FCC RF Test Report

APPLICANT : SHARP CORPORATION

EQUIPMENT : Smart phone FCC ID : APYHRO00262

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

CLASSIFICATION: PCS Licensed Transmitter Held to Ear (PCE)

The product was received on Mar. 24, 2018 and completely tested on Apr. 13, 2018. We, SPORTON INTERNATIONAL Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA-603-E and the testing has shown the tested sample to be 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., the test report shall not be reproduced except in full.

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager

SPORTON INTERNATIONAL INC.

No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C.

SPORTON INTERNATIONAL INC.

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Report Issued Date : Apr. 27, 2018
Report Version : Rev. 01

Report Template No.: BU5-FGLTE Version 2.0

1190

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG832404B	Rev. 01	Initial issue of report	Apr. 27, 2018

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SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark	
	§2.1046	Conducted Output Power	Reporting Only			
3.4	§24.232(c)	Equivalent Isotropic Radiated Power (Band 2)	EIRP < 2Watt	PASS	-	
	§27.50(d)(4)	Equivalent Isotropic Radiated Power (Band 4)	EIRP < 1Watt			
3.5	§24.232(d)	Peak-to-Average Ratio	<13 dB	PASS	-	
3.6	§2.1049	Occupied Bandwidth	Reporting Only	PASS	-	
3.7	§2.1051 §24.238(a) §27.53(h)	Conducted Band Edge Measurement (Band 2) (Band 4)	< 43+10log10(P[Watts])	PASS	-	
3.8	§2.1051 §24.238(a) §27.53(h)	Conducted Spurious Emission (Band 2) (Band 4)	< 43+10log10(P[Watts])	PASS	-	
3.9	§2.1055 §24.235 §27.54	Frequency Stability Temperature & Voltage	Within Authorized Band	PASS	-	
4.4	§2.1053 §24.238(a) §27.53(h)	Radiated Spurious Emission (Band 2) (Band 4)	< 43+10log ₁₀ (P[Watts])	PASS	Under limit 17.83 dB at 3441.000 MHz	

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1 General Description

1.1 Applicant

SHARP CORPORATION

2-13-1, HACHIHONMATSU-IIDA, HIGASHI-HIROSHIMA-SHI, HIROSHIMA PREFECTURE 739-0192, Japan

1.2 Manufacturer

SHARP CORPORATION

2-13-1, HACHIHONMATSU-IIDA, HIGASHI-HIROSHIMA-SHI, HIROSHIMA PREFECTURE 739-0192, Japan

1.3 Product Feature of Equipment Under Test

GSM/WCDMA/LTE, Bluetooth, Wi-Fi 2.4GHz 802.11b/g/n, and GNSS.

Product Specification subjective to this standard						
Antonna Tyma	WWAN: Monopole Antenna WLAN: Monopole Antenna					
Antenna Type	Bluetooth: Monopole Antenna GPS / Glonass : Monopole Antenna					

1.4 Modification of EUT

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

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1.5 Testing Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1190 and TW0007 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

Test Site	SPORTON INTERNATIONAL INC.				
	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park,				
Test Site Location	Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C.				
Test Site Location	TEL: +886-3-327-3456				
	FAX: +886-3-328-4978				
Test Site No.	Sporton Site No.				
Test Site NO.	TH05-HY				

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

Test Site	SPORTON INTERNATIONAL INC.			
	No.58, Aly. 75, Ln. 564, Wenhua 3rd Rd. Guishan Dist,			
Test Site Location	Taoyuan City, Taiwan (R.O.C.)			
rest Site Location	TEL: +886-3-327-0868			
	FAX: +886-3-327-0855			
Test Site No.	Sporton Site No.			
rest site No.	03CH13-HY			

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

1.6 Applicable Standards

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

- 47 CFR Part 2, 24(E), 27
- ANSI / TIA-603-E
- FCC KDB 971168 D01 Power Meas. License Digital Systems v03
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01

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, Subpart B, recorded in a separate test report.

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Test Configuration of Equipment Under Test 2

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 v03 with maximum output power.

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission.

Test Items		Bandwidth (MHz)				Modulation		RB#			Test Channel				
	Band	1.4	3	5	10	15	20	QPSK	16QAM	1	Half	Full	L	М	н
Max.	2	v	v	v	v	v	v	v	v	v	v	v	v	v	v
Output Power	4	v	v	v	v	v	v	v	v	v	v	V	v	v	v
Peak-to- Average	2						v	v	v	v		v	v	v	v
Ratio	4						v	v	v	v		v	v	v	v
26dB and 99%	2	v	٧	v	v	v	v	v	v			v	v	v	v
Bandwidth	4	v	٧	v	v	v	v	v	v			٧	v	v	v
Conducted	2	v	V	v	v	v	v	v	v	v		v	v		v
Band Edge	4	v	v	٧	٧	٧	v	v	v	v		v	٧		٧
Conducted	2	v	٧	v	v	v	v	v	v	v			v	v	v
Spurious Emission	4	v	٧	v	v	v	v	v	v	v			v	v	v
Frequency	2				v			v				٧		v	
Stability	4				v			v				v		v	
E.R.P/	2	v	٧	v	v	v	v	v	v	v	v		v	v	v
E.I.R.P	4	v	٧	v	v	v	v	v	v	v	v		v	v	v
Radiated	2						Wor	st Case					v	v	v
Spurious Emission	4						Wor	st Case					v	v	v
Note	 The mark "v" means that this configuration is chosen for testing The mark "-" means that this bandwidth is not supported. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported. 											under			

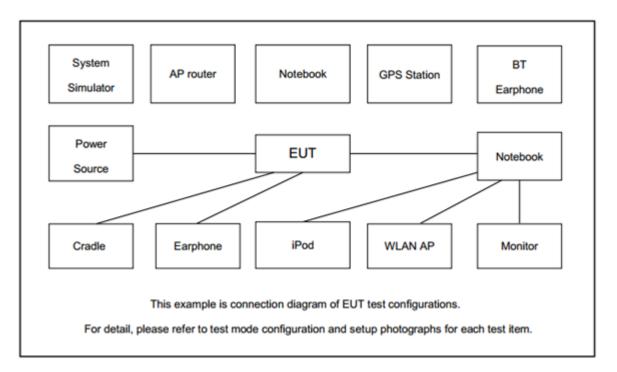
reported.

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2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

Item	Equipment	nt Trade Name Model No.		FCC ID Data Cable		Power Cord	
1.	System Simulatr	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m	
2.	iPod Earphone	Apple	N/A	Verification	Unshielded, 1.0 m	N/A	

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 Cha	nnel and Frequenc	cy List	
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	18700	18900	19100
20	Frequency	1860	1880	1900
15	Channel	18675	18900	19125
15	Frequency	1857.5	1880	1902.5
10	Channel	18650	18900	19150
10	Frequency	1855	1880	1905
5	Channel	18625	18900	19175
5	Frequency	1852.5	1880	1907.5
3	Channel	18615	18900	19185
3	Frequency	1851.5	1880	1908.5
1.4	Channel	18607	18900	19193
1.4	Frequency	1850.7	1880	1909.3

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

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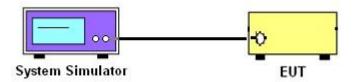
3 Conducted Test Items

3.1 Measuring Instruments

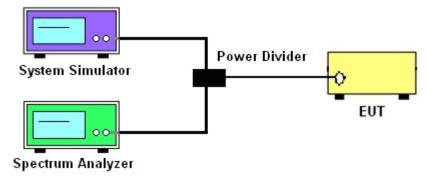
See list of measuring instruments of this test report.

3.2 Test Setup

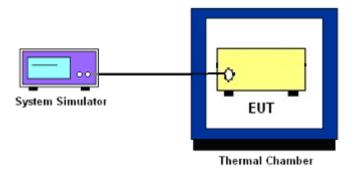
3.2.1 Conducted Output Power



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



3.2.3 Frequency Stability



3.3 Test Result of Conducted Test

Please refer to Appendix A.

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3.4 Conducted Output Power and ERP/EIRP

3.4.1 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.

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_T = gain of the transmitting antenna in dBi

 L_{C} = signal attenuation in the connecting cable between the transmitter and antenna in dB

3.4.2 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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3.5 Peak-to-Average Ratio

3.5.1 Description of the PAR Measurement

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

3.5.2 Test Procedures

The testing follows FCC KDB 971168 v03 Section 5.7.1

- 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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3.6 Occupied Bandwidth

3.6.1 Description of Occupied Bandwidth Measurement

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

The 26 dB emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

3.6.2 Test Procedures

The testing follows FCC KDB 971168 v03 Section 4.2

- 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.

3.7 Conducted Band Edge

3.7.1 Description of Conducted Band Edge Measurement

24.238 (a)

For operations in the 1850-1910 and 1930-1990 MHz band, the FCC limit is $43 + 10\log_{10}(P[Watts])$ 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.

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.

3.7.2 Test Procedures

The testing follows FCC KDB 971168 v03 Section 6.0.

- 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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3.8 Conducted Spurious Emission

3.8.1 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.

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

3.8.2 Test Procedures

The testing follows FCC KDB 971168 v03 Section 6.0.

- 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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3.9 Frequency Stability

3.9.1 Description of Frequency Stability Measurement

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

3.9.2 Test Procedures for Temperature Variation

The testing follows FCC KDB 971168 v03 Section 9.0.

- 1. The EUT was set up in the thermal chamber and connected with the system simulator.
- 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.

3.9.3 Test Procedures for Voltage Variation

The testing follows FCC KDB 971168 v03 Section 9.0.

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

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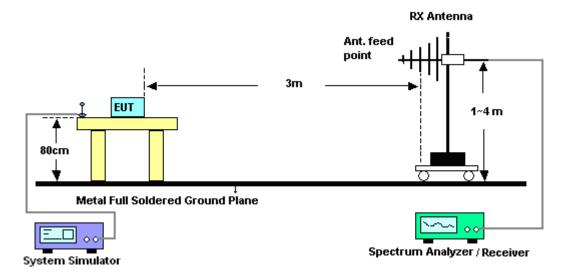
4 Radiated Test Items

4.1 Measuring Instruments

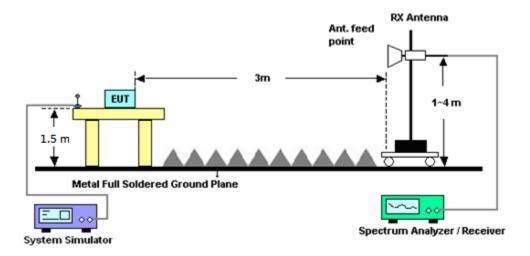
See list of measuring instruments of this test report.

4.2 Test Setup

4.2.1 For radiated test from 30MHz to 1GHz



4.2.2 For radiated test above 1GHz



4.3 Test Result of Radiated Test

Please refer to Appendix B.

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4.4 Radiated Spurious Emission

4.4.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI / TIA-603-E. The power of any emission outside of the authorized operating frequency ranges must be attenuated

below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

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

4.4.2 Test Procedures

The testing follows FCC KDB 971168 v03 Section 5.8 and ANSI / TIA-603-E Section 2.2.12.

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

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

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5 List of Measuring Equipment

					Calibration			
Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Date	Test Date	Due Date	Remark
LTE Base Station	Anritsu	MT8820C	6201432821	GSM/GPRS	Oct. 13, 2017	Mar. 24, 2018~	Oct. 12, 2018	Conducted
ETE Base Station	Aiiitsu	W110020C		/WCDMA/LTE	Oct. 13, 2017	Apr. 11, 2018	Oct. 12, 2010	(TH05-HY)
Spectrum	Rohde &	E0)/40	101007	4011 40011	N 07 0047	Mar. 24, 2018~	N 00 0040	Conducted
Analyzer	Schwarz	FSV40	101397	10Hz~40GHz	Nov. 07, 2017	Apr. 11, 2018	Nov. 06, 2018	(TH05-HY)
Temperature	ESPEC	SH-641	92013720	-30°C ~70°C	Aug. 28, 2017	Mar. 24, 2018~	Aug. 27, 2018	Conducted
Chamber						Apr. 11, 2018		(TH05-HY)
Programmable Power Supply	GW Instek	PSS-2005	EL890001	1V~20V 0.5A~5A	Oct. 06, 2017	Mar. 24, 2018~ Apr. 11, 2018	Oct. 05, 2018	Conducted (TH05-HY)
		1-18GHz 20						Operations
Coupler	Warison	dB 25WSM A Directiona	#B	1G~18GHz	Dec. 04, 2017	Mar. 24, 2018~ Apr. 11, 2018	Dec. 03, 2018	Conducted (TH05-HY)
		I Coupler				Арі. 11, 2010		,
Amplifier	MITEQ	TTA1840-35	1871923	18GHz~40GHz, VSWR : 2.5:1	Jul. 18, 2017	Apr. 06, 2018~	Jul. 17, 2018	Radiation
7 unpliner	WITEG	-HG	107 1020	max	oui. 10, 2017	Apr. 13, 2018	oui. 17, 2010	(03CH13-HY)
Bilog Antenna	TESEQ	CBL 6111D&N-6-	35414&AT-N	30MHz~1GHz	Oct. 14, 2017	Apr. 06, 2018~	Oct. 13, 2018	Radiation
Bilog Antenna	TESEQ	06	0602	30WHZ~1GHZ	Oct. 14, 2017	Apr. 13, 2018	Oct. 13, 2016	(03CH13-HY)
Amplifier	Sonoma-Instru	310 N	187282	9KHz~1GHz	Dec. 21, 2016	Apr. 06, 2018~	Dec. 20, 2018	Radiation
	ment SCHWARZBE	BBHA 9120				Apr. 13, 2018 Apr. 06, 2018~		(03CH13-HY) Radiation
Horn Antenna	CK	D	9120D-1241	1GHz ~ 18GHz	Jun. 15, 2017	Apr. 13, 2018	Jun. 14, 2018	(03CH13-HY)
Preamplifier	MITEQ	AMF-7D-00 101800-30-1	1590074	1GHz~18GHz	May 22, 2017	Apr. 06, 2018~	May 21, 2018	Radiation
reampline	WITEQ	0P	1000074	101123100112	Way 22, 2017	Apr. 13, 2018	Way 21, 2010	(03CH13-HY)
Spectrum	Keysight	N9010A	MY5537052	10Hz~44GHz	Mar. 15, 2018	Apr. 06, 2018~	Mar. 14, 2019	Radiation
Analyzer	=1.1=0	AM-BS-450	6			Apr. 13, 2018 Apr. 06, 2018~		(03CH13-HY) Radiation
Antenna Mast	EMEC	0-B	N/A	1m~4m	N/A	Apr. 13, 2018	N/A	(03CH13-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Apr. 06, 2018~ Apr. 13, 2018	N/A	Radiation (03CH13-HY)
SHF-EHF Horn	SCHWARZBE	DDIIA 0470	BBHA91702	40011- 40011-	Nov. 40, 2047	Apr. 06, 2018~	Nav. 00, 0040	Radiation
Antenna	CK	BBHA 9170	51	18GHz- 40GHz	Nov. 10, 2017	Apr. 13, 2018	Nov. 09, 2018	(03CH13-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA 9170	BBHA91705 84	18GHz- 40GHz	Nov. 27, 2017	Apr. 06, 2018~ Apr. 13, 2018	Nov. 26, 2018	Radiation (03CH13-HY)
RF Cable	HUBER +	SUCOFLEX	0030/126E	30M-18G	Jan. 22, 2018	Apr. 06, 2018~	Jan. 21, 2019	Radiation
	SUHNER HUBER +	126E SUCOFLEX				Apr. 13, 2018 Apr. 06, 2018~	, =5 : 5	(03CH13-HY) Radiation
RF Cable	SUHNER	104	335041/4	30M-18G	Jan. 22, 2018	Apr. 13, 2018	Jan. 21, 2019	(03CH13-HY)
RF Cable	HUBER +	SUCOFLEX	MY24961/4	30M~18GHz	Jan. 22, 2018	Apr. 06, 2018~	Jan. 21, 2019	Radiation
	SUHNER	104 E3				Apr. 13, 2018		(03CH13-HY)
Test Software	AUDIX	6.2009-8-24	RK-001124	N/A	N/A	Apr. 06, 2018~ Apr. 13, 2018	N/A	Radiation (03CH13-HY)
		С				7 (pr. 10, 2010		(3001110111)

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Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Filter	Wainwright	WHKX12-27 00-3000-180 00-60SS		3G High Pass	Sep. 18, 2017	Apr. 06, 2018~ Apr. 13, 2018	Sep. 17, 2018	Radiation (03CH13-HY)
Filter	Wainwright	WLK4-1000- 1530-8000-4 0SS	SN12	1GHz Low Pass Filter	Sep. 18, 2017	Apr. 06, 2018~ Apr. 13, 2018	Sep. 17, 2018	Radiation (03CH13-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	9120D-1241	1G~18GHz	Jun. 15, 2017	Apr. 06, 2018~ Apr. 13, 2018	Jun. 14, 2018	Radiation (03CH13-HY)
Signal Generator	Rohde & Schwarz	SMF100A	101107	100kHz~40GHz	May 22, 2017	Apr. 06, 2018~ Apr. 13, 2018	May 21, 2018	Radiation (03CH13-HY)
Preamplifier	Keysight	83017A	MY5327026 4	1GHz ~ 26.5GHz	Dec. 05, 2017	Apr. 06, 2018~ Apr. 13, 2018	Dec. 04, 2018	Radiation (03CH13-HY)

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6 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of	3.07
Confidence of 95% (U = 2Uc(y))	3.07

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

Measuring Uncertainty for a Level of	3.48
Confidence of 95% (U = 2Uc(y))	3.40

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

Measuring Uncertainty for a Level of	3.92
Confidence of 95% (U = 2Uc(y))	3.92

SPORTON INTERNATIONAL INC.

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Appendix A. Test Results of Conducted Test

Report No.: FG832404B

Conducted Output Power(Average power)

		LTE	Band 2 Max	kimum Average Po	wer [dBm]	
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0		22.97	23.22	22.68
20	1	49		23.47	23.28	22.95
20	1	99		23.05	22.78	22.56
20	50	0	QPSK	22.33	22.24	22.08
20	50	24		22.44	22.32	22.13
20	50	50		22.33	22.18	21.85
20	100	0		22.40	22.34	21.96
20	1	0		21.74	21.93	21.26
20	1	49		21.96	21.87	21.61
20	1	99		21.95	21.28	21.00
20	50	0	16-QAM	21.35	21.49	21.18
20	50	24		21.35	21.46	21.15
20	50	50		21.35	21.29	21.05
20	100	0		21.41	21.35	21.07
15	1	0		23.41	23.20	22.93
15	1	37		23.18	23.08	23.16
15	1	74		23.25	22.99	22.60
15	36	0	QPSK	22.41	22.25	21.99
15	36	20		22.27	22.24	22.06
15	36	39		22.29	22.19	21.74
15	75	0		22.34	22.26	21.90
15	1	0		22.12	22.00	21.72
15	1	37		22.67	22.26	21.61
15	1	74		21.79	22.19	21.29
15	36	0	16-QAM	21.34	21.35	20.98
15	36	20		21.24	21.26	21.06
15	36	39		21.23	21.31	20.87
15	75	0		21.46	21.37	20.90

		LTE	Band 2 Max	ximum Average Po	wer [dBm]	
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0		23.11	22.91	22.73
10	1	25		22.96	23.07	23.07
10	1	49		23.36	22.81	22.58
10	25	0	QPSK	22.51	22.20	22.06
10	25	12		22.16	22.17	22.00
10	25	25		22.32	22.15	21.81
10	50	0		22.37	22.18	21.86
10	1	0		22.18	21.61	21.69
10	1	25		22.10	22.46	21.58
10	1	49		21.96	21.83	21.37
10	25	0	16-QAM	21.41	21.11	20.88
10	25	12		21.29	21.20	21.02
10	25	25		21.30	21.27	20.73
10	50	0		21.40	21.30	20.88
5	1	0		23.13	23.05	22.49
5	1	12		23.20	23.05	22.93
5	1	24		23.08	22.90	22.56
5	12	0	QPSK	22.31	22.21	21.85
5	12	7		22.36	22.21	21.93
5	12	13		22.13	22.20	21.95
5	25	0		22.40	22.16	21.88
5	1	0		21.76	21.90	21.95
5	1	12		21.84	22.37	21.55
5	1	24		21.81	21.74	21.34
5	12	0	16-QAM	21.22	21.08	20.73
5	12	7		21.24	21.04	20.76
5	12	13		21.19	21.04	20.77
5	25	0		21.44	21.34	20.81



		LTE	Band 2 Max	ximum Average Po	wer [dBm]	
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0		23.19	23.14	22.94
3	1	8		23.13	23.11	22.69
3	1	14		23.15	22.67	22.68
3	8	0	QPSK	22.38	22.19	21.83
3	8	4		22.37	22.22	21.92
3	8	7		22.37	22.24	22.02
3	15	0		22.26	22.17	21.78
3	1	0		21.88	22.09	21.98
3	1	8		22.16	22.31	21.48
3	1	14		22.02	22.01	21.47
3	8	0	16-QAM	21.28	21.27	21.00
3	8	4		21.37	21.09	20.97
3	8	7		21.37	21.39	20.79
3	15	0		21.38	21.29	21.04
1.4	1	0		23.40	23.24	22.87
1.4	1	3		23.41	23.27	22.85
1.4	1	5		23.42	23.01	22.61
1.4	3	0	QPSK	23.41	23.25	22.93
1.4	3	1		23.40	23.40	23.01
1.4	3	3		23.38	23.25	22.99
1.4	6	0		22.42	22.21	21.83
1.4	1	0		21.84	21.93	21.50
1.4	1	3		22.05	22.04	21.97
1.4	1	5		21.89	21.92	21.99
1.4	3	0	16-QAM	22.27	21.80	21.76
1.4	3	1		22.33	22.12	22.06
1.4	3	3		22.30	21.99	21.79
1.4	6	0		21.31	21.08	20.73



		LTE	Band 4 Max	ximum Average Po	wer [dBm]	
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0		22.73	23.56	23.36
20	1	49		23.89	23.91	23.52
20	1	99		23.33	22.97	22.78
20	50	0	QPSK	22.57	22.70	22.55
20	50	24		22.51	22.60	22.32
20	50	50		22.57	22.48	22.28
20	100	0		22.59	22.50	22.44
20	1	0		22.05	22.37	22.46
20	1	49		22.32	22.19	22.42
20	1	99		22.06	21.97	21.82
20	50	0	16-QAM	21.55	21.72	21.52
20	50	24		21.55	21.66	21.26
20	50	50		21.51	21.55	21.22
20	100	0		21.59	21.54	21.44
15	1	0		22.86	23.32	23.36
15	1	37		23.87	23.42	23.44
15	1	74		23.21	23.01	22.89
15	36	0	QPSK	22.65	22.63	22.41
15	36	20		22.46	22.46	22.31
15	36	39		22.36	22.43	22.14
15	75	0		22.44	22.53	22.30
15	1	0		22.17	22.20	22.34
15	1	37		22.18	21.98	21.75
15	1	74		22.05	21.81	21.68
15	36	0	16-QAM	21.58	21.46	21.36
15	36	20		21.56	21.42	21.21
15	36	39		21.40	21.34	21.15
15	75	0		21.47	21.42	21.45



		LTE	Band 4 Max	kimum Average Po	wer [dBm]	
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0		22.88	23.32	22.95
10	1	25		23.86	23.56	23.20
10	1	49		23.16	23.04	23.10
10	25	0	QPSK	22.63	22.54	22.30
10	25	12		22.55	22.40	22.20
10	25	25		22.47	22.40	22.15
10	50	0		22.60	22.45	22.17
10	1	0		21.74	22.11	22.04
10	1	25		22.16	22.58	22.03
10	1	49		21.88	21.78	21.95
10	25	0	16-QAM	21.53	21.59	21.35
10	25	12		21.70	21.38	21.24
10	25	25		21.59	21.40	21.18
10	50	0		21.60	21.44	21.21
5	1	0		23.40	23.19	23.05
5	1	12		23.42	23.47	23.16
5	1	24		22.96	23.16	23.09
5	12	0	QPSK	22.41	22.53	22.21
5	12	7		22.53	22.41	22.26
5	12	13		22.50	22.41	22.23
5	25	0		22.59	22.48	22.13
5	1	0		22.45	21.90	21.52
5	1	12		22.38	21.97	21.73
5	1	24		22.08	21.68	21.57
5	12	0	16-QAM	21.17	21.32	21.26
5	12	7		21.26	21.59	21.31
5	12	13		21.22	21.48	21.27
5	25	0		21.33	21.44	21.22



		LTE	Band 4 Max	kimum Average Po	wer [dBm]	
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0		23.39	23.27	23.01
3	1	8		23.37	23.13	22.88
3	1	14		23.29	23.31	22.96
3	8	0	QPSK	22.50	22.48	22.22
3	8	4		22.43	22.50	22.07
3	8	7		22.43	22.44	22.07
3	15	0		22.47	22.48	22.05
3	1	0		22.12	22.54	21.79
3	1	8		22.48	22.22	21.68
3	1	14		22.04	22.25	21.82
3	8	0	16-QAM	21.17	21.53	21.12
3	8	4		21.37	21.52	21.06
3	8	7		21.51	21.45	21.18
3	15	0		21.41	21.50	21.11
1.4	1	0		23.40	23.37	23.08
1.4	1	3		23.39	23.48	23.14
1.4	1	5		23.41	23.23	23.09
1.4	3	0	QPSK	23.54	23.46	23.10
1.4	3	1		23.58	23.51	23.19
1.4	3	3		23.57	23.38	23.21
1.4	6	0		22.46	22.41	22.17
1.4	1	0		21.97	21.94	21.66
1.4	1	3		22.12	22.72	22.45
1.4	1	5		21.99	22.54	22.38
1.4	3	0	16-QAM	22.34	22.47	22.03
1.4	3	1		22.14	22.59	22.05
1.4	3	3		22.30	22.39	22.11
1.4	6	0		21.25	21.27	21.11

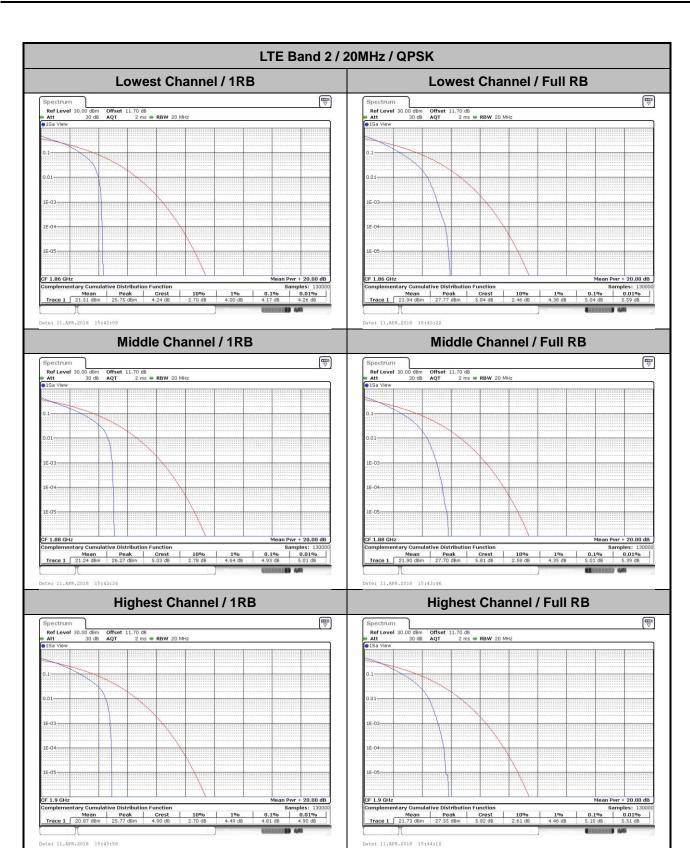
LTE Band 2

Peak-to-Average Ratio

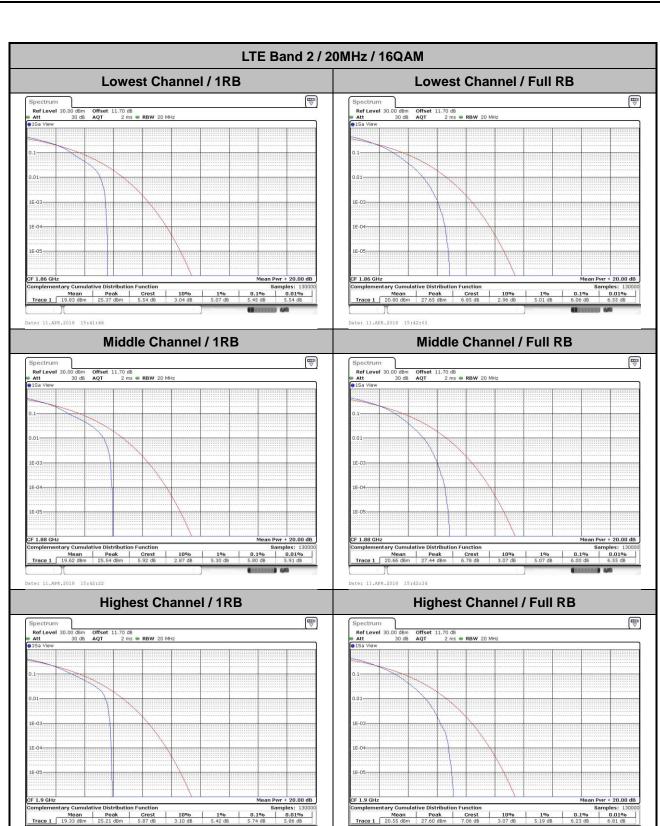
Mode		LTE Band 2 / 20MHz							
Mod.	QP	SK	16C	Limit: 13dB					
RB Size	1RB	Full RB	1RB	Full RB	Result				
Lowest CH	4.17	5.04	5.45	6.06					
Middle CH	4.93	5.01	5.8	6	PASS				
Highest CH	4.81	5.1	5.74	6.23					

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26dB Bandwidth

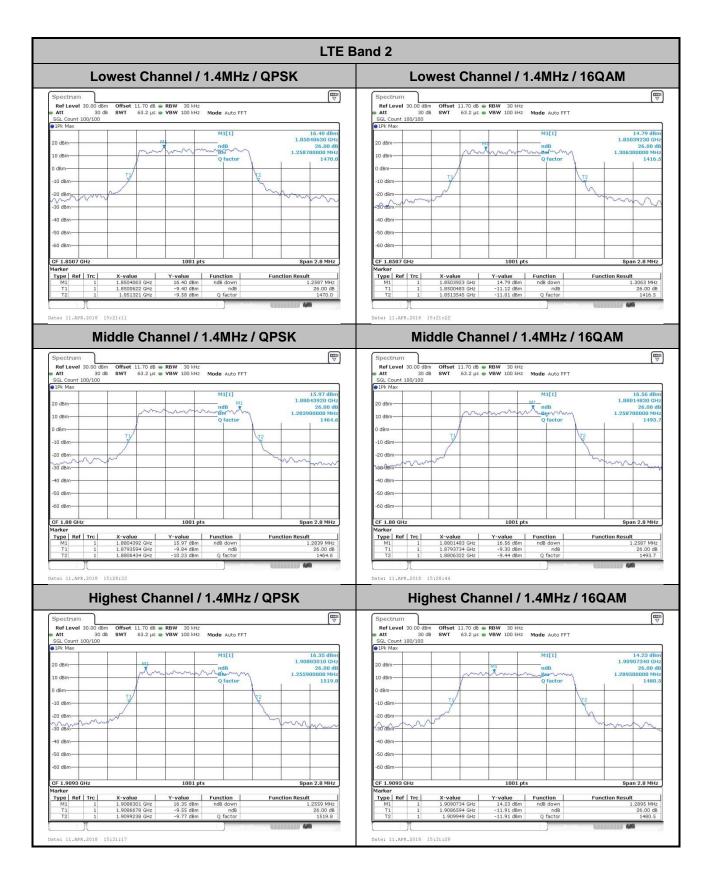
Mode		LTE Band 2 : 26dB BW(MHz)										
BW	1.4MHz 3MHz				5MHz 10MHz		ИHz	15MHz		20MHz		
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.26	1.31	3.03	3.00	4.95	4.98	9.69	9.93	14.30	14.45	20.18	20.1
Middle CH	1.28	1.26	3.05	2.97	5.00	4.94	9.93	9.87	14.33	14.54	20.02	20.18
Highest CH	1.26	1.29	3.01	2.98	4.94	4.97	9.77	9.65	14.27	14.48	19.94	20.06

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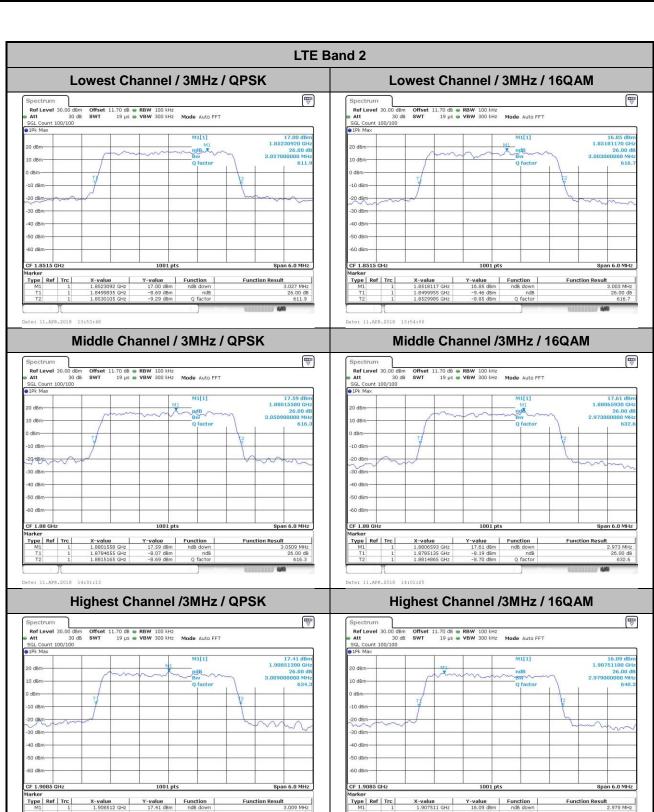
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 X-value
 Y-value
 Function

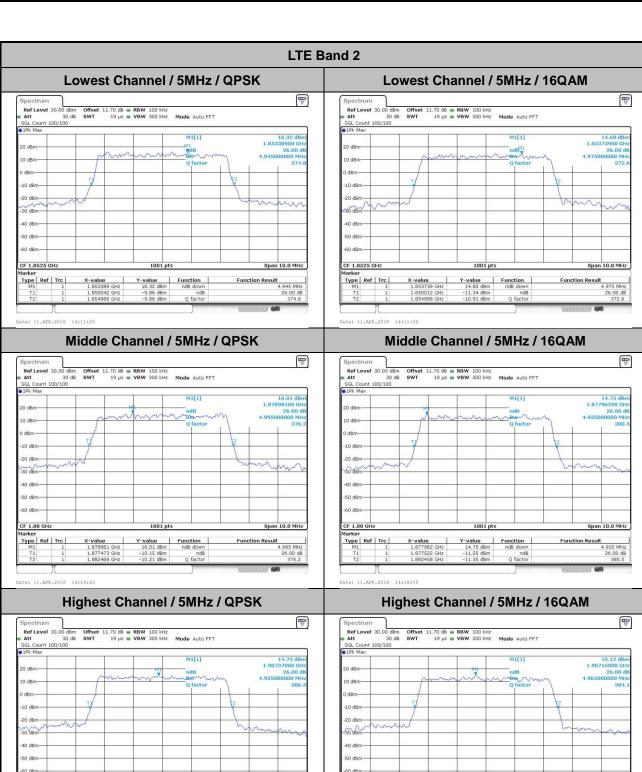
 1.908512 GHz
 17.41 dBm
 ndB down

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Type | Ref | Trc |

 Type
 Ref
 Trc
 X-value
 Y-value
 Function

 M1
 1
 1.907511 GHz
 16.09 dBm
 ndB down



CF 1.9075 GHz

Function Result 4,935 MHz 26.00 dB 386.5

 Marker
 Y-value
 Y-value
 Function

 M1
 1
 1,90737 GHz
 14,75 dBm
 n/d8 down

 T1
 1
 1,909202 GHz
 -11,45 dBm
 n/d8 down

 T2
 1
 1,909938 GHz
 -11,47 dBm
 Q factor

TEL: 886-3-327-3456 FAX: 886-3-328-4978 | Market | Trc | X-value | Y-value | Function | M1 | 1 | 1,00715 GHz | 15.12 dbm | ndB down | 11 | 1 | 1,00724 GHz | 10.1079 dbm | ndB down | 12 | 1 | 1,010007 GHz | -11.14 dbm | Q factor | 1 | 1,010007 GHz | -11.14 dbm | Q factor | 1,010007 GHz | -11.14 dbm | Q factor | 1,010007 GHz | -11.14 dbm | Q factor | -11.14 dbm |

Function Result 4,965 MHz 26,00 dB 384.1

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Report No.: FG832404B LTE Band 2 Lowest Channel / 10MHz / QPSK Lowest Channel / 10MHz / 16QAM 17.69 dB 16.54 dBr 10 dBm Q factor 191. 186. -10 dBm -50 dBm
 X-value
 Y-value
 Function

 1.856918 GHz
 17.69 dBm
 ndB down

 1.85018S GHz
 -8.58 dBm
 ndB

 1.859875 GHz
 -8.44 dBm
 Q factor
 Middle Channel / 10MHz / QPSK Middle Channel / 10MHz / 16QAM 16.45 dBn 1.8840160 GH 26.00 df 9.870000000 MH 190, 17.26 dBi 1.8805590 GF 26.00 d 9.930000000 MF 189. CF 1.88 GH Span 20.0 MHz Span 20.0 MHz
 Y-value
 Function

 2
 17.26 dBm
 ndB down

 2
 -8.52 dBm
 ndB

 z
 -8.81 dBm
 Q factor
 Type Ref Trc Type | Ref | Trc | Date: 11.APR.2018 14:36:23 Highest Channel / 10MHz / QPSK Highest Channel / 10MHz / 16QAM 00 dBm Offset 30 dB SWT 11.70 dB **RBW** 300 kHz 12.6 µs **VBW** 1 MHz **Mode** Auto FFT 11.70 dB **© RBW** 300 kHz 12.6 μs **© VBW** 1 MHz **Mode** Auto FFT SGL Count 100/100 17.09 dBn 1.9027620 GH M1[1] 26.00 di 9.650000000 MH

SPORTON INTERNATIONAL INC. Page Number : A2-8 of 41 TEL: 886-3-327-3456

Function Result

 X-value
 Y-value
 Function

 1.902762 GHz
 17.09 dBm
 nd8 down

 1.900945 GHz
 -9.11 dBm
 nd8

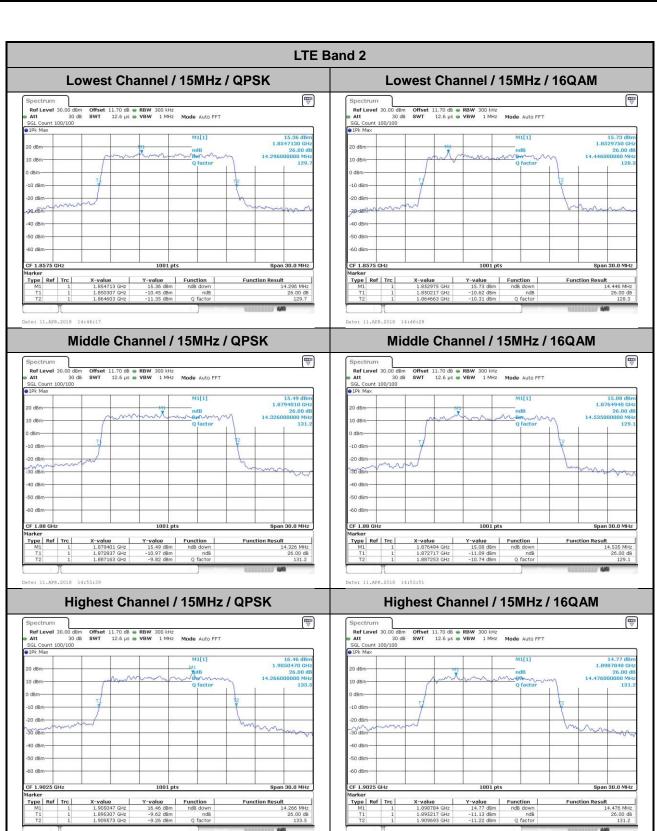
 1.909815 GHz
 -9.29 dBm
 0 factor

Type | Ref | Trc |

FAX: 886-3-328-4978

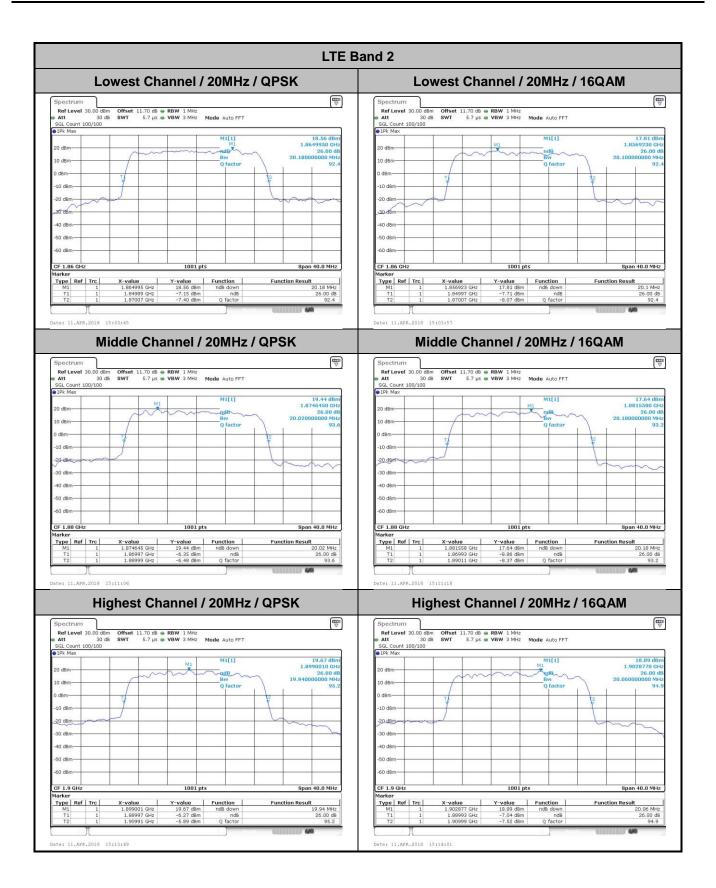
CF 1.905 GHz

Function Result



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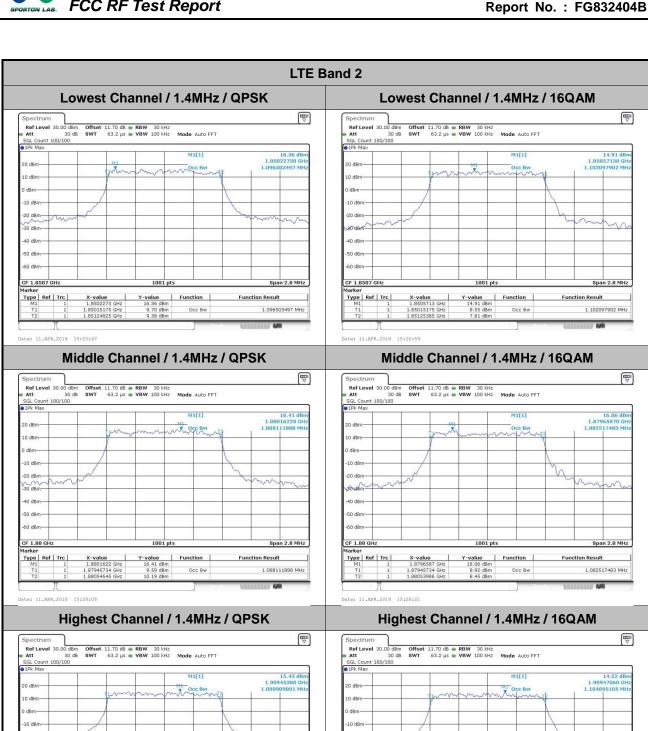
Occupied Bandwidth

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	1.1	1.1	2.7	2.7	4.5	4.47	8.99	9.03	13.43	13.43	18.22	18.26
Middle CH	1.09	1.08	2.71	2.73	4.51	4.5	9.01	8.95	13.43	13.43	18.22	18.1
Highest CH	1.09	1.1	2.7	2.71	4.48	4.48	9.01	8.99	13.43	13.37	18.22	18.3

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30 dBm-

-60 dBm-

1.090909091 MHz

Type Ref Trc



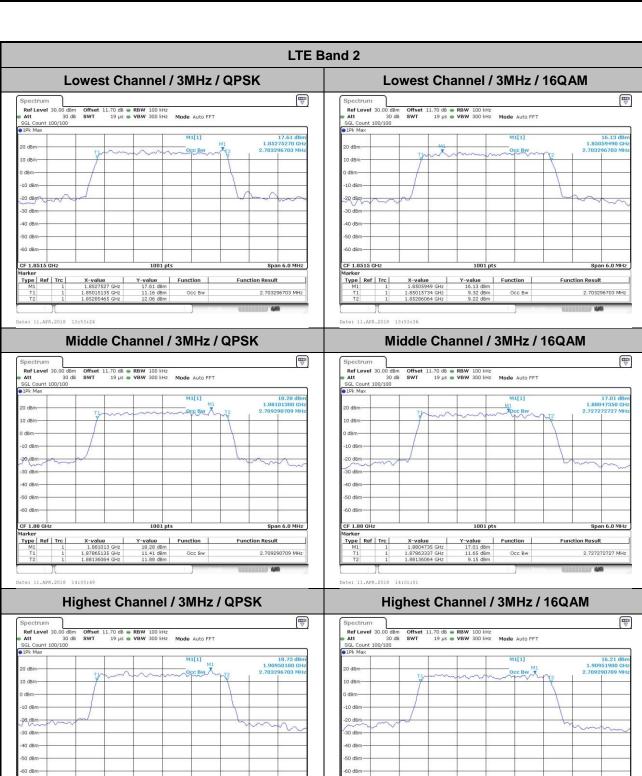
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-60 dBm-

Marker Type Ref Trc

Occ Bw

1.104895105 MHz



CF 1.9085 GHz

 Marker
 Trc
 X-value
 Y-value
 Function

 M1
 1
 1,909519 GHz
 16.21 dm
 16.21 dm

 T1
 1
 1,9074533 GHz
 9,60 dsm
 Occ Bw

 T2
 1
 1,90985465 GHz
 8,54 d8m
 Occ Bw

Span 6.0 MHz

2.703296703 MHz

 Marker
 Trc
 X-value
 Y-value
 Function
 Function Result

 M1
 1
 1.090501 GHz
 18.73 dbm
 Punction
 Function Result

 T1
 1
 1.9073936 GHz
 11.00 dbm
 Occ 8w
 2.703296

 T2
 1
 1.90984266 GHz
 10.74 d8m
 Occ 8w
 2.703296

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2.709290709 MHz

LTE Band 2 Lowest Channel / 5MHz / QPSK Lowest Channel / 5MHz / 16QAM Ref Level 30.00 dBm Offset 11.70 dB = RBW 100 kHz Auto FFT SGL Count 100/100 SHZ 19 µs = VBW 300 kHz Mode Auto FFT GL Count 100/100 M1[1] 15.17 dBr 10 dBm -10 dBm -30 den --50 d8m--60 dBm-
 Marker
 Trc
 X-value
 Y-value
 Function

 M1
 1
 1.85296 GHz
 15.17 dbm
 15.17 dbm

 T1
 1
 1.8502722 GHz
 8.66 dbm
 Occ Bw

 T2
 1
 1.8547378 GHz
 9.82 dbm
 Occ Bw

 X-value
 Y-value
 Function
 Function Result

 1.853579 GHz
 16.03 dBm
 16.03 cm

 1.8502622 GHz
 10.41 dBm
 Occ Bw
 4.49550

 1.8547577 GHz
 10.07 dBm
 4.49550
 Middle Channel / 5MHz / QPSK Middle Channel / 5MHz / 16QAM more -20 dBm-30 dBm non 40 dBm -40 dBm -50 d8m CF 1.88 GHz 1001 pts Span 10.0 MHz Span 10.0 MHz
 Marker
 Y-value
 Function

 Type Ref
 1rc
 X-value
 Y-value
 Function

 M1
 1
 1.88006 GHz
 15.57 dBm
 15.7 dBm

 T1
 1
 1.8777423 GHz
 9.34 dBm
 Occ BW

 T2
 1
 1.8822478 GHz
 10.76 dBm

 X-value
 Y-value
 Function

 1.8796 GHz
 14.79 dBm
 18.77423 GHz

 1.872423 GHz
 9.77 dBm
 Occ Bw

 1.8922378 GHz
 9.75 dBm
 Type Ref Trc Function Result **Function Result** 4.505494505 MHz 4.495504496 MHz Date: 11.APR.2018 14:18:32 Highest Channel / 5MHz / QPSK Highest Channel / 5MHz / 16QAM 00 dBm Offset 30 dB SWT 11.70 dB **RBW** 100 kHz 19 µs **WBW** 300 kHz **Mode** Auto FFT SGL Count 100/100 15.59 dBn 1.90624100 GH 4.475524476 MH 1.90882900 GH 4.475524476 MH 20 dBm dBm-30 dBm -50 dBm 50 dBm

CF 1.9075 GHz

4.475524476 MHz

 Marker
 Trc
 X-value
 Y-value
 Function
 Function Result

 M1
 1
 1.006241 GHz
 15.59 dbm
 Punction
 4.475524

 T1
 1
 1.050522 GHz
 10.74 dbm
 Occ 8w
 4.475524

 T2
 1
 1.9097278 GHz
 9.61 dbm
 Occ 8w
 4.475524

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

4.475524476 MHz

LTE Band 2 Lowest Channel / 10MHz / QPSK Lowest Channel / 10MHz / 16QAM 16.99 dBn 1.8557190 GH 030969031 MH 18.07 dB 10 dBm -10 dBm -50 d8m-
 X-value
 Y-value
 Function
 Function Result

 1.859137 GHz
 18.07 dBm
 18.07 dBm
 18.07 dBm

 1.8595945 GHz
 11.25 dBm
 Occ Bw
 8.99100

 1.8594955 GHz
 11.90 dBm
 0cc Bw
 8.99100
 Date: 11.APR.2018 14:28:38 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
 40 dBm CF 1.88 GHz 1001 pts Span 20.0 MHz
 X-value
 Y-value

 1.879481 GHz
 16.76 dBm

 1.8755245 GHz
 9.92 dBm

 1.8844755 GHz
 10.14 dBm
 X-value Y 1.877103 GHz 1.8754845 GHz 1.8844955 GHz
 Y-value
 Function

 2
 17.45 dBm

 2
 11.43 dBm
 Occ Bw

 2
 11.13 dBm
 Type Ref Trc Type | Ref | Trc | **Function Result** Function **Function Result** 9.010989011 MHz 8.951048951 MHz Date: 11.APR.2018 14:35:59 Highest Channel / 10MHz / QPSK Highest Channel / 10MHz / 16QAM 00 dBm Offset 30 dB SWT 11.70 dB **RBW** 300 kHz 12.6 µs **VBW** 1 MHz **Mode** Auto FFT 11.70 dB **© RBW** 300 kHz 12.6 μs **© VBW** 1 MHz **Mode** Auto FFT SGL Count 100/100 16.21 dBm 1.9074180 GHz 8.991008991 MHz 17.84 dBn 1.9070980 GH 9.010989011 MH dBm--10 dBm 50 dBm CF 1.905 GHz
 Marker
 Trc
 X-value
 Y-value
 Function
 Function Result

 M1
 1
 1.007098 GHz
 17.94 dbm
 Punction
 9.010985

 T1
 1
 1.909545 GHz
 11.29 dbm
 Occ 8w
 9.010985

 T2
 1
 1.9095155 GHz
 10.65 d8m
 Occ 8w
 9.010985

 Marker
 Trc
 X-value
 Y-value
 Function

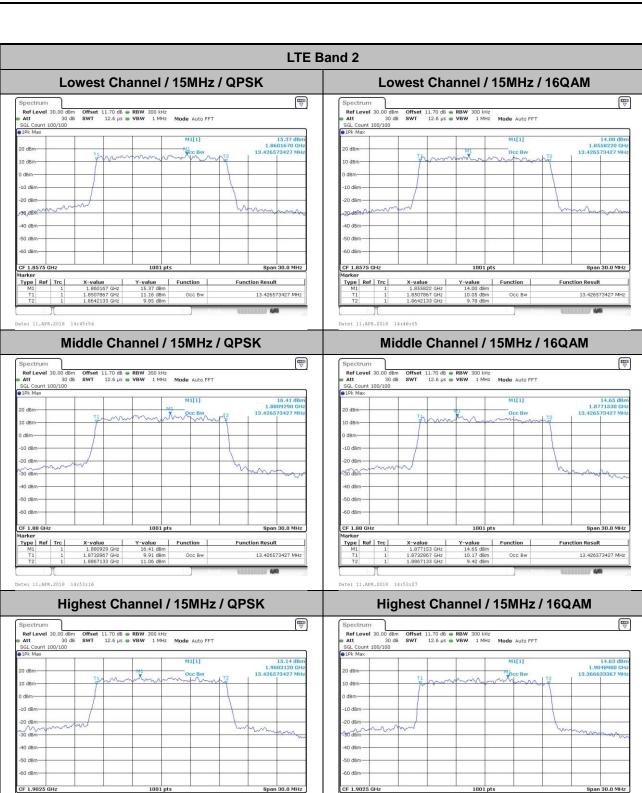
 M1
 1
 1.907418 GHz
 16.21 dbm
 16.21 dbm

 T1
 1
 1.9005045 GHz
 10.20 dbm
 Occ Bw

 T2
 1
 1.9094955 GHz
 9.24 dbm
 Occ Bw
 Function Result

9.010989011 MHz

TEL: 886-3-327-3456 FAX: 886-3-328-4978 8.991008991 MHz



13.426573427 MHz

 Marker
 Trc
 X-value
 Y-value
 Function
 Function Result

 M1
 1
 1.000312 GHz
 15.14 dbm
 Function
 11.1
 1.000312 GHz
 10.12 dbm
 Occ Bw
 13.42657

 T2
 1
 1.9092133 GHz
 10.12 dbm
 Occ Bw
 13.42657

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

13.366633367 MHz

LTE Band 2 Lowest Channel / 20MHz / QPSK Lowest Channel / 20MHz / 16QAM Ref Level 30.00 dBm Offset 11.70 dB → RBW 1 MHz
Att 30 dB SWT 5.7 μs → VBW 3 MHz Mode Auto FFT
SGL Count 100/100 17.95 dBm 1.8675120 GH: 18.261738262 MH: 10 dBm -10 dBm -10 dBm -30 dB -50 d8m-50 dBm -60 dBm
 X-value
 Y-value
 Function
 Function Result

 1.85044 GHz
 19.79 dBm
 18.850449 GHz
 10.80 dBm
 0cc 8w
 18.22177

 1.8509409 GHz
 12.08 dBm
 0cc 8w
 18.22177
 Date: 11.APR.2018 15:03:21 Date: 11.APR.2018 15:03:33 Middle Channel / 20MHz / QPSK Middle Channel / 20MHz / 16QAM Ref Level 30.00 dBm Offset 11.70 dB → RBW 1 MHz
Att 30 dB SWT 5.7 μs → VBW 3 MHz Mode Auto FFT
SGL Count 100/100
 Ref Level
 30.00 dBm
 Offset
 11.70 dB ■ RBW 1 MHz

 Att
 30 dB
 SWT
 5.7 μs ■ VBW 3 MHz
 Mode
 Auto FFT
 18.46 dBi 1.8788010 GF 18.221778222 MF 17.45 dBm 1.8771230 GHz 18.101898102 MHz -20 dBm 20 dBm--40 dBm 40 dBm CF 1.88 GHz 1001 pts
 X-value
 Y-value

 1.877123 GHz
 17.45 dBm

 1.8708891 GHz
 10.70 dBm

 1.888991 GHz
 9.99 dBm
 | Y-value | Function |
| 18.46 dBm |
| 11.97 dBm | Occ Bw |
| 10.68 dBm | Type Ref Trc Type | Ref | Trc | **Function Result** Function **Function Result** 18.221778222 MHz 18.101898102 MHz Date: 11.APR.2018 15:10:54 Highest Channel / 20MHz / QPSK Highest Channel / 20MHz / 16QAM 0 dBm Offset 11.70 dB • RBW 1 MHz 30 dB SWT 5.7 µs • VBW 3 MHz Mode Auto FFT SGL Count 100/100 17.77 dBn 1.8964440 GH 18.301698302 MH 1.9025570 GH 18.221778222 MH 20 dBm dBm--10 dBm -20 dBr -20 dBm--30 dBm--50 dBm 50 dBm

CF 1.9 GHz

18.221778222 MHz

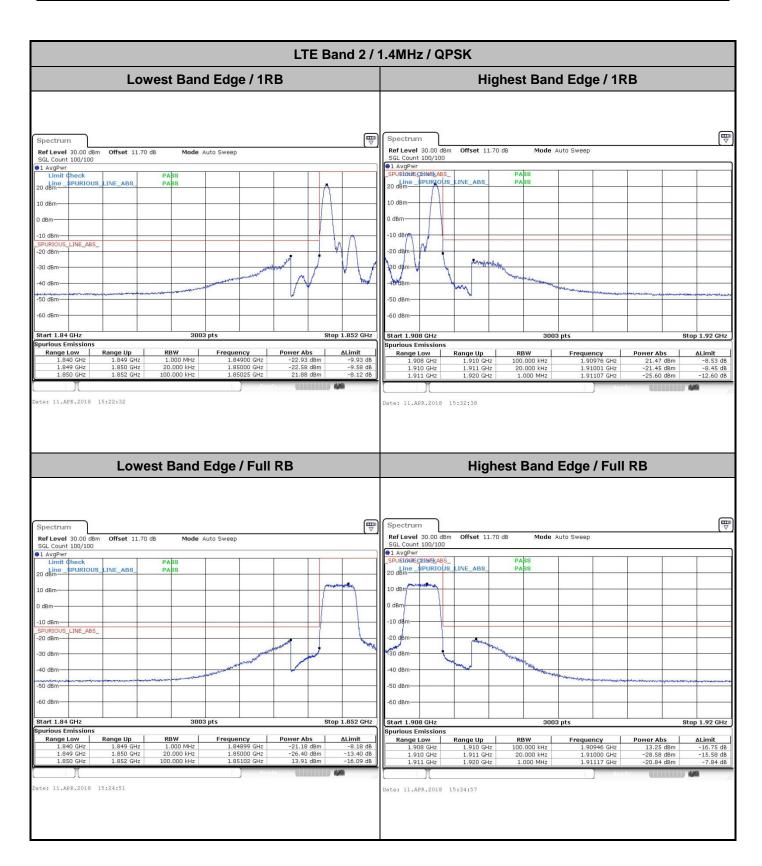
TEL: 886-3-327-3456 FAX: 886-3-328-4978 18.301698302 MHz

Conducted Band Edge

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