

FCC RF Test Report

APPLICANT	: Motorola Mobility LLC
EQUIPMENT	: Mobile Cellular Phone
BRAND NAME	: Motorola
MODEL NAME	: XT2237-1
FCC ID	: IHDT56AJ1
STANDARD	:47 CFR Part 2, Part 27 Subpart Q
CLASSIFICATION	: PCS Licensed Transmitter Held to Ear (PCE)
TEST DATE(S)	: Oct. 24, 2022 ~ Nov. 14, 2022

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

JasonJia

Approved by: Jason Jia



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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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG2O0909E	Rev. 01	Initial issue of report	Nov. 23, 2022



Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	—	Report Only	-
3.5	§27.50 (k)(4)	Peak-to-Average Ratio	<13dB	PASS	
3.6	§27.50 (k)(3)	EIRP	EIRP < 1W (30dBm)	PASS	-
3.7	§2.1049	Occupied Bandwidth	_	Report Only	-
3.8	§2.1051 §27.53 (n)(2)	Conducted Band Edge Measurement	-13dBm/MHz	PASS	-
3.9	§2.1051 §27.53 (n)(2) Conducted Spurious Emission		-13dBm/MHz	PASS	-
3.10	§2.1055 Frequency Stability 10 §27.54 Temperature & Voltage		Within the band	PASS	-
4.4 §2.1053 §27.53 (n)(2) Rac		Radiated Spurious Emission	-13dBm/MHz	PASS	Under limit 46.08 dB at 13968.000 MHz

SUMMARY OF TEST RESULT

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.



1 General Description

1.1 Applicant

Motorola Mobility LLC

222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

1.2 Manufacturer

Motorola Mobility LLC

222 W, Merchandise Mart Plaza, Chicago IL 60654 USA

1.3 Product Feature of Equipment Under Test

Product Feature				
Equipment Mobile Cellular Phone				
Brand Name Motorola				
Model Name XT2237-1				
FCC ID	IHDT56AJ1			
IMEI Code	Conducted: 352182740031539/352182740031547			
	Radiation: 352182740025754/352182740025762			
HW Version	DVT2			
SW Version TTN33.40				
EUT Stage	Identical Prototype			

1.4 Product Specification of Equipment Under Test

Product Feature		
Tx/Rx Frequency	LTE Band 42: 3450 MHz ~ 3550 MHz	
Bandwidth	5MHz / 10MHz / 15MHz / 20MHz	
Maximum Output Power to Antenna	LTE Band 42 : 22.90 dBm	
Antenna Gain	LTE Band 42 : -4.1 dBi	
Type of Modulation	QPSK / 16QAM / 64QAM	

1.5 Modification of EUT

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



		Accessories Information		
AC Adapter 1 (US)	Brand Name	Motorola(Salom)	Model Name	MC-301
AC Adapter 1 (EU)	Brand Name	Motorola(Salom)	Model Name	MC-302
AC Adapter 1 (UK)	Brand Name	Motorola(Salom)	Model Name	MC-303
AC Adapter 1 (AU)	Brand Name	Motorola(Salom)	Model Name	MC-305
AC Adapter 1 (AR)	Brand Name	Motorola(Salom)	Model Name	MC-306
AC Adapter 1 (BR)	Brand Name	Motorola(Salom)	Model Name	MC-307
AC Adapter 2 (IN)	Brand Name	Motorola(Acbel)	Model Name	MC-304
Battery 1	Brand Name	Motorola(Sunwoda)	Model Name	PV50
Battery 2	Brand Name	Motorola(SCUD)	Model Name	PV50
Earphone	Brand Name	Motorola(Juwei)	Model Name	MH202
USB Cable 1	Brand Name	Motorola(Saibao)	Model Name	SC18D13215
USB Cable 2	Brand Name	Motorola(Cabletech)	Model Name	SC18D13216
USB Cable 3	Brand Name	Motorola(Luxshare)	Model Name	SC18D13217

1.6 Specification of Accessory

1.7 Maximum EIRP Power and Emission Designator

LTE Band 42		LTE Band 42 QPSK		16QAM/64QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
20	3460 ~ 3540	0.0759	17M9G7D	0.0597	17M8W7D

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



1.8 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)				
	No. 1098, Pengxi North Road, Kunshan Economic Development Zone				
Test Site Location	Jiangsu Province 2153	Jiangsu Province 215300 People's Republic of China			
Test Sile Location	TEL : +86-512-57900158				
	FAX : +86-512-57900958				
	Sporton Site No.	FCC Designation No.	FCC Test Firm		
Test Site No.	Sporton Sile No.	FCC Designation No.	Registration No.		
	03CH04-KS TH01-KS	CN1257	314309		

1.9 Test Software

lte	Item Site		Manufacturer	Name	Version
1		03CH04-KS	AUDIX	E3	6.2009-8-24al

1.10Applied Standards

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

- 47 CFR Part 2, Part 27 Subpart Q
- ANSI C63.26-2015
- FCC KDB 971168 Power Meas License Digital Systems D01 v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01

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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.

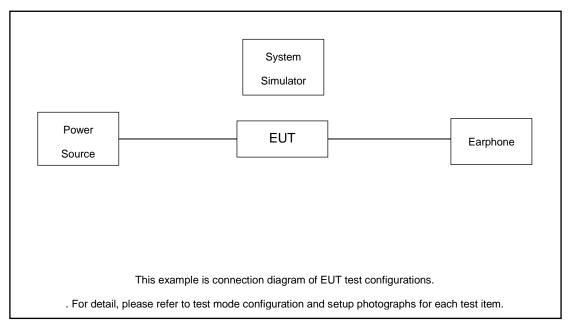
Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission. (Z-Plane)

Test	Daniel	Bandwidth (MHz)	Modulation	RB #	Test Channel
Test Cases Band		eg. 5M, 10M, 15M, 20M	eg. QPSK, 16QAM, 64QAM	1RB, Partial RB, Full RB	L/M/H
Max. Output Power	LTE Band 42 5M, 10M, 15M, 20M		QPSK, 16QAM, 64QAM	1RB, Full RB	L, M, H
Peak-to-Average Ratio			QPSK, 16QAM, 64QAM	Full RB	М
E.I.R.P			QPSK, 16QAM, 64QAM	1RB, Full RB	L, M, H
26dB and 99% Bandwidth	LTE Band 42	20M	QPSK, 16QAM	Full RB	М
Conducted Band Edge	LTE Band 42 5M, 10M, 15M, 20M		QPSK, 16QAM, 64QAM	1RB, Full RB	L, H
Conducted Spurious EmissionLTE Band 425M, 10M, 15M, 20MFrequency StabilityLTE Band 4210M		5M, 10M, 15M, 20M	5M, 20M QPSK		L, M, H
		QPSK 1RB		М	
Radiated Spurious Emission	LTE Band 42	Worst case from maximum power			М
Emission	LTE Band 42	Worst case from maximum power			М

Note:

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

ltem	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.	Base Station	Anritsu	MT8820C	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 8.72 dB.

Example :

Offset(dB) = RF cable loss(dB).

= 8.72 (dB)



2.5 Frequency List of Low/Middle/High Channels

	LTE Band 42 Cha	annel and Frequen	cy List	
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	42190	42590	42990
20	Frequency	3460 3500 3540 42165 42590 43015		
15	Channel	42165	42590	43015
	Frequency	3457.5	3500	3542.5
10	Channel	42140	42590	43040
10	Frequency	3455	3500	3545
F	Channel	42115	42590	43065
5	Frequency	3452.5	3500	3547.5



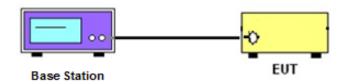
3 Conducted Test Items

3.1 Measuring Instruments

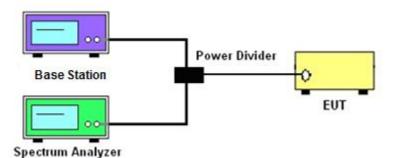
See list of measuring instruments of this test report.

3.2 Test Setup

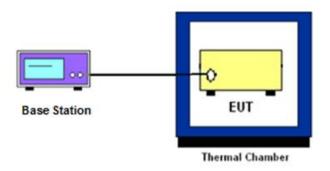
3.2.1 Conducted Output Power



3.2.2 Peak-to-Average Ratio, Occupied / 26dB Bandwidth ,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 Measurement

3.4.1 Description of the Conducted Output Power Measurement

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.

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.



3.5 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 EIRP

3.6.1 Description of EIRP Limit

§ 27.50 (k)(3)

Mobile devices are limited to 1Watt (30 dBm) EIRP. Mobile devices operating in these bands must employ a means for limiting power to the minimum necessary for successful communications

3.6.2 Test Procedures

- 1. According to KDB 412172 D01 Power Approach,
- 2. 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



3.7 Occupied Bandwidth

3.7.1 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.

3.7.2 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.
- 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.
- 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.



3.8 Conducted Band Edge Measurement

3.8.1 Description of Conducted Band Edge Measurement

§ 27.53 (n)(2)

For mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz.

Compliance with this paragraph is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed, but limited to a maximum of 200 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz.

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 band edges of low and high channels for the highest RF powers were measured.
- 4. Set RBW ≥ 1% EBW but limited to a maximum of 200 kHz in the 1MHz band immediately outside and adjacent to the band edge.
- 5. Beyond the 1 MHz and 5 MHz removed from the band edge, set RBW \geq 500KHz.
- 6. Beyond the 5 MHz removed from the band edge, set RBW = 1MHz.
- 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. Checked that all the results comply with the emission limit line.



3.9 Conducted Spurious Emission Measurement

3.9.1 Description of Conducted Spurious Emission Measurement

The power of any emission outside of the authorized operating frequency ranges shall not exceed -13 dBm/MHz.

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

3.9.2 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.
- 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. Checked that all the results comply with the emission limit line.



3.10 Frequency Stability Measurement

3.10.1 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.

3.10.2 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.

3.10.3 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.



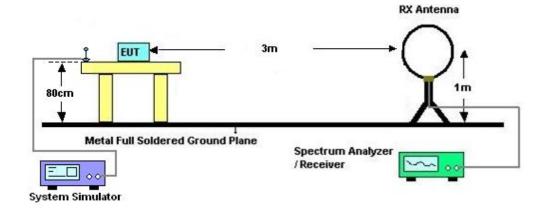
4 Radiated Test Items

4.1 Measuring Instruments

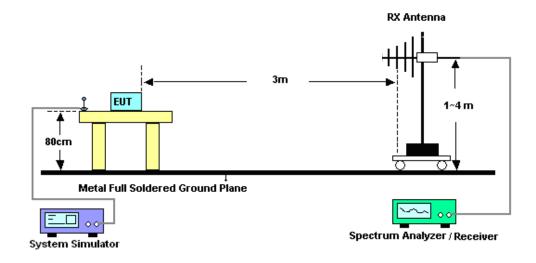
See list of measuring instruments of this test report.

4.2 Test Setup

4.2.1 For radiated test below 30MHz

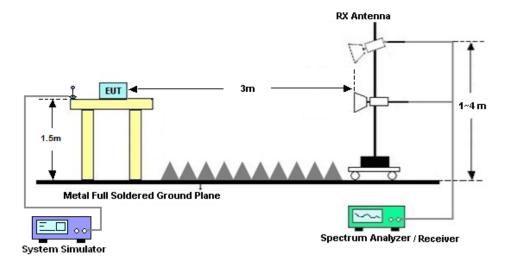


4.2.2 For radiated test from 30MHz to 1GHz





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 shall not exceed -13 dBm/MHz.

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.

EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain ERP (dBm) = EIRP - 2.15

10. 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. 12, 2022	Oct. 24, 2022~ Oct. 26, 2022	Oct. 11, 2023	Conducted (TH01-KS)
Power divider	STI	STI08-0055	-	0.5~40GHz	Aug. 26, 2022	Oct. 24, 2022~ Oct. 26, 2022	Aug. 25, 2023	Conducted (TH01-KS)
Temperature &h umidity chamber	Hongzhan	LP-150U	H2014011440	-40~+150°C 20%~95%RH	Jul. 15, 2022	Oct. 24, 2022~ Oct. 26, 2022	Jul. 14, 2023	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010B	MY57471079	10Hz-44G,MAX 30dB	Oct. 12, 2022	Nov. 14, 2022	Oct. 11, 2023	Radiation (03CH04-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 16, 2022	Nov. 14, 2022	Oct. 15, 2023	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	May 24, 2022	Nov. 14, 2022	May 23, 2023	Radiation (03CH04-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	1284	1GHz~18GHz	Jan. 05, 2022	Nov. 14, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 05, 2022	Nov. 14, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	187289	9KHz-1GHz	Jan. 05, 2022	Nov. 14, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
Amplifier	MITEQ	EM18G40G GA	060728	18~40GHz	Jan. 05, 2022	Nov. 14, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
high gain Amplifier	EM	EM01G18G A	060840	1Ghz-18Ghz	Oct. 12, 2022	Nov. 14, 2022	Oct. 11, 2023	Radiation (03CH04-KS)
Amplifier	Agilent	8449B	3008A02370	1Ghz-18Ghz	Oct. 12, 2022	Nov. 14, 2022	Oct. 11, 2023	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Nov. 14, 2022	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Nov. 14, 2022	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Nov. 14, 2022	NCR	Radiation (03CH04-KS)

NCR: No Calibration Required



6 Uncertainty of Evaluation

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 Power	±0.46 dB
Conducted Emissions	±0.48 dB
Occupied Channel Bandwidth	±0.10 %

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

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.8dB	
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Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

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

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



Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power) and EIRP

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq. 42190	Power Middle Ch. / Freq. 42590	Power High Ch. / Freq. 42990		EIRP(W)		
	Frequence	cy (MHz)		3460	3500	3540	L	М	Н	
20	QPSK	1	0	22.80	22.90	22.69	0.0741	0.0759	0.0723	
20	QPSK	1	99	22.60	22.72	22.57	0.0708	0.0728	0.0703	
20	QPSK	100	0	21.72	21.80	21.68	0.0578	0.0589	0.0573	
20	16QAM	1	0	21.74	21.86	21.63	0.0581	0.0597	0.0566	
20	64QAM	1	0	20.55	20.64	20.50	0.0442	0.0451	0.0437	
	Channel		42165	42590	43015					
Frequency (MHz)		3457.5	3500	3542.5	L	М	Н			
15	QPSK	1	0	22.67	22.85	22.57	0.0719	0.0750	0.0703	
15	16QAM	1	0	21.61	21.82	21.54	0.0564	0.0592	0.0555	
	Cha	nnel		42140	42590	43040		EIRP(W)		
	Frequence	cy (MHz)		3455	3500	3545	L	М	Н	
10	QPSK	1	0	22.77	22.78	22.55	0.0736	0.0738	0.0700	
10	16QAM	1	0	21.60	21.78	21.60	0.0562	0.0586	0.0562	
	Cha	nnel		42115	42590	43065		EIRP(W)		
	Frequence	cy (MHz)		3452.5	3500	3547.5	L	М	Н	
5	QPSK	1	0	22.73	22.77	22.55	0.0729	0.0736	0.0700	
5	16QAM	1	0	21.64	21.77	21.60	0.0568	0.0585	0.0562	

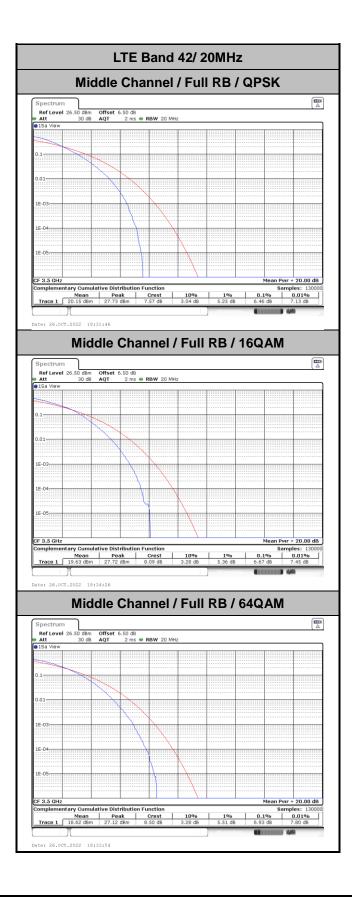


LTE Band 42

Peak-to-Average Ratio

Mode	ព	E Band 42 / 20MI	Ηz	
Mod.	QPSK	16QAM	64QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Result
Middle CH	6.46	6.67	6.93	PASS







26dB Bandwidth

Mode	LTE Band 42 : 2	26dB BW(MHz)					
BW	201	20MHz					
Mod.	QPSK	16QAM					
Middle CH	18.66	18.82					

Middle Channel / 20MHz / QPSK						Middle Channel / 20MHz / 16QAM							
Spectrum						Spect	um					E A	
Ref Level 26.50 dBm		RBW 300 kHz			(2)		vel 26.50 dB		iB 😑 RBW 300 kHz			(=	
Att 30 dB SGL Count 100/100	SWT 18.9 µs	VBW 1 MHz	Mode Auto FFT			Att	30 c unt 100/100	18 SWT 18.9	is 🖶 VBW 1 MHz	Mode Auto FFT			
1Pk Max						IPk Ma							
20 dBm			M1[1]		14.02 dBm	20 dBm-				M1[1]		12.54 dBn	
	X		ndB		3.4924880 GHz 26.00 dB					ndB M1		3.5061940 GH 26.00 dt	
10 dBm-	- phone	- marine		~~ ;	18.66100000 MHz	10 dBm-		- more	mont	Month Bay Mon	~~~18.	82100000 MH	
0 dBm	- (Q factor		187.2	0 dBm-	_			Q factor		186.3	
-10 dBm	T.			12		-10 dBm		т			12		
-10 ubiii								1			7		
-20 dBm						-20 dBm		+					
-30 dBm	1 ml					-30 dBm							
-30 dBm	0* · V			and and	mm	-40 dBm	\sim	ww			Van	mm	
-to upin													
-50 dBm						-50 dBm							
-60 dBm		_				-60 dBm	_						
-70 dBm						-70 dBm							
CF 3.5 GHz		1001 pt	ts		Span 40.0 MHz	CF 3.5			1001 g	ots		Span 40.0 MHz	
Marker		1001 0				Marker			1001				
Type Ref Trc	X-value 3.492488 GHz	Y-value 14.02 dBm	Function ndB down	Functio	18,661 MHz	Type	Ref Trc	X-value 3,506194 GF	Y-value 12 12.54 dBm	Function ndB down	Function F	18.821 MHz	
M1 1 T1 1	3.492488 GHz 3.490689 GHz	-10.29 dBm	ndB down ndB		18.661 MHz 26.00 dB	M1 T1	1	3.506194 GF 3.490689 GF				18.821 MHz 26.00 dB	
T2 1	3.509351 GHz	-11.40 dBm	Q factor		187.2	T2	1	3.50951 GF	iz -13.20 dBm	Q factor		186.3	



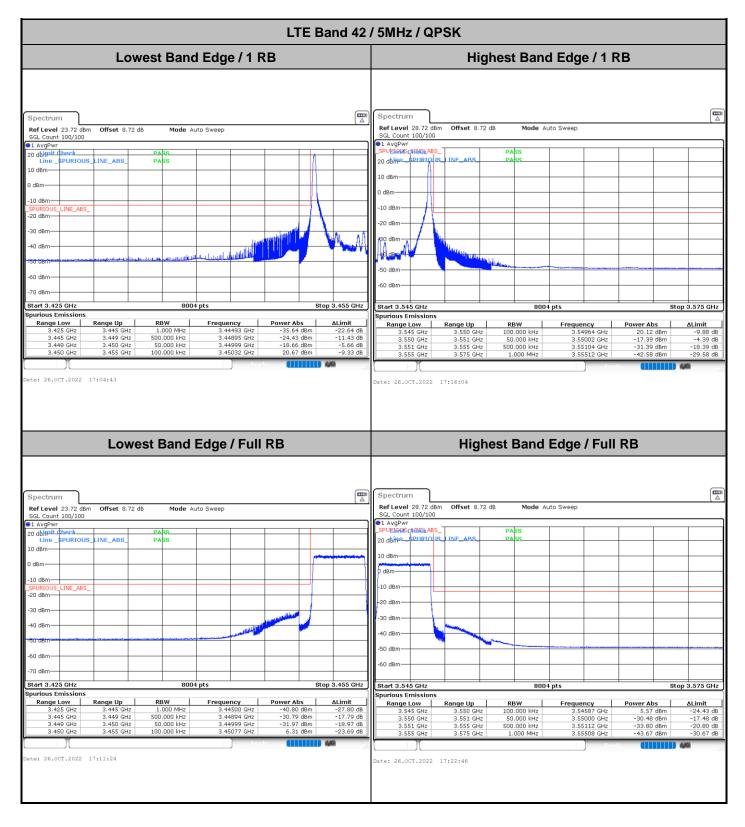
Occupied Bandwidth

Mode	LTE Band 42 : 9	99%OBW(MHz)					
BW	201	20MHz					
Mod.	QPSK	16QAM					
Middle CH	17.86	17.78					

Μ	Middle Channel / 20MHz / QPSK						Middle Channel / 20MHz / 16QAM							
Spectrum						Spectrun								
Ref Level 26.50 dB	m Offset 6.50	dB 😑 RBW 300 kHz					26.50 dBn	n Offset 6.50 dB 🕯	RBW 300 kHz				1	
		µs 🖶 VBW 1 MHz	Mode Auto FFT			e Att	30 dE			Mode Auto FFT				
5GL Count 100/100						SGL Count	100/100							
1Pk Max						1Pk Max								
0 dBm			M1[1]		14.51 dBm	20 dBm-				M1[1]			13.86 dB	
o dbm			0		928070 GHz 137862 MHz	20 dbm				M1			144360 GH	
0 dBm	T1 N	m	A PCC BW	17.8621	137862 MHZ	10 dBm-		Thomas	mmmm	Oc Bw	JAI2	17.7822	17782 MF	
								1 1 ~			71			
dBm						0 dBm								
						10.00								
10 dBm						-10 dBm								
20 dBm						-20 dBm-								
30 dBm				ham a		-30 dBm	0 0.	al			600			
All dBm	~~			homm	www	-40 dBm-	mm	¥.~			1 ° V	m	hm	
iu asm						-40 dBm								
50 dBm						-50 dBm					_			
						50 0011								
50 dBm	<u> </u>					-60 dBm			+		-			
70 dBm						-70 dBm							1	
F 3.5 GHz		1001 pt	s	Span	1 40.0 MHz	CF 3.5 GH			1001 pt	s		Spar	140.0 MHz	
arker Type Ref Trc	X-value	Y-value	Function	Function Result	• 1	Marker Type Re	El Teo I	X-value	Y-value	Function	Fun	ction Resul		
M1 1	3,492807 G		runction	r unction Result	·	M1	1	3.504436 GHz	13.86 dBm	runction	Full	ction Resul		
T1 1	3.4910889 G	Hz 9.37 dBm	Occ Bw	17.8621	37862 MHz	T1	1	3.4911289 GHz	7.78 dBm	Occ Bw		17.7822	17782 MHz	
T2 1	3.508951 G	Hz 10.08 dBm				T2	1	3.5089111 GHz	7.89 dBm					

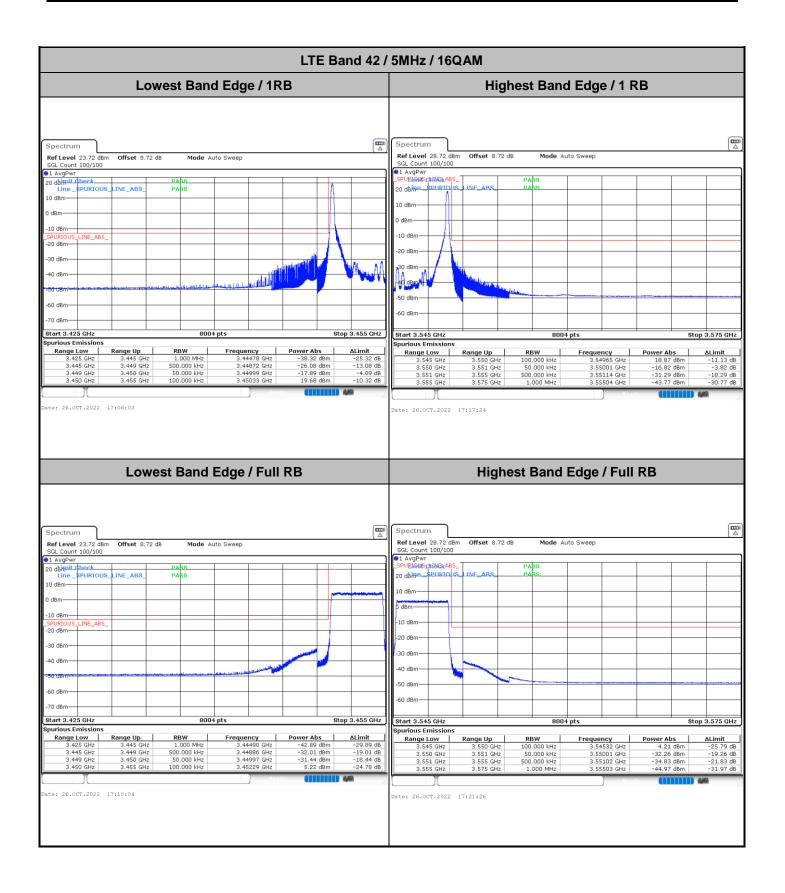


Conducted Band Edge



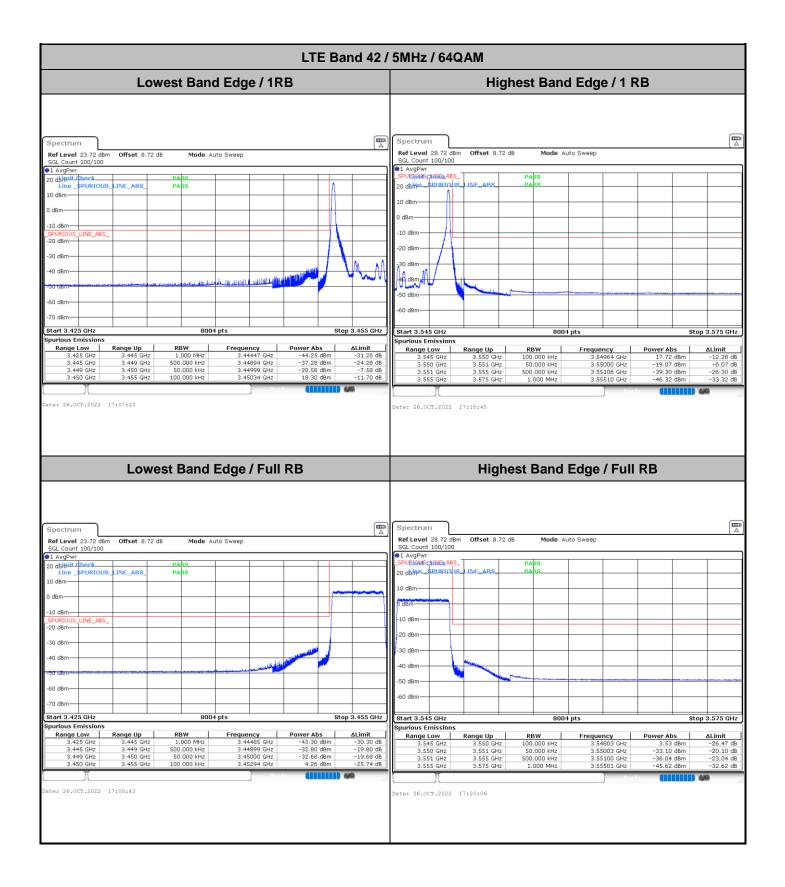
Sporton International Inc. (Kunshan) TEL : +86-512-57900158 FAX : +86-512-57900958 FCC ID : IHDT56AJ1





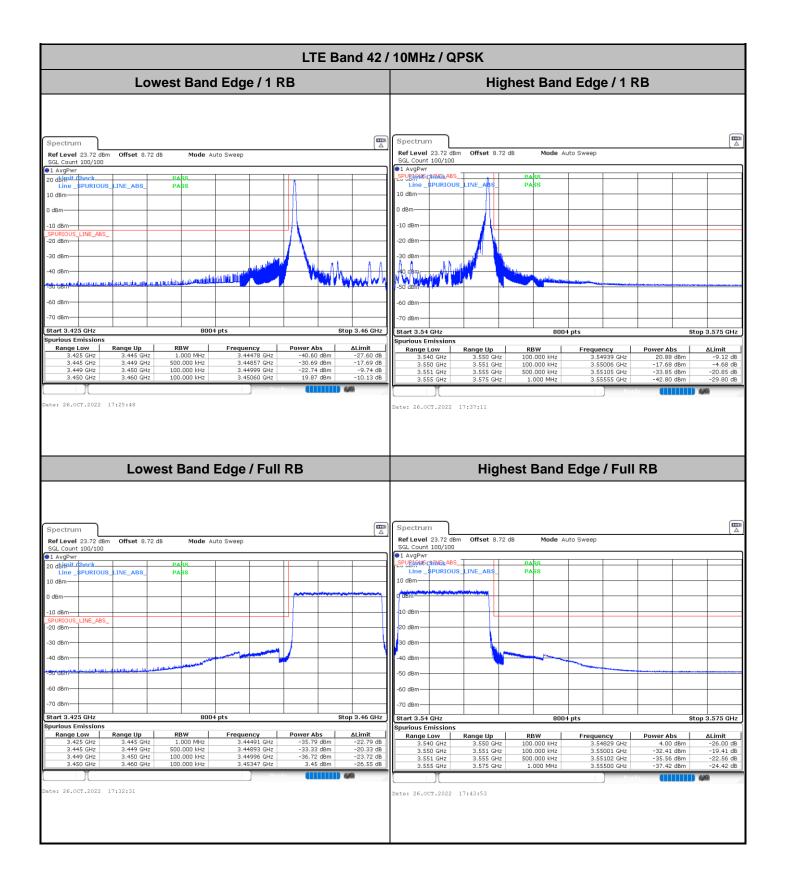




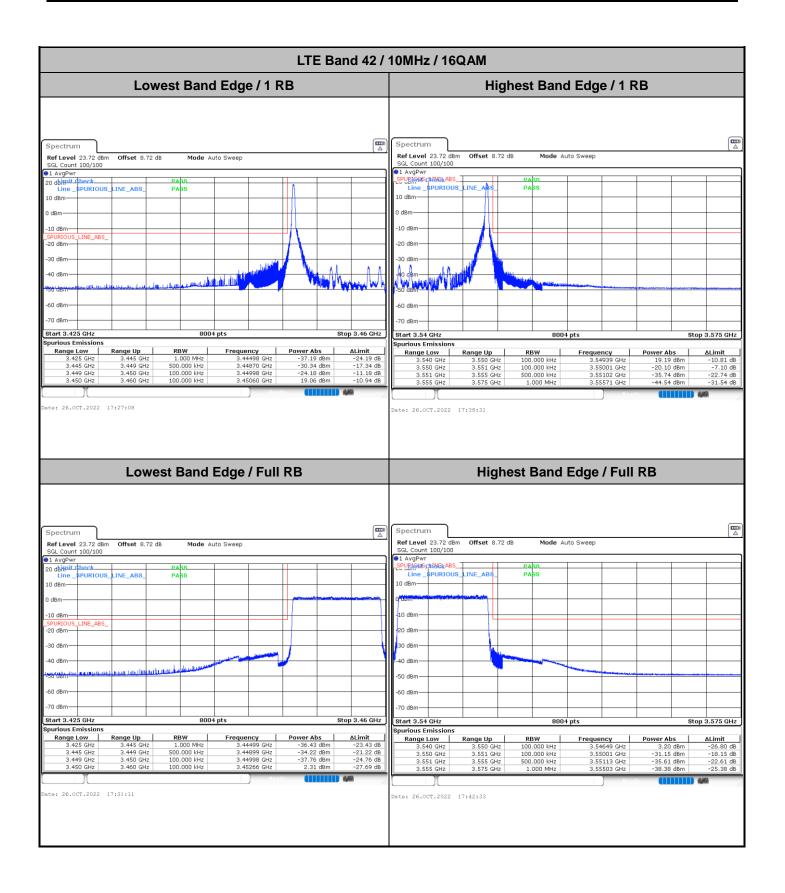






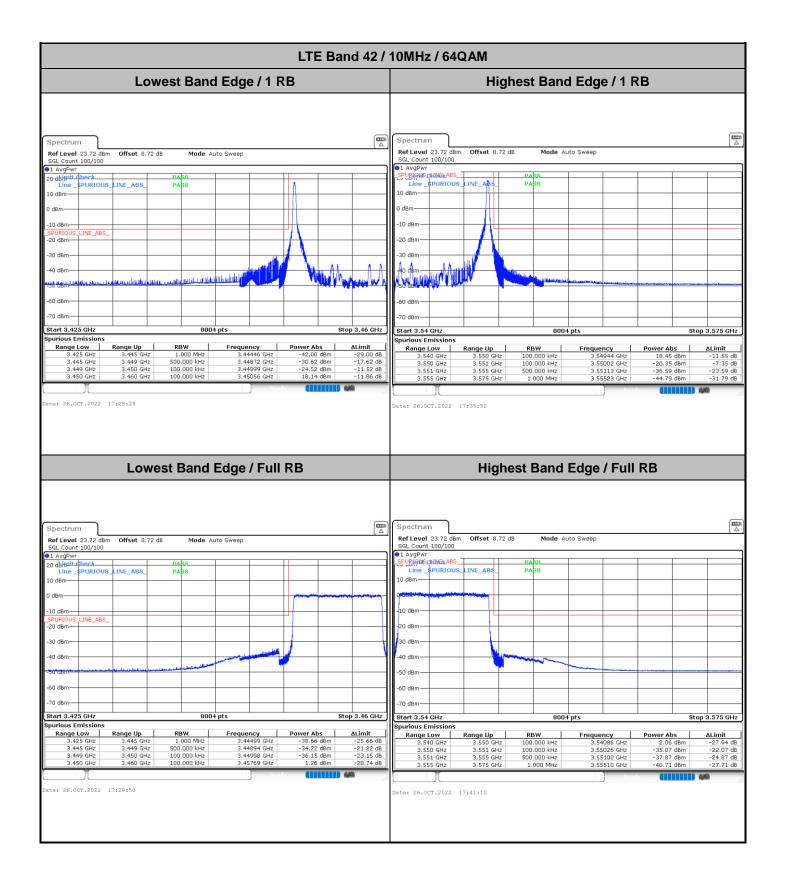






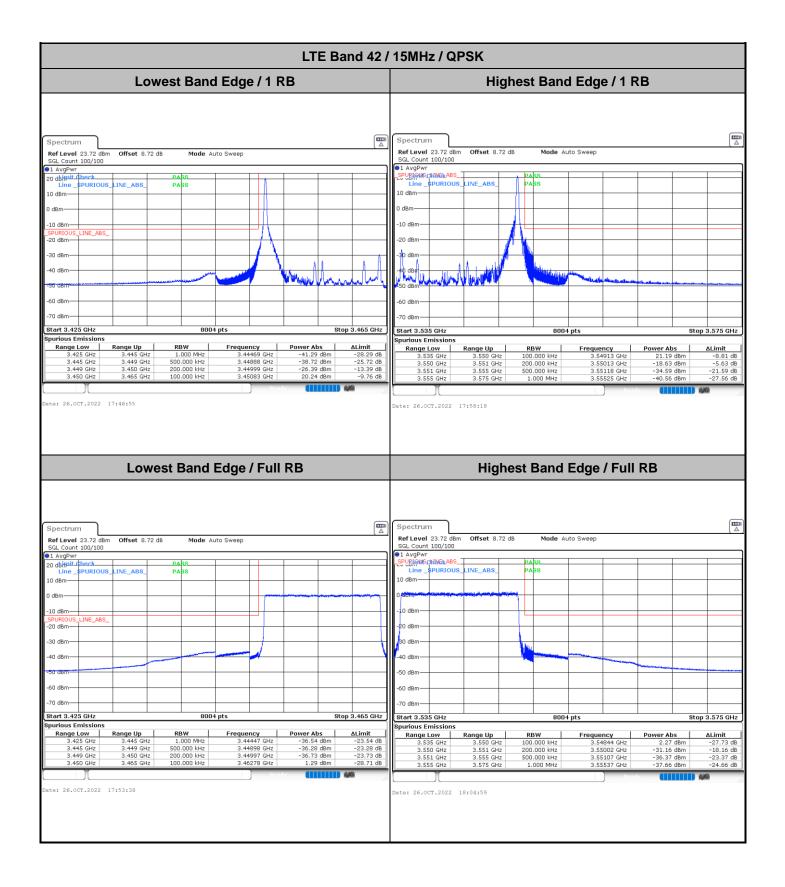






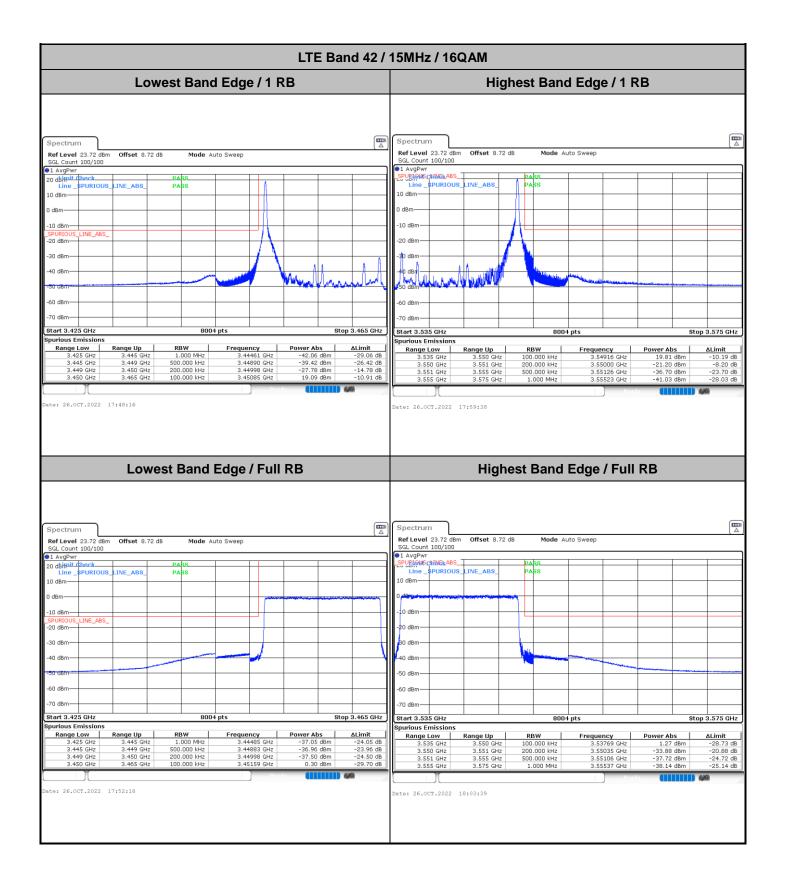






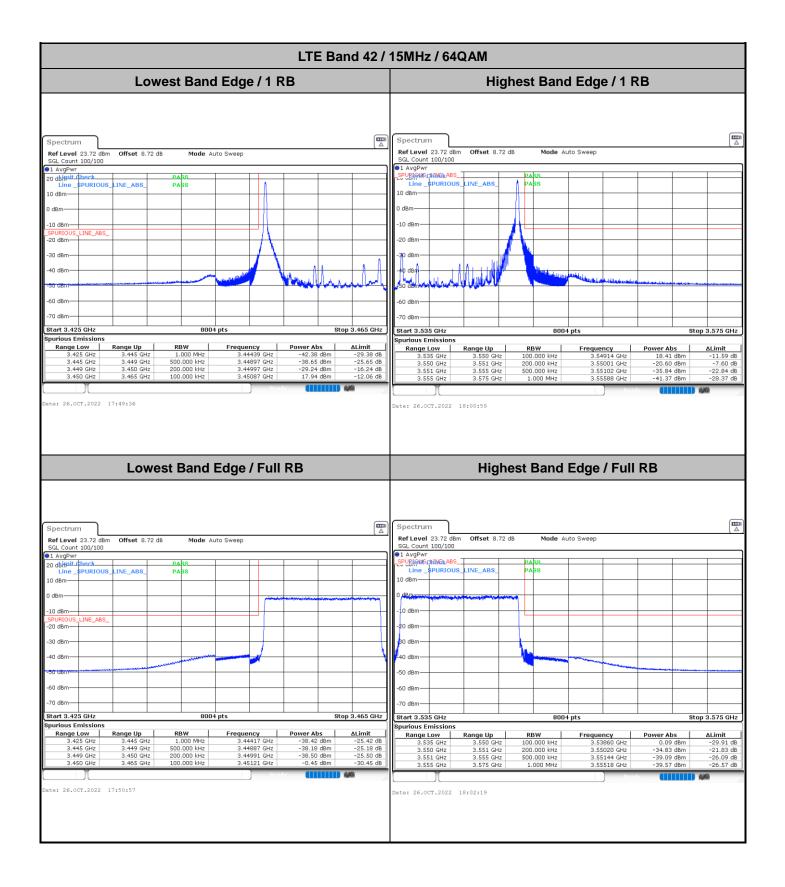






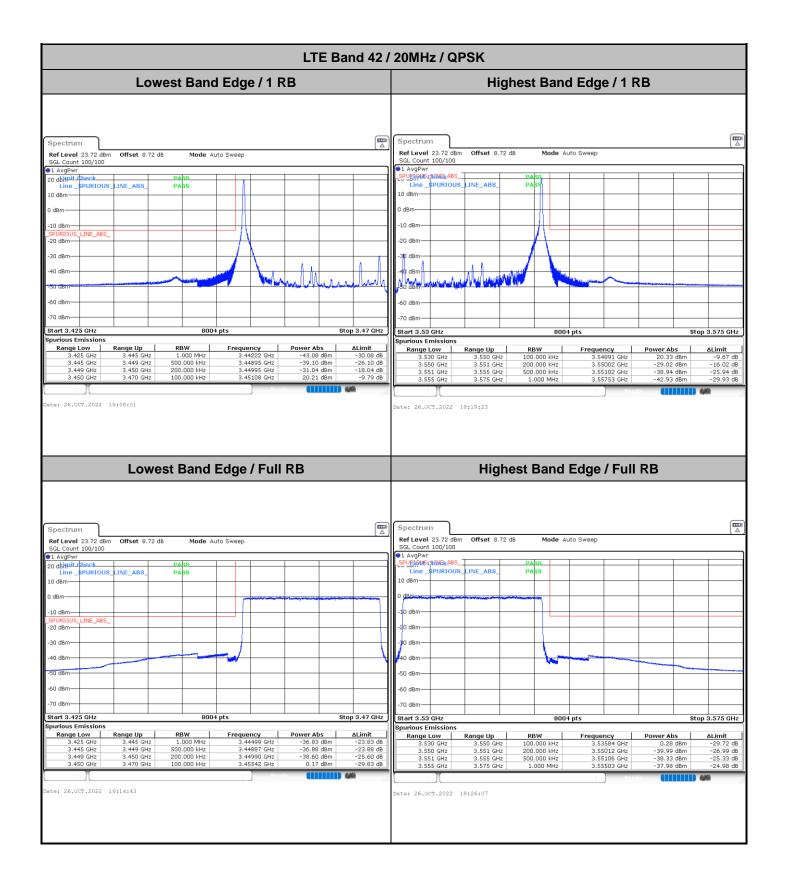






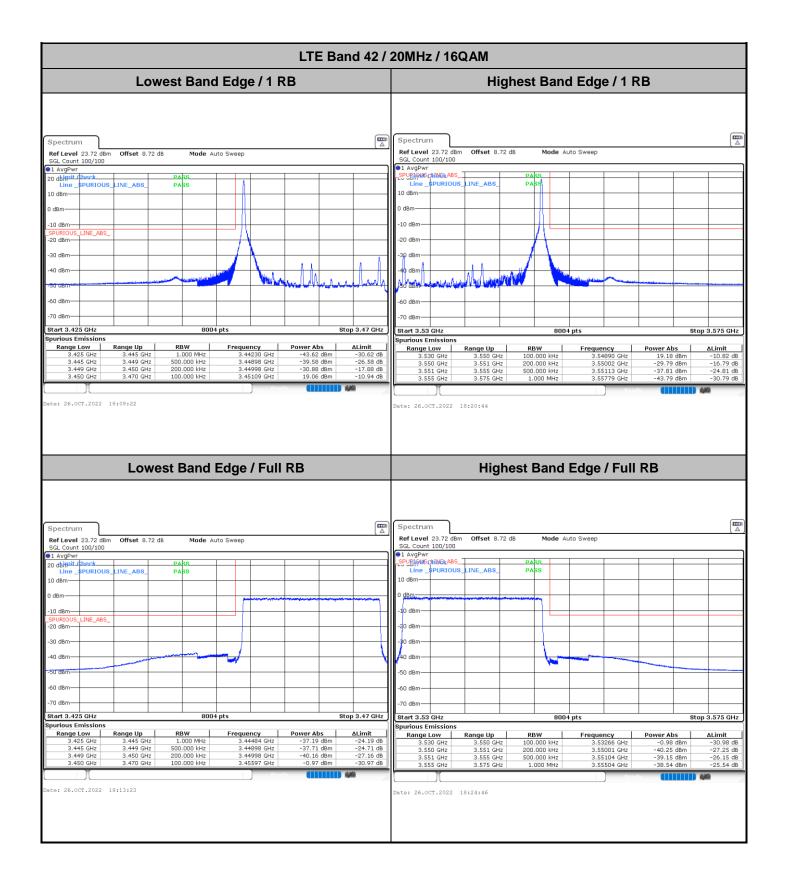






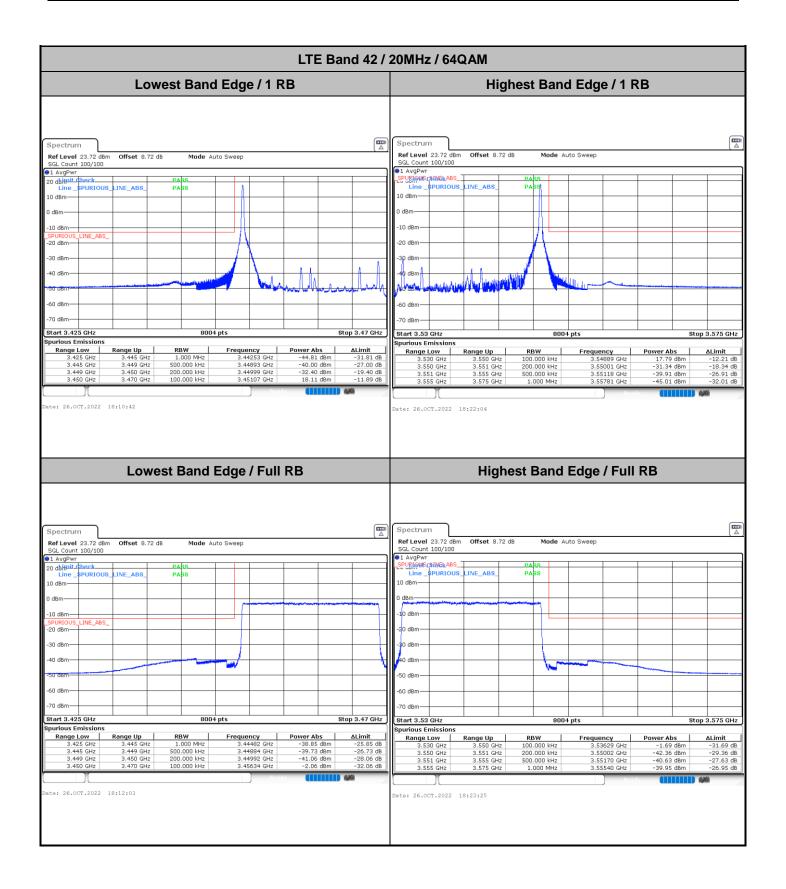














Conducted Spurious Emission

			LTE Band	42 / 5MHz					
Lov	west Channel /	QPSK		Middle Channel / QPSK					
Spectrum Ref Level 0.00 dbm Offset 8.72 db SGL Count 100/100 IARE_ABE I AugPwr IIII (heck -10 dbm FALE -20 dbm IARE_ABE -30 dbm IARE -90 dbm IARE -90 dbm IARE -30 dbm IARE -90 dbm IARE 10.000 GHZ	Mode Auto Sweep PABS PABS PABS PABS PABS PABS		dBm -41.49 dB dBm -38.50 dB dBm -33.53 dB dBm -38.98 dB dBm -37.23 dB dBm -33.82 dB dBm -33.62 dB	Ref Level 0.00 dBm Of SGL Count 100/100 I Augher Limit Check -10 dBm		le Auto Sweep	Power Abs H2 -51.40 dBm H2 -51.40 dBm H2 -51.99 dBm H2 -51.94 dBm H2 -50.14 dBm H2 -46.97 dBm H2 -47.62 dBm	(▲	
Date: 26.0CT.2022 17:03:22				Date: 26.0CT.2022 17:1	3:03				
hate: 26.0CT.2022 17:03:22					3:03				
bate: 26.0CT.2022 17:03:22	Spectrum	Н	lighest Cha	annel / QPSK	3103				
Date: 26.0CT.2022 17:03:22	Ref Level 0.00 dBm SGL Count 100/100		lighest Cha Mode Au	annel / QPSK	3103				
Date: 26.0CT.2022 17:03:22	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr		Mode Au	annel / QPSK	3:03				
Date: 26.007.2022 17:03:22	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check	n Offset 8.72 dB	-	annel / QPSK	3103				
Date: 26.0CT.2022 17:03:22	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check -10 dBm CPURIOUS SPURIOUS_LINE_ABS	n Offset 8.72 dB	Mode Au	annel / QPSK	3103				
Date: 26.0CT.2022 17:03:22	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check -10 dBm	n Offset 8.72 dB	Mode Au	annel / QPSK	3:03				
Date: 26.0CT.2022 17:03:22	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check -10 dBm CPURIOUS SPURIOUS_LINE_ABS	n Offset 8.72 dB	Mode Au	annel / QPSK	3:03				
Date: 26.0CT.2022 17:03:22	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check -10 dBm	n Offset 8.72 dB	Mode Au	annel / QPSK	3:03				
Date: 26.0CT.2022 17:03:22	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check -10 dBmBrURIOUS SPURIOUS LINE_ABS -20 dBm -30 dBm -40 dBm	n Offset 8.72 dB	Mode Au	annel / QPSK	3:03				
Date: 26.0CT.2022 17:03:22	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check -10 dBmPURIOUS SPURIOUS_LINE_ABS -20 dBm -40 dBm	n Offset 8.72 dB	Mode Au	annel / QPSK					
Date: 26.0CT.2022 17:03:22	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check -10 dBmPPURIOUS SPURIOUS -20 dBm	n Offset 8.72 dB	Mode Au	annel / QPSK					
Date: 26.0CT.2022 17:03:22	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check -10 dBmPURIOUS SPURIOUS_LINE_ABS -20 dBm -40 dBm	n Offset 8.72 dB	Mode Au	annel / QPSK					
Date: 26.00T.2022 17:03:22	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check -10 dBmPPURIOUS SPURIOUS_LINE_ABS -20 dBm -40 dBm -50 dBm	n Offset 8.72 dB	Mode Au	annel / QPSK					
Date: 26.007.2022 17:03:22	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check -10 dBm -10 dBm SPURIOUS LINE_ABS -20 dBm -30 dBm -40 dBm -50 dBm -50 dBm -60 dBm -70 dBm -80 dBm	n Offset 8.72 dB	Mode Au	annel / QPSK					
Date: 26.007.2022 17:03:22	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check -10 dBm	n Offset 8.72 dB	Mode Au	annel / QPSK					
Date: 26.0CT.2022 17:03:22	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check -10 dBm -10 dBm SPURIOUS LINE_ABS -20 dBm -30 dBm -40 dBm -50 dBm -50 dBm -60 dBm -70 dBm -80 dBm	n Offset 8.72 dB	Mode Au	annel / QPSK		€ 40.0 GHz			
Date: 26.0CT.2022 17:03:22	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check 10 dBm -10 dBm SPURIOUS LINE_ABS -20 dBm -30 dBm -40 dBm -50 dBm -50 dBm -70 dBm -80 dBm -90 dBm Start 30.0 MHz Spurious Emissions	Offset 8.72 dB INE_ABE INE_ABE INE_ABE INE_ABE	Mode Au	annel / QPSK		(△)			
Date: 26.0CT.2022 17:03:22	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check -10 dBmSPURIOUS -20 dBm	n Offset 8.72 dB e INE_ABE	Mode Au PASS PASS PASS PASS PASS PASS PASS PA	annel / QPSK	Power Abs	Stop 40.0 GHz			
Date: 26.0CT.2022 17:03:22	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check 10 dBm -10 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -90 dBm Start 30.0 MHz Spurious Emissions Range Low 30.000 MHz	Offset 8.72 dB	Mode Au PABS PABS PABS PABS PABS PABS PABS PABS	annel / QPSK	Power Abs -54.47 dBm	▲			
Date: 26.0CT.2022 17:03:22	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check 10 dBm -10 dBm SPURIOUS LINE_ABS -20 dBm -30 dBm -40 dBm -50 dBm -50 dBm -70 dBm -80 dBm -90 dBm -90 dBm Spurious Emissions Range Low 30.000 MHz 1.000 GHz 1.000 GHz	n Offset 8.72 dB e INE_ABE	Mode Au PASS PASS PASS PASS PASS PASS PASS P	annel / QPSK	Power Abs -54.47 dBm -51.60 dBm	(▲)			
Date: 26.0CT.2022 17:03:22	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check -10 dBm -10 dBm -50 dBm -30 dBm -60 dBm -50 dBm -60 dBm -60 dBm -60 dBm -80 dBm -90 dBm Spurious Emissions Range Low 30,000 MHz 1,000 GHz 3,575 GHz 7,000 GHz	Offset 8.72 dB INE_ABS	Mode Au PASS PASS PASS PASS PASS PASS PASS PA	annel / QPSK to Sweep	Power Abs -54.47 dBm -51.60 dBm -49.03 dBm -51.57 dBm	▲			
Date: 26.007.2022 17:03:22	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check 10 dBm -10 dBm 50 uBm -30 dBm -30 dBm -60 dBm -50 dBm -70 dBm -80 dBm -90 dBm -80 dBm -90 dBm -90 dBm -10.000 GHz 3.575 GHz -7.000 GHz 1.000 GHz 1.000 GHz 1.000 GHz	Offset 8.72 dB INE_AB8_	Mode Au PASS PASS PASS PASS PASS PASS PASS PA	annel / QPSK	Power Abs -54.47 dBm -51.60 dBm -49.03 dBm -51.57 dBm -50.22 dBm	▲			
Date: 26.007.2022 17:03:22	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check -10 dBm -10 dBm -PURIOUS -30 dBm	Offset 8.72 dB INF_ABS	Mode Au PASS PASS PASS PASS PASS PASS PASS PA	annel / QPSK	Power Abs 	▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲			
Date: 26.0CT.2022 17:03:22	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check 10 dBm -10 dBm 50 uBm -30 dBm -30 dBm -60 dBm -50 dBm -70 dBm -80 dBm -90 dBm -80 dBm -90 dBm -90 dBm -10.000 GHz 3.575 GHz -7.000 GHz 1.000 GHz 1.000 GHz 1.000 GHz	Offset 8.72 dB INE_AB8_	Mode Au PASS PASS PASS PASS PASS PASS PASS PA	annel / QPSK	Power Abs -54.47 dBm -51.60 dBm -49.03 dBm -51.57 dBm -50.22 dBm	▲			
Date: 26.0CT.2022 17:03:22	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check -10 dBm -10 dBm SPURIOUS LINE_ABS -20 dBm	Offset 8.72 dB INE_ABE	Mode Au PASS PASS PASS	Annel / QPSK	Power Abs -54.47 dBm -51.60 dBm -51.57 dBm -51.57 dBm -50.22 dBm -47.05 dBm -47.05 dBm	▲			

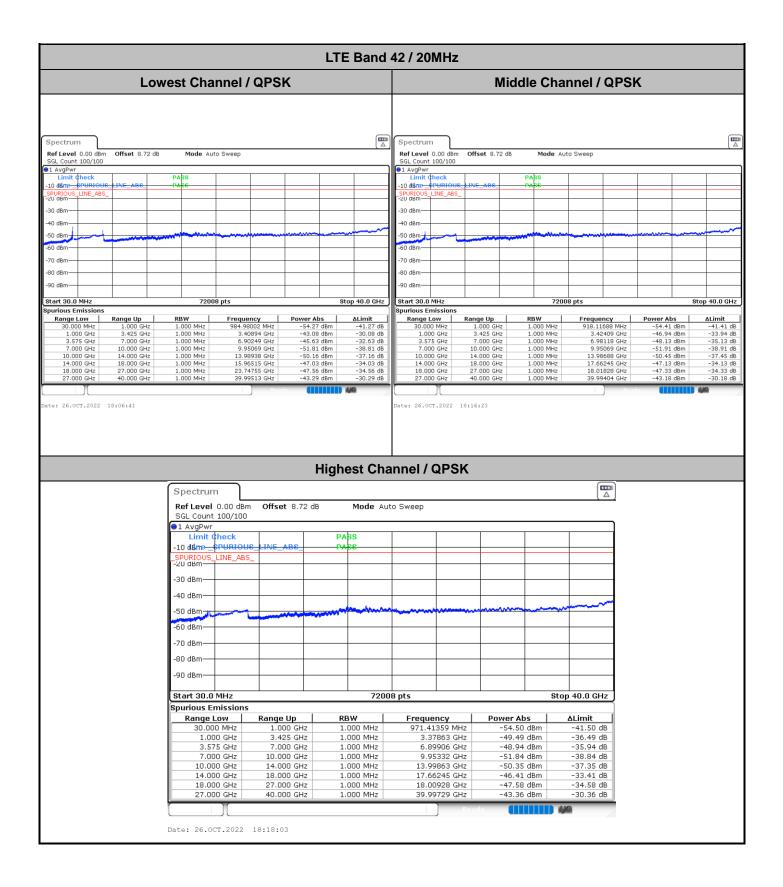


			LTE Band	42 / 10MHz					
Lowe	est Channel /	/ QPSK		Middle Channel / QPSK					
Spectrum Ref Level 0.00 dBm Offset 8.72 dB SGL Count 100/100 1 AvgPwr	Mode Auto Sweep PA 5 - - PA 5 -	ancy Power A 3596 MHz 54.45 0033 GHz -54.45 0033 GHz -55.12 0249 GHz -45.51.61 7763 GHz -45.95 9571 GHz -46.95 0399 GHz -47.31	8 dBm -41.48 dB 0 dBm -38.20 dB 1 dBm -32.41 dB 5 dBm -38.65 dB 1 dBm -36.91 dB	SGL Count 100/100 ● 1 AvgPwr Limit Ghack -10 dBmfHVHH048_IA -50 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm -90 dBm 1.000 GHz 1.000 GHz 1.000 GHz 1.000 GHz 1.100 GHz 1.100 GHz 1.100 GHz	ffset 8.72 dB Mode	2 Auto Sweep	Statistics of the second secon	op 40.0 GP	
⇒: 26.0CT.2022 17:24:27				Date: 26.0CT.2022 17:3	4:10				
e: 26.0CT.2022 17:24:27				Date: 26.0CT.2022 17:3	14:10				
9: 26.0CT.2022 17:24:27			Highest Cha	Date: 26.0CT.2022 17:3	14:10				
e: 26.ocT.2022 17:24:27	Spectrum		Highest Cha		4;10				
	Ref Level 0.00 dBm	m Offset 8.72 dB		nnel / QPSK	4:10				
	· _	m Offset 8.72 dB	B Mode Au	nnel / QPSK	4:10				
	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check	m Offset 8.72 da	B Mode Au PA <mark>SS</mark>	nnel / QPSK	4:10				
	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit check -10 dBmp_pruriou SPURIOUS LINE ABS	m Offset 8.72 df	B Mode Au	nnel / QPSK	4:10				
	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check -10 dBmSPURIOU	m Offset 8.72 df	B Mode Au PA <mark>SS</mark>	nnel / QPSK					
	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit check -10 dBmp_pruriou SPURIOUS LINE ABS	m Offset 8.72 df	B Mode Au PA <mark>SS</mark>	nnel / QPSK					
	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check -10 dBmPURIOU PURIOUS_LINE_ABS -20 dBm	m Offset 8.72 df	B Mode Au PA <mark>SS</mark>	nnel / QPSK					
	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check -10 dBmp_pPURIOUS SPURIOUS -20 dBm	m Offset 8.72 db	B Mode Au PASS PASS	nnel / QPSK					
	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit check -10 dBm	m Offset 8.72 db	B Mode Au PA <mark>SS</mark>	nnel / QPSK					
	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check -10 dBmp_pPURIOUS SPURIOUS -20 dBm	m Offset 8.72 db	B Mode Au PASS PASS	nnel / QPSK					
	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit check -10 dBm	m Offset 8.72 db	B Mode Au PASS PASS	nnel / QPSK					
	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Limit theck -10 dBm -PURIOUS SPURIOUS LINE_ABS -20 dBm - -30 dBm - -50 dBm -	m Offset 8.72 db	B Mode Au PASS PASS	nnel / QPSK					
	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check -10 dBmPUNLOUS LINE_ABS -20 dBm - -30 dBm - -40 dBm - -50 dBm - -60 dBm - -70 dBm - -80 dBm -	m Offset 8.72 db	B Mode Au PASS PASS	nnel / QPSK					
	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check -10 dBm FOURIOU SPURIOUS LINE_ABS -20 dBm	m Offset 8.72 db	B Mode Au PASS PASS	nnel / QPSK					
	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check -10 dBmPUNLOUS LINE_ABS -20 dBm - -30 dBm - -40 dBm - -50 dBm - -60 dBm - -70 dBm - -80 dBm -	m Offset 8.72 db	B Mode Au PASS PAPS	nnel / QPSK		□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □			
	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Gheck -10 dBm PUNLOUS -20 dBm	m Offset 8.72 de	B Mode Au PASS PASS PASS PASS 7200 7200	nnel / QPSK		()			
	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check -10 dBm CPURIOU SPURIOUS LINE -30 dBm - -40 dBm - -50 dBm - -60 dBm - -90 dBm - -90 dBm - -90 dBm - -90 dBm - Spurious Emissions Range Low	M Offset 8.72 df	B Mode Au PASS PASS PASS PASS PASS PASS PASS PA	nnel / QPSK	Power Abs	ΔLimit			
	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Gheck -10 dBm SPURIOUS_LINE_ABS -20 dBm	m Offset 8.72 df	B Mode Au PASS PAS PAS PAS PAS PAS PAS PAS PAS P	o Sweep	Power Abs -54.37 dBm				
	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Gheck -10 dBm PUNHOUS -20 dBm	m Offset 8.72 de	B Mode Au PASS PAPS PAPS PAPS PAPS PAPS PAPS PA	nnel / QPSK	Power Abs	▲			
	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Gheck -10 dBm SPURIOUS_LINE_ABS -20 dBm	m Offset 8.72 df	B Mode Au PASS PAS PAS PAS PAS PAS PAS PAS PAS P	o Sweep	Power Abs -54.37 dBm -50.45 dBm -48.99 dBm -51.15 dBm	Δ ΔLimit -41.37 dB -37.45 dB -37.45 dB -38.15 dB			
	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Gheck -10 dBm PUNIOUS -20 dBm	m Offset 8.72 df	B Mode Au PASS PAPS PAPS PAPS PAPS PAPS PAPS PA	Co Sweep	Power Abs -54.37 dBm -50.45 dBm -48.99 dBm -51.15 dBm -50.30 dBm	▲			
	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Gheck -10 dBm PUNLOUS -20 dBm	M Offset 8.72 de	B Mode Au PASS PASS PASS PASS PASS PASS PASS PA	mnel / QPSK o Sweep	Power Abs -54.37 dBm -50.45 dBm -50.30 dBm -47.07 dBm	▲ Stop 40.0 GHz ▲ 			
	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Gheck -10 dBm PUNIOUS -20 dBm	m Offset 8.72 df	B Mode Au PASS PAPS PAPS PAPS PAPS PAPS PAPS PA	Co Sweep	Power Abs -54.37 dBm -50.45 dBm -48.99 dBm -51.15 dBm -50.30 dBm	▲			
	Ref Level 0.00 dBm SGL Count 100/100 1 AvgPwr Limit Check -10 dBm CPURIOU SPURIOUS LINE -20 dBm	m Offset 8.72 df	B Mode Au PASS PASS PASS PASS PASS PASS PASS PA	o Sweep	Power Abs -54.37 dBm -54.37 dBm -50.45 dBm -48.99 dBm -51.15 dBm -50.30 dBm -77.07 dBm -47.07 dBm	▲ Stop 40.0 GHz ▲ ALimit -41.37 dB -37.45 dB -37.45 dB -38.15 dB -38.15 dB -34.70 dB -34.70 dB -34.70 dB -30.34 dB			



1.0			LTE Band	42 / 15MHz					
LO	west Channel	/ QPSK		Middle Channel / QPSK					
pectrum Larl Offset 8.72 di Larl Offset 8.72 di Lavger Limit Offset 8.72 di Limit Check Inte_Ass Inte_Ass U dsm Inte_Ass Inte_Ass Inte_Ass Io dsm Io Io Io	PASS PASS PASS <th></th> <th>dBm -39.23 dB dBm -28.83 dB dBm -32.72 dB dBm -38.90 dB dBm -37.30 dB dBm -37.30 dB dBm -34.09 dB dBm -34.62 dB</th> <th>Ref Level 0.00 dBm O GL Court 100/100 Imit Check Imit Check I AvgPwr Limit Check Imit Check I dBm FUNROUS LINE_ABS -20 dBm Imit Check Imit Check -30 dBm Imit Check Imit Check -50 dBm Imit Check Imit Check -60 dBm Imit Check Imit Check -90 dBm Imit Check Imit Checke -90 dBm Im</th> <th>Image Up RBW 1.000 MH 1.000 GHz 1.000 MH 1.000 GHz 1.000 MH</th> <th>Auto Sweep Auto Sweep Solution Trequency Solution Solution Solution Frequency Solution Solution Solu</th> <th>Power Abs z -54.12 dBm z -54.12 dBm z -54.12 dBm z -53.09 dBm z -45.03 dBm z -45.75 dBm</th> <th>top 40.0 Gl ALimit -41.12 -93.99 -34.14 -39.13 -37.39 -33.60 -34.54 -30.36</th>		dBm -39.23 dB dBm -28.83 dB dBm -32.72 dB dBm -38.90 dB dBm -37.30 dB dBm -37.30 dB dBm -34.09 dB dBm -34.62 dB	Ref Level 0.00 dBm O GL Court 100/100 Imit Check Imit Check I AvgPwr Limit Check Imit Check I dBm FUNROUS LINE_ABS -20 dBm Imit Check Imit Check -30 dBm Imit Check Imit Check -50 dBm Imit Check Imit Check -60 dBm Imit Check Imit Check -90 dBm Imit Check Imit Checke -90 dBm Im	Image Up RBW 1.000 MH 1.000 GHz 1.000 MH 1.000 GHz 1.000 MH	Auto Sweep Auto Sweep Solution Trequency Solution Solution Solution Frequency Solution Solution Solu	Power Abs z -54.12 dBm z -54.12 dBm z -54.12 dBm z -53.09 dBm z -45.03 dBm z -45.75 dBm	top 40.0 Gl ALimit -41.12 -93.99 -34.14 -39.13 -37.39 -33.60 -34.54 -30.36	
		I	Highest Cha	annel / OPSK					
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	Ref Level 0.00 dBr SGL Count 100/100 ●1 AvgPwr Limit check Limit check -10 dBm	16_LINE_AB6	Mode Au						
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	Ref Level 0.00 dBr SGL Count 100/100 ● 1 AvgPwr Limit check Limit dheck -10 dBm	16_LINE_AB6	PASS PASS PASS	to Sweep					
	Ref Level 0.00 dBr SGL Count 100/100 I AvgPwr Limit dheck -10 dBm		PASS PASS PASS			€top 40.0 GHz			
	Ref Level 0.00 dBr SGL Count 100/100 ● 1 AvgPwr Limit check Limit dheck -10 dBm		PASS PASS PASS	to Sweep	Power Abs				
	Ref Level 0.00 dBi SGL Count 100/100 I AvgPwr Limit dheck 10 dBim 10 dBim <td>JP LINE_ABE S_ </td> <td>Mode Au PASS PASS</td> <td>to Sweep</td> <td>Power Abs -54.44 dBm</td> <td>Limit -41.44 dB</td> <td></td> <td></td>	JP LINE_ABE S_	Mode Au PASS PASS	to Sweep	Power Abs -54.44 dBm	Limit -41.44 dB			
	Ref Level 0.00 dBr SGL Count 100/100 I AvgPwr Limit dheck -10 dBm AvgPwr -30 dBm -30 dBm -40 dBm -50 dBm -50 dBm -60 dBm -90 dBm -90 dBm -90 dBm -80 dBm -90 dBm -90 dBm Spurious Emissions Range Low 30,000 MHz 1,000 GHz	IP INE_ABP 6_	Mode Au PASS PAS PAS	to Sweep	Power Abs -54.44 dBm -49.58 dBm	Limit -41.44 dB -36.58 dB			
	Ref Level 0.00 dBr SGL Count 100/100 I AvgPwr Limit dheck -10 dBm PURIOL -20 dBm -20 dBm -30 dBm -30 dBm -50 dBm -60 dBm -60 dBm -90 dBm -90 dBm -90 dBm Spurious Emissions Range Low 30.000 MHz 3.000 GHz 3.575 GHz -375 GHz	JE INE_ABE S_	Mode Au PASS PASE PASE	to Sweep	Power Abs -54.44 dBm -49.58 dBm -47.78 dBm	ΔLimit -41.44 dB -36.58 dB -34.78 dB			
	Ref Level 0.00 dBr SGL Count 100/100 I AvgPwr Limit dheck -10 dBm AvgPwr -30 dBm -30 dBm -40 dBm -50 dBm -50 dBm -60 dBm -90 dBm -90 dBm -90 dBm -80 dBm -90 dBm -90 dBm Spurious Emissions Range Low 30,000 MHz 1,000 GHz	IP INE_ABP 6_	Mode Au PASS PAS PAS	to Sweep	Power Abs -54.44 dBm -49.58 dBm -47.78 dBm -51.86 dBm -50.23 dBm	Limit -41.44 dB -36.58 dB -34.78 dB -38.86 dB -37.23 dB			
	Ref Level 0.00 dBr SGL Count 100/100 ●1 AvgPwr Limit dheck -10 dBm Pr04104 -20 dBm -30 dBm -40 dBm -50 dBm -50 dBm -60 dBm -70 dBm -90 dBm -90 dBm -90 dBm -90 dBm -90 dBm 30.000 MHz Spurious Emissions Range Low 30.000 MHz 30.000 GHz 1.000 GHz 10.000 GHz 14.000 GHz	10 114E_ABB 5_	Mode Au PASS PASE PASE	to Sweep	Power Abs -54.44 dBm -49.58 dBm -47.78 dBm -51.86 dBm -50.23 dBm -46.84 dBm	Limit -41.44 dB -36.58 dB -34.78 dB -38.86 dB -37.23 dB -33.84 dB			
	Ref Level 0.00 dBr SGL Count 100/100 I AvgPwr Limit dheck -10 dBm -PURIOL -20 dBm -20 dBm -30 dBm -30 dBm -40 dBm -50 dBm -50 dBm -60 dBm -90 dBm -90 dBm Spurious Emissions Range Low 30.000 MHz 1.000 GHz 1.000 GHz 10.000 GHz 10.000 GHz 18.000 GHz	10 1145_AB8_ 5_	Mode Au PASS PASE PASE	to Sweep	Power Abs -54.44 dBm -49.58 dBm -47.78 dBm -51.86 dBm -50.23 dBm -46.84 dBm -47.55 dBm	A Btop 40.0 GHz ALimit -41.44 dB -36.58 dB -37.23 dB -33.84 dB -34.55 dB			
	Ref Level 0.00 dBr SGL Count 100/100 ●1 AvgPwr Limit dheck -10 dBm Pr04104 -20 dBm -30 dBm -40 dBm -50 dBm -50 dBm -60 dBm -70 dBm -90 dBm -90 dBm -90 dBm -90 dBm -90 dBm 30.000 MHz Spurious Emissions Range Low 30.000 MHz 30.000 GHz 1.000 GHz 10.000 GHz 14.000 GHz	10 114E_ABB 5_	Mode Au PASS PASS PASS	to Sweep	Power Abs -54.44 dBm -49.58 dBm -47.78 dBm -51.86 dBm -50.23 dBm -46.84 dBm	▲ ▲ ■			







Frequency Stability

Test Conditions		LTE Band 42 (QPSK) / Middle Channel			
		BW 10MHz	Note 2.		
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result		
50	Normal Voltage	0.0011			
40	Normal Voltage	0.0024			
30	Normal Voltage	0.0019			
20(Ref.)	Normal Voltage	0.0000			
10	Normal Voltage	0.0025			
0	Normal Voltage	0.0018			
-10	Normal Voltage	0.0009	PASS		
-20	Normal Voltage	0.0014			
-30	Normal Voltage	0.0016			
20	Maximum Voltage	0.0009			
20	Normal Voltage	0.0000			
20	Battery End Point	0.0015			

Note:

- 1. Normal Voltage =3.89 V. ; Battery End Point (BEP) =3.6V. ; Maximum Voltage =4.2 V.
- 2. Note: The frequency fundamental emissions stay within the authorized frequency block.



Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

LTE Band 42 / 20MHz / QPSK / ANT5									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	
	6984	-61.74	-13	-48.74	-71.95	3.03	13.24	Н	
	10473	-60.64	-13	-47.64	-70.09	3.56	13.01	Н	
Middle	13968	-59.08	-13	-46.08	-68.60	3.92	13.44	Н	
Middle	6984	-61.71	-13	-48.71	-71.92	3.03	13.24	V	
	10473	-60.99	-13	-47.99	-70.44	3.56	13.01	V	
	13964	-59.76	-13	-46.76	-69.28	3.92	13.44	V	

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