



# FCC/IC RF Test Report

**APPLICANT** : Sony Mobile Communications Inc.  
**EQUIPMENT** : Smart phone  
**BRAND NAME** : SONY  
**TYPE NAME** : PM-0861-BV  
**FCC ID** : PY7-PM0861  
**STANDARD** : FCC 47 CFR Part 2, 22(H), 24(E)  
IC RSS-132 issue 3 and RSS-133 issue 6  
**CLASSIFICATION** : PCS Licensed Transmitter Held to Ear (PCE)

This is a partial report which is included the RF Conducted Power and Field Strength of Spurious Radiation Measurement test items. The product was received on Dec. 31, 2014 and testing was completed on Feb. 05, 2015. 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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### 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)	Conducted Output Power	Reporting Only	PASS	-
3.2	§2.1053 §22.917(a) §24.238(a)	RSS-132 (5.5) RSS-133 (6.5)	Field Strength of Spurious Radiation	$< 43+10\log_{10}(P[\text{Watts}])$	PASS	Under limit 18.36 dB at 6792.000 MHz



# 1 General Description

## 1.1 Applicant

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

## 1.2 Manufacturer

**Arima Communications 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, Wi-Fi 5GHz 802.11a/n, Bluetooth with FM Receiver, GPS and NFC features, and below is details of information.

Product Feature	
Equipment	Smart phone
Brand Name	SONY
Type Name	PM-0861-BV
FCC ID	PY7-PM0861
GSM Operating Band(s)	GSM 850/900/1800/1900MHz
GPRS / EGPRS Multi Slot Class	GPRS Class 12, EGPRS Class 12
WCDMA Operating Band(s)	FDD Band I / II / V / VIII
WCDMA Rel. Version	Rel. 8
LTE Operating Band(s)	FDD Band I / III / V / VII / VIII / XX
LTE Rel. Version	Rel. 8
Wi-Fi Specification	802.11a/b/g/n (HT20/HT40)
Bluetooth Version	v3.0 + EDR / v4.0 - LE
NFC Specification	ISO14443A / ISO14443B / Felica
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	
<b>Tx Frequency</b>	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz
<b>Rx Frequency</b>	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 II: 1932.4 MHz ~ 1987.6 MHz
<b>Maximum Output Power to Antenna</b>	GSM850 : 32.45 dBm GSM1900 : 29.53 dBm WCDMA Band V : 23.99 dBm WCDMA Band II : 22.48 dBm
<b>Antenna Type</b>	GSM850: Coupling type (LDS) Antenna / -7.70 dBi GSM1900: Coupling type (LDS) Antenna / -4.70 dBi WCDMA Band V: Coupling type (LDS) Antenna / -7.70 dBi WCDMA Band II: Coupling type (LDS) Antenna / -4.70 dBi
<b>Type of Modulation</b>	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: 004402453895967	A	27.1.A.1.11	RR4C13D11293	Conducted Measurement Radiated Spurious Emission



Accessory List	
AC Adapter	Model No. : EP800
	Type No. : AC-0030-US
	S/N : 3113W46622783
Battery	Model No. : Ram
Earphone	Model No. : MH410c
	Type No. : AG-1103
	S/N : 1411204C00BC7D0
USB Cable	Model No. : EC450
	Type No. : AI-0700
	S/N : 143912D8330504A

**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.

<b>Test Site</b>	SPORTON INTERNATIONAL INC.		
<b>Test Site Location</b>	No. 52, Hwa Ya 1 <sup>st</sup> Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978		
<b>Test Site No.</b>	<b>Sporton Site No.</b>		<b>IC Registration No.</b>
	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)
- ♦ ANSI / TIA / EIA-603-C-2004
- ♦ FCC KDB 971168 D01 Power Meas. License Digital Systems v02r02
- ♦ IC RSS-132 Issue 3
- ♦ IC RSS-133 Issue 6
- ♦ IC RSS-Gen Issue 4
- ♦ 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 v02r02 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.

All modes and data rates and positions were investigated.

Test modes are chosen to be reported as the worst case configuration below:

Test Modes	
Band	Radiated TCs
GSM 850	■ GPRS class 8 Link
GSM 1900	■ GPRS class 8 Link

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

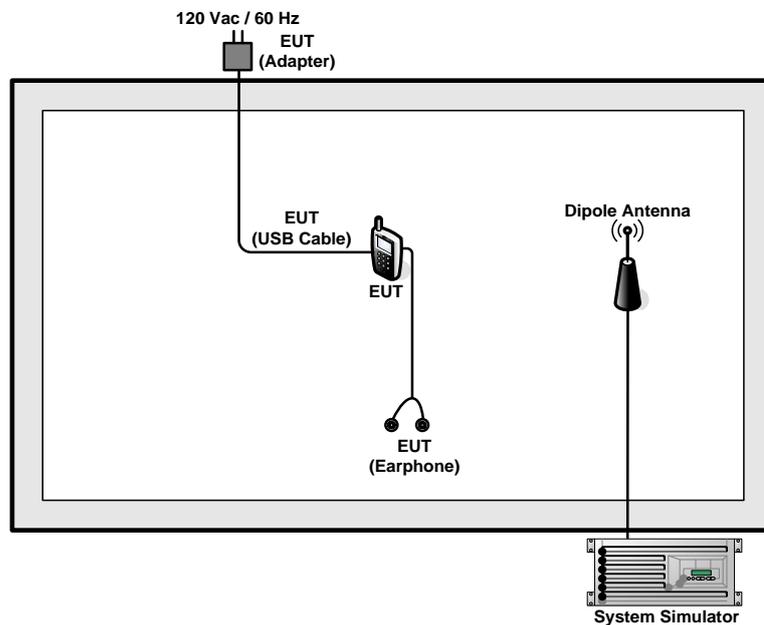
GPRS mode for GMSK modulation.

#### Conducted Power Measurement Results:

Conducted Power (*Unit: dBm)						
Band	GSM850 (GPRS class 8)			GSM1900 (GPRS class 8)		
Channel	128	189	251	512	661	810
Frequency	824.2	836.4	848.8	1850.2	1880.0	1909.8
GSM	32.36	32.40	32.44	29.52	29.39	29.36
GPRS class 8	32.37	32.41	32.45	29.53	29.40	29.37
GPRS class 10	30.55	30.56	30.64	26.69	26.52	26.45
GPRS class 11	29.60	29.61	29.66	25.60	25.40	25.34
GPRS class 12	28.42	28.43	28.45	24.79	24.46	24.42
EGPRS class 8	29.14	29.04	28.88	26.44	26.31	26.36
EGPRS class 10	28.23	28.11	27.94	25.47	25.34	25.39
EGPRS class 11	27.18	27.06	26.91	23.99	24.27	24.49
EGPRS class 12	26.14	26.00	25.81	22.91	23.17	23.48

Conducted Power	Burst Average Power (dBm)					
	Band	WCDMA Band V			WCDMA Band II	
Channel	4132	4182	4233	9262	9400	9538
Frequency (MHz)	826.4	836.4	846.6	1852.4	1880.0	1907.6
RMC 12.2K	23.97	23.99	23.98	22.44	22.48	22.43
HSDPA Subtest-1	22.98	22.98	22.95	21.47	21.49	21.48
HSDPA Subtest-2	22.99	22.98	22.96	21.47	21.48	21.46
HSDPA Subtest-3	22.42	22.45	22.46	20.97	20.99	20.94
HSDPA Subtest-4	22.49	22.45	22.48	20.91	20.95	20.93
HSUPA Subtest-1	21.01	21.03	21.03	19.53	19.55	19.51
HSUPA Subtest-2	20.95	20.94	20.91	19.43	19.48	19.45
HSUPA Subtest-3	21.96	21.99	21.94	20.48	20.46	20.45
HSUPA Subtest-4	20.50	20.52	20.46	19.11	19.05	19.02
HSUPA Subtest-5	22.97	22.99	22.96	21.44	21.44	21.42

## 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.

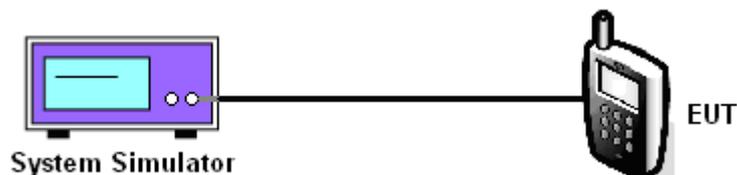
##### **3.1.2 Measuring Instruments**

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**





3.1.5 Test Result of Conducted Output Power

Cellular Band									
Modes	GSM850 (GPRS class 8)			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)	32.37	32.41	32.45	29.14	29.04	28.88	23.97	23.99	23.98

PCS Band									
Modes	GSM1900(GPRS class 8)			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)	29.53	29.40	29.37	26.44	26.31	26.36	22.44	22.48	22.43

**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

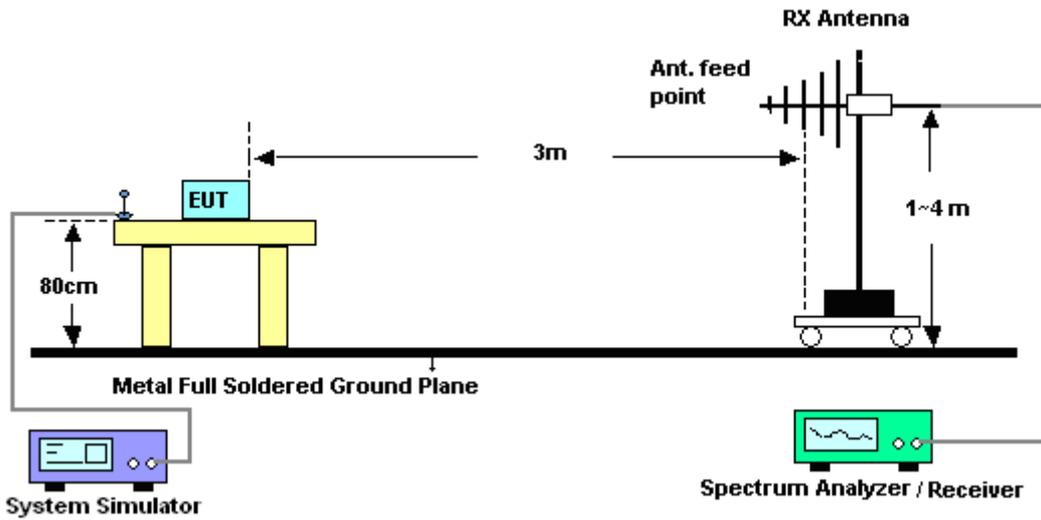
The measuring equipment is listed in the section 4 of this test report.

### 3.2.3 Test Procedures

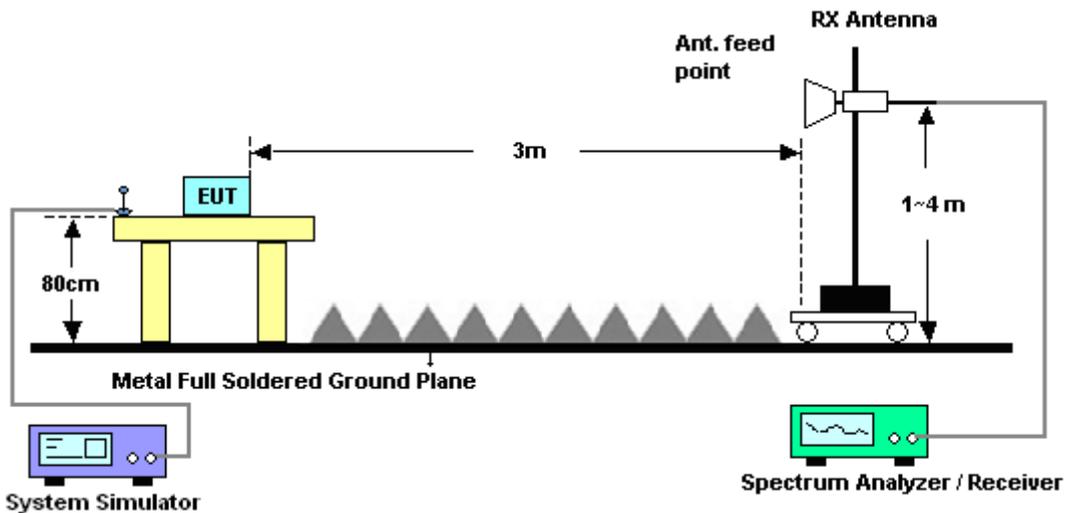
1. The testing follows FCC KDB 971168 v02r02 Section 5.8 and ANSI / TIA-603-C-2004 Section 2.2.12.
2. The EUT was placed on a rotatable wooden table 0.8 meters above the ground.
3. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
4. The table was rotated 360 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 for the maximum spurious emission for both horizontal and vertical polarizations.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking 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.  $EIRP \text{ (dBm)} = S.G. \text{ Power} - Tx \text{ Cable Loss} + Tx \text{ Antenna Gain}$
12.  $ERP \text{ (dBm)} = EIRP - 2.15$
13. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
14. The limit line is derived from  $43 + 10\log(P)$  dB below the transmitter power P(Watts)  
 $= P(W) - [43 + 10\log(P)] \text{ (dB)}$   
 $= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$   
 $= -13dBm.$

### 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>

<b>Band :</b>	GSM850				<b>Temperature :</b>	23~24°C			
<b>Test Mode :</b>	GPRS class 8 Link (GMSK)				<b>Relative Humidity :</b>	46~48%			
<b>Test Engineer :</b>	Nick Yu, Derreck Chen and Ken Wu				<b>Polarization :</b>	Horizontal			
<b>Remark :</b>	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
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 )	Result
1648	-49.14	-13	-36.14	-60.67	-50.9	0.98	4.89	H	Pass
2472	-45.42	-13	-32.42	-62.12	-47.3	1.28	5.32	H	Pass
3296	-47.09	-13	-34.09	-64.59	-50.5	1.54	7.10	H	Pass
4120	-49.86	-13	-36.86	-71.58	-54.5	1.83	8.62	H	Pass
4944	-53.37	-13	-40.37	-77.13	-58.5	2.30	9.59	H	Pass
5768	-48.22	-13	-35.22	-73.4	-53.1	2.78	9.81	H	Pass
6592	-34.26	-13	-21.26	-60.53	-39.7	2.72	10.31	H	Pass
7416	-45.47	-13	-32.47	-72.38	-52.5	2.46	11.63	H	Pass
8240	-42.68	-13	-29.68	-69.73	-50.5	2.32	12.29	H	Pass

<b>Band :</b>	GSM850				<b>Temperature :</b>	23~24°C			
<b>Test Mode :</b>	GPRS class 8 Link (GMSK)				<b>Relative Humidity :</b>	46~48%			
<b>Test Engineer :</b>	Nick Yu, Derreck Chen and Ken Wu				<b>Polarization :</b>	Vertical			
<b>Remark :</b>	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
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 )	Result
1648	-47.54	-13	-34.54	-59.64	-49.3	0.98	4.89	V	Pass
2472	-43.32	-13	-30.32	-61.54	-45.2	1.28	5.32	V	Pass
3296	-53.09	-13	-40.09	-72.18	-56.5	1.54	7.10	V	Pass
4120	-50.86	-13	-37.86	-73.44	-55.5	1.83	8.62	V	Pass
4944	-52.07	-13	-39.07	-76.72	-57.2	2.30	9.59	V	Pass
5768	-51.22	-13	-38.22	-77.14	-56.1	2.78	9.81	V	Pass
6592	-41.06	-13	-28.06	-68.04	-46.5	2.72	10.31	V	Pass
7416	-47.17	-13	-34.17	-75.81	-54.2	2.46	11.63	V	Pass
8240	-46.98	-13	-33.98	-76	-54.8	2.32	12.29	V	Pass



<Middle Channel>

<b>Band :</b>	GSM850				<b>Temperature :</b>	23~24°C			
<b>Test Mode :</b>	GPRS class 8 Link (GMSK)				<b>Relative Humidity :</b>	46~48%			
<b>Test Engineer :</b>	Nick Yu, Derreck Chen and Ken Wu				<b>Polarization :</b>	Horizontal			
<b>Remark :</b>	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
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 )	Result
1672	-51.22	-13	-38.22	-62.68	-52.9	0.99	4.82	H	Pass
2512	-38.53	-13	-25.53	-55.54	-40.5	1.29	5.41	H	Pass
3344	-49.99	-13	-36.99	-67.48	-53.6	1.56	7.31	H	Pass
4184	-48.58	-13	-35.58	-70.43	-53.2	1.87	8.64	H	Pass
5016	-53.30	-13	-40.30	-77.13	-58.5	2.35	9.70	H	Pass
5856	-45.24	-13	-32.24	-70.28	-50.1	2.83	9.84	H	Pass
6688	-34.22	-13	-21.22	-60.47	-39.8	2.69	10.43	H	Pass
7528	-48.65	-13	-35.65	-76.09	-55.9	2.42	11.82	H	Pass
8368	-39.40	-13	-26.40	-65.94	-47.3	2.35	12.39	H	Pass

<b>Band :</b>	GSM850				<b>Temperature :</b>	23~24°C			
<b>Test Mode :</b>	GPRS class 8 Link (GMSK)				<b>Relative Humidity :</b>	46~48%			
<b>Test Engineer :</b>	Nick Yu, Derreck Chen and Ken Wu				<b>Polarization :</b>	Vertical			
<b>Remark :</b>	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
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 )	Result
1672	-46.22	-13	-33.22	-58.5	-47.9	0.99	4.82	V	Pass
2512	-42.23	-13	-29.23	-60.59	-44.2	1.29	5.41	V	Pass
3344	-52.29	-13	-39.29	-71.79	-55.9	1.56	7.31	V	Pass
4184	-51.28	-13	-38.28	-73.47	-55.9	1.87	8.64	V	Pass
5016	-50.30	-13	-37.30	-74.72	-55.5	2.35	9.70	V	Pass
5856	-50.04	-13	-37.04	-76.15	-54.9	2.83	9.84	V	Pass
6688	-41.52	-13	-28.52	-68.55	-47.1	2.69	10.43	V	Pass
7528	-48.35	-13	-35.35	-76.98	-55.6	2.42	11.82	V	Pass
8368	-47.60	-13	-34.60	-76.35	-55.5	2.35	12.39	V	Pass



<High Channel>

<b>Band :</b>	GSM850		<b>Temperature :</b>	23~24°C					
<b>Test Mode :</b>	GPRS class 8 Link (GMSK)		<b>Relative Humidity :</b>	46~48%					
<b>Test Engineer :</b>	Nick Yu, Derreck Chen and Ken Wu		<b>Polarization :</b>	Horizontal					
<b>Remark :</b>	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
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 )	Result
1696	-50.80	-13	-37.80	-62.63	-52.4	1.00	4.75	H	Pass
2544	-45.12	-13	-32.12	-61.76	-47.1	1.30	5.44	H	Pass
3392	-53.50	-13	-40.50	-71.39	-57.3	1.57	7.52	H	Pass
4240	-47.90	-13	-34.90	-69.84	-52.5	1.90	8.65	H	Pass
5096	-48.34	-13	-35.34	-72.21	-53.5	2.39	9.70	H	Pass
5944	-43.75	-13	-30.75	-68.91	-48.6	2.88	9.88	H	Pass
6792	-31.36	-13	-18.36	-57.83	-37.1	2.66	10.55	H	Pass
7640	-49.25	-13	-36.25	-76.85	-56.6	2.38	11.88	H	Pass
8488	-39.93	-13	-26.93	-66.84	-47.9	2.37	12.49	H	Pass

<b>Band :</b>	GSM850		<b>Temperature :</b>	23~24°C					
<b>Test Mode :</b>	GPRS class 8 Link (GMSK)		<b>Relative Humidity :</b>	46~48%					
<b>Test Engineer :</b>	Nick Yu, Derreck Chen and Ken Wu		<b>Polarization :</b>	Vertical					
<b>Remark :</b>	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
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 )	Result
1696	-46.30	-13	-33.30	-58.72	-47.9	1.00	4.75	V	Pass
2544	-41.12	-13	-28.12	-59.71	-43.1	1.30	5.44	V	Pass
3392	-56.40	-13	-43.40	-75.68	-60.2	1.57	7.52	V	Pass
4240	-50.50	-13	-37.50	-72.91	-55.1	1.90	8.65	V	Pass
5096	-47.54	-13	-34.54	-72.28	-52.7	2.39	9.70	V	Pass
5944	-49.65	-13	-36.65	-75.77	-54.5	2.88	9.88	V	Pass
6792	-38.16	-13	-25.16	-66.02	-43.9	2.66	10.55	V	Pass
7640	-42.65	-13	-29.65	-74.98	-50	2.38	11.88	V	Pass
8488	-48.33	-13	-35.33	-77.19	-56.3	2.37	12.49	V	Pass



<Low Channel>

<b>Band :</b>	GSM1900			<b>Temperature :</b>	23~24°C				
<b>Test Mode :</b>	GPRS class 8 Link (GMSK)			<b>Relative Humidity :</b>	46~48%				
<b>Test Engineer :</b>	Nick Yu, Derreck Chen and Ken Wu			<b>Polarization :</b>	Horizontal				
<b>Remark :</b>	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
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 )	Result
3700	-43.63	-13	-30.63	-62.95	-50.2	1.67	8.24	H	Pass
5548	-38.03	-13	-25.03	-62.65	-45.1	2.65	9.72	H	Pass
7403	-44.05	-13	-31.05	-70.69	-53.2	2.46	11.61	H	Pass
9251	-38.14	-13	-25.14	-65.36	-48.2	2.54	12.60	H	Pass
11102	-37.13	-13	-24.13	-68.78	-46.9	2.69	12.46	H	Pass
12954	-42.77	-13	-29.77	-77.03	-52.8	2.92	12.94	H	Pass

<b>Band :</b>	GSM1900			<b>Temperature :</b>	23~24°C				
<b>Test Mode :</b>	GPRS class 8 Link (GMSK)			<b>Relative Humidity :</b>	46~48%				
<b>Test Engineer :</b>	Nick Yu, Derreck Chen and Ken Wu			<b>Polarization :</b>	Vertical				
<b>Remark :</b>	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
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 )	Result
3700	-45.73	-13	-32.73	-66.02	-52.3	1.67	8.24	V	Pass
5548	-38.73	-13	-25.73	-64.85	-45.8	2.65	9.72	V	Pass
7403	-38.05	-13	-25.05	-66.39	-47.2	2.46	11.61	V	Pass
9251	-45.54	-13	-32.54	-75.4	-55.6	2.54	12.60	V	Pass
11102	-38.33	-13	-25.33	-71.75	-48.1	2.69	12.46	V	Pass
12954	-41.47	-13	-28.47	-77.33	-51.5	2.92	12.94	V	Pass



<Middle Channel>

<b>Band :</b>	GSM1900		<b>Temperature :</b>	23~24°C					
<b>Test Mode :</b>	GPRS class 8 Link (GMSK)		<b>Relative Humidity :</b>	46~48%					
<b>Test Engineer :</b>	Nick Yu, Derreck Chen and Ken Wu		<b>Polarization :</b>	Horizontal					
<b>Remark :</b>	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
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 )	Result
3756	-39.18	-13	-26.18	-58.63	-45.8	1.68	8.31	H	Pass
5639	-35.25	-13	-22.25	-60.37	-42.3	2.71	9.76	H	Pass
7522	-42.51	-13	-29.51	-69.75	-51.9	2.42	11.81	H	Pass
9398	-37.23	-13	-24.23	-64.63	-47.2	2.57	12.54	H	Pass
11282	-38.80	-13	-25.80	-70.79	-48.5	2.68	12.39	H	Pass
13163	-42.04	-13	-29.04	-75.75	-52.3	2.97	13.23	H	Pass

<b>Band :</b>	GSM1900		<b>Temperature :</b>	23~24°C					
<b>Test Mode :</b>	GPRS class 8 Link (GMSK)		<b>Relative Humidity :</b>	46~48%					
<b>Test Engineer :</b>	Nick Yu, Derreck Chen and Ken Wu		<b>Polarization :</b>	Vertical					
<b>Remark :</b>	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
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 )	Result
3756	-39.28	-13	-26.28	-60.24	-45.9	1.68	8.31	V	Pass
5639	-34.05	-13	-21.05	-60.45	-41.1	2.71	9.76	V	Pass
7522	-39.51	-13	-26.51	-68.71	-48.9	2.42	11.81	V	Pass
9398	-41.23	-13	-28.23	-71.4	-51.2	2.57	12.54	V	Pass
11282	-38.80	-13	-25.80	-70.79	-48.5	2.68	12.39	V	Pass
13163	-41.94	-13	-28.94	-75.75	-52.2	2.97	13.23	V	Pass



<High Channel>

<b>Band :</b>	GSM1900	<b>Temperature :</b>	23~24°C						
<b>Test Mode :</b>	GPRS class 8 Link (GMSK)	<b>Relative Humidity :</b>	46~48%						
<b>Test Engineer :</b>	Nick Yu, Derreck Chen and Ken Wu	<b>Polarization :</b>	Horizontal						
<b>Remark :</b>	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
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 )	Result
3819	-37.52	-13	-24.52	-58.63	-44.2	1.70	8.38	H	Pass
5730	-36.27	-13	-23.27	-61.3	-43.3	2.76	9.79	H	Pass
7641	-42.80	-13	-29.80	-70.62	-52.3	2.38	11.88	H	Pass
9552	-37.93	-13	-24.93	-65.63	-47.8	2.60	12.47	H	Pass
11453	-37.86	-13	-24.86	-70.17	-47.5	2.68	12.32	H	Pass

<b>Band :</b>	GSM1900	<b>Temperature :</b>	23~24°C						
<b>Test Mode :</b>	GPRS class 8 Link (GMSK)	<b>Relative Humidity :</b>	46~48%						
<b>Test Engineer :</b>	Nick Yu, Derreck Chen and Ken Wu	<b>Polarization :</b>	Vertical						
<b>Remark :</b>	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.								
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 )	Result
3819	-39.92	-13	-26.92	-61.4	-46.6	1.70	8.38	V	Pass
5730	-35.37	-13	-22.37	-61.61	-42.4	2.76	9.79	V	Pass
7641	-38.10	-13	-25.10	-67.38	-47.6	2.38	11.88	V	Pass
9552	-38.73	-13	-25.73	-69.03	-48.6	2.60	12.47	V	Pass
11453	-32.16	-13	-19.16	-67.28	-41.8	2.68	12.32	V	Pass
13372	-41.80	-13	-28.80	-77.31	-52.3	3.02	13.52	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	Jul. 29, 2014	Feb. 05, 2015	Jul. 28, 2015	Conducted (TH02-HY)
Hygrometer	Testo	608-H1	34893241	N/A	May. 06, 2014	Feb. 05, 2015	May. 05, 2015	Conducted (TH02-HY)
RF cable	WOKEN	S05	S05-130708-2 2	N/A	Jan. 21, 2015	Feb. 05, 2015	Jan. 20, 2016	Conducted (TH02-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV30	101749	10Hz ~ 30GHz	Feb. 10, 2014	Jan. 27, 2015	Feb. 09, 2015	Radiation (03CH07-HY)
Bilog Antenna	Schaffner	CBL6111C	2726	30MHz ~ 1GHz	Sep. 27, 2014	Jan. 27, 2015	Sep. 26, 2015	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	75962	1GHz~18GHz	Aug. 19, 2014	Jan. 27, 2015	Aug. 18, 2015	Radiation (03CH07-HY)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170584	18GHz- 40GHz	Nov. 03, 2014	Jan. 27, 2015	Nov. 02, 2015	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10 MHz ~ 1000MHz	Mar. 17, 2014	Jan. 27, 2015	Mar. 16, 2015	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1 GHz~26.5 GHz	Oct. 21, 2014	Jan. 27, 2015	Oct. 20, 2015	Radiation (03CH07-HY)
Preamplifier	MITEQ	JS44-18004 000-33-8P	1840917	18GHz ~ 40GHz	Jun. 09, 2014	Jan. 27, 2015	Jun. 08, 2015	Radiation (03CH07-HY)
Turn Table	ChainTek	ChainTek 3000	N/A	0 ~ 360 degree	N/A	Jan. 27, 2015	N/A	Radiation (03CH07-HY)
Antenna Mast	Max-Full	MFA520BS	N/A	1m~4m	N/A	Jan. 27, 2015	N/A	Radiation (03CH07-HY)
Controller	ChainTek	Chaintek 3000	N/A	Control Turn table	N/A	Jan. 27, 2015	N/A	Radiation (03CH07-HY)
Controller	Max-Full	MF7802	MF780208368	Control Ant Mast	N/A	Jan. 27, 2015	N/A	Radiation (03CH07-HY)
Hygrometer	Testo	608-H1	34897197	N/A	May 06, 2014	Jan. 27, 2015	May 05, 2015	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY84209521	1GHz~40GHz	Dec. 04, 2014	Jan. 27, 2015	Dec. 03, 2015	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY84209521	9KHz~1GHz	Dec. 04, 2014	Jan. 27, 2015	Dec. 03, 2015	Radiation (03CH07-HY)



Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Notch Filter	Wainwright	WRCG 824/849/814 /859-40 8SS	SN35	GSM850 / WCDMA 850	Oct. 01, 2014	Jan. 27, 2015	Sep. 30, 2015	Radiation (03CH07-HY)
Notch Filter	Wainwright	WRCT1850/ 1910-40/8S S	SN21	1900	Oct. 01, 2014	Jan. 27, 2015	Sep. 30, 2015	Radiation (03CH07-HY)
Filter	Microwave Circuits	H1G013G1	SN477215	1GHz HPF	Oct. 01, 2014	Jan. 27, 2015	Sep. 30, 2015	Radiation (03CH07-HY)
Filter	Wainwright Instruments GmbH	WLKS1200- 8SS	SN3	1.2GHz LPF	Oct. 01, 2014	Jan. 27, 2015	Sep. 30, 2015	Radiation (03CH07-HY)
Filter	Microwave Circuits	H3G018G1	SN477220	3GHz HPF	Oct. 01, 2014	Jan. 27, 2015	Sep. 30, 2015	Radiation (03CH07-HY)
Test Software	Audix	E3	Version 6.2009-08-24	N/A	N/A	Jan. 27, 2015	N/A	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
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