

**1GHz~ 25 GHz (Horizontal), Channel 11: 2462 MHz**

Operator: Jerry Chiou

RBW: 1MHz  
Humidity (%): 41  
Temperature (C): 23

| Frequency | Rx_R(pk) | Ant_F | Cab_L. | PreAmpl | Emission(pk) | Limit(av) | Margin | A.Tower | T.Table |
|-----------|----------|-------|--------|---------|--------------|-----------|--------|---------|---------|
| MHz       | dBuV     | dB/m  | dB     | dB      | dBuV/m       | dBuV/m    | dB     | cm      | deg     |
| 1464.54   | 63.15    | 26.64 | 1.82   | 46.20   | 45.40        | 54.00     | -8.60  | 101     | 80      |
| 1796.70   | 50.49    | 29.29 | 2.00   | 46.21   | 35.58        | 54.00     | -18.42 | 100     | 57      |
| 2391.11   | 51.46    | 30.92 | 2.67   | 46.21   | 38.84        | 54.00     | -15.16 | 101     | 166     |
| 3105.39   | 46.91    | 31.18 | 2.66   | 46.59   | 34.17        | 54.00     | -19.83 | 103     | 330     |
| 7887.11   | 35.99    | 40.44 | 3.10   | 44.28   | 35.25        | 54.00     | -18.75 | 100     | 239     |
| 9583.42   | 31.46    | 40.72 | 3.19   | 42.23   | 33.14        | 54.00     | -20.86 | 102     | 8       |

**1GHz~ 25 GHz (Vertical), Channel 11 : 2462 MHz**

Operator: Jerry Chiou

RBW: 1MHz  
Humidity (%): 41  
Temperature (C): 23

| Frequency | Rx_R(pk) | Ant_F | Cab_L. | PreAmpl | Emission(pk) | Limit(av) | Margin | A.Tower | T.Table |
|-----------|----------|-------|--------|---------|--------------|-----------|--------|---------|---------|
| MHz       | dBuV     | dB/m  | dB     | dB      | dBuV/m       | dBuV/m    | dB     | cm      | deg     |
| 1794.21   | 53.88    | 29.27 | 2.00   | 46.21   | 38.94        | 54.00     | -15.06 | 100     | 57      |
| 2396.10   | 53.29    | 30.92 | 2.67   | 46.21   | 40.67        | 54.00     | -13.33 | 101     | 167     |
| 3102.90   | 49.43    | 31.18 | 2.67   | 46.59   | 36.68        | 54.00     | -17.32 | 103     | 331     |
| 4195.80   | 41.92    | 32.79 | 1.88   | 46.30   | 30.29        | 54.00     | -23.71 | 102     | 80      |
| 8816.18   | 34.54    | 41.19 | 3.25   | 42.71   | 36.27        | 54.00     | -17.73 | 102     | 63      |
| 9223.78   | 31.90    | 40.90 | 3.19   | 42.67   | 33.32        | 54.00     | -20.68 | 103     | 16      |

Note:

“ \* ”: Fundamental Frequency

“\*\*”: Not in the restricted band, Limit level=Fundamental Emission-20dB

“ pk”: peak reading

“av”: average reading

“---”: No meter reading data due to the emission level is smaller than spectrum noise level.

The Spectrum noise level+Correction Factor &lt; Limit - 6 dB

Margin=Corrected Amplitude – Limit

Corrected Amplitude=Radiated Amplitude+Antenna Correction Factor+Cable Loss-Pre-Amplifier Gain

A margin of -8dB means that the emission is 8dB below the limit.

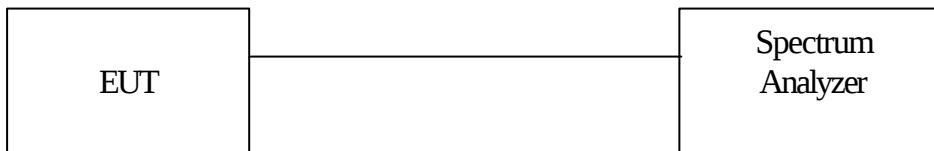
**All frequencies from 1GHz to 25 GHz have been tested.**

## 5.5 Band Edge Measurement

### 5.5.1 Test Procedure (Conducted)

1. The transmitter output of EUT was connected to the spectrum analyzer.  
Equipment mode: Spectrum analyzer  
Detector function: Peak mode  
SPAN: 100MHz  
RBW: 100KHz  
VBW: 100KHz  
Center frequency: 2.4GHz, 2.4835GHz.
2. Using Peak Search to read the peak power of Carrier frequencies after Maximum Hold function is completed
3. Find the next peak frequency outside the operation frequency band

### 5.5.2 Test Setup (Conducted)



### 5.5.3 Test Data:

**Table: Band Edge measurement (Conducted)**

| Test Engr: Jerry Chiou |                    | Temp. (deg. C): 25            |                                                  | Humidity (%): 50 |  |
|------------------------|--------------------|-------------------------------|--------------------------------------------------|------------------|--|
| Channel                | Frequency<br>(MHz) | Spectrum<br>Reading<br>(dBuV) | Carrier -<br>Outsideband<br>Limit: >20dB<br>(dB) | Pass/Fail        |  |
| 1                      | 2407.3             | 99.94                         | ---                                              | ---              |  |
| Outside band           | 2399.9             | 61.86                         | 38.08                                            | Pass             |  |
| 11                     | 2463.6             | 100.98                        | ---                                              | ---              |  |
| Outside band           | 2474.3             | 63.89                         | 37.09                                            | Pass             |  |

Note: Two RF output( MAIN & AUX) have been test,the worse data shown above.

# Band Edge Conducted measurement



# Band Edge Conducted Measurement



#### 5.5.4 Test Procedure (Radiated)

1. Antenna and Turntable test procedure same as Radiated Emission Measurement.  
Equipment mode: Spectrum analyzer  
Detector function: Peak mode  
SPAN: 100MHz  
RBW: 1MHz  
VBW: 1MHz  
Center frequency: 2.395GHz, 2.48GHz.
2. Using Peak Search to read the peak power of Carrier frequencies after Maximum Hold function is completed.
3. Find the next peak frequency outside the operation frequency band
4. For peak frequency emission level measurement in Restricted Band ,  
Change RBW: 1MHz  
VBW: 10Hz  
Span: 100MHz.
5. Get the spectrum reading after Maximum Hold function is completed.

#### 5.5.5 Test Setup (Radiated)

Same as *Radiated Emission Measurement*

## 5.5.6 Test Data

Table Band Edge measurement (Radiated)

Temp. (deg. C): 25

Test Engr: Jerry Chiou

Humidity (%): 50

| Channel             | Frequency<br>(MHz) | Spectrum<br>Reading<br>(dBuV) | Correction<br>Factor<br>(dB/m) | Emission<br>Level<br>(dBuV/m) | dBc ( Limit:<br>> 20dBc) | Limit<br>(dBuV/m) | Equip.<br>Setup<br>VBW | Pass<br>or<br>Fail |
|---------------------|--------------------|-------------------------------|--------------------------------|-------------------------------|--------------------------|-------------------|------------------------|--------------------|
| 1(peak mode)        | 2405.3             | 68.45                         | 33.61                          | 102.06                        | ---                      | ---               | 1MHz                   | ---                |
| Outside<br>band     | 2399.8             | 33.89                         | 33.61                          | 67.5                          | 34.56                    | ---               | 1MHz                   | Pass               |
| 1(average<br>mode)  | 2405.1             | 59.22                         | 33.61                          | 92.83                         | ---                      | ---               | 10Hz                   | ---                |
| Restricted<br>band  | 2390               | 7.07                          | 33.61                          | 40.68                         | ---                      | 54                | 10Hz                   | Pass               |
| 11(peak<br>mode)    | 2466.3             | 67.55                         | 33.68                          | 101.23                        | ---                      | ---               | 1MHz                   | ---                |
| Outside<br>band     | 2474.2             | 34.9                          | 33.68                          | 68.58                         | 32.65                    | ---               | 1MHz                   | Pass               |
| 11(average<br>mode) | 2466.5             | 58.49                         | 33.68                          | 92.17                         | ---                      | ---               | 10Hz                   | ---                |
| Restricted<br>band  | 2544.1             | 9.51                          | 33.68                          | 43.19                         | ---                      | 54                | 10Hz                   | Pass               |

## Note:

The Spectrum plot of emission level measurement in Restricted band is attached.

Emission Level=Spectrum Reading+Correction Factor

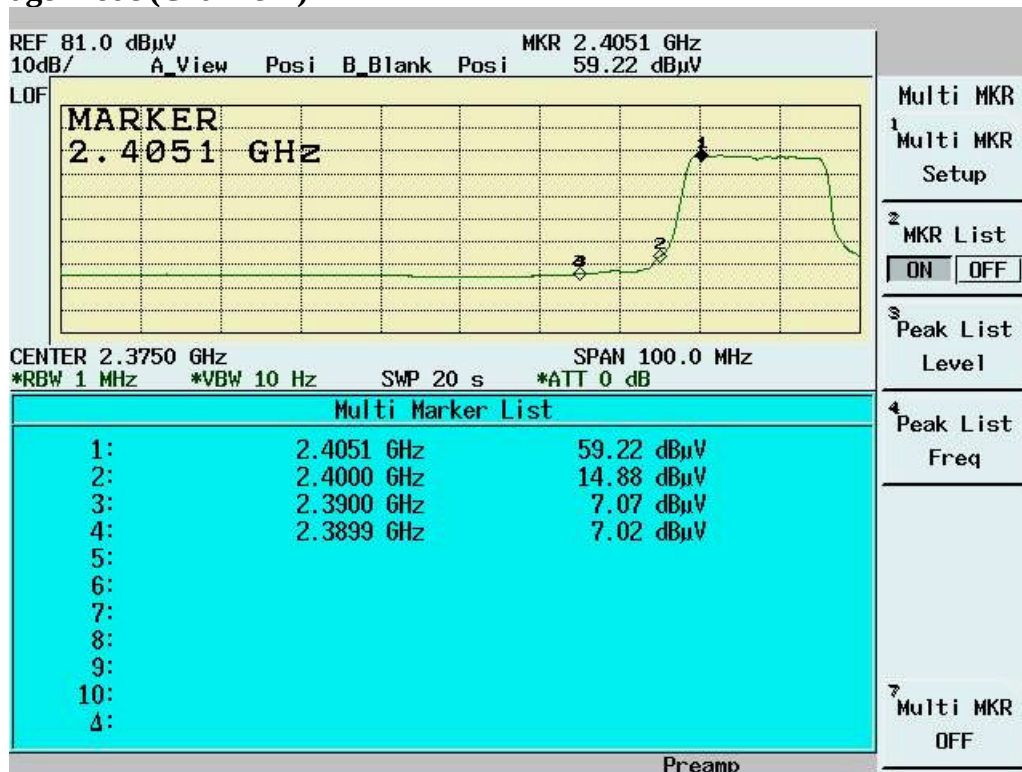
Correction Factor=Antenna Factor+cable loss–amplifier gain

Both Horizontal and Vertical polarizaion have been tested and the worst data is listed above.

**Band Edge measurement for radiated emission in Restricted Band(Radiated)  
Peak Mode (Channel 1)**



**Band Edge measurement for radiated emission in Restricted Band(Radiated)  
Average Mode (Channel 1)**



### Band Edge measurement for radiated emission in Restricted Band(Radiated) Peak Mode (Channel 11)



### Band Edge measurement for radiated emission in Restricted Band(Radiated) Average Mode (Channel 11)



## **5.6 RF Exposure Measurement [Section 15.247(b)(4) & 1.1307(b)]**

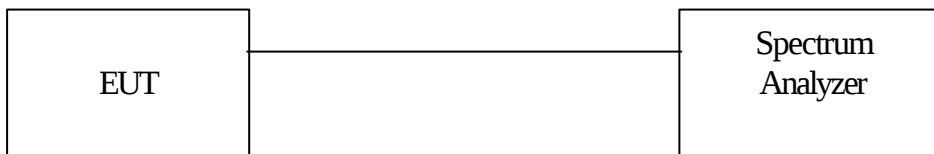
**See MPE report**

## 5.7 DSSS Peak Power Spectral Density [Section 15.247(d) ]

### 5.7.1 Test Procedure

1. The Transmitter output of EUT was connected to the spectrum analyzer.  
Equipment mode: Spectrum analyzer  
Detector function: Peak mode  
SPAN:1.5MHz  
RBW: 3KHz  
VBW: 30KHz  
Center frequency: fundamental frequency tested.  
Sweep time= 500 sec.
2. Using Peak Search to read the peak power after Maximum Hold function is completed.

### 5.7.2 Test Setup



### 5.7.3 Test Data

#### Maximum Peak Output Power Density

Temp. (deg. C): 25

Test Engr: Jerry Chiou

Humidity (%): 50

| Chennel | Frequency<br>(MHz) | Spectrum<br>Reading<br>(dBm/3KHz) | Cable Loss<br>(dB) | Peak Power<br>Output<br>(dBm/3KHz) | Limit<br>(dBm/3KHz) | Pass/Fail |
|---------|--------------------|-----------------------------------|--------------------|------------------------------------|---------------------|-----------|
| 1       | 2412               | -20.15                            | 1.1                | -19.05                             | 8                   | Pass      |
| 6       | 2437               | -19.98                            | 1.1                | -18.88                             | 8                   | Pass      |
| 11      | 2462               | -19.88                            | 1.1                | -18.78                             | 8                   | Pass      |

Note: Two RF output( MAIN & AUX) have been test,the worse data shown above.

Channel 1



Channel 6



Channel 11



International Standards Laboratory

Report Number: 04LR024FC

HC LAB:NVLAP:200234-0;VCCI: R-341,C-354;NEMKO:ELA 113a,113c;BSMI:SL2-IN-E-0037;SL2-R1-E-0037;CNLA:1178

LT LAB:NVLAP:200234-0;VCCI: R-1435,C-1440;NEMKO:ELA 113b,113d;BSMI:SL2-IN-E-0013;CNLA:0997

## 6. Appendix

### 6.1 Appendix A: Measurement Procedure for Power line Conducted Emissions

The measurements are performed in a 3.5m x 3.4m x 2.5m shielded room, which referred as Conduction 01 test site, or a 3m x 3m x 2.3m test site, which referred as Conduction 02 test site. The EUT was placed on non-conduction 1.0m x 1.5m table, which is 0.8 meters above an earth-grounded.

Power to the EUT was provided through the LISN which has the Impedance (50ohm/50uH) vs. Frequency Characteristic in accordance with the required standard. Power to the LISNs were filtered to eliminate ambient signal interference and these filters were bonded to the ground plane. Peripheral equipment required to provide a functional system (support equipment) for EUT testing was powered from the second LISN through a ganged, metal power outlet box which is bonded to the ground plane at the LISN.

If the EUT is supplied with a flexible power cord, the power cord length in excess of the distance separating the EUT from the LISN shall be folded back and forth at the center of the lead so as to form a bundle not exceeding 40cm in length. If the EUT is provided with a permanently coiled power cord, bundling of the cord is not required. If the EUT is supplied without a power cord, the EUT shall be connected to the LISN by a power cord of the type specified by the manufacturer which shall not be longer than 1 meter. The excess power cord shall be bundled as described above. If a non-flexible power cord is provided with the EUT, it shall be cut to the length necessary to attach the EUT to the LISN and shall not be bundled.

The interconnecting cables were arranged and moved to get the maximum emission. Both the line of power cord, hot and neutral, were measured.

The highest emissions were analyzed in details by operating the spectrum analyzer in fixed tuned mode to determine the nature of the emissions and to provide information which could be useful in reducing their amplitude.

## **6.2 Appendix B: Test Procedure for Radiated Emissions**

### **Preliminary Measurements in the Anechoic Chamber**

The radiated emissions are initially measured in the anechoic chamber at a measurement distance of 3 meters. Desktop EUT are placed on a wooden stand 0.8 meter in height. The measurement antenna is 3 meters from the EUT. The test setup in anechoic chamber is the same as open site. The turntable rotated 360°. The antenna height is varied from 1-2.5m. The primary objective of the radiated measurements in the anechoic chamber is to identify the frequency spectrum in the absence of the electromagnetic environment existing on the open test site. The frequencies can then be pre-selected on the open test site to obtain the corresponding amplitude. The initial scan is made with the spectrum analyzer in automatic sweep mode. The spectrum peaks are then measured manually to determine the exact frequencies.

### **Measurements on the Open Site or 10m EMC Chamber**

The radiated emissions test will then be repeated on the open site or 10m EMC chamber to measure the amplitudes accurately and without the multiple reflections existing in the shielded room. The EUT and support equipment are set up on the turntable of one of the 3 or 10 meter open field sites. Desktop EUT are set up on a wooden stand 0.8 meter above the ground.

For the initial measurements, the receiving antenna is varied from 1-4 meter height and is changed in the vertical plane from vertical to horizontal polarization at each frequency. Both readings are recorded with the quasi-peak detector with 120KHz bandwidth. For frequency between 30 MHz and 1000MHz, the reading is recorded with peak detector or quasi-peak detector. For frequency above 1 GHz, the reading is recorded with peak detector or average detector with 1 MHz bandwidth.

At the highest amplitudes observed, the EUT is rotated in the horizontal plane while changing the antenna polarization in the vertical plane to maximize the reading. The interconnecting cables were arranged and moved to get the maximum emission. Once the maximum reading is obtained, the antenna elevation and polarization will be varied between specified limits to maximize the readings.

## 6.3 Appendix C: Test Equipment

### 6.3.1 Test Equipment List

| Location               | Equipment Name                    | Brand             | Model                    | S/N               | Last Cal. Date | Next Cal. Date |
|------------------------|-----------------------------------|-------------------|--------------------------|-------------------|----------------|----------------|
| Conduction             | Coaxial Cable 1F-C2               | Harbourindustries | RG400                    | 1F-C2             | 06/02/2004     | 06/02/2005     |
| Conduction             | Digital Hygro-Thermometer Conduct | MicroLife         | HT-2126G                 | ISL-Conductio n02 | 12/04/2002     | 12/04/2004     |
| Conduction             | EMI Receiver 03                   | HP                | 85460A                   | 3448A00209        | 01/08/2004     | 01/08/2005     |
| Conduction             | LISN 01                           | R&S               | ESH2-Z5                  | 890485/013        | 04/30/2004     | 04/30/2005     |
| Conduction             | LISN 04                           | EMCO              | 3810/2                   | 9604-1429         | 12/18/2003     | 12/18/2004     |
| Radiation              | BILOG Antenna 08                  | Schaffner         | CBL6112B                 | 2756              | 06/03/2004     | 06/03/2005     |
| Radiation              | Coaxial Cable Chmb 02-10M         | Belden            | RG-8/U                   | Chmb 02-10M       | 09/09/2003     | 09/09/2004     |
| Radiation              | Microwave Cable Chmb 02 3M        | HUBER+SUHNER AG.  | Sucoflex 103             | 42731/3 & 42729/3 | 03/17/2004     | 03/17/2005     |
| Radiation              | Digital Hygro-Thermometer Chmb 02 | MicroLife         | HT-2126G                 | Chmb 02           | 12/04/2002     | 12/04/2004     |
| Radiation              | EMI Receiver 02                   | HP                | 85460A                   | 3448A00183        | 10/02/2003     | 10/02/2004     |
| Radiation              | EMI Receiver 04                   | AFJ               | ER 55CR                  | 55390143233       | 05/20/2004     | 05/20/2005     |
| Radiation              | Spectrum Analyzer 13              | Advantest         | R3132                    | 121200411         | 02/12/2004     | 02/12/2005     |
| Rad. Above 1Ghz        | Horn Antenna 02                   | Com-Power         | AH-118                   | 10088             | 02/17/2004     | 02/17/2005     |
| Rad. Above 1Ghz        | Horn Antenna 04                   | Com-Power         | AH-826                   | 081-001           | 01/07/2004     | 01/07/2005     |
| Rad. Above 1Ghz        | Horn Antenna 05                   | Com-Power         | AH-640                   | 100A              | 09/18/2003     | 09/18/2005     |
| Rad. Above 1Ghz        | Microwave Cable RF SK-01          | HUBER+SUHNER AG.  | Sucoflex 102             | 22139 /2          | 02/17/2004     | 02/17/2005     |
| Rad. Above 1Ghz        | Peak Power Analyzer               | HP                | 8990A                    | 3621A01269        | 01/02/2004     | 01/02/2005     |
| Rad. Above 1Ghz        | Power Sensor Radar                | HP                | 84815A                   | 3318A01828        | 01/02/2004     | 01/02/2006     |
| Rad. Spurious Emission | Power Meter 01                    | HP                | 438A                     | 3513U06187        | 01/07/2004     | 01/07/2005     |
| Rad. Spurious Emission | Power Sensor RF 01                | HP                | 8481H                    | MY41091048        | 06/17/2003     | 06/17/2004     |
| Rad. Above 1Ghz        | Preamplifier 02                   | MITEQ             | AFS44-00102650-40-10P-44 | 728229            | 05/13/2004     | 05/13/2005     |
| Rad. Above 1Ghz        | Preamplifier 09                   | MITEQ             | AFS44-00102650-40-10P-44 | 858687            | 05/13/2004     | 05/13/2005     |
| Rad. Above 1Ghz        | Preamplifier 10                   | MITEQ             | JS-26004000-27-5A        | 818471            | N/A            | N/A            |
| Rad. Above 1Ghz        | Spectrum Analyzer 07              | Advantest         | R3182                    | 110600649         | 04/08/2004     | 04/08/2005     |

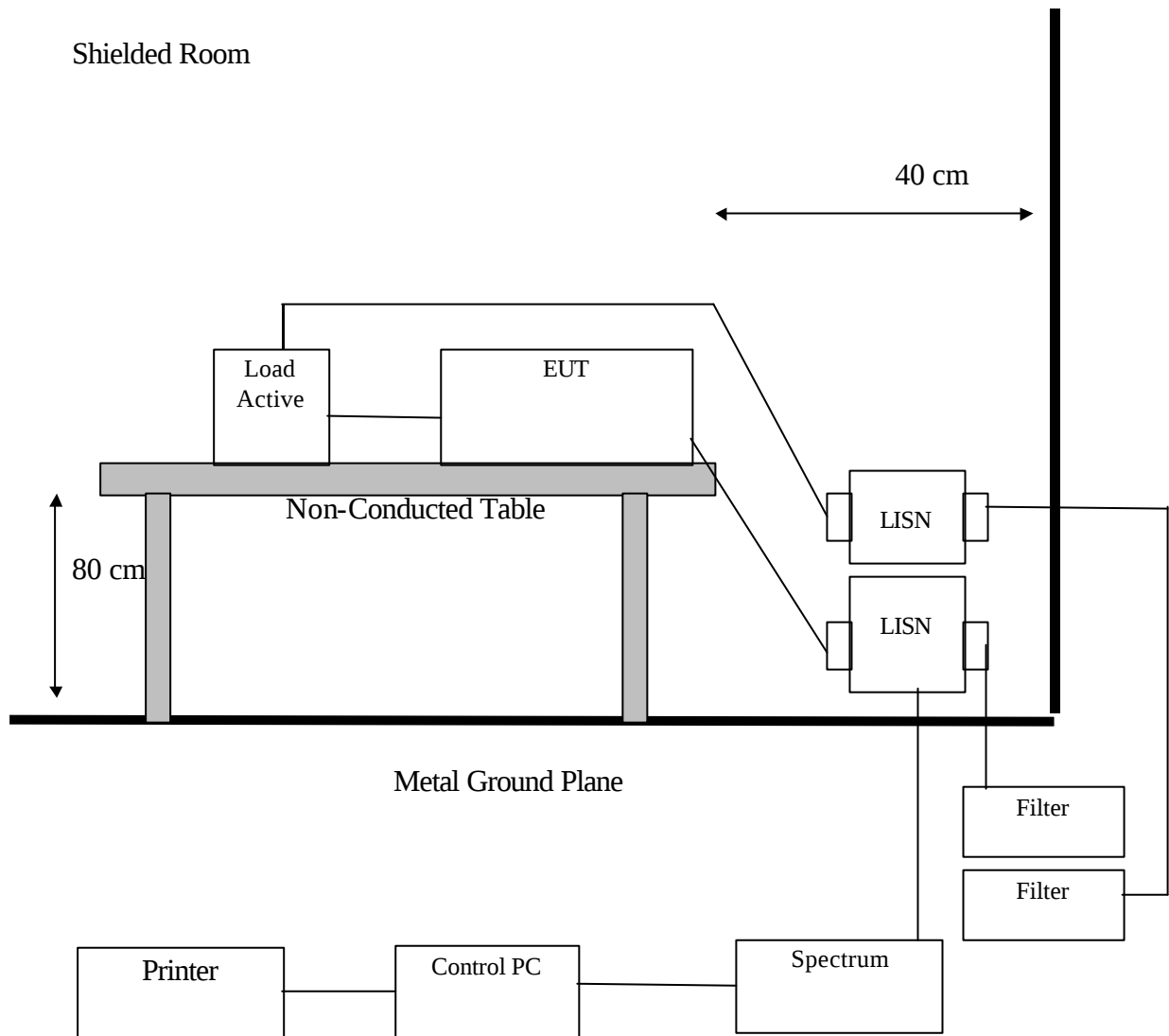
Note: Calibration is traceable to NIST or national or international standards.

**6.3.2 Software for Controlling Spectrum/Receiver and Calculating Test Data**

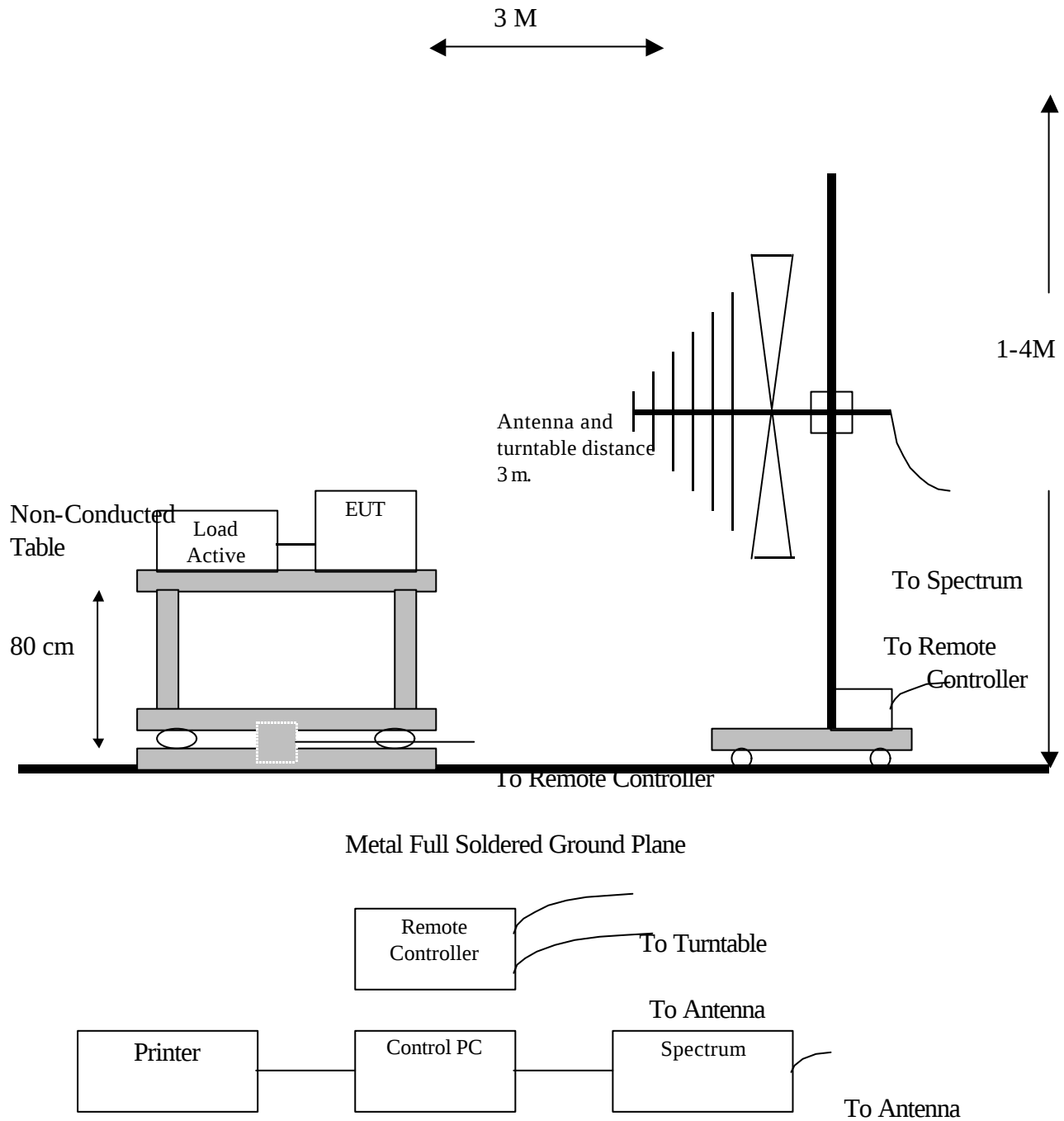
| <b>Radiation/Conduction</b> | <b>Filename</b> | <b>Version</b> | <b>Issued Date</b> |
|-----------------------------|-----------------|----------------|--------------------|
| Conduction                  | Tile.exe        | 2.3.B          | 12/30/2003         |
| Radiation                   | Tile.exe        | 2.3.B          | 12/30/2003         |

## 6.4 Appendix D: Layout of EUT and Support Equipment

### 6.4.1 General Conducted Test Configuration



## 6.4.2 General Radiation Test Configuration



## 6.5 Appendix E: Description of Support Equipment

### 6.5.1 Description of Support Equipment

#### Support Unit 1.

|                                |                                     |
|--------------------------------|-------------------------------------|
| Description:                   | Notebook Personal Computer          |
| Model No.:                     | Aspire1510,ZP2,ZP2A                 |
| Brand:                         | acer                                |
| AC Power Adapter Manufacturer: | LSE(Model:ADP-90FB REV:F)           |
| HDD:                           | HGST (Model: IC25N030ATMR04-0)      |
| Modem Card:                    | Ambit (Model: T60M283.10)           |
| FDD:                           | Panasonic (Model:UJ-266A343FC)      |
| SDRAM:                         | Infineon (Model:HYS64D32020GDL-6-B) |
| 1394 C0nnectector:             | one 4 Pins                          |
| USB Connector:                 | four 4 Pins                         |
| RJ11 Connector:                | one 2 Pins                          |
| RJ45 Connector:                | one 8 Pins                          |
| VGA Connector:                 | one 15 Pins                         |
| PCMCIA Slot                    | one                                 |
| Line out Port:                 | one                                 |
| Line-in Port:                  | one                                 |
| Parallel Port                  | one 25pins                          |
| DC IN Port:                    | one                                 |
| Battery:                       | Li-ION DC14.8V 4400mAh              |
| LCD:                           | QSI (Model:QD150XL06-01)            |
| CPU                            | AMD Athlon 64 2800+, 3000+, 4000+   |

#### Support Unit 2.

|                              |                                  |
|------------------------------|----------------------------------|
| Description:                 | USB 2.0 Card Reader/Writer       |
| Model Number:                | UID12W                           |
| Serial Number:               | N/A                              |
| Power Supply Type:           | From USB Port                    |
| USB 2.0 Port:                | one 4-pin                        |
| SD/MMC Card Slot:            | one                              |
| SecureDigital Card (Option): | SD (Model: SD-M16B1) 16MB        |
| USB Cable:                   | Shielded, Detachable (With Cord) |
| FCC ID:                      | (Comply with FCC DOC)            |

#### Support Unit 3.

|                              |                                  |
|------------------------------|----------------------------------|
| Description:                 | USB 2.0 Card Reader/Writer       |
| Model Number:                | UID12W                           |
| Serial Number:               | N/A                              |
| Power Supply Type:           | From USB Port                    |
| USB 2.0 Port:                | one 4-pin                        |
| SD/MMC Card Slot:            | one                              |
| SecureDigital Card (Option): | SD (Model: SD-M16B1) 16MB        |
| USB Cable:                   | Shielded, Detachable (With Cord) |
| FCC ID:                      | (Comply with FCC DOC)            |

## Support Unit 4.

|                    |                                            |
|--------------------|--------------------------------------------|
| Description:       | Digital Video Camera                       |
| Model:             | DCR-PC100                                  |
| Serial Number:     | 173009                                     |
| Power Supply Type: | AC Power Adaptor<br>(SONY, Model: AC-L10A) |
| Power Cord:        | Nonshielded, Detachable                    |
| FCC ID:            | (Comply with FCC DOC)                      |

## Support Unit 5.

|                    |                           |
|--------------------|---------------------------|
| Description:       | DELL USB Mouse            |
| Model Number:      | M-UR69                    |
| Serial Number:     | LNA24412741               |
| Power Supply Type: | N/A                       |
| Power Cord:        | N/A                       |
| FCC ID:            | N/A (Comply with FCC DOC) |

## Support Unit 6.

|                    |                          |
|--------------------|--------------------------|
| Description:       | DELL USB Keyboard        |
| Model Number:      | RT7D10                   |
| Serial Number:     | TH-05695W-37171-2B7-1021 |
| Power Supply Type: | N/A                      |
| Power Cord:        | N/A                      |
| FCC ID:            | AQ6-7D10                 |

## Support Unit 7.

|                    |                |
|--------------------|----------------|
| Description:       | KOKA Headphone |
| Model Number:      | ST-304         |
| Serial Number:     | N/A            |
| Power Supply Type: | N/A            |
| Power Cord:        | N/A            |
| FCC ID:            | N/A            |

## Support Unit 8.

|                    |                 |
|--------------------|-----------------|
| Description:       | KOKA Microphone |
| Model Number:      | DM-510          |
| Serial Number:     | N/A             |
| Power Supply Type: | N/A             |
| Power Cord:        | N/A             |
| FCC ID:            | N/A             |

## Support Unit 9.

|                    |                                          |
|--------------------|------------------------------------------|
| Description:       | HP Printer (for parallel interface port) |
| Model Number:      | C2642A                                   |
| Serial Number:     | TH84T1N3J3                               |
| Power Supply Type: | AC Adaptor (HP Model: C2175A)            |
| Power Cord:        | Non-shielded, Detachable                 |
| Data Cable:        | Shielded, Detachable, With Metal Hood    |
| FCC ID:            | B94C2642X                                |

## Support Unit 10.

|                |                          |
|----------------|--------------------------|
| Description:   | DELL 19" LCD Monitor     |
| Model:         | 2000FP                   |
| AC Adapter:    | DELL(ADP-70EB)           |
| Serial Number: | N/A                      |
| DSUB In:       | One 15 Pins              |
| DVI In:        | One Pins                 |
| S-Video In:    | One7 Pins                |
| Power Cord:    | Non-shielded, Detachable |
| FCC ID:        | (Comply with FCC DOC)    |

### 6.5.2 Software for Controlling Support Unit

A test program which generates a complete line of continuously repeating "H" pattern is used as the software test program. The program was executed as follows:

- A. Read and write to the disk drives.
- B. R/W memory card form EUT USB Port through Card Reader/Writer
- C. R/W memory card form EUT USB Port through Card Reader/Writer
- D. Capture the image from digital video camera then transfer to display.(CCD).
- E. Send audio signal to the headphone.
- F. Receive audio signal from the microphone.
- G. Send H pattern to the parallel port device (Printer).
- H. Send H pattern to the video port device (LCD Monitor).
- I. The RF software makes the transmitter contiunely sending RF signals
- J. Repeat the above steps.

|                      | Filename     | Issued Date |
|----------------------|--------------|-------------|
| Monitor              | HH.bat       | 8/20/1991   |
| Printer1             | Wordpad.exe  | 11/11/1999  |
| Digital Video Camera | Divpcam.exe  | 12/10/1998  |
| Winthrax             | Winthrax.exe | 5/21/1996   |
| Atheros_1.6.2002     | ART.exe      | 2003/12/17  |

**6.5.3 I/O Cable Condition of EUT and Support Units**

| Description                          | Path                                        | Cable Length | Cable Type                       | Connector Type |
|--------------------------------------|---------------------------------------------|--------------|----------------------------------|----------------|
| AC Power Cord                        | 110V (~240V) to AC Power Cord Inlet (3-pin) | 1.8M         | Nonshielded, Detachable          | Plastic Head   |
| Printer Data Cable                   | Printer to PC Parallel port                 | 1.5M         | Shielded, Detachable             | Metal Head     |
| Microphone Data Cable                | Microphone to PC Line In Port               | 1.5M         | Nonshielded, Undetachable        | Plastic Head   |
| Headphone Data Cable                 | Headphone to PC Line Out Port               | 1.2M         | Nonshielded, Undetachable        | Plastic Head   |
| Keyboard Data Cable                  | Keyboard to PC Keyboard port                | 1.8M         | Shielded, Undetachable           | Metal Head     |
| Mouse Data Cable                     | Mouse to PC Mouse port                      | 1.8M         | Shielded, Un-detachable          | Metal Head     |
| Digital Video Camera 1394 Data Cable | Digital Video Camera to 1394 port of PC     | 1.0M         | Shielded, Detachable             | Metal Head     |
| USB Data Cable                       | EUT USB Port to Card Reader/Writer          | 1.0 M        | Shielded, detachable (with cord) | Metal Head     |
| USB Data Cable                       | EUT USB Port to Card Reader/Writer          | 1.0 M        | Shielded, detachable (with cord) | Metal Head     |
| LCD Monitor D-SUB Data Cable         | LCD Monitor to EUT D-SUB Port               | 1.6M         | Shielded, Detachable             | Metal Head     |
| LCD Monitor S Data Cable             | LCD Monitor to EUT S Port                   | 1.6M         | Shielded, Detachable             | Metal Head     |

## 6.6 Appendix F: Accuracy of Measurement

Test Site: Conduction 02

| Item | Source of Uncertainty                                                            | Probability Distribution | Total Uncertainties (dB) |              | Standard Uncertainty (dB) |       |
|------|----------------------------------------------------------------------------------|--------------------------|--------------------------|--------------|---------------------------|-------|
| 1    | Systematic Effects:<br>(Assessment from 20 repeat observation; 1 reading on EUT) | Normal                   | k=2                      | 0.104        | k=1                       | 0.052 |
| 2    | Random Effects:<br>(Assessment from 20 random observations; 1 reading on EUT)    | Normal                   | k=2                      | 0.330        | k=1                       | 0.165 |
| 3    | Receiver Calibration                                                             | Rectangular              | k=1.73                   | 1.000        | k=1                       | 0.577 |
| 4    | LISN Factor Calibration                                                          | Normal                   | k=2                      | 1.200        | k=1                       | 0.600 |
| 5    | Cable Loss Calibration                                                           | Normal                   | k=2                      | 1.000        | k=1                       | 0.500 |
| 6    | Combined Standard Uncertainty $U_c(y)$                                           | Normal                   |                          |              | k=1                       | 0.850 |
| 7    | <b>Total Uncertainty @95% mim. Confidence Level</b>                              | <b>Normal</b>            | <b>k=2</b>               | <b>1.701</b> |                           |       |

Measurement Uncertainty Calculations:

$$U_c(y) = \text{square root} (u_1(y)^2 + u_2(y)^2 + \dots + u_n(y)^2)$$

$$U = 2 * U_c(y)$$

Note: The measurement Uncertainties mentioned above also refer to NIS 81-1994 of NAMAS : The treatment of Uncertainty in EMC Measurement.

Test Site: Chamber 02-3M

| Item | Source of Uncertainty                                                            | Probability Distribution | Total Uncertainties (dB) |              | Standard Uncertainty (dB) |       |
|------|----------------------------------------------------------------------------------|--------------------------|--------------------------|--------------|---------------------------|-------|
| 1    | Systematic Effects:<br>(Assessment from 20 repeat observation; 1 reading on EUT) | Normal                   | k=2                      | 0.067        | k=1                       | 0.034 |
| 2    | Random Effects:<br>(Assessment from 20 random observations; 1 reading on EUT)    | Normal                   | k=2                      | 0.103        | k=1                       | 0.052 |
| 3    | Receiver Calibration                                                             | Rectangular              | k=1.73                   | 1.000        | k=1                       | 0.577 |
| 4    | Antenna Factor Calibration                                                       | Normal                   | k=2                      | 1.700        | k=1                       | 0.850 |
| 5    | Cable Loss Calibration                                                           | Normal                   | k=2                      | 1.000        | k=1                       | 0.500 |
| 6    | Combined Standard Uncertainty $U_c(y)$                                           | Normal                   |                          |              | k=1                       | 1.029 |
| 7    | <b>Total Uncertainty @95% mim. Confidence Level</b>                              | <b>Normal</b>            | <b>k=2</b>               | <b>2.059</b> |                           |       |

Measurement Uncertainty Calculations:

$$U_c(y) = \text{square root} (u_1(y)^2 + u_2(y)^2 + \dots + u_n(y)^2)$$

$$U = 2 * U_c(y)$$

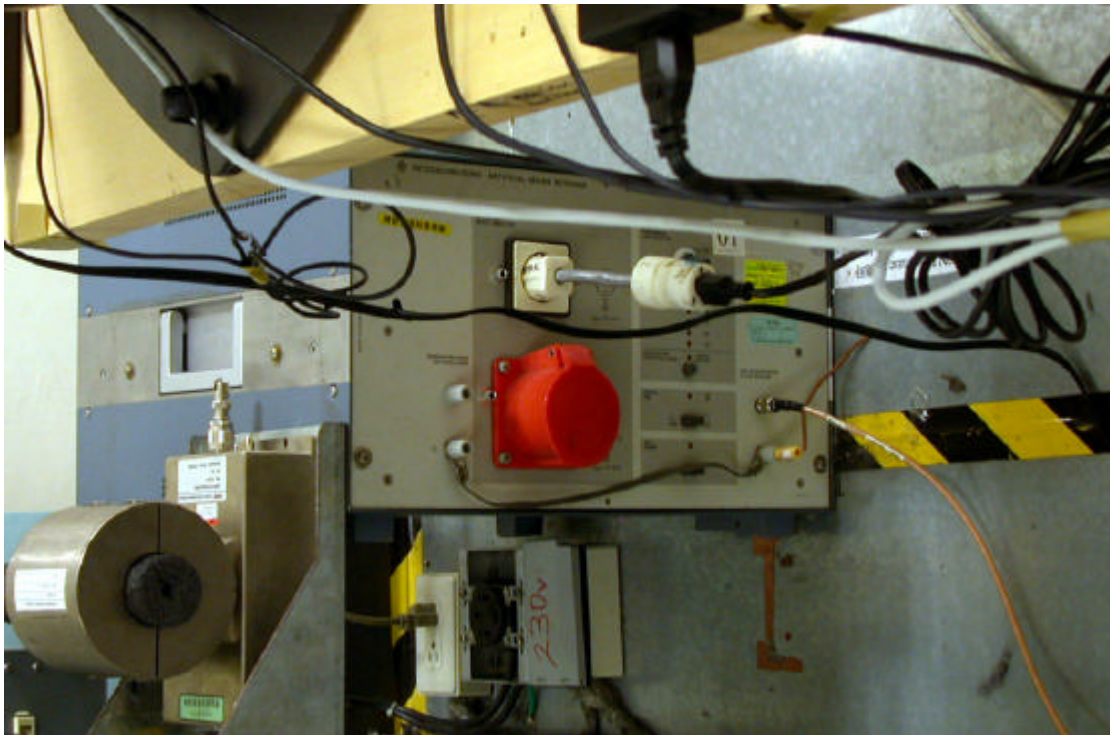
Note: The measurement Uncertainties mentioned above also refer to NIS 81-1994 of NAMAS : The treatment of Uncertainty in EMC Measurement.

## 6.7 Appendix G: Photographs of EUT Configuration Test Set Up

The Front View of Highest Conducted Set-up For EUT



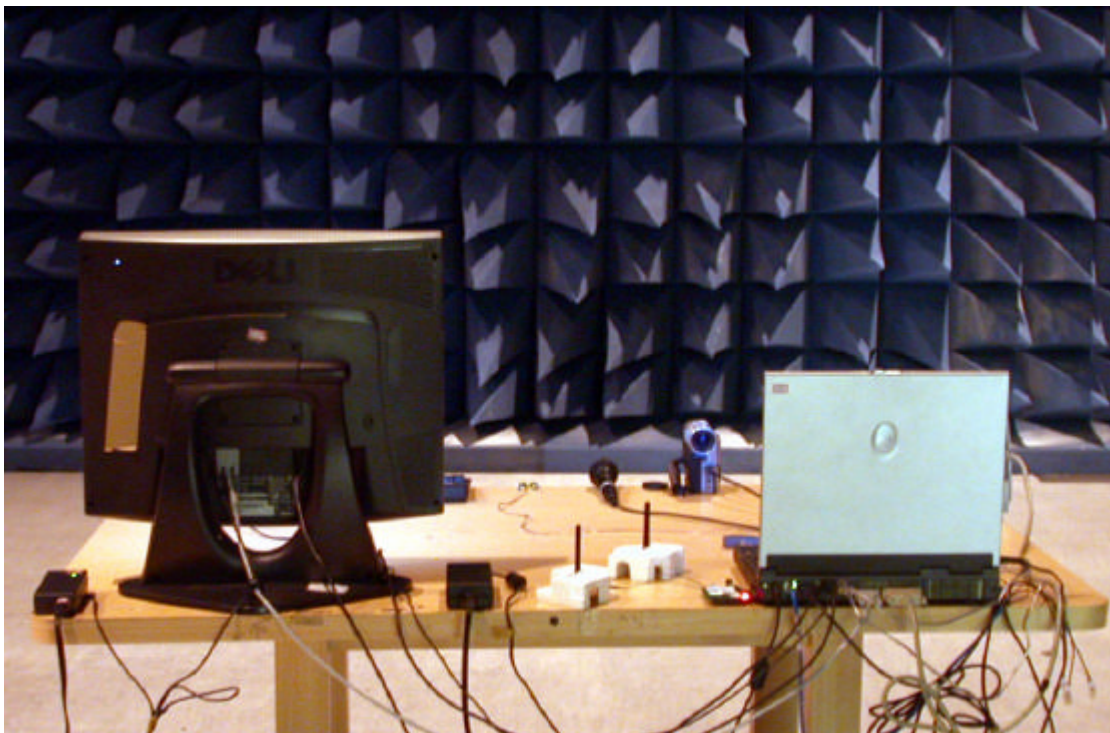
The Back View of Highest Conducted Set-up For EUT



The Front View of Highest Radiated Set-up For EUT



The Back View of Highest Radiated Set-up For EUT



## **6.8 Appendix H: Antenna Spec.**

Please refer to the attached file.