

Report No.: FG0O2628-02D



## **FCC RADIO TEST REPORT**

**FCC ID** : UZ7TC26EK

Equipment : Touch computer

**Brand Name** : Zebra : TC26EK **Model Name** 

: Zebra Technologies Corporation **Applicant** 

1 Zebra Plaza, Holtsville, NY 11742

Manufacturer : Zebra Technologies Corporation

1 Zebra Plaza, Holtsville, NY 11742

Standard : FCC 47 CFR Part 2, and 90(S)

The product was received on Jan. 27, 2021 and testing was started from Feb. 01, 2021 and completed on Feb. 19, 2021. 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 Win

Sporton International Inc. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)

FAX: 886-3-328-4978 Issued Date : Mar. 08, 2021 Report Version

Report Template No.: BU5-FGLTE90S Version 2.4

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## History of this test report

Report No.: FG0O2628-02D

Report No.	Version	Description	Issued Date
FG0O2628-02D	01	Initial issue of report	Mar. 04, 2021
FG0O2628-02D	02	Add Conducted Output Power in section 1.4	Mar. 08, 2021

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## **Summary of Test Result**

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Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.2	§2.1046 §90.635	Conducted Output Power and Effective Radiated Power	Pass	-
3.3	-	Peak-to-Average Ratio	Reporting only	-
3.4	§2.1049 §90.209	Occupied Bandwidth and 26dB Bandwidth	Reporting only	-
3.5	§2.1051 §90.691	Emission masks – In-band emissions	Pass	-
3.6	§2.1051 §90.691	Emission masks – Out of band emissions	Pass	-
3.7	§2.1055 §90.213	Frequency Stability for Temperature & Voltage	Pass	-
4.1	§2.1053 §90.691	Field Strength of Spurious Radiation	Pass	Under limit 45.18 dB at 3258.000 MHz

#### **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: Yimin Ho

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## 1 General Description

## 1.1 Feature of Equipment Under Test

	Product Feature
Equipment	Touch computer
Brand Name	Zebra
Model Name	TC26EK
FCC ID	UZ7TC26EK
	WCDMA/HSPA/LTE/NFC/GNSS
EUT supports Radios application	WLAN 11a/b/g/n HT20/HT40
Lo i supports itaulos application	WLAN 11ac VHT20/VHT40/VHT80
	Bluetooth BR/EDR/LE
HW Version	EV1.5
SW Version	Android version 10
OS Version	FUSION_QA_2_1.3.0.019_Q
FW Version	Zebra/TC26PG/TC26:10/10-16-10.00-QG-U33-STD-HEL-
LAA AGISIOII	04/115:userdebug/release-keys
MFD	13JAN21
EUT Stage	Engineering sample

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

Specification of Accessories									
AC Adapter	Brand Name	Zebra	Model Name	SAWA-65-20005A					
Battery	<b>Brand Name</b>	Zebra	Model Name	BT-000409A					
USB Cable 1 (TypeA plug to TypeC plug)	Brand Name	Zebra	Part Number	CBL-TC5X-USBC2A-01					
USB Cable 2 (TypeA plug to TypeC plug)	Brand Name	Zebra	Part Number	CBL-TC2Y-USBC90A-01					
Headset 3.5mm type with PTT/micassy	Brand Name	Zebra	Part Number	HDST-35MM-PTVP-01					
Adapter Cable PTT headset (3.5mm to 3.5mm)	Brand Name	Zebra	Part Number	CBL-TC51-HDST35-01					
Type C to 3.5mm adapter	<b>Brand Name</b>	Zebra	Part Number	ADP-USBC-35MM1-01					
Snap on Trigger handle	<b>Brand Name</b>	Zebra	Part Number	TRG-TC2Y-SNP1-01					
Belt Holster	<b>Brand Name</b>	Zebra	Part Number	SG-TC2Y-HLSTR1-01					
Wearable Arm Mount	Brand Name	Zebra	Part Number	SG-TC2Y-ARMNT-01					

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## 1.2 Product Specification of Equipment Under Test

Product Specification subjective to this standard						
Tx Frequency	LTE Band 26: 814.7 ~ 823.3 MHz					
Rx Frequency	LTE Band 26: 859.7 ~ 868.3 MHz					
Bandwidth	1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz					
Maximum Output Power to Antenna	23.22 dBm					
Antenna Type	PIFA Antenna					
Antenna Gain	0.7 dBi					
Type of Modulation	QPSK / 16QAM / 64QAM					

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**Remark:** The above EUT's information was declared by manufacturer. Please refer to Comments and Explanations in report summary.

#### 1.3 Modification of EUT

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

## 1.4 Emission Designator

LTE	Band 26		QP	SK		16QAM					
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Conducted Output Power(dBm)	I FRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Conducted Output Power(dBm)	Maximum ERP(W)		
1.4	814.7~823.3	1M09G7D	-	23.18	0.1489	1M10W7D	-	23.22	0.1503		
3	815.5~822.5	2M76G7D	-	23.16	0.1483	2M71W7D	-	22.71	0.1337		
5	816.5~821.5	4M50G7D	-	23.19	0.1493	4M49W7D	-	22.79	0.1361		
10	819.0	9M05G7D	0.0186	23.09	0.1459	9M07W7D	-	22.71	0.1337		
15	821.5	13M5G7D	0.0181	23.07	0.1452	13M5W7D	1	22.64	0.1315		

LTE	Band 26	64QAM						
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Conducted Output Power(dBm)	Maximum ERP(W)			
1.4	814.7~823.3	1M09W7D	-	21.58	0.1030			
3	815.5~822.5	2M73W7D	-	21.53	0.1019			
5	816.5~821.5	4M49W7D	Î	21.56	0.1026			
10	819.0	9M03W7D	1	21.53	0.1019			
15	821.5	13M4W7D	-	21.48	0.1007			

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## 1.5 Testing Site

Test Site	Sporton International Inc. EMC & Wireless Communications Laboratory					
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, 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	George Chen					
Temperature	22~25°C					
Relative Humidity	51~55%					

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Test Site Sporton International Inc. Wensan Laboratory					
	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist.,				
Test Site Location	Taoyuan City 333010, Taiwan (R.O.C.)				
Test Site Location	TEL: +886-3-327-0868				
	FAX: +886-3-327-0855				
Test Site No.	Sporton Site No.				
rest site No.	03CH11-HY (TAF Code: 3786)				
Test Engineer	Bill Chang, Fu Chen, Quentin Liu and Troye Hsieh				
Temperature	19~22.5°C				
Relative Humidity	42.9~59.3%				
Remark	The Radiated test item subcontracted to Sporton International Inc. Wensan Laboratory.				

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

FCC Designation No.: TW1190 and TW0007

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#### 1.6 Applied Standards

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

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- FCC 47 CFR Part 2, 90
- ANSI / TIA-603-E
- ANSI C63.26-2015
- 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
- Interim Guidance for Equipment Authorization of Devices with Channel Bandwidths Combined Across Two Contiguous Service Rule Allocations OET/Lab/EACB, June 6, 2013

#### Remark:

- 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.

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## 2 Test Configuration of Equipment Under Test

#### 2.1 Test Mode

During all testing, EUT is in link mode with base station emulator at maximum power level.

For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X plane with Adapter) were recorded in this report.

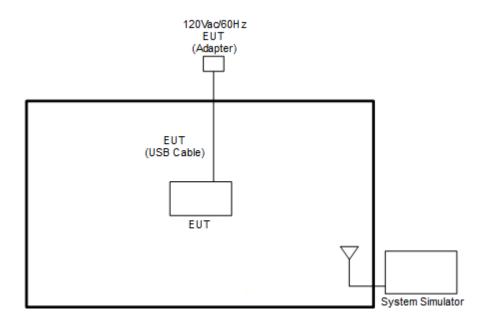
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Frequency range investigated for radiated emission is 30 MHz to 9000 MHz.

Conducted		Bandwidth (MHz)					Modulation				RB#		Test Channel			
Test Cases	Band	1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	М	Н
Max. Output Power	26	V	v	v	v	v	-	v	v	v	v	v	v	V	V	v
Peak-to-Average Ratio	26					v	ı	v	v	v			v		>	
26dB and 99% Bandwidth	26	<b>v</b>	٧	V	V	v	ı	V	v	v			v		>	
Emission masks In-band emissions	26	>	<b>&gt;</b>	V	V	v	ı	v	v	v	v		v	V		v
Emission masks – Out of band emissions	26	v	v	v	v	v		v			v				v	
Frequency Stability	26				v	v	-	v					v		v	
E.R.P.	26	٧	٧	v	v	v	ı	v	v	v	v			V	>	v
Radiated Spurious Emission	26 Worst Case						V	>	v							
1. The mark "v" means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported. 3. LTE Band26 transmit frequency for part22 rule is 824MHz-849MHz, for part90 rule is 814MHz-824M ERP over 15MHz bandwidth complies the ERP limit line of part22 rule, therefore ERP of the partial frequency spectrum which falls within part 22 also complies. 4. All the radiated test cases were performed with USB Cable 1.							ЛHz.									

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#### 2.2 Connection Diagram of Test System



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## 2.3 Support Unit used in test configuration and system

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

## 2.4 Measurement Results Explanation Example

#### For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between RF conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level will be exactly the RF output level.

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

Offset = RF cable loss + attenuator factor.

The following shows an offset computation example with RF cable loss 4.2 dB and a 10dB attenuator.

#### Example:

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

= 4.2 + 10 = 14.2 (dB)

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## 2.5 Frequency List of Low/Middle/High Channels

	LTE Band 26 Channel and Frequency List										
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest							
15	Channel	26765	-	-							
15	Frequency	821.5	-	-							
10	Channel	-	26740	-							
10	Frequency	-	819	-							
5	Channel	26715	26740	26765							
5	Frequency	816.5	819	821.5							
3	Channel	26705	26740	26775							
3	Frequency	815.5	819	822.5							
1.4	Channel	26697	26740	26783							
1.4	Frequency	814.7	819	823.3							

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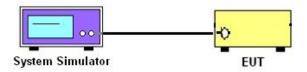
#### 3 Conducted Test Items

#### 3.1 Measuring Instruments

See list of measuring instruments of this test report.

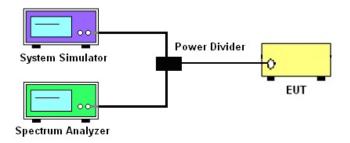
#### 3.1.1 Test Setup

#### 3.1.2 Conducted Output Power

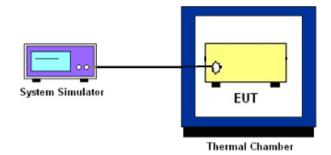


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# 3.1.3 Peak-to-Average Ratio, Occupied Bandwidth, Conducted Band-Edge, Emission Mask, Emissions Mask – Out Of Band Emissions, and Conducted Spurious Emission



#### 3.1.4 Frequency Stability



#### 3.1.5 Test Result of Conducted Test

Please refer to Appendix A.

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#### 3.2 Conducted Output Power Measurement and ERP Measurement

## 3.2.1 Description of the Conducted Output Power Measurement and ERP Measurement

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

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The ERP of mobile transmitters must not exceed 7 Watts for LTE Band 26.

According to KDB 412172 D01 Power Approach,

 $EIRP = P_T + G_T - L_C$ , where

 $P_T$  = transmitter output power in dBm

 $G_T$  = gain of the transmitting antenna in dBi

L<sub>C</sub> = 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 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.

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### 3.3 Peak-to-Average Ratio

#### 3.3.1 Description of the PAR Measurement

Reporting only

#### 3.3.2 Test Procedures

- 1. The EUT was connected to spectrum and system simulator via a power divider.
- 2. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.

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- 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.

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### 3.4 99% Occupied Bandwidth and 26dB Bandwidth Measurement

#### 3.4.1 Description of (Occupied) Bandwidth Limitations Measurement

The 99% 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.

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The emission bandwidth is defined as the width of the signal between two points, located at the 2 sides of the carrier frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

#### 3.4.2 Test Procedures

- 1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
- 2. The 26dB and 99% occupied bandwidth (BW) of the middle channel for the highest RF power with full RB sizes were measured.

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#### 3.5 Emissions Mask Measurement

#### 3.5.1 Description of Emissions Mask Measurement

Equipment used in this licensed to EA or non-EA systems shall comply with the emission mask provisions of FCC Part 90.691.(a)

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- (a) Out-of-band emission requirement shall apply only to the "outer" channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:
- (1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116  $\log_{10}(f/6.1)$  decibels or 50 + 10  $\log_{10}(P)$  decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.
- (2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \text{Log}_{10}$  (P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

#### 3.5.2 Test Procedures

- 1. The EUT was connected to spectrum analyzer and base station via power divider.
- 2. The emissions mask of low and high channels for the highest RF powers were measured.
- 3. Set RBW and VBW 3 times of RBW to make the measurement with the spectrum analyzer's, and according to KDB 971168 D02 Misc Rev Approve License Devices v02r01 standards, set RBW = 300 Hz to make offsets less than 37.5 kHz from a channel edge, RBW = 100 kHz to make offsets greater than 37.5 kHz, that is allowed.
- 4. The test results were shown below plots with a correction offset factor including cable loss, insertion loss of power divider.

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#### 3.6 Emissions Mask - Out Of Band Emissions Measurement

#### 3.6.1 Description of Conducted Emissions Out of band emissions measurement

The power of any emission FCC Part 90.691 (a)(2) on any frequency removed from the assigned frequency by out of the authorized bandwidth at least 43 + 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 10<sup>th</sup> harmonic.

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#### 3.6.2 Test Procedures

- 1. The EUT was connected to spectrum analyzer and system simulator via a 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. For testing below 1GHz, make the measurement with the spectrum analyzer's RBW = 100 kHz, VBW = 3MHz, taking the record of maximum spurious emission.
- 6. For testing above 1GHz, make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
- 7. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
- 8. The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)

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## 3.7 Frequency Stability Measurement

#### 3.7.1 Description of Frequency Stability Measurement

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

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#### 3.7.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

#### 3.7.3 Test Procedures for Temperature Variation

- 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 for three hours. 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.

#### 3.7.4 Test Procedures for Voltage Variation

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

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#### 4 Radiated Test Items

### 4.1 Field Strength of Spurious Radiation Measurement

#### 4.1.1 Description of Field Strength of Spurious Radiated Measurement

The radiated spurious emission was measured by substitution method according to ANSI / TIA-603-E. The power of any emission FCC Part 90.691 on any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth at least 43 + 10 log (P) dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

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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+10log<sub>10</sub>(P[Watts]) dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

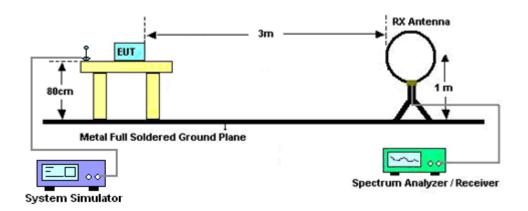
#### 4.1.2 Test Procedures

- 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.
- For testing below 1GHz, make the measurement with the spectrum analyzer's RBW = 100 kHz,
   VBW = 3MHz, Sweep = 500ms, Taking the record of maximum spurious emission.
- For testing above 1GHz, make the measurement with the spectrum analyzer's RBW = 1MHz,
   VBW = 3MHz, Sweep = 500ms, Taking the record of maximum spurious emission.
- 7. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
- 8. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
- 9. Taking the record of output power at antenna port.
- 10. Repeat step 7 to step 8 for another polarization.
- 11. EIRP (dBm) = S.G. Power Tx Cable Loss + Tx Antenna Gain
- 12. ERP (dBm) = EIRP 2.15
- 13. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
- 14. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

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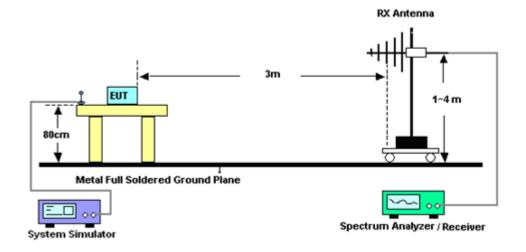
## 4.1.3 Test Setup

#### For radiated test below 30MHz



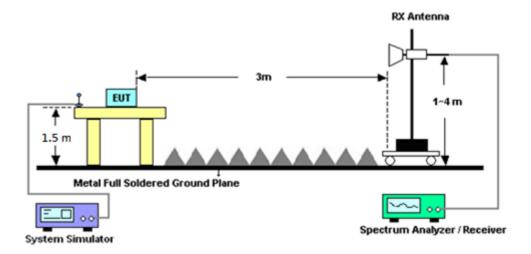
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#### For radiated test from 30MHz to 1GHz



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#### For radiated test above 1GHz



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#### 4.1.4 Test Result of Field Strength of Spurious Radiated

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.

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## 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	Jul. 14, 2020	Feb. 01, 2021~ Feb. 19, 2021	Jul. 13, 2021	Radiation (03CH11-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	9120D-132 6	1GHz ~ 18GHz	Nov. 03, 2020	Feb. 01, 2021~ Feb. 19, 2021	Nov. 02, 2021	Radiation (03CH11-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	9120D-121 2	1GHz ~ 18GHz	May 20, 2020	Feb. 01, 2021~ Feb. 19, 2021	May 19, 2021	Radiation (03CH11-HY)
Bilog Antenna	TESEQ	CBL 6111D & N-6-06	35414 & AT-N0602	30MHz~1GHz	Oct. 11, 2020	Feb. 01, 2021~ Feb. 19, 2021	Oct. 10, 2021	Radiation (03CH11-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01 N-06	37059 & 01	30MHz~1GHz	Oct. 11, 2020	Feb. 01, 2021~ Feb. 19, 2021	Oct. 10, 2021	Radiation (03CH11-HY)
Preamplifier	Keysight	83017A	MY532700 80	1GHz~26.5GHz	Nov. 12, 2020	Feb. 01, 2021~ Feb. 19, 2021	Nov. 11, 2021	Radiation (03CH11-HY)
Amplifier	SONOMA	310N	187312	9kHz~1GHz	Dec. 02, 2020	Feb. 01, 2021~ Feb. 19, 2021	Dec. 01, 2021	Radiation (03CH11-HY)
Spectrum Analyzer	Keysight	N9010A	MY542004 86	10Hz~44GHz	Oct. 23, 2020	Feb. 01, 2021~ Feb. 19, 2021	Oct. 22, 2021	Radiation (03CH11-HY)
Signal Generator	Rohde & Schwarz	SMF100A	101107	100kHz~40GHz	Dec. 14, 2020	Feb. 01, 2021~ Feb. 19, 2021	Dec. 13, 2021	Radiation (03CH11-HY)
Controller	EMEC	EM 1000	N/A	Control Turn table & Ant Mast	N/A	Feb. 01, 2021~ Feb. 19, 2021	N/A	Radiation (03CH11-HY)
Antenna Mast	EMEC	AM-BS-4500- B	N/A	1~4m	N/A	Feb. 01, 2021~ Feb. 19, 2021	N/A	Radiation (03CH11-HY)
Turn Table	EMEC	TT 2000	N/A	0~360 Degree	N/A	Feb. 01, 2021~ Feb. 19, 2021	N/A	Radiation (03CH11-HY)
Software	Audix	E3 6.2009-8-24	RK-00105 3	N/A	N/A	Feb. 01, 2021~ Feb. 19, 2021	N/A	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY9837/4 PE	9kHz-30MHz	Mar. 12, 2020	Feb. 01, 2021~ Feb. 19, 2021	Mar. 11, 2021	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY2859/2	30MHz-40GHz	Mar. 12, 2020	Feb. 01, 2021~ Feb. 19, 2021	Mar. 11, 2021	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY9837/4 PE	30M-18G	Mar. 12, 2020	Feb. 01, 2021~ Feb. 19, 2021	Mar. 11, 2021	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY4274/2	30MHz-40GHz	Mar. 12, 2020	Feb. 01, 2021~ Feb. 19, 2021	Mar. 11, 2021	Radiation (03CH11-HY)
Filter	Wainwright	WHKX12-108 0-1200-15000 -60SS	SN2	1.2GHz High Pass Filter	Sep. 14, 2020	Feb. 01, 2021~ Feb. 19, 2021	Sep. 13, 2021	Radiation (03CH11-HY)
Filter	Wainwright	WHKX12-270 0-3000-18000 -60SS	SN3	3GHz High Pass Filter	Sep. 14, 2020	Feb. 01, 2021~ Feb. 19, 2021	Sep. 13, 2021	Radiation (03CH11-HY)
Hygrometer	TECPEL	DTM-303B	TP140325	N/A	Nov. 18, 2020	Feb. 01, 2021~ Feb. 19, 2021	Nov. 17, 2021	Radiation (03CH11-HY)
Hygrometer	TECPEL	DTM-303B	TP200880	QA-3-031	Oct. 22, 2020	Feb. 01, 2021~ Feb. 19, 2021	Oct. 21, 2021	Radiation (03CH11-HY)

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Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Base Station(Measure)	Anritsu	MT8821C	626200253 41	N/A	Oct. 06, 2020	Feb. 01, 2021~ Feb. 05, 2021	Oct. 05, 2021	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV40	101909	10Hz~40GHz	May 19, 2020	Feb. 01, 2021~ Feb. 05, 2021	May 18, 2021	Conducted (TH05-HY)
Thermal Chamber	ESPEC	SH-641	92013720	-40°C ~90°C	Sep. 14, 2020	Feb. 01, 2021~ Feb. 05, 2021	Sep. 13, 2021	Conducted (TH05-HY)
Programmable Power Supply	GW Instek	PSS-2005	EL890094	1V~20V 0.5A~5A	Oct. 05, 2020	Feb. 01, 2021~ Feb. 05, 2021	Oct. 04, 2021	Conducted (TH05-HY)
Coupler	MVE	MVE4816	A400014	0.5~18GHz	May 08, 2020	Feb. 01, 2021~ Feb. 05, 2021	May 07, 2021	Conducted (TH05-HY)

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## 6 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of	
· · · · · · · · · · · · · · · · · · ·	3.29
Confidence of 95% (U = 2Uc(y))	

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

Measuring Uncertainty for a Level of	3.32
Confidence of 95% (U = 2Uc(y))	3.32

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## **Appendix A. Test Results of Conducted Test**

## Conducted Output Power (Average power & ERP)

	LTE Band 26 Maximum Average Power [dBm] (GT - LC = 0.7 dB)										
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP (W)			
15	1	0		23.05		-					
15	1	37		23.01	-	-					
15	1	74		23.07	1	-					
15	36	0	QPSK	22.00	1	-	21.62	0.1452			
15	36	20		22.15	-	-					
15	36	39		22.13	1	-					
15	75	0		22.17	1	1					
15	1	0		22.10	1	-	21.19	0.1315			
15	1	37		22.47	-	-					
15	1	74		22.64	-	-					
15	36	0	16-QAM	21.19	1	-					
15	36	20		21.23	1	-					
15	36	39		21.18	1	-					
15	75	0		21.22	-	-					
15	1	0		21.48	1	-					
15	1	37		21.20	1	1					
15	1	74		21.27	1	-					
15	36	0	64-QAM	20.18	1	-	20.03	0.1007			
15	36	20		20.29	-	-					
15	36	39		20.15	-	-					
15	75	0		20.15	-	-					
Limit		ERP < 7W			Result		Pa	ISS			

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Limit

ERP < 7W

LTE Band 26 Maximum Average Power [dBm] (GT - LC = 0.7 dB) BW [MHz] RB Size RB Offset Mod Lowest Middle Highest ERP (dBm) ERP (W) 10 1 0 23.09 10 1 25 23.06 10 1 49 23.03 10 25 0 **QPSK** 22.09 21.64 0.1459 10 25 12 22.09 10 25 25 22.00 10 50 0 22.14 10 1 0 22.08 10 1 25 -22.71 49 10 1 22.37 -10 25 0 16-QAM 21.18 21.26 0.1337 10 25 12 21.09 -\_ 25 10 25 21.11 10 50 0 -21.20 10 1 0 21.30 10 1 25 21.43 10 1 49 21.53 25 20.08 0.1019 10 0 64-QAM 20.23 10 25 12 20.21 10 25 25 20.11 10 50 0 20.21

Result

Report No.: FG0O2628-02D

Pass



LTE Band 26 Maximum Average Power [dBm] (GT - LC = 0.7 dB) BW [MHz] **RB Size** RB Offset Mod Lowest Middle Highest ERP (dBm) ERP (W) 5 1 0 22.96 23.09 23.16 12 5 1 23.01 23.08 23.04 5 1 24 23.06 23.03 23.19 5 12 0 **QPSK** 21.95 22.16 22.09 21.74 0.1493 5 12 7 22.07 22.10 22.20 5 12 13 22.04 21.98 22.09 5 25 0 22.08 22.10 22.20 5 1 0 22.06 22.17 22.37 1 12 5 22.45 22.72 22.52 5 1 24 22.39 22.64 22.79 5 12 0 16-QAM 21.18 21.19 21.34 0.1361 21.14 5 12 7 21.14 21.11 21.35 5 12 13 21.18 21.17 21.28 5 25 0 21.13 21.18 21.17 5 21.40 0 21.33 21.20 5 12 1 21.18 21.53 21.43 5 1 24 21.20 21.56 21.32 0.1026 5 12 0 64-QAM 20.12 20.23 20.13 20.11 7 5 20.28 20.21 20.38 12 5 12 13 20.14 20.13 20.23 5 25 0 20.13 20.12 20.29 Limit ERP < 7W Result **Pass** 

Report No.: FG0O2628-02D



LTE Band 26 Maximum Average Power [dBm] (GT - LC = 0.7 dB) BW [MHz] **RB Size** RB Offset Mod Lowest Middle Highest ERP (dBm) ERP (W) 3 1 0 22.98 23.09 23.16 3 1 8 22.92 23.01 23.03 3 1 14 23.03 23.01 23.16 3 8 0 **QPSK** 21.96 22.09 22.09 21.71 0.1483 3 8 4 22.10 22.11 22.11 3 8 22.08 21.99 22.13 3 15 0 22.14 22.14 22.15 3 1 0 22.07 22.16 22.37 3 1 8 22.43 22.70 22.49 3 1 14 22.58 22.38 22.71 3 0 16-QAM 21.18 21.27 21.26 0.1337 8 21.10 3 8 4 21.15 21.13 21.31 7 3 8 21.14 21.13 21.22 3 15 0 21.21 21.14 21.16 3 21.39 21.28 21.26 0 3 1 8 21.16 21.50 21.50 3 1 14 21.18 21.53 21.35 0.1019 3 8 0 64-QAM 20.15 20.21 20.14 20.08 8 4 20.21 20.23 20.34 3 3 8 7 20.14 20.16 20.20 3 15 0 20.09 20.14 20.20 Limit ERP < 7W Result **Pass** 

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LTE Band 26 Maximum Average Power [dBm] (GT - LC = 0.7 dB) BW [MHz] **RB Size** RB Offset Mod Lowest Middle Highest ERP (dBm) ERP (W) 1.4 1 0 23.02 23.04 23.18 1.4 1 3 22.97 23.05 23.10 1.4 1 5 23.05 23.02 23.13 1.4 3 0 QPSK 23.01 22.99 23.18 21.73 0.1489 1.4 3 1 22.95 23.05 23.03 3 1.4 3 23.05 23.04 23.18 1.4 6 0 22.07 22.10 22.22 1.4 1 0 22.07 22.09 22.35 1 1.4 3 22.40 22.64 22.51 1.4 1 5 22.61 22.43 22.70 1.4 3 0 16-QAM 23.02 23.22 21.77 0.1503 23.09 3 1.4 1 22.99 23.03 23.13 1.4 3 3 23.06 23.01 23.15 6 0 1.4 21.12 21.13 21.16 21.28 21.29 1.4 0 21.41 3 1.4 1 21.18 21.52 21.44 1 21.48 1.4 5 21.19 21.32 0.1030 1.4 3 0 64-QAM 21.47 21.35 21.24 20.13 1.4 3 1 21.14 21.47 21.45 3 3 1.4 21.25 21.58 21.34 1.4 6 0 20.07 20.19 20.26 Limit ERP < 7W Result **Pass** 

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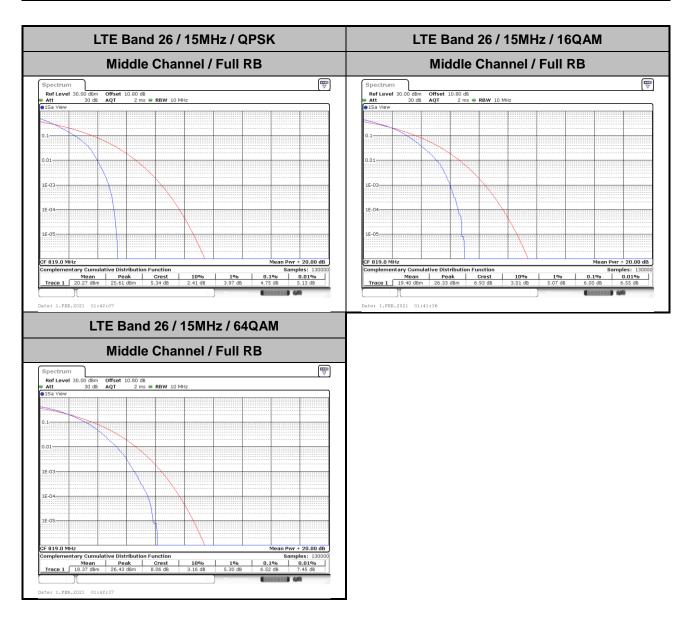


## LTE Band 26

## Peak-to-Average Ratio

Mode					
Mod.	QPSK	16QAM	64QAM	Limit: 13dB	
RB Size	Full RB	Full RB	Full RB	Result	
Middle CH	4.75	6.00	6.52	PASS	

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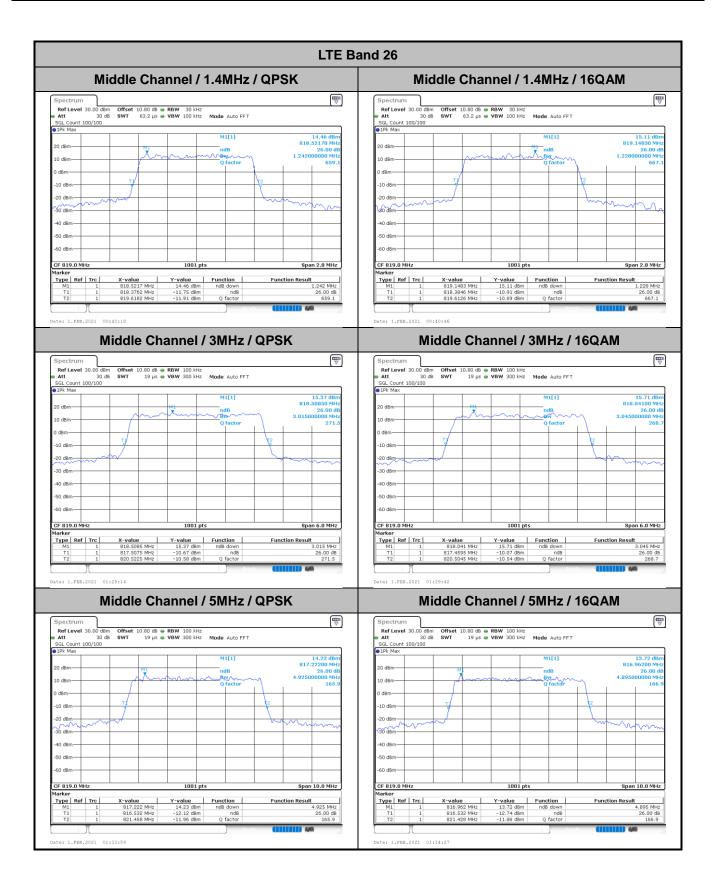
## 26dB Bandwidth

Mode	LTE Band 26 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	1.24	1.23	3.02	3.05	4.93	4.90	9.83	9.77	14.57	14.45	-	-
Mode	LTE Band 26 : 26dB BW(MHz)											
BW	1.4	ИНz	3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM	256 QAM	64QAM	256 QAM	64QAM	256 QAM	64QAM	256 QAM	64QAM	256 QAM	64QAM	256 QAM
Middle CH	1.23	-	3.02	-	4.91	-	9.65	-	14.39	-	-	-

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 X-value
 Y-value
 Function

 822.052 MHz
 13.83 dBm
 ndB down

 816.687 MHz
 -11.94 dBm
 ndB

 831.253 MHz
 -12.52 dBm
 Q factor

Type Ref Trc

FAX: 886-3-328-4978

LTE Band 26 Middle Channel / 10MHz / QPSK Middle Channel / 10MHz / 16QAM Ref Level 30.00 dBm

Att 30 dB

SGL Count 100/100

1Pk Max -10 dBm Span 20.0 MHz CF 819.0 MHz Span 20.0 MHz Middle Channel / 15MHz / QPSK Middle Channel / 15MHz / 16QAM 10.80 dB • RBW 300 kHz 12.6 µs • VBW 1 MHz Mode Auto FFT Offset 10.80 dB ● RBW 300 kHz SWT 12.6 µs ● VBW 1 MHz Mode Auto FFT 13.83 dBr 822.0520 M M1[1] anydem-40 dBm -50 dBm

Type Ref Trc

Function Result 14.565 MHz 26.00 dB 56.4 Report No.: FG0O2628-02D

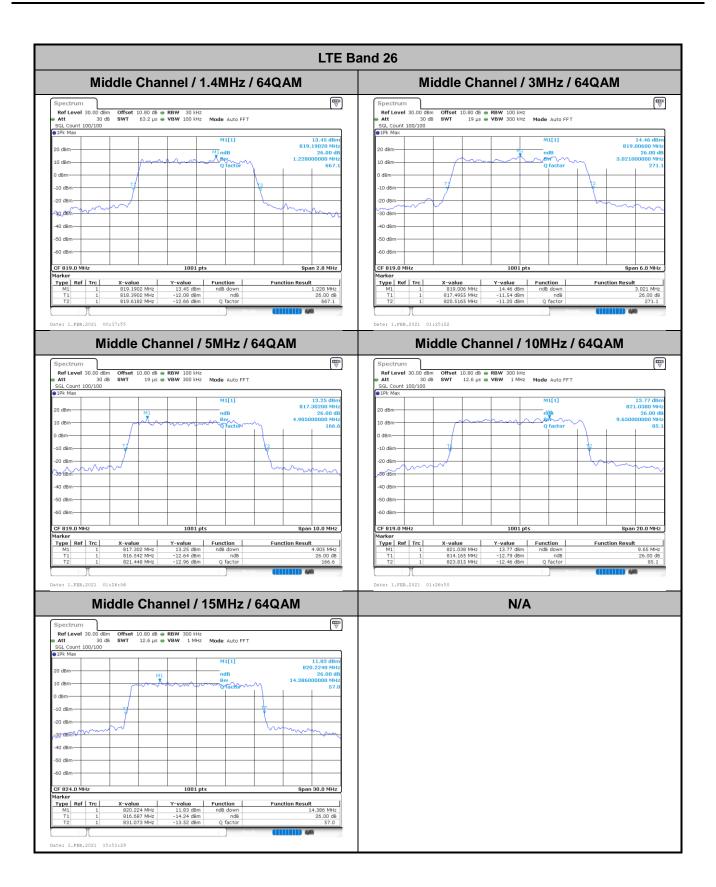
Function Result

14.446 MHz

26.00 dB

57.3

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## Occupied Bandwidth

Mode		LTE Band 26 : 99%OBW(MHz)										
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	1.09	1.10	2.76	2.71	4.50	4.49	9.05	9.07	13.52	13.46	-	-
Mode					LTE Ba	and 26 :	99%OBV	V(MHz)				
BW	1.4	ИНz	3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM	256 QAM	64QAM	256 QAM	64QAM	256 QAM	64QAM	256 QAM	64QAM	256 QAM	64QAM	256 QAM
Middle CH	1.09	-	2.73	-	4.49	-	9.03	-	13.43	-	-	-

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Type | Ref | Trc |

FAX: 886-3-328-4978

LTE Band 26 Middle Channel / 1.4MHz / QPSK Middle Channel / 1.4MHz / 16QAM Ref Level 30.00 dBm Att 30 dB SGL Count 100/100 -20 dBm -20 dBm-40 dBm-CF 819.0 MHz CF 819.0 MHz 
 X-value
 Y-value
 Function

 818.5329 MHz
 14.80 dBm
 Bl.345455 MHz

 818.45455 MHz
 7.71 dBm
 Occ Bw

 819.54545 MHz
 7.77 dBm

 X-value
 Y-value
 Function

 819.0028 MHz
 14.02 dBm
 818.45455 MHz

 618.45455 MHz
 6.26 dBm
 Occ Bw

 819.55385 MHz
 6.79 dBm
 Type Ref Trc Function Result Type Ref Trc **Function Result** 1.090909091 MHz 1.099300699 MHz Middle Channel / 3MHz / QPSK Middle Channel / 3MHz / 16QAM .80 dB • RBW 100 kHz 19 µs • VBW 300 kHz Mode Auto FFT Offset 10.80 dB ● RBW 100 kHz SWT 19 µs ● VBW 300 kHz Mode Auto FFT 14.89 dBi 819.81520 MF 2.757242757 MF dBm--20 dBm-40 dBm 40 dBm -50 dBm-CF 819.0 MHz Type | Ref | Trc | 
 X-value
 Y-value
 Function

 819.8152 MHz
 14.89 dBm
 817.62138 MHz

 917.62138 MHz
 9.20 dBm
 Occ Bw

 820.37862 MHz
 8.64 dBm
 Type Ref Trc 
 X-value
 Y-value
 Function

 818.6104 MHz
 15.72 dBm
 91.7.64535 MHz

 817.64535 MHz
 8.28 dBm
 Occ Bw

 820.35465 MHz
 8.83 dBm
 **Function Result Function Result** 2.757242757 MHz 2.709290709 MHz Middle Channel / 5MHz / QPSK Middle Channel / 5MHz / 16QAM Ref Level 30.00 dBm

Att 30 dB

SGL Count 100/100

1Pk Max 13.74 dBr 819.67900 MH 4.495504496 MH M1[1] M1[1] 10 dBm--10 dBm-30 dBm -60 dBm--60 dBm-

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Occ Bw

Type Ref Trc

Occ Bw

 X-value
 Y-value
 Function

 828.825 MHz
 14.96 dBm

 817.2567 MHz
 9.61 dBm
 Occ Bw

 830.7732 MHz
 8.84 dBm

LTE Band 26 Middle Channel / 10MHz / QPSK Middle Channel / 10MHz / 16QAM Ref Level 30.00 dBm
Att 30 dB
SGL Count 100/100
Pk Max 15.41 dB 815.3440 MH 9.050949051 MH 10 dBm -10 dBm--10 dBm 40 dBm -60 dBm 1001 pts CF 819.0 MHz Span 20.0 MHz CF 819.0 MHz Span 20.0 MHz X-value 819.5 MHz 814.4645 MHz 823.5355 MHz Y-value 14.78 dBm 9.08 dBm 8.60 dBm Type Ref Trc Type Ref Trc 9.050949051 MHz Middle Channel / 15MHz / QPSK Middle Channel / 15MHz / 16QAM 0 dBm Offset 10.80 dB • RBW 300 kHz 30 dB SWT 12.6 µs • VBW 1 MHz Mode Auto FFT 14.96 dBi 828.8250 MF 13.516483516 MF 13.56 dBn 817.7660 MHz 13.456543457 MHz dBmand them-40 dBm -50 dBm-

CF 824.0 MHz

**Function Result** 

13.516483516 MHz

Type Ref Trc

Date: 3.FEB.2021 15:53:00

 X-value
 Y-value
 Function

 817.766 MHz
 13.56 dBm
 817.2567 MHz
 8.47 dBm
 Occ Bw

 830.7133 MHz
 7.59 dBm
 Occ Bw
 0cc Bw

**Function Result** 

13.456543457 MHz

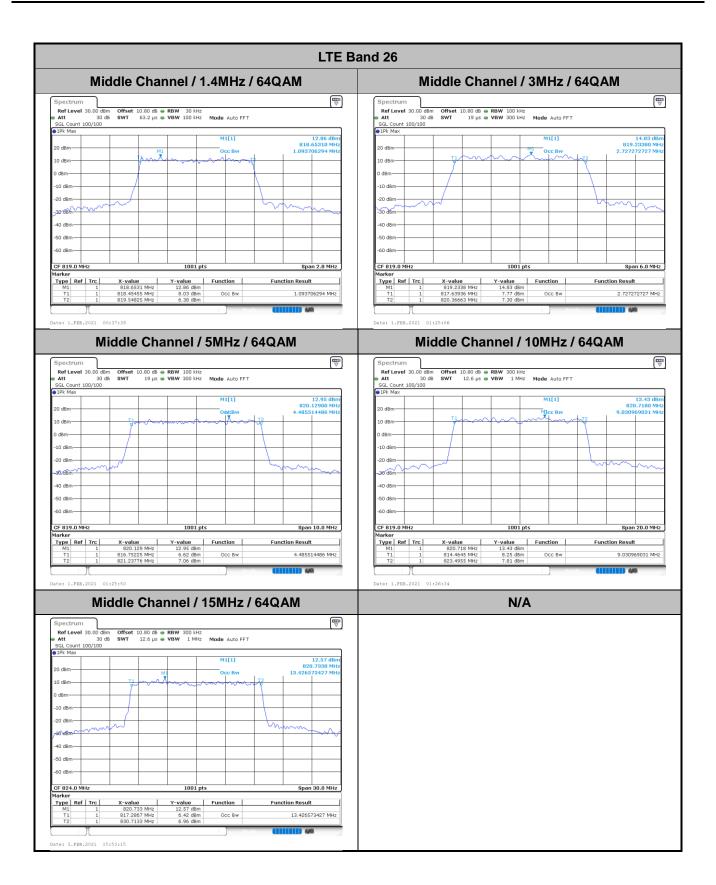
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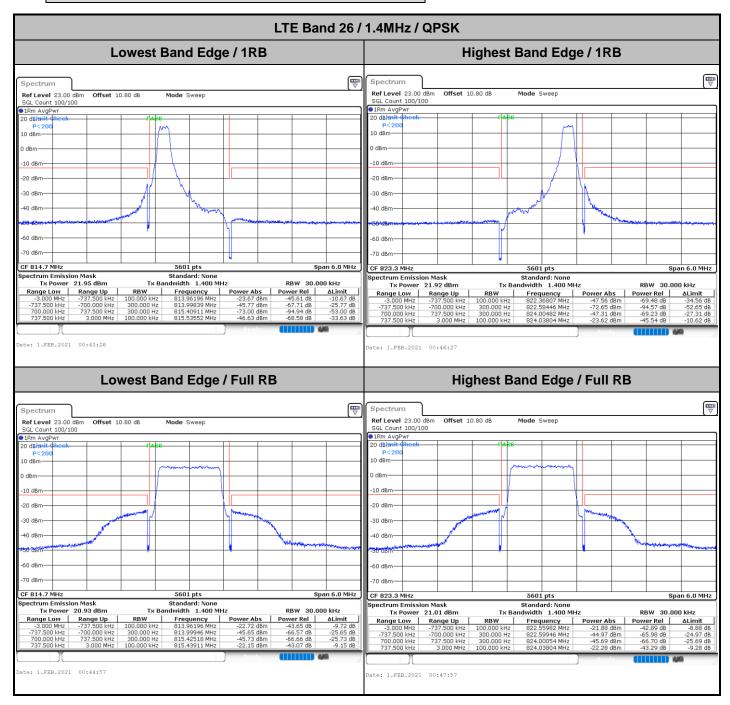
Type Ref Trc

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### Emission masks - In-band emissions



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LTE Band 26 / 1.4MHz / 16QAM Lowest Band Edge / 1 RB Highest Band Edge / 1 RB Spectrum Ref Level 23.00 dBm Offset 10.80 dB Mode Sweep Ref Level 23.00 dBm Offset 10.80 dB Mode Sweep Count 100/100 AvgPwr GL Count 100/100 20 dRim 10 dBm -10 dBm -10 dBm -20 dBr -20 dBr -30 dBn -30 dBn -40 dBn -40 dBm -60 dBm -70 dBm--70 dBm CF 814.7 MHz 5601 pts Span 6.0 MHz CF 823.3 MH 5601 pts Dectrum Emission Mask
TX Power 21.32 dBm
Range Low Range Up
-3.000 MHz -737.500 kH Standard: None Tx Bandwidth 1.400 MHz Spectrum Emission Mask Standard: None Tx Bandwidth 1.400 MHz RBW 30.000 kHz | Width 1.400 MHz | Frequency | Power Abs | 813.96196 MHz | -24.46 dBm | 813.99839 MHz | -47.29 dBm | 815.40696 MHz | -73.56 dBm | 815.52159 MHz | -47.92 dBm | 
 Power Rel
 ΔLimit

 -45.78 dB
 -11.46 dB

 -68.61 dB
 -27.29 dB

 -94.88 dB
 -53.56 dB

 -69.24 dB
 -34.92 dB
 Date: 1.FEB.2021 00:44:12 **Highest Band Edge / Full RB** Lowest Band Edge / Full RB Spectrum Offset 10.80 dB Ref Level 23.00 dBm Offset 10.80 dB Mode Sweep ●1Rm AvgPwr 10 dBm -10 dBn -10 dBm -20 dBr -20 dBr -30 dBm -30 dBm -40 dBm -60 dBn -70 dBm 5601 pts CF 823.3 MHz 5601 pts Span 6.0 MHz Standard: None Tx Bandwidth 1.400 MHz ectrum Emission Mask Standard: None Tx Bandwidth 1.400 MHz RBW 30.000 kHz Frequency ΔLimit -10.31 dB -26.22 dB -26.39 dB -11.15 dB Range Up Power Abs ate: 1.FEB.2021 00:45:42 ate: 1.FEB.2021 00:48:42

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LTE Band 26 / 1.4MHz / 64QAM Lowest Band Edge / 1 RB Highest Band Edge / 1 RB Spectrum Ref Level 23.00 dBm Offset 10.80 dB Mode Sweep Ref Level 23.00 dBm Offset 10.80 dB Mode Sweep Count 100/100 AvgPwr GL Count 100/100 20 dRim 10 dBm -10 dBm -10 dBm -20 dBr -20 dBr -30 dBn -30 dBm -40 dBm -40 dBm -60 dBm -60 dBm -70 dBm--70 dBm 5601 pts CF 814.7 MHz 5601 pts Span 6.0 MHz CF 823.3 MH pectrum Emission Mask
TX Power 20.23 dBm
Range Low Range Up
-3.000 MHz -737.500 kH Standard: None Tx Bandwidth 1.400 MHz Spectrum Emission Mask Standard: None Tx Bandwidth 1.400 MHz 20.11 dBm RBW 30.000 kHz Power Rel ALimit
1 -47.88 dB -14.65 dB
1 -70.25 dB -30.02 dB
1 -93.83 dB -53.61 dB
1 -67.54 dB -34.31 dB Date: 1.FEB.2021 00:49:28 **Highest Band Edge / Full RB** Lowest Band Edge / Full RB Spectrum Offset 10.80 dB Ref Level 23.00 dBm Offset 10.80 dB Mode Sweep ●1Rm AvgPwr 10 dBm -10 dBn -10 dBm -20 dBr -20 dBr -30 dBm -30 dBm -40 dBm -60 dBn -70 dBm 5601 pts CF 823.3 MHz 5601 pts Span 6.0 MHz Standard: None Tx Bandwidth 1.400 MHz ectrum Emission Mask Standard: None Tx Bandwidth 1.400 MHz RBW 30.000 kHz | Range Low | Range Up | -3.000 MHz | -737.500 kHz | -700.000 kHz ΔLimit -12.35 dB -28.65 dB -29.18 dB -12.80 dB Frequency 822.55125 MHz 822.59839 MHz Power Rel ALimit

1 -43.38 dB -11.41 dB

1 -66.83 dB -27.86 dB

1 -68.07 dB -29.10 dB

1 -44.24 dB -12.27 dB Power Abs
2 -24.41 dBm
2 -47.86 dBm
2 -49.10 dBm
2 -25.27 dBm Range Up ate: 1.FEB.2021 00:50:13 Date: 1.FEB.2021 00:51:43

Report No.: FG0O2628-02D

TEL: 886-3-327-3456 Page Number: A2-12 of 29

LTE Band 26 / 3MHz / QPSK Lowest Band Edge / 1RB Highest Band Edge / 1 RB Spectrum Ref Level 23.00 dBm Offset 10.80 dB Mode Sweep Ref Level 23.00 dBm Offset 10.80 dB Mode Sweep Count 100/100 AvgPwr GL Count 100/100 20 dBins 10 dBm -10 dBm -10 dBm -20 dBr -20 dBr -30 dBr -30 dBn -40 dBn -40 dBm -60 dBm -60 dBm -70 dBm-CF 815.5 MHz 5601 pts Span 10.0 MHz CF 822.5 MH 5601 pts Dectrum Environments of Mask
Tx Power 21.75 dBm
Range Low Range Up
-5.000 MHz -1.538 MHz
1.538 MHz -1.500 MHz
1.538 MHz 5.000 MHz
1.538 MHz 5.000 MHz Standard: None Tx Bandwidth 3.000 MHz Spectrum Emission Mask Standard: None Tx Bandwidth 3.000 MHz Tx Power 21.82 dBm

Range Low Range Up

-5.000 MHz -1.538 M RBW 30.000 kHz | Width 3.000 MHz | Frequency | Power Abs | 813.96161 MHz | -16.40 dBm | 813.99018 MHz | -39.02 dBm | 817.03482 MHz | -70.32 dBm | 817.10625 MHz | -46.69 dBm | Date: 1.FEB.2021 00:52:29 Date: 1.FEB.2021 00:55:31 Lowest Band Edge / Full RB Highest Band Edge / Full RB Spectrum Mode Sweep Offset 10.80 dB Ref Level 23.00 dBm Offset 10.80 dB ●1Rm AvgPwr 10 dBm -10 dBm -10 dBn -20 dBn -20 dBn -30 dBn -30 dBm -40 dBm -60 dBn -70 dBm 5601 pts Span 10.0 MHz CF 822.5 MHz 5601 pts | CF 922.5 MHz | September | S Standard: None Tx Bandwidth 3.000 MHz ectrum Emission Mask Tx Power 20.95 dBm Standard: None Tx Bandwidth 3.000 MHz RBW 30.000 kHz Frequency 220 95804 MHz 
 wer Rel
 ALimit

 -44.42 dB
 -10.46 dB

 -66.80 dB
 -25.84 dB

 -66.55 dB
 -25.60 dB

 -43.14 dB
 -9.19 dB
 Range Up Power Abs 

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TEL: 886-3-327-3456 Page Number : A2-13 of 29

Date: 1.FEB.2021 00:57:02

FAX: 886-3-328-4978

ate: 1.FEB.2021 00:54:00

LTE Band 26 / 3MHz / 16QAM Lowest Band Edge / 1 RB Highest Band Edge /1 RB Spectrum Ref Level 23.00 dBm Offset 10.80 dB Mode Sweep Ref Level 23.00 dBm Offset 10.80 dB Mode Sweep Count 100/100 AvgPwr GL Count 100/100 20 dRim 10 dBm -10 dBm -10 dBm -20 dBr -20 dBr -30 dBr -30 dBm -40 dBn -40 dBm -60 dBm -60 dBm -70 dBm-CF 815.5 MHz 5601 pts Span 10.0 MHz CF 822.5 MH 5601 pts | Table | Tabl Standard: None Tx Bandwidth 3.000 MHz Spectrum Emission Mask Standard: None Tx Bandwidth 3.000 MHz RBW 30.000 kHz | width 3.000 MHz | Frequency | Power Abs | 813.94554 MHz | -19.06 dBm | 817.00446 MHz | -72.64 dBm | 817.03839 MHz | -46.85 dBm | Power Rel ALimit
-67.36 dB -32.97 dB
-92.07 dB -50.69 dB
-62.20 dB -20.81 dB
-39.45 dB -5.07 dB Date: 1.FEB.2021 00:53:15 Lowest Band Edge / Full RB Highest Band Edge / Full RB Spectrum Mode Sweep Offset 10.80 dB Ref Level 23.00 dBm Offset 10.80 dB ●1Rm AvgPwr 10 dBm -10 dBm -10 dBm -20 dBn -20 dBn -30 dBn -30 dBm -40 dBm -50 dBm -50 dBm -60 dBn -70 dBm 5601 pts Span 10.0 MHz CF 822.5 MHz 5601 pts Standard: None Tx Bandwidth 3.000 MHz ectrum Emission Mask Standard: None Tx Bandwidth 3.000 MHz RBW 30.000 kHz Frequency RBW 30.000 ALimit

Power Rel ALimit

-43.84 dB -10.65 dB

-67.26 dB -27.06 dB

-66.05 dB -25.85 dB

-45.62 dB -12.42 dB ΔLimit -11.86 dB -27.39 dB -26.09 dB -11.82 dB Range Up Power Abs

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Date: 1.FEB.2021 00:58:30

FAX: 886-3-328-4978

ate: 1.FEB.2021 00:54:46

LTE Band 26 / 3MHz / 64QAM Lowest Band Edge / 1 RB Highest Band Edge /1 RB Spectrum Ref Level 23.00 dBm Offset 10.80 dB Mode Sweep Ref Level 23.00 dBm Offset 10.80 dB Mode Sweep Count 100/100 AvgPwr GL Count 100/100 20 dBins 10 dBm -10 dBm -10 dBm -20 dBr -20 dBr -30 dBr -30 dBn -40 dBm -40 dBm -60 dBm -70 dBm-CF 815.5 MHz 5601 pts Span 10.0 MHz CF 822.5 MH 5601 pts | Table | Tabl Standard: None Tx Bandwidth 3.000 MHz Spectrum Emission Mask Standard: None Tx Bandwidth 3.000 MHz RBW 30.000 kHz | Width 3.000 MHz | Frequency | Power Abs | 813.96161 MHz | -20.47 dBm | 813.99911 MHz | -44.29 dBm | 817.00446 MHz | -74.42 dBm | 818.13125 MHz | -47.28 dBm | - 
 Power Rel
 ΔLimit

 -40.29 dB
 -7.47 dB

 -64.10 dB
 -24.29 dB

 -94.23 dB
 -54.42 dB

 -67.10 dB
 -34.28 dB
 Date: 1.FEB.2021 01:14:20 Lowest Band Edge / Full RB Highest Band Edge / Full RB Spectrum Mode Sweep Offset 10.80 dB Ref Level 23.00 dBm Offset 10.80 dB ●1Rm AvgPwr 10 dBm -10 dBm -10 dBm -20 dBr -20 dBn -30 dBm -30 dBm -40 dBm -60 dBr -70 dBm CF 815.5 MH: 5601 pts Span 10.0 MHz CF 822.5 MHz 5601 pts Standard: None Tx Bandwidth 3.000 MHz ectrum Emission Mask Tx Power 19.05 dBm Standard: None Tx Bandwidth 3.000 MHz Tx Power 19.19 abm

Range Low Range Up

-5.000 MHz -1.538 MHz
-1.500 MHz 1.500 MHz
1.500 MHz 1.538 MHz
1.538 MHz 5.000 MHz RBW 30.000 kHz | Power Rel | ΔLimit | | -45.04 dB | -12.85 dB | | -67.75 dB | -28.55 dB | | -67.09 dB | -27.89 dB | | -45.20 dB | -13.00 dB Frequency 820.95982 MHz 820.99911 MHz 824.01696 MHz 824.04196 MHz Range Up Power Abs

Report No.: FG0O2628-02D

TEL: 886-3-327-3456 Page Number : A2-15 of 29

Date: 1.FEB.2021 01:16:36

FAX: 886-3-328-4978

ate: 1.FEB.2021 01:15:05

ate: 1.FEB.2021 01:00:46

FAX: 886-3-328-4978

LTE Band 26 / 5MHz / QPSK Lowest Band Edge / 1 RB Highest Band Edge / 1 RB Spectrum Ref Level 23.00 dBm Offset 10.80 dB Mode Sweep Ref Level 23.00 dBm Offset 10.80 dB Mode Sweep Count 100/100 AvgPwr GL Count 100/100 20 dBins 10 dBm -10 dBm -10 dBm -20 dBr -20 dBr -30 dBr -30 dBn -40 dBn -40 dBn -60 dBm -60 dBm -70 dBm-CF 816.5 MHz 5601 pts Span 15.0 MHz CF 821.5 MH: 5601 pts pectrum Emission Mask
TX Power 21.24 dBm
Range Low Range Up
-7.500 MHz -2.538 MH Standard: None Tx Bandwidth 5.000 MHz Spectrum Emission Mask Standard: None Tx Bandwidth 5.000 MHz RBW 50.000 kHz RBW 50.000 kHz 
 Frequency
 Power Abs

 813.96116 MHz
 -23.35 dBm

 813.99866 MHz
 -45.14 dBm

 819.01473 MHz
 -74.15 dBm

 823.05546 MHz
 -48.38 dBm

 Power Rel
 ΔLimit

 -44.59 dB
 -10.35 dB

 -66.37 dB
 -25.14 dB

 -95.39 dB
 -54.15 dB

 -69.62 dB
 -35.38 dB
 Power Rel ALimit

-69.50 dB -35.02 dB
-95.65 dB -54.17 dB
-67.94 dB -26.46 dB
-45.37 dB -10.89 dB Date: 1.FEB.2021 00:59:15 **Highest Band Edge / Full RB** Lowest Band Edge / Full RB Spectrum Mode Sweep Offset 10.80 dB Ref Level 23.00 dBm Offset 10.80 dB ●1Rm AvgPwr 10 dBm -10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -30 dBm -40 dBm -60 dBn -70 dBm 5601 pts Span 15.0 MHz CF 821.5 MHz 5601 pts Standard: None Tx Bandwidth 5.000 MHz ectrum Emission Mask Tx Power 21.09 dBm Standard: None Tx Bandwidth 5.000 MHz RBW 50.000 kHz RBW 50.000 kHz | Power Rel | ΔLimit | | -47.48 dB | -13.38 dB | | -70.78 dB | -29.68 dB | | -70.95 dB | -29.85 dB | | -46.95 dB | -12.85 dB Range Up ΔLimit -12.41 dB -30.00 dB -30.05 dB -13.95 dB Frequency 818.96116 MHz 918.98795 MHz Power Abs

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TEL: 886-3-327-3456 Page Number: A2-16 of 29

Date: 1.FEB.2021 01:03:47

ate: 1.FEB.2021 01:01:31

FAX: 886-3-328-4978

LTE Band 26 / 5MHz / 16QAM Lowest Band Edge / 1RB Highest Band Edge / 1 RB Spectrum Ref Level 23.00 dBm Offset 10.80 dB Mode Sweep Ref Level 23.00 dBm Offset 10.80 dB Mode Sweep Count 100/100 AvgPwr GL Count 100/100 20 dBins 10 dBm -10 dBm -10 dBm -20 dBr -20 dBr -30 dBr -30 dBn -40 dBm -40 dBn -60 dBm -60 dBm -70 dBm-CF 816.5 MHz 5601 pts Span 15.0 MHz CF 821.5 MH 5601 pts pectrum Emission Mask
TX Power 20.98 dBm
Range Low Range Up
-7.500 MHz -2.538 MH Standard: None Tx Bandwidth 5.000 MHz Spectrum Emission Mask Standard: None Tx Bandwidth 5.000 MHz RBW 50.000 kHz RBW 50.000 kHz | Width 5.000 MHz | Frequency | Power Abs | 813.95580 MHz | -24.49 dBm | 813.99866 MHz | -48.01 dBm | 819.01205 MHz | -74.42 dBm | 823.06618 MHz | -48.68 dBm | - 
 Power Rel
 ΔLimit

 -45.47 dB
 -11.49 dB

 -68.98 dB
 -28.01 dB

 -95.40 dB
 -54.42 dB

 -69.66 dB
 -35.68 dB

 Power Rel
 ΔLimit

 -69.26 dB
 -35.28 dB

 -95.61 dB
 -54.63 dB

 -68.70 dB
 -27.72 dB

 -46.67 dB
 -12.69 dB
 Date: 1.FEB.2021 01:00:01 Date: 1.FEB.2021 01:03:01 Lowest Band Edge / Full RB Highest Band Edge / Full RB Spectrum Offset 10.80 dB Ref Level 23.00 dBm Offset 10.80 dB Mode Sweep ●1Rm AvgPwr 10 dBm -10 dBm -10 dBm -20 dBn -20 dBn -30 dBn -30 dBm -40 dBm -60 dBn -70 dBm 5601 pts Span 15.0 MHz CF 821.5 MHz 5601 pts Standard: None Tx Bandwidth 5.000 MHz ectrum Emission Mask Tx Power 20.13 dBm Standard: None Tx Bandwidth 5.000 MHz RBW 50.000 kHz Power Rel ALimit
-47.36 dB -14.17 dB
-71.52 dB -31.33 dB
-71.89 dB -31.70 dB
-48.31 dB -15.12 dB Frequency 818.96116 MHz 818.99063 MHz Range Up

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TEL: 886-3-327-3456 Page Number: A2-17 of 29

ate: 1.FEB.2021 01:04:32

ate: 1.FEB.2021 01:18:07

FAX: 886-3-328-4978

LTE Band 26 / 5MHz / 64QAM Lowest Band Edge / 1RB Highest Band Edge / 1 RB Spectrum Ref Level 23.00 dBm Offset 10.80 dB Mode Sweep Ref Level 23.00 dBm Offset 10.80 dB Mode Sweep Count 100/100 AvgPwr GL Count 100/100 20 dBins 10 dBm -10 dBm -10 dBm -20 dBr -20 dBr -30 dBr -30 dBn -40 dBm -40 dBn -60 dBm -60 dBm -70 dBm-CF 816.5 MHz 5601 pts Span 15.0 MHz CF 821.5 MH 5601 pts pectrum Emission Mask
Tx Power 19.74 dBm
Range Low Range Up
-7.500 MHz -2.538 MH Standard: None Tx Bandwidth 5.000 MHz Spectrum Emission Mask Standard: None Tx Bandwidth 5.000 MHz RBW 50.000 kHz RBW 50.000 kHz Power Rel ΔLimit
-44.72 dB -11.98 dB
-69.42 dB -29.68 dB
-94.60 dB -54.86 dB
-67.61 dB -34.87 dB Power Rel ALimit
-68.72 dB -35.51 dB
-94.83 dB -54.61 dB
-67.86 dB -27.65 dB
-46.96 dB -13.75 dB Date: 1.FEB.2021 01:17:21 Lowest Band Edge / Full RB Highest Band Edge / Full RB Spectrum Offset 10.80 dB Ref Level 23.00 dBm Offset 10.80 dB Mode Sweep ●1Rm AvgPwr 10 dBm -10 dBm -10 dBm -20 dBn -20 dBn -30 dBm -30 dBm -40 dBm -60 dBn -70 dBm 70 bu.

CF 821.5 MHz
Spectrum Emission Mask
Tx Power 19.20 dBm
Range Low
-7.500 MHz
-2.538 MHz
-2.538 MHz
-2.538 MHz
-7.500 MHz 5601 pts Span 15.0 MHz 5601 pts Standard: None Tx Bandwidth 5.000 MHz ectrum Emission Mask Tx Power 19.17 dBm Standard: None Tx Bandwidth 5.000 MHz RBW 50.000 kHz Jwiatn Frequency 918,84058 MHz Power Rel -49.09 dB -16.89 dB -71.99 dB -32.79 dB -72.19 dB -32.99 dB -49.33 dB -17.12 dB △Limit -17.24 dB -33.14 dB -33.11 dB -16.21 dB Range Up

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TEL: 886-3-327-3456 Page Number: A2-18 of 29

ate: 1.FEB.2021 01:19:37

LTE Band 26 / 10MHz / QPSK Lowest Band Edge / 1 RB Highest Band Edge / 1 RB Spectrum Ref Level 23.00 dBm Offset 10.80 dB Mode Sweep Ref Level 23.00 dBm Offset 10.80 dB Mode Sweep Count 100/100 AvgPwr GL Count 100/100 ●1Rm AvgPwr 20 dBinnit Gh 10 dBm -10 dBm -10 dBm -20 dBr -20 dBr -30 dBn -30 dBn -40 dBm -40 dBm -60 dBm -60 dBm -70 dBm-CF 819.0 MHz 5601 pts Span 20.0 MHz CF 819.0 MH: 5601 pts pectrum Emission Mask
Tx Power 21.35 dBm
Range Low Range Up
-10.000 MHz -5.038 MH Standard: None Tx Bandwidth 10.000 MHz Spectrum Emission Mask Standard: None Tx Bandwidth 10.000 MHz RBW 100.000 kHz RBW 100.000 kHz | Width | 10.000 MHz | Frequency | Power Abs | 813.95714 MHz | -36.18 dBm | 813.99813 MHz | -59.94 dBm | 824.00188 MHz | -73.82 dBm | 827.86209 MHz | -48.35 dBm | ate: 1.FEB.2021 01:05:17 Lowest Band Edge / Full RB Spectrum Ref Level 23.00 dBm Offset 10.80 dB SGL Count 100/100 Mode Sweep ●1Rm AvgPwr 20 dBir 10 dBm-0 dBm -10 dBm--20 dBm -30 dBm 40 dBm--50 dBm -70 dBm-CF 819.0 MHz 5601 pts pectrum Emission Mask RBW 100.000 kHz Tx Power 20.96 dBm Tx Bandwidth 10.000 MHz Frequency Power Abs
813.96071 MHz -30.33 dBm
13.99913 MHz -54.13 dBm
2 824.03188 MHz -53.13 dBm
2 824.04643 MHz -29.61 dBm

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Date: 1.FEB.2021 01:08:18

LTE Band 26 / 10MHz / 16QAM Lowest Band Edge / 1 RB Highest Band Edge / 1 RB Spectrum Ref Level 23.00 dBm Offset 10.80 dB Mode Sweep Ref Level 23.00 dBm Offset 10.80 dB Mode Sweep Count 100/100 AvgPwr GL Count 100/100 20 dBins 10 dBm -10 dBm -10 dBm -20 dBr -20 dBr -30 dBr -30 dBn -40 dBm -40 dBm -60 dBm -70 dBm-CF 819.0 MHz 5601 pts Span 20.0 MHz CF 819.0 MH: 5601 pts pectrum Emission Mask
Tx Power 20.67 dBm

Range Low Range Up
-10.000 MHz -5.038 MH; Standard: None Tx Bandwidth 10.000 MHz Spectrum Emission Mask Standard: None Tx Bandwidth 10.000 MHz RBW 100.000 kHz | width | 10.000 MHz | Prequency | Power Abs | 813.93213 MHz | -34.06 dBm | 813.99813 MHz | -60.44 dBm | 824.00563 MHz | -74.56 dBm | 827.75848 MHz | -48.10 dBm | Power Rel ALimit

-69.53 dB -35.73 dB
-95.11 dB -54.31 dB
-81.06 dB -40.26 dB
-57.32 dB -23.52 dB ate: 1.FEB.2021 01:06:02 Lowest Band Edge / Full RB Spectrum Ref Level 23.00 dBm Offset 10.80 dB Mode Sweep SGL Count 100/100 ●1Rm AvgPwr 20 dBir 10 dBm-0 dBm -10 dBm--20 dBm -30 dBm 40 dBm -50 dBm -70 dBm-CF 819.0 MHz 5601 pts pectrum Emission Mask RBW 100.000 kHz Tx Power 20.08 dBm Tx Bandwidth 10.000 MHz Frequency Power Abs
813.94642 MHz -31.46 dBm
13.96812 MHz -55.97 dBm
2 824.00188 MHz -56.15 dBm
2 824.50731 MHz -31.40 dBm Power Rel ALimit
-51.55 dB -18.46
-76.05 dB -35.97
-76.23 dB -36.15
-51.48 dB -18.40

Report No.: FG0O2628-02D

TEL: 886-3-327-3456 Page Number : A2-20 of 29

Date: 1.FEB.2021 01:09:03

LTE Band 26 / 10MHz / 64QAM Lowest Band Edge / 1 RB Highest Band Edge / 1 RB Spectrum Ref Level 23.00 dBm Offset 10.80 dB Mode Sweep Ref Level 23.00 dBm Offset 10.80 dB Mode Sweep Count 100/100 AvgPwr GL Count 100/100 ●1Rm AvgPwi 20 dBinnit Gh 10 dBm -10 dBm -10 dBm -20 dBr -20 dBr -30 dBn -30 dBm -40 dBm -40 dBm -60 dBm -70 dBm-CF 819.0 MHz 5601 pts Span 20.0 MHz CF 819.0 MH: 5601 pts Pectrum Emission Mask
Tx Power 19.49 dBm
Range Low Range Up
-10.000 MHz -5.038 MH Standard: None Tx Bandwidth 10.000 MHz Spectrum Emission Mask Standard: None Tx Bandwidth 10.000 MHz RBW 100.000 kHz Power Rel ALimit

-68.87 dB -36.10 dB
-94.63 dB -54.86 dB
-84.12 dB -44.36 dB
-62.77 dB -30.00 dB ate: 1.FEB.2021 01:20:22 Lowest Band Edge / Full RB Spectrum Ref Level 23.00 dBm Offset 10.80 dB SGL Count 100/100 Mode Sweep ●1Rm AvgPwr 20 dBir 10 dBm-0 dBm -10 dBm--20 dBm -30 dBm -50 dBm -70 dBm-CF 819.0 MHz 5601 pts pectrum Emission Mask RBW 100.000 kHz Tx Power 19.04 dBm Tx Bandwidth 10.000 MHz Frequency Power Abs
1 813.94642 MHz -33.79 dBm
2 813.97188 MHz -57.93 dBm
2 824.19291 MHz -58.20 dBm
2 824.19291 MHz -33.22 dBm Power Rel ALimit

Report No.: FG0O2628-02D

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Date: 1.FEB.2021 01:21:52

LTE Band 26 / 15MHz / QPSK Lowest Band Edge / 1 RB Highest Band Edge / 1 RB Spectrum Ref Level 23.00 dBm SGL Count 100/100 1Rm AvgPwr 20 dBinnit check P<200 Mode Sweep Offset 10.80 dB Mode Sweep ●1Rm AvgPwr 20 dBinnit Gh 10 dBm -10 dBm -10 dBm -20 dBr -20 dBn -30 dBm -30 dBm -40 dBm -40 dBm -60 dBm -60 dBm Span 30.0 MHz CF 821.5 MHz Span 30.0 MHz 5601 pts CF 821.5 MHz 5601 pts pectrum Emission Mask
TX Power 21.38 dBm
Range Low Range Up
-15.000 MHz -7.538 MH. Standard: None Tx Bandwidth 15.000 MHz Spectrum Emission Mask Standard: None Tx Bandwidth 15.000 MHz RBW 100.000 kHz RBW 100.000 kHz Date: 1.FEB.2021 01:09:49 Lowest Band Edge / Full RB Spectrum Ref Level 23.00 dBm Offset 10.80 dB SGL Count 100/100 IRM AvgPwr Mode Sweep 20 dBimit P<20 10 dBm 0 dBm -10 dBm--20 dBm -30 dBm -50 dBm -70 dBm-CF 821.5 MHz 5601 pts Spectrum Emission Mask RBW 100.000 kHz Tx Power 21.04 dBm Tx Bandwidth 15.000 MHz | Frequency | Power Abs | 13.94375 MHz | -31.32 dBm | 2 | 813.94375 MHz | -56.42 dBm | 829.01875 MHz | -55.57 dBm | 829.01875 MHz | -55.57 dBm | 2 | 813.98125 MHz | -55.57 dBm | -55.57 dB Power Rel ALimit
-52,36 dB -18,32
-77,46 dB -36,42
-76,62 dB -35,57

Report No.: FG0O2628-02D

TEL: 886-3-327-3456 Page Number : A2-22 of 29

Date: 1.FEB.2021 01:12:49

LTE Band 26 / 15MHz / 16QAM Lowest Band Edge / 1 RB Highest Band Edge / 1 RB Spectrum Ref Level 23.00 dBm SGL Count 100/100 1Rm AvgPwr 20 dBinnit check P<200 Ref Level 23.00 dBm SGL Count 100/100 Offset 10.80 dB Mode Sweep Offset 10.80 dB Mode Sweep ●1Rm AvgPwr 20 dBinnit Gh 10 dBm -10 dBm -10 dBm -20 dBr -20 dBn -30 dBm -30 dBm -40 dBm -40 dBm -60 dBm -60 dBm Span 30.0 MHz CF 821.5 MHz Span 30.0 MHz 5601 pts CF 821.5 MHz 5601 pts pectrum Emission Mask
TX Power 20.65 dBm
Range Low Range Up
-15.000 MHz -7.538 MH; Standard: None Tx Bandwidth 15.000 MHz Spectrum Emission Mask Standard: None Tx Bandwidth 15.000 MHz | The control of the RBW 100.000 kHz | Width 15.00U MHz | Frequency | Power Abs | 813.95982 MHz | -39.50 dBm | 813.99732 MHz | -61.61 dBm | 829.03482 MHz | -73.94 dBm | 829.13661 MHz | -47.98 dBm | RBW 100.000 kHz Power Rel ALimit
-60.15 dB -26.50 dB
-82.26 dB -41.61 dB
-94.59 dB -53.94 dB
-68.62 dB -34.98 dB 
 Power Rel
 ΔLimit

 -69.63 dB
 -35.89 dB

 -95.36 dB
 -54.62 dB

 -81.63 dB
 -40.89 dB

 -58.89 dB
 -25.14 dB
 Date: 1.FEB.2021 01:10:34 Lowest Band Edge / Full RB Spectrum Ref Level 23.00 dBm Offset 10.80 dB SGL Count 100/100 IRM AvgPwr Mode Sweep 20 dBimit P<20 10 dBm 0 dBm -10 dBm--30 dBm 40 dB -50 dBm -70 dBm CF 821.5 MHz 5601 pts Spectrum Emission Mask RBW 100.000 kHz Tx Power 20.07 dBm Tx Bandwidth 15.000 MHz Power Rel ALimit

Report No.: FG0O2628-02D

TEL: 886-3-327-3456 Page Number : A2-23 of 29

Date: 1.FEB.2021 01:13:34

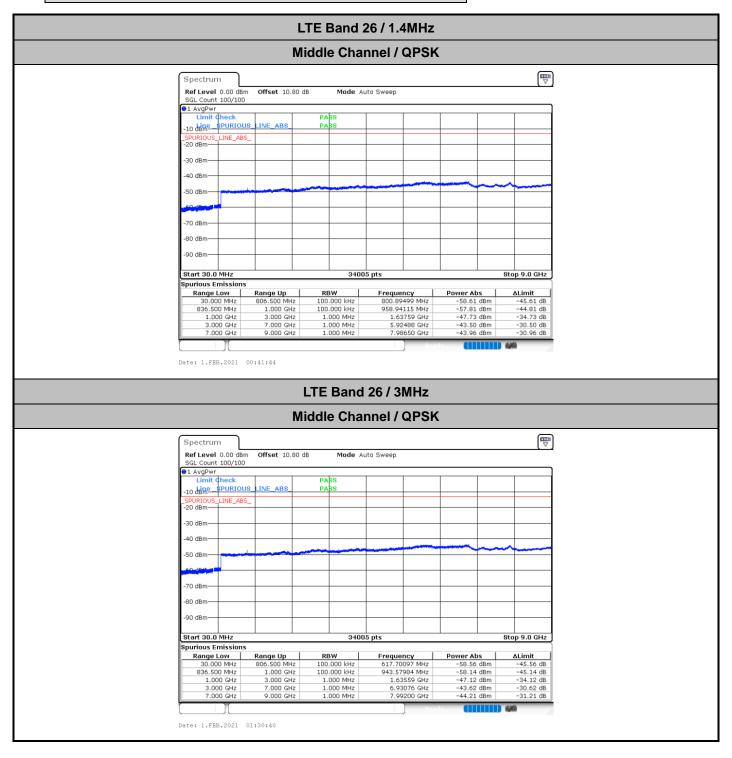
LTE Band 26 / 15MHz / 64QAM Lowest Band Edge / 1 RB Highest Band Edge / 1 RB Spectrum Ref Level 23.00 dBm SGL Count 100/100 1Rm AvgPwr 20 dBinnit check P<200 Mode Sweep Offset 10.80 dB Mode Sweep ●1Rm AvgPwr 20 dBinnit Gh 10 dBm -10 dBm -10 dBm -20 dBr -20 dBn -30 dBm -30 dBm -40 dBm -40 dBm -60 dBm Span 30.0 MHz CF 821.5 MHz Span 30.0 MHz 5601 pts CF 821.5 MHz 5601 pts pectrum Emission Mask
Tx Power 19.79 dBm
Range Low Range Up
-15.000 MHz -7.538 MH Standard: None Tx Bandwidth 15.000 MHz Spectrum Emission Mask Standard: None Tx Bandwidth 15.000 MHz Range Low P.538 Mr.

-15.000 Mr.
-7.538 Mr. RBW 100.000 kHz | Width 15.00U MHz | Frequency | Power Abs | 813.95982 MHz | -40.19 dBm | 813.99732 MHz | -62.81 dBm | 829.01339 MHz | -74.89 dBm | 834.66518 MHz | -48.20 dBm | RBW 100.000 kHz Power Rel ΔLimit
-68.58 dB -36.06 dB
-94.30 dB -54.78 dB
-80.84 dB -41.32 dB
-58.10 dB -25.58 dB Date: 1.FEB.2021 01:22:38 Lowest Band Edge / Full RB Spectrum Ref Level 23.00 dBm Offset 10.80 dB SGL Count 100/100 IRM AvgPwr Mode Sweep 20 dBimit P<20 10 dBm 0 dBm -10 dBm--30 dBm -40 dBm -50 dBm -70 dBm CF 821.5 MHz 5601 pts Spectrum Emission Mask RBW 100.000 kHz Tx Power 19.15 dBm Tx Bandwidth 15.000 MHz Power Rel ΔLimit
-54.60 dB -22.45
-79.43 dB -40.28
-78.64 dB -39.49
-53.96 dB -21.81 813.90625 MHz 813.98125 MHz 829.00804 MHz Date: 1.FEB.2021 01:24:08

Report No.: FG0O2628-02D

TEL: 886-3-327-3456 Page Number : A2-24 of 29

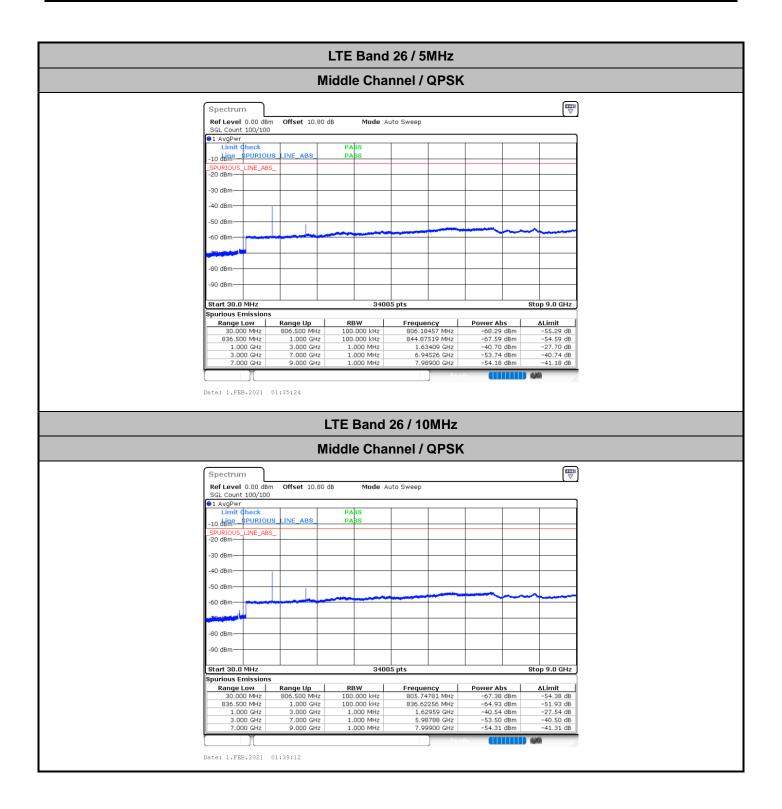
### Emission masks - Out of band emissions



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CC RADIO TEST REPORT Report No. : FG0O2628-02D



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Date: 3.FEB.2021 15:59:39

LTE Band 26 / 15MHz Middle Channel / QPSK Ref Level 0.00 dBm Offset 10.80 dB SGL Count 100/100 Mode Auto Sweep ●1 AvgPwr Limit ¢h PASS PASS -10 dime SPURIOUS LINE ABS -20 dBm--30 dBm--40 dBm--50 dBm -70 dBm -80 dBm -90 dBm-Start 30.0 MHz 34005 pts Stop 9.0 GHz purious Emissions Range Low | 30.000 MHz | 836.500 MHz | 1.000 GHz | 3.000 GHz | 7.000 GHz | 7.000 GHz | 3.000 GHz | 3.0 Range Up 806.500 MHz 1.000 GHz 3.000 GHz 7.000 GHz 9.000 GHz RBW 100.000 kHz 100.000 kHz 1.000 MHz 1.000 MHz 1.000 MHz -58.20 dBm -51.95 dBm -47.02 dBm -42.41 dBm -43.31 dBm ΔLimit
-45.20 dB
-38.95 dB
-34.02 dB
-29.41 dB
-30.31 dB 746.10663 MHz 837.35795 MHz 2.97526 GHz 6.90876 GHz 8.92677 GHz

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# Frequency Stability

Test (	Conditions	LTE Band 26 (QPSK) / Middle Channel	Limit		
Temperature	Voltage	BW 10MHz	Note 2.		
(°C)	(Volt)	Deviation (ppm)	Result		
50	Normal Voltage	0.0128			
40	Normal Voltage	0.0023			
30	Normal Voltage	0.0121			
20(Ref.)	Normal Voltage	0.0000			
10	Normal Voltage	0.0012			
0	Normal Voltage	0.0050	DA CC		
-10	Normal Voltage	0.0027	PASS		
-20	Normal Voltage	0.0018			
-30	Normal Voltage	0.0004			
20	Maximum Voltage	0.0013			
20	Normal Voltage	0.0000			
20	Battery End Point	0.0186			

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#### Note:

- 1. Normal Voltage =3.8 V.; Battery End Point (BEP) =3.5 V.; Maximum Voltage =4.2 V.
- 2. The frequency fundamental emissions stay within the authorized frequency block.

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**Test Conditions** Limit LTE Band 26 (QPSK) / Low Channel **BW 15MHz** Note 2. **Temperature Voltage Deviation** (°C) (Volt) Result (ppm) 50 Normal Voltage 0.0164 40 Normal Voltage 0.0013 30 0.0082 Normal Voltage 20(Ref.) Normal Voltage 0.0000 10 Normal Voltage 0.0103 0 Normal Voltage 0.0007 **PASS** -10 0.0035 Normal Voltage -20 Normal Voltage 0.0012 -30 Normal Voltage 0.0113 20 0.0146 Maximum Voltage 20 0.0000 Normal Voltage 20 **Battery End Point** 0.0181

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#### Note:

- 1. Normal Voltage =3.8 V.; Battery End Point (BEP) =3.5 V.; Maximum Voltage =4.2 V.
- 2. The frequency fundamental emissions stay within the authorized frequency block.

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# **Appendix B. Test Results of Radiated Test**

## LTE Band 26

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LTE Band 26 / 1.4MHz / 16QAM											
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)		
Lowest	1628	-64.10	-13	-51.10	-73.05	-71.01	0.52	9.58	Н		
	2443	-61.25	-13	-48.25	-74.02	-69.21	0.64	10.75	Н		
	3258	-59.69	-13	-46.69	-74.98	-68.66	0.75	11.87	Н		
									Н		
									Н		
									Н		
	1628	-63.25	-13	-50.25	-73.01	-70.16	0.52	9.58	V		
	2443	-59.69	-13	-46.69	-74.06	-67.65	0.64	10.75	V		
	3258	-58.18	-13	-45.18	-74.61	-67.15	0.75	11.87	V		
									V		
									V		
									V		
									V		
Middle	1637	-61.83	-13	-48.83	-71.79	-68.76	0.52	9.60	Н		
	2456	-59.72	-13	-46.72	-73.45	-67.69	0.65	10.76	Н		
	3275	-58.41	-13	-45.41	-74.73	-67.43	0.75	11.93	Н		
									Н		
									Н		
									Н		
	1637	-63.10	-13	-50.10	-72.89	-70.03	0.52	9.60	V		
	2456	-59.24	-13	-46.24	-73.54	-67.21	0.65	10.76	V		
	3275	-58.45	-13	-45.45	-74.84	-67.47	0.75	11.93	V		
									V		
									V		
									V		
									V		

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-72.17 1648 -62.08 -13 -49.08 -69.03 0.53 9.63 Н 2469 61.92 -13 74.92 -73.6 53.94 0.65 10.78 Н 3292 -58.54 -13 -74.9 0.76 Н -45.54 -67.61 11.98 Н Н Н Н Highest ٧ 1648 -63.38 -13 -50.38 -73.17 -70.33 0.53 9.63 -59.78 2469 -13 -74.01 -67.76 10.78 ٧ -46.78 0.65 3292 -58.23 -13 -45.23 -74.57 -67.3 0.76 11.98 ٧ ٧ ٧ ٧ ٧

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

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