FCC TEST REPORT

REPORT NO.: RF111012E11

MODEL NO.: P.DG A4001N A-000-1A1-AX

FCC ID: Z5LPDGA4001N

RECEIVED: Oct. 12, 2011

TESTED: Oct. 17 to Nov. 01, 2011

ISSUED: Nov. 11, 2011

APPLICANT: ADB Broadband S.p.A.

ADDRESS: Viale Sarca 222, 20126 Milano, Italy

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
RF111012E11	Original release	Nov. 11, 2011

1. CERTIFICATION

PRODUCT:	ADSL2+ WiFi Router
BRAND NAME:	ADB
MODEL NO.:	P.DG A4001N A-000-1A1-AX
TEST SAMPLE:	ENGINEERING SAMPLE
TESTED:	Oct. 17 to Nov. 01, 2011
APPLICANT:	ADB Broadband S.p.A.
STANDARDS:	FCC Part 15, Subpart C (Section 15.247) ANSI C63.4-2003 ANSI C63.10-2009

The above equipment (Model: P.DG A4001N A-000-1A1-AX) 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:** Nov. 11, 2011
(Lori Chung, Specialist)

APPROVED BY : _____ , **DATE:** Nov. 11, 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 -3.16dB at 6.549MHz
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 2500.00MHz & 2390.00MHz.
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 I-PEX 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)	3.89dB
Radiated emissions (1GHz -18GHz)	2.19 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	ADSL2+ WiFi Router
MODEL NO.	P.DG A4001N A-000-1A1-AX
FCC ID	Z5LPDGA4001N
POWER SUPPLY	DC 15V from power adapter
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b: Up to 11Mbps 802.11g: Up to 54Mbps 802.11n (20MHz, 800ns GI): Up to 130Mbps 802.11n (40MHz, 800ns GI): Up to 270Mbps
FREQUENCY OPERATING	2412MHz ~ 2462MHz
NUMBER OF CHANNEL	11 for 802.11b, 802.11g, 802.11n (20MHz) 7 for 802.11n (40MHz)
MAXIMUM OUTPUT POWER	802.11b: 144.5mW 802.11g: 263.0mW 802.11n (20MHz): 317.0mW 802.11n (40MHz): 351.6mW
ANTENNA TYPE	Please see NOTE
DATA CABLE	NA
I/O PORTS	Ethernet Port × 4 (10, 100Mbps) USB Port × 1 (USB 2.0) ADSL Port × 1(DSL)
ASSOCIATED DEVICES	Adapter × 1

NOTE:

1. The EUT must be supplied with power adapter as following spec:

BRAND	DVE
MODEL	DSA-12PFA-15 FUS 150080
INPUT POWER	AC 100-240V, 50/60 Hz, 0.5A
OUTPUT POWER	DC 15V, 0.8A DC output cable: 2m, unshielded

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

Transmitter Circuit	Antenna Type	Gain (dBi)	Cable Loss(dB)	Cable length	Connecter Type	Frequency range (MHz to MHz)	Diversity
Chain (0)	Dipole	2	0.39	11cm	I-PEX	2400~2500	Yes
Chain (1)	Dipole	2	0.89	25cm	I-PEX	2400~2500	Yes

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

Test Mode	Description
Mode A	Laying-flat type
Mode B	**Stand-up type**

From the above modes, the worst Radiated emission test was found in **Mode B**. Therefore only the test data of the mode was recorded in this report.

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

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

6. 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

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 b	-	√
C	802.11 g	√	-
D	802.11 g	-	√
E	802.11n(20MHz) for 800ns	√	√
F	802.11n(40MHz) for 800ns	√	√

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.
2. Mode B, D, E, F the worst modes, were 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
802.11n (20MHz)	1 to 11	6	OFDM	BPSK	13	E

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	MODULATIO N TYPE	DATA RATE (Mbps)	COMBINATION MODE
802.11n (20MHz)	1 to 11	6	OFDM	BPSK	13	E

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
802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	13	E
802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	27	F

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
802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	13	E
802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	27	F

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
802.11n (20MHz)	1 to 11	1, 11	OFDM	BPSK	13	E
802.11n (40MHz)	3 to 9	3, 9	OFDM	BPSK	27	F

※ **TEST CONDITION:**

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
PLC	20deg. C, 60%RH,	120Vac, 60Hz	Kyle Huang
RE≥1G	26deg. C, 61%RH	120Vac, 60Hz	Amos Chuang
RE<1G	29deg. C, 75%RH	120Vac, 60Hz	Rex Huang
APCM	25deg. C, 60%RH	120Vac, 60Hz	Frank Liu
OB	25deg. C, 60%RH	120Vac, 60Hz	Frank 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 is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It 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.

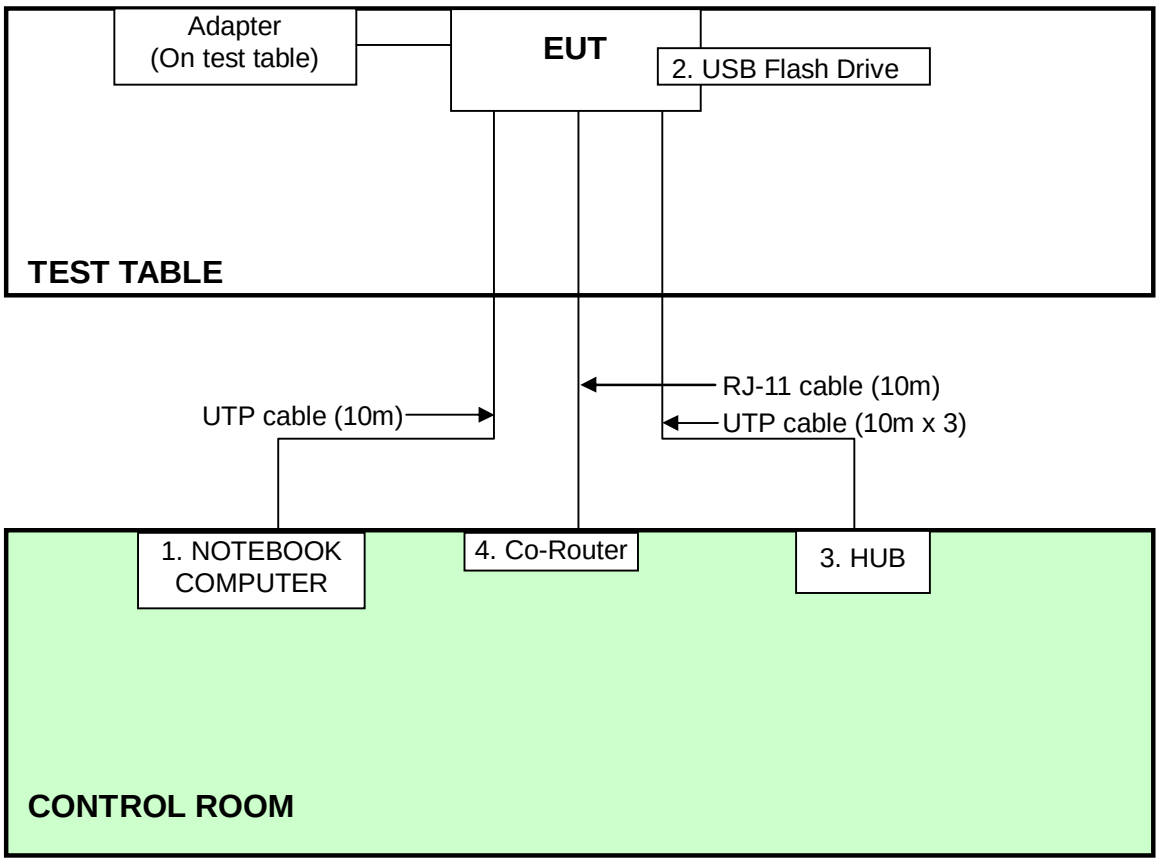
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP32LA	FSLB32S	FCC DoC
2	USB Flash Drive (For Conducted test)	SanDisk	SDCZ2-512-A 10	5587999162	FCC DoC
	iPod (For other test items)	Apple	MC749TA/A	CC4DMFJUDFDM	NA
3	HUB	ZyXEL	ES-116P	S060H02000215	FCC DoC
4	CO-ROUTER	ZyXEL	IES-1000	S4Z3112558	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	UTP cable (10m)
2	USB cable (0.1m)
3	UTP cable (10m)
4	RJ-11 cable (10m)

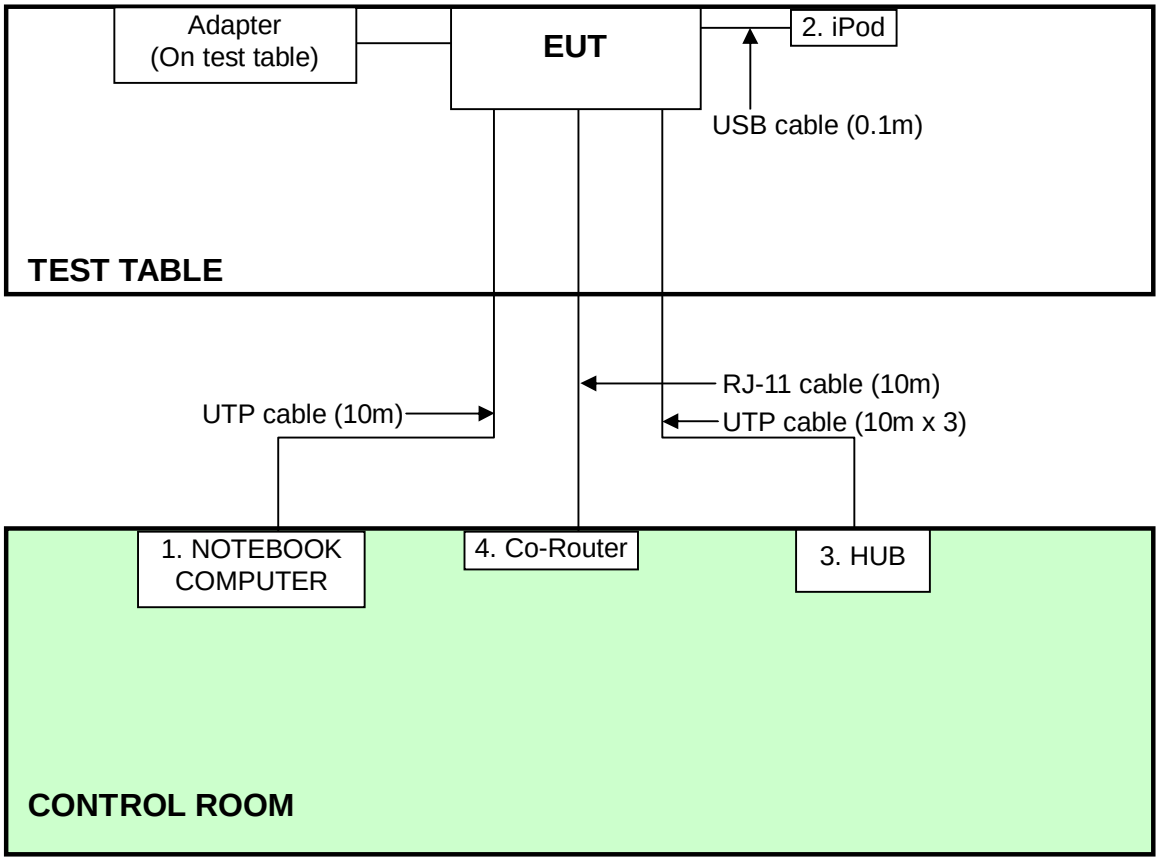
NOTE: All power cords of the above support units are non shielded (1.8m).

3.5 CONFIGURATION OF SYSTEM UNDER TEST

For Conducted Emission test:



For other test items:



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: Oct. 17, 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. 20, 2011	Sep. 19, 2012
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.

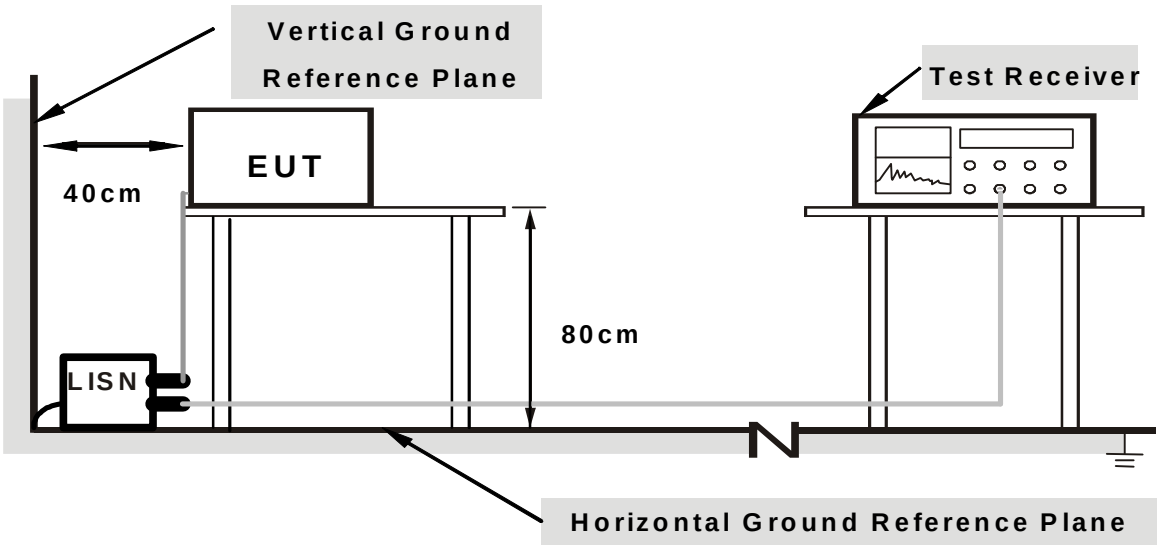
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

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

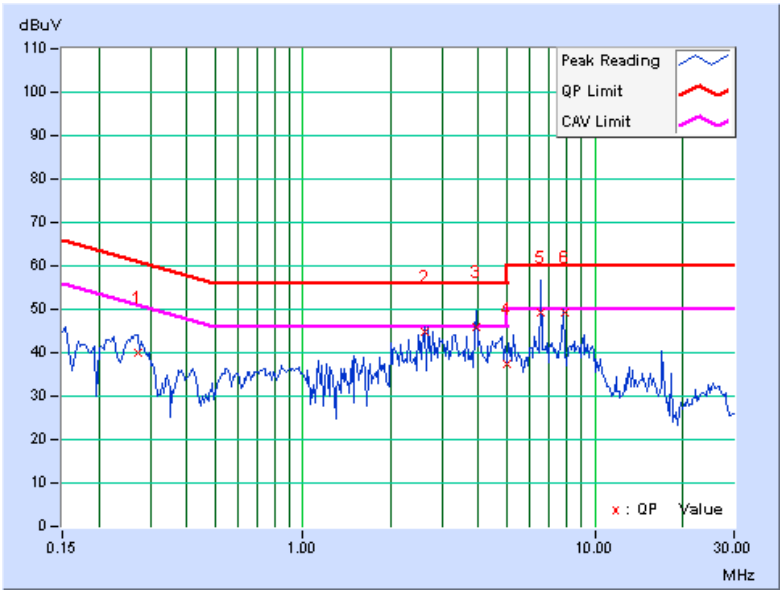
1. Connect the EUT with the support unit 1 (Notebook Computer) which is placed on a testing table.
2. The communication partner run test program “Telnet Command” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

4.1.7 TEST RESULTS

PHASE	Line (L)	6dB BANDWIDTH	9 kHz

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.271	0.07	39.77	27.23	39.84	27.30	61.08	51.08	-21.25	-23.79
2	2.622	0.23	44.68	38.54	44.91	38.77	56.00	46.00	-11.09	-7.23
3	3.930	0.30	45.73	40.25	46.03	40.55	56.00	46.00	-9.97	-5.45
4	5.000	0.35	37.15	27.08	37.50	27.43	60.00	50.00	-22.50	-22.57
5	**6.549**	**0.42**	**48.71**	**46.42**	**49.13**	**46.84**	**60.00**	**50.00**	**-10.87**	**-3.16**
6	7.858	0.48	48.73	43.19	49.21	43.67	60.00	50.00	-10.79	-6.33

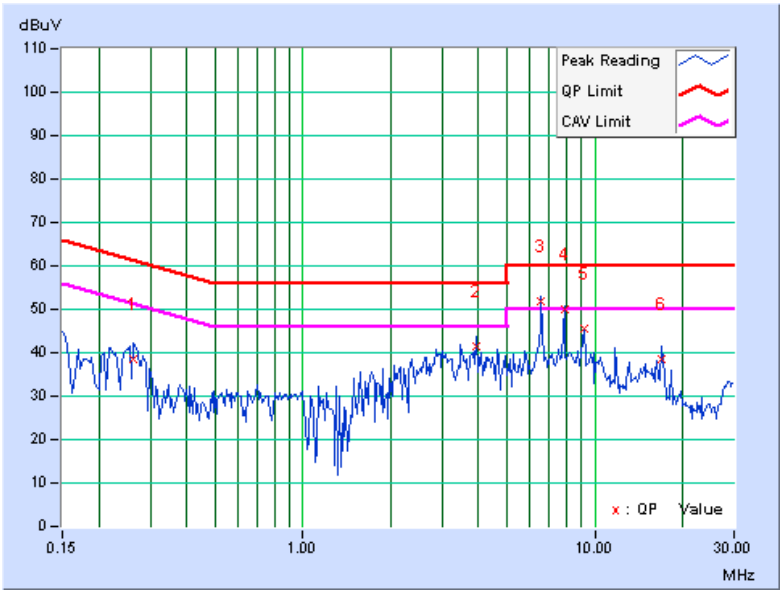
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading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



PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.263	0.08	38.36	20.27	38.44	20.35	61.33	51.33	-22.88	-30.97
2	3.934	0.31	41.25	35.31	41.56	35.62	56.00	46.00	-14.44	-10.38
3	6.553	0.42	51.46	46.38	51.88	46.80	60.00	50.00	-8.12	-3.20
4	7.865	0.47	49.46	43.61	49.93	44.08	60.00	50.00	-10.07	-5.92
5	9.176	0.53	44.86	39.53	45.39	40.06	60.00	50.00	-14.61	-9.94
6	17.023	0.89	37.76	32.81	38.65	33.70	60.00	50.00	-21.35	-16.30

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: Oct. 19 to Nov. 01, 2011

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Agilent Spectrum Analyzer	E4446A	MY48250253	Aug. 29, 2011	Aug. 28, 2012
Agilent Pre-Selector	N9039A	MY46520310	Aug. 29, 2011	Aug. 28, 2012
Agilent Signal Generator	N5181A	MY49060347	July 25, 2011	July 24, 2012
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	Nov. 16, 2010	Nov. 15, 2011
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. 07, 2011	Oct. 06, 2012
RF CABLE	NA	RF104-205 RF104-207 RF104-202	Dec. 28, 2010	Dec. 27, 2011
RF Cable	NA	CHHCAB_001	Oct. 08, 2011	Oct. 07, 2012
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 a 3 meters chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.

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

c. The height of antenna 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.

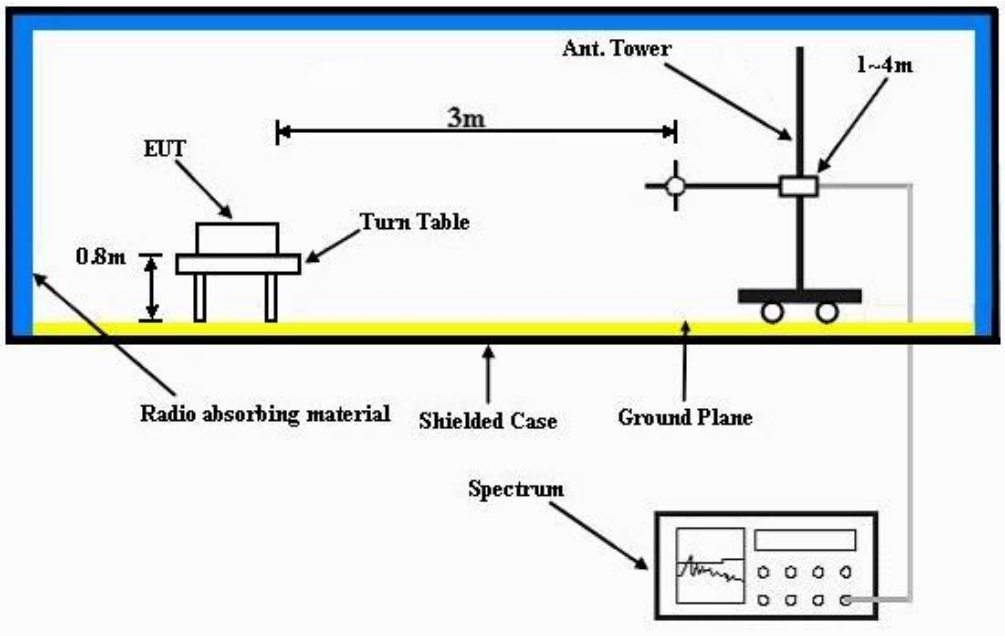
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz 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	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	29deg. C, 75%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	250.03	36.0 QP	46.0	-10.0	1.00 H	80	22.71	13.28
2	500.02	35.4 QP	46.0	-10.6	1.75 H	324	15.30	20.06
3	625.07	40.4 QP	46.0	-5.6	1.25 H	332	17.98	22.42
4	640.00	31.4 QP	46.0	-14.6	1.25 H	0	8.87	22.53
5	750.01	39.8 QP	46.0	-6.2	1.00 H	26	15.53	24.25
6	875.06	37.6 QP	46.0	-8.4	1.00 H	360	11.01	26.59
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	50.49	34.5 QP	40.0	-5.5	1.00 V	214	20.18	14.32
2	250.03	36.3 QP	46.0	-9.7	1.00 V	53	22.99	13.28
3	500.02	37.8 QP	46.0	-8.2	1.25 V	87	17.72	20.06
4	625.07	39.9 QP	46.0	-6.1	1.00 V	305	17.51	22.42
5	750.01	39.4 QP	46.0	-6.6	1.50 V	310	15.13	24.25
6	875.06	36.1 QP	46.0	-9.9	1.25 V	121	9.53	26.59

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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 61%RH	TESTED BY	Amos Chuang

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	55.5 PK	74.0	-18.5	1.00 H	340	23.62	31.88
2	2390.00	43.6 AV	54.0	-10.4	1.00 H	340	11.72	31.88
3	*2412.00	95.5 PK			1.00 H	341	63.55	31.95
4	*2412.00	92.7 AV			1.00 H	341	60.75	31.95
5	2500.00	57.2 PK	74.0	-16.8	1.14 H	20	24.95	32.25
6	2500.00	47.6 AV	54.0	-6.4	1.14 H	20	15.35	32.25
7	4824.00	48.1 PK	74.0	-25.9	1.51 H	251	6.88	41.22
8	4824.00	42.5 AV	54.0	-11.5	1.51 H	251	1.28	41.22
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	56.3 PK	74.0	-17.7	1.17 V	40	24.42	31.88
2	2390.00	45.6 AV	54.0	-8.4	1.17 V	40	13.72	31.88
3	*2412.00	106.7 PK			1.16 V	330	74.75	31.95
4	*2412.00	104.3 AV			1.16 V	330	72.35	31.95
5	2500.00	60.4 PK	74.0	-13.6	1.18 V	38	28.15	32.25
6	2500.00	52.7 AV	54.0	-1.3	1.18 V	38	20.45	32.25
7	4824.00	51.7 PK	74.0	-22.3	1.02 V	197	10.48	41.22
8	4824.00	46.9 AV	54.0	-7.1	1.02 V	197	5.68	41.22

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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 61%RH	TESTED BY	Amos Chuang

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	97.3 PK			1.00 H	340	65.26	32.04
2	*2437.00	94.6 AV			1.00 H	340	62.56	32.04
3	4874.00	49.9 PK	74.0	-24.1	1.49 H	250	8.54	41.36
4	4874.00	43.4 AV	54.0	-10.6	1.49 H	250	2.04	41.36
5	7311.00	55.4 PK	74.0	-18.6	1.66 H	249	9.73	45.67
6	7311.00	47.6 AV	54.0	-6.4	1.66 H	249	1.93	45.67
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	108.6 PK			1.18 V	329	76.56	32.04
2	*2437.00	106.1 AV			1.18 V	329	74.06	32.04
3	2500.00	60.6 PK	74.0	-13.4	1.18 V	39	28.35	32.25
4	2500.00	53.2 AV	54.0	-0.8	1.18 V	39	20.95	32.25
5	4874.00	51.4 PK	74.0	-22.6	1.00 V	240	10.04	41.36
6	4874.00	46.3 AV	54.0	-7.7	1.00 V	240	4.94	41.36
7	7311.00	57.8 PK	74.0	-16.2	1.30 V	118	12.13	45.67
8	7311.00	48.2 AV	54.0	-5.8	1.30 V	118	2.53	45.67

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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 61%RH	TESTED BY	Amos Chuang

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	97.5 PK			1.00 H	340	65.38	32.12
2	*2462.00	95.0 AV			1.00 H	340	62.88	32.12
3	2500.00	56.7 PK	74.0	-17.3	1.14 H	17	24.45	32.25
4	2500.00	47.6 AV	54.0	-6.4	1.14 H	17	15.35	32.25
5	4924.00	49.7 PK	74.0	-24.3	1.51 H	249	8.22	41.48
6	4924.00	43.3 AV	54.0	-10.7	1.51 H	249	1.82	41.48
7	7386.00	55.2 PK	74.0	-18.8	1.65 H	245	9.29	45.91
8	7386.00	47.5 AV	54.0	-6.5	1.65 H	245	1.59	45.91
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	107.5 PK			1.21 V	338	75.38	32.12
2	*2462.00	104.9 AV			1.21 V	338	72.78	32.12
3	2500.00	60.1 PK	74.0	-13.9	1.17 V	37	27.85	32.25
4	2500.00	52.6 AV	54.0	-1.4	1.17 V	37	20.35	32.25
5	4924.00	53.3 PK	74.0	-20.7	1.00 V	212	11.82	41.48
6	4924.00	47.5 AV	54.0	-6.5	1.00 V	212	6.02	41.48
7	7386.00	58.1 PK	74.0	-15.9	1.16 V	206	12.19	45.91
8	7386.00	49.3 AV	54.0	-4.7	1.16 V	206	3.39	45.91

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

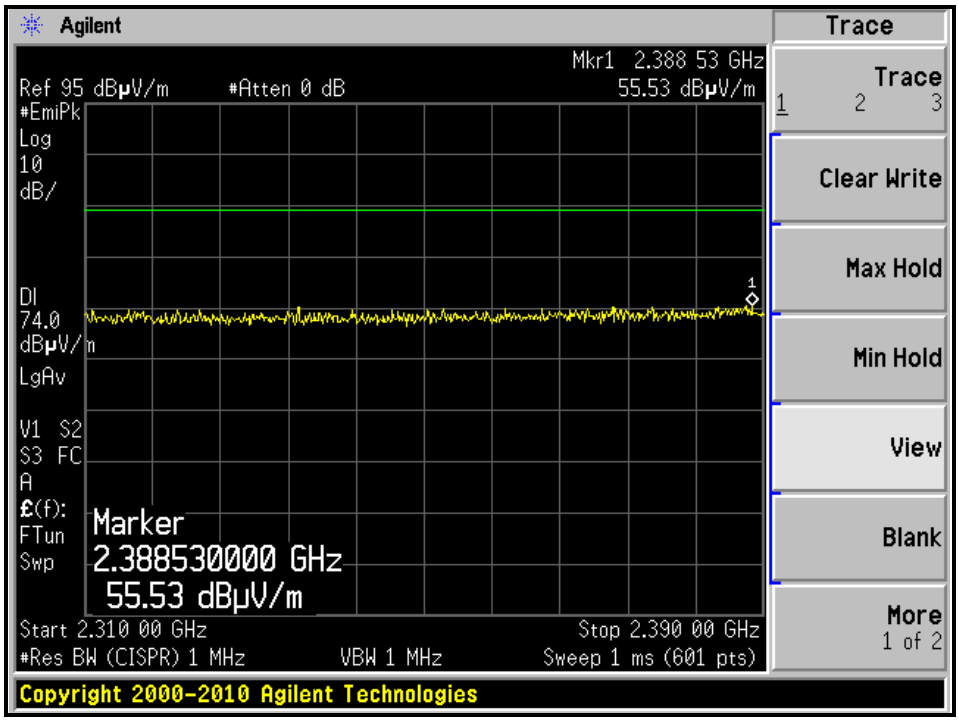
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

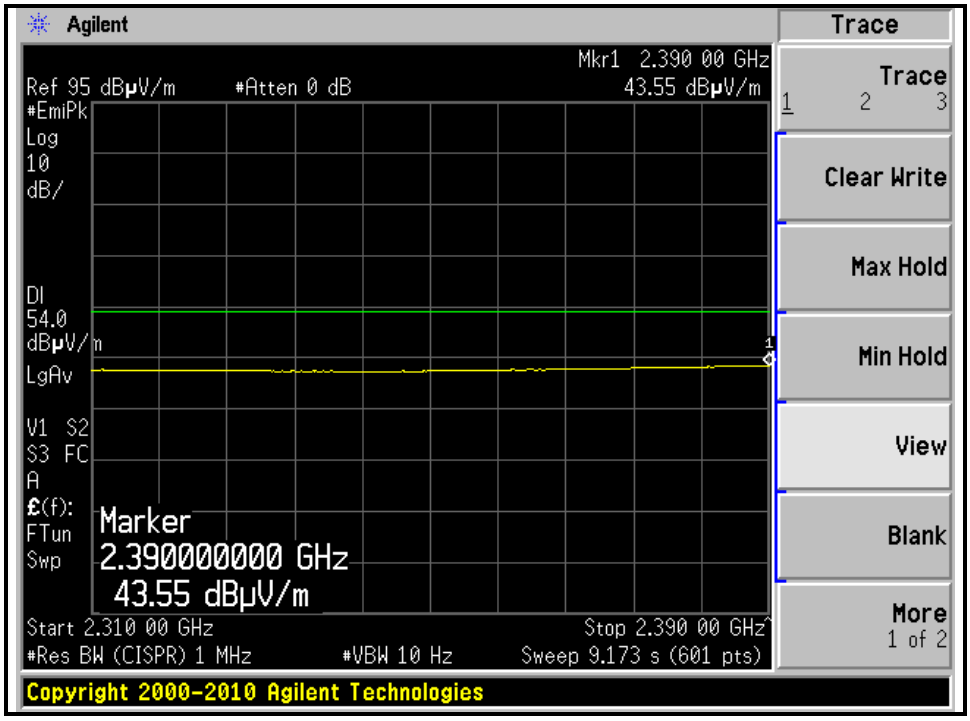
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

RESTRICTED BANDEDGE (802.11b MODE,CH1, HORIZONTAL)





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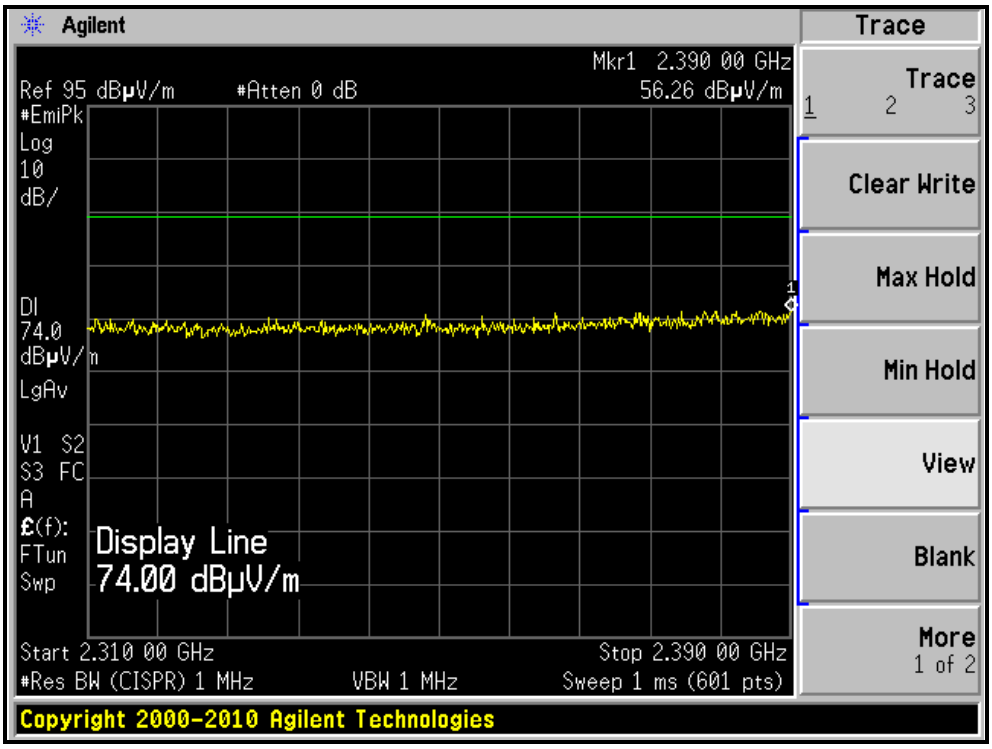

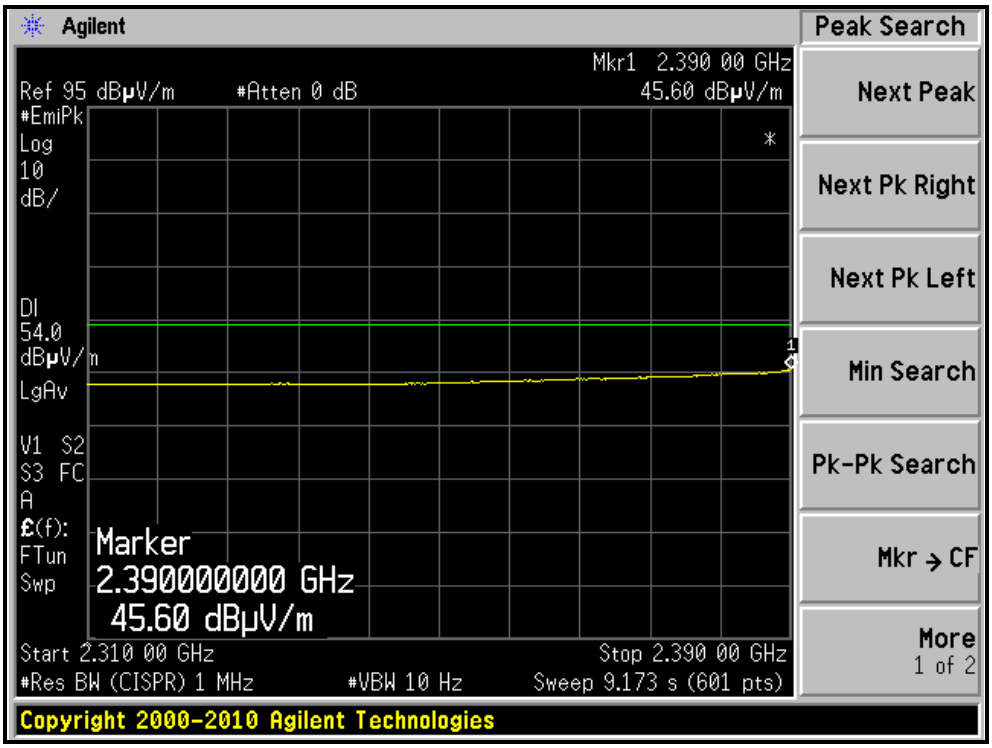

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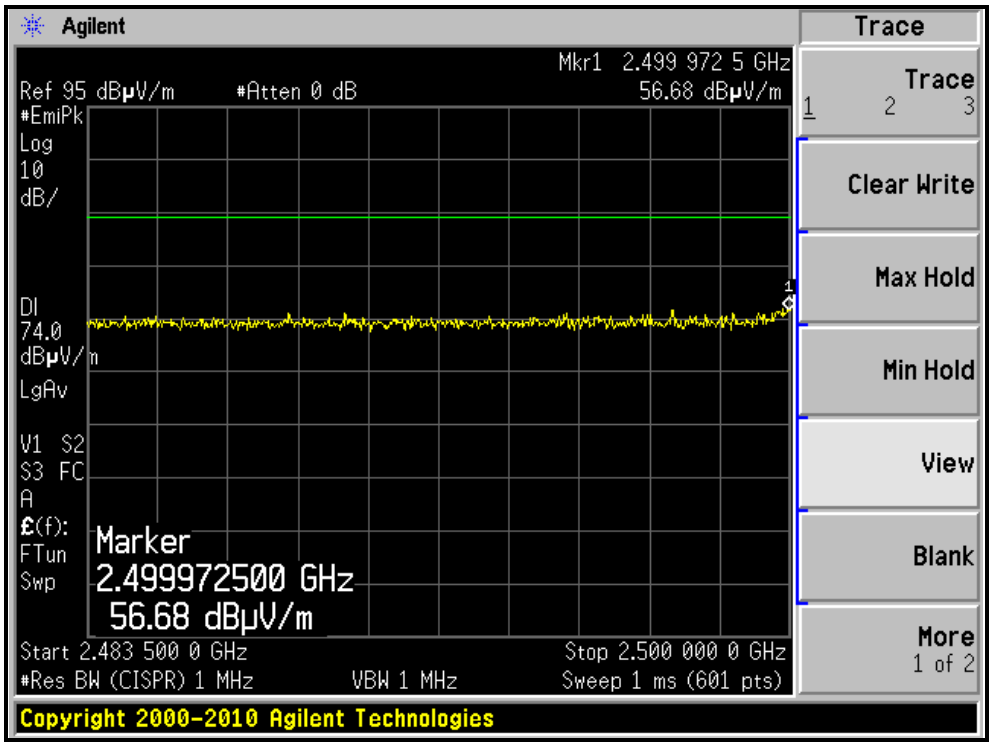

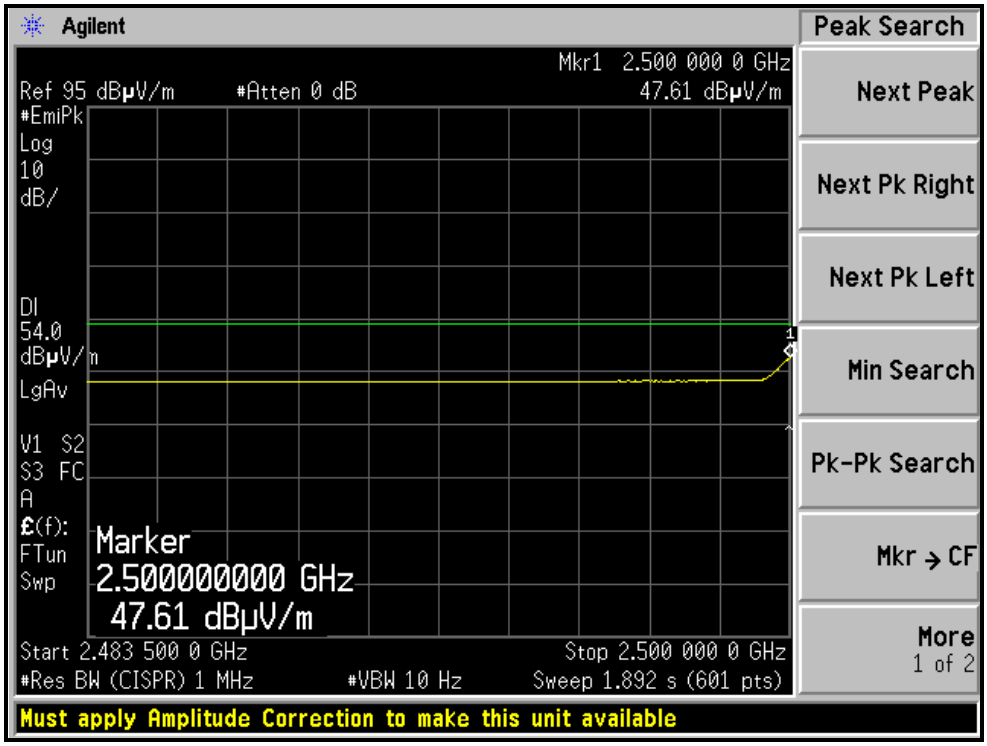

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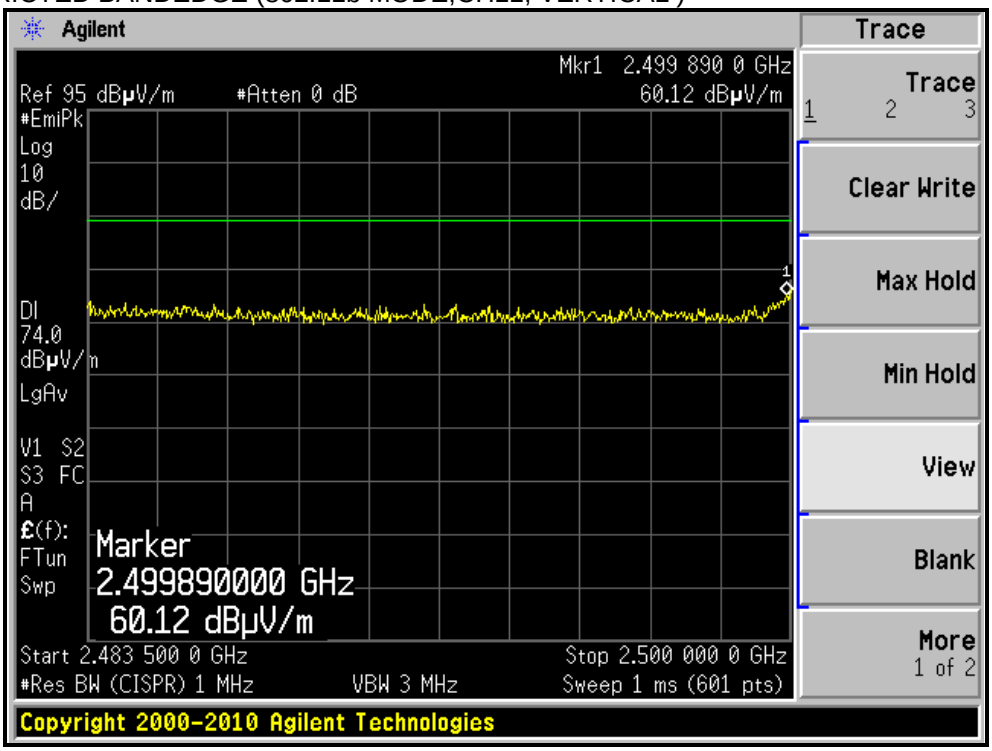
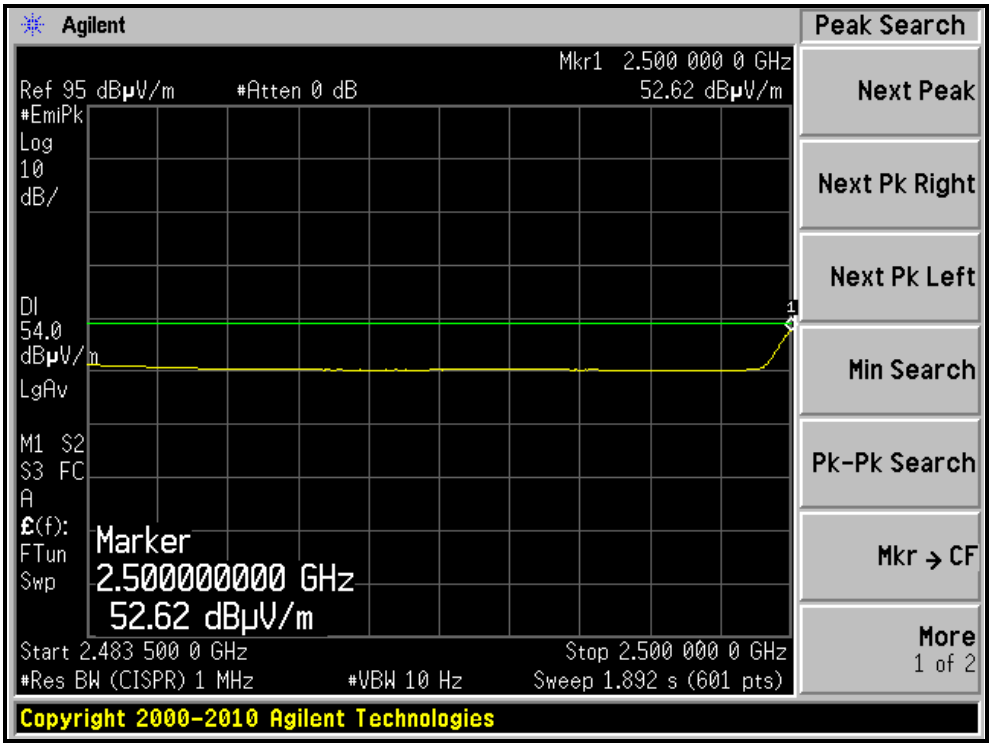




802.11g OFDM MODULATION

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	26deg. C, 61%RH	TESTED BY	Amos Chuang

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	56.7 PK	74.0	-17.3	1.00 H	335	24.82	31.88
2	2390.00	44.8 AV	54.0	-9.2	1.00 H	335	12.92	31.88
3	*2412.00	95.5 PK			1.00 H	337	63.55	31.95
4	*2412.00	85.6 AV			1.00 H	337	53.65	31.95
5	2500.00	56.9 PK	74.0	-17.1	1.17 H	18	24.65	32.25
6	2500.00	47.3 AV	54.0	-6.7	1.17 H	18	15.05	32.25
7	4824.00	46.7 PK	74.0	-27.3	1.48 H	251	5.48	41.22
8	4824.00	34.4 AV	54.0	-19.6	1.48 H	251	-6.82	41.22
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	67.0 PK	74.0	-7.0	1.20 V	332	35.12	31.88
2	2390.00	52.5 AV	54.0	-1.5	1.20 V	332	20.62	31.88
3	*2412.00	107.4 PK			1.17 V	146	75.45	31.95
4	*2412.00	97.3 AV			1.17 V	146	65.35	31.95
5	4824.00	46.8 PK	74.0	-27.2	1.00 V	246	5.58	41.22
6	4824.00	34.5 AV	54.0	-19.5	1.00 V	246	-6.72	41.22

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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 61%RH	TESTED BY	Amos Chuang

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	99.2 PK			1.00 H	339	67.16	32.04
2	*2437.00	89.5 AV			1.00 H	339	57.46	32.04
3	4874.00	46.7 PK	74.0	-27.3	1.45 H	252	5.34	41.36
4	4874.00	34.5 AV	54.0	-19.5	1.45 H	252	-6.86	41.36
5	7311.00	51.5 PK	74.0	-22.5	1.66 H	243	5.83	45.67
6	7311.00	39.3 AV	54.0	-14.7	1.66 H	243	-6.37	45.67
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	109.1 PK			1.20 V	144	77.06	32.04
2	*2437.00	98.9 AV			1.20 V	144	66.86	32.04
3	2500.00	60.7 PK	74.0	-13.3	1.20 V	37	28.45	32.25
4	**2500.00**	**53.5 AV**	**54.0**	**-0.5**	**1.20 V**	**37**	**21.25**	**32.25**
5	4874.00	51.7 PK	74.0	-22.3	1.00 V	247	10.34	41.36
6	4874.00	39.9 AV	54.0	-14.1	1.00 V	247	-1.46	41.36
7	7311.00	54.5 PK	74.0	-19.5	1.16 V	208	8.83	45.67
8	7311.00	41.3 AV	54.0	-12.7	1.16 V	208	-4.37	45.67

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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 61%RH	TESTED BY	Amos Chuang

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	95.6 PK			1.00 H	340	63.48	32.12
2	*2462.00	86.2 AV			1.00 H	340	54.08	32.12
3	2500.00	56.7 PK	74.0	-17.3	1.16 H	17	24.45	32.25
4	2500.00	46.9 AV	54.0	-7.1	1.16 H	17	14.65	32.25
5	4924.00	46.7 PK	74.0	-27.3	1.49 H	250	5.22	41.48
6	4924.00	34.5 AV	54.0	-19.5	1.49 H	250	-6.98	41.48
7	7386.00	51.2 PK	74.0	-22.8	1.65 H	244	5.29	45.91
8	7386.00	39.1 AV	54.0	-14.9	1.65 H	244	-6.81	45.91
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	106.3 PK			1.20 V	330	74.18	32.12
2	*2462.00	96.6 AV			1.20 V	330	64.48	32.12
3	2483.50	65.4 PK	74.0	-8.6	1.15 V	155	33.21	32.19
4	2483.50	52.6 AV	54.0	-1.4	1.15 V	155	20.41	32.19
5	4924.00	46.9 PK	74.0	-27.1	1.00 V	247	5.42	41.48
6	4924.00	34.6 AV	54.0	-19.4	1.00 V	247	-6.88	41.48
7	7386.00	52.2 PK	74.0	-21.8	1.16 V	207	6.29	45.91
8	7386.00	39.5 AV	54.0	-14.5	1.16 V	207	-6.41	45.91

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

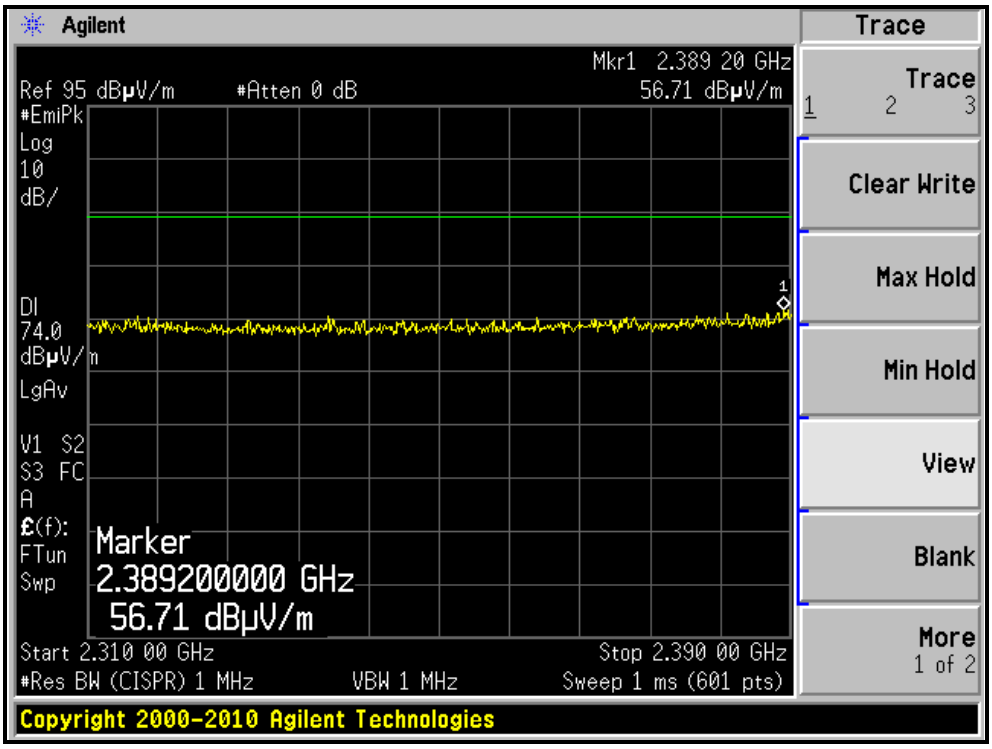
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

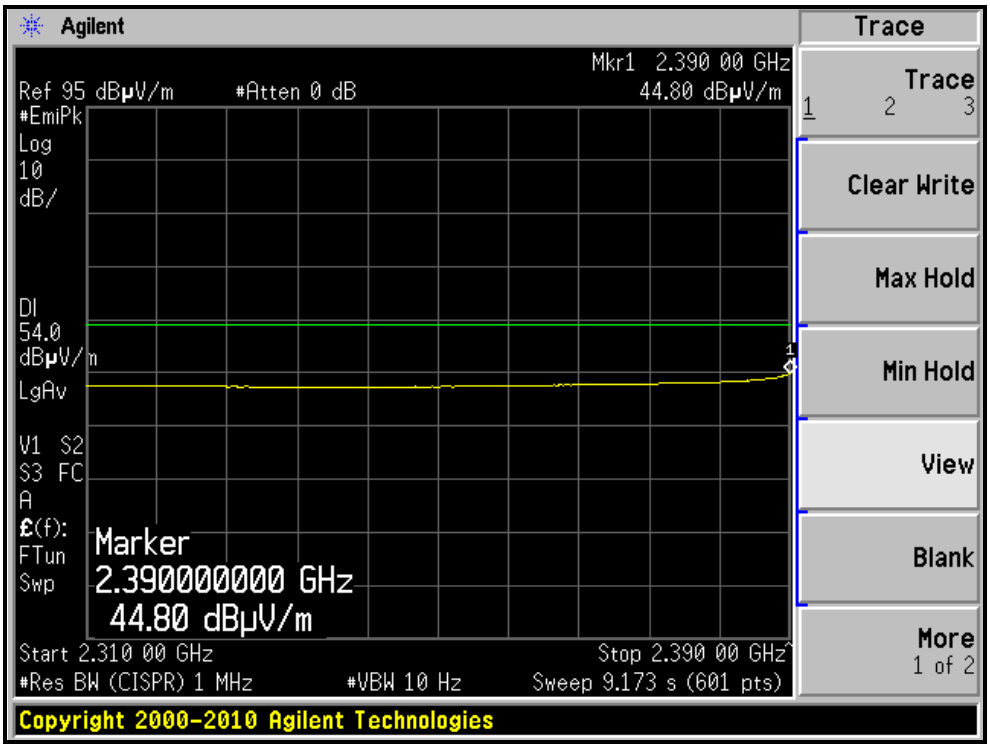
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

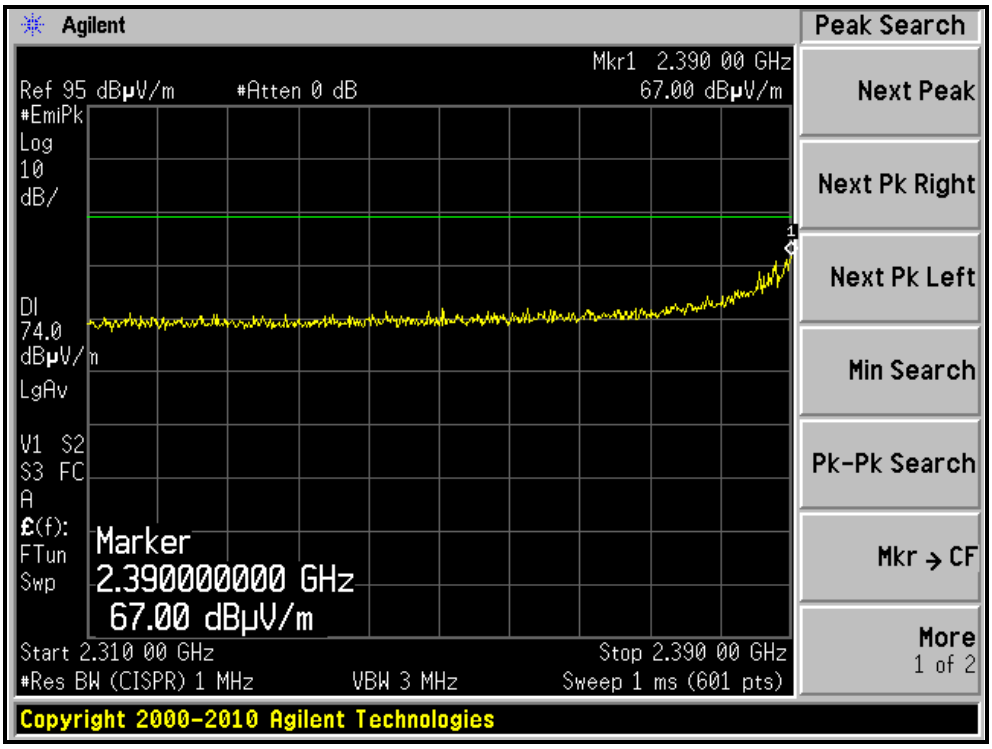
5. " * ": Fundamental frequency.

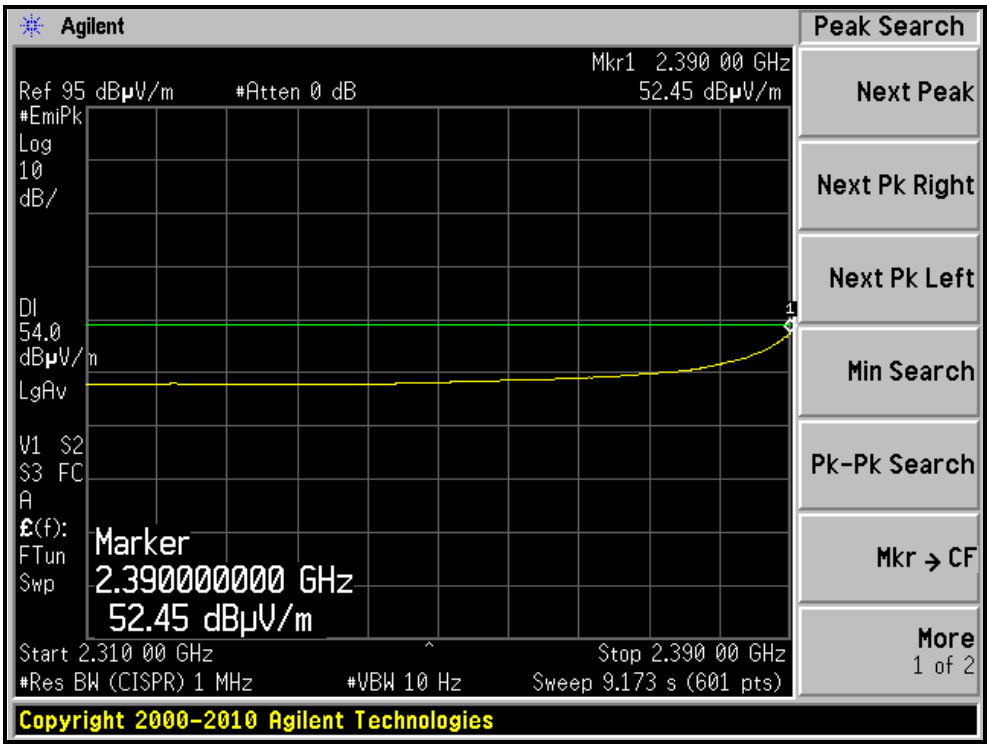
RESTRICTED BANDEDGE (802.11g MODE,CH1, HORIZONTAL)



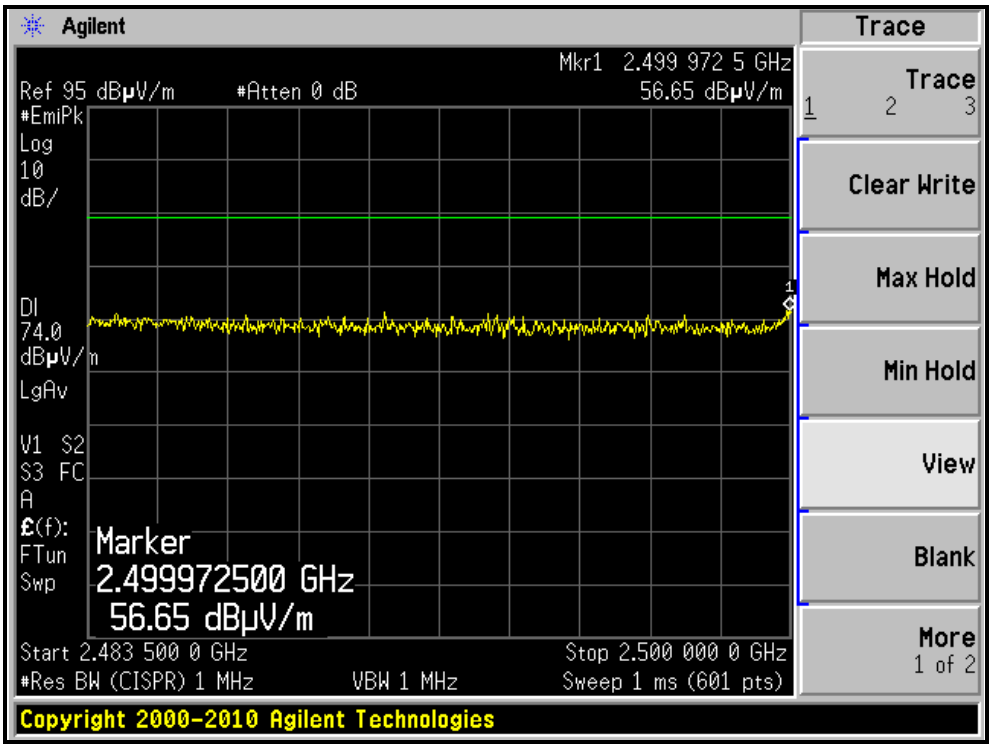


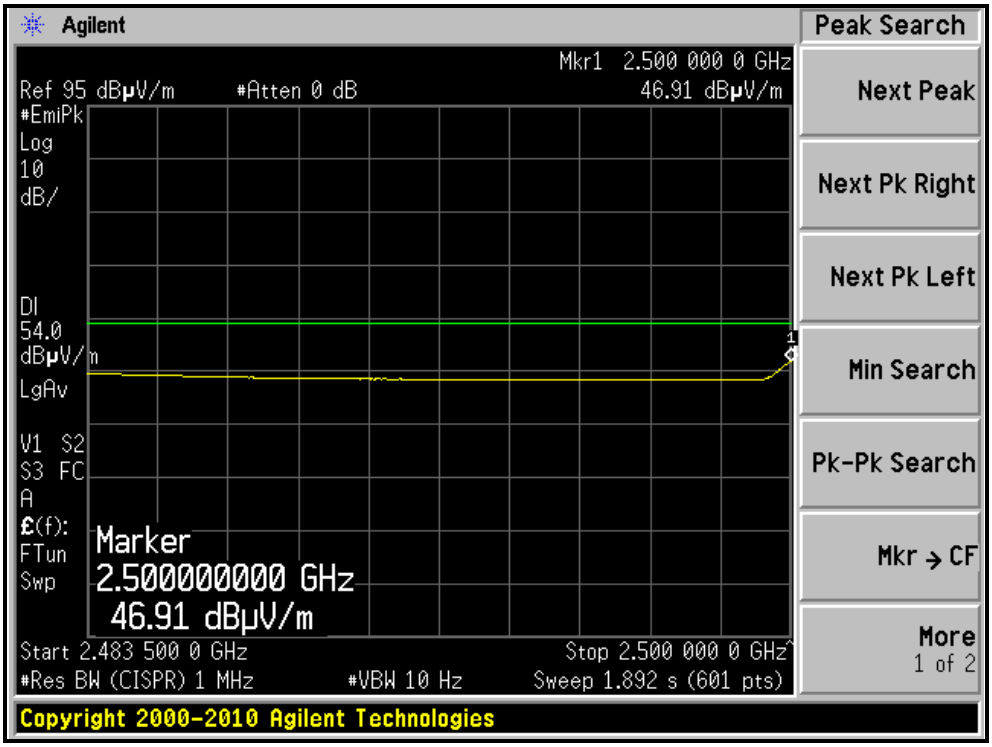
RESTRICTED BANDEDGE (802.11g MODE,CH1, VERTICAL)



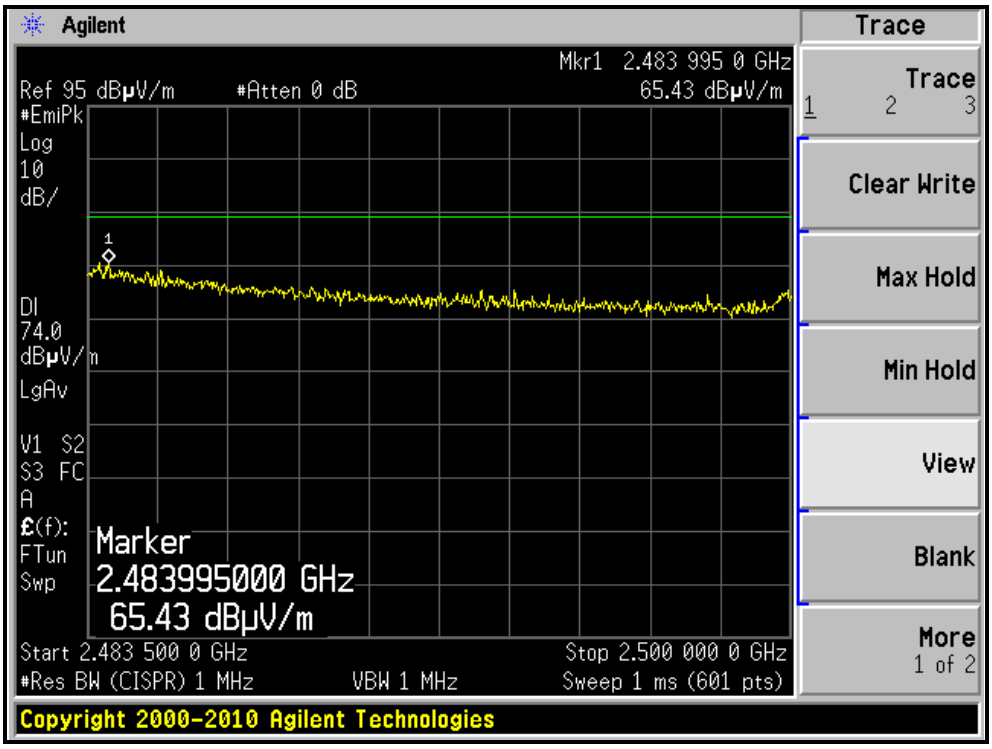


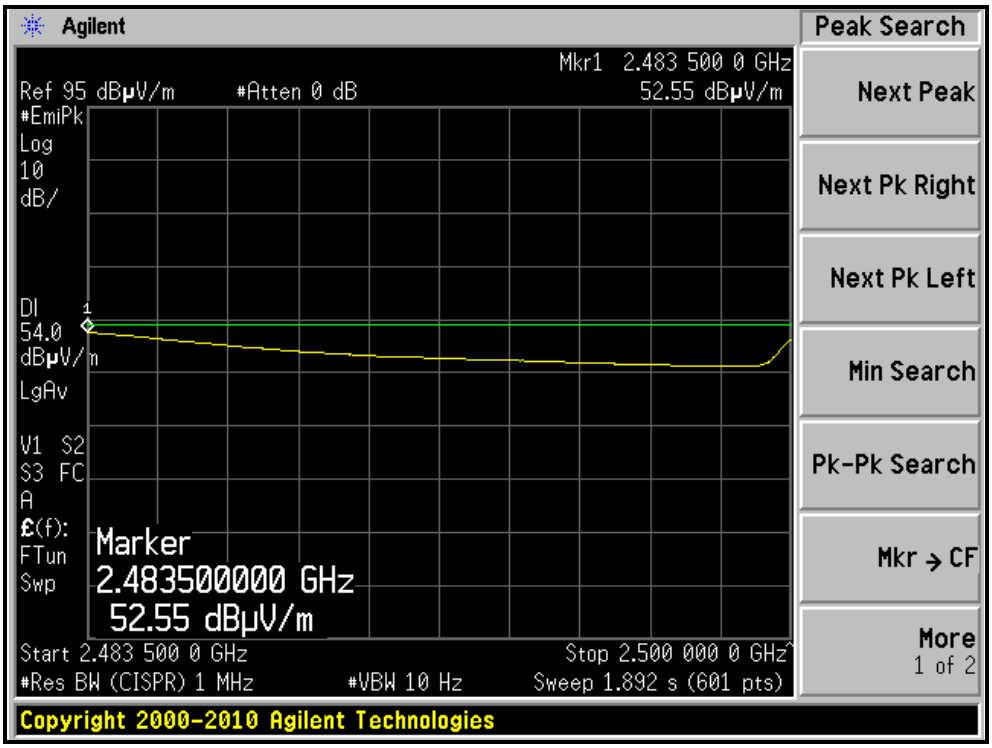
RESTRICTED BANDEDGE (802.11g MODE,CH11, HORIZONTAL)





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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 61%RH	TESTED BY	Amos Chuang

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	56.5 PK	74.0	-17.5	1.00 H	335	24.62	31.88
2	2390.00	44.2 AV	54.0	-9.8	1.00 H	335	12.32	31.88
3	*2412.00	93.5 PK			1.00 H	338	61.55	31.95
4	*2412.00	83.5 AV			1.00 H	338	51.55	31.95
5	2500.00	56.4 PK	74.0	-17.6	1.17 H	19	24.15	32.25
6	2500.00	46.6 AV	54.0	-7.4	1.17 H	19	14.35	32.25
7	4824.00	46.7 PK	74.0	-27.3	1.00 H	79	5.48	41.22
8	4824.00	34.3 AV	54.0	-19.7	1.00 H	79	-6.92	41.22
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	66.1 PK	74.0	-7.9	1.00 V	153	34.22	31.88
2	**2390.00**	**53.5 AV**	**54.0**	**-0.5**	**1.00 V**	**153**	**21.62**	**31.88**
3	*2412.00	108.7 PK			1.00 V	163	76.75	31.95
4	*2412.00	95.0 AV			1.00 V	163	63.05	31.95
5	4824.00	46.9 PK	74.0	-27.1	1.00 V	173	5.68	41.22
6	4824.00	34.6 AV	54.0	-19.4	1.00 V	173	-6.62	41.22

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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 61%RH	TESTED BY	Amos Chuang

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	96.4 PK			1.00 H	338	64.36	32.04
2	*2437.00	86.3 AV			1.00 H	338	54.26	32.04
3	4874.00	46.3 PK	74.0	-27.7	1.00 H	80	4.94	41.36
4	4874.00	34.5 AV	54.0	-19.5	1.00 H	80	-6.86	41.36
5	7311.00	51.7 PK	74.0	-22.3	1.00 H	161	6.03	45.67
6	7311.00	39.1 AV	54.0	-14.9	1.00 H	161	-6.57	45.67
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	56.8 PK	74.0	-17.2	1.00 V	161	24.92	31.88
2	2390.00	46.2 AV	54.0	-7.8	1.00 V	161	14.32	31.88
3	*2437.00	107.8 PK			1.19 V	144	75.76	32.04
4	*2437.00	97.0 AV			1.19 V	144	64.96	32.04
5	2500.00	61.1 PK	74.0	-12.9	1.17 V	27	28.85	32.25
6	2500.00	53.0 AV	54.0	-1.0	1.17 V	27	20.75	32.25
7	4874.00	48.3 PK	74.0	-25.7	1.00 V	176	6.94	41.36
8	4874.00	35.2 AV	54.0	-18.8	1.00 V	176	-6.16	41.36
9	7311.00	52.6 PK	74.0	-21.4	1.25 V	90	6.93	45.67
10	7311.00	39.9 AV	54.0	-14.1	1.25 V	90	-5.77	45.67

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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 61%RH	TESTED BY	Amos Chuang

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	95.4 PK			1.00 H	340	63.28	32.12
2	*2462.00	85.2 AV			1.00 H	340	53.08	32.12
3	2483.50	56.7 PK	74.0	-17.3	1.17 H	20	24.51	32.19
4	2483.50	46.6 AV	54.0	-7.4	1.17 H	20	14.41	32.19
5	4924.00	46.8 PK	74.0	-27.2	1.00 H	77	5.32	41.48
6	4924.00	34.4 AV	54.0	-19.6	1.00 H	77	-7.08	41.48
7	7386.00	51.5 PK	74.0	-22.5	1.00 H	159	5.59	45.91
8	7386.00	39.0 AV	54.0	-15.0	1.00 H	159	-6.91	45.91
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	106.5 PK			1.00 V	311	74.38	32.12
2	*2462.00	95.6 AV			1.00 V	311	63.48	32.12
3	2483.50	65.8 PK	74.0	-8.2	1.18 V	143	33.61	32.19
4	2483.50	52.6 AV	54.0	-1.4	1.18 V	143	20.41	32.19
5	4924.00	47.3 PK	74.0	-26.7	1.00 V	178	5.82	41.48
6	4924.00	34.9 AV	54.0	-19.1	1.00 V	178	-6.58	41.48
7	7386.00	52.1 PK	74.0	-21.9	1.23 V	89	6.19	45.91
8	7386.00	39.2 AV	54.0	-14.8	1.23 V	89	-6.71	45.91

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

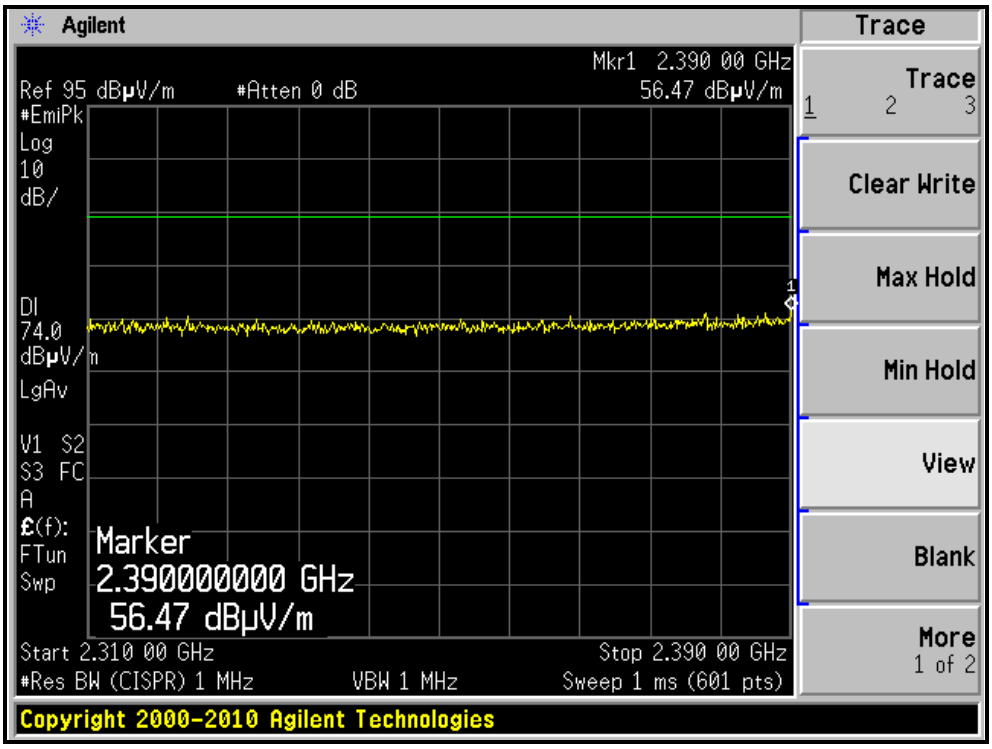
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

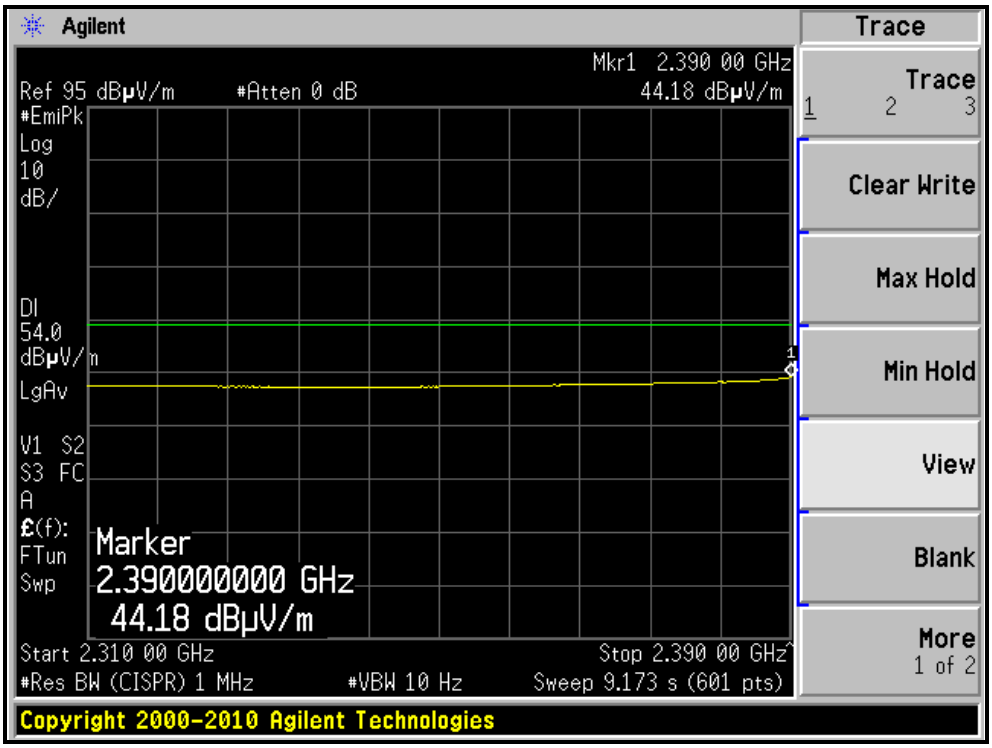
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

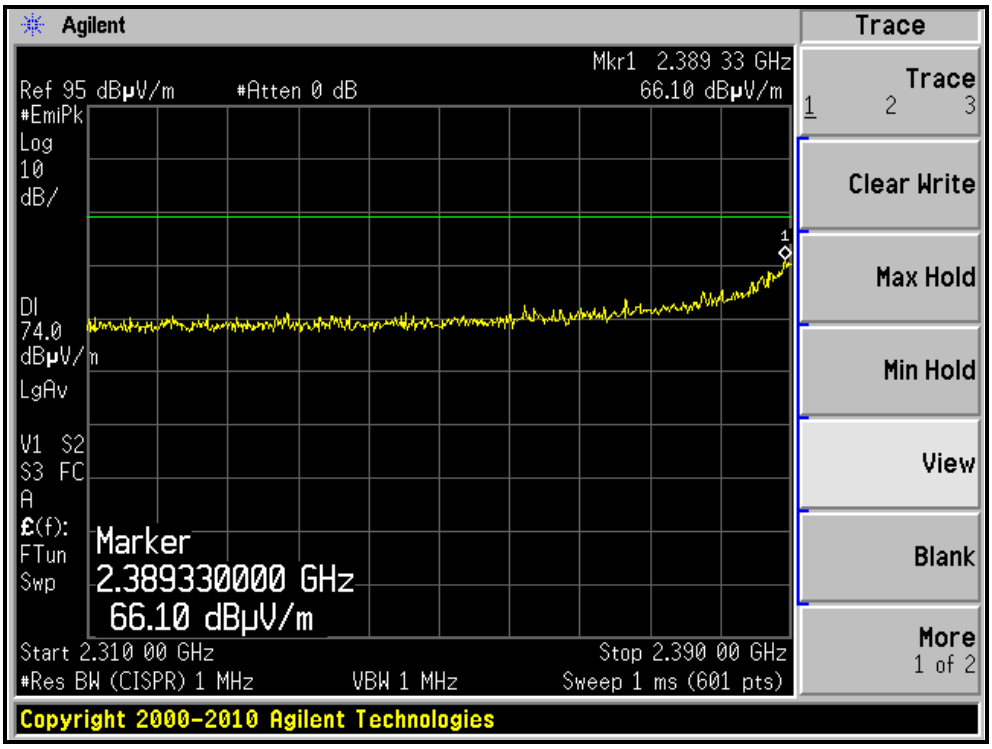
5. " * ": Fundamental frequency.

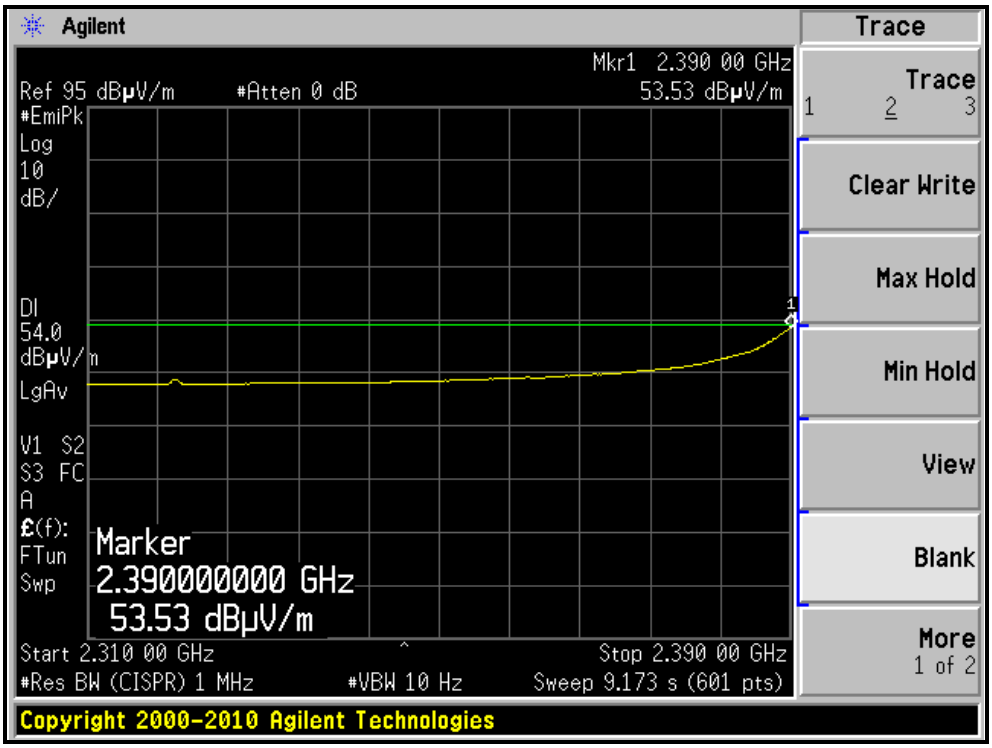
RESTRICTED BANDEDGE (802.11n (20MHz) MODE,CH1, HORIZONTAL)



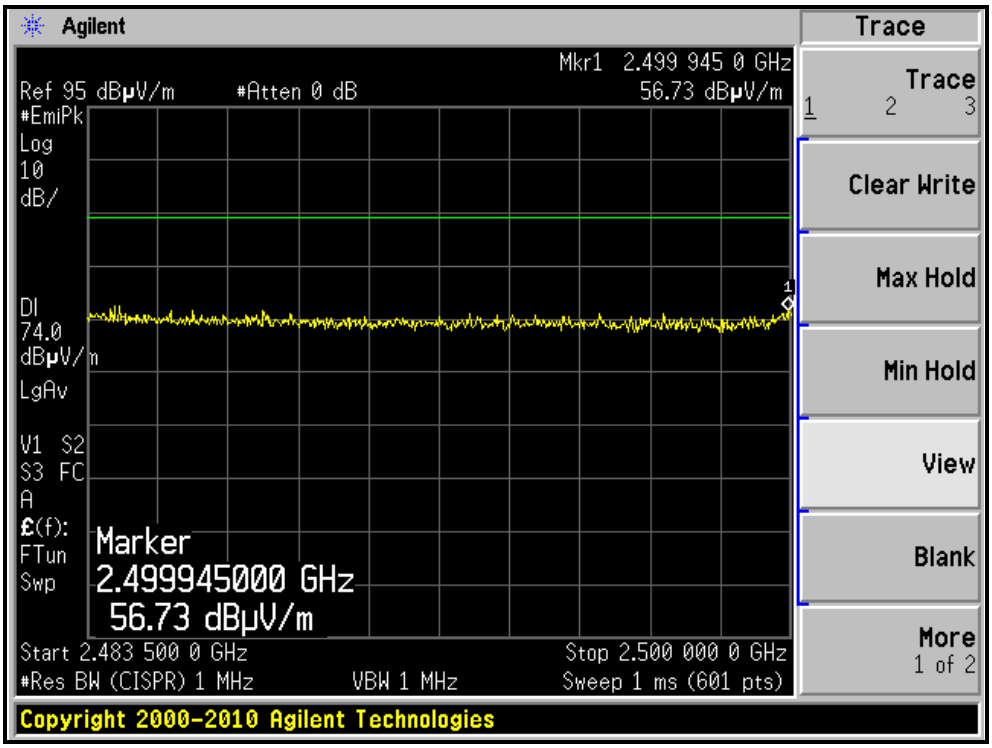


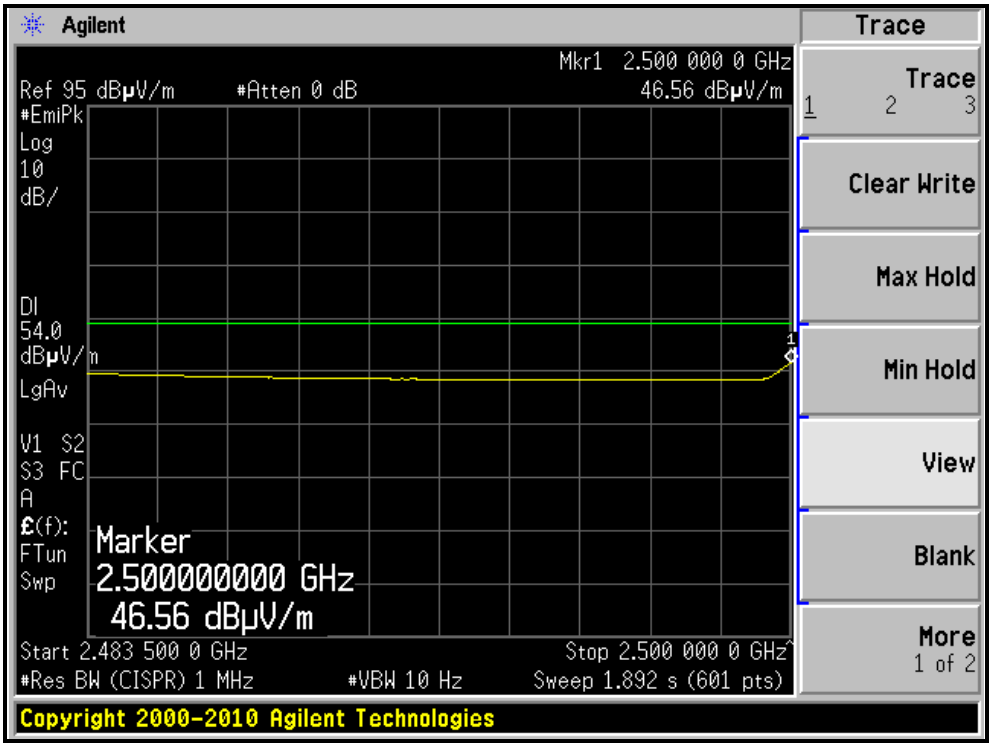
RESTRICTED BANDEDGE (802.11n (20MHz) MODE,CH1, VERTICAL)



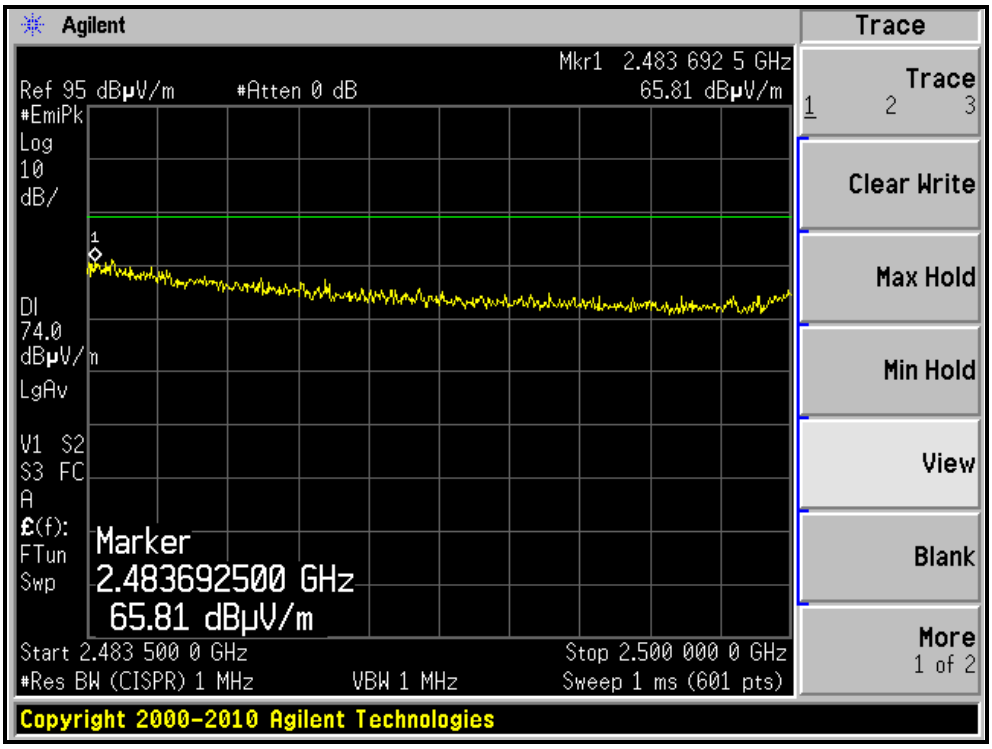


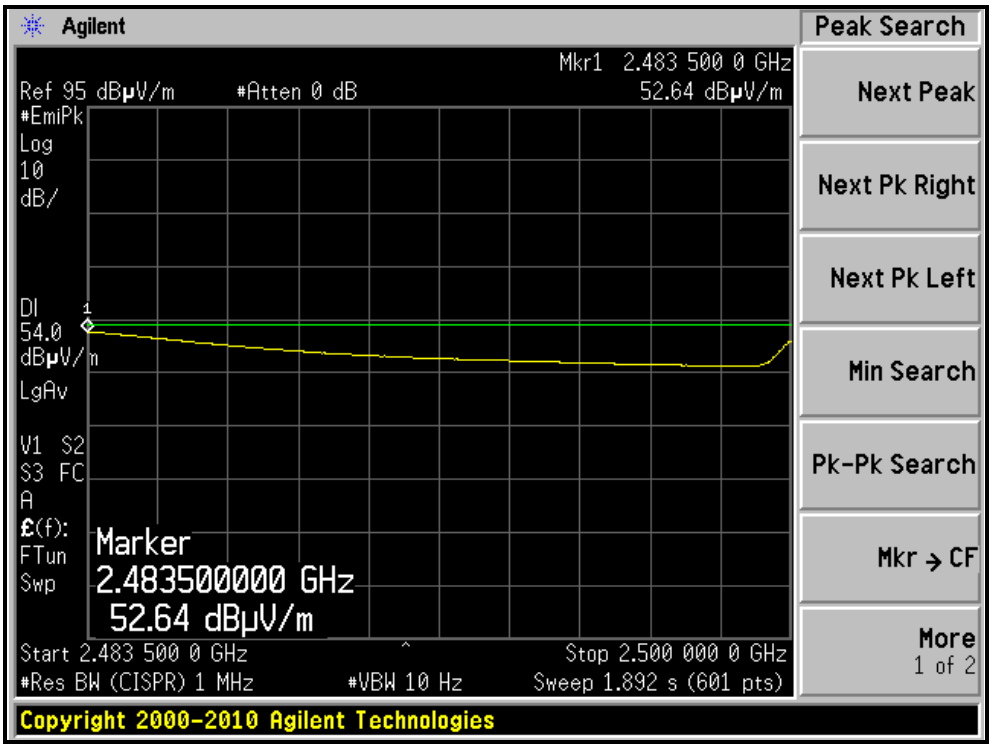
RESTRICTED BANDEDGE (802.11n (20MHz) MODE,CH11, HORIZONTAL)





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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 61%RH	TESTED BY	Amos Chuang

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	61.7 PK	74.0	-12.3	1.00 H	339	29.82	31.88
2	2390.00	45.9 AV	54.0	-8.1	1.00 H	339	14.02	31.88
3	*2422.00	96.0 PK			1.00 H	338	64.02	31.98
4	*2422.00	75.5 AV			1.00 H	338	43.52	31.98
5	2500.00	58.0 PK	74.0	-16.0	1.17 H	17	25.75	32.25
6	2500.00	46.2 AV	54.0	-7.8	1.17 H	17	13.95	32.25
7	4844.00	47.7 PK	74.0	-26.3	1.00 H	75	6.42	41.28
8	4844.00	34.3 AV	54.0	-19.7	1.00 H	75	-6.98	41.28
9	7266.00	51.7 PK	74.0	-22.3	1.00 H	155	6.15	45.55
10	7266.00	39.3 AV	54.0	-14.7	1.00 H	155	-6.25	45.55
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	72.3 PK	74.0	-1.7	1.22 V	149	40.42	31.88
2	2390.00	51.3 AV	54.0	-2.7	1.22 V	149	19.42	31.88
3	*2422.00	105.5 PK			1.20 V	148	73.52	31.98
4	*2422.00	81.1 AV			1.20 V	148	49.12	31.98
5	4844.00	48.1 PK	74.0	-25.9	1.00 V	169	6.82	41.28
6	4844.00	35.2 AV	54.0	-18.8	1.00 V	169	-6.08	41.28
7	7266.00	52.0 PK	74.0	-22.0	1.25 V	79	6.45	45.55
8	7266.00	39.5 AV	54.0	-14.5	1.25 V	79	-6.05	45.55

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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 61%RH	TESTED BY	Amos Chuang

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	99.2 PK			1.00 H	334	67.16	32.04
2	*2437.00	77.3 AV			1.00 H	334	45.26	32.04
3	4874.00	48.4 PK	74.0	-25.6	1.00 H	79	7.04	41.36
4	4874.00	35.4 AV	54.0	-18.6	1.00 H	79	-5.96	41.36
5	7311.00	52.1 PK	74.0	-21.9	1.00 H	150	6.43	45.67
6	7311.00	40.2 AV	54.0	-13.8	1.00 H	150	-5.47	45.67
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	70.2 PK	74.0	-3.8	1.23 V	146	38.32	31.88
2	2390.00	50.9 AV	54.0	-3.1	1.23 V	146	19.02	31.88
3	*2437.00	108.0 PK			1.20 V	146	75.96	32.04
4	*2437.00	82.2 AV			1.20 V	146	50.18	32.04
5	2500.00	66.1 PK	74.0	-7.9	1.16 V	26	33.85	32.25
6	2500.00	50.3 AV	54.0	-3.7	1.16 V	26	18.05	32.25
7	4874.00	48.6 PK	74.0	-25.4	1.00 V	172	7.24	41.36
8	4874.00	35.6 AV	54.0	-18.4	1.00 V	172	-5.76	41.36
9	7311.00	53.3 PK	74.0	-20.7	1.22 V	99	7.63	45.67
10	7311.00	41.5 AV	54.0	-12.5	1.22 V	99	-4.17	45.67

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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 61%RH	TESTED BY	Amos Chuang

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	96.6 PK			1.00 H	340	64.51	32.09
2	*2452.00	76.0 AV			1.00 H	340	43.91	32.09
3	2483.50	65.8 PK	74.0	-8.2	1.00 H	338	33.61	32.19
4	2483.50	47.1 AV	54.0	-6.9	1.00 H	338	14.91	32.19
5	4904.00	48.2 PK	74.0	-25.8	1.00 H	78	6.76	41.44
6	4904.00	35.3 AV	54.0	-18.7	1.00 H	78	-6.14	41.44
7	7356.00	51.9 PK	74.0	-22.1	1.00 H	154	6.09	45.81
8	7356.00	40.1 AV	54.0	-13.9	1.00 H	154	-5.71	45.81
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	106.3 PK			1.20 V	46	74.21	32.09
2	*2452.00	81.4 AV			1.20 V	46	49.32	32.09
3	2483.50	72.4 PK	74.0	-1.6	1.23 V	160	40.21	32.19
4	2483.50	50.4 AV	54.0	-3.6	1.23 V	160	18.21	32.19
5	4904.00	48.5 PK	74.0	-25.5	1.00 V	175	7.06	41.44
6	4904.00	35.6 AV	54.0	-18.4	1.00 V	175	-5.84	41.44
7	7356.00	52.3 PK	74.0	-21.7	1.23 V	91	6.49	45.81
8	7356.00	40.5 AV	54.0	-13.5	1.23 V	91	-5.31	45.81

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

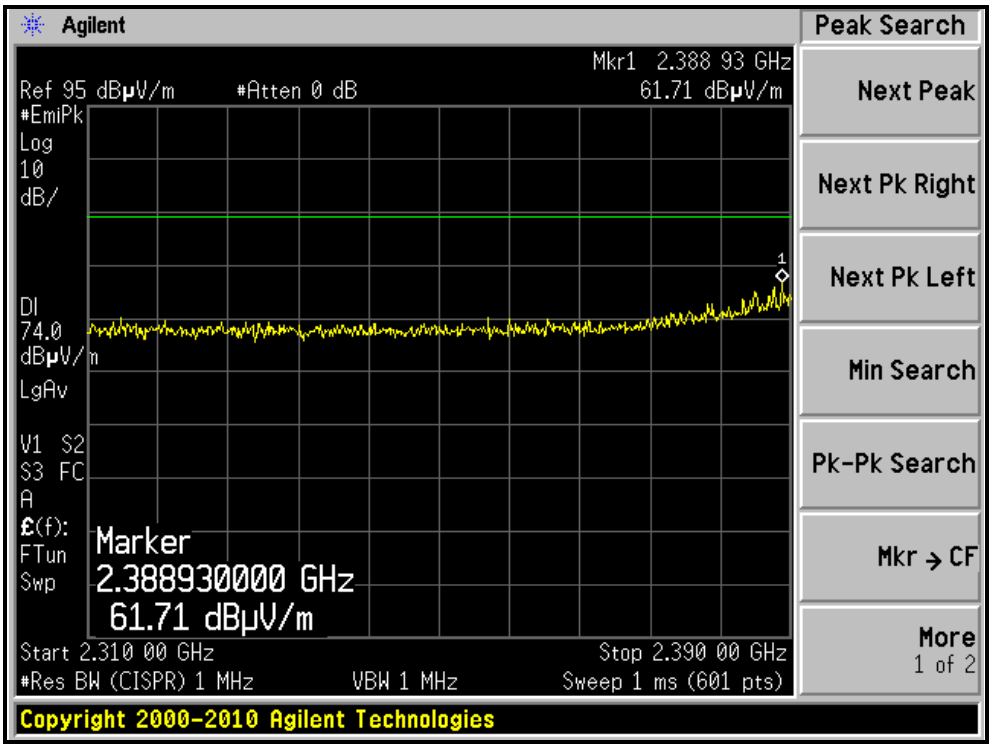
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

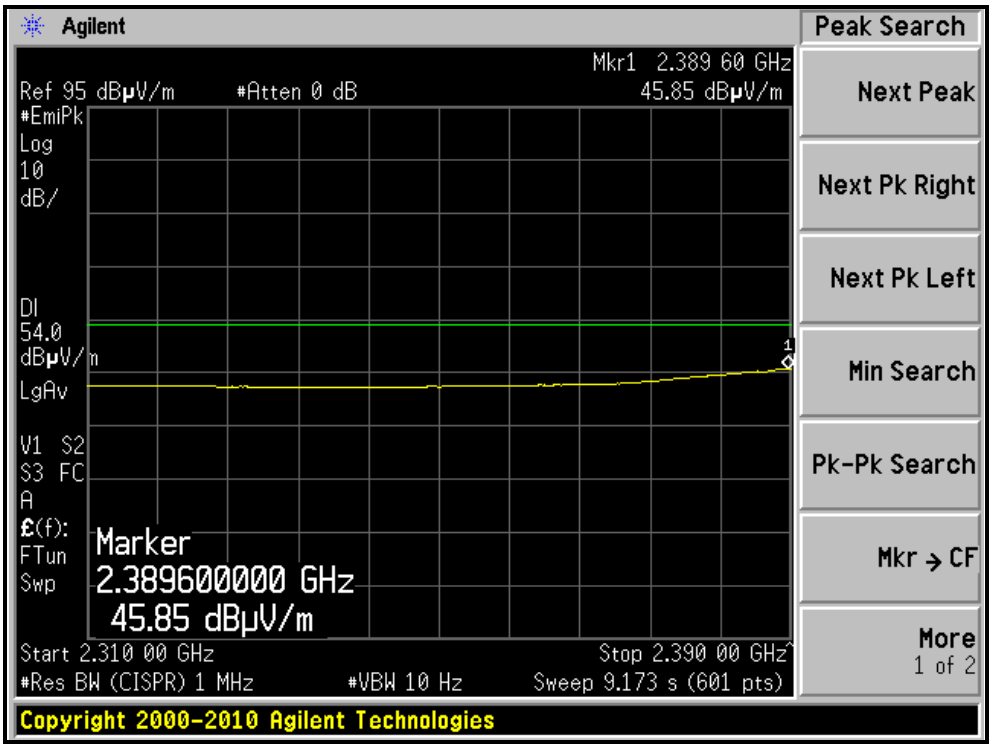
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

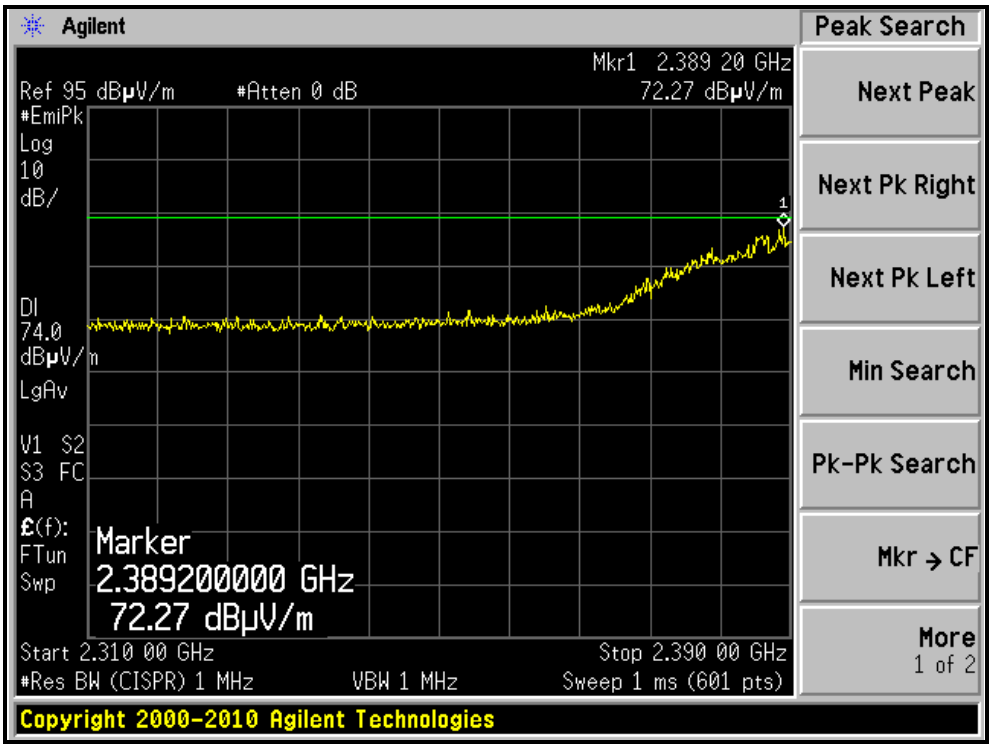
5. " * ": Fundamental frequency.

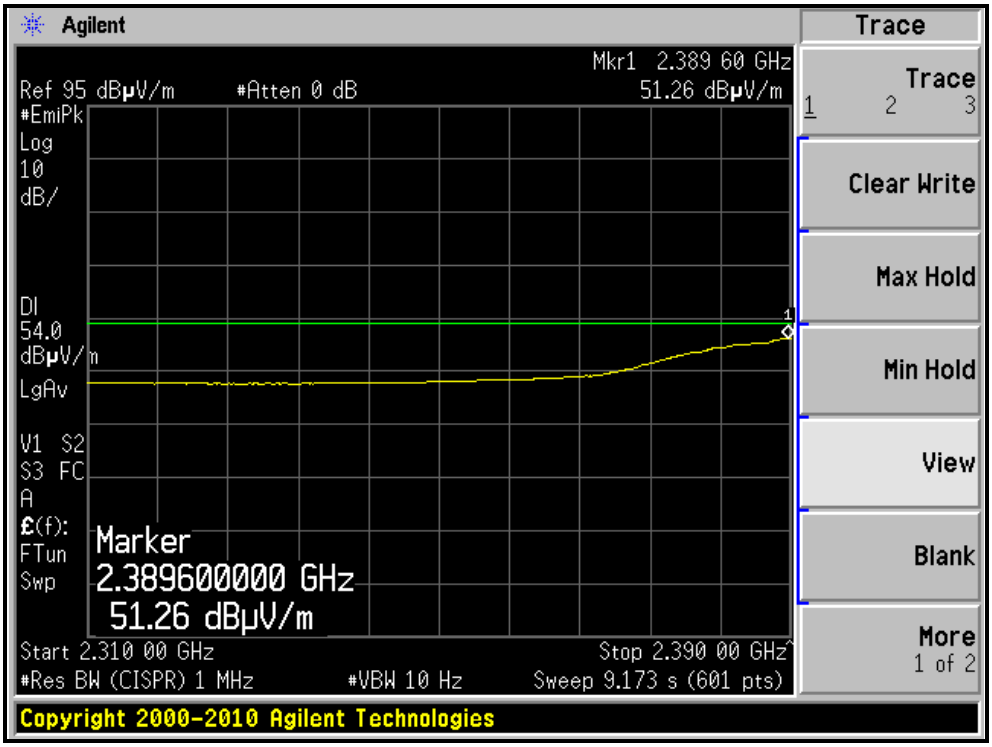
RESTRICTED BANDEDGE (802.11n (40MHz) MODE,CH3, HORIZONTAL)



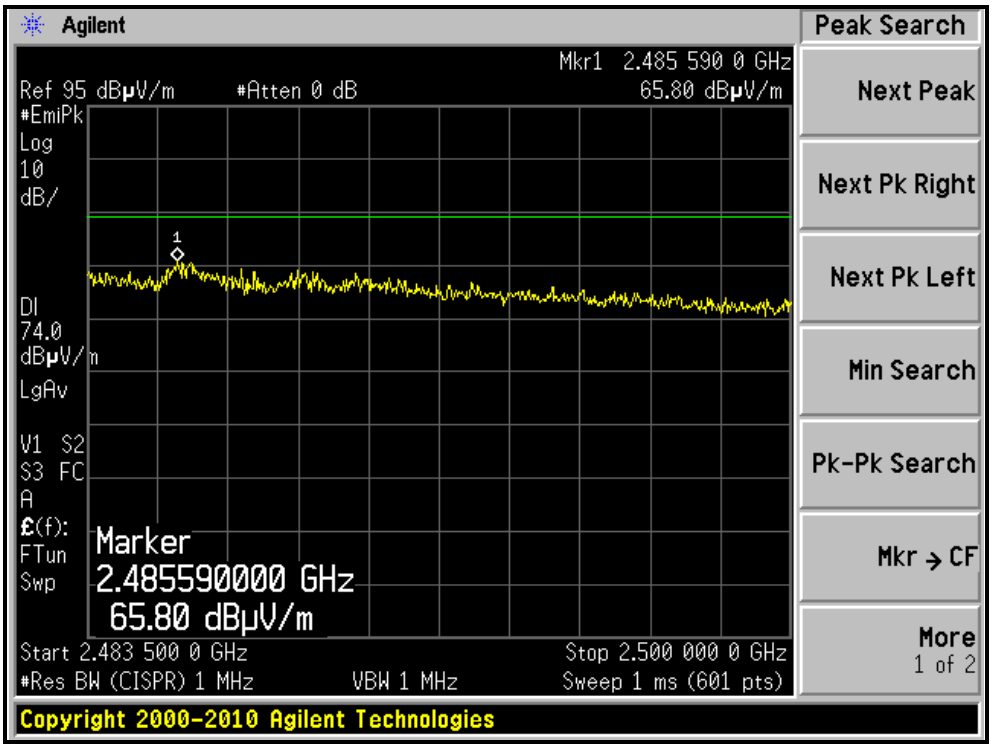


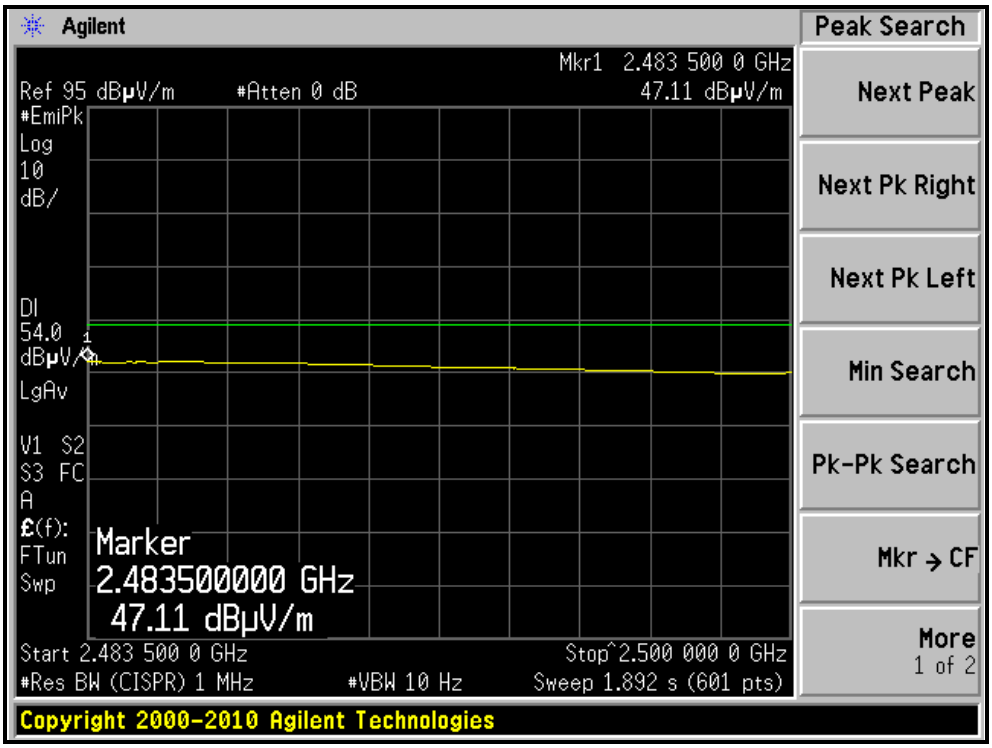
RESTRICTED BANDEDGE (802.11n (40MHz) MODE,CH3, VERTICAL)



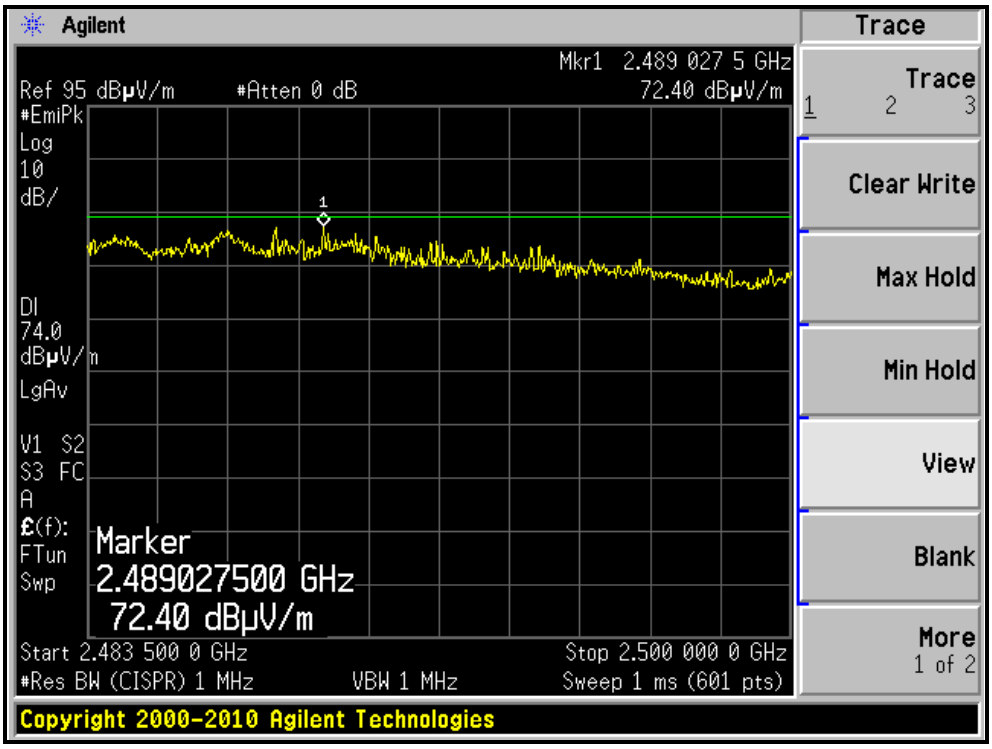


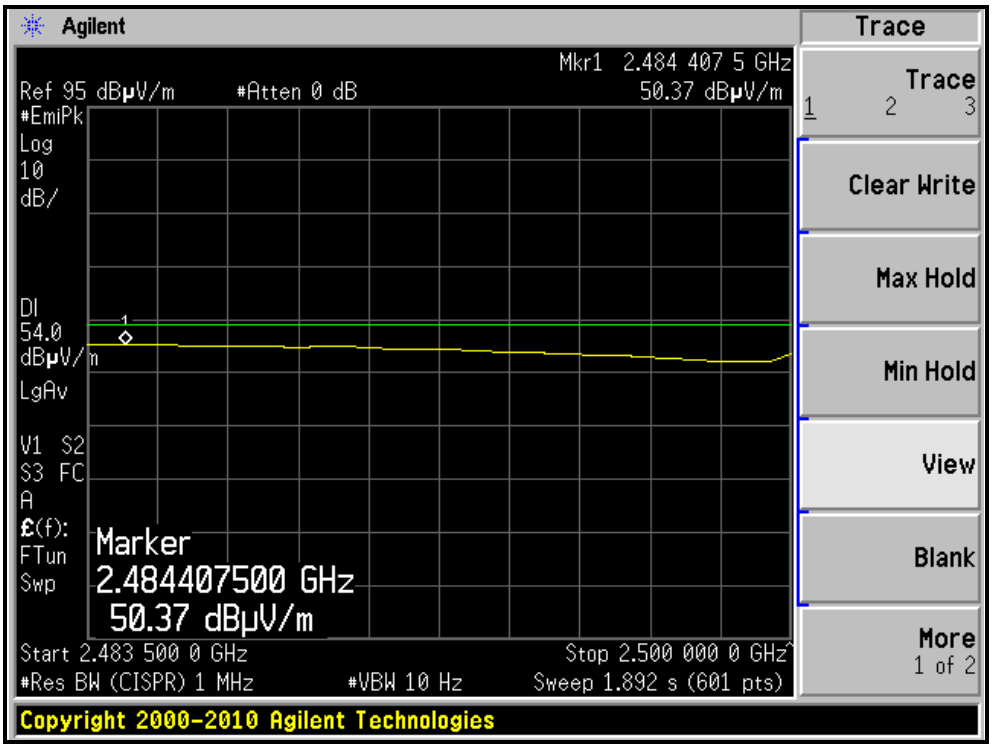
RESTRICTED BANDEDGE (802.11n (40MHz) MODE,CH9, HORIZONTAL)





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: Oct. 25, 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.

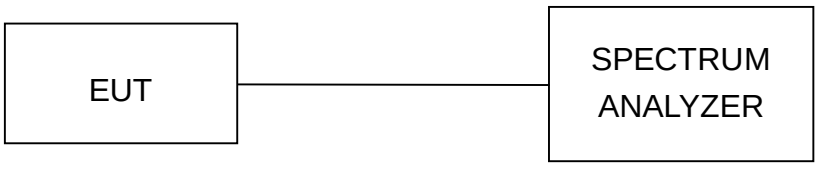
4.3.3 TEST PROCEDURE

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

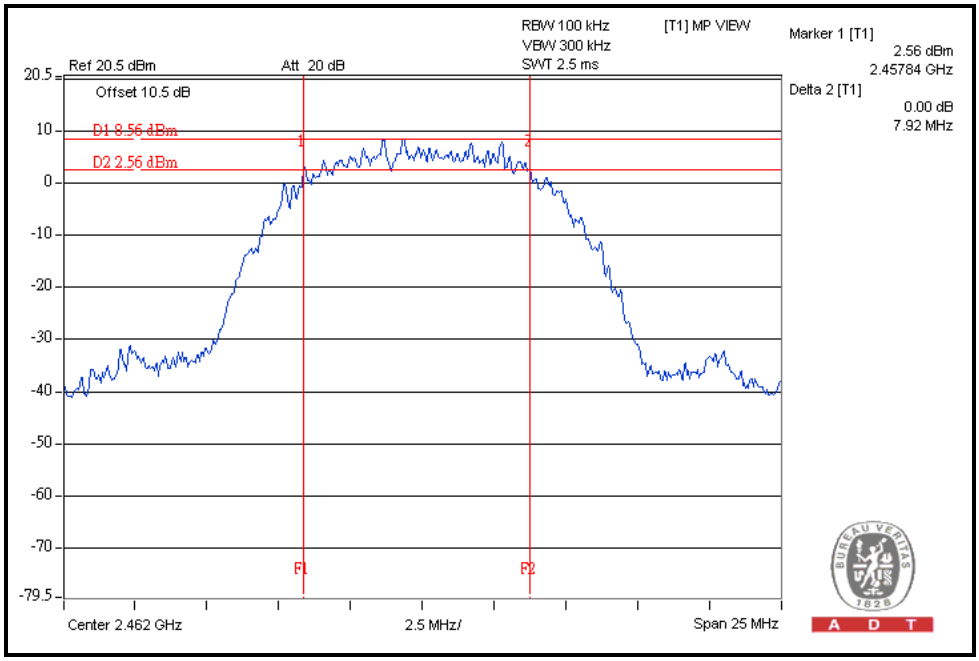
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 TEST RESULTS

802.11b DSSS MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	7.92	0.5	PASS
6	2437	7.33	0.5	PASS
11	2462	7.92	0.5	PASS

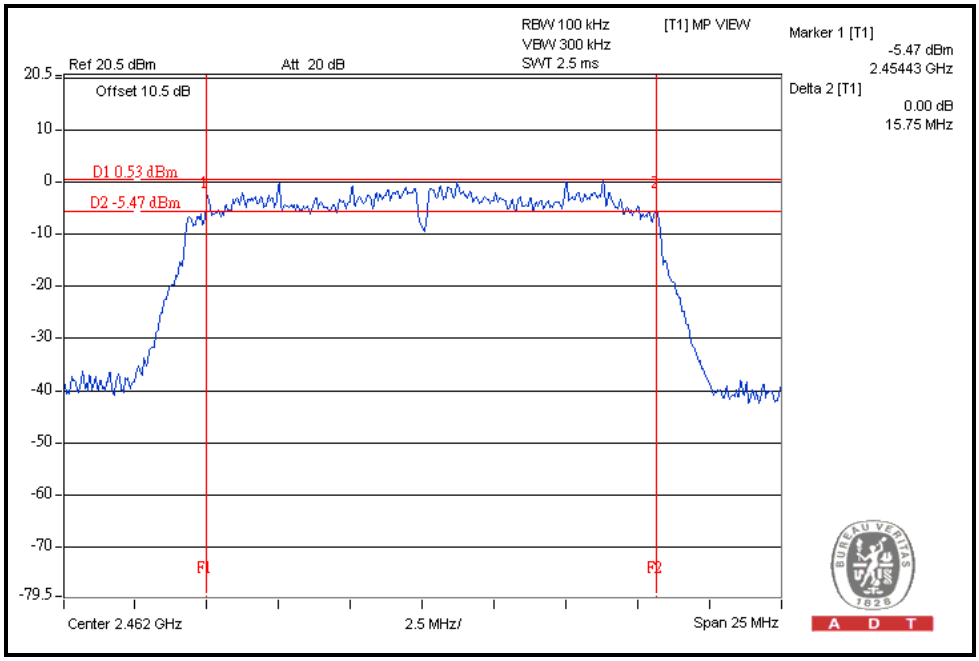
CH11



802.11g OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	15.16	0.5	PASS
6	2437	15.48	0.5	PASS
11	2462	15.75	0.5	PASS

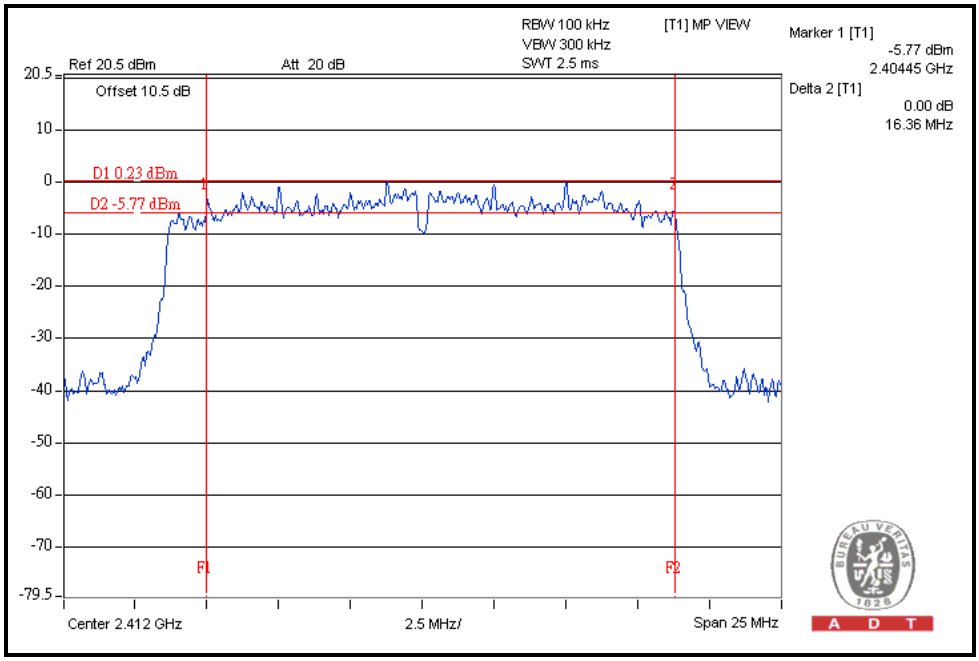
CH11



802.11n (20MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
1	2412	14.93	16.36	0.5	PASS
6	2437	15.11	14.50	0.5	PASS
11	2462	15.74	15.15	0.5	PASS

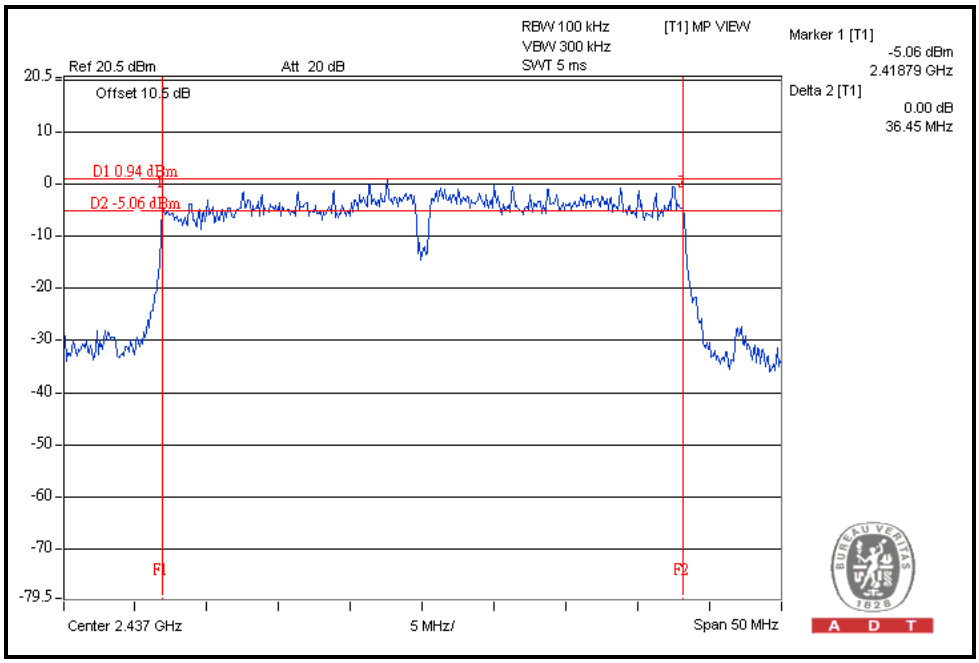
For CHAIN (1): CH1



802.11n (40MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
3	2422	35.86	36.39	0.5	PASS
6	2437	35.84	36.45	0.5	PASS
9	2452	35.88	36.45	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: Oct. 25, 2011

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Anritsu Power Meter	ML2495A	0824006	May 04, 2011	May 03, 2012
Pulse 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.

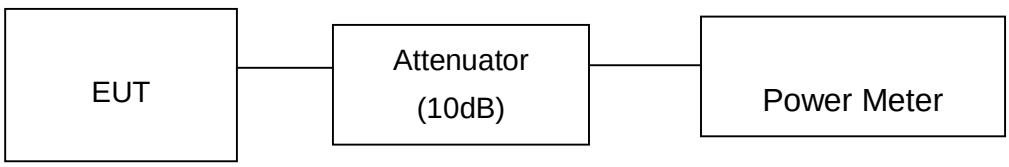
4.4.3 TEST PROCEDURES

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 (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	83.2	19.2	30	PASS
6	2437	144.5	21.6	30	PASS
11	2462	123.0	20.9	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	158.5	22.0	30	PASS
6	2437	263.0	24.2	30	PASS
11	2462	154.9	21.9	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(0)	CHAIN(1)				
1	2412	20.4	19.0	189.1	22.8	30	PASS
6	2437	23.0	20.7	317.0	25.0	30	PASS
11	2462	20.7	20.1	219.8	23.4	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	19.3	20.3	192.3	22.8	30	PASS
6	2437	22.4	22.5	351.6	25.5	30	PASS
9	2452	20.0	21.2	231.8	23.7	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: Oct. 25, 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.

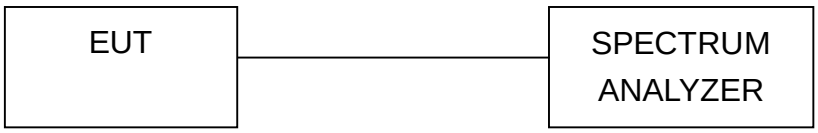
4.5.3 TEST PROCEDURE

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

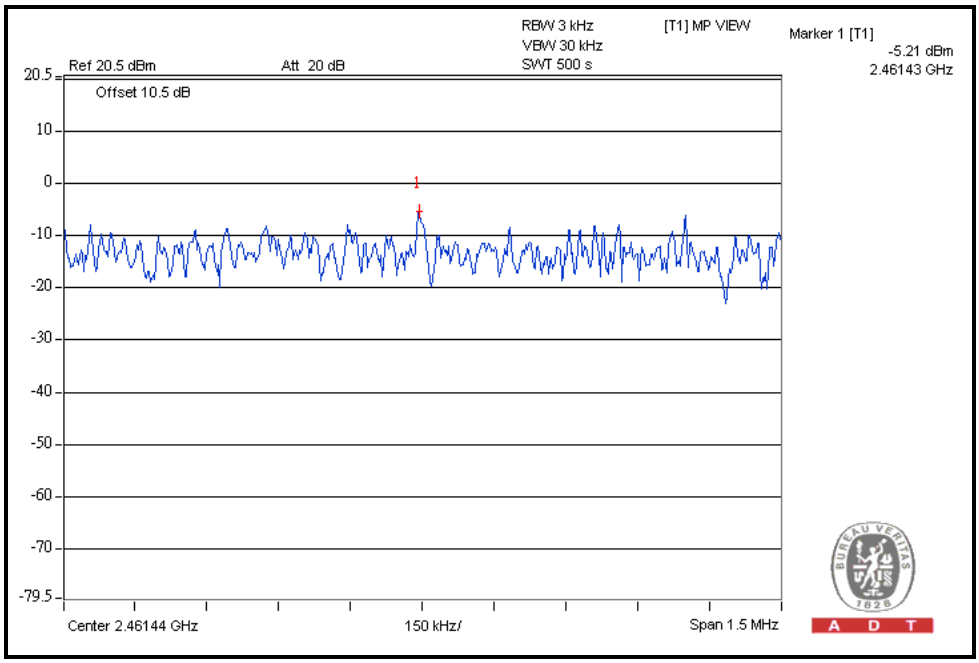
Same as Item 4.3.6

4.5.7 TEST RESULTS

802.11b DSSS MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-7.5	8	PASS
6	2437	-9.1	8	PASS
11	2462	-5.2	8	PASS

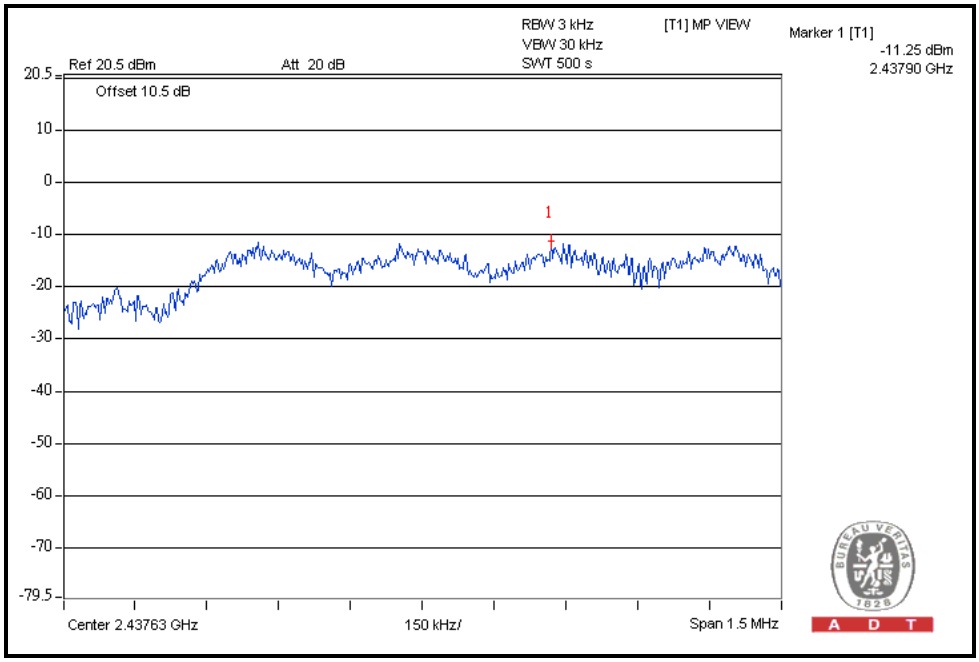
CH11



802.11g OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-13.5	8	PASS
6	2437	-11.3	8	PASS
11	2462	-14.2	8	PASS

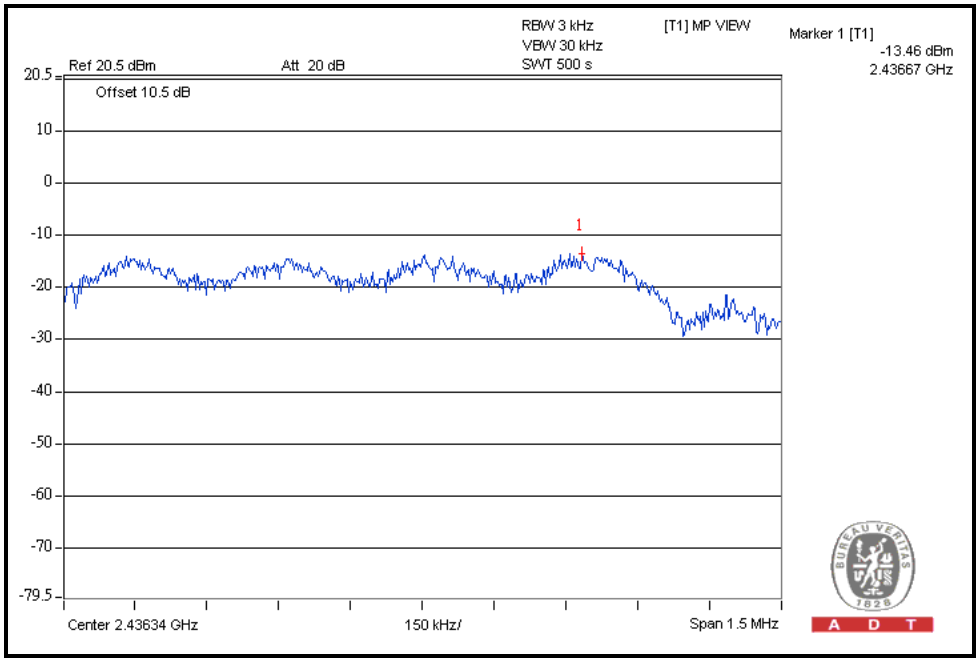
CH6



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	-16.2	-15.7	-12.9	8	PASS
6	2437	-15.0	-13.5	-11.2	8	PASS
11	2462	-14.6	-14.2	-11.4	8	PASS

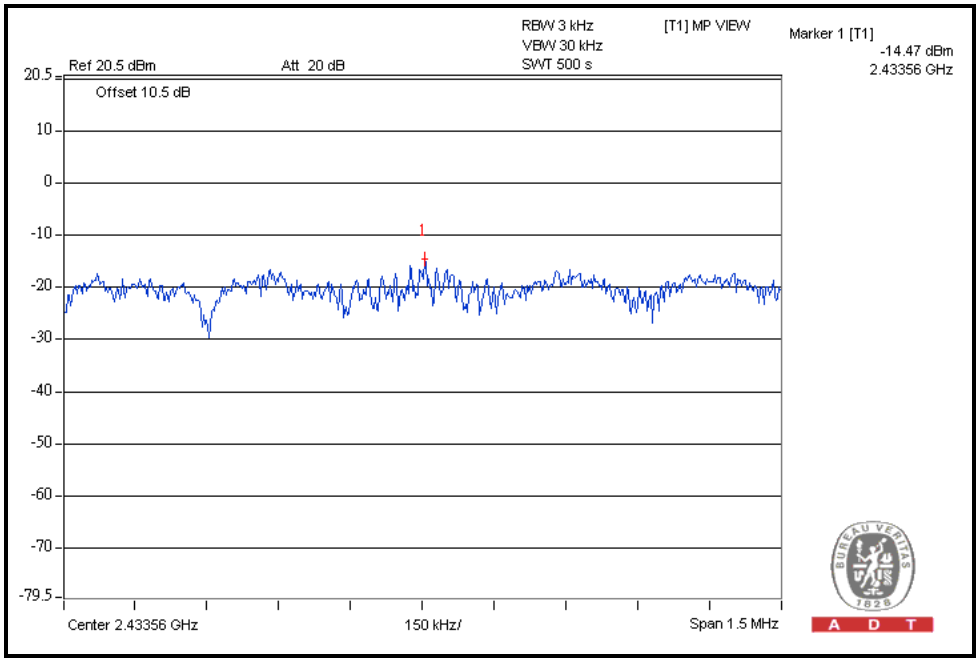
For CHAIN(1): CH6



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(0)	CHAIN(1)			
3	2422	-18.5	-18.9	-15.7	8	PASS
6	2437	-15.2	-14.5	-11.8	8	PASS
9	2452	-18.4	-18.1	-15.2	8	PASS

For CHAIN(1): 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: Oct. 25, 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 100 MHz or 200 MHz 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

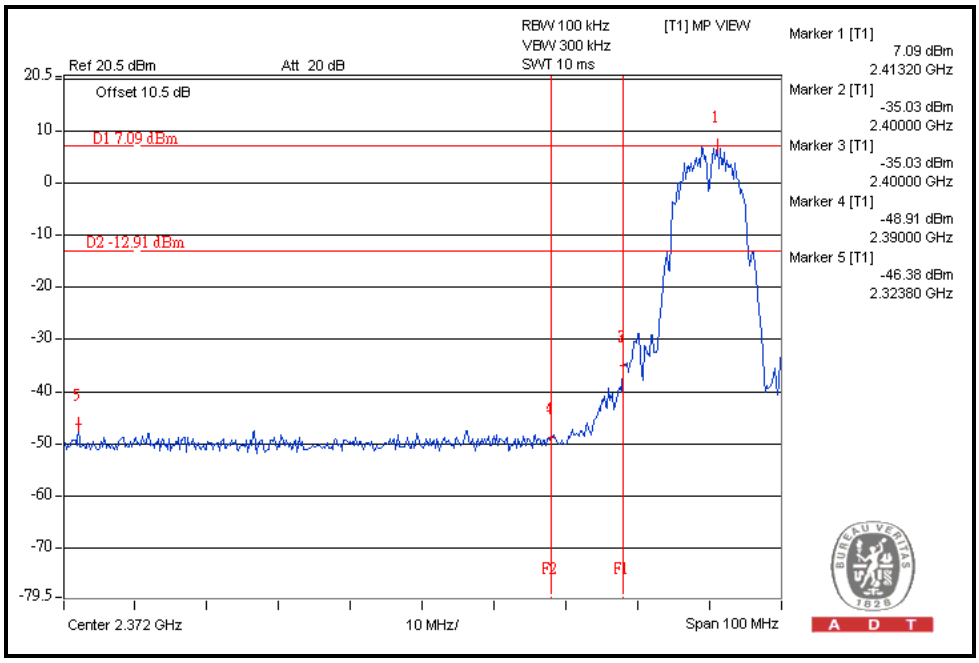
Same as Item 4.3.6

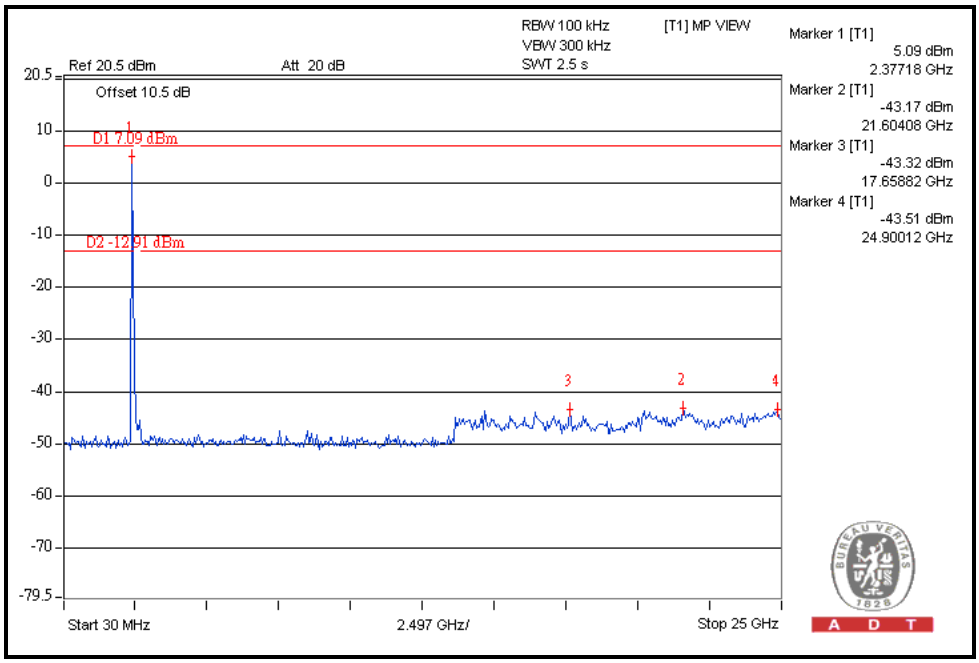
4.6.6 TEST RESULTS

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).

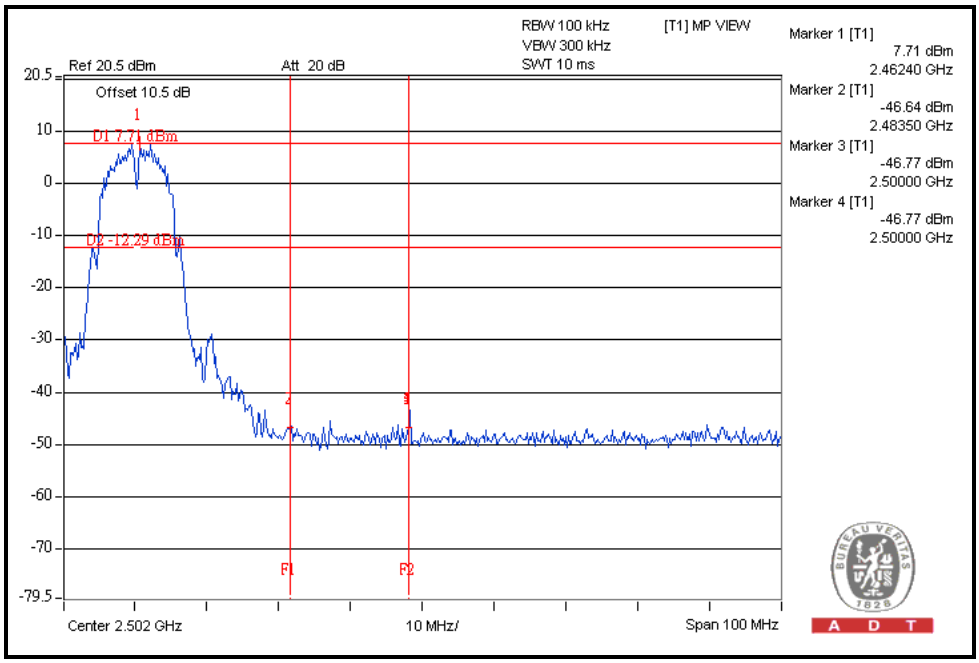
Performing measurements: Measure and add 10 log(N) dB
802.11b DSSS MODULATION:

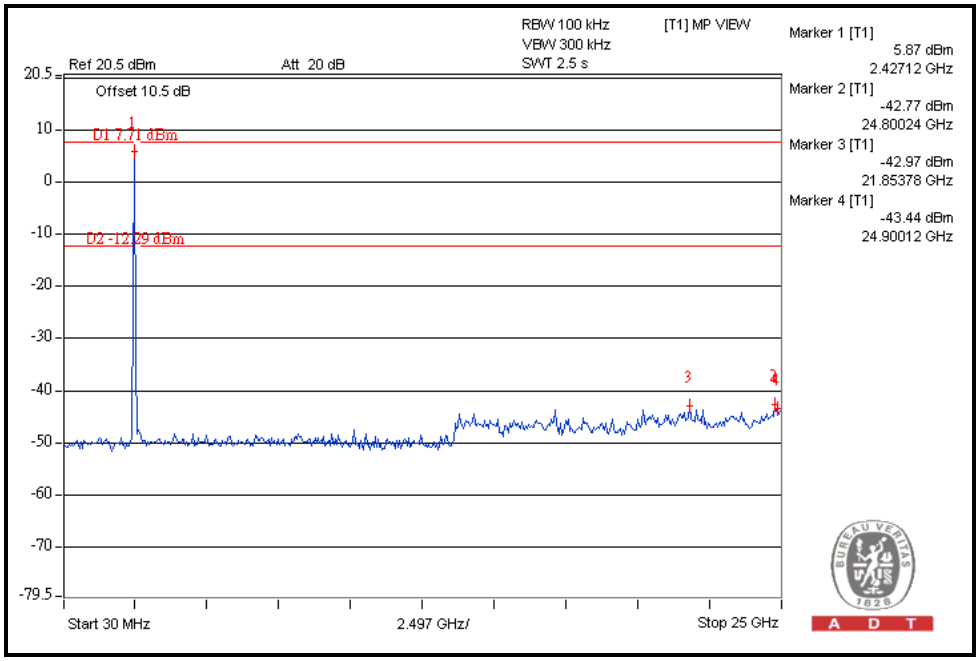
CH1





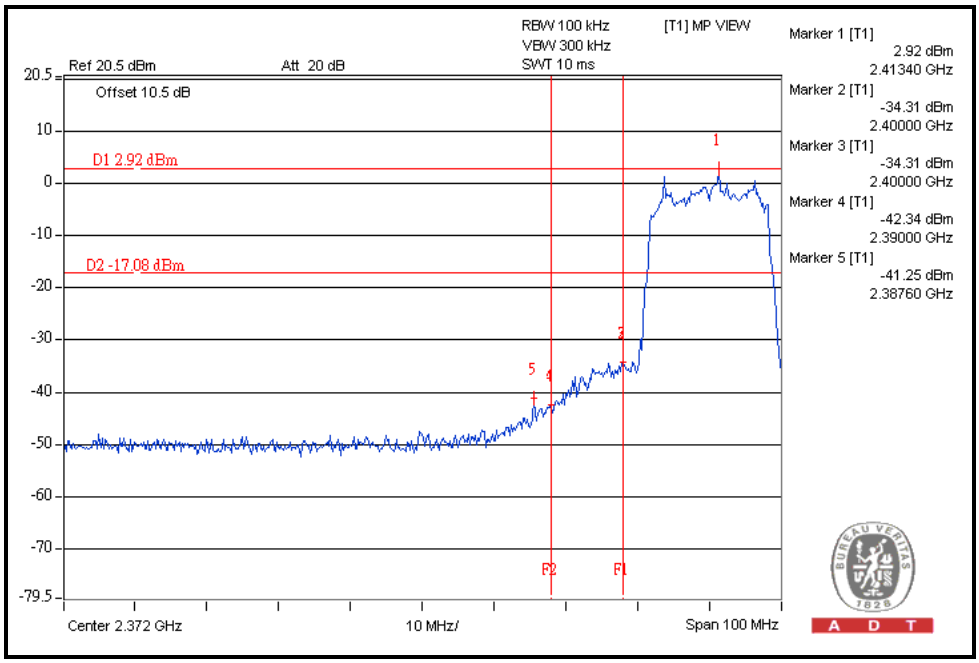
CH11

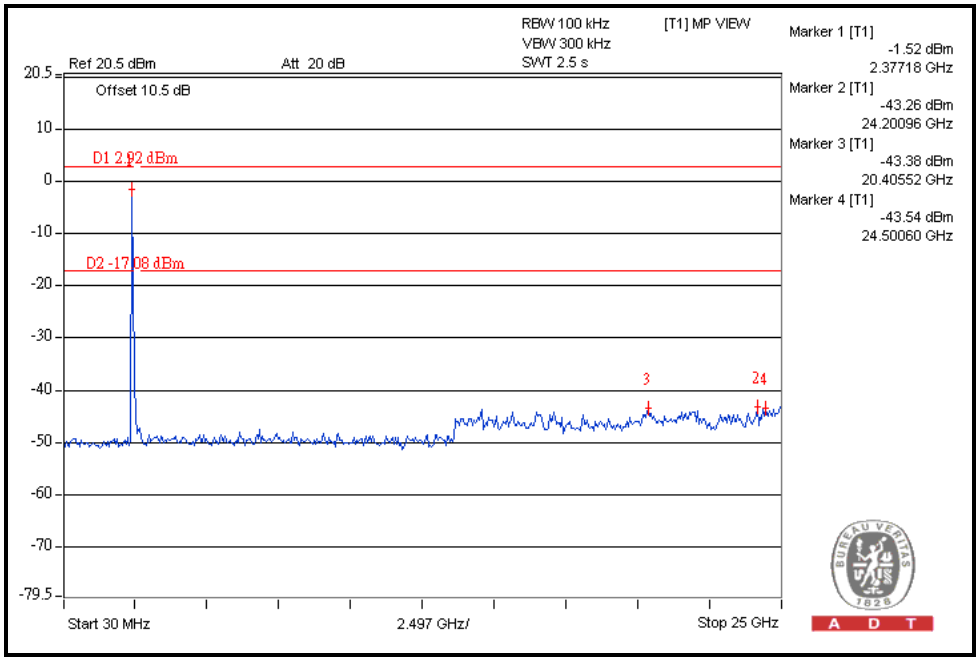

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MP VIEW
Ref 20.5 dBm
Att 20 dB
Offset 10.5 dB
D1 7.71 dBm
D2 -12.29 dBm
Marker 1 [T1]
7.71 dBm
2.46240 GHz
Marker 2 [T1]
-46.64 dBm
2.48350 GHz
Marker 3 [T1]
-46.77 dBm
2.50000 GHz
Marker 4 [T1]
-46.77 dBm
2.50000 GHz
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MP VIEW
Ref 20.5 dBm
Att 20 dB
Offset 10.5 dB
D1 7.71 dBm
D2 -12.29 dBm
Marker 1 [T1]
5.87 dBm
2.42712 GHz
Marker 2 [T1]
-42.77 dBm
24.80024 GHz
Marker 3 [T1]
-42.97 dBm
21.85378 GHz
Marker 4 [T1]
-43.44 dBm
24.90012 GHz
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Start 30 MHz
2.497 GHz/
Stop 25 GHz

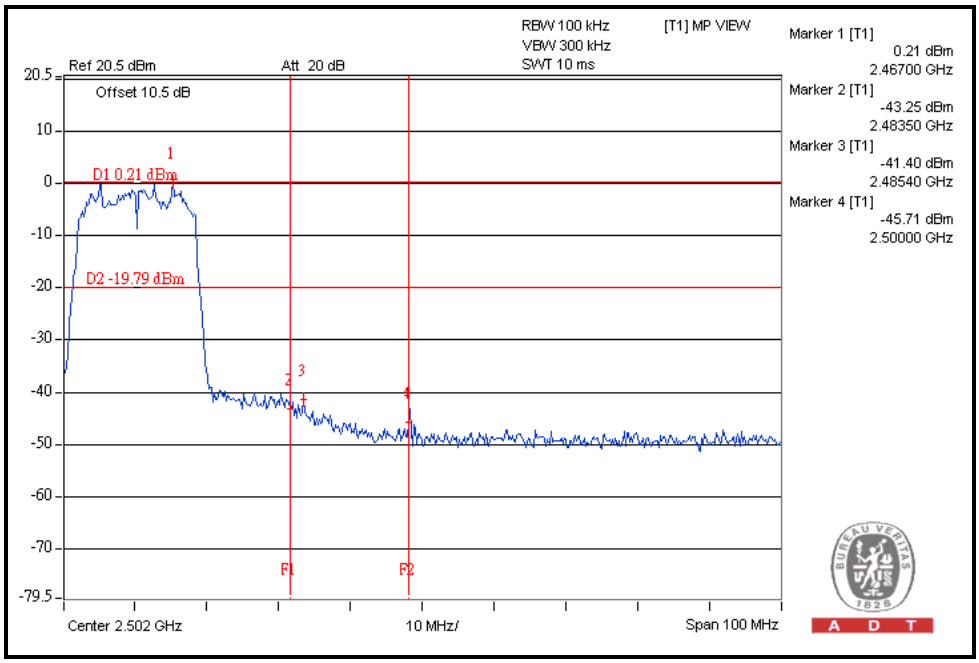
802.11g OFDM MODULATION:

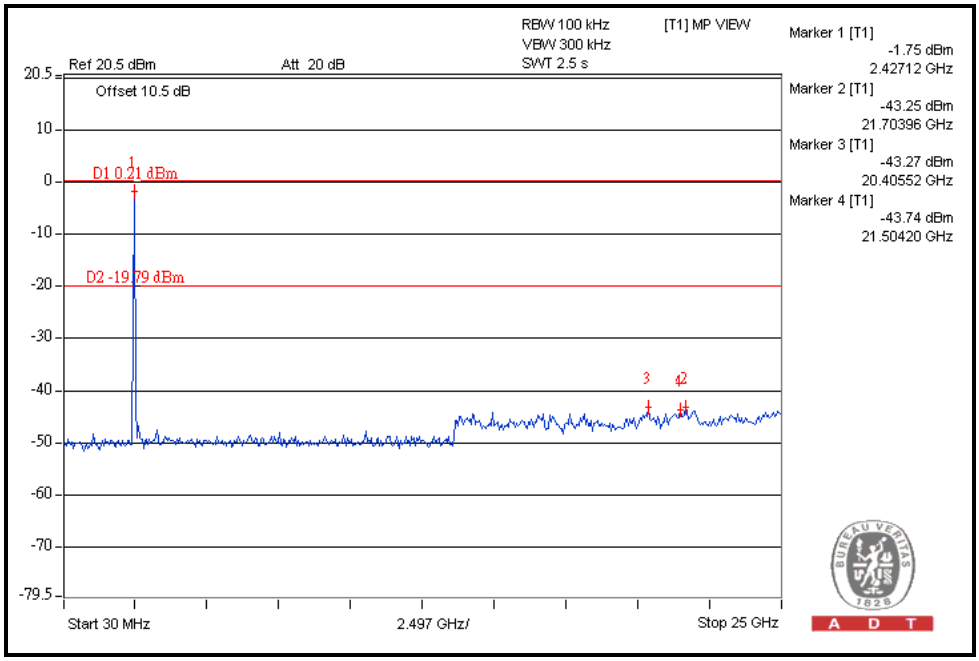
CH1





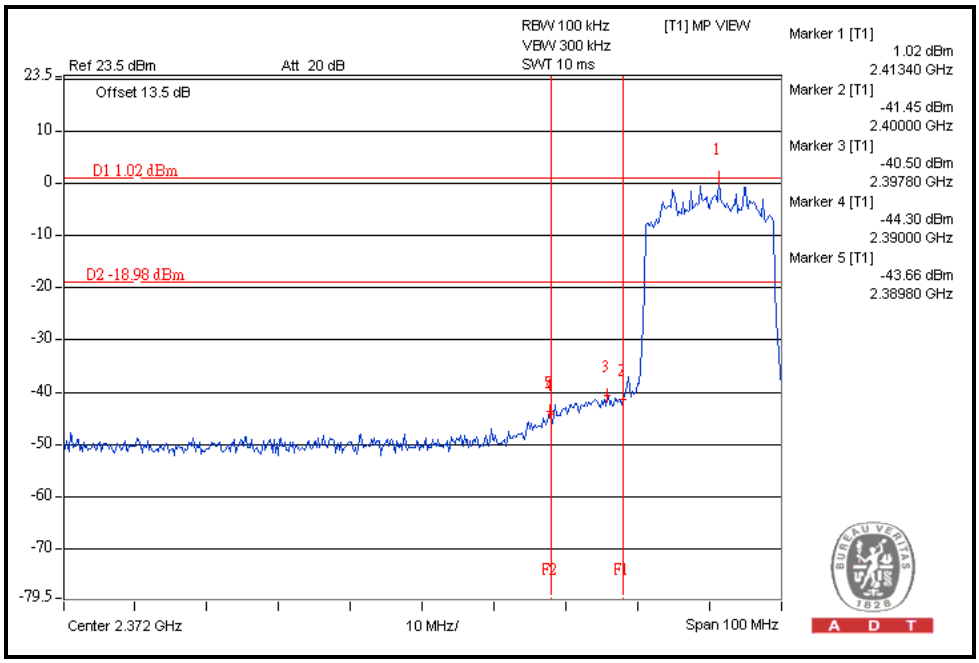
CH11

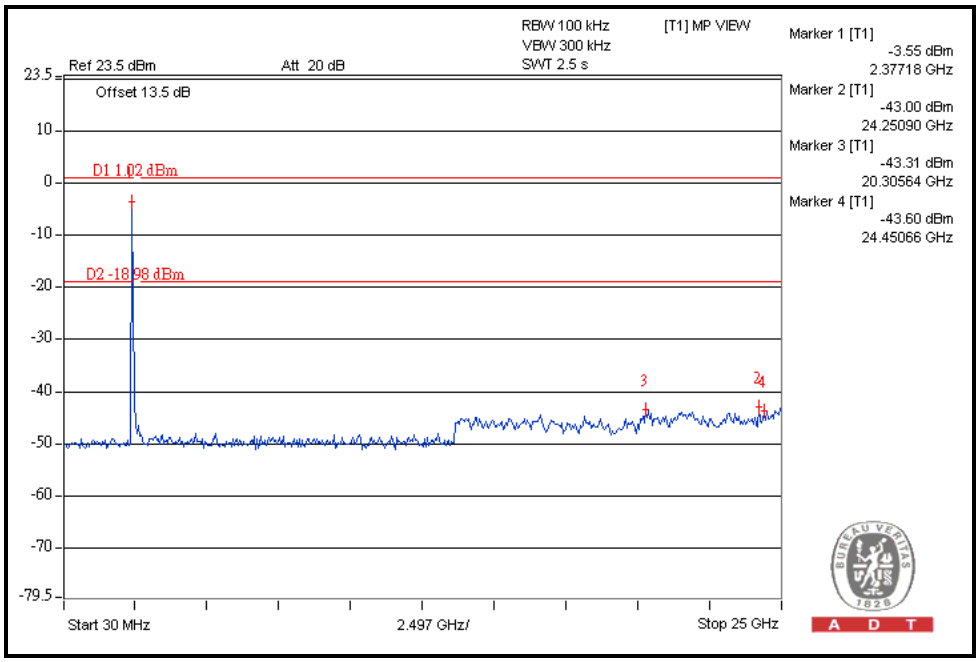

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MP VIEW
Ref 20.5 dBm
Att 20 dB
Offset 10.5 dB
D1 0.21 dBm
D2 -19.79 dBm
Marker 1 [T1]
0.21 dBm
2.46700 GHz
Marker 2 [T1]
-43.25 dBm
2.48350 GHz
Marker 3 [T1]
-41.40 dBm
2.48540 GHz
Marker 4 [T1]
-45.71 dBm
2.50000 GHz
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MP VIEW
Ref 20.5 dBm
Att 20 dB
Offset 10.5 dB
D1 0.21 dBm
D2 -19.79 dBm
Marker 1 [T1]
-1.75 dBm
2.42712 GHz
Marker 2 [T1]
-43.25 dBm
21.70396 GHz
Marker 3 [T1]
-43.27 dBm
20.40552 GHz
Marker 4 [T1]
-43.74 dBm
21.50420 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz

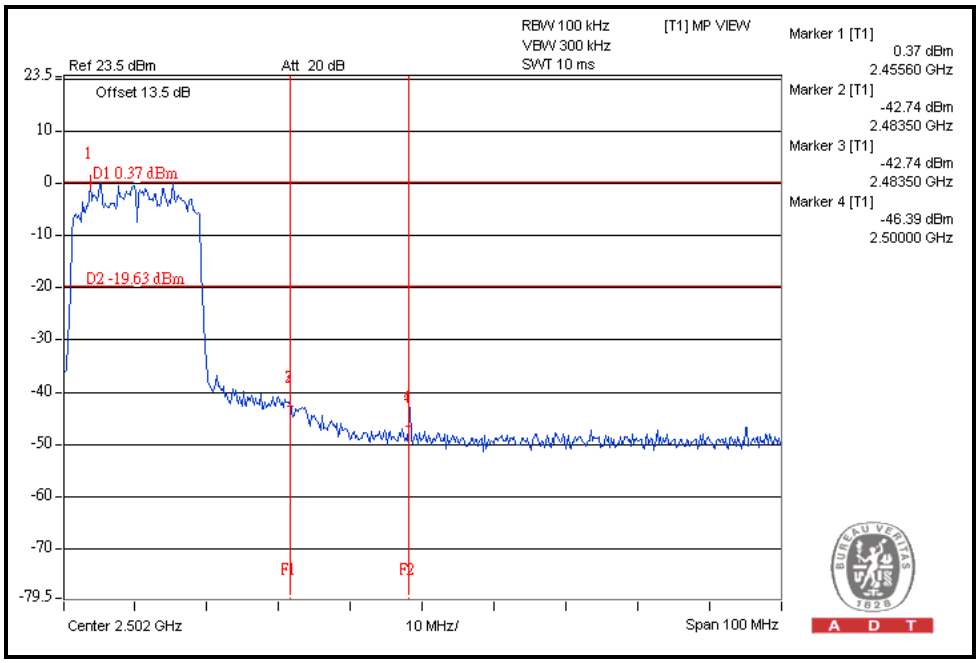
802.11n (20MHz) OFDM MODULATION:

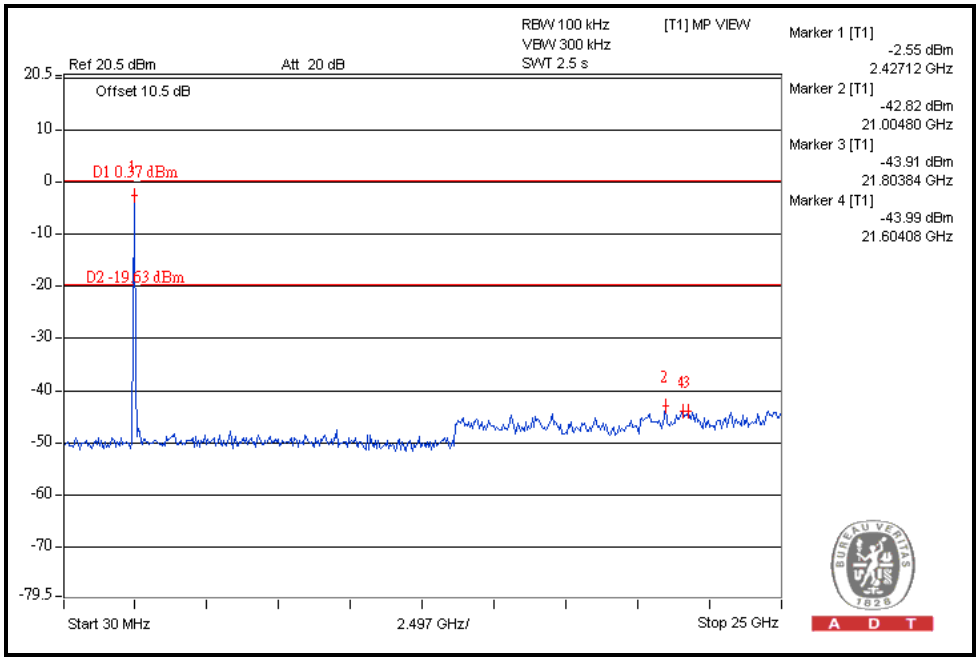
CH1





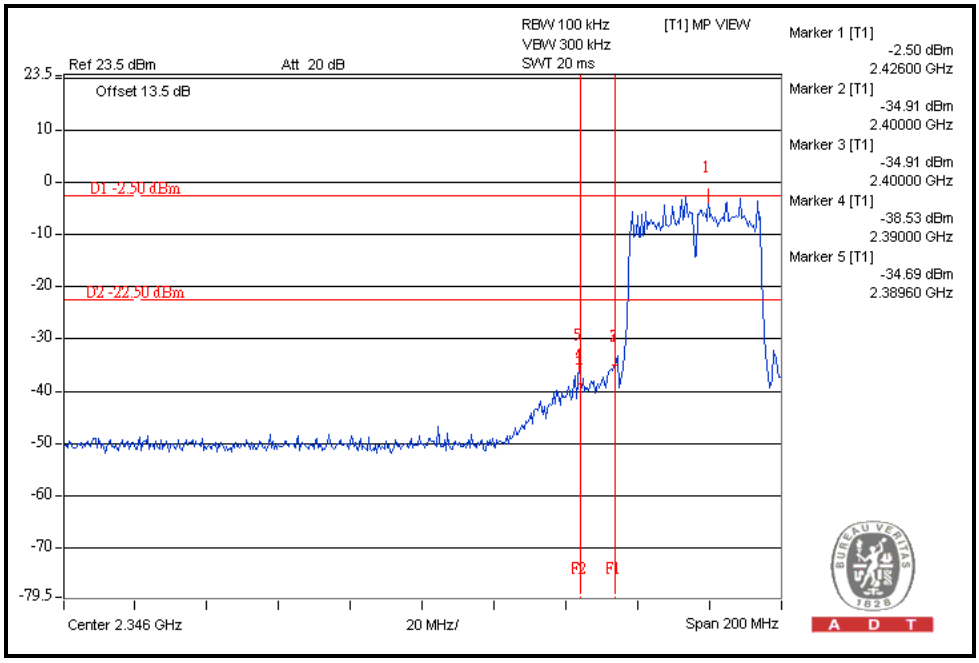
CH11

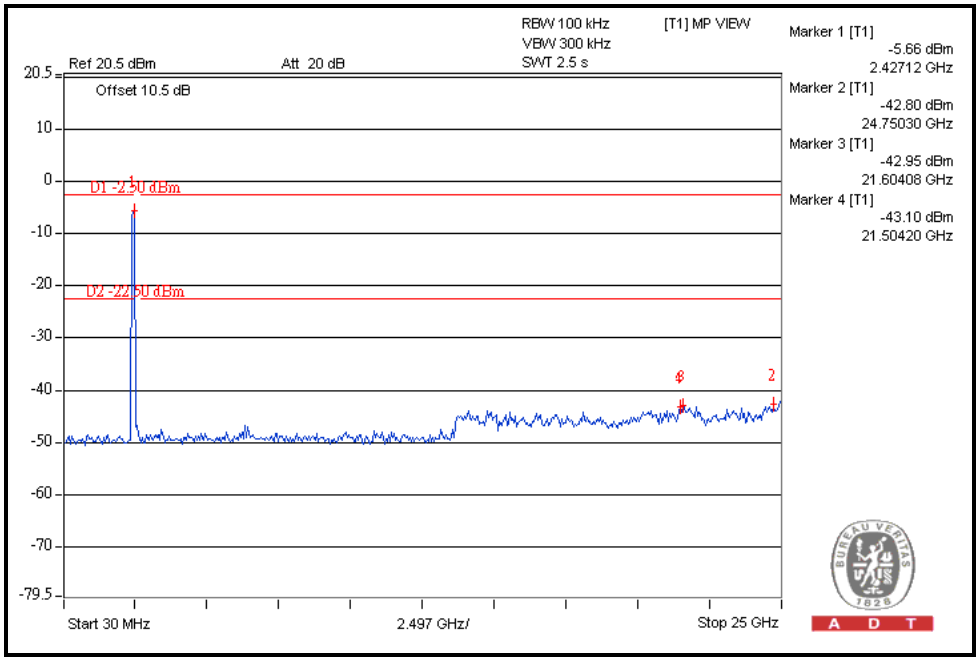

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MP VIEW
Ref 23.5 dBm
Att 20 dB
Offset 13.5 dB
D1 0.37 dBm
D2 -19.63 dBm
Marker 1 [T1]
0.37 dBm
2.45560 GHz
Marker 2 [T1]
-42.74 dBm
2.48350 GHz
Marker 3 [T1]
-42.74 dBm
2.48350 GHz
Marker 4 [T1]
-46.39 dBm
2.50000 GHz
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MP VIEW
Ref 20.5 dBm
Att 20 dB
Offset 10.5 dB
D1 0.37 dBm
D2 -19.63 dBm
Marker 1 [T1]
-2.55 dBm
2.42712 GHz
Marker 2 [T1]
-42.82 dBm
21.00480 GHz
Marker 3 [T1]
-43.91 dBm
21.80384 GHz
Marker 4 [T1]
-43.99 dBm
21.60408 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz

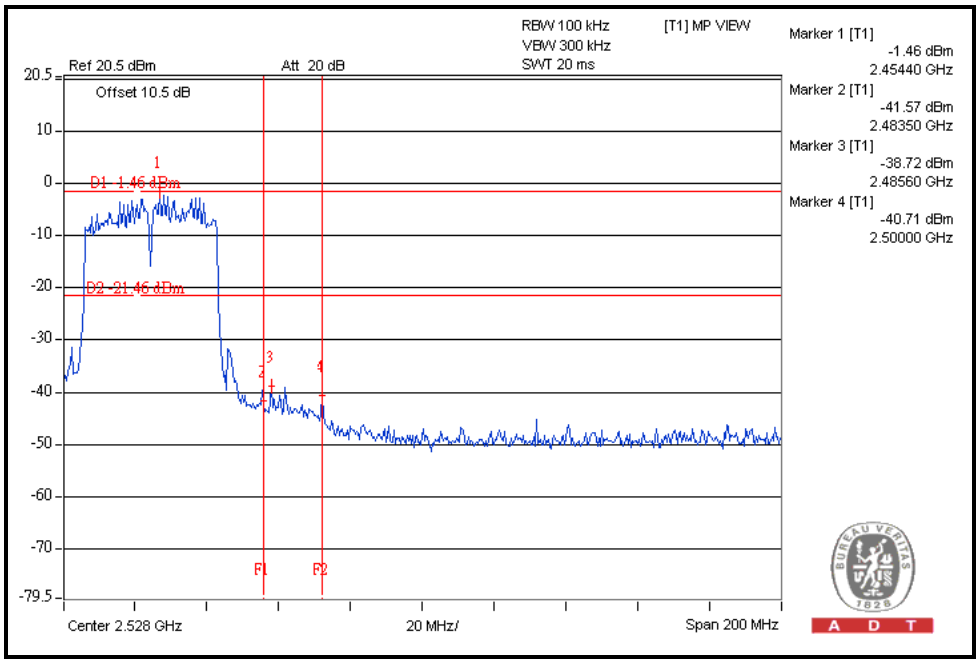
802.11n (40MHz) OFDM MODULATION:

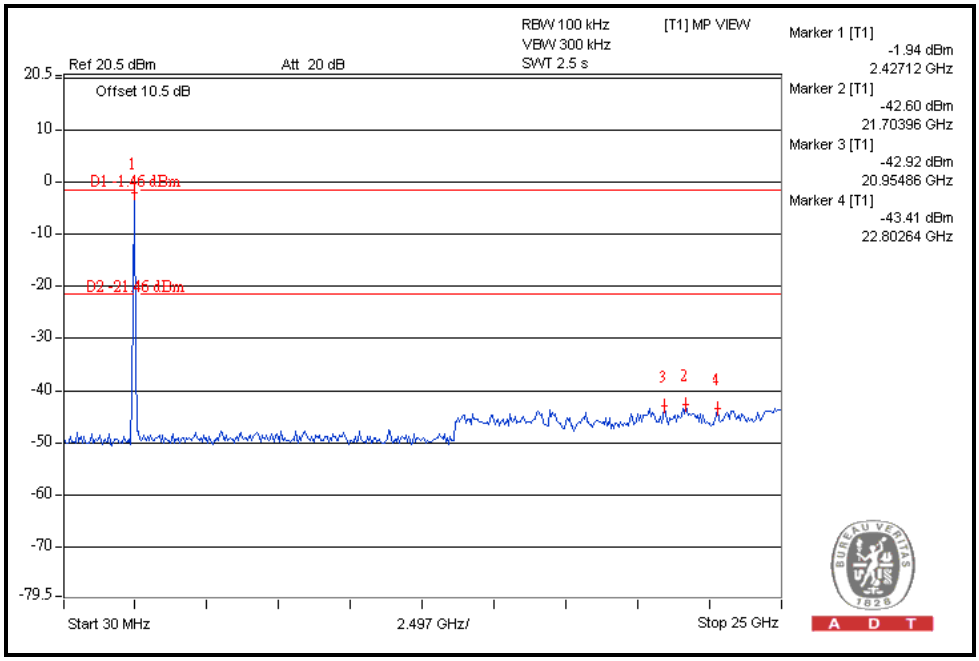
CH3





CH9


RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MP VIEW
Ref 20.5 dBm
Att 20 dB
Offset 10.5 dB
D1 -1.46 dBm
D2 -21.46 dBm
Marker 1 [T1]
-1.46 dBm
2.45440 GHz
Marker 2 [T1]
-41.57 dBm
2.48350 GHz
Marker 3 [T1]
-38.72 dBm
2.48560 GHz
Marker 4 [T1]
-40.71 dBm
2.50000 GHz
Center 2.528 GHz
20 MHz/
Span 200 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MP VIEW
Ref 20.5 dBm
Att 20 dB
Offset 10.5 dB
D1 -1.46 dBm
D2 -21.46 dBm
Marker 1 [T1]
-1.94 dBm
2.42712 GHz
Marker 2 [T1]
-42.60 dBm
21.70396 GHz
Marker 3 [T1]
-42.92 dBm
20.95486 GHz
Marker 4 [T1]
-43.41 dBm
22.80264 GHz
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 and authorization 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
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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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