



# VCCI TEST REPORT

according to

**V-3/2012.04, Class A ITE**

Equipment : Remote Ethernet Device

Model No. : RED 50xxxxxxx (where x can be any alphanumeric character or blank)

Applicant : **Astaro GmbH & Co. KG**  
Amalienbadstrasse 41/Bau 52, 76227 Karlsruhe,  
Germany

## Statement

- The test result refers exclusively to the test presented test model / sample.
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***SPORTON International Inc.***

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

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## CERTIFICATE OF COMPLIANCE

according to

### V-3/2012.04, Class A ITE

Equipment : Remote Ethernet Device

Model No. : RED 50xxxxxxx (where x can be any alphanumeric character or blank)

Applicant : **Astaro GmbH & Co. KG**  
Amalienbadstrasse 41/Bau 52, 76227 Karlsruhe,  
Germany

**HEREBY** CERTIFY THAT :

The measurements shown in this test report were made in accordance with the procedures given in **Implementation Regulation from Voluntary Control Council for Interference (VCCI) by Information Technology Equipment**. The energy emitted by this equipment was **passed** both Radiated and Conducted Emissions **Class A ITE** limits.

The test was carried out on Sep. 26, 2012 at **SPORTON International Inc.** LAB.

Reviewed by:

  
\_\_\_\_\_  
Jack Deng  
Engineering Manager

Approved by:

  
\_\_\_\_\_  
Alex Chen  
Q.A Dept. Director

### **SPORTON International Inc.**

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



## 1. General Description of Equipment under Test

### 1.1. Applicant

Astaro GmbH & Co. KG  
Amalienbadstrasse 41/Bau 52, 76227 Karlsruhe, Germany

### 1.2. Manufacturer

Same as 1.1

### 1.3. Basic Description of Equipment under Test

Equipment : Remote Ethernet Device  
Model No. : RED 50xxxxxxx (where x can be any alphanumeric character or blank)

#### **Associated with interface cables**

RJ45 Cable x2 : Non-Shielded, 20 m  
RJ45-RS232 Cable : AL-F-Shielded, 1.85 m  
Data Cable Type : Please see section 2.2 of this test report for details  
Power Supply Type : From Adapter  
AC Power Cord : Non-Shielded, 1.8 m, 3 pin  
DC Power Cable : AL-F-Shielded, 1.2 m

### 1.4. Feature of Equipment under Test

Please refer to user manual.



## 2. Test Configuration of Equipment under Test

### 2.1. Test Manner

- a. During testing, the personal computer and equipment positions were varied according to Implementation Regulation from Voluntary Control Council for Interference (VCCI) by Information Technology Equipment.
- b. The equipment under test were performed the following test modes:

| Test Items                   | Function Type  |
|------------------------------|--|
| <b>AC Conducted Emission</b> | Mode 1. LAN 1Gbps  |
| <b>ISN</b>                   | Mode 1. LAN 10Mbps 10% (LAN Port)<br>Mode 2. LAN 100Mbps 10% (LAN Port)<br>Mode 3. LAN 1Gbps 10% (LAN Port)<br>Mode 4. LAN 10Mbps 10% (WAN Port)<br>Mode 5. LAN 100Mbps 10% (WAN Port)<br>Mode 6. LAN 1Gbps 10% (WAN Port)<br>cause "mode 4~6" generated the worst test result; it was reported as final data. |
| <b>Radiated Emissions</b>    | Mode 1. LAN 1Gbps  |

- c. Frequency range investigated: Conduction 150 kHz to 30 MHz, Radiation 30 MHz to 6,000 MHz.



## 2.2. Description of Test System

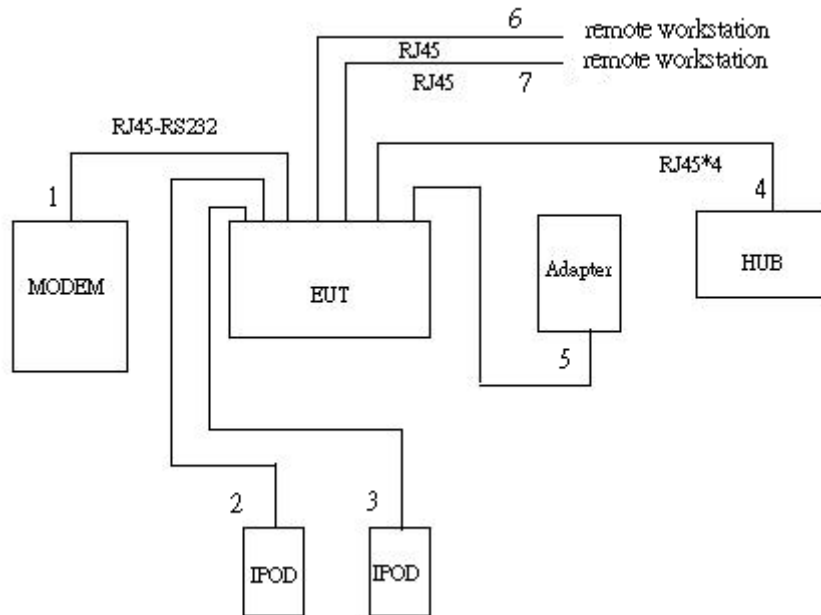
### <Conducted and Radiated below 1GHz>

| No. | Peripheral           | Manufacturer | Model Number | FCC ID     | Cable / Spec. Description        | Placed |
|-----|----------------------|--------------|--------------|------------|----------------------------------|--------|
| 1   | Modem                | ACEEX        | DM1414       | IFAXDM1414 | RS-232 Cable, D-Shielded, 1.15m  | Local  |
| 2   | USB 2.0 IPOD x2      | APPLE        | A1137        | DoC        | USB Cable, D-Shielded, 1.0m      | Local  |
| 3   | HUB                  | LanTEch      | GE-800       | N/A        | RJ45 Cable, Non-Shielded, 10m x4 | Local  |
| 4   | Personal Computer x2 | DELL         | DCTA         | DoC        | N/A                              | Remote |
| 5   | LCD Monitor x2       | DELL         | E198WFPF     | DoC        | D-SUB Cable, D-Shielded, 1.8m    | Remote |
| 6   | Keyboard x2          | DELL         | SK-8175      | DoC        | USB Cable, AL-F-Shielded, 1.8m   | Remote |
| 7   | Mouse x2             | DELL         | MOC5UO       | DoC        | USB Cable, AL-F-Shielded, 1.8m   | Remote |

### <ISN & Radiation above 1GHz test >

| No. | Peripheral      | Manufacturer | Model Number | FCC ID     | Cable / Spec. Description        | Placed |
|-----|-----------------|--------------|--------------|------------|----------------------------------|--------|
| 1   | Modem           | ACEEX        | DM1414       | IFAXDM1414 | RS-232 Cable, D-Shielded, 1.15m  | Local  |
| 2   | USB 2.0 IPOD x2 | APPLE        | A1199        | DoC        | USB Cable, D-Shielded, 1.0m      | Local  |
| 3   | HUB             | LanTEch      | GE-800       | N/A        | RJ45 Cable, Non-Shielded, 10m x4 | Local  |
| 4   | Notebook PC x2  | DELL         | PP32LB       | DoC        | N/A                              | Remote |

### 2.3. Connection Diagram of Test System



1. The RJ45-RS232 cable is connected from the EUT to the support unit 1.
2. The I/O cable is connected from the EUT to the support unit 2.
3. The I/O cable is connected from the EUT to the support unit 2.
4. These RJ45 cables are connected from the EUT to the support unit 3.
5. The Power cable is connected from the EUT to the Adapter.
6. The RJ45 cable is connected from the EUT to the remote workstation.
7. The RJ45 cable is connected from the EUT to the remote workstation.

Note: Above support unit on behalf of the meaning, please refer to section 2.2.





### 3. Test Software

During the test, the following program from remote workstation was executed:

- Executed " ping.exe" to link with the EUT to receive and transmit data by RJ45 cable.

For ISN test, the remote workstation Executed "tfgen.exe" to traffic packet data generated software and keep 10% traffic load to link with the EUT by RJ45 cable.

## 4. General Information of Test

### 4.1. Test Facility

**Test Site : SPORTON INTERNATIONAL INC.**

- Test Site Location : No. 3, Lane 238, Kang Lo Street, Nei Hwu District, Taipei 11424, Taiwan, R.O.C.  
TEL : 886-2-2631-4739  
FAX : 886-2-2631-9740
- Test Site No. : CO01-NH, OS02-NH (VCCI Registration No.: C-247/R-1906)
- Test Site Location : No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiag, Tao Yuan Hsien, Taiwan, R.O.C.  
TEL : 886-3-327-3456  
FAX : 886-3-318-0055
- Test Site No. : 10CH02-HY (VCCI Registration No.: G-126)
- <Telecommunication Port>**
- Test Site Location : No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiag, Tao Yuan Hsien, Taiwan, R.O.C.  
TEL : 886-3-327-3456  
FAX : 886-3-318-0055
- Test Site No. : CO01-HY (VCCI Registration No.: T-1731)

### 4.2. Test Voltage

AC 100V / 50Hz

### 4.3. Measurement Procedure

Implementation Regulation from Voluntary Control Council for Interference (VCCI) by Information Technology Equipment.

### 4.4. Test in Compliance with

V-3/2012.04, Class A ITE

### 4.5. Frequency Range Investigated

- a. Conducted emission test: from 150 kHz to 30 MHz
- b. Radiated emission test: from 30 MHz to 6,000 MHz

### 4.6. Test Distance

- a. The test distance of radiated emission test from antenna to EUT is 10 M (from 30MHz~1GHz).
- b. The test distance of radiated emission test from antenna to EUT is 3 M (from 1GHz~6GHz).

## 5. Test of Conducted Powerline

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 kHz and return leads of the EUT according to the methods defined in Implementation Regulation from Voluntary Control Council for Interference (VCCI) by Information Technology Equipment, Section 3.1. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meter above the ground plane as shown in section 5.4. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position producing maximum conducted emissions.

### 5.1. Limits for conducted disturbance at mains terminals and telecommunication ports

#### Limits for conducted disturbance at mains terminals

| Frequency range (MHz) | Class A Limits dB(μV) |         | Class B Limits dB(μV) |         |
|-----------------------|-----------------------|---------|-----------------------|---------|
|                       | Quasi-peak            | Average | Quasi-peak            | Average |
| 0.15 to 0.50          | 79                    | 66      | 66 - 56               | 56 - 46 |
| 0.50 to 5             | 73                    | 60      | 56                    | 46      |
| 5 to 30               | 73                    | 60      | 60                    | 50      |

NOTE: The limits decrease linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

#### Limits for conducted disturbance at telecommunication ports

| Frequency range (MHz) | Class A                |         |                        |         |
|-----------------------|------------------------|---------|------------------------|---------|
|                       | Voltage limits dB (μV) |         | Current limits dB (μA) |         |
|                       | Quasi-peak             | Average | Quasi-peak             | Average |
| 0.15 to 0.50          | 97 - 87                | 84 - 74 | 53 - 43                | 40 - 30 |
| 0.50 to 30            | 87                     | 74      | 43                     | 30      |

NOTE: The limits decrease linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

| Frequency range (MHz) | Class B                |         |                        |         |
|-----------------------|------------------------|---------|------------------------|---------|
|                       | Voltage limits dB (μV) |         | Current limits dB (μA) |         |
|                       | Quasi-peak             | Average | Quasi-peak             | Average |
| 0.15 to 0.50          | 84 - 74                | 74 - 64 | 40 - 30                | 30 - 20 |
| 0.50 to 30            | 74                     | 64      | 30                     | 20      |

NOTE: The limits decrease linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.



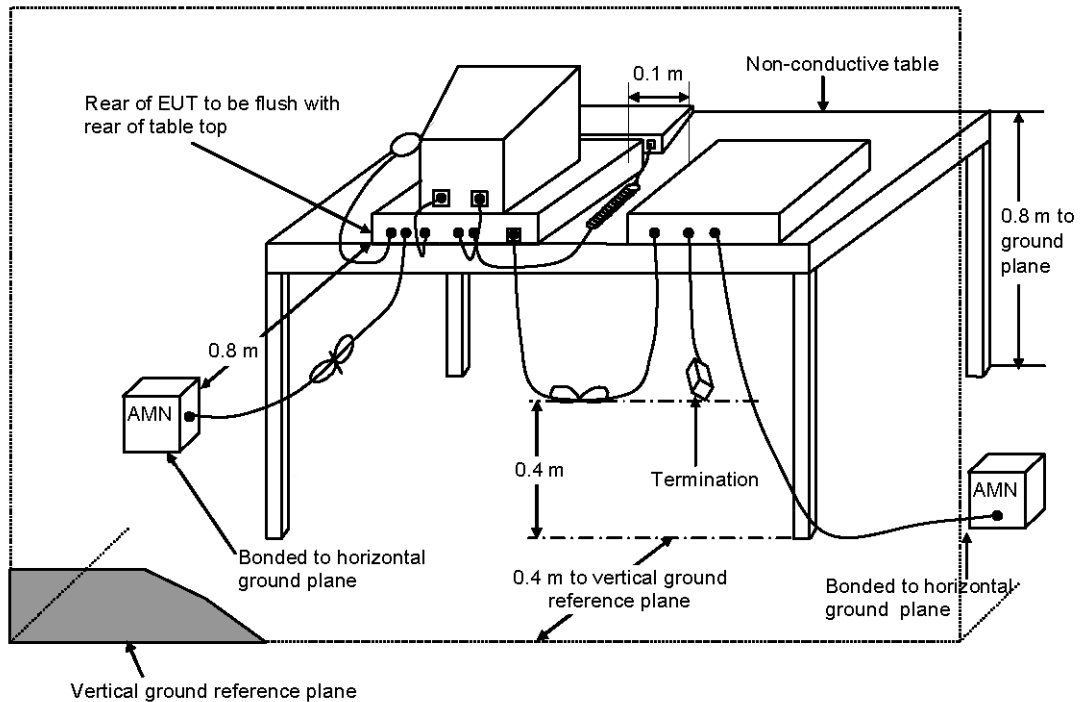
### 5.2. Description of Major Test Instruments

| Test Receiver Parameters | Setting          |
|--------------------------|------------------|
| Test Receiver            | R&S ESCS 30      |
| Attenuation              | 10 dB            |
| Start Frequency          | 0.15 MHz         |
| Stop Frequency           | 30 MHz           |
| IF Bandwidth             | 9 kHz            |
| Signal Input             | 9 kHz - 2.75 GHz |

### 5.3. Test Procedures

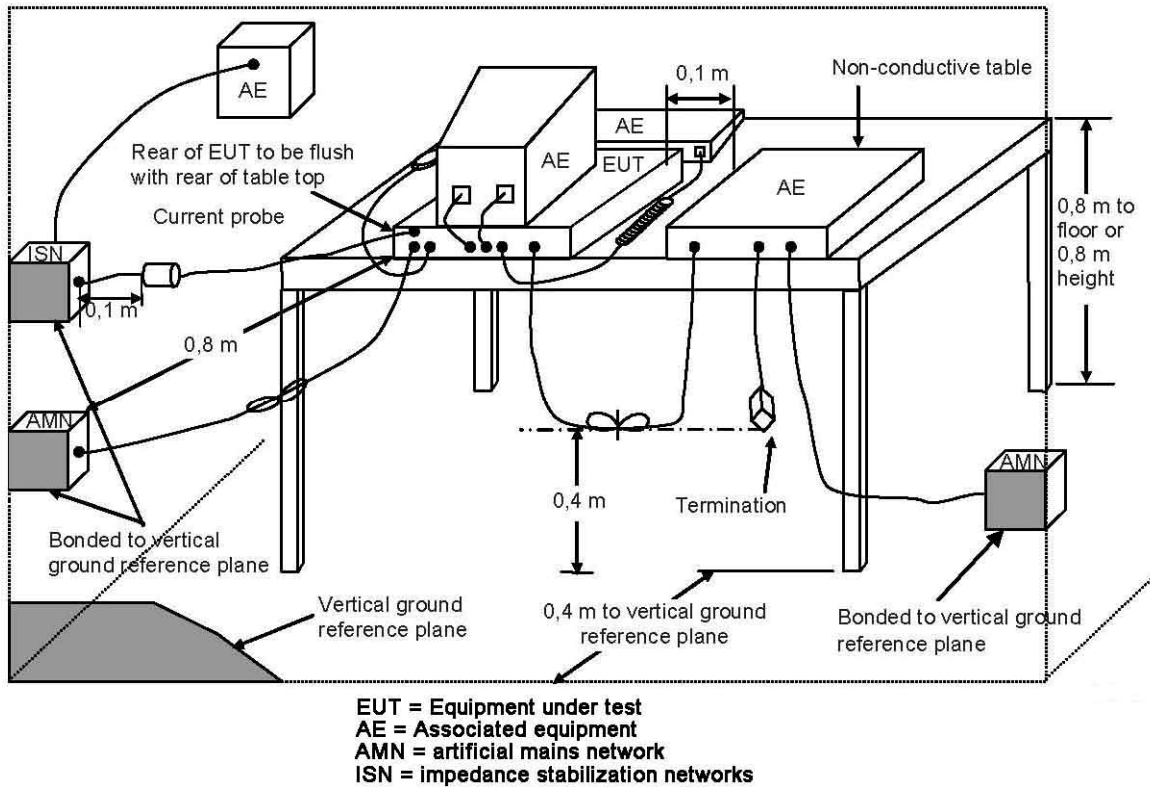
- a. The EUT was placed on a desk 0.8 meter height from the metal ground plane and 0.4 meter from the conducting wall of the shielding room and it was kept at least 0.8 meter from any other grounded conducting surface.
- b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- c. Connect Telecommunication port to ISN (Impedance Stabilization Network).
- d. All the support units are connect to the other LISN.
- e. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- f. The CISPR states that a 50 ohm, 50 microhenry LISN should be used.
- g. Both sides of AC line were checked for maximum conducted interference.
- h. The frequency range from 150 kHz to 30 MHz was searched.
- i. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

### 5.4. Typical Test Setup Layout of Conducted Powerline



- a. AMN is 80 cm from the EUT and at least 80 cm from other units and other metal planes.
- b. EUT is connected to one artificial mains network (AMN).
- c. All other units of a system are powered from a second AMN. A multiple outlet strip can be used for multiple mains cords.
- d. Rear of EUT to be flushed with rear of table top.
- e. Peripherals shall be placed at a distance of 10 cm from each other and from the controller, except for the monitor which, if this is an acceptable installation practice, shall be placed directly on the top of the controller.
- f. If cables, which hang closer than 40 cm to the horizontal metal ground plane, cannot be shortened to appropriate length, the excess shall be folded back and forth forming a bundle 30 cm to 40 cm long.
- g. Mains cords and signal cables shall be positioned for their entire lengths, as far as possible, at 40 cm from the vertical reference plane.
- h. Cables of hand operated devices, such as keyboards, mice, etc. shall be placed as for normal usage.

### 5.5. Typical Test Setup Layout of disturbances at telecommunication ports



- a. AMN and ISN are 80 cm from the EUT and at least 80 cm from other units and other metal planes.
- b. EUT is connected to one artificial mains network (AMN).
- c. All other units of a system are powered from a second AMN. A multiple outlet strip can be used for multiple mains cords.
- d. Rear of EUT to be flushed with rear of table top.
- e. Peripherals shall be placed at a distance of 10 cm from each other and from the controller, except for the monitor which, if this is an acceptable installation practice, shall be placed directly on the top of the controller.
- f. If cables, which hang closer than 40 cm to the horizontal metal ground plane, cannot be shortened to appropriate length, the excess shall be folded back and forth forming a bundle 30 cm to 40 cm long.
- g. Mains cords and signal cables shall be positioned for their entire lengths, as far as possible, at 40 cm from the vertical reference plane.
- h. Cables of hand operated devices, such as keyboards, mice, etc. shall be placed as for normal usage.



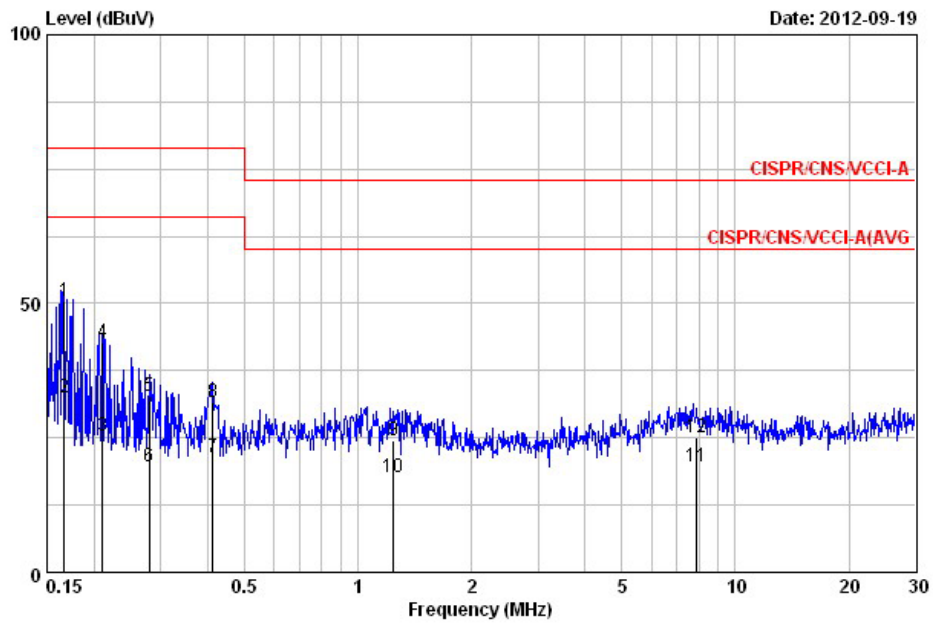
### 5.6. Test Result of AC Powerline Conducted Emission

|                |                   |                   |         |
|----------------|-------------------|-------------------|---------|
| Test Mode      | Mode 1            | Test Site No.     | CO01-NH |
| Test Frequency | 0.15 MHz ~ 30 MHz | Test Engineer     | Eddie   |
| Temperature    | 24 °C             | Relative Humidity | 48%     |

Note: 1. Corrected Reading (dB $\mu$ V) = LISN Factor + Cable Loss + Read Level = Level  
 2. All emissions not reported here are more than 10 dB below the prescribed limit.

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

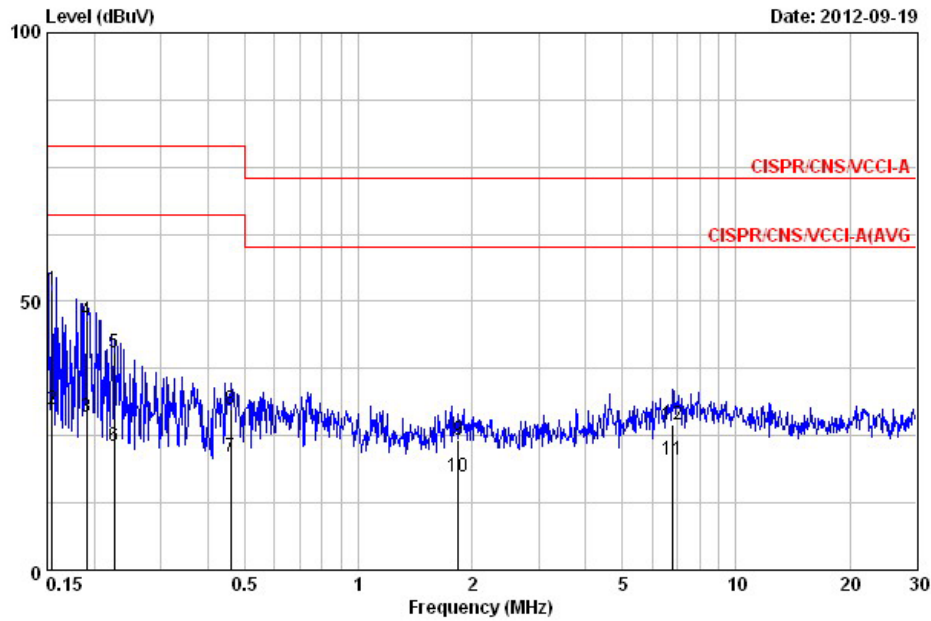
Line



|    | Freq  | Level | Over Limit | Limit Line | Read Level | LISN Factor | Cable Loss | Remark  |
|----|-------|-------|------------|------------|------------|-------------|------------|---------|
|    | MHz   | dBuV  | dB         | dBuV       | dBuV       | dB          | dB         |         |
| 1  | 0.167 | 50.42 | -28.58     | 79.00      | 40.17      | 10.15       | 0.10       | QP      |
| 2  | 0.167 | 32.44 | -33.56     | 66.00      | 22.19      | 10.15       | 0.10       | AVERAGE |
| 3  | 0.211 | 25.44 | -40.56     | 66.00      | 15.18      | 10.16       | 0.10       | AVERAGE |
| 4  | 0.211 | 42.86 | -36.14     | 79.00      | 32.60      | 10.16       | 0.10       | QP      |
| 5  | 0.280 | 32.83 | -46.17     | 79.00      | 22.57      | 10.16       | 0.10       | QP      |
| 6  | 0.280 | 19.71 | -46.29     | 66.00      | 9.45       | 10.16       | 0.10       | AVERAGE |
| 7  | 0.413 | 21.44 | -44.56     | 66.00      | 11.18      | 10.16       | 0.10       | AVERAGE |
| 8  | 0.413 | 31.60 | -47.40     | 79.00      | 21.34      | 10.16       | 0.10       | QP      |
| 9  | 1.242 | 24.51 | -48.49     | 73.00      | 14.23      | 10.18       | 0.10       | QP      |
| 10 | 1.242 | 17.75 | -42.25     | 60.00      | 7.47       | 10.18       | 0.10       | AVERAGE |
| 11 | 7.893 | 19.57 | -40.43     | 60.00      | 9.10       | 10.27       | 0.20       | AVERAGE |
| 12 | 7.893 | 24.95 | -48.05     | 73.00      | 14.48      | 10.27       | 0.20       | QP      |



Neutral



|    | Freq  | Level | Over Limit | Limit Line | Read Level | LISN Factor | Cable Loss | Remark  |
|----|-------|-------|------------|------------|------------|-------------|------------|---------|
|    | MHz   | dBuV  | dB         | dBuV       | dBuV       | dB          | dB         |         |
| 1  | 0.155 | 52.04 | -26.96     | 79.00      | 41.80      | 10.14       | 0.10       | QP      |
| 2  | 0.155 | 30.01 | -35.99     | 66.00      | 19.77      | 10.14       | 0.10       | AVERAGE |
| 3  | 0.190 | 28.50 | -37.50     | 66.00      | 18.26      | 10.14       | 0.10       | AVERAGE |
| 4  | 0.190 | 46.45 | -32.55     | 79.00      | 36.21      | 10.14       | 0.10       | QP      |
| 5  | 0.226 | 40.35 | -38.65     | 79.00      | 30.11      | 10.14       | 0.10       | QP      |
| 6  | 0.226 | 22.99 | -43.01     | 66.00      | 12.75      | 10.14       | 0.10       | AVERAGE |
| 7  | 0.459 | 21.20 | -44.80     | 66.00      | 10.96      | 10.14       | 0.10       | AVERAGE |
| 8  | 0.459 | 30.03 | -48.97     | 79.00      | 19.79      | 10.14       | 0.10       | QP      |
| 9  | 1.839 | 24.35 | -48.65     | 73.00      | 14.08      | 10.17       | 0.10       | QP      |
| 10 | 1.839 | 17.50 | -42.50     | 60.00      | 7.23       | 10.17       | 0.10       | AVERAGE |
| 11 | 6.769 | 20.51 | -39.49     | 60.00      | 10.08      | 10.24       | 0.20       | AVERAGE |
| 12 | 6.769 | 26.94 | -46.06     | 73.00      | 16.51      | 10.24       | 0.20       | QP      |



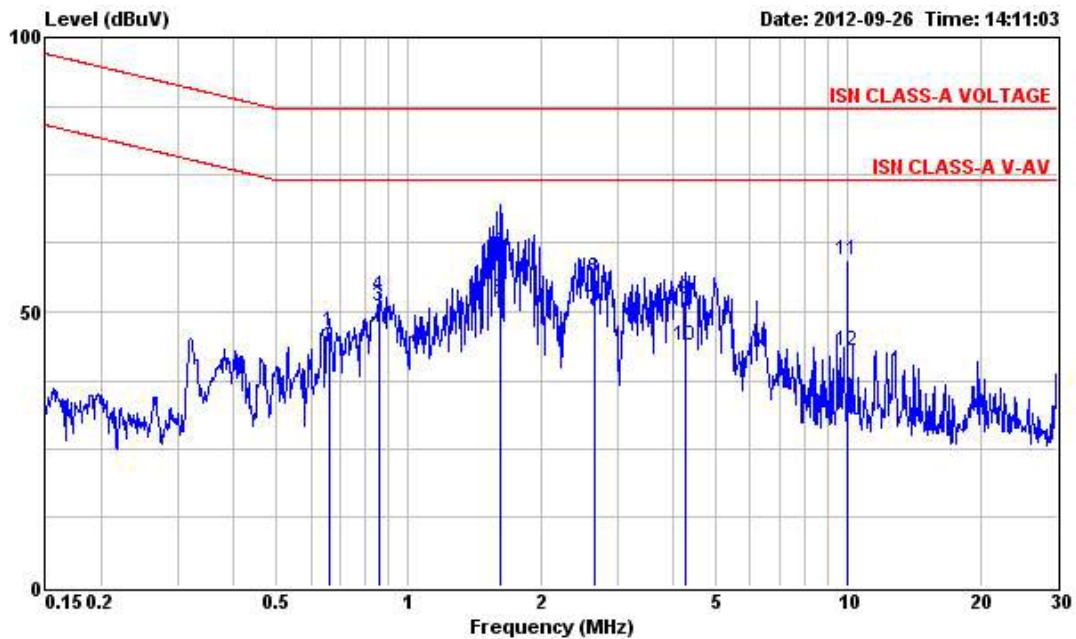


5.7. Test Result of disturbances at telecommunication ports

|                |                   |                   |         |
|----------------|-------------------|-------------------|---------|
| Test Mode      | Mode 4            | Test Site No.     | CO01-HY |
| Test Frequency | 0.15 MHz ~ 30 MHz | Test Engineer     | David   |
| Temperature    | 25.6 °C           | Relative Humidity | 56 %    |

Note: 1. Corrected Reading (dBμV) = LISN Factor + Cable Loss + Read Level = Level  
 2. All emissions not reported here are more than 10 dB below the prescribed limit.

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



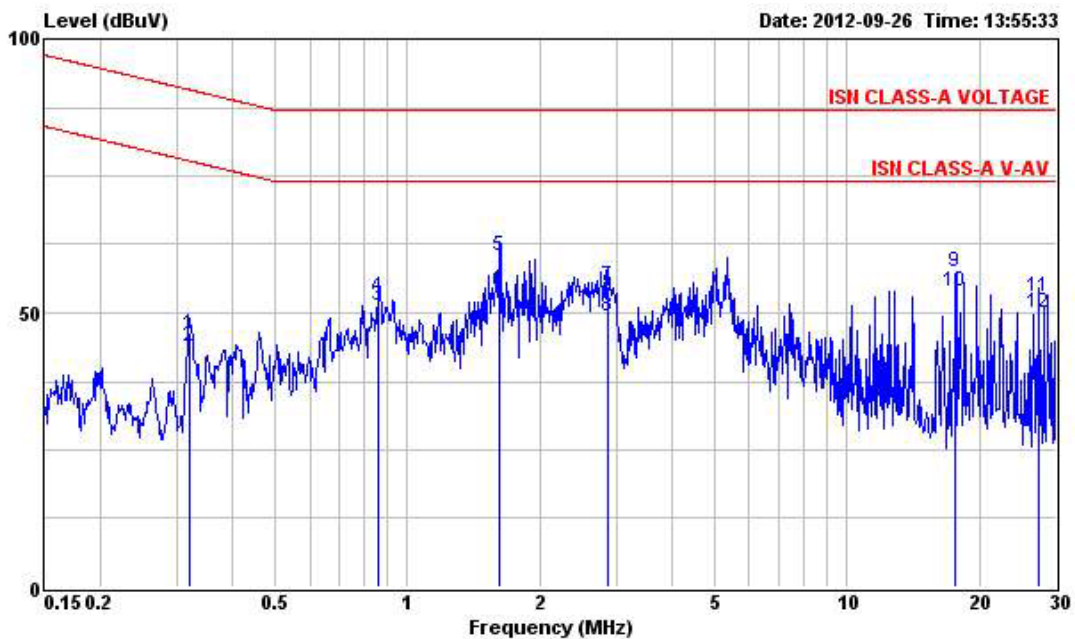
|    | Freq   | Level | Over Limit | Limit Line | Read Level | Probe Factor | Cable Loss | Remark  |
|----|--------|-------|------------|------------|------------|--------------|------------|---------|
|    | MHz    | dBuV  | dB         | dBuV       | dBuV       | dB           | dB         |         |
| 1  | 0.661  | 46.39 | -40.61     | 87.00      | 36.35      | 9.94         | 0.10       | QP      |
| 2  | 0.661  | 43.56 | -30.44     | 74.00      | 33.52      | 9.94         | 0.10       | Average |
| 3  | 0.862  | 51.09 | -22.91     | 74.00      | 41.08      | 9.91         | 0.10       | Average |
| 4  | 0.862  | 52.85 | -34.15     | 87.00      | 42.84      | 9.91         | 0.10       | QP      |
| 5  | 1.620  | 60.61 | -26.39     | 87.00      | 50.66      | 9.85         | 0.10       | QP      |
| 6  | 1.620  | 52.37 | -21.63     | 74.00      | 42.42      | 9.85         | 0.10       | Average |
| 7  | 2.660  | 50.36 | -23.64     | 74.00      | 40.45      | 9.81         | 0.10       | Average |
| 8  | 2.660  | 56.17 | -30.83     | 87.00      | 46.26      | 9.81         | 0.10       | QP      |
| 9  | 4.270  | 52.18 | -34.82     | 87.00      | 42.29      | 9.79         | 0.10       | QP      |
| 10 | 4.270  | 43.90 | -30.10     | 74.00      | 34.01      | 9.79         | 0.10       | Average |
| 11 | 10.000 | 59.46 | -27.54     | 87.00      | 49.57      | 9.79         | 0.10       | QP      |
| 12 | 10.000 | 42.99 | -31.01     | 74.00      | 33.10      | 9.79         | 0.10       | Average |



|                |                   |                   |         |
|----------------|-------------------|-------------------|---------|
| Test Mode      | Mode 5            | Test Site No.     | CO01-HY |
| Test Frequency | 0.15 MHz ~ 30 MHz | Test Engineer     | David   |
| Temperature    | 25.6 °C           | Relative Humidity | 56 %    |

Note: 1. Corrected Reading (dBμV) = LISN Factor + Cable Loss + Read Level = Level  
 2. All emissions not reported here are more than 10 dB below the prescribed limit.

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



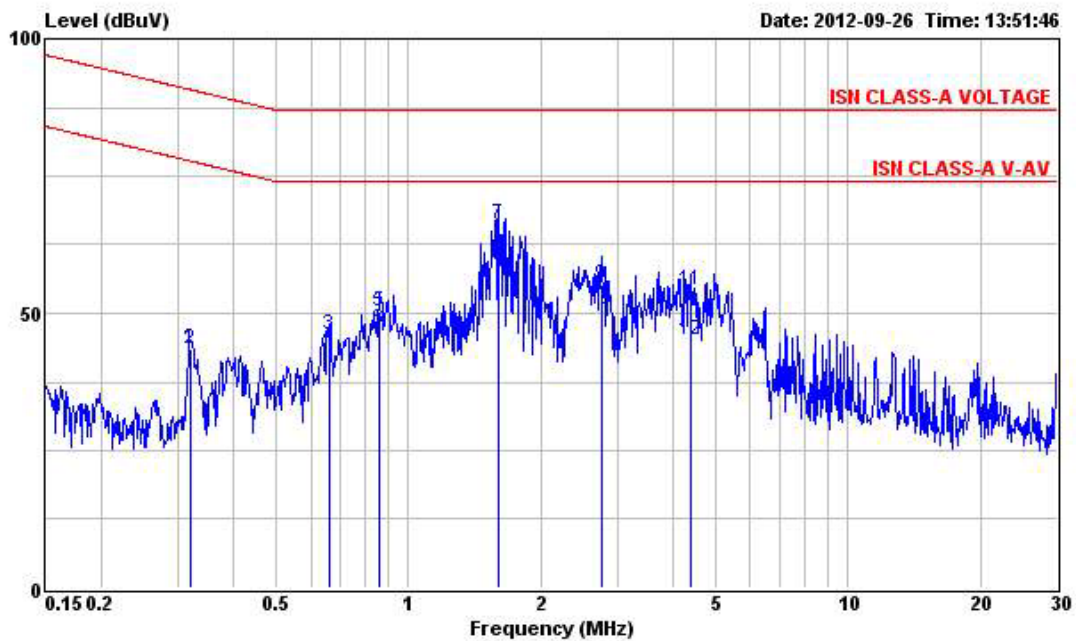
|    | Freq   | Level | Over Limit | Limit Line | Read Level | Probe Factor | Cable Loss | Remark  |
|----|--------|-------|------------|------------|------------|--------------|------------|---------|
|    | MHz    | dBuV  | dB         | dBuV       | dBuV       | dB           | dB         |         |
| 1  | 0.320  | 46.21 | -44.50     | 90.71      | 35.97      | 10.11        | 0.13       | QP      |
| 2  | 0.320  | 43.98 | -33.73     | 77.71      | 33.74      | 10.11        | 0.13       | Average |
| 3  | 0.862  | 51.38 | -22.62     | 74.00      | 41.37      | 9.91         | 0.10       | Average |
| 4  | 0.862  | 53.01 | -33.99     | 87.00      | 43.00      | 9.91         | 0.10       | QP      |
| 5  | 1.620  | 60.39 | -26.61     | 87.00      | 50.44      | 9.85         | 0.10       | QP      |
| 6  | 1.620  | 53.87 | -20.13     | 74.00      | 43.92      | 9.85         | 0.10       | Average |
| 7  | 2.870  | 55.02 | -31.98     | 87.00      | 45.11      | 9.81         | 0.10       | QP      |
| 8  | 2.870  | 49.44 | -24.56     | 74.00      | 39.53      | 9.81         | 0.10       | Average |
| 9  | 17.695 | 57.61 | -29.39     | 87.00      | 47.45      | 9.96         | 0.20       | QP      |
| 10 | 17.695 | 53.95 | -20.05     | 74.00      | 43.79      | 9.96         | 0.20       | Average |
| 11 | 27.345 | 52.77 | -34.23     | 87.00      | 42.03      | 10.39        | 0.35       | QP      |
| 12 | 27.345 | 49.89 | -24.11     | 74.00      | 39.15      | 10.39        | 0.35       | Average |



|                |                   |                   |         |
|----------------|-------------------|-------------------|---------|
| Test Mode      | Mode 6            | Test Site No.     | CO01-HY |
| Test Frequency | 0.15 MHz ~ 30 MHz | Test Engineer     | David   |
| Temperature    | 25.6 °C           | Relative Humidity | 56 %    |

Note: 1. Corrected Reading (dBμV) = LISN Factor + Cable Loss + Read Level = Level  
 2. All emissions not reported here are more than 10 dB below the prescribed limit.

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



|    | Freq  | Level | Over Limit | Limit Line | Read Level | Probe Factor | Cable Loss | Remark  |
|----|-------|-------|------------|------------|------------|--------------|------------|---------|
|    | MHz   | dBuV  | dB         | dBuV       | dBuV       | dB           | dB         |         |
| 1  | 0.320 | 43.58 | -47.13     | 90.71      | 33.34      | 10.11        | 0.13       | QP      |
| 2  | 0.320 | 43.48 | -34.23     | 77.71      | 33.24      | 10.11        | 0.13       | Average |
| 3  | 0.661 | 46.26 | -40.74     | 87.00      | 36.22      | 9.94         | 0.10       | QP      |
| 4  | 0.661 | 43.82 | -30.18     | 74.00      | 33.78      | 9.94         | 0.10       | Average |
| 5  | 0.857 | 50.22 | -36.78     | 87.00      | 40.21      | 9.91         | 0.10       | QP      |
| 6  | 0.857 | 47.17 | -26.83     | 74.00      | 37.16      | 9.91         | 0.10       | Average |
| 7  | 1.600 | 66.10 | -20.90     | 87.00      | 56.15      | 9.85         | 0.10       | QP      |
| 8  | 1.600 | 58.78 | -15.22     | 74.00      | 48.83      | 9.85         | 0.10       | Average |
| 9  | 2.750 | 55.17 | -31.83     | 87.00      | 45.26      | 9.81         | 0.10       | QP      |
| 10 | 2.750 | 50.63 | -23.37     | 74.00      | 40.72      | 9.81         | 0.10       | Average |
| 11 | 4.410 | 54.28 | -32.72     | 87.00      | 44.39      | 9.79         | 0.10       | QP      |
| 12 | 4.410 | 45.02 | -28.98     | 74.00      | 35.13      | 9.79         | 0.10       | Average |

## 6. Test of Radiated Emission

Radiated emissions from 30 MHz to 6,000 MHz were measured with a bandwidth of 120 kHz for 30 MHz to 1000 MHz and 1 MHz for above 1GHz according to the methods defines in Implementation Regulation from Voluntary Control Council for Interference (VCCI) by Information Technology Equipment. The EUT was placed on a nonmetallic stand, 0.8 meter above the ground plane, as shown in section 6.4. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions.

### 6.1. Limits for radiated disturbance

Limits for radiated disturbance at a measuring distance of 10 m

| Frequency range (MHz) | Class A                    | Class B                    |
|-----------------------|----------------------------|----------------------------|
|                       | Quasi-peak limits dB(μV/m) | Quasi-peak limits dB(μV/m) |
| 30 to 230             | 40                         | 30                         |
| 230 to 1000           | 47                         | 37                         |

Limits for radiated disturbance at a measuring distance of 3 m

| Frequency range (MHz) | Class A                |                     | Class B                |                     |
|-----------------------|------------------------|---------------------|------------------------|---------------------|
|                       | Average limit dB(μV/m) | Peak limit dB(μV/m) | Average limit dB(μV/m) | Peak limit dB(μV/m) |
| 1000 to 3000          | 56                     | 76                  | 50                     | 70                  |
| 3000 to 6000          | 60                     | 80                  | 54                     | 74                  |



## 6.2. Description of Major Test Instruments

### For Below 1GHz

| Amplifier Parameters | Setting            |
|----------------------|--------------------|
| Amplifier            | (BURGEON BPA-530 ) |
| RF Gain              | 30 dB              |
| Signal Input         | 0.01 MHz - 3 GHz   |

| Test Receiver Parameters | Setting                |
|--------------------------|------------------------|
| Test Receiver            | ( R&S ESCI )           |
| Resolution Bandwidth     | 120 kHz                |
| Frequency Band           | 9 kHz - 3 GHz          |
| Quasi-Peak Detector      | ON for Quasi-Peak Mode |
|                          | OFF for Peak Mode      |

### For above 1GHz

| Amplifier Parameters | Setting        |
|----------------------|----------------|
| Amplifier            | (EMCI EMC330 ) |
| RF Gain              | 30 dB          |
| Signal Input         | 1 GHz – 8 GHz  |

| Test Receiver Parameters | Setting       |
|--------------------------|---------------|
| Test Receiver            | ( R&S ESI )   |
| Attenuation              | 10 dB         |
| Start Frequency          | 1000 MHz      |
| Stop Frequency           | 6000 MHz      |
| Resolution Bandwidth     | 1 MHz         |
| Signal Input             | 20 Hz - 7 GHz |



### 6.3. Test Procedures

#### For Below 1GHz

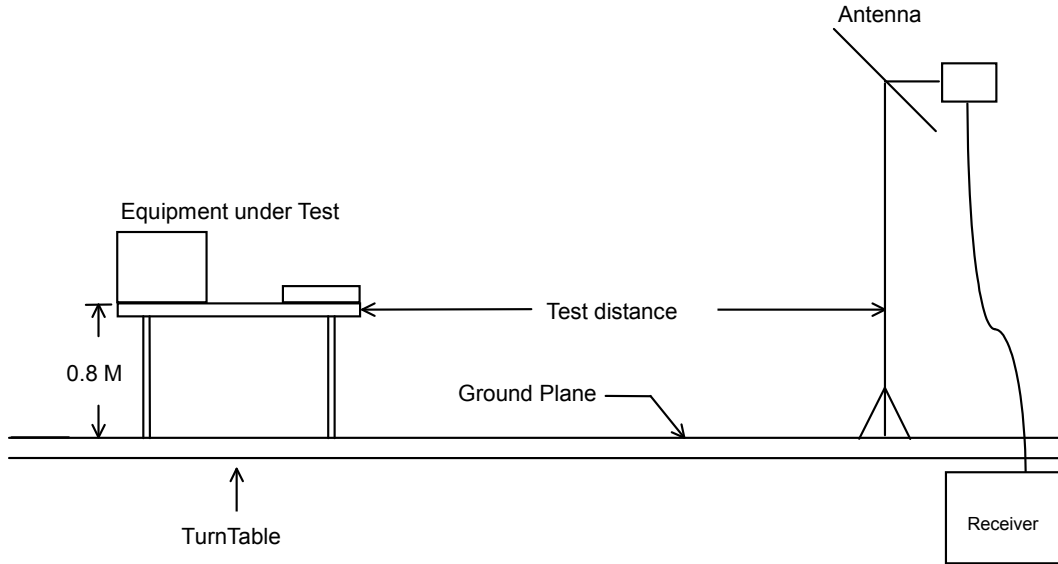
- a. The EUT was placed on a rotatable table top 0.8 meter above ground.
- b. The EUT was set 10 meters from the interference-receiving antenna which was mounted on the top of a variable height antenna tower.
- c. The table was rotated 360 degrees to determine the position of the highest radiation.
- d. The antenna is a half wave dipole and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
- e. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
- f. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.

#### For above 1GHz

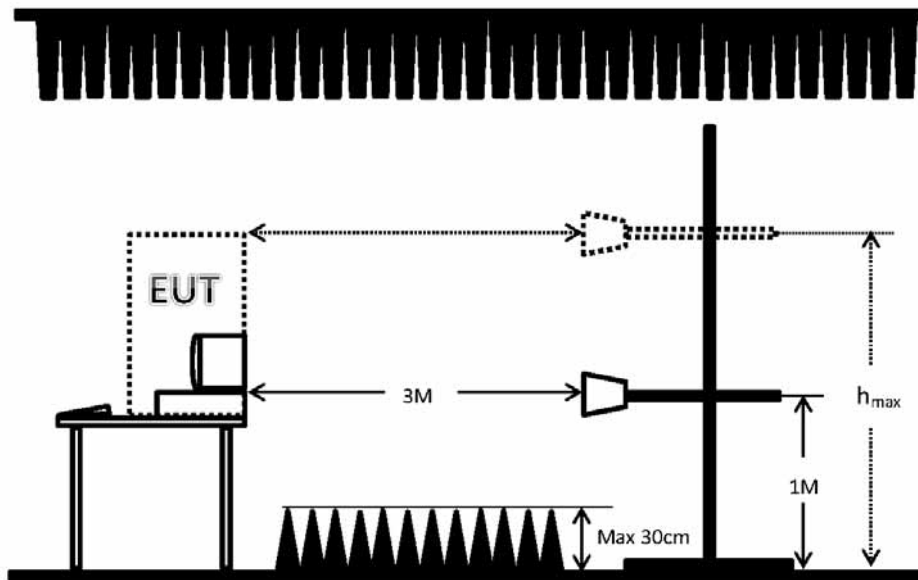
- a. Same test set up as below 1GHz radiated testing.
- b. The EUT was set 3 meters from the interference-receiving antenna which was mounted on the top of a variable height antenna tower.
- c. There should be absorber placed between the EUT and Antenna and its located size should let the test site meet CISPR16-1-4 requirement.
- d. The table was rotated 360 degrees to determine the position of the highest radiation.
- e. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
- f. Set the DRG Horn Antenna (Model: 3115) at 1M height, then run the turn table to get the maximum noise reading from Horizontal and Vertical polarity separately.
- g. When EUT locating on the turn-table, and its height is over 172cm (Antenna's 3dB beam width of 6GHz is  $27^\circ$  ), the DRG Horn Antenna must be raised up and descended down, then turning around the turn-table to get the maximum noise reading of the Horizontal and Vertical polarity separately. Note the maximum raise up height is same as the top of EUT.
- h. If emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

### 6.4. Typical Test Setup Layout of Radiated Emission

For Below 1GHz



For above 1GHz



Remark: When EUT's height is over 172cm,  $h_{max}$  = top of EUT



6.5. Test Result of Radiated Emission for Below 1GHz

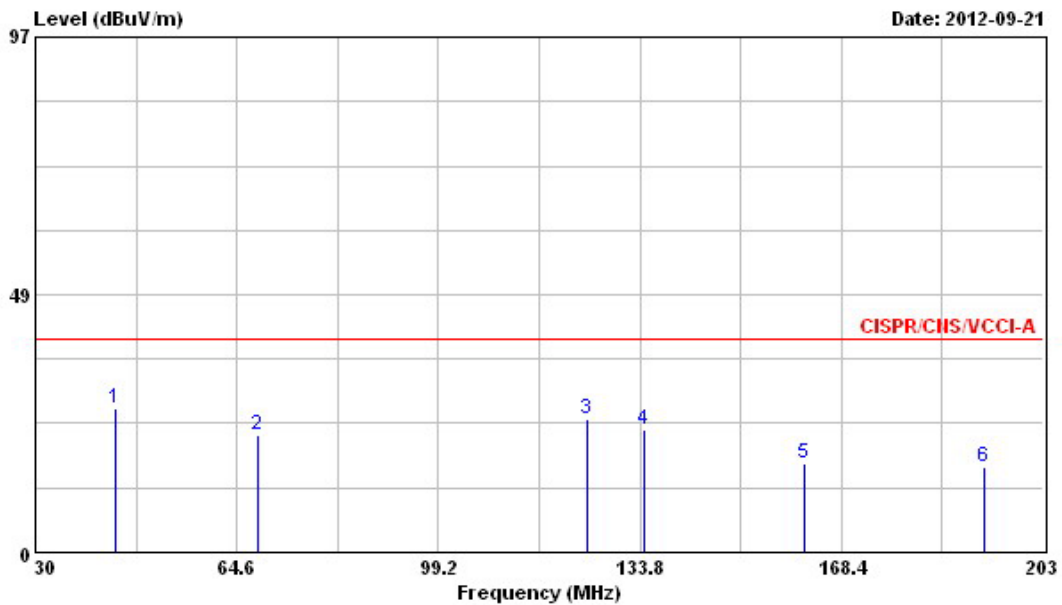
|                |                   |                   |         |
|----------------|-------------------|-------------------|---------|
| Test mode      | Mode 1            | Test Site No.     | OS02-NH |
| Test frequency | 30 MHz ~ 1000 MHz | Test Engineer     | Alan    |
| Temperature    | 25 °C             | Relative Humidity | 50 %    |

Note: 1. Emission level (dB $\mu$ V/m) = 20 log Emission level ( $\mu$ V/m)

2. Corrected Reading : Antenna Factor + Cable Loss + Read Level – Preamp Factor = Level

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

Vertical

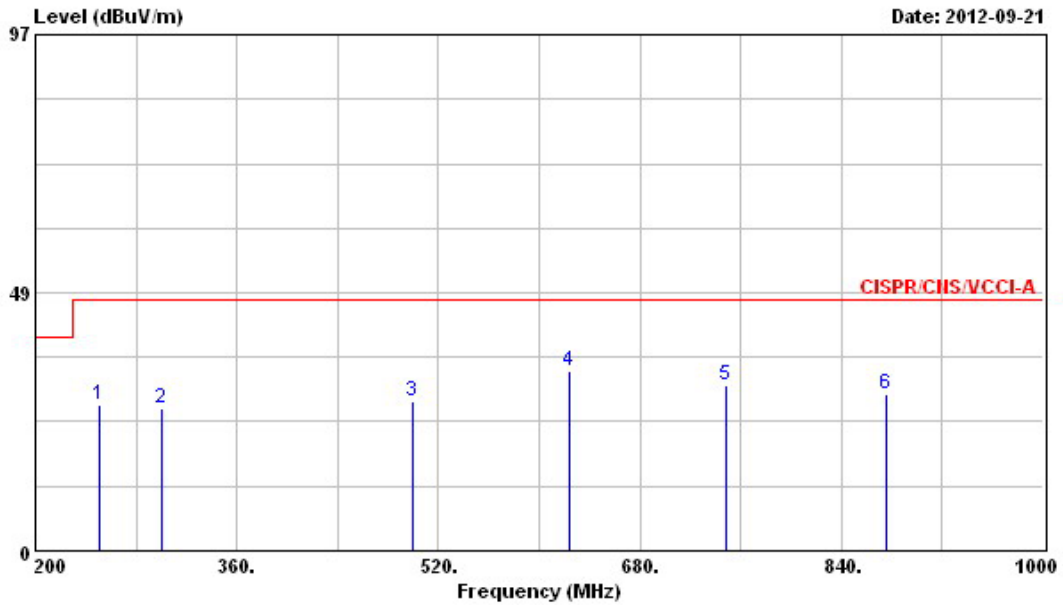


| Freq | Level   | Over Limit | Limit Line | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Remark     | Ant Pos | Table Pos |
|------|---------|------------|------------|------------|----------------|------------|---------------|------------|---------|-----------|
| MHz  | dBUV/m  | dB         | dBUV/m     | dBUV       | dB/m           | dB         | dB            |            | cm      | deg       |
| 1    | 43.840  | 26.99      | -13.01     | 40.00      | 46.09          | 11.62      | 1.08          | 31.80 Peak | ---     | ---       |
| 2    | 68.230  | 22.18      | -17.82     | 40.00      | 46.20          | 6.35       | 1.40          | 31.77 Peak | ---     | ---       |
| 3    | 124.800 | 25.12      | -14.88     | 40.00      | 42.45          | 12.36      | 1.92          | 31.61 Peak | ---     | ---       |
| 4    | 134.490 | 23.24      | -16.76     | 40.00      | 41.49          | 11.36      | 1.98          | 31.59 Peak | ---     | ---       |
| 5    | 162.000 | 16.65      | -23.35     | 40.00      | 35.86          | 10.08      | 2.23          | 31.52 Peak | ---     | ---       |
| 6    | 192.970 | 15.90      | -24.10     | 40.00      | 35.55          | 9.23       | 2.56          | 31.44 Peak | ---     | ---       |





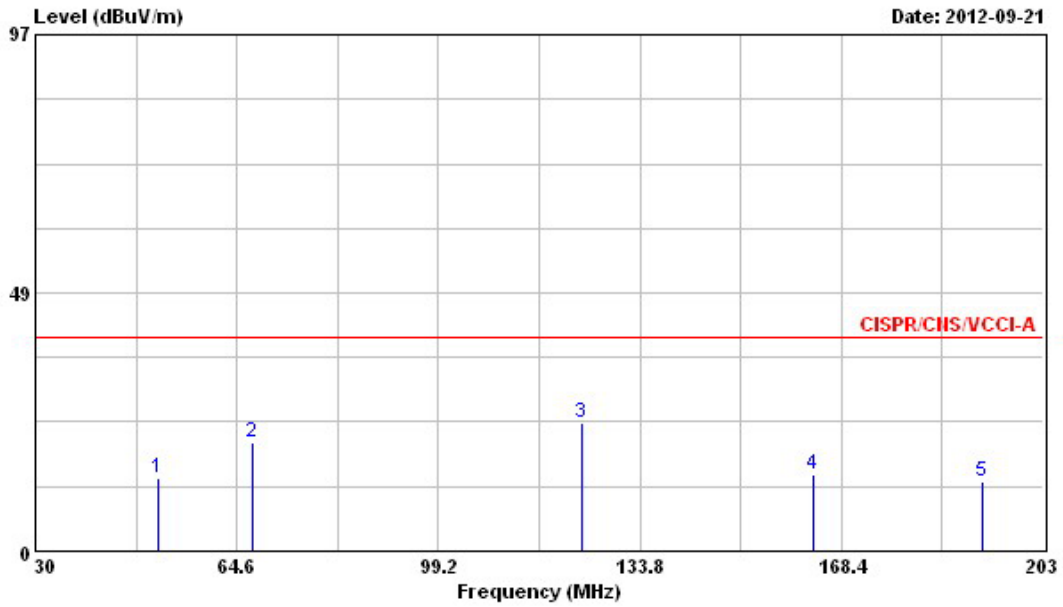
Vertical



|   | Freq    | Level  | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | Ant Pos | Table Pos |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|--------|---------|-----------|
|   | MHz     | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m           | dB         | dB            |        | cm      | deg       |
| 1 | 251.200 | 27.34  | -19.66     | 47.00      | 43.38             | 12.37          | 2.98       | 31.39         | Peak   | ---     | ---       |
| 2 | 300.000 | 26.76  | -20.24     | 47.00      | 41.55             | 13.25          | 3.32       | 31.36         | Peak   | ---     | ---       |
| 3 | 500.000 | 28.03  | -18.97     | 47.00      | 36.94             | 17.57          | 4.84       | 31.32         | Peak   | ---     | ---       |
| 4 | 624.000 | 33.95  | -13.05     | 47.00      | 40.26             | 19.15          | 5.81       | 31.27         | Peak   | ---     | ---       |
| 5 | 748.800 | 31.19  | -15.81     | 47.00      | 35.72             | 19.97          | 6.80       | 31.30         | Peak   | ---     | ---       |
| 6 | 876.000 | 29.34  | -17.66     | 47.00      | 31.24             | 21.38          | 7.95       | 31.23         | Peak   | ---     | ---       |



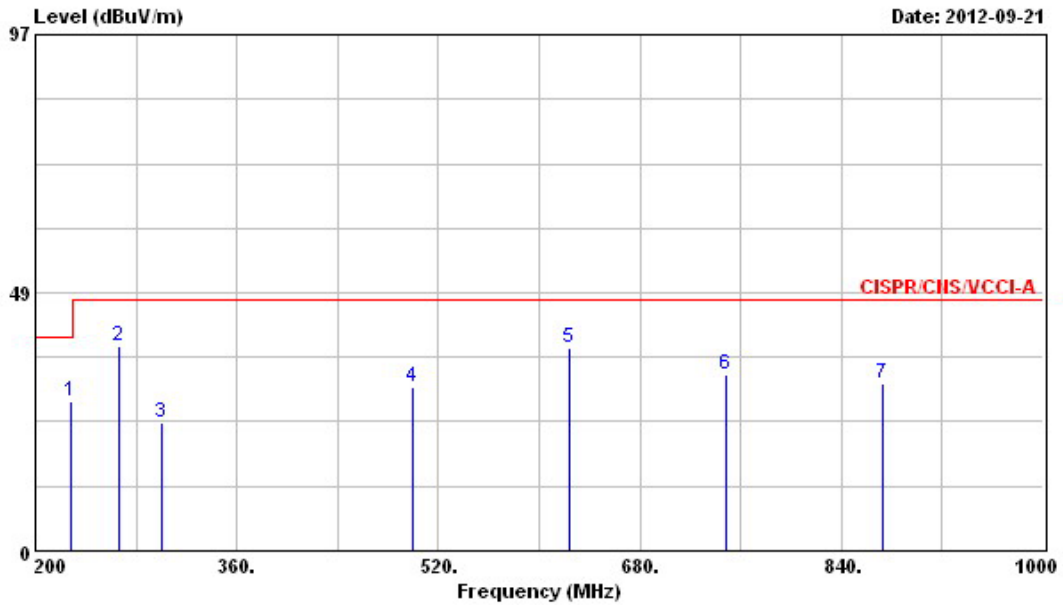
Horizontal



|   | Freq    | Level  | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | Ant Pos | Table Pos |
|---|---------|--------|------------|------------|-------------------|----------------|------------|---------------|--------|---------|-----------|
|   | MHz     | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m           | dB         | dB            |        | cm      | deg       |
| 1 | 51.110  | 13.65  | -26.35     | 40.00      | 36.37             | 7.95           | 1.16       | 31.83         | Peak   | ---     | ---       |
| 2 | 67.370  | 20.54  | -19.46     | 40.00      | 44.57             | 6.35           | 1.40       | 31.78         | Peak   | ---     | ---       |
| 3 | 123.770 | 24.13  | -15.87     | 40.00      | 41.45             | 12.39          | 1.91       | 31.62         | Peak   | ---     | ---       |
| 4 | 163.560 | 14.30  | -25.70     | 40.00      | 33.61             | 9.95           | 2.26       | 31.52         | Peak   | ---     | ---       |
| 5 | 192.620 | 13.06  | -26.94     | 40.00      | 32.71             | 9.23           | 2.56       | 31.44         | Peak   | ---     | ---       |



Horizontal



|   | Freq    | Level  | Over Limit | Limit Line | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Remark | Ant Pos | Table Pos |
|---|---------|--------|------------|------------|------------|----------------|------------|---------------|--------|---------|-----------|
|   | MHz     | dBuV/m | dB         | dBuV/m     | dBuV       | dB/m           | dB         | dB            |        | cm      | deg       |
| 1 | 228.800 | 28.24  | -11.76     | 40.00      | 45.77      | 11.07          | 2.80       | 31.40         | Peak   | ---     | ---       |
| 2 | 266.400 | 38.32  | -8.68      | 47.00      | 53.97      | 12.65          | 3.08       | 31.38         | QP     | 400     | 180       |
| 3 | 300.000 | 24.03  | -22.97     | 47.00      | 38.82      | 13.25          | 3.32       | 31.36         | Peak   | ---     | ---       |
| 4 | 500.000 | 30.76  | -16.24     | 47.00      | 39.67      | 17.57          | 4.84       | 31.32         | Peak   | ---     | ---       |
| 5 | 624.000 | 37.99  | -9.01      | 47.00      | 44.30      | 19.15          | 5.81       | 31.27         | Peak   | ---     | ---       |
| 6 | 748.800 | 32.99  | -14.01     | 47.00      | 37.52      | 19.97          | 6.80       | 31.30         | Peak   | ---     | ---       |
| 7 | 872.800 | 31.53  | -15.47     | 47.00      | 33.50      | 21.35          | 7.92       | 31.24         | Peak   | ---     | ---       |



6.6. Test Result of Radiated Emission for Above 1GHz

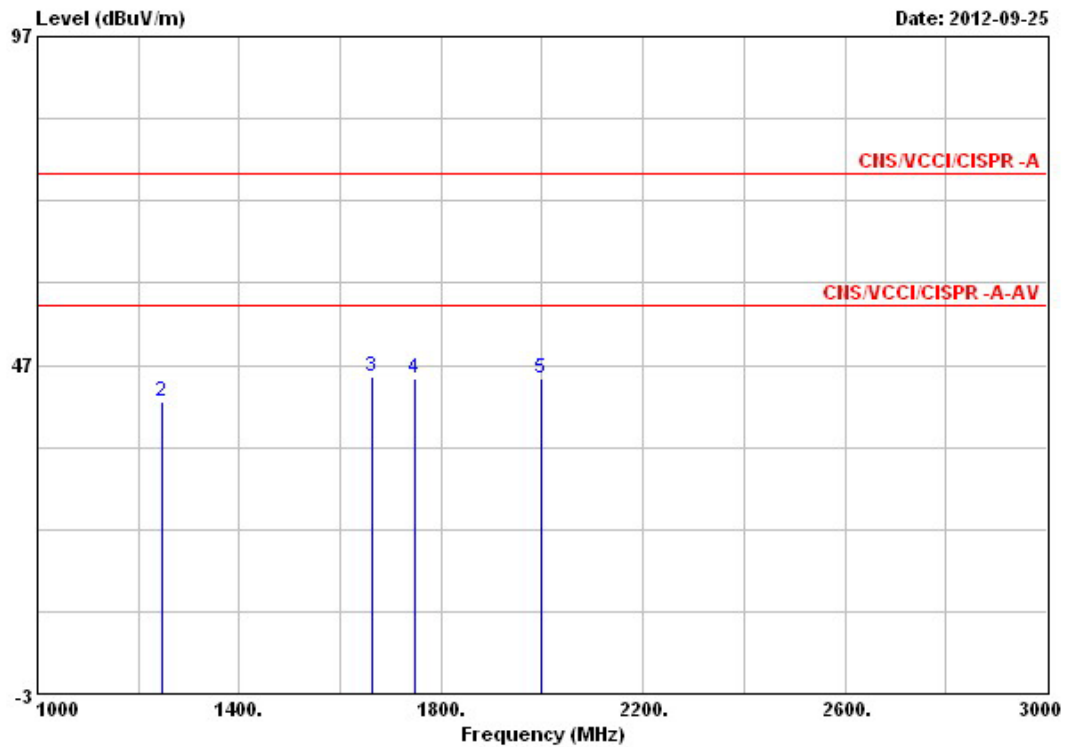
|                |               |                   |           |
|----------------|---------------|-------------------|-----------|
| Test mode      | Mode 1        | Test Site No.     | 10CH02-HY |
| Test frequency | 1 GHz ~ 6 GHz | Test Engineer     | Teddy     |
| Temperature    | 23 °C         | Relative Humidity | 41 %      |

Note: 1. Emission level (dBμV/m) = 20 log Emission level (μV/m)

2. Corrected Reading : Antenna Factor + Cable Loss + Read Level – Preamp Factor = Level

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

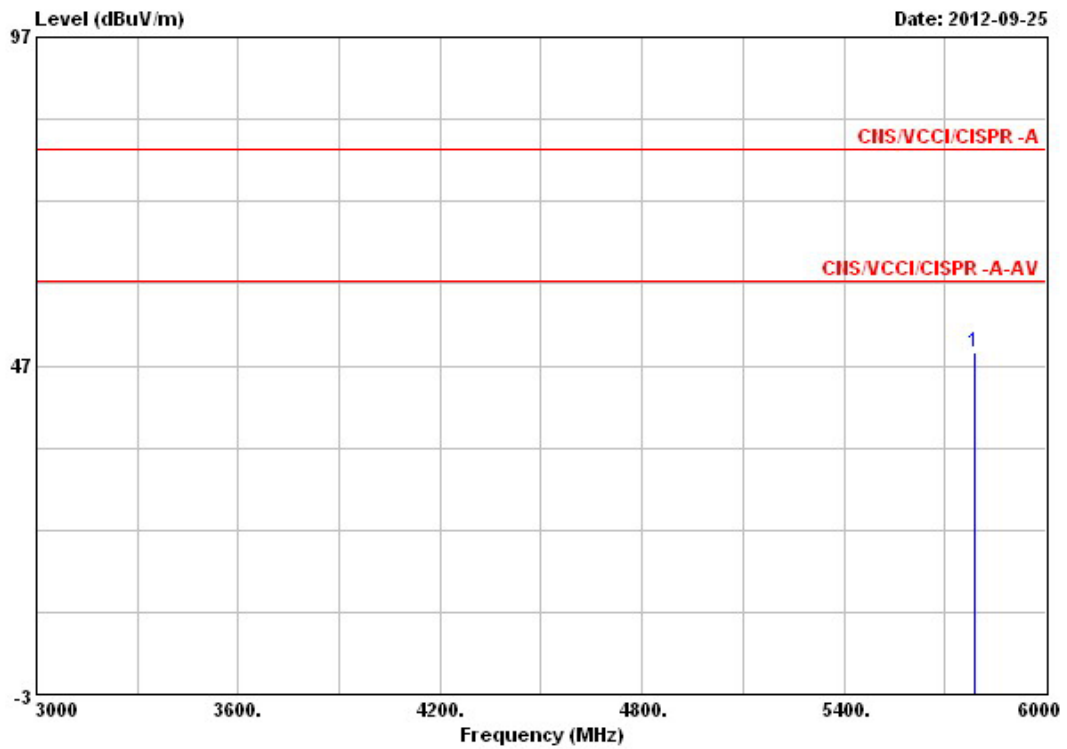
Vertical



|   | Freq     | Level  | Over Limit | Limit Line | Read Level | Preamp Factor | Cable Loss | Antenna Factor | Remark | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|------------|---------------|------------|----------------|--------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV       | dB            | dB         | dB/m           |        | cm      | deg       |
| 1 | 1000.000 | 42.59  | -33.41     | 76.00      | 45.45      | 31.72         | 5.06       | 23.80          | Peak   | ---     | ---       |
| 2 | 1246.000 | 41.53  | -34.47     | 76.00      | 42.62      | 31.14         | 5.62       | 24.43          | Peak   | ---     | ---       |
| 3 | 1662.000 | 45.27  | -30.73     | 76.00      | 43.84      | 30.92         | 6.58       | 25.77          | Peak   | ---     | ---       |
| 4 | 1748.000 | 44.99  | -31.01     | 76.00      | 43.20      | 31.11         | 6.80       | 26.10          | Peak   | ---     | ---       |
| 5 | 1998.000 | 45.02  | -30.98     | 76.00      | 42.13      | 31.68         | 7.47       | 27.10          | Peak   | ---     | ---       |



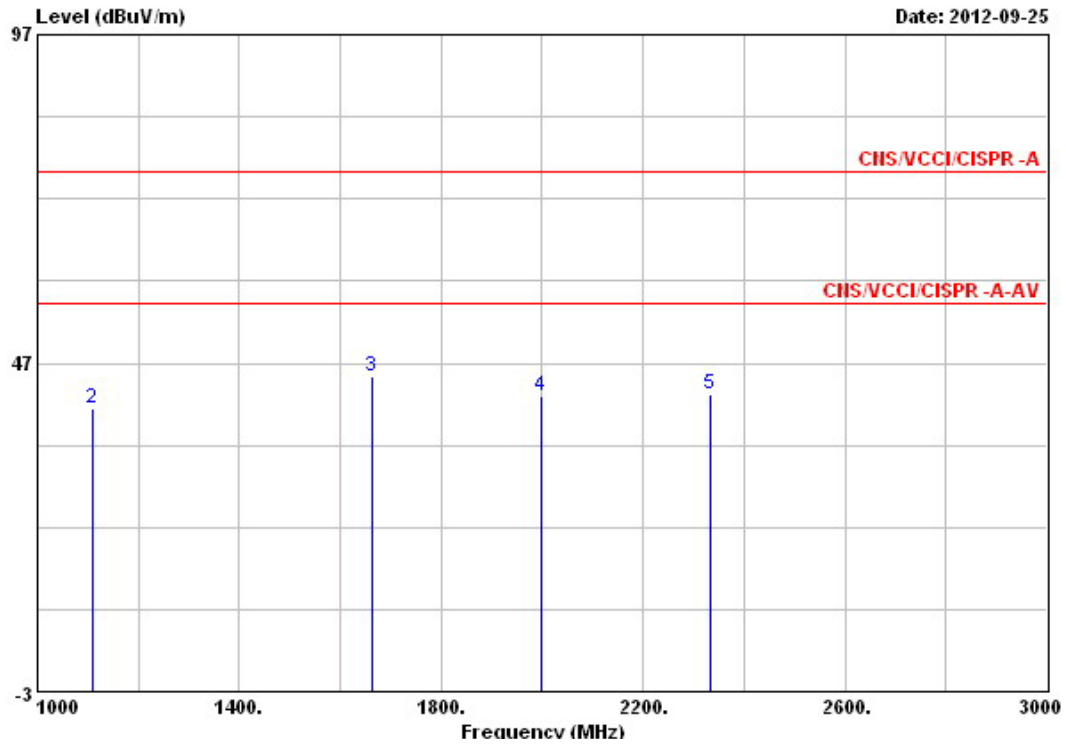
Vertical



|   | Freq     | Level  | Over Limit | Limit Line | Read Level | Preamp Factor | Cable Loss | Antenna Factor | Remark | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|------------|---------------|------------|----------------|--------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV       | dB            | dB         | dB/m           |        | cm      | deg       |
| 1 | 5790.000 | 49.00  | -31.00     | 80.00      | 33.05      | 30.22         | 12.25      | 33.92          | Peak   | ---     | ---       |



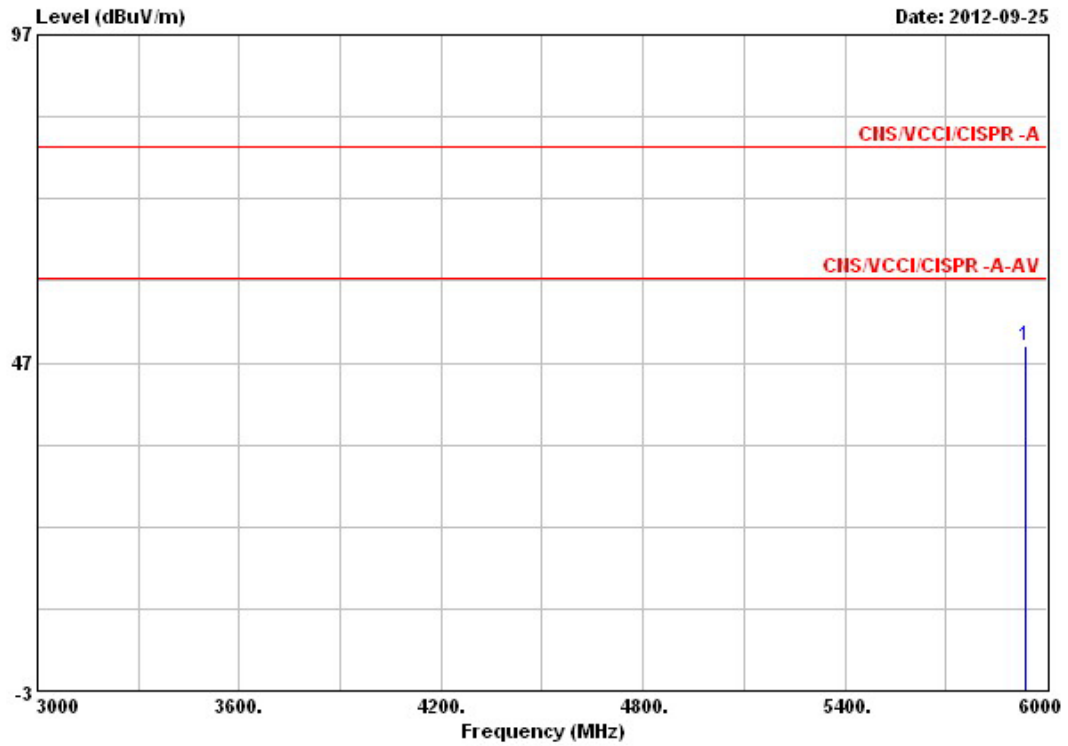
Horizontal



|   | Freq     | Level  | Over Limit | Limit Line | Read Level | Preamp Factor | Cable Loss | Antenna Factor | Remark | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|------------|---------------|------------|----------------|--------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV       | dB            | dB         | dB/m           |        | cm      | deg       |
| 1 | 1000.000 | 42.82  | -33.18     | 76.00      | 45.68      | 31.72         | 5.06       | 23.80          | Peak   | ---     | ---       |
| 2 | 1108.000 | 40.03  | -35.97     | 76.00      | 42.13      | 31.47         | 5.30       | 24.07          | Peak   | ---     | ---       |
| 3 | 1662.000 | 45.01  | -30.99     | 76.00      | 43.58      | 30.92         | 6.58       | 25.77          | Peak   | ---     | ---       |
| 4 | 1998.000 | 41.87  | -34.13     | 76.00      | 38.98      | 31.68         | 7.47       | 27.10          | Peak   | ---     | ---       |
| 5 | 2332.000 | 42.25  | -33.75     | 76.00      | 37.95      | 31.45         | 7.80       | 27.95          | Peak   | ---     | ---       |



Horizontal



| Freq         | Level  | Over Limit | Limit Line | Read Level | Preamp Factor | Cable Loss | Antenna Factor | Remark | Ant Pos | Table Pos |
|--------------|--------|------------|------------|------------|---------------|------------|----------------|--------|---------|-----------|
| MHz          | dBuV/m | dB         | dBuV/m     | dBuV       | dB            | dB         | dB/m           |        | cm      | deg       |
| 1 @ 5937.000 | 49.67  | -30.33     | 80.00      | 33.61      | 30.35         | 12.44      | 33.97          | Peak   | 100     | 0         |

## 7. Photographs of Test Configuration

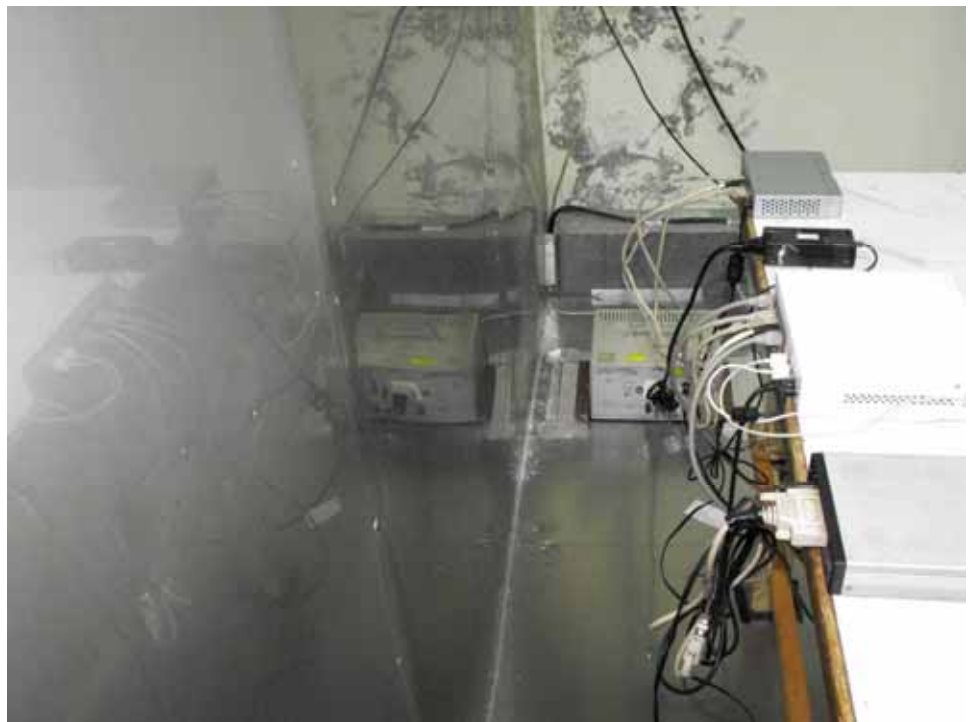
### 7.1. Photographs of AC Powerline Conducted Emissions Test Configuration

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

FRONT VIEW



REAR VIEW





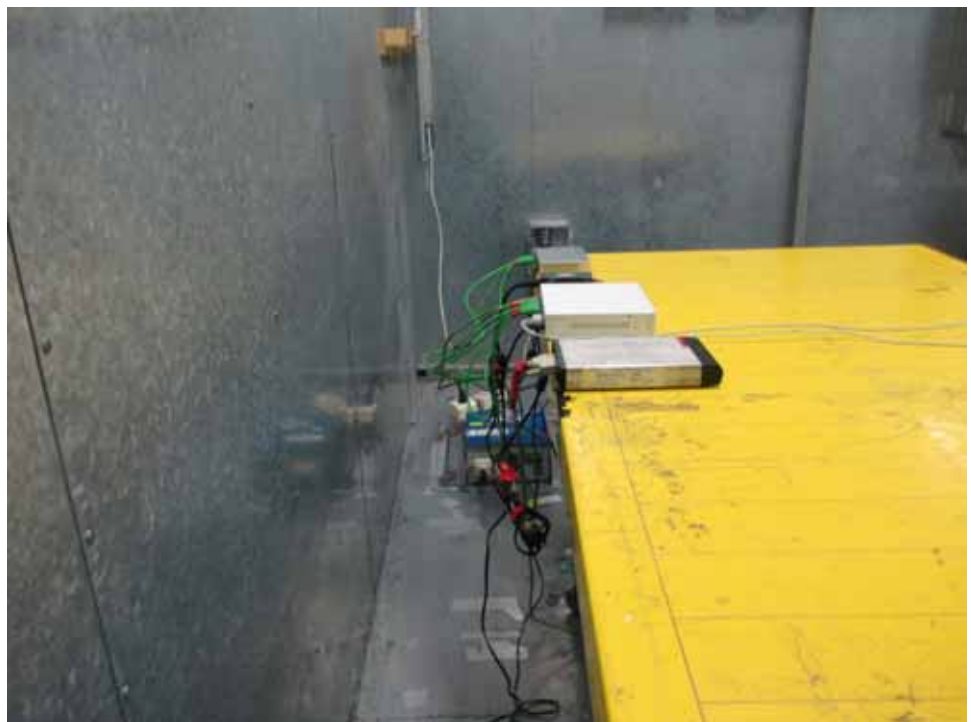
## 7.2. Photographs of Disturbances at Telecommunication ports Test Configuration

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

FRONT VIEW



REAR VIEW



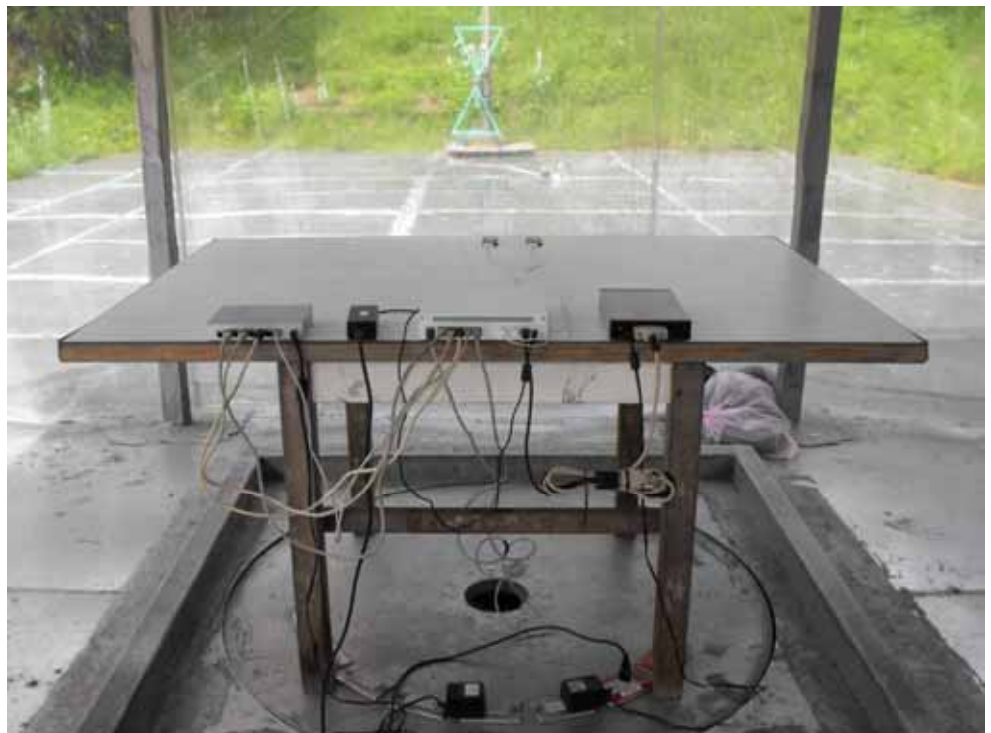
### 7.3. Photographs of Radiated Emissions Test Configuration

- The photographs show the configuration that generates the maximum emission.  
For Below 1GHz

FRONT VIEW

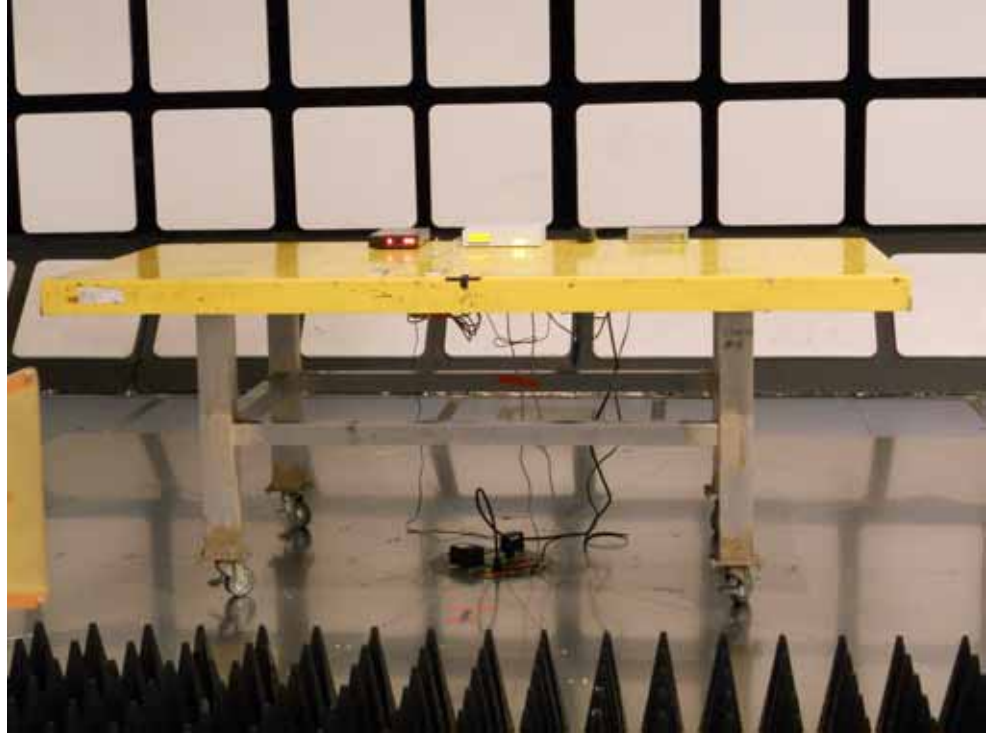


REAR VIEW



- The photographs show the configuration that generates the maximum emission.  
For Above 1GHz

FRONT VIEW



REAR VIEW





## 8. List of Measuring Equipment Used

### Conducted Emission

| Instrument                      | Manufacturer       | Model No. | Serial No.     | Characteristics  | Calibration Date | Remark               |
|---------------------------------|--------------------|-----------|----------------|------------------|------------------|----------------------|
| Test Receiver                   | R&S                | ESCS 30   | 100357         | 9 kHz ~ 2.75 GHz | Nov. 18, 2011    | Conduction (CO01-NH) |
| LISN                            | SCHAFFNER          | NNB41     | 04/10053       | 9 kHz ~ 30 MHz   | Nov. 17, 2011    | Conduction (CO01-NH) |
| Power Filter                    | CORCOM             | MR12030   | N/A            | 30A*2            | N/A              | Conduction (CO01-NH) |
| RF Cable-CON                    | Suhner Switzerland | RG223/U   | CB004          | 9 kHz ~ 30 MHz   | Dec. 13, 2011    | Conduction (CO01-NH) |
| EMC Receiver                    | R&S                | ESCS 30   | 100132         | 9kHz ~ 2.75GHz   | Feb. 08, 2012    | Conduction (CO01-HY) |
| RF Cable-CON                    | HUBER+SUHNER       | RG213/U   | 07611832010001 | 9kHz ~ 30MHz     | Mar. 02, 2012    | Conduction (CO01-HY) |
| Impedance Stabilization Network | TESEQ              | T800      | 23342          | 150kHz ~ 230MHz  | Feb. 16, 2012    | Conduction (CO01-HY) |

Note: Calibration Interval of instruments listed above is one year.

### Radiation Emission Below 1GHz

| Instrument          | Manufacturer | Model No. | Serial No. | Characteristics           | Calibration Date | Remark              |
|---------------------|--------------|-----------|------------|---------------------------|------------------|---------------------|
| Open Area Test Site | SPORTON      | OATS-10   | OS02-NH    | 30 MHz - 1 GHz<br>10m, 3m | Jan. 02, 2012    | Radiation (OS02-NH) |
| Amplifier           | BURGEON      | BPA-530   | 100203     | 0.01 MHz - 3 GHz          | Jun. 01, 2012    | Radiation (OS02-NH) |
| Receiver            | R&S          | ESCI      | 100497     | 9 kHz - 3 GHz             | Apr. 17, 2012    | Radiation (OS02-NH) |
| Bilog Antenna       | CHASE        | CBL6122B  | 2884       | 30 MHz - 2 GHz            | Feb. 11, 2012    | Radiation (OS02-NH) |
| Turn Table          | EMCO         | 2080      | 9508-1805  | 0 - 360 degree            | N/A              | Radiation (OS02-NH) |
| Antenna Mast        | ETS          | 2075-2    | 2385       | 1 m - 4 m                 | N/A              | Radiation (OS02-NH) |
| RF Cable-R10m       | MIYAZAKI     | 5DFB      | CB044      | 30 MHz - 1 GHz            | Sep. 14, 2012    | Radiation (OS02-NH) |

Note: Calibration Interval of instruments listed above is one year.

**Radiation Emission Above 1GHz**

| Instrument                | Manufacturer | Model No.       | Serial No.    | Characteristics     | Calibration Date | Remark                   |
|---------------------------|--------------|-----------------|---------------|---------------------|------------------|--------------------------|
| Amplifier                 | EMCI         | EMC330          | 98007         | 1~8GHz              | May 14, 2012     | Radiation<br>(10CH02-HY) |
| Horn Antenna              | EMCO         | 3115            | 6903          | 1 ~ 8 GHz           | May 04, 2012     | Radiation<br>(10CH02-HY) |
| Receiver                  | R&S          | ESI             | 838496/008    | 20 Hz ~ 7 GHz       | May 14, 2012     | Radiation<br>(10CH02-HY) |
| RF Cable 5M               | SUHNER       | SUCOFLEX<br>104 | SN : 304379/4 | 1 GHz ~ 18 GHz      | Mar. 09, 2012    | Radiation<br>(10CH02-HY) |
| RF Cable 13M              | SUHNER       | SUCOFLEX<br>104 | SN : 16647/4  | 1 GHz ~ 18 GHz      | Mar. 09, 2012    | Radiation<br>(10CH02-HY) |
| 10m Semi Anechoic Chamber | TDK          | SAC-10M         | 10CH02-HY     | 1 GHz ~ 6 GHz<br>3m | May 23, 2012     | Radiation<br>(10CH02-HY) |

Note: Calibration Interval of instruments listed above is one year.



## 9. Certificate of VCCI

|   |   |
|---|---|
|    | <br>VCCI Council |
| <h1>CERTIFICATE</h1>  |   |
| Company: SPORTON INTERNATIONAL INC.<br><Member No. 466 >  |   |
| Facility: CO01-NH<br>(Mains Ports Conducted Interference Measurement)   |   |
| Location of Facility:<br>No.3, Lane 238, Kang Lo Street, Nei Hwu District, Taipei,<br>11424 Taiwan  |   |
| <i>This is to certify that the following measuring facility<br/>has been registered in accordance with the Rules<br/>for Voluntary Control Measures</i> |   |
| Registration No.: C-247<br>Date of Registration: October 01 , 2011<br>This Certificate is valid until September 30 , 2014                               |   |
| <br>VCCI Council   |   |
|    |                |

  
VCCI

  
VCCI Council

## CERTIFICATE

Company: Sporton International Inc.  
<Member No. 466 >

Facility: Hwa Ya Conducted Test Site CO01-HY  
(Telecommunication Ports Conducted Interference Measurement)

Location of Facility:  
No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiag, Tao Yuan Hsien Taiwan

*This is to certify that the following measuring facility  
has been registered in accordance with the Rules  
for Voluntary Control Measures*

Registration No.: T-1731  
Date of Registration: February 09 , 2010  
This Certificate is valid until February 08 , 2013

VCCI Council



  
VCCI

  
VCCI

|   |   |
|---|---|
|    | <br>VCCI Council |
| <h1>CERTIFICATE</h1>  |   |
| Company: Sporton International Inc.<br><Member No. 466 >  |   |
| Facility: Nei-Hwu OS02-NH Test Site<br>(Radiation 10 meter site)  |   |
| Location of Facility:<br>No.3, Lane 238, Kang Lo St., Nei Hwu District, Taipei,<br>Taiwan   |   |
| <i>This is to certify that the following measuring facility<br/>has been registered in accordance with the Rules<br/>for Voluntary Control Measures</i> |   |
| Registration No.: R-1906  |   |
| Date of Registration: May 19 , 2010   |   |
| This Certificate is valid until May 18 , 2013   |   |
| VCCI Council   |   |
|    |                |





  
VCCI Council

## CERTIFICATE

Company: Sporton International Inc.  
 <Member No. 466 >

Facility: Hwa Ya 10CH02-HY 10m Chamber  
 (Facility for measuring radiated disturbance above 1GHz)

Measurement Distance: 3 m      Upper frequency validated: 6 GHz  
 Test Volume: Diameter 2 m,  
 Height (Top, Bottom): ( 2 m, 0 m)

Location of Facility:  
 No.52, Hwa Ya 1st Rd., Hwa Ya Technology  
 Park, Kwei-Shan Hsiag, Tao Yuan Hsien Taiwan

*This is to certify that the following measuring facility  
 has been registered in accordance with the Rules  
 for Voluntary Control Measures*

Registration No.: G-126  
 Date of Registration: February 09 , 2010  
 This Certificate is valid until February 08 , 2013

  
VCCI Council





APPENDIX A. Photographs of EUT





