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FCC TEST REPORT (15.247)

REPORT NO.: RF991229E03

MODEL NO.: CY-SWR1100

FCC ID: A3LCYSWR1100

RECEIVED: Dec. 29, 2010

TESTED: Dec. 31, 2010 to Jan. 10, 2011

ISSUED: Jan. 31, 2011

APPLICANT: Samsung Electronics Co., Ltd.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
Original release	NA	Jan. 31, 2011



1. CERTIFICATION

PRODUCT: Wireless Router
BRAND NAME: Samsung
MODEL NO.: CY-SWR1100
TEST SAMPLE: MASS-PRODUCTION
TESTED: Dec. 31, 2010 to Jan. 10, 2011
APPLICANT: Samsung Electronics Co., Ltd.
STANDARDS: FCC Part 15, Subpart C (Section 15.247)
ANSI C63.4-2003
ANSI C63.10-2009

The above equipment (Model: CY-SWR1100) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : Carol Liao , **DATE:** Jan. 31, 2011
(Carol Liao, Specialist)

APPROVED BY : May Chen , **DATE:** Jan. 31, 2011
(May Chen, Deputy Manager)

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

For 2.4GHz, 2412~2462MHz Band

APPLIED STANDARD: FCC 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 -11.52dB at 0.326MHz
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 -0.5dB at 2489.7MHz
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	Antenna connector is MHF not a standard connector.



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For 5GHz, 5725~5850MHz Band

APPLIED STANDARD: FCC 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 -11.52dB at 0.326MHz
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 -3.8dB at 45.50MHz
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	Antenna connector is MHF not a standard connector.

NOTE:

1. The EUT was operating in 2400 ~ 2483.5MHz, 5.15~5.25GHz and 5.725~5.850GHz frequencies band. This report was recorded the RF parameters including 2400 ~ 2483.5MHz and 5.725~5.850GHz. For the 5.15~5.25GHz RF parameters was recorded in another test report.



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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)	3.94 dB
Radiated emissions (1GHz -18GHz)	2.49 dB
Radiated emissions (18GHz -40GHz)	2.70 dB



3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Wireless Router
MODEL NO.	CY-SWR1100
FCC ID	A3LCYSWR1100
POWER SUPPLY	DC 12V from power adapter
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	<p>802.11g: 54 / 48 / 36 / 24 / 18 / 12 / 9 / 6Mbps 802.11b: 11 / 5.5 / 2 / 1Mbps 802.11a: 54/48/36/24/18/12/9/6Mbps HT20 MCS0~7 (800ns GI): 6.5Mbps, 13Mbps, 19.5Mbps, 26Mbps, 39Mbps, 52Mbps, 58.5Mbps, 65Mbps, HT20 MCS8~15 (800ns GI): 13Mbps, 26Mbps, 39Mbps, 52Mbps, 78Mbps, 104Mbps, 117Mbps, 130Mbps. HT40 MCS0~7 (800ns GI): 13.5Mbps, 27Mbps, 40.5Mbps, 54Mbps, 81Mbps, 108Mbps, 121.5Mbps, 135Mbps. HT40 MCS8~15 (800ns GI): 27Mbps, 54Mbps, 81Mbps, 108Mbps, 162Mbps, 216Mbps, 243Mbps, 270Mbps. HT20 MCS0~7 (400ns GI): 7.2Mbps, 14.4Mbps, 21.7Mbps, 28.9Mbps, 43.3Mbps, 57.8Mbps, 65.0Mbps, 72.2Mbps, HT20 MCS8~15 (400ns GI): 14.444Mbps, 28.889Mbps, 43.333Mbps, 57.778Mbps, 86.667Mbps, 115.556Mbps, 130.000Mbps, 144.444Mbps. HT40 MCS0~7 (400ns GI): 15.0Mbps, 30.0Mbps, 45.0Mbps, 60.0Mbps, 90.0Mbps, 120.0Mbps, 135.0Mbps, 150.0Mbps, HT40 MCS8~15 (400ns GI): 30.0Mbps, 60.0Mbps, 90.0Mbps, 120.0Mbps, 180.0Mbps, 240.0Mbps, 270.0Mbps, 300.0Mbps.</p>
OPERATING FREQUENCY	For 15.407 802.11a: 5.18 ~ 5.24GHz
	For 15.247 802.11b & 802.11g: 2.412 ~ 2.462GHz 802.11a: 5.745 ~ 5.825GHz



NUMBER OF CHANNEL	For 15.407 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz)
	For 15.247(2.4GHz) 11 for 802.11b, 802.11g, 802.11n (20MHz) 7 for 802.11n (40MHz)
	For 15.247(5GHz) 5 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz)
MAXIMUM OUTPUT POWER	For 15.407 802.11a: 30.9mW 802.11n (20MHz): 28.9mW 802.11n (40MHz): 27.6mW For 15.247(2.4GHz) 802.11b: 87.1mW 802.11g: 309.0mW 802.11n (20MHz): 413.1mW 802.11n (40MHz): 243.6mW For 15.247(5GHz) 802.11a: 257.0mW 802.11n (20MHz): 526.1mW 802.11n (40MHz): 469.0mW
ANTENNA TYPE	Please see note 1
DATA CABLE	Ethernet cable (unshielded, 1.5m)
I/O PORTS	USB port x 1 Internet port (10, 100, 1000Mbps) port x 1 Ethernet port (10, 100, 1000Mbps) port x 4
ASSOCIATED DEVICES	Adapter x 1 Stand x 1

NOTE:

1. There are two antennas provided to this EUT, please refer to the following table:

Transmitter Circuit	Manufacture	Model No.	Antenna Type	Gain (dBi)	Cable Loss (dB)	Net Gain (dB)	Cable length (mm)	Antenna Connector
Chain (0)	WHA YU GROUP	C037-511102-A (SSR-02095)	PCB	4.76	0.68	4.08	170	MHF
Chain (1)		C037-511101-A (SSR-02094)	PCB	4.73	0.49	4.24	120	

2. The EUT must be supplied with a power adapter as following table:

BRAND	SAMSUNG
MANUFACTURE	Yang Ming Industrial
MODEL	DA-24B12-FAC
INPUT POWER	AC 100-240V, 47-63Hz, 0.65A Max AC Cable: 1.85m unshielded
OUTPUT POWER	DC 12V, 2A DC Cable: 1.55m unshielded with one core

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

Test Mode	Description
Mode A	Level-set
Mode B	Tower-set

From the above modes, the radiated emission<below 1GHz> worse case was found in Mode A and the radiated emission<above 1GHz> worse case was found in Mode B. Therefore only the test data of the modes were recorded in this report.

4. The EUT incorporates a MIMO function with 802.11n.
5. The EUT is 2 * 2 spatial MIMO (2Tx & 2Rx) without beam forming function. The 11abg legacy mode is limited to single transmitter only.
6. When the EUT operating in 802.11n, the software operation, which is defined by manufacturer, MCS (Modulation and Coding Schemes) from 0 to 15.
7. The EUT complies with 802.11n standards and backwards compatible with 802.11b, 802.11g products.
8. The above EUT information was declared by the 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, 802.11n (20MHz):

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		

Operated in 5725 ~ 5850MHz band:

Five channels are provided for 802.11a, 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
149	5745 MHz	161	5805 MHz
153	5765 MHz	165	5825 MHz
157	5785 MHz		

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

CHANNEL	FREQUENCY
151	5755 MHz
159	5795 MHz



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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	√	√			Level-set
2			√	√	Tower-set

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

ANTENNA COMBINATION MODE:

COMBINATION MODE	OPERATION MODE	TX CHAIN(0)	TX CHAIN(1)	Remark
A	802.11 b	√		With diversity
B	802.11 b		√	With diversity
C	802.11 g	√		With diversity
D	802.11 g		√	With diversity
E	802.11 a	√		With diversity
F	802.11 a		√	With diversity
G	802.11n(20MHz) for MCS0~15	√	√	
H	802.11n(40MHz) for MCS0~15	√	√	

Note:

1. The above information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.
2. Mode B, D, F, G & H the worst modes, was selected as representative mode for the report.

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)	COMBINATION MODE
Worst Channel	-	-	-	-	-	-



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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)	COMBINATION MODE
For 2.4 GHz 802.11n (20MHz)	1 to 11	1	OFDM	BPSK	1	G
For 5 GHz 802.11n (20MHz)	149 to 165	149	OFDM	BPSK	6.5	G

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)	COMBINATION MODE
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1	B
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6	D
For 2.4 GHz 802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5	G
For 2.4 GHz 802.11n (40MHz)	1 to 7	1, 4, 7	OFDM	BPSK	13.5	H
802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6	F
For 5 GHz 802.11n (20MHz)	149 to 165	149, 157, 165	OFDM	BPSK	6.5	G
For 5 GHz 802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	13.5	H

**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)	COMBINATION MODE
802.11b	1 to 11	1, 11	DSSS	DBPSK	1	B
802.11g	1 to 11	1, 11	OFDM	BPSK	6	D
For 2.4 GHz 802.11n (20MHz)	1 to 11	1, 11	OFDM	BPSK	6.5	G
For 2.4 GHz 802.11n (40MHz)	1 to 7	1, 7	OFDM	BPSK	13.5	H
802.11a	149 to 165	149, 165	OFDM	BPSK	6	F
For 5 GHz 802.11n (20MHz)	149 to 165	149, 165	OFDM	BPSK	6.5	G
For 5 GHz 802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	13.5	H

- ✘ After verification, conducted out band emission as show worst chain in report by investigations.

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)	COMBINATION MODE
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1	B
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6	D
For 2.4 GHz 802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5	G
For 2.4 GHz 802.11n (40MHz)	1 to 7	1, 4, 7	OFDM	BPSK	13.5	H
802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6	F
For 5 GHz 802.11n (20MHz)	149 to 165	149, 157, 165	OFDM	BPSK	6.5	G
For 5 GHz 802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	13.5	H

- ✘ After verification, bandwidth as show worst chain in report by investigations.



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※ **TEST CONDITION:**

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE ³ 1G	21deg. C, 61%RH, 1013 hPa	120Vac, 60Hz	Frank Liu
RE<1G	24deg. C, 78%RH, 1013 hPa	120Vac, 60Hz	Frank Liu
PLC	25deg. C, 60%RH, 1013 hPa	120Vac, 60Hz	Timmy Hu
APCM	25deg. C, 60%RH, 1013 hPa	120Vac, 60Hz	Kent Liu

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

ANSI C63.10-2009

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	PERSONAL COMPUTER	Compag	DCSM	294QL1S	FCC DoC
2	MONITOR	DELL	E2210Hc	CN-OG337R-64180-97S-OQGS	FCC DoC
3	KEYBOARD	DELL	SK-8115	MY-0DJ325-71619-99B-0479	FCC DoC
4	MOUSE	DELL	MOC5UO	I1401LVG	FCC DoC
5	SWITCH	HP	J9086A	NA	NA
6	iPod nano 2GB	APPLE	A1199	YM712NN5VQ5	FCC DoC
7	NOTEBOOK COMPUTER	DELL	PP18L	4799903248	FCC DoC
8	NOTEBOOK COMPUTER	HP	HSTNN-S19C	GFC2Q-3C9FD-QX CYT-YTB2D-BJH43	FCC DoC

For Conducted test:	
No.	Signal cable description
1	UTP Cable (3m)
2	1.8 m braid shielded wire, VGA connector, with two cores.
3	1.8 m foil shielded wire, USB Connector, , w/o core
4	1.5 m foil shielded wire, USB Connector, w/o core.
5	UTP Cable (10m)
6	1 m shielded cable, terminated with USB connector, w/o core.
7	NA
8	NA

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



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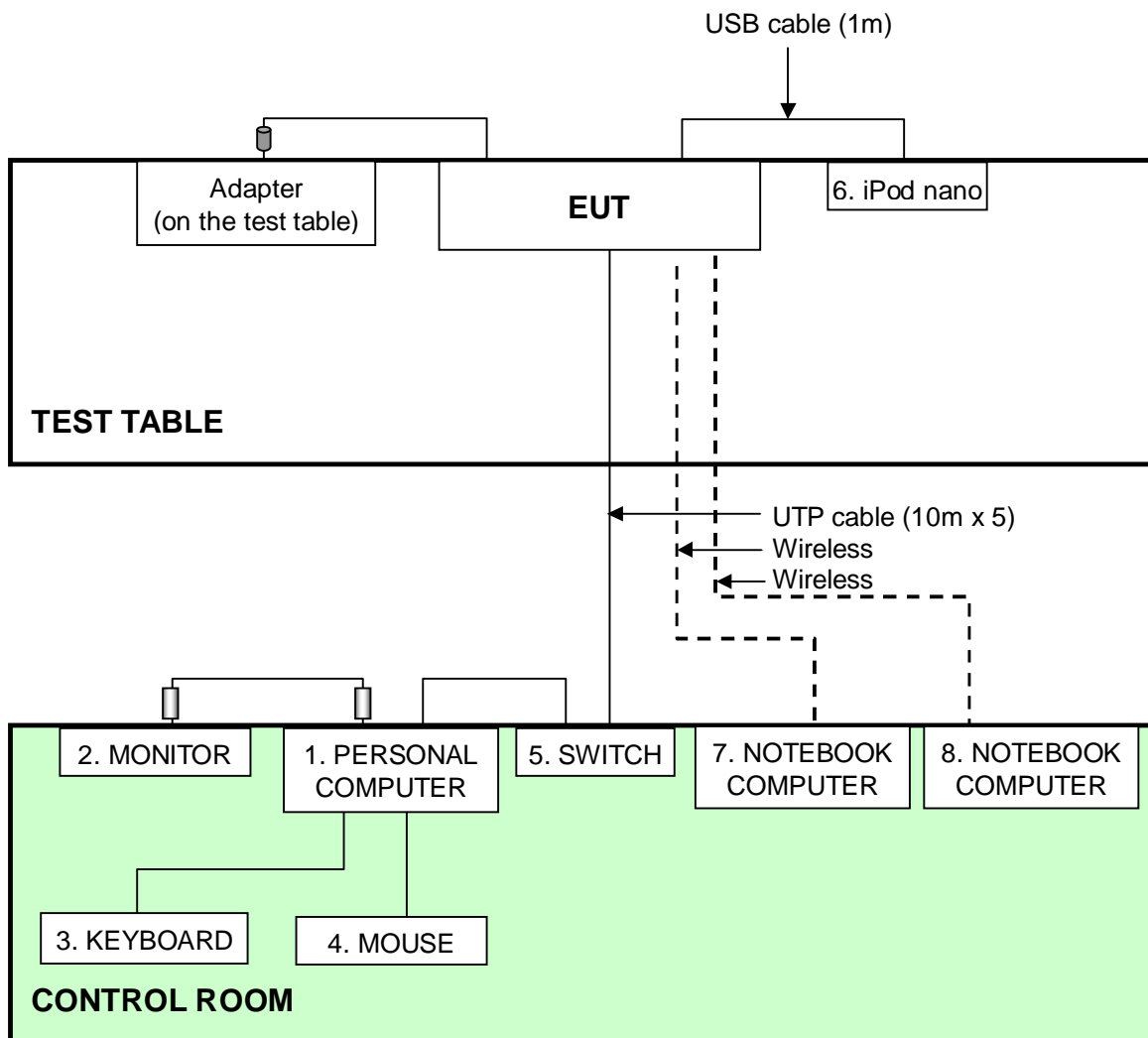
For Radiated test:					
No.	Product	Brand	Model No.	Serial No.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP18L	6976685584	FCC DoC
2	NOTEBOOK COMPUTER	DELL	PP17L	CN-ONF743-48643-7AV-0124	FCC DoC
3	HUB	ZyXEL	ES-116P	S060H02000215	FCC DoC
4	USB Flash Drive	SanDisk	SDCZ2-512-A10	5472260816	FCC DoC

For Radiated test:	
No.	Signal cable description
1	UTP cable (10m)
2	UTP cable (10m)
3	UTP cable (10m)
4	NA

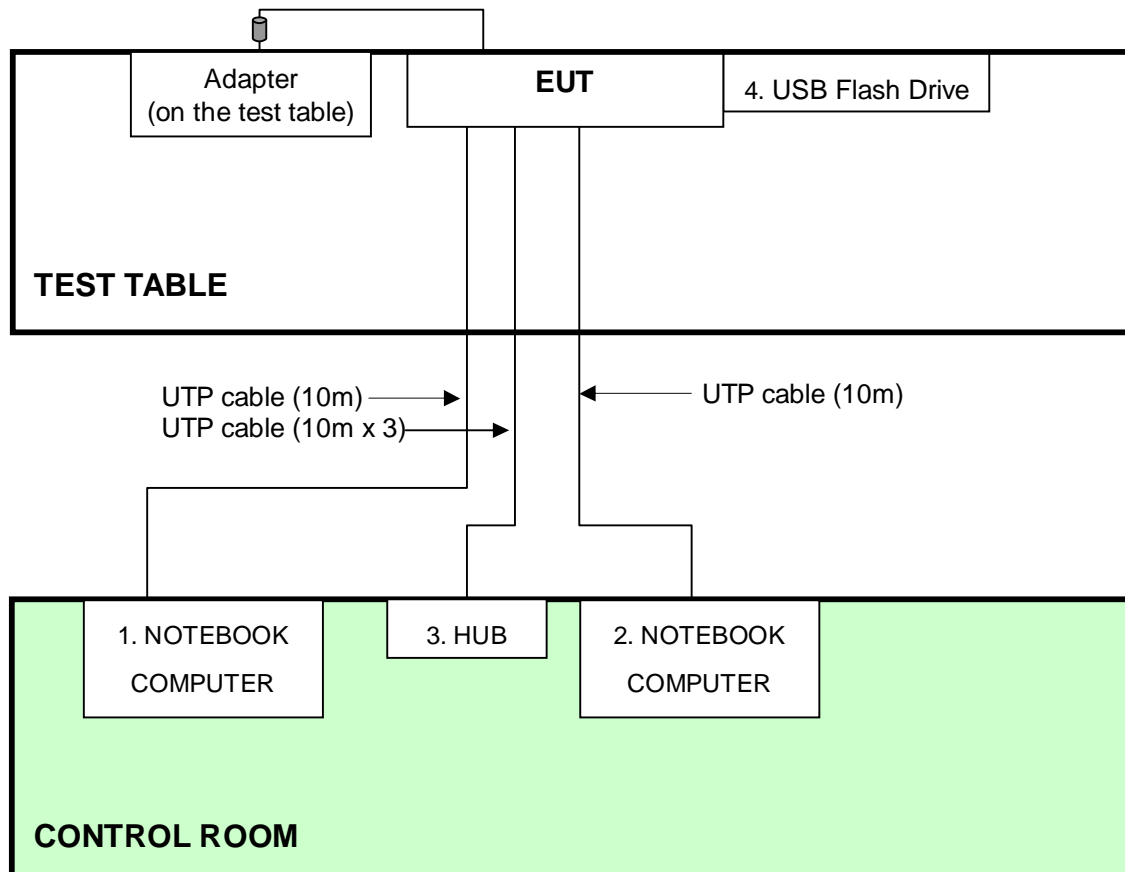
Note: The power cords of the above support units were unshielded (1.8m).

3.5 CONFIGURATION OF SYSTEM UNDER TEST

For Conducted test:



For Radiated test:





4. TEST TYPES AND RESULTS (802.11b & g, 2400 ~ 2483.5MHz Band)

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBµV)	
0.15-0.5 0.5-5 5-30	Quasi-peak	Average
	66 to 56	56 to 46
	56	46
	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

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver	ESCS 30	100375	Mar. 09, 2010	Mar. 08, 2011
Line-Impedance Stabilization Network (for EUT)	NSLK 8127	8127-522	Sep. 08, 2010	Sep. 07, 2011
Line-Impedance Stabilization Network (for Peripheral)	ESH3-Z5	848773/004	Nov. 03, 2010	Nov. 02, 2011
RF Cable (JYEBAO)	5DFB	COCCAB-002	Aug. 30, 2010	Aug. 29, 2011
50 ohms Terminator	50	3	Nov. 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.

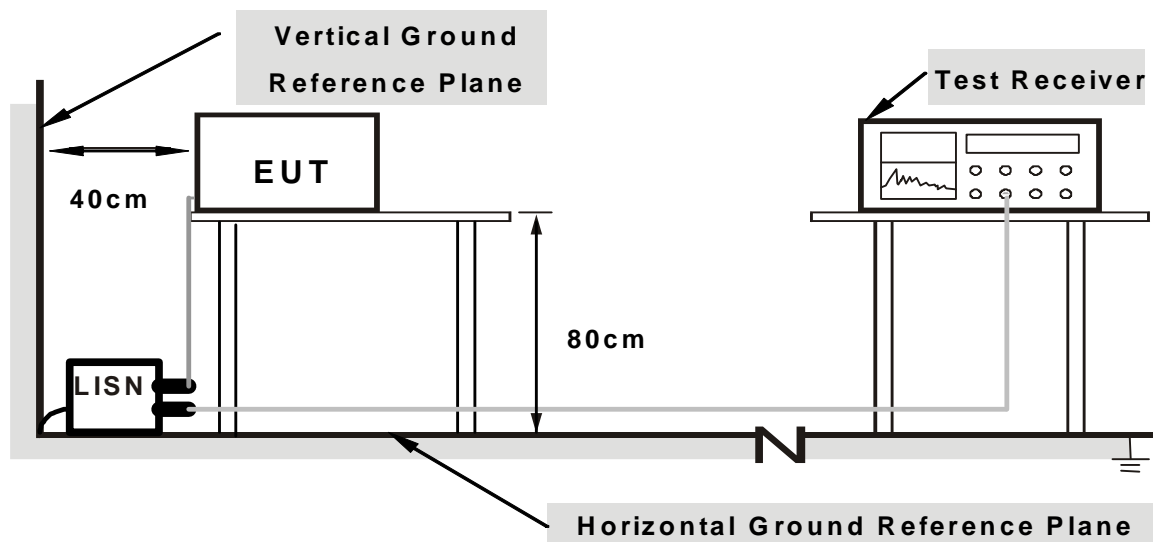
4.1.3 TEST PROCEDURES

- 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 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

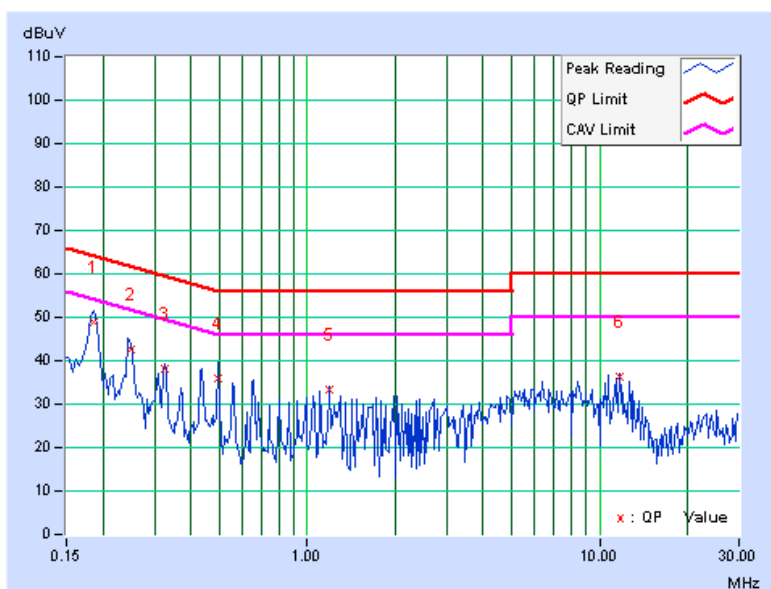
1. Placed the EUT on testing table.
2. Prepared other computer systems (support units 1, 7 & 8) to act as communication partners and placed them outside of testing area.
3. The communication partners ran test program “WinTG.exe” & “Ping.exe” to enable EUT under transmission/receiving condition continuously via UTP cables and wireless transmission.

4.1.7 TEST RESULTS

PHASE	Line (L)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.185	0.12	48.76	40.20	48.88	40.32	64.25	54.25	-15.37	-13.93
2	0.249	0.13	42.31	34.81	42.44	34.94	61.81	51.81	-19.37	-16.87
3	0.326	0.13	37.84	37.91	37.97	38.04	59.56	49.56	-21.59	-11.52
4	0.494	0.13	35.90	33.35	36.03	33.48	56.10	46.10	-20.07	-12.62
5	1.188	0.14	33.34	22.62	33.48	22.76	56.00	46.00	-22.52	-23.24
6	11.731	0.51	35.70	36.29	36.21	36.80	60.00	50.00	-23.79	-13.20

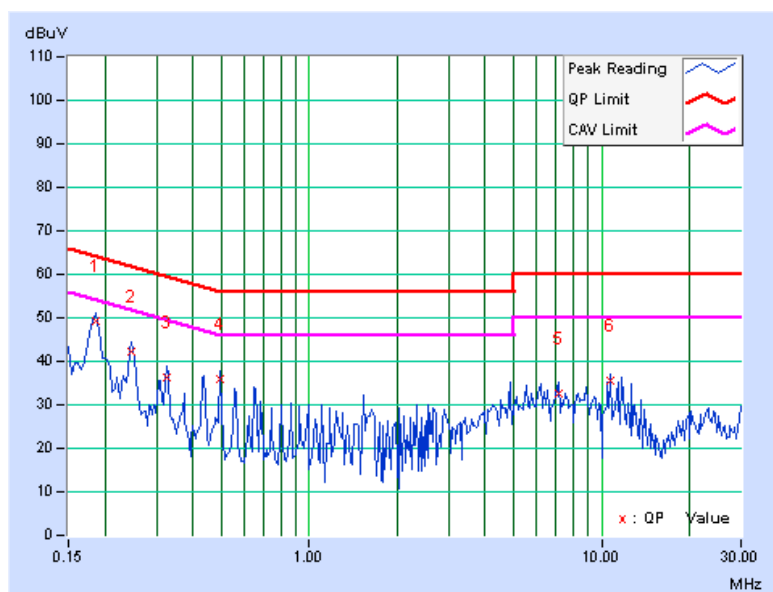
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.185	0.13	49.19	39.69	49.32	39.82	64.25
2	0.248	0.14	42.01	33.13	42.15	33.27	61.84	51.84	-19.68	-18.56
3	0.326	0.15	36.19	37.26	36.34	37.41	59.56	49.56	-23.22	-12.15
4	0.494	0.15	35.68	32.98	35.83	33.13	56.10	46.10	-20.27	-12.97
5	7.168	0.57	32.13	28.50	32.70	29.07	60.00	50.00	-27.30	-20.93
6	10.748	0.87	34.83	35.41	35.70	36.28	60.00	50.00	-24.30	-13.72

- 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. Section 15.205 restricted bands of operation shall compliance with the limits in Section 15.209.



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4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ROHDE & SCHWARZ Spectrum Analyzer	FSP40	100036	Dec. 08, 2010	Dec. 07, 2011
Agilent PSA Spectrum Analyzer	E4446A	MY46180622	May 12 , 2010	May 11 , 2011
HP Pre_Amplifier	8449B	300801923	Nov. 01, 2010	Oct. 31, 2011
ROHDE & SCHWARZ Test Receiver	ESCS30	847124/029	Sep. 03, 2010	Sep. 02, 2011
SCHWARZBECK TRILOG Broadband Antenna	VULB 9168	138	Apr. 28, 2010	Apr. 27, 2011
Schwarzbeck Horn_Antenna	BBHA9120	D124	Dec. 17, 2010	Dec. 16, 2011
Schwarzbeck Horn_Antenna	BBHA 9170	BBHA9170153	Jan. 22, 2010	Jan. 21, 2011
RF Switches	EMH-011	1001	NA	NA
RF CABLE (Chaintek)	Sucoflex 104+ Sucoflex 106	RF104-101+R F106-101	Aug. 24, 2010	Aug. 23, 2011
RF Cable	8DFB	STCCAB-30M- 1GHz	NA	NA
Software	ADT_Radiated_ V7.6.15.9.2	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) and Spectrum Analyzer (model: FSP40) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in Open Site No. C.
4. The FCC Site Registration No. is 656396.
5. The VCCI Site Registration No. is R-1626.
6. The CANADA Site Registration No. is IC 7450G-3.

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 10 meter open area test site. 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 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.

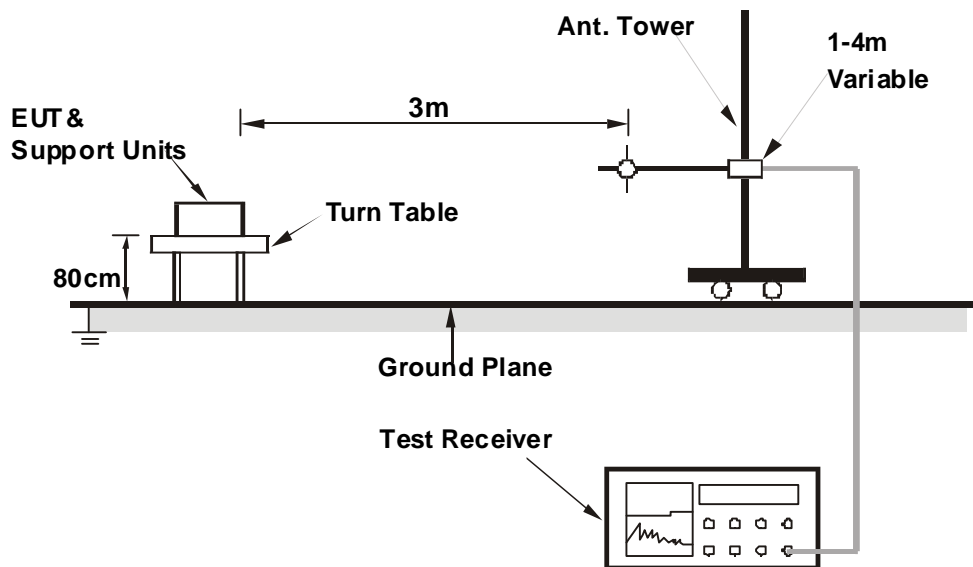
NOTE:

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 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

1. Turn on the power of all equipment.
2. Support unit 1 (Notebook Computer) run a test program “RT3x9xQA.exe” to enable of EUT via UTP cable continuously.



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4.2.7 TEST RESULTS

BELOW 1GHz WORST-CASE DATA : 802.11n (20MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	24deg. C, 78%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	172.37	28.3 QP	43.5	-15.2	1.00 H	38	14.21	14.10
2	250.00	39.4 QP	46.0	-6.6	1.00 H	0	25.55	13.89
3	375.00	36.9 QP	46.0	-9.1	1.00 H	166	18.90	17.98
4	500.00	38.4 QP	46.0	-7.6	1.82 H	297	17.17	21.26
5	625.00	36.8 QP	46.0	-9.2	1.00 H	20	11.63	25.14
6	750.00	36.6 QP	46.0	-9.4	1.08 H	19	10.28	26.32
7	960.00	39.2 QP	46.0	-6.8	1.00 H	212	10.14	29.02
8	999.96	34.5 QP	54.0	-19.5	1.00 H	258	5.16	29.37

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	45.56	36.9 QP	40.0	-3.1	1.00 V	7	23.04	13.86
2	69.34	31.2 QP	40.0	-8.8	1.00 V	13	18.89	12.27
3	125.00	35.9 QP	43.5	-7.6	1.00 V	176	22.76	13.16
4	250.00	36.7 QP	46.0	-9.3	1.00 V	43	22.78	13.89
5	375.00	34.6 QP	46.0	-11.4	1.00 V	101	16.60	17.98
6	500.00	37.8 QP	46.0	-8.2	1.00 V	106	16.57	21.26
7	625.00	35.7 QP	46.0	-10.3	1.00 V	355	10.54	25.14
8	960.00	35.6 QP	46.0	-10.4	1.00 V	161	6.58	29.02

- 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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	21deg. C, 61%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	2386.30	57.8 PK	74.0	-16.2	1.01 H	359	27.75	30.05
2	2386.30	44.9 AV	54.0	-9.1	1.01 H	359	14.85	30.05
3	*2412.00	99.9 PK			1.00 H	347	69.75	30.15
4	*2412.00	95.2 AV			1.00 H	347	65.05	30.15
5	4824.00	50.4 PK	74.0	-23.6	1.20 H	123	14.97	35.43
6	4824.00	46.3 AV	54.0	-7.7	1.20 H	123	10.87	35.43

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	2386.27	59.5 PK	74.0	-14.5	1.40 V	283	29.45	30.05
2	2386.27	51.7 AV	54.0	-2.3	1.40 V	283	21.65	30.05
3	*2412.00	109.0 PK			1.39 V	272	78.85	30.15
4	*2412.00	106.7 AV			1.39 V	272	76.55	30.15
5	4824.00	48.5 PK	74.0	-25.5	1.00 V	328	13.07	35.43
6	4824.00	44.4 AV	54.0	-9.6	1.00 V	328	8.97	35.43

- 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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	21deg. C, 61%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	*2437.00	100.2 PK			1.01 H	350	69.96	30.24
2	*2437.00	95.3 AV			1.01 H	350	65.06	30.24
3	4874.00	49.7 PK	74.0	-24.3	1.29 H	129	14.18	35.52
4	4874.00	46.3 AV	54.0	-7.7	1.29 H	129	10.78	35.52
5	7311.00	50.6 PK	74.0	-23.4	1.21 H	254	8.64	41.96
6	7311.00	38.7 AV	54.0	-15.3	1.21 H	254	-3.26	41.96
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	109.2 PK			1.40 V	288	78.96	30.24
2	*2437.00	106.6 AV			1.40 V	288	76.36	30.24
3	4874.00	46.6 PK	74.0	-27.4	1.54 V	197	11.08	35.52
4	4874.00	39.7 AV	54.0	-14.3	1.54 V	197	4.18	35.52
5	7311.00	52.0 PK	74.0	-22.0	1.16 V	192	10.04	41.96
6	7311.00	43.4 AV	54.0	-10.6	1.16 V	192	1.44	41.96

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	21deg. C, 61%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	*2462.00	100.3 PK			1.00 H	292	69.96	30.34
2	*2462.00	95.4 AV			1.00 H	292	65.06	30.34
3	2487.80	58.7 PK	74.0	-15.3	1.00 H	291	28.26	30.44
4	2487.80	44.9 AV	54.0	-9.1	1.00 H	291	14.46	30.44
5	4924.00	48.7 PK	74.0	-25.3	1.00 H	157	13.08	35.62
6	4924.00	44.6 AV	54.0	-9.4	1.00 H	157	8.98	35.62
7	7386.00	50.6 PK	74.0	-23.4	1.16 H	157	8.50	42.10
8	7386.00	40.5 AV	54.0	-13.5	1.16 H	157	-1.60	42.10

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

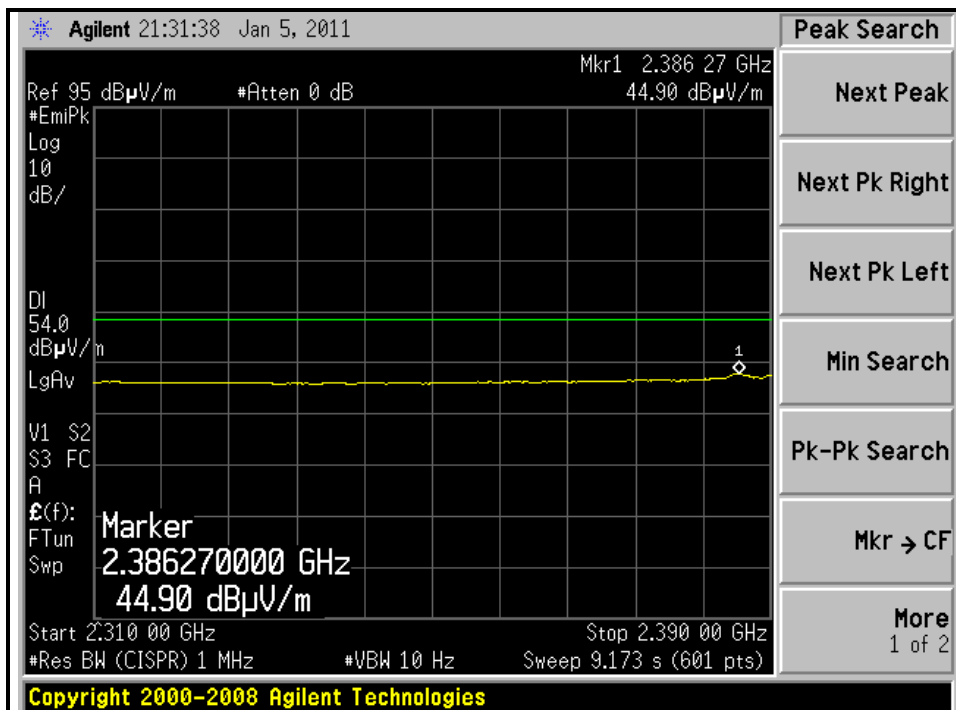
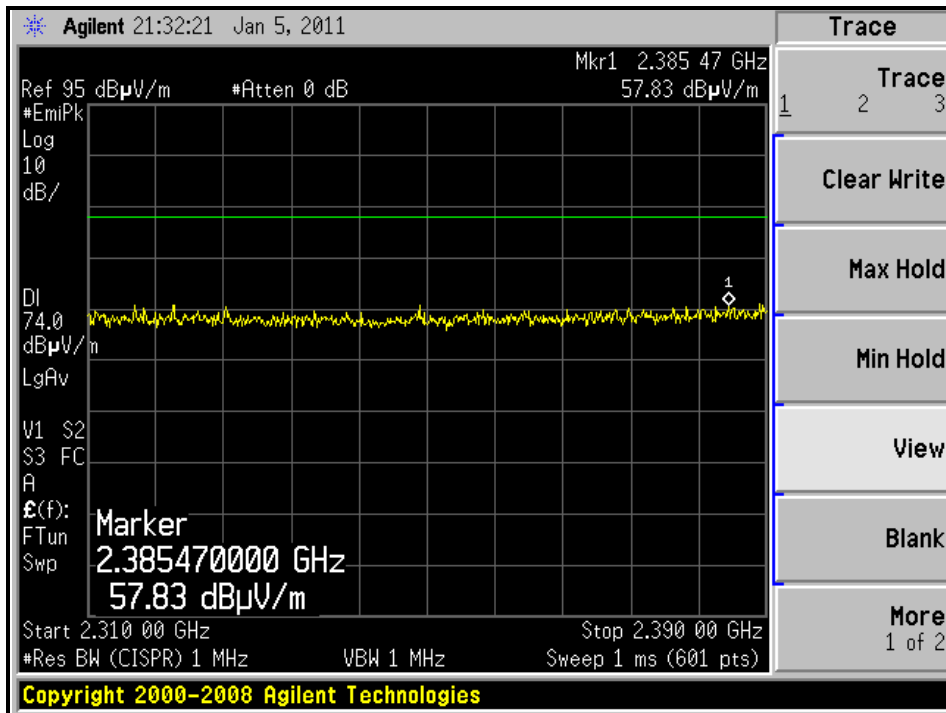
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1	*2462.00	107.3 PK			1.34 V	321	76.96	30.34
2	*2462.00	105.0 AV			1.34 V	321	74.66	30.34
3	2487.70	59.8 PK	74.0	-14.2	1.28 V	321	29.36	30.44
4	2487.70	49.1 AV	54.0	-4.9	1.28 V	321	18.66	30.44
5	4924.00	46.2 PK	74.0	-27.8	1.13 V	161	10.58	35.62
6	4924.00	39.4 AV	54.0	-14.6	1.13 V	161	3.78	35.62
7	7386.00	52.3 PK	74.0	-21.7	1.13 V	172	10.20	42.10
8	7386.00	43.7 AV	54.0	-10.3	1.13 V	172	1.60	42.10

- 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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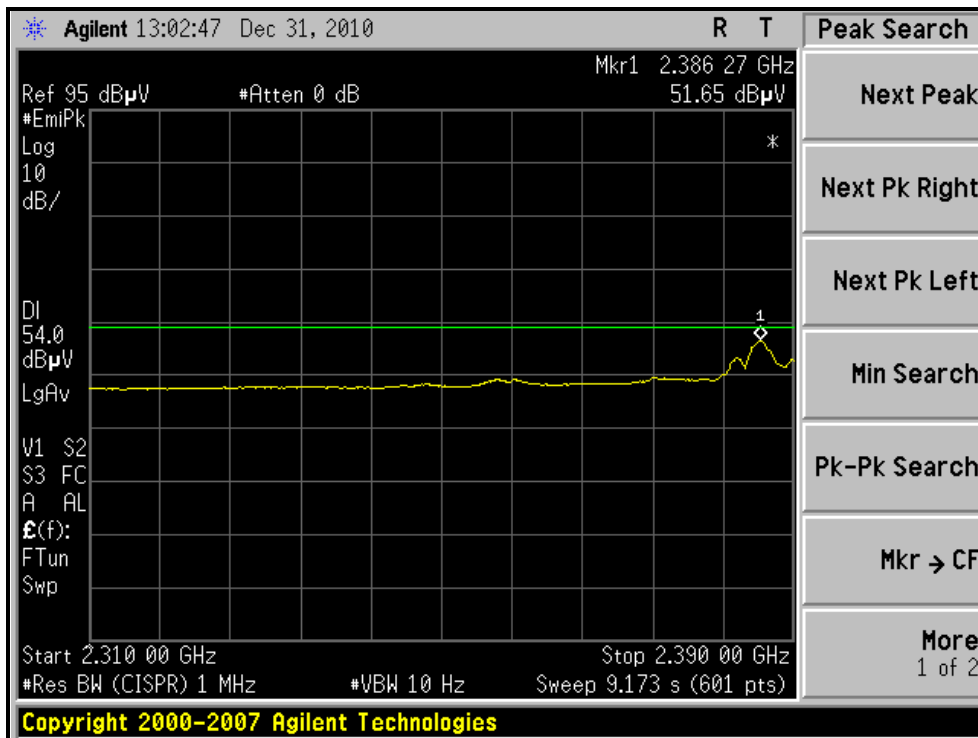
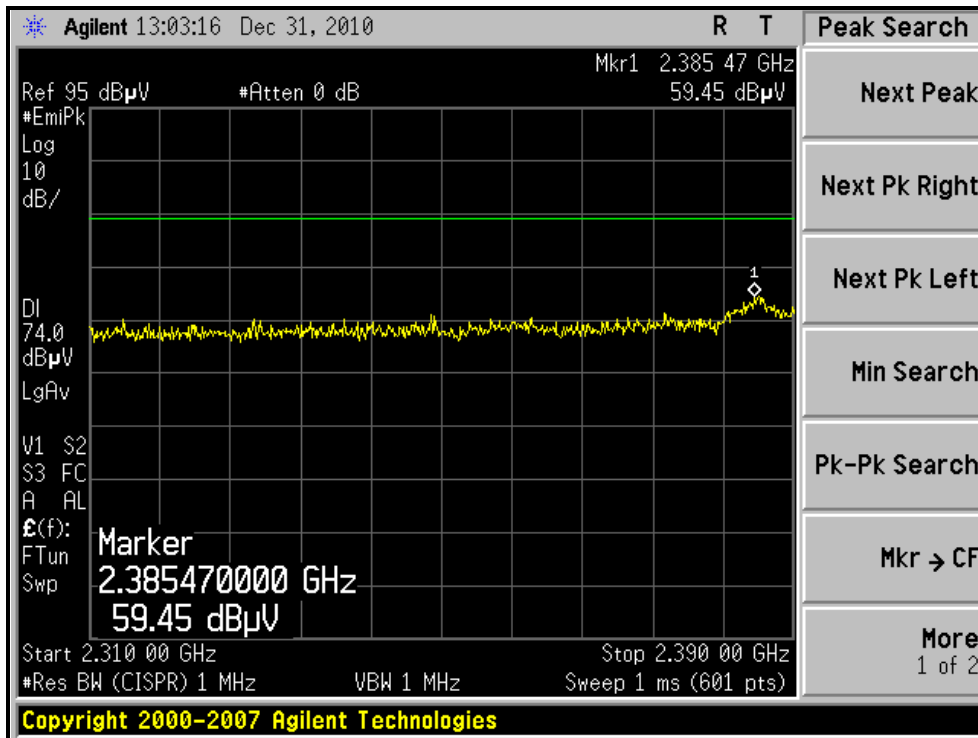
RESTRICTED BANDEDGE (802.11b MODE,CH1, HORIZONTAL)





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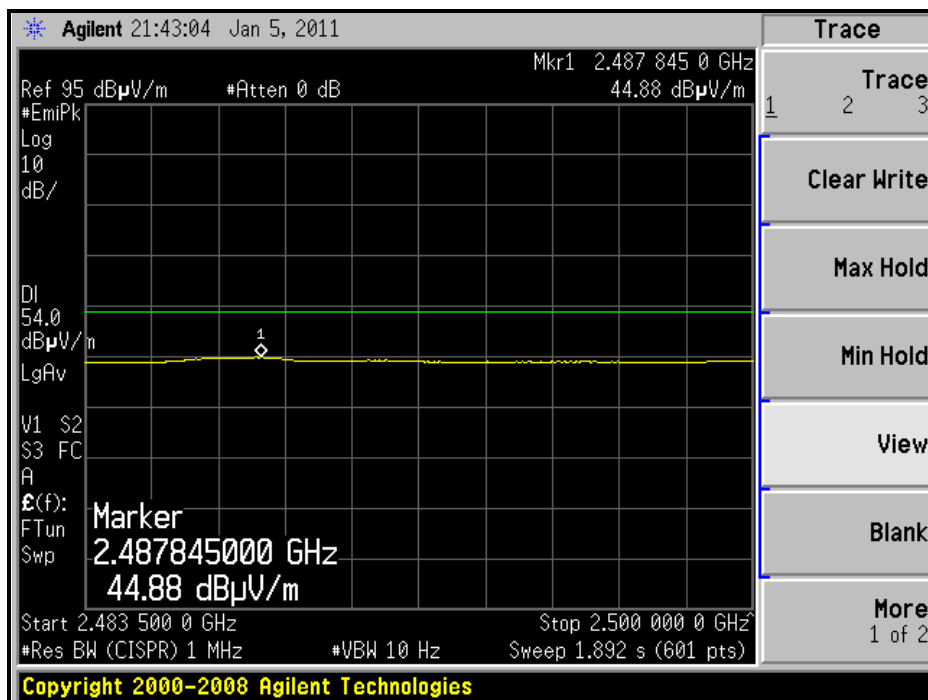
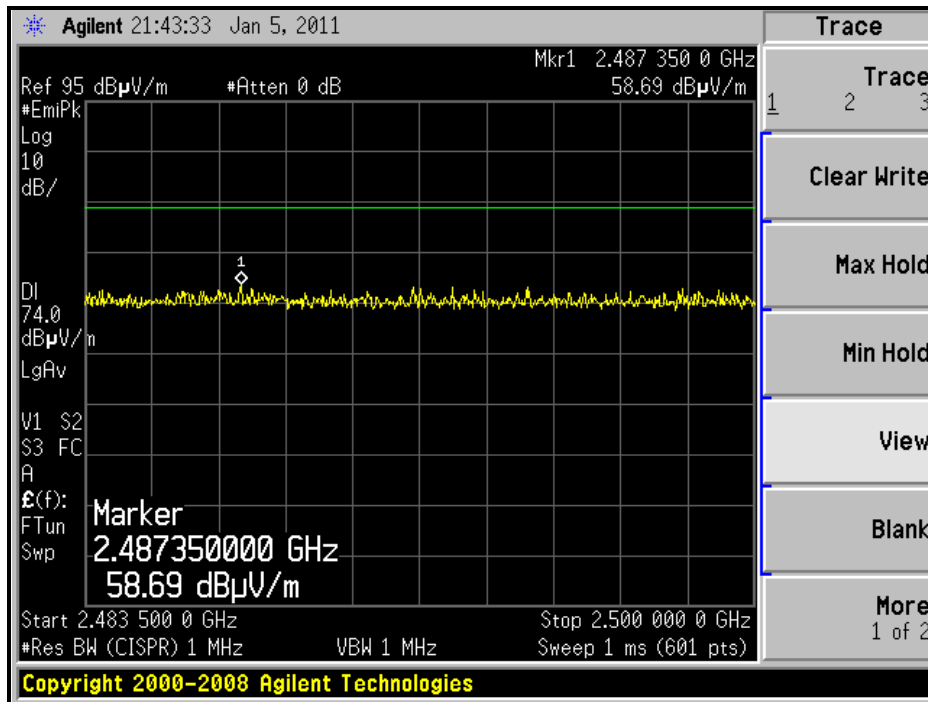
RESTRICTED BANDEDGE (802.11b MODE, CH1, VERTICAL)





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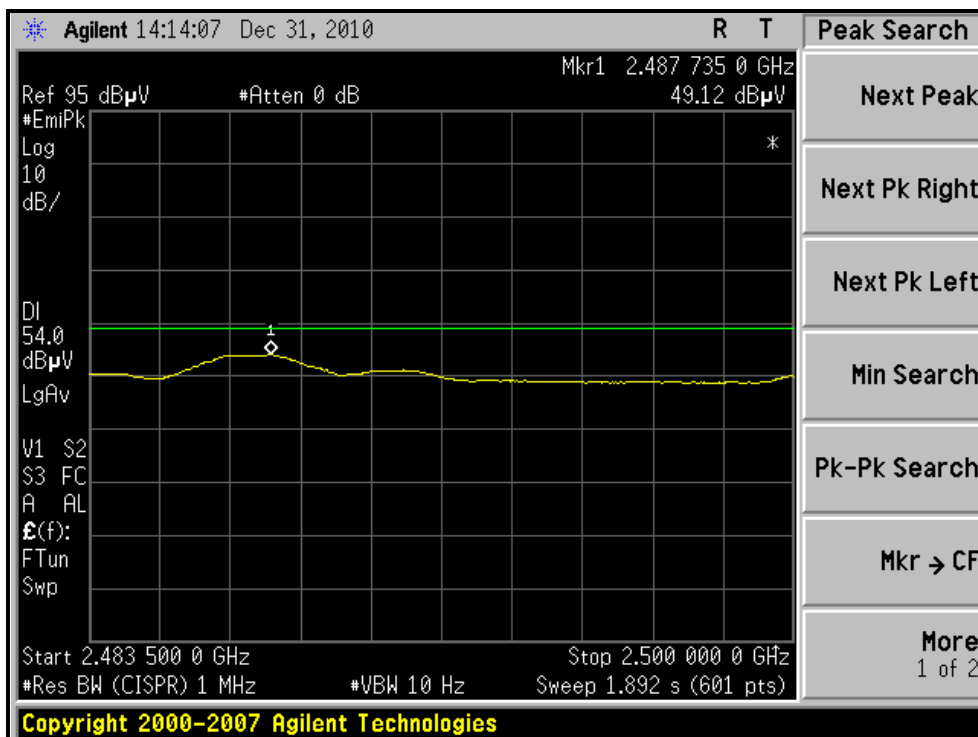
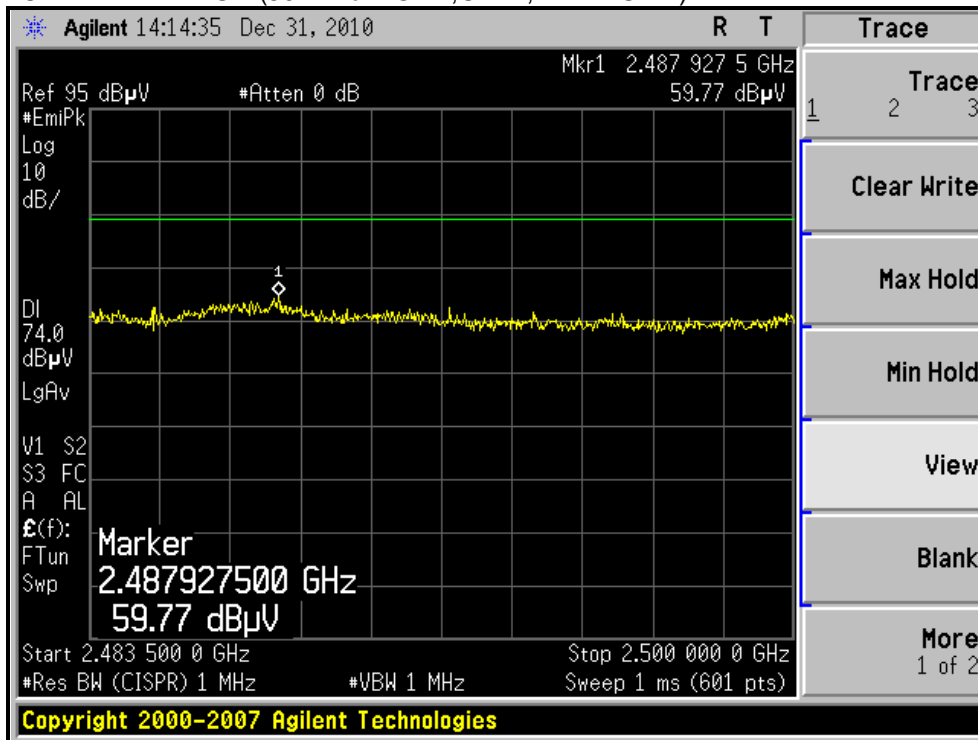
RESTRICTED BANDEDGE (802.11b MODE, CH11, HORIZONTAL)





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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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	21deg. C, 61%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	2390.00	59.1 PK	74.0	-14.9	1.00 H	345	29.04	30.06
2	2390.00	46.5 AV	54.0	-7.5	1.00 H	345	16.44	30.06
3	*2412.00	99.9 PK			1.01 H	341	69.75	30.15
4	*2412.00	89.6 AV			1.01 H	341	59.45	30.15
5	4824.00	48.3 PK	74.0	-25.7	1.32 H	104	12.87	35.43
6	4824.00	38.4 AV	54.0	-15.6	1.32 H	104	2.97	35.43

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	69.0 PK	74.0	-5.0	1.40 V	255	38.94	30.06
2	2390.00	53.1 AV	54.0	-0.9	1.40 V	255	23.04	30.06
3	*2412.00	111.0 PK			1.34 V	275	80.85	30.15
4	*2412.00	100.4 AV			1.34 V	275	70.25	30.15
5	4824.00	50.0 PK	74.0	-24.0	1.01 V	306	14.57	35.43
6	4824.00	38.9 AV	54.0	-15.1	1.01 V	306	3.47	35.43

- 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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	21deg. C, 61%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	*2437.00	99.4 PK			1.00 H	288	69.16	30.24
2	*2437.00	90.1 AV			1.00 H	288	59.86	30.24
3	4874.00	48.5 PK	74.0	-25.5	1.29 H	111	12.98	35.52
4	4874.00	38.5 AV	54.0	-15.5	1.29 H	111	2.98	35.52
5	7311.00	52.5 PK	74.0	-21.5	1.30 H	69	10.54	41.96
6	7311.00	40.2 AV	54.0	-13.8	1.30 H	69	-1.76	41.96

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	2384.50	62.6 PK	74.0	-11.4	1.40 V	271	32.56	30.04
2	2384.50	52.4 AV	54.0	-1.6	1.40 V	271	22.36	30.04
3	*2437.00	110.8 PK			1.29 V	288	80.56	30.24
4	*2437.00	100.5 AV			1.29 V	288	70.26	30.24
5	2489.70	64.3 PK	74.0	-9.7	1.58 V	286	33.85	30.45
6	2489.70	53.5 AV	54.0	-0.5	1.58 V	286	23.05	30.45
7	4874.00	50.4 PK	74.0	-23.6	1.14 V	258	14.88	35.52
8	4874.00	39.1 AV	54.0	-14.9	1.14 V	258	3.58	35.52
9	7311.00	53.5 PK	74.0	-20.5	1.20 V	150	11.54	41.96
10	7311.00	40.9 AV	54.0	-13.1	1.20 V	150	-1.06	41.96

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	21deg. C, 61%RH 1013 hPa	TESTED BY	Frank Liu

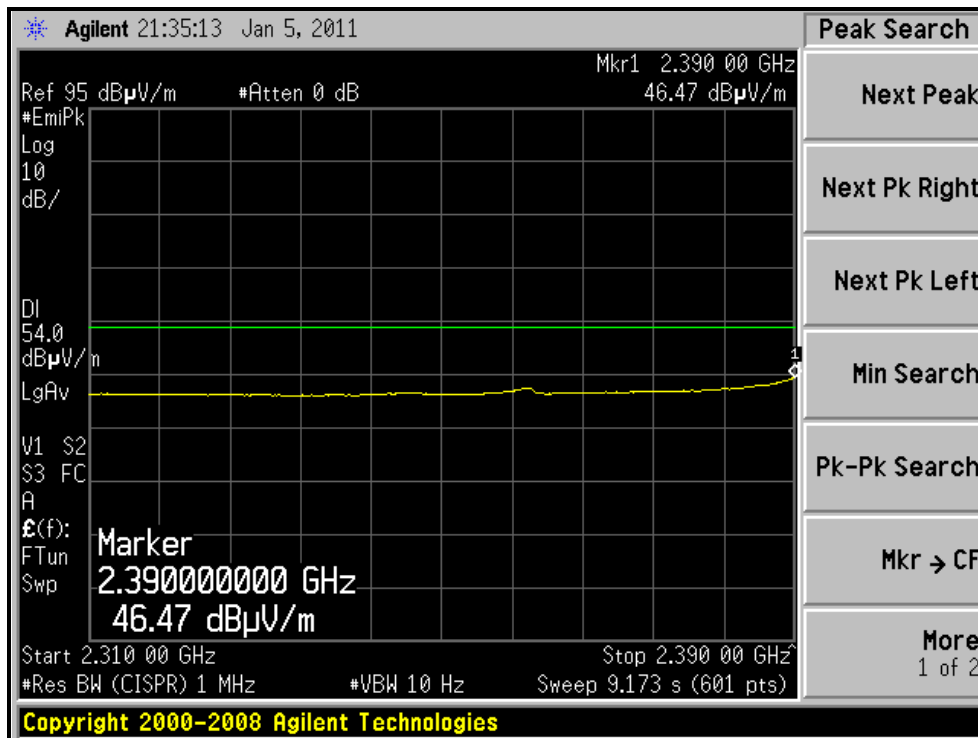
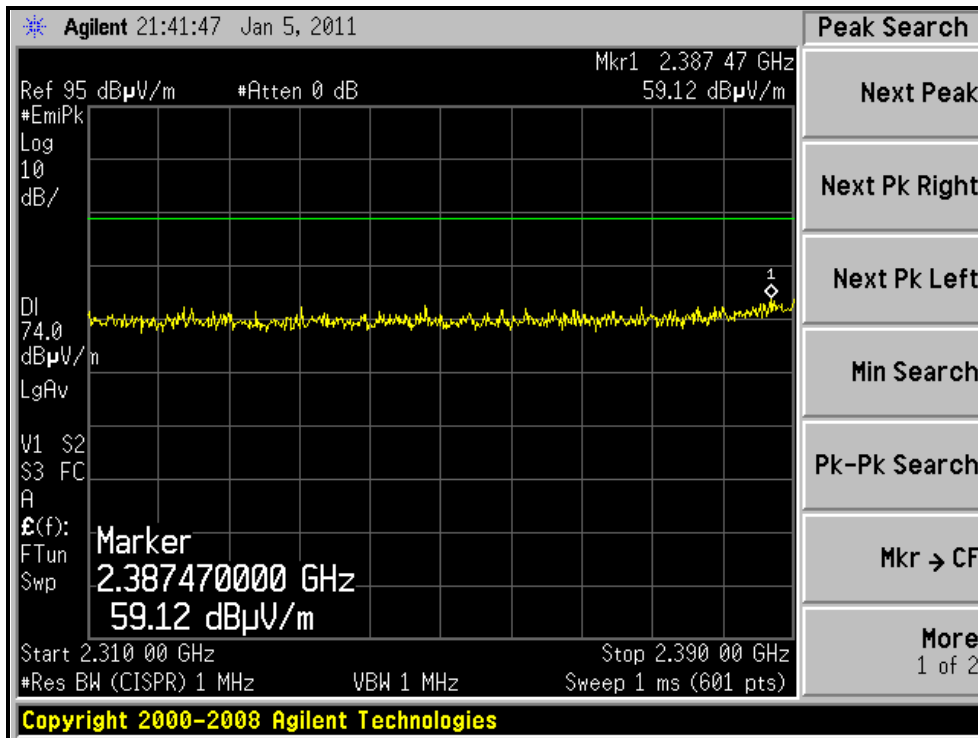
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NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	99.3 PK			1.00 H	291	68.96	30.34
2	*2462.00	90.0 AV			1.00 H	291	59.66	30.34
3	2483.50	63.0 PK	74.0	-11.0	1.01 H	288	32.57	30.43
4	2483.50	46.5 AV	54.0	-7.5	1.01 H	288	16.07	30.43
5	4924.00	48.0 PK	74.0	-26.0	1.29 H	100	12.38	35.62
6	4924.00	38.1 AV	54.0	-15.9	1.29 H	100	2.48	35.62
7	7386.00	52.3 PK	74.0	-21.7	1.29 H	20	10.20	42.10
8	7386.00	40.2 AV	54.0	-13.8	1.29 H	20	-1.90	42.10
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	110.7 PK			1.59 V	275	80.36	30.34
2	*2462.00	100.8 AV			1.59 V	275	70.46	30.34
3	2483.50	70.6 PK	74.0	-3.4	1.57 V	275	40.17	30.43
4	2483.50	53.2 AV	54.0	-0.8	1.57 V	275	22.77	30.43
5	4924.00	48.7 PK	74.0	-25.3	1.08 V	300	13.08	35.62
6	4924.00	38.4 AV	54.0	-15.6	1.08 V	300	2.78	35.62
7	7386.00	52.9 PK	74.0	-21.1	1.10 V	58	10.80	42.10
8	7386.00	40.7 AV	54.0	-13.3	1.10 V	58	-1.40	42.10

- 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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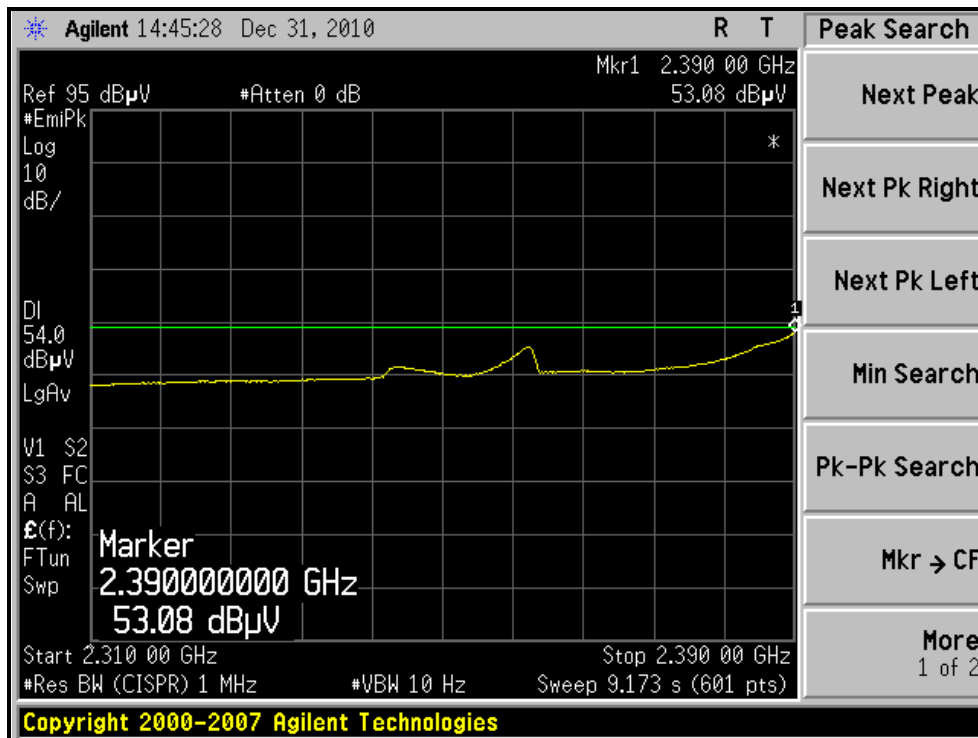
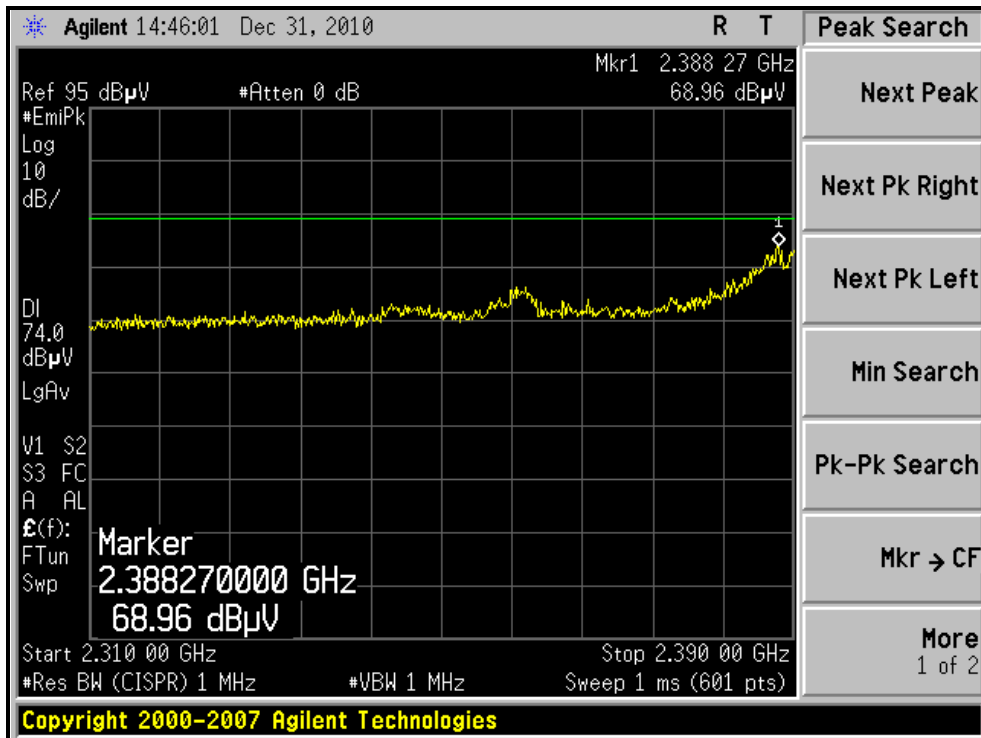
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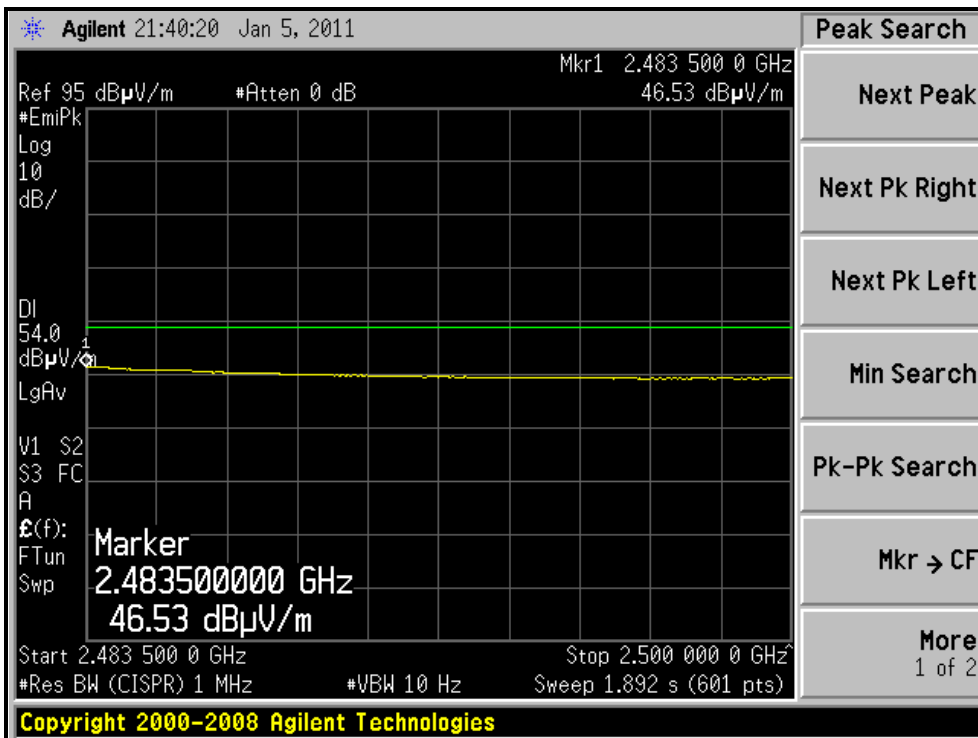
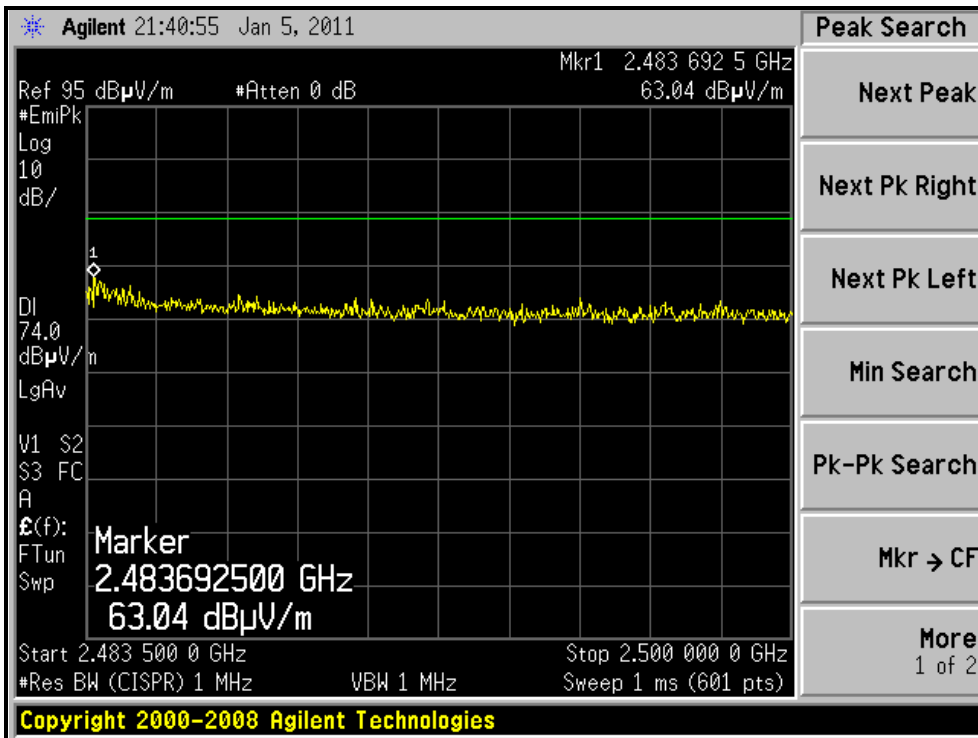
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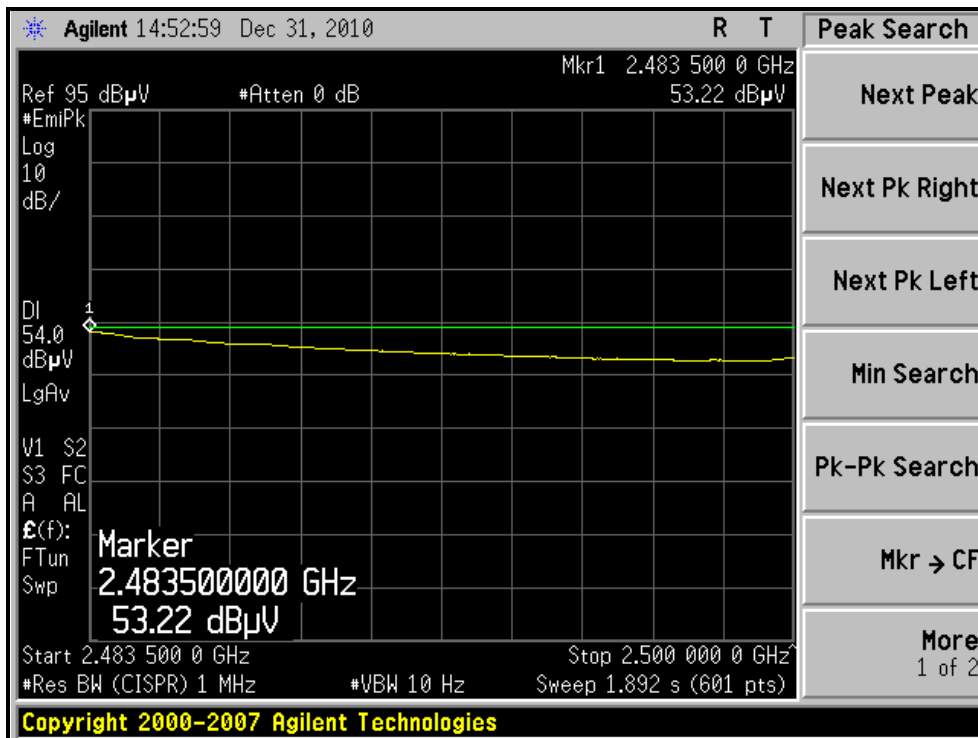
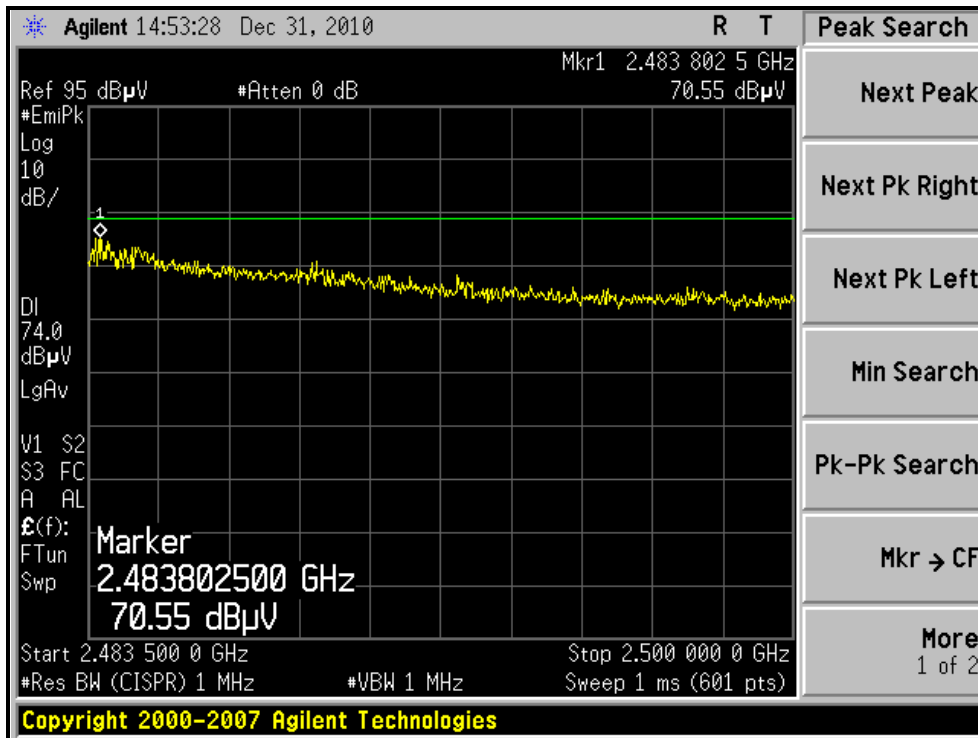
RESTRICTED BANDEDGE (802.11g MODE, CH11, HORIZONTAL)





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RESTRICTED BANDEDGE (802.11g MODE,CH11, VERTICAL)





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802.11n (20MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	21deg. C, 61%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	2390.00	69.5 PK	74.0	-4.5	1.43 H	341	39.44	30.06
2	2390.00	50.5 AV	54.0	-3.5	1.43 H	341	20.44	30.06
3	*2412.00	111.5 PK			1.41 H	343	81.35	30.15
4	*2412.00	100.7 AV			1.41 H	343	70.55	30.15
5	4824.00	48.2 PK	74.0	-25.8	1.30 H	211	12.77	35.43
6	4824.00	37.1 AV	54.0	-16.9	1.30 H	211	1.67	35.43

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	67.7 PK	74.0	-6.3	1.41 V	291	37.64	30.06
2	2390.00	50.4 AV	54.0	-3.6	1.41 V	291	20.34	30.06
3	*2412.00	109.7 PK			1.39 V	264	79.55	30.15
4	*2412.00	99.0 AV			1.39 V	264	68.85	30.15
5	4824.00	49.6 PK	74.0	-24.4	1.41 V	266	14.17	35.43
6	4824.00	37.9 AV	54.0	-16.1	1.41 V	266	2.47	35.43

- 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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	21deg. C, 61%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	2385.00	62.9 PK	74.0	-11.1	1.44 H	345	32.86	30.04
2	2385.00	52.3 AV	54.0	-1.7	1.44 H	345	22.26	30.04
3	*2437.00	112.0 PK			1.40 H	343	81.76	30.24
4	*2437.00	101.1 AV			1.40 H	343	70.86	30.24
5	2488.00	61.4 PK	74.0	-12.6	1.42 H	0	30.96	30.44
6	2488.00	51.4 AV	54.0	-2.6	1.42 H	0	20.96	30.44
7	4874.00	47.4 PK	74.0	-26.6	1.22 H	250	11.88	35.52
8	4874.00	37.8 AV	54.0	-16.2	1.22 H	250	2.28	35.52
9	7311.00	52.7 PK	74.0	-21.3	1.40 H	266	10.74	41.96
10	7311.00	39.9 AV	54.0	-14.1	1.40 H	266	-2.06	41.96
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	2385.00	62.2 PK	74.0	-11.8	1.40 V	264	32.16	30.04
2	2385.00	52.0 AV	54.0	-2.0	1.40 V	264	21.96	30.04
3	*2437.00	110.6 PK			1.40 V	264	80.36	30.24
4	*2437.00	99.4 AV			1.40 V	264	69.16	30.24
5	2488.00	62.1 PK	74.0	-11.9	1.40 V	258	31.66	30.44
6	2488.00	51.9 AV	54.0	-2.1	1.40 V	258	21.46	30.44
7	4874.00	49.9 PK	74.0	-24.1	1.39 V	250	14.38	35.52
8	4874.00	38.2 AV	54.0	-15.8	1.39 V	250	2.68	35.52
9	7311.00	54.0 PK	74.0	-20.0	1.22 V	263	12.04	41.96
10	7311.00	41.8 AV	54.0	-12.2	1.22 V	263	-0.16	41.96

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	21deg. C, 61%RH 1013 hPa	TESTED BY	Frank Liu

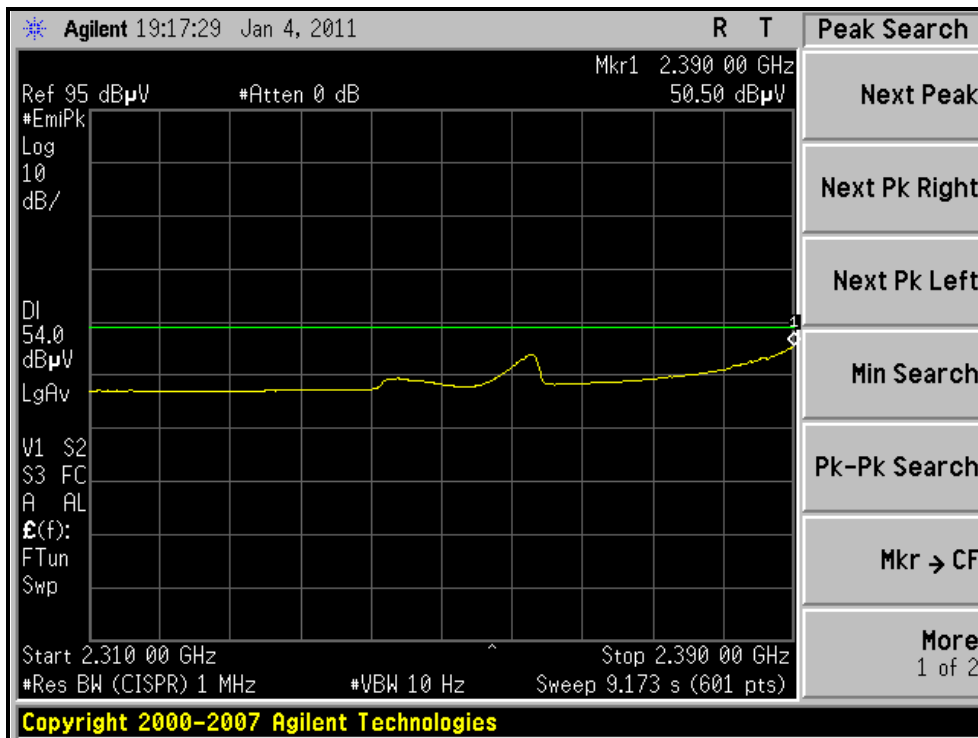
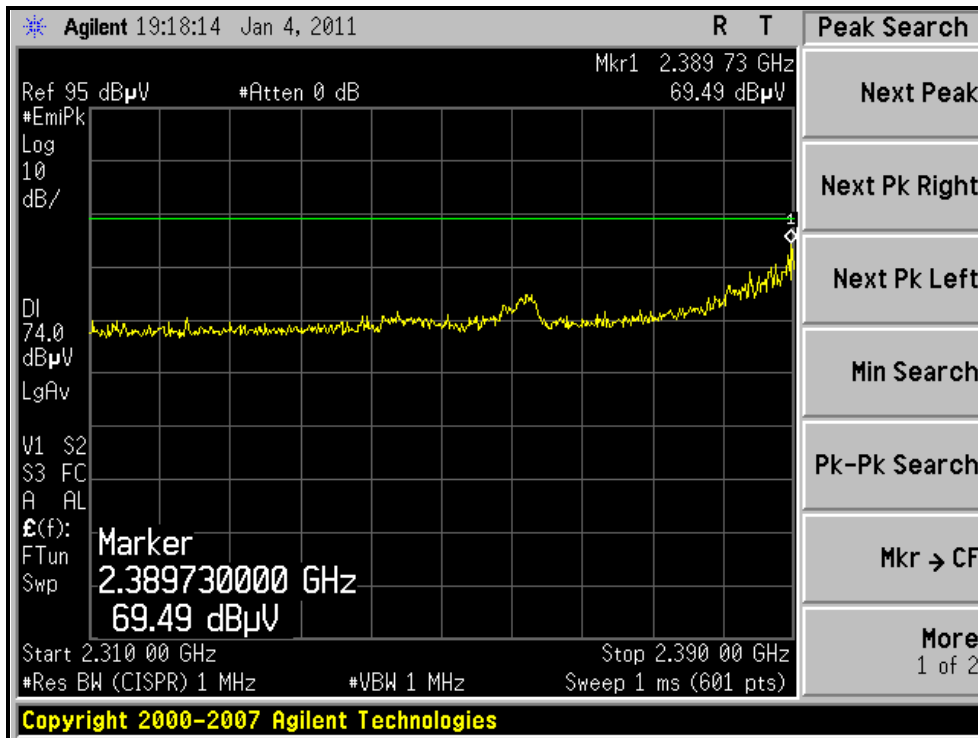
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	110.3 PK			1.42 H	346	79.96	30.34
2	*2462.00	100.1 AV			1.42 H	346	69.76	30.34
3	2483.50	65.2 PK	74.0	-8.8	1.42 H	345	34.77	30.43
4	2483.50	48.9 AV	54.0	-5.1	1.42 H	345	18.47	30.43
5	4924.00	46.9 PK	74.0	-27.1	1.19 H	241	11.28	35.62
6	4924.00	36.8 AV	54.0	-17.2	1.19 H	241	1.18	35.62
7	7386.00	51.1 PK	74.0	-22.9	1.34 H	271	9.00	42.10
8	7386.00	39.2 AV	54.0	-14.8	1.34 H	271	-2.90	42.10
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	109.8 PK			1.36 V	247	79.46	30.34
2	*2462.00	99.8 AV			1.36 V	247	69.46	30.34
3	2483.50	65.8 PK	74.0	-8.2	1.31 V	257	35.37	30.43
4	2483.50	49.4 AV	54.0	-4.6	1.31 V	257	18.97	30.43
5	4924.00	49.4 PK	74.0	-24.6	1.33 V	270	13.78	35.62
6	4924.00	37.8 AV	54.0	-16.2	1.33 V	270	2.18	35.62
7	7386.00	52.9 PK	74.0	-21.1	1.41 V	111	10.80	42.10
8	7386.00	41.1 AV	54.0	-12.9	1.41 V	111	-1.00	42.10

- 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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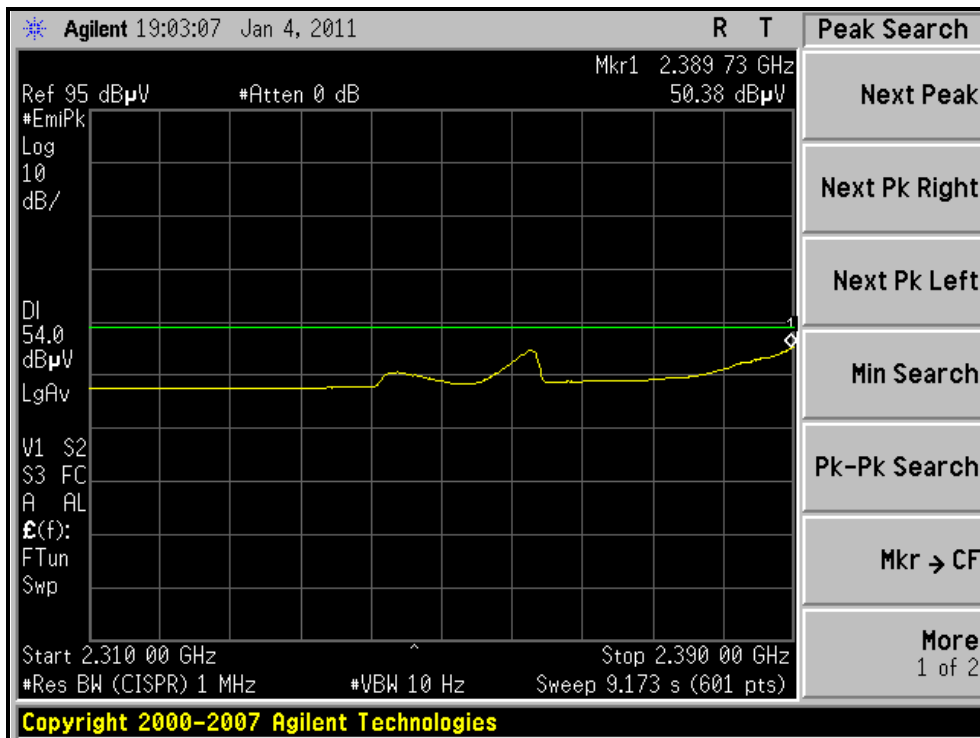
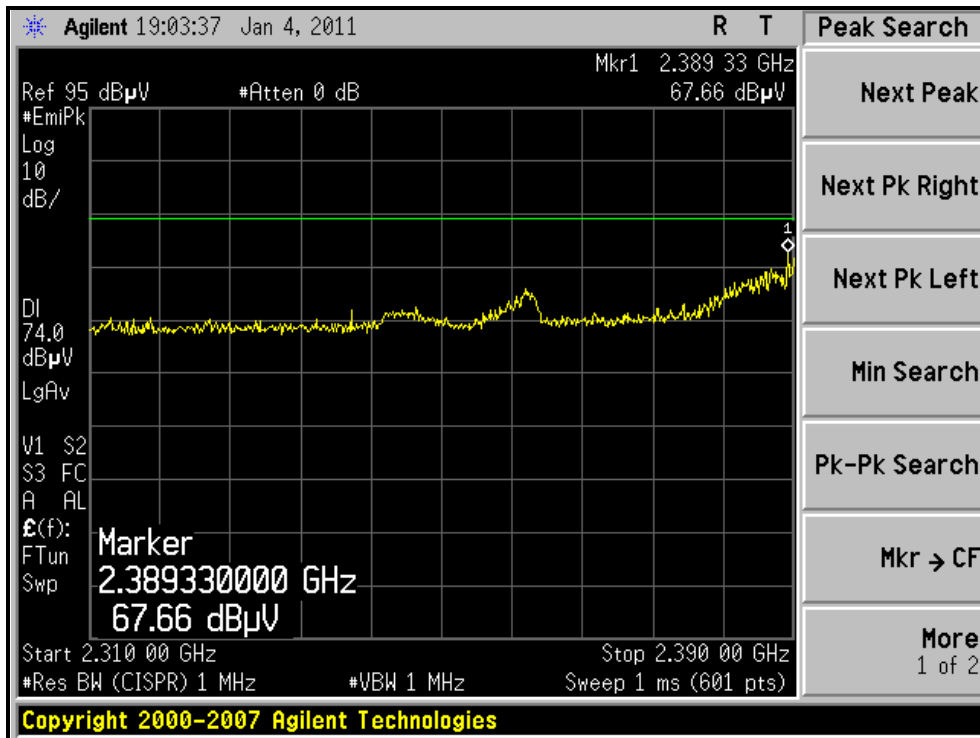
RESTRICTED BANDEDGE (802.11n (20MHz) MODE,CH1, HORIZONTAL)





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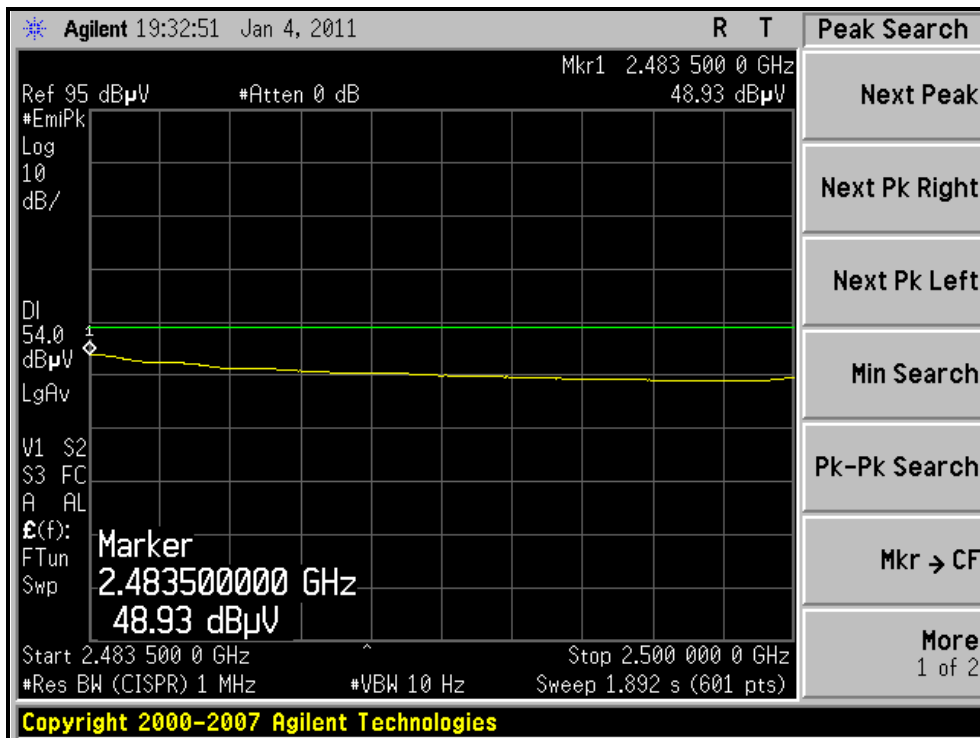
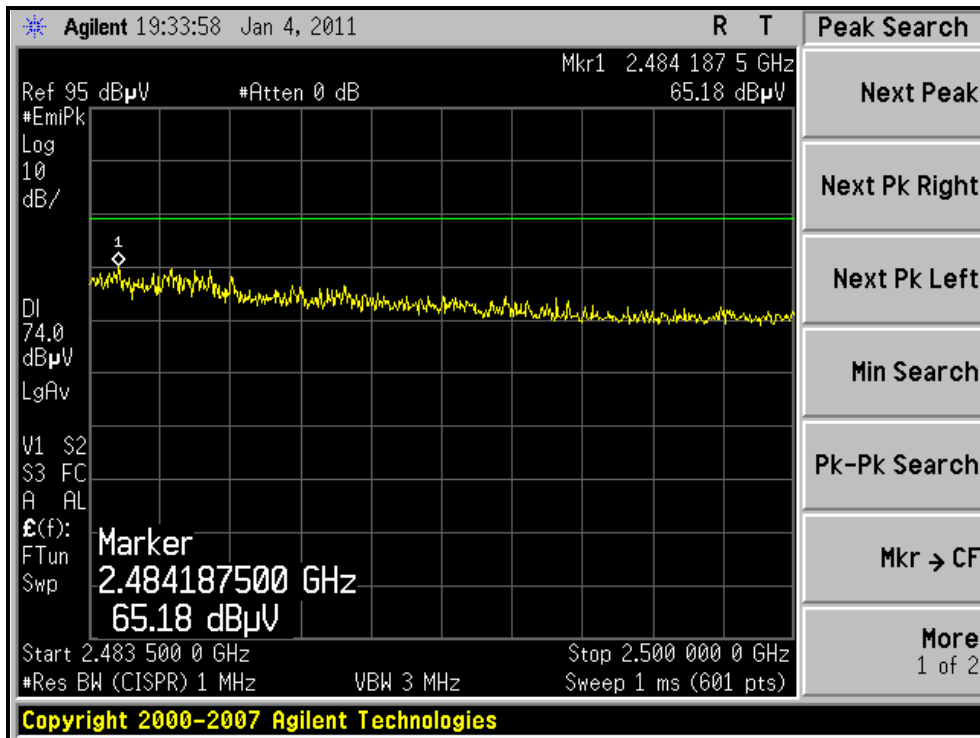
RESTRICTED BANDEDGE (802.11n (20MHz) MODE,CH1, VERTICAL)





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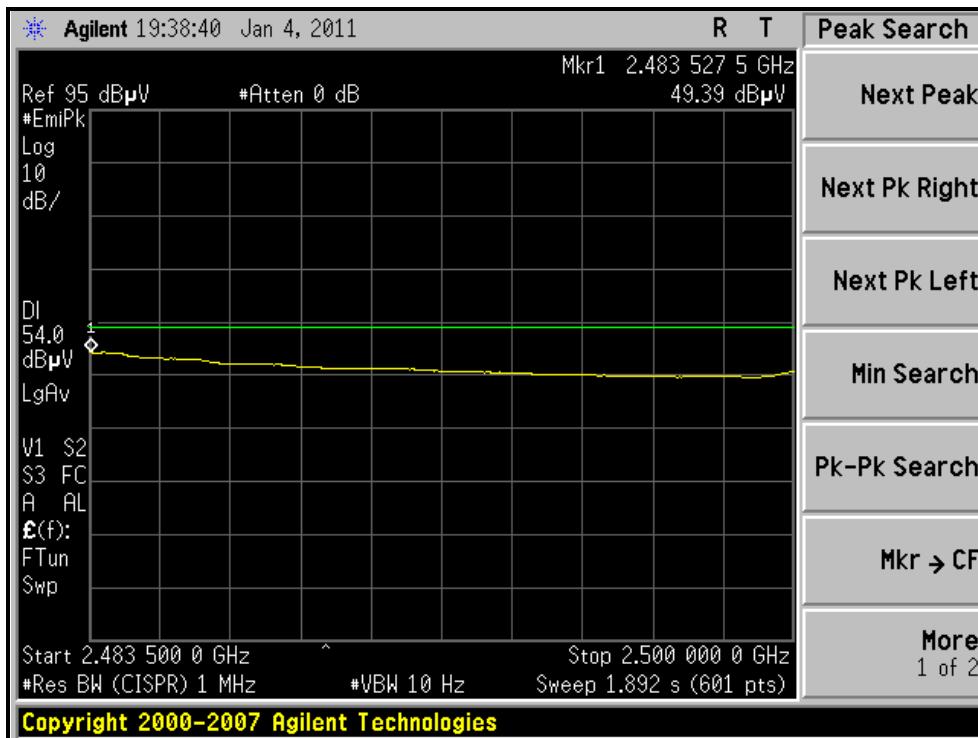
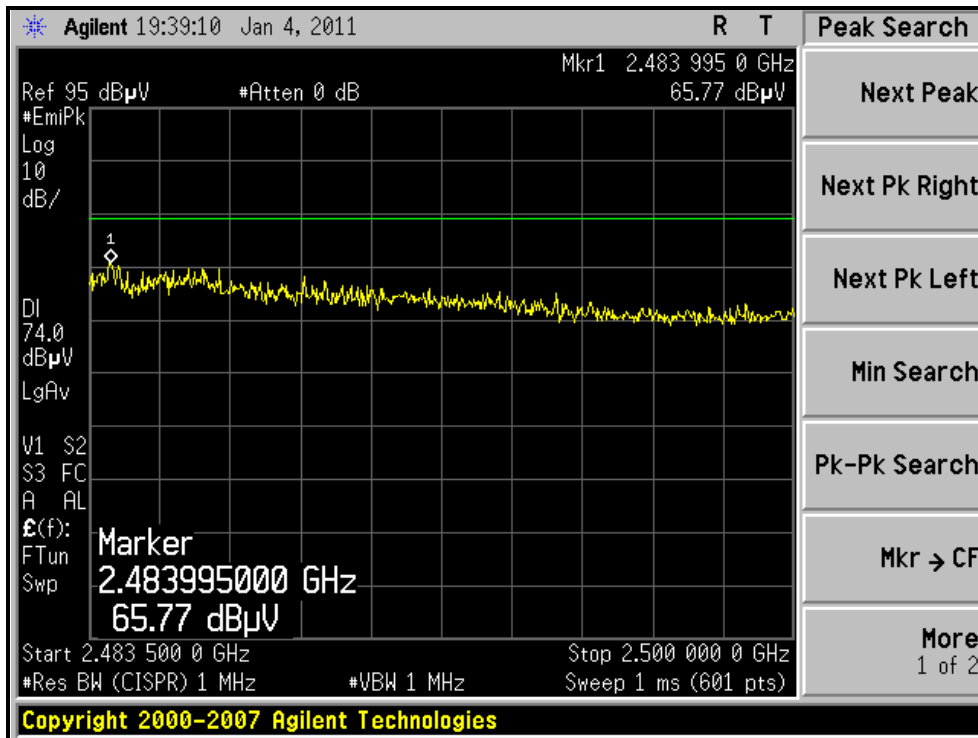
RESTRICTED BANDEDGE (802.11n (20MHz) MODE, CH11, HORIZONTAL)





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RESTRICTED BANDEDGE (802.11n (20MHz) MODE,CH11, VERTICAL)





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802.11n (40MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	21deg. C, 61%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	2390.00	63.6 PK	74.0	-10.4	1.17 H	1	33.54	30.06
2	2390.00	49.4 AV	54.0	-4.6	1.17 H	1	19.34	30.06
3	*2422.00	103.6 PK			1.20 H	2	73.41	30.19
4	*2422.00	93.5 AV			1.20 H	2	63.31	30.19
5	4844.00	47.1 PK	74.0	-26.9	1.19 H	288	11.63	35.47
6	4844.00	36.2 AV	54.0	-17.8	1.19 H	288	0.73	35.47
7	7266.00	49.9 PK	74.0	-24.1	1.26 H	84	8.03	41.87
8	7266.00	38.9 AV	54.0	-15.1	1.26 H	84	-2.97	41.87
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	67.9 PK	74.0	-6.1	1.62 V	257	37.84	30.06
2	2390.00	52.0 AV	54.0	-2.0	1.62 V	257	21.94	30.06
3	*2422.00	104.6 PK			1.58 V	257	74.41	30.19
4	*2422.00	93.5 AV			1.58 V	257	63.31	30.19
5	4844.00	48.1 PK	74.0	-25.9	1.11 V	271	12.63	35.47
6	4844.00	37.1 AV	54.0	-16.9	1.11 V	271	1.63	35.47
7	7266.00	52.0 PK	74.0	-22.0	1.26 V	30	10.13	41.87
8	7266.00	40.9 AV	54.0	-13.1	1.26 V	30	-0.97	41.87

- 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.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	21deg. C, 61%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	*2437.00	105.9 PK			1.20 H	3	75.66	30.24
2	*2437.00	94.6 AV			1.20 H	3	64.36	30.24
3	4874.00	47.2 PK	74.0	-26.8	1.19 H	4	11.68	35.52
4	4874.00	36.9 AV	54.0	-17.1	1.19 H	4	1.38	35.52
5	7311.00	52.1 PK	74.0	-21.9	1.68 H	33	10.14	41.96
6	7311.00	40.0 AV	54.0	-14.0	1.68 H	33	-1.96	41.96
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	65.5 PK	74.0	-8.5	1.64 V	28	35.44	30.06
2	2390.00	49.0 AV	54.0	-5.0	1.64 V	28	18.94	30.06
3	*2437.00	105.8 PK			1.56 V	282	75.56	30.24
4	*2437.00	94.5 AV			1.56 V	282	64.26	30.24
5	2483.50	67.9 PK	74.0	-6.1	1.55 V	281	37.47	30.43
6	2483.50	50.3 AV	54.0	-3.7	1.55 V	281	19.87	30.43
7	4874.00	49.5 PK	74.0	-24.5	1.21 V	288	13.98	35.52
8	4874.00	38.1 AV	54.0	-15.9	1.21 V	288	2.58	35.52
9	7311.00	53.4 PK	74.0	-20.6	1.39 V	26	11.44	41.96
10	7311.00	41.9 AV	54.0	-12.1	1.39 V	26	-0.06	41.96

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 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 7	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	21deg. C, 61%RH 1013 hPa	TESTED BY	Frank Liu

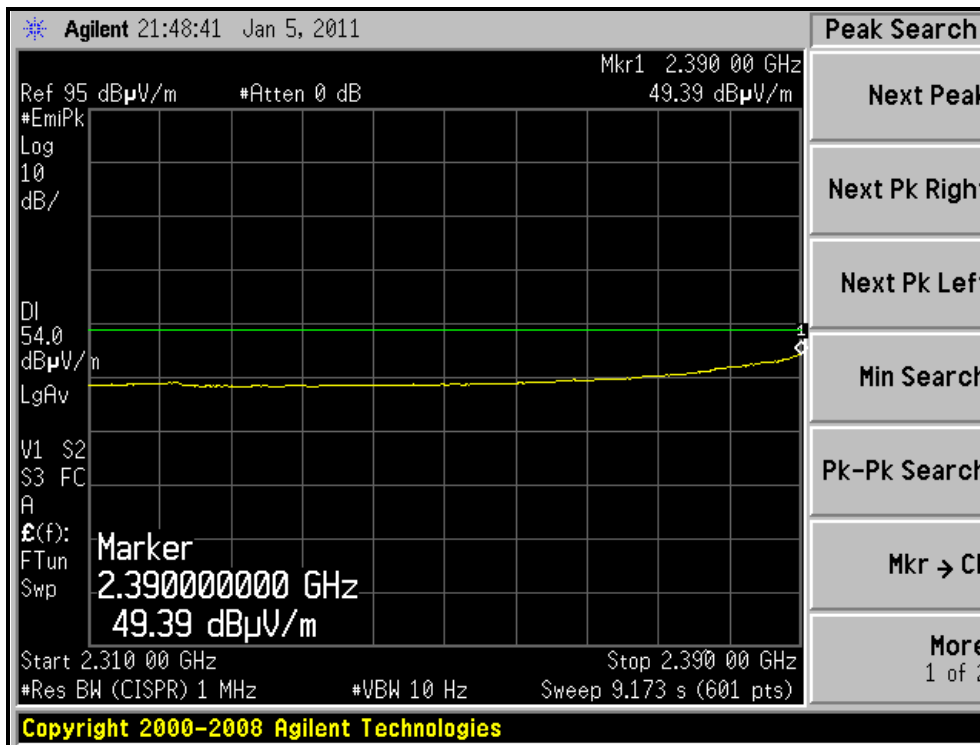
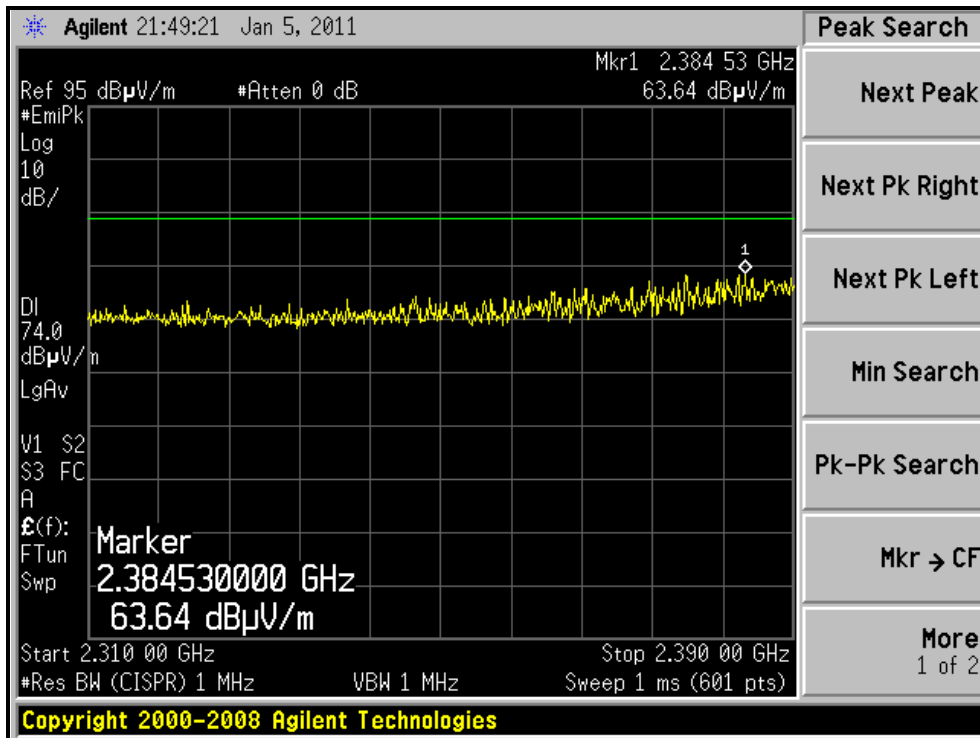
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	102.6 PK			1.17 H	1	72.30	30.30
2	*2452.00	92.9 AV			1.17 H	1	62.60	30.30
3	2483.50	66.8 PK	74.0	-7.2	1.16 H	2	36.37	30.43
4	2483.50	49.9 AV	54.0	-4.1	1.16 H	2	19.47	30.43
5	4904.00	46.7 PK	74.0	-27.3	1.22 H	281	11.12	35.58
6	4904.00	36.1 AV	54.0	-17.9	1.22 H	281	0.52	35.58
7	7356.00	50.9 PK	74.0	-23.1	1.40 H	288	8.86	42.04
8	7356.00	39.2 AV	54.0	-14.8	1.40 H	288	-2.84	42.04
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	*2452.00	105.5 PK			1.57 V	280	75.20	30.30
2	*2452.00	93.8 AV			1.57 V	280	63.50	30.30
3	2483.50	71.5 PK	74.0	-2.5	1.55 V	280	41.07	30.43
4	2483.50	52.1 AV	54.0	-1.9	1.55 V	280	21.67	30.43
5	4904.00	48.2 PK	74.0	-25.8	1.21 V	266	12.62	35.58
6	4904.00	37.4 AV	54.0	-16.6	1.21 V	266	1.82	35.58
7	7356.00	52.1 PK	74.0	-21.9	1.41 V	14	10.06	42.04
8	7356.00	41.0 AV	54.0	-13.0	1.41 V	14	-1.04	42.04

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 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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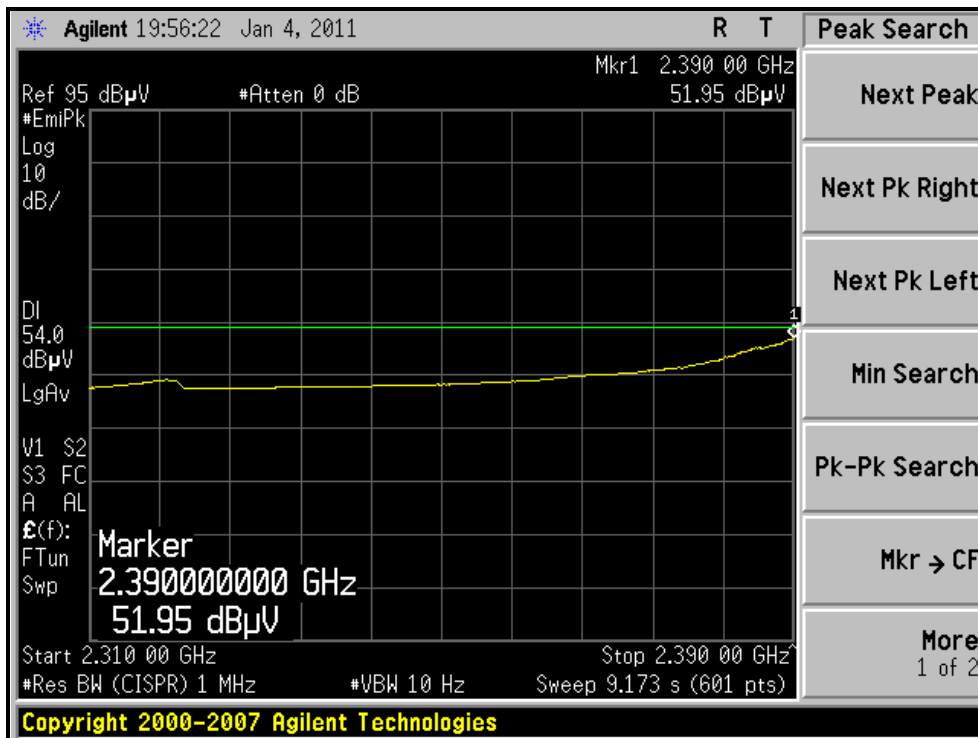
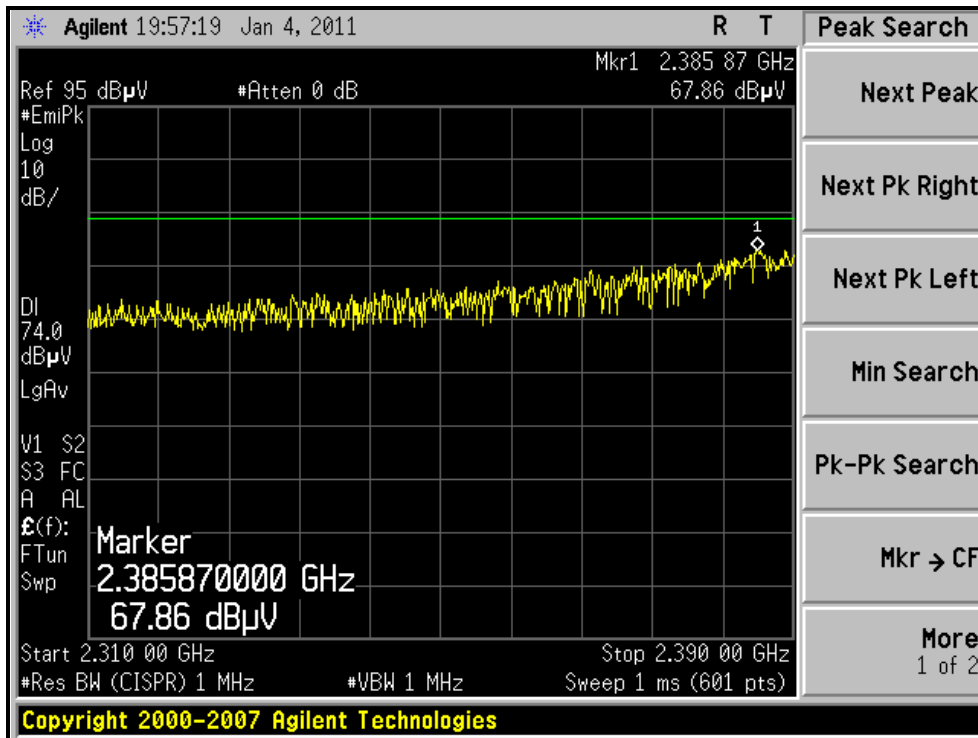
RESTRICTED BANDEDGE (802.11n (40MHz) MODE,CH1, HORIZONTAL)





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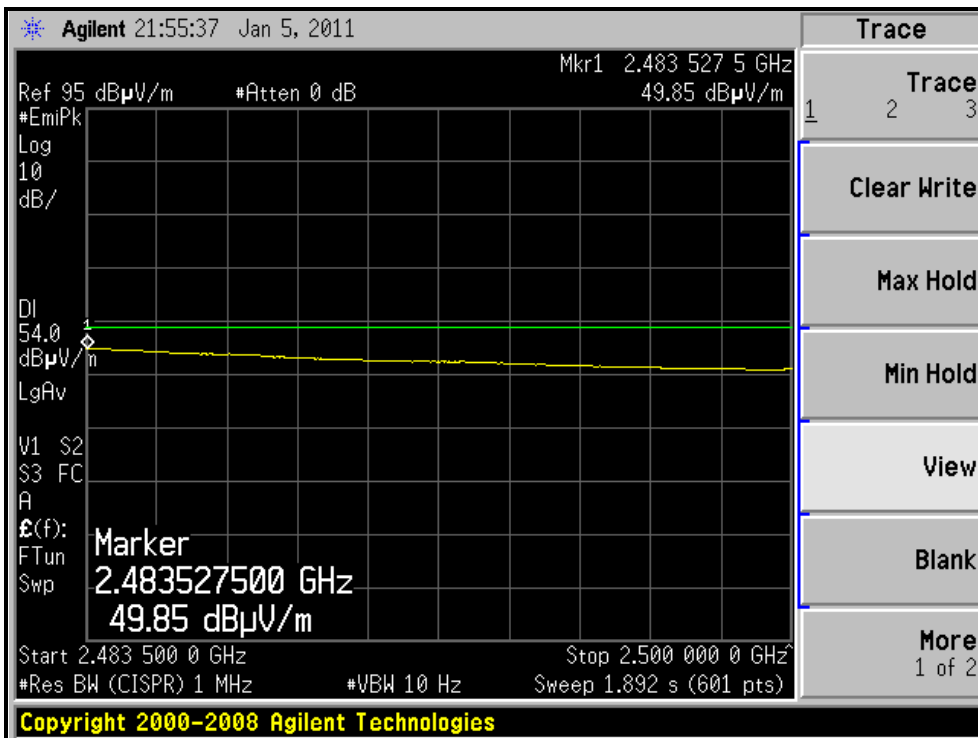
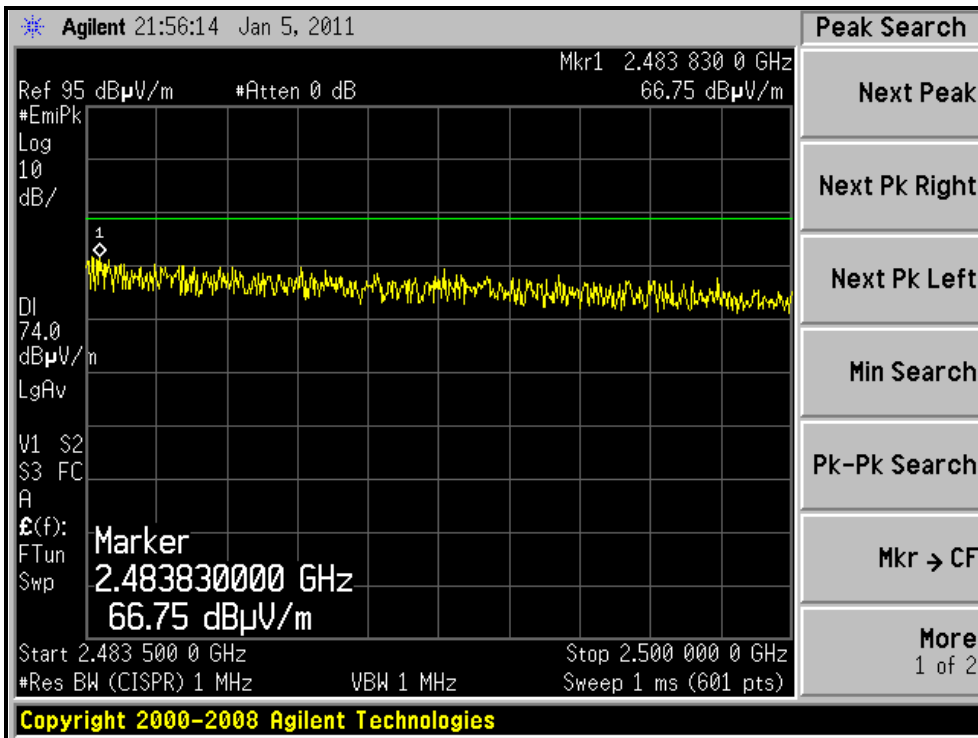
RESTRICTED BANDEDGE (802.11n (40MHz) MODE,CH1, VERTICAL)





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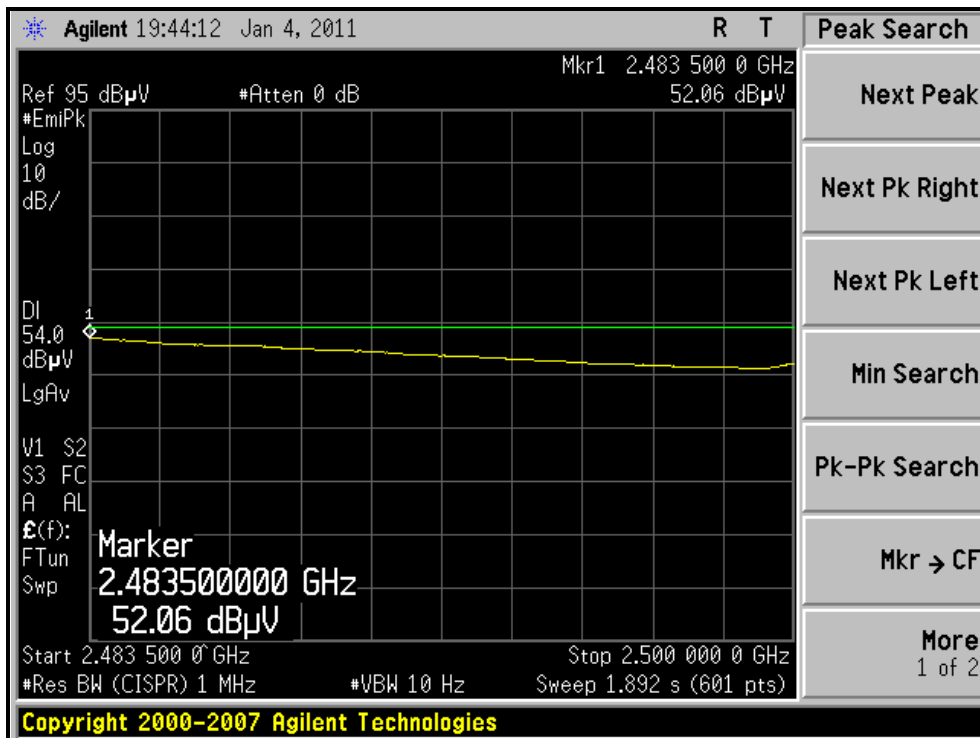
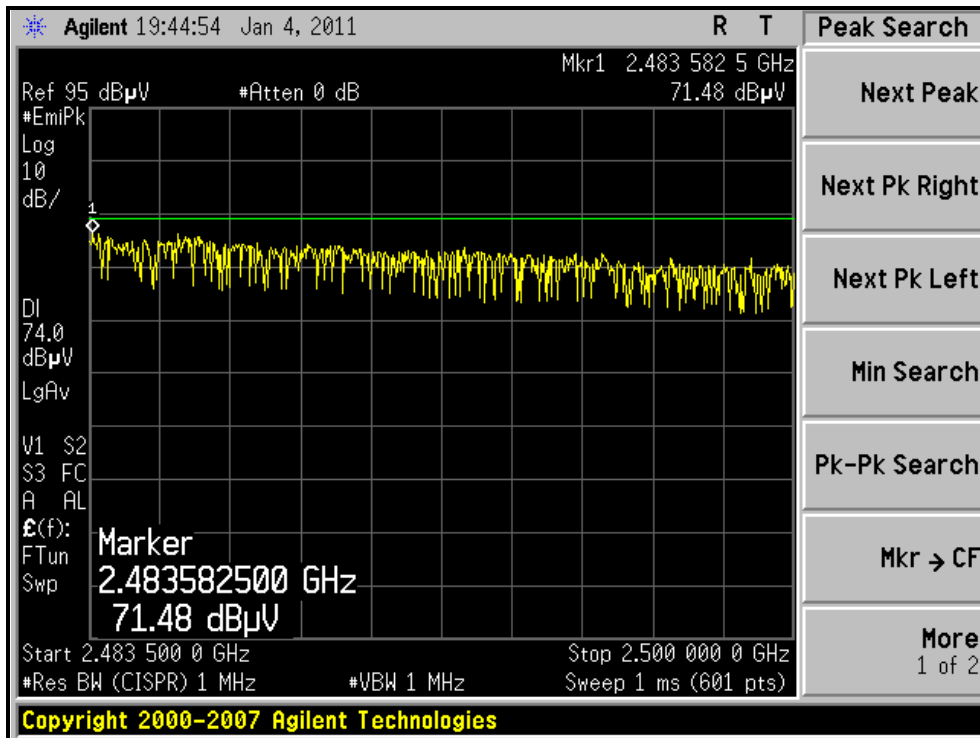
RESTRICTED BANDEDGE (802.11n (40MHz) MODE,CH7, HORIZONTAL)





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RESTRICTED BANDEDGE (802.11n (40MHz) MODE,CH7, VERTICAL)



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
Spectrum Analyzer	FSP 40	100060	May 17, 2010	May 16, 2011

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

4.3.3 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



4.3.6 EUT OPERATING CONDITIONS

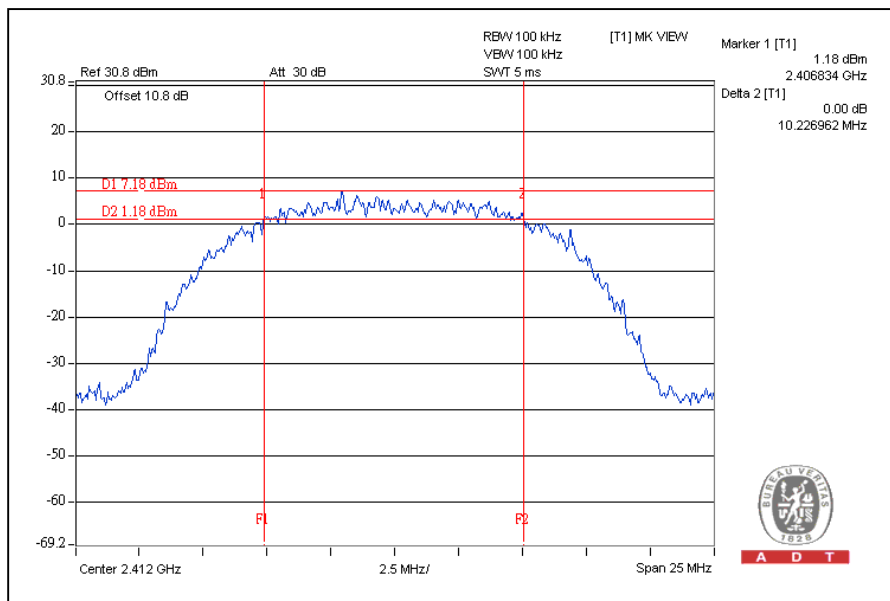
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 TEST RESULTS

802.11b DSSS MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	10.22	0.5	PASS
6	2437	10.17	0.5	PASS
11	2462	10.18	0.5	PASS

CH1



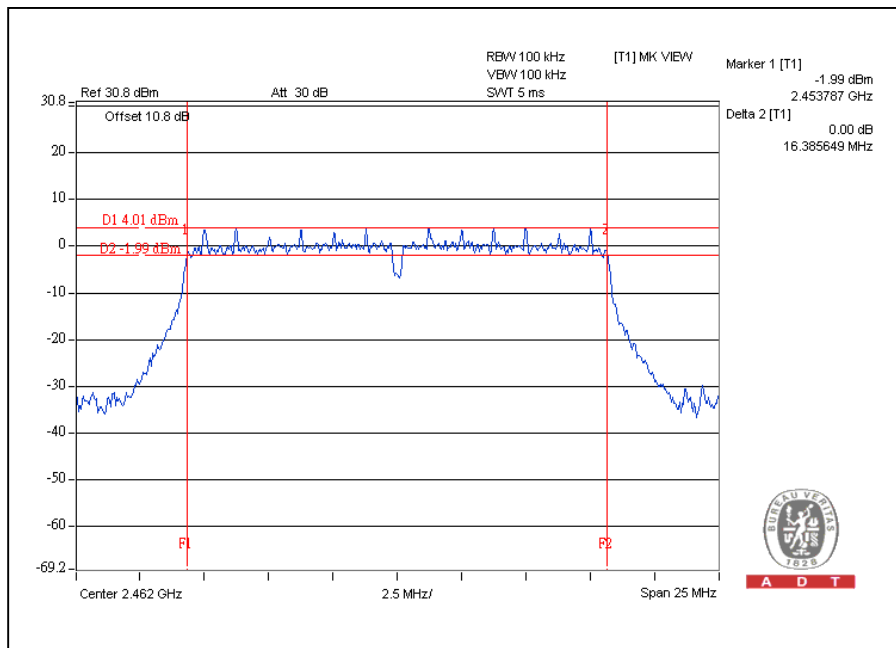


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802.11g OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.35	0.5	PASS
6	2437	15.88	0.5	PASS
11	2462	16.38	0.5	PASS

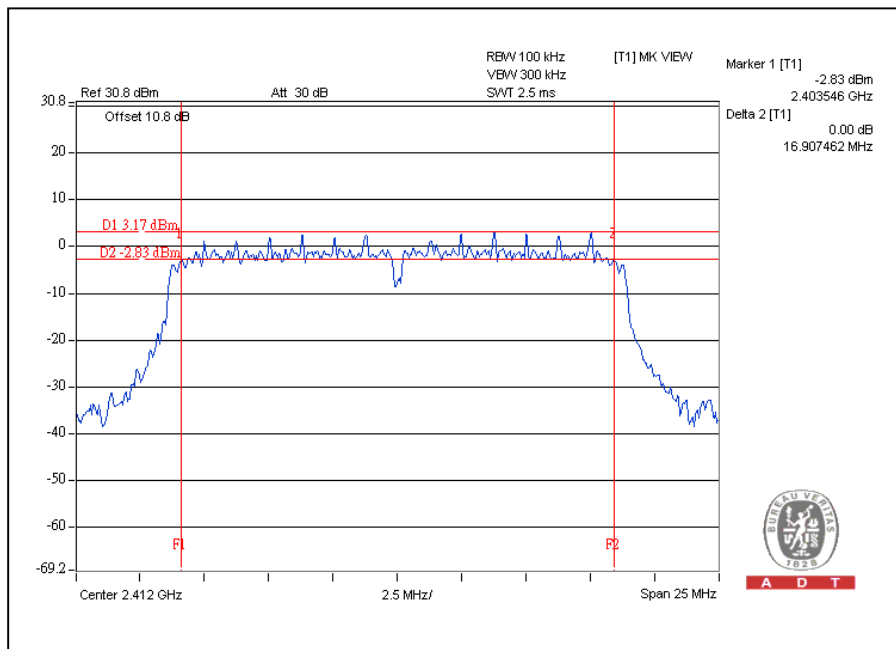
CH11



802.11n (20MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.90	0.5	PASS
6	2437	16.58	0.5	PASS
11	2462	16.32	0.5	PASS

CH1



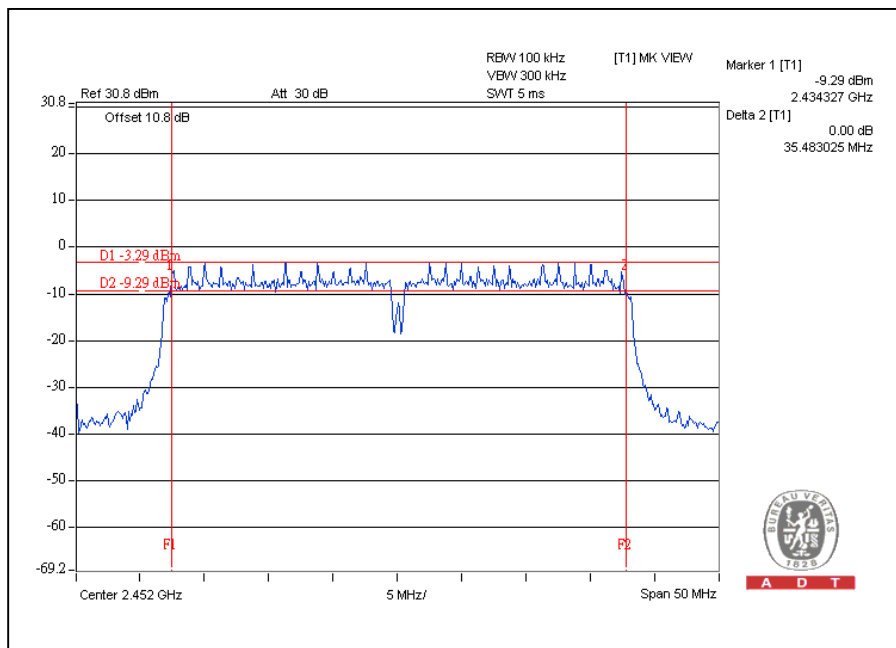


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802.11n (40MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2422	35.46	0.5	PASS
4	2437	35.35	0.5	PASS
7	2452	35.48	0.5	PASS

CH7



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.

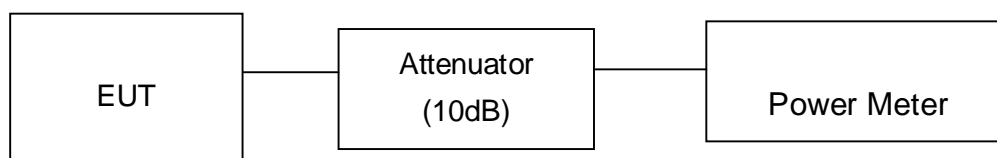
4.4.3 TEST PROCEDURES

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



4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6



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4.4.7 TEST RESULTS

802.11b DSSS MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	83.2	19.2	30	PASS
6	2437	85.1	19.3	30	PASS
11	2462	87.1	19.4	30	PASS

802.11g OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	269.2	24.3	30	PASS
6	2437	257.0	24.1	30	PASS
11	2462	309.0	24.9	30	PASS

802.11n (20MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN(2G0)	CHAIN(2G1)				
1	2412	23.1	23.2	413.1	26.2	30	PASS
6	2437	23.1	23.1	408.3	26.1	30	PASS
11	2462	23.1	23.2	413.1	26.2	30	PASS



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802.11n (40MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN(2G0)	CHAIN(2G1)				
1	2422	20.3	20.8	227.4	23.6	30	PASS
4	2437	20.6	21.1	243.6	23.9	30	PASS
7	2452	20.3	20.5	219.4	23.4	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
Spectrum Analyzer	FSP 40	100060	May 17, 2010	May 16, 2011

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

4.5.3 TEST PROCEDURE

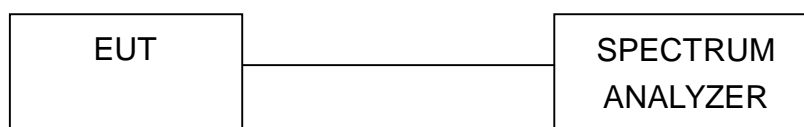
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

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

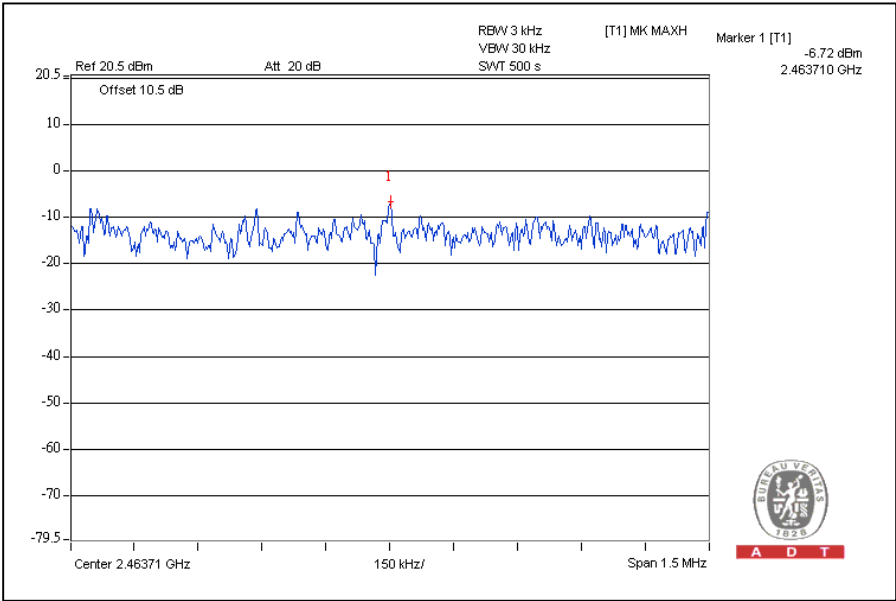
Same as Item 4.3.6

4.5.7 TEST RESULTS

802.11b DSSS MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-7.3	8	PASS
6	2437	-6.7	8	PASS
11	2462	-6.7	8	PASS

CH11



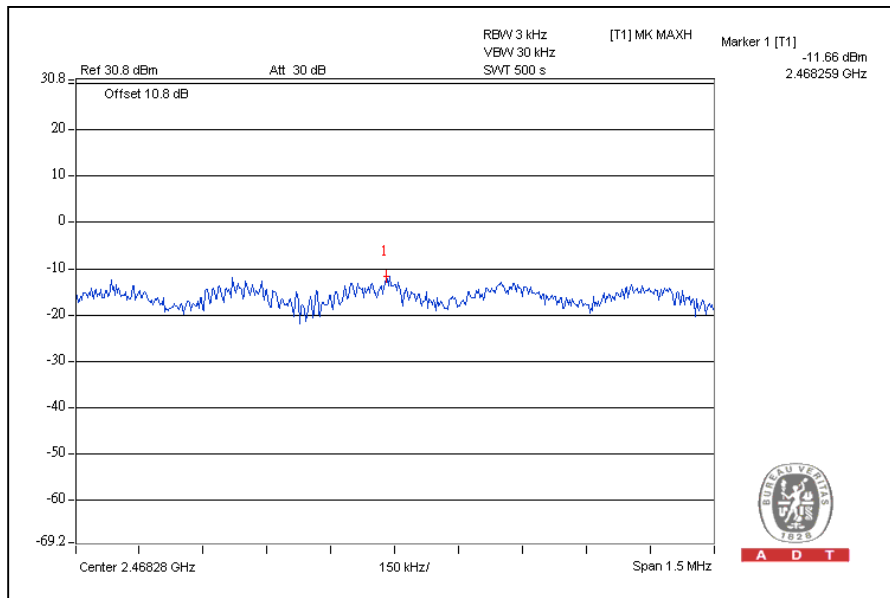


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802.11g OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-12.0	8	PASS
6	2437	-13.1	8	PASS
11	2462	-11.7	8	PASS

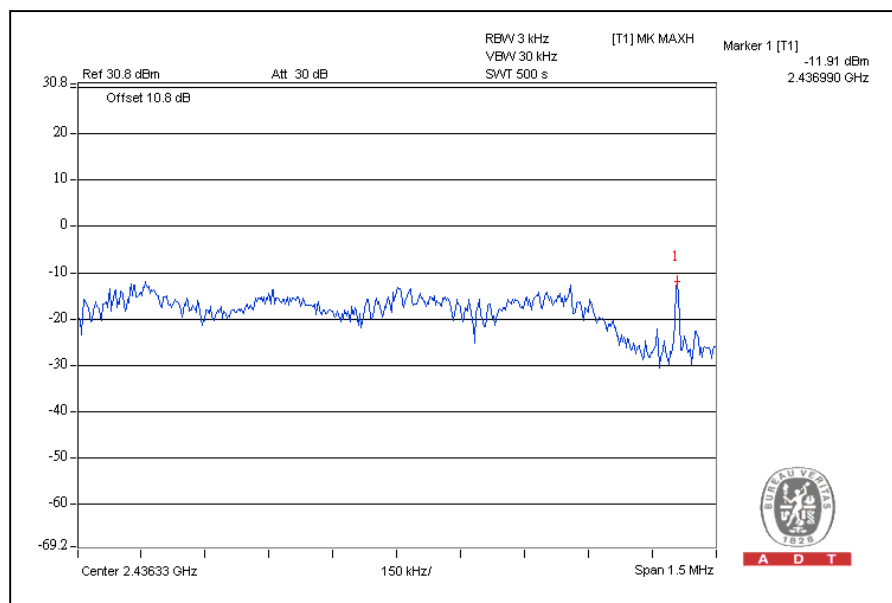
CH11



802.11n (20MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)			
1	2412	-12.5	-12.3	-9.4	8	PASS
6	2437	-14.1	-11.9	-9.9	8	PASS
11	2462	-13.8	-12.9	-10.3	8	PASS

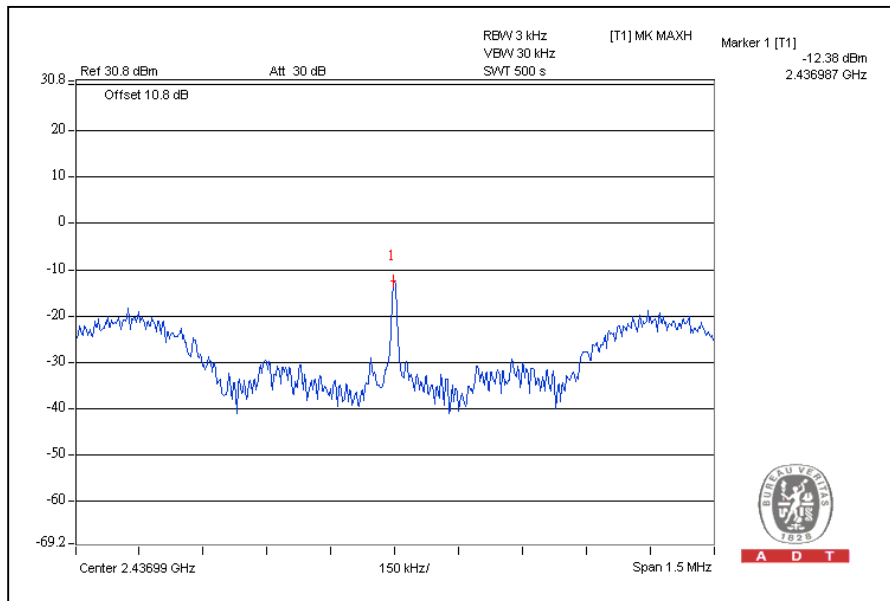
For Chain(1): CH6



802.11n (40MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(2G0)	CHAIN(2G1)			
1	2422	-14.4	-13.7	-11.0	8	PASS
4	2437	-14.5	-12.4	-10.3	8	PASS
7	2452	-14.2	-13.0	-10.6	8	PASS

For Chain (1): CH4



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
Spectrum Analyzer	FSP 40	100060	May 17, 2010	May 16, 2011

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

4.6.3 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 or 200MHz 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

4.6.6 TEST RESULTS

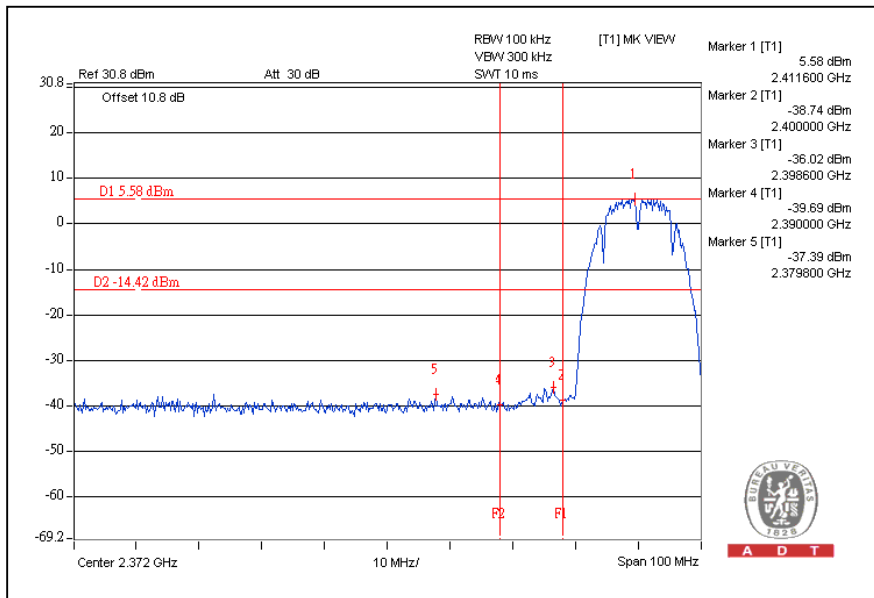
The spectrum plots are attached on the following images. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).



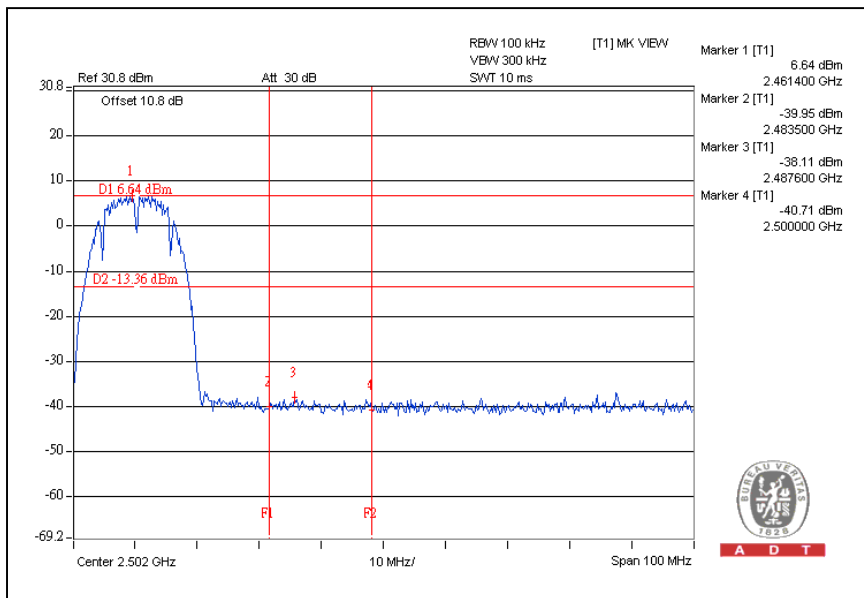
A D T

802.11b DSSS MODULATION:

CH1



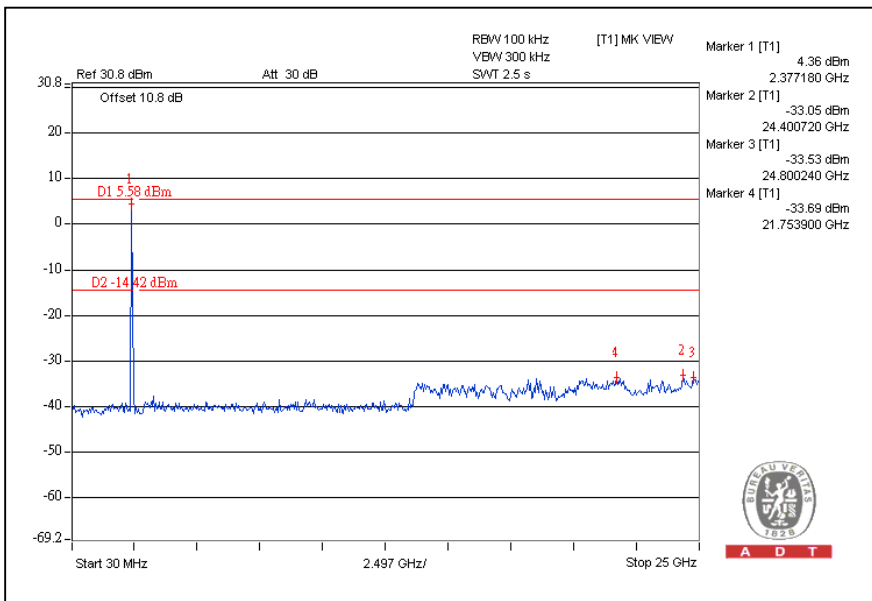
CH11



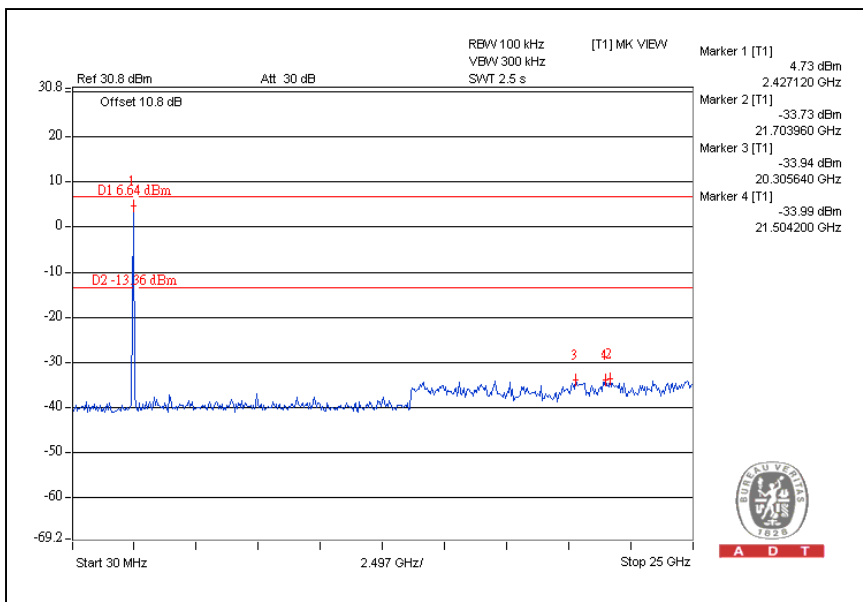


A D T

CH1



CH11

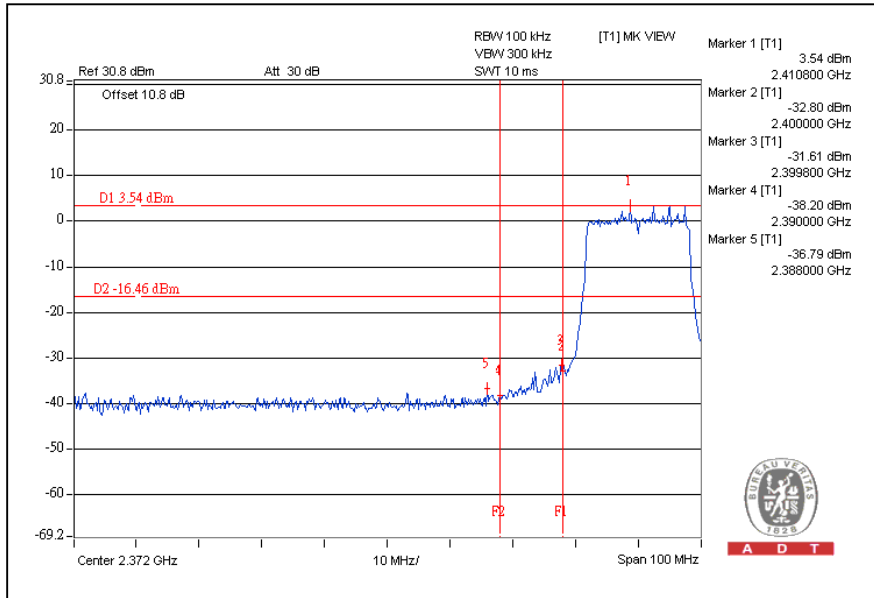




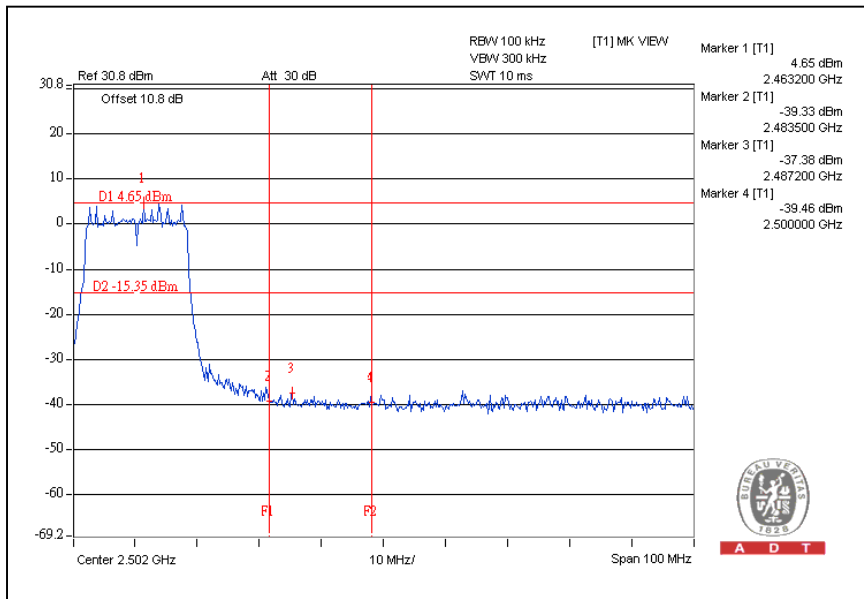
A D T

802.11g OFDM MODULATION:

CH1



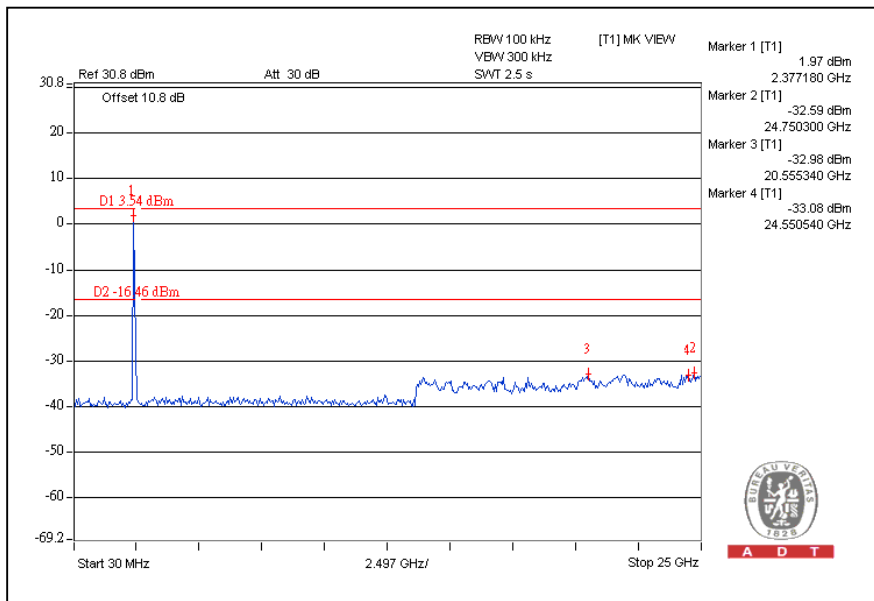
CH11



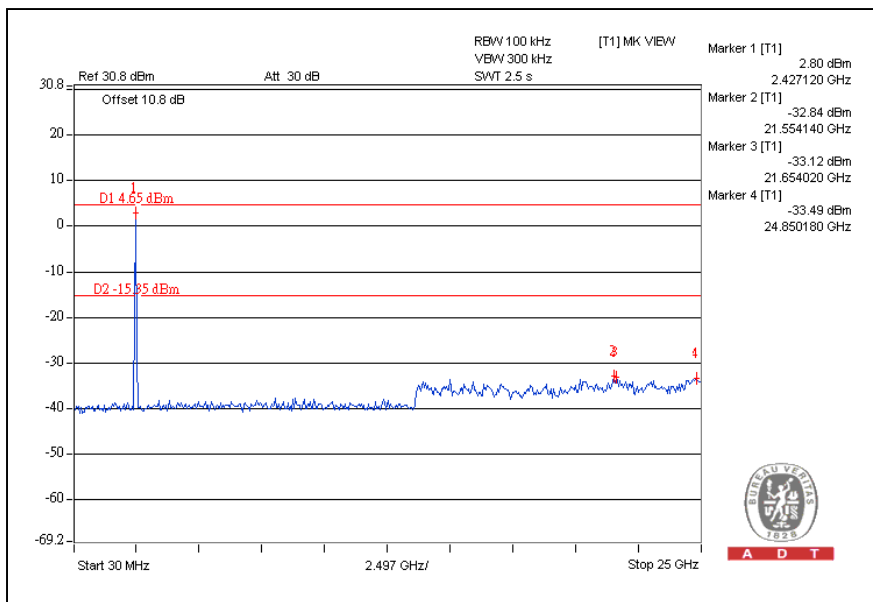


A D T

CH1

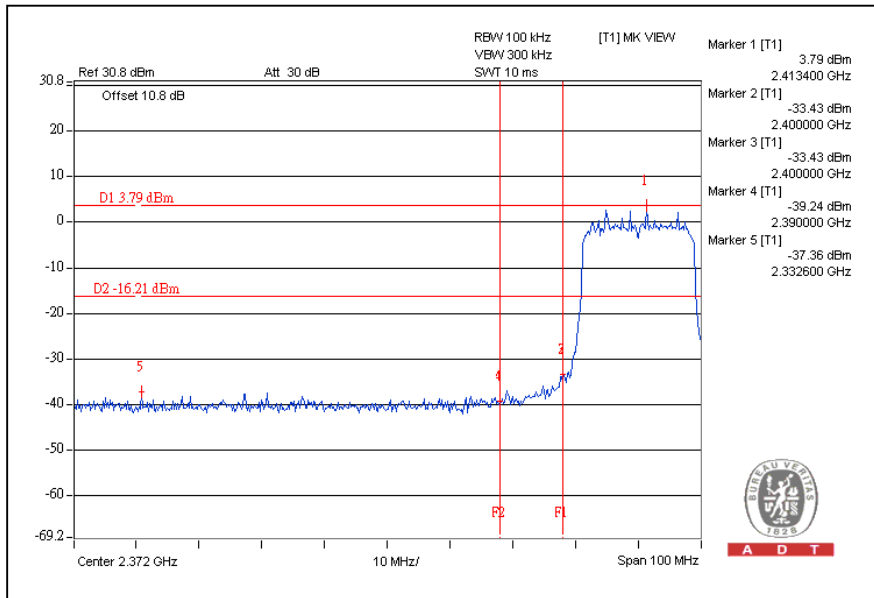


CH11

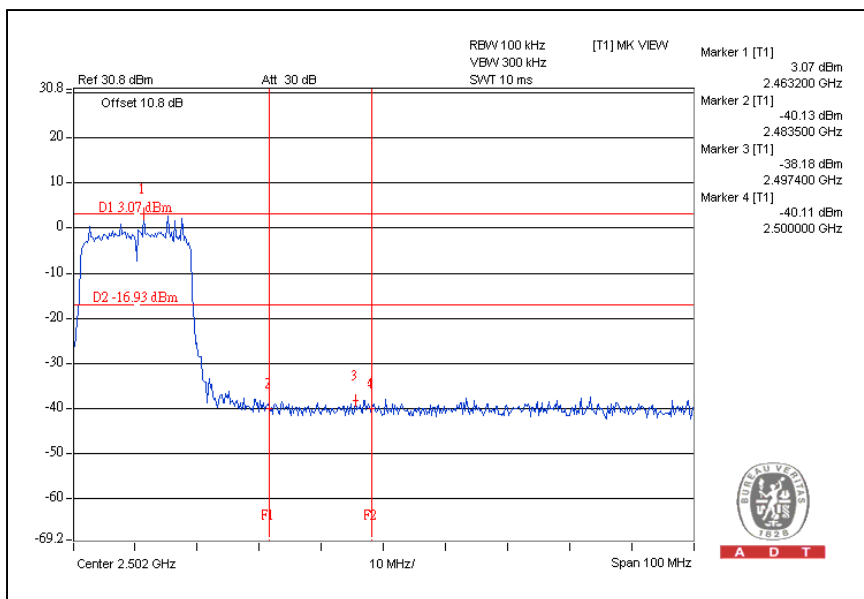


802.11n (20MHz) OFDM MODULATION:

CH1



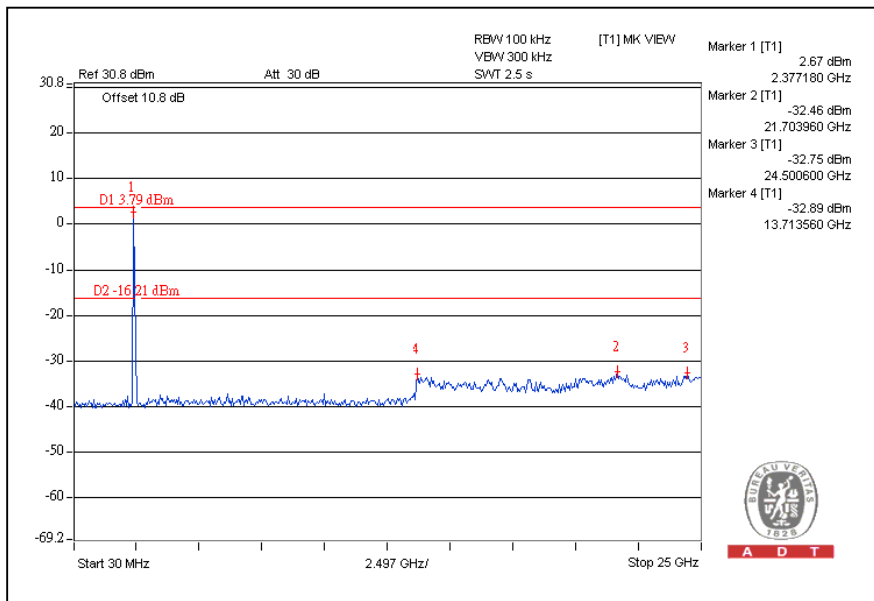
CH11



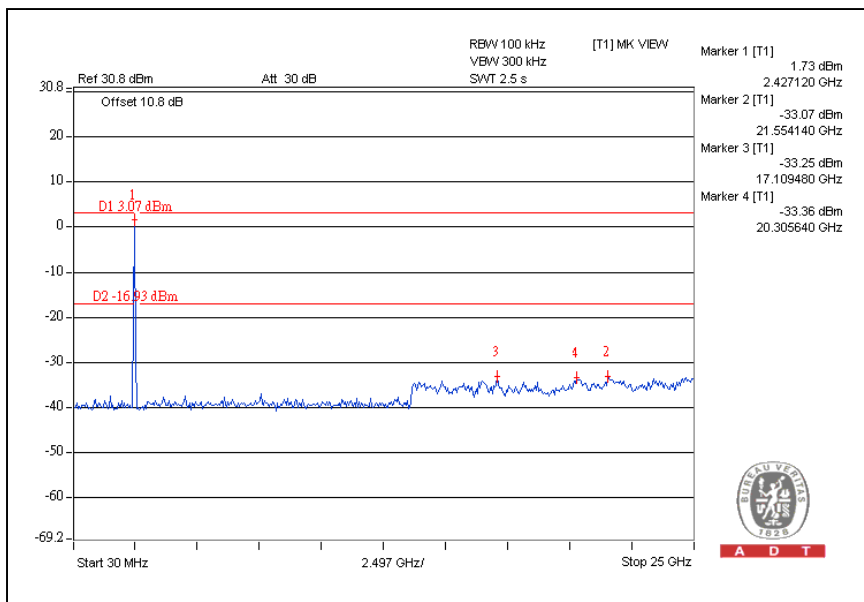


A D T

CH1

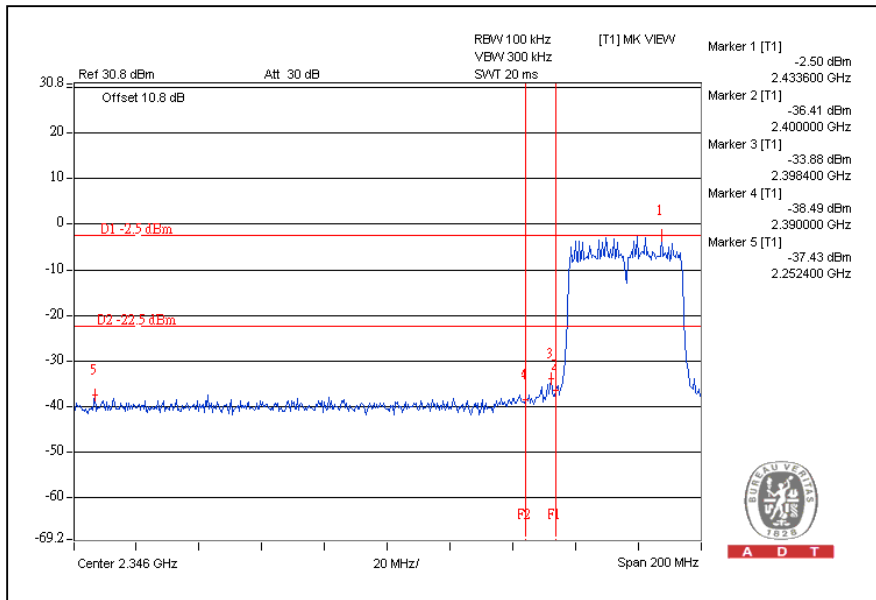


CH11

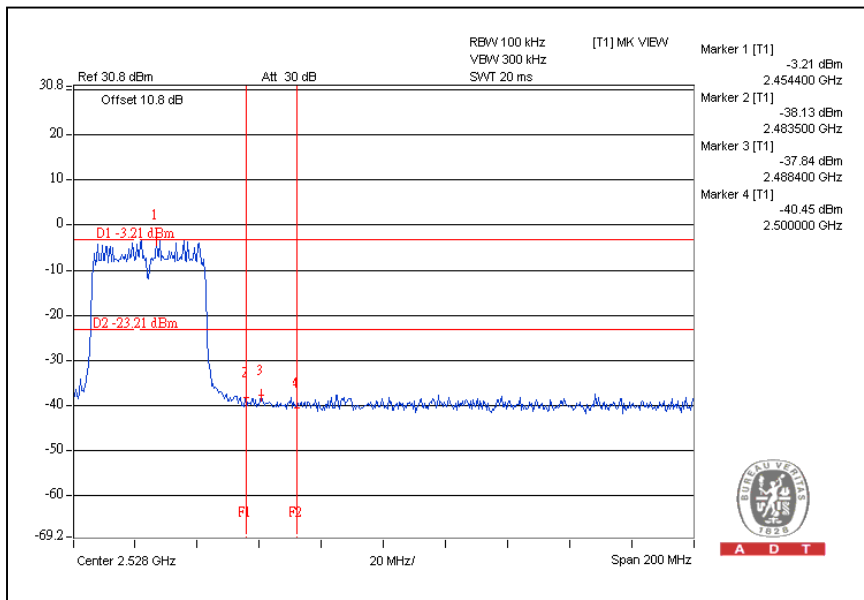


802.11n (40MHz) OFDM MODULATION:

CH1



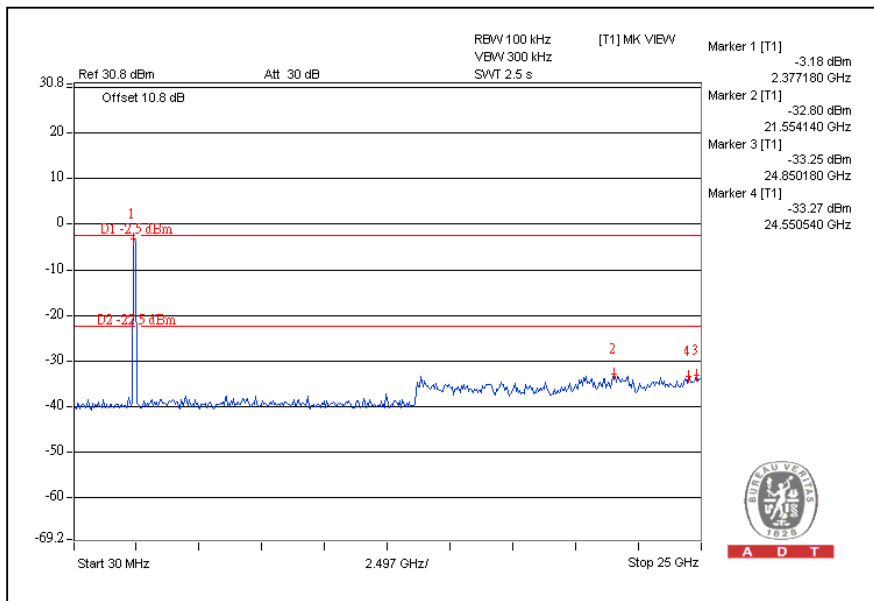
CH7



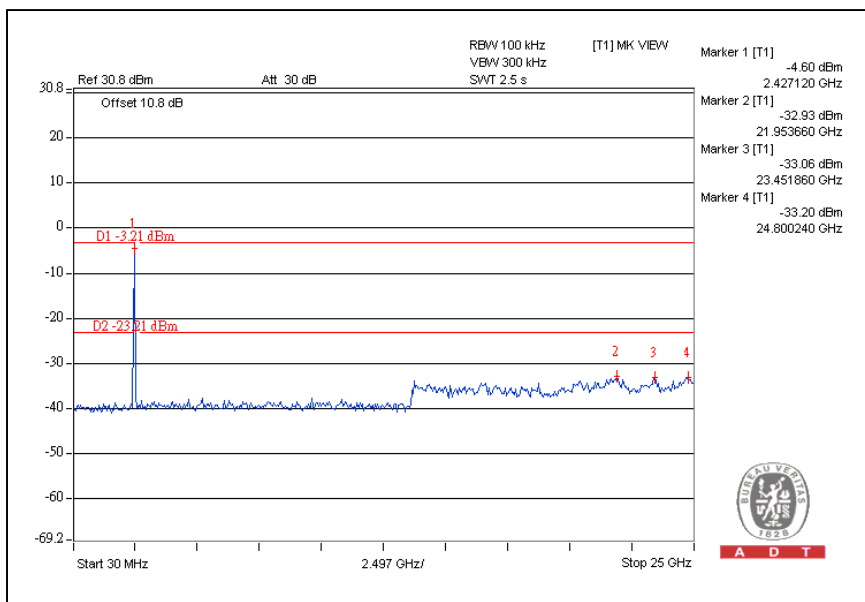


A D T

CH1



CH7



5. TEST TYPES AND RESULTS (802.11a, 5725~5850MHz Band)

5.1 CONDUCTED EMISSION MEASUREMENT

5.1.1 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.

5.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver	ESCS 30	100375	Mar. 09, 2010	Mar. 08, 2011
Line-Impedance Stabilization Network (for EUT)	NSLK 8127	8127-522	Sep. 08, 2010	Sep. 07, 2011
Line-Impedance Stabilization Network (for Peripheral)	ESH3-Z5	848773/004	Nov. 03, 2010	Nov. 02, 2011
RF Cable (JYEBAO)	5DFB	COCCAB-002	Aug. 30, 2010	Aug. 29, 2011
50 ohms Terminator	50	3	Nov. 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.

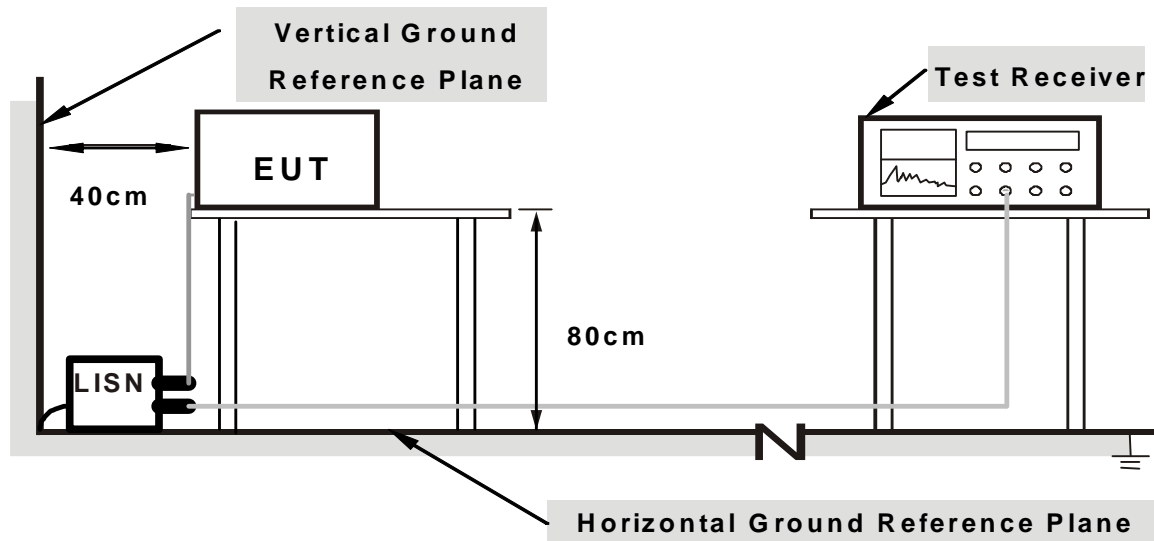
5.1.3 TEST PROCEDURES

- 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.

5.1.4 DEVIATION FROM TEST STANDARD

No deviation

5.1.5 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.

5.1.6 EUT OPERATING CONDITIONS

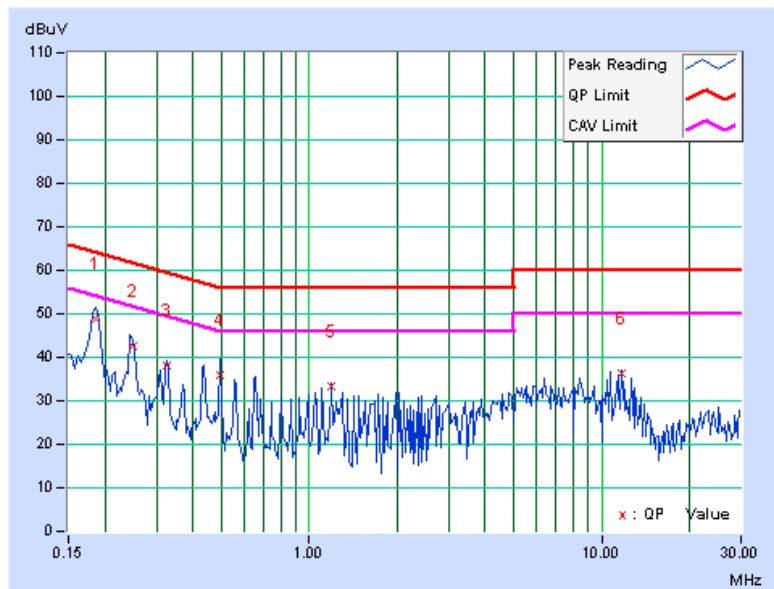
Same as the 4.1.6

5.1.7 TEST RESULTS

PHASE	Line (L)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.185	0.12	48.76	40.20	48.88	40.32	64.25	54.25	-15.37	-13.93
2	0.249	0.13	42.31	34.81	42.44	34.94	61.81	51.81	-19.37	-16.87
3	0.326	0.13	37.84	37.91	37.97	38.04	59.56	49.56	-21.59	-11.52
4	0.494	0.13	35.90	33.35	36.03	33.48	56.10	46.10	-20.07	-12.62
5	1.188	0.14	33.34	22.62	33.48	22.76	56.00	46.00	-22.52	-23.24
6	11.731	0.51	35.70	36.29	36.21	36.80	60.00	50.00	-23.79	-13.20

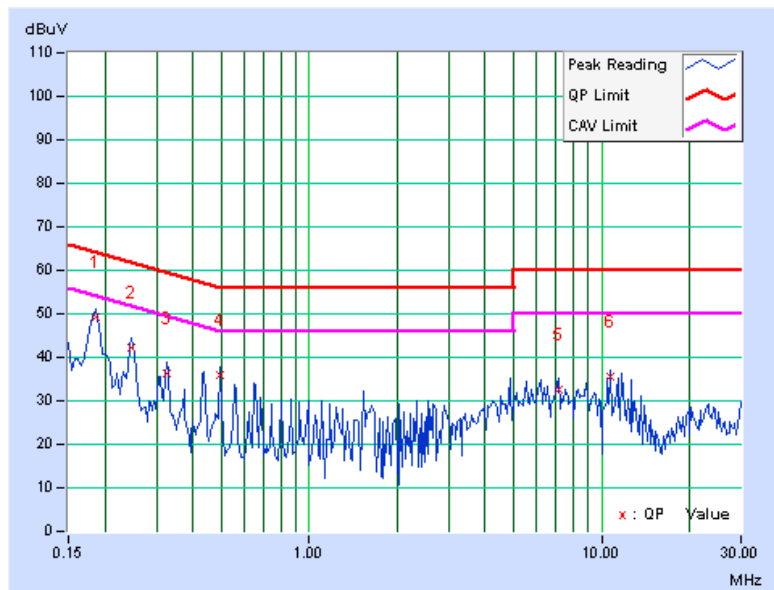
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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. [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	0.13	49.19	39.69	49.32	39.82	64.25	54.25	-14.93	-14.43
2	0.248	0.14	42.01	33.13	42.15	33.27	61.84	51.84	-19.68	-18.56
3	0.326	0.15	36.19	37.26	36.34	37.41	59.56	49.56	-23.22	-12.15
4	0.494	0.15	35.68	32.98	35.83	33.13	56.10	46.10	-20.27	-12.97
5	7.168	0.57	32.13	28.50	32.70	29.07	60.00	50.00	-27.30	-20.93
6	10.748	0.87	34.83	35.41	35.70	36.28	60.00	50.00	-24.30	-13.72

- 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.



5.2 RADIATED EMISSION MEASUREMENT

5.2.1 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. Section 15.205 restricted bands of operation shall compliance with the limits in Section 15.209.



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5.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ROHDE & SCHWARZ Spectrum Analyzer	FSP40	100036	Dec. 08, 2010	Dec. 07, 2011
Agilent PSA Spectrum Analyzer	E4446A	MY46180622	May 12 , 2010	May 11 , 2011
HP Pre_Amplifier	8449B	300801923	Nov. 01, 2010	Oct. 31, 2011
ROHDE & SCHWARZ Test Receiver	ESCS30	847124/029	Sep. 03, 2010	Sep. 02, 2011
SCHWARZBECK TRILOG Broadband Antenna	VULB 9168	138	Apr. 28, 2010	Apr. 27, 2011
Schwarzbeck Horn_Antenna	BBHA9120	D124	Dec. 17, 2010	Dec. 16, 2011
Schwarzbeck Horn_Antenna	BBHA 9170	BBHA9170153	Jan. 22, 2010	Jan. 21, 2011
RF Switches	EMH-011	1001	NA	NA
RF CABLE (Chaintek)	Sucoflex 104+ Sucoflex 106	RF104-101+R F106-101	Aug. 24, 2010	Aug. 23, 2011
RF Cable	8DFB	STCCAB-30M- 1GHz	NA	NA
Software	ADT_Radiated_ V7.6.15.9.2	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) and Spectrum Analyzer (model: FSP40) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in Open Site No. C.
4. The FCC Site Registration No. is 656396.
5. The VCCI Site Registration No. is R-1626.
6. The CANADA Site Registration No. is IC 7450G-3.

5.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. 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 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.

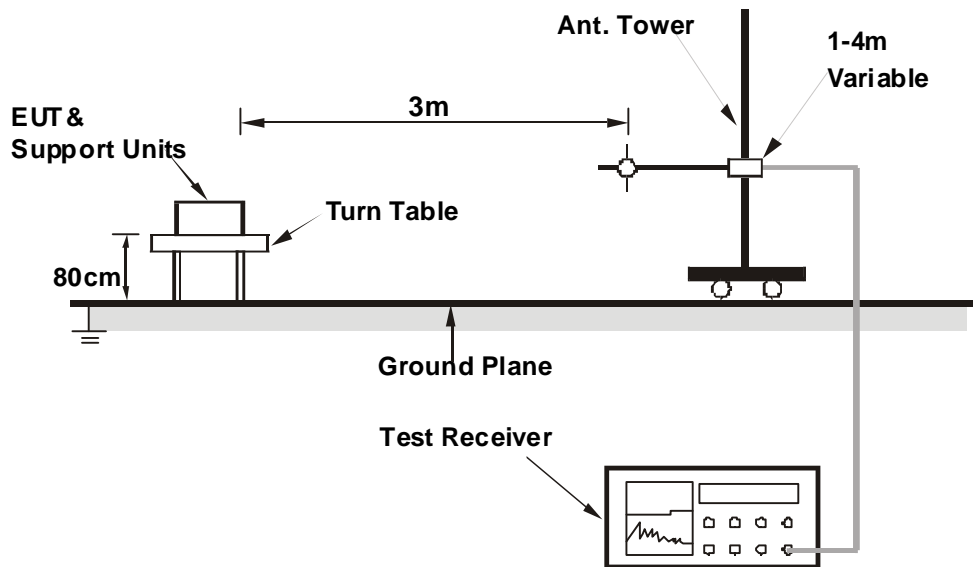
NOTE:

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 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.

5.2.4 DEVIATION FROM TEST STANDARD

No deviation

5.2.5 TEST SETUP



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

5.2.6 EUT OPERATING CONDITIONS

Same as the 4.2.6



A D T

5.2.7 TEST RESULTS

BELOW 1GHz WORST-CASE DATA : 802.11n (20MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	21deg. C, 61%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	172.50	28.6 QP	43.5	-15.0	1.02 H	24	14.46	14.09
2	250.00	39.1 QP	46.0	-6.9	1.00 H	247	25.25	13.89
3	375.00	36.1 QP	46.0	-9.9	1.00 H	185	18.12	17.98
4	500.00	38.5 QP	46.0	-7.5	1.04 H	57	17.24	21.26
5	625.00	36.7 QP	46.0	-9.3	1.00 H	24	11.56	25.14
6	750.00	36.8 QP	46.0	-9.2	1.04 H	278	10.49	26.31
7	960.00	39.1 QP	46.0	-6.9	1.00 H	227	10.08	29.02
8	1000.00	34.3 QP	54.0	-19.7	1.00 H	87	4.93	29.37
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	45.50	36.2 QP	40.0	-3.8	1.00 V	5	22.35	13.85
2	69.30	31.1 QP	40.0	-8.9	1.00 V	24	18.82	12.28
3	125.00	35.2 QP	43.5	-8.3	1.00 V	54	22.05	13.15
4	250.00	36.7 QP	46.0	-9.3	1.00 V	64	22.81	13.89
5	375.00	35.3 QP	46.0	-10.7	1.00 V	105	17.32	17.98
6	500.00	37.5 QP	46.0	-8.5	1.00 V	204	16.24	21.26
7	625.00	35.8 QP	46.0	-10.2	1.00 V	248	10.66	25.14
8	960.00	34.9 QP	46.0	-11.1	1.02 V	55	5.88	29.02

- 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

ABOVE 1GHz DATA

802.11a OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	21deg. C, 61%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	*5745.00	110.5 PK			1.11 H	112	73.29	37.21
2	*5745.00	99.2 AV			1.11 H	112	61.99	37.21
3	11490.00	59.2 PK	74.0	-14.8	1.03 H	266	12.07	47.13
4	11490.00	46.2 AV	54.0	-7.8	1.03 H	266	-0.93	47.13
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	*5745.00	114.8 PK			1.07 V	277	77.59	37.21
2	*5745.00	104.2 AV			1.07 V	277	66.99	37.21
3	11490.00	60.3 PK	74.0	-13.7	1.44 V	141	13.17	47.13
4	11490.00	48.1 AV	54.0	-5.9	1.44 V	141	0.97	47.13

- 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.
 6. The limit value is defined as per 15.247.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	21deg. C, 61%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	*5785.00	109.3 PK			1.09 H	117	71.99	37.31
2	*5785.00	98.2 AV			1.09 H	117	60.89	37.31
3	11570.00	59.9 PK	74.0	-14.1	1.05 H	264	12.83	47.07
4	11570.00	46.8 AV	54.0	-7.2	1.05 H	264	-0.27	47.07
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	*5785.00	115.7 PK			1.09 V	272	78.39	37.31
2	*5785.00	104.1 AV			1.09 V	272	66.79	37.31
3	11570.00	60.9 PK	74.0	-13.1	1.42 V	141	13.83	47.07
4	11570.00	49.2 AV	54.0	-4.8	1.42 V	141	2.13	47.07

- 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.
 5. “ * “: Fundamental frequency.
 6. The limit value is defined as per 15.247.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 165	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	21deg. C, 61%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	*5825.00	109.9 PK			1.08 H	115	72.48	37.42
2	*5825.00	98.9 AV			1.08 H	115	61.48	37.42
3	11650.00	59.0 PK	74.0	-15.0	1.05 H	266	12.00	47.00
4	11650.00	46.4 AV	54.0	-7.6	1.05 H	266	-0.60	47.00
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	*5825.00	116.2 PK			1.05 V	275	78.78	37.42
2	*5825.00	104.8 AV			1.05 V	275	67.38	37.42
3	11650.00	61.1 PK	74.0	-12.9	1.45 V	149	14.10	47.00
4	11650.00	49.0 AV	54.0	-5.0	1.45 V	149	2.00	47.00

- REMARKS:**
- Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 - Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 - The other emission levels were very low against the limit.
 - Margin value = Emission level – Limit value.
 - * * *: Fundamental frequency.
 - The limit value is defined as per 15.247.



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802.11n (20MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 149	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	21deg. C, 61%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	*5745.00	107.1 PK			1.55 H	109	69.89	37.21
2	*5745.00	97.3 AV			1.55 H	109	60.09	37.21
3	11490.00	58.3 PK	74.0	-15.7	1.03 H	247	11.17	47.13
4	11490.00	45.9 AV	54.0	-8.1	1.03 H	247	-1.23	47.13

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	*5745.00	112.1 PK			1.14 V	284	74.89	37.21
2	*5745.00	102.8 AV			1.14 V	284	65.59	37.21
3	11490.00	61.3 PK	74.0	-12.7	1.38 V	255	14.17	47.13
4	11490.00	49.0 AV	54.0	-5.0	1.38 V	255	1.87	47.13

- 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.
 6. The limit value is defined as per 15.247.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 157	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	21deg. C, 61%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	*5785.00	107.4 PK			1.50 H	108	70.09	37.31
2	*5785.00	97.8 AV			1.50 H	108	60.49	37.31
3	11570.00	58.1 PK	74.0	-15.9	1.03 H	267	11.03	47.07
4	11570.00	45.3 AV	54.0	-8.7	1.03 H	267	-1.77	47.07
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	*5785.00	112.4 PK			1.14 V	283	75.09	37.31
2	*5785.00	102.5 AV			1.14 V	283	65.19	37.31
3	11570.00	61.7 PK	74.0	-12.3	1.36 V	258	14.63	47.07
4	11570.00	49.4 AV	54.0	-4.6	1.36 V	258	2.33	47.07

- 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.
 5. “ * “: Fundamental frequency.
 6. The limit value is defined as per 15.247.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 165	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	21deg. C, 61%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	*5825.00	106.2 PK			1.51 H	109	68.78	37.42
2	*5825.00	96.3 AV			1.51 H	109	58.88	37.42
3	11650.00	58.4 PK	74.0	-15.6	1.04 H	266	11.40	47.00
4	11650.00	46.1 AV	54.0	-7.9	1.04 H	266	-0.90	47.00
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	*5825.00	111.3 PK			1.14 V	294	73.88	37.42
2	*5825.00	101.2 AV			1.14 V	294	63.78	37.42
3	11650.00	61.3 PK	74.0	-12.7	1.38 V	261	14.30	47.00
4	11650.00	49.3 AV	54.0	-4.7	1.38 V	261	2.30	47.00

- 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.
 5. “ * “: Fundamental frequency.
 6. The limit value is defined as per 15.247.



A D T

802.11n (40MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 151	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	21deg. C, 61%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	*5755.00	108.8 PK			1.07 H	113	71.57	37.23
2	*5755.00	95.9 AV			1.07 H	113	58.67	37.23
3	11510.00	58.0 PK	74.0	-16.0	1.00 H	253	10.88	47.12
4	11510.00	45.5 AV	54.0	-8.5	1.00 H	253	-1.62	47.12
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	*5755.00	110.2 PK			1.00 V	93	72.97	37.23
2	*5755.00	99.4 AV			1.00 V	93	62.17	37.23
3	11510.00	60.9 PK	74.0	-13.1	1.33 V	250	13.78	47.12
4	11510.00	48.3 AV	54.0	-5.7	1.33 V	250	1.18	47.12

- 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.
 6. The limit value is defined as per 15.247.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 159	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	21deg. C, 61%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	*5795.00	107.2 PK			1.09 H	112	69.86	37.34
2	*5795.00	94.0 AV			1.09 H	112	56.66	37.34
3	11590.00	58.2 PK	74.0	-15.8	1.01 H	255	11.15	47.05
4	11590.00	45.2 AV	54.0	-8.8	1.01 H	255	-1.85	47.05
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	*5795.00	109.7 PK			1.00 V	97	72.36	37.34
2	*5795.00	98.4 AV			1.00 V	97	61.06	37.34
3	11590.00	60.0 PK	74.0	-14.0	1.30 V	243	12.95	47.05
4	11590.00	48.1 AV	54.0	-5.9	1.30 V	243	1.05	47.05

- 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.
 6. The limit value is defined as per 15.247.

5.3 6dB BANDWIDTH MEASUREMENT

5.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

5.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer	FSP 40	100060	May 17, 2010	May 16, 2011

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

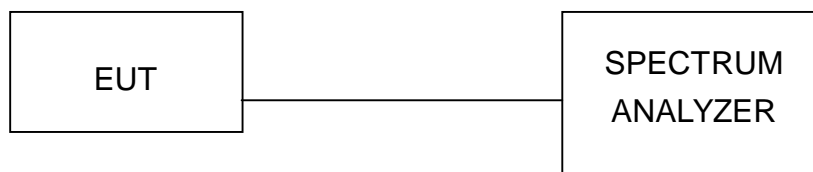
5.3.3 TEST PROCEDURE

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.

5.3.4 DEVIATION FROM TEST STANDARD

No deviation

5.3.5 TEST SETUP



5.3.6 EUT OPERATING CONDITIONS

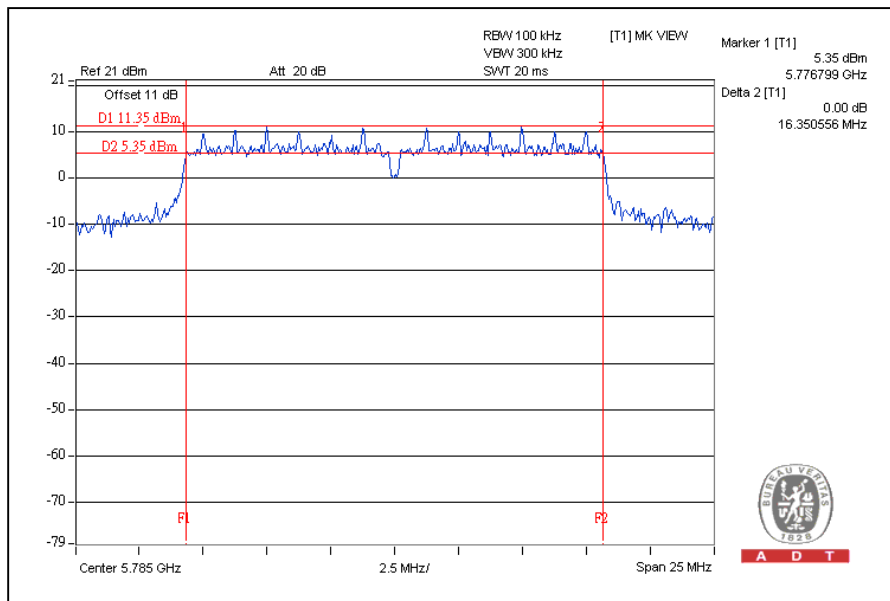
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

5.3.7 TEST RESULTS

802.11a OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	16.31	0.5	PASS
157	5785	16.35	0.5	PASS
165	5825	16.31	0.5	PASS

CH157



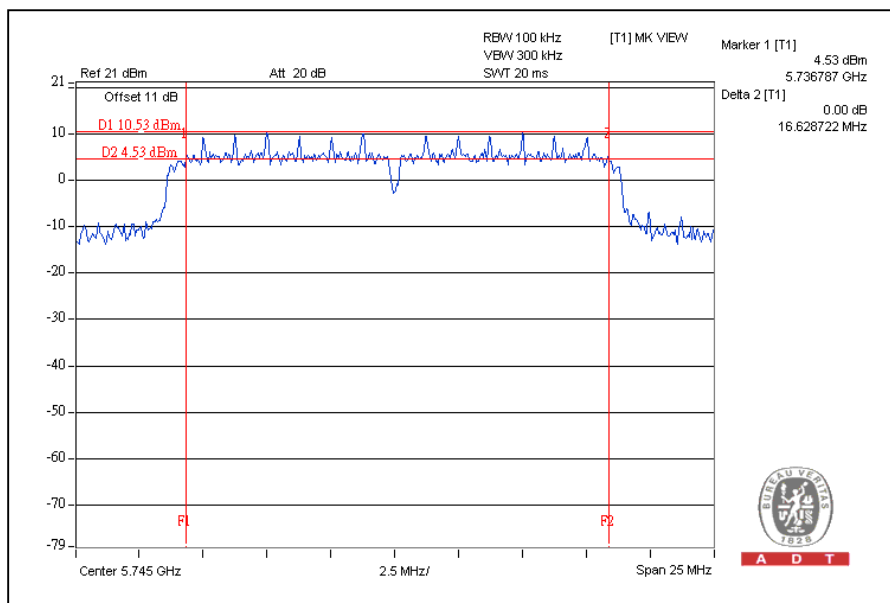


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802.11n (20MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	16.62	0.5	PASS
157	5785	16.60	0.5	PASS
165	5825	16.61	0.5	PASS

CH149



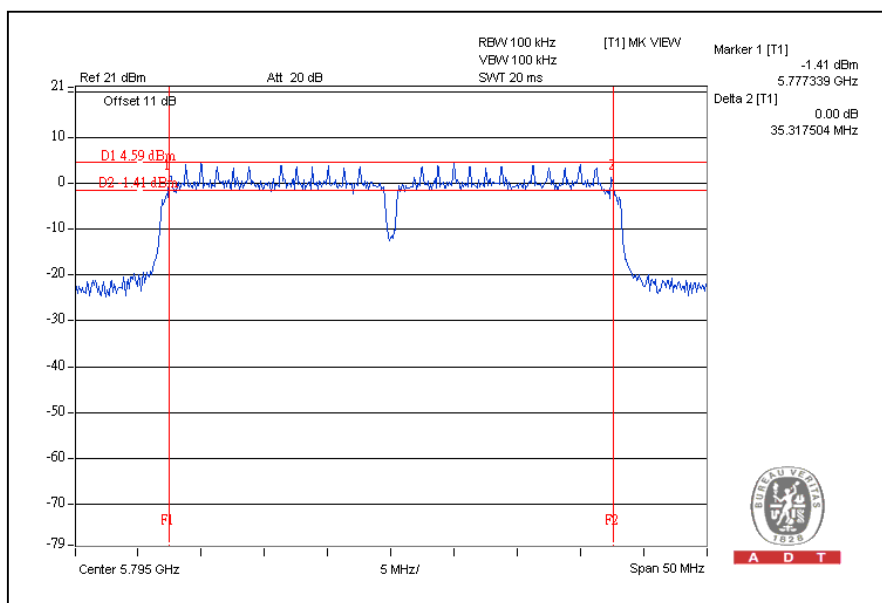


A D T

802.11n (40MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
151	5755	35.28	0.5	PASS
159	5795	35.31	0.5	PASS

CH159



5.4 MAXIMUM PEAK OUTPUT POWER

5.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

5.4.2 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.

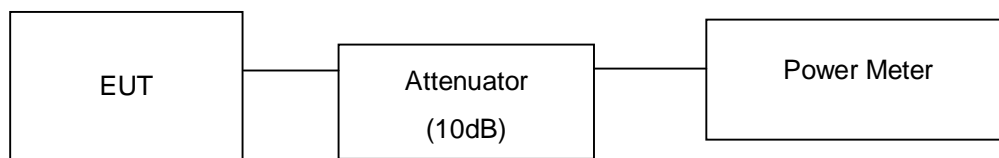
5.4.3 TEST PROCEDURES

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.

5.4.4 DEVIATION FROM TEST STANDARD

No deviation

5.4.5 TEST SETUP



5.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6

5.4.7 TEST RESULTS

802.11a OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
149	5745	257.0	24.1	30	PASS
157	5785	257.0	24.1	30	PASS
165	5825	257.0	24.1	30	PASS

802.11n (20MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)				
149	5745	24.2	24.2	526.1	27.2	30	PASS
157	5785	24.3	23.8	509.0	27.1	30	PASS
165	5825	24.2	23.5	486.9	26.9	30	PASS

802.11n (40MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)				
151	5755	23.6	23.8	469.0	26.7	30	PASS
159	5795	23.3	23.5	437.7	26.4	30	PASS



5.5 POWER SPECTRAL DENSITY MEASUREMENT

5.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

5.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer	FSP 40	100060	May 17, 2010	May 16, 2011

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

5.5.3 TEST PROCEDURE

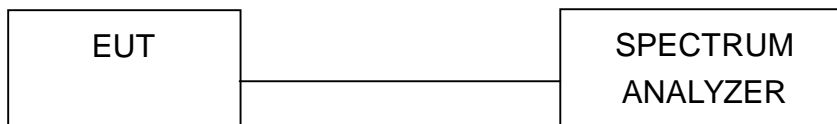
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3 kHz RBW and 30 kHz VBW, set sweep time = span/3 kHz. The power spectral density was measured and recorded.

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

5.5.4 DEVIATION FROM TEST STANDARD

No deviation

5.5.5 TEST SETUP



5.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6



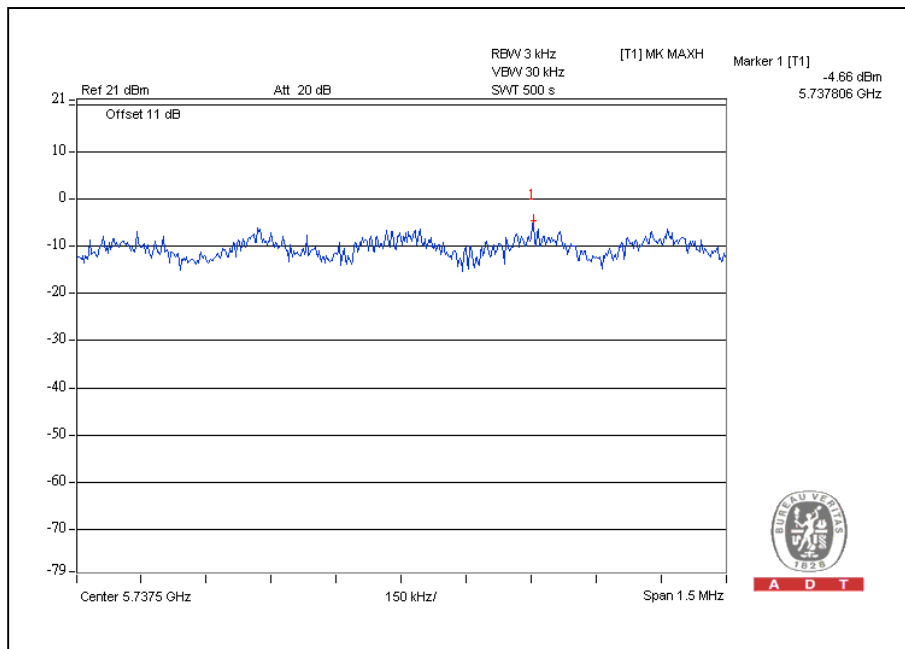
A D T

5.5.7 TEST RESULTS

802.11a OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
149	5745	-4.7	8	PASS
157	5785	-6.3	8	PASS
165	5825	-5.8	8	PASS

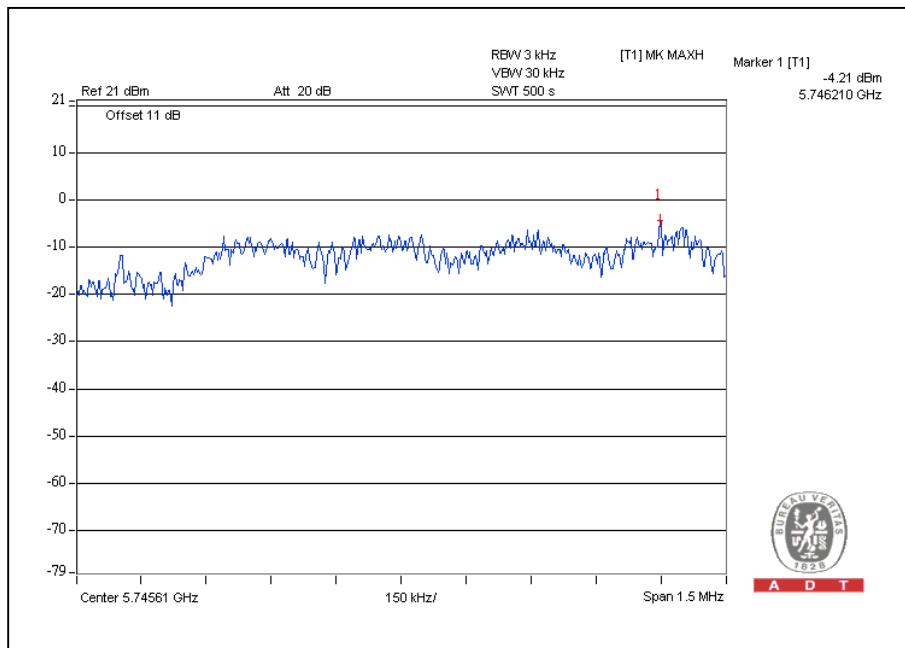
CH149



802.11n (20MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)			
149	5745	-6.9	-4.2	-2.3	8	PASS
157	5785	-6.6	-5.1	-2.8	8	PASS
165	5825	-6.5	-6.2	-3.3	8	PASS

For Chain(1): CH149



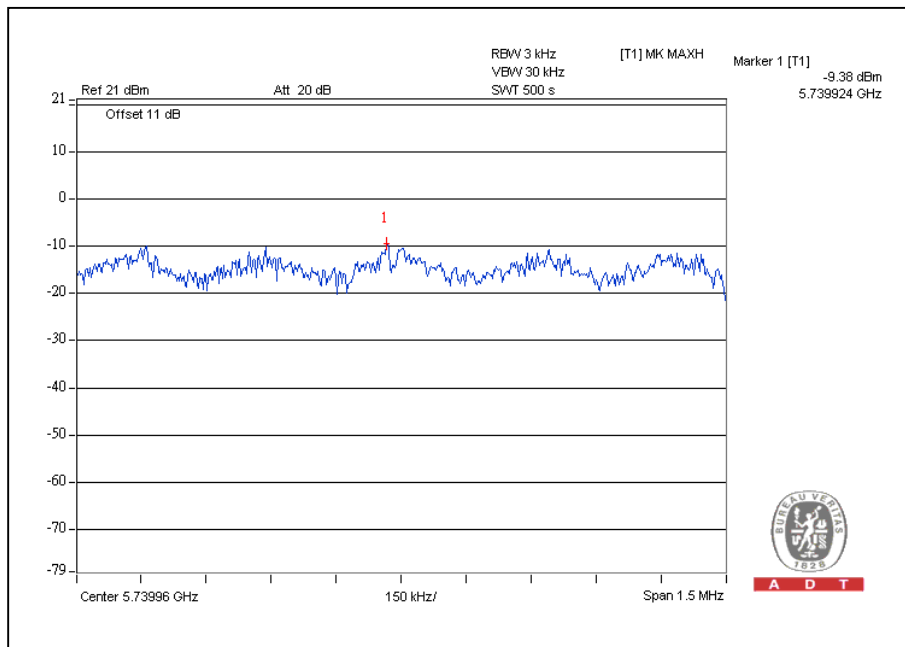


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802.11n (40MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)			
151	5755	-10.6	-9.4	-6.9	8	PASS
159	5795	-10.1	-9.6	-6.8	8	PASS

For Chain(1): CH151





5.6 CONDUCTED OUT-BAND EMISSION MEASUREMENT

5.6.1 LIMITS OF CONDUCTED OUT-BAND EMISSION MEASUREMENT

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

5.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer	FSP 40	100060	May 17, 2010	May 16, 2011

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

5.6.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low loss cable. Set RBW of spectrum analyzer to 100 kHz with suitable frequency span including 100MHz or 200MHz bandwidth from band edge. The band edges was measured and recorded.

5.6.4 DEVIATION FROM TEST STANDARD

No deviation

5.6.5 EUT OPERATING CONDITION

Same as Item 4.3.6

5.6.6 TEST RESULTS

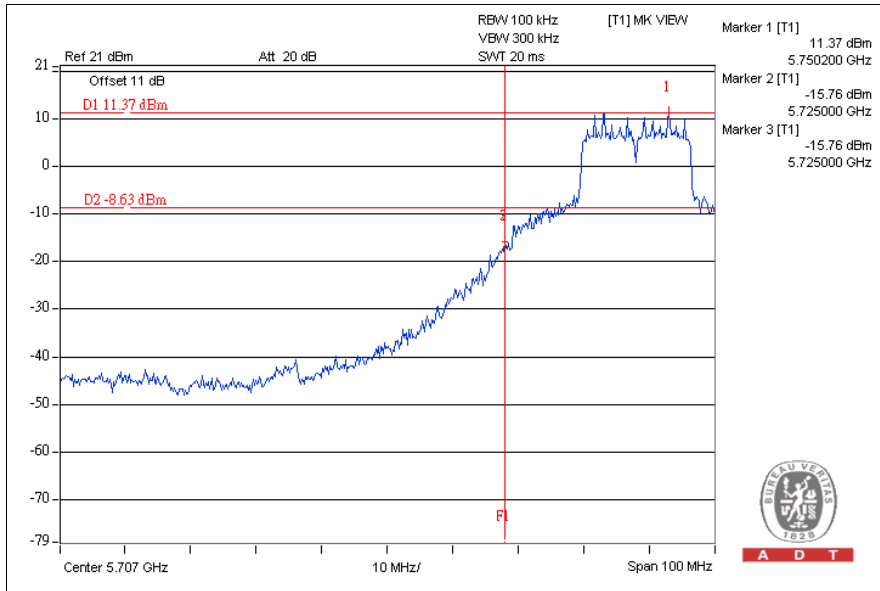
The spectrum plots are attached on the following pages. D2 line indicates the highest level, D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(d).



A D T

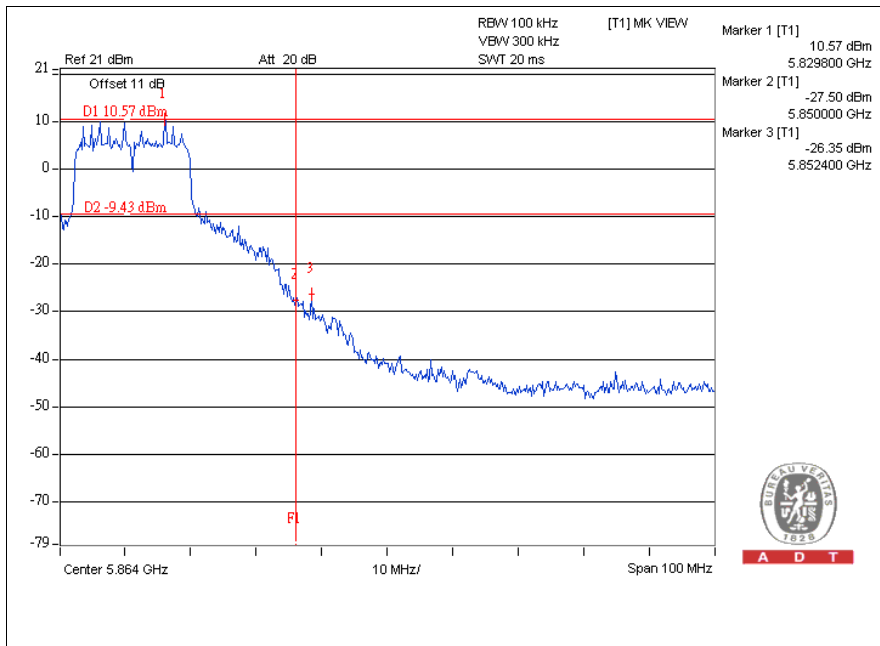
802.11a OFDM modulation

CH149



A D T

CH165

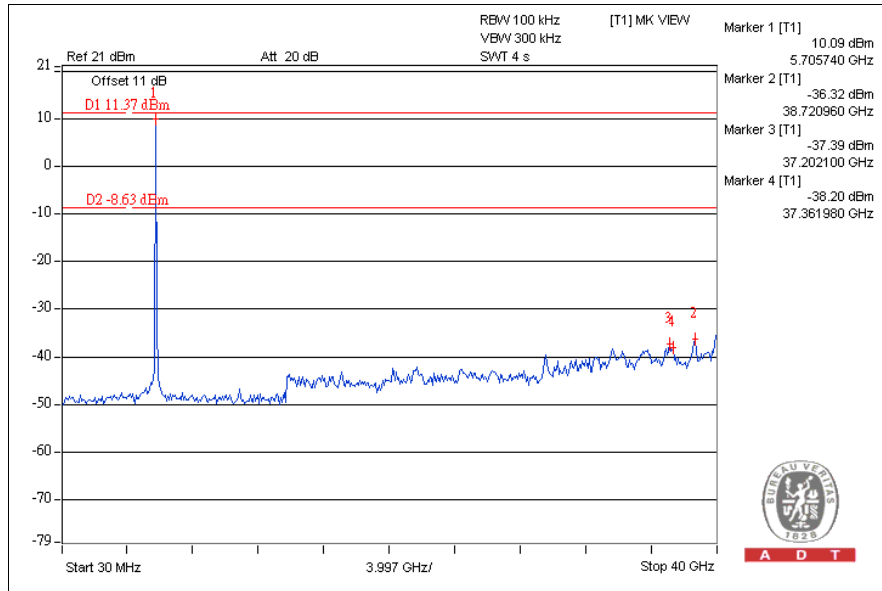


A D T

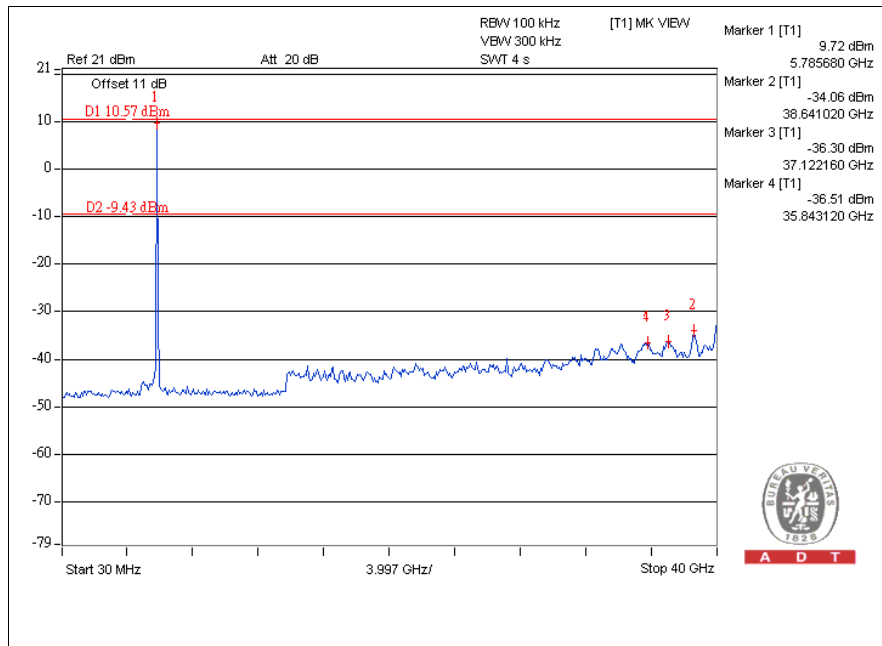


A D T

CH149



CH165

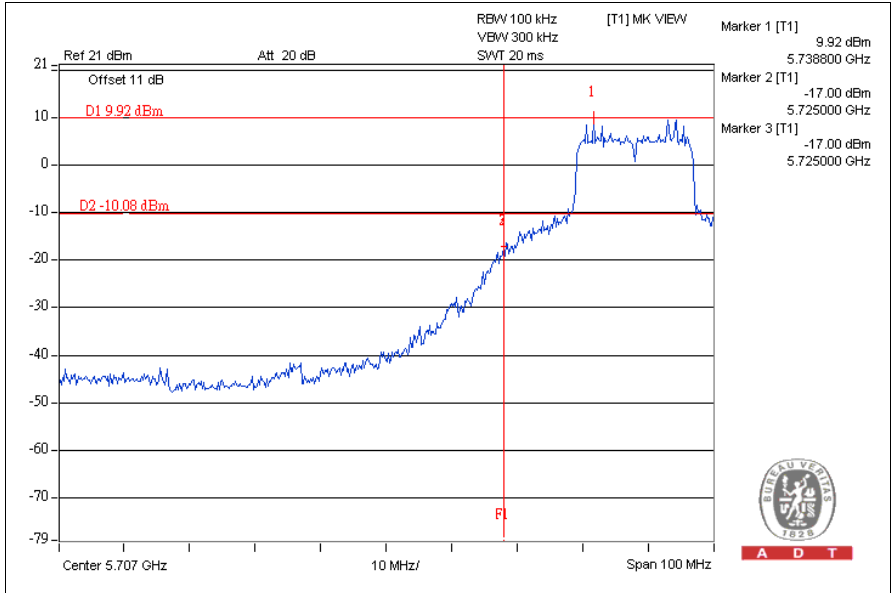




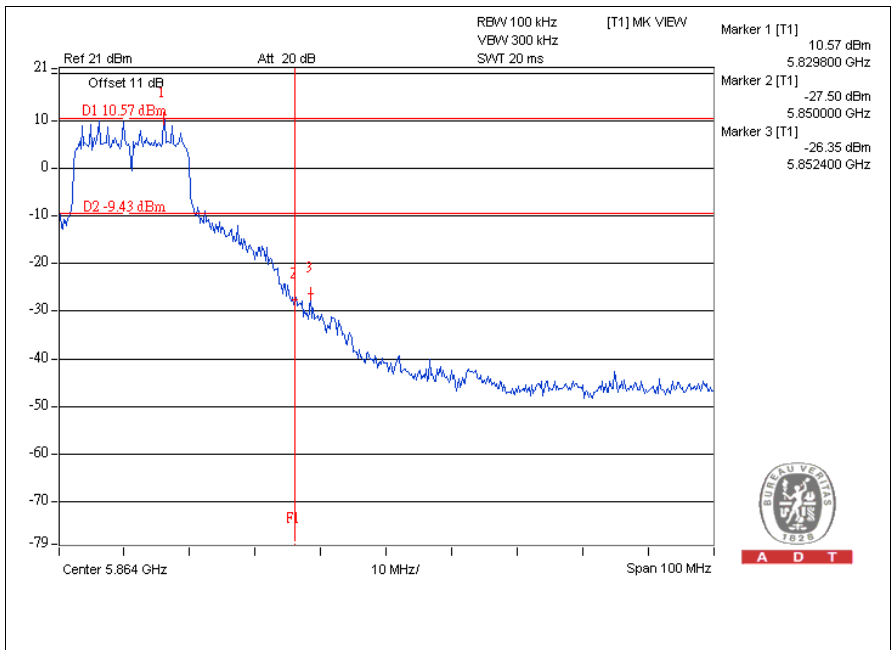
A D T

802.11n (20MHz) OFDM MODULATION:

CH149



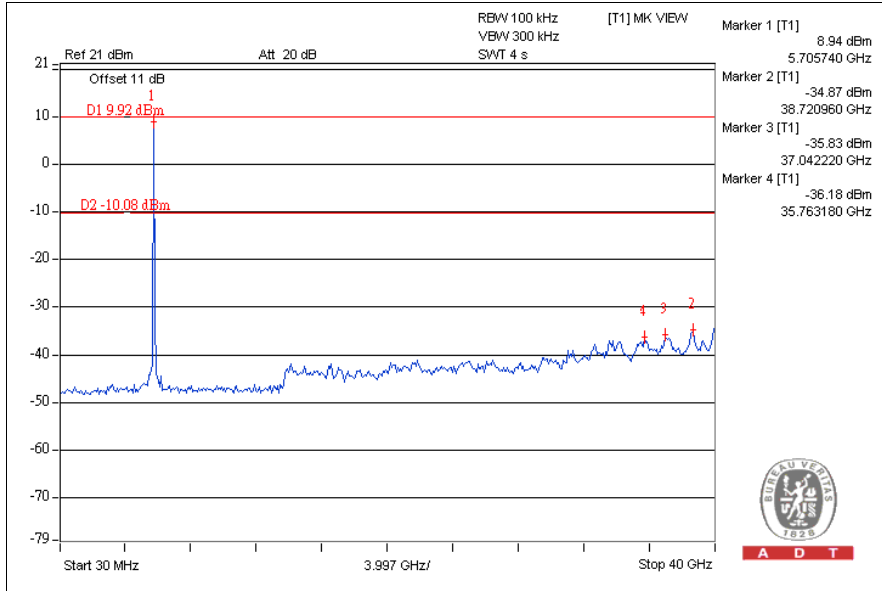
CH165



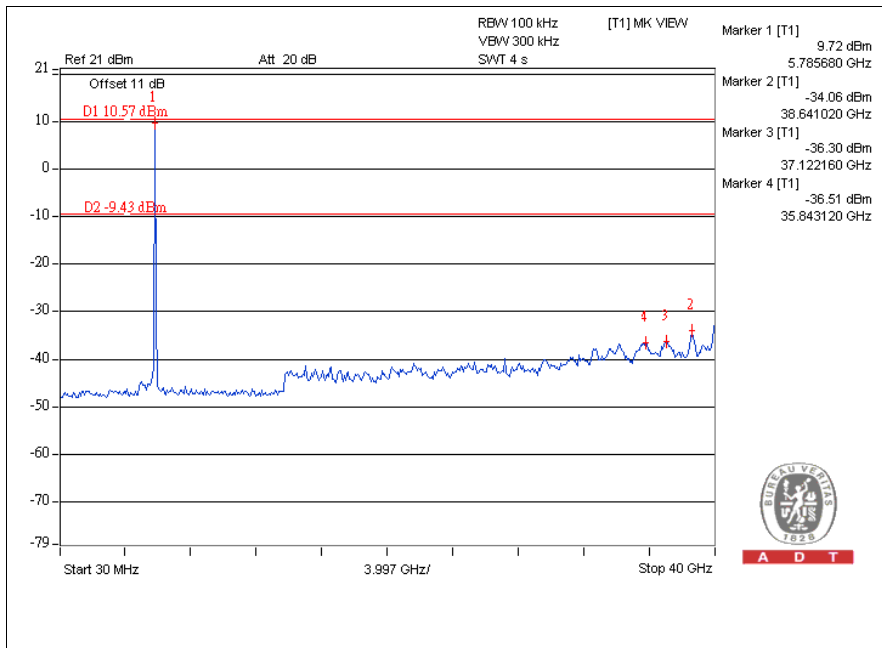


A D T

CH149



CH165

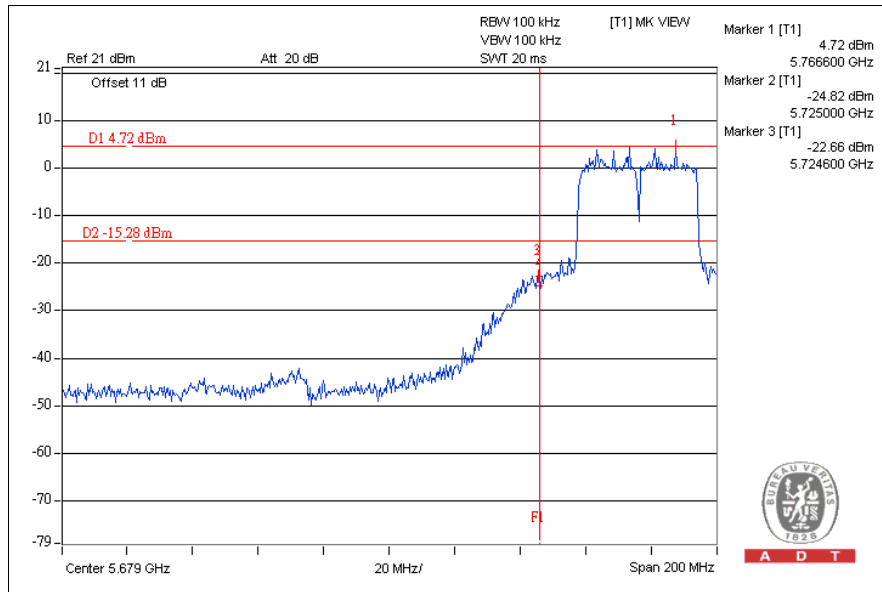




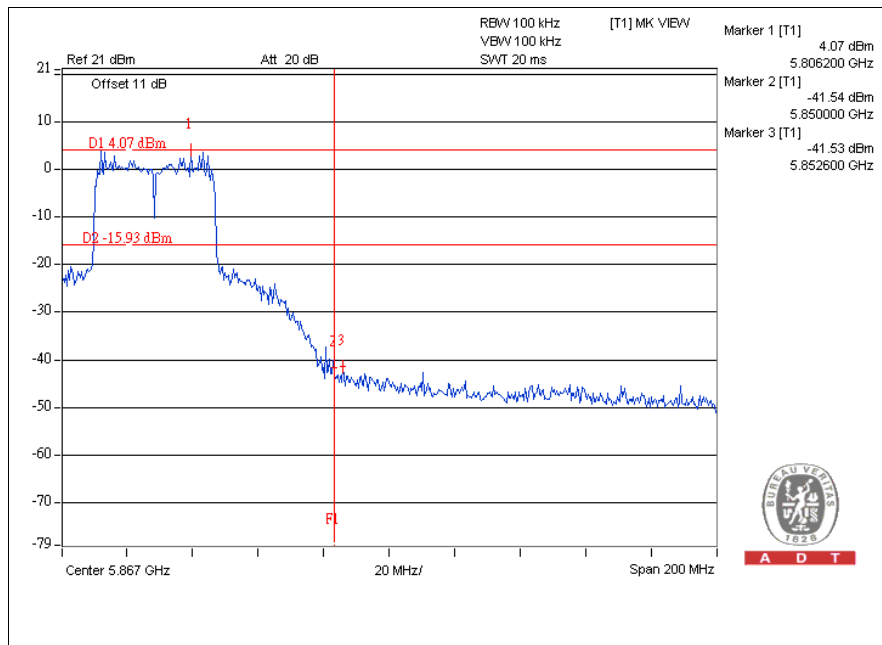
A D T

802.11n (40MHz) OFDM MODULATION:

CH151



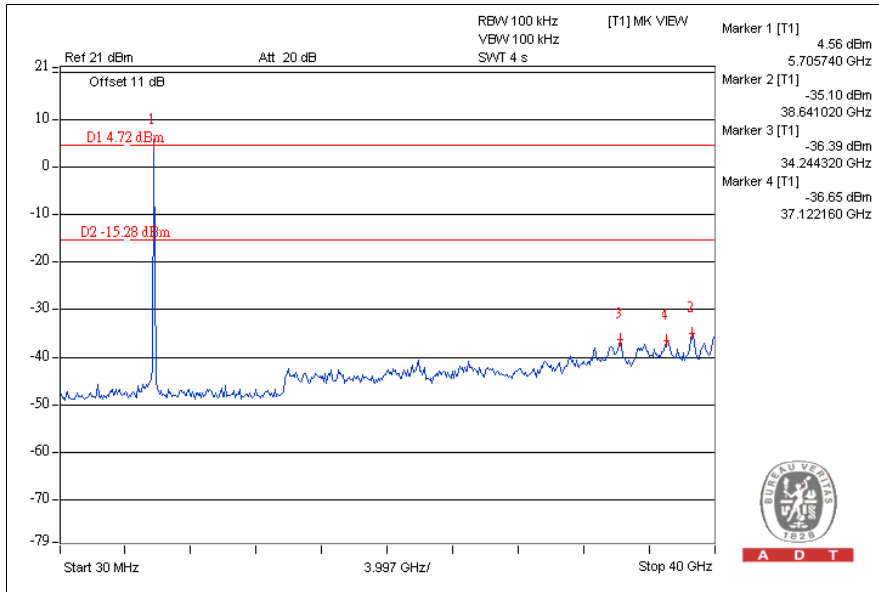
CH159



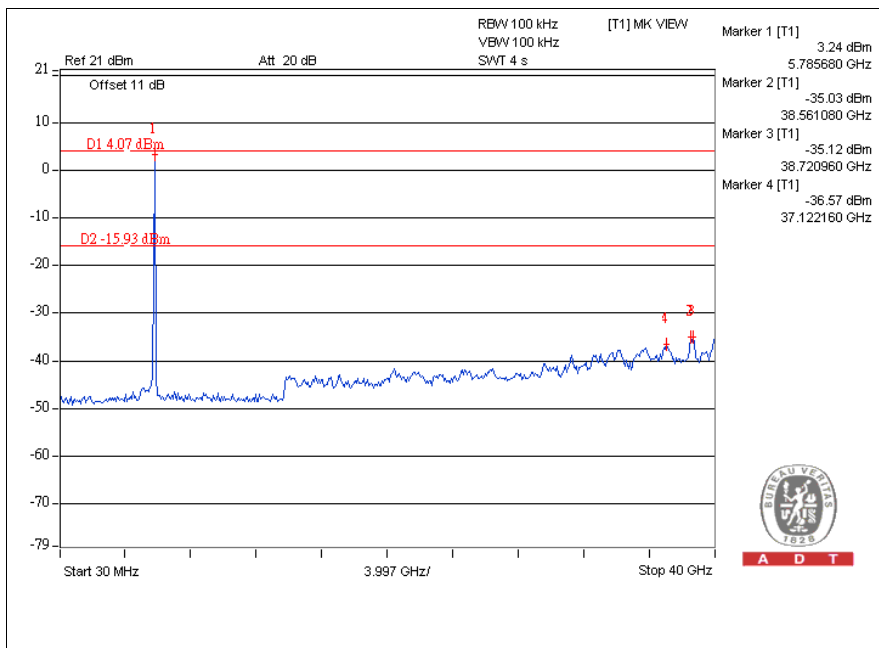


A D T

CH151



CH159





6. INFORMATION ON THE TESTING LABORATORIES

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

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site:
www.adt.com.tw/index.5.phtml. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:

Tel: 886-2-26052180

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

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

--- END ---