FCC RADIO TEST REPORT

FCC ID : PY7-12644I

Equipment : GSM/WCDMA/LTE Phone with BT, DTS/UNII

a/b/g/n/ac/ax, GPS, and NFC

Brand Name : Sony

Applicant : Sony Mobile Communications Inc.

4-12-3 Higashi-Shinagawa, Shinagawa-ku,

Report No.: FG042243-01B

Tokyo, 140-0002, Japan

Manufacturer : Sony Mobile Communications Inc.

4-12-3 Higashi-Shinagawa, Shinagawa-ku,

Tokyo, 140-0002, Japan

Standard : FCC 47 CFR Part 2, 22(H), 27

The product was received on Jul. 20, 2020 and testing was started from Aug. 20, 2020 and completed on Aug. 25, 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.

Louis Wu

Approved by: 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 27
FAX: 886-3-328-4978 Issued Date : Sep. 24, 2020



Table of Contents

His	story o	of this test report	3
Su	mmar	y of Test Result	4
1	Gene	eral Description	ε
	1.1	Product Feature of Equipment Under Test	6
	1.2	Modification of EUT	6
	1.3	Emission Designator	7
	1.4	Testing Location	8
	1.5	Applicable Standards	9
2	Test	Configuration of Equipment Under Test	10
	2.1	Test Mode	10
	2.2	Connection Diagram of Test System	11
	2.3	Support Unit used in test configuration and system	11
	2.4	Measurement Results Explanation Example	12
	2.5	Frequency List of Low/Middle/High Channels	13
3	Conc	ducted Test Items	14
	3.1	Measuring Instruments	
	3.2	Conducted Output Power and ERP/EIRP	15
	3.3	Peak-to-Average Ratio	16
	3.4	Occupied Bandwidth	17
	3.5	Conducted Band Edge	18
	3.6	Conducted Spurious Emission	20
	3.7	Frequency Stability	21
4	Radia	ated Test Items	22
	4.1	Measuring Instruments	22
	4.2	Radiated Spurious Emission Measurement	
5	List	of Measuring Equipment	25
6	Unce	ertainty of Evaluation	27
Аp	pendi	x A. Test Results of Conducted Test	
Δn	nandi	v R. Tast Results of ERP/FIRP and Radiated Tast	

TEL: 886-3-327-3456 FAX: 886-3-328-4978

Report Template No.: BU5-FGLTE Version 2.4

Page Number : 2 of 27

Issued Date : Sep. 24, 2020

Report Version : 02

History of this test report

Report No. : FG042243-01B

Report No.	Version	Description	Issued Date
FG042243-01B	01	Initial issue of report	Sep. 01, 2020
FG042243-01B	02	Revise list of measuring equipment	Sep. 24, 2020

TEL: 886-3-327-3456 Page Number : 3 of 27
FAX: 886-3-328-4978 Issued Date : Sep. 24, 2020

Summary of Test Result

Report No. : FG042243-01B

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
	§2.1046	Conducted Output Power	Reporting only	
	§22.913 (a)(2)	Effective Radiated Power (Band 5) (Band 26)		
3.2	§27.50 (b)(10)	Effective Radiated Power (Band 13) (Band 17)	Pass	-
	§27.50 (h)(2)	Equivalent Isotropic Radiated Power (Band 7) (Band 38) (Band 41)	Fa55	
	§27.50 (d)(4)	Equivalent Isotropic Radiated Power (Band 4)		
3.3	§24.232 (d) §27.50 (d)(5)	Peak-to-Average Ratio	Reporting only	-
3.4	§2.1049	Occupied Bandwidth	Reporting only	-
3.5	§2.1051 §22.917 (a) §27.53 (c)(2)(4)	Conducted Band Edge Measurement (Band 4) (Band 5) (Band 13) (Band 17) (Band 26)	Pass	-
	§2.1051 §27.53 (m)(4)	Conducted Band Edge Measurement (Band 7) (Band 38) (Band 41)		
3.6	§2.1051 §22.917 (a) §27.53 (c)(2)	Conducted Spurious Emission (Band 4) (Band 5) (Band 13) (Band 17) (Band 26)	Pass	-
	§2.1051 §27.53 (m)(4)	Conducted Spurious Emission (Band 7) (Band 38) (Band 41)		
3.7	§2.1055 §22.355 §27.54	Frequency Stability Temperature & Voltage	Pass	-

TEL: 886-3-327-3456 Page Number : 4 of 27
FAX: 886-3-328-4978 Issued Date : Sep. 24, 2020

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
4.2	§2.1053 §22.917 (a) §27.53 (c)(2) §27.53 (f)	Radiated Spurious Emission (Band 4) (Band 5) (Band 13) (Band 17) (Band 26)	Pass	Under limit 11.25 dB at
-	§2.1051 §27.53 (m)(4)	Radiated Spurious Emission (Band 7) (Band 38) (Band 41)		1560.000 MHz

Report No.: FG042243-01B

Remark: The FCC ID: PY7-12644I and FCC ID: PY7-23855M are HW identical, the difference is only SW, and each supported bands are handled by only SW. Only LTE Band 5, 7, and 13 are added in this report.

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: Cindy Liu

TEL: 886-3-327-3456 Page Number : 5 of 27
FAX: 886-3-328-4978 Issued Date : Sep. 24, 2020

1 General Description

1.1 Product Feature of Equipment Under Test

GSM/WCDMA/LTE, Bluetooth, DTS/UNII a/b/g/n/ac/ax, FM Receiver, NFC and GNSS.

Product Specification subjective to this standard								
Antenna Type		Loop Antenna						

Report No.: FG042243-01B

	EUT	Information List	
HW Version	SW Version	S/N	Performed Test Item
		QV7100D23Z	Conducted Measurement
Α	9.60	QV7100DA3Z	Radiated Spurious Emission
		QV71007J3Z	ERP/EIRP Test

	Accessory List							
AC Adamtar	Model Name : UCH32							
AC Adapter	S/N: 6218W30200215							
Familian a	Model Name : STH40D							
Earphone	S/N: N/A							
HOD Oakla	Model Name.: UCB24							
USB Cable	S/N: N/A							

Note:

- 1. Above EUT list used are electrically identical per declared by manufacturer.
- 2. Above the accessories list are used to exercise the EUT during test, and the serial number of each type of accessories is listed in each section of this report.
- 3. For other wireless features of this EUT, test report will be issued separately.

1.2 Modification of EUT

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

TEL: 886-3-327-3456 Page Number : 6 of 27
FAX: 886-3-328-4978 Issued Date : Sep. 24, 2020

1.3 Emission Designator

L	TE Band 5		QPSK			16QAM			64QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)	
1.4	824.7 ~ 848.3	1M09G7D	-	0.0281	1M09W7D	-	0.0243	1M09W7D	-	0.0189	
3	825.5 ~ 847.5	2M72G7D	-	0.0279	2M72W7D	-	0.0245	2M73W7D	-	0.0192	
5	826.5 ~ 846.5	4M52G7D	-	0.0281	4M49W7D	-	0.0243	4M51W7D	-	0.0191	
10	829.0 ~ 844.0	9M03G7D	0.0149	0.0281	8M99W7D	-	0.0244	9M05W7D	1	0.0187	
L	TE Band 7		QPSK			16QAM			64QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	
5	2502.5 ~ 2567.5	4M52G7D	-	0.0244	4M51W7D	-	0.0235	4M52W7D	-	0.0230	
10	2505.0 ~ 2565.0	9M01G7D	0.0068	0.0226	9M03W7D	-	0.0234	9M05W7D	-	0.0232	
15	2507.5 ~ 2562.5	13M5G7D	-	0.0228	13M5W7D	-	0.0237	13M4W7D	-	0.0232	
20	2510.0 ~ 2560.0	18M0G7D	-	0.0226	17M9W7D	-	0.0237	17M9W7D	-	0.0233	
Ľ	TE Band 13		QPSK			16QAM		64QAM			
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	
5	779.5 ~ 784.5	4M51G7D	-	0.0391	4M49W7D	-	0.0318	4M49W7D	-	0.0248	
10	782.0	8M99G7D	0.0152	0.0391	9M01W7D	-	0.0318	8M97W7D	-	0.0251	

Report No. : FG042243-01B

TEL: 886-3-327-3456 Page Number : 7 of 27
FAX: 886-3-328-4978 Issued Date : Sep. 24, 2020

1.4 Testing Location

Test Site	SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City, 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	Sherry Wu
Temperature	23~25℃
Relative Humidity	53~55%

Report No. : FG042243-01B

Test Site	SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	Sporton Site No.
rest site No.	03CH15-HY
Test Engineer	Leo Lee, Mancy Chou and Bigshow Wang
Temperature	23.2~24.9℃
Relative Humidity	44~52%

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

FCC Designation No.: TW1190 and TW0007

TEL: 886-3-327-3456 Page Number : 8 of 27
FAX: 886-3-328-4978 Issued Date : Sep. 24, 2020

1.5 Applicable Standards

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

Report No.: FG042243-01B

- ANSI C63.26-2015
- ANSI / TIA-603-E
- FCC 47 CFR Part 2, 22(H), 27
- FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01
- FCC KDB 414788 D01 Radiated Test Site v01r01.

Remark:

- 1. All 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 : 9 of 27
FAX: 886-3-328-4978 Issued Date : Sep. 24, 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.: FG042243-01B

For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X Plane with Accessory for Band 7 and Z Plane with Accessory for Band 5, 13) were recorded in this report.

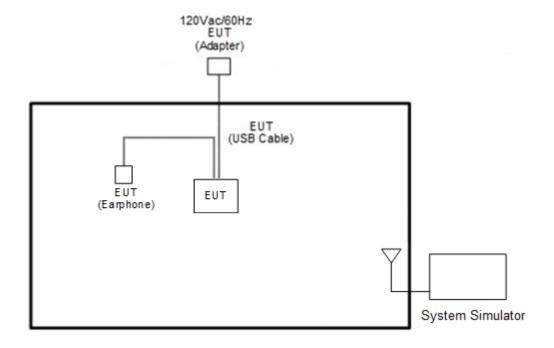
			В	andwid	lth (MH	z)		N	lodulatio	n					nnel	
Test Items	Band	1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	М	Н
	5	v	v	v	v	-	-	v	v	v	٧	v	v	v	v	v
Conducted Band Edge	7	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v
2.9	13	-	•	v	v	-	•	v	v	v	٧	v	٧	٧	٧	v
	5				v	-	-	v	v	v	٧		v	v	v	٧
Peak-to-Av erage Ratio	7	-	•				v	v	v	v	٧		v	٧	v	٧
3	13	•	•		٧	•	•	v	v	v	>		>	>	>	>
26dB and	5	v	v	v	v	-	-	v	v	v			v	v	v	v
99%	7	-	-	v	v	v	v	v	v	v			v	v	v	v
Bandwidth	13	-	-	v	v	-	-	v	v	v			v	v	v	٧
	5	٧	٧	v	٧	•	•	v	v	v	٧		٧	٧		v
Conducted Band Edge	7	-	•	v	v	v	v	v	v	v	٧		v	٧		v
	13	-	•	v	v	-	-	v	v	v	٧		v	٧		v
Conducted	5	v	٧	v	v	-	-	v	v	v	>			٧	v	v
Spurious	7	-	•	v	v	v	v	v	v	v	>			٧	v	٧
Emission	13	•	•	٧	v	•	•	v	v	v	٧			v	v	>
	5				v	•	•	v					٧		٧	
Frequency Stability	7	-	•		v			v					v		v	
Stability	13	-	-		v	-	-	v					V		v	

TEL: 886-3-327-3456 Page Number : 10 of 27
FAX: 886-3-328-4978 Issued Date : Sep. 24, 2020

			Bandwidth (MHz)						Modulation				RB#			Test Channel		
Test Items	Band	1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	М	Н		
	5	v	٧	٧	v	-	-	v	v	v	٧	٧		v	v	٧		
E.R.P / E.I.R.P	7	-	-	٧	v	٧	v	v	v	v	٧	v		v	٧	٧		
Linkii	13	-	-	٧	v	-	-	v	v	v	٧			v	v	v		
Radiated	5						W	orst Case)					٧	v	٧		
Spurious	7						W	orst Case)					v	٧	٧		
Emission	13		Worst Case v v v												٧			
		ne mark	" v " me	ans tha	t this c	onfigur	ation is	chosen fo	or testing							•		
	2. TI	ne mark	"-" mea	ns that	this ba	ndwidtl	h is not	supported	d.									
Remark	3. TI	ne devic	e is inve	estigate	d from	30MHz	z to 10	times of fu	ındamenta	ıl signal for	radiat	ed spu	rious er	missior	n test u	nder		
Kemark	di	fferent R	B size/	offset a	nd mod	dulation	ns in ex	ploratory t	est. Subse	equently, o	nly the	worst	case er	nission	s are			
	re	ported.																
	4. W	ider ope	rating r	ange b	andwid	th cove	ers narr	ower one	when the p	oower is hi	gher o	r the sa	ame.					

Report No.: FG042243-01B

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m

TEL: 886-3-327-3456 Page Number : 11 of 27
FAX: 886-3-328-4978 Issued Date : Sep. 24, 2020

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.

Report No.: FG042243-01B

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

Offset = RF cable loss + attenuator factor.

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

Example:

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

$$= 4.2 + 10 = 14.2 (dB)$$

TEL: 886-3-327-3456 Page Number : 12 of 27
FAX: 886-3-328-4978 Issued Date : Sep. 24, 2020

2.5 Frequency List of Low/Middle/High Channels

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

Report No. : FG042243-01B

: 02

LTE Band 7 Channel and Frequency List									
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest					
20	Channel	20850	21100	21350					
20	Frequency	2510	2535	2560					
15	Channel	20825	21100	21375					
15	Frequency	2507.5	2535	2562.5					
10	Channel	20800	21100	21400					
10	Frequency	2505	2535	2565					
_	Channel	20775	21100	21425					
5	Frequency	2502.5	2535	2567.5					

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

TEL: 886-3-327-3456 Page Number : 13 of 27
FAX: 886-3-328-4978 Issued Date : Sep. 24, 2020

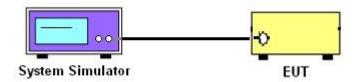
3 Conducted Test Items

3.1 Measuring Instruments

See list of measuring instruments of this test report.

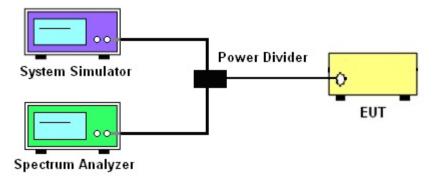
3.1.1 Test Setup

3.1.2 Conducted Output Power

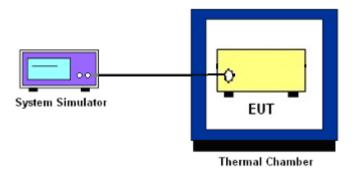


Report No.: FG042243-01B

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



3.1.4 Frequency Stability



3.1.5 Test Result of Conducted Test

Please refer to Appendix A.

TEL: 886-3-327-3456 Page Number : 14 of 27
FAX: 886-3-328-4978 Issued Date : Sep. 24, 2020

3.2 Conducted Output Power and ERP/EIRP

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

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

Report No.: FG042243-01B

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

The ERP of mobile transmitters must not exceed 3 Watts for LTE Band 13

The EIRP of mobile transmitters must not exceed 2 Watts for LTE Band 7

According to KDB 412172 D01 Power Approach,

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

 P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

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

3.2.2 Test Procedures

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

TEL: 886-3-327-3456 Page Number : 15 of 27
FAX: 886-3-328-4978 Issued Date : Sep. 24, 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.: FG042243-01B

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 Page Number : 16 of 27
FAX: 886-3-328-4978 Issued Date : Sep. 24, 2020

3.4 Occupied Bandwidth

3.4.1 Description of Occupied Bandwidth Measurement

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

Report No.: FG042243-01B

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.
- 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.
- 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 : 17 of 27
FAX: 886-3-328-4978 Issued Date : Sep. 24, 2020

3.5 Conducted Band Edge

3.5.1 Description of Conducted Band Edge Measurement

22.917(a)

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

Report No.: FG042243-01B

27.53 (c)

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

27.53(m)(4)

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

TEL: 886-3-327-3456 Page Number : 18 of 27
FAX: 886-3-328-4978 Issued Date : Sep. 24, 2020

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.

Report No.: FG042243-01B

- 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)

For LTE Band 7

The other 40 dB, and 55 dB have additionally applied same calculation above.

TEL: 886-3-327-3456 Page Number : 19 of 27
FAX: 886-3-328-4978 Issued Date : Sep. 24, 2020

3.6 Conducted Spurious Emission

3.6.1 Description of Conducted Spurious Emission Measurement

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

Report No.: FG042243-01B

For LTE Band 7

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least 55 + 10 log (P) dB.

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

3.6.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 6.1.

- 1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
- 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.
- 8. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
- 9. The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)

For LTE Band 7

The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)

TEL: 886-3-327-3456 Page Number : 20 of 27
FAX: 886-3-328-4978 Issued Date : Sep. 24, 2020

3.7 Frequency Stability

3.7.1 Description of Frequency Stability Measurement

22.355

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

Report No.: FG042243-01B

27.54

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

3.7.2 Test Procedures for Temperature Variation

The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.

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

3.7.3 Test Procedures for Voltage Variation

The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.

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

TEL: 886-3-327-3456 Page Number : 21 of 27
FAX: 886-3-328-4978 Issued Date : Sep. 24, 2020

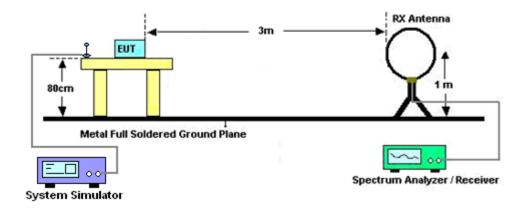
4 Radiated Test Items

4.1 Measuring Instruments

See list of measuring instruments of this test report.

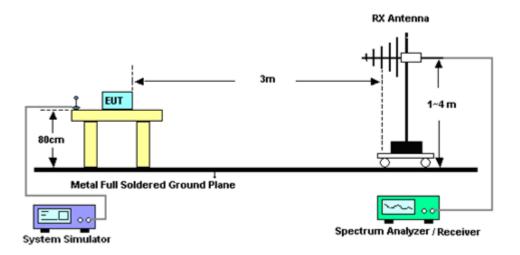
4.1.1 Test Setup

For radiated emissions below 30MHz



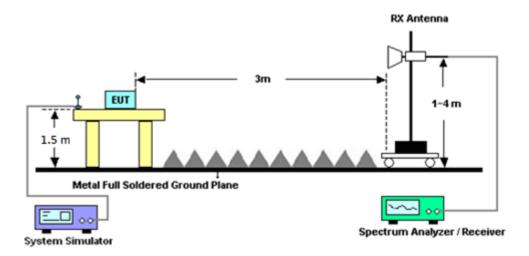
Report No.: FG042243-01B

For radiated test from 30MHz to 1GHz

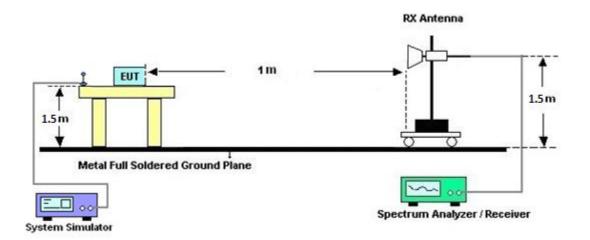


TEL: 886-3-327-3456 Page Number : 22 of 27
FAX: 886-3-328-4978 Issued Date : Sep. 24, 2020

For radiated test from 1GHz to 18GHz



For radiated emissions above 18GHz



4.1.2 Test Result of Radiated Test

Please refer to Appendix B.

Note:

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

There is 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 : 23 of 27
FAX: 886-3-328-4978 Issued Date : Sep. 24, 2020

4.2 Radiated Spurious Emission Measurement

4.2.1 Description of Radiated Spurious Emission Measurement

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

Report No.: FG042243-01B

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

For LTE Band 7

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 55 + 10 log (P) dB.

For LTE Band 13

For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

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

4.2.2 Test Procedures

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

- 1. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
- 2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
- 3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
- 4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
- 5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
- 6. 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.
- The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

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

For LTE Band 7

The limit line is derived from $55 + 10\log(P)dB$ below the transmitter power P(Watts)

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

ERP (dBm) = EIRP - 2.15

TEL: 886-3-327-3456 Page Number : 24 of 27
FAX: 886-3-328-4978 Issued Date : Sep. 24, 2020

5 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Jan. 09, 2020	Aug. 24, 2020~ Aug. 25, 2020	Jan. 08, 2021	Radiation (03CH15-HY)
Bilog Antenna	TESEQ	CBL6111D&008 00N1D01N-06	41912&05	30MHz to 1GHz	Feb. 09, 2020	Aug. 24, 2020~ Aug. 25, 2020	Feb. 08, 2021	Radiation (03CH15-HY)
Amplifier	SONOMA	310N	363440	9kHz~1GHz	Dec. 27, 2019	Aug. 24, 2020~ Aug. 25, 2020	Dec. 26, 2020	Radiation (03CH15-HY)
Horn Antenna	SCHWARZB ECK	BBHA 9120 D	9120D-1620	1-18GHz	Oct. 28, 2019	Aug. 24, 2020~ Aug. 25, 2020	Oct. 27, 2020	Radiation (03CH15-HY)
SHF-EHF Horn Antenna	SCHWARZB ECK	BBHA 9170	BBHA91705 84	18GHz- 40GHz	Dec. 10, 2019	Aug. 24, 2020~ Aug. 25, 2020	Dec. 09, 2020	Radiation (03CH15-HY)
Preamplifier	Jet-Power	JPA0118-55-30 3	1710001800 055006	1GHz~18GHz	May 07, 2020	Aug. 24, 2020~ Aug. 25, 2020	May 06, 2021	Radiation (03CH15-HY)
Preamplifier	Keysight	83017A	MY53270195	1GHz~26.5GHz	Aug. 21, 2020	Aug. 24, 2020~ Aug. 25, 2020	Aug. 20, 2021	Radiation (03CH15-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz ~ 40GHz	Dec. 13, 2019	Aug. 24, 2020~ Aug. 25, 2020	Dec. 12, 2020	Radiation (03CH15-HY)
EMI Test Receiver	Keysight	N9038A(MXE)	MY54130085	20MHz~8.4GHz	Nov. 01, 2019	Aug. 24, 2020~ Aug. 25, 2020	Oct. 31, 2020	Radiation (03CH15-HY
Spectrum Analyzer	Agilent	E4446A	MY50180136	3Hz~44GHz	May 04, 2020	Aug. 24, 2020~ Aug. 25, 2020	May 03, 2021	Radiation (03CH15-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Aug. 24, 2020~ Aug. 25, 2020	N/A	Radiation (03CH15-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Aug. 24, 2020~ Aug. 25, 2020	N/A	Radiation (03CH15-HY)
Software	Audix	E3 6.2009-8-24(k5)	RK-000451	N/A	N/A	Aug. 24, 2020~ Aug. 25, 2020	N/A	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY36980/4	30M-18G	Apr. 14, 2020	Aug. 24, 2020~ Aug. 25, 2020	Apr. 13, 2021	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY9838/4PE	30M-18G	Apr. 14, 2020	Aug. 24, 2020~ Aug. 25, 2020	Apr. 13, 2021	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY37710/4	30M-18G	Apr. 17, 2020	Aug. 24, 2020~ Aug. 25, 2020	Apr. 16, 2021	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30MHz-40GHz	Feb. 25, 2020	Aug. 24, 2020~ Aug. 25, 2020	Feb. 24, 2021	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	800740/2	30MHz-40GHz	Feb. 25, 2020	Aug. 24, 2020~ Aug. 25, 2020	Feb. 24, 2021	Radiation (03CH15-HY)

Report No. : FG042243-01B

TEL: 886-3-327-3456 Page Number : 25 of 27
FAX: 886-3-328-4978 Issued Date : Sep. 24, 2020

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Filter	Wainwright	WLK4-1000-15 30-8000-40SS	SN4	1.53G Low Pass	Jul. 03, 2020	Aug. 24, 2020~ Aug. 25, 2020	Jul. 02, 2021	Radiation (03CH15-HY)
Filter	Wainwright	WHKX12-1080 -1200-15000-6 0ST	SN5	1.2GHz High Pass Filter	Jul. 01, 2020	Aug. 24, 2020~ Aug. 25, 2020	Jun. 30, 2021	Radiation (03CH15-HY)
Filter	Wainwright	WHKX12-2700 -3000-18000-6 0ST	SN4	3GHz High Pass Filter	Sep. 17, 2019	Aug. 24, 2020~ Aug. 25, 2020	Sep. 16, 2020	Radiation (03CH15-HY)
Filter	Wainwright	WHKX8-5872. 5-6750-18000- 40ST	SN6	6.75GHz High Pass Filter	Jul. 03, 2020	Aug. 24, 2020~ Aug. 25, 2020	Jul. 02, 2021	Radiation (03CH15-HY)
Signal Generator	Rohde & Schwarz	SMF100A	101107	100kHz~40GHz	Aug. 27, 2019	Aug. 24, 2020~ Aug. 25, 2020	Aug. 26, 2020	Radiation (03CH15-HY)
Base Station(Measure)	Anritsu	MT8821C	626200253 41	N/A	Oct. 24, 2019	Aug. 20, 2020~ Aug. 21, 2020	Oct. 23, 2020	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV40	101397	10Hz~40GHz	Nov. 15, 2019	Aug. 20, 2020~ Aug. 21, 2020	Nov. 14, 2020	Conducted (TH05-HY)
Temperature Chamber	ESPEC	SU-241	92003713	-30°C ~95°C	May 15, 2020	Aug. 20, 2020~ Aug. 21, 2020	May 14, 2021	Conducted (TH05-HY)
Programmable Power Supply	GW Instek	PSS-2005	EL890094	1V~20V 0.5A~5A	Oct. 09, 2019	Aug. 20, 2020~ Aug. 21, 2020	Oct. 08, 2020	Conducted (TH05-HY)
Coupler	Warison	20dB 25W SMA Directional Coupler	#A	1-18GHz	Jan. 13, 2020	Aug. 20, 2020~ Aug. 21, 2020	Jan. 12, 2021	Conducted (TH05-HY)

Report No. : FG042243-01B

TEL: 886-3-327-3456 Page Number : 26 of 27
FAX: 886-3-328-4978 Issued Date : Sep. 24, 2020

6 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.06
35 /8 (8 = 200(y))	

Report No.: FG042243-01B

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

Measuring Uncertainty for a Level of	3.63
Confidence of 95% (U = 2Uc(y))	3.03

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

Measuring Uncertainty for a Level of	4.16
Confidence of 95% (U = 2Uc(y))	4.10

TEL: 886-3-327-3456 Page Number : 27 of 27
FAX: 886-3-328-4978 Issued Date : Sep. 24, 2020



Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

LTE Band 5 Maximum Average Power [dBm]							
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	
10	1	0		23.54	23.50	23.49	
10	1	25		23.42	23.40	23.42	
10	1	49	QPSK	23.41	23.38	23.32	
10	25	0		22.65	22.55	22.55	
10	25	12		22.64	22.63	22.54	
10	25	25		22.62	22.57	22.57	
10	50	0		22.65	22.63	22.54	
10	1	0		22.93	22.83	22.88	
10	1	25		22.82	22.79	22.80	
10	1	49		22.81	22.76	22.70	
10	25	0	16-QAM	21.65	21.57	21.51	
10	25	12		21.66	21.64	21.54	
10	25	25		21.60	21.59	21.55	
10	50	0		21.65	21.63	21.52	
10	1	0		21.78	21.74	21.73	
10	1	25		21.78	21.73	21.72	
10	1	49		21.73	21.76	21.64	
10	25	0	64-QAM	20.71	20.60	20.59	
10	25	12		20.69	20.67	20.59	
10	25	25		20.63	20.59	20.60	
10	50	0		20.71	20.66	20.59	
5	1	0		23.50	23.48	23.53	
5	1	12		23.41	23.49	23.44	
5	1	24		23.34	23.46	23.32	
5	12	0	QPSK	22.60	22.56	22.59	
5	12	7		22.57	22.59	22.54	
5	12	13		22.57	22.53	22.49	
5	25	0		22.60	22.57	22.53	
5	1	0		22.86	22.80	22.90	
5	1	12		22.74	22.79	22.74	
5	1	24		22.80	22.77	22.69	
5	12	0	16-QAM	21.62	21.61	21.59	
5	12	7		21.66	21.63	21.54	
5	12	13		21.56	21.59	21.49	
5	25	0		21.65	21.63	21.57	
5	1	0		21.69	21.85	21.79	
5	1	12		21.70	21.72	21.64	
5	1	24	64-QAM	21.65	21.74	21.61	
5	12	0		20.68	20.64	20.65	
5	12	7		20.68	20.69	20.61	
5	12	13		20.55	20.65	20.53	
5	25	0		20.67	20.65	20.56	



FCC RADIO TEST REPORT

SPORTON LAB. F	CC RAD	IO TEST		Report No. : FG042243-0			
		ITE	Band 5 Mavi	mum Average Pov	wer [dBm]		
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	
3	1	0		23.50	23.44	23.49	
3	1	8	-	23.51	23.48	23.32	
3	1	14	-	23.49	23.42	23.34	
3	8	0	QPSK	22.69	22.53	22.64	
3	8	4	-	22.70	22.61	22.56	
3	8	7	-	22.62	22.54	22.57	
3	15	0		22.64	22.58	22.61	
3	1	0		22.91	22.79	22.91	
3	1	8	-	22.95	22.85	22.79	
3	1	14		22.83	22.75	22.77	
3	8	0	16-QAM	21.75	21.63	21.55	
3	8	4		21.76	21.63	21.63	
3	8	7		21.70	21.63	21.54	
3	15	0		21.71	21.57	21.60	
3	1	0		21.88	21.69	21.74	
3	1	8		21.86	21.79	21.77	
3	1	14		21.76	21.69	21.65	
3	8	0	64-QAM	20.78	20.64	20.65	
3	8	4		20.77	20.63	20.68	
3	8	7	-	20.69	20.59	20.57	
3	15	0	-	20.71	20.59	20.70	
1.4	1	0		23.51	23.30	23.32	
1.4	1	3		23.51	23.42	23.31	
1.4	1	5		23.47	23.38	23.22	
1.4	3	0	QPSK	23.53	23.38	23.26	
1.4	3	1	-	23.50	23.48	23.34	
1.4	3	3		23.48	23.37	23.30	
1.4	6	0		22.60	22.51	22.41	
1.4	1	0		22.84	22.67	22.65	
1.4	1	3		22.90	22.78	22.68	
1.4	1	5		22.79	22.67	22.59	
1.4	3	0	16-QAM	22.64	22.45	22.43	
1.4	3	1		22.65	22.55	22.28	
1.4	3	3		22.57	22.49	22.38	
1.4	6	0		21.70	21.61	21.49	
1.4	1	0		21.78	21.64	21.54	
1.4	1	3		21.81	21.72	21.61	
1.4	1	5		21.72	21.62	21.49	
1.4	3	0	64-QAM	21.71	21.59	21.46	
1.4	3	1		21.79	21.68	21.57	
1.4	3	3		21.70	21.62	21.42	

20.65

20.56

20.41

Report No. : FG042243-01B

	LTE Band 7 Maximum Average Power [dBm]								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest			
20	1	0		17.81	17.90	18.09			
20	1	49		17.85	17.99	18.06			
20	1	99		17.94	18.01	18.07			
20	50	0	QPSK	17.90	18.09	18.15			
20	50	24		18.03	18.12	18.19			
20	50	50		18.06	18.17	18.24			
20	100	0		17.99	18.06	18.16			
20	1	0		18.14	18.27	18.40			
20	1	49		18.18	18.33	18.45			
20	1	99		18.32	18.38	18.41			
20	50	0	16-QAM	17.92	18.09	18.17			
20	50	24		18.05	18.12	18.19			
20	50	50		18.10	18.23	18.26			
20	100	0		18.00	18.08	18.14			
20	1	0		18.03	18.12	18.24			
20	1	49		18.06	18.23	18.37			
20	1	99		18.23	18.31	18.36			
20	50	0	64-QAM	17.94	18.13	18.19			
20	50	24		18.06	18.18	18.23			
20	50	50		18.09	18.23	18.30			
20	100	0		18.02	18.13	18.14			
15	1	0		17.87	17.94	18.11			
15	1	37		17.87	18.03	18.09			
15	1	74		17.93	18.08	18.13			
15	36	0	QPSK	17.94	18.08	18.16			
15	36	20		18.04	18.15	18.28			
15	36	39		18.05	18.19	18.25			
15	75	0		18.00	18.10	18.15			
15	1	0		18.18	18.27	18.41			
15	1	37		18.22	18.35	18.41			
15	1	74		18.23	18.41	18.44			
15	36	0	16-QAM	17.96	18.12	18.18			
15	36	20		18.04	18.11	18.26			
15	36	39		18.09	18.18	18.27			
15	75	0		18.02	18.09	18.15			
15	1	0		18.01	18.20	18.29			
15	1	37		18.15	18.33	18.36			
15	1	74	64-QAM	18.12	18.30	18.34			
15	36	0		17.92	18.15	18.20			
15	36	20		18.05	18.22	18.32			
15	36	39		18.11	18.29	18.29			
15	75	0		18.00	18.12	18.18			



FCC RADIO TEST REPORT

Report No. : FG042243-01B

LTE Band 7 Maximum Average Power [dBm]								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest		
10	1	0		17.77	17.93	18.07		
10	1	25		17.77	17.93	18.04		
10	1	49		17.88	18.01	18.07		
10	25	0	QPSK	17.91	18.06	18.14		
10	25	12		17.96	18.15	18.24		
10	25	25		18.00	18.17	18.24		
10	50	0		17.91	18.10	18.13		
10	1	0		18.11	18.23	18.36		
10	1	25		18.21	18.28	18.36		
10	1	49		18.15	18.40	18.36		
10	25	0	16-QAM	17.87	18.06	18.11		
10	25	12		18.00	18.03	18.25		
10	25	25		18.01	18.10	18.19		
10	50	0		18.01	18.05	18.07		
10	1	0		17.96	18.13	18.28		
10	1	25		18.11	18.30	18.36		
10	1	49		18.10	18.29	18.31		
10	25	0	64-QAM	17.85	18.10	18.19		
10	25	12		18.05	18.15	18.31		
10	25	25		18.10	18.19	18.24		
10	50	0		17.97	18.02	18.17		
5	1	0		17.80	17.92	18.04		
5	1	12	QPSK	17.84	18.03	18.00		
5	1	24		17.93	18.03	18.03		
5	12	0		17.87	18.05	18.12		
5	12	7		18.04	18.06	18.21		
5	12	13		17.95	18.16	18.19		
5	25	0		17.94	18.01	18.08		
5	1	0		18.14	18.25	18.41		
5	1	12		18.19	18.32	18.32		
5	1	24		18.23	18.34	18.39		
5	12	0	16-QAM	17.89	18.04	18.13		
5	12	7		18.00	18.03	18.23		
5	12	13		18.04	18.14	18.17		
5	25	0		17.98	17.99	18.11		
5	1	0		17.93	18.11	18.21		
5	1	12		18.11	18.23	18.31		
5	1	24	64-QAM	18.10	18.26	18.25		
5	12	0		17.85	18.09	18.20		
5	12	7		18.05	18.21	18.24		
5	12	13		18.02	18.25	18.24		
5	25	0		17.90	18.03	18.13		

Report No. : FG042243-01B

LTE Band 13 Maximum Average Power [dBm]									
BW [MHz] RB Size RB Offset Mod Lowest Middle Highest									
10	1	0			23.87				
10	1	25			23.82	1			
10	1	49			23.82	1			
10	25	0	QPSK		22.93	1			
10	25	12			22.91	1			
10	25	25			22.95				
10	50	0			22.92				
10	1	0							
10	1	25			22.97				
	1	49			22.94				
10	25	0	16-QAM	-	21.93	-			
10	25	12			21.95				
10	25	25			21.99				
10	50	0			21.97				
10	1	0			21.95				
10	1	25			21.94	1			
10	1	49			21.91	1			
10	25	0	64-QAM		21.00	1			
10	25	12			20.98	1			
10	25	25			20.92	1			
10	50	0			20.98	1			
5	1	0		23.87	23.86	23.80			
5	1	12		23.85	23.86	23.84			
5	1	24		23.86	23.82	23.82			
5	12	0	QPSK	22.96	22.95	22.89			
5	12	7		22.97	22.92	22.88			
5	12	13		22.98	22.97	22.92			
5	25	0		22.98	22.89	22.86			
5	1	0		22.91	22.94	22.89			
5	1	12		22.90	22.93	22.88			
5	1	24	16-QAM	22.98	22.94	22.88			
5	12	0		21.77	21.74	21.72			
5	12	7		21.78	21.75	21.70			
5	12	13	-	21.78	21.78	21.74			
5	25	0		21.83	21.75	21.72			
5	1	0		21.72	21.78	21.78			
5	1	12		21.81	21.86	21.89			
5	1	24		21.90	21.86	21.79			
5	12	0	64-QAM	20.82	20.84	20.79			
5	12	7		20.86	20.80	20.74			
5	12	13		20.86	20.87	20.82			
5	25	0		20.84	20.75	20.72			

LTE Band 5

Peak-to-Average Ratio

Mode					
Mod.	QP	SK	160	Limit: 13dB	
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.59	5.04	5.10	5.91	
Middle CH	3.51	5.07	5.13	5.88	PASS
Highest CH	3.59	4.99	5.19	5.83	
Mode					
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	6.87	6.41	-	-	
Middle CH	7.01	6.52	-	-	PASS
Highest CH	6.87	6.35	-	-	

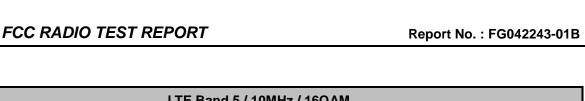
Report No. : FG042243-01B

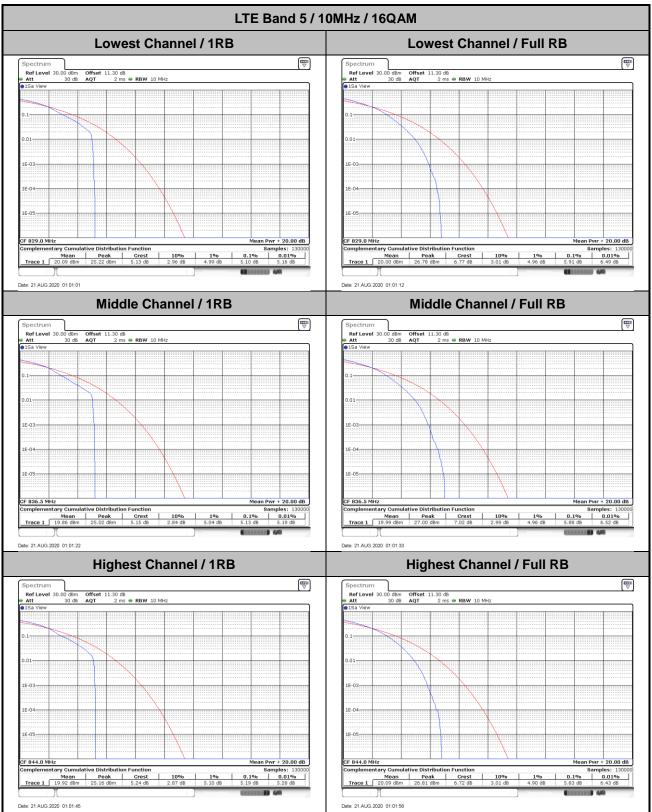
TEL: 886-3-327-3456 Page Number : A5-1 of 41

LTE Band 5 / 10MHz / QPSK Lowest Channel / 1RB Lowest Channel / Full RB Ref Level 30.00 dBm Att 30 dB Ref Level 30.0 Att Date: 21.AUG.2020 01:02:08 Date: 21.AUG.2020 01:02:19 Middle Channel / 1RB Middle Channel / Full RB Date: 21.AUG.2020 01:02:30 Date: 21.AUG.2020 01:02:41 **Highest Channel / 1RB Highest Channel / Full RB** Samples: 130000 0.1% | 0.01% | 3.59 dB | 3.65 dB 9amples: 130000 0.1% 0.01% 4.99 dB 5.62 dB

Report No.: FG042243-01B

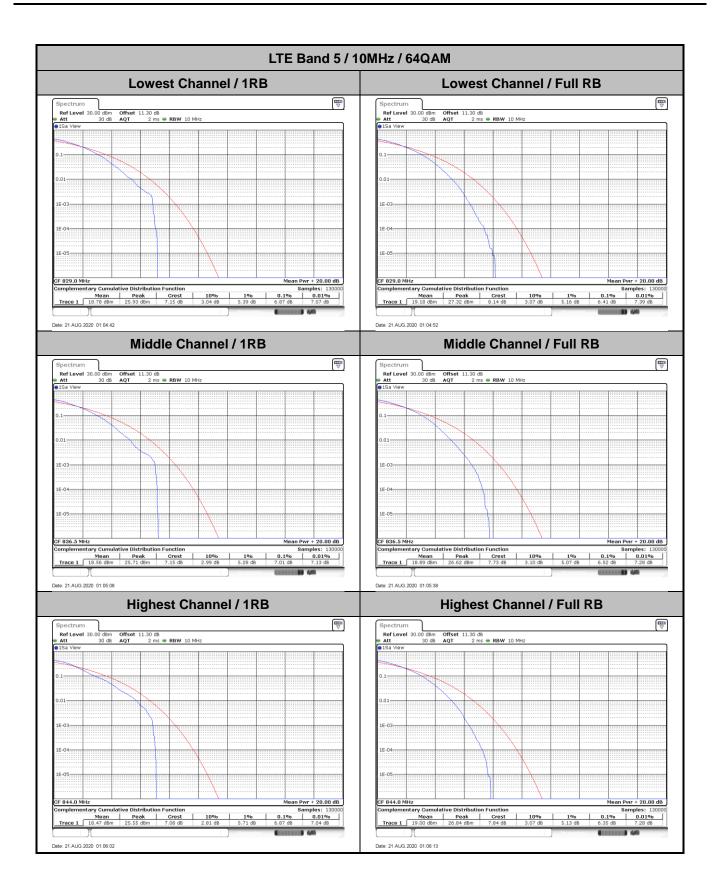
TEL: 886-3-327-3456 Page Number : A5-2 of 41





TEL: 886-3-327-3456 Page Number : A5-3 of 41

CC RADIO TEST REPORT Report No. : FG042243-01B



TEL: 886-3-327-3456 Page Number : A5-4 of 41

26dB Bandwidth

Mode	LTE Band 5 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.24	1.23	3.00	3.04	4.91	4.87	9.65	9.59	-	-	-	-
Middle CH	1.23	1.23	3.01	3.00	4.94	4.93	9.83	9.91	-	-	-	-
Highest CH	1.23	1.21	3.03	2.96	4.96	4.88	9.63	9.65	-	-	-	-
Mode	LTE Band 5 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	1.24	-	3.00	-	4.93	-	9.87	-	-	-	-	-
Middle CH	1.24	-	3.01	-	4.90	-	9.83	-	-	-	-	-
Highest CH	1.22	-	3.04	-	4.90	-	9.91	ı	-	-	-	-

Report No. : FG042243-01B

TEL: 886-3-327-3456 Page Number : A5-5 of 41

LTE Band 5 Lowest Channel / 1.4MHz / QPSK Lowest Channel / 1.4MHz / 16QAM Ref Level 30.00 dBm Offset 11.30 dB = RBW 30 kHz = Att 30 dB SWT 63.2 μs = VBW 100 kHz Mode Auto FFT SGL Count 100/100 Φ 1Pk Max 16.03 dB 14.83 dBr 16.03 dBr 824.99370 MH 26.00 d 1.242000000 MH 10 dBm 664 671. -10 dBm--10 dBm -30 dBm -30 dBr afi dam -50 dBm--60 dBm
 X-value
 Y-value
 Function

 824.9937 MHz
 16.03 dBm
 ndB down

 824.0762 MHz
 -10.28 dBm
 ndB

 825.3182 MHz
 -9.60 dBm
 Q factor

 X-value
 Y-value
 Function

 824.6161 MHz
 14.83 dBm
 nd8 down

 824.0846 MHz
 -11.36 dBm
 nd8

 825.3126 MHz
 -11.33 dBm
 Q factor
 Type Ref Trc Type Ref Trc Middle Channel / 1.4MHz / QPSK Middle Channel / 1.4MHz / 16QAM Ref Level 30.00 dBm
Att 30 dB
SGL Count 100/100
Pk Max
 Ref Level
 30.00 dBm
 Offset
 11.30 dB • RBW
 30 kHz
 30 kHz
 Mode
 Auto FFT
 15.84 dBr 836.32660 MH 26.00 d 1.225200000 MH 682. -20 dBm -20 dBm-40 dBm~ -50 dBm Span 2.8 MHz CF 836.5 MHz Span 2.8 MHz
 X-value
 Y-value
 Function

 836,3266 MHz
 15,84 dBm
 nd8 down

 835,8846 MHz
 -10.36 dBm
 nd8

 837,1098 MHz
 -10.19 dBm
 Q factor
 Type | Ref | Trc | Date: 20.AUG 2020 22:59:35 Date: 20 AUG 2020 22:59:46 Highest Channel / 1.4MHz / QPSK Highest Channel / 1.4MHz / 16QAM 00 dBm Offset 30 dB SWT 11.30 dB • RBW 30 kHz 63.2 µs • VBW 100 kHz Mode Auto FFT 11.30 dB **RBW** 30 kHz 63.2 μs **VBW** 100 kHz **Mode** Auto FFT SGL Count 100/100 SGL Count 100/100 91Pk Max 15.14 dBm 848.01190 MHz 26.00 dE 1.225200000 MHz 692.: 15.61 dBm 848.44830 MI M1[1] M1[1] 20 dBm 26.00 dE 1.211200000 MH; 700.3 dBm--10 dBm -20 dBm -20 dBn -50 dBm -50 dBm-CF 848.3 MHz Function Result 1.2252 MHz 26.00 dB 692.2 Function Result
1.2112 MHz
26.00 dB
700.5
 X-value
 Y-value
 Function

 848.0119 MHz
 15.14 dBm
 nd8 down

 847.8974 MHz
 -11.06 dBm
 nd8

 848.9126 MHz
 -11.07 dBm
 Q factor

 Marker
 Trope
 Ref
 Trc
 X-value
 Y-value
 Function

 M1
 1
 848,4483 MHz
 15.61 dBm
 nd8 down

 T1
 1
 847,993 MHz
 -10.62 dBm
 nd8

 T2
 1
 848,9042 MHz
 -10.27 dBm
 Q factor
 Type | Ref | Trc |

Report No.: FG042243-01B

TEL: 886-3-327-3456 Page Number : A5-6 of 41

LTE Band 5 Lowest Channel / 3MHz / QPSK Lowest Channel / 3MHz / 16QAM Ref Level 30.00 dBm Offset 11.30 dB ■ RBW 100 kHz
■ Att 30 dB SWT 19 μs ■ VBW 300 kHz Mode Auto FFT
SGL Count 100/100
■ 19t Max 15.71 dBm 826.11740 MHz 26.00 dB 3.039000000 Mix-16.37 dB 10 dBm Q factor 274 271. -10 dBm--50 dBm-Function Result 3.003 MHz 26.00 dB 274.6
 X-value
 Y-value
 Function

 824.6968 MHz
 16.37 dBm
 ndB down

 X-value
 Y-value
 Function

 826.1174 MHz
 15.71 dBm
 nd8 down

 823.9775 MHz
 -10.54 dBm
 nd8

 827.0165 MHz
 -10.59 dBm
 Q factor
 Type Ref Trc Type Ref Trc Middle Channel / 3MHz / QPSK Middle Channel / 3MHz / 16QAM 16.47 dBr 837.42910 MH 26.00 d 3.009000000 MH 278. 00 MH 278. -20 dBm--40 dBm -50 dBm Span 6.0 MHz CF 836.5 MHz Span 6.0 MHz Type | Ref | Trc | Function m ndB down Function ndB down Date: 20.AUG-2020 23:32:26 Date: 20 AUG 2020 23:32:37 Highest Channel / 3MHz / QPSK Highest Channel / 3MHz / 16QAM ▽ Ref Level 30.00 dBm Offset 11.30 dB ● RBW 100 kHz

■ Att 30 db SWT 19 μs ● VBW 300 kHz Mode Auto FFT

SGL Count 100/100

■ 1Pk Max Ref Level 30. 16.70 dB 846.96050 Mi 16.68 dBr 846.61290 MH 20 dBm dBm--10 dBm 30 dBm -50 dBm CF 847.5 MH Function Result
2,955 MHz
26,00 dB
286.5 Function Result 3.027 MHz

Report No.: FG042243-01B

TEL: 886-3-327-3456 Page Number : A5-7 of 41

 Type
 Ref
 Trc
 X-value
 Y-value
 Function

 M1
 1
 846.6129 MHz
 16.68 dBm
 ndB down

846.0315 MHz 848.9865 MHz

FAX: 886-3-328-4978

Type | Ref | Trc |

X-value Y-value Function 846.9605 MHz 16.70 dBm ndB down

845.9605 MHz 845.9715 MHz 848.9985 MHz

LTE Band 5 Lowest Channel / 5MHz / QPSK Lowest Channel / 5MHz / 16QAM Ref Level 30.00 dBm Offset 11.30 dB ⇒ RBW 100 kHz ⇒ Att 30 dB SWT 19 μs ⇒ VBW 300 kHz Mode Auto FFT SGL Count 100/100 Φ 1Pk Max M1[1] 14.63 dB M1[1] 14.32 dBr 10 dBm 168 169. -10 dBm-^^_^ 40 dBm− 40 dBm -50 dBm-Function Result 4,905 MHz 26.00 dB 168.4 Function Result 4.865 MHz 26.00 dB 169.5
 X-value
 Y-value
 Function

 825.901 MHz
 14.63 dBm
 nd8 down

 824.022 MHz
 -11.21 dBm
 nd8

 828.928 MHz
 -10.98 dBm
 Q factor

 X-value
 Y-value
 Function

 824.452 MHz
 14.32 dBm
 nd8 down

 824.042 MHz
 -11.98 dBm
 nd8

 828.908 MHz
 -11.54 dBm
 Q factor
 Type Ref Trc Type Ref Trc Middle Channel / 5MHz / QPSK Middle Channel / 5MHz / 16QAM Count 100/100 15.46 dBn 835.79100 MH 26.00 d 4.935000000 MH 169. 14.23 dBn 836.97000 MH 26.00 dl 4.925000000 MH -20 dBm -20 dBm-40 apm -50 dBm-Span 10.0 MHz CF 836.5 MHz Span 10.0 MHz
 X-value
 Y-value
 Function

 835,791 MHz
 15.46 dBm
 ndB down

 834,022 MHz
 -10.78 dBm
 ndB

 838,958 MHz
 -10.38 dBm
 Q factor

 X-value
 Y-value

 836.97 MHz
 14.23 dBm

 834.032 MHz
 -11.79 dBm

 838.958 MHz
 -12.18 dBm
 Type | Ref | Trc | Function ndB down Date: 21.AUG 2020 00:05:15 Date: 21.AUG-2020 00:05:27 Highest Channel / 5MHz / QPSK Highest Channel / 5MHz / 16QAM ♥ 00 dBm Offset 30 dB SWT 11.30 dB • RBW 100 kHz 19 µs • VBW 300 kHz Mode Auto FFT SGL Count 100/100 1Pk Max 14.31 dBn 845.86100 Mr 14.71 dBn 847.22900 MH M1[1] M1[1] 26.00 d 4.955000000 MF 26.00 di 4.875000000 MH 173. dBm--10 dBm -20 dBm -20 dBr 430/ABINA -50 dBm -50 dBm-CF 846.5 MHz Span 10.0 MHz Function Result 4.875 MHz 26.00 dB 173.5 Function Result
4.955 MHz
26.00 d8
171.0
 Marker
 Trc
 X-value
 Y-value
 Function

 M1
 1
 847.229 MHz
 14.71 dBm
 nd8 down

 T1
 1
 844.022 MHz
 -10.95 dBm
 ndb

 T2
 1
 848.986 MHz
 -11.03 dBm
 Q factor

Report No.: FG042243-01B

TEL: 886-3-327-3456 Page Number : A5-8 of 41

LTE Band 5 Lowest Channel / 10MHz / QPSK Lowest Channel / 10MHz / 16QAM 17.07 dB 16.47 dBr 10 dBm 86. -10 dBm--10 dBm -30 d**ß**m -30 dBm -50 dBm-50 dBm -60 dBm Function Result 9.65 MHz 26.00 dB 86.2
 X-value
 Y-value
 Function

 831.977 MHz
 17.07 dBm
 nd8 down

 824.185 MHz
 -9.22 dBm
 nd8 down

 833.835 MHz
 -8.91 dBm
 Q factor

 X-value
 Y-value
 Function

 828.421 MHz
 16.47 dBm
 nd8 down

 824.205 MHz
 -8.62 dBm
 nd8

 833.795 MHz
 -8.90 dBm
 Q factor
 Type Ref Trc Middle Channel / 10MHz / QPSK Middle Channel / 10MHz / 16QAM Ref Level 30.00 dBm Att 30 dB SGL Count 100/100
 Ref Level
 30.00 dBm
 Offset
 11.30 dB
 RBW
 300 kHz

 Att
 30 dB
 SWT
 12.6 μs
 VBW
 1 MHz
 Mode
 Auto FFT
 Offset 11.30 dB ● RBW 300 kHz SWT 12.6 µs ● VBW 1 MHz Mode Auto FFT 15.02 dBn 833.2230 MH 26.00 dl 9.910000000 MH 84. -20 dBm-40 dBm Span 20.0 MHz CF 836.5 MHz Span 20.0 MHz
 Y-value
 Function

 2
 16.62 dBm
 ndB down

 2
 -9.34 dBm
 ndB

 2
 -9.54 dBm
 Q factor
 X-value 833.223 MHz 831.545 MHz 841.455 MHz Y-value 2 15.02 dBm 2 -11.16 dBm 2 -11.24 dBm Type | Ref | Trc | Function ndB down Date: 21.AUG-2020 00:37:04 Date: 21.AUG 2020 00:37:16 Highest Channel / 10MHz / QPSK Highest Channel / 10MHz / 16QAM ♥ 00 dBm Offset 30 dB SWT 11.30 dB • RBW 300 kHz 12.6 µs • VBW 1 MHz Mode Auto FFT 11.30 dB **RBW** 300 kHz 12.6 μs **VBW** 1 MHz **Mode** Auto FFT SGL Count 100/100 17.08 dBn 842.7210 MH 26.00 dl 9.630000000 MH 87. 20 dBm 26.00 dl 9.650000000 MH 87. dBm--10 dBm -20 dBm -20 dB -50 dBm -50 dBm-CF 844.0 MHz Function Result Function Result

Report No.: FG042243-01B

TEL: 886-3-327-3456 Page Number: A5-9 of 41 FAX: 886-3-328-4978

LTE Band 5 Lowest Channel / 1.4MHz / 64QAM Lowest Channel / 3MHz / 64QAM Ref Level 30.00 dBm Offset 11.30 dB = RBW 100 kHz = Att 30 dB SWT 19 μs = VBW 300 kHz Mode Auto FFT SGL Count 100/100 Φ 1Pk Max M1[1] M1[1] 14.73 dBr 14.06 dBr 824.94340 MH 26.00 d 1.236400000 MH 10 dBm 667 274. -10 dBm--10 dBm -30 dBm -50 dBm-
 X-value
 Y-value
 Function

 824.9434 MHz
 14.06 dBm
 ndB down

 824.0818 MHz
 -11.59 dBm
 ndB

 825.3182 MHz
 -11.72 dBm
 Q factor

 X-value
 Y-value
 Function

 824.3611 MHz
 14.73 dBm
 nd8 down

 824.0075 MHz
 -10.94 dBm
 nd8

 827.0105 MHz
 -11.26 dBm
 Q factor
 Type Ref Trc Type Ref Trc Middle Channel / 1.4MHz / 64QAM Middle Channel / 3MHz / 64QAM
 Ref Level
 30.00 dBm
 Offset
 11.30 dB ● RBW
 30 kHz

 Att
 30 dB
 SWT
 63.2 µs ● VBW
 100 kHz
 Mode
 Auto FFT
 SGL Count 100/100)1Pk Max 14.50 dBn 835.23530 MH 26.00 dl 3.009000000 MH 277. 12.56 dBr 836.44130 MH 26.00 d 1.236400000 MH 676. -20 dBm -20 dBm-40 dBm 40 dBm -50 dBm CF 836.5 MHz Span 2.8 MHz Span 6.0 MHz X-value 836.4413 MHz 835.8846 MHz 837.121 MHz
 Y-value
 Function

 2
 12.56 dBm
 ndB down

 2
 -13.12 dBm
 ndB

 z
 -13.65 dBm
 Q factor
 Y-value 2 14.50 dBm 2 -11.62 dBm 2 -11.29 dBm Type | Ref | Trc | Date: 20.AUG-2020 23:16:30 Date: 20.AUG 2020 23:49:20 Highest Channel / 1.4MHz / 64QAM Highest Channel / 3MHz / 64QAM ♥ 00 dBm Offset 30 dB SWT 11.30 dB • RBW 30 kHz 63.2 µs • VBW 100 kHz Mode Auto FFT SGL Count 100/100 SGL Count 100/100 91Pk Max 15.54 dBn 847.29020 MLI-M1[1] 13.63 dBn 848.54620 MH 20 dBm 26.00 dl 3.039000000 MH 278. dBm--10 dBm -20 dBm -20 dBr -50 dBm -50 dBm-CF 847.5 MHz CF 848.3 MHz Function Result 1.2224 MHz 26.00 dB 694.2
 X-value
 Y-value
 Function

 848.5462 MHz
 13.63 dBm
 nd8 down

 847.5872 MHz
 12.22 dBm
 nd8 nd8

 848.9098 MHz
 -12.38 dBm
 Q factor

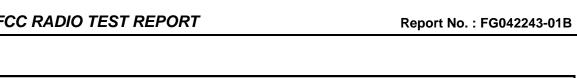
 Marker
 Trope
 Ref
 Trc
 X-value
 Y-value
 Function

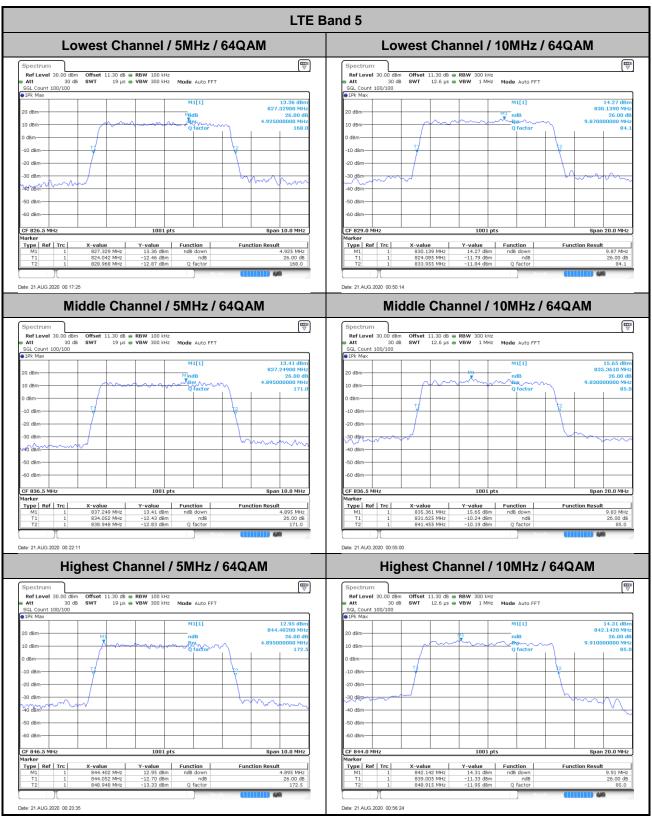
 M1
 1
 847.2902 MHz
 15.54 dBm
 nd8 dbm
 nd8 dbm
 nd8 nd8

 T1
 1
 845.9995 MHz
 -10.54 dBm
 nd8 nd8
 nd8
 nd8
 nd9
 nd8
 nd9
 nd8
 Type | Ref | Trc | Function Result

Report No.: FG042243-01B

TEL: 886-3-327-3456 Page Number : A5-10 of 41 FAX: 886-3-328-4978





TEL: 886-3-327-3456 Page Number : A5-11 of 41

Occupied Bandwidth

Mode	LTE Band 5 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.09	1.09	2.71	2.70	4.52	4.49	9.03	8.99	-	-	-	-
Middle CH	1.09	1.09	2.70	2.72	4.48	4.49	8.95	8.99	-	-	-	-
Highest CH	1.09	1.09	2.72	2.70	4.49	4.49	9.01	8.97	-	-	-	-
Mode	LTE Band 5 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	1.09	-	2.72	-	4.51	-	9.05	-	-	-	-	-
Middle CH	1.08	-	2.70	-	4.48	-	9.01	-	-	-	-	-
Highest CH	1.09	-	2.73	-	4.50	-	8.99	-	-	-	-	-

Report No. : FG042243-01B

TEL: 886-3-327-3456 Page Number : A5-12 of 41

 Marker
 Trc
 X-value
 Y-value
 Function
 Function Result

 M1
 1
 848.3783 MHz
 15.16 dbm
 5.16 dbm
 1.08811

 T1
 1
 847.7855 MHz
 8.73 dbm
 Occ 8w
 1.08811

 T2
 1
 848.84266 MHz
 8.22 dbm
 0.22 dbm

FAX: 886-3-328-4978

LTE Band 5 Lowest Channel / 1.4MHz / QPSK Lowest Channel / 1.4MHz / 16QAM 15.59 dBr 825.13640 MH 1.085314685 MH 15.78 dBn 10 dBm--10 dBm--10 dBm -20 dBm--30 dBm -30 dBn 40 dBm -50 dBm--60 dBm -60 dBm-
 X-value
 Y-value
 Function
 Function Result

 825.1364 MHz
 15.59 dbm
 924.15734 MHz
 9.04 dbm
 0cc Bw
 1.085314

 825.24266 MHz
 8.14 dBm
 0cc Bw
 1.085314
 Type Ref Trc Date: 20.AUG.2020 22:49:50 Middle Channel / 1.4MHz / QPSK Middle Channel / 1.4MHz / 16QAM Ref Level 30.00 dBm Offset 11.30 dB = RBW 30 kHz 4tt 0 30 db SWT 63.2 µs = VBW 100 kHz Mode Auto FFT 56L Count 100/100
 Ref Level
 30.00 dBm
 Offset
 11.30 dB ● RBW
 30 kHz

 Att
 30 dB
 SWT
 63.2 µs ● VBW
 100 kHz
 Mode
 Auto FFT
 SGL Count 100/100 1Pk Max 15.13 dBr 836.29860 MH 1.085314685 MH dBm--10 dBm -20 dBm--20 dBm-40 dBm--50 dBm-CF 836.5 MHz 1001 pts Span 2.8 MHz 1001 pts Span 2.8 MHz
 X-value
 Y-value
 Function

 836,2986 MHz
 15.13 dBm

 835,95734 MHz
 9.15 dBm
 Occ Bw

 837,04266 MHz
 10.32 dBm

 X-value
 Y-value
 Function

 836.6483 MHz
 16.08 d8m
 835.95455 MHz
 7.76 d8m
 Occ Bw

 837.04545 MHz
 7.98 d8m
 Occ Bw
 Type Ref Trc Function Result **Function Result** 1.085314685 MHz 1.090909091 MHz Date: 20.AUG 2020 22:59:11 Date: 20.AUG 2020 22:59:23 Highest Channel / 1.4MHz / QPSK Highest Channel / 1.4MHz / 16QAM SGL Count 100/100 1Pk Max SGL Count 100/100 14.64 dBn 848.67480 MHz 1.085314685 MHz M1[1] 15.16 dBn 848.37830 MH 1.088111888 MH 20 dBm dBmdBm--10 dBm -20 dBm -20 dBm-40 dBm -50 dBm--50 dBm-CF 848.3 MHz CF 848.3 MHz Span 2.8 MHz

Report No.: FG042243-01B

TEL: 886-3-327-3456 Page Number : A5-13 of 41

1.088111888 MHz

 Marker
 Trc
 X-value
 Y-value
 Function
 Function Result

 M1
 1
 848.5748 MHz
 14.64 dbm
 Punction
 1.08531

 T1
 1
 847.5734 MHz
 8.16 dbm
 Occ Bw
 1.08531

 T2
 1
 848.84266 MHz
 7.82 dbm
 7.82 dbm

1.085314685 MHz

LTE Band 5 Lowest Channel / 3MHz / QPSK Lowest Channel / 3MHz / 16QAM 15.51 dBn 10 dBm--10 dBm--10 dBm -20 dBm--30 dBm -30 dBr -40 dBm--40 dBm -50 dBm--60 dBm -60 dBm-
 X-value
 Y-value
 Function
 Function Result

 820, 2972 MHz
 16,28 dBm
 824,1453 MHz
 9,36 dBm
 0cc Bw
 2,70929

 826, 85465 MHz
 10,10 dBm
 0cc Bw
 2,70929
 Type Ref Trc Date: 20.AUG.2020 23:22:41 Middle Channel / 3MHz / QPSK Middle Channel / 3MHz / 16QAM
 Ref Level
 30.00 dBm
 Offset
 11.30 dB
 RBW
 100 kHz
 Mode
 Auto FFT

 Att
 30 dB
 SWT
 19 μs
 VBW
 300 kHz
 Mode
 Auto FFT
 SGL Count 100/100 1Pk Max -20 dBm--20 dBm--40 dBm--50 dBm-CF 836.5 MHz 1001 pts Span 6.0 MHz 1001 pts Span 6.0 MHz
 X-value
 Y-value
 Function

 835.5129 MHz
 16.85 dBm
 835.13936 MHz

 935.13936 MHz
 9.53 dBm
 Occ Bw

 837.85465 MHz
 8.97 dBm
 Type | Ref | Trc |
 X-value
 Y-value
 Function

 837.2972 MHz
 16.27 dBm

 835.15734 MHz
 9.49 dBm
 Occ Bw

 837.85465 MHz
 11.43 dBm
 Function Result **Function Result** 2.697302697 MHz 2.715284715 MHz Date: 20.AUG 2020 23:32:02 Date: 20.AUG 2020 23:32:14 Highest Channel / 3MHz / QPSK Highest Channel / 3MHz / 16QAM Ref Level 30.00 SGL Count 100/100 1Pk Max SGL Count 100/100 M1[1] 16.91 dBn 846.55890 MH 2.715284715 MH 15.92 dBn 846.67880 MHz 2.703296703 MHz 20 dBm dBm--10 dBm -20 dBm -20 dBr 40 dBm--50 dBm -50 dBm-CF 847.5 MHz CF 847.5 MHz Span 6.0 MHz
 Marker
 Trope
 Ref
 Trc
 X-value
 Y-value
 Function
 Function Result

 M1
 1
 846.5589 MHz
 16.91 dbm
 Punction
 2.715284

 T1
 1
 846.15135 MHz
 10.76 dbm
 Occ 8w
 2.715284

 T2
 1
 848.66653 MHz
 9.23 dbm
 9.23 dbm
 2.715284715 MHz 2.703296703 MHz

Report No.: FG042243-01B

TEL: 886-3-327-3456 Page Number : A5-14 of 41 FAX: 886-3-328-4978

LTE Band 5 Lowest Channel / 5MHz / QPSK Lowest Channel / 5MHz / 16QAM 15.24 dBr 825.45100 MH 4.515484515 MH 14.39 dBn 825.89100 MH 4.485514486 MH M1[1] M1[1] 10 dBm -10 dBm--10 dBm -20 dBm--30 dBm -30 dBr 40 dBm-40 dBm--50 dBm-50 dBm -60 dBm -60 dBm-
 Type
 Ref
 Trc
 X-value
 Y-value
 Function

 M1
 1
 825.891 MHz
 14.39 dBm

 Type
 Ref
 Trc
 X-value
 Y-value
 Function
 Function Result

 M1
 1
 825.451 MHz
 15.24 dBm
 Function
 Function Result
 Date: 20.AUG.2020 23:55:31 Middle Channel / 5MHz / QPSK Middle Channel / 5MHz / 16QAM
 Ref Level
 30.00 dBm
 Offset
 11.30 dB
 RBW
 100 kHz
 Mode
 Auto FFT

 Att
 30 dB
 SWT
 19 μs
 VBW
 300 kHz
 Mode
 Auto FFT
 SGL Count 100/100 1Pk Max 14.98 dBr 837.43900 MH 4.475524476 MH dBm--20 dBm -20 dBm-40 dBm 40 dBm -50 dBm -50 dBm CF 836.5 MHz 1001 pts Span 10.0 MHz 1001 pts Span 10.0 MHz
 X-value
 Y-value
 Function

 835.071 MHz
 13.61 dBm
 834.2525 MHz
 9.12 dBm
 Occ Bw

 838.73776 MHz
 9.05 dBm
 Occ Bw

 X-value
 Y-value
 Function

 837.439 MHz
 14.98 dBm

 834.26224 MHz
 9.06 dBm
 Occ Bw

 838.73776 MHz
 9.71 dBm
 Type | Ref | Trc | Function Result **Function Result** 4.475524476 MHz 4.485514486 MHz Date: 21.AUG 2020 00:04:52 Date: 21.AUG.2020 00:05:04 Highest Channel / 5MHz / QPSK Highest Channel / 5MHz / 16QAM Ref Level 30.00 SGL Count 100/100 SGL Count 100/100 13.77 dBn 848.15800 MHz 4.485514486 MHz M1[1] 14.84 dBn 847.37900 MH 4.485514486 MH 20 dBm dBm--10 dBm -20 dBm--20 dBn -30 dBm-46 dBm--50 dBm -50 dBm-CF 846.5 MHz CF 846.5 MHz Span 10.0 MHz
 Marker
 Trope
 Ref
 Trc
 X-value
 Y-value
 Function
 Function Result

 M1
 1
 847.379 MHz
 14.84 dbm
 Punction
 Punction Result

 T1
 1
 844.26224 MHz
 11.05 dbm
 Occ Bw
 4.485514

 T2
 1
 848.74775 MHz
 9.76 dbm
 Occ Bw
 4.485514
 4.485514486 MHz 4.485514486 MHz

Report No.: FG042243-01B

LTE Band 5 Lowest Channel / 10MHz / QPSK Lowest Channel / 10MHz / 16QAM 16.84 dBr 830.4990 MH 9.030969031 MH 16.25 dBn 825.0240 MH 8.991008991 MH 10 dBm--10 dBm--10 dBm -20 dBm--30 dBm 40 dBm--50 dBm--60 dBm -60 dBm-Middle Channel / 10MHz / QPSK Middle Channel / 10MHz / 16QAM
 Ref Level
 30.00 dBm
 Offset
 11.30 dB ● RBW
 300 kHz

 Att
 30 dB
 SWT
 12.6 µs ● VBW
 1 MHz
 Mode
 Auto FFT
 SGL Count 100/100 1Pk Max -20 dBm--20 dBm-40 dBm -50 dBm-CF 836.5 MHz 1001 pts Span 20.0 MHz 1001 pts Span 20.0 MHz
 X-value
 Y-value
 Function

 834.222 MHz
 15.42 dBm
 832.0045 MHz
 9.71 dBm
 Occ Bw

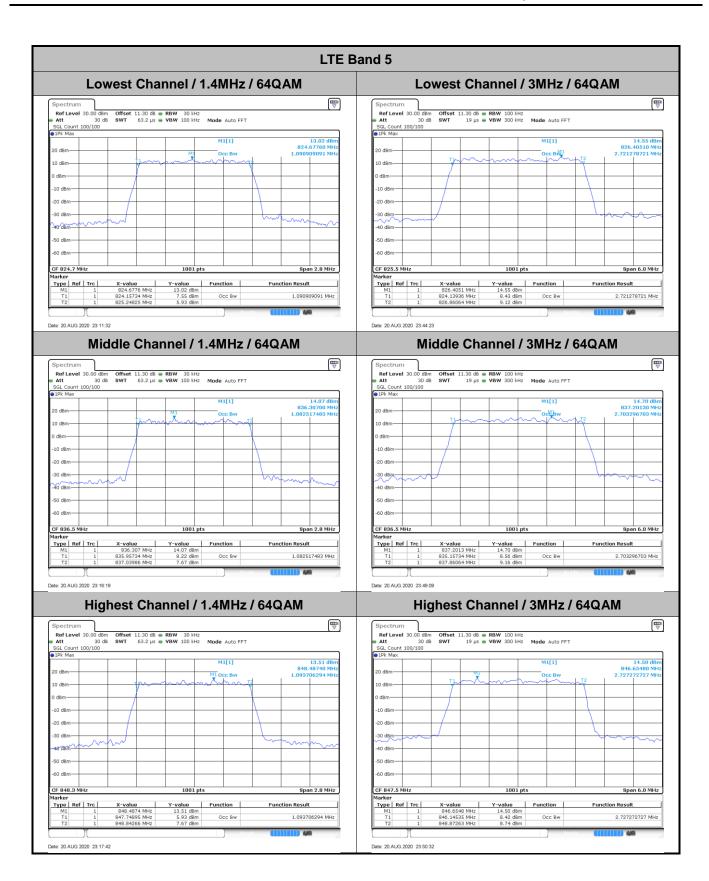
 840.9955 MHz
 9.17 dBm
 Occ Bw
 Type | Ref | Trc |
 X-value
 Y-value
 Function

 838.538 MHz
 16.93 dBm
 832.0445 MHz

 832.0445 MHz
 10.03 dBm
 Occ Bw

 840.9955 MHz
 10.29 dBm
 Function Result **Function Result** 8.951048951 MHz 8.991008991 MHz Date: 21.AUG-2020 00:36:41 Date: 21.AUG 2020 00:36:53 Highest Channel / 10MHz / QPSK Highest Channel / 10MHz / 16QAM SGL Count 100/100 SGL Count 100/100 17.05 dBn 841.6420 MH 9.010989011 MH 15.90 dBn 841.4430 MHz 8.971028971 MHz M1[1] 20 dBm dBm--10 dBm -20 dBm--20 dBr -30 dBm 40 dBm--50 dBm -50 dBm-CF 844.0 MHz Span 20.0 MHz 9.010989011 MHz 8.971028971 MHz

Report No.: FG042243-01B



TEL: 886-3-327-3456 Page Number : A5-17 of 41 FAX: 886-3-328-4978

 Marker
 Trop Ref
 Trc
 X-value
 Y-value
 Function
 Function Result

 M1
 1
 845.371 MHz
 12.83 dbm
 Page 12.83 dbm
 P

FAX: 886-3-328-4978

LTE Band 5 Lowest Channel / 5MHz / 64QAM Lowest Channel / 10MHz / 64QAM M1[1] 14.50 dBr 10 dBm--10 dBm--10 dBm -20 dBm--30 dBm -30 dBr -4e dBm ∕√ 40 dBm--50 dBm-50 dBm -60 dBm -60 dBm-
 Type
 Ref
 Trc
 X-value
 Y-value
 Function
 Function Result

 M1
 1
 826.24 MHz
 12.96 dBm
 Function
 Function
 Date: 21.AUG.2020 00:50:02 Middle Channel / 5MHz / 64QAM Middle Channel / 10MHz / 64QAM
 Ref Level
 30.00 dBm
 Offset
 11.30 dB
 ■ RBW
 100 kHz
 Auto FFT

 Att
 30 dB
 SWT
 19 µs
 ■ VBW
 300 kHz
 Mode
 Auto FFT
 SGL Count 100/100 1Pk Max 14.63 dBn 833.2830 MH: 9.010989011 MH: 12.65 dBr 837.63900 MH 4.475524476 MH 10 dBmdBm--10 dBm -20 dBm--20 dBm-40 dam--40 dBm -50 dBm -50 dBm CF 836.5 MHz 1001 pts Span 10.0 MHz Span 20.0 MHz 1001 pts
 X-value
 Y-value
 Function

 837.639 MHz
 12.65 dbm
 834.26224 MHz
 7.93 dbm

 838.73776 MHz
 7.37 dbm
 Occ Bw

 X-value
 Y-value
 Function

 833.283 MHz
 14.63 dBm
 31.9645 MHz
 8.88 dBm
 Occ Bw

 840.9755 MHz
 8.21 dBm
 Occ Bw
 Type | Ref | Trc | Function Result **Function Result** 4.475524476 MHz 9.010989011 MHz Date: 21.AUG-2020 00:21:59 Date: 21.AUG.2020 00:54:48 Highest Channel / 5MHz / 64QAM Highest Channel / 10MHz / 64QAM SGL Count 100/100 1Pk Max SGL Count 100/100 14.28 dBn 844.8790 MH: 8.991008991 MH: M1[1] 12.83 dBn 845.37100 MH 4.495504496 MH 20 dBm dBm--10 dBm -20 dBm--20 dBm 40 dBm--50 dBm--50 dBm-CF 846.5 MHz CF 844.0 MHz Span 10.0 MHz

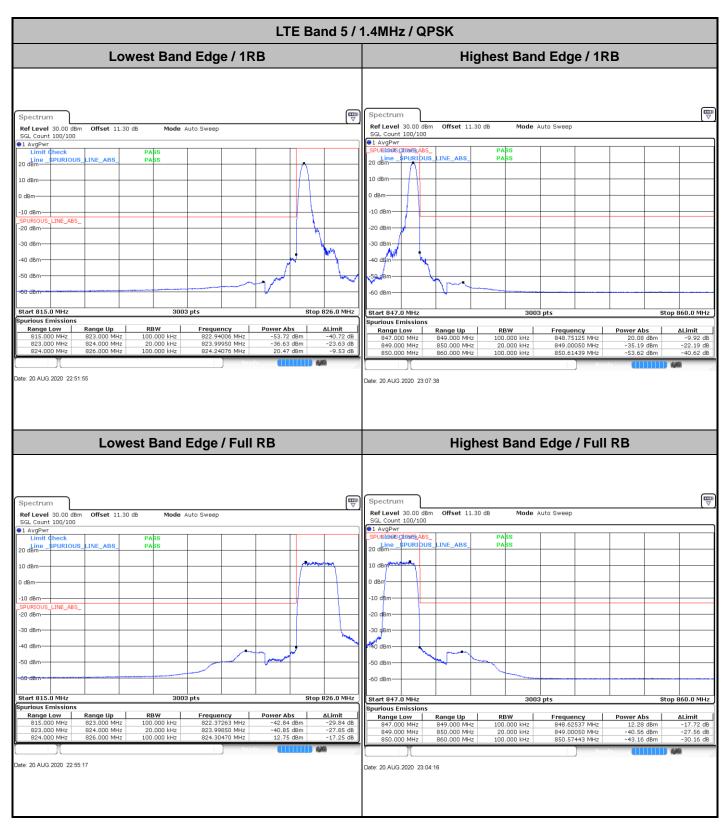
Report No.: FG042243-01B

TEL: 886-3-327-3456 Page Number : A5-18 of 41

4.495504496 MHz

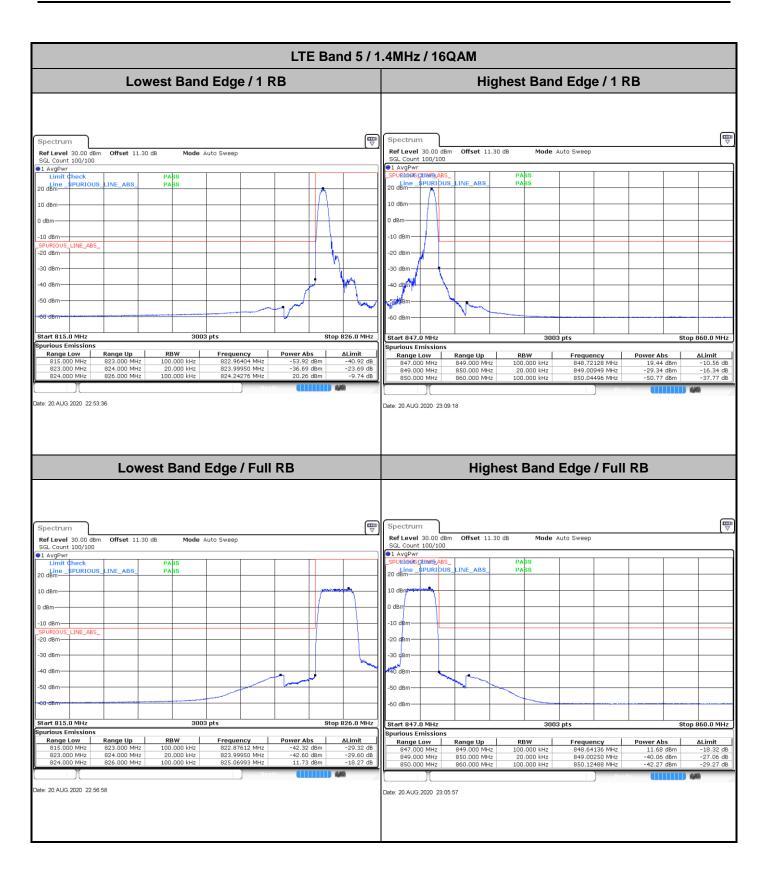
8.991008991 MHz

Conducted Band Edge

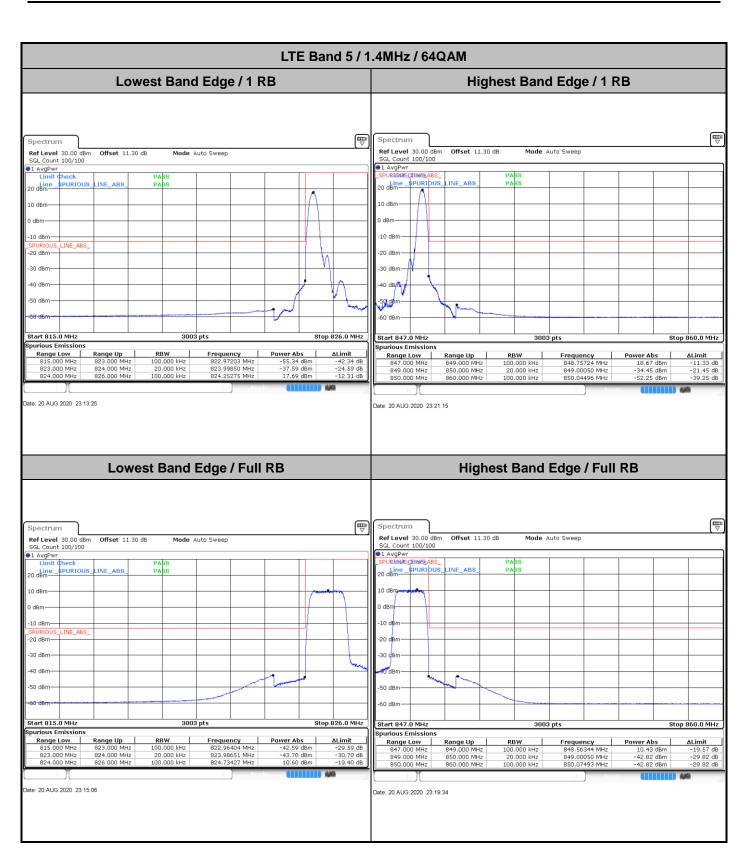


Report No.: FG042243-01B

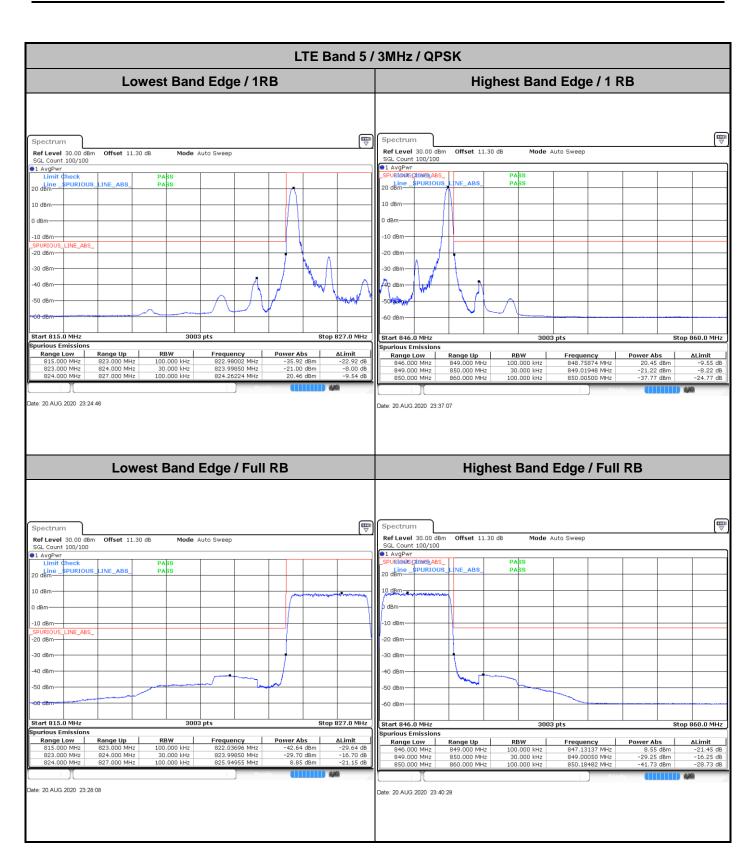
TEL: 886-3-327-3456 Page Number : A5-19 of 41



TEL: 886-3-327-3456 Page Number : A5-20 of 41



TEL: 886-3-327-3456 Page Number : A5-21 of 41



TEL: 886-3-327-3456 Page Number : A5-22 of 41