FCC RF Test Report

APPLICANT	: ASKEY COMPUTER CORP.
EQUIPMENT	: Module
BRAND NAME	: ASKEY
MODEL NAME	: NMQ2210
FCC ID	: H8NNMQ2210-D187
STANDARD	: 47 CFR Part 27(H), 27(F), 27(M), 27(N)
CLASSIFICATION	: PCS Licensed Transmitter (PCB)
TEST DATE(S)	: Aug. 28, 2024 ~ Sep. 11, 2024

We, Sporton International Inc. (Shenzhen), would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.26-2015 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. (Shenzhen), the test report shall not be reproduced except in full.

Jason Jia

Approved by: Jason Jia

ACCREDITED Cert #5145.01

Sporton International Inc. (ShenZhen)

1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055

People's Republic of China

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG471806B	Rev. 01	Initial issue of report	Dec. 05, 2024

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	-	Report Only	-
	§27.50(b)(10) §27.50(c)(10)	Effective Radiated Power (Band 12) (Band 13)(Band 71)	ERP < 3 Watt	PASS	-
	§27.50(h)(2)	Equivalent Isotropic Radiated Power (Band 41)	EIRP < 2Watt		-
3.5	N/A	Peak-to-Average Ratio	<13 dB	PASS	-
3.6	§2.1049	Occupied Bandwidth	-	Report Only	-
3.7	§2.1051 §27.53(c)(2)(4) §27.53(g)	Conducted Band Edge Measurement (Band 12) (Band 13) (Band 71)	< 43+10log10(P[Watts])	PASS	-
	§27.53(m)(4)	Conducted Band Edge Measurement (Band 41)	§27.53(m)(4)		
3.8	§2.1051 §27.53(c)(2) §27.53(g)	Conducted Spurious Emission (Band 12) (Band 13) (Band 71)	< 43+10log10(P[Watts])	PASS	-
	§2.1051 §27.53(m)(4)	Conducted Spurious Emission (Band 41)	< 55+10log$_{10}$(P[Watts])		
3.9	§2.1055 §27.54	Frequency Stability Temperature & Voltage	Within Authorized Band	PASS	-
4.4	§2.1053 §27.53(c)(2) §27.53(g)	Radiated Spurious Emission (Band 12) (Band 13) (Band 71)	< 43+10log$_{10}$(P[Watts])	PASS	Under limit 0.81 dB at 1559.50 MHz
	§2.1053 §27.53(m)(4)	Radiated Spurious Emission (Band 41)	< 55+10log$_{10}$(P[Watts])		

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

ASKEY COMPUTER CORP.

10F, No.119, Jiankang Rd., Zhonghe Dist., New Taipei City, Taiwan

1.2 Manufacturer

ASKEY COMPUTER CORP.

10F, No.119, Jiankang Rd., Zhonghe Dist., New Taipei City, Taiwan

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Module
Brand Name	ASKEY
Model Name	NMQ2210
FCC ID	H8NNMQ2210-D187
SN / IMEI Code	Conducted: 355241830363892(IMEI) Radiation: 411001(SN)
HW Version	REV3
SW Version	NMQ2210_NA_V4.2.25.1
EUT Stage	Production Unit

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	LTE Band 12 : 699 MHz ~ 716 MHz LTE Band 13 : 777 MHz ~ 787 MHz LTE Band 41 : 2496 MHz ~ 2690 MHz LTE Band 71: 663 MHz ~ 698 MHz
Rx Frequency	LTE Band 12 : 729 MHz ~ 746 MHz LTE Band 13 : 746 MHz ~ 756 MHz LTE Band 41 : 2496 MHz ~ 2690 MHz LTE Band 71: 617 MHz ~ 652 MHz
Bandwidth	LTE Band 12 : 1.4MHz / 3MHz / 5MHz / 10MHz LTE Band 13 : 5MHz / 10MHz LTE Band 41 : 5MHz / 10MHz / 15MHz / 20MHz LTE Band 71 : 5MHz / 10MHz / 15MHz / 20MHz
Maximum Output Power to Antenna	<Ant.0> LTE Band 13 : 23.52 dBm LTE Band 12 : 23.70 dBm LTE Band 41 : 24.51 dBm LTE CA_41C: 23.84 dBm LTE Band 71 : 23.52 dBm
Antenna Gain	<Ant.0> LTE Band 12 : 0.93 dBi LTE Band 13 : 0.93 dBi LTE Band 41 : 2.71 dBi LTE Band 71 : 0.93 dBi
Type of Modulation	QPSK / 16QAM / 64QAM / 256QAM

1.5 Modification of EUT

No modifications are made to the EUT during all test items.

1.6 Maximum Conducted Power and Emission Designator

LTE Band 12		QPSK		16QAM/64QAM/256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum Conducted power (W)	Emission Designator (99%OBW)	Maximum Conducted power (W)	Emission Designator (99%OBW)
1.4	699.7 ~ 715.3	0.2328	1M10G7D	0.1884	1M09W7D
3	700.5 ~ 714.5	0.2280	2M72G7D	0.1849	2M74W7D
5	701.5 ~ 713.5	0.2301	4M49G7D	0.1854	4M51W7D
10	704.0 ~ 711.0	0.2344	9M11G7D	0.1901	9M07W7D
LTE Band 13		**QPSK**		**16QAM/64QAM/256QAM**	
BW (MHz)	Frequency Range (MHz)	Maximum Conducted power (W)	Emission Designator (99%OBW)	Maximum Conducted power (W)	Emission Designator (99%OBW)
5	779.5 ~ 784.5	0.2228	4M51G7D	0.1879	4M50W7D
10	782.0	0.2249	9M03G7D	0.1888	8M99W7D
LTE Band 41		**QPSK**		**16QAM/64QAM/256QAM**	
BW (MHz)	Frequency Range (MHz)	Maximum Conducted power (W)	Emission Designator (99%OBW)	Maximum Conducted power (W)	Emission Designator (99%OBW)
5	2498.5 ~ 2687.5	0.2793	4M57G7D	0.2228	4M51W7D
10	2501.0 ~ 2685.0	0.2780	9M03G7D	0.2193	9M05W7D
15	2503.5 ~ 2682.5	0.2780	13M4G7D	0.2208	13M5W7D
20	2506.0 ~ 2680.0	0.2825	17M9G7D	0.2234	17M9W7D
LTE Band 71		**QPSK**		**16QAM/64QAM/256QAM**	
BW (MHz)	Frequency Range (MHz)	Maximum Conducted power (W)	Emission Designator (99%OBW)	Maximum Conducted power (W)	Emission Designator (99%OBW)
5	665.5 ~ 695.5	0.2208	4M48G7D	0.1734	4M50W7D
10	668.0 ~ 693.0	0.2239	9M01G7D	0.1722	9M07W7D
15	670.5 ~ 690.5	0.2173	13M4G7D	0.1742	13M4W7D
20	673.0 ~ 688.0	0.2249	17M9G7D	0.1766	17M8W7D

LTE Band 41 CA	QPSK		16QAM/64QAM/256QAM	
BW (MHz)	Maximum Conducted power (W)	Emission Designator (99%OBW)	Maximum Conducted power (W)	Emission Designator (99%OBW)
5MHz+20MHz	0.2360	22M8G7D	0.1828	23M1W7D
10MHz+20MHz	0.2350	28M1G7D	0.1854	28M2W7D
10MHz+15MHz	0.2344	23M3G7D	0.1845	23M2W7D
15MHz+15MHz	0.2355	28M6G7D	0.1862	28M7W7D
15MHz+20MHz	0.2344	32M8G7D	0.1858	32M7W7D
15MHz+10MHz	0.2312	23M6G7D	0.1866	23M3W7D
20MHz+5MHz	0.2317	23M3G7D	0.1837	23M3W7D
20MHz+10MHz	0.2344	28M1G7D	0.1862	28M0W7D
20MHz+15MHz	0.2344	32M9G7D	0.1854	33M0W7D
20MHz+20MHz	0.2421	37M6G7D	0.1914	37M9W7D

Note: All modulations have been tested, and only the worst test results of PSK & QAM are shown in the report.

1.7 Testing Location

Test Firm	Sporton International Inc. (ShenZhen)		
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	TH01-SZ	CN1256	421272

Test Firm	Sporton International Inc. (ShenZhen)		
Test Site Location	101, 1st Floor, Block B, Building 1, No. 2, Tengfeng 4th Road, Fenghuang Community, Fuyong Street, Baoan District, Shenzhen City, Guangdong Province 518103 People's Republic of China TEL: +86-755-86066985		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	03CH01-SZ	CN1256	421272

1.8 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH01-SZ	AUDIX	E3	6.2009-8-24

1.9 Applicable Standards

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

- 47 CFR Part 27(H), 27(F), 27(M), 27(N)
- ANSI C63.26-2015
- FCC KDB 971168 D01 Power Meas License Digital Systems v03r01
- FCC 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.

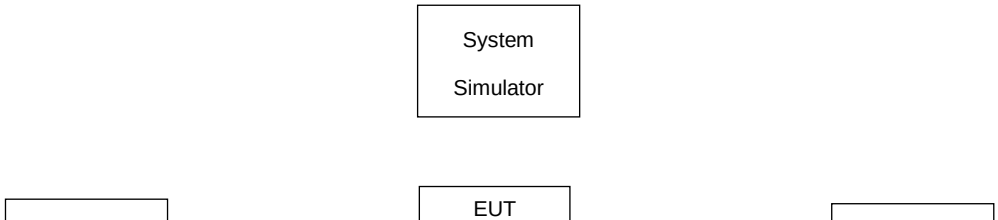
Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission. (X Plane)

Test Items	Band	Bandwidth (MHz)						Modulation				RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	256QAM	1	Half	Full	L	M	H
Max. Output Power	12	v	v	v	v	-	-	v	v	v	v	v	v	v	v	v	v
	13	-	-	v	v	-	-	v	v	v	v	v	v	v	v	v	v
	41	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	71	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	12				v	-	-	v	v	v				v		v	
	13	-	-		v	-	-	v	v	v				v		v	
	41	-	-				v	v	v	v				v		v	
	71	-	-				v	v	v	v				v		v	
26dB and 99% Bandwidth	12	v	v	v	v	-	-	v	v					v		v	
	13	-	-	v	v	-	-	v	v					v		v	
	41	-	-	v	v	v	v	v	v					v		v	
	71	-	-	v	v	v	v	v	v					v		v	
Conducted Band Edge	12	v	v	v	v	-	-	v	v	v		v		v	v		v
	13	-	-	v	v	-	-	v	v	v		v		v	v		v
	41	-	-	v	v	v	v	v	v	v		v		v	v		v
	71	-	-	v	v	v	v	v	v	v		v		v	v		v
Conducted Spurious Emission	12	v	v	v	v	-	-	v				v			v	v	v
	13	-	-	v	v	-	-	v				v			v	v	v
	41	-	-	v	v	v	v	v				v			v	v	v
	71	-	-	v	v	v	v	v				v			v	v	v
Frequency Stability	12				v	-	-	v						v		v	
	13	-	-		v	-	-	v						v		v	
	41	-	-		v			v						v		v	
	71	-	-		v			v						v		v	

Test Items	Band	Bandwidth (MHz)						Modulation				RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	256QAM	1	Half	Full	L	M	H
E.R.P / E.I.R.P	12	v	v	v	v	-	-	v	v	v	v	v	v	v	v	v	v
	13	-	-	v	v	-	-	v	v	v	v	v	v	v	v	v	v
	41	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	71	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v	v
Radiated Spurious Emission	12	Worst Case														v	
	13	Worst Case														v	
	41	Worst Case														v	
	71	Worst Case														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.. 4. All test items are based on engineering evaluation. 5. For QAM modulation mode, the whole testing has assessed 16QAM&64QAM mode by referring to the higher conducted power																

Test Items	Band	Bandwidth (MHz)										Modulation				RB #			Test Channel		
		20+20	20+15	15+20	20+10	10+20	20+5	5+20	15+15	15+10	10+15	QPSK	16QAM	64QAM	256QAM	1	Half	Full	L	M	H
Max. Output Power	41C_CA	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v			v	v	v
26dB and 99% Bandwidth	41C_CA	v	v	v	v	v	v	v	v	v	v	v	v					v		v	
Conducted Band Edge	41C_CA	v	v	v	v	v	v	v	v	v	v	v				v		v	v		v
Conducted Spurious Emission	41C_CA	v	v	v	v	v	v	v	v	v	v	v				v			v	v	v
E.I.R.P.	41C_CA	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v			v	v	v
Radiated Spurious Emission	41C_CA	Worst Case																		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. 4. All test items are based on engineering evaluation. 5. For QAM modulation mode, the whole testing has assessed 16QAM&64QAM mode by referring to the higher conducted power																				

2.2 Connection Diagram of Test System



This example is connection diagram of EUT test configurations.

. For detail, please refer to test mode configuration and setup photographs for each test item.

2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	Power Supply	GWINSTEK	PSS-2002	N/A	N/A	Unshielded, 1.8 m
2.	LTE Base Station	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
3.	Adapter(with cable)	N/A	N/A	N/A	N/A	N/A
4.	Test Jig	N/A	N/A	N/A	N/A	N/A
5.	Antenna	N/A	N/A	N/A	N/A	N/A

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 4.0 dB and 10dB attenuator.

Example :

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

= 4.0 + 10 = 14.0 (dB)

2.5 Frequency List of Low/Middle/High Channels

LTE Band 12 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	23060	23095	23130
	Frequency	704	707.5	711
5	Channel	23035	23095	23155
	Frequency	701.5	707.5	713.5
3	Channel	23025	23095	23165
	Frequency	700.5	707.5	714.5
1.4	Channel	23017	23095	23173
	Frequency	699.7	707.5	715.3

LTE Band 13 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	-	23230	-
	Frequency	-	782	-
5	Channel	23205	23230	23255
	Frequency	779.5	782	784.5

LTE Band 41 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	39750	40620	41490
	Frequency	2506	2593	2680
15	Channel	39725	40620	41515
	Frequency	2503.5	2593	2682.5
10	Channel	39700	40620	41540
	Frequency	2501	2593	2685
5	Channel	39675	40620	41565
	Frequency	2498.5	2593	2687.5

LTE Band 71 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	133222	133322	133372
	Frequency	673.0	680.5	688.0
15	Channel	133197	133297	133397
	Frequency	670.5	680.5	690.5
10	Channel	133172	133272	133422
	Frequency	668.0	678.0	693.0
5	Channel	133147	133247	133447
	Frequency	665.5	675.5	695.5

LTE Band 41C_CA Channel and Frequency List					
BW [MHz]	Channel/Frequency(MHz)		Lowest	Middle	Highest
20 + 20	PCC	Channel	39750	40521	41292
		Frequency	2506.0	2583.1	2660.2
	SCC	Channel	39948	40719	41490
		Frequency	2525.8	2602.9	2680.0
20 + 15	PCC	Channel	39750	40546	41341
		Frequency	2506.0	2585.6	2665.1
	SCC	Channel	39921	40717	41512
		Frequency	2523.1	2602.7	2682.2
15 + 20	PCC	Channel	39728	40523	41319
		Frequency	2503.8	2593.3	2662.9
	SCC	Channel	39899	40694	41490
		Frequency	2520.9	2600.4	2680.0
20 + 10	PCC	Channel	39750	40571	41391
		Frequency	2506.0	2588.1	2670.1
	SCC	Channel	39894	40715	41535
		Frequency	2520.4	2602.5	2684.5
10 + 20	PCC	Channel	39705	40526	41346
		Frequency	2501.5	2583.6	2665.6
	SCC	Channel	39849	40670	41490
		Frequency	2515.9	2598.0	2680.0

LTE Band 41C_CA Channel and Frequency List					
20 + 5	PCC	Channel	39750	40595	41440
		Frequency	2506.0	2590.5	2675.0
	SCC	Channel	39867	40712	41557
		Frequency	2517.7	2602.2	2686.7
5 + 20	PCC	Channel	39683	40528	41373
		Frequency	2499.3	2583.8	2668.3
	SCC	Channel	39800	40645	41490
		Frequency	2511.0	2595.5	2680.0
15 + 15	PCC	Channel	39725	40545	41365
		Frequency	2503.5	2585.5	2667.5
	SCC	Channel	39875	40695	41515
		Frequency	2518.5	2600.5	2682.5
10 + 15	PCC	Channel	39703	40549	41395
		Frequency	2501.3	2585.9	2670.5
	SCC	Channel	39823	40669	41515
		Frequency	2513.3	2597.9	2682.5
15 + 10	PCC	Channel	39725	40571	41417
		Frequency	2503.5	2588.1	2672.7
	SCC	Channel	39845	40691	41537
		Frequency	2515.5	2600.1	2684.7

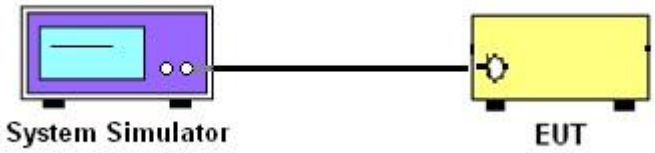
3 Conducted Test Items

3.1 Measuring Instruments

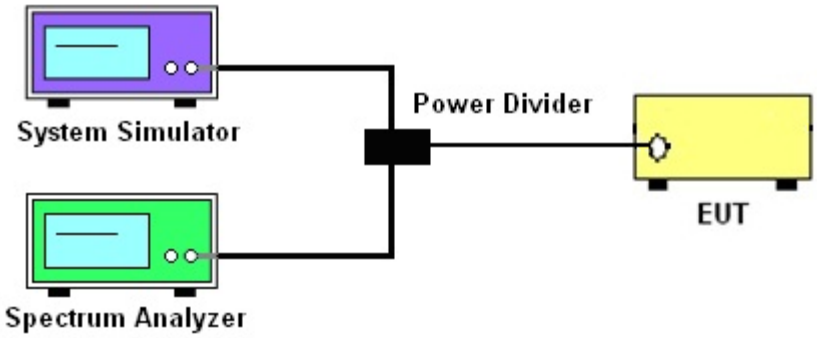
See list of measuring instruments of this test report.

3.2 Test Setup

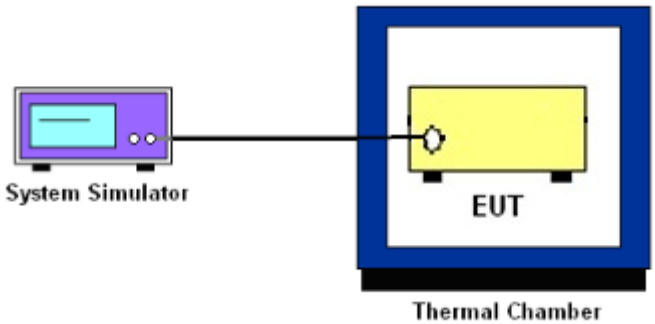
3.2.1 Conducted Output Power



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



3.2.3 Frequency Stability



3.3 Test Result of Conducted Test

Please refer to Appendix A.

3.4 Conducted Output Power and ERP/EIRP

3.4.1 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 3 Watts for LTE Band 12, Band 13 and Band 71.

The EIRP of mobile transmitters must not exceed 2 Watts for LTE Band 41.

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

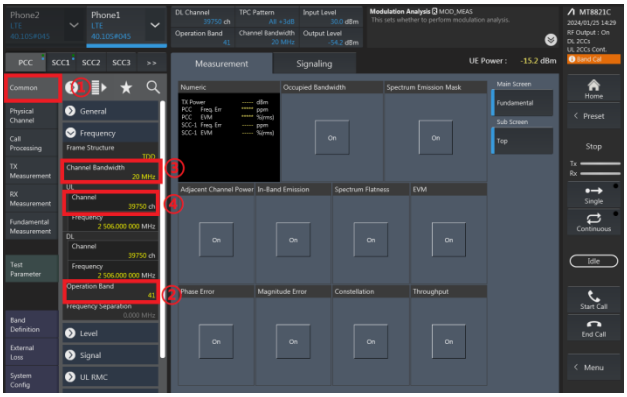
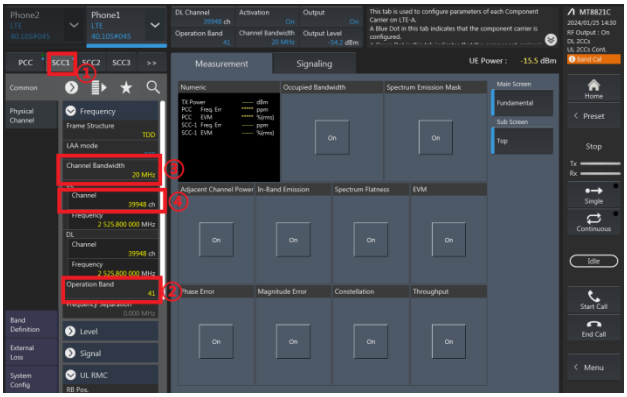
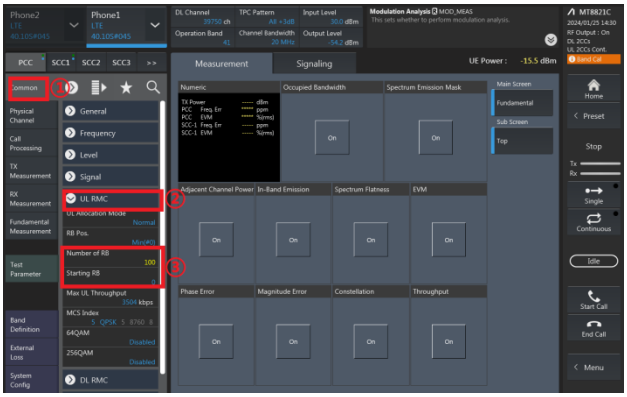
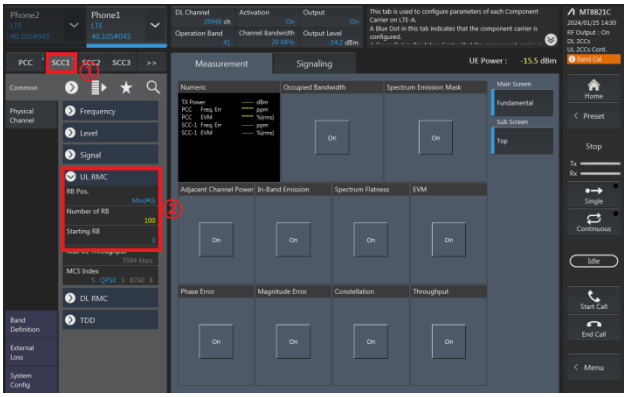
L_C = signal attenuation in the connecting cable between the transmitter and antenna in dB

3.4.2 Test Procedures

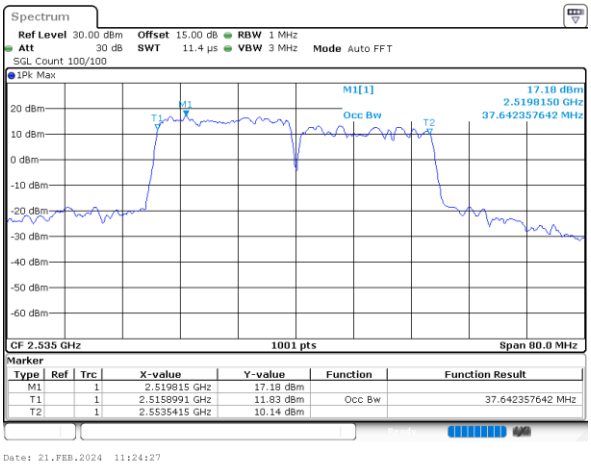
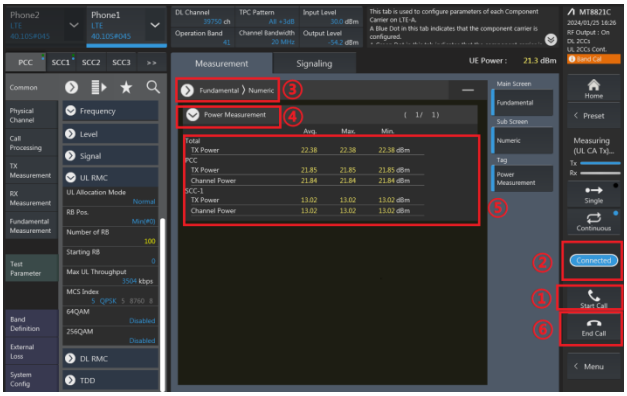
1. The testing follows ANSI C63.26 Section 5.2
2. The transmitter output port was connected to the system simulator.
3. Set EUT at maximum power through the system simulator.
4. Select lowest, middle, and highest channels for each band and different modulation.
5. Measure and record the power level from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

3.4.3 Test Procedures for LTE ULCA

1. The testing follows ANSI C63.26 Section 5.2
2. The transmitter PCC & SCC output ports were connected to the system simulator.
3. Set EUT at maximum power, set the PCC/SCC CA band, channel, bandwidth and RB config.

PCC config_(Channel Bandwidth / Channel / Band)	SCC config_(Channel Bandwidth / Channel / Band)
	
PCC config_(Number of RB / Starting RB)	**SCC config_(Number of RB / Starting RB)**
	

4. Select lowest, middle, and highest channels for each ULCA band and different modulation.
5. Check the ULCA spectrum and record the total power from the system simulator.

Check the ULCA spectrum (eg. 20M+20M)	Read the Total UL CA output power (PCC+SCC)
	

3.5 Peak-to-Average Ratio

3.5.1 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.

3.5.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.2.3.4 (CCDF).
2. The EUT was connected to spectrum and system simulator via a power divider.
3. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
4. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
5. Record the deviation as Peak to Average Ratio.

3.6 Occupied Bandwidth

3.6.1 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.

3.6.2 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.

3.7 Conducted Band Edge

3.7.1 Description of Conducted Band Edge Measurement

27.53 (c)

For operations in the 776-788 MHz band, the FCC limit is 43 + 10log$_{10}$(P[Watts]) dB below the transmitter power P(Watts) in a 100 kHz bandwidth. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed. In addition, the power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power, P (dBW), by at least 65 + 10 log10 p(watts), dB, for mobile and portable equipment.

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(m)(4)

For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

3.7.2 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 RBW >= 1%/ 2% EBW in the 1MHz band immediately outside and adjacent to the band edge.
5. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.
6. Set spectrum analyzer with RMS detector.
7. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
8. Checked that all the results comply with the emission limit line.
   Example:
   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.
9. For LTE Band 41, the other 40 dB, and 55 dB have additionally applied same calculation above.
10. When using the integration method, the starting frequency of the integration shall be centered at one-half of the RBW away from the band edge.

3.8 Conducted Spurious Emission

3.8.1 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.

For Band 41:

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 55 + 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 10th harmonic.

3.8.2 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. 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 RBW = 1MHz, VBW = 3MHz.
7. Set spectrum analyzer with RMS detector.
8. Taking the record of maximum spurious emission.
9. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
10. 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.
11. For Band 41
    The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)
    = P(W)- [55+ 10log(P)] (dB)
    = [30+ 10log(P)] (dBm) - [55+ 10log(P)] (dB)
    = -25dBm.

3.9 Frequency Stability

3.9.1 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.

3.9.2 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.

3.9.3 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.

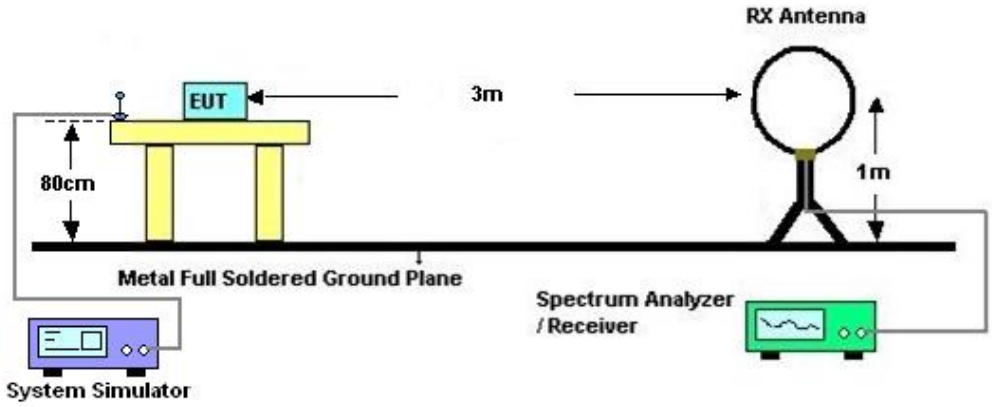
4 Radiated Test Items

4.1 Measuring Instruments

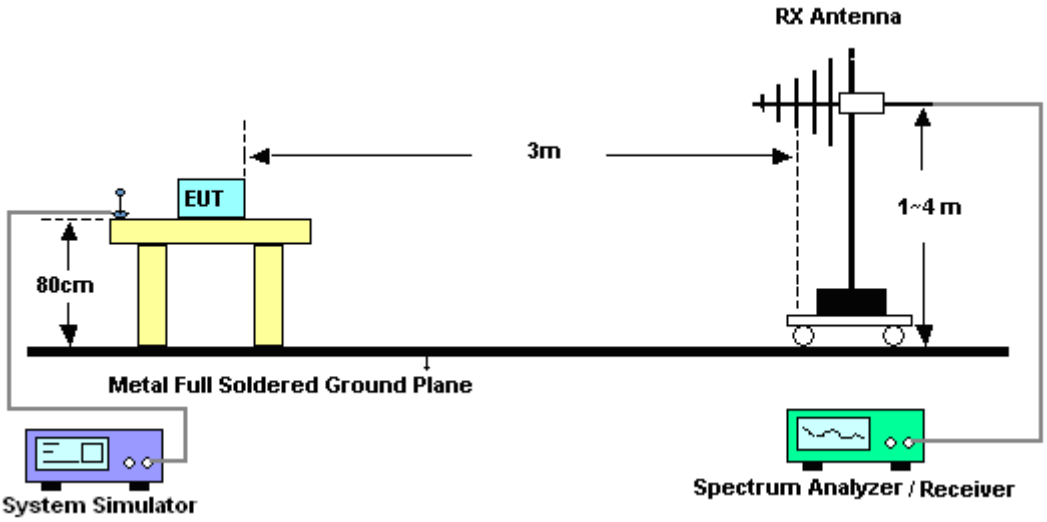
See list of measuring instruments of this test report.

4.2 Test Setup

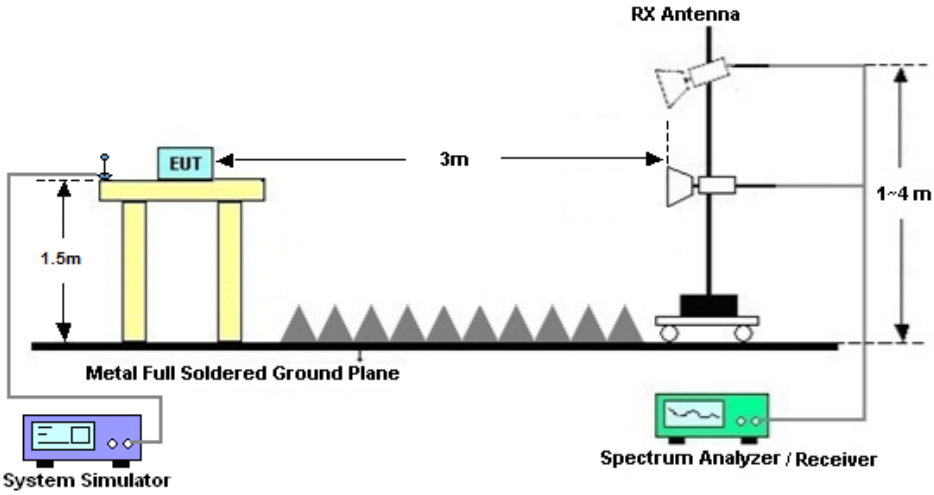
4.2.1 For radiated test below 30MHz



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

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 Band 41

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 55 + 10 log (P) dB.

For LTE Band 13

For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions 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.

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

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.
    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.
13. For Band 41:
    The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)

5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101078	10Hz~40GHz	Apr. 09, 2024	Aug. 28, 2024~ Sep. 11, 2024	Apr. 08, 2025	Conducted (TH01-SZ)
DC Power Supply	TTI	PL330P	290070	Max 32V，3A	Oct. 16, 2023	Aug. 28, 2024~ Sep. 11, 2024	Oct. 15, 2024	Conducted (TH01-SZ)
Power Divider	TOJOIN	PS-2SM-04 265	60.06.020.007 7	0.4GHz~26.5GHz	Dec. 25, 2023	Aug. 28, 2024~ Sep. 11, 2024	Dec. 24, 2024	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Jul. 03, 2024	Aug. 28, 2024~ Sep. 11, 2024	Jul. 02, 2025	Conducted (TH01-SZ)
EMI Test Receiver&SA	Agilent	N9038A	MY52260185	20Hz~26.5GHz	Dec. 27, 2023	Sep. 04, 2024	Dec. 26, 2024	Radiation (03CH01-SZ)
Loop Antenna	R&S	HFH2-Z2E	101141	9kHz~30MHz	Dec. 29, 2023	Sep. 04, 2024	Dec. 28, 2024	Radiation (03CH01-SZ)
HF Amplifier	KEYSIGHT	83017A	MY53270105	0.5GHz~26.5Ghz	Oct. 18, 2023	Sep. 04, 2024	Oct. 17, 2024	Radiation (03CH01-SZ
Bilog Antenna	TeseQ	CBL6112D	35407	30MHz-2GHz	Oct. 24, 2023	Sep. 04, 2024	Oct. 23, 2025	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00119436	1GHz~18GHz	Jul. 04, 2024	Sep. 04, 2024	Jul. 03, 2025	Radiation (03CH01-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz-40GHz	Apr. 09, 2024	Sep. 04, 2024	Apr. 08, 2025	Radiation (03CH01-SZ)
LF Amplifier	Burgeon	BPA-530	102209	0.01~3000Mhz	Apr. 09, 2024	Sep. 04, 2024	Apr. 08, 2025	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	AMF-7D-00 101800-30-1 0P-R	1943528	1GHz~18GHz	Oct. 18, 2023	Sep. 04, 2024	Oct. 17, 2024	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	TTA1840-35 -HG	1871923	18GHz~40GHz	Jul. 03, 2024	Sep. 04, 2024	Jul. 02, 2025	Radiation (03CH01-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	Oct. 18, 2023	Sep. 04, 2024	Oct. 17, 2024	Radiation (03CH01-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Sep. 04, 2024	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Sep. 04, 2024	NCR	Radiation (03CH01-SZ)

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

Test Item	Uncertainty
Conducted Spurious Emission & Bandedge	±1.34 dB
Occupied Channel Bandwidth	±0.012 MHz
Conducted Power	±1.34 dB
Peak to Average Ratio	±1.34 dB
Frequency Stability	±1.3 Hz

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.8 dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.48 dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.53 dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	4.02 dB

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

Appendix A. Test Results of Conducted Test

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

Conducted Output Power(Average power) and ERP/EIRP

LTE Band 12:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	ERP(W)		
Channel				23060	23095	23130			
Frequency (MHz)				704	707.5	711	L	M	H
10	QPSK	1	0	23.62	23.52	23.70	0.1738	0.1698	0.1770
10	QPSK	1	25	23.47	23.43	23.64	0.1679	0.1663	0.1746
10	QPSK	1	49	23.48	23.37	23.69	0.1683	0.1641	0.1766
10	QPSK	25	0	22.48	22.53	22.64	0.1337	0.1352	0.1387
10	QPSK	25	12	22.44	22.42	22.62	0.1324	0.1318	0.1380
10	QPSK	25	25	22.37	22.41	22.53	0.1303	0.1315	0.1352
10	QPSK	50	0	22.46	22.49	22.50	0.1330	0.1340	0.1343
10	16QAM	1	0	22.67	22.70	22.79	0.1396	0.1406	0.1435
10	64QAM	1	0	21.59	21.74	21.81	0.1089	0.1127	0.1146
10	256QAM	1	0	18.58	18.72	18.86	0.0545	0.0562	0.0581
Channel				23035	23095	23155	ERP(W)		
Frequency (MHz)				701.5	707.5	713.5	L	M	H
5	QPSK	1	0	23.59	23.45	23.62	0.1726	0.1671	0.1738
5	16QAM	1	0	22.63	22.68	22.67	0.1384	0.1400	0.1396
Channel				23025	23095	23165	ERP(W)		
Frequency (MHz)				700.5	707.5	714.5	L	M	H
3	QPSK	1	0	23.48	23.44	23.58	0.1683	0.1667	0.1722
3	16QAM	1	0	22.58	22.61	22.67	0.1368	0.1377	0.1396
Channel				23017	23095	23173	ERP(W)		
Frequency (MHz)				699.7	707.5	715.3	L	M	H
1.4	QPSK	1	0	23.55	23.51	23.67	0.1710	0.1694	0.1758
1.4	16QAM	1	0	22.52	22.55	22.75	0.1349	0.1358	0.1422

LTE Band 13:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	ERP(W)		
Channel					23230				
Frequency (MHz)					782			M	
10	QPSK	1	0		23.52			0.1698	
10	QPSK	1	25		23.42			0.1660	
10	QPSK	1	49		23.41			0.1656	
10	QPSK	25	0		22.38			0.1306	
10	QPSK	25	12		22.32			0.1288	
10	QPSK	25	25		22.27			0.1274	
10	QPSK	50	0		22.41			0.1315	
10	16QAM	1	0		22.76			0.1426	
10	64QAM	1	0		21.65			0.1104	
10	256QAM	1	0		18.64			0.0552	
Channel				23205	23230	23255	ERP(W)		
Frequency (MHz)				779.5	782	784.5	L	M	H
5	QPSK	1	0	23.48	23.38	23.45	0.1683	0.1644	0.1671
5	16QAM	1	0	22.68	22.69	22.74	0.1400	0.1403	0.1419

LTE Band 41:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	EIRP(W)		
Channel				39750	40620	41490			
Frequency (MHz)				2506	2593	2680	L	M	H
20	QPSK	1	0	23.93	24.51	24.23	0.4613	0.5272	0.4943
20	QPSK	1	49	23.84	24.43	24.22	0.4519	0.5176	0.4932
20	QPSK	1	99	23.83	24.48	24.18	0.4508	0.5236	0.4887
20	QPSK	50	0	23.20	23.59	23.33	0.3899	0.4266	0.4018
20	QPSK	50	24	23.12	23.46	23.30	0.3828	0.4140	0.3990
20	QPSK	50	50	23.19	23.41	23.23	0.3890	0.4093	0.3926
20	QPSK	100	0	23.19	23.51	23.24	0.3890	0.4188	0.3936
20	16QAM	1	0	23.12	23.49	23.27	0.3828	0.4169	0.3963
20	64QAM	1	0	22.09	22.49	22.25	0.3020	0.3311	0.3133
20	256QAM	1	0	19.12	19.65	19.17	0.1524	0.1722	0.1542
Channel				39725	40620	41515	EIRP(W)		
Frequency (MHz)				2503.5	2593	2682.5	L	M	H
15	QPSK	1	0	23.83	24.44	24.13	0.4508	0.5188	0.4831
15	16QAM	1	0	23.02	23.44	23.21	0.3741	0.4121	0.3908
Channel				39700	40620	41540	EIRP(W)		
Frequency (MHz)				2501	2593	2685	L	M	H
10	QPSK	1	0	23.92	24.44	24.19	0.4603	0.5188	0.4898
10	16QAM	1	0	23.10	23.41	23.19	0.3811	0.4093	0.3890
Channel				39675	40620	41565	EIRP(W)		
Frequency (MHz)				2498.5	2593	2687.5	L	M	H
5	QPSK	1	0	23.92	24.46	24.20	0.4603	0.5212	0.4909
5	16QAM	1	0	23.06	23.48	23.19	0.3776	0.4159	0.3890

LTE Band 71:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	ERP(W)		
Channel				133222	133322	133372			
Frequency (MHz)				673	683	688	L	M	H
20	QPSK	1	0	23.13	23.28	23.52	0.1552	0.1607	0.1698
20	QPSK	1	49	23.04	23.22	23.48	0.1521	0.1585	0.1683
20	QPSK	1	99	22.99	23.14	23.50	0.1503	0.1556	0.1690
20	QPSK	50	0	22.29	22.44	22.48	0.1279	0.1324	0.1337
20	QPSK	50	24	22.15	22.36	22.40	0.1239	0.1300	0.1312
20	QPSK	50	50	22.27	22.29	22.45	0.1274	0.1279	0.1327
20	QPSK	100	0	22.15	22.39	22.40	0.1239	0.1309	0.1312
20	16QAM	1	0	22.45	22.47	22.43	0.1327	0.1334	0.1321
20	64QAM	1	0	21.34	21.41	21.29	0.1028	0.1045	0.1016
20	256QAM	1	0	18.52	18.56	18.62	0.0537	0.0542	0.0550
Channel				133197	133297	133397	ERP(W)		
Frequency (MHz)				670.5	680.5	690.5	L	M	H
15	QPSK	1	0	23.11	23.15	23.37	0.1545	0.1560	0.1641
15	16QAM	1	0	22.30	22.32	22.41	0.1282	0.1288	0.1315
Channel				133172	133272	133422	EIRP(W)		
Frequency (MHz)				668	678	693	L	M	H
10	QPSK	1	0	23.08	23.25	23.50	0.1535	0.1596	0.1690
10	16QAM	1	0	22.35	22.35	22.36	0.1297	0.1297	0.1300
Channel				133147	133247	133447	EIRP(W)		
Frequency (MHz)				665.5	675.5	695.5	L	M	H
5	QPSK	1	0	23.01	23.16	23.44	0.1510	0.1563	0.1667
5	16QAM	1	0	22.39	22.34	22.37	0.1309	0.1294	0.1303

LTE Band 41C:

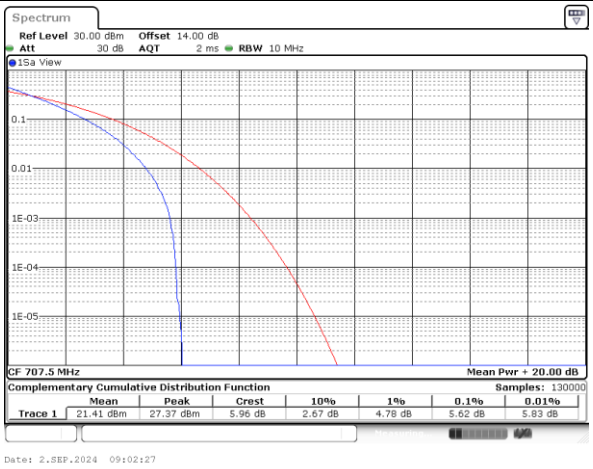
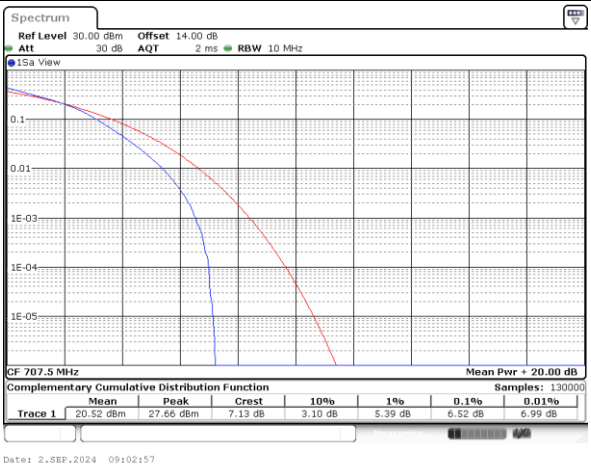
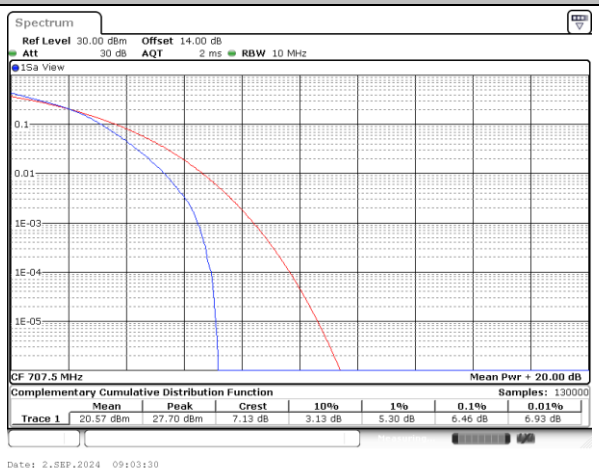
Combination 20MHz+20MHz (100RB+100RB)							
Channel	Modulation	PCC		SCC		Measured Power	EIRP(W)
		RB Size	RB offset	RB Size	RB offset		
L	QPSK	1	Max	1	0	23.33	0.4018
M	QPSK	1	Max	1	0	23.84	0.4519
H	QPSK	1	Max	1	0	23.77	0.4446
L	16QAM	1	Max	1	0	22.59	0.3388
M	16QAM	1	Max	1	0	22.82	0.3573
H	16QAM	1	Max	1	0	22.74	0.3508
L	64QAM	1	Max	1	0	21.64	0.2723
M	64QAM	1	Max	1	0	21.68	0.2748
H	64QAM	1	Max	1	0	21.71	0.2767
L	256QAM	1	Max	1	0	18.69	0.1380
M	256QAM	1	Max	1	0	18.84	0.1429
H	256QAM	1	Max	1	0	18.67	0.1374
Combination 20MHz+15MHz (100RB+75RB)							
Channel	Modulation	PCC		SCC		Measured Power	EIRP(W)
		RB Size	RB offset	RB Size	RB offset		
M	QPSK	1	Max	1	0	23.70	0.4375
M	16QAM	1	Max	1	0	22.68	0.3459
Combination 15MHz+20MHz (75RB+100RB)							
Channel	Modulation	PCC		SCC		Measured Power	EIRP(W)
		RB Size	RB offset	RB Size	RB offset		
M	QPSK	1	Max	1	0	23.70	0.4375
M	16QAM	1	Max	1	0	22.69	0.3467
Combination 15MHz+15MHz (75RB+75RB)							
Channel	Modulation	PCC		SCC		Measured Power	EIRP(W)
		RB Size	RB offset	RB Size	RB offset		
M	QPSK	1	Max	1	0	23.72	0.4395
M	16QAM	1	Max	1	0	22.70	0.3475
Combination 20MHz+10MHz (100RB+50RB)							
Channel	Modulation	PCC		SCC		Measured Power	EIRP(W)
		RB Size	RB offset	RB Size	RB offset		
M	QPSK	1	Max	1	0	23.70	0.4375
M	16QAM	1	Max	1	0	22.70	0.3475
Combination 10MHz+20MHz (50RB+100RB)							
Channel	Modulation	PCC		SCC		Measured Power	EIRP(W)
		RB Size	RB offset	RB Size	RB offset		
M	QPSK	1	Max	1	0	23.71	0.4385
M	16QAM	1	Max	1	0	22.68	0.3459
Combination 15MHz+10MHz (75RB+50RB)							
Channel	Modulation	PCC		SCC		Measured Power	EIRP(W)
		RB Size	RB offset	RB Size	RB offset		
M	QPSK	1	Max	1	0	23.64	0.4315
M	16QAM	1	Max	1	0	22.71	0.3483

Combination 10MHz+15MHz (50RB+75RB)							
Channel	Modulation	PCC		SCC		Measured Power	EIRP(W)
		RB Size	RB offset	RB Size	RB offset		
M	QPSK	1	Max	1	0	23.70	0.4375
M	16QAM	1	Max	1	0	22.66	0.3443
Combination 20MHz+5MHz (100RB+25RB)							
Channel	Modulation	PCC		SCC		Measured Power	EIRP(W)
		RB Size	RB offset	RB Size	RB offset		
M	QPSK	1	Max	1	0	23.65	0.4325
M	16QAM	1	Max	1	0	22.64	0.3428
Combination 5MHz+20MHz (25RB+100RB)							
Channel	Modulation	PCC		SCC		Measured Power	EIRP(W)
		RB Size	RB offset	RB Size	RB offset		
M	QPSK	1	Max	1	0	23.73	0.4406
M	16QAM	1	Max	1	0	22.62	0.3412

LTE Band 12

Peak-to-Average Ratio

Mode	LTE Band 12 / 10MHz			
Mod.	QPSK	16QAM	64QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Result
Middle CH	5.62	6.52	6.46	PASS

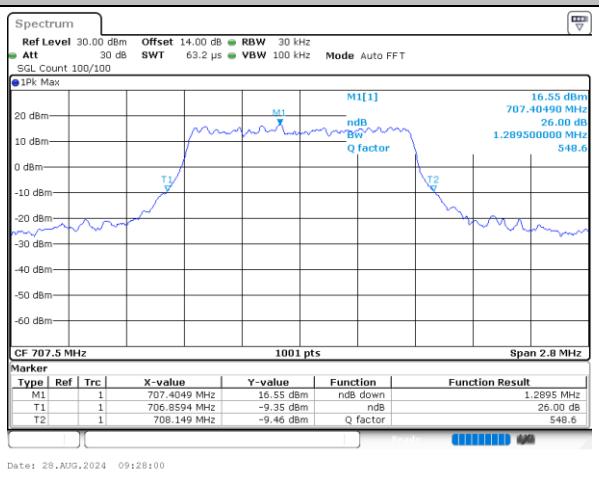
LTE Band 12 / 10MHz / QPSK	LTE Band 12 / 10MHz / 16QAM
Middle Channel / Full RB	Middle Channel / Full RB
	
LTE Band 12 / 10MHz / 64QAM	
Middle Channel / Full RB	
	

26dB Bandwidth

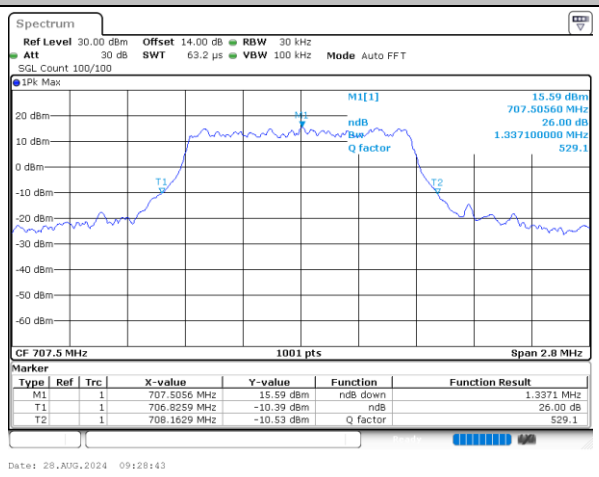
Mode	LTE Band 12 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	1.29	1.34	3.03	3.07	5.18	5.00	9.91	9.73	-	-	-	-

LTE Band 12

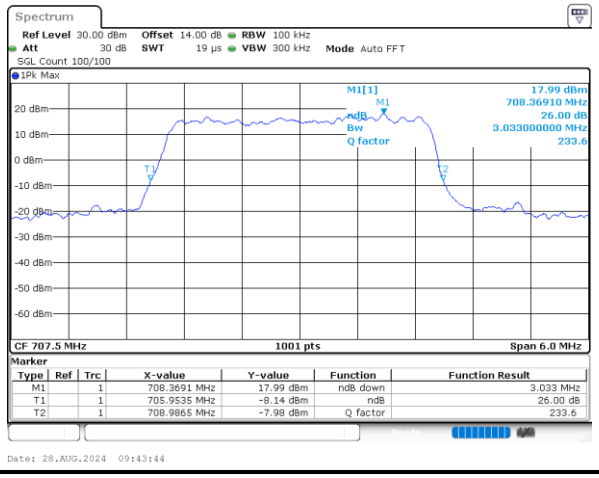
Middle Channel / 1.4MHz / QPSK



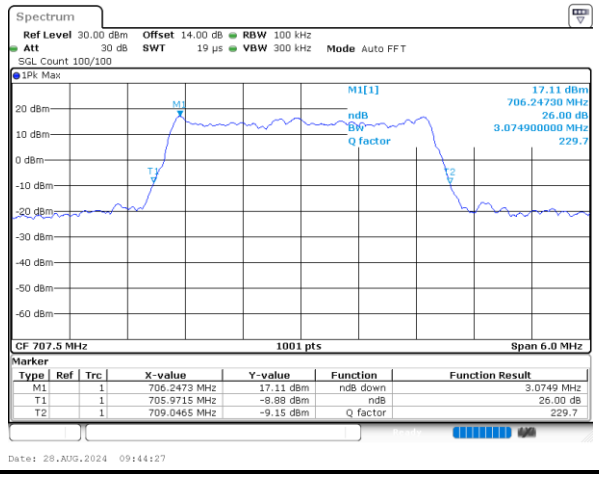
Middle Channel / 1.4MHz / 16QAM

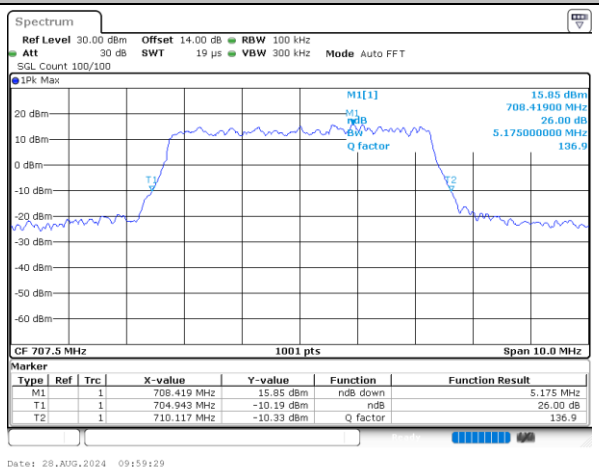
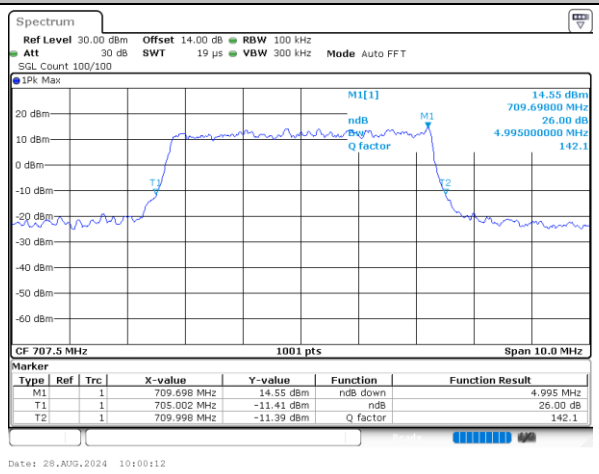
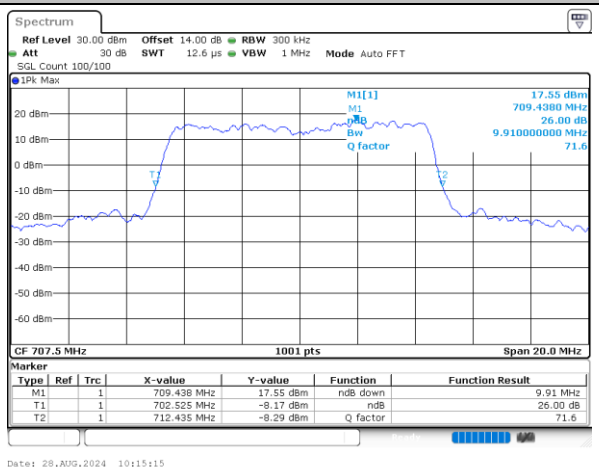
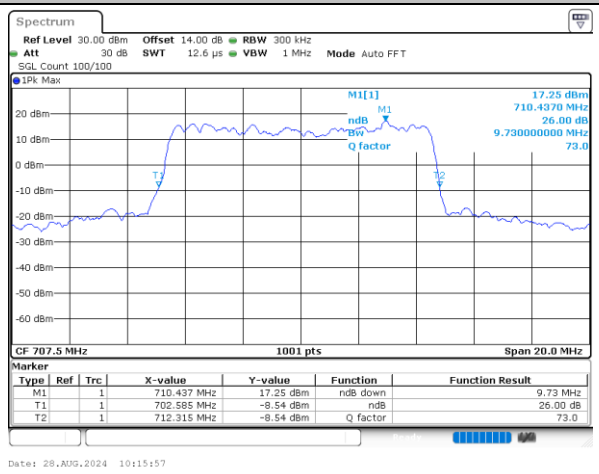


Middle Channel / 3MHz / QPSK



Middle Channel / 3MHz / 16QAM



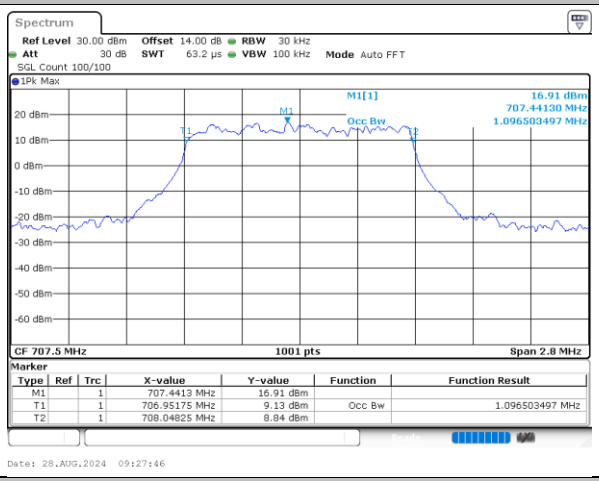
Middle Channel / 5MHz / QPSK	Middle Channel / 5MHz / 16QAM
	
Middle Channel / 10MHz / QPSK	**Middle Channel / 10MHz / 16QAM**
	

Occupied Bandwidth

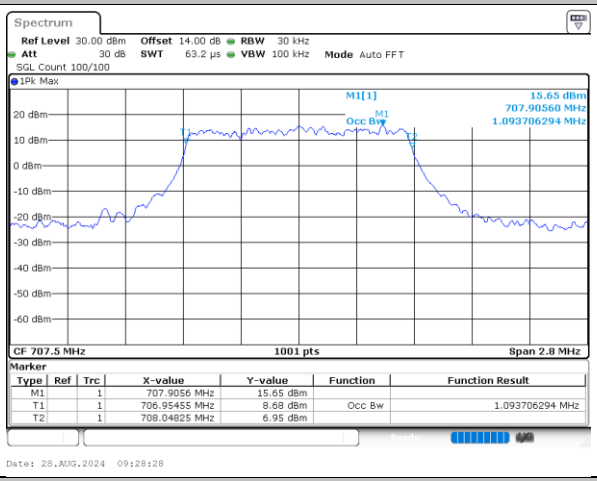
Mode	LTE Band 12 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	1.10	1.09	2.72	2.74	4.49	4.51	9.11	9.07	-	-	-	-

LTE Band 12

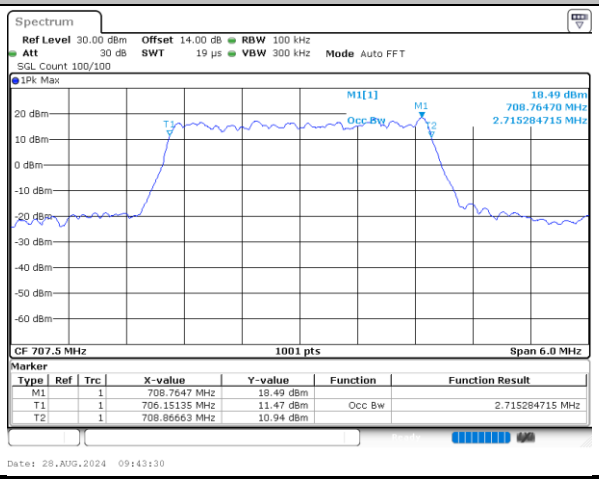
Middle Channel / 1.4MHz / QPSK



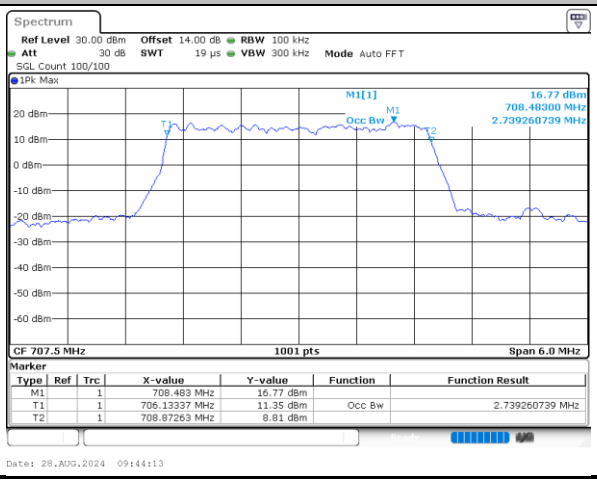
Middle Channel / 1.4MHz / 16QAM

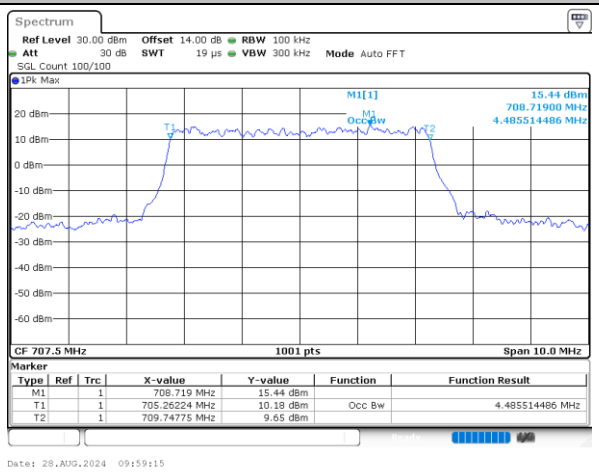
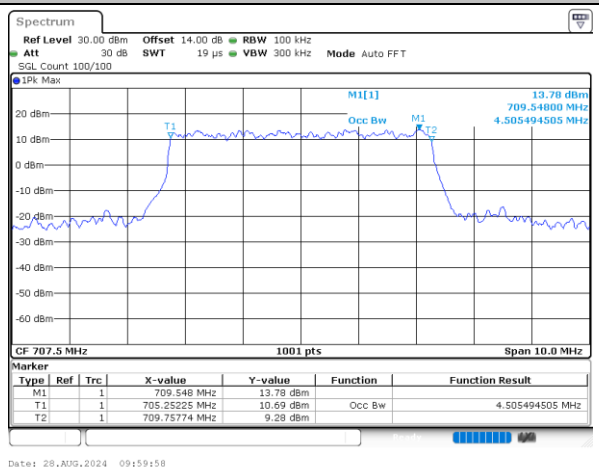
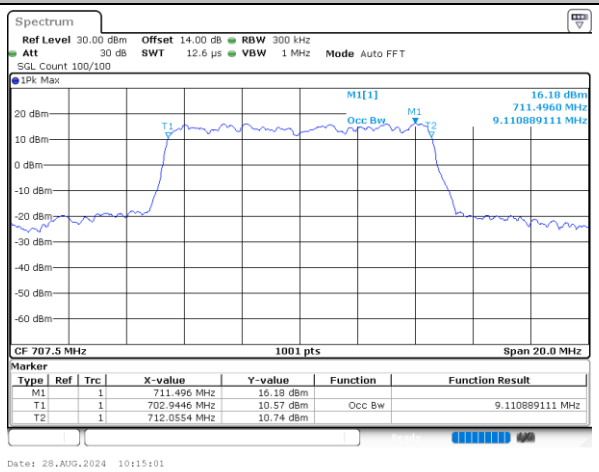
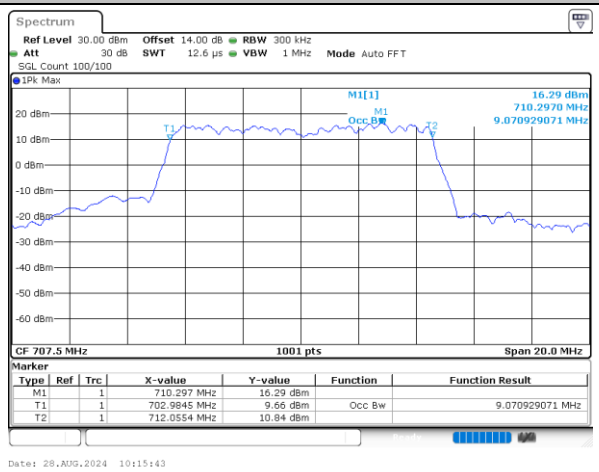


Middle Channel / 3MHz / QPSK



Middle Channel / 3MHz / 16QAM

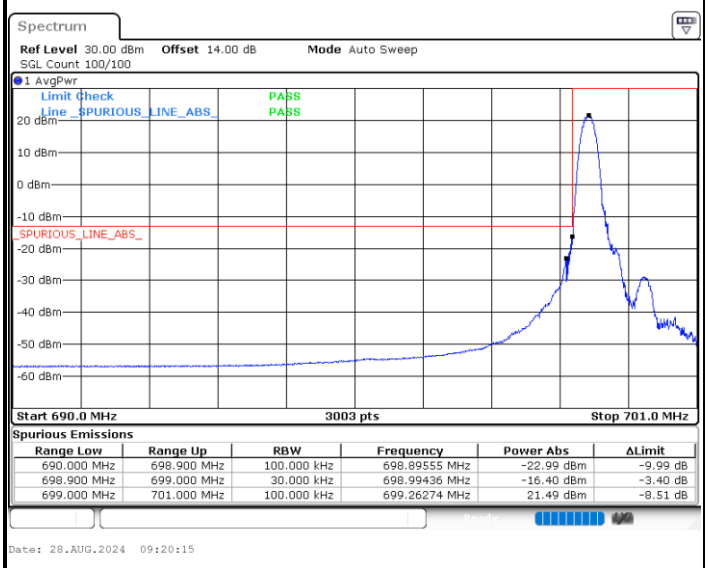


Middle Channel / 5MHz / QPSK	Middle Channel / 5MHz / 16QAM
	
Middle Channel / 10MHz / QPSK	**Middle Channel / 10MHz / 16QAM**
	

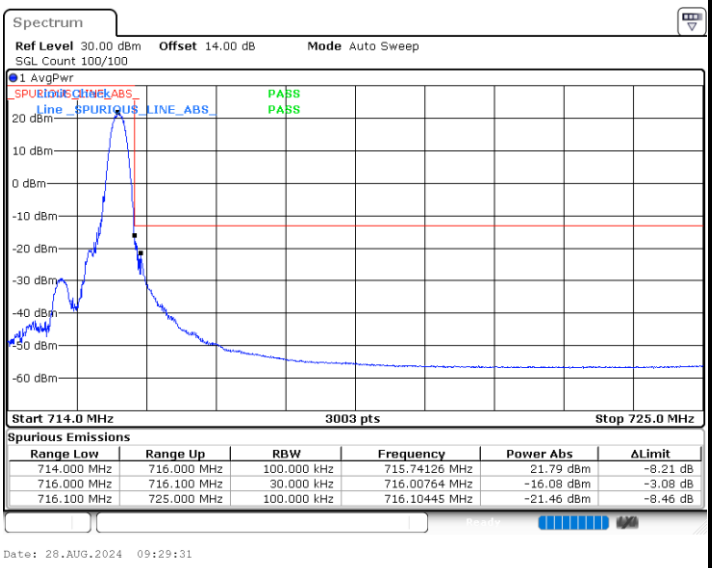
Conducted Band Edge

LTE Band 12 / 1.4MHz / QPSK

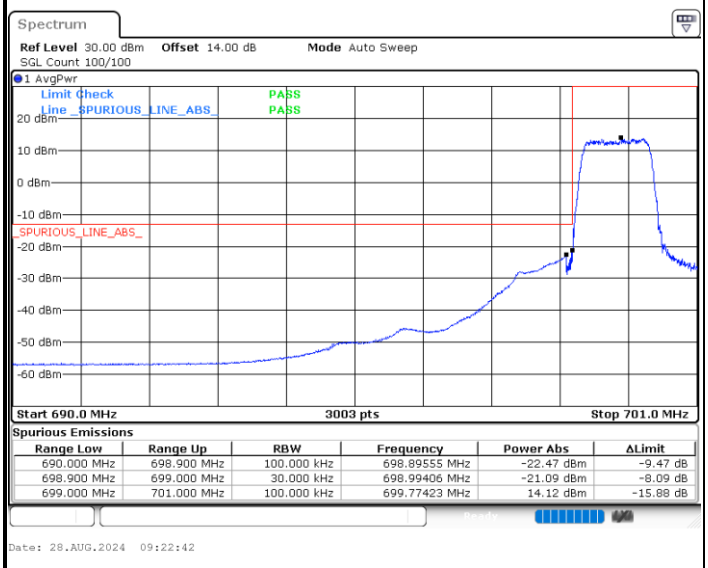
Lowest Band Edge / 1RB



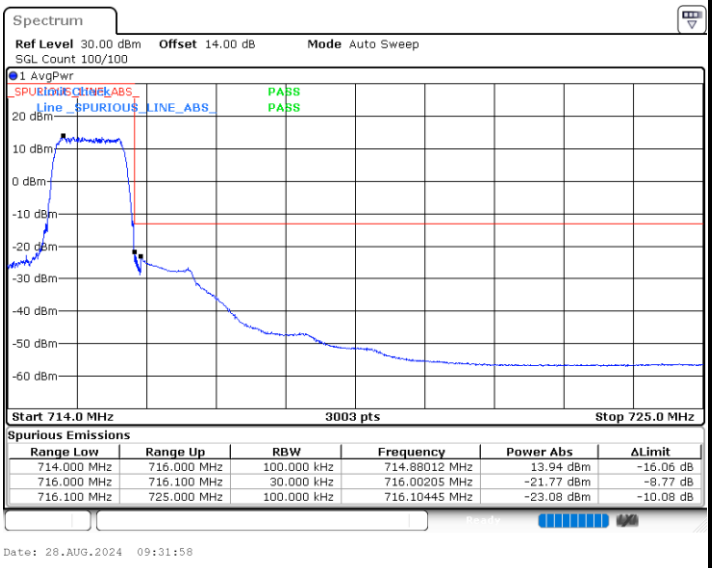
Highest Band Edge / 1RB



Lowest Band Edge / Full RB

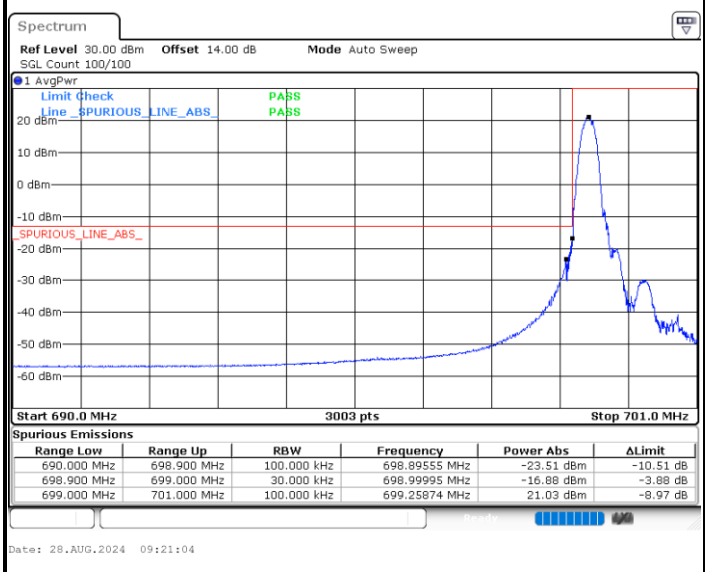


Highest Band Edge / Full RB



LTE Band 12 / 1.4MHz / 16QAM

Lowest Band Edge / 1 RB

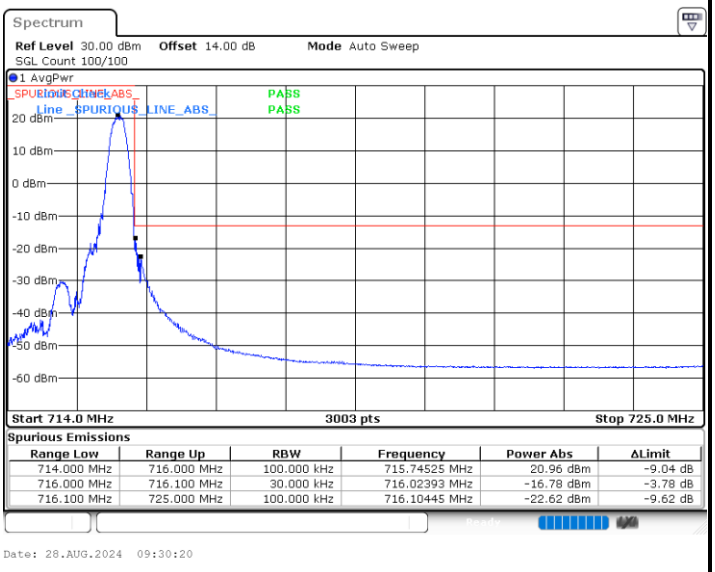


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
690.000 MHz	698.900 MHz	100.000 kHz	698.89555 MHz	-23.51 dBm	-10.51 dB
698.900 MHz	699.000 MHz	30.000 kHz	698.99995 MHz	-16.88 dBm	-3.88 dB
699.000 MHz	701.000 MHz	100.000 kHz	699.25874 MHz	21.03 dBm	-8.97 dB

Date: 28.AUG.2024 09:21:04

Highest Band Edge / 1 RB

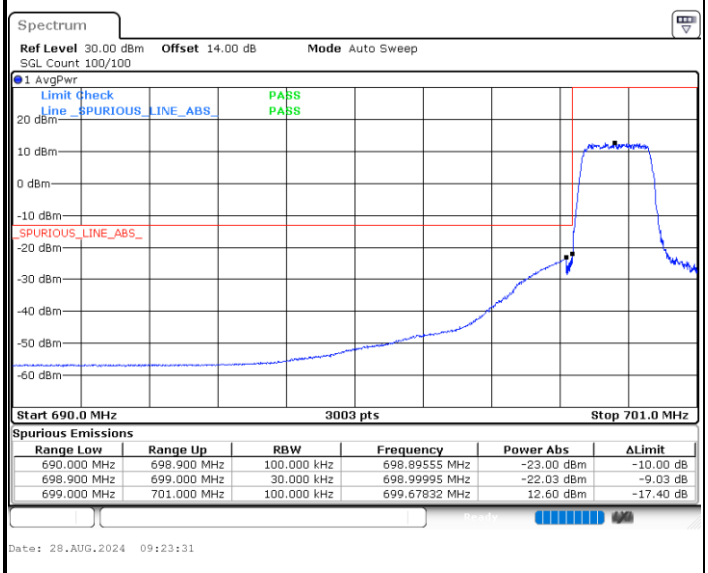


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
714.000 MHz	716.000 MHz	100.000 kHz	715.74525 MHz	20.96 dBm	-9.04 dB
716.000 MHz	716.100 MHz	30.000 kHz	716.02393 MHz	-16.78 dBm	-3.78 dB
716.100 MHz	725.000 MHz	100.000 kHz	716.10445 MHz	-22.62 dBm	-9.62 dB

Date: 28.AUG.2024 09:30:20

Lowest Band Edge / Full RB

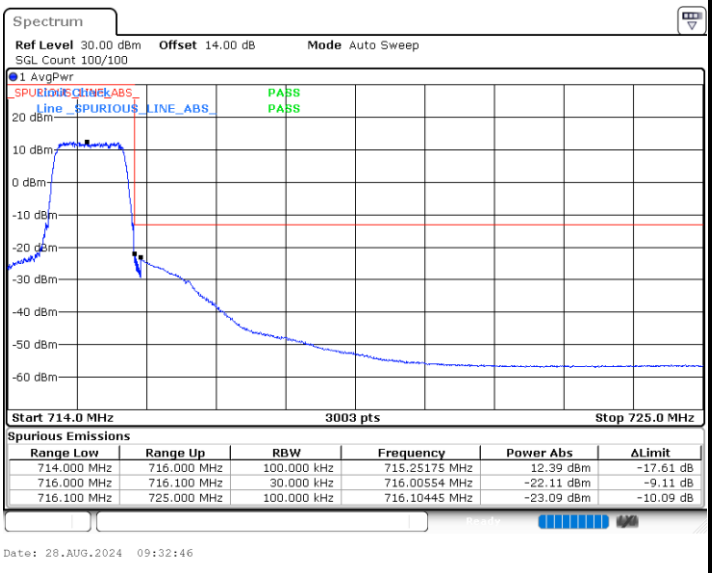


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
690.000 MHz	698.900 MHz	100.000 kHz	698.89555 MHz	-23.00 dBm	-10.00 dB
698.900 MHz	699.000 MHz	30.000 kHz	698.99995 MHz	-22.03 dBm	-9.03 dB
699.000 MHz	701.000 MHz	100.000 kHz	699.67832 MHz	12.60 dBm	-17.40 dB

Date: 28.AUG.2024 09:23:31

Highest Band Edge / Full RB



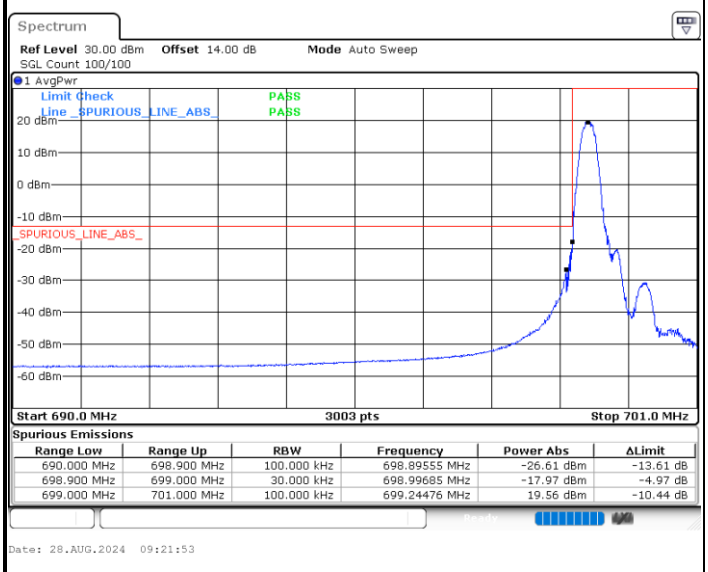
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
714.000 MHz	716.000 MHz	100.000 kHz	715.25175 MHz	12.39 dBm	-17.61 dB
716.000 MHz	716.100 MHz	30.000 kHz	716.00554 MHz	-22.11 dBm	-9.11 dB
716.100 MHz	725.000 MHz	100.000 kHz	716.10445 MHz	-23.09 dBm	-10.09 dB

Date: 28.AUG.2024 09:32:46

LTE Band 12 / 1.4MHz / 64QAM

Lowest Band Edge / 1 RB

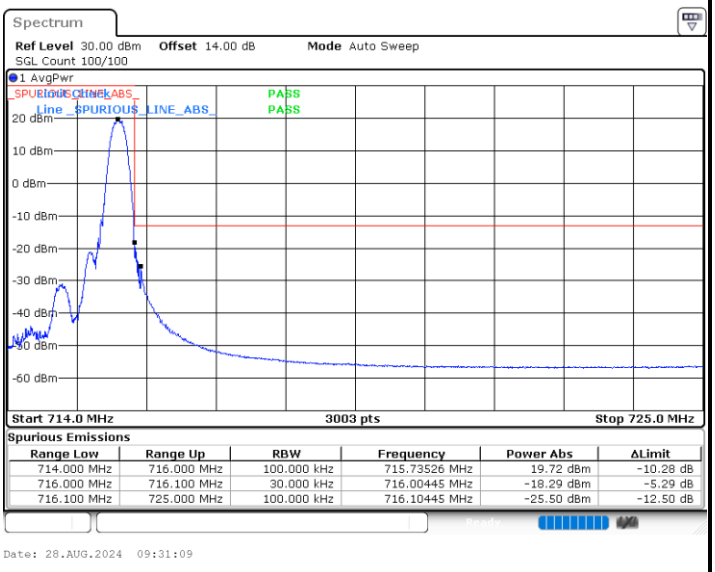


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
690.000 MHz	698.900 MHz	100.000 kHz	698.89555 MHz	-26.61 dBm	-13.61 dB
698.900 MHz	699.000 MHz	30.000 kHz	698.99685 MHz	-17.97 dBm	-4.97 dB
699.000 MHz	701.000 MHz	100.000 kHz	699.24476 MHz	19.56 dBm	-10.44 dB

Date: 28.AUG.2024 09:21:53

Highest Band Edge / 1 RB

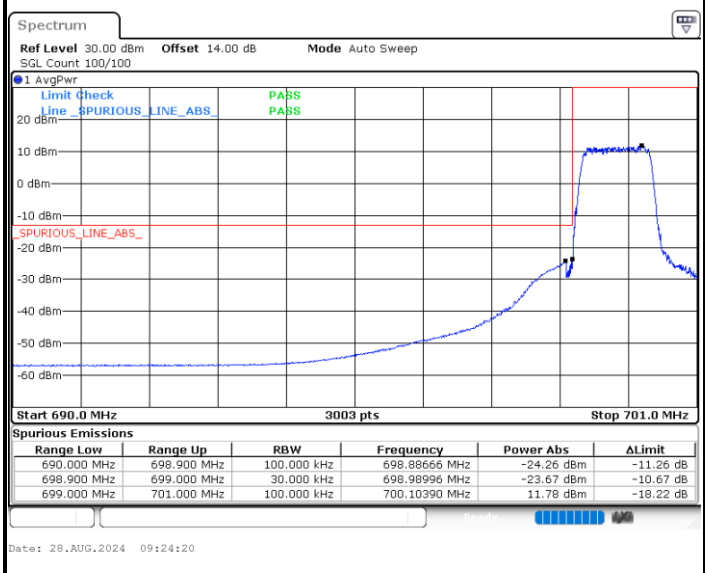


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
714.000 MHz	716.000 MHz	100.000 kHz	715.73526 MHz	19.72 dBm	-10.28 dB
716.000 MHz	716.100 MHz	30.000 kHz	716.00445 MHz	-18.29 dBm	-5.29 dB
716.100 MHz	725.000 MHz	100.000 kHz	716.10445 MHz	-25.50 dBm	-12.50 dB

Date: 28.AUG.2024 09:31:09

Lowest Band Edge / Full RB

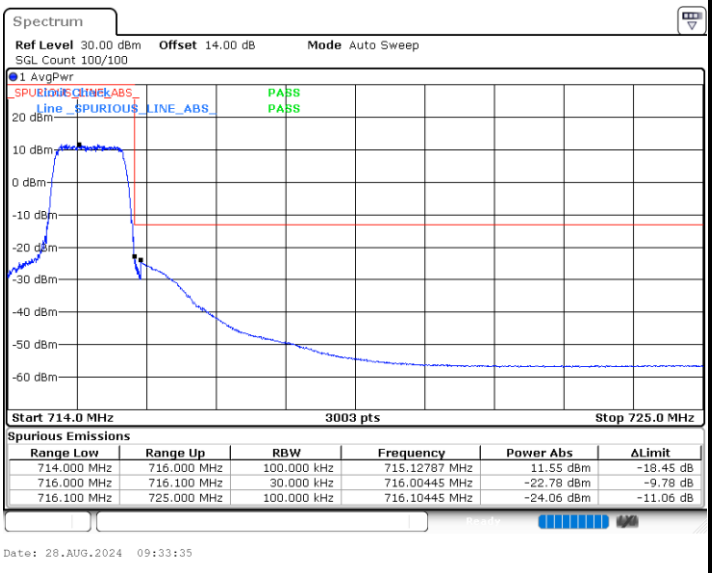


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
690.000 MHz	698.900 MHz	100.000 kHz	698.88666 MHz	-24.26 dBm	-11.26 dB
698.900 MHz	699.000 MHz	30.000 kHz	698.98996 MHz	-23.67 dBm	-10.67 dB
699.000 MHz	701.000 MHz	100.000 kHz	700.10390 MHz	11.78 dBm	-18.22 dB

Date: 28.AUG.2024 09:24:20

Highest Band Edge / Full RB



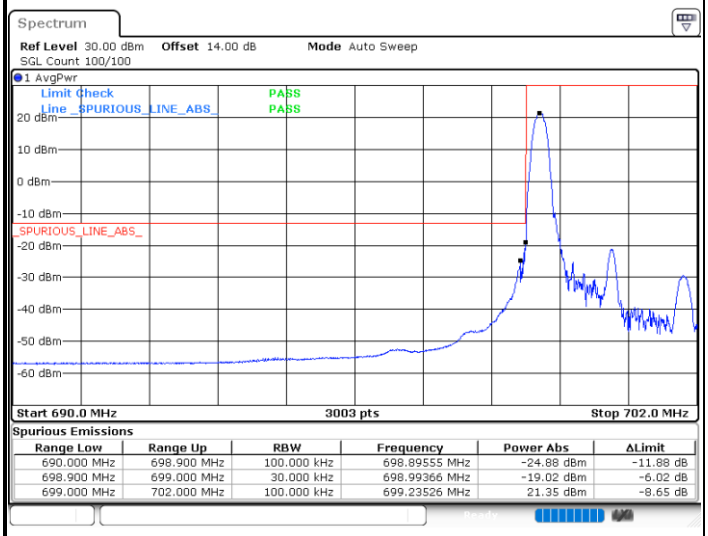
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
714.000 MHz	716.000 MHz	100.000 kHz	715.12787 MHz	11.55 dBm	-18.45 dB
716.000 MHz	716.100 MHz	30.000 kHz	716.00445 MHz	-22.78 dBm	-9.78 dB
716.100 MHz	725.000 MHz	100.000 kHz	716.10445 MHz	-24.06 dBm	-11.06 dB

Date: 28.AUG.2024 09:33:35

LTE Band 12 / 3MHz / QPSK

Lowest Band Edge / 1RB

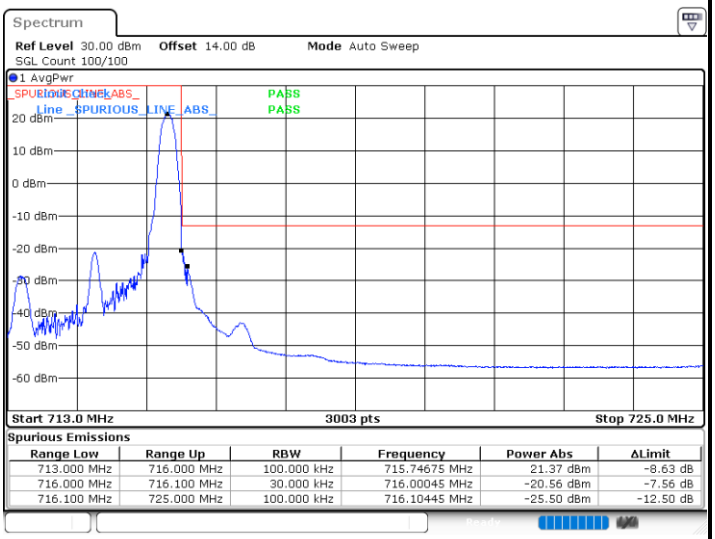


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
690.000 MHz	698.900 MHz	100.000 kHz	698.89555 MHz	-24.88 dBm	-11.88 dB
698.900 MHz	699.000 MHz	30.000 kHz	698.99366 MHz	-19.02 dBm	-6.02 dB
699.000 MHz	702.000 MHz	100.000 kHz	699.23526 MHz	21.35 dBm	-8.65 dB

Date: 28.AUG.2024 09:35:58

Highest Band Edge / 1RB

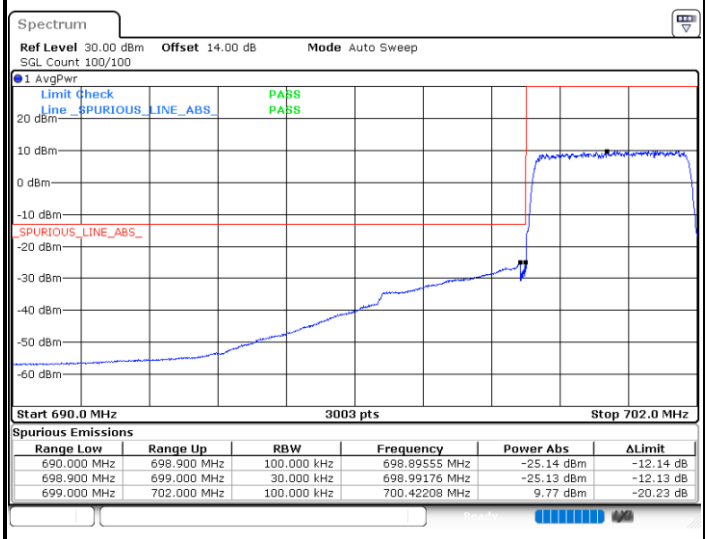


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
713.000 MHz	716.000 MHz	100.000 kHz	715.74675 MHz	21.37 dBm	-8.63 dB
716.000 MHz	716.100 MHz	30.000 kHz	716.00045 MHz	-20.56 dBm	-7.56 dB
716.100 MHz	725.000 MHz	100.000 kHz	716.10445 MHz	-25.50 dBm	-12.50 dB

Date: 28.AUG.2024 09:45:15

Lowest Band Edge / Full RB

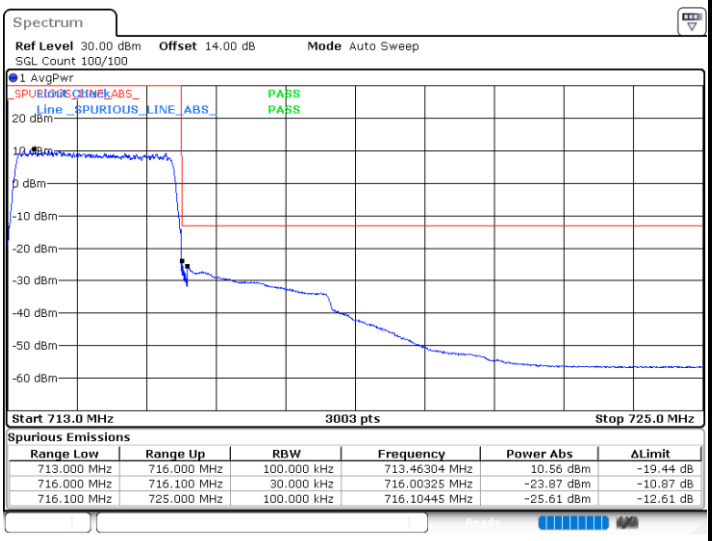


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
690.000 MHz	698.900 MHz	100.000 kHz	698.89555 MHz	-25.14 dBm	-12.14 dB
698.900 MHz	699.000 MHz	30.000 kHz	698.99176 MHz	-25.13 dBm	-12.13 dB
699.000 MHz	702.000 MHz	100.000 kHz	700.42208 MHz	9.77 dBm	-20.23 dB

Date: 28.AUG.2024 09:38:26

Highest Band Edge / Full RB



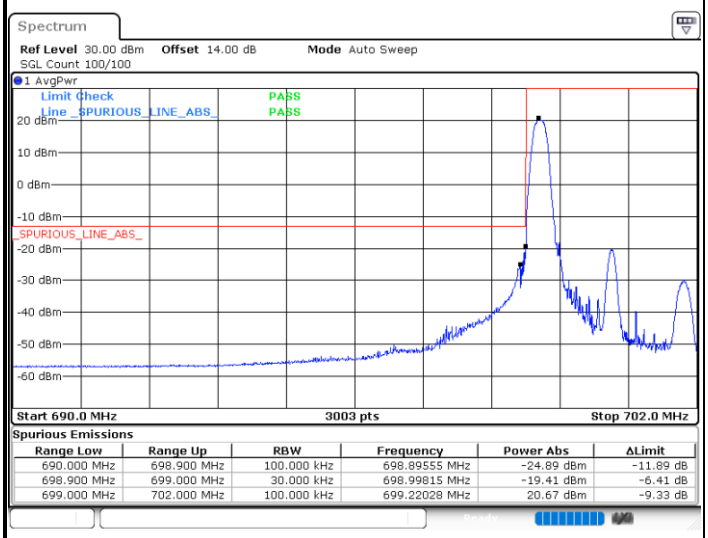
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
713.000 MHz	716.000 MHz	100.000 kHz	713.46304 MHz	10.56 dBm	-19.44 dB
716.000 MHz	716.100 MHz	30.000 kHz	716.00325 MHz	-23.87 dBm	-10.87 dB
716.100 MHz	725.000 MHz	100.000 kHz	716.10445 MHz	-25.61 dBm	-12.61 dB

Date: 28.AUG.2024 09:47:43

LTE Band 12 / 3MHz / 16QAM

Lowest Band Edge / 1 RB

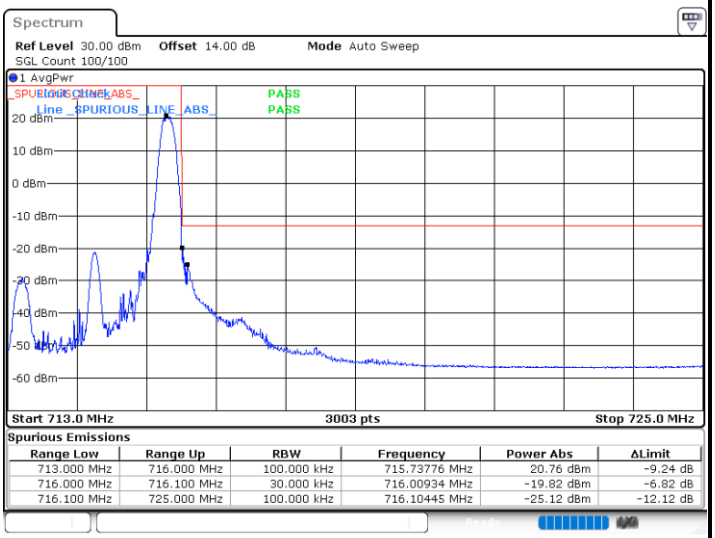


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
690.000 MHz	698.900 MHz	100.000 kHz	698.89555 MHz	-24.89 dBm	-11.89 dB
698.900 MHz	699.000 MHz	30.000 kHz	698.99815 MHz	-19.41 dBm	-6.41 dB
699.000 MHz	702.000 MHz	100.000 kHz	699.22028 MHz	20.67 dBm	-9.33 dB

Date: 28.AUG.2024 09:36:47

Highest Band Edge / 1 RB

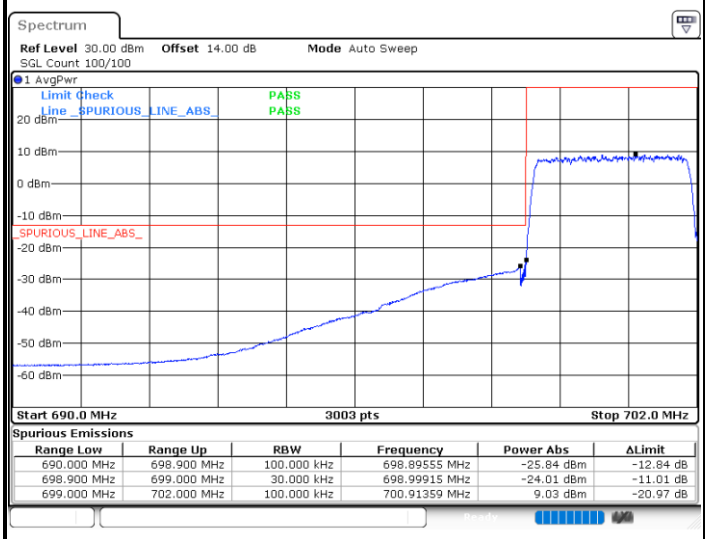


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
713.000 MHz	716.000 MHz	100.000 kHz	715.73776 MHz	20.76 dBm	-9.24 dB
716.000 MHz	716.100 MHz	30.000 kHz	716.00934 MHz	-19.82 dBm	-6.82 dB
716.100 MHz	725.000 MHz	100.000 kHz	716.10445 MHz	-25.12 dBm	-12.12 dB

Date: 28.AUG.2024 09:46:04

Lowest Band Edge / Full RB

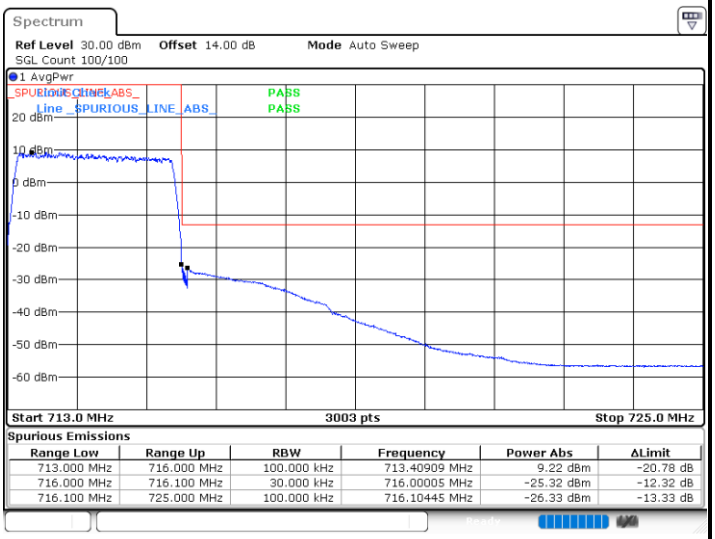


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
690.000 MHz	698.900 MHz	100.000 kHz	698.89555 MHz	-25.84 dBm	-12.84 dB
698.900 MHz	699.000 MHz	30.000 kHz	698.99915 MHz	-24.01 dBm	-11.01 dB
699.000 MHz	702.000 MHz	100.000 kHz	700.91359 MHz	9.03 dBm	-20.97 dB

Date: 28.AUG.2024 09:39:15

Highest Band Edge / Full RB



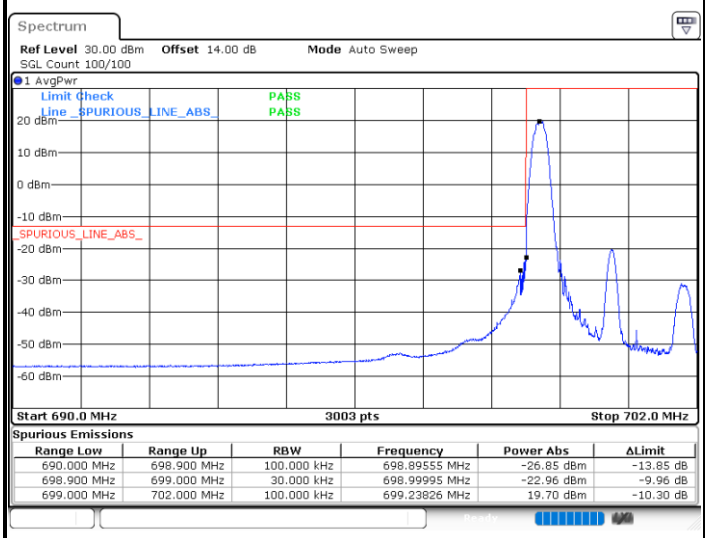
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
713.000 MHz	716.000 MHz	100.000 kHz	713.40909 MHz	9.22 dBm	-20.78 dB
716.000 MHz	716.100 MHz	30.000 kHz	716.00005 MHz	-25.32 dBm	-12.32 dB
716.100 MHz	725.000 MHz	100.000 kHz	716.10445 MHz	-26.33 dBm	-13.33 dB

Date: 28.AUG.2024 09:48:32

LTE Band 12 / 3MHz / 64QAM

Lowest Band Edge / 1 RB

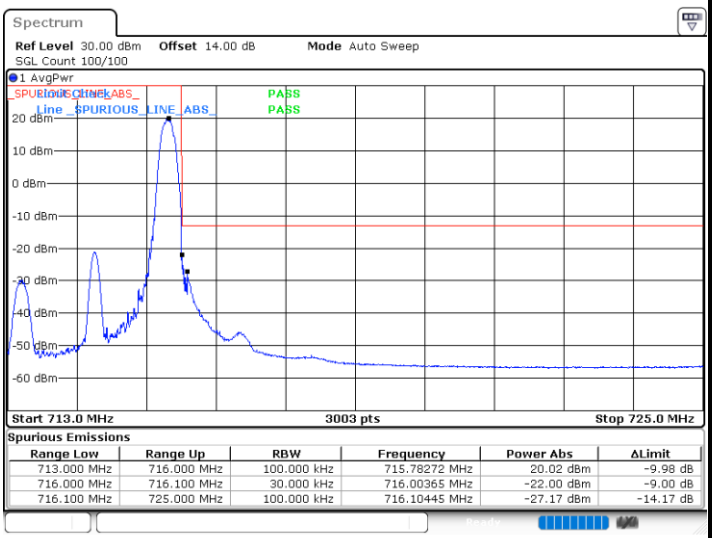


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
690.000 MHz	698.900 MHz	100.000 kHz	698.89555 MHz	-26.85 dBm	-13.85 dB
698.900 MHz	699.000 MHz	30.000 kHz	698.99995 MHz	-22.96 dBm	-9.96 dB
699.000 MHz	702.000 MHz	100.000 kHz	699.23826 MHz	19.70 dBm	-10.30 dB

Date: 28.AUG.2024 09:37:37

Highest Band Edge / 1 RB

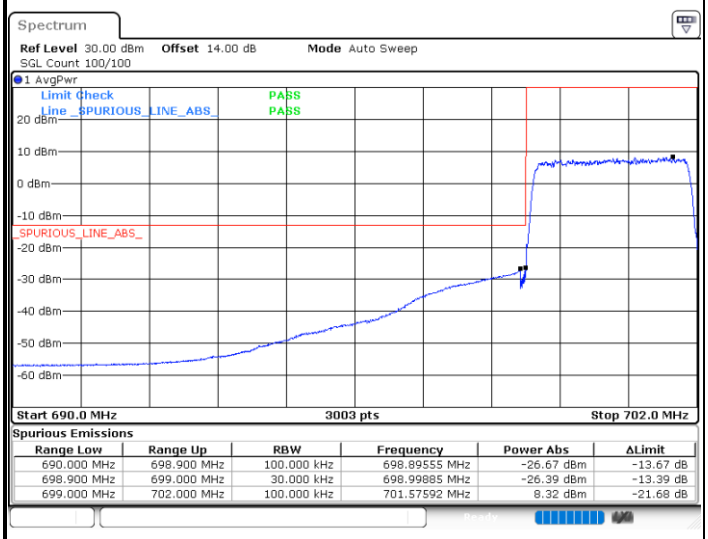


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
713.000 MHz	716.000 MHz	100.000 kHz	715.78272 MHz	20.02 dBm	-9.98 dB
716.000 MHz	716.100 MHz	30.000 kHz	716.00365 MHz	-22.00 dBm	-9.00 dB
716.100 MHz	725.000 MHz	100.000 kHz	716.10445 MHz	-27.17 dBm	-14.17 dB

Date: 28.AUG.2024 09:46:53

Lowest Band Edge / Full RB

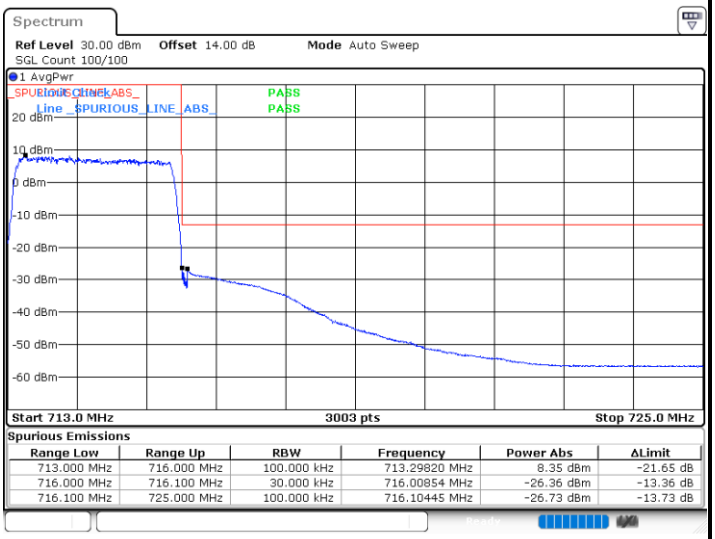


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
690.000 MHz	698.900 MHz	100.000 kHz	698.89555 MHz	-26.67 dBm	-13.67 dB
698.900 MHz	699.000 MHz	30.000 kHz	698.99885 MHz	-26.39 dBm	-13.39 dB
699.000 MHz	702.000 MHz	100.000 kHz	701.57592 MHz	8.32 dBm	-21.68 dB

Date: 28.AUG.2024 09:40:05

Highest Band Edge / Full RB



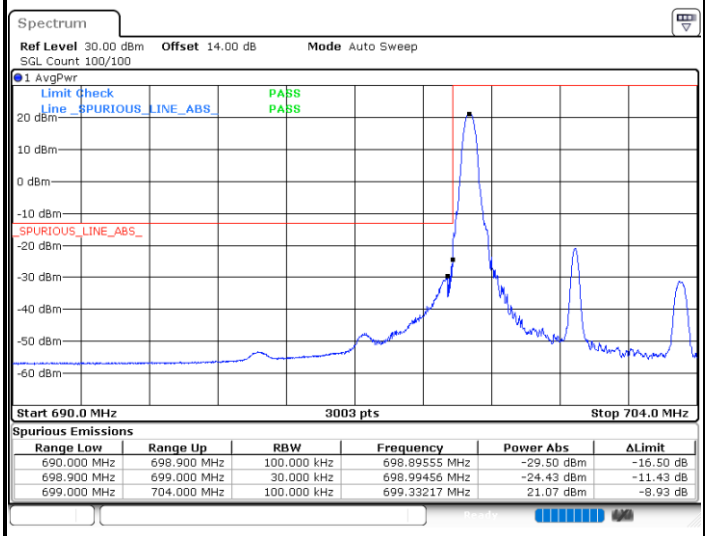
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
713.000 MHz	716.000 MHz	100.000 kHz	713.29820 MHz	8.35 dBm	-21.65 dB
716.000 MHz	716.100 MHz	30.000 kHz	716.00854 MHz	-26.36 dBm	-13.36 dB
716.100 MHz	725.000 MHz	100.000 kHz	716.10445 MHz	-26.73 dBm	-13.73 dB

Date: 28.AUG.2024 09:49:21

LTE Band 12 / 5MHz / QPSK

Lowest Band Edge / 1RB

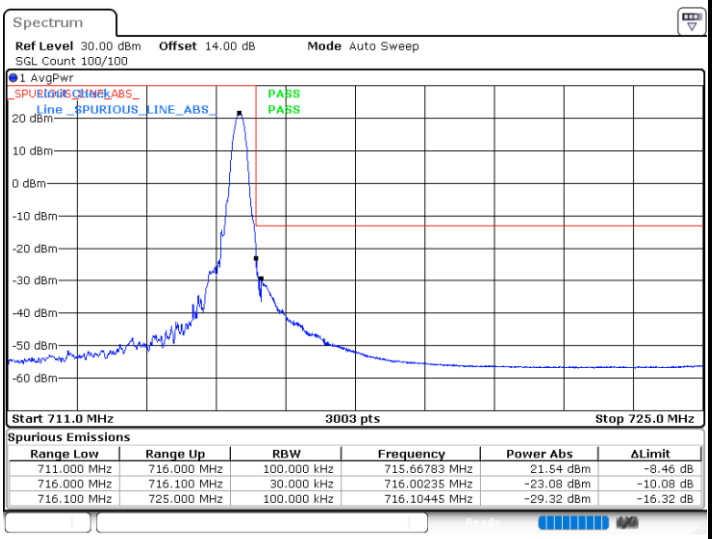


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
690.000 MHz	698.900 MHz	100.000 kHz	698.89555 MHz	-29.50 dBm	-16.50 dB
698.900 MHz	699.000 MHz	30.000 kHz	698.99456 MHz	-24.43 dBm	-11.43 dB
699.000 MHz	704.000 MHz	100.000 kHz	699.33217 MHz	21.07 dBm	-8.93 dB

Date: 28.AUG.2024 09:51:43

Highest Band Edge / 1RB

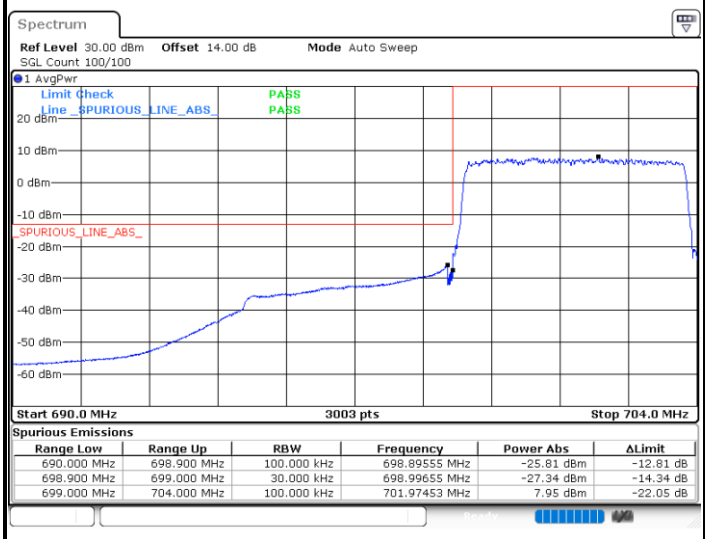


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
711.000 MHz	716.000 MHz	100.000 kHz	715.66783 MHz	21.54 dBm	-8.46 dB
716.000 MHz	716.100 MHz	30.000 kHz	716.00235 MHz	-23.08 dBm	-10.08 dB
716.100 MHz	725.000 MHz	100.000 kHz	716.10445 MHz	-29.32 dBm	-16.32 dB

Date: 28.AUG.2024 10:01:00

Lowest Band Edge / Full RB

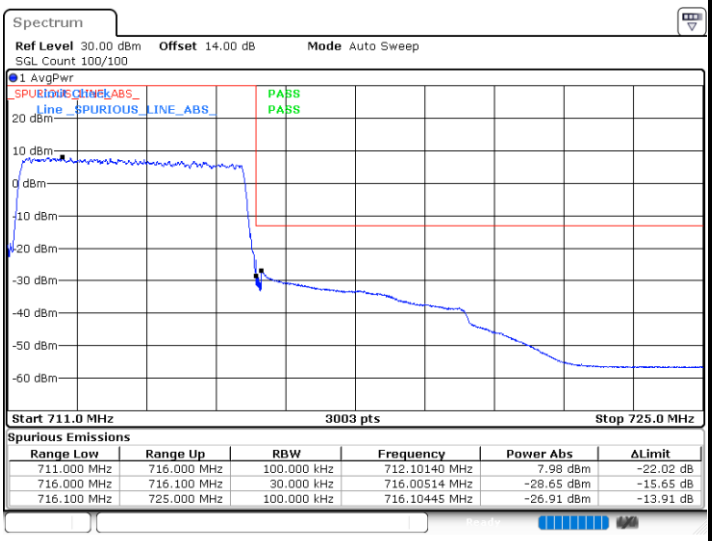


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
690.000 MHz	698.900 MHz	100.000 kHz	698.89555 MHz	-25.81 dBm	-12.81 dB
698.900 MHz	699.000 MHz	30.000 kHz	698.99655 MHz	-27.34 dBm	-14.34 dB
699.000 MHz	704.000 MHz	100.000 kHz	701.97453 MHz	7.95 dBm	-22.05 dB

Date: 28.AUG.2024 09:54:11

Highest Band Edge / Full RB



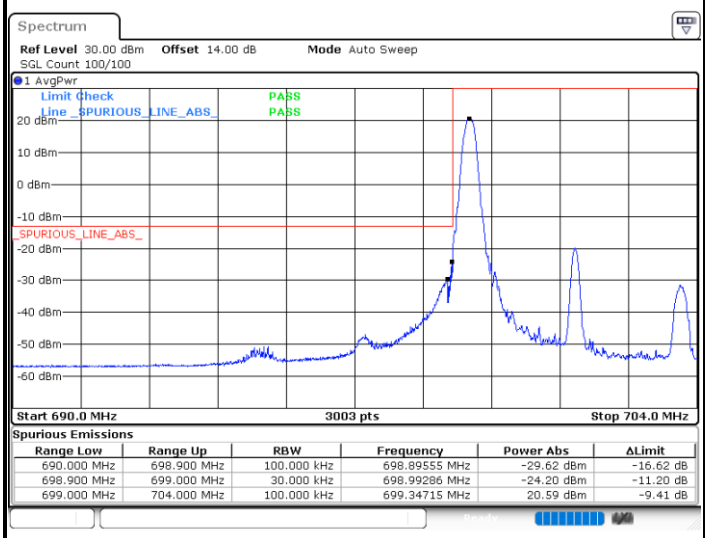
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
711.000 MHz	716.000 MHz	100.000 kHz	712.10140 MHz	7.98 dBm	-22.02 dB
716.000 MHz	716.100 MHz	30.000 kHz	716.00514 MHz	-28.65 dBm	-15.65 dB
716.100 MHz	725.000 MHz	100.000 kHz	716.10445 MHz	-26.91 dBm	-13.91 dB

Date: 28.AUG.2024 10:03:27

LTE Band 12 / 5MHz / 16QAM

Lowest Band Edge / 1 RB

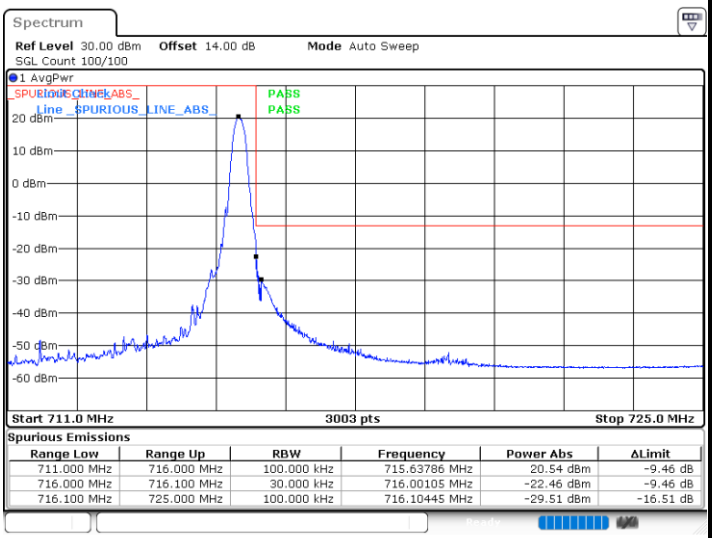


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
690.000 MHz	698.900 MHz	100.000 kHz	698.89555 MHz	-29.62 dBm	-16.62 dB
698.900 MHz	699.000 MHz	30.000 kHz	698.99286 MHz	-24.20 dBm	-11.20 dB
699.000 MHz	704.000 MHz	100.000 kHz	699.34715 MHz	20.59 dBm	-9.41 dB

Date: 28.AUG.2024 09:52:33

Highest Band Edge / 1 RB

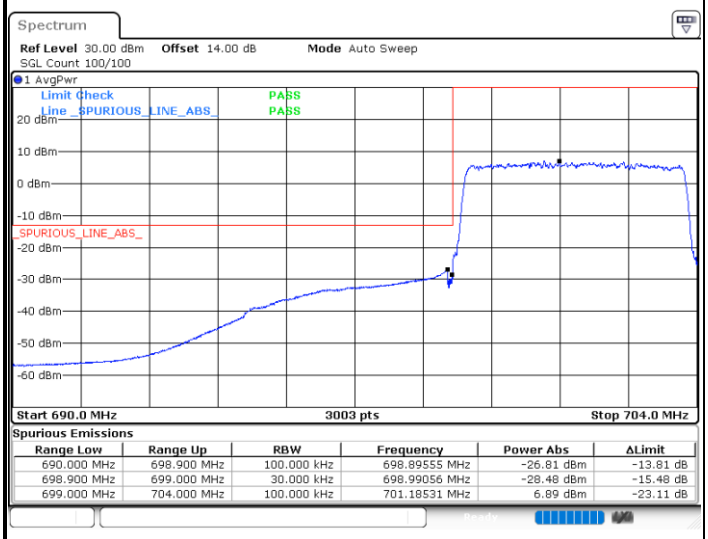


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
711.000 MHz	716.000 MHz	100.000 kHz	715.63786 MHz	20.54 dBm	-9.46 dB
716.000 MHz	716.100 MHz	30.000 kHz	716.00105 MHz	-22.46 dBm	-9.46 dB
716.100 MHz	725.000 MHz	100.000 kHz	716.10445 MHz	-29.51 dBm	-16.51 dB

Date: 28.AUG.2024 10:01:49

Lowest Band Edge / Full RB

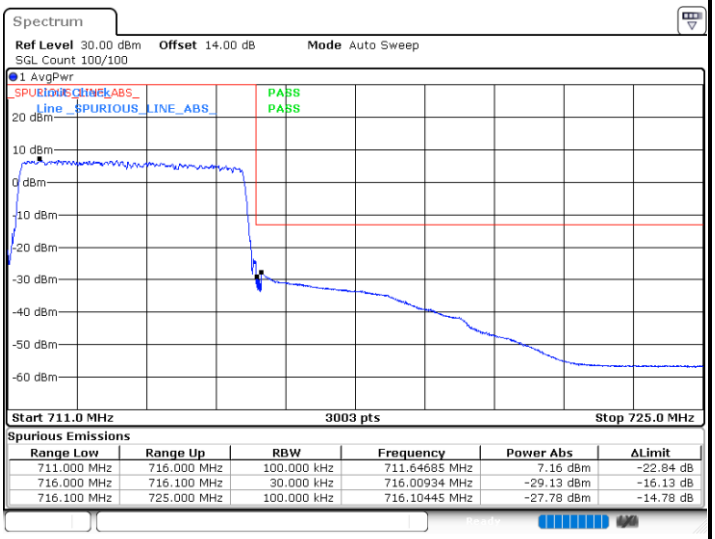


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
690.000 MHz	698.900 MHz	100.000 kHz	698.89555 MHz	-26.81 dBm	-13.81 dB
698.900 MHz	699.000 MHz	30.000 kHz	698.99056 MHz	-28.48 dBm	-15.48 dB
699.000 MHz	704.000 MHz	100.000 kHz	701.18531 MHz	6.89 dBm	-23.11 dB

Date: 28.AUG.2024 09:55:01

Highest Band Edge / Full RB



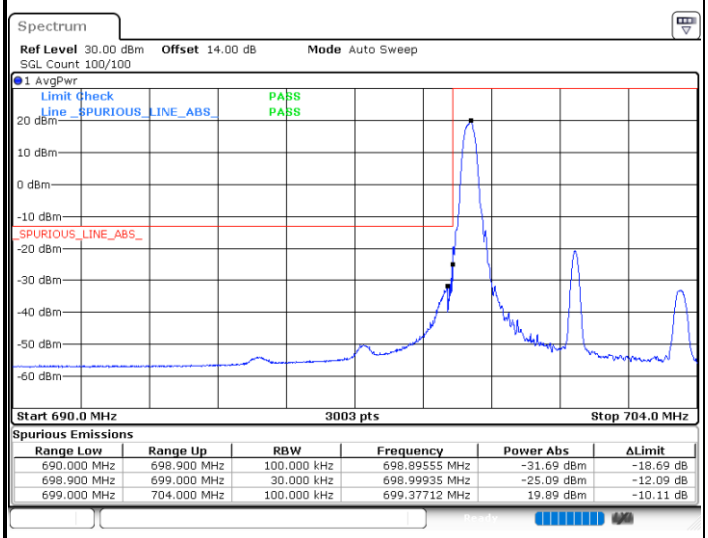
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
711.000 MHz	716.000 MHz	100.000 kHz	711.64685 MHz	7.16 dBm	-22.84 dB
716.000 MHz	716.100 MHz	30.000 kHz	716.00934 MHz	-29.13 dBm	-16.13 dB
716.100 MHz	725.000 MHz	100.000 kHz	716.10445 MHz	-27.78 dBm	-14.78 dB

Date: 28.AUG.2024 10:04:16

LTE Band 12 / 5MHz / 64QAM

Lowest Band Edge / 1 RB

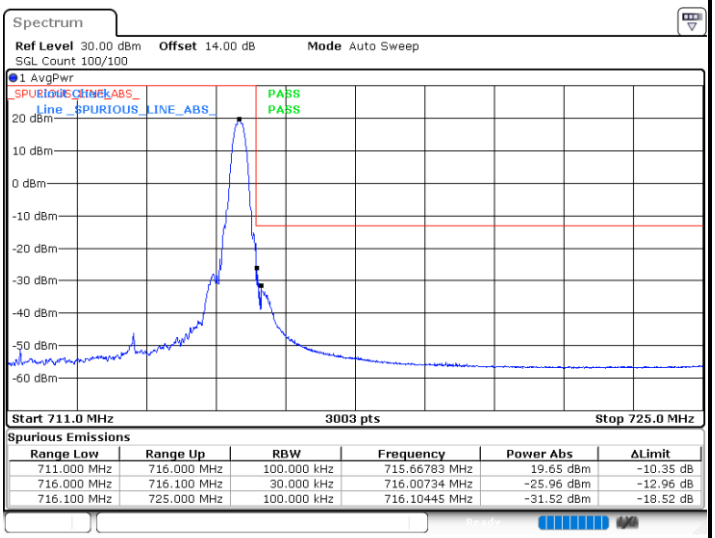


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
690.000 MHz	698.900 MHz	100.000 kHz	698.89555 MHz	-31.69 dBm	-18.69 dB
698.900 MHz	699.000 MHz	30.000 kHz	698.99935 MHz	-25.09 dBm	-12.09 dB
699.000 MHz	704.000 MHz	100.000 kHz	699.37712 MHz	19.89 dBm	-10.11 dB

Date: 28.AUG.2024 09:53:22

Highest Band Edge / 1 RB

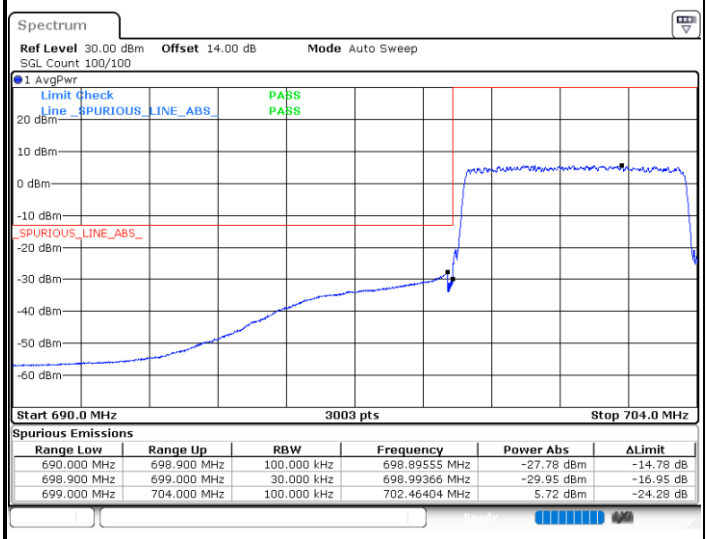


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
711.000 MHz	716.000 MHz	100.000 kHz	715.66783 MHz	19.65 dBm	-10.35 dB
716.000 MHz	716.100 MHz	30.000 kHz	716.00734 MHz	-25.96 dBm	-12.96 dB
716.100 MHz	725.000 MHz	100.000 kHz	716.10445 MHz	-31.52 dBm	-18.52 dB

Date: 28.AUG.2024 10:02:38

Lowest Band Edge / Full RB

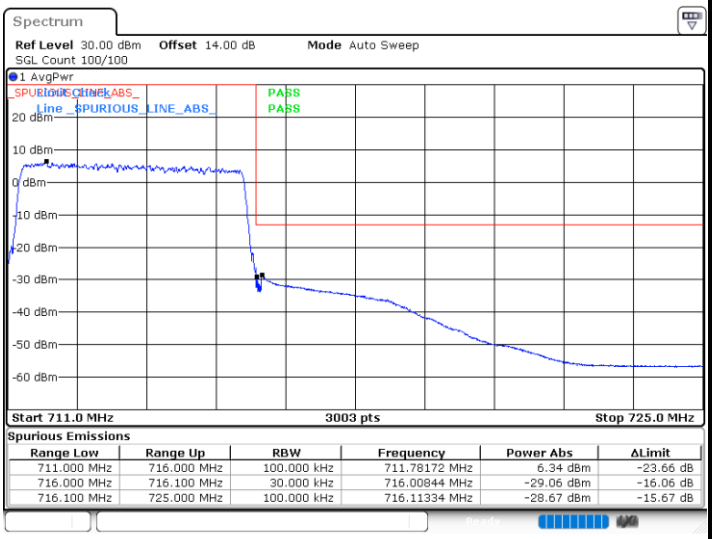


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
690.000 MHz	698.900 MHz	100.000 kHz	698.89555 MHz	-27.78 dBm	-14.78 dB
698.900 MHz	699.000 MHz	30.000 kHz	698.99366 MHz	-29.95 dBm	-16.95 dB
699.000 MHz	704.000 MHz	100.000 kHz	702.46404 MHz	5.72 dBm	-24.28 dB

Date: 28.AUG.2024 09:55:50

Highest Band Edge / Full RB



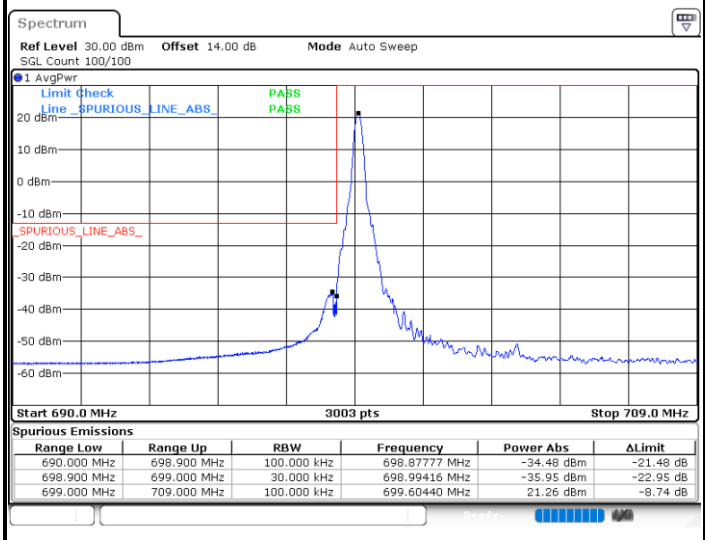
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
711.000 MHz	716.000 MHz	100.000 kHz	711.78172 MHz	6.34 dBm	-23.66 dB
716.000 MHz	716.100 MHz	30.000 kHz	716.00844 MHz	-29.06 dBm	-16.06 dB
716.100 MHz	725.000 MHz	100.000 kHz	716.11334 MHz	-28.67 dBm	-15.67 dB

Date: 28.AUG.2024 10:05:05

LTE Band 12 / 10MHz / QPSK

Lowest Band Edge / 1RB

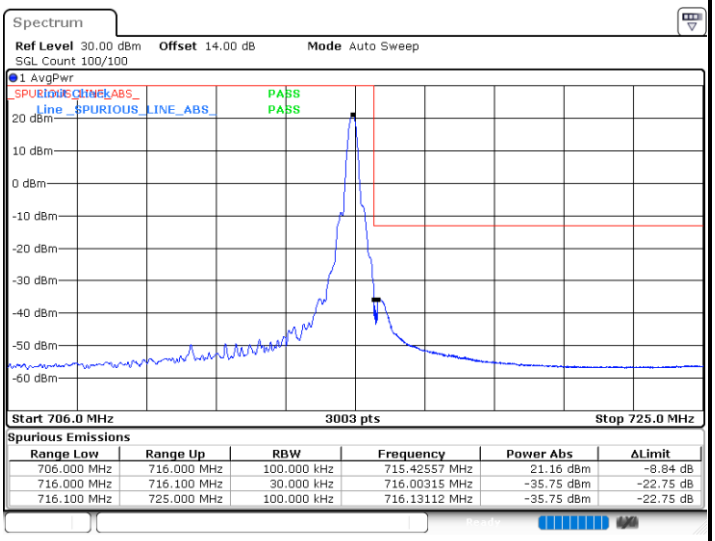


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
690.000 MHz	698.900 MHz	100.000 kHz	698.87777 MHz	-34.48 dBm	-21.48 dB
698.900 MHz	699.000 MHz	30.000 kHz	698.99416 MHz	-35.95 dBm	-22.95 dB
699.000 MHz	709.000 MHz	100.000 kHz	699.60440 MHz	21.26 dBm	-8.74 dB

Date: 28.AUG.2024 10:07:27

Highest Band Edge / 1RB

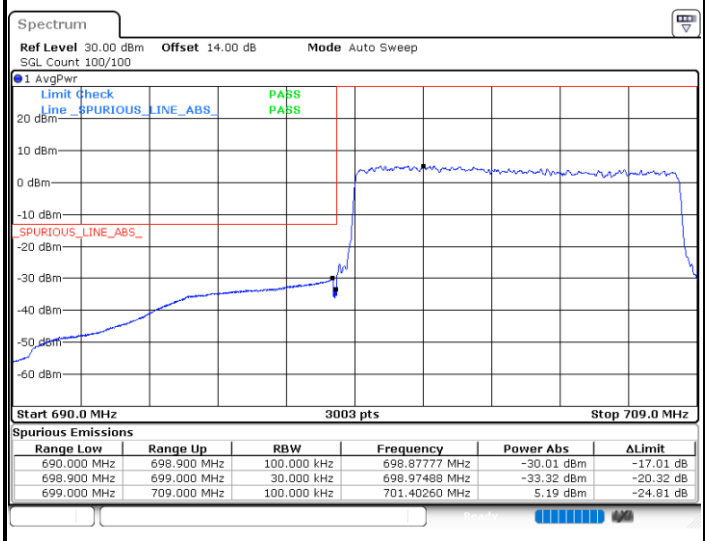


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
706.000 MHz	716.000 MHz	100.000 kHz	715.42557 MHz	21.16 dBm	-8.84 dB
716.000 MHz	716.100 MHz	30.000 kHz	716.00315 MHz	-35.75 dBm	-22.75 dB
716.100 MHz	725.000 MHz	100.000 kHz	716.13112 MHz	-35.75 dBm	-22.75 dB

Date: 28.AUG.2024 10:16:46

Lowest Band Edge / Full RB

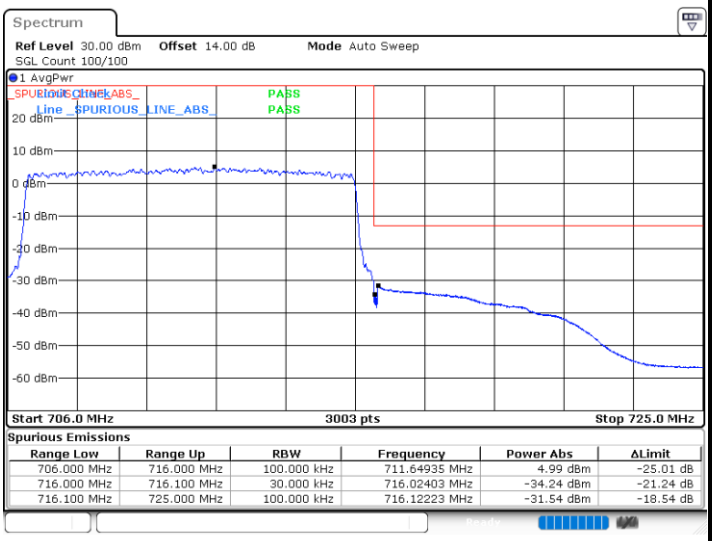


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
690.000 MHz	698.900 MHz	100.000 kHz	698.87777 MHz	-30.01 dBm	-17.01 dB
698.900 MHz	699.000 MHz	30.000 kHz	698.97488 MHz	-33.32 dBm	-20.32 dB
699.000 MHz	709.000 MHz	100.000 kHz	701.40260 MHz	5.19 dBm	-24.81 dB

Date: 28.AUG.2024 10:09:56

Highest Band Edge / Full RB



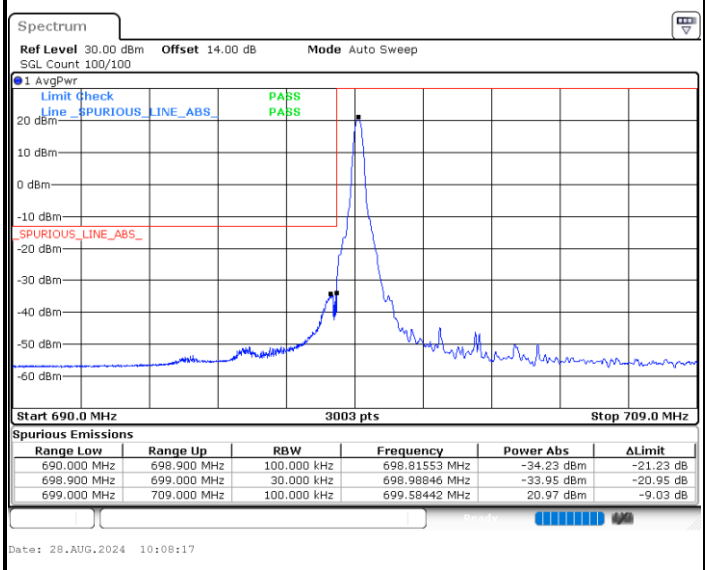
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
706.000 MHz	716.000 MHz	100.000 kHz	711.64935 MHz	4.99 dBm	-25.01 dB
716.000 MHz	716.100 MHz	30.000 kHz	716.02403 MHz	-34.24 dBm	-21.24 dB
716.100 MHz	725.000 MHz	100.000 kHz	716.12223 MHz	-31.54 dBm	-18.54 dB

Date: 28.AUG.2024 10:19:14

LTE Band 12 / 10MHz / 16QAM

Lowest Band Edge / 1 RB

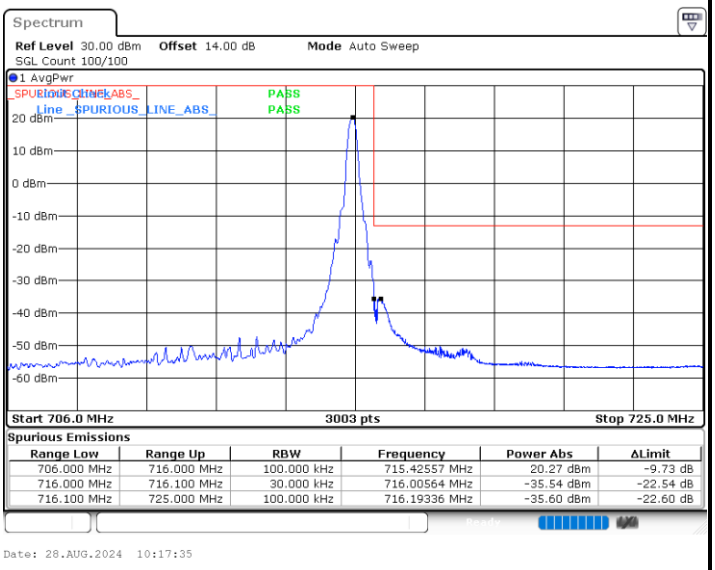


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
690.000 MHz	698.900 MHz	100.000 kHz	698.81553 MHz	-34.23 dBm	-21.23 dB
698.900 MHz	699.000 MHz	30.000 kHz	698.98846 MHz	-33.95 dBm	-20.95 dB
699.000 MHz	709.000 MHz	100.000 kHz	699.58442 MHz	20.97 dBm	-9.03 dB

Date: 28.AUG.2024 10:08:17

Highest Band Edge / 1 RB

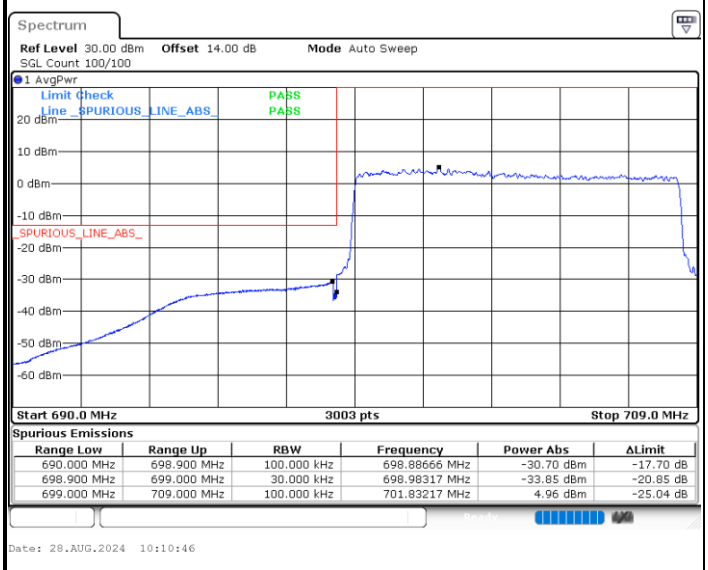


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
706.000 MHz	716.000 MHz	100.000 kHz	715.42557 MHz	20.27 dBm	-9.73 dB
716.000 MHz	716.100 MHz	30.000 kHz	716.00564 MHz	-35.54 dBm	-22.54 dB
716.100 MHz	725.000 MHz	100.000 kHz	716.19336 MHz	-35.60 dBm	-22.60 dB

Date: 28.AUG.2024 10:17:35

Lowest Band Edge / Full RB

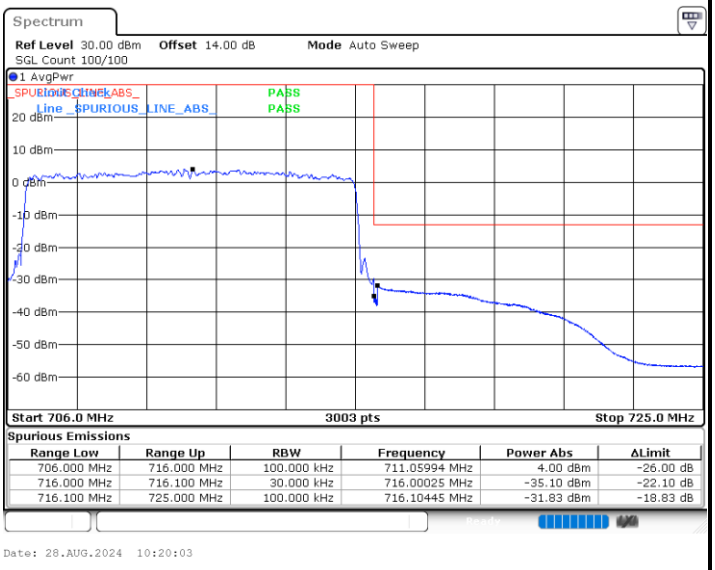


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
690.000 MHz	698.900 MHz	100.000 kHz	698.88666 MHz	-30.70 dBm	-17.70 dB
698.900 MHz	699.000 MHz	30.000 kHz	698.98317 MHz	-33.85 dBm	-20.85 dB
699.000 MHz	709.000 MHz	100.000 kHz	701.83217 MHz	4.96 dBm	-25.04 dB

Date: 28.AUG.2024 10:10:46

Highest Band Edge / Full RB



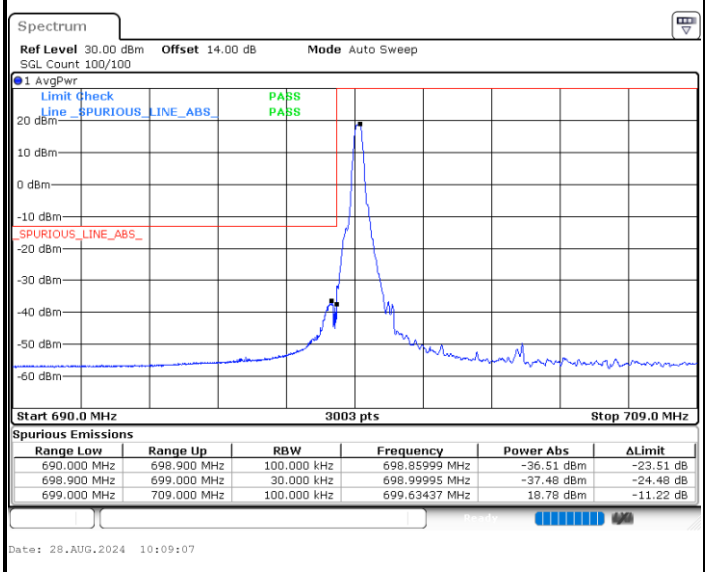
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
706.000 MHz	716.000 MHz	100.000 kHz	711.05994 MHz	4.00 dBm	-26.00 dB
716.000 MHz	716.100 MHz	30.000 kHz	716.00025 MHz	-35.10 dBm	-22.10 dB
716.100 MHz	725.000 MHz	100.000 kHz	716.10445 MHz	-31.83 dBm	-18.83 dB

Date: 28.AUG.2024 10:20:03

LTE Band 12 / 10MHz / 64QAM

Lowest Band Edge / 1 RB

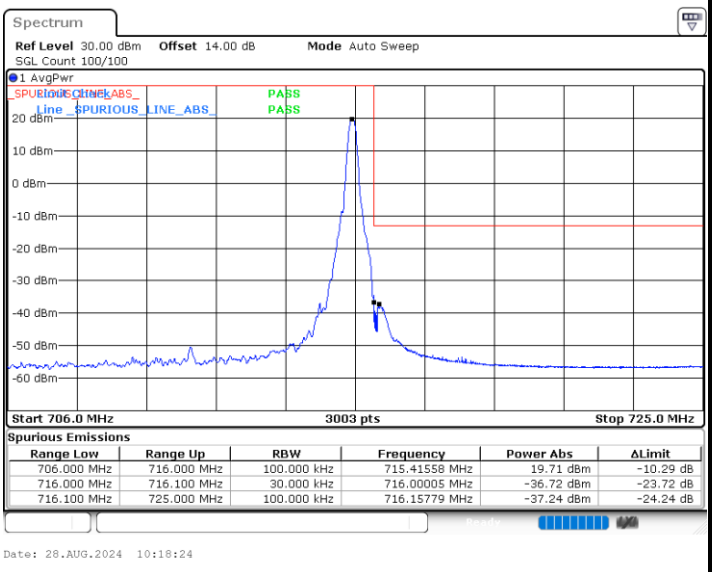


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
690.000 MHz	698.900 MHz	100.000 kHz	698.85999 MHz	-36.51 dBm	-23.51 dB
698.900 MHz	699.000 MHz	30.000 kHz	698.99995 MHz	-37.48 dBm	-24.48 dB
699.000 MHz	709.000 MHz	100.000 kHz	699.63437 MHz	18.78 dBm	-11.22 dB

Date: 28.AUG.2024 10:09:07

Highest Band Edge / 1 RB

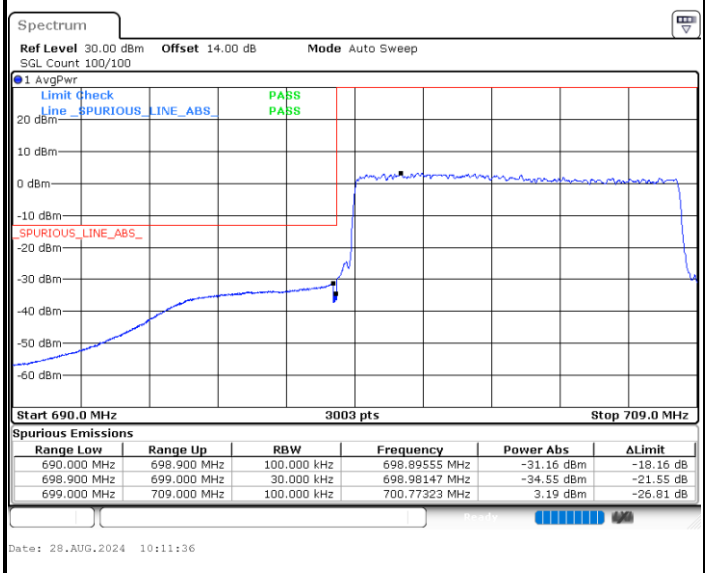


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
706.000 MHz	716.000 MHz	100.000 kHz	715.41558 MHz	19.71 dBm	-10.29 dB
716.000 MHz	716.100 MHz	30.000 kHz	716.00005 MHz	-36.72 dBm	-23.72 dB
716.100 MHz	725.000 MHz	100.000 kHz	716.15779 MHz	-37.24 dBm	-24.24 dB

Date: 28.AUG.2024 10:18:24

Lowest Band Edge / Full RB

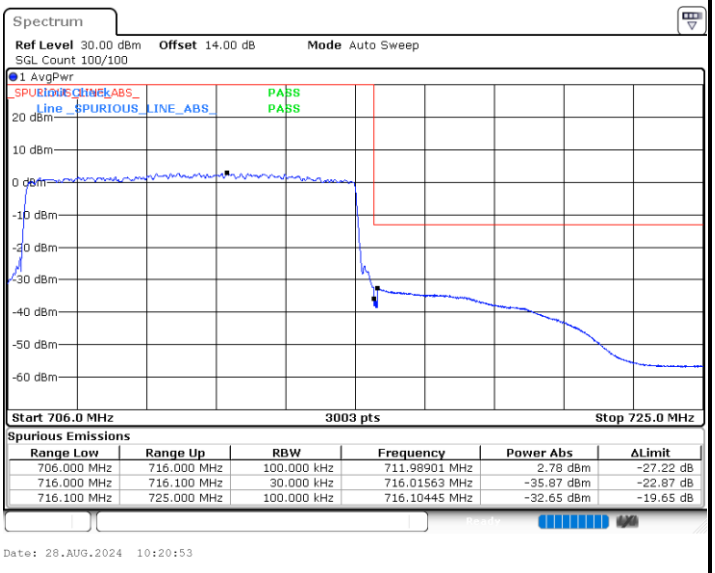


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
690.000 MHz	698.900 MHz	100.000 kHz	698.89555 MHz	-31.16 dBm	-18.16 dB
698.900 MHz	699.000 MHz	30.000 kHz	698.98147 MHz	-34.55 dBm	-21.55 dB
699.000 MHz	709.000 MHz	100.000 kHz	700.77323 MHz	3.19 dBm	-26.81 dB

Date: 28.AUG.2024 10:11:36

Highest Band Edge / Full RB



Spurious Emissions

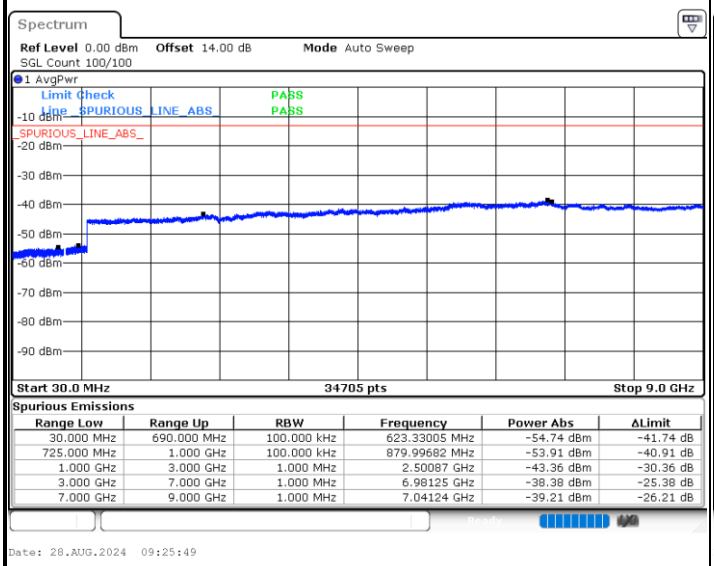
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
706.000 MHz	716.000 MHz	100.000 kHz	711.98901 MHz	2.78 dBm	-27.22 dB
716.000 MHz	716.100 MHz	30.000 kHz	716.01563 MHz	-35.87 dBm	-22.87 dB
716.100 MHz	725.000 MHz	100.000 kHz	716.10445 MHz	-32.65 dBm	-19.65 dB

Date: 28.AUG.2024 10:20:53

Conducted Spurious Emission

LTE Band 12 / 1.4MHz

Lowest Channel / QPSK

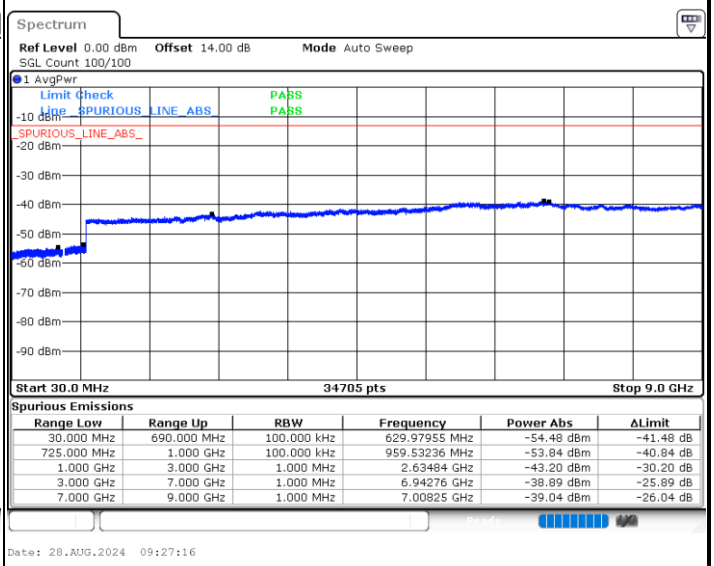


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	623.33005 MHz	-54.74 dBm	-41.74 dB
725.000 MHz	1.000 GHz	100.000 kHz	879.99682 MHz	-53.91 dBm	-40.91 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.50087 GHz	-43.36 dBm	-30.36 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.98125 GHz	-38.38 dBm	-25.38 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.04124 GHz	-39.21 dBm	-26.21 dB

Date: 28.AUG.2024 09:25:49

Middle Channel / QPSK

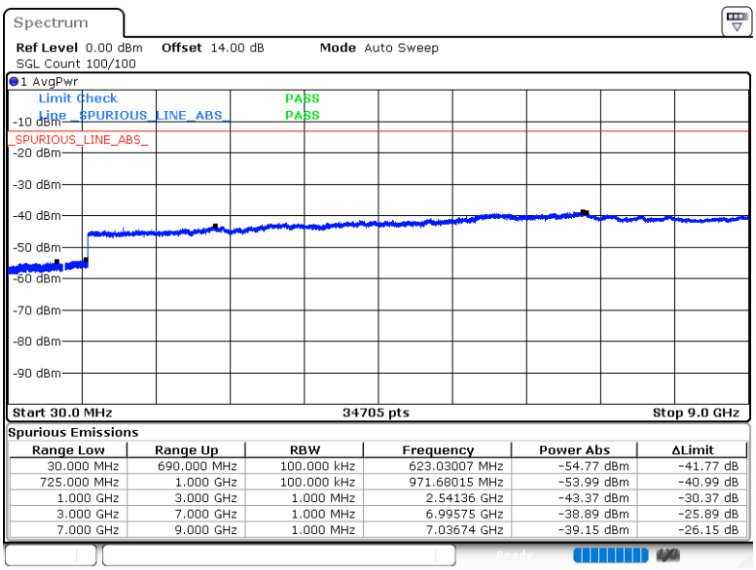


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	629.97955 MHz	-54.48 dBm	-41.48 dB
725.000 MHz	1.000 GHz	100.000 kHz	959.53236 MHz	-53.84 dBm	-40.84 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.63484 GHz	-43.20 dBm	-30.20 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.94276 GHz	-38.89 dBm	-25.89 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.00825 GHz	-39.04 dBm	-26.04 dB

Date: 28.AUG.2024 09:27:16

Highest Channel / QPSK



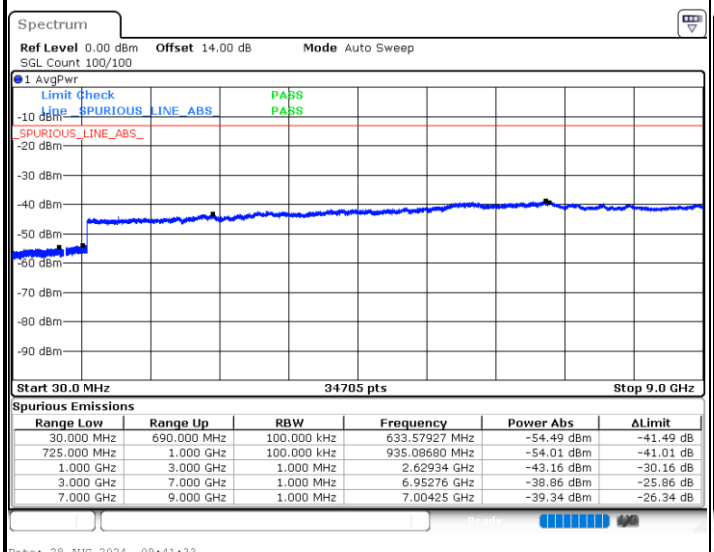
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	623.03007 MHz	-54.77 dBm	-41.77 dB
725.000 MHz	1.000 GHz	100.000 kHz	971.68015 MHz	-53.99 dBm	-40.99 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.54136 GHz	-43.37 dBm	-30.37 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99575 GHz	-38.89 dBm	-25.89 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.03674 GHz	-39.15 dBm	-26.15 dB

Date: 28.AUG.2024 09:35:04

LTE Band 12 / 3MHz

Lowest Channel / QPSK

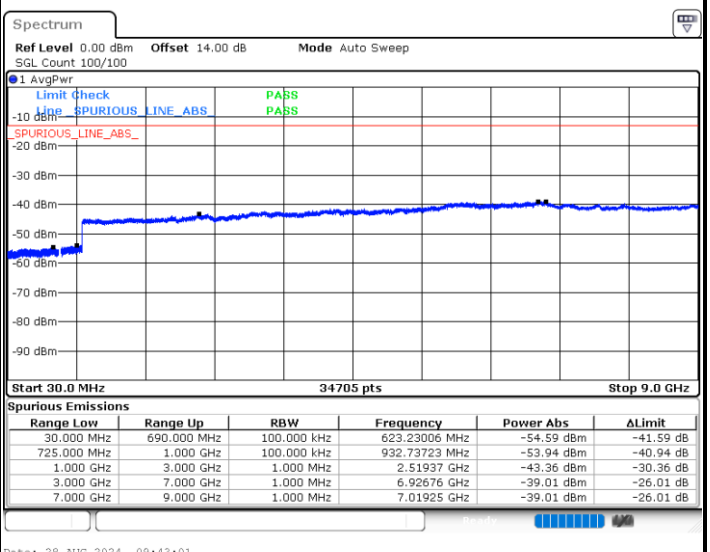


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	633.57927 MHz	-54.49 dBm	-41.49 dB
725.000 MHz	1.000 GHz	100.000 kHz	935.08680 MHz	-54.01 dBm	-41.01 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.62934 GHz	-43.16 dBm	-30.16 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.95276 GHz	-38.86 dBm	-25.86 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.00425 GHz	-39.34 dBm	-26.34 dB

Date: 28.AUG.2024 09:41:33

Middle Channel / QPSK

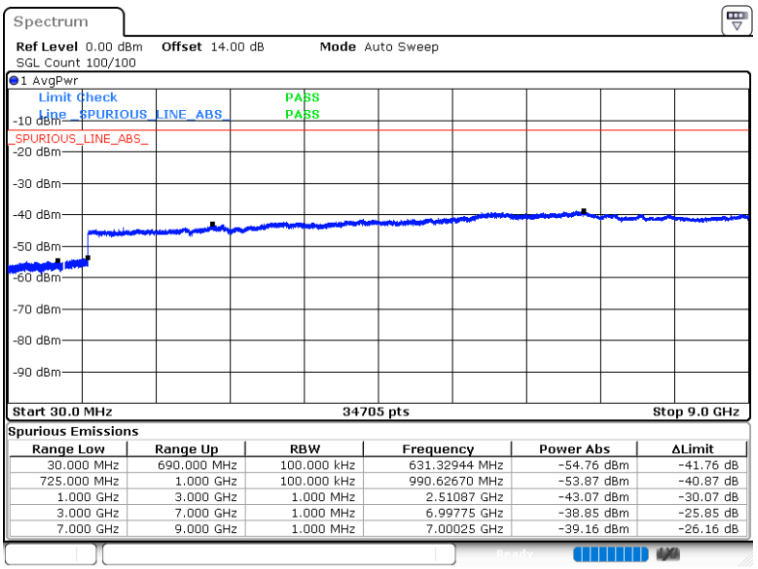


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	623.23006 MHz	-54.59 dBm	-41.59 dB
725.000 MHz	1.000 GHz	100.000 kHz	932.73723 MHz	-53.94 dBm	-40.94 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.51937 GHz	-43.36 dBm	-30.36 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.92676 GHz	-39.01 dBm	-26.01 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.01925 GHz	-39.01 dBm	-26.01 dB

Date: 28.AUG.2024 09:43:01

Highest Channel / QPSK



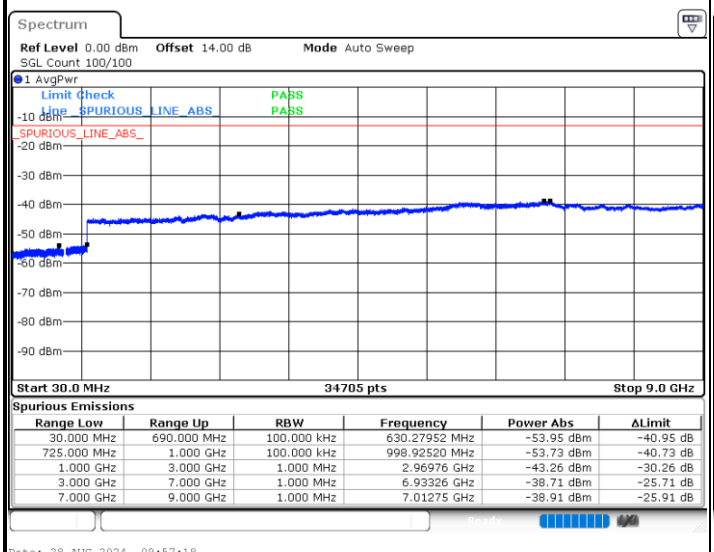
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	631.32944 MHz	-54.76 dBm	-41.76 dB
725.000 MHz	1.000 GHz	100.000 kHz	990.62670 MHz	-53.87 dBm	-40.87 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.51087 GHz	-43.07 dBm	-30.07 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99775 GHz	-38.85 dBm	-25.85 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.00025 GHz	-39.16 dBm	-26.16 dB

Date: 28.AUG.2024 09:50:49

LTE Band 12 / 5MHz

Lowest Channel / QPSK

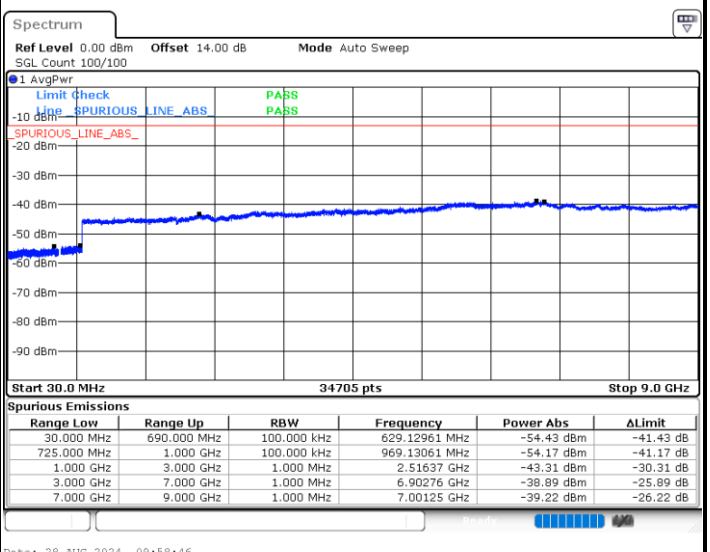


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	630.27952 MHz	-53.95 dBm	-40.95 dB
725.000 MHz	1.000 GHz	100.000 kHz	998.92520 MHz	-53.73 dBm	-40.73 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.96976 GHz	-43.26 dBm	-30.26 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.93326 GHz	-38.71 dBm	-25.71 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.01275 GHz	-38.91 dBm	-25.91 dB

Date: 28.AUG.2024 09:57:18

Middle Channel / QPSK

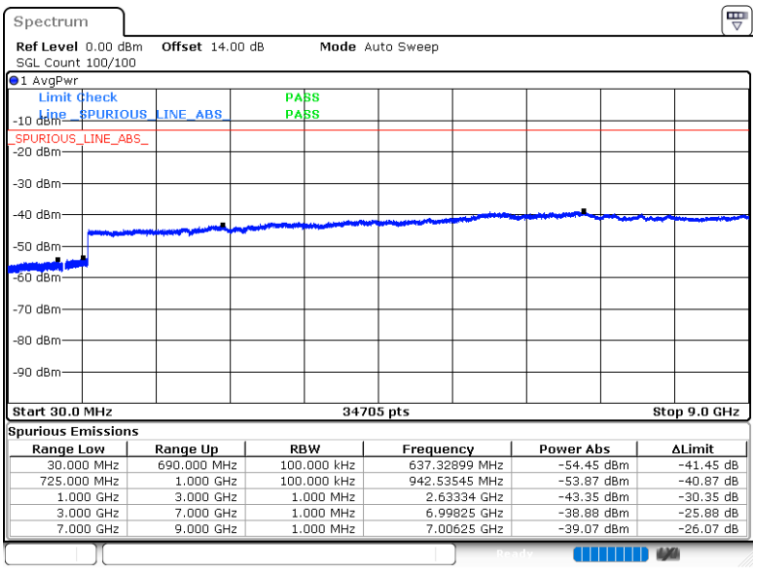


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	629.12961 MHz	-54.43 dBm	-41.43 dB
725.000 MHz	1.000 GHz	100.000 kHz	969.13061 MHz	-54.17 dBm	-41.17 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.51637 GHz	-43.31 dBm	-30.31 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.90276 GHz	-38.89 dBm	-25.89 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.00125 GHz	-39.22 dBm	-26.22 dB

Date: 28.AUG.2024 09:58:46

Highest Channel / QPSK



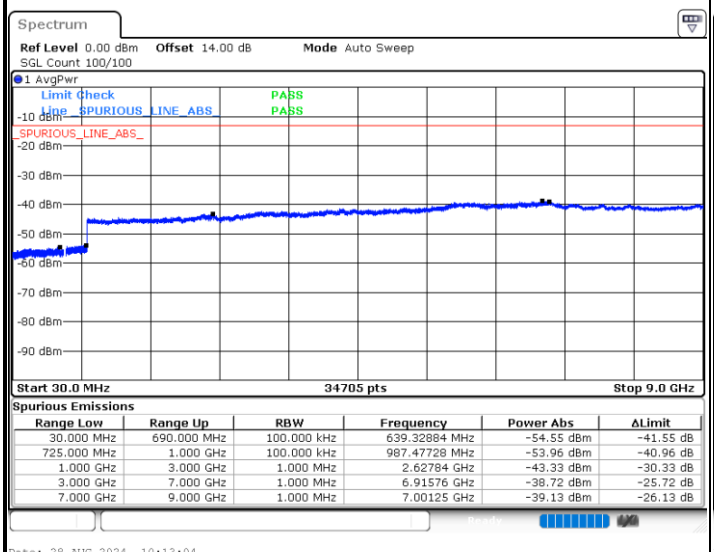
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	637.32899 MHz	-54.45 dBm	-41.45 dB
725.000 MHz	1.000 GHz	100.000 kHz	942.53545 MHz	-53.87 dBm	-40.87 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.63334 GHz	-43.35 dBm	-30.35 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99825 GHz	-38.88 dBm	-25.88 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.00625 GHz	-39.07 dBm	-26.07 dB

Date: 28.AUG.2024 10:06:33

LTE Band 12 / 10MHz

Lowest Channel / QPSK

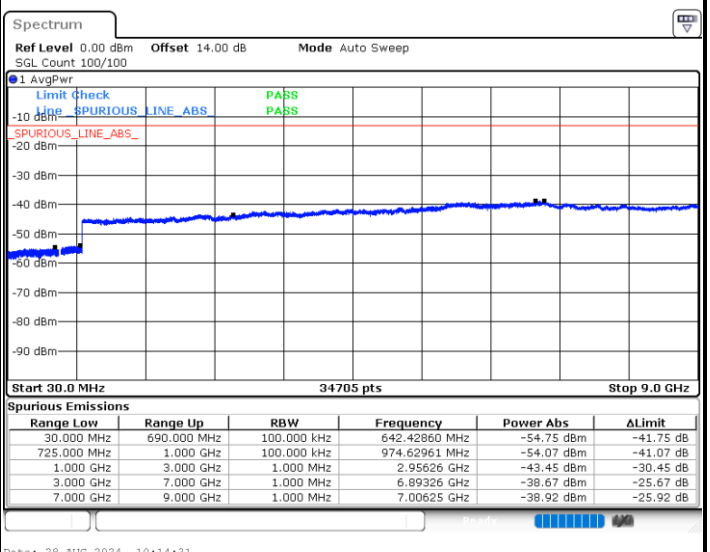


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	639.32884 MHz	-54.55 dBm	-41.55 dB
725.000 MHz	1.000 GHz	100.000 kHz	987.47728 MHz	-53.96 dBm	-40.96 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.62784 GHz	-43.33 dBm	-30.33 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.91576 GHz	-38.72 dBm	-25.72 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.00125 GHz	-39.13 dBm	-26.13 dB

Date: 28.AUG.2024 10:13:04

Middle Channel / QPSK

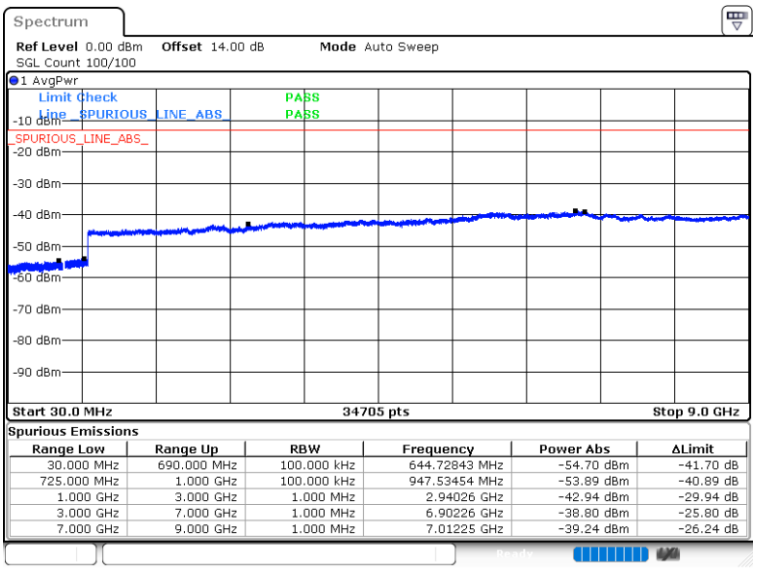


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	642.42860 MHz	-54.75 dBm	-41.75 dB
725.000 MHz	1.000 GHz	100.000 kHz	974.62961 MHz	-54.07 dBm	-41.07 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.95626 GHz	-43.45 dBm	-30.45 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.89326 GHz	-38.67 dBm	-25.67 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.00625 GHz	-38.92 dBm	-25.92 dB

Date: 28.AUG.2024 10:14:31

Highest Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	690.000 MHz	100.000 kHz	644.72843 MHz	-54.70 dBm	-41.70 dB
725.000 MHz	1.000 GHz	100.000 kHz	947.53454 MHz	-53.89 dBm	-40.89 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.94026 GHz	-42.94 dBm	-29.94 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.90226 GHz	-38.80 dBm	-25.80 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.01225 GHz	-39.24 dBm	-26.24 dB

Date: 28.AUG.2024 10:22:21

Frequency Stability

Test Conditions		LTE Band 12 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0014	PASS
40	Normal Voltage	0.0206	
30	Normal Voltage	0.0001	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0010	
0	Normal Voltage	0.0017	
-10	Normal Voltage	0.0198	
-20	Normal Voltage	0.0010	
-30	Normal Voltage	0.0006	
20	Maximum Voltage	0.0017	
20	Normal Voltage	0.0000	
20	Minimum Voltage	0.0220	

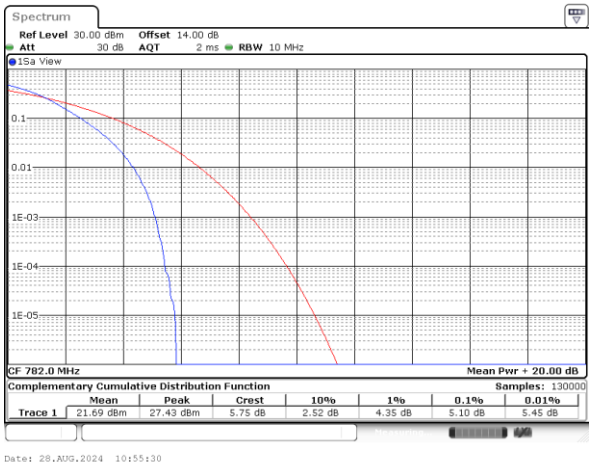
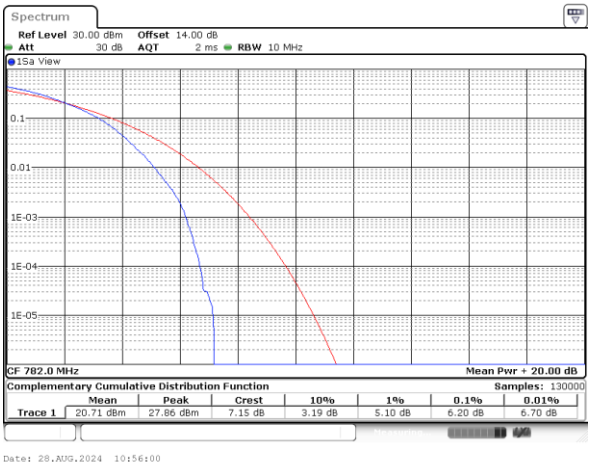
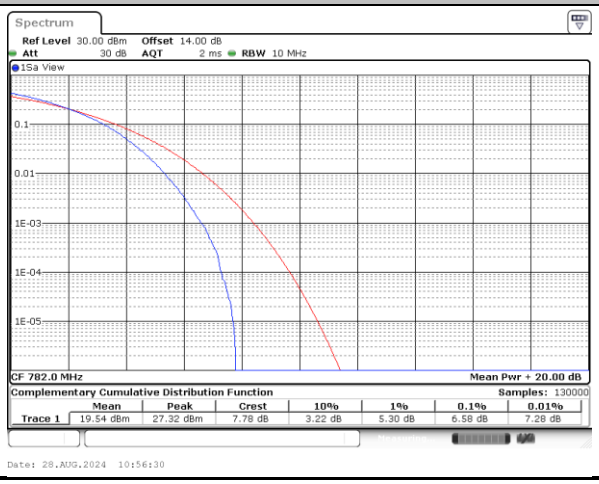
Note:

1. Normal Voltage = 3.8 V. ; Minimum Voltage = 3.4 V. ; Maximum Voltage = 4.4 V.
2. The frequency fundamental emissions stay within the authorized frequency block.

LTE Band 13

Peak-to-Average Ratio

Mode	LTE Band 13 / 10MHz			
Mod.	QPSK	16QAM	64QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Result
Middle CH	5.10	6.20	6.58	PASS

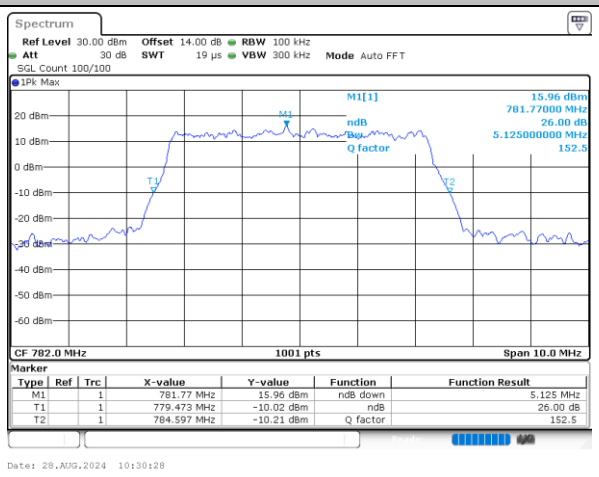
LTE Band 13 / 10MHz / QPSK	LTE Band 13 / 10MHz / 16QAM
Middle Channel / Full RB	Middle Channel / Full RB
	
LTE Band 13 / 10MHz / 64QAM	
Middle Channel / Full RB	
	

26dB Bandwidth

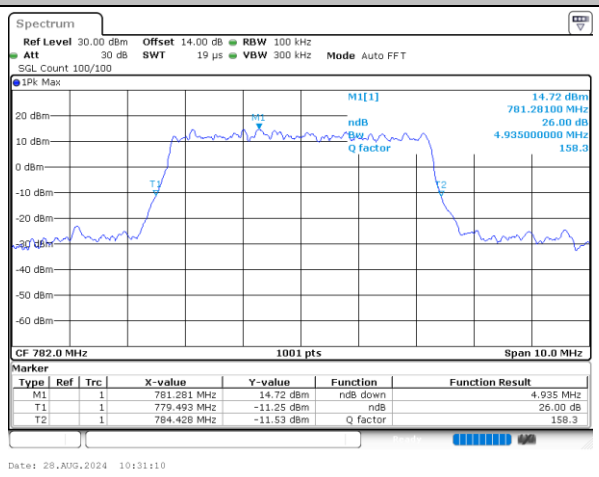
Mode	LTE Band 13 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	-	-	-	-	5.13	4.94	9.73	9.89	-	-	-	-

LTE Band 13

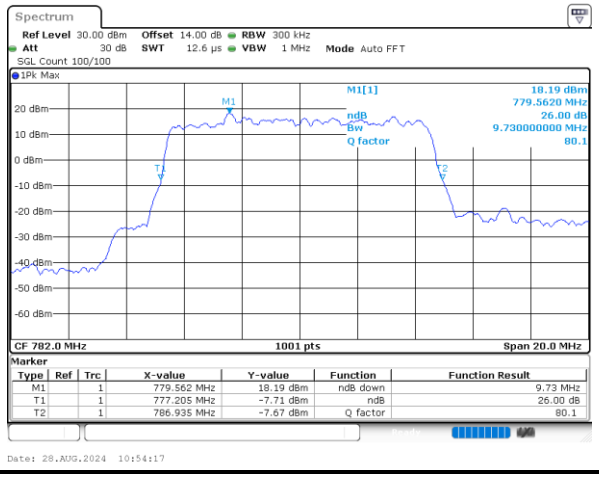
Middle Channel / 5MHz / QPSK



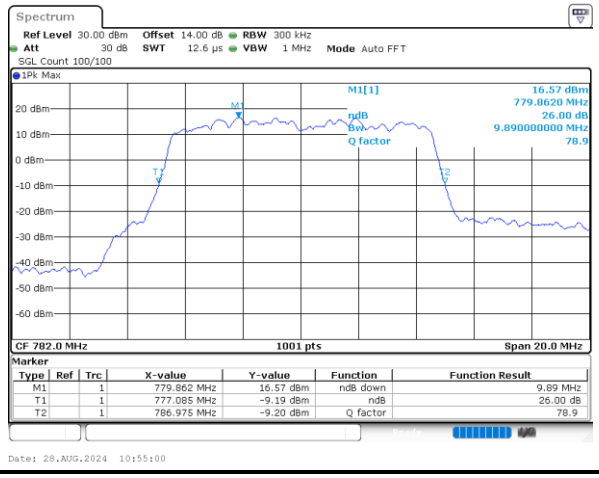
Middle Channel / 5MHz / 16QAM



Middle Channel / 10MHz / QPSK



Middle Channel / 10MHz / 16QAM

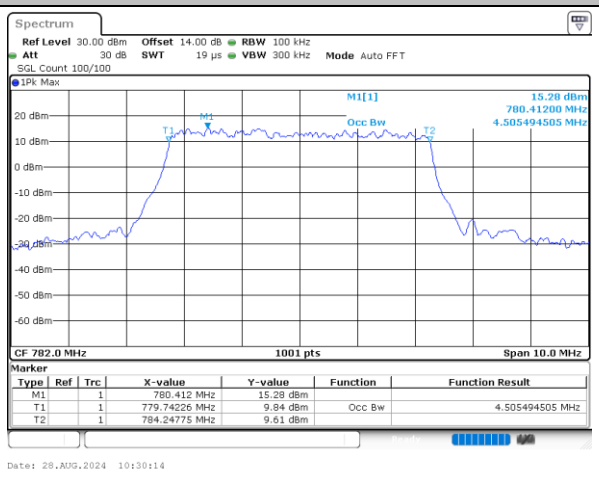


Occupied Bandwidth

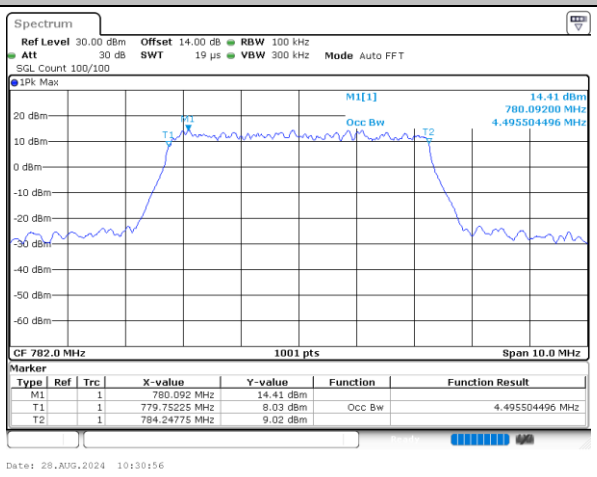
Mode	LTE Band 13 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	-	-	-	-	4.51	4.50	9.03	8.99	-	-	-	-

LTE Band 13

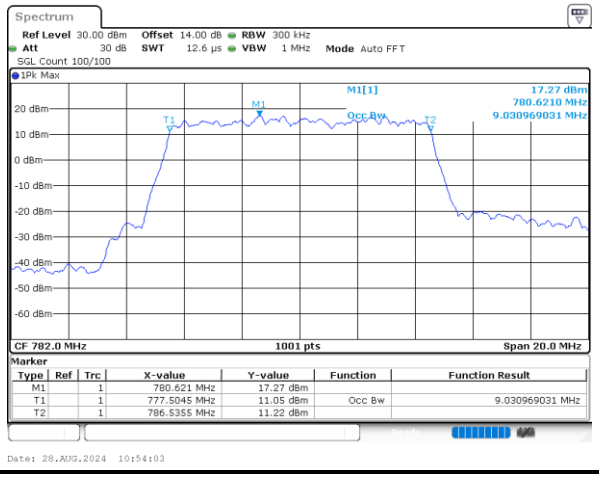
Middle Channel / 5MHz / QPSK



Middle Channel / 5MHz / 16QAM



Middle Channel / 10MHz / QPSK



Middle Channel / 10MHz / 16QAM