

Report No.: FG022521-02E



FCC RADIO TEST REPORT

FCC ID : A4RG025E

Equipment : Phone Model Name : G025E

Applicant : Google LLC

1600 Amphitheatre Parkway,

Mountain View, California, 94043 USA

Standard : FCC 47 CFR Part 2, 90(R)

The product was received on Apr. 30, 2020 and testing was started from May 13, 2020 and completed on Jun. 19, 2020. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA-603-E and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Approved by: Louis Wu

Louis Wu

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

TEL: 886-3-327-3456 Page Number : 1 of 24
FAX: 886-3-328-4978 Issued Date : Jul. 06, 2020

Report Template No.: BU5-FGLTE90R Version 2.4

Report Version : 02

Table of Contents

Report No. : FG022521-02E

His	story o	of this test report	3
Su		y of Test Result	
1	Gene	eral Description	
	1.1	Product Feature of Equipment Under Test	5
	1.2	Product Specification of Equipment Under Test	5
	1.3	Modification of EUT	6
	1.4	Testing Site	6
	1.5	Applied Standards	7
2	Test	Configuration of Equipment Under Test	8
	2.1	Test Mode	8
	2.2	Connection Diagram of Test System	9
	2.3	Support Unit used in test configuration and system	9
	2.4	Measurement Results Explanation Example	9
	2.5	Frequency List of Low/Middle/High Channels	10
3	Cond	lucted Test Items	11
	3.1	Measuring Instruments	11
	3.2	Conducted Output Power Measurement and ERP	12
	3.3	Peak-to-Average Ratio	13
	3.4	Occupied Bandwidth	14
	3.5	Conducted Band Edge	15
	3.6	Emission Mask	16
	3.7	Conducted Spurious Emission	17
	3.8	Frequency Stability	18
4	Radia	ated Test Items	19
	4.1	Measuring Instruments	19
	4.2	Radiated Spurious Emission	21
5	List o	of Measuring Equipment	22
6		ertainty of Evaluation	24
•	•	x A. Test Results of Conducted Test	
Ap	pendi	x B. Test Results of ERP and Radiated Test	

TEL: 886-3-327-3456 Page Number : 2 of 24 FAX: 886-3-328-4978 Issued Date : Jul. 06, 2020

Report Version

: 02

Report Template No.: BU5-FGLTE90R Version 2.4

History of this test report

Report No.	Version	Description	Issued Date
FG022521-02E	01	Initial issue of report	Jun. 29, 2020
FG022521-02E	02	Add remark in section 2.1 for Radiated Spurious Emission Measurement	Jul. 06, 2020

 TEL: 886-3-327-3456
 Page Number : 3 of 24

 FAX: 886-3-328-4978
 Issued Date : Jul. 06, 2020

Report Template No.: BU5-FGLTE90R Version 2.4

Report Version : 02

Report No. : FG022521-02E

Summary of Test Result

Report No.: FG022521-02E

Report Clause	Ref Std. Clause	Test Items			
0.0	§2.1046	Conducted Output Power	Reporting only	-	
3.2	§90.542 (a)(7)	Effective Radiated Power	Pass	-	
3.3	-	Peak-to-Average Ratio	Reporting only	-	
3.4	§2.1049	Reporting only	-		
3.5	§2.1053 §90.543 (e)(2)	Conducted Band Edde Weasurement Pass			
3.6	§2.1051 §90.210 (n)	Emission Mask	Pass	-	
3.7	§2.1053 §90.543 (e)(3)	Conducted Spurious Emission	Pass	-	
3.8	§2.1055 §90.539 (e)	Frequency Stability Temperature & Voltage	Pass	-	
4.2	§2.1053 §90.543 (e)(3) §90.543 (f)	Radiated Spurious Emission	Pass	Under limit 14.31 dB at 1592.000 MHz for Primary Antenna Under limit 15.51 dB at 1591.000 MHz for ASDIV Antenna	

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.

Reviewed by: Wii Chang Report Producer: Ruby Zou

TEL: 886-3-327-3456 Page Number : 4 of 24 FAX: 886-3-328-4978 Issued Date : Jul. 06, 2020

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature							
Equipment	Phone						
Model Name	G025E						
FCC ID	A4RG025E						
EUT supports Radios application	CDMA/EV-DO/GSM/EGPRS/WCDMA/HSPA/LTE/5GNR/ NFC/GNSS WLAN 11b/g/n HT20 WLAN 11a/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE						

Report No. : FG022521-02E

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

EUT Information List								
S/N	Performed Test Item							
04211FQCB00048	Conducted Measurement ERP							
04241FQCB00320	Radiated Spurious Emission							

1.2 Product Specification of Equipment Under Test

Product Specification subjective to this standard						
Tx Frequency 790.5 ~ 795.5 MHz						
Rx Frequency	760.5 ~ 765.5 MHz					
Bandwidth	5MHz / 10MHz					
Maximum Output Power to Antenna	<primary antenna=""> 24.53 dBm <asdiv antenna=""> 24.68 dBm</asdiv></primary>					
Antenna Type	<primary antenna="">: PIFA Antenna <asdiv antenna="">: PIFA Antenna</asdiv></primary>					
Type of Modulation	QPSK / 16QAM / 64QAM					

<Primary Antenna>

Radio Tech	Band Number	Antenna name	Gain
LTE	B14	Ant 0	-3.9

<ASDIV Antenna>

Radio Tech	Band Number	Antenna name	Gain
LTE	B14	Ant 1	-5.4

TEL: 886-3-327-3456 Page Number : 5 of 24 FAX: 886-3-328-4978 Issued Date : Jul. 06, 2020

1.3 Modification of EUT

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

1.4 Testing Site

Test Site	SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory			
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978			
Test Site No.	Sporton Site No.			
rest site No.	TH05-HY			
Test Engineer	Luffy Lin			
Temperature	22~24 ℃			
Relative Humidity	51~55%			

Report No. : FG022521-02E

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

Test Site SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory						
Test Site Location	Io.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., aoyuan City, Taiwan (R.O.C.) EL: +886-3-327-0868 AX: +886-3-327-0855					
Test Site No.	Sporton Site No.					
rest site No.	03CH13-HY					
Test Engineer	Jacky Hung and Wilson Wu					
Temperature	20~25℃					
Relative Humidity	50~60%					

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

FCC Designation No.: TW1190 and TW0007

TEL: 886-3-327-3456 : 6 of 24 Page Number FAX: 886-3-328-4978 Issued Date : Jul. 06, 2020 Report Version : 02

Report Template No.: BU5-FGLTE90R Version 2.4

1.5 Applied Standards

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

Report No.: FG022521-02E

- + ANSI C63.26-2015
- FCC 47 CFR Part 2, Part 90(R)
- ANSI / TIA-603-E
- FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01
- FCC KDB 414788 D01 Radiated Test Site v01r01

Remark:

- **1.** All 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.
- 3. The TAF code is not including all the FCC KDB listed without accreditation.

TEL: 886-3-327-3456 Page Number : 7 of 24
FAX: 886-3-328-4978 Issued Date : Jul. 06, 2020

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.

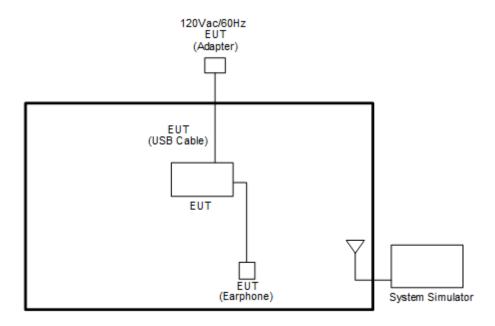
Report No.: FG022521-02E

For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z and Accessory. The worst cases (Primary Antenna: Y plane; ASDIV Antenna: X plane) were recorded in this report.

Conducted			Ва	andwic	lth (MF	lz)		N	Modulatio	n		RB#		Tes	t Cha	nnel
Test Cases	Band	1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	М	н
Max. Output Power	14	-	-	v	v	-	-	٧	v	v	٧	v	v	٧	v	v
Peak-to-Average Ratio	14	•	-		v	-	-	٧	v	v	٧		v		v	
26dB and 99% Bandwidth	14	-	-	v	v	-	-	v	v	v			v	٧	v	v
Conducted Band Edge	14	-	-	v	v	-	-	v	v	v	٧		v	V		v
Emission Mask	14	-	-	v	v	-	-	v	v	v	٧		v	٧	v	v
Conducted Spurious Emission	14	-	-	v	v	-	-	v	v	v	٧			V	v	v
Frequency Stability	14	-	-		v	-	-	V	v	v			v		v	
E.R.P	14	•	-	v	v	-	-	٧	v	v	>			>	v	v
Radiated Spurious Emission	14						Wor	st Case						v	v	v
Remark	 The mark "v" means that this configuration is chosen for testing The mark "-" means that this bandwidth is not supported. 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. All the radiated test cases were performed with Adapter 1 and USB Cable 1. The radiated spurious emissions measurement in 1559-1610 MHz were wideband emissions. 															

TEL: 886-3-327-3456 Page Number : 8 of 24
FAX: 886-3-328-4978 Issued Date : Jul. 06, 2020

2.2 Connection Diagram of Test System



Report No.: FG022521-02E

2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8821C	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 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 4.5 dB and 10dB attenuator.

Example:

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

$$= 4.5 + 10 = 14.5 (dB)$$

TEL: 886-3-327-3456 : 9 of 24 Page Number : Jul. 06, 2020 FAX: 886-3-328-4978 Issued Date : 02

2.5 Frequency List of Low/Middle/High Channels

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

TEL: 886-3-327-3456 Page Number : 10 of 24
FAX: 886-3-328-4978 Issued Date : Jul. 06, 2020

Report Template No.: BU5-FGLTE90R Version 2.4

Report Version : 02

Report No. : FG022521-02E

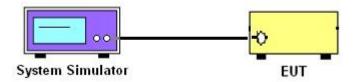
3 Conducted Test Items

3.1 Measuring Instruments

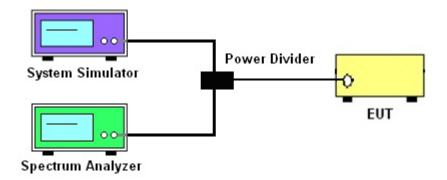
See list of measuring instruments of this test report.

3.1.1 Test Setup

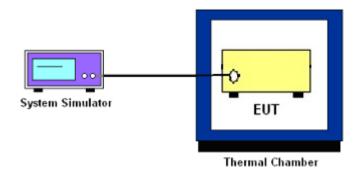
3.1.2 Conducted Output Power



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



3.1.4 Frequency Stability



3.1.5 Test Result of Conducted Test

Please refer to Appendix A.

TEL: 886-3-327-3456 Page Number : 11 of 24
FAX: 886-3-328-4978 Issued Date : Jul. 06, 2020

Report Template No.: BU5-FGLTE90R Version 2.4

Report Version : 02

Report No.: FG022521-02E

3.2 Conducted Output Power Measurement and ERP

3.2.1 Description of the Conducted Output Power Measurement and ERP 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.

Report No.: FG022521-02E

: 02

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

According to KDB 412172 D01 Power Approach,

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

 P_T = transmitter output power in dBm

 G_T = gain of the transmitting antenna in dBi

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

3.2.2 Test Procedures

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

TEL: 886-3-327-3456 Page Number : 12 of 24
FAX: 886-3-328-4978 Issued Date : Jul. 06, 2020

3.3 Peak-to-Average Ratio

3.3.1 Description of the PAR Measurement

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

Report No.: FG022521-02E

3.3.2 Test Procedures

The testing follows ANSI C63.26-2015 Section 5.2.6

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

TEL: 886-3-327-3456 : 13 of 24 Page Number : Jul. 06, 2020 FAX: 886-3-328-4978 Issued Date Report Version : 02

Report Template No.: BU5-FGLTE90R Version 2.4

3.4 Occupied Bandwidth

3.4.1 Description of Occupied Bandwidth Measurement

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

Report No.: FG022521-02E

total mean transmitted power.

The 26 dB emission bandwidth is defined as the frequency range between two points, one above and

one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB

below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit

bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of

the emission bandwidth.

3.4.2 Test Procedures

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

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.

2. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency.

The span range for the spectrum analyzer shall be between two and five times the anticipated

OBW.

3. The nominal resolution bandwidth (RBW) shall be in the range of 1 to 5 % of the anticipated OBW,

and the VBW shall be at least 3 times the RBW.

4. Set the detection mode to peak, and the trace mode to max hold.

5. Determine the reference value: Set the EUT to transmit a modulated signal. Allow the trace to

stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace.

(this is the reference value)

6. Determine the "-26 dB down amplitude" as equal to (Reference Value – X).

7. Place two markers, one at the lowest and the other at the highest frequency of the envelope of

the spectral display such that each marker is at or slightly below the "-X dB down amplitude"

determined in step 6. If a marker is below this "-X dB down amplitude" value it shall be placed as

close as possible to this value. The OBW is the positive frequency difference between the two

markers.

8. Use the 99 % power bandwidth function of the spectrum analyzer and report the measured

bandwidth.

TEL: 886-3-327-3456 Page Number : 14 of 24
FAX: 886-3-328-4978 Issued Date : Jul. 06, 2020

3.5 Conducted Band Edge

3.5.1 Description of Conducted Band Edge Measurement

90.543(e)

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

Report No.: FG022521-02E

- (2) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations.
- (3) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least 43 + 10 log (P) dB.

3.5.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 6.1.

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

The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)

TEL: 886-3-327-3456 Page Number : 15 of 24
FAX: 886-3-328-4978 Issued Date : Jul. 06, 2020

3.6 Emission Mask

3.6.1 Description of Emissions Mask Measurement

Transmitters designed must meet the emission mask comply with the emission mask provisions of FCC Part 90.210(n).

Report No.: FG022521-02E

3.6.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 6.0.

- 1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
- 2. The power of the modulated signal was measured on a spectrum analyzer using an RMS and 10 second sweep time in order to maximize the level.
- 3. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

TEL: 886-3-327-3456 : 16 of 24 Page Number FAX: 886-3-328-4978 Issued Date : Jul. 06, 2020 Report Version : 02

Report Template No.: BU5-FGLTE90R Version 2.4

3.7 Conducted Spurious Emission

3.7.1 Description of Conducted Spurious Emission Measurement

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

Report No.: FG022521-02E

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

3.7.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 6.1.

- 1. The EUT was connected to spectrum analyzer and base station via power divider.
- 2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 3. The middle channel for the highest RF power within the transmitting frequency was measured.
- 4. The conducted spurious emission for the whole frequency range was taken.
- 5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz.
- 6. Set spectrum analyzer with RMS detector.
- 7. Taking the record of maximum spurious emission.
- The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
- 9. The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)

TEL: 886-3-327-3456 Page Number : 17 of 24
FAX: 886-3-328-4978 Issued Date : Jul. 06, 2020

3.8 Frequency Stability

3.8.1 Description of Frequency Stability Measurement

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

Report No.: FG022521-02E

3.8.2 Test Procedures for Temperature Variation

The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.

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

3.8.3 Test Procedures for Voltage Variation

The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.

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

TEL: 886-3-327-3456 Page Number : 18 of 24
FAX: 886-3-328-4978 Issued Date : Jul. 06, 2020



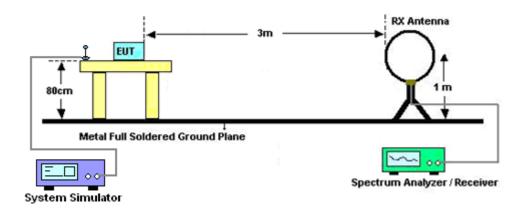
4 Radiated Test Items

4.1 Measuring Instruments

See list of measuring instruments of this test report.

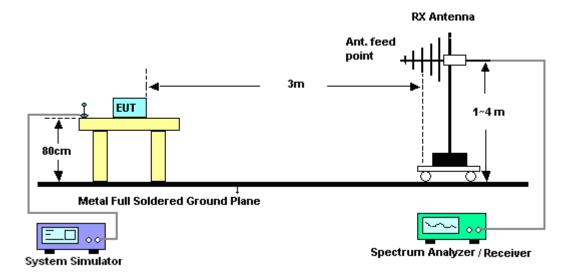
4.1.1 Test Setup

For radiated emissions below 30MHz



Report No.: FG022521-02E

For radiated test from 30MHz to 1GHz



TEL: 886-3-327-3456 Page Number : 19 of 24
FAX: 886-3-328-4978 Issued Date : Jul. 06, 2020

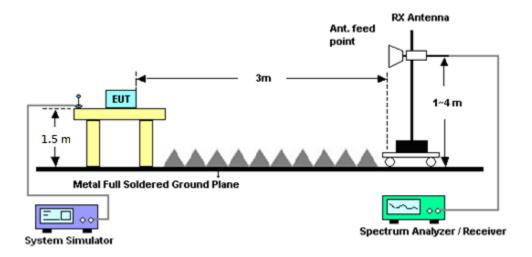
Report Version

: 02

Report Template No.: BU5-FGLTE90R Version 2.4

FCC RADIO TEST REPORT

For radiated test above 1GHz



4.1.2 Test Result of Radiated Test

Please refer to Appendix B.

Note:

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

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

TEL: 886-3-327-3456 Page Number : 20 of 24 FAX: 886-3-328-4978 Issued Date : Jul. 06, 2020

Report Template No.: BU5-FGLTE90R Version 2.4

Report Version : 02

Report No.: FG022521-02E

4.2 Radiated Spurious Emission

4.2.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI / TIA-603-E. 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.

Report No.: FG022521-02E

For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559–1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

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

4.2.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 7 and ANSI / TIA-603-E Section 2.2.12.

- The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
- 2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
- 3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
- 4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
- 5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, Sweep = 500ms, Taking the record of maximum spurious emission.
- 6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
- 7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
- 8. Taking the record of output power at antenna port.
- 9. Repeat step 7 to step 8 for another polarization.
- 10. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
- 11. The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)

TEL: 886-3-327-3456 Page Number : 21 of 24
FAX: 886-3-328-4978 Issued Date : Jul. 06, 2020

5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Amplifier	Sonoma-Instru ment	310 N	187282	9KHz~1GHz	Dec. 17, 2019	May 19, 2020~ Jun. 17, 2020	Dec. 16, 2020	Radiation (03CH13-HY)
Bilog Antenna	TESEQ	CBL 6111D&00800 N1D01N-06	40103&07	30MHz to 1GHz	Apr. 29, 2020	May 19, 2020~ Jun. 17, 2020	Apr. 28, 2021	Radiation (03CH13-HY)
Bilog Antenna	TESEQ	CBL 6111D&00800 N1D01N-06	41912 & 07	30MHz to 1GHz	Apr. 29, 2020	May 19, 2020~ Jun. 17, 2020	Apr. 28, 2021	Radiation (03CH13-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	9120D-124 1	1GHz ~ 18GHz	Jul. 02, 2019	May 19, 2020~ Jun. 17, 2020	Jul. 01, 2020	Radiation (03CH13-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	9120D-152 2	1GHz ~ 18GHz	Sep. 19, 2019	May 19, 2020~ Jun. 17, 2020	Sep. 18, 2020	Radiation (03CH13-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590074	1GHz~18GHz	May 19, 2020	May 19, 2020~ Jun. 17, 2020	May 18, 2021	Radiation (03CH13-HY)
Preamplifier	Keysight	83017A	MY532701 47	1GHz~26.5GHz	Oct. 28, 2019	May 19, 2020~ Jun. 17, 2020	Oct. 27, 2020	Radiation (03CH13-HY)
Signal Generator	Rohde & Schwarz	SMF100A	101107	100kHz~40GHz	Aug. 27, 2019	May 19, 2020~ Jun. 17, 2020	Aug. 26, 2020	Radiation (03CH13-HY)
Spectrum Analyzer	Keysight	N9010A	MY553705 26	10Hz~44GHz	Mar. 20, 2020	May 19, 2020~ Jun. 17, 2020	Mar. 19, 2021	Radiation (03CH13-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	May 19, 2020~ Jun. 17, 2020	N/A	Radiation (03CH13-HY)
Antenna Mast	EMEC	AM-BS-4500- B	N/A	1m~4m	N/A	May 19, 2020~ Jun. 17, 2020	N/A	Radiation (03CH13-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	May 19, 2020~ Jun. 17, 2020	N/A	Radiation (03CH13-HY)
Software	Audix	E3 6.2009-8-24	RK-00099 2	N/A	N/A	May 19, 2020~ Jun. 17, 2020	N/A	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126E	0030/126E	30M-18G	Feb. 12, 2020	May 19, 2020~ Jun. 17, 2020	Feb. 21, 2021	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	804793/4	30M-18G	Feb. 12, 2020	May 19, 2020~ Jun. 17, 2020	Feb. 21, 2021	Radiation (03CH13-HY)
Filter	Wainwright	WHKX12-270 0-3000-18000 -60SS	SN2	3GHz High Pass Filter	Jul. 14, 2019	May 19, 2020~ Jun. 17, 2020	Jul. 13, 2020	Radiation (03CH13-HY)
Filter	Wainwright	WHKX12-108 0-1200-15000 -60SS	SN3	1.2GHz High Pass Filter	Jul. 03, 2019	May 19, 2020~ Jun. 17, 2020	Jul. 02, 2020	Radiation (03CH13-HY)
Hygrometer	TECPEL	DTM-303B	TP157151	N/A	Jun. 17, 2019	May 19, 2020~ Jun. 17, 2020	Jun. 16, 2020	Radiation (03CH13-HY)

Report No. : FG022521-02E

TEL: 886-3-327-3456 Page Number : 22 of 24
FAX: 886-3-328-4978 Issued Date : Jul. 06, 2020

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
LTE Base Station	Anritsu	MT8821C	626200253 41	-	Oct. 24, 2019	May 13, 2020~ Jun. 19, 2020	Oct. 23, 2020	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV40	101397	10Hz~40GHz	Nov. 15, 2019	May 13, 2020~ Jun. 19, 2020	Nov. 14, 2020	Conducted (TH05-HY)
Temperature Chamber	ESPEC	SH-641	92013720	-40°C~90°C	Sep. 02, 2019	May 13, 2020~ Jun. 19, 2020	Sep. 01, 2020	Conducted (TH05-HY)
Programmable Power Supply	GW Instek	PSS-2005	EL890094	1V~20V 0.5A~5A	Oct. 09, 2019	May 13, 2020~ Jun. 19, 2020	Oct. 08, 2020	Conducted (TH05-HY)
Coupler	Warison	20dB 25W S MA Direction al Coupler	#A	1-18GHz	Jan. 13, 2020	May 13, 2020~ Jun. 19, 2020	Jan. 12, 2021	Conducted (TH05-HY)

Report No. : FG022521-02E

TEL: 886-3-327-3456 Page Number : 23 of 24
FAX: 886-3-328-4978 Issued Date : Jul. 06, 2020



6 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of	2 24
Confidence of 95% (U = 2Uc(y))	3.21

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

Measuring Uncertainty for a Level of	3.24
Confidence of 95% (U = 2Uc(y))	3.24

TEL: 886-3-327-3456 Page Number : 24 of 24
FAX: 886-3-328-4978 Issued Date : Jul. 06, 2020

Report Template No.: BU5-FGLTE90R Version 2.4

Report Version : 02

Report No. : FG022521-02E



Appendix A. Test Results of Conducted Test

Report No. : FG022521-02E

Conducted Output Power(Average power)

<Primary Antenna>

41 11111Q1	<primary antenna=""> LTE Band 14 Maximum Average Power [dBm]</primary>										
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest					
10	1	0			24.43						
10	1	25			24.53						
10	1	49			24.34						
10	25	0	QPSK		23.49						
10	25	12			23.47						
10	25	25			23.50						
10	50	0			23.44						
10	1	0			23.82	1					
10	1	25			23.82	1					
10	1	49			23.73						
10	25	0	16-QAM	-	22.48	-					
10	25	12			22.48						
10	25	25			22.49						
10	50	0			22.45						
10	1	0			22.73						
10	1	25			22.59	1					
10	1	49			22.62	1					
10	25	0	64-QAM		21.51						
10	25	12			21.27						
10	25	25			21.52						
10	50	0			21.49	1					
5	1	0		24.43	24.39	24.40					
5	1	12		24.49	24.50	24.44					
5	1	24		24.49	24.41	24.36					
5	12	0	QPSK	23.50	23.48	23.45					
5	12	7		23.55	23.54	23.49					
5	12	13		23.53	23.50	23.47					
5	25	0		23.54	23.48	23.41					
5	1	0		23.75	23.73	23.70					
5	1	12		23.82	23.80	23.77					
5	1	24		23.77	23.76	23.71					
5	12	0	16-QAM	22.50	22.53	22.49					
5	12	7		22.59	22.55	22.50					
5	12	13		22.55	22.53	22.48					
5	25	0		22.54	22.50	22.44					
5	1	0		22.75	22.62	22.31					
5	1	12		22.74	22.25	22.55					
5	1	24		22.30	22.27	22.69					
5	12	0	64-QAM	21.56	21.32	21.21					
5	12	7		21.64	21.19	21.52					
5	12	13		21.37	21.18	21.56					
5	25	0		21.58	21.15	21.45					



<ASDIV Antenna>

LTE Band 14 Maximum Average Power [dBm]										
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest				
10	1	0			24.68					
10	1	25			24.58					
10	1	49			24.49					
10	25	0	QPSK		23.62					
10	25	12			23.61	1				
10	25	25			23.65					
10	50	0			23.61	1				
10	1	0			23.95	1				
10	1	25			23.95					
10	1	49			23.89					
10	25	0	16-QAM	-	22.63	-				
10	25	12			22.61					
10	25	25			22.65					
10	50	0			22.63					
10	1	0			22.85					
10	1	25			22.85					
10	1	49			22.78					
10	25	0	64-QAM		21.67					
10	25	12			21.65					
10	25	25			21.69					
10	50	0			21.63					
5	1	0		24.53	24.52	24.54				
5	1	12		24.64	24.67	24.63				
5	1	24		24.58	24.56	24.52				
5	12	0	QPSK	23.61	23.62	23.59				
5	12	7		23.66	23.66	23.61				
5	12	13		23.65	23.64	23.60				
5	25	0		23.65	23.61	23.52				
5	1	0		23.90	23.84	23.86				
5	1	12		23.92	23.94	23.92				
5	1	24		23.91	23.89	23.84				
5	12	0	16-QAM	22.62	22.62	22.65				
5	12	7		22.73	22.66	22.63				
5	12	13		22.66	22.67	22.63				
5	25	0		22.69	22.62	22.57				
5	1	0		22.77	22.81	22.79				
5	1	12		22.85	22.75	22.87				
5	1	24		22.74	22.83	22.82				
5	12	0	64-QAM	21.66	21.69	21.67				
5	12	7		21.74	21.70	21.66				
5	12	13		21.71	21.71	21.69				
5	25	0		21.68	21.63	21.58				

Report No. : FG022521-02E

LTE Band 14

Peak-to-Average Ratio

Mode						
Mod.	QP	SK	160	Limit: 13dB		
RB Size	1RB Full RB		1RB	Full RB	Result	
Lowest CH			-	-		
Middle CH	3.65	5.04	5.59	5.86	PASS	
Highest CH	-	-	-	-		
Mode		LTE Band	14 / 10MHz			
Mod.	64C	AM			Limit: 13dB	
RB Size	1RB	Full RB			Result	
Lowest CH	-	-	-	-		
Middle CH	6.09	6.55	-	-	PASS	
Highest CH	-	-	-	-		

Report No. : FG022521-02E

TEL: 886-3-327-3456 Page Number : A14-1 of 33

Report No.: FG022521-02E LTE Band 14 / 10MHz / QPSK Middle Channel / 1RB Middle Channel / Full RB Spectrum

Ref Level 30.00 dBm

Att 30 dB

1Sa View LTE Band 14 / 10MHz / 16QAM Middle Channel / 1RB Middle Channel / Full RB Ref Level 30.00 Att Ref Level 30.00 dBm Att 30 dB | Samples: 130000 | 1% | 0.1% | 0.01% | | 19 dB | 5.59 dB | 5.60 dB | Samples: 130000
 Mean
 Peak
 Crest

 Trace 1
 20.61 dBm
 26.33 dBm
 5.71 dB
 LTE Band 14 / 10MHz / 64QAM Middle Channel / 1RB Middle Channel / Full RB Ref Level 30.00 dBm Att 30 da Ref Level 30.00 de

TEL: 886-3-327-3456 Page Number : A14-2 of 33 FAX: 886-3-328-4978

26dB Bandwidth

Mode	LTE Band 14 : 26dB BW(MHz)											
BW	1.4MHz 3MHz			5N	5MHz 10MHz			15MHz		20MHz		
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	-	-	-	-	4.89	4.88	-	-	-	-	-	-
Middle CH	-	-	-	-	4.91	4.88	9.81	9.69	-	-	-	-
Highest CH	-	-	-	-	4.97	4.86	-	-	-	-	-	-
Mode					LTE Ba	and 14 : :	26dB BV	V(MHz)				
BW	1.4	ЛHz	3M	lHz	5N	lHz	101	ЛHz	15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	-	-	-	-	4.88	-	-	-	-	-	-	-
Middle CH	-	-	-	-	4.80	-	9.67	-	-	-	-	-
Highest CH	-	-	-	-	4.90	-	-	-	-	-	-	-

Report No. : FG022521-02E

TEL: 886-3-327-3456 Page Number : A14-3 of 33

LTE Band 14 Lowest Channel / 5MHz / QPSK Lowest Channel / 5MHz / 16QAM Ref Level 30.00 dBm
Att 30 dB
SGL Count 100/100 16.06 dBr 790.00000 MF 26.00 d 4.885000000 MF 161 162 -10 dBm 40 dBm Span 10.0 MHz Span 10.0 MHz -9.84 dBm -10.11 dBm -10.91 dBm -10.69 dBm Middle Channel / 5MHz / QPSK Middle Channel / 5MHz / 16QAM 0 dBm-40 dBm--50 dBm Function Result 4.875 MHz 26.00 dB 162.8
 X-value
 Y-value
 Function

 791.521 MHz
 16.38 dBm
 nd8 down

 790.542 MHz
 -9.73 dBm
 nd8

 795.448 MHz
 -9.79 dBm
 Q factor
 Function Result 4.905 MH Type Ref Trc Type Ref Trc Highest Channel / 5MHz / QPSK Highest Channel / 5MHz / 16QAM ▽ Offset 11.10 dB ● RBW 100 kHz SWT 19 µs ● VBW 300 kHz Mode Auto FFT Att 30 dB
SGL Count 100/100
1Pk Max 15.40 dE 796.62900 M 14.97 dB 795.91000 MF

Report No.: FG022521-02E

 Type
 Ref
 Trc
 X-value
 Y-value
 Function

 M1
 1
 795.91 MHz
 14.97 dBm
 ndB down

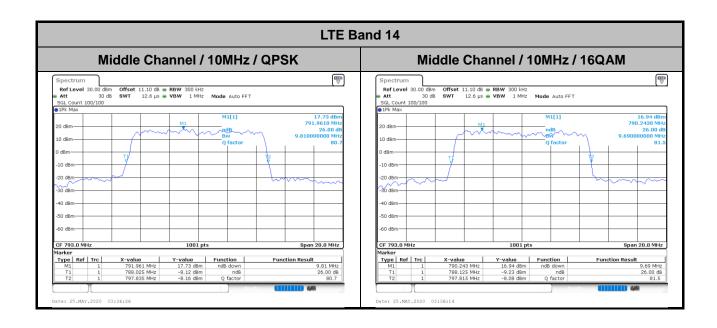
Function Result 4.965 MHz

 X-value
 Y-value
 Function

 796.629 MHz
 15.40 dBm
 ndB down

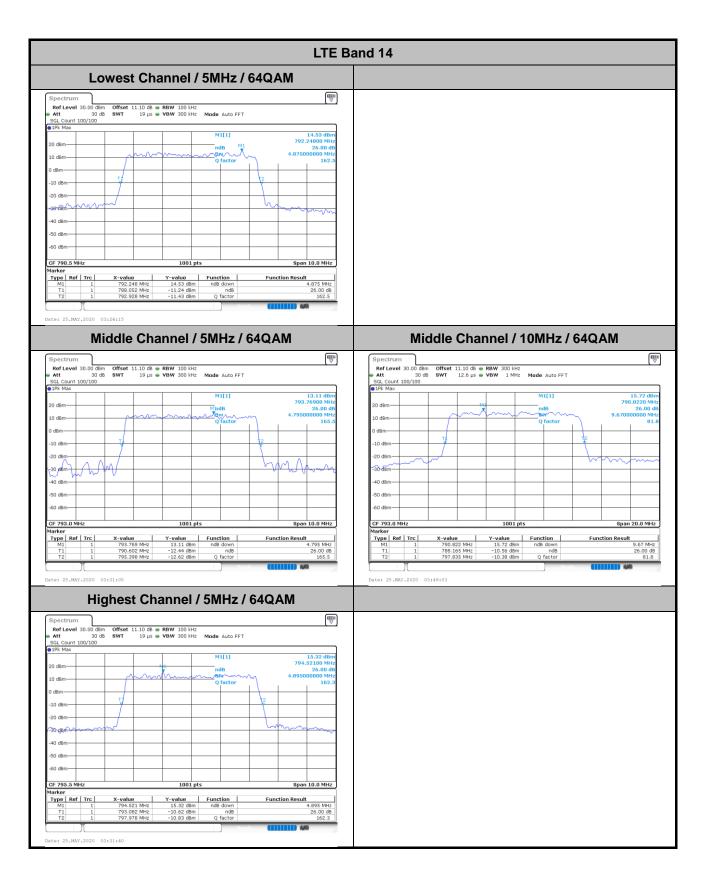
Type | Ref | Trc |

Report No. : FG022521-02E



TEL: 886-3-327-3456 Page Number : A14-5 of 33

Report No. : FG022521-02E



TEL: 886-3-327-3456 Page Number : A14-6 of 33

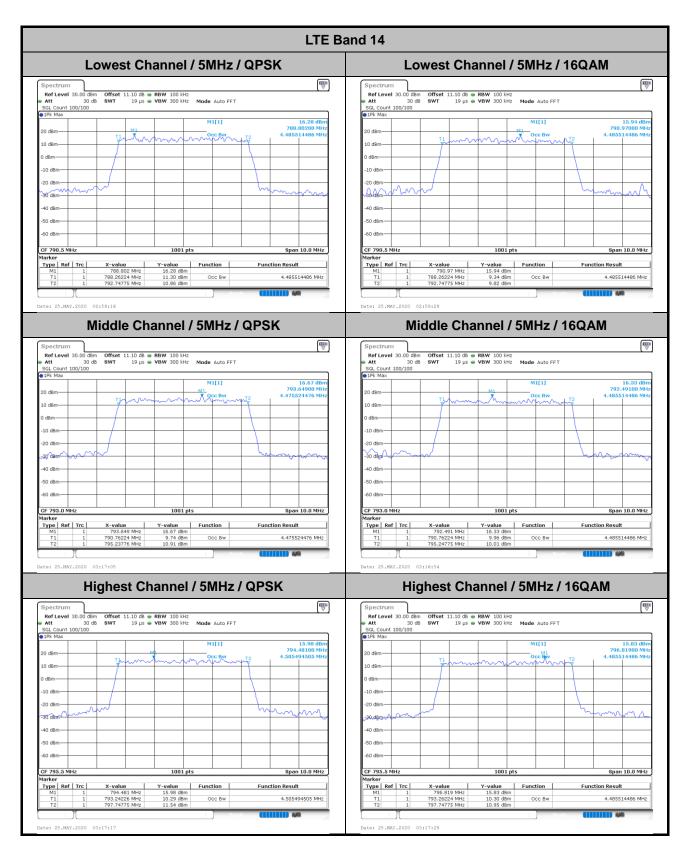
Occupied Bandwidth

Mode		LTE Band 14 : 99%OBW(MHz)										
BW	1.4	ЛHz	3MHz		5MHz		10MHz		15N	ЛHz	20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	-	-	-	-	4.49	4.49	-	-	-	-	-	-
Middle CH	-	-	-	-	4.48	4.49	9.03	9.05	-	-	-	-
Highest CH	-	-	-	-	4.51	4.49	-	-	-	-	-	-
Mode					LTE Ba	and 14 : 9	99%OBV	V(MHz)				
BW	1.4	ЛHz	3M	Hz	5N	lHz	10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	-	-	-	-	4.48	-	-	-	-	-	-	-
Middle CH	-	-	-	-	4.49	-	8.99	-	-	-	-	-
Highest CH	-	-	-	-	4.51	-	-	-	-	-	1	-

Report No. : FG022521-02E

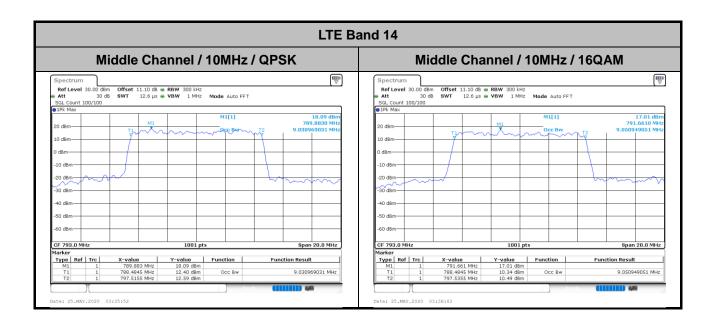
TEL: 886-3-327-3456 Page Number: A14-7 of 33

CC RADIO TEST REPORT Report No. : FG022521-02E



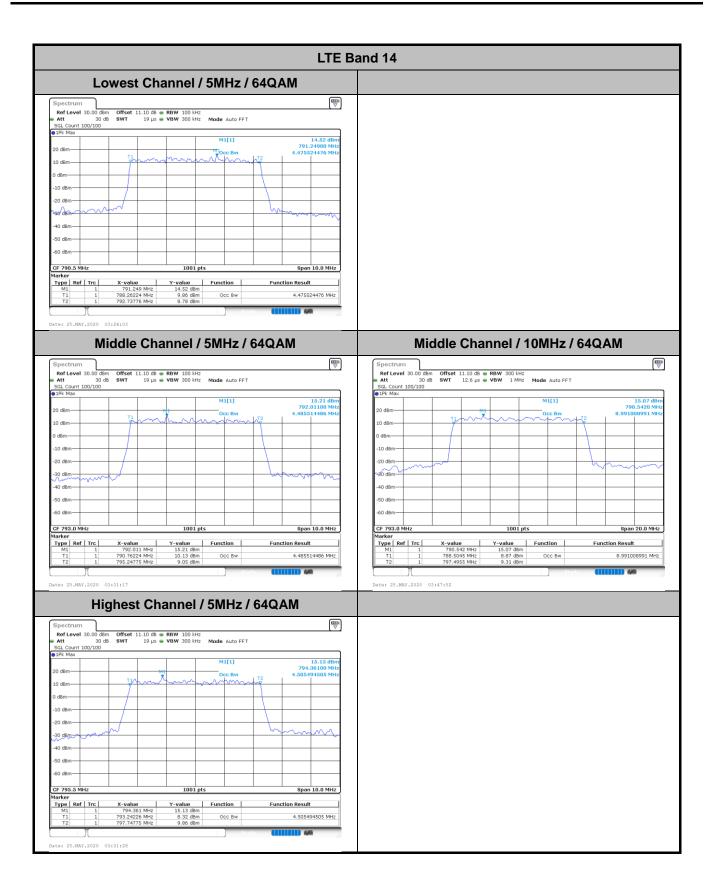
TEL: 886-3-327-3456 Page Number : A14-8 of 33

Report No. : FG022521-02E



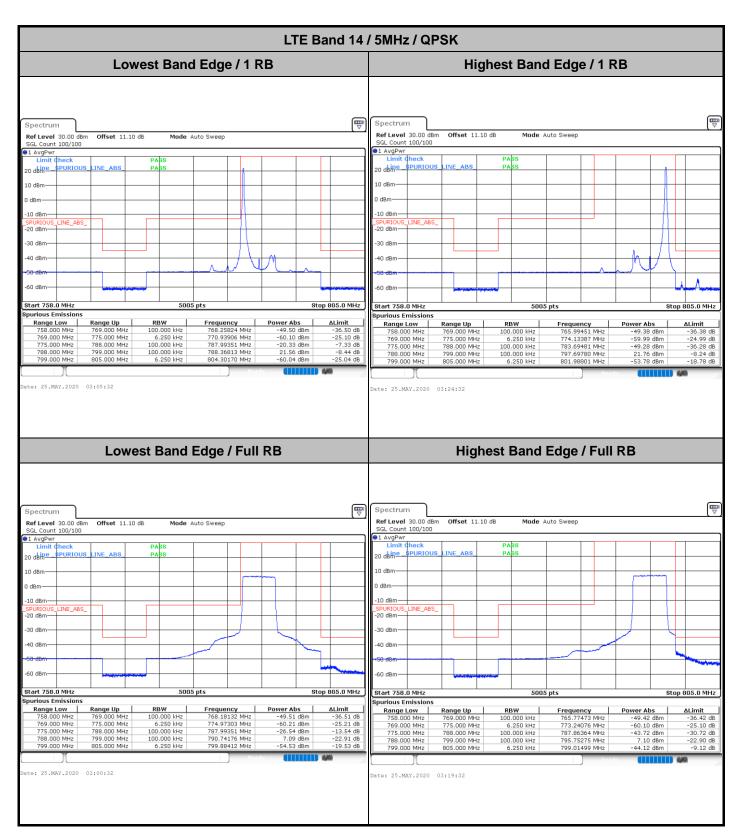
TEL: 886-3-327-3456 Page Number: A14-9 of 33

Report No. : FG022521-02E



TEL: 886-3-327-3456 Page Number : A14-10 of 33

Conducted Band Edge



Report No.: FG022521-02E

TEL: 886-3-327-3456 Page Number : A14-11 of 33 FAX: 886-3-328-4978

LTE Band 14 / 5MHz / 16QAM Lowest Band Edge / 1 RB Highest Band Edge / 1 RB Spectrum Offset 11.10 dB Mode Auto Sweep Offset 11.10 dB Mode Auto Sweep Ref Level 30.00 dBm SGL Count 100/100 1 AvgPwr SGL Count 100/100 1 AvgPw 20 d<mark>bine</mark> SPURIOUS_LINE_ABS PASS o deine LO dBm dBm Start 758.0 MHz Start 758.0 MHz Spurious Emissio 805.0 MHz 5005 pts Stop 805.0 MHz purious Emissions -49.36 dBm -60.05 dBm -19.98 dBm 20.78 dBm -59.86 dBm Range Up 769.000 MHz 775.000 MHz 788.000 MHz 799.000 MHz 805.000 MHz 768.44505 MHz 771.16084 MHz 787.99351 MHz 788.33516 MHz 802.02997 MHz RBW 100.000 kHz 6.250 kHz 100.000 kHz 100.000 kHz 6.250 kHz -49.45 dBm -60.02 dBm -49.35 dBm 20.86 dBm -54.47 dBm Range Low 758.000 MHz 766.51099 MHz 772.73127 MHz 786.83766 MHz 797.63187 MHz 801.97003 MHz ∆Limit 758 000 MHz ALimit
-36.36 dB
-25.05 dB
-6.98 dB
-9.22 dB
-24.86 dB Range Up 769.000 MHz -36.45 dB -25.02 dB -36.35 dB -9.14 dB -19.47 dB 758.000 MHz 769.000 MHz 775.000 MHz 788.000 MHz 799.000 MHz 775.000 MHz 788.000 MHz ate: 25.MAY.2020 03:03:52 Date: 25.MAY.2020 03:22:52 Lowest Band Edge / Full RB **Highest Band Edge / Full RB** \ Spectrum Spectrum Ref Level 30.00 dBm Offset 11.10 dB Mode Auto Sweep Ref Level 30.00 dBm Offset 11.10 dB Mode Auto Sweep SGL Count 100/100 ●1 AvgPwr 1 AvgPwr PURIOUS 20 dkine o dkine INE ABS 20 dBm 20 dBm-Stop 805.0 MHz Start 758.0 MHz urious Emissions Range Low 758.000 MHz 769.000 MHz 775.000 MHz 788.000 MHz Range Up 769.000 MHz 775.000 MHz 788.000 MHz 799.000 MHz 805.000 MHz RBW 100.000 kHz 6.250 kHz 100.000 kHz 100.000 kHz 6.250 kHz Frequency 766.47802 MHz 773.75624 MHz 787.99351 MHz 789.66484 MHz 799.27273 MHz Power Abs
-49.45 dBm
-59.93 dBm
-28.16 dBm
6.11 dBm
-55.45 dBm Range Low
758.000 MHz
769.000 MHz
775.000 MHz
775.000 MHz
788.000 MHz
799.000 MHz ΔLimit
-36.40 dB
-25.14 dB
-31.20 dB
-23.88 dB
-9.77 dB ΔLimit -36.45 dB -24.93 dB -15.16 dB -23.89 dB -20.45 dB te: 25.MAY.2020 03:02:12 Date: 25.MAY.2020 03:21:12

Report No.: FG022521-02E

TEL: 886-3-327-3456 Page Number : A14-12 of 33

LTE Band 14 / 5MHz / 64QAM Lowest Band Edge / 1 RB Highest Band Edge / 1 RB Spectrum Offset 11.10 dB Mode Auto Sweep Offset 11.10 dB Mode Auto Sweep Ref Level 30.00 dBm SGL Count 100/100 1 AvgPwr SGL Count 100/100 1 AvgPw 20 d<mark>bine</mark> SPURIOUS_LINE_ABS PASS o deine LO dBm dBm Start 758.0 MHz Start 758.0 MHz Spurious Emissio 805.0 MHz 5005 pts Stop 805.0 MHz purious Emissions Power Abs -49.39 dBm -60.25 dBm -22.46 dBm 19.91 dBm -59.90 dBm Range Up 769.000 MHz 775.000 MHz 788.000 MHz 799.000 MHz 805.000 MHz Frequency
765.33516 MHz
769.83616 MHz
787.99351 MHz
788.31319 MHz
801.49650 MHz RBW 100.000 kHz 6.250 kHz 100.000 kHz 100.000 kHz 6.250 kHz Power Abs
-49.47 dBm
-60.11 dBm
-49.33 dBm
19.82 dBm
-55.66 dBm Range Low 758.000 MHz 765.53297 MHz 769.59041 MHz 787.20130 MHz 797.63187 MHz 801.94605 MHz ∆Limit 758 000 MHz Range Up 769.000 MHz ΔLimit
-36.39 dB
-25.25 dB
-9.46 dB
-10.09 dB
-24.90 dB -36.47 dB -25.11 dB -36.33 dB -10.18 dB -20.66 dB 758.000 MHz 769.000 MHz 775.000 MHz 788.000 MHz 799.000 MHz 775.000 MHz 788.000 MHz ate: 25.MAY.2020 03:29:35 Date: 25.MAY.2020 03:35:00 Lowest Band Edge / Full RB **Highest Band Edge / Full RB** \ Spectrum Spectrum Ref Level 30.00 dBm Offset 11.10 dB Mode Auto Sweep Ref Level 30.00 dBm Offset 11.10 dB Mode Auto Sweep SGL Count 100/100 ●1 AvgPwr 1 AvgPwr PURIOUS 20 dkine o dkine INE ABS 20 dBm-20 dBm-Stop 805.0 MHz Start 758.0 MHz urious Emissions Range Low 758.000 MHz 769.000 MHz 775.000 MHz 788.000 MHz Range Up 769.000 MHz 775.000 MHz 788.000 MHz 799.000 MHz 805.000 MHz RBW 100.000 kHz 6.250 kHz 100.000 kHz 100.000 kHz 6.250 kHz Frequency
763.10440 MHz
773.71429 MHz
787.99351 MHz
789.36813 MHz
799.47652 MHz -49.43 dBm -60.16 dBm -28.97 dBm 5.35 dBm Range Low
758.000 MHz
769.000 MHz
775.000 MHz
775.000 MHz
788.000 MHz
799.000 MHz ΔLimit -36.43 dB -25.16 dB -15.97 dB -24.65 dB -21.31 dB -36.44 dB -25.14 dB -32.50 dB -24.88 dB -10.68 dB te: 25.MAY.2020 03:27:55 Date: 25.MAY.2020 03:33:20

Report No.: FG022521-02E

TEL: 886-3-327-3456 Page Number : A14-13 of 33

LTE Band 14 / 10MHz / QPSK Lowest Band Edge / 1 RB Highest Band Edge / 1 RB Spectrum Ref Level 30.00 dBm Offset 11.10 dB Mode Auto Sweep Offset 11.10 dB Mode Auto Sweep Ref Level 30.00 dBm SGL Count 100/100 1 AvgPwr SGL Count 100/100 ●1 AvgPw 20 d**bine** SPURIOUS_LINE_ABS PASS 20 dbine 10 dBm dBm Start 758.0 MHz Start 758.0 MHz Spurious Emission 5005 pts Stop 805.0 MHz purious Emissions Power Abs -49.44 dBm -60.23 dBm -33.93 dBm 21.94 dBm -60.09 dBm Range Up 769.000 MHz 775.000 MHz 788.000 MHz 799.000 MHz 805.000 MHz Frequency
765.47802 MHz
774.67333 MHz
787.99351 MHz
788.62088 MHz
804.70330 MHz Range Low 758.000 MHz 769.000 MHz 775.000 MHz 788.000 MHz 799.000 MHz RBW 100.000 kHz 6.250 kHz 100.000 kHz 100.000 kHz 6.250 kHz -49.45 dBm -60.18 dBm -47.96 dBm 21.80 dBm -59.51 dBm ΔLimit
-36.45 dB
-25.18 dB
-34.96 dB
-8.20 dB
-24.51 dB 768.91758 MHz 773.55844 MHz 787.99351 MHz 797.42308 MHz 803.49850 MHz ∆Limit 758 000 MHz Range Up 769.000 MHz 775.000 MHz 775.000 MHz 788.000 MHz 799.000 MHz 805.000 MHz ate: 25.MAY.2020 03:43:03 Date: 25.MAY.2020 03:44:43 Band Edge / Full RB Spectrum Ref Level 30.00 dBm Offset 11.10 dB Mode Auto Sweep SGL Count 100/100 Limit Check PASS 20 dbine SPURIOUS LINE ABS PASS 10 dBm-0 dBm--10 dBm-LINE_ABS -20 dBm--30 dBm -40 dBm-50 d8m -60 dBm-Start 758.0 MHz 5005 pts Stop 805.0 MHz Spurious Emissions Range Low 758.000 MHz Range Up 769.000 MHz RBW 100.000 kHz Frequency 768.92857 MHz Power Abs -49.44 dBm -36.44 dB 769.000 MHz 775.000 MHz 6.250 kHz 772.19181 MHz -60.26 dBm -25.26 dB 775.000 MHz 788.000 MHz 100.000 kHz 787.99351 MHz -29.47 dBm -16.47 dB 788.000 MHz 799.000 MHz 805.000 MHz 100.000 kHz 790.43407 MHz 4.33 dBm -44.42 dBm -25.67 dB 799.15884 MHz -9.42 dB 799,000 MHz 6.250 kHz

Report No.: FG022521-02E

TEL: 886-3-327-3456 Page Number : A14-14 of 33

FAX: 886-3-328-4978

Date: 25.MAY.2020 03:38:06

LTE Band 14 / 10MHz / 16QAM Lowest Band Edge / 1 RB Highest Band Edge / 1 RB Spectrum Ref Level 30.00 dBm Offset 11.10 dB Mode Auto Sweep Offset 11.10 dB Mode Auto Sweep Ref Level 30.00 dBm SGL Count 100/100 1 AvgPwr SGL Count 100/100 ●1 AvgPw 20 d**bine** SPURIOUS_LINE_ABS PASS 20 dbine 10 dBm dBm Start 758.0 MHz Start 758.0 MHz Spurious Emission 5005 pts Stop 805.0 MHz purious Emissions Power Abs -49.47 dBm -59.90 dBm -32.27 dBm 21.05 dBm -59.83 dBm Range Up 769.000 MHz 775.000 MHz 788.000 MHz 799.000 MHz 805.000 MHz Frequency
764.55495 MHz
769.80619 MHz
787.99351 MHz
788.55495 MHz
799.82418 MHz Range Low 758.000 MHz 769.000 MHz 775.000 MHz 788.000 MHz 799.000 MHz RBW 100.000 kHz 6.250 kHz 100.000 kHz 100.000 kHz 6.250 kHz -49.39 dBm -60.14 dBm -49.04 dBm 21.03 dBm -59.36 dBm ΔLimit
-36.39 dB
-25.14 dB
-36.04 dB
-8.97 dB
-24.36 dB Frequency
760.84066 MHz
773.89411 MHz
787.96753 MHz
797.37912 MHz
803.41459 MHz ∆Limit 758 000 MHz Range Up 769.000 MHz 775.000 MHz 775.000 MHz 788.000 MHz 799.000 MHz 805.000 MHz ate: 25.MAY.2020 03:41:24 Date: 25.MAY.2020 03:46:22 Band Edge / Full RB Spectrum Ref Level 30.00 dBm Offset 11.10 dB Mode Auto Sweep SGL Count 100/100 Limit Check PASS 20 dbine SPURIOUS LINE ABS PASS 10 dBm-0 dBm -10 dBm-LINE_ABS -20 dBm--30 dBm -40 dBm--50 dBm -60 dBm-Start 758.0 MHz 5005 pts Stop 805.0 MHz Spurious Emissions Power Abs -49.45 dBm -60.31 dBm Range Low 758.000 MHz Range Up 769.000 MHz RBW 100.000 kHz Frequency 768.69780 MHz -36.45 dB 769.000 MHz 775.000 MHz 6.250 kHz 769.44056 MHz -25.31 dB 775.000 MHz 788.000 MHz 100.000 kHz 787.99351 MHz -31.40 dBm -18.40 dB 788.000 MHz 799.000 MHz 805.000 MHz 100.000 kHz 791.29121 MHz 802.02997 MHz 3.47 dBm -26.53 dB -9.33 dB 799,000 MHz 6.250 kHz -44.33 dBm

Report No.: FG022521-02E

TEL: 886-3-327-3456 Page Number : A14-15 of 33

FAX: 886-3-328-4978

Date: 25.MAY.2020 03:39:45

LTE Band 14 / 10MHz / 64QAM Lowest Band Edge / 1 RB Highest Band Edge / 1 RB Spectrum Ref Level 30.00 dBm Offset 11.10 dB Mode Auto Sweep Offset 11.10 dB Mode Auto Sweep Ref Level 30.00 dBm SGL Count 100/100 1 AvgPwr SGL Count 100/100 ●1 AvgPw 20 d**bine** SPURIOUS_LINE_ABS PASS 20 dbine 10 dBm dBm Start 758.0 MHz Start 758.0 MHz Spurious Emission 5005 pts Stop 805.0 MHz purious Emissions Power Abs -49.47 dBm -60.15 dBm -35.97 dBm 19.99 dBm -60.08 dBm Range Up 769.000 MHz 775.000 MHz 788.000 MHz 799.000 MHz 805.000 MHz Frequency
766.24725 MHz
771.31069 MHz
787.99351 MHz
788.55495 MHz
803.63636 MHz RBW 100.000 kHz 6.250 kHz 100.000 kHz 100.000 kHz 6.250 kHz Power Abs
-49.46 dBm
-60.22 dBm
-49.37 dBm
19.91 dBm
-59.65 dBm ΔLimit
-36.46 dB
-25.22 dB
-36.37 dB
-10.09 dB
-24.65 dB 761.06044 MHz 774.73327 MHz 787.38312 MHz 797.37912 MHz 799.15285 MHz ∆Limit 758 000 MHz Range Low 758.000 MHz Range Up 769.000 MHz 758.000 MHz 769.000 MHz 775.000 MHz 788.000 MHz 799.000 MHz 775.000 MHz 775.000 MHz 788.000 MHz 799.000 MHz 805.000 MHz ate: 25.MAY.2020 03:51:22 Date: 25.MAY.2020 03:53:01 Band Edge / Full RB Spectrum Ref Level 30.00 dBm Offset 11.10 dB Mode Auto Sweep SGL Count 100/100 Limit Check PASS 20 dbine SPURIOUS LINE ABS PASS 10 dBm-0 dBm--10 dBm-LINE_ABS -20 dBm--30 dBm -40 dBm--50 dBm -60 dBm-Start 758.0 MHz 5005 pts Stop 805.0 MHz Spurious Emissions Range Low 758.000 MHz Range Up 769.000 MHz RBW 100.000 kHz Frequency 768.37912 MHz Power Abs -49.40 dBm -36.40 dB 769.000 MHz 775.000 MHz 6.250 kHz 774.68531 MHz -60.33 dBm -25.33 dB 775.000 MHz 788.000 MHz 100.000 kHz -33.00 dBm -20.00 dB 787.99351 MHz 788.000 MHz 799.000 MHz 805.000 MHz 100.000 kHz 790.17033 MHz 802.12587 MHz 2.49 dBm -45.50 dBm -27.51 dB -10.50 dB 799,000 MHz 6.250 kHz

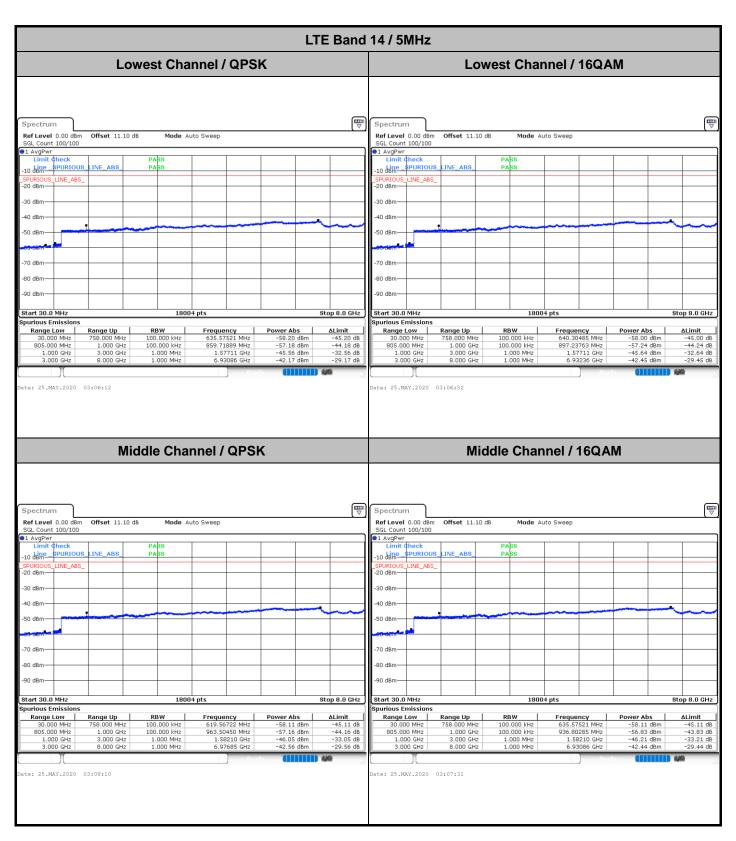
Report No.: FG022521-02E

TEL: 886-3-327-3456 Page Number : A14-16 of 33

FAX: 886-3-328-4978

Date: 25.MAY.2020 03:49:43

Conducted Spurious Emission



Report No.: FG022521-02E

TEL: 886-3-327-3456 Page Number : A14-17 of 33

LTE Band 14 / 5MHz **Highest Channel / QPSK Highest Channel / 16QAM** Spectrum Spectrum Offset 11.10 dB Offset 11.10 dB Mode Auto Sweep Ref Level 0.00 dBm Mode Auto Sweep Ref Level 0.00 dBm GL Count 100/100 SGL Count 100/100 1 AvgPwr ∍1 AvgPwr SPURIOUS -10 dem 10 deme 80 dBm -80 dBm 90 dBm Start 30.0 MHz Stop 8.0 GHz Start 30.0 MHz 18004 pts Stop 8.0 GHz Range Low Spurious Emissions -58.22 dBm -57.01 dBm -44.64 dBm -42.33 dBm -58.19 dBm -57.12 dBm -45.24 dBm -42.49 dBm RBW 100.000 kHz 100.000 kHz Frequency 635.21139 MHz 982.79985 MHz ΔLimit -45.22 dB -44.01 dB 30.000 MHz 805.000 MHz RBW 100.000 kHz 100.000 kHz Frequency 614.47376 MHz 958.43703 MHz **∆Limit** -45.19 dB -44.12 dB Range Up Range Up 758.000 MHz 805.000 MHz 1.000 GHz 1.000 GHz 1.000 MHz 1.000 MHz 1.000 GHz 3.000 GHz 3.000 GHz 8.000 GHz 1.58710 GHz 6.91586 GHz -31.64 dB -29.33 dB 1.000 GHz 3.000 GHz 3.000 GHz 8.000 GHz 1.000 MHz 1.000 MHz -32.24 dB -29.49 dB ate: 25.MAY.2020 03:25:11 Date: 25.MAY.2020 03:25:51 LTE Band 14 / 10MHz Middle Channel / QPSK Middle Channel / 16QAM Spectrum Spectrum Ref Level 0.00 dBm Offset 11.10 dB Mode Auto Sweep Ref Level 0.00 dBm Offset 11.10 dB Mode Auto Sweep GL Count 100/100 SGL Count 100/100 ●1 AvgPwr Limit d -10 dBm SPURIOUS LINE_ABS SPURIOUS 10 deme INE_ABS_ -20 dBm 30 dBm -90 dBm Start 30.0 MHz Spurious Emissio Start 30.0 MHz 18004 pts Stop 8.0 GHz 18004 pts Stop 8.0 GHz Range Up 758.000 MHz 1.000 GHz 3.000 GHz 8.000 GHz RBW 100.000 kHz 100.000 kHz 1.000 MHz 1.000 MHz 45.03 dB -43.94 dB -32.57 dB -29.52 dB -58.03 dBm -56.94 dBm -45.57 dBm -42.52 dBm Range Up 758.000 MHz 1.000 GHz 3.000 GHz 8.000 GHz RBW 100.000 kHz 100.000 kHz 1.000 MHz 1.000 MHz Frequency 633.02849 MHz 981.92279 MHz 1.57761 GHz 6.92486 GHz -58.10 dBm -56.98 dBm -45.51 dBm -42.52 dBm Frequency 633.75612 MHz 944.01424 MHz Range Low 30.000 MHz 805.000 MHz ΔLimit Range Low ate: 25.MAY.2020 03:47:40 Date: 25.MAY.2020 03:47:01

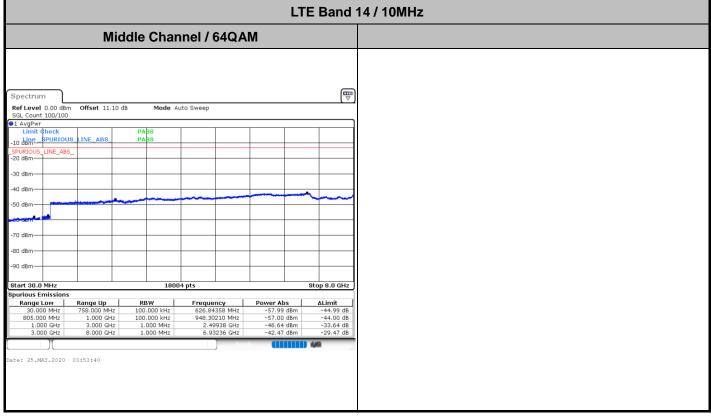
Report No.: FG022521-02E

TEL: 886-3-327-3456 Page Number : A14-18 of 33

LTE Band 14 / 5MHz Lowest Channel / 64QAM Middle Channel / 64QAM Spectrum Spectrum Ref Level 0.00 dBm Offset 11.10 dB Mode Auto Sweep Offset 11.10 dB Mode Auto Sweep Ref Level 0.00 dBm SGL Count 100/100 SGL Count 100/100 1 AvgPwr ∍1 AvgPwr 10 dBm SPURIOUS -10 dine -80 dBm -80 dBm 90 dBm Start 30.0 MHz Stop 8.0 GHz Start 30.0 MHz 18004 pts Stop 8.0 GHz Spurious Emissions Range Up RBW 100.000 kHz 100.000 kHz 1.000 MHz 1.000 MHz Frequency 622.47776 MHz 948.10720 MHz 2.51337 GHz 6.92336 GHz -58.26 dBm -57.02 dBm -46.68 dBm -42.29 dBm -45.26 dB -44.02 dB -33.68 dB -29.29 dB Range Up 758.000 MHz 1.000 GHz 3.000 GHz 8.000 GHz Frequency 750.17791 MHz 950.54348 MHz 2.50887 GHz 6.94986 GHz -58.02 dBm -57.16 dBm -46.51 dBm -42.49 dBm -45.02 dB -44.16 dB -33.51 dB -29.49 dB 30.000 MHz 805.000 MHz RBW 100.000 kHz 100.000 kHz Range Low 30.000 MHz 805.000 MHz 1.000 GHz 1.000 GHz 3.000 GHz 3.000 GHz 8.000 GHz 1.000 GHz 3.000 GHz 1.000 MHz 1.000 MHz ate: 25.MAY.2020 03:30:15 Date: 25.MAY.2020 03:30:54 **Highest Channel / 64QAM** Spectrum Ref Level 0.00 dBm Offset 11.10 dB Mode Auto Sweep SGL Count 100/100 1 AvgPwr Limit ¢heck 50 dBm 70 dBm 80 dBm rious Emissions Range Low 30.000 MHz 805.000 MHz 1.000 GHz 3.000 GHz RBW 100.000 kHz 100.000 kHz 1.000 MHz 1.000 MHz 8.000 MHz 1.000 GHz 3.000 GHz 8.000 GHz ate: 25.MAY.2020 03:35:40

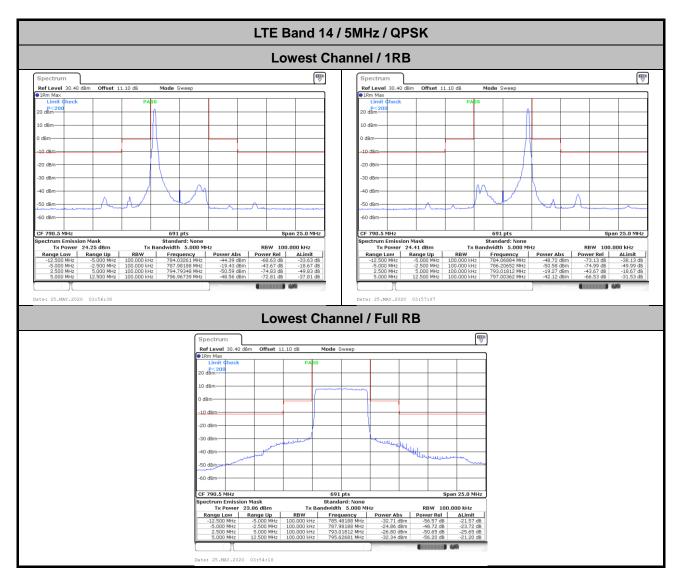
Report No.: FG022521-02E

TEL: 886-3-327-3456 Page Number : A14-19 of 33

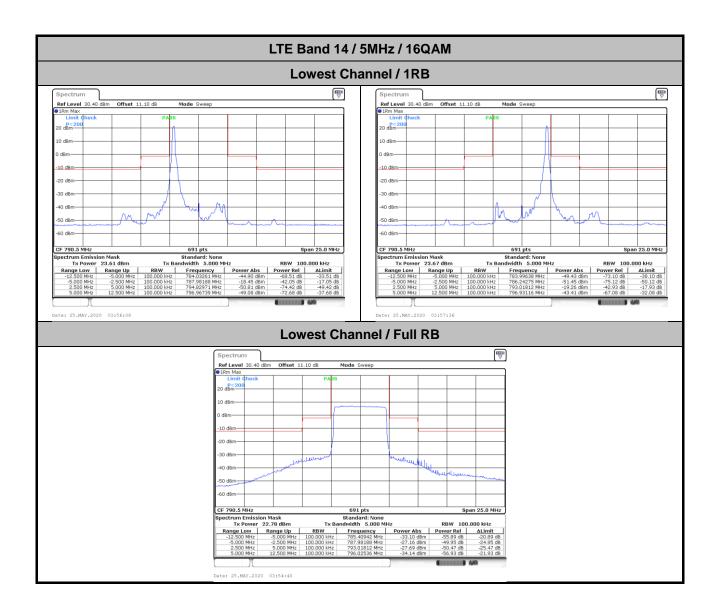


TEL: 886-3-327-3456 Page Number : A14-20 of 33

Mask

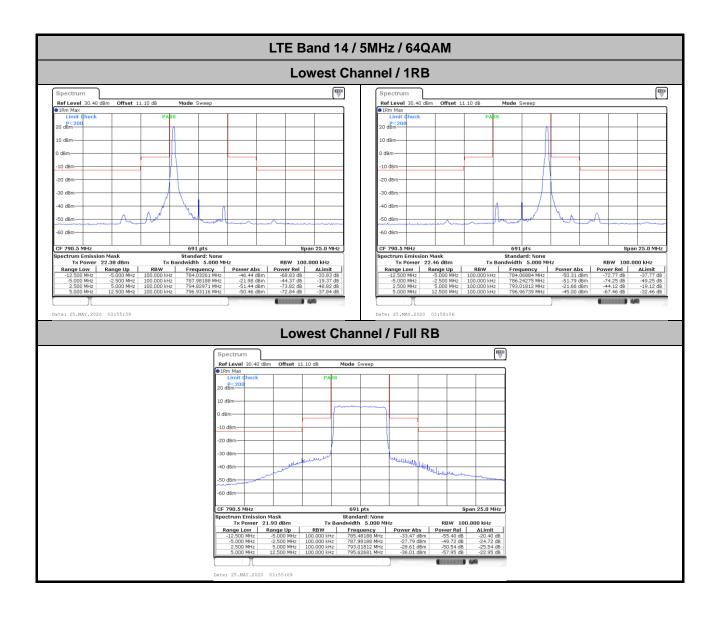


TEL: 886-3-327-3456 Page Number: A14-21 of 33

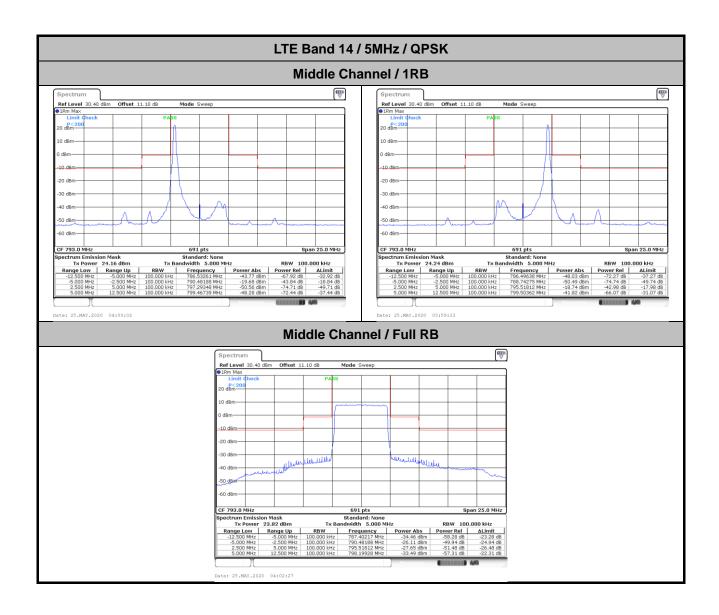


TEL: 886-3-327-3456 Page Number : A14-22 of 33



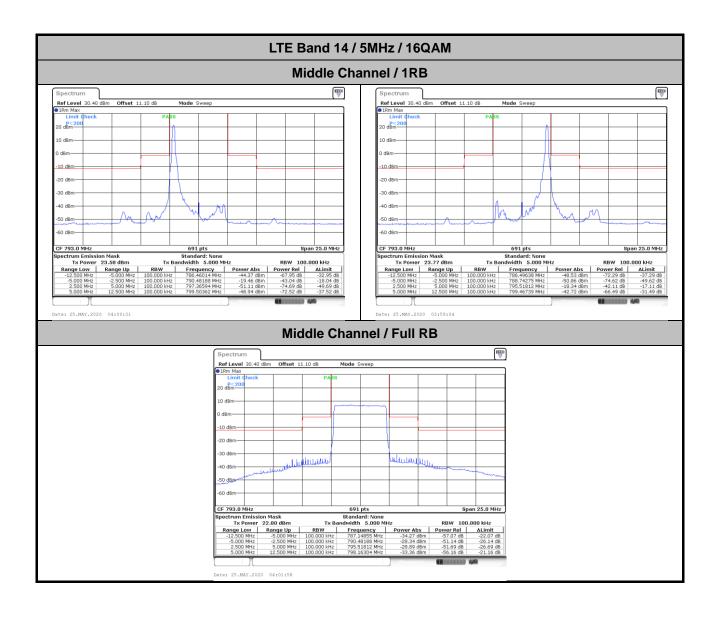


TEL: 886-3-327-3456 Page Number : A14-23 of 33

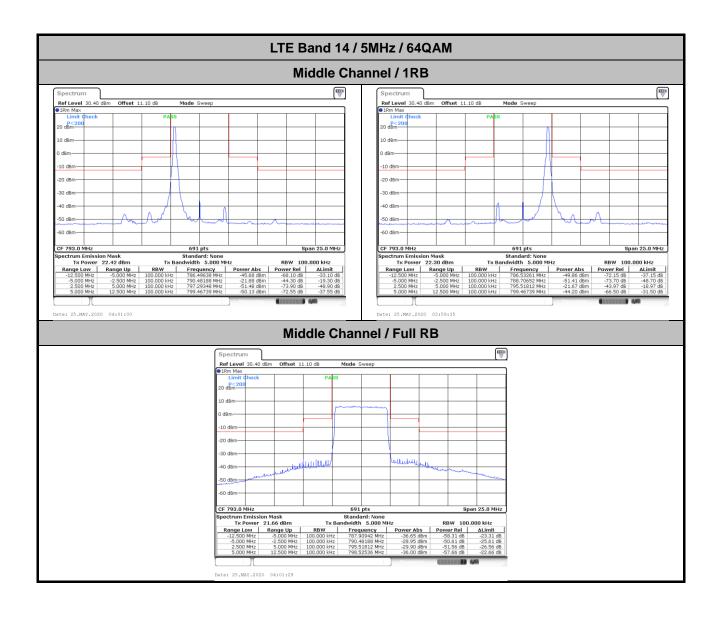


TEL: 886-3-327-3456 Page Number: A14-24 of 33

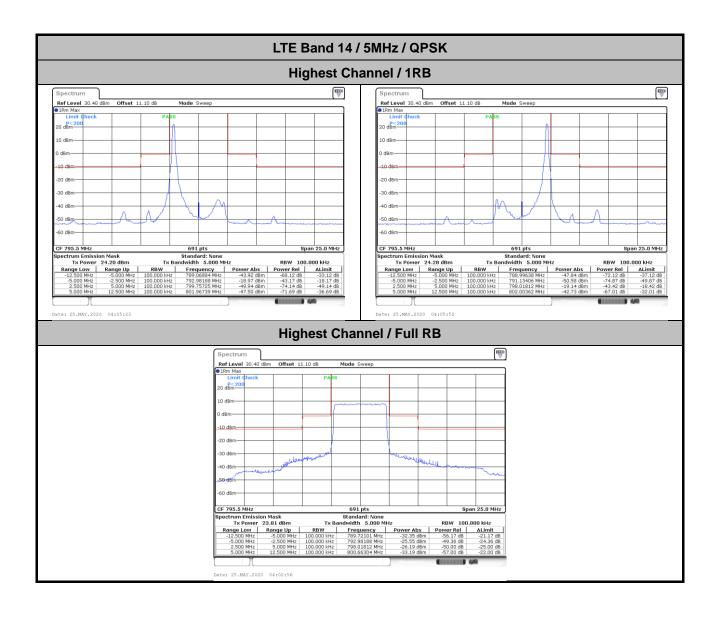




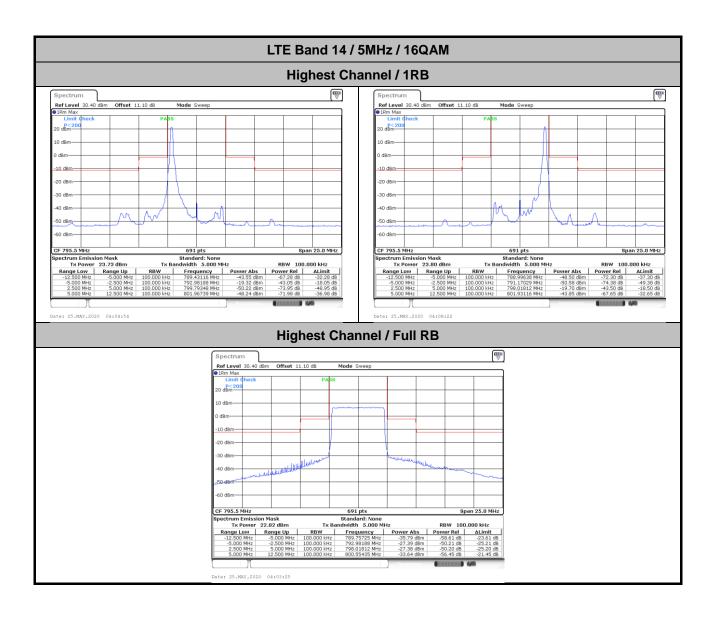
TEL: 886-3-327-3456 Page Number : A14-25 of 33



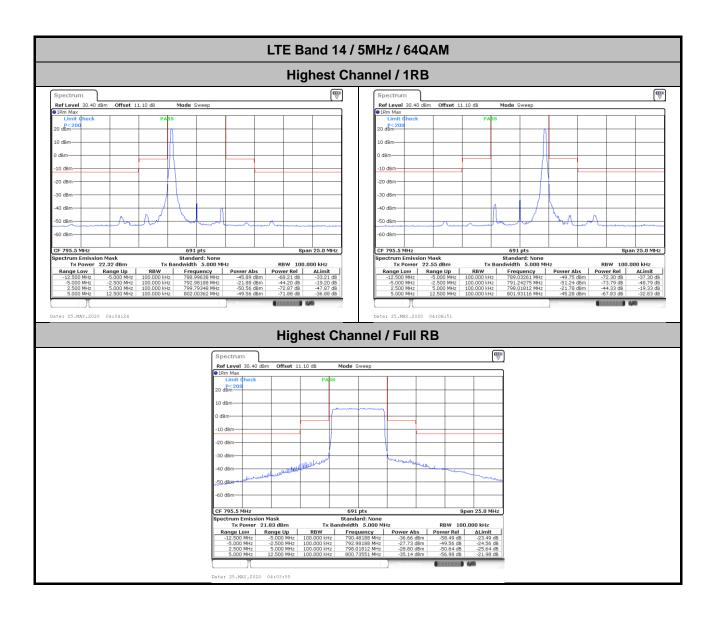
TEL: 886-3-327-3456 Page Number : A14-26 of 33



TEL: 886-3-327-3456 Page Number : A14-27 of 33

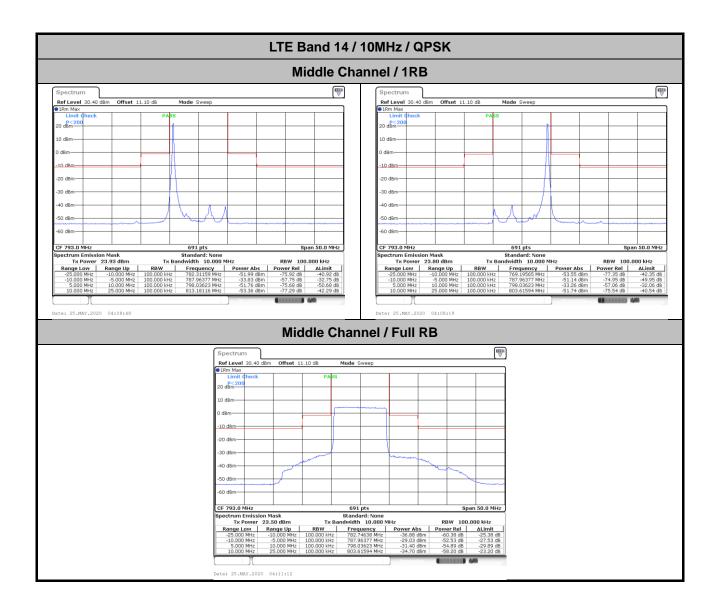


TEL: 886-3-327-3456 Page Number : A14-28 of 33

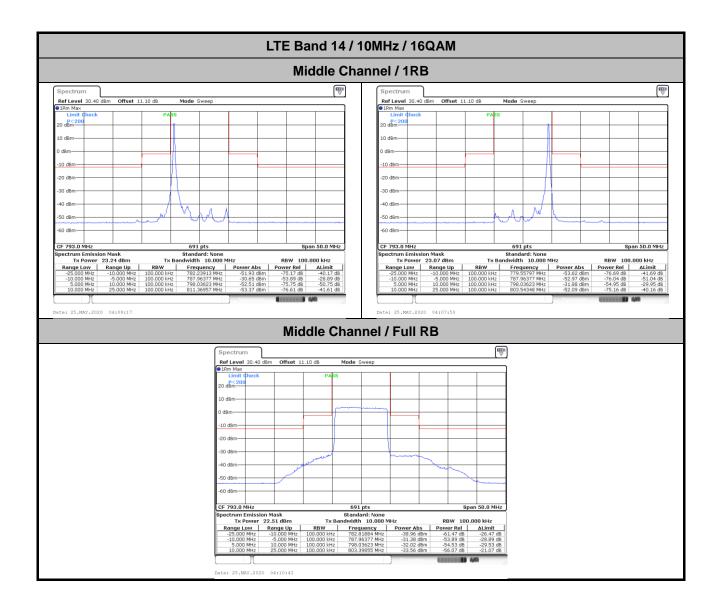


TEL: 886-3-327-3456 Page Number : A14-29 of 33

SPORTON LAB. FCC RADIO TEST REPORT Report No.: FG022521-02E

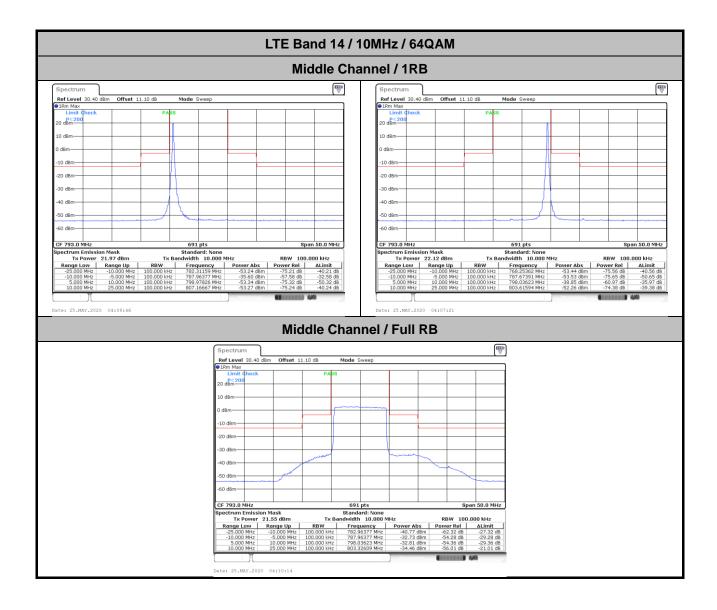


TEL: 886-3-327-3456 Page Number : A14-30 of 33



TEL: 886-3-327-3456 Page Number : A14-31 of 33

FCC RADIO TEST REPORT Report No. : FG022521-02E



TEL: 886-3-327-3456 Page Number : A14-32 of 33

Frequency Stability

Test (Conditions	LTE Band 14 (QPSK) / Middle Channel	Limit
Tamanatama	Valtana	BW 10MHz	Note 2.
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result
50	Normal Voltage	0.0053	
40	Normal Voltage	0.0058	
30	Normal Voltage	0.0052	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0053	
0	Normal Voltage	0.0014	
-10	Normal Voltage	0.0024	PASS
-20	Normal Voltage	0.0018	
-30	Normal Voltage	0.0035	
20	Maximum Voltage	0.0090	
20	Normal Voltage	0.0053	
20	Battery End Point	0.0010	

Report No.: FG022521-02E

Note:

- 1. Normal Voltage =3.87 V.; Battery End Point (BEP) =3.6 V.; Maximum Voltage =4.45 V.
- 2. The frequency fundamental emissions stay within the authorized frequency block.

TEL: 886-3-327-3456 Page Number : A14-33 of 33

Appendix B. Test Results of ERP and Radiated Test

ERP

<Primary Antenna>

Ci iiiiaiy Aii	LTE Band 14 / 5MHz (Average) (GT - LC = -3.9 dB)											
Olympia al	B41 -	R	B	Cond	ucted	ERP						
Channel	Mode	Size	Offset	EIRP(dBm)	EIRP(W)	ERP(dBm)	ERP(W)					
Lowest		1	12	24.49	0.2812	18.44	0.0698					
Middle	QPSK	1	12	24.50	0.2818	18.45	0.0700					
Highest		1	12	24.44	0.2780	18.39	0.0690					
Lowest		1	12	23.82	0.2410	17.77	0.0598					
Middle	16QAM	1	12	23.80	0.2399	17.75	0.0596					
Highest		1	12	23.77	0.2382	17.72	0.0592					
Lowest		1	0	22.75	0.1884	16.70	0.0468					
Middle	64QAM	1	0	22.62	0.1828	16.57	0.0454					
Highest		1	0	22.31	0.1702	16.26	0.0423					
Limit	ERP <	3W		Res	sult	PASS						

	LTE Band 14 / 10MHz (Average) (GT - LC = -3.9 dB)												
Channel	Mode	R	В	Cond	ucted	ERP							
Chainlei	Wode	Size	Offset	EIRP(dBm)	EIRP(W)	ERP(dBm)	ERP(W)						
Lowest		-	-	-	-	-	-						
Middle	QPSK	1	25	24.53	0.2838	18.48	0.0705						
Highest		-	-	-	ı	1	-						
Lowest		-	-	-	ı	1	-						
Middle	16QAM	1	0	23.82	0.2410	17.77	0.0598						
Highest		-	-	-	ı	1	-						
Lowest		-	-	-	-	-	-						
Middle	64QAM	1	0	22.73	0.1875	16.68	0.0466						
Highest		-	-	-	-	-	-						
Limit	ERP <	3W		Re	sult	PASS							

<ASDIV Antenna>

	LTE Band 14 / 5MHz (Average) (GT - LC = -5.4 dB)												
Channel	Mode	R	В	Cond	ucted	ERP							
Chainei	Wode	Size	Offset	EIRP(dBm)	EIRP(W)	ERP(dBm)	ERP(W)						
Lowest		1	12	24.64	0.2911	17.09	0.0512						
Middle	QPSK	1	12	24.67	0.2931	17.12	0.0515						
Highest		1	12	24.63	0.2904	17.08	0.0511						
Lowest		1	12	23.92	0.2466	16.37	0.0434						
Middle	16QAM	1	12	23.94	0.2477	16.39	0.0436						
Highest		1	12	23.92	0.2466	16.37	0.0434						
Lowest		1	12	22.85	0.1928	15.30	0.0339						
Middle	64QAM	1	12	22.75	0.1884	15.20	0.0331						
Highest		1	12	22.87	0.1936	15.32	0.0340						
Limit	ERP <	3W		Re	sult	PASS							

Report No. : FG022521-02E

	LTE Band 14 / 10MHz (Average) (GT - LC = -5.4 dB)												
Channel	Mode	F	RB	Cond	ucted	ERP							
Chaine	Wode	Size	Offset	EIRP(dBm)	EIRP(W)	ERP(dBm)	ERP(W)						
Lowest		-	-	-	-	-	•						
Middle	QPSK	1	0	24.68	0.2938	17.13	0.0516						
Highest		-	-	-	-	-	•						
Lowest		-	-	-	-	-	-						
Middle	16QAM	1	0	23.95	0.2483	16.40	0.0437						
Highest		-	-	-	-	-	-						
Lowest		-	-	-	-	-	-						
Middle	64QAM	1	0	22.85	0.1928	15.30	0.0339						
Highest		-	-	-	-	-	-						
Limit	ERP <	3W		Res	sult	PASS							

Radiated Spurious Emission

<Primary Antenna> <Ant. 0>

LTE Band 14

Report No.: FG022521-02E

			L	TE Band 14	/ 5MHz / QP	SK			
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
	1580	-58.56	-42.15	-16.41	-71.6	-63.72	1.20	8.50	Н
	2368	-53.40	-13	-40.40	-70.64	-60.23	1.42	10.39	Н
	3160	-56.63	-13	-43.63	-75.62	-64.27	1.59	11.38	Н
									Н
									Н
									Н
Lowest									Н
Lowest	1580	-57.40	-42.15	-15.25	-70.25	-62.56	1.20	8.50	V
	2368	-55.81	-13	-42.81	-73.59	-62.64	1.42	10.39	V
	3160	-56.80	-13	-43.80	-75.99	-64.44	1.59	11.38	V
									V
									V
									V
									V
	1584	-58.70	-42.15	-16.55	-71.75	-63.87	1.20	8.52	Н
	2376	-54.11	-13	-41.11	-71.29	-60.94	1.42	10.40	Н
	3176	-56.89	-13	-43.89	-75.97	-64.56	1.60	11.43	Н
									Н
Middle									Н
Middle									Н
									Н
	1584	-57.35	-42.15	-15.20	-70.21	-62.52	1.20	8.52	V
	2376	-54.80	-13	-41.80	-72.52	-61.63	1.42	10.40	V
	3172	-56.67	-13	-43.67	-75.92	-64.33	1.60	11.42	V

TEL: 886-3-327-3456 Page Number : B2-1 of 6

			L	TE Band 14	/ 5MHz / QP	SK			
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
	1592	-56.52	-42.15	-14.37	-69.5	-61.71	1.20	8.55	Н
	2384	-54.40	-13	-41.40	-71.51	-61.24	1.42	10.41	Н
	3184	-57.05	-13	-44.05	-76.17	-64.74	1.61	11.45	Н
									Н
									Н
									Н
Lighoot									Н
Highest	1592	-56.46	-42.15	-14.31	-69.26	-61.65	1.20	8.55	V
	2384	-54.81	-13	-41.81	-72.47	-61.65	1.42	10.41	V
	3184	-56.90	-13	-43.90	-76.17	-64.59	1.61	11.45	V
									V
									V
									V
									V

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

TEL: 886-3-327-3456 Page Number : B2-2 of 6

			Ľ	TE Band 14	/ 10MHz / QF	PSK			
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
	1584	-58.54	-42.15	-16.39	-71.59	-63.71	1.20	8.52	Н
	2376	-52.98	-13	-39.98	-70.16	-59.81	1.42	10.40	Н
	3172	-56.86	-13	-43.86	-75.92	-64.52	1.60	11.42	Н
									Н
									Н
									Н
NA: al all a									Н
Middle	1584	-57.62	-42.15	-15.47	-70.48	-62.79	1.20	8.52	V
	2376	-54.45	-13	-41.45	-72.17	-61.28	1.42	10.40	V
	3172	-56.74	-13	-43.74	-75.98	-64.40	1.60	11.42	V
									V
									V
									V
									V

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

TEL: 886-3-327-3456 Page Number: B2-3 of 6

<ASDIV Antenna> <Ant. 1>

LTE Band 14

Report No. : FG022521-02E

			L	TE Band 14	/ 5MHz / QP	SK			
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
	1581	-58.68	-42.15	-16.53	-71.75	-63.84	1.20	8.51	Н
	2371	-54.33	-13	-41.33	-71.55	-61.16	1.42	10.40	Н
	3162	-56.26	-13	-43.26	-75.26	-63.90	1.59	11.39	Н
									Н
									Н
									Н
Lowest									Н
Lowest	1581	-58.76	-42.15	-16.61	-71.64	-63.92	1.20	8.51	V
	2371	-56.60	-13	-43.60	-74.36	-63.43	1.42	10.40	V
	3162	-56.08	-13	-43.08	-75.28	-63.72	1.59	11.39	V
									V
									V
									V
									V
	1584	-57.93	-42.15	-15.78	-70.96	-63.10	1.20	8.52	Н
	2376	-56.52	-13	-43.52	-73.67	-63.35	1.42	10.40	Н
	3176	-56.56	-13	-43.56	-75.62	-64.23	1.60	11.43	Н
									Н
									Н
									Н
Middle									Н
	1584	-58.15	-42.15	-16.00	-70.99	-63.32	1.20	8.52	V
	2376	-57.03	-13	-44.03	-74.72	-63.86	1.42	10.40	V
	3172	-56.59	-13	-43.59	-75.83	-64.25	1.60	11.42	V
									V
									V
									V

TEL: 886-3-327-3456 Page Number : B2-4 of 6

			L	TE Band 14	/ 5MHz / QP	SK			
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
	1591	-57.66	-42.15	-15.51	-70.64	-62.85	1.20	8.55	Н
	2386	-55.59	-13	-42.59	-72.69	-62.43	1.42	10.41	Н
	3182	-56.60	-13	-43.60	-75.71	-64.29	1.61	11.45	Н
									Н
									Н
									Н
l liabaat									Н
Highest	1591	-59.48	-42.15	-17.33	-72.28	-64.67	1.20	8.55	V
	2386	-57.14	-13	-44.14	-74.79	-63.98	1.42	10.41	V
	3182	-56.45	-13	-43.45	-75.72	-64.14	1.61	11.45	V
									V
									V
									V
									V

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

TEL: 886-3-327-3456 Page Number : B2-5 of 6

			Ľ	TE Band 14	/ 10MHz / QF	PSK			
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
	1577	-58.06	-42.15	-15.91	-71.19	-63.20	1.20	8.49	Н
	2365	-52.68	-13	-39.68	-69.94	-59.50	1.42	10.39	Н
	3154	-56.69	-13	-43.69	-75.67	-64.32	1.59	11.36	Н
									Н
									Н
									Н
Middle									Н
ivildale	1577	-57.73	-42.15	-15.58	-70.66	-62.87	1.20	8.49	V
	2365	-55.33	-13	-42.33	-73.13	-62.15	1.42	10.39	V
	3154	-56.35	-13	-43.35	-75.54	-63.98	1.59	11.36	V
									V
									V
									V
									V

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



TEL: 886-3-327-3456 Page Number : B2-6 of 6