FCC TEST REPORT

REPORT NO.:	RF110725C08
MODEL NO.:	DNMA-91
FCC ID:	NKR-DNMA91
RECEIVED:	July 25, 2011
TESTED:	Aug. 17 to 25, 2011
ISSUED:	Aug. 29, 2011

APPLICANT:	Wistron NeWeb Corp.
ADDRESS:	20 Park Avenue II, Hsinchu Science Park,Hsinchu 308, Taiwan, R.O.C.

ISSUED BY:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
LAB ADDRESS :	No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan
TEST LOCATION (1):	No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan
TEST LOCATION (2):	No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF110725C08	Original release	Aug. 29, 2011

1. CERTIFICATION

PRODUCT:	WLAN 802.11 b/g/n Mini-PCI Module
BRAND NAME:	WNC
MODEL NO.:	DNMA-91
TEST SAMPLE:	ENGINEERING SAMPLE
APPLICANT:	Wistron NeWeb Corp.
TESTED:	Aug. 17 to 25, 2011
STANDARDS:	FCC Part 15, Subpart C (Section 15.247) ANSI C63.4-2003 ANSI C63.10-2009

The above equipment (Model: DNMA-91) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : _____ , **DATE:** *Aug. 29, 2011*
(Claire Kuan, Specialist)

APPROVED BY : _____ , **DATE:** *Aug. 29, 2011*
(May Chen, Deputy Manager)

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

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 -14.06dB at 0.283MHz
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 4874.00MHz and 2288.00MHz and 2483.50MHz
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 RP-SMA-Male not a standard connector.

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)	3.89 dB
Radiated emissions (1GHz -18GHz)	2.19 dB
Radiated emissions (18GHz -40GHz)	2.56 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	WLAN 802.11 b/g/n Mini-PCI Module
MODEL NO.	DNMA-91
FCC ID	NKR-DNMA91
POWER SUPPLY	DC 3.3V from host equipment
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	**802.11b:** 11 / 5.5 / 2 / 1Mbps **802.11g:** 54 / 48 / 36 / 24 / 18 / 12 / 9 / 6Mbps **802.11n:** up to 300Mbps
OPERATING FREQUENCY	2412MHz ~ 2462MHz
NUMBER OF CHANNEL	For 802.11b, 802.11g, 802.11n (20MHz) : 11 For 802.11n (40MHz) : 7
MAXIMUM OUTPUT POWER	802.11b: 73.6mW 802.11g: 788.4mW 802.11n (20MHz): 824.2mW 802.11n (40MHz): 520.3mW
ANTENNA TYPE	Please see NOTE
DATA CABLE	NA
I/O PORTS	NA
ASSOCIATED DEVICES	NA

NOTE:

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

Transmitter Circuit	Peak Gain	Antenna Type	Connecter Type	Input Connecter	Difference
Chain (0)	2.15	Dipole	UFL	RP-SMA-Male	with a transmission cable (350mm)
Chain (1)	2.15	Dipole	UFL	RP-SMA-Male	with a transmission cable (140mm)

2. The EUT is 2 * 2 spatial MIMO (2Tx & 2Rx) without beam forming function.

3. When the EUT operating in 802.11n, the software operation, which is defined by manufacturer, MCS (Modulation and Coding Schemes) from 0 to 15.

4. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 DESCRIPTION OF TEST MODES

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
3	2422MHz	7	2442MHz
4	2427MHz	8	2447MHz
5	2432MHz	9	2452MHz
6	2437MHz		

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO					DESCRIPTION
	PLC	RE < 1G	RE ³ 1G	APCM	OB	
	√	√	√	√	√	

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

RE ³ 1G: Radiated Emission above 1GHz **APCM:** Antenna Port Conducted Measurement

OB: Conducted Out-Band Emission Measurement

ANTENNA COMBINATION MODE:

COMBINATION MODE	OPERATION MODE	TX CHAIN(0)	TX CHAIN(1)
A	802.11 b	√	√
B	802.11 g	√	√
C	802.11n(20MHz) for MCS0~15	√	√
D	802.11n(40MHz) for MCS0~15	√	√

Note:
The above information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

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)
802.11n (20MHz)	1 to 11	6	OFDM	BPSK	6.5

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)
802.11n (20MHz)	1 to 11	6	OFDM	BPSK	6.5

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)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	13.5

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)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	13.5

※ Bandwidth as show worst chain in report base on preliminary measurement.

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)
802.11b	1 to 11	1, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 11	OFDM	BPSK	6
802.11n (20MHz)	1 to 11	1, 11	OFDM	BPSK	6.5
802.11n (40MHz)	3 to 9	3, 9	OFDM	BPSK	13.5

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
PLC	27deg. C, 62%RH	120Vac, 60Hz	Kyle Huang
RE≥1G	25deg. C, 65%RH	120Vac, 60Hz	Evan Huang
RE<1G	26deg. C, 74%RH	120Vac, 60Hz	Rex Huang
APCM	25deg. C, 60%RH	120Vac, 60Hz	Rex Huang
OB	25deg. C, 60%RH	120Vac, 60Hz	Rex Huang

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

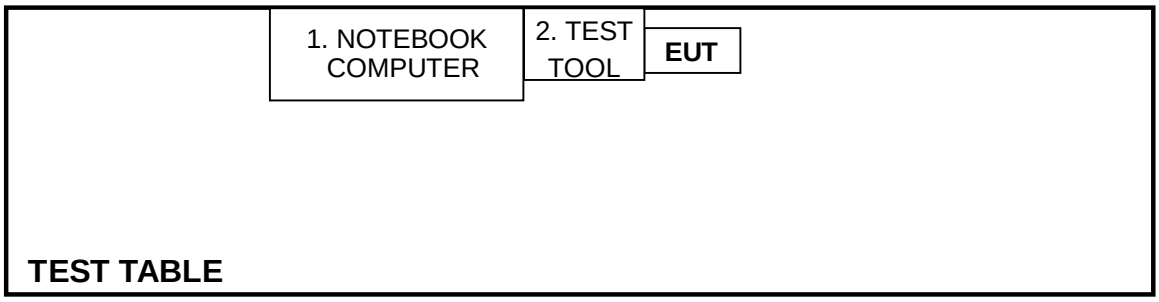
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	D531	CN-0XM006-48643-86L-4472	FCC DoC
2	TEST TOOL	BVADT-C-201	NA	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	NA

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

3.5 CONFIGURATION OF SYSTEM UNDER TEST



4.TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

NOTE:
1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.1.2 TEST INSTRUMENTS

Test date: Aug. 25, 2011

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ROHDE & SCHWARZ Test Receiver	ESCS 30	100287	Mar. 02, 2011	Mar. 01, 2012
Line-Impedance Stabilization Network (for EUT)	NSLK 8127	8127-523	Sep. 17, 2010	Sep. 16, 2011
Line-Impedance Stabilization Network (for Peripheral)	ENV-216	100072	June 10, 2011	June 09, 2012
RF Cable (JYEBAO)	5DFB	CONCAB-003	Aug. 05, 2011	Aug. 04, 2012
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. A.
3 The VCCI Con A Registration No. is C-817.

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.

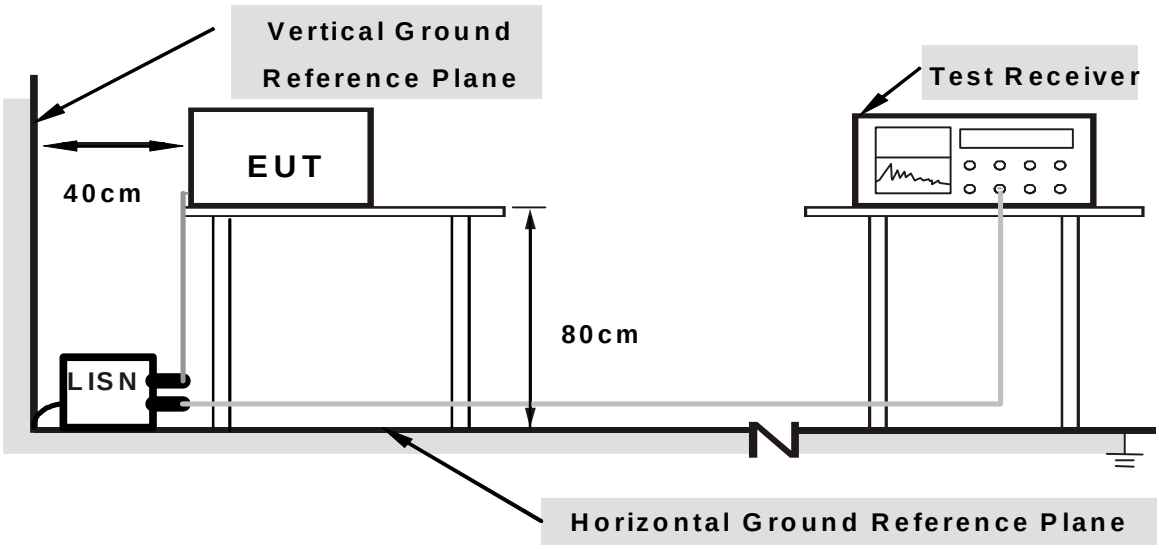
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

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

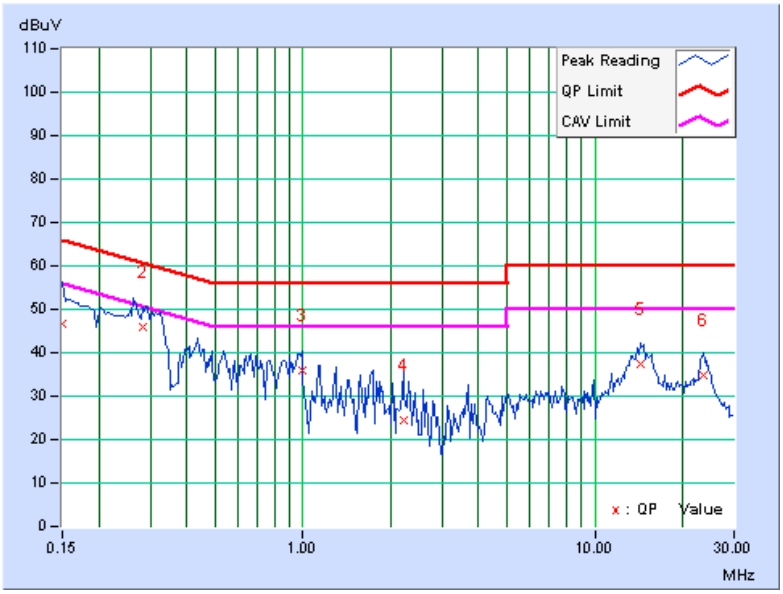
1. Turn on the power of all equipment.
2. The notebook computer ran test program “art.exe R0.9B7” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

4.1.7 TEST RESULTS

PHASE	Line (L)	6dB BANDWIDTH	9 kHz

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.36	46.25	36.10	46.61	36.46	66.00	56.00	-19.39	-19.54
2	**0.283**	**0.35**	**45.73**	**36.31**	**46.08**	**36.66**	**60.72**	**50.72**	**-14.64**	**-14.06**
3	0.994	0.36	35.49	24.21	35.85	24.57	56.00	46.00	-20.15	-21.43
4	2.207	0.46	23.82	12.47	24.28	12.93	56.00	46.00	-31.72	-33.07
5	14.367	0.87	36.51	29.64	37.38	30.51	60.00	50.00	-22.62	-19.49
6	23.637	1.09	33.65	28.10	34.74	29.19	60.00	50.00	-25.26	-20.81

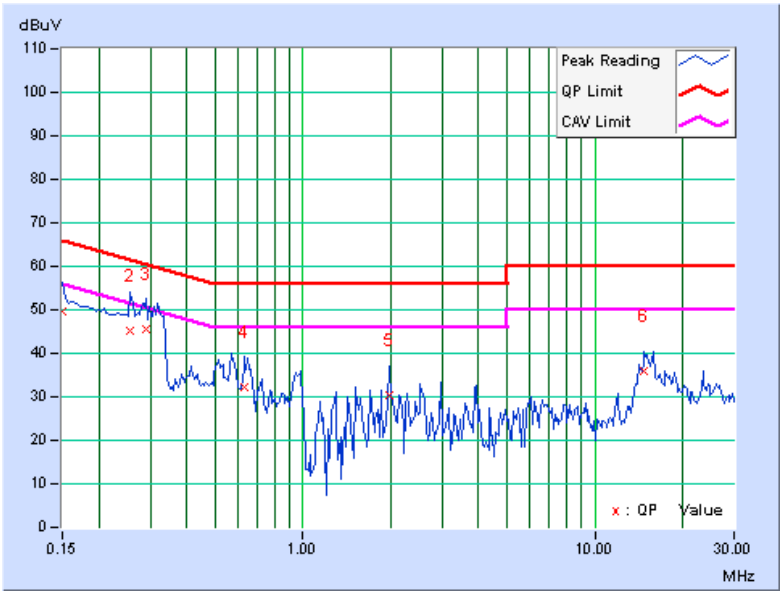
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading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



PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.09	49.72	30.70	49.81	30.79	66.00	56.00	-16.19	-25.21
2	0.255	0.09	45.23	26.83	45.32	26.92	61.58	51.58	-16.25	-24.65
3	0.291	0.09	45.51	33.95	45.60	34.04	60.51	50.51	-14.90	-16.46
4	0.634	0.10	32.27	20.43	32.37	20.53	56.00	46.00	-23.63	-25.47
5	1.973	0.19	30.03	22.22	30.22	22.41	56.00	46.00	-25.78	-23.59
6	14.672	0.81	35.20	27.67	36.01	28.48	60.00	50.00	-23.99	-21.52

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



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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.

4.2.2 TEST INSTRUMENTS

Test date: Aug. 17, 2011

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Agilent Spectrum Analyzer	E4446A	MY48250253	Aug. 23, 2010	Aug. 22, 2011
Agilent Pre-Selector	N9039A	MY46520310	Aug. 23, 2010	Aug. 22, 2011
Agilent Signal Generator	N5181A	MY49060347	July 25, 2011	July 24, 2012
LIG NEX1 Test Receiver	ER-265	L09068005	Oct. 25, 2010	Oct. 24, 2011
Mini-Circuits Pre-Amplifier	ZFL-1000VH2B	AMP-ZFL-04	Nov. 16, 2010	Nov. 15, 2011
Agilent Pre-Amplifier	8449B	3008A02465	Feb. 28, 2011	Feb. 27, 2012
Miteq Pre-Amplifier	AFS33-18002650-30-8P-44	881786	NA	NA
SCHWARZBECK Trilog Broadband Antenna	VULB 9168	9168-361	Apr. 14, 2011	Apr. 13, 2012
AISI Horn_Antenna	AIH.8018	0000220091110	Nov. 22, 2010	Nov. 21, 2011
SCHWARZBECK Horn_Antenna	BBHA 9170	9170-424	Oct. 08, 2010	Oct. 07, 2011
RF CABLE	NA	RF104-205 RF104-207 RF104-202	Dec. 28, 2010	Dec. 27, 2011
RF Cable	NA	CHHCAB_001	NA	NA
Software	ADT_Radiated_V8.7.05	NA	NA	NA
CT Antenna Tower & Turn Table	NA	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna, preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in 966 Chamber No. H.
4. The FCC Site Registration No. is 797305.
5. The CANADA Site Registration No. is IC 7450H-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 3 meters chamber test. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The height of antenna 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.

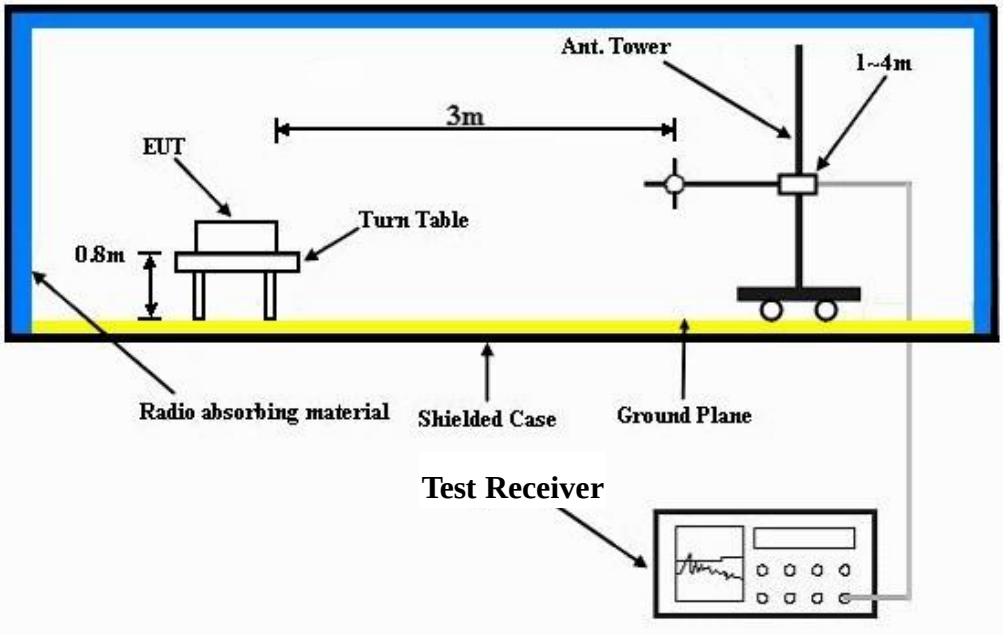
NOTE:

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

Same as 4.1.6

4.2.7 TEST RESULTS

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	26deg. C, 74%RH	TESTED BY	Rex Huang

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	133.38	39.0 QP	43.5	-4.5	1.75 H	360	25.45	13.52
2	232.27	39.8 QP	46.0	-6.2	1.00 H	4	27.41	12.39
3	368.69	37.7 QP	46.0	-8.3	1.00 H	245	21.06	16.66
4	492.09	35.6 QP	46.0	-10.4	2.00 H	233	16.22	19.36
5	630.28	35.7 QP	46.0	-10.4	1.25 H	271	13.89	21.76
6	850.43	32.2 QP	46.0	-13.8	1.00 H	360	7.03	25.15
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	33.08	35.5 QP	40.0	-4.5	1.00 V	237	22.36	13.17
2	232.50	31.8 QP	46.0	-14.2	1.00 V	229	19.43	12.40
3	368.69	33.5 QP	46.0	-12.6	1.50 V	360	16.79	16.66
4	621.64	30.4 QP	46.0	-15.6	1.00 V	265	8.66	21.71
5	725.02	28.5 QP	46.0	-17.6	2.00 V	300	5.74	22.71
6	947.78	28.5 QP	46.0	-17.5	1.00 V	281	2.15	26.34

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.

ABOVE 1GHz WORST-CASE DATA

802.11b DSSS MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 62%RH	TESTED BY	Evan Huang

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	2386.13	55.2 PK	74.0	-18.8	1.46 H	157	24.00	31.20
2	2386.13	43.3 AV	54.0	-10.7	1.46 H	157	12.10	31.20
3	*2412.00	101.1 PK			1.46 H	158	69.83	31.27
4	*2412.00	98.6 AV			1.46 H	158	67.33	31.27
5	4824.00	53.4 PK	74.0	-20.6	1.00 H	110	13.98	39.42
6	4824.00	44.6 AV	54.0	-9.4	1.00 H	110	5.18	39.42
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	2386.13	59.8 PK	74.0	-14.2	1.49 V	90	28.6	31.20
2	2386.13	51.3 AV	54.0	-2.7	1.49 V	90	20.10	31.20
3	*2412.00	108.3 PK			1.48 V	89	77.03	31.27
4	*2412.00	105.5 AV			1.48 V	89	74.23	31.27
5	4824.00	56.2 PK	74.0	-17.8	1.00 V	79	16.78	39.42
6	4824.00	53.2 AV	54.0	-0.8	1.00 V	79	13.80	39.42

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 62%RH	TESTED BY	Evan Huang

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	100.8 PK			1.72 H	192	69.46	31.34
2	*2437.00	98.5 AV			1.72 H	192	67.16	31.34
3	4874.00	52.1 PK	74.0	-21.9	1.33 H	100	12.48	39.62
4	4874.00	46.9 AV	54.0	-7.1	1.33 H	100	7.28	39.62
5	7311.00	53.6 PK	74.0	-20.4	1.37 H	243	9.50	44.10
6	7311.00	41.1 AV	54.0	-12.9	1.37 H	243	-3.00	44.10
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	2288.00	56.7 PK	74.0	-17.3	1.46 V	90	25.76	30.94
2	2288.00	44.5 AV	54.0	-9.5	1.46 V	90	13.56	30.94
3	*2437.00	106.9 PK			1.46 V	87	75.56	31.34
4	*2437.00	104.4 AV			1.46 V	87	73.06	31.34
5	2483.50	56.3 PK	74.0	-17.7	1.46 V	91	24.84	31.46
6	2483.50	44.5 AV	54.0	-9.5	1.46 V	91	13.04	31.46
7	4874.00	56.3 PK	74.0	-17.7	1.00 V	79	16.68	39.62
8	**4874.00**	**53.5 AV**	**54.0**	**-0.5**	**1.00 V**	**79**	**13.88**	**39.62**
9	7311.00	53.7 PK	74.0	-20.3	1.18 V	102	9.60	44.10
10	7311.00	41.9 AV	54.0	-12.1	1.18 V	102	-2.20	44.10

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 62%RH	TESTED BY	Evan Huang

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	100.6 PK			1.41 H	141	69.20	31.40
2	*2462.00	97.8 AV			1.41 H	141	66.40	31.40
3	2487.73	56.9 PK	74.0	-17.1	1.42 H	143	25.43	31.47
4	2487.73	43.6 AV	54.0	-10.4	1.42 H	143	12.13	31.47
5	4924.00	50.6 PK	74.0	-23.4	1.00 H	254	10.78	39.82
6	4924.00	45.1 AV	54.0	-8.9	1.00 H	254	5.28	39.82
7	7386.00	53.3 PK	74.0	-20.7	1.25 H	165	9.12	44.18
8	7386.00	41.8 AV	54.0	-12.2	1.25 H	165	-2.38	44.18
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	105.8 PK			1.44 V	93	74.40	31.40
2	*2462.00	103.1 AV			1.44 V	93	71.70	31.40
3	2487.79	56.0 PK	74.0	-18.0	1.43 V	94	24.53	31.47
4	2487.79	44.1 AV	54.0	-9.9	1.43 V	94	12.63	31.47
5	4924.00	56.1 PK	74.0	-17.9	1.00 V	79	16.28	39.82
6	4924.00	53.4 AV	54.0	-0.6	1.00 V	79	13.58	39.82
7	7386.00	54.2 PK	74.0	-19.8	1.18 V	100	10.02	44.18
8	7386.00	41.9 AV	54.0	-12.1	1.18 V	100	-2.28	44.18

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

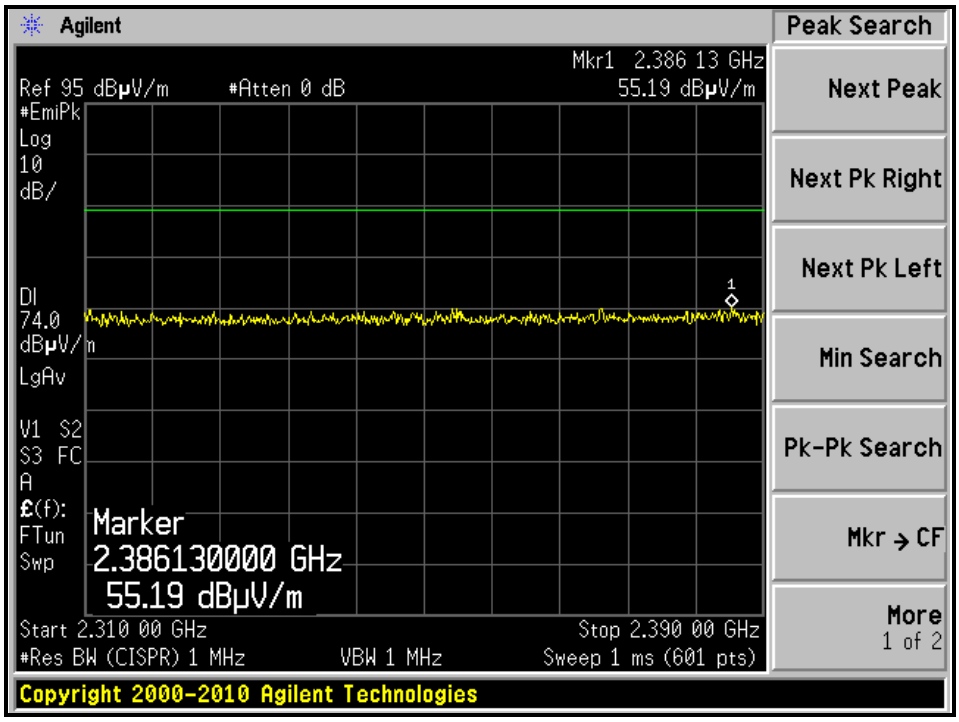
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

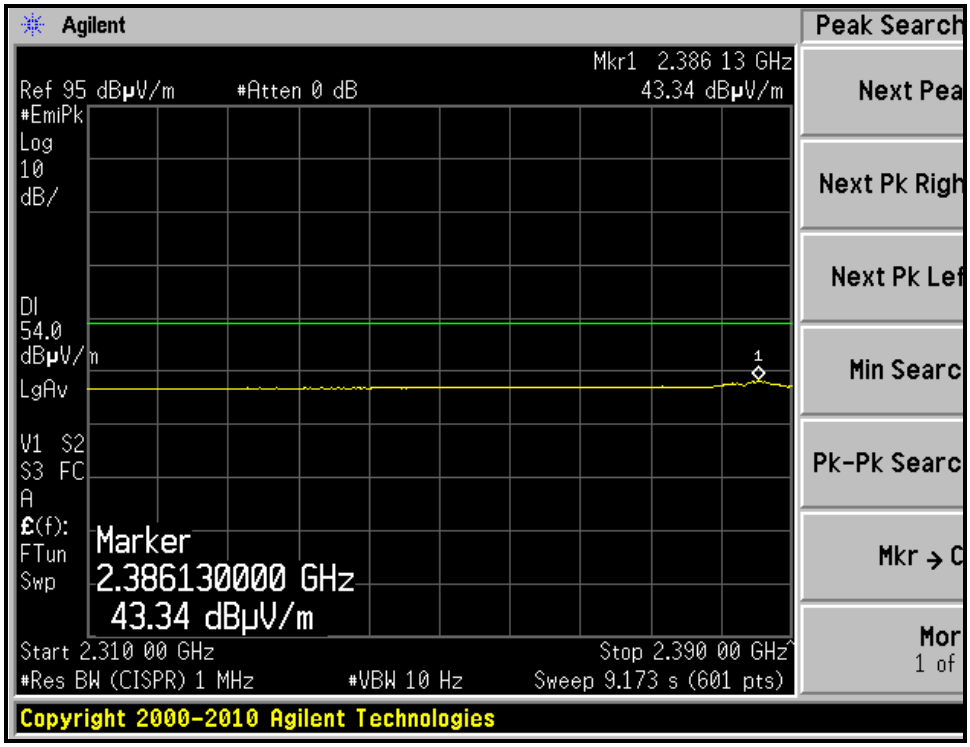
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

RESTRICTED BANDEDGE (802.11b MODE,CH1, HORIZONTAL)





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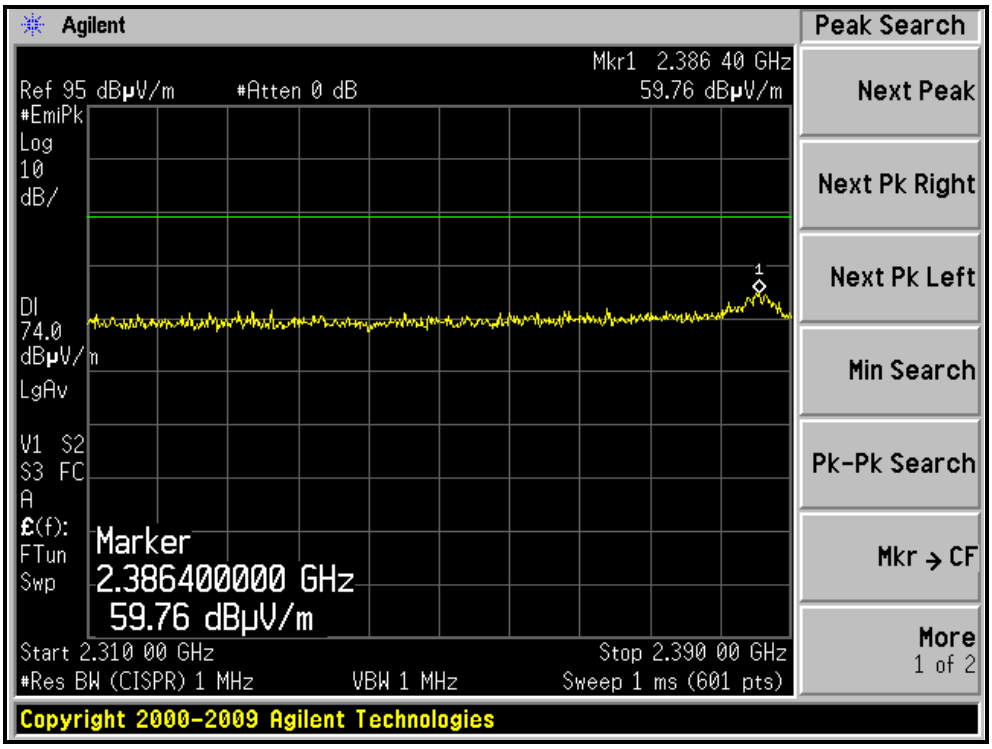

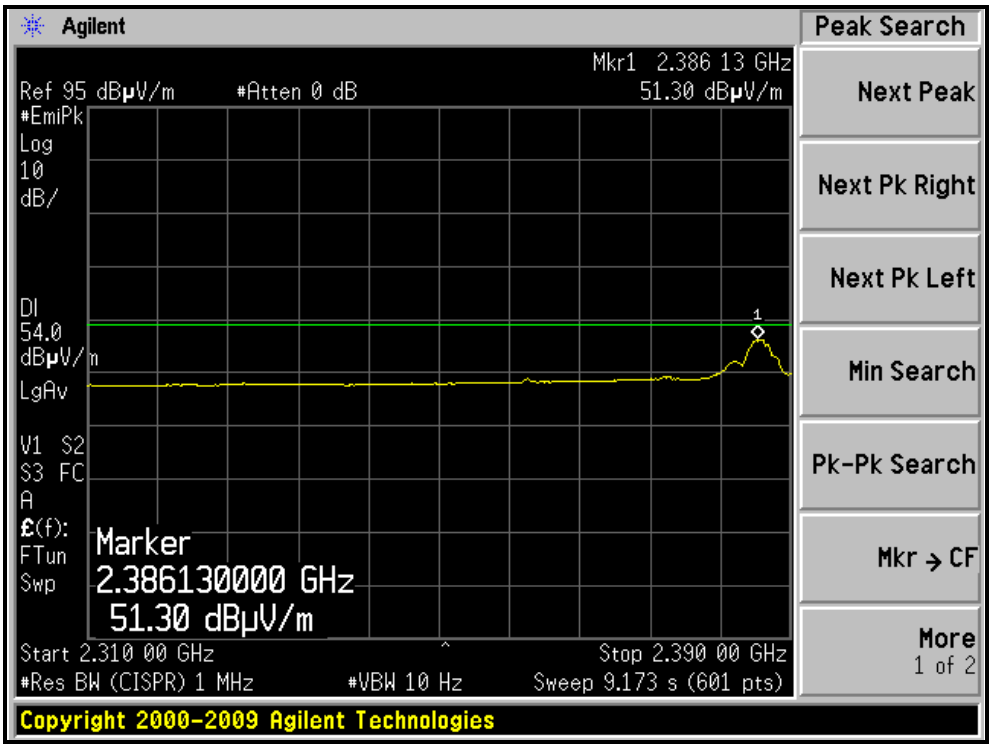

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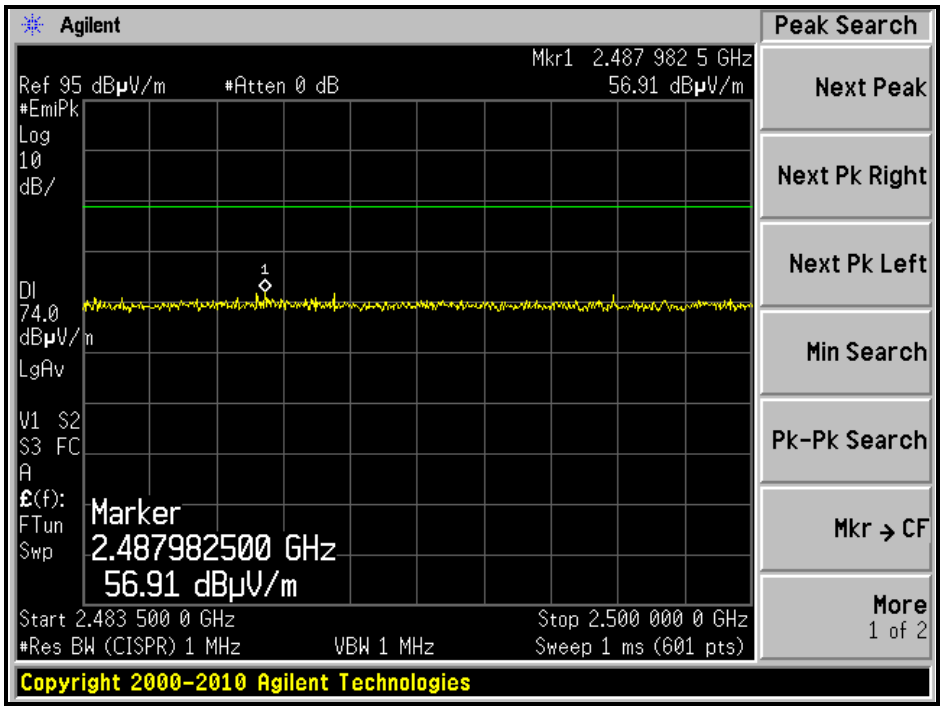
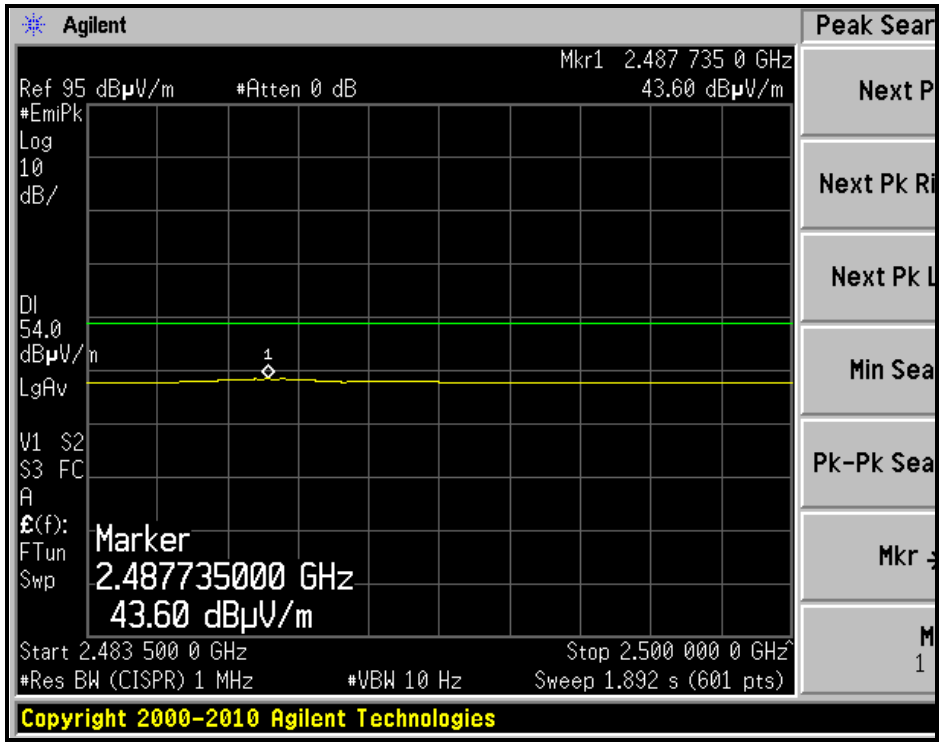
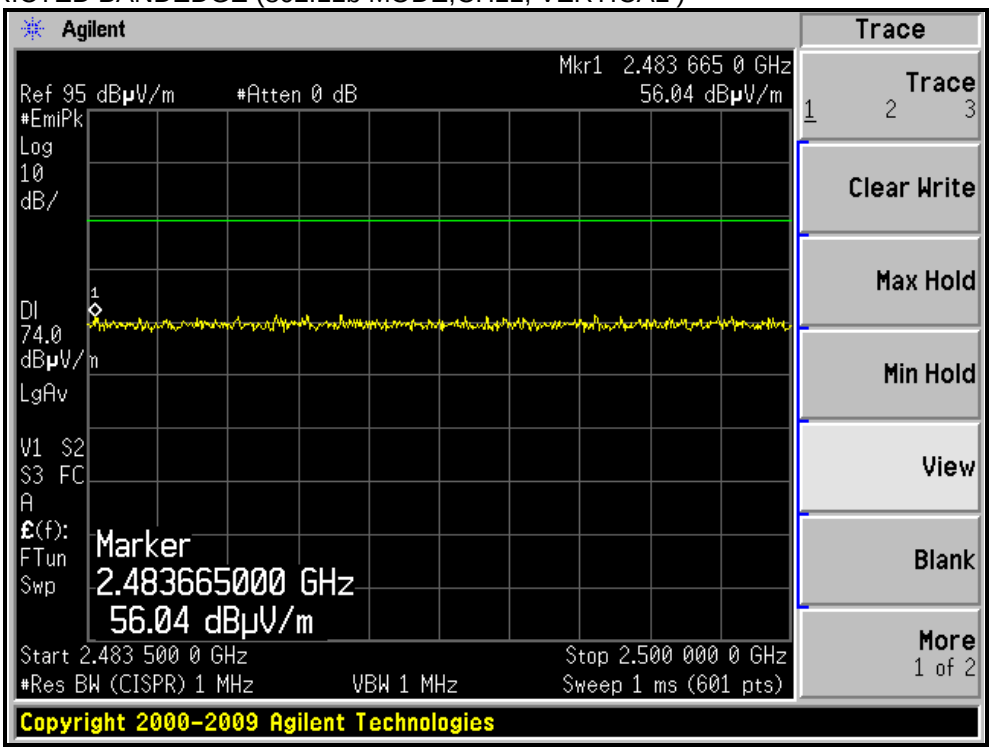
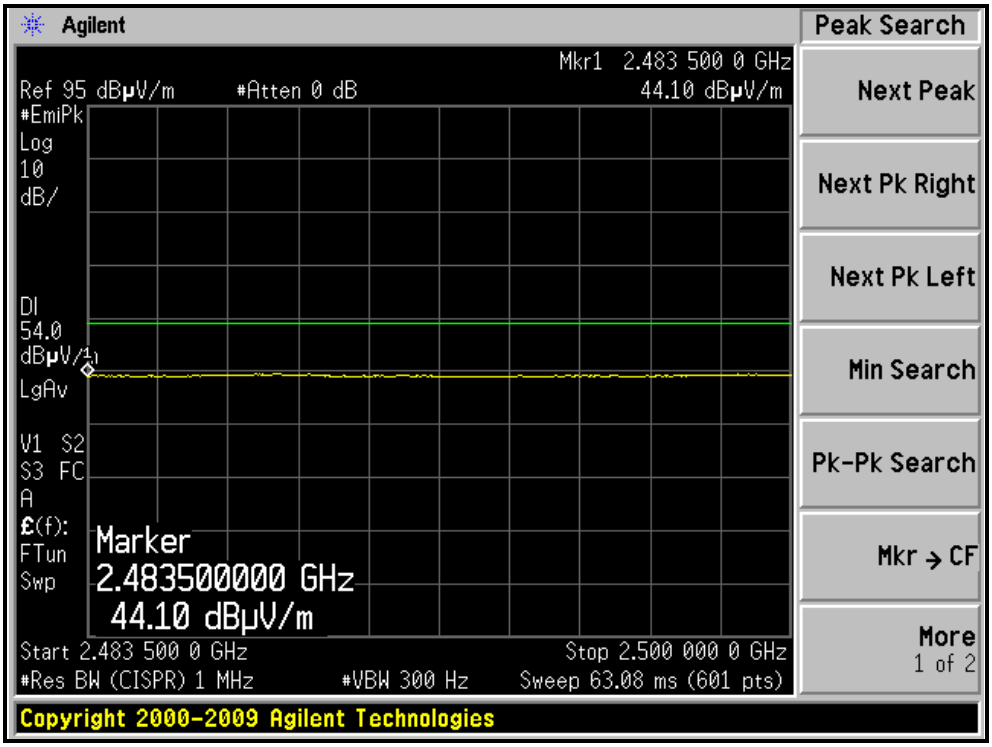




RESTRICTED BANDEDGE (802.11b MODE,CH11, VERTICAL)





802.11g OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 62%RH	TESTED BY	Evan Huang

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	59.9 PK	74.0	-14.1	1.45 H	159	28.69	31.21
2	2390.00	45.5 AV	54.0	-8.5	1.45 H	159	14.29	31.21
3	*2412.00	104.1 PK			1.45 H	155	72.83	31.27
4	*2412.00	95.1 AV			1.45 H	155	63.83	31.27
5	4824.00	51.3 PK	74.0	-22.7	1.00 H	111	11.88	39.42
6	4824.00	38.1 AV	54.0	-15.9	1.00 H	111	-1.32	39.42
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	1.00 V	94	36.49	31.21
2	2390.00	52.9 AV	54.0	-1.1	1.00 V	94	21.69	31.21
3	*2412.00	112.2 PK			1.00 V	98	80.93	31.27
4	*2412.00	102.3 AV			1.00 V	98	71.03	31.27
5	4824.00	49.2 PK	74.0	-24.8	1.43 V	48	9.78	39.42
6	4824.00	37.9 AV	54.0	-16.1	1.43 V	48	-1.52	39.42

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 62%RH	TESTED BY	Evan Huang

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	110.8 PK			1.72 H	193	79.46	31.34
2	*2437.00	101.6 AV			1.72 H	193	70.26	31.34
3	4874.00	53.8 PK	74.0	-20.2	1.00 H	130	14.18	39.62
4	4874.00	41.3 AV	54.0	-12.7	1.00 H	130	1.68	39.62
5	7311.00	53.7 PK	74.0	-20.3	1.32 H	243	9.60	44.10
6	7311.00	41.4 AV	54.0	-12.6	1.32 H	243	-2.70	44.10
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	2288.00	71.6 PK	74.0	-2.4	1.00 V	91	40.62	30.94
2	2288.00	52.2 AV	54.0	-1.8	1.00 V	91	21.30	30.94
3	*2437.00	118.1 PK			1.00 V	94	86.80	31.34
4	*2437.00	106.7 AV			1.00 V	94	75.36	31.34
5	2483.50	72.1 PK	74.0	-1.9	1.00 V	94	40.64	31.46
6	2483.50	52.7 AV	54.0	-1.3	1.00 V	94	21.24	31.46
7	4874.00	55.9 PK	74.0	-18.1	1.28 V	272	16.28	39.62
8	4874.00	45.1 AV	54.0	-8.9	1.28 V	272	5.48	39.62
9	7311.00	57.1 PK	74.0	-16.9	1.61 V	199	13.00	44.10
10	7311.00	46.9 AV	54.0	-7.1	1.61 V	199	2.80	44.10

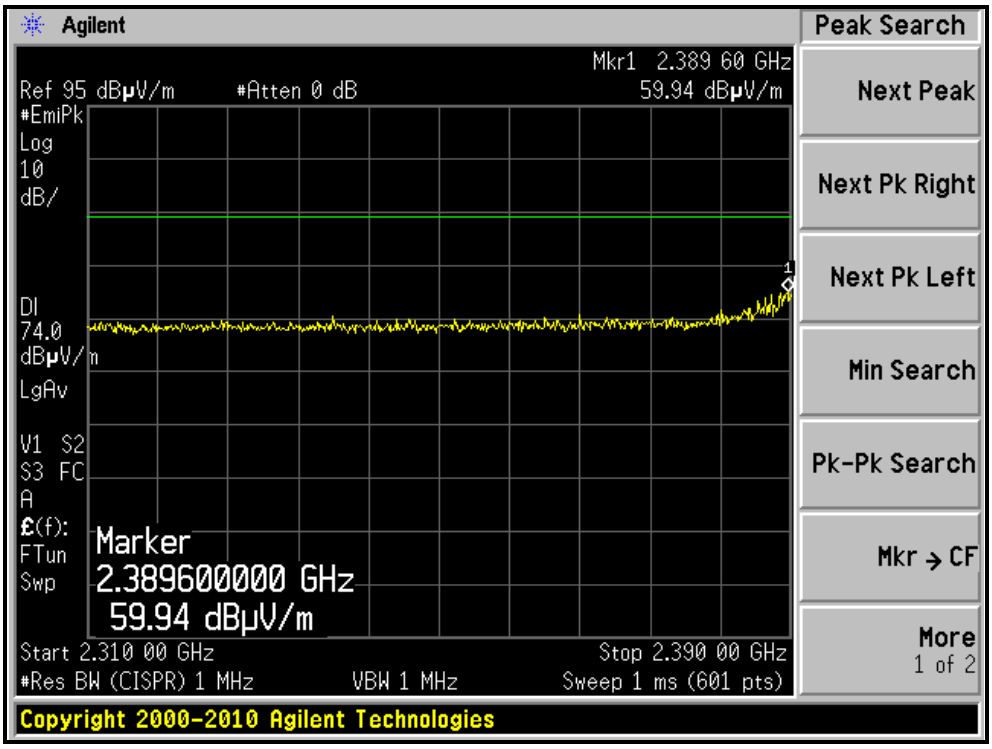
REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

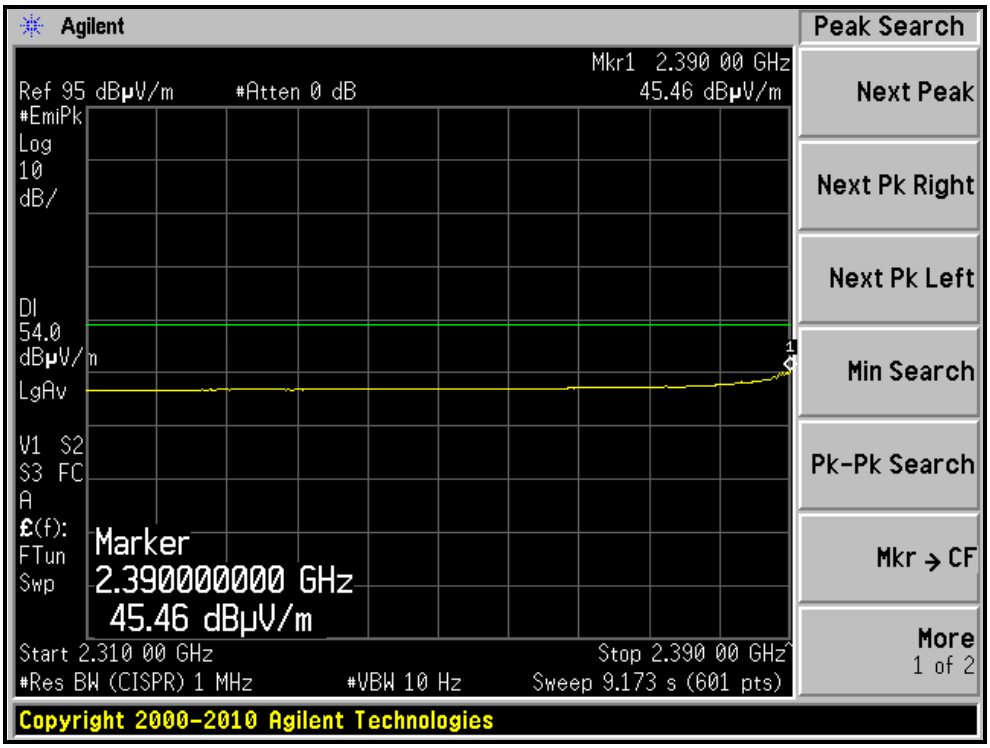
EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 62%RH	TESTED BY	Evan Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	106.4 PK			1.44 H	141	75.00	31.40
2	*2462.00	96.1 AV			1.44 H	141	64.70	31.40
3	2483.50	68.9 PK	74.0	-5.1	1.44 H	142	37.44	31.46
4	2483.50	48.2 AV	54.0	-5.8	1.44 H	142	16.74	31.46
5	4924.00	51.1 PK	74.0	-22.9	1.00 H	109	11.28	39.82
6	4924.00	39.1 AV	54.0	-14.9	1.00 H	109	-0.72	39.82
7	7386.00	53.4 PK	74.0	-20.6	1.26 H	244	9.22	44.18
8	7386.00	41.3 AV	54.0	-12.7	1.26 H	244	-2.88	44.18
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	111.7 PK			1.00 V	95	80.30	31.40
2	*2462.00	99.9 AV			1.00 V	95	68.50	31.40
3	**2483.50**	**73.5 PK**	**74.0**	**-0.5**	**1.00 V**	**95**	**42.02**	**31.46**
4	2483.50	49.4 AV	54.0	-4.6	1.00 V	95	17.94	31.46
5	4924.00	53.5 PK	74.0	-20.5	1.27 V	274	13.68	39.82
6	4924.00	42.6 AV	54.0	-11.4	1.27 V	274	2.78	39.82
7	7386.00	55.6 PK	74.0	-18.4	1.26 V	214	11.42	44.18
8	7386.00	43.5 AV	54.0	-10.6	1.26 V	214	-0.73	44.18

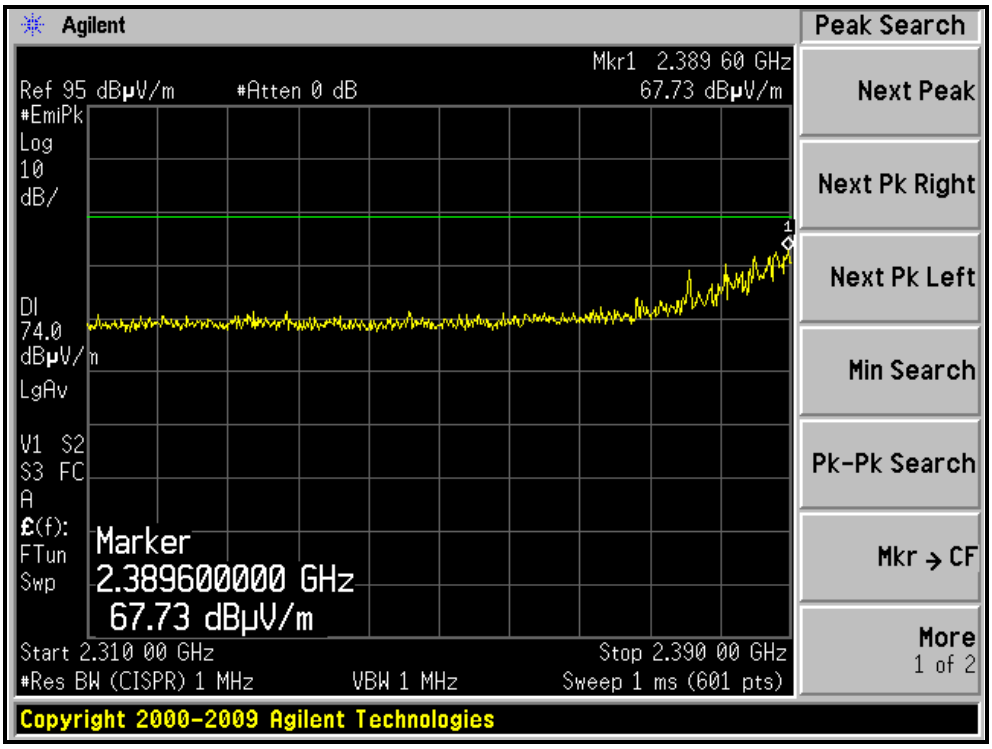
REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

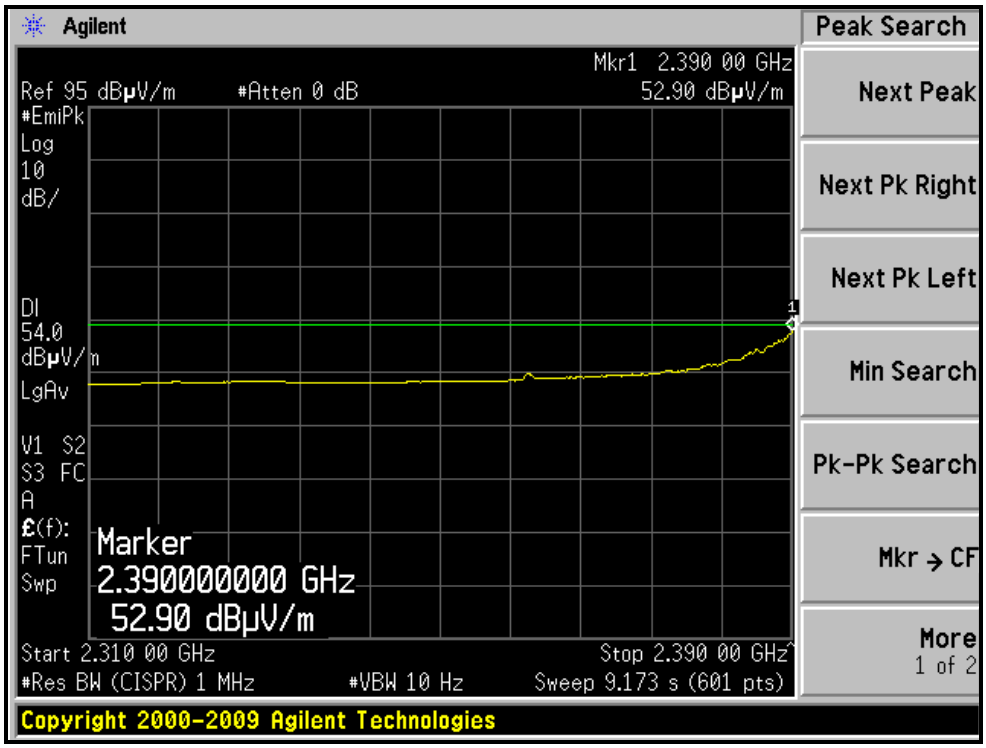
RESTRICTED BANDEDGE (802.11g MODE,CH1, HORIZONTAL)



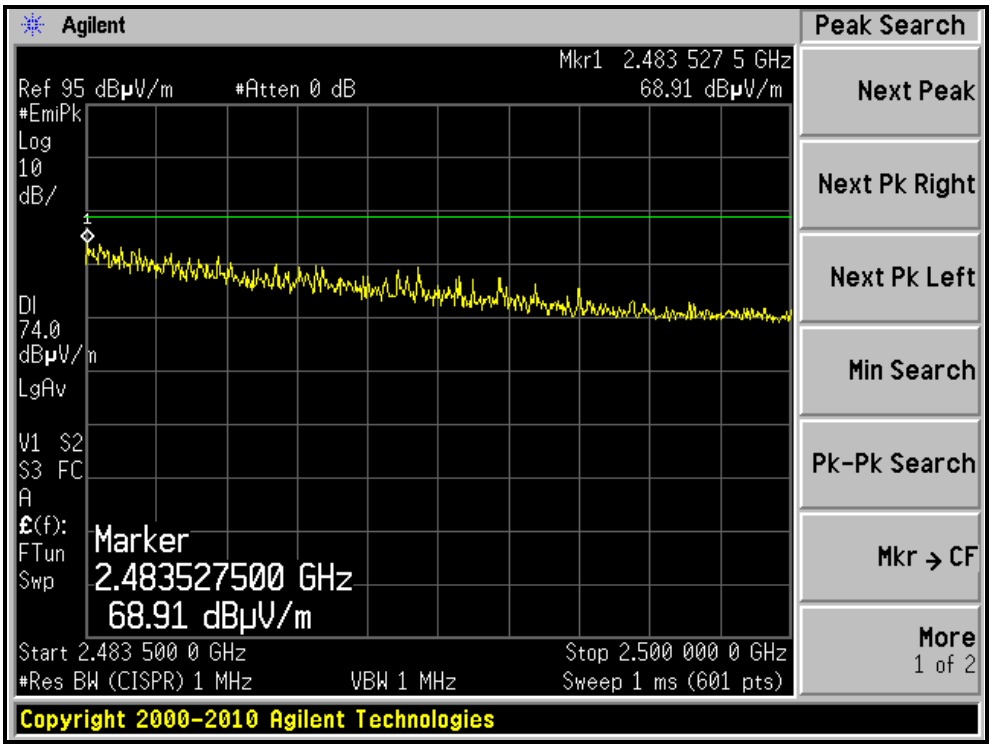


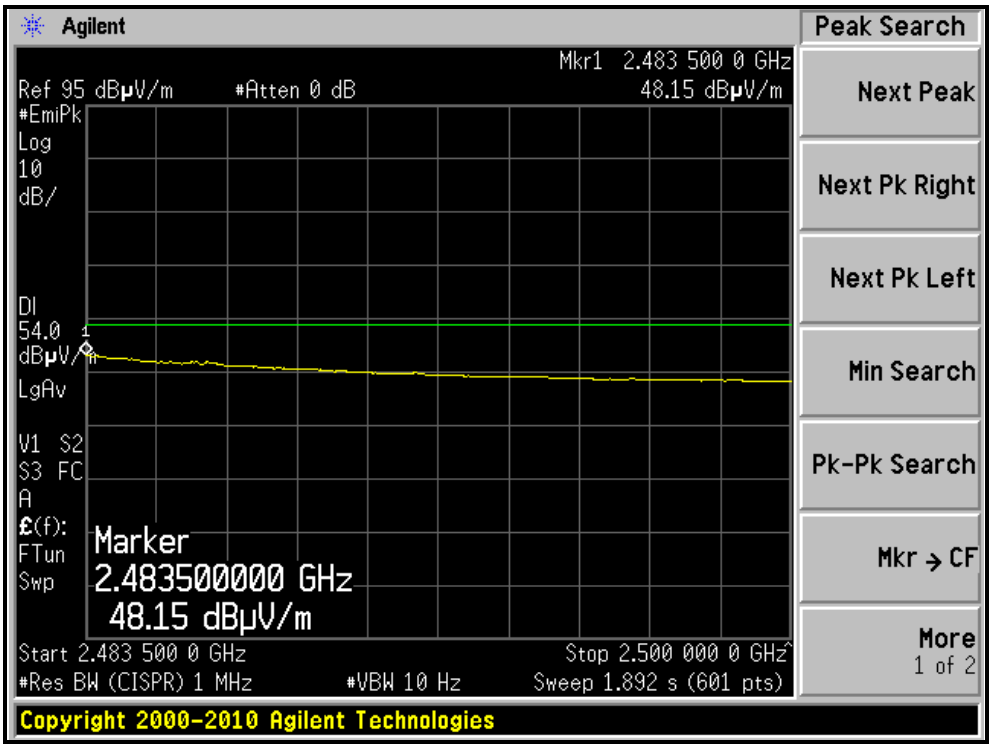
RESTRICTED BANDEDGE (802.11g MODE,CH1, VERTICAL)



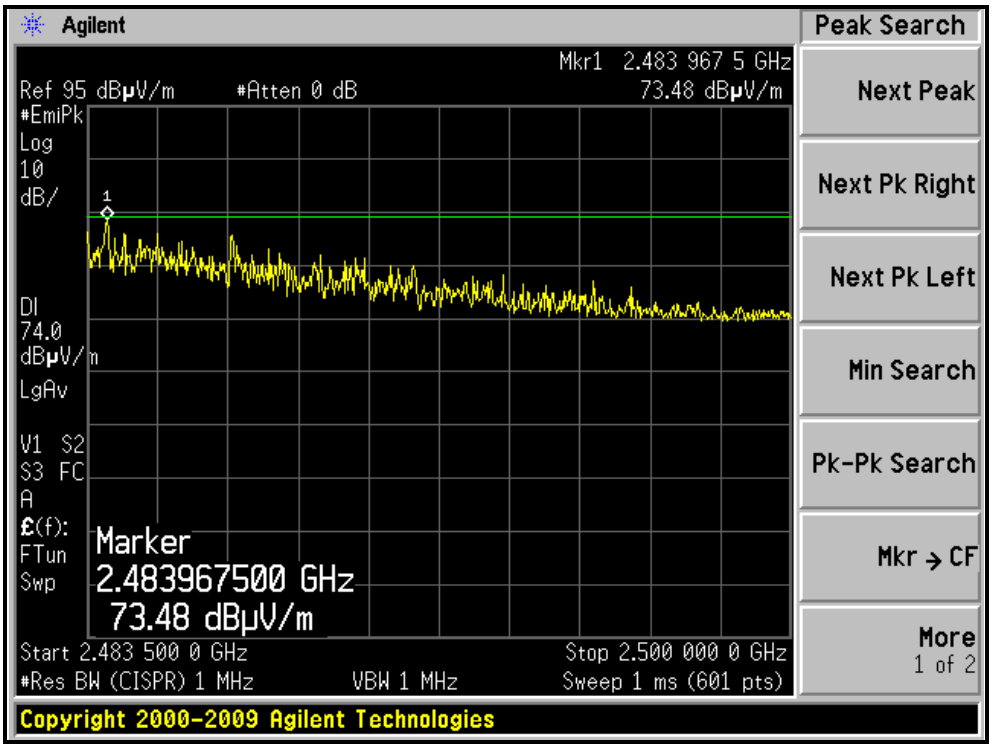


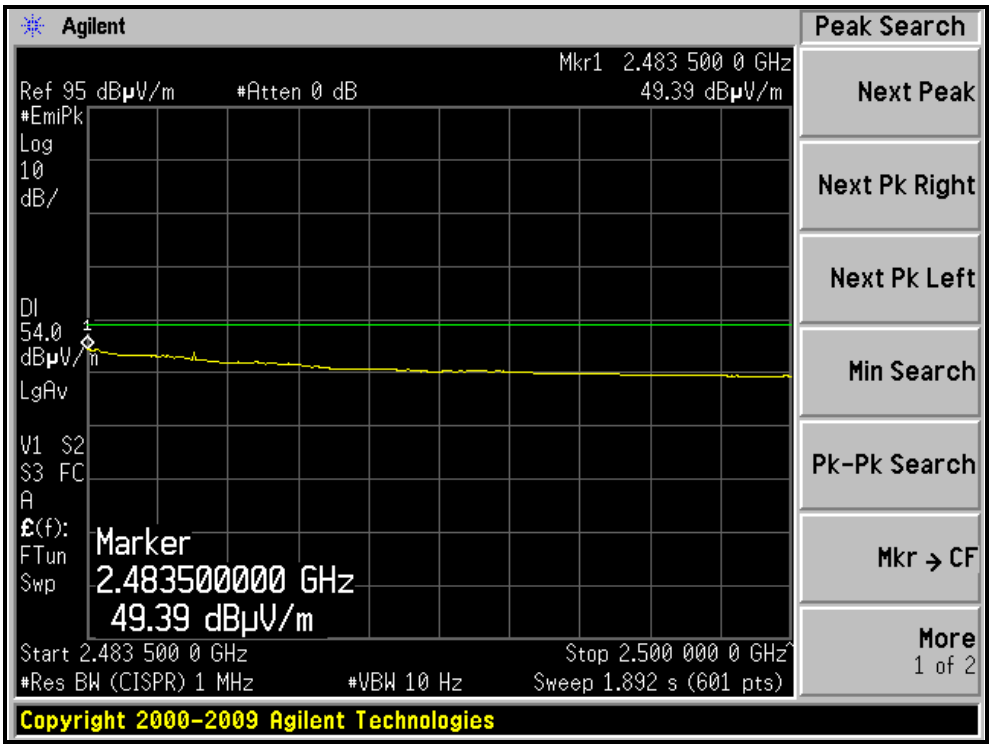
RESTRICTED BANDEDGE (802.11g MODE,CH11, HORIZONTAL)





RESTRICTED BANDEDGE (802.11g MODE,CH11, VERTICAL)





802.11n (20MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 62%RH	TESTED BY	Evan Huang

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	67.1 PK	74.0	-6.9	1.46 H	131	35.89	31.21
2	2390.00	48.4 AV	54.0	-5.6	1.46 H	131	17.19	31.21
3	*2412.00	106.3 PK			1.46 H	158	75.03	31.27
4	*2412.00	95.9 AV			1.46 H	158	64.63	31.27
5	4824.00	51.1 PK	74.0	-22.9	1.00 H	113	11.68	39.42
6	4824.00	38.8 AV	54.0	-15.2	1.00 H	113	-0.62	39.42
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	71.0 PK	74.0	-3.0	1.00 V	88	39.79	31.21
2	2390.00	53.1 AV	54.0	-0.9	1.00 V	88	21.89	31.21
3	*2412.00	112.1 PK			1.00 V	97	80.83	31.27
4	*2412.00	101.2 AV			1.00 V	97	69.93	31.27
5	4824.00	54.2 PK	74.0	-19.8	1.00 V	80	14.78	39.42
6	4824.00	43.4 AV	54.0	-10.6	1.00 V	80	3.98	39.42

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 62%RH	TESTED BY	Evan Huang

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	111.0 PK			1.70 H	190	79.66	31.34
2	*2437.00	101.2 AV			1.70 H	190	69.86	31.34
3	4874.00	54.2 PK	74.0	-19.8	1.00 H	131	14.58	39.62
4	4874.00	41.5 AV	54.0	-12.5	1.00 H	131	1.88	39.62
5	7311.00	53.3 PK	74.0	-20.7	1.31 H	241	9.20	44.10
6	7311.00	41.1 AV	54.0	-12.9	1.31 H	241	-3.00	44.10
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	**2288.00**	**73.5 PK**	**74.0**	**-0.5**	**1.00 V**	**94**	**42.56**	**30.94**
2	2288.00	53.0 AV	54.0	-1.0	1.00 V	94	22.06	30.94
3	*2437.00	117.1 PK			1.00 V	97	85.76	31.34
4	*2437.00	106.3 AV			1.00 V	97	74.96	31.34
5	2483.50	72.9 PK	74.0	-1.1	1.00 V	81	41.44	31.46
6	2483.50	52.9 AV	54.0	-1.1	1.00 V	81	21.44	31.46
7	4874.00	57.7 PK	74.0	-16.3	1.14 V	280	18.08	39.62
8	4874.00	46.6 AV	54.0	-7.4	1.14 V	280	6.96	39.62
9	7311.00	57.1 PK	74.0	-16.9	1.00 V	92	13.00	44.10
10	7311.00	45.6 AV	54.0	-8.4	1.00 V	92	1.50	44.10

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 62%RH	TESTED BY	Evan Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	106.3 PK			1.43 H	140	74.90	31.40
2	*2462.00	96.6 AV			1.43 H	140	65.20	31.40
3	2483.50	72.4 PK	74.0	-1.6	1.43 H	140	40.94	31.46
4	2483.50	51.1 AV	54.0	-2.9	1.43 H	140	19.64	31.46
5	4924.00	50.0 PK	74.0	-24.0	1.00 H	114	10.18	39.82
6	4924.00	36.9 AV	54.0	-17.1	1.00 H	114	-2.92	39.82
7	7386.00	53.4 PK	74.0	-20.6	1.33 H	250	9.22	44.18
8	7386.00	41.3 AV	54.0	-12.7	1.33 H	250	-2.88	44.18
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			1.00 V	97	79.30	31.40
2	*2462.00	99.8 AV			1.00 V	97	68.40	31.40
3	2483.50	73.1 PK	74.0	-0.9	1.00 V	96	41.64	31.46
4	2483.50	52.4 AV	54.0	-1.6	1.00 V	96	20.94	31.46
5	4924.00	48.2 PK	74.0	-25.8	1.21 V	210	8.38	39.82
6	4924.00	37.2 AV	54.0	-16.8	1.21 V	210	-2.62	39.82
7	7386.00	55.7 PK	74.0	-18.3	1.24 V	242	11.52	44.18
8	7386.00	43.5 AV	54.0	-10.5	1.24 V	242	-0.68	44.18

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

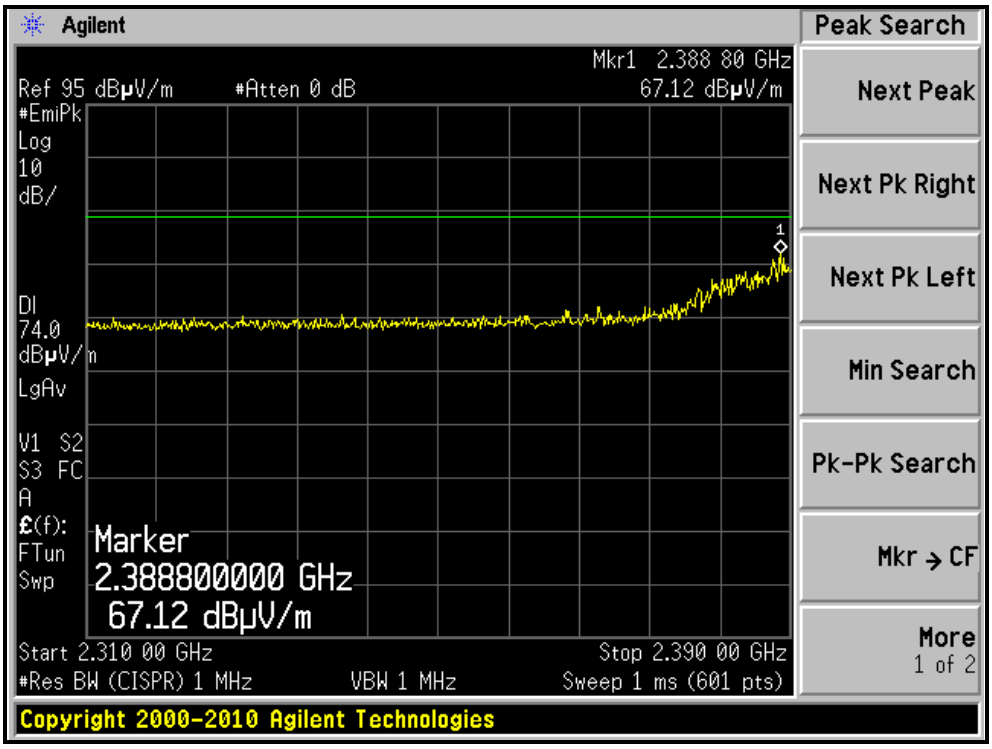
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

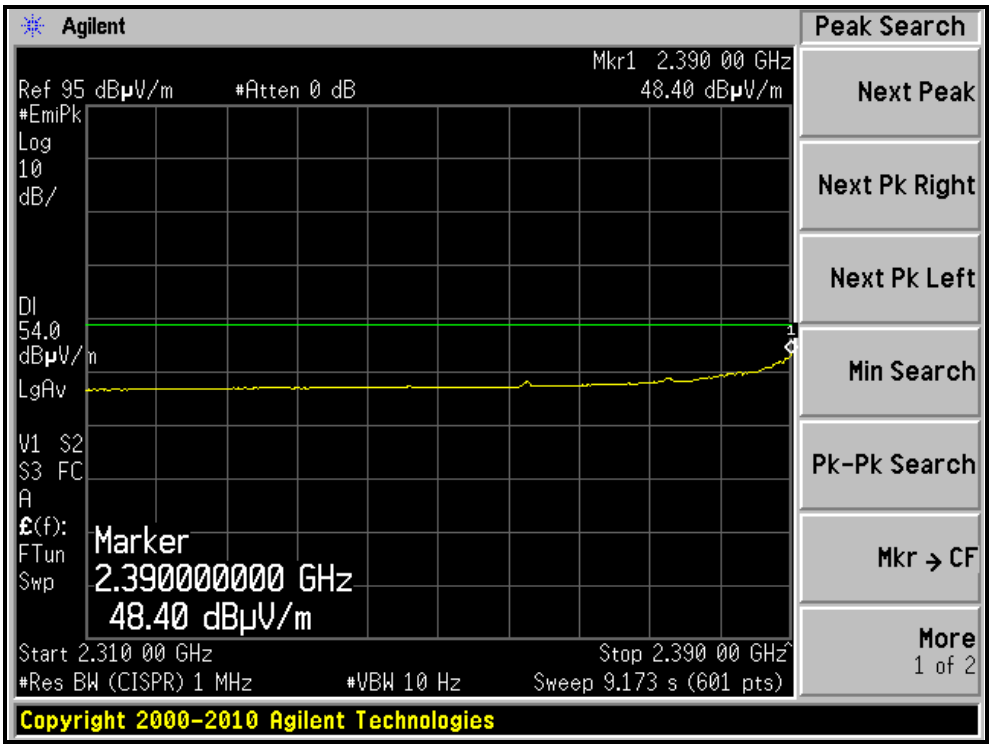
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

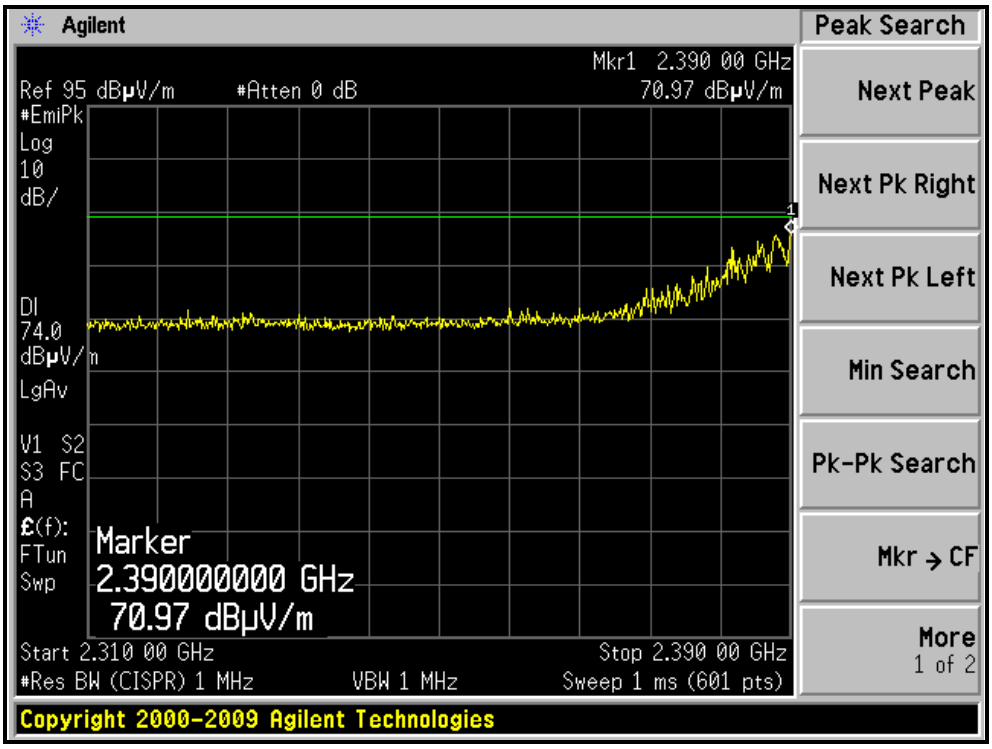
5. " * ": Fundamental frequency.

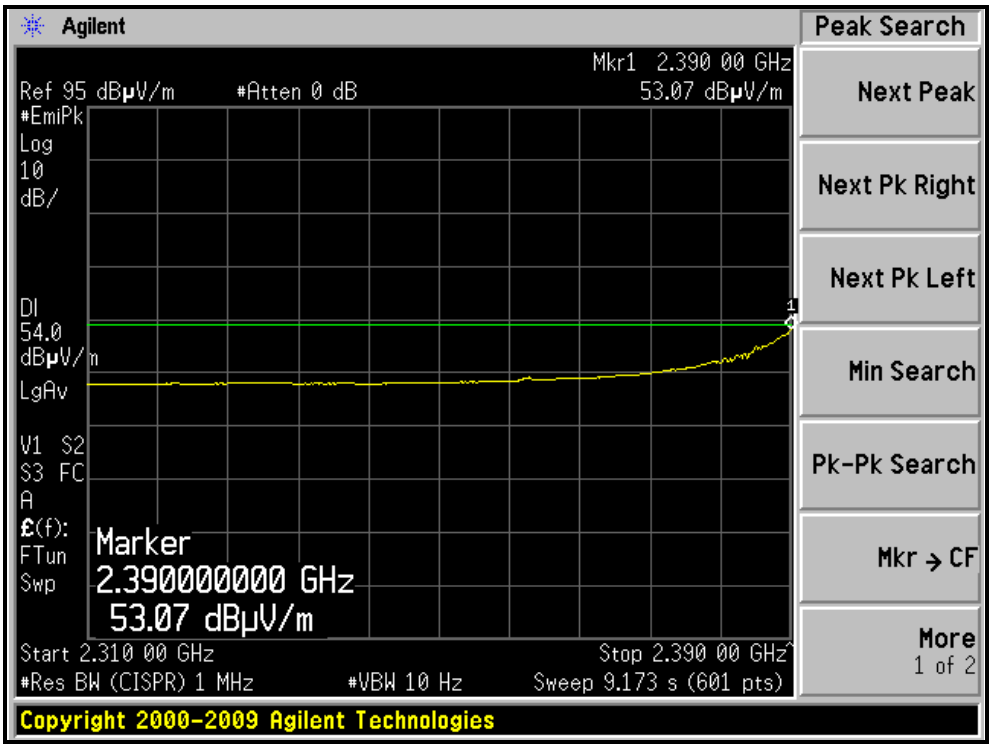
RESTRICTED BANDEDGE (802.11n (20MHz) MODE,CH1, HORIZONTAL)





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





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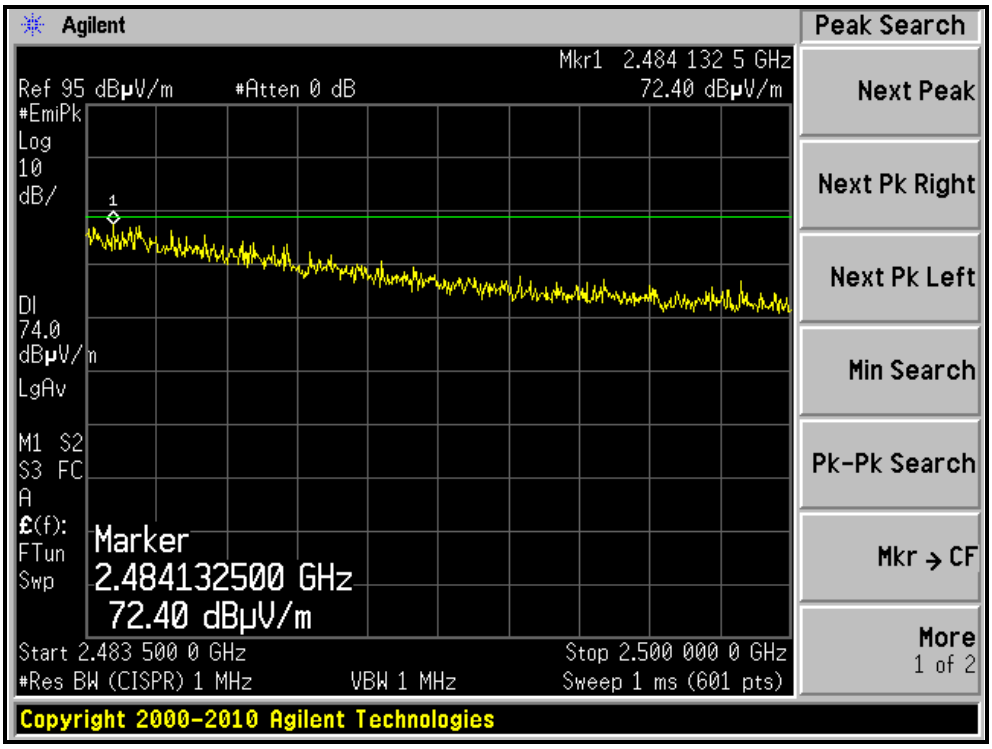
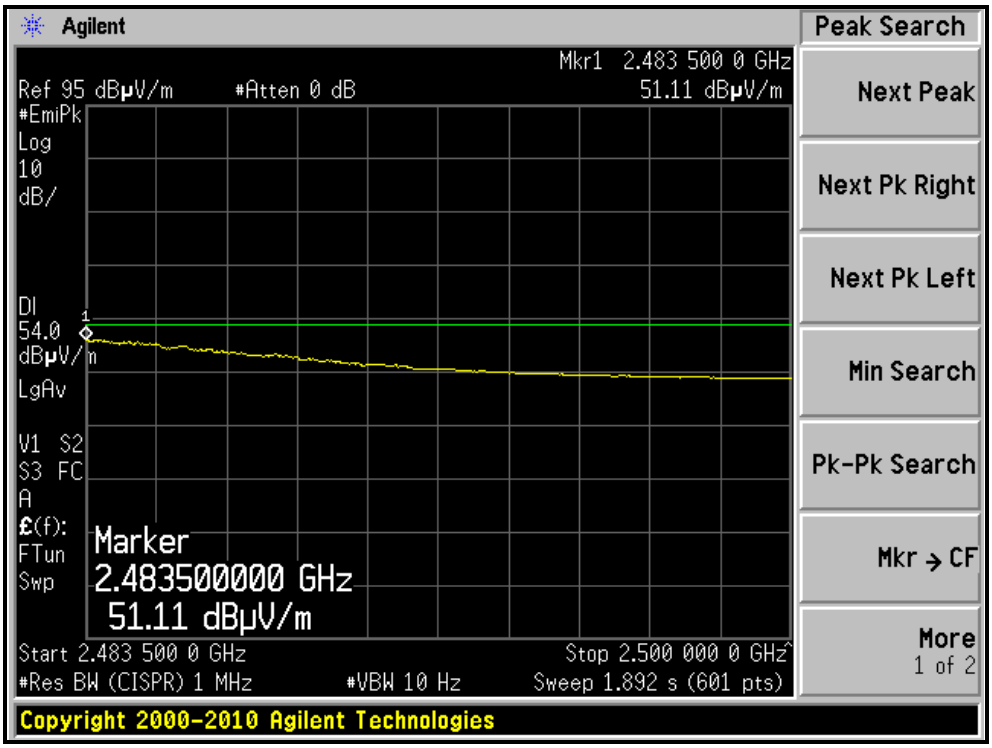
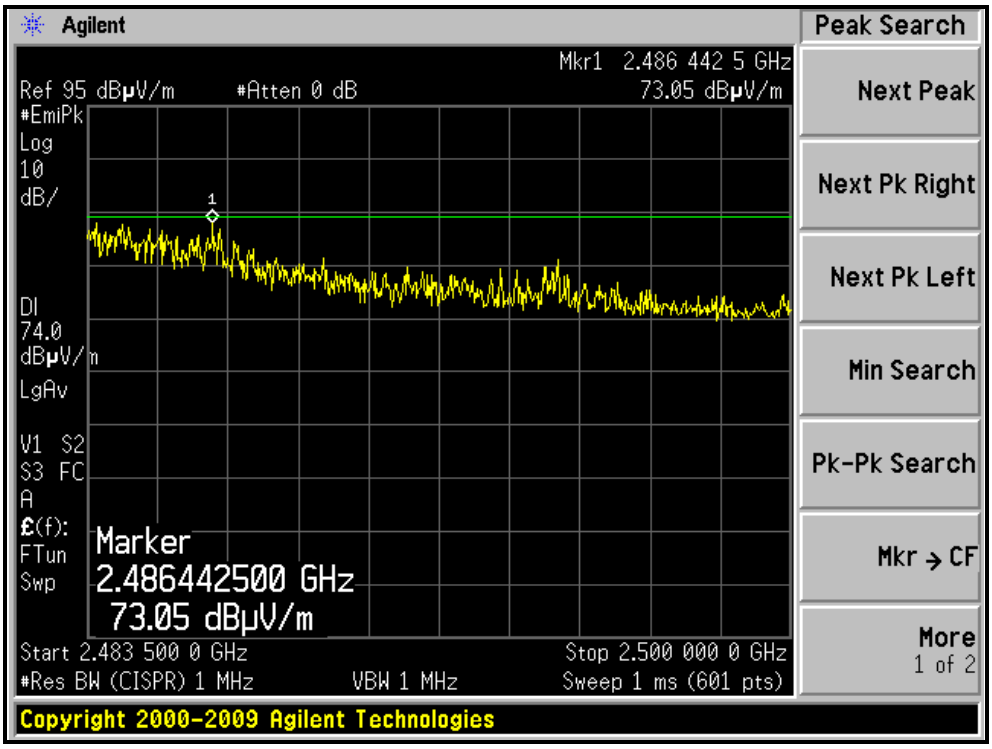
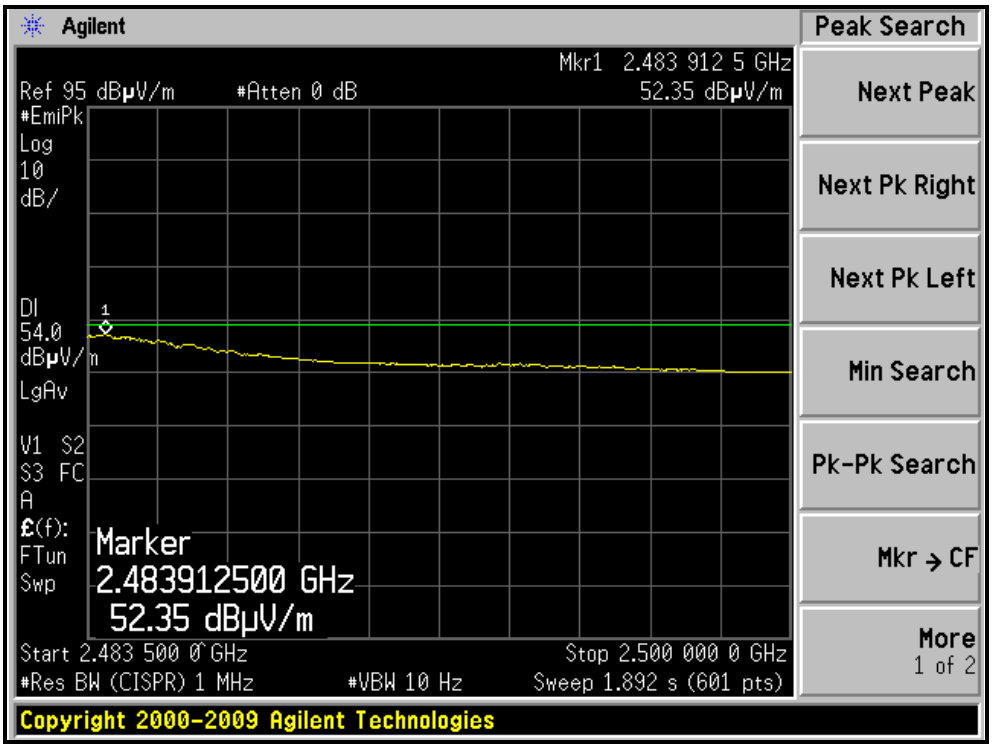




RESTRICTED BANDEDGE (802.11n (20MHz) MODE,CH11, VERTICAL)





802.11n (40MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 3	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 62%RH	TESTED BY	Evan Huang

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	2388.90	61.5 PK	74.0	-12.5	1.47 H	157	30.29	31.21
2	2388.90	42.8 AV	54.0	-11.2	1.47 H	157	11.59	31.21
3	*2422.00	97.9 PK			1.47 H	158	66.60	31.30
4	*2422.00	86.7 AV			1.47 H	158	55.40	31.30
5	4844.00	49.4 PK	74.0	-24.6	1.00 H	109	9.90	39.50
6	4844.00	37.3 AV	54.0	-16.7	1.00 H	109	-2.20	39.50
7	7266.00	53.7 PK	74.0	-20.3	1.27 H	243	9.64	44.06
8	7266.00	41.1 AV	54.0	-12.9	1.27 H	243	-2.96	44.06
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	2389.73	67.4 PK	74.0	-6.6	1.00 V	87	36.19	31.21
2	2389.73	53.0 AV	54.0	-1.0	1.00 V	87	21.79	31.21
3	*2422.00	103.7 PK			1.00 V	98	72.40	31.30
4	*2422.00	92.9 AV			1.00 V	98	61.60	31.30
5	4844.00	50.2 PK	74.0	-23.8	1.00 V	78	10.70	39.50
6	4844.00	38.3 AV	54.0	-15.7	1.00 V	78	-1.20	39.50
7	7266.00	55.7 PK	74.0	-18.3	1.00 V	90	11.64	44.06
8	7266.00	43.2 AV	54.0	-10.8	1.00 V	90	-0.86	44.06

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 62%RH	TESTED BY	Evan Huang

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	103.1 PK			1.77 H	197	71.76	31.34
2	*2437.00	92.1 AV			1.77 H	197	60.76	31.34
3	4874.00	52.2 PK	74.0	-21.8	1.00 H	133	12.58	39.62
4	4874.00	39.9 AV	54.0	-14.1	1.00 H	133	0.28	39.62
5	7311.00	53.5 PK	74.0	-20.5	1.30 H	248	9.40	44.10
6	7311.00	41.0 AV	54.0	-13.0	1.30 H	248	-3.10	44.10
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	2288.00	71.8 PK	74.0	-2.2	1.00 V	85	40.86	30.94
2	2288.00	52.9 AV	54.0	-1.1	1.00 V	85	21.96	30.94
3	*2437.00	109.6 PK			1.45 V	94	78.26	31.34
4	*2437.00	98.2 AV			1.45 V	94	66.88	31.34
5	2483.50	73.2 PK	74.0	-0.8	1.00 V	79	41.74	31.46
6	2483.50	53.3 AV	54.0	-0.7	1.00 V	79	21.84	31.46
7	4874.00	56.8 PK	74.0	-17.2	1.00 V	80	17.18	39.62
8	4874.00	43.1 AV	54.0	-10.9	1.00 V	80	3.48	39.62
9	7311.00	55.1 PK	74.0	-18.9	1.00 V	84	11.00	44.10
10	7311.00	43.6 AV	54.0	-10.4	1.00 V	84	-0.50	44.10

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 9	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 62%RH	TESTED BY	Evan Huang

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	99.5 PK			1.66 H	247	68.12	31.38
2	*2452.00	87.5 AV			1.66 H	247	56.12	31.38
3	2483.50	66.5 PK	74.0	-7.5	1.66 H	248	35.04	31.46
4	2483.50	46.2 AV	54.0	-7.8	1.66 H	248	14.74	31.46
5	4904.00	49.3 PK	74.0	-24.7	1.00 H	128	9.56	39.74
6	4904.00	36.9 AV	54.0	-17.1	1.00 H	128	-2.84	39.74
7	7356.00	53.1 PK	74.0	-20.9	1.28 H	237	8.95	44.15
8	7356.00	41.4 AV	54.0	-12.6	1.28 H	237	-2.75	44.15
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	105.1 PK			1.44 V	67	73.72	31.38
2	*2452.00	93.5 AV			1.44 V	67	62.12	31.38
3	2484.50	72.1 PK	74.0	-1.9	1.42 V	92	40.64	31.46
4	2484.50	50.5 AV	54.0	-3.5	1.42 V	92	19.04	31.46
5	4904.00	51.3 PK	74.0	-22.7	1.00 V	79	11.56	39.74
6	4904.00	35.5 AV	54.0	-18.5	1.00 V	79	-4.24	39.74
7	7356.00	55.2 PK	74.0	-18.8	1.00 V	81	11.05	44.15
8	7356.00	43.3 AV	54.0	-10.7	1.00 V	81	-0.85	44.15

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

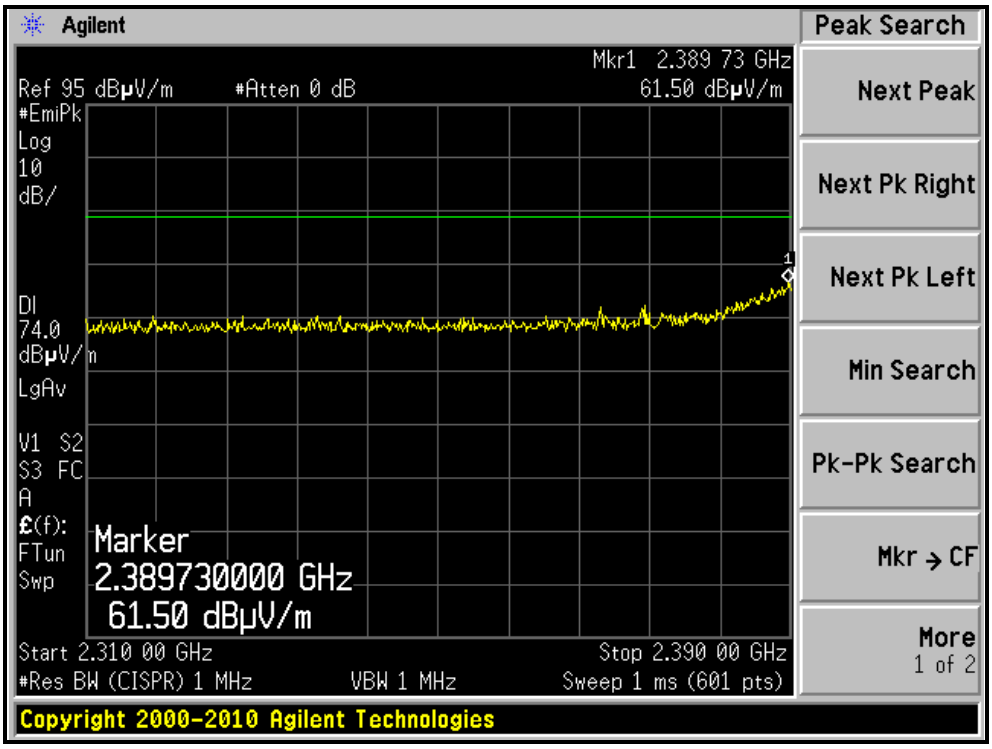
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

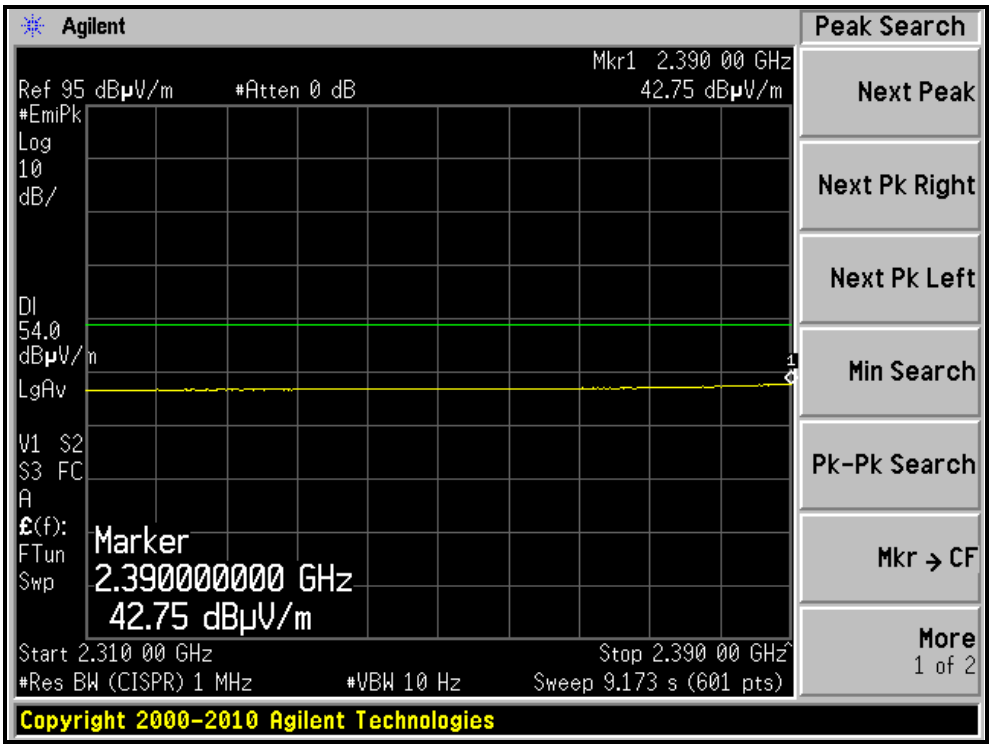
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

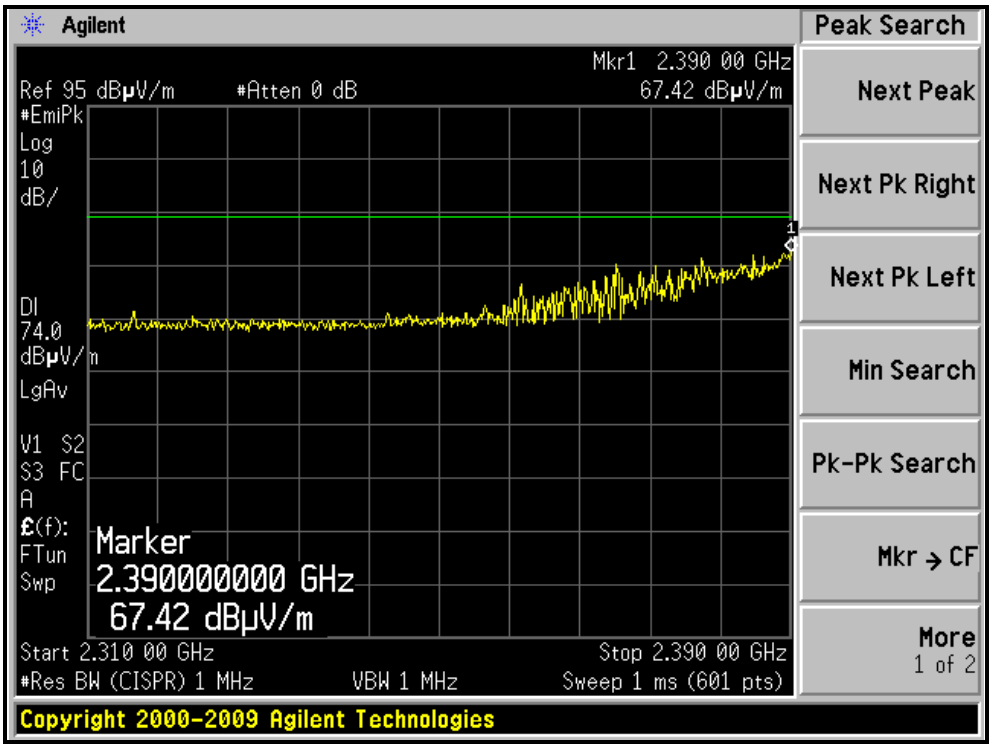
5. " * ": Fundamental frequency.

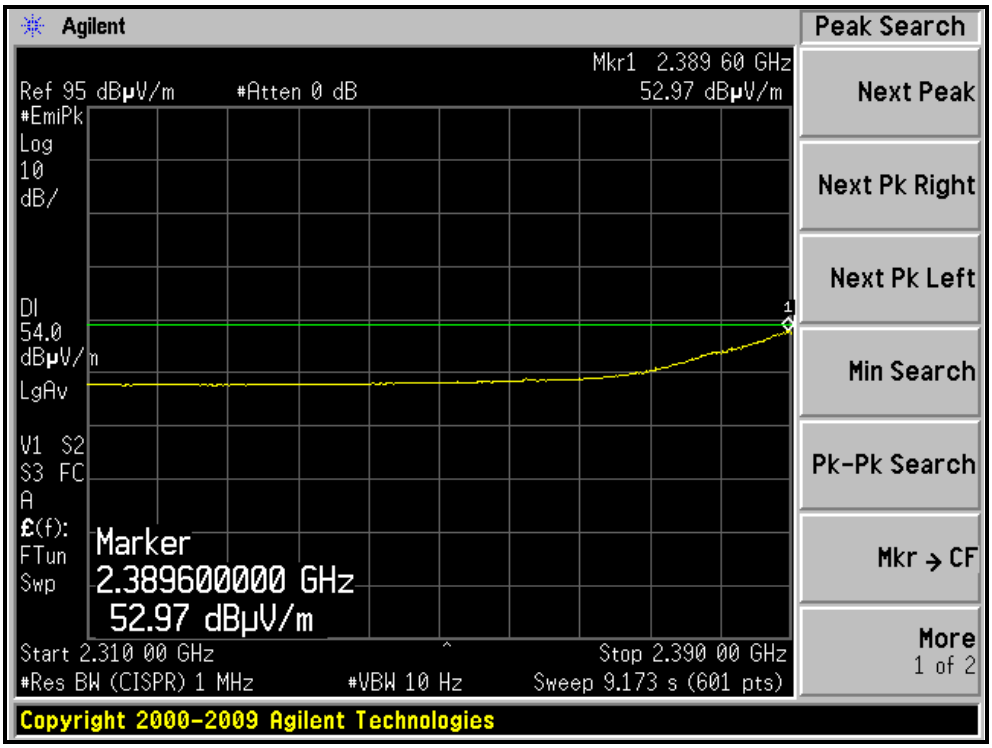
RESTRICTED BANDEDGE (802.11n (40MHz) MODE,CH3, HORIZONTAL)



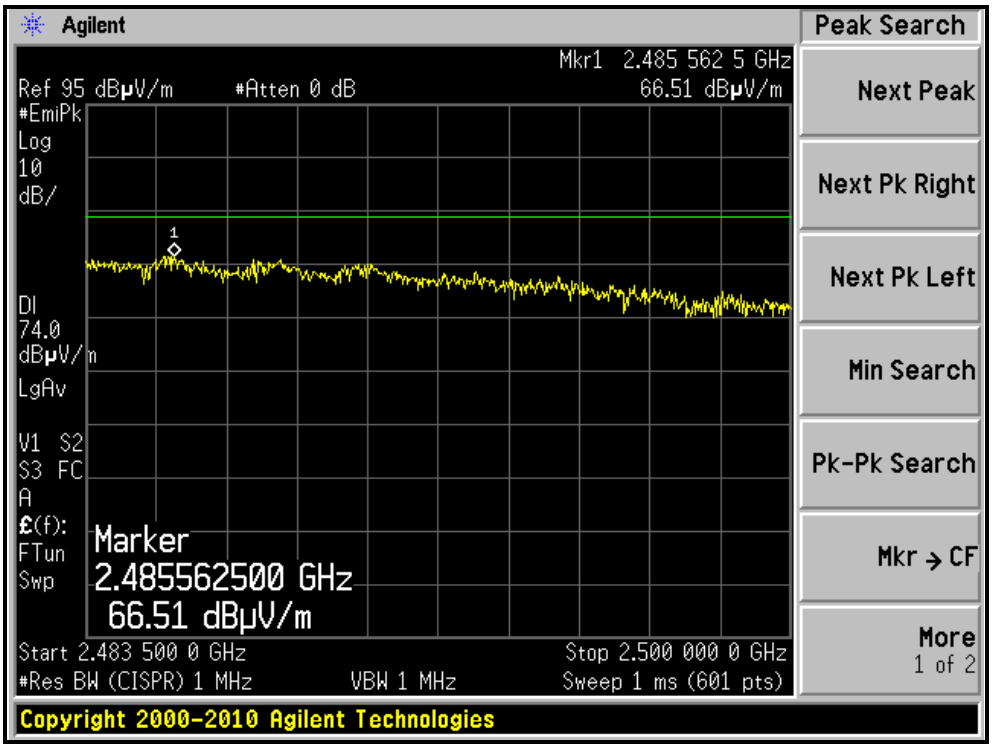


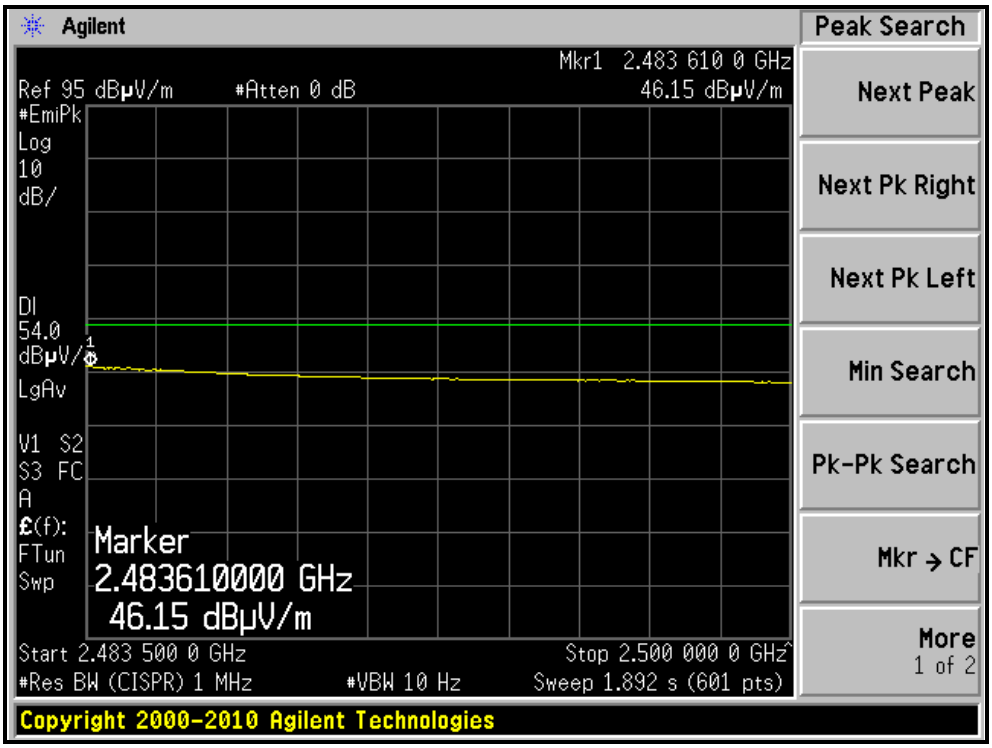
RESTRICTED BANDEDGE (802.11n (40MHz) MODE,CH3, VERTICAL)



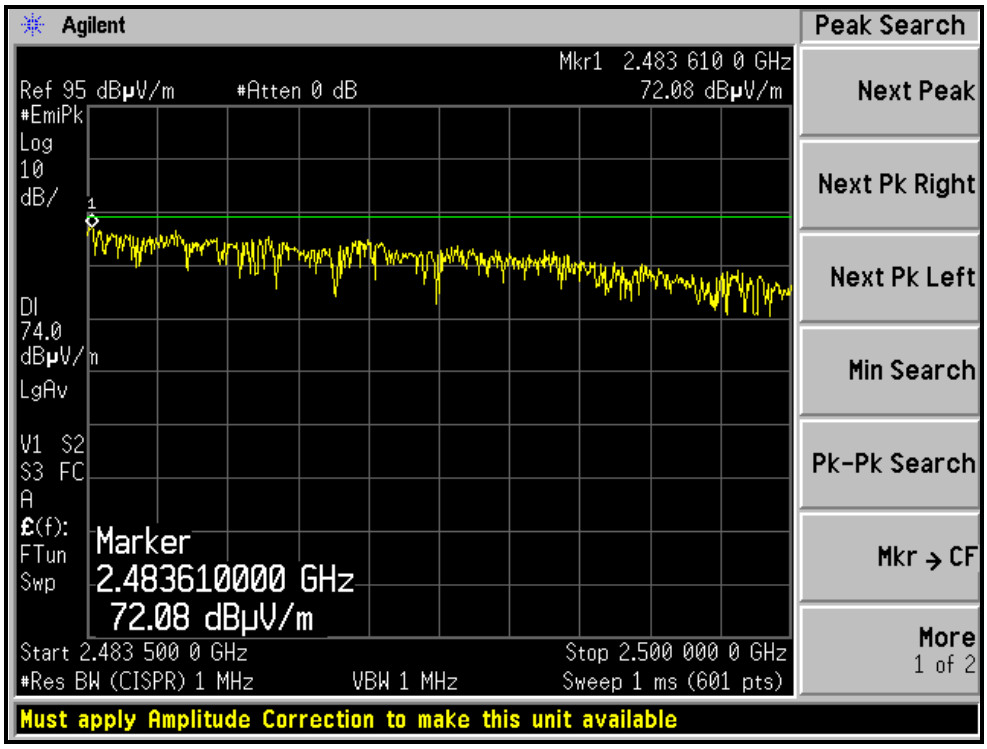


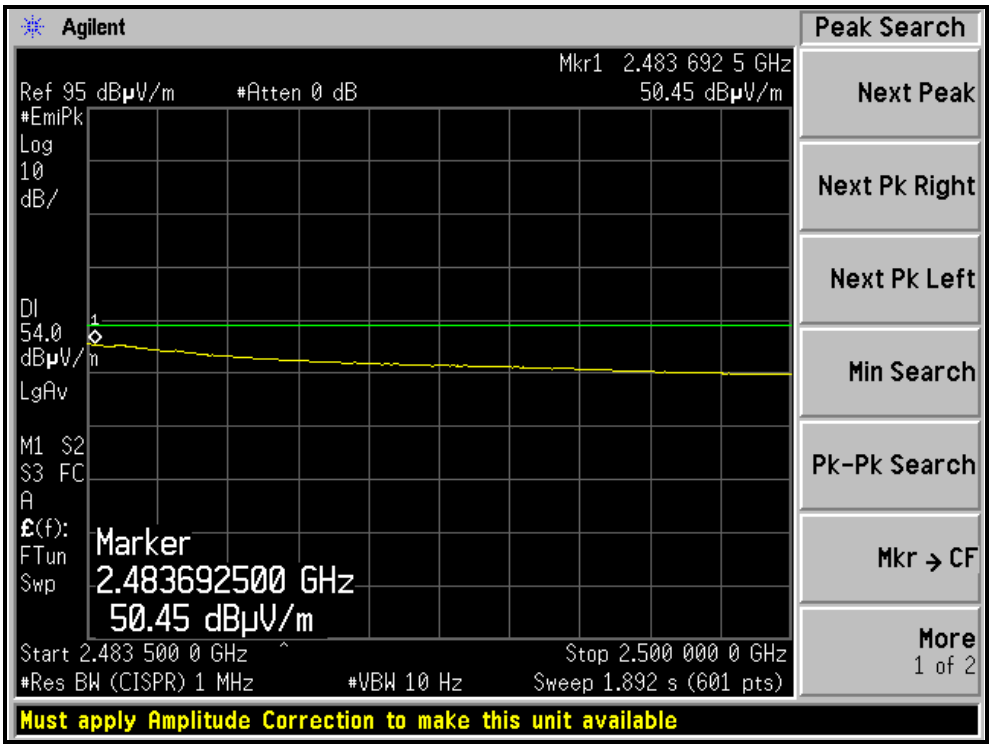
RESTRICTED BANDEDGE (802.11n (40MHz) MODE,CH9, HORIZONTAL)





RESTRICTED BANDEDGE (802.11n (40MHz) MODE,CH9, 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

Test date: Aug. 19, 2011

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S Spectrum Analyzer	FSP 40	100060	May 11, 2011	May 10, 2012

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 300kHz 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

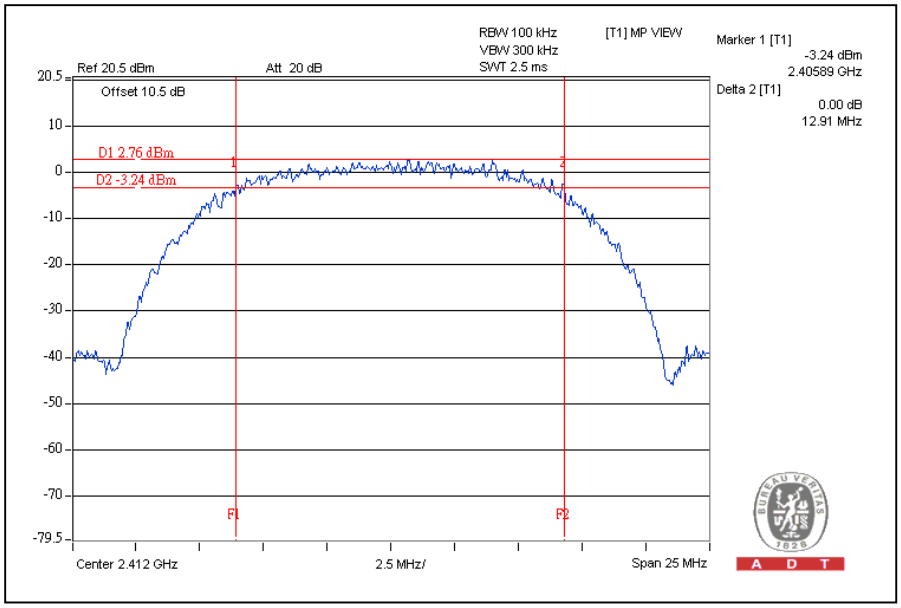
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 TEST RESULTS

802.11b DSSS MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
1	2412	11.78	12.91	0.5	PASS
6	2437	11.07	11.81	0.5	PASS
11	2462	11.68	11.95	0.5	PASS

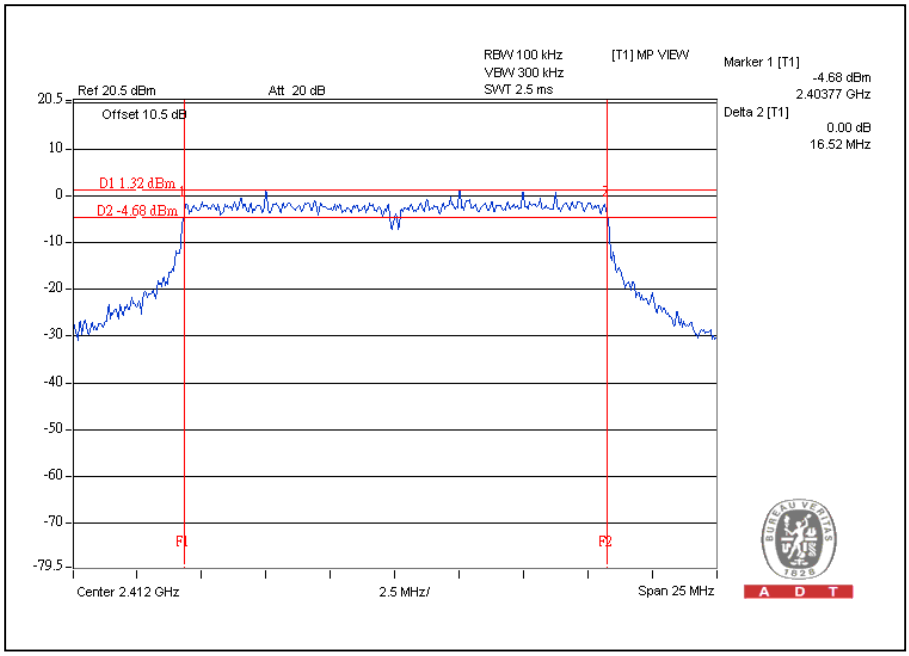
For CHAIN(1)
CH1



802.11g OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
1	2412	16.52	16.50	0.5	PASS
6	2437	16.48	16.49	0.5	PASS
11	2462	16.49	16.47	0.5	PASS

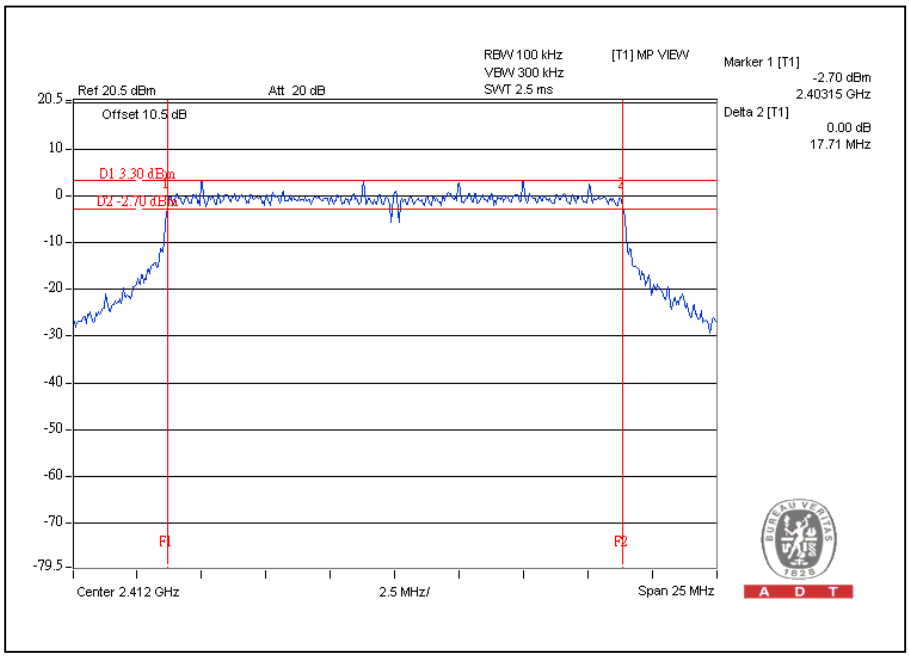
For CHAIN(0)
CH1



802.11n (20MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
1	2412	17.71	17.69	0.5	PASS
6	2437	17.65	17.66	0.5	PASS
11	2462	17.66	17.68	0.5	PASS

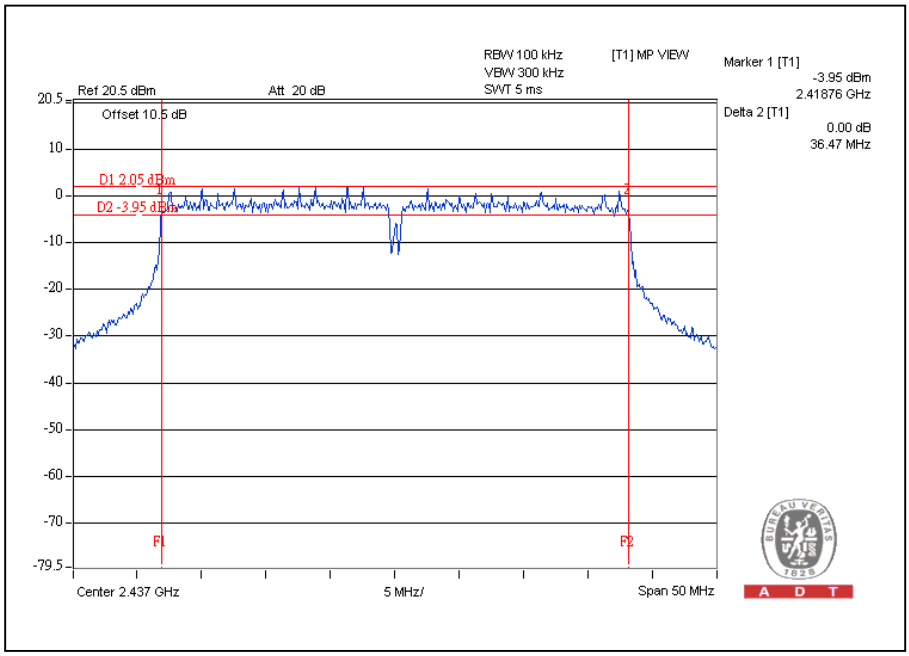
For CHAIN(0)
CH1



802.11n (40MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
3	2422	36.46	36.44	0.5	PASS
6	2437	36.20	36.47	0.5	PASS
9	2452	36.46	36.44	0.5	PASS

For CHAIN(1)
CH6



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

Test date: Aug. 19, 2011

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Peak Power Meter	ML2495A	0824006	May 04, 2011	May 03, 2012
Power Sensor	MA2411B	0738172	May 03, 2011	May 02, 2012

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

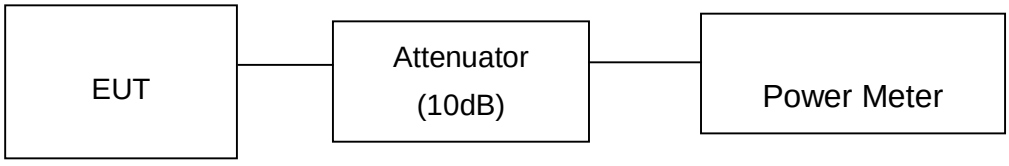
4.4.3 TEST PROCEDURES

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

4.4.7 TEST RESULTS

802.11b DSSS 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)				
1	2412	14.7	15.7	66.7	18.2	30	PASS
6	2437	14.7	15.3	63.4	18.0	30	PASS
11	2462	15.4	15.9	73.6	18.7	30	PASS

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi)=5.2

The effective legacy gain is 5.2dBi, therefore the limit doesn't reduce.

802.11g 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)				
1	2412	22.1	23.1	366.4	25.6	30	PASS
6	2437	25.7	26.2	788.4	29.0	30	PASS
11	2462	24.2	24.3	532.2	27.3	30	PASS

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi)=5.2

The effective legacy gain is 5.2dBi, therefore the limit doesn't reduce.

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)				
1	2412	24.2	25.1	586.6	27.7	30	PASS
6	2437	26.1	26.2	824.2	29.2	30	PASS
11	2462	24.2	24.8	565.0	27.5	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)				
3	2422	19.6	20.1	193.5	22.9	30	PASS
6	2437	24.3	24.0	520.3	27.2	30	PASS
9	2452	21.0	21.0	251.8	24.0	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

Test date: Aug. 19, 2011

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S Spectrum Analyzer	FSP 40	100060	May 11, 2011	May 10, 2012

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

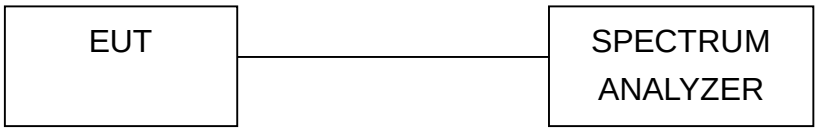
4.5.3 TEST PROCEDURE

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)		TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)			
1	2412	-11.0	-8.9	-6.8	8	PASS
6	2437	-9.3	-7.8	-5.5	8	PASS
11	2462	-10.7	-8.1	-6.2	8	PASS

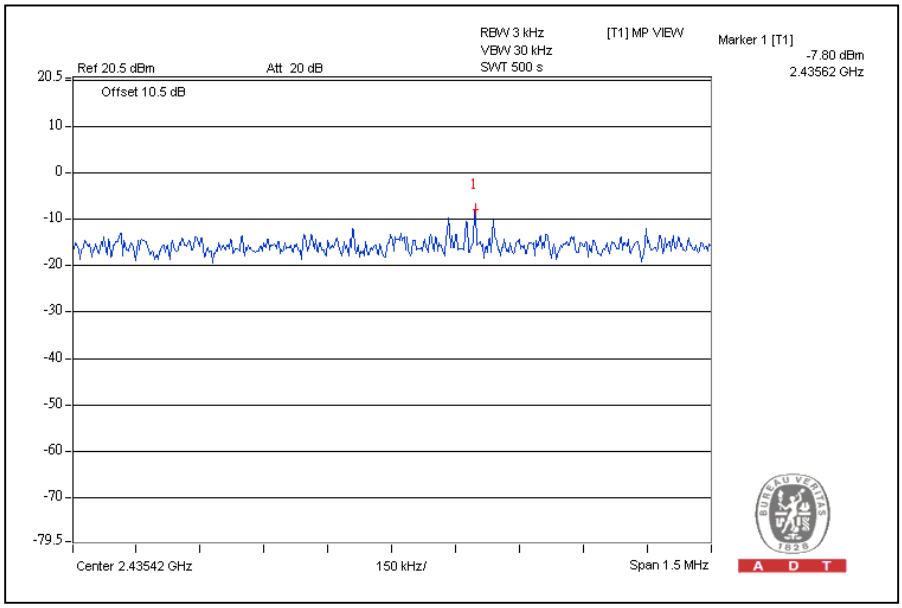
Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi)=5.2

The effective legacy gain is 5.2dBi, therefore the limit doesn't reduce.

For CHAIN(1)

CH6



802.11g 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	-7.9	-11.3	-6.3	8	PASS
6	2437	3.0	-2.5	4.1	8	PASS
11	2462	-0.6	-6.9	0.3	8	PASS

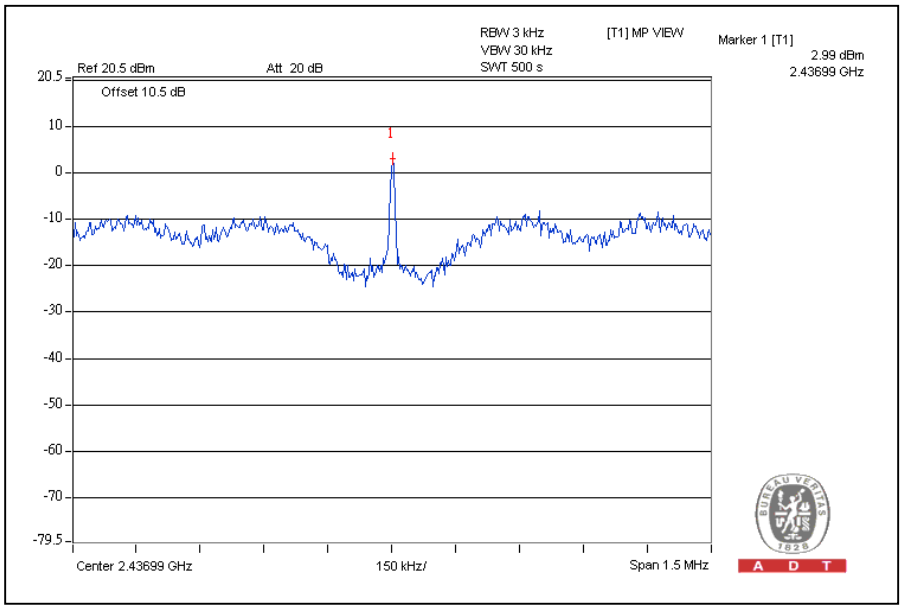
Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi)=5.2

The effective legacy gain is 5.2dBi, therefore the limit doesn't reduce.

For CHAIN(0)

CH6

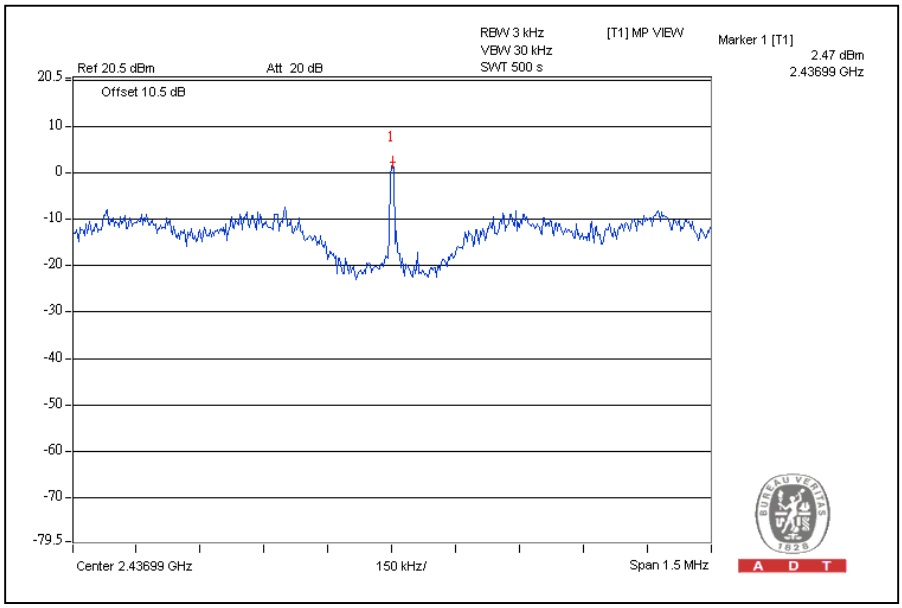


802.11n (20MHz) OFDM MODULATION:

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	-1.1	-8.1	-0.3	8	PASS
6	2437	2.5	-1.0	4.1	8	PASS
11	2462	-0.6	-7.2	0.3	8	PASS

For CHAIN(0)

CH6

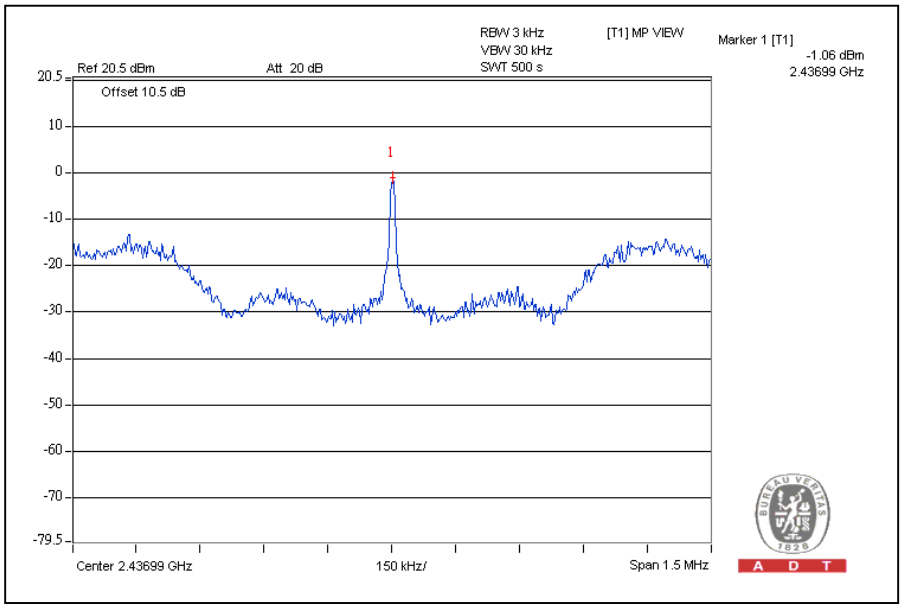


802.11n (40MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)			
3	2422	-8.7	-11.9	-7.0	8	PASS
6	2437	-1.1	-8.8	-0.4	8	PASS
9	2452	-7.8	-15.9	-7.2	8	PASS

For CHAIN(0)

CH6



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

Test date: Aug. 19, 2011

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S Spectrum Analyzer	FSP 40	100060	May 11, 2011	May 10, 2012

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 lose 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

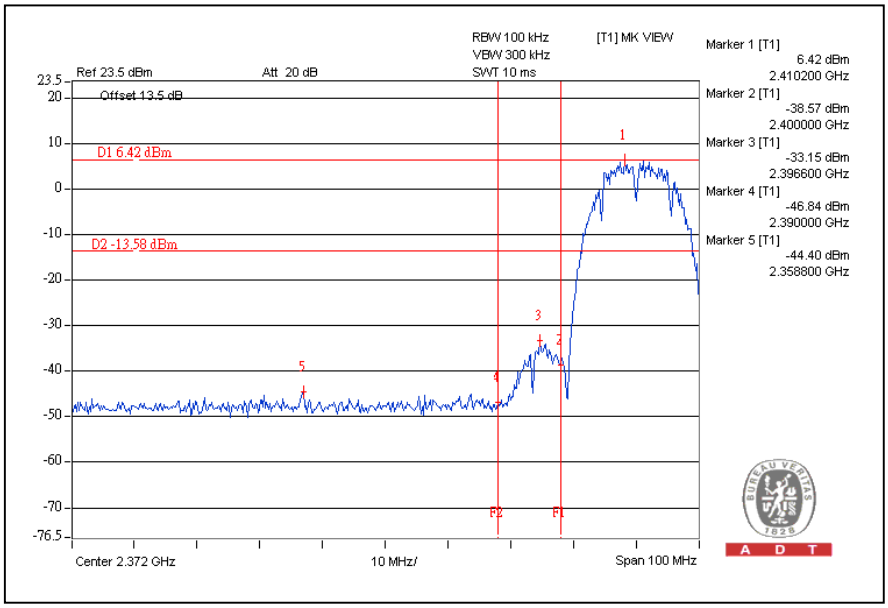
4.6.6 TEST RESULTS

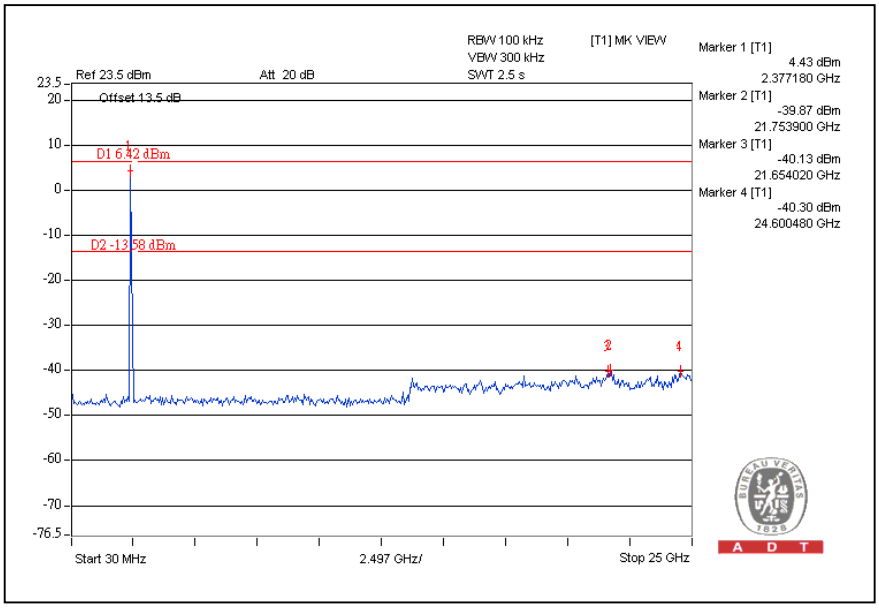
The spectrum plots are attached on the following images. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).

Performing measurements: Measure and add 10 log(N) dB

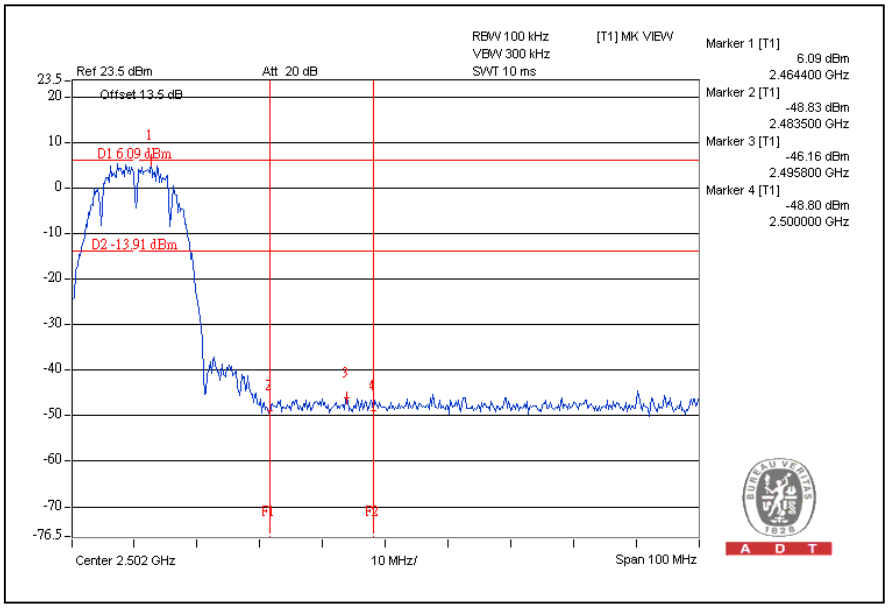
802.11b DSSS MODULATION:

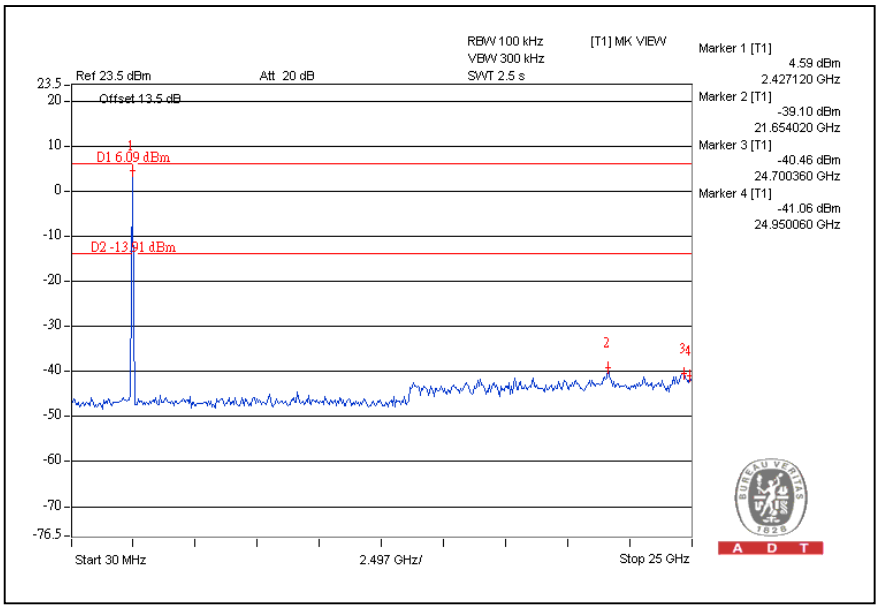
CH1





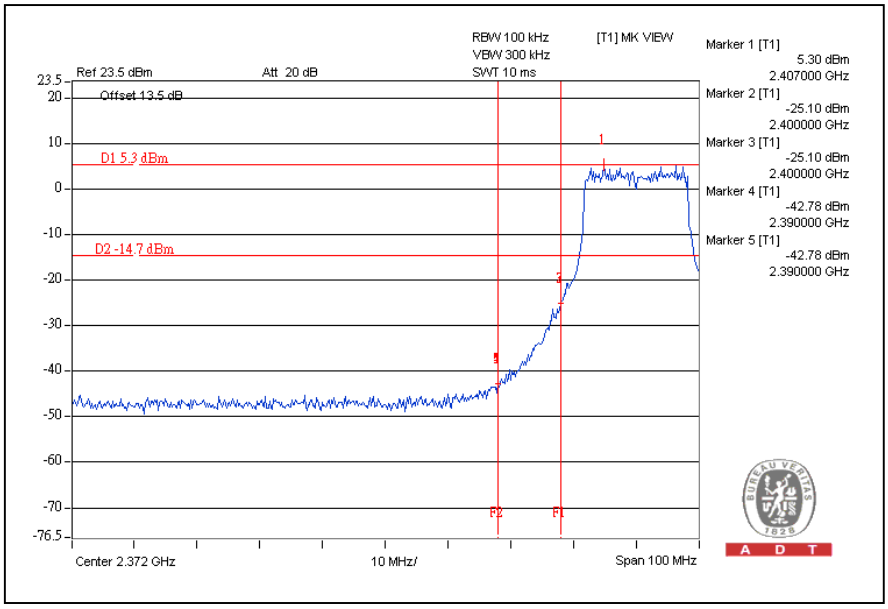
CH11

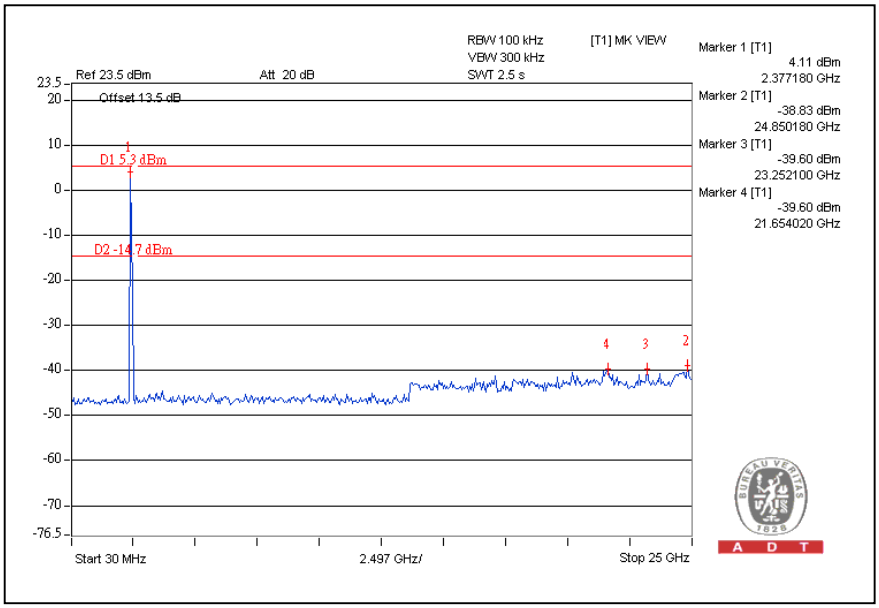

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Marker 1 [T1]
6.09 dBm
2.464400 GHz
Marker 2 [T1]
-48.83 dBm
2.483500 GHz
Marker 3 [T1]
-46.16 dBm
2.495800 GHz
Marker 4 [T1]
-48.80 dBm
2.500000 GHz
Ref 23.5 dBm
Att 20 dB
Offset 13.5 dB
D1 6.09 dBm
D2 -13.91 dBm
23.5
20
10
0
-10
-20
-30
-40
-50
-60
-70
-76.5
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Marker 1 [T1]
4.59 dBm
2.427120 GHz
Marker 2 [T1]
-39.10 dBm
21.654020 GHz
Marker 3 [T1]
-40.46 dBm
24.700360 GHz
Marker 4 [T1]
-41.06 dBm
24.950060 GHz
Ref 23.5 dBm
Att 20 dB
Offset 13.5 dB
D1 6.09 dBm
D2 -13.91 dBm
23.5
20
10
0
-10
-20
-30
-40
-50
-60
-70
-76.5
Start 30 MHz
2.497 GHz/
Stop 25 GHz

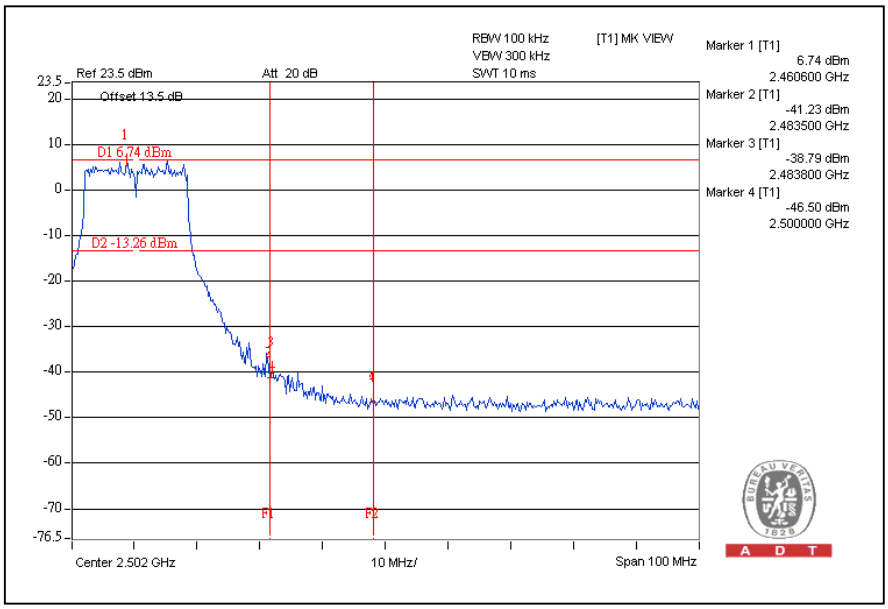
802.11g OFDM MODULATION:

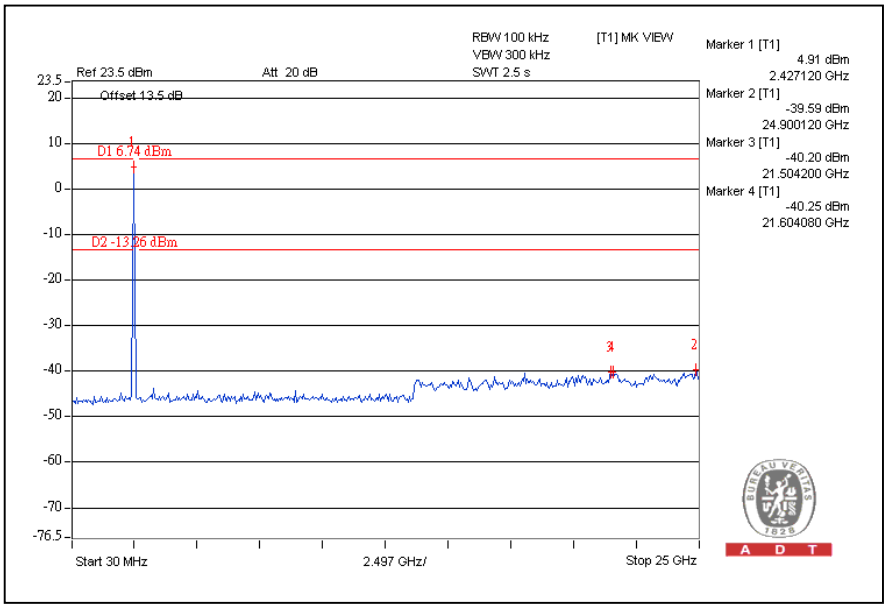
CH1





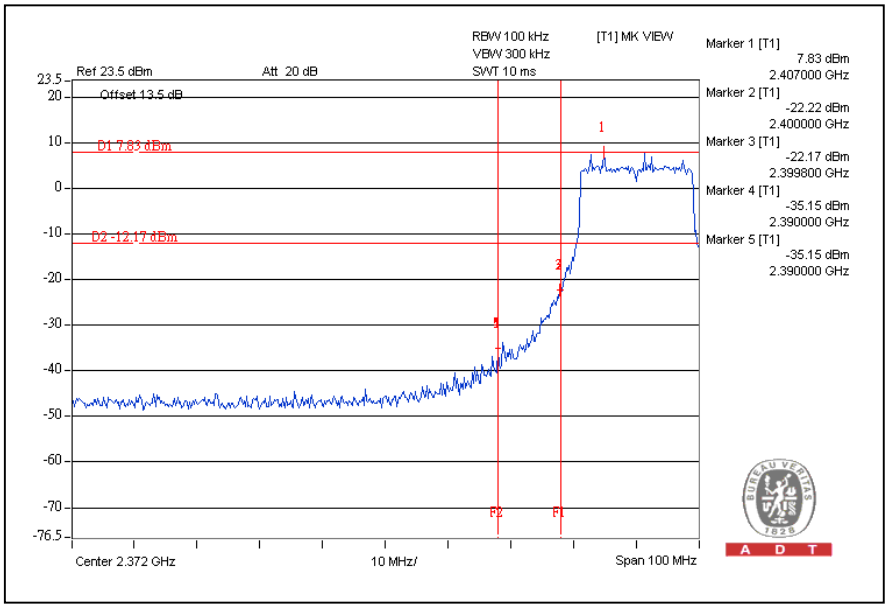
CH11

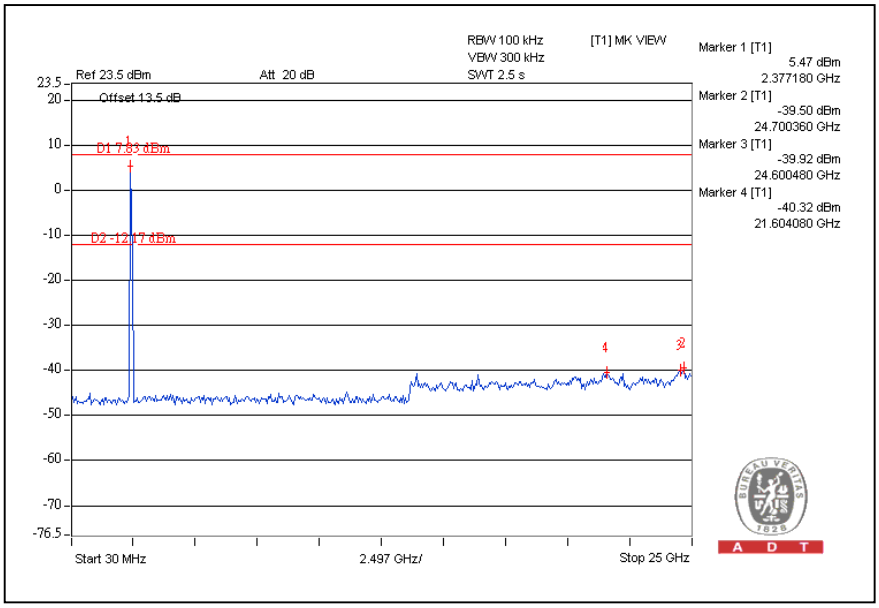

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 23.5 dBm
Att 20 dB
Offset 13.5 dB
D1 6.74 dBm
D2 -13.26 dBm
Marker 1 [T1]
6.74 dBm
2.460600 GHz
Marker 2 [T1]
-41.23 dBm
2.483500 GHz
Marker 3 [T1]
-38.79 dBm
2.483800 GHz
Marker 4 [T1]
-46.50 dBm
2.500000 GHz
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 23.5 dBm
Att 20 dB
Offset 13.5 dB
D1 6.74 dBm
D2 -13.26 dBm
Marker 1 [T1]
4.91 dBm
2.427120 GHz
Marker 2 [T1]
-39.59 dBm
24.900120 GHz
Marker 3 [T1]
-40.20 dBm
21.504200 GHz
Marker 4 [T1]
-40.25 dBm
21.604080 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz

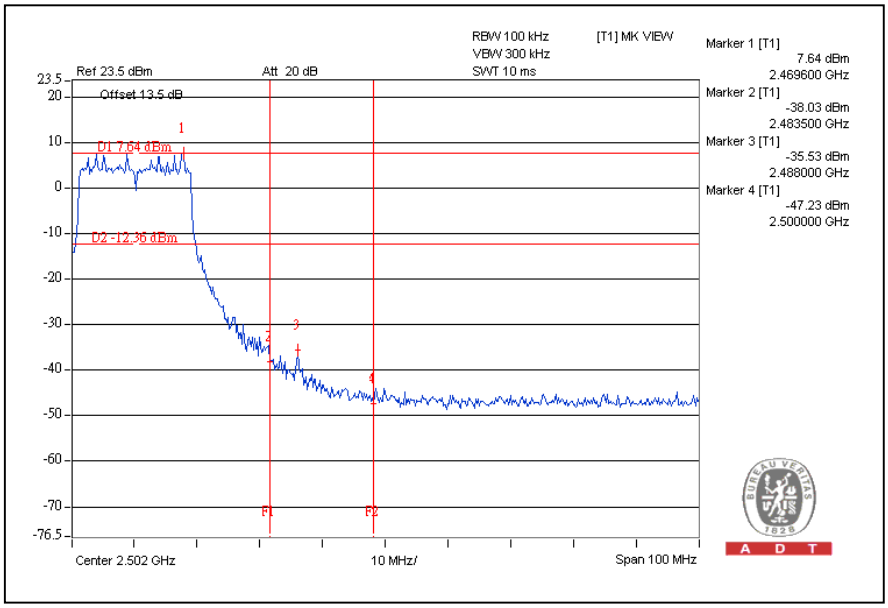
802.11n (20MHz) OFDM MODULATION:

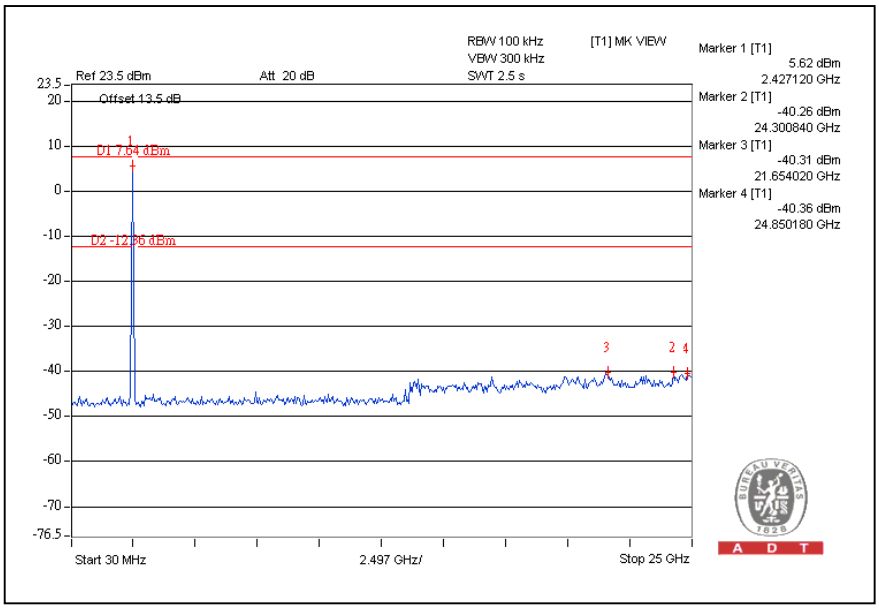
CH1





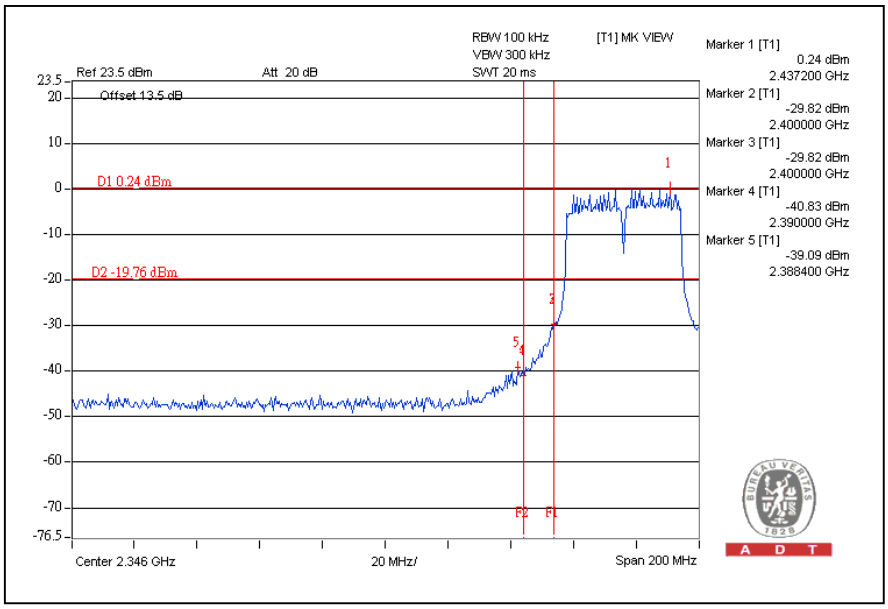
CH11

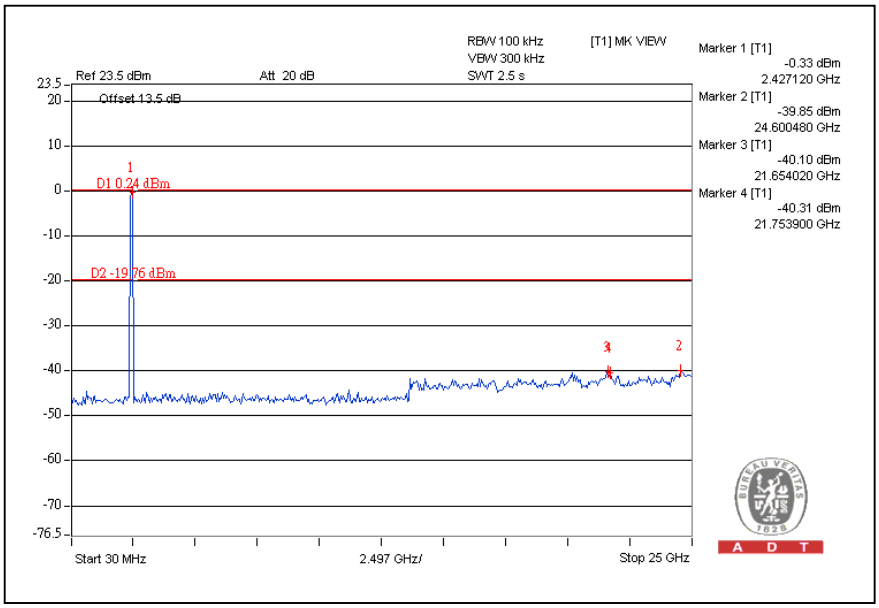

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 23.5 dBm
Att 20 dB
Offset 13.5 dB
D1 7.64 dBm
D2 -12.36 dBm
Marker 1 [T1]
7.64 dBm
2.469600 GHz
Marker 2 [T1]
-38.03 dBm
2.483500 GHz
Marker 3 [T1]
-35.53 dBm
2.488000 GHz
Marker 4 [T1]
-47.23 dBm
2.500000 GHz
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 23.5 dBm
Att 20 dB
Offset 13.5 dB
D1 7.64 dBm
D2 -12.36 dBm
Marker 1 [T1]
5.62 dBm
2.427120 GHz
Marker 2 [T1]
-40.26 dBm
24.300840 GHz
Marker 3 [T1]
-40.31 dBm
21.654020 GHz
Marker 4 [T1]
-40.36 dBm
24.850180 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz

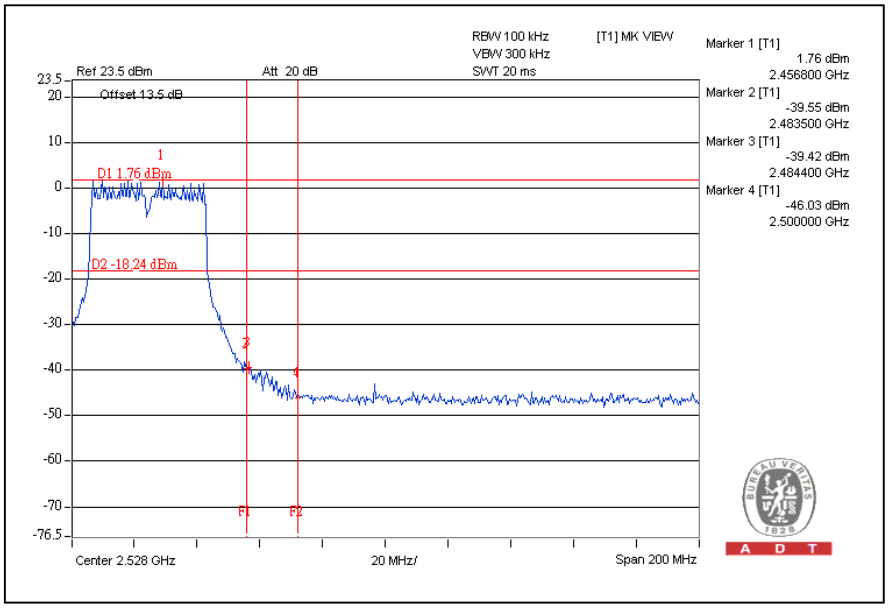
802.11n (40MHz) OFDM MODULATION:

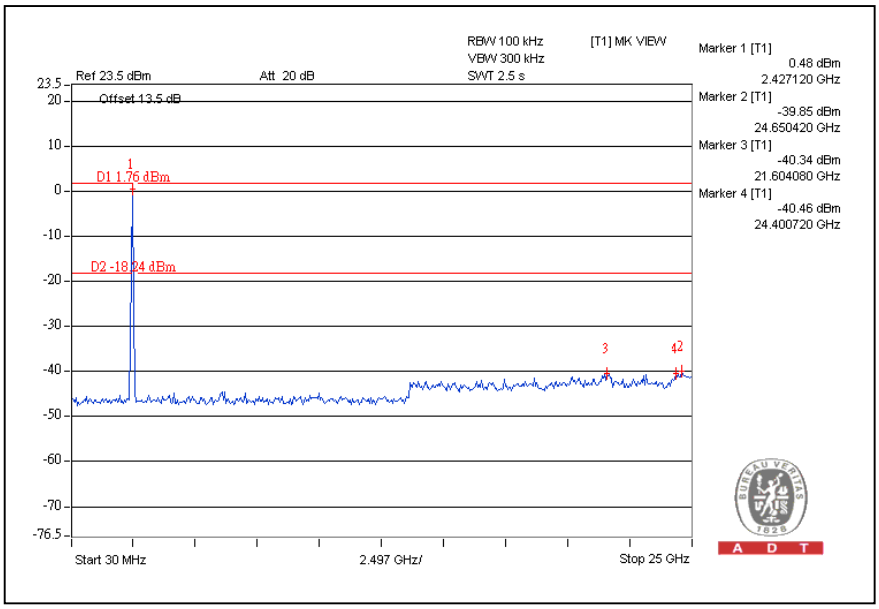
CH3





CH9


RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
1.76 dBm
2.456800 GHz
Marker 2 [T1]
-39.55 dBm
2.483500 GHz
Marker 3 [T1]
-39.42 dBm
2.484400 GHz
Marker 4 [T1]
-46.03 dBm
2.500000 GHz
Ref 23.5 dBm
Att 20 dB
Offset 13.5 dB
D1 1.76 dBm
D2 -18.24 dBm
23.5
20
10
0
-10
-20
-30
-40
-50
-60
-70
-76.5
F1
F2
Center 2.528 GHz
20 MHz/
Span 200 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Marker 1 [T1]
0.48 dBm
2.427120 GHz
Marker 2 [T1]
-39.85 dBm
24.650420 GHz
Marker 3 [T1]
-40.34 dBm
21.604080 GHz
Marker 4 [T1]
-40.46 dBm
24.400720 GHz
Ref 23.5 dBm
Att 20 dB
Offset 13.5 dB
D1 1.76 dBm
D2 -18.24 dBm
23.5
20
10
0
-10
-20
-30
-40
-50
-60
-70
-76.5
Start 30 MHz
2.497 GHz/
Stop 25 GHz

5. INFORMATION ON THE TESTING LABORATORIES

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

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

Linko EMC/RF Lab:
Tel: 886-2-26052180
Fax: 886-2-26052943

Hsin Chu EMC/RF Lab:
Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab:
Tel: 886-3-3183232
Fax: 886-3-3185050

Email: service.adt@tw.bureauveritas.com
Web Site: www.adt.com.tw

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

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

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

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