



FCC RF Test Report

APPLICANT : TCL Communication Ltd.
EQUIPMENT : LTE / UMTS / GSM Band Mobile Phone
MODEL NAME : 7053J
FCC ID : 2ACCJB033
STANDARD : 47 CFR Part 2, 24(E), 27(L), 27(M)
CLASSIFICATION : PCS Licensed Transmitter Held to Ear (PCE)

The product was received on Sep. 16, 2015 and completely tested on Nov. 07, 2015. We, SPORTON INTERNATIONAL (SHENZHEN) 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 (SHENZHEN) INC., the test report shall not be reproduced except in full.

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG591604-01B	Rev. 01	This is a variant product of 7053E, The product equality declaration could be referred to Appendix D. All the test cases were performed on original report which can be referred to Sporton Report Number FC591604 (Model name: 7053E; FCC ID: 2ACCJB034). Based on the original test report, only the conducted power, and the worst cases of radiated emission and ERIP were verified for the differences between 7053E and current 7053J.	Nov. 23, 2015

**SUMMARY OF TEST RESULT**

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	§2.1046	Conducted Output Power	Reporting Only	PASS	-
4.4	§24.232(c) §27.50(h)(2)	Equivalent Isotropic Radiated Power (Band 2) (Band 7)	EIRP < 2Watt	PASS	-
	§27.50(d)(4)	Equivalent Isotropic Radiated Power (Band 4)	EIRP < 1Watt		
4.5	§2.1053 §24.238(a) §27.53(h)	Radiated Spurious Emission (Band 2) (Band 4)	$< 43 + 10\log_{10}(P[\text{Watts}])$	PASS	Under limit 15.04 dB at 7578.270 MHz
	§2.1053 §27.53(m)(4)	Radiated Spurious Emission (Band 7)	$< 55 + 10\log_{10}(P[\text{Watts}])$		



1 General Description

1.1 Applicant

TCL Communication Ltd.

5F, C-Tower, No. 232, Liang Jing Road, ZhangJiang High-Tech Park, Pudong Area, Shanghai, 201203,
P. R. China

1.2 Manufacturer

TCL Communication Ltd.

5F, C-Tower, No. 232, Liang Jing Road, ZhangJiang High-Tech Park, Pudong Area, Shanghai, 201203,
P. R. China

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	LTE / UMTS / GSM Band Mobile Phone
Model Name	7053J
FCC ID	2ACCJB033
EUT supports Radios application	GSM/GPRS/EGPRS/WCDMA/HSPA/DC-HSDPA/ HSPA+ (16QAM uplink is not supported)/LTE/ WLAN 2.4GHz 802.11b/g/n HT20/ Bluetooth v3.0 + EDR/Bluetooth v4.0 LE
IMEI	Radiation: 014467000000542/014467000000559 ERP/EIRP: 014467000000542/014467000000559
HW Version	PIO
SW Version	V1.0
EUT Stage	Production Unit

1.4 Product Specification subjective to this standard

Product Specification subjective to this standard	
Tx Frequency	LTE Band 2 : 1850.7 MHz ~ 1909.3 MHz LTE Band 4 : 1710.7 MHz ~ 1754.3 MHz LTE Band 7 : 2502.5 MHz ~ 2567.5 MHz
Rx Frequency	LTE Band 2 : 1930.7 MHz ~ 1989.3 MHz LTE Band 4 : 2110.7 MHz ~ 2154.3 MHz LTE Band 7 : 2622.5MHz ~ 2687.5 MHz
Bandwidth	LTE Band 2 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 4 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 7 : 5MHz/ 10MHz / 15MHz / 20MHz
Maximum Output Power to Antenna	LTE Band 2 : 22.72 dBm LTE Band 4 : 22.87 dBm LTE Band 7 : 22.79 dBm
Type of Modulation	QPSK / 16QAM

1.5 Specification of Accessory

Specification of Accessory				
AC Adapter	Brand Name	TENPAO	Model Name	UC11US
	Power Rating	I/P: 100-240Vac, 200mA, O/P: 5Vdc, 1000mA		
	P/N	CBA0058AG0C2		
Battery	Brand Name	JIADe	Model Name	TLp021CF
	Power Rating	3.8Vdc, 2150mAh		
	S/N	C2150009CFJ004UV		
USB Cable 1	Brand Name	JUWEI	Model Name	CDA0000025C2
	Signal Line Type	1.0meter,shielded cable, without ferrite core		
USB Cable 2	Brand Name	JUWEI	Model Name	CDA0000026C2
	Signal Line Type	1.0meter,shielded cable, without ferrite core		
Earphone 1	Brand Name	JUWEI	Model Name	CCB0023A10C1
	Signal Line Type	1.2meter,non-shielded cable, without ferrite core		
Earphone 2	Brand Name	JUWEI	Model Name	CCB0023B10C1
	Signal Line Type	1.2meter,non-shielded cable, without ferrite core		



1.6 Modification of EUT

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

1.7 Maximum EIRP Power

LTE Band 2	QPSK	16QAM
BW(MHz)	Maximum EIRP(W)	Maximum EIRP(W)
20	0.1400	0.1315
LTE Band 4	QPSK	16QAM
BW(MHz)	Maximum EIRP(W)	Maximum EIRP(W)
15	0.2404	0.1811
LTE Band 7	QPSK	16QAM
BW(MHz)	Maximum EIRP(W)	Maximum EIRP(W)
10	0.1074	0.1059

1.8 Testing Location

Test Site	SPORTON INTERNATIONAL (SHENZHEN) INC.	
Test Site Location	No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, Nanshan District, Shenzhen, Guangdong, P. R. China TEL: +86-755- 3320-2398	
Test Site No.	Sporton Site No.	FCC Registration No.
	03CH01-SZ	831040

Note: The test site complies with ANSI C63.4 2009 requirement.

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, 24(E), 27(L), 27(M)
- ANSI / TIA / EIA-603-D-2010
- FCC KDB 971168 D01 Power Meas. License Digital Systems v02r02

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

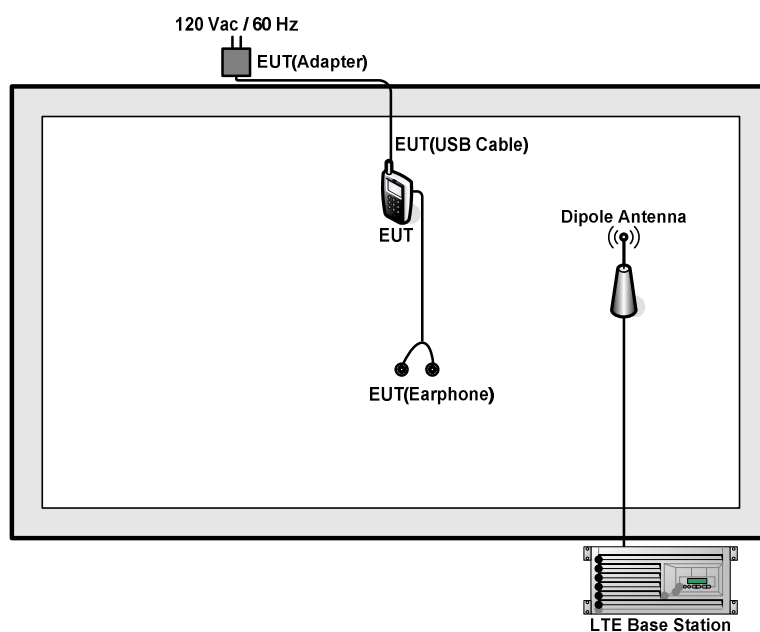
2.1 Test Mode

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	2	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	4	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	7	-	-	√	√	√	√	√	√	√	√	√	√	√	√
E.I.R.P.	2						√	√	√	√			√	√	√
	4					√		√	√	√			√	√	√
	7	-	-		√			√	√	√			√	√	√
Radiated Spurious Emission	2		√					√		√				√	
	4				√			√		√				√	
	7	-	-				√	√		√				√	
Note	<ol style="list-style-type: none"> The mark "√" 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. 														

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.	DC Power Supply	GW INSTEK	GPS-3030D	N/A	N/A	Unshielded, 1.8 m



2.4 Frequency List of Low/Middle/High Channels

LTE Band 2 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	18700	18900	19100
	Frequency	1860	1880	1900
15	Channel	18675	18900	19125
	Frequency	1857.5	1880	1902.5
10	Channel	18650	18900	19150
	Frequency	1855	1880	1905
5	Channel	18625	18900	19175
	Frequency	1852.5	1880	1907.5
3	Channel	18615	18900	19185
	Frequency	1851.5	1880	1908.5
1.4	Channel	18607	18900	19193
	Frequency	1850.7	1880	1909.3

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



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



3 Conducted Test Items

3.1 Conducted Output Power

3.1.1 Description of the Conducted Output Power 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.

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.

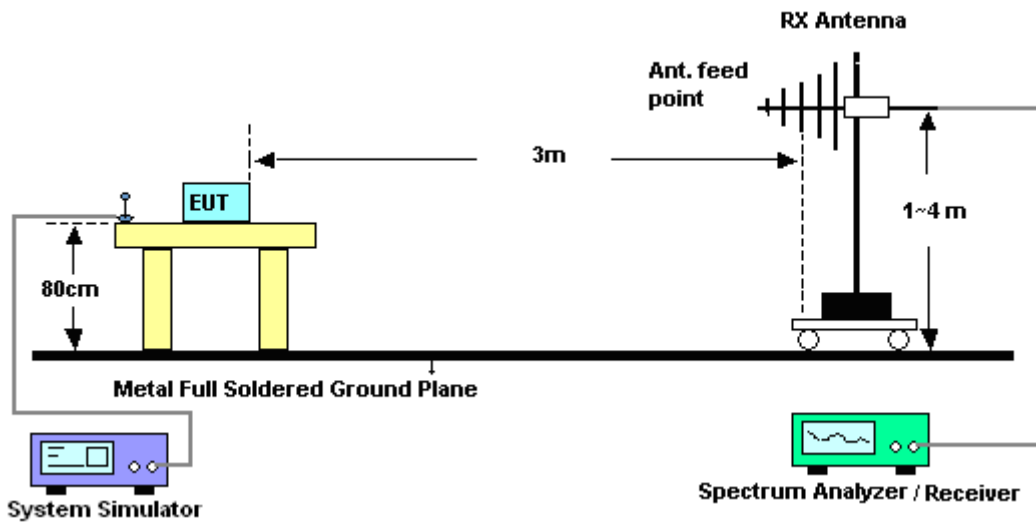
4 Radiated Test Items

4.1 Measuring Instruments

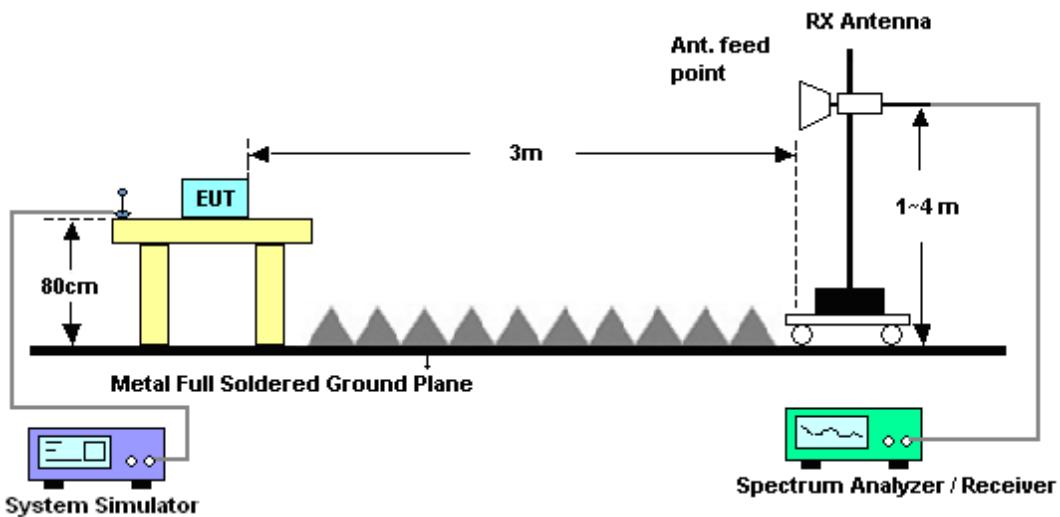
See list of measuring instruments of this test report.

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 Effective Isotropic Radiated Power

4.4.1 Description of the EIRP Measurement

Equivalent isotropic radiated power output measurements by substitution method according to ANSI / TIA / EIA-603-D-2010, and the spectrum analyzer configuration follows KDB 971168 D01 Power Meas. License Digital Systems v02r02. Mobile and portable (hand-held) stations operating are limited to average EIRP of 2 watts with LTE band 2 / 7 and 1 watt with LTE band 4.

4.4.2 Test Procedures

1. The EUT was placed on a non-conductive rotating platform 0.8 meters high in a semi-anechoic chamber. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and a spectrum analyzer with RMS detector per section 5. of KDB 971168 D01.
1. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power. The maximum emission was recorded from analyzer power level (LVL) from the 360 degrees rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.
2. Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to TIA/EIA-603-C. The EUT was replaced by the substitution antenna at same location, and then a known power from S.G. was applied into the dipole antenna through a Tx cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna. The correction factor (in dB) = S.G. - Tx Cable loss + Substitution antenna gain - Analyzer reading. Then the EUT's EIRP was calculated with the correction factor, $EIRP = LVL + \text{Correction factor}$ and $ERP = EIRP - 2.15$. Take the record of the output power at substitution antenna.



	LTE Average					
LTE BW	1.4M	3M	5M	10M	15M	20M
Span	3MHz	6MHz	10MHz	20MHz	30MHz	40MHz
RBW	30kHz	100kHz	100kHz	300kHz	300kHz	300kHz
VBW	100kHz	300kHz	300kHz	1MHz	1MHz	1MHz
Detector	RMS	RMS	RMS	RMS	RMS	RMS
Trace	Average	Average	Average	Average	Average	Average
Average Type	Power	Power	Power	Power	Power	Power
Sweep Count	100	100	100	100	100	100

4.5 Radiated Spurious Emission

4.5.1 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

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.

4.5.2 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 rotatable wooden table with 0.8 meter above ground.
3. The EUT was set 3 meters from the receiving antenna, which was 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 one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
7. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
8. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
9. Taking the record of output power at antenna port.
10. Repeat step 7 to step 8 for another polarization.
11. 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.

For Band 7:

The limit line is derived from $55 + 10\log(P)$ dB below the transmitter power P(Watts)

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

13. ERP (dBm) = EIRP - 2.15



5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Test Receiver&SA	Agilent Technologies	N9038A	MY52260185	20Hz~26.5GHz	May 26, 2015	Nov. 07, 2015	May 25, 2016	Radiation (03CH01-SZ)
Spectrum Analyzer	KEYSIGHT	N9010A	MY55150213	10Hz~44GHz;Max 30dBm	Jun. 07, 2015	Nov. 07, 2015	Jun. 06, 2016	Radiation (03CH01-SZ)
Bilog Antenna	TeseQ	CBL6112D	23188	30MHz-2GHz	Oct. 17, 2015	Nov. 07, 2015	Oct. 16, 2016	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1285	1GHz~18GHz	Jan. 20, 2015	Nov. 07, 2015	Jan. 19, 2016	Radiation (03CH01-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz-40GHz	Aug.19, 2015	Nov. 07, 2015	Aug. 18, 2016	Radiation (03CH01-SZ)
Amplifier	ADVANTEST	BB525C	E9007003	9kHz ~3000MHz / 30 dB	Jan. 28, 2015	Nov. 07, 2015	Jan. 27, 2016	Radiation (03CH01-SZ)
Amplifier	Agilent Technologies	83017A	MY39501302	500MHz~26.5GHz	Jan. 28, 2015	Nov. 07, 2015	Jan. 27, 2016	Radiation (03CH01-SZ)
Amplifier	Yiai	AV3860B	04030	2GHz~26.5GHz	May 05, 2015	Nov. 07, 2015	May 04, 2016	Radiation (03CH01-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	NCR	Nov. 07, 2015	NCR	Radiation (03CH01-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Nov. 07, 2015	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Nov. 07, 2015	NCR	Radiation (03CH01-SZ)



6 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.8 dB
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Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	22.39	22.43	22.49
20	1	49		22.72	22.46	22.70
20	1	99		22.53	22.31	22.38
20	50	0		21.49	21.46	21.48
20	50	24		21.29	21.34	21.23
20	50	50		21.27	21.37	21.24
20	100	0		21.36	21.33	21.35
20	1	0	16-QAM	21.67	21.79	21.60
20	1	49		22.03	21.57	21.84
20	1	99		21.49	21.61	21.53
20	50	0		20.35	20.45	20.38
20	50	24		20.41	20.34	20.34
20	50	50		20.37	20.47	20.37
20	100	0		20.31	20.45	20.39
15	1	0	QPSK	22.29	22.35	22.37
15	1	37		22.23	22.25	22.16
15	1	74		22.29	22.20	22.17
15	36	0		21.21	21.43	21.32
15	36	20		21.30	21.33	21.23
15	36	39		21.30	21.33	21.25
15	75	0		21.33	21.36	21.29
15	1	0	16-QAM	21.64	21.84	21.52
15	1	37		21.56	21.58	21.42
15	1	74		21.77	21.58	21.51
15	36	0		20.24	20.32	20.35
15	36	20		20.29	20.22	20.14
15	36	39		20.29	20.23	20.17
15	75	0		20.24	20.47	20.29



LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.37	22.44	22.32
10	1	25		22.28	22.50	22.22
10	1	49		22.52	22.48	22.43
10	25	0		21.28	21.34	21.28
10	25	12		21.28	21.39	21.18
10	25	25		21.34	21.37	21.23
10	50	0		21.27	21.40	21.29
10	1	0	16-QAM	21.67	21.70	21.69
10	1	25		21.55	21.67	21.49
10	1	49		21.71	21.57	21.71
10	25	0		20.45	20.53	20.31
10	25	12		20.27	20.39	20.31
10	25	25		20.33	20.38	20.35
10	50	0		20.28	20.39	20.30
5	1	0	QPSK	22.05	22.36	22.30
5	1	12		22.25	22.49	22.43
5	1	24		22.18	22.32	22.25
5	12	0		21.18	21.33	21.25
5	12	7		21.21	21.41	21.19
5	12	13		21.21	21.41	21.26
5	25	0		21.27	21.35	21.28
5	1	0	16-QAM	21.44	21.48	21.42
5	1	12		21.51	21.70	21.53
5	1	24		21.55	21.65	21.59
5	12	0		20.17	20.33	20.16
5	12	7		20.23	20.42	20.31
5	12	13		20.23	20.43	20.27
5	25	0		20.40	20.35	20.30



LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	22.42	22.58	22.45
3	1	8		22.31	22.58	22.47
3	1	14		22.49	22.42	22.40
3	8	0		21.19	21.51	21.32
3	8	4		21.23	21.44	21.37
3	8	7		21.30	21.48	21.44
3	15	0		21.24	21.45	21.38
3	1	0	16-QAM	21.67	21.86	21.57
3	1	8		21.59	21.76	21.58
3	1	14		21.79	21.81	21.73
3	8	0		20.24	20.45	20.28
3	8	4		20.28	20.60	20.52
3	8	7		20.26	20.44	20.51
3	15	0		20.26	20.36	20.33
1.4	1	0	QPSK	22.29	22.25	22.21
1.4	1	3		22.36	22.35	22.28
1.4	1	5		22.33	22.23	22.26
1.4	3	0		22.37	22.46	22.30
1.4	3	1		22.41	22.63	22.44
1.4	3	3		22.40	22.51	22.25
1.4	6	0		21.23	21.37	21.27
1.4	1	0	16-QAM	21.53	21.56	21.51
1.4	1	3		21.66	21.65	21.62
1.4	1	5		21.77	21.65	21.57
1.4	3	0		21.21	21.65	21.45
1.4	3	1		21.47	21.60	21.50
1.4	3	3		21.55	21.57	21.48
1.4	6	0		20.20	20.46	20.36



LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	22.67	22.82	22.74
20	1	49		22.68	22.87	22.75
20	1	99		22.25	22.46	22.48
20	50	0		21.33	21.66	21.59
20	50	24		21.30	21.51	21.43
20	50	50		21.19	21.45	21.40
20	100	0		21.21	21.51	21.50
20	1	0	16-QAM	21.67	22.03	21.77
20	1	49		21.40	21.63	21.96
20	1	99		21.49	21.70	21.80
20	50	0		20.29	20.43	20.68
20	50	24		20.28	20.40	20.52
20	50	50		20.17	20.44	20.49
20	100	0		20.27	20.39	20.60
15	1	0	QPSK	22.15	22.63	22.65
15	1	37		22.25	22.41	22.80
15	1	74		22.12	22.35	22.48
15	36	0		21.23	21.52	21.51
15	36	20		21.25	21.34	21.46
15	36	39		21.21	21.44	21.39
15	75	0		21.23	21.49	21.55
15	1	0	16-QAM	21.73	21.94	21.94
15	1	37		21.52	21.73	22.01
15	1	74		21.53	21.67	21.89
15	36	0		20.33	20.51	20.52
15	36	20		20.34	20.44	20.45
15	36	39		20.31	20.44	20.38
15	75	0		20.22	20.37	20.46



LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.36	22.61	22.36
10	1	25		22.31	22.41	22.54
10	1	49		22.43	22.45	22.30
10	25	0		21.25	21.41	21.38
10	25	12		21.16	21.38	21.36
10	25	25		21.12	21.32	21.22
10	50	0		21.25	21.37	21.26
10	1	0	16-QAM	21.63	21.88	21.60
10	1	25		21.95	21.75	21.68
10	1	49		21.38	21.46	21.55
10	25	0		20.26	20.47	20.48
10	25	12		20.27	20.49	20.48
10	25	25		20.23	20.45	20.45
10	50	0		20.22	20.27	20.30
5	1	0	QPSK	22.37	22.52	22.26
5	1	12		22.34	22.51	22.42
5	1	24		22.43	22.20	22.43
5	12	0		21.19	21.38	21.22
5	12	7		21.29	21.40	21.28
5	12	13		21.28	21.32	21.21
5	25	0		21.06	21.35	21.24
5	1	0	16-QAM	21.79	21.70	21.67
5	1	12		21.58	21.70	21.85
5	1	24		21.48	21.56	21.46
5	12	0		20.17	20.38	20.28
5	12	7		20.29	20.31	20.27
5	12	13		20.18	20.33	20.33
5	25	0		20.17	20.25	20.30



LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	22.21	22.45	22.48
3	1	8		22.16	22.26	22.46
3	1	14		22.11	22.26	22.55
3	8	0		21.37	21.62	21.50
3	8	4		21.34	21.59	21.45
3	8	7		21.49	21.57	21.43
3	15	0		21.37	21.60	21.45
3	1	0	16-QAM	21.75	21.97	21.83
3	1	8		21.20	21.86	22.03
3	1	14		21.76	21.81	22.01
3	8	0		20.53	20.55	20.61
3	8	4		20.37	20.52	20.50
3	8	7		20.39	20.50	20.49
3	15	0		20.17	20.39	20.50
1.4	1	0	QPSK	22.15	22.35	22.41
1.4	1	3		22.35	22.29	22.21
1.4	1	5		22.26	22.23	22.14
1.4	3	0		22.26	22.43	22.36
1.4	3	1		22.29	22.59	22.58
1.4	3	3		22.42	22.52	22.35
1.4	6	0		21.22	21.44	21.25
1.4	1	0	16-QAM	21.56	21.56	21.49
1.4	1	3		21.27	21.68	21.64
1.4	1	5		21.44	21.54	21.60
1.4	3	0		21.51	21.27	21.47
1.4	3	1		21.28	21.53	21.63
1.4	3	3		21.52	21.54	21.53
1.4	6	0		20.35	20.29	20.22



LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	22.73	22.64	22.63
20	1	49		22.74	22.75	22.74
20	1	99		22.52	22.57	22.56
20	50	0		21.67	21.87	21.84
20	50	24		21.57	21.79	21.78
20	50	50		21.57	21.76	21.74
20	100	0		21.61	21.79	21.73
20	1	0	16-QAM	21.96	22.23	22.32
20	1	49		21.91	22.05	21.98
20	1	99		21.83	22.10	22.10
20	50	0		20.45	20.77	20.84
20	50	24		20.42	20.79	20.62
20	50	50		20.40	20.75	20.55
20	100	0		20.52	20.83	20.76
15	1	0	QPSK	22.51	22.79	22.63
15	1	37		22.45	22.49	22.74
15	1	74		22.46	22.48	22.56
15	36	0		21.57	21.78	21.88
15	36	20		21.57	21.74	21.67
15	36	39		21.58	21.86	21.86
15	75	0		21.58	21.83	21.82
15	1	0	16-QAM	21.98	22.30	22.40
15	1	37		21.84	22.08	22.14
15	1	74		21.91	22.16	22.18
15	36	0		20.56	20.76	20.82
15	36	20		20.33	20.78	20.64
15	36	39		20.49	20.88	20.76
15	75	0		20.48	20.88	20.70



LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.65	22.66	22.69
10	1	25		22.49	22.62	22.55
10	1	49		22.46	22.62	22.55
10	25	0		21.54	21.80	21.80
10	25	12		21.50	21.82	21.88
10	25	25		21.49	21.81	21.80
10	50	0		21.53	21.77	21.83
10	1	0	16-QAM	21.90	22.08	22.19
10	1	25		21.86	21.81	22.16
10	1	49		21.84	21.99	22.10
10	25	0		20.46	20.78	20.93
10	25	12		20.51	20.80	20.58
10	25	25		20.51	20.86	20.86
10	50	0		20.55	20.74	20.61
5	1	0	QPSK	22.63	22.62	22.64
5	1	12		22.57	22.68	22.74
5	1	24		22.27	22.69	22.71
5	12	0		21.54	21.72	21.79
5	12	7		21.45	21.79	21.80
5	12	13		21.36	21.79	21.82
5	25	0		21.40	21.80	21.80
5	1	0	16-QAM	21.78	22.11	22.39
5	1	12		21.35	21.98	22.13
5	1	24		21.60	22.00	22.08
5	12	0		20.35	20.82	20.79
5	12	7		20.45	20.77	20.76
5	12	13		20.15	20.76	20.77
5	25	0		20.39	20.77	20.70



Appendix B. Test Results of Radiated Test

EIRP

LTE Band 2 / 20MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	49	20.25	0.1059	21.46	0.1400
Middle		1	49	20.05	0.1012	21.32	0.1355
Highest		1	49	19.53	0.0897	21.07	0.1279
Lowest	16QAM	1	49	20.89	0.1227	20.86	0.1219
Middle		1	0	21.19	0.1315	20.18	0.1042
Highest		1	49	20.73	0.1183	20.01	0.1002
Limit	EIRP < 2W			Result		PASS	

LTE Band 4 / 15MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	37	20.90	0.1230	22.32	0.1706
Middle		1	0	20.47	0.1114	22.02	0.1592
Highest		1	37	22.45	0.1758	23.81	0.2404
Lowest	16QAM	1	0	18.95	0.0785	21.62	0.1452
Middle		1	0	18.98	0.0791	21.53	0.1422
Highest		1	37	19.30	0.0851	22.58	0.1811
Limit	EIRP < 1W			Result		PASS	



LTE Band 7 / 10MHz (Average)							
Channel	Modulation	RB		Horizontal		Vertical	
		Size	Offset	EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	18.51	0.0710	20.31	0.1074
Middle		1	0	18.29	0.0675	20.09	0.1021
Highest		1	0	18.49	0.0706	20.25	0.1059
Lowest	16QAM	1	0	18.63	0.0729	20.25	0.1059
Middle		1	0	18.48	0.0705	20.10	0.1023
Highest		1	0	19.22	0.0836	19.88	0.0973
Limit	EIRP < 2W			Result		PASS	

**Radiated Spurious Emission**

LTE Band 2 / 3MHz / 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	3758.92	-46.76	-13	-33.76	-59.53	-53.95	0.81	8.00	H
	5638.38	-38.76	-13	-25.76	-58.19	-48.75	1.01	11.00	H
	7517.84	-40.90	-13	-27.90	-63.07	-53.14	1.46	13.70	H
	3758.92	-48.57	-13	-35.57	-61.64	-55.76	0.81	8.00	V
	5638.38	-40.43	-13	-27.43	-59.49	-50.42	1.01	11.00	V
	7517.84	-44.54	-13	-31.54	-67.03	-56.78	1.46	13.70	V

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

LTE Band 4 / 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	3456.18	-48.84	-13	-35.84	-61.67	-56.03	0.81	8.00	H
	5184.27	-48.02	-13	-35.02	-66.55	-57.07	0.95	10.00	H
	6912.36	-41.00	-13	-28.00	-62.34	-53.27	1.13	13.40	H
	3456.18	-48.98	-13	-35.98	-62.32	-60.77	0.81	12.60	V
	5184.27	-44.97	-13	-31.97	-63.6	-56.72	0.95	12.70	V
	6912.36	-30.11	-13	-17.11	-56	-40.68	1.13	11.70	V

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

LTE Band 7 / 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	5052.18	-43.16	-25	-18.16	-60.79	-52.21	0.95	10.00	H
	7578.27	-40.04	-25	-15.04	-65.66	-52.28	1.46	13.70	H
	10104.36	-44.51	-25	-19.51	-72.06	-56.40	1.31	13.20	H
	5052.18	-48.00	-25	-23.00	-65.9	-57.0456	0.95	10.00	V
	7578.27	-44.50	-25	-19.50	-68.83	-56.7356	1.46	13.70	V
	10104.36	-46.38	-25	-21.38	-72.86	-58.2656	1.31	13.20	V

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



Appendix D Product equality declaration



General: 7053J is a variant product of 7053E

- Protocol Stack changes: No
- MMS/STK/USAT/USIM changes: No
- DM/SUPL/VT/FUMO/SWP/HCI: No (indicated the changed items if yes)
- Other changes detailed: No

- Band changes: **Yes**
- **7053E** (GSM 850/900/1800/1900 UMTS 850/1700/1900/2100 LTE B2/B4/B5/B7/B12/B17)
- **7053J** (GSM 850/900/1800/1900 UMTS 850/900/1900/2100 LTE B1/B2/B3/B4/B7/B28)
- PCB Layout changes: **No**
- Main RF components changes:

	Antenna	AP	Modem	Transceiver	Power Amplifier	Rx SAW Filter	ASM
GSM850	NO	No	No	No	NO	NO	NO
GSM900	NO	No	No	No	NO	NO	NO
GSM1800	NO	No	No	No	NO	NO	NO
GSM1900	NO	No	No	No	NO	NO	NO

	Antenna	AP	Modem	Transceiver	Power Amplifier	Tx SAW Filter	Rx SAW Filter	Duplexer	ASM
UMTS2100	NO	no	No	No	NO	NO	no	NO	NO
UMTS1900	NO	No	No	No	no	no	No	no	no
UMTS1700	no	NA	NA	NA	NA	NA	NA	NA	NA
UMTS900	NO	No	No	No	NO	NO	YES	YES	NO
UMTS850	NO	No	No	No	No	No	no	No	No

[illegible]

LTE Band 3	NO	NO	NO	NO	NO	YES	YES	YES	NO
LTE Band 4	NO	NO	NO	NO	NO	NO	NO	NO	NO
LTE Band 5	NA	NA	NA	NA	NA	NA	NA	NA	NA
LTE Band 7	NO	NO	NO	NO	NO	NO	NO	NO	NO
LTE Band 12	NA	NA	NA	NA	NA	NA	NA	NA	NA
LTE Band 17	NA	NA	NA	NA	NA	NA	NA	NA	NA
LTE Band 28	NO	NO	NO	NO	NO	YES	YES	YES	NO

	Antenna	AP	Modem	Transceiver	Power Amplifier	Balun	Band pass filter	Diplexer
Bluetooth	NO	No	No	No	No	No	No	No
Wi-Fi	NO	No	No	No	No	No	No	No

- FM changes: No
- LCD/ Speaker/ Camera/ Vibrator changes: (indicated the changed items if yes) No
- Other changes detailed: NO

● **MECHANICAL MODIFICATIONS:**

- Use new metal front/back cover or keypad: No
- Mechanical shell changes:
Whole size of EUT: No
Distance of Ear reference point to bottom of handset: No
Other trinkets to change the surface of handset: No
- Other changes detailed: No

APPROVED BY:

Project Manager: Tiffany Tang

Signature:

Tiffany Tang

Date: 2015-11-06