



FCC/IC RF Test Report

APPLICANT : Sony Mobile Communications Inc.
EQUIPMENT : Smart phone
BRAND NAME : SONY
TYPE NAME : PM-0383-BV
FCC ID : PY7PM-0383
IC : 4170B-PM0383
STANDARD : FCC 47 CFR Part 2, 22(H), 24(E), 27(L)
IC RSS-132 issue 3, RSS-133 issue 6, and RSS-139 issue 2
CLASSIFICATION : PCS Licensed Transmitter Held to Ear (PCE)

The product was received on May 02, 2014 and testing was completed on Jun. 26, 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 has been 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.

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IC: 4170B-PM0383

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG450254A	Rev. 01	Initial issue of report	Jul. 14, 2014
FG450254A	Rev. 02	Update EUT Information List for SW version change as 18.4.C.1.10	Aug. 01, 2014



SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	§2.1046	RSS-132 (5.4) RSS-133 (6.4) RSS-139 (6.4)	Conducted Output Power	Reporting Only	PASS	-
3.2	§2.1053 §22.917(a) §24.238(a) §27.53(g)	RSS-GEN(4.9) RSS-132 (5.5) RSS-133 (6.5) RSS-139 (6.5)	Field Strength of Spurious Radiation	$< 43 + 10 \log_{10}(P[\text{Watts}])$	PASS	Under limit 16.38 dB at 2509.000 MHz



1 General Description

1.1 Applicant

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

1.2 Manufacturer

Arima Communication Corp.
6F, No. 866, Zhongjheng Rd., Zhonghe 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-0383-BV
FCC ID	PY7PM-0383
IC	4170B-PM0383
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 II / 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 Test Standard

Product Specification subjective to this standard	
Tx Frequency	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz WCDMA Band IV : 1712.4 MHz ~ 1752.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz
Rx Frequency	GSM850: 869.2 MHz ~ 893.8 MHz GSM1900: 1930.2 MHz ~ 1989.8 MHz WCDMA Band V: 871.4 MHz ~ 891.6 MHz WCDMA Band IV : 2112.4 MHz ~ 2152.6 MHz WCDMA Band II: 1932.4 MHz ~ 1987.6 MHz
Maximum Output Power to Antenna	GSM850 : 32.55 dBm GSM1900 : 29.67 dBm WCDMA Band V : 23.48 dBm WCDMA Band IV : 23.40 dBm WCDMA Band II : 23.31 dBm
Antenna Type / Gain	IFA Antenna / 0.22 dBi
Type of Modulation	GSM: GMSK GPRS: GMSK EDGE: GMSK / 8PSK WCDMA: QPSK (Uplink) HSDPA: 64QAM (Downlink) HSUPA: QPSK (Uplink)

EUT Information List				
IMEI	HW Version	SW Version	S/N	Performed Test Item
IMEI: 004402452625449	A	18.4.C.1.10	HL4421D19876	RF conducted measurement
IMEI: 004402452628385			HL4421D19404	Radiated Spurious Emission, ERP/EIRP test

Accessory List	
AC Adapter	Model No. : EP800
	Type No. : CAA-0002016-US B
	S/N : 3113W45408465
Battery	Model No. : LIS1551ERPC
Earphone	Model No. : MH410c
	Type No. : AG-1100
	S/N: 13511E5B0076390
USB Cable	Model No. : EC450
	Part No. : AI-0700
	S/N: 134912DC0004380

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, 22(H), 24(E), 27(L)
- ♦ ANSI / TIA / EIA-603-C-2004
- ♦ FCC KDB 971168 D01 Power Meas. License Digital Systems v02r01
- ♦ IC RSS-132 Issue 3
- ♦ IC RSS-133 Issue 6
- ♦ IC RSS-139 Issue 2
- ♦ 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. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.
3. 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 were performed according to KDB 971168 D01 Power Meas. License Digital Systems v02r01 with maximum output power.

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

Radiated emissions were investigated as following frequency range:

1. 30 MHz to 9000 MHz for GSM850.
2. 30 MHz to 19000 MHz for GSM1900.
3. 30 MHz to 18000 MHz for WCDMA Band IV.

Test Modes	
Band	Radiated TCs
GSM 850	■ GSM Link
GSM 1900	■ GSM Link
WCDMA Band IV	■ RMC 12.2Kbps Link

Note: The maximum power levels are chosen to test as the worst case configuration as follows:

GSM mode for GMSK modulation,

RMC 12.2Kbps mode for WCDMA band IV,

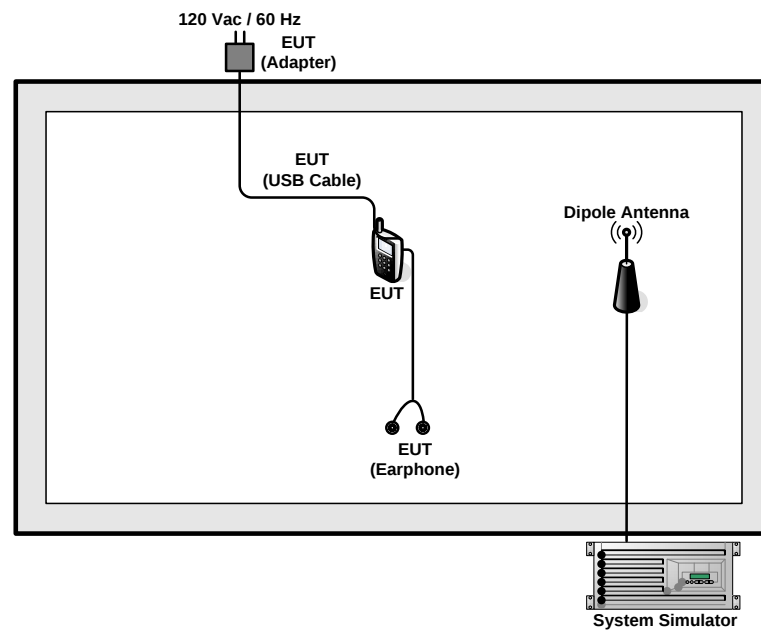
only these modes were used for all tests.

Conducted Power Measurement Results:

Conducted Power		Burst Average Power (dBm)					
Band		GSM850			GSM1900		
Channel		128	189	251	512	661	810
Frequency (MHz)		824.2	836.4	848.8	1850.2	1880.0	1909.8
GSM		32.12	32.53	32.55	29.63	29.67	29.47
GPRS Class 8		32.11	32.51	32.54	29.63	29.66	29.47
GPRS Class 10		29.45	29.53	29.94	26.65	26.70	26.52
GPRS Class 11		27.20	27.54	27.67	24.68	24.71	24.60
GPRS Class 33		26.01	26.14	26.39	23.58	23.69	23.57
EGPRS Class 8		26.78	26.92	27.09	26.54	26.63	26.55
EGPRS Class 10		24.15	24.29	24.46	23.88	24.01	23.97
EGPRS Class 11		23.14	23.37	23.50	22.38	22.46	22.41
EGPRS Class 33		21.94	22.13	22.35	21.12	21.20	21.12
DTM 5	GSM (GMSK, 1 Tx slot)	29.43	29.51	29.91	26.63	26.66	26.50
	GPRS (GMSK, 1 Tx slot)	29.33	29.50	29.88	26.61	26.65	26.44
DTM 9	GSM (GMSK, 1 Tx slot)	29.40	29.46	29.85	26.55	26.63	26.43
	GPRS (GMSK, 1 Tx slot)	29.26	29.41	29.81	26.50	26.55	26.40
DTM 11	GSM (GMSK, 1 Tx slot)	27.12	27.50	27.60	24.62	24.66	24.55
	GPRS (GMSK, 2 Tx slots)	27.10	27.44	27.55	24.60	24.65	24.51
DTM 5	GSM (GMSK, 1 Tx slot)	29.41	29.50	29.80	26.61	26.66	26.46
	EDGE (8PSK, 1 Tx slot)	24.11	24.25	24.41	23.85	23.95	23.94
DTM 9	GSM (GMSK, 1 Tx slot)	29.38	29.45	29.80	26.52	26.61	26.44
	EDGE (8PSK, 1 Tx slot)	24.09	24.22	24.38	23.82	23.92	23.91
DTM 11	GSM (GMSK, 1 Tx slot)	27.15	27.52	27.56	24.55	24.59	24.44
	EDGE (8PSK, 2 Tx slots)	23.11	23.35	23.45	22.35	22.41	22.37

Conducted Power	Burst Average Power (dBm)								
Band	WCDMA Band V			WCDMA Band II			WCDMA Band IV		
Channel	4132	4182	4233	9262	9400	9538	1312	1413	1513
Frequency (MHz)	826.4	836.4	846.6	1852.4	1880.0	1907.6	1712.4	1732.6	1752.6
RMC 12.2K	23.25	23.34	23.48	23.31	23.29	23.15	23.38	23.40	23.35
HSDPA Subtest-1	23.41	22.85	22.78	23.24	22.45	21.78	23.00	22.85	22.90
HSDPA Subtest-2	22.72	22.56	22.65	22.66	22.52	21.95	23.06	22.95	22.97
HSDPA Subtest-3	22.91	22.58	22.24	22.03	21.89	21.32	22.43	22.35	22.36
HSDPA Subtest-4	22.92	22.98	22.24	22.06	21.95	21.25	22.42	22.41	22.39
HSUPA Subtest-1	22.68	22.65	22.56	22.19	22.16	22.50	22.54	22.54	22.41
HSUPA Subtest-2	21.87	21.95	21.71	21.39	21.37	21.48	21.40	21.45	21.33
HSUPA Subtest-3	21.65	21.71	21.91	21.25	21.29	21.54	21.08	21.14	21.05
HSUPA Subtest-4	21.75	21.80	21.98	21.15	21.19	21.47	21.30	21.47	21.21
HSUPA Subtest-5	22.83	22.91	22.61	22.34	22.33	22.60	22.74	22.83	22.65

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	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 enforce EUT transmitting at the maximum power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

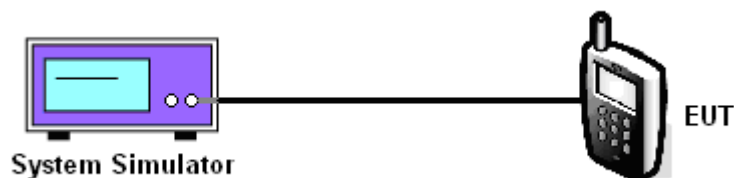
3.1.2 Measuring Instruments

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 system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure the maximum burst average power for GSM and maximum average power for other modulation signal.

3.1.4 Test Setup



3.1.6 Test Result of Conducted Output Power

Cellular Band									
Modes	GSM850 (GSM)			GSM850 (EDGE class 8)			WCDMA Band V (RMC 12.2Kbps)		
Channel	128 (Low)	189 (Mid)	251 (High)	128 (Low)	189 (Mid)	251 (High)	4132 (Low)	4182 (Mid)	4233 (High)
Frequency (MHz)	824.2	836.4	848.8	824.2	836.4	848.8	826.4	836.4	846.6
Conducted Power (dBm)	32.12	32.53	32.55	26.78	26.92	27.09	23.25	23.34	23.48
Conducted Power (Watts)	1.6293	1.7906	1.7989	0.4764	0.4920	0.5117	0.2113	0.2158	0.2228

PCS Band									
Modes	GSM1900 (GSM)			GSM1900 (EDGE class 8)			WCDMA Band II (RMC 12.2Kbps)		
Channel	512 (Low)	661 (Mid)	810 (High)	512 (Low)	661 (Mid)	810 (High)	9262 (Low)	9400 (Mid)	9538 (High)
Frequency (MHz)	1850.2	1880	1909.8	1850.2	1880	1909.8	1852.4	1880	1907.6
Conducted Power (dBm)	29.63	29.67	29.47	26.54	26.63	26.55	23.31	23.29	23.15
Conducted Power (Watts)	0.9183	0.9268	0.8851	0.4508	0.4603	0.4519	0.2143	0.2133	0.2065

AWS Band			
Modes	WCDMA Band IV (RMC 12.2Kbps)		
Channel	1312(Low)	1413 (Mid)	1513 (High)
Frequency (MHz)	1712.4	1732.6	1752.6
Conducted Power (dBm)	23.38	23.40	23.35
Conducted Power (Watts)	0.2178	0.2188	0.2163

Note: maximum burst average power for GSM, and maximum average power for WCDMA.

3.2 Field Strength of Spurious Radiation Measurement

3.2.1 Description of Field Strength of Spurious Radiated Measurement

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

3.2.2 Measuring Instruments

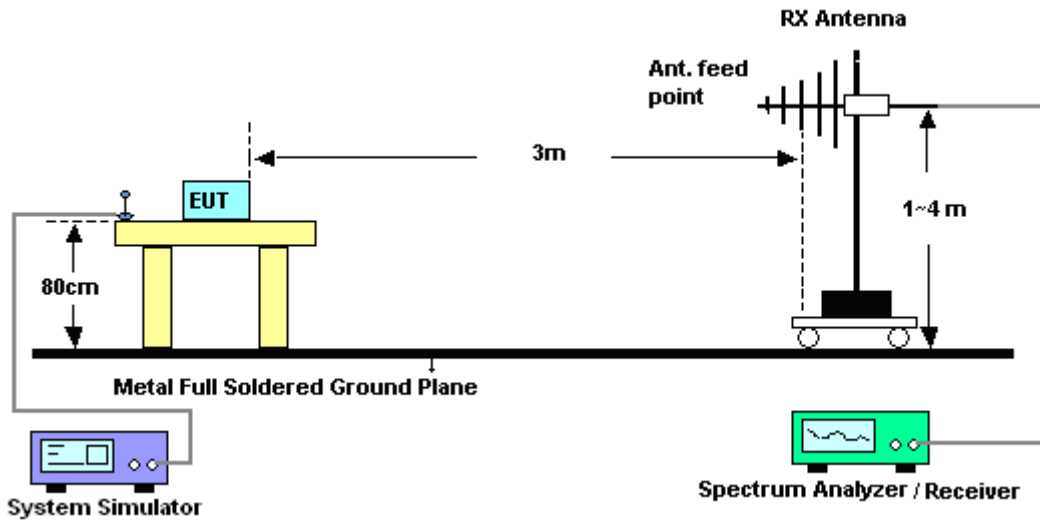
The measuring equipment is listed in the section 4 of this test report.

3.2.3 Test Procedures

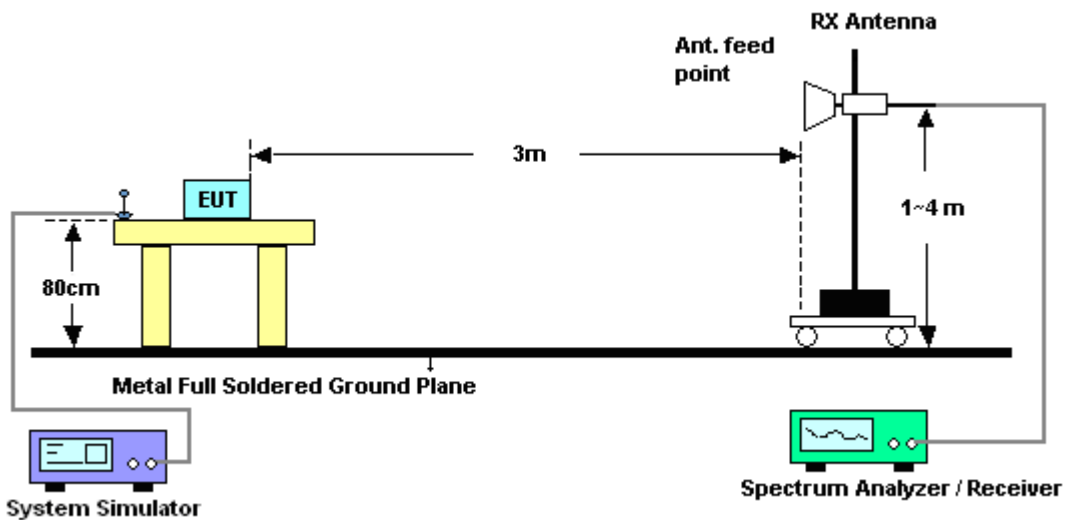
1. The EUT was placed on a rotatable wooden table 0.8 meters above the ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search for the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking 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. $EIRP \text{ (dBm)} = S.G. \text{ Power} - Tx \text{ Cable Loss} + Tx \text{ Antenna Gain}$
11. $ERP \text{ (dBm)} = EIRP - 2.15$
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
13. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [43 + 10\log(P)] \text{ (dB)}$
 $= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$
 $= -13\text{dBm}.$

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

<Low Channel>

Band :	GSM850	Temperature :	21~24°C						
Test Mode :	GSM Link (GMSK)	Relative Humidity :	44~48%						
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz 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)	
1648	-50.20	-13	-37.20	-59.3	-54.2	1.53	5.53	H	Pass
2473	-41.21	-13	-28.21	-54.85	-45.3	2.06	6.15	H	Pass
3297	-54.15	-13	-41.15	-68.46	-59.6	2.48	7.93	H	Pass

Band :	GSM850	Temperature :	21~24°C						
Test Mode :	GSM Link (GMSK)	Relative Humidity :	44~48%						
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz 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	Reading	Power	loss	Gain	(H/V)	
(dB)			(dB)	(dBm)	(dBm)	(dB)	(dBi)		
1648	-53.10	-13	-40.10	-64.36	-57.1	1.53	5.53	V	Pass
2473	-51.01	-13	-38.01	-64.67	-55.1	2.06	6.15	V	Pass
3297	-52.45	-13	-39.45	-68.17	-57.9	2.48	7.93	V	Pass



<Middle Channel>

Band :	GSM850	Temperature :	21~24°C						
Test Mode :	GSM Link (GMSK)	Relative Humidity :	44~48%						
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz 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)	
1672	-54.23	-13	-41.23	-63.56	-58.1	1.62	5.49	H	Pass
2509	-29.38	-13	-16.38	-42.98	-33.5	2.1	6.22	H	Pass
3345	-53.36	-13	-40.36	-67.55	-58.4	3.03	8.07	H	Pass

Band :	GSM850	Temperature :	21~24°C						
Test Mode :	GSM Link (GMSK)	Relative Humidity :	44~48%						
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz 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)	
1672	-51.53	-13	-38.53	-62.98	-55.4	1.62	5.49	V	Pass
2509	-34.28	-13	-21.28	-48.24	-38.4	2.1	6.22	V	Pass
3345	-52.26	-13	-39.26	-67.98	-57.3	3.03	8.07	V	Pass



<High Channel>

Band :	GSM850	Temperature :	21~24°C						
Test Mode :	GSM Link (GMSK)	Relative Humidity :	44~48%						
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz 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)	
1697	-56.52	-13	-43.52	-65.74	-60.4	1.57	5.45	H	Pass
2544	-37.24	-13	-24.24	-50.48	-41.5	2.02	6.28	H	Pass
3395	-53.50	-13	-40.50	-67.81	-59.4	2.3	8.20	H	Pass

Band :	GSM850	Temperature :	21~24°C						
Test Mode :	GSM Link (GMSK)	Relative Humidity :	44~48%						
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz 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)	
1697	-52.62	-13	-39.62	-64.08	-56.5	1.57	5.45	V	Pass
2544	-42.24	-13	-29.24	-56.23	-46.5	2.02	6.28	V	Pass
3395	-51.60	-13	-38.60	-67.35	-57.5	2.3	8.20	V	Pass



<Low Channel>

Band :	GSM1900	Temperature :	21~24°C						
Test Mode :	GSM Link (GMSK)	Relative Humidity :	44~48%						
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz 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)	
3700	-53.15	-13	-40.15	-68.32	-59.3	2.59	8.74	H	Pass
5551	-48.84	-13	-35.84	-69.46	-56.5	3.04	10.70	H	Pass
7401	-41.96	-13	-28.96	-69.41	-50.7	3.28	12.02	H	Pass

Band :	GSM1900	Temperature :	21~24°C						
Test Mode :	GSM Link (GMSK)	Relative Humidity :	44~48%						
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over Limit	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	(dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3700	-52.95	-13	-39.95	-69.11	-59.1	2.59	8.74	V	Pass
5551	-48.64	-13	-35.64	-69.26	-56.3	3.04	10.70	V	Pass
7401	-42.36	-13	-29.36	-69.39	-51.1	3.28	12.02	V	Pass



<Middle Channel>

Band :	GSM1900	Temperature :	21~24°C						
Test Mode :	GSM Link (GMSK)	Relative Humidity :	44~48%						
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz 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	Reading	Power	loss	Gain	(H/V)	
(dB)			(dB)	(dBm)	(dBm)	(dB)	(dBi)		
3760	-51.10	-13	-38.10	-66.77	-57.4	2.51	8.81	H	Pass
5636	-47.79	-13	-34.79	-68.65	-55.5	2.99	10.70	H	Pass
7520	-42.27	-13	-29.27	-69.71	-50.8	3.59	12.12	H	Pass

Band :	GSM1900	Temperature :	21~24°C						
Test Mode :	GSM Link (GMSK)	Relative Humidity :	44~48%						
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz 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)	
3760	-51.70	-13	-38.70	-68.07	-58	2.51	8.81	V	Pass
5636	-48.39	-13	-35.39	-69.33	-56.1	2.99	10.70	V	Pass
7520	-42.37	-13	-29.37	-69.51	-50.9	3.59	12.12	V	Pass



<High Channel>

Band :	GSM1900	Temperature :	21~24°C						
Test Mode :	GSM Link (GMSK)	Relative Humidity :	44~48%						
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz 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	Reading	Power	loss	Gain	(H/V)	
(dB)			(dB)	(dBm)	(dBm)	(dB)	(dBi)		
3820	-52.49	-13	-39.49	-67.89	-58.9	2.47	8.88	H	Pass
5729	-49.00	-13	-36.00	-69.64	-56.7	3	10.70	H	Pass
7639	-43.32	-13	-30.32	-69.31	-52.1	3.43	12.21	H	Pass

Band :	GSM1900	Temperature :	21~24°C						
Test Mode :	GSM Link (GMSK)	Relative Humidity :	44~48%						
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz 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)	
3820	-51.69	-13	-38.69	-67.96	-58.1	2.47	8.88	V	Pass
5729	-48.80	-13	-35.80	-69.64	-56.5	3	10.70	V	Pass
7639	-42.02	-13	-29.02	-68.47	-50.8	3.43	12.21	V	Pass

**<Low Channel>**

Band :	WCDMA Band IV	Temperature :	21~24°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	44~48%						
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz 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)	
3424	-52.67	-13	-39.67	-66.98	-56.5	4.48	8.31	H	Pass
5137	-49.06	-13	-36.06	-67.5	-53.7	5.332	9.98	H	Pass
6850	-43.26	-13	-30.26	-68.84	-48.5	6.1	11.34	H	Pass

Band :	WCDMA Band IV					Temperature :	21~24°C		
Test Mode :	RMC 12.2Kbps Link (QPSK)					Relative Humidity :	44~48%		
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu					Polarization :	Vertical		
Remark :	Spurious emissions within 30-1000MHz 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)	
3424	-52.07	-13	-39.07	-67.91	-55.9	4.48	8.31	V	Pass
5137	-47.46	-13	-34.46	-65.93	-52.1	5.332	9.98	V	Pass
6850	-43.96	-13	-30.96	-68.74	-49.2	6.1	11.34	V	Pass

**<Middle Channel>**

Band :	WCDMA Band IV	Temperature :	21~24°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	44~48%						
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz 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)	
3465	-52.67	-13	-39.67	-66.99	-56.5	4.48	8.31	H	Pass
5197	-49.66	-13	-36.66	-68.66	-54.3	5.332	9.98	H	Pass
6930	-43.26	-13	-30.26	-69.28	-48.5	6.1	11.34	H	Pass

Band :	WCDMA Band IV	Temperature :	21~24°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	44~48%						
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz 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)	
3465	-52.07	-13	-39.07	-67.56	-55.9	4.48	8.31	V	Pass
5198	-46.56	-13	-33.56	-65.31	-51.2	5.332	9.98	V	Pass
6930	-43.76	-13	-30.76	-69.12	-49	6.1	11.34	V	Pass

**<High Channel>**

Band :	WCDMA Band IV	Temperature :	21~24°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	44~48%						
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	Polarization :	Horizontal						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over Limit	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	(dB)	Reading (dBm)	Power (dBm)	loss (dB)	Gain (dBi)	(H/V)	
3505	-51.13	-13	-38.13	-65.69	-55.4	4.16	8.43	H	Pass
5257	-48.54	-13	-35.54	-67.53	-53.5	5.13	10.09	H	Pass
7011	-43.42	-13	-30.42	-69.94	-48.7	6.15	11.43	H	Pass

Band :	WCDMA Band IV	Temperature :	21~24°C						
Test Mode :	RMC 12.2Kbps Link (QPSK)	Relative Humidity :	44~48%						
Test Engineer :	Kai Wang and Stan Hsieh and Ken Wu	Polarization :	Vertical						
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
Frequency	EIRP	Limit	Over Limit	SPA	S.G.	TX Cable	TX Antenna	Polarization	Result
(MHz)	(dBm)	(dBm)	(dB)	(dBm)	(dBm)	loss	Gain	(H/V)	
3505	-51.63	-13	-38.63	-67.21	-55.9	4.16	8.43	V	Pass
5257	-45.14	-13	-32.14	-64.17	-50.1	5.13	10.09	V	Pass
7011	-43.62	-13	-30.62	-69.52	-48.9	6.15	11.43	V	Pass



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
System Simulator	Rohde & Schwarz	CMU200	117995	N/A	Aug. 01, 2013	May. 30, 2014	Jul. 31, 2014	Conducted (TH02-HY)
Hygrometer	Testo	608-H2	41410069	N/A	Jul. 18, 2013	May. 30, 2014	Jul. 17, 2014	Conducted (TH02-HY)
Filter	WAINWRIGHT	whkx2..0/18g	N/A	2GHighPass Filter	Nov. 28, 2013	May. 30, 2014	Nov. 27, 2014	Conducted (TH02-HY)
RF cable	WOKEN	SMA(M)-SMA(M)	S05-130703-32	N/A	Jul. 09, 2013	May. 30, 2014	Jul. 08, 2014	Conducted (TH02-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV30	101749	10Hz ~ 30GHz	Feb. 10, 2014	Jun. 20, 2014 ~ Jun. 26, 2014	Feb. 09, 2015	Radiation (03CH07-HY)
Bilog Antenna	Schaffner	CBL6111C	2726	30MHz ~ 1GHz	Oct. 10, 2013	Jun. 20, 2014 ~ Jun. 26, 2014	Oct. 09, 2014	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	75962	1GHz~18GHz	Aug. 22, 2013	Jun. 20, 2014 ~ Jun. 26, 2014	Aug. 21, 2014	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz- 40GHz	Oct. 03, 2013	Jun. 20, 2014 ~ Jun. 26, 2014	Oct. 02, 2014	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10 MHz ~ 1GHz	Mar. 17, 2014	Jun. 20, 2014 ~ Jun. 26, 2014	Mar. 16, 2015	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~26.5GHz	Nov. 29, 2013	Jun. 20, 2014 ~ Jun. 26, 2014	Nov. 28, 2014	Radiation (03CH07-HY)
Filter	Microwave Circuits	1000-12750 MHz SMA	0100V1H0100 01G	1GHz HPF	Nov. 28, 2013	Jun. 20, 2014 ~ Jun. 26, 2014	Nov. 27, 2014	Radiation (03CH07-HY)
Filter	Microwave Circuits	H3G018G1	SN477220	3GHz HPF	Nov. 28, 2013	Jun. 20, 2014 ~ Jun. 26, 2014	Nov. 27, 2014	Radiation (03CH07-HY)
Notch Filter	Wainwright	WRCT 1800/2000-20/40-10ssk	SN1	GSM 1900	Nov. 28, 2013	Jun. 20, 2014 ~ Jun. 26, 2014	Nov. 27, 2014	Radiation (03CH07-HY)
Notch Filter	Wainwright	WRCG 824/849/814/859-40 8SS	SN35	GSM850 / WCDMA 850	Nov. 28, 2013	Jun. 20, 2014 ~ Jun. 26, 2014	Nov. 27, 2014	Radiation (03CH07-HY)
Notch Filter	Wainwright	WRCD 1710/1980-10/10-10ssk	SN1	AWS Band	Nov. 28, 2013	Jun. 20, 2014 ~ Jun. 26, 2014	Nov. 27, 2014	Radiation (03CH07-HY)



Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
HF RF Cable	HUBER SUHNER	SUCOFLEX 104	38411/6	1GHz ~ 18GHz	Nov. 28, 2013	Jun. 20, 2014 ~ Jun. 26, 2014	Nov. 27, 2014	Radiation (03CH07-HY)
LF RF Cable	Warison+HUBER SUHNER	WCBA-WC04 NM.NM2	N/A	30MHz ~ 1GHz	Nov. 28, 2013	Jun. 20, 2014 ~ Jun. 26, 2014	Nov. 27, 2014	Radiation (03CH07-HY)
Turn Table	ChainTek	ChainTek 3000	N/A	0 ~ 360 degree	N/A	Jun. 20, 2014 ~ Jun. 26, 2014	N/A	Radiation (03CH07-HY)
Antenna Mast	ChainTek	M-400-0	114/8000604/L	N/A	N/A	Jun. 20, 2014 ~ Jun. 26, 2014	N/A	Radiation (03CH07-HY)
Test Software	Audix	E3	Version 6.2009-08-24	N/A	N/A	Jun. 20, 2014 ~ Jun. 26, 2014	N/A	Radiation (03CH07-HY)
Hygrometer	Testo	608-H1	34897197	N/A	May 06, 2014	Jun. 20, 2014 ~ Jun. 26, 2014	May 05, 2015	Radiation (03CH07-HY)

Note: Test equipment calibration is traceable to the procedure of ISO17025.



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
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