



FCC DoC TEST REPORT

REPORT NO. : FD990816E05

MODEL NO. : N647

RECEIVED : Aug. 16, 2010

TESTED : Aug. 18, 2010

ISSUED : Sep. 06, 2010

APPLICANT : NETRONIX, INC.

ADDRESS : No. 945, Boai St., Jubei City,
Hsin-Chu,302,Taiwan, R.O.C.

ISSUED BY : Bureau Veritas Consumer Products Services
(H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory

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Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan

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Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan

TEST LOCATION (2): No. 49, Ln. 206, Wende Rd., Shangshan Tsuen,
Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan

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1 CERTIFICATION

PRODUCT : Kobo E-reader
BRAND NAME : Kobo
MODEL NO. : N647
TEST DATE : Aug. 18, 2010
TEST SAMPLE : R&D SAMPLE
APPLICANT : NETRONIX , INC.
STANDARDS : FCC Part 15, Subpart B, Class B
CISPR 22:1997, Class B
ICES-003: 2004, Class B
ANSI C63.4-2003

The above equipment (Model: N647) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : Carol Liao , **DATE:** Sep. 06, 2010
(Carol Liao, Specialist)

TECHNICAL ACCEPTANCE : Ray Yeh , **DATE:** Sep. 06, 2010
(Ray Yeh, Deputy Manager)

APPROVED BY : May Chen , **DATE:** Sep. 06, 2010
(May Chen, Deputy Manager)

2 SUMMARY OF TEST RESULTS

Standard	Test Type	Result	Remarks
FCC Part 15 Subpart B, Class B	Conducted Test	PASS	Meets Class B Limit Minimum passing margin is -12.55 dB at 0.400 MHz
CISPR 22: 1997, Class B ICES-003: Class B	Radiated Test	PASS	Meets Class B Limit Minimum passing margin is -4.29 dB at 825.09 MHz

NOTE:

The limit for radiated test was performed according to CISPR 22, which was specified in FCC PART 15 Subpart B 15.109(g). Also the limits of ICES-003: 2004 and CISPR 22 are same.

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Measurement	Value
Conducted emissions	2.45 dB
Radiated emissions (30MHz-1GHz)	3.21 dB
Radiated emissions (1GHz-18GHz)	2.19 dB

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Kobo E-reader
MODEL NO.	N647
POWER SUPPLY	DC 5V from power adapter, DC 5V from host equipment or DC 3.7V from battery
POWER CORD	DC output cable (unshielded, 1.56m)
DATA CABLE SUPPLIED	USB cable (shielded, 1.3m)
I/O PORT	USB port x 1 Memory slot port x 1
ASSOCIATED DEVICES	Rechargeable Battery x 1, adapter x 1

Note:

1. The EUT must be supplied with a CPU and following two different model (PCB layout, CPU Pin assignment and Define are identical) could be chosen:

Component	Model	Brand	Manufacturer	Description
CPU (iMX35)	iMX353	Freescale	Freescale	CPU 532MHz (Without OpenVG SW License)
	iMX357	Freescale	Freescale	CPU 532MHz (With OpenVG SW License)

Above two CPUs were pre-tested in chamber, the worse case was found in Model: **iMX357**. Therefore only the test data of the model was recorded in this report.

2. There is one chip antenna with 2.5dBi antenna gain provided to EUT.
3. The EUT must be supplied with a power adapter or battery as following table:

Item	Brand	Model No.	Spec.
Adapter	DVE	DSA-6G-05	AC I/P: 100-240V, 0.2A, 50~60Hz
		FUS 050100	DC O/P: 5V, 1A
Battery	Psebattery	H503456	DC 3.7~4.2V, 1000mAh

4. The EUT was pre-tested under following test modes :

Pre-test Mode	Description	Power Source
Mode A	Level-set - WLAN	Battery
Mode B	Tower-set - WLAN	Battery
Mode C	Level-set - WLAN	Adapter
Mode D	Level-set - USB	PC system

The worst radiated emissions were found in **Mode C & D**. Therefore only the test data of the modes were recorded in this report.

5. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

3.2 GENERAL DESCRIPTION OF TEST MODE

The EUT was tested under the following test modes, and its data were recorded in this report:

Test Mode	Description	Power Source
Mode 1	Level-set - WLAN	Adapter
Mode 2	Level-set - USB	PC system



3.3 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.

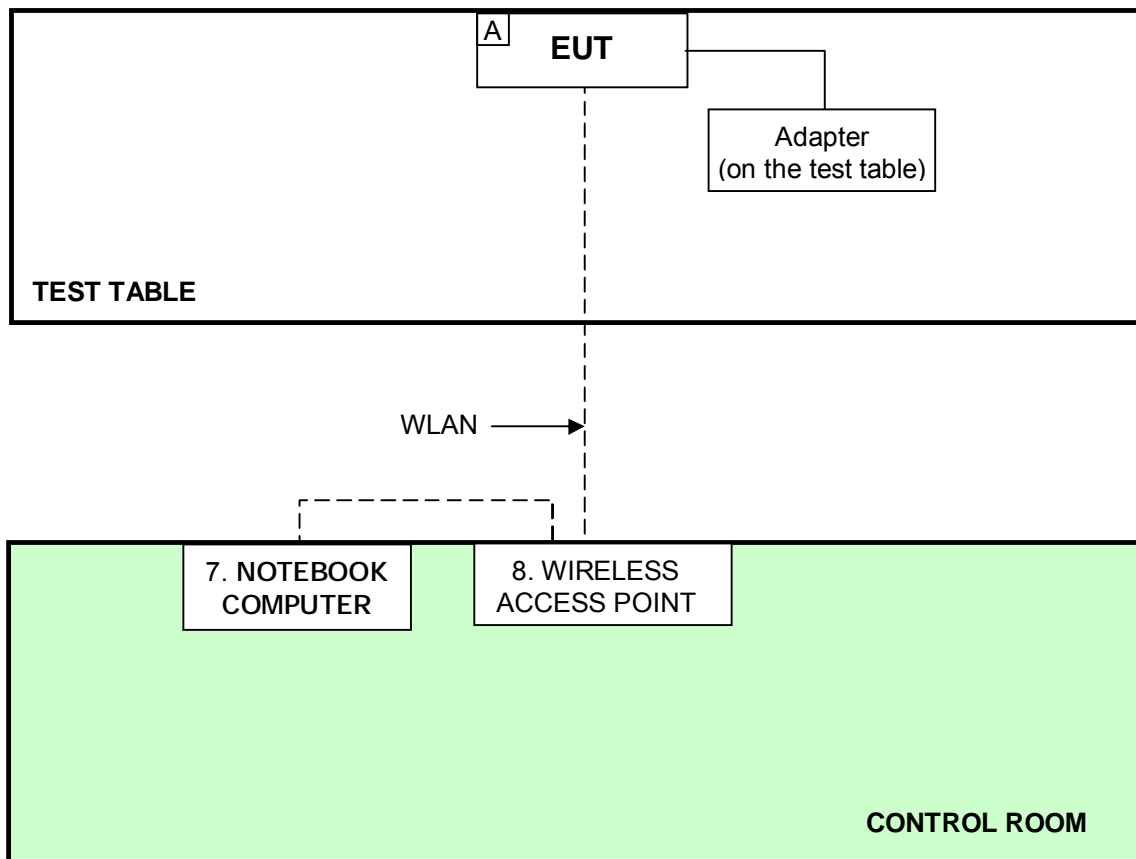
No.	Product	Brand	Model No.	Serial No.	FCC ID
1	PERSONAL COMPUTER (For Conducted test)	DELL	DCSM	294QL1S	FCC DoC
	PERSONAL COMPUTER (For Radiated test)	DELL	DCSCMF	CKKB32S	FCC DoC
2	MONITOR (For Conducted test)	DELL	E228WFPc	CN-OX765G-64180-86Q-OJTL-AOO	FCC DoC
	MONITOR (For Radiated test)	DELL	E2210Hc	CN-OG337R-64180-97S-OQNS	FCC DoC
3	PRINTER	EPSON	LQ-300+II	G88Y074086	FCC DoC
4	MODEM	ACEEX	1414	0206026778	IFAXDM1414
5	KEYBOARD	DELL	SK-8115	MY-0DJ325-71619-99B-0476	FCC DoC
6	MOUSE	DELL	MOC5UO	I1406CUN	FCC DoC
7	NOTEBOOK COMPUTER	DELL	PP18L	12252644560	FCC DoC
8	WIRELESS ACCESS POINT	Air Station	WLA-G54	NA	NA

No.	Signal cable description
1	1.3 m shielded, USB cable.
2	1.8 m braid shielded wire, terminated with VGA connector via metallic frame, with two cores.
3	1.8 m braid shielded wire, terminated with USB connector via metallic frame, w/o core.
4	1.0 m braid shielded wire, terminated with DB25 and DB9 connector via metallic frame, w/o core.
5	1.8 m foil shielded wire, USB connector, w/o core.
6	1.5 m foil shielded wire, USB connector, w/o core.
7	NA
8	NA

Note: The power cords of the above support units were unshielded (1.8m).

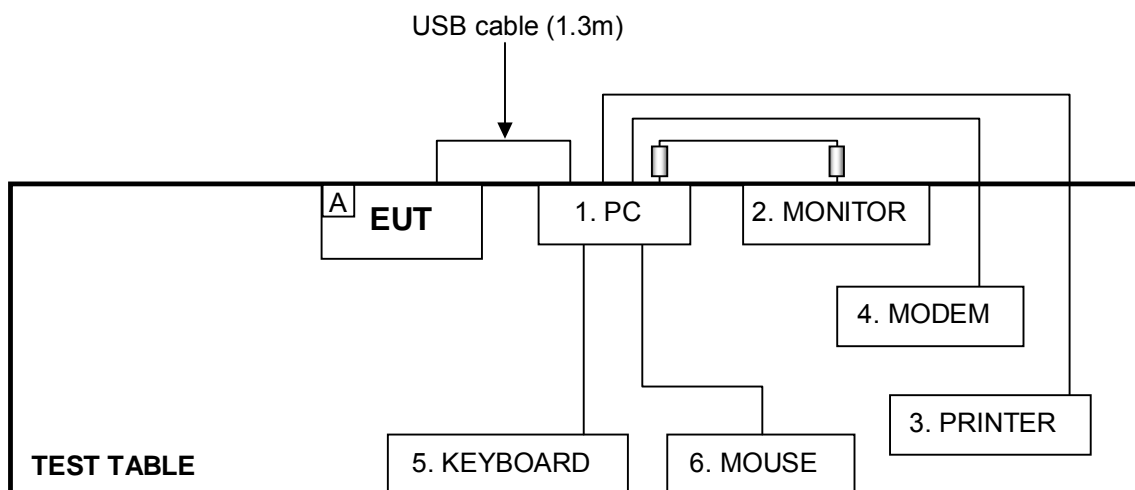
3.4 CONFIGURATION OF SYSTEM UNDER TEST

For test mode 1:



NOTE: 1. Item A is the SD Card (Brand: Transcend).

For test mode 2:



NOTE: 1. Item A is the SD Card (Brand: Transcend).

4 EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

TEST STANDARD:

FCC Part 15, Subpart B (Section: 15.107)

CISPR 22: 1997 (section 5)

ICES-003: 2004 (Class A: section 5.2)
(Class B: section 5.3)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

NOTE: (1) The lower limit shall apply at the transition frequencies.

(2) The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50 MHz

(3) All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ROHDE & SCHWARZ Test Receiver	ESCS 30	100287	Mar. 01, 2010	Feb. 28, 2011
Line-Impedance Stabilization Network (for EUT)	NSLK 8127	8127-523	Sep. 23, 2009	Sep. 22, 2010
Line-Impedance Stabilization Network (for Peripheral)	ENV-216	100072	June 11, 2010	June 10, 2011
RF Cable (JYEBAO)	5DFB	COACAB-001	Dec. 14, 2009	Dec. 13, 2010
50 ohms Terminator	50	3	Oct. 28, 2009	Oct. 27, 2010
Software	BV ADT_Cond_V7.3.7	NA	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. A.
3. The VCCI Con A Registration No. is C-817.

4.1.3 TEST PROCEDURE

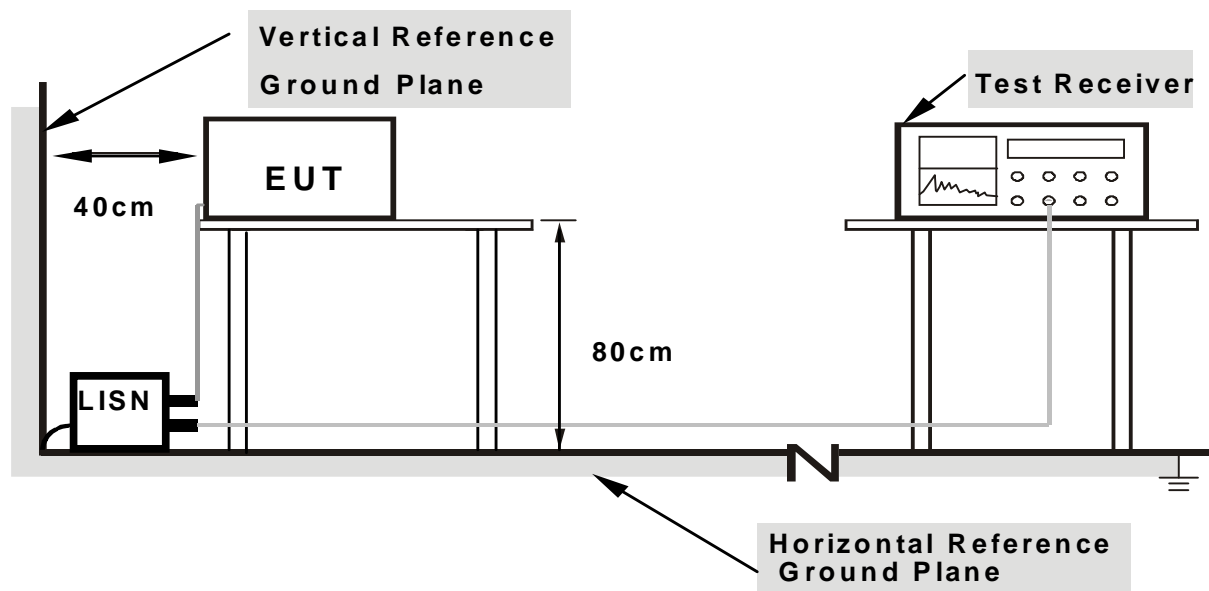
The basic test procedure was in accordance with ANSI C63.4-2003 (section 7), CISPR 22 (section 9) and ICES-003: 2004 (section 4).

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels over 10dB under the prescribed limits could not be reported.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



- Note:**
1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

4.1.6 EUT OPERATING CONDITIONS

For test mode 1:

1. Turn on the power of all equipment.
2. Support unit 7 (NB) runs a test program "Ping.exe" to communicate with EUT via support unit 8 (Wireless Access Point) via wireless transmission condition continuously.

For test mode 2:

1. Turn on the power of all equipment.
2. Support unit 1(PC) runs "EMC.bat" to enable EUT under "Read – Write – Erase mode" continually.
3. Support unit 1(PC) runs " EMC.bat" to sends "H" messages to monitor, and the monitor scrolling "H" patterns on its screen.
4. Support unit 1(PC) runs " EMC.bat" to sends "H" messages to printer, and the printer prints them on paper.
5. Support unit 1(PC) runs " EMC.bat" to sends "H" messages to modem.
6. Repeat steps 2-5.



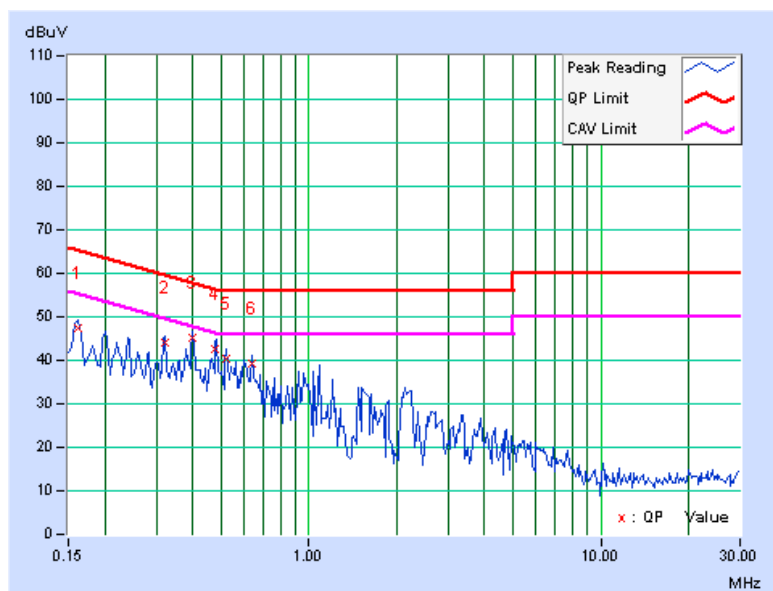
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4.1.7 TEST RESULTS (MODE 1)

TEST MODE	Mode 1	PHASE	Line (L)
INPUT POWER	120Vac, 60 Hz	6dB BANDWIDTH	9 kHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60 % RH, 1011 hPa	TESTED BY	Max Tseng

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
	1	0.162	0.04	47.47	-	47.51	-	65.38	55.38	-17.87
2	0.322	0.05	44.03	-	44.08	-	59.66	49.66	-15.58	-
3	0.400	0.05	45.25	-	45.30	-	57.85	47.85	-12.55	-
4	0.478	0.07	42.53	-	42.60	-	56.37	46.37	-13.77	-
5	0.521	0.08	40.19	-	40.27	-	56.00	46.00	-15.73	-
6	0.642	0.11	39.15	-	39.26	-	56.00	46.00	-16.74	-

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value
 5. Correction factor = Insertion loss + Cable loss
 6. Emission Level = Correction Factor + Reading Value.



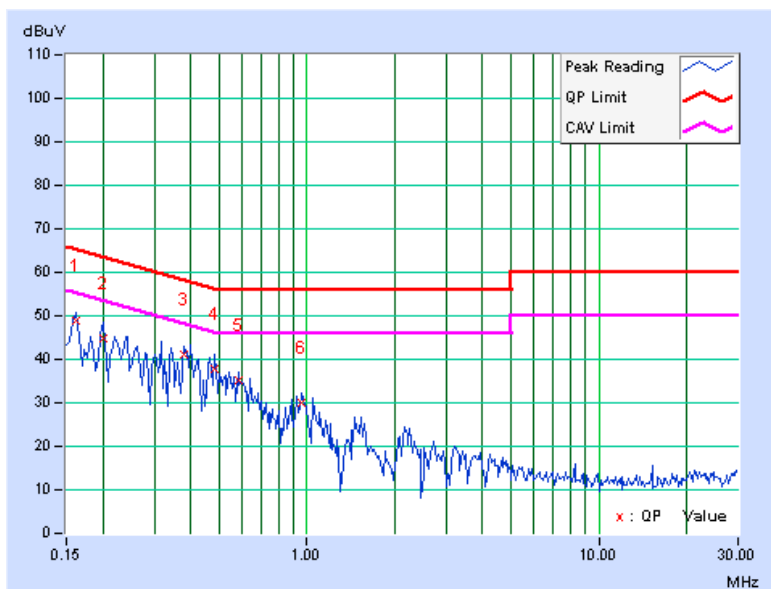


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TEST MODE	Mode 1	PHASE	Neutral (N)
INPUT POWER	120Vac, 60 Hz	6dB BANDWIDTH	9 kHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60 % RH, 1011 hPa	TESTED BY	Max Tseng

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.162	0.05	48.83	-	48.88	-	65.38	55.38	-16.50	-
2	0.201	0.05	44.89	-	44.94	-	63.58	53.58	-18.64	-
3	0.380	0.06	41.07	-	41.13	-	58.27	48.27	-17.14	-
4	0.482	0.08	37.69	-	37.77	-	56.30	46.30	-18.53	-
5	0.584	0.11	35.19	-	35.30	-	56.00	46.00	-20.70	-
6	0.963	0.21	29.95	-	30.16	-	56.00	46.00	-25.84	-

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value
 5. Correction factor = Insertion loss + Cable loss
 6. Emission Level = Correction Factor + Reading Value.





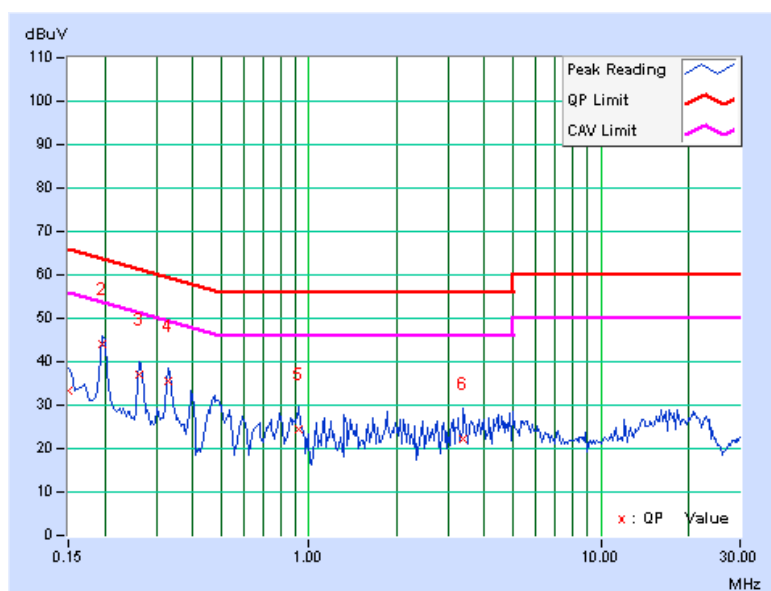
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4.1.8 TEST RESULTS (MODE 2)

TEST MODE	Mode 2	PHASE	Line (L)
INPUT POWER (SYSTEM)	120Vac, 60 Hz	6dB BANDWIDTH	9 kHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60 % RH, 1011 hPa	TESTED BY	Max Tseng

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.150	0.03	33.45	-	33.48	-	66.00
2	0.197	0.04	43.99	-	44.03	-	63.74	53.74	-19.71	-
3	0.263	0.04	36.83	-	36.87	-	61.33	51.33	-24.45	-
4	0.330	0.05	35.58	-	35.63	-	59.46	49.46	-23.83	-
5	0.923	0.19	24.33	-	24.52	-	56.00	46.00	-31.48	-
6	3.375	0.20	22.14	-	22.34	-	56.00	46.00	-33.66	-

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value
 5. Correction factor = Insertion loss + Cable loss
 6. Emission Level = Correction Factor + Reading Value.



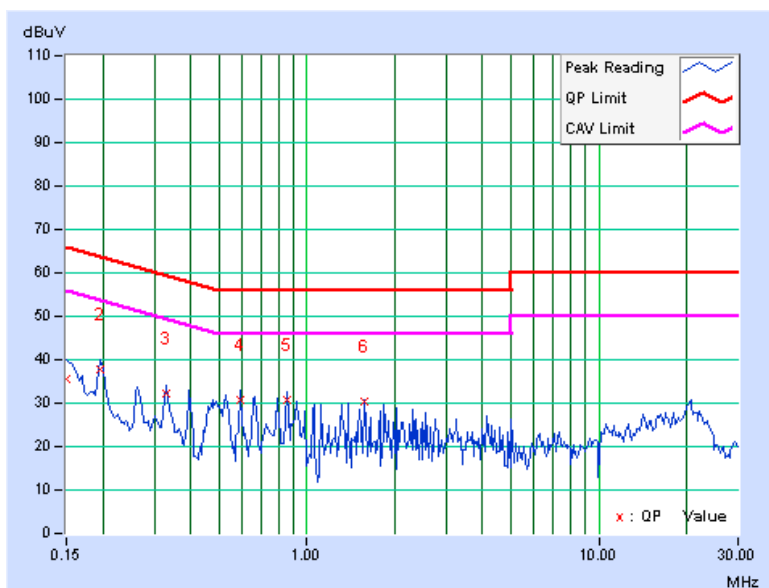


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TEST MODE	Mode 2	PHASE	Neutral (N)
INPUT POWER (SYSTEM)	120Vac, 60 Hz	6dB BANDWIDTH	9 kHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60 % RH, 1011 hPa	TESTED BY	Max Tseng

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.150	0.04	35.70	-	35.74	-	66.00
2	0.197	0.05	37.79	-	37.84	-	63.74	53.74	-25.90	-
3	0.330	0.06	32.04	-	32.10	-	59.46	49.46	-27.36	-
4	0.591	0.11	30.78	-	30.89	-	56.00	46.00	-25.11	-
5	0.857	0.18	30.49	-	30.67	-	56.00	46.00	-25.33	-
6	1.582	0.23	30.13	-	30.36	-	56.00	46.00	-25.64	-

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value
 5. Correction factor = Insertion loss + Cable loss
 6. Emission Level = Correction Factor + Reading Value.



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

TEST STANDARD:

FCC Part 15, Subpart B (Section: 15.109)

CISPR 22: 1997 (section 6)

ICES-003: 2004 (Class A: Section 5.4)/(Class B: Section 5.5)

FOR FREQUENCY BELOW 1000 MHz (47 CFR Part 15 Subpart B)

FREQUENCY (MHz)	Class A (at 10m)		Class B (at 3m)	
	uV/m	dBuV/m	uV/m	dBuV/m
30 – 88	90	39.1	100	40.0
88 – 216	150	43.5	150	43.5
216 - 960	210	46.4	200	46.0
Above 960	300	49.5	500	54.0

FOR FREQUENCY BELOW 1000 MHz (CISPR 22)

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

Note: The limit for radiated test was performed according to CISPR 22, which was specified in FCC PART 15 Subpart B 15.109(g) and ICES-003 clause 7.

LIMIT OF RADIATED EMISSION OF FCC PART 15, SUBPART B FOR FREQUENCY ABOVE 1000 MHz

FREQUENCY (MHz)	Class A (dBuV/m) (at 3m)		Class B (dBuV/m) (at 3m)	
	PEAK	AVERAGE	PEAK	AVERAGE
Above 1000	80.0	60.0	74.0	54.0

- Note:**
- (1) The lower limit shall apply at the transition frequencies.
 - (2) Emission level (dBuV/m) = 20 log Emission level (uV/m).
 - (3) All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.



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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 th harmonic of the highest frequency or 40 GHz, whichever is lower

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Agilent Spectrum Analyzer	E4443A	MY48250349	July 29, 2010	July 28, 2011
	E4443A	MY49420002	Oct. 31, 2009	Oct. 30, 2010
Agilent Pre-Selector	N9039A	MY46520331	Nov. 20, 2009	Nov. 19, 2010
	N9039A	MY46520309	July 29, 2010	July 28, 2011
Agilent Signal Generator	N5181A	MY49060520	July 19, 2010	July 18, 2011
Mini-Circuits Pre-Amplifier	ZFL-1000VH2B	AMP-ZFL-01	Nov. 18, 2009	Nov. 17, 2010
	ZFL-1000VH2B	AMP-ZFL-02	Nov. 18, 2009	Nov. 17, 2010
Mini-Circuits Pre_Amplifier (1~18GHz)	ZVA-183-S+	AMP-ZVA-01	Nov. 18, 2009	Nov. 17, 2010
SPACEK LABS (15~40GHz)	SLKKa-48-6	9K16	NA	NA
SCHWARZBECK Trilog Broadband Antenna	VULB 9168	9168-359	Sep. 30, 2009	Sep. 29, 2010
	VULB 9168	9168-358	Sep. 30, 2009	Sep. 29, 2010
SCHWARZBECK Horn Antenna	BBHA 9170	9170-424	Sep. 30, 2009	Sep. 29, 2010
	BBHA 9120	9120D-783	Sep. 30, 2009	Sep. 29, 2010
RF CABLE	NA	RF104-202 RF104-206 RF104-209	Dec. 24, 2009	Dec. 23, 2010
Software	ADT_Radiated_V8.7.05	NA	NA	NA
CT Antenna Tower & Turn Table	NA	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The test was performed in 10m Chamber No. F.

3. The FCC Site Registration No. is 928149.

4. The VCCI Site Registration No. is R-3252 & G-136.

5. The CANADA Site Registration No. is IC 7450H-1.

4.2.3 TEST PROCEDURE

The basic test procedure was in accordance with ANSI C63.4-2003 (section 8), CISPR 22 (section 10) and ICES-003: 2004 (section 4).

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meters chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 10 meters (3 meters -above 1GHz) away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.

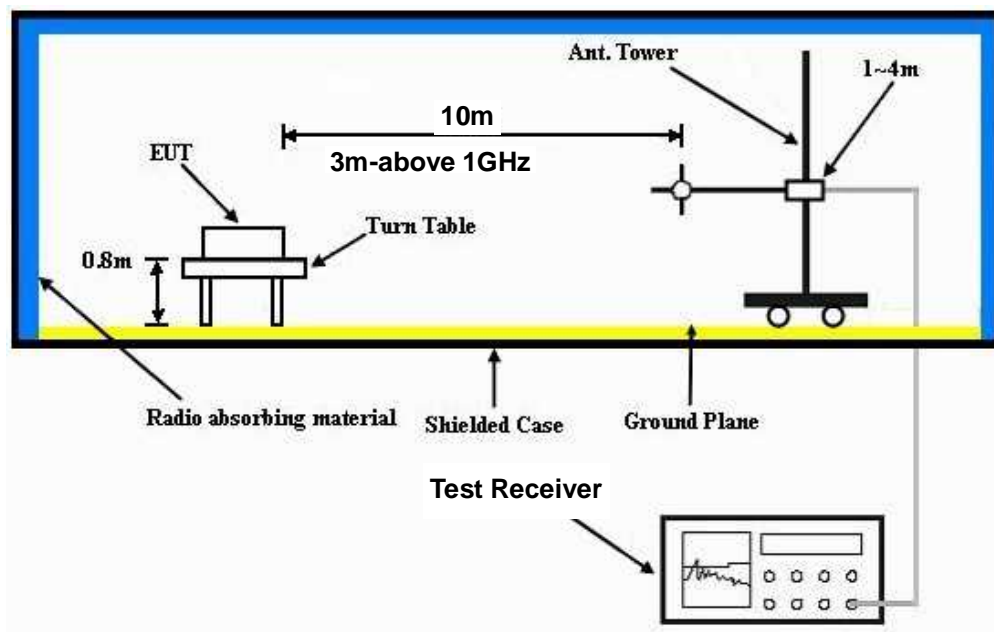
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth is 1MHz and video bandwidth of test receiver/spectrum analyzer is 3MHz for Peak detection at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz for Average detection (AV) at frequency above 1GHz.
3. For measurement of frequency above 1000 MHz, the EUT was set 3 meters away from the interference-receiving antenna.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6

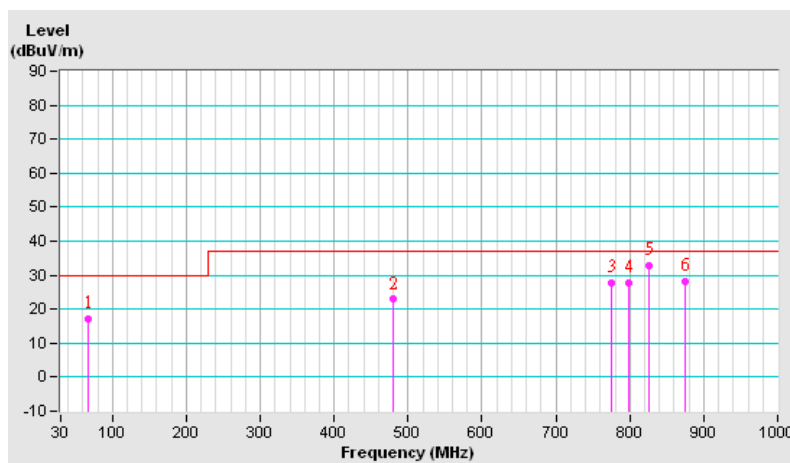
4.2.7 TEST RESULTS (MODE 1)

TEST MODE	Mode 1	INPUT POWER	120Vac, 60 Hz
FREQUENCY RANGE	30-1000 MHz	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak, 120kHz
ENVIRONMENTAL CONDITIONS	24 deg. C, 66 % RH, 1011 hPa	TESTED BY	Andy Ho

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 10 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	66.71	17.05 QP	30.00	-12.95	4.00 H	33	4.35	12.70
2	480.01	22.84 QP	37.00	-14.16	2.00 H	14	2.80	20.04
3	775.00	27.88 QP	37.00	-9.12	1.00 H	91	2.95	24.93
4	798.09	27.85 QP	37.00	-9.15	1.00 H	74	2.56	25.29
5	825.09	32.71 QP	37.00	-4.29	1.00 H	80	7.08	25.63
6	875.06	28.28 QP	37.00	-8.72	1.00 H	72	2.03	26.25

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.



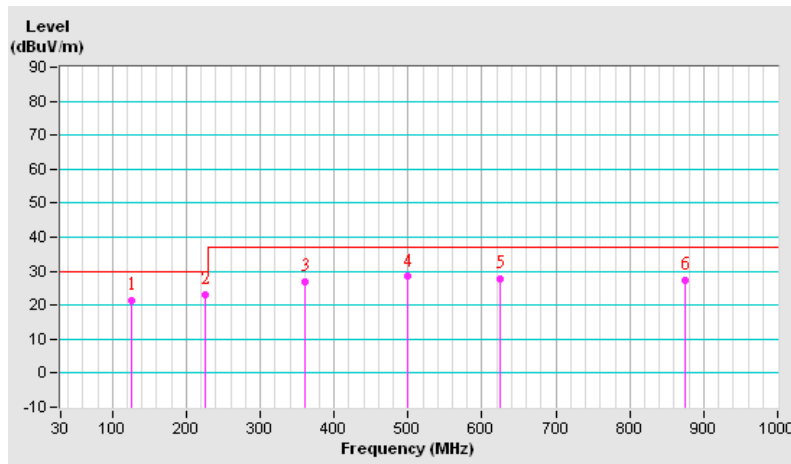


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TEST MODE	Mode 1	INPUT POWER	120Vac, 60 Hz
FREQUENCY RANGE	30-1000 MHz	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak, 120kHz
ENVIRONMENTAL CONDITIONS	24 deg. C, 66 % RH, 1011 hPa	TESTED BY	Andy Ho

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 10 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	124.97	21.44 QP	30.00	-8.56	2.00 V	245	8.95	12.49
2	225.04	23.00 QP	30.00	-7.00	1.00 V	207	10.30	12.70
3	359.93	26.75 QP	37.00	-10.25	1.00 V	237	9.44	17.31
4	500.02	28.43 QP	37.00	-8.57	2.00 V	324	7.55	20.88
5	624.96	27.64 QP	37.00	-9.36	4.00 V	232	4.41	23.23
6	875.06	27.38 QP	37.00	-9.62	2.00 V	28	0.61	26.77

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.



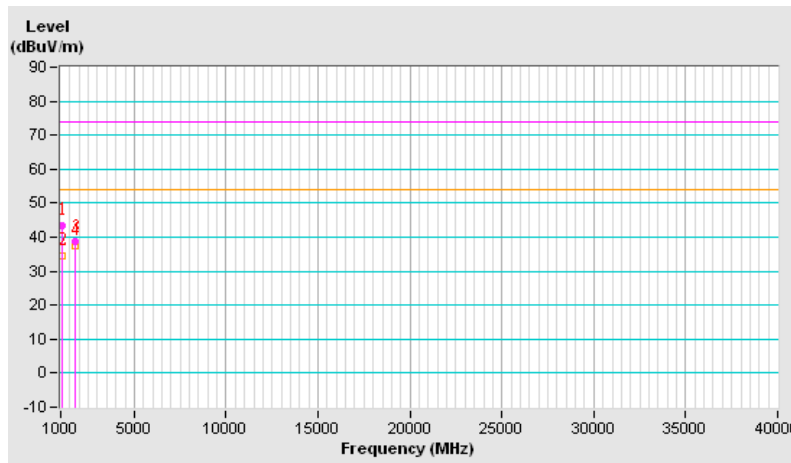


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TEST MODE	Mode 1	INPUT POWER	120Vac, 60 Hz
FREQUENCY RANGE	1000-12500 MHz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) / Average (AV), 1MHz
ENVIRONMENTAL CONDITIONS	22 deg. C, 69 % RH, 1011 hPa	TESTED BY	Andy Ho

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1056.77	43.55 PK	74.00	-30.45	1.05 H	287	14.92	28.63
2	1056.77	34.49 AV	54.00	-19.51	1.05 H	287	5.86	28.63
3	1794.77	38.52 PK	74.00	-35.48	1.22 H	319	7.35	31.17
4	1794.77	37.42 AV	54.00	-16.58	1.22 H	319	6.25	31.17

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.





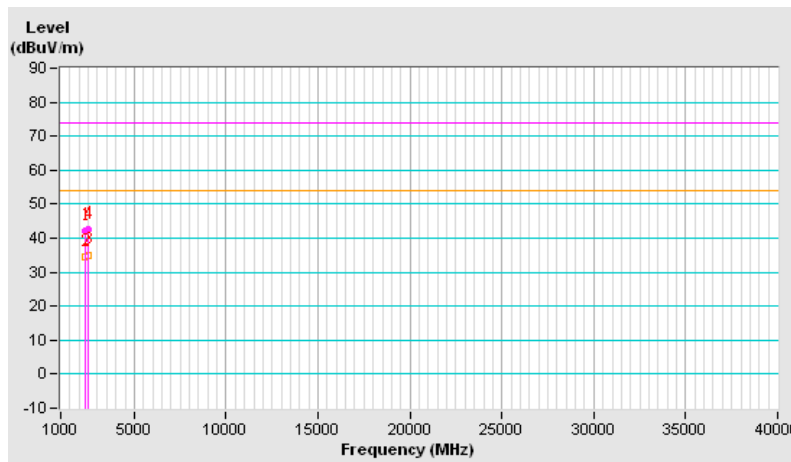
A D T

TEST MODE	Mode 1	INPUT POWER	120Vac, 60 Hz
FREQUENCY RANGE	1000-12500 MHz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) / Average (AV), 1MHz
ENVIRONMENTAL CONDITIONS	22 deg. C, 69 % RH, 1011 hPa	TESTED BY	Andy Ho

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2330.73	42.19 PK	74.00	-31.81	1.00 V	360	8.66	33.53
2	2330.73	34.47 AV	54.00	-19.53	1.00 V	360	0.94	33.53
3	2493.10	34.86 AV	54.00	-19.14	1.00 V	2	0.57	34.29
4	2493.10	42.59 PK	74.00	-31.41	1.00 V	2	8.30	34.29

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.



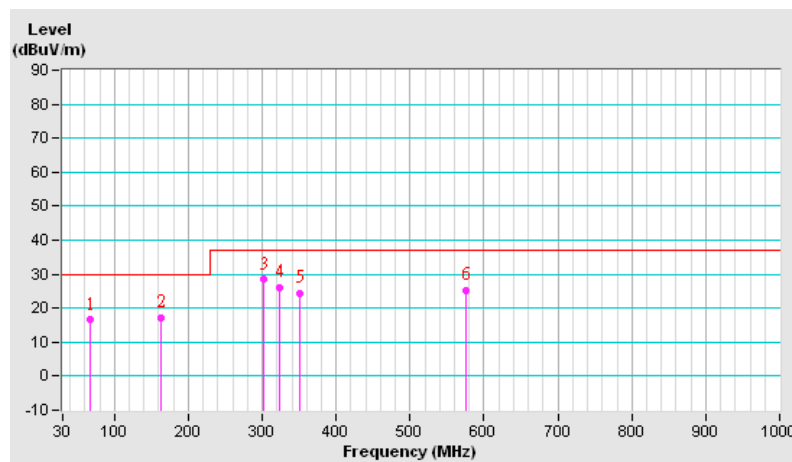
4.2.8 TEST RESULTS (MODE 2)

TEST MODE	Mode 2	INPUT POWER (SYSTEM)	120Vac, 60 Hz
FREQUENCY RANGE	30-1000 MHz	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak, 120kHz
ENVIRONMENTAL CONDITIONS	24 deg. C, 66 % RH, 1011 hPa	TESTED BY	Andy Ho

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 10 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	66.47	16.48 QP	30.00	-13.52	4.00 H	326	3.75	12.73
2	162.04	17.32 QP	30.00	-12.68	4.00 H	130	2.96	14.36
3	302.25	28.40 QP	37.00	-8.60	2.00 H	277	13.21	15.19
4	322.50	26.03 QP	37.00	-10.97	3.00 H	95	10.17	15.86
5	350.57	24.39 QP	37.00	-12.61	3.00 H	126	7.60	16.79
6	574.98	25.21 QP	37.00	-11.79	2.00 H	318	2.99	22.22

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.





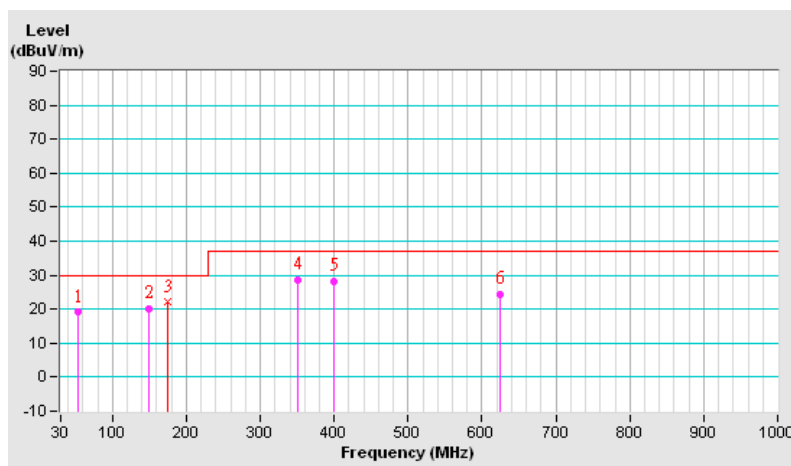
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TEST MODE	Mode 2	INPUT POWER (SYSTEM)	120Vac, 60 Hz
FREQUENCY RANGE	30-1000 MHz	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak, 120kHz
ENVIRONMENTAL CONDITIONS	24 deg. C, 66 % RH, 1011 hPa	TESTED BY	Andy Ho

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 10 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	54.04	19.07 QP	30.00	-10.93	1.00 V	59	5.17	13.90
2	149.96	19.99 QP	30.00	-10.01	1.00 V	256	4.83	15.16
3	175.01	22.03 QP	30.00	-7.97	1.00 V	8	7.93	14.10
4	350.57	28.67 QP	37.00	-8.33	1.00 V	237	11.65	17.02
5	399.01	28.10 QP	37.00	-8.90	1.00 V	5	9.57	18.53
6	625.07	24.40 QP	37.00	-12.60	3.00 V	248	1.17	23.23

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.



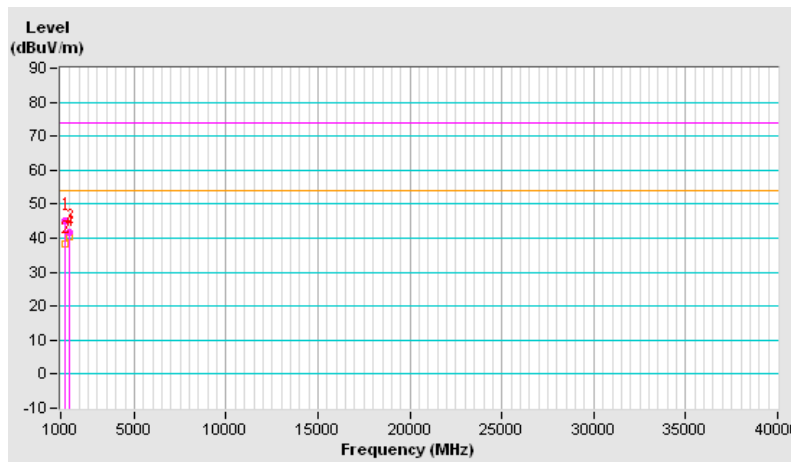


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TEST MODE	Mode 2	INPUT POWER (SYSTEM)	120Vac, 60 Hz
FREQUENCY RANGE	1000-12500 MHz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) / Average (AV), 1MHz
ENVIRONMENTAL CONDITIONS	22 deg. C, 69 % RH, 1011 hPa	TESTED BY	Andy Ho

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1200.00	45.18 PK	74.00	-28.82	1.16 H	143	16.06	29.12
2	1200.00	38.27 AV	54.00	-15.73	1.16 H	143	9.15	29.12
3	1440.00	41.69 PK	74.00	-32.31	1.02 H	287	11.80	29.89
4	1440.00	40.50 AV	54.00	-13.50	1.02 H	287	10.61	29.89

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.





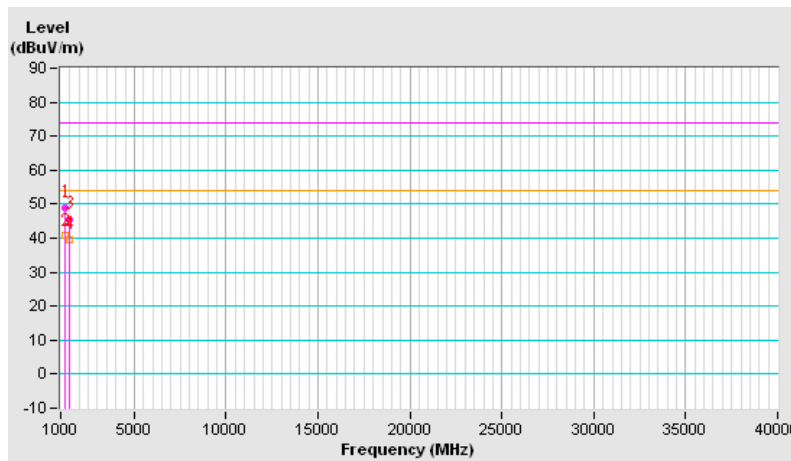
A D T

TEST MODE	Mode 2	INPUT POWER (SYSTEM)	120Vac, 60 Hz
FREQUENCY RANGE	1000-12500 MHz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) / Average (AV), 1MHz
ENVIRONMENTAL CONDITIONS	22 deg. C, 69 % RH, 1011 hPa	TESTED BY	Andy Ho

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1200.00	49.06 PK	74.00	-24.94	1.03 V	277	19.94	29.12
2	1200.00	40.71 AV	54.00	-13.29	1.03 V	277	11.59	29.12
3	1440.00	45.49 PK	74.00	-28.51	1.21 V	146	15.60	29.89
4	1440.00	39.55 AV	54.00	-14.45	1.21 V	146	9.66	29.89

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.

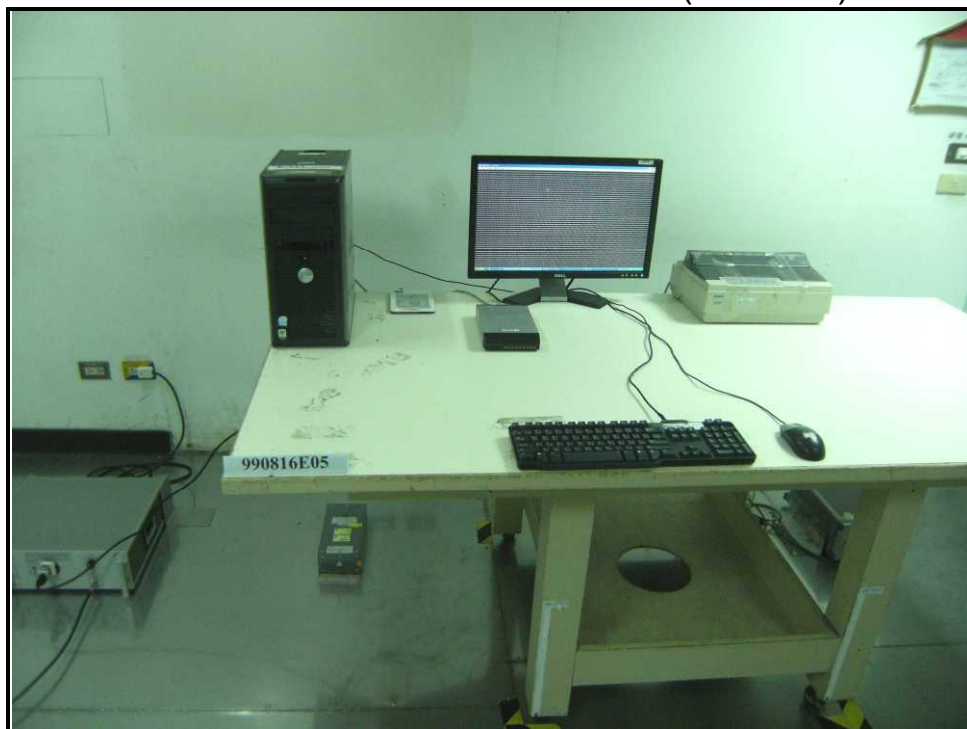


5 PHOTOGRAPHS OF THE TEST CONFIGURATION

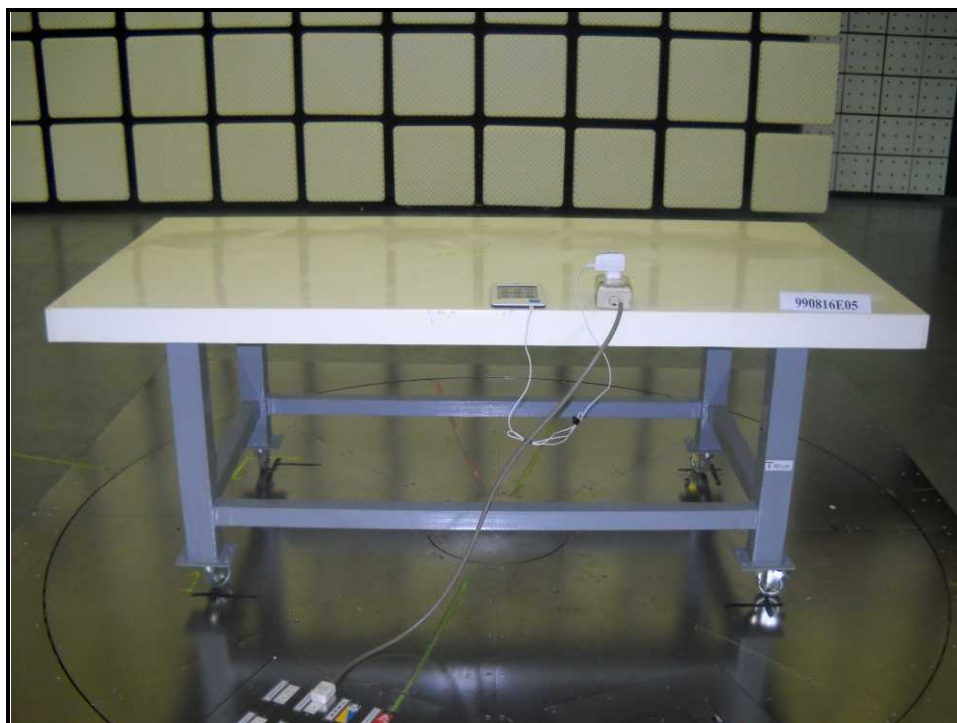
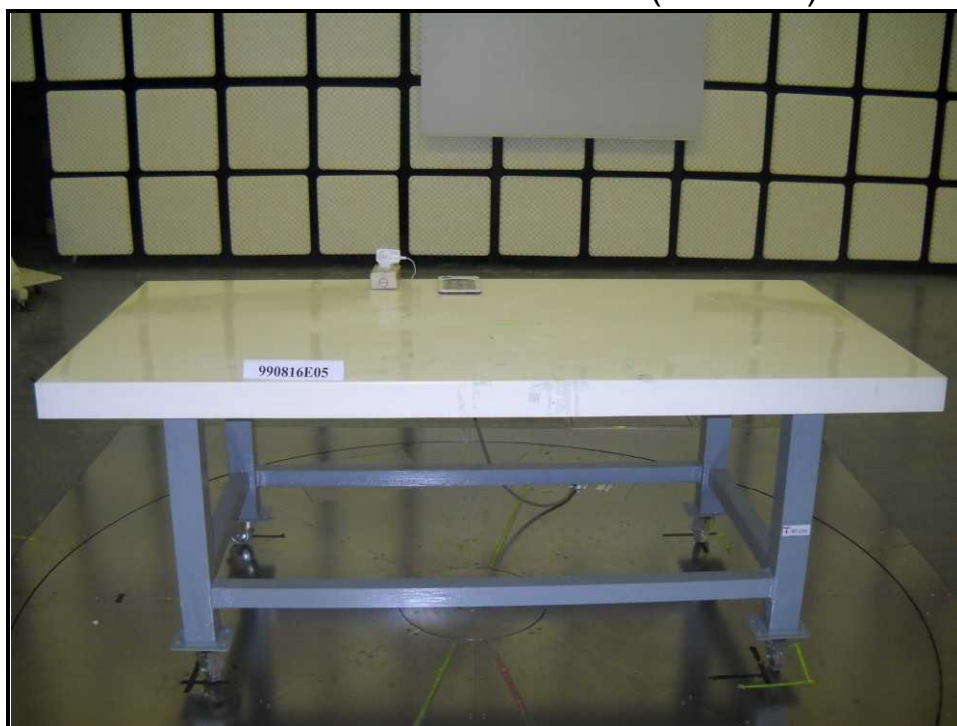
CONDUCTED EMISSION TEST (MODE 1)



CONDUCTED EMISSION TEST (MODE 2)



RADIATED EMISSION TEST (MODE 1)



RADIATED EMISSION TEST (MODE 2)





6 INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site: www.adt.com.tw/index.5/phtml.

If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:

Tel: 886-2-26052180

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Hsin Chu EMC/RF Lab:

Tel: 886-3-5935343

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Hwa Ya EMC/RF/Safety/Telecom Lab:

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Email: service@adt.com.tw

Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also.

7 APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

--- END ---