FCC TEST REPORT

REPORT NO.:	RF110705E05
MODEL NO.:	DAP-2310
FCC ID:	KA2AP2310A1
RECEIVED:	July 05, 2011
TESTED:	July 29 to Aug. 26, 2011
ISSUED:	Sep. 30, 2011

APPLICANT:	D-Link Corporation
ADDRESS:	No.289, Sinhu 3rd Rd., Neihu District, Taipei City 114, 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
RF110705E05	Original release	Sep. 30, 2011

1. CERTIFICATION

PRODUCT:	802.11n 2.4GHz Wireless AP
BRAND NAME:	D-Link
MODEL NO.:	DAP-2310
TEST SAMPLE:	MASS-PRODUCTION
APPLICANT:	D-Link Corporation
TESTED:	July 29 to Aug. 26, 2011
STANDARDS:	FCC Part 15, Subpart C (Section 15.247) ANSI C63.4-2003 ANSI C63.10-2009

The above equipment (Model: DAP-2310) 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 : Elsie Hsu , **DATE:** Sep. 30, 2011
(Elsie Hsu, Specialist)

APPROVED BY : , **DATE:** Sep. 30, 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 -9.61dB at 0.308MHz
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 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 SMA Straight Plug Reverse 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)	3.81 dB
Radiated emissions (1GHz -18GHz)	2.49 dB
Radiated emissions (18GHz -40GHz)	2.70 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	802.11n 2.4GHz Wireless AP
MODEL NO.	DAP-2310
FCC ID	KA2AP2310A1
POWER SUPPLY	DC 5V from power adapter
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11g:54/48/36/24/18/12/9/6Mbps 802.11b:11/5.5/2/1Mbps HT20 MCS0~7 (800ns GI): 6.5Mbps, 13Mbps, 19.5Mbps, 26Mbps, 39Mbps, 52Mbps, 58.5Mbps, 65Mbps, HT20 MCS8~15 (800ns GI): 13Mbps, 26Mbps, 39Mbps, 52Mbps, 78Mbps, 104Mbps, 117Mbps, 130Mbps. HT40 MCS0~7 (800ns GI): 13.5Mbps, 27Mbps, 40.5Mbps, 54Mbps, 81Mbps, 108Mbps, 121.5Mbps, 135Mbps. HT40 MCS8~15 (800ns GI): 27Mbps, 54Mbps, 81Mbps, 108Mbps, 162Mbps, 216Mbps, 243Mbps, 270Mbps. HT40 MCS0~7 (400ns GI): 15.0Mbps, 30.0Mbps, 45.0Mbps, 60.0Mbps, 90.0Mbps, 120.0Mbps, 135.0Mbps, 150.0Mbps, HT40 MCS8~15 (400ns GI): 30.0Mbps, 60.0Mbps, 90.0Mbps, 120.0Mbps, 180.0Mbps, 240.0Mbps, 270.0Mbps, 300.0Mbps.
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: 453.7mW 802.11g: 701.6mW 802.11n (20MHz): 662.4mW 802.11n (40MHz): 248.9mW
ANTENNA TYPE	Please see NOTE
DATA CABLE	Ethernet cable x 1 (1.5m, unshielded)
I/O PORTS	LAN port x 1 (Ethernet : 10 / 100 / 1000Mbps)

ASSOCIATED DEVICES	Adapter x 1 POE x 1

NOTE:

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

Transmitter Circuit	Manufacture	Model name	Peak Gain (Included cable loss)	Antenna Type	Connecter Type
Chain (0)	WHA YU GROUP	C037-510982-A	2	Dipole	SMA Straight Plug Reverse
Chain (1)	WHA YU GROUP	C037-510982-A	2	Dipole	SMA Straight Plug Reverse

2. The EUT must be supplied with one PoE or one power adapter and following different models could be chosen:

Adapter 1	
Brand:	D-Link
Manufacturer	Yeou Diann
Model No.:	AMS3-0502000SU
Input power :	100-120V, 0.5A, 60Hz
Output power :	5V, 2.0A DC Power core x 1 (1.5m, unshielded)
Adapter 2	
Brand:	D-Link
Manufacturer	Yeou Diann
Model No.:	AMS3-0502000FU
Input power :	100-240V, 0.5A, 50/60Hz
Output power :	5V, 2.0A DC Power core x 1 (1.5m, unshielded)
PoE*	
Brand	Base-Unit
Model	EBU-101G-T2 LF
Output Power	DC 48V, 0.4A
* The POE must be supplied with the following adapter: Brand: Bothhand Model: SA06-20S48-V Input Power: 100-240V, 0.6A, 50-60Hz (1.85m, unshielded) Output Power: DC48V, 0.4A, Power core x 1 (1.5m, unshielded, with Switch)	
※The EUT was pre-tested with above two types of adapter, the worse case was found in the **adapter 2**. Therefore only the test data of the adapter was recorded in this report.	

3. The EUT were two samples:

Sample	Description
Sample 1	Without POE function
Sample 2	With POE function

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

Test Mode	Description
Mode A	Sample 2: Laying-flat type + POE
Mode B	**Sample 2:Stand-up type + POE**
Mode C	Sample 1: Stand-up type + Adapter2

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

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

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

7. The EUT incorporates CDD function with 802.11b, 802.11g

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

3.2 DESCRIPTION OF TEST MODES

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	
MODE1	√	√	√	√	√	Sample 2+ POE
MODE2	√	-	-	-	-	Sample 2+Adapter1
MODE3	√	-	-	-	-	Sample 2+Adapter2
MODE4	√	-	-	-	-	Sample 1+Adapter1
MODE5	√	-	-	-	-	Sample 1+Adapter2

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

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	TESTED BY
PLC	26deg. C, 63%RH	120Vac, 60Hz	Eagle Chen
RE≥1G	32deg. C, 59%RH	120Vac, 60Hz	Kent Liu
RE<1G	25deg. C, 70%RH	120Vac, 60Hz	Frank Liu
APCM	26deg. C, 63%RH	120Vac, 60Hz	Rex Huang
OB	26deg. C, 63%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.

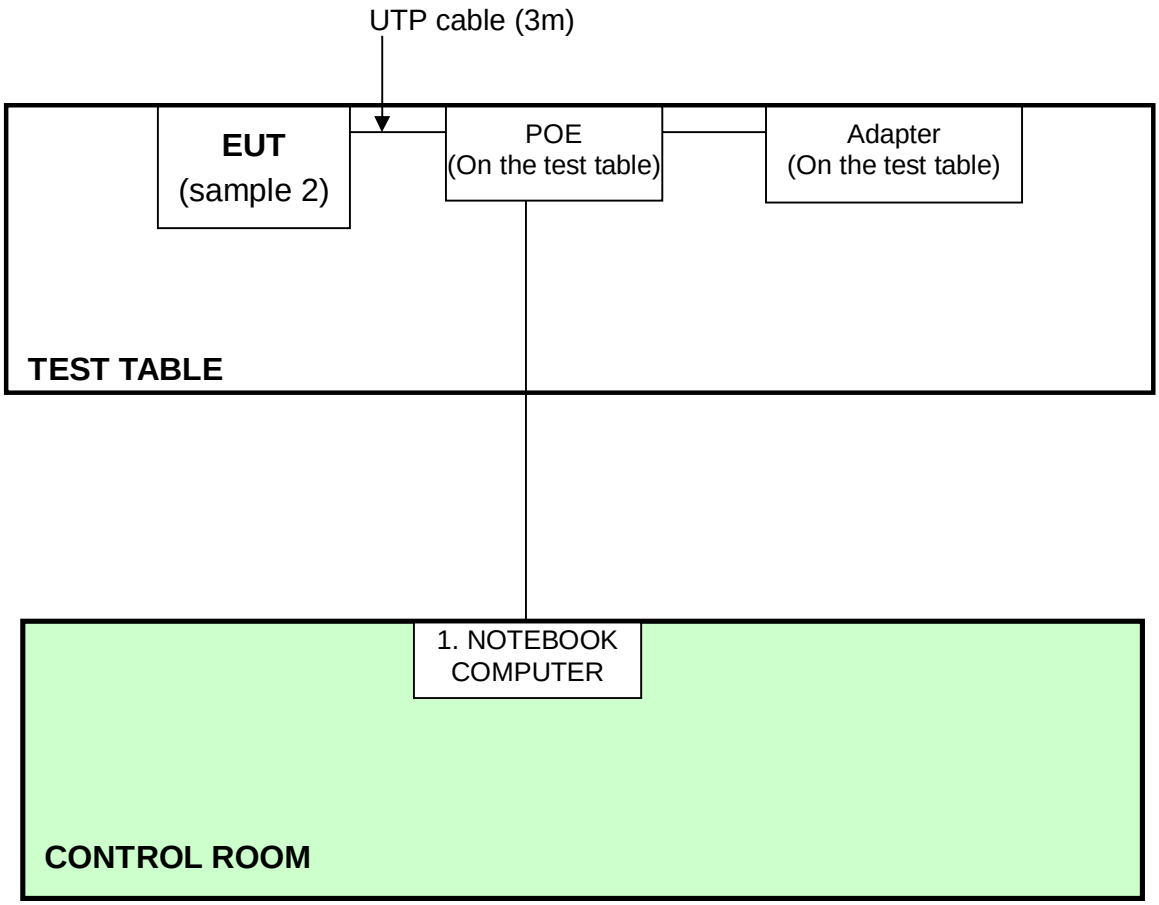
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	PERSONAL COMPUTER	DELL	D531	CN-0XM006-48643-86L-4472	FCC DoC

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	10m UTP cable x 1

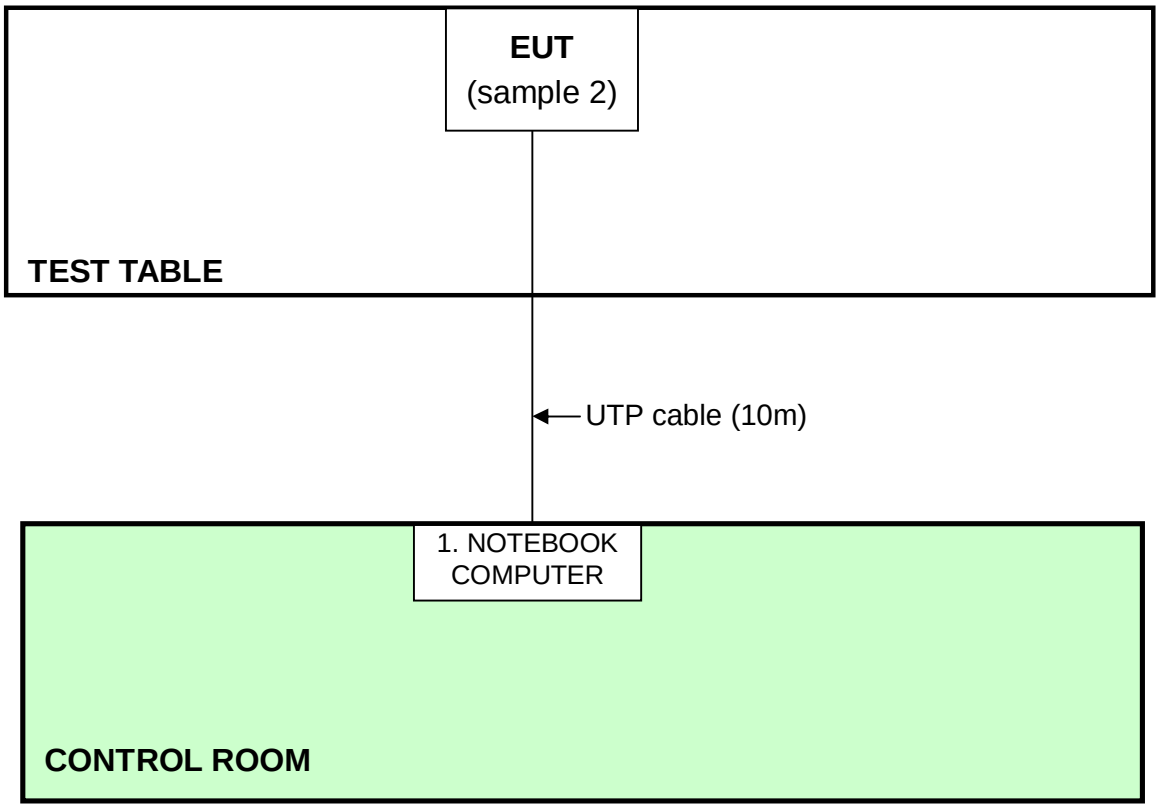
NOTE: All power cords of the above support units are non shielded (1.8m).

3.5 CONFIGURATION OF SYSTEM UNDER TEST

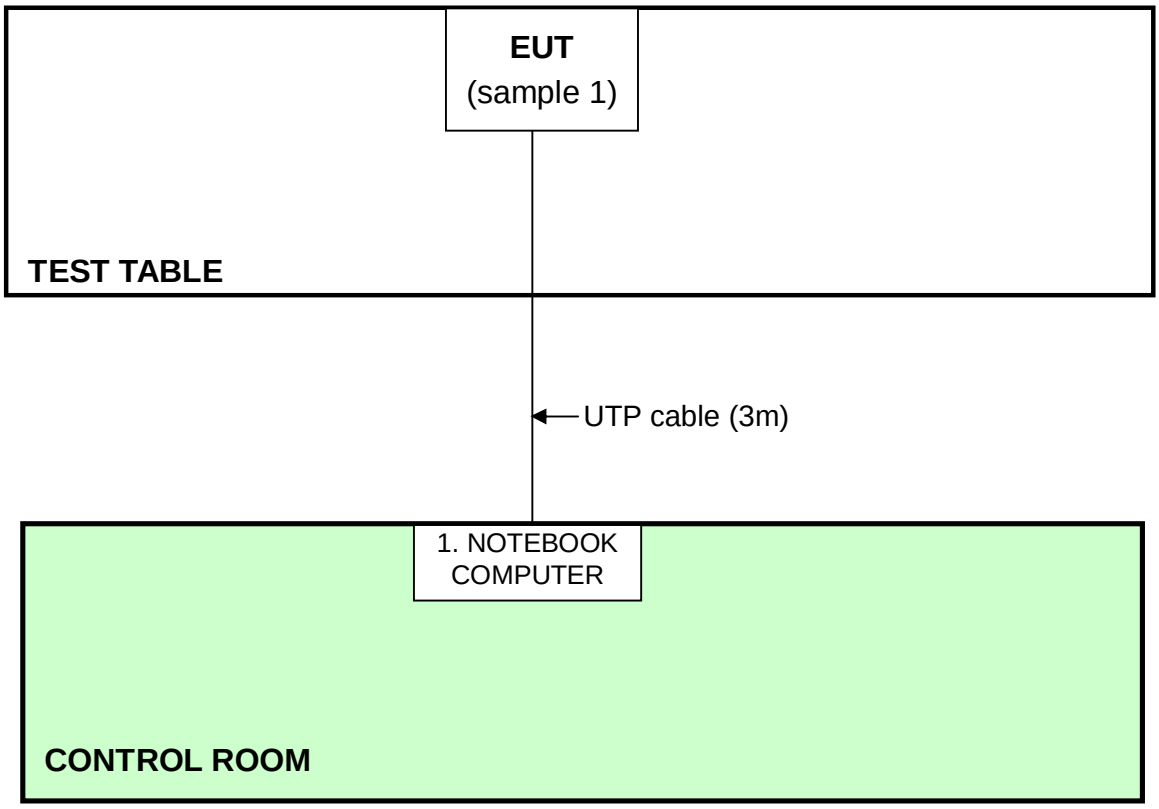
TEST MODE 1 :



TEST MODE 2~3 :


EUT
(sample 2)
TEST TABLE
UTP cable (10m)
1. NOTEBOOK COMPUTER
CONTROL ROOM

TEST MODE 4~5 :


EUT
(sample 1)
TEST TABLE
UTP cable (3m)
1. NOTEBOOK
COMPUTER
CONTROL ROOM

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. 26, 2011

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver	ESCS 30	100375	Mar. 09, 2011	Mar. 08, 2012
Line-Impedance Stabilization Network (for EUT)	NSLK 8127	8127-522	Sep. 08, 2010	Sep. 07, 2011
Line-Impedance Stabilization Network (for Peripheral)	ESH3-Z5	848773/004	Nov. 03, 2010	Nov. 02, 2011
RF Cable (JYEBAO)	5DFB	COCCAB-002	Aug. 30, 2010	Aug. 29, 2011
50 ohms Terminator	50	3	Oct. 07, 2010	Oct. 06, 2011
Software	BV ADT_Cond_V7.3.7	NA	NA	NA

Note:
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. C.
3 The VCCI Con C Registration No. is C-3611.

4.1.3 TEST PROCEDURES

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.

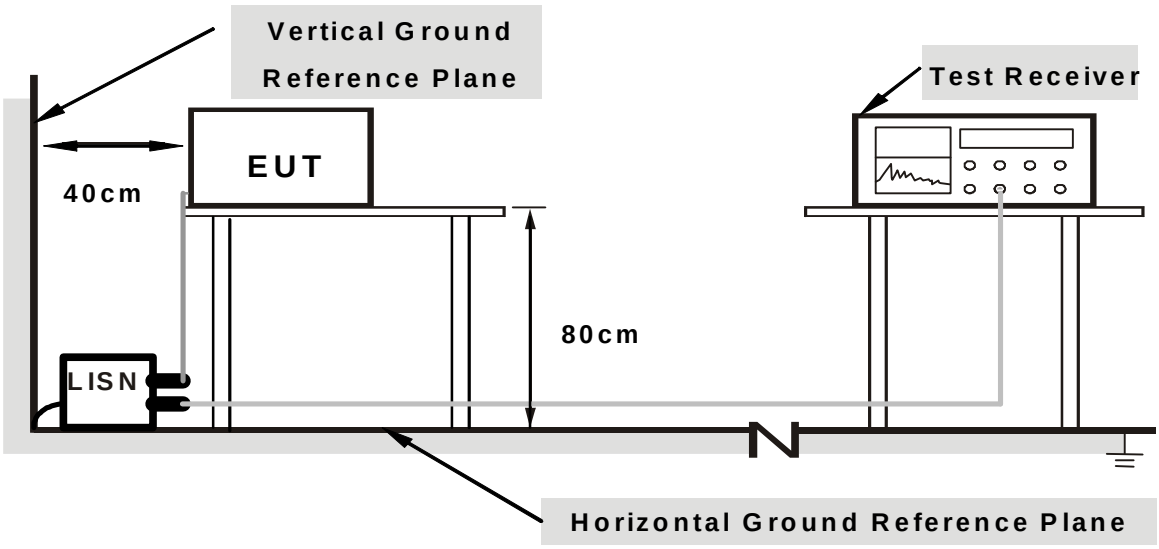
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

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

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

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

4.1.6 EUT OPERATING CONDITIONS

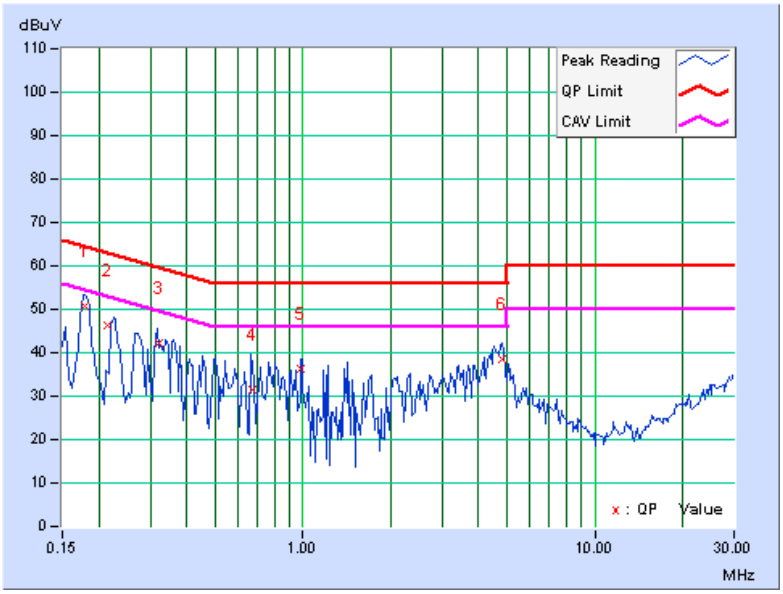
1. Turn on the power of all equipment.
2. The communication partner run test program “v0_9_b21_ar928xALL” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

4.1.7 TEST RESULTS (MODE 1)

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	0.179	0.12	50.52	40.25	50.64	40.37	64.55	54.55	-13.91	-14.18
2	0.215	0.14	46.25	35.58	46.39	35.72	63.00	53.00	-16.61	-17.28
3	0.321	0.15	42.22	30.51	42.37	30.66	59.69	49.69	-17.32	-19.03
4	0.675	0.17	31.40	21.00	31.57	21.17	56.00	46.00	-24.43	-24.83
5	0.982	0.18	36.28	28.18	36.46	28.36	56.00	46.00	-19.54	-17.64
6	4.801	0.33	38.25	27.22	38.58	27.55	56.00	46.00	-17.42	-18.45

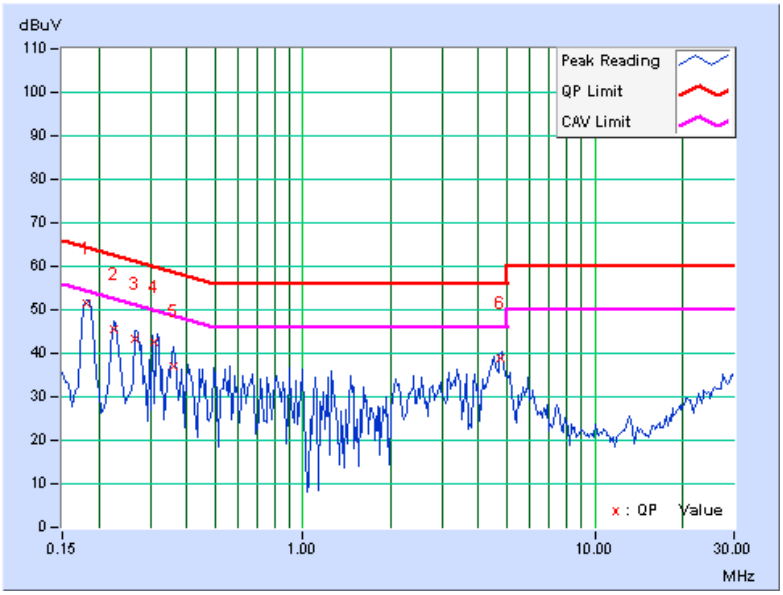
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading 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	0.183	0.14	51.25	40.55	51.39	40.69	64.36	54.36	-12.98	-13.68
2	0.225	0.15	45.25	36.85	45.40	37.00	62.63	52.63	-17.22	-15.62
3	0.267	0.16	43.25	35.12	43.41	35.28	61.21	51.21	-17.81	-15.94
4	**0.308**	**0.16**	**42.25**	**40.25**	**42.41**	**40.41**	**60.02**	**50.02**	**-17.61**	**-9.61**
5	0.360	0.17	36.75	31.22	36.92	31.39	58.72	48.72	-21.81	-17.34
6	4.779	0.44	38.41	26.35	38.85	26.79	56.00	46.00	-17.15	-19.21

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.

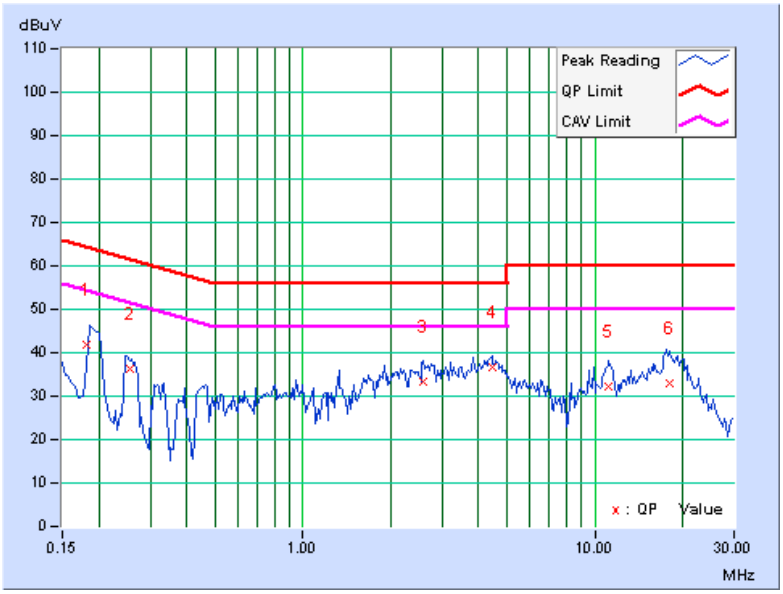


4.1.8 TEST RESULTS (MODE 2)

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	0.182	0.13	41.55	30.55	41.68	30.68	64.39	54.39	-22.71	-23.71
2	0.254	0.15	36.28	24.20	36.43	24.35	61.62	51.62	-25.19	-27.27
3	2.589	0.24	33.09	25.02	33.33	25.26	56.00	46.00	-22.67	-20.74
4	4.451	0.31	36.25	28.11	36.56	28.42	56.00	46.00	-19.44	-17.58
5	11.192	0.69	31.50	26.01	32.19	26.70	60.00	50.00	-27.81	-23.30
6	18.022	0.92	32.12	25.20	33.04	26.12	60.00	50.00	-26.96	-23.88

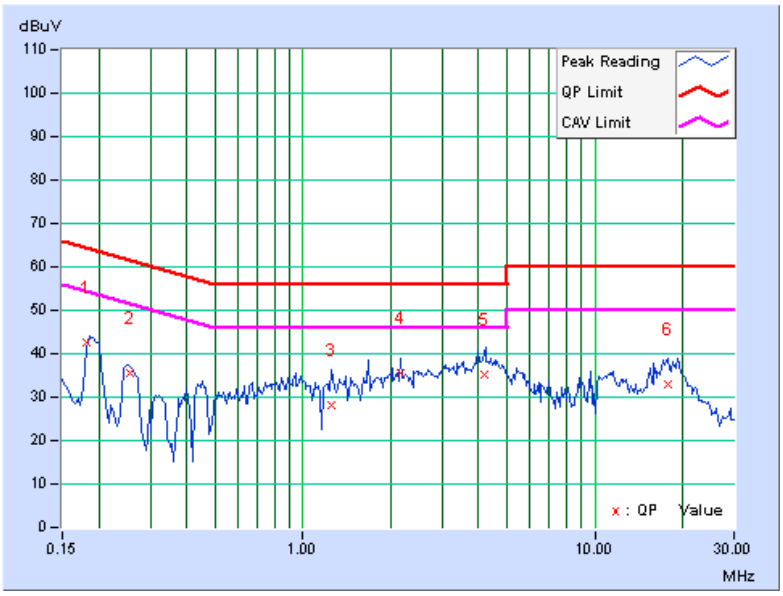
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading 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	0.182	0.14	42.45	30.60	42.59	30.74	64.39	54.39	-21.80	-23.65
2	0.255	0.16	35.52	26.24	35.68	26.40	61.61	51.61	-25.93	-25.21
3	1.254	0.19	28.14	21.14	28.33	21.33	56.00	46.00	-27.67	-24.67
4	2.155	0.22	35.22	20.55	35.44	20.77	56.00	46.00	-20.56	-25.23
5	4.205	0.37	34.82	27.55	35.19	27.92	56.00	46.00	-20.81	-18.08
6	17.812	1.61	31.52	23.34	33.13	24.95	60.00	50.00	-26.87	-25.05

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.

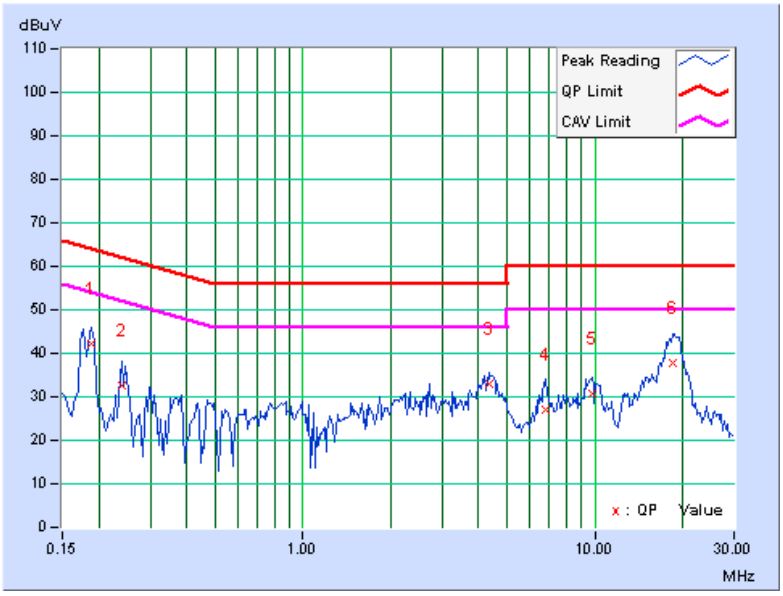


4.1.9 TEST RESULTS (MODE 3)

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	0.189	0.13	42.20	28.25	42.33	28.38	64.08	54.08	-21.75	-25.70
2	0.240	0.14	32.28	20.58	32.42	20.72	62.10	52.10	-29.68	-31.38
3	4.336	0.30	32.81	21.55	33.11	21.85	56.00	46.00	-22.89	-24.15
4	6.758	0.45	26.51	18.58	26.96	19.03	60.00	50.00	-33.04	-30.97
5	9.824	0.64	30.28	24.52	30.92	25.16	60.00	50.00	-29.08	-24.84
6	18.410	0.93	36.82	31.55	37.75	32.48	60.00	50.00	-22.25	-17.52

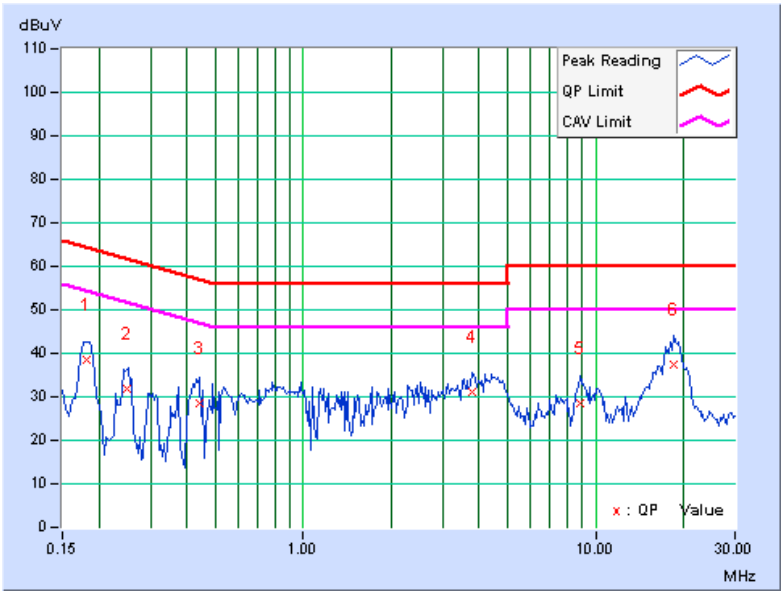
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading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



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	0.183	0.14	38.21	22.14	38.35	22.28	64.37	54.37	-26.02	-32.09
2	0.251	0.16	31.58	20.52	31.74	20.68	61.74	51.74	-30.00	-31.06
3	0.444	0.17	28.26	15.12	28.43	15.29	57.00	47.00	-28.56	-31.70
4	3.771	0.33	30.88	23.51	31.21	23.84	56.00	46.00	-24.79	-22.16
5	8.835	0.88	27.56	24.21	28.44	25.09	60.00	50.00	-31.56	-24.91
6	18.512	1.66	35.85	30.55	37.51	32.21	60.00	50.00	-22.49	-17.79

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.

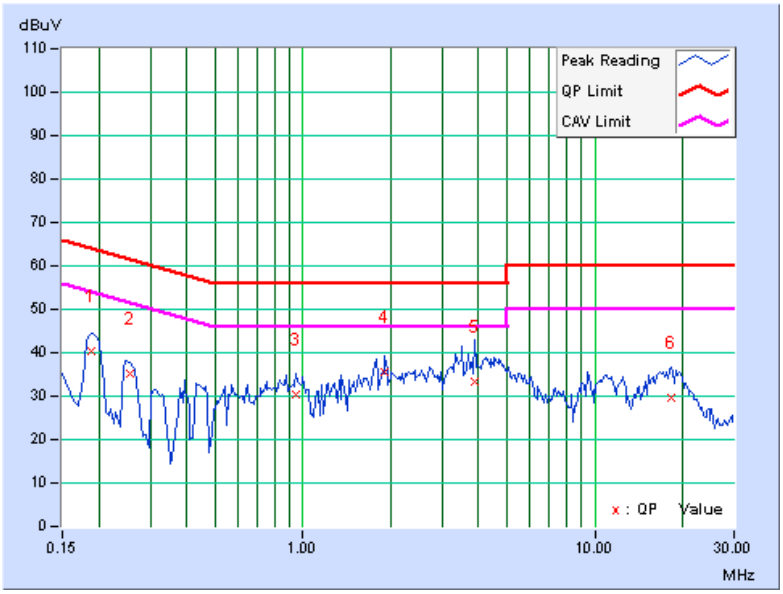


4.1.10 TEST RESULTS (MODE 4)

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	0.189	0.12	40.32	28.41	40.44	28.53	64.08	54.08	-23.63	-25.54
2	0.255	0.13	35.20	27.15	35.33	27.28	61.58	51.58	-26.25	-24.30
3	0.947	0.14	30.18	26.12	30.32	26.26	56.00	46.00	-25.68	-19.74
4	1.914	0.16	35.43	21.15	35.59	21.31	56.00	46.00	-20.41	-24.69
5	3.871	0.20	33.18	25.16	33.38	25.36	56.00	46.00	-22.62	-20.64
6	18.324	0.63	29.15	23.45	29.78	24.08	60.00	50.00	-30.22	-25.92

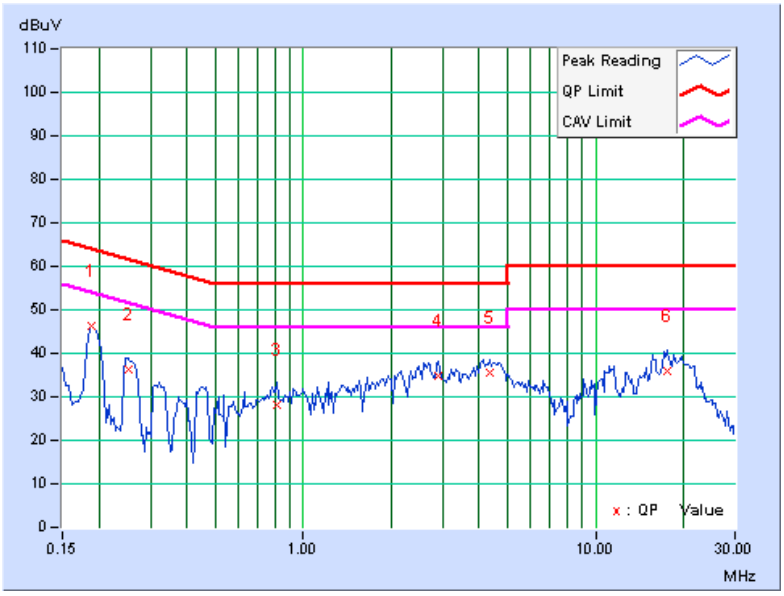
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading 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	0.189	0.13	46.21	30.58	46.34	30.71	64.08	54.08	-17.73	-23.36
2	0.252	0.14	36.25	28.21	36.39	28.35	61.71	51.71	-25.31	-23.35
3	0.810	0.16	28.08	16.20	28.24	16.36	56.00	46.00	-27.76	-29.64
4	2.891	0.23	34.58	26.17	34.81	26.40	56.00	46.00	-21.19	-19.60
5	4.375	0.31	35.28	28.36	35.59	28.67	56.00	46.00	-20.41	-17.33
6	17.531	1.27	34.58	27.18	35.85	28.45	60.00	50.00	-24.15	-21.55

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.

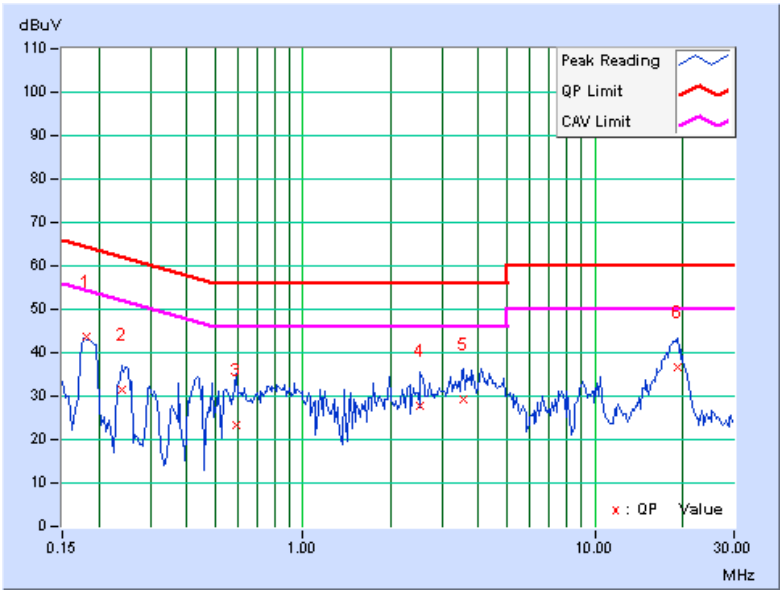


4.1.11 TEST RESULTS (MODE 5)

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	0.181	0.13	43.54	31.17	43.67	31.30	64.44	54.44	-20.77	-23.14
2	0.240	0.14	31.28	25.82	31.42	25.96	62.10	52.10	-30.68	-26.14
3	0.591	0.17	23.24	16.25	23.41	16.42	56.00	46.00	-32.59	-29.58
4	2.527	0.24	27.50	25.17	27.74	25.41	56.00	46.00	-28.26	-20.59
5	3.551	0.27	28.85	20.44	29.12	20.71	56.00	46.00	-26.88	-25.29
6	19.219	0.96	35.78	30.10	36.74	31.06	60.00	50.00	-23.26	-18.94

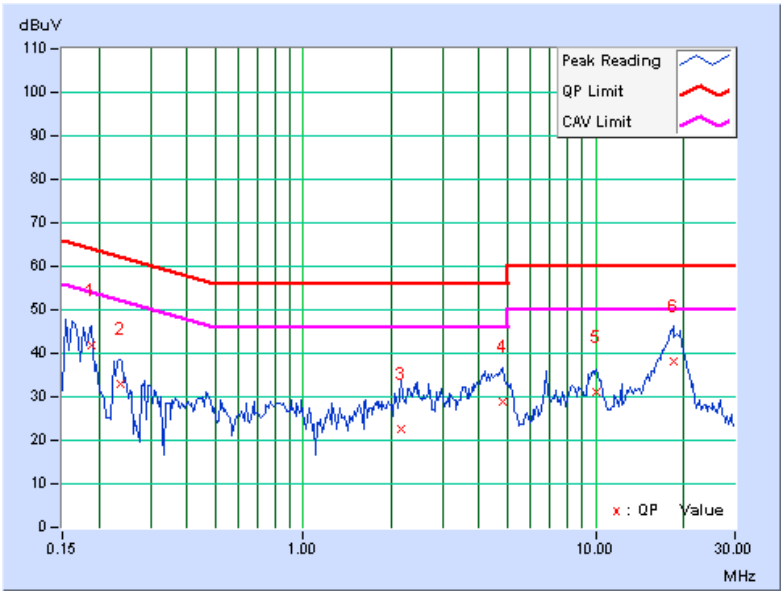
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading 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	0.189	0.14	41.72	22.79	41.86	22.93	64.08	54.08	-22.22	-31.15
2	0.236	0.15	32.87	25.37	33.02	25.52	62.24	52.24	-29.21	-26.71
3	2.160	0.22	22.45	19.77	22.67	19.99	56.00	46.00	-33.33	-26.01
4	4.789	0.44	28.45	24.19	28.89	24.63	56.00	46.00	-27.11	-21.37
5	10.121	1.02	30.25	23.37	31.27	24.39	60.00	50.00	-28.73	-25.61
6	18.539	1.67	36.58	31.41	38.25	33.08	60.00	50.00	-21.75	-16.92

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

For below 1GHz test (Test date: Aug. 18, 2011)

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Agilent Spectrum Analyzer	E4446A	MY48250254	July 12, 2011	July 11, 2012
Agilent Pre-Selector	N9039A	MY46520311	July 12, 2011	July 11, 2012
Agilent Signal Generator	N5181A	MY49060517	July 12, 2011	July 11, 2012
Mini-Circuits Pre-Amplifier	ZFL-1000VH2B	AMP-ZFL-03	Nov. 16, 2010	Nov. 15, 2011
Agilent Pre-Amplifier	8449B	3008A02578	July 04, 2011	July 03, 2012
Miteq Pre-Amplifier	AFS33-18002650-30-8P-44	881786	NA	NA
SCHWARZBECK Trilog Broadband Antenna	VULB 9168	9168-360	Apr. 14, 2011	Apr. 13, 2012
AISI Horn_Antenna	AIH.8018	0000320091110	Nov. 12, 2010	Nov. 11, 2011
SCHWARZBECK Horn_Antenna	BBHA 9170	9170-424	Oct. 08, 2010	Oct. 07, 2011
RF CABLE	NA	RF104-201 RF104-203 RF104-204	Dec. 27, 2010	Dec. 26, 2011
RF Cable	NA	CHGCAB_001	NA	NA
Software	ADT_Radiated_V8.7.05	NA	NA	NA
CT Antenna Tower & Turn Table	NA	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna, preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in 966 Chamber No. G.
4. The FCC Site Registration No. is 966073.
5. The VCCI Site Registration No. is G-137.
6. The CANADA Site Registration No. is IC 7450H-2.

For above 1GHz test (Test date: July 29, 2011)

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ROHDE & SCHWARZ Spectrum Analyzer	FSP40	100036	Dec. 08, 2010	Dec. 07, 2011
Agilent PSA Spectrum Analyzer	E4446A	MY48250113	Nov. 30 , 2010	Nov. 29 , 2011
HP Pre_Amplifier	8449B	300801923	Nov. 01, 2010	Oct. 31, 2011
ROHDE & SCHWARZ Test Receiver	ESCS30	847124/029	Sep. 03, 2010	Sep. 02, 2011
SCHWARZBECK TRILOG Broadband Antenna	VULB 9168	138	Apr. 14, 2011	Apr. 13, 2012
Schwarzbeck Horn_Antenna	BBHA9120	D124	Dec. 17, 2010	Dec. 16, 2011
Schwarzbeck Horn_Antenna	BBHA 9170	BBHA9170153	Jan. 17, 2011	Jan. 16, 2012
RF Switches	EMH-011	1001	NA	NA
RF CABLE (Chaintek)	Sucoflex 104+ Sucoflex 106	RF104-101+RF106-101	Aug. 24, 2010	Aug. 23, 2011
RF Cable	8DFB	STCCAB-30M-1GHz	NA	NA
Software	ADT_Radiated_V7.6.15.9.2	NA	NA	NA
CT Antenna Tower & Turn Table	NA	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna, preamplifier (model: 8449B) and Spectrum Analyzer (model: FSP40) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in Open Site No. C.
4. The FCC Site Registration No. is 656396.
5. The VCCI Site Registration No. is R-1626.
6. The CANADA Site Registration No. is IC 7450G-3.

4.2.3 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meters chamber test for below 1GHz test and a10 meters open field site for above 1GHz 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.

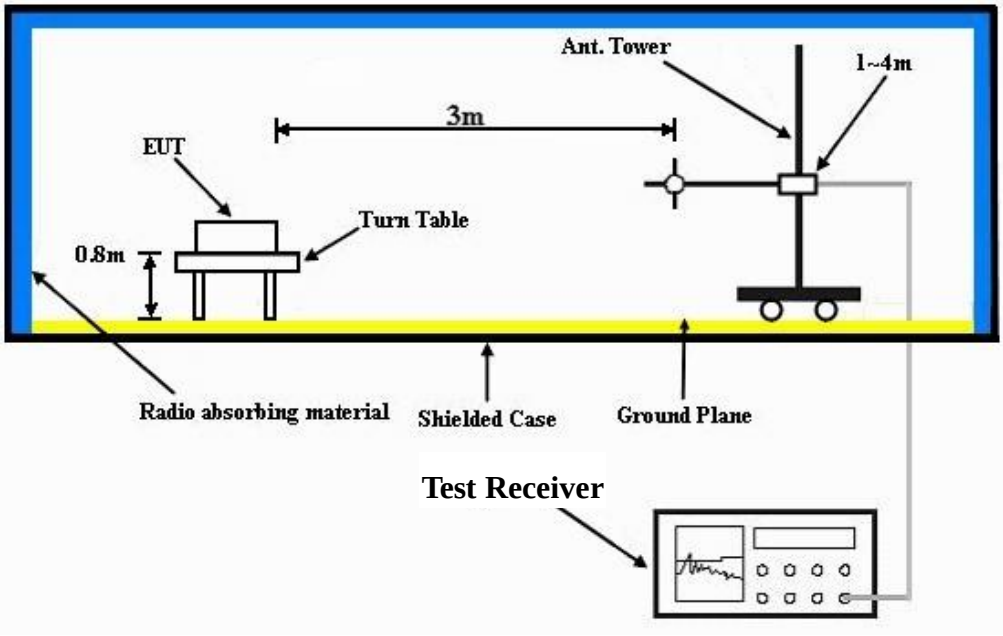
NOTE:

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	25deg. C, 70%RH	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	65.29	35.3 QP	40.0	-4.7	2.00 H	134	22.29	13.03
2	152.45	38.3 QP	43.5	-5.2	2.00 H	66	23.62	14.72
3	164.41	39.2 QP	43.5	-4.3	1.50 H	99	24.84	14.35
4	500.02	39.2 QP	46.0	-6.9	1.50 H	136	19.23	19.92
5	624.96	37.7 QP	46.0	-8.3	1.50 H	360	15.40	22.27
6	750.01	34.1 QP	46.0	-11.9	1.00 H	360	10.23	23.87
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.75	37.0 QP	40.0	-3.0	1.00 V	55	23.13	13.83
2	104.25	38.7 QP	43.5	-4.8	1.00 V	360	28.51	10.15
3	147.59	37.1 QP	43.5	-6.4	1.00 V	68	22.47	14.63
4	500.02	37.3 QP	46.0	-8.7	1.00 V	340	17.39	19.92
5	625.07	36.1 QP	46.0	-9.9	1.50 V	0	13.87	22.27
6	750.01	35.6 QP	46.0	-10.4	1.50 V	60	11.73	23.87

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

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	32deg. C, 59%RH	TESTED BY	Kent Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2386.40	57.9 PK	74.0	-16.1	1.05 H	340	26.59	31.31
2	2386.40	46.0 AV	54.0	-8.0	1.05 H	340	14.69	31.31
3	*2412.00	108.9 PK			1.05 H	340	77.51	31.39
4	*2412.00	105.3 AV			1.05 H	340	73.91	31.39
5	4824.00	55.5 PK	74.0	-18.5	1.18 H	56	19.33	36.17
6	4824.00	53.1 AV	54.0	-0.9	1.18 H	56	16.93	36.17
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	2387.10	61.6 PK	74.0	-12.4	1.35 V	5	30.29	31.31
2	2387.10	53.2 AV	54.0	-0.8	1.35 V	5	21.89	31.31
3	*2412.00	116.4 PK			1.32 V	7	85.01	31.39
4	*2412.00	113.7 AV			1.32 V	7	82.31	31.39
5	4824.00	54.7 PK	74.0	-19.3	1.22 V	186	18.53	36.17
6	4824.00	52.3 AV	54.0	-1.7	1.22 V	186	16.13	36.17

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
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	32deg. C, 59%RH	TESTED BY	Kent Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	109.4 PK			1.06 H	349	77.91	31.49
2	*2437.00	106.9 AV			1.06 H	349	75.41	31.49
3	4874.00	55.9 PK	74.0	-18.1	1.05 H	33	19.59	36.31
4	4874.00	53.2 AV	54.0	-0.8	1.05 H	33	16.89	36.31
5	7311.00	52.3 PK	74.0	-21.7	1.01 H	48	10.07	42.23
6	7311.00	43.6 AV	54.0	-10.4	1.01 H	48	1.37	42.23
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	118.6 PK			1.11 V	178	87.11	31.49
2	*2437.00	116.0 AV			1.11 V	178	84.51	31.49
3	4874.00	55.7 PK	74.0	-18.3	1.02 V	352	19.39	36.31
4	**4874.00**	**53.5 AV**	**54.0**	**-0.5**	**1.02 V**	**352**	**17.19**	**36.31**
5	7311.00	52.7 PK	74.0	-21.3	1.02 V	18	10.47	42.23
6	7311.00	45.5 AV	54.0	-8.5	1.02 V	18	3.27	42.23

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	32deg. C, 59%RH	TESTED BY	Kent Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	109.2 PK			1.06 H	343	77.62	31.58
2	*2462.00	106.7 AV			1.06 H	343	75.12	31.58
3	2483.50	55.5 PK	74.0	-18.5	1.05 H	339	23.84	31.66
4	2483.50	44.5 AV	54.0	-9.5	1.05 H	339	12.84	31.66
5	4924.00	55.4 PK	74.0	-18.6	1.36 H	230	18.98	36.42
6	4924.00	53.1 AV	54.0	-0.9	1.36 H	230	16.68	36.42
7	7386.00	51.7 PK	74.0	-22.3	1.15 H	219	9.18	42.52
8	7386.00	44.6 AV	54.0	-9.4	1.15 H	219	2.08	42.52
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	117.4 PK			1.32 V	80	85.82	31.58
2	*2462.00	114.6 AV			1.32 V	80	83.02	31.58
3	2488.12	62.4 PK	74.0	-11.6	1.43 V	173	30.72	31.68
4	2488.12	52.3 AV	54.0	-1.7	1.43 V	173	20.62	31.68
5	4924.00	54.1 PK	74.0	-19.9	1.00 V	2	17.68	36.42
6	4924.00	52.3 AV	54.0	-1.7	1.00 V	2	15.88	36.42
7	7386.00	53.4 PK	74.0	-20.6	1.16 V	138	10.88	42.52
8	7386.00	45.7 AV	54.0	-8.3	1.16 V	138	3.18	42.52

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

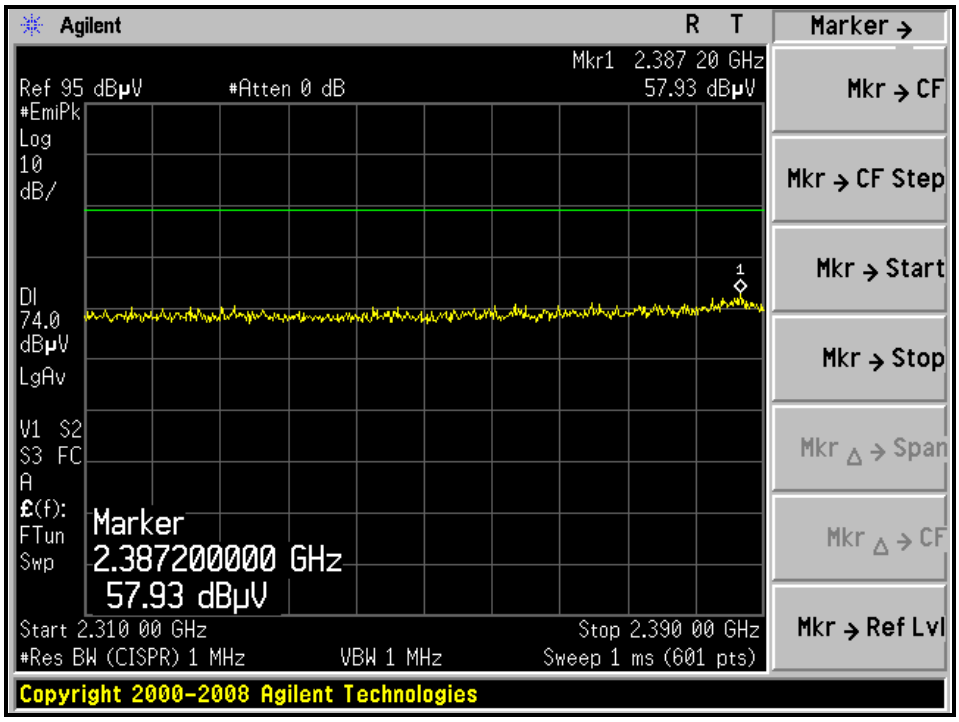
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

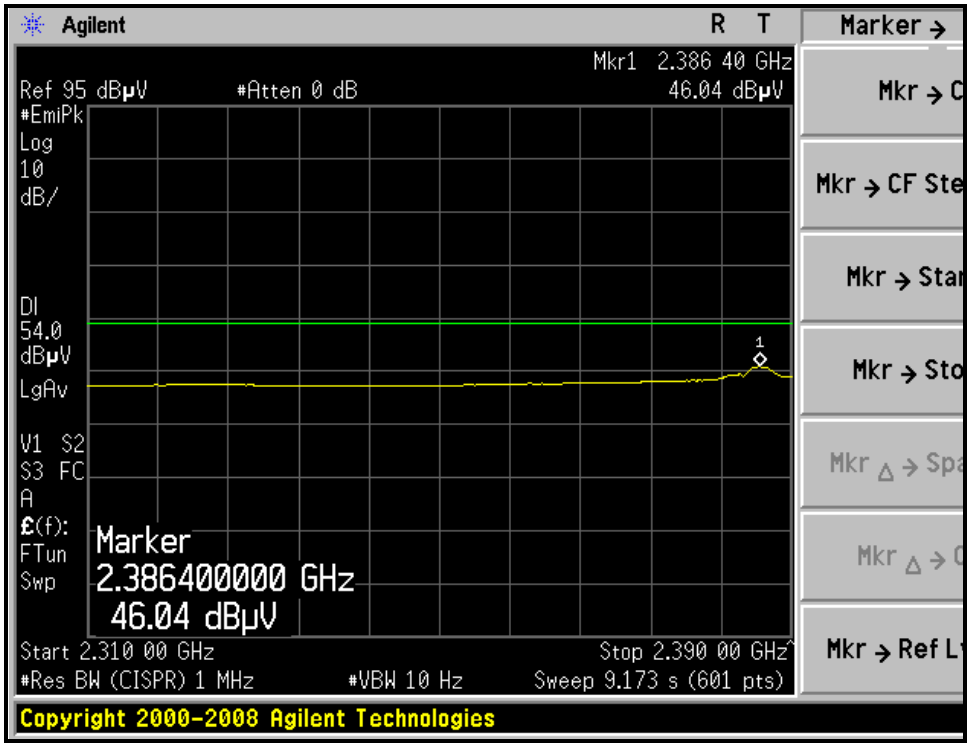
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

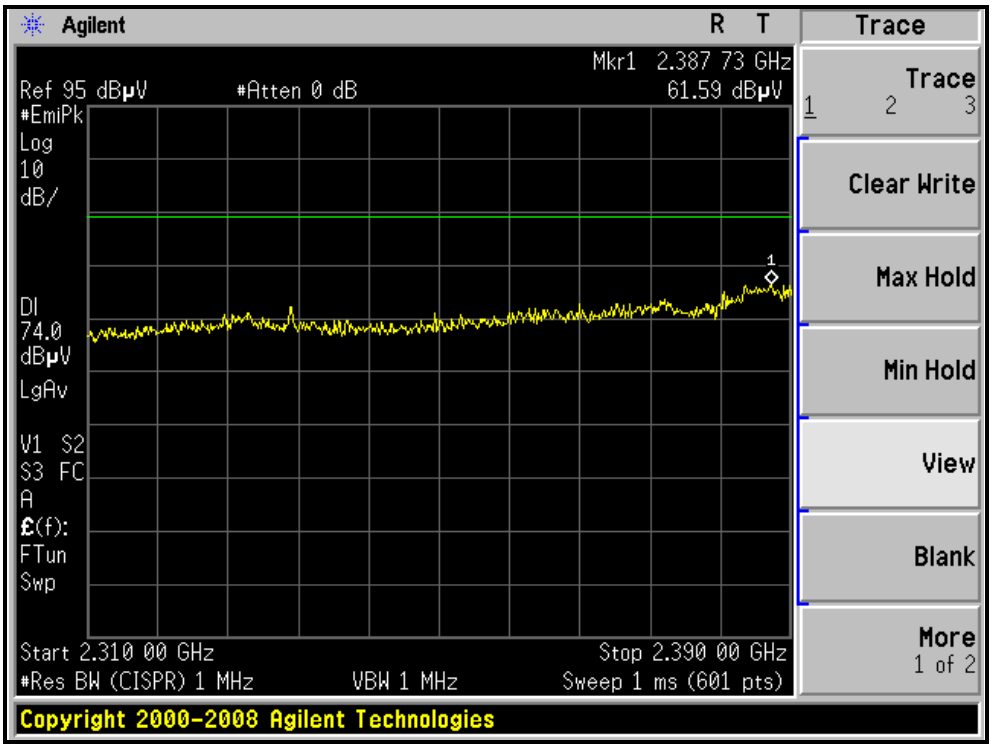
5. " * ": Fundamental frequency.

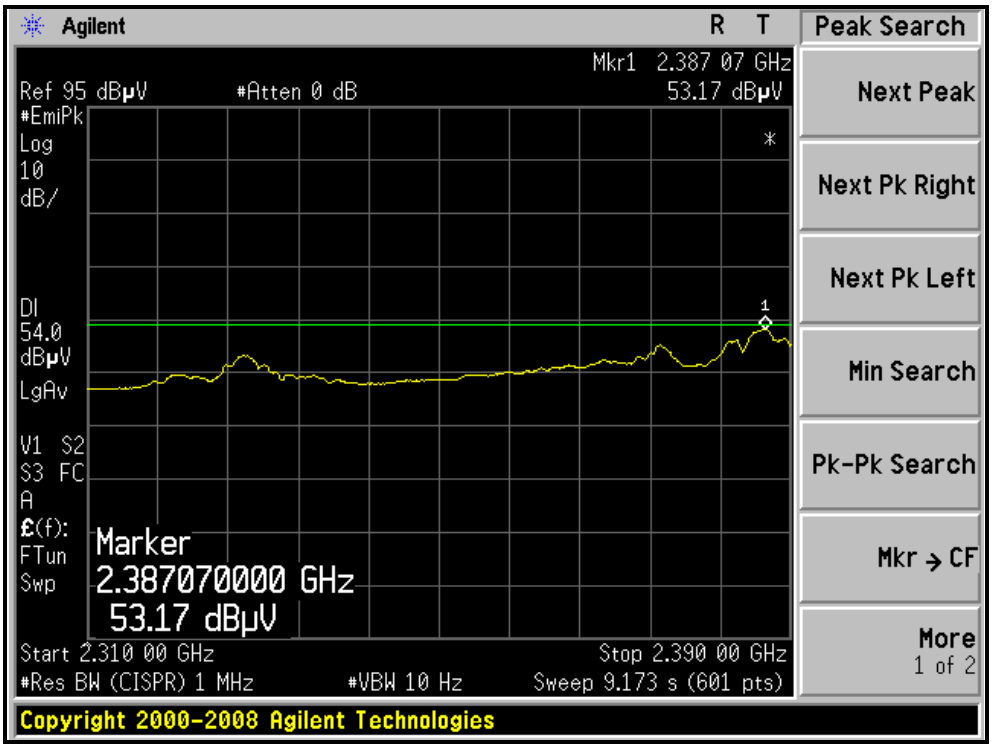
RESTRICTED BANDEDGE (802.11b MODE,CH1, HORIZONTAL)



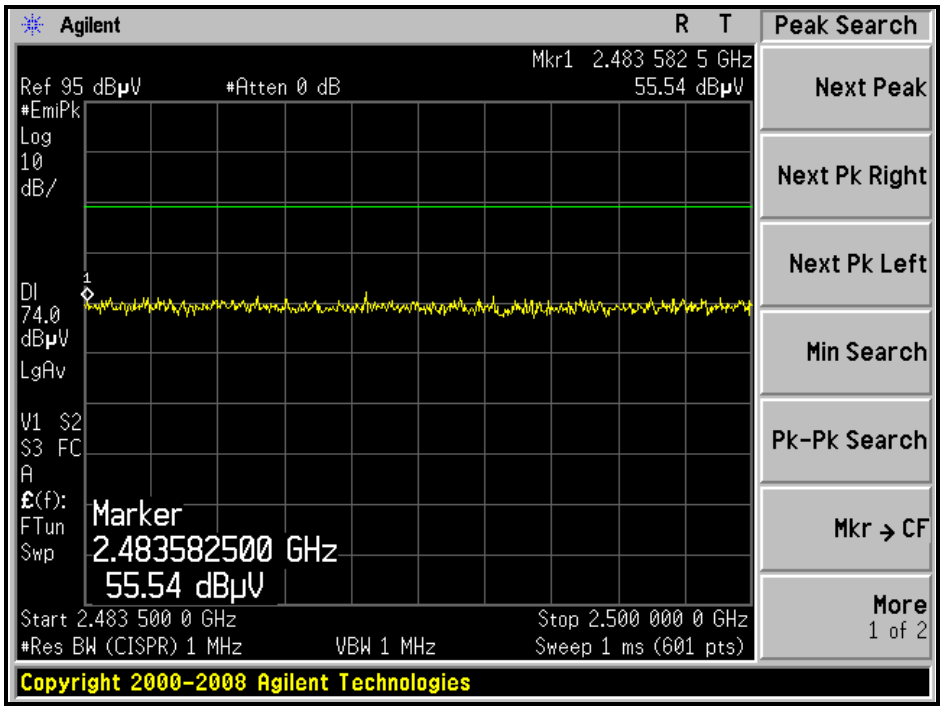


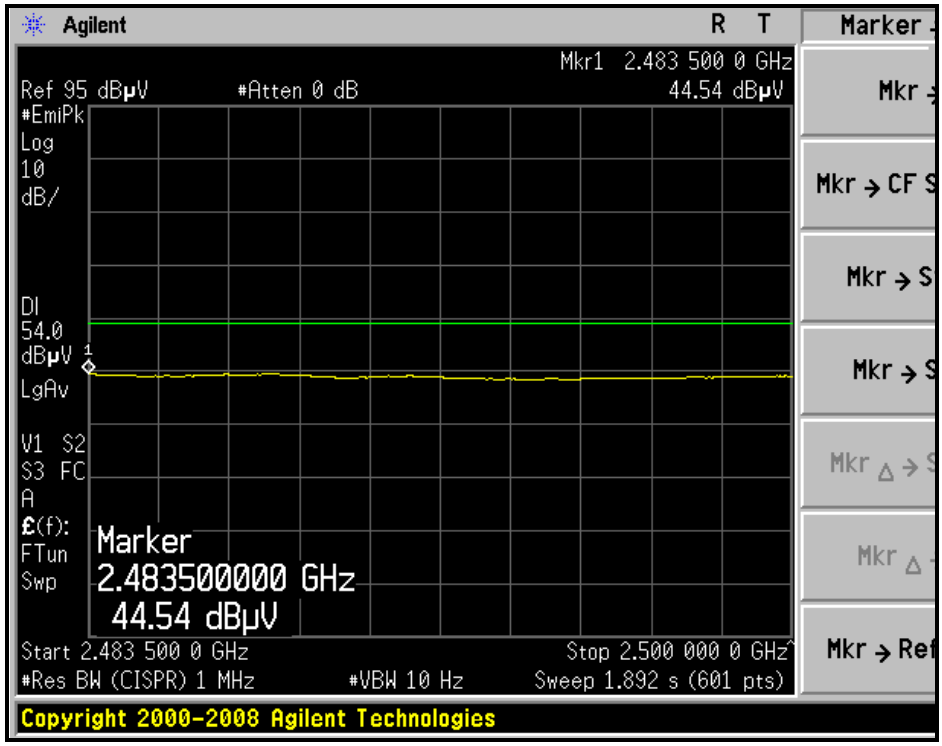
RESTRICTED BANDEDGE (802.11b MODE,CH1, VERTICAL)



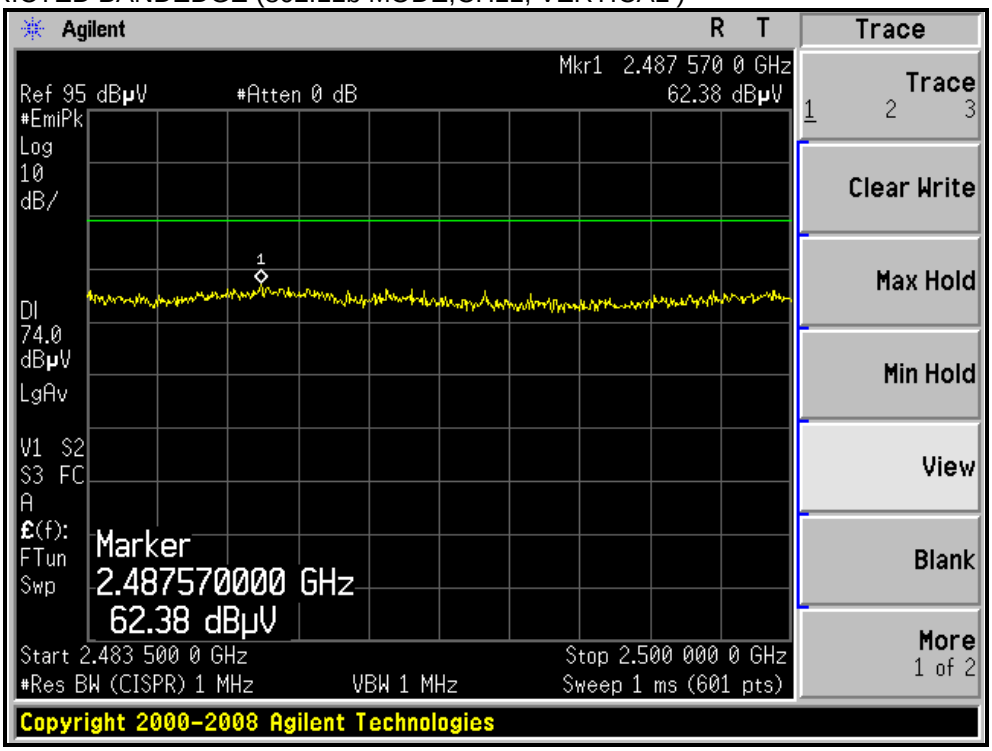


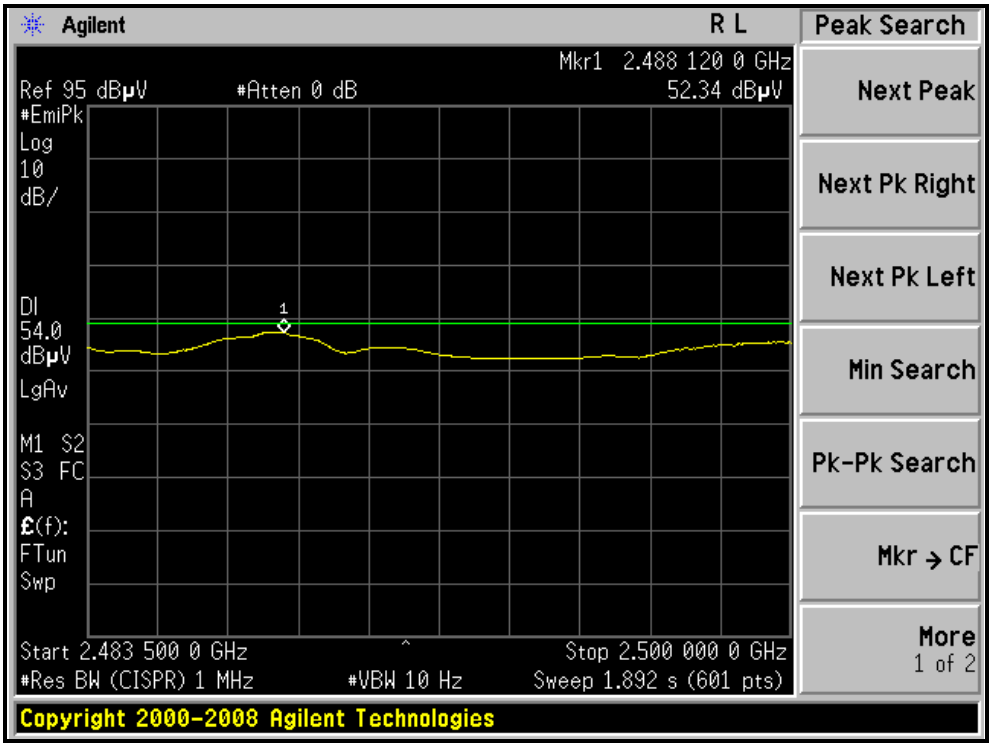
RESTRICTED BANDEDGE (802.11b MODE,CH11, HORIZONTAL)





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	32deg. C, 59%RH	TESTED BY	Kent Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	58.9 PK	74.0	-15.1	1.15 H	339	27.58	31.32
2	2390.00	47.6 AV	54.0	-6.4	1.15 H	339	16.28	31.32
3	*2412.00	108.6 PK			1.32 H	337	77.21	31.39
4	*2412.00	94.7 AV			1.32 H	337	63.31	31.39
5	4824.00	48.4 PK	74.0	-25.6	1.16 H	106	12.23	36.17
6	4824.00	35.0 AV	54.0	-19.0	1.16 H	106	-1.17	36.17
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	67.8 PK	74.0	-6.2	1.34 V	276	36.48	31.32
2	2390.00	53.2 AV	54.0	-0.8	1.34 V	276	21.88	31.32
3	*2412.00	116.9 PK			1.26 V	274	85.51	31.39
4	*2412.00	106.1 AV			1.26 V	274	74.71	31.39
5	4824.00	47.0 PK	74.0	-27.0	1.13 V	7	10.83	36.17
6	4824.00	34.0 AV	54.0	-20.0	1.13 V	7	-2.17	36.17

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
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	32deg. C, 59%RH	TESTED BY	Kent Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	113.5 PK			1.04 H	337	82.01	31.49
2	*2437.00	100.2 AV			1.04 H	337	68.71	31.49
3	4874.00	55.3 PK	74.0	-18.7	1.16 H	57	18.99	36.31
4	4874.00	42.5 AV	54.0	-11.5	1.16 H	57	6.19	36.31
5	7311.00	55.0 PK	74.0	-19.0	1.00 H	23	12.77	42.23
6	7311.00	40.5 AV	54.0	-13.5	1.00 H	23	-1.73	42.23
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	68.4 PK	74.0	-5.6	1.34 V	359	37.08	31.32
2	2390.00	53.2 AV	54.0	-0.8	1.34 V	359	21.88	31.32
3	*2437.00	123.0 PK			1.00 V	360	91.51	31.49
4	*2437.00	111.5 AV			1.00 V	360	80.01	31.49
5	2483.50	68.7 PK	74.0	-5.3	1.34 V	10	37.04	31.66
6	2483.50	53.1 AV	54.0	-0.9	1.34 V	10	21.44	31.66
7	4874.00	52.4 PK	74.0	-21.6	1.14 V	8	16.09	36.31
8	4874.00	40.5 AV	54.0	-13.5	1.14 V	8	4.19	36.31
9	7311.00	55.7 PK	74.0	-18.3	4.00 V	20	13.47	42.23
10	7311.00	43.2 AV	54.0	-10.8	4.00 V	20	0.97	42.23

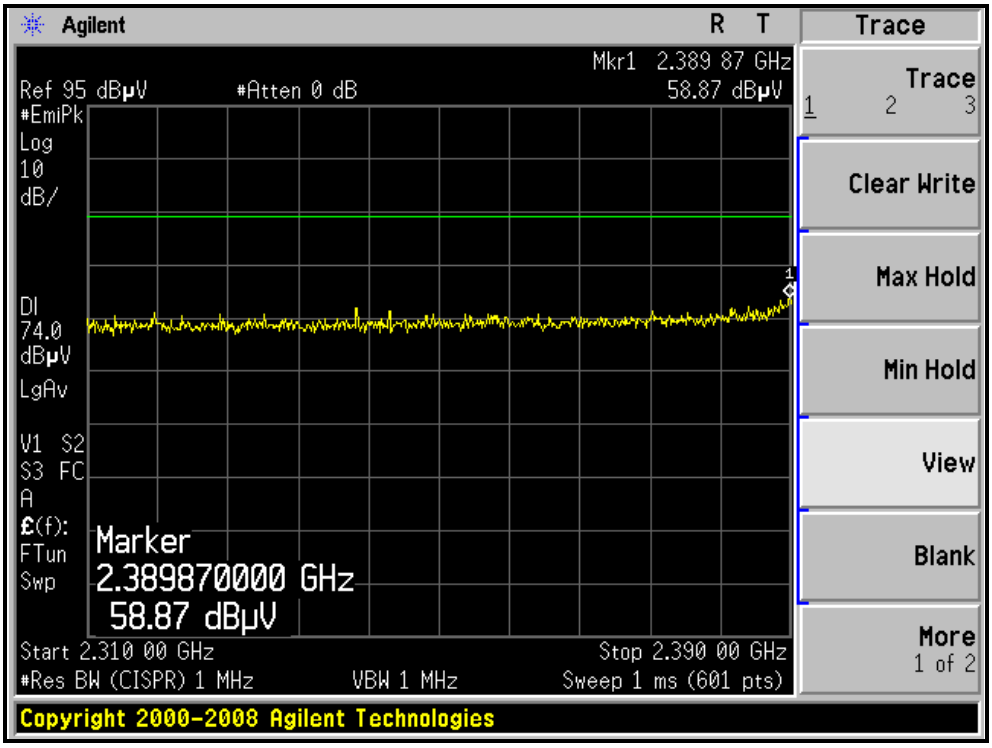
REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

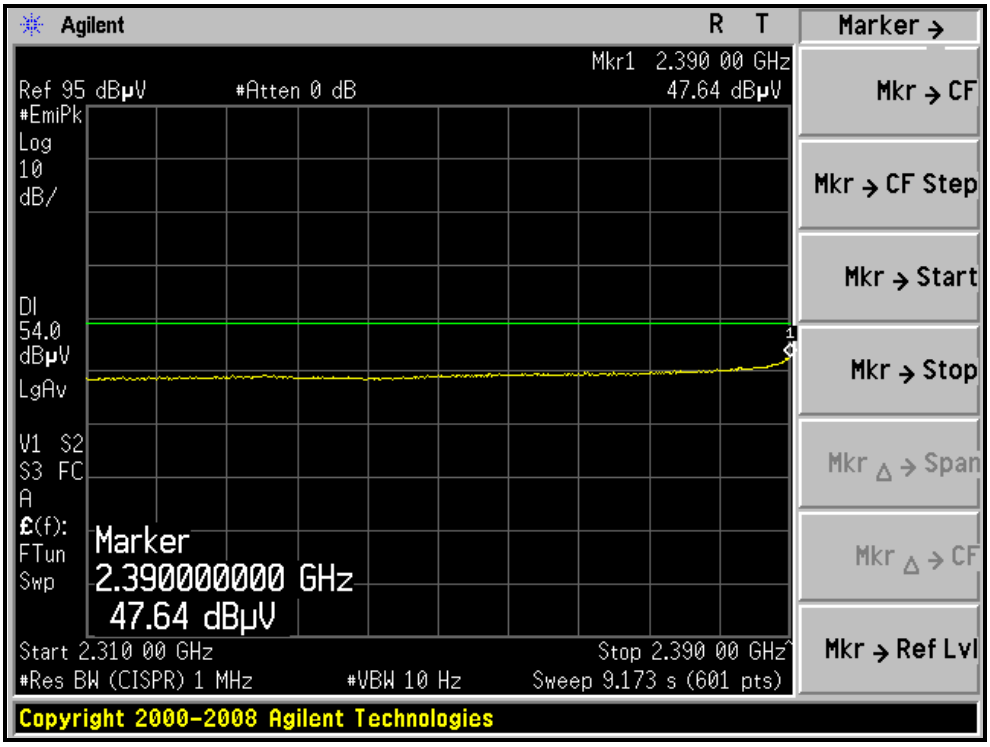
EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	32deg. C, 59%RH	TESTED BY	Kent Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	108.2 PK			1.03 H	338	76.62	31.58
2	*2462.00	95.0 AV			1.03 H	338	63.42	31.58
3	2483.50	61.6 PK	74.0	-12.4	1.03 H	338	29.94	31.66
4	2483.50	46.3 AV	54.0	-7.7	1.03 H	338	14.64	31.66
5	4924.00	45.0 PK	74.0	-29.0	1.17 H	289	8.58	36.42
6	4924.00	33.2 AV	54.0	-20.8	1.17 H	289	-3.22	36.42
7	7386.00	49.6 PK	74.0	-24.4	1.18 H	0	7.08	42.52
8	7386.00	37.0 AV	54.0	-17.0	1.18 H	0	-5.52	42.52
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	116.2 PK			1.14 V	267	84.62	31.58
2	*2462.00	105.5 AV			1.14 V	267	73.92	31.58
3	2483.50	68.1 PK	74.0	-5.9	1.18 V	290	36.44	31.66
4	**2483.50**	**53.5 AV**	**54.0**	**-0.5**	**1.18 V**	**290**	**21.84**	**31.66**
5	4924.00	44.9 PK	74.0	-29.1	1.00 V	0	8.48	36.42
6	4924.00	32.3 AV	54.0	-21.7	1.00 V	0	-4.12	36.42
7	7386.00	48.5 PK	74.0	-25.5	1.00 V	0	5.98	42.52
8	7386.00	36.3 AV	54.0	-17.7	1.00 V	0	-6.22	42.52

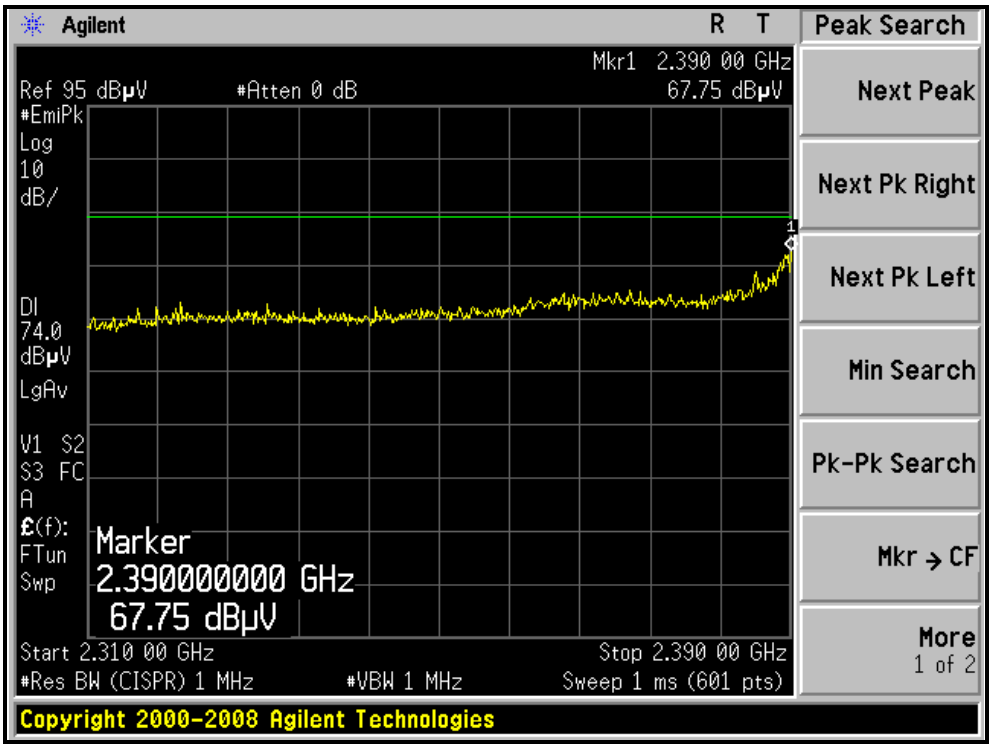
REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

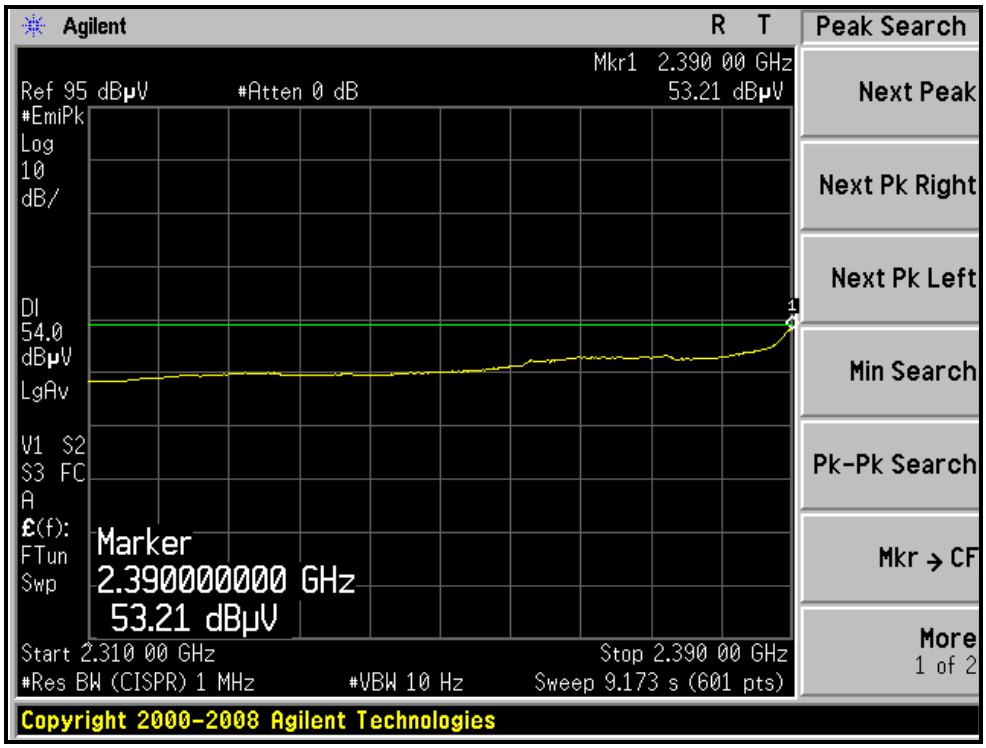
RESTRICTED BANDEDGE (802.11g MODE,CH1, HORIZONTAL)



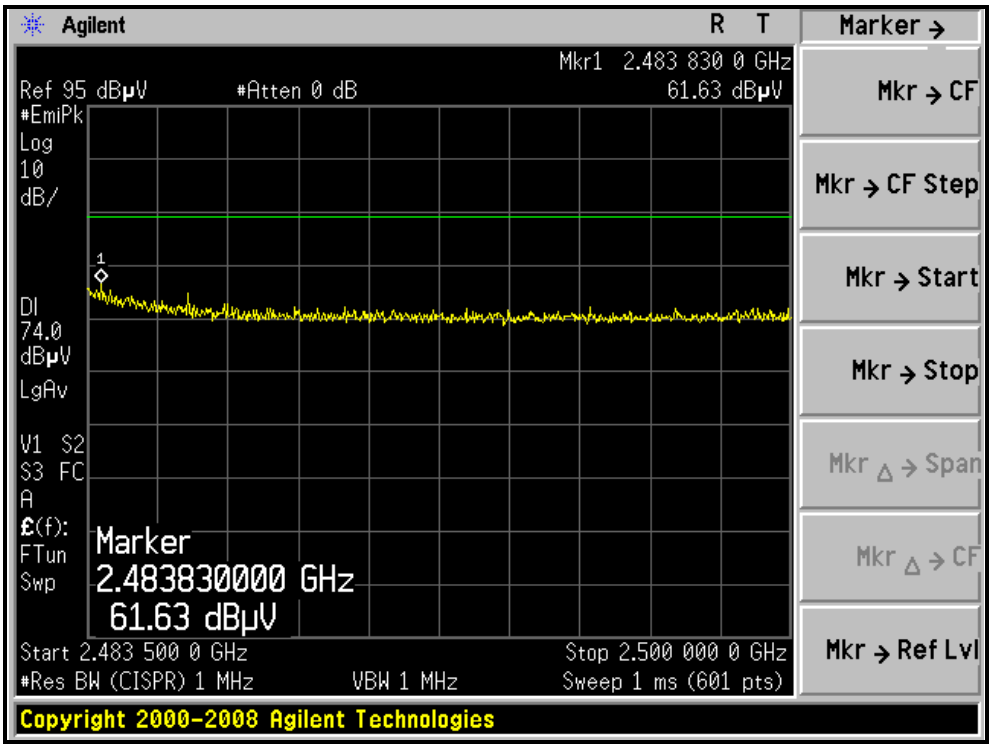


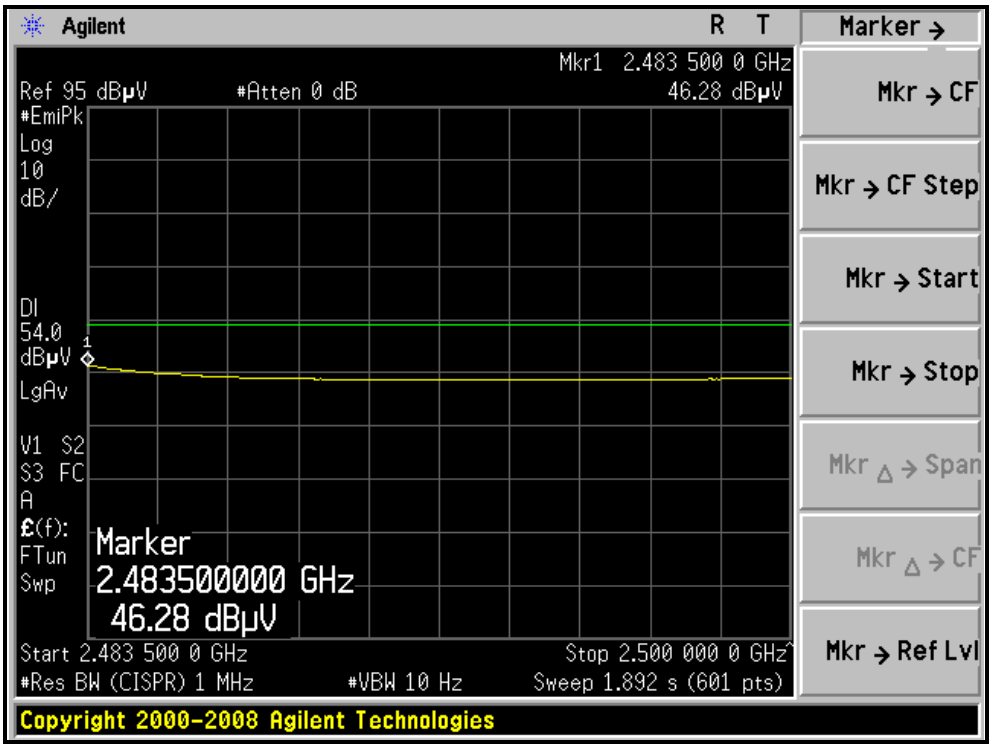
RESTRICTED BANDEDGE (802.11g MODE,CH1, VERTICAL)



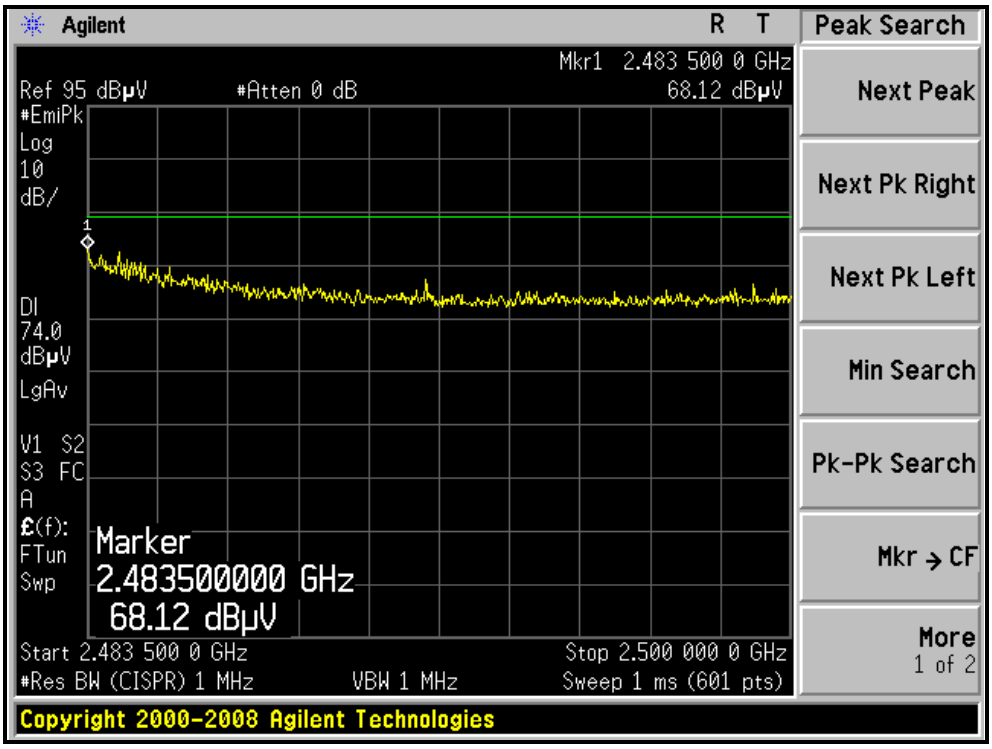


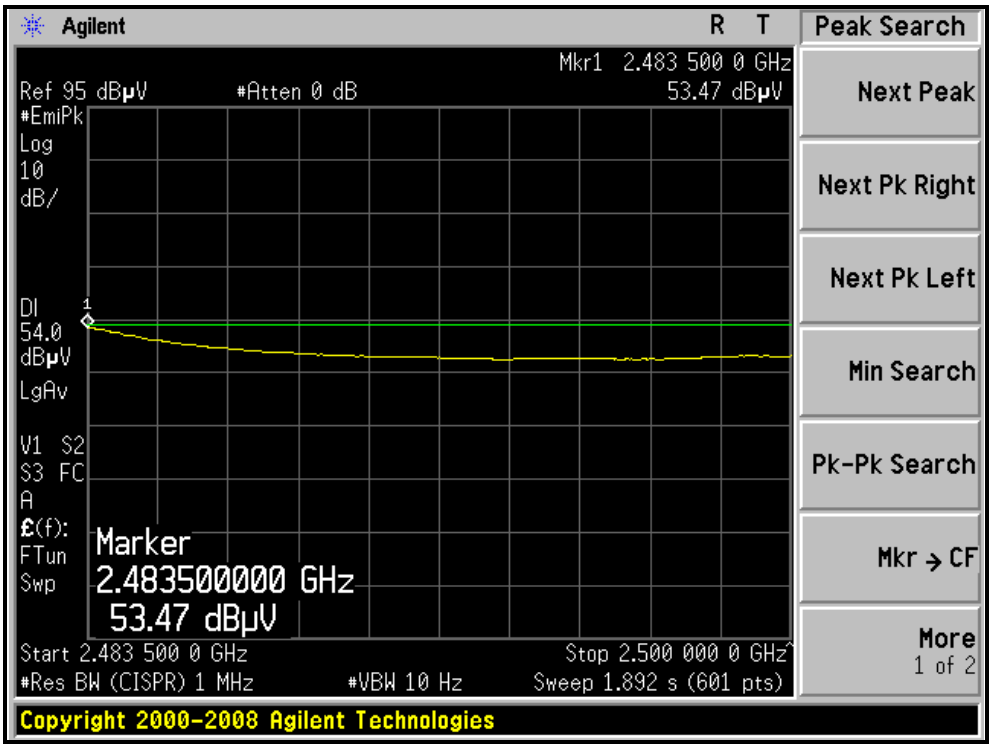
RESTRICTED BANDEDGE (802.11g MODE,CH11, HORIZONTAL)





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	32deg. C, 59%RH	TESTED BY	Kent Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	60.8 PK	74.0	-13.2	1.19 H	356	29.48	31.32
2	2390.00	46.7 AV	54.0	-7.3	1.19 H	356	15.38	31.32
3	*2412.00	108.1 PK			1.07 H	342	76.71	31.39
4	*2412.00	93.2 AV			1.07 H	342	61.81	31.39
5	4824.00	46.3 PK	74.0	-27.7	1.00 H	52	10.13	36.17
6	4824.00	34.3 AV	54.0	-19.7	1.00 H	52	-1.87	36.17
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	67.8. PK	74.0	-6.9	1.32 V	95	35.78	31.32
2	2390.00	53.1 AV	54.0	-0.9	1.32 V	95	21.78	31.32
3	*2412.00	114.7 PK			1.32 V	95	83.31	31.39
4	*2412.00	103.6 AV			1.32 V	95	72.21	31.39
5	4824.00	44.8 PK	74.0	-29.2	1.05 V	10	8.63	36.17
6	4824.00	33.0 AV	54.0	-21.0	1.05 V	10	-3.17	36.17

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
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	32deg. C, 59%RH	TESTED BY	Kent Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	60.8 PK	74.0	-13.2	1.19 H	356	29.48	31.32
2	2390.00	46.7 AV	54.0	-7.3	1.19 H	356	15.38	31.32
3	*2412.00	108.1 PK			1.07 H	342	76.71	31.39
4	*2412.00	93.2 AV			1.07 H	342	61.81	31.39
5	4824.00	46.3 PK	74.0	-27.7	1.00 H	52	10.13	36.17
6	4824.00	34.3 AV	54.0	-19.7	1.00 H	52	-1.87	36.17
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	67.1 PK	74.0	-6.9	1.32 V	95	35.78	31.32
2	2390.00	53.1 AV	54.0	-0.9	1.32 V	95	21.78	31.32
3	*2412.00	114.7 PK			1.32 V	95	83.31	31.39
4	*2412.00	103.6 AV			1.32 V	95	72.21	31.39
5	4824.00	44.8 PK	74.0	-29.2	1.05 V	10	8.63	36.17
6	4824.00	33.0 AV	54.0	-21.0	1.05 V	10	-3.17	36.17

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

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

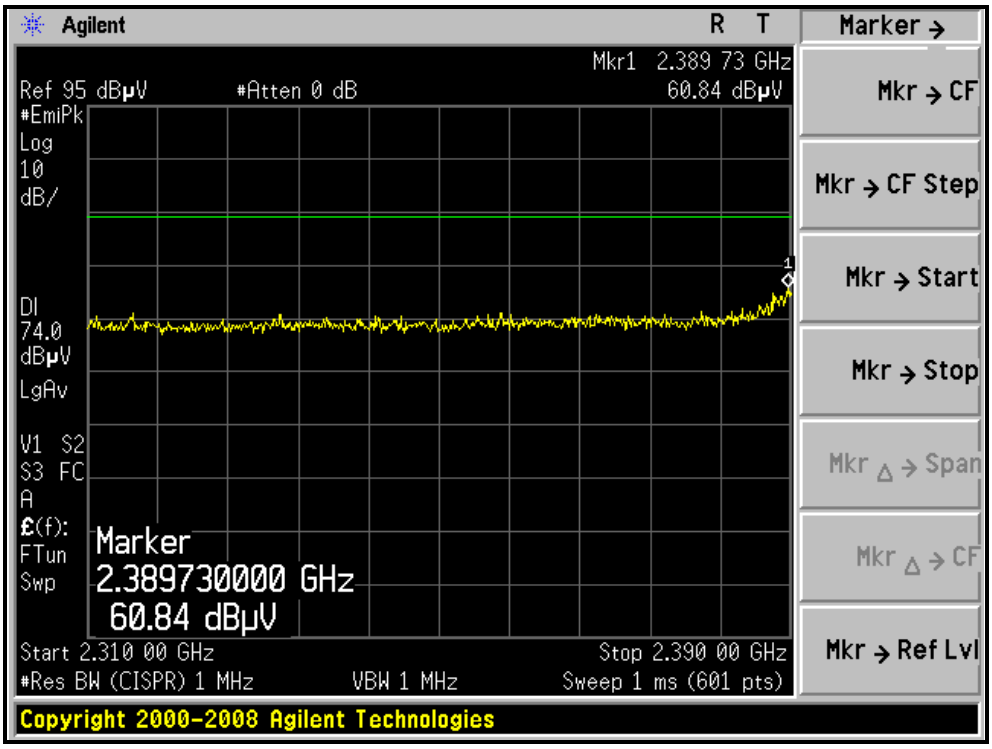
EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	32deg. C, 59%RH	TESTED BY	Kent Liu

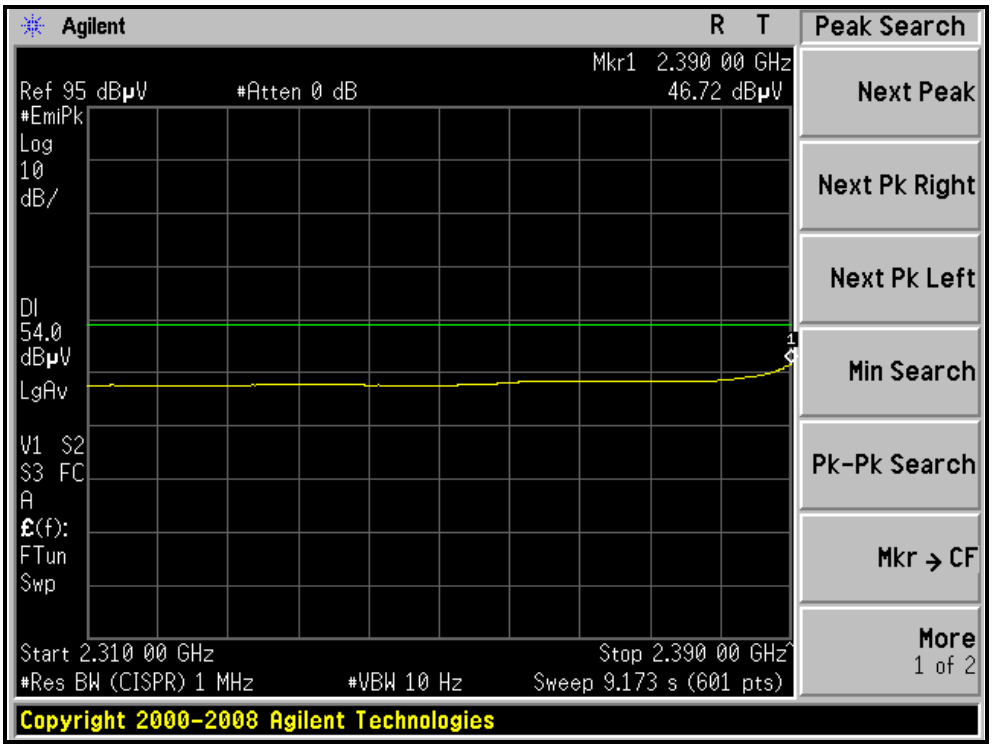
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	60.8 PK	74.0	-13.2	1.19 H	356	29.48	31.32
2	2390.00	46.7 AV	54.0	-7.3	1.19 H	356	15.38	31.32
3	*2412.00	108.1 PK			1.07 H	342	76.71	31.39
4	*2412.00	93.2 AV			1.07 H	342	61.81	31.39
5	4824.00	46.3 PK	74.0	-27.7	1.00 H	52	10.13	36.17
6	4824.00	34.3 AV	54.0	-19.7	1.00 H	52	-1.87	36.17
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	67.1 PK	74.0	-6.9	1.32 V	95	35.78	31.32
2	2390.00	53.1 AV	54.0	-0.9	1.32 V	95	21.78	31.32
3	*2412.00	114.7 PK			1.32 V	95	83.31	31.39
4	*2412.00	103.6 AV			1.32 V	95	72.21	31.39
5	4824.00	44.8 PK	74.0	-29.2	1.05 V	10	8.63	36.17
6	4824.00	33.0 AV	54.0	-21.0	1.05 V	10	-3.17	36.17

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

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

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





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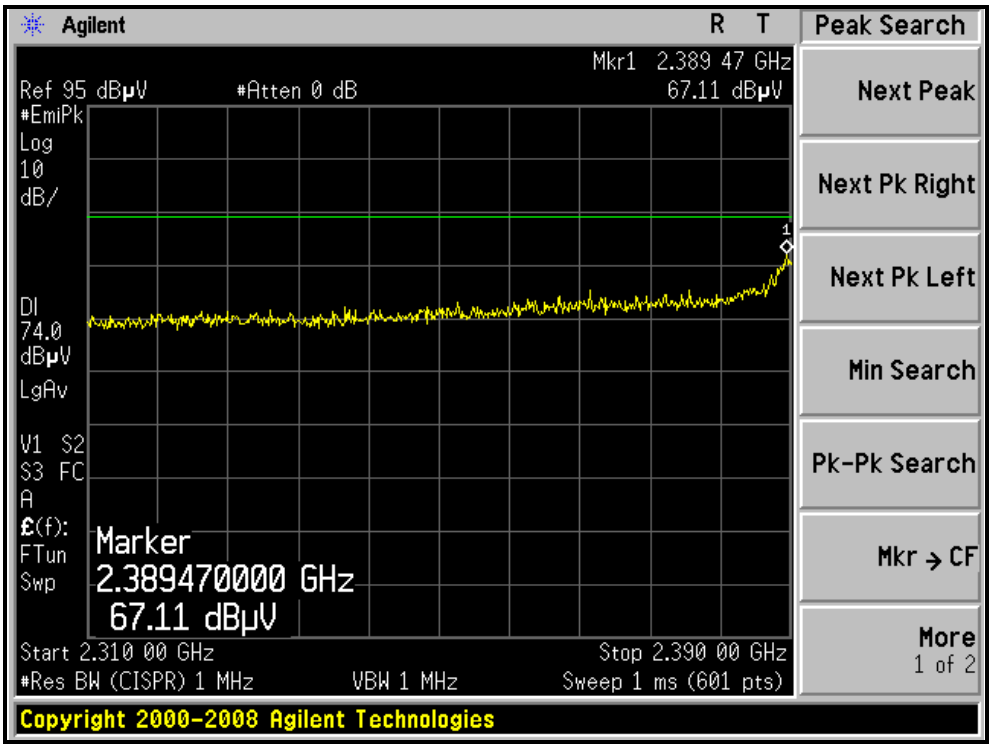

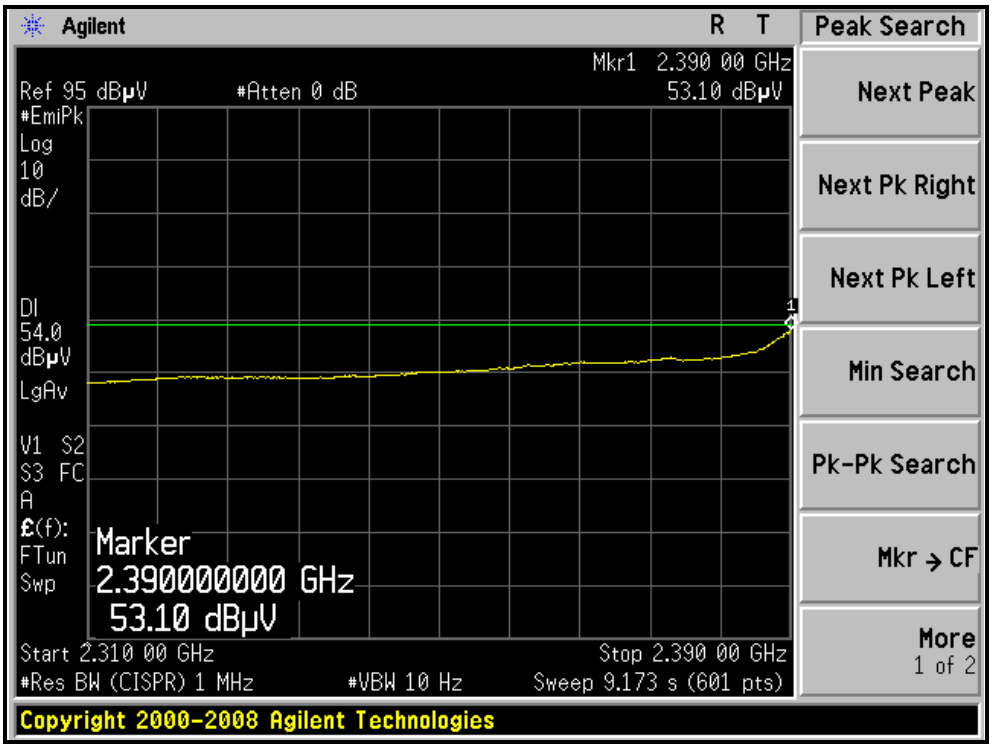

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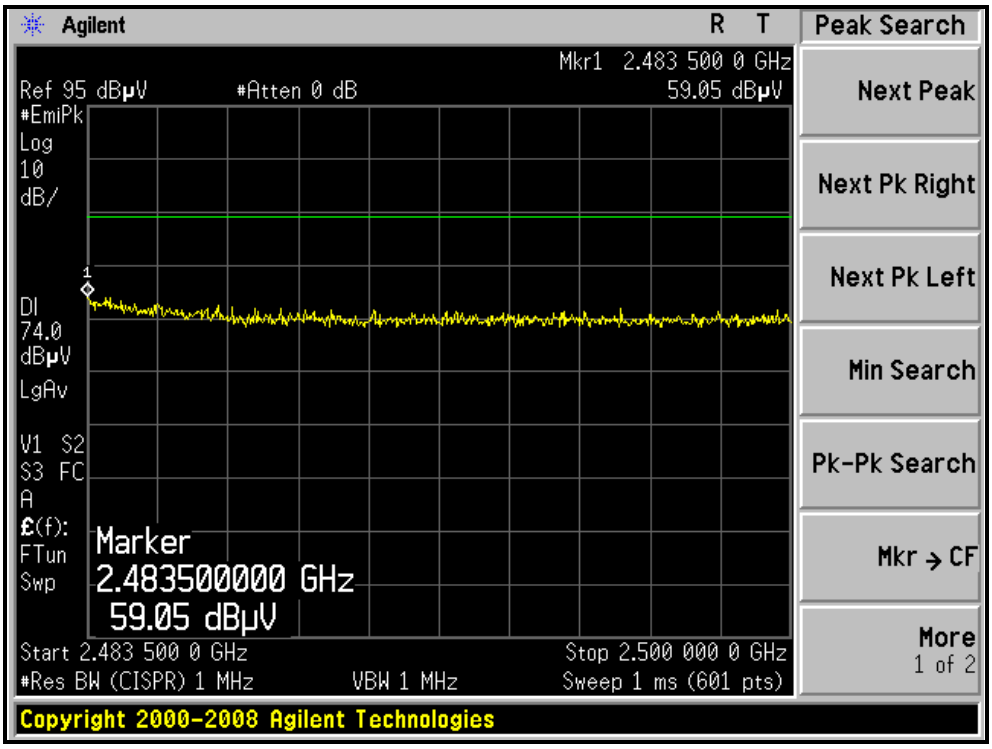
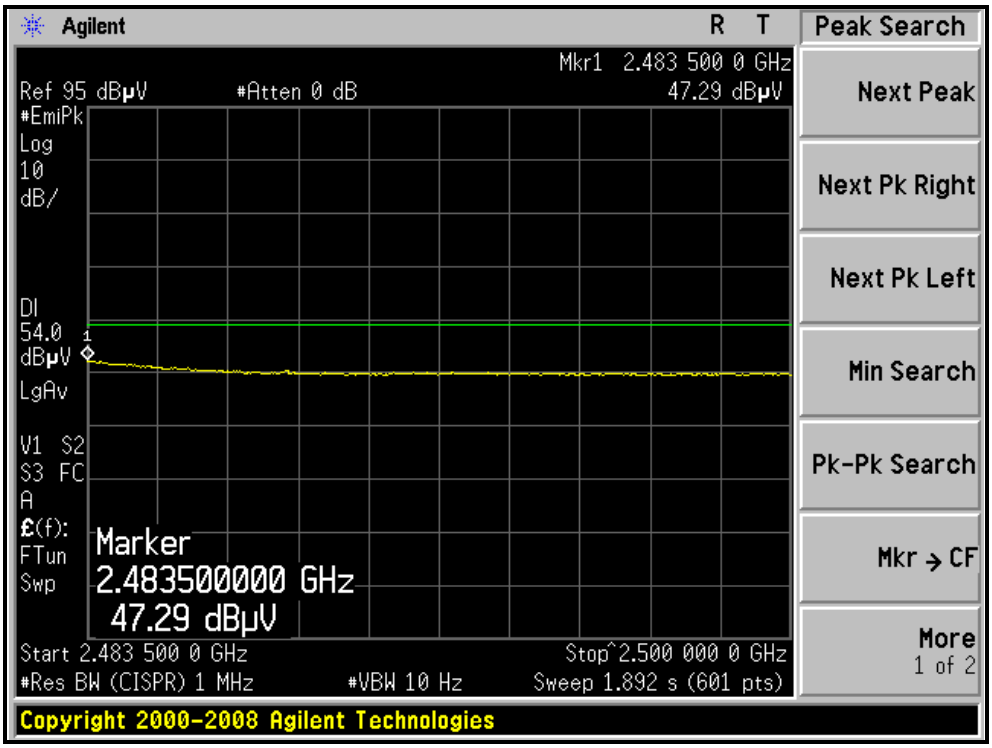
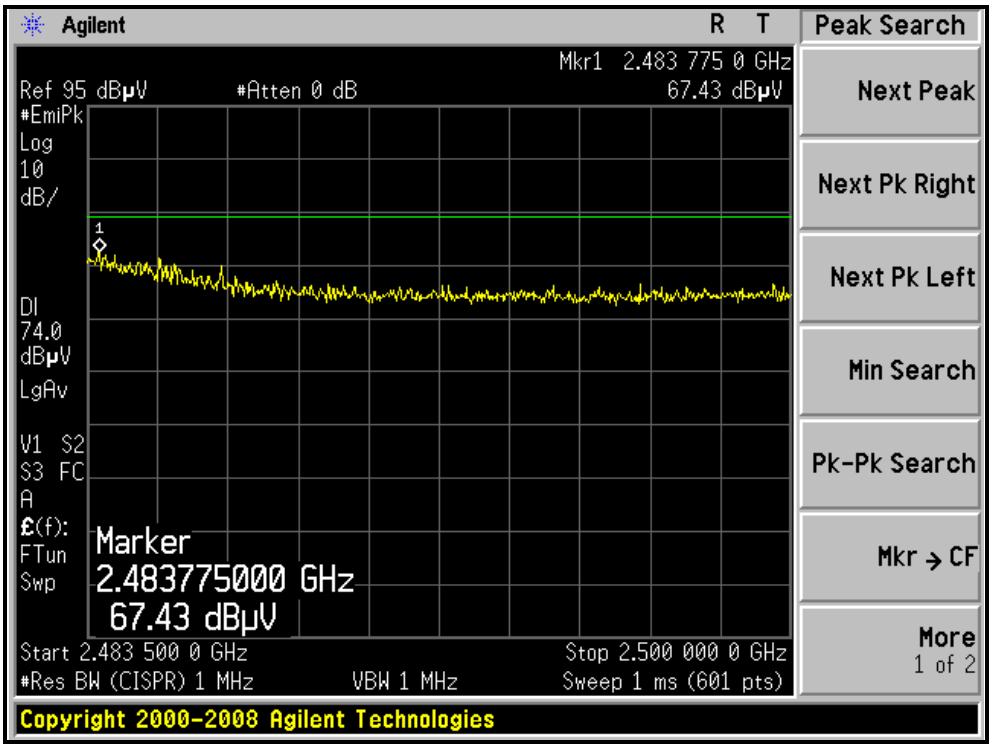
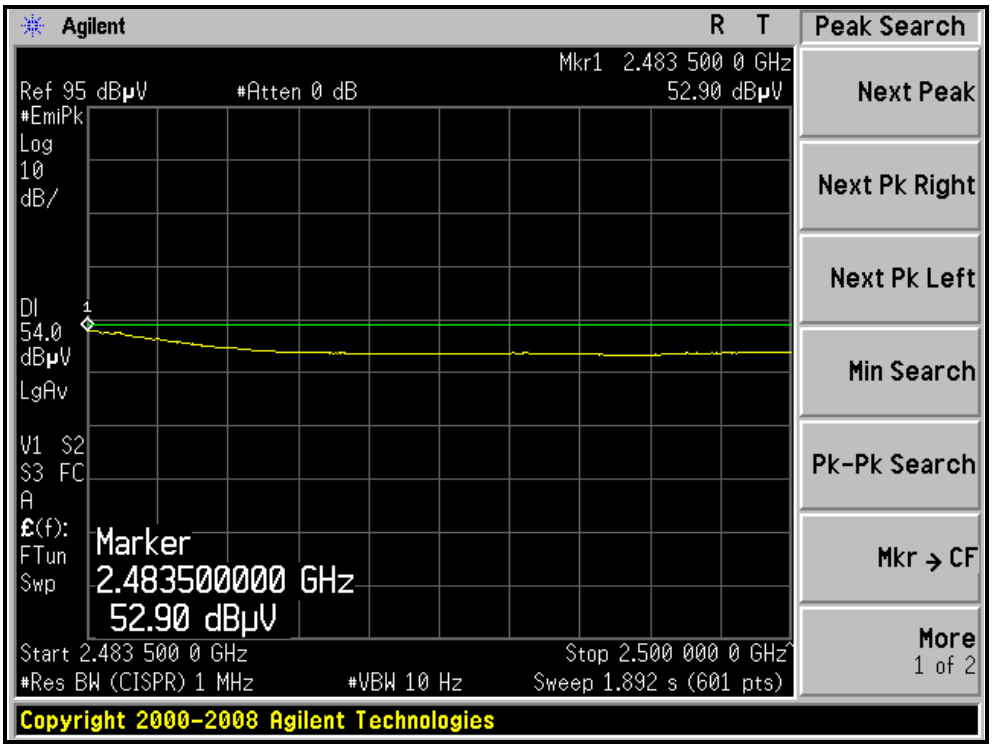




RESTRICTED BANDEDGE (802.11n (20MHz) MODE,CH11, VERTICAL)





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	32deg. C, 59%RH	TESTED BY	Kent Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	62.8 PK	74.0	-11.2	1.46 H	348	31.48	31.32
2	2390.00	47.3 AV	54.0	-6.7	1.46 H	348	15.98	31.32
3	*2422.00	101.3 PK			1.19 H	348	69.87	31.43
4	*2422.00	87.8 AV			1.19 H	348	56.37	31.43
5	4844.00	43.7 PK	74.0	-30.3	1.03 H	32	7.48	36.22
6	4844.00	30.8 AV	54.0	-23.2	1.03 H	32	-5.42	36.22
7	7266.00	49.1 PK	74.0	-24.9	1.03 H	20	6.97	42.13
8	7266.00	36.8 AV	54.0	-17.2	1.03 H	20	-5.33	42.13
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	71.5 PK	74.0	-2.5	1.07 V	305	40.18	31.32
2	2390.00	52.9 AV	54.0	-1.1	1.07 V	305	21.58	31.32
3	*2422.00	109.2 PK			1.07 V	305	77.77	31.43
4	*2422.00	97.2 AV			1.07 V	305	65.77	31.43
5	4844.00	42.5 PK	74.0	-31.5	1.00 V	0	6.28	36.22
6	4844.00	30.5 AV	54.0	-23.5	1.00 V	0	-5.72	36.22
7	7266.00	48.5 PK	74.0	-25.5	1.00 V	0	6.37	42.13
8	7266.00	36.8 AV	54.0	-17.2	1.00 V	0	-5.33	42.13

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

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	32deg. C, 59%RH	TESTED BY	Kent Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	106.2 PK			1.11 H	342	74.71	31.49
2	*2437.00	92.3 AV			1.11 H	342	60.81	31.49
3	4874.00	44.9 PK	74.0	-29.1	1.00 H	52	8.59	36.31
4	4874.00	32.7 AV	54.0	-21.3	1.00 H	52	-3.61	36.31
5	7311.00	49.9 PK	74.0	-24.1	1.00 H	20	7.67	42.23
6	7311.00	36.8 AV	54.0	-17.2	1.00 H	20	-5.43	42.23
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	73.2 PK	74.0	-0.8	1.08 V	306	41.88	31.32
2	2390.00	50.7 AV	54.0	-3.3	1.08 V	306	19.38	31.32
3	*2437.00	114.6 PK			1.30 V	353	83.11	31.49
4	*2437.00	102.3 AV			1.30 V	353	70.81	31.49
5	2483.50	69.9 PK	74.0	-4.1	1.13 V	251	38.24	31.66
6	2483.50	50.1 AV	54.0	-3.9	1.13 V	251	18.44	31.66
7	4874.00	47.0 PK	74.0	-27.0	1.13 V	5	10.69	36.31
8	4874.00	32.6 AV	54.0	-21.4	1.13 V	5	-3.71	36.31
9	7311.00	50.8 PK	74.0	-23.2	1.00 V	20	8.57	42.23
10	7311.00	37.3 AV	54.0	-16.7	1.00 V	20	-4.93	42.23

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	32deg. C, 59%RH	TESTED BY	Kent Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	101.1 PK			1.04 H	339	69.56	31.54
2	*2452.00	87.0 AV			1.04 H	339	55.46	31.54
3	2483.50	63.1 PK	74.0	-10.9	1.07 H	343	31.44	31.66
4	2483.50	48.2 AV	54.0	-5.8	1.07 H	343	16.54	31.66
5	4904.00	43.3 PK	74.0	-30.7	1.03 H	0	6.91	36.39
6	4904.00	30.3 AV	54.0	-23.7	1.03 H	0	-6.09	36.39
7	7356.00	49.1 PK	74.0	-24.9	1.04 H	20	6.70	42.40
8	7356.00	36.6 AV	54.0	-17.4	1.04 H	20	-5.80	42.40
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	108.5 PK			1.00 V	3	76.96	31.54
2	*2452.00	96.7 AV			1.00 V	3	65.16	31.54
3	2483.50	71.0 PK	74.0	-3.0	1.13 V	251	39.34	31.66
4	2483.50	52.9 AV	54.0	-1.1	1.13 V	251	21.24	31.66
5	4904.00	41.8 PK	74.0	-32.2	1.00 V	5	5.41	36.39
6	4904.00	30.4 AV	54.0	-23.6	1.00 V	5	-5.99	36.39
7	7356.00	48.4 PK	74.0	-25.6	1.00 V	0	6.00	42.40
8	7356.00	36.6 AV	54.0	-17.4	1.00 V	0	-5.80	42.40

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

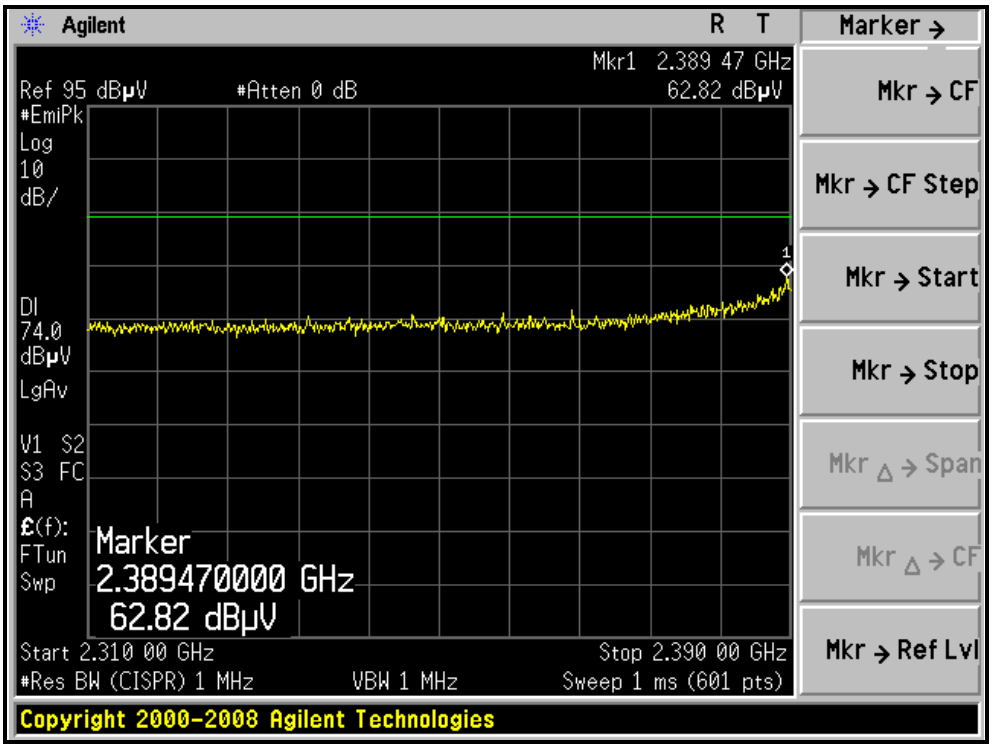
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

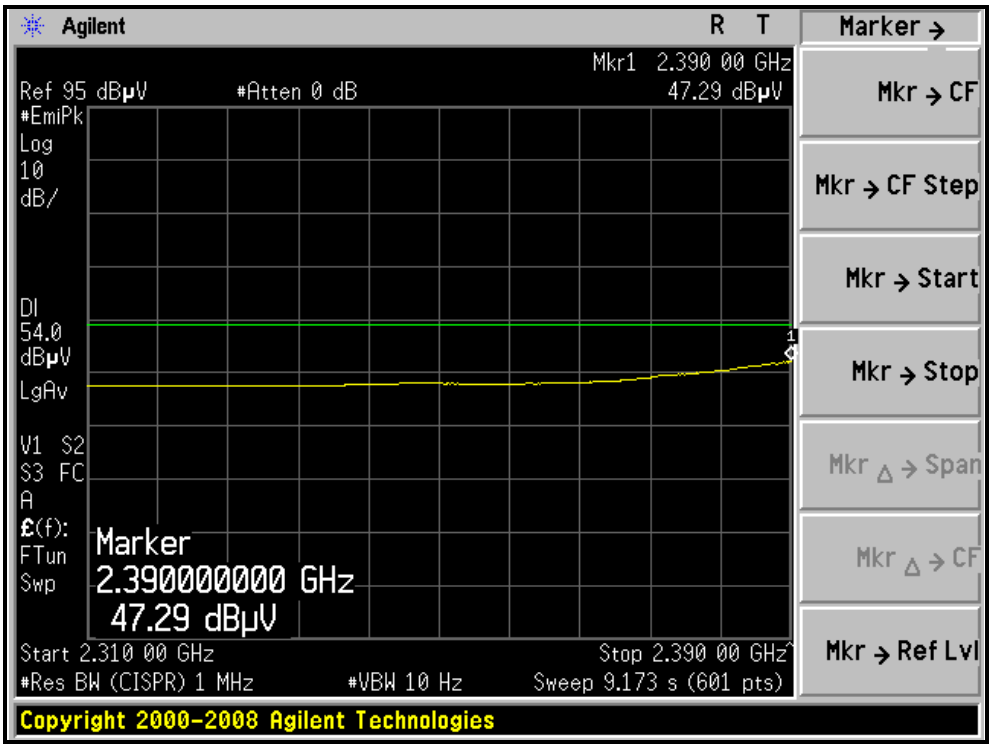
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

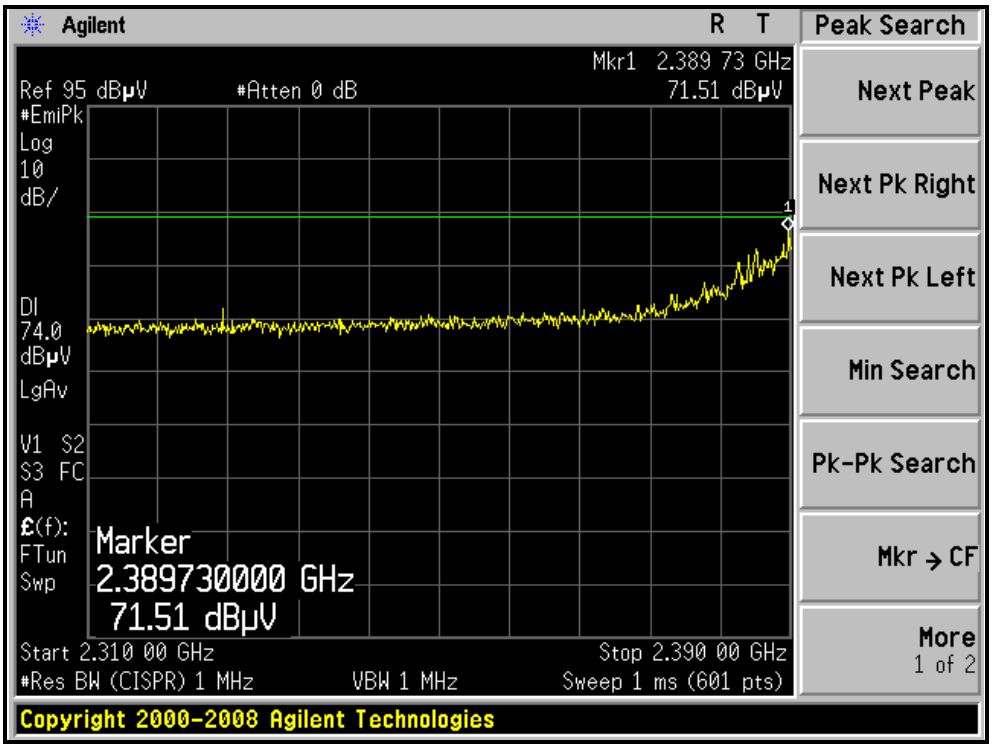
5. " * ": Fundamental frequency.

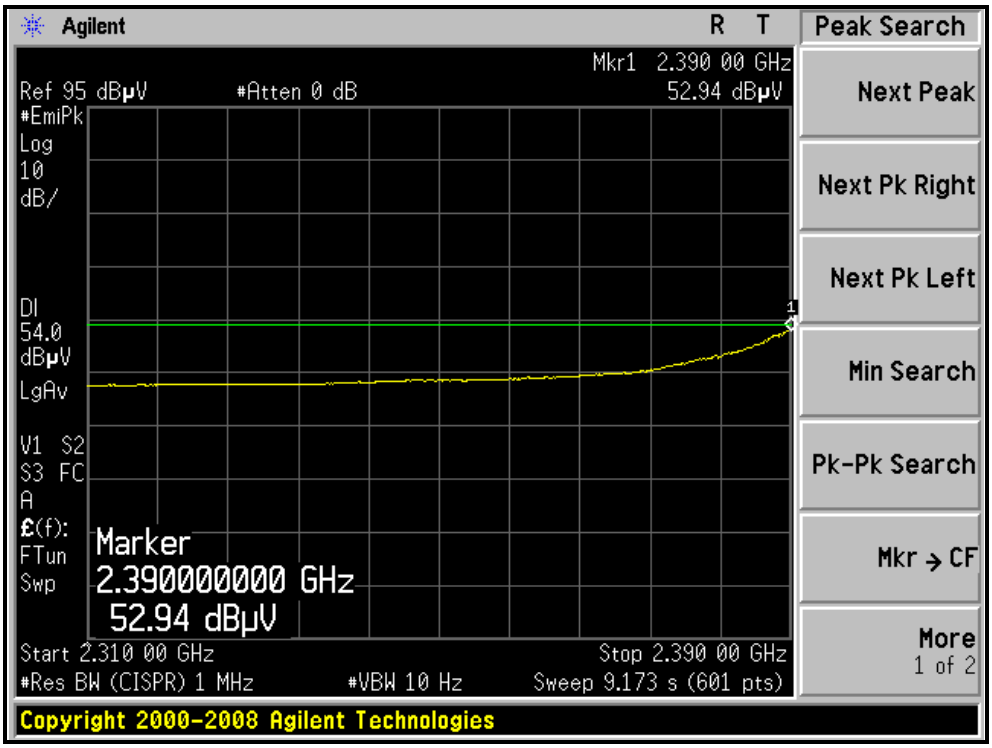
RESTRICTED BANDEDGE (802.11n (40MHz) MODE,CH3, HORIZONTAL)



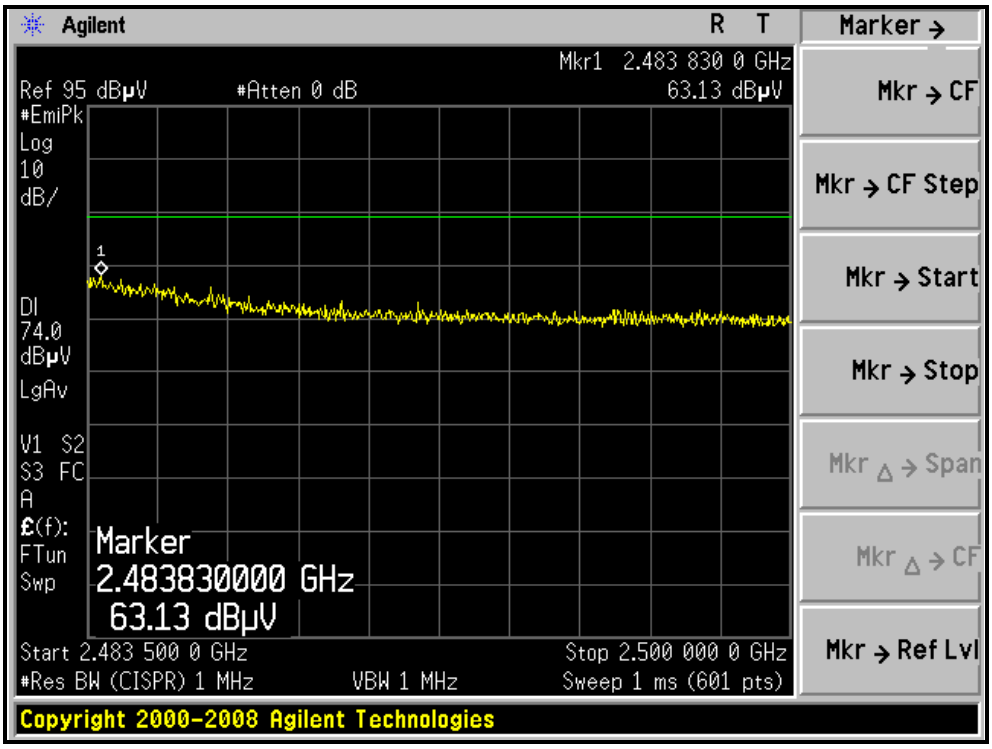


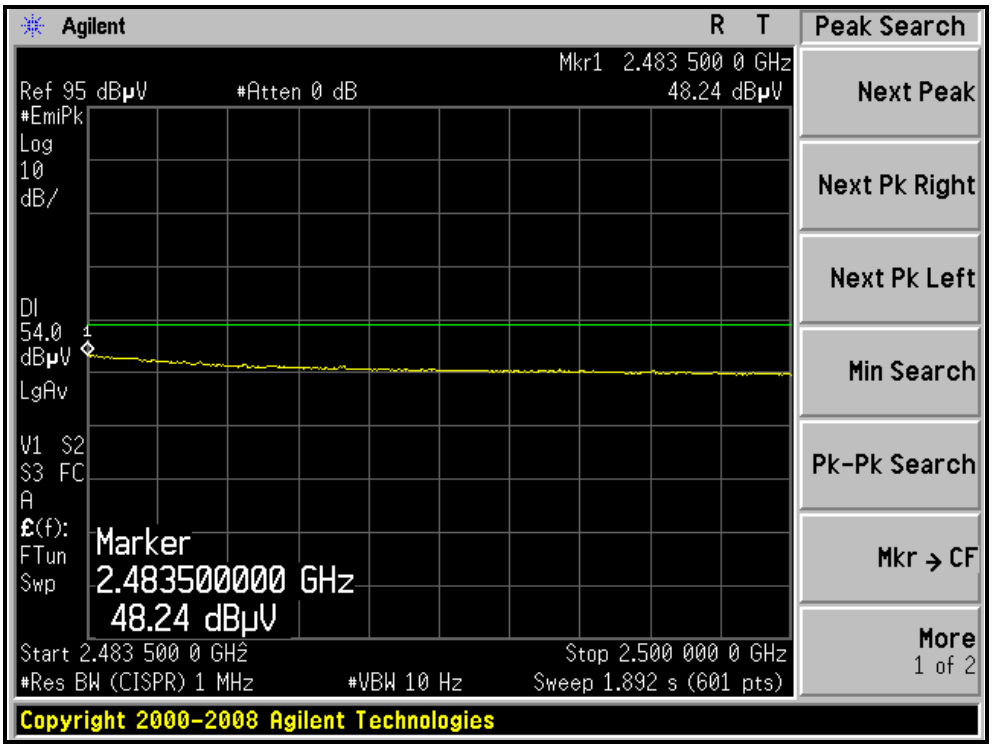
RESTRICTED BANDEDGE (802.11n (40MHz) MODE,CH3, VERTICAL)



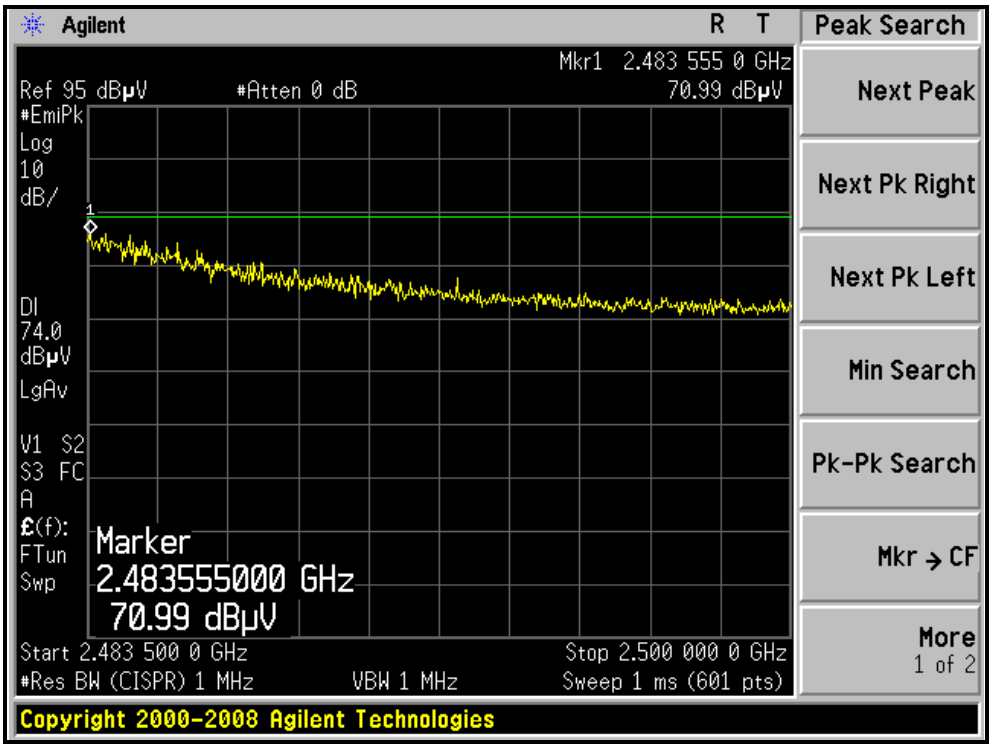


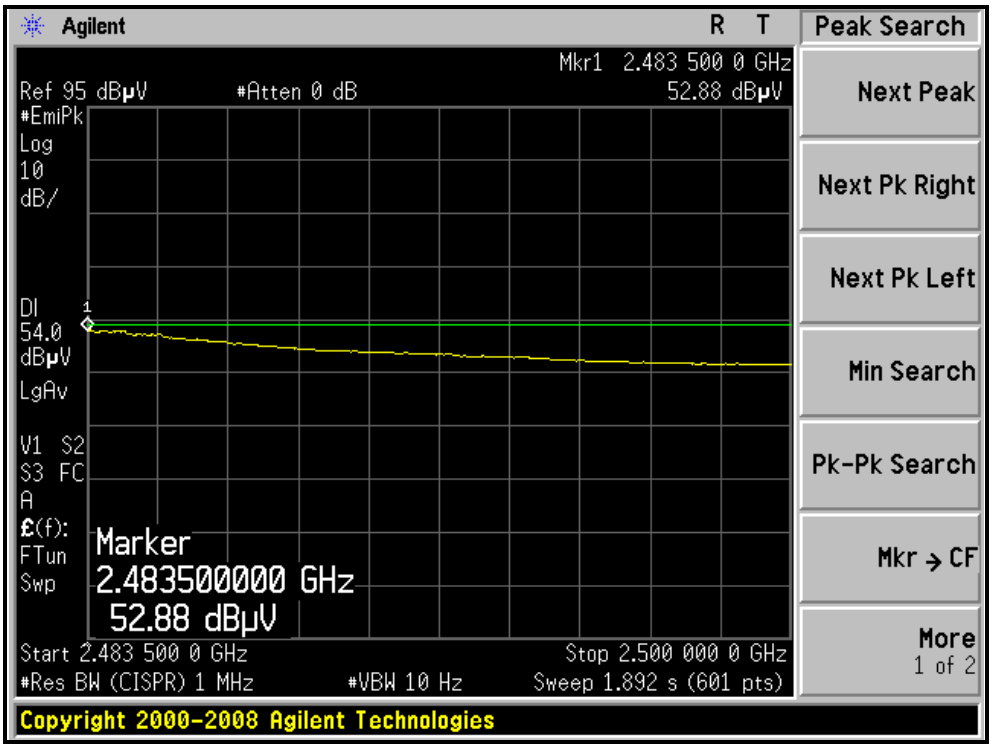
RESTRICTED BANDEDGE (802.11n (40MHz) MODE,CH9, HORIZONTAL)





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. 04, 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

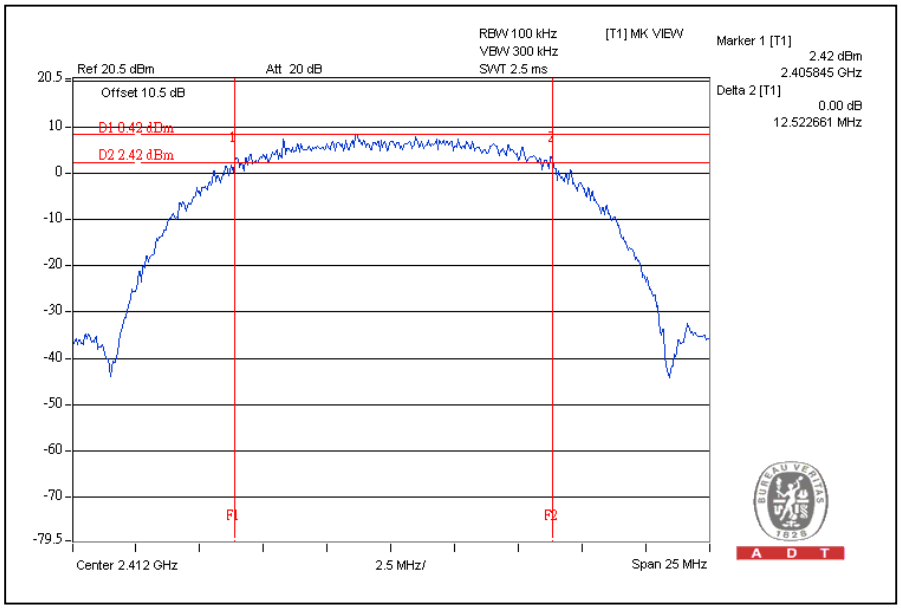
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

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	12.52	12.49	0.5	PASS
6	2437	12.29	12.31	0.5	PASS
11	2462	11.37	12.33	0.5	PASS

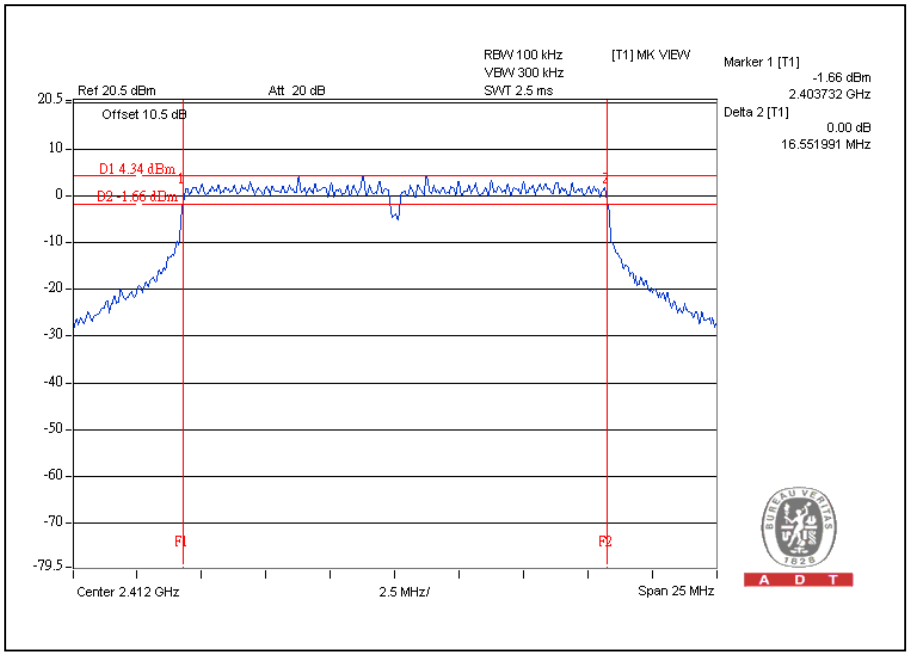
For CHAIN(0)
CH1



802.11g OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
1	2412	16.51	16.55	0.5	PASS
6	2437	16.49	16.5	0.5	PASS
11	2462	16.47	16.48	0.5	PASS

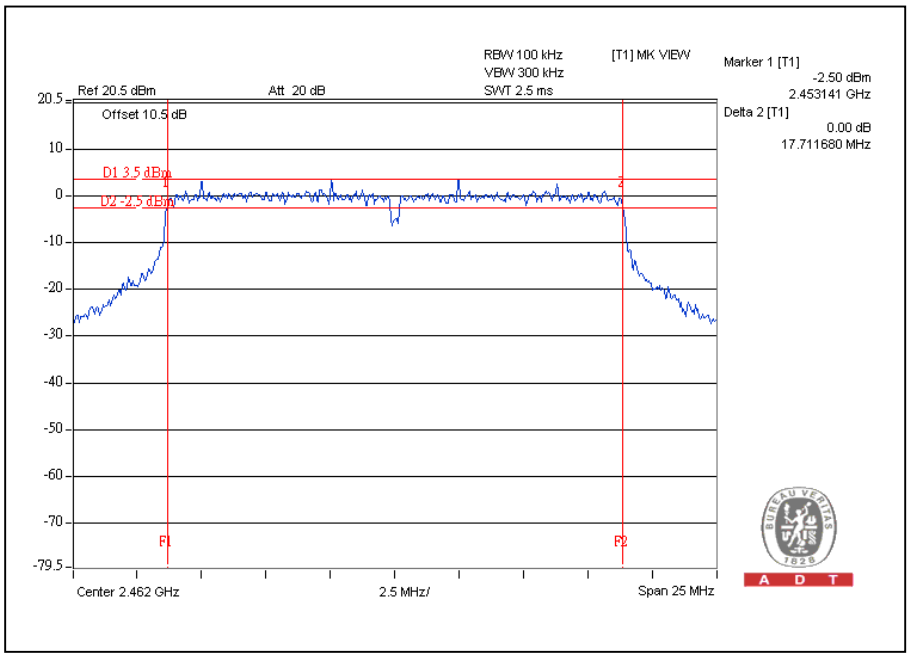
For CHAIN(1)
CH1



802.11n (20MHz) OFDM MODULATION:

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

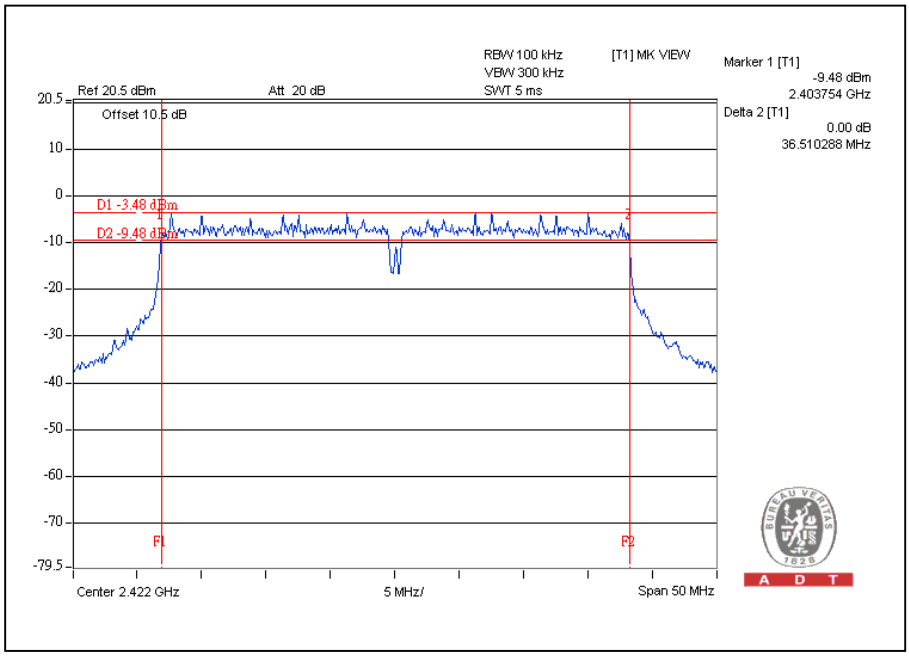
For CHAIN(0)
CH11



802.11n (40MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
3	2422	36.13	36.51	0.5	PASS
6	2437	35.82	36.49	0.5	PASS
9	2452	36.46	36.49	0.5	PASS

For CHAIN(1)
CH3



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. 04, 2011

Description & Manufacturer	Model No.	Serial No.	Calibrated DATE	Calibrated Until
Agilent SIGNAL GENERATOR	E8257C	MY43320668	Dec. 27, 2010	Dec. 26, 2011
TEKTRONIX OSCILLOSCOPE	TDS 5104	BO51450	May. 17, 2011	May. 16, 2012
NARDA DETECTOR	4503A	FSCM99899	NA	NA

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. A detector was used on the output port of the EUT. An oscilloscope was used to read the response of the detector.
2. Replaced the EUT by the signal generator. The center frequency of the S.G was adjusted to the center frequency of the measured channel.
3. Adjusted the power to have the same reading on oscilloscope. 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	20.9	20.9	246.1	23.9	30	PASS
6	2437	23.8	23.3	453.7	26.6	30	PASS
11	2462	22.0	21.7	306.4	24.9	30	PASS

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

Effective Legacy Gain (dBi)=5

The effective legacy gain is 5dBi, 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	21.4	21.7	285.9	24.6	30	PASS
6	2437	25.5	25.4	701.6	28.5	30	PASS
11	2462	21.7	21.4	285.9	24.6	30	PASS

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

Effective Legacy Gain (dBi)=5

The effective legacy gain is 5dBi, 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	20.6	20.6	229.6	23.6	30	PASS
6	2437	25.3	25.1	662.4	28.2	30	PASS
11	2462	20.4	20.3	216.8	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	15.8	16.2	79.7	19.0	30	PASS
6	2437	20.9	21.0	248.9	24.0	30	PASS
9	2452	13.9	14.5	52.7	17.2	30	PASS

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST INSTRUMENTS

Test date: Aug. 04, 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.

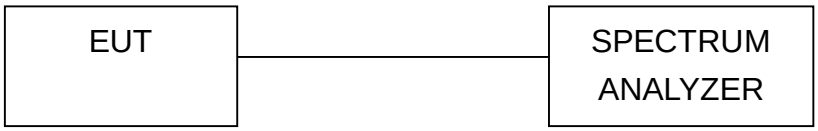
4.5.3 TEST PROCEDURE

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	-2.4	-3.0	0.3	8	PASS
6	2437	-2.4	1.9	3.3	8	PASS
11	2462	-1.3	-1.7	1.5	8	PASS

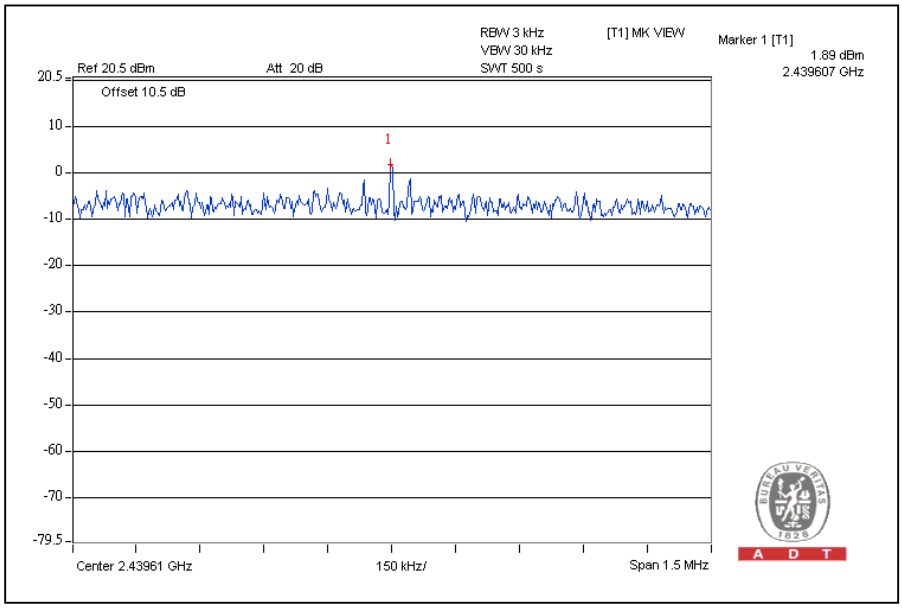
Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi)=5

The effective legacy gain is 5dBi, 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	-6.4	-8.5	-4.3	8	PASS
6	2437	-4.2	0.7	1.9	8	PASS
11	2462	-8.6	-8.7	-5.6	8	PASS

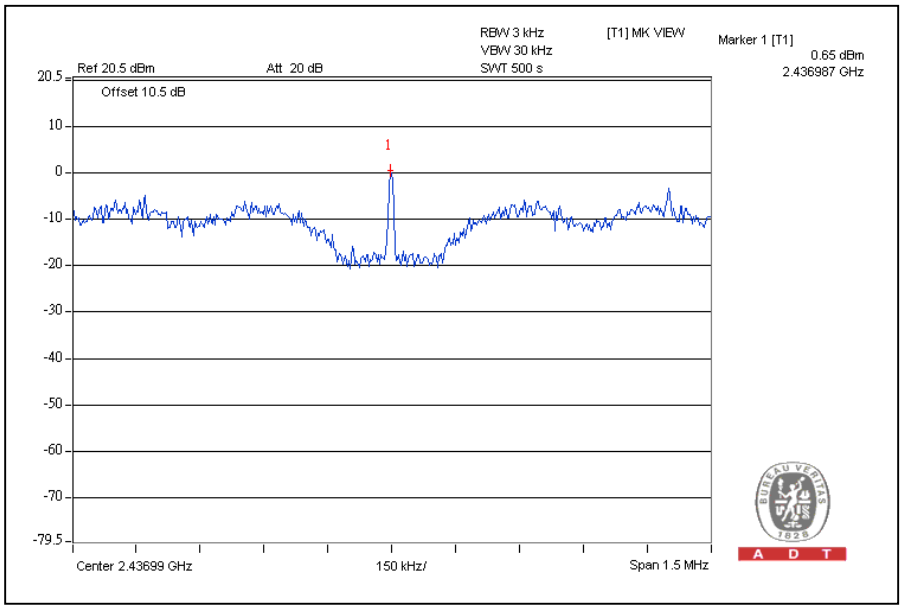
Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi)=5

The effective legacy gain is 5dBi, therefore the limit doesn't reduce.

For CHAIN(1)

CH6

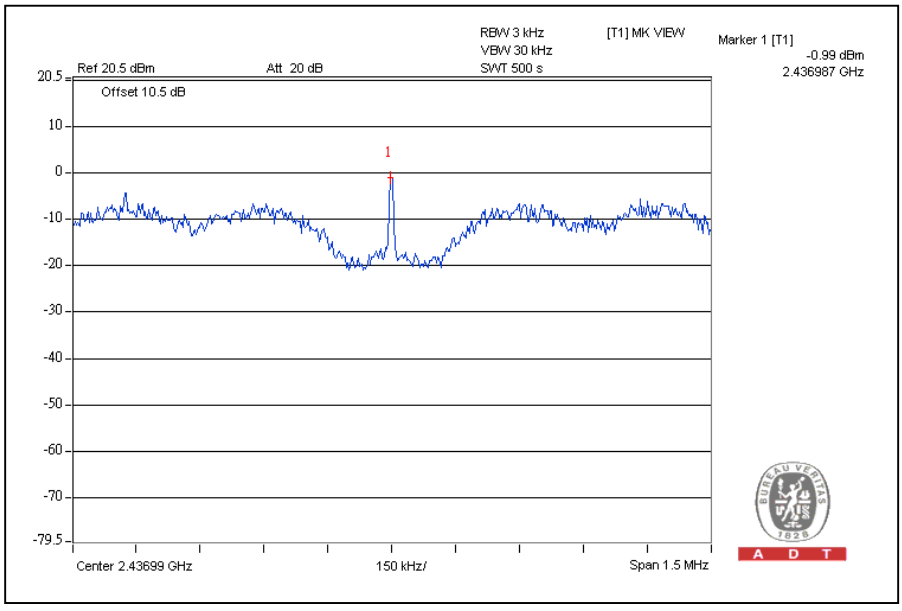


802.11n (20MHz) OFDM MODULATION:

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	-8.8	-8.9	-5.8	8	PASS
6	2437	-4.1	-1.0	0.7	8	PASS
11	2462	-10.2	-9.6	-6.9	8	PASS

For CHAIN(1)

CH6

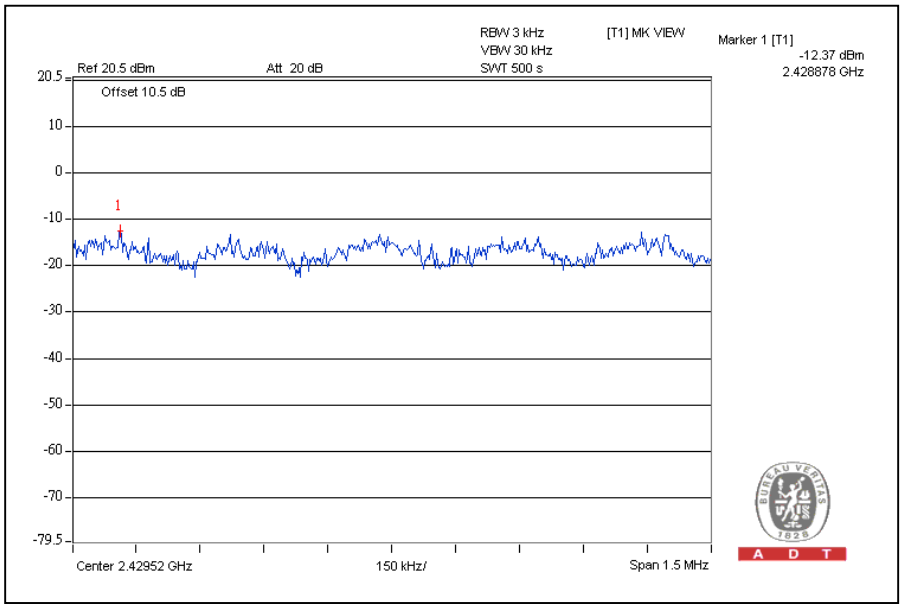


802.11n (40MHz) OFDM MODULATION:

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	-13.7	-13.5	-10.6	8	PASS
6	2437	-12.4	-12.6	-9.5	8	PASS
9	2452	-14.4	-17.5	-12.7	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. 04, 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

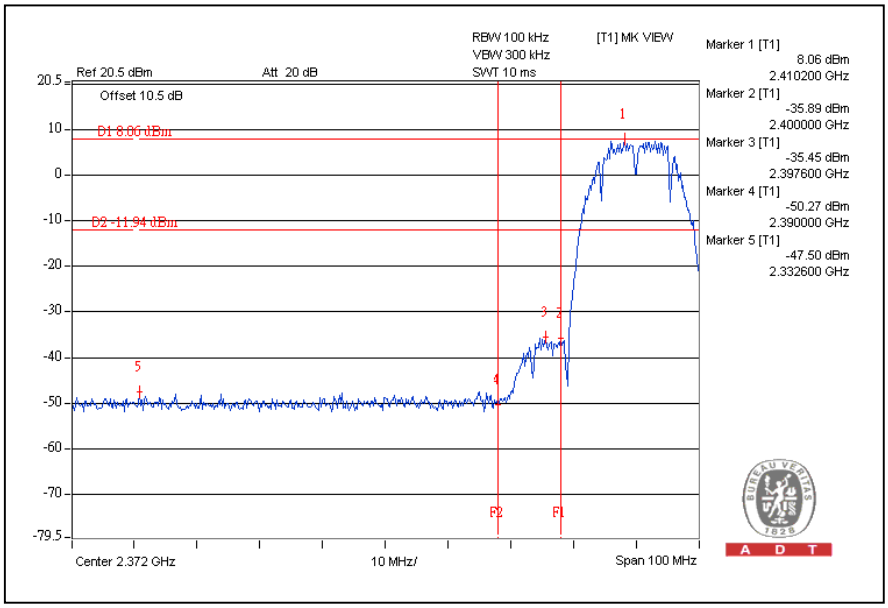
4.6.6 TEST RESULTS

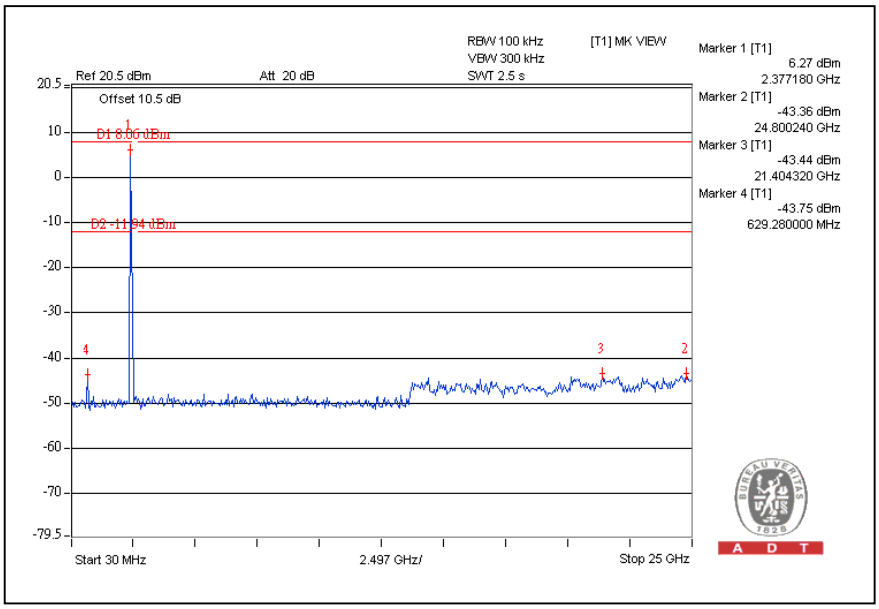
The spectrum plots are attached on the following images. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).

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

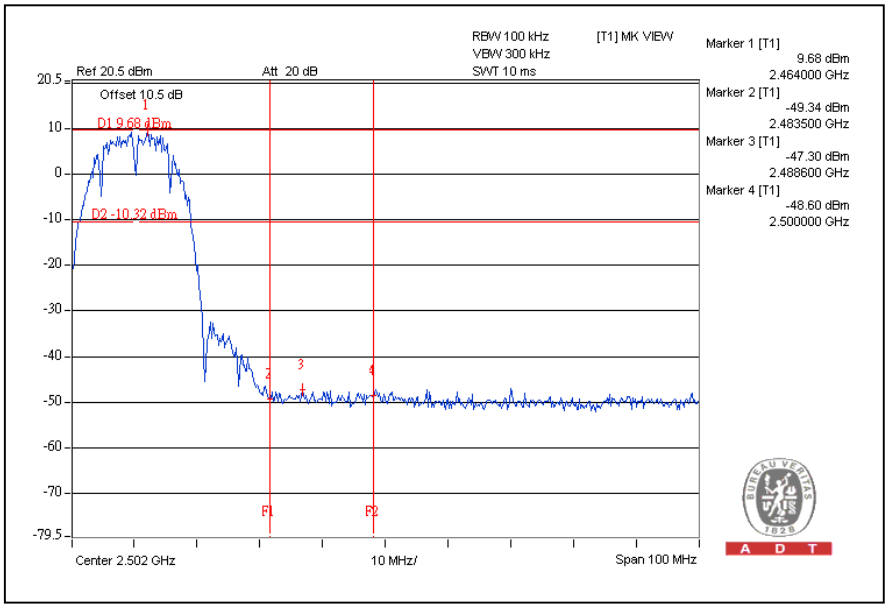
802.11b DSSS MODULATION:

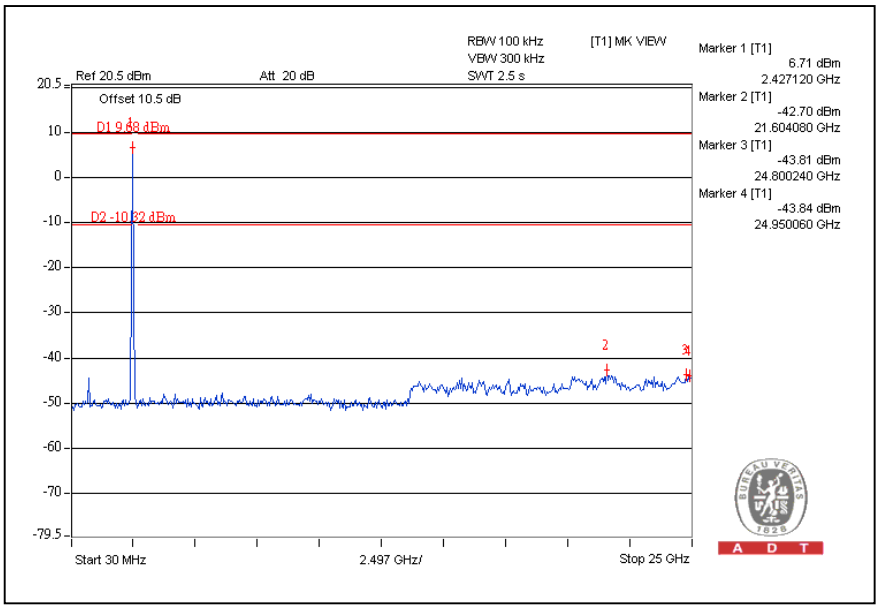
CH1





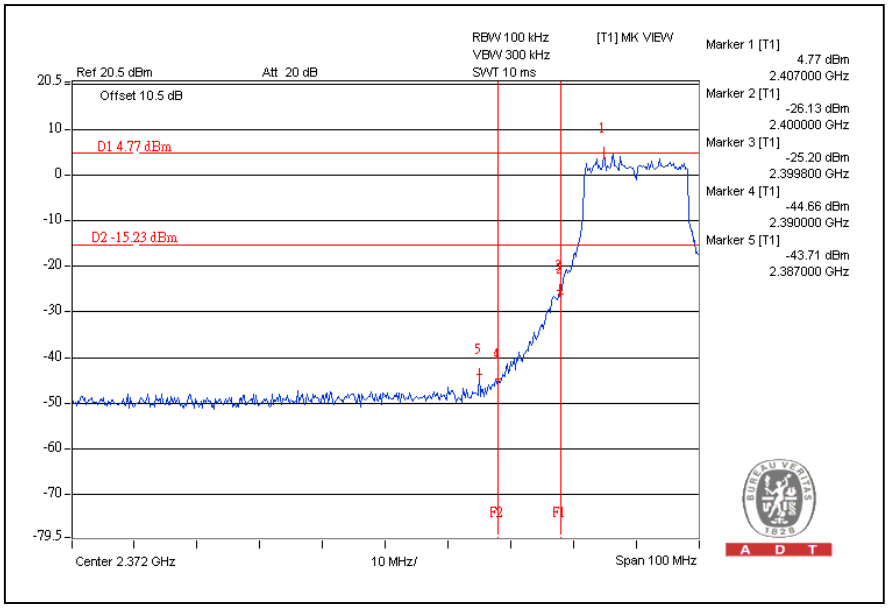
CH11

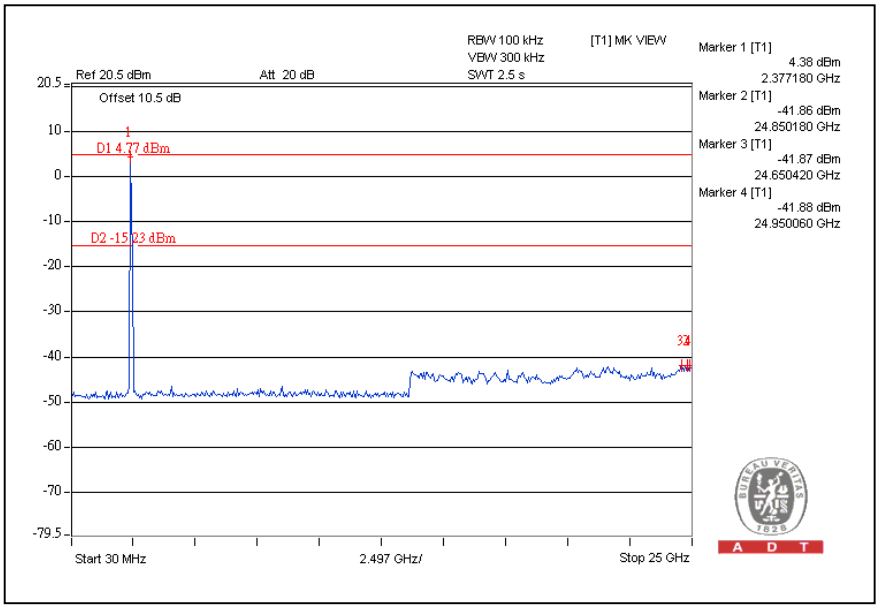

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 20.5 dBm
Att 20 dB
Offset 10.5 dB
D1 9.68 dBm
D2 -10.32 dBm
Marker 1 [T1]
9.68 dBm
2.464000 GHz
Marker 2 [T1]
-49.34 dBm
2.483500 GHz
Marker 3 [T1]
-47.30 dBm
2.488600 GHz
Marker 4 [T1]
-48.60 dBm
2.500000 GHz
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20.5 dBm
Att 20 dB
Offset 10.5 dB
D1 9.68 dBm
D2 -10.32 dBm
Marker 1 [T1]
6.71 dBm
2.427120 GHz
Marker 2 [T1]
-42.70 dBm
21.604080 GHz
Marker 3 [T1]
-43.81 dBm
24.800240 GHz
Marker 4 [T1]
-43.84 dBm
24.950060 GHz
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Start 30 MHz
2.497 GHz/
Stop 25 GHz

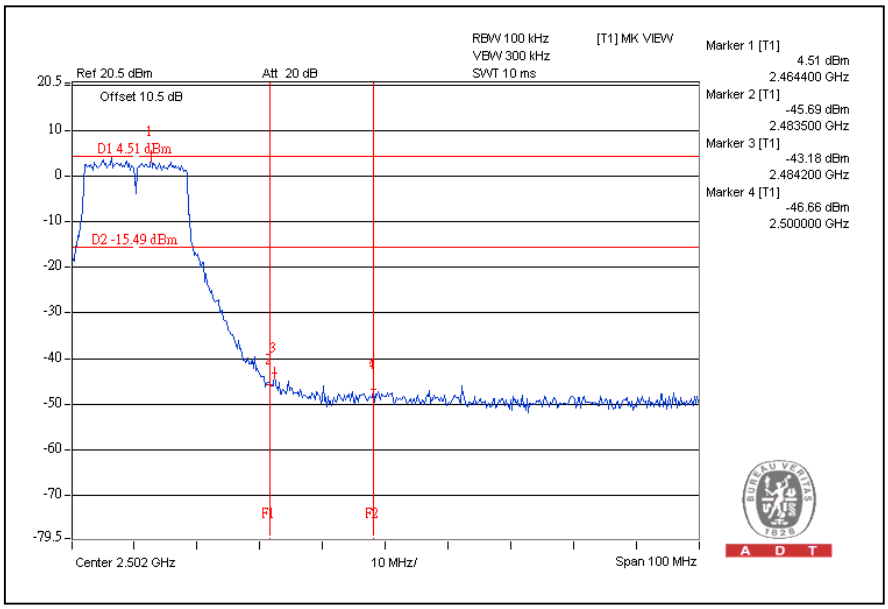
802.11g OFDM MODULATION:

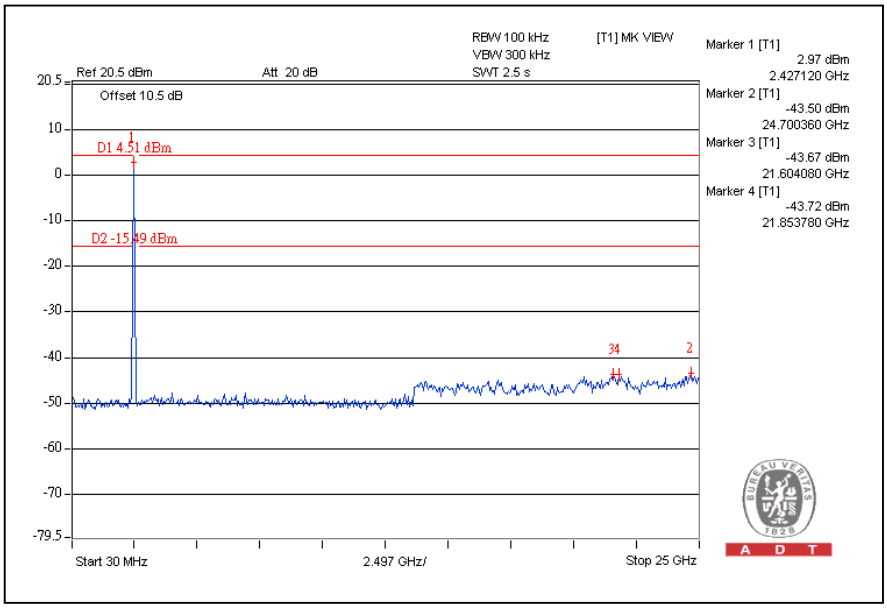
CH1





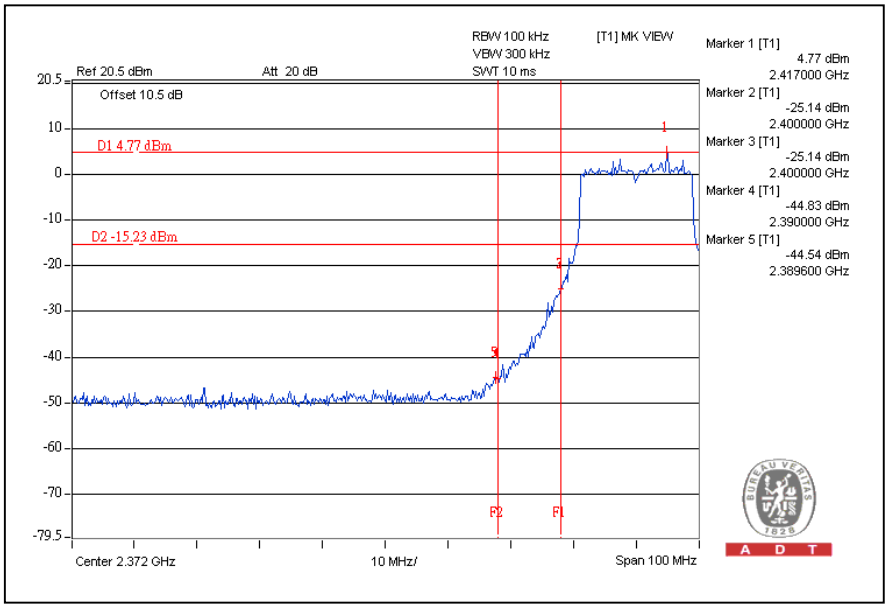
CH11

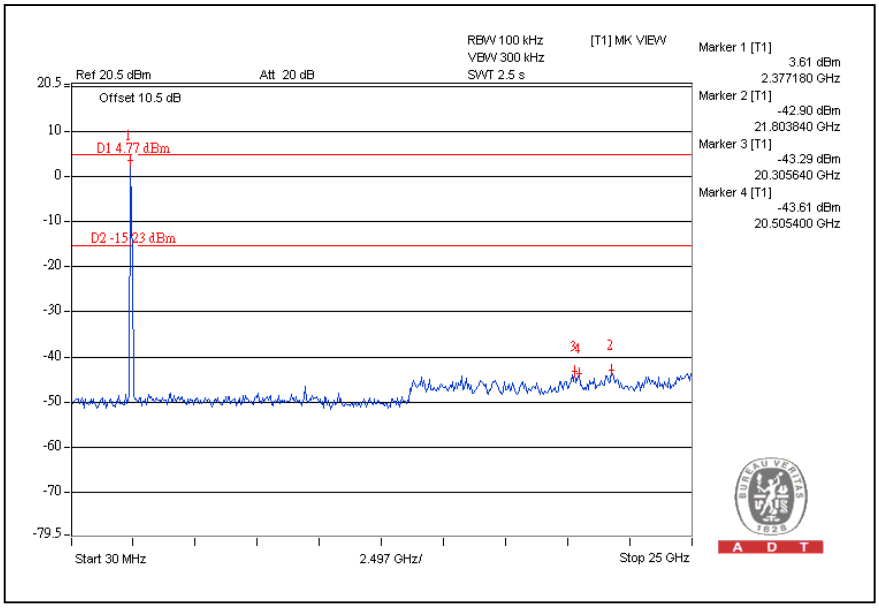

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Marker 1 [T1]
4.51 dBm
2.464400 GHz
Marker 2 [T1]
-45.69 dBm
2.483500 GHz
Marker 3 [T1]
-43.18 dBm
2.484200 GHz
Marker 4 [T1]
-46.66 dBm
2.500000 GHz
Ref 20.5 dBm
Att 20 dB
Offset 10.5 dB
D1 4.51 dBm
D2 -15.49 dBm
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Marker 1 [T1]
2.97 dBm
2.427120 GHz
Marker 2 [T1]
-43.50 dBm
24.700360 GHz
Marker 3 [T1]
-43.67 dBm
21.604080 GHz
Marker 4 [T1]
-43.72 dBm
21.853780 GHz
Ref 20.5 dBm
Att 20 dB
Offset 10.5 dB
D1 4.51 dBm
D2 -15.49 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

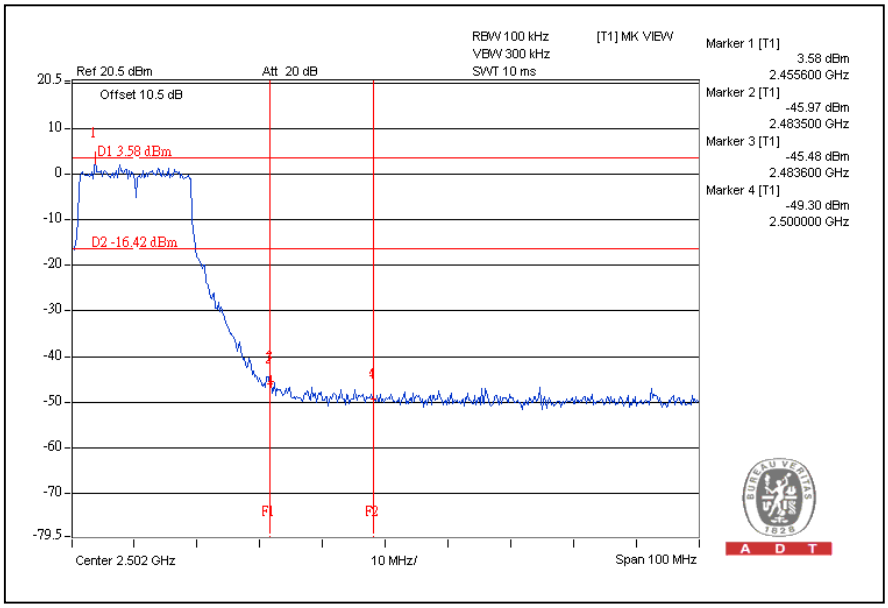
802.11n (20MHz) OFDM MODULATION:

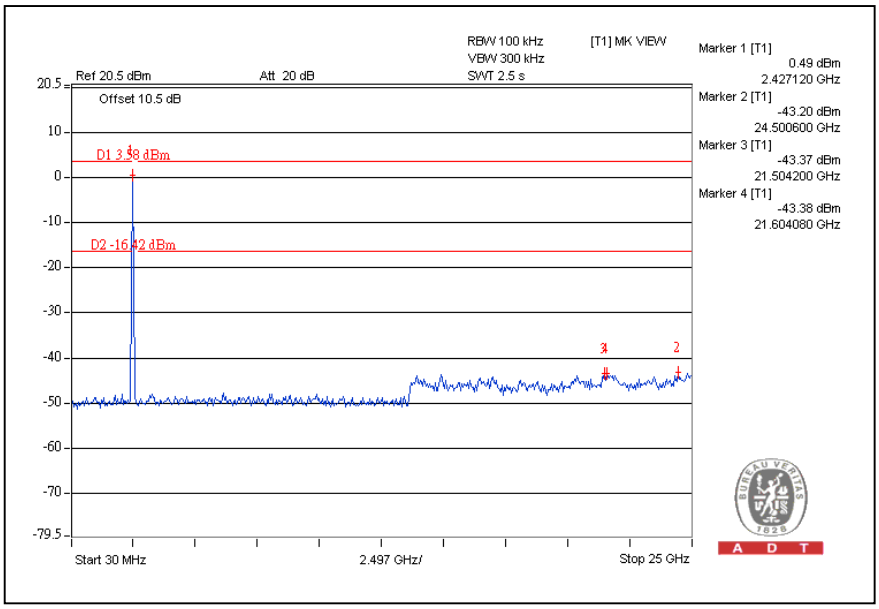
CH1





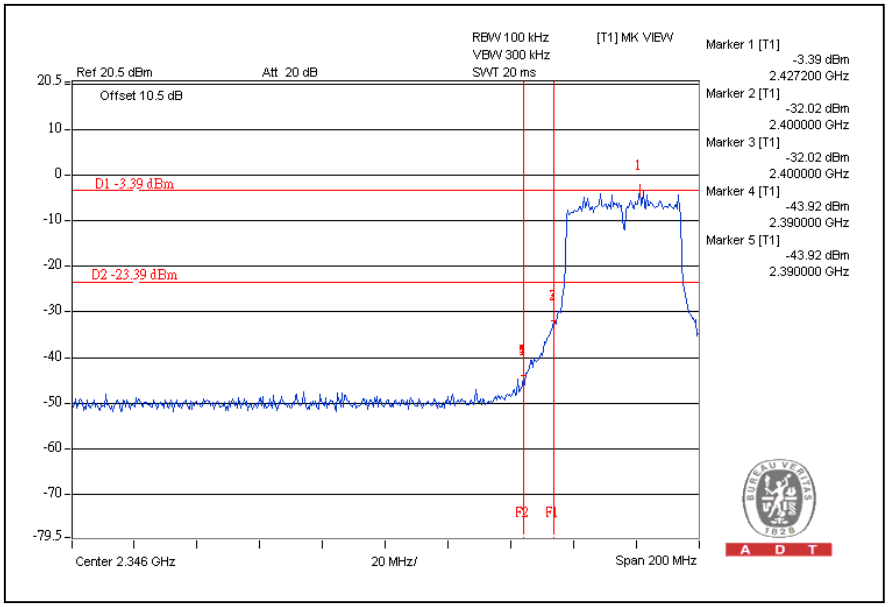
CH11

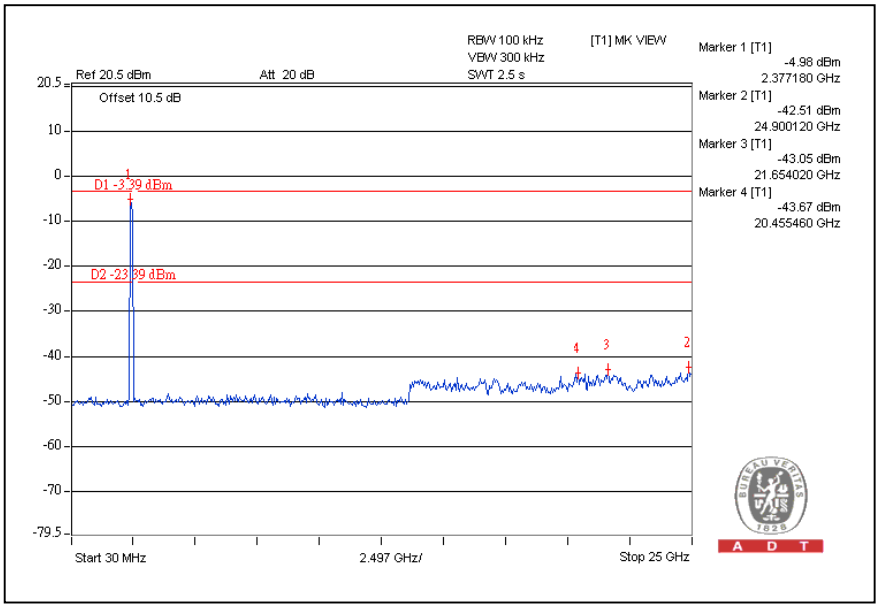

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 20.5 dBm
Att 20 dB
Offset 10.5 dB
D1 3.58 dBm
D2 -16.42 dBm
Marker 1 [T1]
3.58 dBm
2.455600 GHz
Marker 2 [T1]
-45.97 dBm
2.483500 GHz
Marker 3 [T1]
-45.48 dBm
2.483600 GHz
Marker 4 [T1]
-49.30 dBm
2.500000 GHz
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20.5 dBm
Att 20 dB
Offset 10.5 dB
D1 3.58 dBm
D2 -16.42 dBm
Marker 1 [T1]
0.49 dBm
2.427120 GHz
Marker 2 [T1]
-43.20 dBm
24.500600 GHz
Marker 3 [T1]
-43.37 dBm
21.504200 GHz
Marker 4 [T1]
-43.38 dBm
21.604080 GHz
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Start 30 MHz
2.497 GHz/
Stop 25 GHz

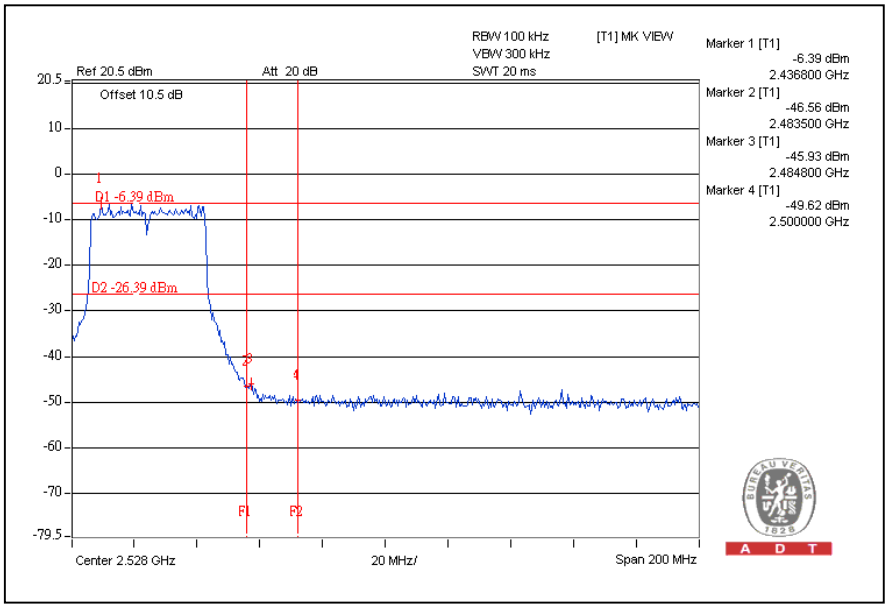
802.11n (40MHz) OFDM MODULATION:

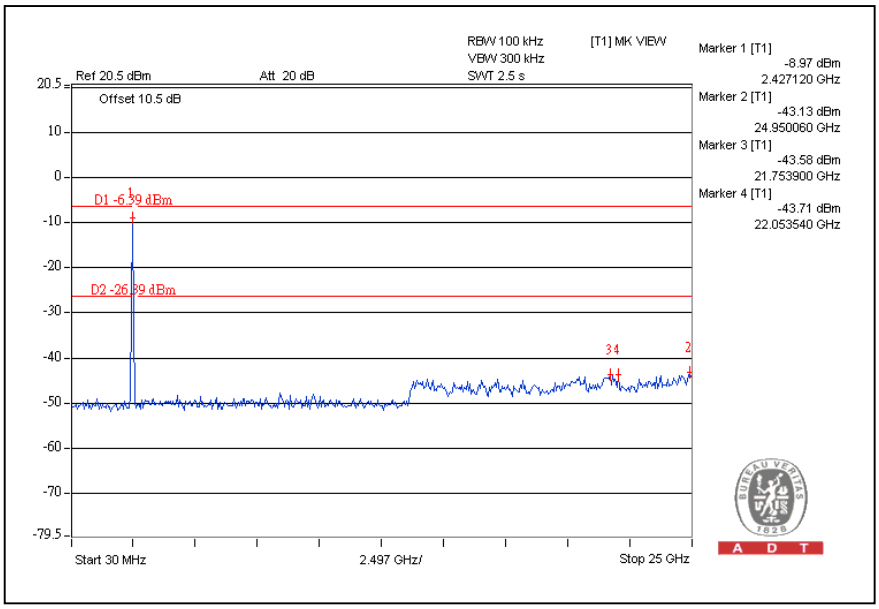
CH3





CH9


RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Marker 1 [T1]
-6.39 dBm
2.436800 GHz
Marker 2 [T1]
-46.56 dBm
2.483500 GHz
Marker 3 [T1]
-45.93 dBm
2.484800 GHz
Marker 4 [T1]
-49.62 dBm
2.500000 GHz
Ref 20.5 dBm
Att 20 dB
Offset 10.5 dB
D1 -6.39 dBm
D2 -26.39 dBm
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
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]
-8.97 dBm
2.427120 GHz
Marker 2 [T1]
-43.13 dBm
24.950060 GHz
Marker 3 [T1]
-43.58 dBm
21.753900 GHz
Marker 4 [T1]
-43.71 dBm
22.053540 GHz
Ref 20.5 dBm
Att 20 dB
Offset 10.5 dB
D1 -6.39 dBm
D2 -26.39 dBm
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
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.

--- END ---