



# FCC RADIO TEST REPORT

FCC ID : NKRIMA2

Equipment : M2M DATA MODULE

Brand Name : WNC

Model Name : IMA2,IMA2G

Applicant : Wistron NeWeb Corporation

20 Park Avenue II, Hsinchu Science Park, Hsinchu 308, Taiwan, R.O.C

Manufacturer : Wistron NeWeb Corporation

20 Park Avenue II, Hsinchu Science Park, Hsinchu 308, Taiwan, R.O.C

Standard : 47 CFR Part 2, 24(E), 27

The product was received on Jan. 06, 2020 and testing was started from Feb. 05, 2020 and completed on Feb. 21, 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 report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

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.)

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Report No.: FG9D3102

Report Version : 01

# History of this test report

Report No. : FG9D3102

Report No.	Version	Description	Issued Date
FG9D3102	01	Initial issue of report	Feb. 26, 2020

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# **Summary of Test Result**

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Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark	
	§2.1046	Conducted Output Power	Reporting only		
0.0	§27.50 (c)(10)	27.50 (c)(10) Effective Radiated Power (Band 12)			
3.2	§24.232 (c)	Equivalent Isotropic Radiated Power (Band 2)	Pass	-	
	§27.50 (d)(4)	Equivalent Isotropic Radiated Power (Band 4)			
3.3	§24.232 (d) §27.50 (d)(5)	Peak-to-Average Ratio	Pass	-	
3.4	§2.1049	Occupied Bandwidth	Reporting only	-	
3.5	§2.1051 §24.238 (a) §27.53 (g) §27.53 (h)	Conducted Band Edge Measurement (Band 2) (Band 4) (Band 12)	Pass	-	
3.6	\$2.1051 \$24.238 (a) \$27.53 (g) \$27.53 (h)	Conducted Spurious Emission (Band 2) (Band 4) (Band 12)	Pass	-	
3.7	§2.1055 §24.235 §27.54	Frequency Stability Temperature & Voltage	Pass	-	
4.2	§2.1053 §24.238 (a) §27.53 (g) §27.53 (h)	Radiated Spurious Emission (Band 2) (Band 4) (Band 12)	Pass	Under limit 24.22 dB at 3420.000 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: Lucy Wu

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# 1 General Description

# 1.1 Product Feature of Equipment Under Test

LTE, and GNSS.

Product Specification subjective to this standard							
Antenna Type	WWAN: Fixed External Antenna						
Antenna Type	GPS / Glonass : External Antenna						

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#### 1.2 Modification of EUT

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

# 1.3 Testing Location

Test Site	SPORTON INTERNATIONAL IN	SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory							
Test Site Location	No.52, Huaya 1st Rd., Guishan Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978	Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456							
Test Site No.	Sporton Site No.								
rest one ivo.	TH05-H	Y	03CH07-HY						
Test Engineer	Jacky Wang	Aking Chang	Stan Hsieh						
Temperature	<b>23~25</b> ℃	<b>24~27</b> ℃	20~23℃						
Relative Humidity	52~55%	52~56%	52~56%						

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

FCC Designation No.: TW1190

# 1.4 Applicable Standards

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

- + ANSI C63.26-2015
- ANSI / TIA-603-E
- 47 CFR Part 2, 24(E), 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.

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# 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.

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For radiated measurement, pre-scanned in two degree. The worst cases (Ant. 0° for LTE Band 2 and 12; Ant. 90° for LTE Band 4) were recorded in this report.

To at Hanna	Don't		В	andwid	lth (MH	lz)		N	/lodulatio	n		RB#		Tes	t Char	nel
Test Items	Band	1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	М	Н
Max.	2	v	V	V	v	v	v	v	v		٧	v	v	٧	v	٧
Output	4	v	٧	٧	v	v	v	v	v		>	v	v	>	v	v
Power	12	v	V	V	v	-	-	v	v		٧	v	v	٧	v	v
	2						٧	v	v		v		v	v	v	v
Peak-to-Av erage Ratio	4						v	v	v		٧		v	٧	٧	v
3	12				v	•	•	٧	v		>		v	>	v	v
26dB and	2	v	v	v	v	v	v	v	v				v	v	v	v
99%	4	v	v	v	v	v	٧	v	v				v	v	v	v
Bandwidth	12	v	٧	٧	v	•	•	v	v				v	٧	٧	v
	2	v	v	v	v	v	v	v	v		v		v	v		v
Conducted Band Edge	4	v	v	v	v	v	v	v	v		v		v	v		v
	12	v	٧	٧	v	•	•	v	v		٧		v	٧		v
Conducted	2	v	v	v	v	v	v	v	v		v			v	v	v
Spurious	4	v	v	v	v	v	٧	v	v		v			v	v	v
Emission	12	v	٧	٧	v	•	•	v	v		٧			٧	v	v
	2				v			v					v		v	
Frequency Stability	4				v			v					v		v	
	12				v	-	-	v					v		v	

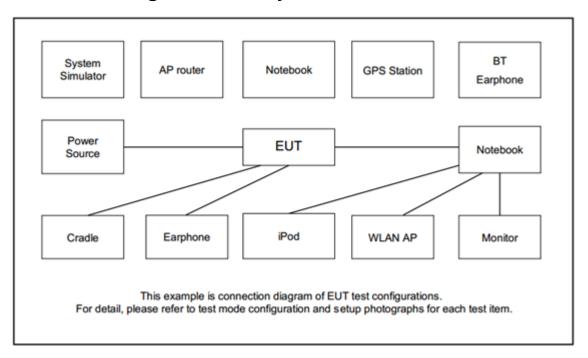
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		Bandwidth (MHz)				Modulation			RB#			Test Channel				
Test Items	Band	1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	М	н
	2	v	٧	v	v	v	v	v	v		v			٧	v	v
E.R.P / E.I.R.P	4	٧	٧	v	v	v	v	v	v		v			v	v	v
	12	٧	٧	v	v	-	-	v	v		v			v	v	v
Radiated	2		Worst Case								v	v	v			
Spurious	4		Worst Case									>	v	v		
Emission	12		Worst Case v v v													
Remark	<ol> <li>The mark "v" means that this configuration is chosen for testing</li> <li>The mark "-" means that this bandwidth is not supported.</li> <li>The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.</li> </ol>															

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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

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8821C	N/A	N/A	Unshielded, 1.8 m

# 2.4 Measurement Results Explanation Example

#### For all conducted test items:

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

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

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 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 2 Channel and Frequency List									
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest					
00	Channel	18700	18900	19100					
20	Frequency	1860	1880	1900					
15	Channel	18675	18900	19125					
	Frequency	1857.5	1880	1902.5					
4.0	Channel	18650	18900	19150					
10	Frequency	1855	1880	1905					
	Channel	18625	18900	19175					
5	Frequency	1852.5	1880	1907.5					
	Channel	18615	18900	19185					
3	Frequency	1851.5	1880	1908.5					
4.4	Channel	18607	18900	19193					
1.4	Frequency	1850.7	1880	1909.3					
	LTE Band 4 Cha	nnel and Frequen	cy List						
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest					

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	LTE Band 4 Cha	nnel and Frequenc	cy List			
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest		
00	Channel	20050	20175	20300		
20	Frequency	1720	1732.5	1745		
45	Channel	20025	20175	20325		
15	Frequency	1717.5	1732.5	1747.5		
40	Channel	20000	20175	20350		
10	Frequency	1715	1732.5	1750		
-	Channel	19975	20175	20375		
5	Frequency	1712.5	1732.5	1752.5		
2	Channel	19965	20175	20385		
3	Frequency	1711.5	1732.5	1753.5		
4.4	Channel	19957	20175	20393		
1.4	Frequency	1710.7	1732.5	1754.3		

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

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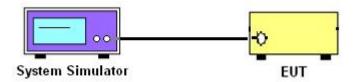
## 3 Conducted Test Items

# 3.1 Measuring Instruments

See list of measuring instruments of this test report.

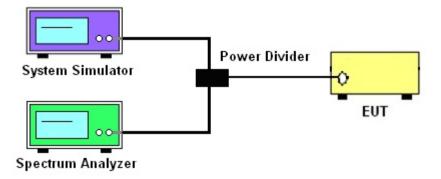
#### 3.1.1 Test Setup

#### 3.1.2 Conducted Output Power

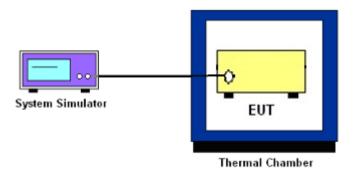


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# 3.1.3 Peak-to-Average Ratio, Occupied Bandwidth ,Conducted Band-Edge and Conducted Spurious Emission



#### 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 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.

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The ERP of mobile transmitters must not exceed 3 Watts for LTE Band 12

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

The EIRP of mobile transmitters must not exceed 1 Watts for LTE Band 4

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<sub>T</sub> = 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 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.

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## 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.

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#### 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.

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## 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.

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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.

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3.5 Conducted Band Edge

3.5.1 Description of Conducted Band Edge Measurement

24.238 (a)

For operations in the 1850-1910 and 1930-1990 MHz band, the FCC limit is 43 + 10log10(P[Watts]) dB below the transmitter power P(Watts) in a 1MHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

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27.53 (g)

For operations in the 600MHz band and 698 -746 MHz band, the FCC limit is 43 + 10log10(P[Watts]) dB below the transmitter power P(Watts) in a 100 kHz bandwidth. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

27.53 (h)

For operations in the 1710 - 1755 MHz band, the FCC limit is  $43 + 10\log_{10}(P[Watts])$  dB below the transmitter power P(Watts) in a 1 MHz 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.

3.5.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 6.1.

- 1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
- 2. The band edges of low and high channels for the highest RF powers were measured.
- 3. Set RBW >= 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
- 4. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.
- 5. Set spectrum analyzer with RMS detector.
- 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  $43 + 10\log(P)dB$  below the transmitter power P(Watts)

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## 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.

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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.

#### 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)

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# 3.7 Frequency Stability

#### 3.7.1 Description of Frequency Stability Measurement

24.235 & 27.54

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 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.

- 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.

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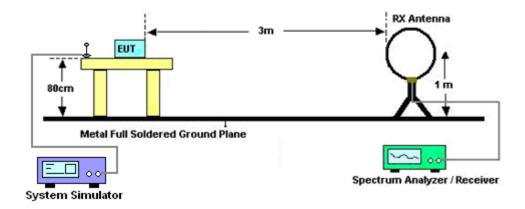
## 4 Radiated Test Items

# 4.1 Measuring Instruments

See list of measuring instruments of this test report.

## 4.1.1 Test Setup

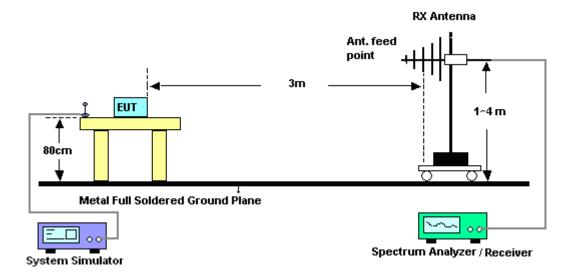
#### For radiated emissions below 30MHz



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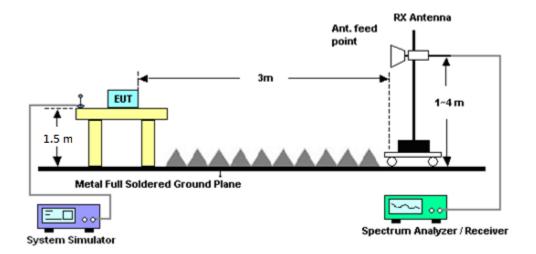
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#### For radiated test from 30MHz to 1GHz



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#### For radiated test above 1GHz



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#### 4.1.2 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.

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# 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.

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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 + 10 log (P) dB.

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

#### 4.2.2 Test Procedures

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

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

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

ERP (dBm) = EIRP - 2.15

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# 5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
LTE Base Station	Anritsu	MT8821C	6201107507	-	Jun. 27, 2019	Feb. 21, 2020	Jun. 26, 2020	Conducted (TH05-HY)
Base Station (Measure)	Anritsu	MT8821C	6201664755	LTE FDD/TDD with 44) /LTE-3CC DLCA,2CC ULCA	Mar. 03, 2019	Feb. 05, 2020~ Feb. 14, 2020	Mar. 02, 2020	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV40	101397	10Hz~40GHz	Nov. 15, 2019	Feb. 05, 2020~ Feb. 14, 2020	Nov. 14, 2020	Conducted (TH05-HY)
Temperature Chamber	ESPEC	SH-641	92013720	-40°C ~90°C	Sep. 02, 2019	Feb. 05, 2020~ Feb. 14, 2020	Sep. 01, 2020	Conducted (TH05-HY)
Programmable Power Supply	GW Instek	PSS-2005	EL890094	1V~20V 0.5A~5A	Oct. 09, 2019	Feb. 05, 2020~ Feb. 14, 2020	Oct. 08, 2020	Conducted (TH05-HY)
Coupler	Warison	20dB 25W S MA Directional Coupler	#A	1-18GHz	Jan. 13, 2020	Feb. 05, 2020~ Feb. 14, 2020	Jan. 12, 2021	Conducted (TH05-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N -06	35419 & 03	30MHz~1GHz	Apr. 30, 2019	Feb. 20, 2020~ Feb. 21, 2020	Apr. 29, 2020	Radiation (03CH07-HY)
Bilog Antenna	TESEQ	CBL 6111D & N-6-06	35414 & AT-N0602	30MHz~1GHz	Oct. 12, 2019	Feb. 20, 2020~ Feb. 21, 2020	Oct. 11, 2020	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Dec. 06, 2019	Feb. 20, 2020~ Feb. 21, 2020	Dec. 05, 2020	Radiation (03CH07-HY)
Horn Antenna	ESCO	3117	00066584	1GHz ~18GHz	Sep. 25, 2019	Feb. 20, 2020~ Feb. 21, 2020	Sep. 24, 2020	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA 9170	BBHA917057 6	18GHz~40GHz	May 14, 2019	Feb. 20, 2020~ Feb. 21, 2020	May 13, 2020	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA 9170	BBHA917025 1	18GHz~40GHz	Dec. 06, 2019	Feb. 20, 2020~ Feb. 21, 2020	Dec. 06, 2020	Radiation (03CH07-HY)
Spectrum Analyzer	Agilent	N9030A	MY52350276	3Hz~44GHz	Apr. 02, 2019	Feb. 20, 2020~ Feb. 21, 2020	Apr. 01, 2020	Radiation (03CH07-HY)
Spectrum Analyzer	Keysight	N9010A	MY54200486	10Hz~44GHz	Oct. 28, 2019	Feb. 20, 2020~ Feb. 21, 2020	Oct. 27, 2020	Radiation (03CH07-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590075	1GHz~18GHz	Apr. 24, 2019	Feb. 20, 2020~ Feb. 21, 2020	Apr. 23, 2020	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10MHz~1GHz	May 20, 2019	Feb. 20, 2020~ Feb. 21, 2020	May 19, 2020	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~26.5GHz	Nov. 01, 2019	Feb. 20, 2020~ Feb. 21, 2020	Oct. 31, 2020	Radiation (03CH07-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz~40GHz	Dec. 13, 2019	Feb. 20, 2020~ Feb. 21, 2020	Dec. 12, 2020	Radiation (03CH07-HY)
Filter	Microwave	H1G013G1	SN477215	1GHz High Pass Filter	Nov. 01, 2019	Feb. 20, 2020~ Feb. 21, 2020	Oct. 31, 2020	Radiation (03CH07-HY)
Filter	Microwave	H3G018G1	SN477220	3GHz High Pass Filter	Nov. 01, 2019	Feb. 20, 2020~ Feb. 21, 2020	Oct. 31, 2020	Radiation (03CH07-HY)

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Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY28655/4, MY24971/4, MY15682/4	30MHz~1GHz	Feb. 26, 2019	Feb. 20, 2020~ Feb. 21, 2020	Feb. 25, 2020	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY28655/4, MY24971/4, MY15682/4	1GHz~18GHz	Feb. 26, 2019	Feb. 20, 2020~ Feb. 21, 2020	Feb. 25, 2020	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY2858/2	18GHz~40GHz	Feb. 26, 2019	Feb. 20, 2020~ Feb. 21, 2020	Feb. 25, 2020	Radiation (03CH07-HY)
Antenna Mast	Max-Full	MFA520BS	N/A	1m~4m	N/A	Feb. 20, 2020~ Feb. 21, 2020	N/A	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 Degree	N/A	Feb. 20, 2020~ Feb. 21, 2020	N/A	Radiation (03CH07-HY)
Signal Generator	Rohde & Schwarz	SMF100A	101107	100kHz~40GHz	Aug. 27, 2019	Feb. 20, 2020~ Feb. 21, 2020	Aug. 26, 2020	Radiation (03CH07-HY)
Software	Audix	E3 6.2009-8-2 4	8050400465 6H	N/A	N/A	Feb. 20, 2020~ Feb. 21, 2020	N/A	Radiation (03CH07-HY)

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# 6 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of	2.22
Confidence of 95% (U = 2Uc(y))	3.23

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

Measuring Uncertainty for a Level of	2 62
Confidence of 95% (U = 2Uc(y))	3.63

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

Measuring Uncertainty for a Level of	4.70
Confidence of 95% (U = 2Uc(y))	4.70

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

# Conducted Output Power(Average power)

		Ľ	TE C	at. N	/11 B	and 2 Maxin	num Average Powe	er [dBm]	
BW [MHz]	RB Size	RB Offset		Index		Mod	Lowest	Middle	Highest
DVV [WITIZ]	ND 3126	KD Oliset	L	М	Н	WIOG	Lowest	Wildale	riigilest
20	1	0	0	8	15		23.21	23.10	23.27
20	1	5	0	8	15		23.23	23.05	23.32
20	3	0	0	8	15	QPSK	23.54	23.43	23.64
20	3	3	0	8	15		23.30	23.15	23.45
20	6	0	0	8	15		23.30	23.12	23.37
20	1	0	0	8	15		23.63	23.49	23.71
20	1	5	0	8	15		23.61	23.43	23.73
20	3	0	0	8	15	16-QAM	23.38	23.26	23.49
20	3	3	0	8	15		23.39	23.26	23.49
20	6	0	0	8	15		23.20	23.19	23.32
15	1	0	0	6	11		23.20	23.09	22.27
15	1	5	0	6	11		23.22	23.10	23.31
15	3	0	0	6	11	QPSK	23.58	23.63	23.72
15	3	3	0	6	11		23.38	23.47	23.53
15	6	0	0	6	11		23.30	23.28	23.47
15	1	0	0	6	11		23.62	23.57	23.78
15	1	5	0	6	11		23.57	23.54	23.72
15	3	0	0	6	11	16-QAM	23.33	23.26	23.42
15	3	3	0	6	11		23.37	23.32	23.51
15	6	0	0	6	11		23.11	23.04	23.10



		L	TE C	at. N	И1 В	and 2 Maxin	num Average Powe	er [dBm]	
BW [MHz]	RB Size	RB Offset		Index		Mod	Lowest	Middle	Highest
			L	М	Н				
10	1	0	0	4	7		23.22	23.00	23.29
10	1	5	0	4	7		23.22	23.07	23.33
10	3	0	0	4	7	QPSK	23.68	23.34	23.61
10	3	3	0	4	7		23.50	23.08	23.41
10	6	0	0	4	7		22.37	22.10	22.40
10	1	0	0	4	7		23.67	23.45	23.72
10	1	5	0	4	7		23.64	23.38	23.70
10	3	0	0	4	7	16-QAM	23.30	23.20	23.47
10	3	3	0	4	7		23.42	23.20	23.47
10	6	0	0	4	7		21.08	20.99	21.20
5	1	0	0	2	3		23.23	23.01	23.75
5	1	5	0	2	3		23.26	23.01	23.73
5	3	0	0	2	3	QPSK	22.44	22.33	22.52
5	3	3	0	2	3		22.26	22.31	22.59
5	6	0	0	2	3		22.30	22.17	21.27
5	1	0	0	2	3		23.65	23.47	23.72
5	1	5	0	2	3		23.59	23.42	23.71
5	3	0	0	2	3	16-QAM	22.44	22.17	22.56
5	3	3	0	2	3		22.45	22.25	22.59
5	6	0	0	2	3		21.18	20.87	21.21



		Ľ	TE C	at. N	/11 B	and 2 Maxin	num Average Powe	er [dBm]	
BW [MHz]	RB Size	RB Offset		Index		Mod	Lowest	Middle	Highest
	112 6126		L	M	Н				g
3	1	0	0	0	1		23.30	23.10	23.30
3	1	5	0	0	1		23.30	23.00	23.30
3	3	0	0	0	1	QPSK	22.50	22.30	22.60
3	3	3	0	0	1		22.30	22.20	22.40
3	6	0	0	0	1		21.30	21.00	21.30
3	1	0	0	0	1		22.33	22.12	22.37
3	1	5	0	0	1		22.26	22.03	22.32
3	3	0	0	0	1	16-QAM	21.41	21.16	21.42
3	3	3	0	0	1		21.39	21.14	21.43
3	6	0	0	0	1		21.40	21.10	21.40
1.4	1	0	0	0	0		23.13	22.90	23.21
1.4	1	5	0	0	0		23.07	22.81	23.18
1.4	3	0	0	0	0	QPSK	23.02	22.69	22.96
1.4	3	3	0	0	0		22.85	22.61	22.81
1.4	6	0	0	0	0		21.28	20.97	21.28
1.4	1	0	0	0	0		22.43	22.21	22.42
1.4	1	5	0	0	0		22.36	22.14	22.46
1.4	3	0	0	0	0	16-QAM	21.28	21.01	21.40
1.4	3	3	0	0	0		21.46	21.18	21.53
1.4	6	0	0	0	0		21.30	21.08	21.36



		L'	TE C	at. N	/11 B	and 4 Maxin	num Average Powe	er [dBm]	
BW [MHz]	RB Size	RB Offset		Index		Mod	Lowest	Middle	Highest
00			L	M	H		00.00	22.52	22.22
20	1	0	0	8	15		23.23	23.52	23.66
20	1	5	0	8	15		23.24	23.58	23.70
20	3	0	0	8	15	QPSK	23.54	23.97	24.12
20	3	3	0	8	15		23.32	23.76	23.95
20	6	0	0	8	15		23.35	23.64	23.79
20	1	0	0	8	15		23.78	24.05	24.17
20	1	5	0	8	15		23.77	24.02	24.16
20	3	0	0	8	15	16-QAM	23.33	23.68	23.82
20	3	3	0	8	15		23.41	23.72	23.85
20	6	0	0	8	15		23.16	23.49	23.62
15	1	0	0	6	11		23.28	23.49	23.69
15	1	5	0	6	11		23.33	23.50	23.71
15	3	0	0	6	11	QPSK	23.80	23.92	24.24
15	3	3	0	6	11		23.61	23.74	24.16
15	6	0	0	6	11		23.45	23.61	23.93
15	1	0	0	6	11		23.83	23.99	24.25
15	1	5	0	6	11		23.81	23.99	24.24
15	3	0	0	6	11	16-QAM	23.41	23.65	23.90
15	3	3	0	6	11		23.48	23.69	23.92
15	6	0	0	6	11		23.24	23.48	23.67



		L	TE C	at. N	/11 B	and 4 Maxin	num Average Powe	er [dBm]	
BW [MHz]	RB Size	RB Offset		Index		Mod	Lowest	Middle	Highest
DVV [IVITZ]	KD Size	KB Offset	L	М	Н	WIOG	Lowest	Mildale	Highest
10	1	0	0	4	7		23.21	23.55	23.69
10	1	5	0	4	7		23.28	23.59	23.70
10	3	0	0	4	7	QPSK	23.92	24.12	24.32
10	3	3	0	4	7		23.87	23.96	24.19
10	6	0	0	4	7		22.45	22.71	22.88
10	1	0	0	4	7		23.86	24.11	24.25
10	1	5	0	4	7		23.87	24.10	24.27
10	3	0	0	4	7	16-QAM	23.34	23.68	23.81
10	3	3	0	4	7		23.48	23.76	23.90
10	6	0	0	4	7		21.01	21.37	21.46
5	1	0	0	2	3		23.24	23.48	23.69
5	1	5	0	2	3		23.28	23.55	23.69
5	3	0	0	2	3	QPSK	23.90	24.06	24.17
5	3	3	0	2	3		23.83	23.88	24.04
5	6	0	0	2	3		22.38	22.69	22.88
5	1	0	0	2	3		23.87	24.04	24.23
5	1	5	0	2	3		23.84	24.01	24.22
5	3	0	0	2	3	16-QAM	23.33	23.62	23.84
5	3	3	0	2	3		23.46	23.71	23.89
5	6	0	0	2	3		21.06	21.35	21.49



		Ľ	TE C	at. N	/11 B	and 4 Maxin	num Average Powe	er [dBm]	
BW [MHz]	RB Size	RB Offset		Index		Mod	Lowest	Middle	Highest
			L	M	Н				
3	1	0	0	0	1		23.25	23.52	23.70
3	1	5	0	0	1		23.23	23.50	23.64
3	3	0	0	0	1	QPSK	22.64	22.98	23.18
3	3	3	0	0	1		22.45	22.85	23.00
3	6	0	0	0	1		21.26	21.54	21.67
3	1	0	0	0	1		22.30	22.62	22.77
3	1	5	0	0	1		22.27	22.61	22.72
3	3	0	0	0	1	16-QAM	21.32	21.59	21.75
3	3	3	0	0	1		21.34	21.68	21.82
3	6	0	0	0	1		21.33	21.51	21.72
1.4	1	0	0	0	0		23.07	23.32	23.46
1.4	1	5	0	0	0		23.07	23.29	23.42
1.4	3	0	0	0	0	QPSK	23.09	23.19	23.37
1.4	3	3	0	0	0		22.87	23.10	23.24
1.4	6	0	0	0	0		21.28	21.51	21.74
1.4	1	0	0	0	0		22.43	22.72	22.94
1.4	1	5	0	0	0		22.41	22.69	22.87
1.4	3	0	0	0	0	16-QAM	21.22	21.45	21.67
1.4	3	3	0	0	0		21.35	21.55	21.70
1.4	6	0	0	0	0		21.27	21.54	21.75



		Lī	TE C	at. M	l1 Ba	and 12 Maxii	num Average Pow	er [dBm]	
BW [MHz]	RB Size	RB Offset	Index			Mod	Lowest	Middle	Highest
			L	М	Н		2011001		9
10	1	0	0	4	7		22.99	22.90	22.80
10	1	5	0	4	7		22.97	22.92	22.84
10	3	0	0	4	7	QPSK	23.19	23.01	23.07
10	3	3	0	4	7		22.96	22.77	22.82
10	6	0	0	4	7		22.01	21.87	21.87
10	1	0	0	4	7		23.32	23.23	23.19
10	1	5	0	4	7		23.25	23.18	23.19
10	3	0	0	4	7	16-QAM	23.21	23.13	23.08
10	3	3	0	4	7		23.20	23.11	23.08
10	6	0	0	4	7		20.81	20.78	20.71
5	1	0	0	2	3		22.95	22.86	22.83
5	1	5	0	2	3		22.97	22.85	22.85
5	3	0	0	2	3	QPSK	21.93	21.95	21.98
5	3	3	0	2	3		21.70	21.76	21.78
5	6	0	0	2	3		21.91	21.87	21.90
5	1	0	0	2	3		23.26	23.18	23.22
5	1	5	0	2	3		23.19	23.14	23.15
5	3	0	0	2	3	16-QAM	22.14	22.04	22.05
5	3	3	0	2	3		22.11	22.05	22.03
5	6	0	0	2	3		20.86	20.69	20.72



		L1	TE C	at. M	1 Ba	and 12 Maxii	mum Average Pow	er [dBm]	
BW [MHz]	RB Size	RB Offset		Index		Mod	Lowest	Middle	Highest
DVV [IVITIZ]	ND SIZE	KB Oliset	L	M	H	WIOG		wildule	nighest
3	1	0	0	0	1		23.10	22.95	22.99
3	1	5	0	0	1		22.99	22.87	22.90
3	3	0	0	0	1	QPSK	22.26	21.94	21.99
3	3	3	0	0	1		22.07	21.76	21.82
3	6	0	0	0	1		20.96	20.84	20.87
3	1	0	0	0	1		22.07	21.93	21.96
3	1	5	0	0	1		21.98	21.81	21.89
3	3	0	0	0	1	16-QAM	21.11	21.05	21.08
3	3	3	0	0	1		21.15	20.97	21.05
3	6	0	0	0	1		21.06	21.00	21.07
1.4	1	0	0	0	0		22.82	22.65	22.77
1.4	1	5	0	0	0		22.77	22.70	22.71
1.4	3	0	0	0	0	QPSK	22.63	22.50	22.49
1.4	3	3	0	0	0		22.44	22.32	22.37
1.4	6	0	0	0	0		20.91	20.84	20.84
1.4	1	0	0	0	0		22.07	22.10	22.09
1.4	1	5	0	0	0		22.02	21.97	22.01
1.4	3	0	0	0	0	16-QAM	20.91	20.92	20.84
1.4	3	3	0	0	0		21.12	21.02	21.03
1.4	6	0	0	0	0		21.01	20.97	20.98

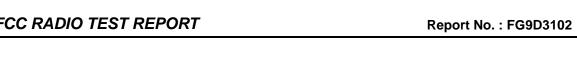
# LTE Band 2

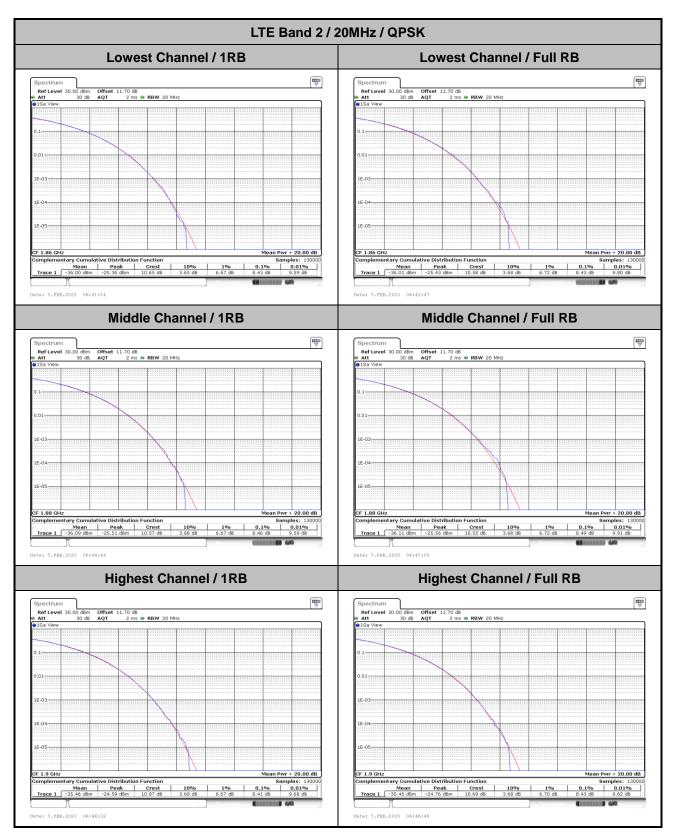
# Peak-to-Average Ratio

Mode						
Mod.	QP	SK	16C	Limit: 13dB		
RB Size	1RB	Full RB	1RB	Full RB	Result	
Lowest CH	8.43	8.43	8.38	8.38		
Middle CH	8.46	8.49	8.46	8.46	PASS	
Highest CH	8.41	8.43	8.49	8.38		

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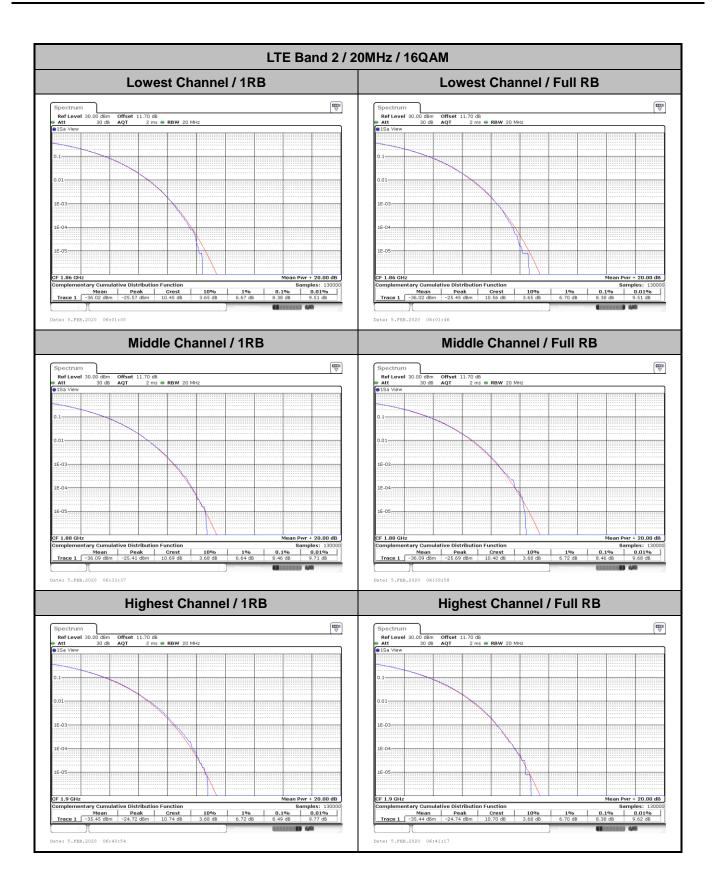
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# 26dB Bandwidth

Mode	LTE Band 2 : 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	1.26	1.28	1.38	1.37	1.38	1.41	1.76	1.78	1.80	1.89	1.92	1.92
Middle CH	1.26	1.30	1.38	1.41	1.36	1.41	1.78	1.76	1.83	1.83	2.40	1.84
Highest CH	1.33	1.27	1.35	1.40	1.38	1.38	1.78	2.22	1.83	1.80	1.76	1.84

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LTE Band 2 Lowest Channel / 1.4MHz / QPSK Lowest Channel / 1.4MHz / 16QAM 13.79 dBm 1.85017970 GHz 26.00 dB 1.261500000 MHz 12.82 dBn 1.85039230 GH 26.00 dl 1.283900000 MH M1[1] M1[1] -20 dBm--30 dBm-Addish Function Result
1.2039 MHz
26.00 dB
1441.2 
 X-value
 Y-value
 Function

 1.8501797 GHz
 13.79 dBm
 nd8 down

 1.8500622 GHz
 -12.28 dBm
 nd8

 1.8513238 GHz
 -12.36 dBm
 Q factor
 Function Result 1.2615 MHz Type Ref Trc 
 Type
 Ref
 Trc
 X-value
 Y-value
 Function

 M1
 1
 1.8503923 GHz
 12.82 dBm
 ndB down
 Date: 5.FEB.2020 Middle Channel / 1.4MHz / QPSK Middle Channel / 1.4MHz / 16QAM Ref Level 30.00 dBm
Att 30 dB
SGL Count 100/100 Reflevel 30.00 dBm Offset 11.70 dB • RBW 30 kHz
Att 30 dB SWT 63.2 µs • VBW 100 kHz Mode Auto FFT
SGL Count 100/100
10°R Max 11.70 dB • RBW 30 kHz 63.2 µs • VBW 100 kHz Mode Auto FFT 12.43 dBi 1.88034690 GF 13.37 dBn 1.87975380 GH 20 dBm 1487 1445. -10 dBm--20 dBm-40 dBm-50 dBm -50 dBm-Type Ref Trc Type Ref Trc 
 X-value
 Y-value
 Function

 1.8797538 GHz
 13.37 dBm
 nd8 down

 1.8799531 GHz
 -12.50 dBm
 nd8

 1.8806517 GHz
 -12.49 dBm
 Q factor
 Date: 5.FEB.2020 05:34:40 Date: 5.FEB.2020 05:34:59 Highest Channel / 1.4MHz / QPSK Highest Channel / 1.4MHz / 16QAM Ref Level 30.00 dbm Offset 11.70 db @ RBW 30 kHz
Ref Level 30.00 dbm Offset 11.70 db @ RBW 30 kHz
Att 30 db SWT 63.2 μs @ VBW 100 kHz Mode Auto FFT
SGL Count 100/100
BPK Max M1[1] M1[1] 10 dBm-1439 -20 dBm -50 dBm -60 dBm-Function Result
1.3259 MHz
26.00 dB
1439.9 Function Result 1.2727 MHz 26.00 dB 1499.9 Type Ref Trc 
 X-value
 Y-value
 Function

 1.9991835 GHz
 14.20 dBm
 ndB down

 1.9096371 GHz
 -11.74 dBm
 ndB

 1.9099629 GHz
 -12.05 dBm
 Q factor
 Type Ref Trc M1 1 
 X-value
 Y-value
 Function

 1.9089951 GHz
 13.71 dBm
 nd8 down

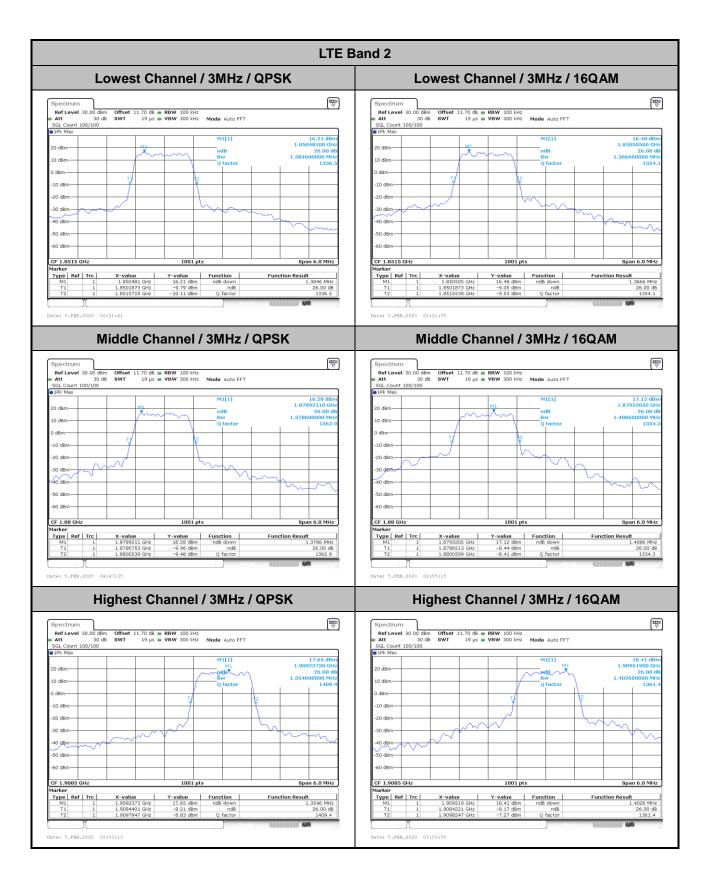
 1.9086338 GHz
 -12.40 dBm
 nd8

 1.9099266 GHz
 -12.33 dBm
 Q factor

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Date: 5.FEB.2020 05:44:29



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LTE Band 2 Lowest Channel / 5MHz / QPSK Lowest Channel / 5MHz / 16QAM Ref Level 30.00 dBm Offset 11.70 dB @ RBW 100 Hz
Att 30 db SWT 19 µs @ VBW 300 Hz Mode Auto FFT
SGL Count 100/100 18.05 dBm 1.85052200 GHz 26.00 dB 1.379000000 MHz 17.45 dBn 1.85046200 GH 26.00 dl M1[1] M1[1] 0 dBm -20 dBm--30 dBr 30 dBm -4d dd6m 
 X-value
 Y-value
 Function

 1.850522 GHz
 18.05 dBm
 nd8 down

 1.850102 GHz
 -8.73 dBm
 nd8

 1.851481 GHz
 -7.30 dBm
 Q factor
 Type Ref Trc 
 Type
 Ref
 Trc
 X-value
 Y-value
 Function

 M1
 1
 1.850462 GHz
 17.45 dBm
 ndB down
 Function Result Function Result 1.409 MHz 26.00 dB 1313.7 Date: 5.FEB.2020 Middle Channel / 5MHz / QPSK Middle Channel / 5MHz / 16QAM Ref Level 30.00 dBm
Att 30 dB
SGL Count 100/100 11.70 dB **RBW** 100 kHz 19 μs **VBW** 300 kHz **Mode** Auto FFT Offset 11.70 dB ● RBW 100 kHz SWT 19 µs ● VBW 300 kHz Mode Auto FFT 15.82 dBr 1.87816200 GH 1.878 20 dBm -10 dBm--20 dBm--40 dBm-40 dBm/ -50 dBm -50 dBm-Type Ref Trc X-value 1.878082 GHz 1.877602 GHz 1.878961 GHz Type Ref Trc Date: 5.FEB.2020 03:31:24 Date: 5.FEB.2020 03:33:19 Highest Channel / 5MHz / 16QAM Highest Channel / 5MHz / QPSK Ref Level 30.00 dbm Offset 11.70 db @ RBW 100 kHz Att 30 db SWT 19 µs @ VBW 300 kHz Mode Auto FFT SGL Count 100/100 BPK Max 18.39 dBn 1.909588nn M1[1] M1[1] 10 dBm-1384 1385. -20 dBm -60 dBm--60 dBm-Span 10.0 MHz CF 1.9075 GHz Span 10.0 MHz Type Ref Trc 
 X-value
 Y-value
 Function

 1.999158 GHz
 19.76 dBm
 nd8 down

 1.908509 GHz
 -6.26 dBm
 nd8

 1.999888 GHz
 -5.60 dBm
 Q factor
 Type Ref Trc Function Result Function Result Date: 5.FEB.2020 03:40:10 Date: 5.FEB.2020 03:41:09

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LTE Band 2 Lowest Channel / 10MHz / QPSK Lowest Channel / 10MHz / 16QAM Ref Level 30.00 dBm Offset 11.70 dB @ RBW 300 Hz
Att 30 db SWT 12.6 µs @ VBW 1 MHz Mode Auto FFT
SGL Count 100/100 20.37 dBn 1.8514240 GH: 26.00 dE 1.778000000 MH: 1041.3 M1[1] M1[1] dBm--20 dBm--30 dBm 
 X-value
 Y-value
 Function

 1.850924 GHz
 20.82 dBm
 nd8 down

 1.850345 GHz
 -4.33 dBm
 nd8

 1.852103 GHz
 -4.67 dBm
 Q factor
 Type Ref Trc 
 Type
 Ref
 Trc
 X-value
 Y-value
 Function

 M1
 1
 1.851424 GHz
 20.37 dBm
 ndB down
 Function Result Function Result Date: 5.FEB.2020 Middle Channel / 10MHz / QPSK Middle Channel / 10MHz / 16QAM Ref Level 30.00 dBm Offset 11.70 dB • RBW 300 kHz

Att 30 dB SWT 12.6 µs • VBW 1 MHz

Mode Auto FFT

\$1PK Max

\$1PK Max Ref Level 30.00 dBm
Att 30 dB
SGL Count 100/100

1Pk Max Offset 11.70 dB ● RBW 300 kHz SWT 12.6 µs ● VBW 1 MHz Mode Auto FFT 20.36 dBr 20 dBm--10 dBm--20 dBm-40 dBm--50 dBm Type Ref Trc Date: 5.FEB.2020 04:01:26 Date: 5.FEB.2020 04:01:45 Highest Channel / 10MHz / QPSK Highest Channel / 10MHz / 16QAM Ref Level 30.00 dbm Offset 11.70 db @ RBW 300 kHz Att 30 db SWT 12.6 ps @ VBW 1 MHz Mode Auto FFT SGL Count 100/100 BPK Max M1[1] 21.57 dBn 083970 GH 10 dBm-1073 -20 dBm -60 dBm-Function Result Function Result

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Date: 5.FEB.2020 04:05:37

LTE Band 2 Lowest Channel / 15MHz / QPSK Lowest Channel / 15MHz / 16QAM Ref Level 30.00 dBm Offset 11.70 dB @ RBW 300 Hz
Att 30 db SWT 12.6 µs @ VBW 1 MHz Mode Auto FFT
SGL Count 100/100 22.49 dBn 1.8511460 GH 26.00 di M1[1] M1[1] -20 dBm--30 dBm- 
 X-value
 Y-value
 Function

 1.851056 GHz
 22.01 dBm
 nd8 down

 1.850547 GHz
 -4.61 dBm
 nd8

 1.852345 GHz
 -3.37 dBm
 O factor
 Type Ref Trc Function Result Function Result 1.888 MHz 26.00 dB 980.4 Middle Channel / 15MHz / QPSK Middle Channel / 15MHz / 16QAM Ref Level 30.00 dBm
Att 30 dB
SGL Count 100/100
PIPK Max Offset 11.70 dB ● RBW 300 kHz SWT 12.6 µs ● VBW 1 MHz Mode Auto FFT 21.74 dBr 1.8737060 GF -10 dBm--20 dBm-40 dBm Type Ref Trc Type Ref Trc Date: 5.FEB.2020 04:35:07 Date: 5.FEB.2020 04:35:25 Highest Channel / 15MHz / QPSK Highest Channel / 15MHz / 16QAM Ref Level 30.00 dbm Offset 11.70 db @ RBW 300 kHz Att 30 db SWT 12.6 ps @ VBW 1 MHz Mode Auto FFT SGL Count 100/100 BPK Max M1[1] 10 dBm-1044 1061. -20 dBm -60 dBm- 
 X-value
 Y-value
 Function

 1.908854 GHz
 23.17 dBm
 ndB down

 1.907655 GHz
 -2.04 dBm
 ndB

 1.909453 GHz
 -1.64 dBm
 Q factor
 Function Result Function Result

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TEL: 886-3-327-3456 Page Number: A2-9 of 39

Date: 5.FEB.2020 04:39:08

LTE Band 2 Lowest Channel / 20MHz / QPSK Lowest Channel / 20MHz / 16QAM Ref Level 30.00 dBm Offset 11.70 dB @ RBW 300 Hz
Att 30 db SWT 18.9 µs @ VBW 1 MHz Mode Auto FFT
SGL Count 100/100 21.46 dBm 1.8518880 GHz 26.00 dE 1.918000000 MHz 21.75 dBn 1.8523280 GH 26.00 di M1[1] M1[1] -20 dBm-30 dBm- 
 X-value
 Y-value
 Function

 1.851888 GHz
 21.46 dBm
 nd8 down

 1.850929 GHz
 -5.07 dBm
 nd8

 1.852847 GHz
 -4.45 dBm
 Q factor
 Type Ref Trc 
 Type
 Ref
 Trc
 X-value
 Y-value
 Function

 M1
 1
 1.852328 GHz
 21.75 dBm
 nd8 down
 Function Result Function Result Date: 5.FEB.2020 Middle Channel / 20MHz / QPSK Middle Channel / 20MHz / 16QAM Ref Level 30.00 dBm
Att 30 dB
SGL Count 100/100
1Pk Max Offset 11.70 dB ● RBW 300 kHz SWT 18.9 µs ● VBW 1 MHz Mode Auto FFT 22.10 dBr 1.8715280 GF 20 dBm 1018 -10 dBm--20 dBm-40 dBm Type Ref Trc X-value 1.871528 GHz 1.870649 GHz 1.873047 GHz Type Ref Trc Date: 5.FEB.2020 05:02:30 Date: 5.FEB.2020 05:02:58 Highest Channel / 20MHz / QPSK Highest Channel / 20MHz / 16QAM Ref Level 30.00 dbm Offset 11.70 db @ RBW 300 kHz Att 30 db SWT 18.9 µs @ VBW 1 MHz Mode Auto FFT SGL Count 100/100 BPK Max M1[1] 10 dBm-1037. -20 dBm -60 dBm--60 dBm- 
 X-value
 Y-value
 Function

 1.908472 GHz
 22.77 dBm
 nd8 down

 1.907233 GHz
 -1.56 dBm
 nd8

 1.908991 GHz
 -5.52 dBm
 Q factor
 Function Result Function Result

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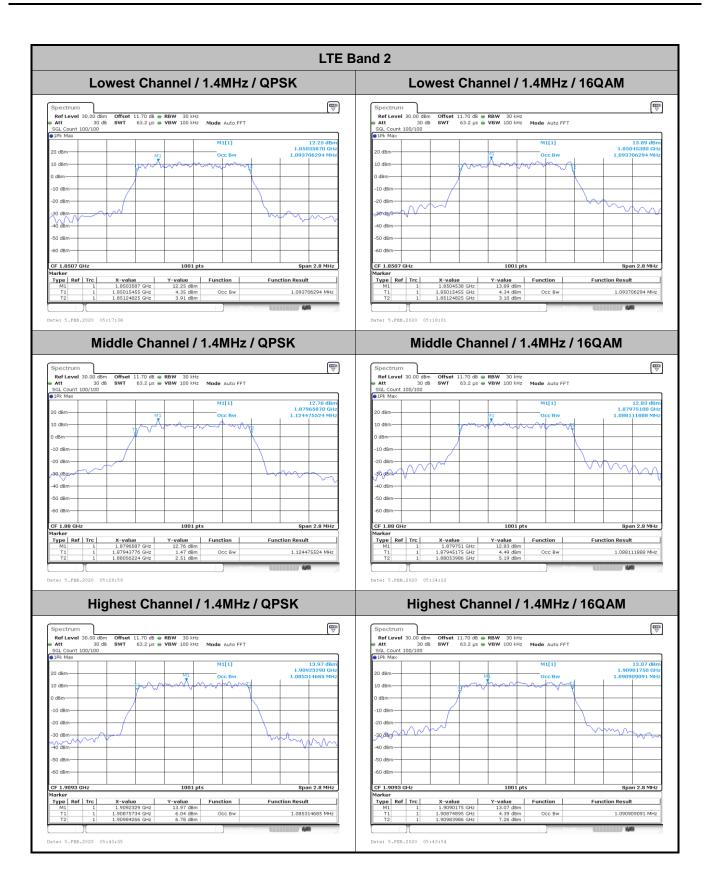
Date: 5.FEB.2020 05:07:19

## **Occupied Bandwidth**

Mode	LTE Band 2 : 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	1.16	1.16	1.19	1.15	1.46	1.42	1.44	1.44	1.48	1.44
Middle CH	1.12	1.09	1.15	1.15	1.15	1.16	1.46	1.42	1.41	1.47	1.48	1.48
Highest CH	1.09	1.09	1.17	1.17	1.19	1.18	1.42	1.46	1.44	1.50	1.48	1.48

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LTE Band 2 Lowest Channel / 3MHz / QPSK Lowest Channel / 3MHz / 16QAM 16.64 dBn 1.85097850 GH 1.156843157 MH 17.12 dBn 1.85108640 GH 1.156843157 MH M1[1] M1[1] 10 dBmdBm--20 dBm--30 dBm -30 dBm-40 dBm-40 dBm -50 dBm CF 1.8515 GHz CF 1.8515 GHz Marker Span 6.0 MHz 
 Marker
 Type Ref
 Trc
 X-value
 Y-value
 Function
 Function Result

 M1
 1
 1.8509785 GHz
 16.64 dbm
 Percentage
 1.156945

 T1
 1
 1.8509292 GHz
 7.51 dbm
 Occ Bw
 1.156945

 T2
 1
 1.85144605 GHz
 5.98 dbm
 1.98 dbm
 1.156843157 MHz 1.156843157 MHz Date: 5.FEB.2020 Middle Channel / 3MHz / QPSK Middle Channel / 3MHz / 16QAM Ref Level 30.00 dBm Offset 11.70 dB RBW 100 kHz
Att 30 dB SWT 19 µs VBW 300 kHz Mode Auto FFT
65G Count 100/100 17.16 dBr 1.87886710 GH 1.150849151 MH 20 dBm-10 dBm--10 dBm -10 dBm--20 dBm-40 dBm--50 dBm -50 dBm- 
 X-value
 Y-value
 Function

 1.8789671 GHz
 17.16 dBm
 16.7878322 GHz

 1.878993407 GHz
 8.69 dBm
 Occ Bw

 Marker
 Trype
 Ref
 Trc
 X-value
 Y-value
 Function

 M1
 1
 1.8793107 GHz
 16.97 dbm
 19.97 dbm

 T1
 1
 1.8787952 GHz
 89.97 dbm
 Occ 8w

 T2
 1
 1.87994006 GHz
 9.55 dbm
 Occ 8w
 Type Ref Trc 1.150849151 MHz 1.144855145 MHz Date: 5.FEB.2020 02:52:13 Date: 5.FEB.2020 02:52:36 Highest Channel / 3MHz / 16QAM Highest Channel / 3MHz / QPSK Ref Level 30.00 dbm Offset 11.70 db @ RBW 100 kHz
Ref Level 30.00 dbm Offset 11.70 db @ RBW 100 kHz
Att 30 db SWT 19 µs @ VBW 300 kHz Mode Auto FFT
SGL Count 100/100
BPK Max 18.23 dBn 890160 GH: 831169 MH: M1[1] M1[1] 10 dBm--10 dBm 20 dBm -20 dBm-30 dBm -60 dBm--60 dBm-1001 pts 1001 pts CF 1.9085 GHz Type Ref Trc 
 Marker
 Trc
 X-value
 Y-value
 Function

 M1
 1
 1.9089016 GHz
 19.23 dBm
 19.23 dBm

 T1
 1
 1.9085395 GHz
 8.60 dBm
 Occ Bw

 T2
 1
 1.90972278 GHz
 6.96 dBm
 Occ Bw
 Function Result Function Result 1.168831169 MHz 1.168831169 MHz Date: 5.FEB.2020 02:58:31 Date: 5.FEB.2020 03:02:53

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LTE Band 2 Lowest Channel / 5MHz / QPSK Lowest Channel / 5MHz / 16QAM 17.83 dBn 1.85117100 GH 1.148851149 MH M1[1] 17.75 dBr 1.85108100 GH 1.188811189 MH M1[1] τ₽ 10 dBm dBm--20 dBm--30 dBm 30 dBm 40 dBm CF 1.8525 GHz Marker Span 10.0 MHz CF 1.8525 GHz 
 Marker
 Type Ref
 Trc
 X-value
 Y-value
 Function
 Function Result

 M1
 1
 1.851081 GHz
 17.75 dBm

 11
 1
 1.850323 GHz
 5.34 dBm
 Occ Bw
 1.18881

 T2
 1
 1.8513711 GHz
 7.49 dBm
 Occ Bw
 1.18881
 1.148851149 MHz 1.188811189 MHz Date: 5.FEB.2020 Middle Channel / 5MHz / QPSK Middle Channel / 5MHz / 16QAM Ref Level 30.00 dBm Offset 11.70 dB RBW 100 kHz
Att 30 dB SWT 19 µs VBW 300 kHz Mode Auto FFT
65G Count 100/100 Reflevel 30.00 dBm Offset 11.70 dB • RBW 100 kHz
Att 30 dB SWT 19 µs • VBW 300 kHz Mode Auto FFT
SGL Count 100/100
1PR Max 18.27 dBi 1.87818200 GF 1.148851149 MF 16.45 dBn 1.87786200 GH 1.158841159 MH 20 dBm--10 dBm -10 dBm--20 dBm--40 dBm--50 dBm -50 dBm- 
 X-value
 Y-value
 Function

 1.878192 GHz
 19.27 dBm
 OCC BW

 1.8777023 GHz
 8.74 dBm
 OCC BW

 1.6786511 GHz
 10.25 dbm

 Marker
 Trype
 Ref
 Trc
 X-value
 Y-value
 Function

 M1
 1
 1.877862 GHz
 16.45 dbm
 Occ 8w

 T1
 1
 1.8777123 GHz
 6.42 dbm
 Occ 8w

 T2
 1
 1.8788711 GHz
 6.71 dbm
 6.71 dbm
 Type Ref Trc 1.148851149 MHz 1.158841159 MHz Date: 5.FEB.2020 03:30:11 Date: 5.FEB.2020 03:30:40 Highest Channel / 5MHz / 16QAM Highest Channel / 5MHz / QPSK Ref Level 30.00 dbm Offset 11.70 db @ RBW 100 kHz
Ref Level 30.00 dbm Offset 11.70 db @ RBW 100 kHz
Att 30 db SWT 19 µs @ VBW 300 kHz Mode Auto FFT
SGL Count 100/100
BPK Max M1[1] M1[1] 10 dBm--10 dBm -20 dBm -60 dBm--60 dBm-1001 pts CF 1.9075 GHz Type Ref Trc 
 X-value
 Y-value
 Function

 1,908909 GHz
 19.20 dBm
 Occ Bw

 1,9085099 GHz
 6.22 dBm
 Occ Bw

 1,9097877 GHz
 9.76 dBm
 Occ Bw

 Marker
 Y-value
 Y-value
 Function

 M1
 1
 1.909468 GHz
 18.06 dBm
 19.06 dBm
 11.1
 1.9096299 GHz
 17.98 dBm
 Occ 8w
 7.78 dBm
 Occ 8w
 7.2
 1.9098077 GHz
 9.84 dBm
 Occ 8w
 7.88 dBm
 Function Result Function Result 1.188811189 MHz 1.178821179 MHz Date: 5.FEB.2020 03:37:28 Date: 5.FEB.2020 03:39:52

Report No.: FG9D3102

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LTE Band 2 Lowest Channel / 10MHz / QPSK Lowest Channel / 10MHz / 16QAM 20.90 dBn 1.8508440 GH 1.418581419 MH M1[1] M1[1] 10 dBmdBm--20 dBm--30 dBm -30 dBm-CF 1.855 GH 
 Marker
 Type Ref
 Trc
 X-value
 Y-value
 Function
 Function Result

 M1
 1
 1.851523 GHz
 20.73 dBm

 11
 1
 1.850948 GHz
 8.29 dBm
 Occ BW
 1.45854

 T2
 1
 1.8519431 GHz
 9.18 dBm
 Occ BW
 1.45854
 10.53 dBm Occ Bw 10.16 dBm 1.458541459 MHz 1.418581419 MHz Date: 5.FEB.2020 Middle Channel / 10MHz / QPSK Middle Channel / 10MHz / 16QAM Reflevel 3.0.0 dbm Offset 11.70 db • RBW 300 kHz
Att 30 db SWT 12.6 µs • VBW 1 MHz Mode Auto FFT
SGL Count 100/100
10°R Max 21.04 dBi 1.8765030 GF 1.458541459 MF 20 dBm--10 dBm--20 dBm-40 dBm\_ -50 dBm- 
 X-value
 Y-value
 Function

 1.875630 GHz
 21.04 dBm
 0.00 BW

 1.8754845 GHz
 9.74 dBm
 Occ BW

 1.6769431 GHz
 11.13 dBm

 Marker
 Trype
 Ref
 Trc
 X-value
 Y-value
 Function

 M1
 1
 1.875503 GHz
 19.35 dbm
 19.35 dbm
 11.2755045 GHz
 8.84 dbm
 Occ 8w

 T2
 1
 1.87659231 GHz
 8.34 dbm
 Occ 8w
 8.34 dbm
 Occ 8w
 Type Ref Trc 1.458541459 MHz 1.418581419 MHz Date: 5.FEB.2020 04:00:42 Date: 5.FEB.2020 04:01:06 Highest Channel / 10MHz / QPSK Highest Channel / 10MHz / 16QAM Ref Level 30.00 dbm Offset 11.70 db @ RBW 300 kHz
Ref Level 30.00 dbm V 12.6 μs @ VBW 1 MHz Mode Auto FFT
SGL Count 100/100
BPK Max 10 dBm--10 dBm -20 dBm-50 dBm--60 dBm--60 dBm-Type Ref Trc 
 X-value
 Y-value
 Function

 1.908736 GHz
 21.66 dBm
 Occ Bw

 1.9080559 GHz
 10.68 dBm
 Occ Bw

 1.9094755 GHz
 10.98 dBm
 Occ Bw

 Marker
 Y-value
 Y-value
 Function

 M1
 1
 1.909736 GHz
 20.97 dBm
 1

 T1
 1
 1.9096599 GHz
 11.39 dBm
 Occ Bw

 T2
 1
 1.9095155 GHz
 10.34 dBm
 Occ Bw
 Function Result Function Result 1.418581419 MHz 1.458541459 MHz

Report No.: FG9D3102

Date: 5.FEB.2020 04:04:57

LTE Band 2 Lowest Channel / 15MHz / QPSK Lowest Channel / 15MHz / 16QAM M1[1] M1[1] dBm--20 dBm--30 dBm -30 dBm-CF 1.8575 GHz 
 Marker
 Type Ref
 Trc
 X-value
 Y-value
 Function
 Function Result

 M1
 1
 1.851996 GHz
 22.17 dBm

 11
 1
 1.8507567 GHz
 11.33 dBm
 Occ Bw
 1.43856

 T2
 1
 1.8521953 GHz
 9.97 dBm
 Occ Bw
 1.43856

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

 M1
 1
 1.851736 GHz
 22.36 dbm
 Percentage
 1.1
 1.1
 1.1
 1.1
 1.1
 1.1
 1.1
 1.1
 1.1
 1.1
 1.1
 1.1
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 1.1 1.438561439 MHz 1.438561439 MHz Middle Channel / 15MHz / QPSK Middle Channel / 15MHz / 16QAM Reflevel 3.0.0 dbm Offset 11.70 db • RBW 300 kHz
Att 30 db SWT 12.6 µs • VBW 1 MHz Mode Auto FFT
SGL Count 100/100
10°R Max 20 dBm--10 dBm--20 dBm--40 dBm--50 dBm- 
 X-value
 Y-value
 Function

 1.874276 GHz
 22.01 dBm
 1.8732567 GHz

 1.8732567 GHz
 10.70 dBm
 Occ Bw

 1.6746653 GHz
 11.38 dBm

 Marker
 Trype
 Ref
 Trc
 X-value
 Y-value
 Function

 M1
 1
 1.874066 GHz
 21.91 dbm
 10.22 dbm
 Occ 8w

 T1
 1
 1.8732268 GHz
 11.022 dbm
 Occ 8w

 T2
 1
 1.8746953 GHz
 8.50 dbm
 Type Ref Trc 1.408591409 MHz 1.468531469 MHz Date: 5.FEB.2020 04:34:24 Date: 5.FEB.2020 04:34:47 Highest Channel / 15MHz / QPSK Highest Channel / 15MHz / 16QAM Ref Level 30.00 dbm Offset 11.70 db @ RBW 300 kHz
Ref Level 30.00 dbm V 12.6 μs @ VBW 1 MHz Mode Auto FFT
SGL Count 100/100
BPK Max 10 dBm--10 dBm -20 dBm--60 dBm--60 dBm-1001 pts 
 X-value
 Y-value
 Function

 1.908224 GHz
 23.23 dBm
 1.9078347 GHz

 1.9078347 GHz
 11.15 dBm
 Occ Bw

 1.9092732 GHz
 11.83 dBm

 Marker
 Y-value
 Y-value
 Function

 M1
 1
 1.909464 GHz
 23.00 dBm
 1.71
 1.9094747 GHz
 11.90 dBm
 Occ Bw
 0cc Bw
 72
 1.9092732 GHz
 12.59 dBm
 0cc Bw
 12.59 dBm
 0cc Bw
 Function Result Function Result 1.438561439 MHz 1.498501499 MHz

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Date: 5.FEB.2020 04:38:29

LTE Band 2 Lowest Channel / 20MHz / QPSK Lowest Channel / 20MHz / 16QAM 21.64 dBr 1.8521680 GH 1.478521479 MH 21.67 dBn 1.8519280 GH 1.438561439 MH M1[1] M1[1] 10 dBm dBm--20 dBm--30 dBm -30 dBm--50 dBm- 
 X-value
 Y-value
 Function
 Function Result

 1.852168 GHz
 21.64 dBm
 1.8511689 CHz
 1.8511689 CHz

 1.8511689 L2
 21.69 dBm
 Occ Bw
 1.47852

 1.8526474 GHz
 9.94 dBm
 Occ Bw
 1.47852
 Type Ref Trc 9.84 dBm Occ Bw 11.27 dBm 1.478521479 MHz 1.438561439 MHz Middle Channel / 20MHz / QPSK Middle Channel / 20MHz / 16QAM Reflevel 3.0.0 dbm Offset 11.70 db • RBW 300 kHz
Att 30 db SWT 18.9 µs • VBW 1 MHz Mode Auto FFT
SGL Count 100/100
10°R Max 21.50 dBi 1.8716480 GF 1.478521479 MF 20 dBm--10 dBm--20 dBm-40 dBm 
 X-value
 Y-value
 Function

 1.871646 GHz
 21.50 dBm
 1.871698 GHz

 1.871698 GHz
 10.02 dBm
 Occ Bw

 1.8726474 GHz
 11.73 dBm

 Marker
 Trype
 Ref
 Trc
 X-value
 Y-value
 Function

 M1
 1
 1.871648 GHz
 21.23 dbm
 9.75 dbm
 Occ 8w

 T1
 1
 1.871648 GHz
 9.75 dbm
 Occ 8w

 T2
 1
 1.8726474 GHz
 9.76 dbm
 Occ 8w
 Type Ref Trc 1.478521479 MHz 1.478521479 MHz Date: 5.FEB.2020 05:01:40 Date: 5.FEB.2020 05:02:03 Highest Channel / 20MHz / QPSK Highest Channel / 20MHz / 16QAM Ref Level 30.00 dbm Offset 11.70 db @ RBW 300 kHz
Ref Level 30.00 dbm V 18.9 µs @ VBW 1 MHz Mode Auto FFT
SGL Count 100/100
BPK Max 10 dBm--10 dBm -20 dBm--60 dBm--60 dBm-1001 pts Type Ref Trc 
 X-value
 Y-value
 Function

 1.908432 GHz
 23.58 dBm
 OCC BW

 1.9073926 GHz
 12.55 dBm
 OCC BW

 1.9088711 GHz
 12.03 dBm

 Marker
 Trc
 X-value
 Y-value
 Function

 M1
 1
 1,909432 GHz
 22.73 dBm
 1

 T1
 1
 1,9074326 GHz
 13.01 dBm
 Occ Bw

 T2
 1
 1,9088312 GHz
 11.70 dBm
 Occ Bw
 Function Result Function Result 1.478521479 MHz 1.478521479 MHz

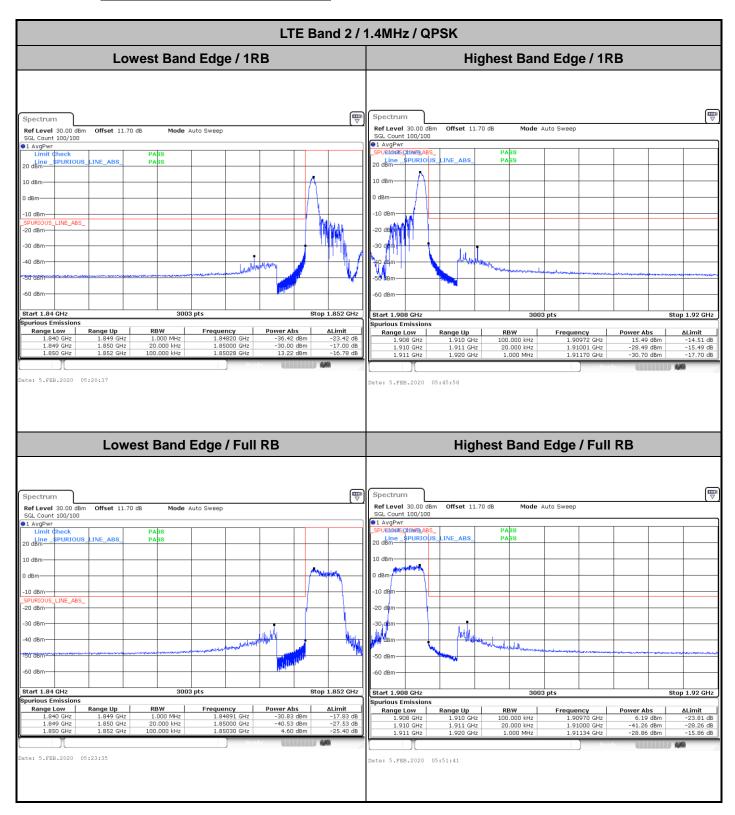
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FAX: 886-3-328-4978

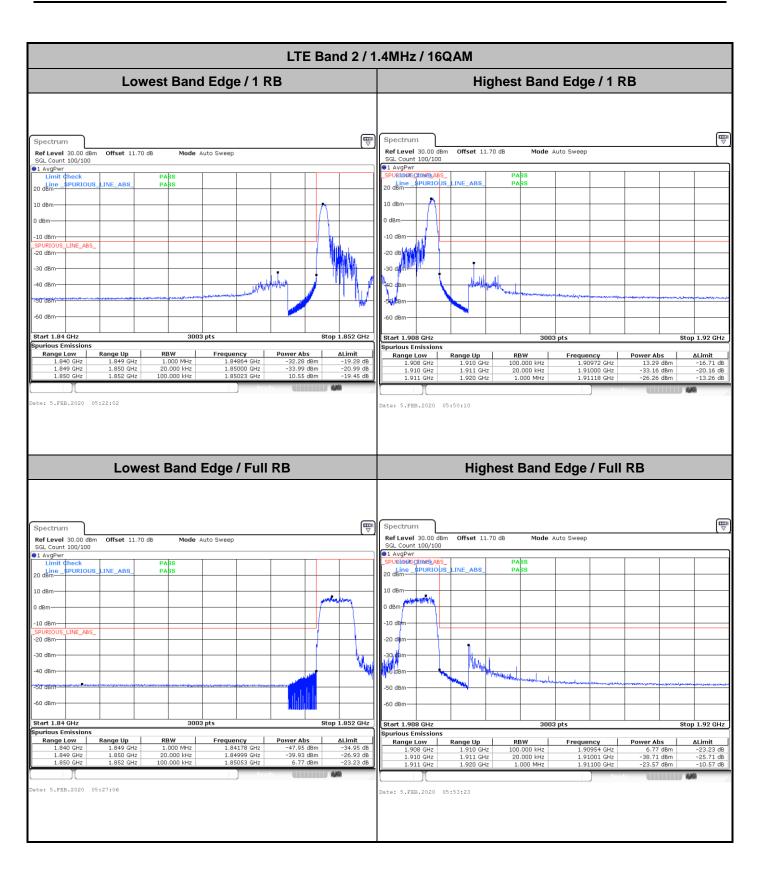
Date: 5.FEB.2020 05:06:40

## **Conducted Band Edge**



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LTE Band 2 / 3MHz / QPSK Lowest Band Edge / 1RB Highest Band Edge / 1 RB Spectrum Ref Level 30.00 dBm Offset 11.70 dB Mode Auto Sweep Ref Level 30.00 dBm SGL Count 100/100 Offset 11.70 dB Mode Auto Sween SGL Count 100/100 ●1 AvgPw 10 dBn -20 dBm--30 dBm -30 dBm Start 1.84 GHz Spurious Emissio 3003 pts Stop 1.853 GHz purious Emissions Frequency 1.84824 GHz 1.84999 GHz 1.85041 GHz Range Low Range Low 1.840 GH Range Up 1.849 GHz -36.22 d 1.911 GHz 1.920 GHz ate: 5.FEB.2020 02:23:40 Lowest Band Edge / Full RB **Highest Band Edge / Full RB** Spectrum Mode Auto Sweep Ref Level 30.00 dBm Offset 11.70 dB Ref Level 30.00 dBm Offset 11.70 dB SGL Count 100/100 Mode Auto Sweep SGL Count 100/100

1 AvgPwr

SPURIOUS CITNEL ABS

Line SPURIOUS

20 dBm PASS PASS 20 dBm— 10 dBm 10 dBm Amount 0 dBm INE\_ABS\_ -20 dBm--30 dBn YHYMAL -60 dBm-Start 1.84 GHz 3003 1.853 GHz Start 1.907 GHz ourious Emissions Range Up 1.849 GHz 1.850 GHz 1.853 GHz Frequency 1.84857 GHz 1.85000 GHz 1.85117 GHz -35.37 dBm -42.75 dBm 5.78 dBm Range Low 1.907 GHz 1.910 GHz 1.911 GHz ∆Limit te: 5.FEB.2020 02:28:31 Date: 5.FEB.2020 03:12:14

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LTE Band 2 / 3MHz / 16QAM Lowest Band Edge / 1 RB Highest Band Edge /1 RB Spectrum Ref Level 30.00 dBm Offset 11.70 dB Mode Auto Sweep Ref Level 30.00 dBm SGL Count 100/100 Offset 11.70 dB Mode Auto Sweep SGL Count 100/100 ●1 AvgPw -20 dBm--30 dBm Start 1.84 GHz Spurious Emissio 3003 pts Stop 1.853 GHz Power Abs -31.36 dB urious Emissions Range Low 1.84880 GHz 1.84999 GHz 1.85044 GHz Range Low 1.840 GH Range Up 1.849 GHz 1.911 GHz 1.920 GHz ate: 5.FEB.2020 02:25:11 Lowest Band Edge / Full RB **Highest Band Edge / Full RB** Spectrum Mode Auto Sweep Ref Level 30.00 dBm Offset 11.70 dB Ref Level 30.00 dBm Offset 11.70 dB SGL Count 100/100 Mode Auto Sweep SGL Count 100/100

1 AvgPwr

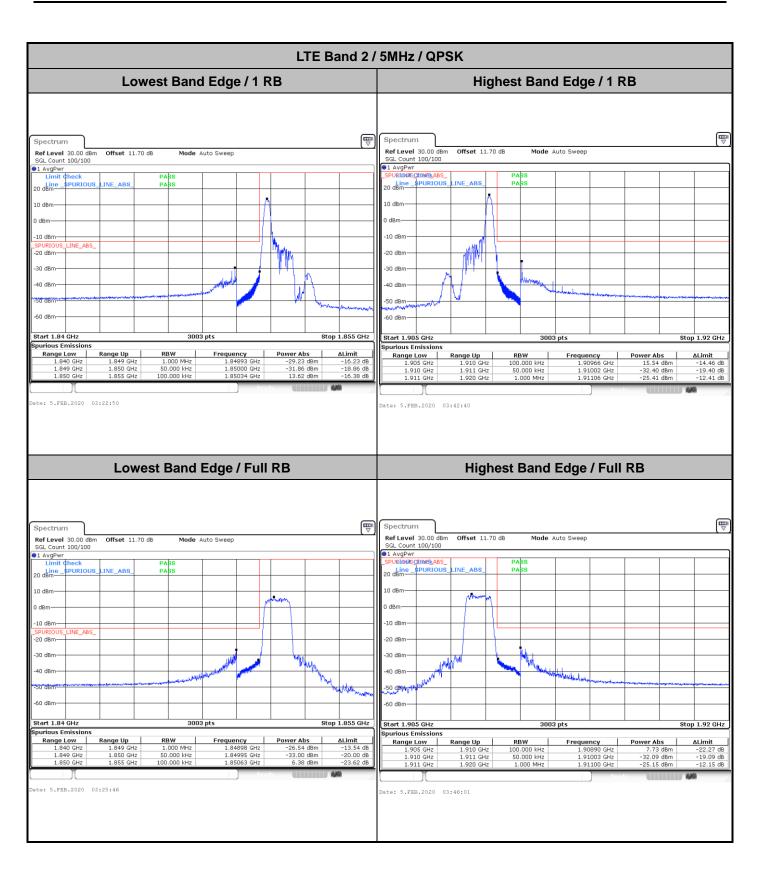
SPURIOUS CITNEL ABS

Line SPURIOUS

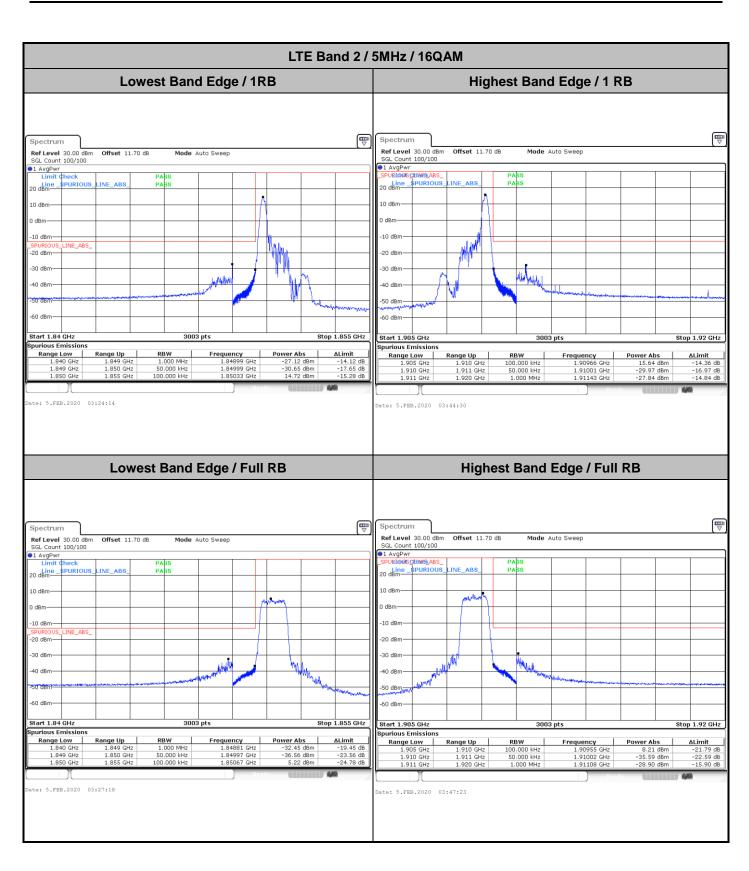
20 dBm PASS PASS 20 dBm— 10 dBm 10 dBm INE\_ABS\_ -20 dBm--30 dBn -60 dBm-Start 1.84 GHz 3003 1.853 GHz Start 1.907 GHz ourious Emissions Range Up 1.849 GHz 1.850 GHz 1.853 GHz 1.84867 GHz 1.85000 GHz 1.85067 GHz -32.51 dBm -39.65 dBm 5.61 dBm △Limit -19.51 dB -26.65 dB -24.39 dB 1.907 GHz 1.910 GHz 1.911 GHz Frequency 1.90887 GHz 1.91000 GHz 1.91104 GHz te: 5.FEB.2020 02:30:00 Date: 5.FEB.2020 03:13:40

Report No.: FG9D3102

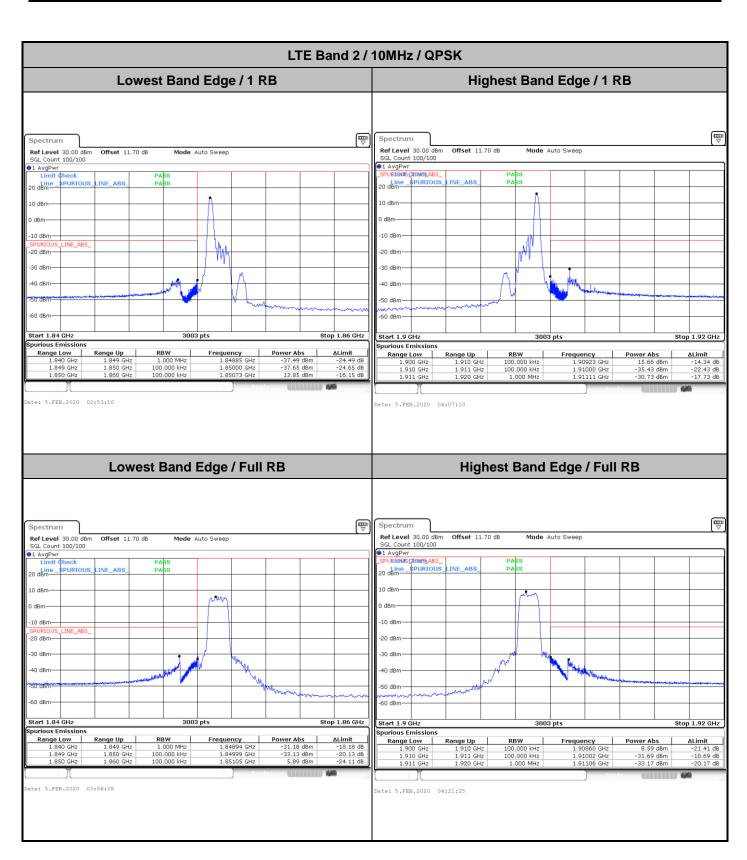
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