

## ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

### INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 24 SUBPART E REQUIREMENT AND INDUSTRY CANADA RSS-133

OF

|                      |                                                                                                                            |
|----------------------|----------------------------------------------------------------------------------------------------------------------------|
| <b>Product Name:</b> | <b>SEKITO</b>                                                                                                              |
| <b>Brand Name:</b>   | <b>FOMA N600i</b>                                                                                                          |
| <b>Model Name:</b>   | <b>FOMA N600i</b>                                                                                                          |
| <b>FCC ID:</b>       | <b>A98-FOMA-N600I</b>                                                                                                      |
| <b>IC:</b>           | <b>140K-N600I</b>                                                                                                          |
| <b>Report No.:</b>   | <b>EH/2005/A0005~6</b>                                                                                                     |
| <b>Issue Date:</b>   | <b>Dec. 23, 2005</b>                                                                                                       |
| <b>Rule Part:</b>    | <b>2 &amp; 24E/ RSS 133, Issue 3</b>                                                                                       |
| <b>Prepared for</b>  | <b>NEC America Inc<br/>Wireless Engineering Division<br/>6535 N. State Highway 161<br/>Irving, TX 75039, United States</b> |
| <b>Prepared by</b>   | <b>SGS Taiwan Ltd.<br/>No. 134, Wu Kung Rd., Wuku Industrial<br/>Zone, Taipei County, Taiwan.</b>                          |

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## VERIFICATION OF COMPLIANCE

**Applicant:** NEC America Inc  
Wireless Engineering Division 6535 N. State Highway 161  
Irving, TX 75039, United States

**Equipment Under Test:** SEKITO

**FCC ID Number:** A98-FOMA-N600I

**IC Number:** 140K-N600I

**Brand Name:** FOMA N600i

**Model No.:** FOMA N600i

**Model Difference:** N/A

**File Number:** EH/2005/A0005~6

**Date of test:** Oct. 18, 2005 ~ Nov. 01, 2005

**Date of EUT Received:** Oct. 15, 2005

### We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in TIA/EIA-603-1-1998 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC PART 24 subpart E and Issue 3 of RSS-133.

The test results of this report relate only to the tested sample identified in this report.

|                     |                    |             |                      |
|---------------------|--------------------|-------------|----------------------|
| <b>Test By:</b>     | <u>Willis Chen</u> | <b>Date</b> | <u>Dec. 23, 2005</u> |
|                     | <i>Willis Chen</i> |             |                      |
| <b>Prepared By:</b> | <u>Gigi yeh</u>    | <b>Date</b> | <u>Dec. 23, 2005</u> |
|                     | <i>Gigi Yeh</i>    |             |                      |
| <b>Approved By</b>  | <u>Vincent Su</u>  | <b>Date</b> | <u>Dec. 23, 2005</u> |
|                     | <i>Vincent Su</i>  |             |                      |

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## Version

| Version No. | Date          |
|-------------|---------------|
| 00          | Nov. 22, 2005 |
| 01          | Dec. 23, 2005 |
|             |               |

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## 1. GENERAL INFORMATION

### 1.1 Product Description

|                           |                                                              |        |
|---------------------------|--------------------------------------------------------------|--------|
| Product                   | SEKITO                                                       |        |
| Model Name                | FOMA N600i                                                   |        |
| Model Difference:         | N/A                                                          |        |
| Trade Name                | FOMA N600i                                                   |        |
| Cellular Phone Standards  | GSM 900, 1800,1900 and WCDMA Band I Mobile Phone             |        |
| Frequency Range and Power | GSM 900, TX: 890.2 MHz – 914.8MHz                            | 33 dBm |
|                           | GSM 1800, TX:1710.2MHz-1784.8MHz                             | 30 dBm |
|                           | GSM 1900, TX: 1850.2MHz –1909.8MHz                           | 30 dBm |
|                           | WCDMA Band I: TX:1920MHz - 1980MHz                           | 24 dBm |
| Hardware Version          | EP1.5/EP2.2                                                  |        |
| Software Version          | 0A00/0D00                                                    |        |
| Power Supply              | 3.8 Vdc re-chargeable battery or 5Vdc by AC/DC power adapter |        |
|                           | Model                                                        | N/A    |

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## 1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: A98-FOMA-N600I filing to comply with Section Part 24 subpart E of the FCC CFR 47 Rules and IC: 140K-N600I filing to comply with issue 3 of RSS-133.

## 1.3 Test Methodology

Both conducted and radiated testing were performed according to the procedures document on chapter 13 of ANSI C63.4 (2003) and FCC CFR 47.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057 and issue 3 of RSS-133.

## 1.4 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located on the address of SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. The Open Area Test Sites and the Line Conducted labs are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003 and CISPR 22/EN 55022 requirements. Site No. 1(3 & 10 meters) Registration Number: 94644, Both OATS and Anechoic chamber (3 meters) was accredited by CNLA(0513) and NVLAP (200704-0).

## 1.5 Special Accessories

Not available for this EUT intended for grant.

## 1.6 Equipment Modifications

Not available for this EUT intended for grant.

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## 2. SYSTEM TEST CONFIGURATION

### 2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

### 2.2 EUT Exercise

The EUT (Transmitter) was operated in the engineering mode to fix the Tx frequency which was for the purpose of the measurements.

### 2.3 Test Procedure

#### 2.3.1 Conducted Emissions

The EUT is placed on a turn table which is 0.8 m above ground plane. According to the requirements in Section 7 and 13 of ANSI C63.4-2003. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and Average detector mode.

#### 2.3.2 Radiated Emissions

The EUT is placed on a turn table which is 1.0 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter(EUT) was rotated through three orthogonal axes according to the requirements in Section 8 and 13 of ANSI C63.4-2003.

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## 2.4 Configuration of Tested System

Fig. 2-1 Configuration of Tested System

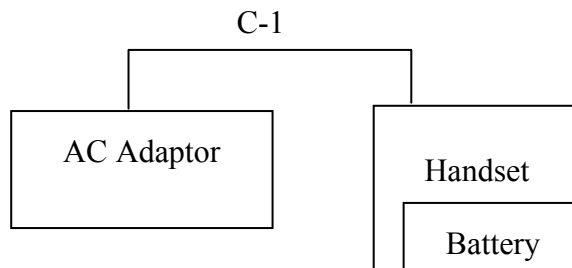


Table 2-1 Equipment Used in Tested System

| Item | Equipment  | Mfr/Brand | Model/Type No.  | Series No.      | Data Cable | Power Cord           |
|------|------------|-----------|-----------------|-----------------|------------|----------------------|
| 1.   | Handset    | NEC       | FOMA N600i      | 004400014985913 | N/A        | N/A                  |
| 2.   | Battery    | DoCoMo    | N12             | TS018-BT020     | N/A        | N/A                  |
| 3.   | AC Adaptor | NEC       | MAY-BH0008-D001 | OFA01068S1      | N/A        | 1.8m,<br>Un-shielded |
| 4.   |            |           |                 |                 |            |                      |

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### 3. SUMMARY OF TEST RESULTS

| FCC/IC Rules                           | Description Of Test                           | Result    |
|----------------------------------------|-----------------------------------------------|-----------|
| §2.1046<br>§6.4 (RSS-133)              | RF Power Output                               | Compliant |
| §2.1046<br>§24.232(a)<br>§6.4(RSS-133) | EIRP measurement                              | Compliant |
| §2.1049                                | Occupied Bandwidth                            | No Limit  |
| §2.1051<br>§24.238(a)<br>§6.5(RSS-133) | Out of Band Emissions at Antenna<br>Terminals | Compliant |
| §2.1053<br>§24.238(a)<br>§6.5(RSS-133) | Field Strength of Spurious Radia-<br>tion(TX) | Compliant |
| §2.1055,<br>§24.235<br>§6.3(RSS-133)   | Frequency Stability vs. Temperature           | Compliant |
| §2.1055,<br>§24.235<br>§6.3(RSS-133)   | Frequency Stability vs. Voltage               | Compliant |
| §6.7(RSS-133)                          | Receiver Spurious Emissions                   | Compliant |
| §15.107;§15.207                        | AC Power Line Conducted Emission              | Compliant |

### 4. DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition.

EUT staying in continuous transmitting mode. Channel low, Mid and High for each type and band with rated data rate are chosen for full testing.

The field strength of spurious radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for both GSM and GPRS six modes. The worst-case E2 mode for channel Low, Mid and High at GSM mode was reported.

The worst case of RX spurious emission of channel mid was reported.

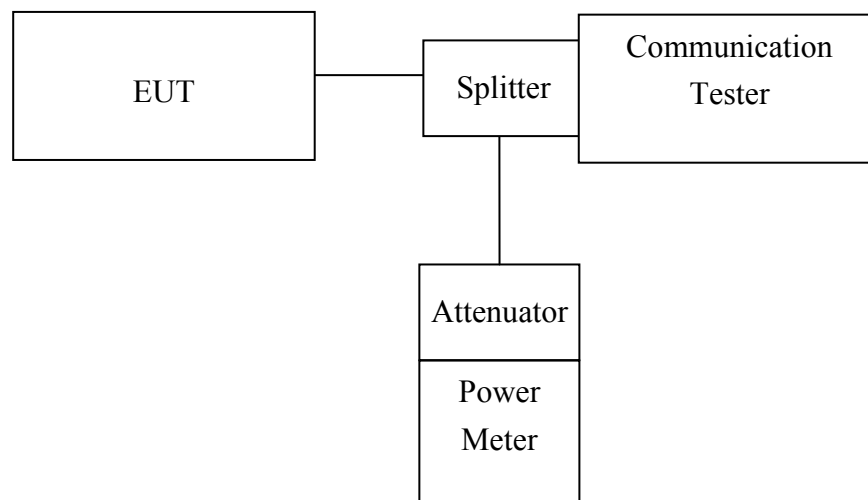
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## RF POWER OUTPUT MEASUREMENT

### 4.1 Standard Applicable

According to FCC §2.1046.

### 4.2 Test Set-up:



**Note:** Measurement setup for testing on Antenna connector

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### 4.3 Measurement Procedure

The transmitter output was connected to a calibrated attenuator, the other end of which was connected to a power meter. Transmitter output was read off the power meter in dBm. The power output at the transmitter antenna port was determined by adding the value of the attenuator to the power meter reading.

### 4.4 Measurement Equipment Used:

| Conducted Emission Test Site |              |                 |               |            |            |
|------------------------------|--------------|-----------------|---------------|------------|------------|
| EQUIPMENT TYPE               | MFR          | MODEL NUMBER    | SERIAL NUMBER | LAST CAL.  | CAL DUE.   |
| Spectrum Analyzer            | Agilent      | E4446A          | MY43360126    | 03/29/2005 | 03/28/2006 |
| Spectrum Analyzer            | Agilent      | E7405A          | US41160416    | 06/28/2005 | 06/29/2006 |
| Spectrum Analyzer            | R&S          | FSP 40          | 100034        | 11/09/2005 | 11/10/2006 |
| Communication Test           | R&S          | SMU200          | N/A           | N/A        | N/A        |
| Power Sensor                 | Anritsu      | MA2490A         | 31431         | 06/28/2005 | 06/29/2006 |
| Power Meter                  | Anritsu      | ML2487A         | 6K00002070    | 06/28/2005 | 06/29/2006 |
| Temperature Chamber          | TERCHY       | MHG-120LF       | 911009        | 10/14/2005 | 10/13/2006 |
| Low Loss Cable               | HUBER+SUHNER | SUCOFLEX 104PEA | N/A           | N/A        | N/A        |
| Attenuator                   | Mini-Circuit | BW-S10W5        | N/A           | 09/23/2005 | 09/22/2006 |
| Attenuator                   | Mini-Circuit | BW-S6W5         | N/A           | 09/23/2005 | 09/22/2006 |
| Splitter                     | Agilent      | 11636B          | 51728         | 09/23/2005 | 09/22/2006 |
| AC Power Supply              | APW-105N     | 887592          | All Power     | 12/15/2004 | 12/14/2005 |

### 4.5 Measurement Result

| Frequency (MHz) | CH  | Power Meter Reading (dBm) | Offset (dB) | Average Power (dBm) |
|-----------------|-----|---------------------------|-------------|---------------------|
| 1850.20         | 512 | 2.33                      | 27.00       | 29.33               |
| 1880.00         | 661 | 2.32                      | 27.00       | 29.32               |
| 1909.80         | 810 | 2.05                      | 27.00       | 29.05               |

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## 5. ERP, EIRP MEASUREMENT

### 5.1 Standard Applicable

According to FCC §2.1046

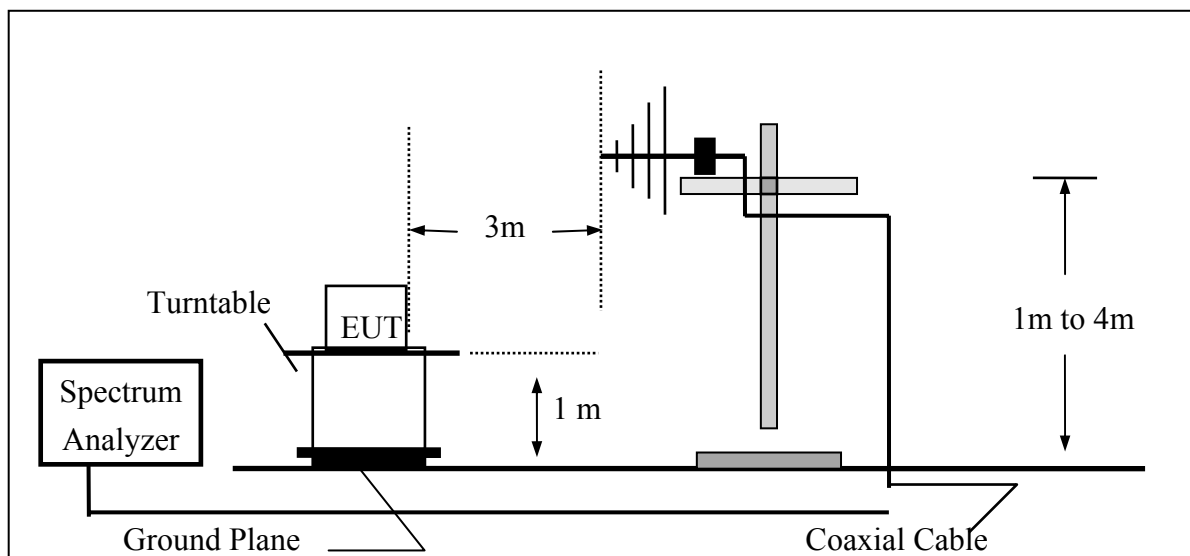
FCC 24.232(b) Mobile station are limited to 2W EIRP.

According to IC RSS-133 §6.4

The peak e.i.r.p. for transmitters operating in the band 1850-1910 MHz shall not exceed the limits 2W which given in SRSP-510.

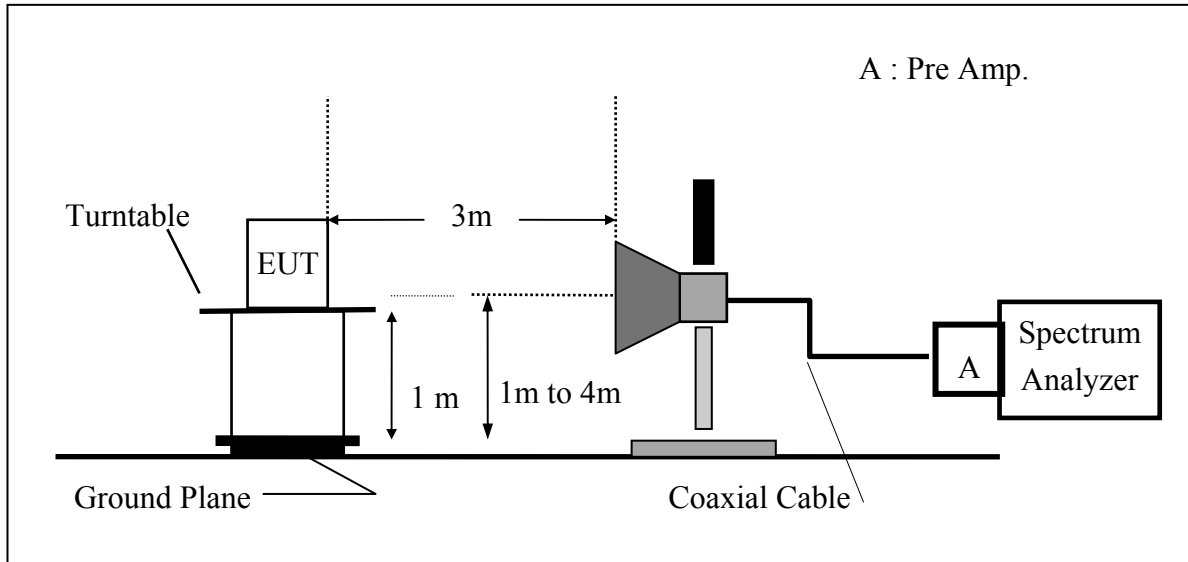
### 5.2 Test SET-UP (Block Diagram of Configuration)

(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz

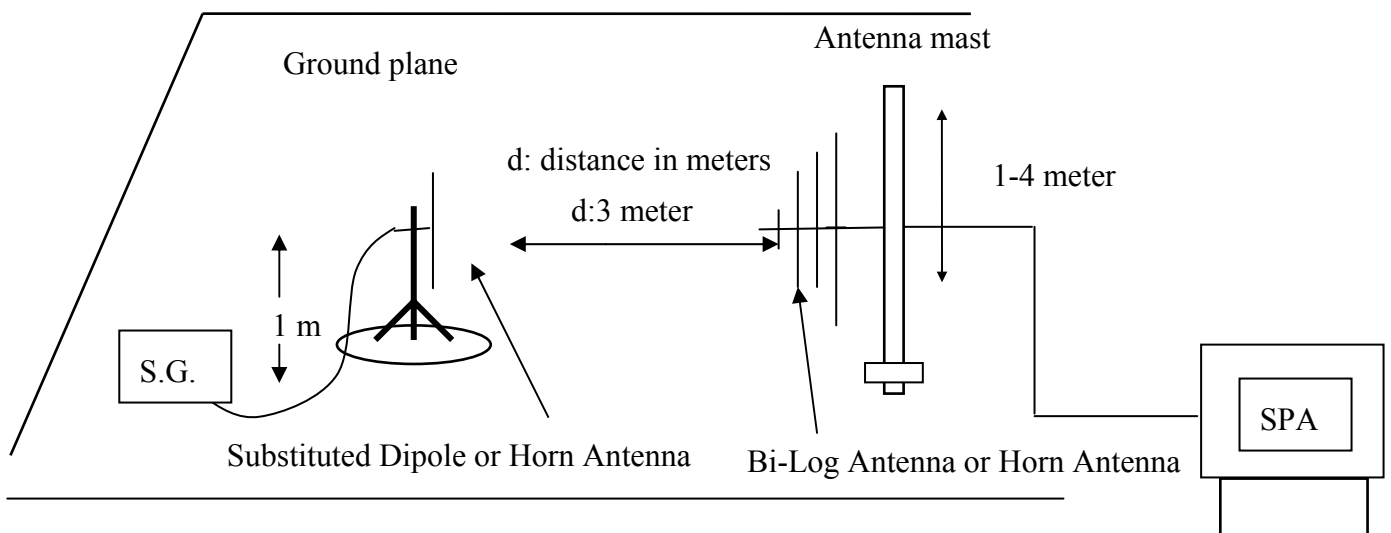


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(B) Radiated Emission Test Set-UP Frequency Over 1 GHz



(C) Substituted Method Test Set-UP



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### 5.3 Measurement Procedure

The EUT was placed on a non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.

During the measurement of the EUT, the resolution bandwidth was set to 1MHz and the average bandwidth was set to 1MHz. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna. The reading was recorded and the field strength (E in dBuV/m) was calculated.

EIRP in frequency band 1850.2 –1909.8MHz were measured using a substitution method. The EUT was replaced by a horn antenna connected, the S.G. output was recorded and EIRP was calculated as follows:

$$\text{EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable Loss (dB)}$$

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#### 5.4 Measurement Equipment Used:

| EQUIPMENT TYPE     | MFR          | MODEL NUMBER         | SERIAL NUMBER | LAST CAL.  | CAL DUE.   |
|--------------------|--------------|----------------------|---------------|------------|------------|
| Spectrum Analyzer  | Agilent      | E4446A               | MY43360126    | 03/29/2005 | 03/28/2006 |
| Spectrum Analyzer  | Agilent      | 7405A                | US41160416    | 06/28/2005 | 06/29/2006 |
| Spectrum Analyzer  | R&S          | FSP 40               | 100034        | 11/09/2005 | 11/10/2006 |
| Communication Test | R&S          | SMU200               | N/A           | N/A        | N/A        |
| Bilog Antenna      | SCHWAZBECK   | VULB9163             | 152           | 06/03/2005 | 06/02/2006 |
| Horn antenna       | Schwarzbeck  | BBHA 9120D           | 309/320       | 08/16/2005 | 08/15/2006 |
| Pre-Amplifier      | HP           | 8447D                | 2944A09469    | 07/19/2005 | 07/18/2006 |
| Pre-Amplifier      | HP           | 8494B                | 3008A00578    | 02/26/2005 | 02/25/2006 |
| Signal Generator   | R&S          | SMR40                | 100210        | 02/09/2005 | 02/10/2006 |
| Turn Table         | HD           | DT420                | N/A           | N.C.R      | N.C.R      |
| Antenna Tower      | HD           | MA240-N              | 240/657       | N.C.R      | N.C.R      |
| Controller         | HD           | HD100                | N/A           | N.C.R      | N.C.R      |
| Low Loss Cable     | HUBER+SUHNER | SUCOFLEX 104PEA-10M  | 10m           | 10/09/2005 | 10/08/2006 |
| Low Loss Cable     | HUBER+SUHNER | SUCOFLEX 104PEA-3M   | 3m            | 10/09/2005 | 10/08/2006 |
| Low Loss Cable     | HUBER+SUHNER | SUCOFLEX 104PEA-0.5M | 0.5m          | 10/09/2005 | 10/08/2006 |
| Site NSA           | SGS          | 966 chamber          | N/A           | 11/17/2005 | 11/16/2006 |
| Site NSA           | SGS          | 10m Open-Site        | N/A           | 11/17/2005 | 11/16/2006 |
| Attenuator         | Mini-Circuit | BW-S10W5             | N/A           | 09/23/2005 | 09/22/2006 |
| Dipole Antenna     | Schwarzbeck  | VHAP                 | 908/909       | 06/10/2004 | 06/11/2006 |
| Dipole Antenna     | Schwarzbeck  | UHAP                 | 891/892       | 06/10/2004 | 06/11/2006 |
| Horn antenna       | Schwarzbeck  | BBHA 9120D           | N/A           | 08/16/2004 | 08/15/2006 |

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## 5.5 Measurement Result

| EUT Mode | Frequency (MHz) | CH  | EUT Pol. | Antenna Pol. | SPA Reading (dBuV) | S.G. Output (dBm) | Antenna Gain (dBi) | Cable Loss (dB) | EIRP (dBm) | Limit (dBm) |
|----------|-----------------|-----|----------|--------------|--------------------|-------------------|--------------------|-----------------|------------|-------------|
| PCS 1900 | 1850.20         | 512 | H        | V            | 123.01             | 16.05             | 9.90               | 5.41            | 20.54      | 33.00       |
|          |                 |     |          | H            | 126.32             | 19.43             | 9.90               | 5.41            | 23.92      | 33.00       |
|          |                 |     | E1       | V            | 129.20             | 22.24             | 9.90               | 5.41            | 26.73      | 33.00       |
|          |                 |     |          | H            | 122.36             | 15.47             | 9.90               | 5.41            | 19.96      | 33.00       |
|          |                 |     | E2       | V            | 123.60             | 16.64             | 9.90               | 5.41            | 21.13      | 33.00       |
|          |                 |     |          | H            | 128.98             | 22.09             | 9.90               | 5.84            | 26.15      | 33.00       |
|          | 1880.00         | 661 | H        | V            | 121.01             | 14.06             | 9.99               | 5.46            | 18.59      | 33.00       |
|          |                 |     |          | H            | 129.44             | 22.57             | 9.99               | 5.46            | 27.10      | 33.00       |
|          |                 |     | E1       | V            | 129.62             | 22.67             | 9.99               | 5.46            | 27.20      | 33.00       |
|          |                 |     |          | H            | 123.76             | 16.89             | 9.99               | 5.46            | 21.42      | 33.00       |
|          |                 |     | E2       | V            | 129.62             | 22.67             | 9.99               | 5.46            | 27.20      | 33.00       |
|          |                 |     |          | H            | 129.72             | 22.85             | 9.99               | 5.46            | 27.38      | 33.00       |
|          | 1909.80         | 810 | H        | V            | 120.79             | 13.85             | 10.08              | 5.51            | 18.42      | 33.00       |
|          |                 |     |          | H            | 128.70             | 21.85             | 10.08              | 5.51            | 26.41      | 33.00       |
|          |                 |     | E1       | V            | 128.65             | 21.71             | 10.08              | 5.51            | 26.28      | 33.00       |
|          |                 |     |          | H            | 126.24             | 19.39             | 10.08              | 5.51            | 23.95      | 33.00       |
|          |                 |     | E2       | V            | 123.10             | 16.16             | 10.08              | 5.51            | 20.73      | 33.00       |
|          |                 |     |          | H            | 124.05             | 21.30             | 10.08              | 5.51            | 25.86      | 33.00       |

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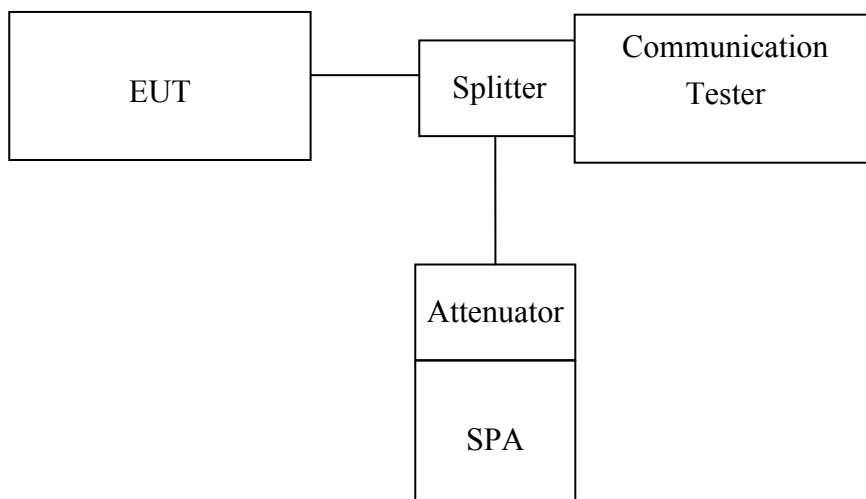
## 6. 99% OCCUPIED BANDWIDTH MEASUREMENT

### 6.1 Standard Applicable

According to FCC§2.1049.

According to IC RSS-133 §2.6

### 6.2 Test Set-up:



*Note: Measurement setup for testing on Antenna connector*

### 6.3 Measurement Procedure

The EUT's output RF connector was connected with a short cable to the spectrum analyzer, RBW (10KHz) was set to about 1% of emission BW, VBW= 30KHz, -26dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.

### 6.4 Measurement Equipment Used:

| Conducted Emission Test Site |         |              |               |            |            |
|------------------------------|---------|--------------|---------------|------------|------------|
| EQUIPMENT TYPE               | MFR     | MODEL NUMBER | SERIAL NUMBER | LAST CAL.  | CAL DUE.   |
| Spectrum Analyzer            | Agilent | E4446A       | MY43360126    | 03/29/2005 | 03/28/2006 |
| Spectrum Analyzer            | Agilent | E7405A       | US41160416    | 06/28/2005 | 06/29/2006 |

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|                     |                  |                    |            |            |            |
|---------------------|------------------|--------------------|------------|------------|------------|
| Spectrum Analyzer   | R&S              | FSP 40             | 100034     | 11/09/2005 | 11/10/2006 |
| Communication Test  | R&S              | SMU200             | N/A        | N/A        | N/A        |
| Power Sensor        | Anritsu          | MA2490A            | 31431      | 06/28/2005 | 06/29/2006 |
| Power Meter         | Anritsu          | ML2487A            | 6K00002070 | 06/28/2005 | 06/29/2006 |
| Temperature Chamber | TERCHY           | MHG-120LF          | 911009     | 10/14/2005 | 10/13/2006 |
| Low Loss Cable      | HUBER+SUHNE<br>R | SUCOFLEX<br>104PEA | N/A        | N/A        | N/A        |
| Attenuator          | Mini-Circuit     | BW-S10W5           | N/A        | 09/23/2005 | 09/22/2006 |
| Attenuator          | Mini-Circuit     | BW-S6W5            | N/A        | 09/23/2005 | 09/22/2006 |
| Splitter            | Agilent          | 11636B             | 51728      | 09/23/2005 | 09/22/2006 |
| AC Power Supply     | APW-105N         | 887592             | All Power  | 12/15/2004 | 12/14/2005 |

## 6.5 Measurement Result:

| EUT Mode | Frequency<br>(MHz) | CH  | 99% Bandwidth<br>(MHz) |
|----------|--------------------|-----|------------------------|
| PCS 1900 | 1850.20            | 512 | 0.2443                 |
|          | 1880.00            | 661 | 0.2457                 |
|          | 1909.80            | 810 | 0.2490                 |

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Figure 7-1: PCS Channel Low

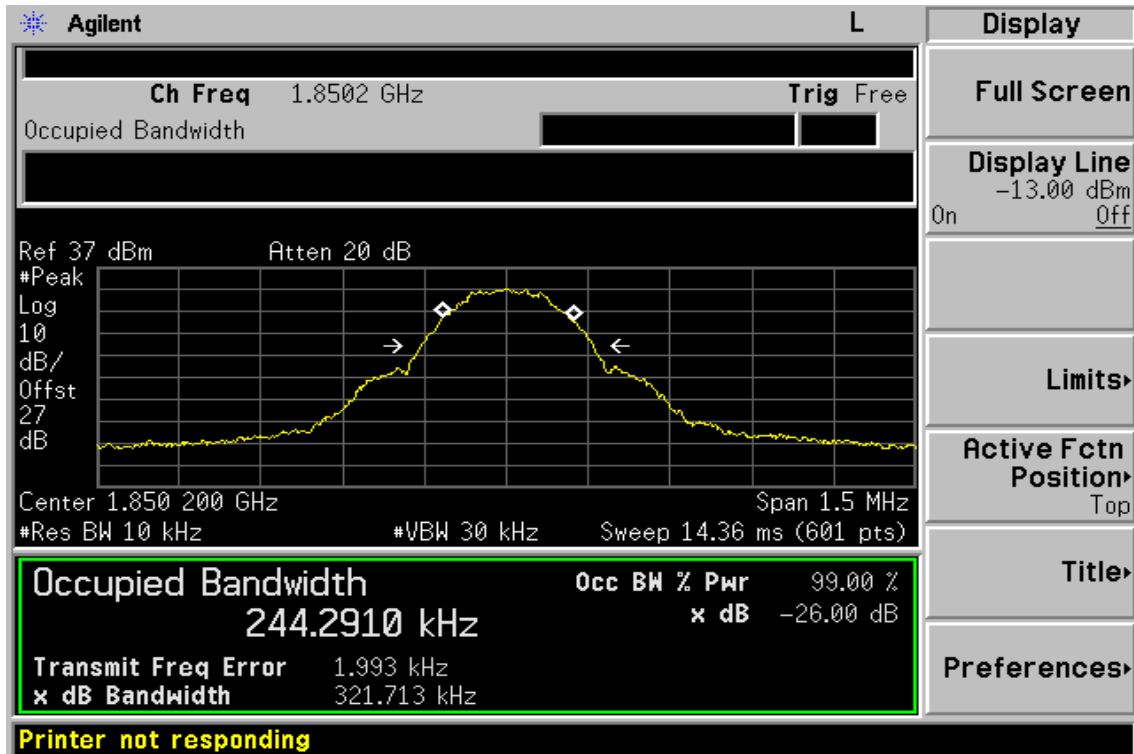
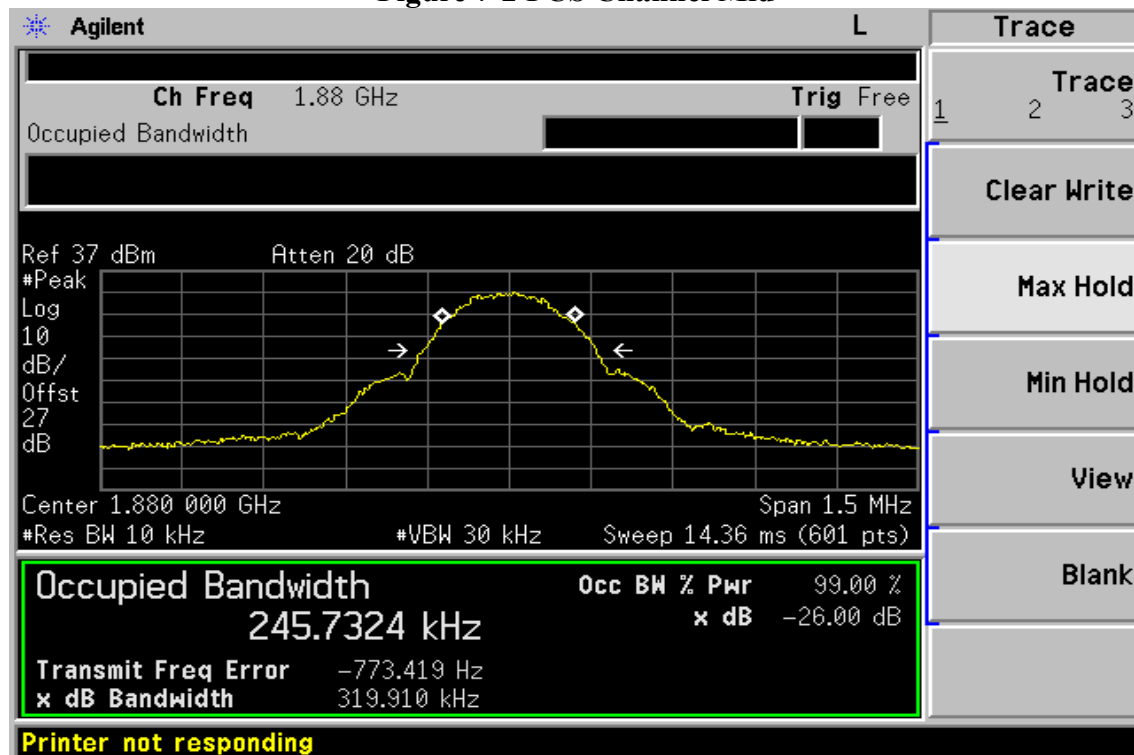
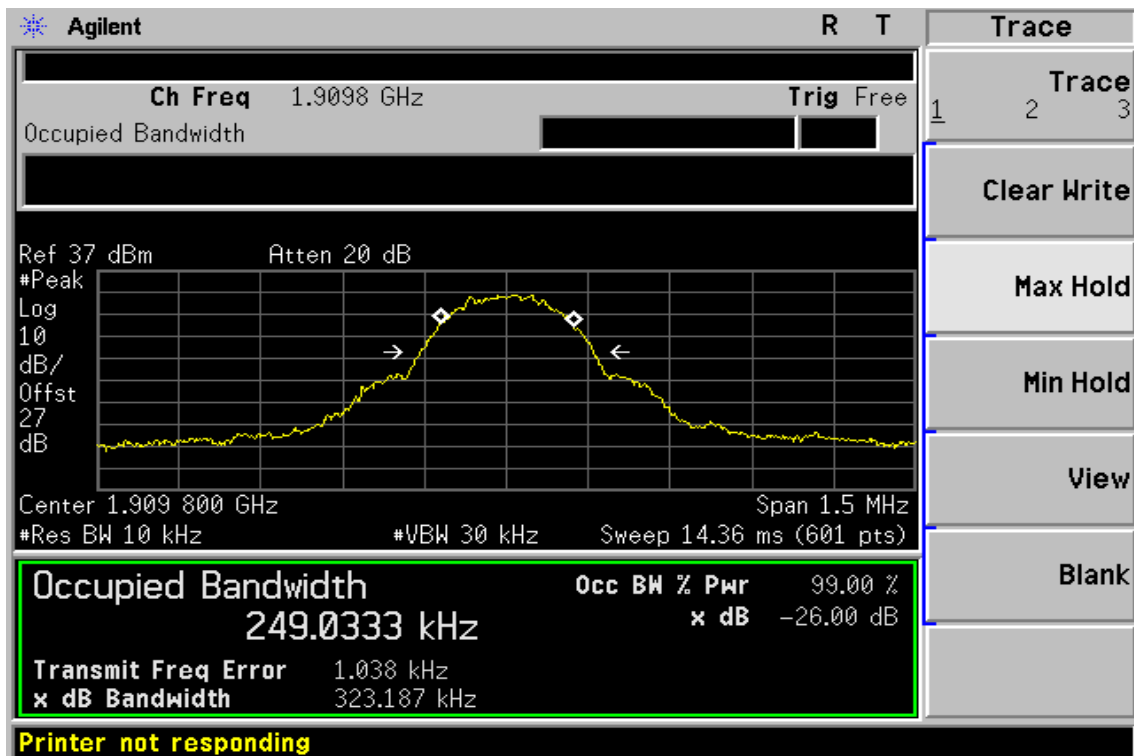


Figure 7-2 PCS Channel Mid



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Figure 7-3: PCS Channel High



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## 7. OUT OF BAND EMISSION AT ANTENNA TERMINALS(TX)

### 7.1 Standard Applicable

According to FCC §2.1051.

FCC §24.238(a), the magnitude of each spurious and harmonic emission that can be detected when the equipment is operated under the conditions specified in the instruction manual and/or alignment procedure, shall not be less than  $43 + 10 \log$  (mean output power in watts) dBc below the mean power output outside a license's frequency block (-13dBm)

According to RSS-133 §6.5

#### 6.5.1 Out-of-Block Emissions

a. Mobile stations must comply with subsection i. below.

In the first 1.0MHz band immediately outside and adjacent to the licensee's frequency block. the power of emissions per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in watts) by at least  $43 + 10 \log (P)$ , dB.

b. After the first 1.0 MHz (for equipment that complies with a.i. of this subsection) or 1.5 MHz (for equipment that complies with a.ii. of this subsection), the power of emissions shall be attenuated below the transmitter output power by at least  $43 + 10 \log (P)$ , dB, per any MHz of bandwidth.

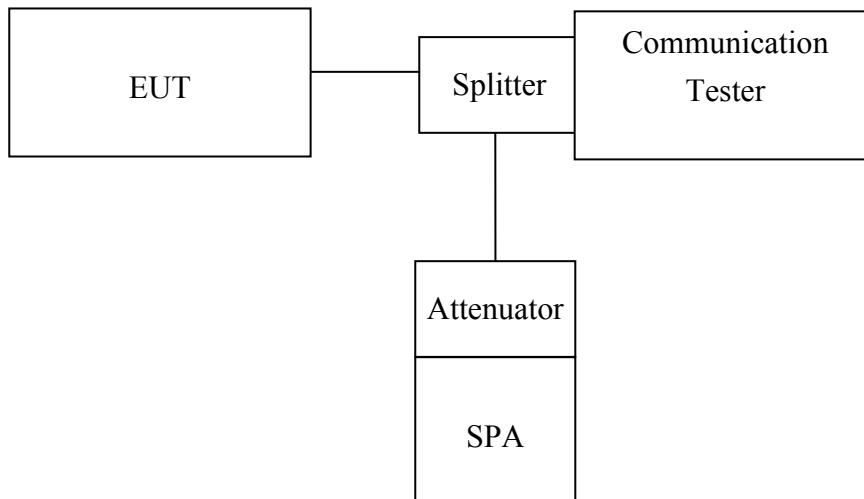
(Note: If the test result using 1% of the emission bandwidth is used, then power integration over 1.0 MHz is required; alternatively, the spectrum analyser resolution and video bandwidths can be increased to 1.0 MHz for this measurement).

#### 6.5.2 Out-of-Sub-band Emissions

Outside the sub-bands 1850-1910 MHz and 1930-1990 MHz, the attenuation shall be equal to or greater than the out-of-block emission limits in Section 6.5.1.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report cannot be reproduced, except in full, without prior written permission of the Company.

## 7.2 Test SET-UP



*Note: Measurement setup for testing on Antenna connector*

## 7.3 Measurement Procedure

The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic.

For the out of band: Set the RBW, VBW = 1MHz, Start=30MHz, Stop= 10th harmonic.  
Limit = -13dBm

Band Edge Requirements(1850MHz and 1910MHz) : In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions. Limit, -13dBm.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report cannot be reproduced, except in full, without prior written permission of the Company.

#### 7.4 Measurement Equipment Used:

| Conducted Emission Test Site |              |                 |               |            |            |
|------------------------------|--------------|-----------------|---------------|------------|------------|
| EQUIPMENT TYPE               | MFR          | MODEL NUMBER    | SERIAL NUMBER | LAST CAL.  | CAL DUE.   |
| Spectrum Analyzer            | Agilent      | E4446A          | MY43360126    | 03/29/2005 | 03/28/2006 |
| Spectrum Analyzer            | Agilent      | E7405A          | US41160416    | 06/28/2005 | 06/29/2006 |
| Spectrum Analyzer            | R&S          | FSP 40          | 100034        | 11/09/2005 | 11/10/2006 |
| Communication Test           | R&S          | SMU200          | N/A           | N/A        | N/A        |
| Power Sensor                 | Anritsu      | MA2490A         | 31431         | 06/28/2005 | 06/29/2006 |
| Power Meter                  | Anritsu      | ML2487A         | 6K00002070    | 06/28/2005 | 06/29/2006 |
| Temperature Chamber          | TERCHY       | MHG-120LF       | 911009        | 10/14/2005 | 10/13/2006 |
| Low Loss Cable               | HUBER+SUHNER | SUCOFLEX 104PEA | N/A           | N/A        | N/A        |
| Attenuator                   | Mini-Circuit | BW-S10W5        | N/A           | 09/23/2005 | 09/22/2006 |
| Attenuator                   | Mini-Circuit | BW-S6W5         | N/A           | 09/23/2005 | 09/22/2006 |
| Splitter                     | Agilent      | 11636B          | 51728         | 09/23/2005 | 09/22/2006 |
| AC Power Supply              | APW-105N     | 887592          | All Power     | 12/15/2004 | 12/14/2005 |

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## 7.5 Measurement Result

Figure 8-1: Out of Band emission at antenna terminals– PCS Channel Low

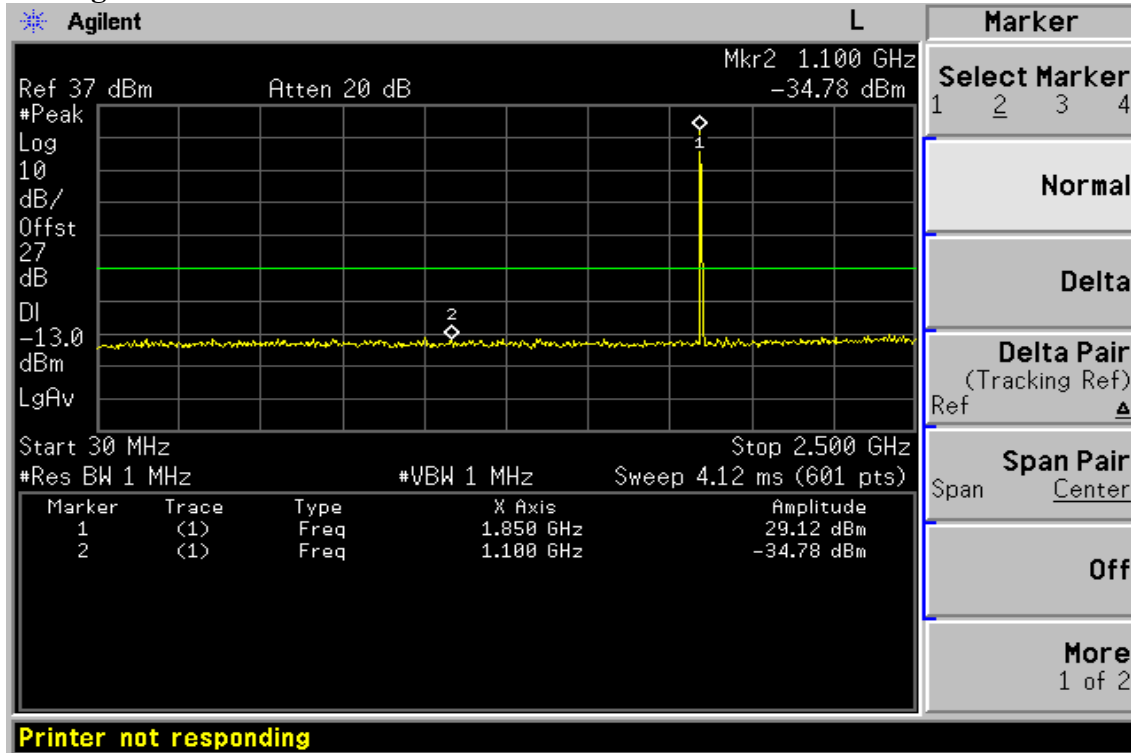
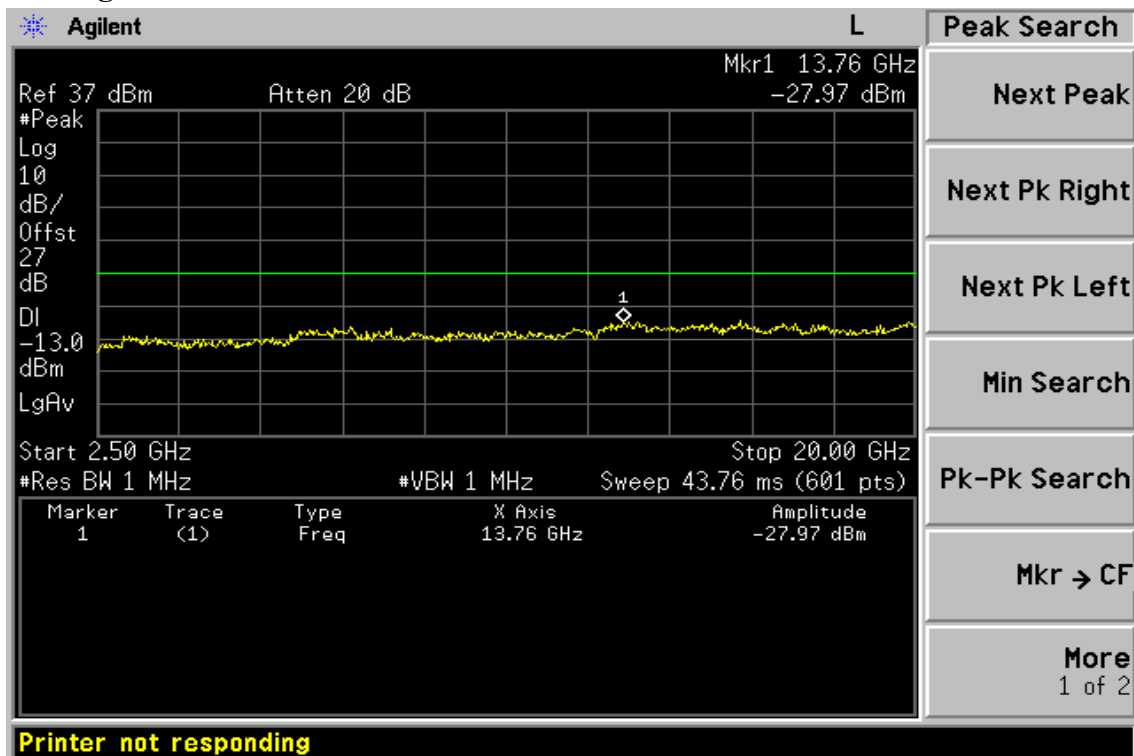


Figure 8-2: Out of Band emission at antenna terminals–PCS Channel Low



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Figure 8-3: Out of Band emission at antenna terminals –PCS Channel Mid

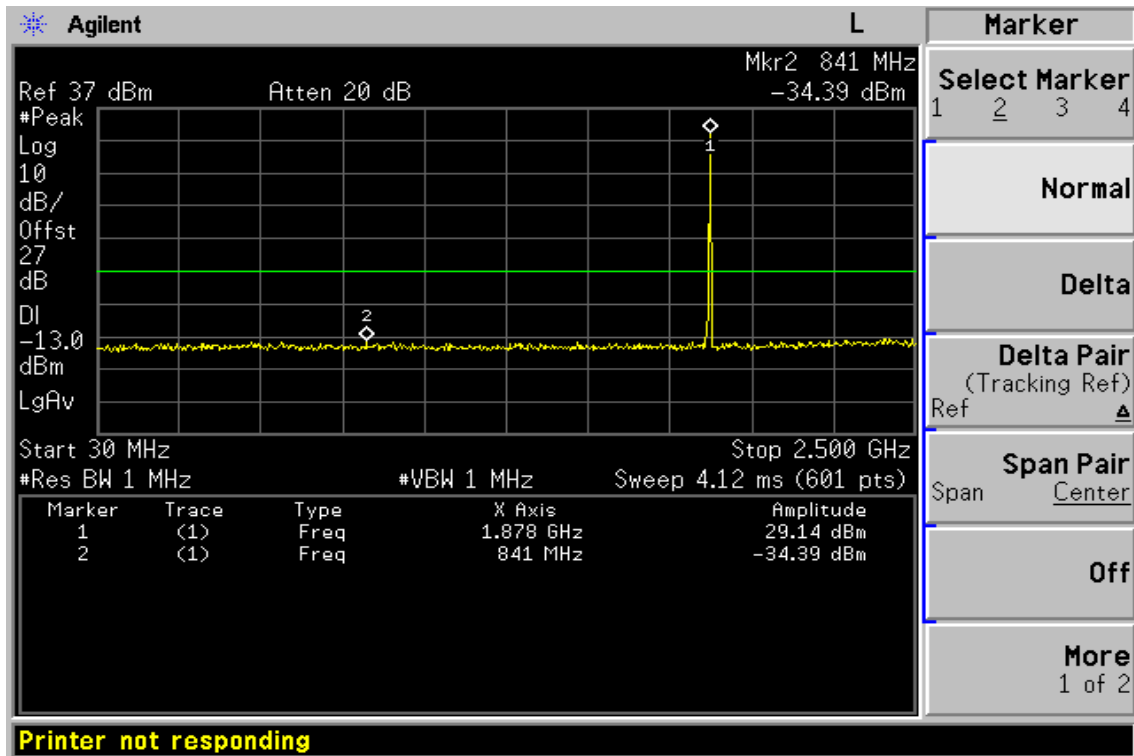
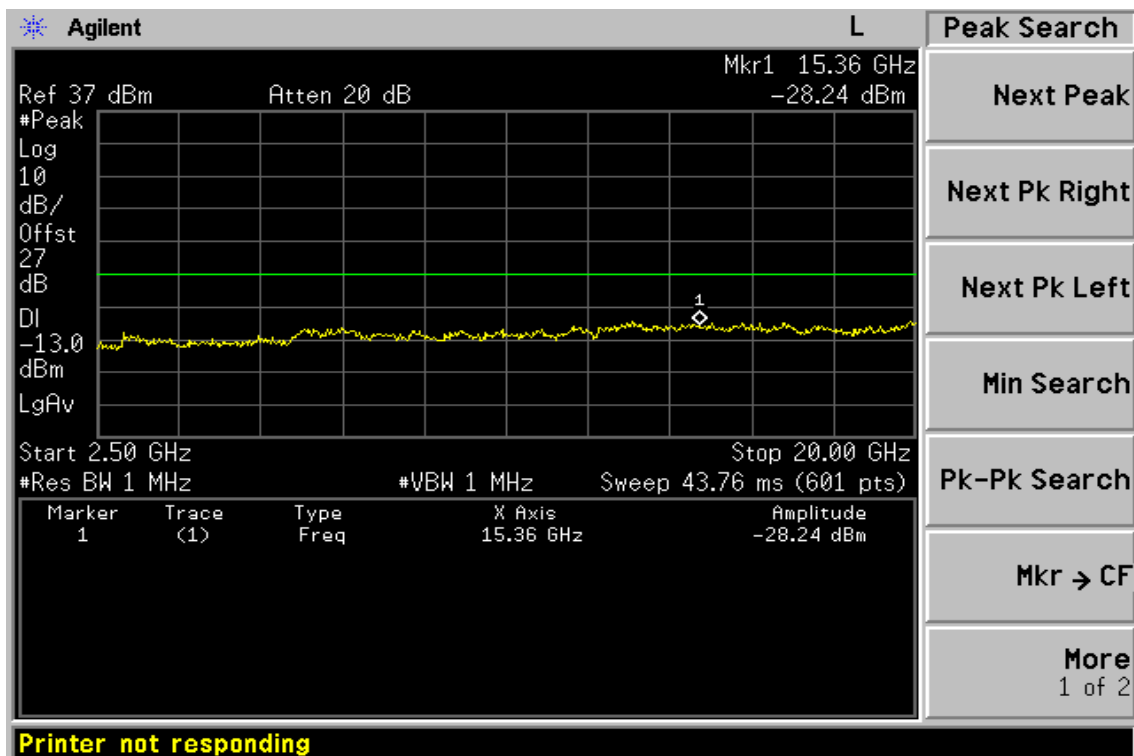


Figure 8-4: Out of Band emission at antenna terminals –PCS Channel Mid



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Figure 8-5: Out of Band emission at antenna terminals–PCS Channel High

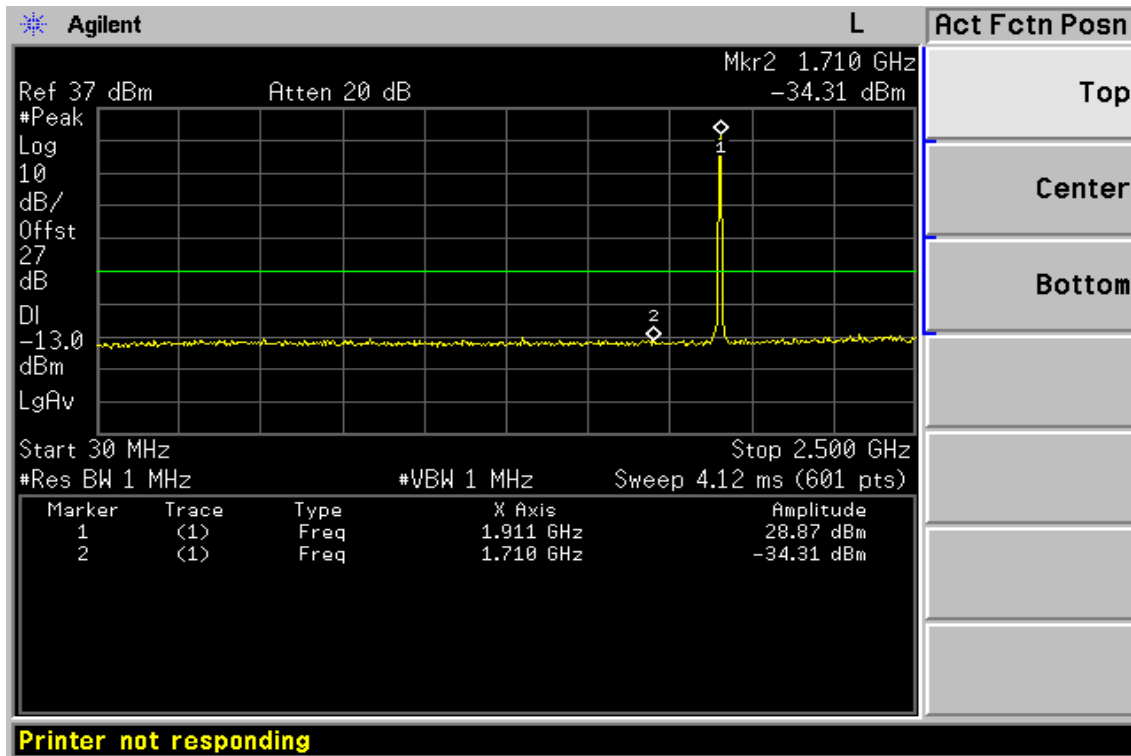
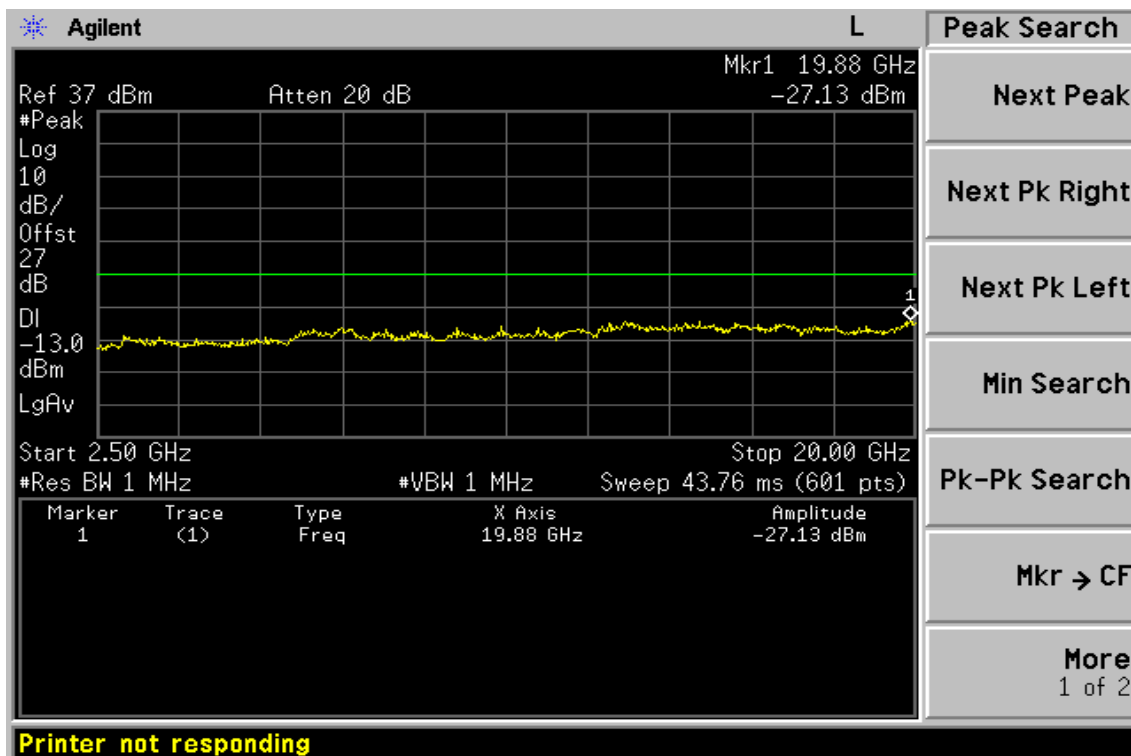


Figure 8-6: Out of Band emission at antenna terminals– PCS Channel High



The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report cannot be reproduced, except in full, without prior written permission of the Company.

Figure 8-7: Bad edge emission at antenna terminals – PCS CH 512

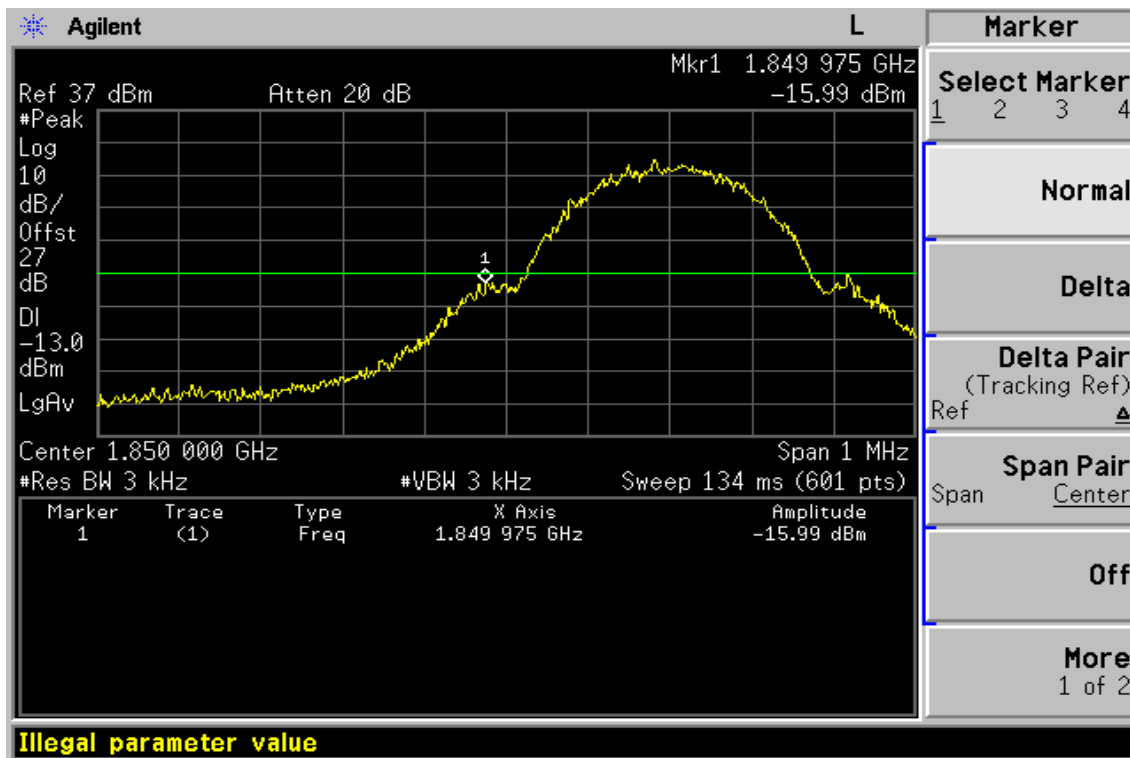
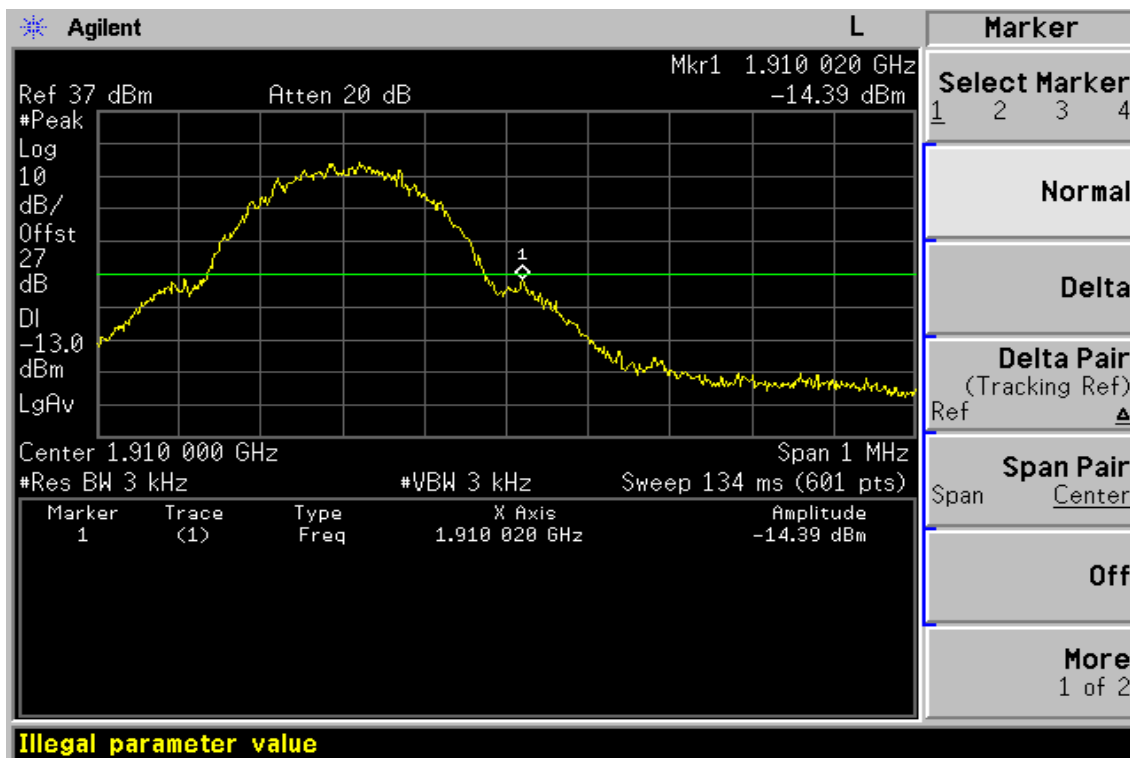


Figure 8-8: Band edge emission at antenna terminals – PCS CH 810



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## 8. FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT(TX)

### 8.1 Standard Applicable

According to FCC §2.1053,

FCC §24.238(a), the magnitude of each spurious and harmonic emission that can be detected when the equipment is operated under the conditions specified in the instruction manual and/or alignment procedure, shall not be less than  $43 + 10 \log$  (mean output power in watts) dBc below the mean power output outside a license's frequency block (-13dBm)

According to RSS-133 §6.5

#### 6.5.1 Out-of-Block Emissions

a. Mobile stations must comply with subsection i. below.

In the first 1.0MHz band immediately outside and adjacent to the licensee's frequency block. the power of emissions per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in watts) by at least  $43 + 10 \log (P)$ , dB.

b. After the first 1.0 MHz (for equipment that complies with a.i. of this subsection) or 1.5 MHz (for equipment that complies with a.ii. of this subsection), the power of emissions shall be attenuated below the transmitter output power by at least  $43 + 10 \log (P)$ , dB, per any MHz of bandwidth.

(Note: If the test result using 1% of the emission bandwidth is used, then power integration over 1.0 MHz is required; alternatively, the spectrum analyser resolution and video bandwidths can be increased to 1.0 MHz for this measurement).

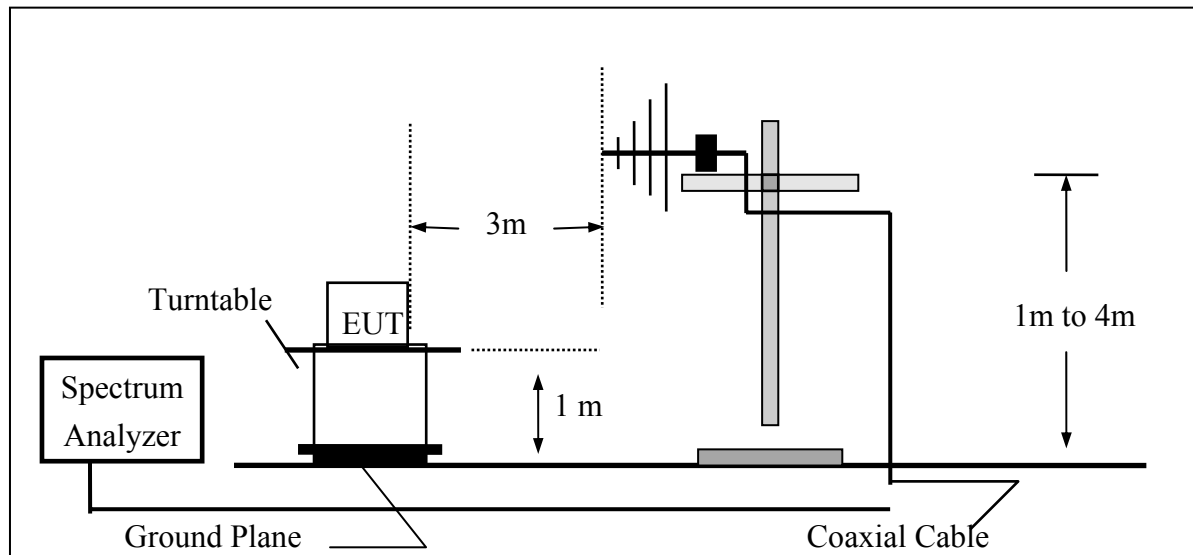
#### 6.5.2 Out-of-Sub-band Emissions

Outside the sub-bands 1850-1910 MHz and 1930-1990 MHz, the attenuation shall be equal to or greater than the out-of-block emission limits in Section 6.5.1.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report cannot be reproduced, except in full, without prior written permission of the Company.

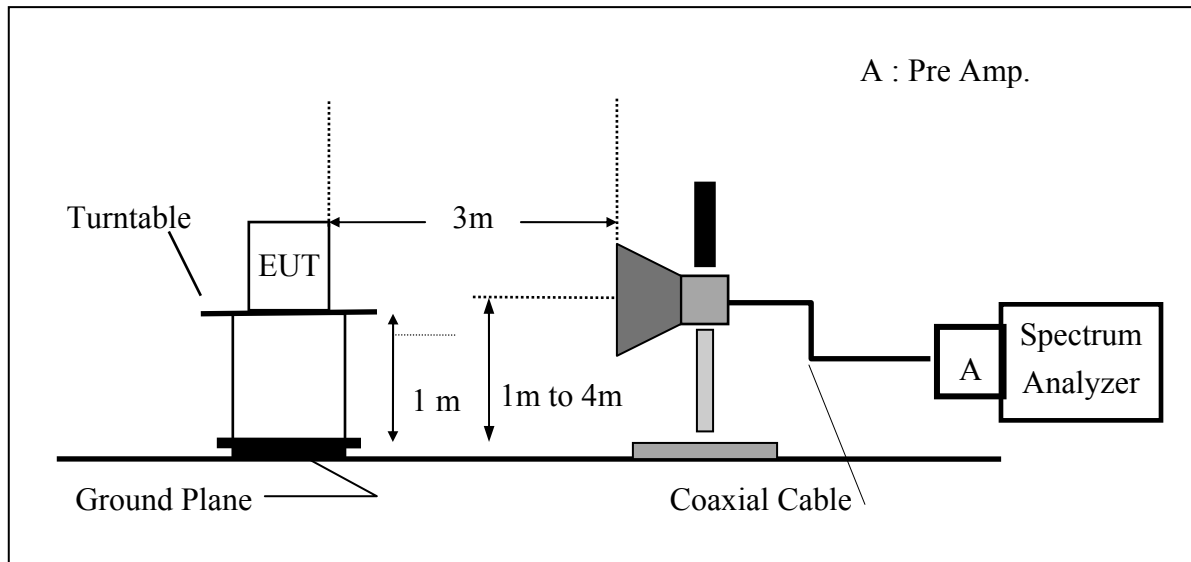
## 8.2 EUT Setup (Block Diagram of Configuration)

(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz

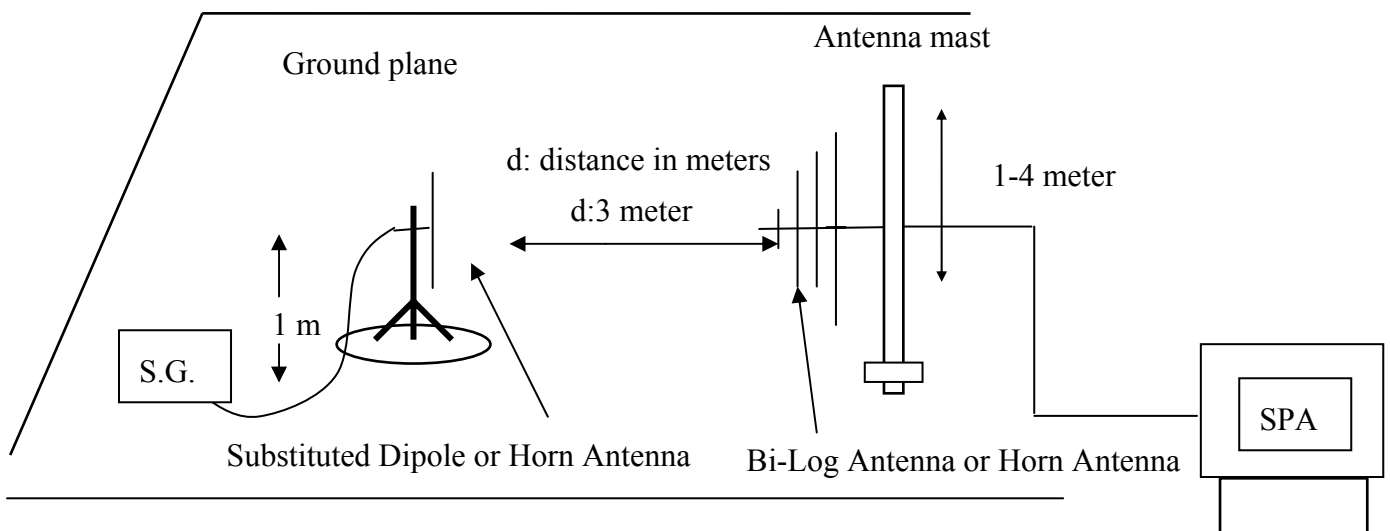


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## (B) Radiated Emission Test Set-UP Frequency Over 1 GHz



## (C) Substituted Method Test Set-UP



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### 8.3 Measurement Procedure

The EUT was placed on a non-conductive, The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission were identified, the power of the emission was determined using the substitution method.

The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.

$$\text{EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain(dBi)} - \text{Cable Loss (dB)}$$

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#### 8.4 Measurement Equipment Used:

| EQUIPMENT TYPE     | MFR          | MODEL NUMBER         | SERIAL NUMBER | LAST CAL.  | CAL DUE.   |
|--------------------|--------------|----------------------|---------------|------------|------------|
| Spectrum Analyzer  | Agilent      | E4446A               | MY43360126    | 03/29/2005 | 03/28/2006 |
| Spectrum Analyzer  | Agilent      | 7405A                | US41160416    | 06/28/2005 | 06/29/2006 |
| Spectrum Analyzer  | R&S          | FSP 40               | 100034        | 11/09/2005 | 11/10/2006 |
| Communication Test | R&S          | SMU200               | N/A           | N/A        | N/A        |
| Bilog Antenna      | SCHWAZBECK   | VULB9163             | 152           | 06/03/2005 | 06/02/2006 |
| Horn antenna       | Schwarzbeck  | BBHA 9120D           | 309/320       | 08/16/2005 | 08/15/2006 |
| Pre-Amplifier      | HP           | 8447D                | 2944A09469    | 07/19/2005 | 07/18/2006 |
| Pre-Amplifier      | HP           | 8494B                | 3008A00578    | 02/26/2005 | 02/25/2006 |
| Signal Generator   | R&S          | SMR40                | 100210        | 02/09/2005 | 02/10/2006 |
| Turn Table         | HD           | DT420                | N/A           | N.C.R      | N.C.R      |
| Antenna Tower      | HD           | MA240-N              | 240/657       | N.C.R      | N.C.R      |
| Controller         | HD           | HD100                | N/A           | N.C.R      | N.C.R      |
| Low Loss Cable     | HUBER+SUHNER | SUCOFLEX 104PEA-10M  | 10m           | 10/09/2005 | 10/08/2006 |
| Low Loss Cable     | HUBER+SUHNER | SUCOFLEX 104PEA-3M   | 3m            | 10/09/2005 | 10/08/2006 |
| Low Loss Cable     | HUBER+SUHNER | SUCOFLEX 104PEA-0.5M | 0.5m          | 10/09/2005 | 10/08/2006 |
| Site NSA           | SGS          | 966 chamber          | N/A           | 11/17/2005 | 11/16/2006 |
| Site NSA           | SGS          | 10m Open-Site        | N/A           | 11/17/2005 | 11/16/2006 |
| Attenuator         | Mini-Circuit | BW-S10W5             | N/A           | 09/23/2005 | 09/22/2006 |
| Dipole Antenna     | Schwarzbeck  | VHAP                 | 908/909       | 06/10/2004 | 06/11/2006 |
| Dipole Antenna     | Schwarzbeck  | UHAP                 | 891/892       | 06/10/2004 | 06/11/2006 |
| Horn antenna       | Schwarzbeck  | BBHA 9120D           | N/A           | 08/16/2004 | 08/15/2006 |

#### 8.5 Measurement Result

Refer to attach tabular data sheets.

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## Radiated Spurious Emission Measurement Result

Operation Mode : TX CH Low E2 Mode  
Fundamental Frequency : 1850.20MHz  
Temperature : 25°C  
Humidity : 65%

Test Date : Oct. 19, 2005  
Test By: : Alex  
Pol: : Ver

| Freq.    | SPA.<br>Reading | Ant.Pol. | S.G<br>Output | Antenna<br>Gain | Cable Loss | ERP/<br>EIRP | Limit  | Safe Margin |
|----------|-----------------|----------|---------------|-----------------|------------|--------------|--------|-------------|
| (MHz)    | (dBuV)          | H/V      | (dBm)         | (dB/dBi)        | (dB)       | (dBm)        | (dBm)  | (dBm)       |
| 67.83    | 43.21           | V        | -68.48        | -0.95           | 1.00       | -70.42       | -13.00 | -57.42      |
| 153.19   | 34.69           | V        | -63.21        | -7.80           | 1.47       | -72.48       | -13.00 | -59.48      |
| 322.94   | 35.06           | V        | -63.77        | -7.79           | 2.21       | -73.77       | -13.00 | -60.77      |
| 1588.00  | 60.91           | V        | -46.15        | 9.11            | 4.95       | -42.00       | -13.00 | -29.00      |
| 1849.98  | 83.10           | V        | -23.86        | 9.90            | 5.41       | -19.37       | -13.00 | -6.37       |
| 2414.00  | 59.62           | V        | -44.80        | 10.11           | 6.22       | -40.91       | -13.00 | -27.91      |
| 3128.00  | 57.30           | V        | -45.35        | 11.80           | 7.13       | -40.68       | -13.00 | -27.68      |
| 3688.00  | 58.10           | V        | -43.54        | 12.61           | 7.71       | -38.64       | -13.00 | -25.64      |
| 5543.00  | 60.74           | V        | -34.49        | 13.21           | 9.68       | -30.95       | -13.00 | -17.95      |
| 7398.00  | 61.64           | V        | -24.36        | 11.50           | 11.28      | -24.14       | -13.00 | -11.14      |
| 9251.00  | --              | V        | --            | --              | --         | --           | -13.00 | --          |
| 11101.20 | --              | V        | --            | --              | --         | --           | -13.00 | --          |
| 12951.40 | --              | V        | --            | --              | --         | --           | -13.00 | --          |
| 14801.60 | --              | V        | --            | --              | --         | --           | -13.00 | --          |
| 16651.80 | --              | V        | --            | --              | --         | --           | -13.00 | --          |
| 18502.00 | --              | V        | --            | --              | --         | --           | -13.00 | --          |

### Remark :

- 1 The emission behaviour belongs to narrowband spurious emission.
- 2 Remark”---“ means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP (dBm) = SG \text{ Setting}(dBm) + Antenna \text{ Gain} (dBd/dBi) - Cable \text{ loss} (dB)$

The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report cannot be reproduced, except in full, without prior written permission of the Company.

## Radiated Spurious Emission Measurement Result

Operation Mode : TX CH Low E2 Mode  
Fundamental Frequency : 1850.20MHz  
Temperature : 25°C  
Humidity : 65%

Test Date : Oct. 19, 2005  
Test By: : Alex  
Pol : Hor

| Freq.    | SPA.<br>Reading | Ant.Pol. | S.G<br>Output | Antenna<br>Gain | Cable Loss | ERP/<br>EIRP | Limit  | Safe Margin |
|----------|-----------------|----------|---------------|-----------------|------------|--------------|--------|-------------|
| (MHz)    | (dBuV)          | H/V      | (dBm)         | (dB/dBi)        | (dB)       | (dBm)        | (dBm)  | (dBm)       |
| 67.83    | 45.56           | H        | -66.50        | -0.95           | 1.00       | -68.44       | -13.00 | -55.44      |
| 182.29   | 34.92           | H        | -65.74        | -7.83           | 1.53       | -75.09       | -13.00 | -62.09      |
| 293.84   | 34.43           | H        | -65.34        | -7.92           | 1.99       | -75.24       | -13.00 | -62.24      |
| 1850.00  | 77.11           | H        | -29.78        | 9.90            | 5.41       | -25.29       | -13.00 | -12.29      |
| 2953.00  | 57.11           | H        | -45.61        | 11.38           | 6.96       | -41.19       | -13.00 | -28.19      |
| 3688.00  | 56.96           | H        | -44.45        | 12.61           | 7.71       | -39.55       | -13.00 | -26.55      |
| 5543.00  | 56.18           | H        | -38.97        | 13.21           | 9.68       | -35.43       | -13.00 | -22.43      |
| 7398.00  | 59.81           | H        | -26.26        | 11.50           | 11.28      | -26.04       | -13.00 | -13.04      |
| 9251.00  | --              | H        | --            | --              | --         | --           | -13.00 | --          |
| 11101.20 | --              | H        | --            | --              | --         | --           | -13.00 | --          |
| 12951.40 | --              | H        | --            | --              | --         | --           | -13.00 | --          |
| 14801.60 | --              | H        | --            | --              | --         | --           | -13.00 | --          |
| 16651.80 | --              | H        | --            | --              | --         | --           | -13.00 | --          |
| 18502.00 | --              | H        | --            | --              | --         | --           | -13.00 | --          |

### Remark :

- 1 The emission behaviour belongs to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP (dBm) = SG \text{ Setting}(dBm) + Antenna \text{ Gain} (dBd/dBi) - Cable \text{ loss} (dB)$

The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report cannot be reproduced, except in full, without prior written permission of the Company.

## Radiated Spurious Emission Measurement Result

Operation Mode : TX CH Mid E2 Mode  
Fundamental Frequency : 1880MHz  
Temperature : 25°C  
Humidity : 65%

Test Date : Oct. 19, 2005  
Test By: : Alex  
Pol : Ver

| Freq.    | SPA.<br>Reading | Ant.Pol. | S.G<br>Output | Antenna<br>Gain | Cable Loss | ERP/<br>EIRP | Limit  | Safe Margin |
|----------|-----------------|----------|---------------|-----------------|------------|--------------|--------|-------------|
| (MHz)    | (dBuV)          | H/V      | (dBm)         | (dB/dBi)        | (dB)       | (dBm)        | (dBm)  | (dBm)       |
| 53.28    | 41.11           | V        | -67.30        | -0.55           | 0.92       | -68.77       | -13.00 | -55.77      |
| 153.19   | 34.69           | V        | -63.21        | -7.80           | 1.47       | -72.48       | -13.00 | -59.48      |
| 322.94   | 35.06           | V        | -63.77        | -7.79           | 2.21       | -73.77       | -13.00 | -60.77      |
| 3009.00  | 57.86           | V        | -44.84        | 11.54           | 7.04       | -40.33       | -13.00 | -27.33      |
| 3128.00  | 58.32           | V        | -44.33        | 11.80           | 7.13       | -39.66       | -13.00 | -26.66      |
| 3758.00  | 64.94           | V        | -36.37        | 12.60           | 7.82       | -31.59       | -13.00 | -18.59      |
| 5634.00  | 61.66           | V        | -33.31        | 13.35           | 9.73       | -29.69       | -13.00 | -16.69      |
| 7524.00  | 58.03           | V        | -27.57        | 11.45           | 11.34      | -27.46       | -13.00 | -14.46      |
| 9400.00  | --              | V        | --            | --              | --         | --           | -13.00 | --          |
| 11280.00 | --              | V        | --            | --              | --         | --           | -13.00 | --          |
| 13160.00 | --              | V        | --            | --              | --         | --           | -13.00 | --          |
| 15040.00 | --              | V        | --            | --              | --         | --           | -13.00 | --          |
| 16920.00 | --              | V        | --            | --              | --         | --           | -13.00 | --          |
| 18800.00 | --              | V        | --            | --              | --         | --           | -13.00 | --          |

### Remark :

- 1 The emission behaviour belongs to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP (dBm) = SG \text{ Setting}(dBm) + Antenna \text{ Gain} (dBd/dBi) - Cable \text{ loss} (dB)$

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## Radiated Spurious Emission Measurement Result

Operation Mode : TX CH Mid E2 Mode  
Fundamental Frequency : 1880MHz  
Temperature : 25°C  
Humidity : 65%

Test Date : Oct. 19, 2005  
Test By: : Alex  
Pol : Hor

| Freq.    | SPA.<br>Reading | Ant.Pol. | S.G<br>Output | Antenna<br>Gain | Cable Loss | ERP/<br>EIRP | Limit  | Safe Margin |
|----------|-----------------|----------|---------------|-----------------|------------|--------------|--------|-------------|
| (MHz)    | (dBuV)          | H/V      | (dBm)         | (dB/dBi)        | (dB)       | (dBm)        | (dBm)  | (dBm)       |
| 43.58    | 43.27           | H        | -61.07        | -1.92           | 0.83       | -63.81       | -13.00 | -50.81      |
| 67.83    | 45.83           | H        | -66.23        | -0.95           | 1.00       | -68.17       | -13.00 | -55.17      |
| 182.29   | 35.11           | H        | -65.55        | -7.83           | 1.53       | -74.90       | -13.00 | -61.90      |
| 324.88   | 35.02           | H        | -63.38        | -7.78           | 2.23       | -73.39       | -13.00 | -60.39      |
| 1588.00  | 56.39           | H        | -50.66        | 9.11            | 4.95       | -46.50       | -13.00 | -33.50      |
| 3009.00  | 58.04           | H        | -44.55        | 11.54           | 7.04       | -40.05       | -13.00 | -27.05      |
| 3758.00  | 60.99           | H        | -40.13        | 12.60           | 7.82       | -35.34       | -13.00 | -22.34      |
| 5634.00  | 59.63           | H        | -35.28        | 13.35           | 9.73       | -31.65       | -13.00 | -18.65      |
| 7524.00  | 54.61           | H        | -31.07        | 11.45           | 11.34      | -30.96       | -13.00 | -17.96      |
| 9400.00  | --              | H        | --            | --              | --         | --           | -13.00 | --          |
| 11280.00 | --              | H        | --            | --              | --         | --           | -13.00 | --          |
| 13160.00 | --              | H        | --            | --              | --         | --           | -13.00 | --          |
| 15040.00 | --              | H        | --            | --              | --         | --           | -13.00 | --          |
| 16920.00 | --              | H        | --            | --              | --         | --           | -13.00 | --          |
| 18800.00 | --              | H        | --            | --              | --         | --           | -13.00 | --          |

### Remark :

- 1 The emission behaviour belongs to narrowband spurious emission.
- 2 Remark”---“ means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP (dBm) = SG \text{ Setting}(dBm) + \text{Antenna Gain} (dBd/dBi) - \text{Cable loss} (dB)$

The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report cannot be reproduced, except in full, without prior written permission of the Company.

## Radiated Spurious Emission Measurement Result

Operation Mode : TX CH High E2 Mode  
Fundamental Frequency : 1909.8 MHz  
Temperature : 25°C  
Humidity : 65%

Test Date : Oct. 19, 2005  
Test By: : Alex  
Pol : Ver

| Freq.    | SPA.<br>Reading | Ant.Pol. | S.G<br>Output | Antenna<br>Gain | Cable Loss | ERP/<br>EIRP | Limit  | Safe Margin |
|----------|-----------------|----------|---------------|-----------------|------------|--------------|--------|-------------|
| (MHz)    | (dBuV)          | H/V      | (dBm)         | (dB/dBi)        | (dB)       | (dBm)        | (dBm)  | (dBm)       |
| 46.49    | 43.57           | V        | -61.60        | -1.32           | 0.86       | -63.78       | -13.00 | -50.78      |
| 182.29   | 35.16           | V        | -65.35        | -7.83           | 1.53       | -74.70       | -13.00 | -61.70      |
| 1588.00  | 64.70           | V        | -42.36        | 9.11            | 4.95       | -38.21       | -13.00 | -25.21      |
| 1910.02  | 83.07           | V        | -23.87        | 10.08           | 5.51       | -19.30       | -13.00 | -6.30       |
| 2414.00  | 57.80           | V        | -46.62        | 10.11           | 6.22       | -42.73       | -13.00 | -29.73      |
| 3184.00  | 58.86           | V        | -43.77        | 11.92           | 7.17       | -39.02       | -13.00 | -26.02      |
| 3814.00  | 65.88           | V        | -35.18        | 12.60           | 7.91       | -30.48       | -13.00 | -17.48      |
| 5718.00  | 63.52           | V        | -31.22        | 13.48           | 9.77       | -27.51       | -13.00 | -14.51      |
| 7629.00  | 53.32           | V        | -31.88        | 11.41           | 11.47      | -31.95       | -13.00 | -18.95      |
| 9549.00  | --              | V        | --            | --              | --         | --           | -13.00 | --          |
| 11458.80 | --              | V        | --            | --              | --         | --           | -13.00 | --          |
| 13368.60 | --              | V        | --            | --              | --         | --           | -13.00 | --          |
| 15278.40 | --              | V        | --            | --              | --         | --           | -13.00 | --          |
| 17188.20 | --              | V        | --            | --              | --         | --           | -13.00 | --          |
| 19098.00 | --              | V        | --            | --              | --         | --           | -13.00 | --          |

### Remark :

- 1 The emission behaviour belongs to narrowband spurious emission.
- 2 Remark”---“ means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP (dBm) = SG \text{ Setting}(dBm) + \text{Antenna Gain} (dBd/dBi) - \text{Cable loss} (dB)$

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## Radiated Spurious Emission Measurement Result

Operation Mode : TX CH High E2 Mode  
Fundamental Frequency : 1909.8 MHz  
Temperature : 25°C  
Humidity : 65%

Test Date : Oct. 19, 2005  
Test By: : Alex  
Pol : Hor

| Freq.    | SPA.<br>Reading | Ant.Pol. | S.G<br>Output | Antenna<br>Gain | Cable Loss | ERP/<br>EIRP | Limit  | Safe Margin |
|----------|-----------------|----------|---------------|-----------------|------------|--------------|--------|-------------|
| (MHz)    | (dBuV)          | H/V      | (dBm)         | (dB/dBi)        | (dB)       | (dBm)        | (dBm)  | (dBm)       |
| 67.83    | 43.95           | H        | -68.11        | -0.95           | 1.00       | -70.05       | -13.00 | -57.05      |
| 182.29   | 35.57           | H        | -65.09        | -7.83           | 1.53       | -74.44       | -13.00 | -61.44      |
| 870.99   | 32.89           | H        | -53.60        | -7.91           | 3.78       | -65.28       | -13.00 | -52.28      |
| 1903.00  | 60.39           | H        | -46.47        | 10.06           | 5.50       | -41.91       | -13.00 | -28.91      |
| 1910.02  | 77.39           | H        | -29.46        | 10.08           | 5.51       | -24.90       | -13.00 | -11.90      |
| 2988.00  | 55.63           | H        | -47.00        | 11.48           | 7.01       | -42.53       | -13.00 | -29.53      |
| 3814.00  | 59.37           | H        | -41.51        | 12.60           | 7.91       | -36.81       | -13.00 | -23.81      |
| 5718.00  | 58.86           | H        | -35.82        | 13.48           | 9.77       | -32.12       | -13.00 | -19.12      |
| 7629.00  | 53.79           | H        | -31.53        | 11.41           | 11.47      | -31.59       | -13.00 | -18.59      |
| 9549.00  | --              | H        | --            | --              | --         | --           | -13.00 | --          |
| 11458.80 | --              | H        | --            | --              | --         | --           | -13.00 | --          |
| 13368.60 | --              | H        | --            | --              | --         | --           | -13.00 | --          |
| 15278.40 | --              | H        | --            | --              | --         | --           | -13.00 | --          |
| 17188.20 | --              | H        | --            | --              | --         | --           | -13.00 | --          |
| 19098.00 | --              | H        | --            | --              | --         | --           | -13.00 | --          |

### Remark :

- 1 The emission behaviour belongs to narrowband spurious emission.
- 2 Remark”---“ means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP (dBm) = SG \text{ Setting}(dBm) + \text{Antenna Gain} (dBd/dBi) - \text{Cable loss} (dB)$

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## 9. FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT

### 9.1 Standard Applicable

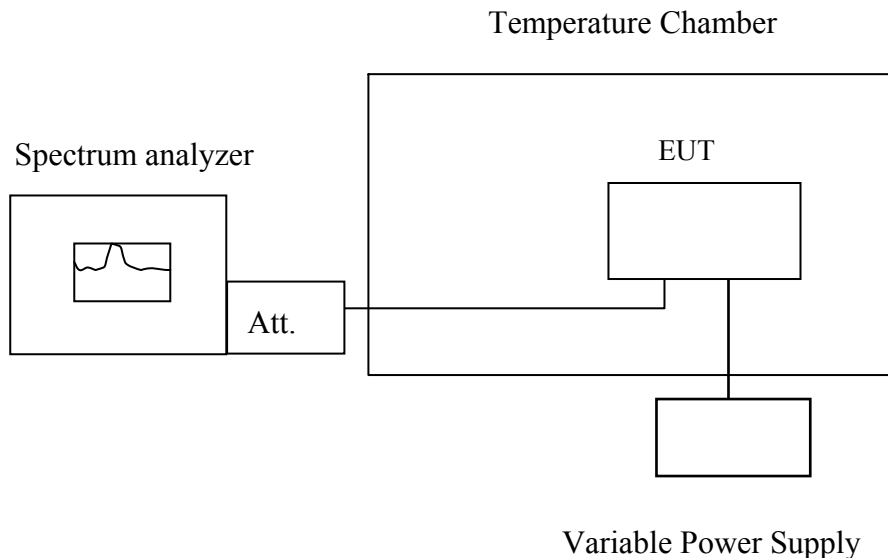
According to FCC §2.1055, FCC §24.235.

Frequency Tolerance: 2.5 ppm

According to RSS-133 §6.3

The carrier frequency shall not depart from the reference frequency in excess of  $\pm 2.5$  ppm for mobile stations.

### 9.2 Test Set-up:



**Note :** Measurement setup for testing on Antenna connector

### 9.3 Measurement Procedure

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30°C. After the temperature stabilized for approximately 30 minutes re-recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.

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#### 9.4 Measurement Equipment Used:

| Conducted Emission Test Site |              |                 |               |            |            |
|------------------------------|--------------|-----------------|---------------|------------|------------|
| EQUIPMENT TYPE               | MFR          | MODEL NUMBER    | SERIAL NUMBER | LAST CAL.  | CAL DUE.   |
| Spectrum Analyzer            | Agilent      | E4446A          | MY43360126    | 03/29/2005 | 03/28/2006 |
| Spectrum Analyzer            | Agilent      | E7405A          | US41160416    | 06/28/2005 | 06/29/2006 |
| Spectrum Analyzer            | R&S          | FSP 40          | 100034        | 11/09/2005 | 11/10/2006 |
| Communication Test           | R&S          | SMU200          | N/A           | N/A        | N/A        |
| Power Sensor                 | Anritsu      | MA2490A         | 31431         | 06/28/2005 | 06/29/2006 |
| Power Meter                  | Anritsu      | ML2487A         | 6K00002070    | 06/28/2005 | 06/29/2006 |
| Temperature Chamber          | TERCHY       | MHG-120LF       | 911009        | 10/14/2005 | 10/13/2006 |
| Low Loss Cable               | HUBER+SUHNER | SUCOFLEX 104PEA | N/A           | N/A        | N/A        |
| Attenuator                   | Mini-Circuit | BW-S10W5        | N/A           | 09/23/2005 | 09/22/2006 |
| Attenuator                   | Mini-Circuit | BW-S6W5         | N/A           | 09/23/2005 | 09/22/2006 |
| Splitter                     | Agilent      | 11636B          | 51728         | 09/23/2005 | 09/22/2006 |
| AC Power Supply              | APW-105N     | 887592          | All Power     | 12/15/2004 | 12/14/2005 |

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## 9.5 Measurement Result

| Reference Frequency: PCS Mid Channel 1880 MHz @ 25°C |                  |            |            |            |
|------------------------------------------------------|------------------|------------|------------|------------|
| Limit: +/- 2.5 ppm = 4700 Hz                         |                  |            |            |            |
| Power Supply                                         | Environment      | Frequency  | Delta (Hz) | Limit (Hz) |
| Vdc                                                  | Temperature (°C) | (MHz)      |            |            |
| 3.8                                                  | 25               | 1880.06460 | 20.00      | 4700       |
| 3.8                                                  | -30              | 1880.06472 | -100.00    | 4700       |
| 3.8                                                  | -20              | 1880.06471 | -90.00     | 4700       |
| 3.8                                                  | -10              | 1880.06458 | 40.00      | 4700       |
| 3.8                                                  | 0                | 1880.06457 | 50.00      | 4700       |
| 3.8                                                  | 10               | 1880.06468 | -60.00     | 4700       |
| 3.8                                                  | 20               | 1880.06462 | 0.00       | 4700       |
| 3.8                                                  | 30               | 1880.06460 | 20.00      | 4700       |
| 3.8                                                  | 40               | 1880.06459 | 30.00      | 4700       |
| 3.8                                                  | 50               | 1880.06467 | -50.00     | 4700       |

**Note: The battery is rated 3.8V dc.**

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## 10. FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT

### 10.1 Standard Applicable

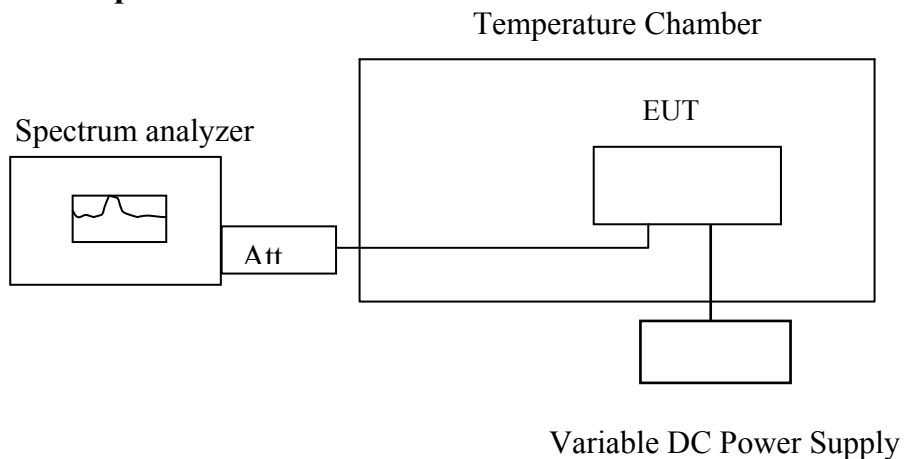
According to FCC §2.1055, FCC §24.235,

Frequency Tolerance: 2.5 ppm

According to RSS-133 §6.3

The carrier frequency shall not depart from the reference frequency in excess of  $\pm 2.5$  ppm for mobile stations.

### 10.2 Test Set-up:



*Note: Measurement setup for testing on Antenna connector*

### 10.3 Measurement Procedure

Set chamber temperature to 25°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specified extreme voltage variation ( $\pm 15\%$ ) and endpoint, record the maximum frequency change.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report cannot be reproduced, except in full, without prior written permission of the Company.

#### 10.4 Measurement Equipment Used:

| Conducted Emission Test Site |              |                 |               |            |            |
|------------------------------|--------------|-----------------|---------------|------------|------------|
| EQUIPMENT TYPE               | MFR          | MODEL NUMBER    | SERIAL NUMBER | LAST CAL.  | CAL DUE.   |
| Spectrum Analyzer            | Agilent      | E4446A          | MY43360126    | 03/29/2005 | 03/28/2006 |
| Spectrum Analyzer            | Agilent      | E7405A          | US41160416    | 06/28/2005 | 06/29/2006 |
| Spectrum Analyzer            | R&S          | FSP 40          | 100034        | 11/09/2005 | 11/10/2006 |
| Communication Test           | R&S          | SMU200          | N/A           | N/A        | N/A        |
| Power Sensor                 | Anritsu      | MA2490A         | 31431         | 06/28/2005 | 06/29/2006 |
| Power Meter                  | Anritsu      | ML2487A         | 6K00002070    | 06/28/2005 | 06/29/2006 |
| Temperature Chamber          | TERCHY       | MHG-120LF       | 911009        | 10/14/2005 | 10/13/2006 |
| Low Loss Cable               | HUBER+SUHNER | SUCOFLEX 104PEA | N/A           | N/A        | N/A        |
| Attenuator                   | Mini-Circuit | BW-S10W5        | N/A           | 09/23/2005 | 09/22/2006 |
| Attenuator                   | Mini-Circuit | BW-S6W5         | N/A           | 09/23/2005 | 09/22/2006 |
| Splitter                     | Agilent      | 11636B          | 51728         | 09/23/2005 | 09/22/2006 |
| AC Power Supply              | APW-105N     | 887592          | All Power     | 12/15/2004 | 12/14/2005 |

#### 10.5 Measurement Result

| Reference Frequency: PCS Mid Channel 1880 MHz @ 25°C |                  |            |            |            |
|------------------------------------------------------|------------------|------------|------------|------------|
| Limit: +/- 2.5 ppm = 4700 Hz                         |                  |            |            |            |
| Power Supply                                         | Environment      | Frequency  | Delta (Hz) | Limit (Hz) |
| Vdc                                                  | Temperature (°C) | (MHz)      |            |            |
| 4.18                                                 | 25               | 1880.06463 | -30.00     | 4700       |
| 3.80                                                 | 25               | 1880.06460 | 0.00       | 4700       |
| 3.42                                                 | 25               | 1880.06461 | -10.00     | 4700       |
| 3.1 (End Point)                                      | 25               | 1880.06472 | -120.00    | 4700       |

**Note: The battery is rated 3.8V dc.**

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## 11. AC POWER LINE CONDUCTED EMISSION TEST

### 11.1 Standard Applicable

According to §15.207. The emission value for frequency within 150KHz to 30MHz shall not exceed criteria of below chart.

| Frequency range<br>MHz                                                                                                                                                       | Limits<br>dB(uV) |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------|
|                                                                                                                                                                              | Quasi-peak       | Average  |
| 0.15 to 0.50                                                                                                                                                                 | 66 to 56         | 56 to 46 |
| 0.50 to 5                                                                                                                                                                    | 56               | 46       |
| 5 to 30                                                                                                                                                                      | 60               | 50       |
| Note<br>1.The lower limit shall apply at the transition frequencies<br>2.The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz. |                  |          |

### 11.2 EUT Setup

1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.4-2003.
2. The EUT was plug-in DC power adaptor and was placed on the center of the back edge on the test table. The peripherals like earphone was placed on the side of the EUT. The rear of the EUT and peripherals were placed flushed with the rear of the tabletop.
3. The Power adaptor was connected with 110Vac/60Hz power source.

### 11.3 Measurement Procedure

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report cannot be reproduced, except in full, without prior written permission of the Company.

#### 11.4 Measurement Equipment Used:

| Conducted Emission Test Site |            |              |               |            |            |
|------------------------------|------------|--------------|---------------|------------|------------|
| EQUIPMENT TYPE               | MFR        | MODEL NUMBER | SERIAL NUMBER | LAST CAL.  | CAL DUE.   |
| EMC Analyzer                 | HP         | 8594EM       | 3624A00203    | 09/02/2005 | 09/03/2006 |
| EMI Test Receiver            | R&S        | ESCS30       | 828985/004    | 06/09/2005 | 06/10/2006 |
| Transient Limiter            | HP         | 11947A       | 3107A02062    | 09/02/2005 | 09/03/2006 |
| LISN                         | Rolf-Heine | NNB-2/16Z    | 99012         | 12/31/2004 | 12/30/2005 |
| LISN                         | Rolf-Heine | NNB-2/16Z    | 99013         | 12/24/2004 | 12/23/2005 |
| Coaxial Cables               | N/A        | No. 3, 4     | N/A           | 12/24/2004 | 12/23/2005 |

#### 11.5 Measurement Result

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report cannot be reproduced, except in full, without prior written permission of the Company.

## AC POWER LINE CONDUCTED EMISSION TEST DATA

|                 |                  |            |     |             |               |
|-----------------|------------------|------------|-----|-------------|---------------|
| Operation Mode: | Normal Operating |            |     | Test Date : | Oct. 20, 2005 |
| Temperature :   | 24 °C            | Humidity : | 57% | Test By:    | Willis        |

| FREQ<br>MHz | Q.P.<br>Raw<br>dBuV | AVG<br>Raw<br>dBuV | Q.P.<br>Limit<br>dBuV | AVG<br>Limit<br>dBuV | Q.P.<br>Margin<br>dB | AVG<br>Margin<br>dB | NOTE |
|-------------|---------------------|--------------------|-----------------------|----------------------|----------------------|---------------------|------|
| 0.165       | 51.10               | 31.70              | 65.21                 | 55.21                | -14.11               | -23.51              | L1   |
| 0.425       | 35.01               | ---                | 57.35                 | 47.35                | -22.34               | ---                 | L1   |
| 0.755       | 35.63               | ---                | 56.00                 | 46.00                | -20.37               | ---                 | L1   |
| 1.370       | 39.99               | ---                | 56.00                 | 46.00                | -16.01               | ---                 | L1   |
| 1.865       | 36.39               | ---                | 56.00                 | 46.00                | -19.61               | ---                 | L1   |
| 2.270       | 35.83               | ---                | 56.00                 | 46.00                | -20.17               | ---                 | L1   |
|             |                     |                    |                       |                      |                      |                     |      |
| 0.165       | 51.02               | ---                | 65.21                 | 55.21                | -14.19               | ---                 | L2   |
| 0.595       | 32.97               | ---                | 56.00                 | 46.00                | -23.03               | ---                 | L2   |
| 0.750       | 35.66               | ---                | 56.00                 | 46.00                | -20.34               | ---                 | L2   |
| 1.370       | 39.91               | ---                | 56.00                 | 46.00                | -16.09               | ---                 | L2   |
| 1.790       | 36.33               | ---                | 56.00                 | 46.00                | -19.67               | ---                 | L2   |
| 24.000      | 35.88               | ---                | 60.00                 | 50.00                | -24.12               | ---                 | L2   |

### Remark :

- (1) Measuring frequencies from 0.15 MHz to 30MHz °
- (2) The emissions measured in frequency range from 0.15 MHz to 30MHz were made with an instrument using Qusia-Peak detector and Average detector.
- (3) “---” denotes the emission level was or more than 2dB below the Average limit, so no re-check anymore.
- (4) The IF bandwidth of SPA between 0.15MHz to 30MHz was 10KHz;  
The IF bandwidth of Test Receiver between 0.15MHz to 30MHz was 9KHz;
- (5) L1 = Line One (Hot side) / L2 = Line Two (Neutral side)

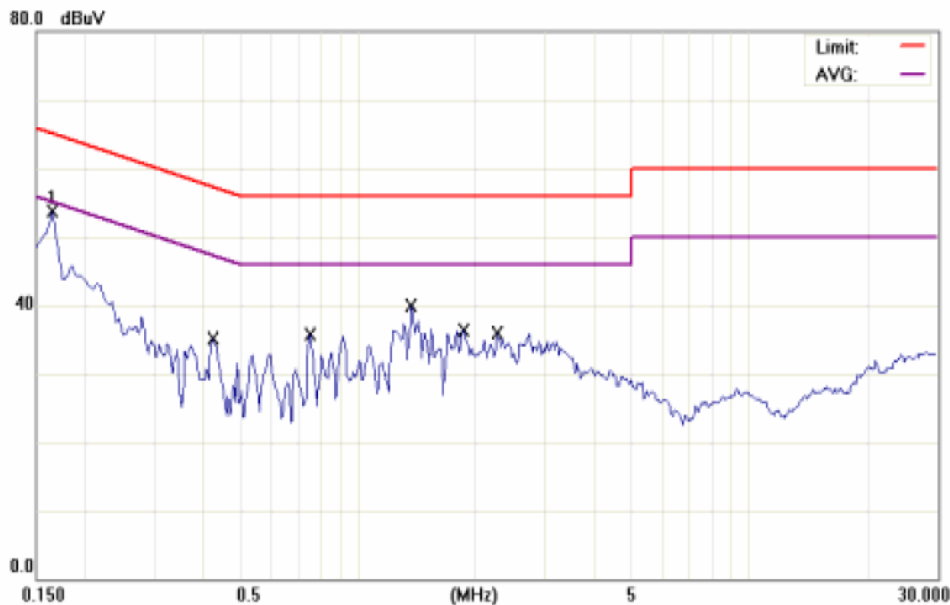
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### Conducted Emission Measurement

Data :#4

Date: 2005/10/20

Time: 下午 06:23:43



Site SGS CONDUCTED #1

Phase: L1

Temperature: 24 °C

Limit: CISPR22 Class B Conduction(QP)

Power: AC 120V/60Hz

Humidity: 57 %

EUT: NEC MOBILE PHONE

Distance:

Air Pressure: hpa

M/N: N600i

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|--------------|--------------------------|---------------|------------|----------|---------|
| 1   | *   | 0.1650       | 53.03                    | 0.60         | 53.63                    | 65.21         | -11.58     | peak     |         |
| 2   |     | 0.1650       | 50.50                    | 0.60         | 51.10                    | 65.21         | -14.11     | QP       |         |
| 3   |     | 0.1650       | 31.10                    | 0.60         | 31.70                    | 55.21         | -23.51     | AVG      |         |
| 4   |     | 0.4250       | 34.40                    | 0.61         | 35.01                    | 57.35         | -22.34     | QP       |         |
| 5   |     | 0.7550       | 35.01                    | 0.62         | 35.63                    | 56.00         | -20.37     | QP       |         |
| 6   |     | 1.3700       | 39.36                    | 0.63         | 39.99                    | 56.00         | -16.01     | QP       |         |
| 7   |     | 1.8600       | 35.74                    | 0.65         | 36.39                    | 56.00         | -19.61     | QP       |         |
| 8   |     | 2.2700       | 35.17                    | 0.66         | 35.83                    | 56.00         | -20.17     | QP       |         |

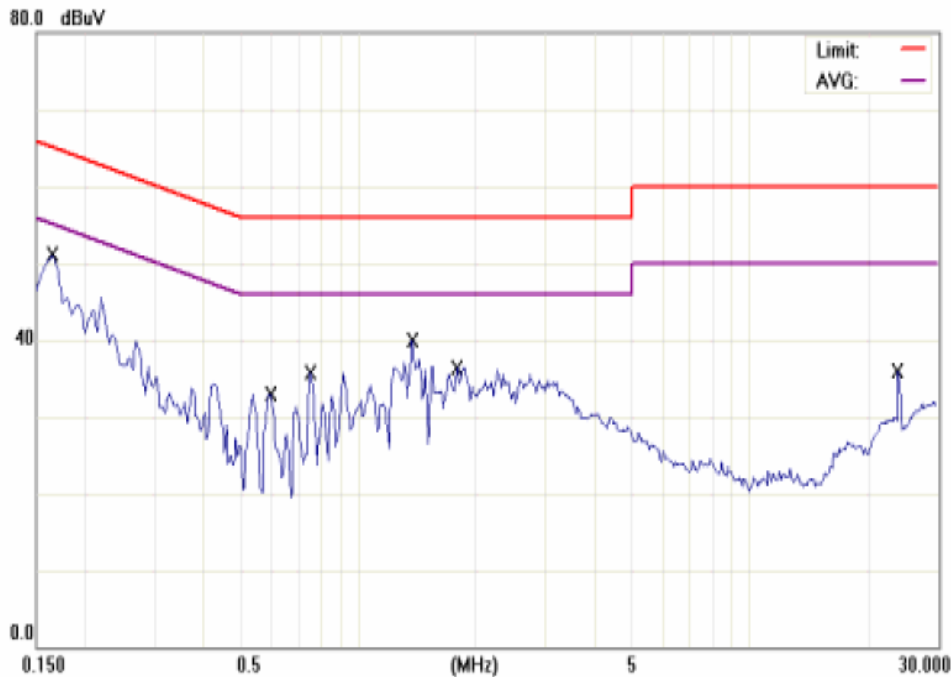
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### Conducted Emission Measurement

Data :#5

Date: 2005/10/20

Time: 下午 06:28:03



Site SGS CONDUCTED #1

Limit: CISPR22 Class B Conduction(QP)

EUT: NEC MOBILE PHONE

M/N: N600i

Phase: **N**

Power: AC 120V/60Hz

Distance:

Temperature: 24 °C

Humidity: 57 %

Air Pressure: hpa

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|--------------|--------------------------|---------------|------------|----------|---------|
| 1   | *   | 0.1650       | 50.42                    | 0.60         | 51.02                    | 65.21         | -14.19     | QP       |         |
| 2   |     | 0.5950       | 32.36                    | 0.61         | 32.97                    | 56.00         | -23.03     | QP       |         |
| 3   |     | 0.7500       | 35.05                    | 0.61         | 35.66                    | 56.00         | -20.34     | QP       |         |
| 4   |     | 1.3750       | 39.28                    | 0.63         | 39.91                    | 56.00         | -16.09     | QP       |         |
| 5   |     | 1.7900       | 35.69                    | 0.64         | 36.33                    | 56.00         | -19.67     | QP       |         |
| 6   |     | 24.0000      | 34.57                    | 1.31         | 35.88                    | 60.00         | -24.12     | QP       |         |

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## 12. SPURIOUS RADIATED EMISSION TEST (RX)

### 12.1 Standard Applicable

According to §6.7, all spurious emissions shall comply with the limits of Table 2. The resolution bandwidth of the spectrum analyzer shall be 100 kHz for spurious emissions measurements below 1.0 GHz, and 1.0 MHz for measurements above 1.0 GHz.

| Frequency (MHz) | Field strength $\mu\text{V/m}$ | Distance (m) | Field strength at 3m $\text{dB}\mu\text{V/m}$ |
|-----------------|--------------------------------|--------------|-----------------------------------------------|
| 30-88           | 100                            | 3            | 40                                            |
| 88-216          | 150                            | 3            | 43.5                                          |
| 216-960         | 200                            | 3            | 46                                            |
| Above 960       | 500                            | 3            | 54                                            |

### 12.2 EUT Setup

1. The radiated emission tests were performed in the 3 meter open-test site, using the setup in accordance with the ANSI C63.4-2003.
2. The EUT was put in the front of the test table. The rear of the EUT and peripherals were placed flushed with the rear of the tabletop.
3. The spacing between the peripherals was 10 centimeters.
4. External I/O cables were draped along the edge of the test table and bundle when necessary.
5. The host was connected with 110Vac/60Hz power source.

### 12.3 Measurement Procedure

The EUT was placed on a turn table which is 0.8m above ground plane.

The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.

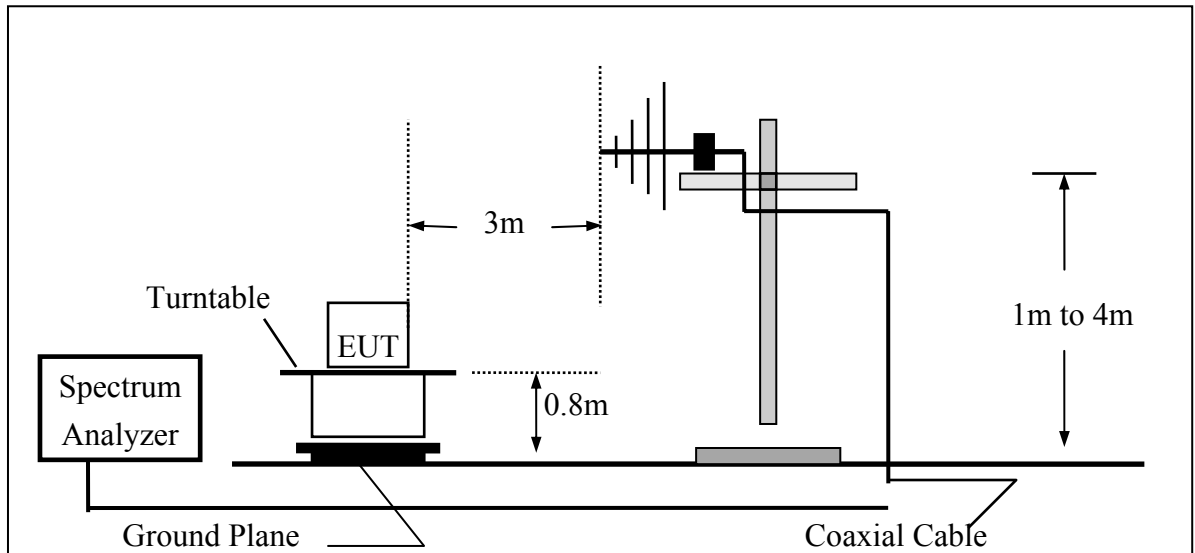
Maximum procedure was performed on the six highest emissions to ensure EUT compliance. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

Repeat above procedures until all frequency measured were complete.

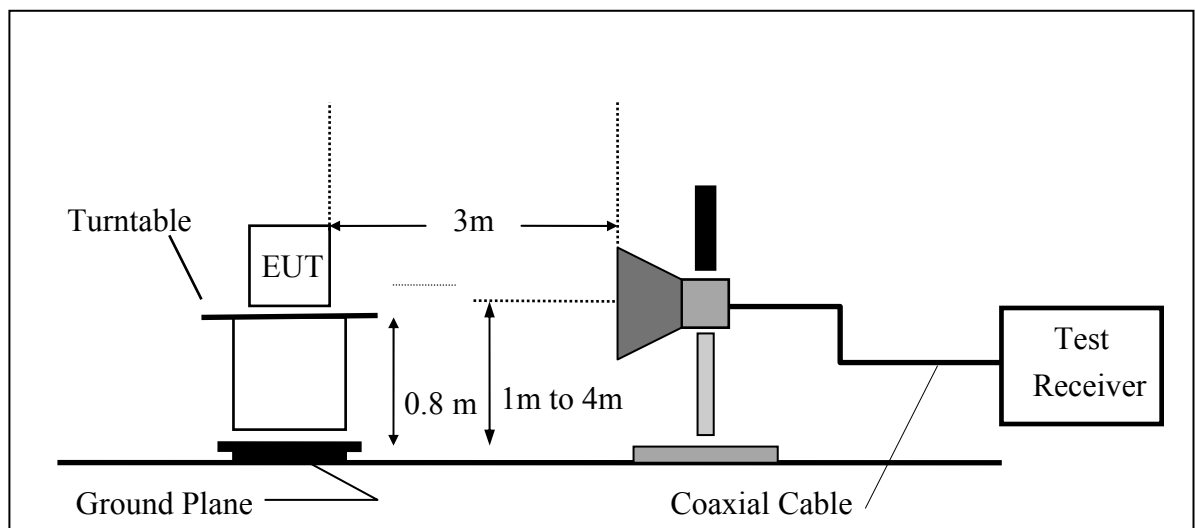
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## 12.4 Test SET-UP (Block Diagram of Configuration)

Radiated Emission Test Set-Up, Frequency Below 1000MHz



(B) Radiated Emission Test Set-UP Frequency Over 1 GHz



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## 12.5 Measurement Equipment Used:

| EQUIPMENT TYPE     | MFR          | MODEL NUMBER         | SERIAL NUMBER | LAST CAL.  | CAL DUE.   |
|--------------------|--------------|----------------------|---------------|------------|------------|
| Spectrum Analyzer  | Agilent      | E4446A               | MY43360126    | 03/29/2005 | 03/28/2006 |
| Spectrum Analyzer  | Agilent      | 7405A                | US41160416    | 06/28/2005 | 06/29/2006 |
| Spectrum Analyzer  | R&S          | FSP 40               | 100034        | 11/09/2005 | 11/10/2006 |
| Communication Test | R&S          | SMU200               | N/A           | N/A        | N/A        |
| Bilog Antenna      | SCHWAZBECK   | VULB9163             | 152           | 06/03/2005 | 06/02/2006 |
| Horn antenna       | Schwarzbeck  | BBHA 9120D           | 309/320       | 08/16/2005 | 08/15/2006 |
| Pre-Amplifier      | HP           | 8447D                | 2944A09469    | 07/19/2005 | 07/18/2006 |
| Pre-Amplifier      | HP           | 8494B                | 3008A00578    | 02/26/2005 | 02/25/2006 |
| Turn Table         | HD           | DT420                | N/A           | N.C.R      | N.C.R      |
| Antenna Tower      | HD           | MA240-N              | 240/657       | N.C.R      | N.C.R      |
| Controller         | HD           | HD100                | N/A           | N.C.R      | N.C.R      |
| Low Loss Cable     | HUBER+SUHNER | SUCOFLEX 104PEA-10M  | 10m           | 10/09/2005 | 10/08/2006 |
| Low Loss Cable     | HUBER+SUHNER | SUCOFLEX 104PEA-3M   | 3m            | 10/09/2005 | 10/08/2006 |
| Low Loss Cable     | HUBER+SUHNER | SUCOFLEX 104PEA-0.5M | 0.5m          | 10/09/2005 | 10/08/2006 |
| Site NSA           | SGS          | 966 chamber          | N/A           | 11/17/2005 | 11/16/2006 |
| Site NSA           | SGS          | 10m Open-Site        | N/A           | 11/17/2005 | 11/16/2006 |

## 12.6 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor(if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

|                           |                                            |
|---------------------------|--------------------------------------------|
| Where FS = Field Strength | CL = Cable Attenuation Factor (Cable Loss) |
| RA = Reading Amplitude    | AG = Amplifier Gain                        |
| AF = Antenna Factor       |                                            |

## 12.7 Measurement Result

Refer to attach tabular data sheets.

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## Radiated Spurious Emission Measurement Result (below 1GHz)

|                       |                        |           |               |
|-----------------------|------------------------|-----------|---------------|
| Operation Mode        | RX CH MID (worst case) | Test Date | Oct. 20, 2005 |
| Fundamental Frequency | N/A                    | Test By   | Alex          |
| Temperature           | 22 °C                  | Pol       | Ver./Hor      |
| Humidity              | 53 %                   |           |               |

| Freq.<br>(MHz) | Ant.Pol.<br>H/V | Detector<br>Mode<br>(PK/QP) | Reading<br>(dBuV) | Ant./CL/<br>Amp. CF(dB) | Actual FS<br>(dBuV/m) | Limit3m<br>(dBuV/m) | Safe Margin<br>(dB) |
|----------------|-----------------|-----------------------------|-------------------|-------------------------|-----------------------|---------------------|---------------------|
| 33.88          | V               | Peak                        | 39.32             | -15.13                  | 24.19                 | 40.00               | -15.81              |
| 46.49          | V               | Peak                        | 40.23             | -14.63                  | 25.60                 | 40.00               | -14.40              |
| 53.28          | V               | Peak                        | 41.11             | -14.91                  | 26.20                 | 40.00               | -13.80              |
| 67.83          | V               | Peak                        | 43.21             | -15.88                  | 27.33                 | 40.00               | -12.67              |
| 153.19         | V               | Peak                        | 34.69             | -13.67                  | 21.02                 | 43.50               | -22.48              |
| 322.94         | V               | Peak                        | 35.06             | -12.71                  | 22.35                 | 46.00               | -23.65              |
| 31.94          | H               | Peak                        | 38.82             | -15.21                  | 23.61                 | 40.00               | -16.39              |
| 43.58          | H               | Peak                        | 43.27             | -14.64                  | 28.63                 | 40.00               | -11.37              |
| 67.83          | H               | Peak                        | 45.83             | -15.88                  | 29.95                 | 40.00               | -10.05              |
| 92.08          | H               | Peak                        | 35.89             | -17.77                  | 18.12                 | 43.50               | -25.38              |
| 182.29         | H               | Peak                        | 35.11             | -15.35                  | 19.76                 | 43.50               | -23.74              |
| 324.88         | H               | Peak                        | 35.02             | -12.66                  | 22.36                 | 46.00               | -23.64              |

### Remark :

- (1) Measuring frequencies from 30 MHz to the 1GHz °
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/AV detector mode.
- (3) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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## Radiated Spurious Emission Measurement Result (above 1GHz)

|                       |                        |           |               |
|-----------------------|------------------------|-----------|---------------|
| Operation Mode        | RX CH MID (worst case) | Test Date | Oct. 20, 2005 |
| Fundamental Frequency | N/A                    | Test By   | Alex          |
| Temperature           | 22 °C                  | Pol       | Ver           |
| Humidity              | 53 %                   |           |               |

| Freq.<br>(MHz) | Peak<br>Reading | AV<br>Reading | Ant./CL<br>CF(dB) | Actual FS        |                | Peak<br>Limit | AV<br>Limit | Margin<br>(dB) |
|----------------|-----------------|---------------|-------------------|------------------|----------------|---------------|-------------|----------------|
|                | (dBuV)          | (dBuV)        |                   | Peak<br>(dBuV/m) | AV<br>(dBuV/m) | (dBuV/m)      | (dBuV/m)    |                |
| 1609.0         | 53.32           | --            | -6.72             | 46.60            | --             | 74.00         | 54.00       | -7.40          |
| 1651.0         | 50.35           | --            | -6.55             | 43.80            | --             | 74.00         | 54.00       | -10.20         |
| 2414.0         | 51.37           | --            | -3.35             | 48.02            | --             | 74.00         | 54.00       | -5.98          |
| 2939.0         | 52.64           | --            | -2.12             | 50.52            | --             | 74.00         | 54.00       | -3.48          |
| 3289.0         | 51.50           | --            | -1.46             | 50.04            | --             | 74.00         | 54.00       | -3.96          |
| 5424.0         | 45.30           | --            | 4.86              | 50.16            | --             | 74.00         | 54.00       | -3.84          |
| --             | --              | --            | --                | --               | --             | --            | --          | --             |
| --             | --              | --            | --                | --               | --             | --            | --          | --             |
| --             | --              | --            | --                | --               | --             | --            | --          | --             |
| --             | --              | --            | --                | --               | --             | --            | --          | --             |
| --             | --              | --            | --                | --               | --             | --            | --          | --             |

### Remark :

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency °
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column °
- (4) Spectrum Peak Setting : 1GHz- 13GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 13GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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## Radiated Spurious Emission Measurement Result (above 1GHz)

|                       |                        |           |               |
|-----------------------|------------------------|-----------|---------------|
| Operation Mode        | RX CH MID (worst case) | Test Date | Oct. 20, 2005 |
| Fundamental Frequency | N/A                    | Test By   | Alex          |
| Temperature           | 22 °C                  | Pol       | Hor           |
| Humidity              | 53 %                   |           |               |

| Freq.<br>(MHz) | Peak<br>Reading | AV<br>Reading | Ant./CL<br>CF(dB) | Actual FS        |                | Peak<br>Limit | AV<br>Limit | Margin<br>(dB) |
|----------------|-----------------|---------------|-------------------|------------------|----------------|---------------|-------------|----------------|
|                | (dBuV)          | (dBuV)        |                   | Peak<br>(dBuV/m) | AV<br>(dBuV/m) | (dBuV/m)      | (dBuV/m)    |                |
| 1588.0         | 56.39           |               | -6.81             | 49.58            | --             | 74.00         | 54.00       | -4.42          |
| 2414.0         | 54.15           |               | -3.35             | 50.80            | --             | 74.00         | 54.00       | -3.20          |
| 2673.0         | 49.90           |               | -2.63             | 47.27            | --             | 74.00         | 54.00       | -6.73          |
| 2883.0         | 51.74           |               | -2.22             | 49.52            | --             | 74.00         | 54.00       | -4.48          |
| 3128.0         | 52.15           |               | -1.78             | 50.37            | --             | 74.00         | 54.00       | -3.63          |
| 3933.0         | 47.44           |               | 0.50              | 47.94            | --             | 74.00         | 54.00       | -6.06          |
| --             | --              |               |                   |                  |                |               |             |                |
| --             | --              |               |                   |                  |                |               |             |                |
| --             | --              |               |                   |                  |                |               |             |                |
| --             | --              |               |                   |                  |                |               |             |                |

### Remark :

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency °
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column °
- (4) Spectrum Peak Setting : 1GHz- 13GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting : 1GHz- 13GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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