FCC TEST REPORT

REPORT NO.: RF111031E02

MODEL NO.: RTL8723AE

FCC ID: TX2-RTL8723AE

RECEIVED: Oct. 31, 2011

TESTED: Nov. 10 to 17, 2011

ISSUED: Nov. 29, 2011

APPLICANT: Realtek Semiconductor Corp.

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ISSUED BY: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF111031E02	Original release	Nov. 29, 2011

1. CERTIFICATION

PRODUCT:	802.11b/g/n RTL8723AE Combo miniCard
BRAND NAME:	Realtek
MODEL NO.:	RTL8723AE
TEST SAMPLE:	ENGINEERING SAMPLE
TESTED:	Nov. 10 to 17, 2011
APPLICANT:	Realtek Semiconductor Corp.
STANDARDS:	FCC Part 15, Subpart C (Section 15.247) ANSI C63.4-2003 ANSI C63.10-2009

The above equipment (Model: RTL8723AE) 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 : Phoenix Huang , **DATE:** Nov. 29, 2011
(Phoenix Huang, Specialist)

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

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart C			
Standard Section	**Test Type and Limit**	**Result**	**Remark**
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -6.09dB at 0.189MHz
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 -1.2dB at 7311.00MHz.
15.247(e)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit.
15.247(d)	Conducted Out-Band Emission Measurement Limit: 20dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is 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)	2.19 dB
Radiated emissions (18GHz -40GHz)	2.56 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	802.11b/g/n RTL8723AE Combo miniCard
MODEL NO.	RTL8723AE
FCC ID	TX2-RTL8723AE
POWER SUPPLY	DC 3.3V from host equipment
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b: Up to 11Mbps 802.11g: Up to 54Mbps 802.11n (20MHz, 800ns GI): Up to 65Mbps 802.11n (20MHz, 400ns GI): Up to 72.2Mbps 802.11n (40MHz, 800ns GI): Up to 135Mbps 802.11n (40MHz, 400ns GI): Up to 150Mbps
FREQUENCY OPERATING	2412MHz ~ 2462MHz
NUMBER OF CHANNEL	11 for 802.11b, 802.11g, 802.11n (20MHz) 7 for 802.11n (40MHz)
MAXIMUM OUTPUT POWER	802.11b: 72.4mW 802.11g: 177.8mW 802.11n (20MHz): 190.5mW 802.11n (40MHz): 141.3mW
ANTENNA TYPE	Please see NOTE
DATA CABLE	NA
I/O PORTS	NA
ASSOCIATED DEVICES	NA

NOTE:

1. There are Bluetooth technology and WLAN technology used for the EUT. <the Bluetooth test data please refer " RF111031E02-1 " and the co-location test data refer “RF111031E02-2”>

2. The EUT has four different samples could be chosen and please refer the below table:

No.	miniCard type	Note
1	HMC module	Diversity
2	HMC module	Fixed
3	Stamp module	Diversity
4	Stamp module	Fixed

Above four samples were pre-tested in chamber, the worse case was found in **No.2**. Therefore only the test data of the model was recorded in this report.

3. The difference between HMC module and stamp module is in form factor, and some NC/reserved/AUX pins in HMC case were removed in stamp case.
4. Both of them are still indentical in PCIe interface cxcept pin numbers and form factor. The RF circuits for both are exactly the same, namely identical.
5. The HMC and Stamp will support different form factor for future application, and the form factor of Stamp module is defined by Realtek.
6. There are 172 sets of antennas provided to this EUT, please refer to the following table:

No.	Brand	Model	Antenna Type	Peak gain with cable loss	Cable Loss	Connector Type
1	JOYMAX	TWF-614XMPXX-500 (Main) TWF-614XMPXX-500 (Aux)	Dipole	3 3	NA	IPEX
2	LYNwave	ALA110-222050-150010 (Main) ALA110-222050-150010 (Aux)	PIFA	3.5 3.5	NA	IPEX
3	ACON	APP8P-700186 (Main) APP8P-700185 (Aux)	PIFA	1.84 0.07	0.81 1.12	IPEX, MHF, U.FL-L(P)
4	ACON	APP8P-700188 (Main) APP8P-700187 (Aux)	PIFA	1.84 0.07	0.81 1.12	IPEX, MHF, U.FL-L(P)
5	WHAYU	C435-520042-A (Main) C435-520045-A (Aux)	PIFA	1.91 1.88	1.11 1.85	Technova
6	WHAYU	C435-520044-A (Main) C435-520043-A (Aux)	PIFA	1.96 1.97	1.11 1.85	Technova

No.	Brand	Model	Antenna Type	Peak gain with cable loss	Cable Loss	Connector Type
7	WNC	25.90A1E.001 (Main) 25.90A1F.001 (Aux)	PIFA	1.89 -0.90	-1.85 -1.84	IPEX
8	YAGEO	25.90A1E.011 (Main) 25.90A1F.011 (Aux)	PIFA	1.94 1.78	1.95 2.04	U.FL
9	WNC	25.91370.021 (Main) 25.91371.021 (Aux)	PIFA	0.51 0.58	1.40 1.73	IPEX
10	YAGEO	25.91370.011 (Main) 25.91371.011 (Aux)	PIFA	1.06 0.16	1.36 2.00	U.FL
11	Quanta	DQ6GC200100 (Main) DQ6GC200200 (Aux)	PIFA	0.1 -0.4	NA	IPEX
12	Tyco	25.90A4C.021 (Main) 25.90A4D.021 (Aux)	PIFA	0.06 0.18	1.55 1.60	U.FL
13	WNC	25.90A4C.001 (Main) 25.90A4D.001 (Aux)	PIFA	1.52 -0.60	1.83 1.84	U.FL
14	YAGEO	25.90A4C.011 (Main) 25.90A4D.011 (Aux)	PIFA	0.93 -0.17	1.64 1.65	U.FL
15	ACON	25.90929.001 (Main) 25.90930.001 (Aux)	PIFA	-0.04 1.16	NA	IPEX, Hirose, U.FL-L(P)
16	Ethertronics Inc.	25.90934.001 (Main) 25.90935.001 (Aux)	PIFA	0.60 -0.59	NA	U.FL
17	WNC	25.90919.001 (Main) 25.90920.001 (Aux)	PIFA	0.87 -0.93	NA	IPEX
18	Tyco	25.90A2G.021 (Main) 25.90A2H.021 (Aux)	PIFA	-0.38 1.04	1.49 1.59	IPEX
19	WNC	25.90A2G.001 (Main) 25.90A2H.001 (Aux)	PIFA	1.23 0.29	1.65 1.74	IPEX
20	YAGEO	25.90A2G.011 (Main) 25.90A2H.011 (Aux)	PIFA	0.48 -1.37	1.50 1.60	U.FL
21	Amphenol	C-2238-11-000-26 (Main) C-2239-11-000-26 (Aux)	PIFA	-1.31 -3.09	0.92 1.08	U.FL
22	Amphenol	C-1952-11-000-26 (Main) C-1953-11-000-26 (Aux)	PIFA	0.35 -1.20	0.92 1.08	U.FL
23	Foxconn	WDAN-LFNZ3001-DH (Main) WDAN-LFNZ3002-DH (Aux)	PIFA Coupling Type Inverted F	1.14 0.61	1.03 1.12	IPEX

No.	Brand	Model	Antenna Type	Peak gain with cable loss	Cable Loss	Connector Type
24	Tyco	1556219-1 (Main) 1556220-1 (Aux)	PIFA	0.64 -0.92	1.24 1.98	IPEX
25	ACON	APP8P-700189 (Main) APP8P-700190 (Aux)	PIFA	2.00 0.13	1.36 1.98	IPEX, MHF, U.FL-L(P), Technova
26	ACON	APP8P-700191 (Main) APP8P-700192 (Aux)	PIFA	2.00 0.13	1.36 1.98	IPEX, MHF, U.FL-L(P), Technova
27	Tyco	1556216-1 (Main) 1556215-1 (Aux)	PIFA	0.64 -0.92	1.24 1.98	IPEX
28	Quanta	DQ6GC300100 (Main) DQ6GC300200 (Aux)	PIFA	-1.3 0.7	NA	IPEX
29	Amphenol	C-2381-11-000-26 (Main) C-2382-11-000-26 (Aux)	PIFA	-1.54 -2.93	1.09 1.28	U.FL
30	Foxconn	WDAN-LWSN3001-DH (Main) WDAN-LWSN3002-DH (Aux)	PIFA Coupling Type Inverted F	0.87 0.49	1.40 1.43	IPEX
31	WNC	25.90A1E.001 (Main) 25.90A1F.001 (Aux)	PIFA	1.94 -0.85	-1.85 -1.84	IPEX
32	Quanta	QADC FL8_WL_M (Main) QADC FL8_WL_A (Aux)	PIFA	0.1 -0.3	1.6 1.6	IPEX
33	YAGEO	25.90A4W.001 (Main) 25.90A4V.001 (Aux)	PIFA	0.07 -0.06	-1.25 -1.50	U.FL
34	FOXLINK	25.90A4W.011 (Main) 25.90A4V.011 (Aux)	PIFA	1.98 1.97	-1.39 -1.58	U.FL
35	Quanta	QADC PS3_WL_M (Main) QADC PS3_WL_A (Aux)	PIFA	-0.1 0.0	1.6 1.6	IPEX
36	Quanta	QADCFL3_WL_M (Main) QADCFL3_WL_A (Aux)	PIFA	-0.1 -0.1	NA	IPEX
37	Quanta	QADCGC5_WL_M (Main) QADCGC5_WL_A (Aux)	PIFA	0.4 -1.0	NA	IPEX
38	Quanta	DQ6GC200100 (Main) DQ6GC200200 (Aux)	PIFA	0.1 -0.4	NA	IPEX
39	Quanta	QADCGC6_WL_M (Main) QADCGC6_WL_A (Aux)	PIFA	0.7 1.2	NA	IPEX

No.	Brand	Model	Antenna Type	Peak gain with cable loss	Cable Loss	Connector Type
40	Quanta	QADCPS1_WL_M (Main) QADCPS1_WL_A (Aux)	PIFA	-0.5 -1.4	NA	IPEX
41	ACON	25.90700.001 (Main) 25.90702.001 (Aux)	PIFA	-1.21 1.27	NA	IPEX
42	ACON	25.90800.001 (Main) 25.90802.001 (Aux)	PIFA	1.37 1.21	NA	U.FL
43	Amphenol	C-1334-11-000-26 (Main) C-1335-11-000-26 (Aux)	PIFA	-0.37 -2.64	NA	U.FL
44	WNC	25.90979.001 (Main) 25.90980.001 (Aux)	PIFA	0.77 0.74	NA	IPEX
45	Mag.Layers	FPA-2423-25GC1-A1 PCA-2111-25GC1-A1	PIFA	1.77 2.17	NA	IPEX
46	WNC	WNC005 (Main) WNC005 (Aux)	PIFA	-2.76 -3.64	1.86 2.54	IPEX
47	WNC	WNC001 (Main) WNC001 (Aux)	PIFA	-1.10 1.76	1.17 1.17	IPEX
48	WNC	WNC001 (Main) WNC001 (Aux)	PIFA	0.31 -0.75	1.98 2.01	IPEX
49	Tyco Holdings (Bermuda) VII Ltd.	TBN003 (Main) TBN003 (Aux)	PIFA	-1.11 -1.11	1.84 2.16	I.P.X
50	WNC	WNC004 (Main) WNC004 (Aux)	PIFA	2.40 1.50	1.53 1.92	IPEX
51	WNC	WNC002 (Tx1) WNC002 (Tx2)	PIFA	1.18 1.75	2.28 2.12	IPEX
52	WNC	WNC003 (Main) WNC003 (Aux)	PIFA	0.52 1.07	1.49 2.13	IPEX
53	Hitachi Cable, Ltd	HFT40 (Tx1) HFT40 (Tx2)	PIFA	0.58 1.12	1.42 2.12	I-PEX-20278
54	Hitachi Cable, Ltd	HFT60 (Tx1) HFT60 (Tx2)	PIFA	-1.65 -0.92	1.48 2.18	I-PEX-20278
55	Hitachi Cable, Ltd	HBY07 (Tx1) HBY07 (Tx2)	PIFA	2.19 -0.33	0.95 0.95	I-PEX-20278
56	Hitachi Cable, Ltd	HBY051 (Tx1) HBY051 (Tx2)	PIFA	2.91 2.82	0.95 0.95	I-PEX-20278
57	Hitachi Cable, Ltd	HBY052 (Tx1) HBY052 (Tx2)	PIFA	0.27 0.02	0.95 0.95	I-PEX-20278
58	Hitachi Cable, Ltd	HBY061 (Tx1) HBY061 (Tx2)	PIFA	1.30 2.42	0.95 0.95	I-PEX-20278

No.	Brand	Model	Antenna Type	Peak gain with cable loss	Cable Loss	Connector Type
59	Hitachi Cable, Ltd	HBY062 (Tx1) HBY062 (Tx2)	PIFA	-1.04 -1.19	0.95 0.95	I-PEX-20278
60	Hitachi Cable, Ltd	HFT65 (Tx1) HFT65 (Tx2)	PIFA	-1.74 1.16	0.95 0.95	I-PEX-20278
61	Hitachi Cable, Ltd	HCT01 (Main) HCT01 (Aux)	PIFA	0.87 1.94	0.89 0.89	IPEX, HRS
62	FOXCONN	WDAN-TQ (Tx1) WDAN-TQ (Tx2)	PIFA	-0.43 -0.7	2.5 2.5	Foxconn SGX0001
63	ethertronics	5002011-1 (Tx1) 5002012-1 (Tx2)	PIFA	0.12 -3.87	NA	Technova
64	ethertronics	5002015-1 (Tx1) 5002016-1 (Tx2)	PIFA	0.76 0.59	NA	Technova
65	ethertronics	5010011-1 (Tx1) 5010012-1 (Tx2)	PIFA	-1.76 -2.61	NA	Technova
66	ethertronics	5010015-1 (Tx1) 5010016-1 (Tx2)	PIFA	-0.84 -2.07	NA	Technova
67	ACON	AMP6P (Tx1) AMP6P (Tx2)	PIFA	0.00 1.89	0.86 0.86	IPEX, Hirose, U.FL-L(P)
68	WNC	81.EJZ15.G52 (Main) 81.EJZ15.G52 (Aux)	PIFA	-1.08 -0.62	2.22 3.03	IPEX
69	WNC	81.EJT15.GJC (Main) 81.EJT15.GJC (Aux)	PIFA	-0.58 -1.26	2.20 3.01	IPEX
70	WNC	81.EJT15.GGW (Tx1) 81.EJT15.GGW (Tx2)	PIFA	0.21 0.77	2.40 3.25	IPEX
71	WNC	81.EJZ15.G53 (Tx1) 81.EJZ15.G53 (Tx2)	PIFA	-0.78 -2.14	2.45 3.24	IPEX
72	QUANTA	AN-070-G(R) AN-070-G(L)	PIFA	-0.7 -1.9	-2.1 -3	IPEX
73	QUANTA	AN-070-G(R) AN-070-G(L)	PIFA	-0.3 -1.9	-2.1 -3	IPEX
74	QUANTA	AN-120-F(R) AN-120-F(L)	PIFA	-0.4 -0.3	-2.1 -3	IPEX
75	QUANTA	AN-120-F(R) AN-120-F(L)	PIFA	-1.8 -4.4	-2.1 -3	IPEX
76	WHAYU	C435-520023-A (Main) C435-520024-A (Aux)	PIFA	1.74 1.56	1.73 2.43	TNOV
77	WNC	81.EJZ (Main) 81.EJZ (Aux)	PIFA	-0.67 -0.35	1.79 1.79	IPEX

No.	Brand	Model	Antenna Type	Peak gain with cable loss	Cable Loss	Connector Type
78	WNC	81.EJT (Main) 81.EJT (Aux)	PIFA	-0.40 -1.91	1.79 1.79	IPEX
79	JEM	IA-100193 (Main) IA-100194 (Aux)	PIFA	1.27 -1.27	1.56 2.36	IPEX
80	Tyco Holdings (Bermuda) VII Ltd. Taiwan Branch	TBN008 (Tx1) TBN008 (Tx2)	PIFA	-0.10 -0.92	1.85 2.66	Technova
81	Smart Approach Co., Ltd.	03-FR021-026 (Main) 03-FR021-026 (Aux)	PIFA	1.51 1.56	1.26 1.69	IPEX
82	Hitachi Cable	HBY17 (Tx1) HBY17 (Tx2)	PIFA	-0.36 0.97	0.99 0.99	IPEX
83	Hitachi Cable, Ltd	HFT60 (Tx1) HFT60 (Tx2)	PIFA	2.97 0.90	0.32 0.32	IPEX, HRS
84	Smart Approach Co., Ltd.	03-FR021-020 (Main) 03-FR021-020 (Aux)	PIFA	1.66 1.83	1.27 1.28	IPEX
85	WHAYU INDUSTRIAL CO.,LTD	MSA-00005A (Main) MSA-00005A (Aux)	PIFA	-2.12 -2.49	-1.55 -2.16	Tnov
86	Tyco	TBN008 (Tx1) TBN008 (Tx2)	PIFA	-2.60 -0.26	2.34 2.13	IPEX
87	Tyco	TBN007 (Tx1) TBN007 (Tx2)	PIFA	1.98 1.97	-0.97 -0.97	U.FL
88	Tyco Electronics Japan G.K.	TBN009 (Tx1) TBN009 (Tx2)	PIFA	0.22 0.33	0.96 0.95	U.FL
89	Tyco Electronics Japan G.K.	TBN010 (Tx1) TBN010 (Tx2)	PIFA	1.68 1.45	0.96 0.95	U.FL
90	Smart Approach.Co.,Ltd	03-FR021-016 (Tx1) 03-FR021-016 (Tx2)	PIFA	2.32 0.49	1.03 1.11	IPX
91	Foxconn	WDAN-T1WM (Tx1) WDAN-T1WM (Tx2)	PIFA	1.47 1.38	0.909 0.909	IPEX
92	Foxconn	WDAN-T1AM1001-DH (Tx1) WDAN-T1AM1002-DH (Tx2)	PIFA	2.58 1.39	0.909 0.909	Foxconn SGX0008-01

No.	Brand	Model	Antenna Type	Peak gain with cable loss	Cable Loss	Connector Type
93	WNC	WNC003 (Main) WNC003 (Aux)	PIFA	-0.10 2.30	1.22 1.48	RF
94	TE Connectivity	1556465-1 TBN003 (Tx1) 1556466-1 TBN003 (Tx2)	PIFA	-0.23 -0.49	1.52 1.64	MI-113
95	ACON	APP8P-700341 (Main) APP8P-700342 (Aux)	PIFA	1.10 1.99	1.03 1.21	IPEX, MHF, U.FL-L(P)
96	Smart Approach	SE-ECLA1-001 (Main) SE-ECLA1-002 (Aux)	PIFA	2.53 2.92	1.20 1.39	IPX
97	WNC	81.EK515.G13 (Main) 81.EK515.G14 (Aux)	PIFA	0.30 0.39	1.96 2.67	IPEX
98	Favortron CO.,LTD (FVC)	N01001205001 (Tx1) N01001206001 (Tx2)	PIFA	2.81 1.97	-2.52 -2.13	IPEX
99	Favortron CO.,LTD (FVC)	W270HUQ-WiMAX-1 W270HUQ-WiMAX-2	PIFA	2.85 1.87	NA	I-PEX
100	Favortron CO.,LTD (FVC)	N01001193001 (Tx1) N01001193001 (Tx2)	PIFA	2.97 0.9	-2.13 -2.13	IPEX
101	Favortron CO.,LTD (FVC)	N01001199001 (Tx1) N01001199001 (Tx2)	PIFA	2.73 2.87	-2.61 -2.65	IPEX
102	Well Green	SKW24WMPB01+A (Tx1) SKW24WMPB01+A (Tx2)	PIFA	-1.63 -0.99	1.62 1.79	IPEX
103	Favortron CO.,LTD (FVC)	N01001218001 (Tx1) N01001218001 (Tx2)	PIFA	2.53 2.28	-1.93 -1.93	IPEX
104	Well Green	SKM11WMPB03+A (Tx1) SKM11WMPB02+D (Tx2)	PIFA	-1.84 -2.93	1.17 0.89	IPEX
105	Favortron CO.,LTD (FVC)	E5120-WiMAX-1 E5120-WiMAX-2	PIFA	2.7 2.19	NA	IPEX
106	Favortron CO.,LTD (FVC)	B5100-WiMAX-1 B5100-WiMAX-2	PIFA	1.58 1.75	NA	IPEX
107	Well Green	SKW31WMPB01+A (Tx1) SKW31WMPB01+A (Tx2)	PIFA	-1.07 -0.64	-1.39 -1.53	IPEX
108	WhaYu	C680-520279-A (Tx1) C680-520279-A (Tx2)	PIFA	1.09 -0.55	0.72 1.89	FAF
109	WhaYu	C680-520278-A (Tx1) C680-520277-A (Tx2)	PIFA	1.92 -1.03	0.64 1.72	FAF
110	Wellshine	DQ67KJQUT35 (Tx1) DQ67KJQUT36 (Tx2)	PIFA	2.03 0.05	1.00 1.80	IPEX
111	ZTX	ZTX-A162-Q18000-00 (Tx1) ZTX-A162-Q18000-00 (Tx2)	PIFA	2.014 1.742	NA	IPEX

No.	Brand	Model	Antenna Type	Peak gain with cable loss	Cable Loss	Connector Type
112	Well Green	SK81WMPB01+A (Tx1) SK81WMPB02+A (Tx2)	PIFA	1.79 0.66	-1.88 -2.95	IPEX
113	Wellshine	DQ67KJQUT33 (Tx1) DQ67KJQUT33 (Tx2)	PIFA	1.17 -0.06	0.77 1.90	IPEX
114	Tyco Holding (Bermuda) VII Ltd.	TBN001 (Main) TBN001 (Aux)	PIFA	3.45 2.41	1.45 2.13	I.P.X
115	tyco	TBN005 TBN006	PIFA	2.09 3.40	NA	IPEX
116	Tyco Electronic AMPKK	TBN004 (Main) TBN004 (Aux)	PIFA	0.28 -0.83	0.98 0.98	U.FL
117	Hitachi	HFS23	PIFA	-0.8	0.89	IPEX or HRS
118	Hitachi	HFS40	PIFA	0.64	0.89	IPEX or HRS
119	Quanta	AS-070-F (Tx1) AS-070-F (Tx2)	PIFA	-0.5 -1.9	-1.6 -3	IPEX
120	ACON	DQ60APM6P02(APM6P-700091) (Main) DQ60APM6P02(APM6P-700091) (Aux)	PIFA	-0.7 -0.29	1.81 2.52	IPX, Hirose, Technova, MHF
121	ACON	DQ60APM6P03(APM6P-700092) (Main) DQ60APM6P03(APM6P-700092) (Aux)	PIFA	-0.6 -1.02	2.02 2.73	IPX, Hirose, Technova, MHF
122	Quanta Computer Inc	37LX6AATP00 (Tx1) 37LX6AATP00 (Tx2)	PIFA	1.8 -0.3	-1.40 -2.02	I-PEX
123	Quanta Computer Inc	37LX7AATP00 (Tx1) 37LX7AATP00 (Tx2)	PIFA	0.3 1.7	-1.44 -1.79	I-PEX
124	Quanta Computer Inc	3ASP8AATP20 (Tx1) 3ASP8AATP20 (Tx2)	PIFA	1.0 0.2	-1.36 -1.95	SPD
125	Quanta Computer Inc	35AX6AATP10 (Tx1) 35AX6AATP10 (Tx2)	PIFA	0.7 -1.4	-1.28 -1.96	SGX
126	Foxconn	WDAN-HMCH1401-DH/79010T000-600-G (Tx1) WDAN-HMCH1402-DH/79010SY00-600-G (Tx2)	PIFA	-0.99 -0.09	1.05 1.82	IPEX

No.	Brand	Model	Antenna Type	Peak gain with cable loss	Cable Loss	Connector Type
127	Yageo	CAN43130WIFO04921/79010SQ00-011-G (Tx1) CAN43130WIFO04922/79010SR00-011-G (Tx2)	PIFA	0.23 1.53	1.08 1.88	Hirose, U.FL-LP, IPEX, MHF
128	WHAYU	C107-520757-A/79010T100-12S-G (Tx1) C107-520756-A/79010SS00-12S-G (Tx2)	PIFA	-0.18 2.58	1.30 1.30	IPEX
129	Foxconn	WDAN-HMCH1501-DH/79010SW00-600-G (Tx1) WDAN-HMCH1502-DH/79010SV00-600-G (Tx2)	PIFA	-0.35 0.38	1.22 2.03	IPEX
130	ACON	AMP8P-700186 (Main) AMP8P-700187 (Aux)	PIFA	1.96 1.91	1.58 2.29	IPEX, U.FL, MHF
131	Amphenol	FL5202-11-001-C (Tx1) FL5202-11-001-C (Tx2)	PIFA	-1.41 -0.77	1.38 1.88	U.FL
132	Amphenol	IV5233-15-003-C (Tx1) IV5233-15-002-C (Tx2)	PIFA	0.54 -0.53	1.56 2.37	GBE
133	Amphenol	IV5218-11-002-C (Tx1) IV5218-11-001-C (Tx2)	PIFA	0.55 0.31	1.36 2.23	U.FL
134	Amphenol	FX5170-15-004-C (Tx1) FX5170-15-001-C (Tx2)	PIFA	0.76 -2.11	0.80 1.62	IPEX, Technova
135	HON HAI	WDAN-HMEDW005-DH (Tx1) WDAN-HMEDW005-DH (Rx2)	PIFA	-1.85 1.33	0.67 1.34	IPEX
136	WNC	6036B0086802 (Tx1) 6036B0087102 (Tx2)	PIFA	-1.30 -0.49	1.09 1.36	U.FL
137	WNC	6036B0088203 (Main) 6036B0088303 (Aux)	PIFA	0.50 0.12	1.83 2.25	U.FL
138	WNC	6036B0088203 (Main) 6036B0088303 (Aux)	PIFA	1.21 -0.07	1.83 2.25	U.FL
139	WNC	6036B0087303 (Main) 6036B0087203 (Aux)	PIFA	2.34 1.28	1.76 2.45	U.FL
140	WNC	6036B0091201 (Main) 6036B0091401 (Aux)	PIFA	-1.11 -0.95	1.85 2.71	U.FL
141	YAGEO	CAN43130LIIN03863 (Tx1) CAN43130LIIN03864 (Tx2)	PIFA	-2.69 -1.09	1.04 1.78	Technova
142	YAGEO	6036B0091202 (Tx1) 6036B0091402 (Tx2)	PIFA	0.80 0.25	1.30 1.98	Technova
143	YAGEO	CAN43130LIIN03841 (Tx1) CAN43130LIIN03842 (Tx2)	PIFA	1.46 0.95	1.22 2.03	Technova
144	YAGEO	6036B0088401 (Tx1) 6036B0088501 (Tx2)	PIFA	0.61 0.71	1.90 2.40	Technova
145	ACON	APM8P-700018 (Tx1) APM8P-700019 (Tx2)	PIFA	2.66 2.27	1.72 2.53	IPEX, MHF, U.FL-LP

No.	Brand	Model	Antenna Type	Peak gain with cable loss	Cable Loss	Connector Type
146	WNC	81.EK515.G15 (Main) 81.EK515.G16 (Aux)	PIFA	2.36 1.13	1.94 2.76	IPEX
147	ACON	APM8P-700016 (Main) APM8P-700017 (Aux)	PIFA	2.79 0.74	1.48 2.09	IPEX, MHF, U.FL-LP
148	NISSEI ELECTRIC CO., LTD	3209970 (Rx) 3210002 (Tx)	PIFA	1.88 1.26	NA	U.FL
149	ACON	25.90598.001 (Rx) 25.90597.001 (Tx)	PIFA	1.17 1.04	NA	I-PEX
150	WNC	25.90587.001 (Rx) 25.90586.001 (Tx)	PIFA	1.94 0.59	NA	I-PEX
151	ACON	25.90653.001 (Rx) 25.90654.001 (Tx)	PIFA	-0.42 -0.13	NA	I-PEX
152	WNC	25.90649.001 (Rx) 25.90650.001 (Tx)	PIFA	-0.52 0.31	NA	I-PEX
153	Foxconn	024-01F0-2242 (Rx) 024-01F0-2243 (Tx)	PIFA	1.16 -0.88	NA	SGX0003-02
154	NISSEI ELECTRIC CO., LTD	3176658 (Rx) 3176674 (Tx)	PIFA	-0.83 -0.61	NA	U.FL
155	Foxconn	WDAN-L1WK1001-DF (Rx) WDAN-L1WK1002-DF (Tx)	PIFA	1.71 1.43	NA	FOXCONN
156	Hitachi	HMT14-MAIN (Rx) HMT14-AUX (Tx)	PIFA	1.82 1.54	NA	U.FL
157	ACON	25.90700.001 (Rx) 25.90702.001 (Tx)	PIFA	-1.21 1.27	NA	I-PEX
158	ACON	25.90800.001 (Rx) 25.90802.001 (Tx)	PIFA	1.37 1.21	NA	U.FL
159	ACON	APM6P-700033 (Rx) APM6P-700034 (Tx)	PIFA	-0.96 -0.86	NA	I-PEX
160	Amphenol Taiwan Corporation	14G152168231LV (Rx) 14G152168131LV (Tx)	PIFA	-1.85 -1.60	NA	I-PEX
161	ACON	APM6P-700027 (Rx) APM6P-700029 (Tx)	PIFA	-1.32 -0.23	NA	I-PEX
162	TYCO	2023940-1 (Rx) 2023944-1 (Tx)	PIFA	-2.39 1.52	NA	U.FL
163	ACON	APM6P-700028 (Rx) APM6P-700030 (Tx)	PIFA	-1.16 -0.74	NA	I-PEX
164	Tyco Holding (Bermuda) VII Ltd.	2023946-1 (Rx) 2023950-1 (Tx)	PIFA	-0.58 -0.11	NA	U.FL

No.	Brand	Model	Antenna Type	Peak gain with cable loss	Cable Loss	Connector Type
165	Amphenol SAA	LX-0980-11-000-R (Rx) LX-0983-11-000-R (Tx)	PIFA	1.61 1.57	NA	20351-111 R-37
166	NISSEI ELECTRIC CO., LTD	3172525 (Rx) 3172566 (Tx)	PIFA	1.35 1.99	NA	U.FL
167	Amphenol	LX0970-11-000-R (Rx) LX0968-11-000-R (Tx)	PIFA	1.47 1.68	NA	U.FL
168	FOXCONN	WDAN-L1ML3001-DF (Rx) WDAN-L1ML3002-DF (Tx)	PIFA	-0.40 1.10	NA	SGX0003-02
169	NISSEI ELECTRIC CO., LTD	3172467 (Rx) 3172509 (Tx)	PIFA	0.54 1.80	NA	U.FL
170	ACON	25.90675.001 (Rx) 25.90676.001 (Tx)	PIFA	-0.39 0.64	NA	U.FL
171	WNC	25.90669.001 (Rx) 25.90670.001 (Tx)	PIFA	-1.53 1.32	NA	I-PEX
172	ACON	AWP6P (Main) AWP6P (Aux)	PIFA	-0.19 -0.99	0.85 0.85	I-PEX, Hirose, U.FL-L(P)

From the above antennas, the worst case was found in No. 1 & 2. Therefore only the test data of the modes were recorded in this report individually.

7. The PIFA antenna was pre-tested under the following test modes for three different axes placements:

Test Mode	Description
Mode A	**X plane**
Mode B	Y plane
Mode C	Z plane

From the above modes, the worst emission level was found in Mode A. Therefore only the test data of the modes were recorded in this report individually.

8. The EUT is 1 * 1 spatial SISO (1Tx & 1Rx) without beam forming function.

9. When the EUT operating in 802.11n, the software operation, which is defined by manufacturer, MCS (Modulation and Coding Schemes) from 0 to 7

10. The above EUT information was declared by the manufacturer and for more detailed feature descriptions, 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	
1	-	√	√	-	-	Dipole Antenna
2	√	√	√	√	√	PIFA Antenna

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

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)	PLANE
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)	PLANE
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	

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

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

※ TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
PLC	28deg. C, 64%RH,	120Vac, 60Hz	Kent Liu
RE≥1G	20deg. C, 67%RH	120Vac, 60Hz	Evan Huang
RE<1G	18deg. C, 70%RH	120Vac, 60Hz	Kent Liu
APCM	25deg. C, 60%RH	120Vac, 60Hz	Rex Huang
OB	25deg. C, 60%RH	120Vac, 60Hz	Rex Huang

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart C. (15.247)
ANSI C63.4-2003
ANSI C63.10-2009

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

NOTE: The EUT has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

3.4 DESCRIPTION OF SUPPORT UNITS

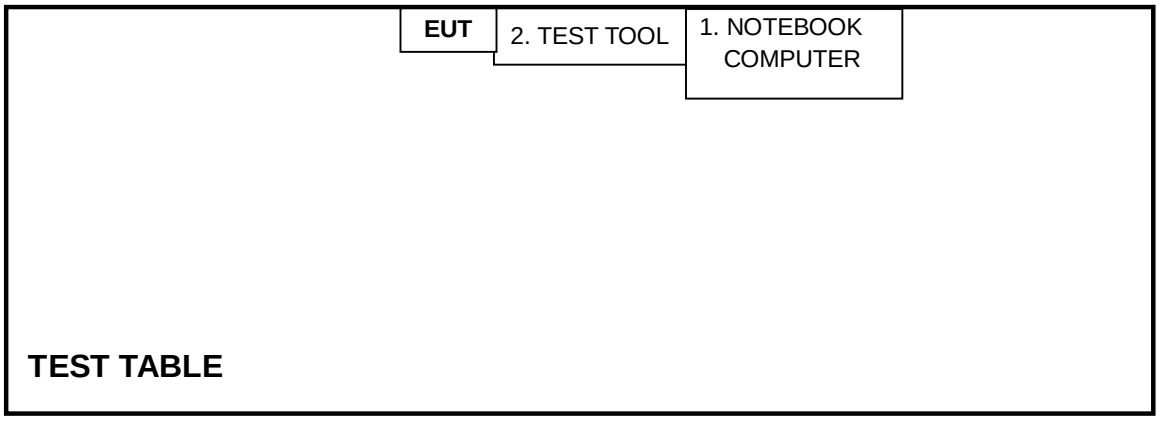
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP19L	CN-OHC416-70166-5CA-0448	PIW632500516610
2	TEST TOOL	Realtek	NA	NA	NA

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

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

3.5 CONFIGURATION OF SYSTEM UNDER TEST



4.TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

4.1.2 TEST INSTRUMENTS

Test date: Nov. 22, 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)	NSLK8127	8127-522	Sep. 07, 2011	Sep. 06, 2012
Line-Impedance Stabilization Network (for Peripheral)	ESH3-Z5	848773/004	Nov. 01, 2011	Oct. 31, 2012
RF Cable (JYEBAO)	5DFB	COCCAB-002	Aug. 29, 2011	Aug. 28, 2012
50 ohms Terminator	50	3	Nov. 02, 2011	Nov. 01, 2012
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.

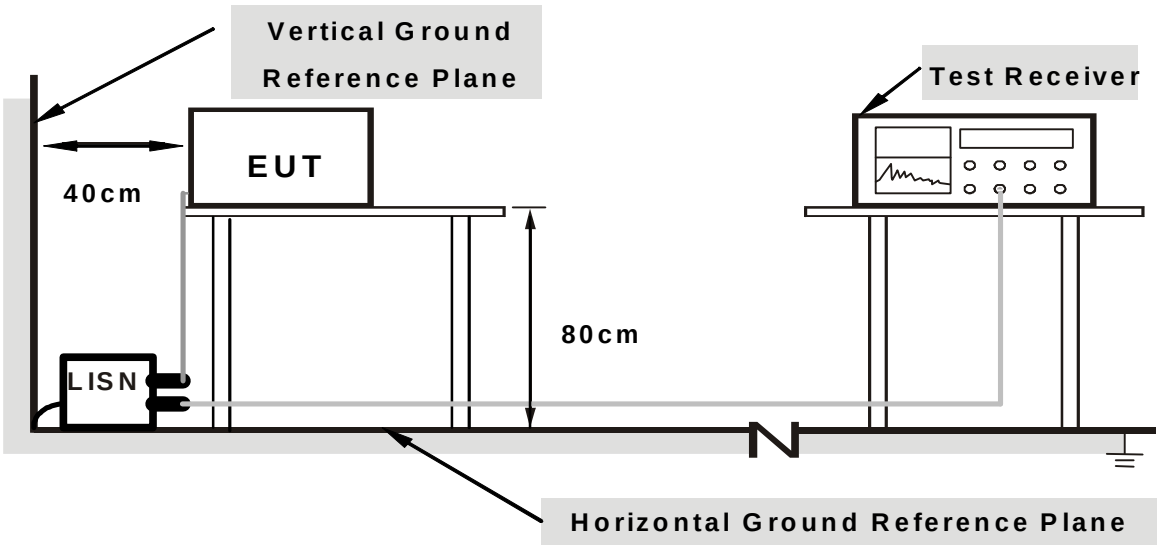
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

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

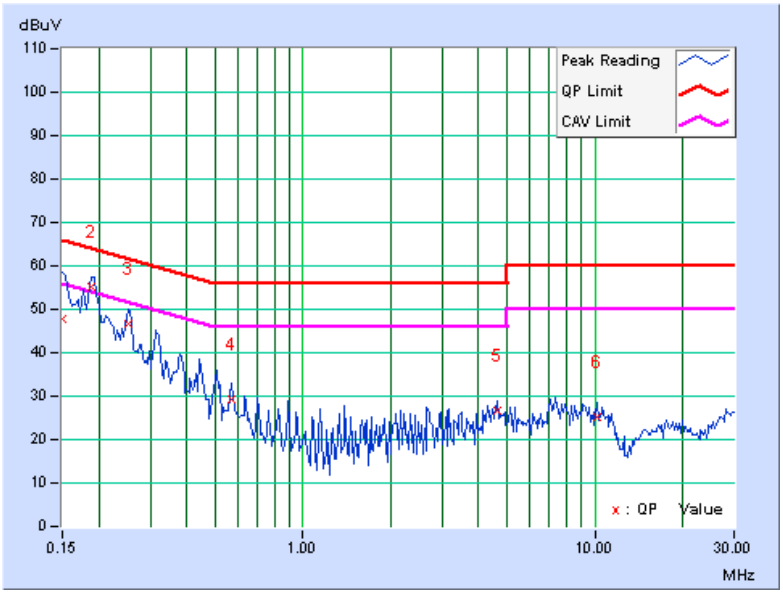
1. Connect the EUT with the support unit 1 (Notebook Computer) which is placed on a testing table.
2. The communication partner run test program “setup.exe” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

4.1.7 TEST RESULTS

PHASE	Line (L)	6dB BANDWIDTH	9 kHz

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.09	47.64	21.94	47.73	22.03	66.00	56.00	-18.27	-33.97
2	**0.189**	**0.10**	**55.16**	**47.89**	**55.26**	**47.99**	**64.08**	**54.08**	**-8.82**	**-6.09**
3	0.252	0.10	46.47	39.51	46.57	39.61	61.71	51.71	-15.13	-12.09
4	0.568	0.12	29.01	25.43	29.13	25.55	56.00	46.00	-26.87	-20.45
5	4.633	0.34	26.21	18.65	26.55	18.99	56.00	46.00	-29.45	-27.01
6	10.152	0.55	24.62	19.46	25.17	20.01	60.00	50.00	-34.83	-29.99

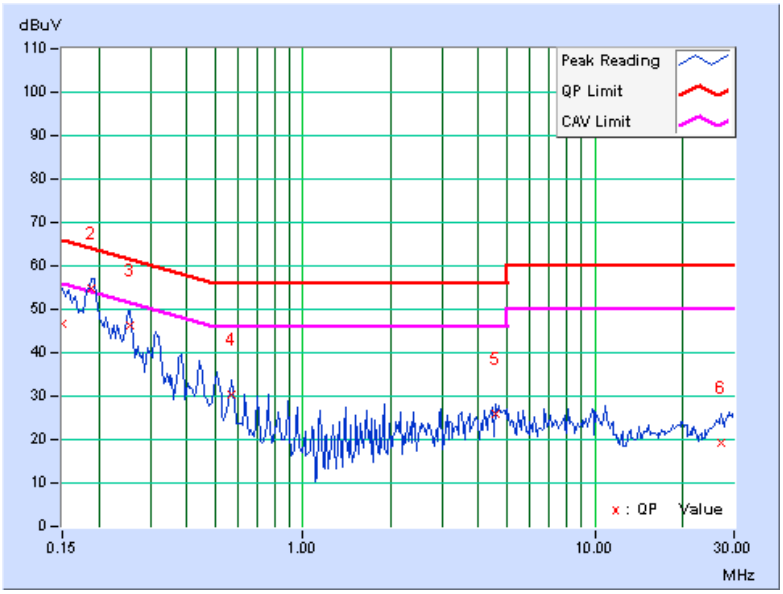
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading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



PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.07	46.77	21.43	46.84	21.50	66.00	56.00	-19.16	-34.50
2	0.189	0.09	54.78	47.43	54.87	47.52	64.08	54.08	-9.21	-6.56
3	0.255	0.10	46.17	38.69	46.27	38.79	61.58	51.58	-15.31	-12.79
4	0.572	0.12	30.08	26.27	30.20	26.39	56.00	46.00	-25.80	-19.61
5	4.566	0.26	25.68	21.01	25.94	21.27	56.00	46.00	-30.06	-24.73
6	27.262	0.83	18.30	13.53	19.13	14.36	60.00	50.00	-40.87	-35.64

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 dipole antenna blow 1GHz (Test date: Nov. 10, 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
SPACEK LABS	SLKKa-48-6	9K16	Nov. 16, 2010	Nov. 15, 2011
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. 07, 2011	Oct. 06, 2012
RF CABLE	NA	RF104-201 RF104-203 RF104-204	Dec. 27, 2010	Dec. 26, 2011
RF Cable	NA	CHGCAB_001	Oct. 07, 2011	Oct. 06, 2012
Software	ADT_Radiated_ V8.7.05	NA	NA	NA
CT Antenna Tower & Turn Table	NA	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna, preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in 966 Chamber No. 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 Other test: (Test date: Nov. 16 to 17, 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. 15, 2011	Nov. 14, 2012
Agilent Pre-Amplifier	8449B	3008A02578	July 04, 2011	July 03, 2012
SPACEK LABS	SLKKa-48-6	9K16	Nov. 15, 2011	Nov. 14, 2012
SCHWARZBECK Trilog Broadband Antenna	VULB 9168	9168-360	Apr. 14, 2011	Apr. 13, 2012
AISI Horn_Antenna	AIH.8018	0000320091110	Nov. 14, 2011	Nov. 13, 2012
SCHWARZBECK Horn_Antenna	BBHA 9170	9170-424	Oct. 07, 2011	Oct. 06, 2012
RF CABLE	NA	RF104-201 RF104-203 RF104-204	Dec. 27, 2010	Dec. 26, 2011
RF Cable	NA	CHGCAB_001	Oct. 07, 2011	Oct. 06, 2012
Software	ADT_Radiated_ V8.7.05	NA	NA	NA
CT Antenna Tower & Turn Table	NA	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna, preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in 966 Chamber No. 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.

4.2.3 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters chamber room 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.

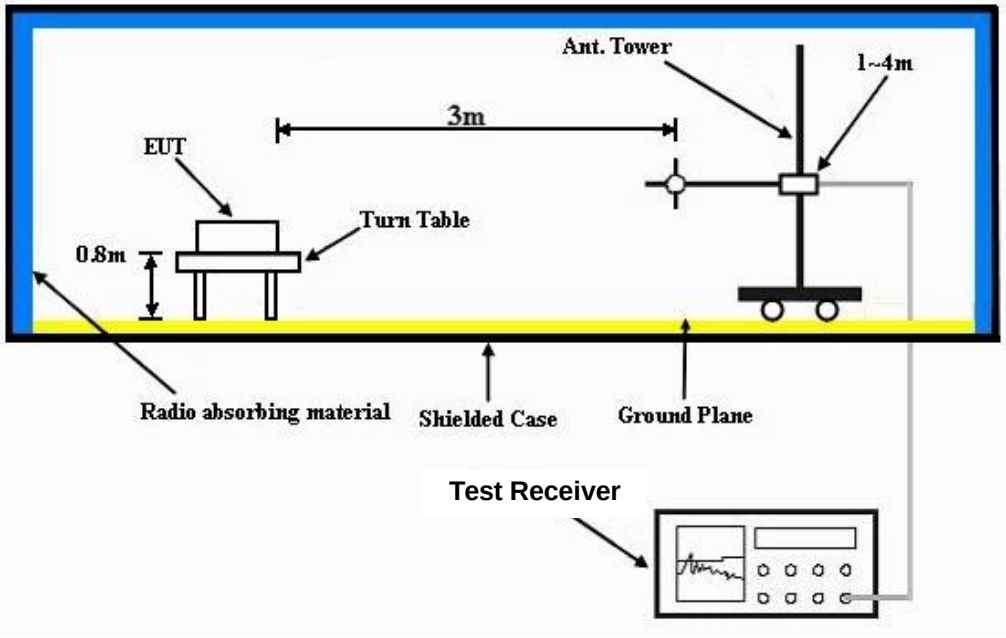
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP



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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6

4.2.7 TEST RESULTS (DIPOLE ANTENNA)

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 / 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	18deg. C, 70%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	168.20	36.1 QP	43.5	-7.4	1.75 H	196	22.03	14.06
2	399.83	38.4 QP	46.0	-7.6	1.00 H	360	20.47	17.93
3	560.06	40.8 QP	46.0	-5.2	1.50 H	243	19.11	21.70
4	699.80	38.4 QP	46.0	-7.6	1.25 H	44	15.35	23.05
5	796.19	38.8 QP	46.0	-7.2	1.00 H	144	13.04	25.76
6	895.67	38.5 QP	46.0	-7.5	1.50 H	264	11.20	27.30
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	36.75	35.4 QP	40.0	-4.6	1.00 V	203	21.78	13.60
2	168.20	31.1 QP	43.5	-12.4	2.00 V	303	17.02	14.06
3	399.95	39.8 QP	46.0	-6.3	1.25 V	338	21.82	17.93
4	499.78	44.1 QP	46.0	-1.9	1.00 V	104	23.78	20.30
5	560.06	40.4 QP	46.0	-5.6	1.00 V	360	18.67	21.70
6	799.98	41.9 QP	46.0	-4.1	1.25 V	228	16.02	25.87

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 / 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 67%RH	TESTED BY	Evan Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2386.90	56.2 PK	74.0	-17.8	1.00 H	112	24.46	31.74
2	2386.90	44.4 AV	54.0	-9.6	1.00 H	112	12.66	31.74
3	*2412.00	101.0 PK			1.00 H	112	69.18	31.82
4	*2412.00	98.9 AV			1.00 H	112	67.08	31.82
5	4824.00	49.9 PK	74.0	-24.1	1.36 H	78	10.54	39.36
6	4824.00	41.9 AV	54.0	-12.1	1.36 H	78	2.54	39.36
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	2386.30	58.2 PK	74.0	-15.8	1.36 V	289	26.46	31.74
2	2386.30	48.8 AV	54.0	-5.2	1.36 V	289	17.06	31.74
3	*2412.00	108.4 PK			1.36 V	290	76.58	31.82
4	*2412.00	106.5 AV			1.36 V	290	74.68	31.82
5	4824.00	54.4 PK	74.0	-19.6	1.25 V	261	15.04	39.36
6	4824.00	50.4 AV	54.0	-3.6	1.25 V	261	11.04	39.36

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 / 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 67%RH	TESTED BY	Evan Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	100.3 PK			1.03 H	106	68.38	31.92
2	*2437.00	98.5 AV			1.03 H	106	66.58	31.92
3	4874.00	53.2 PK	74.0	-20.8	1.02 H	80	13.70	39.50
4	4874.00	45.9 AV	54.0	-8.1	1.02 H	80	6.40	39.50
5	7311.00	55.1 PK	74.0	-18.9	1.11 H	249	8.22	46.88
6	7311.00	44.9 AV	54.0	-9.1	1.11 H	249	-1.98	46.88
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	109.3 PK			1.35 V	288	77.38	31.92
2	*2437.00	107.3 AV			1.35 V	288	75.38	31.92
3	4874.00	50.3 PK	74.0	-23.7	1.00 V	126	10.80	39.50
4	4874.00	43.3 AV	54.0	-10.7	1.00 V	126	3.80	39.50
5	7311.00	59.8 PK	74.0	-14.2	1.64 V	86	12.92	46.88
6	7311.00	52.5 AV	54.0	-1.5	1.64 V	86	5.62	46.88

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 / 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 67%RH	TESTED BY	Evan Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	100.3 PK			1.00 H	114	68.29	32.01
2	*2462.00	98.3 AV			1.00 H	114	66.29	32.01
3	2485.60	56.7 PK	74.0	-17.3	1.00 H	114	24.60	32.10
4	2485.60	43.8 AV	54.0	-10.2	1.00 H	114	11.70	32.10
5	4924.00	53.3 PK	74.0	-20.7	1.05 H	88	13.63	39.67
6	4924.00	46.1 AV	54.0	-7.9	1.05 H	88	6.43	39.67
7	7386.00	55.5 PK	74.0	-18.5	1.05 H	237	8.70	46.80
8	7386.00	45.0 AV	54.0	-9.0	1.05 H	237	-1.80	46.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	107.7 PK			1.34 V	291	75.69	32.01
2	*2462.00	105.7 AV			1.34 V	291	73.69	32.01
3	2500.00	57.7 PK	74.0	-16.3	1.34 V	291	25.55	32.15
4	2500.00	46.3 AV	54.0	-7.7	1.34 V	291	14.15	32.15
5	4924.00	52.2 PK	74.0	-21.8	1.37 V	110	12.53	39.67
6	4924.00	45.8 AV	54.0	-8.2	1.37 V	110	6.13	39.67
7	7386.00	57.2 PK	74.0	-16.8	1.62 V	86	10.40	46.80
8	7386.00	50.3 AV	54.0	-3.7	1.62 V	86	3.50	46.80

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

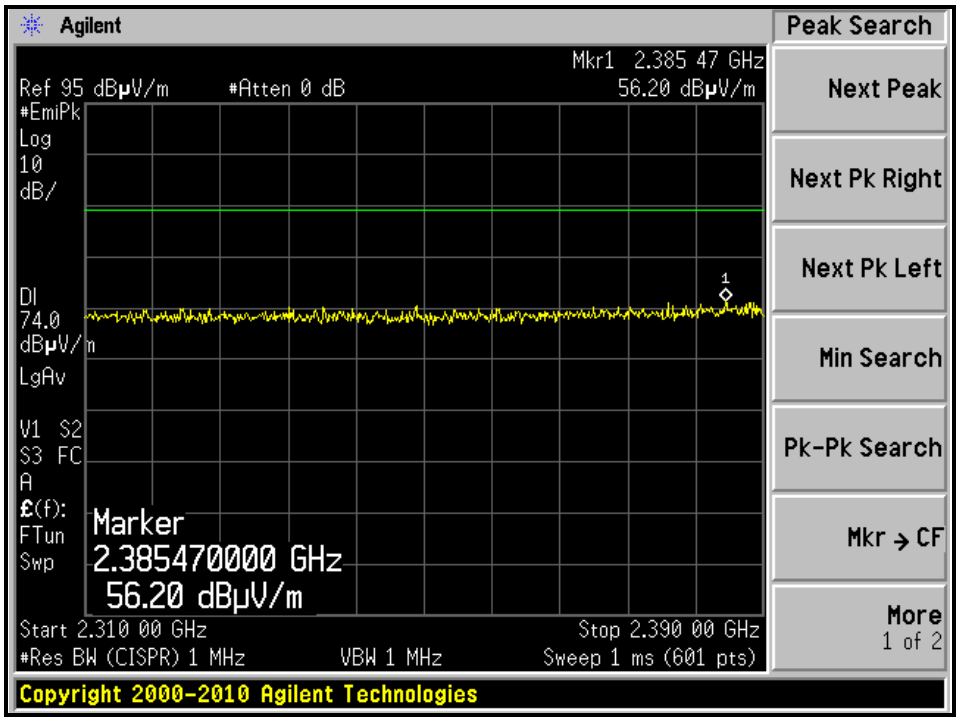
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

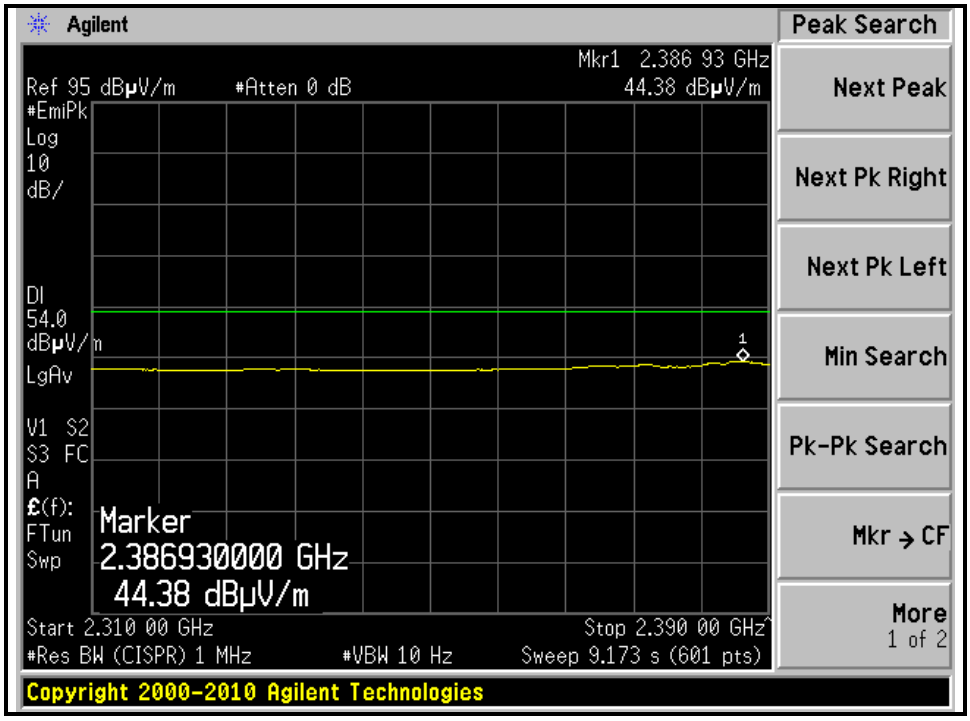
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

RESTRICTED BANDEDGE (802.11b MODE,CH1, HORIZONTAL)





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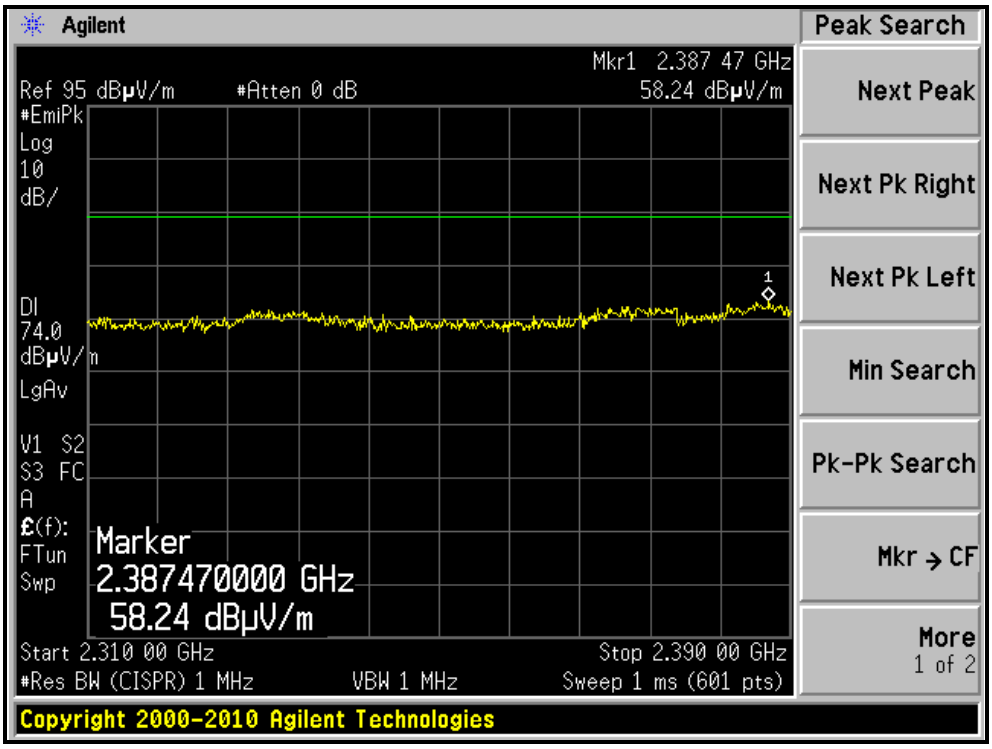

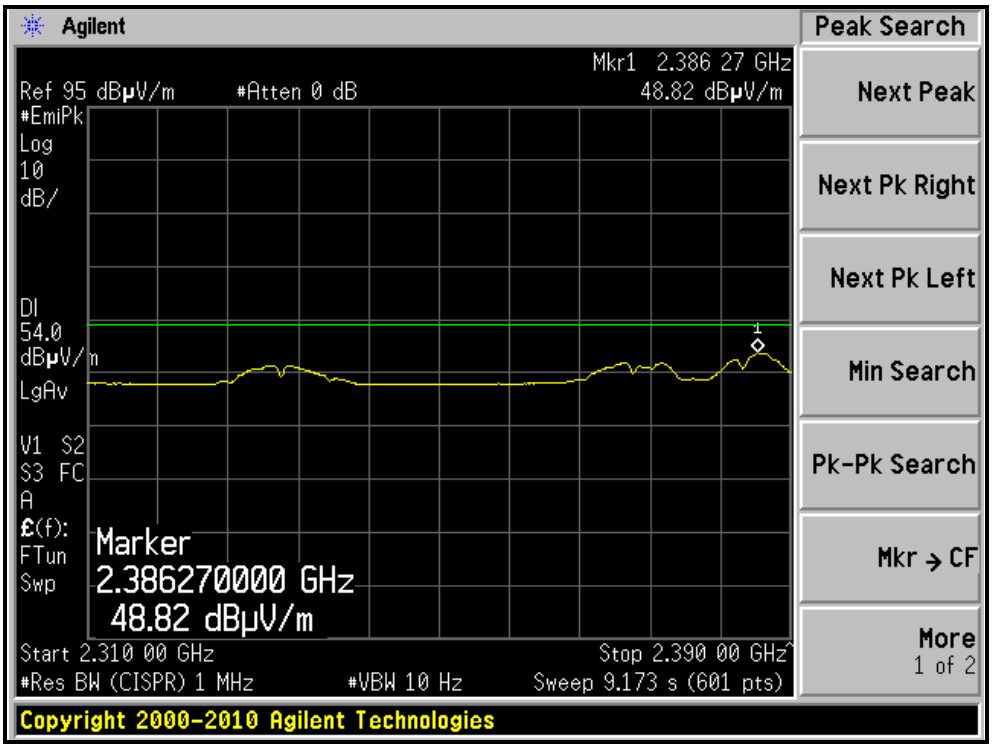

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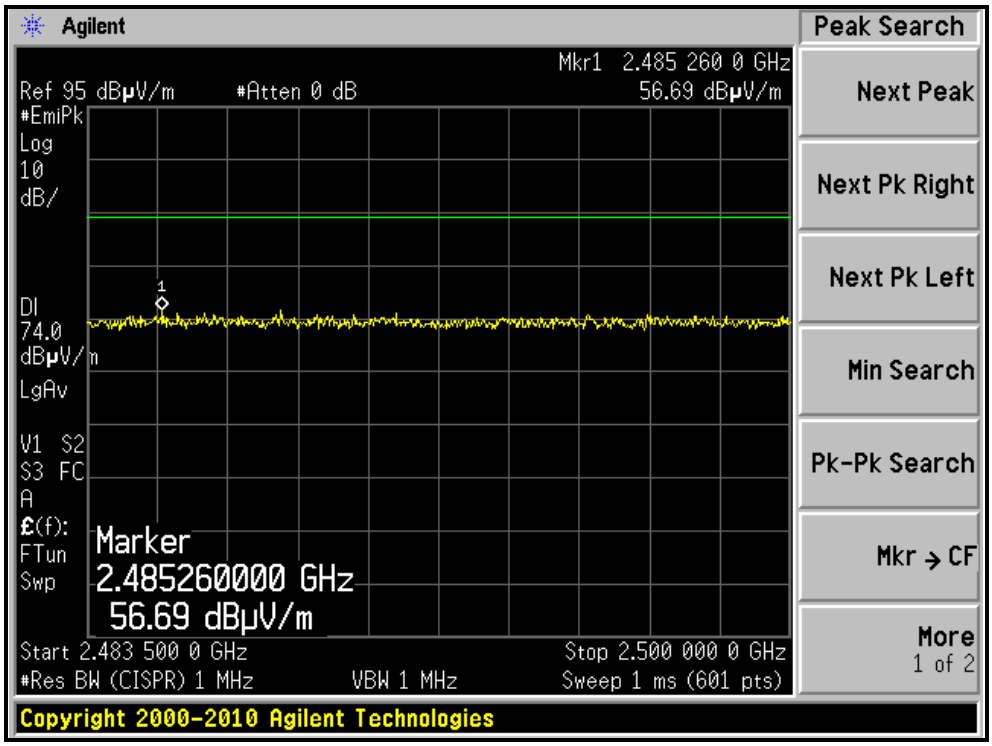
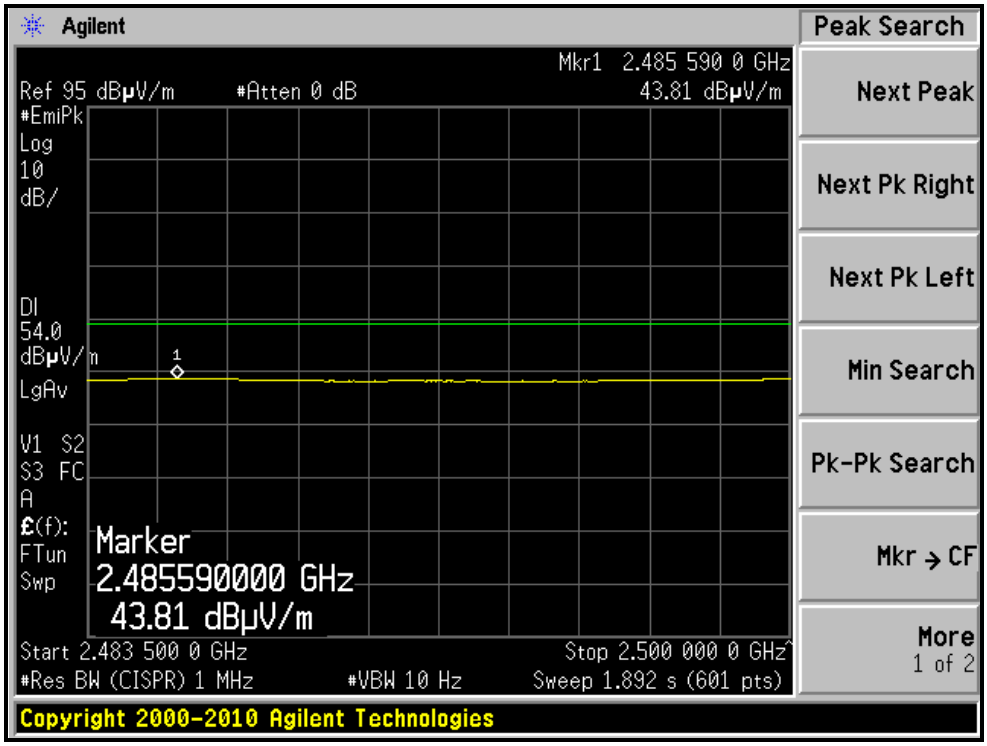
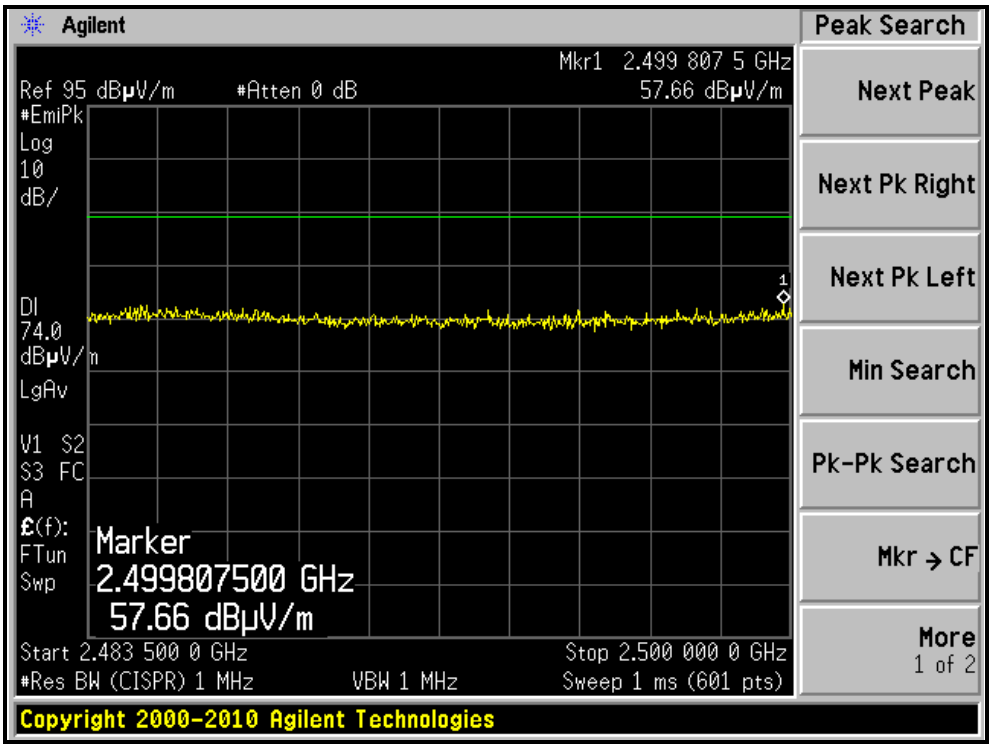
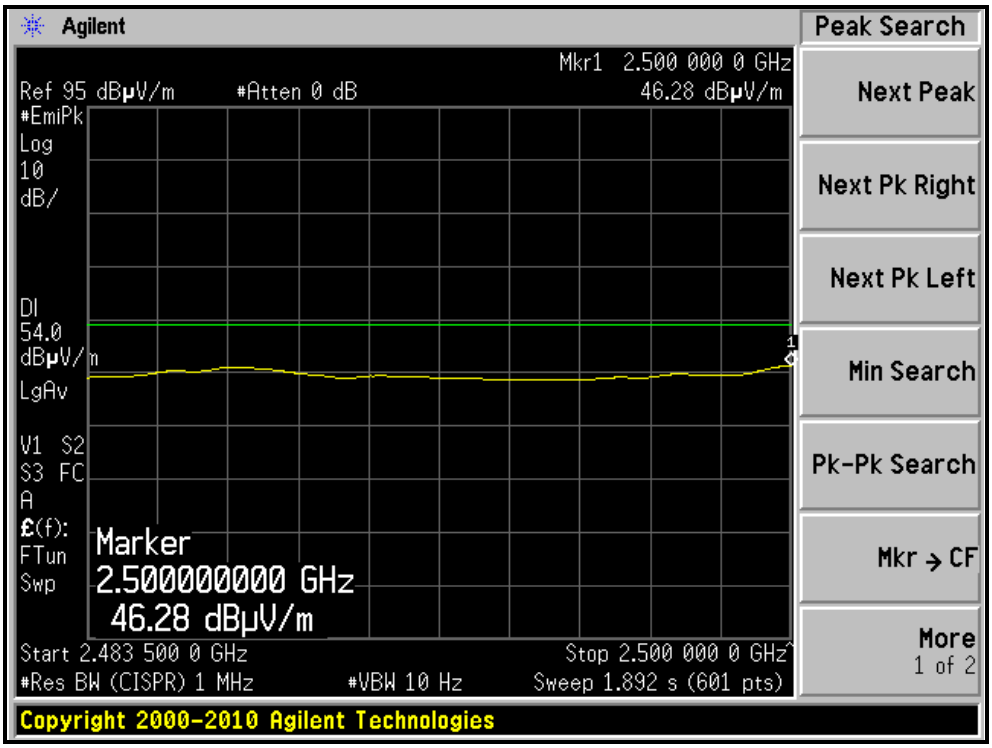




RESTRICTED BANDEDGE (802.11b MODE,CH11, VERTICAL)





802.11g OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac / 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 67%RH	TESTED BY	Evan Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	58.8 PK	74.0	-15.2	1.00 H	116	27.05	31.75
2	2390.00	45.3 AV	54.0	-8.7	1.00 H	116	13.55	31.75
3	*2412.00	101.2 PK			1.00 H	116	69.38	31.82
4	*2412.00	92.3 AV			1.00 H	116	60.48	31.82
5	4824.00	52.7 PK	74.0	-21.3	1.10 H	84	13.34	39.36
6	4824.00	45.8 AV	54.0	-8.2	1.10 H	84	6.44	39.36
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	64.1 PK	74.0	-9.9	1.40 V	303	32.35	31.75
2	2390.00	48.4 AV	54.0	-5.6	1.40 V	303	16.65	31.75
3	*2412.00	106.0 PK			1.41 V	325	74.18	31.82
4	*2412.00	97.1 AV			1.41 V	325	65.28	31.82
5	4824.00	52.0 PK	74.0	-22.0	1.14 V	258	12.64	39.36
6	4824.00	43.2 AV	54.0	-10.8	1.14 V	258	3.84	39.36

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 / 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 67%RH	TESTED BY	Evan Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	100.9 PK			1.00 H	128	68.98	31.92
2	*2437.00	92.3 AV			1.00 H	128	60.38	31.92
3	4874.00	51.2 PK	74.0	-22.8	1.00 H	53	11.70	39.50
4	4874.00	42.3 AV	54.0	-11.7	1.00 H	53	2.80	39.50
5	7311.00	54.4 PK	74.0	-19.6	1.11 H	102	7.52	46.88
6	7311.00	42.7 AV	54.0	-11.3	1.11 H	102	-4.18	46.88
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	108.6 PK			1.45 V	280	76.68	31.92
2	*2437.00	99.7 AV			1.45 V	280	67.78	31.92
3	4874.00	52.5 PK	74.0	-21.5	1.15 V	261	13.00	39.50
4	4874.00	43.5 AV	54.0	-10.5	1.15 V	261	4.00	39.50
5	7311.00	65.5 PK	74.0	-8.5	1.49 V	104	18.62	46.88
6	7311.00	52.4 AV	54.0	-1.6	1.49 V	104	5.52	46.88

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 / 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 67%RH	TESTED BY	Evan Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	100.8 PK			1.00 H	116	68.79	32.01
2	*2462.00	91.9 AV			1.00 H	116	59.89	32.01
3	2483.50	58.6 PK	74.0	-15.4	1.00 H	116	26.51	32.09
4	2483.50	45.1 AV	54.0	-8.9	1.00 H	116	13.01	32.09
5	4924.00	50.4 PK	74.0	-23.6	1.00 H	52	10.73	39.67
6	4924.00	41.8 AV	54.0	-12.2	1.00 H	52	2.13	39.67
7	7386.00	54.5 PK	74.0	-19.5	1.14 H	121	7.70	46.80
8	7386.00	43.3 AV	54.0	-10.7	1.14 H	121	-3.50	46.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	105.6 PK			1.43 V	278	73.59	32.01
2	*2462.00	96.6 AV			1.43 V	278	64.59	32.01
3	2483.50	63.4 PK	74.0	-10.6	1.40 V	279	31.31	32.09
4	2483.50	48.3 AV	54.0	-5.7	1.40 V	279	16.21	32.09
5	4924.00	52.5 PK	74.0	-21.5	1.11 V	251	12.83	39.67
6	4924.00	43.5 AV	54.0	-10.5	1.11 V	251	3.83	39.67
7	7386.00	64.5 PK	74.0	-9.5	1.35 V	161	17.70	46.80
8	7386.00	51.0 AV	54.0	-3.0	1.35 V	161	4.20	46.80

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

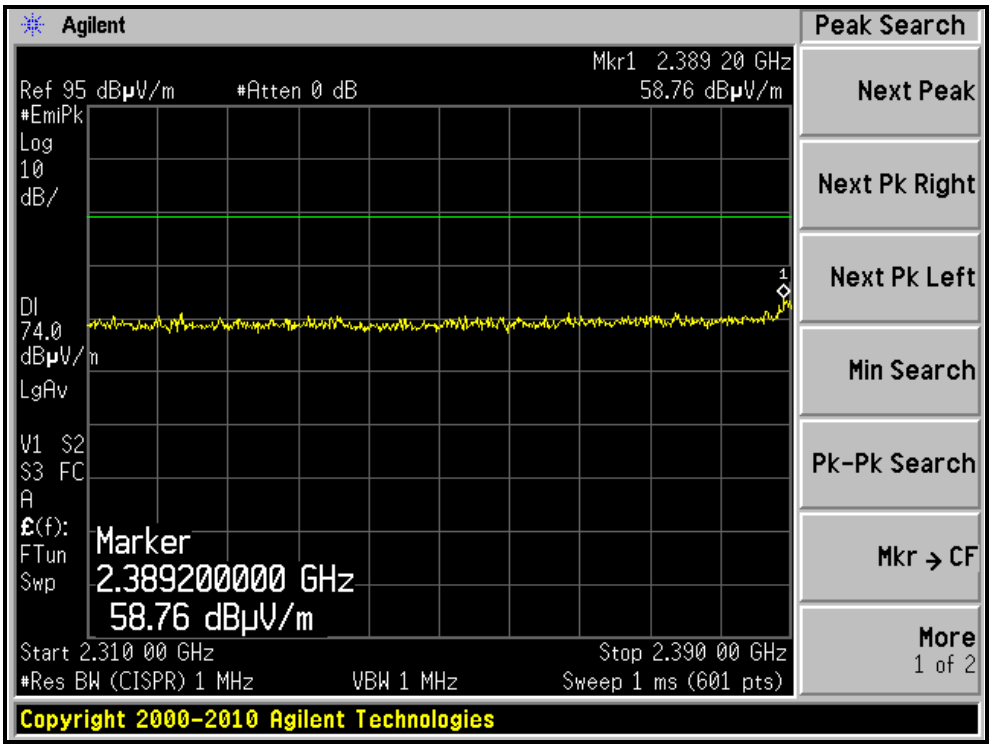
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

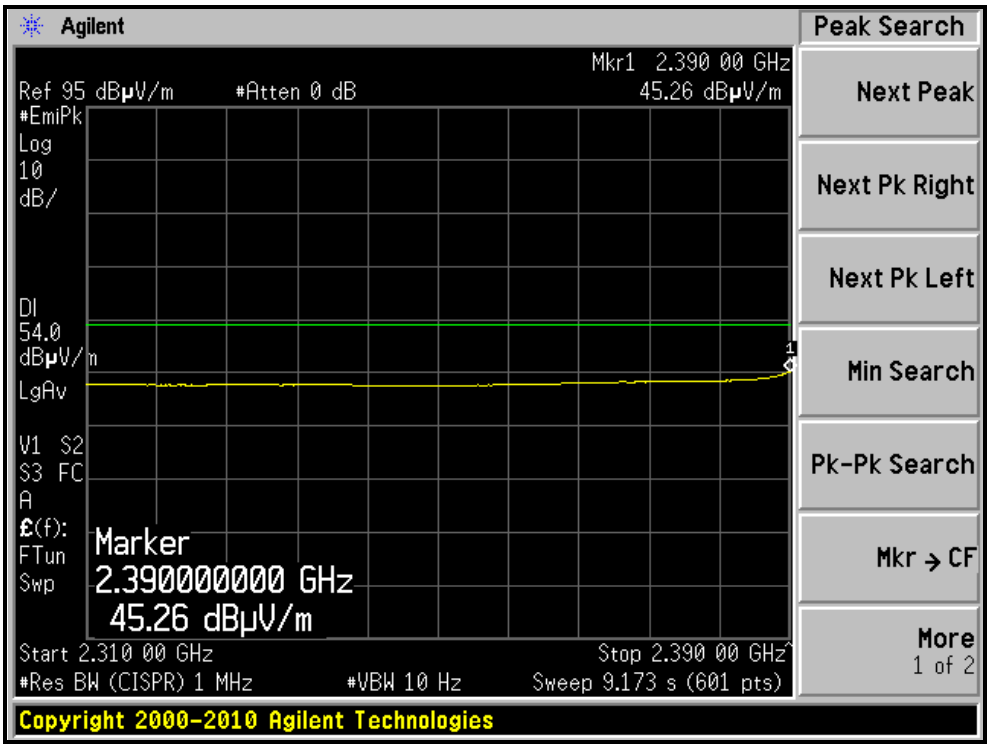
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

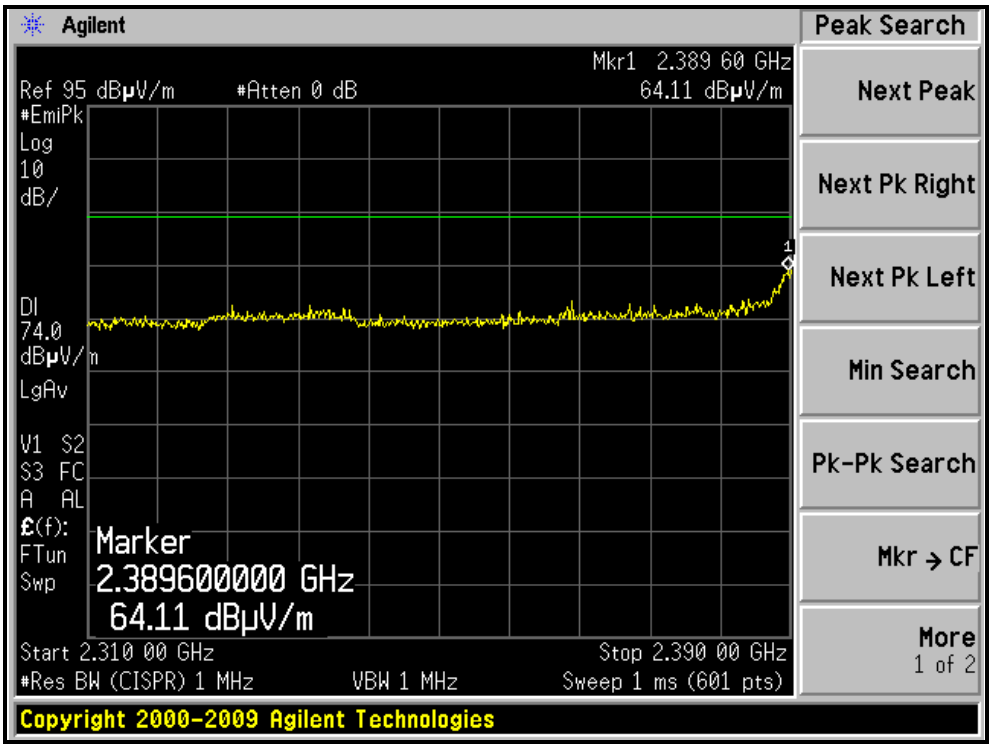
5. " * ": Fundamental frequency.

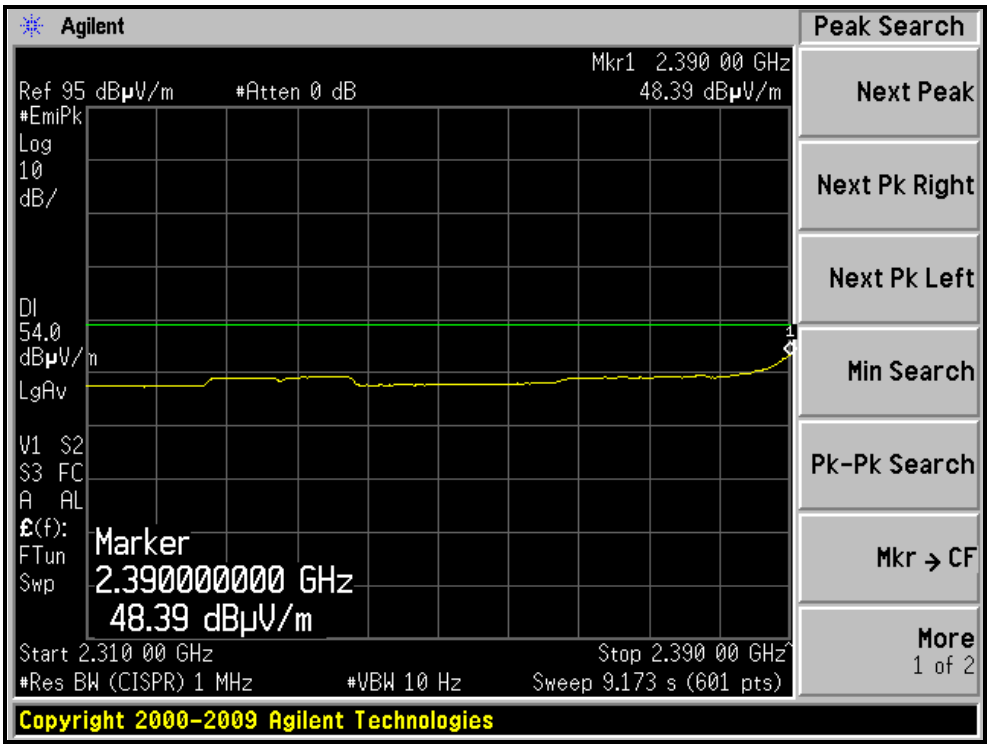
RESTRICTED BANDEDGE (802.11g MODE,CH1, HORIZONTAL)





RESTRICTED BANDEDGE (802.11g MODE,CH1, VERTICAL)





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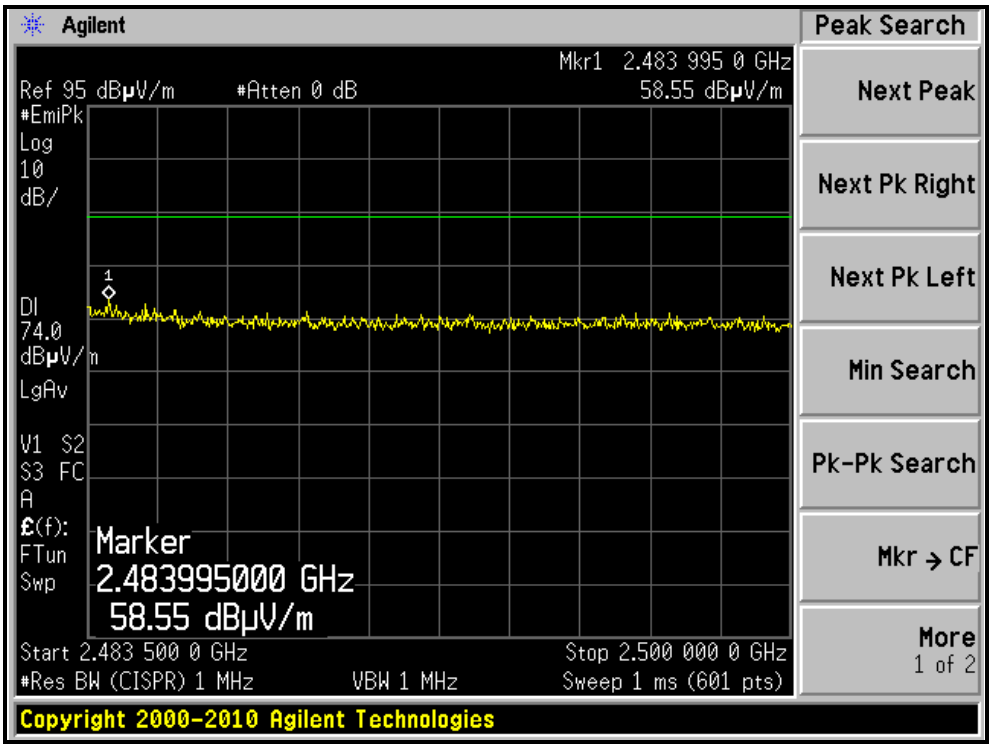
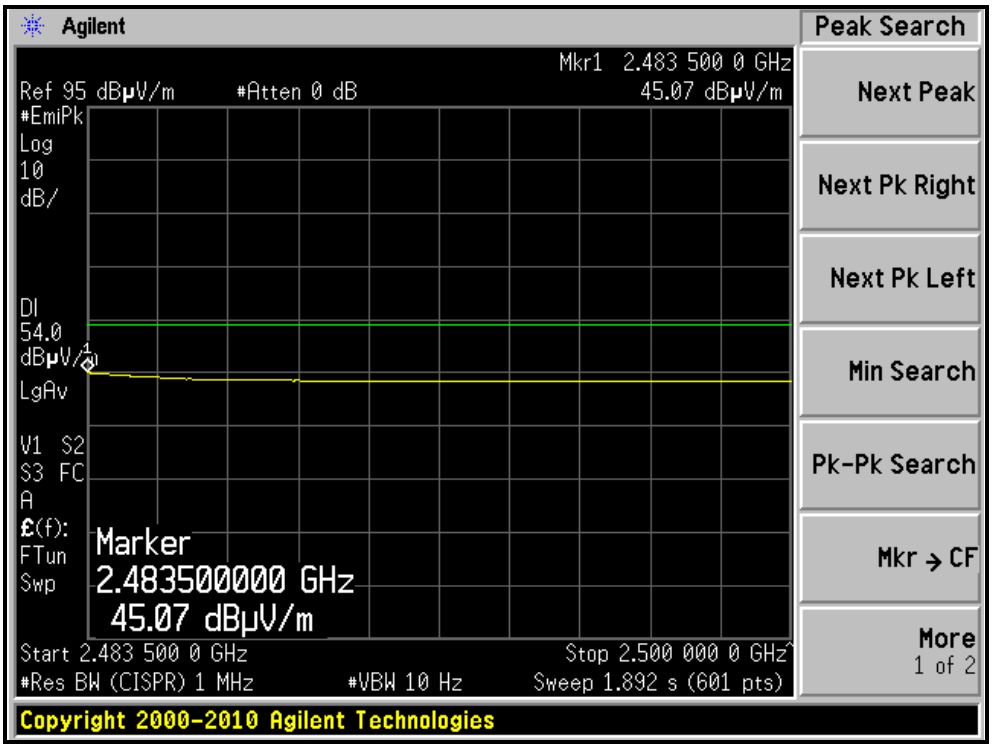
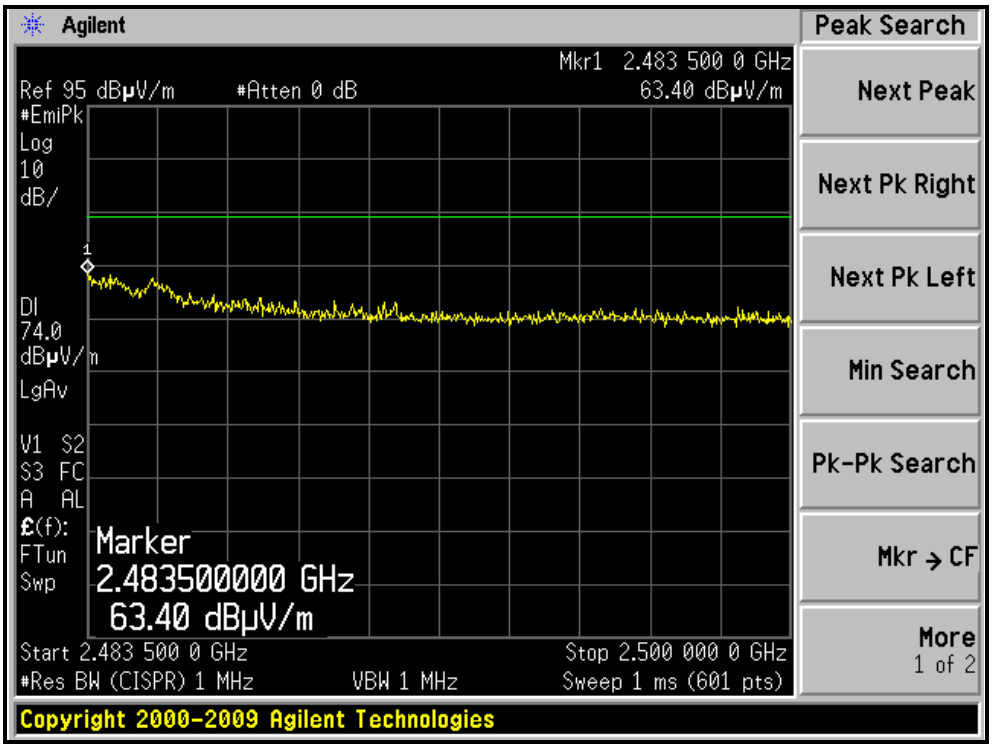
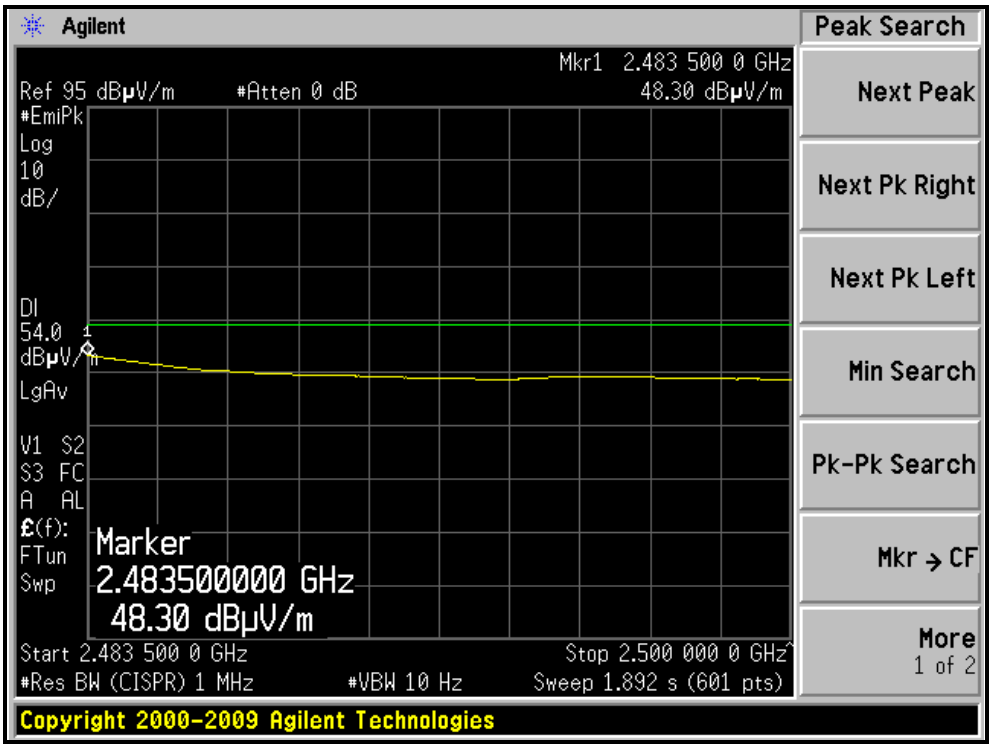




RESTRICTED BANDEDGE (802.11g MODE,CH11, VERTICAL)





802.11n (20MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac / 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 67%RH	TESTED BY	Evan Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	57.7 PK	74.0	-16.3	1.00 H	115	25.95	31.75
2	2390.00	45.8 AV	54.0	-8.2	1.00 H	115	14.05	31.75
3	*2412.00	99.7 PK			1.00 H	115	67.88	31.82
4	*2412.00	90.1 AV			1.00 H	115	58.28	31.82
5	4824.00	53.0 PK	74.0	-21.0	1.07 H	98	13.64	39.36
6	4824.00	42.2 AV	54.0	-11.8	1.07 H	98	2.84	39.36
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	63.6 PK	74.0	-10.4	1.49 V	285	31.85	31.75
2	2390.00	49.4 AV	54.0	-4.6	1.49 V	285	17.65	31.75
3	*2412.00	106.3 PK			1.39 V	295	74.48	31.82
4	*2412.00	96.7 AV			1.39 V	295	64.88	31.82
5	4824.00	52.3 PK	74.0	-21.7	1.16 V	247	12.94	39.36
6	4824.00	43.5 AV	54.0	-10.5	1.16 V	247	4.14	39.36

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 / 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 67%RH	TESTED BY	Evan Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	100.6 PK			1.00 H	114	68.68	31.92
2	*2437.00	92.2 AV			1.00 H	114	60.28	31.92
3	4874.00	52.6 PK	74.0	-21.4	1.04 H	94	13.10	39.50
4	4874.00	41.7 AV	54.0	-12.3	1.04 H	94	2.20	39.50
5	7311.00	54.9 PK	74.0	-19.1	1.07 H	120	8.02	46.88
6	7311.00	44.0 AV	54.0	-10.0	1.07 H	120	-2.88	46.88
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	108.5 PK			1.44 V	283	76.58	31.92
2	*2437.00	99.0 AV			1.44 V	283	67.08	31.92
3	4874.00	52.1 PK	74.0	-21.9	1.00 V	126	12.60	39.50
4	4874.00	43.8 AV	54.0	-10.2	1.00 V	126	4.30	39.50
5	7311.00	66.7 PK	74.0	-7.3	1.51 V	103	19.82	46.88
6	**7311.00**	**52.8 AV**	**54.0**	**-1.2**	**1.51 V**	**103**	**5.92**	**46.88**

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 / 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 67%RH	TESTED BY	Evan Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	99.3 PK			1.00 H	116	67.29	32.01
2	*2462.00	89.5 AV			1.00 H	116	57.49	32.01
3	2483.50	56.5 PK	74.0	-17.5	1.00 H	116	24.41	32.09
4	2483.50	44.0 AV	54.0	-10.0	1.00 H	116	11.91	32.09
5	4924.00	52.2 PK	74.0	-21.8	1.03 H	92	12.53	39.67
6	4924.00	41.3 AV	54.0	-12.7	1.03 H	92	1.63	39.67
7	7386.00	55.3 PK	74.0	-18.7	1.06 H	110	8.50	46.80
8	7386.00	44.2 AV	54.0	-9.8	1.06 H	110	-2.60	46.80
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	104.0 PK			1.43 V	277	71.99	32.01
2	*2462.00	94.1 AV			1.43 V	277	62.09	32.01
3	2483.50	59.6 PK	74.0	-14.4	1.43 V	277	27.51	32.09
4	2483.50	46.2 AV	54.0	-7.8	1.43 V	277	14.11	32.09
5	4924.00	52.6 PK	74.0	-21.4	1.18 V	224	12.93	39.67
6	4924.00	43.3 AV	54.0	-10.7	1.18 V	224	3.63	39.67
7	7386.00	62.7 PK	74.0	-11.3	1.00 V	186	15.90	46.80
8	7386.00	49.2 AV	54.0	-4.8	1.00 V	186	2.40	46.80

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

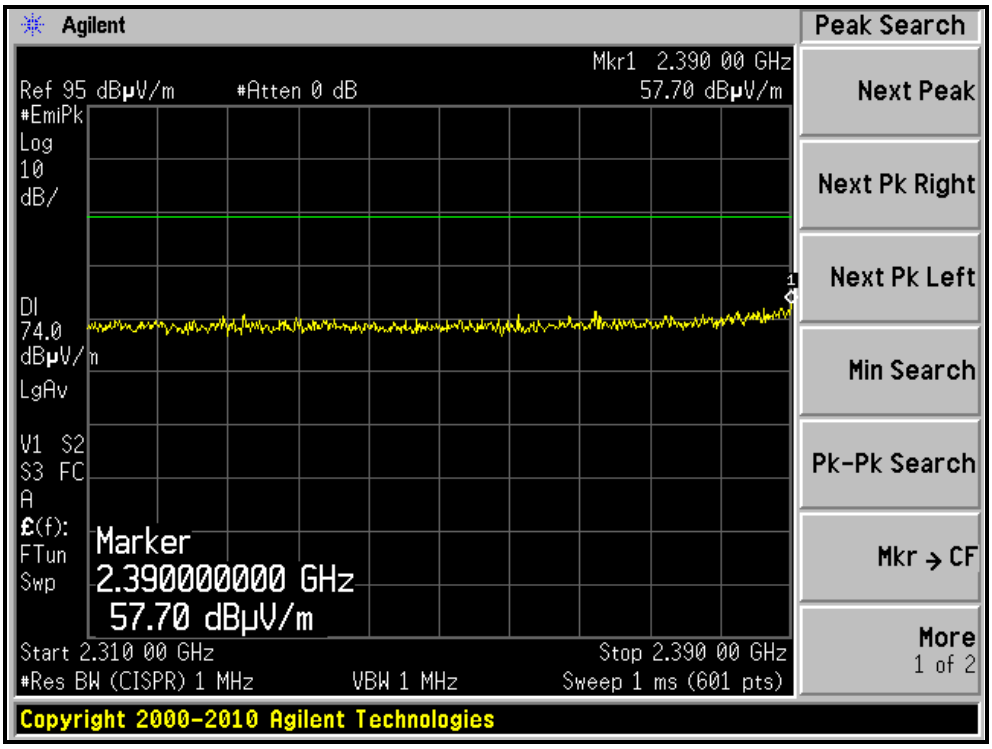
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

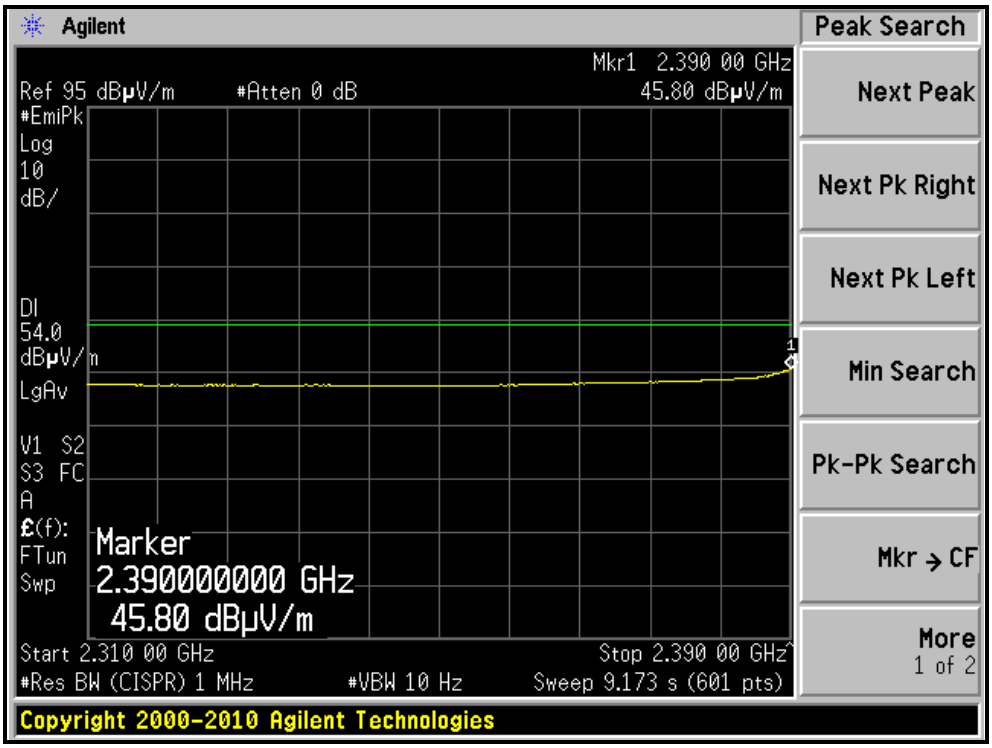
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

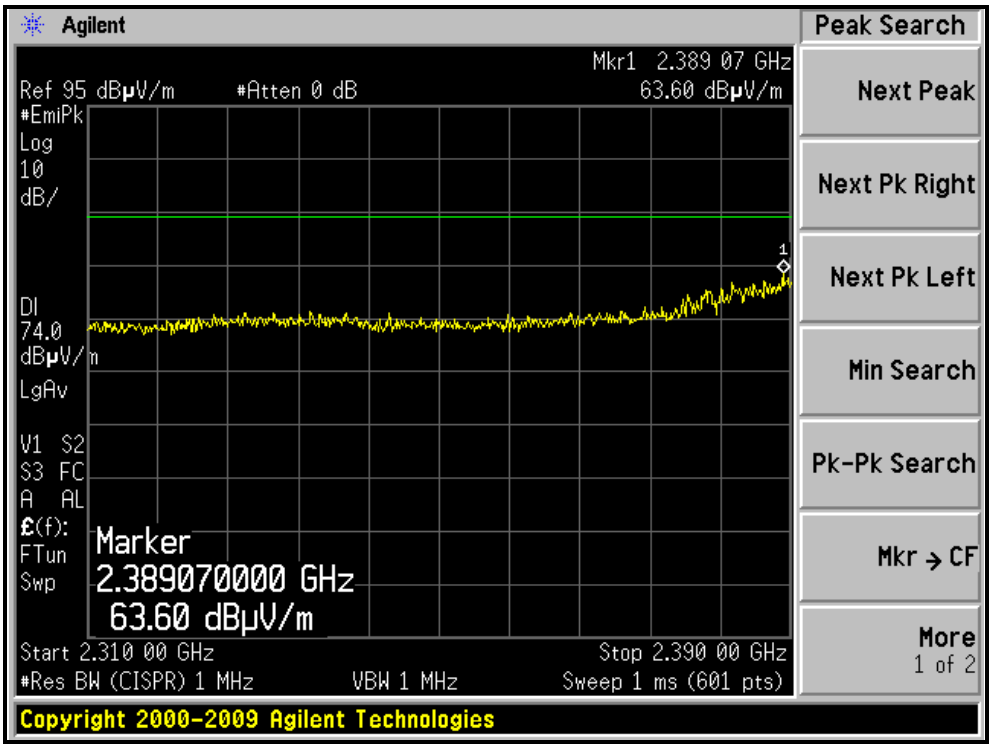
5. " * ": Fundamental frequency.

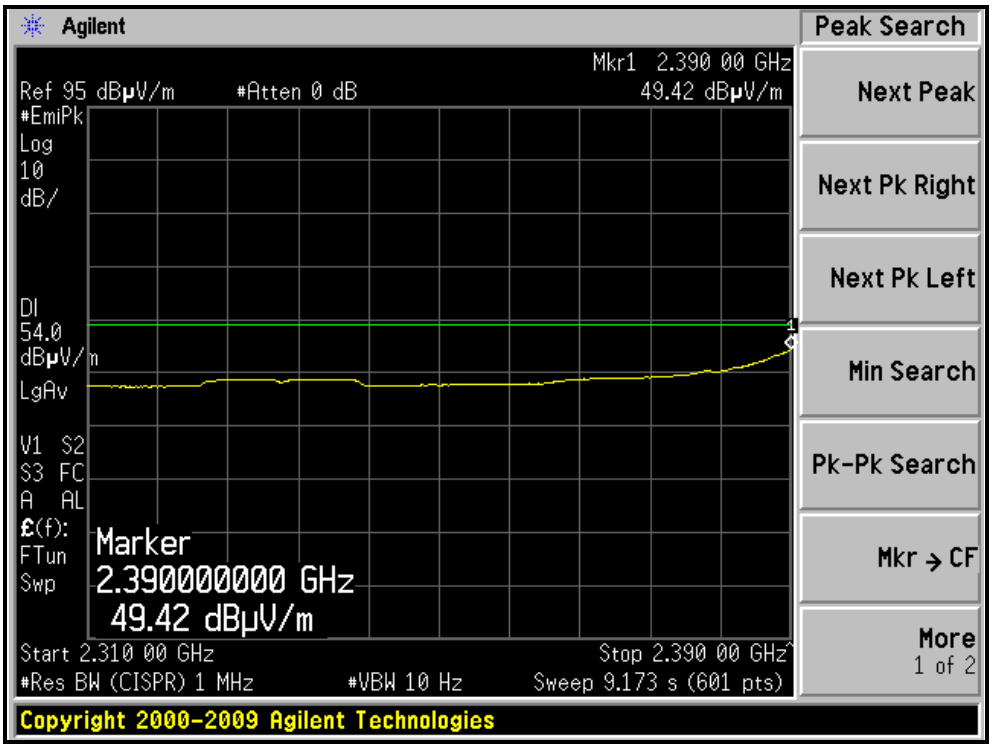
RESTRICTED BANDEDGE (802.11n (20MHz) MODE,CH1, HORIZONTAL)



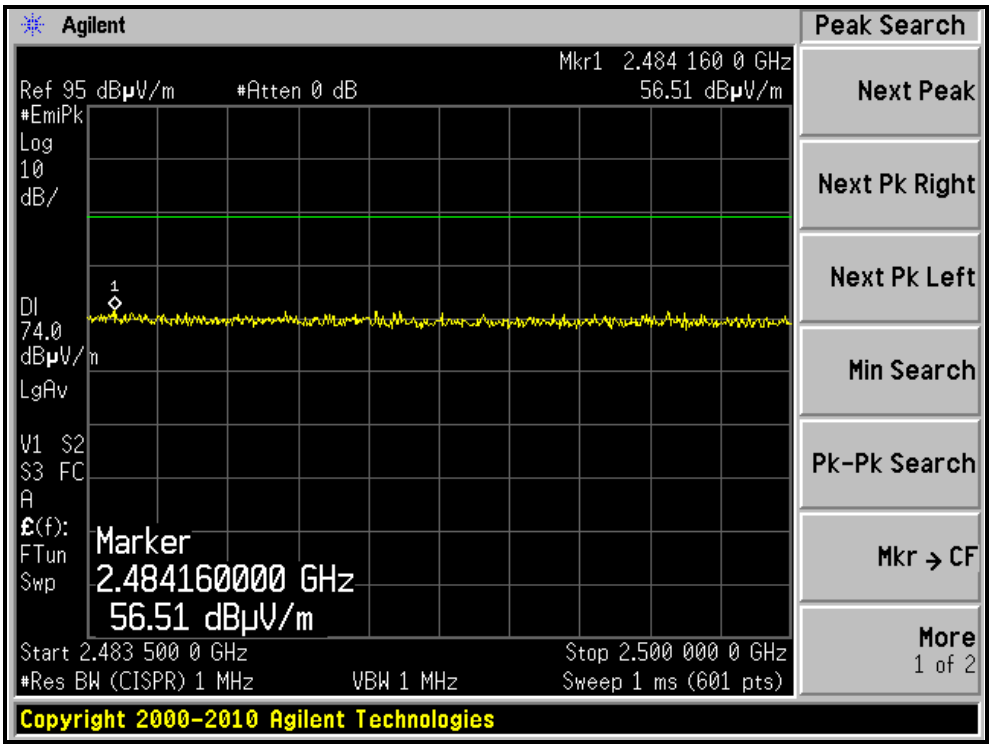


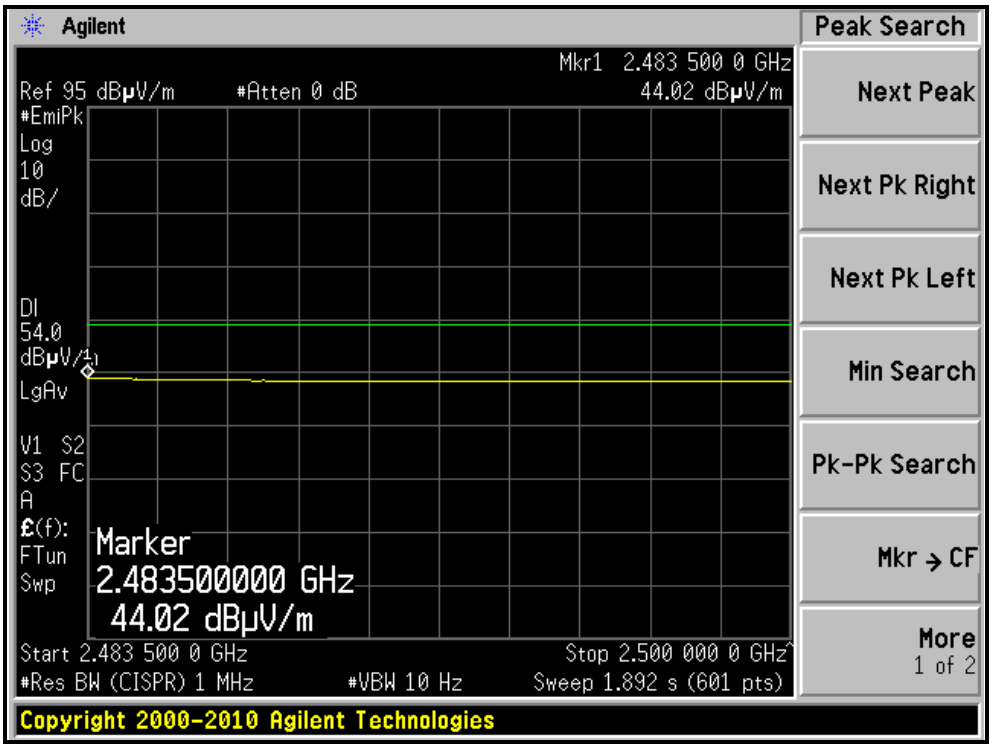
RESTRICTED BANDEDGE (802.11n (20MHz) MODE,CH1, VERTICAL)



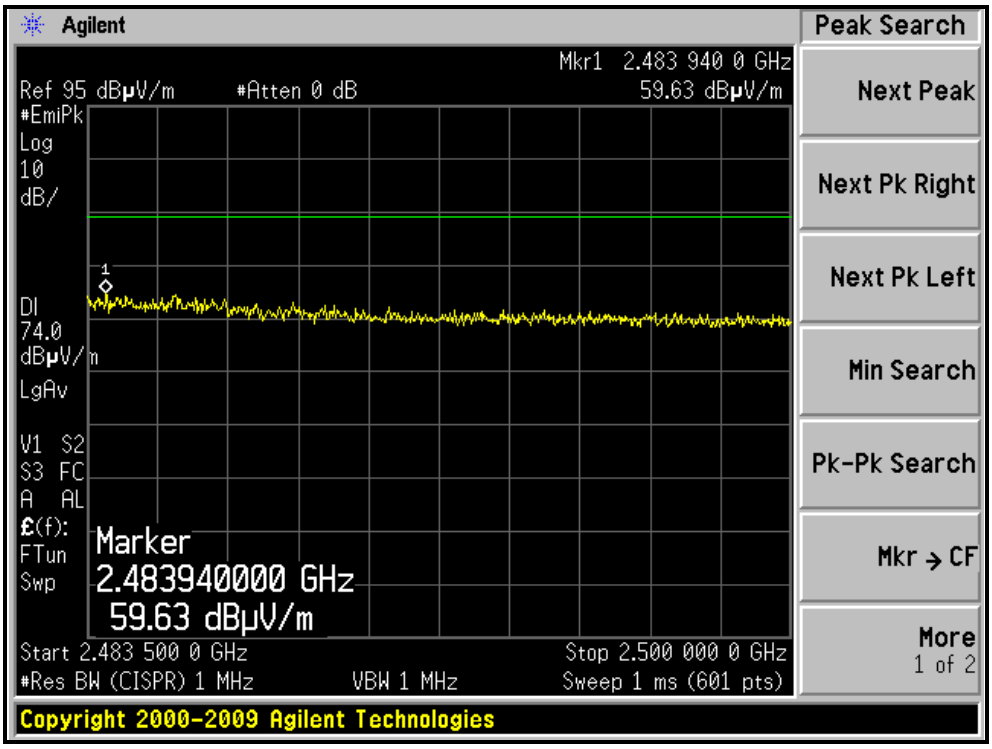


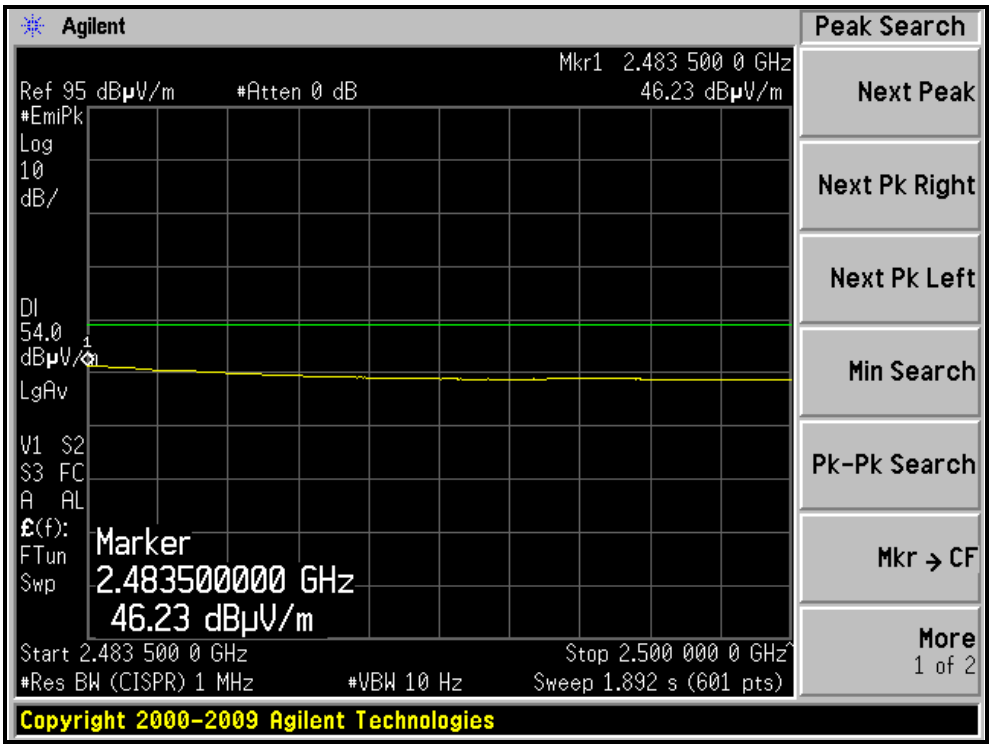
RESTRICTED BANDEDGE (802.11n (20MHz) MODE,CH11, HORIZONTAL)





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





802.11n (40MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 3	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac / 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 67%RH	TESTED BY	Evan Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	57.9 PK	74.0	-16.1	1.00 H	117	26.15	31.75
2	2390.00	45.5 AV	54.0	-8.5	1.00 H	117	13.75	31.75
3	*2422.00	96.4 PK			1.00 H	117	64.54	31.86
4	*2422.00	86.9 AV			1.00 H	117	55.04	31.86
5	4844.00	51.0 PK	74.0	-23.0	1.00 H	58	11.58	39.42
6	4844.00	42.3 AV	54.0	-11.7	1.00 H	58	2.88	39.42
7	7266.00	54.3 PK	74.0	-19.7	1.15 H	115	7.39	46.91
8	7266.00	42.9 AV	54.0	-11.1	1.15 H	115	-4.01	46.91
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	65.3 PK	74.0	-8.7	1.39 V	295	33.55	31.75
2	2390.00	50.5 AV	54.0	-3.5	1.39 V	295	18.75	31.75
3	*2422.00	103.5 PK			1.39 V	295	71.64	31.86
4	*2422.00	94.2 AV			1.39 V	295	62.34	31.86
5	4844.00	52.1 PK	74.0	-21.9	1.13 V	237	12.68	39.42
6	4844.00	42.9 AV	54.0	-11.1	1.13 V	237	3.48	39.42
7	7266.00	62.2 PK	74.0	-11.8	1.11 V	74	15.29	46.91
8	7266.00	50.0 AV	54.0	-4.0	1.11 V	74	3.09	46.91

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac / 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 67%RH	TESTED BY	Evan Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	96.8 PK			1.00 H	116	64.88	31.92
2	*2437.00	87.4 AV			1.00 H	116	55.48	31.92
3	4874.00	51.7 PK	74.0	-22.3	1.00 H	84	12.20	39.50
4	4874.00	43.0 AV	54.0	-11.0	1.00 H	84	3.50	39.50
5	7311.00	55.7 PK	74.0	-18.3	1.04 H	113	8.82	46.88
6	7311.00	44.4 AV	54.0	-9.6	1.04 H	113	-2.48	46.88
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	102.3 PK			1.41 V	280	70.38	31.92
2	*2437.00	93.0 AV			1.41 V	280	61.08	31.92
3	4874.00	52.4 PK	74.0	-21.6	1.14 V	249	12.90	39.50
4	4874.00	43.4 AV	54.0	-10.6	1.14 V	249	3.90	39.50
5	7311.00	62.4 PK	74.0	-11.6	1.06 V	73	15.52	46.88
6	7311.00	49.9 AV	54.0	-4.1	1.06 V	73	3.02	46.88

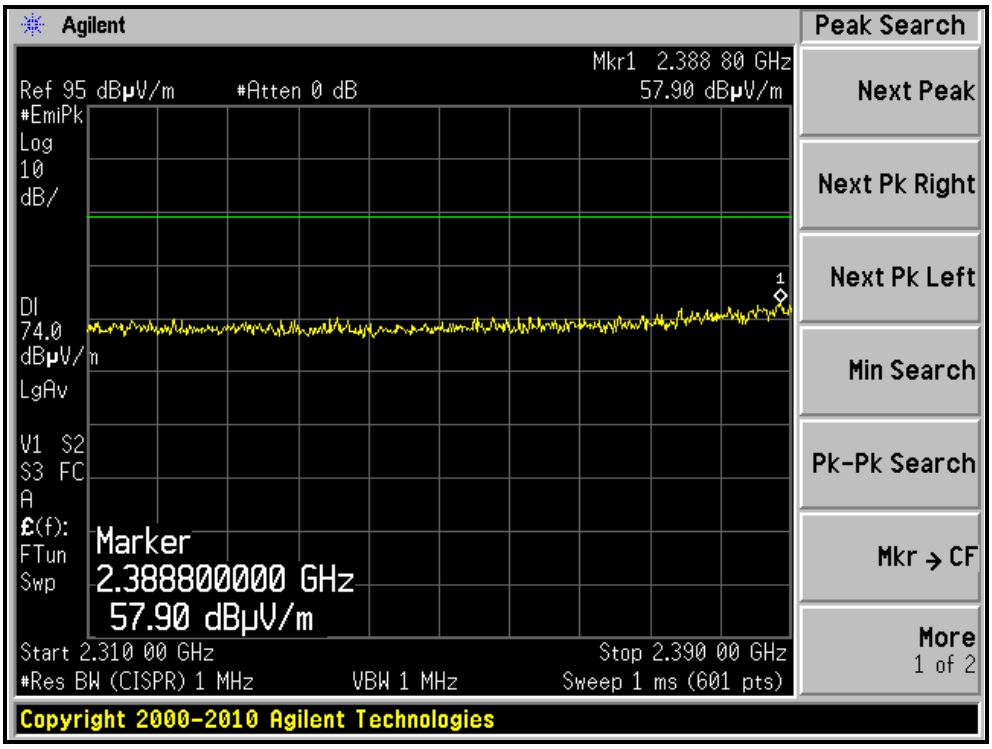
REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

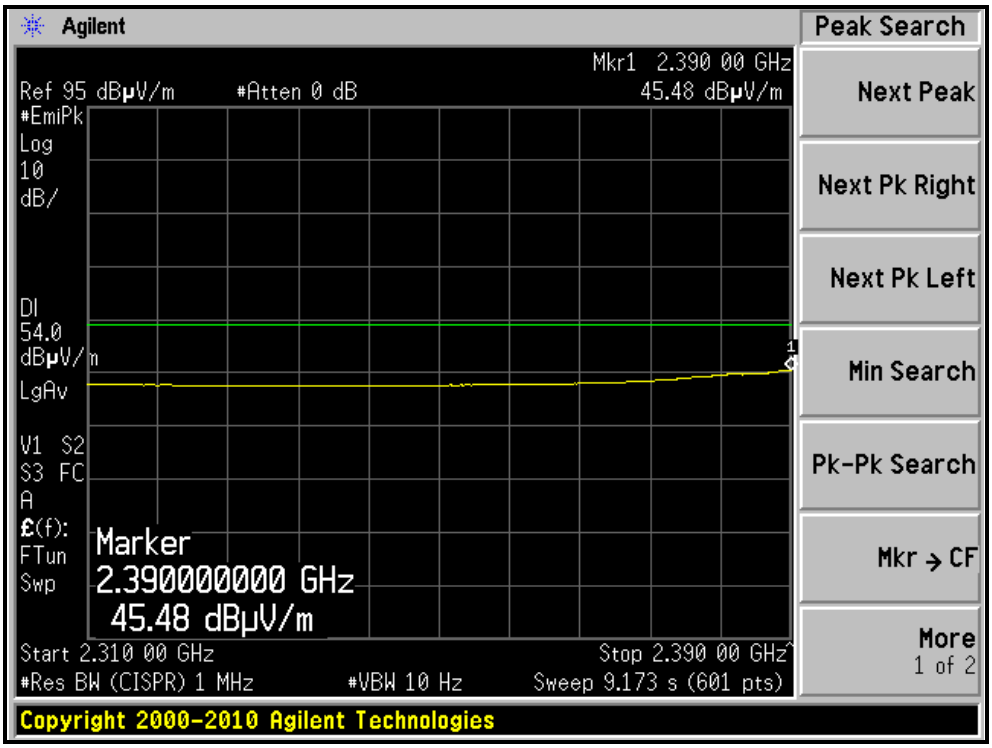
EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 9	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac / 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 67%RH	TESTED BY	Evan Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	95.4 PK			1.00 H	115	63.43	31.97
2	*2452.00	86.3 AV			1.00 H	115	54.33	31.97
3	2483.50	58.2 PK	74.0	-15.8	1.00 H	115	26.11	32.09
4	2483.50	44.2 AV	54.0	-9.8	1.00 H	115	12.11	32.09
5	4904.00	51.6 PK	74.0	-22.4	1.00 H	71	12.00	39.60
6	4904.00	42.7 AV	54.0	-11.3	1.00 H	71	3.10	39.60
7	7356.00	54.6 PK	74.0	-19.4	1.17 H	113	7.77	46.83
8	7356.00	43.1 AV	54.0	-10.9	1.17 H	113	-3.73	46.83
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	103.4 PK			1.31 V	294	71.43	31.97
2	*2452.00	94.1 AV			1.31 V	294	62.13	31.97
3	2484.40	64.4 PK	74.0	-9.6	1.31 V	294	32.31	32.09
4	2484.40	48.3 AV	54.0	-5.7	1.31 V	294	16.21	32.09
5	4904.00	52.8 PK	74.0	-21.2	1.17 V	131	13.20	39.60
6	4904.00	45.0 AV	54.0	-9.0	1.17 V	131	5.40	39.60
7	7356.00	61.7 PK	74.0	-12.3	1.03 V	246	14.87	46.83
8	7356.00	48.4 AV	54.0	-5.6	1.03 V	246	1.57	46.83

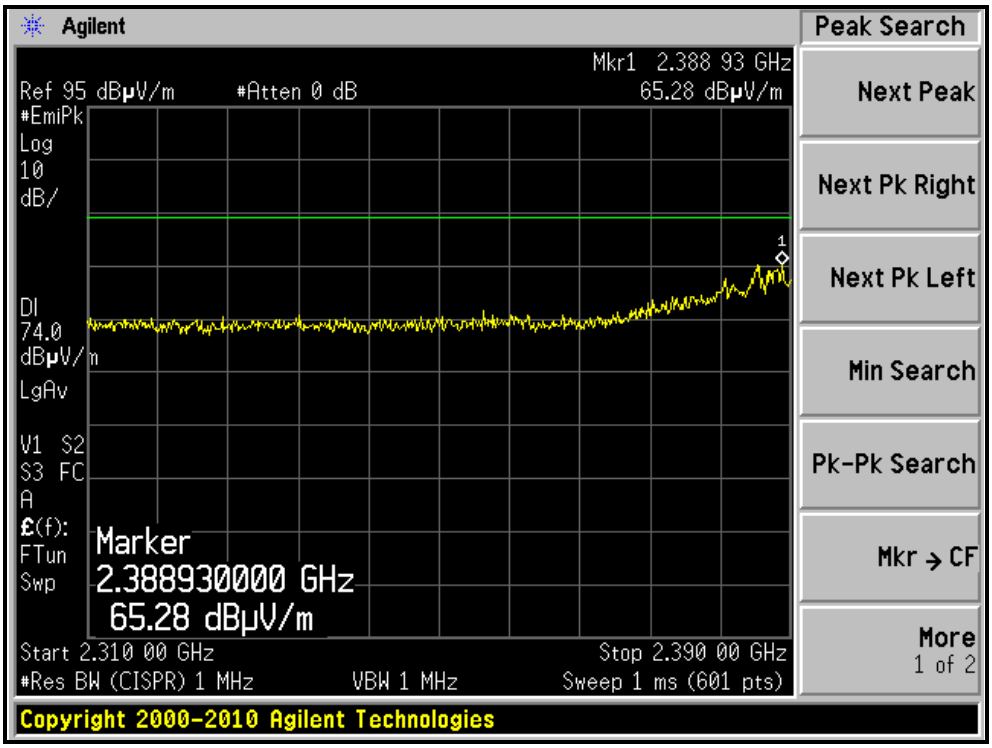
REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

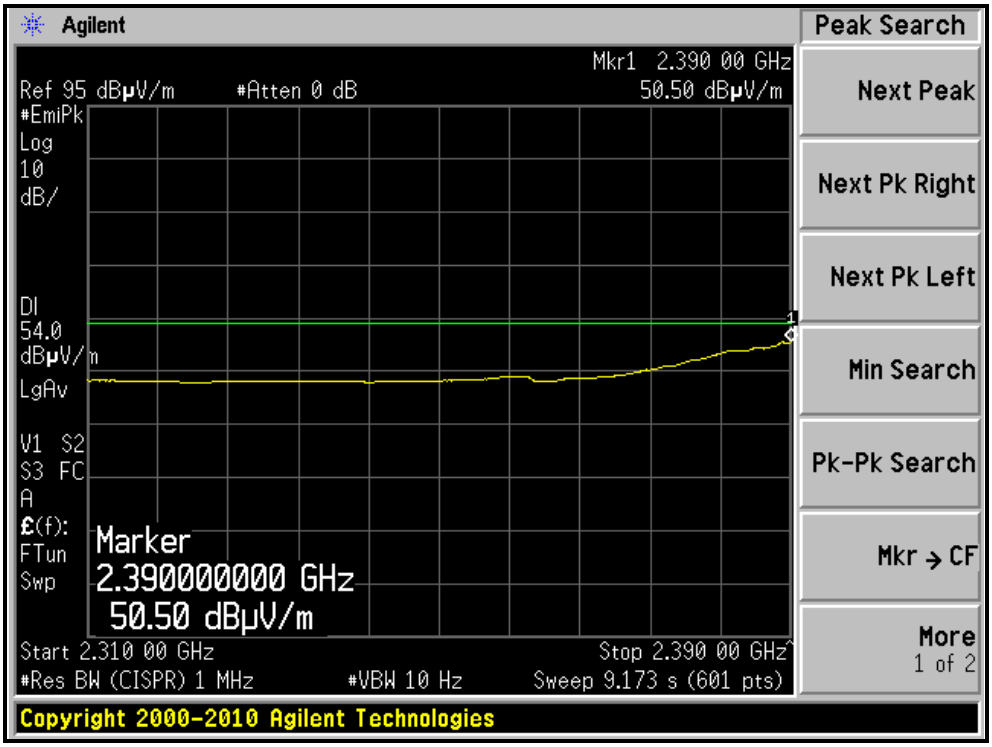
RESTRICTED BANDEDGE (802.11n (40MHz) MODE,CH3, HORIZONTAL)



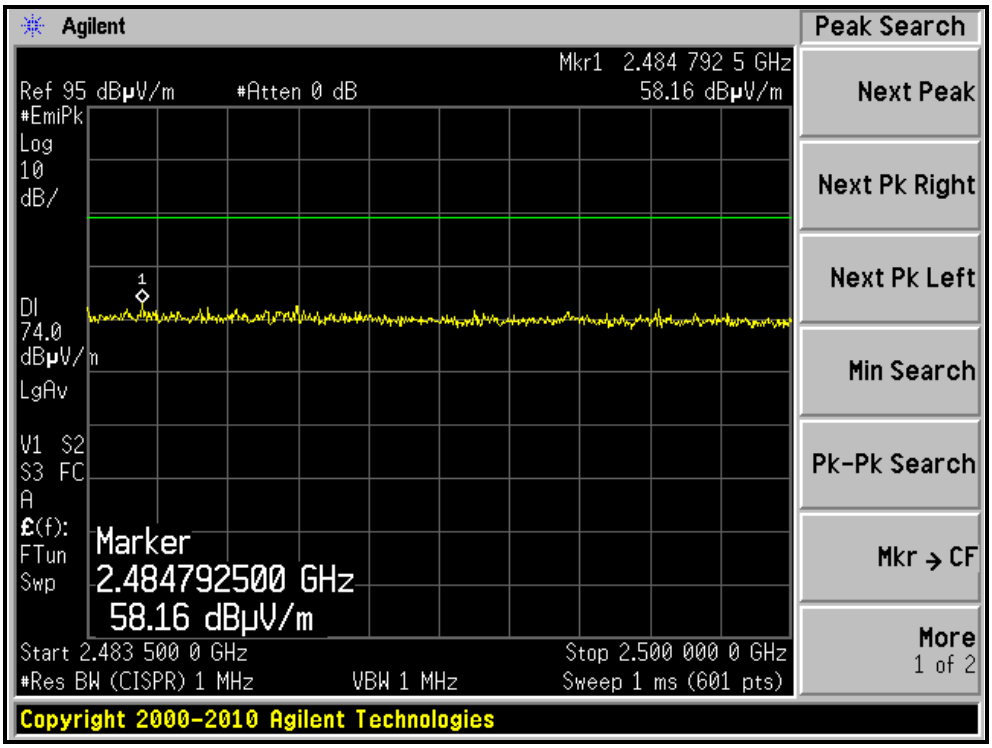


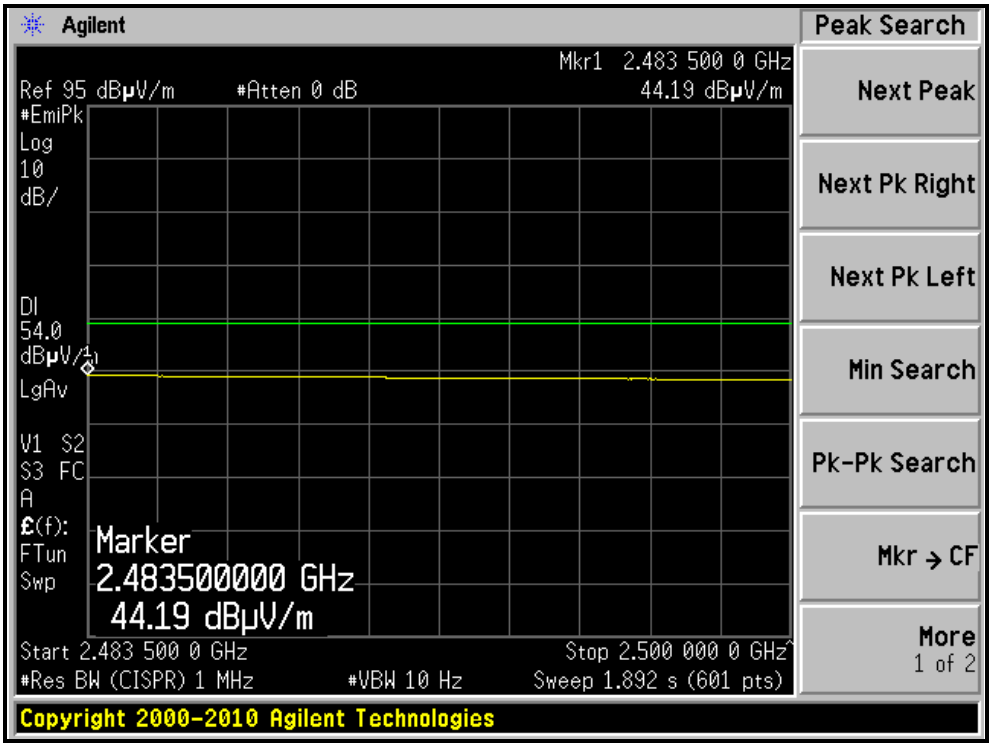
RESTRICTED BANDEDGE (802.11n (40MHz) MODE,CH3, VERTICAL)



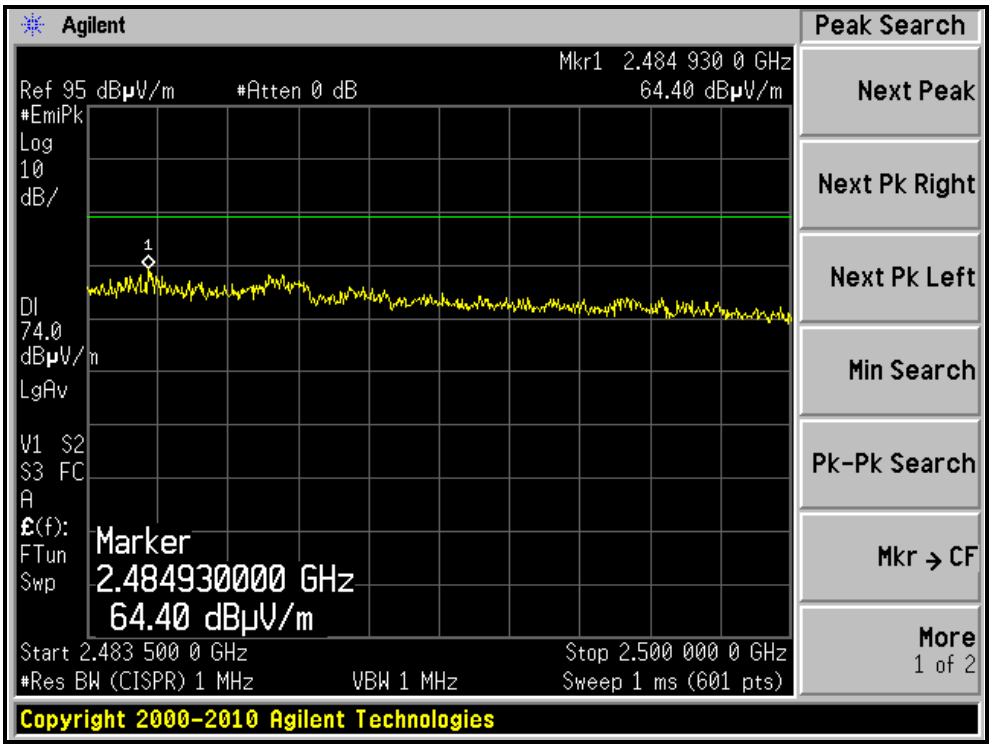


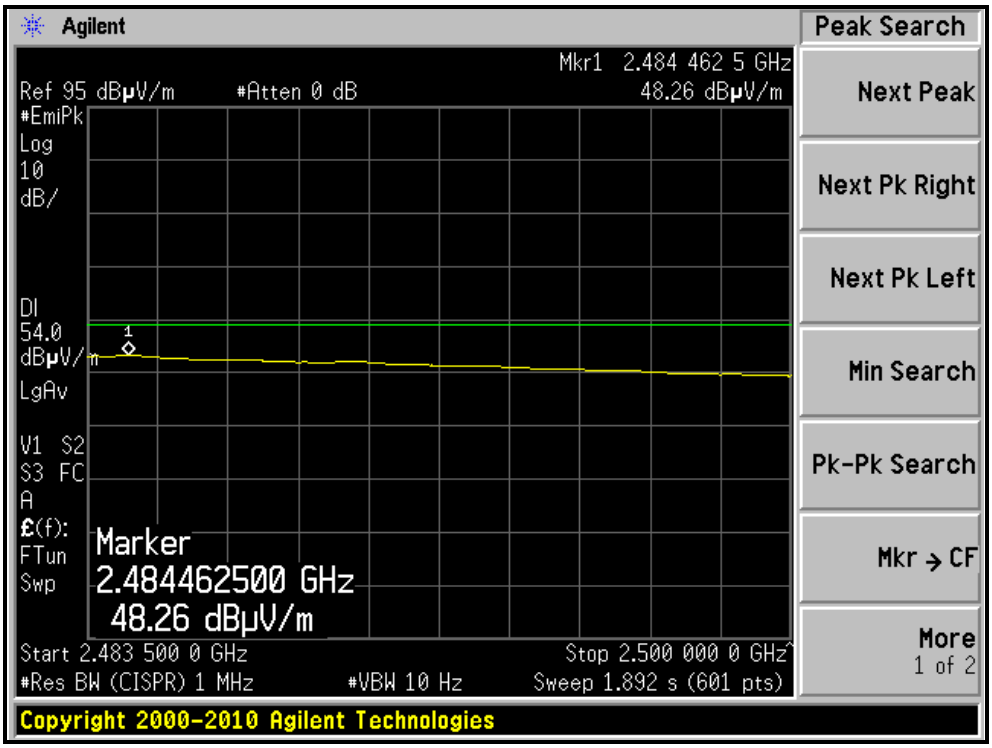
RESTRICTED BANDEDGE (802.11n (40MHz) MODE,CH9, HORIZONTAL)





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





4.2.8 TEST RESULTS (PIFA ANTENNA)

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 / 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	18deg. C, 70%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	167.99	36.9 QP	43.5	-6.6	1.75 H	37	22.81	14.08
2	399.84	38.2 QP	46.0	-7.8	1.00 H	116	20.27	17.93
3	559.87	40.7 QP	46.0	-5.3	1.50 H	314	18.99	21.70
4	699.90	38.6 QP	46.0	-7.4	1.25 H	63	15.56	23.05
5	796.17	38.3 QP	46.0	-7.8	1.00 H	38	12.49	25.76
6	895.52	38.3 QP	46.0	-7.7	1.50 H	2	11.03	27.30
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	36.54	38.3 QP	40.0	-1.7	1.00 V	176	24.73	13.57
2	168.20	33.7 QP	43.5	-9.8	2.00 V	147	19.61	14.06
3	399.95	38.5 QP	46.0	-7.6	1.00 V	69	20.52	17.93
4	499.85	43.4 QP	46.0	-2.6	1.00 V	258	23.09	20.31
5	560.10	41.8 QP	46.0	-4.2	1.00 V	36	20.14	21.70
6	799.98	41.7 QP	46.0	-4.3	1.50 V	177	15.81	25.87

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 / 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 67%RH	TESTED BY	Evan Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2386.00	58.1 PK	74.0	-15.9	1.67 H	112	26.36	31.74
2	2386.00	46.4 AV	54.0	-7.6	1.67 H	112	14.66	31.74
3	*2412.00	104.8 PK			1.67 H	112	72.98	31.82
4	*2412.00	102.6 AV			1.67 H	112	70.78	31.82
5	4824.00	52.6 PK	74.0	-21.4	1.33 H	129	13.24	39.36
6	4824.00	45.6 AV	54.0	-8.4	1.33 H	129	6.24	39.36
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	2386.00	56.8 PK	74.0	-17.2	1.00 V	83	25.06	31.74
2	2386.00	44.4 AV	54.0	-9.6	1.00 V	83	12.66	31.74
3	*2412.00	101.2 PK			1.00 V	83	69.38	31.82
4	*2412.00	99.1 AV			1.00 V	83	67.28	31.82
5	4824.00	53.2 PK	74.0	-20.8	1.06 V	99	13.84	39.36
6	4824.00	45.5 AV	54.0	-8.5	1.06 V	99	6.14	39.36

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 / 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 67%RH	TESTED BY	Evan Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	103.2 PK			1.68 H	111	71.28	31.92
2	*2437.00	101.5 AV			1.68 H	111	69.58	31.92
3	4874.00	53.0 PK	74.0	-21.0	1.35 H	55	13.50	39.50
4	4874.00	45.9 AV	54.0	-8.1	1.35 H	55	6.40	39.50
5	7311.00	55.0 PK	74.0	-19.0	1.23 H	330	8.12	46.88
6	7311.00	45.6 AV	54.0	-8.4	1.23 H	330	-1.28	46.88
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	100.2 PK			1.01 V	84	68.28	31.92
2	*2437.00	97.7 AV			1.01 V	84	65.78	31.92
3	4874.00	51.6 PK	74.0	-22.4	1.06 V	98	12.10	39.50
4	4874.00	43.3 AV	54.0	-10.7	1.06 V	98	3.80	39.50
5	7311.00	55.3 PK	74.0	-18.7	1.22 V	233	8.42	46.88
6	7311.00	48.3 AV	54.0	-5.7	1.22 V	233	1.42	46.88

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 / 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 67%RH	TESTED BY	Evan Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	102.6 PK			1.62 H	110	70.59	32.01
2	*2462.00	100.6 AV			1.62 H	110	68.59	32.01
3	2486.20	57.6 PK	74.0	-16.4	1.40 H	273	25.50	32.10
4	2486.20	44.6 AV	54.0	-9.4	1.40 H	273	12.50	32.10
5	4924.00	53.0 PK	74.0	-21.0	1.31 H	70	13.33	39.67
6	4924.00	46.2 AV	54.0	-7.8	1.31 H	70	6.53	39.67
7	7386.00	54.8 PK	74.0	-19.2	1.29 H	320	8.00	46.80
8	7386.00	45.5 AV	54.0	-8.5	1.29 H	320	-1.30	46.80
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	100.0 PK			1.00 V	79	67.99	32.01
2	*2462.00	97.9 AV			1.00 V	79	65.89	32.01
3	2485.30	56.3 PK	74.0	-17.7	1.00 V	86	24.20	32.10
4	2485.30	43.5 AV	54.0	-10.5	1.00 V	86	11.40	32.10
5	4924.00	51.5 PK	74.0	-22.5	1.07 V	95	11.83	39.67
6	4924.00	42.9 AV	54.0	-11.1	1.07 V	95	3.23	39.67
7	7386.00	59.6 PK	74.0	-14.4	1.11 V	168	12.80	46.80
8	7386.00	51.1 AV	54.0	-2.9	1.11 V	168	4.30	46.80

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

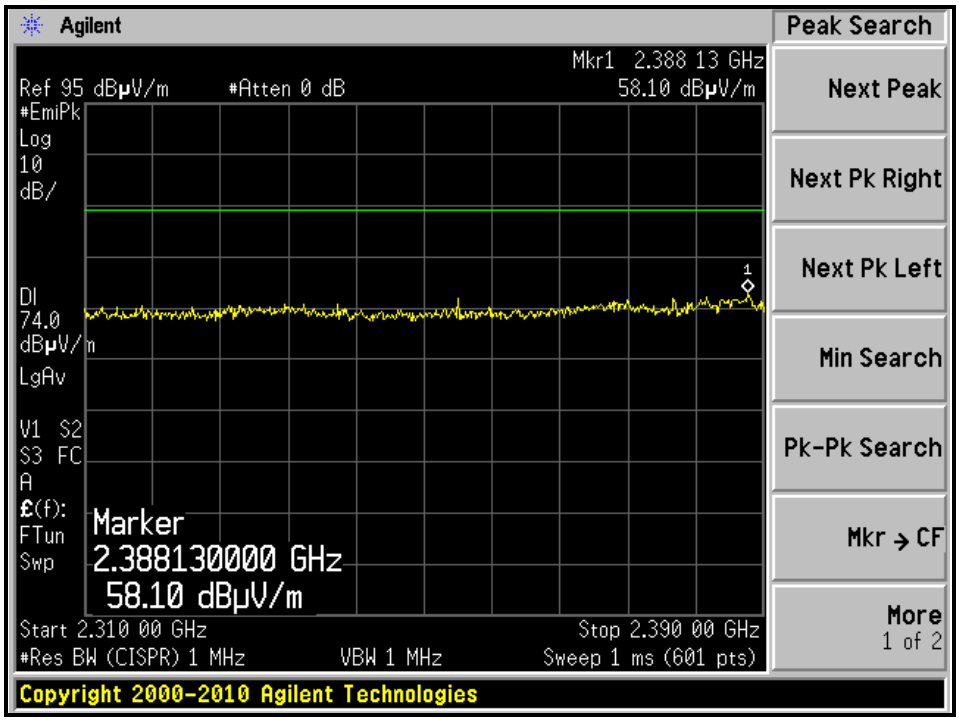
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

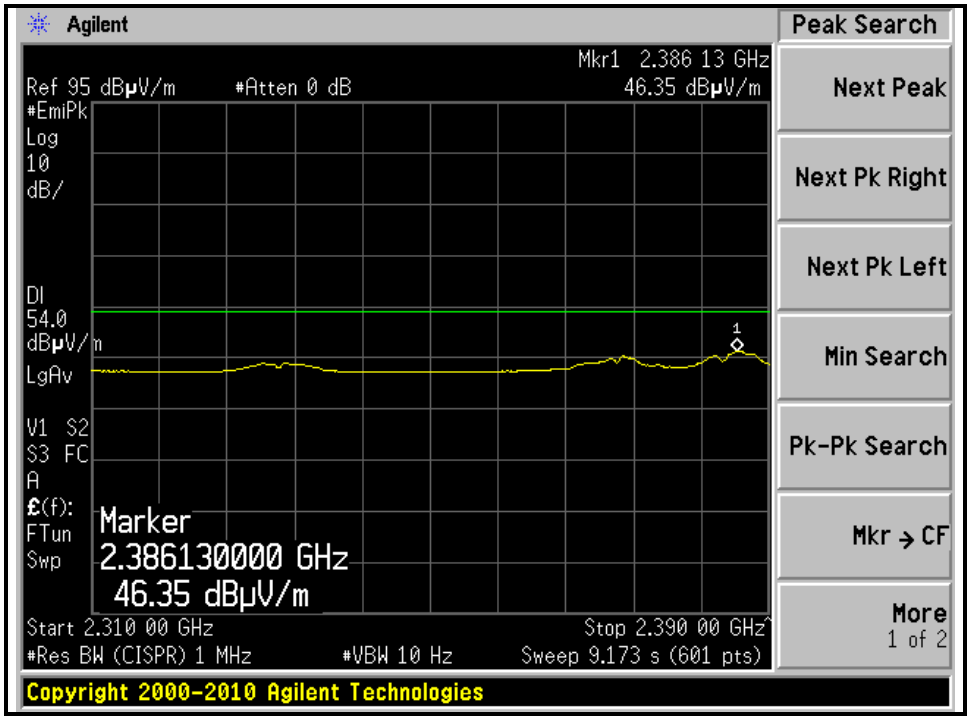
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

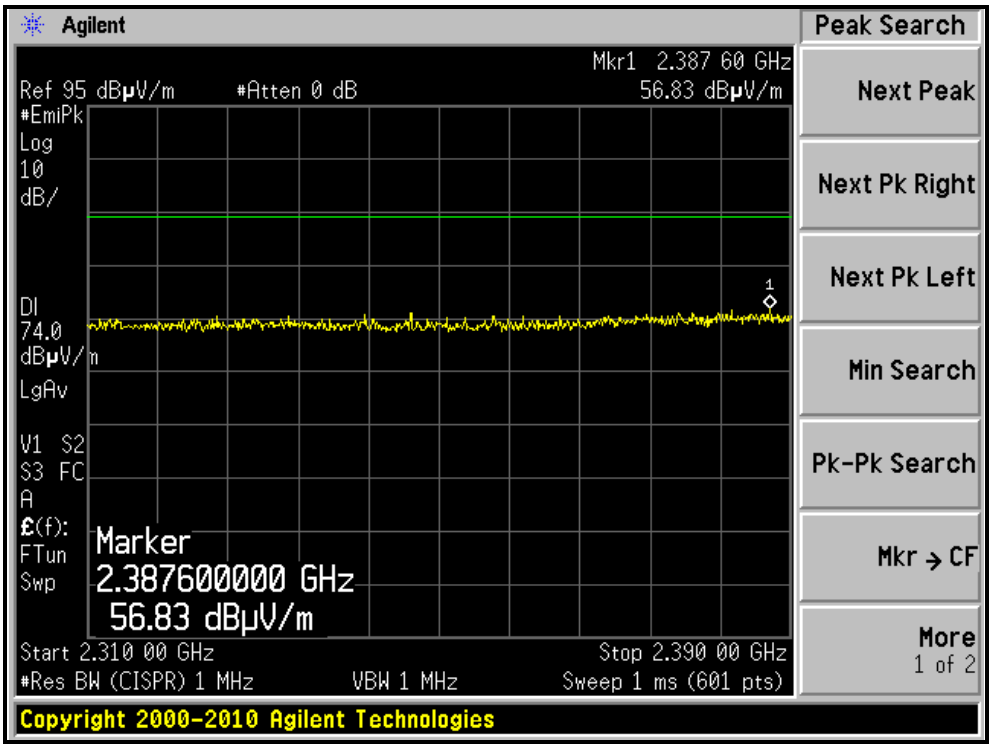
5. " * ": Fundamental frequency.

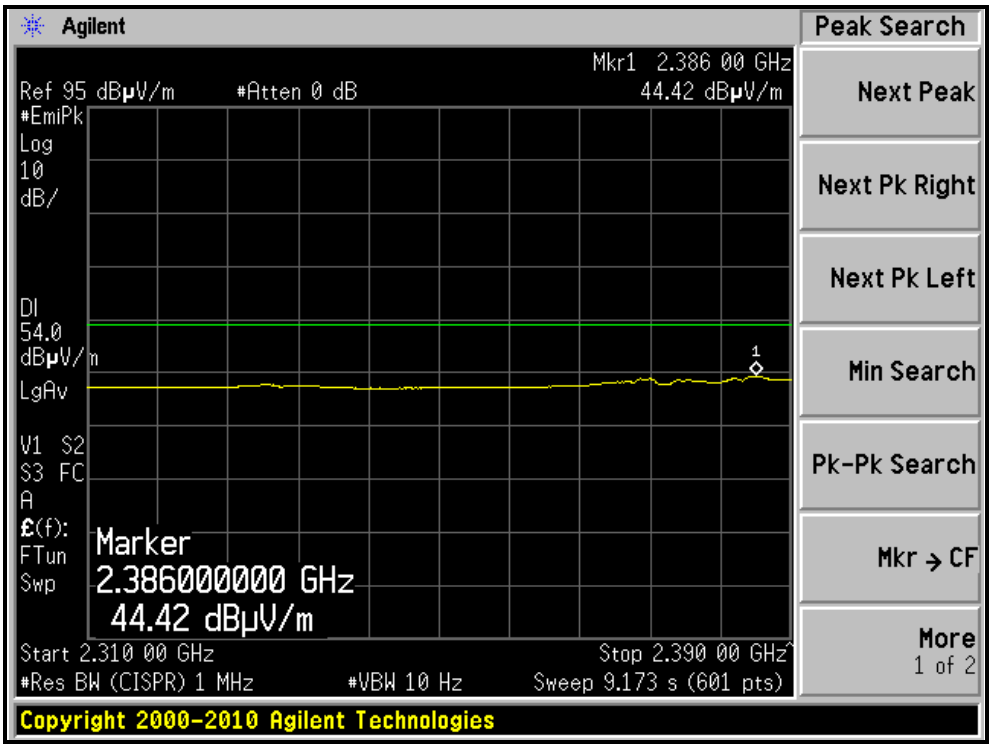
RESTRICTED BANDEDGE (802.11b MODE,CH1, HORIZONTAL)





RESTRICTED BANDEDGE (802.11b MODE,CH1, VERTICAL)





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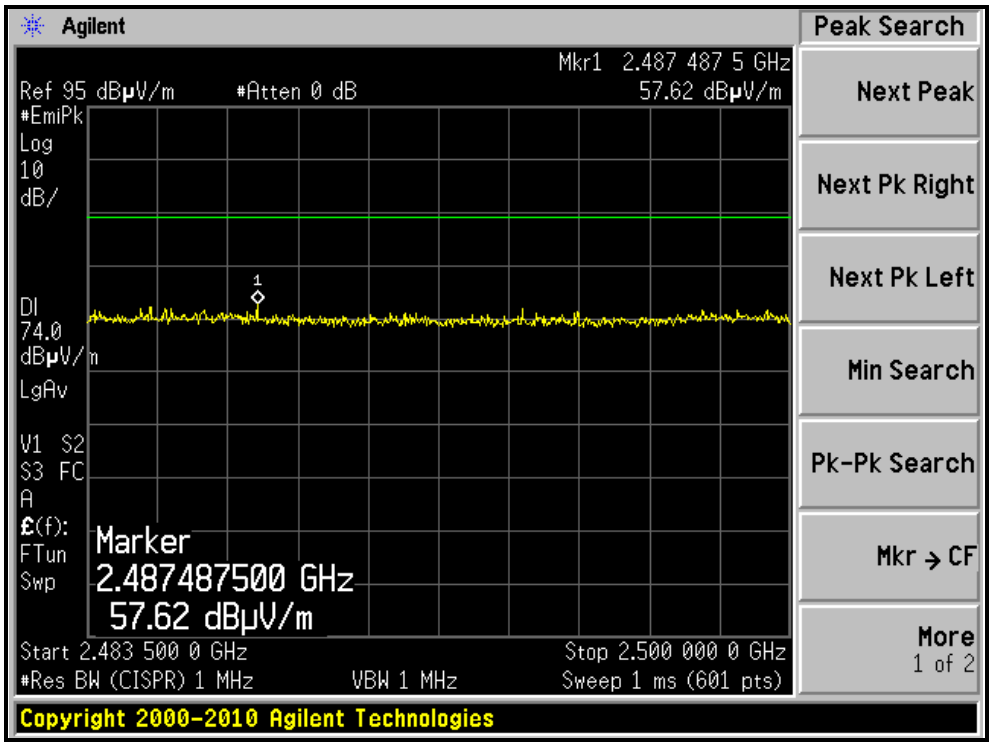
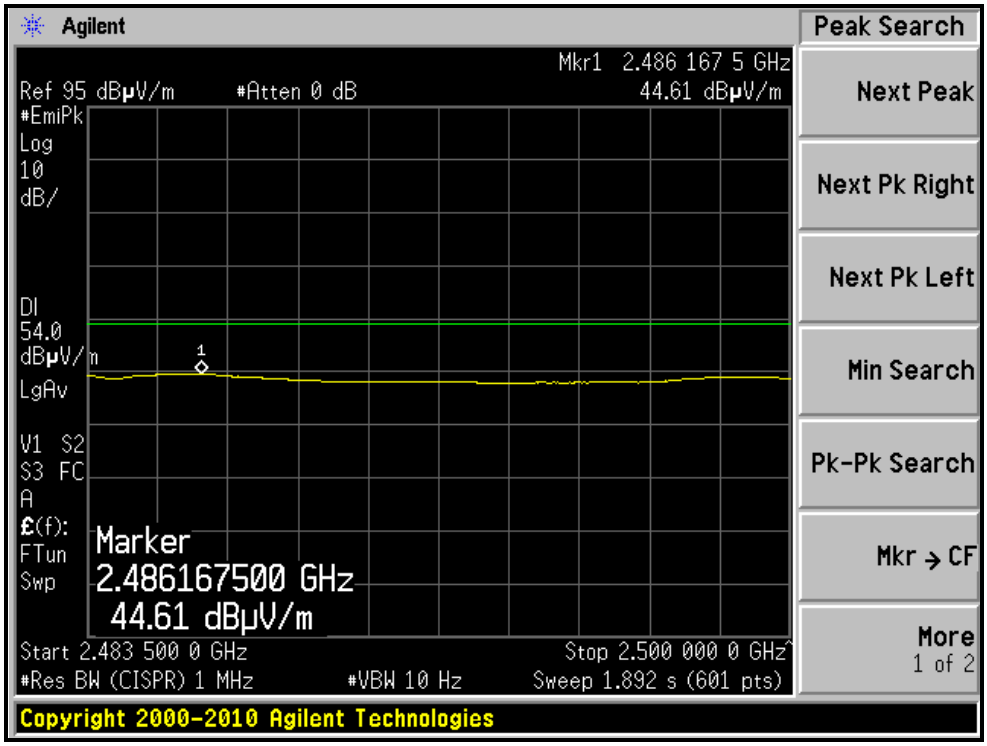
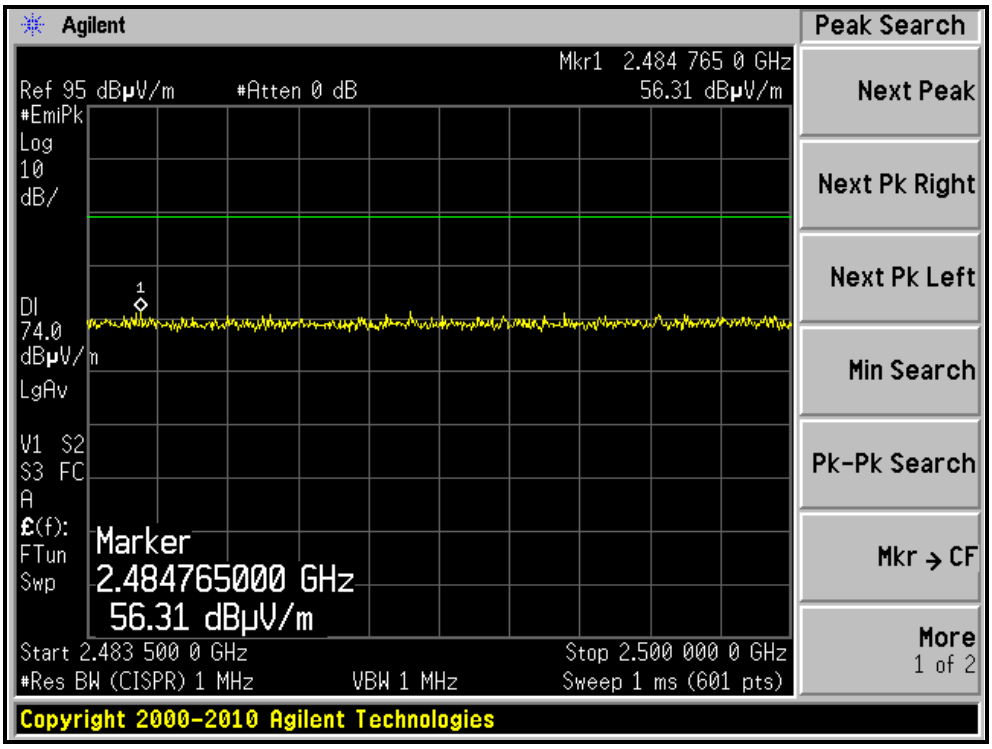
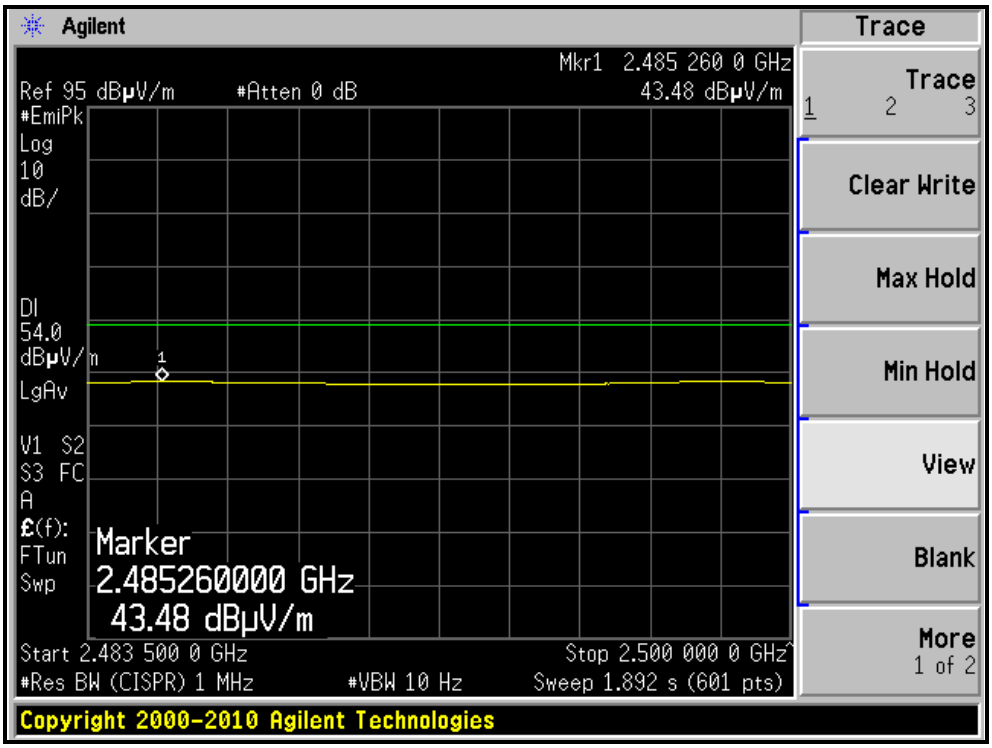




RESTRICTED BANDEDGE (802.11b MODE,CH11, VERTICAL)





802.11g OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac / 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 67%RH	TESTED BY	Evan Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	64.8 PK	74.0	-9.2	1.41 H	245	33.05	31.75
2	2390.00	49.5 AV	54.0	-4.5	1.41 H	245	17.75	31.75
3	*2412.00	107.2 PK			1.39 H	249	75.38	31.82
4	*2412.00	98.3 AV			1.39 H	249	66.48	31.82
5	4824.00	51.2 PK	74.0	-22.8	1.26 H	73	11.84	39.36
6	4824.00	42.2 AV	54.0	-11.8	1.26 H	73	2.84	39.36
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	56.8 PK	74.0	-17.2	1.00 V	265	25.05	31.75
2	2390.00	44.7 AV	54.0	-9.3	1.00 V	265	12.95	31.75
3	*2412.00	99.0 PK			1.00 V	265	67.18	31.82
4	*2412.00	89.9 AV			1.00 V	265	58.08	31.82
5	4824.00	51.9 PK	74.0	-22.1	1.04 V	74	12.54	39.36
6	4824.00	41.0 AV	54.0	-13.0	1.04 V	74	1.64	39.36

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 / 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 67%RH	TESTED BY	Evan Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2364.50	58.6 PK	74.0	-15.4	1.39 H	244	26.93	31.67
2	2364.50	46.2 AV	54.0	-7.8	1.39 H	244	14.53	31.67
3	*2437.00	110.5 PK			1.39 H	245	78.58	31.92
4	*2437.00	101.7 AV			1.39 H	245	69.78	31.92
5	2483.50	57.0 PK	74.0	-17.0	1.36 H	251	24.91	32.09
6	2483.50	46.7 AV	54.0	-7.3	1.36 H	251	14.61	32.09
7	4874.00	50.8 PK	74.0	-23.2	1.31 H	80	11.30	39.50
8	4874.00	41.8 AV	54.0	-12.2	1.31 H	80	2.30	39.50
9	7311.00	60.1 PK	74.0	-13.9	1.56 H	215	13.22	46.88
10	7311.00	46.1 AV	54.0	-7.9	1.56 H	215	-0.78	46.88
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	101.2 PK			1.00 V	85	69.28	31.92
2	*2437.00	92.2 AV			1.00 V	85	60.28	31.92
3	4874.00	52.1 PK	74.0	-21.9	1.07 V	85	12.60	39.50
4	4874.00	41.3 AV	54.0	-12.7	1.07 V	85	1.80	39.50
5	7311.00	62.9 PK	74.0	-11.1	1.19 V	120	16.02	46.88
6	7311.00	49.5 AV	54.0	-4.5	1.19 V	120	2.62	46.88

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 / 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 67%RH	TESTED BY	Evan Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	109.4 PK			1.37 H	251	77.39	32.01
2	*2462.00	100.5 AV			1.37 H	251	68.49	32.01
3	2483.50	70.2 PK	74.0	-3.8	1.36 H	270	38.11	32.09
4	2483.50	48.9 AV	54.0	-5.1	1.36 H	270	16.81	32.09
5	4924.00	51.2 PK	74.0	-22.8	1.29 H	76	11.53	39.67
6	4924.00	42.1 AV	54.0	-11.9	1.29 H	76	2.43	39.67
7	7386.00	60.0 PK	74.0	-14.0	1.60 H	210	13.20	46.80
8	7386.00	46.0 AV	54.0	-8.0	1.60 H	210	-0.80	46.80
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	100.9 PK			1.00 V	81	68.89	32.01
2	*2462.00	91.9 AV			1.00 V	81	59.89	32.01
3	2483.50	59.3 PK	74.0	-14.7	1.00 V	80	27.21	32.09
4	2483.50	45.0 AV	54.0	-9.0	1.00 V	80	12.91	32.09
5	4924.00	52.0 PK	74.0	-22.0	1.13 V	98	12.33	39.67
6	4924.00	41.5 AV	54.0	-12.5	1.13 V	98	1.83	39.67
7	7386.00	64.2 PK	74.0	-9.8	1.26 V	178	17.40	46.80
8	7386.00	51.8 AV	54.0	-2.2	1.26 V	178	5.00	46.80

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

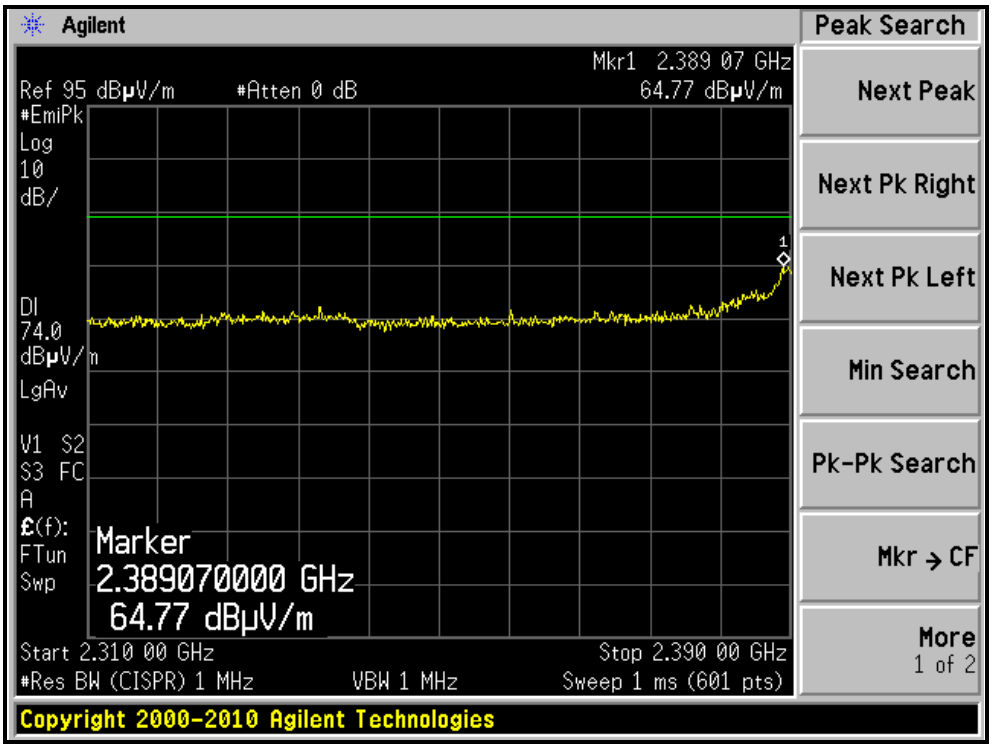
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

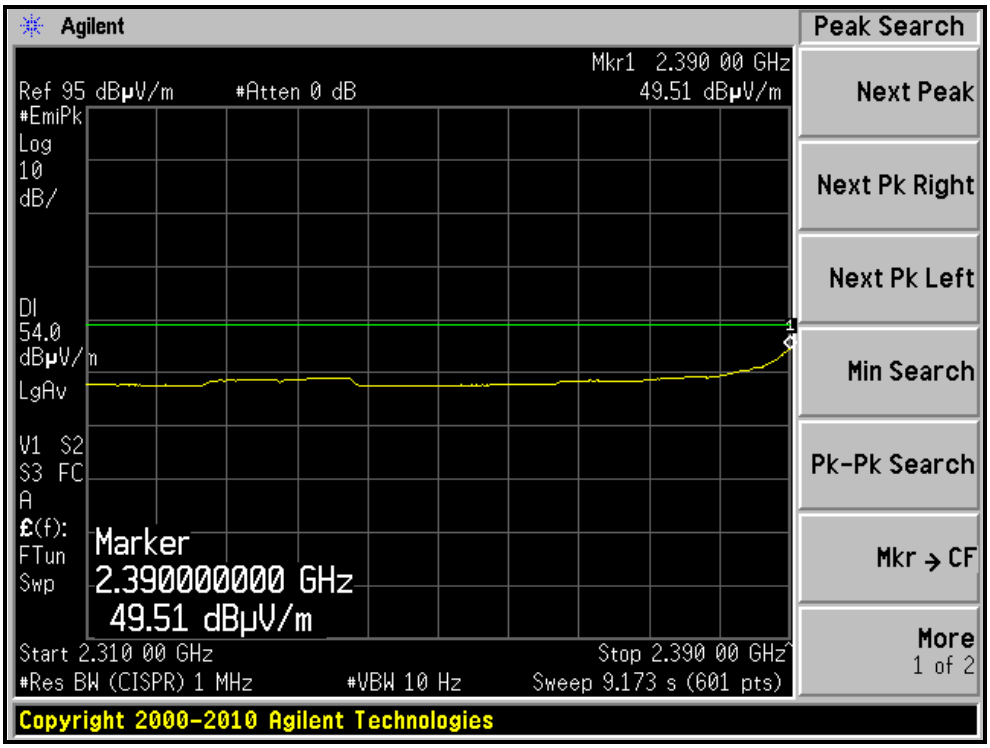
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

RESTRICTED BANDEDGE (802.11g MODE,CH1, HORIZONTAL)





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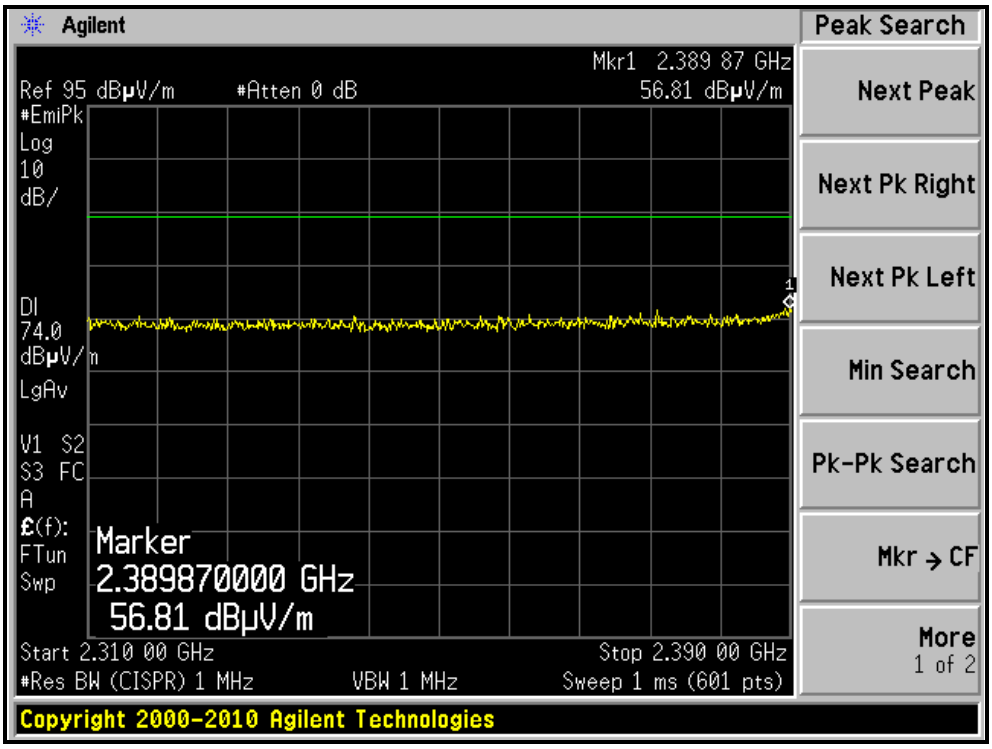
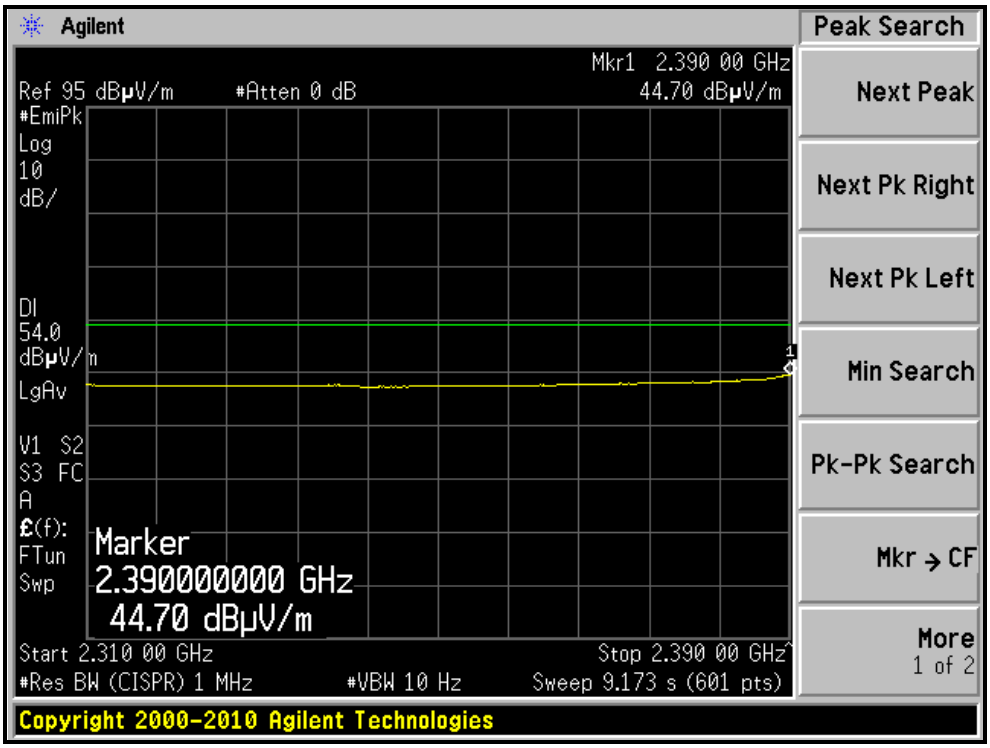
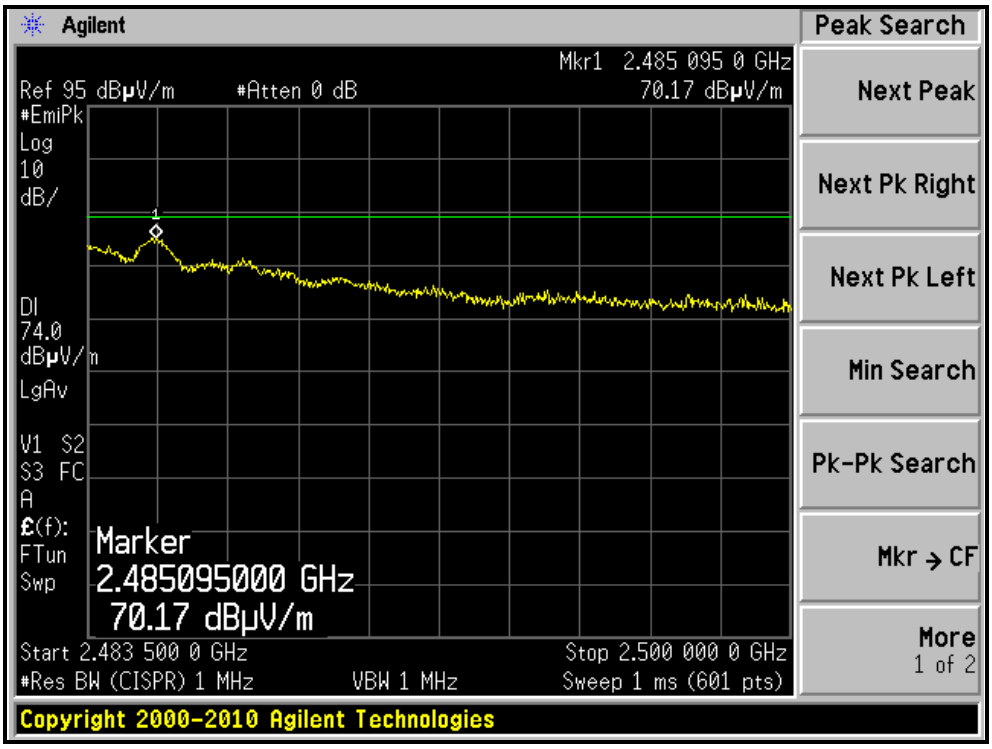
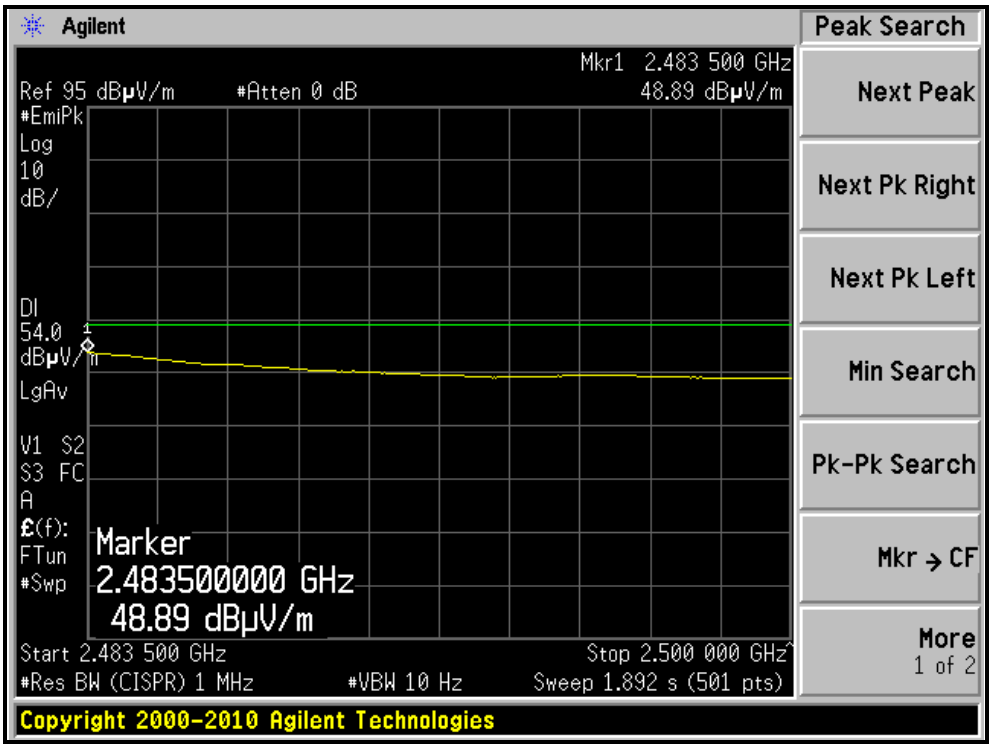


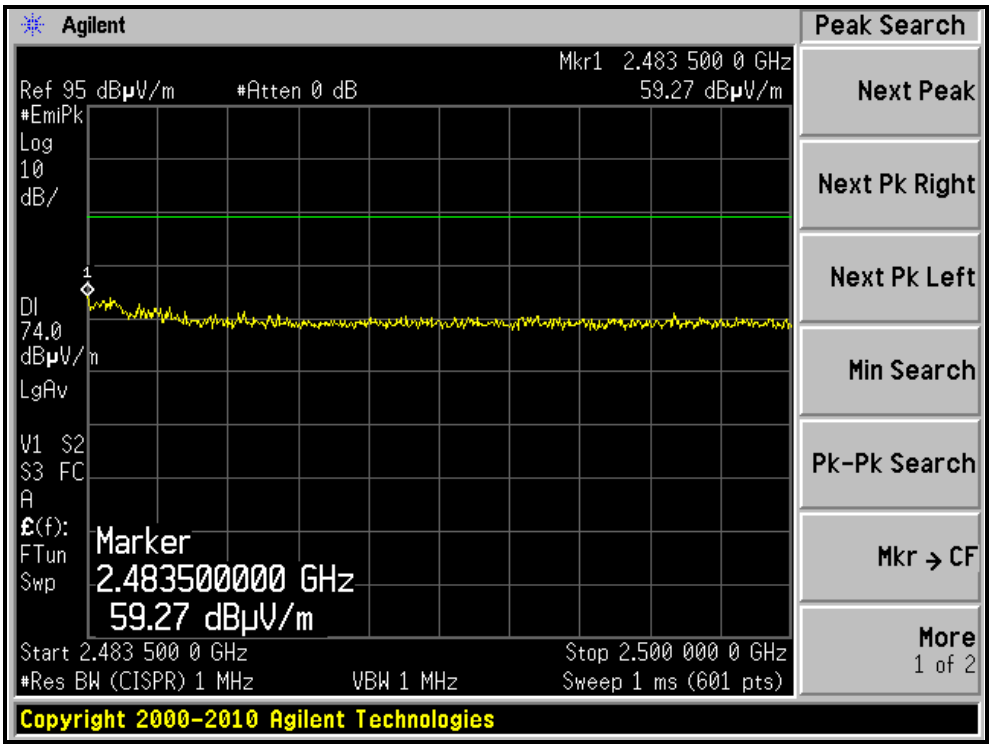


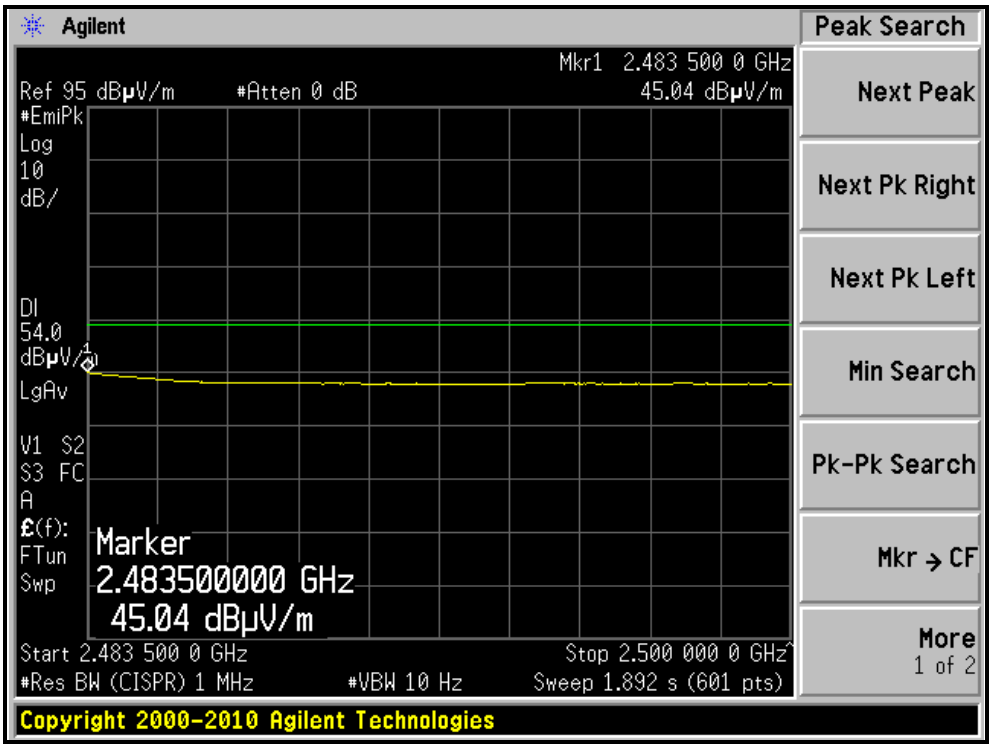
RESTRICTED BANDEDGE (802.11g MODE,CH11, HORIZONTAL)





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 / 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 67%RH	TESTED BY	Evan Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	65.4 PK	74.0	-8.6	1.41 H	245	33.65	31.75
2	2390.00	51.9 AV	54.0	-2.1	1.41 H	245	20.15	31.75
3	*2412.00	105.7 PK			1.37 H	247	73.88	31.82
4	*2412.00	96.6 AV			1.37 H	247	64.78	31.82
5	4824.00	51.5 PK	74.0	-22.5	1.28 H	61	12.14	39.36
6	4824.00	42.5 AV	54.0	-11.5	1.28 H	61	3.14	39.36
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	59.5 PK	74.0	-14.5	1.00 V	83	27.75	31.75
2	2390.00	45.6 AV	54.0	-8.4	1.00 V	83	13.85	31.75
3	*2412.00	100.8 PK			1.00 V	83	68.98	31.82
4	*2412.00	91.0 AV			1.00 V	83	59.18	31.82
5	4824.00	52.1 PK	74.0	-21.9	1.17 V	89	12.74	39.36
6	4824.00	41.7 AV	54.0	-12.3	1.17 V	89	2.34	39.36

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 / 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 67%RH	TESTED BY	Evan Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2365.07	58.6 PK	74.0	-15.4	1.42 H	249	26.93	31.67
2	2365.07	46.1 AV	54.0	-7.9	1.42 H	249	14.43	31.67
3	*2437.00	110.3 PK			1.38 H	251	78.38	31.92
4	*2437.00	101.0 AV			1.38 H	251	69.08	31.92
5	2483.50	60.7 PK	74.0	-13.3	1.43 H	268	28.61	32.09
6	2483.50	46.3 AV	54.0	-7.7	1.43 H	268	14.21	32.09
7	4874.00	50.5 PK	74.0	-23.5	1.27 H	90	11.00	39.50
8	4874.00	41.9 AV	54.0	-12.1	1.27 H	90	2.40	39.50
9	7311.00	60.1 PK	74.0	-13.9	1.61 H	205	13.22	46.88
10	7311.00	46.1 AV	54.0	-7.9	1.61 H	205	-0.78	46.88
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	99.8 PK			1.00 V	80	67.88	31.92
2	*2437.00	90.5 AV			1.00 V	80	58.58	31.92
3	4874.00	51.6 PK	74.0	-22.4	1.17 V	83	12.10	39.50
4	4874.00	41.4 AV	54.0	-12.6	1.17 V	83	1.90	39.50
5	7311.00	61.9 PK	74.0	-12.1	1.37 V	177	15.02	46.88
6	7311.00	46.4 AV	54.0	-7.6	1.37 V	177	-0.48	46.88

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 / 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 67%RH	TESTED BY	Evan Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	107.8 PK			1.36 H	250	75.79	32.01
2	*2462.00	98.4 AV			1.36 H	250	66.39	32.01
3	2483.50	66.4 PK	74.0	-7.6	1.35 H	249	34.31	32.09
4	2483.50	51.4 AV	54.0	-2.6	1.35 H	249	19.31	32.09
5	4924.00	51.1 PK	74.0	-22.9	1.29 H	75	11.43	39.67
6	4924.00	42.2 AV	54.0	-11.8	1.29 H	75	2.53	39.67
7	7386.00	60.0 PK	74.0	-14.0	1.62 H	204	13.20	46.80
8	7386.00	45.9 AV	54.0	-8.1	1.62 H	204	-0.90	46.80
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	99.7 PK			1.00 V	81	67.69	32.01
2	*2462.00	90.0 AV			1.00 V	81	57.99	32.01
3	2483.50	57.8 PK	74.0	-16.2	1.00 V	81	25.71	32.09
4	2483.50	43.9 AV	54.0	-10.1	1.00 V	81	11.81	32.09
5	4924.00	51.8 PK	74.0	-22.2	1.23 V	85	12.13	39.67
6	4924.00	41.6 AV	54.0	-12.4	1.23 V	85	1.93	39.67
7	7386.00	59.9 PK	74.0	-14.1	1.29 V	187	13.10	46.80
8	7386.00	45.2 AV	54.0	-8.8	1.29 V	187	-1.60	46.80

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

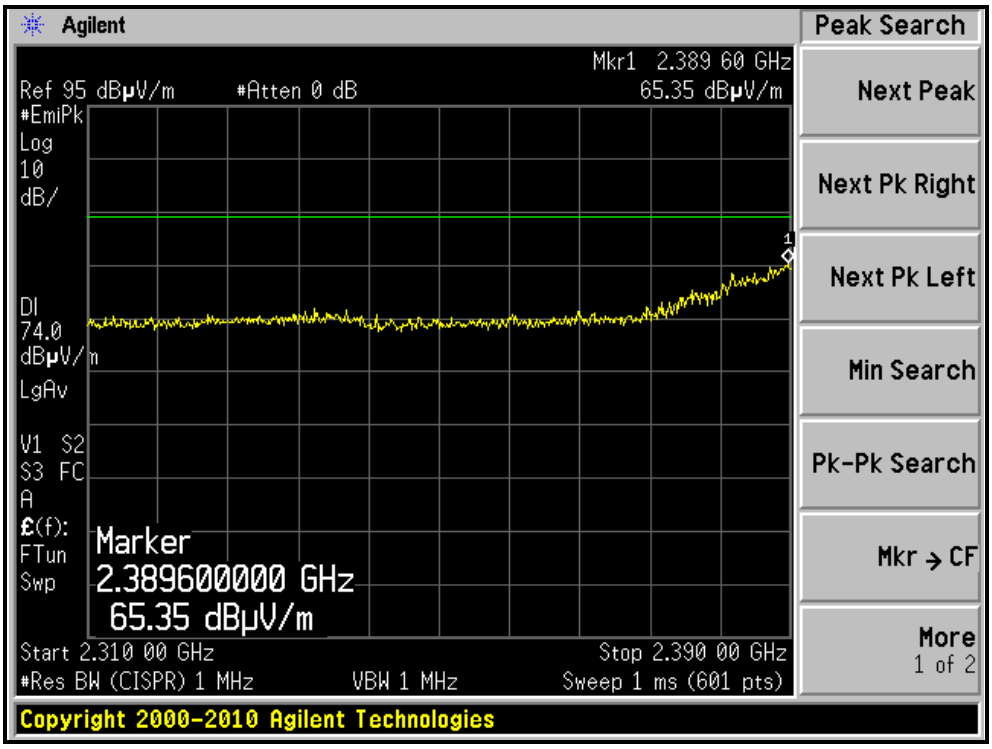
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

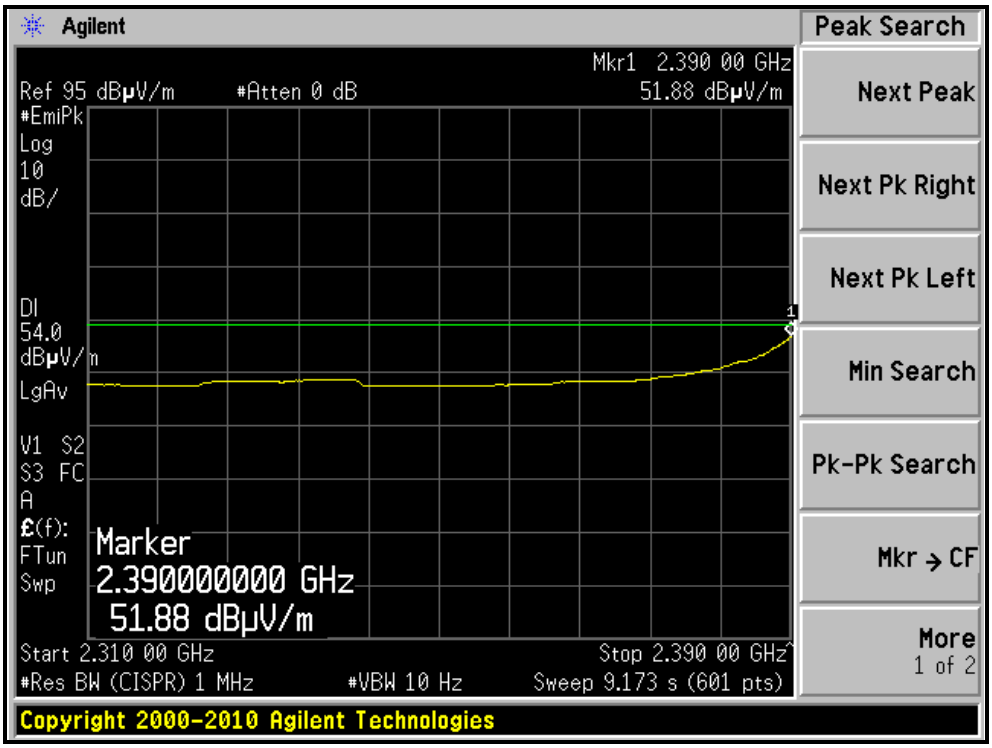
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

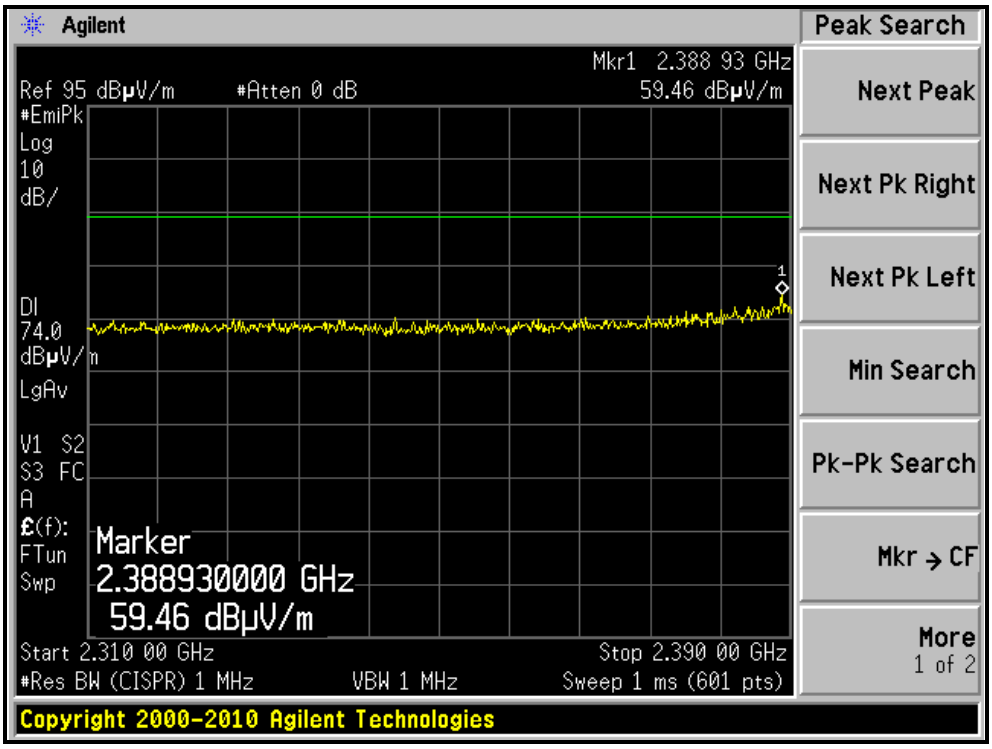
5. " * ": Fundamental frequency.

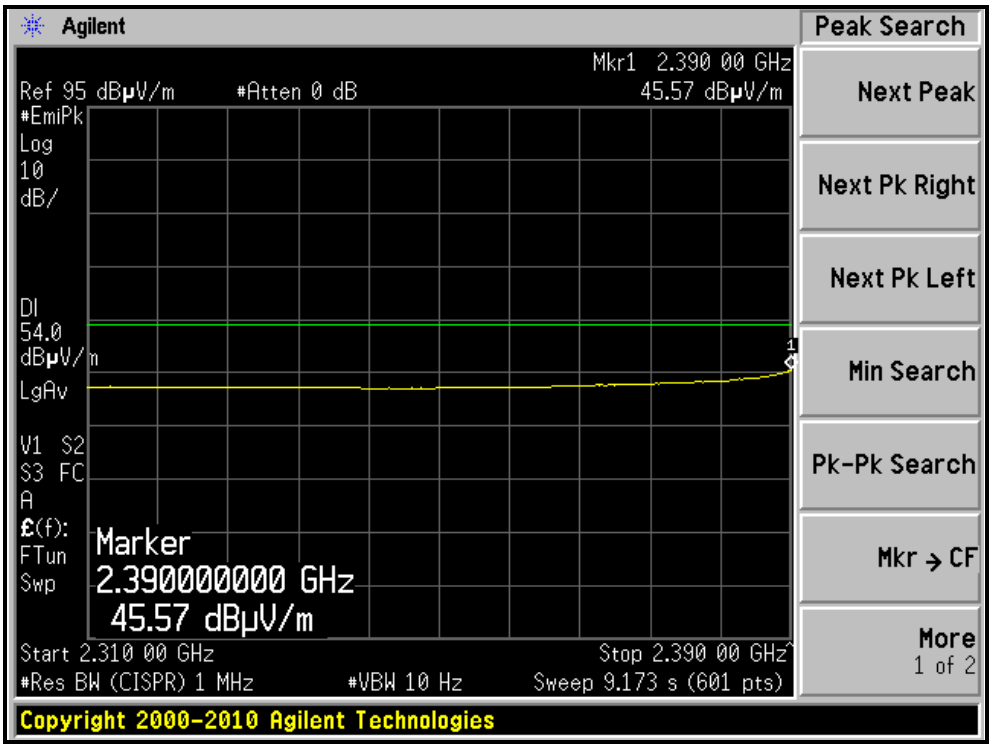
RESTRICTED BANDEDGE (802.11n (20MHz) MODE,CH1, HORIZONTAL)



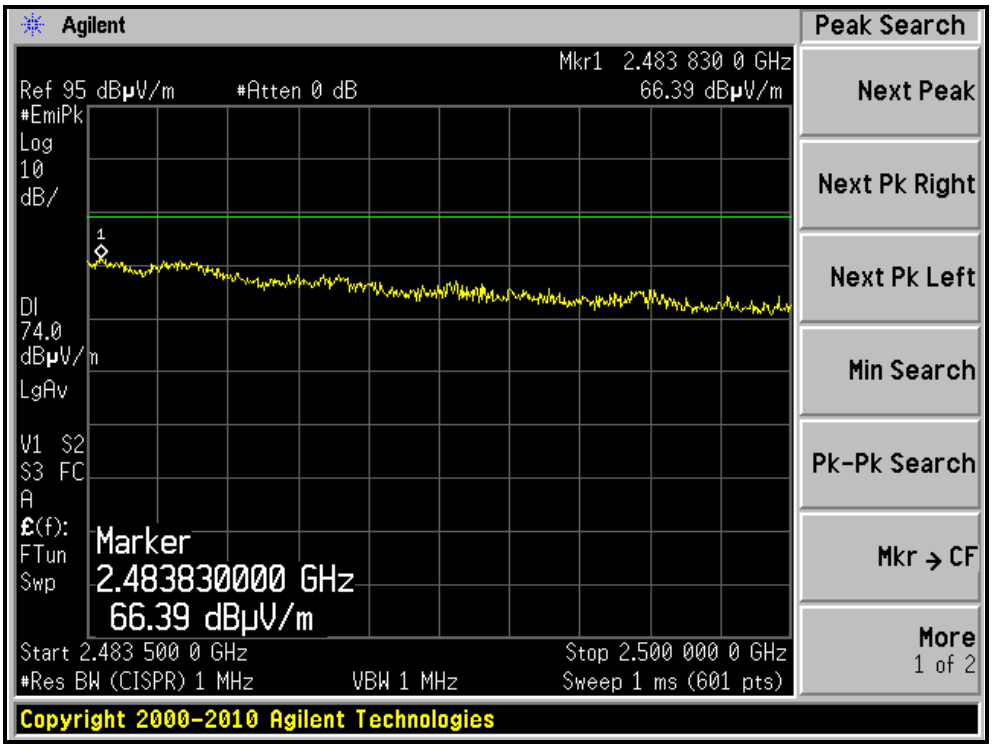


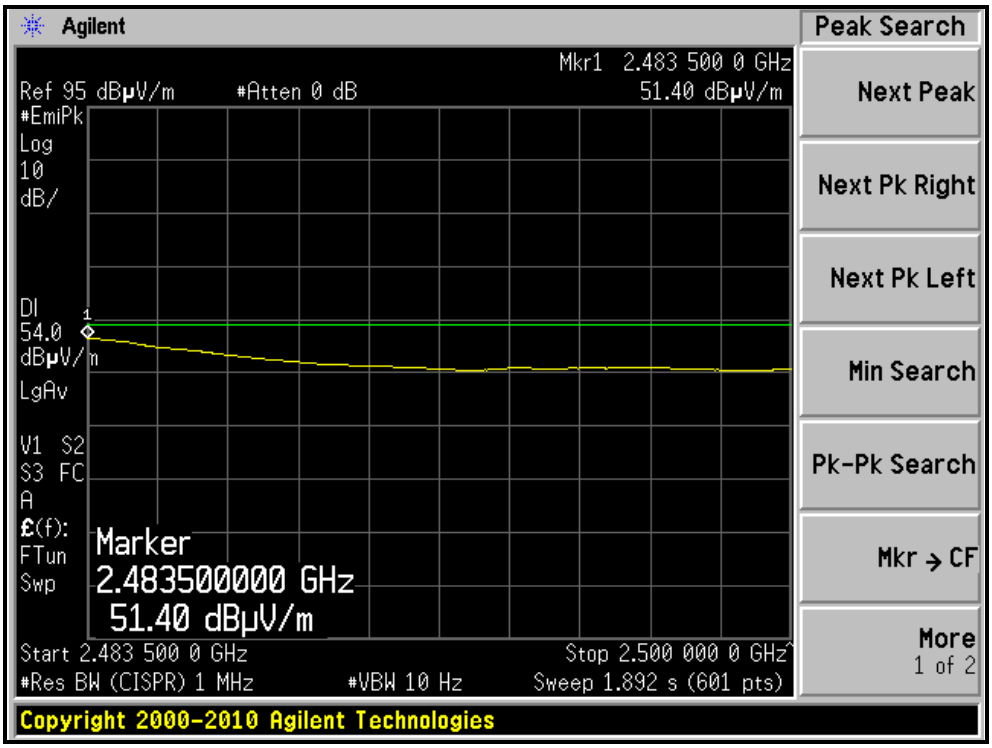
RESTRICTED BANDEDGE (802.11n (20MHz) MODE,CH1, VERTICAL)



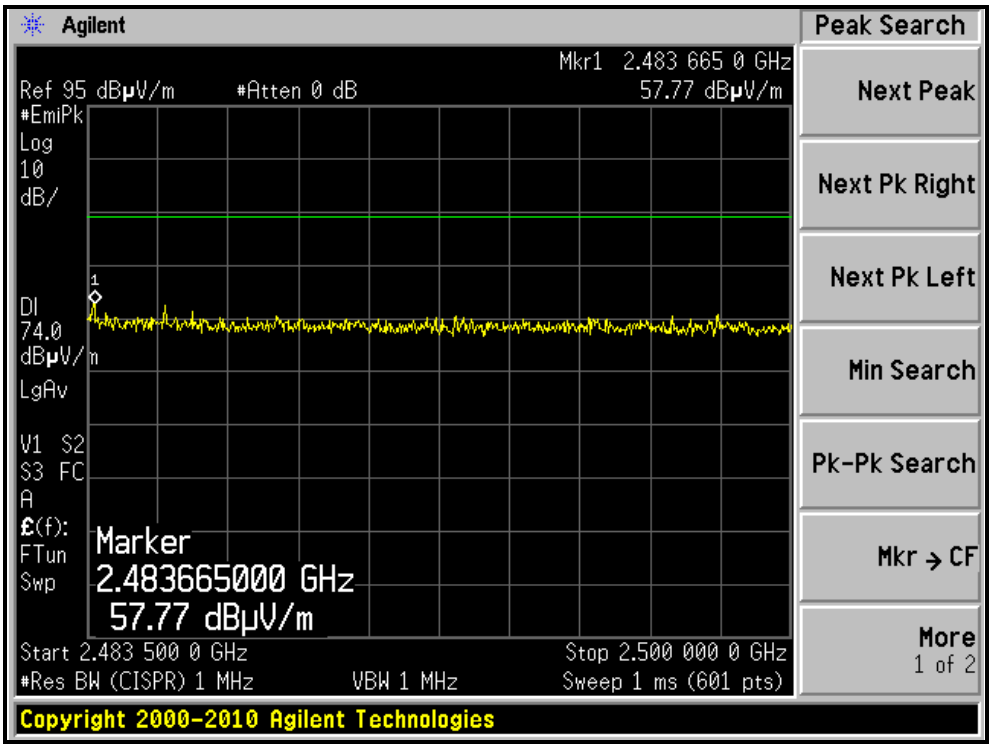


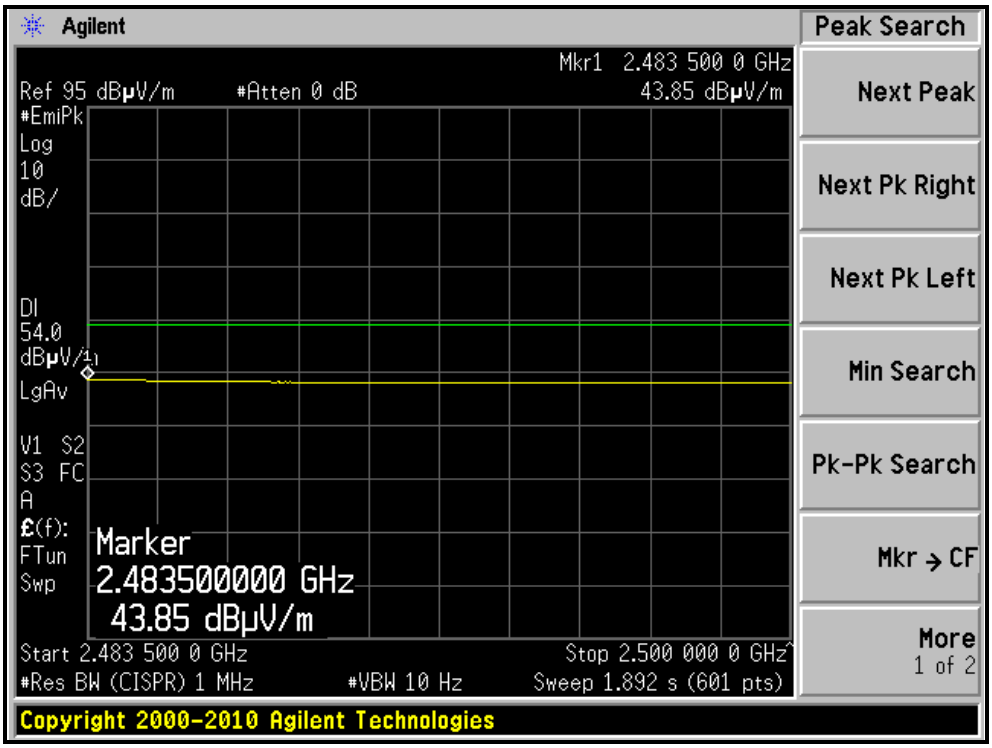
RESTRICTED BANDEDGE (802.11n (20MHz) MODE,CH11, HORIZONTAL)





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





802.11n (40MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 3	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac / 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 67%RH	TESTED BY	Evan Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2389.07	65.3 PK	74.0	-8.7	1.40 H	247	33.55	31.75
2	2389.07	50.5 AV	54.0	-3.5	1.40 H	247	18.75	31.75
3	*2422.00	103.1 PK			1.38 H	251	71.24	31.86
4	*2422.00	93.3 AV			1.38 H	251	61.44	31.86
5	4844.00	50.9 PK	74.0	-23.1	1.30 H	96	11.48	39.42
6	4844.00	41.8 AV	54.0	-12.2	1.30 H	96	2.38	39.42
7	7266.00	54.6 PK	74.0	-19.4	1.74 H	210	7.69	46.91
8	7266.00	43.4 AV	54.0	-10.6	1.74 H	210	-3.51	46.91
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	57.8 PK	74.0	-16.2	1.00 V	81	26.05	31.75
2	2390.00	44.9 AV	54.0	-9.1	1.00 V	81	13.15	31.75
3	*2422.00	96.1 PK			1.00 V	81	64.24	31.86
4	*2422.00	86.7 AV			1.00 V	81	54.84	31.86
5	4844.00	50.5 PK	74.0	-23.5	1.11 V	70	11.08	39.42
6	4844.00	40.0 AV	54.0	-14.0	1.11 V	70	0.58	39.42
7	7266.00	57.8 PK	74.0	-16.2	1.31 V	255	10.89	46.91
8	7266.00	45.7 AV	54.0	-8.3	1.31 V	255	-1.21	46.91

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac / 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 67%RH	TESTED BY	Evan Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2389.96	63.1 PK	74.0	-10.9	1.39 H	245	31.35	31.75
2	2389.96	49.2 AV	54.0	-4.8	1.39 H	245	17.45	31.75
3	*2437.00	104.6 PK			1.39 H	249	72.68	31.92
4	*2437.00	95.0 AV			1.39 H	249	63.08	31.92
5	2483.50	63.8 PK	74.0	-10.2	1.40 H	266	31.71	32.09
6	2483.50	50.3 AV	54.0	-3.7	1.40 H	266	18.21	32.09
7	4874.00	51.1 PK	74.0	-22.9	1.29 H	76	11.60	39.50
8	4874.00	42.0 AV	54.0	-12.0	1.29 H	76	2.50	39.50
9	7311.00	54.9 PK	74.0	-19.1	1.70 H	219	8.02	46.88
10	7311.00	43.6 AV	54.0	-10.4	1.70 H	219	-3.28	46.88
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	96.3 PK			1.00 V	81	64.38	31.92
2	*2437.00	87.0 AV			1.00 V	81	55.08	31.92
3	4874.00	50.4 PK	74.0	-23.6	1.06 V	85	10.90	39.50
4	4874.00	41.0 AV	54.0	-13.0	1.06 V	85	1.50	39.50
5	7311.00	58.3 PK	74.0	-15.7	1.29 V	260	11.42	46.88
6	7311.00	45.8 AV	54.0	-8.2	1.29 V	260	-1.08	46.88

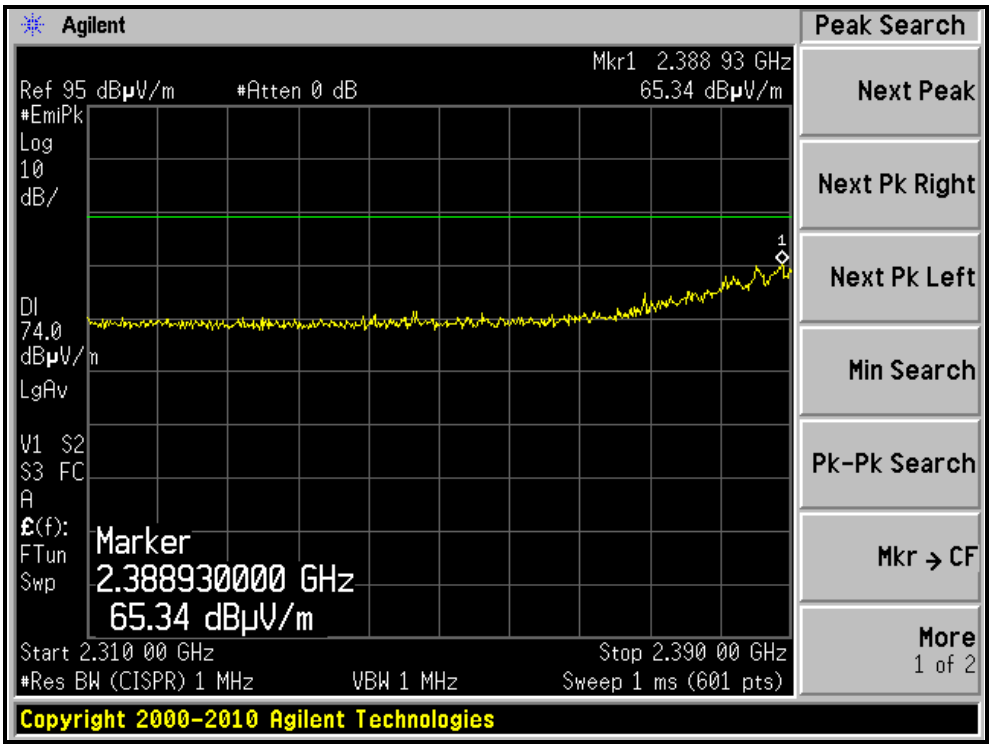
REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

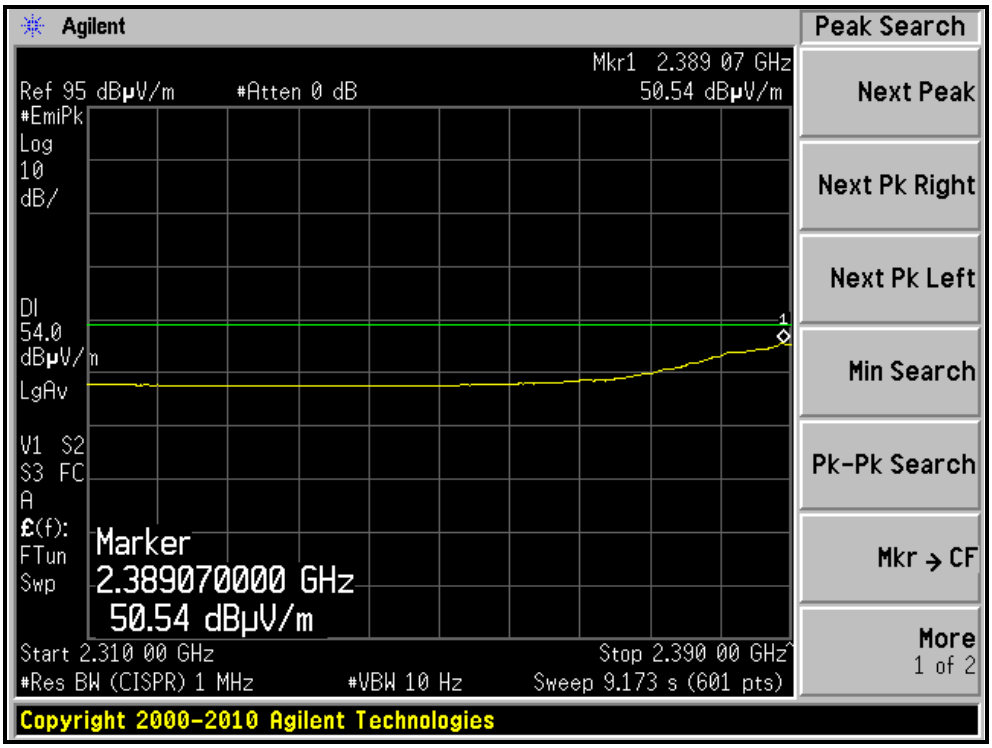
EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 9	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac / 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	20deg. C, 67%RH	TESTED BY	Evan Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	102.9 PK			1.38 H	253	70.93	31.97
2	*2452.00	92.8 AV			1.38 H	253	60.83	31.97
3	2483.50	65.7 PK	74.0	-8.3	1.40 H	265	33.61	32.09
4	2483.50	51.0 AV	54.0	-3.0	1.40 H	265	18.91	32.09
5	4904.00	51.1 PK	74.0	-22.9	1.28 H	91	11.50	39.60
6	4904.00	41.9 AV	54.0	-12.1	1.28 H	91	2.30	39.60
7	7356.00	54.3 PK	74.0	-19.7	1.72 H	211	7.47	46.83
8	7356.00	43.3 AV	54.0	-10.7	1.72 H	211	-3.53	46.83
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	95.6 PK			1.00 V	80	63.63	31.97
2	*2452.00	86.3 AV			1.00 V	80	54.33	31.97
3	2483.50	58.3 PK	74.0	-15.7	1.00 V	80	26.21	32.09
4	2483.50	44.5 AV	54.0	-9.5	1.00 V	80	12.41	32.09
5	4904.00	50.2 PK	74.0	-23.8	1.10 V	72	10.60	39.60
6	4904.00	39.8 AV	54.0	-14.2	1.10 V	72	0.20	39.60
7	7356.00	58.1 PK	74.0	-15.9	1.34 V	246	11.27	46.83
8	7356.00	45.7 AV	54.0	-8.3	1.34 V	246	-1.13	46.83

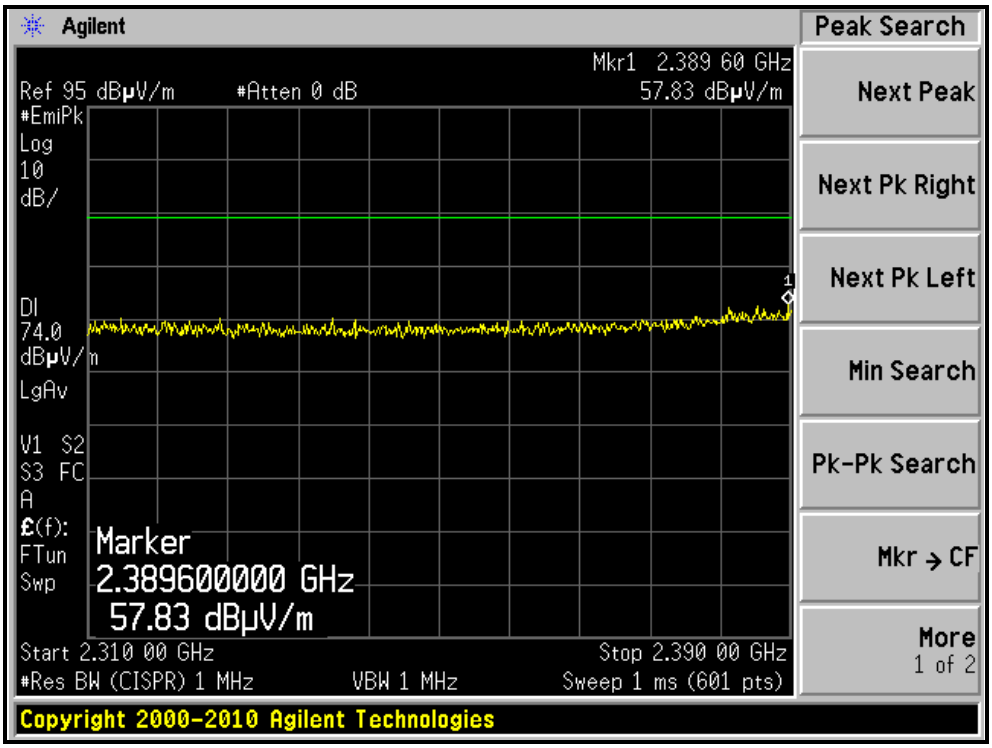
REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

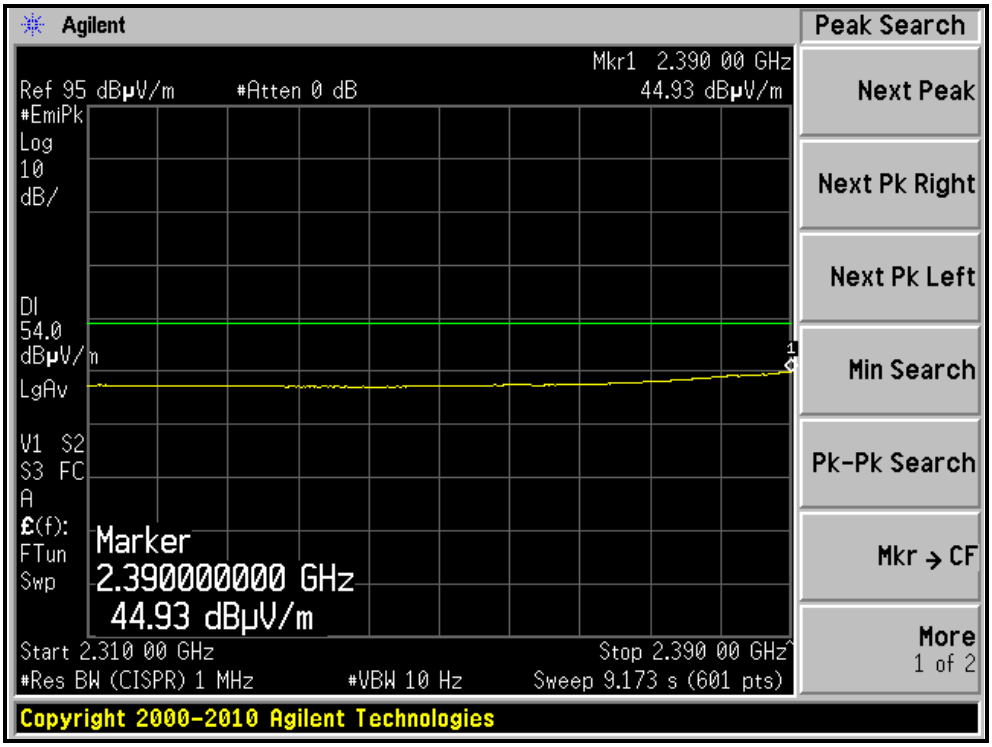
RESTRICTED BANDEDGE (802.11n (40MHz) MODE,CH3, HORIZONTAL)



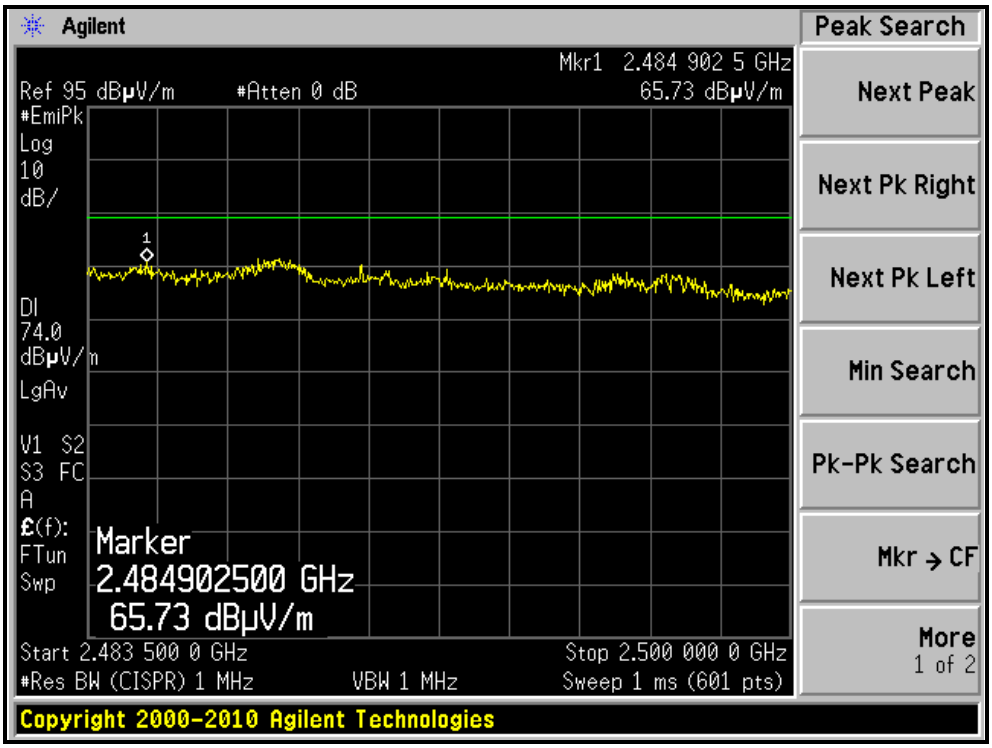


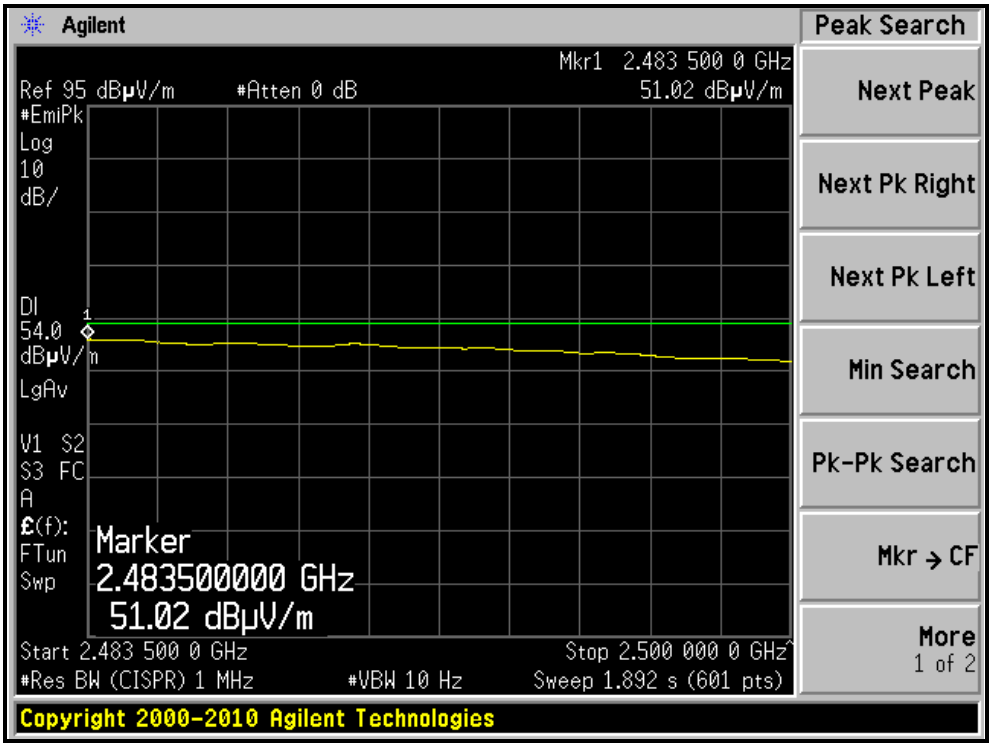
RESTRICTED BANDEDGE (802.11n (40MHz) MODE,CH3, VERTICAL)



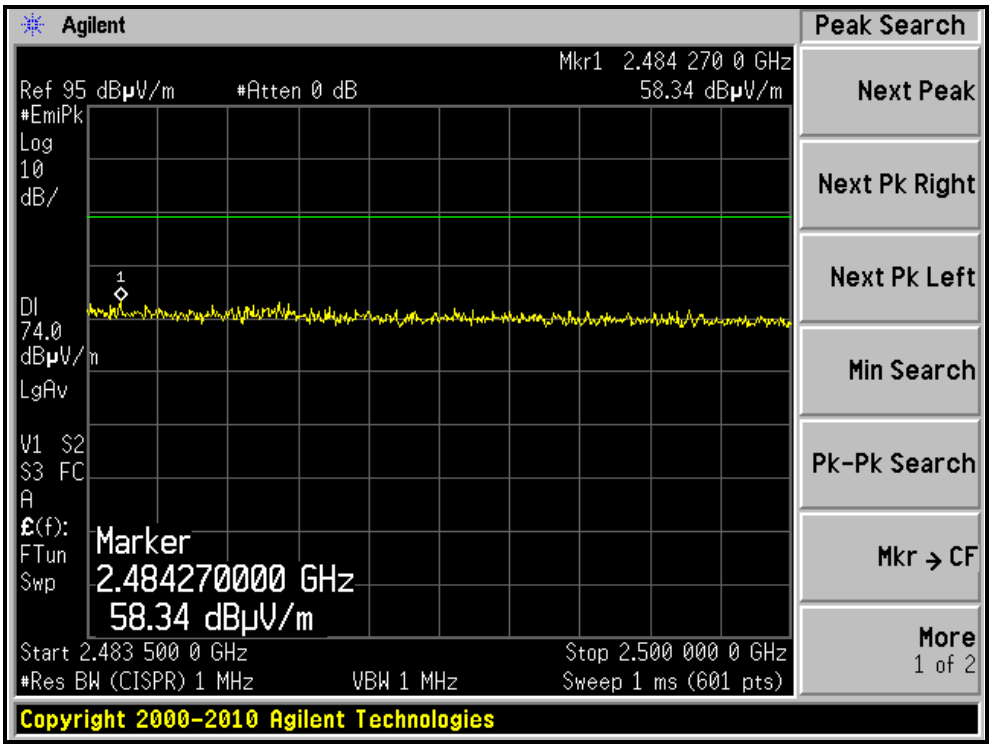


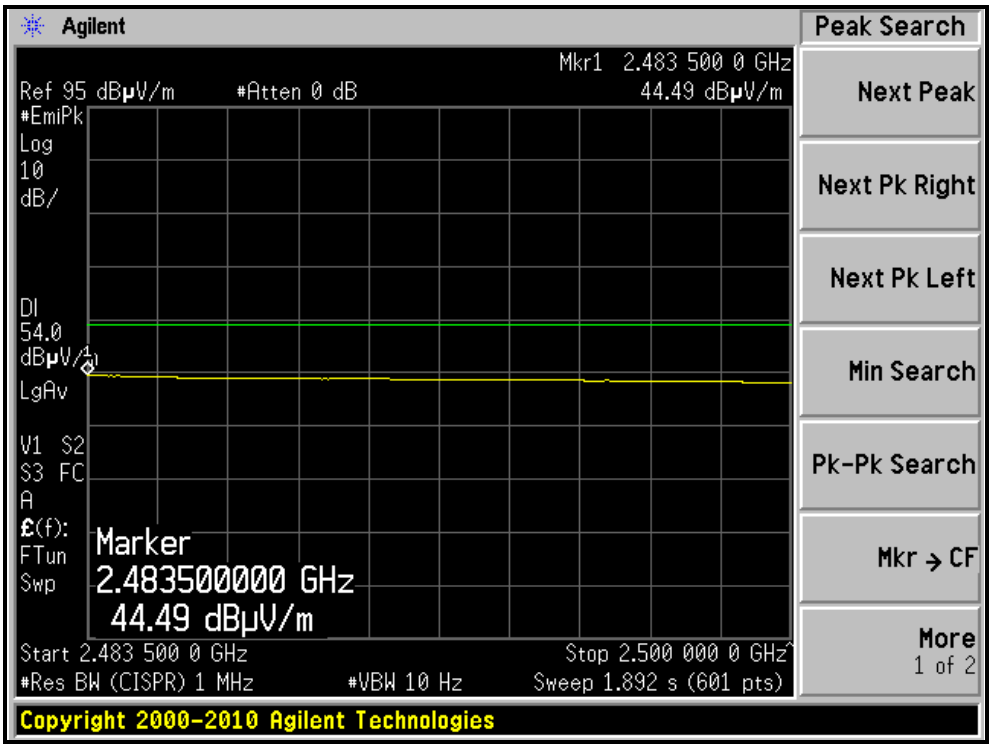
RESTRICTED BANDEDGE (802.11n (40MHz) MODE,CH9, HORIZONTAL)





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: Nov. 16, 2011

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

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

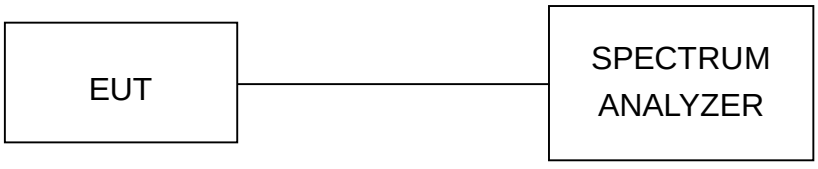
4.3.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100kHz RBW and 300kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

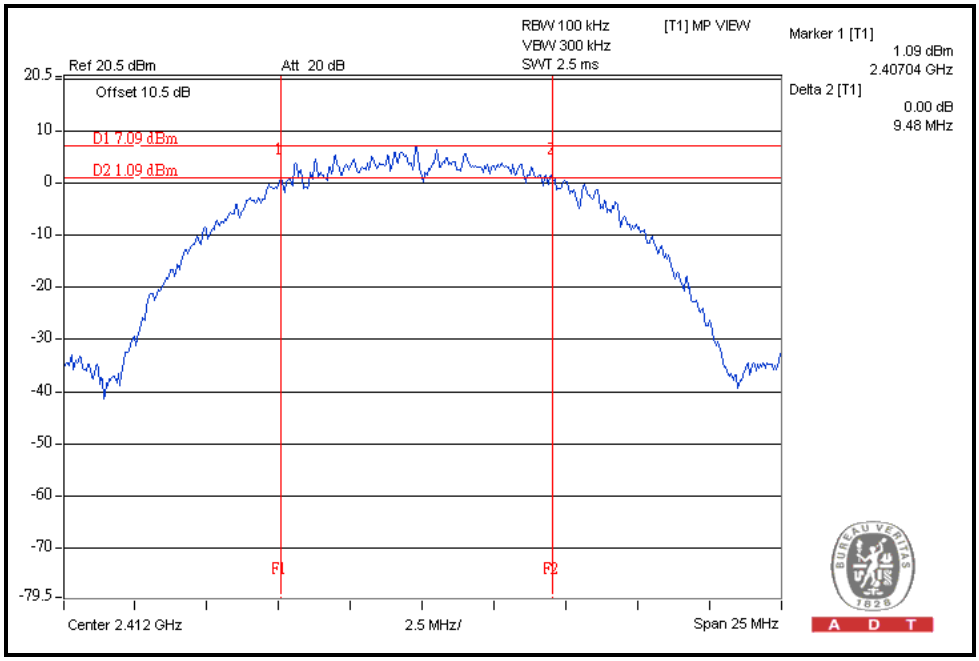
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 TEST RESULTS

802.11b DSSS MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	9.48	0.5	PASS
6	2437	9.11	0.5	PASS
11	2462	9.26	0.5	PASS

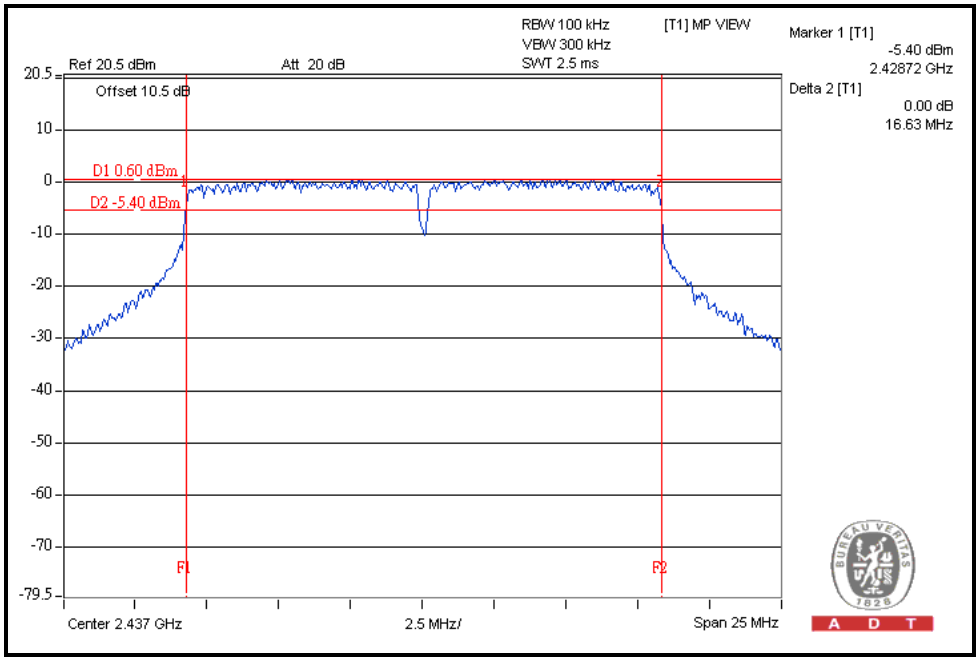
CH1



802.11g OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.61	0.5	PASS
6	2437	16.63	0.5	PASS
11	2462	16.58	0.5	PASS

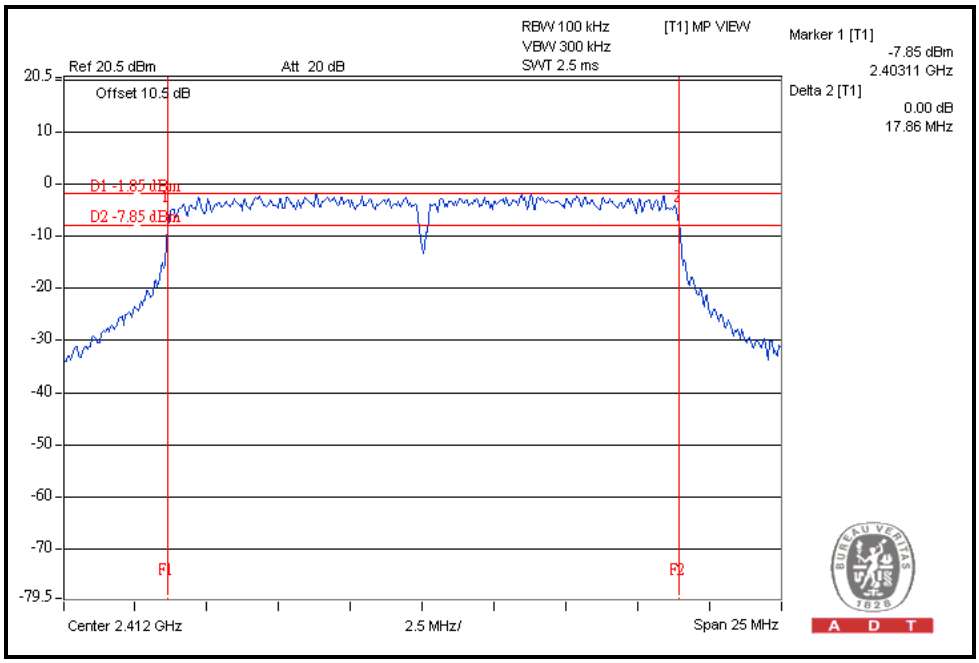
CH6



802.11n (20MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	17.86	0.5	PASS
6	2437	17.83	0.5	PASS
11	2462	17.81	0.5	PASS

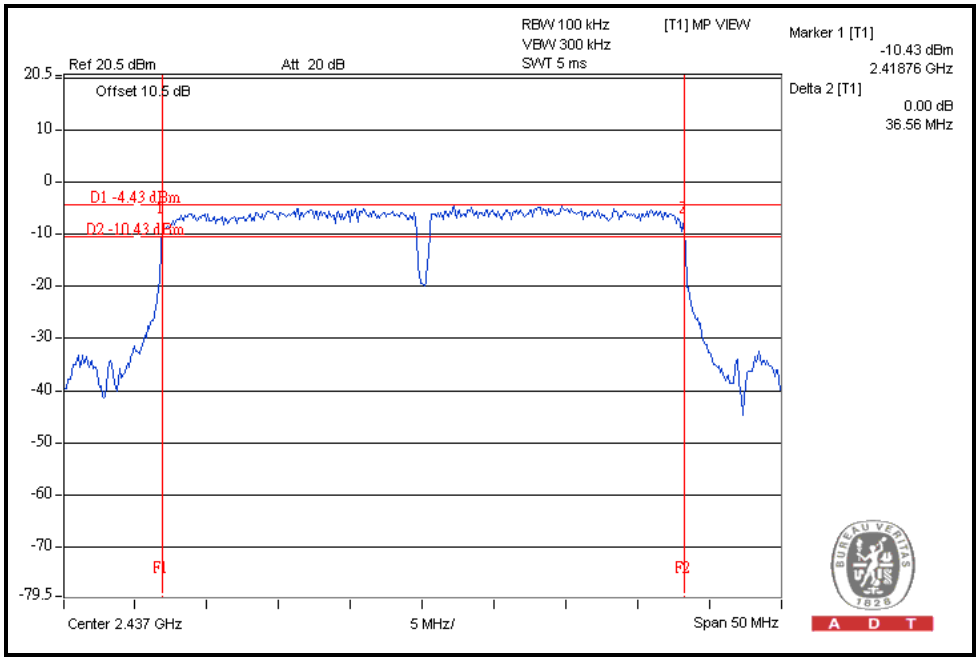
CH1



802.11n (40MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
3	2422	36.52	0.5	PASS
6	2437	36.56	0.5	PASS
9	2452	36.55	0.5	PASS

CH6



4.4 MAXIMUM PEAK OUTPUT POWER

4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

4.4.2 INSTRUMENTS

Test date: Nov. 16, 2011

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

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

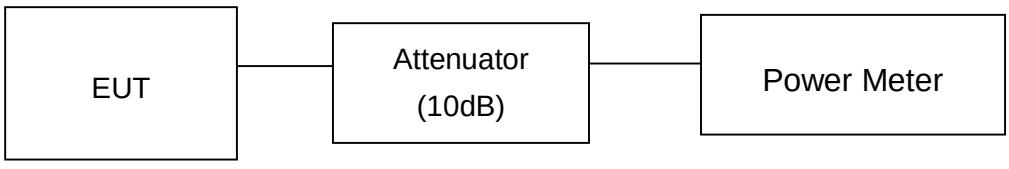
4.4.3 TEST PROCEDURES

1. The transmitter output was connected to the power meter through an attenuator; the bandwidth of the fundamental frequency was measured with the power meter.
2. Record the power level.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6

4.4.7 TEST RESULTS

802.11b DSSS MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	70.8	18.5	30	PASS
6	2437	70.8	18.5	30	PASS
11	2462	72.4	18.6	30	PASS

802.11g OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	173.8	22.4	30	PASS
6	2437	177.8	22.5	30	PASS
11	2462	169.8	22.3	30	PASS

802.11n (20MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	151.4	21.8	30	PASS
6	2437	190.5	22.8	30	PASS
11	2462	141.3	21.5	30	PASS

802.11n (40MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
3	2422	134.9	21.3	30	PASS
6	2437	131.8	21.2	30	PASS
9	2452	141.3	21.5	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: Nov. 16, 2011

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

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

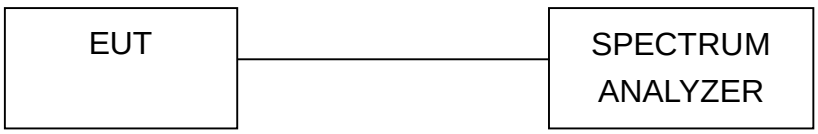
4.5.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.
The sweep time is allowed to be longer than span/3kHz for a full response of the mixer in the spectrum analyzer.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITION

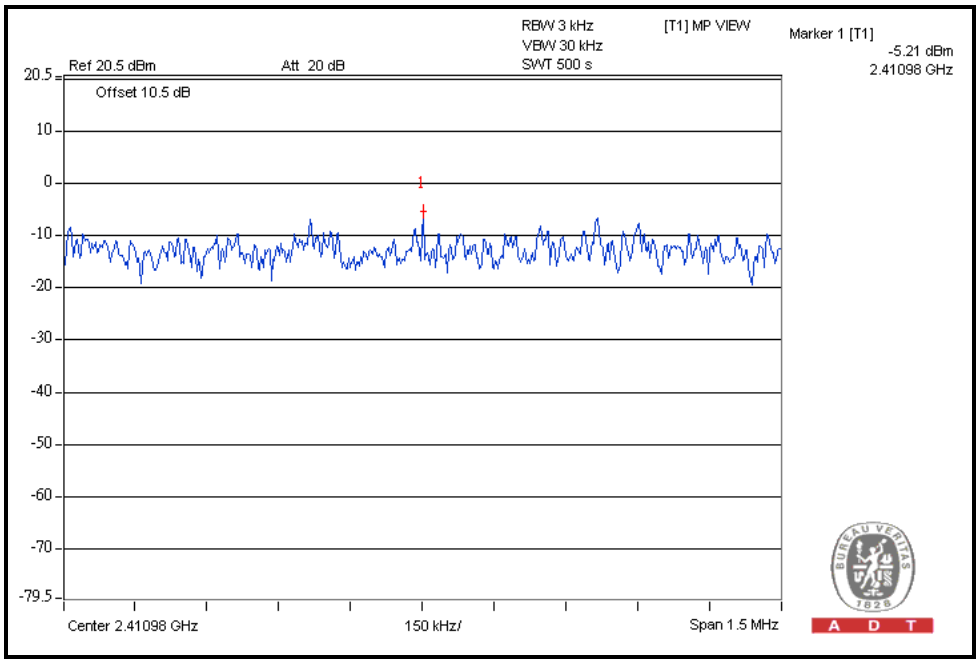
Same as Item 4.3.6

4.5.7 TEST RESULTS

802.11b DSSS MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-5.2	8.0	PASS
6	2437	-6.4	8.0	PASS
11	2462	-6.0	8.0	PASS

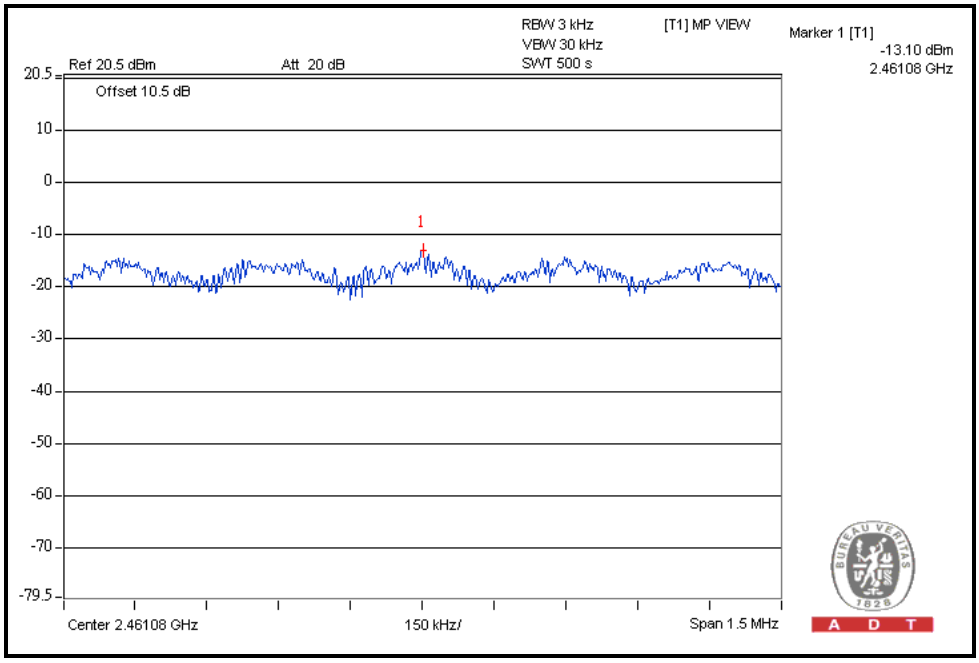
CH1



802.11g OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-14.4	8.0	PASS
6	2437	-13.4	8.0	PASS
11	2462	-13.1	8.0	PASS

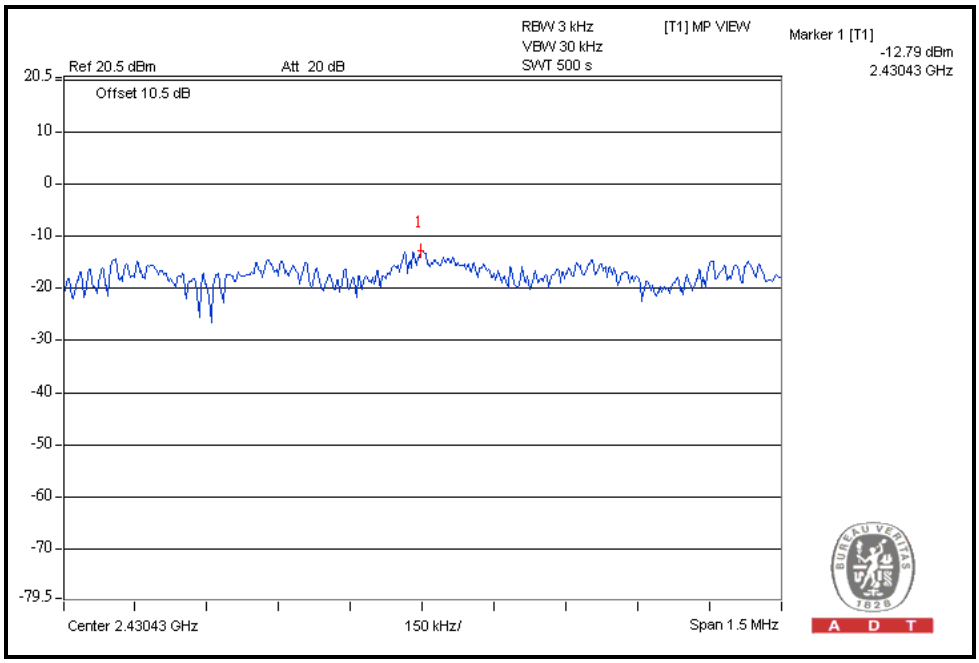
CH11



802.11n (20MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-15.3	8.0	PASS
6	2437	-12.8	8.0	PASS
11	2462	-14.7	8.0	PASS

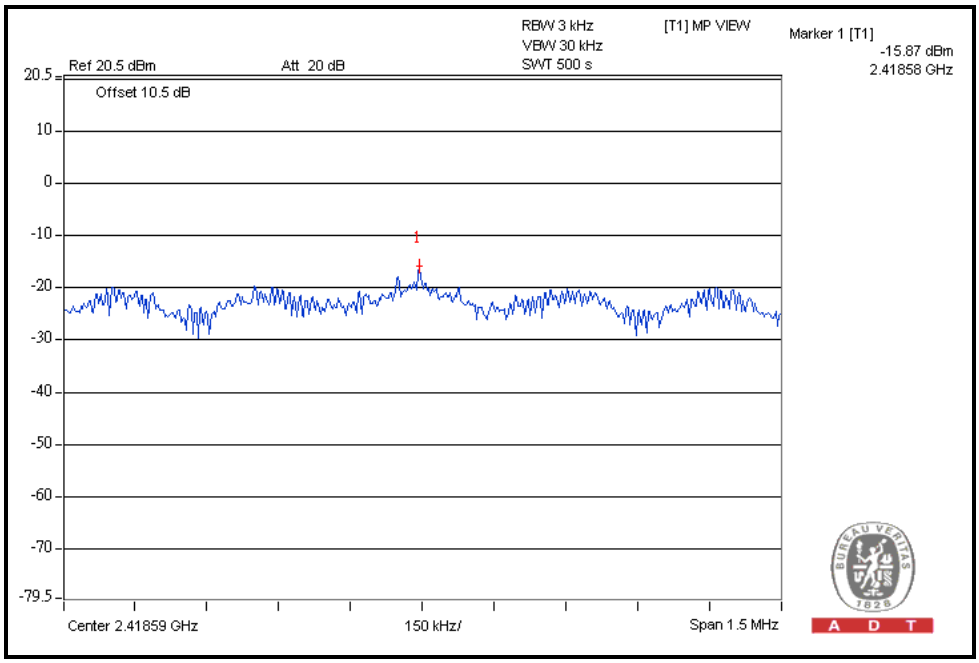
CH6



802.11n (40MHz) OFDM MODULATION:

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
3	2422	-15.9	8.0	PASS
6	2437	-16.6	8.0	PASS
9	2452	-16.0	8.0	PASS

CH3



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: Nov. 16, 2011

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

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

4.6.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low lose cable. Set RBW of spectrum analyzer to 100kHz and VBW of spectrum analyzer to 300kHz with suitable frequency span including 100 MHz or 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

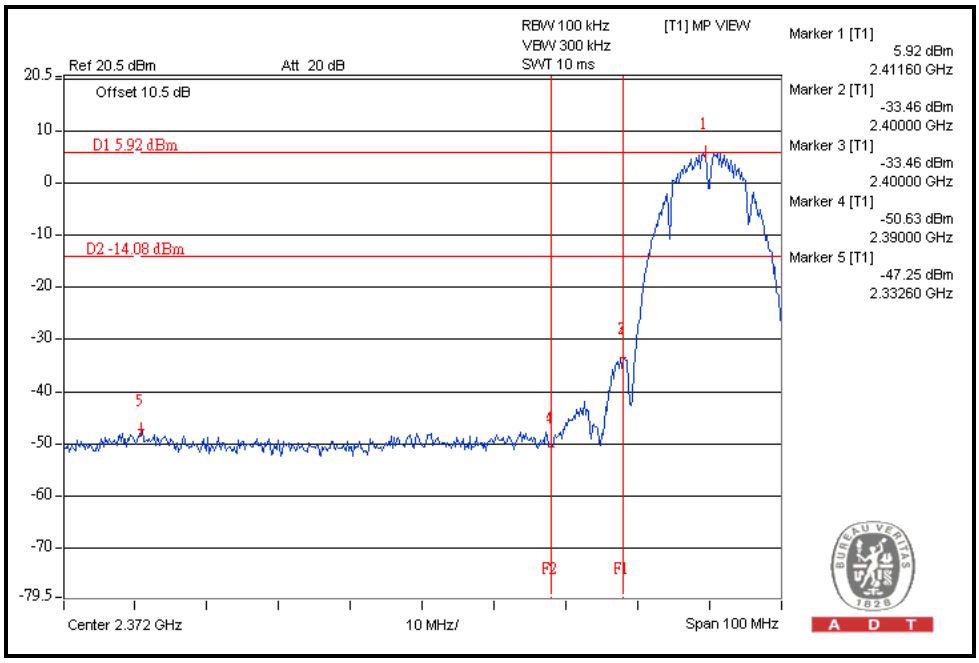
Same as Item 4.3.6

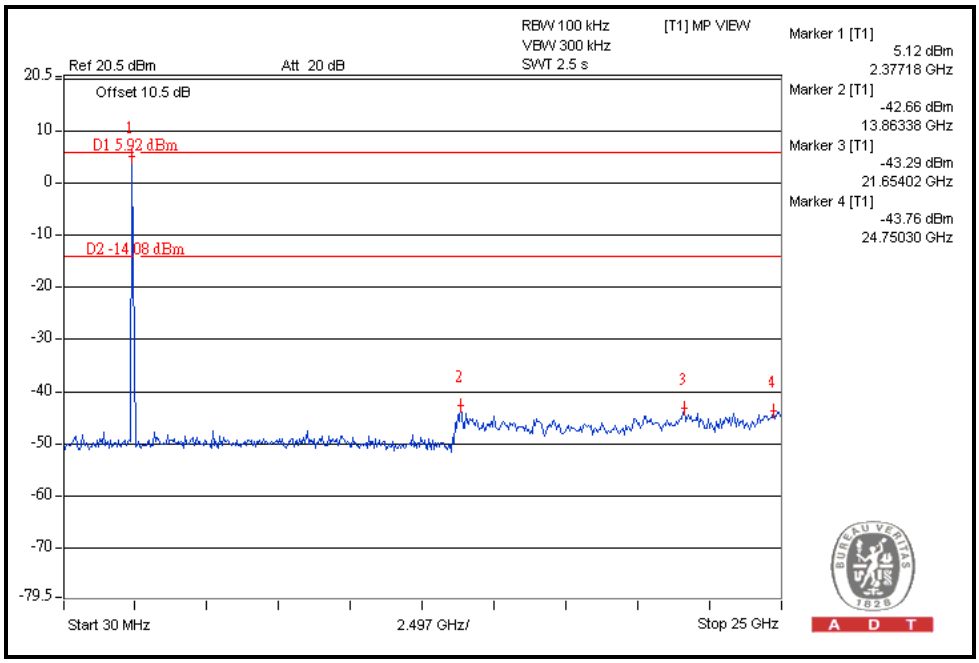
4.6.6 TEST RESULTS

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).

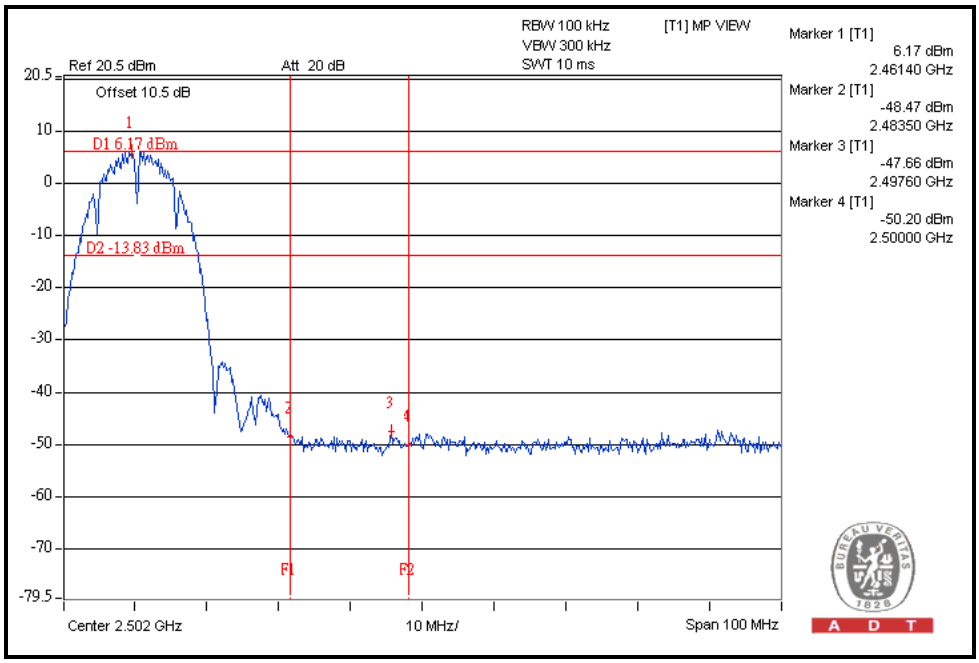
802.11b DSSS MODULATION:

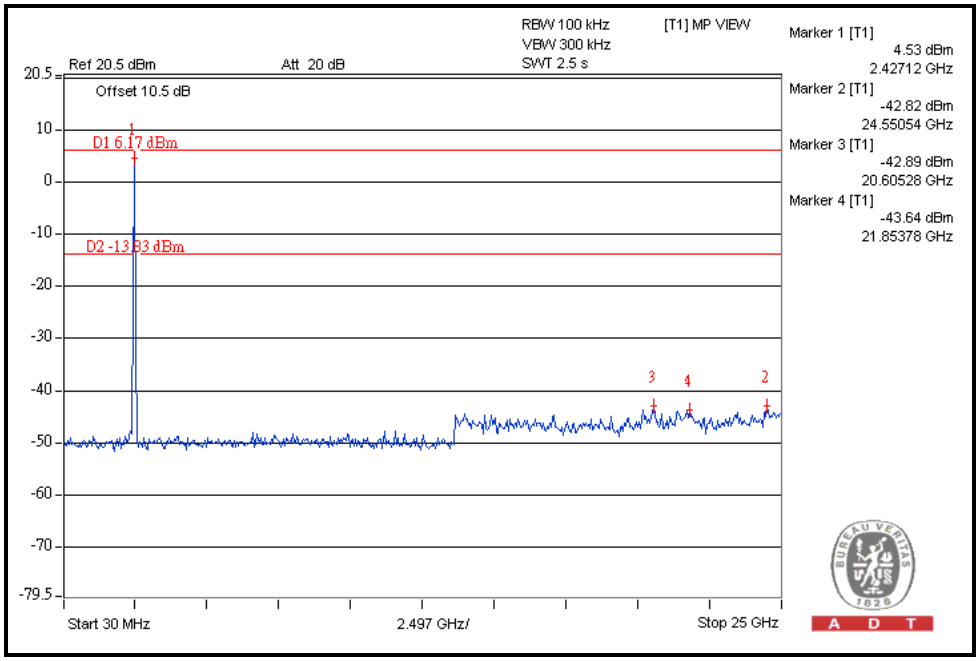
CH1





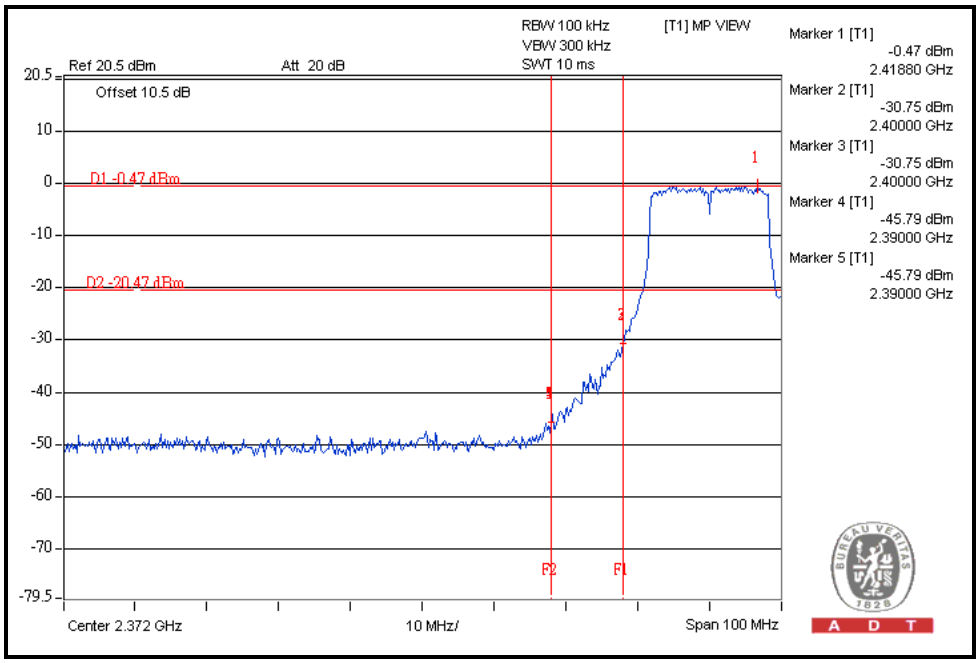
CH11

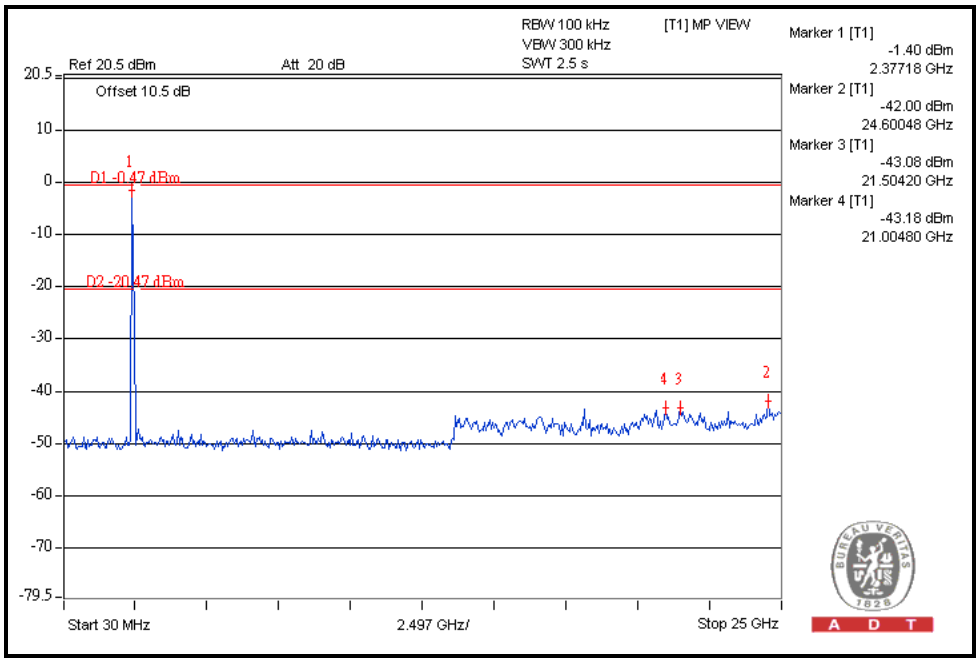

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MP VIEW
Ref 20.5 dBm
Att 20 dB
Offset 10.5 dB
D1 6.17 dBm
D2 -13.83 dBm
Marker 1 [T1]
6.17 dBm
2.46140 GHz
Marker 2 [T1]
-48.47 dBm
2.48350 GHz
Marker 3 [T1]
-47.66 dBm
2.49760 GHz
Marker 4 [T1]
-50.20 dBm
2.50000 GHz
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MP VIEW
Ref 20.5 dBm
Att 20 dB
Offset 10.5 dB
D1 6.17 dBm
D2 -13.83 dBm
Marker 1 [T1]
4.53 dBm
2.42712 GHz
Marker 2 [T1]
-42.82 dBm
24.55054 GHz
Marker 3 [T1]
-42.89 dBm
20.60528 GHz
Marker 4 [T1]
-43.64 dBm
21.85378 GHz
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Start 30 MHz
2.497 GHz/
Stop 25 GHz

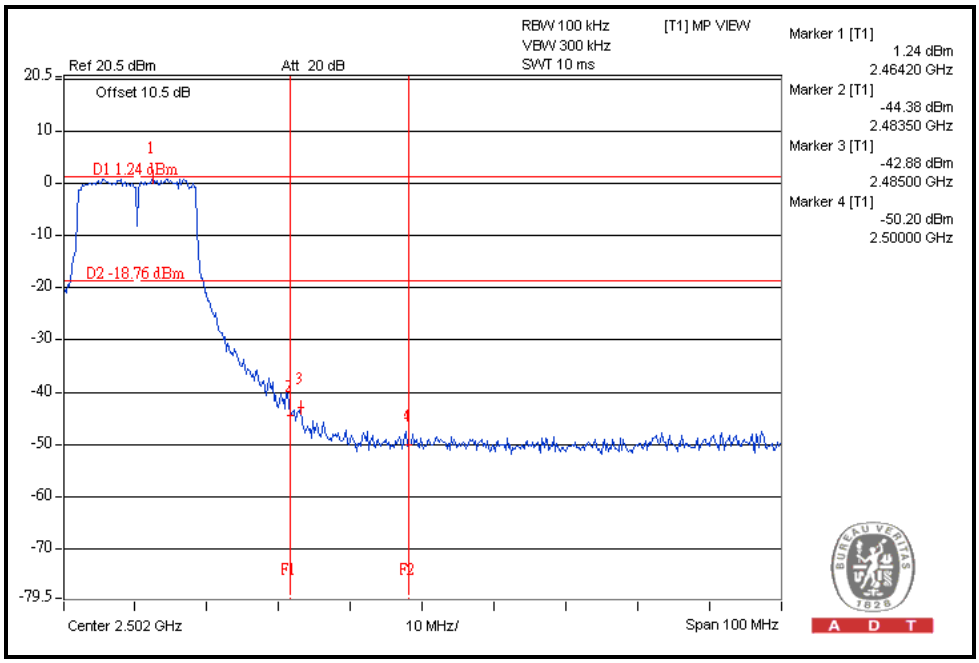
802.11g OFDM MODULATION:

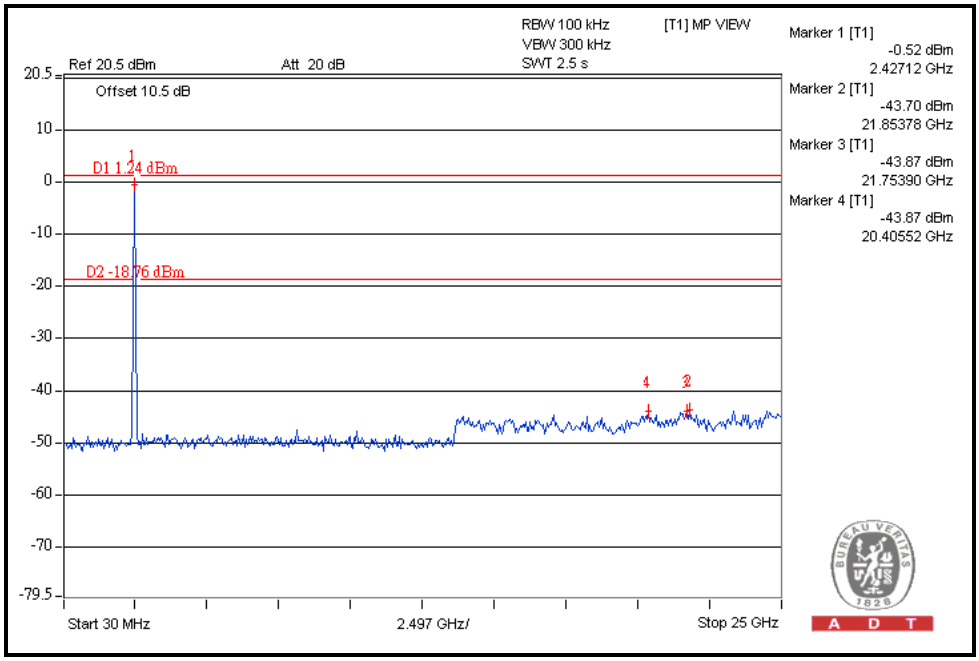
CH1





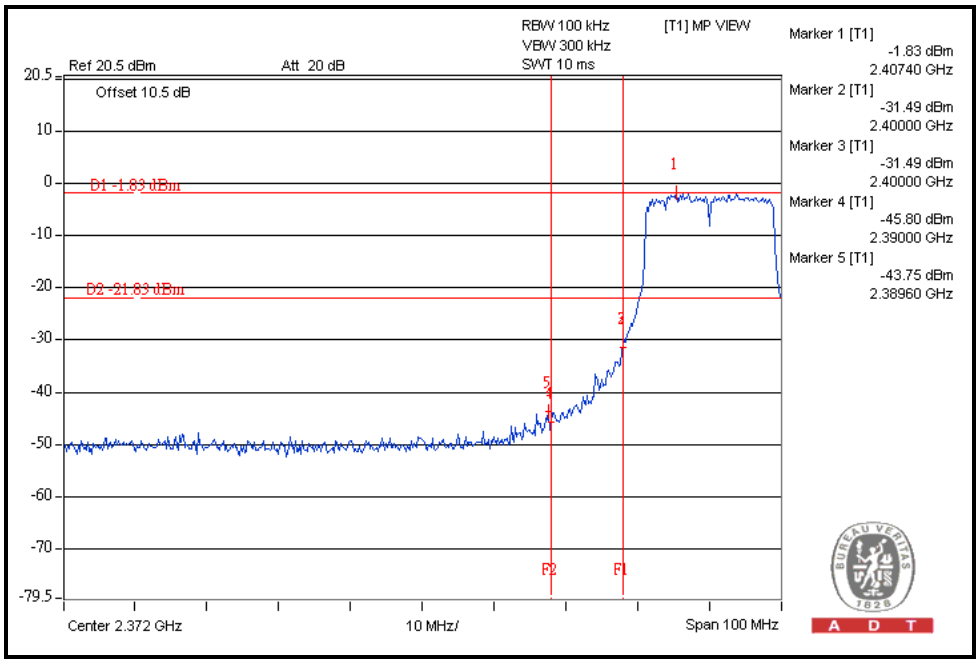
CH11

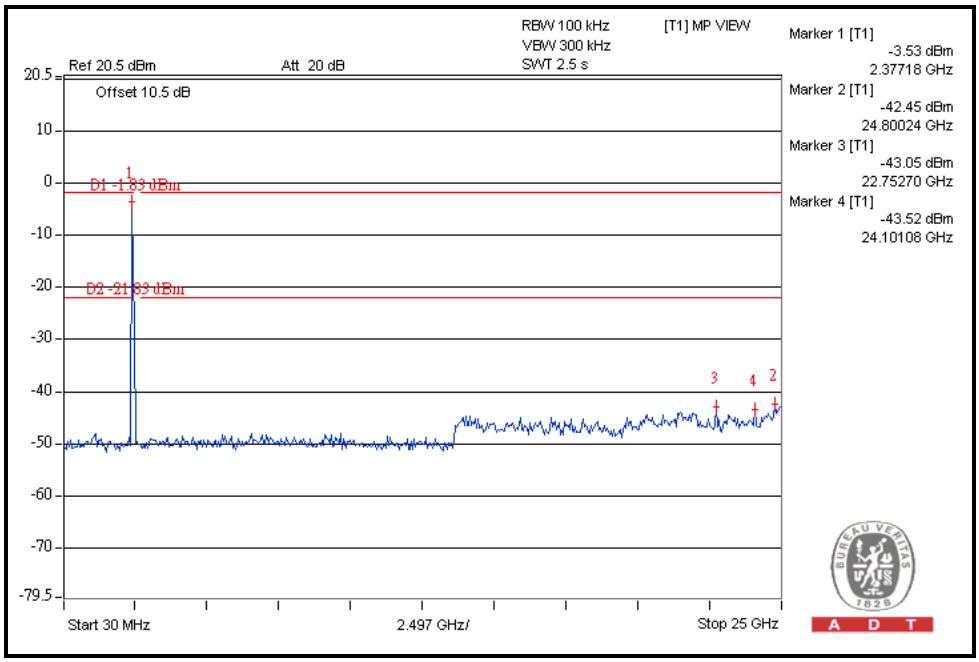

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MP VIEW
Ref 20.5 dBm
Att 20 dB
Offset 10.5 dB
D1 1.24 dBm
D2 -18.76 dBm
Marker 1 [T1]
1.24 dBm
2.46420 GHz
Marker 2 [T1]
-44.38 dBm
2.48350 GHz
Marker 3 [T1]
-42.88 dBm
2.48500 GHz
Marker 4 [T1]
-50.20 dBm
2.50000 GHz
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MP VIEW
Ref 20.5 dBm
Att 20 dB
Offset 10.5 dB
D1 1.24 dBm
D2 -18.76 dBm
Marker 1 [T1]
-0.52 dBm
2.42712 GHz
Marker 2 [T1]
-43.70 dBm
21.85378 GHz
Marker 3 [T1]
-43.87 dBm
21.75390 GHz
Marker 4 [T1]
-43.87 dBm
20.40552 GHz
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Start 30 MHz
2.497 GHz/
Stop 25 GHz

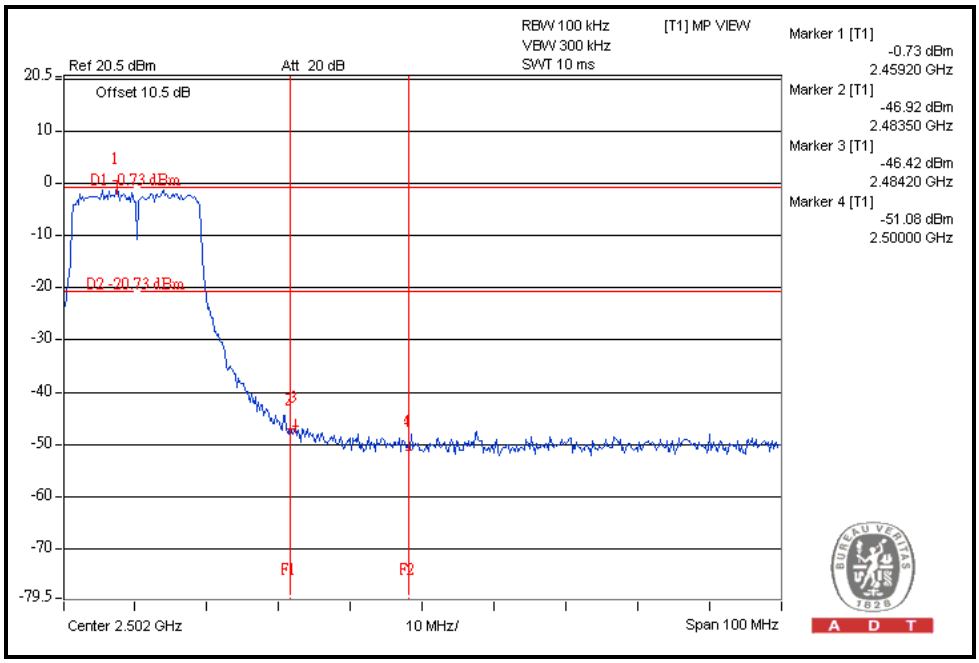
802.11n (20MHz) OFDM MODULATION:

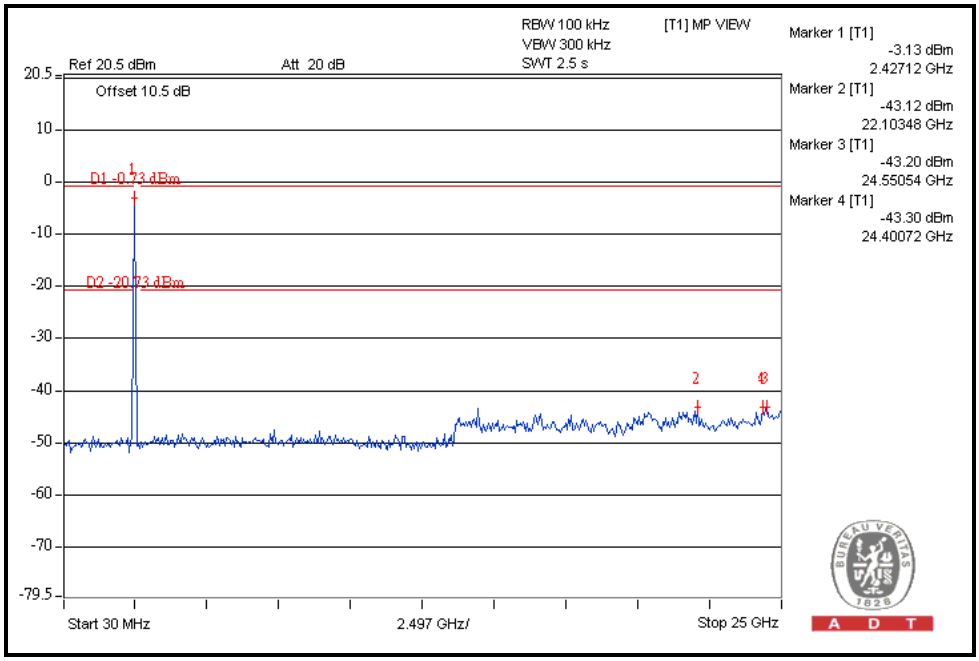
CH1





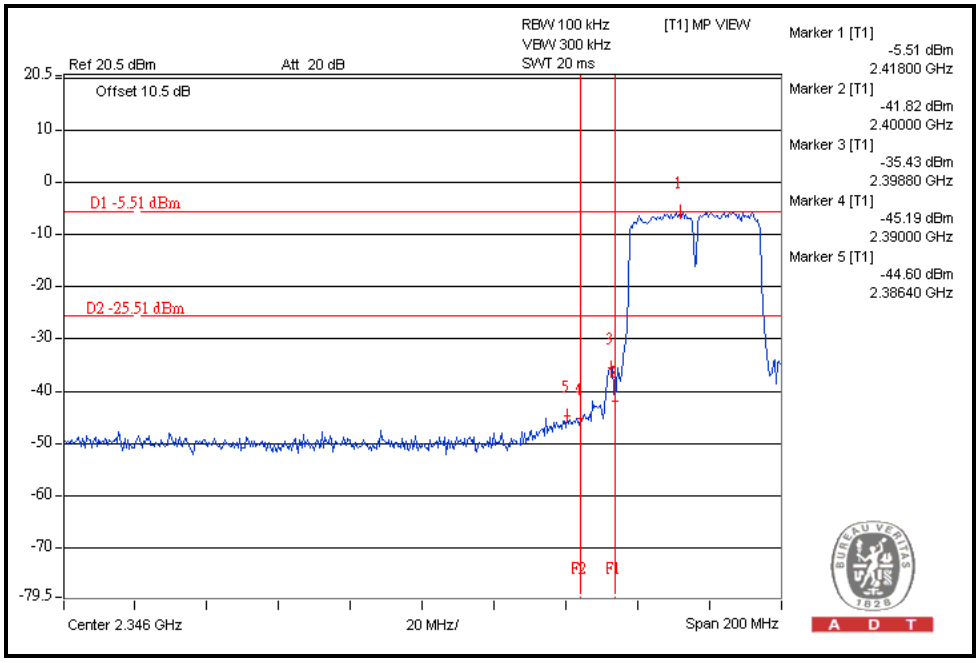
CH11

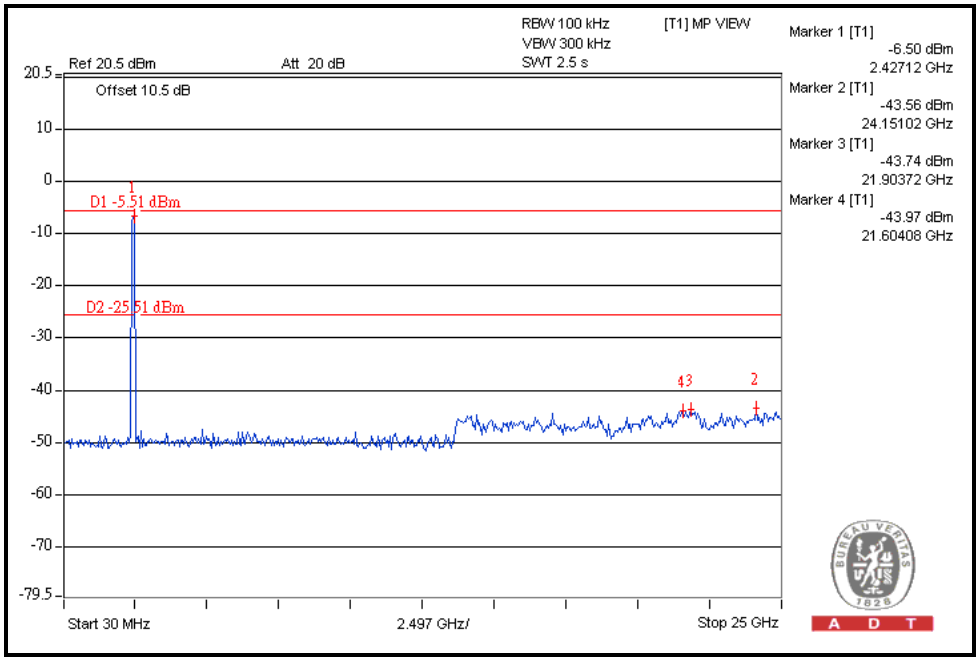

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MP VIEW
Ref 20.5 dBm
Att 20 dB
Offset 10.5 dB
D1 -0.73 dBm
D2 -20.73 dBm
Marker 1 [T1]
-0.73 dBm
2.45920 GHz
Marker 2 [T1]
-46.92 dBm
2.48350 GHz
Marker 3 [T1]
-46.42 dBm
2.48420 GHz
Marker 4 [T1]
-51.08 dBm
2.50000 GHz
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MP VIEW
Ref 20.5 dBm
Att 20 dB
Offset 10.5 dB
D1 -0.73 dBm
D2 -20.73 dBm
Marker 1 [T1]
-3.13 dBm
2.42712 GHz
Marker 2 [T1]
-43.12 dBm
22.10348 GHz
Marker 3 [T1]
-43.20 dBm
24.55054 GHz
Marker 4 [T1]
-43.30 dBm
24.40072 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz

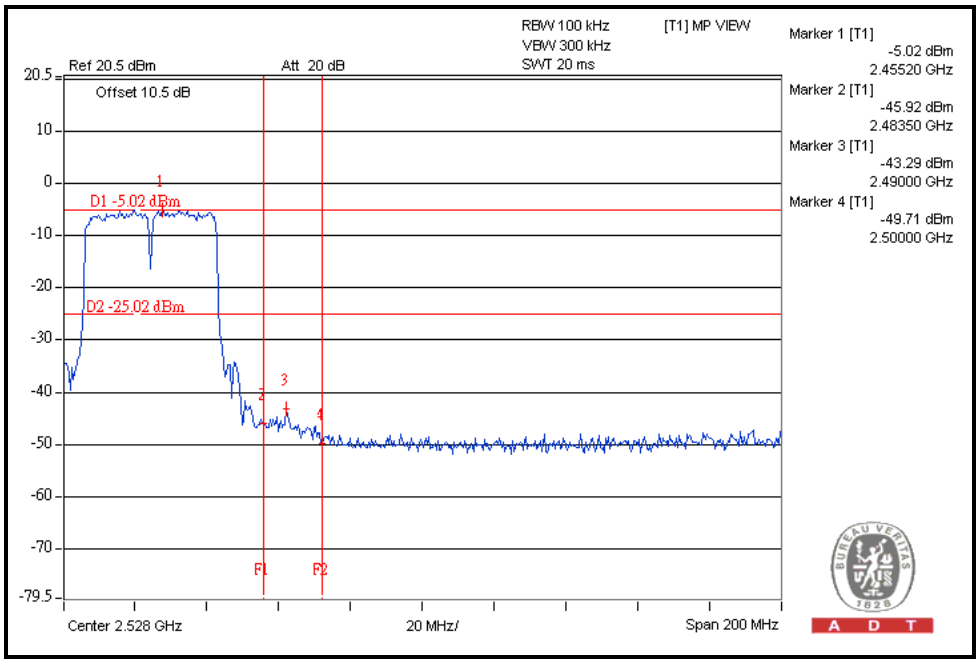
802.11n (40MHz) OFDM MODULATION:

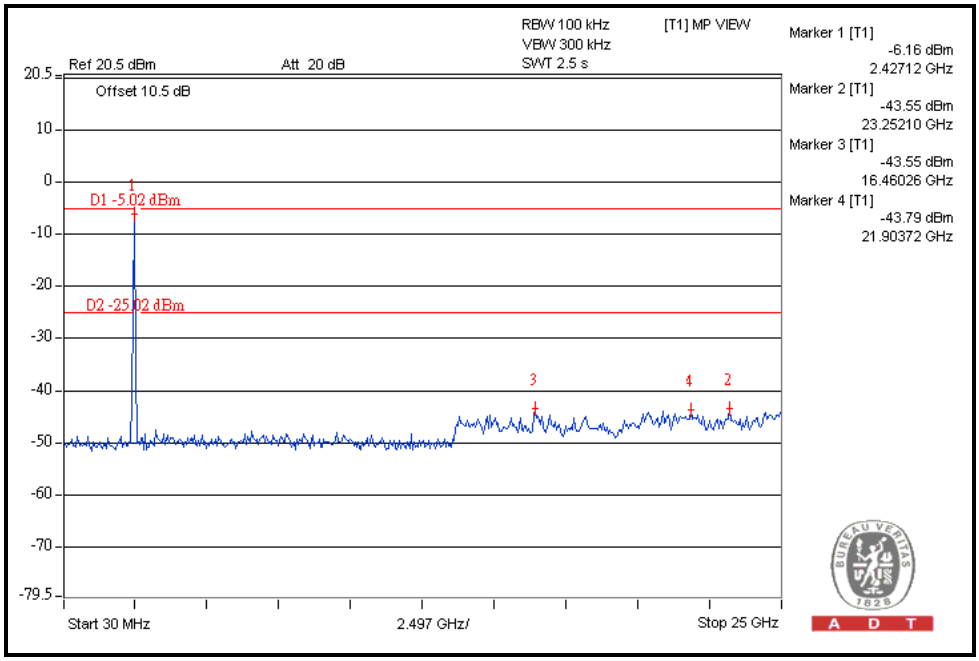
CH3





CH9


RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MP VIEW
Ref 20.5 dBm
Att 20 dB
Offset 10.5 dB
D1 -5.02 dBm
D2 -25.02 dBm
Marker 1 [T1]
-5.02 dBm
2.45520 GHz
Marker 2 [T1]
-45.92 dBm
2.48350 GHz
Marker 3 [T1]
-43.29 dBm
2.49000 GHz
Marker 4 [T1]
-49.71 dBm
2.50000 GHz
Center 2.528 GHz
20 MHz/
Span 200 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MP VIEW
Ref 20.5 dBm
Att 20 dB
Offset 10.5 dB
D1 -5.02 dBm
D2 -25.02 dBm
Marker 1 [T1]
-6.16 dBm
2.42712 GHz
Marker 2 [T1]
-43.55 dBm
23.25210 GHz
Marker 3 [T1]
-43.55 dBm
16.46026 GHz
Marker 4 [T1]
-43.79 dBm
21.90372 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz

5. INFORMATION ON THE TESTING LABORATORIES

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

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

Linko EMC/RF Lab:
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Email: service.adt@tw.bureauveritas.com
Web Site: www.adt.com.tw

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

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

No modifications were made to the EUT by the lab during the test.

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