



FCC RF Test Report

APPLICANT : Motorola Mobility LLC
EQUIPMENT : Mobile Cellular Phone
BRAND NAME : Motorola
MODEL NAME : XT1926-2, XT1926-3
FCC ID : IHDT56WL2
STANDARD : 47 CFR Part 2, 22(H), 27(M)
CLASSIFICATION : PCS Licensed Transmitter Held to Ear (PCE)

The product was received on Dec. 27, 2017 and completely tested on Feb. 24, 2018. We, Sporton International (Kunshan) 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 (Kunshan) Inc., the test report shall not be reproduced except in full.



Approved by: James Huang / Manager

Sporton International (Kunshan) Inc.

No.3-2 Ping-Xiang Rd, Kunshan Development Zone Kunshan City Jiangsu Province 215335 China



TABLE OF CONTENTS

REVISION HISTORY.....3
SUMMARY OF TEST RESULT4
1 GENERAL DESCRIPTION5
1.1 Applicant5
1.2 Manufacturer.....5
1.3 Product Feature of Equipment Under Test.....5
1.4 Product Specification of Equipment Under Test.....6
1.5 Modification of EUT6
1.6 Specification of Accessory.....7
1.7 Re-use of Measured Data8
1.8 Maximum EIRP Power, Frequency Tolerance, and Emission Designator9
1.9 Testing Location10
1.10 Applicable Standards.....10
2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST11
2.1 Test Mode.....11
2.2 Connection Diagram of Test System.....12
2.3 Support Unit used in test configuration and system12
2.4 Frequency List of Low/Middle/High Channels13
3 CONDUCTED TEST ITEMS14
3.1 Measuring Instruments14
3.2 Test Setup14
3.3 Test Result of Conducted Test14
3.4 Conducted Output Power and ERP/EIRP15
4 RADIATED TEST ITEMS16
4.1 Measuring Instruments16
4.2 Test Setup16
4.3 Test Result of Radiated Test16
4.4 Radiated Spurious Emission17
5 LIST OF MEASURING EQUIPMENT18
6 UNCERTAINTY OF EVALUATION19
APPENDIX A. TEST RESULTS OF CONDUCTED TEST
APPENDIX B. TEST RESULTS OF RADIATED TEST
APPENDIX C. TEST SETUP PHOTOGRAPHS
APPENDIX D. REFERENCE REPORT



REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG7D2702-01B	Rev. 01	Initial issue of report	Mar. 13, 2018



SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§22.913(a)(2)	Effective Radiated Power (Band 5)	ERP < 7 Watt	PASS	-
	§27.50(h)(2)	Equivalent Isotropic Radiated Power (Band 38)	EIRP < 2Watt	PASS	-
4.4	§2.1053 §22.917(a)	Radiated Spurious Emission (Band 5)	< 43+10log ₁₀ (P[Watts])	PASS	Under limit 17.42 dB at 1664.00 MHz
	§2.1053 §27.53(m)(4)	Radiated Spurious Emission (Band 38)	< 55+10log ₁₀ (P[Watts])		



1 General Description

1.1 Applicant

Motorola Mobility LLC
222 W, Merchandise Mart Plaza, Chicago IL 60654 USA

1.2 Manufacturer

Motorola Mobility LLC
222 W, Merchandise Mart Plaza, Chicago IL 60654 USA

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Cellular Phone
Brand Name	Motorola
Model Name	XT1926-2, XT1926-3
FCC ID	IHDT56WL2
EUT supports Radios application	GSM/GPRS/EGPRS/WCDMA/HSPA/DC-HSDPA/ HSPA+/LTE/NFC WLAN 2.4GHz 802.11b/g/n HT20 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 Bluetooth v3.0+EDR/ Bluetooth v4.0 LE/ Bluetooth v4.1 LE/ Bluetooth v4.2 LE/ Bluetooth v5.0 LE
IMEI Code	Conducted: 351854090025672 Radiation: 351871090006205
HW Version	DVT1B
SW Version	evert_n-userdebug 8.0.0 OPW27.88 1825 intcfg,test-keys
EUT Stage	Identical Prototype

Remark:

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. There are two types of EUT sample 1 and sample 2, the differences between two samples are only for SIM slot, sample 1(Model name: XT1926-3) is dual SIM slot, sample 2(Model name: XT1926-2) is single SIM slot.



1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	LTE Band 5 : 824.7 MHz ~ 848.3 MHz LTE Band 7 : 2502.5 MHz ~ 2567.5 MHz LTE Band 38 : 2572.5MHz ~ 2617.5MHz
Rx Frequency	LTE Band 5 : 869.7 MHz ~ 893.3 MHz LTE Band 7 : 2622.5MHz ~ 2687.5 MHz LTE Band 38 : 2572.5MHz ~ 2617.5MHz
Bandwidth	LTE Band 5 : 1.4MHz / 3MHz / 5MHz / 10MHz LTE Band 7 : 5MHz/ 10MHz / 15MHz / 20MHz LTE Band 38 : 5MHz / 10MHz / 15MHz / 20MHz
Antenna Gain	LTE Band 5 : -3.1 dBi LTE Band 7 : -2.1 dBi for Antenna #2 LTE Band 38 : -2.3 dBi for Antenna #2
Type of Modulation	QPSK / 16QAM / 64QAM

1.5 Modification of EUT

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



1.6 Specification of Accessory

Specification of Accessory				
AC Adapter 1(US)	Brand Name	Motorola (Salom)	Model Name	SC-22
	Power Rating	I/P: 100-240 Vac, 500mA, O/P: 5Vdc,3000mA or 9Vdc,1600mA or 12Vdc,1200mA		
AC Adapter 1(EU)	Brand Name	Motorola (Salom)	Model Name	SC-23
	Power Rating	I/P: 100-240 Vac, 500mA, O/P: 5Vdc,3000mA or 9Vdc,1600mA or 12Vdc,1200mA		
AC Adapter 1(UK)	Brand Name	Motorola (Salom)	Model Name	SC-24
	Power Rating	I/P: 100-240 Vac, 500mA, O/P: 5Vdc,3000mA or 9Vdc,1600mA or 12Vdc,1200mA		
AC Adapter 1(IN)	Brand Name	Motorola (Salom)	Model Name	SC-25
	Power Rating	I/P: 100-240 Vac, 500mA, O/P: 5Vdc,3000mA or 9Vdc,1600mA or 12Vdc,1200mA		
AC Adapter 1(AU)	Brand Name	Motorola (Salom)	Model Name	SC-26
	Power Rating	I/P: 100-240 Vac, 500mA, O/P: 5Vdc,3000mA or 9Vdc,1600mA or 12Vdc,1200mA		
AC Adapter 2(US)	Brand Name	Motorola (Chenyang)	Model Name	SC-22
	Power Rating	I/P: 100-240 Vac, 500mA, O/P: 5Vdc,3000mA or 9Vdc,1600mA or 12Vdc,1200mA		
AC Adapter 2(EU)	Brand Name	Motorola (Chenyang)	Model Name	SC-23
	Power Rating	I/P: 100-240 Vac, 500mA, O/P: 5Vdc,3000mA or 9Vdc,1600mA or 12Vdc,1200mA		
AC Adapter 2(UK)	Brand Name	Motorola (Chenyang)	Model Name	SC-24
	Power Rating	I/P: 100-240 Vac, 500mA, O/P: 5Vdc,3000mA or 9Vdc,1600mA or 12Vdc,1200mA		
AC Adapter 2(IN)	Brand Name	Motorola (Chenyang)	Model Name	SC-25
	Power Rating	I/P: 100-240 Vac, 500mA, O/P: 5Vdc,3000mA or 9Vdc,1600mA or 12Vdc,1200mA		
AC Adapter 2(AU)	Brand Name	Motorola (Chenyang)	Model Name	SC-26
	Power Rating	I/P: 100-240 Vac, 500mA, O/P: 5Vdc,3000mA or 9Vdc,1600mA or 12Vdc,1200mA		
Battery	Brand Name	Motorola (ATL)	Model Name	JT40
	Power Rating	3.8Vdc,3200mAh	Type	Li-ion Polymer
Earphone 1	Brand Name	Motorola (Jiahe)	Model Name	LS-118M-12
	Signal Line Type	1.2 meter, non-shielded cable, without ferrite core		
Earphone 2	Brand Name	Motorola (Lianyun)	Model Name	TS910A-38AMS01WHR-M
	Signal Line Type	1.2 meter, non-shielded cable, without ferrite core		
USB Cable	Brand Name	Motorola (Liqi)	Model Name	L32B-053000100-ALL
	Signal Line Type	1.0 meter, shielded cable, without ferrite core		



1.7 Re-use of Measured Data

1.7.1 Introduction Section

This application re-uses data collected on a similar device. The subject device of this application (Model: XT1926-2, XT1926-3, FCC ID: IHDT56WL2) is electrically identical to the reference device (Model: XT1926-6, XT1926-7, FCC ID: IHDT56WL4 and Model: XT1926-5, FCC ID: IHDT56WL3) for the portions of the circuitry corresponding to the data being re-used, as treated by KDB Publication 178919 D01.

1.7.2 Difference Section

For details concerning the similarity with respect to component placement, mechanical/electrical design etc., some difference of population/depopulation to enable support of different cellular bands, please refer to the Product Equality Declaration.

The re-used RF data includes the following bands provided in Appendix D (Sporton RF Report No. FG7D2702B for the reference device Model: XT1926-6, XT1926-7, FCC ID: IHDT56WL4 and FG7D2702-05B for the reference device Model: XT1926-5, FCC ID: IHDT56WL3):

1.7.3 Spot Check Verification Data Section

In order to confirm hardware similarity of the subject device with the reference device, spot check measurements were performed on the subject device for radiated spurious emission, Conducted Band-edge and Conducted spurious emission, the test result were consistent with FCC ID: IHDT56WL4 and IHDT56WL3.

Assertions concerning the similarity of these devices are based on representations by the applicant. The applicant accepts full responsibility for the validity of the similarity claim, and for the determination that verification test data are sufficient to support it.

1.7.4 Reference detail Section:

Equipment Class	Reference FCC ID	Folder Test	Report Title/Section
PCE (LTE)	IHDT56WL4	Part22H.24E.27L.27M.27H (FG7D2702B)	All sections (except RSE/ERP) applicable fo for LTE Band 5
			All sections applicable fo for LTE Band 7
PCE (LTE)	IHDT56WL3	Part22H.24E.27M (FG7D2702-05B)	All sections (except RSE/ERP) applicable fo for LTE Band 38



1.8 Maximum EIRP Power, Frequency Tolerance, and Emission Designator

LTE Band 5		QPSK	16QAM
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Maximum ERP(W)
1.4	824.7 ~ 848.3	0.0655	0.0566
3	825.5 ~ 847.5	0.0658	0.0571
5	826.5 ~ 846.5	0.0655	0.0570
10	829.0 ~ 844.0	0.0659	0.0573
LTE Band 5		64QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	
1.4	824.7 ~ 848.3	0.0453	
3	825.5 ~ 847.5	0.0445	
5	826.5 ~ 846.5	0.0453	
10	829.0 ~ 844.0	0.0443	
LTE Band 38		QPSK	16QAM
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Maximum ERP(W)
5	2572.5 ~ 2617.5	0.1014	0.0826
10	2575.0 ~ 2615.0	0.1009	0.0841
15	2577.5 ~ 2612.5	0.1005	0.0820
20	2580.0 ~ 2610.0	0.1016	0.0826
LTE Band 38		64QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	
5	2572.5 ~ 2617.5	0.0689	
10	2575.0 ~ 2615.0	0.0675	
15	2577.5 ~ 2612.5	0.0676	
20	2580.0 ~ 2610.0	0.0684	



1.9 Testing Location

Sporton Lab is accredited to ISO 17025 by National Voluntary Laboratory Accreditation Program (NVLAP code: 600155-0) and the FCC designation No is CN5013.

Test Site	Sporton International (Kunshan) Inc.	
Test Site Location	No.3-2 Ping-Xiang Rd, Kunshan Development Zone Kunshan City Jiangsu Province 215335 China TEL : +86-512-57900158 FAX : +86-512-57900958	
Test Site No.	Sporton Site No.	FCC Test Firm Registration No.
	03CH03-KS	630927

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

1.10 Applicable Standards

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

- ♦ 47 CFR Part 2, 22(H), 27(M)
- ♦ ANSI/TIA-603-E
- ♦ FCC KDB 971168 D01 Power Meas License Digital Systems v03
- ♦ FCC KDB 412172 D01 Determining ERP and EIRP 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.



2 Test Configuration of Equipment Under Test

2.1 Test Mode

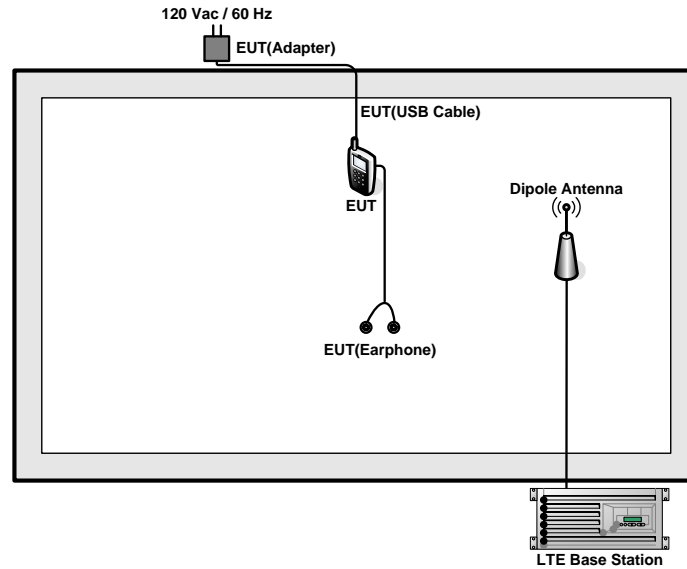
Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas License Digital Systems v03 with maximum output power.

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

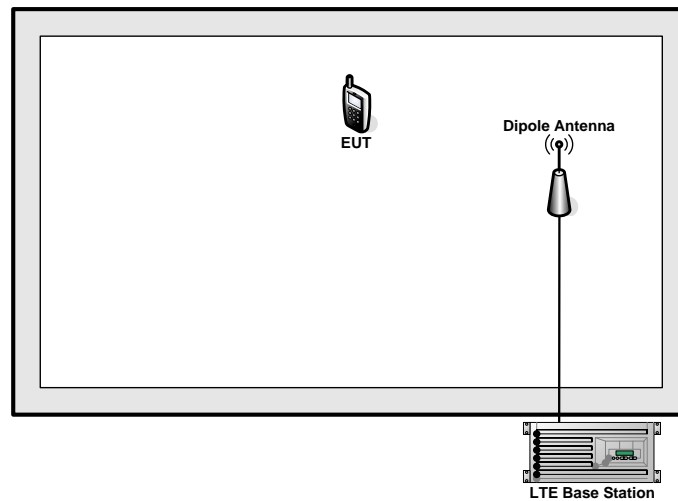
Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
E.R.P./	5	Y	Y	Y	Y	-	-	Y	Y	Y	Y			Y	Y	Y
E.I.R.P.	38	-	-	Y	Y	Y	Y	Y	Y	Y	Y			Y	Y	Y
Radiated Spurious Emission	5				Y	-	-	Y				Y				Y
	38	-	-				Y	Y				Y				Y
Note	<ol style="list-style-type: none"> The mark "Y" 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 BW/RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported. 															

2.2 Connection Diagram of Test System

LTE Band 5/38 Antenna #3



LTE Band 38 Antenna #2



2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	LTE Base Station	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m



2.4 Frequency List of Low/Middle/High Channels

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

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

LTE Band 38 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	37850	38000	38150
	Frequency	2580	2595	2610
15	Channel	37825	38000	38175
	Frequency	2577.5	2595	2612.5
10	Channel	37800	38000	38200
	Frequency	2575	2595	2615
5	Channel	37775	38000	38225
	Frequency	2572.5	2595	2617.5

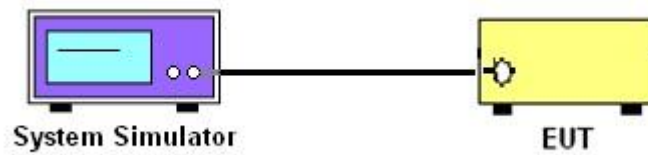
3 Conducted Test Items

3.1 Measuring Instruments

See list of measuring instruments of this test report.

3.2 Test Setup

3.2.1 Conducted Output Power



3.3 Test Result of Conducted Test

Please refer to Appendix A.



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

The EIRP of mobile transmitters must not exceed 2 Watts for LTE Band 38.

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.

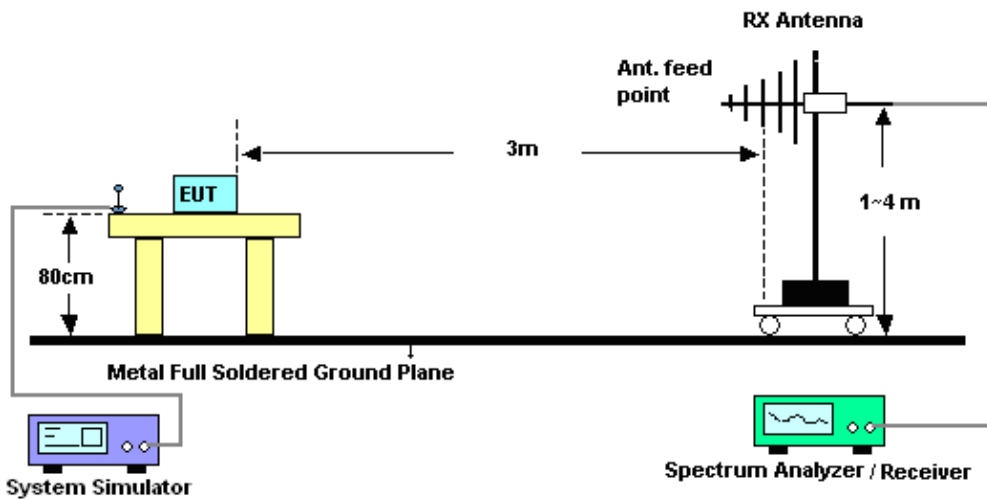
4 Radiated Test Items

4.1 Measuring Instruments

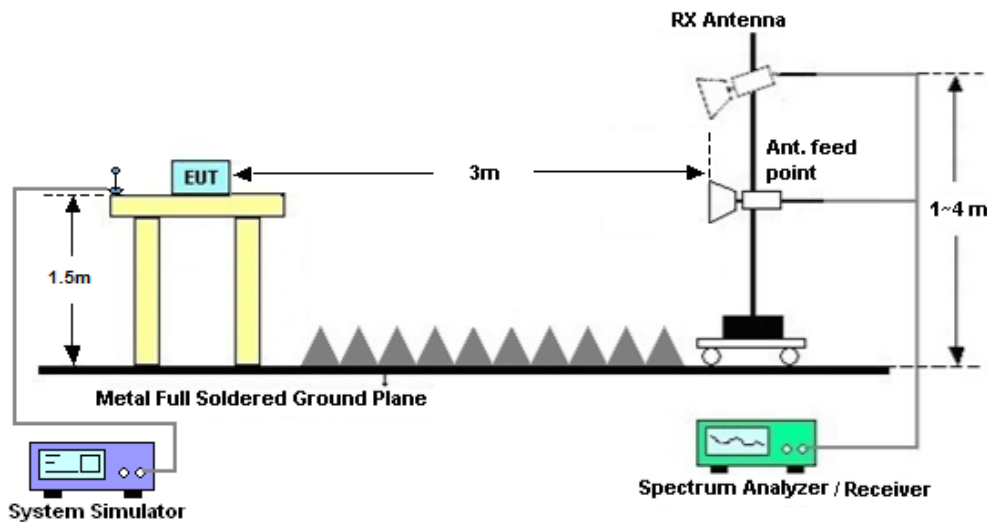
See list of measuring instruments of this test report.

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.



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.

For Band 38

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

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

4.4.2 Test Procedures

1. The testing follows FCC KDB 971168 v03 Section 5.8 and ANSI/TIA-603-E Section 2.2.12.
2. The EUT was placed on a turntable with 0.8 meter height for frequency below 1GHz and 1.5 meter height for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
6. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
7. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
8. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
9. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
10. $EIRP (dBm) = S.G. Power - Tx Cable Loss + Tx Antenna Gain$
11. $ERP (dBm) = EIRP - 2.15$
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [43 + 10\log(P)] (dB)$
 $= [30 + 10\log(P)] (dBm) - [43 + 10\log(P)] (dB)$
 $= -13dBm.$

13. For Band 38:

The limit line is derived from $55 + 10\log(P)$ dB below the transmitter power P(Watts)
 $EIRP (dBm) = S.G. Power - Tx Cable Loss + Tx Antenna Gain$
 $ERP (dBm) = EIRP - 2.15$



5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EXA Spectrum Analyzer	Keysight	N9010A	MY55150244	10Hz~44GHz	Apr. 18, 2017	Feb. 24, 2018	Apr. 17, 2018	Radiation (03CH03-KS)
Bilog Antenna	TeseQ	CBL6112D	35406	25MHz~2GHz	Apr. 22, 2017	Feb. 24, 2018	Apr. 21, 2018	Radiation (03CH03-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1356	1GHz~18GHz	Apr. 22, 2017	Feb. 24, 2018	Apr. 21, 2018	Radiation (03CH03-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz~40GHz	Feb. 07, 2018	Feb. 24, 2018	Feb. 06, 2019	Radiation (03CH03-KS)
Amplifier	com-power	PA-103A	161069	1MHz~1000MHz / 32 dB	Apr. 18, 2017	Feb. 24, 2018	Apr. 17, 2018	Radiation (03CH03-KS)
Amplifier	MITEQ	TTA1840-35-HG	1887435	18GHz~40GHz	Oct. 12, 2017	Feb. 24, 2018	Oct. 11, 2018	Radiation (03CH03-KS)
high gain Amplifier	MITEQ	AMF-7D-00 101800-30-1	2025788	1GHz~18GHz	Apr. 18, 2017	Feb. 24, 2018	Apr. 17, 2018	Radiation (03CH03-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz	Oct. 12, 2017	Feb. 24, 2018	Oct. 11, 2018	Radiation (03CH03-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Feb. 24, 2018	NCR	Radiation (03CH03-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Feb. 24, 2018	NCR	Radiation (03CH03-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Feb. 24, 2018	NCR	Radiation (03CH03-KS)

NCR: No Calibration Required



6 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.8 dB
---	--------

Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.3dB
---	-------



Appendix A. Test Results of Conducted Test

ERP/EIRP

LTE Band 5 ($G_T - L_C = -3.1$ dB) QPSK									
Bandwidth	1.4M			3M			5M		
Channel	20407	20525	20643	20415	20525	20635	20425	20525	20625
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
(MHz)									
Conducted Power (dBm)	23.07	23.32	23.41	23.28	23.43	23.39	23.22	23.41	23.37
Conducted Power (Watts)	0.2028	0.2148	0.2193	0.2128	0.2203	0.2183	0.2099	0.2193	0.2173
ERP(dBm)	17.82	18.07	18.16	18.03	18.18	18.14	17.97	18.16	18.12
ERP(Watts)	0.0605	0.0641	0.0655	0.0635	0.0658	0.0652	0.0627	0.0655	0.0649

LTE Band 5 ($G_T - L_C = -3.1$ dB) QPSK			
Bandwidth	10M		
Channel	20450	20525	20600
	(Low)	(Mid)	(High)
Frequency	829	836.5	844
(MHz)			
Conducted Power (dBm)	23.13	23.31	23.44
Conducted Power (Watts)	0.2056	0.2143	0.2208
ERP(dBm)	17.88	18.06	18.19
ERP(Watts)	0.0614	0.0640	0.0659



LTE Band 5 ($G_T - L_C = -3.1$ dB) 16QAM									
Bandwidth	1.4M			3M			5M		
Channel	20407	20525	20643	20415	20525	20635	20425	20525	20625
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
Conducted Power (dBm)	22.58	22.78	22.75	22.65	22.70	22.82	22.67	22.79	22.81
Conducted Power (Watts)	0.1811	0.1897	0.1884	0.1841	0.1862	0.1914	0.1849	0.1901	0.1910
ERP(dBm)	17.33	17.53	17.50	17.40	17.45	17.57	17.42	17.54	17.56
ERP(Watts)	0.0541	0.0566	0.0562	0.0550	0.0556	0.0571	0.0552	0.0568	0.0570

LTE Band 5 ($G_T - L_C = -3.1$ dB) 16QAM			
Bandwidth	10M		
Channel	20450	20525	20600
	(Low)	(Mid)	(High)
Frequency (MHz)	829	836.5	844
Conducted Power (dBm)	22.60	22.73	22.83
Conducted Power (Watts)	0.1820	0.1875	0.1919
ERP(dBm)	17.35	17.48	17.58
ERP(Watts)	0.0543	0.0560	0.0573



LTE Band 5 (G _T - L _C = -3.1 dB) 64QAM									
Bandwidth	1.4M			3M			5M		
Channel	20407	20525	20643	20415	20525	20635	20425	20525	20625
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
Conducted Power (dBm)	21.19	21.52	21.81	21.00	21.46	21.73	21.19	21.52	21.81
Conducted Power (Watts)	0.1315	0.1419	0.1517	0.1259	0.1400	0.1489	0.1315	0.1419	0.1517
ERP(dBm)	15.94	16.27	16.56	15.75	16.21	16.48	15.94	16.27	16.56
ERP(Watts)	0.0393	0.0424	0.0453	0.0376	0.0418	0.0445	0.0393	0.0424	0.0453

LTE Band 5 (G _T - L _C = -3.1 dB) 64QAM			
Bandwidth	10M		
Channel	20450	20525	20600
	(Low)	(Mid)	(High)
Frequency (MHz)	829	836.5	844
Conducted Power (dBm)	21.31	21.62	21.71
Conducted Power (Watts)	0.1352	0.1452	0.1483
ERP(dBm)	16.06	16.37	16.46
ERP(Watts)	0.0404	0.0434	0.0443



< Antenna #2 >

LTE Band 38 (G _T - L _C = -2.3 dBi) QPSK									
Bandwidth	5M			10M			15M		
Channel	37775	38000	38225	37800	38000	38200	37825	38000	38175
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	2572.5	2595	2617.5	2575	2595	2615	2577.5	2595	2612.5
(MHz)									
Conducted Power (dBm)	22.36	22.16	22.31	22.28	22.15	22.34	22.32	22.20	22.27
Conducted Power (Watts)	0.1722	0.1644	0.1702	0.1690	0.1641	0.1714	0.1706	0.1660	0.1687
EIRP(dBm)	20.06	19.86	20.01	19.98	19.85	20.04	20.02	19.90	19.97
EIRP(Watts)	0.1014	0.0968	0.1002	0.0995	0.0966	0.1009	0.1005	0.0977	0.0993

LTE Band 38 (G _T - L _C = -2.3 dBi) QPSK			
Bandwidth	20M		
Channel	37850	38000	38150
	(Low)	(Mid)	(High)
Frequency	2580	2595	2610
(MHz)			
Conducted Power (dBm)	22.37	22.14	22.09
Conducted Power (Watts)	0.1726	0.1637	0.1618
EIRP(dBm)	20.07	19.84	19.79
EIRP(Watts)	0.1016	0.0964	0.0953



LTE Band 38 (G _T - L _C = -2.3 dBi) 16QAM									
Bandwidth	5M			10M			15M		
Channel	37775	38000	38225	37800	38000	38200	37825	38000	38175
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	2572.5	2595	2617.5	2575	2595	2615	2577.5	2595	2612.5
Conducted Power (dBm)	21.47	21.30	21.40	21.55	21.29	21.43	21.38	21.44	21.38
Conducted Power (Watts)	0.1403	0.1349	0.1380	0.1429	0.1346	0.1390	0.1374	0.1393	0.1374
EIRP(dBm)	19.17	19.00	19.10	19.25	18.99	19.13	19.08	19.14	19.08
EIRP(Watts)	0.0826	0.0794	0.0813	0.0841	0.0793	0.0818	0.0809	0.0820	0.0809

LTE Band 38 (G _T - L _C = -2.3 dBi) 16QAM			
Bandwidth	20M		
Channel	37850	38000	38150
	(Low)	(Mid)	(High)
Frequency (MHz)	2580	2595	2610
Conducted Power (dBm)	21.36	21.47	21.38
Conducted Power (Watts)	0.1368	0.1403	0.1374
EIRP(dBm)	19.06	19.17	19.08
EIRP(Watts)	0.0805	0.0826	0.0809



LTE Band 38 (G _T - L _C = -2.3 dBi) 64QAM									
Bandwidth	5M			10M			15M		
Channel	37775	38000	38225	37800	38000	38200	37825	38000	38175
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	2572.5	2595	2617.5	2575	2595	2615	2577.5	2595	2612.5
Conducted Power (dBm)	20.68	20.51	20.34	20.59	20.46	20.28	20.60	20.54	20.27
Conducted Power (Watts)	0.1169	0.1125	0.1081	0.1146	0.1112	0.1067	0.1148	0.1132	0.1064
EIRP(dBm)	18.38	18.21	18.04	18.29	18.16	17.98	18.30	18.24	17.97
EIRP(Watts)	0.0689	0.0662	0.0637	0.0675	0.0655	0.0628	0.0676	0.0667	0.0627

LTE Band 38 (G _T - L _C = -2.3 dBi) 64QAM			
Bandwidth	20M		
Channel	37850	38000	38150
	(Low)	(Mid)	(High)
Frequency (MHz)	2580	2595	2610
Conducted Power (dBm)	20.65	20.43	20.35
Conducted Power (Watts)	0.1161	0.1104	0.1084
EIRP(dBm)	18.35	18.13	18.05
EIRP(Watts)	0.0684	0.0650	0.0638



Radiated Spurious Emission

LTE Band 5 / 10MHz / QPSK / RB Size 1 Offset 0									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1664	-31.83	-13	-18.83	-34.72	-33.74	1.14	5.20	H
	2496	-35.06	-13	-22.06	-42.80	-37.69	1.12	5.90	H
	3327	-51.37	-13	-38.37	-56.80	-54.58	1.34	6.70	H
	4161	-57.50	-13	-44.50	-64.89	-60.96	1.59	7.20	H
	1664	-30.42	-13	-17.42	-32.86	-32.33	1.14	5.20	V
	2496	-33.24	-13	-20.24	-41.51	-35.87	1.12	5.90	V
	3327	-45.48	-13	-32.48	-53.2	-48.69	1.34	6.70	V
	4161	-61.99	-13	-48.99	-68	-65.45	1.59	7.20	V

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



< Antenna #2>

LTE Band 38 / 20MHz / QPSK / RB Size 1 Offset 0									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	5172	-65.63	-25	-40.63	-52.22	-72.46	2.46	9.29	H
	7756	-56.07	-25	-31.07	-52.55	-65.26	3.01	12.20	H
	10341	-62.27	-25	-37.27	-59.14	-71.00	3.52	12.25	H
	12930	-58.68	-25	-33.68	-62.13	-67.87	3.82	13.01	H
	15516	-59.26	-25	-34.26	-61.62	-68.33	4.30	13.37	H
	5172	-63.45	-25	-38.45	-48.22	-70.28	2.46	9.29	V
	7760	-63.91	-25	-38.91	-51.83	-73.10	3.01	12.20	V
	10344	-63.24	-25	-38.24	-59.59	-71.97	3.52	12.25	V
	12930	-58.61	-25	-33.61	-62.05	-67.80	3.82	13.01	V
	15516	-54.75	-25	-29.75	-56.66	-63.82	4.30	13.37	V

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

< Antenna #3>

LTE Band 38 / 20MHz / QPSK / RB Size 1 Offset 0									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	5172	-64.82	-25	-39.82	-51.41	-71.65	2.46	9.29	H
	7756	-56.16	-25	-31.16	-52.64	-65.35	3.01	12.20	H
	10344	-62.42	-25	-37.42	-59.29	-71.15	3.52	12.25	H
	12930	-58.20	-25	-33.20	-61.65	-67.39	3.82	13.01	H
	15516	-52.65	-25	-27.65	-55.01	-61.72	4.30	13.37	H
	5172	-70.11	-25	-45.11	-54.88	-76.94	2.46	9.29	V
	7760	-65.72	-25	-40.72	-53.64	-74.91	3.01	12.20	V
	10341	-63.68	-25	-38.68	-60.03	-72.41	3.52	12.25	V
	12930	-58.31	-25	-33.31	-61.75	-67.50	3.82	13.01	V
	15516	-60.86	-25	-35.86	-62.77	-69.93	4.30	13.37	V

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



Appendix D. Reference Report

Please refer to Sporton report number FG7D2702B and FG7D2702-05B which are issued separately.