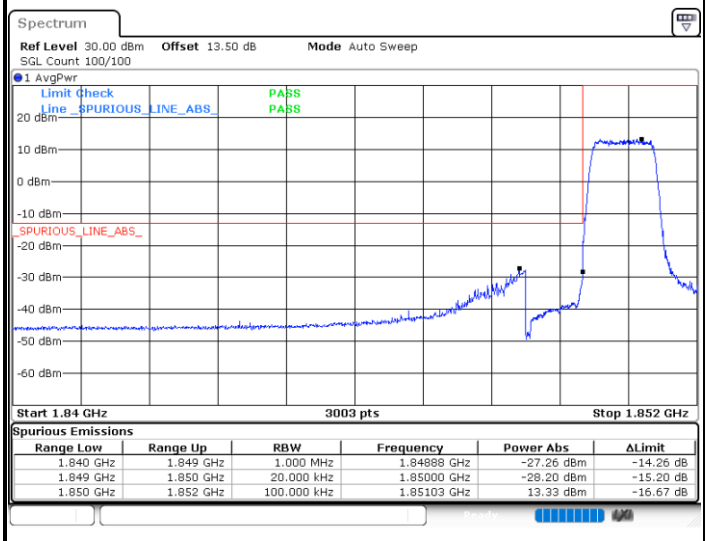


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.908 GHz	1.910 GHz	100.000 kHz	1.90977 GHz	21.22 dBm	-8.78 dB
1.910 GHz	1.911 GHz	20.000 kHz	1.91000 GHz	-21.15 dBm	-8.15 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91104 GHz	-27.38 dBm	-14.38 dB

Date: 25.SEP.2024 11:42:34

Lowest Band Edge / Full RB

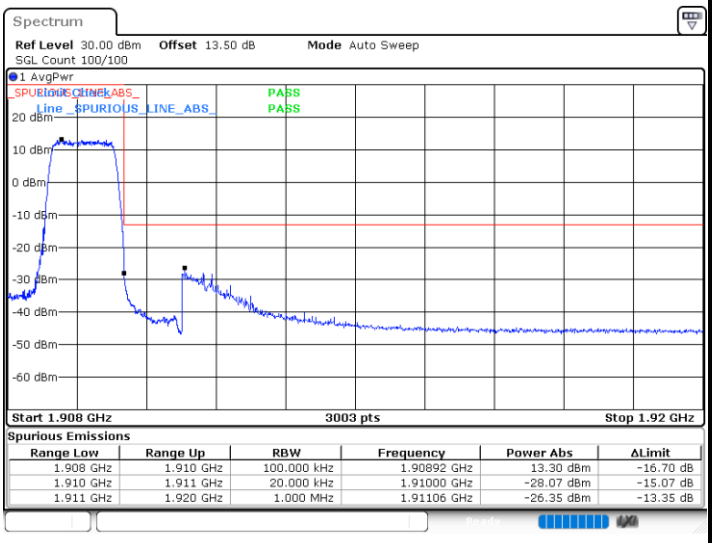


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84888 GHz	-27.26 dBm	-14.26 dB
1.849 GHz	1.850 GHz	20.000 kHz	1.85000 GHz	-28.20 dBm	-15.20 dB
1.850 GHz	1.852 GHz	100.000 kHz	1.85103 GHz	13.33 dBm	-16.67 dB

Date: 25.SEP.2024 11:35:33

Highest Band Edge / Full RB



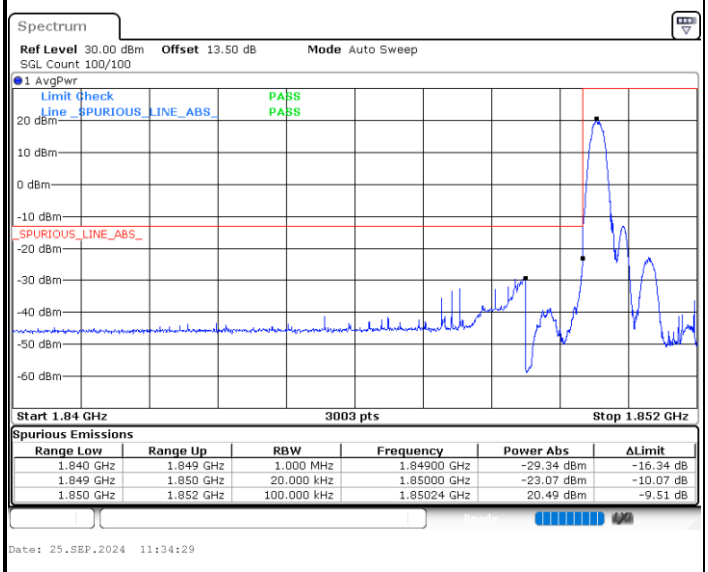
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.908 GHz	1.910 GHz	100.000 kHz	1.90892 GHz	13.30 dBm	-16.70 dB
1.910 GHz	1.911 GHz	20.000 kHz	1.91000 GHz	-28.07 dBm	-15.07 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91106 GHz	-26.35 dBm	-13.35 dB

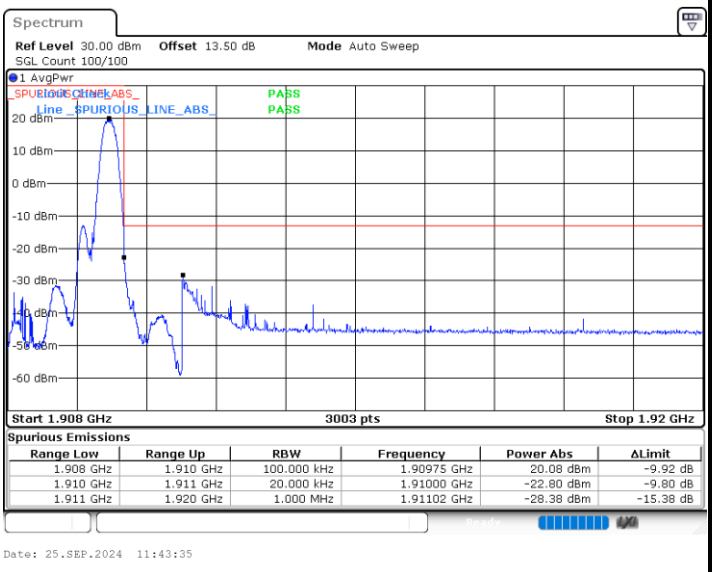
Date: 25.SEP.2024 11:44:38

LTE Band 2 / 1.4MHz / 16QAM

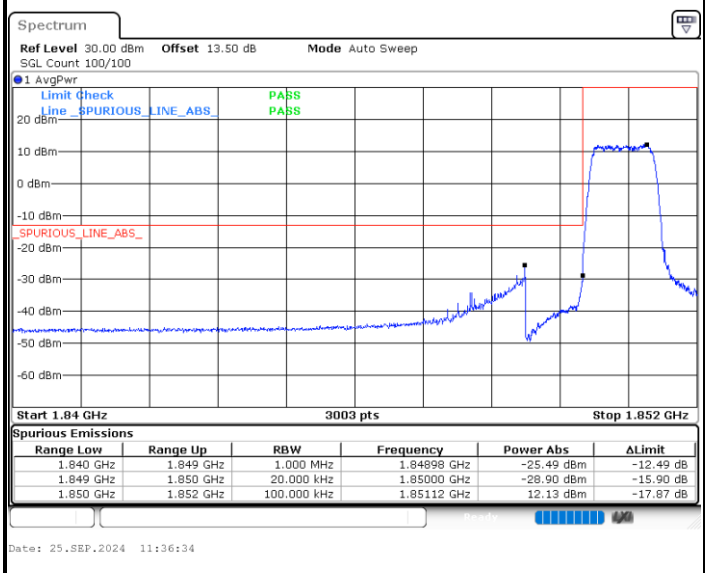
Lowest Band Edge / 1 RB



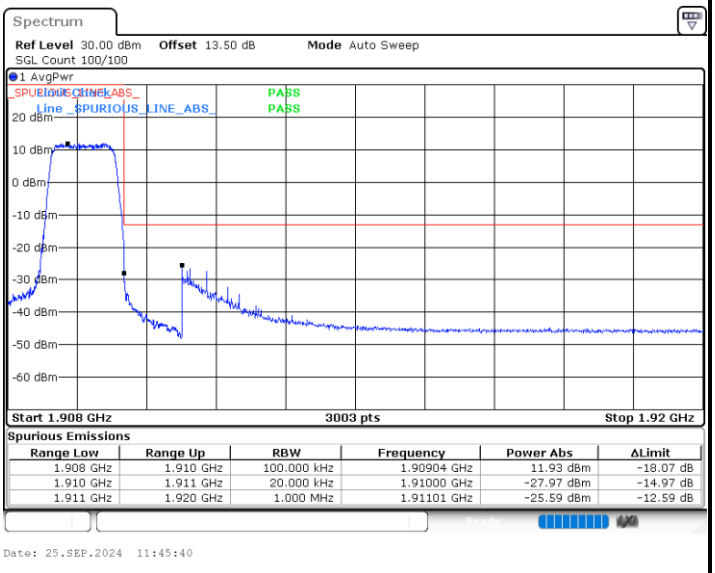
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB

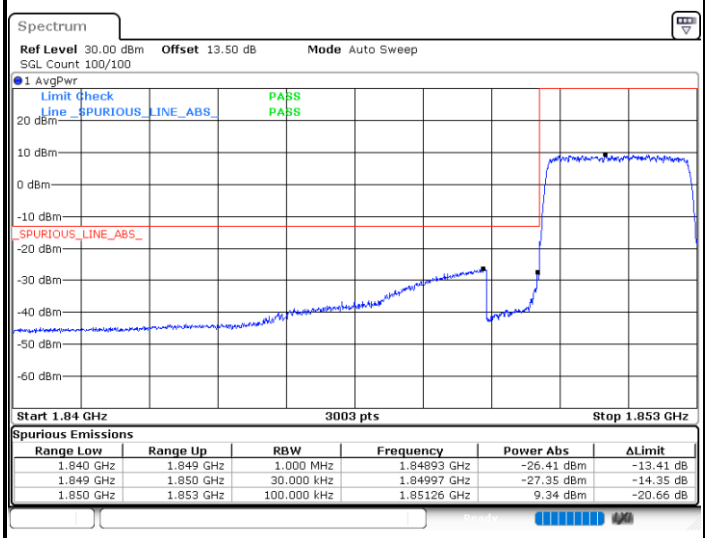


Highest Band Edge / Full RB



LTE Band 2 / 3MHz / QPSK

Lowest Band Edge / Full RB

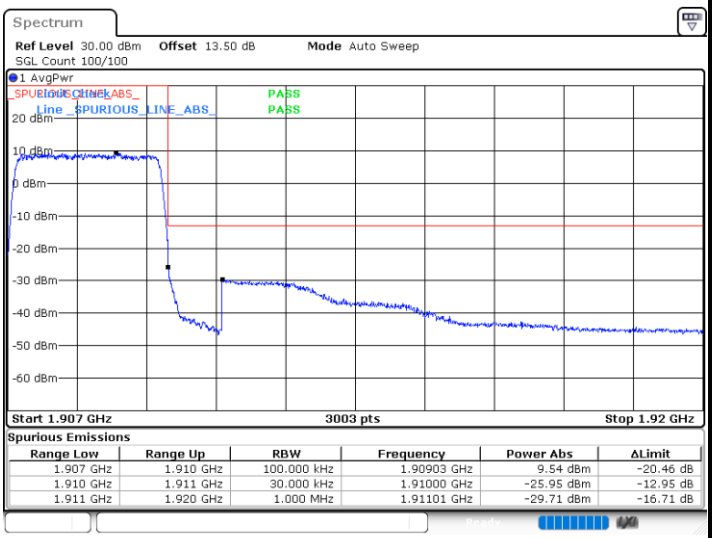


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84893 GHz	-26.41 dBm	-13.41 dB
1.849 GHz	1.850 GHz	30.000 kHz	1.84997 GHz	-27.35 dBm	-14.35 dB
1.850 GHz	1.853 GHz	100.000 kHz	1.85126 GHz	9.34 dBm	-20.66 dB

Date: 25.SEP.2024 11:48:07

Highest Band Edge / Full RB



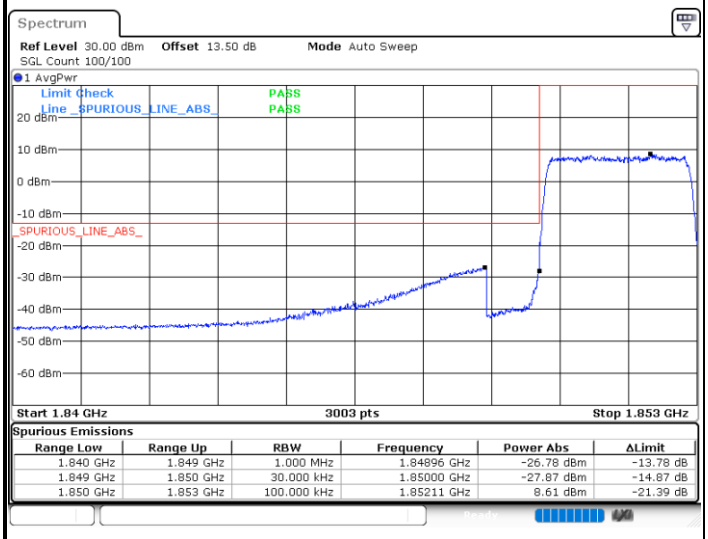
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.907 GHz	1.910 GHz	100.000 kHz	1.90903 GHz	9.54 dBm	-20.46 dB
1.910 GHz	1.911 GHz	30.000 kHz	1.91000 GHz	-25.95 dBm	-12.95 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91101 GHz	-29.71 dBm	-16.71 dB

Date: 25.SEP.2024 11:56:46

LTE Band 2 / 3MHz / 16QAM

Lowest Band Edge / Full RB

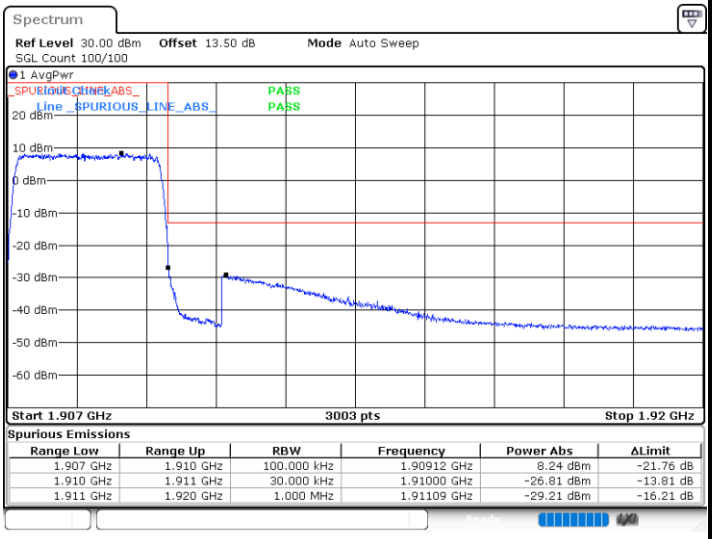


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84896 GHz	-26.78 dBm	-13.78 dB
1.849 GHz	1.850 GHz	30.000 kHz	1.85000 GHz	-27.87 dBm	-14.87 dB
1.850 GHz	1.853 GHz	100.000 kHz	1.85211 GHz	8.61 dBm	-21.39 dB

Date: 25.SEP.2024 11:49:09

Highest Band Edge / Full RB



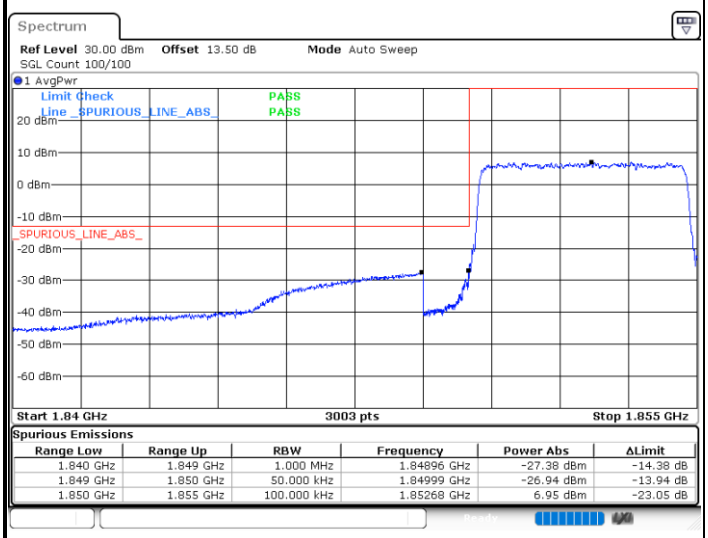
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.907 GHz	1.910 GHz	100.000 kHz	1.90912 GHz	8.24 dBm	-21.76 dB
1.910 GHz	1.911 GHz	30.000 kHz	1.91000 GHz	-26.81 dBm	-13.81 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91109 GHz	-29.21 dBm	-16.21 dB

Date: 25.SEP.2024 11:57:48

LTE Band 2 / 5MHz / QPSK

Lowest Band Edge / Full RB

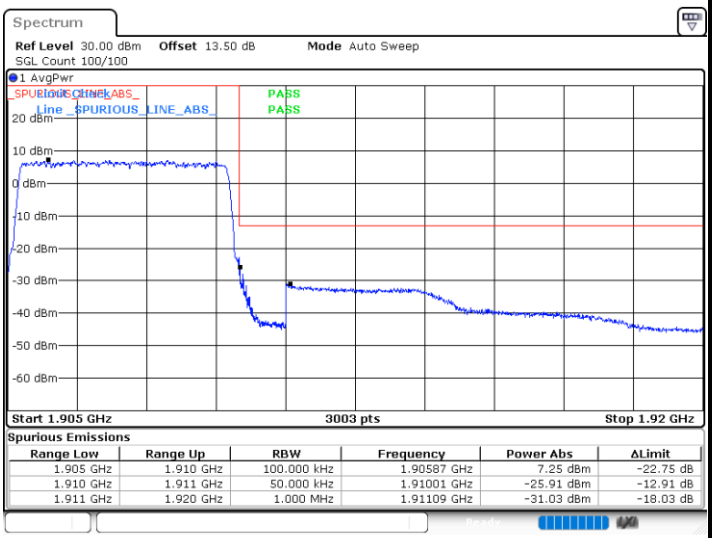


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84896 GHz	-27.38 dBm	-14.38 dB
1.849 GHz	1.850 GHz	50.000 kHz	1.84999 GHz	-26.94 dBm	-13.94 dB
1.850 GHz	1.855 GHz	100.000 kHz	1.85268 GHz	6.95 dBm	-23.05 dB

Date: 25.SEP.2024 11:58:50

Highest Band Edge / Full RB



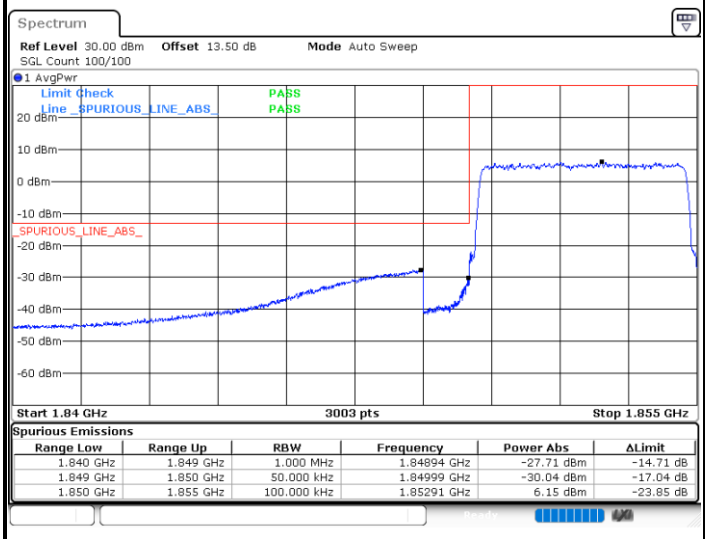
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.905 GHz	1.910 GHz	100.000 kHz	1.90587 GHz	7.25 dBm	-22.75 dB
1.910 GHz	1.911 GHz	50.000 kHz	1.91001 GHz	-25.91 dBm	-12.91 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91109 GHz	-31.03 dBm	-18.03 dB

Date: 25.SEP.2024 12:03:07

LTE Band 2 / 5MHz / 16QAM

Lowest Band Edge / Full RB

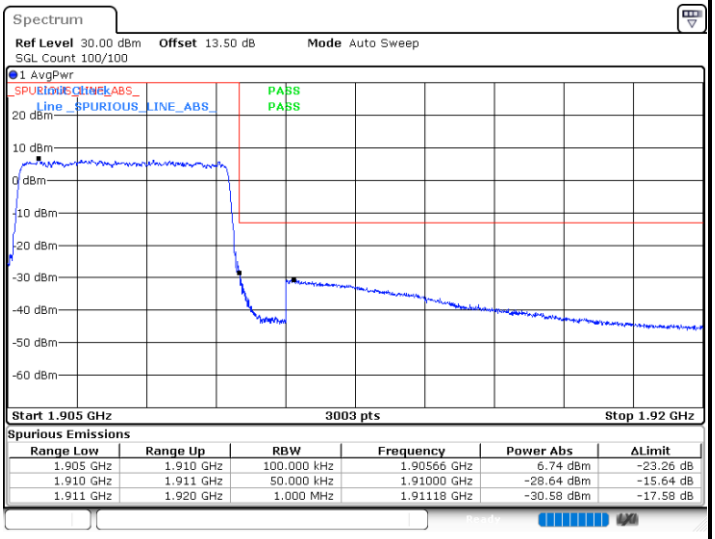


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84894 GHz	-27.71 dBm	-14.71 dB
1.849 GHz	1.850 GHz	50.000 kHz	1.84999 GHz	-30.04 dBm	-17.04 dB
1.850 GHz	1.855 GHz	100.000 kHz	1.85291 GHz	6.15 dBm	-23.85 dB

Date: 25.SEP.2024 11:59:52

Highest Band Edge / Full RB



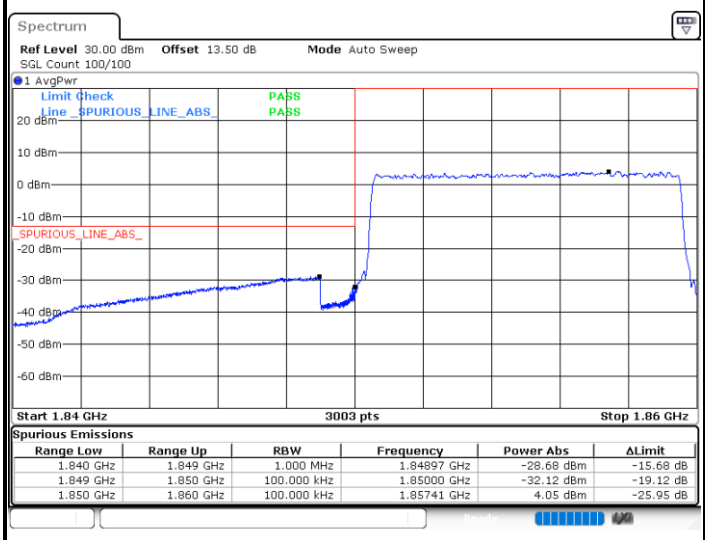
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.905 GHz	1.910 GHz	100.000 kHz	1.90566 GHz	6.74 dBm	-23.26 dB
1.910 GHz	1.911 GHz	50.000 kHz	1.91000 GHz	-28.64 dBm	-15.64 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91118 GHz	-30.58 dBm	-17.58 dB

Date: 25.SEP.2024 12:04:09

LTE Band 2 / 10MHz / QPSK

Lowest Band Edge / Full RB

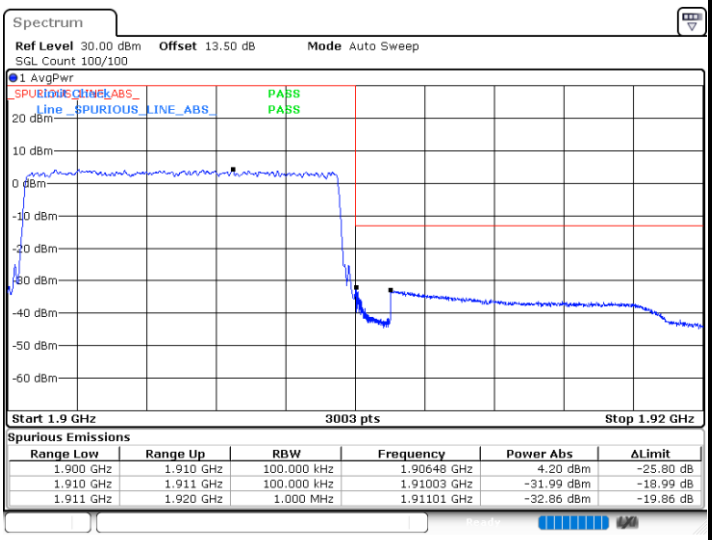


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84897 GHz	-28.68 dBm	-15.68 dB
1.849 GHz	1.850 GHz	100.000 kHz	1.85000 GHz	-32.12 dBm	-19.12 dB
1.850 GHz	1.860 GHz	100.000 kHz	1.85741 GHz	4.05 dBm	-25.95 dB

Date: 25.SEP.2024 12:09:32

Highest Band Edge / Full RB



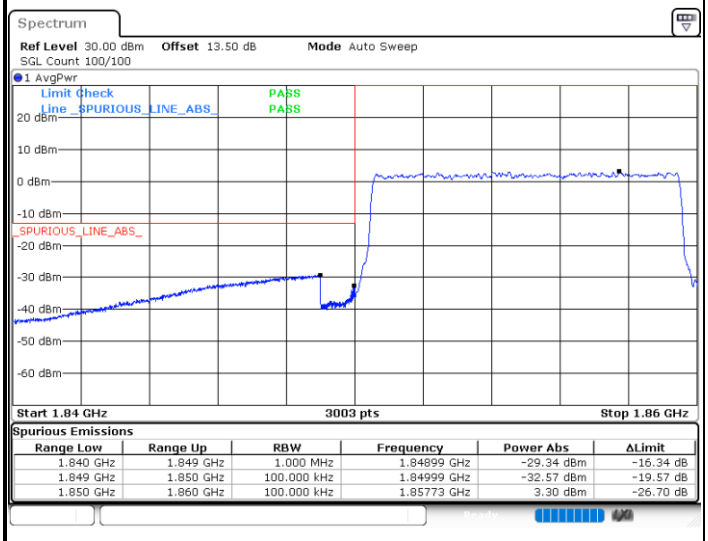
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.900 GHz	1.910 GHz	100.000 kHz	1.90648 GHz	4.20 dBm	-25.80 dB
1.910 GHz	1.911 GHz	100.000 kHz	1.91003 GHz	-31.99 dBm	-18.99 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91101 GHz	-32.86 dBm	-19.86 dB

Date: 25.SEP.2024 12:18:03

LTE Band 2 / 10MHz / 16QAM

Lowest Band Edge / Full RB

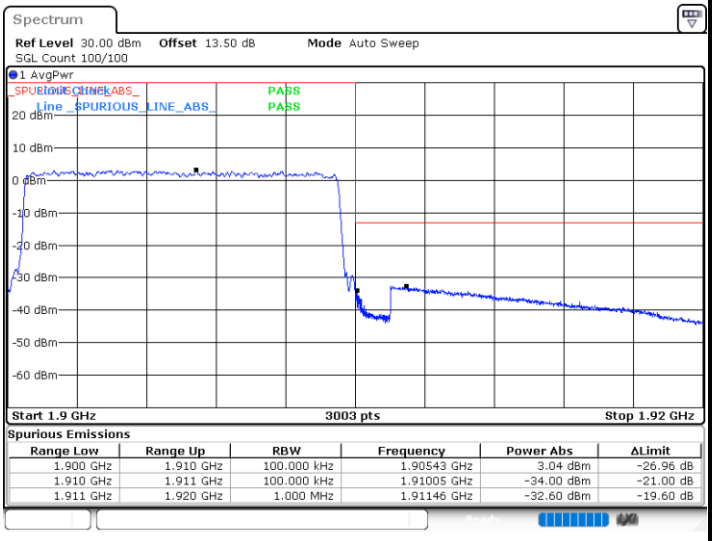


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84899 GHz	-29.34 dBm	-16.34 dB
1.849 GHz	1.850 GHz	100.000 kHz	1.84999 GHz	-32.57 dBm	-19.57 dB
1.850 GHz	1.860 GHz	100.000 kHz	1.85773 GHz	3.30 dBm	-26.70 dB

Date: 25.SEP.2024 12:10:33

Highest Band Edge / Full RB



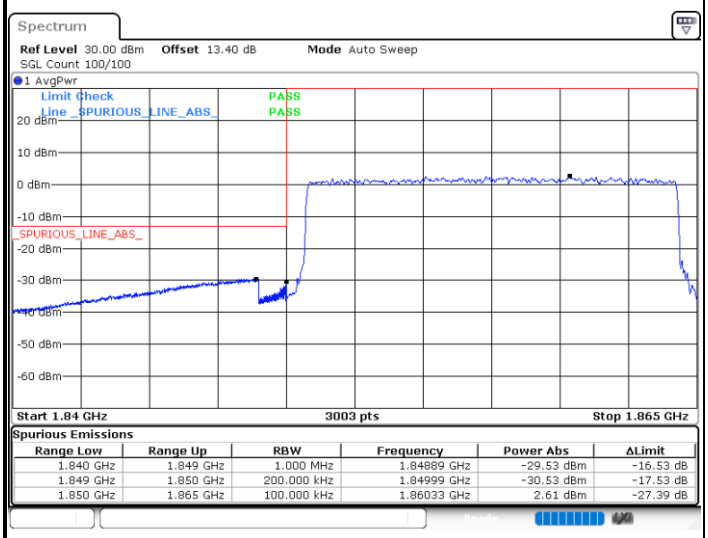
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.900 GHz	1.910 GHz	100.000 kHz	1.90543 GHz	3.04 dBm	-26.96 dB
1.910 GHz	1.911 GHz	100.000 kHz	1.91005 GHz	-34.00 dBm	-21.00 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91146 GHz	-32.60 dBm	-19.60 dB

Date: 25.SEP.2024 12:19:05

LTE Band 2 / 15MHz / QPSK

Lowest Band Edge / Full RB

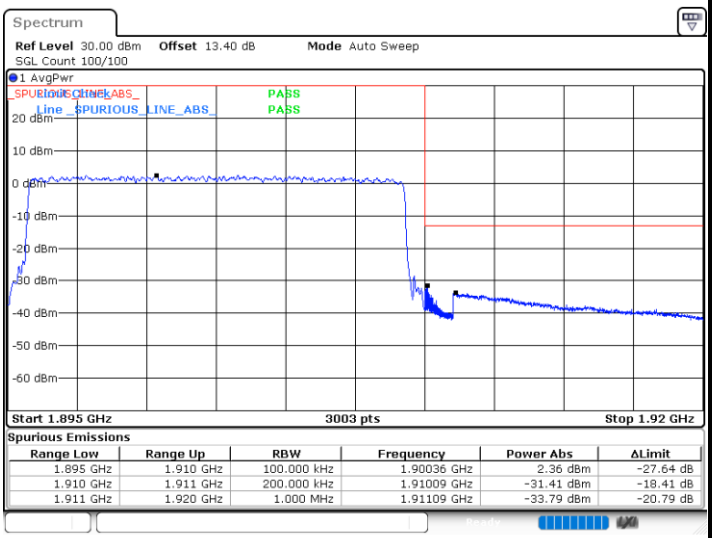


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84889 GHz	-29.53 dBm	-16.53 dB
1.849 GHz	1.850 GHz	200.000 kHz	1.84999 GHz	-30.53 dBm	-17.53 dB
1.850 GHz	1.865 GHz	100.000 kHz	1.86033 GHz	2.61 dBm	-27.39 dB

Date: 10.DEC.2024 09:15:47

Highest Band Edge / Full RB



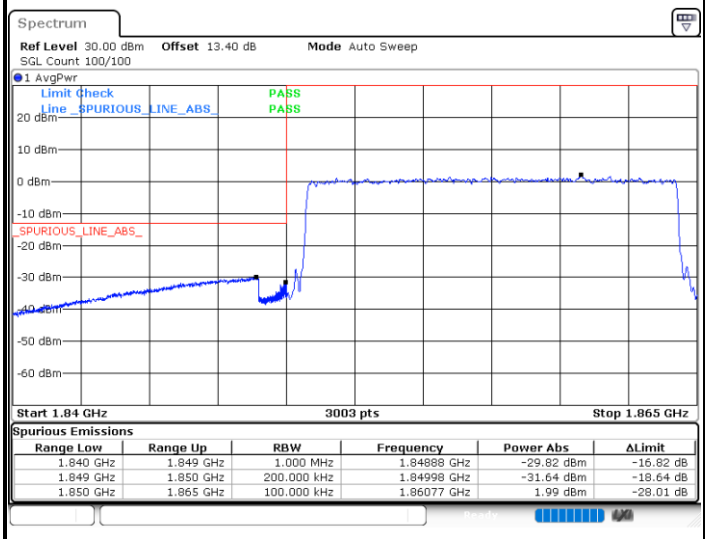
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.895 GHz	1.910 GHz	100.000 kHz	1.90036 GHz	2.36 dBm	-27.64 dB
1.910 GHz	1.911 GHz	200.000 kHz	1.91009 GHz	-31.41 dBm	-18.41 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91109 GHz	-33.79 dBm	-20.79 dB

Date: 10.DEC.2024 09:17:53

LTE Band 2 / 15MHz / 16QAM

Lowest Band Edge / Full RB

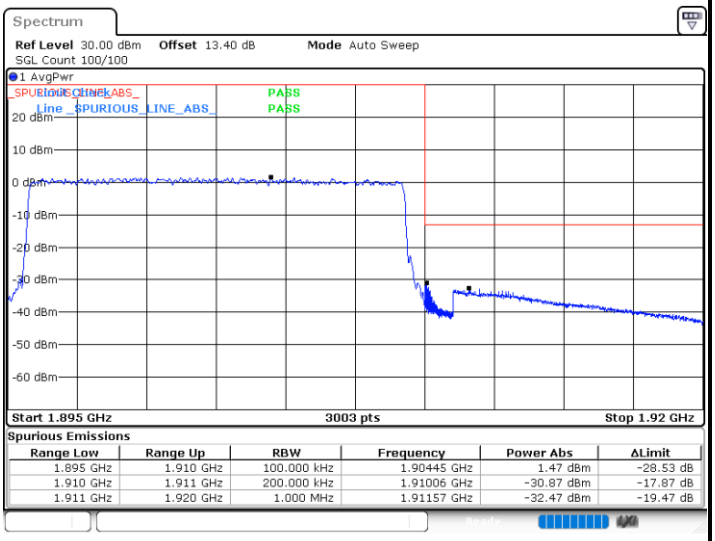


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84888 GHz	-29.82 dBm	-16.82 dB
1.849 GHz	1.850 GHz	200.000 kHz	1.84998 GHz	-31.64 dBm	-18.64 dB
1.850 GHz	1.865 GHz	100.000 kHz	1.86077 GHz	1.99 dBm	-28.01 dB

Date: 10.DEC.2024 09:16:51

Highest Band Edge / Full RB



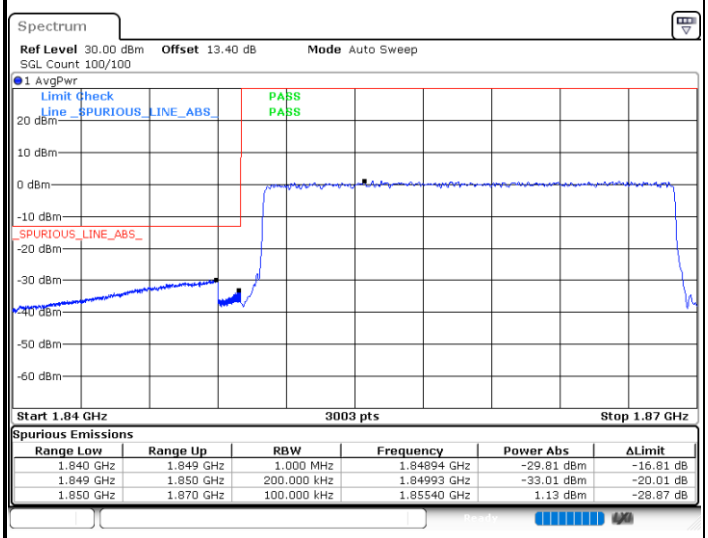
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.895 GHz	1.910 GHz	100.000 kHz	1.90445 GHz	1.47 dBm	-28.53 dB
1.910 GHz	1.911 GHz	200.000 kHz	1.91006 GHz	-30.87 dBm	-17.87 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91157 GHz	-32.47 dBm	-19.47 dB

Date: 10.DEC.2024 09:18:56

LTE Band 2 / 20MHz / QPSK

Lowest Band Edge / Full RB

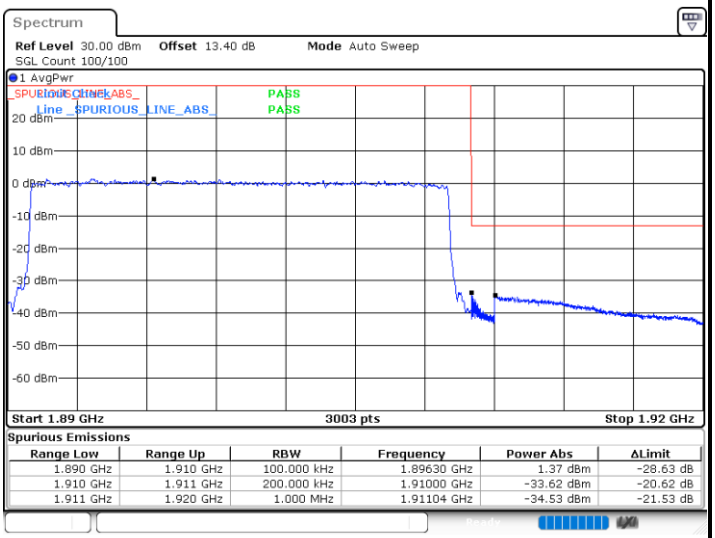


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84894 GHz	-29.81 dBm	-16.81 dB
1.849 GHz	1.850 GHz	200.000 kHz	1.84993 GHz	-33.01 dBm	-20.01 dB
1.850 GHz	1.870 GHz	100.000 kHz	1.85540 GHz	1.13 dBm	-28.87 dB

Date: 10.DEC.2024 09:21:04

Highest Band Edge / Full RB



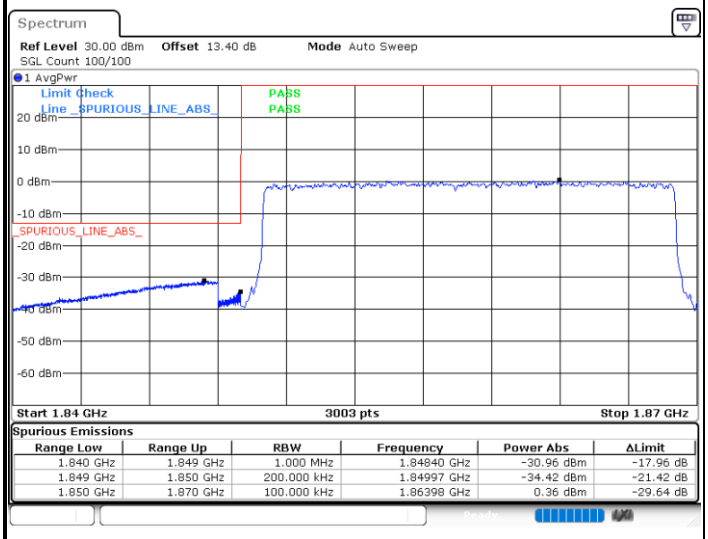
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.890 GHz	1.910 GHz	100.000 kHz	1.89630 GHz	1.37 dBm	-28.63 dB
1.910 GHz	1.911 GHz	200.000 kHz	1.91000 GHz	-33.62 dBm	-20.62 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91104 GHz	-34.53 dBm	-21.53 dB

Date: 10.DEC.2024 09:23:23

LTE Band 2 / 20MHz / 16QAM

Lowest Band Edge / Full RB

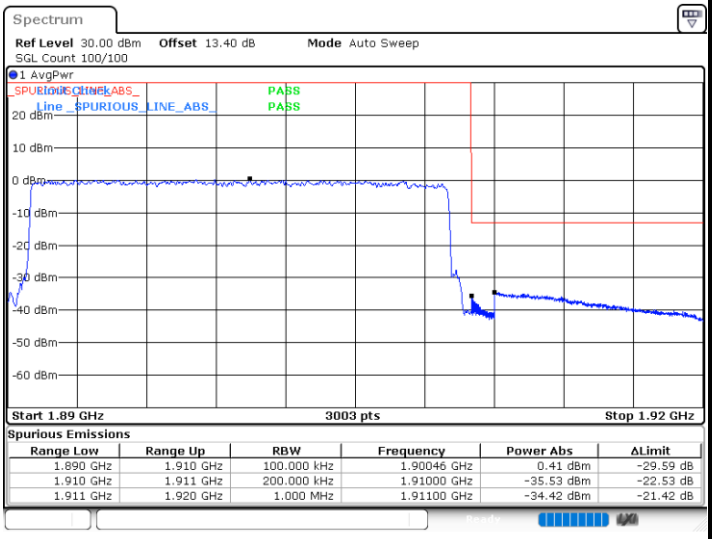


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84840 GHz	-30.96 dBm	-17.96 dB
1.849 GHz	1.850 GHz	200.000 kHz	1.84997 GHz	-34.42 dBm	-21.42 dB
1.850 GHz	1.870 GHz	100.000 kHz	1.86398 GHz	0.36 dBm	-29.64 dB

Date: 10.DEC.2024 09:22:14

Highest Band Edge / Full RB



Spurious Emissions

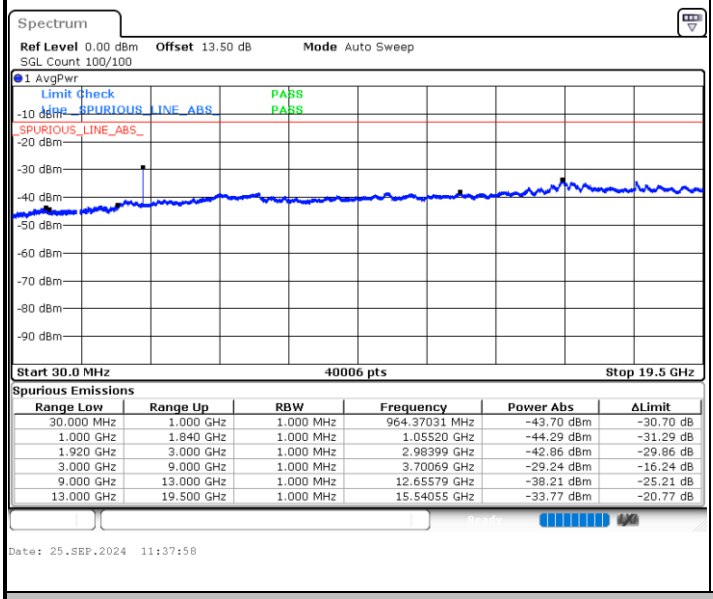
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.890 GHz	1.910 GHz	100.000 kHz	1.90046 GHz	0.41 dBm	-29.59 dB
1.910 GHz	1.911 GHz	200.000 kHz	1.91000 GHz	-35.53 dBm	-22.53 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91100 GHz	-34.42 dBm	-21.42 dB

Date: 10.DEC.2024 09:24:27

Conducted Spurious Emission

LTE Band 2 / 1.4MHz

Lowest Channel / QPSK

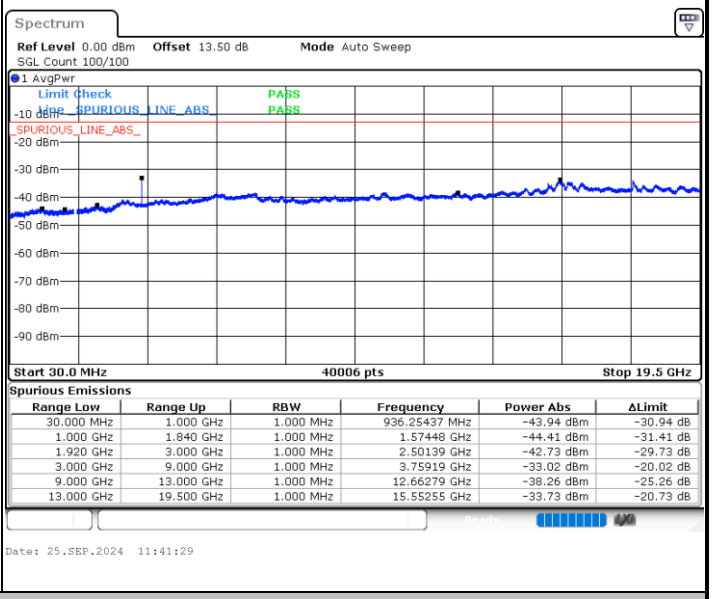


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	964.37031 MHz	-43.70 dBm	-30.70 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.05520 GHz	-44.29 dBm	-31.29 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.98399 GHz	-42.86 dBm	-29.86 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70069 GHz	-29.24 dBm	-16.24 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.65579 GHz	-38.21 dBm	-25.21 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.54055 GHz	-33.77 dBm	-20.77 dB

Date: 25.SEP.2024 11:37:58

Middle Channel / QPSK

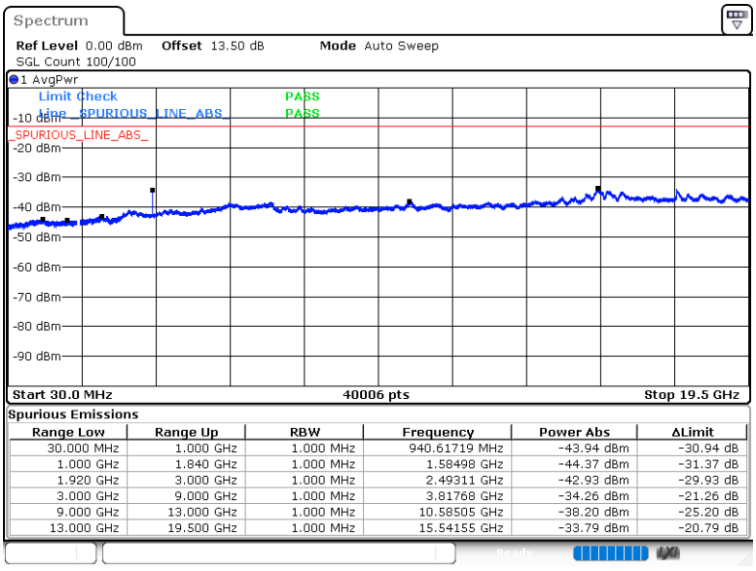


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	936.25437 MHz	-43.94 dBm	-30.94 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.57448 GHz	-44.41 dBm	-31.41 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.50139 GHz	-42.73 dBm	-29.73 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.75919 GHz	-33.02 dBm	-20.02 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.66279 GHz	-38.26 dBm	-25.26 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.55255 GHz	-33.73 dBm	-20.73 dB

Date: 25.SEP.2024 11:41:29

Highest Channel / QPSK



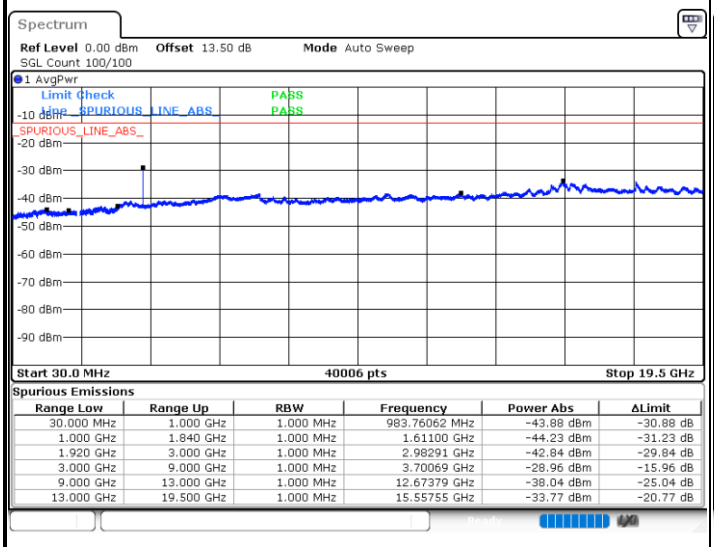
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	940.61719 MHz	-43.94 dBm	-30.94 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.58498 GHz	-44.37 dBm	-31.37 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.49311 GHz	-42.93 dBm	-29.93 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.81768 GHz	-34.26 dBm	-21.26 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.58505 GHz	-38.20 dBm	-25.20 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.54155 GHz	-33.79 dBm	-20.79 dB

Date: 25.SEP.2024 11:47:04

LTE Band 2 / 3MHz

Lowest Channel / QPSK

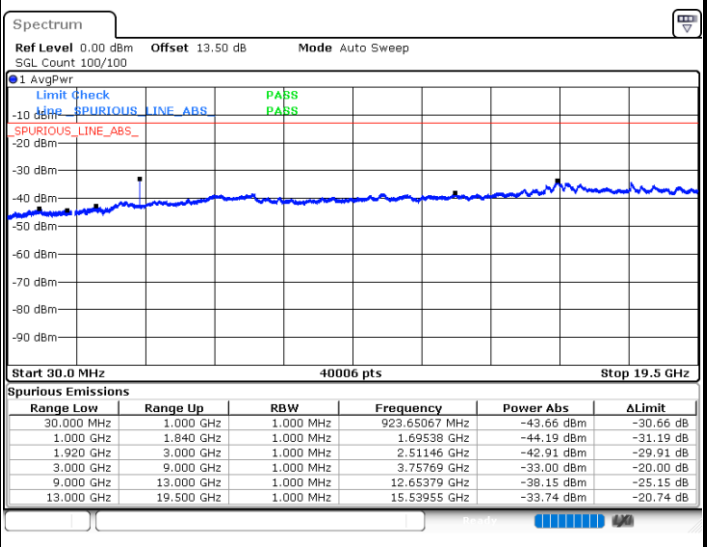


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	983.76062 MHz	-43.88 dBm	-30.88 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.61100 GHz	-44.23 dBm	-31.23 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.98291 GHz	-42.84 dBm	-29.84 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70069 GHz	-28.96 dBm	-15.96 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.67379 GHz	-38.04 dBm	-25.04 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.55755 GHz	-33.77 dBm	-20.77 dB

Date: 25.SEP.2024 11:52:48

Middle Channel / QPSK

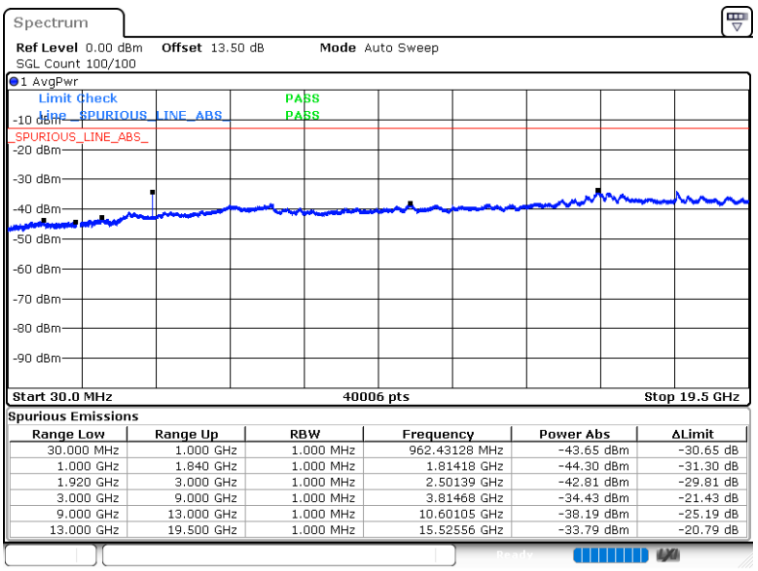


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	923.65067 MHz	-43.66 dBm	-30.66 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.69538 GHz	-44.19 dBm	-31.19 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.51146 GHz	-42.91 dBm	-29.91 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.75769 GHz	-33.00 dBm	-20.00 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.65379 GHz	-38.15 dBm	-25.15 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.53955 GHz	-33.74 dBm	-20.74 dB

Date: 25.SEP.2024 11:54:15

Highest Channel / QPSK



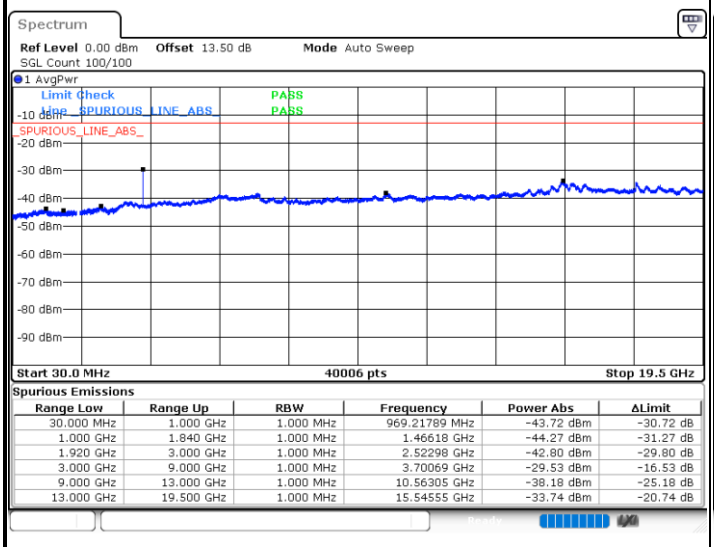
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	962.43128 MHz	-43.65 dBm	-30.65 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.81418 GHz	-44.30 dBm	-31.30 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.50139 GHz	-42.81 dBm	-29.81 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.81468 GHz	-34.43 dBm	-21.43 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.60105 GHz	-38.19 dBm	-25.19 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.52556 GHz	-33.79 dBm	-20.79 dB

Date: 25.SEP.2024 11:55:40

LTE Band 2 / 5MHz

Lowest Channel / QPSK

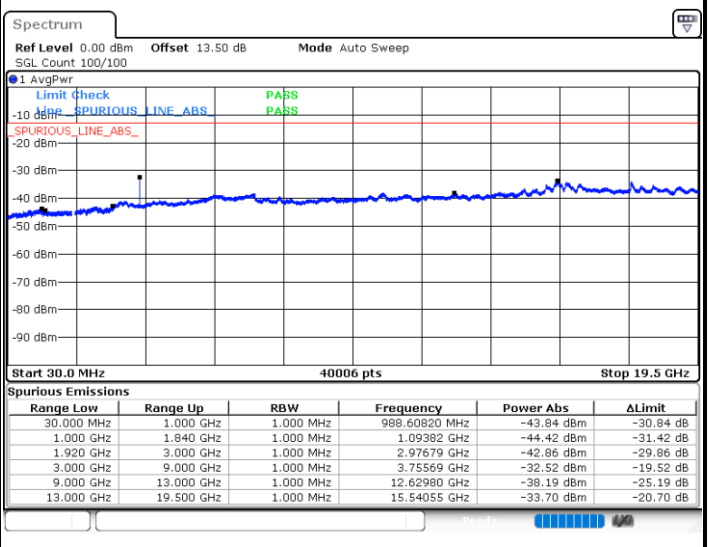


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	969.21789 MHz	-43.72 dBm	-30.72 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.46618 GHz	-44.27 dBm	-31.27 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.52298 GHz	-42.80 dBm	-29.80 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70069 GHz	-29.53 dBm	-16.53 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.56305 GHz	-38.18 dBm	-25.18 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.54555 GHz	-33.74 dBm	-20.74 dB

Date: 25.SEP.2024 12:05:34

Middle Channel / QPSK

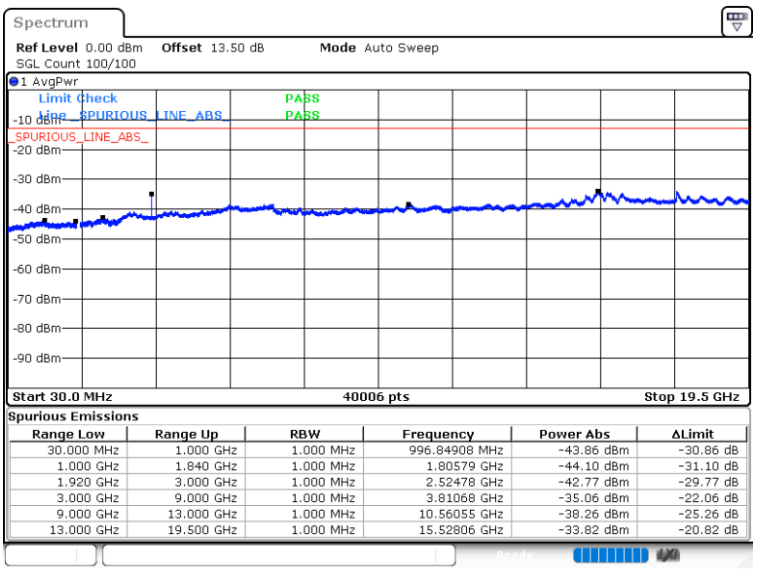


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	988.60820 MHz	-43.84 dBm	-30.84 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.09382 GHz	-44.42 dBm	-31.42 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.97679 GHz	-42.86 dBm	-29.86 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.75569 GHz	-32.52 dBm	-19.52 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.62980 GHz	-38.19 dBm	-25.19 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.54055 GHz	-33.70 dBm	-20.70 dB

Date: 25.SEP.2024 12:07:00

Highest Channel / QPSK



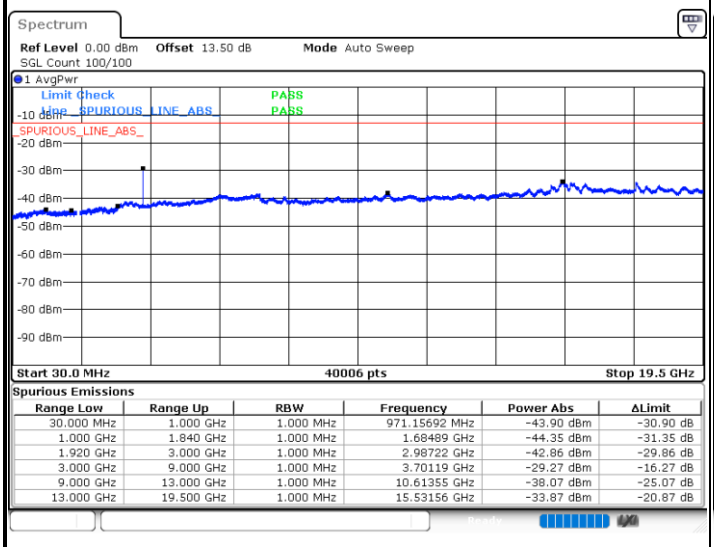
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	996.84908 MHz	-43.86 dBm	-30.86 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.80579 GHz	-44.10 dBm	-31.10 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.52478 GHz	-42.77 dBm	-29.77 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.81068 GHz	-35.06 dBm	-22.06 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.56055 GHz	-38.26 dBm	-25.26 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.52806 GHz	-33.82 dBm	-20.82 dB

Date: 25.SEP.2024 12:08:27

LTE Band 2 / 10MHz

Lowest Channel / QPSK

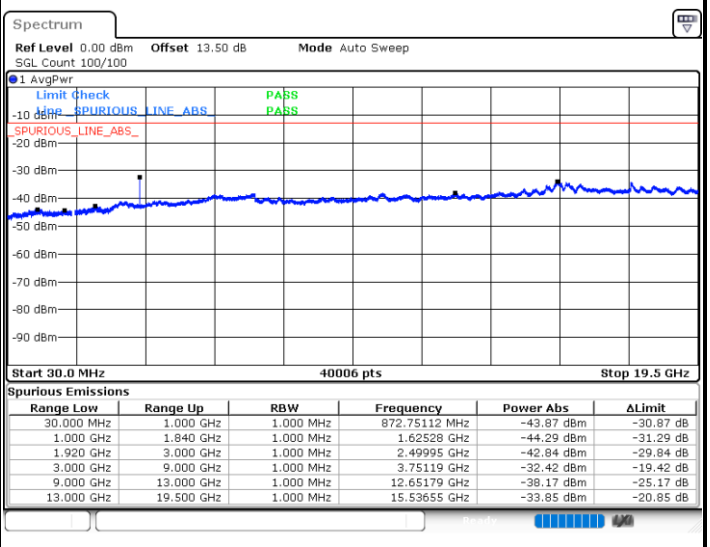


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	971.15692 MHz	-43.90 dBm	-30.90 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.68489 GHz	-44.35 dBm	-31.35 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.98722 GHz	-42.86 dBm	-29.86 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70119 GHz	-29.27 dBm	-16.27 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.61355 GHz	-38.07 dBm	-25.07 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.53156 GHz	-33.87 dBm	-20.87 dB

Date: 25.SEP.2024 12:14:07

Middle Channel / QPSK

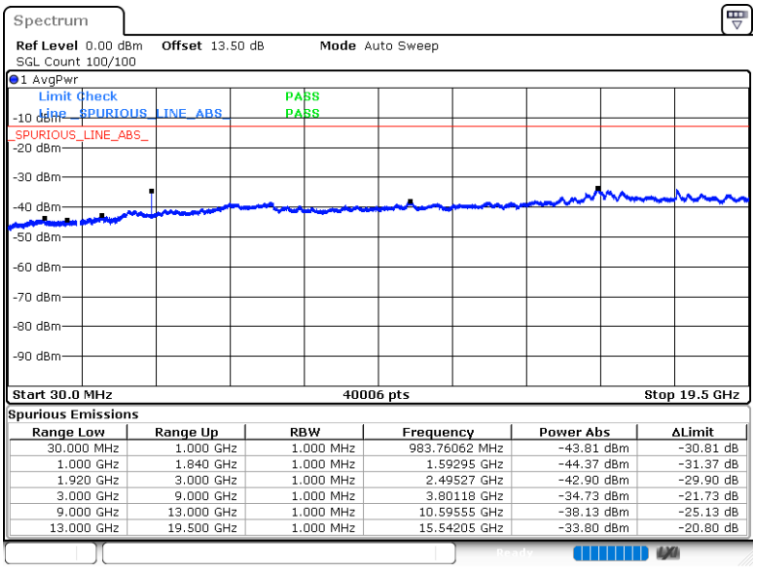


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	872.75112 MHz	-43.87 dBm	-30.87 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.62528 GHz	-44.29 dBm	-31.29 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.49995 GHz	-42.84 dBm	-29.84 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.75119 GHz	-32.42 dBm	-19.42 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.65179 GHz	-38.17 dBm	-25.17 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.53655 GHz	-33.85 dBm	-20.85 dB

Date: 25.SEP.2024 12:15:32

Highest Channel / QPSK



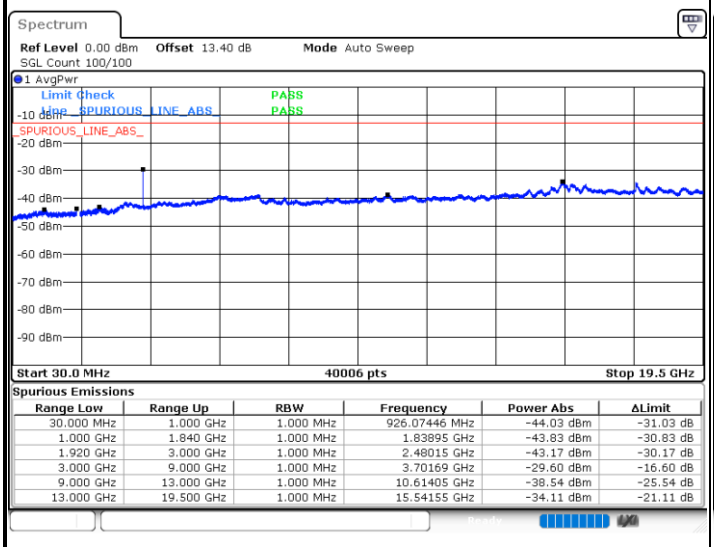
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	983.76062 MHz	-43.81 dBm	-30.81 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.59295 GHz	-44.37 dBm	-31.37 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.49527 GHz	-42.90 dBm	-29.90 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.80118 GHz	-34.73 dBm	-21.73 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.59555 GHz	-38.13 dBm	-25.13 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.54205 GHz	-33.80 dBm	-20.80 dB

Date: 25.SEP.2024 12:16:58

LTE Band 2 / 15MHz

Lowest Channel / QPSK

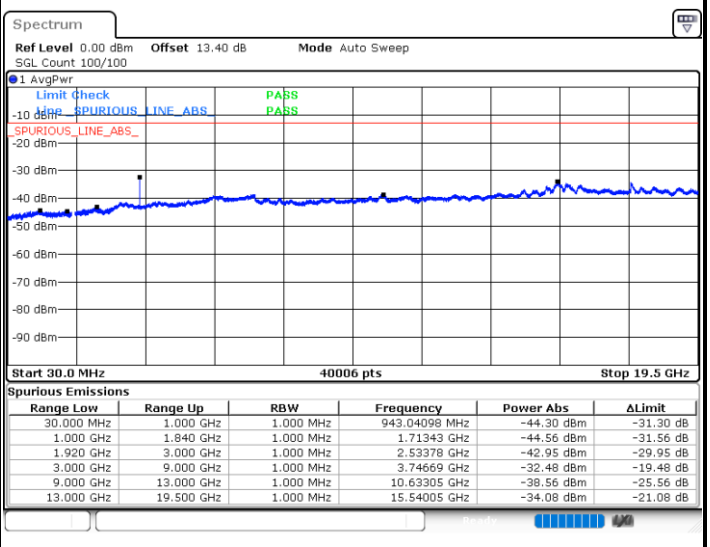


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	926.07446 MHz	-44.03 dBm	-31.03 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83895 GHz	-43.83 dBm	-30.83 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.48015 GHz	-43.17 dBm	-30.17 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70169 GHz	-29.60 dBm	-16.60 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.61405 GHz	-38.54 dBm	-25.54 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.54155 GHz	-34.11 dBm	-21.11 dB

Date: 10.DEC.2024 09:32:05

Middle Channel / QPSK

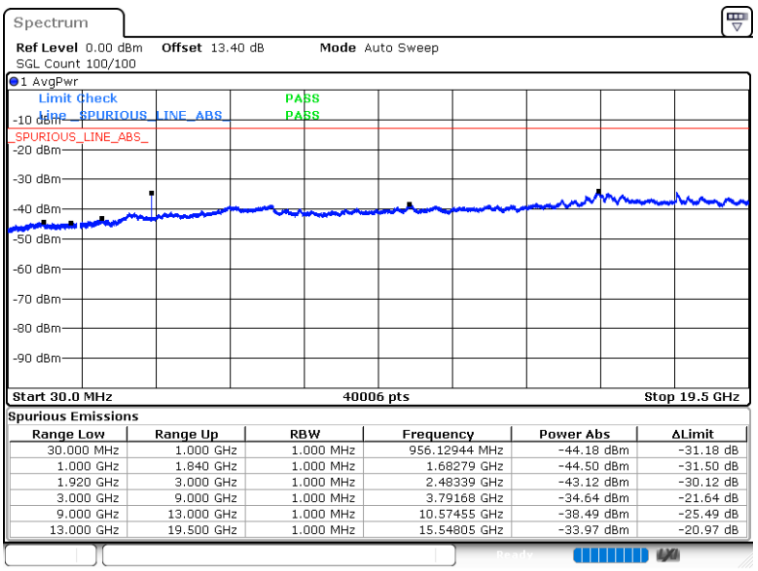


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	943.04098 MHz	-44.30 dBm	-31.30 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.71343 GHz	-44.56 dBm	-31.56 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.53378 GHz	-42.95 dBm	-29.95 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.74669 GHz	-32.48 dBm	-19.48 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.63305 GHz	-38.56 dBm	-25.56 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.54005 GHz	-34.08 dBm	-21.08 dB

Date: 10.DEC.2024 09:33:37

Highest Channel / QPSK



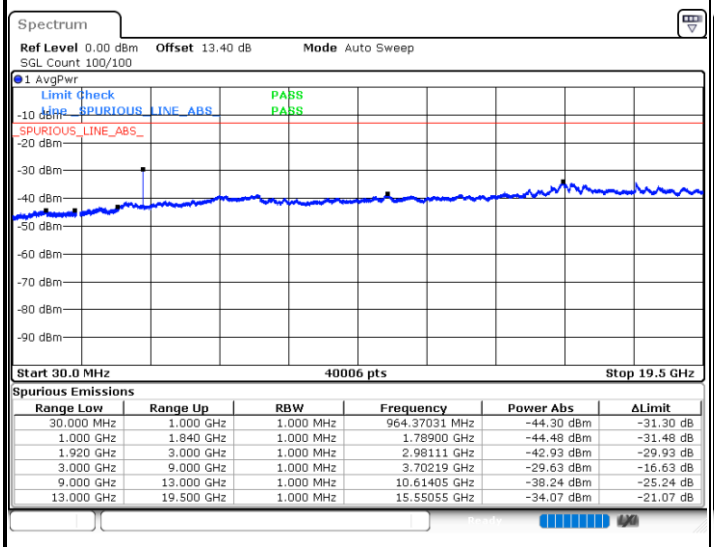
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	956.12944 MHz	-44.18 dBm	-31.18 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.68279 GHz	-44.50 dBm	-31.50 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.48339 GHz	-43.12 dBm	-30.12 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.79168 GHz	-34.64 dBm	-21.64 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.57455 GHz	-38.49 dBm	-25.49 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.54805 GHz	-33.97 dBm	-20.97 dB

Date: 10.DEC.2024 09:35:06

LTE Band 2 / 20MHz

Lowest Channel / QPSK

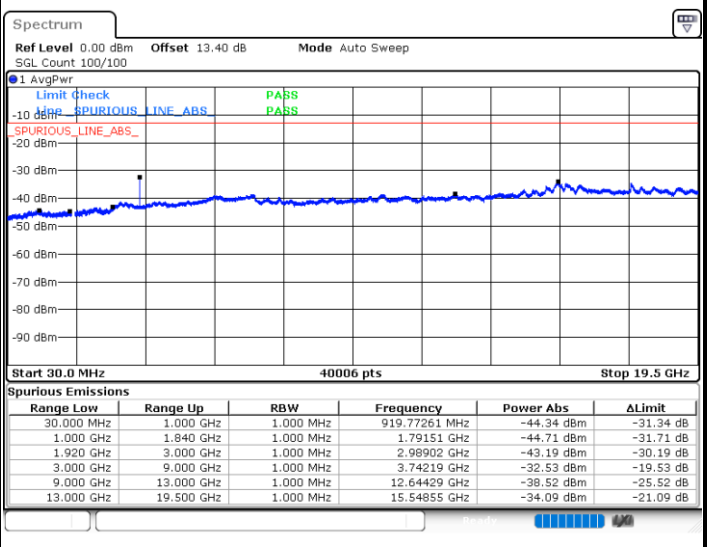


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	964.37031 MHz	-44.30 dBm	-31.30 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.78900 GHz	-44.48 dBm	-31.48 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.98111 GHz	-42.93 dBm	-29.93 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70219 GHz	-29.63 dBm	-16.63 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.61405 GHz	-38.24 dBm	-25.24 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.55055 GHz	-34.07 dBm	-21.07 dB

Date: 10.DEC.2024 09:36:35

Middle Channel / QPSK

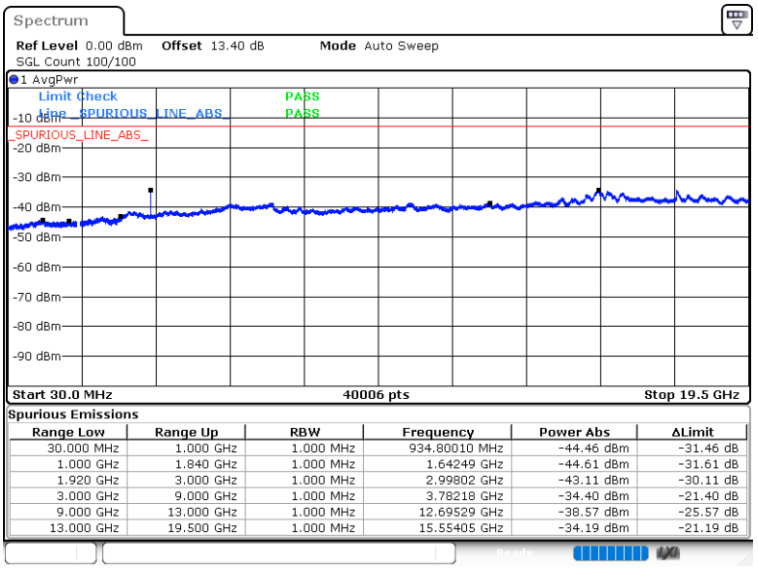


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	919.77261 MHz	-44.34 dBm	-31.34 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.79151 GHz	-44.71 dBm	-31.71 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.98902 GHz	-43.19 dBm	-30.19 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.74219 GHz	-32.53 dBm	-19.53 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.64429 GHz	-38.52 dBm	-25.52 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.54855 GHz	-34.09 dBm	-21.09 dB

Date: 10.DEC.2024 09:38:08

Highest Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	934.80010 MHz	-44.46 dBm	-31.46 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.64249 GHz	-44.61 dBm	-31.61 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.99802 GHz	-43.11 dBm	-30.11 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.78218 GHz	-34.40 dBm	-21.40 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.69529 GHz	-38.57 dBm	-25.57 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.55405 GHz	-34.19 dBm	-21.19 dB

Date: 10.DEC.2024 09:39:41

Frequency Stability

Test Conditions		LTE Band 2 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0056	PASS
40	Normal Voltage	0.0036	
30	Normal Voltage	0.0024	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0056	
0	Normal Voltage	0.0037	
-10	Normal Voltage	0.0023	
-20	Normal Voltage	0.0038	
-30	Normal Voltage	0.0018	
20	Maximum Voltage	0.0040	
20	Normal Voltage	0.0000	
20	Minimum Voltage	0.0038	

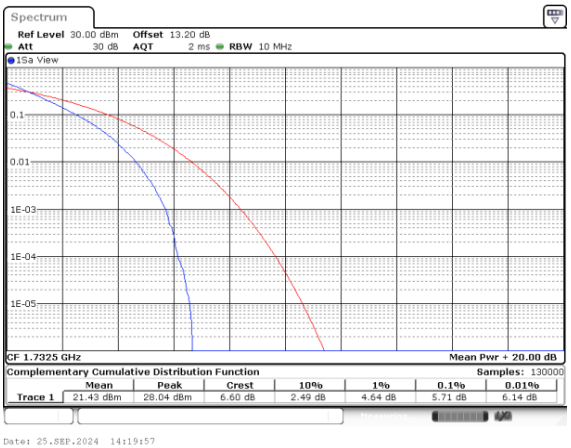
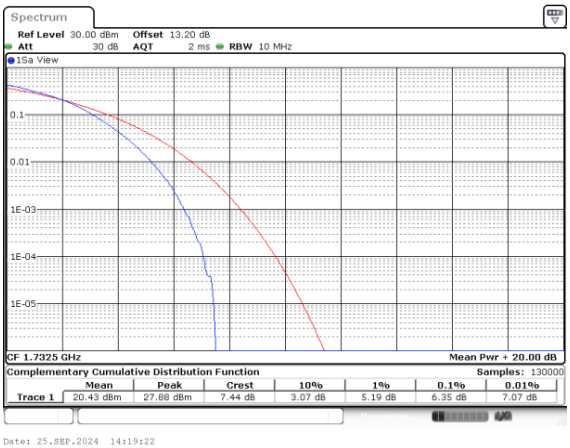
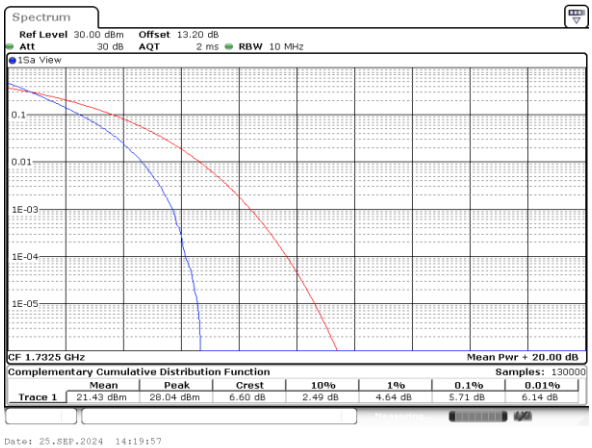
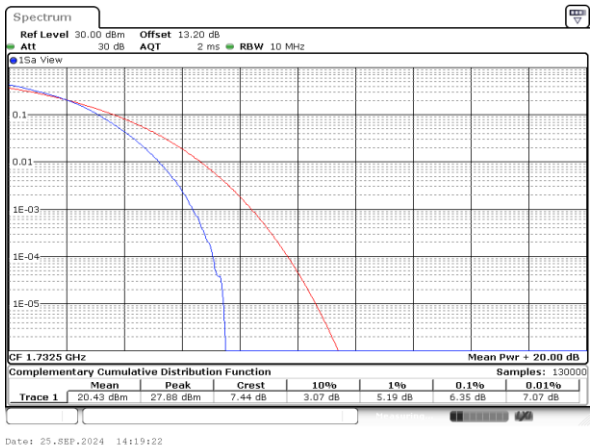
Note:

1. Normal Voltage = 12 V.；Minimum Voltage = 10.2 V.；Maximum Voltage = 13.8 V.
2. The frequency fundamental emissions stay within the authorized frequency block.
3. The frequency variation is sufficient to ensure that the occupied bandwidth of all operation channels stay within the operating frequency block or frequency block group.

LTE Band 4

Peak-to-Average Ratio

Mode	LTE Band 4 / 10MHz		LTE Band 4 / 20MHz		
Mod.	QPSK	16QAM	QPSK	16QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Full RB	Result
Middle CH	5.71	6.35	5.71	6.35	PASS

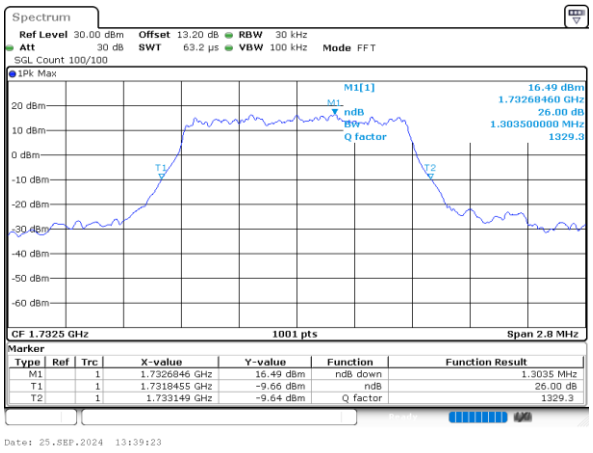
LTE Band 4 / 10MHz / QPSK	LTE Band 4 / 10MHz / 16QAM
Middle Channel / Full RB	Middle Channel / Full RB
	
LTE Band 4 / 20MHz / QPSK	LTE Band 4 / 20MHz / 16QAM
Middle Channel / Full RB	Middle Channel / Full RB
	

26dB Bandwidth

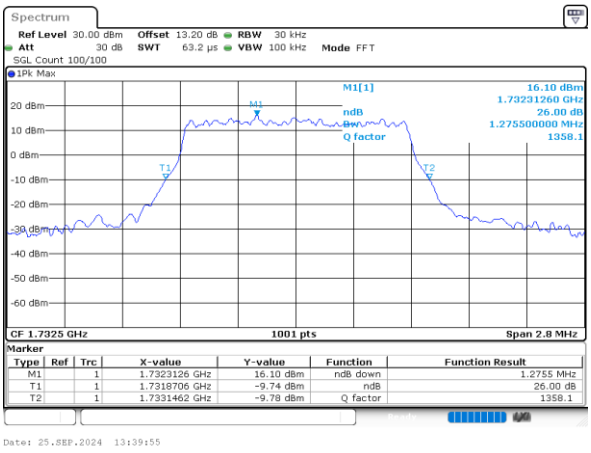
Mode	LTE Band 4 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	1.30	1.27	3.02	3.01	4.98	4.91	9.71	9.66	14.86	14.68	18.94	18.98

LTE Band 4

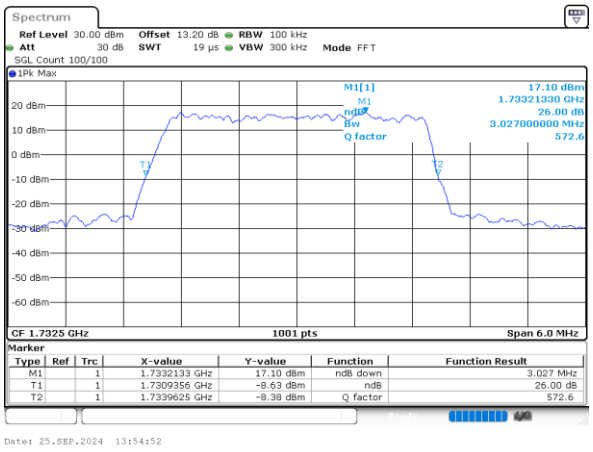
Middle Channel / 1.4MHz / QPSK



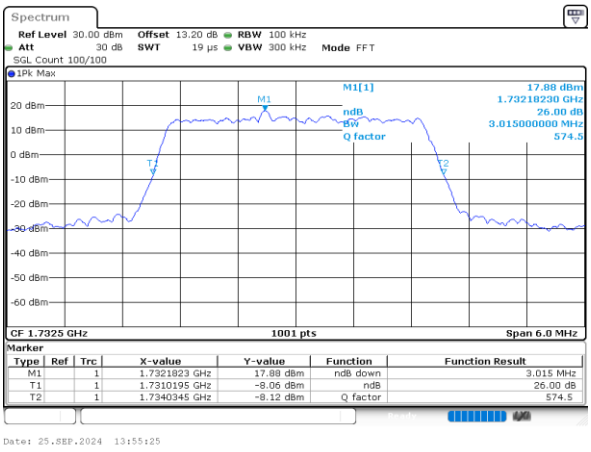
Middle Channel / 1.4MHz / 16QAM



Middle Channel / 3MHz / QPSK

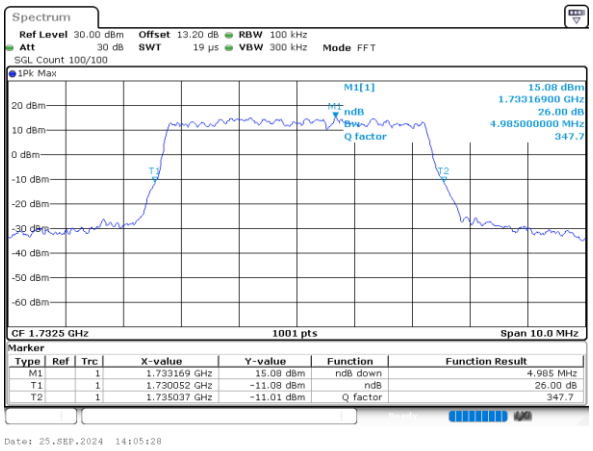


Middle Channel / 3MHz / 16QAM

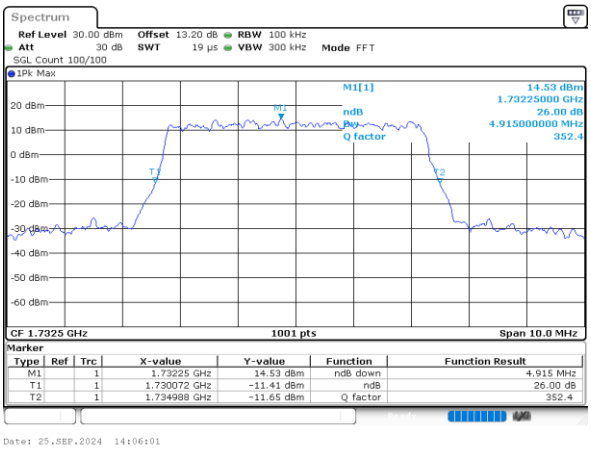


LTE Band 4

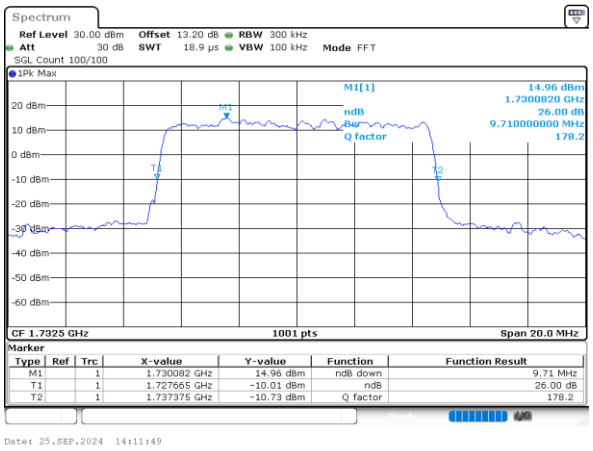
Middle Channel / 5MHz / QPSK



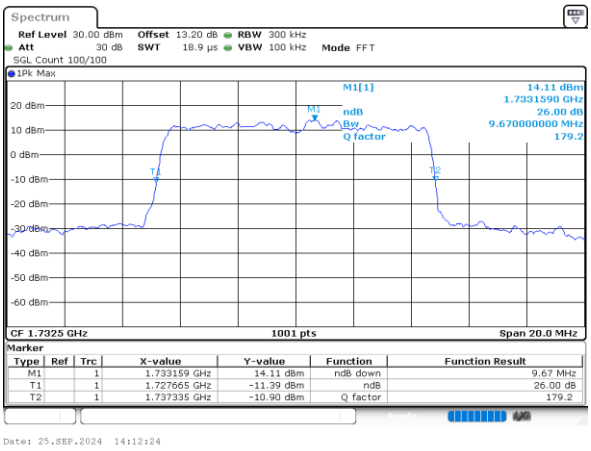
Middle Channel / 5MHz / 16QAM



Middle Channel / 10MHz / QPSK

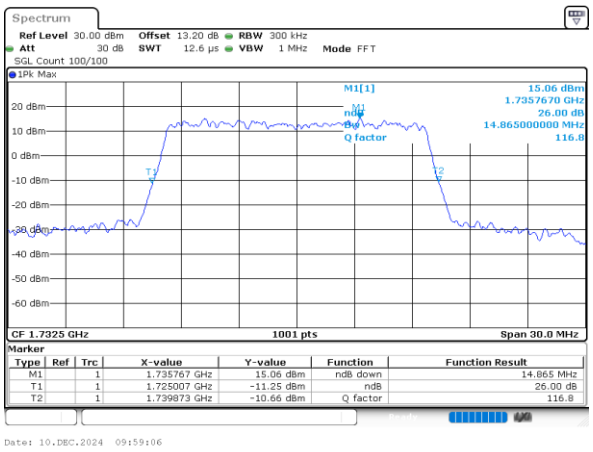


Middle Channel / 10MHz / 16QAM

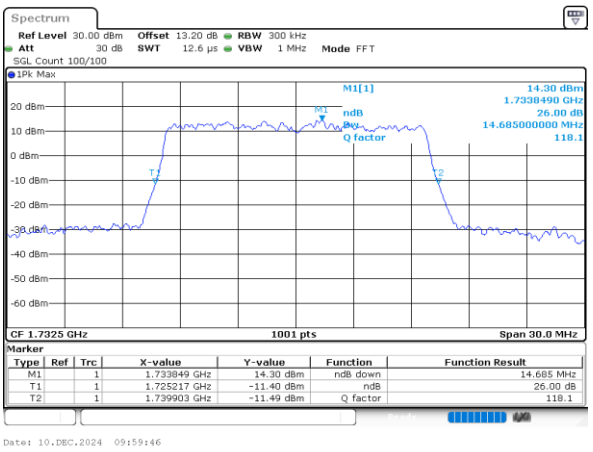


LTE Band 4

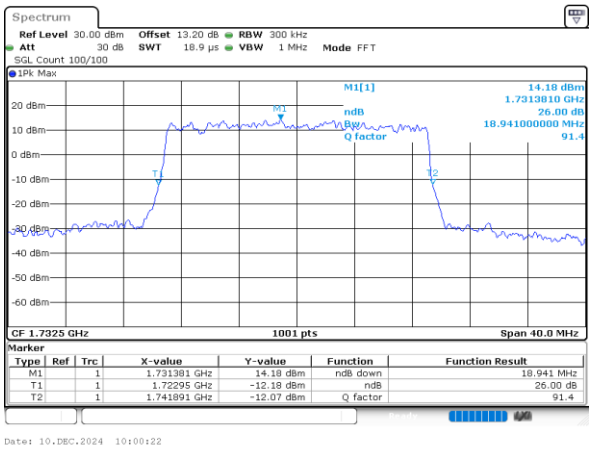
Middle Channel / 15MHz / QPSK



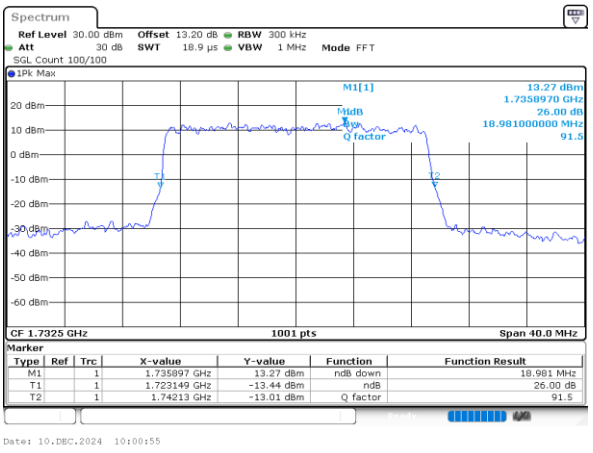
Middle Channel / 15MHz / 16QAM



Middle Channel / 20MHz / QPSK



Middle Channel / 20MHz / 16QAM

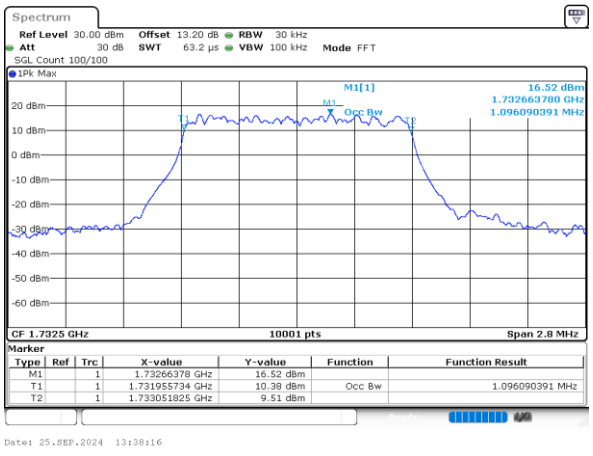


Occupied Bandwidth

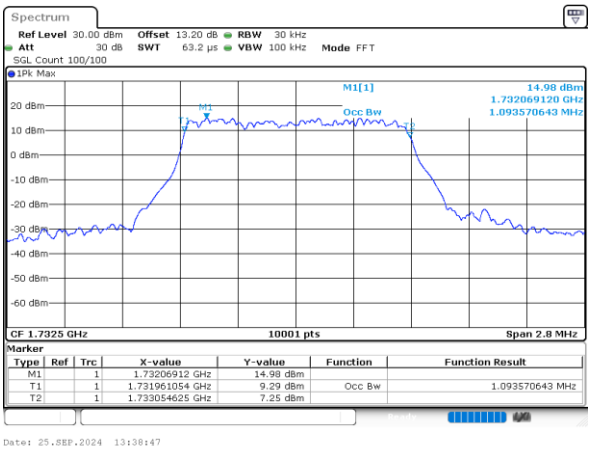
Mode	LTE Band 4 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	1.09	1.09	2.70	2.72	4.48	4.48	9.06	9.06	13.47	13.48	17.86	17.88

LTE Band 4

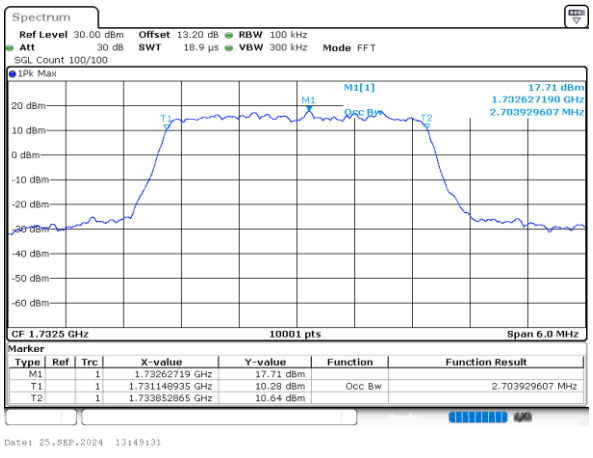
Middle Channel / 1.4MHz / QPSK



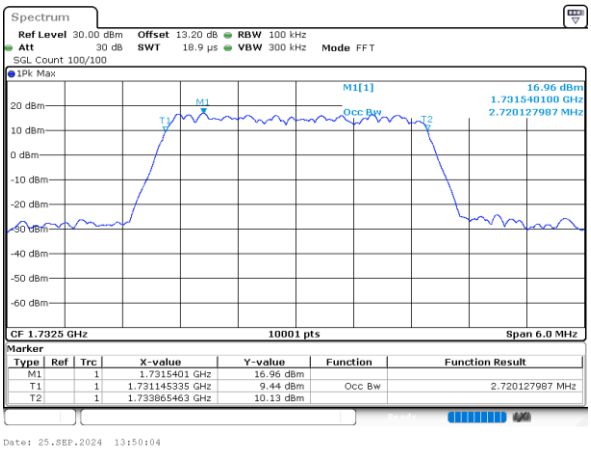
Middle Channel / 1.4MHz / 16QAM



Middle Channel / 3MHz / QPSK

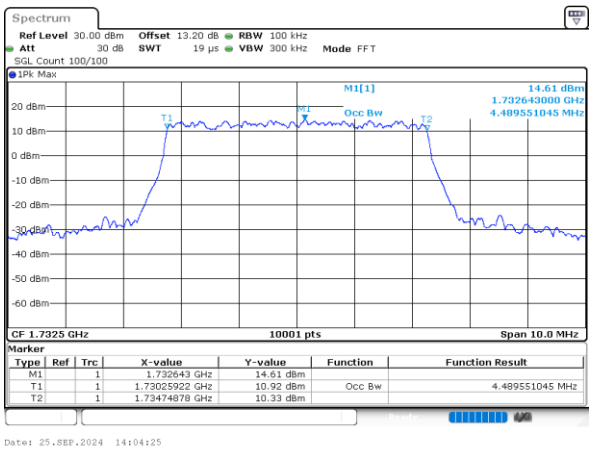


Middle Channel / 3MHz / 16QAM

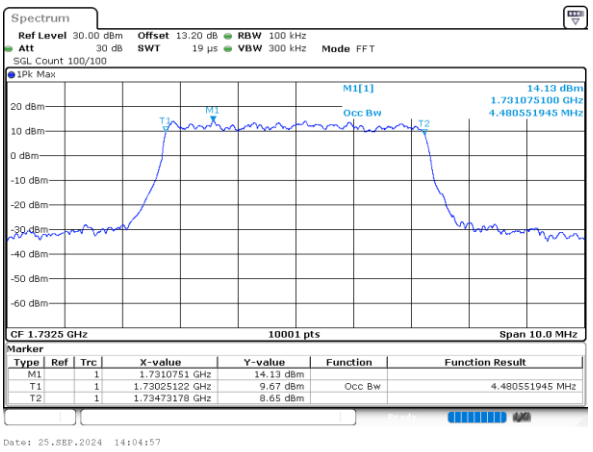


LTE Band 4

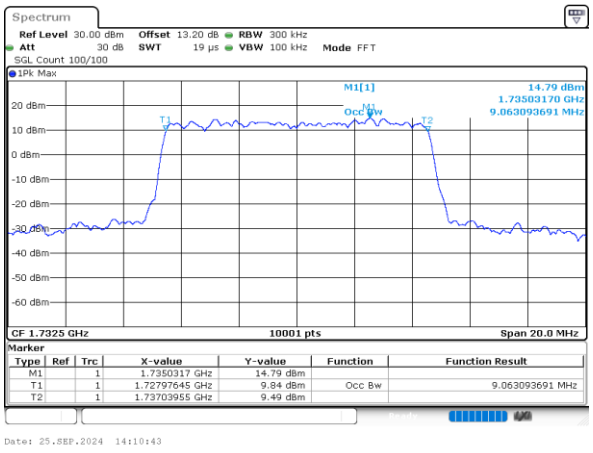
Middle Channel / 5MHz / QPSK



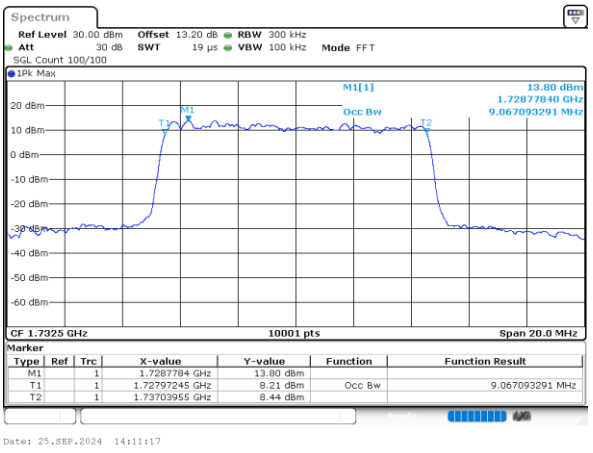
Middle Channel / 5MHz / 16QAM



Middle Channel / 10MHz / QPSK

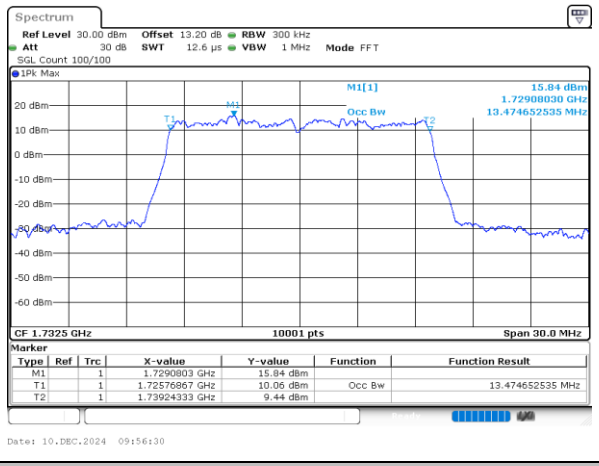


Middle Channel / 10MHz / 16QAM

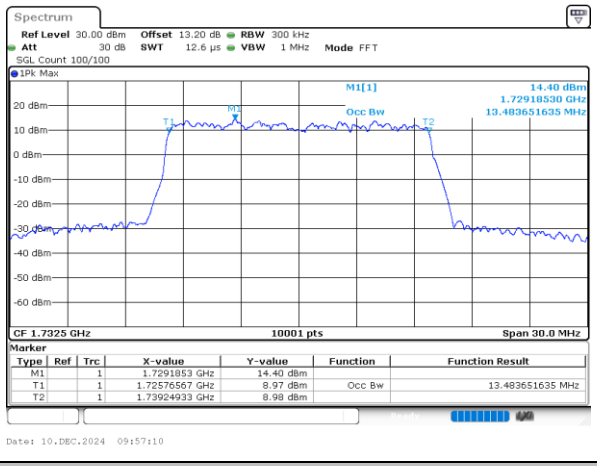


LTE Band 4

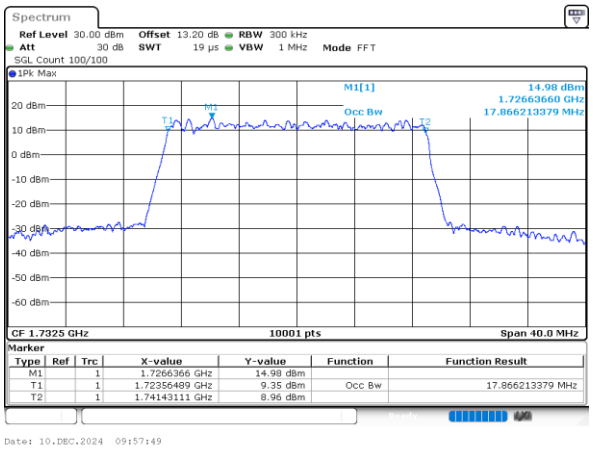
Middle Channel / 15MHz / QPSK



Middle Channel / 15MHz / 16QAM



Middle Channel / 20MHz / QPSK



Middle Channel / 20MHz / 16QAM