FCC RF Test Report

APPLICANT	:	Motorola Mobility LLC
EQUIPMENT	:	Mobile Cellular Phone
BRAND NAME	:	Motorola
MODEL NAME	:	10714
FCC ID	:	IHDT56WC6
STANDARD	:	47 CFR Part 2, 22(H), 27(M)
CLASSIFICATION	:	PCS Licensed Transmitter Held to Ear (PCE)

The product was received on Jun. 12, 2017 and completely tested on Jul. 06, 2017. 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 / EIA-603-D-2010 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 (KunShasn) INC., the test report shall not be reproduced except in full.

James Huang

Prepared by: James Huang / Manager

Jones Tsai

SPORTON LAB.

Approved by: Jones Tsai / Manager

ilac-MRA TAF Testing Laboratory 2627

Sporton International (KunShan) INC.

No.3-2, Pingxiang Road, Kunshan Development Zone, Jiangsu, China

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG761213B	Rev. 01	Initial issue of report	Aug. 01, 2017

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3	§2.1046	Conducted Output Power	Reporting Only	PASS	-
	§22.913(a)(2)	Effective Radiated Power (Band 5)	ERP < 7 Watt	PASS	-
	§27.50(h)(2)	Equivalent Isotropic Radiated Power (Band 7)(Band 38)	EIRP < 2Watt	PASS	-
4.4	§2.1053 §22.917(a)	Radiated Spurious Emission (Band 5)	< $43+10\log_{10}$(P[Watts])	PASS	Under limit 15.24 dB at 7592.000 MHz
	§2.1053 §27.53(m)(4)	Radiated Spurious Emission (Band 7)(Band 38)	< $55+10\log_{10}$(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	10714
FCC ID	IHDT56WC6
EUT supports Radios application	GSM/GPRS/EGPRS/WCDMA/HSPA/DC-HSDPA/HSPA+/LTE/ WLAN 2.4GHz 802.11b/g/n HT20/ Bluetooth v3.0 + EDR/ Bluetooth v 4.0 LE/ Bluetooth v 4.1 LE/Bluetooth v 4.2 LE
IMEI Code	Radiation: 355664100050976/355664100050984
HW Version	WKGMA1A4-3
SW Version	woods- userdebug 7.0 NMA25.27 314 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. This is a variant report for 10714. The product equality declaration could be referred to Appendix D. According to the differences between previous and current project, only the worst case of Radiated Spurious Emission,ERP/EIRP, Conducted Power from original test report (Sporton Report Number FG711913B) were verified for the differences.

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
Maximum Output Power to Antenna	LTE Band 5 : 23.44 dBm LTE Band 7 : 23.50 dBm LTE Band 38 : 23.06 dBm
Antenna Gain	LTE Band 5 : -0.40 dBi LTE Band 7 : -0.10 dBi LTE Band 38 : 0.00 dBi
Type of Modulation	QPSK / 16QAM / 64QAM(Downlink only)

1.5 Specification of Accessory

Specification of Accessory				
AC Adapter IN	**Brand Name**	Motorola (AcBel)	**Model Name**	C-P45
	Power Rating	I/P: 100-240 Vac, 130mA, O/P: 5 Vdc, 1000mA		
AC Adapter US	**Brand Name**	Motorola (AcBel)	**Model Name**	C-P56
	Power Rating	I/P: 100-240 Vac, 130mA, O/P: 5 Vdc, 1000mA		
AC Adapter EU	**Brand Name**	Motorola (AcBel)	**Model Name**	C-P57
	Power Rating	I/P: 100-240 Vac, 130mA, O/P: 5 Vdc, 1000mA		
AC Adapter UK	**Brand Name**	Motorola (AcBel)	**Model Name**	C-P58
	Power Rating	I/P: 100-240 Vac, 130mA, O/P: 5 Vdc, 1000mA		
AC Adapter AU	**Brand Name**	Motorola (AcBel)	**Model Name**	C-P59
	Power Rating	I/P: 100-240 Vac, 130mA, O/P: 5 Vdc, 1000mA		
Battery 1	**Brand Name**	Motorola (ATL)	**Model Name**	GK40
	Power Rating	3.8Vdc,2685/2800mAh (Min/Typ)	**Type**	Li-ion
Battery 2	**Brand Name**	Motorola (Sunwoda)	**Model Name**	GK40
	Power Rating	3.8Vdc,2685/2800mAh (Min/Typ)	**Type**	Li-ion
Earphone	**Brand Name**	Motorola(hetong)	**Model Name**	PY-13A1602-01KC39
	Signal Line Type	1.4 meter, non-shielded cable, without ferrite core		
USB Cable	**Brand Name**	Motorola (Sai Bao)	**Model Name**	SYD-A015A
	Signal Line Type	1.0 meter, shielded cable, without ferrite core		

1.6 Modification of EUT

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

1.7 Maximum ERP/EIRP Power, Frequency Tolerance, and Emission Designator

LTE Band 5		QPSK			16QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)
1.4	824.7 ~ 848.3	-	-	0.1211	-	-	0.1002
3	825.5 ~ 847.5	-	-	0.1186	-	-	0.0979
5	826.5 ~ 846.5	-	-	0.1208	-	-	0.1019
10	829.0 ~ 844.0	-	-	0.1227	-	-	0.1026
LTE Band 7		**QPSK**			**16QAM**		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
5	2502.5 ~ 2567.5	-	-	0.2133	-	-	0.1754
10	2505.0 ~ 2565.0	-	-	0.2188	-	-	0.1770
15	2507.5 ~ 2562.5	-	-	0.2153	-	-	0.1786
20	2510.0 ~ 2560.0	-	-	0.2148	-	-	0.1778
LTE Band 38		**QPSK**			**16QAM**		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
5	2572.5 ~ 2617.5	-	-	0.1910	-	-	0.1581
10	2575.0 ~ 2615.0	-	-	0.1977	-	-	0.1596
15	2577.5 ~ 2612.5	-	-	0.2023	-	-	0.1603
20	2580.0 ~ 2610.0	-	-	0.2018	-	-	0.1626

1.8 Testing Location

Test Site	Sporton International (KunShan) INC.	
Test Site Location	No.3-2, Pingxiang Road, Kunshan Development Zone, Jiangsu, China TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958	
Test Site No.	**Sporton Site No.**	**FCC Registration No.**
	03CH03-KS	306251

1.9 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 / EIA-603-D-2010
- FCC KDB 971168 D01 Power Meas. License Digital Systems v02r02
- 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

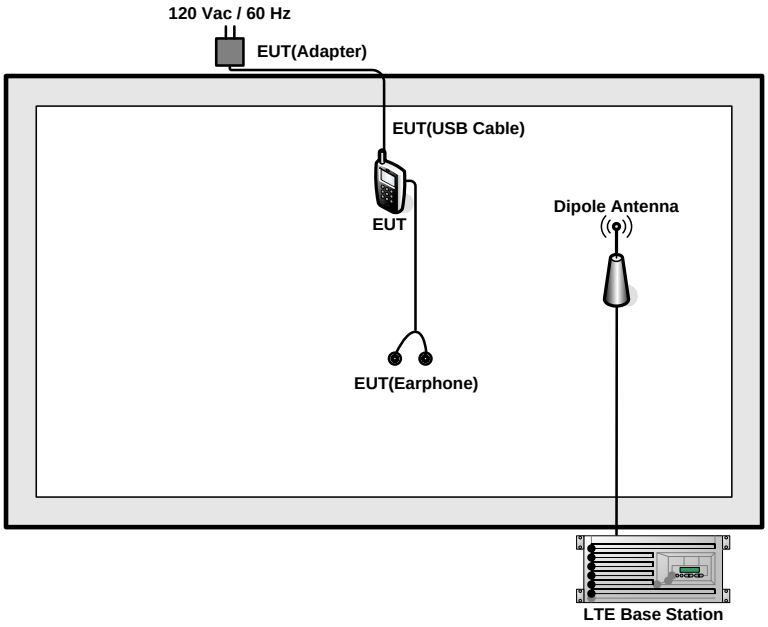
2.1 Test Mode

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas. License Digital Systems v02r02 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	1	Half	Full	L	M	H
Max. Output Power	5	v	v	v	v	-	-	v	v	v	v	v	v	v	v
	7	-	-	v	v	v	v	v	v	v	v	v	v	v	v
	38	-	-	v	v	v	v	v	v	v	v	v	v	v	v
E.R.P./ E.I.R.P.	5	v	v	v	v	-	-	v	v	v			v	v	v
	7	-	-	v	v	v	v	v	v	v			v	v	v
	38	-	-	v	v	v	v	v	v	v			v	v	v
Radiated Spurious Emission	5			v		-	-	v		v				v	
	7	-	-		v			v		v				v	
	38	-	-		v			v		v				v	
Note	1. The mark "v " means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported. 3. 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.														

2.2 Connection Diagram of Test System



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 Output Power and ERP/EIRP

3.1.1 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 7 and 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

3.1.2 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.

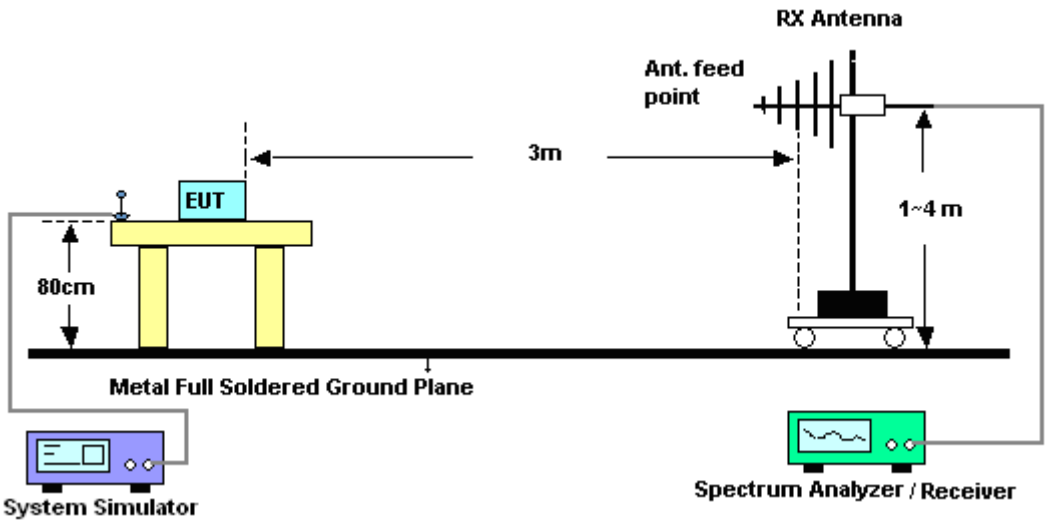
4 Radiated Test Items

4.1 Measuring Instruments

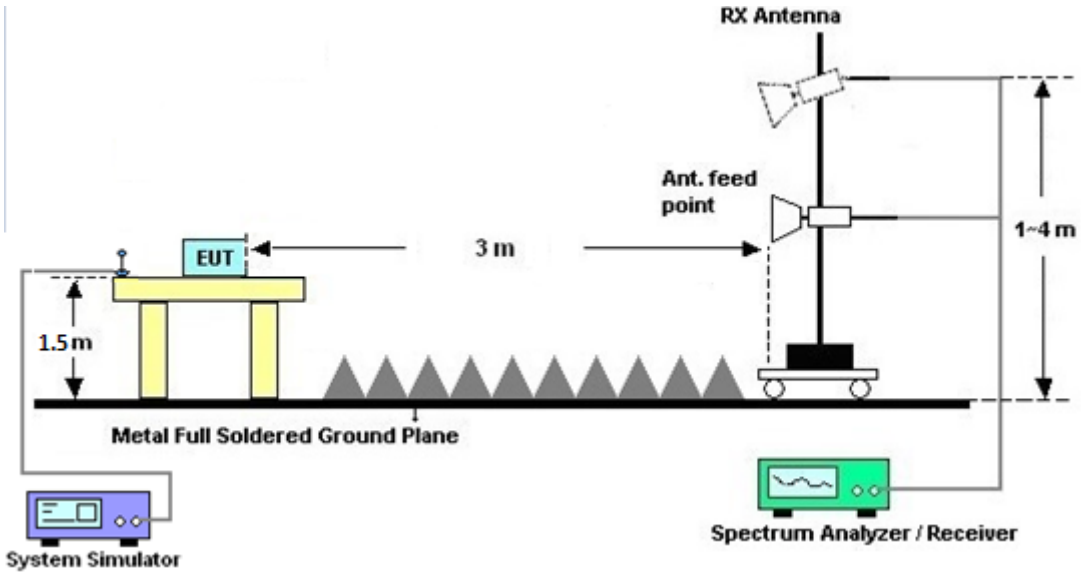
See list of measuring instruments of this test report.

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 / EIA-603-D-2010. 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 7, 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 v02r02 Section 5.8 and ANSI / TIA-603-D-2010 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 + 10log(P)dB below the transmitter power P(Watts)
    = P(W)- [43 + 10log(P)] (dB)
    = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
    = -13dBm.
13. For Band 7, 38:
    The limit line is derived from 55 + 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

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	Jul. 06, 2017	Apr. 17, 2018	Radiation (03CH03-KS)
Bilog Antenna	TeseQ	CBL6112D	35406	25MHz-2GHz	Apr. 22, 2017	Jul. 06, 2017	Apr. 21, 2018	Radiation (03CH03-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1356	1GHz~18GHz	Apr. 22, 2017	Jul. 06, 2017	Apr. 21, 2018	Radiation (03CH03-KS)
SHF-EHF Horn	com-power	AH-840	101070	18GHz ~40GHz	Oct. 19, 2016	Jul. 06, 2017	Oct. 18, 2017	Radiation (03CH03-KS)
Amplifier	com-power	PA-103A	161069	1MHz ~1000MHz / 32 dB	Apr. 18, 2017	Jul. 06, 2017	Apr .17, 2018	Radiation (03CH03-KS)
high gain Amplifier	MITEQ	AMF-7D-00 101800-30-1	2025788	1Ghz-18Ghz	Apr. 18, 2017	Jul. 06, 2017	Apr. 17, 2018	Radiation (03CH03-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz	Oct. 13, 2016	Jul. 06, 2017	Oct. 12, 2017	Radiation (03CH03-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Jul. 06, 2017	NCR	Radiation (03CH03-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Jul. 06, 2017	NCR	Radiation (03CH03-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Jul. 06, 2017	NCR	Radiation (03CH03-KS)

NCR: No Calibration Required

6 Uncertainty of Evaluation

Uncertainty of Radiated Emission Measurement (25 MHz ~ 1000 MHz)

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

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

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

Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.44	23.25	23.42
10	1	25		23.27	23.3	23.38
10	1	49		23.27	23.29	23.4
10	25	0		22.49	22.35	22.46
10	25	12		22.32	22.31	22.44
10	25	25		22.31	22.30	22.41
10	50	0		22.47	22.30	22.26
10	1	0	16-QAM	22.48	22.50	22.58
10	1	25		22.54	22.53	22.66
10	1	49		22.53	22.54	22.63
10	25	0		22.29	22.31	22.43
10	25	12		22.31	22.32	22.45
10	25	25		22.33	22.35	22.45
10	50	0		21.30	21.32	21.44
5	1	0	QPSK	23.24	23.24	23.35
5	1	12		23.24	23.25	23.15
5	1	24		23.15	23.27	23.37
5	12	0		22.32	22.29	22.43
5	12	7		22.32	22.32	22.40
5	12	13		22.32	22.28	22.40
5	25	0		22.28	22.25	22.36
5	1	0	16-QAM	22.46	22.47	22.60
5	1	12		22.51	22.50	22.63
5	1	24		22.46	22.40	22.40
5	12	0		21.31	21.34	21.42
5	12	7		21.33	21.32	21.38
5	12	13		21.33	21.28	21.36
5	25	0		21.30	21.27	21.35

LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	23.20	23.19	23.24
3	1	8		23.13	23.07	23.05
3	1	14		23.06	23.03	23.01
3	8	0		23.02	22.98	23.09
3	8	4		23.29	22.29	22.34
3	8	7		22.27	22.22	22.34
3	15	0		22.28	22.27	22.39
3	1	0	16-QAM	22.36	22.41	22.42
3	1	8		22.43	22.43	22.46
3	1	14		22.42	22.33	22.37
3	8	0		21.35	21.36	21.38
3	8	4		21.35	21.32	21.34
3	8	7		21.33	21.27	21.34
3	15	0		21.29	21.29	21.36
1.4	1	0	QPSK	23.21	23.23	23.27
1.4	1	3		23.30	23.27	23.36
1.4	1	5		23.18	23.14	23.27
1.4	3	0		23.31	23.31	23.38
1.4	3	1		23.27	23.25	23.33
1.4	3	3		23.27	23.22	23.32
1.4	6	0		22.28	22.28	22.37
1.4	1	0	16-QAM	22.42	22.50	22.43
1.4	1	3		22.52	22.52	22.56
1.4	1	5		22.43	22.44	22.44
1.4	3	0		22.29	22.32	22.31
1.4	3	1		22.25	22.27	22.27
1.4	3	3		22.24	22.22	22.27
1.4	6	0		21.34	21.35	21.38

LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.35	23.28	23.42
20	1	49		23.22	23.09	23.41
20	1	99		23.12	23.18	23.39
20	50	0		22.33	22.24	22.51
20	50	24		22.29	22.13	22.50
20	50	50		22.25	22.15	22.49
20	100	0		22.29	22.18	22.48
20	1	0	16-QAM	22.48	22.34	22.60
20	1	49		22.39	22.26	22.59
20	1	99		22.36	22.47	22.58
20	50	0		21.27	21.10	21.41
20	50	24		21.22	21.05	21.42
20	50	50		21.18	21.14	21.43
20	100	0		21.20	21.11	21.39
15	1	0	QPSK	23.31	23.10	23.41
15	1	37		23.24	23.08	23.43
15	1	74		23.17	23.20	23.39
15	36	0		22.37	22.16	22.50
15	36	20		22.31	22.15	22.52
15	36	39		22.28	22.19	22.49
15	75	0		22.32	22.17	22.49
15	1	0	16-QAM	22.45	22.28	22.60
15	1	37		22.42	22.26	22.62
15	1	74		22.35	22.39	22.58
15	36	0		21.24	21.08	21.42
15	36	20		21.21	21.07	21.43
15	36	39		21.18	21.10	21.41
15	75	0		21.22	21.09	21.41

LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.31	23.08	23.40
10	1	25		23.26	23.07	23.39
10	1	49		23.42	23.13	23.50
10	25	0		22.31	22.12	22.45
10	25	12		22.28	22.11	22.45
10	25	25		22.28	22.15	22.43
10	50	0		22.34	22.15	22.47
10	1	0	16-QAM	22.43	22.27	22.58
10	1	25		22.39	22.26	22.56
10	1	49		22.34	22.32	22.51
10	25	0		21.23	21.04	21.40
10	25	12		21.19	21.04	21.37
10	25	25		21.19	21.06	21.35
10	50	0		21.23	21.06	21.40
5	1	0	QPSK	23.29	23.06	23.37
5	1	12		23.29	23.39	23.36
5	1	24		23.20	23.19	23.25
5	12	0		22.16	22.10	22.08
5	12	7		22.39	22.08	22.40
5	12	13		22.32	22.10	22.42
5	25	0		22.32	22.08	22.39
5	1	0	16-QAM	22.43	22.23	22.54
5	1	12		22.41	22.23	22.52
5	1	24		22.36	22.26	22.47
5	12	0		21.25	21.05	21.36
5	12	7		21.23	21.02	21.33
5	12	13		21.23	21.02	21.33
5	25	0		21.21	21.01	21.33

LTE Band 38 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.05	22.77	22.80
20	1	49		22.85	22.55	22.68
20	1	99		22.73	21.96	22.69
20	50	0		22.04	21.99	21.75
20	50	24		21.85	21.58	21.73
20	50	50		21.81	21.59	21.68
20	100	0		21.86	21.61	21.71
20	1	0	16-QAM	22.11	21.83	21.72
20	1	49		21.90	21.60	21.76
20	1	99		21.80	21.72	21.87
20	50	0		20.99	20.74	20.73
20	50	24		20.91	20.65	20.80
20	50	50		20.86	20.67	20.81
20	100	0		20.92	20.68	20.77
15	1	0	QPSK	23.06	22.75	22.72
15	1	37		22.95	22.58	22.75
15	1	74		22.83	22.66	22.82
15	36	0		22.01	21.70	21.72
15	36	20		21.96	21.60	21.77
15	36	39		21.88	21.56	21.80
15	75	0		21.92	21.62	21.76
15	1	0	16-QAM	22.05	21.78	21.71
15	1	37		21.94	21.60	21.79
15	1	74		21.85	21.67	21.89
15	36	0		20.95	20.68	20.72
15	36	20		20.90	20.61	20.77
15	36	39		20.86	20.59	20.79
15	75	0		20.96	20.68	20.82

LTE Band 38 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.96	22.66	22.72
10	1	25		22.95	22.59	22.78
10	1	49		22.89	22.71	22.79
10	25	0		21.95	21.59	21.72
10	25	12		21.94	21.51	21.77
10	25	25		21.91	21.52	21.80
10	50	0		21.92	21.58	21.77
10	1	0	16-QAM	22.03	21.71	21.78
10	1	25		21.96	21.68	21.82
10	1	49		21.91	21.58	21.86
10	25	0		20.95	20.65	20.81
10	25	12		20.94	20.58	20.83
10	25	25		20.90	20.61	20.84
10	50	0		20.93	20.66	20.83
5	1	0	QPSK	22.67	22.57	22.77
5	1	12		22.78	22.59	22.81
5	1	24		22.68	22.56	22.59
5	12	0		21.96	21.67	21.89
5	12	7		21.98	21.53	21.81
5	12	13		21.96	21.54	21.82
5	25	0		21.95	21.53	21.79
5	1	0	16-QAM	21.98	21.61	21.80
5	1	12		21.99	21.58	21.89
5	1	24		21.87	21.52	21.92
5	12	0		20.93	20.59	20.85
5	12	7		20.90	20.54	20.82
5	12	13		20.92	20.56	20.85
5	25	0		20.95	20.58	20.85

ERP/EIRP

LTE Band 5 (G_T - L_C = -0.40 dBi) 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 (MHz)	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
Conducted Power (dBm)	23.31	23.31	23.38	23.29	22.29	22.34	23.15	23.27	23.37
Conducted Power (Watts)	0.2143	0.2143	0.2178	0.2133	0.1694	0.1714	0.2065	0.2123	0.2173
ERP(dBm)	20.76	20.76	20.83	20.74	19.74	19.79	20.60	20.72	20.82
ERP(Watts)	0.1191	0.1191	0.1211	0.1186	0.0942	0.0953	0.1148	0.1180	0.1208

LTE Band 5 (G_T - L_C = -0.40 dBi) QPSK			
Bandwidth	10M		
Channel	20450	20525	20600
	(Low)	(Mid)	(High)
Frequency (MHz)	829	836.5	844
Conducted Power (dBm)	23.44	23.25	23.42
Conducted Power (Watts)	0.2208	0.2113	0.2198
ERP(dBm)	20.89	20.70	20.87
ERP(Watts)	0.1227	0.1175	0.1222

LTE Band 5 (G_T - L_C = -0.40 dBi) 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)	22.52	22.52	22.56	22.43	22.43	22.46	22.51	22.50	22.63
Conducted Power (Watts)	0.1786	0.1786	0.1803	0.1750	0.1750	0.1762	0.1782	0.1778	0.1832
ERP(dBm)	19.97	19.97	20.01	19.88	19.88	19.91	19.96	19.95	20.08
ERP(Watts)	0.0993	0.0993	0.1002	0.0973	0.0973	0.0979	0.0991	0.0989	0.1019

LTE Band 5 (G_T - L_C = -0.40 dBi) 16QAM			
Bandwidth	**10M**		
Channel	**20450**	**20525**	**20600**
	(Low)	**(Mid)**	**(High)**
Frequency (MHz)	**829**	**836.5**	**844**
Conducted Power (dBm)	22.54	22.53	22.66
Conducted Power (Watts)	0.1795	0.1791	0.1845
ERP(dBm)	19.99	19.98	20.11
ERP(Watts)	0.0998	0.0995	0.1026

LTE Band 7 (G_T - L_C = -0.10 dB) QPSK									
Bandwidth	**5M**			**10M**			**15M**		
Channel	**20775**	**21100**	**21425**	**20800**	**21100**	**21400**	**20825**	**21100**	**21375**
	(Low)	**(Mid)**	**(High)**	**(Low)**	**(Mid)**	**(High)**	**(Low)**	**(Mid)**	**(High)**
Frequency (MHz)	**2502.5**	**2535**	**2567.5**	**2505**	**2535**	**2565**	**2507.5**	**2535**	**2562.5**
Conducted Power (dBm)	23.29	23.39	23.36	23.42	23.13	23.50	23.24	23.08	23.43
Conducted Power (Watts)	0.2133	0.2183	0.2168	0.2198	0.2056	0.2239	0.2109	0.2032	0.2203
EIRP(dBm)	23.19	23.29	23.26	23.32	23.03	23.40	23.14	22.98	23.33
EIRP(Watts)	0.2084	0.2133	0.2118	0.2148	0.2009	0.2188	0.2061	0.1986	0.2153

LTE Band 7 (G_T - L_C = -0.10 dB) QPSK			
Bandwidth	**20M**		
Channel	**20850**	**21100**	**21350**
	(Low)	**(Mid)**	**(High)**
Frequency (MHz)	**2510**	**2535**	**2560**
Conducted Power (dBm)	23.35	23.28	23.42
Conducted Power (Watts)	0.2163	0.2128	0.2198
EIRP(dBm)	23.25	23.18	23.32
EIRP(Watts)	0.2113	0.2080	0.2148

LTE Band 7 (G_T - L_C = -0.10 dB) 16QAM									
Bandwidth	**5M**			**10M**			**15M**		
Channel	**20775**	**21100**	**21425**	**20800**	**21100**	**21400**	**20825**	**21100**	**21375**
	(Low)	**(Mid)**	**(High)**	**(Low)**	**(Mid)**	**(High)**	**(Low)**	**(Mid)**	**(High)**
Frequency (MHz)	**2502.5**	**2535**	**2567.5**	**2505**	**2535**	**2565**	**2507.5**	**2535**	**2562.5**
Conducted Power (dBm)	22.43	22.23	22.54	22.43	22.27	22.58	22.42	22.26	22.62
Conducted Power (Watts)	0.1750	0.1671	0.1795	0.1750	0.1687	0.1811	0.1746	0.1683	0.1828
EIRP(dBm)	22.33	22.13	22.44	22.33	22.17	22.48	22.32	22.16	22.52
EIRP(Watts)	0.1710	0.1633	0.1754	0.1710	0.1648	0.1770	0.1706	0.1644	0.1786

LTE Band 7 (G_T - L_C = -0.10 dB) 16QAM			
Bandwidth	**20M**		
Channel	**20850**	**21100**	**21350**
	(Low)	**(Mid)**	**(High)**
Frequency (MHz)	**2510**	**2535**	**2560**
Conducted Power (dBm)	22.48	22.34	22.60
Conducted Power (Watts)	0.1770	0.1714	0.1820
EIRP(dBm)	22.38	22.24	22.50
EIRP(Watts)	0.1730	0.1675	0.1778

LTE Band 38 (G_T - L_C = 0.00 dB) 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 (MHz)	2572.5	2595	2617.5	2575	2595	2615	2577.5	2595	2612.5
Conducted Power (dBm)	22.78	22.59	22.81	22.96	22.66	22.72	23.06	22.75	22.72
Conducted Power (Watts)	0.1897	0.1816	0.1910	0.1977	0.1845	0.1871	0.2023	0.1884	0.1871
EIRP(dBm)	22.78	22.59	22.81	22.96	22.66	22.72	23.06	22.75	22.72
EIRP(Watts)	0.1897	0.1816	0.1910	0.1977	0.1845	0.1871	0.2023	0.1884	0.1871

LTE Band 38 (G_T - L_C = 0.00 dB) QPSK			
Bandwidth	20M		
Channel	37850	38000	38150
	(Low)	(Mid)	(High)
Frequency (MHz)	2580	2595	2610
Conducted Power (dBm)	23.05	22.77	22.80
Conducted Power (Watts)	0.2018	0.1892	0.1905
EIRP(dBm)	23.05	22.77	22.80
EIRP(Watts)	0.2018	0.1892	0.1905

LTE Band 38 (G_T - L_C = 0.00 dB) 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)	21.99	21.58	21.89	22.03	21.71	21.78	22.05	21.78	21.71
Conducted Power (Watts)	0.1581	0.1439	0.1545	0.1596	0.1483	0.1507	0.1603	0.1507	0.1483
EIRP(dBm)	21.99	21.58	21.89	22.03	21.71	21.78	22.05	21.78	21.71
EIRP(Watts)	0.1581	0.1439	0.1545	0.1596	0.1483	0.1507	0.1603	0.1507	0.1483

LTE Band 38 (G_T - L_C = 0.00 dB) 16QAM			
Bandwidth	**20M**		
Channel	**37850**	**38000**	**38150**
	(Low)	**(Mid)**	**(High)**
Frequency (MHz)	**2580**	**2595**	**2610**
Conducted Power (dBm)	22.11	21.83	21.72
Conducted Power (Watts)	0.1626	0.1524	0.1486
EIRP(dBm)	22.11	21.83	21.72
EIRP(Watts)	0.1626	0.1524	0.1486

Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

LTE Band 5 / 5MHz / 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	1668	-66.78	-13	-53.78	-65.41	-68.64	1.19	5.20	H
	2502	-53.62	-13	-40.62	-56.61	-55.84	1.53	5.90	H
	3336	-59.09	-13	-46.09	-63.04	-61.88	1.76	6.70	H
	1668	-67.05	-13	-54.05	-65.01	-68.91	1.19	5.20	V
	2502	-54.40	-13	-41.40	-56.38	-56.62	1.53	5.90	V
	3336	-59.13	-13	-46.13	-62.45	-61.92	1.76	6.70	V

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

LTE Band 7 / 10MHz / 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	5060	-48.00	-25	-23.00	-35.14	-54.71	2.40	9.12	H
	7592	-49.32	-25	-24.32	-41.66	-58.94	2.87	12.50	H
	10122	-61.79	-25	-36.79	-56.03	-70.71	3.18	12.10	H
	5060	-47.58	-25	-22.58	-35.42	-54.30	2.40	9.12	V
	7592	-40.24	-25	-15.24	-36.1	-49.87	2.87	12.50	V
	10122	-62.18	-25	-37.18	-56.86	-71.10	3.18	12.10	V

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

LTE Band 38 / 10MHz / 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	5180	-54.78	-25	-29.78	-38.81	-61.49	2.40	9.12	H
	7772	-47.55	-25	-22.55	-39.89	-57.17	2.87	12.50	H
	10359	-61.63	-25	-36.63	-55.87	-70.55	3.18	12.10	H
	5180	-53.42	-25	-28.42	-39.09	-60.14	2.40	9.12	V
	7772	-42.86	-25	-17.86	-38.09	-52.49	2.87	12.50	V
	10359	-63.18	-25	-38.18	-57.86	-72.10	3.18	12.10	V

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

Appendix D.Product Equality Declaration

Appendix E. Original Report

Please refer to Sporton report number FG711913B which is issued separately.