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FCC TEST REPORT

REPORT NO.: RF990928E12

MODEL NO.: MR868, SMCWPBR-3G, NR413-SA,
OZ – 868, AP-PR1000

FCC ID: YUNAICONNMR868-00

RECEIVED: Sep. 28, 2010

TESTED: Oct. 06 to 27, 2010

ISSUED: Nov. 18, 2010

APPLICANT: Aiconn Technology Corporation

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Testing Laboratory
2022



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1. CERTIFICATION

PRODUCT: Portable Router, Mobile Router, OZ Portable Router

BRAND NAME: Mobile Air, SMC, BOINTEC, OZ Air,
AP Comtel Private Limited, India

MODEL NO.: MR868, SMCWPBR-3G, NR413-SA, OZ – 868,
AP-PR1000

TEST SAMPLE: ENGINEERING SAMPLE

TESTED DATE: Oct. 06 to 27, 2010

APPLICANT: Aiconn Technology Corporation

STANDARDS: FCC Part 15, Subpart C (Section 15.247)
ANSI C63.4-2003

The above equipment (Model: MR868) 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:** Nov. 18, 2010
(Midoli Peng, Specialist)

**TECHNICAL
ACCEPTANCE** : Hank Chung , **DATE:** Nov.18, 2010
(Hank Chung, Deputy Manager)

APPROVED BY : May Chen , **DATE:** Nov. 18, 2010
(May Chen, Deputy Manager)



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2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart C (Section 15.247)			
Standard Section	Test Type and Limit	Result	Remark
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -12.03dB at 0.170MHz
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Limit: min. 500kHz	PASS	Meet the requirement of limit.
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit.
15.247(d)	Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit. Minimum passing margin is -4.3dB at 143.97MHz
15.247(e)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit.
15.247(d)	Conducted Out-Band Emission Measurement Limit: 20dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	No antenna connector is used.



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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)	3.3 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	Portable Router, Mobile Router, OZ Portable Router
MODEL NO.	MR868, SMCWPBR-3G, NR413-SA, OZ – 868, AP-PR1000
FCC ID	YUNAICONNMR868-00
POWER SUPPLY	DC 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
OPERATING FREQUENCY	2412 ~ 2462MHz
NUMBER OF CHANNEL	11
MAXIMUM OUTPUT POWER	802.11b: 12.6mW 802.11g: 12.6mW
ANTENNA TYPE	Printed PIFA antenna without connector(Gain: 2.5dBi)
DATA CABLE	USB cable(shielded, 0.2m)
I/O PORTS	USB port x 1 (For 3G card) USB port x 1 (For battery recharge)
ASSOCIATED DEVICES	Battery x1 Adapter x1 (For battery recharge)



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NOTE:

1. The EUT has below product / brand / model names which are identical to each other in all aspects except for the following table :

Product name	Brand name	Model name	Different
Portable Router	Mobile Air	MR868	EUT Color: White/Orange
Portable Router	SMC	SMCWPBR-3G	EUT Color: Black
Mobile Router	BOINTEC	NR413-SA	EUT Color: White/Orange, White/Apple Green with Trademark print on the top cover
OZ Portable Router	OZ Air	OZ - 868	EUT Color: red with black belt
Portable Router	AP Comtel Private Limited, India	AP-PR1000	EUT Color: White/Orange with mark on the top.

From the above models, model: MR868 was selected as representative model for the test and its data was recorded in this report.

2. The EUT has two different types could be chosen and please refer the below table:

Sample	Different
Main source	Different with color of LED & manufacturer of 48MHz crystal.
Second source	

From the above samples, the worst Radiated Emissions (below 1GHz) was found in **Main source**. Therefore only the test data of the modes were recorded in this report.

3. The EUT could be supplied with 3.7V battery or power adapter as below table:

Power adapter			Note
Brand	Model Name	Specification	for battery recharge (through USB cable /1.6m / unshielded / without core)
DVE	DSC-6PFA-05 FUS 050100	Input: 100-240Vac, 0.2A, 50-60Hz Output: DC 5V, 1A	
Battery			Note
Brand	Model Name	Specification	
WANSGLORY	H604070	3.7V, 2000mAh	



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

Test Mode	Description
Mode A	X-Y plane + Battery
Mode B	Y-Z plane + Battery
Mode C	X-Z plane + Battery
Mode D	X-Y plane + Battery + Adapter(For battery recharge)
Mode E	Y-Z plane + Battery + Adapter(For battery recharge)
Mode F	X-Z plane + Battery + Adapter(For battery recharge)
Mode D	X-Y plane + Battery +USB cable(NB)
Mode E	Y-Z plane + Battery +USB cable(NB)
Mode F	X-Z plane + Battery +USB cable(NB)

For Radiated Emissions, the worst Radiated Emissions (below 1GHz) was found in **Mode F**. the worst Radiated Emissions (above 1GHz) was found in **Mode D**. Therefore only the test data of the modes were recorded in this report individually.

5. The EUT could be applied with one 3G card, 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>

Brand name	Model name	FCC ID
HUAWEI	E169u	QISE169
ZTE	K3765-Z	Q87-K3765-Z
eMobile	D12LC	VV6D12LC

The EUT was pre-tested in chamber with above 3G cards, the worst case was found in mode: **E169u**. Therefore only the test data of the mode was recorded in this report.

6. The EUT, operates in the 2.4GHz frequency range, lets you connect IEEE 802.11g or IEEE 802.11b devices to the network. With its high-speed data transmissions of up to 54Mbps.
7. The above EUT information was declared by manufacturer and for more detailed feature descriptions, please refer to the manufacturer's specifications or user's manual.



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3.2 DESCRIPTION OF TEST MODES

Eleven channels are provided to this EUT.

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		



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3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	PLC	RE < 1G	RE ≥ 1G	APCM	
1	√	-	-	-	Main source + Power source (Adapter mode)
2	√	-	-	-	Second source + Power source (Adapter mode)
3	√	√	√	√	Main source + Power source (USB mode)
4	√	-	-	-	Second source + Power source (USB mode)

Where **PLC**: Power Line Conducted Emission**RE < 1G**: Radiated Emission below 1GHz**RE ≥ 1G**: Radiated Emission above 1GHz**APCM**: Antenna Port Conducted Measurement

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	1 to 11	1	OFDM	BPSK	6	1, 2, 3 & 4

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	1 to 11	1	OFDM	BPSK	6	3



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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
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1	3
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6	3

CONDUCTED OUT-BAND EMISSION MEASUREMENT:

- 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
802.11b	1 to 11	1, 11	DSSS	DBPSK	1	3
802.11g	1 to 11	1, 11	OFDM	BPSK	6	3

ANTENNA PORT CONDUCTED MEASUREMENT:

- This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- 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
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1	3
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6	3



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TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
RE≥1G	26deg. C, 75%RH, 1014 hPa	120Vac, 60Hz	Eric Lee
RE<1G	26deg. C, 75%RH, 1014 hPa	120Vac, 60Hz	Eric Lee
PLC	20deg. C, 69%RH, 1014 hPa	120Vac, 60Hz	Moris Lin
APCM	25deg. C, 60%RH, 1014 hPa	120Vac, 60Hz	Rex Huang



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3.3 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:

FCC Part 15, Subpart C. (15.247)

ANSI C63.4-2003

All test items 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.



3.4 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.

For Conducted test:					
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP17L	CN-ONF743-48643-7 AV-0124	FCC DoC
2	iPod	Apple	A1137	6U6078FMUPR	FCC DoC
3	3G CARD	HUAWEI	E169u	Q54CAB1042404880	QISE169

For Radiated test:					
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP19L	CN-OHC416-70166-5 CA-0448	PIW632500516610
2	3G CARD	HUAWEI	E169u	Q54CAB1042404880	QISE169

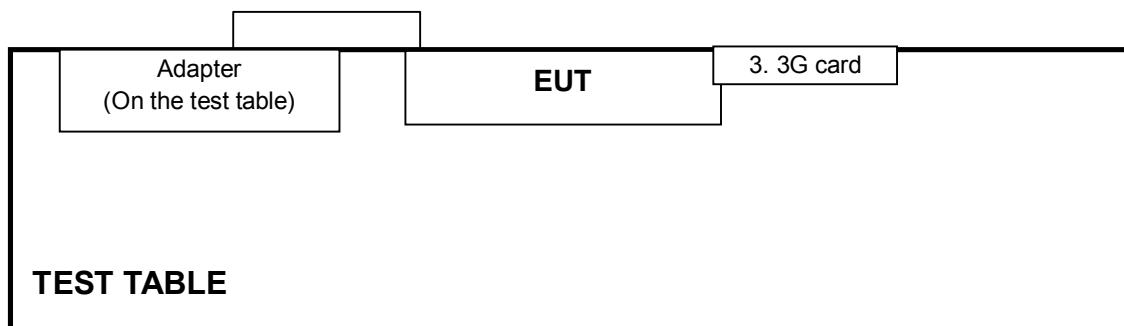
For Conducted test:	
NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	USB cable(0.2m)
2	USB cable(1.2m)
3	NA

For Radiated test:	
NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	USB cable(0.2m)
2	NA

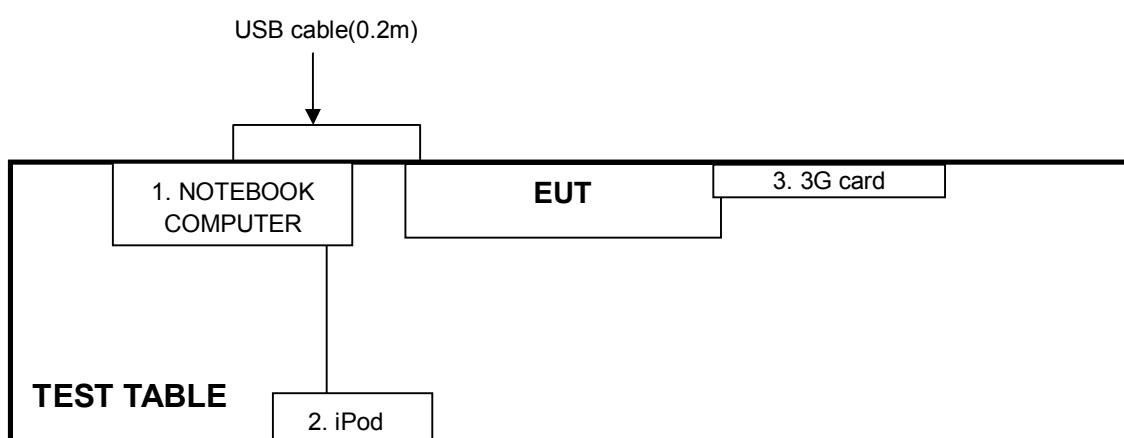
Note: The power cords of the above support units were unshielded (1.8m).

3.5 CONFIGURATION OF SYSTEM UNDER TEST

Conducted test – mode 1 & 2:



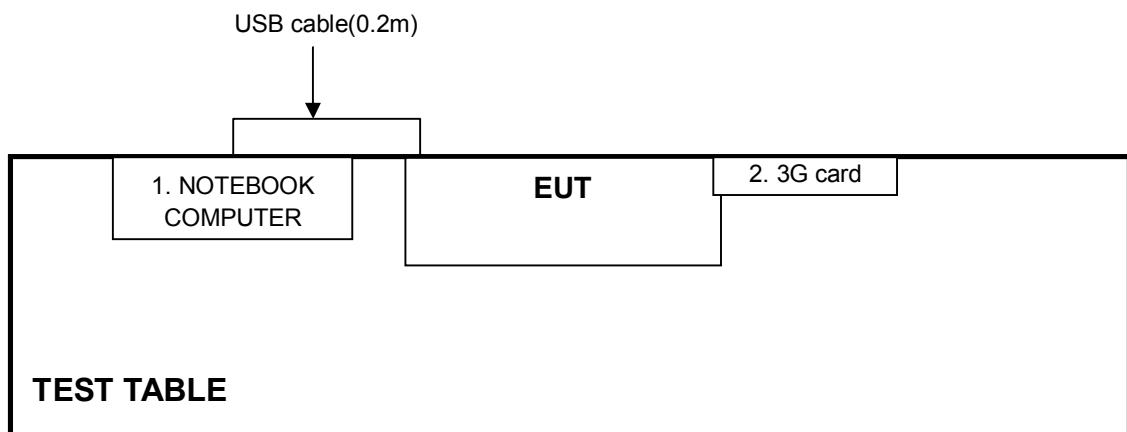
Conducted test – mode 3 & 4:





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Radiated test:





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

Test date: Oct. 27, 2010

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	Oct. 07, 2010	Oct. 06, 2011
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.



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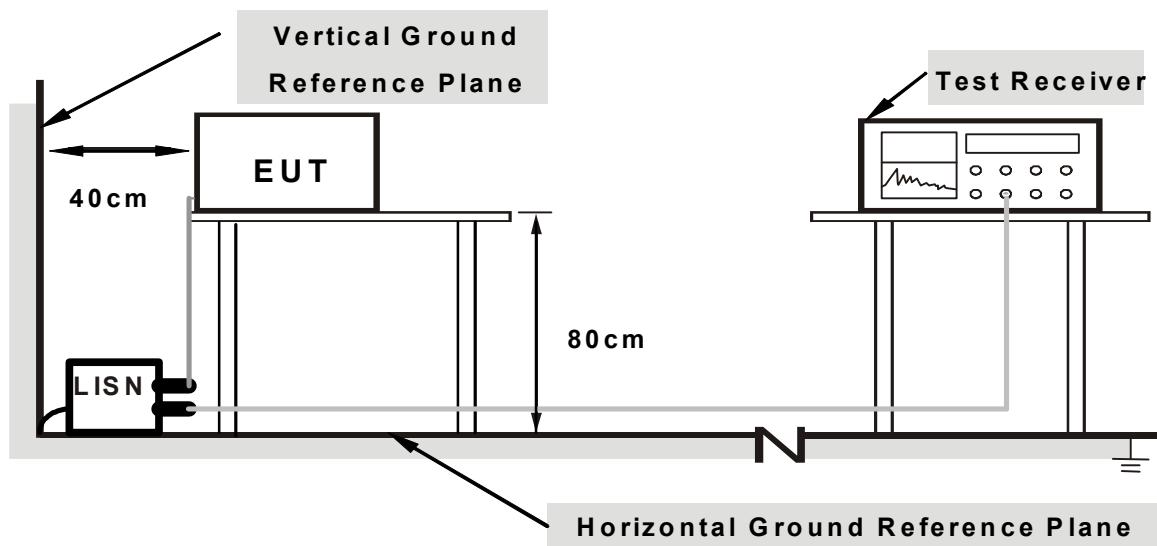
4.1.3 TEST PROCEDURES

- 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 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 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. Placed the EUT on testing table.
2. The support unit 1 (Notebook computer) communication partners ran test program “Telnet command” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

4.1.7 TEST RESULTS (Mode 1)

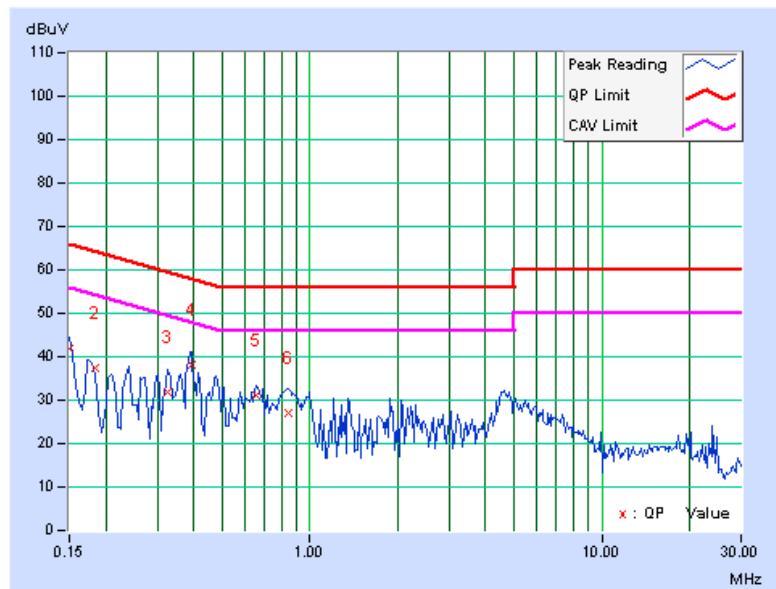
802.11g OFDM MODULATION:

PHASE	Line (L)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor (dB)	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB]	
1	0.150	0.37	41.44	-	41.81	-	66.00	56.00	-24.19	-
2	0.183	0.36	36.90	-	37.26	-	64.33	54.33	-27.07	-
3	0.326	0.36	31.63	-	31.99	-	59.56	49.56	-27.57	-
4	0.392	0.36	37.69	-	38.05	-	58.02	48.02	-19.97	-
5	0.654	0.38	30.77	-	31.15	-	56.00	46.00	-24.85	-
6	0.841	0.40	26.53	-	26.93	-	56.00	46.00	-29.07	-

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.

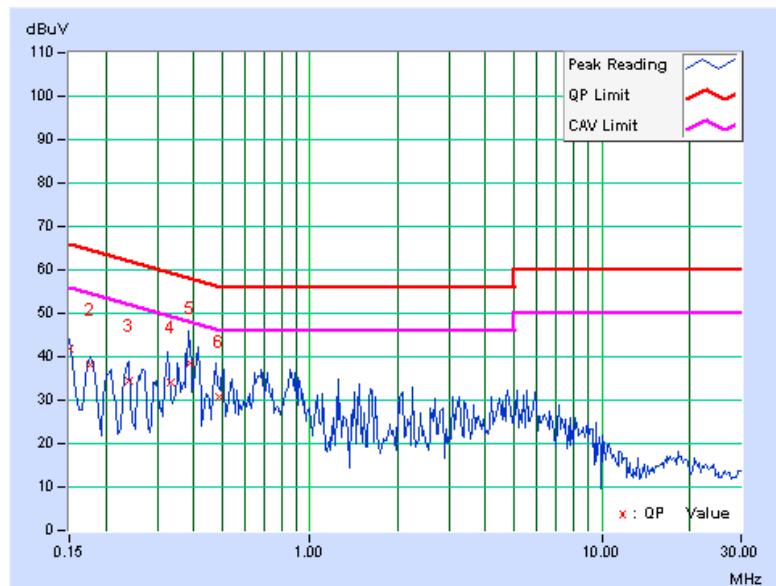


PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor (dB)	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.10	41.59	-	41.69	-	66.00	56.00	-24.31	-
2	0.177	0.10	38.10	-	38.20	-	64.61	54.61	-26.41	-
3	0.240	0.10	34.38	-	34.48	-	62.10	52.10	-27.62	-
4	0.333	0.11	34.12	-	34.23	-	59.38	49.38	-25.15	-
5	0.391	0.11	38.36	-	38.47	-	58.04	48.04	-19.57	-
6	0.487	0.12	30.66	-	30.78	-	56.21	46.21	-25.43	-

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.



4.1.8 TEST RESULTS (Mode 2)

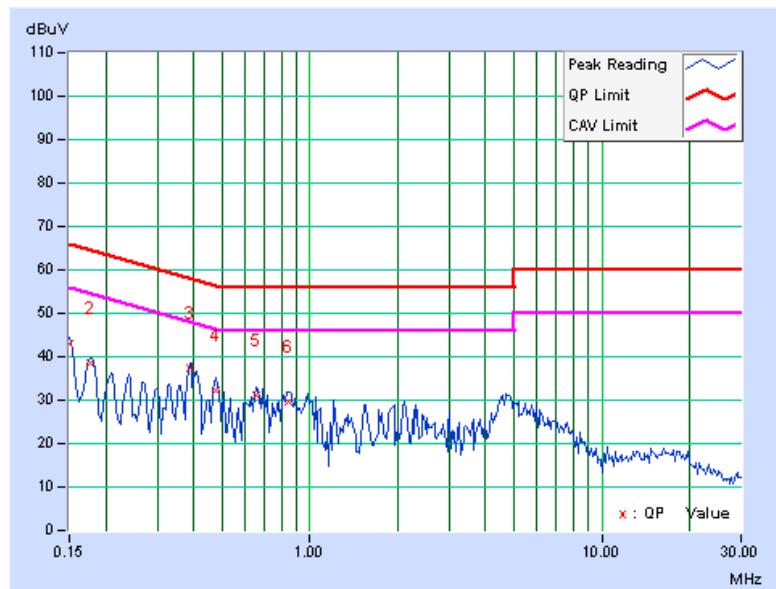
802.11g OFDM MODULATION:

PHASE	Line (L)	6dB BANDWIDTH	9 kHz
-------	----------	---------------	-------

No	Freq. [MHz]	Corr. (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]
1	0.150	0.37	42.67	-	43.04	-	66.00	56.00	-22.96	-
2	0.177	0.36	38.08	-	38.44	-	64.61	54.61	-26.17	-
3	0.388	0.36	37.21	-	37.57	-	58.10	48.10	-20.53	-
4	0.474	0.37	31.99	-	32.36	-	56.44	46.44	-24.08	-
5	0.658	0.38	30.67	-	31.05	-	56.00	46.00	-24.95	-
6	0.841	0.40	29.22	-	29.62	-	56.00	46.00	-26.38	-

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.





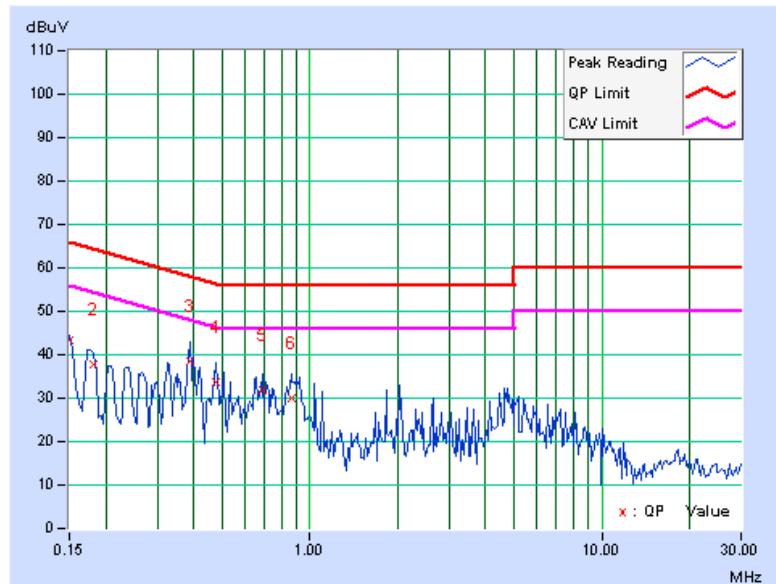
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PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor (dB)	[dB (uV)]	[dB (uV)]	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.10	43.30	-	43.40	-	66.00	56.00	-22.60	-
2	0.182	0.10	37.64	-	37.74	-	64.40	54.40	-26.66	-
3	0.388	0.11	38.59	-	38.70	-	58.10	48.10	-19.40	-
4	0.474	0.12	33.67	-	33.79	-	56.44	46.44	-22.65	-
5	0.685	0.13	31.55	-	31.68	-	56.00	46.00	-24.32	-
6	0.861	0.15	29.78	-	29.93	-	56.00	46.00	-26.07	-

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.



4.1.9 TEST RESULTS (Mode 3)

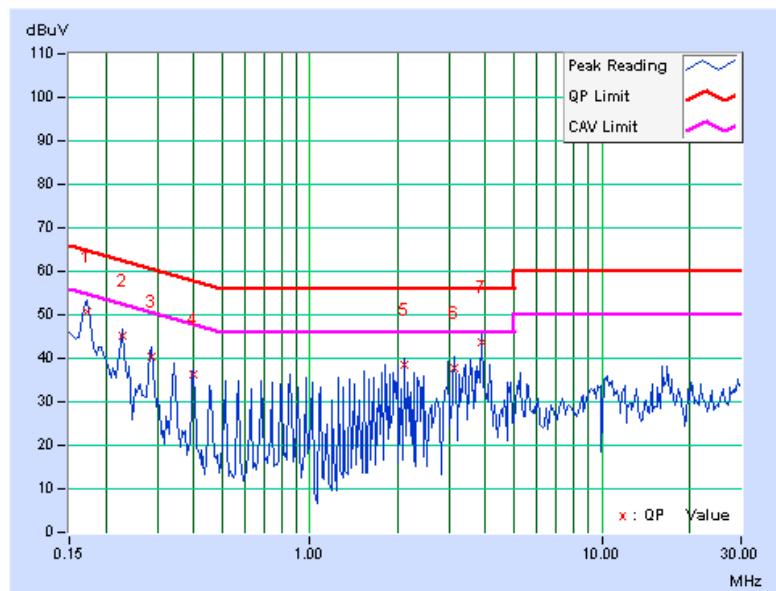
802.11g OFDM MODULATION:

PHASE	Line (L)	6dB BANDWIDTH	9 kHz
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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	0.173	0.36	50.44	-	50.80	-	64.79	54.79	-13.99	-
2	0.228	0.36	45.00	-	45.36	-	62.52	52.52	-17.16	-
3	0.287	0.36	39.97	-	40.33	-	60.62	50.62	-20.29	-
4	0.400	0.36	35.89	-	36.25	-	57.85	47.85	-21.60	-
5	2.105	0.46	37.99	-	38.45	-	56.00	46.00	-17.55	-
6	3.129	0.49	37.14	-	37.63	-	56.00	46.00	-18.37	-
7	3.871	0.51	43.31	-	43.82	-	56.00	46.00	-12.18	-

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.





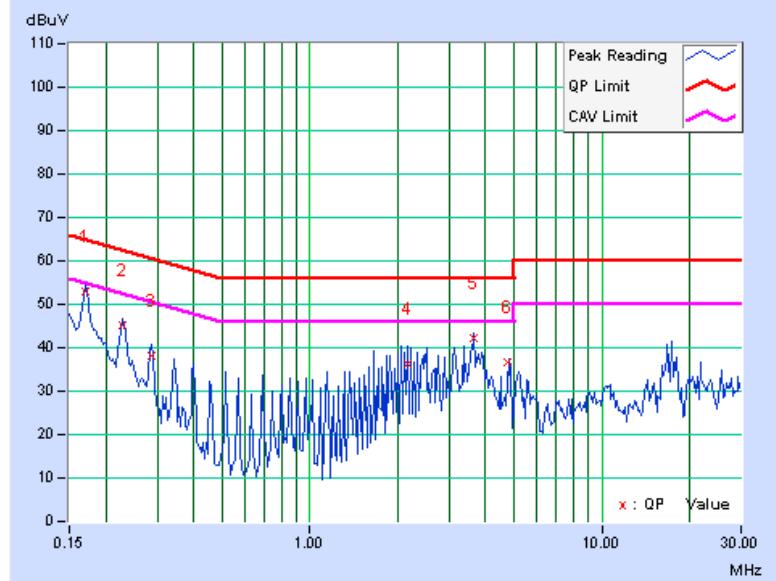
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PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
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	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.170	0.10	52.86	-	52.96	-	64.98	54.98	-12.03	-
2	0.228	0.10	45.04	-	45.14	-	62.52	52.52	-17.38	-
3	0.287	0.10	38.22	-	38.32	-	60.62	50.62	-22.29	-
4	2.168	0.20	36.19	-	36.39	-	56.00	46.00	-19.61	-
5	3.645	0.23	42.02	-	42.25	-	56.00	46.00	-13.75	-
6	4.783	0.27	36.27	-	36.54	-	56.00	46.00	-19.46	-

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.



4.1.10 TEST RESULTS (Mode 4)

802.11g OFDM MODULATION:

PHASE	Line (L)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor (dB)	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]
1	0.170	0.36	50.87	-	51.23	-	64.98	54.98	-13.75	-
2	0.228	0.36	43.53	-	43.89	-	62.52	52.52	-18.63	-
3	0.283	0.36	41.08	-	41.44	-	60.73	50.73	-19.29	-
4	1.645	0.44	38.39	-	38.83	-	56.00	46.00	-17.17	-
5	1.871	0.45	39.64	-	40.09	-	56.00	46.00	-15.91	-
6	3.406	0.50	39.55	-	40.05	-	56.00	46.00	-15.95	-

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

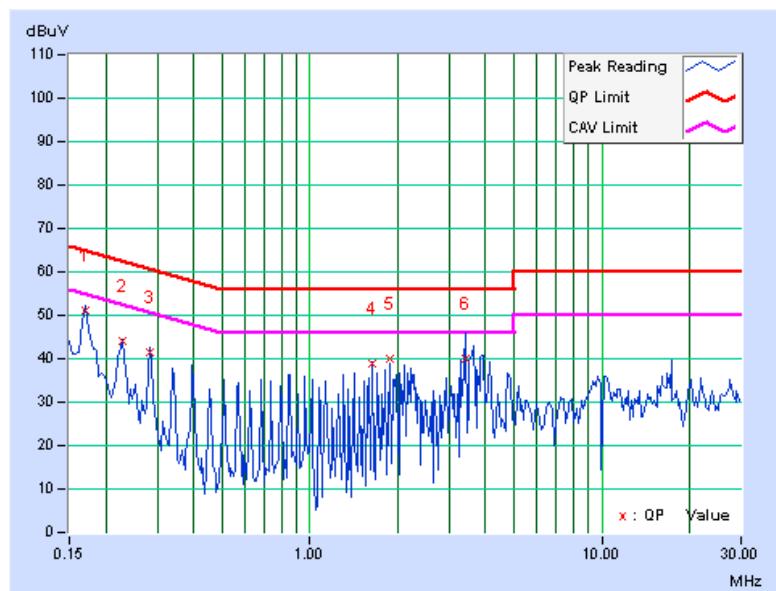
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.

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.

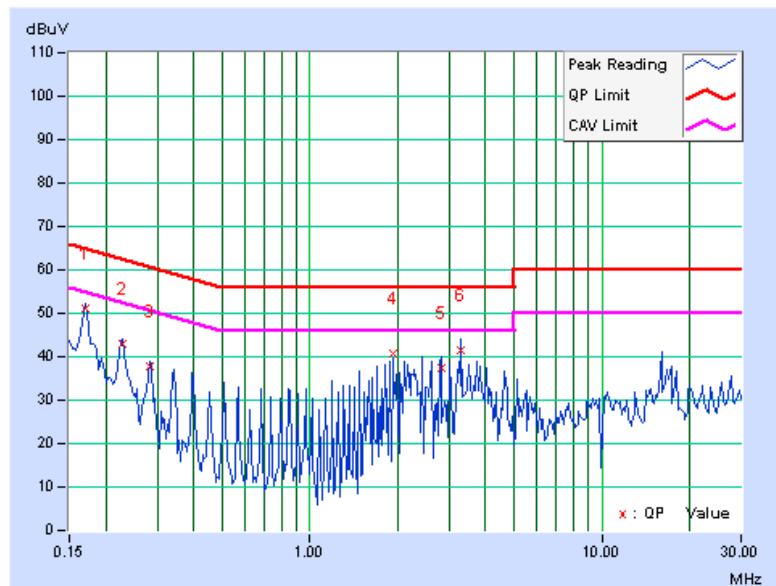


PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor (dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.170	0.10	51.17	-	51.27	-	64.98	54.98	-13.72	-
2	0.228	0.10	42.92	-	43.02	-	62.52	52.52	-19.50	-
3	0.283	0.10	37.74	-	37.84	-	60.73	50.73	-22.89	-
4	1.926	0.20	40.45	-	40.65	-	56.00	46.00	-15.35	-
5	2.836	0.22	37.18	-	37.40	-	56.00	46.00	-18.60	-
6	3.285	0.23	41.14	-	41.37	-	56.00	46.00	-14.63	-

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 (dB_uV/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.



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4.2.2 TEST INSTRUMENTS

Test date: Oct. 06, 2010

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Agilent Spectrum Analyzer	E4446A	MY48250254	July 14, 2010	July 13, 2011
Agilent Pre-Selector	N9039A	MY46520311	July 14, 2010	July 13, 2011
Agilent Signal Generator	N5181A	MY49060517	July 14, 2010	July 13, 2011
Mini-Circuits Pre-Amplifier	ZFL-1000VH2B	AMP-ZFL-03	Nov. 18, 2009	Nov. 17, 2010
Agilent Pre-Amplifier	8449B	3008A02578	July 05, 2010	July 04, 2011
Miteq Pre-Amplifier	AFS33-1800265 0-30-8P-44	881786	NA	NA
SCHWARZBECK Trilog Broadband Antenna	VULB 9168	9168-360	Apr. 29, 2010	Apr. 28, 2011
AISI Horn_Antenna	AIH.8018	0000320091110	Nov. 16, 2009	Nov. 15, 2010
SCHWARZBECK Horn_Antenna	BBHA 9170	9170-424	Oct. 08, 2009	Oct. 07, 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.



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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 meter chamber. 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 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 Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

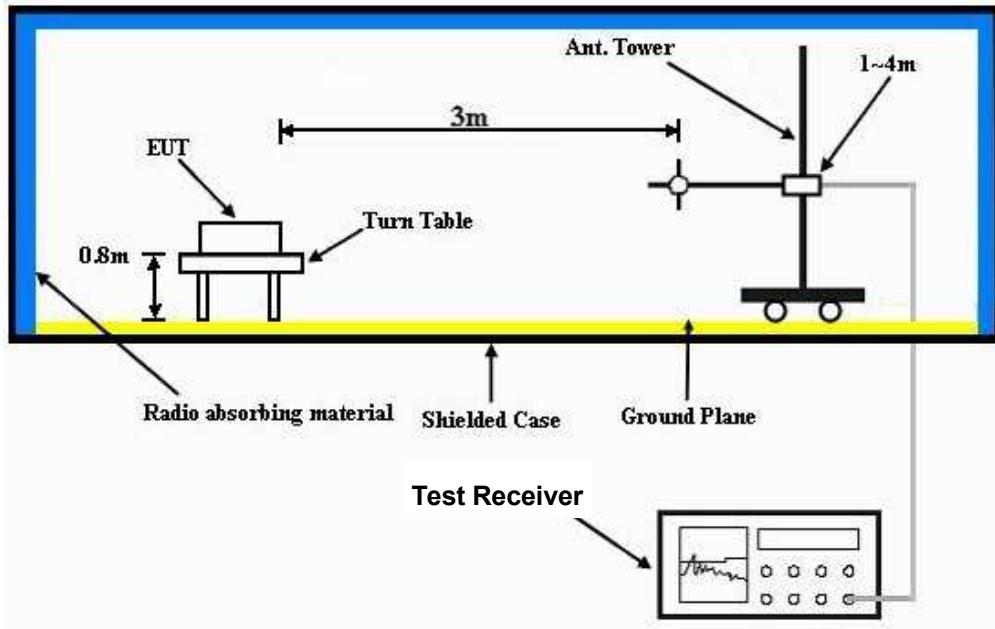
NOTE:

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 3 MHz for Peak detection (PK) 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 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



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4.2.7 TEST RESULTS

BELOW 1GHz WORST-CASE DATA : 802.11g OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL		Channel 1		FREQUENCY RANGE
INPUT POWER (SYSTEM)		120Vac, 60 Hz		DETECTOR FUNCTION
ENVIRONMENTAL CONDITIONS		26deg. C, 75%RH 1013 hPa		TESTED BY
				Eric Lee

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	136.99	32.1 QP	43.5	-11.4	1.25 H	214	18.50	13.60
2	143.97	39.2 QP	43.5	-4.3	1.75 H	298	25.45	13.79
3	157.67	32.5 QP	43.5	-11.0	1.25 H	84	18.21	14.33
4	192.20	33.5 QP	43.5	-10.0	2.00 H	326	22.50	11.04
5	204.14	30.2 QP	43.5	-13.3	1.75 H	84	19.40	10.80
6	266.82	32.5 QP	46.0	-13.5	1.25 H	97	18.59	13.87
7	533.40	36.0 QP	46.0	-10.0	1.00 H	82	15.52	20.45
8	600.02	34.2 QP	46.0	-11.8	1.50 H	236	12.24	21.97
9	699.54	34.8 QP	46.0	-11.2	1.25 H	222	11.67	23.14
10	733.24	33.2 QP	46.0	-12.8	1.25 H	9	9.63	23.61

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	133.30	28.2 QP	43.5	-15.3	1.50 V	258	14.85	13.35
2	144.12	30.1 QP	43.5	-13.4	1.25 V	328	16.31	13.79
3	166.01	25.3 QP	43.5	-18.2	1.25 V	47	11.61	13.70
4	303.10	32.1 QP	46.0	-13.9	1.00 V	254	16.83	15.27
5	310.24	32.5 QP	46.0	-13.6	2.00 V	247	17.03	15.42
6	533.53	36.2 QP	46.0	-9.8	1.75 V	64	15.75	20.46
7	599.99	32.3 QP	46.0	-13.7	1.25 V	33	10.37	21.97
8	666.90	30.9 QP	46.0	-15.1	1.25 V	32	8.13	22.74
9	697.03	27.2 QP	46.0	-18.8	1.75 V	11	4.13	23.11
10	895.69	30.2 QP	46.0	-15.8	1.25 V	236	4.03	26.17

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.



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ABOVE 1GHz WORST-CASE DATA

802.11b DSSS MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL		Channel 1		FREQUENCY RANGE 1 ~ 25GHz
INPUT POWER (SYSTEM)		120Vac, 60 Hz		DETECTOR FUNCTION Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS		26deg. C, 75%RH 1013 hPa		TESTED BY Eric Lee

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	2386.10	57.8 PK	74.0	-16.2	1.00 H	245	26.16	31.64
2	2386.10	45.6 AV	54.0	-8.4	1.00 H	245	13.96	31.64
3	*2412.00	105.5 PK			1.00 H	245	73.77	31.73
4	*2412.00	102.6 AV			1.00 H	245	70.87	31.73
5	4824.00	48.8 PK	74.0	-25.2	1.00 H	13	9.83	38.97
6	4824.00	35.7 AV	54.0	-18.3	1.00 H	13	-3.27	38.97
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	2388.90	56.0 PK	74.0	-18.0	1.00 V	58	24.35	31.65
2	2388.90	43.9 AV	54.0	-10.1	1.00 V	58	12.25	31.65
3	*2412.00	102.1 PK			1.00 V	59	70.37	31.73
4	*2412.00	100.0 AV			1.00 V	59	68.27	31.73
5	4824.00	46.9 PK	74.0	-27.1	1.00 V	300	7.93	38.97
6	4824.00	33.7 AV	54.0	-20.3	1.00 V	300	-5.27	38.97

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. “*”: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL		Channel 6		FREQUENCY RANGE 1 ~ 25GHz
INPUT POWER (SYSTEM)		120Vac, 60 Hz		DETECTOR FUNCTION Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS		26deg. C, 75%RH 1013 hPa		TESTED BY Eric Lee

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	*2437.00	105.2 PK			1.00 H	246	73.39	31.81
2	*2437.00	102.3 AV			1.00 H	246	70.49	31.81
3	4874.00	48.1 PK	74.0	-25.9	1.00 H	11	8.96	39.14
4	4874.00	34.8 AV	54.0	-19.2	1.00 H	11	-4.34	39.14
5	7311.00	55.2 PK	74.0	-18.8	1.40 H	61	8.57	46.63
6	7311.00	42.4 AV	54.0	-11.6	1.40 H	61	-4.23	46.63
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	*2437.00	102.9 PK			1.00 V	55	71.09	31.81
2	*2437.00	100.5 AV			1.00 V	55	68.69	31.81
3	4874.00	48.1 PK	74.0	-25.9	1.00 V	302	8.96	39.14
4	4874.00	34.8 AV	54.0	-19.2	1.00 V	302	-4.34	39.14
5	7311.00	54.3 PK	74.0	-19.7	1.00 V	320	7.67	46.63
6	7311.00	41.4 AV	54.0	-12.6	1.00 V	320	-5.23	46.63

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. “*”: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL		Channel 11		FREQUENCY RANGE 1 ~ 25GHz
INPUT POWER (SYSTEM)		120Vac, 60 Hz		DETECTOR FUNCTION Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS		26deg. C, 75%RH 1013 hPa		TESTED BY Eric Lee

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	*2462.00	104.6 PK			1.00 H	250	72.71	31.89
2	*2462.00	102.2 AV			1.00 H	250	70.31	31.89
3	2487.70	57.1 PK	74.0	-16.9	1.00 H	250	25.12	31.98
4	2487.70	44.8 AV	54.0	-9.2	1.00 H	250	12.82	31.98
5	4924.00	49.3 PK	74.0	-24.7	1.00 H	10	9.99	39.31
6	4924.00	35.9 AV	54.0	-18.1	1.00 H	10	-3.41	39.31
7	7386.00	56.5 PK	74.0	-17.5	1.40 H	60	9.90	46.60
8	7386.00	42.6 AV	54.0	-11.4	1.40 H	60	-4.00	46.60

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	*2462.00	103.0 PK			1.00 V	56	71.11	31.89
2	*2462.00	100.6 AV			1.00 V	56	68.71	31.89
3	2484.50	56.7 PK	74.0	-17.3	1.00 V	55	24.73	31.97
4	2484.50	44.3 AV	54.0	-9.7	1.00 V	55	12.33	31.97
5	4924.00	48.5 PK	74.0	-25.5	1.00 V	299	9.19	39.31
6	4924.00	35.0 AV	54.0	-19.0	1.00 V	299	-4.31	39.31
7	7386.00	55.6 PK	74.0	-18.4	1.00 V	22	9.00	46.60
8	7386.00	42.6 AV	54.0	-11.4	1.00 V	22	-4.00	46.60

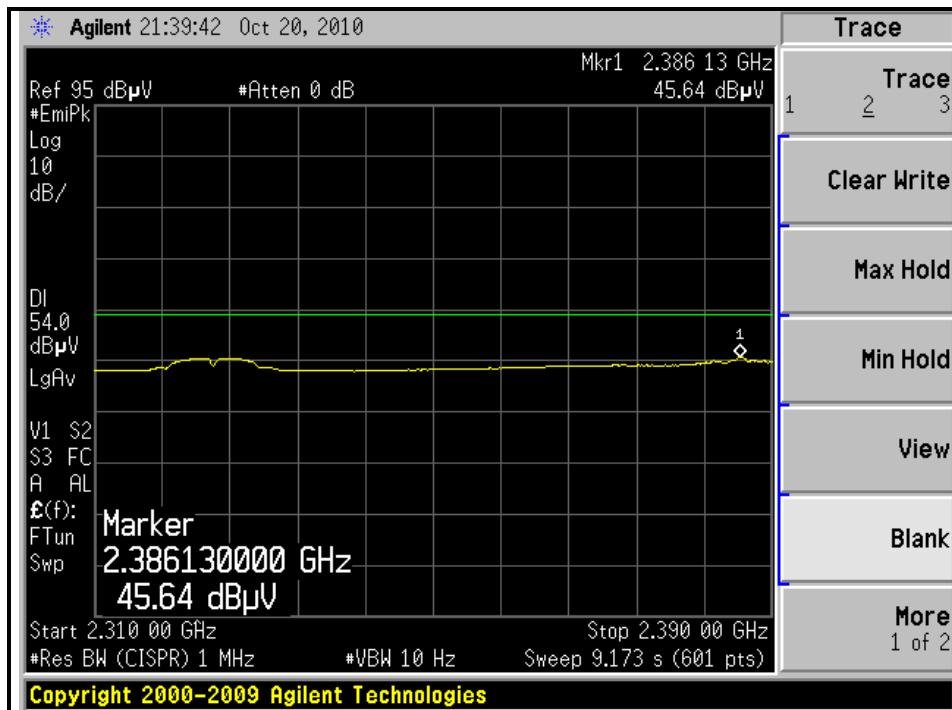
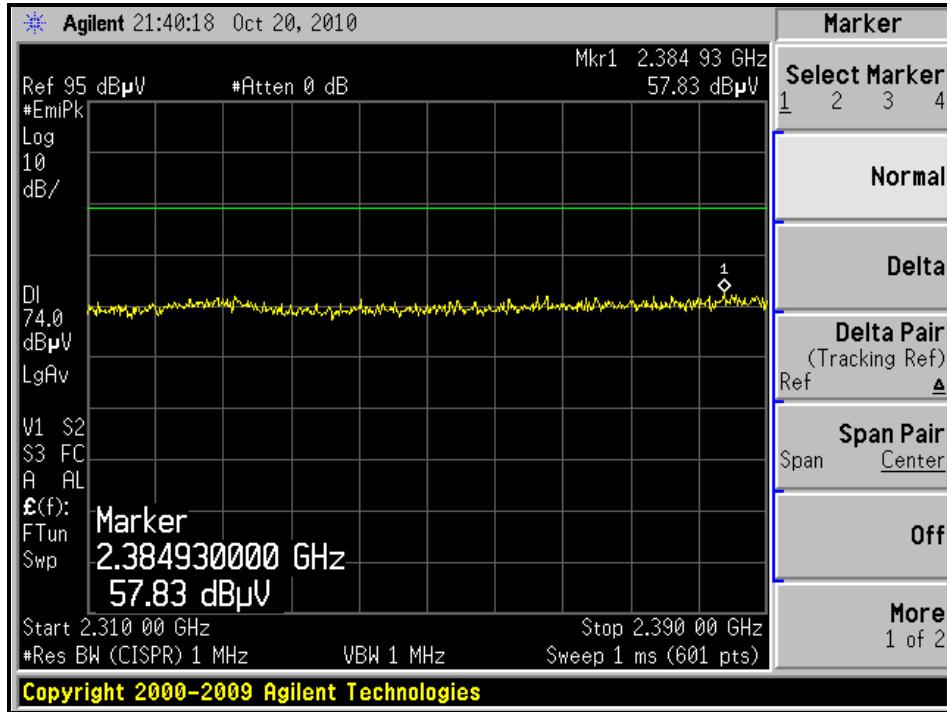
REMARKS:

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. “*”: Fundamental frequency.



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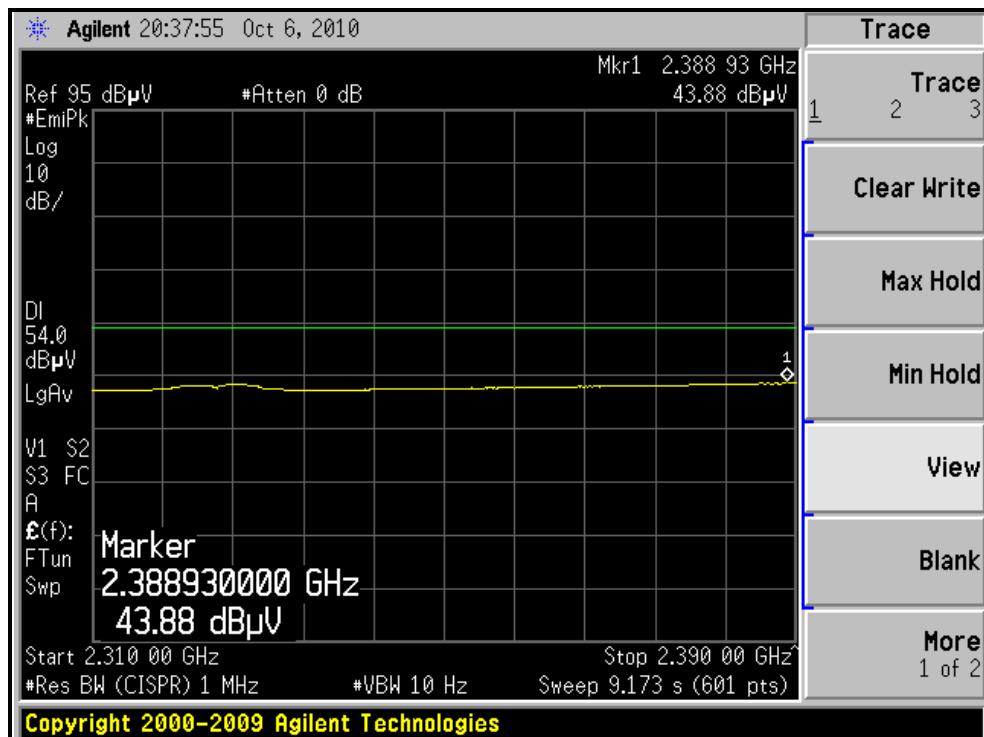
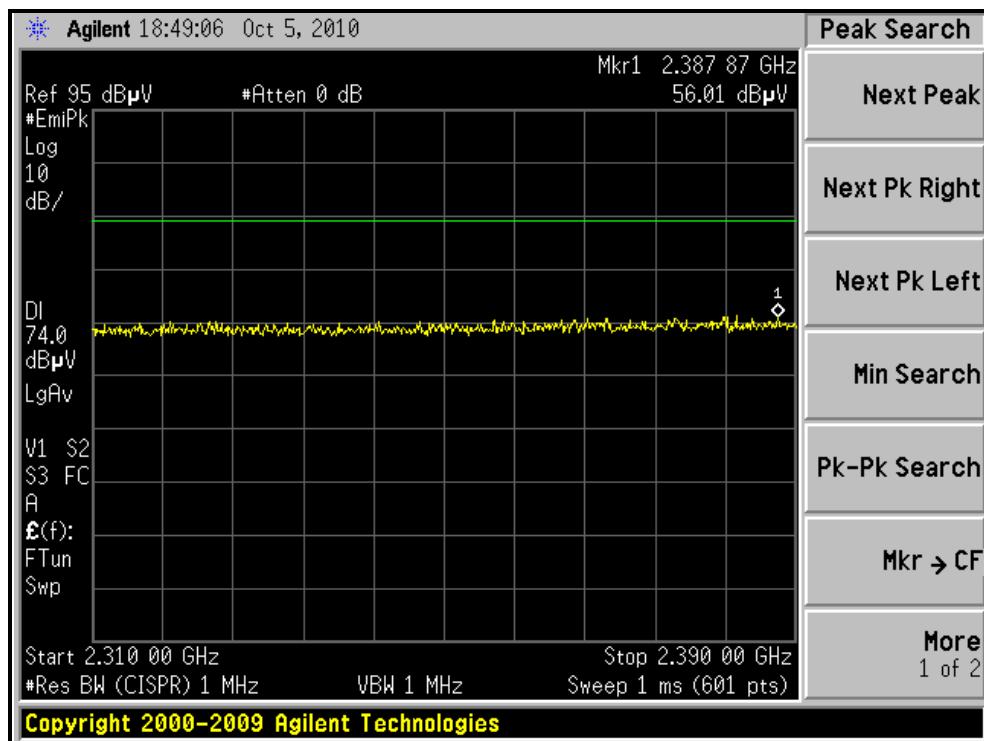
RESTRICTED BANDEDGE (802.11b MODE,CH1, HORIZONTAL)





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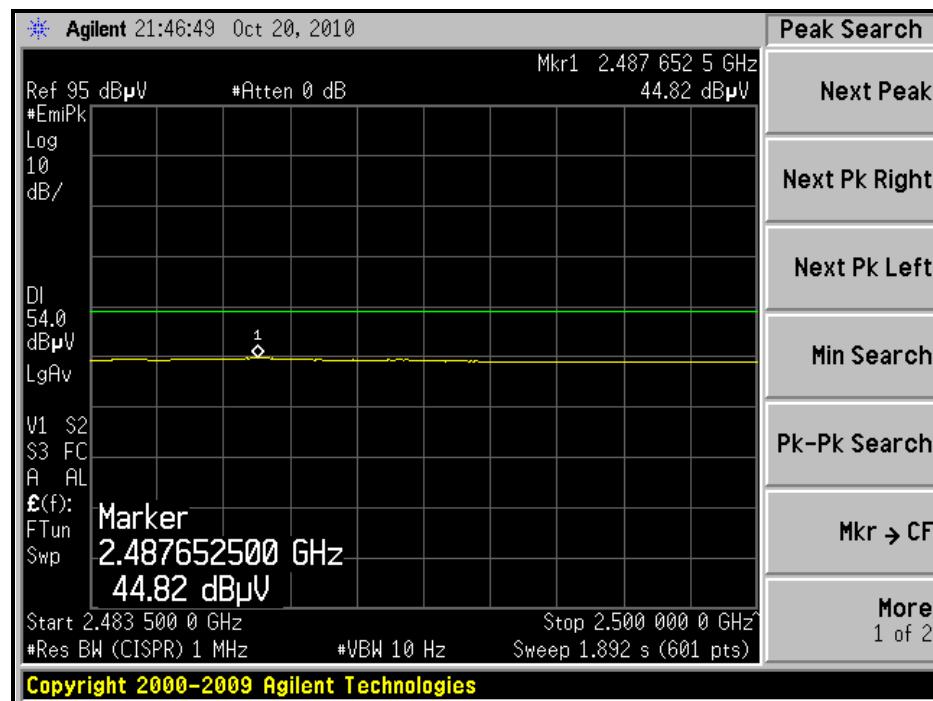
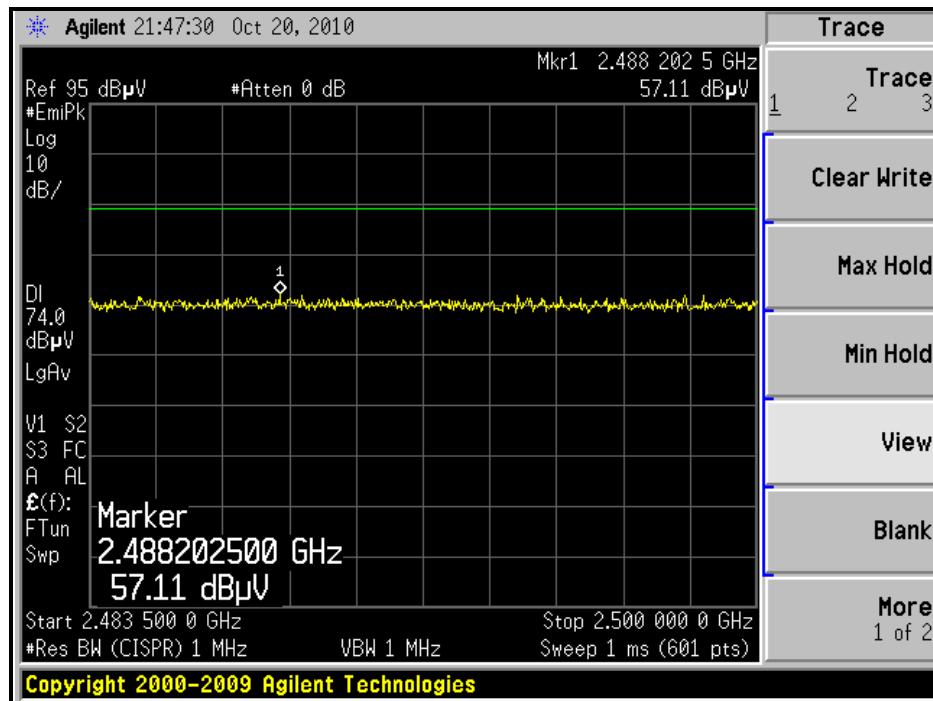
RESTRICTED BANDEDGE (802.11b MODE,CH1, VERTICAL)





A D T

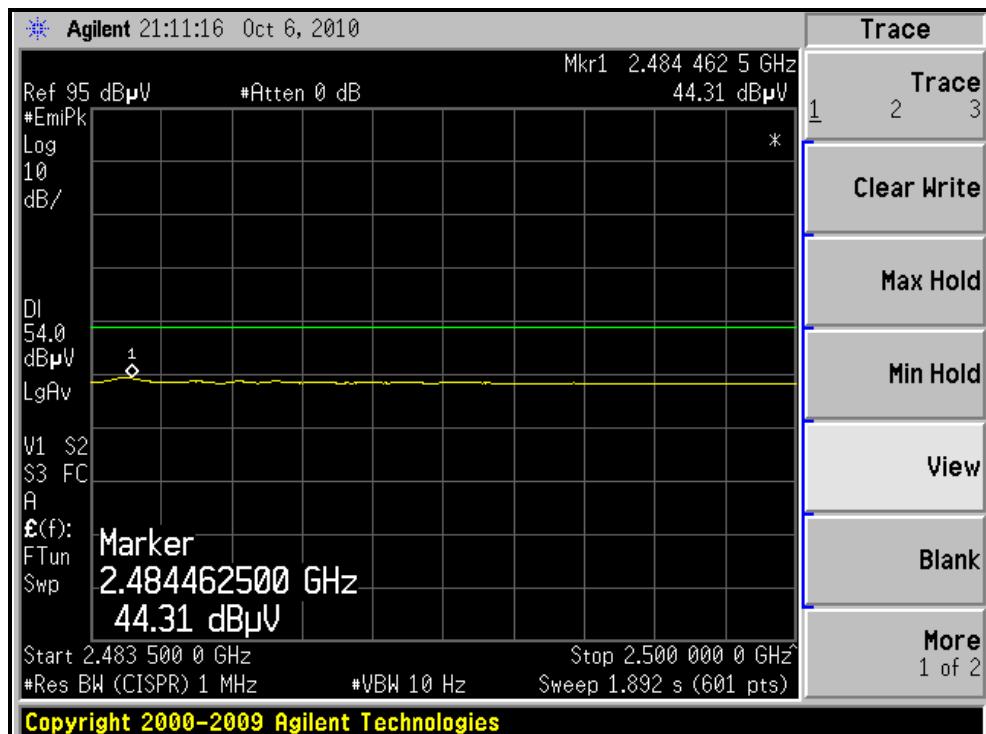
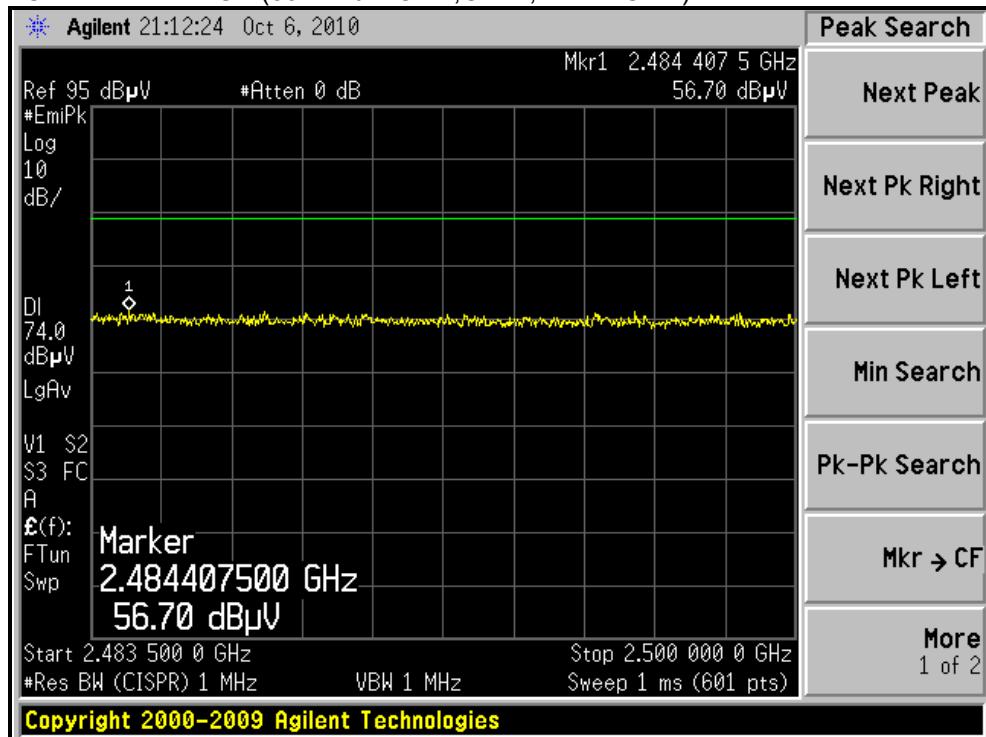
RESTRICTED BANDEDGE (802.11b MODE,CH11, HORIZONTAL)





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RESTRICTED BANDEDGE (802.11b MODE,CH11, VERTICAL)





A D T

802.11g OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL		Channel 1		FREQUENCY RANGE 1 ~ 25GHz
INPUT POWER (SYSTEM)		120Vac, 60 Hz		DETECTOR FUNCTION Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS		26deg. C, 75%RH 1013 hPa		TESTED BY Eric Lee

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	2390.00	62.6 PK	74.0	-11.4	1.01 H	250	30.94	31.66
2	2390.00	48.5 AV	54.0	-5.5	1.01 H	250	16.84	31.66
3	*2412.00	107.3 PK			1.00 H	249	75.57	31.73
4	*2412.00	97.6 AV			1.00 H	249	65.87	31.73
5	4824.00	45.4 PK	74.0	-28.6	1.01 H	261	6.43	38.97
6	4824.00	33.8 AV	54.0	-20.2	1.01 H	261	-5.17	38.97
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	2390.00	60.1 PK	74.0	-13.9	1.01 V	288	28.44	31.66
2	2390.00	46.1 AV	54.0	-7.9	1.01 V	288	14.44	31.66
3	*2412.00	104.6 PK			1.00 V	293	72.87	31.73
4	*2412.00	95.0 AV			1.00 V	293	63.27	31.73
5	4824.00	45.2 PK	74.0	-28.8	1.38 V	39	6.23	38.97
6	4824.00	33.7 AV	54.0	-20.3	1.38 V	39	-5.27	38.97

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. “*”: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL		Channel 6		FREQUENCY RANGE 1 ~ 25GHz
INPUT POWER (SYSTEM)		120Vac, 60 Hz		DETECTOR FUNCTION Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS		26deg. C, 75%RH 1013 hPa		TESTED BY Eric Lee

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	*2437.00	107.3 PK			1.00 H	266	75.49	31.81
2	*2437.00	97.4 AV			1.00 H	266	65.59	31.81
3	4874.00	45.8 PK	74.0	-28.2	1.11 H	281	6.66	39.14
4	4874.00	34.4 AV	54.0	-19.6	1.11 H	281	-4.74	39.14
5	7311.00	54.1 PK	74.0	-19.9	1.08 H	200	7.47	46.63
6	7311.00	41.6 AV	54.0	-12.4	1.08 H	200	-5.03	46.63
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	*2437.00	105.0 PK			1.01 V	294	73.19	31.81
2	*2437.00	95.5 AV			1.01 V	294	63.69	31.81
3	4874.00	45.3 PK	74.0	-28.7	1.40 V	211	6.16	39.14
4	4874.00	33.7 AV	54.0	-20.3	1.40 V	211	-5.44	39.14
5	7311.00	53.5 PK	74.0	-20.5	1.50 V	71	6.87	46.63
6	7311.00	41.3 AV	54.0	-12.7	1.50 V	71	-5.33	46.63

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. “*”: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL		Channel 11		FREQUENCY RANGE 1 ~ 25GHz
INPUT POWER (SYSTEM)		120Vac, 60 Hz		DETECTOR FUNCTION Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS		26deg. C, 75%RH 1013 hPa		TESTED BY Eric Lee

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	*2462.00	106.9 PK			1.01 H	271	75.01	31.89
2	*2462.00	96.8 AV			1.01 H	271	64.91	31.89
3	2483.50	63.6 PK	74.0	-10.4	1.00 H	288	31.63	31.97
4	2483.50	47.3 AV	54.0	-6.7	1.00 H	288	15.33	31.97
5	4924.00	45.6 PK	74.0	-28.4	1.11 H	48	6.29	39.31
6	4924.00	34.1 AV	54.0	-19.9	1.11 H	48	-5.21	39.31
7	7386.00	53.9 PK	74.0	-20.1	1.20 H	51	7.30	46.60
8	7386.00	41.5 AV	54.0	-12.5	1.20 H	51	-5.10	46.60

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	*2462.00	105.1 PK			1.00 V	320	73.21	31.89
2	*2462.00	95.8 AV			1.00 V	320	63.91	31.89
3	2483.50	62.3 PK	74.0	-11.7	1.01 V	303	30.33	31.97
4	2483.50	46.6 AV	54.0	-7.4	1.01 V	303	14.63	31.97
5	4924.00	45.4 PK	74.0	-28.6	1.01 V	222	6.09	39.31
6	4924.00	33.9 AV	54.0	-20.1	1.01 V	222	-5.41	39.31
7	7386.00	53.6 PK	74.0	-20.4	1.48 V	69	7.00	46.60
8	7386.00	41.4 AV	54.0	-12.6	1.48 V	69	-5.20	46.60

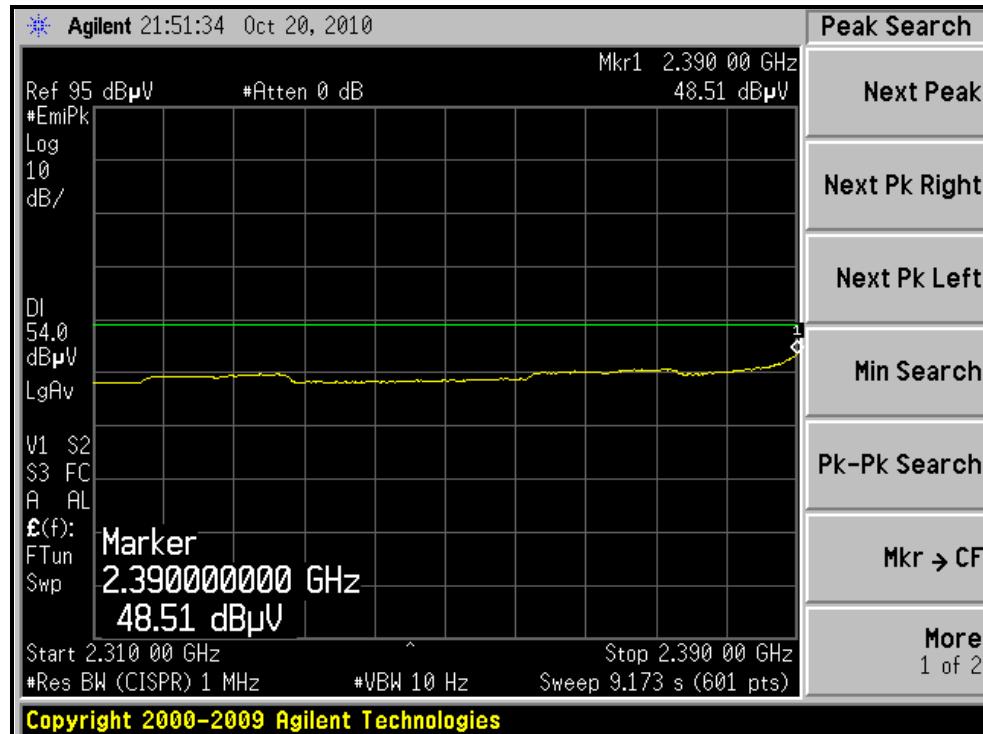
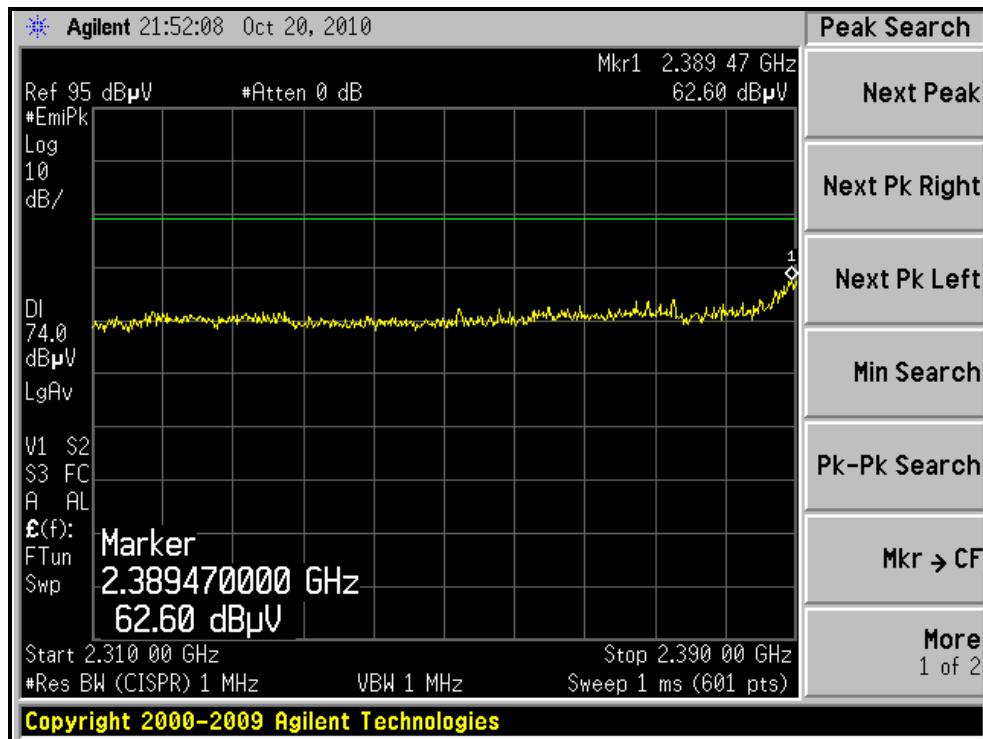
REMARKS:

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. “*”: Fundamental frequency.



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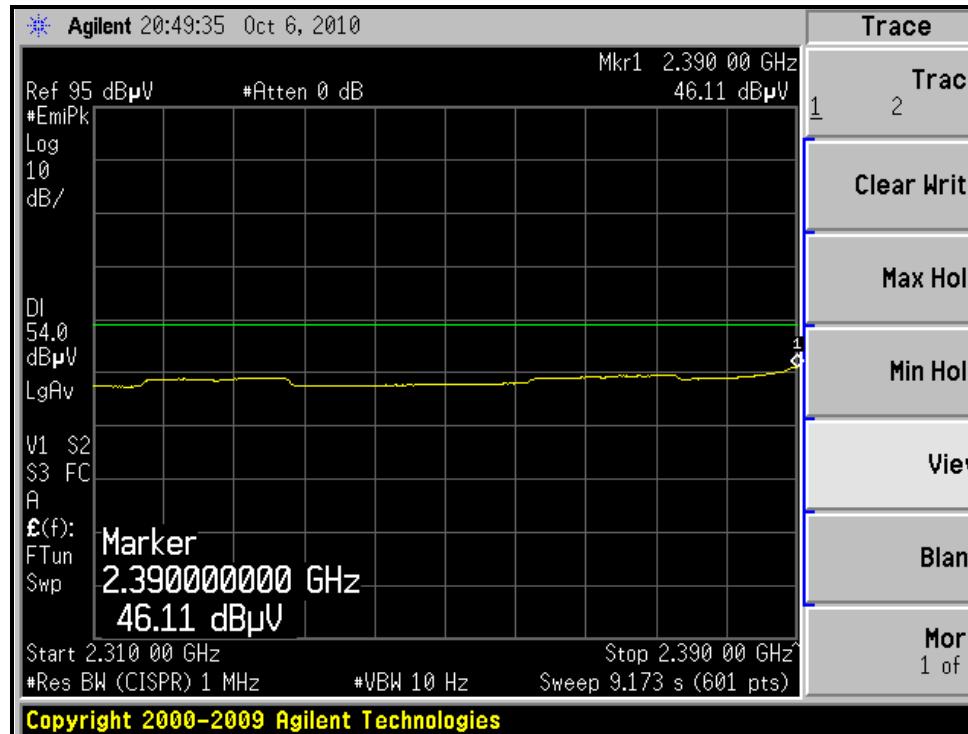
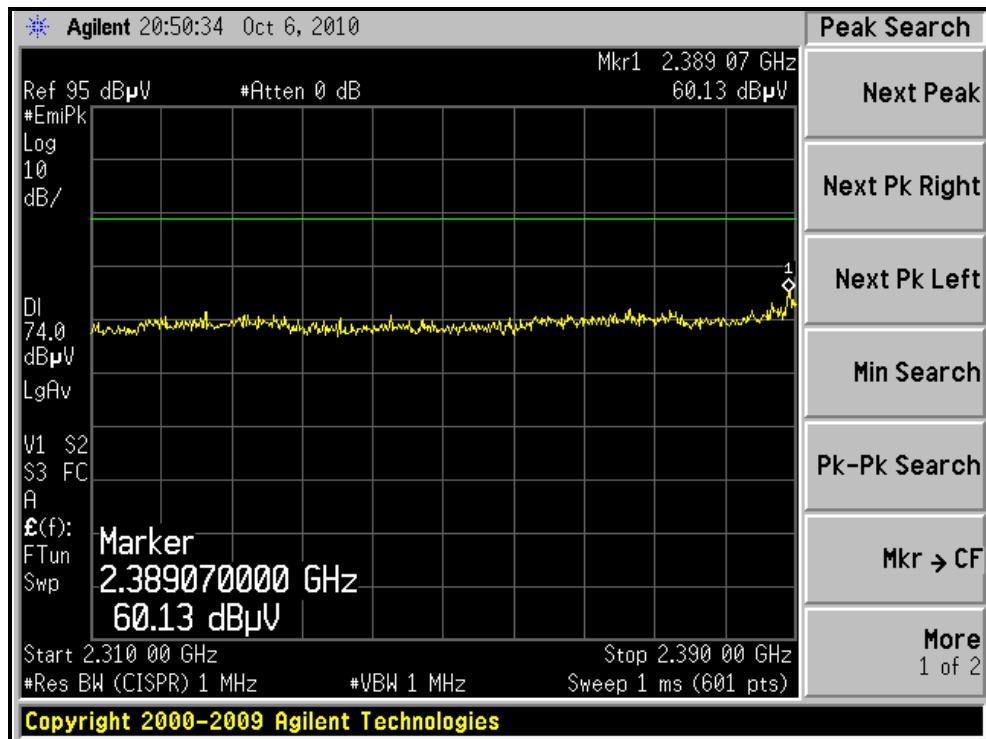
RESTRICTED BANDEDGE (802.11g MODE,CH1, HORIZONTAL)





A D T

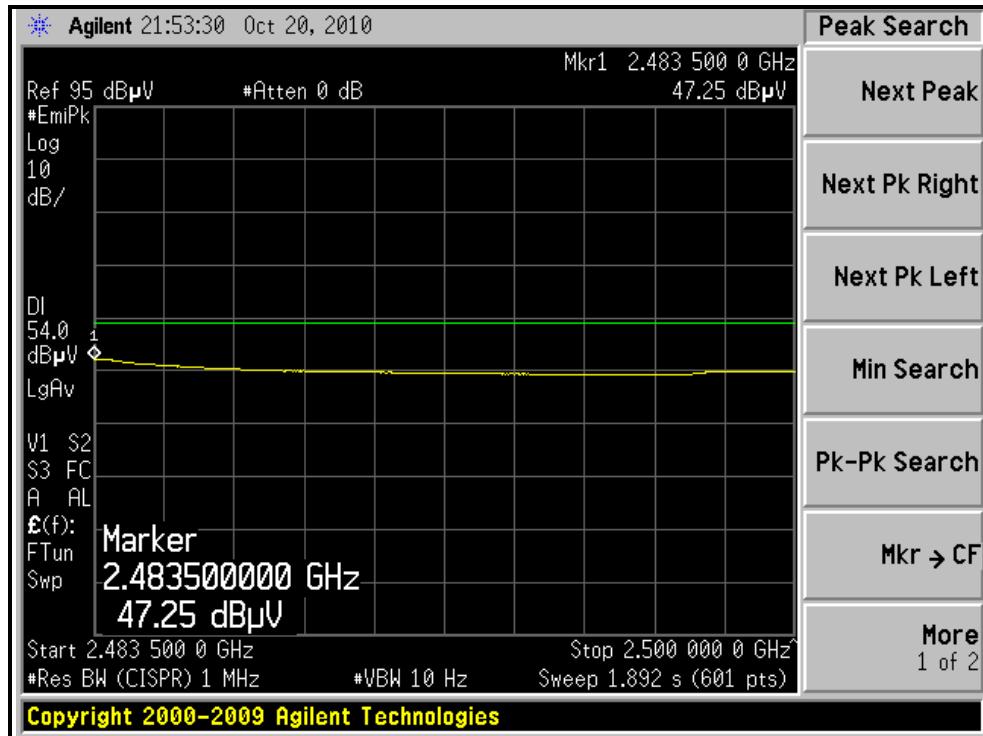
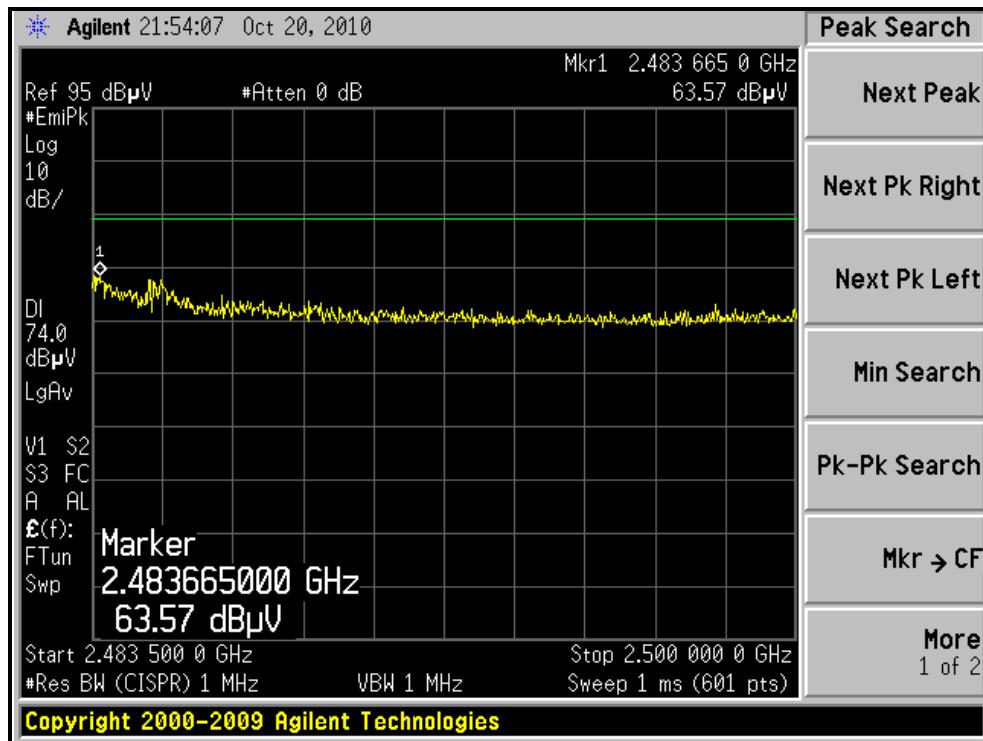
RESTRICTED BANDEDGE (802.11g MODE,CH1, VERTICAL)





A D T

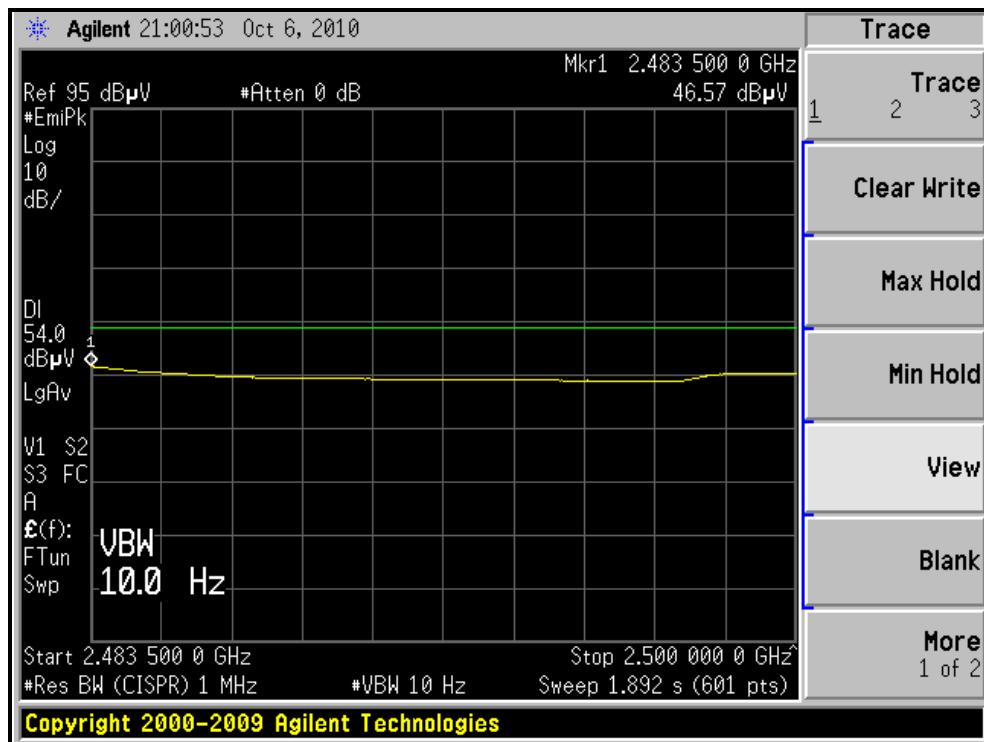
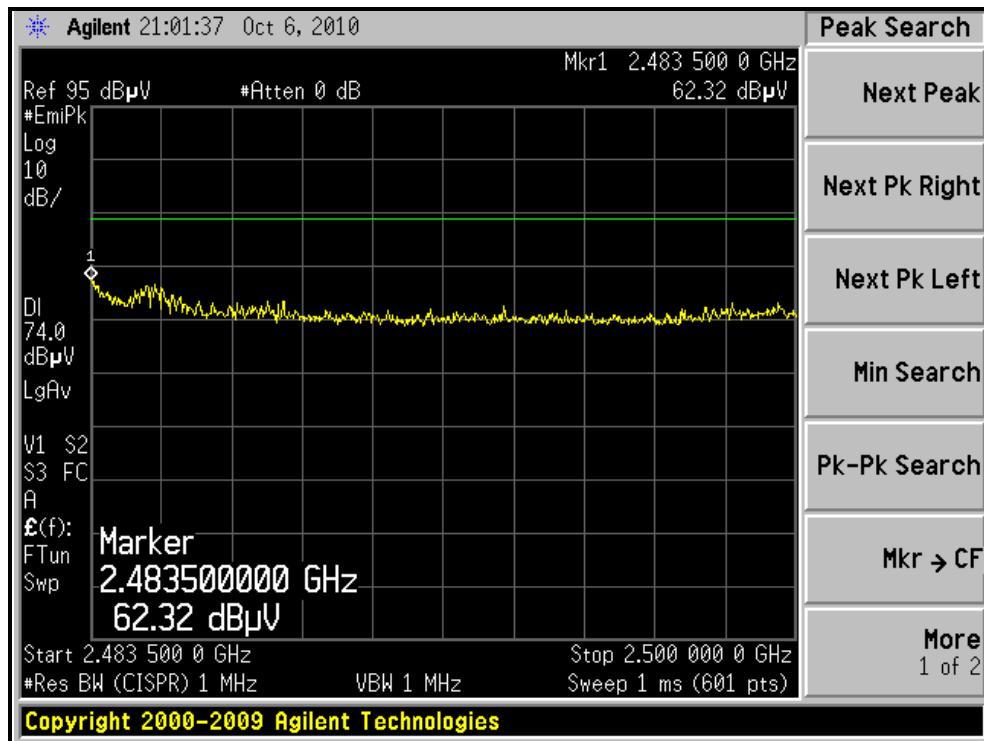
RESTRICTED BANDEDGE (802.11g MODE,CH11, HORIZONTAL)





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RESTRICTED BANDEDGE (802.11g MODE,CH11, VERTICAL)





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4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100036	Dec. 18, 2009	Dec. 17, 2010

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

4.3.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100kHz RBW and 100kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP





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4.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.



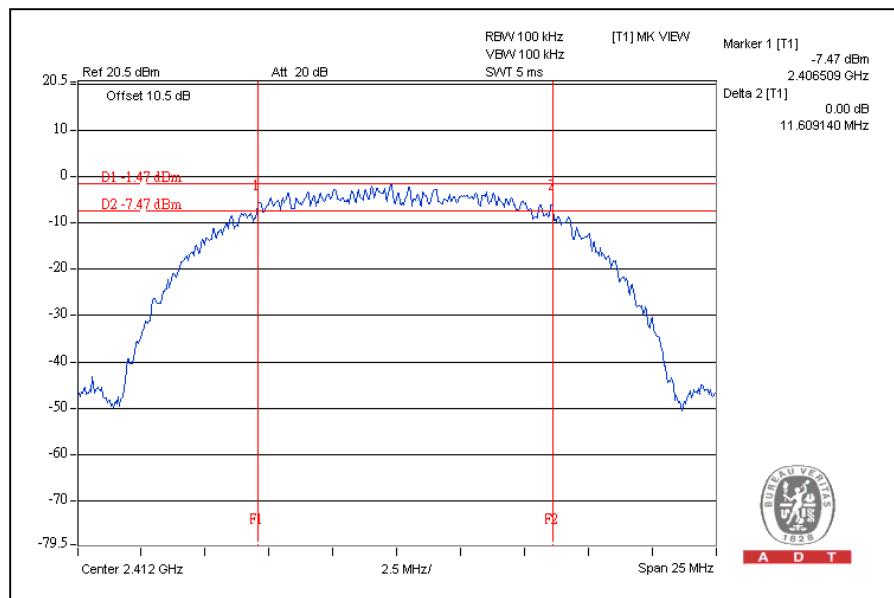
A D T

4.3.7 TEST RESULTS

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	11.60	0.5	PASS
6	2437	11.60	0.5	PASS
11	2462	11.59	0.5	PASS

CH1



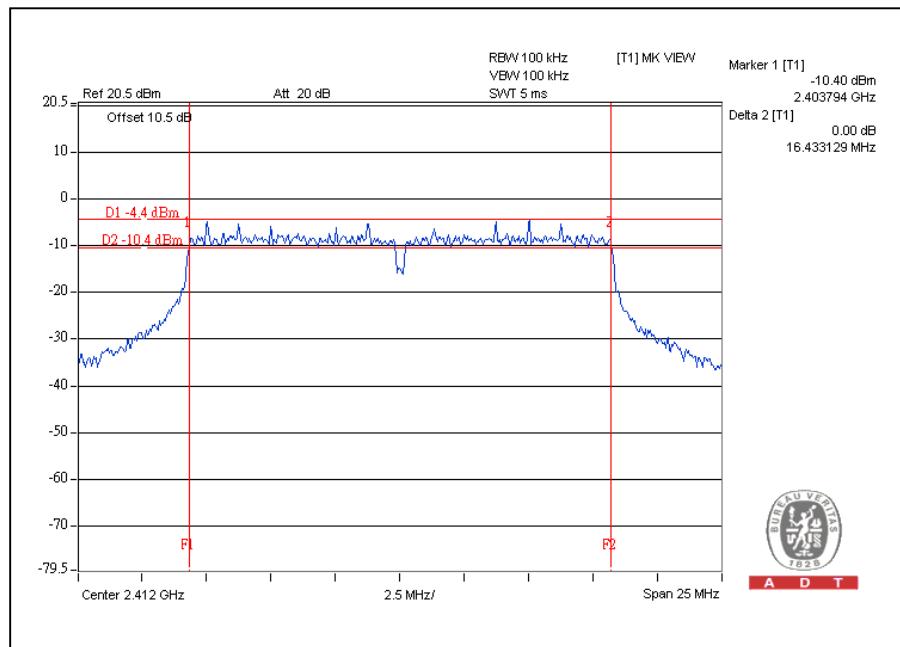


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802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.43	0.5	PASS
6	2437	16.43	0.5	PASS
11	2462	16.43	0.5	PASS

CH1





4.4 MAXIMUM PEAK OUTPUT POWER

4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

4.4.2 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Peak Power Meter	ML2495A	0824006	May 04, 2010	May 03, 2011
Power Sensor	MA2411B	0738172	May 04, 2010	May 03, 2011

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

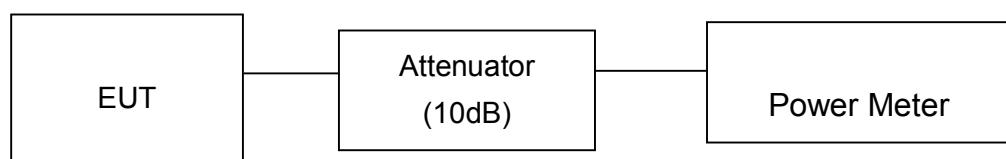
4.4.3 TEST PROCEDURES

1. The transmitter output was connected to the power meter through an attenuator; the bandwidth of the fundamental frequency was measured with the power meter.
2. Record the power level.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP





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4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6



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4.4.7 TEST RESULTS

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	12.6	11.0	30	PASS
6	2437	11.2	10.5	30	PASS
11	2462	11.5	10.6	30	PASS

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	12.6	11.0	30	PASS
6	2437	11.0	10.4	30	PASS
11	2462	10.5	10.2	30	PASS



4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100036	Dec. 18, 2009	Dec. 17, 2010

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

4.5.3 TEST PROCEDURE

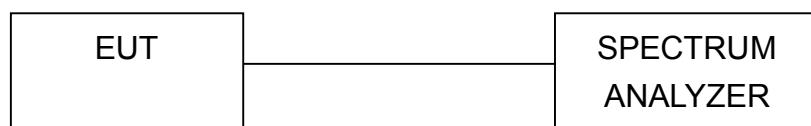
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

The sweep time is allowed to be longer than span/3kHz for a full response of the mixer in the spectrum analyzer.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6



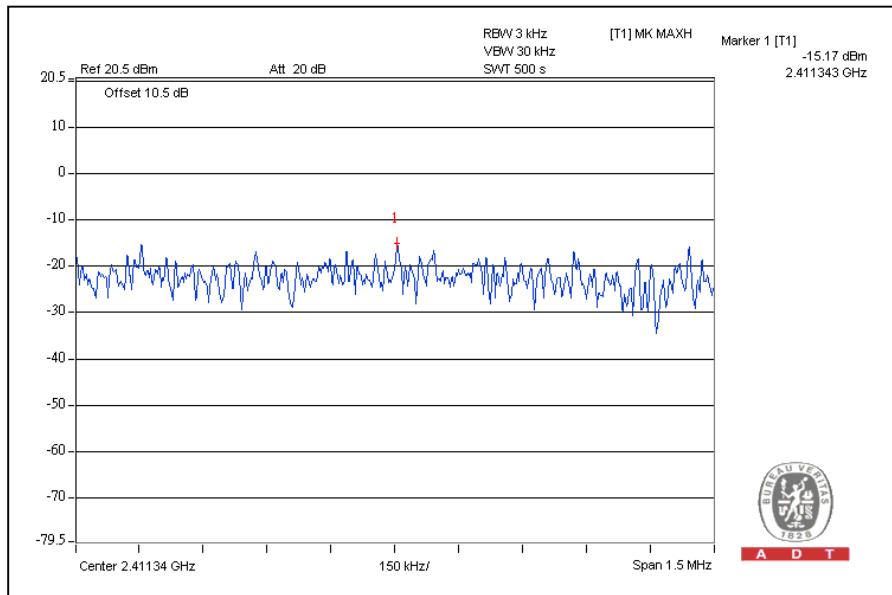
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4.5.7 TEST RESULTS

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-15.2	8	PASS
6	2437	-15.7	8	PASS
11	2462	-15.6	8	PASS

CH1



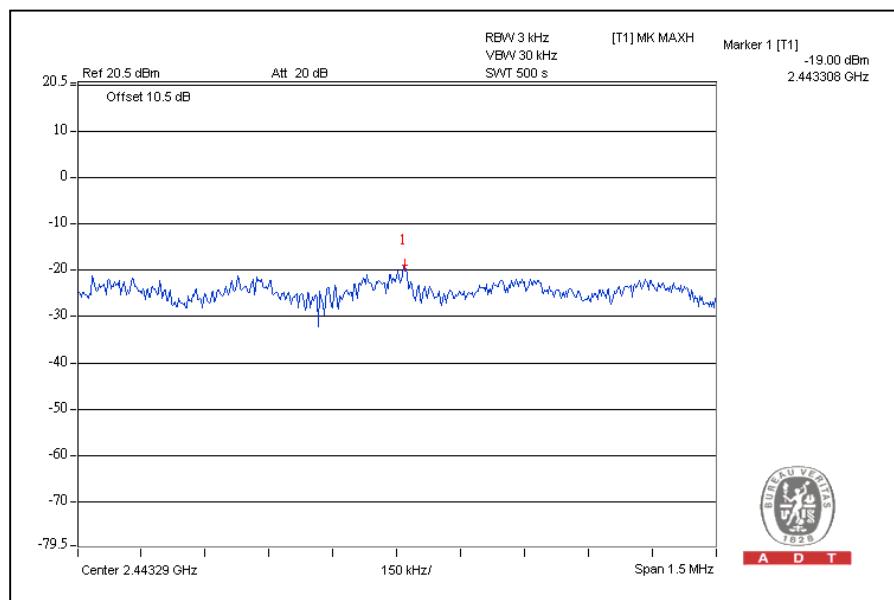


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802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-19.1	8	PASS
6	2437	-19.0	8	PASS
11	2462	-19.8	8	PASS

CH6





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4.6 CONDUCTED OUT-BAND EMISSION MEASUREMENT

4.6.1 LIMITS OF CONDUCTED OUT-BAND EMISSION MEASUREMENT

Below -20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100036	Dec. 18, 2009	Dec. 17, 2010

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

4.6.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low loss cable. Set RBW of spectrum analyzer to 100kHz and VBW of spectrum analyzer to 300kHz with suitable frequency span including 100MHz bandwidth from band edge. The band edges was measured and recorded.

The spectrum plots (RBW = 100kHz , VBW = 300kHz) are attached on the following pages.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 EUT OPERATING CONDITION

Same as Item 4.3.6



A D T

4.6.6 TEST RESULTS

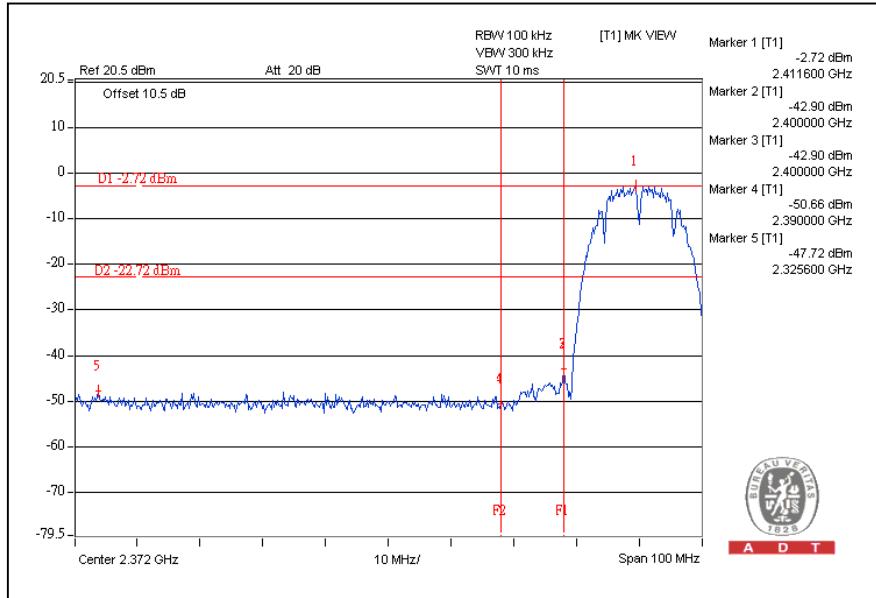
The spectrum plots are attached on the following images. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).



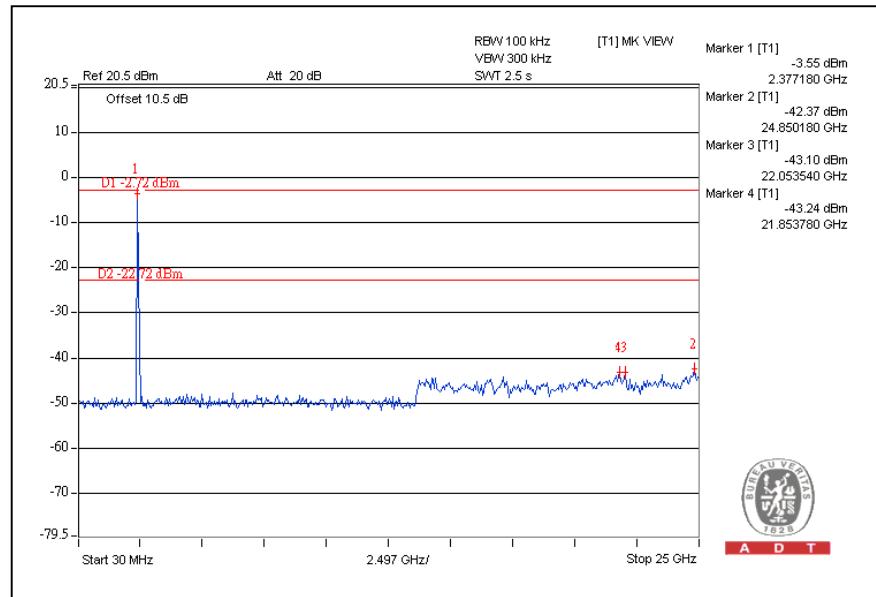
A D T

802.11b:

CH1



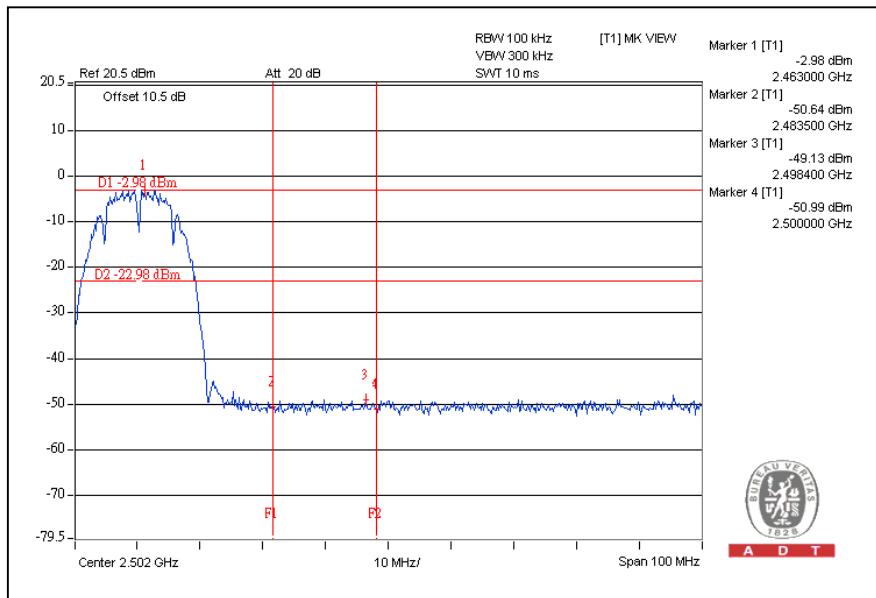
CH11



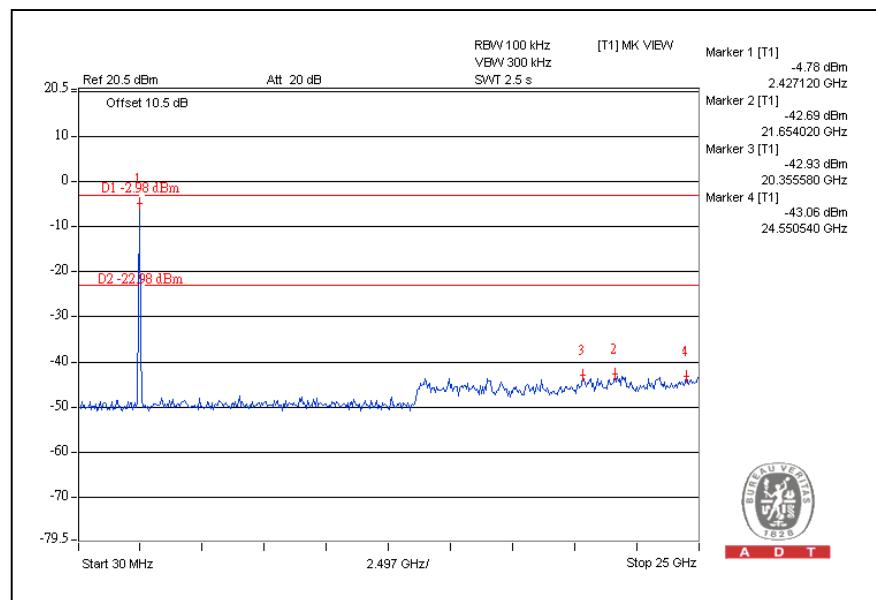


A D T

CH1



CH11

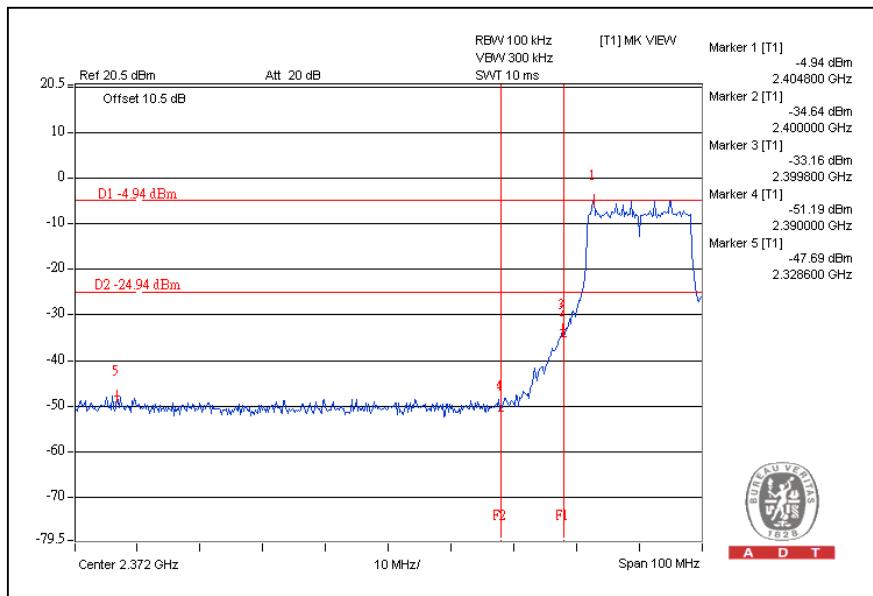




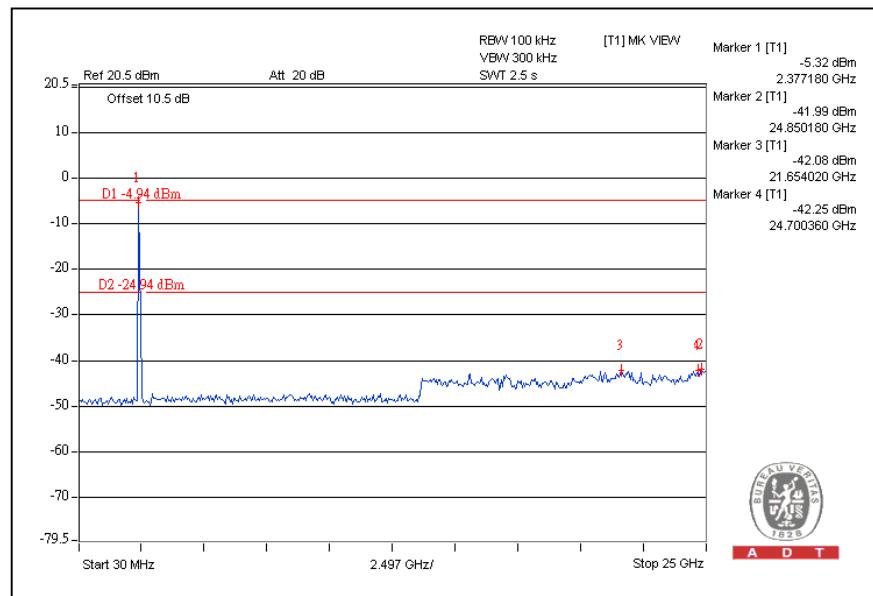
A D T

802.11g:

CH1



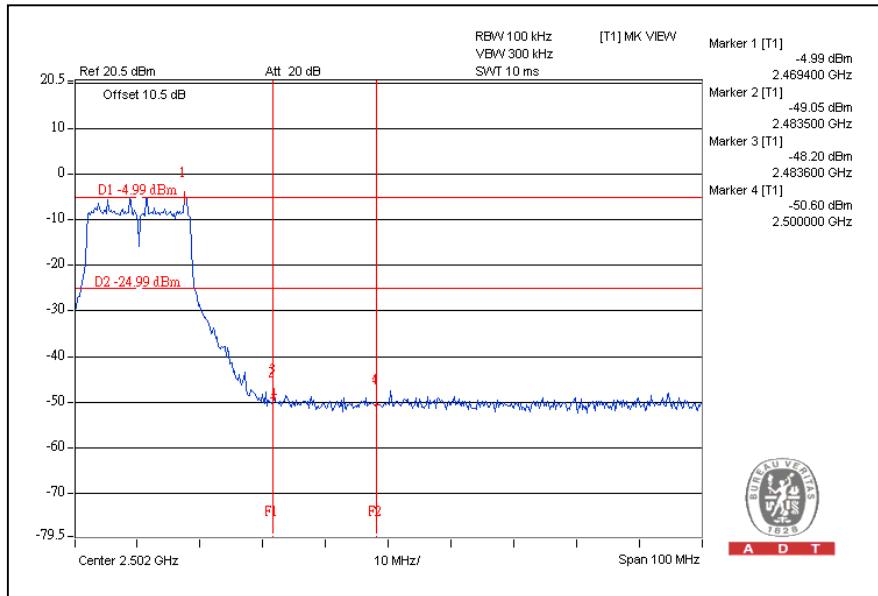
CH11



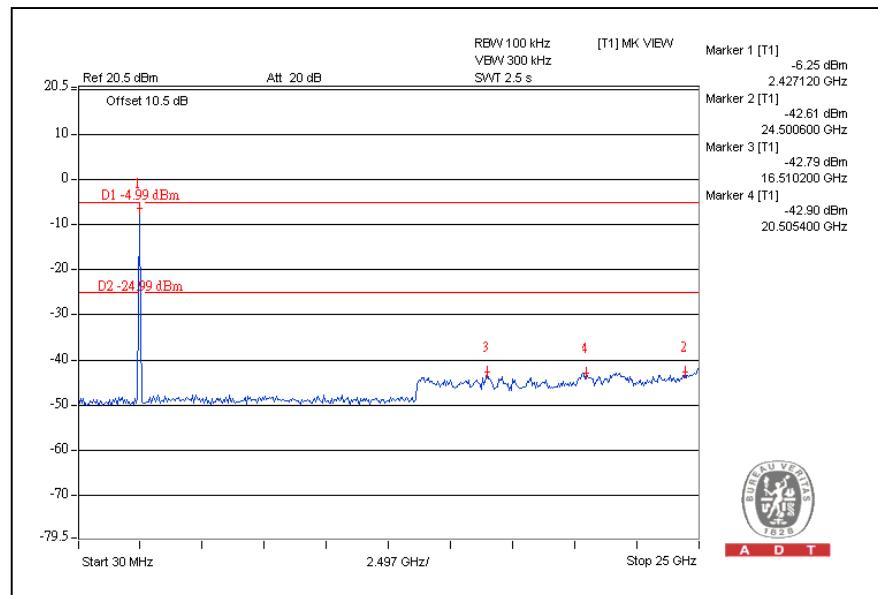


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CH1



CH11





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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:

Linko EMC/RF Lab:

Tel: 886-2-26052180
Fax: 886-2-26052943

Hsin Chu EMC/RF Lab:

Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab:

Tel: 886-3-3183232
Fax: 886-3-3185050

Web Site: www.adt.com.tw

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---