



# FCC/IC Test Report

APPLICANT : Sony Mobile Communications Inc.  
EQUIPMENT : Smart phone  
BRAND NAME : SONY  
TYPE NAME : PM-0382-BV  
FCC ID : PY7PM-0382  
IC : 4170B-PM0382  
STANDARD : FCC 47 CFR FCC Part 15 Subpart B  
ICES-003 Issue 5  
CLASSIFICATION : FCC CLASS B PERSONAL  
COMPUTERS AND PERIPHERALS

The product was received on Apr. 22, 2014 and testing was completed on May 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 C63.4-2009 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: Louis Wu / Manager

Approved by: Jones Tsai / Manager



## SPORTON INTERNATIONAL INC.

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FCC ID : PY7PM-0382

IC : 4170B-PM0382

Page Number : 1 of 24

Report Issued Date : Jul. 14, 2014

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## REVISION HISTORY

| REPORT NO. | VERSION | DESCRIPTION             | ISSUED DATE   |
|------------|---------|-------------------------|---------------|
| FC442202   | Rev. 01 | Initial issue of report | Jul. 14, 2014 |
|            |         |                         |               |
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|            |         |                         |               |



## SUMMARY OF TEST RESULT

| Report Section | FCC Rule | IC Rule                | Description           | Limit                                   | Result | Remark                                    |
|----------------|----------|------------------------|-----------------------|-----------------------------------------|--------|-------------------------------------------|
| 3.1            | 15.107   | ICES003<br>Section 6.1 | AC Conducted Emission | < 15.107 limits<br>< ICES003 6.1 limits | PASS   | Under limit<br>8.20 dB at<br>0.198 MHz    |
| 3.2            | 15.109   | ICES003<br>Section 6.2 | Radiated Emission     | < 15.109 limits<br>< ICES003 6.2 limits | PASS   | Under limit<br>11.91 dB at<br>499.500 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, 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, 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-0382-BV                                |
| FCC ID                        | PY7PM-0382                                |
| IC                            | 4170B-PM0382                              |
| 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 / VIII                |
| WCDMA Rel. Version            | Rel. 8                                    |
| Wi-Fi Specification           | 802.11b/g/n (HT20)                        |
| Bluetooth Version             | v3.0 + EDR / v4.0 - LE                    |
| NFC Specification             | ISO15693 / ISO14443A / ISO14443B / Felica |
| ANT+                          | ANT+                                      |
| Power Supply                  | Battery / AC Adapter / Car Charger        |
| EUT Stage                     | Production Unit                           |

**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

Below EUT sample and accessory are used to test.

| EUT Information List                               |            |            |              |                                                  |
|----------------------------------------------------|------------|------------|--------------|--------------------------------------------------|
| IMEI                                               | HW Version | SW Version | S/N          | Performed Test Item                              |
| IMEI 1: 004402147601532<br>IMEI 2: 004402147601540 | A          | 18.4.B.0.7 | SQ4408D21715 | Conducted Emission<br>Radiated Spurious Emission |

| Accessory List   |                                                                                                                     |
|------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Battery</b>   | Model No. : LIS1551ERPC                                                                                             |
| <b>Earphone</b>  | Model No. : MH410c                                                                                                  |
|                  | Type No. : AG-1100                                                                                                  |
|                  | S/N :<br>13511E560075F9C (for AC power line Conducted Emission)<br>46844E580076508 (for Radiated Spurious Emission) |
| <b>USB Cable</b> | Model No. : EC 450                                                                                                  |
|                  | Type No. : AI-0700                                                                                                  |
|                  | S/N :<br>134921D00034040 (for AC power line Conducted Emission)<br>134912D80007390 (for Radiated Spurious Emission) |

### 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. Test Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation 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,<br>Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.<br>TEL: +886-3-327-3456<br>FAX: +886-3-328-4978 |           |                            |
| <b>Test Site No.</b>      | <b>Sporton Site No.</b>                                                                                                                                         |           | <b>IC Registration No.</b> |
|                           | CO05-HY                                                                                                                                                         | 03CH06-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:

- ♦ FCC 47 CFR FCC Part 15 Subpart B
- ♦ ANSI C63.4-2009
- ♦ IC ICES-003 Issue 5

### **Remark:**

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. For FCC 15 Subpart B - Unintentional Radiators, device supporting USB interface or similar peripherals (defined as the Section 15.3 (r) Peripheral device) acting as a peripheral for personal computers shall be authorized as "The Class B personal computers and peripherals" per the Section 15.101 (a) Equipment authorization of unintentional radiators.
3. For other Unintentional Radiators features of this EUT, test reports are be issued separately.  
Per the Note of the Section 15.101, when device supports features (USB, FM Radio, digital devices...etc) more than one category of authorization, type of authorization shall be appropriately chosen for FCC 15B compliance rule, and the Section 15.101 (b), only those receivers that operate (tune) within the frequency range of 30-960 MHz, CB receivers and radar detectors are subject to the authorizations shown in paragraph (a) of the Section 15.101. However, receivers indicated as being subject to Declaration of Conformity that are contained within a transceiver, the transmitter portion of which is subject to certification, shall be authorized under the verification procedure.



## 2. Test Configuration of Equipment Under Test

### 2.1. Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2009 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

Frequency range investigated: conduction (150 kHz to 30 MHz), radiation (30MHz to the 5th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

The following tables are showing the test modes as the worst cases and recorded in this report.

| Item | EUT Configuration       | Test Condition |        |
|------|-------------------------|----------------|--------|
|      |                         | EMI AC         | EMI RE |
| 1.   | Data Link with Notebook | ☒              | ☒      |

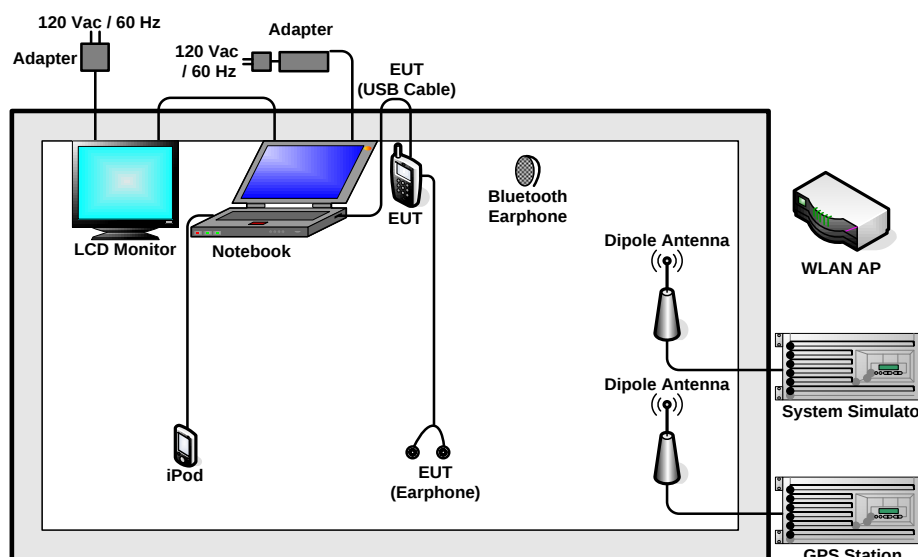
The data application (each file size is greater than 30Mbytes) is continuously transferred between the EUT and Notebook connected via USB cable, while GSM, WLAN, and Bluetooth and GPS idle.

For SIM verification, SIM1 is tested based on the worst case for conducted emission and SIM2 is tested based on the worst case for radiated emission, only the two modes are reported.

#### Abbreviations:

- EMI AC: AC conducted emissions
- EMI RE: EUT radiated emissions.

## 2.2. Connection Diagram of Test System



### 2.3. Support Unit used in test configuration and system

| Item | Equipment          | Trade Name | Model Name     | FCC ID                                    | Data Cable        | Power Cord                                                 |
|------|--------------------|------------|----------------|-------------------------------------------|-------------------|------------------------------------------------------------|
| 1.   | System Simulator   | R&S        | CMU 200        | N/A                                       | N/A               | Unshielded, 1.8 m                                          |
| 2.   | GPS Station        | Pendulum   | GSG-54         | N/A                                       | N/A               | Unshielded, 1.8 m                                          |
| 3.   | WLAN AP            | D-Link     | DIR-628        | KA2DIR628A2                               | N/A               | Unshielded, 1.8 m                                          |
| 4.   | iPod               | Apple      | A1285          | FCC DoC                                   | Shielded, 1.0 m   | N/A                                                        |
| 5.   | Notebook           | DELL       | Latitude E6320 | FCC DoC/<br>Contains FCC ID: QDS-BRCM1054 | N/A               | AC I/P:<br>Unshielded, 1.2 m<br>DC O/P:<br>Shielded, 1.8 m |
| 6.   | Bluetooth Earphone | Sony       | SBH20          | PY7-RD0010                                | Unshielded, 0.75m | N/A                                                        |
| 7.   | LCD Monitor        | DELL       | U2410          | FCC DoC                                   | Shielded, 1.6 m   | Unshielded, 1.8 m                                          |
| 8.   | SD Card            | SanDisk    | MicroSD HC     | FCC DoC                                   | N/A               | N/A                                                        |

## 2.4. EUT Operation Test Setup

The data application (each file size is greater than 30Mbytes) is continuously transferred between the EUT and Notebook connected via USB cable, while GSM and Bluetooth, WLAN and GPS idle.

### 3. Test Result

#### 3.1. Test of AC Conducted Emission Measurement

##### 3.1.1 Limits of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

| Frequency of emission<br>(MHz) | Conducted limit (dBuV) |           |
|--------------------------------|------------------------|-----------|
|                                | Quasi-peak             | Average   |
| 0.15-0.5                       | 66 to 56*              | 56 to 46* |
| 0.5-5                          | 56                     | 46        |
| 5-30                           | 60                     | 50        |

\*Decreases with the logarithm of the frequency.

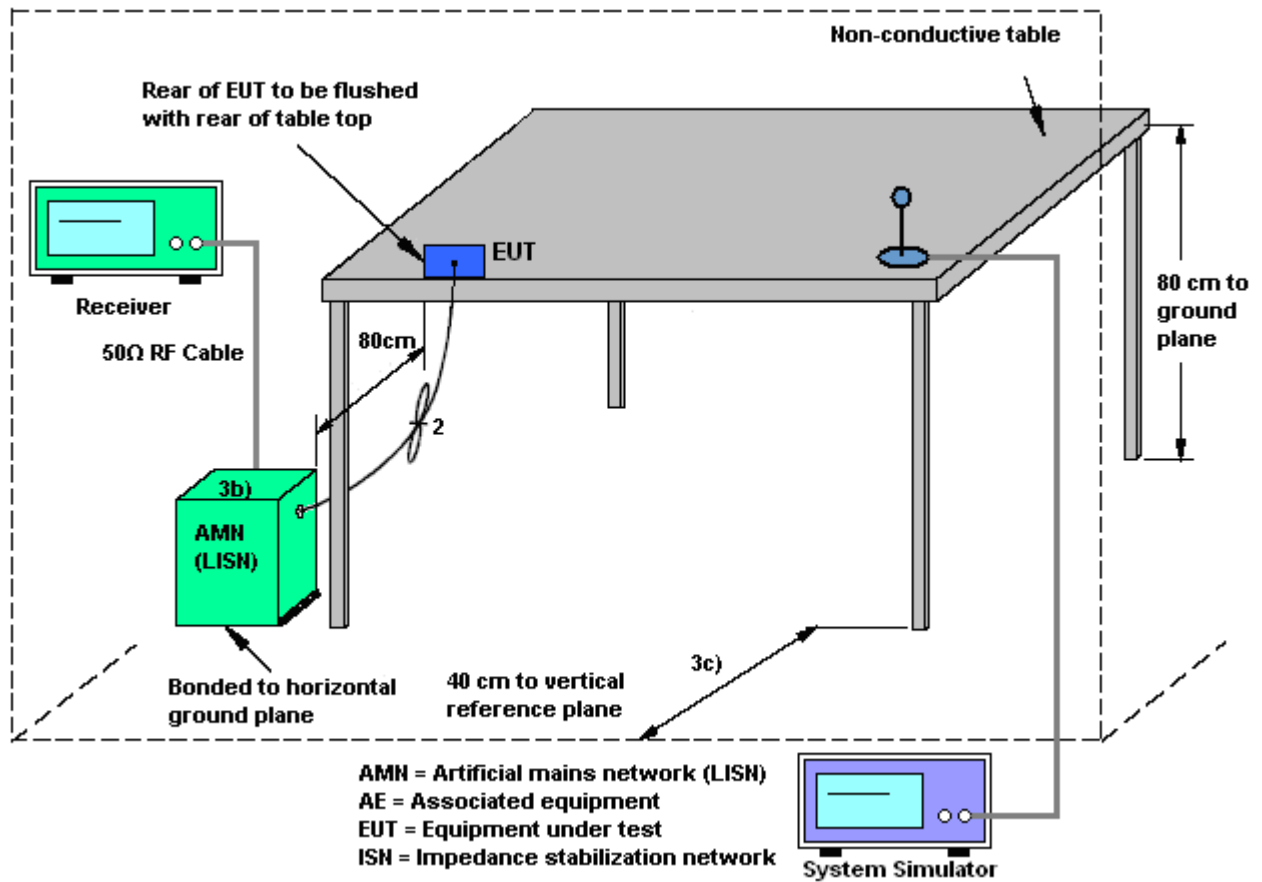
##### 3.1.2 Measuring Instruments

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

##### 3.1.3 Test Procedure

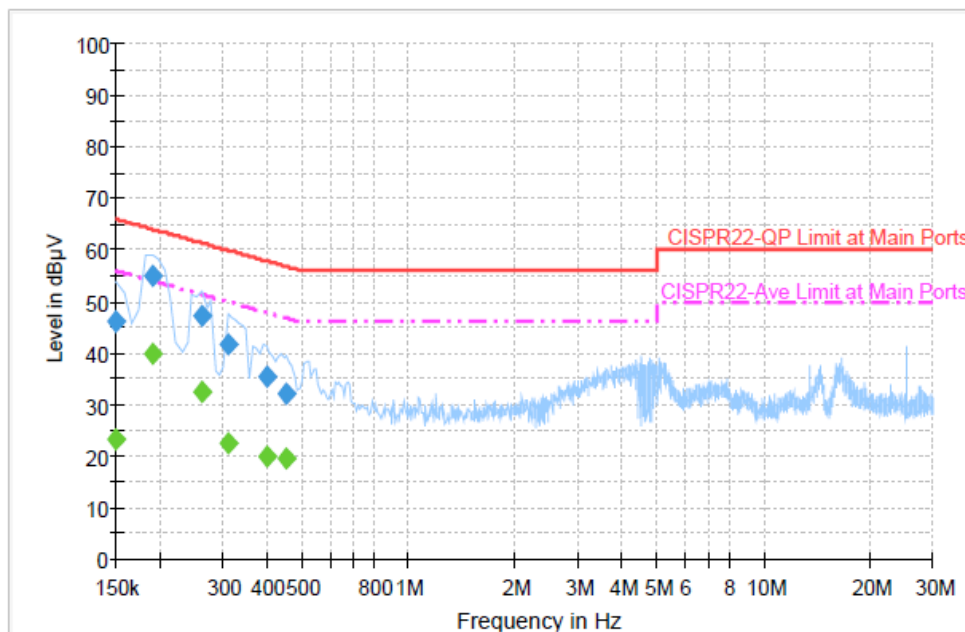
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

### 3.1.4 Test Setup



### 3.1.5 Test Result of AC Conducted Emission

|                        |                                                                                                                       |                            |        |
|------------------------|-----------------------------------------------------------------------------------------------------------------------|----------------------------|--------|
| <b>Test Mode :</b>     | Mode 1                                                                                                                | <b>Temperature :</b>       | 20~22℃ |
| <b>Test Engineer :</b> | Slash Huang                                                                                                           | <b>Relative Humidity :</b> | 45~47% |
| <b>Test Voltage :</b>  | 120Vac / 60Hz                                                                                                         | <b>Phase :</b>             | Line   |
| <b>Function Type :</b> | GSM1900 Idle + Bluetooth Idle + WLAN Idle + GPS Rx + Earphone + Battery + USB Cable (Data Link with Notebook) + SIM 1 |                            |        |



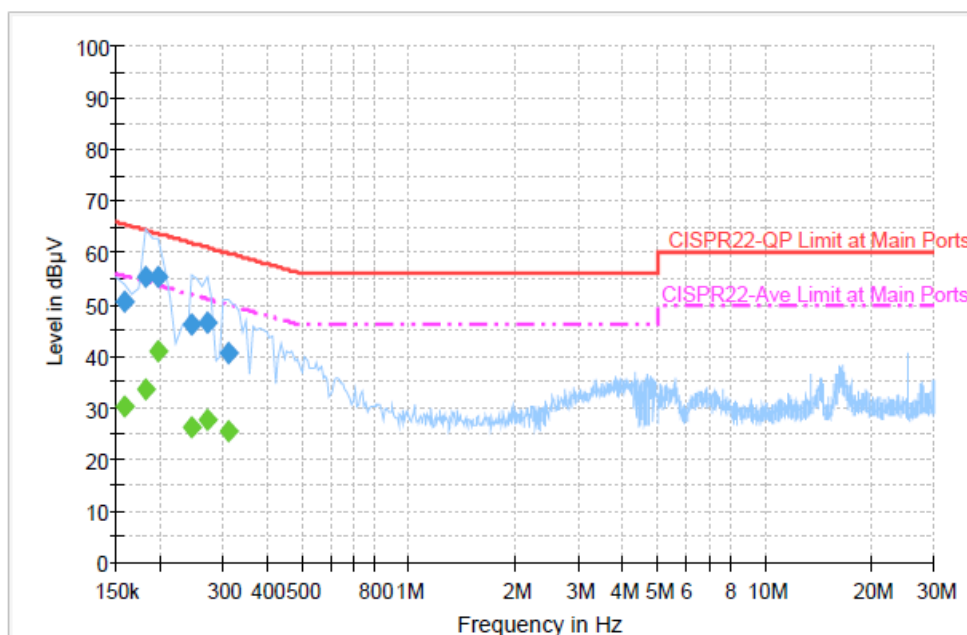
#### Final Result : Quasi-Peak

| Frequency (MHz) | Quasi-Peak (dBμV) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) |
|-----------------|-------------------|--------|------|------------|-------------|--------------|
| 0.150000        | 46.1              | Off    | L1   | 19.4       | 19.9        | 66.0         |
| 0.190000        | 54.9              | Off    | L1   | 19.4       | 9.1         | 64.0         |
| 0.262000        | 47.3              | Off    | L1   | 19.3       | 14.1        | 61.4         |
| 0.310000        | 41.8              | Off    | L1   | 19.3       | 18.2        | 60.0         |
| 0.398000        | 35.4              | Off    | L1   | 19.3       | 22.5        | 57.9         |
| 0.454000        | 32.2              | Off    | L1   | 19.3       | 24.6        | 56.8         |

#### Final Result : Average

| Frequency (MHz) | Average (dBμV) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) |
|-----------------|----------------|--------|------|------------|-------------|--------------|
| 0.150000        | 23.3           | Off    | L1   | 19.4       | 32.7        | 56.0         |
| 0.190000        | 39.7           | Off    | L1   | 19.4       | 14.3        | 54.0         |
| 0.262000        | 32.5           | Off    | L1   | 19.3       | 18.9        | 51.4         |
| 0.310000        | 22.5           | Off    | L1   | 19.3       | 27.5        | 50.0         |
| 0.398000        | 19.8           | Off    | L1   | 19.3       | 28.1        | 47.9         |
| 0.454000        | 19.4           | Off    | L1   | 19.3       | 27.4        | 46.8         |

|                        |                                                                                                                       |                            |         |
|------------------------|-----------------------------------------------------------------------------------------------------------------------|----------------------------|---------|
| <b>Test Mode :</b>     | Mode 1                                                                                                                | <b>Temperature :</b>       | 20~22°C |
| <b>Test Engineer :</b> | Slash Huang                                                                                                           | <b>Relative Humidity :</b> | 45~47%  |
| <b>Test Voltage :</b>  | 120Vac / 60Hz                                                                                                         | <b>Phase :</b>             | Neutral |
| <b>Function Type :</b> | GSM1900 Idle + Bluetooth Idle + WLAN Idle + GPS Rx + Earphone + Battery + USB Cable (Data Link with Notebook) + SIM 1 |                            |         |

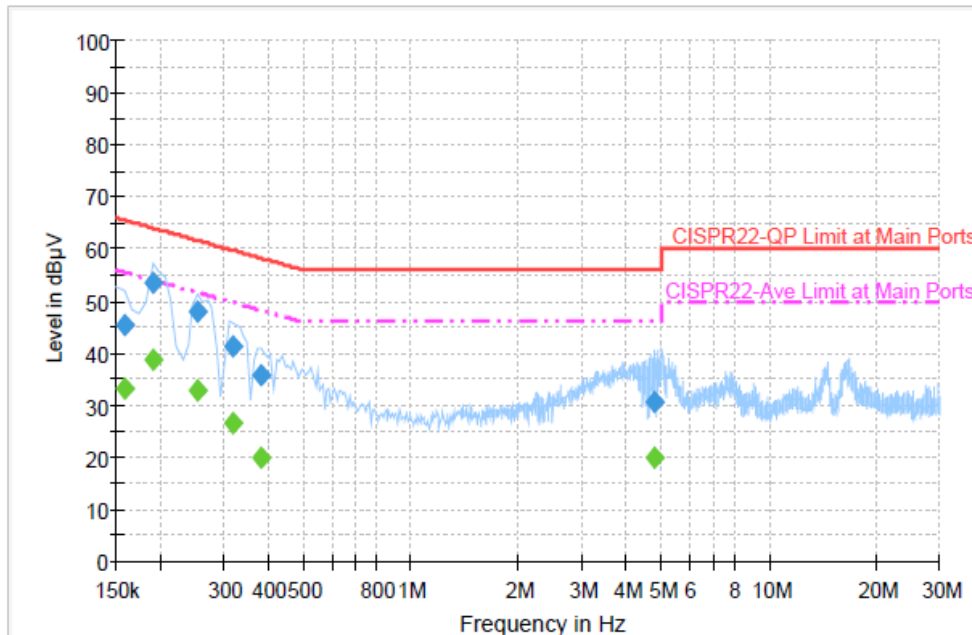

**Final Result : Quasi-Peak**

| Frequency (MHz) | Quasi-Peak (dBμV) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) |
|-----------------|-------------------|--------|------|------------|-------------|--------------|
| 0.158000        | 50.5              | Off    | N    | 19.3       | 15.1        | 65.6         |
| 0.182000        | 55.5              | Off    | N    | 19.3       | 8.9         | 64.4         |
| 0.198000        | 55.5              | Off    | N    | 19.3       | 8.2         | 63.7         |
| 0.246000        | 46.2              | Off    | N    | 19.4       | 15.7        | 61.9         |
| 0.270000        | 46.5              | Off    | N    | 19.3       | 14.6        | 61.1         |
| 0.310000        | 40.7              | Off    | N    | 19.3       | 19.3        | 60.0         |

**Final Result : Average**

| Frequency (MHz) | Average (dBμV) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) |
|-----------------|----------------|--------|------|------------|-------------|--------------|
| 0.158000        | 30.1           | Off    | N    | 19.3       | 25.5        | 55.6         |
| 0.182000        | 33.4           | Off    | N    | 19.3       | 21.0        | 54.4         |
| 0.198000        | 40.8           | Off    | N    | 19.3       | 12.9        | 53.7         |
| 0.246000        | 26.2           | Off    | N    | 19.4       | 25.7        | 51.9         |
| 0.270000        | 27.6           | Off    | N    | 19.3       | 23.5        | 51.1         |
| 0.310000        | 25.6           | Off    | N    | 19.3       | 24.4        | 50.0         |

|                        |                                                                                                                       |                            |         |
|------------------------|-----------------------------------------------------------------------------------------------------------------------|----------------------------|---------|
| <b>Test Mode :</b>     | Mode 2                                                                                                                | <b>Temperature :</b>       | 20~22°C |
| <b>Test Engineer :</b> | Slash Huang                                                                                                           | <b>Relative Humidity :</b> | 45~47%  |
| <b>Test Voltage :</b>  | 120Vac / 60Hz                                                                                                         | <b>Phase :</b>             | Line    |
| <b>Function Type :</b> | GSM1900 Idle + Bluetooth Idle + WLAN Idle + GPS Rx + Earphone + Battery + USB Cable (Data Link with Notebook) + SIM 2 |                            |         |

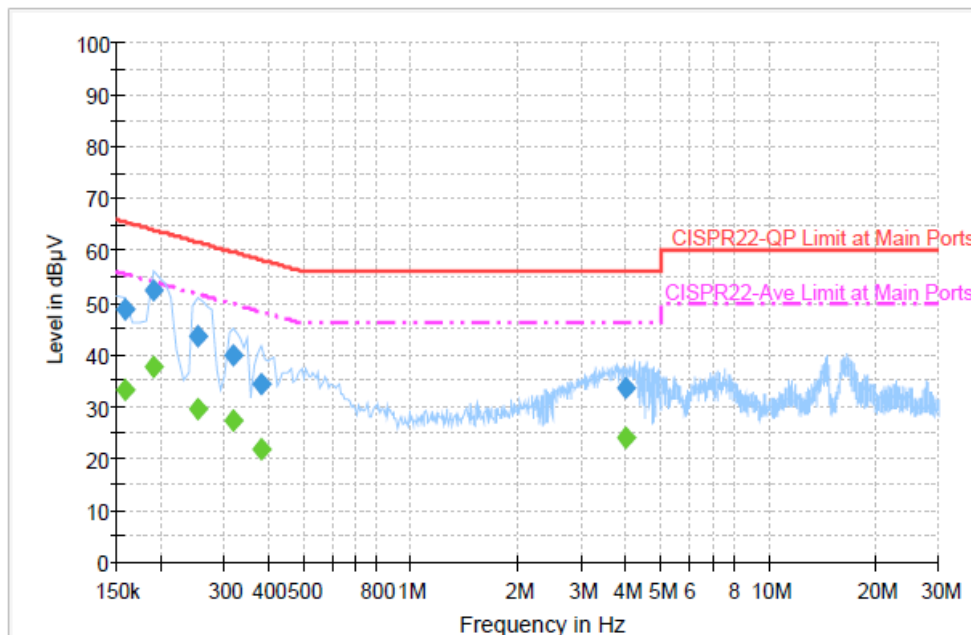

**Final Result : Quasi-Peak**

| Frequency (MHz) | Quasi-Peak (dBμV) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) |
|-----------------|-------------------|--------|------|------------|-------------|--------------|
| 0.158000        | 45.5              | Off    | L1   | 19.3       | 20.1        | 65.6         |
| 0.190000        | 53.5              | Off    | L1   | 19.4       | 10.5        | 64.0         |
| 0.254000        | 47.9              | Off    | L1   | 19.4       | 13.7        | 61.6         |
| 0.318000        | 41.1              | Off    | L1   | 19.4       | 18.7        | 59.8         |
| 0.382000        | 35.8              | Off    | L1   | 19.3       | 22.4        | 58.2         |
| 4.806000        | 30.6              | Off    | L1   | 19.6       | 25.4        | 56.0         |

**Final Result : Average**

| Frequency (MHz) | Average (dBμV) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) |
|-----------------|----------------|--------|------|------------|-------------|--------------|
| 0.158000        | 33.3           | Off    | L1   | 19.3       | 22.3        | 55.6         |
| 0.190000        | 38.8           | Off    | L1   | 19.4       | 15.2        | 54.0         |
| 0.254000        | 32.7           | Off    | L1   | 19.4       | 18.9        | 51.6         |
| 0.318000        | 26.5           | Off    | L1   | 19.4       | 23.3        | 49.8         |
| 0.382000        | 20.1           | Off    | L1   | 19.3       | 28.1        | 48.2         |
| 4.806000        | 19.9           | Off    | L1   | 19.6       | 26.1        | 46.0         |

|                        |                                                                                                                       |                            |         |
|------------------------|-----------------------------------------------------------------------------------------------------------------------|----------------------------|---------|
| <b>Test Mode :</b>     | Mode 2                                                                                                                | <b>Temperature :</b>       | 20~22°C |
| <b>Test Engineer :</b> | Slash Huang                                                                                                           | <b>Relative Humidity :</b> | 45~47%  |
| <b>Test Voltage :</b>  | 120Vac / 60Hz                                                                                                         | <b>Phase :</b>             | Neutral |
| <b>Function Type :</b> | GSM1900 Idle + Bluetooth Idle + WLAN Idle + GPS Rx + Earphone + Battery + USB Cable (Data Link with Notebook) + SIM 2 |                            |         |


**Final Result : Quasi-Peak**

| Frequency (MHz) | Quasi-Peak (dBμV) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) |
|-----------------|-------------------|--------|------|------------|-------------|--------------|
| 0.158000        | 48.8              | Off    | N    | 19.3       | 16.8        | 65.6         |
| 0.190000        | 52.4              | Off    | N    | 19.4       | 11.6        | 64.0         |
| 0.254000        | 43.6              | Off    | N    | 19.4       | 18.0        | 61.6         |
| 0.318000        | 39.7              | Off    | N    | 19.4       | 20.1        | 59.8         |
| 0.382000        | 34.2              | Off    | N    | 19.3       | 24.0        | 58.2         |
| 3.998000        | 33.8              | Off    | N    | 19.6       | 22.2        | 56.0         |

**Final Result : Average**

| Frequency (MHz) | Average (dBμV) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) |
|-----------------|----------------|--------|------|------------|-------------|--------------|
| 0.158000        | 33.3           | Off    | N    | 19.3       | 22.3        | 55.6         |
| 0.190000        | 37.5           | Off    | N    | 19.4       | 16.5        | 54.0         |
| 0.254000        | 29.4           | Off    | N    | 19.4       | 22.2        | 51.6         |
| 0.318000        | 27.1           | Off    | N    | 19.4       | 22.7        | 49.8         |
| 0.382000        | 21.6           | Off    | N    | 19.3       | 26.6        | 48.2         |
| 3.998000        | 24.1           | Off    | N    | 19.6       | 21.9        | 46.0         |

## **3.2. Test of Radiated Emission Measurement**

### **3.2.1. Limit of Radiated Emission**

The emissions from an unintentional radiator shall not exceed the field strength levels specified in the following table:

| <b>Frequency<br/>(MHz)</b> | <b>Field Strength<br/>(microvolts/meter)</b> | <b>Measurement Distance<br/>(meters)</b> |
|----------------------------|----------------------------------------------|------------------------------------------|
| 30 – 88                    | 100                                          | 3                                        |
| 88 – 216                   | 150                                          | 3                                        |
| 216 - 960                  | 200                                          | 3                                        |
| Above 960                  | 500                                          | 3                                        |

### **3.2.2. Measuring Instruments**

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

### **3.2.3. Test Procedures**

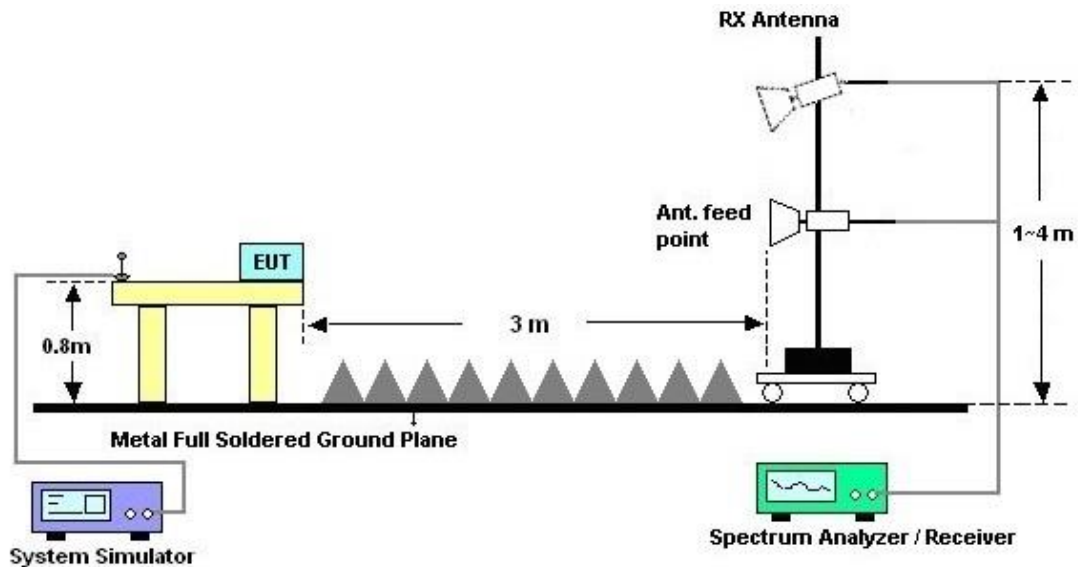
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna is a Bi-Log antenna and its height is adjusted between one to four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, peak values of EUT will be reported. Otherwise, the emission will be repeated by using the quasi-peak method and reported.
8. Emission level (dBμV/m) = 20 log Emission level (μV/m)
9. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

### 3.2.4. Test Setup of Radiated Emission

For radiated emissions from 30MHz to 1GHz



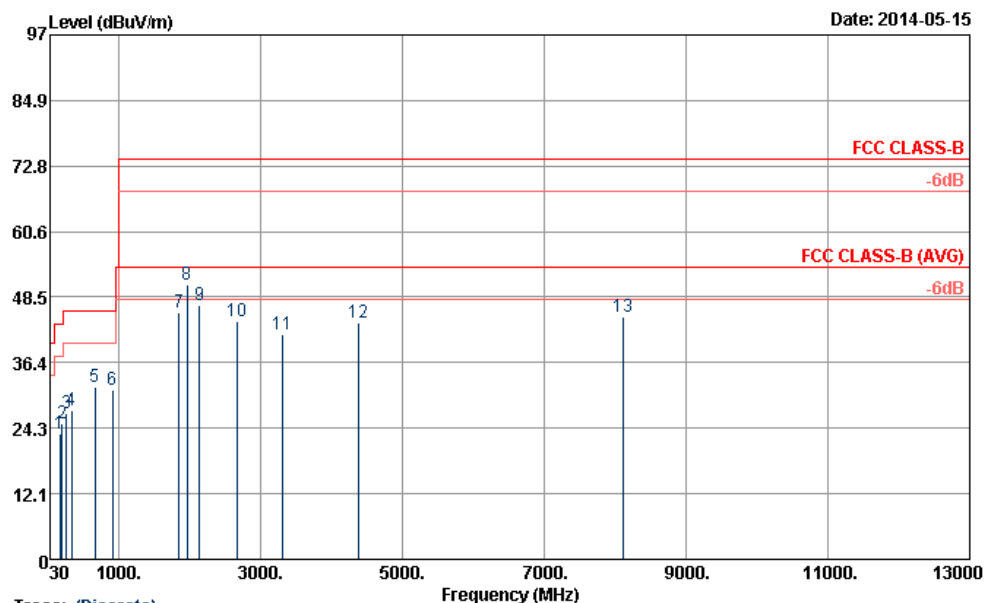
For radiated emissions above 1GHz





## 3.2.6. Test Result of Radiated Emission

|                 |                                                                                                                       |                     |            |
|-----------------|-----------------------------------------------------------------------------------------------------------------------|---------------------|------------|
| Test Mode :     | Mode 1                                                                                                                | Temperature :       | 22~24°C    |
| Test Engineer : | Marlboro Hsu                                                                                                          | Relative Humidity : | 47~49%     |
| Test Distance : | 3m                                                                                                                    | Polarization :      | Horizontal |
| Function Type : | GSM1900 Idle + Bluetooth Idle + WLAN Idle + GPS Rx + Earphone + Battery + USB Cable (Data Link with Notebook) + SIM 1 |                     |            |
| Remark :        | #8 is system simulator signal which can be ignored.                                                                   |                     |            |



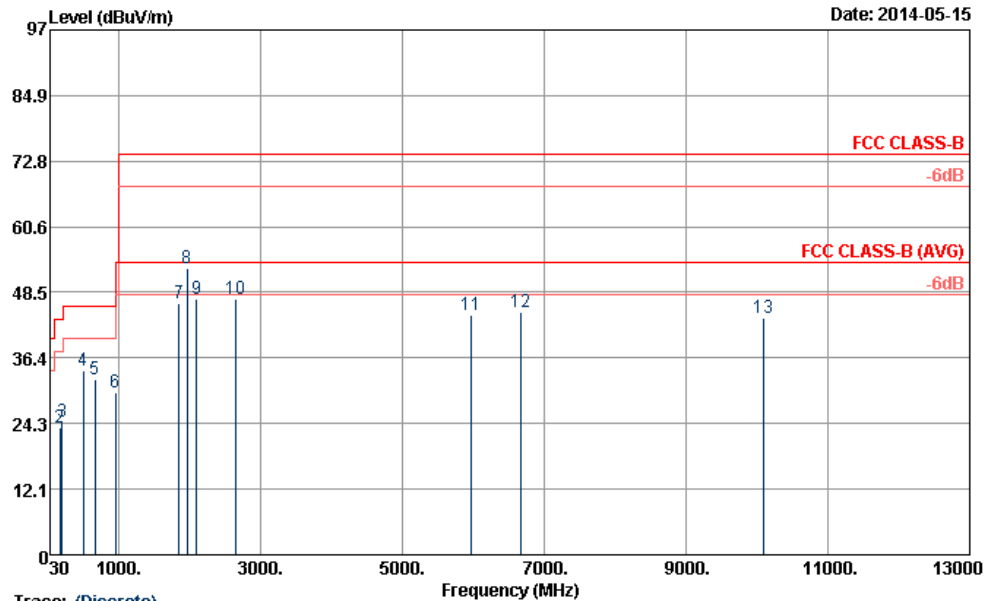
Trace: (Discrete)

Site : 03CH06-HY  
Condition : FCC CLASS-B 3m HF-ANT\_583\_130802 HORIZONTAL  
Project : 442202  
Power : From System  
Mode : Mode 1

|    | Freq    | Level  | Over   | Limit  | ReadAntenna | Cable | Preamp | A/Pos | T/Pos | Remark  |
|----|---------|--------|--------|--------|-------------|-------|--------|-------|-------|---------|
|    | MHz     | dBuV/m | dB     | dBuV/m | dBuV        | dB/m  | dB     | dB    | cm    | deg     |
| 1  | 166.35  | 23.18  | -20.32 | 43.50  | 43.49       | 9.86  | 1.58   | 31.75 | ---   | Peak    |
| 2  | 204.96  | 25.06  | -18.44 | 43.50  | 46.11       | 9.15  | 1.55   | 31.75 | ---   | Peak    |
| 3  | 266.25  | 27.03  | -18.97 | 46.00  | 43.69       | 13.27 | 1.80   | 31.73 | ---   | Peak    |
| 4  | 329.40  | 27.67  | -18.33 | 46.00  | 43.74       | 13.70 | 1.98   | 31.75 | ---   | Peak    |
| 5  | 665.40  | 31.89  | -14.11 | 46.00  | 41.64       | 19.45 | 2.83   | 32.03 | 100   | 96 Peak |
| 6  | 909.00  | 31.39  | -14.61 | 46.00  | 38.46       | 21.01 | 3.37   | 31.45 | ---   | Peak    |
| 7  | 1852.00 | 45.73  | -28.27 | 74.00  | 70.17       | 30.46 | 5.57   | 60.47 | ---   | Peak    |
| 8  | 1960.00 | 50.70  |        | 74.00  | 74.18       | 31.22 | 5.79   | 60.49 | ---   | Peak    |
| 9  | 2142.00 | 47.04  | -26.96 | 74.00  | 69.72       | 31.71 | 6.11   | 60.50 | 100   | 95 Peak |
| 10 | 2662.00 | 44.09  | -29.91 | 74.00  | 65.61       | 32.23 | 6.92   | 60.67 | ---   | Peak    |
| 11 | 3310.00 | 41.61  | -32.39 | 74.00  | 62.24       | 32.76 | 7.86   | 61.25 | ---   | Peak    |
| 12 | 4374.00 | 43.73  | -30.27 | 74.00  | 61.29       | 34.28 | 9.79   | 61.63 | ---   | Peak    |
| 13 | 8116.00 | 44.88  | -29.12 | 74.00  | 58.00       | 35.60 | 10.93  | 59.65 | ---   | Peak    |



|                 |                                                                                                                       |                     |          |
|-----------------|-----------------------------------------------------------------------------------------------------------------------|---------------------|----------|
| Test Mode :     | Mode 1                                                                                                                | Temperature :       | 22~24°C  |
| Test Engineer : | Marlboro Hsu                                                                                                          | Relative Humidity : | 47~49%   |
| Test Distance : | 3m                                                                                                                    | Polarization :      | Vertical |
| Function Type : | GSM1900 Idle + Bluetooth Idle + WLAN Idle + GPS Rx + Earphone + Battery + USB Cable (Data Link with Notebook) + SIM 1 |                     |          |
| Remark :        | #8 is system simulator signal which can be ignored.                                                                   |                     |          |



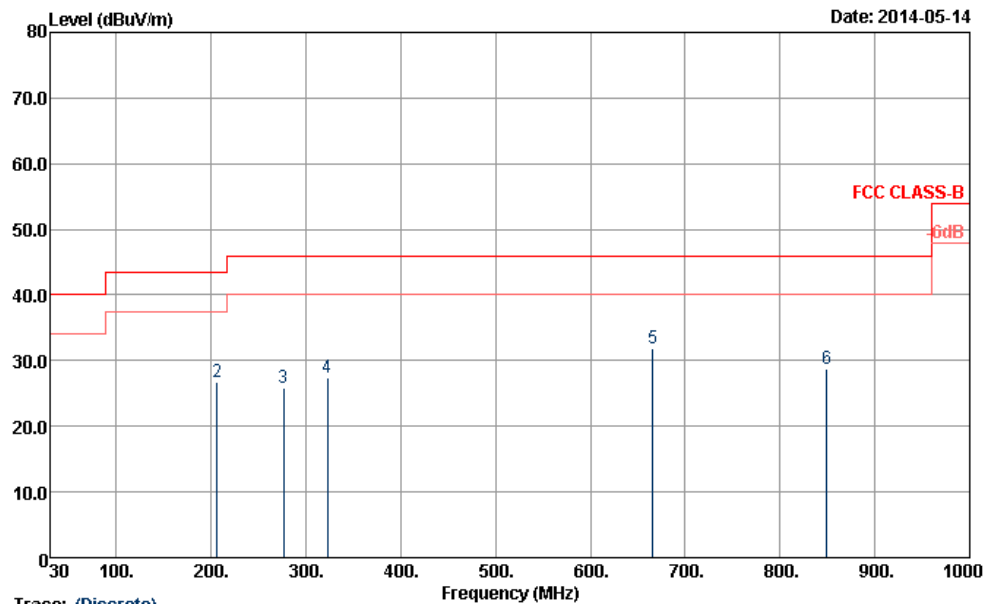
Trace: (Discrete)

Site : 03CH06-HY  
Condition : FCC CLASS-B 3m HF-ANT\_583\_130802 VERTICAL  
Project : 442202  
Power : From System  
Mode : Mode 1

|    | Freq     | Level  | Over Limit | Limit Line | ReadAntenna Level | Cable Factor | Preamp Loss | A/Pos | T/Pos | Remark  |
|----|----------|--------|------------|------------|-------------------|--------------|-------------|-------|-------|---------|
|    | MHz      | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m         | dB          | dB    | cm    | deg     |
| 1  | 30.00    | 26.31  | -13.69     | 40.00      | 38.97             | 18.50        | 0.64        | 31.80 | ---   | Peak    |
| 2  | 171.75   | 23.58  | -19.92     | 43.50      | 44.01             | 9.72         | 1.60        | 31.75 | ---   | Peak    |
| 3  | 202.26   | 24.52  | -18.98     | 43.50      | 45.55             | 9.17         | 1.55        | 31.75 | ---   | Peak    |
| 4  | 499.50   | 34.09  | -11.91     | 46.00      | 45.75             | 17.79        | 2.48        | 31.93 | 100   | 39 Peak |
| 5  | 665.40   | 32.41  | -13.59     | 46.00      | 42.16             | 19.45        | 2.83        | 32.03 | ---   | Peak    |
| 6  | 949.60   | 29.97  | -16.03     | 46.00      | 36.39             | 21.30        | 3.35        | 31.07 | ---   | Peak    |
| 7  | 1850.00  | 46.55  | -27.45     | 74.00      | 71.05             | 30.46        | 5.51        | 60.47 | ---   | Peak    |
| 8  | 1960.00  | 52.83  |            |            | 76.31             | 31.22        | 5.79        | 60.49 | ---   | Peak    |
| 9  | 2098.00  | 47.37  | -26.63     | 74.00      | 70.15             | 31.68        | 6.04        | 60.50 | 100   | 32 Peak |
| 10 | 2656.00  | 47.36  | -26.64     | 74.00      | 68.88             | 32.21        | 6.92        | 60.65 | ---   | Peak    |
| 11 | 5974.00  | 44.23  | -29.77     | 74.00      | 57.35             | 35.28        | 11.77       | 60.17 | ---   | Peak    |
| 12 | 6672.00  | 44.74  | -29.26     | 74.00      | 58.00             | 35.73        | 11.48       | 60.47 | ---   | Peak    |
| 13 | 10084.00 | 43.80  | -30.20     | 74.00      | 57.42             | 36.88        | 10.58       | 61.08 | ---   | Peak    |



|                 |                                                                                                                       |                     |            |
|-----------------|-----------------------------------------------------------------------------------------------------------------------|---------------------|------------|
| Test Mode :     | Mode 2                                                                                                                | Temperature :       | 22~24°C    |
| Test Engineer : | Marlboro Hsu                                                                                                          | Relative Humidity : | 47~49%     |
| Test Distance : | 3m                                                                                                                    | Polarization :      | Horizontal |
| Function Type : | GSM1900 Idle + Bluetooth Idle + WLAN Idle + GPS Rx + Earphone + Battery + USB Cable (Data Link with Notebook) + SIM 2 |                     |            |



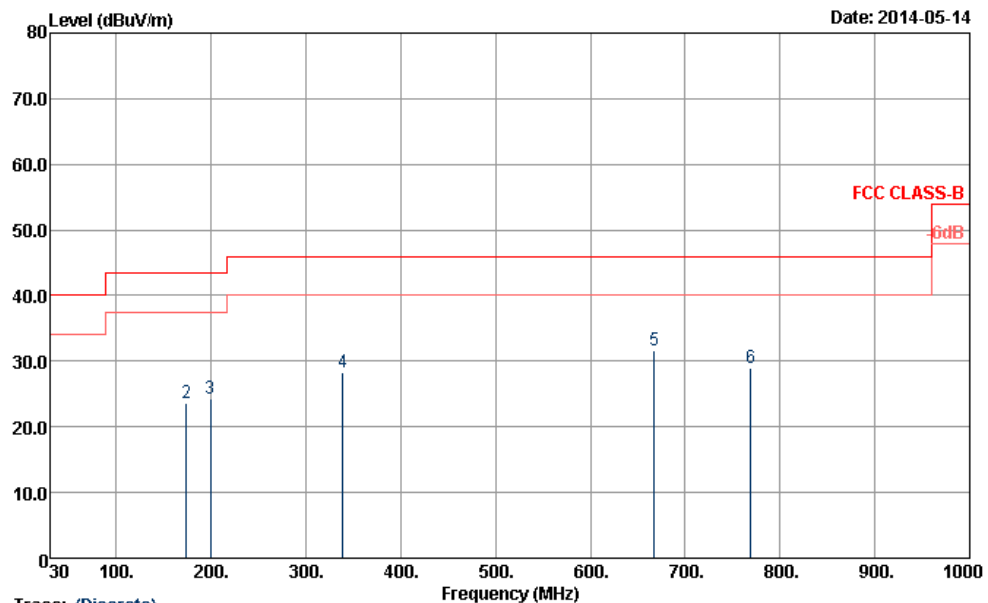
Trace: (Discrete)

Site : 03CH06-HY  
Condition : FCC CLASS-B 3m BILOG\_131010 HORIZONTAL  
Project : 442202  
Power : From System  
Mode : Mode 2

|   | Freq   | Level  | Over   | Limit  | ReadAntenna | Cable | Preamp | A/Pos | T/Pos | Remark |
|---|--------|--------|--------|--------|-------------|-------|--------|-------|-------|--------|
|   | MHz    | dBuV/m | dB     | dBuV/m | dBuV        | dB/m  | dB     | dB    | cm    | deg    |
| 1 | 30.00  | 23.06  | -16.94 | 40.00  | 35.72       | 18.50 | 0.64   | 31.80 | ---   | ---    |
| 2 | 206.04 | 26.66  | -16.84 | 43.50  | 47.70       | 9.15  | 1.56   | 31.75 | ---   | ---    |
| 3 | 276.24 | 25.85  | -20.15 | 46.00  | 42.88       | 12.87 | 1.83   | 31.73 | ---   | ---    |
| 4 | 322.40 | 27.46  | -18.54 | 46.00  | 43.54       | 13.70 | 1.96   | 31.74 | ---   | ---    |
| 5 | 665.40 | 31.93  | -14.07 | 46.00  | 41.68       | 19.45 | 2.83   | 32.03 | 100   | 116    |
| 6 | 849.50 | 28.74  | -17.26 | 46.00  | 36.45       | 20.80 | 3.23   | 31.74 | ---   | ---    |



|                 |                                                                                                                       |                     |          |
|-----------------|-----------------------------------------------------------------------------------------------------------------------|---------------------|----------|
| Test Mode :     | Mode 2                                                                                                                | Temperature :       | 22~24°C  |
| Test Engineer : | Marlboro Hsu                                                                                                          | Relative Humidity : | 47~49%   |
| Test Distance : | 3m                                                                                                                    | Polarization :      | Vertical |
| Function Type : | GSM1900 Idle + Bluetooth Idle + WLAN Idle + GPS Rx + Earphone + Battery + USB Cable (Data Link with Notebook) + SIM 2 |                     |          |



Trace: (Discrete)

Site : 03CH06-HY  
Condition : FCC CLASS-B 3m BILOG\_131010 VERTICAL  
Project : 442202  
Power : From System  
Mode : Mode 2

|   | Freq   | Level  | Over   | Limit  | ReadAntenna | Cable | Preamp | A/Pos | T/Pos | Remark |
|---|--------|--------|--------|--------|-------------|-------|--------|-------|-------|--------|
|   | MHz    | dBuV/m | dB     | dBuV/m | dBuV        | dB/m  | dB     | dB    | cm    | deg    |
| 1 | 30.00  | 25.04  | -14.96 | 40.00  | 37.70       | 18.50 | 0.64   | 31.80 | ---   | ---    |
| 2 | 173.64 | 23.63  | -19.87 | 43.50  | 44.18       | 9.64  | 1.56   | 31.75 | ---   | ---    |
| 3 | 199.56 | 24.30  | -19.20 | 43.50  | 45.31       | 9.20  | 1.54   | 31.75 | ---   | ---    |
| 4 | 338.50 | 28.27  | -17.73 | 46.00  | 44.07       | 13.95 | 2.01   | 31.76 | ---   | ---    |
| 5 | 667.50 | 31.62  | -14.38 | 46.00  | 41.35       | 19.47 | 2.83   | 32.03 | 100   | 304    |
| 6 | 769.00 | 28.95  | -17.05 | 46.00  | 37.76       | 20.11 | 3.05   | 31.97 | ---   | ---    |



## 4. List of Measuring Equipment

| Instrument                        | Manufacturer    | Model No. | Serial No.             | Characteristics | Calibration Date | Test Date                     | Due Date      | Remark                |
|-----------------------------------|-----------------|-----------|------------------------|-----------------|------------------|-------------------------------|---------------|-----------------------|
| EMI Test Receiver                 | Rohde & Schwarz | ESCS 30   | 100356                 | 9kHz ~ 2.75GHz  | Nov. 15, 2013    | May 10, 2014                  | Nov. 14, 2014 | Conduction (CO05-HY)  |
| LISN<br>(for auxiliary equipment) | Rohde & Schwarz | ENV216    | 100081                 | 9kHz ~ 30MHz    | Dec. 12, 2013    | May 10, 2014                  | Dec. 11, 2014 | Conduction (CO05-HY)  |
| LISN                              | Rohde & Schwarz | ENV216    | 100080                 | 9kHz ~ 30MHz    | Dec. 04, 2013    | May 10, 2014                  | Dec. 03, 2014 | Conduction (CO05-HY)  |
| AC Power Source                   | ChainTek        | APC-1000W | N/A                    | N/A             | N/A              | May 10, 2014                  | N/A           | Conduction (CO05-HY)  |
| Hygrometer                        | Testo           | 608-H1    | 34913912               | N/A             | Apr. 23, 2014    | May 10, 2014                  | Apr. 22, 2015 | Conduction (CO05-HY)  |
| Test Software                     | N/A             | EMC32     | 8.40.0                 | N/A             | N/A              | May 10, 2014                  | N/A           | Conduction (CO05-HY)  |
| LF Cable                          | Shuner          | RG-402    | N/A                    | N/A             | Oct. 17, 2013    | May 10, 2014                  | Oct. 16, 2014 | Conduction (CO05-HY)  |
| Spectrum Analyzer                 | R&S             | FSP30     | 101067                 | 9kHz ~ 30GHz    | Nov. 20, 2013    | May 14, 2014~<br>May 15, 2014 | Nov. 19, 2014 | Radiation (03CH06-HY) |
| Spectrum Analyzer                 | Agilent         | E4408B    | MY44211030             | 9kHz ~ 26.5GHz  | Dec. 02, 2013    | May 14, 2014~<br>May 15, 2014 | Dec. 01, 2014 | Radiation (03CH06-HY) |
| EMI Test Receiver                 | R&S             | ESVS10    | 834468/0003            | 20MHz ~ 1000MHz | May 06, 2014     | May 14, 2014~<br>May 15, 2014 | May 05, 2015  | Radiation (03CH06-HY) |
| Filter                            | Microwave       | H1G013G1  | SN477217               | 1GHz HPF        | Nov. 28, 2013    | May 14, 2014~<br>May 15, 2014 | Nov. 27, 2014 | Radiation (03CH06-HY) |
| Bilog Antenna                     | Schaffner       | CBL6112B  | 2885                   | 30MHz ~ 2GHz    | Oct. 10, 2013    | May 14, 2014~<br>May 15, 2014 | Oct. 09, 2014 | Radiation (03CH06-HY) |
| Double Ridge Horn Antenna         | EMCO            | 3117      | 00066583               | 1GHz ~ 18GHz    | Aug. 02, 2013    | May 14, 2014~<br>May 15, 2014 | Aug. 01, 2014 | Radiation (03CH06-HY) |
| Amplifier                         | SONOMA          | 310N      | 186713                 | 9kHz ~ 1GHz     | Apr. 16, 2014    | May 14, 2014~<br>May 15, 2014 | Apr. 15, 2015 | Radiation (03CH06-HY) |
| Pre Amplifier                     | EMCI            | EMC051845 | SN980048               | 1GHz ~ 18GHz    | Jul. 18, 2013    | May 14, 2014~<br>May 15, 2014 | Jul. 17, 2014 | Radiation (03CH06-HY) |
| RF Cable                          | Huber+Suhner    | RG 142    | NA                     | 30MHz ~1GHz     | Nov. 28, 2013    | May 14, 2014~<br>May 15, 2014 | Nov. 27, 2014 | Radiation (03CH06-HY) |
| RF Cable                          | Huber+Suhner    | SF104     | NA                     | 1GHz ~26.5GHz   | Nov. 28, 2013    | May 14, 2014~<br>May 15, 2014 | Nov. 27, 2014 | Radiation (03CH06-HY) |
| Hygrometer                        | WISEWIND        | 0410      | BU5004                 | N/A             | May 06 2014      | May 14, 2014~<br>May 15, 2014 | May 05, 2015  | Radiation (03CH06-HY) |
| Test Software                     | Audix           | E3        | Version<br>6.2009-8-24 | N/A             | N/A              | May 14, 2014~<br>May 15, 2014 | N/A           | Radiation (03CH06-HY) |
| Turn Table                        | INN-CO          | DS2000    | 420/650/00             | 0 ~ 360 degree  | N/A              | May 14, 2014~<br>May 15, 2014 | N/A           | Radiation (03CH06-HY) |
| Antenna Mast                      | MF              | MF-7802   | MF78020821<br>2        | 1 m ~ 4 m       | N/A              | May 14, 2014~<br>May 15, 2014 | N/A           | Radiation (03CH06-HY) |

**Note:** The test equipment calibration is traceable to the ISO17025



## 5. Uncertainty of Evaluation

### Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)

|                                                                         |      |
|-------------------------------------------------------------------------|------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 2.26 |
|-------------------------------------------------------------------------|------|

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

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