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FCC DoC TEST REPORT

REPORT NO. : FC110907E02D

MODEL NO. : AR5B22, AR5B22-SB

RECEIVED : Sep. 06, 2011

TESTED : Oct. 11 to 13, 2011

ISSUED : Dec. 16, 2011

APPLICANT : Qualcomm Atheros, Inc.

ADDRESS : 1700 Technology Drive, San Jose, CA 95110

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

LAB ADDRESS: No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen,
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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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FC110907E02D	Original release	Dec. 16, 2011



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1 CERTIFICATION

PRODUCT : PCIE 802.11a/b/g/n 2.4GHz/5GHz + USB BT 4.0 card,
PCIE 802.11b/g/n 2.4GHz + USB BT 4.0 card

BRAND NAME : Atheros

MODEL NO. : AR5B22, AR5B22-SB

TEST SAMPLE : R&D SAMPLE

APPLICANT : Qualcomm Atheros, Inc.

TESTED : Oct. 11 to 13, 2011

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: AR5B22) 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 : Midoli Peng, **DATE:** Dec. 16, 2011
(Midoli Peng, Specialist)

APPROVED BY : Ken Lu, **DATE:** Dec. 16, 2011
(Ken Lu, 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 -11.76 dB at 0.185 MHz
CISPR 22: 1997, Class B	Radiated Test	PASS	Meets Class B Limit Minimum passing margin is -0.41 dB at 184.77 MHz
ICES-003: 2004, Class B			

NOTE:

1. The limit for radiated test was performed according to third edition of CISPR 22:1997, which was specified in FCC PART 15 Subpart B 15.109(g). Also the limits of ICES-003: 2004 and CISPR 22:1997 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)	3.81 dB
Radiated emissions (1GHz ~ 18GHz)	2.19 dB

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	PCIE 802.11a/b/g/n 2.4GHz/5GHz + USB BT 4.0 card, PCIE 802.11b/g/n 2.4GHz + USB BT 4.0 card
MODEL NO.	AR5B22, AR5B22-SB
POWER SUPPLY	DC 3.3V from host equipment
POWER CORD	NA
DATA CABLE SUPPLIED	NA
I/O PORT	NA
ASSOCIATED DEVICES	NA

Note :

1. There are Bluetooth technology and WLAN technology used for the EUT.
2. The Bluetooth supports version 4.0.
3. The EUT was included two product names & model names, which are identical to each other in all aspects except for the following table:

Product name	Model name	Difference
PCIE 802.11a/b/g/n 2.4GHz/5GHz + USB BT 4.0 card	AR5B22	802.11abgn + Bluetooth
PCIE 802.11b/g/n 2.4GHz + USB BT 4.0 card	AR5B22-SB	802.11bgn + Bluetooth

From the above models, model: **AR5B22** was selected as representative model for the test and their data were recorded in this report.

4. The device has three configurations (working mode)
 - a. WLAN only (2x2 MIMO)
 - b. BT+WLAN (2x2 MIMO) with reduced power on WLAN
 - c. BT+WLAN (1x1 mode on a/b/g only, chain 0 is used for BT and chain 1 is used for WLAN)
5. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.



3.2 ANTENNA SPECIFICATIONS

There is one set of antenna provided to this EUT, please refer to the following table:

Set 1:

No.	Brand	Model	Antenna Type	Connector	Antenna Gain (dBi)< included cable loss>		
					For 2.4GHz	For 5GHz (5.15~5.35)	For 5GHz (5.47~5.725)
1&2	WNC	81.EBJ15.005	PIFA	IPEX	3.62	3.08	4.76

Cable Loss:

No.	Brand	Model	Cable Loss(dB)			Cable Length
			For 2.4GHz	For 5GHz (5.15~5.35)	For 5GHz (5.47~5.725)	
1&2	WNC	81-EBJ15.005	1.15	1.70	1.74	300

Note:

- 1. Above antenna gains of antenna are Total (H+V).

3.3 GENERAL DESCRIPTION OF TEST MODE

The EUT was tested under following test modes:

Test Mode	Description
Mode 1	WLAN + Bluetooth mode



3.4 DESCRIPTION OF SUPPORT UNITS

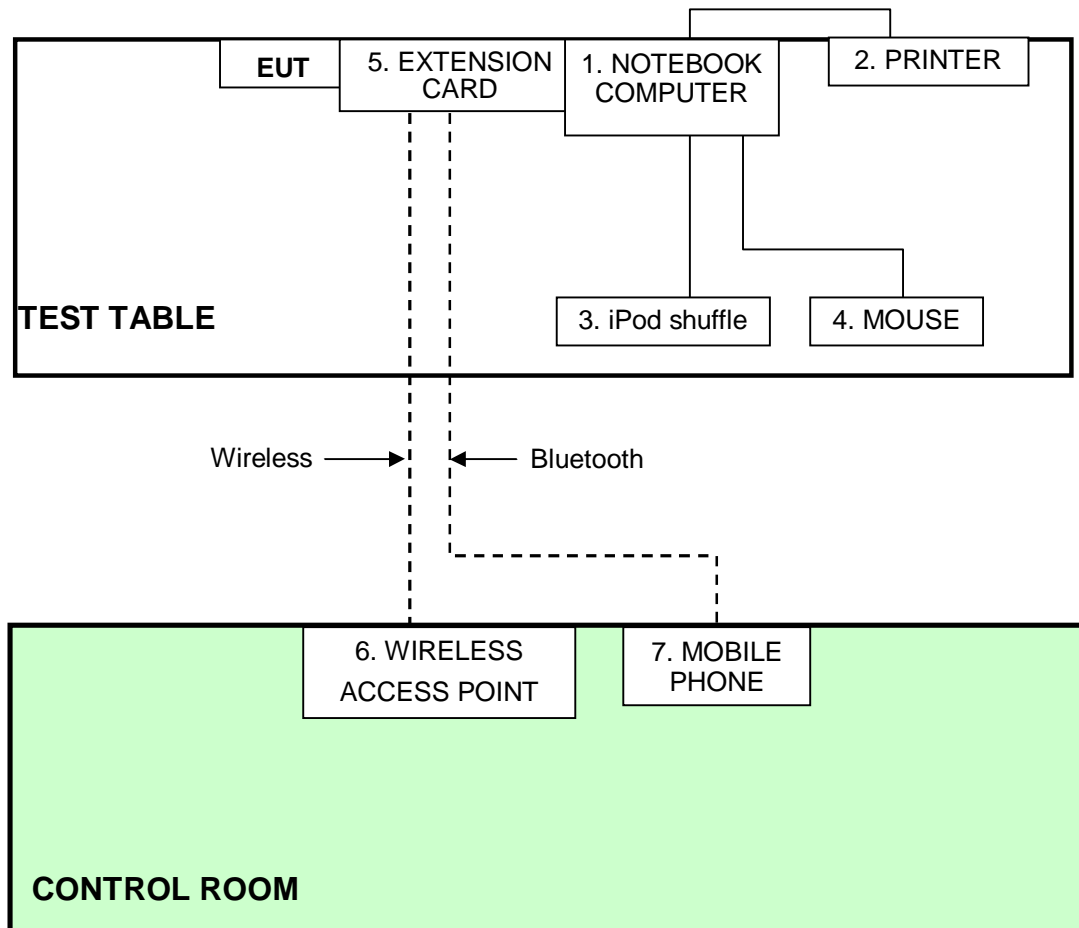
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Product	Brand	Model No.	Serial No.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP21L	CN-0GD366-70166-5B3-09ZX	QDS-BRCM1016
2	PRINTER	EPSON	LQ-300+II	G88Y074083	FCC DoC
3	iPod shuffle	Apple	MC749TA/A	CC4DN25WDFDM	FCC DoC
4	MOUSE	DELL	MOC5UO	I14066PK	FCC DoC
5	EXTENSION CARD	Atheros	NA	NA	NA
6	WIRELESS ACCESS POINT	Air Station	WLA-G54	NA	NA
7	MOBILE PHONE	Sony Ericsson	Sation U1	NA	FCC DoC

No.	Signal cable description
1	NA
2	USB cable(1.8m)
3	USB cable(0.1m)
4	USB cable(1.8m)
5	NA
6	NA
7	NA

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

3.5 CONFIGURATION OF SYSTEM UNDER TEST





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

Test date: Oct. 11, 2011

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver	ESCS 30	100375	Mar. 09, 2011	Mar. 08, 2012
Line-Impedance Stabilization Network (for EUT)	ENV216	100072	Jun. 10, 2011	Jun. 09, 2012
Line-Impedance Stabilization Network (for Peripheral)	ESH3-Z5	848773/004	Nov. 03, 2010	Nov. 02, 2011
RF Cable (JYBAO)	5DFB	COCCAB-002	Aug. 29, 2011	Aug. 28, 2012
50 ohms Terminator	50	3	Oct. 03, 2010	Nov. 02, 2011
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. C.
3. The VCCI Con C Registration No. is C-3611.

4.1.3 TEST PROCEDURE

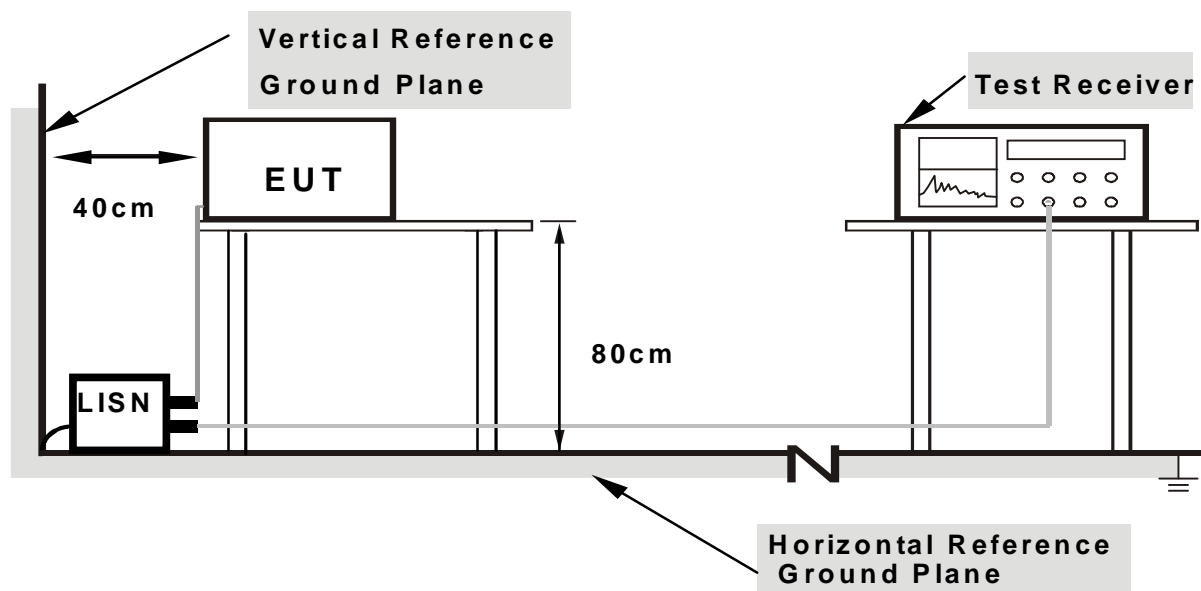
The basic test procedure was in accordance with ANSI C63.4-2003 (section 7), CISPR 22 (section 9) and ICES-003: 2004 (section 4).

- 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 cm 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

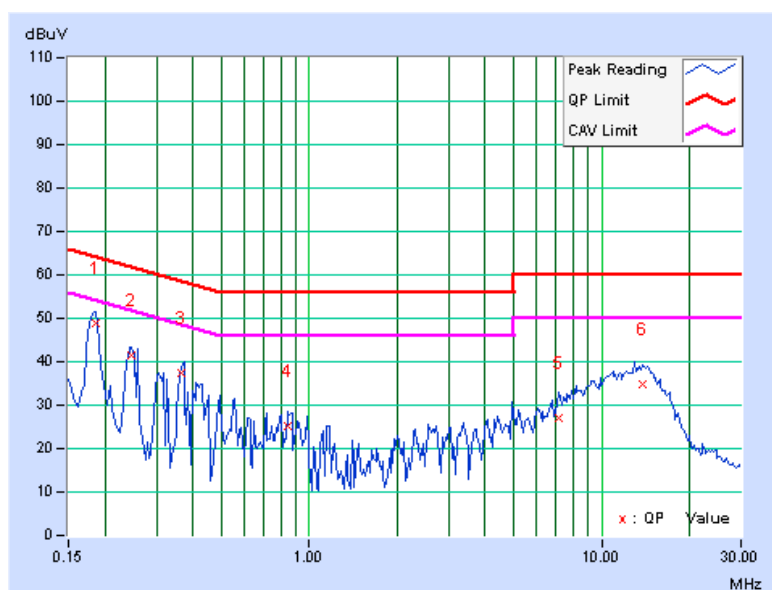
1. Connect the EUT with the support unit 1 (Notebook Computer) which is placed on a testing table.
2. The support unit 1 (Notebook Computer) ran a test program “Ping. exe” to enable EUT under transmission/receiving condition continuously with support unit 6 (Wireless Access Point) via wireless.
3. The support unit 1 (Notebook Computer) sent messages to support unit 7 (Mobile) under transmission condition continuously via Bluetooth.

4.1.7 TEST RESULTS

TEST MODE	Mode 1	PHASE	Line (L)
INPUT POWER (SYSTEM)	120Vac, 60 Hz	6dB BANDWIDTH	9 kHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 70 % RH	TESTED BY	Mike Hsieh

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	0.185	0.10	48.63	42.40	48.73	42.50	64.25	54.25	-15.53	-11.76
2	0.245	0.10	41.24	33.87	41.34	33.97	61.93	51.93	-20.59	-17.96
3	0.363	0.11	37.38	33.90	37.49	34.01	58.66	48.66	-21.17	-14.65
4	0.849	0.14	25.00	22.41	25.14	22.55	56.00	46.00	-30.86	-23.45
5	7.125	0.44	26.64	17.00	27.08	17.44	60.00	50.00	-32.92	-32.56
6	13.863	0.64	34.06	27.56	34.70	28.20	60.00	50.00	-25.30	-21.80

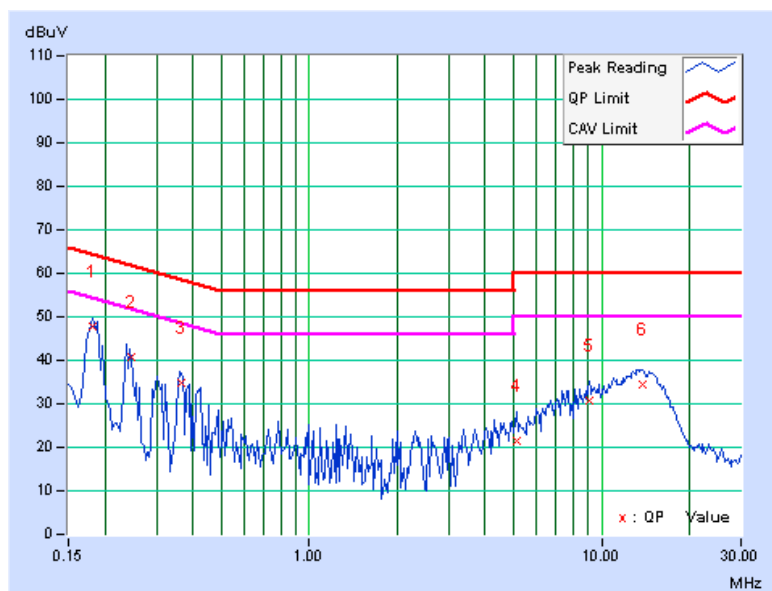
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. The emission levels of other frequencies were very low against the limit.
 3. Margin value = Emission level - Limit value
 4. Correction factor = Insertion loss + Cable loss
 5. Emission Level = Correction Factor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



TEST MODE	Mode 1	PHASE	Neutral (N)
INPUT POWER (SYSTEM)	120Vac, 60 Hz	6dB BANDWIDTH	9 kHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 70 % RH	TESTED BY	Mike Hsieh

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	0.181	0.08	47.65	41.45	47.73	41.53	64.43	54.43	-16.69	-12.89
2	0.246	0.09	40.76	34.54	40.85	34.63	61.90	51.90	-21.05	-17.27
3	0.367	0.11	34.80	31.69	34.91	31.80	58.57	48.57	-23.66	-16.77
4	5.148	0.27	21.35	8.82	21.62	9.09	60.00	50.00	-38.38	-40.91
5	9.078	0.38	30.20	21.33	30.58	21.71	60.00	50.00	-29.42	-28.29
6	13.883	0.51	33.83	26.89	34.34	27.40	60.00	50.00	-25.66	-22.60

- 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.





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

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 used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement 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



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4.2.2 TEST INSTRUMENTS

Test date: Oct. 12 to 13, 2011

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Agilent Spectrum Analyzer	E4443A	MY48250349	July 28, 2011	July 27, 2012
	E4443A	MY49420002	Aug. 10, 2011	Aug. 09, 2012
Agilent Pre-Selector	N9039A	MY46520331	Aug. 10, 2011	Aug. 09, 2012
	N9039A	MY46520309	July 26, 2011	July 27, 2012
Agilent Signal Generator	N5181A	MY49060520	Aug. 11, 2011	Aug. 10, 2012
Mini-Circuits Pre-Amplifier	ZFL-1000VH2B	AMP-ZFL-01	Nov. 16, 2010	Nov. 15, 2011
	ZFL-1000VH2B	AMP-ZFL-02	Nov. 16, 2010	Nov. 15, 2011
Mini-Circuits Pre_Amplifier (1~18GHz)	ZVA-183-S+	AMP-ZVA-01	Nov. 16, 2010	Nov. 15, 2011
SPACEK LABS (18~40GHz)	SLKKa-48-6	9K16	Nov. 16, 2010	Nov. 15, 2011
SCHWARZBECK Trilog Broadband Antenna	VULB 9168	9168-359	April 13, 2011	April 12, 2012
	VULB 9168	9168-358	April 13, 2011	April 12, 2012
SCHWARZBECK Horn Antenna	BBHA 9120	9120D-783	Sep. 21, 2011	Sep. 20, 2012
RF CABLE	NA	RF104-110 RF104-206 RF104-209	Dec. 22, 2010	Dec. 21, 2011
RF Cable	8DFB	CHFCAB-001 CHFCAB-002 CHFCAB-003	Nov. 16, 2010	Nov. 15, 2011
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 (3m-above 1GHz) away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna 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 turn table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. 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. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

NOTE:

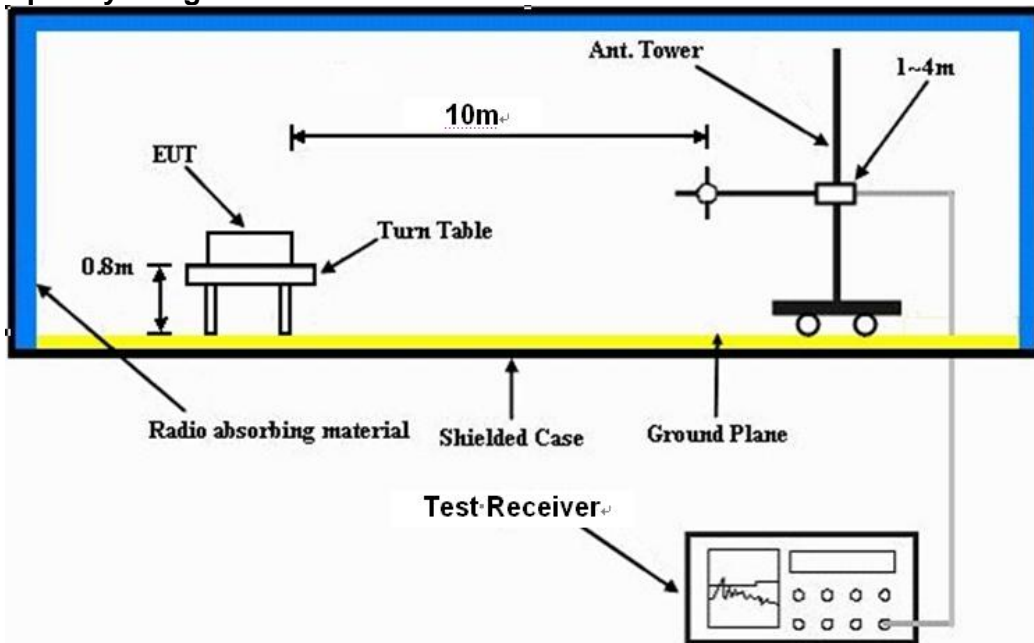
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz. The resolution 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

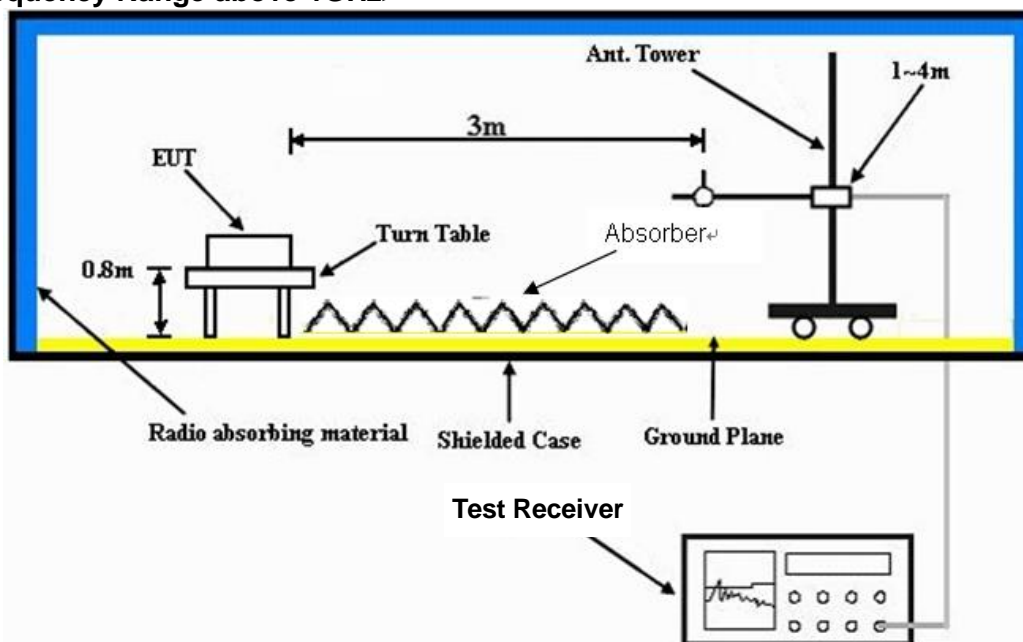
No deviation

4.2.5 TEST SETUP

<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



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



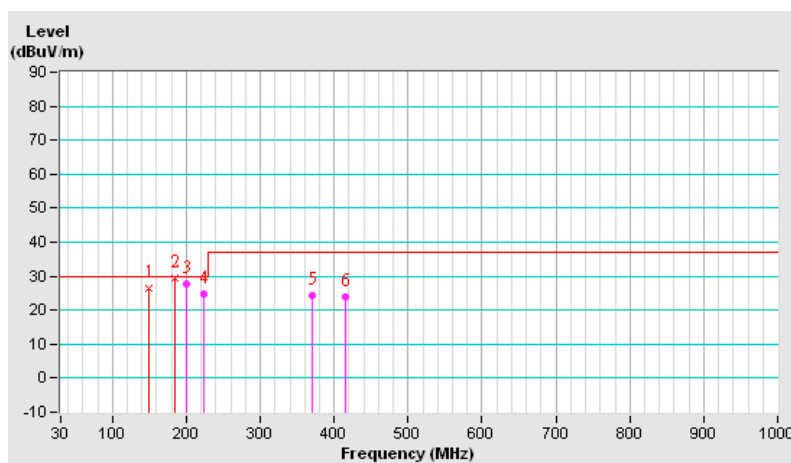
4.2.7 TEST RESULTS

TEST MODE	Mode 1	INPUT POWER (SYSTEM)	120Vac, 60 Hz
FREQUENCY RANGE	30-1000 MHz	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak, 120kHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 69 % RH	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	148.42	26.60 QP	30.00	-3.40	4.00 H	34	11.09	15.51
2	184.77	29.59 QP	30.00	-0.41	3.90 H	33	16.24	13.35
3	199.82	27.87 QP	30.00	-2.13	4.00 H	54	15.90	11.97
4	222.67	24.67 QP	30.00	-5.33	4.00 H	34	11.73	12.94
5	369.87	24.48 QP	37.00	-12.52	3.00 H	14	6.61	17.87
6	415.70	24.05 QP	37.00	-12.95	3.00 H	65	5.05	19.00

- 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.



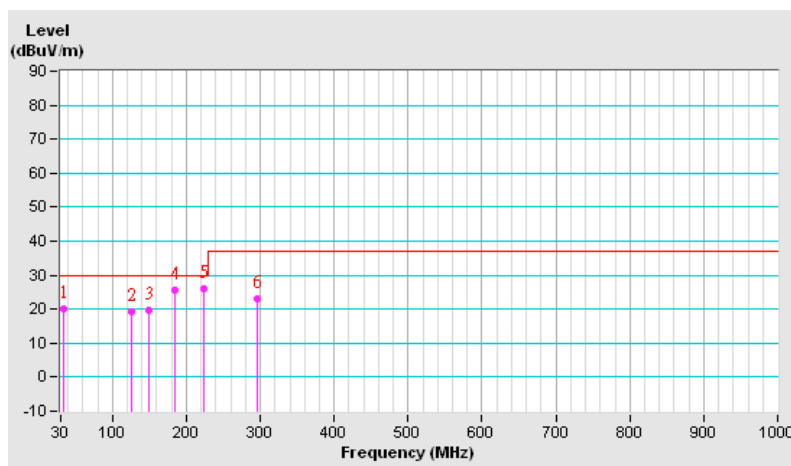


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TEST MODE	Mode 1	INPUT POWER (SYSTEM)	120Vac, 60 Hz
FREQUENCY RANGE	30-1000 MHz	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak, 120kHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 69 % RH	TESTED BY	Andy Ho

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	34.74	20.13 QP	30.00	-9.87	1.00 V	48	6.66	13.47
2	124.97	19.39 QP	30.00	-10.61	2.00 V	145	6.62	12.77
3	148.42	19.82 QP	30.00	-10.18	1.00 V	247	5.23	14.59
4	184.66	25.53 QP	30.00	-4.47	1.00 V	346	12.92	12.61
5	222.67	25.97 QP	30.00	-4.03	1.00 V	189	13.50	12.47
6	295.86	23.18 QP	37.00	-13.82	1.00 V	348	7.82	15.36

- 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.





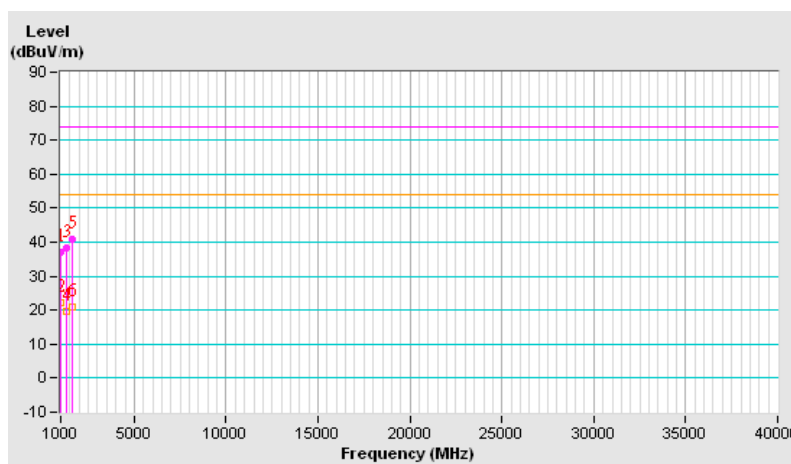
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TEST MODE	Mode 1	INPUT POWER (SYSTEM)	120Vac, 60 Hz
FREQUENCY RANGE	1000~29500MHz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) / Average (AV), 1MHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 68 % RH	TESTED BY	Andy Ho

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	1037.24	36.95 PK	74.00	-37.05	2.00 H	0	9.71	27.24
2	1037.24	22.11 AV	54.00	-31.89	2.00 H	0	-5.13	27.24
3	1329.02	38.48 PK	74.00	-35.52	1.00 H	74	10.24	28.24
4	1329.02	19.73 AV	54.00	-34.27	1.00 H	74	-8.51	28.24
5	1596.98	41.01 PK	74.00	-32.99	2.00 H	64	11.94	29.07
6	1596.98	21.02 AV	54.00	-32.98	2.00 H	64	-8.05	29.07

- 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.



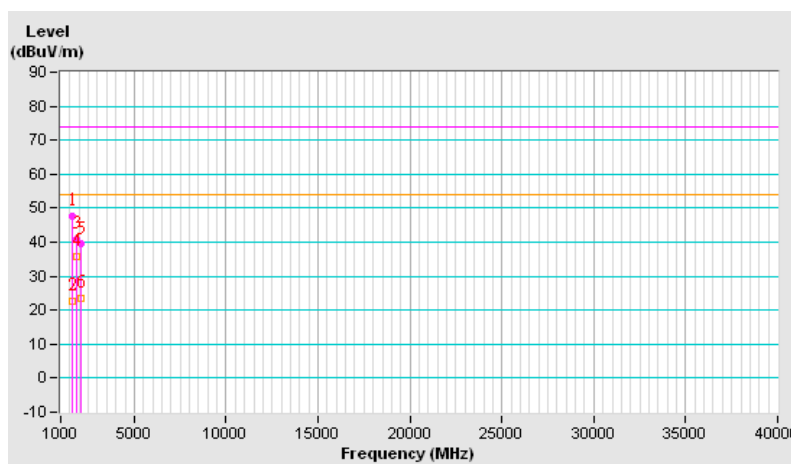


A D T

TEST MODE	Mode 1	INPUT POWER (SYSTEM)	120Vac, 60 Hz
FREQUENCY RANGE	1000~29500MHz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) / Average (AV), 1MHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 68 % RH	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	1596.39	47.65 PK	74.00	-26.35	2.00 V	360	18.58	29.07
2	1596.39	22.62 AV	54.00	-31.38	2.00 V	360	-6.45	29.07
3	1858.87	41.00 PK	74.00	-33.00	1.00 V	124	11.21	29.79
4	1858.87	35.83 AV	54.00	-18.17	1.00 V	124	6.04	29.79
5	2128.68	39.40 PK	74.00	-34.60	2.00 V	114	8.70	30.70
6	2128.68	23.51 AV	54.00	-30.49	2.00 V	114	-7.19	30.70

- 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 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 and authorization certificates of our laboratories obtained from approval agencies can be downloaded from our web site:

www.adt.com.tw/index.5.phtml.

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



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6 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---