

# **FCC TEST REPORT**

Authorized under **D**eclaration of **C**onformity

according to

**47 CFR Part 2 Part 15 Subpart B**

**Equipment : GSM 900 / 1800/ 1900 GPRS PEN PHONE**

**Model No. : P7 / Puccini**

**FCC ID : SG70408000P7**

**Filing Type : Declaration of Conformity**

**Applicant : Haier Telecom (Qingdao) Co., Ltd.**  
No. 1 Haier Raod, Hi-tech Zone, Qingdao,  
266101, PRC

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***SPORTON International Inc.***

*6F, No.106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.*

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| <b>Appendix A. Photographs of EUT</b>                          |           |

**History of this test report**

Original Report Issue Date: Aug. 05, 2004

☒ No additional attachment.

☐ Additional attachment were issued as following record:

| Attachment No. | Issue Date    | Description                                        |
|----------------|---------------|----------------------------------------------------|
|                | Sep. 15, 2004 | Additional Tests for PC Peripheral and PCS Rx Mode |
|                |               |                                                    |
|                |               |                                                    |
|                |               |                                                    |
|                |               |                                                    |
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|                |               |                                                    |

**CERTIFICATE OF COMPLIANCE**  
Authorized under Declaration of Conformity  
according to

**47 CFR Part 2 and Part 15 Subpart B Class B**

**Equipment** : GSM 900 / 1800/ 1900 GPRS PEN PHONE  
**Model No.** : P7 / Puccini  
**FCC ID** : SG70408000P7  
**Filing Type** : Declaration of Conformity  
**Applicant** : Haier Telecom (Qingdao) Co., Ltd.  
No. 1 Haier Raod, Hi-tech Zone, Qingdao, 266101,  
PRC

**HEREBY CERTIFY THAT:**

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.4 - 2001** and the energy emitted by this equipment was **passed FCC Part 15 B** in both radiated and conducted emission class B limits. Testing was carried out on Aug. 15, 2004 at **SPORTON International Inc. LAB.**

  
Daniel Lee  
Manager

**SPORTON International Inc.**

6F, No.106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

## **1. General Description of Equipment under Test**

### **1.1 Applicant**

**Chi Mei Communication Systems, Inc.**

11F, No. 39, Chung Hua RD. Sec. 1, Taipei 100, Taiwan

### **1.2 Manufacturer**

**Chi Mei Communication Systems, Inc.**

No. 128, Sheng-Li Rd., Jen Te Shiang, Tainan County, Taiwan 717

### **1.3 Basic Description of Equipment under Test**

|                     |                                        |
|---------------------|----------------------------------------|
| Equipment           | : GSM 900 / 1800 / 1900 GPRS PEN PHONE |
| Trade Name          | : Haier / CMCS                         |
| Model No.           | : P7 / Puccini                         |
| FCC ID              | : SG70408000P7                         |
| Power Supply Type.  | : Switching                            |
| Charger Power Input | : AC 120V, Wall-mount, 1 meter, 2pin   |

#### 1.4 Feature of Equipment under Test

| Product Feature & Specification      |                                      |
|--------------------------------------|--------------------------------------|
| 1. DUT Type :                        | GSM 900 / 1800 / 1900 GPRS PEN PHONE |
| 2. Trade Name :                      | Haier / CMCS                         |
| 3. Model Name :                      | P7 / Puccini                         |
| 4. Tx Frequency :                    | 1850-1910 MHz (PCS)                  |
| 5. Rx Frequency :                    | 1930-1990MHz (PCS)                   |
| 6. Channel Spacing                   | 200 KHz                              |
| 7. Maximum Output Power to Antenna : | 29 dBm                               |
| 9. HW Version :                      | V0.1                                 |
| 10. SW Version :                     | V0.04                                |
| 11. Type of Modulation :             | GMSK                                 |
| 12. DUT Stage :                      | Identical Prototype                  |
| 13. Application Type :               | Certification                        |

## **2. Test Configuration of Equipment under Test**

### **2.1 Test Manner**

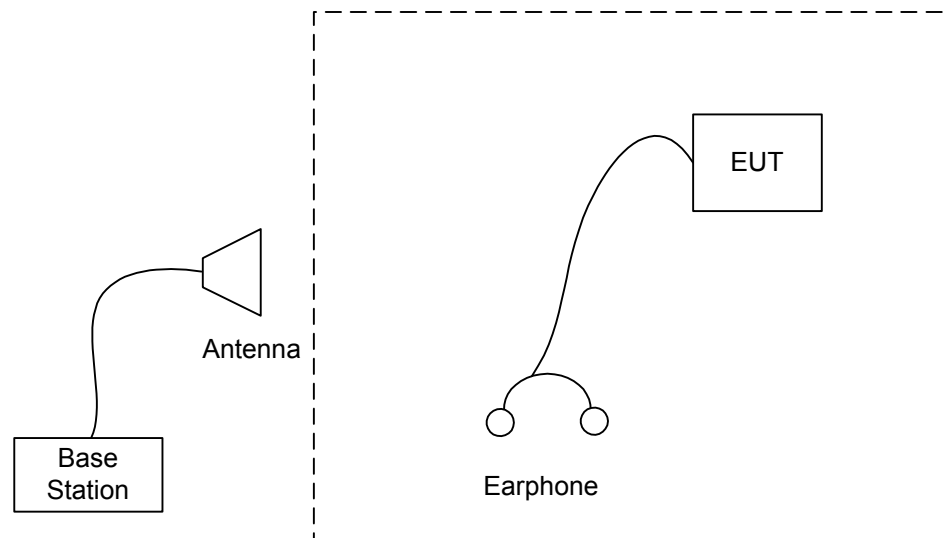
- a. The EUT has been setup pursuant to ANSI C63.4-2001 and configuration operated in a manner which tended to maximize its emission characteristics in a typical application.
- b. The complete test system included Earphone and EUT for EMI test.
- c. The following test modes were performed for conduction test:  
Mode 1:PCS Link Mode  
Mode 2:PCS Idle Mode  
Mode 3: USB Link Mode
- d. The following test modes were performed for radiation test:  
Mode 1: PCS Idle Mode  
Mode 2: USB Link Mode
- e. Frequency range investigated: conduction 150 KHz to 30 MHz, radiation 30 MHz to 1000MHz.

### **2.2 Description of Test System**

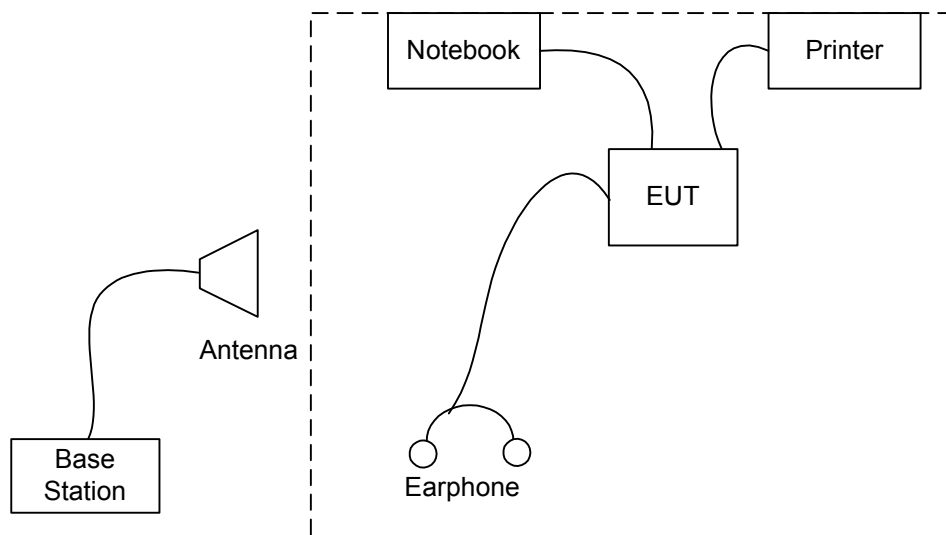
| Item | Asset           | Model Name       | Power Cord | S/N    |
|------|-----------------|------------------|------------|--------|
| 1.   | Earphone (NEC)  | N/A              | N/A        | N/A    |
| 2.   | Notebook (DELL) | PP05L            | N/A        | SP0005 |
| 3.   | Printer (EPSON) | STYLUS COLOR C61 | N/A        | SP0012 |

## 2.3 Connection Diagram of Test System

### EUT Only



### EUT + PC:



### **3. Test Software**

The EUT is in GSM 1900 Idle mode controlled by CMU200.

There is no other test software in the testing.

## **4. General Information of Test**

### **4.1 Test Facility**

Test Site Location : No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park,  
Kwei-Shan Hsiag, Tao Yuan Hsien, Taiwan, R.O.C.  
TEL : 886-3-327-3456  
FAX : 886-3-318-0055  
Test Site No. : CO01-HY, 03CH06-HY

### **4.2 Test Voltage**

120V/60Hz

### **4.3 Standard for Methods of Measurement**

ANSI C63.4-2001

### **4.4 Test in Compliance with**

FCC Part 15, Subpart B

### **4.5 Frequency Range Investigated**

- a. Conduction: from 150 kHz to 30 MHz
- b. Radiation: from 30 MHz to 1000MHz

### **4.6 Test Distance**

The test distance of radiated emission from antenna to EUT is 3m.

## **5. Test of Conducted Powerline**

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 kHz and return leads of the EUT according to the methods defined in ANSI C63.4-2001 Section 3.1. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 5.3. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

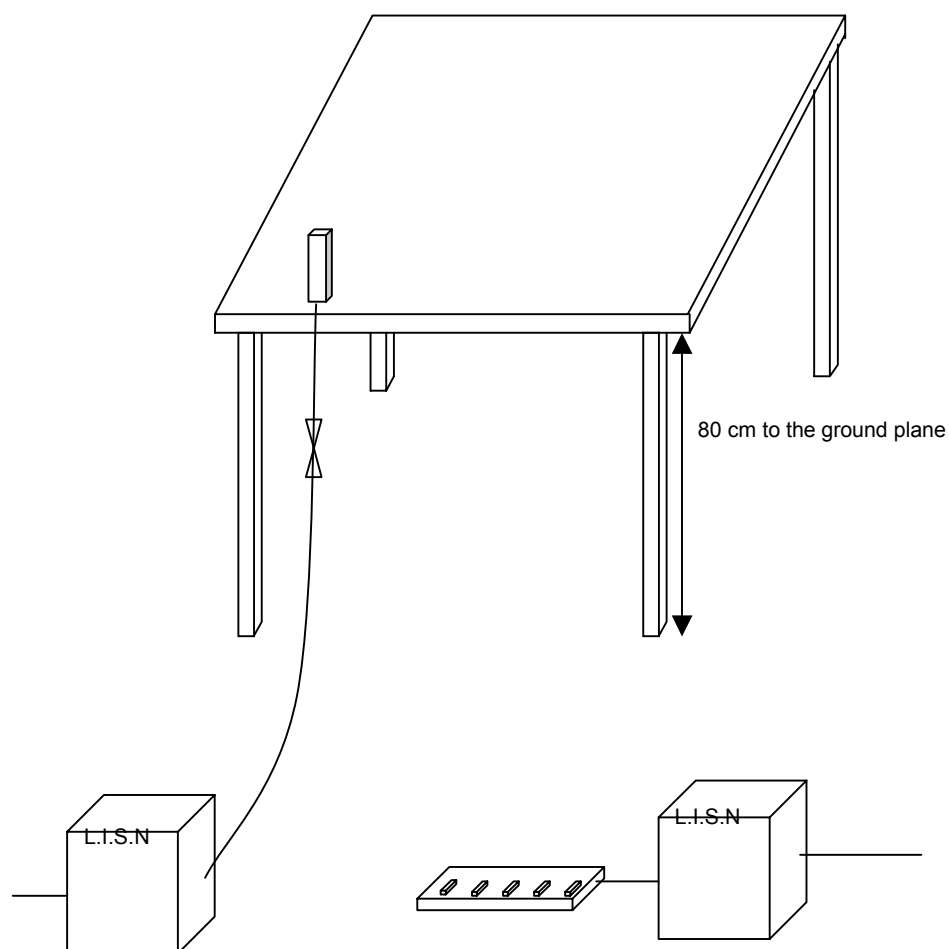
### **5.1 Major Measuring Instruments**

|                 |               |
|-----------------|---------------|
| ● Test Receiver | (R&S ESCS 30) |
| Attenuation     | 10 dB         |
| Start Frequency | 0.15 MHz      |
| Stop Frequency  | 30 MHz        |
| IF Bandwidth    | 9 kHz         |

## **5.2 Test Procedures**

- a. 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.
- b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- c. All the support units are connect to the other LISN.
- d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- e. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
- f. Both sides of AC line were checked for maximum conducted interference.
- g. The frequency range from 150 kHz to 30 MHz was searched.
- h. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

### 5.3 Typical Test Setup Layout of Conducted Powerline

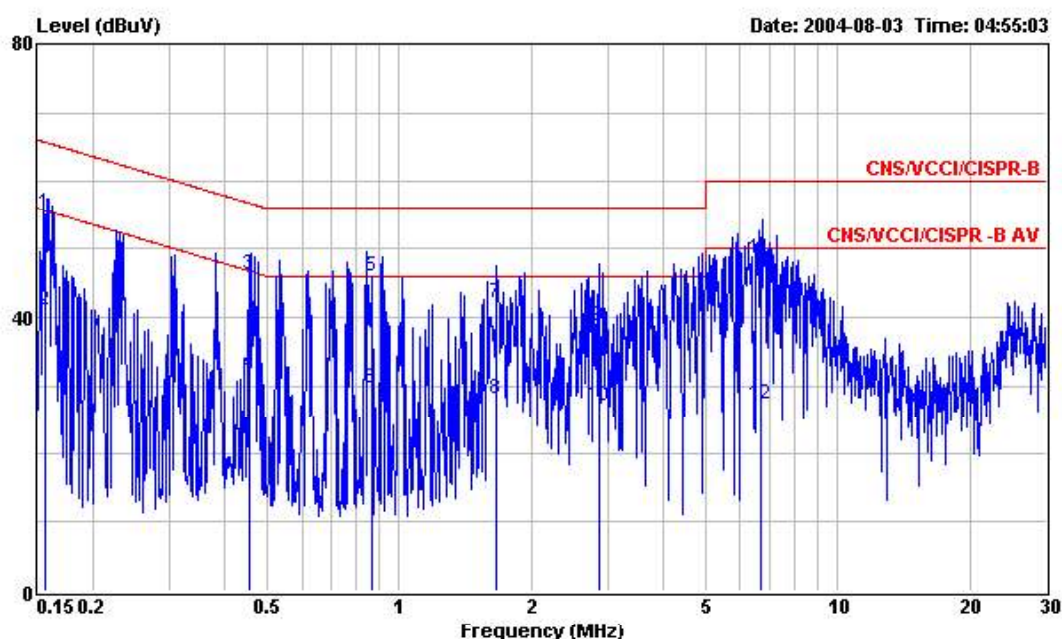


## 5.4 Test Result of AC Powerline Conducted Emission

### 5.4.1 Test Mode: Mode 1

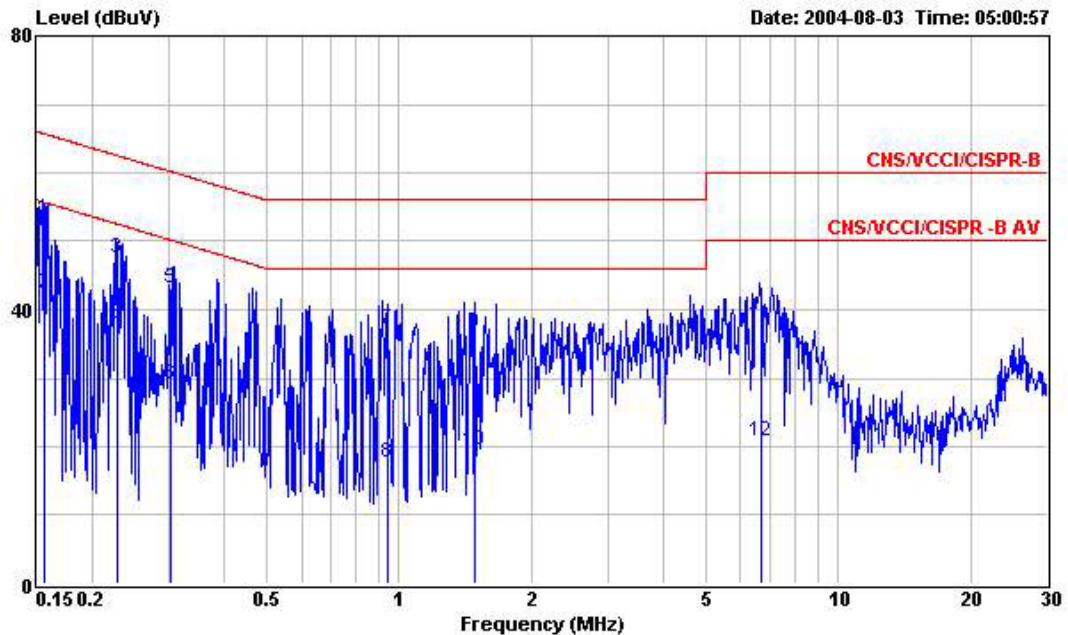
- Frequency Range of Test: from 0.15 MHz to 30 MHz
- Temperature: 31°C
- Relative Humidity: 53 %
- All emissions not reported here are more than 10 dB below the prescribed limit.

The test that passed at the minimum margin was marked by a frame in the following data



Site : CO01-HY  
 Condition : CNS/VCCI/CISPR-B 2003 2001/008 LINE  
 EUT : GSM 900/1800/1900 GPRS PEN Phone  
 Power : 120Vac/60Hz  
 Model : Puccini  
 Memo : PCS Link Mode

|    | Freq  | Level | Over   | Limit | Read  | Probe  | Cable |         |
|----|-------|-------|--------|-------|-------|--------|-------|---------|
|    | MHz   | dBuV  | Limit  | Line  | Level | Factor | Loss  | Remark  |
|    |       |       | dB     | dBuV  | dBuV  | dB     | dB    |         |
| 1  | 0.156 | 55.30 | -10.36 | 65.66 | 55.19 | 0.10   | 0.01  | QP      |
| 2  | 0.156 | 41.01 | -14.65 | 55.66 | 40.90 | 0.10   | 0.01  | Average |
| 3  | 0.453 | 46.21 | -10.60 | 56.81 | 46.08 | 0.10   | 0.03  | QP      |
| 4  | 0.453 | 31.62 | -15.19 | 46.81 | 31.49 | 0.10   | 0.03  | Average |
| 5  | 0.864 | 45.91 | -10.09 | 56.00 | 45.77 | 0.10   | 0.04  | QP      |
| 6  | 0.864 | 29.62 | -16.38 | 46.00 | 29.48 | 0.10   | 0.04  | Average |
| 7  | 1.662 | 42.01 | -13.99 | 56.00 | 41.84 | 0.10   | 0.07  | QP      |
| 8  | 1.662 | 28.18 | -17.82 | 46.00 | 28.01 | 0.10   | 0.07  | Average |
| 9  | 2.855 | 38.61 | -17.39 | 56.00 | 38.41 | 0.10   | 0.10  | QP      |
| 10 | 2.855 | 27.12 | -18.88 | 46.00 | 26.92 | 0.10   | 0.10  | Average |
| 11 | 6.675 | 48.52 | -11.48 | 60.00 | 48.26 | 0.16   | 0.10  | QP      |
| 12 | 6.675 | 27.40 | -22.60 | 50.00 | 27.14 | 0.16   | 0.10  | Average |



Site : CO01-HY  
 Condition : CNS/VCCI/CISPR-B 2003 2001/008 NEUTRAL  
 EUT : GSM 900/1800/1900 GPRS PEN Phone  
 Power : 120Vac/60Hz  
 Model : Puccini  
 Memo : PCS Link Mode

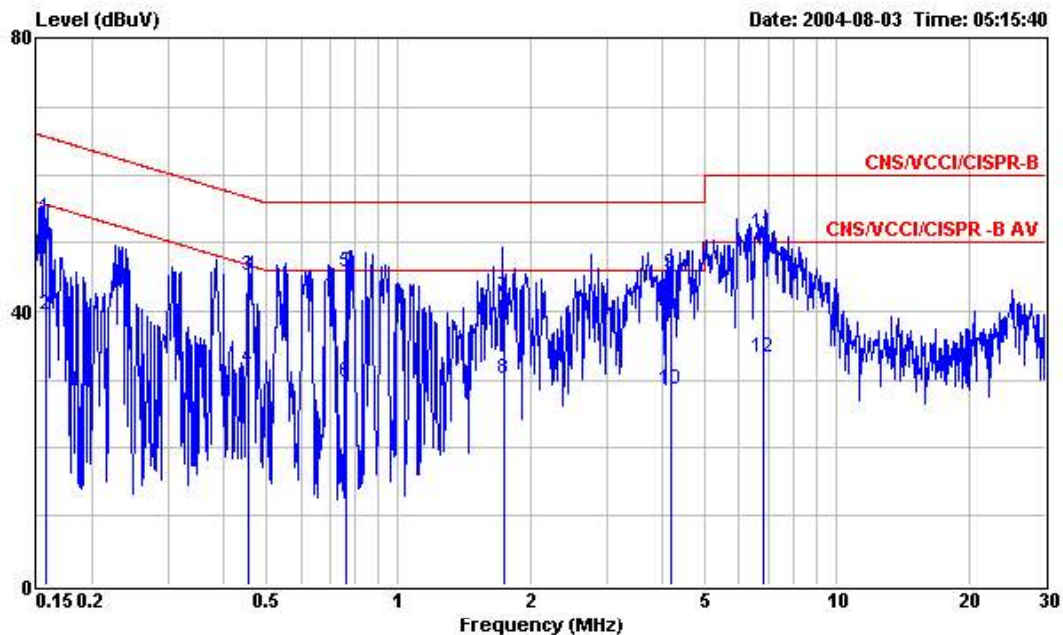
|    | Freq  | Level | Over   | Limit | Read  | Probe  | Cable |         |
|----|-------|-------|--------|-------|-------|--------|-------|---------|
|    | MHz   | dBuV  | Limit  | Line  | Level | Factor | Loss  | Remark  |
|    |       |       | dB     | dBuV  | dBuV  | dB     | dB    |         |
| 1  | 0.156 | 53.21 | -12.46 | 65.67 | 53.10 | 0.10   | 0.01  | QP      |
| 2  | 0.156 | 42.25 | -13.42 | 55.67 | 42.14 | 0.10   | 0.01  | Average |
| 3  | 0.228 | 47.42 | -15.11 | 62.53 | 47.31 | 0.10   | 0.01  | QP      |
| 4  | 0.228 | 37.52 | -15.01 | 52.53 | 37.41 | 0.10   | 0.01  | Average |
| 5  | 0.302 | 43.05 | -17.14 | 60.19 | 42.93 | 0.10   | 0.02  | QP      |
| 6  | 0.302 | 29.20 | -20.99 | 50.19 | 29.08 | 0.10   | 0.02  | Average |
| 7  | 0.942 | 37.02 | -18.98 | 56.00 | 36.88 | 0.10   | 0.04  | QP      |
| 8  | 0.942 | 17.71 | -28.29 | 46.00 | 17.57 | 0.10   | 0.04  | Average |
| 9  | 1.490 | 36.70 | -19.30 | 56.00 | 36.54 | 0.10   | 0.06  | QP      |
| 10 | 1.490 | 19.37 | -26.63 | 46.00 | 19.21 | 0.10   | 0.06  | Average |
| 11 | 6.676 | 37.79 | -22.21 | 60.00 | 37.49 | 0.20   | 0.10  | QP      |
| 12 | 6.676 | 20.76 | -29.24 | 50.00 | 20.46 | 0.20   | 0.10  | Average |

Test Engineer :   
 Jay

#### 5.4.2 Test Mode: Mode 2

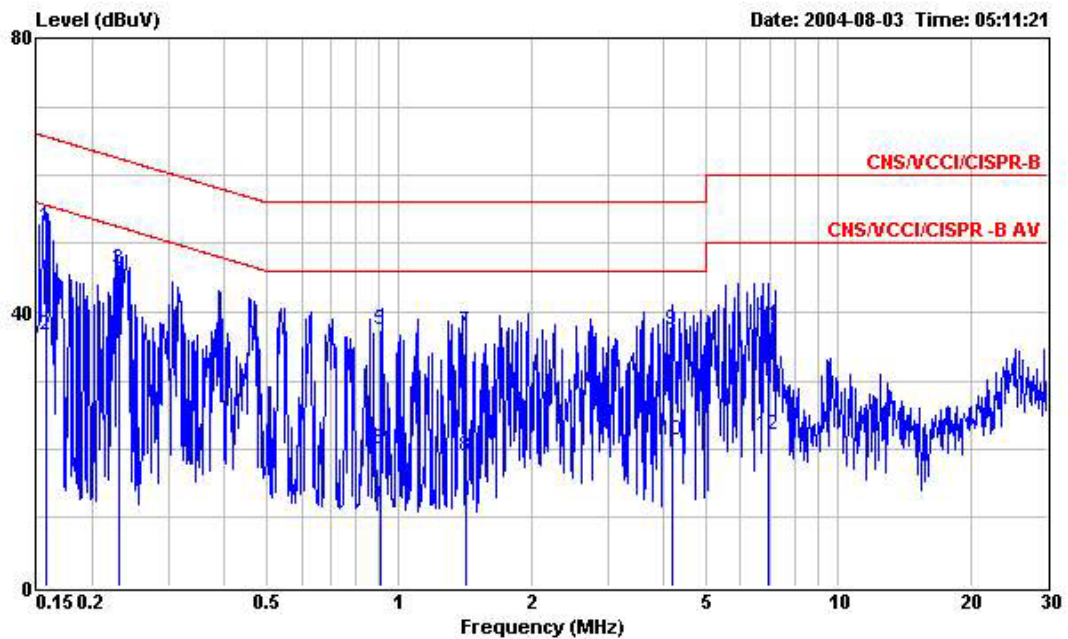
- Frequency Range of Test: from 0.15 MHz to 30 MHz
- Temperature: 31°C
- Relative Humidity: 53 %
- All emissions not reported here are more than 10 dB below the prescribed limit.

The test that passed at the minimum margin was marked by a frame in the following data



Site : CO01-HY  
 Condition : CNS/VCCI/CISPR-B 2003 2001/008 LINE  
 EUT : GSM 900/1800/1900 GPRS PEN Phone  
 Power : 120Vac/50Hz  
 Model : Puccini  
 Memo : PCS Idle Mode

|    | Freq  | Level | Over   | Limit | Read  | Probe  | Cable |         |
|----|-------|-------|--------|-------|-------|--------|-------|---------|
|    | MHz   | dBuV  | Limit  | Line  | Level | Factor | Loss  | Remark  |
|    | MHz   | dBuV  | dB     | dBuV  | dBuV  | dB     | dB    |         |
| 1  | 0.157 | 53.76 | -11.85 | 65.61 | 53.65 | 0.10   | 0.01  | QP      |
| 2  | 0.157 | 39.36 | -16.25 | 55.61 | 39.25 | 0.10   | 0.01  | Average |
| 3  | 0.456 | 45.17 | -11.60 | 56.77 | 45.04 | 0.10   | 0.03  | QP      |
| 4  | 0.456 | 31.67 | -15.10 | 46.77 | 31.54 | 0.10   | 0.03  | Average |
| 5  | 0.757 | 45.66 | -10.34 | 56.00 | 45.52 | 0.10   | 0.04  | QP      |
| 6  | 0.757 | 29.62 | -16.38 | 46.00 | 29.48 | 0.10   | 0.04  | Average |
| 7  | 1.740 | 42.05 | -13.95 | 56.00 | 41.88 | 0.10   | 0.07  | QP      |
| 8  | 1.740 | 30.22 | -15.78 | 46.00 | 30.05 | 0.10   | 0.07  | Average |
| 9  | 4.203 | 45.55 | -10.45 | 56.00 | 45.33 | 0.11   | 0.11  | QP      |
| 10 | 4.203 | 28.54 | -17.46 | 46.00 | 28.32 | 0.11   | 0.11  | Average |
| 11 | 6.823 | 51.37 | -8.63  | 60.00 | 51.11 | 0.16   | 0.10  | QP      |
| 12 | 6.823 | 33.28 | -16.72 | 50.00 | 33.02 | 0.16   | 0.10  | Average |



Site : CO01-HY  
Condition : CNS/VCCI/CISPR-B 2003 2001/008 NEUTRAL  
EUT : GSM 900/1800/1900 GPRS PEN Phone  
Power : 120Vac/50Hz  
Model : Puccini  
Memo : PCS Idle Mode

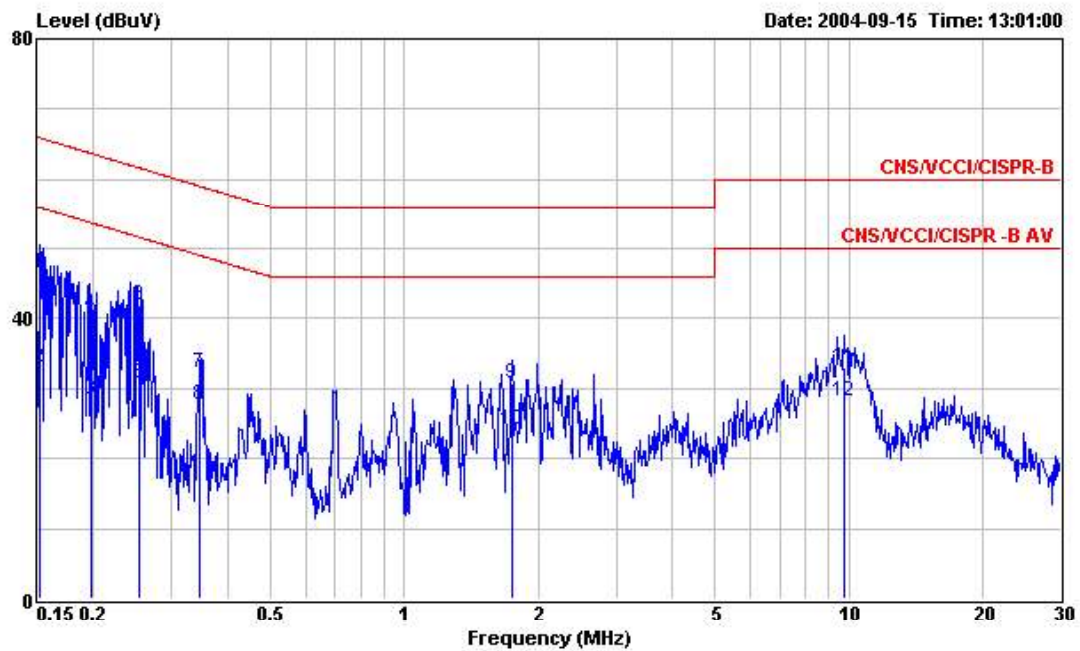
|    | Freq  | Level | Over   | Limit | Read  | Probe  | Cable |         |
|----|-------|-------|--------|-------|-------|--------|-------|---------|
|    | MHz   | dBuV  | Limit  | Line  | Level | Factor | Loss  | Remark  |
|    | MHz   | dBuV  | dB     | dBuV  | dBuV  | dB     | dB    |         |
| 1  | 0.157 | 52.41 | -13.20 | 65.61 | 52.30 | 0.10   | 0.01  | QP      |
| 2  | 0.157 | 36.63 | -18.98 | 55.61 | 36.52 | 0.10   | 0.01  | Average |
| 3  | 0.230 | 46.11 | -16.36 | 62.47 | 46.00 | 0.10   | 0.01  | QP      |
| 4  | 0.230 | 37.14 | -15.33 | 52.47 | 37.03 | 0.10   | 0.01  | Average |
| 5  | 0.908 | 37.36 | -18.64 | 56.00 | 37.22 | 0.10   | 0.04  | QP      |
| 6  | 0.908 | 19.99 | -26.01 | 46.00 | 19.85 | 0.10   | 0.04  | Average |
| 7  | 1.422 | 37.03 | -18.97 | 56.00 | 36.87 | 0.10   | 0.06  | QP      |
| 8  | 1.422 | 19.05 | -26.95 | 46.00 | 18.89 | 0.10   | 0.06  | Average |
| 9  | 4.182 | 37.46 | -18.54 | 56.00 | 37.15 | 0.20   | 0.11  | QP      |
| 10 | 4.182 | 21.24 | -24.76 | 46.00 | 20.93 | 0.20   | 0.11  | Average |
| 11 | 6.946 | 37.95 | -22.05 | 60.00 | 37.65 | 0.20   | 0.10  | QP      |
| 12 | 6.946 | 22.12 | -27.88 | 50.00 | 21.82 | 0.20   | 0.10  | Average |

Test Engineer :   
Jay

### 5.4.3 Test Mode: Mode 3

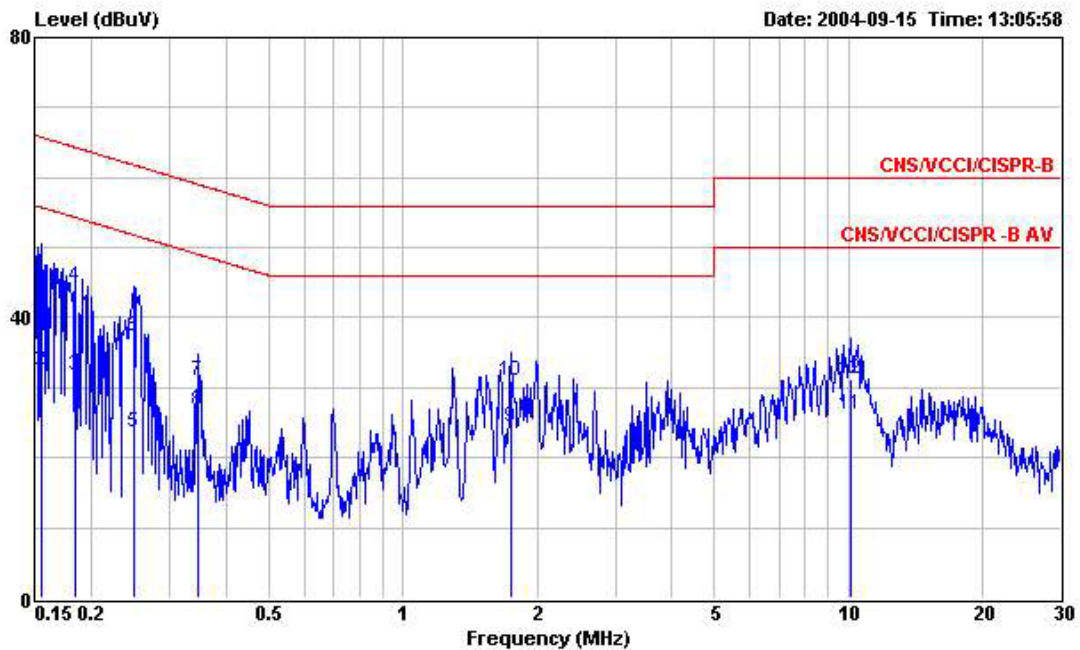
- Frequency Range of Test: from 0.15 MHz to 30 MHz
- Temperature: 31°C
- Relative Humidity: 53 %
- All emissions not reported here are more than 10 dB below the prescribed limit.

The test that passed at the minimum margin was marked by a frame in the following data



Site : CO01-HY  
Condition : CNS/VCCI/CISPR-B 2003 2001/008 LINE  
EUT : GSM 900/1800/1900 GPRS PEN Phone  
Power : 120Vac/60Hz  
Model : Puccini  
Memo : USB Link mode

|    | Freq  | Level | Over   | Limit | Read  | Probe  | Cable |         |
|----|-------|-------|--------|-------|-------|--------|-------|---------|
|    | MHz   | dBuV  | Limit  | Line  | Level | Factor | Loss  | Remark  |
|    | MHz   | dBuV  | dB     | dBuV  | dBuV  | dB     | dB    |         |
| 1  | 0.152 | 46.58 | -19.31 | 65.89 | 46.47 | 0.10   | 0.01  | QP      |
| 2  | 0.152 | 33.02 | -22.87 | 55.89 | 32.91 | 0.10   | 0.01  | Average |
| 3  | 0.197 | 28.35 | -25.39 | 53.74 | 28.24 | 0.10   | 0.01  | Average |
| 4  | 0.197 | 40.70 | -23.04 | 63.74 | 40.59 | 0.10   | 0.01  | QP      |
| 5  | 0.253 | 30.62 | -21.02 | 51.64 | 30.50 | 0.10   | 0.02  | Average |
| 6  | 0.253 | 41.91 | -19.73 | 61.64 | 41.79 | 0.10   | 0.02  | QP      |
| 7  | 0.348 | 32.17 | -26.84 | 59.01 | 32.04 | 0.10   | 0.03  | QP      |
| 8  | 0.348 | 27.75 | -21.26 | 49.01 | 27.62 | 0.10   | 0.03  | Average |
| 9  | 1.750 | 30.62 | -25.38 | 56.00 | 30.45 | 0.10   | 0.07  | QP      |
| 10 | 1.750 | 24.03 | -21.97 | 46.00 | 23.86 | 0.10   | 0.07  | Average |
| 11 | 9.760 | 33.05 | -26.95 | 60.00 | 32.75 | 0.20   | 0.10  | QP      |
| 12 | 9.760 | 28.27 | -21.73 | 50.00 | 27.97 | 0.20   | 0.10  | Average |



Site : CO01-HY  
 Condition : CNS/VCCI/CISPR-B 2003 2001/008 LINE  
 EUT : GSM 900/1800/1900 GPRS PEN Phone  
 Power : 120Vac/50Hz  
 Model : Puccini  
 Memo : USB Link mode

|    | Freq   | Level | Over   | Limit | Read  | Probe  | Cable |         |
|----|--------|-------|--------|-------|-------|--------|-------|---------|
|    | MHz    | dBuV  | Limit  | Line  | Level | Factor | Loss  | Remark  |
|    | MHz    | dBuV  | dB     | dBuV  | dBuV  | dB     | dB    |         |
| 1  | 0.154  | 46.25 | -19.53 | 65.78 | 46.14 | 0.10   | 0.01  | QP      |
| 2  | 0.154  | 32.55 | -23.23 | 55.78 | 32.44 | 0.10   | 0.01  | Average |
| 3  | 0.184  | 31.79 | -32.51 | 64.30 | 31.68 | 0.10   | 0.01  | QP      |
| 4  | 0.184  | 44.43 | -19.87 | 64.30 | 44.32 | 0.10   | 0.01  | QP      |
| 5  | 0.248  | 23.60 | -28.22 | 51.82 | 23.48 | 0.10   | 0.02  | Average |
| 6  | 0.248  | 37.39 | -24.43 | 61.82 | 37.27 | 0.10   | 0.02  | QP      |
| 7  | 0.346  | 30.99 | -28.07 | 59.06 | 30.86 | 0.10   | 0.03  | QP      |
| 8  | 0.346  | 26.63 | -22.43 | 49.06 | 26.50 | 0.10   | 0.03  | Average |
| 9  | 1.750  | 24.46 | -21.54 | 46.00 | 24.29 | 0.10   | 0.07  | Average |
| 10 | 1.750  | 31.04 | -24.96 | 56.00 | 30.87 | 0.10   | 0.07  | QP      |
| 11 | 10.130 | 26.28 | -23.72 | 50.00 | 25.98 | 0.20   | 0.10  | Average |
| 12 | 10.130 | 31.36 | -28.64 | 60.00 | 31.06 | 0.20   | 0.10  | QP      |

Test Engineer :   
 Jay

## 5.5 Photographs of Conducted Powerline Test Configuration

- The photographs show the configuration that generates the maximum emission.

EUT Only

Front View



Rear View



Side View

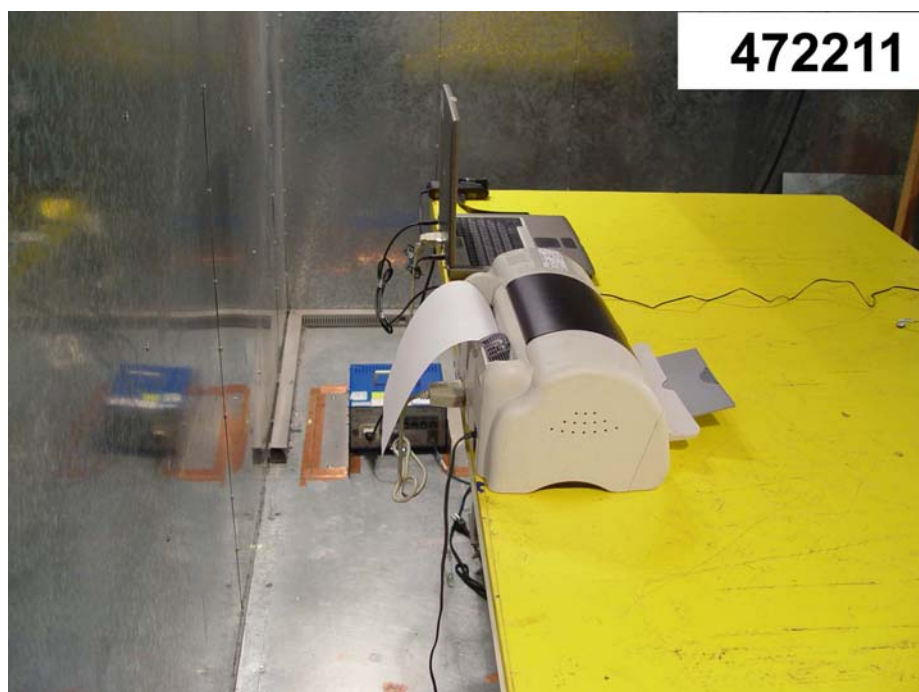


EUT + PC

Front View



Rear View



Side View



**472211**

## **6. Test of Radiated Emission**

Radiated emissions from 30 MHz to 1000 MHz were measured with a bandwidth of 120 kHz and 1MHz according to the methods defines in ANSI C63.4-2001. The EUT was placed on a nonmetallic stand, 0.8 meter above the ground plane, as shown in section 6.3. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions.

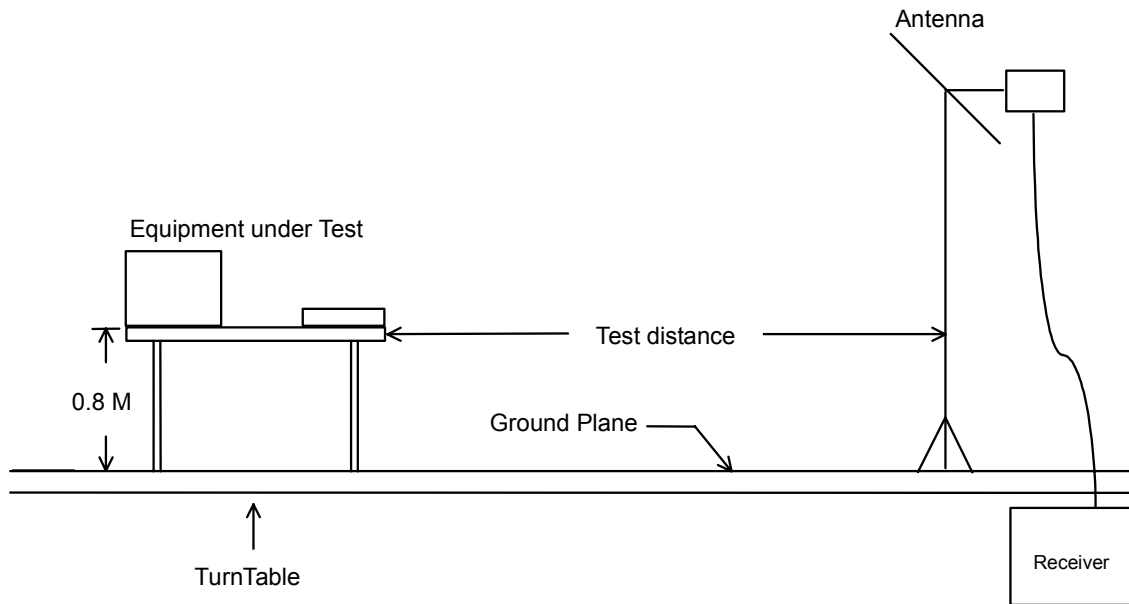
### **6.1 Major Measuring Instruments**

- Amplifier (PA-103 )
  - RF Gain 30 dB
  - Signal Input 100 kHz to 1 GHz
  
- Spectrum analyzer ( R&S FSP40 )
  - Attenuation 10 dB
  - Start Frequency 1 GHz
  - Stop Frequency 25 GHz
  - Resolution Bandwidth 120 kHz
  - Video Bandwidth 300 kHz
  - Signal Input 9 kHz to 40 GHz

## **6.2 Test Procedures**

- a. The EUT was placed on a rotatable table top 0.8 meter above ground.
- b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- c. The table was rotated 360 degrees to determine the position of the highest radiation.
- d. The antenna is a half wave dipole and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both for horizontal polarization and vertical polarization of the antenna.
- e. 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.
- f. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the quasi-peak method and reported.

### 6.3 Typical Test Setup Layout of Radiated Emission

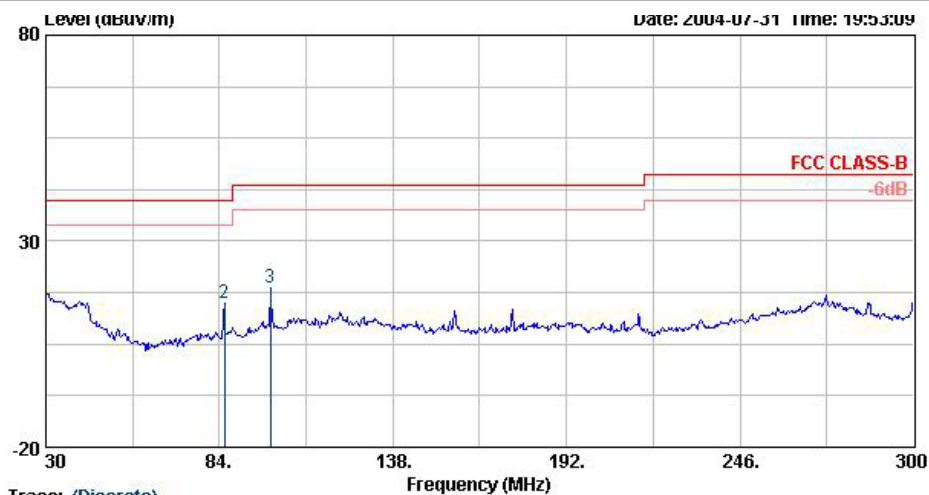


## 6.4 Test Result of Radiated Emission

### 6.4.1 Test Mode: Mode 1

- Frequency Range of Test: from 30 MHz to 13000 MHz
- Test Distance: 3m
- Temperature: 32°C
- Relative Humidity: 57 %
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level

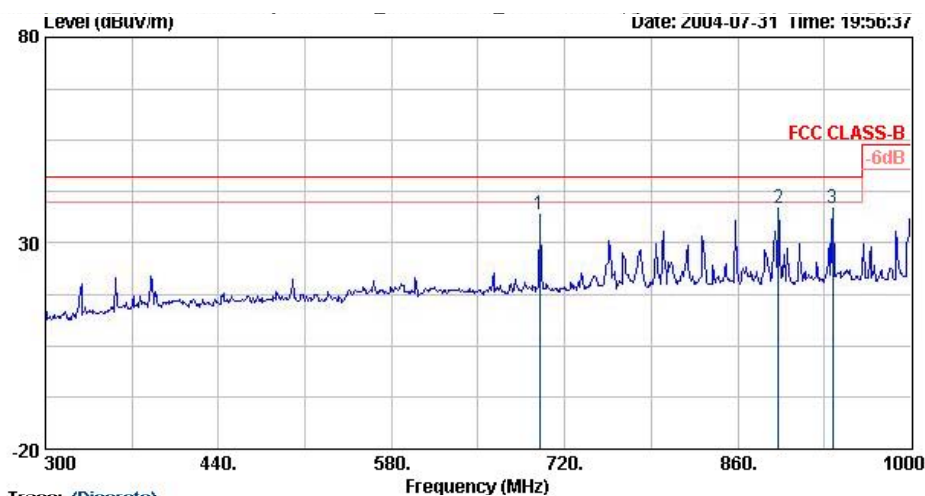
The test that passed at the minimum margin was marked by a frame in the following data



Trace: (Discrete)

Site : 03CH06  
 Condition : FCC CLASS-B 3m BI LOG 2004 0629 HORIZONTAL  
 EUT : GSM 900/1800/1900 GPRS PEN Phone  
 Power : 120Vac/60Hz  
 Model : Puccini  
 Memo : PCS Idle Mode

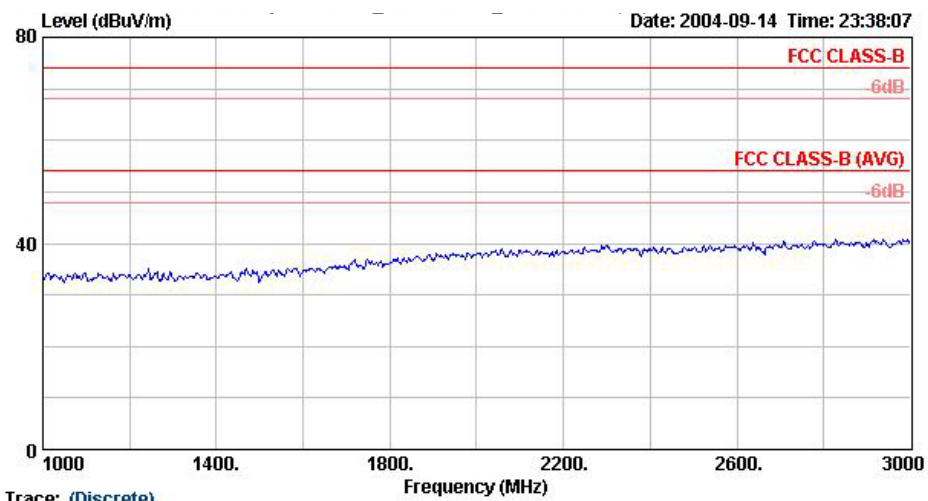
|   | Freq  | Level  | Over   | Limit  | Antenna | Preamp | Cable |        | Ant | Table |
|---|-------|--------|--------|--------|---------|--------|-------|--------|-----|-------|
|   | MHz   | dBuV/m | Limit  | Line   | Factor  | Factor | Loss  | Remark | Pos | Pos   |
|   |       |        | dB     | dBuV/m | dB/m    | dB     | dB    |        | cm  | deg   |
| 1 | 30.00 | 17.45  | -22.55 | 40.00  | 17.90   | 32.12  | 0.50  | Peak   | --- | ---   |
| 2 | 85.62 | 14.97  | -25.03 | 40.00  | 7.90    | 32.23  | 0.82  | Peak   | --- | ---   |
| 3 | 99.93 | 18.52  | -24.98 | 43.50  | 10.40   | 32.30  | 0.89  | Peak   | --- | ---   |



Trace: (Discrete)

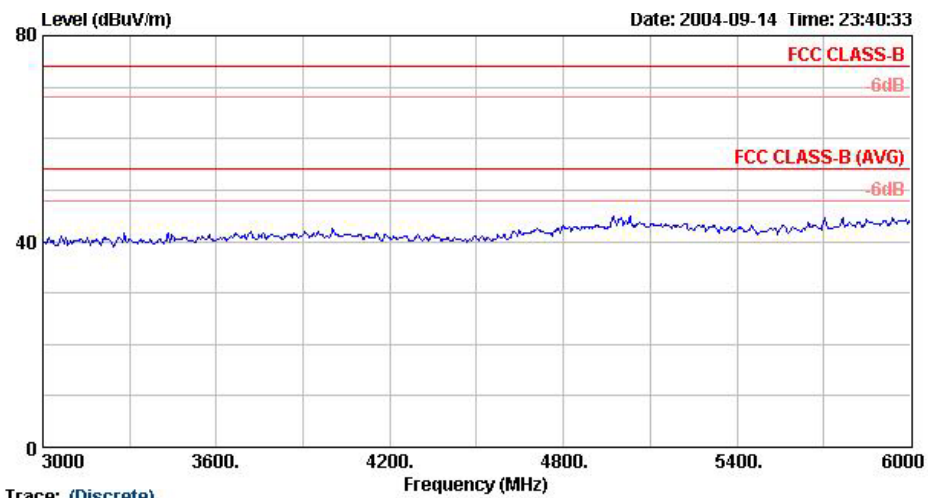
Site : 03CH06  
 Condition : FCC CLASS-B 3m BI LOG 2004 0629 HORIZONTAL  
 EUT : GSM 900/1800/1900 GPRS PEN Phone  
 Power : 120Vac/60Hz  
 Model : Puccini  
 Memo : PCS Idle Mode

|     | Freq   | Level  | Over  | Limit  | Antenna | Preamp | Cable |        | Ant | Table |
|-----|--------|--------|-------|--------|---------|--------|-------|--------|-----|-------|
|     | MHz    | dBuV/m | Limit | dBuV/m | Factor  | Factor | Loss  | Remark | Pos | Pos   |
|     |        |        | dB    |        | dB/m    | dB     | dB    |        | cm  | deg   |
| 1 @ | 699.70 | 36.86  | -9.14 | 46.00  | 19.10   | 31.45  | 2.57  | Peak   | --- | ---   |
| 2 @ | 892.90 | 38.21  | -7.79 | 46.00  | 20.57   | 30.86  | 2.96  | Peak   | --- | ---   |
| 3 @ | 937.00 | 38.43  | -7.57 | 46.00  | 20.77   | 31.03  | 3.09  | Peak   | --- | ---   |



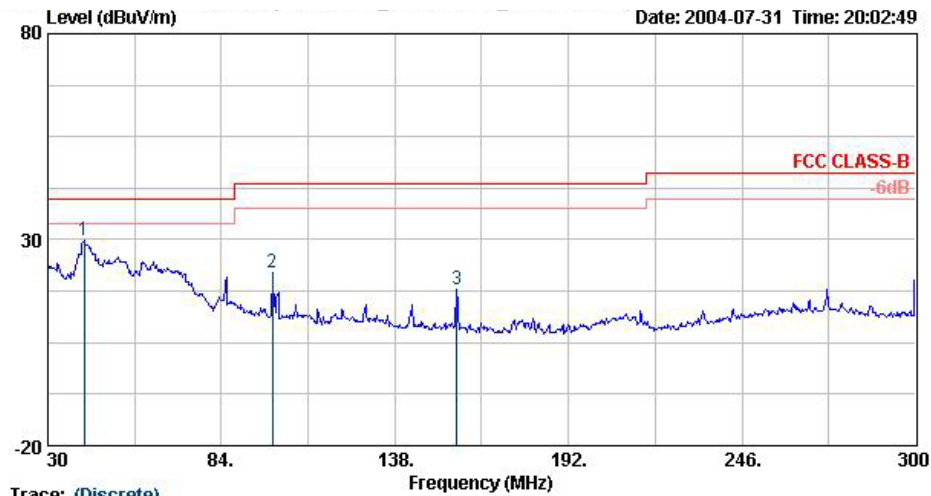
Trace: (Discrete)

Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m HF-HORN AH-118 HORIZONTAL 114cm 360deg  
 EUT : GSM 900/1800/1900 GPRS PEN Phone  
 Power : 120Vac/60Hz  
 Model : Puccini  
 Memo : PCS Idle Mode



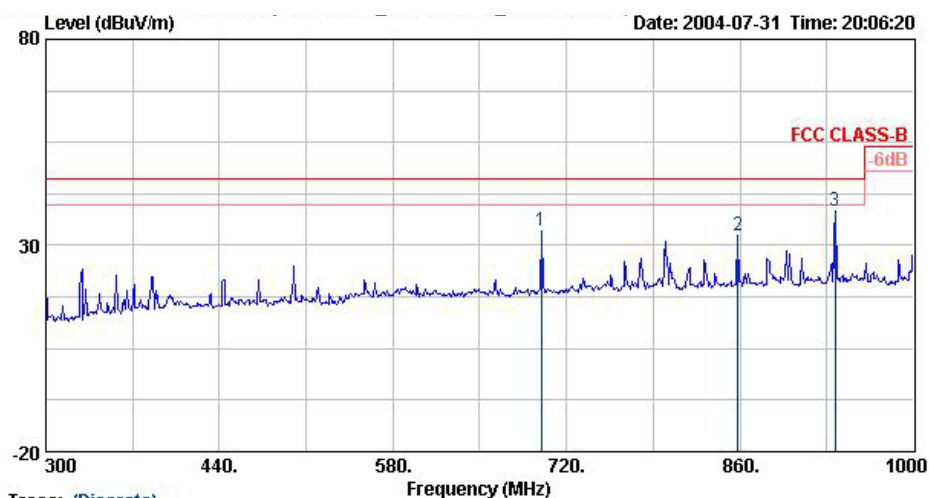
Trace: (Discrete)

Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m HF-HORN AH-118 HORIZONTAL 114cm 0deg  
 EUT : GSM 900/1800/1900 GPRS PEN Phone  
 Power : 120Vac/60Hz  
 Model : Puccini  
 Memo : PCS Idle Mode



Site : 03CH06  
 Condition : FCC CLASS-B 3m BI LOG 2004 0629 VERTICAL  
 EUT : GSM 900/1800/1900 GPRS PEN Phone  
 Power : 120Vac/60Hz  
 Model : Puccini  
 Memo : PCS Idle Mode

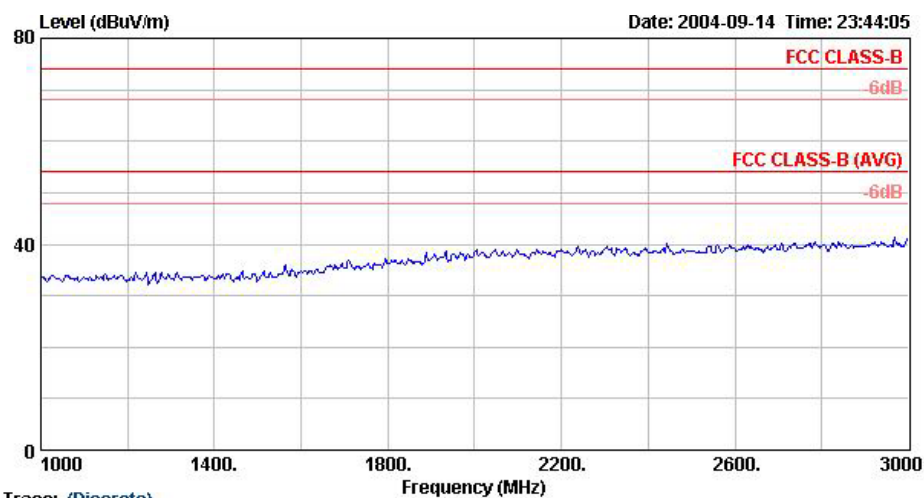
|     | Freq   | Level  | Over   | Limit  | Antenna | Preamp | Cable |        | Ant | Table |
|-----|--------|--------|--------|--------|---------|--------|-------|--------|-----|-------|
|     | MHz    | dBuV/m | Limit  | Line   | Factor  | Factor | Loss  | Remark | Pos | Pos   |
|     |        |        | dB     | dBuV/m | dB/m    | dB     | dB    |        | cm  | deg   |
| 1 @ | 41.34  | 29.99  | -10.01 | 40.00  | 11.49   | 32.22  | 0.56  | Peak   | --- | ---   |
| 2   | 99.93  | 22.09  | -21.41 | 43.50  | 10.40   | 32.30  | 0.89  | Peak   | --- | ---   |
| 3   | 157.17 | 18.03  | -25.47 | 43.50  | 9.65    | 32.18  | 1.08  | Peak   | --- | ---   |



Trace: (Discrete)

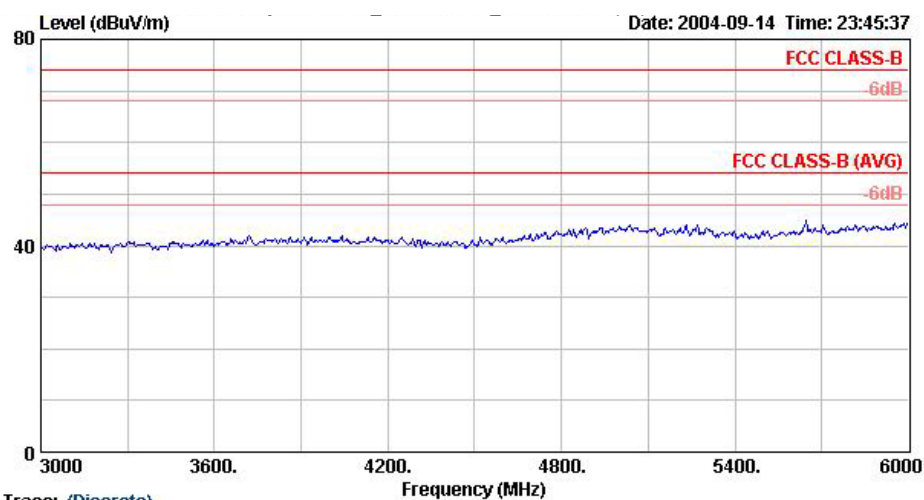
Site : 03CH06  
 Condition : FCC CLASS-B 3m BI LOG 2004 0629 VERTICAL  
 EUT : GSM 900/1800/1900 GPRS PEN Phone  
 Power : 120Vac/60Hz  
 Model : Puccini  
 Memo : PCS Idle Mode

|     | Freq   | Level  | Over   | Limit  | Antenna | Preamp | Cable |        | Ant | Table |
|-----|--------|--------|--------|--------|---------|--------|-------|--------|-----|-------|
|     | MHz    | dBuV/m | Limit  | Line   | Factor  | Factor | Loss  | Remark | Pos | Pos   |
|     |        |        | dB     | dBuV/m | dB/m    | dB     | dB    |        | cm  | deg   |
| 1   | 699.70 | 33.64  | -12.36 | 46.00  | 19.10   | 31.45  | 2.57  | Peak   | --- | ---   |
| 2   | 858.60 | 32.46  | -13.54 | 46.00  | 20.44   | 31.63  | 3.02  | Peak   | --- | ---   |
| 3 @ | 937.00 | 38.29  | -7.71  | 46.00  | 20.77   | 31.03  | 3.09  | Peak   | --- | ---   |



Trace: (Discrete)

Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m HF-HORN AH-118 VERTICAL 114cm 0deg  
 EUT : GSM 900/1800/1900 GPRS PEN Phone  
 Power : 120Vac/60Hz  
 Model : Puccini  
 Memo : PCS Idle Mode



Trace: (Discrete)  
 Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m HF-HORN AH-118 VERTICAL 114cm 0deg  
 EUT : GSM 900/1800/1900 GPRS PEN Phone  
 Power : 120Vac/60Hz  
 Model : Puccini  
 Memo : PCS Idle Mode

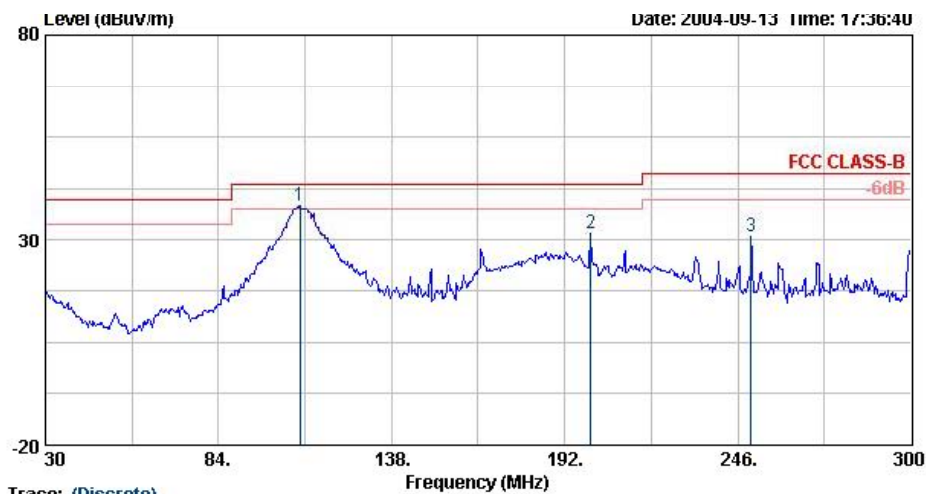
- Mark:  
 Frequency from 6GHz to 13GHz, the emission emitted by the EUT is too low to be measured.

Test Engineer : Jay  
 Jay

## 6.4.2 Test Mode: Mode 2

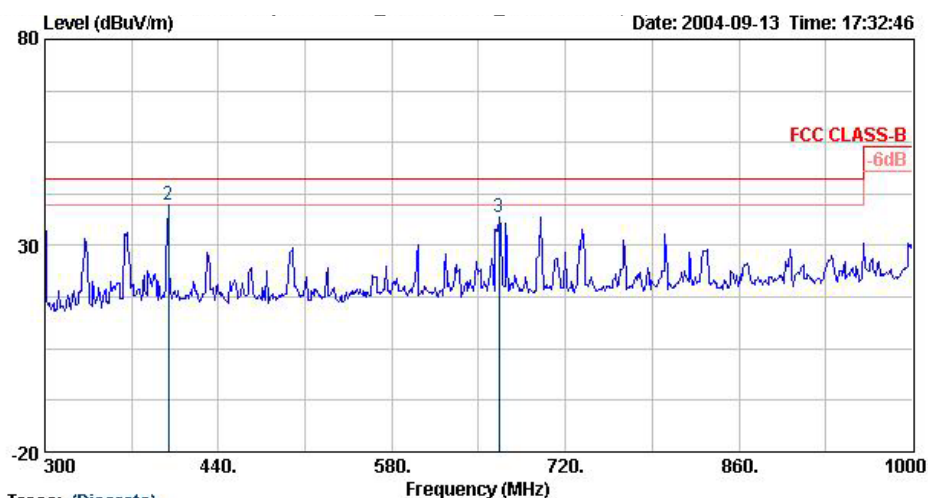
- Frequency Range of Test: from 30 MHz to 13000 MHz
- Test Distance: 3m
- Temperature: 32°C
- Relative Humidity: 57 %
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level

The test that passed at the minimum margin was marked by a frame in the following data



Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m BI LOG 2004 0629 HORIZONTAL 214cm 360deg  
 EUT : GSM 900/1800/1900 GPRS PEN Phone  
 Power : 120Vac/60Hz  
 Model : Puccini  
 Memo : USB mode

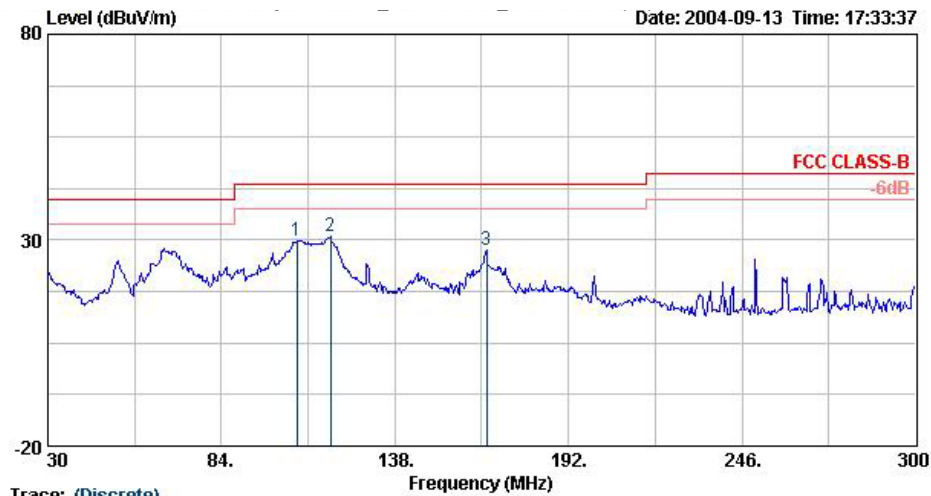
|     | Freq   | Level  | Over Limit | Limit Line | ReadAntenna Level | Preamp Factor | Cable Loss | Ant Pos | Table Pos |
|-----|--------|--------|------------|------------|-------------------|---------------|------------|---------|-----------|
|     | MHz    | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m          | dB         | cm      | deg       |
| 1 @ | 109.38 | 38.46  | -5.04      | 43.50      | 58.26             | 11.39         | 32.11      | 0.92    | 154 312   |
| 2   | 200.10 | 31.62  | -11.88     | 43.50      | 53.73             | 8.70          | 32.05      | 1.24    | --- ---   |
| 3   | 250.05 | 30.98  | -15.02     | 46.00      | 49.41             | 12.00         | 31.83      | 1.40    | --- ---   |



Trace: (Discrete)

Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m BI LOG 2004 0629 HORIZONTAL 115cm 360deg  
 EUT : GSM 900/1800/1900 GPRS PEN Phone  
 Power : 120Vac/60Hz  
 Model : Puccini  
 Memo : USB mode

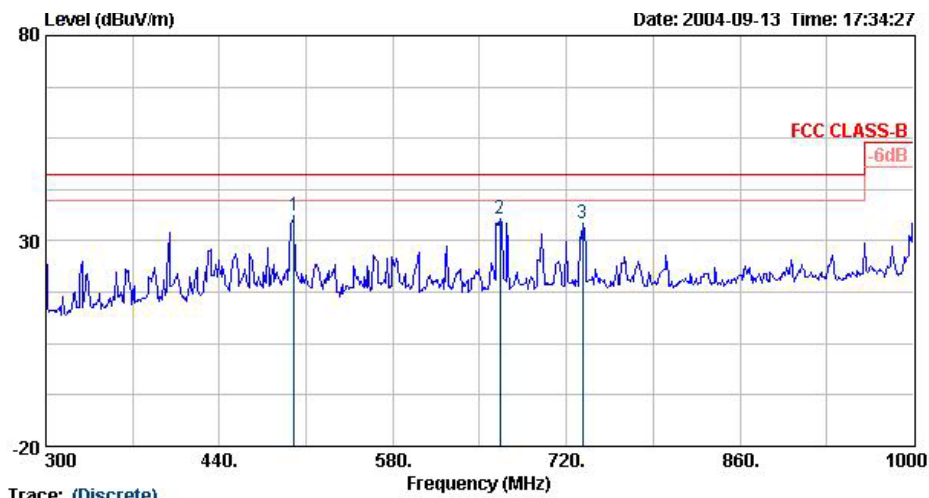
|   | Freq   | Level  | Over  | Limit  | ReadAntenna | Preamp | Cable | Ant  | Table |
|---|--------|--------|-------|--------|-------------|--------|-------|------|-------|
|   | MHz    | dBuV/m | Limit | Line   | Level       | Factor | Loss  | Pos  | Pos   |
|   |        |        | dB    | dBuV/m | dBuV        | dB/m   | dB    | cm   | deg   |
| 1 | 300.00 | 39.53  | -6.47 | 46.00  | 56.94       | 13.00  | 31.91 | 1.50 | ---   |
| 2 | 399.40 | 39.73  | -6.27 | 46.00  | 53.56       | 15.85  | 31.50 | 1.83 | ---   |
| 3 | 666.10 | 36.88  | -9.12 | 46.00  | 47.04       | 18.93  | 31.57 | 2.49 | ---   |



Trace: (Discrete)

Site : 03CH06-HY  
 Condition : FCC CLASS-B 3m BI LOG 2004 0629 VERTICAL 115cm 0deg  
 EUT : GSM 900/1800/1900 GPRS PEN Phone  
 Power : 120Vac/60Hz  
 Model : Puccini  
 Memo : USB mode

|   | Freq   | Level  | Over   | Limit  | ReadAntenna | Preamp | Cable | Ant  | Table |
|---|--------|--------|--------|--------|-------------|--------|-------|------|-------|
|   | MHz    | dBuV/m | Limit  | Line   | Level       | Factor | Loss  | Pos  | Pos   |
|   |        |        | dB     | dBuV/m | dBuV        | dB/m   | dB    | cm   | deg   |
| 1 | 107.49 | 29.93  | -13.57 | 43.50  | 50.00       | 11.17  | 32.15 | 0.91 | ---   |
| 2 | 118.02 | 30.87  | -12.63 | 43.50  | 50.21       | 11.66  | 31.95 | 0.95 | ---   |
| 3 | 166.62 | 27.72  | -15.78 | 43.50  | 49.49       | 9.15   | 32.04 | 1.12 | ---   |



Site : 03CH06-HY  
Condition : FCC CLASS-B 3m BI LOG 2004 0629 VERTICAL 115cm 360deg  
EUT : GSM 900/1800/1900 GPRS PEN Phone  
Power : 120Vac/60Hz  
Model : Puccini  
Memo : USB mode

|   | Freq   | Level  | Over   | Limit  | ReadAntenna | Preampl | Cable  | Ant  | Table |
|---|--------|--------|--------|--------|-------------|---------|--------|------|-------|
|   | MHz    | dBuV/m | Limit  | Line   | Level       | Factor  | Factor | Loss | Pos   |
|   |        |        | dB     | dBuV/m | dBuV        | dB/m    | dB     | dB   | cm    |
| 1 | 500.20 | 36.09  | -9.91  | 46.00  | 48.12       | 17.30   | 31.42  | 2.09 | ---   |
| 2 | 666.10 | 35.28  | -10.72 | 46.00  | 45.44       | 18.93   | 31.57  | 2.49 | ---   |
| 3 | 733.30 | 34.37  | -11.63 | 46.00  | 43.56       | 19.60   | 31.38  | 2.60 | ---   |

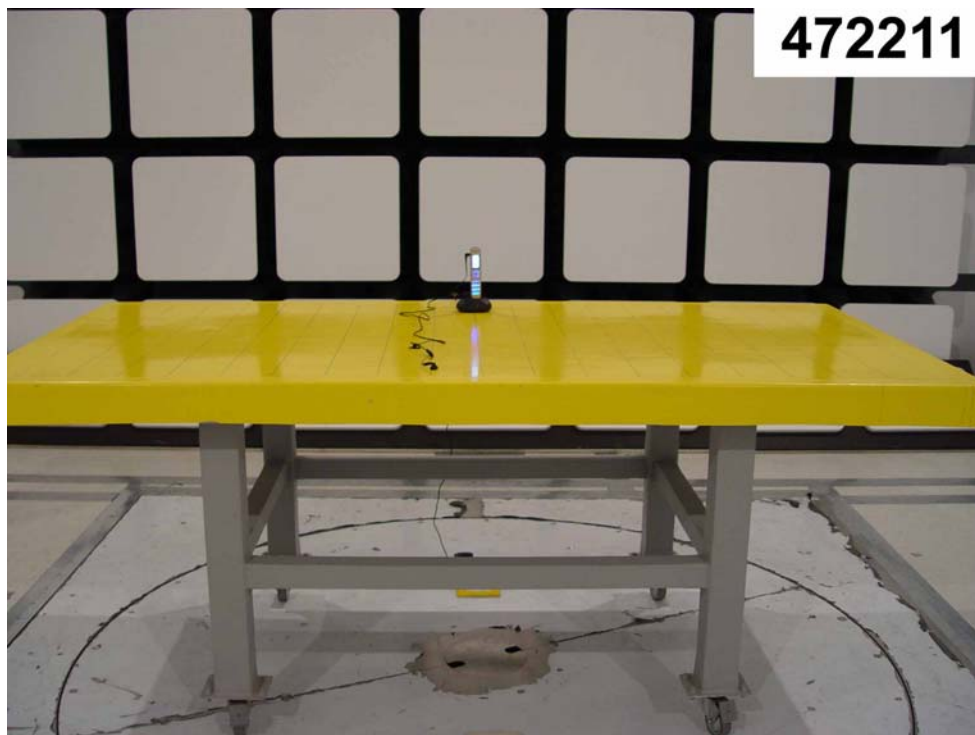
Test Engineer : 

Jay

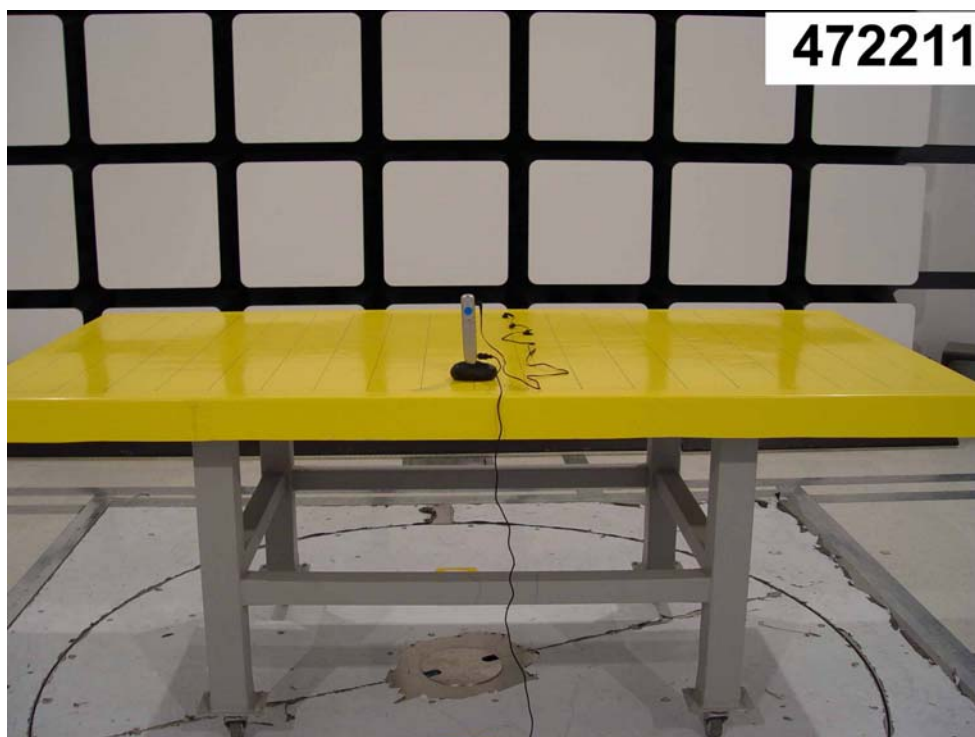
## 6.4 Photographs of Radiated Emission Test Configuration

- The photographs show the configuration that generates the maximum emission.  
EUT Only

FRONT VIEW

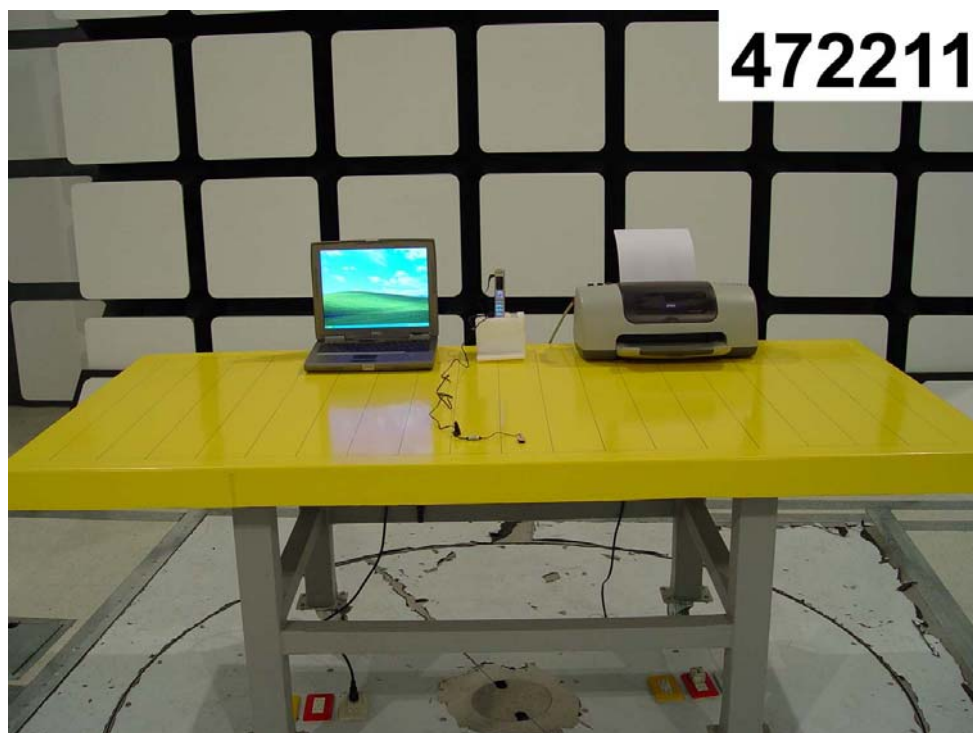


REAR VIEW

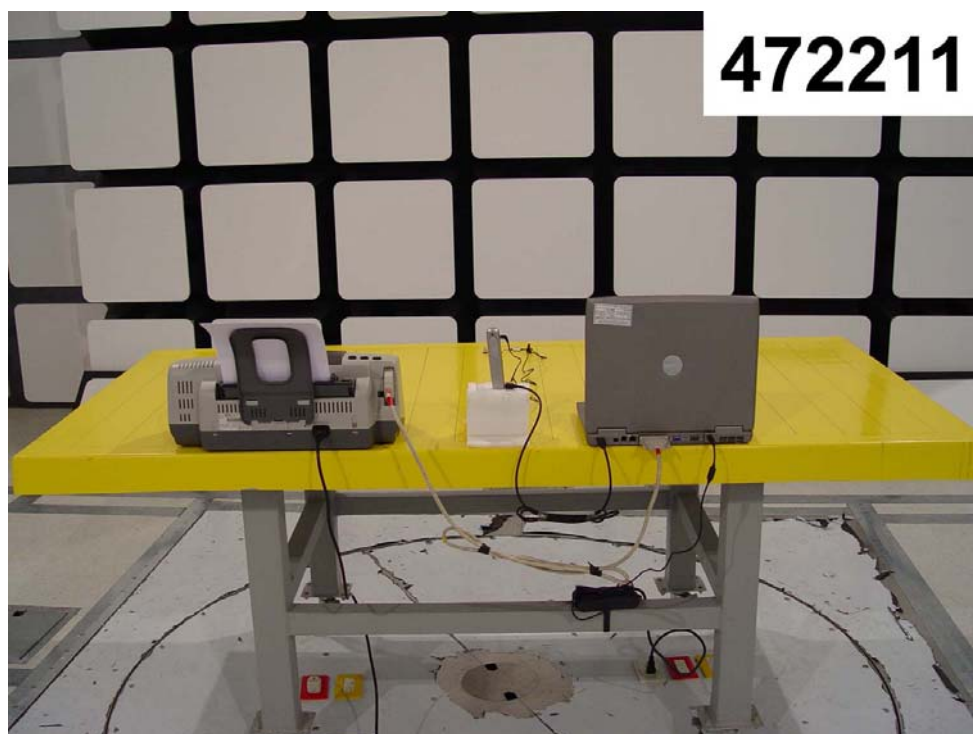


EUT + PC

FRONT VIEW



REAR VIEW



## 7. Antenna Factor & Cable Loss

| Frequency<br>(MHz) | Antenna Factor<br>(dB) | Cable Loss<br>(dB) | Frequency<br>(MHz) | Antenna Factor<br>(dB) | Cable Loss<br>(dB) |
|--------------------|------------------------|--------------------|--------------------|------------------------|--------------------|
| 30                 | 15.35                  | 4.50               | 1000               | 24.10                  | 3.92               |
| 35                 | 13.63                  | 1.13               | 2000               | 27.40                  | 5.66               |
| 40                 | 11.11                  | 1.18               | 3000               | 30.00                  | 7.20               |
| 45                 | 10.59                  | 1.26               | 4000               | 32.60                  | 9.36               |
| 50                 | 6.47                   | 1.31               | 5000               | 33.40                  | 9.16               |
| 55                 | 5.83                   | 1.34               | 6000               | 34.20                  | 10.70              |
| 60                 | 5.18                   | 1.43               | 7000               | 35.30                  | 12.16              |
| 65                 | 4.81                   | 1.52               | 8000               | 36.90                  | 13.12              |
| 70                 | 4.43                   | 1.56               | 9000               | 38.10                  | 13.81              |
| 75                 | 5.10                   | 1.57               | 10000              | 39.00                  | 14.83              |
| 80                 | 5.91                   | 1.60               | 11000              | 38.60                  | 15.83              |
| 85                 | 7.33                   | 1.66               | 12000              | 39.50                  | 17.11              |
| 90                 | 8.74                   | 1.75               | 13000              | 39.30                  | 17.62              |
| 95                 | 9.05                   | 1.76               | 14000              | 41.60                  | 18.37              |
| 100                | 9.36                   | 1.83               | 15000              | 40.60                  | 19.10              |
| 110                | 9.65                   | 1.86               | 16000              | 37.20                  | 19.72              |
| 120                | 9.97                   | 1.92               | 17000              | 40.20                  | 21.98              |
| 130                | 10.51                  | 2.00               | 18000              | 48.90                  | 21.22              |
| 140                | 10.32                  | 2.11               | 19000              | 37.60                  | 23.90              |
| 150                | 9.42                   | 2.18               | 20000              | 37.30                  | 24.07              |
| 160                | 8.09                   | 2.22               | 21000              | 37.00                  | 25.49              |
| 170                | 7.43                   | 2.26               | 22000              | 38.00                  | 24.92              |
| 180                | 7.60                   | 2.31               | 23000              | 38.70                  | 25.60              |
| 190                | 7.43                   | 2.37               | 24000              | 38.60                  | 25.70              |
| 200                | 7.26                   | 2.43               | 25000              | 24.10                  | 3.92               |
| 220                | 9.11                   | 2.56               | 14000              | 27.40                  | 5.66               |
| 240                | 10.88                  | 2.70               | 15000              | 30.00                  | 7.20               |
| 260                | 11.75                  | 2.83               | 16000              | 32.60                  | 9.36               |
| 280                | 11.55                  | 2.93               | 17000              | 33.40                  | 9.16               |
| 300                | 11.36                  | 3.03               | 18000              | 34.20                  | 10.70              |
| 320                | 12.03                  | 3.13               | 19000              | 35.30                  | 12.16              |
| 340                | 12.69                  | 3.23               | 20000              | 36.90                  | 13.12              |
| 360                | 13.33                  | 3.32               | 21000              | 38.10                  | 13.81              |
| 380                | 14.00                  | 3.41               | 22000              | 39.00                  | 14.83              |
| 400                | 14.63                  | 3.48               | 23000              | 38.60                  | 15.83              |
| 450                | 15.33                  | 3.71               | 24000              | 39.50                  | 17.11              |
| 500                | 16.03                  | 3.85               | 25000              | 39.30                  | 17.62              |
| 550                | 16.65                  | 4.03               |                    |                        |                    |
| 600                | 17.29                  | 4.32               |                    |                        |                    |
| 650                | 17.64                  | 4.51               |                    |                        |                    |
| 700                | 18.00                  | 4.54               |                    |                        |                    |
| 750                | 18.39                  | 4.90               |                    |                        |                    |
| 800                | 18.79                  | 5.04               |                    |                        |                    |
| 850                | 19.10                  | 5.04               |                    |                        |                    |
| 900                | 19.42                  | 5.20               |                    |                        |                    |
| 950                | 19.58                  | 5.28               |                    |                        |                    |
| 1000               | 19.75                  | 5.58               |                    |                        |                    |

## 8. List of Measuring Equipment Used

| Instrument             | Manufacturer          | Model No. | Serial No. | Characteristics  | Calibration Date | Due Date      | Remark               |
|------------------------|-----------------------|-----------|------------|------------------|------------------|---------------|----------------------|
| EMC Receiver           | R&S                   | ESCS 30   | 100132     | 9 KHz – 2.75 GHz | Jun. 23, 2004    | Jun. 23, 2005 | Conduction (CO01-HY) |
| LISN                   | MessTec               | NNB-2/16Z | 2001/008   | 9 KHz – 30 MHz   | May 03, 2004     | May 03, 2005  | Conduction (CO01-HY) |
| LISN<br>(Support Unit) | MessTec               | NNB-2/16Z | 2001/009   | 9 KHz – 30 MHz   | Apr. 19, 2004    | Apr. 19, 2005 | Conduction (CO01-HY) |
| EMI Filter             | LINDGREN              | LRE-2060  | 1004       | < 450 Hz         | N/A              | N/A           | Conduction (CO01-HY) |
| EMI Filter             | LINDGREN              | N6006     | 201052     | 0 ~ 60 Hz        | N/A              | N/A           | Conduction (CO01-HY) |
| RF Cable-CON           | Suhner<br>Switzerland | RG223/U   | CB029      | 9KHz~30MHz       | Dec. 24, 2003    | Dec. 24, 2004 | Conduction (CO01-HY) |

| Instrument        | Manufacturer | Model No. | Serial No. | Characteristics | Calibration Date | Due Date      | Remark                |
|-------------------|--------------|-----------|------------|-----------------|------------------|---------------|-----------------------|
| Spectrum analyzer | R&S          | FSP40     | 100057     | 9KHz-40GHz      | Feb. 26, 2004    | Feb. 26, 2005 | Radiation (03CH06-HY) |
| Bilog Antenna     | SCHAFFNER    | CBL6112B  | 2885       | 30MHz -2GHz     | Dec. 18, 2003    | Dec. 18, 2004 | Radiation (03CH06-HY) |
| Horn Antenna      | Com-Power    | AH118     | 071025     | 1G-18G          | Feb. 11, 2004    | Feb. 11, 2005 | Radiation (03CH06-HY) |
| PreAmplifier      | Com-Power    | PA-103    | 161055     | 1MHz - 1000MHz  | Apr. 26, 2004    | Apr. 26, 2005 | Radiation (03CH06-HY) |
| HF Amplifier      | MITEQ        | AFS44     | 973248     | 0.1G - 26.5G    | May. 20, 2004    | May. 20, 2005 | Radiation (03CH06-HY) |

## 9. Uncertainty of Test Site

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

| Contribution                                                                                               | Uncertainty of $x_i$ |                          | $u(x_i)$ |
|------------------------------------------------------------------------------------------------------------|----------------------|--------------------------|----------|
|                                                                                                            | dB                   | Probability Distribution |          |
| Receiver reading                                                                                           | 0.10                 | Normal(k=2)              | 0.05     |
| Cable loss                                                                                                 | 0.10                 | Normal(k=2)              | 0.05     |
| AMN insertion loss                                                                                         | 2.50                 | Rectangular              | 0.63     |
| Receiver Spec                                                                                              | 1.50                 | Rectangular              | 0.43     |
| Site imperfection                                                                                          | 1.39                 | Rectangular              | 0.80     |
| Mismatch Receiver VSWR $\Gamma_1$ =<br>LISN VSWR $\Gamma_2$ =<br>Uncertainty= $20\log(1-\Gamma_1\Gamma_2)$ | +0.34/-0.3<br>5      | U-shape                  | 0.24     |
| <b>combined standard uncertainty Uc(y)</b>                                                                 | <b>1.13</b>          |                          |          |
| <b>Measuring uncertainty for a level of confidence of 95% U=2Uc(y)</b>                                     | <b>2.26</b>          |                          |          |

Uncertainty of Radiated Emission Measurement (150kHz ~ 30MHz)

| Contribution                                                                                                               | Uncertainty of $x_i$ |                          | $u(x_i)$ |
|----------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------------|----------|
|                                                                                                                            | dB                   | Probability Distribution |          |
| Receiver reading                                                                                                           | 0.41                 | Normal(k=2)              | 0.21     |
| Antenna factor calibration                                                                                                 | 0.83                 | Normal(k=2)              | 0.42     |
| Cable loss calibration                                                                                                     | 0.25                 | Normal(k=2)              | 0.13     |
| Pre Amplifier Gain calibration                                                                                             | 0.27                 | Normal(k=2)              | 0.14     |
| RCV/SPA specification                                                                                                      | 2.50                 | Rectangular              | 0.72     |
| Antenna Factor Interpolation for Frequency                                                                                 | 1.00                 | Rectangular              | 0.29     |
| Site imperfection                                                                                                          | 1.43                 | Rectangular              | 0.83     |
| Mismatch<br>Receiver VSWR $\Gamma_1$ = 0.20<br>Antenna VSWR $\Gamma_2$ = 0.23<br>Uncertainty= $20\log(1-\Gamma_1\Gamma_2)$ | +0.39/-0.41          | U-shaped                 | 0.28     |
| <b>combined standard uncertainty Uc(y)</b>                                                                                 | <b>1.27</b>          |                          |          |
| <b>Measuring uncertainty for a level of confidence of 95% U=2Uc(y)</b>                                                     | <b>2.54</b>          |                          |          |

$U = \sqrt{\{(1/2)^2 + (0.3/2)^2 + (2^2 + 0.5^2 + 2^2 + 0.25^2 + 2^2)/3 + (0.54)^2/2\}} = 2.2$  for 10m test distance

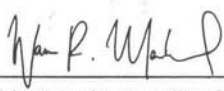
$U = \sqrt{\{(1/2)^2 + (0.3/2)^2 + (2^2 + 3^2 + 2^2 + 0.25^2 + 2^2)/3 + (0.54)^2/2\}} = 2.7$  for 3m test distance

Uncertainty of Conducted Emission Measurement (1GHz ~ 40GHz )

| Contribution                                                                                                                               | Uncertainty of $x_i$ |                          | $u(x_i)$ | $C_i$ | $C_i * u(x_i)$ |
|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------------|----------|-------|----------------|
|                                                                                                                                            | dB                   | Probability Distribution |          |       |                |
| Receiver reading                                                                                                                           | $\pm 0.10$           | Normal(k=1)              | 0.10     | 1     | 0.10           |
| Antenna factor calibration                                                                                                                 | $\pm 1.70$           | Normal(k=2)              | 0.85     | 1     | 0.85           |
| Cable loss calibration                                                                                                                     | $\pm 0.50$           | Normal(k=2)              | 0.25     | 1     | 0.25           |
| Receiver Correction                                                                                                                        | $\pm 2.00$           | Rectangular              | 1.15     | 1     | 1.15           |
| Antenna Factor Directional                                                                                                                 | $\pm 1.50$           | Rectangular              | 0.87     | 1     | 0.87           |
| Site imperfection                                                                                                                          | $\pm 2.80$           | Triangular               | 1.14     | 1     | 1.14           |
| Mismatch<br>Receiver VSWR $\Gamma_1 = 0.197$<br>Antenna VSWR $\Gamma_2 = 0.194$<br>Uncertainty = $20 \log(1 - \Gamma_1 \Gamma_2 \Gamma_3)$ | +0.34/-0.35          | U-shaped                 | 0.244    | 1     | 0.244          |
| <b>Combined standard uncertainty<br/>Uc(y)</b>                                                                                             | <b>2.36</b>          |                          |          |       |                |
| <b>Measuring uncertainty for a level of<br/>confidence of 95% U=2Ue(y)</b>                                                                 | <b>4.72</b>          |                          |          |       |                |

$$U = \sqrt{\{(0.3/2)^2 + (2^2 + 1.5^2 + 0.2^2)/3 + (0.2)^2/2\}} = 1.66$$

## 10. Certificate of NVLAP Accreditation

|                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| United States Department of Commerce<br>National Institute of Standards and Technology                                                                                                                                                                                                                                                                    |                                                                                                                                                                            |
| <b>NVLAP</b> <sup>®</sup>                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                            |
| ISO/IEC 17025:1999<br>ISO 9002:1994                                                                                                                                                                                                                                                                                                                       | <b>Certificate of Accreditation</b>                                                                                                                                        |
| <b>SPORTON INTERNATIONAL, INC.</b><br>TAIPEI HSIEN 221<br>TAIWAN                                                                                                                                                                                                                                                                                          |                                                                                                                                                                            |
| <i>is recognized by the National Voluntary Laboratory Accreditation Program<br/>for satisfactory compliance with criteria set forth in NIST Handbook 150:2001,<br/>all requirements of ISO/IEC 17025:1999, and relevant requirements of ISO 9002:1994.<br/>Accreditation is awarded for specific services, listed on the Scope of Accreditation, for:</i> |                                                                                                                                                                            |
| <b>ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS</b>                                                                                                                                                                                                                                                                                               |                                                                                                                                                                            |
| December 31, 2004<br><br>Effective through                                                                                                                                                                                                                                                                                                                | <br>For the National Institute of Standards and Technology<br>NVLAP Lab Code: 200079-0 |

NVLAP-01C (06-01)