



Supplemental “Transmit Simultaneously” Test Report

REPORT NO.: RF990601E11-1

MODEL NO.: WR5208

FCC ID: MQ4WR5208

RECEIVED: June 01, 2010

TESTED: June 18 to 29, 2010

ISSUED: Sep. 28, 2010

APPLICANT: AboCom Systems, Inc.

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R.O.C.

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

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1 CERTIFICATION

PRODUCT : 802.11b/g/n Portable 3G Router (Dual USB Function)
BRAND : AboCom
MODEL NO. : WR5208
TESTED : June 18 to 29, 2010
TEST SAMPLE : ENGINEERING SAMPLE
APPLICANT : AboCom Systems, Inc.
STANDARDS : FCC Part 15, Subpart C (Section 15.247)
ANSI C63.4-2003

The above equipment (Model: WR5208) 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 : Sunny Wen , **DATE:** Sep. 28, 2010
(Sunny Wen, Specialist)

TECHNICAL ACCEPTANCE : Hank Chung , **DATE:** Sep. 28, 2010
(Hank Chung, Deputy Manager)

APPROVED BY : May Chen , **DATE:** Sep. 28, 2010
(May Chen, Deputy Manager)

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: 47 CFR Part 15, Subpart C			
Standard Section	Test Type and Limit	Result	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -11.62dB at 4.371MHz
15.247(d)	Transmitter Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit Minimum passing margin is -2.4 dB at 320.00 MHz

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	2.44 dB
Radiated emissions (30MHz-1GHz)	3.30 dB
Radiated emissions (1GHz -18GHz)	2.19 dB
Radiated emissions (18GHz -40GHz)	2.56 dB



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3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	802.11b/g/n Portable 3G Router (Dual USB Function)
MODEL NO.	WR5208
FCC ID	MQ4WR5208
POWER SUPPLY	DC 5V from adapter, car Charger & 3.7V from battery
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b: 11 / 5.5 / 2 / 1Mbps 802.11g: 54 / 48 / 36 / 24 / 18 / 12 / 9 / 6Mbps HT20 MCS 0~7 (800ns GI): 65 / 58.5 / 52 / 39 / 26 / 19.5 / 13 / 6.5Mbps. HT40 MCS 0~7 (800ns GI): 135 / 121.5 / 108 / 81 / 54 / 40.5 / 27 / 13.5Mbps. HT20 MCS 0~7 (400ns GI): 72.2 / 65 / 57.8 / 43.3 / 28.9 / 21.7 / 14.4 / 7.2Mbps. HT40 MCS 0~7 (400ns GI): 150 / 135 / 120 / 90 / 60 / 45 / 30 / 15Mbps.
FREQUENCY RANGE	2412MHz ~ 2462MHz
NUMBER OF CHANNEL	11 for 802.11b, 802.11g, 802.11n (20MHz) 7 for 802.11n (40MHz)
MAXIMUM OUTPUT POWER	802.11b: 104.7mW 802.11g: 316.2mW 802.11n (20MHz): 288.4mW 802.11n (40MHz): 234.4mW
ANTENNA TYPE	PIFA antenna without connector (Antenna Gain: 0.81dBi)
DATA CABLE	NA
I/O PORTS	USB port x 2 LAN port x 2
ASSOCIATED DEVICES	Battery, car charger & adapter

NOTE:

1. The EUT could be applied with one 3G card and following three different models could be chosen; therefore emission tests are added for simultaneously transmit between wireless LAN and 3G function. The emission tests have been performed at the worst channel of both WLAN and 3G, and recorded in this report. <only for test, not for sale>

No.	Brand	Model No.	FCC ID
1	HUAWEI	E169u	QISE169
2	D-Link	DWM-156	KA2WM156A2
3	Vodafone	K3565-Z	Q78-3565-Z

The EUT was pre-tested in chamber with above 3G cards, the worst case was found in model no.: **K3565-Z**. Therefore only the test data of the mode was recorded in this report.

2. The EUT must be supplied with a power adapter, car charger or battery as following table:

ADAPTER	
BRAND	DVE
MODEL	DSA-12PFA-05 FUS 050200
INPUT POWER	AC 100-240V~, 50/60Hz, 0.5A
OUTPUT POWER	DC +5V, 2A 1.5m unshielded without core.
CAR CHARGER	
BRAND	SEMDITECH
MODEL	IC-DC55-GPS-G
INPUT POWER	DC 10V, 1470mA
OUTPUT POWER	DC 5V, 2A 1.2m unshielded without core
BATTERY	
BRAND	Formosa Electronic Industries., INC.
MODEL	610-00009-00A
POWER RATING	DC 3.7V, 3A

3. The EUT was pre-tested in chamber under the following modes:

TEST MODE	DESCRIPTION
Mode A	With adapter
Mode B	With car charger
Mode C	With battery

For spurious emission worse case was found in **Mode B**. Therefore only the test data of the mode was recorded in this report.

4. The EUT incorporates a SISO function with 802.11n. Physically, the EUT provides one completed transmitter and one completed receiver.
5. The EUT is 1 * 1 spatial SISO without beam forming function. The antenna configuration is one transmitter antenna and one receiver antenna, as there is 1 PIFA antenna. There is one transmitter and one receiver.
6. The EUT complies with 802.11n standards and backwards compatible with 802.11b, 802.11g products.
7. When the EUT operating in 802.11n, the software operation, which is defined by manufacturer, MCS (Modulation and Coding Schemes) from 0 to 7.
8. 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 DESCRIPTION OF TEST MODES

Operated in 2400 ~ 2483.5MHz band:

Eleven channels are provided for 802.11b, 802.11g:

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2412MHz	7	2442MHz
2	2417MHz	8	2447MHz
3	2422MHz	9	2452MHz
4	2427MHz	10	2457MHz
5	2432MHz	11	2462MHz
6	2437MHz		

Seven channels are provided for 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2422MHz	5	2442MHz
2	2427MHz	6	2447MHz
3	2432MHz	7	2452MHz
4	2437MHz		

3.3 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL:

EUT configure mode	Applicable to			Description
	PLC	RE<1G	RE≥1G	
1	√			Co-located mode With adapter
2		√	√	Co-located mode With car charger

Where PLC: Power Line Conducted Emission RE<1G RE: Radiated Emission below 1GHz
RE≥1G: Radiated Emission above 1GHz

POWER LINE CONDUCTED EMISSION TEST:

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	EUT CONFIGURE MODE
802.11g / 3G	1 to 11 / -	11 / 128	OFDM / CDMA	BPSK / -	6 / -	A

Radiated Emission Test (Below 1 GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	EUT CONFIGURE MODE
802.11g / 3G	1 to 11 / -	11 / 128	OFDM / CDMA	BPSK / -	6 / -	A

Radiated Emission Test (Above 1 GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	EUT CONFIGURE MODE
802.11g / 3G	1 to 11 / -	11 / 128	OFDM / CDMA	BPSK / -	6 / -	A



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TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE ³ 1G	23deg. C, 73%RH, 1013 hPa	DC 5V from car charger	Frank Liu
RE<1G	25deg. C, 74%RH, 1013 hPa	DC 5V from car charger	Frank Liu
PLC	25deg. C, 60%RH, 1013 hPa	120Vac, 60Hz	Max Tseng

3.4 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

47 CFR Part 15, Subpart C. (15.247)
ANSI C63.4 : 2003

All tests have been performed and recorded as per the above standards.

NOTE: The EUT has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

3.5 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.

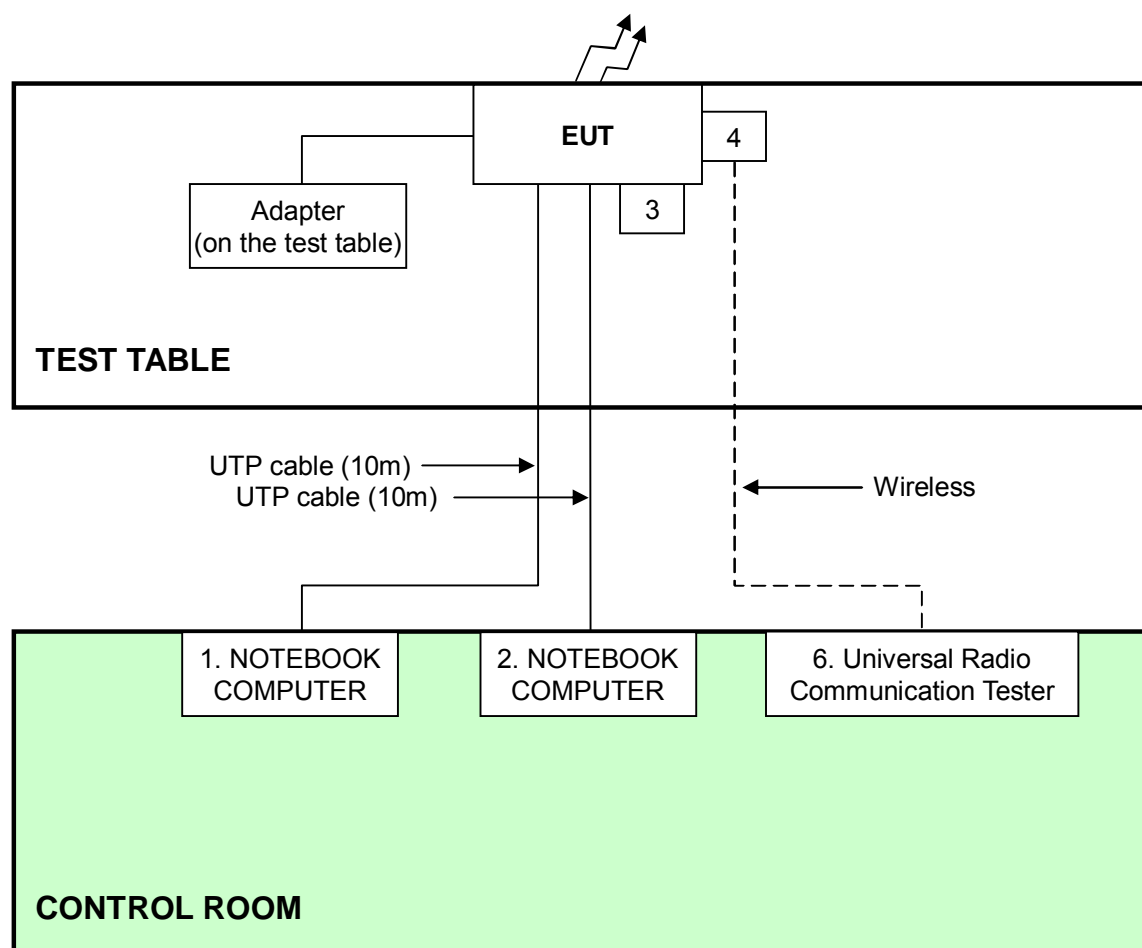
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP32LA	GSLB32S	FCC DoC
2	NOTEBOOK COMPUTER	DELL	PP27L	6YLB32S	FCC DoC
3	USB Flash Drive	SanDisk	SDCZ2-512-A10	5472260816	FCC DoC
4	3G card	Vodafone	K3565-Z	NA	Q78-3565-Z
5	DC POWER SUPPLY	Topward	6603D	795558	NA
6	Universal Radio Communication Tester	R&S	CMU200	104484	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	10 m UTP cable.
2	10 m UTP cable.
3	NA
4	NA
5	3.0 m DC line.
6	NA

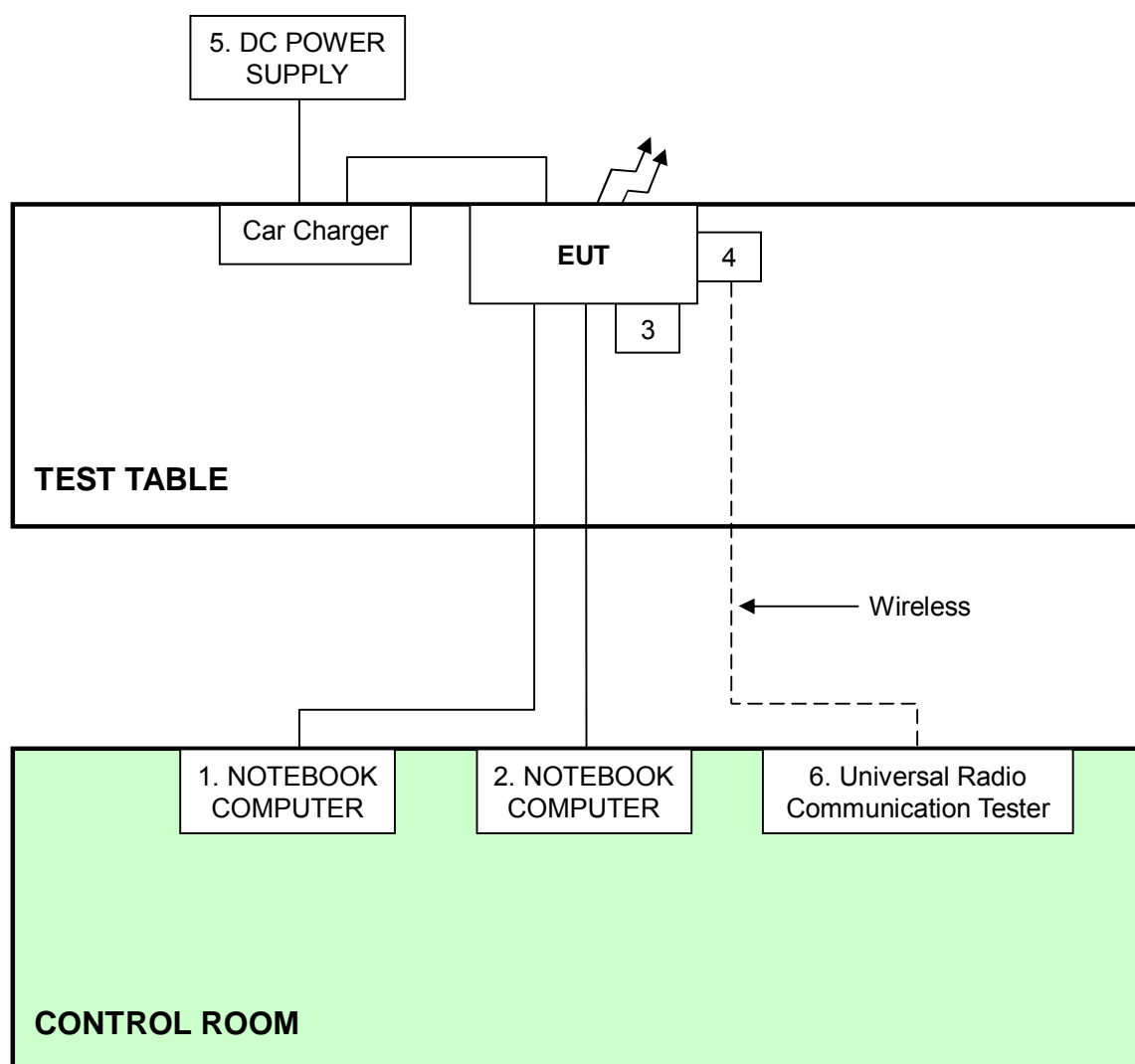
NOTE: 1. All power cords of the above support units are non shielded (1.8m).

3.6 CONFIGURATION OF SYSTEM UNDER TEST

For Conducted test:



For Radiated test:





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4 TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

- NOTE:**
1. The lower limit shall apply at the transition frequencies.
 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
 3. All emanations 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

Tested Date: June 29

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.

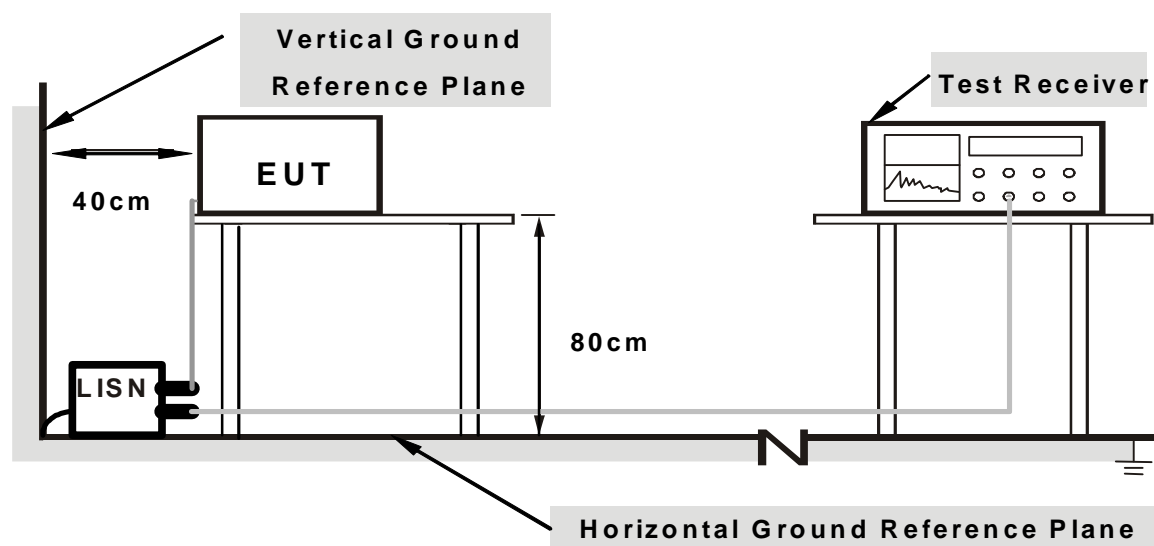
4.1.3 TEST PROCEDURES

- 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 frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) were not recorded.

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.



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4.1.6 EUT OPERATING CONDITIONS

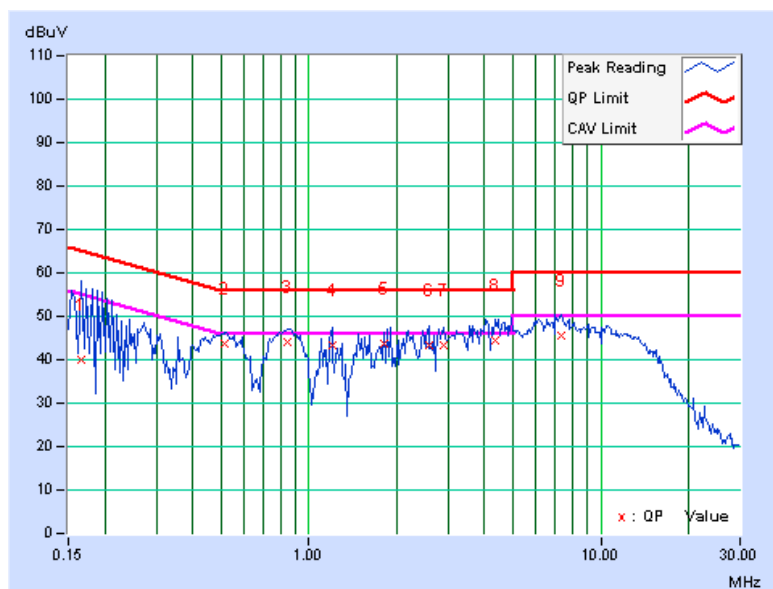
- a. Placed the EUT on testing table.
- b. The 3G card linked support unit 6 (Universal Radio Communication Tester) via wireless.
- c. Prepared other computer systems (support units 1 ~ 2) to act as communication partners and placed them outside of testing area.
- d. The communication partners ran test program “QA_RT3052 V1.0.0.1” to enable EUT under transmission/receiving condition continuously via UTP cables.
- e. Repeat steps b-e.

4.1.7 TEST RESULTS

CHANNEL	Channel 1 / 128	PHASE	Line (L)
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	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.166	0.04	39.92	-	39.96	-	65.18	55.18	-25.22	-
2	0.517	0.08	43.62	-	43.70	-	56.00	46.00	-12.30	-
3	0.841	0.17	43.81	-	43.98	-	56.00	46.00	-12.02	-
4	1.199	0.21	42.99	-	43.20	-	56.00	46.00	-12.80	-
5	1.805	0.23	43.42	-	43.65	-	56.00	46.00	-12.35	-
6	2.582	0.22	43.02	-	43.24	-	56.00	46.00	-12.76	-
7	2.895	0.21	43.18	-	43.39	-	56.00	46.00	-12.61	-
8	4.371	0.21	44.17	-	44.38	-	56.00	46.00	-11.62	-
9	7.344	0.41	45.23	-	45.64	-	60.00	50.00	-14.36	-

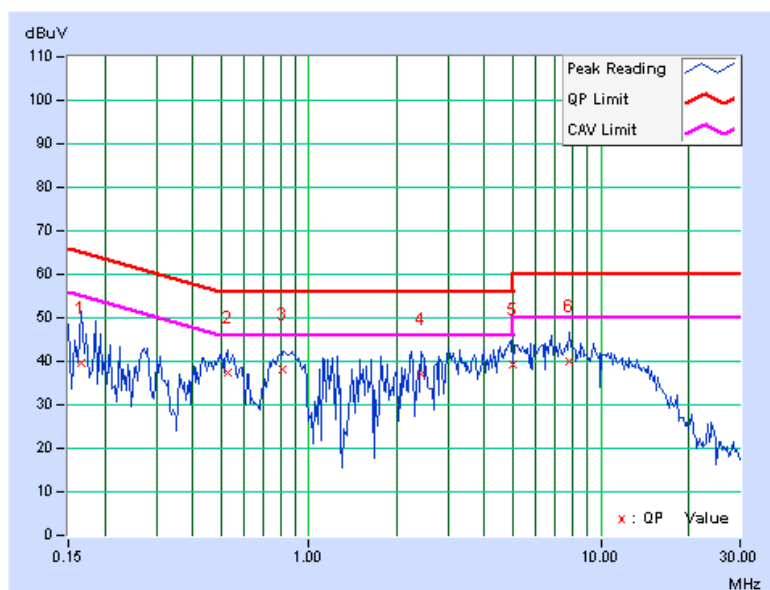
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



CHANNEL	Channel 1 / 128	PHASE	Neutral (N)
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	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.166	0.05	39.73	-	39.78	-	65.18	55.18	-25.40	-
2	0.525	0.09	37.39	-	37.48	-	56.00	46.00	-18.52	-
3	0.818	0.17	38.14	-	38.31	-	56.00	46.00	-17.69	-
4	2.430	0.23	36.67	-	36.90	-	56.00	46.00	-19.10	-
5	5.000	0.27	38.94	-	39.21	-	56.00	46.00	-16.79	-
6	7.781	0.46	39.44	-	39.90	-	60.00	50.00	-20.10	-

- 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

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

Frequencies (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.
4. For 3G device the out of band emission shall comply with the FCC 22.917(a).
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The limit of emission equal to -13dBm(82.2dBuV/m at 3m).



4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Agilent Spectrum Analyzer	E4446A	MY48250253	Aug. 03, 2009	Aug. 02, 2010
Agilent Pre-Selector	N9039A	MY46520311	Aug. 17, 2009	Aug. 16, 2010
Agilent Signal Generator	N5181A	MY49060517	July 20, 2009	July 19, 2010
Mini-Circuits Pre-Amplifier	ZFL-1000VH2B	AMP-ZFL-03	Nov. 18, 2009	Nov. 17, 2010
Agilent Pre-Amplifier	8449B	3008A02578	July 06, 2009	July 05, 2010
Miteq Pre-Amplifier	AFS33-1800265 0-30-8P-44	881786	NA	NA
SCHWARZBECK Trilog Broadband Antenna	VULB 9168	9168-360	Sep. 30, 2009	Sep. 29, 2010
AISI Horn_Antenna	AIH.8018	0000320091110	Nov. 16, 2009	Nov. 15, 2010
SCHWARZBECK Horn_Antenna	BBHA 9170	9170-424	Sep. 30, 2009	Sep. 29, 2010
RF CABLE	NA	RF104-201 RF104-203 RF104-204	Dec. 24, 2009	Dec. 23, 2010
RF Cable	NA	CHGCAB_001	NA	NA
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 horn antenna, preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.

3. The test was performed in 966 Chamber No. G.

4. The FCC Site Registration No. is 966073.

5. The VCCI Site Registration No. is G-137.

6. The CANADA Site Registration No. is IC 7450H-2.

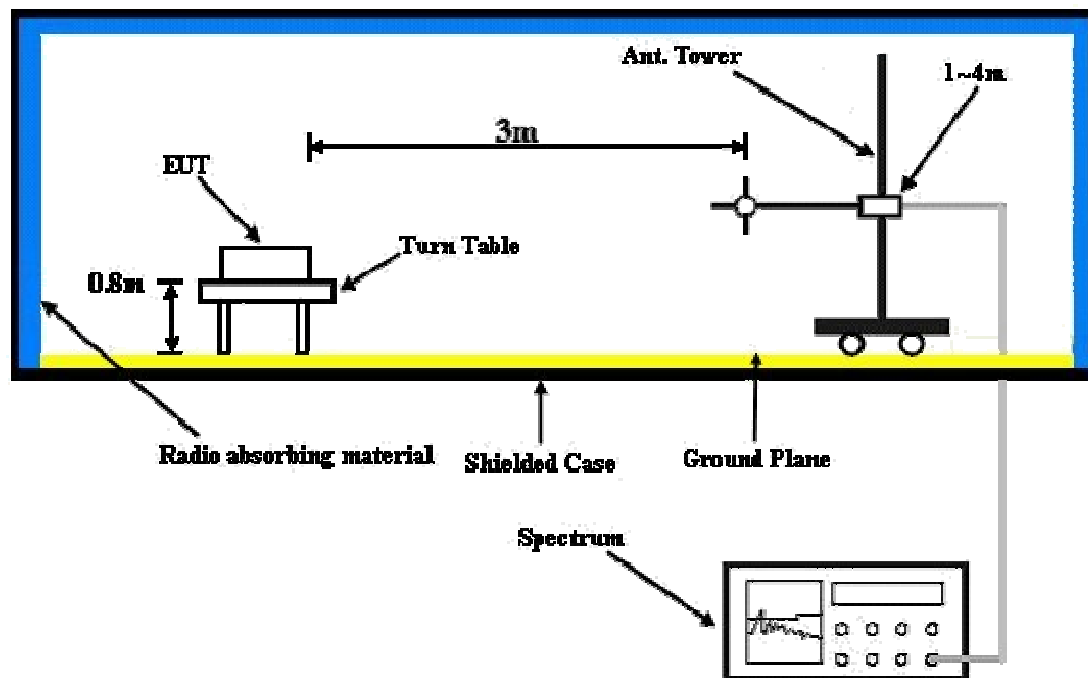
4.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna can be varied from one meter-to four meters, the height of adjustment depends on the EUT height and the antenna 3dB beamwidth both, to detect 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. 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 1 MHz and the video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.

4.2.4 TEST SETUP



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

4.2.5 EUT OPERATING CONDITIONS

Same as 4.1.6



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4.2.6 TEST RESULTS

BELOW 1GHz WORST-CASE DATA :

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11 / 128	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	DC 5v from car charger	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 74%RH 1013 hPa	TESTED BY	Frank Liu

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	232.86	40.8 QP	46.0	-5.2	1.50 H	300	28.55	12.29
2	320.00	43.6 QP	46.0	-2.4	1.00 H	64	28.00	15.63
3	533.30	42.6 QP	46.0	-3.4	1.50 H	49	22.14	20.45
4	640.00	40.6 QP	46.0	-5.5	1.25 H	360	18.14	22.41
5	746.69	40.4 QP	46.0	-5.6	1.00 H	357	16.58	23.79
6	959.97	41.8 QP	46.0	-4.2	1.25 H	46	15.12	26.72
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	51.08	34.8 QP	40.0	-5.2	1.00 V	59	21.04	13.79
2	106.62	38.4 QP	43.5	-5.1	1.00 V	254	28.12	10.30
3	533.30	42.6 QP	46.0	-3.4	1.50 V	0	22.14	20.45
4	640.00	37.2 QP	46.0	-8.8	1.50 V	0	14.81	22.41
5	895.67	41.4 QP	46.0	-4.6	2.25 V	307	15.26	26.17
6	959.97	38.5 QP	46.0	-7.5	1.50 V	13	11.82	26.72

- 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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Above 1GHz WORST-CASE DATA:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11 / 128	FREQUENCY RANGE	1 ~ 17.5GHz
INPUT POWER	DC 5v from car charger	DETECTOR FUNCTION	Peak (PK) Average (AV) RMS
ENVIRONMENTAL CONDITIONS	25deg. C, 74%RH 1013 hPa	TESTED BY	Frank Liu

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	3891.73	69.2	82.2	-13	1.00 H	32	33.54	35.66
2	4924.00	49.4 PK	74.0	-24.6	1.06 H	231	10.09	39.31
3	4924.00	47.3 AV	54.0	-6.7	1.06 H	231	7.99	39.31
4	5842.67	59.3	82.2	-22.9	1.13 H	231	17.47	41.83
5	7386.00	55.9 PK	74.0	-18.1	1.34 H	72	9.30	46.60
6	7386.00	46.3 AV	54.0	-7.7	1.34 H	72	-0.30	46.60
7	7783.00	61.4	82.2	-20.8	1.04 H	29	15.19	46.21

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	3891.73	66.7	82.2	-15.5	1.00 V	308	31.04	35.66
2	4924.00	50.2 PK	74.0	-23.8	1.00 V	26	10.89	39.31
3	4924.00	40.6 AV	54.0	-13.4	1.00 V	26	1.29	39.31
4	5842.67	56.2	82.2	-26.0	1.18 V	223	14.37	41.83
5	7386.00	54.9 PK	74.0	-19.1	1.00 V	123	8.30	46.60
6	7386.00	43.7 AV	54.0	-10.3	1.00 V	123	-2.90	46.60
7	7783.00	59.3	82.2	-22.9	1.08 V	22	13.09	46.21

- 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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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 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:

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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.

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