



**Neutron Engineering Inc.**

# FCC Test Report

**FCC ID: YVR-AW-NU120**

**Issued Date** : Nov. 29, 2010

**Project No.** : R1010004

**Equipment** : Dongle

**Model Name** : AW-NU120

**Applicant** : Lumens Digital Optics Inc.

**Address** : 5F, No. 35, Sintai Rd., Jhubei City,  
Hsinchu County 302, Taiwan

**Tested by:** Neutron Engineering Inc. EMC Laboratory

**Date of Receipt:** Oct. 08, 2010

**Date of Test:** Oct. 08, 2010 ~ Dec. 21, 2010

**Testing Engineer:** Peter Li  
(Peter Li)

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### **Declaration**

**Neutron** represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with the standards traceable to National Measurement Laboratory (**NML**) of **R.O.C.**, or National Institute of Standards and Technology (**NIST**) of **U.S.A.**

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## **1. CERTIFICATION**

Equipment : Dongle  
Brand Name : Lumens  
Model Name : AW-NU120  
Applicant : Lumens Digital Optics Inc.  
Date of Test : Oct. 08, 2010 ~ Dec. 21, 2010  
Standards : FCC Part 15, Subpart B Class B  
CISPR 22: 2005 +A1: 2005 Class B  
ICES-003: 2004 Class B  
ANSI C63.4 (2003)

The above equipment has been tested and found compliance with the requirement of the relative standards by Neutron Engineering Inc. EMC Laboratory.

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. NEI-FCCE-2-R1010004) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of NVLAP and TAF according to the ISO-17025 quality assessment standard and technical standard(s).



## 2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

Emission				
Standard	Test Item	Limit	Judgment	Remark
FCC Part 15, Subpart B CISPR 22: 2005 +A1: 2005 ICES-003: 2004	Conducted Emission	Class B	PASS	
	Radiated Emission	Class B	PASS	

### NOTE:

(1) " N/A" denotes test is not applicable in this Test Report.



## 2.1 TEST FACILITY

The test facilities used to collect the test data in this report:

- C01:** (VCCI RN: C-2918; T-1666)  
No.132-1, Lane 329, Sec. 2, Palian Road, Shijr City, Taipei, Taiwan.
- CB08:** (VCCI RN: G-91; FCC RN: 614388; IC Assigned Code: 4428C-1)  
1F., No. 61, Ln. 77, Sing-ai Rd., Neihs Dist., Taipei City 114, Taiwan (R.O.C.)
- OS02:** (VCCI RN: R-2669)  
No.132-1, Lane 329, Sec. 2, Palian Road, Shijr City, Taipei, Taiwan.

## 2.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $y \pm U$ , where expanded uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately **95%**.

The measurement instrumentation uncertainty considerations contained in CISPR 16-4-2.

A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U , (dB)	NOTE
C01	ANSI	150 kHz ~ 30 MHz	1.94	

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U , (dB)	NOTE
OS-01	ANSI	30 MHz ~ 200 MHz	V	2.86	
		30 MHz ~ 200 MHz	H	2.56	
		200 MHz ~ 1, 000 MHz	V	2.88	
		200 MHz ~ 1, 000 MHz	H	2.98	
OS-02	ANSI	30 MHz ~ 200 MHz	V	2.48	
		30 MHz ~ 200 MHz	H	2.16	
		200 MHz ~ 1, 000 MHz	V	2.50	
		200 MHz ~ 1, 000 MHz	H	2.66	

Test Site	Item	Measurement Frequency Range	Uncertainty	NOTE
CB08	Radiated Emission at 3m	Horizontal Polarization	30 - 200MHz	3.35 dB
			200 - 1000MHz	3.11 dB
			1 - 18GHz	3.97 dB
			18 - 40GHz	4.01 dB
		Vertical Polarization	30 - 200MHz	3.22 dB
			200 - 1000MHz	3.24 dB
			1 - 18GHz	4.05 dB
			18 - 40GHz	4.04 dB

Our calculated Measurement Instrumentation Uncertainty is shown in the tables above. These are our  $U_{lab}$  values in CISPR 16-4-2 terminology.

Since Table 1 of CISPR 16-4-2 has values of measurement instrumentation uncertainty, called  $U_{CISPR}$ , as follows:

Conducted Disturbance (mains port) – 150 kHz – 30 MHz : 3.6 dB

Radiated Disturbance (electric field strength on an open area test site or alternative test site) – 30 MHz – 1000 MHz : 5.2 dB

It can be seen that our  $U_{lab}$  values are smaller than  $U_{CISPR}$ .



### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

Equipment	Dongle
Brand Name	Lumens
Model Name	AW-NU120
OEM Brand/Model Name	N/A
Model Difference	N/A
Product Description	The EUT is a Dongle.
	Operation Frequency: 2412~2462 MHz
	Modulation Type: 802.11b:CCK, DQPSK, DBPSK 802.11g:OFDM 802.11n:OFDM( 1 TX & 2 RX )
	Bit Rate of Transmitter: 802.11b: 11/5.5/2/1 Mbps 802.11g: 54/48/36/24/18/12/9/6 Mbps 802.11n up to 300 Mbps
	Number Of Channel: Please see Note 2.
	Antenna Designation: Please see Note 3.
	Antenna Gain(Peak): Please see Note 3.
	Peak Output Power(Max): 802.11b: 19.87 dBm Max. 802.11g: 23.35 dBm Max. 802.11n(20MHz): 21.87 dBm Max. 802.11n(40MHz): 21.32 dBm Max.
	Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.
Power Source	Supplied from PC USB port.
Power Rating	I/P: DC 5V
Connecting I/O Port(s)	Please refer to the User's Manual
Products Covered	N/A
EUT Modification(s)	N/A



**Note:**

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2. CH 01 – CH 11 for 802.11b, 802.11g, 802.11n(20MHz)  
CH 03 – CH 09 for 802.11n(40MHz)

Channel List					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
<b>01</b>	<b>2412</b>	05	2432	<b>09</b>	<b>2452</b>
02	2417	<b>06</b>	<b>2437</b>	10	2457
<b>03</b>	<b>2422</b>	07	2442	<b>11</b>	<b>2462</b>
04	2427	08	2447		

3. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	Printed	N/A	2.05

4. The EUT incorporates MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R)

Modulated type	TX Function
802.11b	1TX
802.11g	1TX
Draft 802.11n(20MHz)	1TX
Draft 802.11n(40MHz)	1TX

5. This report ONLY covers EUT RX function. Its TX function testing is covered in another test report: NEI-FCCP-1-R1010004.





### 3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

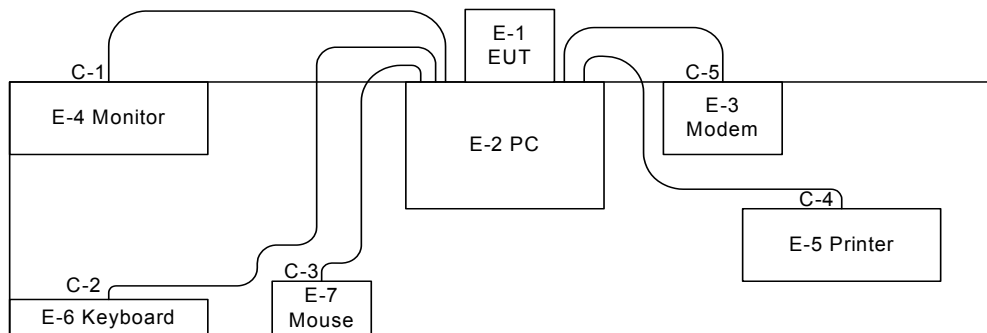
Pretest Test Mode	Description
Mode 1	NORMAL OPERATION

For Conducted Test	
Final Test Mode	Description
Mode 1	NORMAL OPERATION

For Radiated Test	
Final Test Mode	Description
Mode 1	NORMAL OPERATION



### 3.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



C-1 D-SUB Cable  
C-2 PS/2 Cable  
C-3 PS/2 Cable  
C-4 USB Cable  
C-5 RS232 Cable



### 3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
E-1	Dongle	Lumens	AW-NU120	YVR-AW-NU120	N/A	EUT
E-2	PC	DELL	MVT01	DOC	4GCTR18	
E-3	Modem	Intel	PCFM6501	EJMPCFM6501	306925-002	
E-4	24" LCD Monitor	DELL	2408WFPb	DOC	071863-11	
E-5	Printer	HP	C9025A	DOC	TH4B013021	
E-6	PS/2 K/B	Logitech	Y-SJ17(ACK260A)	DOC	SYU44664880	
E-7	PS/2 Mouse	Logitech	M-SBF69	DOC	HCA44601156	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	YES	YES	1.8M	
C-2	YES	NO	1.5M	
C-3	YES	NO	1.7M	
C-4	YES	NO	1.7M	
C-5	YES	NO	1.7M	
C-1	YES	YES	1.8M	

**Note:**

- (1) The support equipment was authorized by Declaration of Conformity.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.



## 4. EMC EMISSION TEST

### 4.1 CONDUCTED EMISSION MEASUREMENT

#### 4.1.1 POWER LINE CONDUCTED EMISSION (FREQUENCY RANGE 150 KHZ-30MHZ)

FREQUENCY ( MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	60.00	50.00

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " \* " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.
- (3) The test result calculated as following:  
 Measurement Value = Reading Level + Correct Factor  
 Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor(if use)  
 Margin Level = Measurement Value – Limit Value

#### 4.1.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	LISN	EMCO	3816/2	00042991	Feb. 07, 2011
2	Test Cable	TIMES	LMR-400	SR03_C_01& 02	Aug. 20, 2011
3	Pulse Limiter	Electro-Metrics	EM-7600	112644	Dec. 27, 2010
4	EMI Test Receiver	R&S	ESCI	100082	Mar. 16, 2011
5	50Ω BNC TYPE Terminator	N/A	N/A	01	May 25, 2011
6	50Ω BNC TYPE Terminator	N/A	N/A	03	May 25, 2011
7	LISN	EMCO	4825/2	00028234	Jul. 22, 2011

Remark: " N/A" denotes No Model Name , Serial No. or No Calibration specified.

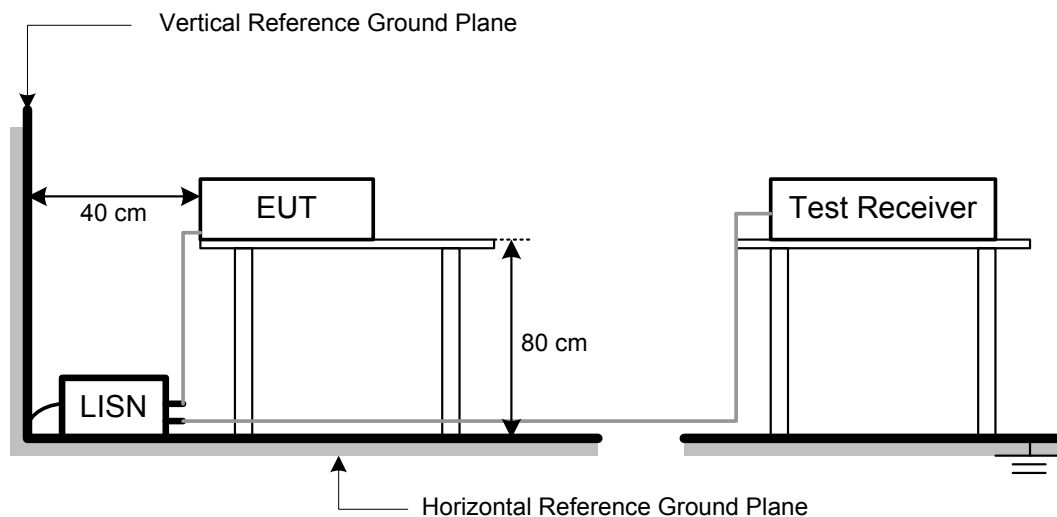
#### 4.1.3 TEST PROCEDURE

- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

#### 4.1.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.1.5 TEST SETUP





#### **4.1.6 EUT OPERATING CONDITIONS**

The EUT exercise program (EMC.exe) used during radiated and/or conducted emission measurement was designed to exercise the various system components in a manner similar to a typical use. The program contained on a PC hard disk and is auto-starting on power-up. Once loaded, the program sequentially exercises each system component in turn. The sequence used is:

1. Read (write) from (to) mass storage device (Disk).
2. Send "H" pattern to video port device (Monitor).
3. Send " H " pattern to USB port device (Printer).
4. Send " H " pattern to serial port device (Modem).
5. Receive data from remote system by wireless (EUT – remote system).
6. Repeated from 2 to 6 continuously.

As the keyboard and mouse are strictly input devices, no data is transmitted to (from) them during test. They are, however, continuously scanned for data input activity.



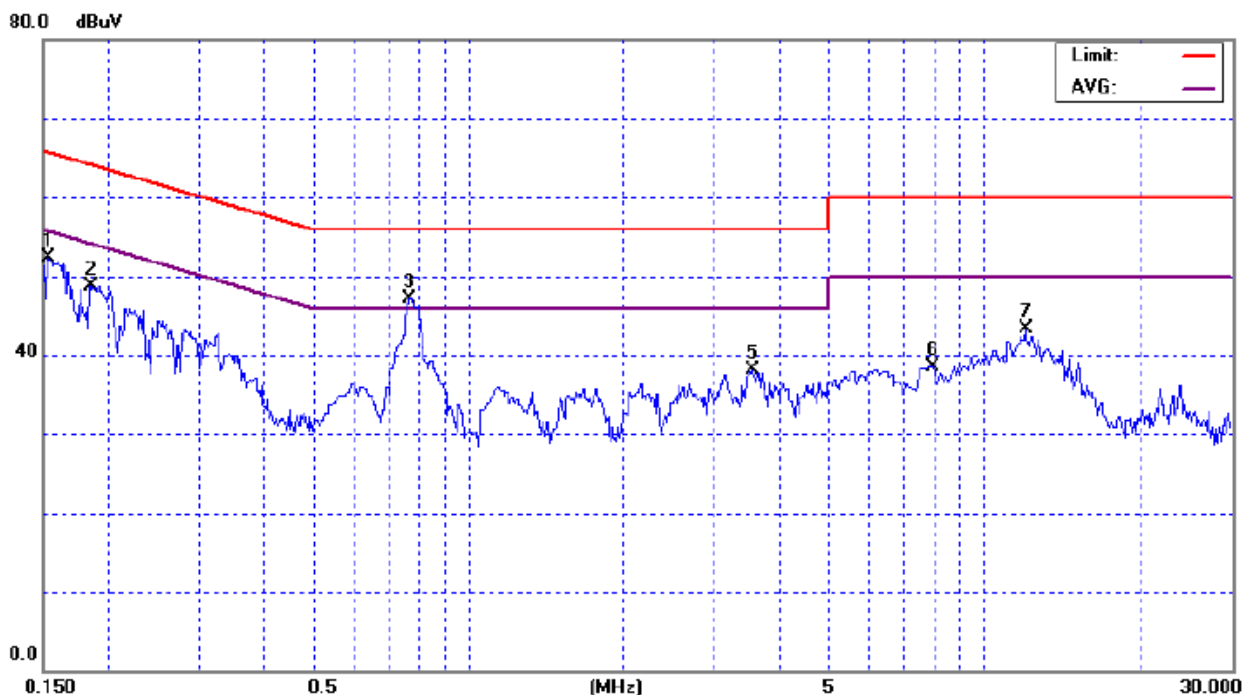
#### 4.1.7 TEST RESULTS

EUT :	Dongle	Model Name :	AW-NU120
Temperature :	24 °C	Relative Humidity :	42%
Test Voltage :	AC 120V/60Hz (System)		
Test Mode :	NORMAL OPERATION		

Freq. (MHz)	Terminal L/N	Reading Level(dBuV)		Correct Factor(dB)	Measurement(dBuV)		Limit(dBuV)		Margin (dB)	Note
		QP-Mode	AV-Mode		QP-Mode	AV-Mode	QP-Mode	AV-Mode		
0.1528	Line	42.51	*	9.72	52.23	*	65.85	55.85	-13.62	(QP)
0.1850	Line	39.07	*	9.71	48.78	*	64.26	54.26	-15.48	(QP)
0.7711	Line	37.40	25.70	9.64	47.04	35.34	56.00	46.00	-8.96	(QP)
3.5600	Line	28.37	*	9.65	38.02	*	56.00	46.00	-17.98	(QP)
7.9500	Line	28.67	*	9.85	38.52	*	60.00	50.00	-21.48	(QP)
12.0500	Line	33.38	*	9.98	43.36	*	60.00	50.00	-16.64	(QP)

#### Remark:

- (1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9 kHz; SPA setting in RBW=10 kHz, VBW =10 kHz, Swp. Time = 0.2 sec./ MHz. Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=10 kHz, VBW=10 kHz, Swp. Time =0.2 sec./ MHz.
- (2) All readings are QP Mode value unless otherwise stated AVG in column of Note. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform. In this case, a " \* " marked in AVG Mode column of Interference Voltage Measured.
- (3) In the "Note" column, QP means the margin value of QP is higher than Average and the "Margin" column shows the margin value of QP; AV means the margin value of Average is higher than QP and the "Margin" column shows the margin value of Average.



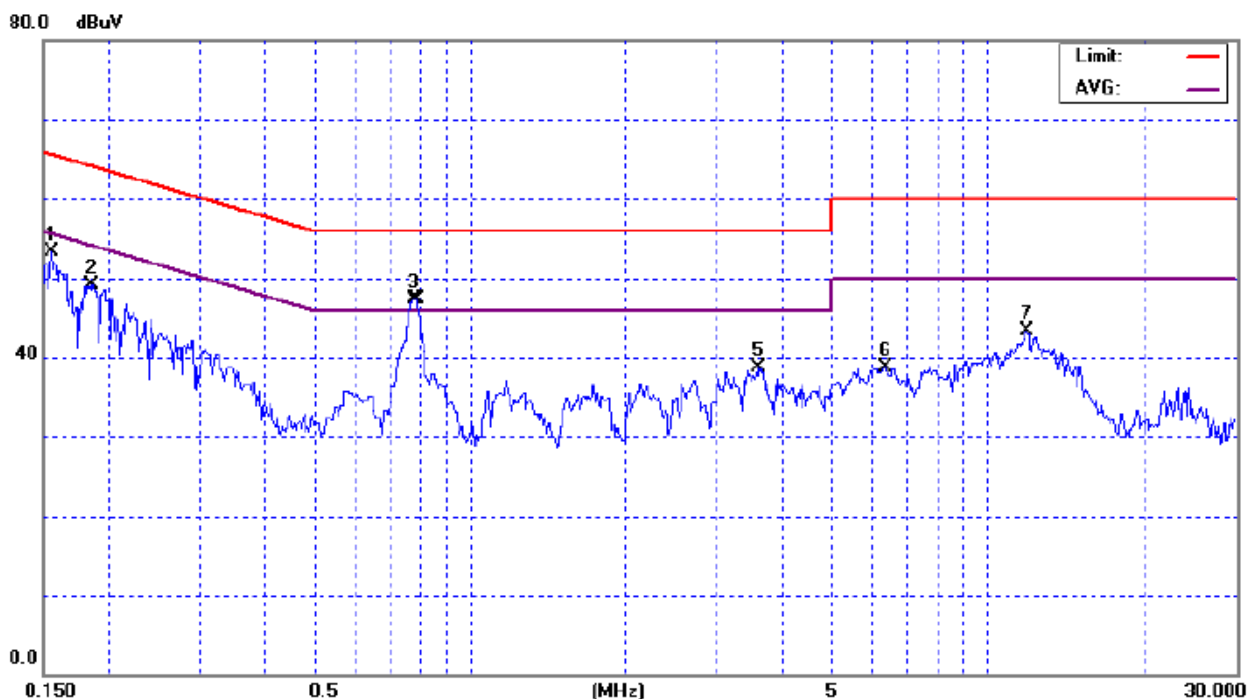


EUT :	Dongle	Model Name :	AW-NU120
Temperature :	24 °C	Relative Humidity :	42%
Test Voltage :	AC 120V/60Hz (System)		
Test Mode :	NORMAL OPERATION		

Freq. (MHz)	Terminal L/N	Reading Level(dBuV)		Correct Factor(dB)	Measurement(dBuV)		Limit(dBuV)		Margin (dB)	Note
		QP-Mode	AV-Mode		QP-Mode	AV-Mode	QP-Mode	AV-Mode		
0.1556	Neutral	43.65	*	9.74	53.39	*	65.70	55.70	-12.31	(QP)
0.1864	Neutral	39.28	*	9.75	49.03	*	64.20	54.20	-15.17	(QP)
0.7793	Neutral	37.55	25.30	9.68	47.23	34.98	56.00	46.00	-8.77	(QP)
3.5960	Neutral	29.05	*	9.73	38.78	*	56.00	46.00	-17.22	(QP)
6.3500	Neutral	28.83	*	9.87	38.70	*	60.00	50.00	-21.30	(QP)
11.9000	Neutral	33.17	*	10.08	43.25	*	60.00	50.00	-16.75	(QP)

**Remark:**

- (1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9 kHz; SPA setting in RBW=10 kHz, VBW =10 kHz, Swp. Time = 0.2 sec./ MHz. Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=10 kHz, VBW=10 kHz, Swp. Time =0.2 sec./ MHz.
- (2) All readings are QP Mode value unless otherwise stated AVG in column of Note. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform. In this case, a " \*" marked in AVG Mode column of Interference Voltage Measured.
- (3) In the "Note" column, QP means the margin value of QP is higher than Average and the "Margin" column shows the margin value of QP; AV means the margin value of Average is higher than QP and the "Margin" column shows the margin value of Average.







## 4.2 RADIATED EMISSION MEASUREMENT

### 4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT (BELOW 1000 MHZ)

FREQUENCY ( MHz)	Class A (at 10m)	Class B (at 10m)
	dBuV/m	dBuV/m
30 – 230	40	30
230 – 1000	47	37

Notes:

- (1) The limit for radiated test was performed according to as following:  
CISPR 22/ FCC PART 15B /ICES-003.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).
- (4) The test result calculated as following:  
 Measurement Value = Reading Level + Correct Factor  
 Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain(if use)  
 Margin Level = Measurement Value – Limit Value

### LIMITS OF RADIATED EMISSION MEASUREMENT (ABOVE 1000MHZ)

FREQUENCY (MHz)	Class A (dBuV/m) (at 3m)		Class B (dBuV/m) (at 3m)	
	PEAK	AVERAGE	PEAK	AVERAGE
Above 1000	80	60	74	54

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15B.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).
- (4) The test result calculated as following:  
 Measurement Value = Reading Level + Correct Factor  
 Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain(if use)  
 Margin Level = Measurement Value – Limit Value

### FREQUENCY RANGE OF RADIATED MEASUREMENT (FOR UNINTENTIONAL RADIATORS)

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz)	Range (MHz)
Below 1.705	30
1.705 – 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5 <sup>th</sup> harmonic of the highest frequency or 40 GHz, whichever is lower



#### 4.2.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Log-Bicon Antenna	Schwarzbeck	VULB 9160	3173	Oct. 14, 2011
2	Pre-Amplifier	Anritsu	MH648A	M98457	Jan. 18, 2011
3	Test Cable	TIMES	LMR-400	10M-OS01	Jun. 17, 2011
4	Test Cable	TIMES	LMR-400	OS02	Jun. 17, 2011
5	EMI Test Receiver	R&S	ESCI	100082	Mar. 16, 2011
6	System Controller (OS02)	CT	SC100	N/A	N/A
7	Turn Table	Chance Most	CMTB-1.5	N/A	N/A
8	Microwave Pre amplifier	Agilent	8449B	3008A01714	Apr. 19, 2011
9	Microflex Cable	HARBOUR INDUSTRIES	27478 LL142	1m	May. 19, 2011
10	Microflex Cable	AISI	S104-SMAP-1	10m	Aug. 22, 2011
11	Microflex Cable	HARBOUR INDUSTRIES	27478 LL142	3m	Aug. 22, 2011
12	Spectrum Analyzer	R&S	FSP-40	100129	Aug. 31, 2011
13	Horn Antenna (1G)	Schwarzbeck	BBHA 9120 D	9120D-325	Dec. 14, 2011

Remark: " N/A " denotes No Model Name / Serial No. and No Calibration specified.

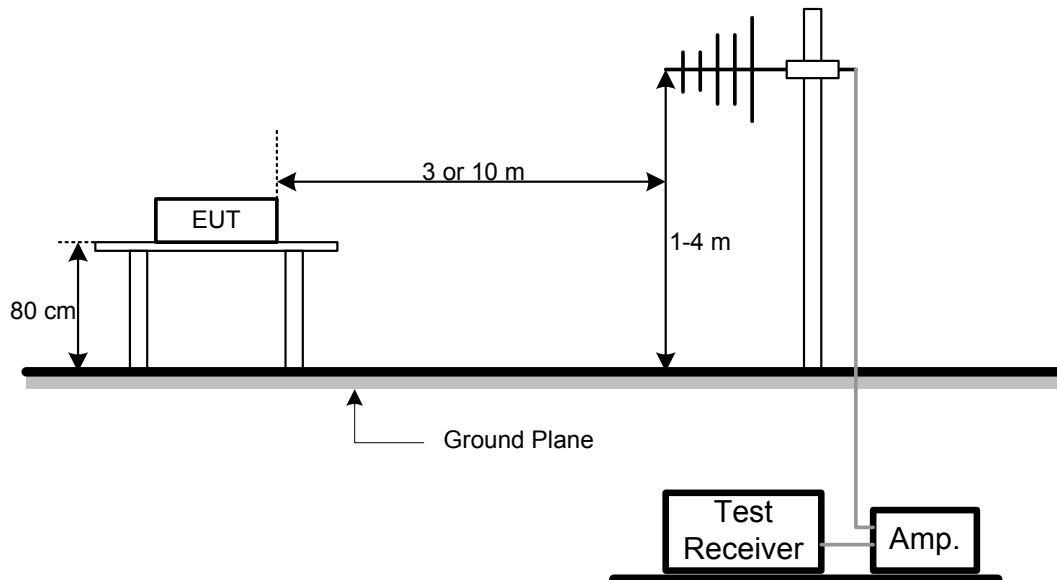
#### 4.2.3 TEST PROCEDURE

- The measuring distance of at 10 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m or 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- The initial step in collecting radiated emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

#### 4.2.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.2.5 TEST SETUP



#### 4.2.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **4.1.6** Unless otherwise a special operating condition is specified in the follows during the testing.



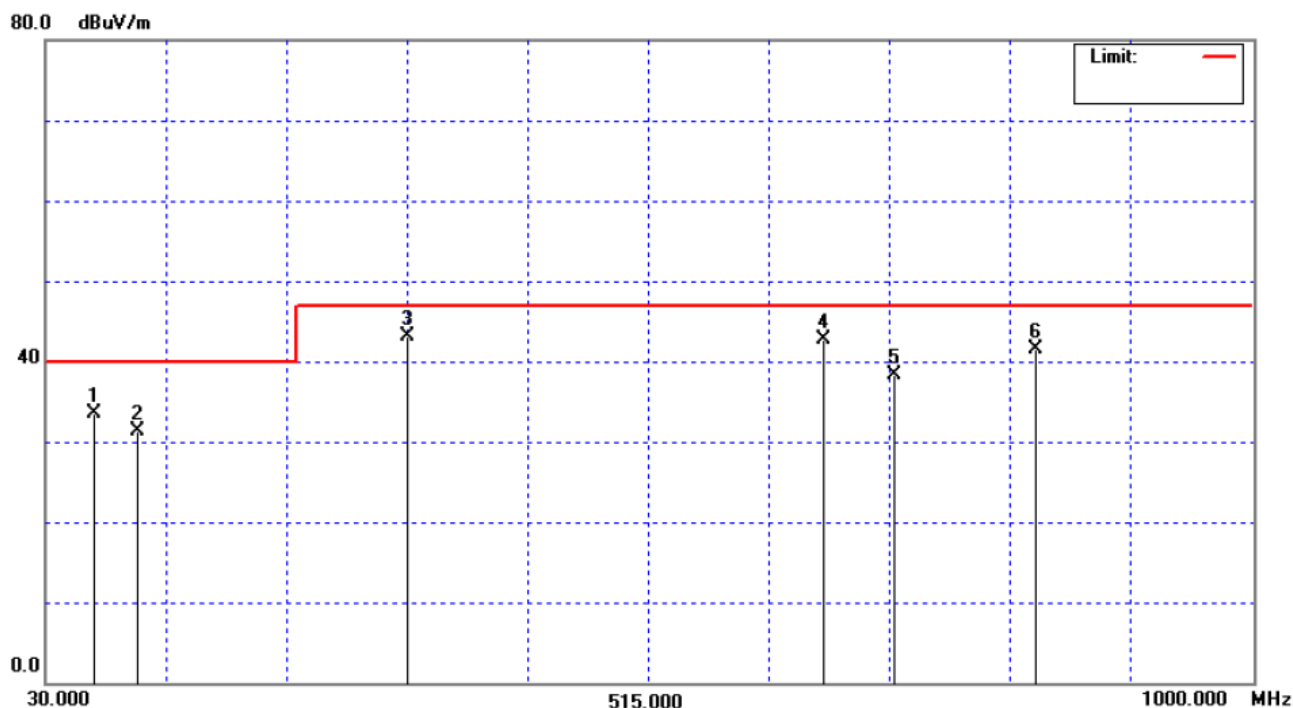
#### 4.2.7 TEST RESULTS-BETWEEN 30MHZ AND 1000MHZ

EUT :	Dongle	Model Name :	AW-NU120
Temperature :	11 °C	Relative Humidity :	29%
Test Voltage :	AC 120V/60Hz (System)		
Test Mode :	NORMAL OPERATION		

Freq. (MHz)	Polarization H/V	Reading Level (dBuV)	Correct Factor(dB)	Measurement (dBuV/m)	Limit(Quasi-Peak) (dBuV/m)	Margin (dB)	Note
31.5080	V	30.76	-7.46	23.30	30.00	- 6.70	
46.7040	V	27.35	-5.90	21.45	30.00	- 8.55	
82.0840	V	30.23	-10.02	20.21	30.00	- 9.79	
186.2240	V	27.00	-6.65	20.35	30.00	- 9.65	
800.0900	V	21.84	5.97	27.81	37.00	- 9.19	
934.1100	V	22.25	8.66	30.91	37.00	- 6.09	

Remark :

- (1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120 kHz; SPA setting in RBW=120 kHz, VBW =120 kHz, Swp. Time = 0.3 sec./ MHz.
- (2) All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (3) Measuring frequency range from 30 MHz to 1000 MHz.
- (4) If the peak scan value is under the limit for more than 20dB, the signal will not show in table.



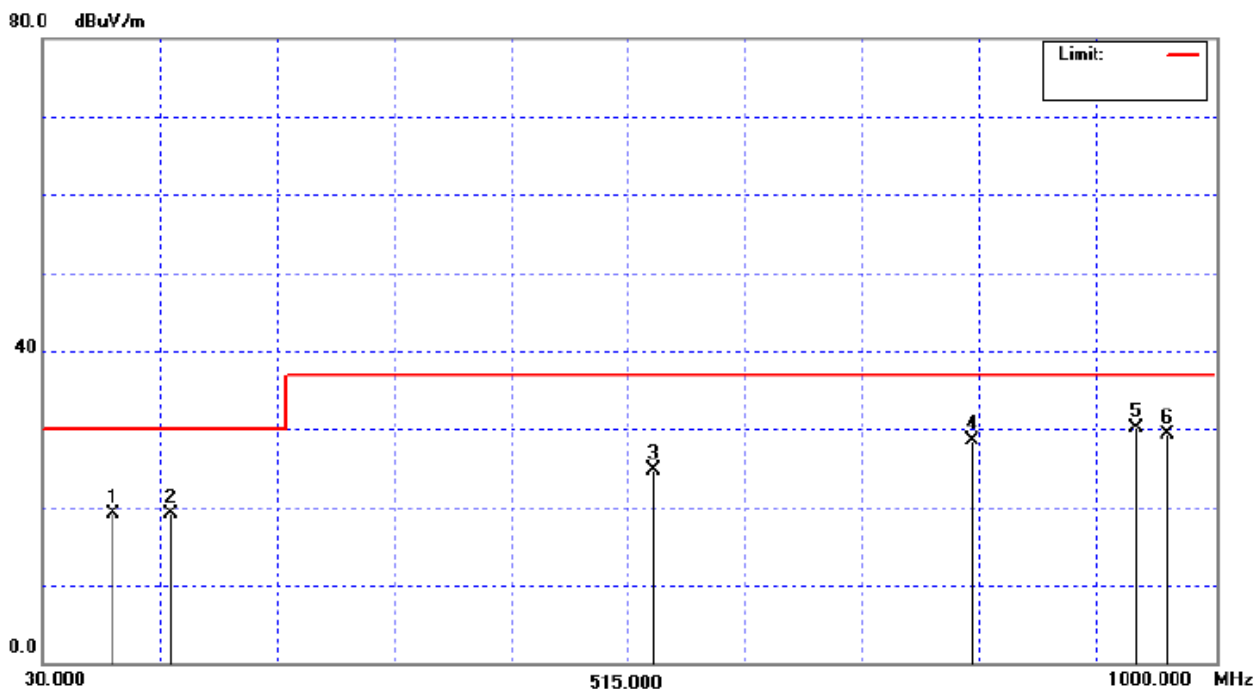


EUT :	Dongle	Model Name :	AW-NU120
Temperature :	11 °C	Relative Humidity :	29%
Test Voltage :	AC 120V/60Hz (System)		
Test Mode :	NORMAL OPERATION		

Freq. (MHz)	Polarization H/V	Reading Level (dBuV)	Correct Factor(dB)	Measurement (dBuV/m)	Limit(Quasi-Peak) (dBuV/m)	Margin (dB)	Note
87.6800	H	29.65	-10.59	19.06	30.00	- 10.94	
135.8700	H	24.17	-5.08	19.09	30.00	- 10.91	
636.3100	H	23.27	1.45	24.72	37.00	- 12.28	
800.0600	H	22.63	5.97	28.60	37.00	- 8.40	
934.0800	H	21.43	8.66	30.09	37.00	- 6.91	
960.1400	H	20.10	9.22	29.32	37.00	- 7.68	

**Remark :**

- (1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120 kHz; SPA setting in RBW=120 kHz, VBW =120 kHz, Swp. Time = 0.3 sec./ MHz.
- (2) All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (3) Measuring frequency range from 30 MHz to 1000 MHz.
- (4) If the peak scan value is under the limit for more than 20dB, the signal will not show in table.





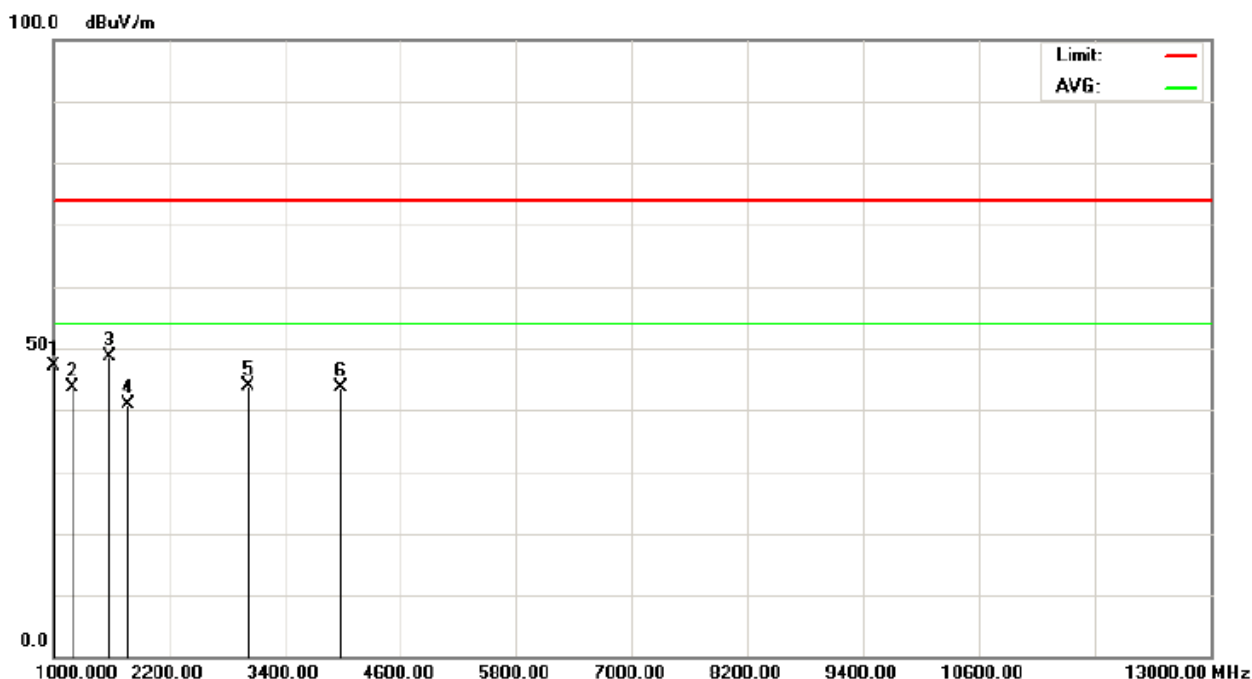
#### 4.2.8 TEST RESULTS-ABOVE 1000MHZ

E.U.T :	Dongle	Model Name :	AW-NU120
Temperature :	25 °C	Relative Humidity :	31%
Test Voltage :	AC 120V/60Hz (System)		
Test Mode :	NORMAL OPERATION		

Freq. (MHz)	Polarization H/V	Reading Level(dBuV)		Correct Factor(dB)	Measurement(dBuV/m)		Limit(dBuV/m)		Margin (dB)	Note
		Peak	AV		Peak	AV	Peak	AV		
#####	V	55.23	*	-8.06	47.17	*	74.00	54.00	- 26.83	Peak
#####	V	51.13	*	-7.48	43.65	*	74.00	54.00	- 30.35	Peak
#####	V	54.71	*	-6.08	48.63	*	74.00	54.00	- 25.37	Peak
#####	V	46.57	*	-5.65	40.92	*	74.00	54.00	- 33.08	Peak
#####	V	46.92	*	-2.97	43.95	*	74.00	54.00	- 30.05	Peak
#####	V	44.15	*	-0.51	43.64	*	74.00	54.00	- 30.36	Peak

Remark :

- (1) Reading in which marked as PK means measurements by using are Peak Mode with instrument setting in RBW= 1 MHz, VBW= 1 MHz, Swp. Time = Auto.  
Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW= 1 MHz, VBW= 10 Hz, Swp. Time = Auto.
- (2) All readings are PK Mode value unless otherwise stated AVG in column of Note. If the PK Mode Measured value compliance with the PK Limits and lower than AVG Limits, the EUT shall be deemed to meet both PK & AVG Limits and then only PK Mode was measured, but AVG Mode didn't perform. In this case, a " \* " marked in AVG Mode column of Interference Voltage Measured.
- (3) In the "Note" column, Peak means the margin value of Peak is higher than Average and the "Margin" column shows the margin value of Peak; AV means the margin value of Average is higher than Peak and the "Margin" column shows the margin value of Average.



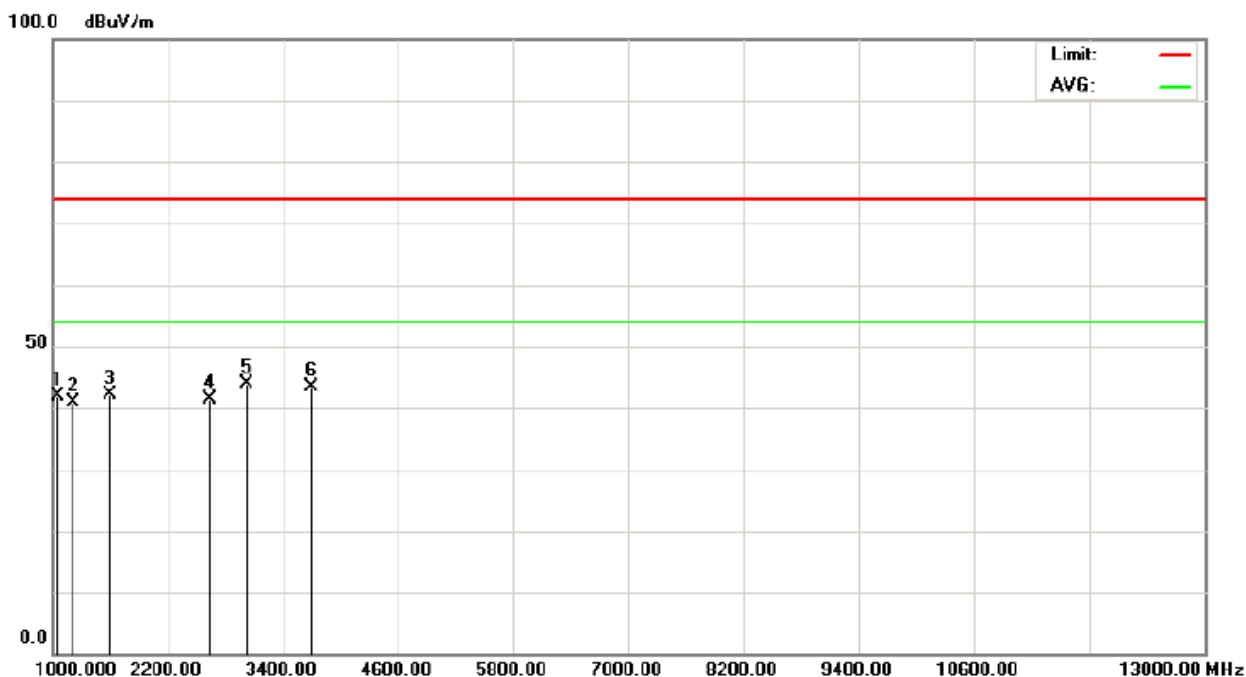


E.U.T :	Dongle	Model Name :	AW-NU120
Temperature :	25 °C	Relative Humidity :	31%
Test Voltage :	AC 120V/60Hz (System)		
Test Mode :	NORMAL OPERATION		

Freq. (MHz)	Polarization H/V	Reading Level(dBuV)		Correct Factor(dB)	Measurement(dBuV/m)		Limit(dBuV/m)		Margin (dB)	Note
		Peak	AV		Peak	AV	Peak	AV		
#####	H	49.79	*	-7.97	41.82	*	74.00	54.00	- 32.18	Peak
#####	H	48.18	*	-7.40	40.78	*	74.00	54.00	- 33.22	Peak
#####	H	48.19	*	-6.03	42.16	*	74.00	54.00	- 31.84	Peak
#####	H	44.02	*	-2.73	41.29	*	74.00	54.00	- 32.71	Peak
#####	H	46.90	*	-2.97	43.93	*	74.00	54.00	- 30.07	Peak
#####	H	44.52	*	-1.04	43.48	*	74.00	54.00	- 30.52	Peak

Remark :

- (1) Reading in which marked as PK means measurements by using are Peak Mode with instrument setting in RBW= 1 MHz, VBW= 1 MHz, Swp. Time = Auto.  
Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW= 1 MHz, VBW= 10 Hz, Swp. Time = Auto.
- (2) All readings are PK Mode value unless otherwise stated AVG in column of Note. If the PK Mode Measured value compliance with the PK Limits and lower than AVG Limits, the EUT shall be deemed to meet both PK & AVG Limits and then only PK Mode was measured, but AVG Mode didn't perform. In this case, a " \* " marked in AVG Mode column of Interference Voltage Measured.
- (3) In the "Note" column, Peak means the margin value of Peak is higher than Average and the "Margin" column shows the margin value of Peak; AV means the margin value of Average is higher than Peak and the "Margin" column shows the margin value of Average.

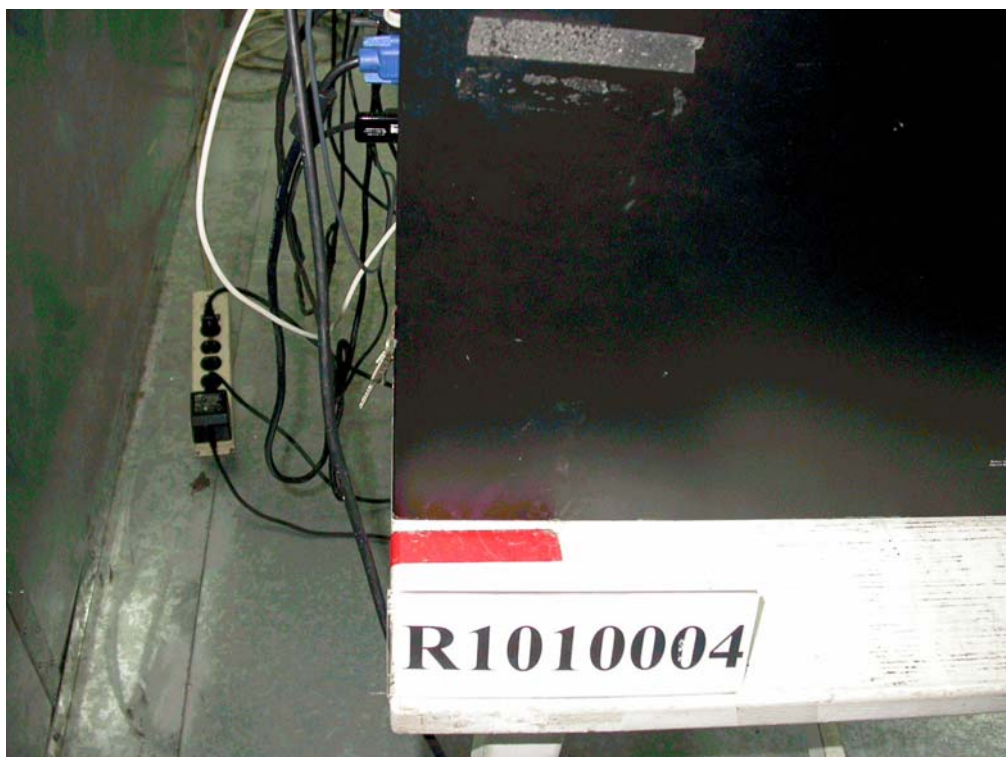






**5. EUT TEST PHOTO**

**Conducted Measurement Photos**







**Radiated Measurement Photos  
BETWEEN 30MHZ AND 1000MHZ**



**Radiated Measurement Photos**

**ABOVE 1000MHZ**

