FCC TEST REPORT

REPORT NO.:	RF990104H03
MODEL NO.:	WR6202-1U, WR6202, SMCWBR11S-3GN, SMCWBR11S-N, BG-100
RECEIVED:	Jan. 04, 2010
TESTED:	Jan. 14 to 26, 2010
ISSUED:	Mar. 03, 2010

APPLICANT:	Accton Wireless Broadband Corp.
ADDRESS:	3F, No. 1 Creation Rd. III, Science-based Industrial Park Hsinchu 30077, Taiwan, R.O.C.

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

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1. CERTIFICATION

PRODUCT :	150Mbps Wireless-N Mini 3G Broadband Router, 150Mbps Wireless-N Mini Broadband Router, Pareto Networks BG-100 Branch Services Gateway
BRAND :	AWB, SMC, Pareto
MODEL NO.:	WR6202-1U, WR6202, SMCWBR11S-3GN, SMCWBR11S-N, BG-100
APPLICANT :	Accton Wireless Broadband Corp.
TESTED :	Jan. 14 to 26, 2010
TEST SAMPLE :	R&D SAMPLE
STANDARDS :	FCC Part 15, Subpart C (Section 15.247), ANSI C63.4-2003

The above equipment (Model: WR6202-1U) 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:** Mar. 03, 2010
(Midoli Peng, Specialist)

TECHNICAL ACCEPTANCE : _____ , **DATE:** Mar. 03, 2010
(Hank Chung, Deputy Manager)

APPROVED BY : _____ , **DATE:** Mar. 03, 2010
(May Chen, Deputy Manager)

Revision Note:

Revision No.	Revised Date	Revised Pages	Comment
Rev.1.0	Mar. 03, 2010	9, 15	Modify the brand name of 3G card (Model: E169).

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 -2.75dB at 0.341MHz.
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)	Transmitter Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit. Minimum passing margin is -0.8dB at 2390.0MHz.
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 Reverse SMA 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)	3.94 dB
Radiated emissions (1GHz -18GHz)	2.49 dB
Radiated emissions (18GHz -40GHz)	2.70 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	150Mbps Wireless-N Mini 3G Broadband Router, 150Mbps Wireless-N Mini Broadband Router, Pareto Networks BG-100 Branch Services Gateway
MODEL NO.	WR6202-1U, WR6202, SMCWBR11S-3GN, SMCWBR11S-N, BG-100
FCC ID	V8YFIU816202T00W
POWER SUPPLY	12V from power adapter
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b: 11 / 5.5 / 2 / 1Mbps 802.11g: 54 / 48 / 36 / 24 / 18 / 12 / 9 / 6Mbps 802.11n (20MHz, 800ns GI): 65 / 58.5 / 52 / 39 / 26 / 19.5 / 13 / 6.5Mbps 802.11n (40MHz, 800ns GI): 135 / 121.5 / 108 / 81 / 54 / 40.5 / 27 / 13.5Mbps 802.11n (20MHz, 400ns GI): 72.2 / 65 / 57.8 / 43.3 / 28.9 / 21.7 / 14.4 / 7.2Mbps 802.11n (40MHz, 400ns GI): 150 / 135 / 120 / 90 / 60 / 45 / 30 / 15Mbps
FREQUENCY RANGE	2412MHz ~ 2462MHz
NUMBER OF CHANNEL	11 for 802.11b, 802.11g, 802.11n (20MHz) 7 for 802.11n (40MHz)
MAXIMUM OUTPUT POWER	802.11b: 199.5mW 802.11g: 281.8mW 802.11n (20MHz): 263.0mW 802.11n (40MHz): 195.0mW
ANTENNA TYPE	Please see note 2
ANTENNA CONNECTOR	Please see note 2
DATA CABLE	NA
I/O PORT	RJ-45 port x 2 (Ethernet (10,100Mbps)) USB port x 1 (Option) Antenna port x1
ASSOCIATED DEVICES	Adapter x1 Antenna x1

NOTE:

1. The EUT has three product / brand names and five model names, which are identical to each other in all aspects except for the followings:

Product name	Brand name	Model name	Different
150Mbps Wireless-N Mini 3G Broadband Router	AWB	WR6202-1U	with 3G USB Port
150Mbps Wireless-N Mini Broadband Router	AWB	WR6202	w/o 3G USB Port
150Mbps Wireless-N Mini 3G Broadband Router	SMC	SMCWBR11S-3GN	with 3G USB Port
150Mbps Wireless-N Mini Broadband Router	SMC	SMCWBR11S-N	w/o 3G USB Port
Pareto Networks BG-100 Branch Services Gateway	Pareto	BG-100	with 3G USB Port

From the above models, model: WR6202-1U was selected as representative model for the test and its data was recorded in this report.

2. There is one antenna provided to this EUT, please refer to the following table:

Brand No.	Model No.	Net Gain (dBi)	Cable Length(cm)	Antenna Type	Connector
E.S.G.T	E6601144081	2.35	7.5	Dipole	Reverse SMA

3. The EUT must be supplied with a power adapter and following three different models could be chosen:

Adapter 1	
Brand:	APD
Model No.:	WA-12I12FU
Input power :	AC 100-240V, 0.5A Max., 50-60Hz Cable:1.5m / unshielded
Output power :	DC 12V, 1A
Adapter 2	
Brand:	APD
Model No.:	WA-12I12R
Input power :	AC 100-240V, 0.5A Max., 50-60Hz Cable:1.5m / unshielded
Output power :	DC 12V, 1A
Adapter 3	
Brand:	Sunny
Model No.:	SYS1381-1212-W2
Input power :	AC 100-240V, 0.5A Max., 50-60Hz Cable:1.9m / unshielded
Output power :	DC 12V, 1A

The EUT was pre-tested in chamber with above adapters, the radiated emission worst case was found in model: **WA-12I12R**. Therefore only the test data of the mode was recorded in this report.

4. The EUT could be applied with one 3G Card and following three different models could be chosen; therefore emission tests are added for simultaneously transmit between wireless LAN and 3G function. The emission tests have been performed at the worst channel of both WLAN and 3G, and recorded in other report. <only for test, not for sale>

Item	Product name	Brand name	Model name	FCC ID
1	HSDPA USB Stick	HUAWEI	E169	QISE169
2	HSDPA USB MODEM	ZTE	MF626	Q78-ZTEMF626
3	HSDPA USB MODEM	HUAWEI	E220	QISE220

The EUT was pre-tested in chamber with above 3G Cards, the worst case was found in model: E169. Therefore only the test data of the mode was recorded in this report.

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

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

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

6. The EUT incorporates a SISO function with 802.11b, 802.11g, 802.11n. Physically, the EUT provides one completed transmitter and receiver.

7. The EUT is 1 * 1 spatial SISO without beam forming function. The antenna configuration is one transmitter antenna and one receiver antenna, as there is 1 Dipole antenna. There is one transmitter and one receiver.

8. The EUT complies with 802.11n standards and backwards compatible with 802.11b, 802.11g products.

9. The EUT, operates in the 2.4GHz frequency range, lets you connect IEEE 802.11g or IEEE 802.11b and 802.11n technique devices to the network.

10. 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.

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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
1	2422MHz	5	2442MHz
2	2427MHz	6	2447MHz
3	2432MHz	7	2452MHz
4	2437MHz		

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	PLC	RE < 1G	RE ≥ 1G	APCM	
A	√	-	-	-	Adapter 1
B	√	√	√	√	Adapter 2
C	√	-	-	-	Adapter 3

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

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

POWER LINE CONDUCTED EMISSION TEST:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	EUT CONFIGURE MODE
802.11g	1 to 11	6	OFDM	BPSK	6	A, B, C

RADIATED EMISSION TEST (BELOW 1 GHZ):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	EUT CONFIGURE MODE
802.11g	1 to 11	1	OFDM	BPSK	6	B

RADIATED EMISSION TEST (ABOVE 1 GHZ):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	EUT CONFIGURE MODE
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1	B
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6	B
802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5	B
802.11n (40MHz)	1 to 7	1, 4, 7	OFDM	BPSK	13.5	B

BANDEDGE MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	EUT CONFIGURE MODE
802.11b	1 to 11	1, 11	DSSS	DBPSK	1	B
802.11g	1 to 11	1, 11	OFDM	BPSK	6	B
802.11n (20MHz)	1 to 11	1, 11	OFDM	BPSK	6.5	B
802.11n (40MHz)	1 to 7	1, 7	OFDM	BPSK	13.5	B

ANTENNA PORT CONDUCTED MEASUREMENT:

☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	EUT CONFIGURE MODE
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1	B
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6	B
802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5	B
802.11n (40MHz)	1 to 7	1, 4, 7	OFDM	BPSK	13.5	B

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	15deg. C, 60%RH, 1024 hPa	120Vac, 60Hz	Frank Liu
RE<1G	15deg. C, 63%RH, 1024 hPa	120Vac, 60Hz	Wen Yu
PLC	25deg. C, 60%RH, 1024 hPa	120Vac, 60Hz	Timmy Hu
APCM	25deg. C, 60%RH, 1024 hPa	120Vac, 60Hz	Phoenix Huang

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is an RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C. (15.247)

ANSI C63.4-2003

All test items have been performed and recorded as per the above standards.

NOTE: The EUT 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	D531	CN-0XM006-48643-86L-4472	QDS-BRCM1019
2	NOTEBOOK COMPUTER	ASUS	M2400N	4ANP088103	FCC DoC
3	3G card	HUAWEI	E169	NA	QISE169

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	UTP cable (Unshielded, 10m)
2	UTP cable (Unshielded, 10m)
3	NA

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

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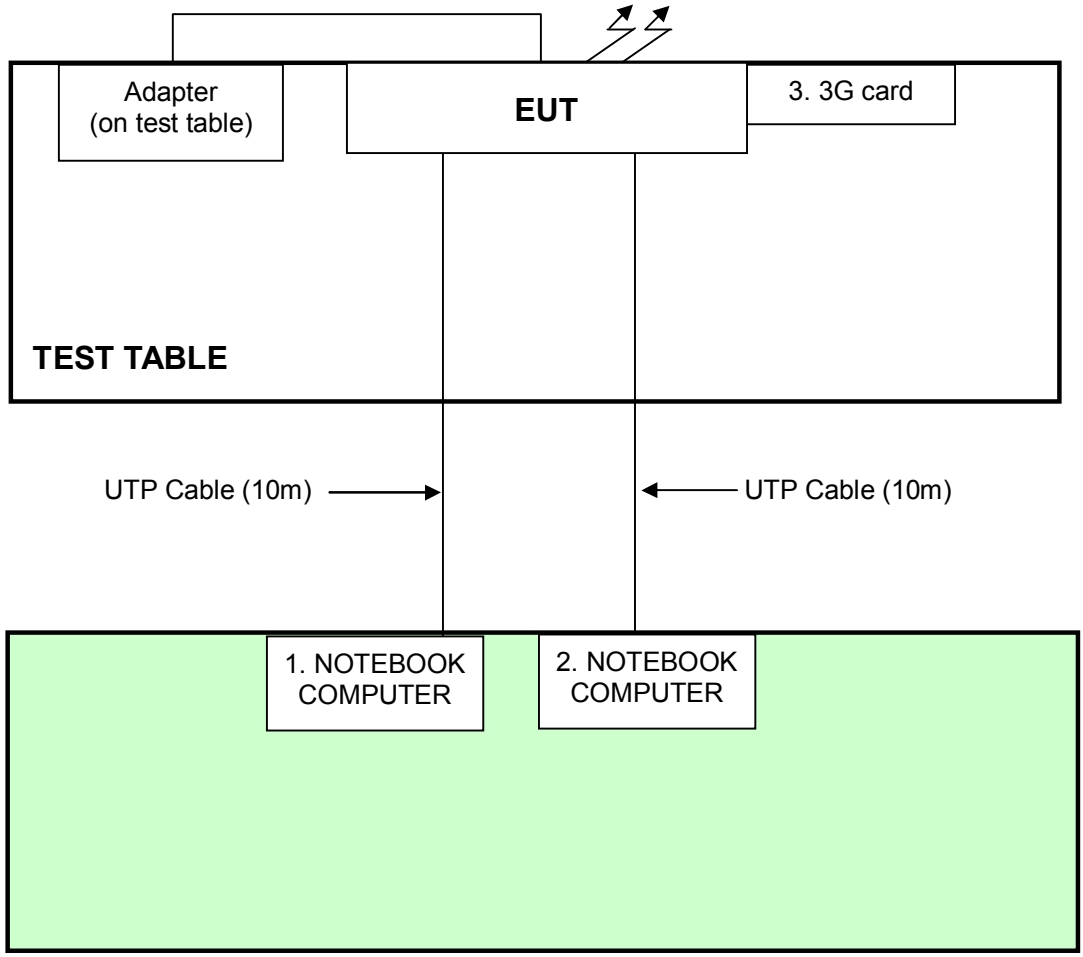
3.5 CONFIGURATION OF SYSTEM UNDER TEST



4. TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ROHDE & SCHWARZ Test Receiver	ESCS 30	100287	Mar. 05, 2009	Mar. 04, 2010
Line-Impedance Stabilization Network (for EUT)	KNW-407	8-1395-12	May 04, 2009	May 03, 2010
Line-Impedance Stabilization Network (for Peripheral)	ENV-216	100072	June 08, 2009	June 07, 2010
RF Cable (JYEBAO)	5DFB	COACAB-001	Dec. 14, 2009	Dec. 13, 2010
50 ohms Terminator	50	3	Oct. 28, 2009	Oct. 27, 2010
Software	BV ADT_Cond_V7.3.7	NA	NA	NA

Note:
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. A.
3 The VCCI Con A Registration No. is C-817.

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.

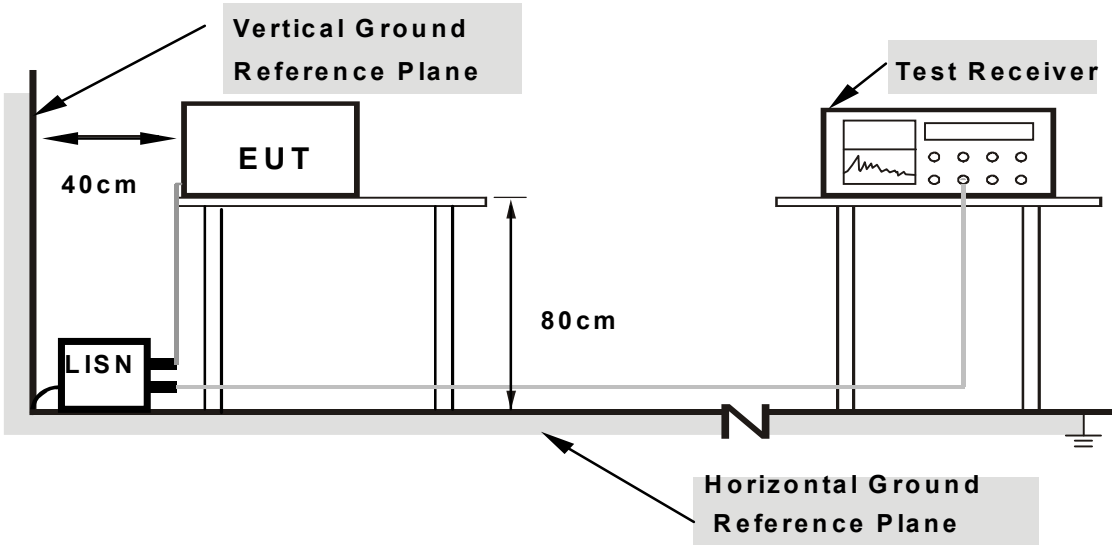
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

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

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



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

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

4.1.6 EUT OPERATING CONDITIONS

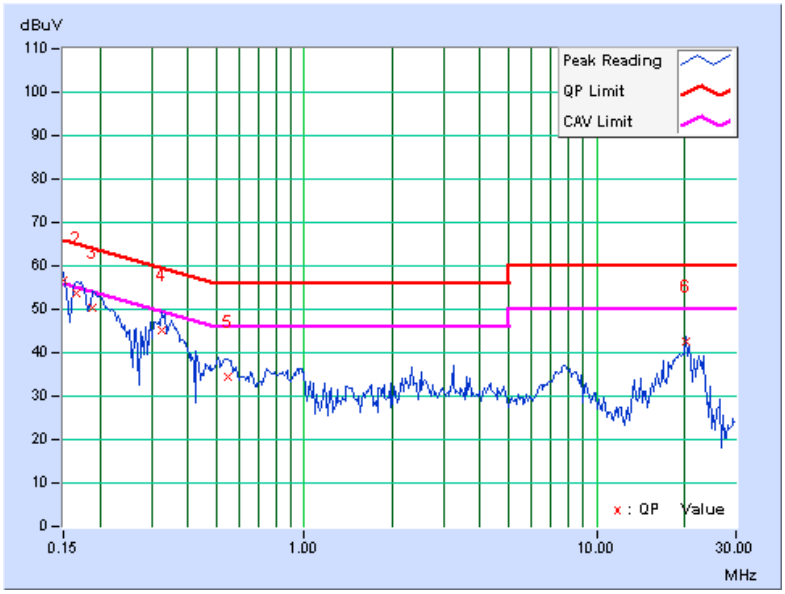
1. Placed the EUT on testing table.
2. Prepared other computer systems (support units 1~2) to act as communication partners and placed them outside of testing area.
3. The communication partners run test program “QA RT3052.exe” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

4.1.7 TEST RESULTS - With adapter 1

PHASE	Line (L)	6dB BANDWIDTH	9 kHz
TEST MODE	With adapter 1		

	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	0.150	0.04	56.60	42.11	56.64	42.15	66.00	56.00	-9.36	-13.85
2	0.166	0.04	53.64	-	53.68	-	65.18	55.18	-11.50	-
3	0.189	0.04	50.46	-	50.50	-	64.08	54.08	-13.58	-
4	0.326	0.05	45.02	-	45.07	-	59.56	49.56	-14.49	-
5	0.548	0.07	34.55	-	34.62	-	56.00	46.00	-21.38	-
6	20.258	0.55	41.88	-	42.43	-	60.00	50.00	-17.57	-

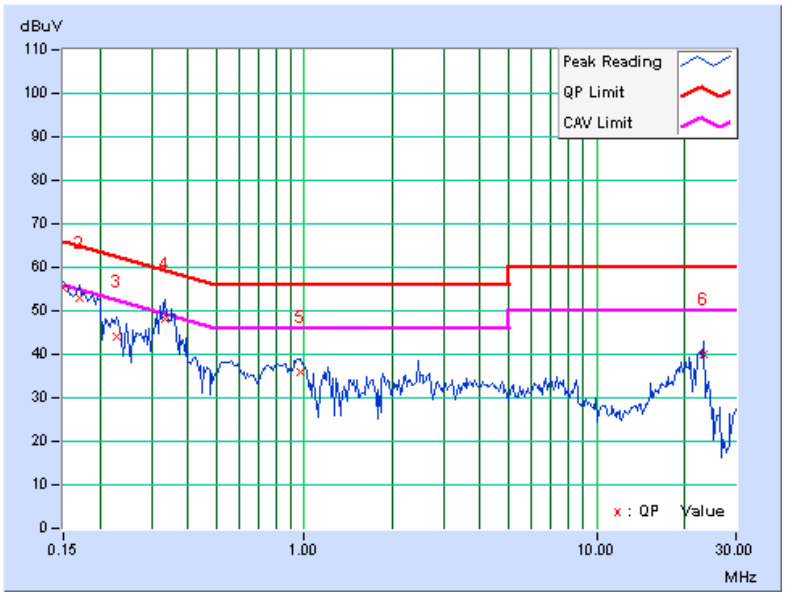
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
TEST MODE	With adapter 1		

	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	0.150	0.05	55.06	-	55.11	-	66.00	56.00	-10.89	-
2	0.170	0.05	52.80	-	52.85	-	64.98	54.98	-12.13	-
3	0.228	0.05	44.07	-	44.12	-	62.52	52.52	-18.40	-
4	0.334	0.06	47.97	-	48.03	-	59.36	49.36	-11.33	-
5	0.966	0.10	35.90	-	36.00	-	56.00	46.00	-20.00	-
6	23.125	0.68	39.46	-	40.14	-	60.00	50.00	-19.86	-

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

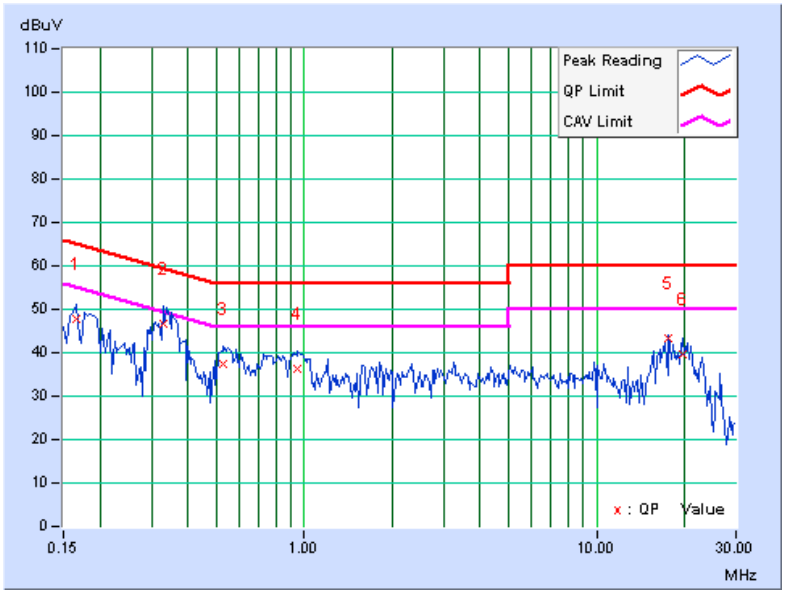


4.1.8 TEST RESULTS - With adapter 2

PHASE	Line (L)	6dB BANDWIDTH	9 kHz
TEST MODE	With adapter 2		

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	0.166	0.04	47.85	-	47.89	-	65.18	55.18	-17.29	-
2	0.330	0.05	46.69	-	46.74	-	59.46	49.46	-12.72	-
3	0.529	0.07	37.18	-	37.25	-	56.00	46.00	-18.75	-
4	0.951	0.09	36.06	-	36.15	-	56.00	46.00	-19.85	-
5	17.695	0.51	42.92	-	43.43	-	60.00	50.00	-16.57	-
6	19.707	0.54	39.19	-	39.73	-	60.00	50.00	-20.27	-

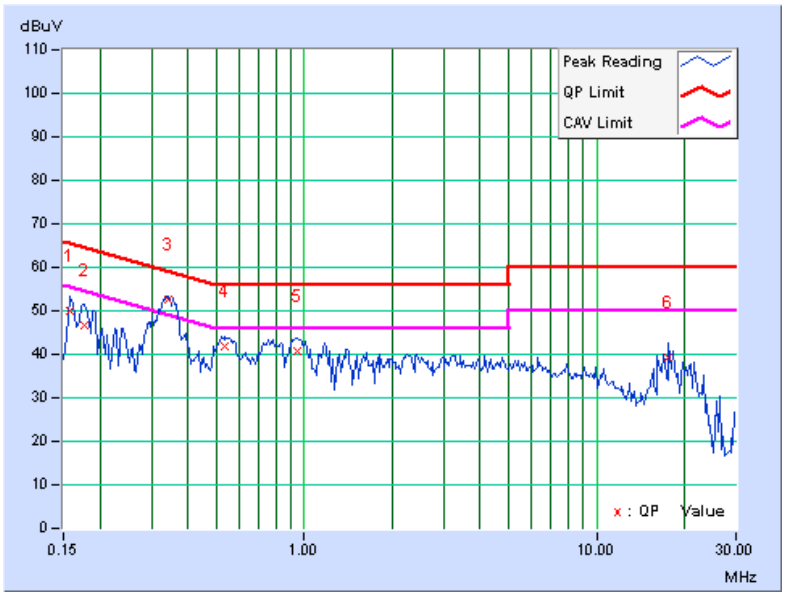
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
TEST MODE	With adapter 2		

	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	0.158	0.05	50.10	-	50.15	-	65.58	55.58	-15.43	-
2	0.177	0.05	46.61	-	46.66	-	64.61	54.61	-17.95	-
3	**0.341**	**0.06**	**52.44**	**46.35**	**52.50**	**46.41**	**59.17**	**49.17**	**-6.66**	**-2.75**
4	0.533	0.08	41.79	-	41.87	-	56.00	46.00	-14.13	-
5	0.943	0.10	40.65	-	40.75	-	56.00	46.00	-15.25	-
6	17.691	0.52	38.87	-	39.39	-	60.00	50.00	-20.61	-

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

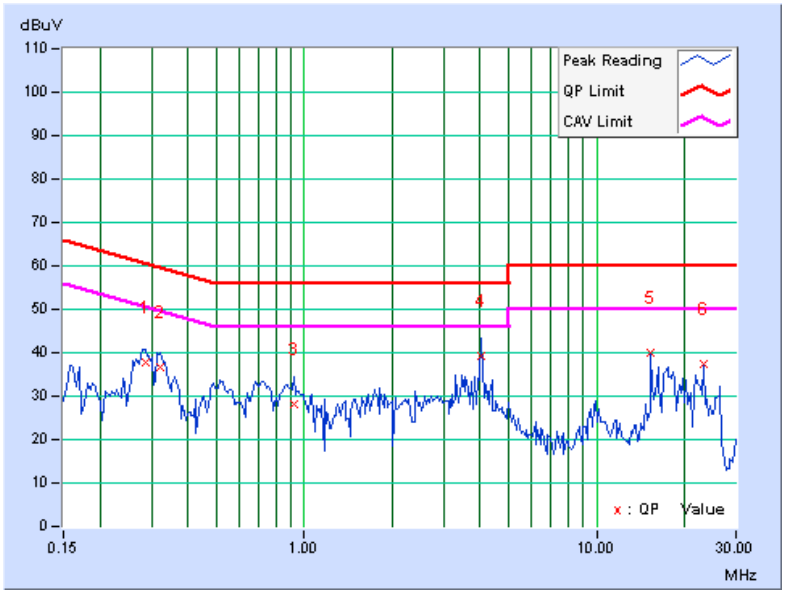


4.1.9 TEST RESULTS - With adapter 3

PHASE	Line (L)	6dB BANDWIDTH	9 kHz
TEST MODE	With adapter 3		

	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	0.287	0.05	37.88	-	37.93	-	60.62	50.62	-22.69	-
2	0.321	0.05	36.54	-	36.59	-	59.67	49.67	-23.08	-
3	0.927	0.09	27.96	-	28.05	-	56.00	46.00	-27.95	-
4	4.012	0.20	39.11	-	39.31	-	56.00	46.00	-16.69	-
5	15.363	0.47	39.44	-	39.91	-	60.00	50.00	-20.09	-
6	23.129	0.66	36.88	-	37.54	-	60.00	50.00	-22.46	-

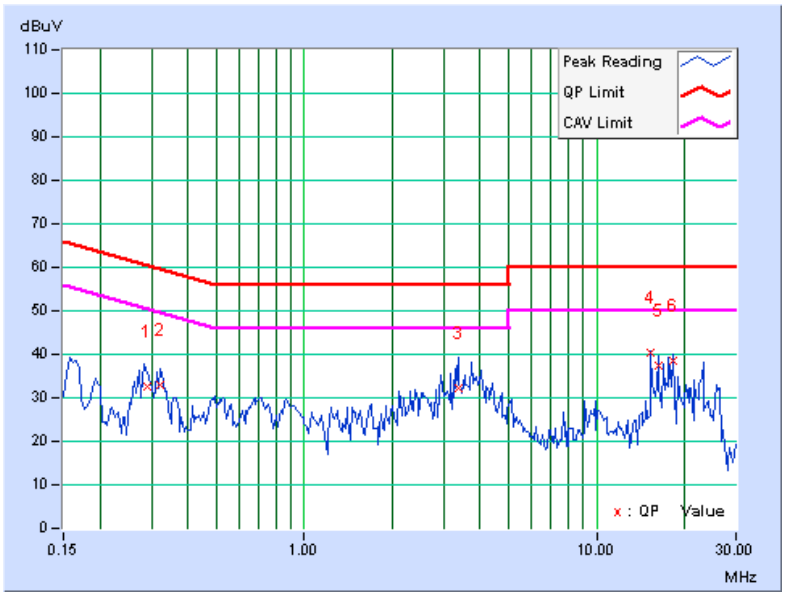
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
TEST MODE	With adapter 3		

	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	0.290	0.06	32.71	-	32.77	-	60.53	50.53	-27.76	-
2	0.322	0.06	32.83	-	32.89	-	59.66	49.66	-26.77	-
3	3.371	0.19	32.04	-	32.23	-	56.00	46.00	-23.77	-
4	15.363	0.49	39.91	-	40.40	-	60.00	50.00	-19.60	-
5	16.227	0.50	36.88	-	37.38	-	60.00	50.00	-22.62	-
6	18.242	0.53	38.17	-	38.70	-	60.00	50.00	-21.30	-

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



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (meters)
0.009 ~ 0.490	2400 / F(kHz)	300
0.490 ~ 1.705	24000 / F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ADVANTEST Spectrum Analyzer	U3751	170100022	Nov. 18, 2009	Nov. 17, 2010
ADVANTEST Spectrum Analyzer	U3772	160100280	Sep. 21, 2009	Sep. 20, 2010
HP Pre_Amplifier	8449B	3008A01922	Sep. 25, 2009	Sep. 24, 2010
ROHDE & SCHWARZ Test Receiver	ESCS 30	100027	May 05, 2009	May 04, 2010
SCHWARZBECK Broadband Antenna	VULB-9168	263	April 29, 2009	April 28, 2010
Schwarzbeck Horn_Antenna	BBHA9120	D123	Sep. 21, 2009	Sep. 20, 2010
Schwarzbeck Horn_Antenna	BBHA 9170	BBHA9170153	Jan. 22, 2010	Jan. 21, 2011
RF Switches	EM-H-01-1	1009	Aug. 10, 2009	Aug. 09, 2010
RF Cable	8DFB	STACAB-30M-1GHz-091	Feb. 19, 2009	Feb. 18, 2010
Software	ADT_Radiated_V7.6.15.9.2	NA	NA	NA
CT Antenna Tower & Turn Table	TT100	ADT01	NA	NA
CORCOM AC Filter	MRI2030	107/108	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, HP preamplifier (model: 8449B) and Spectrum Analyzer (model: FSP40) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in Open Site No. C.
4. The FCC Site Registration No. is 656396.
5. The VCCI Site Registration No. is R-1626.
6. The CANADA Site Registration No. is IC 7450G-3.

4.2.3 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.

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

c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

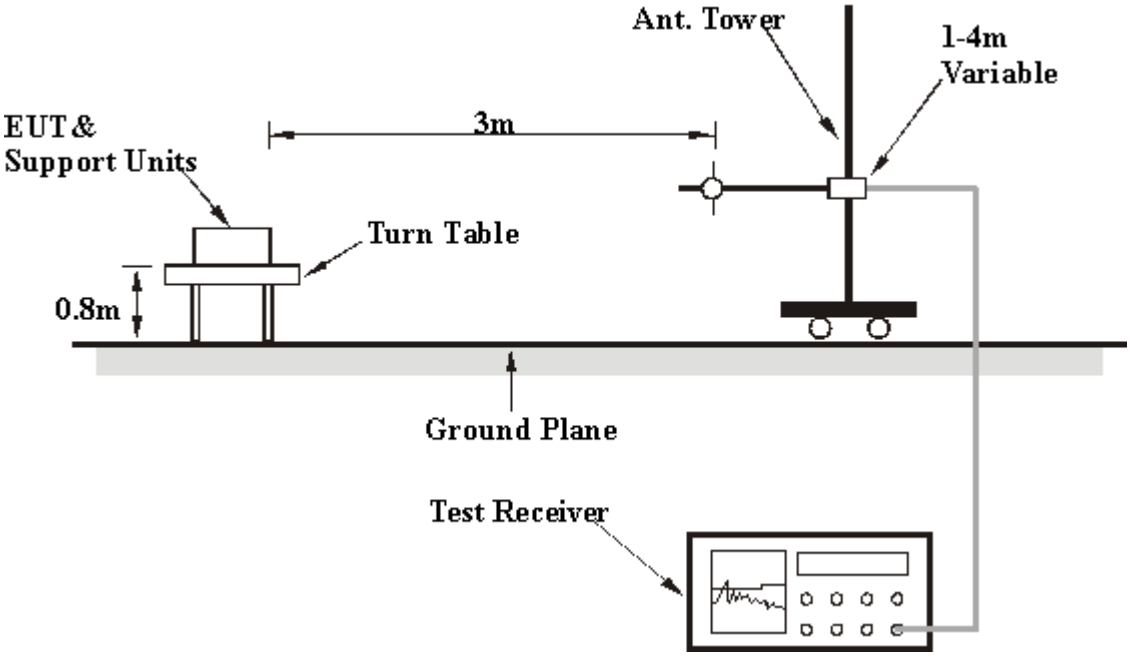
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth is 1MHz and video bandwidth of test receiver/spectrum analyzer 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

Below 1GHz Test Data

4.2.7 TEST RESULTS

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	15deg. C, 63%RH 1024 hPa	TESTED BY	Wen Yu

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	125.00	33.0 QP	43.5	-10.5	4.00 H	331	19.96	13.07
2	250.00	36.4 QP	46.0	-9.6	3.11 H	51	22.17	14.25
3	375.00	35.4 QP	46.0	-10.6	2.21 H	351	16.61	18.81
4	500.00	39.5 QP	46.0	-6.6	1.78 H	36	16.96	22.49
5	640.00	39.4 QP	46.0	-6.6	1.40 H	35	13.99	25.43
6	853.32	37.5 QP	46.0	-8.6	1.00 H	25	8.59	28.86
7	1000.00	42.5 QP	54.0	-11.5	1.00 H	351	11.72	30.74
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	125.00	32.1 QP	43.5	-11.4	1.00 V	52	19.04	13.07
2	250.00	37.1 QP	46.0	-8.9	1.00 V	331	22.87	14.25
3	375.00	33.3 QP	46.0	-12.7	2.11 V	350	14.45	18.81
4	500.00	37.2 QP	46.0	-8.8	1.55 V	64	14.75	22.49
5	750.00	34.3 QP	46.0	-11.7	2.24 V	356	7.35	26.91
6	875.00	35.5 QP	46.0	-10.5	2.20 V	15	6.18	29.29
7	1000.00	40.2 QP	54.0	-13.8	1.89 V	35	9.42	30.74

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 Test Data

4.2.8 TEST RESULTS

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	15deg. C, 60%RH 1024 hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2386.13	55.3 PK	74.0	-18.7	1.00 H	207	25.22	30.05
2	2386.13	43.5 AV	54.0	-10.5	1.00 H	207	13.48	30.05
3	*2412.00	100.6 PK			1.00 H	207	70.41	30.15
4	*2412.00	96.7 AV			1.00 H	207	66.58	30.15
5	4824.00	47.5 PK	74.0	-26.5	1.16 H	208	12.07	35.43
6	4824.00	43.5 AV	54.0	-10.5	1.16 H	208	8.07	35.43
7	14472.00	55.9 PK	74.0	-18.1	1.14 H	203	6.59	49.31
8	14472.00	48.1 AV	54.0	-5.9	1.14 H	203	-1.21	49.31
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2386.13	59.9 PK	74.0	-14.2	1.04 V	154	29.80	30.05
2	2386.13	50.7 AV	54.0	-3.3	1.04 V	154	20.65	30.05
3	*2412.00	110.0 PK			1.07 V	20	79.85	30.15
4	*2412.00	107.7 AV			1.07 V	20	77.55	30.15
5	4824.00	45.6 PK	74.0	-28.4	1.16 V	217	10.17	35.43
6	4824.00	40.7 AV	54.0	-13.3	1.16 V	217	5.27	35.43
7	14472.00	56.9 PK	74.0	-17.1	1.29 V	185	7.59	49.31
8	14472.00	49.4 AV	54.0	-4.6	1.29 V	185	0.09	49.31

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	15deg. C, 60%RH 1024 hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	101.9 PK			1.00 H	213	71.66	30.24
2	*2437.00	98.1 AV			1.00 H	213	67.86	30.24
3	4874.00	54.2 PK	74.0	-19.8	1.01 H	152	18.68	35.52
4	4874.00	53.1 AV	54.0	-0.9	1.01 H	152	17.58	35.52
5	7311.00	53.6 PK	74.0	-20.4	1.04 H	29	11.64	41.96
6	7311.00	42.4 AV	54.0	-11.6	1.04 H	29	0.44	41.96
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	111.0 PK			1.00 V	27	80.76	30.24
2	*2437.00	108.6 AV			1.00 V	27	78.36	30.24
3	2483.50	59.2 PK	74.0	-14.8	1.00 V	91	28.77	30.43
4	2483.50	50.7 AV	54.0	-3.3	1.00 V	91	20.27	30.43
5	4874.00	51.8 PK	74.0	-22.2	1.00 V	146	16.28	35.52
6	4874.00	48.4 AV	54.0	-5.6	1.00 V	146	12.88	35.52
7	7311.00	51.7 PK	74.0	-22.3	1.00 V	24	9.74	41.96
8	7311.00	40.6 AV	54.0	-13.4	1.00 V	24	-1.36	41.96

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

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

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	15deg. C, 60%RH 1024 hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	101.4 PK			1.00 H	213	71.06	30.34
2	*2462.00	97.3 AV			1.00 H	213	66.96	30.34
3	2483.50	54.6 PK	74.0	-19.4	1.17 H	242	24.17	30.43
4	2483.50	42.2 AV	54.0	-11.8	1.17 H	242	11.77	30.43
5	4924.00	49.6 PK	74.0	-24.4	1.00 H	231	13.98	35.62
6	4924.00	46.4 AV	54.0	-7.6	1.00 H	231	10.78	35.62
7	7386.00	51.4 PK	74.0	-22.6	1.00 H	26	9.30	42.10
8	7386.00	39.4 AV	54.0	-14.6	1.00 H	26	-2.70	42.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	111.2 PK			1.00 V	32	80.86	30.34
2	*2462.00	108.4 AV			1.00 V	32	78.06	30.34
3	2483.50	59.9 PK	74.0	-14.2	1.00 V	91	29.42	30.43
4	2483.50	52.5 AV	54.0	-1.5	1.00 V	91	22.08	30.43
5	4924.00	47.7 PK	74.0	-26.3	1.00 V	147	12.08	35.62
6	4924.00	43.0 AV	54.0	-11.0	1.00 V	147	7.38	35.62
7	7386.00	51.0 PK	74.0	-23.0	1.00 V	21	8.90	42.10
8	7386.00	40.0 AV	54.0	-14.0	1.00 V	21	-2.10	42.10

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

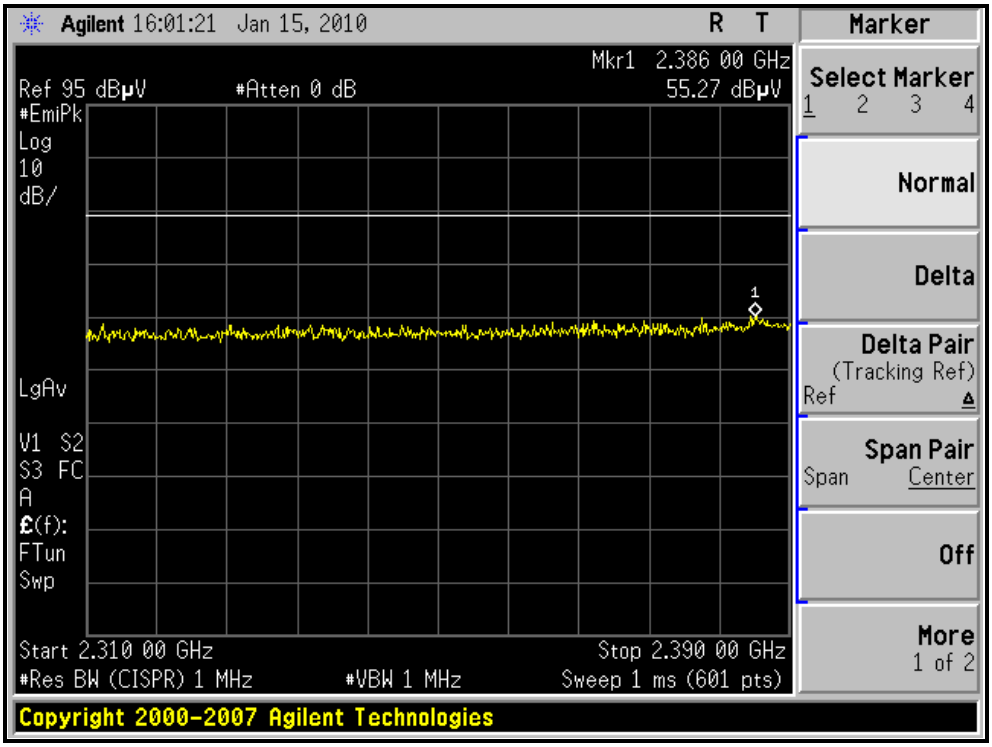
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

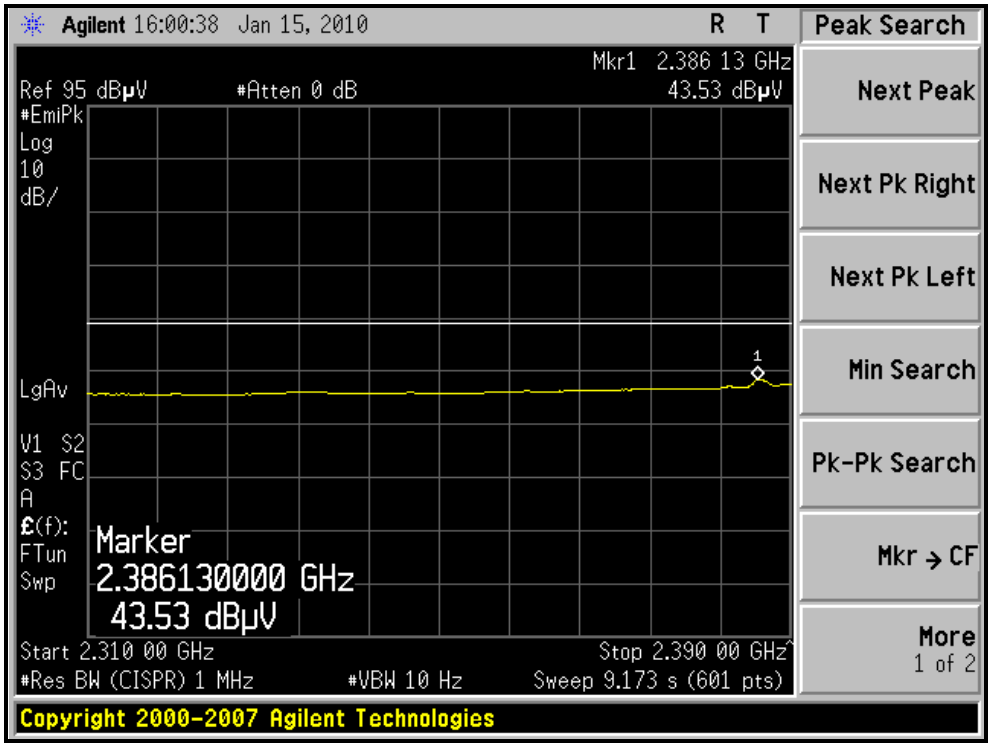
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

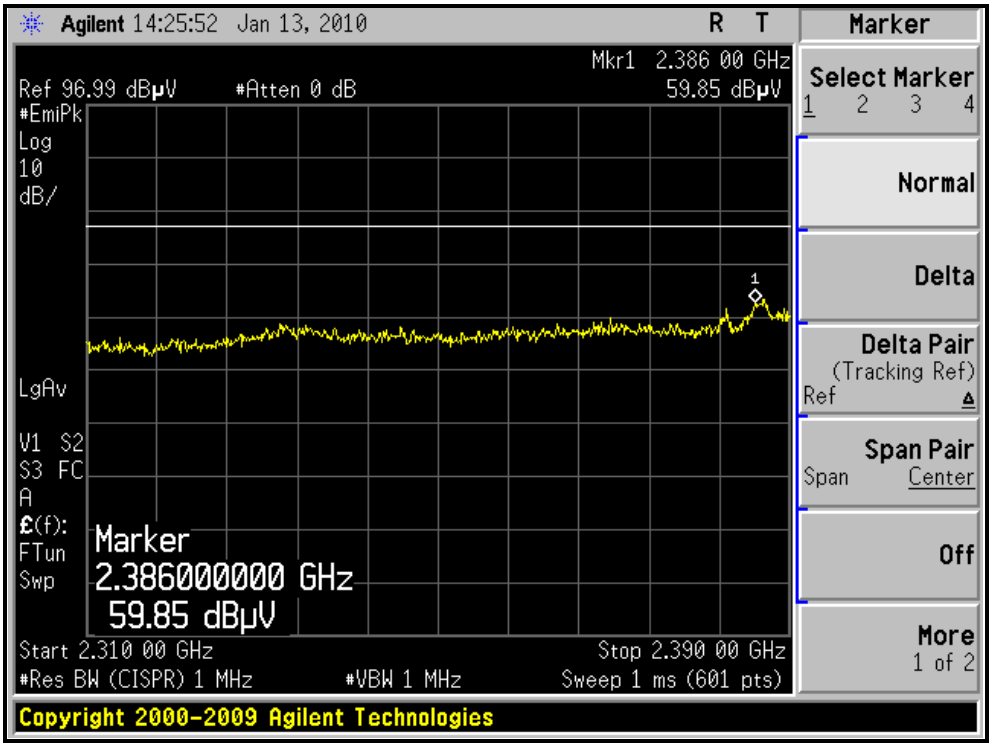
5. " * ": Fundamental frequency.

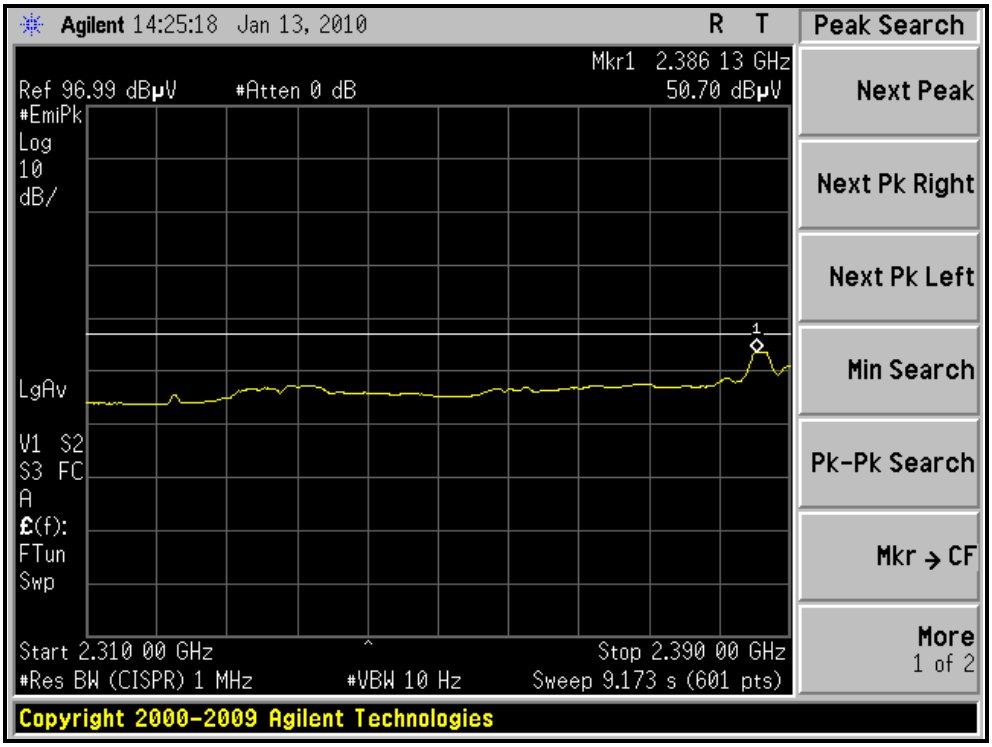
RESTRICTED BANDEDGE (802.11b MODE,CH1, HORIZONTAL)



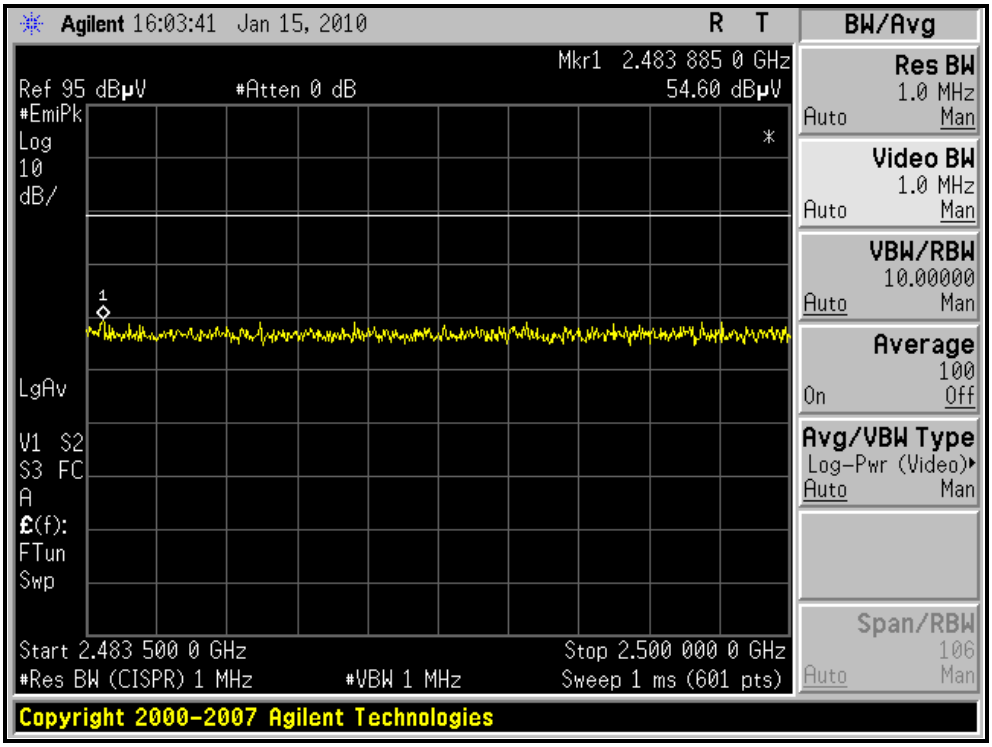


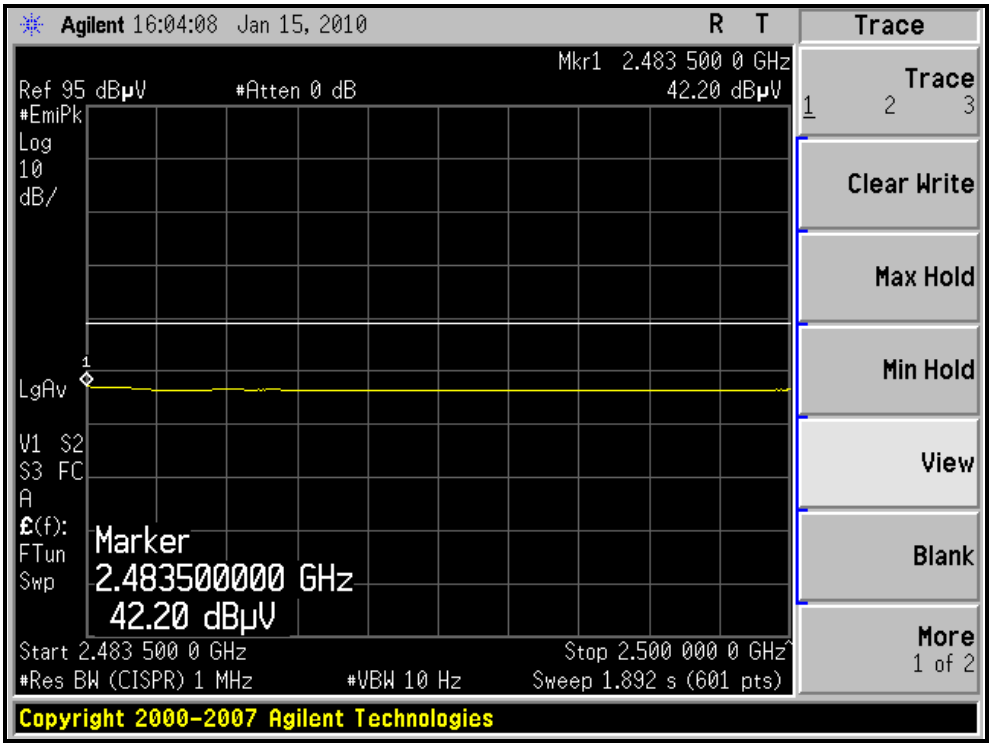
RESTRICTED BANDEDGE (802.11b MODE,CH1, VERTICAL)



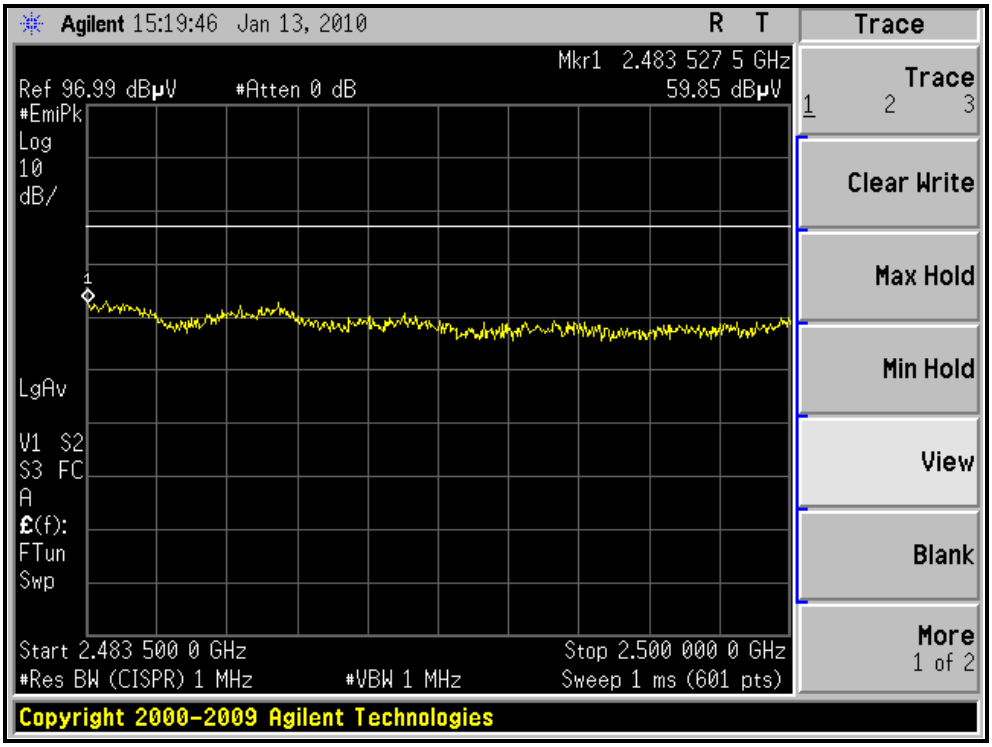


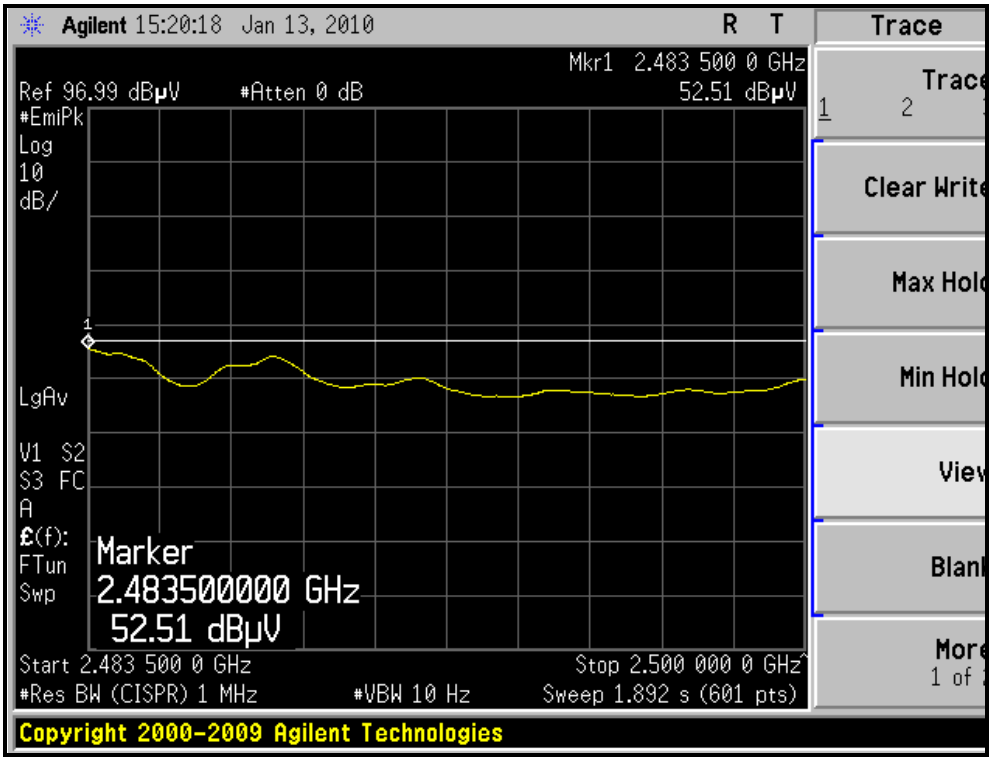
RESTRICTED BANDEDGE (802.11b MODE,CH11, HORIZONTAL)





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	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	15deg. C, 60%RH 1024 hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	56.0 PK	74.0	-18.0	1.17 H	242	25.96	30.06
2	2390.00	42.3 AV	54.0	-11.7	1.17 H	242	12.21	30.06
3	*2412.00	99.3 PK			1.14 H	213	69.15	30.15
4	*2412.00	89.2 AV			1.14 H	213	59.05	30.15
5	4824.00	41.1 PK	74.0	-32.9	1.00 H	190	5.67	35.43
6	4824.00	30.7 AV	54.0	-23.3	1.00 H	190	-4.73	35.43
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	71.3 PK	74.0	-2.7	1.03 V	156	41.25	30.06
2	**2390.00**	**53.2 AV**	**54.0**	**-0.8**	**1.03 V**	**156**	**23.11**	**30.06**
3	*2412.00	110.7 PK			1.06 V	20	80.55	30.15
4	*2412.00	100.1 AV			1.06 V	20	69.95	30.15
5	4824.00	40.4 PK	74.0	-33.6	1.04 V	159	4.97	35.43
6	4824.00	30.1 AV	54.0	-23.9	1.04 V	159	-5.33	35.43

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

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	15deg. C, 60%RH 1024 hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	100.3 PK			1.12 H	219	70.06	30.24
2	*2437.00	92.4 AV			1.12 H	219	62.16	30.24
3	4874.00	48.7 PK	74.0	-25.3	1.00 H	155	13.18	35.52
4	4874.00	36.5 AV	54.0	-17.5	1.00 H	155	0.98	35.52
5	7311.00	50.2 PK	74.0	-23.8	1.24 H	173	8.24	41.96
6	7311.00	40.3 AV	54.0	-13.7	1.24 H	173	-1.66	41.96
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	109.6 PK			1.00 V	17	79.36	30.24
2	*2437.00	101.5 AV			1.00 V	17	71.26	30.24
3	2489.13	68.4 PK	74.0	-5.6	1.04 V	162	37.95	30.45
4	2489.13	51.6 AV	54.0	-2.4	1.04 V	162	21.15	30.45
5	4874.00	46.2 PK	74.0	-27.8	1.00 V	142	10.68	35.52
6	4874.00	34.3 AV	54.0	-19.7	1.00 V	142	-1.22	35.52
7	7311.00	48.1 PK	74.0	-25.9	1.04 V	157	6.14	41.96
8	7311.00	38.4 AV	54.0	-15.6	1.04 V	157	-3.56	41.96

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

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

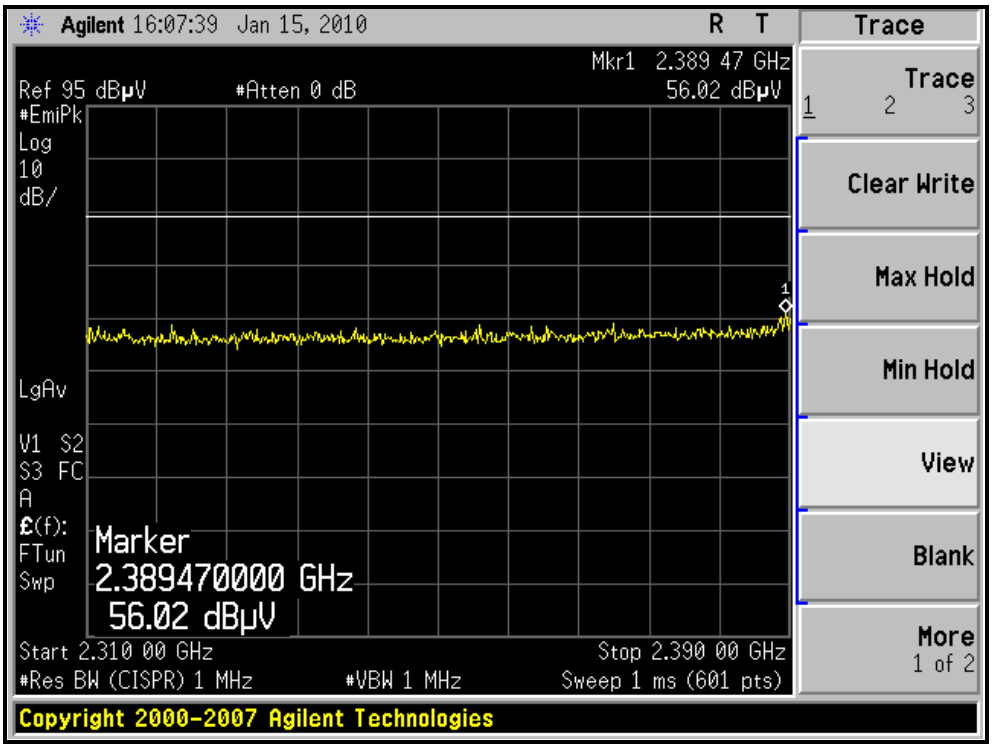
EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	15deg. C, 60%RH 1024 hPa	TESTED BY	Frank Liu

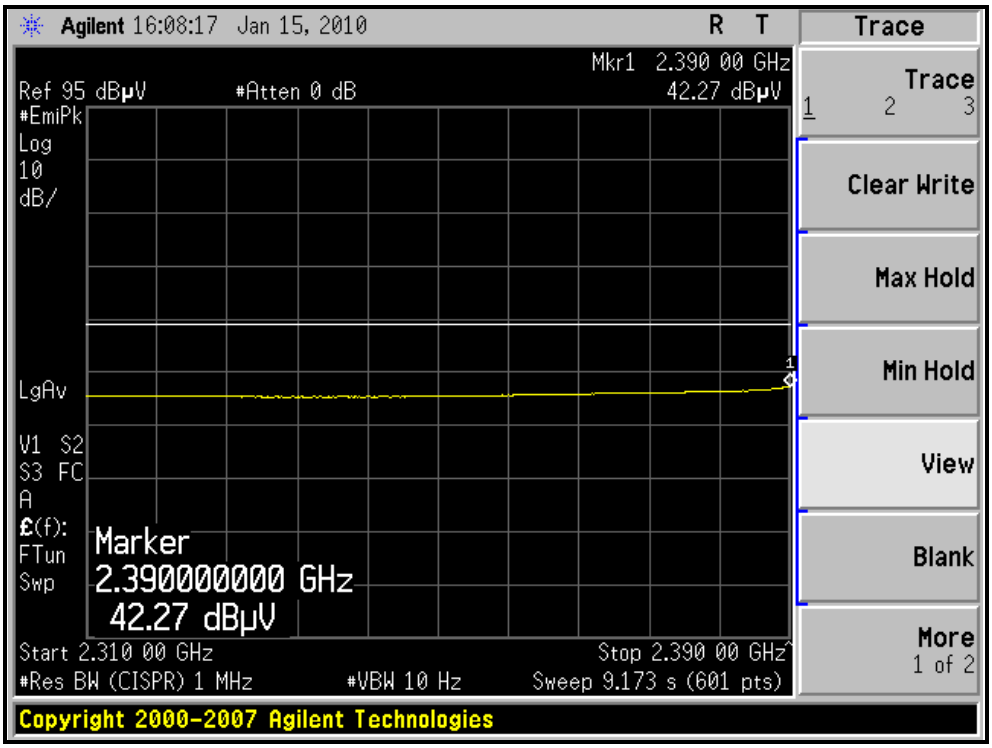
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	98.2 PK			1.14 H	213	67.86	30.34
2	*2462.00	88.4 AV			1.14 H	213	58.06	30.34
3	2483.50	63.0 PK	74.0	-11.0	1.00 H	151	32.60	30.43
4	2483.50	43.6 AV	54.0	-10.4	1.00 H	151	13.15	30.43
5	4924.00	41.6 PK	74.0	-32.4	1.00 H	192	5.98	35.62
6	4924.00	30.9 AV	54.0	-23.1	1.00 H	192	-4.72	35.62
7	7386.00	48.0 PK	74.0	-26.0	1.21 H	179	5.90	42.10
8	7386.00	38.4 AV	54.0	-15.6	1.21 H	179	-3.70	42.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	110.9 PK			1.03 V	21	80.56	30.34
2	*2462.00	99.4 AV			1.03 V	21	69.06	30.34
3	2483.50	69.3 PK	74.0	-4.7	1.03 V	175	38.91	30.43
4	2483.50	52.4 AV	54.0	-1.6	1.03 V	175	22.01	30.43
5	4924.00	40.3 PK	74.0	-33.7	1.00 V	137	4.68	35.62
6	4924.00	30.4 AV	54.0	-23.6	1.00 V	137	-5.22	35.62
7	7386.00	48.1 PK	74.0	-25.9	1.09 V	156	6.00	42.10
8	7386.00	36.1 AV	54.0	-17.9	1.09 V	156	-6.00	42.10

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

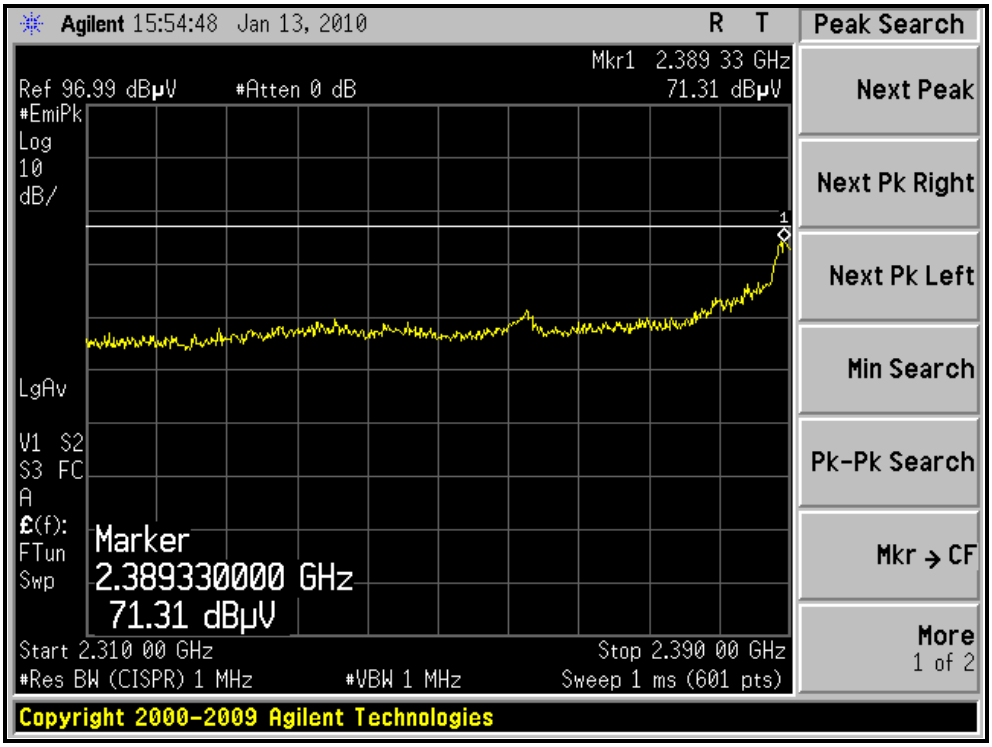
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

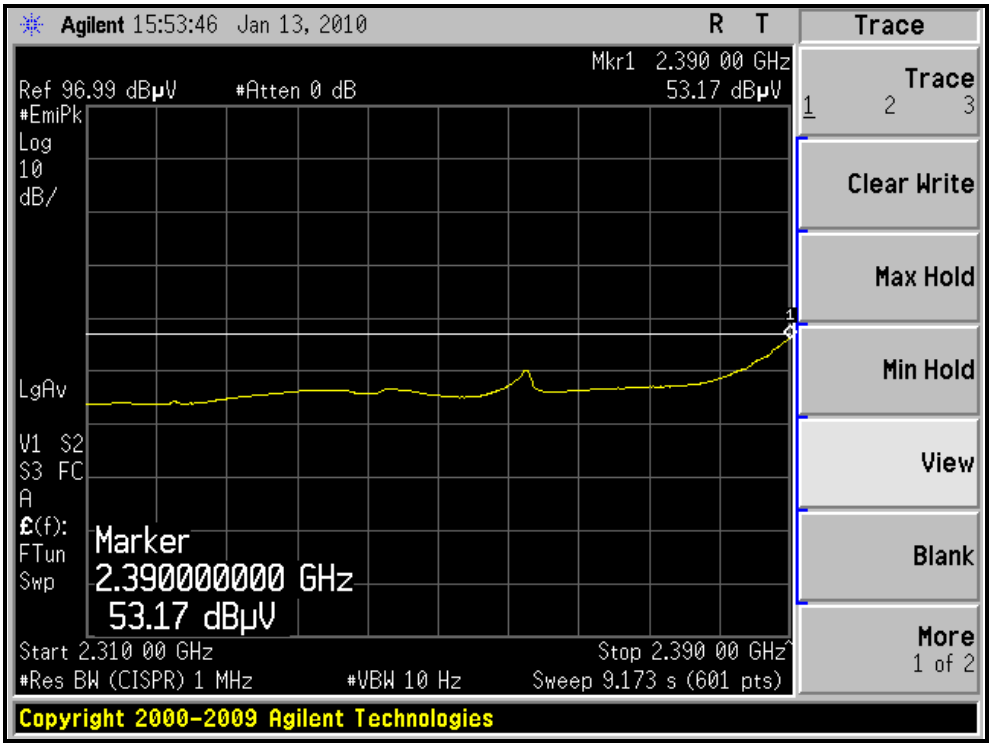
RESTRICTED BANDEDGE (802.11g MODE,CH1, HORIZONTAL)





RESTRICTED BANDEDGE (802.11g MODE,CH1, VERTICAL)





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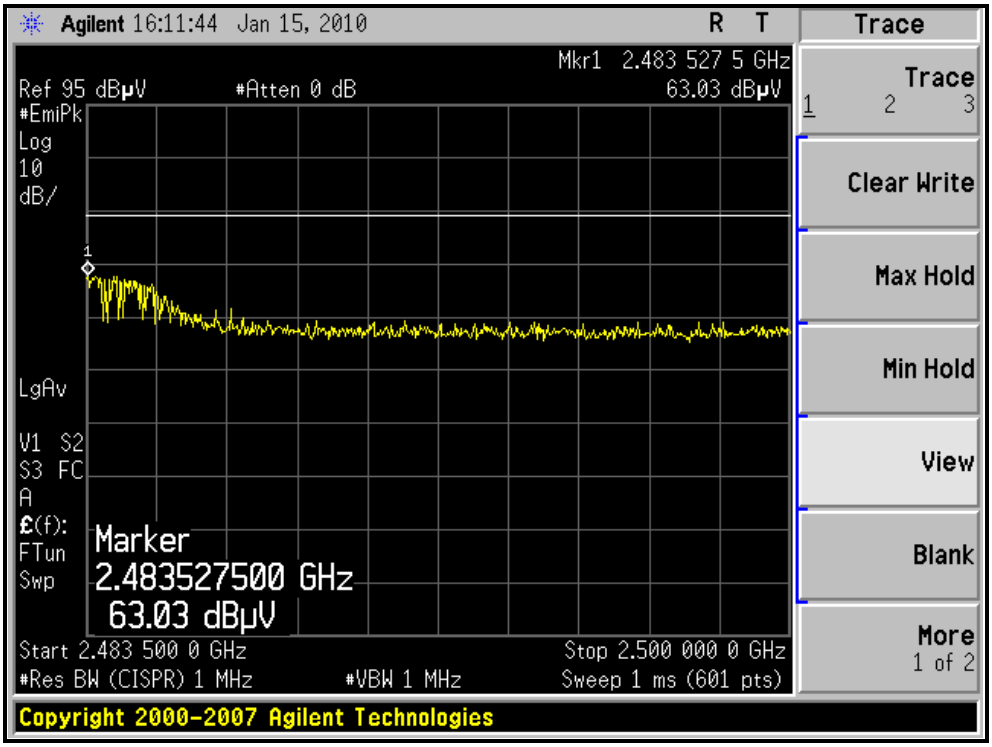
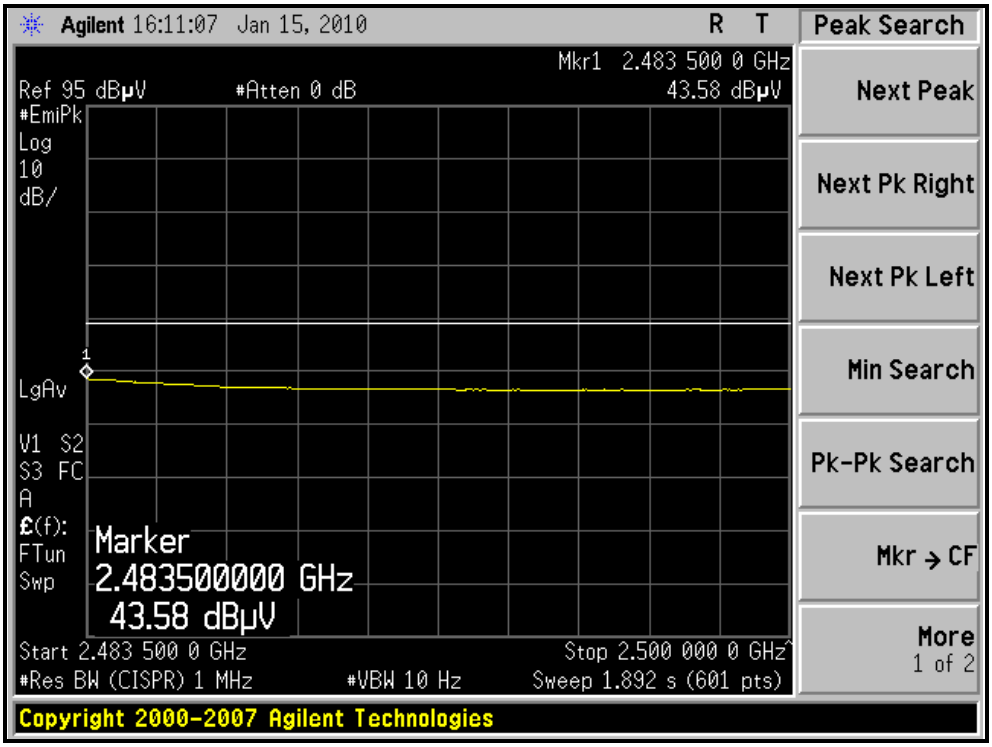
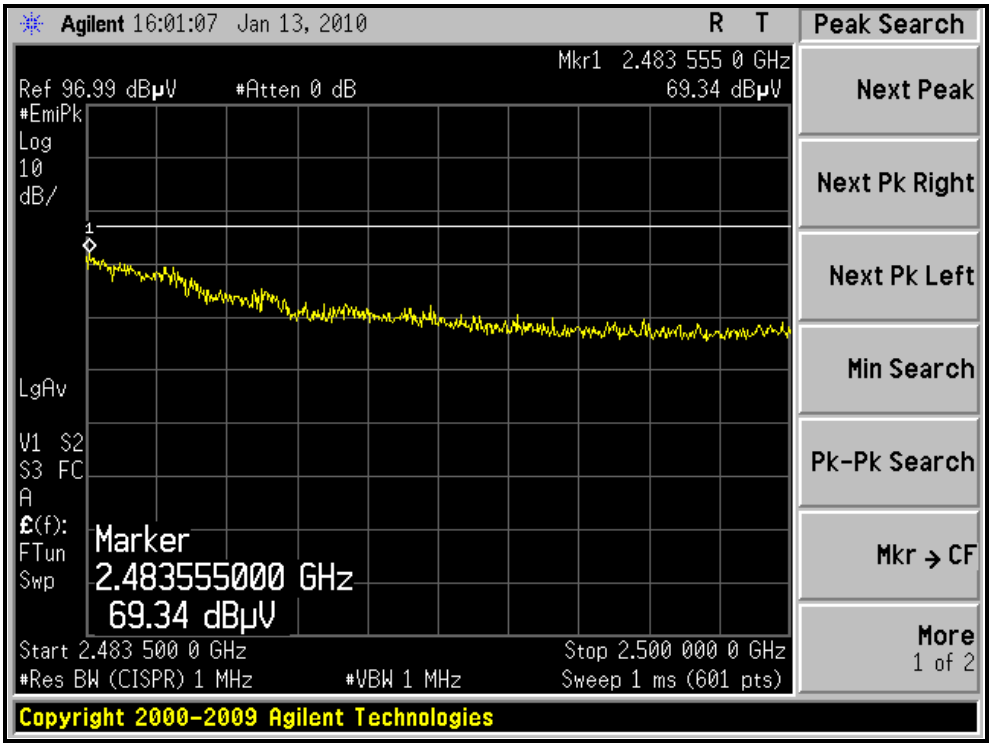
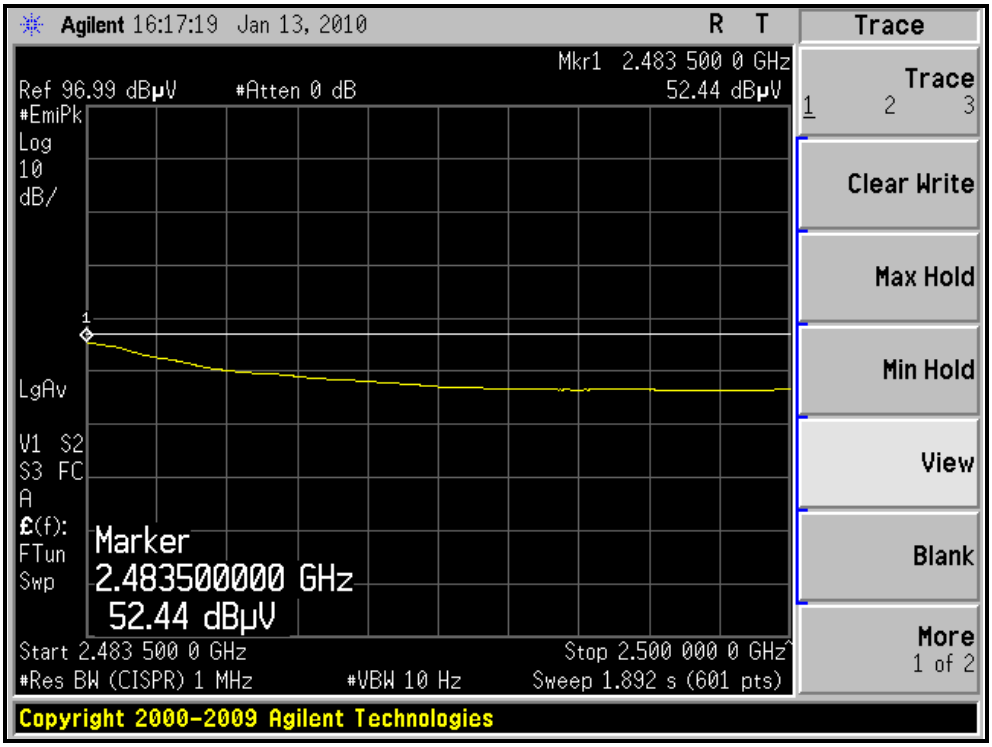




RESTRICTED BANDEDGE (802.11g MODE,CH11, VERTICAL)





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	15deg. C, 60%RH 1024 hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	59.3 PK	74.0	-14.8	1.54 H	241	29.19	30.06
2	2390.00	43.4 AV	54.0	-10.7	1.54 H	241	13.29	30.06
3	*2412.00	101.2 PK			1.51 H	213	71.05	30.15
4	*2412.00	90.4 AV			1.51 H	213	60.25	30.15
5	4824.00	41.3 PK	74.0	-32.7	1.00 H	187	5.87	35.43
6	4824.00	30.6 AV	54.0	-23.4	1.00 H	187	-4.83	35.43
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	71.1 PK	74.0	-2.9	1.05 V	156	41.06	30.06
2	2390.00	51.5 AV	54.0	-2.5	1.05 V	156	21.44	30.06
3	*2412.00	110.9 PK			1.00 V	26	80.75	30.15
4	*2412.00	100.4 AV			1.00 V	26	70.25	30.15
5	4824.00	40.8 PK	74.0	-33.2	1.03 V	157	5.37	35.43
6	4824.00	30.2 AV	54.0	-23.8	1.03 V	157	-5.23	35.43

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

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	15deg. C, 60%RH 1024 hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	101.6 PK			1.50 H	209	71.36	30.24
2	*2437.00	90.8 AV			1.50 H	209	60.56	30.24
3	4874.00	48.2 PK	74.0	-25.8	1.00 H	184	12.68	35.52
4	4874.00	36.3 AV	54.0	-17.7	1.00 H	184	0.78	35.52
5	7311.00	50.4 PK	74.0	-23.6	1.21 H	169	8.44	41.96
6	7311.00	40.6 AV	54.0	-13.4	1.21 H	169	-1.36	41.96
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	109.8 PK			1.00 V	23	79.56	30.24
2	*2437.00	101.4 AV			1.00 V	23	71.16	30.24
3	2488.80	62.1 PK	74.0	-11.9	1.00 V	310	31.65	30.45
4	2488.80	51.9 AV	54.0	-2.1	1.00 V	310	21.45	30.45
5	4874.00	45.8 PK	74.0	-28.2	1.02 V	137	10.28	35.52
6	4874.00	33.9 AV	54.0	-20.1	1.02 V	137	-1.62	35.52
7	7311.00	48.4 PK	74.0	-25.6	1.03 V	156	6.44	41.96
8	7311.00	38.2 AV	54.0	-15.8	1.03 V	156	-3.76	41.96

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

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

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	15deg. C, 60%RH 1024 hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	100.4 PK			1.55 H	211	70.06	30.34
2	*2462.00	89.3 AV			1.55 H	211	58.96	30.34
3	2483.50	60.5 PK	74.0	-13.5	1.50 H	243	30.08	30.43
4	2483.50	44.0 AV	54.0	-10.0	1.50 H	243	13.59	30.43
5	4924.00	41.3 PK	74.0	-32.7	1.00 H	182	5.68	35.62
6	4924.00	30.8 AV	54.0	-23.2	1.00 H	182	-4.82	35.62
7	7386.00	48.2 PK	74.0	-25.8	1.24 H	157	6.10	42.10
8	7386.00	38.3 AV	54.0	-15.7	1.24 H	157	-3.80	42.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	110.4 PK			1.03 V	24	80.06	30.34
2	*2462.00	99.3 AV			1.03 V	24	68.96	30.34
3	2483.50	71.5 PK	74.0	-2.5	1.00 V	165	41.05	30.43
4	2483.50	52.9 AV	54.0	-1.1	1.00 V	165	22.45	30.43
5	4924.00	40.4 PK	74.0	-33.6	1.00 V	134	4.78	35.62
6	4924.00	30.6 AV	54.0	-23.4	1.00 V	134	-5.02	35.62
7	7386.00	48.4 PK	74.0	-25.6	1.04 V	151	6.30	42.10
8	7386.00	36.2 AV	54.0	-17.8	1.04 V	151	-5.90	42.10

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

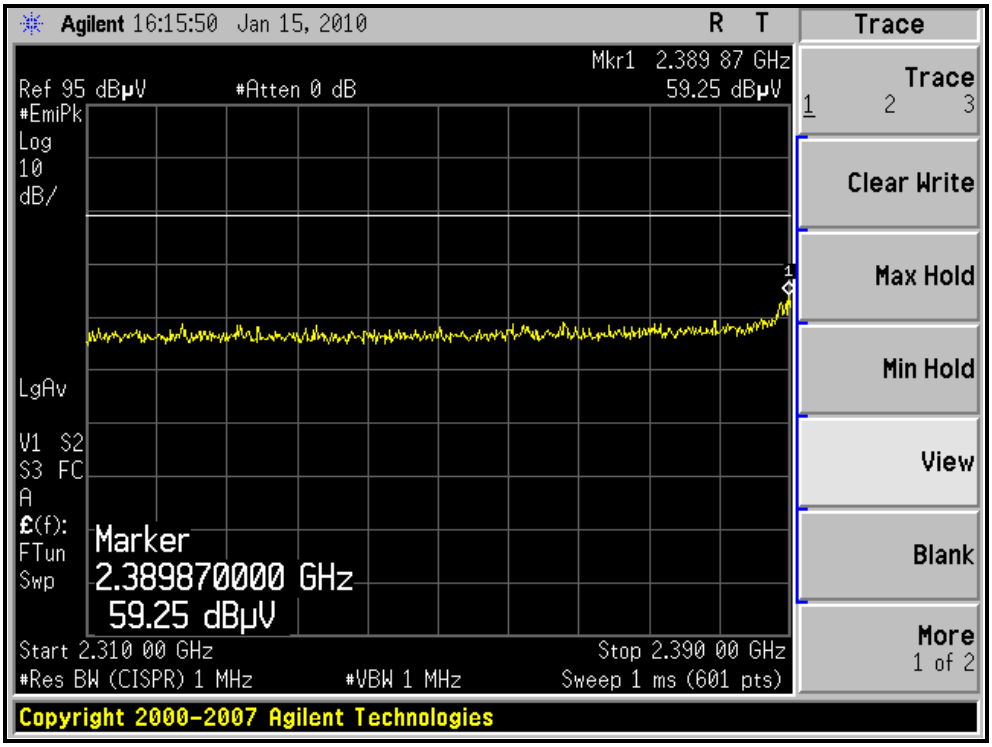
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

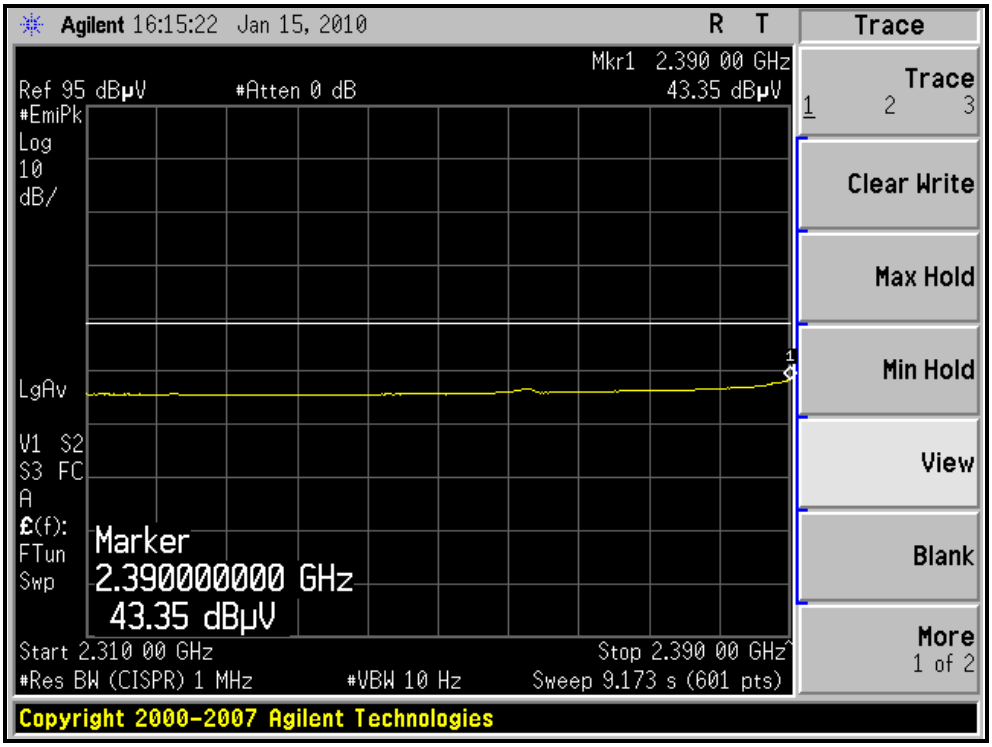
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

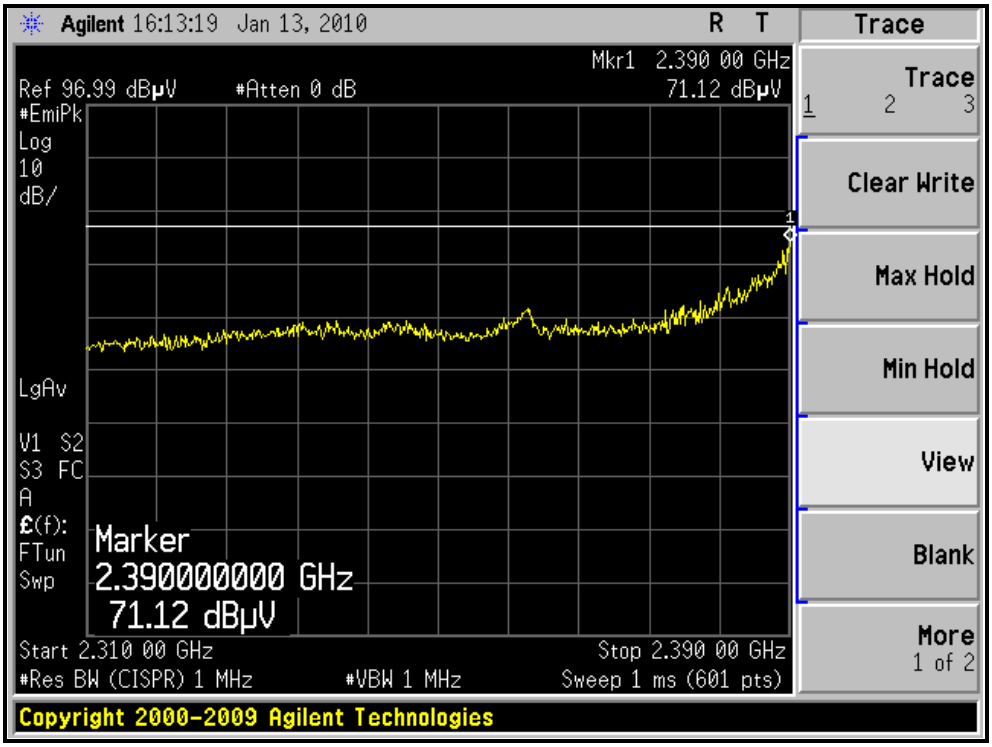
5. " * ": Fundamental frequency.

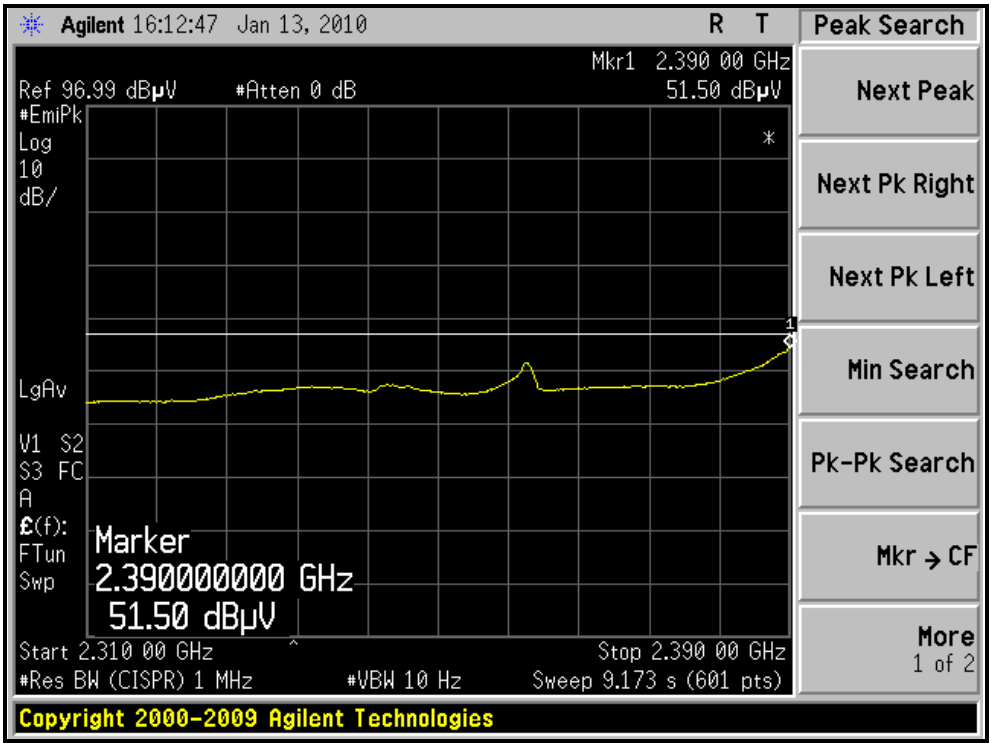
RESTRICTED BANDEDGE (802.11n (20MHz) MODE,CH1, HORIZONTAL)



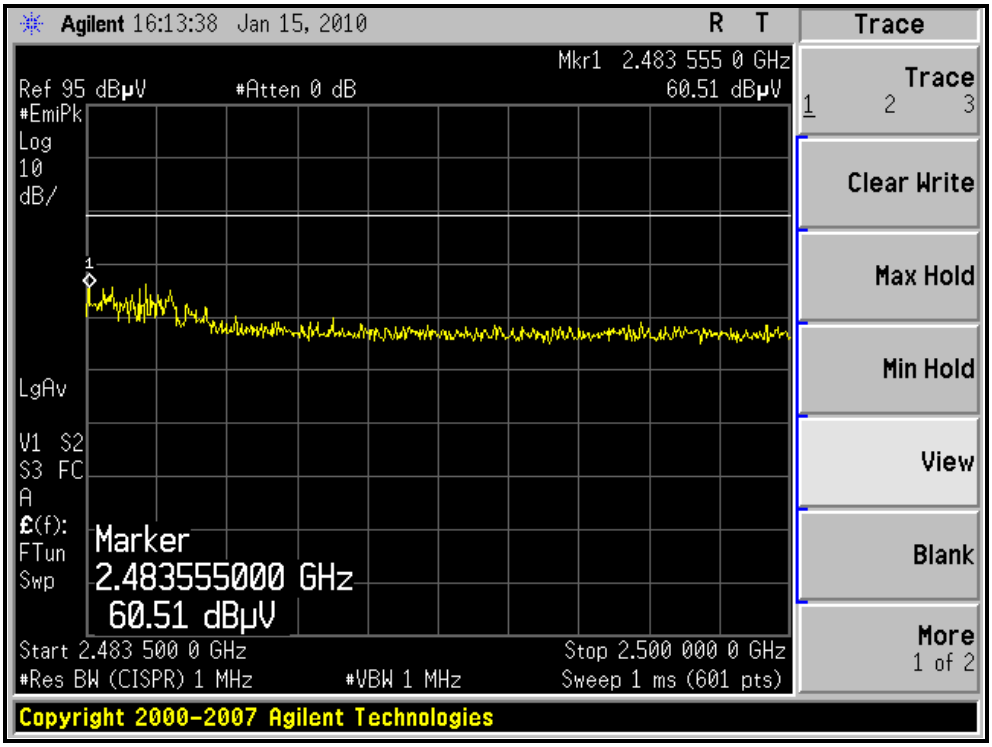


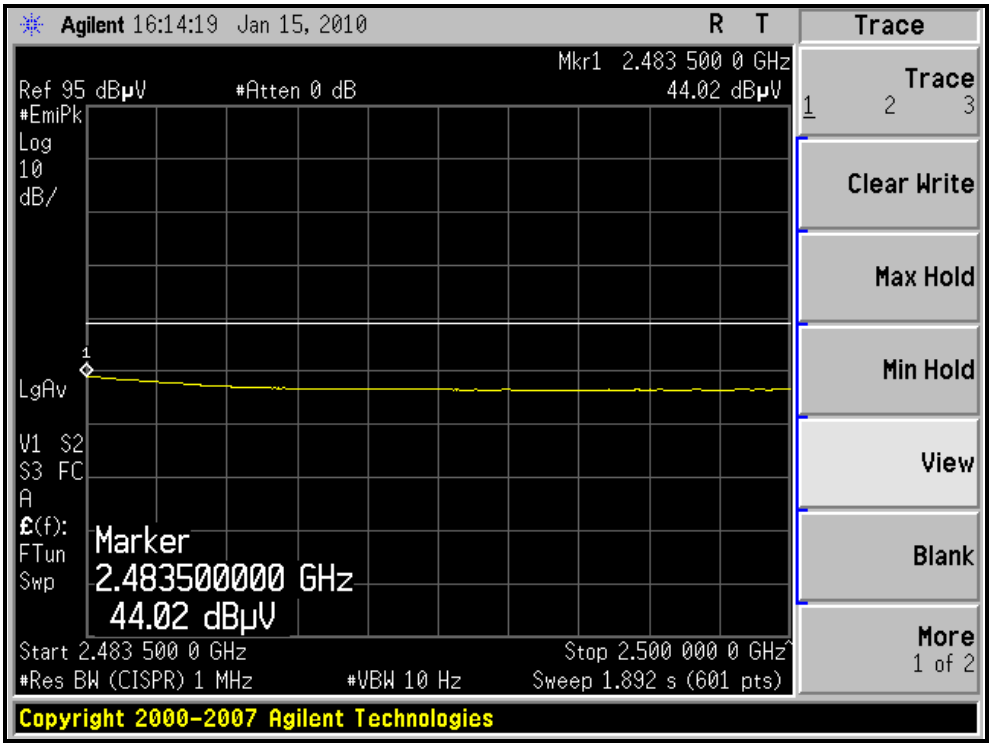
RESTRICTED BANDEDGE (802.11n (20MHz) MODE,CH1, VERTICAL)



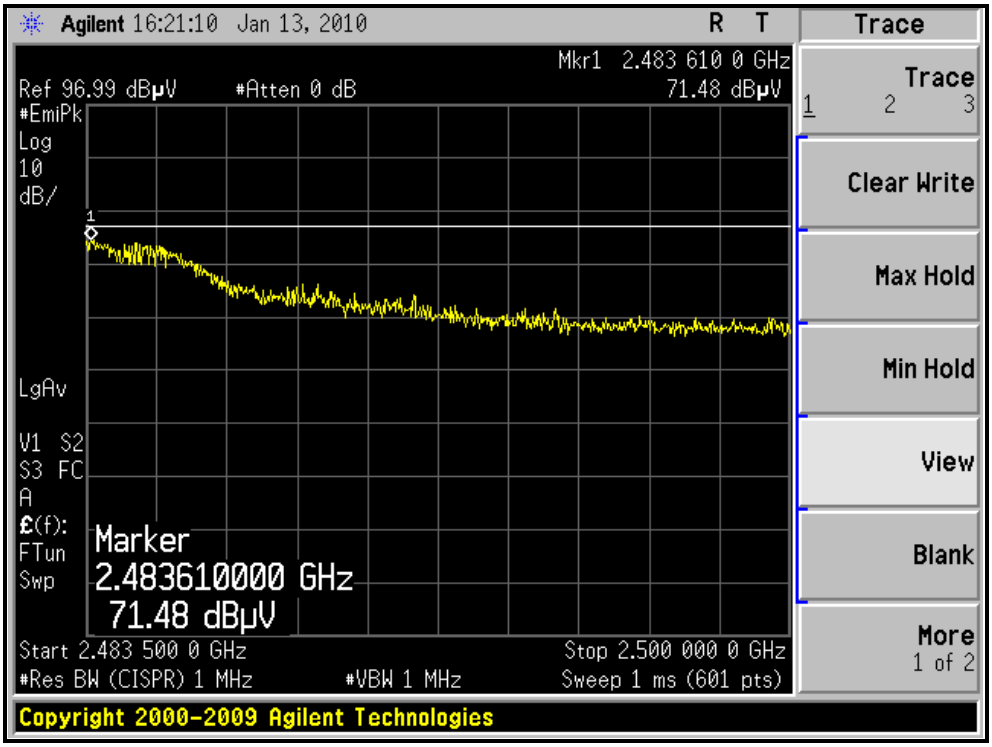


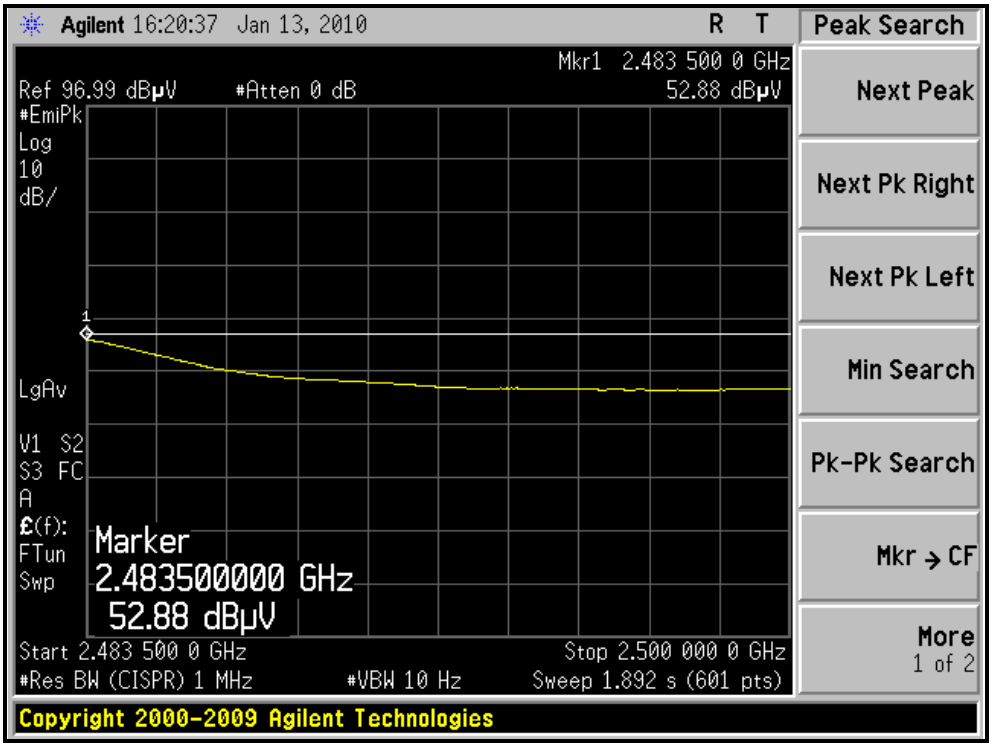
RESTRICTED BANDEDGE (802.11n (20MHz) MODE,CH11, HORIZONTAL)





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





802.11n (40MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	15deg. C, 60%RH 1024 hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	58.0 PK	74.0	-16.0	1.53 H	242	27.91	30.06
2	2390.00	44.1 AV	54.0	-9.9	1.53 H	242	14.01	30.06
3	*2422.00	95.1 PK			1.00 H	243	64.91	30.19
4	*2422.00	86.3 AV			1.00 H	243	56.11	30.19
5	4844.00	41.2 PK	74.0	-32.8	1.00 H	184	5.73	35.47
6	4844.00	30.4 AV	54.0	-23.6	1.00 H	184	-5.07	35.47
7	7266.00	48.3 PK	74.0	-25.7	1.21 H	156	6.43	41.87
8	7266.00	36.4 AV	54.0	-17.6	1.21 H	156	-5.47	41.87
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.7 PK	74.0	-5.3	1.02 V	155	38.64	30.06
2	2390.00	52.3 AV	54.0	-1.7	1.02 V	155	22.26	30.06
3	*2422.00	106.2 PK			1.00 V	37	76.01	30.19
4	*2422.00	97.3 AV			1.00 V	37	67.11	30.19
5	4844.00	41.3 PK	74.0	-32.7	1.00 V	127	5.83	35.47
6	4844.00	30.2 AV	54.0	-23.8	1.00 V	127	-5.27	35.47
7	7266.00	48.7 PK	74.0	-25.3	1.03 V	154	6.83	41.87
8	7266.00	36.1 AV	54.0	-17.9	1.03 V	154	-5.77	41.87

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	15deg. C, 60%RH 1024 hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	96.2 PK			1.03 H	249	65.96	30.24
2	*2437.00	87.4 AV			1.03 H	249	57.16	30.24
3	4874.00	41.4 PK	74.0	-32.6	1.00 H	182	5.88	35.52
4	4874.00	30.8 AV	54.0	-23.2	1.00 H	182	-4.72	35.52
5	7311.00	48.4 PK	74.0	-25.6	1.29 H	157	6.44	41.96
6	7311.00	36.6 AV	54.0	-17.4	1.29 H	157	-5.36	41.96
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	106.3 PK			1.01 V	27	76.06	30.24
2	*2437.00	98.0 AV			1.01 V	27	67.76	30.24
3	2483.50	67.6 PK	74.0	-6.4	1.00 V	27	37.17	30.43
4	2483.50	52.9 AV	54.0	-1.1	1.00 V	27	22.47	30.43
5	4874.00	41.7 PK	74.0	-32.3	1.00 V	126	6.18	35.52
6	4874.00	30.6 AV	54.0	-23.4	1.00 V	126	-4.92	35.52
7	7311.00	48.9 PK	74.0	-25.1	1.04 V	157	6.94	41.96
8	7311.00	36.3 AV	54.0	-17.7	1.04 V	157	-5.66	41.96

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 7	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	15deg. C, 60%RH 1024 hPa	TESTED BY	Frank Liu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	94.3 PK			1.00 H	211	64.00	30.30
2	*2452.00	85.2 AV			1.00 H	211	54.90	30.30
3	2487.84	58.8 PK	74.0	-15.2	1.55 H	231	28.40	30.44
4	2487.84	42.9 AV	54.0	-11.1	1.55 H	231	12.49	30.44
5	4904.00	41.1 PK	74.0	-32.9	1.00 H	184	5.52	35.58
6	4904.00	30.7 AV	54.0	-23.3	1.00 H	184	-4.88	35.58
7	7356.00	48.8 PK	74.0	-25.2	1.21 H	159	6.76	42.04
8	7356.00	36.9 AV	54.0	-17.1	1.21 H	159	-5.14	42.04
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	104.0 PK			1.00 V	27	73.70	30.30
2	*2452.00	95.1 AV			1.00 V	27	64.80	30.30
3	2483.50	68.6 PK	74.0	-5.4	1.00 V	177	38.14	30.43
4	2483.50	52.1 AV	54.0	-2.0	1.00 V	177	21.62	30.43
5	4904.00	41.3 PK	74.0	-32.7	1.00 V	127	5.72	35.58
6	4904.00	30.2 AV	54.0	-23.8	1.00 V	127	-5.38	35.58
7	7356.00	48.7 PK	74.0	-25.3	1.03 V	154	6.66	42.04
8	7356.00	36.4 AV	54.0	-17.6	1.03 V	154	-5.64	42.04

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

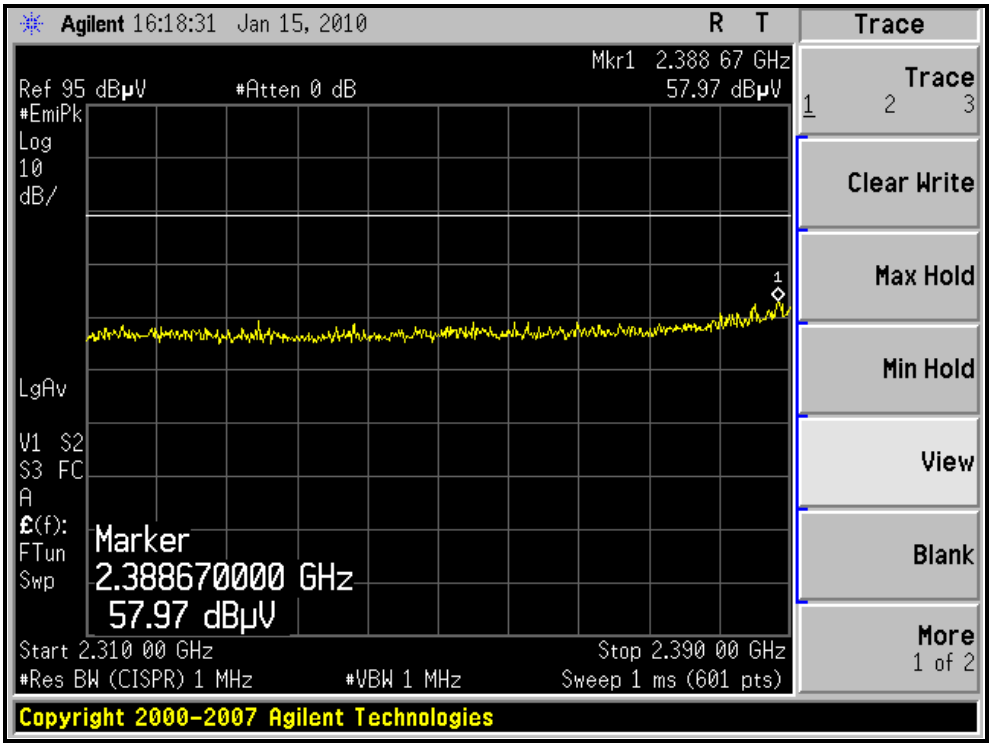
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

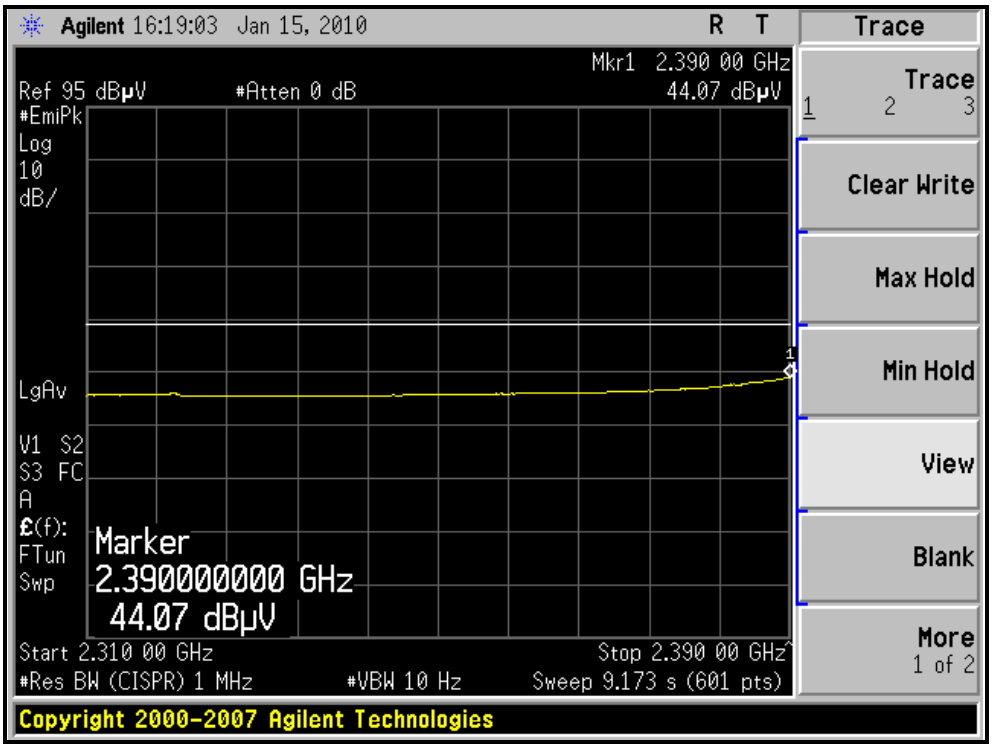
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

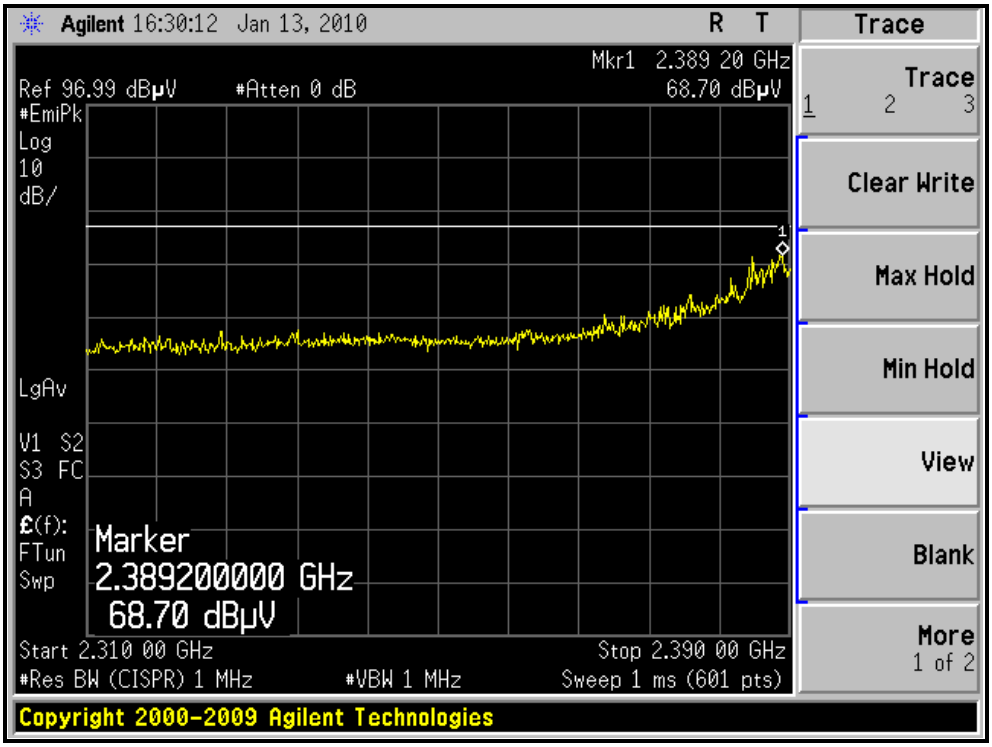
5. " * ": Fundamental frequency.

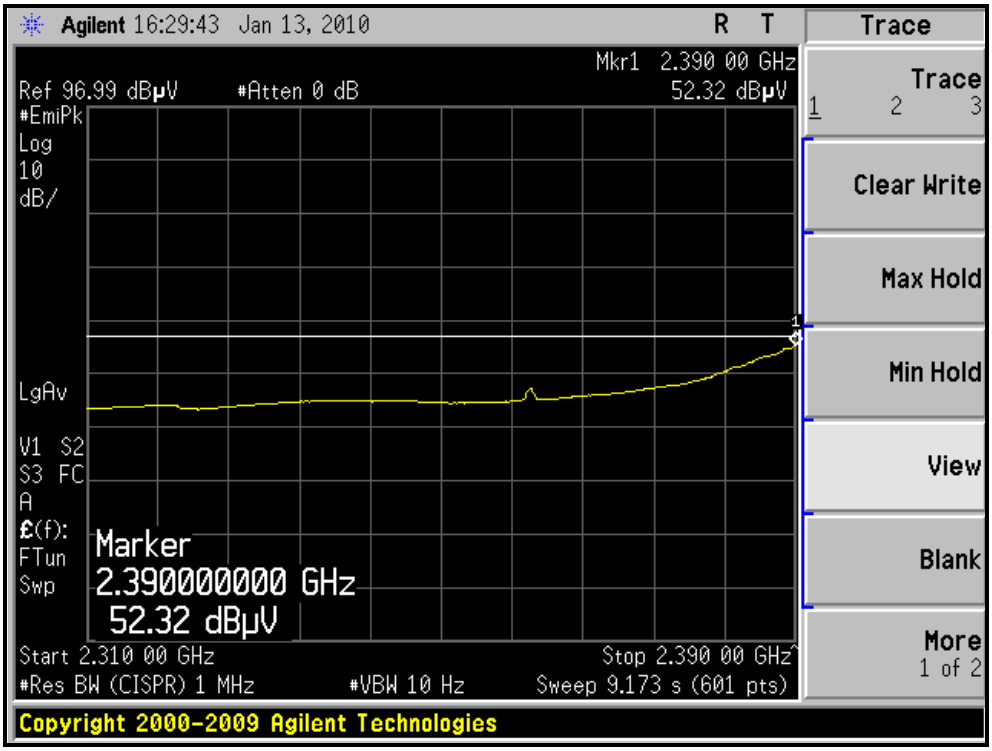
RESTRICTED BANDEDGE (802.11n (40MHz) MODE,CH1, HORIZONTAL)



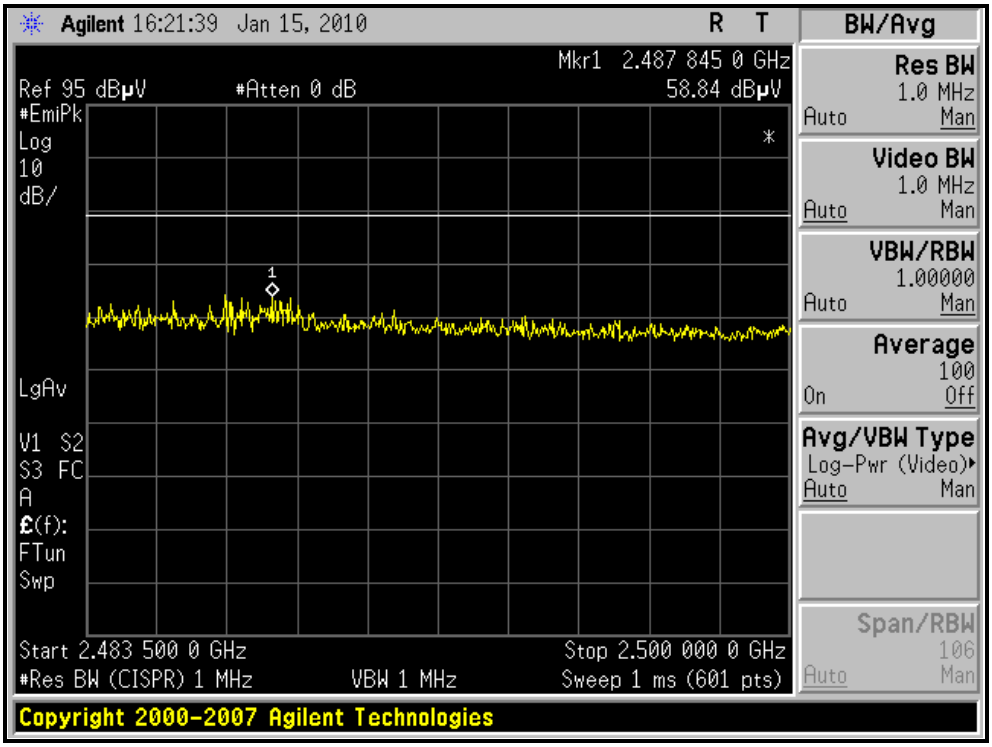


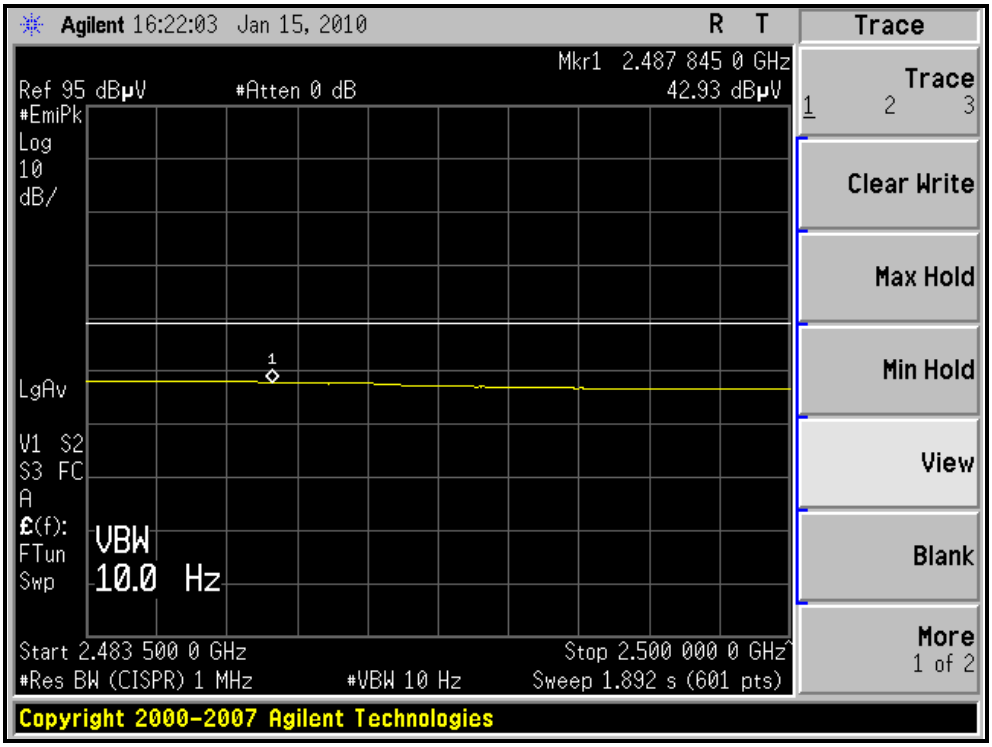
RESTRICTED BANDEDGE (802.11n (40MHz) MODE,CH1, VERTICAL)



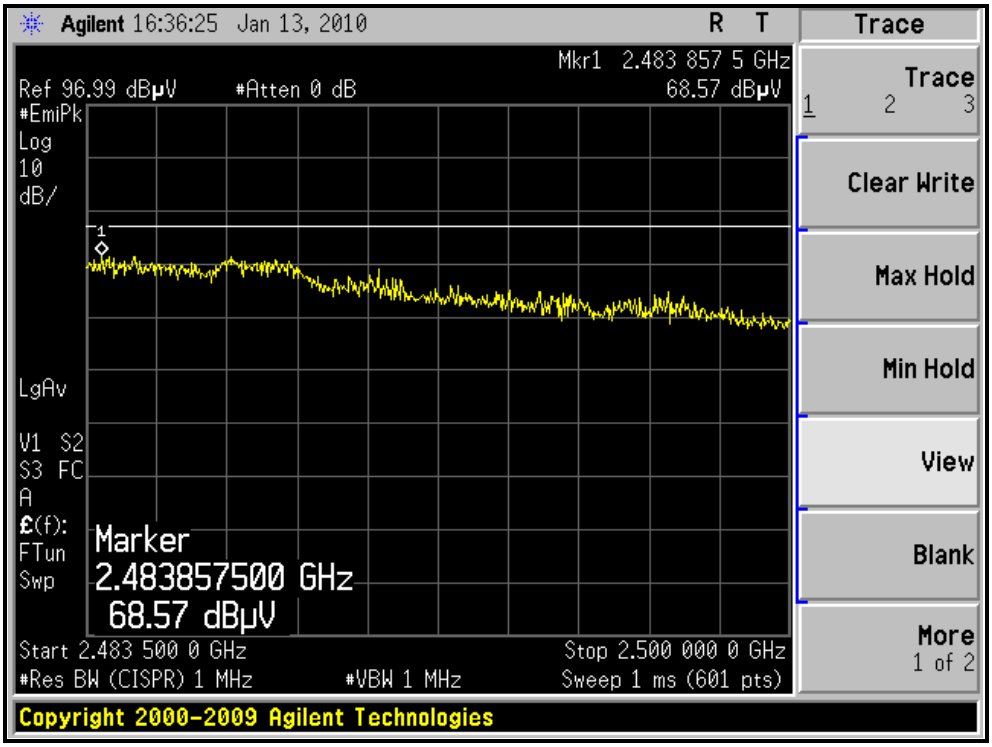


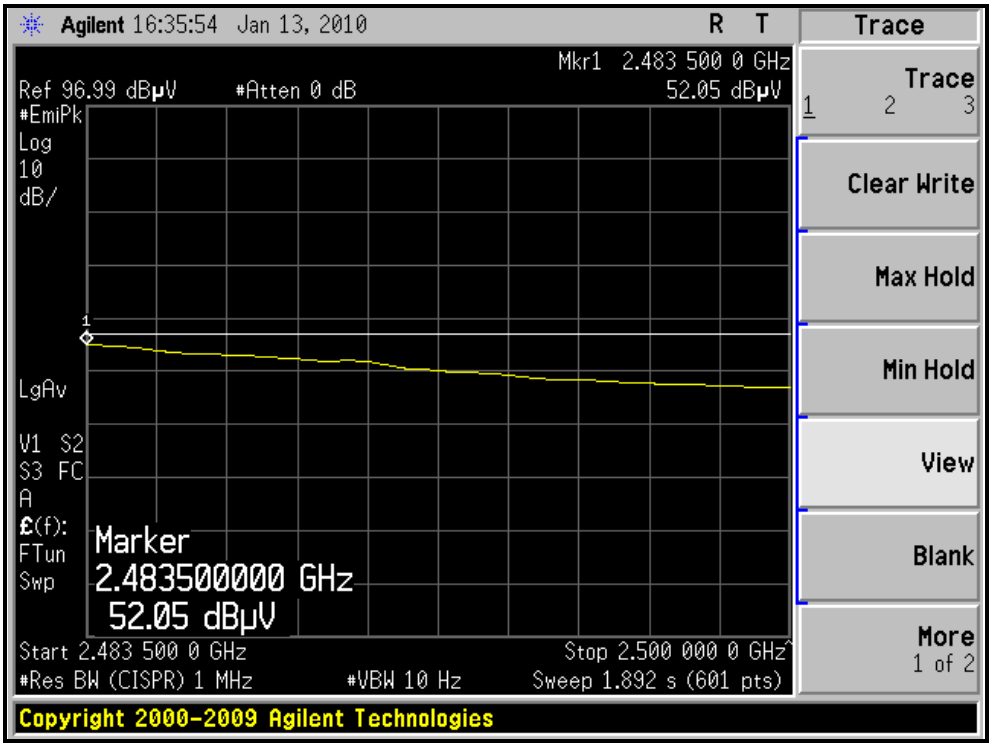
RESTRICTED BANDEDGE (802.11n (40MHz) MODE,CH7, HORIZONTAL)





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





4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 03, 2009	Aug. 02, 2010

NOTE:

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

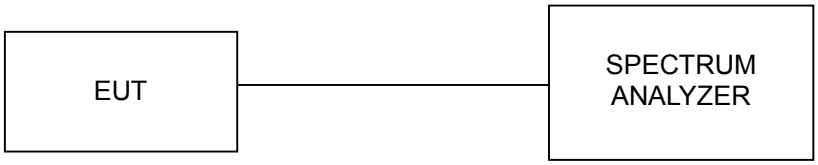
4.3.3 TEST PROCEDURE

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

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

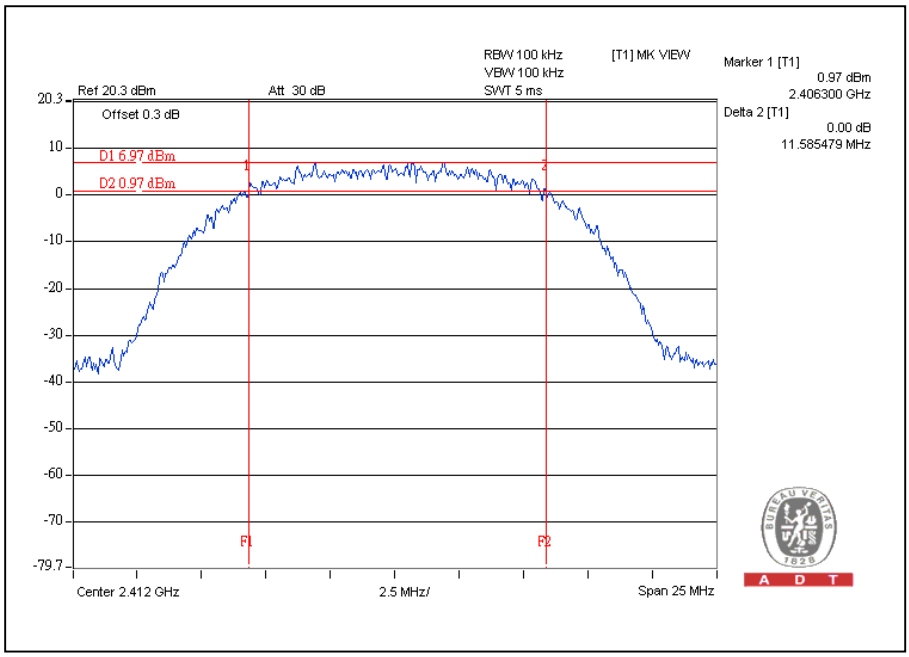
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 TEST RESULTS

802.11b DSSS MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	11.59	0.5	PASS
6	2437	11.57	0.5	PASS
11	2462	11.58	0.5	PASS

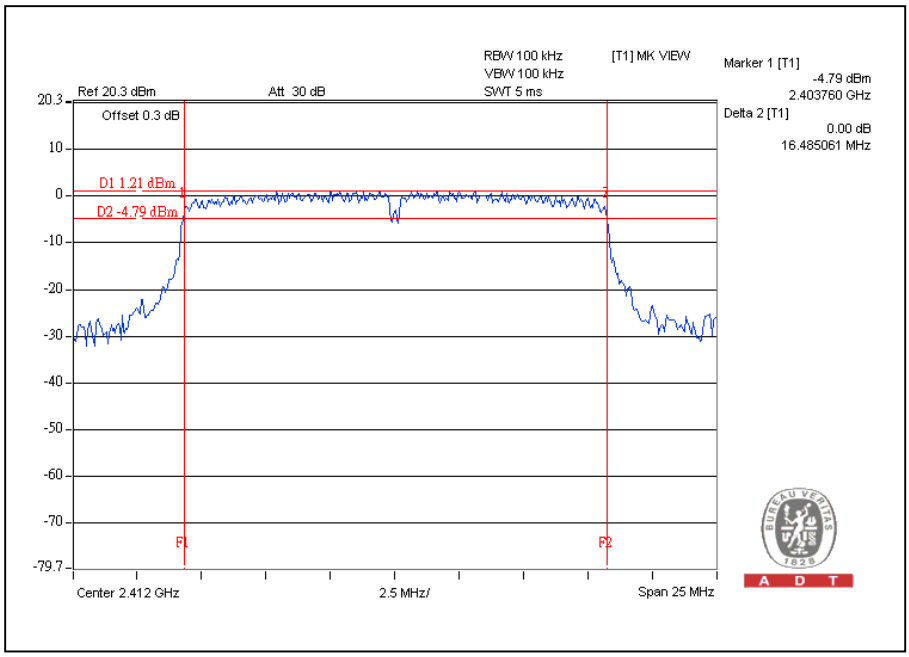
CH1



802.11g OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.49	0.5	PASS
6	2437	16.46	0.5	PASS
11	2462	16.47	0.5	PASS

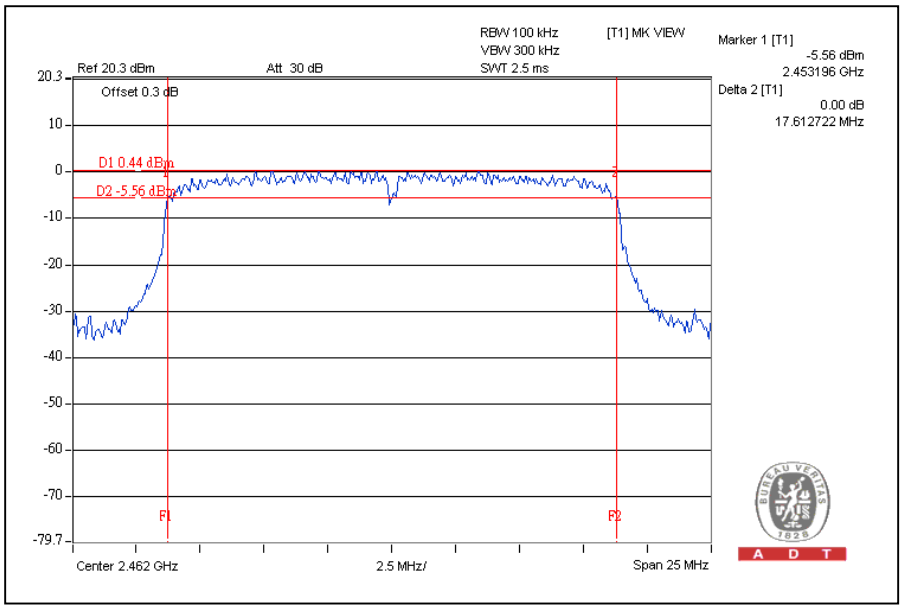
CH1



802.11n (20MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	17.58	0.5	PASS
6	2437	17.60	0.5	PASS
11	2462	17.61	0.5	PASS

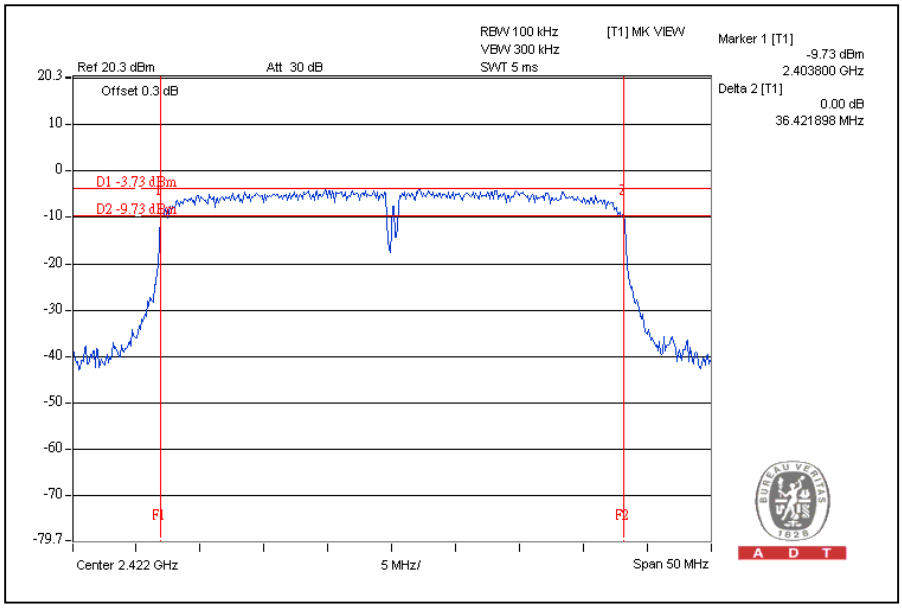
CH11



802.11n (40MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2422	36.42	0.5	PASS
4	2437	35.87	0.5	PASS
7	2452	36.38	0.5	PASS

CH1



4.4 MAXIMUM PEAK OUTPUT POWER

4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

4.4.2 INSTRUMENTS

Description & Manufacturer	Model no.	Serial No.	Calibrated date	Calibrated Until
Anritsu Power Meter	ML2495A	0824006	April 25, 2009	April 24, 2010
Pulse Power Sensor	MA2411B	0738172	April 25, 2009	April 24, 2010

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

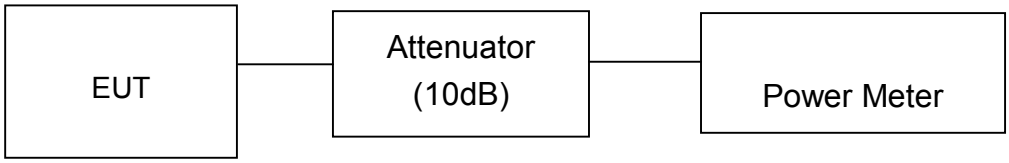
4.4.3 TEST PROCEDURES

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 4.2.6

4.4.7 TEST RESULTS

802.11b DSSS MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER OUTPUT (mW)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	21.6	144.5	30	PASS
6	2437	23.0	199.5	30	PASS
11	2462	21.0	125.9	30	PASS

802.11g OFDM modulation:

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER OUTPUT (mW)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	24.1	257.0	30	PASS
6	2437	24.5	281.8	30	PASS
11	2462	22.8	190.5	30	PASS

802.11n (20MHz) OFDM modulation:

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER OUTPUT (mW)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	23.9	245.5	30	PASS
6	2437	24.2	263.0	30	PASS
11	2462	22.8	190.5	30	PASS

802.11n (40MHz) OFDM modulation:

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER OUTPUT (mW)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2422	22.2	166.0	30	PASS
4	2437	22.9	195.0	30	PASS
7	2452	20.5	112.2	30	PASS

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 03, 2009	Aug. 02, 2010

NOTE:

1. 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

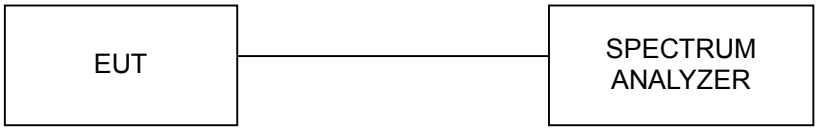
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

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

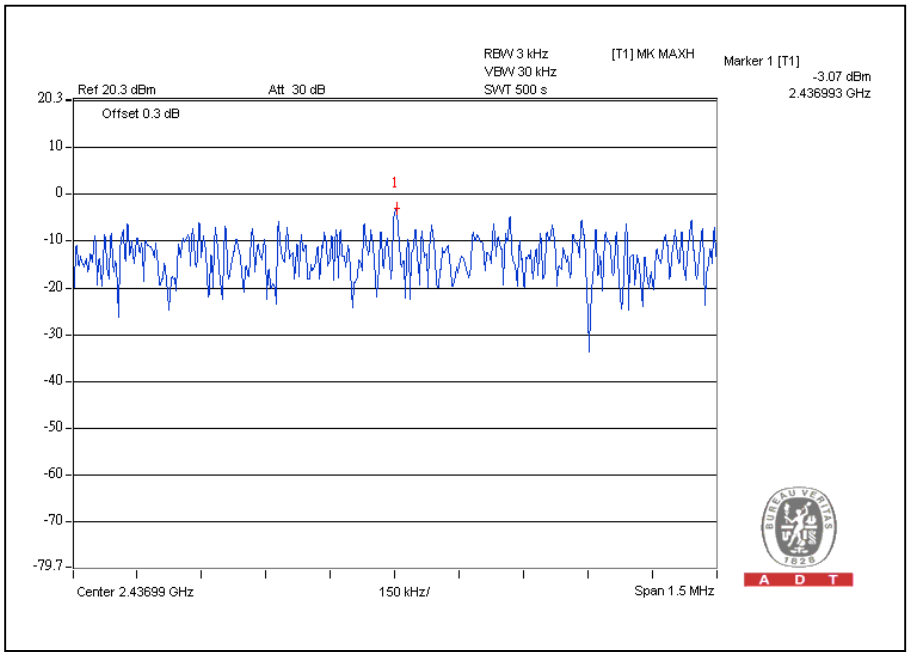
Same as Item 4.2.6

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	-5.1	8	PASS
6	2437	-3.1	8	PASS
11	2462	-5.8	8	PASS

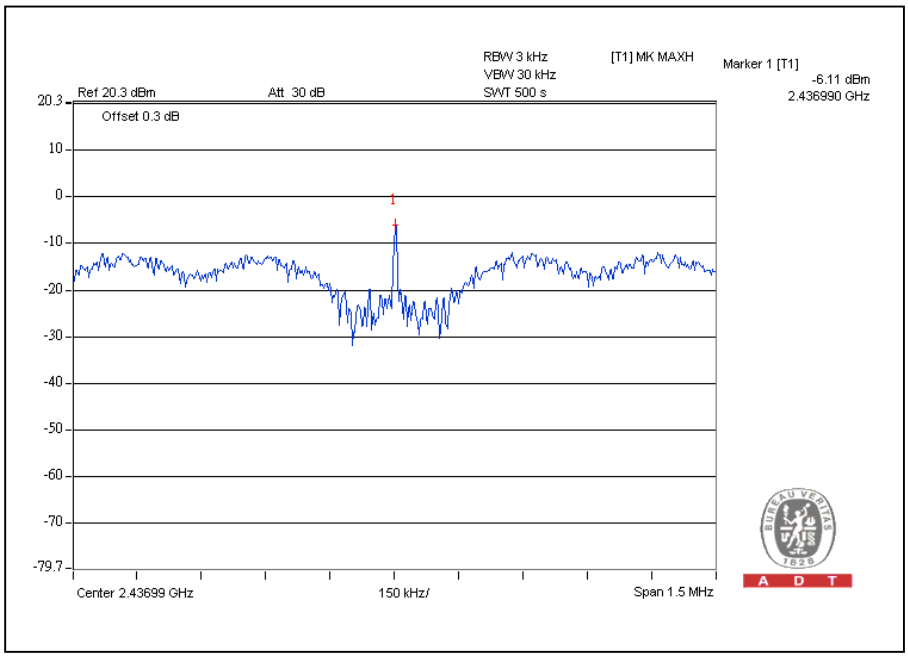
CH6



802.11g OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-7.7	8	PASS
6	2437	-6.1	8	PASS
11	2462	-8.6	8	PASS

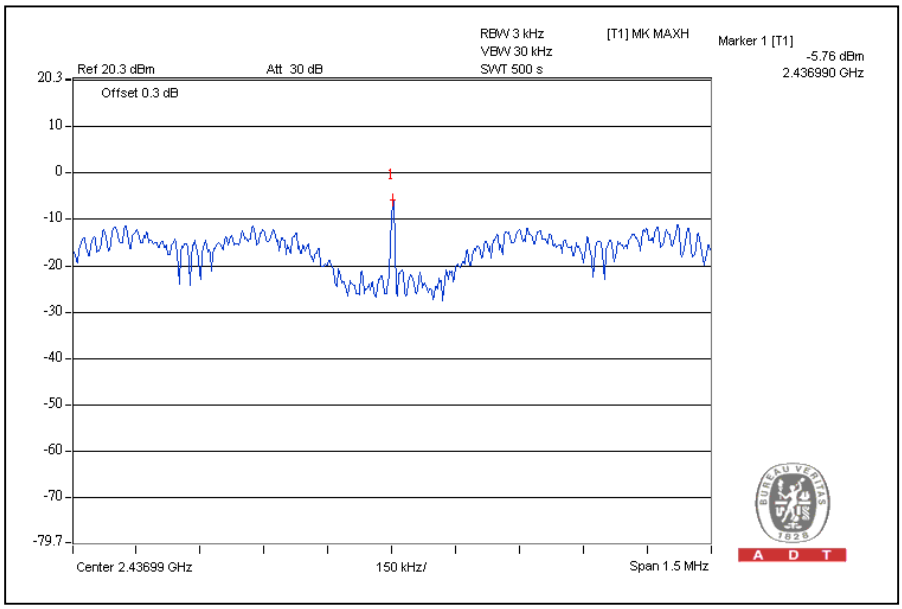
CH6



802.11n (20MHz) OFDM 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	-5.8	8	PASS
11	2462	-8.5	8	PASS

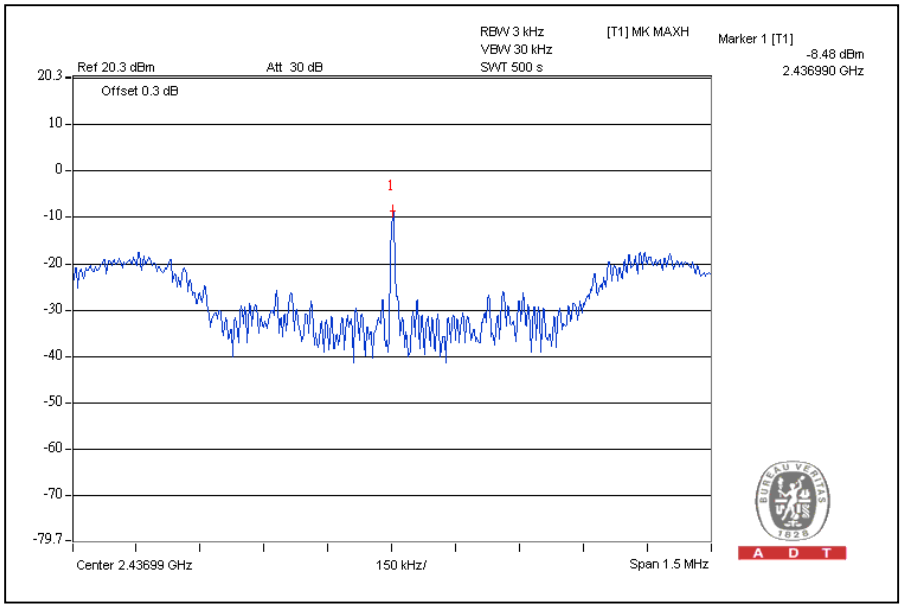
CH6



802.11n (40MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2422	-9.7	8	PASS
4	2437	-8.5	8	PASS
7	2452	-11.9	8	PASS

CH4



4.6 CONDUCTED OUT-BAND EMISSION MEASUREMENT

4.6.1 LIMITS OF CONDUCTED OUT-BAND EMISSION MEASUREMENT

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

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 03, 2009	Aug. 02, 2010

NOTE:

1. 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 both RBW and VBW of spectrum analyzer to 100kHz and 300kHz with suitable frequency span including 100 MHz bandwidth from band edge. The band edges was measured and recorded.

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

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 EUT OPERATING CONDITION

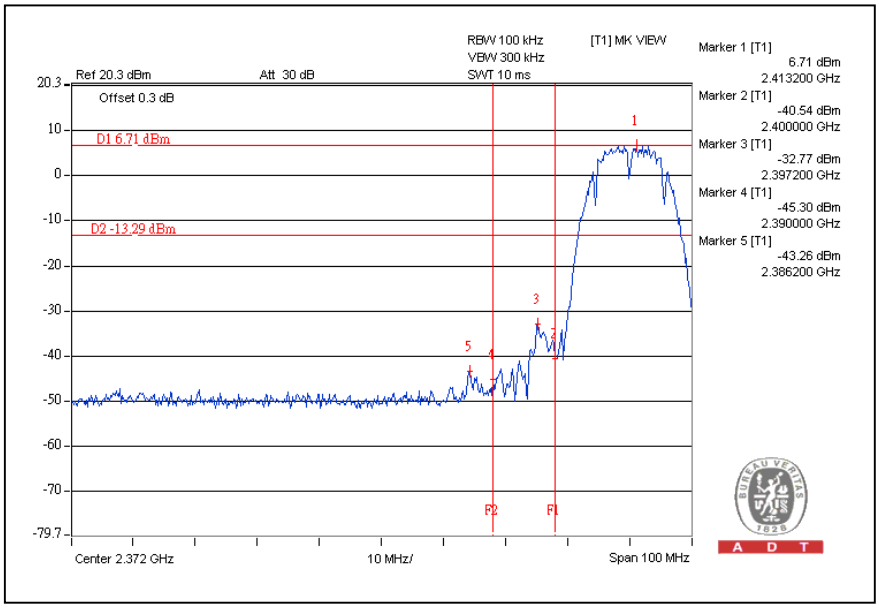
Same as Item 4.2.6

4.6.6 TEST RESULTS

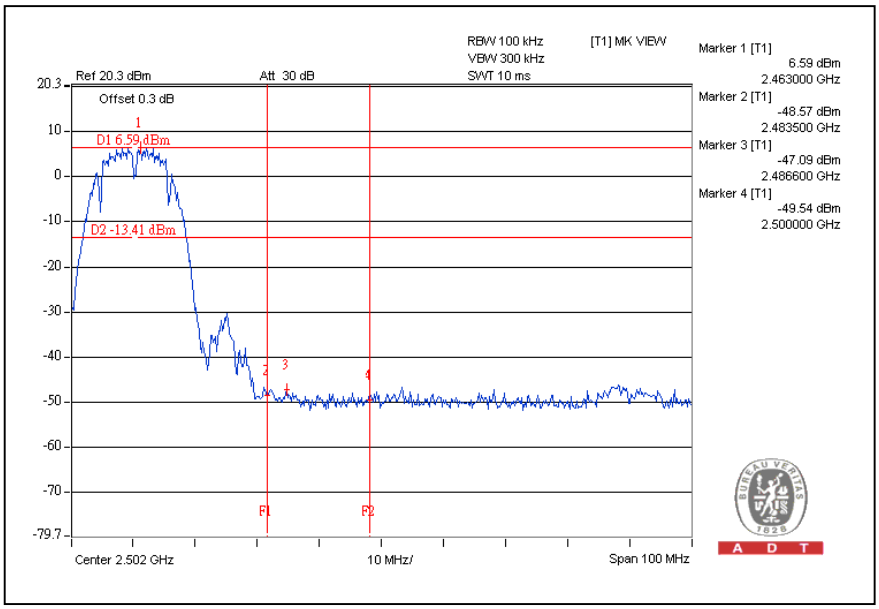
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).

802.11b DSSS MODULATION:

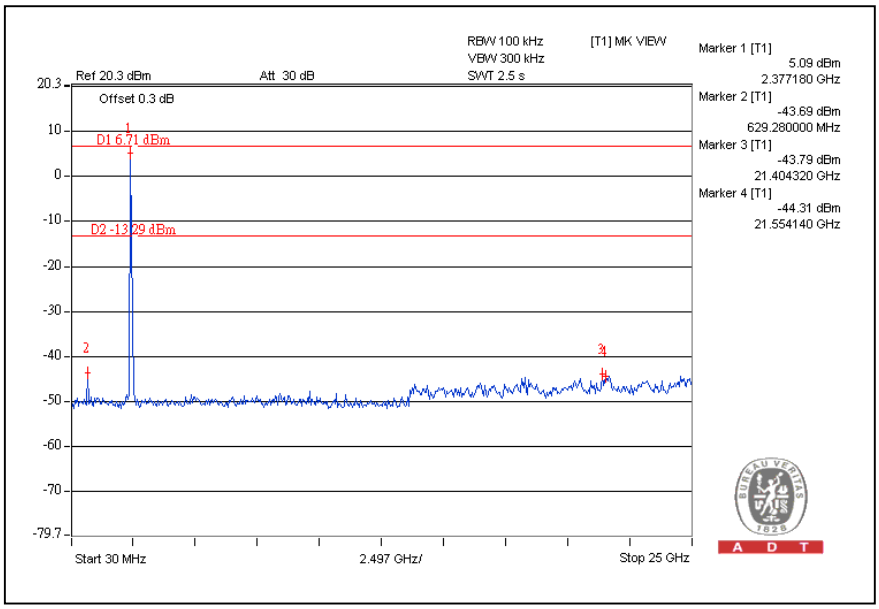
CH1



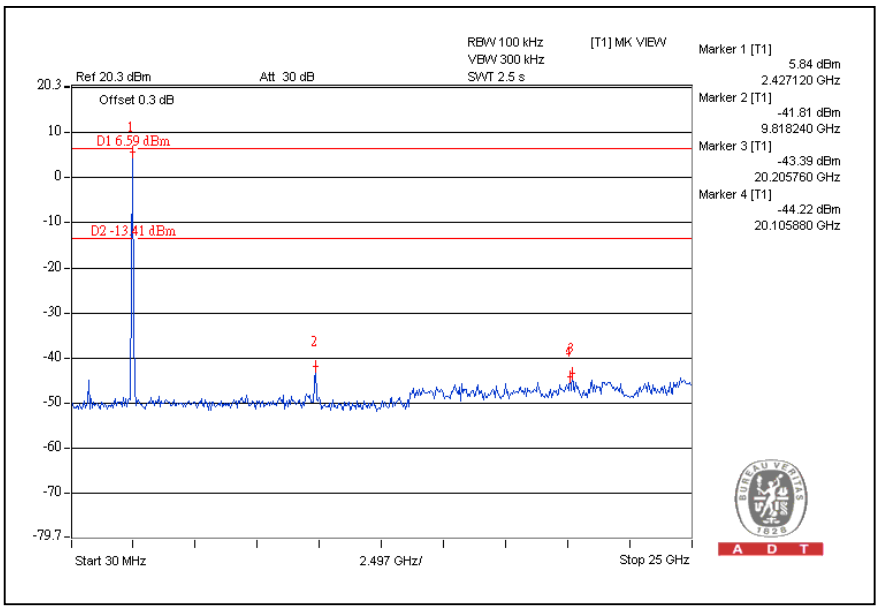
CH11



CH1

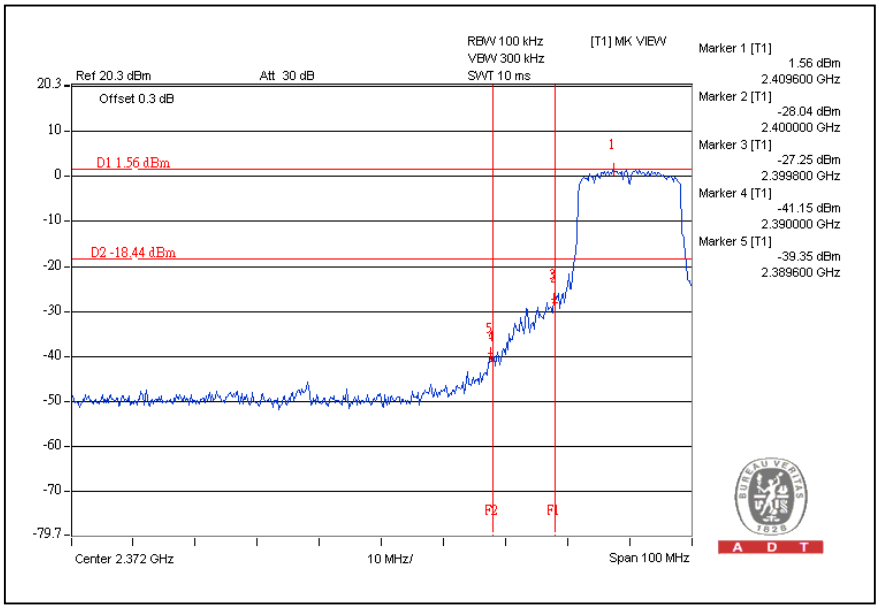

RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20.3 dBm
Att 30 dB
Offset 0.3 dB
D1 6.71 dBm
D2 -13.29 dBm
Marker 1 [T1]
5.09 dBm
2.377180 GHz
Marker 2 [T1]
-43.69 dBm
629.280000 MHz
Marker 3 [T1]
-43.79 dBm
21.404320 GHz
Marker 4 [T1]
-44.31 dBm
21.554140 GHz
20.3
10
0
-10
-20
-30
-40
-50
-60
-70
-79.7
Start 30 MHz
2.497 GHz/
Stop 25 GHz

CH11

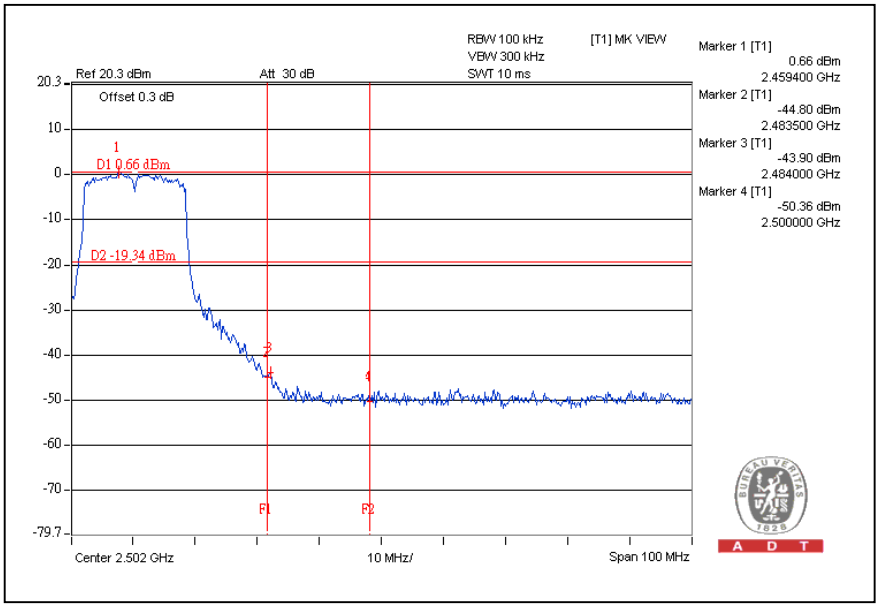

RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20.3 dBm
Att 30 dB
Offset 0.3 dB
D1 6.59 dBm
D2 -13.41 dBm
Marker 1 [T1]
5.84 dBm
2.427120 GHz
Marker 2 [T1]
-41.81 dBm
9.818240 GHz
Marker 3 [T1]
-43.39 dBm
20.205760 GHz
Marker 4 [T1]
-44.22 dBm
20.105880 GHz
20.3
10
0
-10
-20
-30
-40
-50
-60
-70
-79.7
Start 30 MHz
2.497 GHz/
Stop 25 GHz

802.11g OFDM MODULATION:

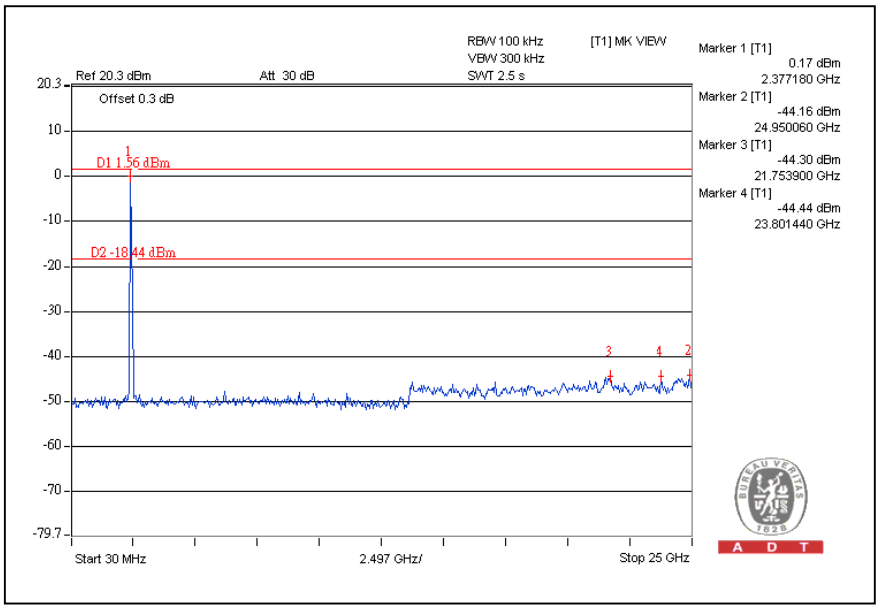
CH 1



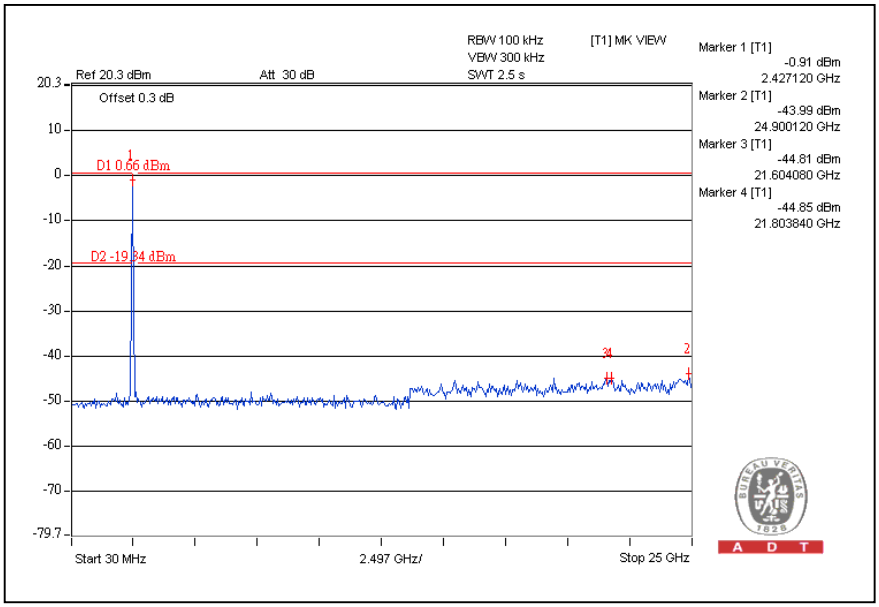
CH11



CH1

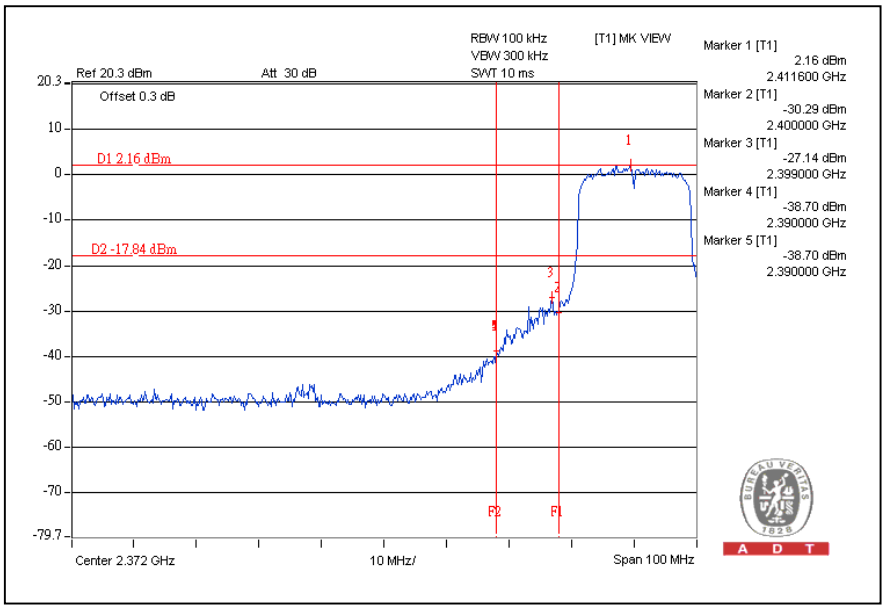

RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20.3 dBm
Att 30 dB
Offset 0.3 dB
D1 1.56 dBm
D2 -18.44 dBm
Marker 1 [T1]
0.17 dBm
2.377180 GHz
Marker 2 [T1]
-44.16 dBm
24.950060 GHz
Marker 3 [T1]
-44.30 dBm
21.753900 GHz
Marker 4 [T1]
-44.44 dBm
23.801440 GHz
20.3
10
0
-10
-20
-30
-40
-50
-60
-70
-79.7
Start 30 MHz
2.497 GHz/
Stop 25 GHz

CH11

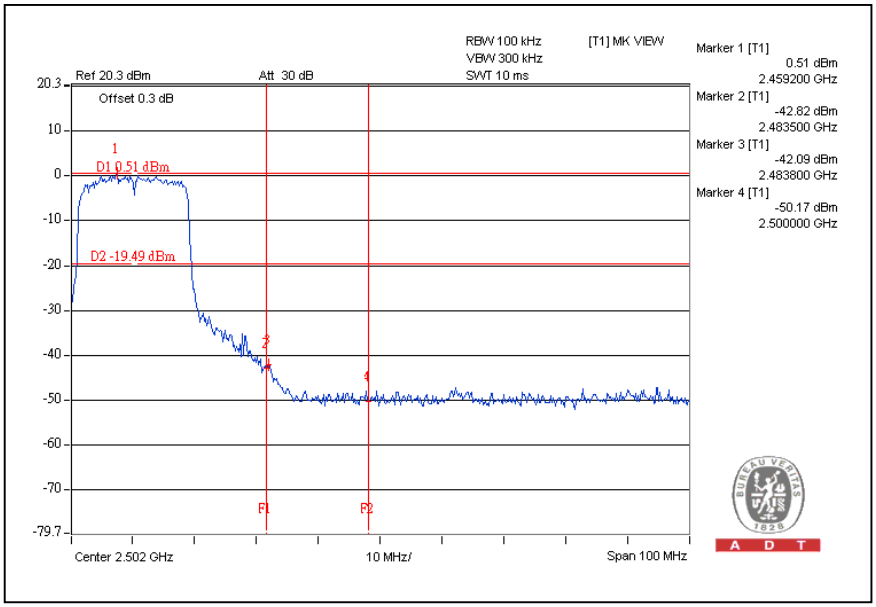

RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20.3 dBm
Att 30 dB
Offset 0.3 dB
D1 0.66 dBm
D2 -19.34 dBm
Marker 1 [T1]
-0.91 dBm
2.427120 GHz
Marker 2 [T1]
-43.99 dBm
24.900120 GHz
Marker 3 [T1]
-44.81 dBm
21.604080 GHz
Marker 4 [T1]
-44.85 dBm
21.803840 GHz
20.3
10
0
-10
-20
-30
-40
-50
-60
-70
-79.7
Start 30 MHz
2.497 GHz/
Stop 25 GHz

802.11n (20MHz) OFDM MODULATION:

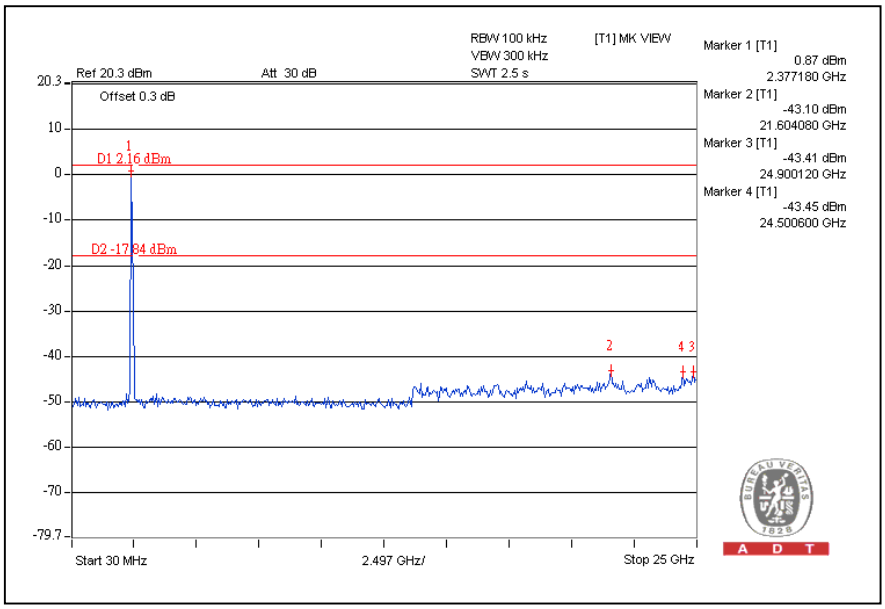
CH1



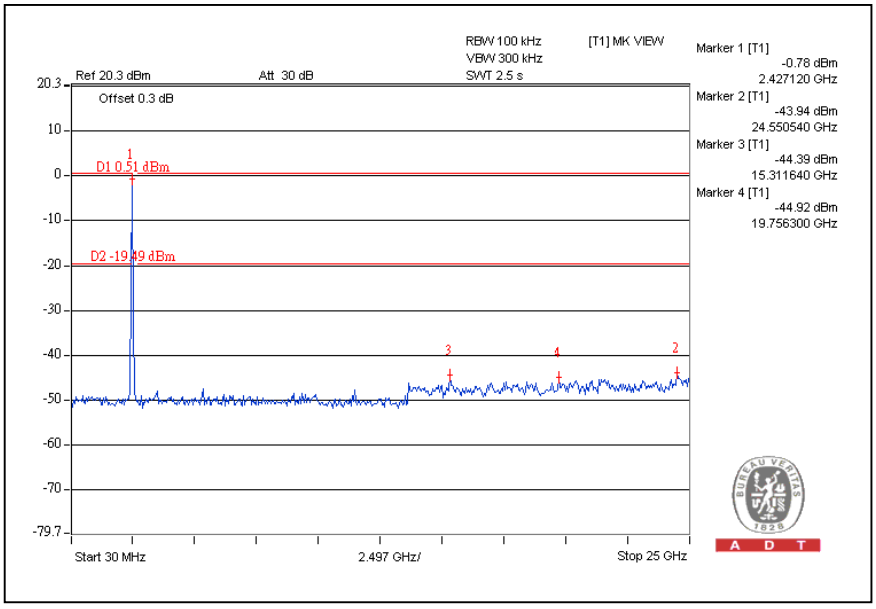
CH11



CH1

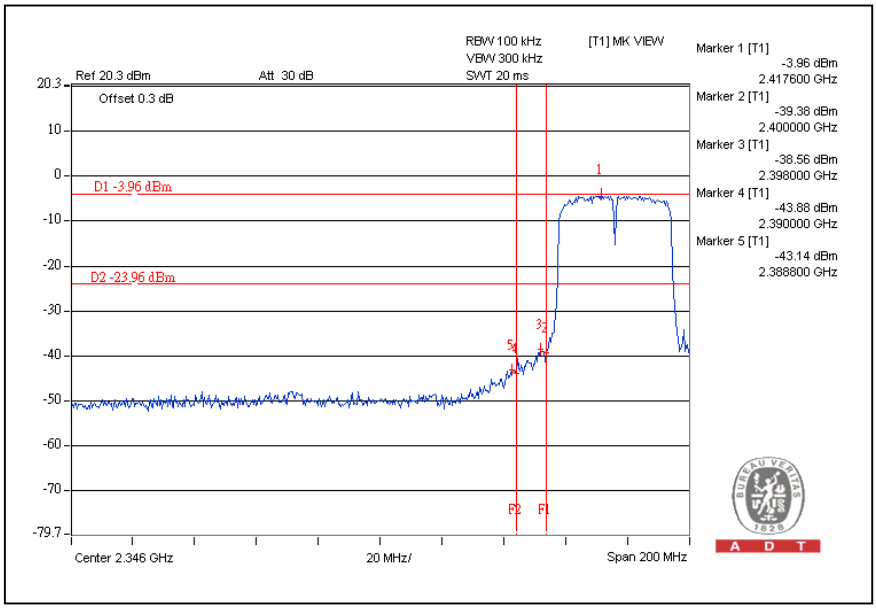

RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20.3 dBm
Att 30 dB
Offset 0.3 dB
D1 2.16 dBm
D2 -17.84 dBm
Marker 1 [T1]
0.87 dBm
2.377180 GHz
Marker 2 [T1]
-43.10 dBm
21.604080 GHz
Marker 3 [T1]
-43.41 dBm
24.900120 GHz
Marker 4 [T1]
-43.45 dBm
24.500600 GHz
20.3
10
0
-10
-20
-30
-40
-50
-60
-70
-79.7
Start 30 MHz
2.497 GHz/
Stop 25 GHz

CH11

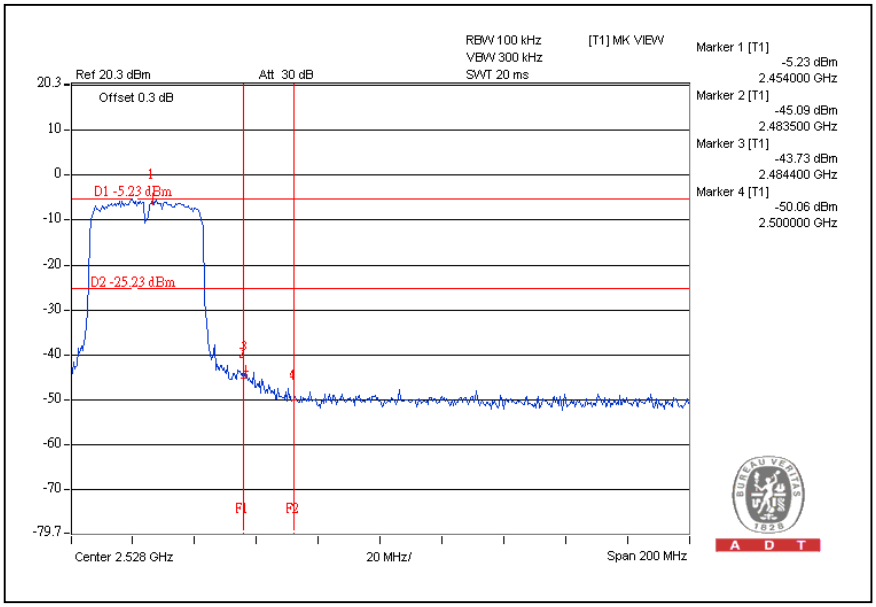

RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20.3 dBm
Att 30 dB
Offset 0.3 dB
D1 0.51 dBm
D2 -19.49 dBm
Marker 1 [T1]
-0.78 dBm
2.427120 GHz
Marker 2 [T1]
-43.94 dBm
24.550540 GHz
Marker 3 [T1]
-44.39 dBm
15.311640 GHz
Marker 4 [T1]
-44.92 dBm
19.756300 GHz
20.3
10
0
-10
-20
-30
-40
-50
-60
-70
-79.7
Start 30 MHz
2.497 GHz/
Stop 25 GHz

802.11n (40MHz) OFDM MODULATION:

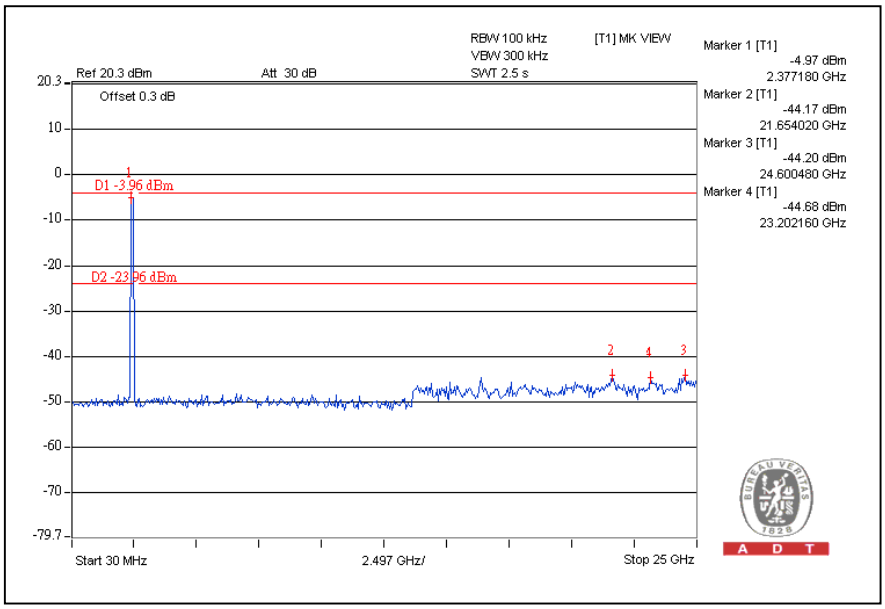
CH1



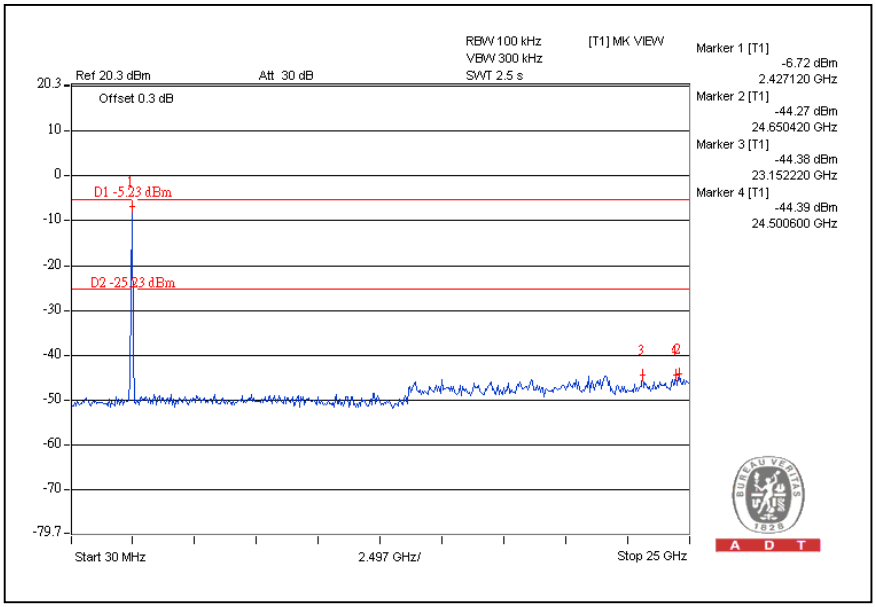
CH7



CH1


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Marker 1 [T1]
-4.97 dBm
2.377180 GHz
Marker 2 [T1]
-44.17 dBm
21.654020 GHz
Marker 3 [T1]
-44.20 dBm
24.600480 GHz
Marker 4 [T1]
-44.68 dBm
23.202160 GHz
Ref 20.3 dBm
Att 30 dB
Offset 0.3 dB
D1 -3.96 dBm
D2 -23.96 dBm
20.3
10
0
-10
-20
-30
-40
-50
-60
-70
-79.7
Start 30 MHz
2.497 GHz/
Stop 25 GHz

CH7


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Marker 1 [T1]
-6.72 dBm
2.427120 GHz
Marker 2 [T1]
-44.27 dBm
24.650420 GHz
Marker 3 [T1]
-44.38 dBm
23.152220 GHz
Marker 4 [T1]
-44.39 dBm
24.500600 GHz
Ref 20.3 dBm
Att 30 dB
Offset 0.3 dB
D1 -5.23 dBm
D2 -25.23 dBm
20.3
10
0
-10
-20
-30
-40
-50
-60
-70
-79.7
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

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 ---