

CERTIFICATE OF CONFORMITY



A D T

Equipment : AC ADAPTER
Brand Name : CWT, NETGEAR, D-LINK
Test Model No. : 2AAQ008B, 2ABE008B, 2AAQ010B, 2ABE010B, 2AAQ011B,
2ABE011B
Multiple Listing : 2AAQxxxBzzzzz, 2ABExxxBzzzzz
(xxx=008, 010, 011; z=0-9, A-Z hyphen or blank)
Applicant : CHANNEL WELL TECHNOLOGY CO., LTD
Test Report No. : FV140909D05

We, **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, declare that the equipment above has been tested in our facility and found compliance with the requirement limits of applicable standards. The test record, data evaluation and Equipment Under Test (EUT) configurations represented herein are true and accurate under the standards herein specified.

47 CFR FCC Part 15, Subpart B, Class B

ICES-003:2012 Issue 5, Class B

ANSI C63.4:2009

Kenny Meng

Kenny Meng / Assistant Manager

Sep. 26, 2014



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FCC Verification Test Report

Report No.: FV140909D05

Test Model: 2AAQ008B, 2ABE008B, 2AAQ010B, 2ABE010B, 2AAQ011B, 2ABE011B

Series Model: 2AAQxxxBzzzzz, 2ABExxxBzzzzz

Received Date: Sep. 9, 2014

Test Date: Sep. 10 ~ 16, 2014

Issued Date: Sep. 26, 2014

Applicant: CHANNEL WELL TECHNOLOGY CO., LTD

Address: No.222, Sec. 2, Nankan Rd., Lujhu Township, Taoyuan County 338, Taiwan (R.O.C.)

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C.)



LAB CODE: 200836-0



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.

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A D T

Release Control Record

Issue No.	Description	Date Issued
FV140909D05	Original release.	Sep. 26, 2014

1 Certificate of Conformity

Product: AC ADAPTER

Brand: CWT, NETGEAR, D-LINK

Test Model: 2AAQ008B, 2ABE008B, 2AAQ010B, 2ABE010B, 2AAQ011B, 2ABE011B

Series Model: 2AAQxxxBzzzzz, 2ABExxxBzzzzz

Sample Status: Engineering sample

Applicant: CHANNEL WELL TECHNOLOGY CO., LTD

Test Date: Sep. 10 ~ 16, 2014

Standards: 47 CFR FCC Part 15, Subpart B, Class B
ICES-003:2012 Issue 5, Class B
ANSI C63.4:2009

The above equipment 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 :

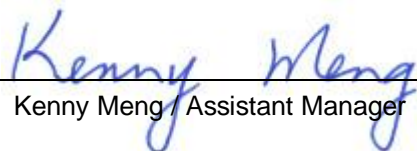


Date:

Sep. 26, 2014

Sharon Tsui / Specialist

Approved by :



Date:

Sep. 26, 2014

Kenny Meng / Assistant Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart B / ICES-003:2012 Issue 5, Class B

ANSI C63.4:2009

FCC Clause	ICES-003 Clause	Test Item	Result/Remarks	Verdict
15.107	6.1	AC Power Line Conducted Emissions	Minimum passing Class B margin is -11.03 dB at 0.54453 MHz	Pass
15.109	6.2.1	Radiated Emissions up to 1 GHz	Minimum passing Class B margin is -6.22 dB at 144.36 MHz	Pass
	6.2.2	Radiated Emissions above 1 GHz	EUT's highest frequency is 45kMHz	N/A

Note: 1. There is no deviation to the applied test methods and requirements covered by the scope of this report.

2. N/A: Not Applicable

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT:

The listed uncertainties are the worst case uncertainty for the entire range of measurement. Please note that the uncertainty values are provided for informational purposes only and are not used in determining the PASS/FAIL results.

Measurement	Frequency	Expanded Uncertainty (k=2) (\pm)
Conducted Emissions at mains ports	150kHz ~ 30MHz	3.43 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	4.26 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 Features of EUT

The tests reported herein were performed according to the method specified by CHANNEL WELL TECHNOLOGY CO., LTD, for detailed feature description, please refer to the manufacturer's specifications or user's manual.

3.2 General Description of EUT

Product	AC ADAPTER
Brand	CWT, NETGEAR, D-LINK
Test Model	2AAQ008B, 2ABE008B, 2AAQ010B, 2ABE010B, 2AAQ011B, 2ABE011B
Series Model	Refer to note as below
Model Difference	Refer to note as below
Sample Status	Engineering sample
Operating Software	N/A
Power Supply Rating	Rating: Refer to note as below Power Cord: Non-shielded DC cable (1.2m)
Accessory Device	N/A
Data Cable Supplied	N/A

Note:

The EUT is an AC ADAPTER (AC 2-Pin) which has the following models:

Model No.	Output Type
2AAQxxxBzzzzz	USB port
2ABExxxBzzzzz	DC wire
Model definition: xxx=008, 010, 011; z=0-9, A-Z hyphen or blank for different customers.	

During the test, the following models were selected as representative models:

Model No.	2AAQ008B	2ABE008B	2AAQ010B	2ABE010B	2AAQ011B	2ABE011B
AC I/P	100-240Vac or 100-120Vac, 50/60Hz, 0.3A					
DC O/P	5V/1.5A		5V/2.0A		5V/2.1A	
Output Type	USB port	DC wire	USB port	DC wire	USB port	DC wire

3.3 Operating Modes of EUT and Determination of Worst Case Operating Mode

- The EUT is designed with AC power of rating 100-240Vac or 100-120Vac, 50/60Hz. For radiated emission evaluation, 230Vac/50Hz (for EN 55022), 120Vac/60Hz (for FCC Part 15), 110Vac/60Hz (for CNS 13438) had been covered during the pre-test. The worst data was found at **110Vac/60Hz** and recorded in the applied test report. Then the other test items were tested at 120Vac/60Hz.
- The EUT has been pre-tested under following test modes 1~3 and 4~6:

Mode	Model No.
1	2AAQ011B
2	2AAQ010B
3	2AAQ008B
4	2ABE011B
5	2ABE010B
6	2ABE008B

The worse emission level was found under **Mode 1** and **Mode 6**

- Test modes are presented in the report as below:

Test Item	Mode	Model No.	Input Power	Test Condition
Conducted Emission Test	1	2AAQ011B	120V/50Hz	Full Load
	2	2AAQ010B		
	3	2AAQ008B		
	4	2ABE011B		
	5	2ABE010B		
	6	2ABE008B		
Radiated Emission Test	1	2AAQ011B	110V/60Hz	
	6	2ABE008B		

3.4 Test Program Used and Operation Descriptions

Set the EUT under full resistor load.

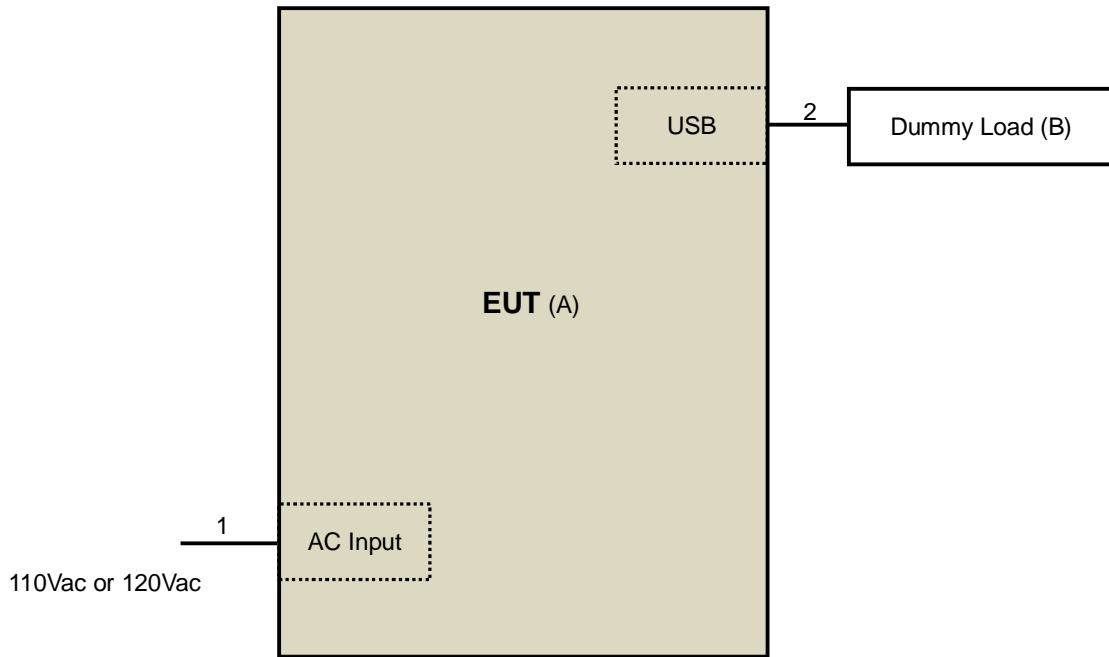
3.5 Primary Clock Frequencies of Internal Source

The highest frequency generated or used within the EUT or on which the EUT operates or tunes is 65kHz, provided by CHANNEL WELL TECHNOLOGY CO., LTD, for detailed internal source, please refer to the manufacturer's specifications.

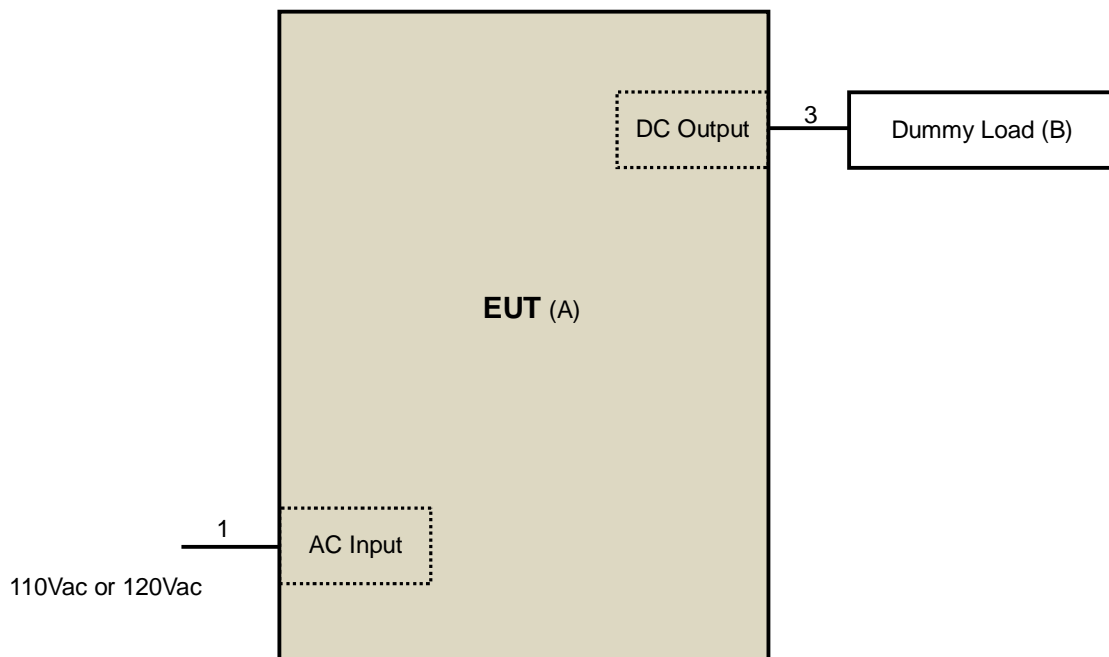
4 Configuration and Connections with EUT

4.1 Connection Diagram of EUT and Peripheral Devices

Mode 1~3



Mode 4~6



4.2 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	EUT	CWT, NETGEAR, D-LINK	2AAQ008B, 2ABE008B, 2AAQ010B, 2ABE010B, 2AAQ011B, 2ABE011B	-	-	-
B.	DUMMY LOAD	BVADT	L19B	L2-010025	N/A	Provided by Lab

Note: All power cords of the above support units are non-shielded (1.8m).

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	AC power cable	1	1.8	N	0	Provided by Lab
2.	USB cable	1	1.8	N	0	Provided by Lab
3.	DC cable	1	1.2	N	0	Supplied by client

Note: The core(s) is(are) originally attached to the cable(s).

5 Conducted Emissions at Mains Ports

5.1 Limits

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

Notes: 1. The lower limit shall apply at the transition frequencies.
 2. The limit decreases linearly with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

5.2 Test Instruments

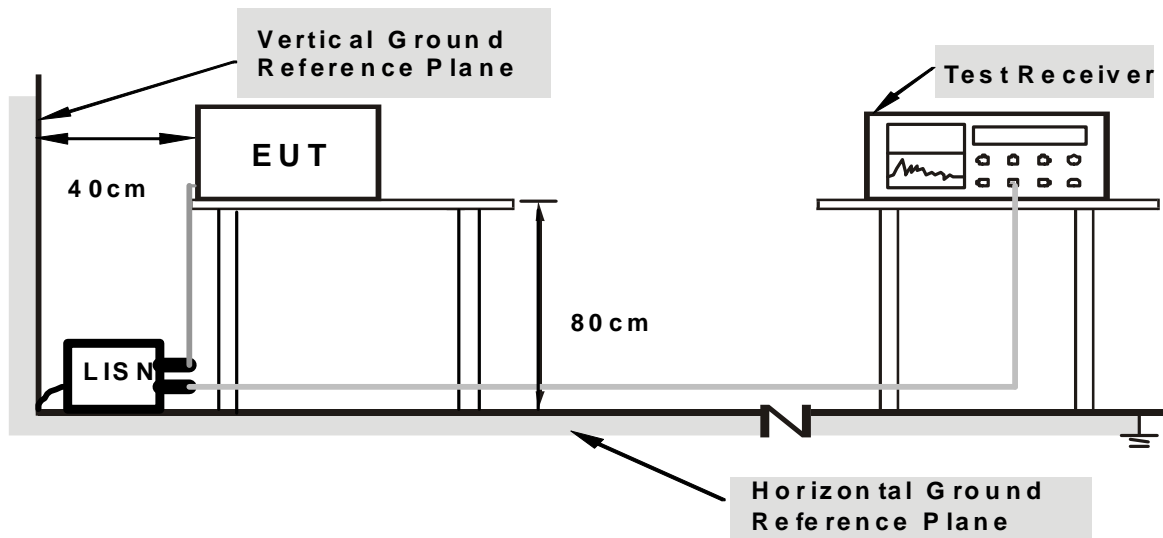
Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
ROHDE & SCHWARZ TEST RECEIVER	ESCS 30	100276	Apr. 18, 2014	Apr. 17, 2015
ROHDE & SCHWARZ Artificial Mains Network (for EUT)	ESH3-Z5	100219	Nov. 17, 2013	Nov. 16, 2014
LISN With Adapter (for EUT)	AD10	C10Ada-001	Nov. 17, 2013	Nov. 16, 2014
ROHDE & SCHWARZ Artificial Mains Network (for peripherals)	ESH3-Z5	100218	Nov. 25, 2013	Nov. 24, 2014
SCHWARZBECK Artificial Mains Network (For EUT)	NNLK8129	8129229	May 08, 2014	May 07, 2015
Software	ADT_Cond_V7.3.7	NA	NA	NA
RF cable (JYEBAO)	5D-FB	Cable-C10.01	Feb. 18, 2014	Feb. 17, 2015
SUHNER Terminator (For ROHDE & SCHWARZ LISN)	65BNC-5001	E1-011484	May 27, 2014	May 26, 2015

Notes: 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. 10.
 3. The VCCI Site Registration No. C-1852.
 4. Tested Date: Sep. 10, 2014

5.3 Test Arrangement

- 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.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The test results of conducted emissions at mains ports are recorded of six worst margins for quasi-peak (mandatory) [and average (if necessary)] values against the limits at frequencies of interest unless the margin is 20 dB or greater.

Note: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.



Note: Support units were connected to second LISN.

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

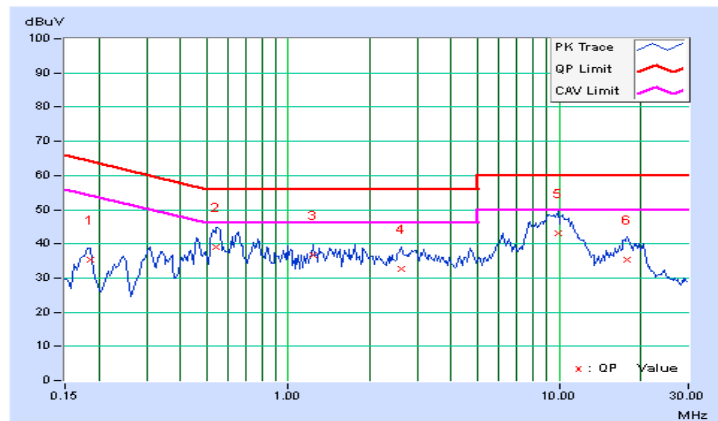
5.4 Test Results (1)

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 76%RH
Tested by	Ian Chang		
Test Mode	Mode 1		

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18516	0.16	35.22	30.04	35.38	30.20	64.25	54.25	-28.87	-24.05
2	0.54453	0.17	38.96	25.89	39.13	26.06	56.00	46.00	-16.87	-19.94
3	1.24219	0.18	36.38	26.69	36.56	26.87	56.00	46.00	-19.44	-19.13
4	2.62109	0.22	32.58	24.74	32.80	24.96	56.00	46.00	-23.20	-21.04
5	9.87500	0.53	42.50	32.82	43.03	33.35	60.00	50.00	-16.97	-16.65
6	17.85547	1.01	34.29	22.45	35.30	23.46	60.00	50.00	-24.70	-26.54

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

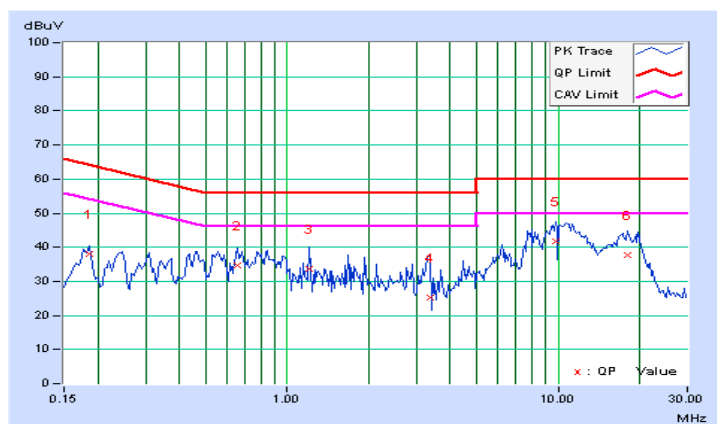


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 76%RH
Tested by	Ian Chang		
Test Mode	Mode 1		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18516	0.54	37.39	27.90	37.93	28.44	64.25	54.25	-26.32	-25.81
2	0.65391	0.54	34.15	24.12	34.69	24.66	56.00	46.00	-21.31	-21.34
3	1.21094	0.56	33.13	22.57	33.69	23.13	56.00	46.00	-22.31	-22.87
4	3.35547	0.49	24.74	13.20	25.23	13.69	56.00	46.00	-30.77	-32.31
5	9.77734	0.76	40.91	30.66	41.67	31.42	60.00	50.00	-18.33	-18.58
6	18.10938	1.04	36.75	20.14	37.79	21.18	60.00	50.00	-22.21	-28.82

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



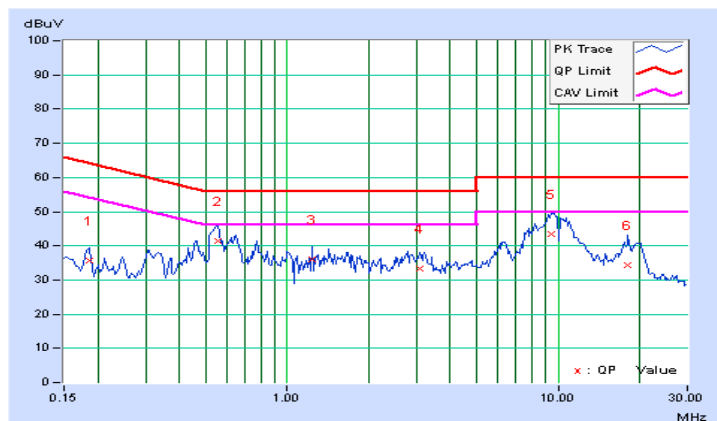
5.5 Test Results (2)

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 76%RH
Tested by	Ian Chang		
Test Mode	Mode 2		

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18516	0.16	35.38	28.97	35.54	29.13	64.25	54.25	-28.71	-25.12
2	0.55625	0.17	41.26	31.59	41.43	31.76	56.00	46.00	-14.57	-14.24
3	1.23828	0.18	35.75	26.09	35.93	26.27	56.00	46.00	-20.07	-19.73
4	3.08203	0.24	33.24	26.39	33.48	26.63	56.00	46.00	-22.52	-19.37
5	9.42969	0.52	43.07	32.68	43.59	33.20	60.00	50.00	-16.41	-16.80
6	18.16016	1.03	33.36	22.04	34.39	23.07	60.00	50.00	-25.61	-26.93

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

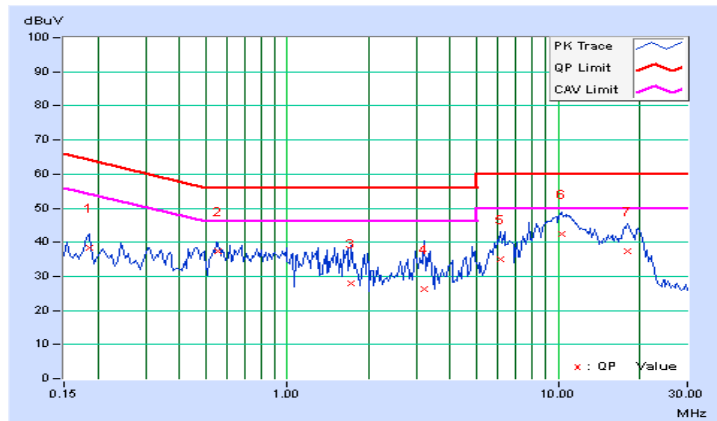


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 76%RH
Tested by	Ian Chang		
Test Mode	Mode 2		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18516	0.54	37.69	26.94	38.23	27.48	64.25	54.25	-26.02	-26.77
2	0.55480	0.54	36.68	26.65	37.22	27.19	56.00	46.00	-18.78	-18.81
3	1.73047	0.57	27.26	17.05	27.83	17.62	56.00	46.00	-28.17	-28.38
4	3.20313	0.50	25.87	15.13	26.37	15.63	56.00	46.00	-29.63	-30.37
5	6.13281	0.56	34.43	24.17	34.99	24.73	60.00	50.00	-25.01	-25.27
6	10.36328	0.78	41.79	31.54	42.57	32.32	60.00	50.00	-17.43	-17.68
7	17.97266	1.04	36.43	20.08	37.47	21.12	60.00	50.00	-22.53	-28.88

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



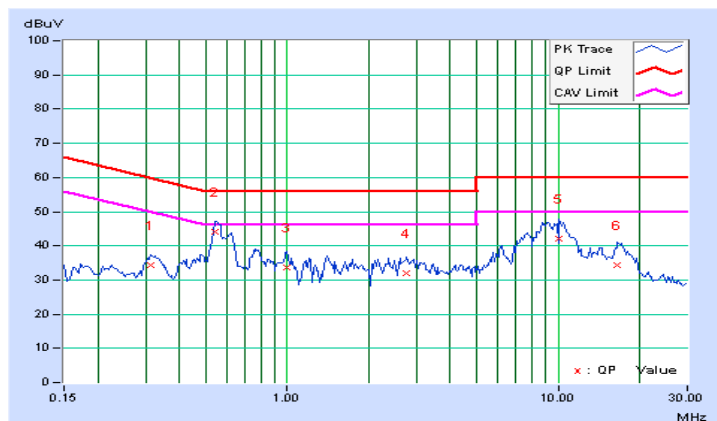
5.6 Test Results (3)

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 76%RH
Tested by	Ian Chang		
Test Mode	Mode 3		

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.31406	0.17	34.31	25.04	34.48	25.21	59.86	49.86	-25.39	-24.66
2	0.54453	0.17	43.90	34.80	44.07	34.97	56.00	46.00	-11.93	-11.03
3	0.99766	0.17	33.52	24.67	33.69	24.84	56.00	46.00	-22.31	-21.16
4	2.76563	0.23	31.83	23.52	32.06	23.75	56.00	46.00	-23.94	-22.25
5	10.08594	0.55	41.58	33.23	42.13	33.78	60.00	50.00	-17.87	-16.22
6	16.58203	0.95	33.55	22.58	34.50	23.53	60.00	50.00	-25.50	-26.47

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

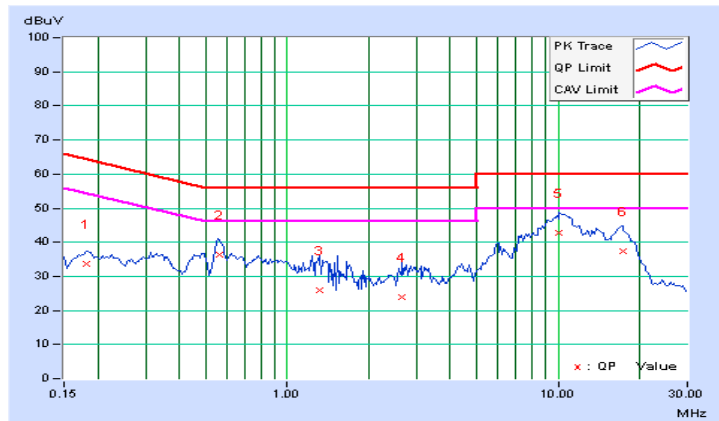


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 76%RH
Tested by	Ian Chang		
Test Mode	Mode 3		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18125	0.54	33.21	21.58	33.75	22.12	64.43	54.43	-30.67	-32.30
2	0.56016	0.54	35.69	25.22	36.23	25.76	56.00	46.00	-19.77	-20.24
3	1.31250	0.57	25.37	15.79	25.94	16.36	56.00	46.00	-30.06	-29.64
4	2.66016	0.53	23.27	13.39	23.80	13.92	56.00	46.00	-32.20	-32.08
5	10.03125	0.77	41.84	31.37	42.61	32.14	60.00	50.00	-17.39	-17.86
6	17.28516	1.02	36.43	19.85	37.45	20.87	60.00	50.00	-22.55	-29.13

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



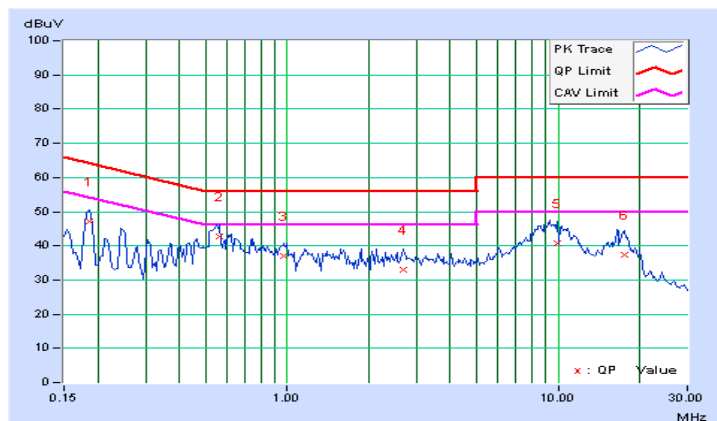
5.7 Test Results (4)

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 76%RH
Tested by	Ian Chang		
Test Mode	Mode 4		

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18516	0.16	47.02	35.84	47.18	36.00	64.25	54.25	-17.07	-18.25
2	0.56016	0.17	42.75	32.20	42.92	32.37	56.00	46.00	-13.08	-13.63
3	0.97422	0.17	36.85	28.68	37.02	28.85	56.00	46.00	-18.98	-17.15
4	2.67188	0.23	32.67	25.69	32.90	25.92	56.00	46.00	-23.10	-20.08
5	9.96875	0.54	40.30	31.11	40.84	31.65	60.00	50.00	-19.16	-18.35
6	17.58203	1.00	36.49	22.68	37.49	23.68	60.00	50.00	-22.51	-26.32

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

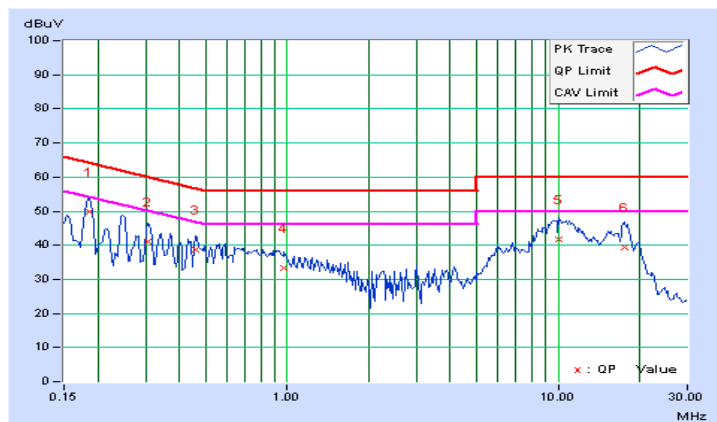


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 76%RH
Tested by	Ian Chang		
Test Mode	Mode 4		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18516	0.54	49.18	35.54	49.72	36.08	64.25	54.25	-14.53	-18.17
2	0.30625	0.53	40.55	27.83	41.08	28.36	60.07	50.07	-18.99	-21.71
3	0.45859	0.53	38.20	25.30	38.73	25.83	56.72	46.72	-17.99	-20.89
4	0.97422	0.56	32.81	22.47	33.37	23.03	56.00	46.00	-22.63	-22.97
5	10.10156	0.77	40.97	30.09	41.74	30.86	60.00	50.00	-18.26	-19.14
6	17.49219	1.02	38.35	20.13	39.37	21.15	60.00	50.00	-20.63	-28.85

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



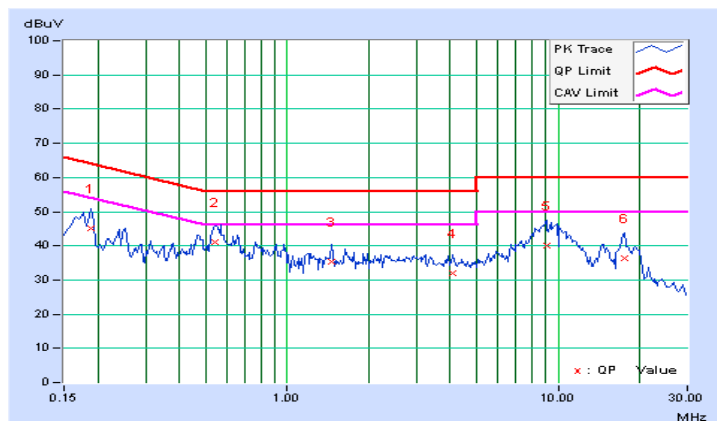
5.8 Test Results (5)

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 76%RH
Tested by	Ian Chang		
Test Mode	Mode 5		

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18906	0.16	44.94	33.39	45.10	33.55	64.08	54.08	-18.98	-20.53
2	0.54453	0.17	40.83	29.24	41.00	29.41	56.00	46.00	-15.00	-16.59
3	1.44922	0.18	35.06	26.66	35.24	26.84	56.00	46.00	-20.76	-19.16
4	4.07813	0.28	31.55	24.83	31.83	25.11	56.00	46.00	-24.17	-20.89
5	9.07031	0.50	39.67	29.40	40.17	29.90	60.00	50.00	-19.83	-20.10
6	17.54688	1.00	35.26	22.15	36.26	23.15	60.00	50.00	-23.74	-26.85

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

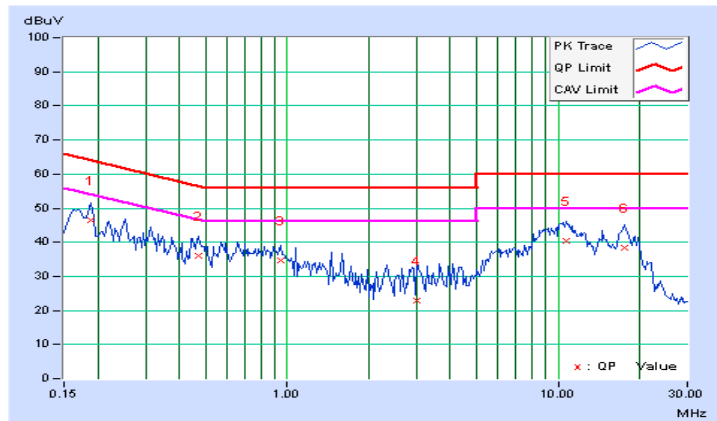


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 76%RH
Tested by	Ian Chang		
Test Mode	Mode 5		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18906	0.54	45.93	31.98	46.47	32.52	64.08	54.08	-17.61	-21.56
2	0.47031	0.53	35.37	21.92	35.90	22.45	56.51	46.51	-20.60	-24.05
3	0.94688	0.56	34.25	24.10	34.81	24.66	56.00	46.00	-21.19	-21.34
4	3.01953	0.51	22.37	12.23	22.88	12.74	56.00	46.00	-33.12	-33.26
5	10.71094	0.80	39.67	29.08	40.47	29.88	60.00	50.00	-19.53	-20.12
6	17.56250	1.03	37.45	18.96	38.48	19.99	60.00	50.00	-21.52	-30.01

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



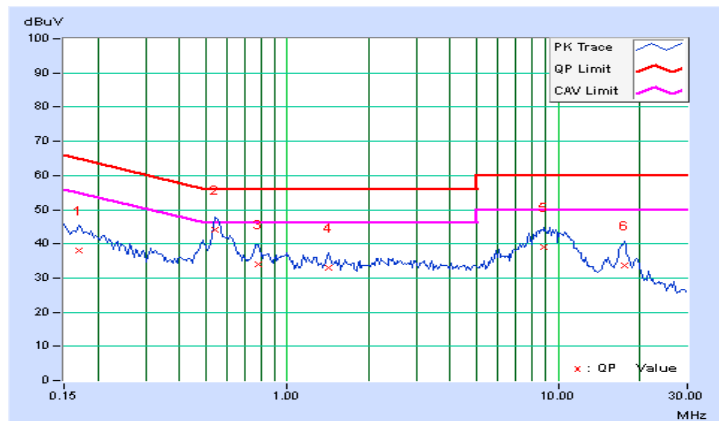
5.9 Test Results (6)

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 76%RH
Tested by	Ian Chang		
Test Mode	Mode 6		

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16953	0.15	38.01	26.74	38.16	26.89	64.98	54.98	-26.82	-28.09
2	0.54453	0.17	44.02	34.25	44.19	34.42	56.00	46.00	-11.81	-11.58
3	0.78281	0.17	33.83	26.51	34.00	26.68	56.00	46.00	-22.00	-19.32
4	1.42969	0.18	32.67	25.58	32.85	25.76	56.00	46.00	-23.15	-20.24
5	8.87891	0.49	38.50	28.45	38.99	28.94	60.00	50.00	-21.01	-21.06
6	17.54688	1.00	32.64	20.52	33.64	21.52	60.00	50.00	-26.36	-28.48

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

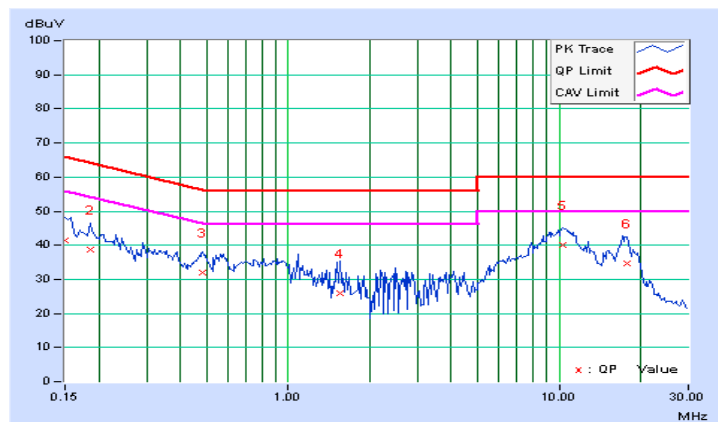


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 76%RH
Tested by	Ian Chang		
Test Mode	Mode 6		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.55	40.81	26.63	41.36	27.18	66.00	56.00	-24.64	-28.82
2	0.18516	0.54	38.22	26.34	38.76	26.88	64.25	54.25	-25.49	-27.37
3	0.48203	0.53	31.61	20.67	32.14	21.20	56.30	46.30	-24.16	-25.10
4	1.55078	0.57	25.44	16.53	26.01	17.10	56.00	46.00	-29.99	-28.90
5	10.29297	0.78	39.17	28.35	39.95	29.13	60.00	50.00	-20.05	-20.87
6	17.80078	1.03	33.50	15.97	34.53	17.00	60.00	50.00	-25.47	-33.00

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



6 Radiated Emissions up to 1 GHz

6.1 Limits

Emissions radiated outside of the specified bands, shall be according to the general radiated limits as following:

Radiated Emissions Limits at 10 meters (dB μ V/m)				
Frequencies (MHz)	FCC 15B / ICES-003, Class A	FCC 15B / ICES-003, Class B	CISPR 22, Class A	CISPR 22, Class B
30-88	39	29.5	40	30
88-216	43.5	33.1		
216-230	46.4	35.6		
230-960				
960-1000	49.5	43.5	47	37

Radiated Emissions Limits at 3 meters (dB μ V/m)				
Frequencies (MHz)	FCC 15B / ICES-003, Class A	FCC 15B / ICES-003, Class B	CISPR 22, Class A	CISPR 22, Class B
30-88	49.5	40	50.5	40.5
88-216	54	43.5		
216-230	56.9	46		
230-960				
960-1000	60	54	57.5	47.5

- Notes: 1. The lower limit shall apply at the transition frequencies.
 2. Emission level (dB μ V/m) = 20 log Emission level (uV/m).
 3. QP detector shall be applied if not specified.

6.2 Test Instruments

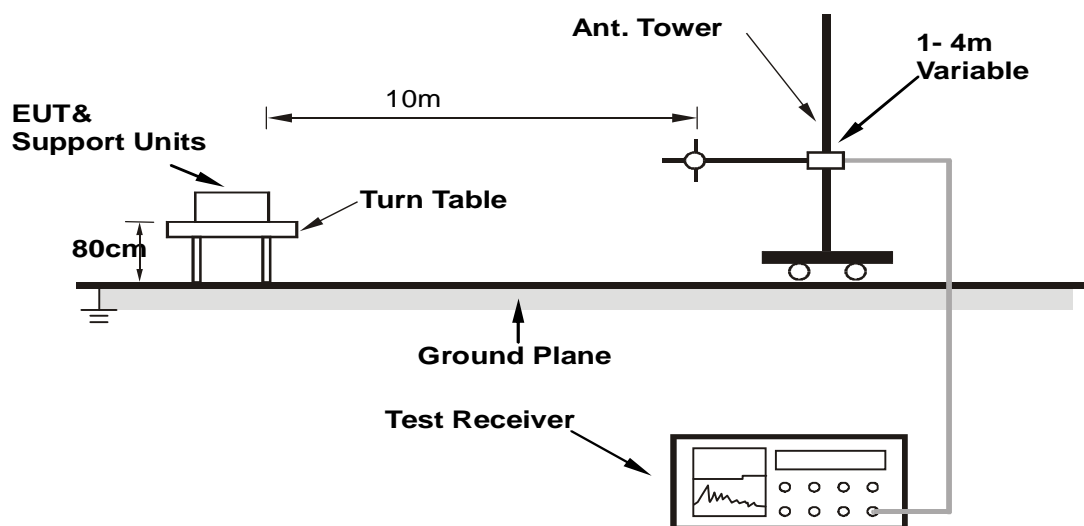
Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Agilent Preamplifier	8447D	2944A11062	Feb. 27, 2014	Feb. 26, 2015
Agilent Preamplifier	8447D	2944A11064	Feb. 27, 2014	Feb. 26, 2015
Agilent Test Receiver	N9038A	MY50010158	Jul. 22, 2014	Jul. 21, 2015
Agilent Test Receiver	N9038A	MY51210114	Nov. 26, 2013	Nov. 25, 2014
Schwarzbeck Antenna	VULB9168	9168-316	Feb. 27, 2014	Feb. 26, 2015
Schwarzbeck Antenna	VULB9168	9168-317	Feb. 27, 2014	Feb. 26, 2015
Max Full. Turn Table & Tower	MF7802	MF7802121	NA	NA
Max Full. Tower	MF7802	MF780208105	NA	NA
Software	ADT_Radiated_V8.7.07	NA	NA	NA
WOKEN RF cable	8D	CABLE-CH8-01.V	Dec. 18, 2013	Dec. 17, 2014
JYE BAO RF cable	8D	CABLE-CH8-02.H	Dec. 18, 2013	Dec. 17, 2014
JYE BAO RF cable	8D	CABLE-CH8-03.3M	Dec. 18, 2013	Dec. 17, 2014

- Notes: 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 Chamber No. 8.
 3. The Industry Canada Reference No. IC 7450E-8.
 4. The VCCI Site Registration No. R-2946.
 5. The FCC Site Registration No. 493821.
 6. Tested Date: Sep. 11 ~ 16, 2014

6.3 Test Arrangement

- The EUT was placed on the top of a rotating table 0.8 meters above the ground at an accredited test facility. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- 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.
- 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.

Note: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for quasi-peak detection (QP) at frequency below 1GHz.



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

6.4 Test Results (1)

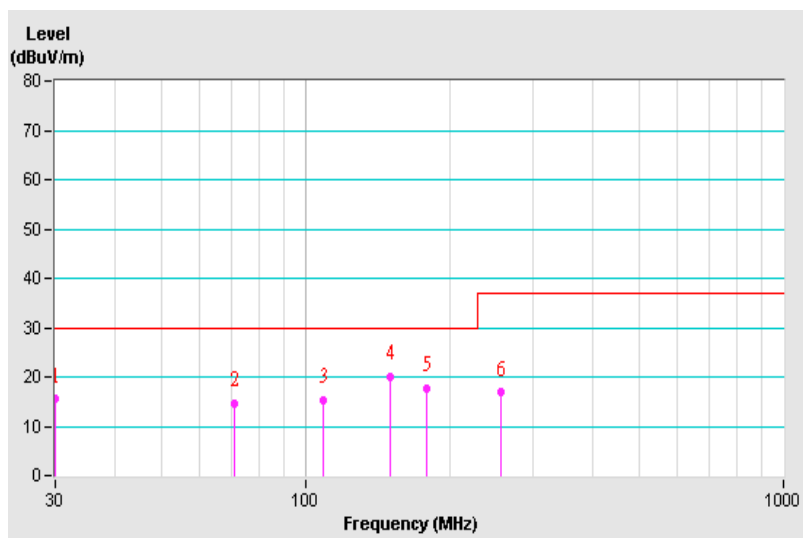
Frequency Range	30MHz ~ 1GHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP), 120kHz
Input Power	120Vac, 60Hz	Environmental Conditions	26°C, 76%RH
Tested by	Ian Chang		
Test Mode	Mode 1		

Antenna Polarity & Test Distance : Horizontal at 10 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	30.00	15.43 QP	30.00	-14.57	4.00 H	127	30.64	-15.21
2	71.22	14.69 QP	30.00	-15.31	4.00 H	198	30.23	-15.54
3	108.96	15.34 QP	30.00	-14.66	4.00 H	180	31.30	-15.96
4	151.01	20.08 QP	30.00	-9.92	4.00 H	165	32.30	-12.22
5	179.48	17.61 QP	30.00	-12.39	4.00 H	360	30.99	-13.38
6	255.96	16.82 QP	37.00	-20.18	4.00 H	12	28.86	-12.04

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) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value



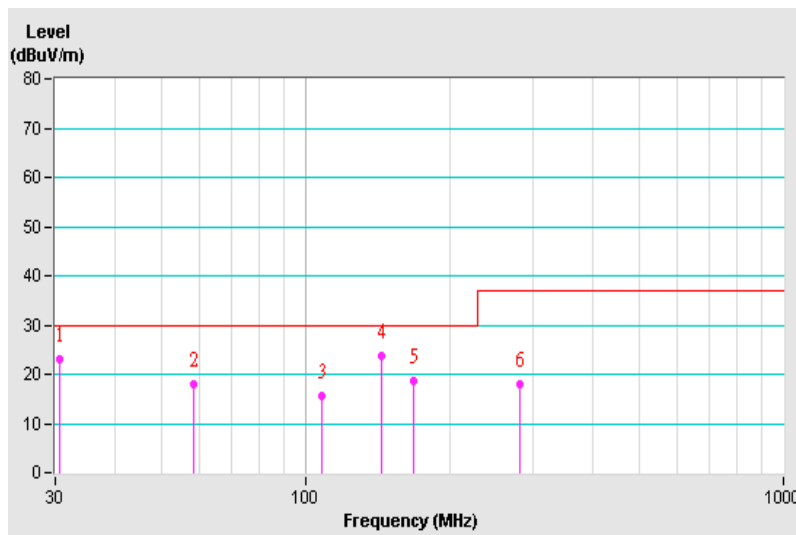
Frequency Range	30MHz ~ 1GHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP), 120kHz
Input Power	120Vac, 60Hz	Environmental Conditions	26°C, 76%RH
Tested by	Ian Chang		
Test Mode	Mode 1		

Antenna Polarity & Test Distance : Vertical at 10 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	30.68	23.05 QP	30.00	-6.95	1.00 V	344	37.65	-14.60
2	58.23	17.90 QP	30.00	-12.10	1.00 V	166	30.88	-12.98
3	108.38	15.65 QP	30.00	-14.35	1.00 V	75	31.13	-15.48
4	144.36	23.78 QP	30.00	-6.22	1.00 V	88	35.73	-11.95
5	168.47	18.67 QP	30.00	-11.33	1.00 V	72	30.39	-11.72
6	280.60	18.09 QP	37.00	-18.91	1.00 V	50	28.67	-10.58

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) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value



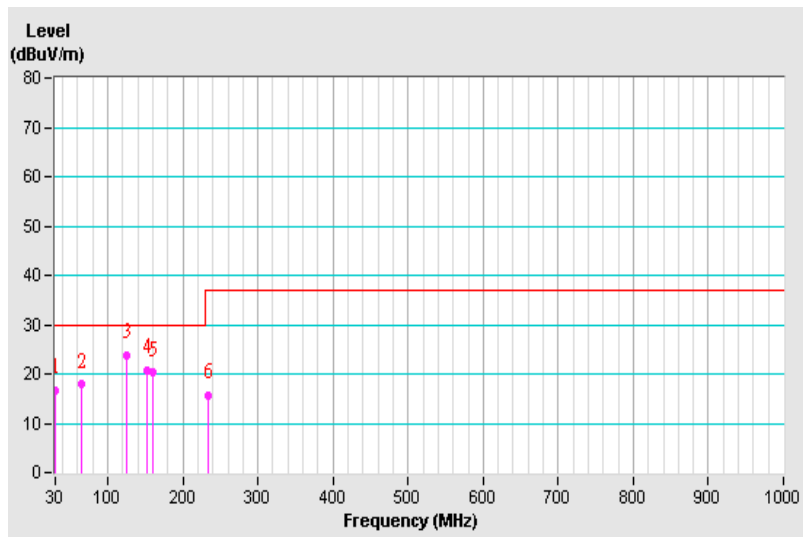
6.5 Test Results (2)

Frequency Range	30MHz ~ 1GHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP), 120kHz
Tested by	Vincent Lin	Environmental Conditions	27°C, 73%RH
Test Mode	Mode 6		

Antenna Polarity & Test Distance : Horizontal at 10 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	30.33	16.67 QP	30.00	-13.33	4.00 H	180	31.87	-15.20
2	64.97	17.86 QP	30.00	-12.14	4.00 H	199	32.07	-14.21
3	125.74	23.72 QP	30.00	-6.28	4.00 H	144	38.08	-14.36
4	151.93	20.63 QP	30.00	-9.37	4.00 H	162	32.85	-12.22
5	160.80	20.24 QP	30.00	-9.76	4.00 H	67	32.31	-12.07
6	233.46	15.71 QP	37.00	-21.29	2.35 H	178	29.45	-13.74

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) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

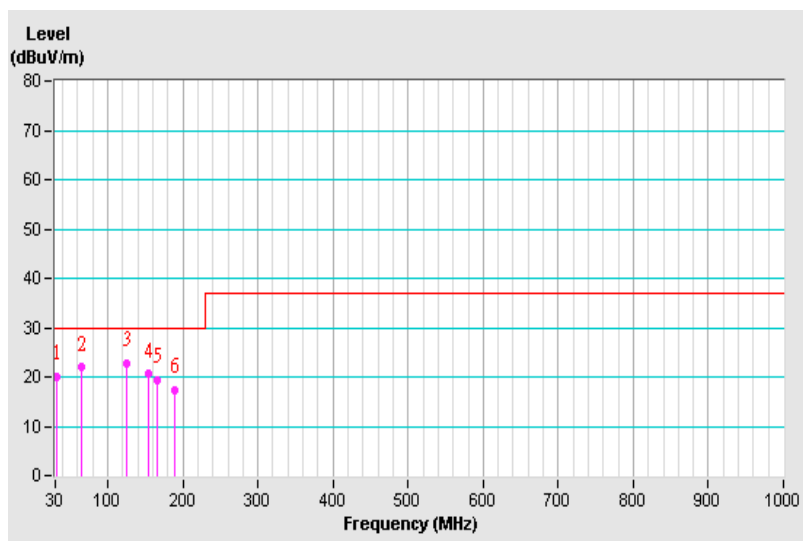


Frequency Range	30MHz ~ 1GHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP), 120kHz
Tested by	Vincent Lin	Environmental Conditions	27°C, 73%RH
Test Mode	Mode 6		

Antenna Polarity & Test Distance : Vertical at 10 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	31.65	20.02 QP	30.00	-9.98	1.00 V	172	34.61	-14.59
2	64.44	21.90 QP	30.00	-8.10	1.43 V	216	35.64	-13.74
3	124.14	22.68 QP	30.00	-7.32	1.00 V	83	36.49	-13.81
4	154.01	20.51 QP	30.00	-9.49	1.00 V	102	31.89	-11.38
5	165.75	19.38 QP	30.00	-10.62	1.00 V	44	30.96	-11.58
6	188.74	17.21 QP	30.00	-12.79	1.00 V	159	31.17	-13.96

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) – Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value



7 Pictures of Test Arrangements

7.1 Conducted Emissions at Mains Ports

Mode 1~3

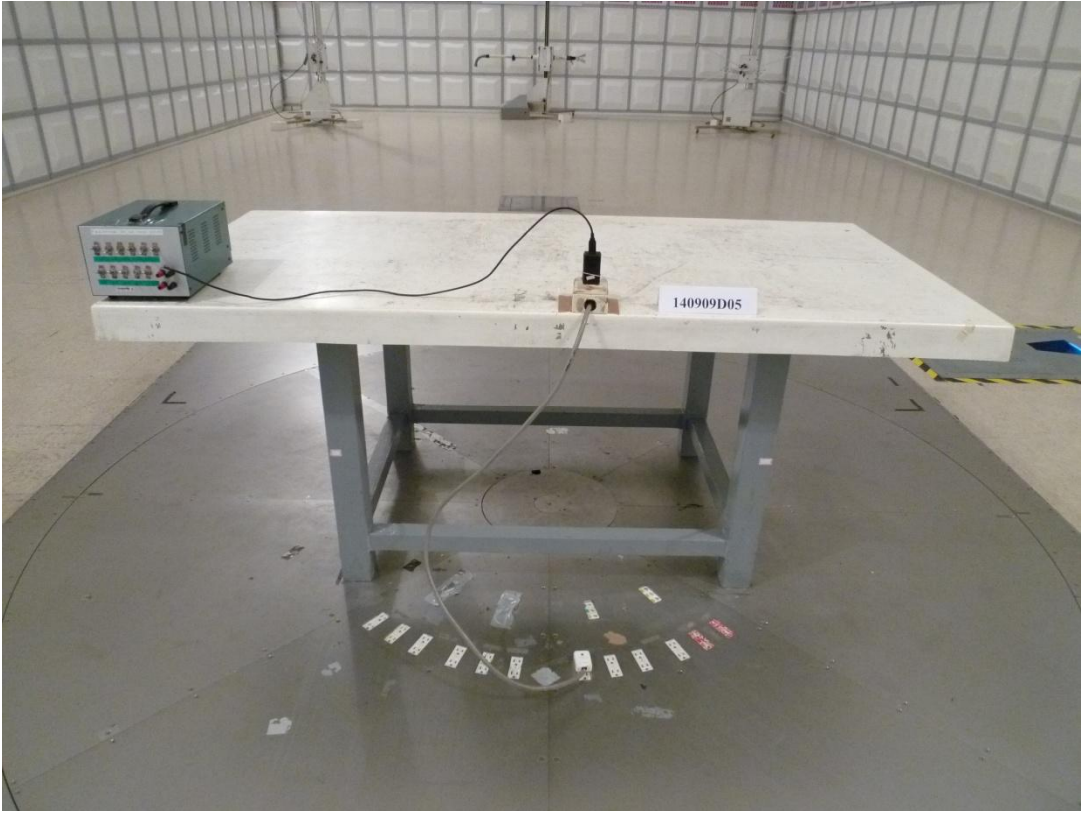


Mode 4~6



7.2 Radiated Emissions up to 1 GHz

Mode 1~3



Mode 4~6



Appendix – 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.

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

Linko EMC/RF Lab

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-5935343

Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Lab

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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

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