



# Partial FCC/IC RF Test Report

**APPLICANT** : Sony Mobile Communications AB  
**EQUIPMENT** : Smart phone  
**BRAND NAME** : SONY  
**MODEL NAME** : D2114  
**TYPE NAME** : PM-0674-BV  
**FCC ID** : PY7PM-0674  
**IC** : 4170B-PM0674  
**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 Conducted Output Power and Field Strength of Spurious Radiation test items. The product was received on Oct. 31, 2013 and testing was completed on Nov. 10, 2013. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI / TIA / EIA-603-C-2004 and shown to be compliant 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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FCC ID : PY7PM-0674

IC : 4170B-PM0674

Page Number : 1 of 30

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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	N/A	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 20.57 dB at 5640.000 MHz



# 1 General Description

## 1.1 Applicant

Sony Mobile Communications AB  
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 Feature of Equipment Under Test

Product Feature	
Equipment	Smart phone
Brand Name	SONY
Model Name	D2114
Type Name	PM-0674-BV
FCC ID	PY7PM-0674
IC	4170B-PM0674
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 / V
WCDMA Rel. Version	Rel. 7
Wi-Fi Specification	802.11b/g/n (HT20)
Bluetooth Version	v3.0+EDR / v4.0-LE
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 Details of Tested Sample (EUT) Information

Product Specification subjective to this Test Standard	
<b>Transmitter Frequency Range</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>Receiver Frequency Range</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 : 32.99 dBm GSM1900 : 30.98 dBm WCDMA Band V : 23.99 dBm WCDMA Band II : 23.35 dBm
<b>Antenna Type</b>	PIFA Antenna
<b>Type of Modulation</b>	GSM: GMSK GPRS: GMSK EDGE: GMSK / 8PSK WCDMA: QPSK (Uplink) HSDPA: QPSK (Uplink) HSUPA: QPSK (Uplink)
<b>EUT Serial Number</b>	IMEI 1: 004402147060630 IMEI 2: 004402147006648 S/N : WUJ016MQBE
<b>H/W</b>	A
<b>S/W</b>	20.0.B.0.9
<b>EUT Stage</b>	Production Unit

Accessory List	
<b>AC Adapter</b>	Model No. : EP800
	Type No. : CAA-0002016-US B
<b>Battery</b>	Model No. : BA900
	Type No. : AB-0500
<b>Earphone</b>	Model No. : MH410c
	Type No. : AG-1100
<b>USB Cable</b>	Model No. : EC450
	Part No. : 1242.6715.3 12W46

**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, and the serial number of each type of accessories is listed in each section of this report.
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 Site

<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 Hsiang, Tao Yuan Hsien, 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>FCC/IC Registration No.</b>
	TH02-HY	03CH07-HY	722060/4086B-1



## **1.7 Applied Standards**

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

- ♦ FCC 47 CFR Part 2, 22(H), 24(E)
- ♦ 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-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

- a. Preliminary tests were performed in different radio applications and recorded the RF output power in the following table:

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		32.97	32.99	32.87	30.98	30.96	30.78
GPRS Class 8		32.96	32.98	32.86	30.97	30.95	30.82
GPRS Class 10		29.91	29.94	29.90	27.96	27.85	27.64
GPRS Class 11		28.15	28.16	28.08	26.19	26.05	25.93
GPRS Class 33		26.89	26.93	26.85	24.96	24.80	24.62
EGPRS Class 8		27.18	27.24	27.15	27.18	27.01	26.86
EGPRS Class 10		25.35	25.42	25.30	24.44	24.35	24.20
EGPRS Class 11		23.44	23.50	23.39	22.59	22.38	22.20
EGPRS Class 33		22.28	22.32	22.21	21.48	21.35	21.20
DTM 5	GSM (GMSK, 1 Tx slot)	29.90	29.92	29.88	27.99	27.82	27.62
	GPRS (GMSK, 1 Tx slot)	29.80	29.78	29.81	27.81	27.63	27.40
DTM 9	GSM (GMSK, 1 Tx slot)	29.83	29.88	29.76	27.96	27.87	27.63
	GPRS (GMSK, 1 Tx slot)	29.76	29.75	29.74	27.84	27.66	27.42
DTM 11	GSM (GMSK, 1 Tx slot)	28.14	28.16	28.09	26.19	26.09	25.89
	GPRS (GMSK, 2 Tx slots)	28.05	28.06	27.98	25.95	25.79	25.56
DTM 5	GSM (GMSK, 1 Tx slot)	29.84	29.87	29.82	27.87	27.71	27.46
	EDGE (8PSK, 1 Tx slot)	25.32	25.30	25.33	24.41	24.26	24.16
DTM 9	GSM (GMSK, 1 Tx slot)	29.87	29.91	29.81	27.92	27.88	27.67
	EDGE (8PSK, 1 Tx slot)	25.23	25.22	25.26	24.33	24.14	23.97
DTM 11	GSM (GMSK, 1 Tx slot)	28.11	28.12	28.04	26.02	25.81	25.65
	EDGE (8PSK, 2 Tx slots)	23.42	23.40	23.42	22.38	22.18	22.02



Conducted Power (*Unit: dBm)						
Band	WCDMA Band V			WCDMA Band II		
Channel	4132	4182	4233	9262	9400	9538
Frequency	826.4	836.4	846.6	1852.4	1880.0	1907.6
RMC 12.2K	23.99	23.92	23.94	23.29	23.35	23.28
HSDPA Subtest-1	22.63	22.43	22.55	21.96	22.18	22.03
HSDPA Subtest-2	22.66	22.45	22.54	21.93	22.14	22.02
HSDPA Subtest-3	22.62	22.47	22.50	21.92	22.12	21.89
HSDPA Subtest-4	22.58	22.48	22.53	21.91	22.11	21.99
HSUPA Subtest-1	22.81	22.66	22.76	22.45	22.08	22.10
HSUPA Subtest-2	22.07	21.49	21.84	20.91	21.59	20.90
HSUPA Subtest-3	21.75	21.61	21.66	20.96	21.34	21.41
HSUPA Subtest-4	22.46	22.33	22.38	21.93	22.13	21.93
HSUPA Subtest-5	22.93	22.78	22.82	22.37	22.54	22.28



- b. During all testing, EUT was in link mode with base station emulator at maximum power level. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range, and the EUT was rotated on three test axes planes to find out the worst emission.

Frequency range investigated for radiated emission is as follows:

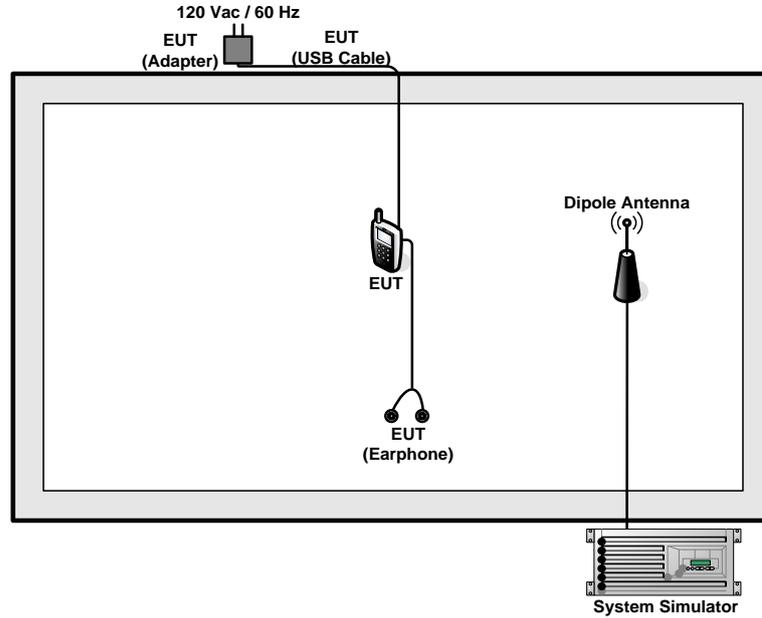
- 1. 30 MHz to 9000 MHz for GSM850.
- 2. 30 MHz to 19000 MHz for GSM1900.

Test Modes	
Band	Radiated TCs
GSM 850	■ GSM Link + SIM 2
GSM 1900	■ GSM Link + SIM 2

**Note:**

- 1. The maximum power levels of GSM mode is chosen for radiated test. All of all modes evaluated in report are demonstrated in compliance with FCC test standard.
- 2. Because there are individual antennas for each WWAN, WLAN, and Bluetooth, the co-location test modes are not required.

## 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.	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 base station simulator was used to establish communication with the EUT. Its parameters were set to transmit the maximum power on the EUT. The measured power in the radio frequency on the transmitter output terminals shall be reported.

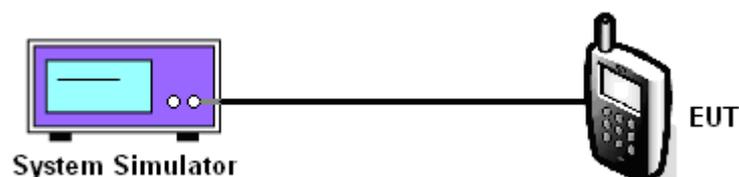
##### 3.1.2 Measuring Instruments

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 base station.
2. Set EUT at maximum power through base station.
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 (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)	32.97	32.99	32.87	27.18	27.24	27.15	23.99	23.92	23.94
Conducted Power (Watts)	1.98	1.99	1.94	0.52	0.53	0.52	0.25	0.25	0.25

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)	30.98	30.96	30.78	27.18	27.01	26.86	23.29	23.35	23.28
Conducted Power (Watts)	1.25	1.25	1.20	0.52	0.50	0.49	0.21	0.22	0.21

**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

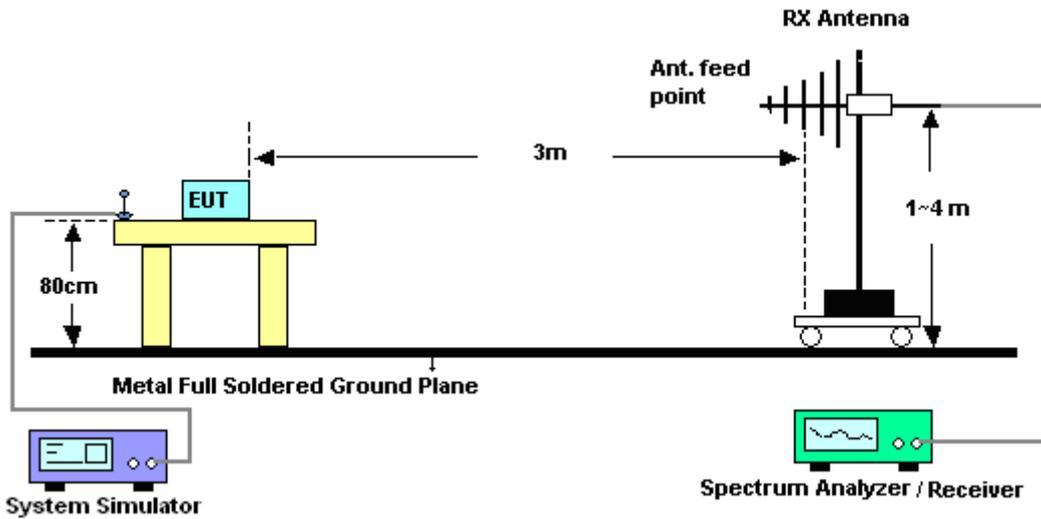
The measuring equipment is listed in the section 4 of this test report.

### 3.2.3 Test Procedures

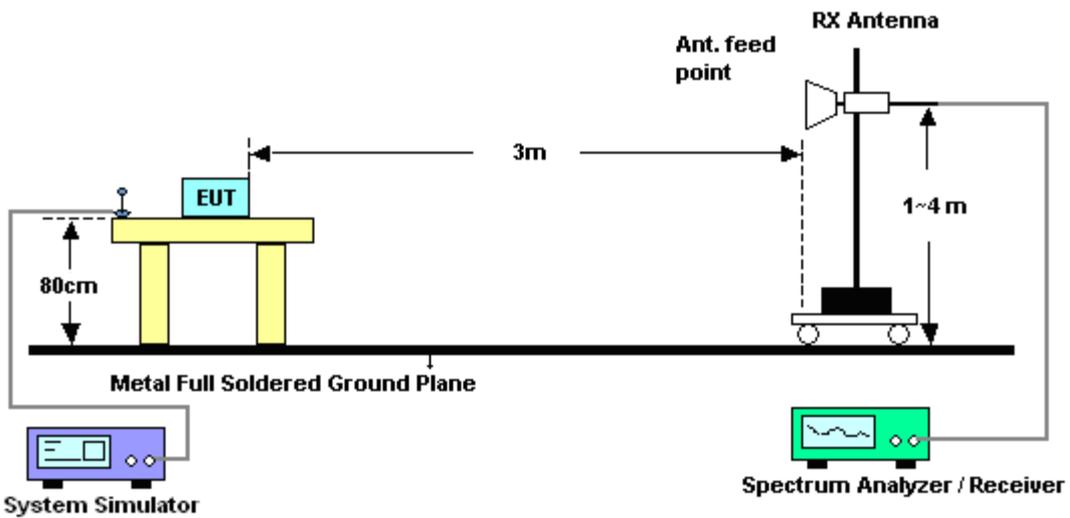
1. The EUT was placed on a rotatable wooden table with 0.8 meter above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving 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.
11. 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)  
 $= -13\text{dBm}$ .
12. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
13. ERP (dBm) = EIRP - 2.15

### 3.2.4 Test Setup

For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz

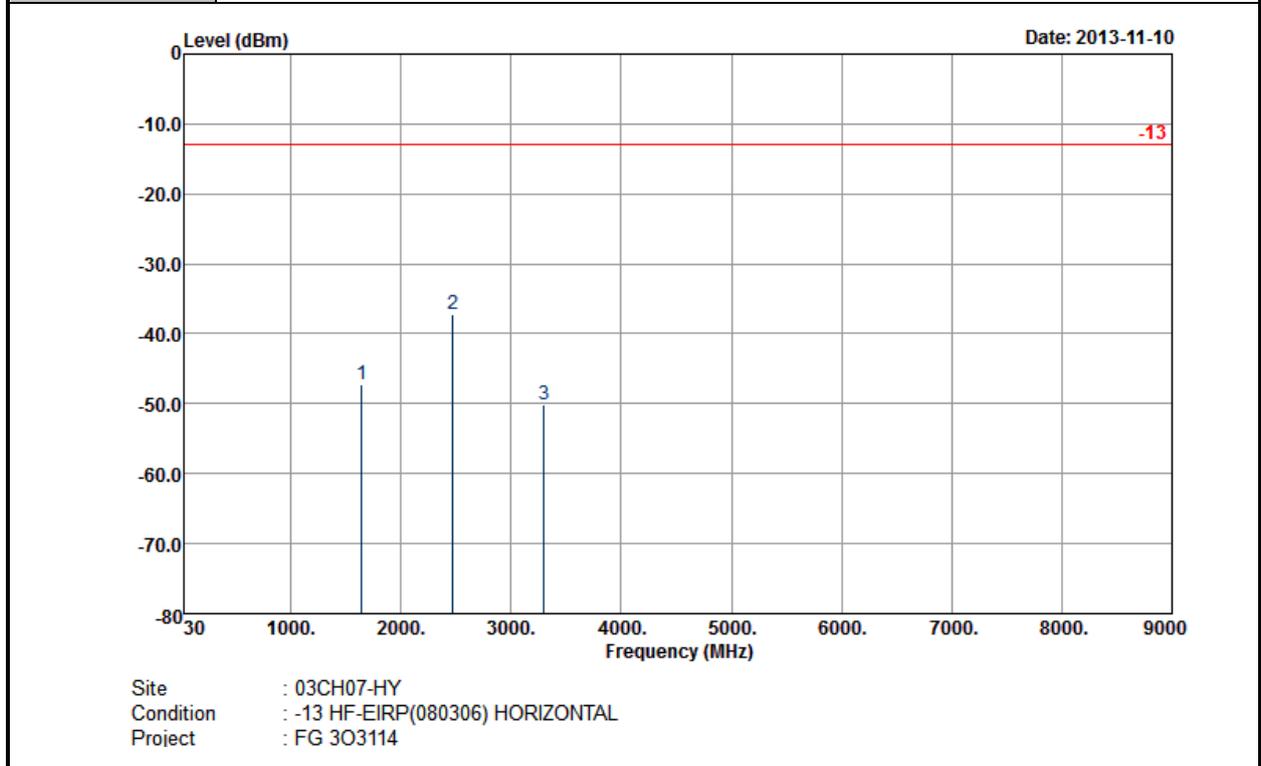




3.2.5 Test Result of Field Strength of Spurious Radiated

<Low Channel>

Band :	GSM850	Temperature :	23~26°C
Test Mode :	GSM Link (GMSK) + SIM 2	Relative Humidity :	51~53%
Channel :	128	Polarization :	Horizontal
Test Engineer :	Stan Hsieh		
Remark :	1. Spurious emissions within 30-1000MHz were found more than 20dB below limit line. 2. The harmonic (5 <sup>th</sup> , 6 <sup>th</sup> , 7 <sup>th</sup> ,...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise.		

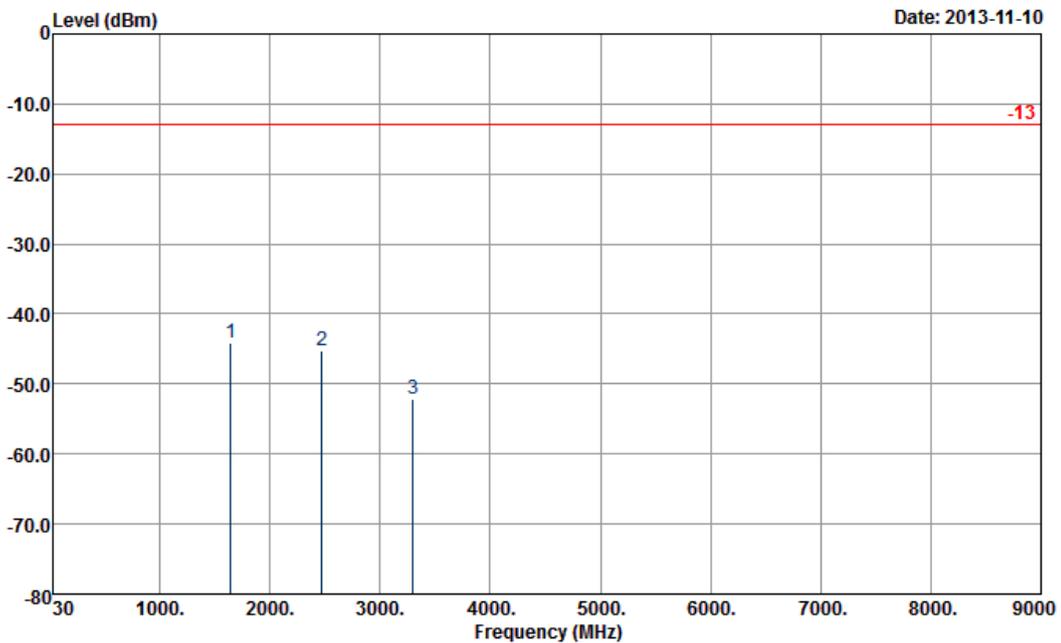


Frequency ( MHz )	ERP ( dBm )	Limit ( dBm )	Over Limit ( dB )	SPA Reading ( dBm )	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain ( dBi )	Polarization ( H/V )	Result
1648	-47.23	-13	-34.23	-55.97	-51.23	1.53	5.53	H	Pass
2473	-37.19	-13	-24.19	-50.26	-41.28	2.06	6.15	H	Pass
3298	-50.03	-13	-37.03	-64.14	-55.48	2.48	7.93	H	Pass

Other harmonics are lower than background noise



<b>Band :</b>	GSM850	<b>Temperature :</b>	23~26°C
<b>Test Mode :</b>	GSM Link (GMSK) + SIM 2	<b>Relative Humidity :</b>	51~53%
<b>Channel :</b>	128	<b>Polarization :</b>	Vertical
<b>Test Engineer :</b>	Stan Hsieh		
<b>Remark :</b>	1. Spurious emissions within 30-1000MHz were found more than 20dB below limit line. 2. The harmonic (5 <sup>th</sup> , 6 <sup>th</sup> , 7 <sup>th</sup> ,...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise.		



Site : 03CH07-HY  
 Condition : -13 HF-EIRP(080306) VERTICAL  
 Project : FG 303114

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	-44.19	-13	-31.19	-55.27	-48.19	1.53	5.53	V	Pass
2473	-45.25	-13	-32.25	-58.72	-49.34	2.06	6.15	V	Pass
3298	-52.24	-13	-39.24	-67.67	-57.69	2.48	7.93	V	Pass

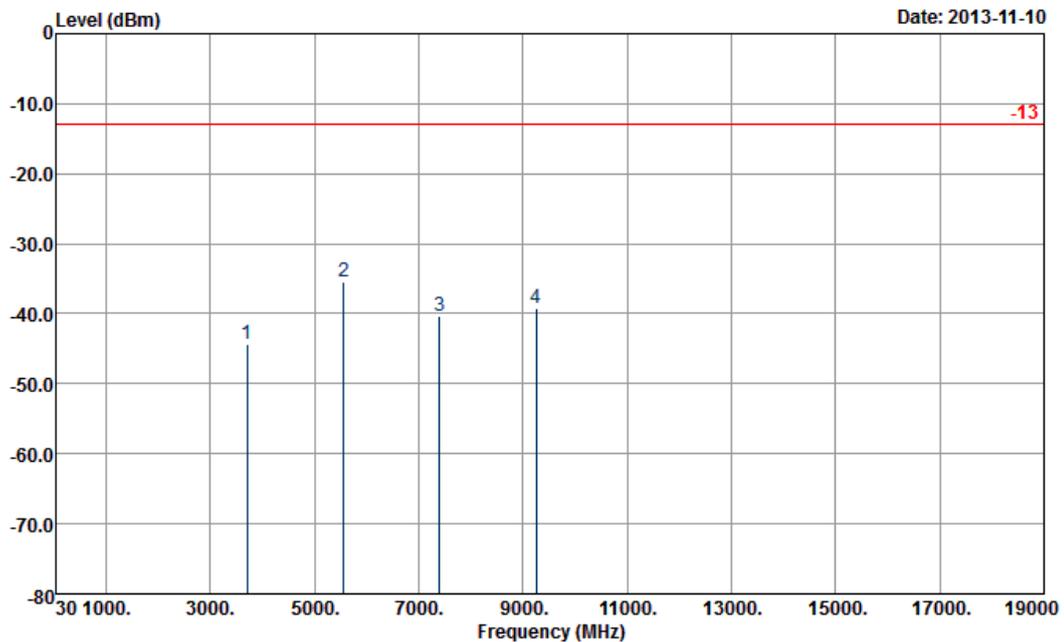
Other harmonics are lower than background noise



<b>Band :</b>	GSM1900	<b>Temperature :</b>	23~26°C
<b>Test Mode :</b>	GSM Link (GMSK) + SIM 2	<b>Relative Humidity :</b>	51~53%
<b>Channel :</b>	512	<b>Polarization :</b>	Horizontal
<b>Test Engineer :</b>	Stan Hsieh		

**Remark :**

- Spurious emissions within 30-1000MHz were found more than 20dB below limit line.
- The harmonic (6<sup>th</sup>, 7<sup>th</sup>, 8<sup>th</sup>,...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise.



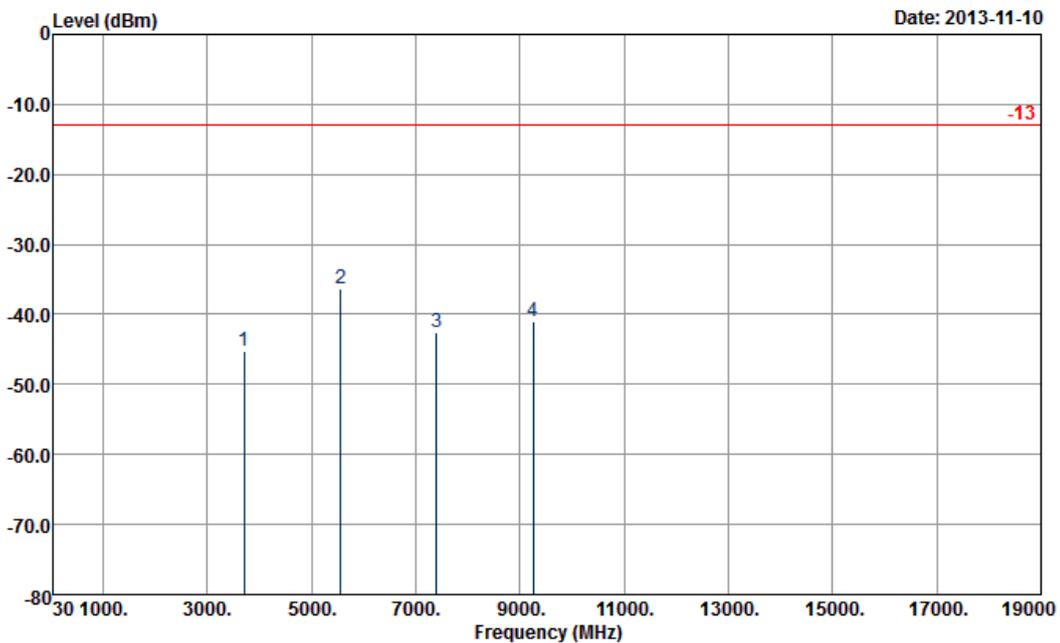
Site : 03CH07-HY  
 Condition : -13 HF-EIRP(080306) HORIZONTAL  
 Project : FG 303114

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	-44.32	-13	-31.32	-59.61	-50.47	2.59	8.74	H	Pass
5552	-35.49	-13	-22.49	-55.95	-43.15	3.04	10.70	H	Pass
7400	-40.29	-13	-27.29	-67.56	-49.03	3.28	12.02	H	Pass
9252	-39.29	-13	-26.29	-65.8	-48.59	3.9	13.20	H	Pass

Other harmonics are lower than background noise



<b>Band :</b>	GSM1900	<b>Temperature :</b>	23~26°C
<b>Test Mode :</b>	GSM Link (GMSK) + SIM 2	<b>Relative Humidity :</b>	51~53%
<b>Channel :</b>	512	<b>Polarization :</b>	Vertical
<b>Test Engineer :</b>	Stan Hsieh		
<b>Remark :</b>	1. Spurious emissions within 30-1000MHz were found more than 20dB below limit line. 2. The harmonic (6 <sup>th</sup> , 7 <sup>th</sup> , 8 <sup>th</sup> ,...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise.		



Site : 03CH07-HY  
 Condition : -13 HF-EIRP(080306) VERTICAL  
 Project : FG 303114

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	-45.23	-13	-32.23	-61.77	-51.38	2.59	8.74	V	Pass
5552	-36.23	-13	-23.23	-56.42	-43.89	3.04	10.70	V	Pass
7400	-42.50	-13	-29.50	-69.49	-51.24	3.28	12.02	V	Pass
9252	-41.11	-13	-28.11	-67.18	-50.41	3.9	13.20	V	Pass

Other harmonics are lower than background noise

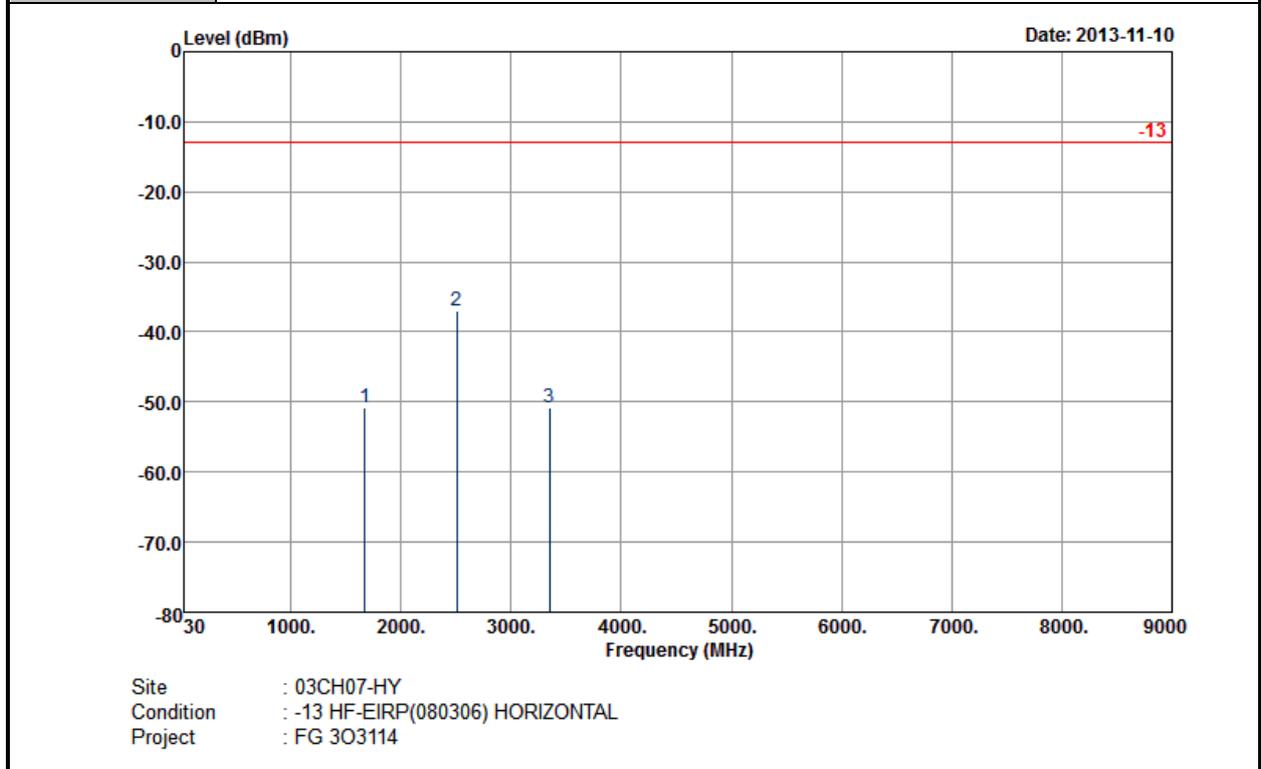


<Middle Channel>

Band :	GSM850	Temperature :	23~26°C
Test Mode :	GSM Link (GMSK) + SIM 2	Relative Humidity :	51~53%
Channel :	189	Polarization :	Horizontal
Test Engineer :	Stan Hsieh		

**Remark :**

- Spurious emissions within 30-1000MHz were found more than 20dB below limit line.
- The harmonic (5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup>,...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise.



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	-50.76	-13	-37.76	-59.65	-54.63	1.62	5.49	H	Pass
2509	-36.89	-13	-23.89	-50.09	-41.01	2.1	6.22	H	Pass
3346	-50.83	-13	-37.83	-64.82	-55.87	3.03	8.07	H	Pass

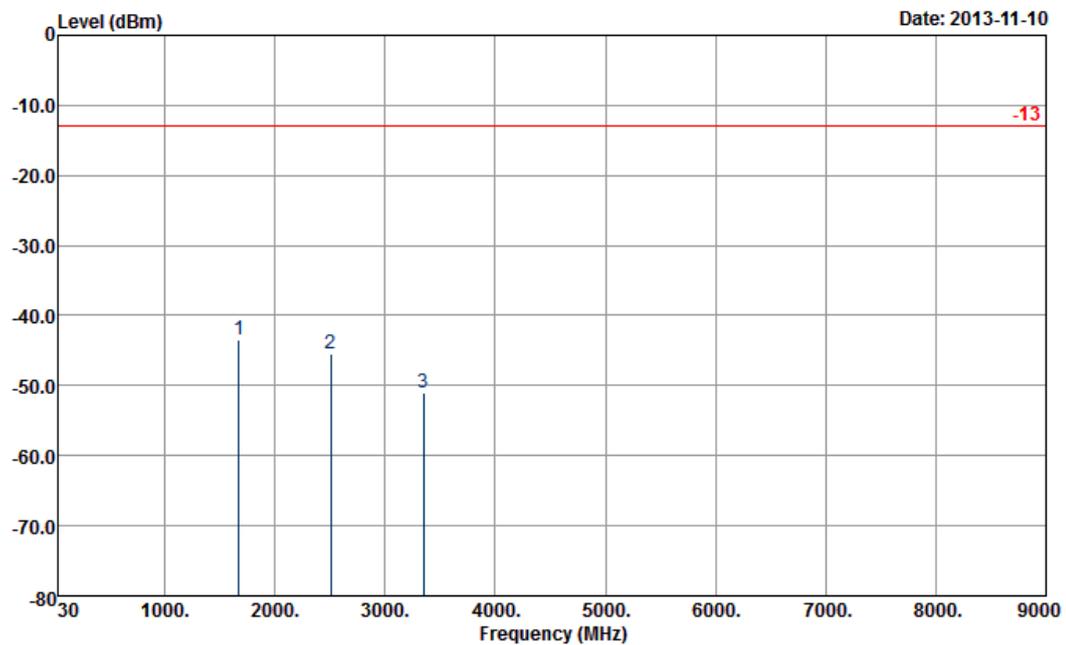
Other harmonics are lower than background noise



<b>Band :</b>	GSM850	<b>Temperature :</b>	23~26°C
<b>Test Mode :</b>	GSM Link (GMSK) + SIM 2	<b>Relative Humidity :</b>	51~53%
<b>Channel :</b>	189	<b>Polarization :</b>	Vertical
<b>Test Engineer :</b>	Stan Hsieh		

**Remark :**

- Spurious emissions within 30-1000MHz were found more than 20dB below limit line.
- The harmonic (5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup>,...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise.



Site : 03CH07-HY  
 Condition : -13 HF-EIRP(080306) VERTICAL  
 Project : FG 303114

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	-43.36	-13	-30.36	-54.63	-47.23	1.62	5.49	V	Pass
2509	-45.56	-13	-32.56	-59.27	-49.68	2.1	6.22	V	Pass
3346	-51.11	-13	-38.11	-66.63	-56.15	3.03	8.07	V	Pass

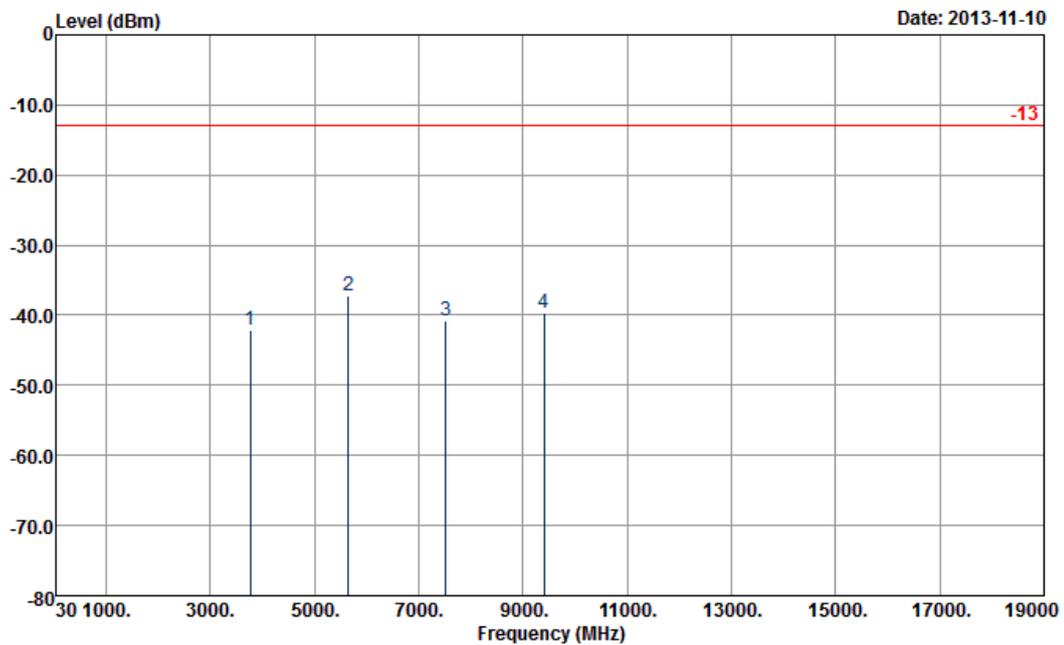
Other harmonics are lower than background noise



<b>Band :</b>	GSM1900	<b>Temperature :</b>	23~26°C
<b>Test Mode :</b>	GSM Link (GMSK) + SIM 2	<b>Relative Humidity :</b>	51~53%
<b>Channel :</b>	661	<b>Polarization :</b>	Horizontal
<b>Test Engineer :</b>	Stan Hsieh		

**Remark :**

- Spurious emissions within 30-1000MHz were found more than 20dB below limit line.
- The harmonic (6<sup>th</sup>, 7<sup>th</sup>, 8<sup>th</sup>,...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise.



Site : 03CH07-HY  
 Condition : -13 HF-EIRP(080306) HORIZONTAL  
 Project : FG 303114

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
3760	-42.09	-13	-29.09	-57.48	-48.39	2.51	8.81	H	Pass
5640	-37.30	-13	-24.30	-58.13	-45.01	2.99	10.70	H	Pass
7520	-40.72	-13	-27.72	-67.87	-49.25	3.59	12.12	H	Pass
9400	-39.66	-13	-26.66	-66.18	-48.76	4.1	13.20	H	Pass

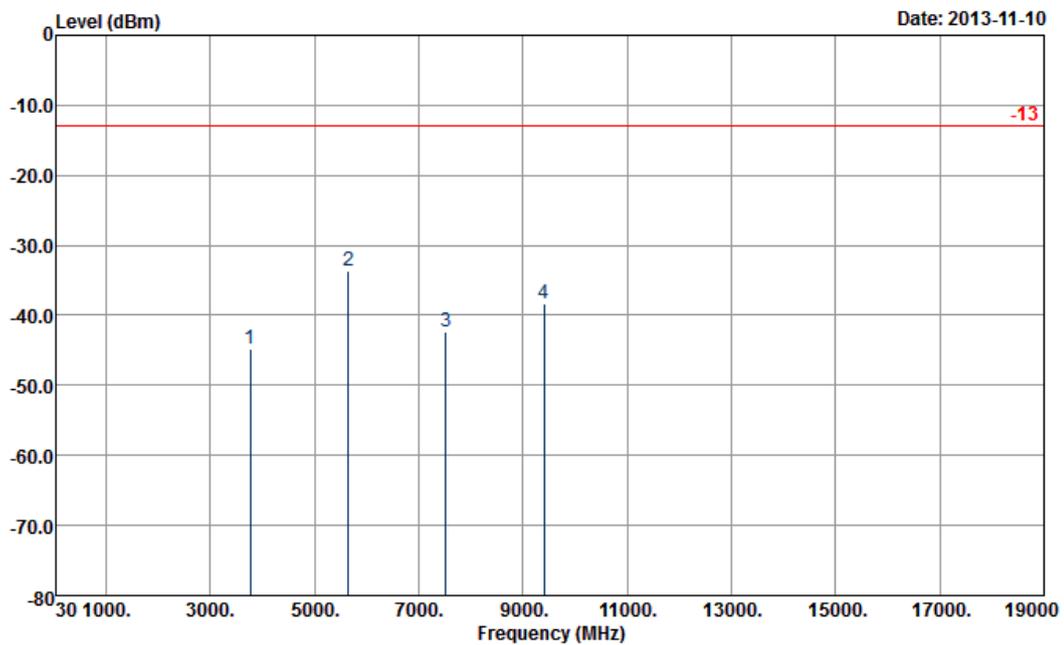
Other harmonics are lower than background noise



<b>Band :</b>	GSM1900	<b>Temperature :</b>	23~26°C
<b>Test Mode :</b>	GSM Link (GMSK) + SIM 2	<b>Relative Humidity :</b>	51~53%
<b>Channel :</b>	661	<b>Polarization :</b>	Vertical
<b>Test Engineer :</b>	Stan Hsieh		

**Remark :**

- Spurious emissions within 30-1000MHz were found more than 20dB below limit line.
- The harmonic (6<sup>th</sup>, 7<sup>th</sup>, 8<sup>h</sup>,...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise.



Site : 03CH07-HY  
 Condition : -13 HF-EIRP(080306) VERTICAL  
 Project : FG 303114

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
3760	-44.88	-13	-31.88	-61.15	-51.18	2.51	8.81	V	Pass
5640	-33.57	-13	-20.57	-54.21	-41.28	2.99	10.70	V	Pass
7520	-42.34	-13	-29.34	-69.3	-50.87	3.59	12.12	V	Pass
9400	-38.42	-13	-25.42	-64.85	-47.52	4.1	13.20	V	Pass

Other harmonics are lower than background noise

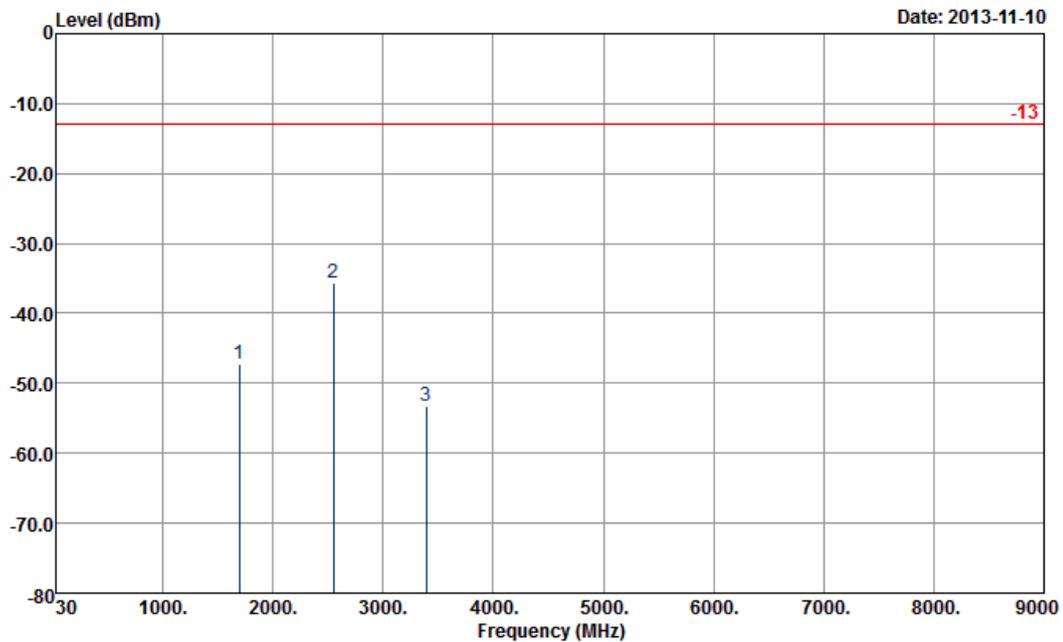


<High Channel>

Band :	GSM850	Temperature :	23~26°C
Test Mode :	GSM Link (GMSK) + SIM 2	Relative Humidity :	51~53%
Channel :	251	Polarization :	Horizontal
Test Engineer :	Eric Shih		

**Remark :**

- Spurious emissions within 30-1000MHz were found more than 20dB below limit line.
- The harmonic (5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup>,...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise.



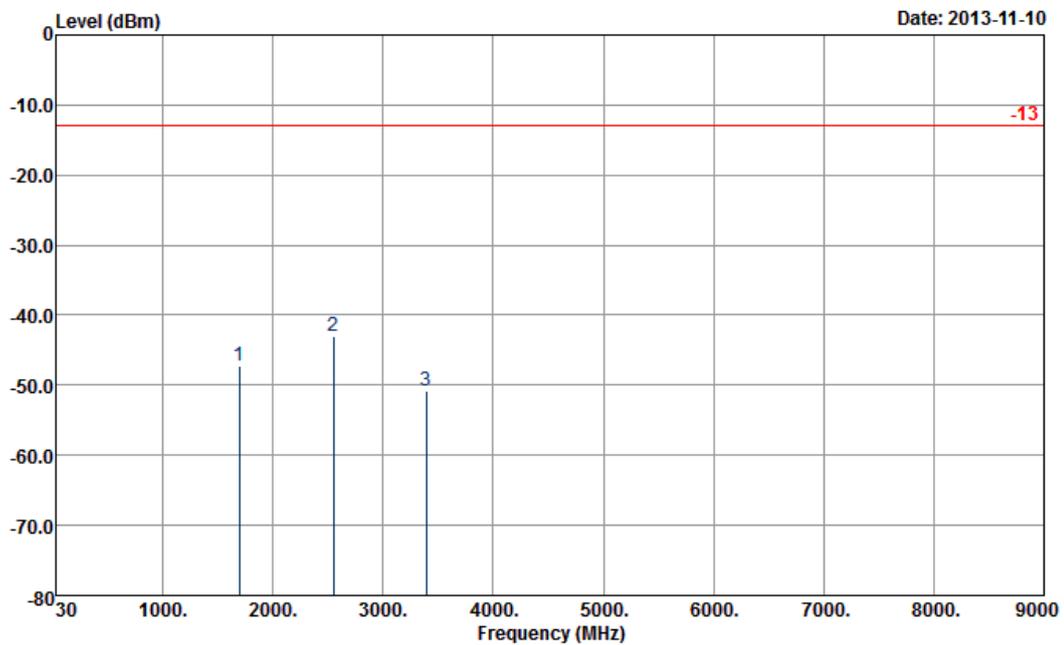
Site : 03CH07-HY  
 Condition : -13 HF-EIRP(080306) HORIZONTAL  
 Project : FG 303114

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	-47.33	-13	-34.33	-56.24	-51.21	1.57	5.45	H	Pass
2548	-35.61	-13	-22.61	-48.83	-39.87	2.02	6.28	H	Pass
3394	-53.36	-13	-40.36	-67.45	-59.26	2.3	8.20	H	Pass

Other harmonics are lower than background noise



<b>Band :</b>	GSM850	<b>Temperature :</b>	23~26°C
<b>Test Mode :</b>	GSM Link (GMSK) + SIM 2	<b>Relative Humidity :</b>	51~53%
<b>Channel :</b>	251	<b>Polarization :</b>	Vertical
<b>Test Engineer :</b>	Stan Hsieh		
<b>Remark :</b>	1. Spurious emissions within 30-1000MHz were found more than 20dB below limit line. 2. The harmonic (5 <sup>th</sup> , 6 <sup>th</sup> , 7 <sup>th</sup> ,...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise.		



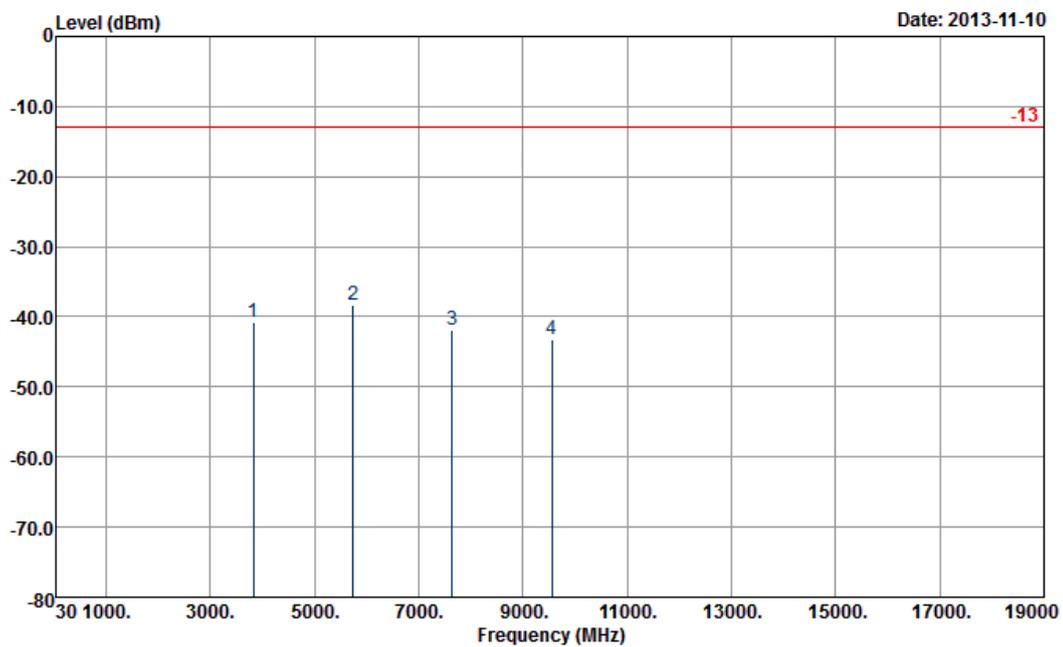
Site : 03CH07-HY  
 Condition : -13 HF-EIRP(080306) VERTICAL  
 Project : FG 303114

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	-47.34	-13	-34.34	-58.76	-51.22	1.57	5.45	V	Pass
2548	-42.91	-13	-29.91	-56.74	-47.17	2.02	6.28	V	Pass
3394	-50.84	-13	-37.84	-66.37	-56.74	2.3	8.20	V	Pass

Other harmonics are lower than background noise



<b>Band :</b>	GSM1900	<b>Temperature :</b>	23~26°C
<b>Test Mode :</b>	GSM Link (GMSK) + SIM 2	<b>Relative Humidity :</b>	51~53%
<b>Channel :</b>	810	<b>Polarization :</b>	Horizontal
<b>Test Engineer :</b>	Stan Hsieh		
<b>Remark :</b>	1. Spurious emissions within 30-1000MHz were found more than 20dB below limit line. 2. The harmonic (6 <sup>th</sup> , 7 <sup>th</sup> , 8 <sup>th</sup> ,...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise.		



Site : 03CH07-HY  
 Condition : -13 HF-EIRP(080306) HORIZONTAL  
 Project : FG 303114

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
3820	-40.80	-13	-27.80	-56.41	-47.21	2.47	8.88	H	Pass
5732	-38.32	-13	-25.32	-59.43	-46.02	3	10.70	H	Pass
7640	-41.80	-13	-28.80	-68.24	-50.58	3.43	12.21	H	Pass
9552	-43.25	-13	-30.25	-70.16	-52.46	3.99	13.20	H	Pass

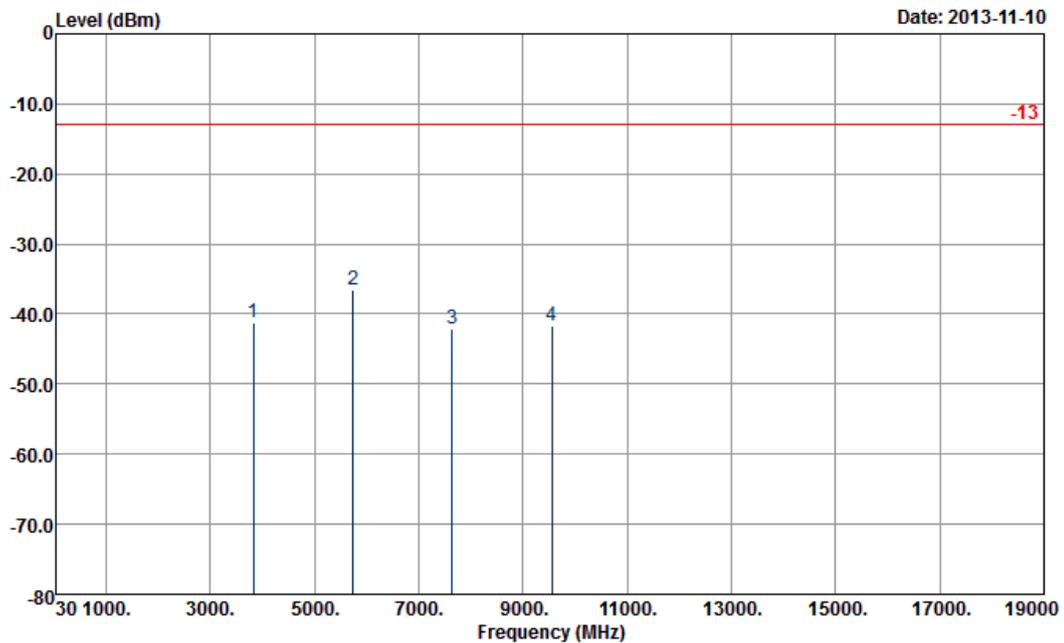
Other harmonics are lower than background noise



<b>Band :</b>	GSM1900	<b>Temperature :</b>	23~26°C
<b>Test Mode :</b>	GSM Link (GMSK) + SIM 2	<b>Relative Humidity :</b>	51~53%
<b>Channel :</b>	810	<b>Polarization :</b>	Vertical
<b>Test Engineer :</b>	Stan Hsieh		

**Remark :**

- Spurious emissions within 30-1000MHz were found more than 20dB below limit line.
- The harmonic (6<sup>th</sup>, 7<sup>th</sup>, 8<sup>th</sup>,...etc.) and other spurious are not reported, because those levels are lower than average limit line and background noise.



Site : 03CH07-HY  
 Condition : -13 HF-EIRP(080306) VERTICAL  
 Project : FG 303114

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
3820	-41.18	-13	-28.18	-57.61	-47.59	2.47	8.88	V	Pass
5732	-36.63	-13	-23.63	-57.6	-44.33	3	10.70	V	Pass
7636	-42.11	-13	-29.11	-68.33	-50.89	3.43	12.21	V	Pass
9552	-41.63	-13	-28.63	-68.24	-50.84	3.99	13.20	V	Pass

Other harmonics are lower than background noise



## 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	Nov. 09, 2013	Jul. 31, 2014	Conducted (TH02-HY)
Hygrometer	Testo	608-H1	34897199	N/A	May 07, 2013	Nov. 09, 2013	May 06, 2014	Conducted (TH02-HY)
RF cable	HONOVA	MF86	N/A	N/A	Nov. 26, 2012	Nov. 09, 2013	Nov. 25, 2013	Conducted (TH02-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP30	101067	9KHz~30GHz	Nov. 30, 2012	Nov. 10, 2013	Nov. 29, 2013	Radiation (03CH07-HY)
Bilog Antenna	Schaffner	CBL6111C	2726	30MHz ~ 1GHz	Oct. 10, 2013	Nov. 10, 2013	Oct. 09, 2014	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	75962	1GHz~18GHz	Aug. 22, 2013	Nov. 10, 2013	Aug. 21, 2014	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170 251	15GHz- 40GHz	Oct. 03, 2013	Nov. 10, 2013	Oct. 02, 2014	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	30MHz~1GHz	Feb. 26, 2013	Nov. 10, 2013	Feb. 25, 2014	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A023 62	1GHz~26.5GHz	Dec. 01, 2012	Nov. 10, 2013	Nov. 30, 2013	Radiation (03CH07-HY)
Turn Table	ChainTek	ChainTek 3000	N/A	0 ~ 360 degree	N/A	Nov. 10, 2013	N/A	Radiation (03CH07-HY)
Antenna Mast	ChainTek	ChainTek 3000	N/A	N/A	N/A	Nov. 10, 2013	N/A	Radiation (03CH07-HY)
High Pass Filter	Woken	1000-12750MHz SMA	0100V1H0 10001G	1GHz HPF	Nov. 26, 2012	Nov. 10, 2013	Nov. 25, 2013	Radiation (03CH07-HY)
High Pass Filter	Microwave	H03G18G3	N/A	3GHz HPF	Nov. 26, 2012	Nov. 10, 2013	Nov. 25, 2013	Radiation (03CH07-HY)
Notch Filter	Wainwright	WRCT 1800/2000-20/40-10ssk	SN1	GSM 1900 / WCDMA Band 1,2 / LTE Band	Nov. 26, 2012	Nov. 10, 2013	Nov. 25, 2013	Radiation (03CH07-HY)
Notch Filter	Wainwright	WRCG 824/849/814/859-40 8SS	SN35	WCDMA 850	Nov. 26, 2012	Nov. 10, 2013	Nov. 25, 2013	Radiation (03CH07-HY)
HF RF Cable	HUBER SUHNER	SUCOFLEX 104	38411/6	1GHz ~ 18GHz	Dec.04 , 2012	Nov. 10, 2013	Dec. 03, 2013	Radiation (03CH07-HY)
LF RF Cable	Warison+HUBER SUHNER	WCBA-WC04NM. NM2	N/A	30MHz ~ 1GHz	Dec.04 , 2012	Nov. 10, 2013	Dec. 03, 2013	Radiation (03CH07-HY)
Test Software	Audix	E3	Version 6.2009-08-	N/A	N/A	Nov. 10, 2013	N/A	Radiation (03CH07-HY)
Hygrometer	Testo	608-H1	34897197	N/A	Nov. 20, 2012	Nov. 10, 2013	Nov. 19, 2013	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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