FCC RF Test Report

APPLICANT	:	VeriFone, Inc.
EQUIPMENT	:	Point of Sale Terminal
BRAND NAME	:	Verifone & VERIFONE
MODEL NAME	:	V660p-A, V660p Plus-A
FCC ID	:	B32V660PA
STANDARD	:	47 CFR Part 2, 90(R)
CLASSIFICATION	:	PCS Licensed Transmitter (PCB)
TEST DATE(S)	:	May 26, 2024 ~ Jun. 04, 2024

We, Sporton International Inc. (Kunshan), would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.26 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (Kunshan), the test report shall not be reproduced except in full.

Jason Jia

Approved by: Jason Jia

ACCREDITED
Cert #5145.02

Sporton International Inc. (Kunshan)
No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China

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APPENDIX A. TEST RESULTS OF CONDUCTED TEST

APPENDIX B. TEST RESULTS OF RADIATED TEST

APPENDIX C. TEST SETUP PHOTOGRAPHS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG440202D	Rev. 01	Initial issue of report	Jul. 02, 2024

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.2	§2.1046	Conducted Output Power	—	Reporting only	-
	§90.542 (a)(7)	Effective Radiated Power	ERP < 3Watt	PASS	-
3.3	-	Peak-to-Average Ratio	—	Reporting only	-
3.4	§2.1049	Occupied Bandwidth	—	Reporting only	-
3.5	§2.1053 §90.543 (e)(2)(3)	Conducted Band Edge Measurement	Refer standard	PASS	-
3.6	§2.1051 §90.210(n)	Emission Mask	Mask B	PASS	-
3.7	§2.1053 §90.543 (e)(3)	Conducted Spurious Emission	< $43+10\log_{10}$(P[Watts])	PASS	-
3.8	§2.1055 §90.539 (e)	Frequency Stability Temperature & Voltage	< ±1.25 ppm	PASS	-
4.4	§2.1053 §90.543 (e)(3) §90.543 (f)	Radiated Spurious Emission	< $43+10\log_{10}$(P[Watts])	PASS	Under limit 16.05 dB at 1576.00 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.

1 General Description

1.1 Applicant

VeriFone, Inc.
1400 West Stanford Ranch Road Suite 150 Rocklin CA 95765 USA

1.2 Manufacturer

VeriFone, Inc.
1400 West Stanford Ranch Road Suite 150 Rocklin CA 95765 USA

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	Point of Sale Terminal
Brand Name	Verifone & VERIFONE
Model Name	V660p-A, V660p Plus-A
FCC ID	B32V660PA
Tx Frequency	LTE Band 14: 788 MHz ~ 798 MHz
Rx Frequency	LTE Band 14: 758 MHz ~ 768 MHz
Bandwidth	5MHz / 10MHz
Maximum Output Power to Antenna	23.79 dBm
Antenna Gain	-1.1 dBi
Type of Modulation	QPSK / 16QAM / 64QAM
IMEI Code	Conducted: 356784410000664/356784410000672 Radiation: 356784410000144/356784410000151 356784410000227/356784410000235
EUT Stage	Identical Prototype

Remark:

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. There are two samples under test, Sample 1 (V660p-A) is dual P-SIM sample, and Sample 2 (V660p Plus-A) is P-SIM + E-SIM sample. The difference does not affect RF features, full test Sample 1 for representative.

1.4 Maximum ERP Power, and Emission Designator

LTE Band 14		QPSK		16QAM/64QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
5	**790.5~795.5**	0.1114	4M50G7D	0.0849	4M50W7D
10	**793**	0.1132	9M07G7D	0.0873	9M01W7D

1.5 Testing Site

Sporton International Inc. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	03CH04-KS TH01-KS	CN1257	314309

1.6 Test Software

Item	Site	Manufacturer	Name	Version
1.	TH01-KS	SPORTON	Part2224_Ver5.0 200330	5.0
2.	03CH04-KS	AUDIX	E3	210616

1.7 Applied Standards

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

- 47 CFR Part 2, Part 90(R)
- ANSI C63.26
- KDB 971168 D01 Power Meas License Digital Systems v03r01
- KDB 412172 D01 Determining ERP and EIRP v01r01

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

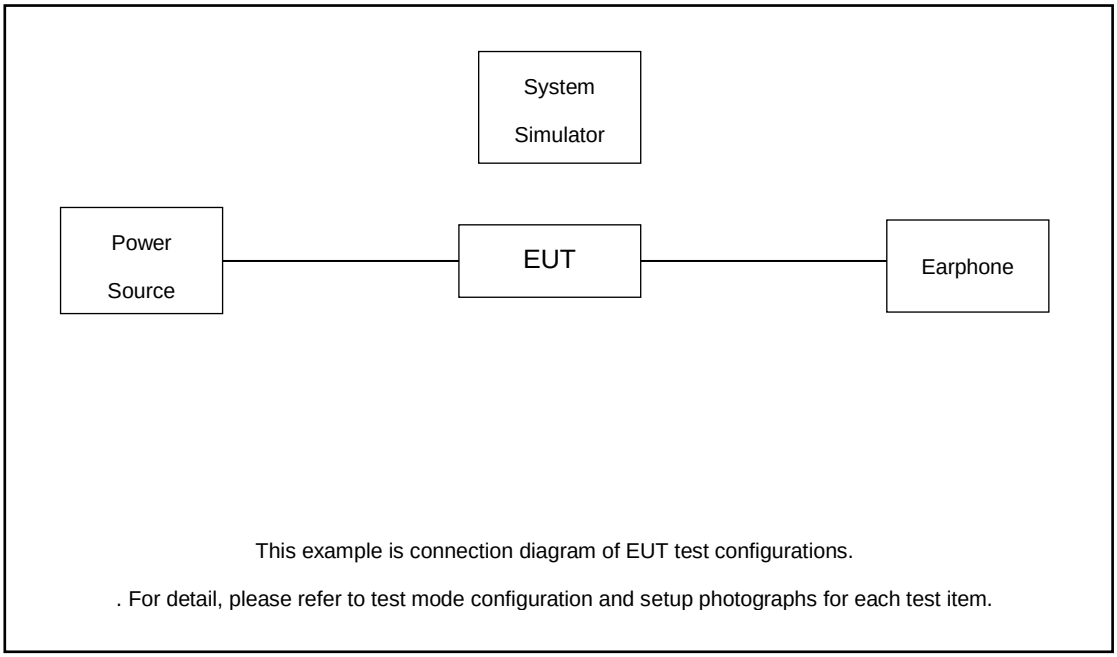
2.1 Test Mode

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.

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission.

Conducted Test Cases	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
Max. Output Power	14	-	-	v	-	-	-	v	v	v	v	v	v	v	v	v
	14	-	-		v	-	-	v	v	v	v	v	v		v	
Peak-to-Average Ratio	14	-	-		v	-	-	v	v	v			v		v	
26dB and 99% Bandwidth	14	-	-	v		-	-	v	v				v		v	
	14	-	-		v	-	-	v	v				v		v	
Conducted Band Edge	14	-	-	v		-	-	v	v	v	v		v	v		v
	14	-	-		v	-	-	v	v	v	v		v	v		v
Emission Mask	14	-	-	v		-	-	v	v	v	v		v	v	v	v
	14	-	-		v	-	-	v	v	v	v		v		v	
Conducted Spurious Emission	14	-	-	v		-	-	v			v			v	v	v
	14	-	-		v	-	-	v			v				v	
Frequency Stability	14	-	-	v	v	-	-	v					v		v	
E.R.P	14	-	-	v		-	-	v	v	v	v			v	v	v
	14	-	-		v	-	-	v	v	v	v				v	
Radiated Spurious Emission	14	-	-	v	v	-	-	v			v			v	v	v
Note	1. The mark "v " means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported. 3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.															

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	LTE Base Station	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	DC Power Supply	GW INSTEK	GPS-3030D	N/A	N/A	Unshielded, 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 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.

Offset = RF cable loss.

Following shows an offset computation example with cable loss 4.8 dB.

Example :

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

= 4.8(dB)

2.5 Frequency List of Low/Middle/High Channels

LTE Band 14 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
10	Channel	-	23330	-
	Frequency	-	793	-
5	Channel	23305	23330	23355
	Frequency	790.5	793	795.5

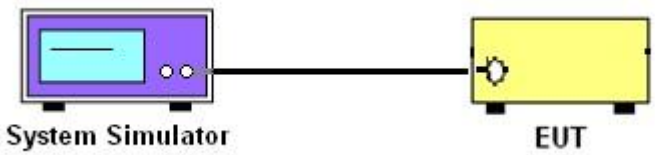
3 Conducted Test Items

3.1 Measuring Instruments

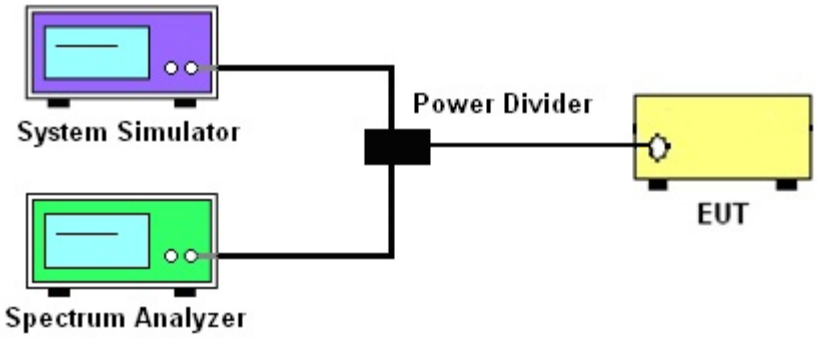
See list of measuring instruments of this test report.

3.1.1 Test Setup

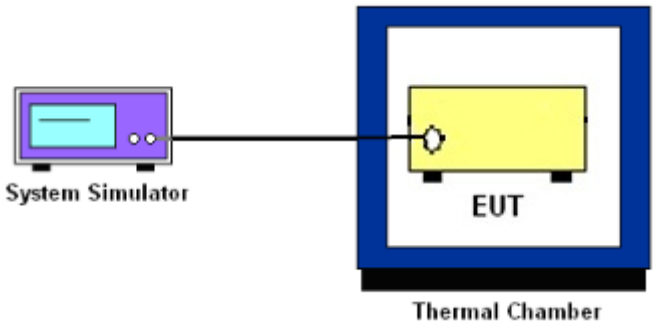
3.1.2 Conducted Output Power



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

3.2.1 Description of the Conducted Output Power Measurement and ERP

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

The ERP of mobile transmitters must not exceed 3 Watts for LTE Band 14.

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 testing follows ANSI C63.26 Section 5.2
2. The transmitter output port was connected to the system simulator.
3. Set EUT at maximum power through the system simulator.
4. Select lowest, middle, and highest channels for each band and different modulation.
5. 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

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

1. The testing follows ANSI C63.26 Section 5.4
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. 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.
4. 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.
5. Set the detection mode to peak, and the trace mode to max hold.
6. 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)
7. Determine the “-26 dB down amplitude” as equal to (Reference Value – X).
8. 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.
9. Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

3.5 Conducted Band Edge Measurement

3.5.1 Description of Conducted Band Edge Measurement

For operations in the 758-768 MHz and the 788-798 MHz bands

(1) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations.

(2) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations.

(3) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least 43 + 10 log (P) dB.

3.5.2 Test Procedures

1. The testing follows ANSI C63.26 section 5.7
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The band edges of low and high channels for the highest RF powers were measured.
4. Set spectrum analyzer with RMS detector.
5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
6. Checked that all the results comply with the emission limit line.

3.6 Emission Mask

3.6.1 Description of Emission Mask

<Emission Mask B>.

For transmitters that are equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power (P) as follows:

(1) On any frequency removed from the assigned frequency by more than 50 percent, but not more than 100 percent of the authorized bandwidth: At least 25 dB.

(2) On any frequency removed from the assigned frequency by more than 100 percent, but not more than 250 percent of the authorized bandwidth: At least 35 dB.

(3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least 43 + 10 log (P) dB.

3.6.2 Test Procedures

1. The testing follows ANSI C63.26 section 5.7
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. 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.
4. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz.
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 Conducted Spurious Emission Measurement

3.7.1 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 30MHz up to a frequency including its 10th harmonic.

3.7.2 Test Procedures

1. The testing follows ANSI C63.26 section 5.7
2. The EUT was connected to spectrum analyzer and base station via power divider.
3. 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.
4. The middle channel for the highest RF power within the transmitting frequency was measured.
5. The conducted spurious emission for the whole frequency range was taken.
6. Make the measurement with the spectrum analyzer's, for under 1GHz RBW = 100kHz, VBW = 300kHz and for above 1GHz RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
7. Set spectrum analyzer with RMS detector.
8. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
9. The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
   = P(W)- [43 + 10log(P)] (dB)
   = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
   = -13dBm.

3.8 Frequency Stability Measurement

3.8.1 Description of Frequency Stability Measurement

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 ±1.25 ppm of the center frequency.

3.8.2 Test Procedures for Temperature Variation

1. The testing follows ANSI C63.26 section 5.6.4
2. The EUT was set up in the thermal chamber and connected with the system simulator.
3. 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.
4. 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.

3.8.3 Test Procedures for Voltage Variation

1. The testing follows ANSI C63.26 section 5.6.5.
2. The EUT was placed in a temperature chamber at 20±5°C and connected with the system simulator.
3. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value for other than hand carried battery equipment.
4. For hand carried, battery powered equipment, reduce the primary ac or dc supply voltage to the battery operating end point, which shall be specified by the manufacturer.
5. The variation in frequency was measured for the worst case.

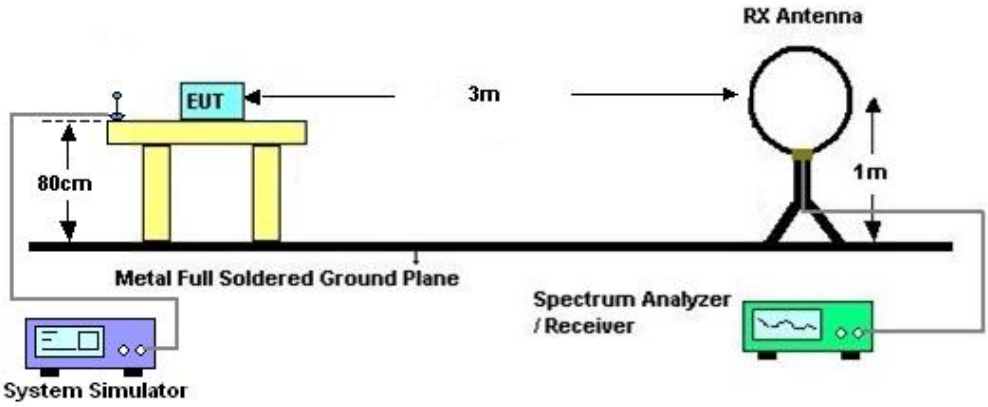
4 Radiated Test Items

4.1 Measuring Instruments

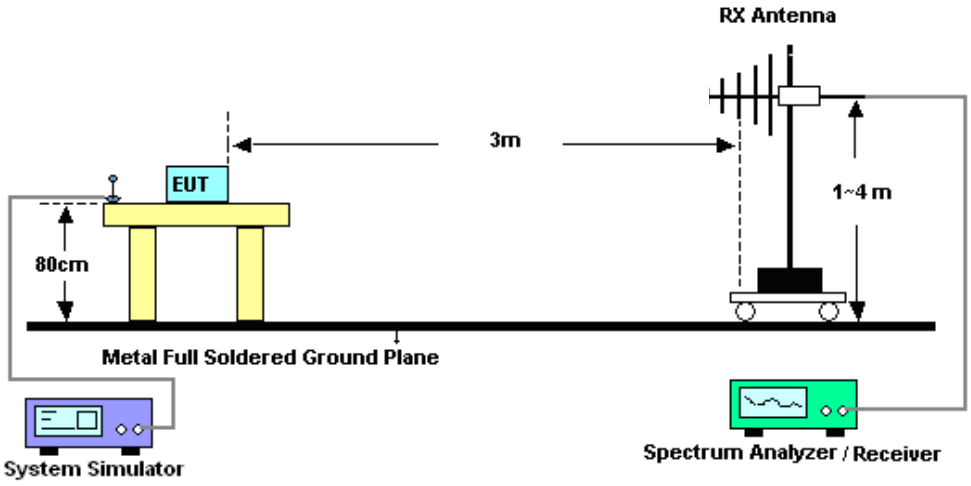
See list of measuring instruments of this test report.

4.2 Test Setup

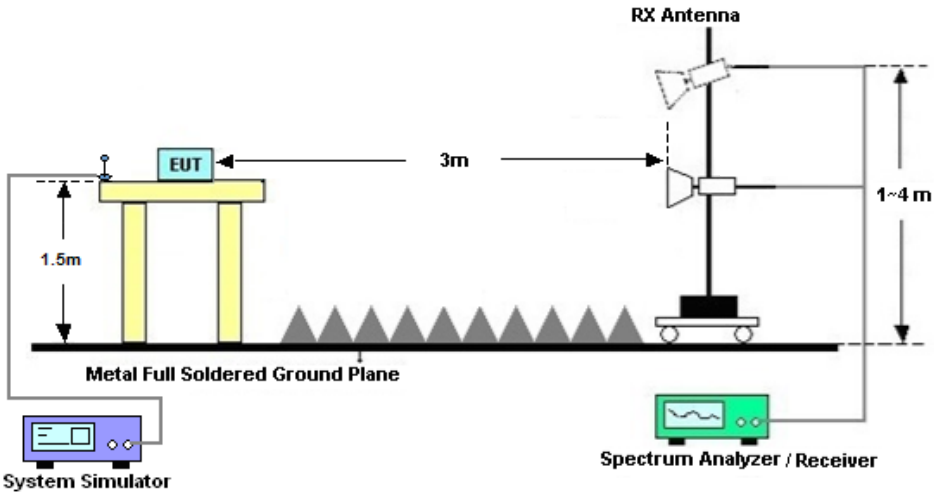
4.2.1 For radiated test below 30MHz



4.2.2 For radiated test from 30MHz to 1GHz



4.2.3 For radiated test above 1GHz



4.3 Test Result of Radiated Test

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.

Please refer to Appendix B.

4.4 Radiated Spurious Emission Measurement

4.4.1 Description of Radiated Spurious Emission

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

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. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

4.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.5
2. The EUT was placed on a turntable with 0.8 meter height for frequency below 1GHz and 1.5 meter height for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
6. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
7. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
8. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
9. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
10. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
11. ERP (dBm) = EIRP - 2.15
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 11, 2023	May 26, 2024~ Jun. 19, 2024	Oct. 10, 2024	Conducted (TH01-KS)
Power divider	STI	STI08-0055	-	0.5~40GHz	NCR	May 26, 2024~ Jun. 19, 2024	NCR	Conducted (TH01-KS)
Temperature & humidity chamber	Hongzhan	LP-150U	H2014011440	-40~+150°C 20%~95%RH	Jul. 06, 2023	May 26, 2024~ Jun. 19, 2024	Jul. 05, 2024	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010B	MY57471079	10Hz-44G,MAX 30dB	Oct. 10, 2023	Jun. 04, 2024	Oct. 09, 2024	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	59913	30MHz-1GHz	Aug. 19, 2023	Jun. 04, 2024	Aug. 18, 2024	Radiation (03CH04-KS)
Loop Antenna	R&S	HFH2-Z2E	101125	9kHz~30MHz	Sep. 11 2023	Jun. 04, 2024	Sep. 10, 2024	Radiation (03CH04-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00251694	1GHz~18GHz	Jul. 12, 2023	Jun. 04, 2024	Jul. 11, 2024	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 05, 2024	Jun. 04, 2024	Jan. 04, 2025	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	380827	9KHz-1GHz	Jul. 06, 2023	Jun. 04, 2024	Jul. 05, 2024	Radiation (03CH04-KS)
Amplifier	MITEQ	EM18G40G GA	060728	18~40GHz	Jan. 05, 2024	Jun. 04, 2024	Jan. 04, 2025	Radiation (03CH04-KS)
high gain Amplifier	EM	EM01G18G A	060840	1Ghz-18Ghz	Oct. 10, 2023	Jun. 04, 2024	Oct. 09, 2024	Radiation (03CH04-KS)
Amplifier	Agilent	8449B	3008A02370	1Ghz-18Ghz	Oct. 10, 2023	Jun. 04, 2024	Oct. 09, 2024	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Jun. 04, 2024	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Jun. 04, 2024	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Jun. 04, 2024	NCR	Radiation (03CH04-KS)

NCR: No Calibration Required

6 Measurement Uncertainty

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.26-2015. All the measurement uncertainty value were shown with a coverage K=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

Uncertainty of Conducted Measurement

Conducted Spurious Emission & Bandedge	**±2.26 dB**
Occupied Channel Bandwidth	**±0.1%**
Conducted Power	**±0.46 dB**
Peak to Average Ratio	**±0.46 dB**
Frequency Stability	**±0.4 Hz**

Uncertainty of Radiated Emission Measurement (9 KHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**±2.83dB**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**±2.83dB**

Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**±2.82 dB**

---------- THE END ----------

Appendix A. Test Results of Conducted Test

Test Engineer :	Smile Wang	Temperature :	22~23℃
		Relative Humidity :	40~42%

Conducted Output Power(Average power) and ERP

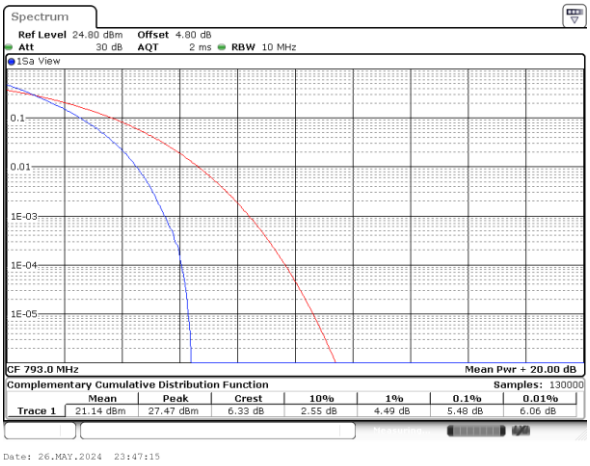
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	ERP(W)		
Channel				23330					
Frequency (MHz)				793				M	
10	QPSK	1	0		23.79			0.1132	
10	QPSK	1	49		23.78			0.1130	
10	QPSK	50	0		22.67			0.0875	
10	16QAM	1	0		22.66			0.0873	
10	64QAM	1	0		21.39			0.0652	
Channel				23305	23330	23355	ERP(W)		
Frequency (MHz)				790.5	793	795.5	L	M	H
5	QPSK	1	0	23.72	23.65	23.66	0.1114	0.1096	0.1099
5	16QAM	1	0	22.45	22.51	22.54	0.0832	0.0843	0.0849

Peak-to-Average Ratio

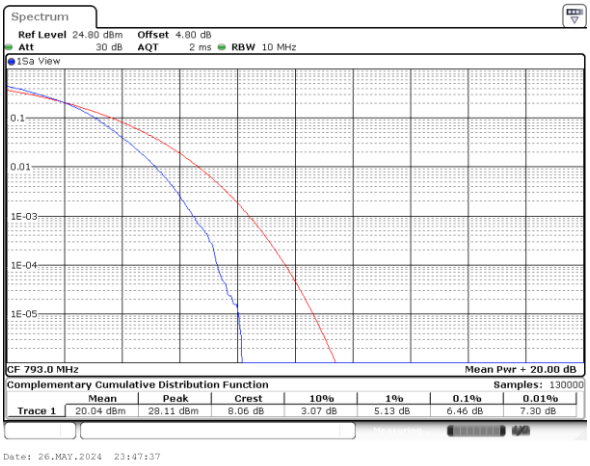
Mode	LTE Band 14 / 10MHz			
Mod.	QPSK	16QAM	64QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Result
Middle CH	5.48	6.46	6.49	PASS

LTE Band 14 / 10MHz

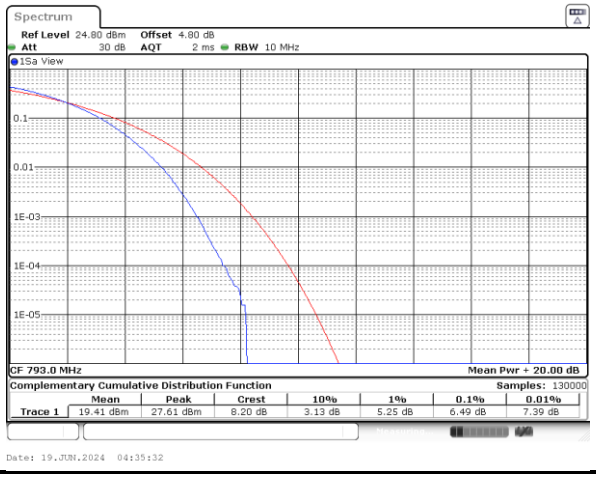
Middle Channel / Full RB/ QPSK



Middle Channel / Full RB/ 16QAM



Middle Channel / Full RB/ 64QAM

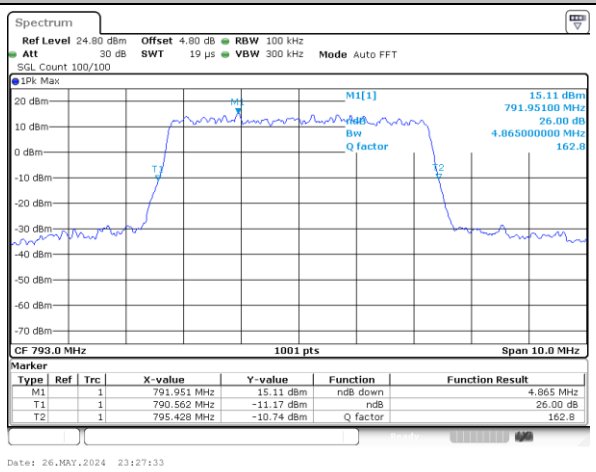


26dB Bandwidth

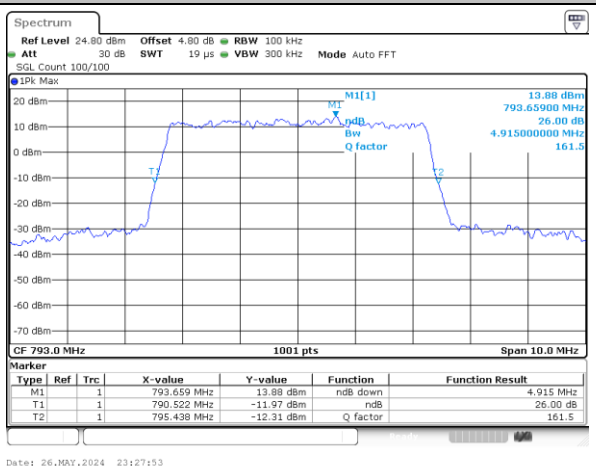
Mode	LTE Band 14 : 26dB BW(MHz)	
BW	5MHz	
Mod.	QPSK	16QAM
Middle CH	4.87	4.92
BW	10MHz	
Mod.	QPSK	16QAM
Middle CH	9.69	9.89

LTE Band 14

Middle Channel / 5MHz / QPSK

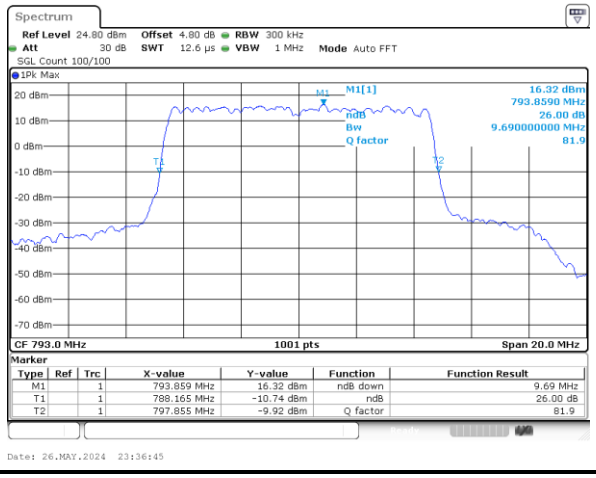


Middle Channel / 5MHz / 16QAM

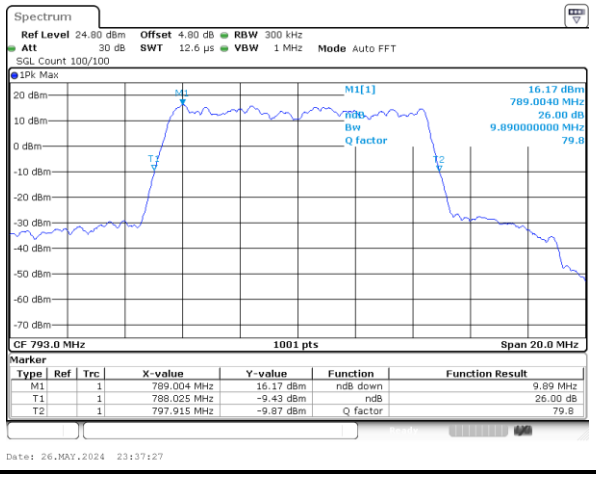


LTE Band 14

Middle Channel /10MHz / QPSK



Middle Channel / 10MHz / 16QAM

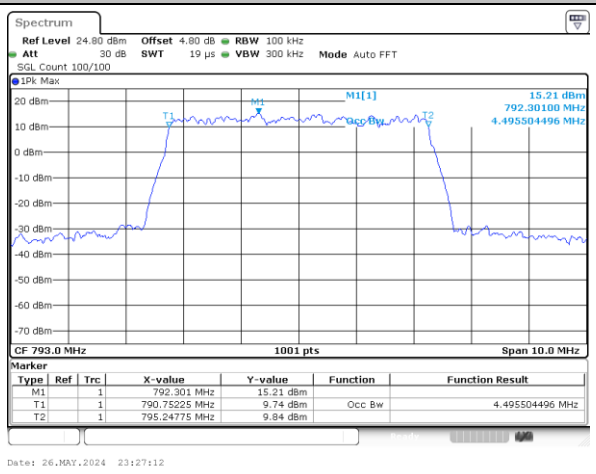


Occupied Bandwidth

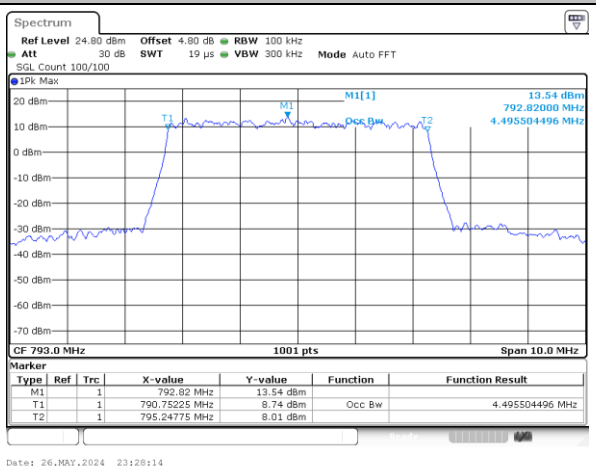
Mode	LTE Band 14 : 99%OBW(MHz)	
BW	5MHz	
Mod.	QPSK	16QAM
Middle CH	4.50	4.50
BW	10MHz	
Mod.	QPSK	16QAM
Middle CH	9.07	9.01

LTE Band 14

Middle Channel / 5MHz / QPSK

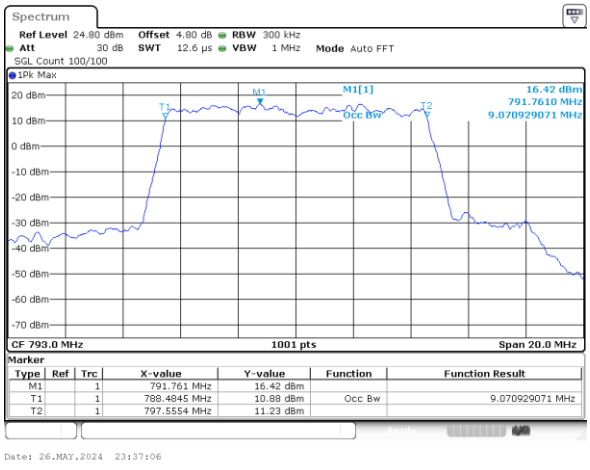


Middle Channel / 5MHz / 16QAM

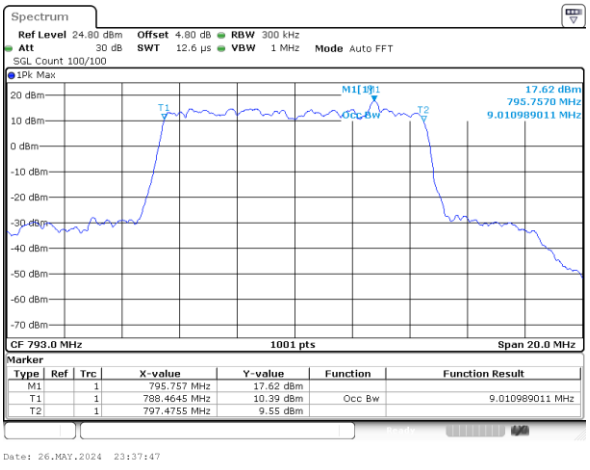


LTE Band 14

Middle Channel / 10MHz / QPSK



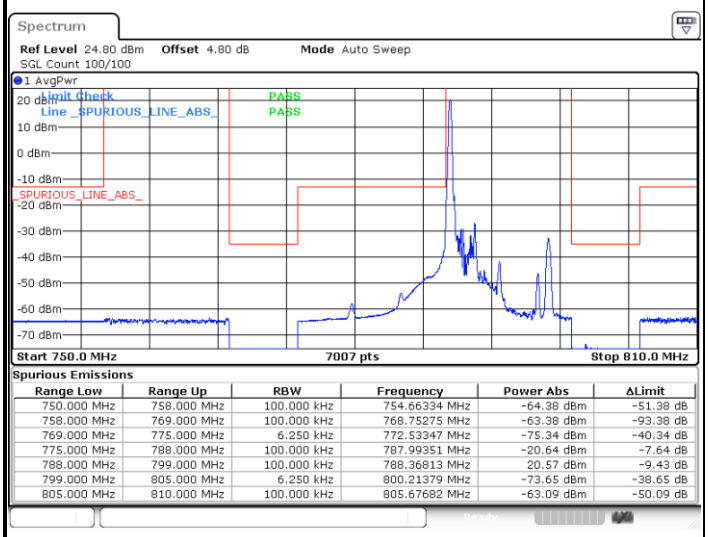
Middle Channel / 10MHz / 16QAM



Conducted Band Edge

LTE Band 14 / 5MHz / QPSK

Lowest Band Edge / 1 RB

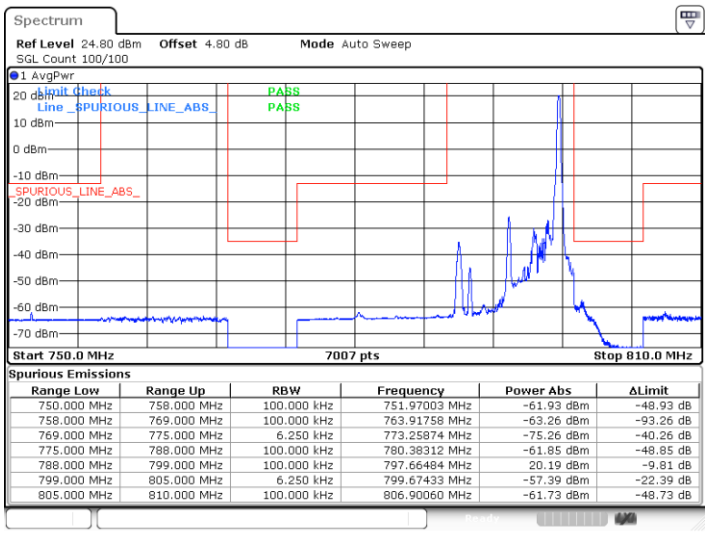


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
750.000 MHz	758.000 MHz	100.000 kHz	754.66334 MHz	-64.38 dBm	-51.38 dB
758.000 MHz	769.000 MHz	100.000 kHz	768.75275 MHz	-63.38 dBm	-93.38 dB
769.000 MHz	775.000 MHz	6.250 kHz	772.53347 MHz	-75.34 dBm	-40.34 dB
775.000 MHz	788.000 MHz	100.000 kHz	787.99351 MHz	-20.64 dBm	-7.64 dB
788.000 MHz	799.000 MHz	100.000 kHz	788.36813 MHz	20.57 dBm	-9.43 dB
799.000 MHz	805.000 MHz	6.250 kHz	800.21379 MHz	-73.65 dBm	-38.65 dB
805.000 MHz	810.000 MHz	100.000 kHz	805.67682 MHz	-63.09 dBm	-50.09 dB

Date: 26.MAY.2024 23:21:29

Highest Band Edge / 1 RB

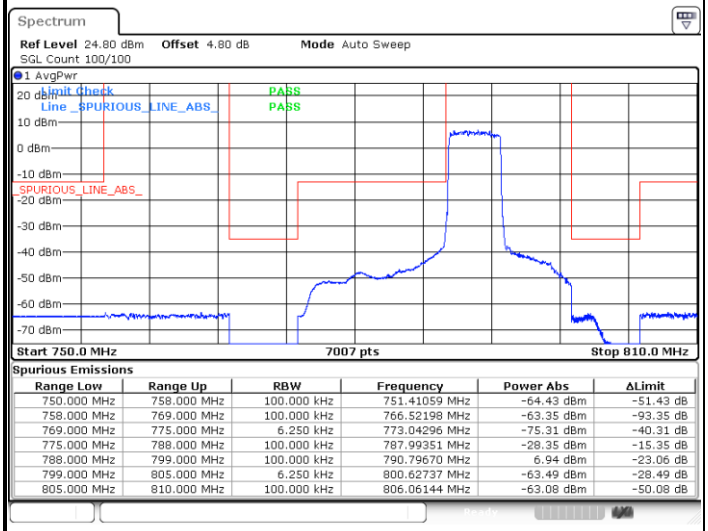


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
750.000 MHz	758.000 MHz	100.000 kHz	751.97003 MHz	-61.93 dBm	-48.93 dB
758.000 MHz	769.000 MHz	100.000 kHz	763.91758 MHz	-63.26 dBm	-93.26 dB
769.000 MHz	775.000 MHz	6.250 kHz	773.25874 MHz	-75.26 dBm	-40.26 dB
775.000 MHz	788.000 MHz	100.000 kHz	780.38312 MHz	-61.85 dBm	-48.85 dB
788.000 MHz	799.000 MHz	100.000 kHz	797.66484 MHz	20.19 dBm	-9.81 dB
799.000 MHz	805.000 MHz	6.250 kHz	799.67433 MHz	-57.39 dBm	-22.39 dB
805.000 MHz	810.000 MHz	100.000 kHz	806.90060 MHz	-61.73 dBm	-48.73 dB

Date: 26.MAY.2024 23:32:33

Lowest Band Edge / Full RB

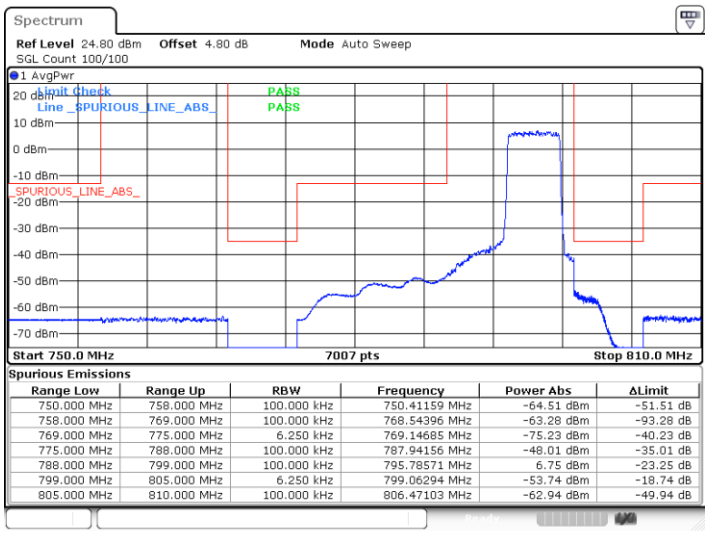


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
750.000 MHz	758.000 MHz	100.000 kHz	751.41059 MHz	-64.43 dBm	-51.43 dB
758.000 MHz	769.000 MHz	100.000 kHz	766.52198 MHz	-63.35 dBm	-93.35 dB
769.000 MHz	775.000 MHz	6.250 kHz	773.04296 MHz	-75.31 dBm	-40.31 dB
775.000 MHz	788.000 MHz	100.000 kHz	787.99351 MHz	-28.35 dBm	-15.35 dB
788.000 MHz	799.000 MHz	100.000 kHz	790.79670 MHz	6.94 dBm	-23.06 dB
799.000 MHz	805.000 MHz	6.250 kHz	800.62737 MHz	-63.49 dBm	-28.49 dB
805.000 MHz	810.000 MHz	100.000 kHz	806.06144 MHz	-63.08 dBm	-50.08 dB

Date: 26.MAY.2024 23:25:18

Highest Band Edge / Full RB



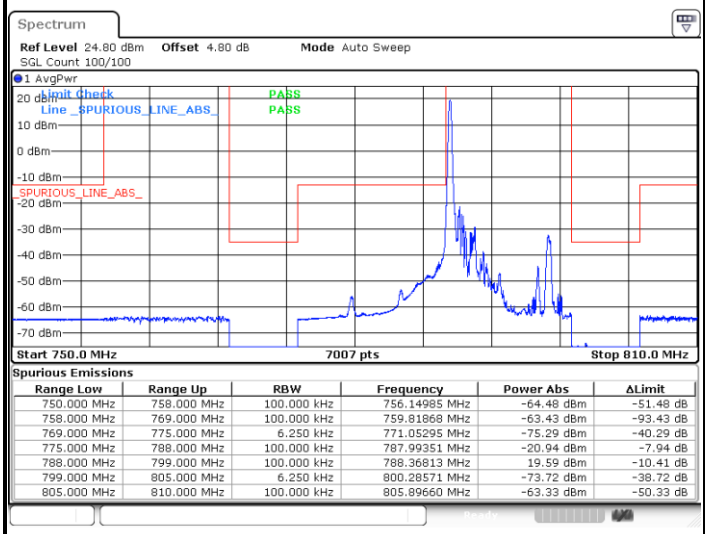
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
750.000 MHz	758.000 MHz	100.000 kHz	750.41159 MHz	-64.51 dBm	-51.51 dB
758.000 MHz	769.000 MHz	100.000 kHz	768.54396 MHz	-63.28 dBm	-93.28 dB
769.000 MHz	775.000 MHz	6.250 kHz	769.14685 MHz	-75.23 dBm	-40.23 dB
775.000 MHz	788.000 MHz	100.000 kHz	787.94156 MHz	-48.01 dBm	-35.01 dB
788.000 MHz	799.000 MHz	100.000 kHz	795.78571 MHz	6.75 dBm	-23.25 dB
799.000 MHz	805.000 MHz	6.250 kHz	799.06294 MHz	-53.74 dBm	-18.74 dB
805.000 MHz	810.000 MHz	100.000 kHz	806.47103 MHz	-62.94 dBm	-49.94 dB

Date: 26.MAY.2024 23:36:22

LTE Band 14 / 5MHz / 16QAM

Lowest Band Edge /1 RB

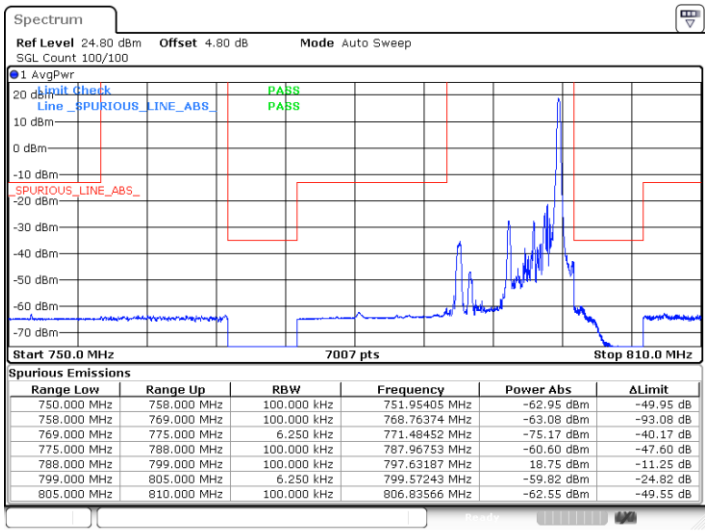


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
750.000 MHz	758.000 MHz	100.000 kHz	756.14985 MHz	-64.48 dBm	-51.48 dB
758.000 MHz	769.000 MHz	100.000 kHz	759.81868 MHz	-63.43 dBm	-93.43 dB
769.000 MHz	775.000 MHz	6.250 kHz	771.05295 MHz	-75.29 dBm	-40.29 dB
775.000 MHz	788.000 MHz	100.000 kHz	787.99351 MHz	-20.94 dBm	-7.94 dB
788.000 MHz	799.000 MHz	100.000 kHz	788.36813 MHz	19.59 dBm	-10.41 dB
799.000 MHz	805.000 MHz	6.250 kHz	800.28571 MHz	-73.72 dBm	-38.72 dB
805.000 MHz	810.000 MHz	100.000 kHz	805.89660 MHz	-63.33 dBm	-50.33 dB

Date: 26.MAY.2024 23:22:46

Highest Band Edge / 1 RB

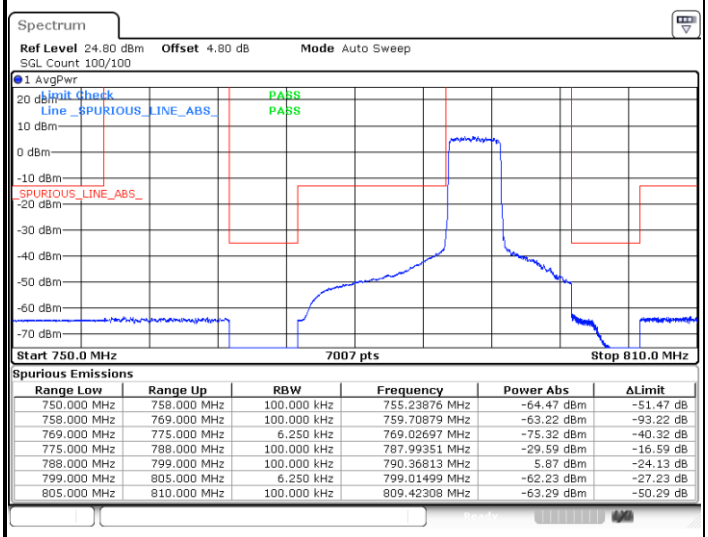


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
750.000 MHz	758.000 MHz	100.000 kHz	751.95405 MHz	-62.95 dBm	-49.95 dB
758.000 MHz	769.000 MHz	100.000 kHz	768.76374 MHz	-63.08 dBm	-93.08 dB
769.000 MHz	775.000 MHz	6.250 kHz	771.48452 MHz	-75.17 dBm	-40.17 dB
775.000 MHz	788.000 MHz	100.000 kHz	787.96753 MHz	-60.60 dBm	-47.60 dB
788.000 MHz	799.000 MHz	100.000 kHz	797.63187 MHz	18.75 dBm	-11.25 dB
799.000 MHz	805.000 MHz	6.250 kHz	799.57243 MHz	-59.82 dBm	-24.82 dB
805.000 MHz	810.000 MHz	100.000 kHz	806.83566 MHz	-62.55 dBm	-49.55 dB

Date: 26.MAY.2024 23:33:50

Lowest Band Edge / Full RB

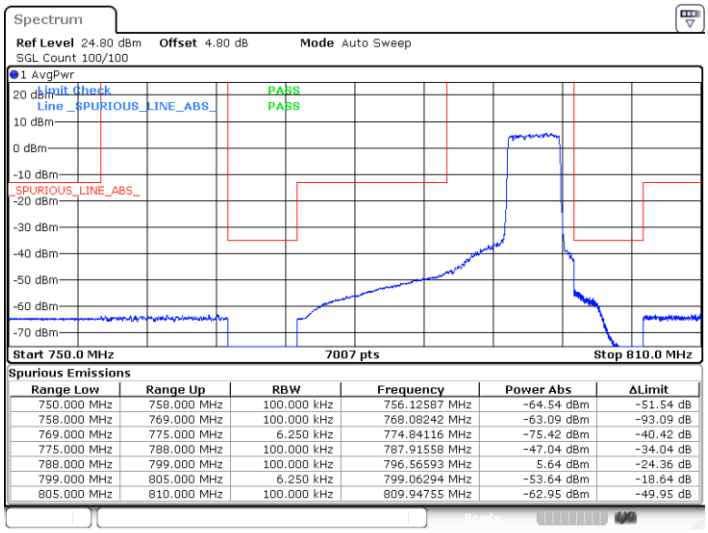


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
750.000 MHz	758.000 MHz	100.000 kHz	755.23876 MHz	-64.47 dBm	-51.47 dB
758.000 MHz	769.000 MHz	100.000 kHz	759.70879 MHz	-63.22 dBm	-93.22 dB
769.000 MHz	775.000 MHz	6.250 kHz	769.02697 MHz	-75.32 dBm	-40.32 dB
775.000 MHz	788.000 MHz	100.000 kHz	787.99351 MHz	-29.59 dBm	-16.59 dB
788.000 MHz	799.000 MHz	100.000 kHz	790.36813 MHz	5.87 dBm	-24.13 dB
799.000 MHz	805.000 MHz	6.250 kHz	799.01499 MHz	-62.23 dBm	-27.23 dB
805.000 MHz	810.000 MHz	100.000 kHz	809.42308 MHz	-63.29 dBm	-50.29 dB

Date: 26.MAY.2024 23:24:02

Highest Band Edge / Full RB



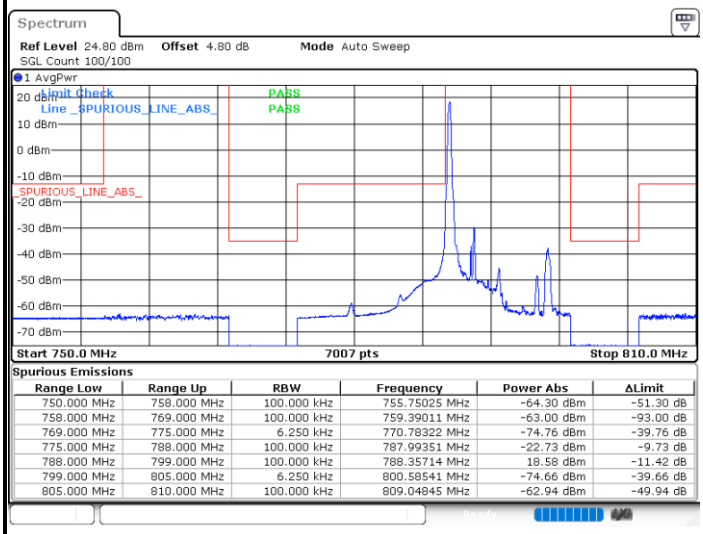
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
750.000 MHz	758.000 MHz	100.000 kHz	756.12587 MHz	-64.54 dBm	-51.54 dB
758.000 MHz	769.000 MHz	100.000 kHz	768.08242 MHz	-63.09 dBm	-93.09 dB
769.000 MHz	775.000 MHz	6.250 kHz	774.84116 MHz	-75.42 dBm	-40.42 dB
775.000 MHz	788.000 MHz	100.000 kHz	787.91558 MHz	-47.04 dBm	-34.04 dB
788.000 MHz	799.000 MHz	100.000 kHz	796.56593 MHz	5.64 dBm	-24.36 dB
799.000 MHz	805.000 MHz	6.250 kHz	799.06294 MHz	-53.64 dBm	-18.64 dB
805.000 MHz	810.000 MHz	100.000 kHz	809.94755 MHz	-62.95 dBm	-49.95 dB

Date: 26.MAY.2024 23:35:06

LTE Band 14 / 5MHz / 64QAM

Lowest Band Edge /1 RB

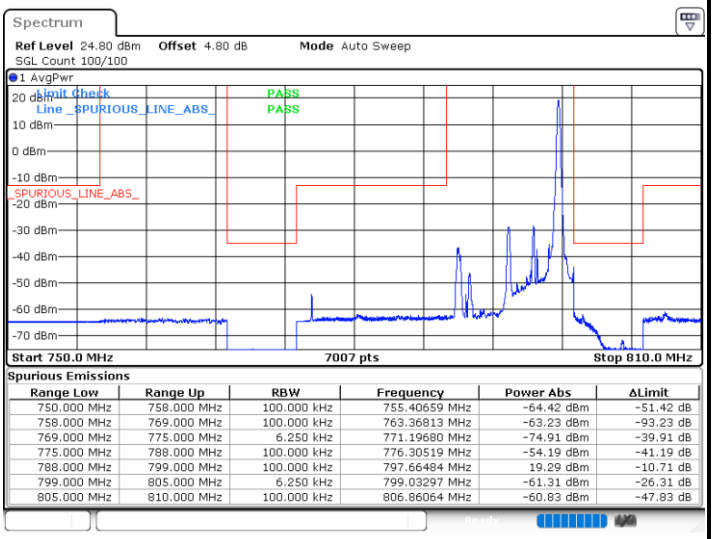


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
750.000 MHz	758.000 MHz	100.000 kHz	755.75025 MHz	-64.30 dBm	-51.30 dB
758.000 MHz	769.000 MHz	100.000 kHz	759.39011 MHz	-63.00 dBm	-93.00 dB
769.000 MHz	775.000 MHz	6.250 kHz	770.78322 MHz	-74.76 dBm	-39.76 dB
775.000 MHz	788.000 MHz	100.000 kHz	787.99351 MHz	-22.73 dBm	-9.73 dB
788.000 MHz	799.000 MHz	100.000 kHz	788.35714 MHz	18.58 dBm	-11.42 dB
799.000 MHz	805.000 MHz	6.250 kHz	800.58541 MHz	-74.66 dBm	-39.66 dB
805.000 MHz	810.000 MHz	100.000 kHz	809.04845 MHz	-62.94 dBm	-49.94 dB

Date: 18.JUN.2024 22:51:12

Highest Band Edge / 1 RB

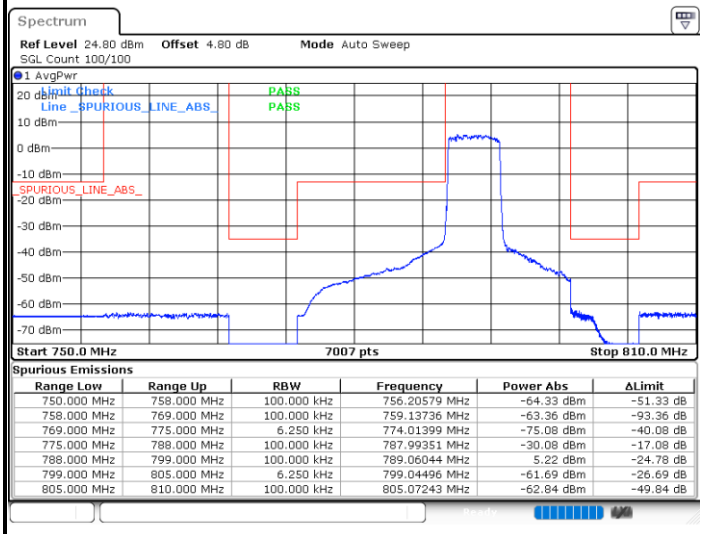


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
750.000 MHz	758.000 MHz	100.000 kHz	755.40659 MHz	-64.42 dBm	-51.42 dB
758.000 MHz	769.000 MHz	100.000 kHz	763.36813 MHz	-63.23 dBm	-93.23 dB
769.000 MHz	775.000 MHz	6.250 kHz	771.19680 MHz	-74.91 dBm	-39.91 dB
775.000 MHz	788.000 MHz	100.000 kHz	776.30519 MHz	-54.19 dBm	-41.19 dB
788.000 MHz	799.000 MHz	100.000 kHz	797.66484 MHz	19.29 dBm	-10.71 dB
799.000 MHz	805.000 MHz	6.250 kHz	799.03297 MHz	-61.31 dBm	-26.31 dB
805.000 MHz	810.000 MHz	100.000 kHz	806.86064 MHz	-60.83 dBm	-47.83 dB

Date: 18.JUN.2024 22:54:05

Lowest Band Edge / Full RB

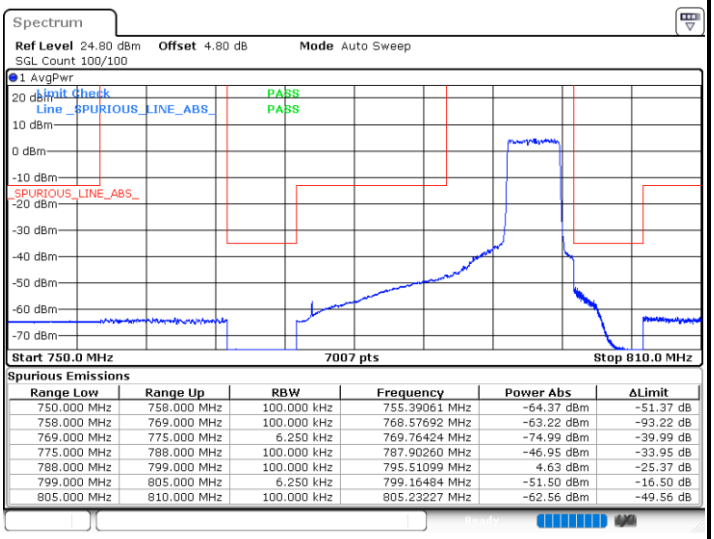


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
750.000 MHz	758.000 MHz	100.000 kHz	756.20579 MHz	-64.33 dBm	-51.33 dB
758.000 MHz	769.000 MHz	100.000 kHz	759.13736 MHz	-63.36 dBm	-93.36 dB
769.000 MHz	775.000 MHz	6.250 kHz	774.01399 MHz	-75.08 dBm	-40.08 dB
775.000 MHz	788.000 MHz	100.000 kHz	787.99351 MHz	-30.08 dBm	-17.08 dB
788.000 MHz	799.000 MHz	100.000 kHz	789.06044 MHz	5.22 dBm	-24.78 dB
799.000 MHz	805.000 MHz	6.250 kHz	799.04496 MHz	-61.69 dBm	-26.69 dB
805.000 MHz	810.000 MHz	100.000 kHz	805.07243 MHz	-62.84 dBm	-49.84 dB

Date: 18.JUN.2024 22:52:38

Highest Band Edge / Full RB



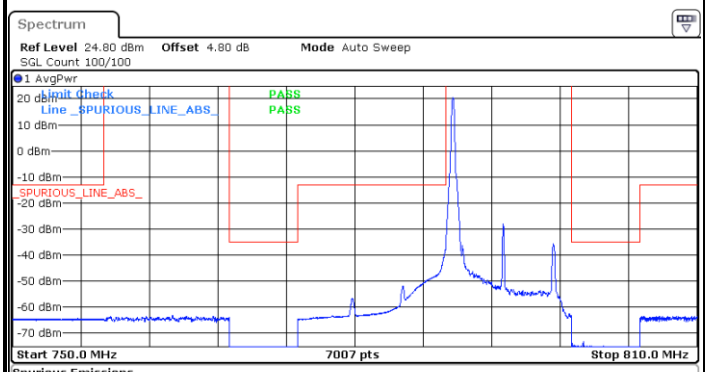
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
750.000 MHz	758.000 MHz	100.000 kHz	755.39061 MHz	-64.37 dBm	-51.37 dB
758.000 MHz	769.000 MHz	100.000 kHz	768.57692 MHz	-63.22 dBm	-93.22 dB
769.000 MHz	775.000 MHz	6.250 kHz	769.76424 MHz	-74.99 dBm	-39.99 dB
775.000 MHz	788.000 MHz	100.000 kHz	787.90260 MHz	-46.95 dBm	-33.95 dB
788.000 MHz	799.000 MHz	100.000 kHz	795.51099 MHz	4.63 dBm	-25.37 dB
799.000 MHz	805.000 MHz	6.250 kHz	799.16484 MHz	-51.50 dBm	-16.50 dB
805.000 MHz	810.000 MHz	100.000 kHz	805.23227 MHz	-62.56 dBm	-49.56 dB

Date: 18.JUN.2024 22:55:31

LTE Band 14 / 10MHz / QPSK

Lowest Band Edge / 1 RB

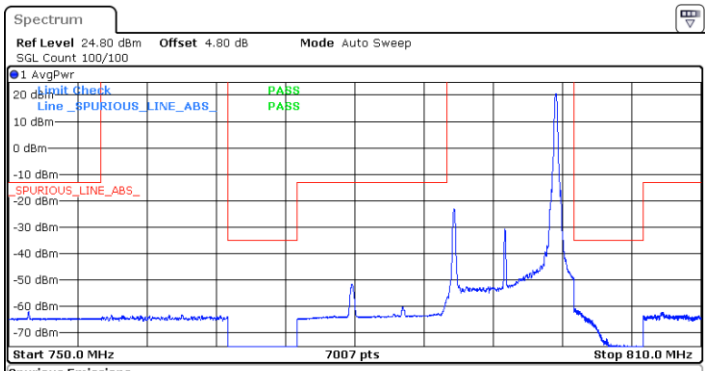


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
750.000 MHz	758.000 MHz	100.000 kHz	755.66234 MHz	-64.36 dBm	-51.36 dB
758.000 MHz	769.000 MHz	100.000 kHz	763.98352 MHz	-63.15 dBm	-93.15 dB
769.000 MHz	775.000 MHz	6.250 kHz	770.50150 MHz	-75.35 dBm	-40.35 dB
775.000 MHz	788.000 MHz	100.000 kHz	787.99351 MHz	-34.71 dBm	-21.71 dB
788.000 MHz	799.000 MHz	100.000 kHz	788.58791 MHz	20.47 dBm	-9.53 dB
799.000 MHz	805.000 MHz	6.250 kHz	800.02797 MHz	-73.09 dBm	-38.09 dB
805.000 MHz	810.000 MHz	100.000 kHz	806.41109 MHz	-63.43 dBm	-50.43 dB

Date: 26.MAY.2024 23:40:34

Highest Band Edge / 1 RB

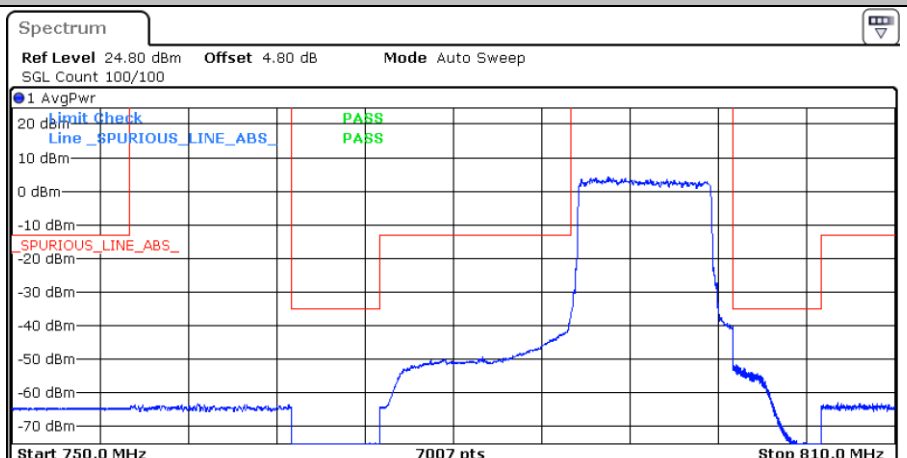


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
750.000 MHz	758.000 MHz	100.000 kHz	751.74625 MHz	-61.93 dBm	-48.93 dB
758.000 MHz	769.000 MHz	100.000 kHz	765.00549 MHz	-63.17 dBm	-93.17 dB
769.000 MHz	775.000 MHz	6.250 kHz	774.32567 MHz	-75.27 dBm	-40.27 dB
775.000 MHz	788.000 MHz	100.000 kHz	779.75974 MHz	-51.53 dBm	-38.53 dB
788.000 MHz	799.000 MHz	100.000 kHz	797.40110 MHz	20.51 dBm	-9.49 dB
799.000 MHz	805.000 MHz	6.250 kHz	799.09291 MHz	-60.76 dBm	-25.76 dB
805.000 MHz	810.000 MHz	100.000 kHz	806.63586 MHz	-62.13 dBm	-49.13 dB

Date: 26.MAY.2024 23:44:21

Band Edge / Full RB



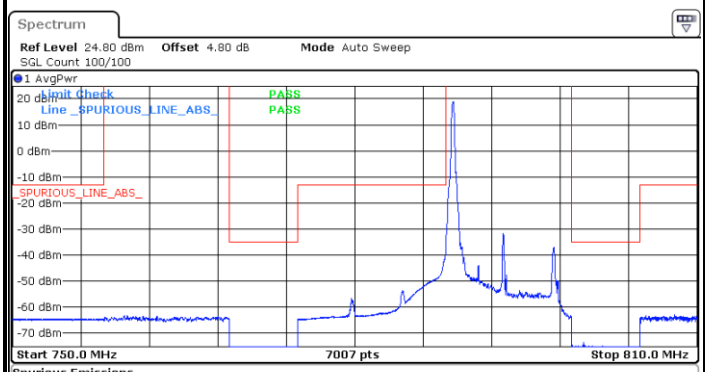
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
750.000 MHz	758.000 MHz	100.000 kHz	750.82717 MHz	-64.47 dBm	-51.47 dB
758.000 MHz	769.000 MHz	100.000 kHz	762.59890 MHz	-63.31 dBm	-93.31 dB
769.000 MHz	775.000 MHz	6.250 kHz	774.28971 MHz	-74.79 dBm	-39.79 dB
775.000 MHz	788.000 MHz	100.000 kHz	787.99351 MHz	-36.13 dBm	-23.13 dB
788.000 MHz	799.000 MHz	100.000 kHz	790.51099 MHz	4.07 dBm	-25.93 dB
799.000 MHz	805.000 MHz	6.250 kHz	799.00899 MHz	-51.46 dBm	-16.46 dB
805.000 MHz	810.000 MHz	100.000 kHz	806.09141 MHz	-63.06 dBm	-50.06 dB

Date: 26.MAY.2024 23:45:37

LTE Band 14 / 10MHz / 16QAM

Lowest Band Edge / 1 RB

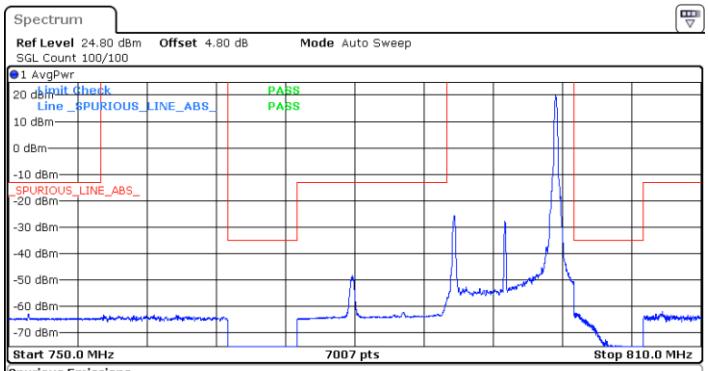


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
750.000 MHz	758.000 MHz	100.000 kHz	755.99800 MHz	-64.48 dBm	-51.48 dB
758.000 MHz	769.000 MHz	100.000 kHz	759.78571 MHz	-63.24 dBm	-93.24 dB
769.000 MHz	775.000 MHz	6.250 kHz	771.50250 MHz	-75.30 dBm	-40.30 dB
775.000 MHz	788.000 MHz	100.000 kHz	787.99351 MHz	-35.30 dBm	-22.30 dB
788.000 MHz	799.000 MHz	100.000 kHz	788.59890 MHz	18.77 dBm	-11.23 dB
799.000 MHz	805.000 MHz	6.250 kHz	800.01598 MHz	-73.53 dBm	-38.53 dB
805.000 MHz	810.000 MHz	100.000 kHz	808.02947 MHz	-62.85 dBm	-49.85 dB

Date: 26.MAY.2024 23:41:50

Highest Band Edge / 1 RB

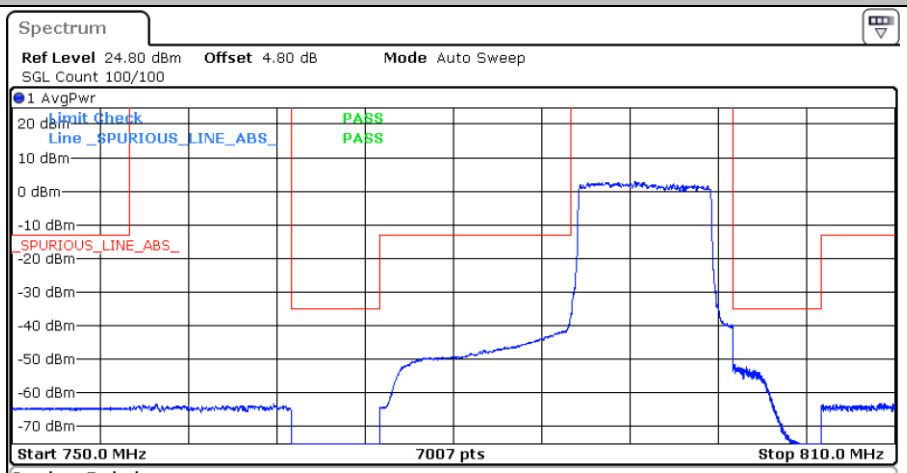


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
750.000 MHz	758.000 MHz	100.000 kHz	751.73826 MHz	-62.88 dBm	-49.88 dB
758.000 MHz	769.000 MHz	100.000 kHz	762.58791 MHz	-63.09 dBm	-93.09 dB
769.000 MHz	775.000 MHz	6.250 kHz	769.03297 MHz	-75.33 dBm	-40.33 dB
775.000 MHz	788.000 MHz	100.000 kHz	779.74675 MHz	-48.44 dBm	-35.44 dB
788.000 MHz	799.000 MHz	100.000 kHz	797.41209 MHz	19.65 dBm	-10.35 dB
799.000 MHz	805.000 MHz	6.250 kHz	799.00300 MHz	-61.94 dBm	-26.94 dB
805.000 MHz	810.000 MHz	100.000 kHz	806.65085 MHz	-62.01 dBm	-49.01 dB

Date: 26.MAY.2024 23:43:05

Band Edge / Full RB



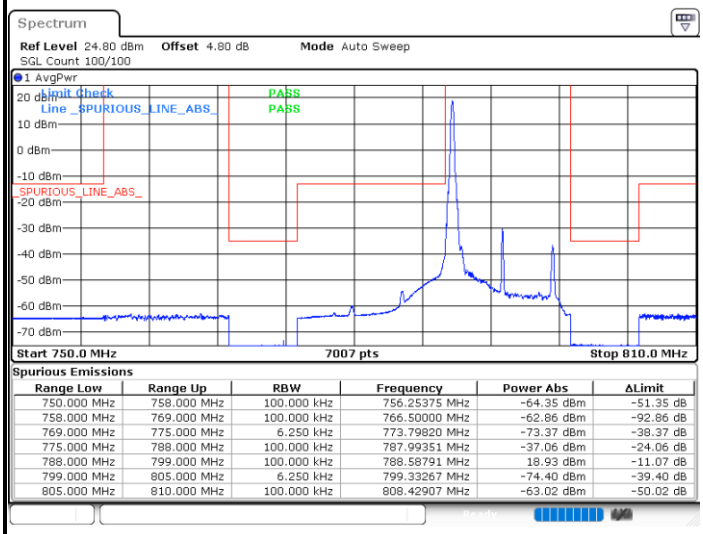
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
750.000 MHz	758.000 MHz	100.000 kHz	756.68531 MHz	-64.35 dBm	-51.35 dB
758.000 MHz	769.000 MHz	100.000 kHz	767.77473 MHz	-63.29 dBm	-93.29 dB
769.000 MHz	775.000 MHz	6.250 kHz	774.81119 MHz	-75.13 dBm	-40.13 dB
775.000 MHz	788.000 MHz	100.000 kHz	787.99351 MHz	-36.33 dBm	-23.33 dB
788.000 MHz	799.000 MHz	100.000 kHz	792.33516 MHz	2.74 dBm	-27.26 dB
799.000 MHz	805.000 MHz	6.250 kHz	799.08092 MHz	-51.47 dBm	-16.47 dB
805.000 MHz	810.000 MHz	100.000 kHz	809.03347 MHz	-63.08 dBm	-50.08 dB

Date: 26.MAY.2024 23:46:52

LTE Band 14 / 10MHz / 64QAM

Lowest Band Edge / 1 RB

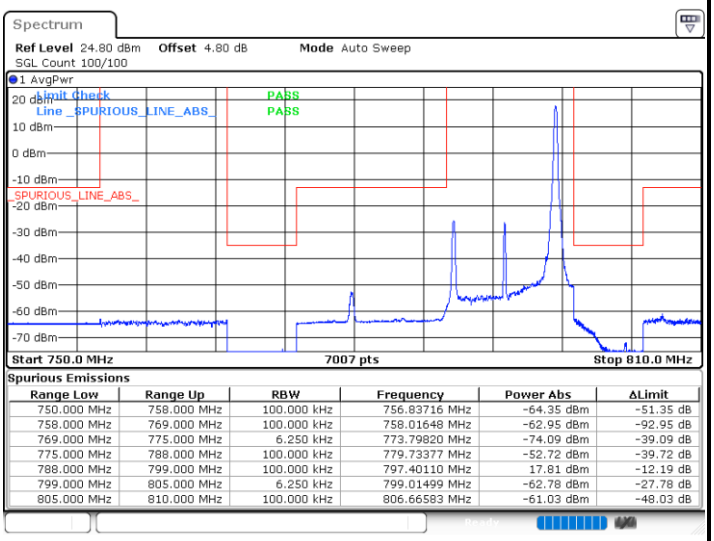


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
750.000 MHz	758.000 MHz	100.000 kHz	756.25375 MHz	-64.35 dBm	-51.35 dB
758.000 MHz	769.000 MHz	100.000 kHz	766.50000 MHz	-62.86 dBm	-92.86 dB
769.000 MHz	775.000 MHz	6.250 kHz	773.79820 MHz	-73.37 dBm	-38.37 dB
775.000 MHz	788.000 MHz	100.000 kHz	787.99351 MHz	-37.06 dBm	-24.06 dB
788.000 MHz	799.000 MHz	100.000 kHz	788.58791 MHz	18.93 dBm	-11.07 dB
799.000 MHz	805.000 MHz	6.250 kHz	799.33267 MHz	-74.40 dBm	-39.40 dB
805.000 MHz	810.000 MHz	100.000 kHz	808.42907 MHz	-63.02 dBm	-50.02 dB

Date: 18.JUN.2024 22:57:00

Highest Band Edge / 1 RB

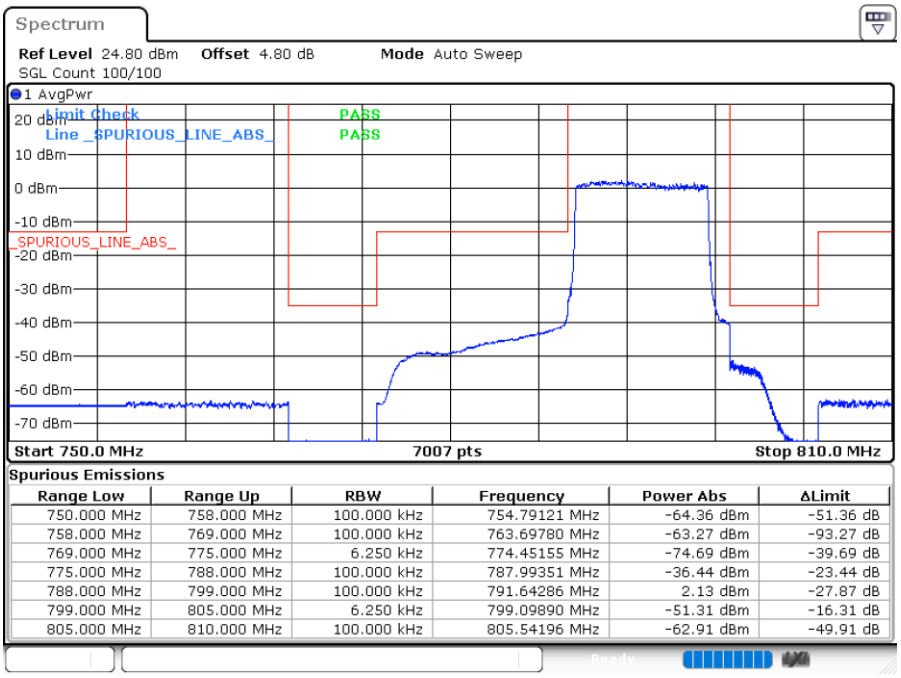


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
750.000 MHz	758.000 MHz	100.000 kHz	756.83716 MHz	-64.35 dBm	-51.35 dB
758.000 MHz	769.000 MHz	100.000 kHz	758.01648 MHz	-62.95 dBm	-92.95 dB
769.000 MHz	775.000 MHz	6.250 kHz	773.79820 MHz	-74.09 dBm	-39.09 dB
775.000 MHz	788.000 MHz	100.000 kHz	779.73377 MHz	-52.72 dBm	-39.72 dB
788.000 MHz	799.000 MHz	100.000 kHz	797.40110 MHz	17.81 dBm	-12.19 dB
799.000 MHz	805.000 MHz	6.250 kHz	799.01499 MHz	-62.78 dBm	-27.78 dB
805.000 MHz	810.000 MHz	100.000 kHz	806.66583 MHz	-61.03 dBm	-48.03 dB

Date: 18.JUN.2024 22:58:26

Band Edge / Full RB



Spurious Emissions

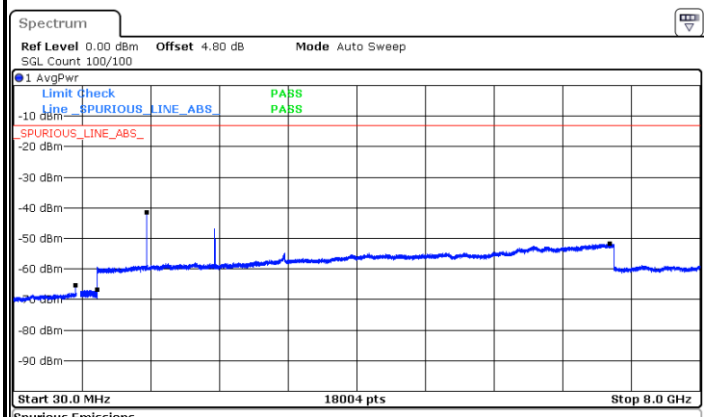
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
750.000 MHz	758.000 MHz	100.000 kHz	754.79121 MHz	-64.36 dBm	-51.36 dB
758.000 MHz	769.000 MHz	100.000 kHz	763.69780 MHz	-63.27 dBm	-93.27 dB
769.000 MHz	775.000 MHz	6.250 kHz	774.45155 MHz	-74.69 dBm	-39.69 dB
775.000 MHz	788.000 MHz	100.000 kHz	787.99351 MHz	-36.44 dBm	-23.44 dB
788.000 MHz	799.000 MHz	100.000 kHz	791.64286 MHz	2.13 dBm	-27.87 dB
799.000 MHz	805.000 MHz	6.250 kHz	799.09890 MHz	-51.31 dBm	-16.31 dB
805.000 MHz	810.000 MHz	100.000 kHz	805.54196 MHz	-62.91 dBm	-49.91 dB

Date: 18.JUN.2024 22:59:52

Conducted Spurious Emission

LTE Band 14 / 5MHz

Lowest Channel / QPSK

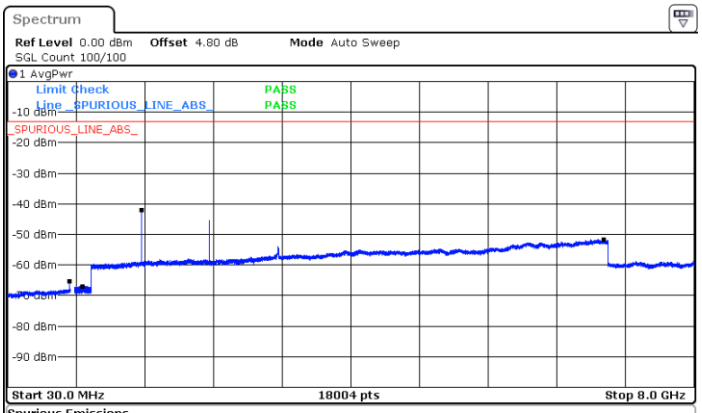


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	758.000 MHz	100.000 kHz	743.26537 MHz	-65.45 dBm	-52.45 dB
805.000 MHz	1.000 GHz	100.000 kHz	998.68441 MHz	-66.79 dBm	-53.79 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.57711 GHz	-41.59 dBm	-28.59 dB
3.000 GHz	8.000 GHz	1.000 MHz	6.94936 GHz	-51.83 dBm	-38.83 dB

Date: 26.MAY.2024 23:26:50

Middle Channel / QPSK

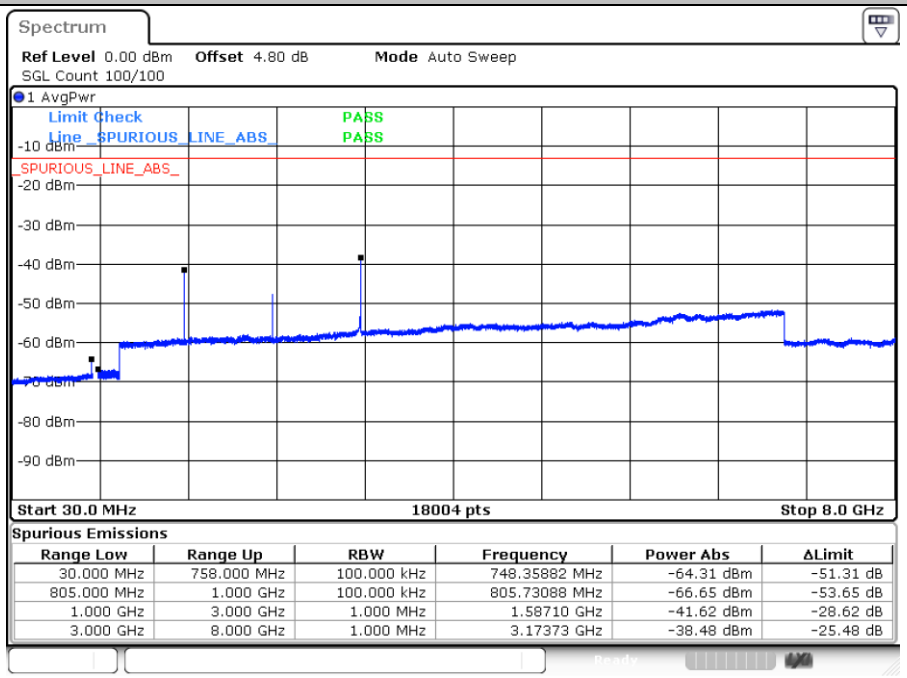


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	758.000 MHz	100.000 kHz	745.81209 MHz	-65.30 dBm	-52.30 dB
805.000 MHz	1.000 GHz	100.000 kHz	898.79685 MHz	-66.94 dBm	-53.94 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.58210 GHz	-42.04 dBm	-29.04 dB
3.000 GHz	8.000 GHz	1.000 MHz	6.95535 GHz	-51.62 dBm	-38.62 dB

Date: 26.MAY.2024 23:29:45

Highest Channel / QPSK

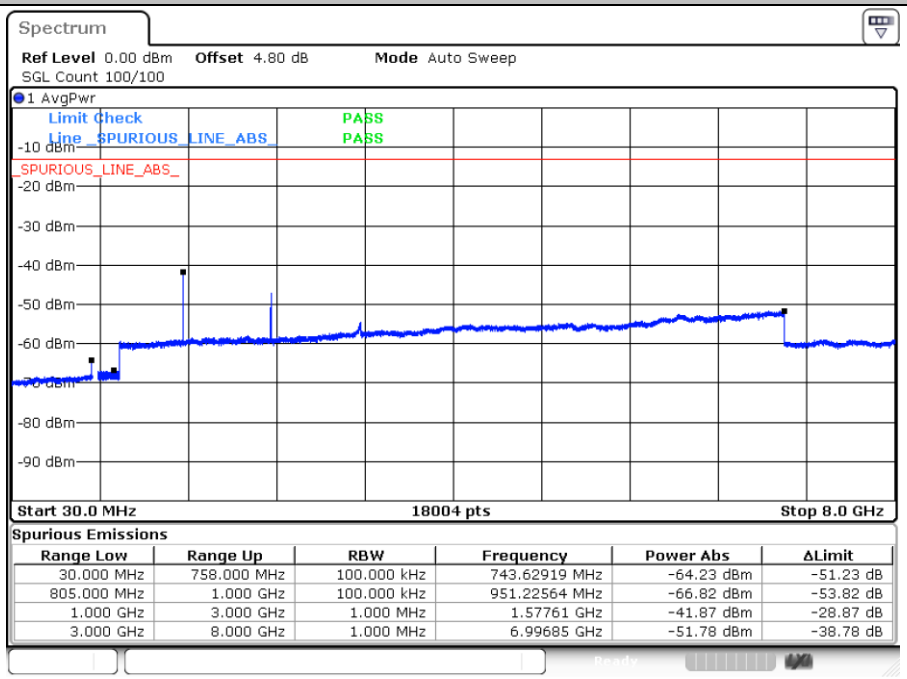


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	758.000 MHz	100.000 kHz	748.35882 MHz	-64.31 dBm	-51.31 dB
805.000 MHz	1.000 GHz	100.000 kHz	805.73088 MHz	-66.65 dBm	-53.65 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.58710 GHz	-41.62 dBm	-28.62 dB
3.000 GHz	8.000 GHz	1.000 MHz	3.17373 GHz	-38.48 dBm	-25.48 dB

Date: 26.MAY.2024 23:31:17

LTE Band 14 / 10MHz
Middle Channel / QPSK



Spurious Emissions

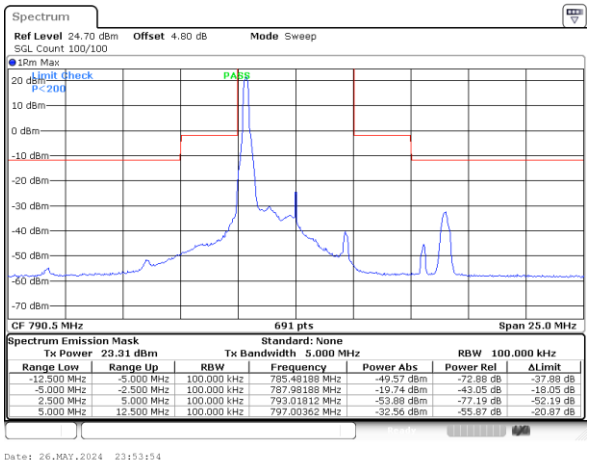
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	758.000 MHz	100.000 kHz	743.62919 MHz	-64.23 dBm	-51.23 dB
805.000 MHz	1.000 GHz	100.000 kHz	951.22564 MHz	-66.82 dBm	-53.82 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.57761 GHz	-41.87 dBm	-28.87 dB
3.000 GHz	8.000 GHz	1.000 MHz	6.99685 GHz	-51.78 dBm	-38.78 dB

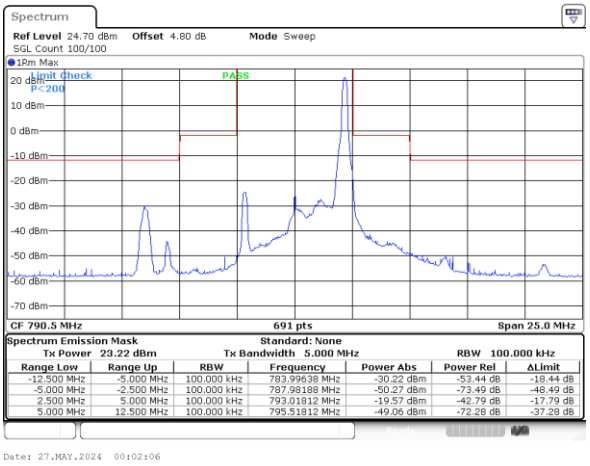
Date: 26.MAY.2024 23:39:18

Emission Mask

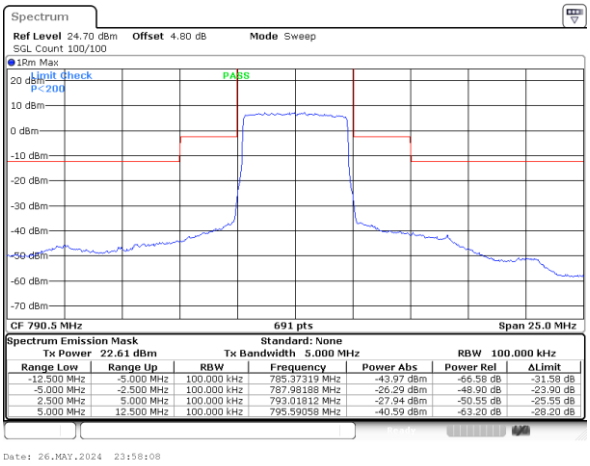
LTE Band 14 / 5MHz / QPSK

Lowest Channel / 1RB



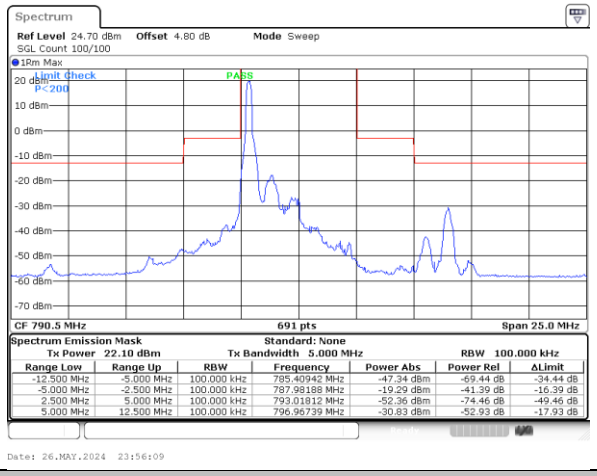


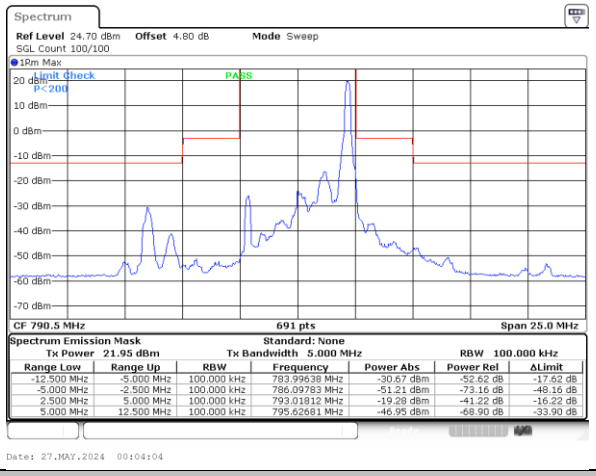
Lowest Channel / Full RB



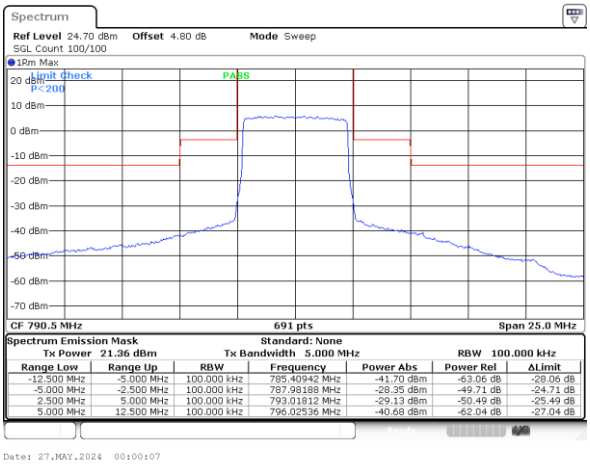
LTE Band 14 / 5MHz / 16QAM

Lowest Channel / 1RB



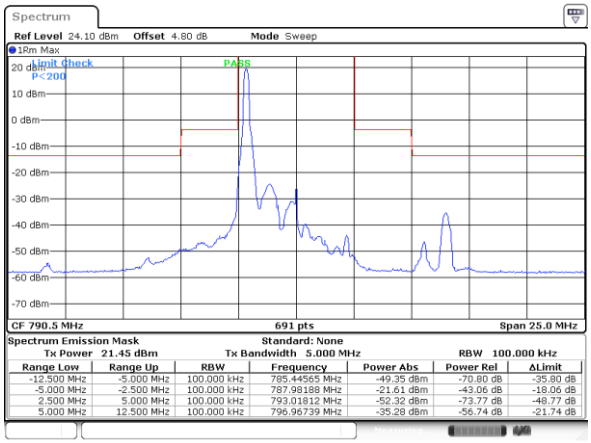


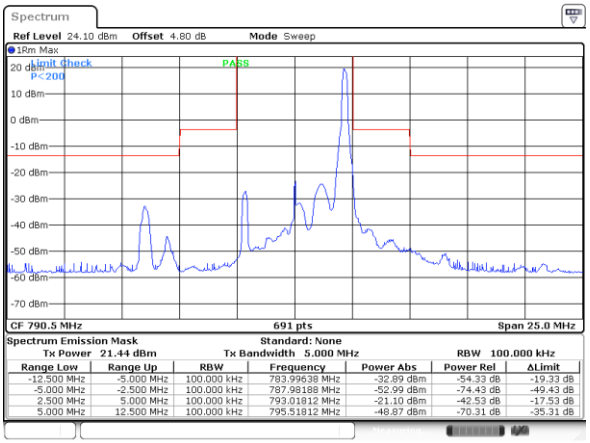
Lowest Channel / Full RB



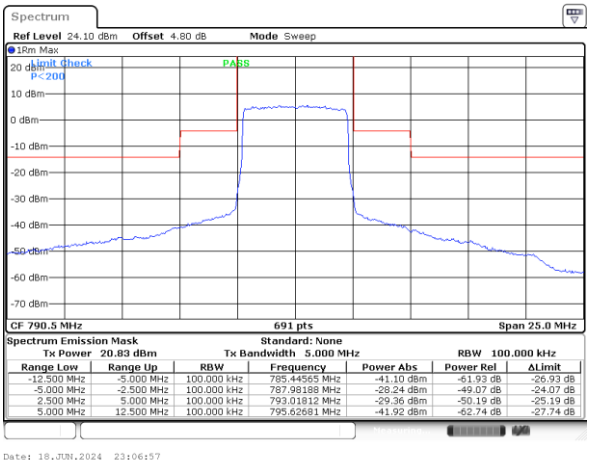
LTE Band 14 / 5MHz / 64QAM

Lowest Channel / 1RB



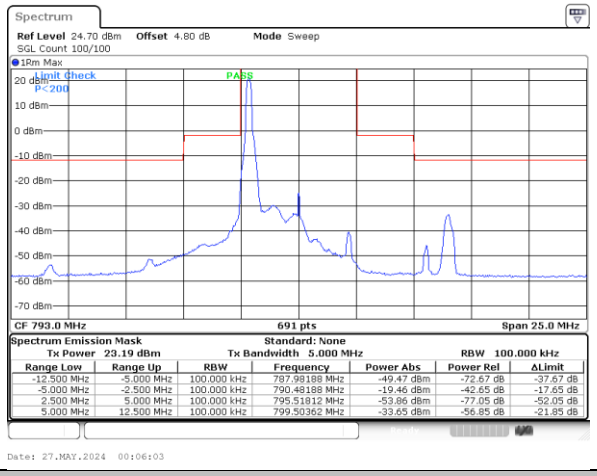


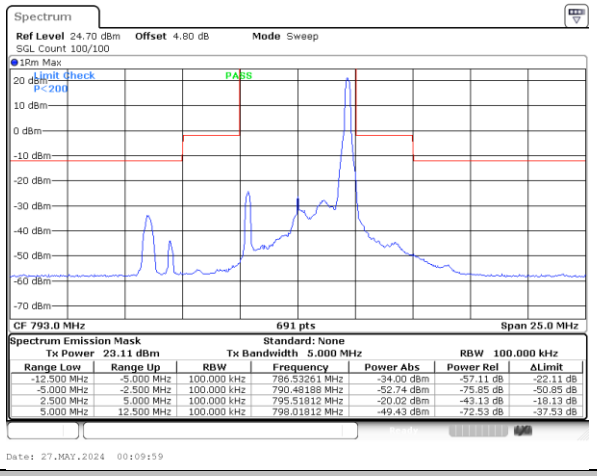
Lowest Channel / Full RB



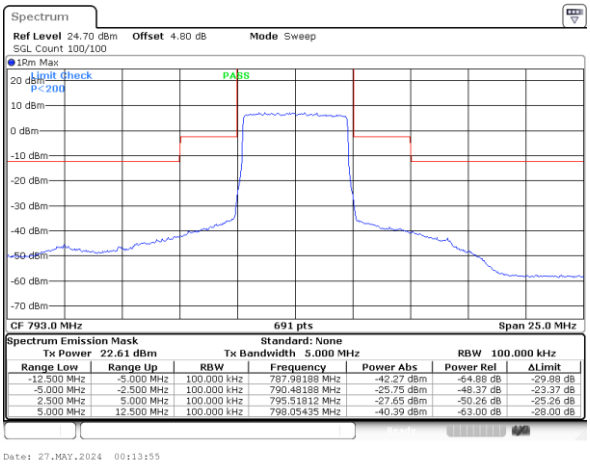
LTE Band 14 / 5MHz / QPSK

Middle Channel / 1RB



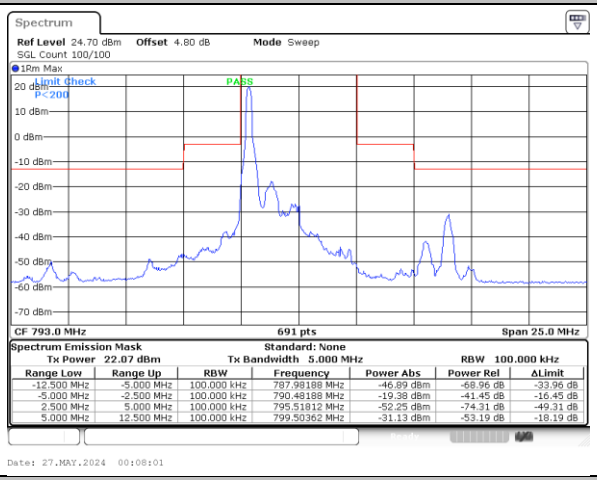


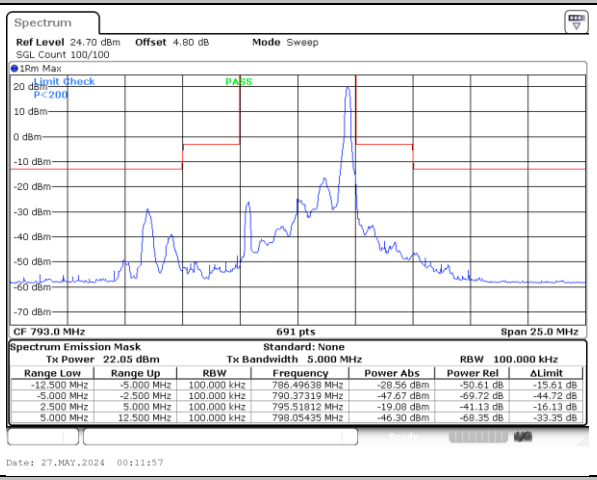
Middle Channel / Full RB



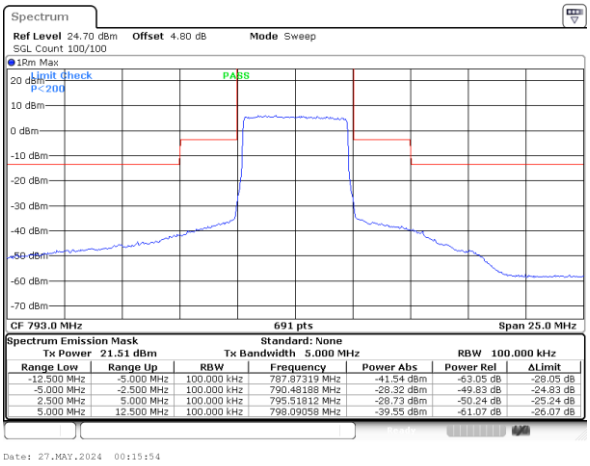
LTE Band 14 / 5MHz / 16QAM

Middle Channel / 1RB



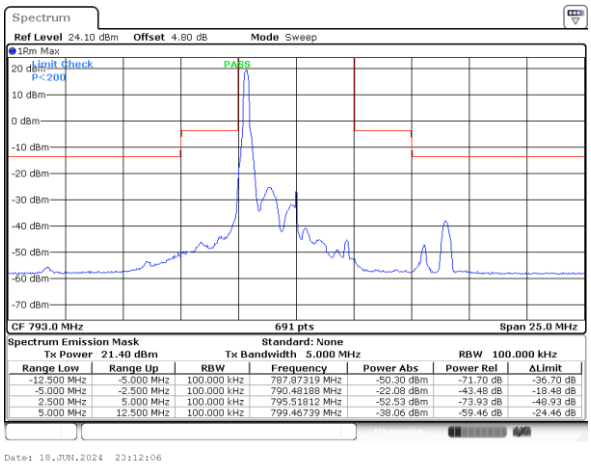


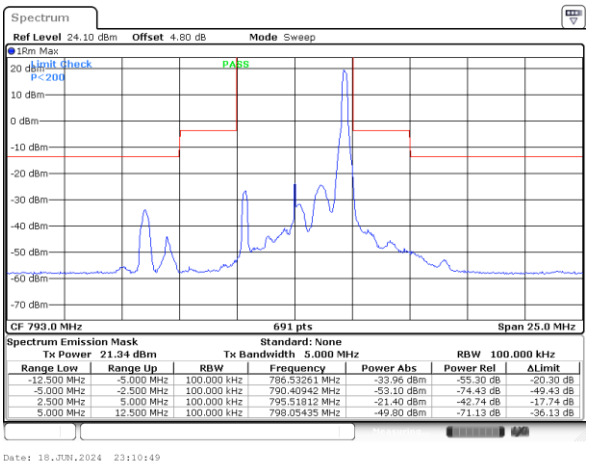
Middle Channel / Full RB



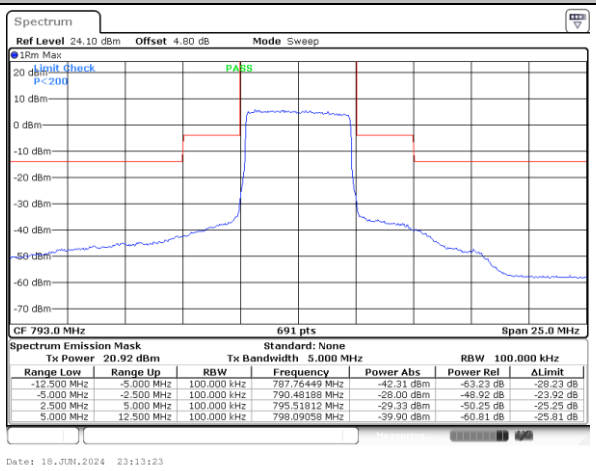
LTE Band 14 / 5MHz / 64QAM

Middle Channel / 1RB



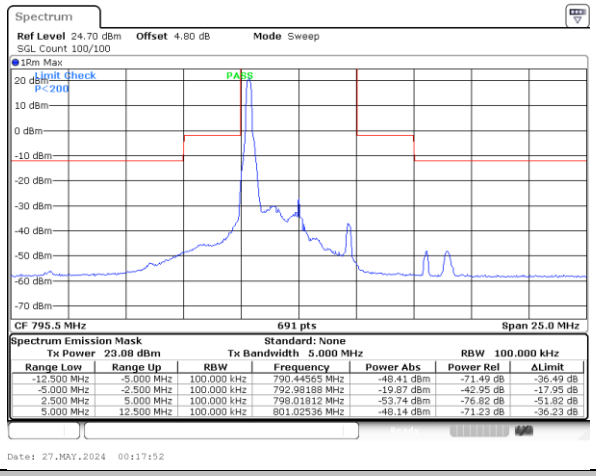


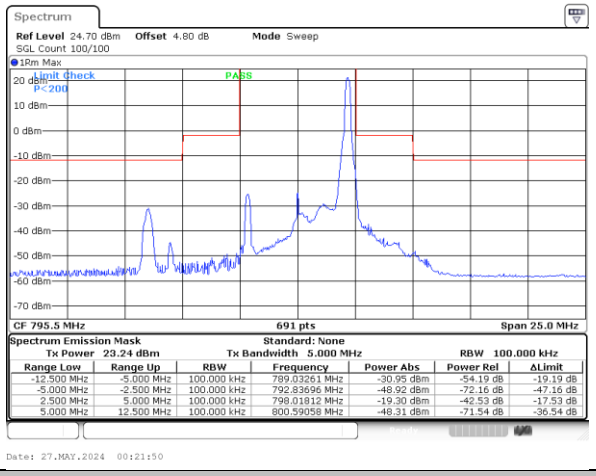
Middle Channel / Full RB



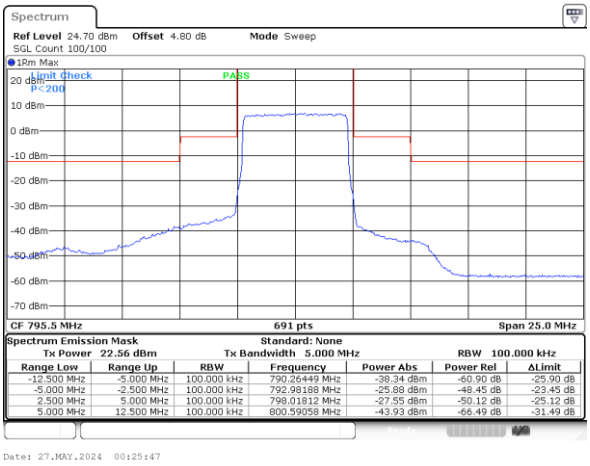
LTE Band 14 / 5MHz / QPSK

Highest Channel / 1RB



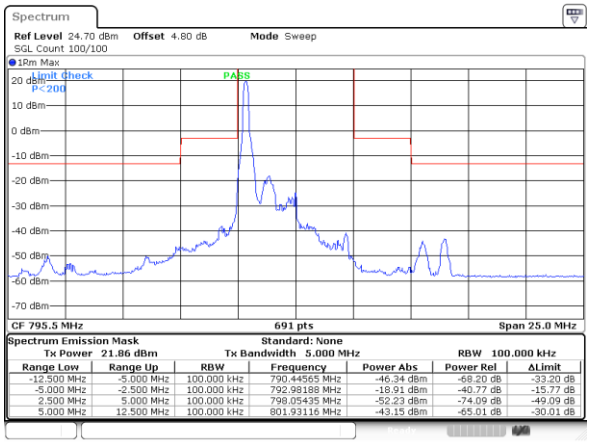


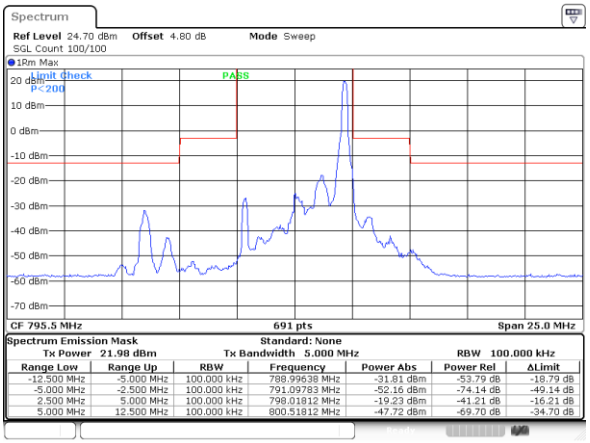
Highest Channel / Full RB



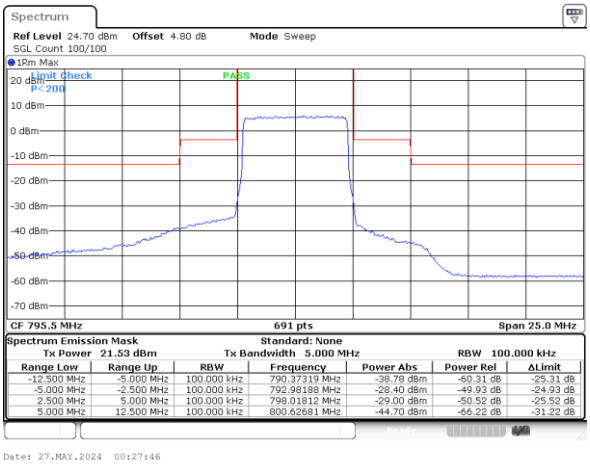
LTE Band 14 / 5MHz / 16QAM

Highest Channel / 1RB



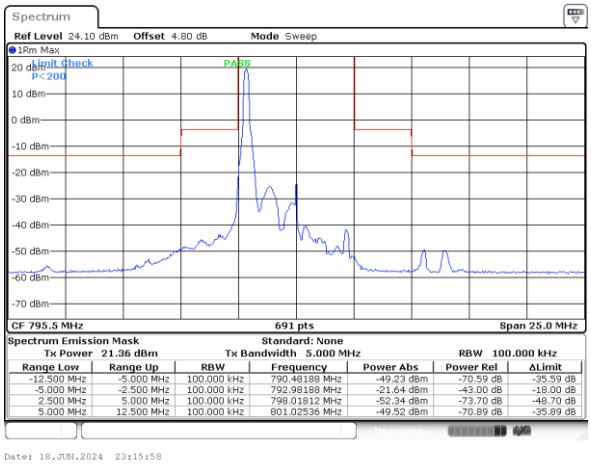


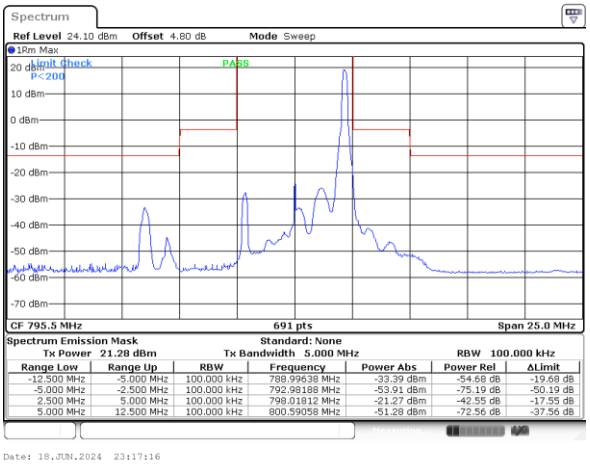
Highest Channel / Full RB



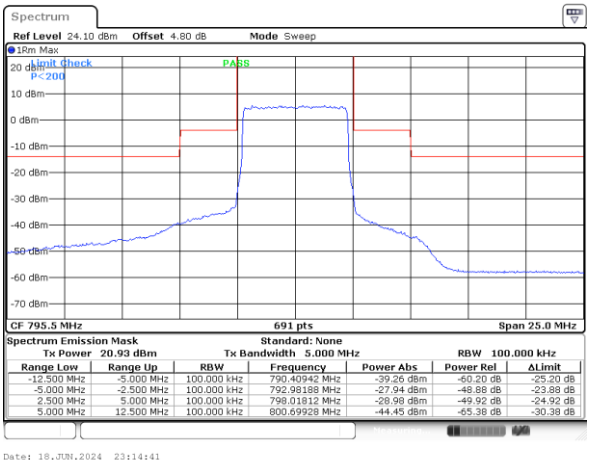
LTE Band 14 / 5MHz / 64QAM

Highest Channel / 1RB



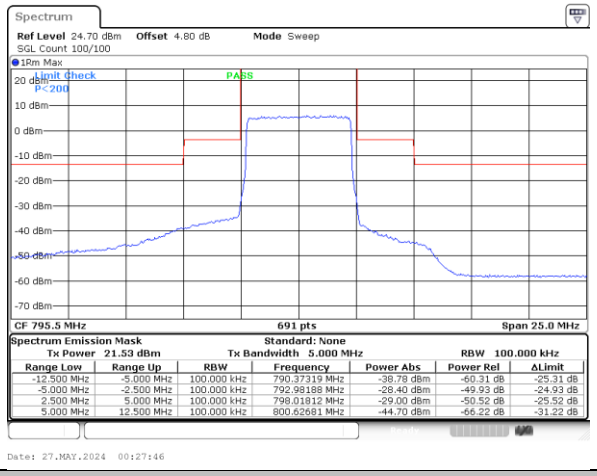


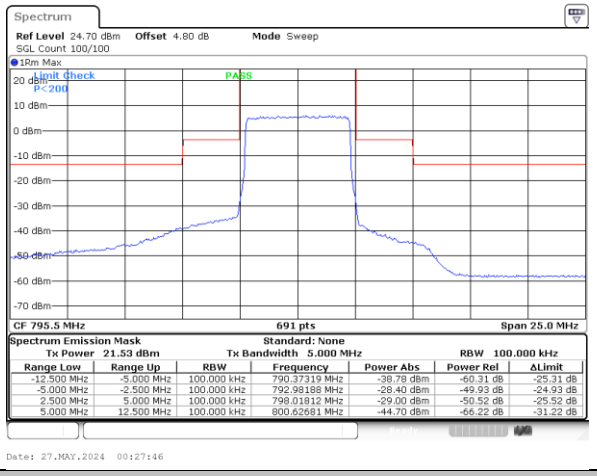
Highest Channel / Full RB



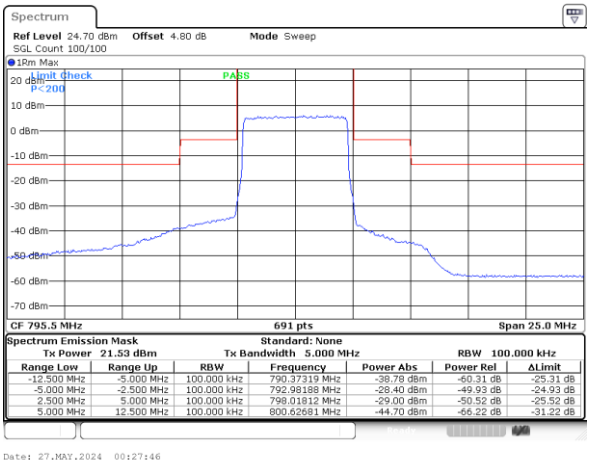
LTE Band 14 / 10MHz / QPSK

Middle Channel / 1RB



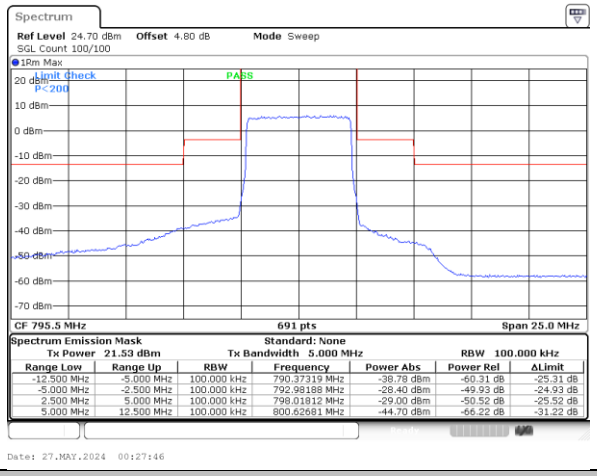


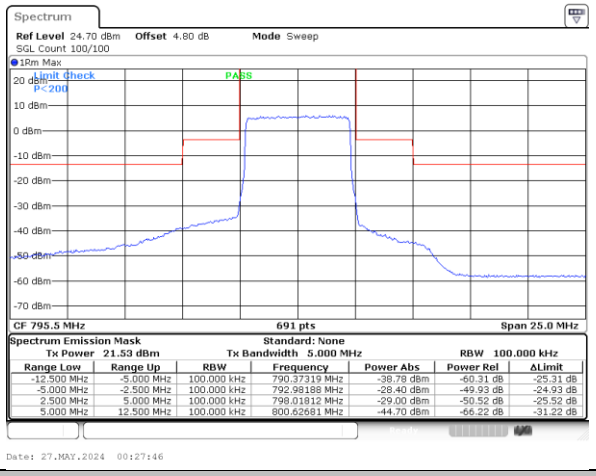
Middle Channel / Full RB



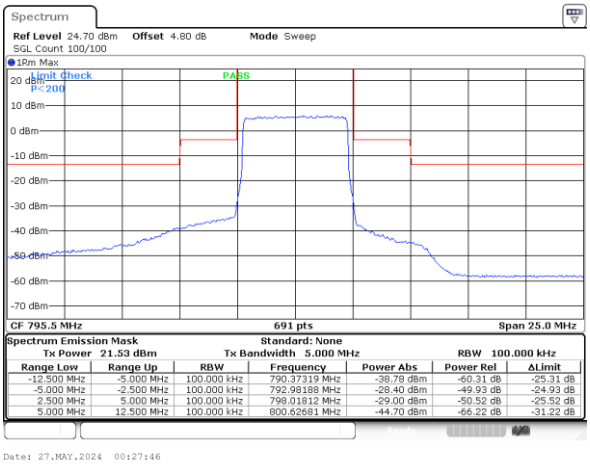
LTE Band 14 / 10MHz / 16QAM

Middle Channel / 1RB



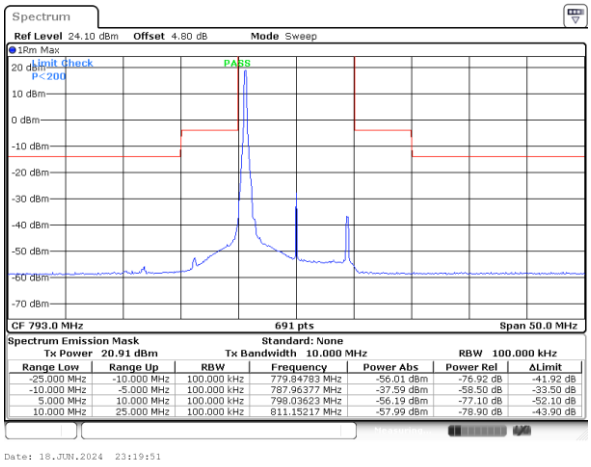


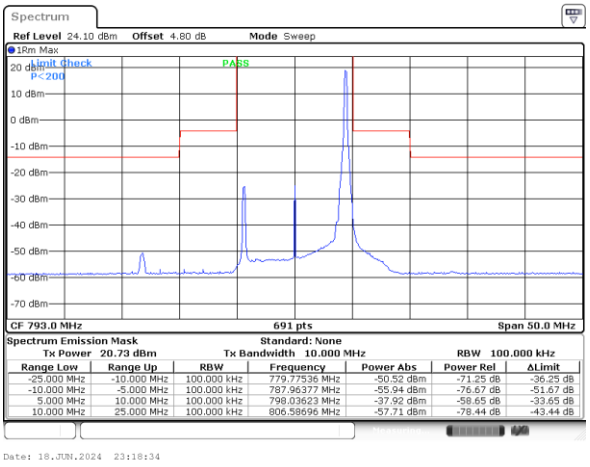
Middle Channel / Full RB



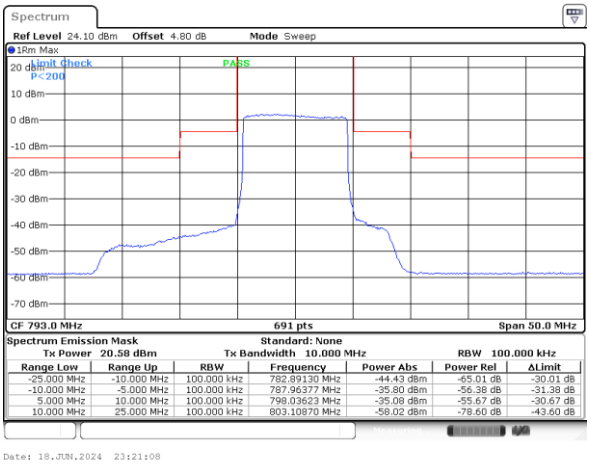
LTE Band 14 / 10MHz / 64QAM

Middle Channel / 1RB





Middle Channel / Full RB



Frequency Stability

Test Conditions		LTE Band 14 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 5MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0026	PASS
40	Normal Voltage	0.0021	
30	Normal Voltage	0.0043	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0008	
0	Normal Voltage	0.0026	
-10	Normal Voltage	0.0016	
-20	Normal Voltage	0.0013	
-30	Normal Voltage	0.0027	
20	Maximum Voltage	0.0009	
20	Normal Voltage	0.0046	
20	Battery End Point	0.0012	

Test Conditions		LTE Band 14 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0024	PASS
40	Normal Voltage	0.0022	
30	Normal Voltage	0.0048	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0005	
0	Normal Voltage	0.0026	
-10	Normal Voltage	0.0017	
-20	Normal Voltage	0.0015	
-30	Normal Voltage	0.0023	
20	Maximum Voltage	0.0006	
20	Normal Voltage	0.0047	
20	Battery End Point	0.0013	

Note:

1. Normal Voltage =7.2 V. ; Battery End Point (BEP) =6.6 V. ; Maximum Voltage =8.26 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.

Appendix B. Test Results of Radiated Test

Field Strength of Spurious Radiated

Test Engineer :	Jake	Temperature :	23~25℃
		Relative Humidity :	41~42%

LTE Band 14 / 5MHz / QPSK								
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	1576	-58.20	-42.15	-16.05	-60.83	1.09	5.87	H
	2368	-56.07	-13	-43.07	-58.47	1.37	5.92	H
	3152	-60.67	-13	-47.67	-64.56	1.64	7.68	H
	1576	-60.22	-42.15	-18.07	-62.85	1.09	5.87	V
	2368	-57.50	-13	-44.50	-59.90	1.37	5.92	V
	3152	-60.08	-13	-47.08	-63.97	1.64	7.68	V
Middle	1584	-62.44	-42.15	-20.29	-65.07	1.09	5.87	H
	2368	-59.26	-13	-46.26	-61.66	1.37	5.92	H
	3160	-60.68	-13	-47.68	-64.57	1.64	7.68	H
	1584	-61.29	-42.15	-19.14	-63.92	1.09	5.87	V
	2368	-57.32	-13	-44.32	-59.72	1.37	5.92	V
	3160	-60.66	-13	-47.66	-64.55	1.64	7.68	V
Highest	1584	-61.45	-42.15	-19.30	-64.08	1.09	5.87	H
	2376	-60.09	-13	-47.09	-62.49	1.37	5.92	H
	3176	-61.07	-13	-48.07	-64.96	1.64	7.68	H
	1584	-62.30	-42.15	-20.15	-64.93	1.09	5.87	V
	2376	-58.08	-13	-45.08	-60.48	1.37	5.92	V
	3176	-60.75	-13	-47.75	-64.64	1.64	7.68	V

LTE Band 14 / 10MHz / QPSK								
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1576	-60.56	-42.15	-18.41	-63.19	1.09	5.87	H
	2368	-57.32	-13	-44.32	-59.72	1.37	5.92	H
	3152	-60.30	-13	-47.30	-64.19	1.64	7.68	H
	1576	-58.62	-42.15	-16.47	-61.25	1.09	5.87	V
	2368	-57.03	-13	-44.03	-59.43	1.37	5.92	V
	3152	-60.62	-13	-47.62	-64.51	1.64	7.68	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.