



FCC/IC RF Test Report

APPLICANT : Sony Mobile Communications Inc.
EQUIPMENT : Smart phone
BRAND NAME : SONY
TYPE NAME : PM-0385-BV
FCC ID : PY7PM-0385
STANDARD : 47 CFR Part 2, 27
IC RSS-130 issue 1
IC RSS-139 issue 2
IC RSS-199 issue 1
CLASSIFICATION : PCS Licensed Transmitter Held to Ear (PCE)

This is a partial report which is included the RF power and field strength of spurious radiation test items. The product was received on Sep. 12, 2014 and testing was completed on Sep. 15, 2014. 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 / EIA-603-C-2004 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 Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.

SPORTON INTERNATIONAL INC.
TEL : 886-3-327-3456
FAX : 886-3-328-4978
FCC ID : PY7PM-0385

Page Number : 1 of 25
Report Issued Date : Sep. 19, 2014
Report Version : Rev. 01
Report Template No.: BU5-FGLTE Version 1.1
Report Template No.: BU5-CGLTE Version 1.1



TABLE OF CONTENTS

REVISION HISTORY	3
SUMMARY OF TEST RESULT	4
1 GENERAL DESCRIPTION	5
1.1 Applicant	5
1.2 Manufacturer	5
1.3 Product Feature of Equipment Under Test.....	5
1.4 Product Specification subjective to this standard	6
1.5 Modification of EUT	7
1.6 Testing Location	7
1.7 Applicable Standards.....	8
2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST	9
2.1 Test Mode	9
2.2 Connection Diagram of Test System.....	10
2.3 Support Unit used in test configuration and system	10
3 TEST RESULT	11
3.1 Conducted Output Power Measurement	11
3.2 Radiated Spurious Emission Measurement	18
4 LIST OF MEASURING EQUIPMENT	24
5 UNCERTAINTY OF EVALUATION	25



REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG450249-03B	Rev. 01	Initial issue of report	Sep. 19, 2014



SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	§2.1046	RSS-Gen(4.8) RSS-130(4.4) RSS-139 (6.4) RSS-199 (4.4)	Conducted Output Power	Reporting Only	PASS	-
3.2	§2.1053 §27.53(g) §27.53(h)	RSS-GEN(4.9) RSS-130(4.6) RSS-139 (6.5)	Radiated Spurious Emission (Band 4) (Band 17)	$< 43+10\log_{10}(P[\text{Watts}])$	PASS	Under limit 4.79 dB at 5100.000 MHz
	§2.1053 §27.53(m)(4)	RSS-GEN(4.9) RSS-199 (4.5)	Radiated Spurious Emission (Band 7)	$< 55+10\log_{10}(P[\text{Watts}])$	PASS	



1 General Description

1.1 Applicant

Sony Mobile Communications Inc.
Nya Vattentorget, 22188 Lund, Sweden

1.2 Manufacturer

Arima Communication Corp.
6F,No.866,Jhongjheng Rd., Jhonghe Dist., New Taipei City 23586, Taiwan

1.3 Product Feature of Equipment Under Test

The Equipment Under Test (hereafter called: EUT) is Smart phone supporting, GSM / WCDMA / LTE, Wi-Fi 2.4GHz 802.11b/g/n, Bluetooth with FM Receiver, ANT+, GPS, and NFC features, and below is details of information.

Product Feature	
Equipment	Smart phone
Brand Name	SONY
Type Name	PM-0385-BV
FCC ID	PY7PM-0385
GSM Operating Band(s)	GSM 850/900/1800/1900MHz
GPRS / EGPRS Multi Slot Class	GPRS Class 33, EGPRS Class 33
WCDMA Operating Band(s)	FDD Band I / II / IV / V
WCDMA Rel. Version	Rel. 9
LTE Operating Band(s)	FDD Band IV / VII / XVII
LTE Rel. Version	Rel. 8
Wi-Fi Specification	802.11b/g/n (HT20)
Bluetooth Version	v3.0+EDR / v4.0-LE
NFC Specification	ISO14443A / ISO14443B / Felica / ISO15693
ANT+	ANT+
Power Supply	Battery / AC Adapter / Car Charger

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4 Product Specification subjective to this standard

Product Specification subjective to this standard	
Tx Frequency	LTE Band 4 : 1710.7 MHz ~ 1754.3 MHz LTE Band 7 : 2502.5 MHz ~ 2567.5 MHz LTE Band 17 : 706.5 MHz ~ 713.5 MHz
Rx Frequency	LTE Band 4 : 2110.7 MHz ~ 2154.3 MHz LTE Band 7 : 2622.5MHz ~ 2687.5 MHz LTE Band 17 : 736.5 MHz ~ 743.5 MHz
Bandwidth	LTE Band 4 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 7 : 5MHz/ 10MHz / 15MHz / 20MHz LTE Band 17 : 5MHz / 10MHz
Maximum Output Power to Antenna	LTE Band 4 : 22.73 dBm LTE Band 7 : 22.47 dBm LTE Band 17 : 23.19 dBm
Antenna Type	I-FA Antenna
Type of Modulation	QPSK / 16QAM

EUT Information List				
IMEI	HW Version	SW Version	S/N	Performed Test Item
IMEI: 004402452493434	A	18.4.C.1.29	N/A	RF Conducted Measurement
IMEI: 004402452493426				Radiated Spurious Emission

Accessory List	
AC Adapter	Model No. : EP800
	Type No. : CAA-0002016-US B
	S/N : 3113W 45 408494
Battery	Model No. : LIS1551ERPC
Earphone	Model No. : MH410c
	Type No. : AG-1100
	S/N : 13511E5B007648E
USB Cable	Model No. : EC 450
	Type No. : AI-0700
	S/N : 134912D80008076

Note:

1. Above EUT list and accessory list used are electrically identical per declared by manufacturer.
2. Above the accessories list are used to exercise the EUT during test.
3. For other wireless features of this EUT, test report will be issued separately.



1.5 Modification of EUT

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

1.6 Testing Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW1022 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978		
Test Site No.	Sporton Site No.		IC Registration No.
	TH02-HY	03CH07-HY	4086B-1

1.7 Applicable Standards

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

- ♦ 47 CFR Part 2, 27
- ♦ ANSI / TIA / EIA-603-C-2004
- ♦ FCC KDB 971168 D01 Power Meas. License Digital Systems v02r01
- ♦ IC RSS-130 Issue1
- ♦ IC RSS-139 Issue 2
- ♦ IC RSS-199 Issue 1
- ♦ IC RSS-Gen Issue 3
- ♦ NOTICE 2012-DRS0126

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. Per the section 2.2.3 of Notice of 2012-DRS0126, “ Receivers Excluded from Industry Canada Requirements”, only radiocommunication receivers operating in stand-alone mode within the band 30-960 MHz and scanner receivers are subject to Industry Canada requirements.



2 Test Configuration of Equipment Under Test

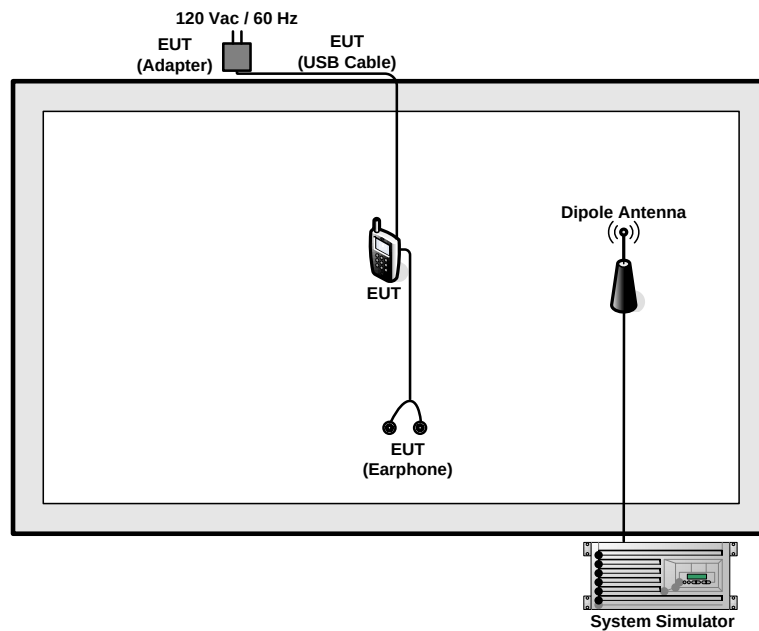
2.1 Test Mode

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas. License Digital Systems v02r01 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	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	7	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	17	-	-	✓	✓	-	-	✓	✓	✓	✓	✓	✓	✓	✓
Radiated Spurious Emission	4				✓			✓		✓					✓
	7	-	-			✓		✓		✓					✓
	17	-	-	✓		-	-	✓		✓				✓	
Note	- 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

3 Test Result

3.1 Conducted Output Power Measurement

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.

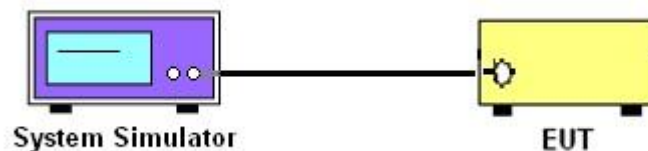
3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.1.3 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.

3.1.4 Test Setup



3.1.5 Test Result of Conducted Output Power

<LTE Band 4 Conducted Power>

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				20050	20175	20300
Frequency (MHz)				1720	1732.5	1745
20	QPSK	1	0	22.73	22.69	22.69
20	QPSK	1	49	22.67	22.50	22.63
20	QPSK	1	99	22.48	22.56	22.45
20	QPSK	50	0	21.59	21.44	21.48
20	QPSK	50	24	21.41	21.43	21.43
20	QPSK	50	49	21.48	21.39	21.50
20	QPSK	100	0	21.54	21.49	21.52
20	16QAM	1	0	21.52	21.65	21.60
20	16QAM	1	49	21.44	21.37	21.50
20	16QAM	1	99	21.42	21.39	21.33
20	16QAM	50	0	20.62	20.45	20.51
20	16QAM	50	24	20.59	20.45	20.56
20	16QAM	50	49	20.57	20.51	20.66
20	16QAM	100	0	20.57	20.50	20.71
Channel				20025	20175	20325
Frequency (MHz)				1717.5	1732.5	1747.5
15	QPSK	1	0	22.69	22.71	22.69
15	QPSK	1	37	22.62	22.45	22.57
15	QPSK	1	74	22.55	22.52	22.48
15	QPSK	36	0	21.44	21.40	21.42
15	QPSK	36	18	21.54	21.41	21.57
15	QPSK	36	37	21.42	21.41	21.57
15	QPSK	75	0	21.46	21.43	21.49
15	16QAM	1	0	21.60	21.50	21.52
15	16QAM	1	37	21.44	21.39	21.54
15	16QAM	1	74	21.52	21.45	21.42
15	16QAM	36	0	20.58	20.43	20.54
15	16QAM	36	18	20.48	20.42	20.55
15	16QAM	36	37	20.49	20.43	20.62
15	16QAM	75	0	20.66	20.53	20.60



BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				20000	20175	20350
Frequency (MHz)				1715	1732.5	1750
10	QPSK	1	0	22.68	22.60	22.67
10	QPSK	1	24	22.61	22.52	22.63
10	QPSK	1	49	22.60	22.60	22.55
10	QPSK	25	0	21.51	21.52	21.60
10	QPSK	25	12	21.53	21.46	21.60
10	QPSK	25	24	21.54	21.44	21.64
10	QPSK	50	0	21.60	21.48	21.65
10	16QAM	1	0	21.58	21.48	21.58
10	16QAM	1	24	21.49	21.44	21.57
10	16QAM	1	49	21.50	21.52	21.46
10	16QAM	25	0	20.65	20.62	20.73
10	16QAM	25	12	20.66	20.59	20.69
10	16QAM	25	24	20.65	20.54	20.70
10	16QAM	50	0	20.59	20.59	20.71
Channel				19975	20175	20375
Frequency (MHz)				1712.5	1732.5	1752.5
5	QPSK	1	0	22.63	22.58	22.65
5	QPSK	1	12	22.55	22.56	22.62
5	QPSK	1	24	22.60	22.52	22.61
5	QPSK	12	0	21.59	21.49	21.66
5	QPSK	12	6	21.49	21.50	21.63
5	QPSK	12	11	21.51	21.48	21.50
5	QPSK	25	0	21.48	21.48	21.53
5	16QAM	1	0	21.53	21.46	21.56
5	16QAM	1	12	21.45	21.42	21.55
5	16QAM	1	24	21.48	21.42	21.44
5	16QAM	12	0	20.70	20.61	20.71
5	16QAM	12	6	20.62	20.59	20.70
5	16QAM	12	11	20.61	20.57	20.59
5	16QAM	25	0	20.63	20.56	20.57



BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				19965	20175	20385
Frequency (MHz)				1711.5	1732.5	1753.5
3	QPSK	1	0	22.63	22.59	22.66
3	QPSK	1	7	22.56	22.55	22.55
3	QPSK	1	14	22.59	22.53	22.61
3	QPSK	8	0	21.58	21.52	21.66
3	QPSK	8	4	21.50	21.48	21.52
3	QPSK	8	7	21.50	21.50	21.51
3	QPSK	15	0	21.50	21.51	21.52
3	16QAM	1	0	21.55	21.42	21.59
3	16QAM	1	7	21.42	21.47	21.50
3	16QAM	1	14	21.48	21.49	21.46
3	16QAM	8	0	20.67	20.59	20.71
3	16QAM	8	4	20.60	20.57	20.60
3	16QAM	8	7	20.60	20.60	20.61
3	16QAM	15	0	20.57	20.56	20.57
Channel				19957	20175	20393
Frequency (MHz)				1710.7	1732.5	1754.3
1.4	QPSK	1	0	22.72	22.69	22.70
1.4	QPSK	1	2	22.71	22.67	22.67
1.4	QPSK	1	5	22.70	22.68	22.68
1.4	QPSK	3	0	22.70	22.68	22.64
1.4	QPSK	3	1	22.65	22.64	22.69
1.4	QPSK	3	2	22.30	22.60	22.62
1.4	QPSK	6	0	21.32	21.63	21.64
1.4	16QAM	1	0	21.64	21.58	21.60
1.4	16QAM	1	2	21.62	21.60	21.58
1.4	16QAM	1	5	21.60	21.53	21.56
1.4	16QAM	3	0	21.59	21.59	21.61
1.4	16QAM	3	1	21.54	21.55	21.56
1.4	16QAM	3	2	21.62	21.55	21.56
1.4	16QAM	6	0	20.66	20.57	20.62



<LTE Band 7 Conducted Power>

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				20850	21100	21350
Frequency (MHz)				2510	2535	2560
20	QPSK	1	0	22.34	22.32	22.22
20	QPSK	1	49	22.42	22.42	22.34
20	QPSK	1	99	22.47	22.37	22.31
20	QPSK	50	0	21.44	21.43	21.31
20	QPSK	50	24	21.52	21.51	21.35
20	QPSK	50	49	21.59	21.46	21.34
20	QPSK	100	0	21.53	21.51	21.23
20	16QAM	1	0	21.36	21.41	21.25
20	16QAM	1	49	21.50	21.40	21.30
20	16QAM	1	99	21.42	21.33	21.28
20	16QAM	50	0	20.43	20.44	20.39
20	16QAM	50	24	20.43	20.52	20.48
20	16QAM	50	49	20.57	20.41	20.42
20	16QAM	100	0	20.49	20.50	20.39
Channel				20825	21100	21375
Frequency (MHz)				2507.5	2535	2562.5
15	QPSK	1	0	22.31	22.32	22.18
15	QPSK	1	37	22.40	22.38	22.24
15	QPSK	1	74	22.42	22.41	22.23
15	QPSK	36	0	21.42	21.46	21.26
15	QPSK	36	18	21.41	21.43	21.25
15	QPSK	36	37	21.45	21.39	21.25
15	QPSK	75	0	21.39	21.41	21.25
15	16QAM	1	0	21.31	21.33	21.18
15	16QAM	1	37	21.37	21.39	21.18
15	16QAM	1	74	21.49	21.29	21.21
15	16QAM	36	0	20.48	20.51	20.30
15	16QAM	36	18	20.48	20.47	20.35
15	16QAM	36	37	20.52	20.49	20.30
15	16QAM	75	0	20.44	20.47	20.34



BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				20800	21100	21400
Frequency (MHz)				2505	2535	2565
10	QPSK	1	0	22.34	22.24	22.19
10	QPSK	1	24	22.45	22.37	22.13
10	QPSK	1	49	22.46	22.31	22.17
10	QPSK	25	0	21.41	21.45	21.17
10	QPSK	25	12	21.43	21.41	21.21
10	QPSK	25	24	21.42	21.40	21.18
10	QPSK	50	0	21.40	21.41	21.19
10	16QAM	1	0	21.28	21.30	21.19
10	16QAM	1	24	21.37	21.38	21.11
10	16QAM	1	49	21.38	21.30	21.16
10	16QAM	25	0	20.51	20.53	20.36
10	16QAM	25	12	20.59	20.50	20.31
10	16QAM	25	24	20.51	20.49	20.36
10	16QAM	50	0	20.41	20.48	20.28
Channel				20775	21100	21425
Frequency (MHz)				2502.5	2535	2567.5
5	QPSK	1	0	22.28	22.17	22.06
5	QPSK	1	12	22.38	22.30	22.10
5	QPSK	1	24	22.43	22.33	22.14
5	QPSK	12	0	21.39	21.45	21.19
5	QPSK	12	6	21.40	21.39	21.16
5	QPSK	12	11	21.42	21.40	21.16
5	QPSK	25	0	21.41	21.41	21.21
5	16QAM	1	0	21.29	21.23	21.06
5	16QAM	1	12	21.35	21.29	21.06
5	16QAM	1	24	21.34	21.29	21.06
5	16QAM	12	0	20.51	20.53	20.31
5	16QAM	12	6	20.51	20.52	20.29
5	16QAM	12	11	20.45	20.50	20.30
5	16QAM	25	0	20.51	20.50	20.33



<LTE Band 17 Conducted Power>

BW [MHz]	Modulation	RB Size	RB Offset	Power (dBm) Low Ch. / Freq.	Power (dBm) Middle Ch. / Freq.	Power (dBm) High Ch. / Freq.
Channel				23780	23790	23800
Frequency (MHz)				709	710	711
10	QPSK	1	0	23.19	22.94	22.99
10	QPSK	1	24	23.12	23.15	23.16
10	QPSK	1	49	23.15	23.07	22.99
10	QPSK	25	0	22.25	22.15	22.20
10	QPSK	25	12	22.20	22.18	22.17
10	QPSK	25	24	22.22	22.23	22.15
10	QPSK	50	0	22.26	22.23	22.20
10	16QAM	1	0	22.03	21.93	21.94
10	16QAM	1	24	22.09	22.09	22.16
10	16QAM	1	49	22.08	22.07	22.00
10	16QAM	25	0	21.05	21.15	21.11
10	16QAM	25	12	21.19	21.17	21.18
10	16QAM	25	24	21.24	21.24	21.13
10	16QAM	50	0	21.07	21.13	21.11
Channel				23755	23790	23825
Frequency (MHz)				706.5	710	713.5
5	QPSK	1	0	23.08	22.94	23.10
5	QPSK	1	12	23.00	23.10	23.18
5	QPSK	1	24	23.12	23.04	23.00
5	QPSK	12	0	22.09	22.10	22.11
5	QPSK	12	6	22.09	22.19	22.17
5	QPSK	12	11	22.15	22.21	22.18
5	QPSK	25	0	22.10	22.19	22.09
5	16QAM	1	0	22.00	21.90	22.09
5	16QAM	1	12	21.97	22.02	22.09
5	16QAM	1	24	22.05	21.99	21.92
5	16QAM	12	0	21.09	21.10	21.05
5	16QAM	12	6	21.03	21.14	21.16
5	16QAM	12	11	21.13	21.16	21.13
5	16QAM	25	0	21.04	21.11	21.04

Note: maximum average power for LTE.



3.2 Radiated Spurious Emission Measurement

3.2.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI / TIA / EIA-603-C-2004. 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.

For LTE Band 17

For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

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

3.2.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.2.3 Test Procedures

1. The EUT was placed on a rotatable wooden table with 0.8 meter 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.
10. 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)

$$= P(W) - [43 + 10\log(P)] \text{ (dB)}$$

$$= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$$

$$= -13\text{dBm}.$$

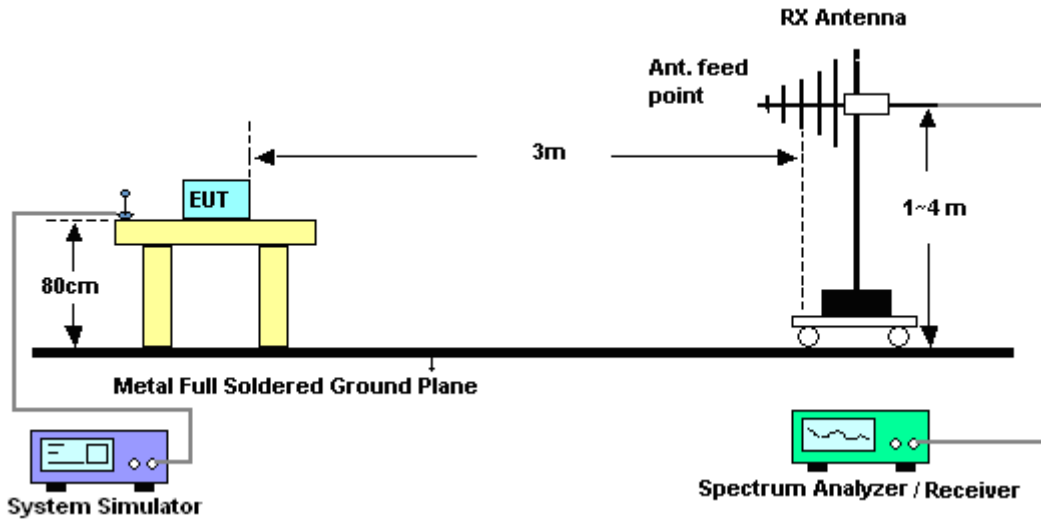
For Band 7

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

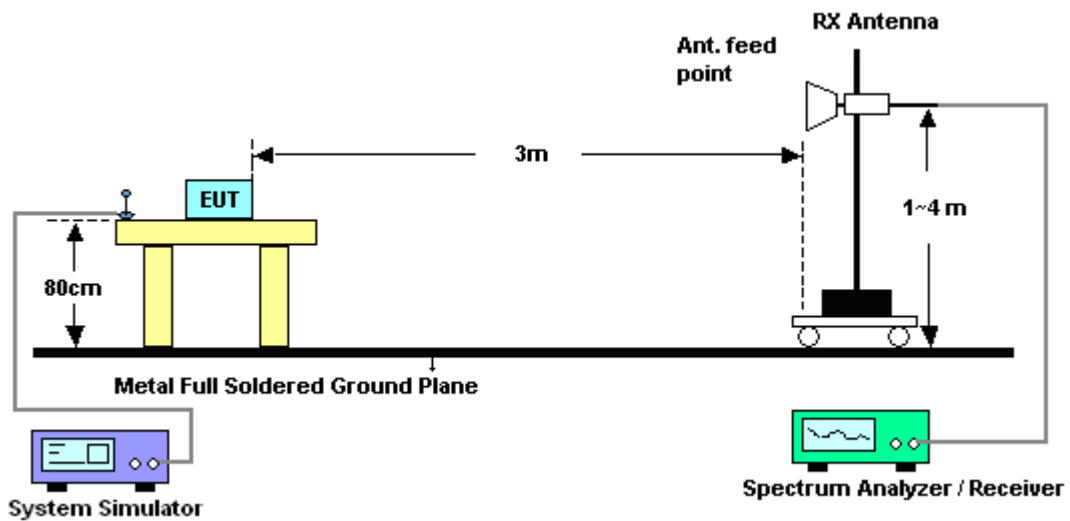
11. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
12. ERP (dBm) = EIRP - 2.15

3.2.4 Test Setup

For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz





3.2.5 Test Result of Field Strength of Spurious Radiated

<High Channel>

Band :	LTE Band 4					Temperature :	23~24℃		
Test Mode :	10MHz QPSK RB Size 1 Offset 0					Relative Humidity :	46~48%		
Test Engineer :	Ken Wu, Stan Hsieh, and Derreck Chen					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
			Limit	Reading	Power	loss	Gain		
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	(dBi)	(H/V)	
3490	-53.71	-13	-40.71	-68.06	-60.06	1.60	7.96	H	Pass
5236	-49.28	-13	-36.28	-68.28	-56.51	2.47	9.70	H	Pass
6982	-41.50	-13	-28.50	-67.94	-49.68	2.60	10.78	H	Pass

Band :	LTE Band 4					Temperature :	23~24℃		
Test Mode :	10MHz QPSK RB Size 1 Offset 0					Relative Humidity :	46~48%		
Test Engineer :	Ken Wu, Stan Hsieh, and Derreck Chen					Polarization :	Vertical		
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3490	-52.49	-13	-39.49	-68.07	-58.84	1.60	7.96	V	Pass
5236	-48.48	-13	-35.48	-67.49	-55.71	2.47	9.70	V	Pass
6982	-41.50	-13	-28.50	-67.05	-49.68	2.60	10.78	V	Pass

**<High Channel>**

Band :	LTE Band 7					Temperature :	23~24℃		
Test Mode :	15MHz QPSK RB Size 1 Offset 0					Relative Humidity :	46~48%		
Test Engineer :	Ken Wu, Stan Hsieh, and Derreck Chen					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
5112	-49.18	-25	-24.18	-67.18	-56.48	2.40	9.70	H	Pass
7668	-41.65	-25	-16.65	-67.24	-51.18	2.38	11.90	H	Pass
10224	-39.05	-25	-14.05	-67.76	-48.64	2.69	12.29	H	Pass

Band :	LTE Band 7					Temperature :	23~24°C		
Test Mode :	15MHz QPSK RB Size 1 Offset 0					Relative Humidity :	46~48%		
Test Engineer :	Ken Wu, Stan Hsieh, and Derreck Chen					Polarization :	Vertical		
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
5112	-48.98	-25	-23.98	-66.88	-56.28	2.40	9.70	V	Pass
7668	-40.81	-25	-15.81	-66.64	-50.34	2.38	11.90	V	Pass
10224	-40.02	-25	-15.02	-67.53	-49.61	2.69	12.29	V	Pass

**<Middle Channel>**

Band :	LTE Band 17					Temperature :	23~24°C		
Test Mode :	5MHz QPSK RB Size 1 Offset 0					Relative Humidity :	46~48%		
Test Engineer :	Ken Wu, Stan Hsieh, and Derreck Chen					Polarization :	Horizontal		
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1416	-55.08	-13	-42.08	-60.54	-56.83	0.87	4.78	H	Pass
2122	-56.67	-13	-43.67	-65.08	-57.61	1.17	4.27	H	Pass
2830	-53.17	-13	-40.17	-64.42	-55.29	1.39	5.66	H	Pass

Band :	LTE Band 17					Temperature :	23~24°C		
Test Mode :	5MHz QPSK RB Size 1 Offset 0					Relative Humidity :	46~48%		
Test Engineer :	Ken Wu, Stan Hsieh, and Derreck Chen					Polarization :	Vertical		
Remark :	Spurious emissions within 30-10th harmonic were found more than 20dB below limit line.								
Frequency	ERP	Limit	Over	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	Limit (dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
1416	-56.37	-13	-43.37	-64.17	-58.12	0.87	4.78	V	Pass
2122	-55.07	-13	-42.07	-65.47	-56.01	1.17	4.27	V	Pass
2830	-51.95	-13	-38.95	-64.33	-54.07	1.39	5.66	V	Pass



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
LTE Base Station	Anritsu	MT8820C	6201026480	30MHz~2.7GHz SISO	Jan. 07, 2014	Sep. 12, 2014	Jan. 06, 2015	Conducted (TH02-HY)
Hygrometer	Testo	608-H2	41410069	N/A	Jul. 17, 2014	Sep. 12, 2014	Jul. 16, 2015	Conducted (TH02-HY)
RF cable	WOKEN	S05	S05-130708-022	N/A	Jan. 22, 2014	Sep. 12, 2014	Jan. 21, 2015	Conducted (TH02-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV30	101749	10Hz ~ 30GHz	Feb. 10, 2014	Sep. 14, 2014~ Sep. 15, 2014	Feb. 09, 2015	Radiation (03CH07-HY)
Bilog Antenna	Schaffner	CBL6111C	2726	30MHz ~ 1GHz	Oct. 10, 2013	Sep. 14, 2014~ Sep. 15, 2014	Oct. 09, 2014	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	75962	1GHz~18GHz	Aug. 19, 2014	Sep. 14, 2014~ Sep. 15, 2014	Aug. 18, 2015	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz- 40GHz	Oct. 03, 2013	Sep. 14, 2014~ Sep. 15, 2014	Oct. 02, 2014	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	30MHz~1GHz	Mar. 17, 2014	Sep. 14, 2014~ Sep. 15, 2014	Mar. 16, 2015	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~26.5GHz	Nov. 29, 2013	Sep. 14, 2014~ Sep. 15, 2014	Nov. 28, 2014	Radiation (03CH07-HY)
Filter	Microwave Circuits	H1G013G1	SN477215	1GHz HPF	Nov. 28, 2013	Sep. 14, 2014~ Sep. 15, 2014	Nov. 27, 2014	Radiation (03CH07-HY)
Filter	Wainwright Instruments	WHKX1.5G/15G-10SS	SN32	1.5GHz HPF	Nov. 28, 2013	Sep. 14, 2014~ Sep. 15, 2014	Nov. 27, 2014	Radiation (03CH07-HY)
Filter	Wainwright Instruments	WLKS1200-8SS	SN3	1.2GHz LPF	Nov. 28, 2013	Sep. 14, 2014~ Sep. 15, 2014	Nov. 27, 2014	Radiation (03CH07-HY)
Filter	Wainwright Instruments	WHKX2.0/18G-10SS	SN12	2GHz HPF	Nov. 28, 2013	Sep. 14, 2014~ Sep. 15, 2014	Nov. 27, 2014	Radiation (03CH07-HY)
Filter	Microwave Circuits	H3G018G1	SN477220	3GHz HPF	Nov. 28, 2013	Sep. 14, 2014~ Sep. 15, 2014	Nov. 27, 2014	Radiation (03CH07-HY)
Notch Filter	Wainwright	WRCT 1800/2000-2	SN1	GSM 1900	Nov. 28, 2013	Sep. 14, 2014~ Sep. 15, 2014	Nov. 27, 2014	Radiation (03CH07-HY)
Notch Filter	Wainwright	WRCG 824/849/814/	SN35	GSM850 / WCDMA 850	Nov. 28, 2013	Sep. 14, 2014~ Sep. 15, 2014	Nov. 27, 2014	Radiation (03CH07-HY)
HF RF Cable	HUBER SUHNER	SUCOFLEX 104	38411/6	1GHz ~ 18GHz	Nov. 28, 2013	Sep. 14, 2014~ Sep. 15, 2014	Nov. 27, 2014	Radiation (03CH07-HY)
LF RF Cable	Warison+HUBER SUHNER	WCBA-WC04NM.NM2	N/A	30MHz ~ 1GHz	Nov. 28, 2013	Sep. 14, 2014~ Sep. 15, 2014	Nov. 27, 2014	Radiation (03CH07-HY)
Turn Table	ChainTek	ChainTek 3000	N/A	0 ~ 360 degree	N/A	Sep. 14, 2014~ Sep. 15, 2014	N/A	Radiation (03CH07-HY)
Antenna Mast	ChainTek	M-400-0	114/8000604/L	N/A	N/A	Sep. 14, 2014~ Sep. 15, 2014	N/A	Radiation (03CH07-HY)
Test Software	Audix	E3	Version 6.2009-08-24	N/A	N/A	Sep. 14, 2014~ Sep. 15, 2014	N/A	Radiation (03CH07-HY)
Hygrometer	Testo	608-H1	34897197	N/A	May 06, 2014	Sep. 14, 2014~ Sep. 15, 2014	May 05, 2015	Radiation (03CH07-HY)



5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.50
---	------