

FCC TEST REPORT

REPORT NO.: RF980610H03

MODEL NO.: MBR1200

RECEIVED: July 23, 2009

TESTED: July 23 to Aug. 06, 2009

ISSUED: Aug. 14, 2009

APPLICANT: Cradlepoint, Inc

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A D T

1. CERTIFICATION

PRODUCT : Wireless-B/G/N Mobile Broadband Router
BRAND : cradlepoint
MODEL NO.: MBR1200
APPLICANT : Cradlepoint, Inc
TESTED : July 23 to Aug. 06, 2009
TEST SAMPLE : PROTOTYPE
STANDARDS : FCC Part 15, Subpart C (Section 15.247),
ANSI C63.4-2003

The above equipment (Model: MBR1200) 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 : Sunny Wen , **DATE:** Aug 14, 2009
(Sunny Wen, Specialist)

TECHNICAL ACCEPTANCE : Hank Chung , **DATE:** Aug 14, 2009
Responsible for RF (Hank Chung, Deputy Manager)

APPROVED BY : May Chen , **DATE:** Aug 14, 2009
(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 -10.54dB at 1.707MHz.
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Limit : min. 500kHz	PASS	Meet the requirement of limit.
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit.
15.247(d)	Transmitter Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit. Minimum passing margin is -0.53dB at 2483.50MHz.
15.247(e)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit.
15.247(d)	Conducted Out-Band Emission Measurement Limit: 20dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit.

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	2.44 dB
Radiated emissions (30MHz-1GHz)	3.94 dB
Radiated emissions (1GHz -18GHz)	2.49 dB
Radiated emissions (18GHz -40GHz)	2.70 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Wireless-B/G/N Mobile Broadband Router
MODEL NO.	MBR1200
FCC ID	UXX-MBR1200
POWER SUPPLY	DC 12V from power adapter
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b: 11 / 5.5 / 2 / 1Mbps 802.11g: 54 / 48 / 36 / 24 / 18 / 12 / 9 / 6Mbps Draft 802.11n (20MHz, 800ns GI MCS8~15): 130 / 117 / 104 / 78 / 52 / 39 / 26 / 13Mbps Draft 802.11n (20MHz, 800ns GI MCS0~7): 65 / 58.5 / 52 / 39 / 26 / 19.5 / 13 / 6.5Mbps Draft 802.11n (40MHz, 800ns GI MCS8~15): 270 / 243 / 216 / 162 / 108 / 81 / 54 / 27Mbps Draft 802.11n (40MHz, 800ns GI MCS0~7): 135 / 121.5 / 108 / 81 / 54 / 40.5 / 27 / 13.5Mbps Draft 802.11n (20MHz, 400ns GI MCS8~15): 144.444 / 130 / 115.556 / 86.667 / 57.778 / 43.333 / 28.889 / 14.444Mbps Draft 802.11n (20MHz, 400ns GI MCS0~7): 72.2 / 65 / 57.8 / 43.3 / 28.9 / 21.7 / 14.4 / 7.2Mbps Draft 802.11n (40MHz, 400ns GI MCS8~15): 300 / 270 / 240 / 180 / 120 / 90 / 60 / 30Mbps Draft 802.11n (40MHz, 400ns GI MCS0~7): 150 / 135 / 120 / 90 / 60 / 45 / 30 / 15Mbps
FREQUENCY RANGE	2412MHz ~ 2462MHz
NUMBER OF CHANNEL	11 for 802.11b, 802.11g, draft 802.11n (20MHz) 7 for draft 802.11n (40MHz)
MAXIMUM OUTPUT POWER	802.11b: 154.17mW 802.11g: 629.476mW draft 802.11n (20MHz): 521.073mW draft 802.11n (40MHz): 682.232mW
ANTENNA TYPE	Please see note 1
DATA CABLE	NA

I/O PORT	LAN (10/100/1000Mbps) port x 4, WAN (10/100/1000Mbps) port x 1, Pure USB port x 1 USB port for 1XEV-DO x 2, Express card for 1XEV-DO port x 1, CardBus for 1XEV-DO x 1
ASSOCIATED DEVICES	Adapter x 1

NOTE:

- There are two sets antennas provided to this EUT, please refer to the following table:

Set No.	Transmitter Circuit	Antenna Type	Antenna Gain (dBi)	Antenna Connector
Set 1	Chain(0)	PIFA	3.47654	NA
	Chain(1)			
Set 2	Chain(0)	Dipole	4.98	MMCX
	Chain(1)			

- The EUT could be applied with three 3.5G 1XEV-DO cards and following four different models could be chosen; therefore emission tests are added for simultaneously transmit between wireless LAN and 3.5G 1XEV-DO function. The emission tests have been performed at the worst channel of both WLAN and 3.5G 1XEV-DO, and recorded in other report.

Interface	Brand	Model No.	FCC ID
Cardbus	KYOCERA	KPC650	OVFKWC-KPC650
USB port	SIERRA WIRELESS	AirCard 875U	N7N-MC8775U
		AirCard 595U	N7N-MC8725U
Express card	Sprint	AirCard 597E	N7NAC597E

From the above 3.5G 1XEV-DO cards, Model No.: **KPC650, AirCard 875U & AirCard 597E** were selected for testing. Only one card can transmit on different interface for 1XEV-DO.

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

Adapter 1	
Brand:	ELEMENTECH
Model No.:	Au-79AOn
Input power :	AC 100-240V, 600mA, 50-60Hz Cable:1.8m/unshielded/w/o core
Output power :	DC 12V, 2A Cable:1.5m/unshielded/with one core
Adapter 2	
Brand:	ELEMENTECH
Model No.:	AU79Dmu
Input power :	AC 100-240V, 0.5A, 50/60Hz
Output power :	DC 12V, 1.5A Cable:1.8m/unshielded/without core
Adapter 3	
Brand:	PHIHONG
Model No.:	PSA18R-120P
Input power :	AC100-240V, 50-60Hz, 0.5A
Output power :	DC 12V, 1.5A Cable:1.9m/unshielded/with one core
Adapter 4	
Brand:	JENTEC
Model No.:	AH1812-B
Input power :	AC100-240V, 50-60Hz, 0.4A
Output power :	DC 12V, 1.5A Cable:1.8m/unshielded/without core

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

Test Mode	Description
Mode A	Level-set (Put on tabletop) with PIFA antenna
Mode B	Tower-set (Wall-mounted) with PIFA antenna
Mode C	Level-set (Put on tabletop) with Dipole antenna
Mode D	Tower-set (Wall-mounted) with Dipole antenna

From the above modes, the spurious emission below 1GHz worst case was found in **Mode A & C**. The spurious emissions above 1GHz worst cases were found **Mode B & C**. Therefore only the test data of the modes were recorded in this report.

5. The EUT incorporates a MIMO function with 802.11g and draft 802.11n. Physically, the EUT provides two completed transmits and two completed receivers.
6. The EUT is 2 * 2 spatial MIMO without beam forming function. The antenna configuration is two transmitter antennas and two receiver antennas, as there are 2 PIFA or Dipole antennas. Spatial multiplexing modes for simultaneous transmission using 2 antennas, and for simultaneous receiver using 2 antennas. The 11b legacy mode is limited to single transmitter only.
7. When the EUT operating in draft 802.11n, the software operation, which is defined by manufacturer, MCS (Modulation and Coding Schemes) from 0 to 15.

8. The EUT complies with draft 802.11n standards and backwards compatible with 802.11b, 802.11g products.
9. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 DESCRIPTION OF TEST MODES

Eleven channels are provided for 802.11b, 802.11g, draft 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 draft 802.11n (40MHz):

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

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	PLC	RE < 1G	RE ≥ 1G	APCM	
-	√	√	√	√	-

Where **PLC**: Power Line Conducted Emission

RE < 1G: Radiated Emission below 1GHz

RE ≥ 1G: Radiated Emission above 1GHz

APCM: Antenna Port Conducted Measurement

ANTENNA COMBINATION MODE:

COMBINATION MODE	OPERATION MODE	TX CHAIN(0)	TX CHAIN(1)
A	802.11b	√	
B	802.11g	√	√
C	DRAFT 802.11n(20MHz) for MCS 0~7	√	√
D	DRAFT 802.11n(20MHz) for MCS 8~15	√	√
E	DRAFT 802.11n(40MHz) for MCS 0~7	√	√
F	DRAFT 802.11n(40MHz) for MCS 8~15	√	√

Note:

1. The above information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.
2. Antenna 1~2 are PIFA or Dipole antennas.
3. Mode A, B, C, E the worst modes, were selected as representative mode for the report.

POWER LINE CONDUCTED EMISSION TEST:

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	EUT CONFIGURE MODE
802.11b	1 to 11	1	DSSS	DBPSK	1	A

- ☒ For conducted emissions, the EUT was tested as the following test modes:

Test Mode	Description
Mode 1	Adapter 1
Mode 2	Adapter 2
Mode 3	Adapter 3
Mode 4	Adapter 4

RADIATED EMISSION TEST (BELOW 1 GHZ):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	EUT CONFIGURE MODE
802.11b	1 to 11	1	DSSS	DBPSK	1	A

- ☒ For spurious emissions (below 1 GHz), the EUT was pre-tested as the following test modes:

Test Mode	Description
Mode 1	Adapter 1
Mode 2	Adapter 2
Mode 3	Adapter 3
Mode 4	Adapter 4

The worst adapter was found in Adapter 1. Their test data were recorded in this report individually.

- ☒ For spurious emissions (below 1 GHz), the EUT was tested as the following test modes:

Test Mode	Description
Mode A	Adapter 1 + PIFA antenna + Level-set
Mode B	Adapter 1 + Dipole antenna + Level-set

RADIATED EMISSION TEST (ABOVE 1 GHZ):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

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

- ☒ For spurious emissions (above 1 GHz), the EUT was tested as the following test modes:

Test Mode	Description
Mode A	Adapter 1 + PIFA antenna + Tower-set
Mode B	Adapter 1 + Dipole antenna + Level-set

BANDEDGE MEASUREMENT:

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

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

ANTENNA PORT CONDUCTED MEASUREMENT:

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

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

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart C. (15.247)

ANSI C63.4-2003

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

NOTE: The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

3.4 DESCRIPTION OF SUPPORT UNITS

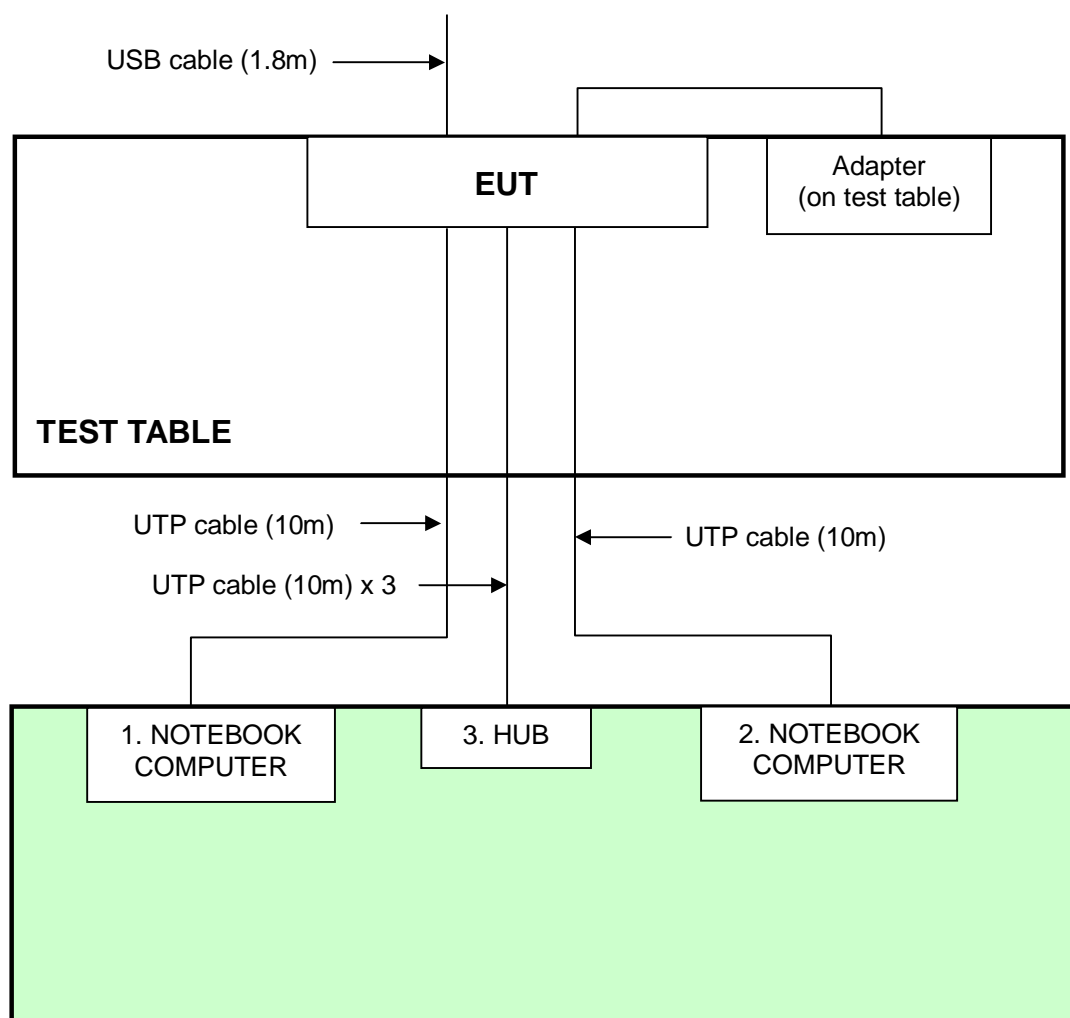
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP18L	6976685584	DoC
2	NOTEBOOK COMPUTER	DELL	D531	CN-0XM006-48643-86L-4472	QDS-BRCM1019
3	HUB	ZyXEL	ES-116P	S060H02000215	DoC

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

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 (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

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

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver	ESCS 30	100375	Mar. 23, 2009	Mar. 22, 2010
Line-Impedance Stabilization Network (for Peripheral)	ENV-216	100071	Nov. 26, 2008	Nov. 25, 2009
Line-Impedance Stabilization Network (for EUT)	ESH3-Z5	848773/004	Nov. 05, 2008	Nov. 04, 2009
RF Cable (JYEBAO)	5DFB	COBCAB-001	Aug. 15, 2008	Aug. 14, 2009
50 ohms Terminator	50	3	Nov. 05, 2008	Nov. 04, 2009
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. B.
3. The VCCI Con B Registration No. is C-2193.

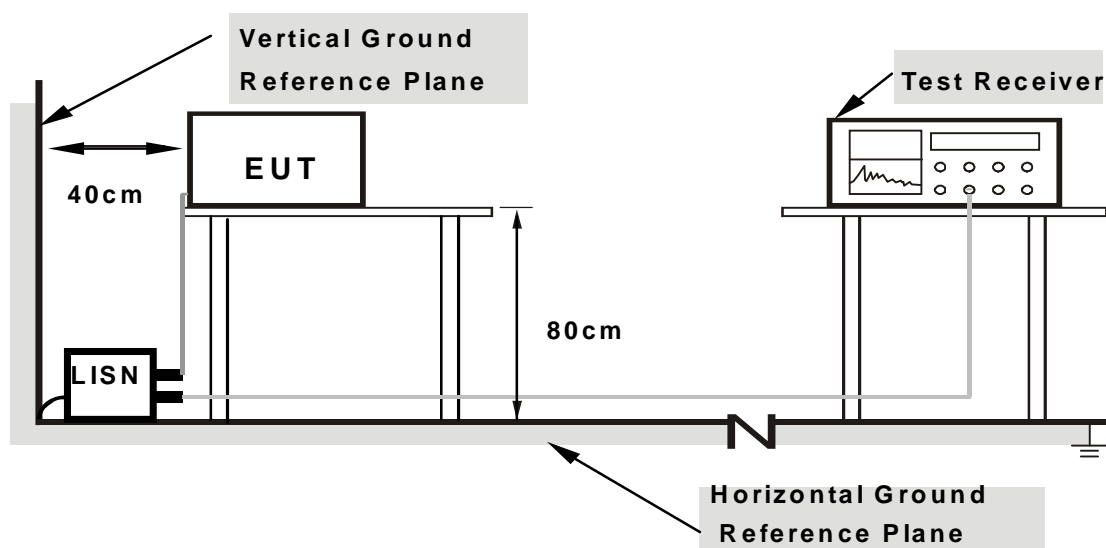
4.1.3 TEST PROCEDURES

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



Note: 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

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

4.1.6 EUT OPERATING CONDITIONS

1. Placed the EUT on testing table.
2. Prepared other computer systems (support units 1 ~ 2) to act as communication partners and placed them outside of testing area.
3. The communication partners run test program “art_v0_9_b7” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

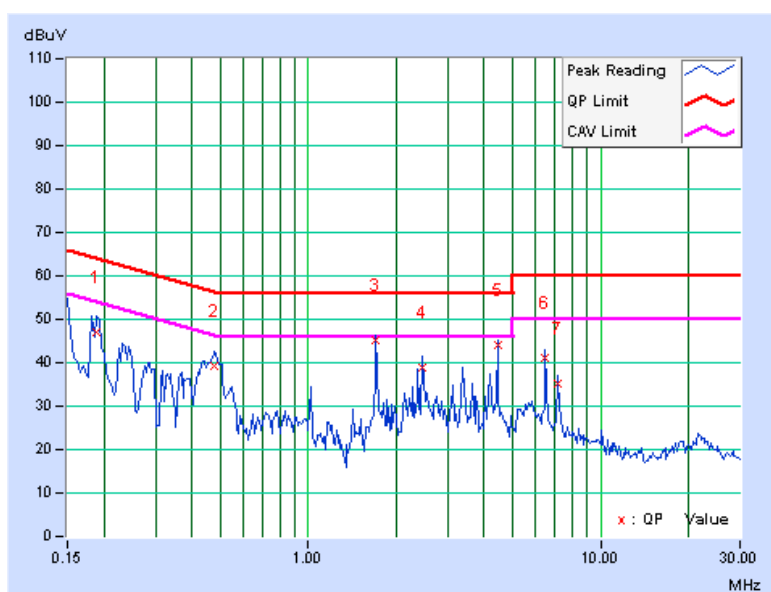
4.1.7 TEST RESULTS

802.11b DSSS MODULATION (ADAPTER 1):

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line (L)
MODULATION TYPE	DBPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	1Mbps	INPUT POWER	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	26deg. C, 58%RH, 972hPa	TESTED BY	Eric Lee

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.189	0.21	46.70	-	46.91	-	64.08	54.08	-17.16	-
2	0.474	0.44	38.75	-	39.19	-	56.44	46.44	-17.25	-
3	1.707	0.37	44.76	-	45.13	-	56.00	46.00	-10.87	-
4	2.457	0.45	38.33	-	38.78	-	56.00	46.00	-17.22	-
5	4.438	0.59	43.46	-	44.05	-	56.00	46.00	-11.95	-
6	6.484	0.63	40.49	-	41.12	-	60.00	50.00	-18.88	-
7	7.172	0.65	34.72	-	35.37	-	60.00	50.00	-24.63	-

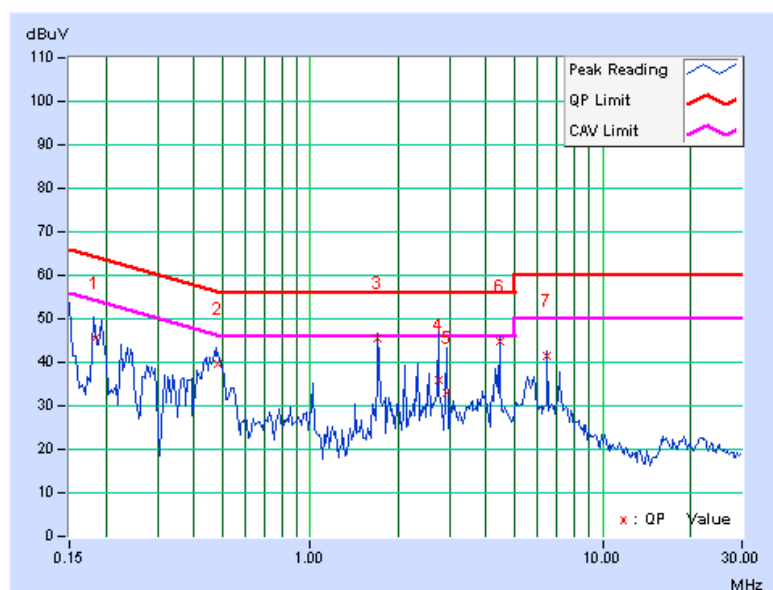
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Neutral (N)
MODULATION TYPE	DBPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	1Mbps	INPUT POWER	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	26deg. C, 58%RH, 972hPa	TESTED BY	Eric Lee

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.184	0.14	45.36	-	45.50	-	64.32	54.32	-18.82	-
2	0.481	0.37	39.14	-	39.51	-	56.33	46.33	-16.82	-
3	1.707	0.29	45.17	-	45.46	-	56.00	46.00	-10.54	-
4	2.754	0.40	35.45	-	35.85	-	56.00	46.00	-20.15	-
5	2.922	0.41	32.38	-	32.79	-	56.00	46.00	-23.21	-
6	4.441	0.51	44.16	-	44.67	-	56.00	46.00	-11.33	-
7	6.484	0.53	40.95	-	41.48	-	60.00	50.00	-18.52	-

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

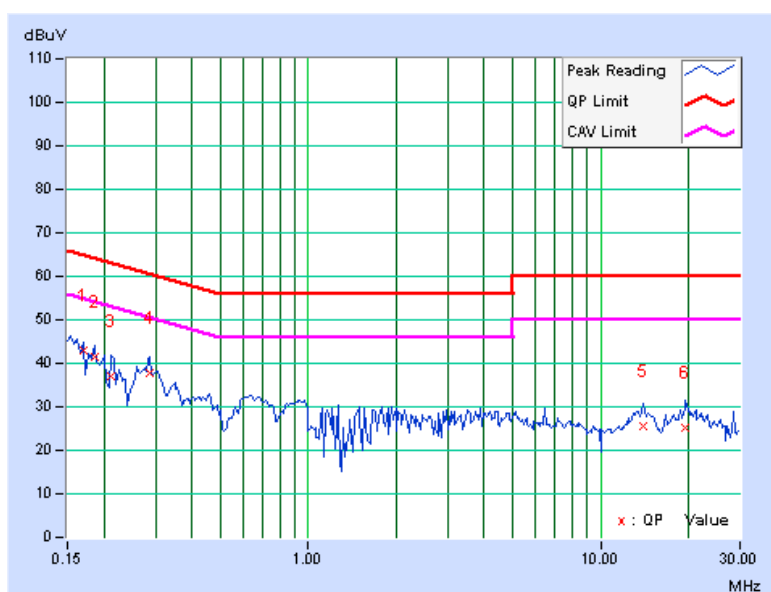


802.11b DSSS MODULATION (ADAPTER 2):

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line (L)
MODULATION TYPE	DBPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	1Mbps	INPUT POWER	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	26deg. C, 58%RH, 972hPa	TESTED BY	Eric Lee

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.170	0.20	42.94	-	43.14	-	64.98	54.98	-21.84	-
2	0.185	0.21	41.14	-	41.35	-	64.25	54.25	-22.90	-
3	0.213	0.23	36.84	-	37.07	-	63.11	53.11	-26.03	-
4	0.287	0.32	37.47	-	37.79	-	60.62	50.62	-22.82	-
5	13.973	1.01	24.49	-	25.50	-	60.00	50.00	-34.50	-
6	19.477	1.46	23.70	-	25.16	-	60.00	50.00	-34.84	-

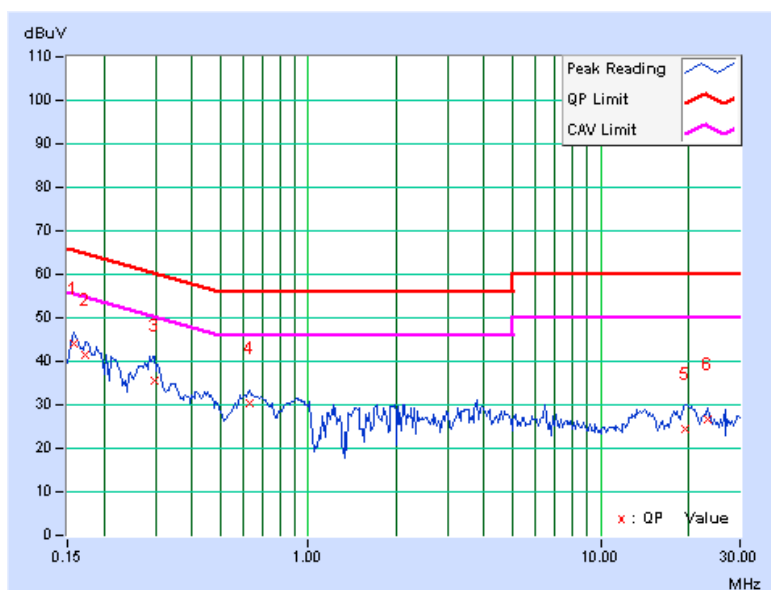
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Neutral (N)
MODULATION TYPE	DBPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	1Mbps	INPUT POWER	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	26deg. C, 58%RH, 972hPa	TESTED BY	Eric Lee

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.158	0.12	43.78	-	43.90	-	65.58	55.58	-21.67	-
2	0.173	0.13	41.38	-	41.51	-	64.79	54.79	-23.28	-
3	0.298	0.27	35.42	-	35.69	-	60.29	50.29	-24.59	-
4	0.634	0.32	29.97	-	30.29	-	56.00	46.00	-25.71	-
5	19.395	1.19	23.38	-	24.57	-	60.00	50.00	-35.43	-
6	23.125	1.34	25.48	-	26.82	-	60.00	50.00	-33.18	-

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

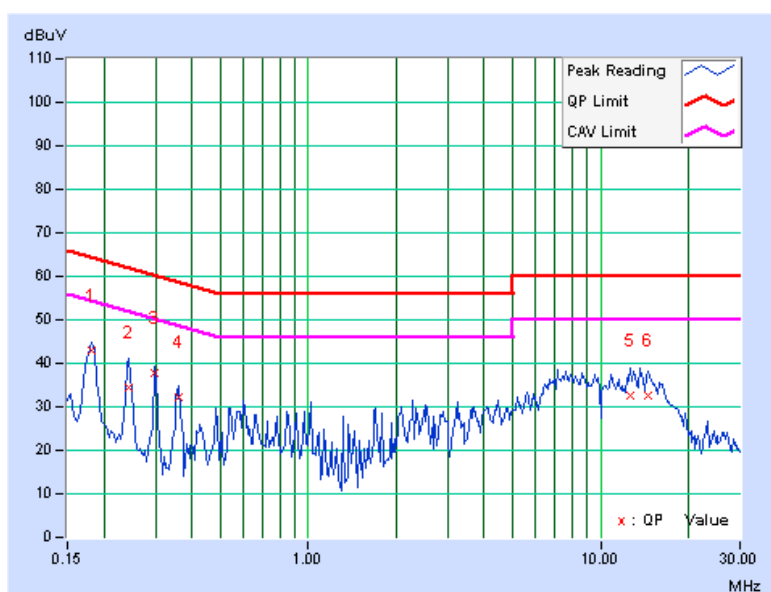


802.11b DSSS MODULATION (ADAPTER 3):

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line (L)
MODULATION TYPE	DBPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	1Mbps	INPUT POWER	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	26deg. C, 58%RH, 972hPa	TESTED BY	Eric Lee

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.181	0.21	42.84	-	43.05	-	64.43	54.43	-21.38	-
2	0.244	0.27	34.07	-	34.34	-	61.97	51.97	-27.62	-
3	0.298	0.34	37.55	-	37.89	-	60.29	50.29	-22.40	-
4	0.361	0.41	31.65	-	32.06	-	58.71	48.71	-26.64	-
5	12.574	0.91	31.78	-	32.69	-	60.00	50.00	-27.31	-
6	14.480	1.05	31.59	-	32.64	-	60.00	50.00	-27.36	-

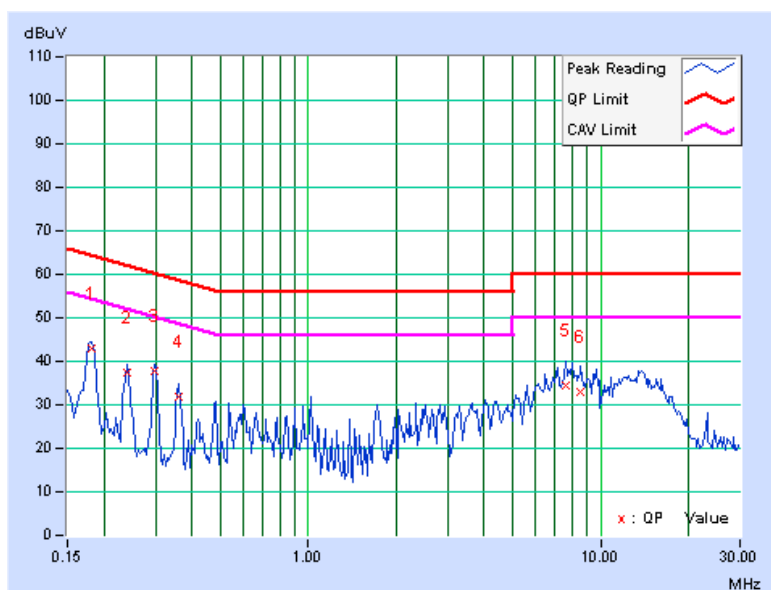
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Neutral (N)
MODULATION TYPE	DBPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	1Mbps	INPUT POWER	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	26deg. C, 58%RH, 972hPa	TESTED BY	Eric Lee

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.181	0.14	42.71	-	42.85	-	64.43	54.43	-21.58	-
2	0.240	0.20	37.25	-	37.45	-	62.10	52.10	-24.65	-
3	0.298	0.27	37.35	-	37.62	-	60.29	50.29	-22.66	-
4	0.361	0.35	31.57	-	31.92	-	58.71	48.71	-26.79	-
5	7.590	0.55	34.03	-	34.58	-	60.00	50.00	-25.42	-
6	8.578	0.56	32.45	-	33.01	-	60.00	50.00	-26.99	-

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

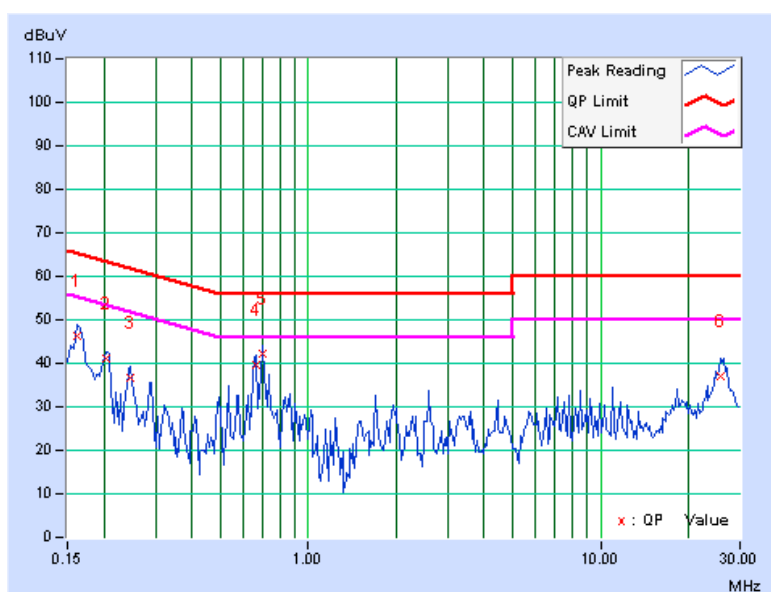


802.11b DSSS MODULATION (ADAPTER 4):

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Line (L)
MODULATION TYPE	DBPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	1Mbps	INPUT POWER	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	26deg. C, 58%RH, 972hPa	TESTED BY	Eric Lee

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.162	0.20	46.00	-	46.20	-	65.38	55.38	-19.18	-
2	0.205	0.23	40.82	-	41.05	-	63.42	53.42	-22.37	-
3	0.248	0.28	36.52	-	36.80	-	61.84	51.84	-25.04	-
4	0.662	0.39	39.16	-	39.55	-	56.00	46.00	-16.45	-
5	0.701	0.37	41.84	-	42.21	-	56.00	46.00	-13.79	-
6	25.695	1.74	35.33	-	37.07	-	60.00	50.00	-22.93	-

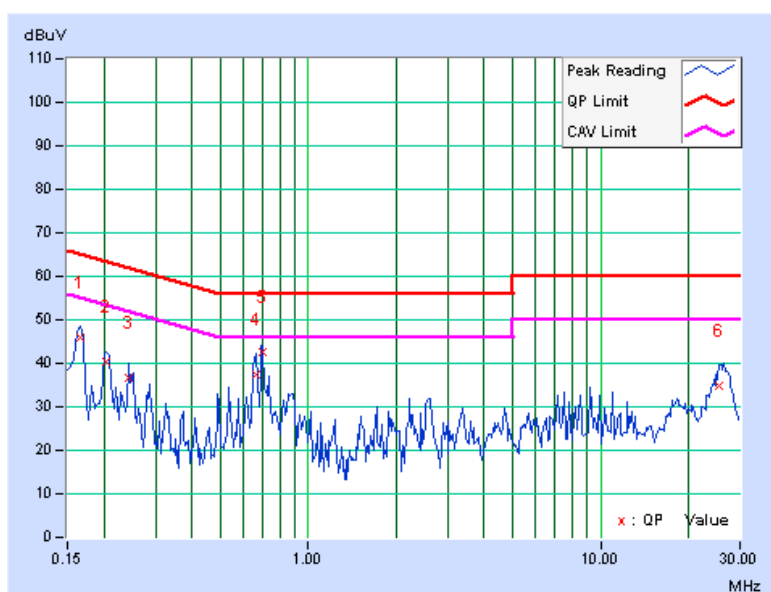
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	Neutral (N)
MODULATION TYPE	DBPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	1Mbps	INPUT POWER	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	26deg. C, 58%RH, 972hPa	TESTED BY	Eric Lee

	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	0.166	0.13	45.88	-	46.01	-	65.18	55.18	-19.17	-
2	0.205	0.16	40.33	-	40.49	-	63.42	53.42	-22.93	-
3	0.244	0.20	36.58	-	36.78	-	61.97	51.97	-25.18	-
4	0.662	0.31	37.04	-	37.35	-	56.00	46.00	-18.65	-
5	0.695	0.30	42.25	-	42.55	-	56.00	46.00	-13.45	-
6	25.355	1.41	33.50	-	34.91	-	60.00	50.00	-25.09	-

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



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

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

NOTE:

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

**A D T**

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ROHDE & SCHWARZ Spectrum Analyzer	FSP40	100036	Dec. 09, 2008	Dec. 08, 2009
Agilent PSA Spectrum Analyzer	E4446A	MY46180622	Apr. 24 , 2009	Apr. 23 , 2010
HP Pre_Amplifier	8449B	3008A01923	Nov. 10, 2008	Nov. 09, 2009
ROHDE & SCHWARZ Test Receiver	ESCS30	847124/029	Sep. 09, 2008	Sep. 08, 2009
SCHWARZBECK TRILOG Broadband Antenna	VULB 9168	138	April 29, 2009	April 28, 2010
Schwarzbeck Horn_Antenna	BBHA9120	D124	Dec. 09, 2008	Dec. 08, 2009
Schwarzbeck Horn_Antenna	BBHA 9170	BBHA9170153	Jan. 22, 2009	Jan. 21, 2010
RF Switches	EMH-011	08009	Oct. 07, 2008	Oct. 06, 2009
RF CABLE (Chaintek)	Sucoflex 106	28077	Aug. 15, 2008	Aug. 14, 2009
RF Cable	8DFB	STCCAB-30M-1GHz	Oct. 07, 2008	Oct. 06, 2009
Software	ADT_Radiated_V7.6.15.9.2	NA	NA	NA
CT Antenna Tower & Turn Table	NA	NA	NA	NA

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

2. The horn antenna, HP preamplifier (model: 8449B) and Spectrum Analyzer (model: FSP40) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in Open Site No. C.
4. The FCC Site Registration No. is 656396.
5. The VCCI Site Registration No. is R-1626.
6. The CANADA Site Registration No. is IC 7450G-3.

4.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

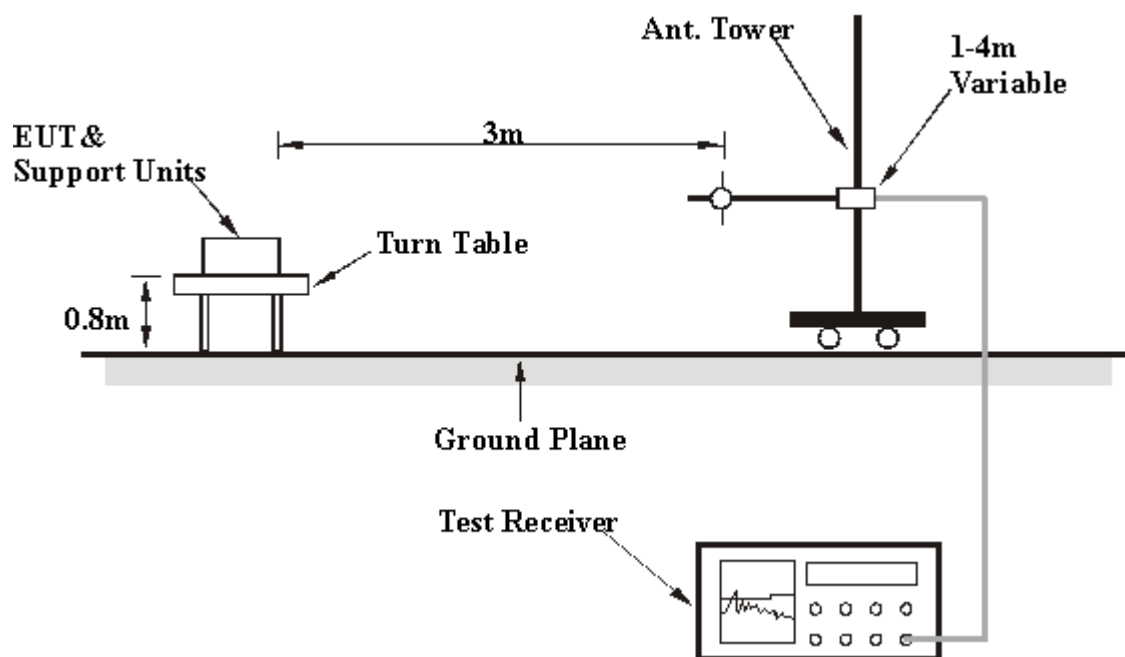
NOTE:

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

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP



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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6

Below 1GHz Test Data

4.2.7 TEST RESULTS

BELOW 1GHz WORST-CASE DATA : 802.11b DSSS MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 66%RH 972 hPa	TESTED BY	Frank Liu
TEST MODE	PIFA		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	250.00	33.06 QP	46.00	-12.94	1.07 H	101	18.81	14.25
2	375.03	39.16 QP	46.00	-6.84	1.16 H	54	20.35	18.81
3	500.00	39.13 QP	46.00	-6.87	1.60 H	5	16.64	22.49
4	625.00	41.66 QP	46.00	-4.34	1.60 H	104	16.37	25.29
5	750.00	38.13 QP	46.00	-7.87	1.60 H	19	11.22	26.91
6	875.00	38.72 QP	46.00	-7.28	1.10 H	44	9.43	29.29
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	43.80	32.30 QP	40.00	-7.70	1.00 V	160	17.56	14.74
2	125.00	38.51 QP	43.50	-4.99	1.00 V	10	25.44	13.07
3	250.01	31.88 QP	46.00	-14.12	1.00 V	236	17.63	14.25
4	375.02	40.05 QP	46.00	-5.95	1.45 V	97	21.24	18.81
5	500.00	38.02 QP	46.00	-7.98	1.51 V	213	15.53	22.49
6	625.00	40.37 QP	46.00	-5.63	2.77 V	108	15.08	25.29
7	750.00	38.49 QP	46.00	-7.51	1.17 V	192	11.58	26.91

- 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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 66%RH 972 hPa	TESTED BY	Frank Liu
TEST MODE	Dipole		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	250.01	34.76 QP	46.00	-11.24	1.14 H	98	20.51	14.25
2	375.03	39.16 QP	46.00	-6.84	1.27 H	223	20.35	18.81
3	500.00	39.13 QP	46.00	-6.87	1.59 H	44	16.64	22.49
4	625.00	41.66 QP	46.00	-4.34	1.34 H	25	16.37	25.29
5	875.00	38.72 QP	46.00	-7.28	1.32 H	21	9.43	29.29
6	1000.00	33.22 QP	54.00	-20.78	1.58 H	42	2.48	30.74
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	43.69	32.53 QP	40.00	-7.47	1.00 V	75	17.80	14.73
2	125.00	28.27 QP	43.50	-15.23	1.00 V	19	15.20	13.07
3	250.00	31.41 QP	46.00	-14.59	1.00 V	161	17.16	14.25
4	375.00	33.16 QP	46.00	-12.84	1.00 V	324	14.35	18.81
5	500.00	35.41 QP	46.00	-10.59	1.00 V	150	12.92	22.49
6	625.00	41.80 QP	46.00	-4.20	1.00 V	84	16.51	25.29

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

Above 1GHz Test Data

4.2.8 TEST RESULTS

802.11b DSSS MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 65%RH 972 hPa	TESTED BY	Eric Lee
TEST MODE	PIFA		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2386.13	58.82 PK	74.00	-15.18	1.62 H	201	28.55	30.27
2	2386.13	48.96 AV	54.00	-5.04	1.62 H	201	18.69	30.27
3	*2412.00	100.49 PK			1.34 H	201	70.13	30.36
4	*2412.00	97.64 AV			1.34 H	201	67.28	30.36
5	4824.00	54.90 PK	74.00	-19.10	1.20 H	330	18.11	36.79
6	4824.00	43.10 AV	54.00	-10.90	1.20 H	330	6.31	36.79
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	2386.27	57.30 PK	74.00	-16.70	1.07 V	348	27.03	30.27
2	2386.27	47.98 AV	54.00	-6.02	1.07 V	348	17.71	30.27
3	*2412.00	98.57 PK			1.21 V	203	68.21	30.36
4	*2412.00	95.59 AV			1.21 V	203	65.23	30.36
5	4824.00	48.24 PK	74.00	-25.76	1.11 V	158	11.45	36.79
6	4824.00	42.92 AV	54.00	-11.08	1.11 V	158	6.13	36.79

- 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.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 65%RH 972 hPa	TESTED BY	Eric Lee
TEST MODE	PIFA		

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	107.50 PK			1.24 H	343	77.04	30.46
2	*2437.00	104.90 AV			1.24 H	343	74.44	30.46
3	4874.00	47.30 PK	74.00	-26.70	1.01 H	53	10.38	36.92
4	4874.00	36.05 AV	54.00	-17.95	1.01 H	53	-0.87	36.92
5	7311.00	55.64 PK	74.00	-18.36	1.00 H	247	12.50	43.14
6	7311.00	43.35 AV	54.00	-10.65	1.00 H	247	0.21	43.14
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	106.20 PK			1.21 V	138	75.74	30.46
2	*2437.00	102.30 AV			1.21 V	138	71.84	30.46
3	4874.00	50.66 PK	74.00	-23.34	1.00 V	1	13.74	36.92
4	4874.00	38.11 AV	54.00	-15.89	1.00 V	1	1.19	36.92
5	7311.00	61.48 PK	74.00	-12.52	1.83 V	38	18.34	43.14
6	7311.00	48.75 AV	54.00	-5.25	1.83 V	38	5.61	43.14

- 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.



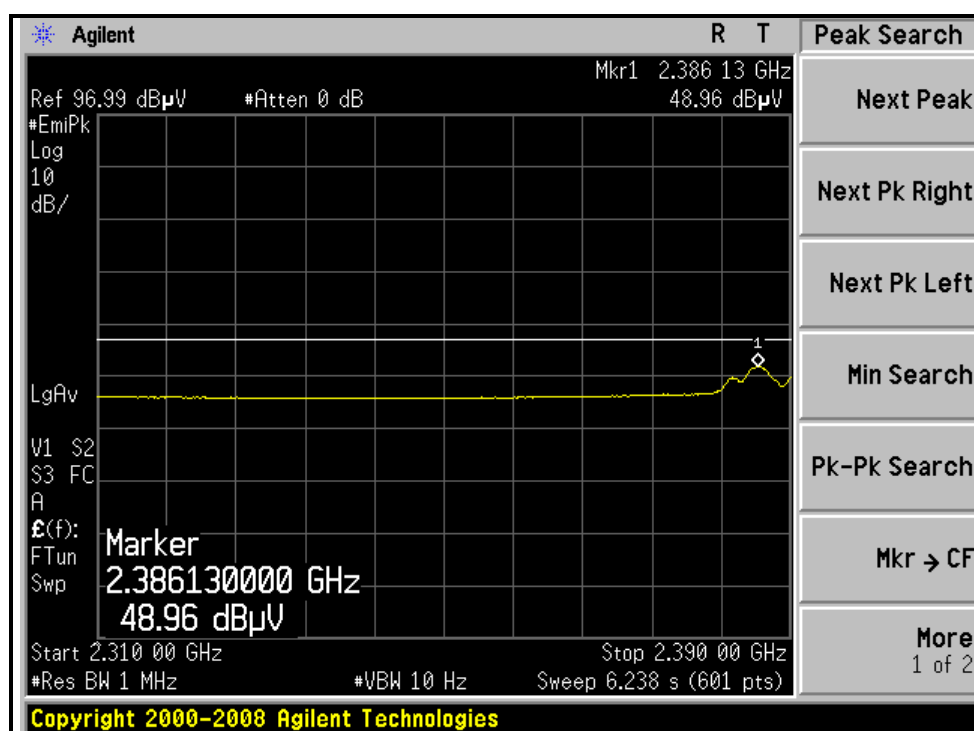
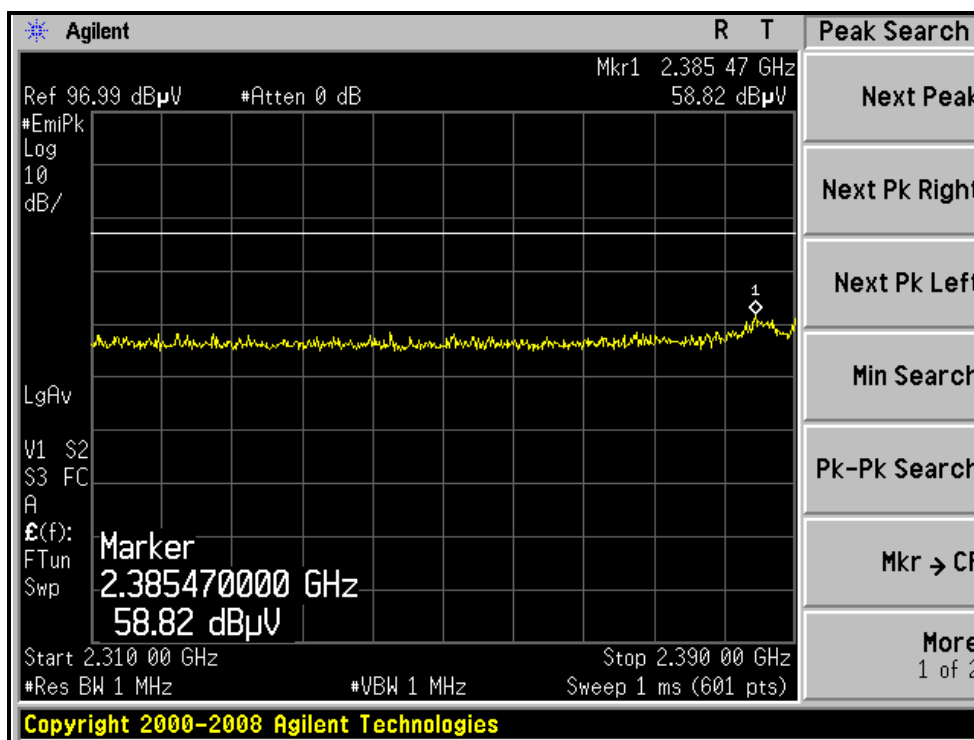
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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 65%RH 972 hPa	TESTED BY	Eric Lee
TEST MODE	PIFA		

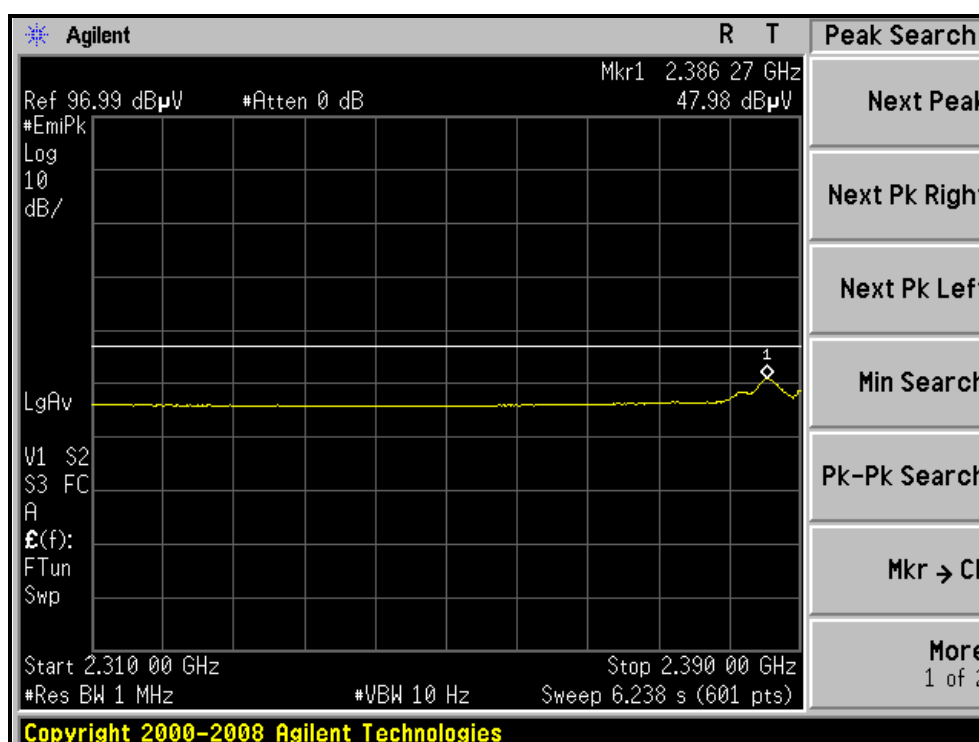
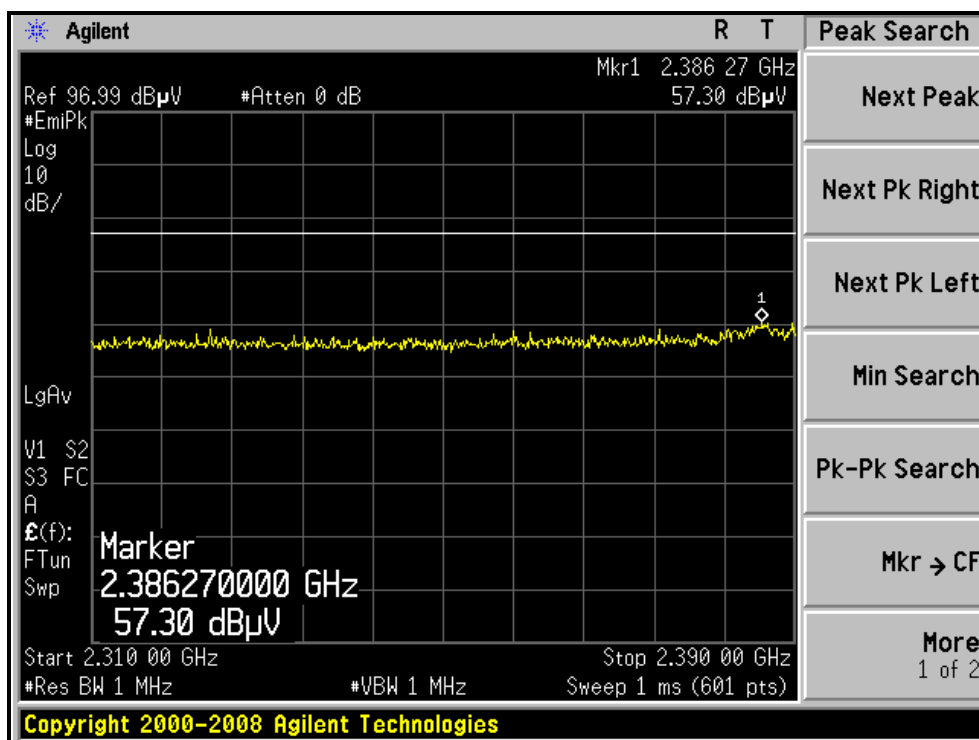
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	104.62 PK			1.49 H	185	74.07	30.55
2	*2462.00	101.89 AV			1.49 H	185	71.34	30.55
3	2488.28	56.99 PK	74.00	-17.01	1.47 H	108	26.34	30.65
4	2488.28	46.12 AV	54.00	-7.88	1.47 H	108	15.47	30.65
5	4924.00	48.95 PK	74.00	-25.05	1.30 H	153	11.89	37.06
6	4924.00	42.76 AV	54.00	-11.24	1.30 H	153	5.70	37.06
7	7386.00	49.87 PK	74.00	-24.13	1.30 H	151	6.74	43.13
8	7386.00	40.28 AV	54.00	-13.72	1.30 H	151	-2.85	43.13
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	100.59 PK			1.34 V	196	70.04	30.55
2	*2462.00	97.87 AV			1.34 V	196	67.32	30.55
3	2488.23	56.51 PK	74.00	-17.49	1.57 V	149	25.86	30.65
4	2488.23	44.27 AV	54.00	-9.73	1.57 V	149	13.62	30.65
5	4924.00	53.08 PK	74.00	-20.92	1.13 V	198	16.02	37.06
6	4924.00	50.24 AV	54.00	-3.76	1.13 V	198	13.18	37.06
7	7386.00	53.68 PK	74.00	-20.32	1.21 V	205	10.55	43.13
8	7386.00	44.66 AV	54.00	-9.34	1.21 V	205	1.53	43.13

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

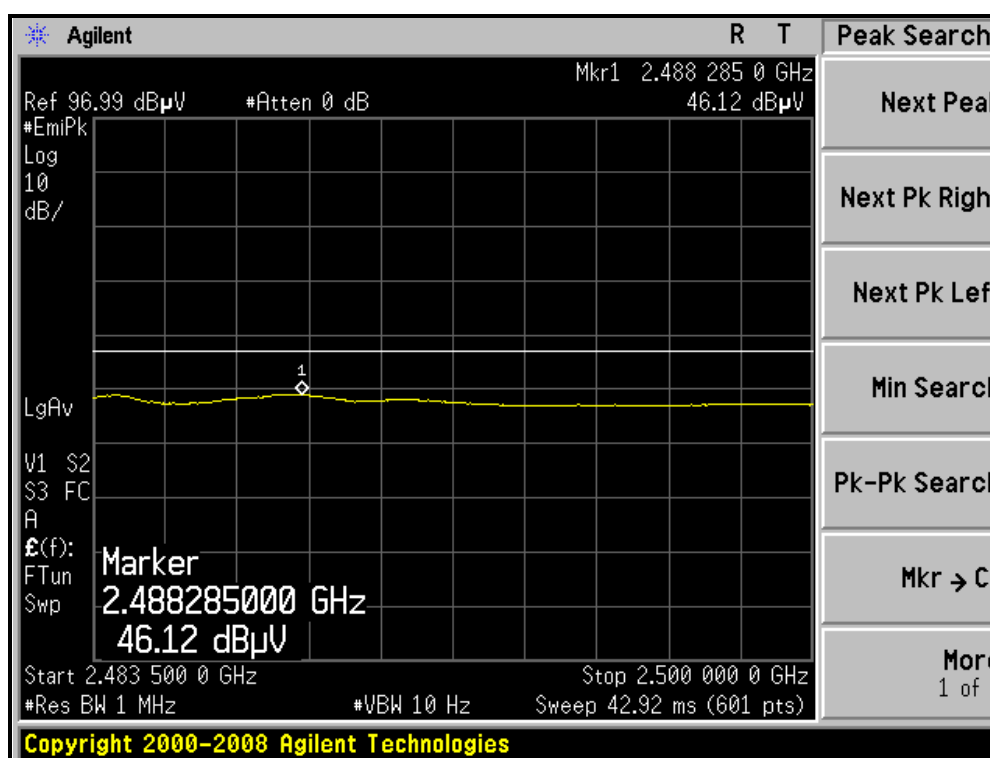
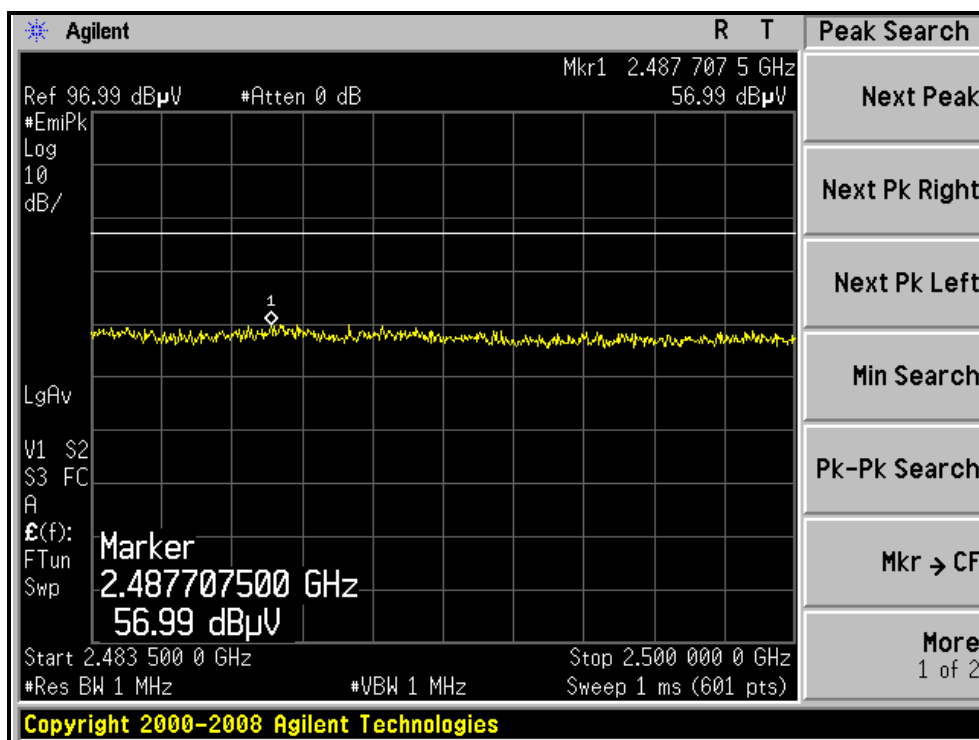
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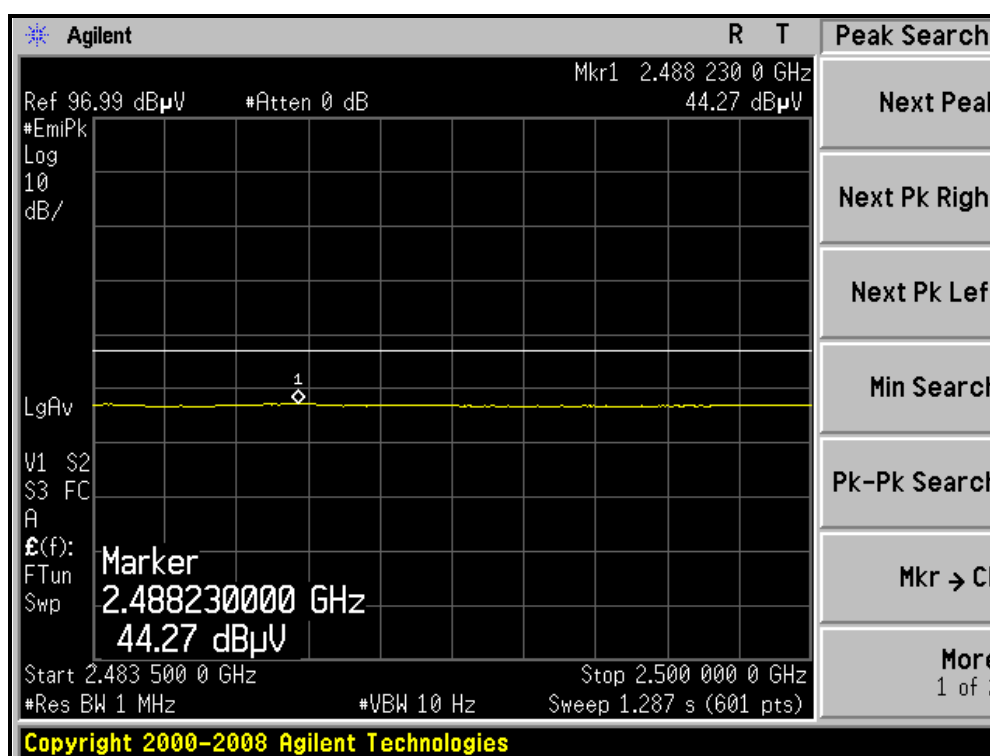
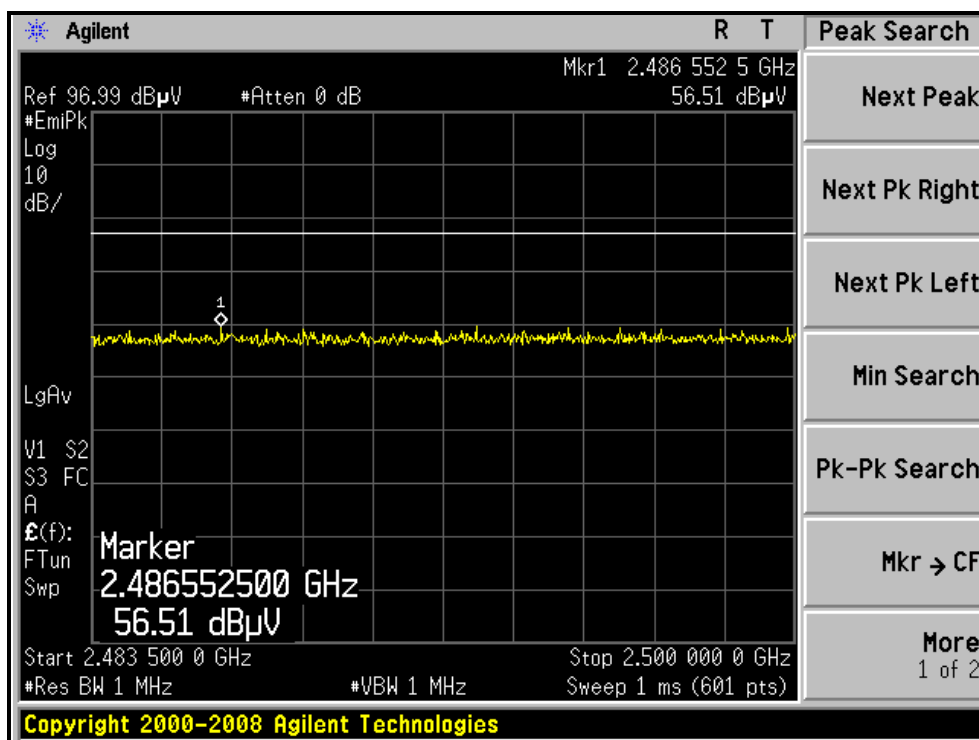
RESTRICTED BANDEDGE (802.11b MODE,CH1, VERTICAL)



RESTRICTED BANDEDGE (802.11b MODE,CH11, HORIZONTAL)



RESTRICTED BANDEDGE (802.11b MODE,CH11, VERTICAL)





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802.11g OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 65%RH 972 hPa	TESTED BY	Eric Lee
TEST MODE	PIFA		

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	68.18 PK	74.00	-5.82	1.31 H	149	37.90	30.28
2	2390.00	47.79 AV	54.00	-6.21	1.31 H	149	17.51	30.28
3	*2412.00	108.75 PK			2.20 H	135	78.39	30.36
4	*2412.00	97.58 AV			2.20 H	135	67.22	30.36
5	4824.00	42.90 PK	74.00	-31.10	1.32 H	68	6.11	36.79
6	4824.00	33.30 AV	54.00	-20.70	1.32 H	68	-3.49	36.79
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	65.11 PK	74.00	-8.89	1.33 V	359	34.83	30.28
2	2390.00	47.25 AV	54.00	-6.75	1.33 V	359	16.97	30.28
3	*2412.00	105.37 PK			1.66 V	100	75.01	30.36
4	*2412.00	94.16 AV			1.66 V	100	63.80	30.36
5	4824.00	45.31 PK	74.00	-28.69	1.03 V	211	8.52	36.79
6	4824.00	38.10 AV	54.00	-15.90	1.03 V	211	1.31	36.79

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 65%RH 972 hPa	TESTED BY	Eric Lee
TEST MODE	PIFA		

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	114.10 PK			1.20 H	26	83.64	30.46
2	*2437.00	102.70 AV			1.20 H	26	72.24	30.46
3	4874.00	43.20 PK	74.00	-30.80	1.81 H	281	6.28	36.92
4	4874.00	33.60 AV	54.00	-20.40	1.81 H	281	-3.32	36.92
5	7311.00	57.28 PK	74.00	-16.72	1.11 H	24	14.14	43.14
6	7311.00	46.31 AV	54.00	-7.69	1.11 H	24	3.17	43.14
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	112.10 PK			1.11 V	167	81.64	30.46
2	*2437.00	101.90 AV			1.11 V	167	71.44	30.46
3	4874.00	51.21 PK	74.00	-22.79	1.31 V	145	14.29	36.92
4	4874.00	40.31 AV	54.00	-13.69	1.31 V	145	3.39	36.92
5	7311.00	62.02 PK	74.00	-11.98	1.27 V	173	18.88	43.14
6	7311.00	49.71 AV	54.00	-4.29	1.27 V	173	6.57	43.14

- 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.



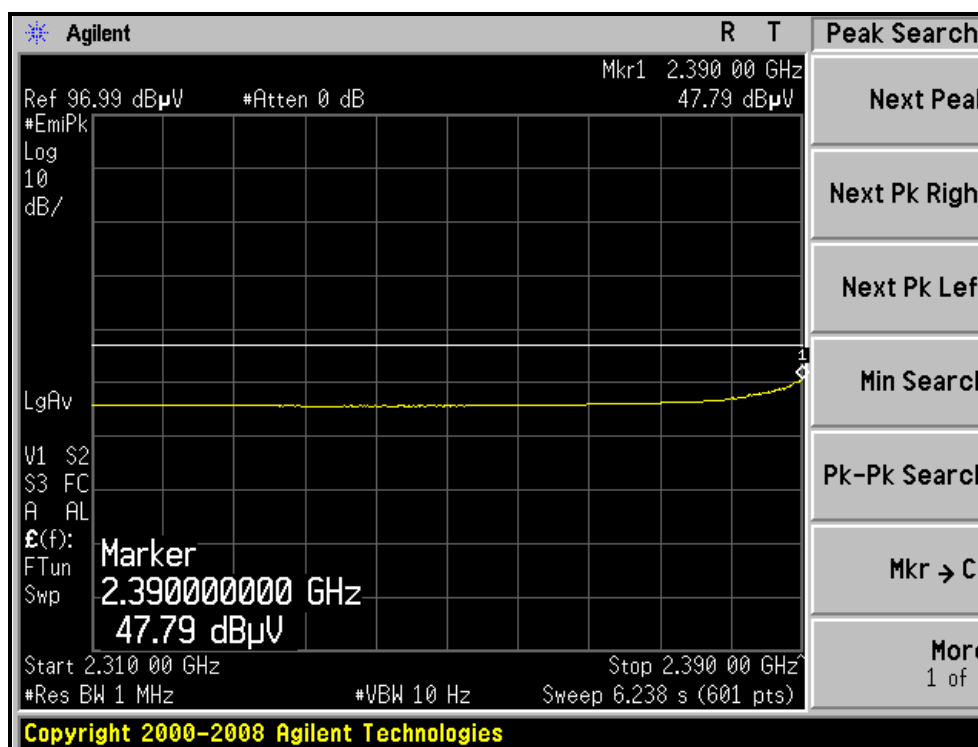
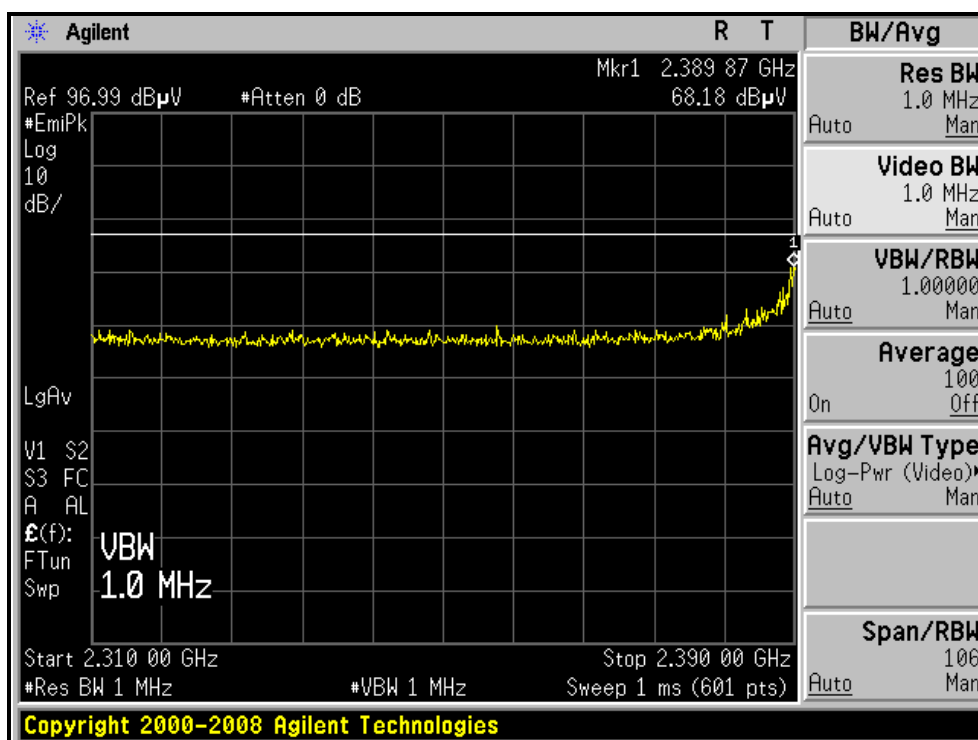
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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 65%RH 972 hPa	TESTED BY	Eric Lee
TEST MODE	PIFA		

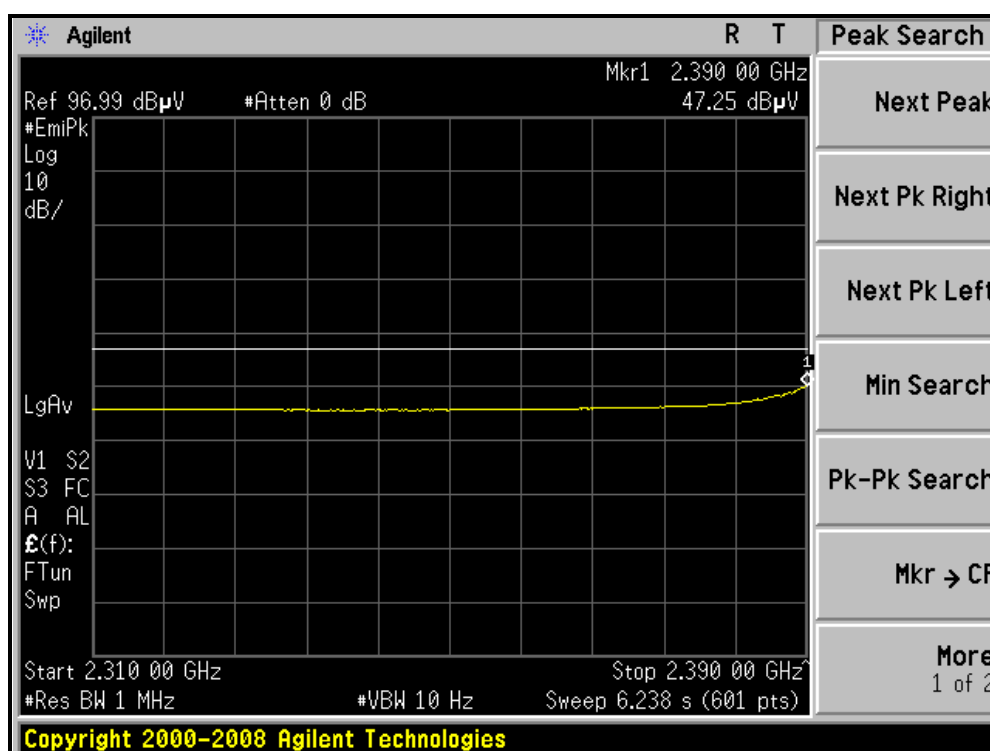
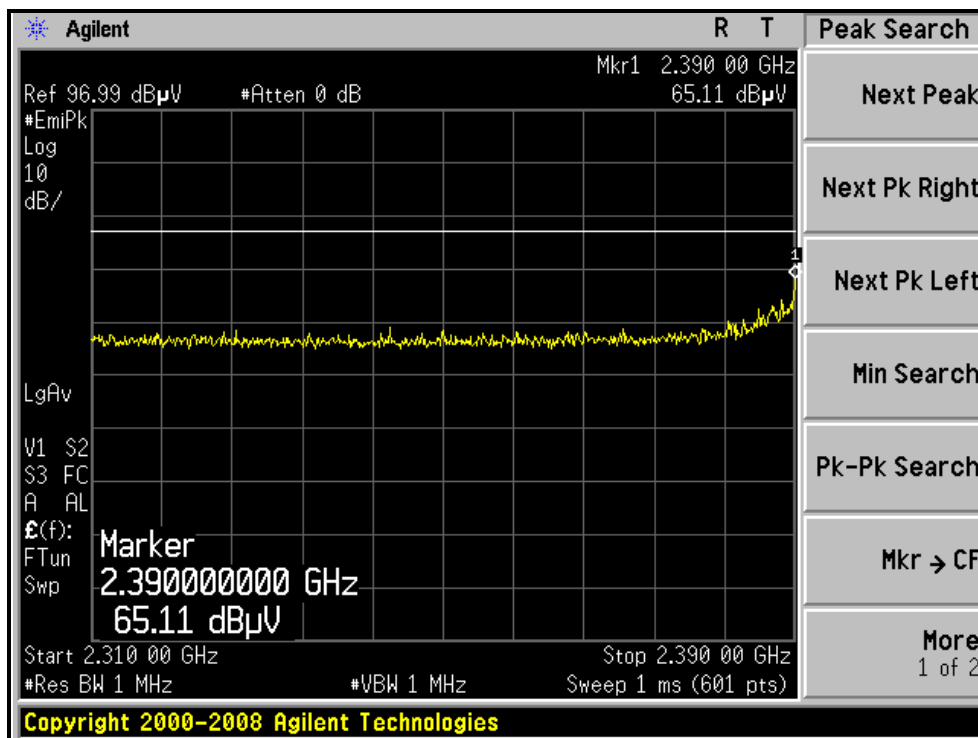
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	106.38 PK			1.00 H	145	75.83	30.55
2	*2462.00	96.55 AV			1.00 H	145	66.00	30.55
3	2483.50	72.36 PK	74.00	-1.64	1.00 H	164	41.73	30.63
4	2483.50	51.49 AV	54.00	-2.51	1.00 H	164	20.86	30.63
5	4924.00	45.10 PK	74.00	-28.90	1.01 H	121	8.04	37.06
6	4924.00	34.20 AV	54.00	-19.80	1.01 H	121	-2.86	37.06
7	7386.00	59.30 PK	74.00	-14.70	1.00 H	244	16.17	43.13
8	7386.00	47.24 AV	54.00	-6.76	1.00 H	244	4.11	43.13
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	103.12 PK			1.00 V	214	72.57	30.55
2	*2462.00	93.21 AV			1.00 V	214	62.66	30.55
3	2483.50	73.04 PK	74.00	-0.96	1.63 V	97	42.41	30.63
4	2483.50	53.47 AV	54.00	-0.53	1.63 V	97	22.84	30.63
5	4924.00	46.50 PK	74.00	-27.50	1.09 V	182	9.44	37.06
6	4924.00	35.80 AV	54.00	-18.20	1.09 V	182	-1.26	37.06
7	7386.00	68.60 PK	74.00	-5.40	1.00 V	152	25.47	43.13
8	7386.00	53.33 AV	54.00	-0.67	1.00 V	152	10.20	43.13

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

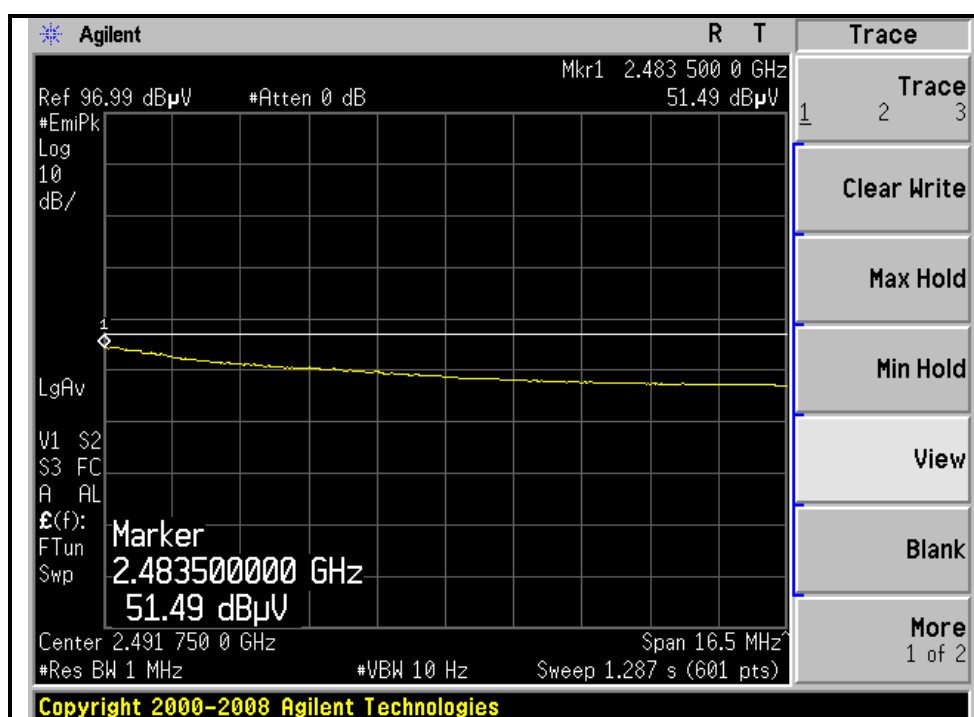
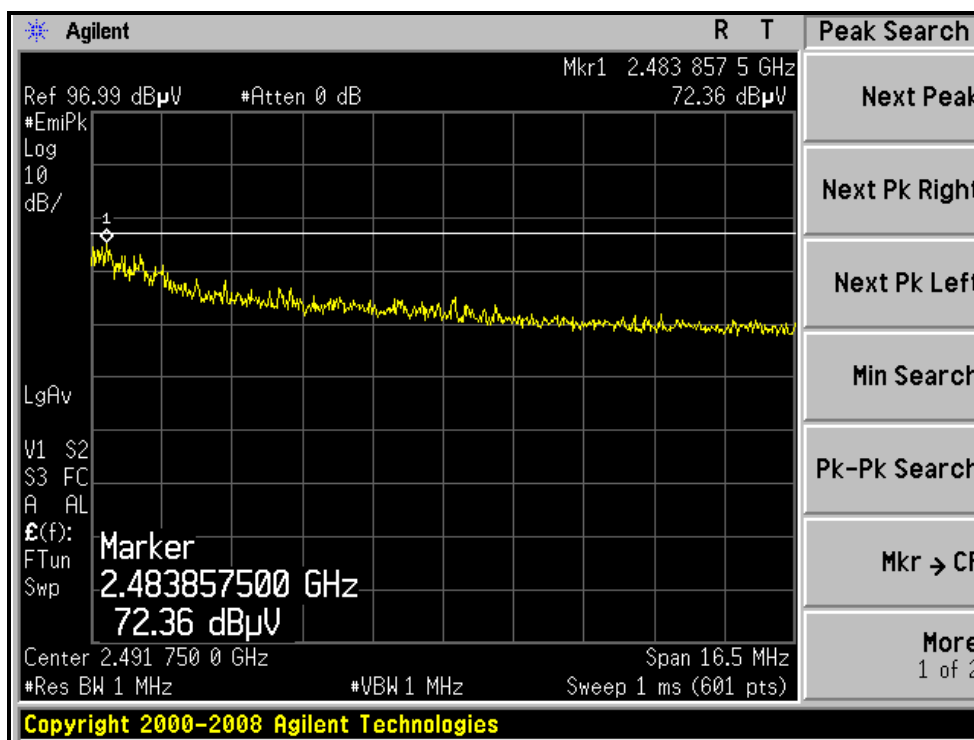
RESTRICTED BANDEDGE (802.11g MODE,CH1, HORIZONTAL)



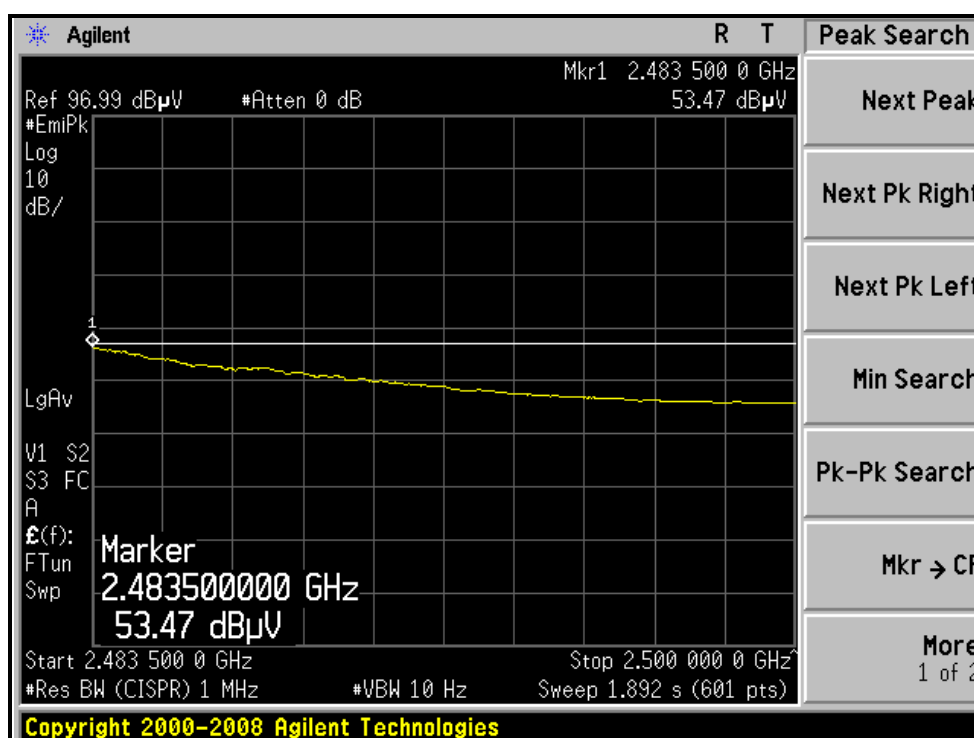
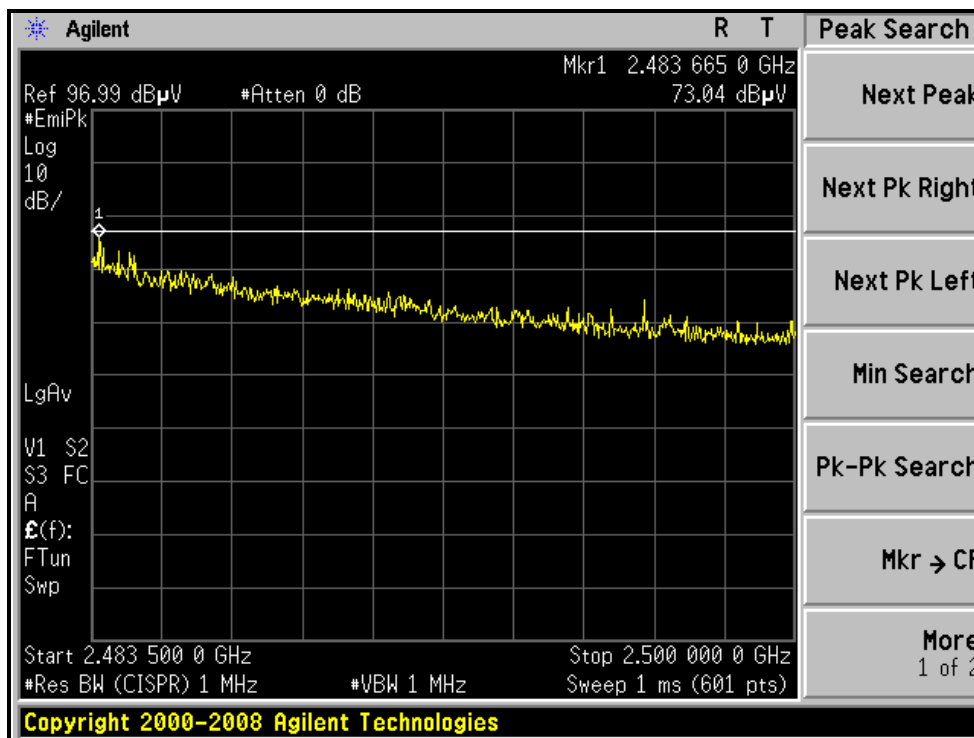
RESTRICTED BANDEDGE (802.11g MODE,CH1, VERTICAL)



RESTRICTED BANDEDGE (802.11g MODE,CH11, HORIZONTAL)



RESTRICTED BANDEDGE (802.11g MODE,CH11, VERTICAL)





A D T

DRAFT 802.11n (20MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 65%RH 972 hPa	TESTED BY	Eric Lee
TEST MODE	PIFA		

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	71.36 PK	74.00	-2.64	1.61 H	110	41.08	30.28
2	2390.00	51.10 AV	54.00	-2.90	1.61 H	110	20.82	30.28
3	*2412.00	108.93 PK			1.54 H	123	78.57	30.36
4	*2412.00	98.25 AV			1.54 H	123	67.89	30.36
5	4824.00	45.68 PK	74.00	-28.32	1.24 H	39	8.89	36.79
6	4824.00	34.31 AV	54.00	-19.69	1.24 H	39	-2.48	36.79
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	64.15 PK	74.00	-9.85	1.67 V	194	33.87	30.28
2	2390.00	47.15 AV	54.00	-6.85	1.67 V	194	16.87	30.28
3	*2412.00	103.27 PK			1.81 V	204	72.91	30.36
4	*2412.00	95.41 AV			1.81 V	204	65.05	30.36
5	4824.00	49.30 PK	74.00	-24.70	1.30 V	62	12.51	36.79
6	4824.00	36.24 AV	54.00	-17.76	1.30 V	62	-0.55	36.79

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 65%RH 972 hPa	TESTED BY	Eric Lee
TEST MODE	PIFA		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	110.40 PK			1.31 H	62	79.94	30.46
2	*2437.00	98.21 AV			1.31 H	62	67.75	30.46
3	4874.00	43.20 PK	74.00	-30.80	1.21 H	78	6.28	36.92
4	4874.00	33.18 AV	54.00	-20.82	1.21 H	78	-3.74	36.92
5	7311.00	54.90 PK	74.00	-19.10	1.32 H	66	11.76	43.14
6	7311.00	41.70 AV	54.00	-12.30	1.32 H	66	-1.44	43.14
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	108.20 PK			1.32 V	87	77.74	30.46
2	*2437.00	97.80 AV			1.32 V	87	67.34	30.46
3	4874.00	50.23 PK	74.00	-23.77	1.35 V	355	13.31	36.92
4	4874.00	37.39 AV	54.00	-16.61	1.35 V	355	0.47	36.92
5	7311.00	63.40 PK	74.00	-10.60	1.32 V	253	20.26	43.14
6	7311.00	47.82 AV	54.00	-6.18	1.32 V	253	4.68	43.14

- 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.



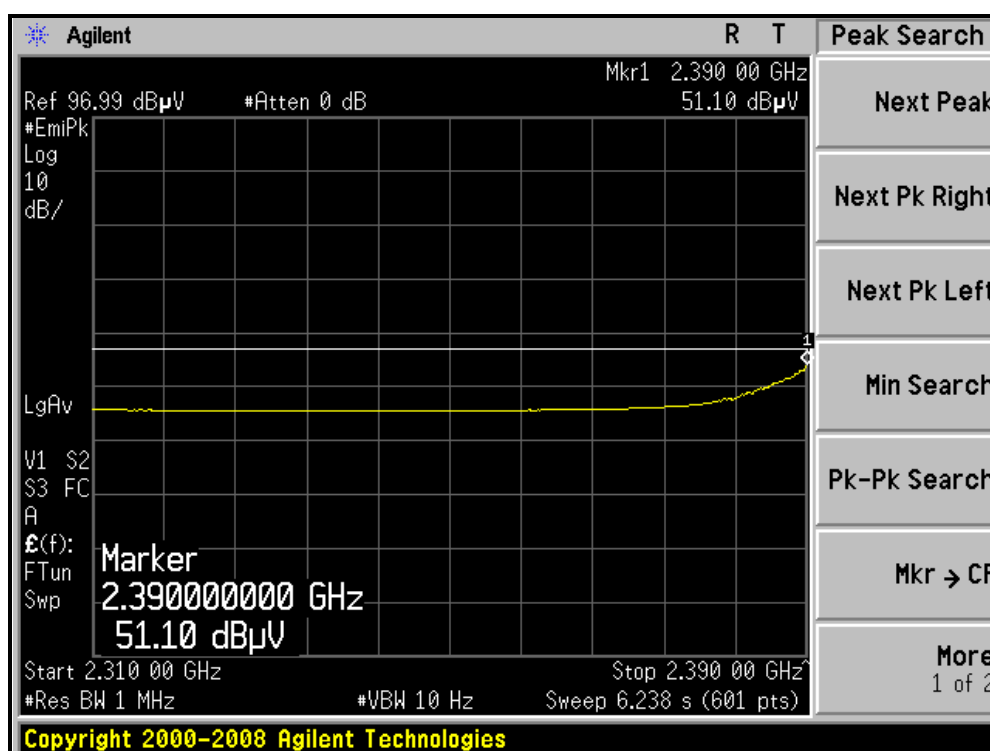
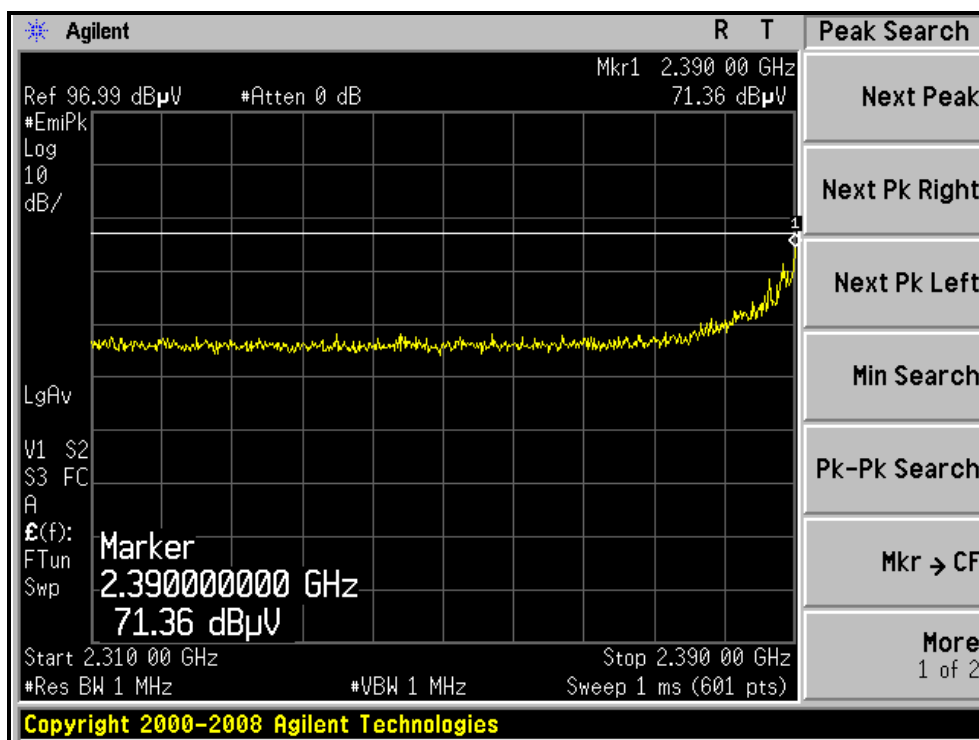
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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 65%RH 972 hPa	TESTED BY	Eric Lee
TEST MODE	PIFA		

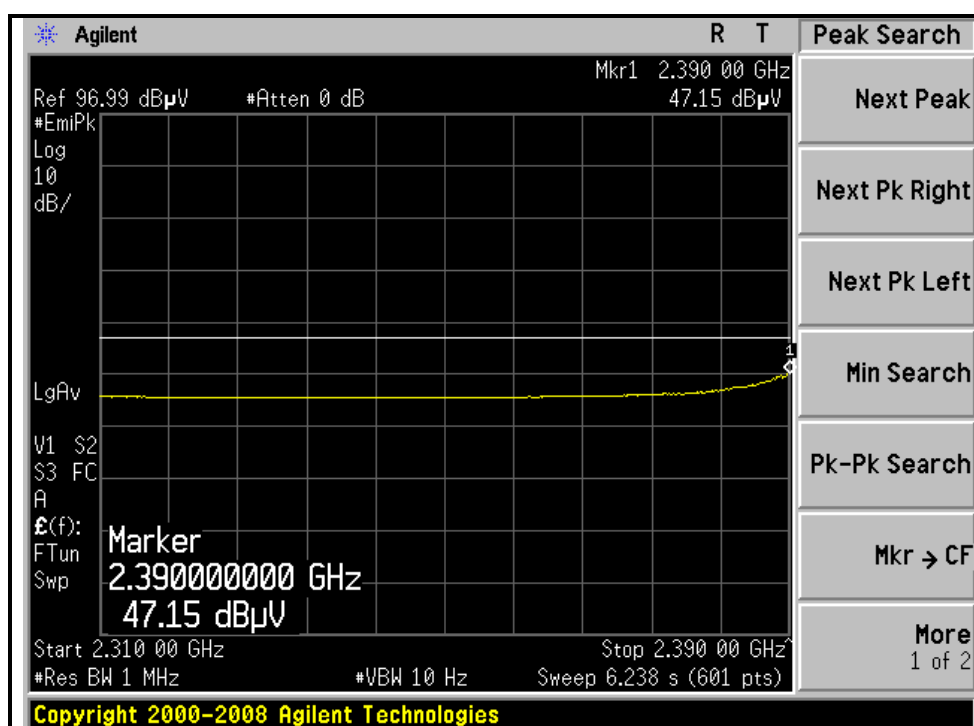
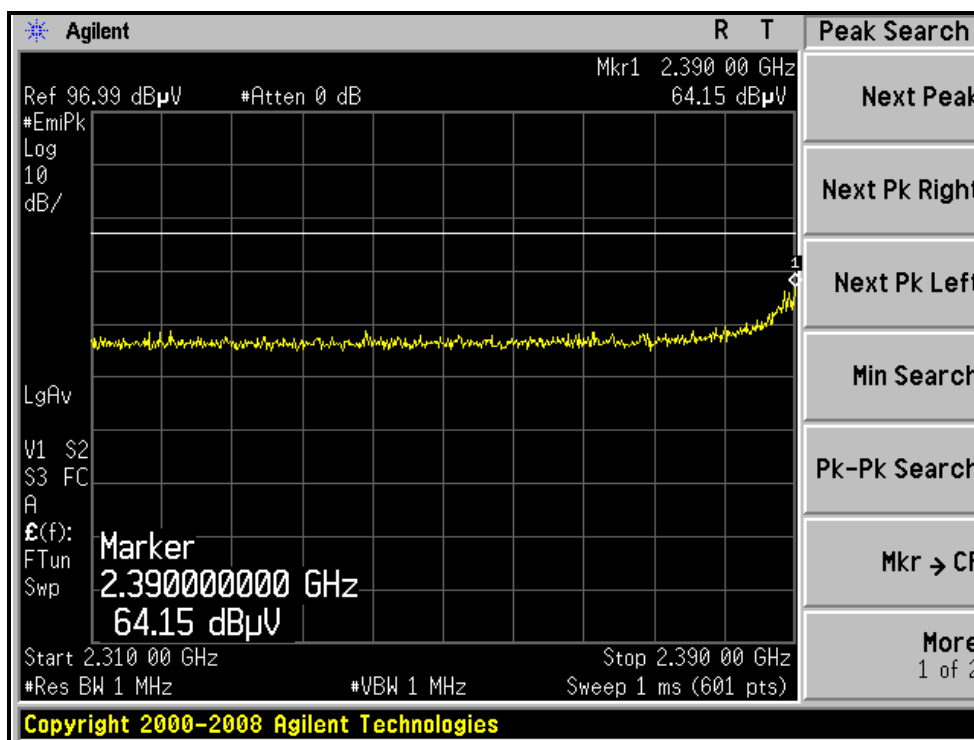
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	107.24 PK			1.50 H	153	76.69	30.55
2	*2462.00	97.38 AV			1.50 H	153	66.83	30.55
3	2483.50	70.82 PK	74.00	-3.18	1.71 H	132	40.19	30.63
4	2483.50	53.26 AV	54.00	-0.74	1.71 H	132	22.63	30.63
5	4924.00	43.20 PK	74.00	-30.80	1.67 H	178	6.14	37.06
6	4924.00	33.60 AV	54.00	-20.40	1.67 H	178	-3.46	37.06
7	7386.00	59.21 PK	74.00	-14.79	1.38 H	238	16.08	43.13
8	7386.00	44.30 AV	54.00	-9.70	1.38 H	238	1.17	43.13
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	105.34 PK			1.31 V	284	74.79	30.55
2	*2462.00	95.21 AV			1.31 V	284	64.66	30.55
3	2483.50	67.83 PK	74.00	-6.17	1.24 V	122	37.20	30.63
4	2483.50	49.15 AV	54.00	-4.85	1.24 V	122	18.52	30.63
5	4924.00	45.45 PK	74.00	-28.55	1.07 V	184	8.39	37.06
6	4924.00	35.77 AV	54.00	-18.23	1.07 V	184	-1.29	37.06
7	7386.00	68.63 PK	74.00	-5.37	1.00 V	163	25.50	43.13
8	7386.00	52.80 AV	54.00	-1.20	1.00 V	163	9.67	43.13

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

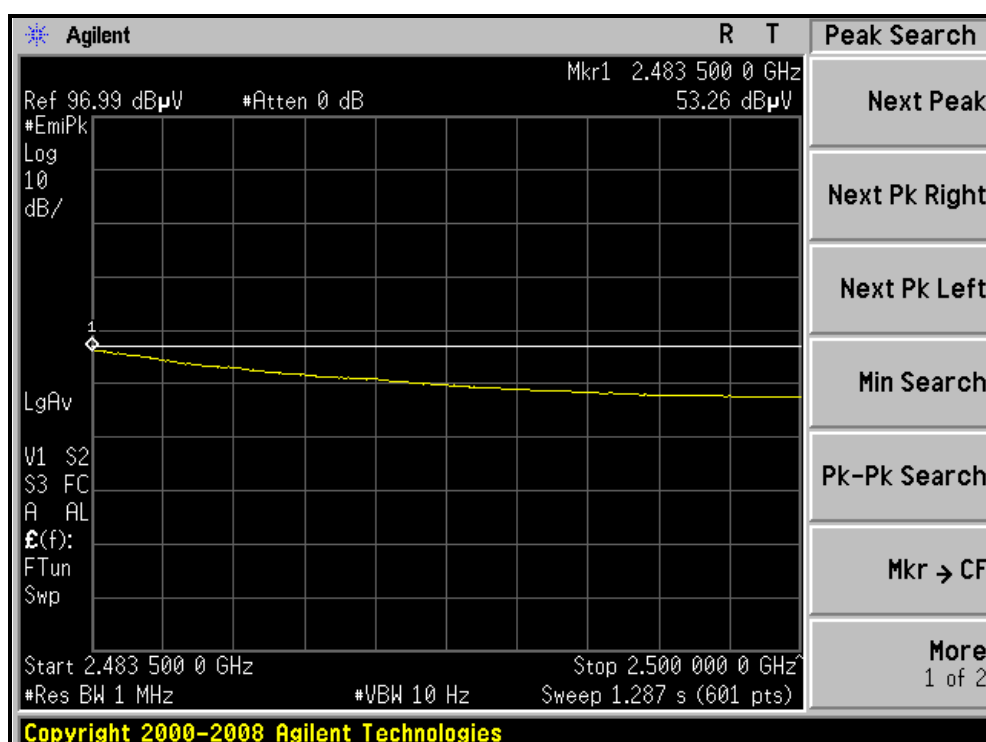
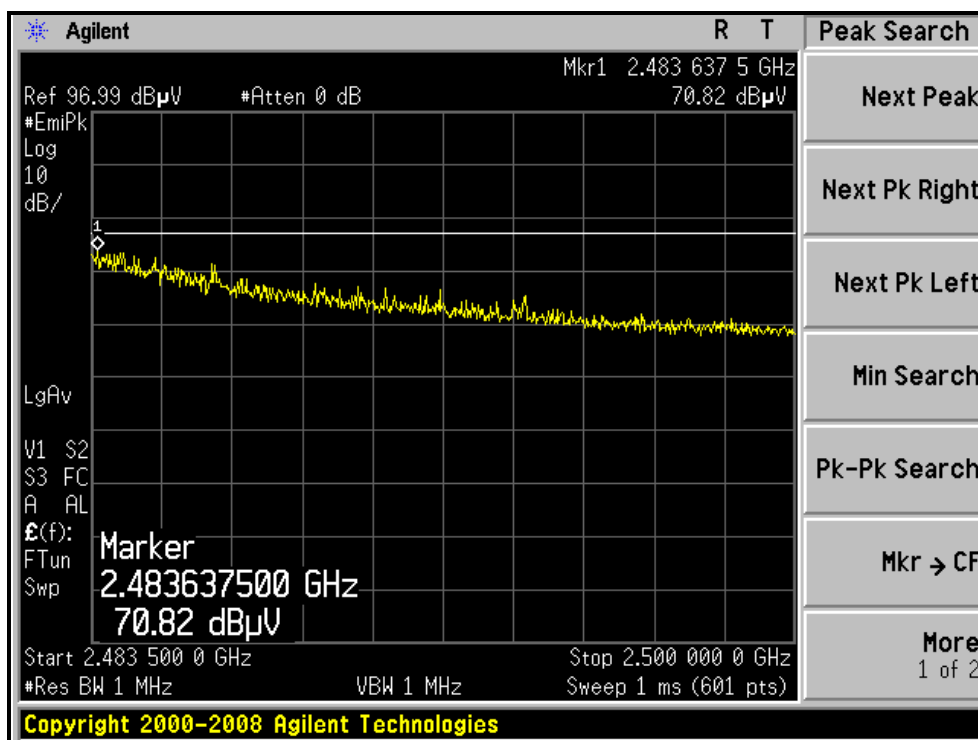
RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH1, HORIZONTAL)



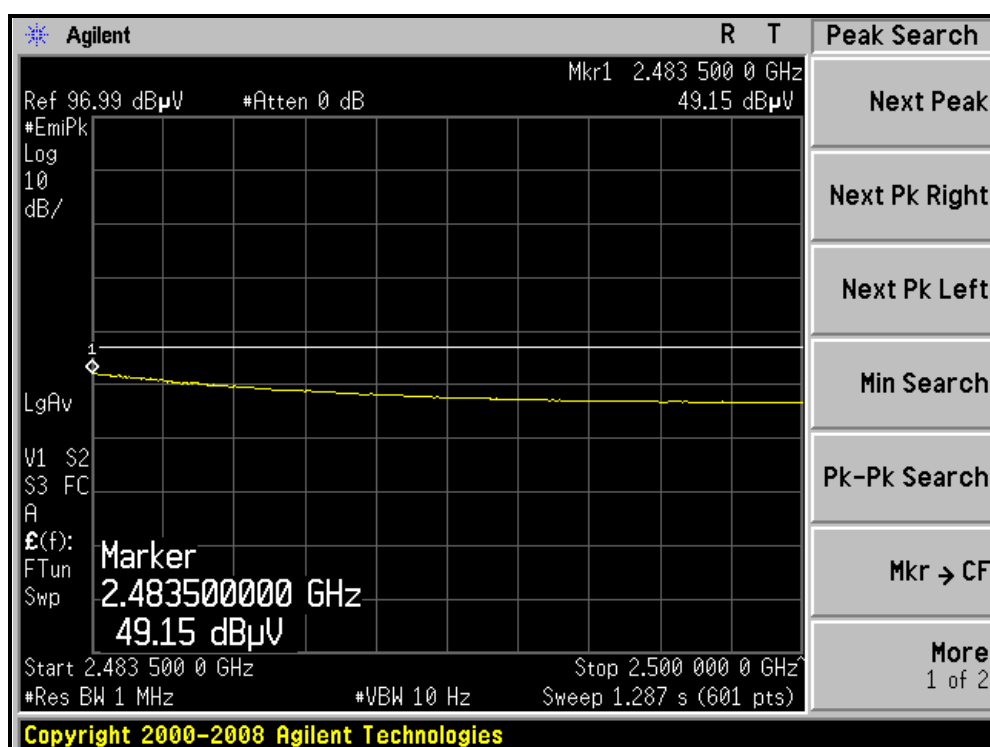
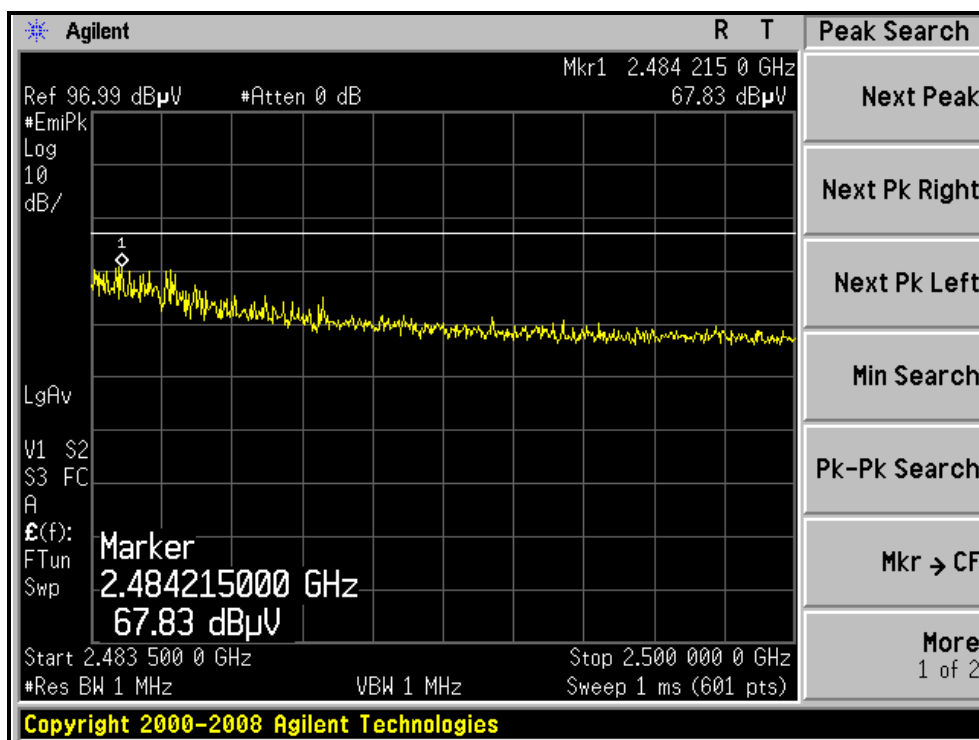
RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH1, VERTICAL)



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



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





A D T

DRAFT 802.11n (40MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 65%RH 972 hPa	TESTED BY	Eric Lee
TEST MODE	PIFA		

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	72.50 PK	74.00	-1.50	1.51 H	143	42.22	30.28
2	2390.00	51.73 AV	54.00	-2.27	1.51 H	143	21.45	30.28
3	*2422.00	105.05 PK			1.70 H	136	74.65	30.40
4	*2422.00	94.75 AV			1.70 H	136	64.35	30.40
5	4844.00	45.34 PK	74.00	-28.66	1.21 H	341	8.50	36.84
6	4844.00	33.62 AV	54.00	-20.38	1.21 H	341	-3.22	36.84
7	7266.00	56.17 PK	74.00	-17.83	1.24 H	315	13.03	43.14
8	7266.00	43.28 AV	54.00	-10.72	1.24 H	315	0.14	43.14
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.66 PK	74.00	-5.34	1.70 V	104	38.38	30.28
2	2390.00	47.05 AV	54.00	-6.95	1.70 V	104	16.77	30.28
3	*2422.00	100.58 PK			1.47 V	21	70.18	30.40
4	*2422.00	90.15 AV			1.47 V	21	59.75	30.40
5	4844.00	44.62 PK	74.00	-29.38	1.04 V	63	7.78	36.84
6	4844.00	32.46 AV	54.00	-21.54	1.04 V	63	-4.38	36.84
7	7266.00	55.84 PK	74.00	-18.16	1.45 V	154	12.70	43.14
8	7266.00	42.12 AV	54.00	-11.88	1.45 V	154	-1.02	43.14

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 65%RH 972 hPa	TESTED BY	Eric Lee
TEST MODE	PIFA		

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	107.90 PK			1.34 H	125	77.44	30.46
2	*2437.00	95.81 AV			1.34 H	125	65.35	30.46
3	4874.00	45.21 PK	74.00	-28.79	1.48 H	161	8.29	36.92
4	4874.00	34.19 AV	54.00	-19.81	1.48 H	161	-2.73	36.92
5	7311.00	56.49 PK	74.00	-17.51	1.71 H	146	13.35	43.14
6	7311.00	43.26 AV	54.00	-10.74	1.71 H	146	0.12	43.14
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	105.20 PK			1.24 V	321	74.74	30.46
2	*2437.00	93.17 AV			1.24 V	321	62.71	30.46
3	4874.00	49.28 PK	74.00	-24.72	1.18 V	189	12.36	36.92
4	4874.00	39.45 AV	54.00	-14.55	1.18 V	189	2.53	36.92
5	7311.00	61.35 PK	74.00	-12.65	1.28 V	158	18.21	43.14
6	7311.00	48.36 AV	54.00	-5.64	1.28 V	158	5.22	43.14

- 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.



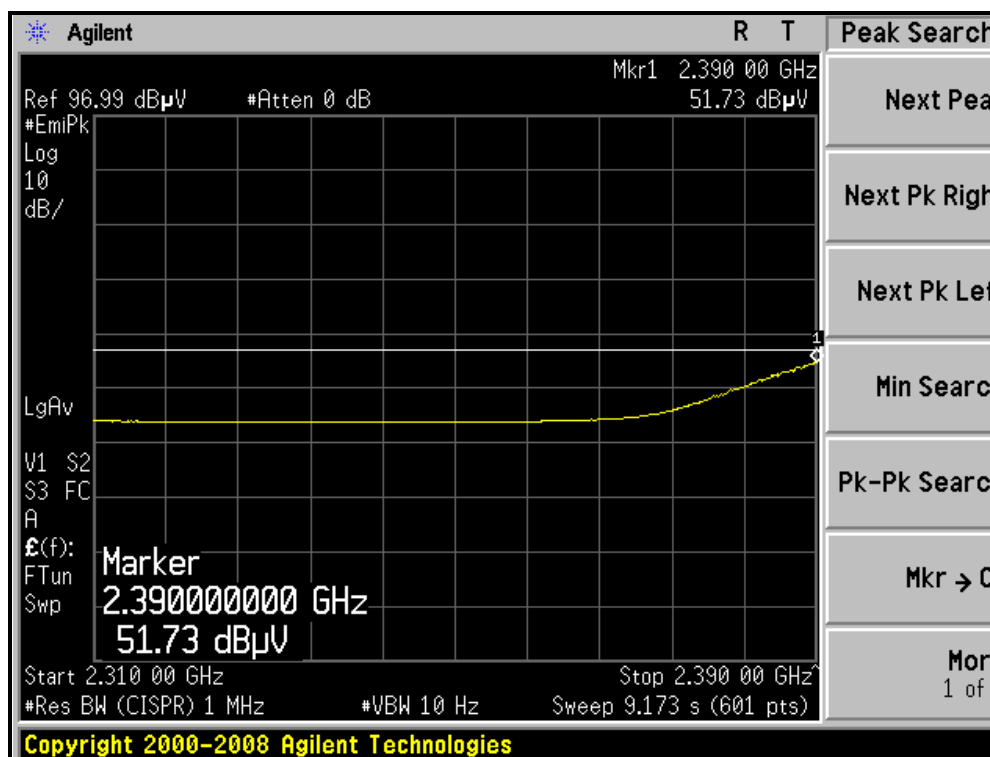
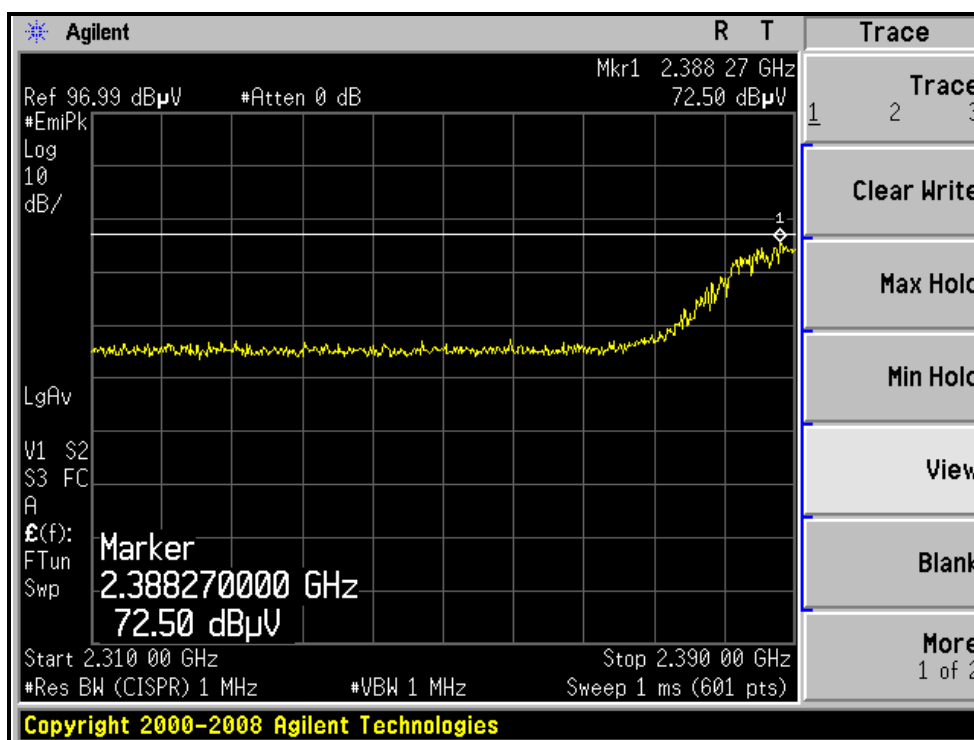
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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 7	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 65%RH 972 hPa	TESTED BY	Eric Lee
TEST MODE	PIFA		

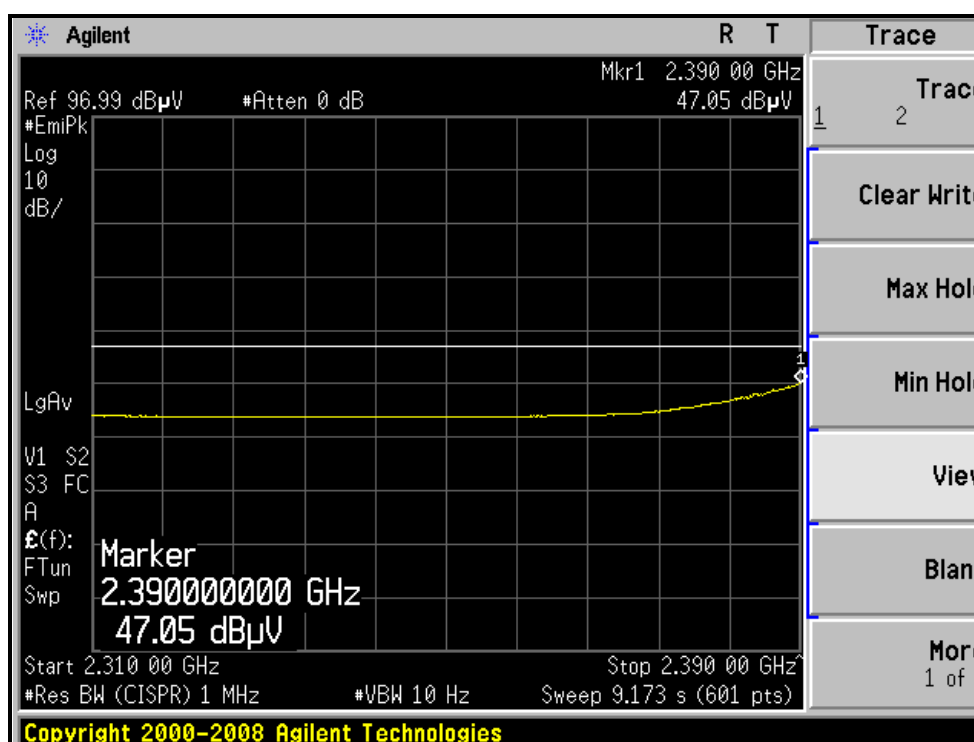
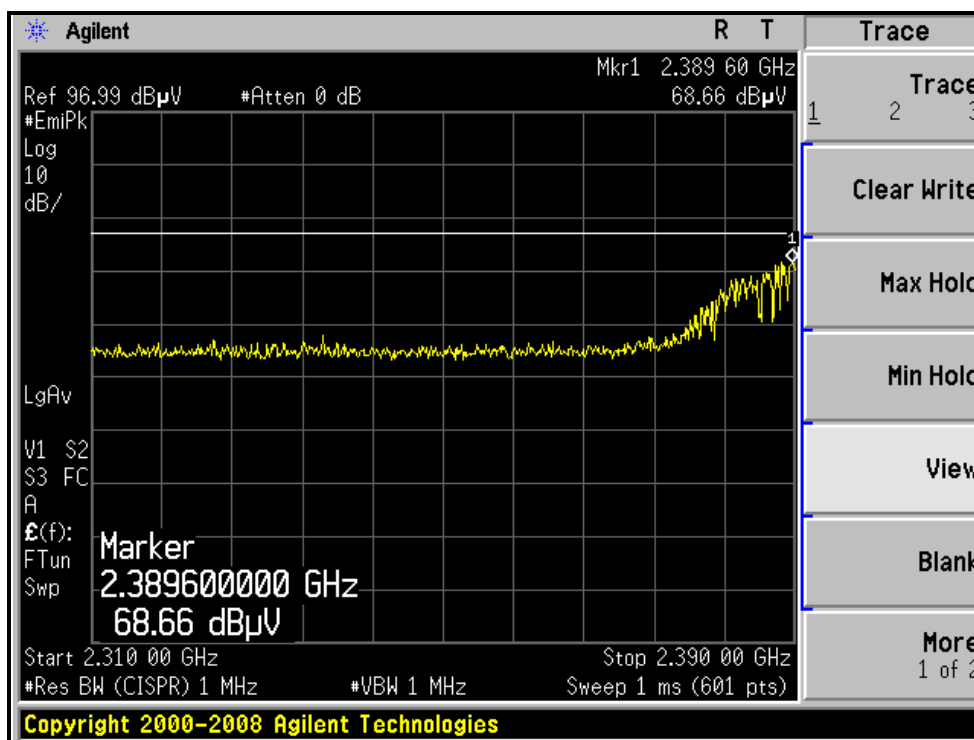
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NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	103.06 PK			1.18 H	140	72.55	30.51
2	*2452.00	92.31 AV			1.18 H	140	61.80	30.51
3	2483.50	72.44 PK	74.00	-1.56	1.22 H	148	41.81	30.63
4	2483.50	51.01 AV	54.00	-2.99	1.22 H	148	20.38	30.63
5	4904.00	46.38 PK	74.00	-27.62	1.21 H	128	9.38	37.00
6	4904.00	34.24 AV	54.00	-19.76	1.21 H	128	-2.76	37.00
7	7356.00	57.25 PK	74.00	-16.75	1.29 H	148	14.12	43.13
8	7356.00	44.98 AV	54.00	-9.02	1.29 H	148	1.85	43.13
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	101.42 PK			1.51 V	114	70.91	30.51
2	*2452.00	89.21 AV			1.51 V	114	58.70	30.51
3	2483.50	70.14 PK	74.00	-3.86	1.63 V	97	39.51	30.63
4	2483.50	49.08 AV	54.00	-4.92	1.63 V	97	18.45	30.63
5	4904.00	48.20 PK	74.00	-25.80	1.28 V	315	11.20	37.00
6	4904.00	37.54 AV	54.00	-16.46	1.28 V	315	0.54	37.00
7	7356.00	60.13 PK	74.00	-13.87	1.05 V	87	17.00	43.13
8	7356.00	47.34 AV	54.00	-6.66	1.05 V	87	4.21	43.13

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

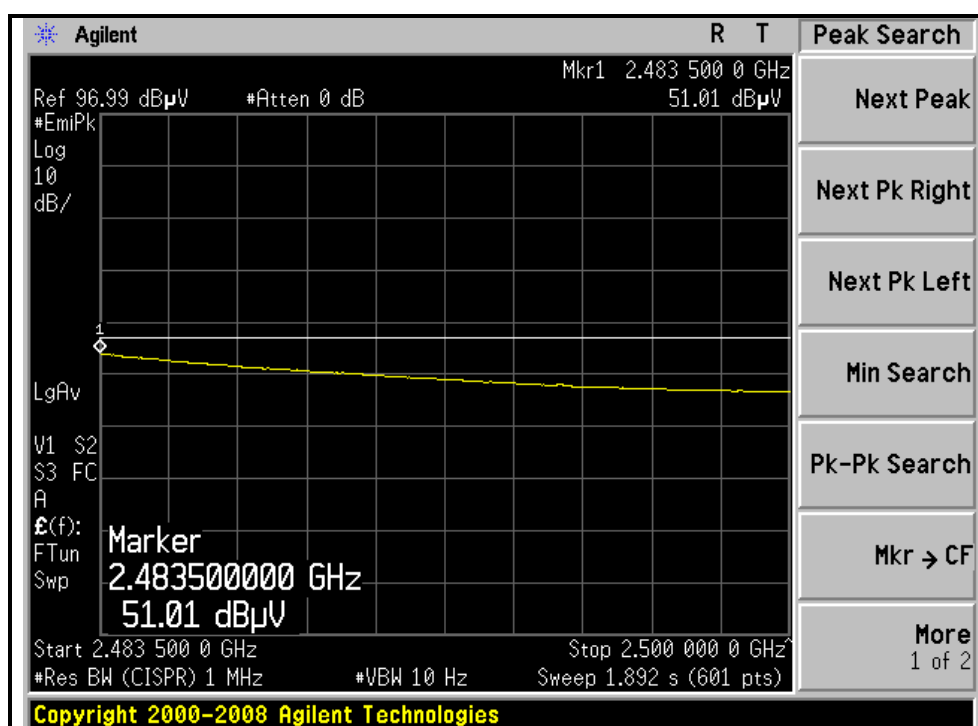
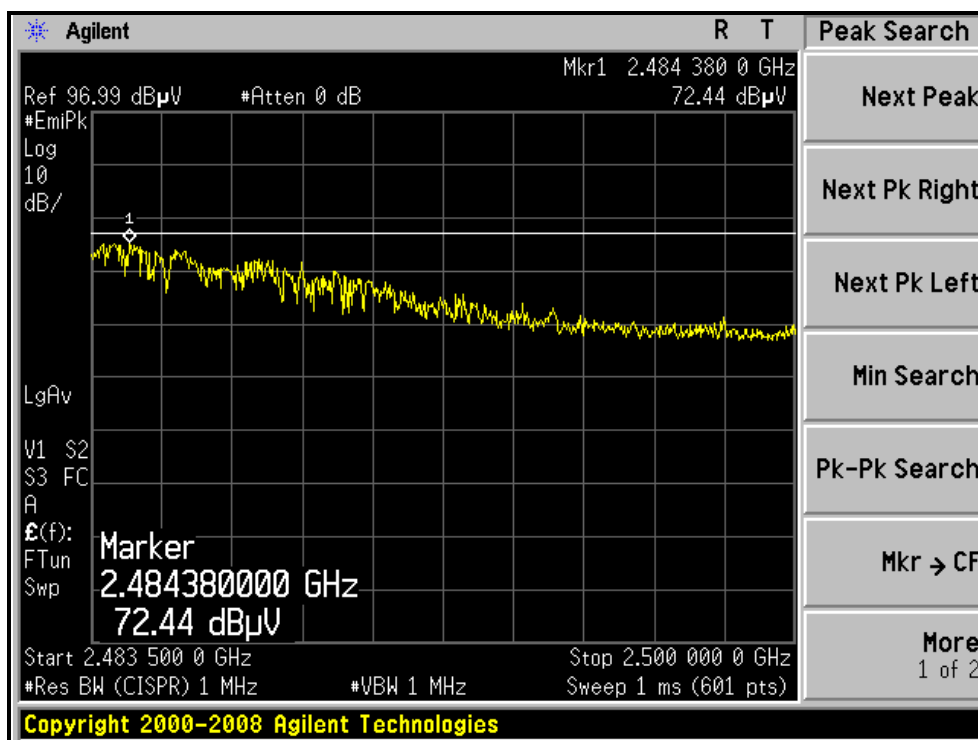
RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE,CH1, HORIZONTAL)



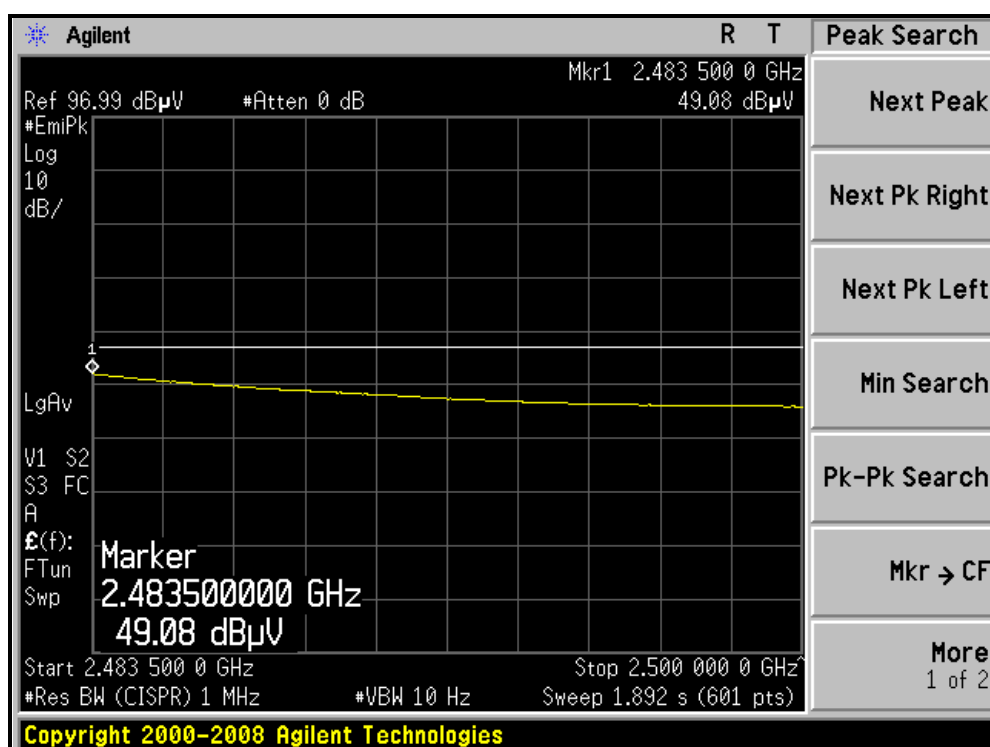
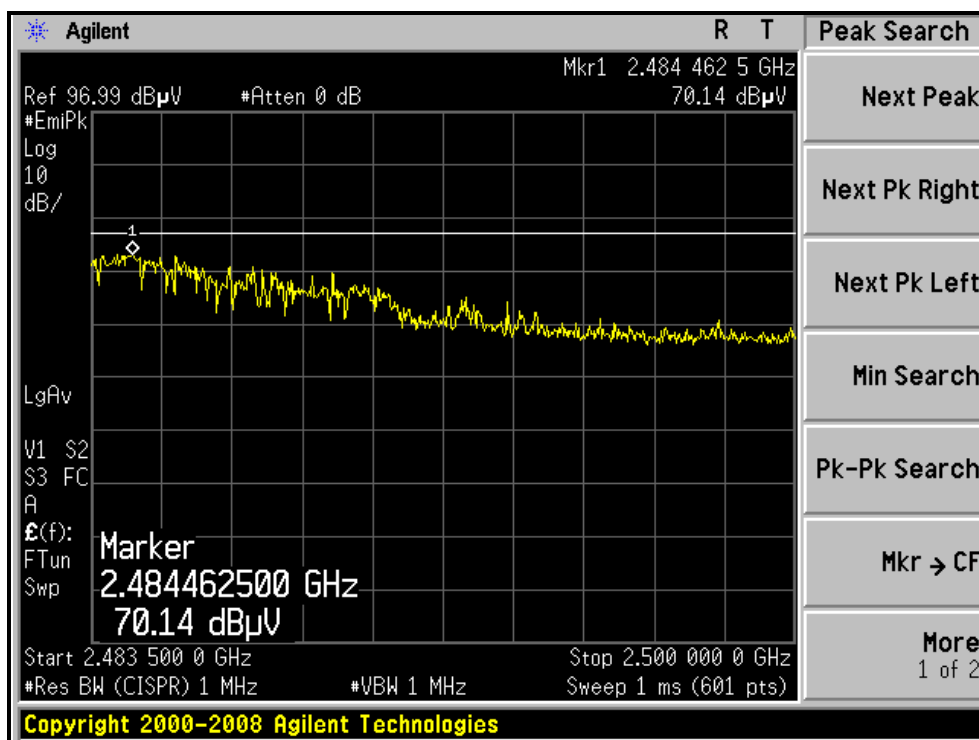
RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE,CH1, VERTICAL)



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



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





A D T

802.11b DSSS MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 65%RH 972 hPa	TESTED BY	Eric Lee
TEST MODE	Dipole		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2386.13	54.42 PK	74.00	-19.58	1.63 H	68	24.15	30.27
2	2386.13	42.44 AV	54.00	-11.56	1.63 H	68	12.17	30.27
3	*2412.00	91.76 PK			1.60 H	172	61.40	30.36
4	*2412.00	89.15 AV			1.60 H	172	58.79	30.36
5	4824.00	46.38 PK	74.00	-27.62	1.31 H	28	9.59	36.79
6	4824.00	40.55 AV	54.00	-13.45	1.31 H	28	3.76	36.79
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	2386.40	59.06 PK	74.00	-14.94	1.01 V	126	28.79	30.27
2	2386.40	52.42 AV	54.00	-1.58	1.01 V	126	22.15	30.27
3	*2412.00	103.68 PK			1.62 V	166	73.32	30.36
4	*2412.00	101.08 AV			1.62 V	166	70.72	30.36
5	4824.00	47.23 PK	74.00	-26.77	1.44 V	320	10.44	36.79
6	4824.00	42.64 AV	54.00	-11.36	1.44 V	320	5.85	36.79

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 65%RH 972 hPa	TESTED BY	Eric Lee
TEST MODE	Dipole		

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	90.81 PK			1.31 H	219	60.35	30.46
2	*2437.00	89.24 AV			1.31 H	219	58.78	30.46
3	4874.00	49.39 PK	74.00	-24.61	1.55 H	295	12.47	36.92
4	4874.00	45.31 AV	54.00	-8.69	1.55 H	295	8.39	36.92
5	7311.00	50.89 PK	74.00	-23.11	1.54 H	232	7.75	43.14
6	7311.00	43.39 AV	54.00	-10.61	1.54 H	232	0.25	43.14
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	103.99 PK			1.58 V	170	73.53	30.46
2	*2437.00	101.69 AV			1.58 V	170	71.23	30.46
3	4874.00	48.65 PK	74.00	-25.35	1.60 V	38	11.73	36.92
4	4874.00	44.69 AV	54.00	-9.31	1.60 V	38	7.77	36.92
5	7311.00	57.58 PK	74.00	-16.42	1.39 V	30	14.44	43.14
6	7311.00	51.98 AV	54.00	-2.02	1.39 V	30	8.84	43.14

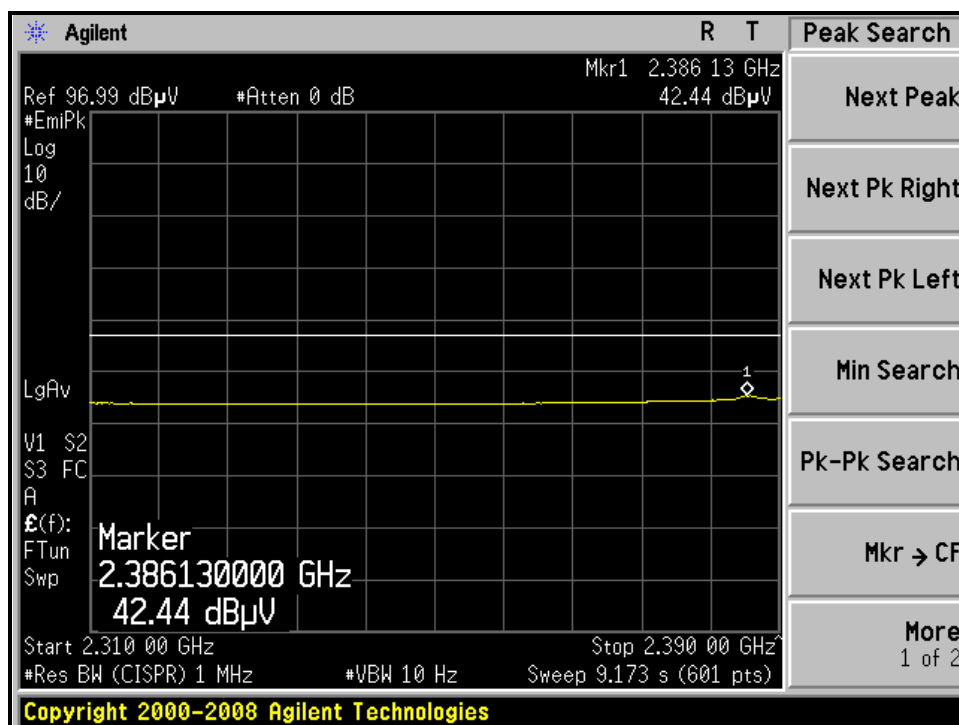
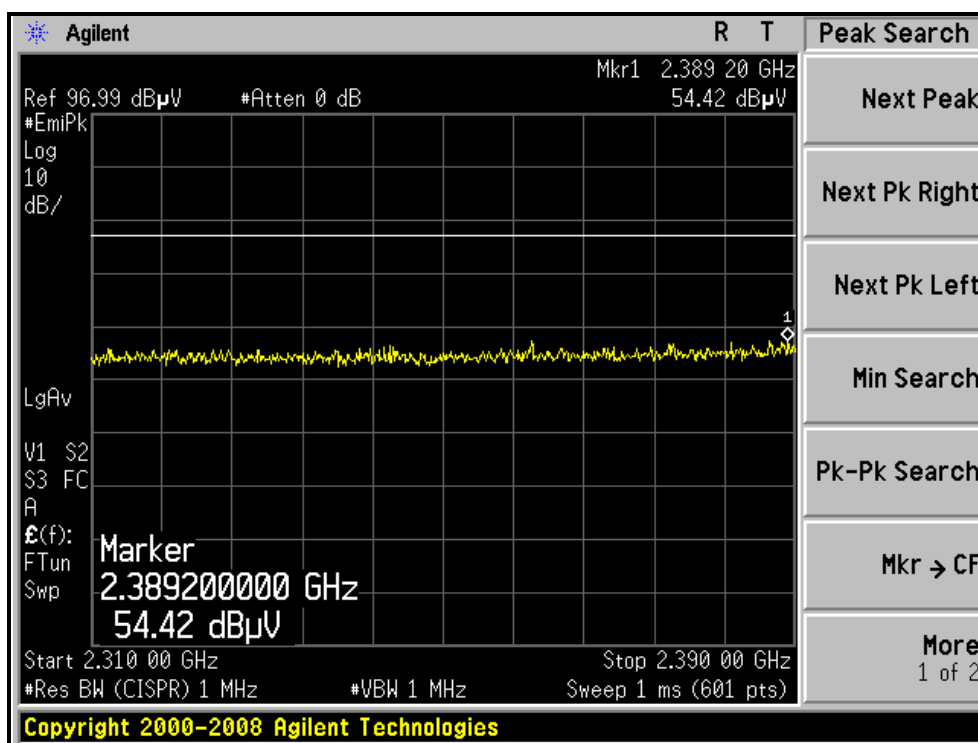
- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * ”: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 65%RH 972 hPa	TESTED BY	Eric Lee
TEST MODE	Dipole		

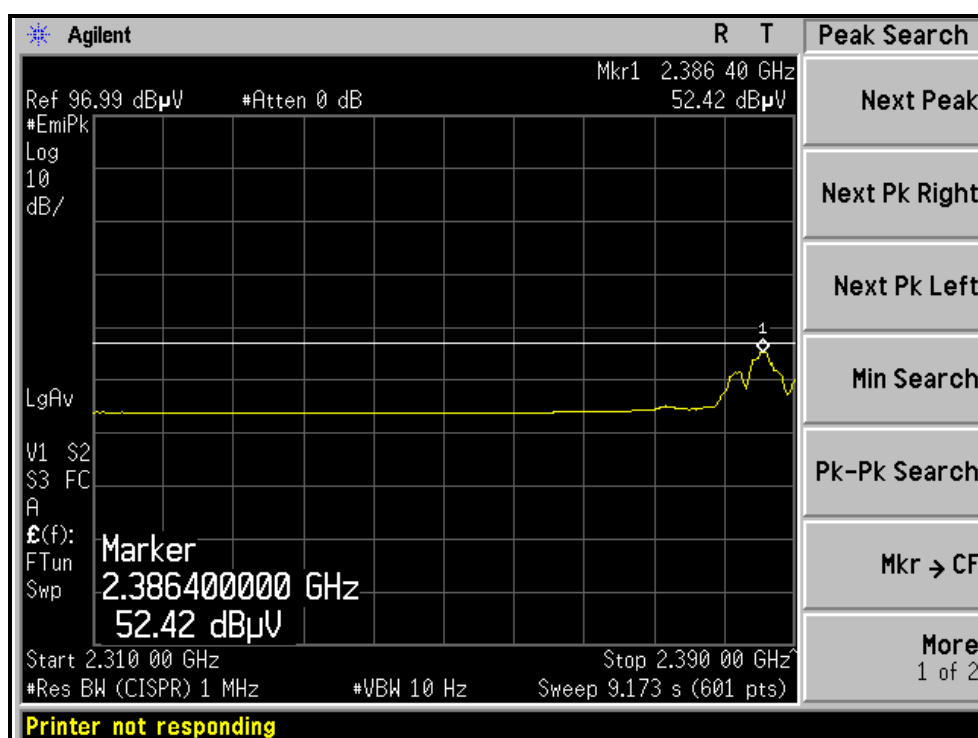
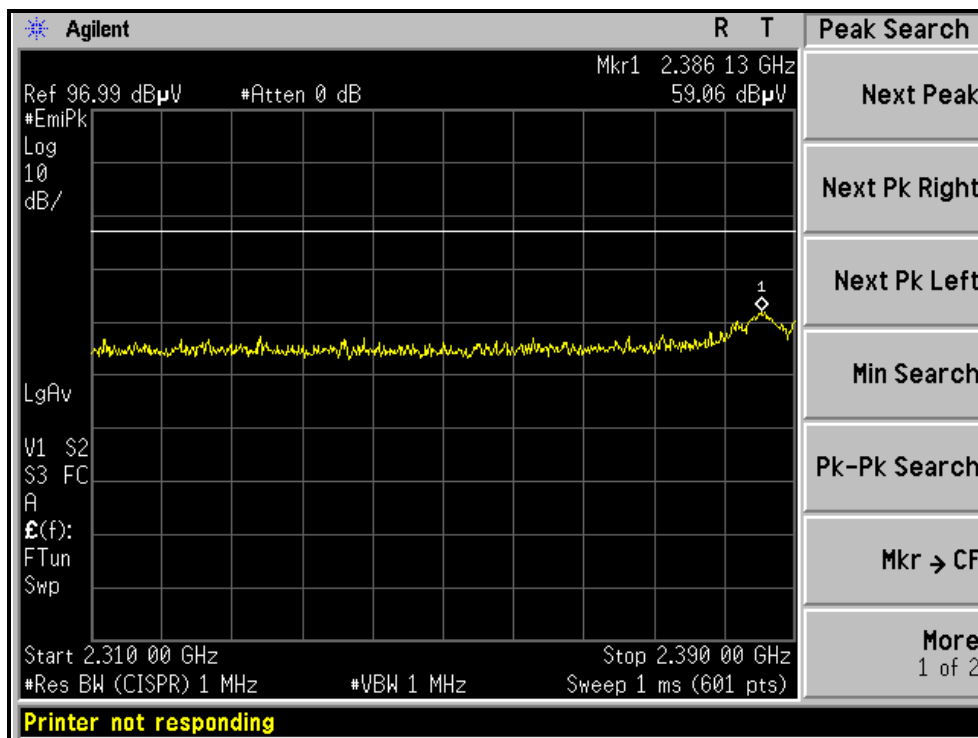
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	91.31 PK			1.05 H	26	60.76	30.55
2	*2462.00	88.74 AV			1.05 H	26	58.19	30.55
3	2487.46	54.78 PK	74.00	-19.22	1.16 H	278	24.14	30.64
4	2487.46	41.62 AV	54.00	-12.38	1.16 H	278	10.98	30.64
5	4924.00	44.21 PK	74.00	-29.79	1.42 H	255	7.15	37.06
6	4924.00	39.01 AV	54.00	-14.99	1.42 H	255	1.95	37.06
7	7386.00	50.33 PK	74.00	-23.67	1.37 H	1	7.20	43.13
8	7386.00	38.54 AV	54.00	-15.46	1.37 H	1	-4.59	43.13
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	103.20 PK			1.42 V	77	72.65	30.55
2	*2462.00	101.02 AV			1.42 V	77	70.47	30.55
3	2484.02	55.89 PK	74.00	-18.11	1.37 V	342	25.26	30.63
4	2484.02	44.53 AV	54.00	-9.47	1.37 V	342	13.90	30.63
5	4924.00	49.74 PK	74.00	-24.26	1.55 V	25	12.68	37.06
6	4924.00	44.48 AV	54.00	-9.52	1.55 V	25	7.42	37.06
7	7386.00	52.26 PK	74.00	-21.74	1.31 V	24	9.13	43.13
8	7386.00	41.16 AV	54.00	-12.84	1.31 V	24	-1.97	43.13

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

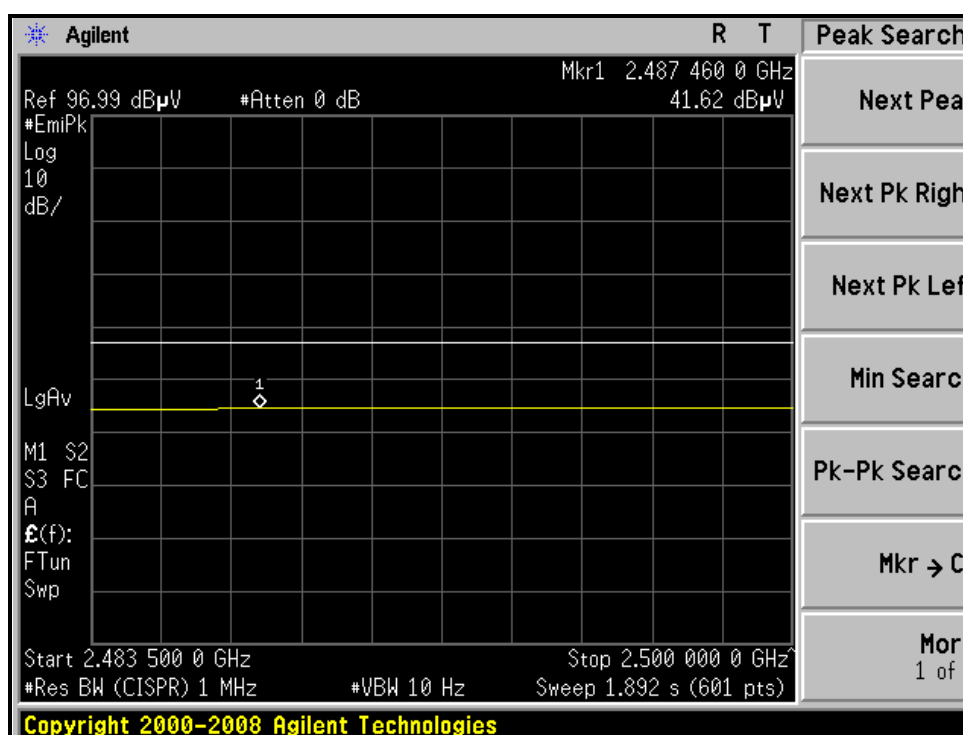
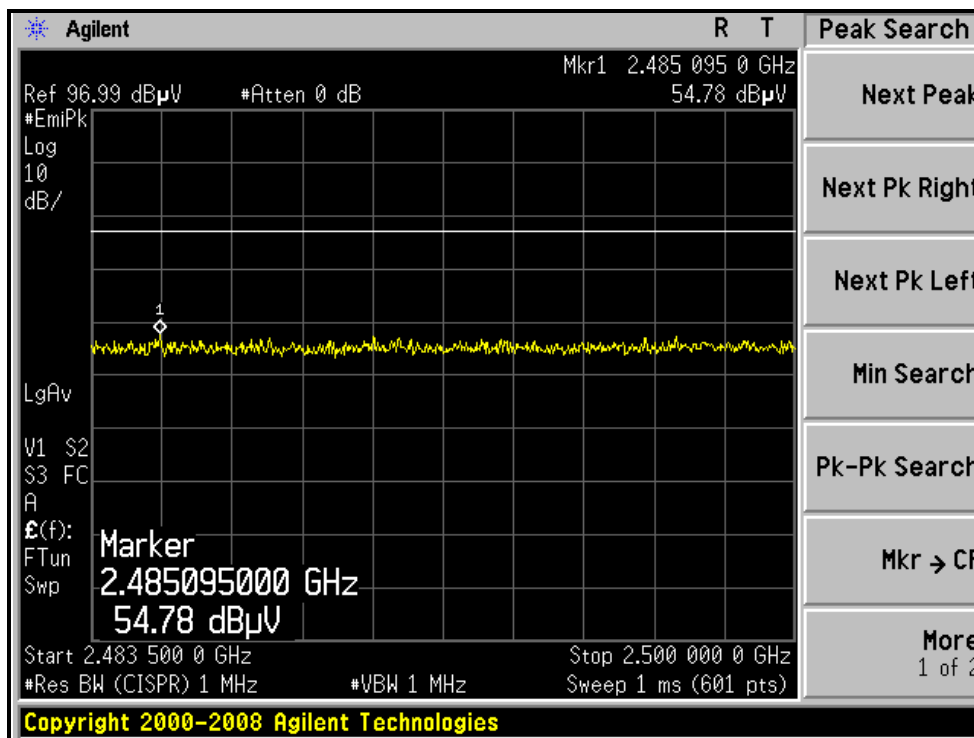
RESTRICTED BANDEDGE (802.11b MODE, CH1, HORIZONTAL)



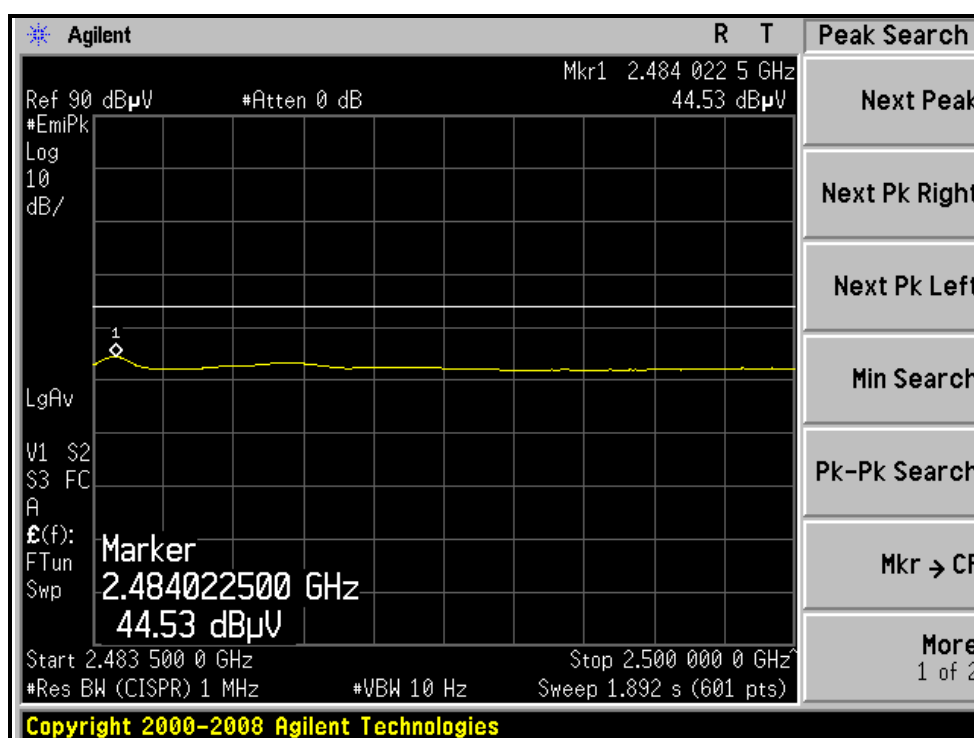
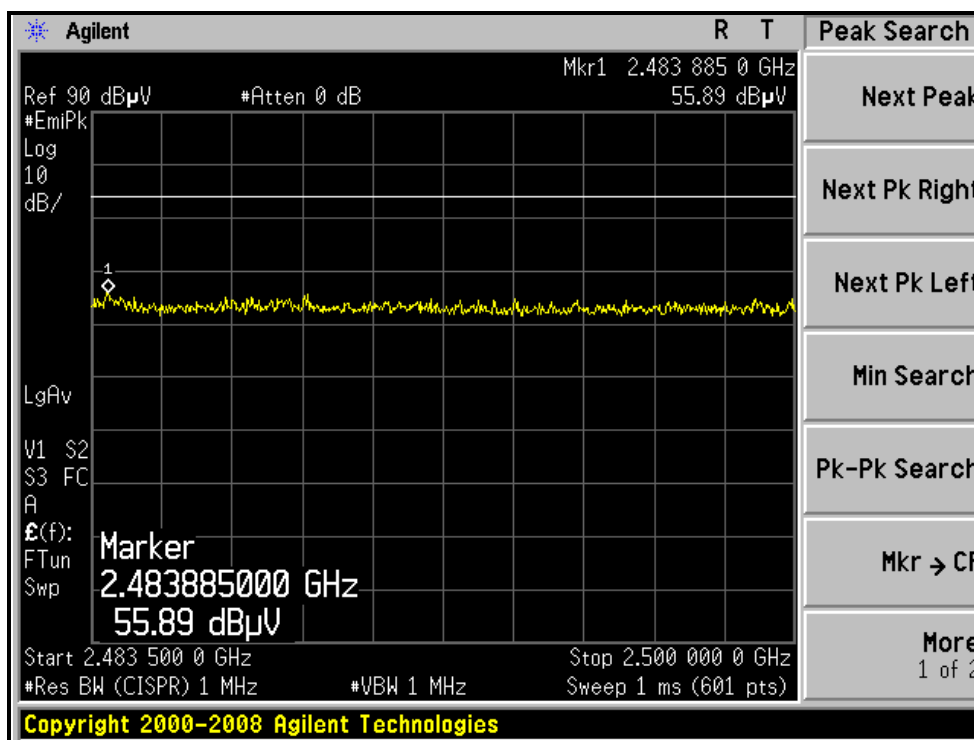
RESTRICTED BANDEDGE (802.11b MODE, CH1, VERTICAL)



RESTRICTED BANDEDGE (802.11b MODE,CH11, HORIZONTAL)



RESTRICTED BANDEDGE (802.11b MODE,CH11, VERTICAL)





A D T

802.11g OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 65%RH 972 hPa	TESTED BY	Eric Lee
TEST MODE	Dipole		

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	57.95 PK	74.00	-16.05	1.66 H	315	27.67	30.28
2	2390.00	43.07 AV	54.00	-10.93	1.66 H	315	12.79	30.28
3	*2412.00	94.45 PK			1.61 H	38	64.09	30.36
4	*2412.00	83.98 AV			1.61 H	38	53.62	30.36
5	4824.00	45.11 PK	74.00	-28.89	1.46 H	291	8.32	36.79
6	4824.00	33.26 AV	54.00	-20.74	1.46 H	291	-3.53	36.79
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	69.17 PK	74.00	-4.83	1.00 V	333	38.89	30.28
2	2390.00	51.45 AV	54.00	-2.55	1.00 V	333	21.17	30.28
3	*2412.00	104.61 PK			1.22 V	45	74.25	30.36
4	*2412.00	93.54 AV			1.22 V	45	63.18	30.36
5	4824.00	47.01 PK	74.00	-26.99	1.28 V	114	10.22	36.79
6	4824.00	34.09 AV	54.00	-19.91	1.28 V	114	-2.70	36.79

- 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.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 65%RH 972 hPa	TESTED BY	Eric Lee
TEST MODE	Dipole		

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	96.74 PK			1.47 H	238	66.28	30.46
2	*2437.00	84.92 AV			1.47 H	238	54.46	30.46
3	4874.00	45.72 PK	74.00	-28.28	1.51 H	292	8.80	36.92
4	4874.00	33.78 AV	54.00	-20.22	1.51 H	292	-3.14	36.92
5	7311.00	52.61 PK	74.00	-21.39	1.40 H	47	9.47	43.14
6	7311.00	39.39 AV	54.00	-14.61	1.40 H	47	-3.75	43.14
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	105.60 PK			1.31 V	296	75.14	30.46
2	*2437.00	94.38 AV			1.31 V	296	63.92	30.46
3	4874.00	49.15 PK	74.00	-24.85	1.29 V	35	12.23	36.92
4	4874.00	36.48 AV	54.00	-17.52	1.29 V	35	-0.44	36.92
5	7311.00	67.01 PK	74.00	-6.99	1.94 V	1	23.87	43.14
6	7311.00	52.22 AV	54.00	-1.78	1.94 V	1	9.08	43.14

- 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.



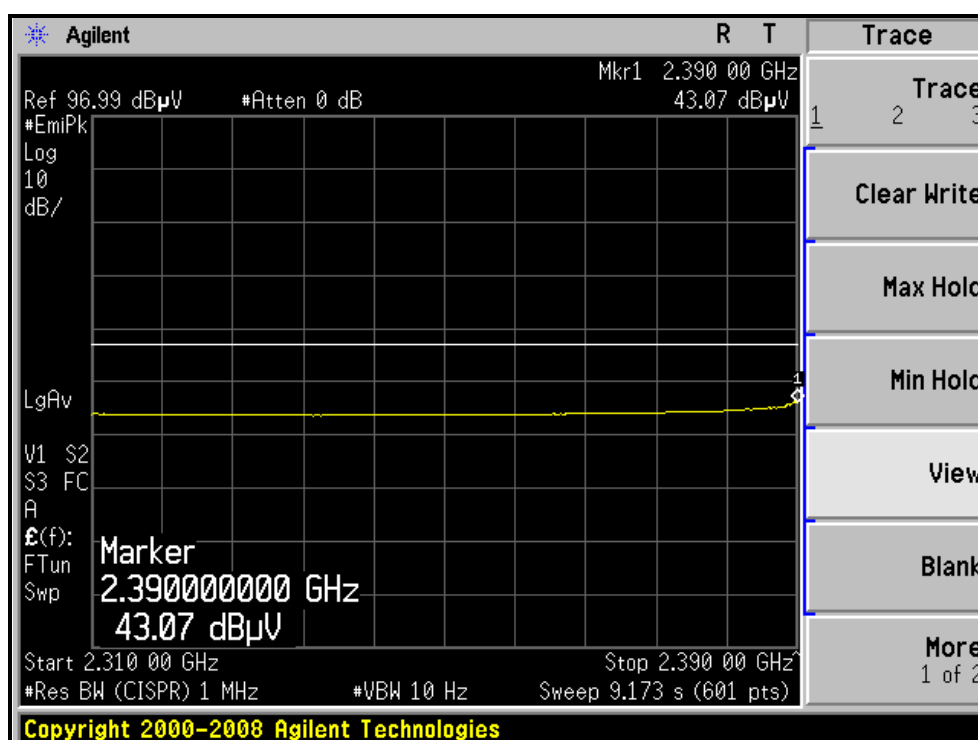
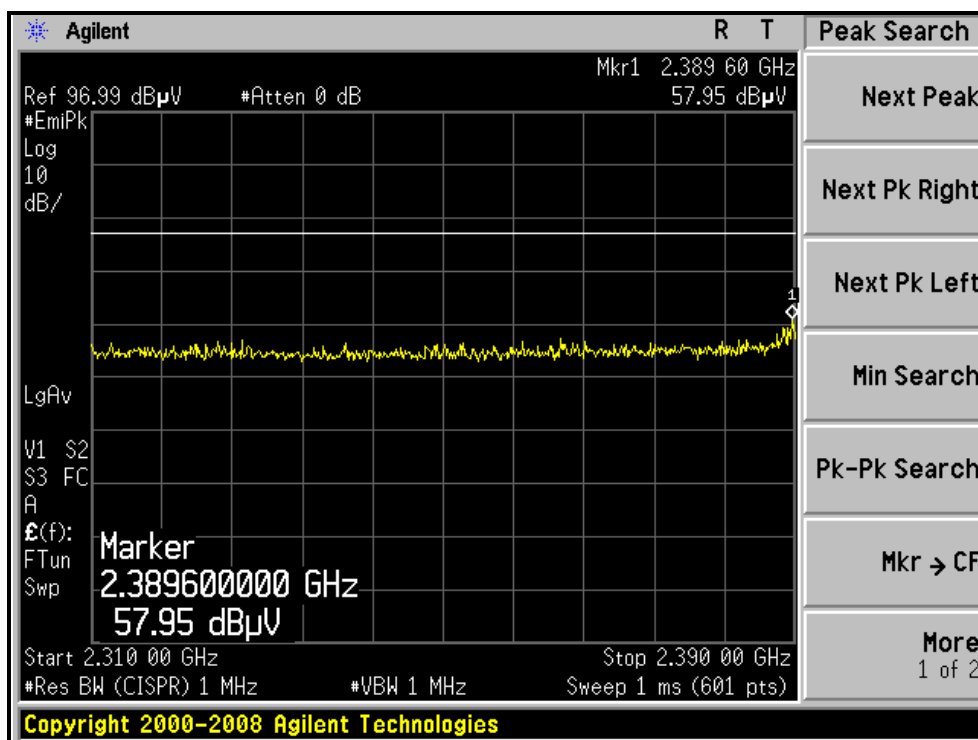
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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 65%RH 972 hPa	TESTED BY	Eric Lee
TEST MODE	Dipole		

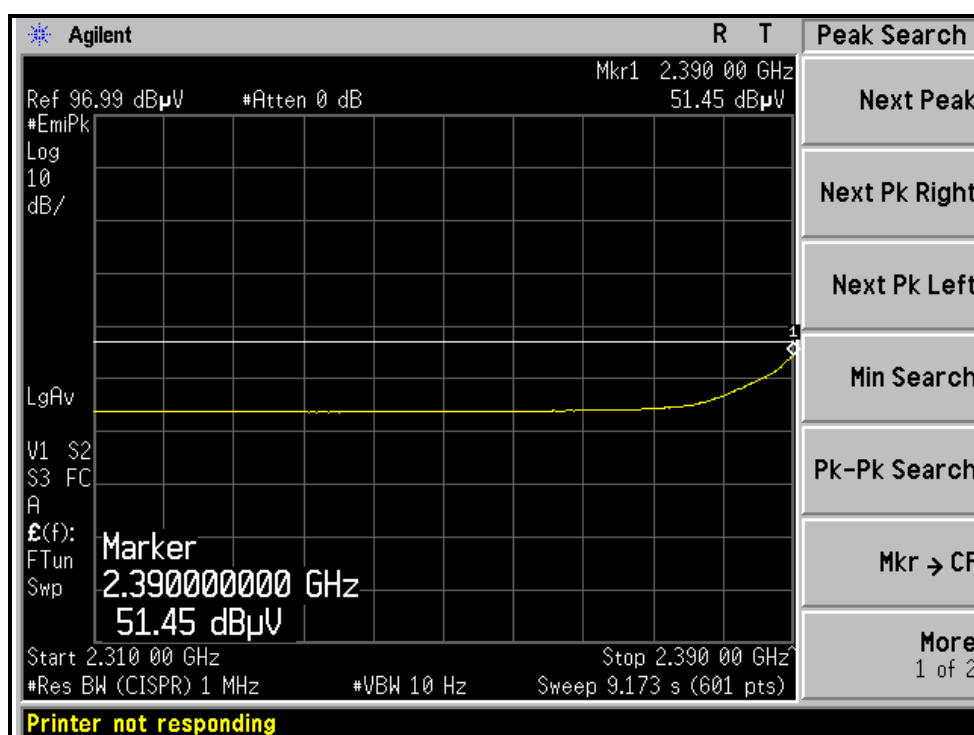
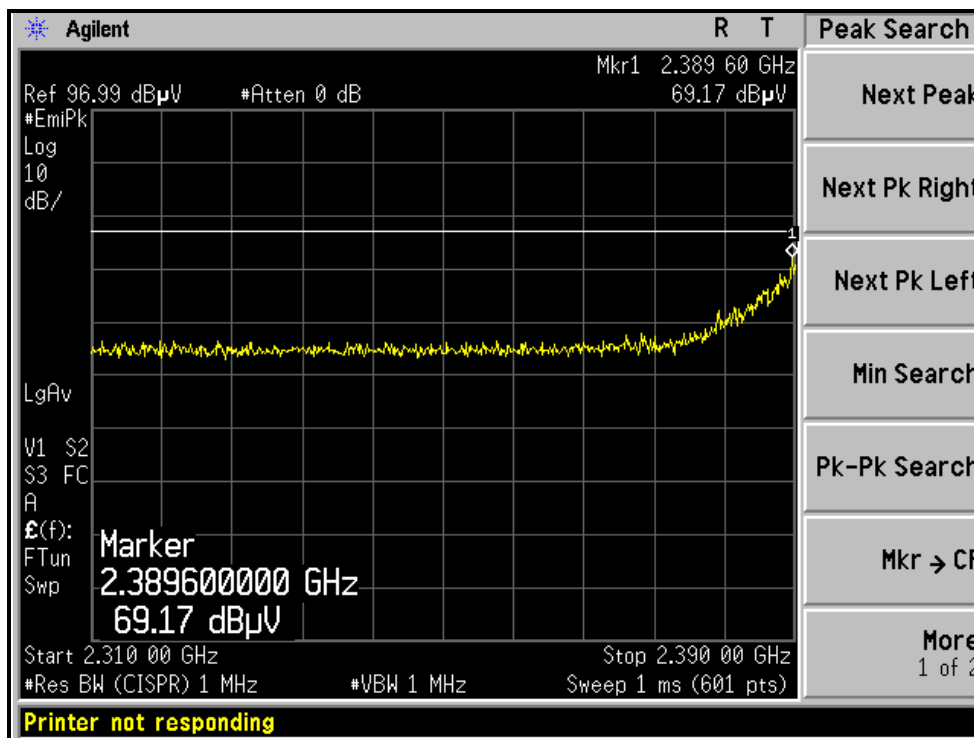
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	91.62 PK			1.52 H	251	61.07	30.55
2	*2462.00	80.53 AV			1.52 H	251	49.98	30.55
3	2500.00	55.17 PK	74.00	-18.83	1.60 H	220	24.48	30.69
4	2500.00	41.75 AV	54.00	-12.25	1.60 H	220	11.06	30.69
5	4924.00	44.88 PK	74.00	-29.12	1.47 H	303	7.82	37.06
6	4924.00	32.57 AV	54.00	-21.43	1.47 H	303	-4.49	37.06
7	7386.00	51.08 PK	74.00	-22.92	1.36 H	60	7.95	43.13
8	7386.00	38.01 AV	54.00	-15.99	1.36 H	60	-5.12	43.13
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	100.34 PK			1.24 V	326	69.79	30.55
2	*2462.00	90.07 AV			1.24 V	326	59.52	30.55
3	2483.50	56.60 PK	74.00	-17.40	1.24 V	33	25.97	30.63
4	2483.50	42.92 AV	54.00	-11.08	1.24 V	33	12.29	30.63
5	4924.00	47.50 PK	74.00	-26.50	1.30 V	121	10.44	37.06
6	4924.00	33.72 AV	54.00	-20.28	1.30 V	121	-3.34	37.06
7	7386.00	53.54 PK	74.00	-20.46	1.51 V	354	10.41	43.13
8	7386.00	39.75 AV	54.00	-14.25	1.51 V	354	-3.38	43.13

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

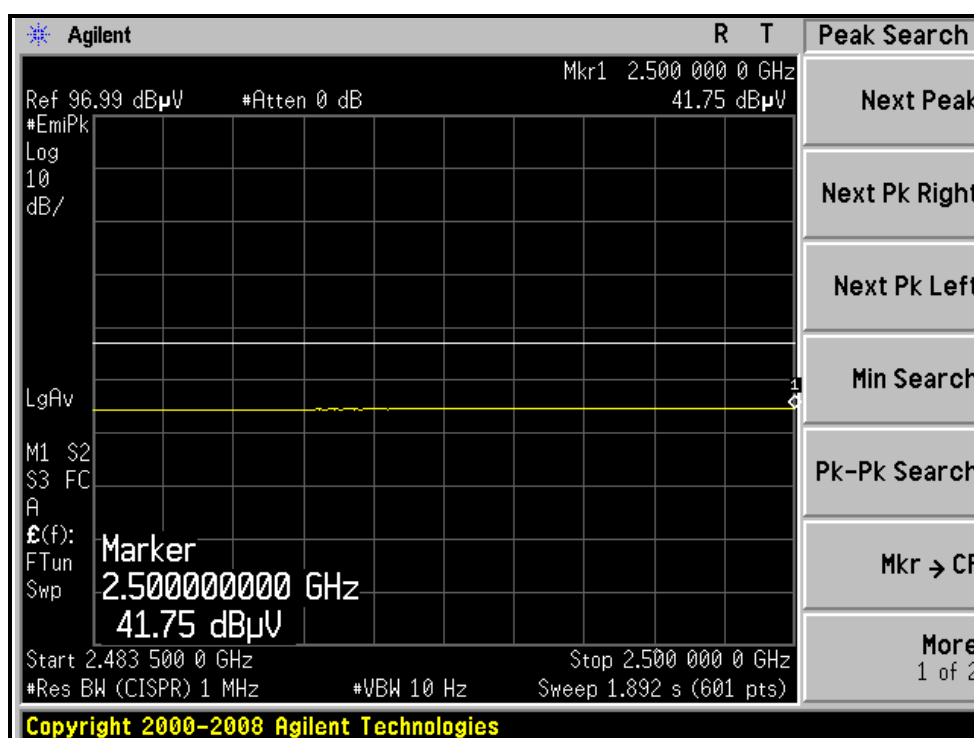
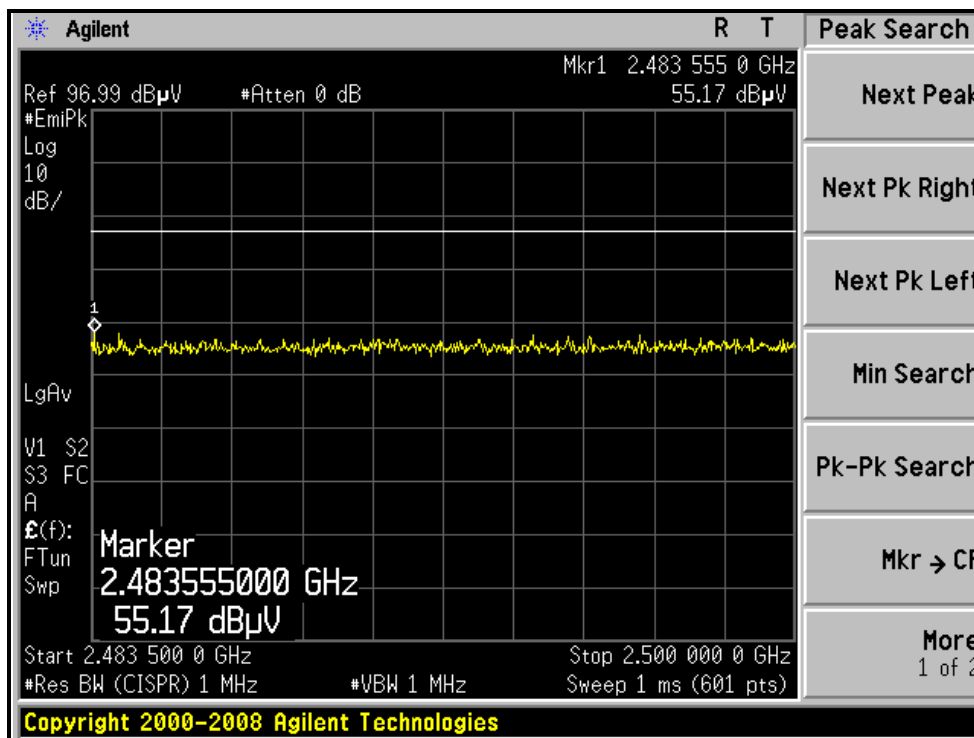
RESTRICTED BANDEDGE (802.11g MODE,CH1, HORIZONTAL)



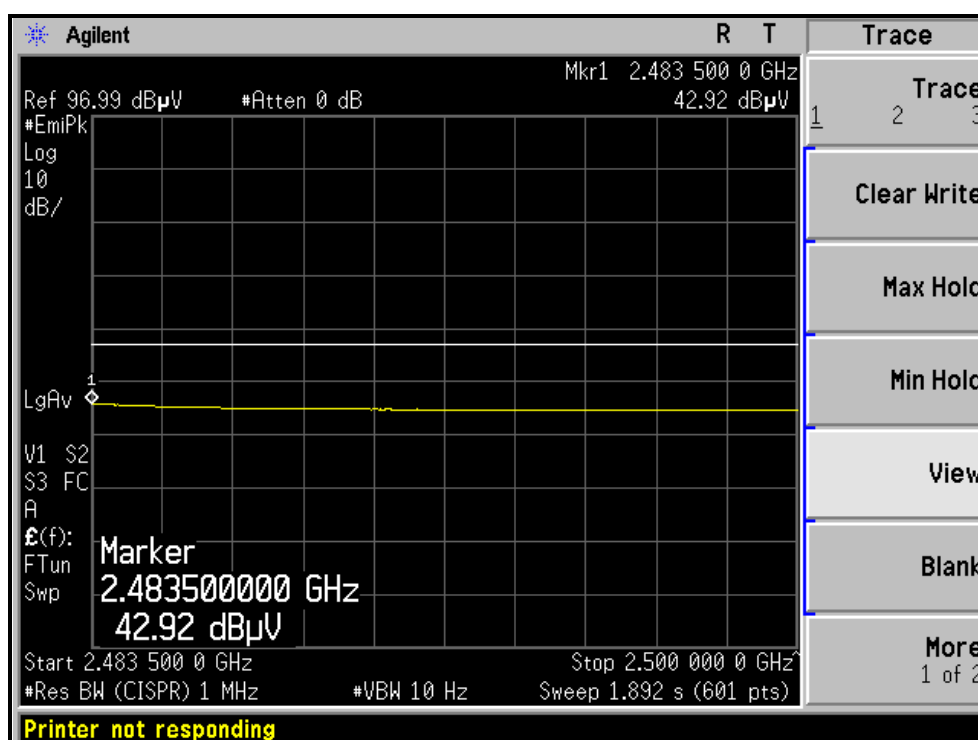
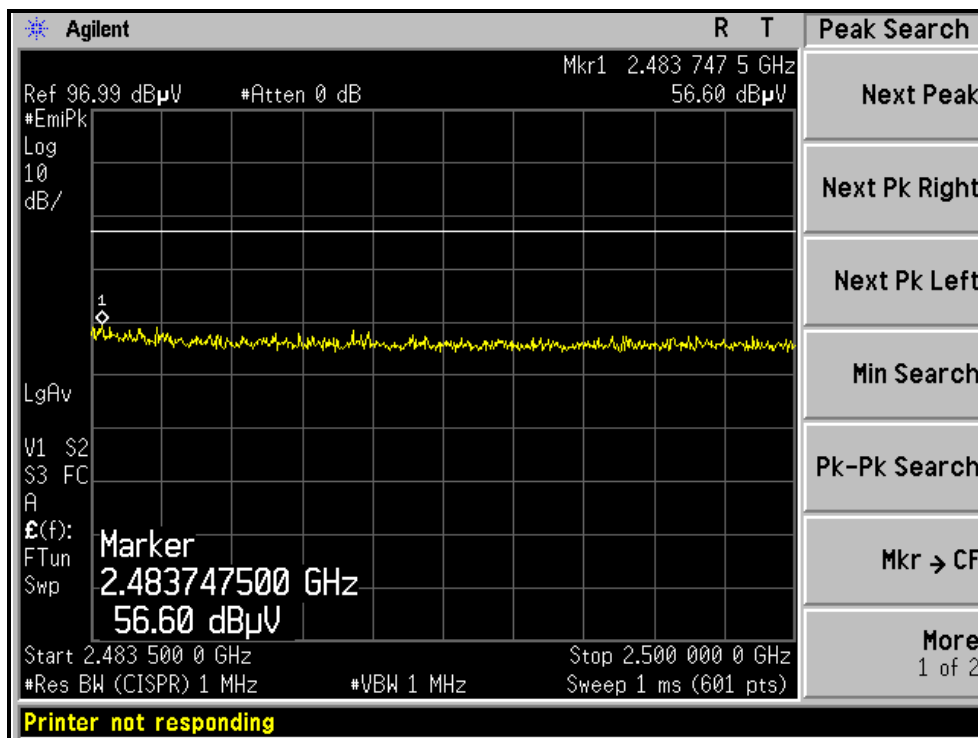
RESTRICTED BANDEDGE (802.11g MODE,CH1, VERTICAL)



RESTRICTED BANDEDGE (802.11g MODE,CH11, HORIZONTAL)



RESTRICTED BANDEDGE (802.11g MODE,CH11, VERTICAL)





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DRAFT 802.11n (20MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 65%RH 972 hPa	TESTED BY	Eric Lee
TEST MODE	Dipole		

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	2389.60	56.49 PK	74.00	-17.51	1.61 H	318	26.21	30.28
2	2389.60	45.29 AV	54.00	-8.71	1.61 H	318	15.01	30.28
3	*2412.00	97.21 PK			1.66 H	321	66.85	30.36
4	*2412.00	89.33 AV			1.66 H	321	58.97	30.36
5	4824.00	45.27 PK	74.00	-28.73	1.58 H	271	8.48	36.79
6	4824.00	33.50 AV	54.00	-20.50	1.58 H	271	-3.29	36.79
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	72.02 PK	74.00	-1.98	1.48 V	163	41.74	30.28
2	2390.00	53.05 AV	54.00	-0.95	1.48 V	163	22.77	30.28
3	*2412.00	105.65 PK			1.41 V	97	75.29	30.36
4	*2412.00	95.95 AV			1.41 V	97	65.59	30.36
5	4824.00	49.31 PK	74.00	-24.69	1.38 V	298	12.52	36.79
6	4824.00	36.25 AV	54.00	-17.75	1.38 V	298	-0.54	36.79

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 65%RH 972 hPa	TESTED BY	Eric Lee
TEST MODE	Dipole		

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	98.24 PK			1.38 H	25	67.78	30.46
2	*2437.00	90.31 AV			1.38 H	25	59.85	30.46
3	4874.00	45.81 PK	74.00	-28.19	1.63 H	284	8.89	36.92
4	4874.00	33.69 AV	54.00	-20.31	1.63 H	284	-3.23	36.92
5	7311.00	59.79 PK	74.00	-14.21	1.44 H	233	16.65	43.14
6	7311.00	44.69 AV	54.00	-9.31	1.44 H	233	1.55	43.14
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	108.24 PK			1.26 V	331	77.78	30.46
2	*2437.00	98.31 AV			1.26 V	331	67.85	30.46
3	4874.00	48.56 PK	74.00	-25.44	1.39 V	17	11.64	36.92
4	4874.00	35.29 AV	54.00	-18.71	1.39 V	17	-1.63	36.92
5	7311.00	67.18 PK	74.00	-6.82	1.34 V	33	24.04	43.14
6	7311.00	51.23 AV	54.00	-2.77	1.34 V	33	8.09	43.14

- 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.



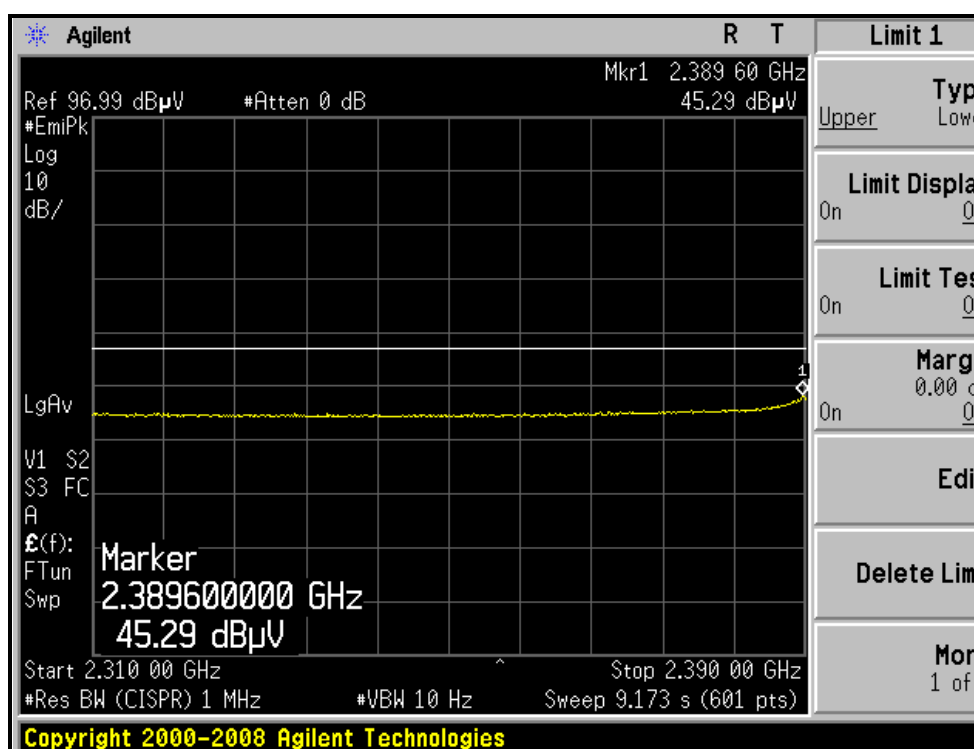
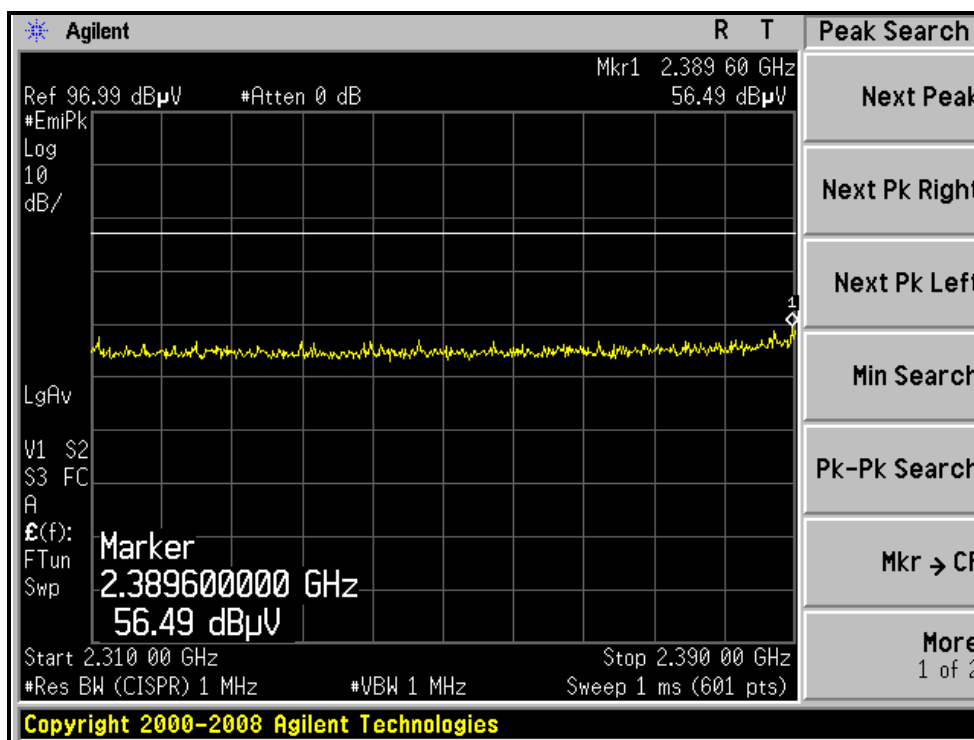
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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 65%RH 972 hPa	TESTED BY	Eric Lee
TEST MODE	Dipole		

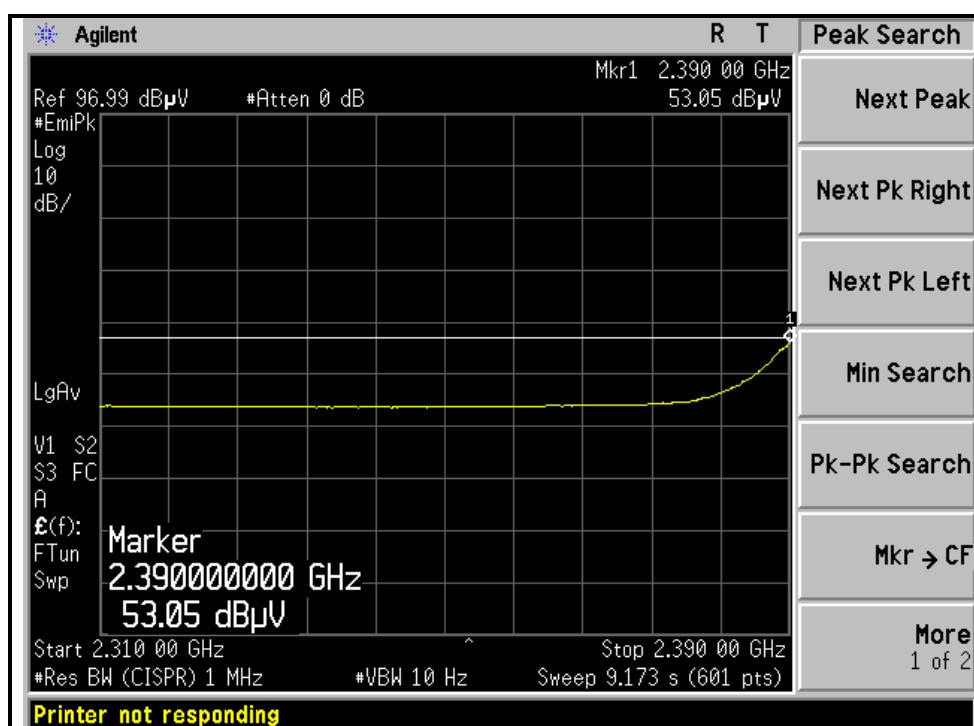
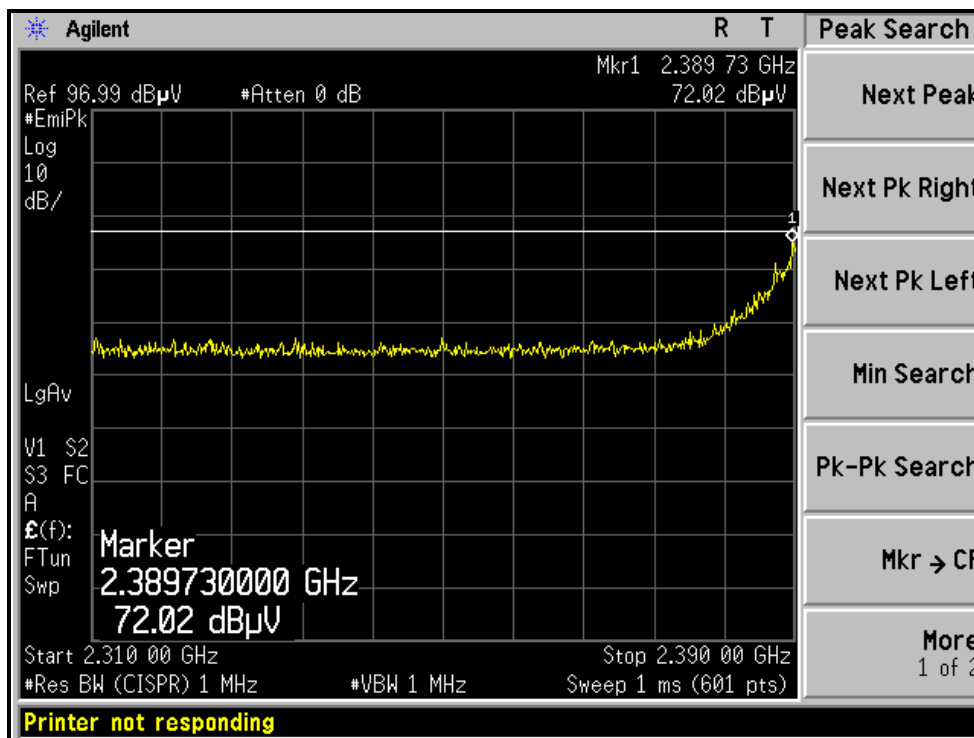
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	89.06 PK			1.65 H	20	58.51	30.55
2	*2462.00	78.37 AV			1.65 H	20	47.82	30.55
3	2485.15	54.80 PK	74.00	-19.20	1.24 H	37	24.16	30.64
4	2485.15	41.57 AV	54.00	-12.43	1.24 H	37	10.93	30.64
5	4924.00	45.25 PK	74.00	-28.75	1.34 H	29	8.19	37.06
6	4924.00	33.29 AV	54.00	-20.71	1.34 H	29	-3.77	37.06
7	7386.00	57.63 PK	74.00	-16.37	1.31 H	281	14.50	43.13
8	7386.00	43.25 AV	54.00	-10.75	1.31 H	281	0.12	43.13
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	97.12 PK			1.45 V	109	66.57	30.55
2	*2462.00	87.93 AV			1.45 V	109	57.38	30.55
3	2483.50	54.27 PK	74.00	-19.73	1.36 V	228	23.64	30.63
4	2483.50	41.93 AV	54.00	-12.07	1.36 V	228	11.30	30.63
5	4924.00	47.24 PK	74.00	-26.76	1.33 V	276	10.18	37.06
6	4924.00	35.10 AV	54.00	-18.90	1.33 V	276	-1.96	37.06
7	7386.00	66.24 PK	74.00	-7.76	1.23 V	318	23.11	43.13
8	7386.00	48.87 AV	54.00	-5.13	1.23 V	318	5.74	43.13

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

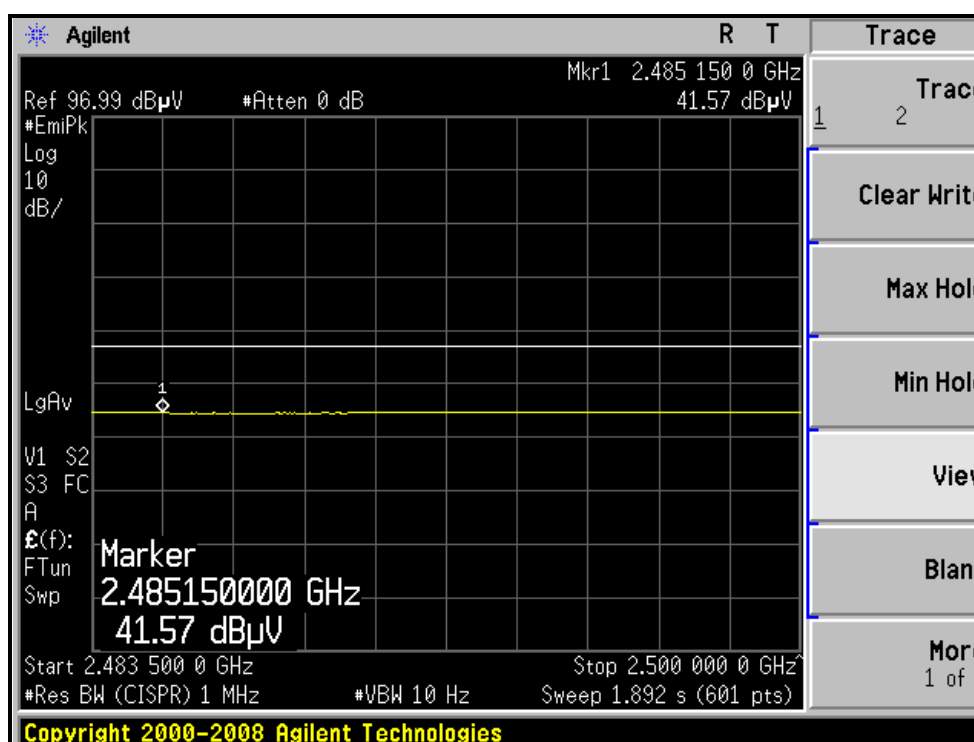
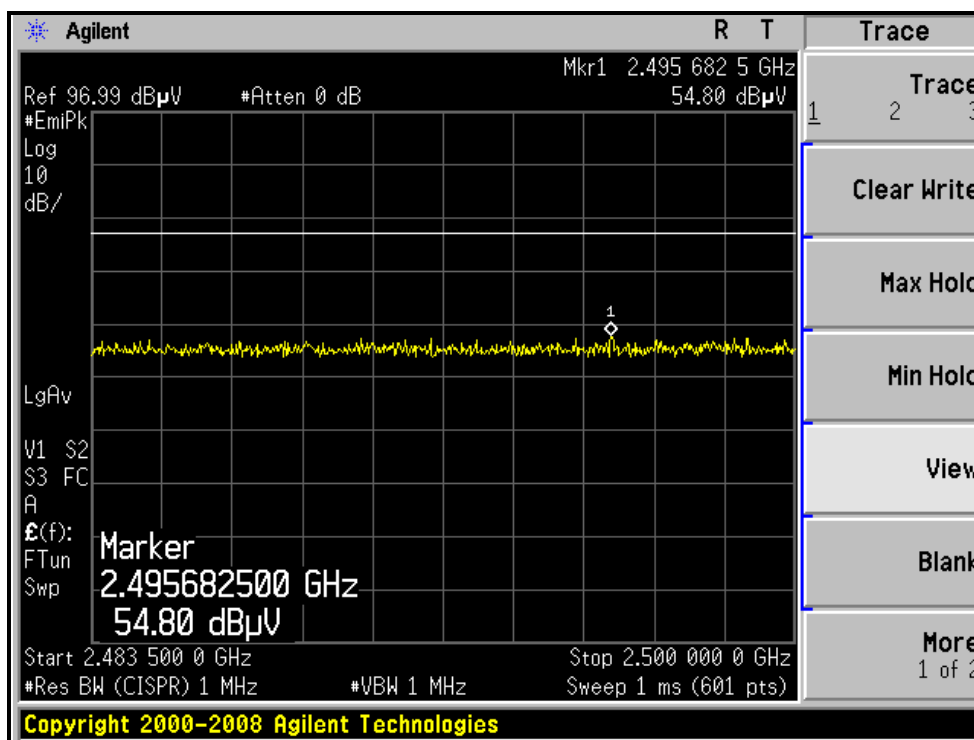
RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH1, HORIZONTAL)



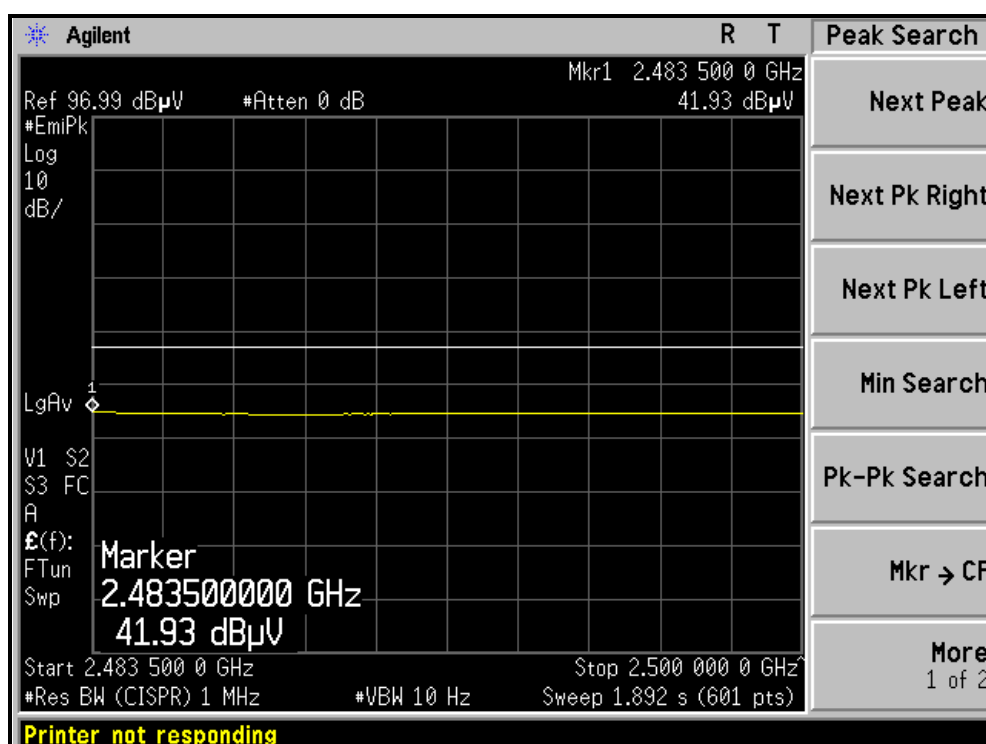
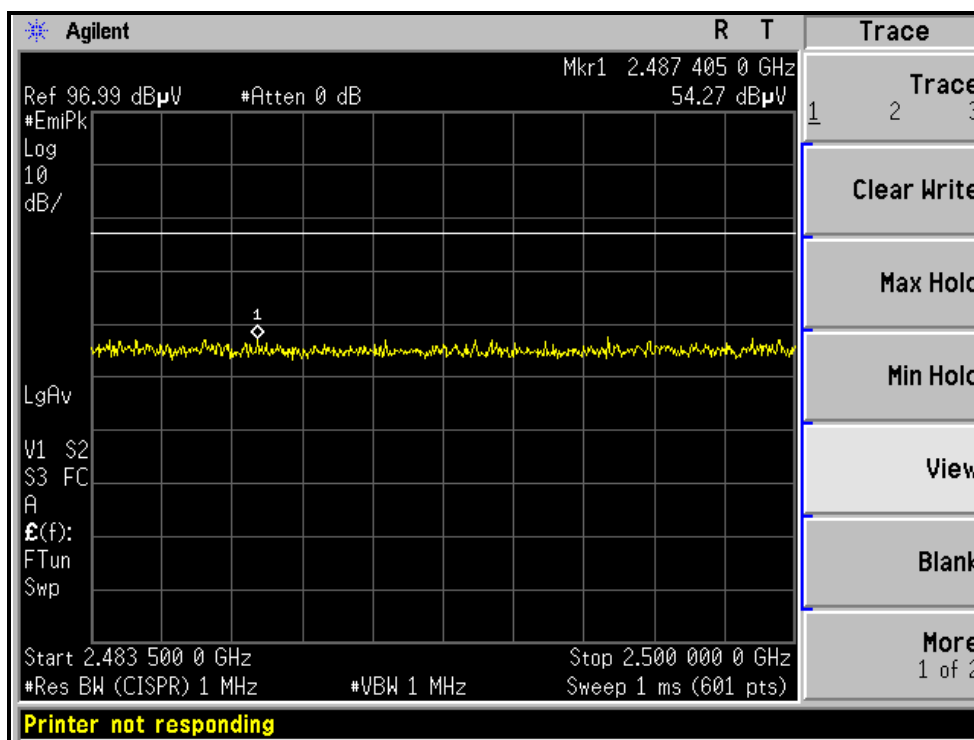
RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH1, VERTICAL)



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



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





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DRAFT 802.11n (40MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 65%RH 972 hPa	TESTED BY	Eric Lee
TEST MODE	Dipole		

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	54.80 PK	74.00	-19.20	1.61 H	236	24.52	30.28
2	2390.00	41.94 AV	54.00	-12.06	1.61 H	236	11.66	30.28
3	*2422.00	91.71 PK			1.65 H	136	61.31	30.40
4	*2422.00	81.11 AV			1.65 H	136	50.71	30.40
5	4844.00	43.89 PK	74.00	-30.11	1.29 H	281	7.05	36.84
6	4844.00	31.69 AV	54.00	-22.31	1.29 H	281	-5.15	36.84
7	7266.00	53.84 PK	74.00	-20.16	1.38 H	284	10.70	43.14
8	7266.00	39.71 AV	54.00	-14.29	1.38 H	284	-3.43	43.14
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	72.69 PK	74.00	-1.31	1.40 V	87	42.41	30.28
2	2390.00	53.19 AV	54.00	-0.81	1.40 V	87	22.91	30.28
3	*2422.00	101.99 PK			1.38 V	347	71.59	30.40
4	*2422.00	91.10 AV			1.38 V	347	60.70	30.40
5	4844.00	42.89 PK	74.00	-31.11	1.49 V	111	6.05	36.84
6	4844.00	32.01 AV	54.00	-21.99	1.49 V	111	-4.83	36.84
7	7266.00	55.91 PK	74.00	-18.09	1.11 V	254	12.77	43.14
8	7266.00	41.97 AV	54.00	-12.03	1.11 V	254	-1.17	43.14

- 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.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 65%RH 972 hPa	TESTED BY	Eric Lee
TEST MODE	Dipole		

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	98.30 PK			1.25 H	37	67.84	30.46
2	*2437.00	88.68 AV			1.25 H	37	58.22	30.46
3	4874.00	44.54 PK	74.00	-29.46	1.32 H	239	7.62	36.92
4	4874.00	32.22 AV	54.00	-21.78	1.32 H	239	-4.70	36.92
5	7311.00	59.04 PK	74.00	-14.96	1.45 H	233	15.90	43.14
6	7311.00	45.06 AV	54.00	-8.94	1.45 H	233	1.92	43.14
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	107.81 PK			1.47 V	241	77.35	30.46
2	*2437.00	97.34 AV			1.47 V	241	66.88	30.46
3	4874.00	43.91 PK	74.00	-30.09	1.54 V	101	6.99	36.92
4	4874.00	32.12 AV	54.00	-21.88	1.54 V	101	-4.80	36.92
5	7311.00	63.01 PK	74.00	-10.99	1.56 V	2	19.87	43.14
6	7311.00	49.36 AV	54.00	-4.64	1.56 V	2	6.22	43.14

- 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.



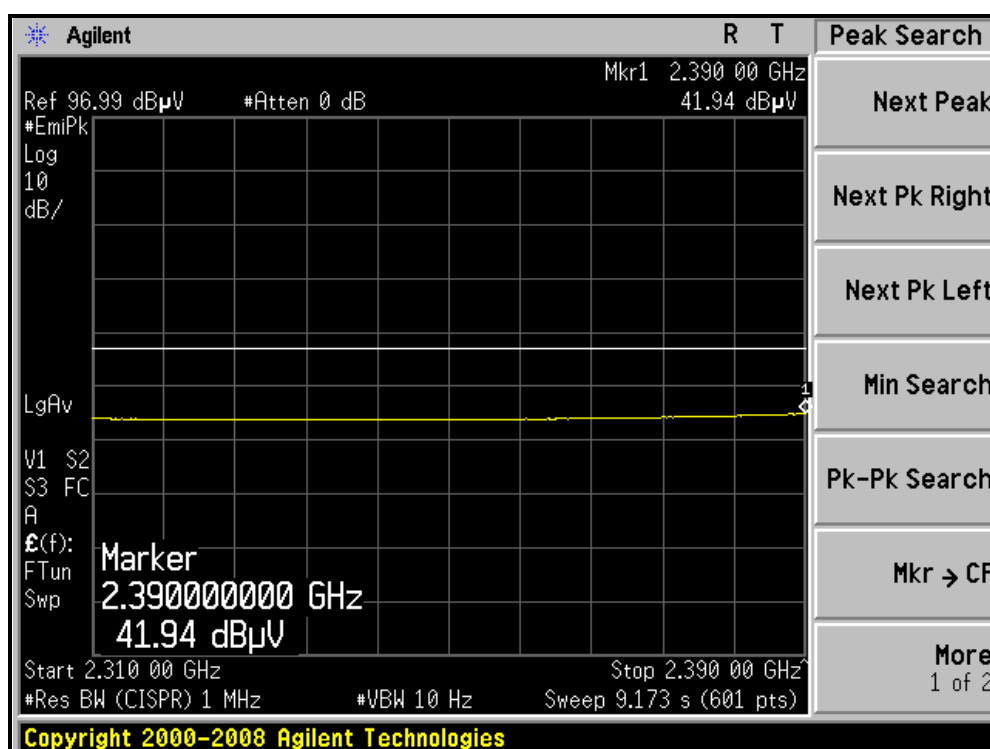
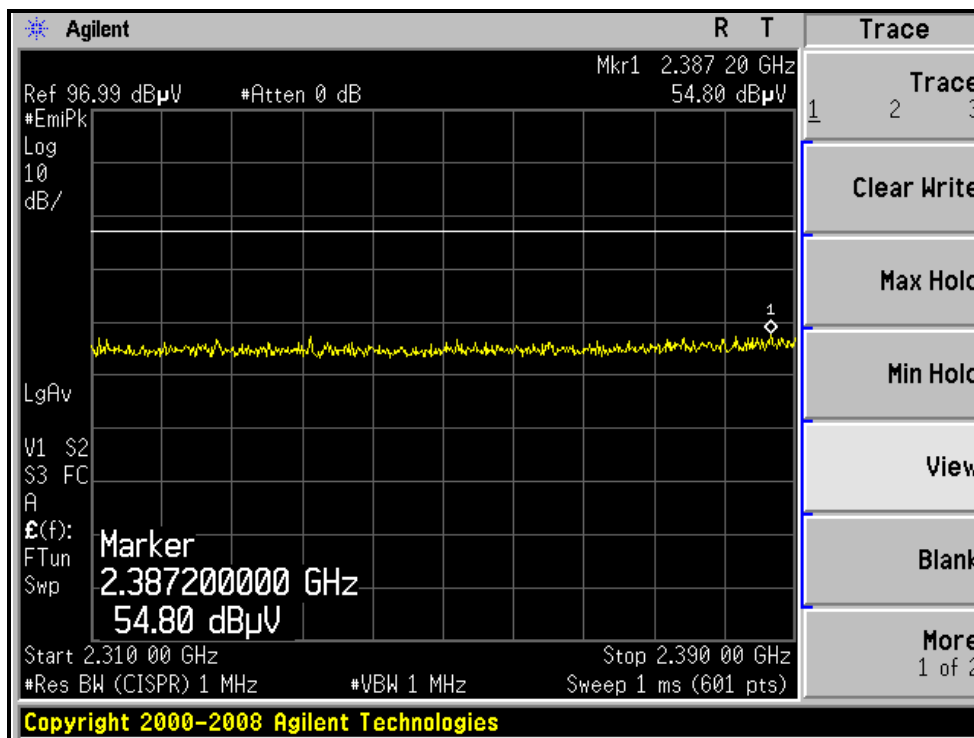
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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 7	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	28deg. C, 65%RH 972 hPa	TESTED BY	Eric Lee
TEST MODE	Dipole		

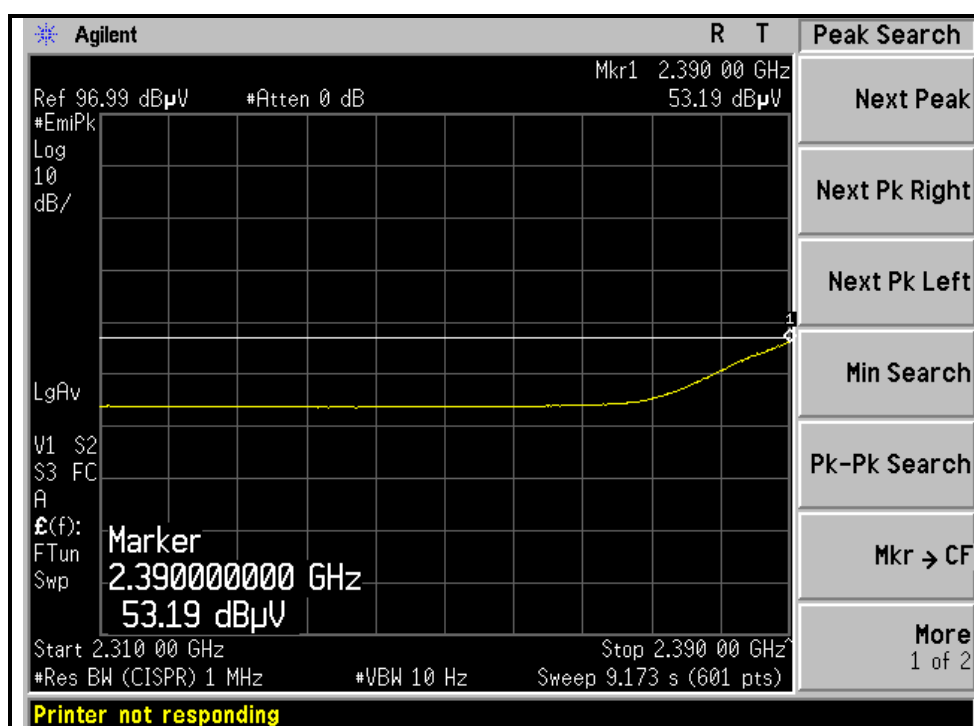
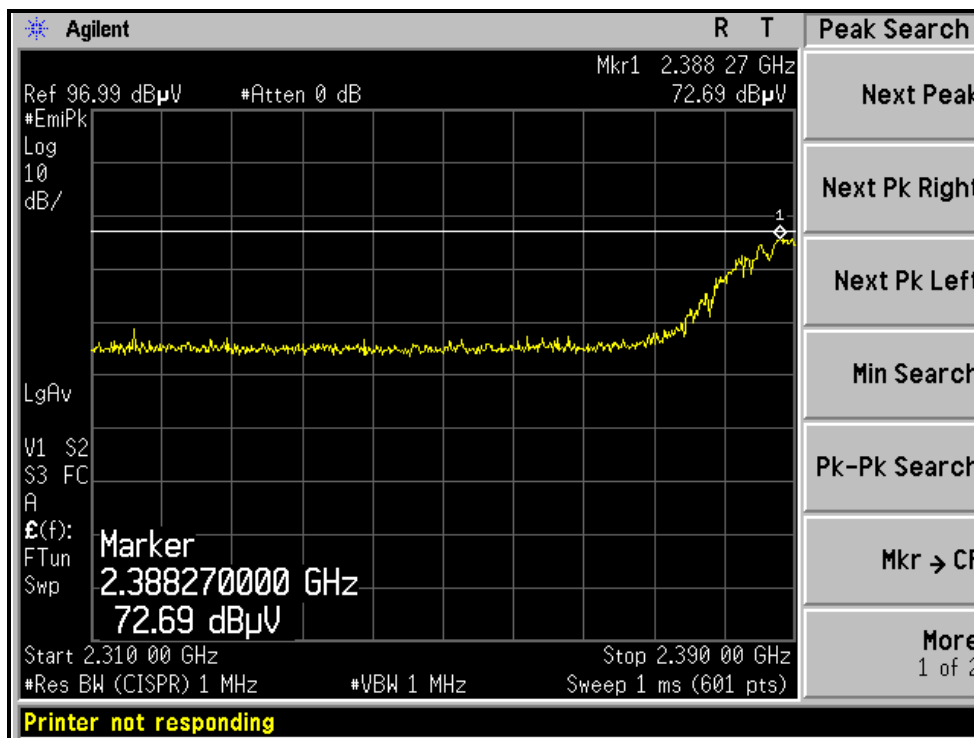
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	87.74 PK			1.63 H	29	57.23	30.51
2	*2452.00	76.88 AV			1.63 H	29	46.37	30.51
3	2483.50	54.47 PK	74.00	-19.53	1.61 H	27	23.84	30.63
4	2483.50	42.33 AV	54.00	-11.67	1.61 H	27	11.70	30.63
5	4904.00	43.99 PK	74.00	-30.01	1.36 H	241	6.99	37.00
6	4904.00	32.07 AV	54.00	-21.93	1.36 H	241	-4.93	37.00
7	7356.00	53.54 PK	74.00	-20.46	1.37 H	294	10.41	43.13
8	7356.00	39.66 AV	54.00	-14.34	1.37 H	294	-3.47	43.13
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	97.38 PK			1.25 V	39	66.87	30.51
2	*2452.00	87.64 AV			1.25 V	39	57.13	30.51
3	2483.50	66.36 PK	74.00	-7.64	1.46 V	31	35.73	30.63
4	2483.50	46.07 AV	54.00	-7.93	1.46 V	31	15.44	30.63
5	4904.00	42.08 PK	74.00	-31.92	1.38 V	122	5.08	37.00
6	4904.00	32.16 AV	54.00	-21.84	1.38 V	122	-4.84	37.00
7	7356.00	54.65 PK	74.00	-19.35	1.36 V	271	11.52	43.13
8	7356.00	39.99 AV	54.00	-14.01	1.36 V	271	-3.14	43.13

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

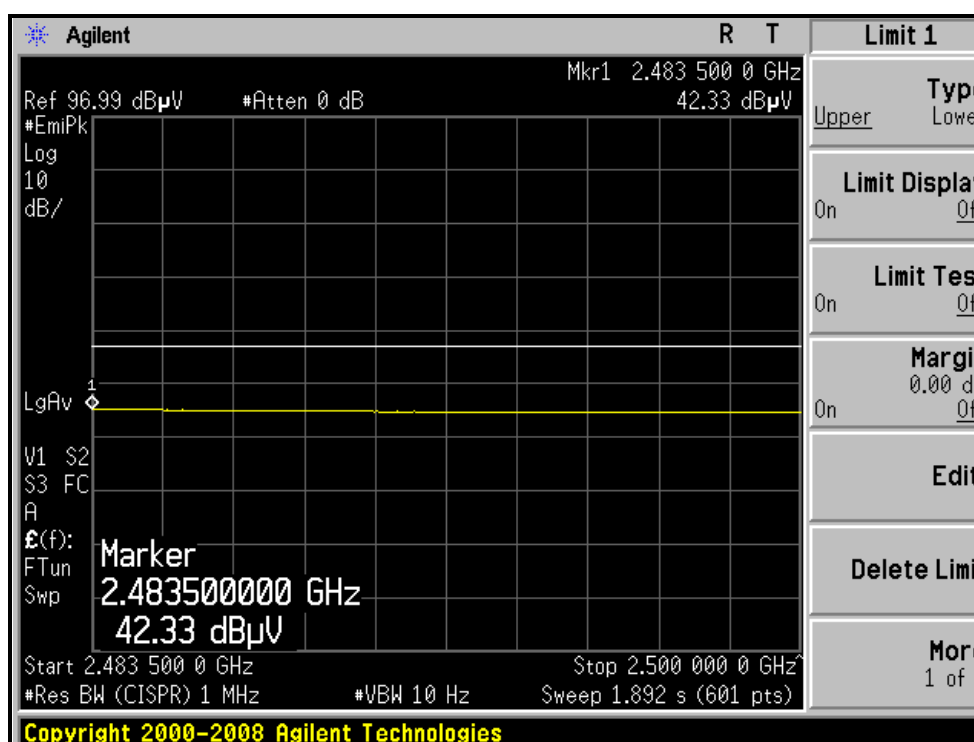
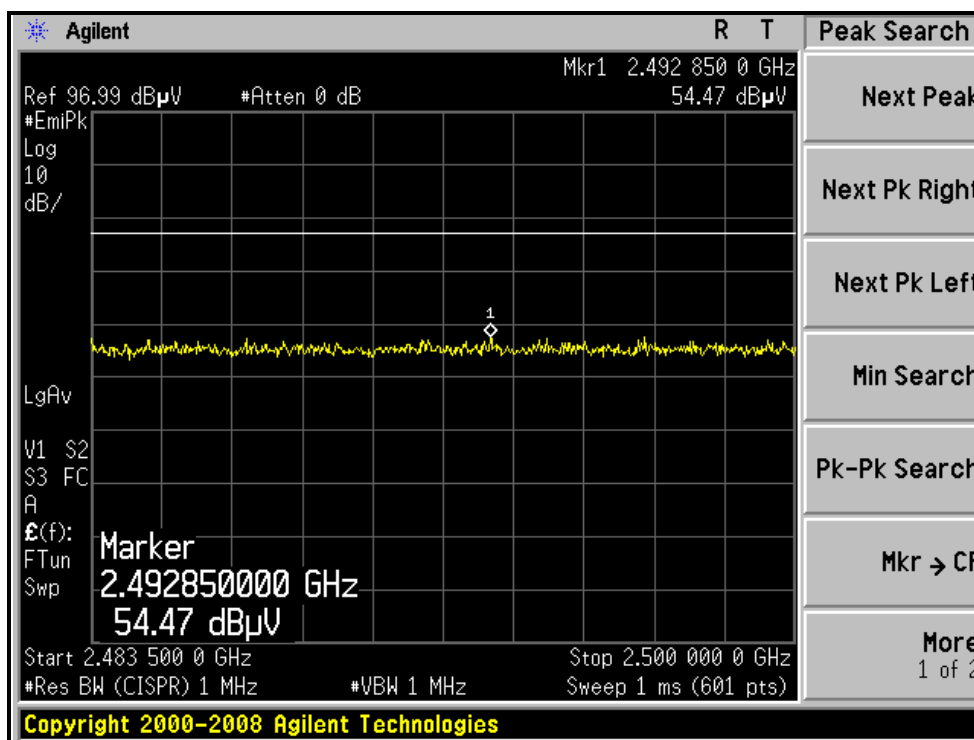
RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE,CH1, HORIZONTAL)



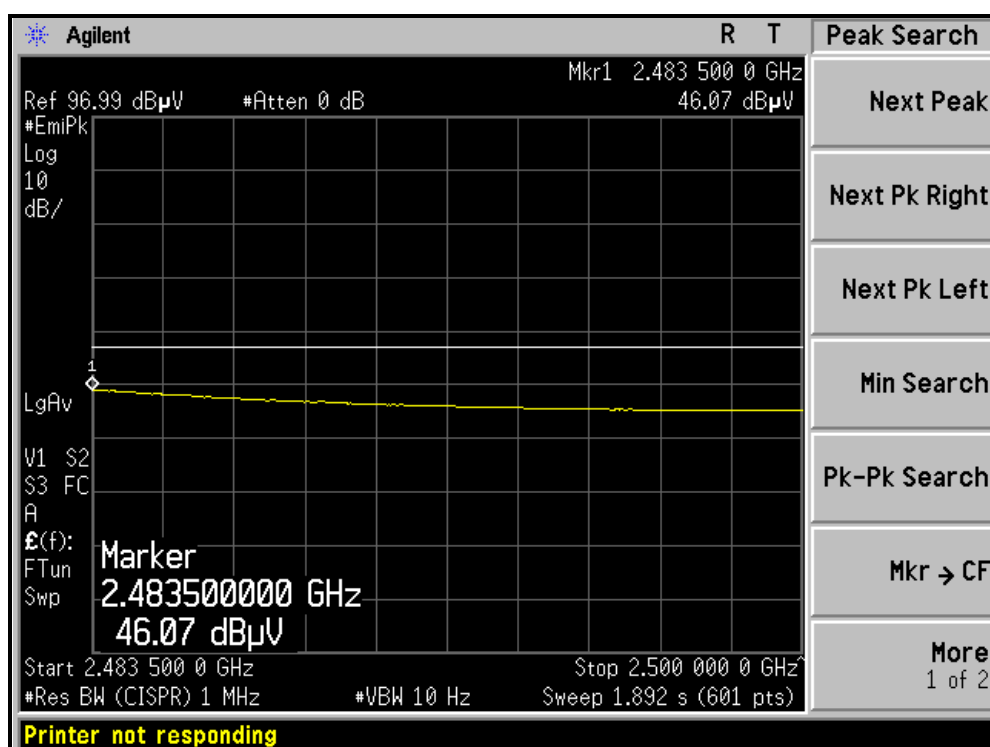
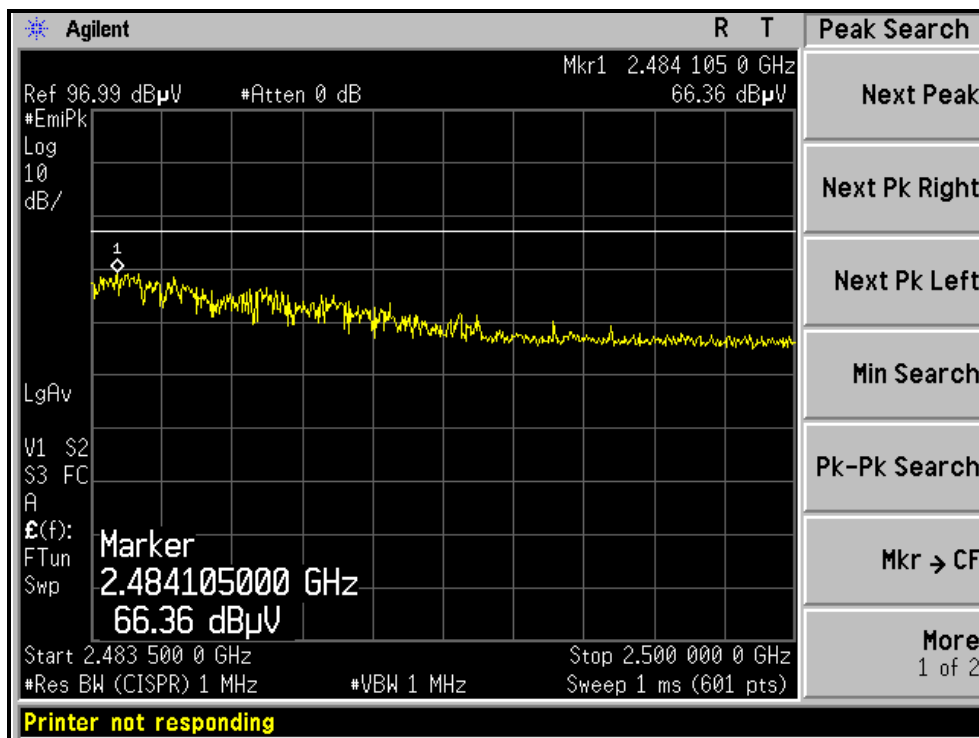
RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE,CH1, VERTICAL)



RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE,CH11, HORIZONTAL)



RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE,CH11, VERTICAL)



4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100036	Dec. 09, 2008	Dec. 08, 2009

NOTE:

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

4.3.3 TEST PROCEDURE

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

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

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

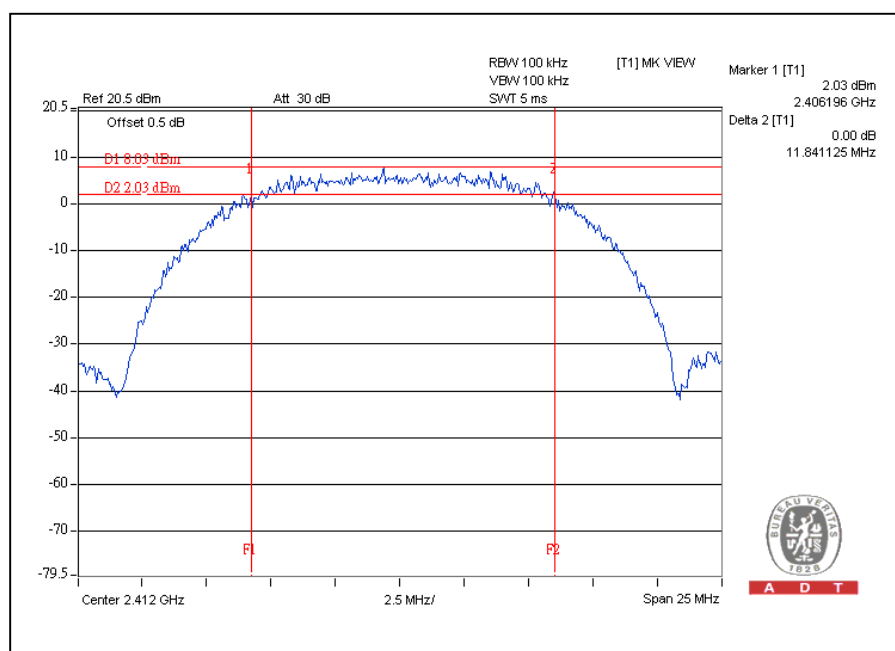
4.3.7 TEST RESULTS

802.11b DSSS MODULATION:

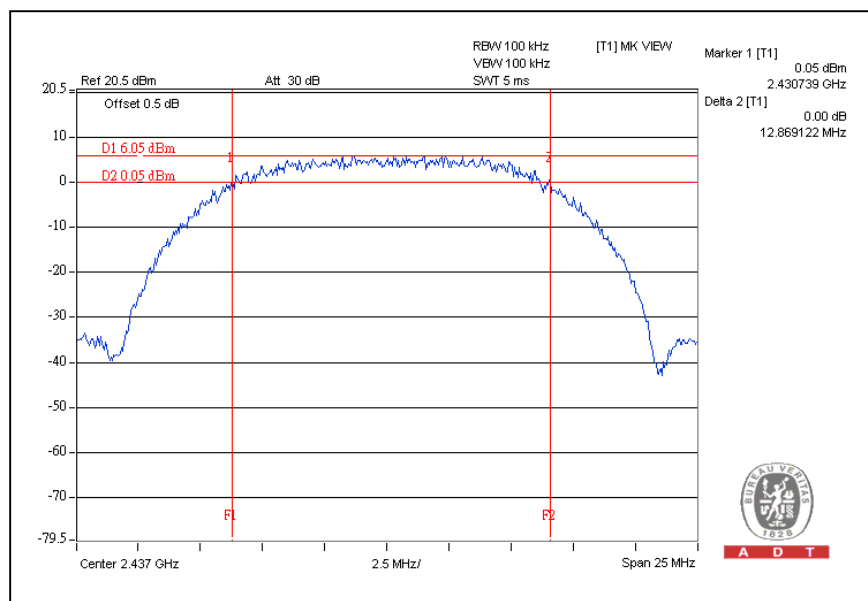
MODULATION TYPE	DBPSK	TRANSFER RATE	1Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 972hPa
TESTED BY	Phoenix Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	11.84	0.5	PASS
6	2437	12.87	0.5	PASS
11	2462	11.6	0.5	PASS

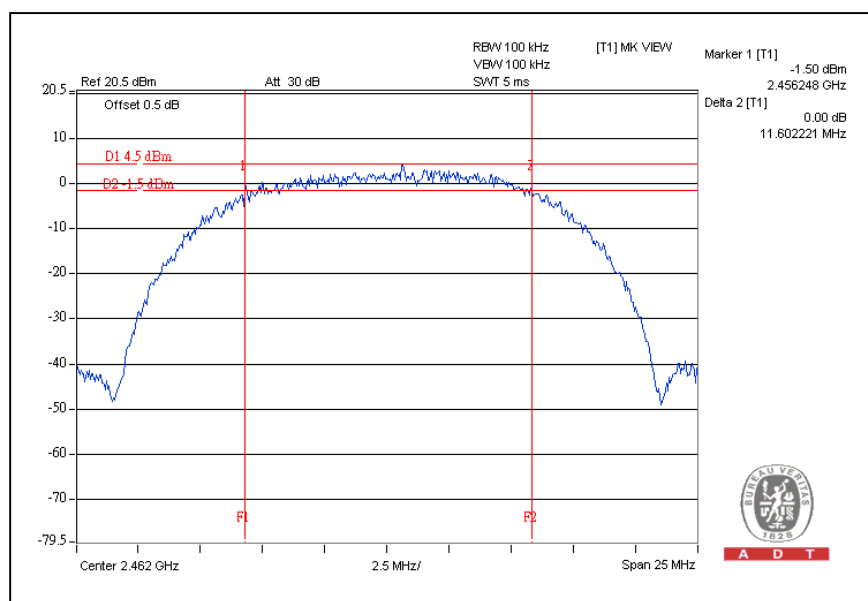
CH1



CH6



CH11

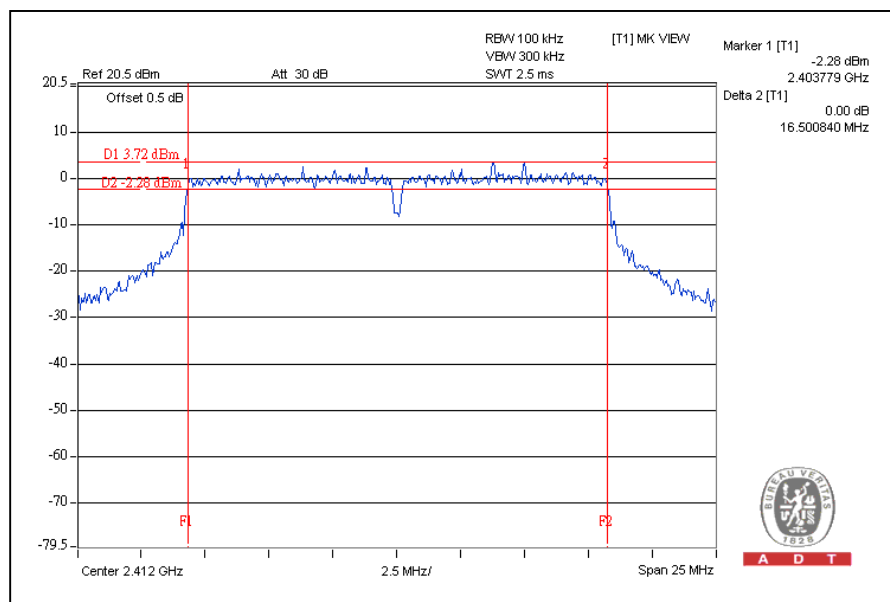


802.11g OFDM MODULATION:

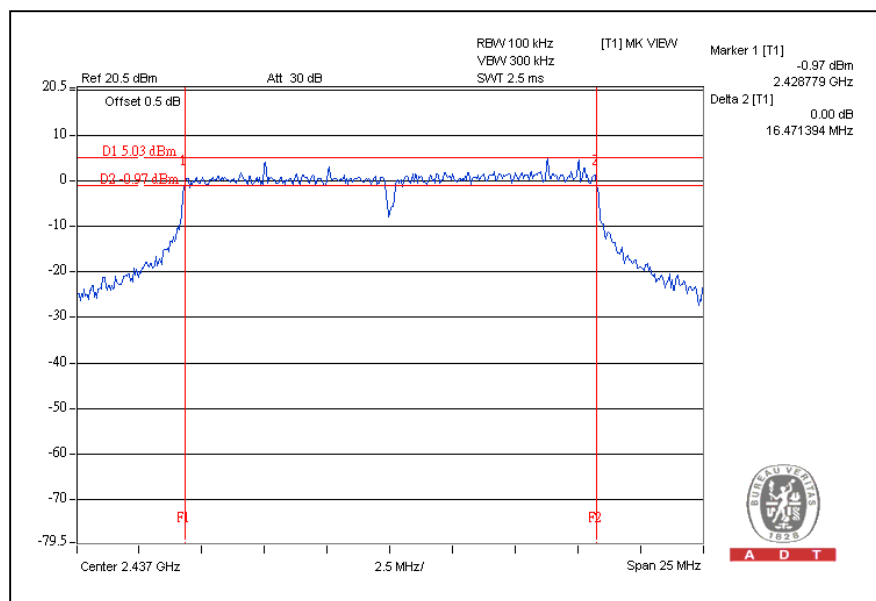
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 972hPa
TESTED BY	Phoenix Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
1	2412	16.5	16.48	0.5	PASS
6	2437	16.47	16.45	0.5	PASS
11	2462	16.47	16.56	0.5	PASS

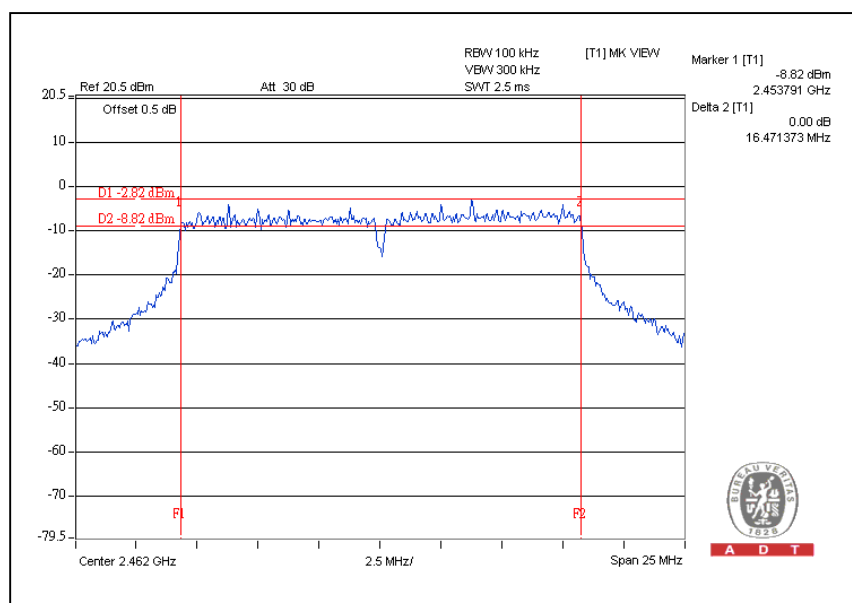
For Chain(0): CH1



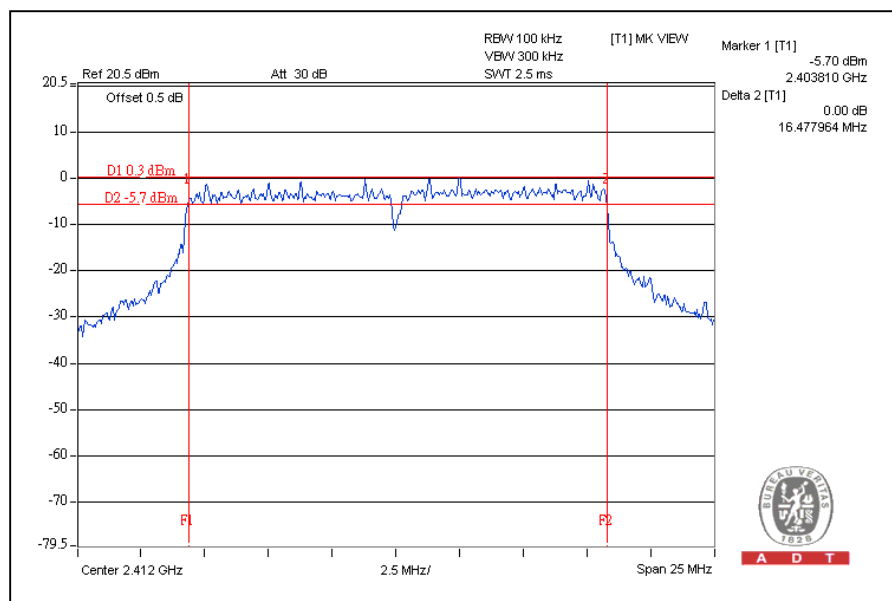
CH6



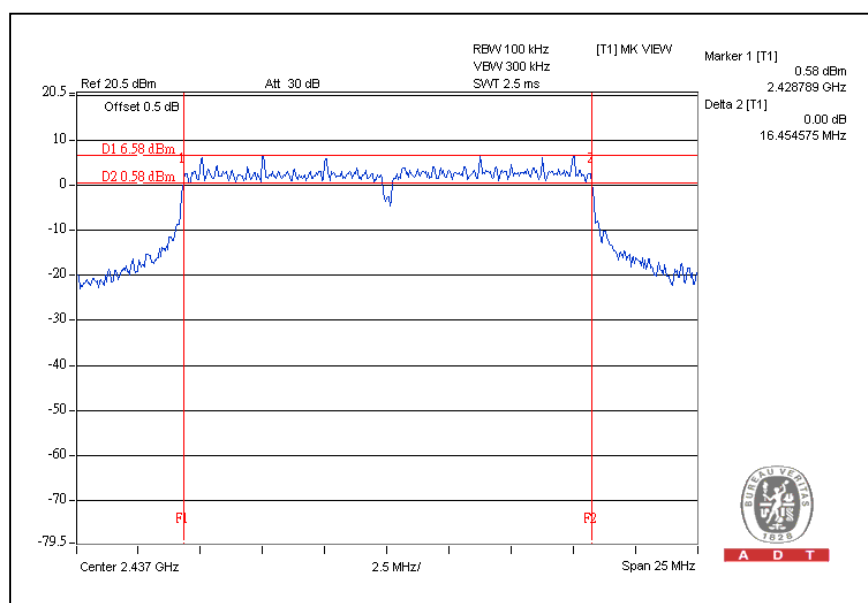
CH11



For CHAIN(1): CH1



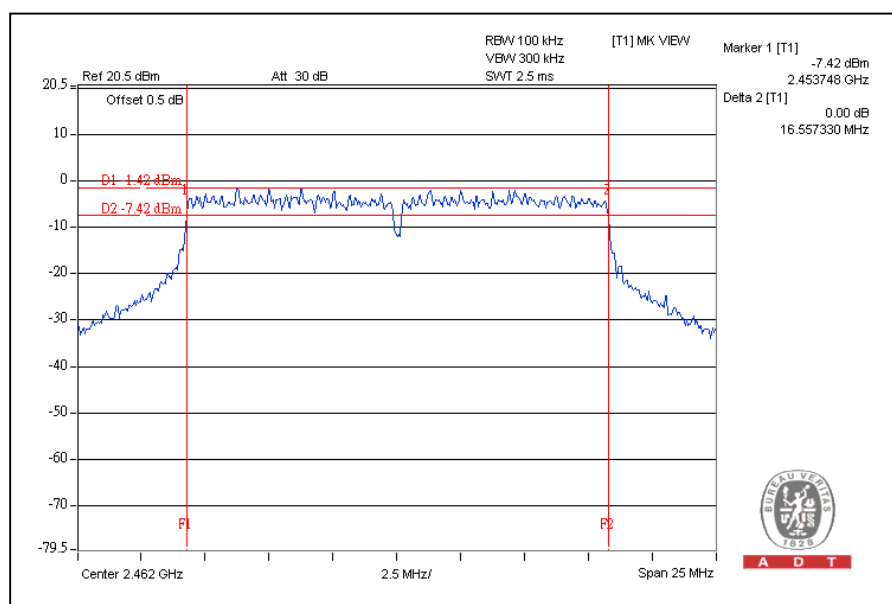
CH6





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CH11

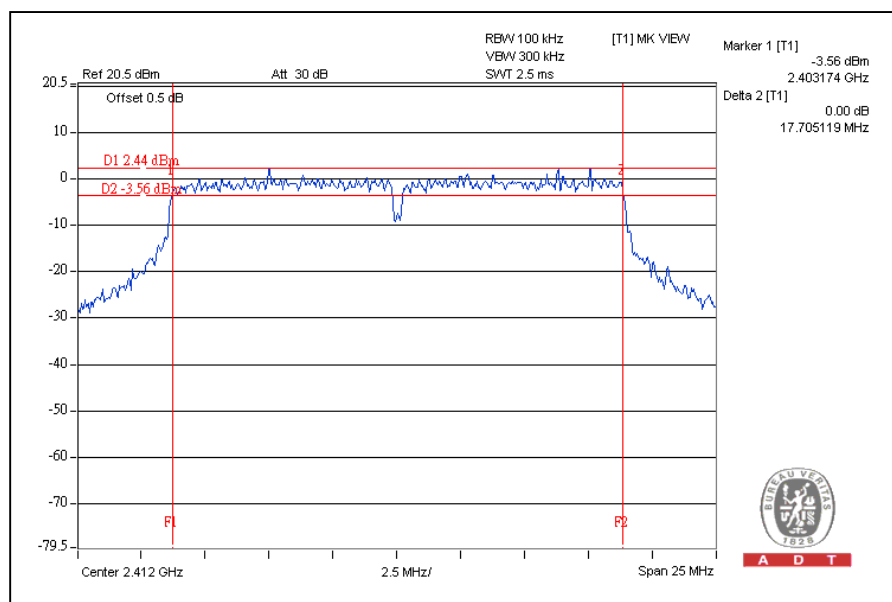


DRAFT 802.11n (20MHz) OFDM MODULATION:

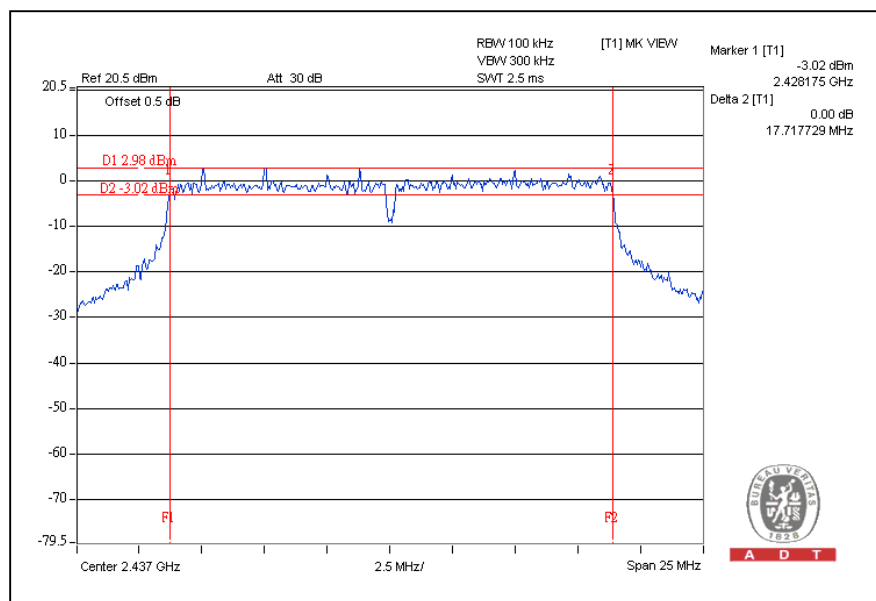
MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 54%RH, 972hPa
TESTED BY	Phoenix Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
1	2412	17.71	17.71	0.5	PASS
6	2437	17.72	17.68	0.5	PASS
11	2462	17.68	17.72	0.5	PASS

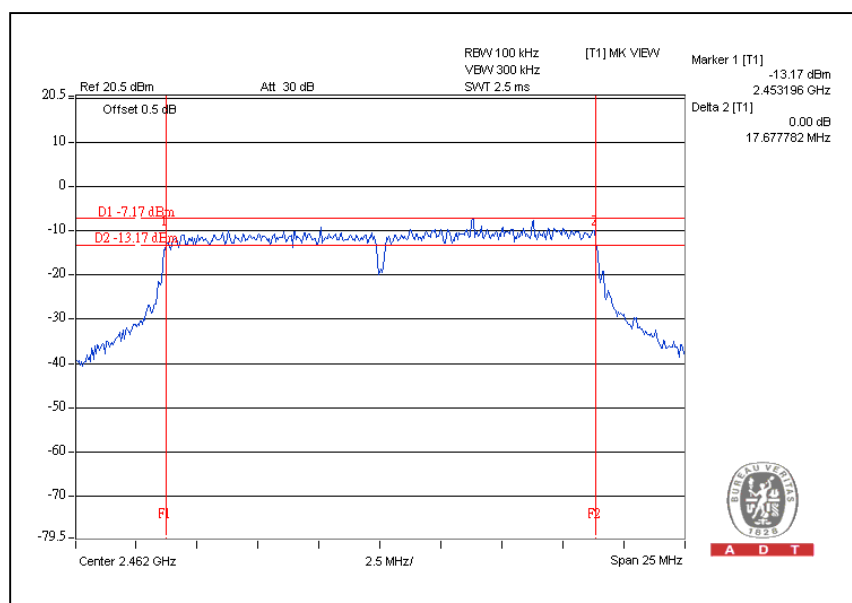
For Chain(0): CH1



CH6



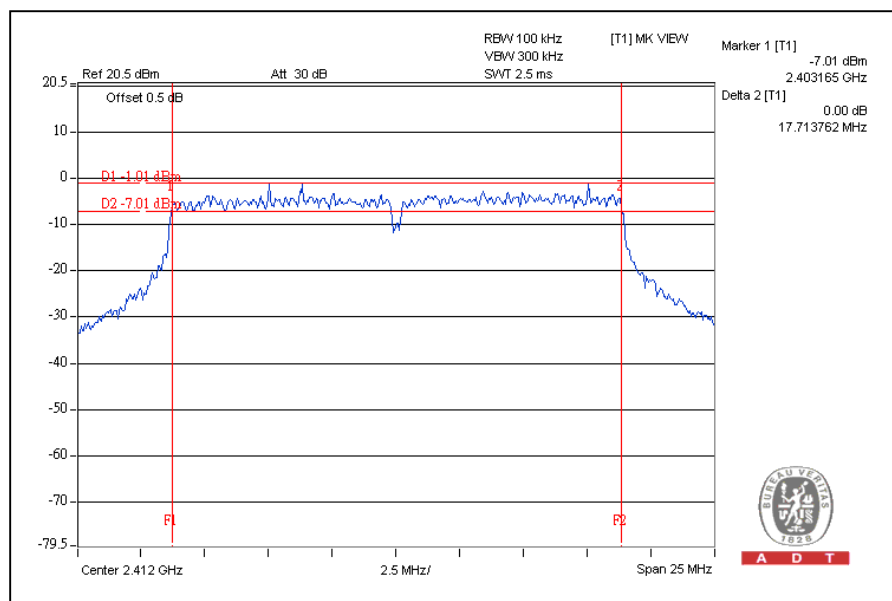
CH11



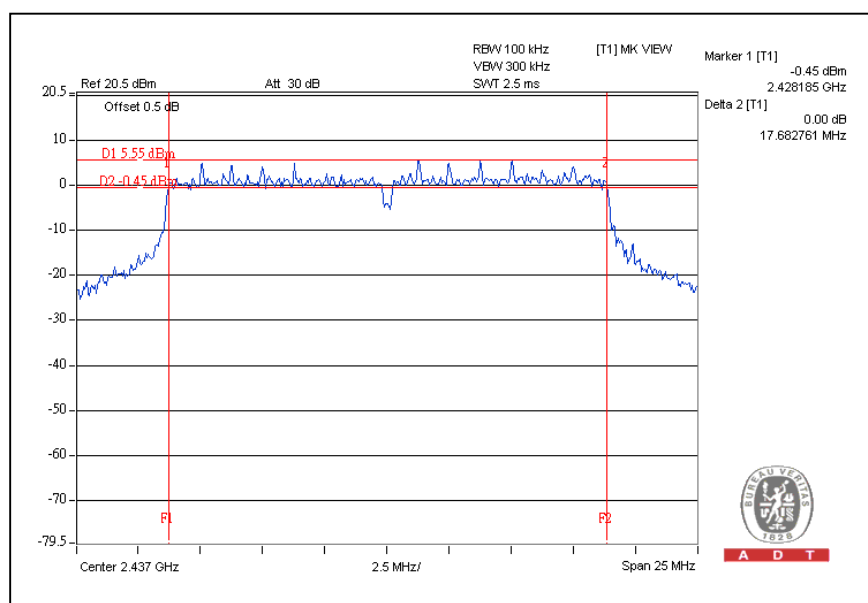


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For CHAIN(1): CH1



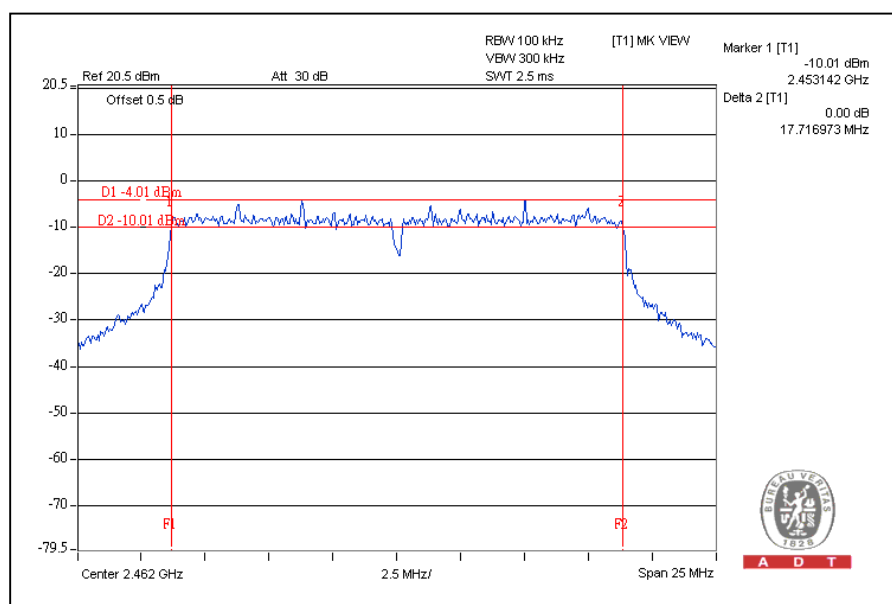
CH6





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CH11

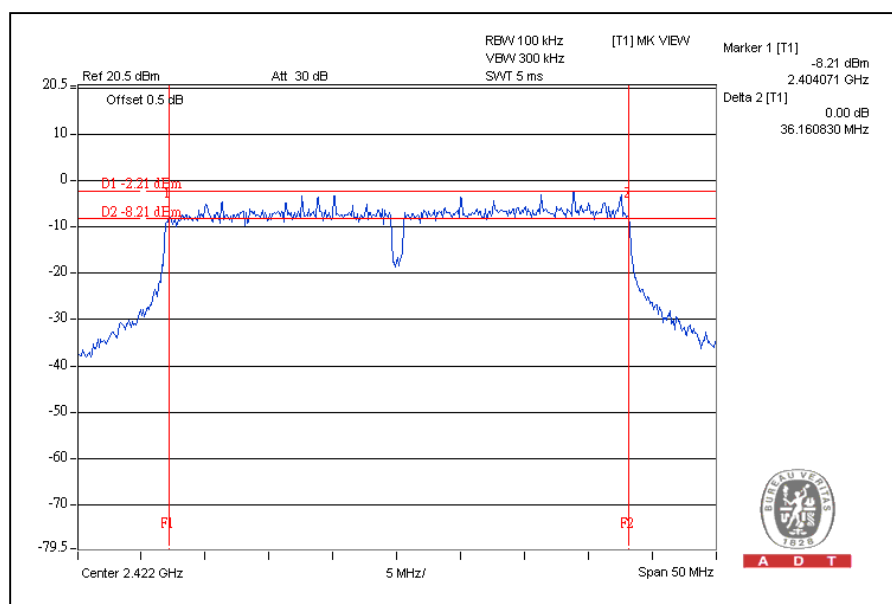


DRAFT 802.11n (40MHz) OFDM MODULATION:

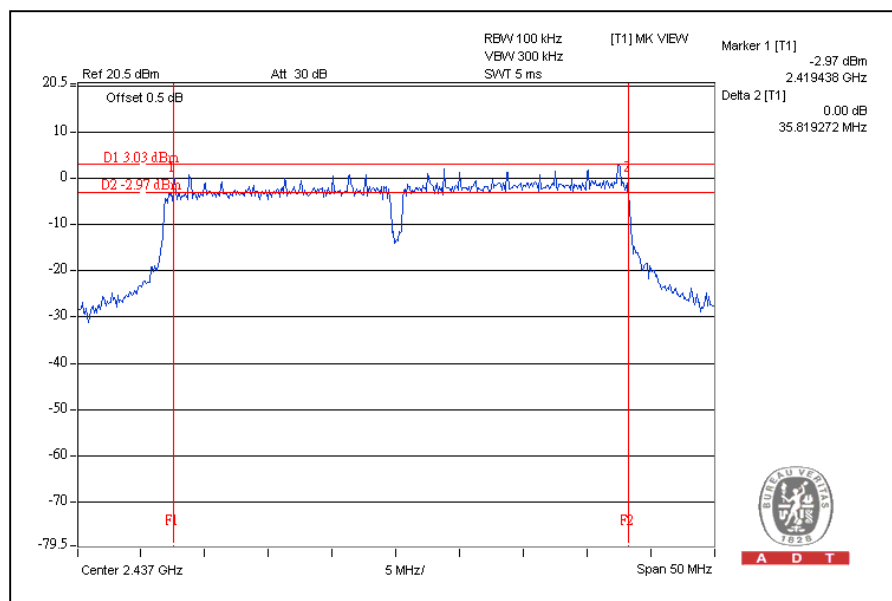
MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 972hPa
TESTED BY	Phoenix Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
1	2422	36.16	35.87	0.5	PASS
4	2437	35.82	36.16	0.5	PASS
7	2452	35.79	36.45	0.5	PASS

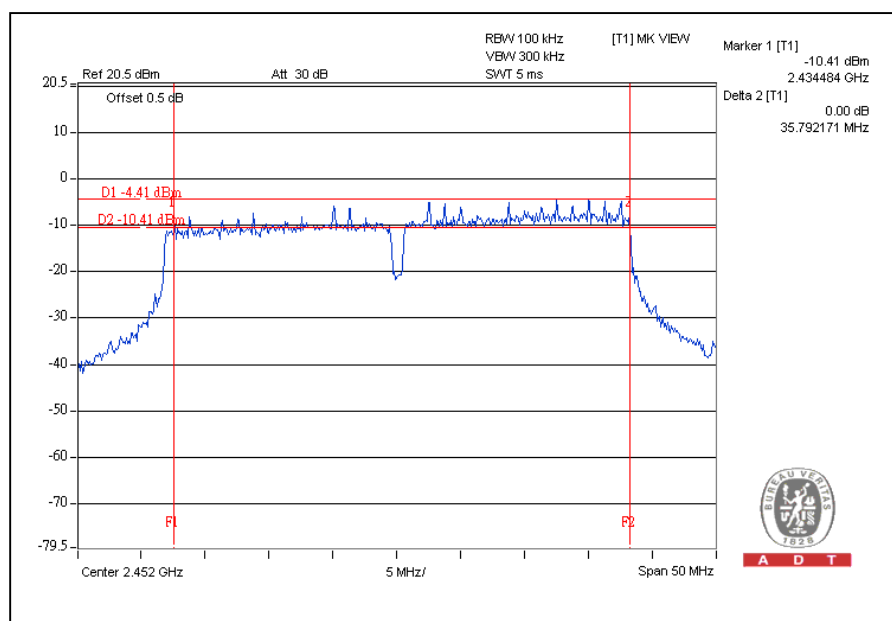
For Chain (0): CH1



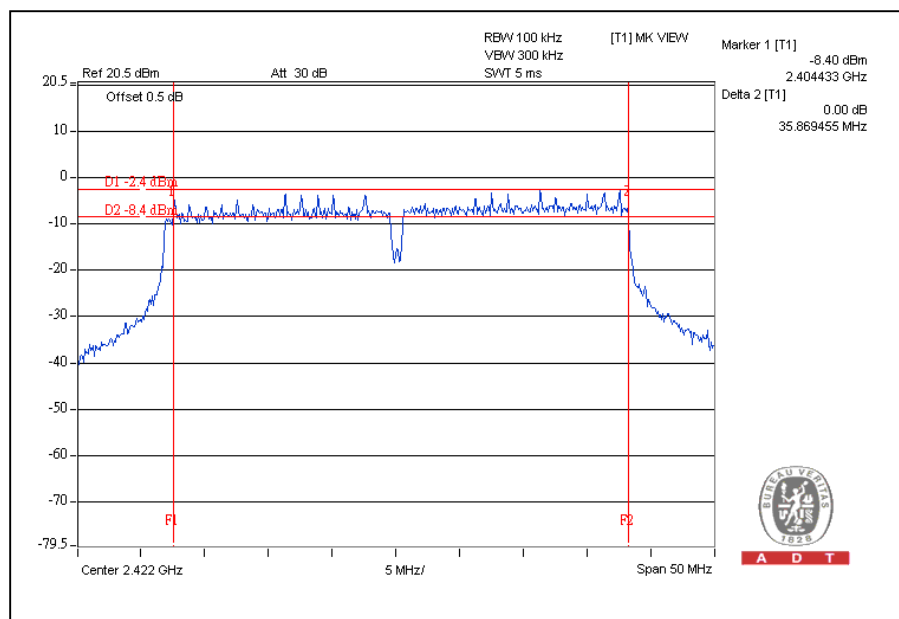
CH4



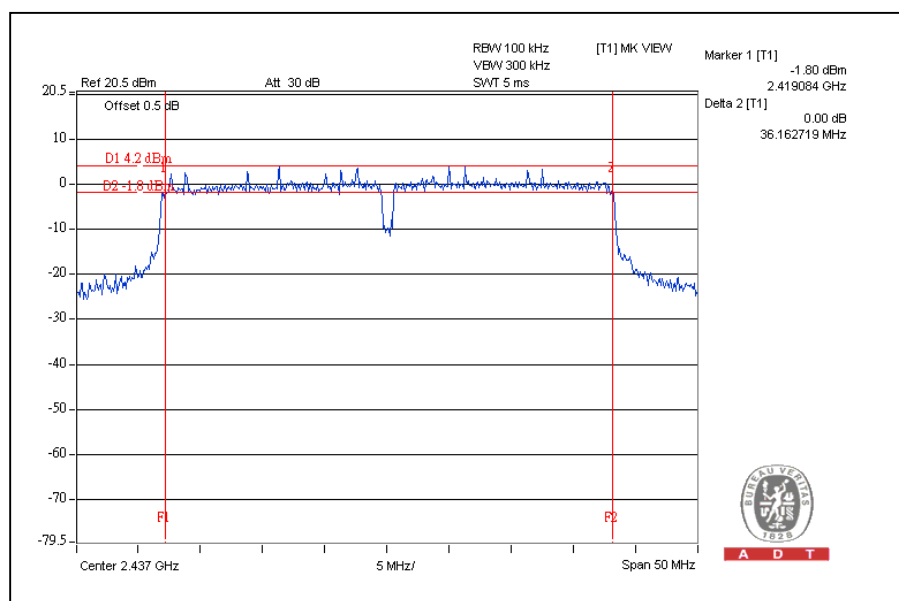
CH7



For Chain (1): CH1



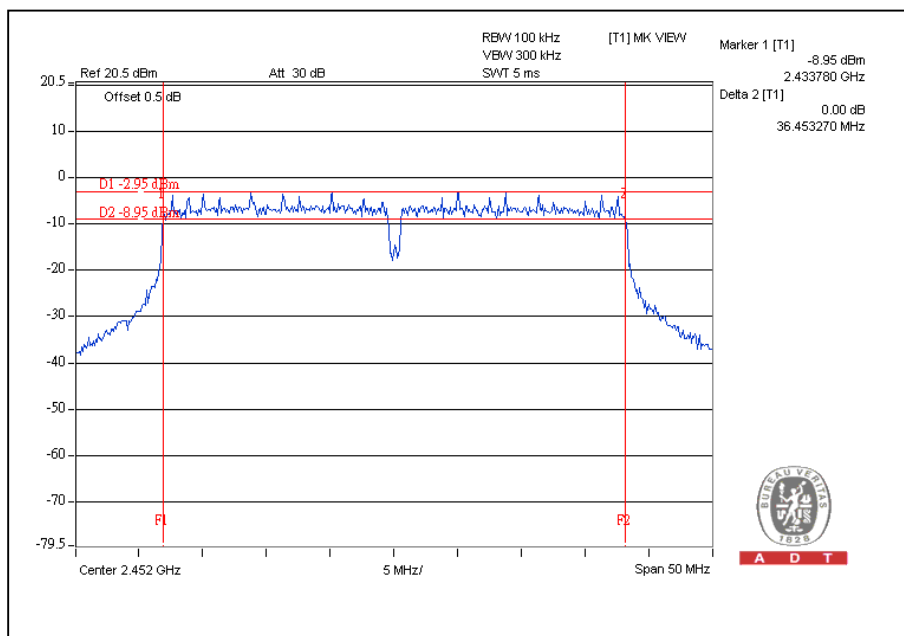
CH4





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CH7



4.4 MAXIMUM PEAK OUTPUT POWER

4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

4.4.2 INSTRUMENTS

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

NOTE:

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

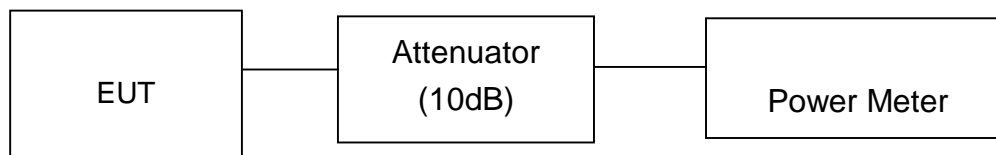
4.4.3 TEST PROCEDURES

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

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.2.6

4.4.7 TEST RESULTS

802.11b DSSS MODULATION (PIFA ANTENNA):

MODULATION TYPE	DBPSK	TRANSFER RATE	1Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 972hPa
TESTED BY	Phoenix Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER OUTPUT (mW)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	18.16	65.464	30	PASS
6	2437	21.44	139.316	30	PASS
11	2462	21.88	154.170	30	PASS

802.11g OFDM MODULATION (PIFA ANTENNA):

MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 972hPa
TESTED BY	Phoenix Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)		PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)	CHAIN(0)	CHAIN(1)				
1	2412	223.357	146.555	23.49	21.66	369.912	25.68	30	PASS
6	2437	289.068	340.408	24.61	25.32	629.476	27.99	30	PASS
11	2462	187.499	199.986	22.73	23.01	387.485	25.88	30	PASS



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DRAFT 802.11n (20MHz) OFDM MODULATION (PIFA ANTENNA):

MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 54%RH, 972hPa
TESTED BY	Phoenix Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)		PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)	CHAIN(0)	CHAIN(1)				
1	2412	172.982	133.660	22.38	21.26	306.642	24.87	30	PASS
6	2437	281.190	239.883	24.49	23.80	521.073	27.17	30	PASS
11	2462	115.611	162.930	20.63	22.12	278.541	24.45	30	PASS

DRAFT 802.11n (40MHz) OFDM MODULATION (PIFA ANTENNA):

MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 972hPa
TESTED BY	Phoenix Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)		PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)	CHAIN(0)	CHAIN(1)				
1	2422	114.815	117.761	20.60	20.71	232.576	23.67	30	PASS
4	2437	363.078	319.154	25.60	25.04	682.232	28.34	30	PASS
7	2452	206.063	206.063	23.14	23.14	412.126	26.15	30	PASS

802.11b DSSS MODULATION (DIPOLE ANTENNA):

MODULATION TYPE	DBPSK	TRANSFER RATE	1Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 972hPa
TESTED BY	Phoenix Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER OUTPUT (mW)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	18.16	65.464	30	PASS
6	2437	21.44	139.316	30	PASS
11	2462	21.88	154.170	30	PASS

802.11g OFDM MODULATION (DIPOLE ANTENNA):

MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 972hPa
TESTED BY	Phoenix Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)		PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)	CHAIN(0)	CHAIN(1)				
1	2412	223.357	146.555	23.49	21.66	369.912	25.68	30	PASS
6	2437	289.068	340.408	24.61	25.32	629.476	27.99	30	PASS
11	2462	187.499	199.986	22.73	23.01	387.485	25.88	30	PASS

**DRAFT 802.11n (20MHz) OFDM MODULATION (DIPOLE ANTENNA):**

MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 54%RH, 972hPa
TESTED BY	Phoenix Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)		PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)	CHAIN(0)	CHAIN(1)				
1	2412	172.982	133.660	22.38	21.26	306.642	24.87	30	PASS
6	2437	281.190	239.883	24.49	23.80	521.073	27.17	30	PASS
11	2462	115.611	162.930	20.63	22.12	278.541	24.45	30	PASS

DRAFT 802.11n (40MHz) OFDM MODULATION (DIPOLE ANTENNA):

MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 972hPa
TESTED BY	Phoenix Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)		PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)	CHAIN(0)	CHAIN(1)				
1	2422	114.815	117.761	20.60	20.71	232.576	23.67	30	PASS
4	2437	363.078	319.154	25.60	25.04	682.232	28.34	30	PASS
7	2452	206.063	206.063	23.14	23.14	412.126	26.15	30	PASS

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100036	Dec. 09, 2008	Dec. 08, 2009

NOTE:

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

4.5.3 TEST PROCEDURE

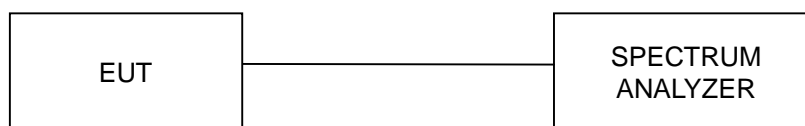
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

The sweep time is allowed to be longer than span/3kHz for a full response of the mixer in the spectrum analyzer.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITION

Same as Item 4.2.6

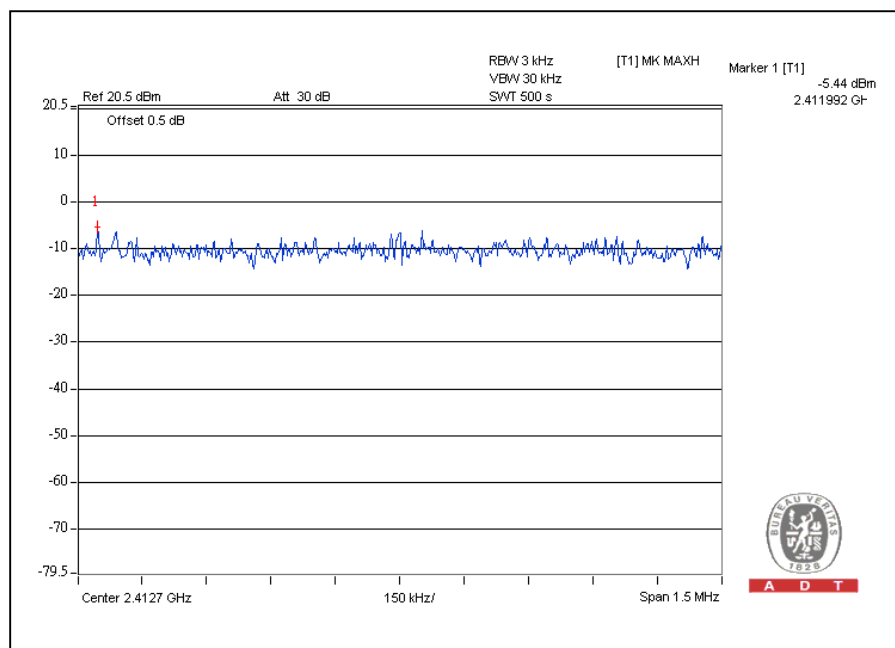
4.5.7 TEST RESULTS

802.11b DSSS MODULATION:

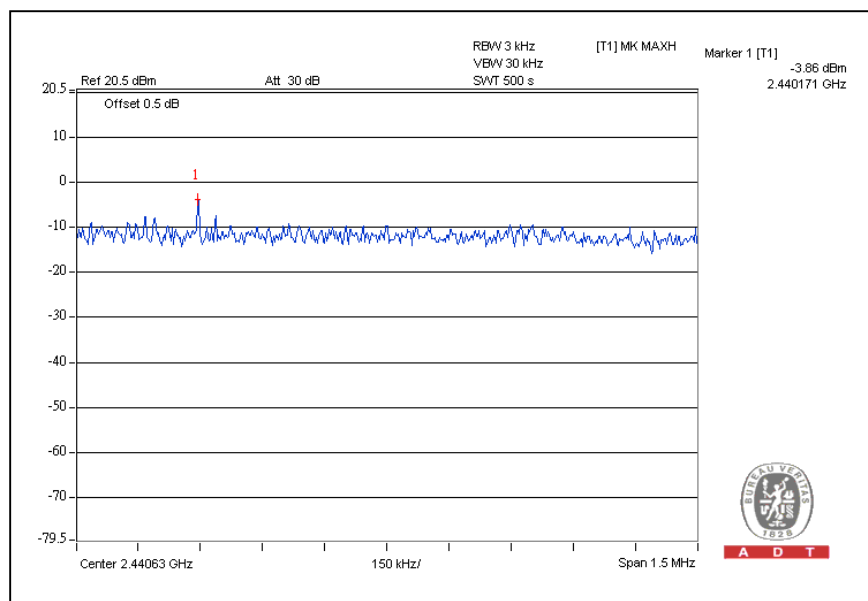
MODULATION TYPE	DBPSK	TRANSFER RATE	1Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 972hPa
TESTED BY	Phoenix Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-5.44	8	PASS
6	2437	-3.86	8	PASS
11	2462	-9.72	8	PASS

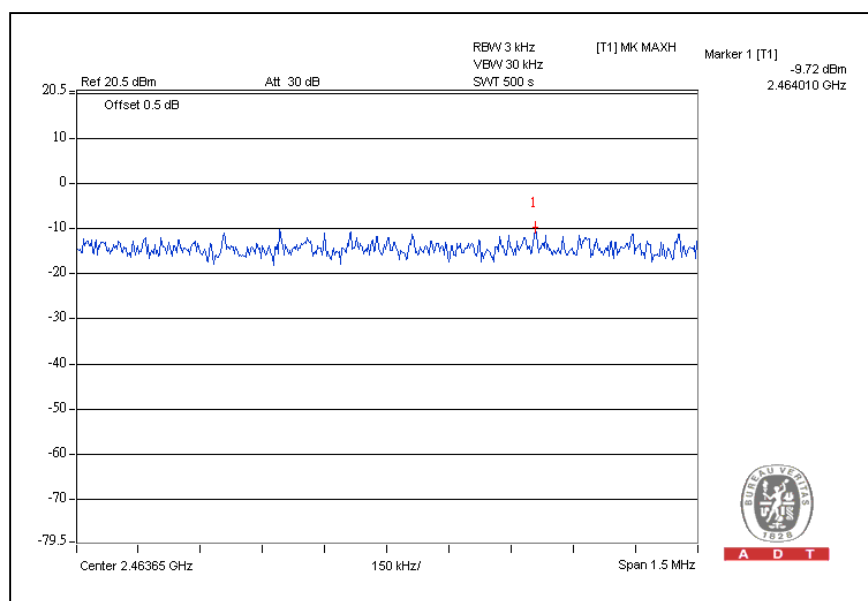
CH1



CH6



CH11

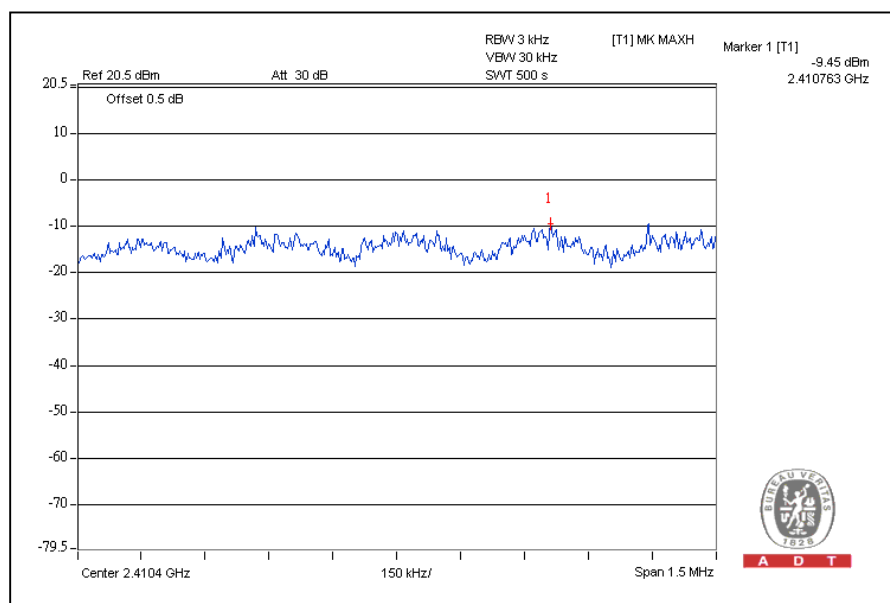


802.11g OFDM MODULATION:

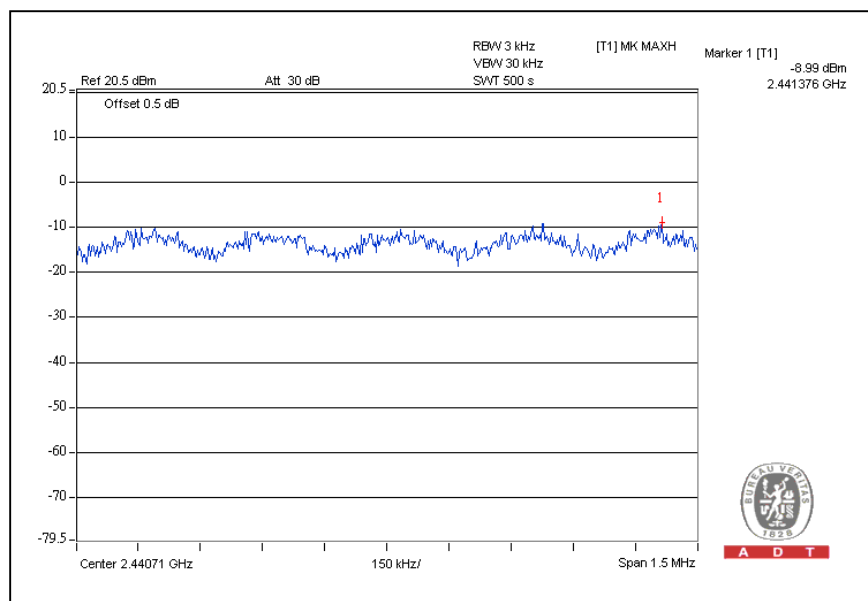
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 972hPa
TESTED BY	Phoenix Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (mW)		RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)	CHAIN(0)	CHAIN(1)				
1	2412	0.114	0.042	-9.45	-13.73	0.156	-8.07	8	PASS
6	2437	0.126	0.179	-8.99	-7.48	0.305	-5.16	8	PASS
11	2462	0.019	0.034	-17.25	-14.74	0.053	-12.76	8	PASS

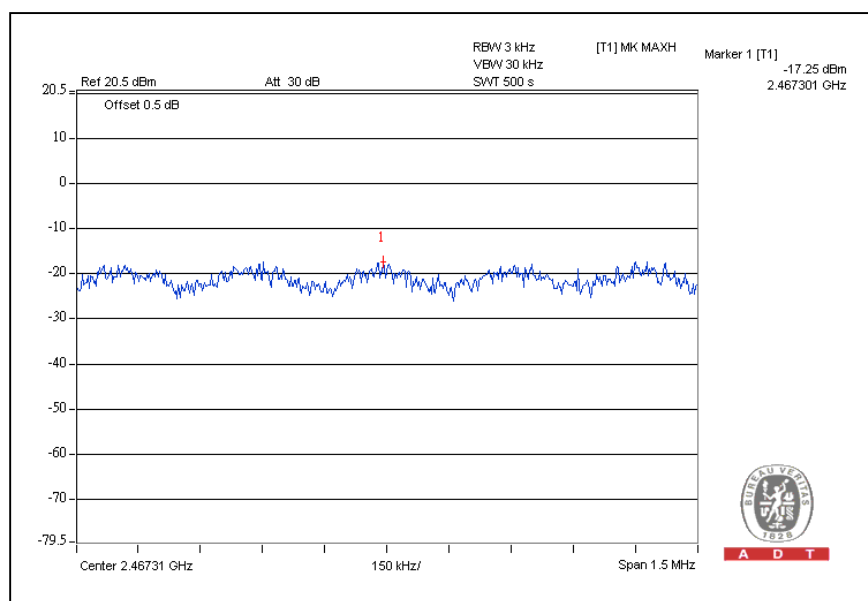
For Chain(0): CH1



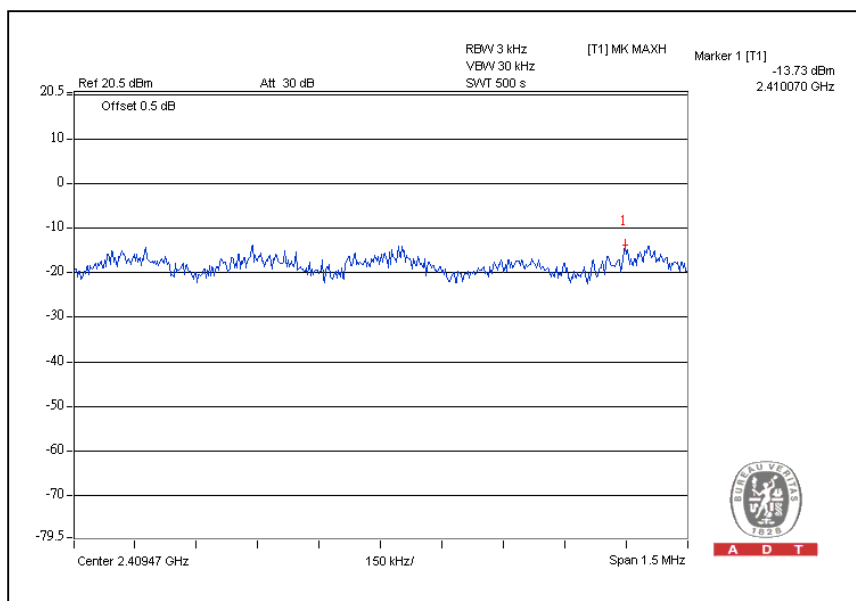
CH6



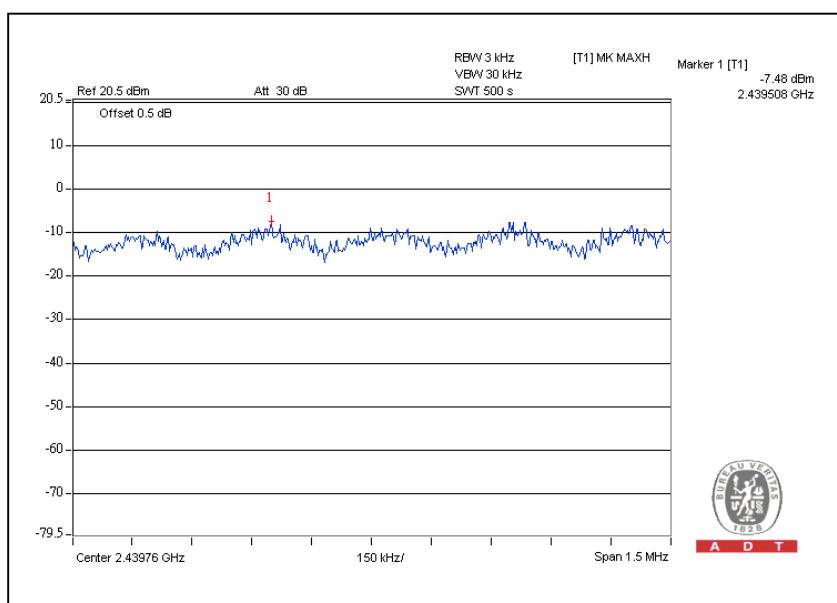
CH11



For Chain (1): CH1



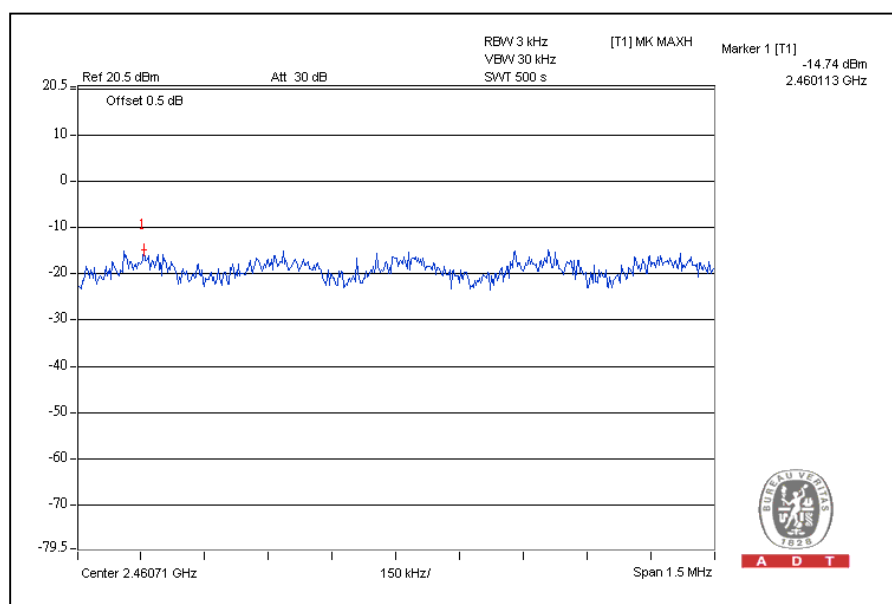
CH6





A D T

CH11

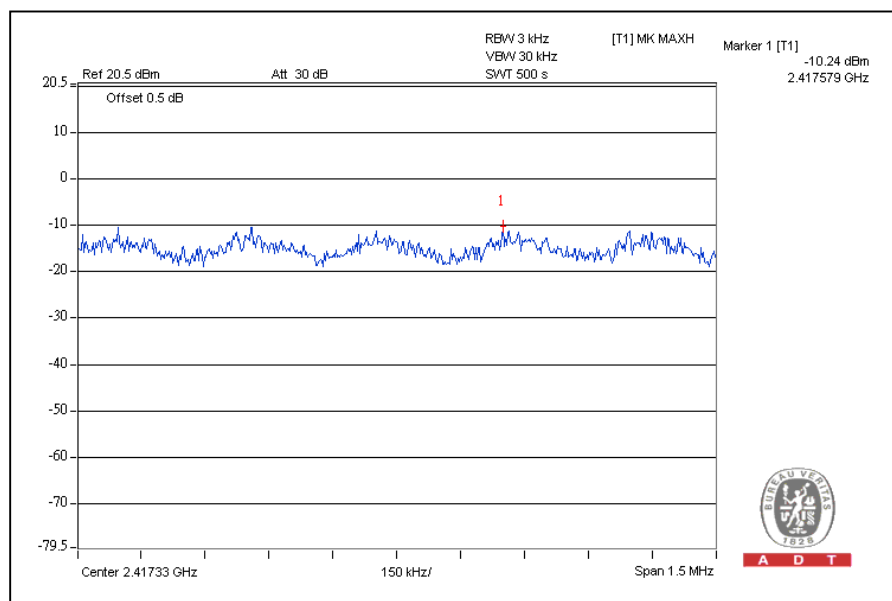


DRAFT 802.11n (20MHz) OFDM MODULATION:

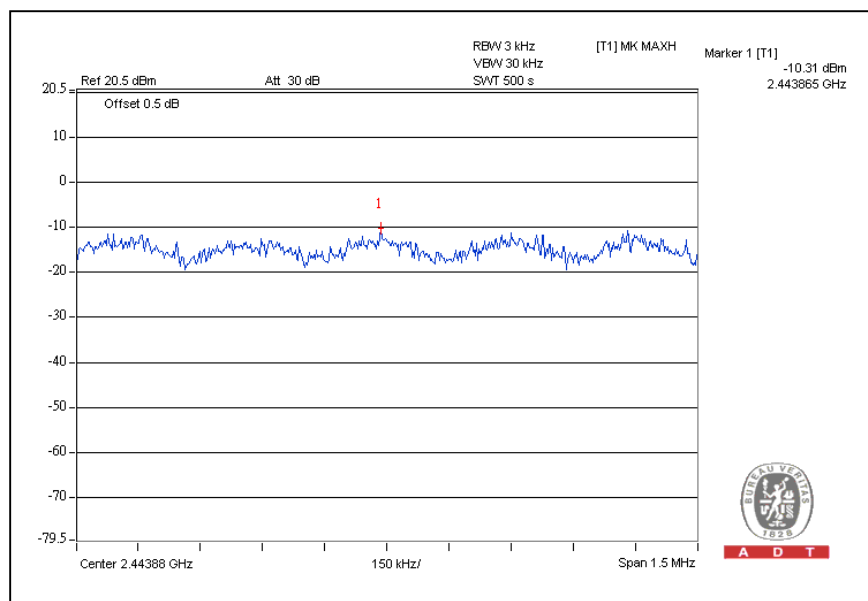
MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 54%RH, 972hPa
TESTED BY	Phoenix Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (mW)		RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)	CHAIN(0)	CHAIN(1)				
1	2412	0.095	0.033	-10.24	-14.79	0.128	-8.93	8	PASS
6	2437	0.093	0.146	-10.31	-8.36	0.239	-6.22	8	PASS
11	2462	0.009	0.015	-20.51	-18.29	0.024	-16.20	8	PASS

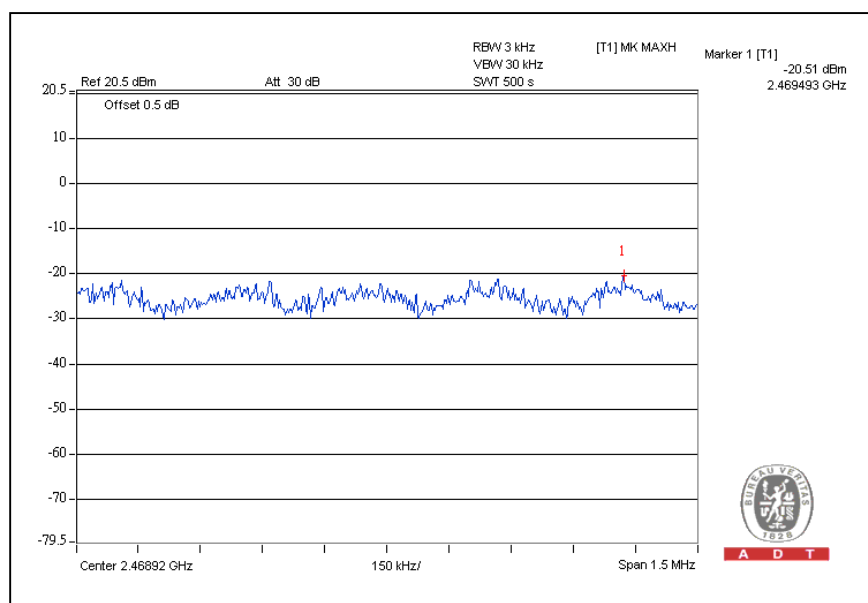
For Chain(0): CH1



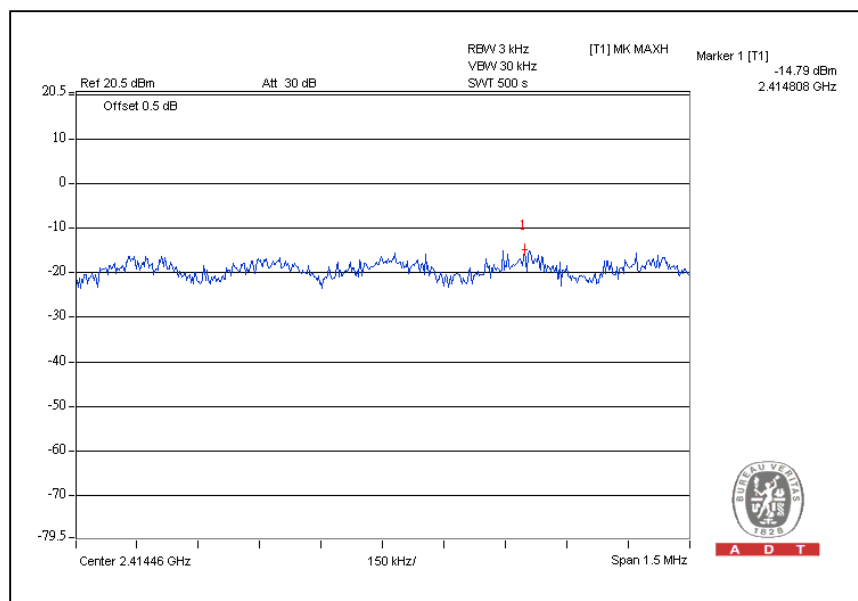
CH6



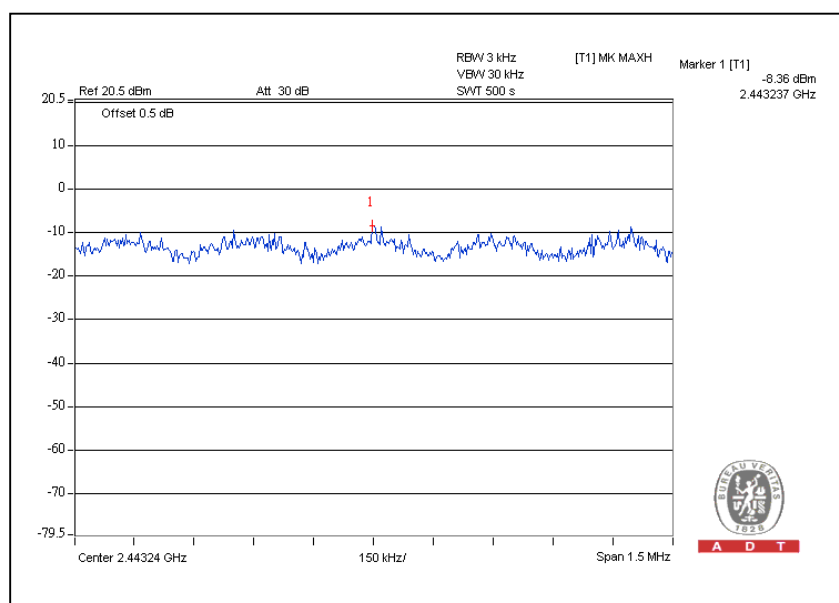
CH11



For Chain (1): CH1



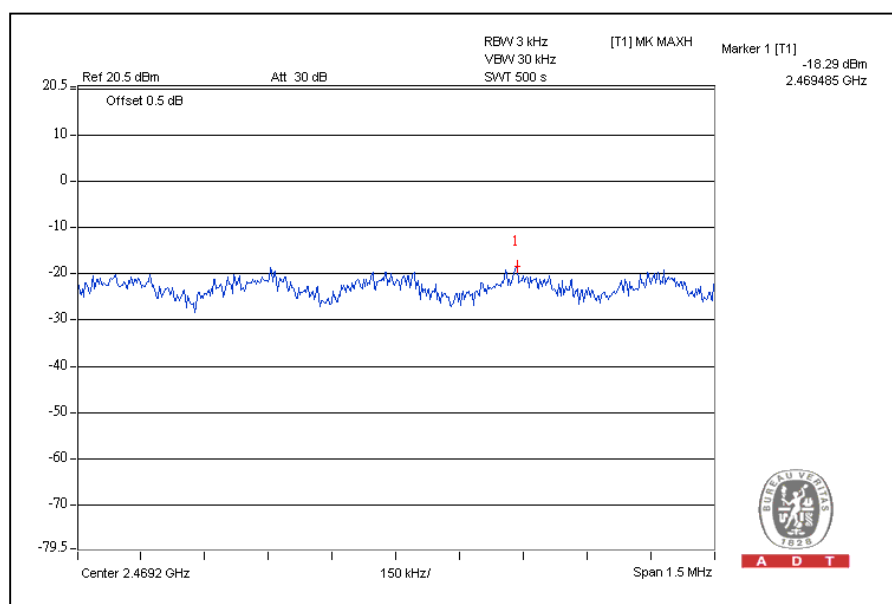
CH6





A D T

CH11





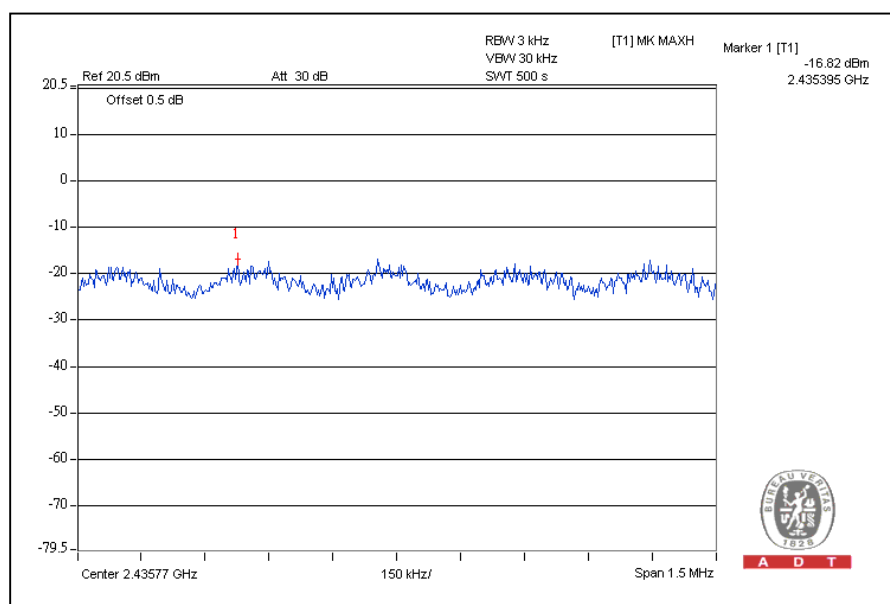
A D T

DRAFT 802.11n (40MHz) OFDM MODULATION:

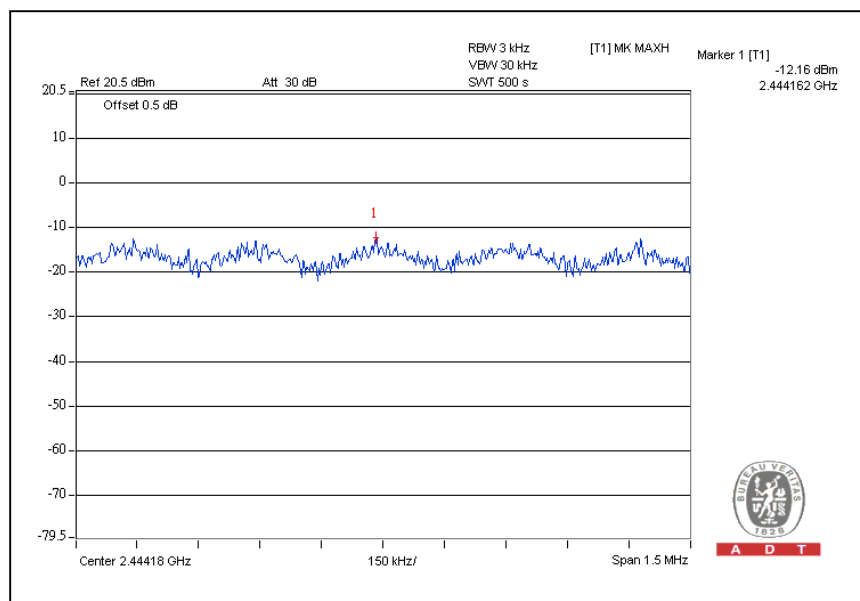
MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 972hPa
TESTED BY	Phoenix Huang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (mW)		RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)	CHAIN(0)	CHAIN(1)				
1	2422	0.022	0.019	-16.62	-17.28	0.041	-13.87	8	PASS
4	2437	0.061	0.095	-12.16	-10.21	0.156	-8.07	8	PASS
7	2452	0.019	0.020	-17.31	-17.02	0.039	-14.09	8	PASS

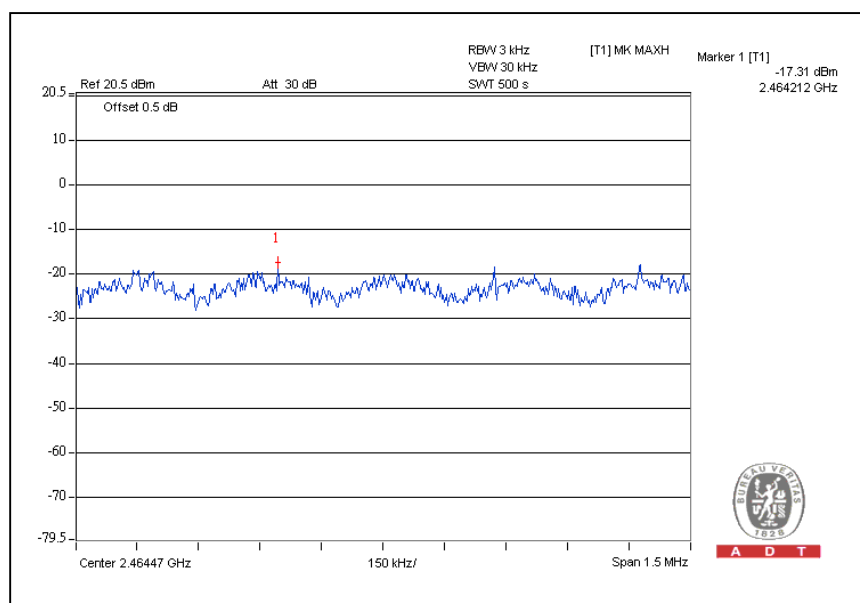
For Chain (0): CH1



CH4



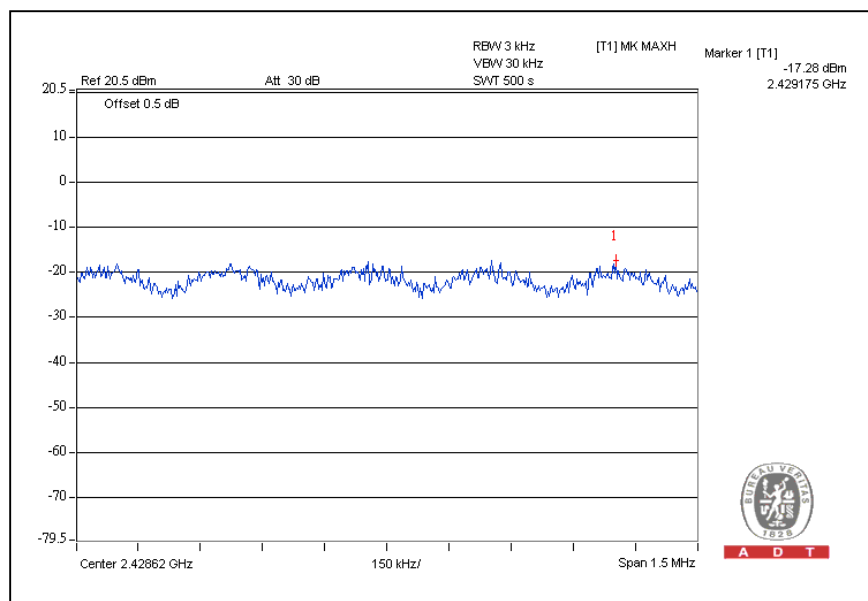
CH7



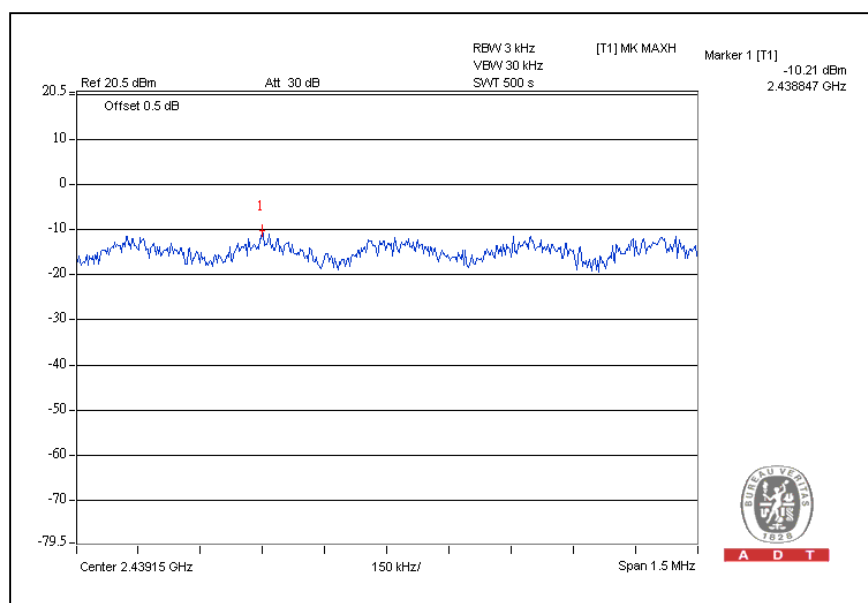


A D T

For Chain (1): CH1



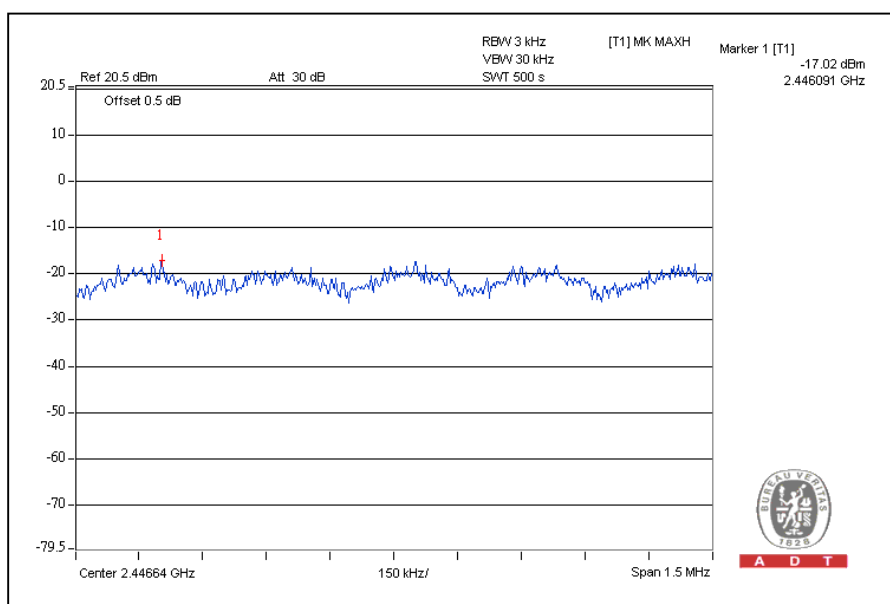
CH4





A D T

CH7



4.6 CONDUCTED OUT-BAND EMISSION MEASUREMENT

4.6.1 LIMITS OF CONDUCTED OUT-BAND EMISSION MEASUREMENT

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

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100036	Dec. 09, 2008	Dec. 08, 2009

NOTE:

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

4.6.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low lose cable. Set both RBW and VBW of spectrum analyzer to 100kHz and 300kHz with suitable frequency span including 100 MHz bandwidth from band edge. The band edges was measured and recorded.

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

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 EUT OPERATING CONDITION

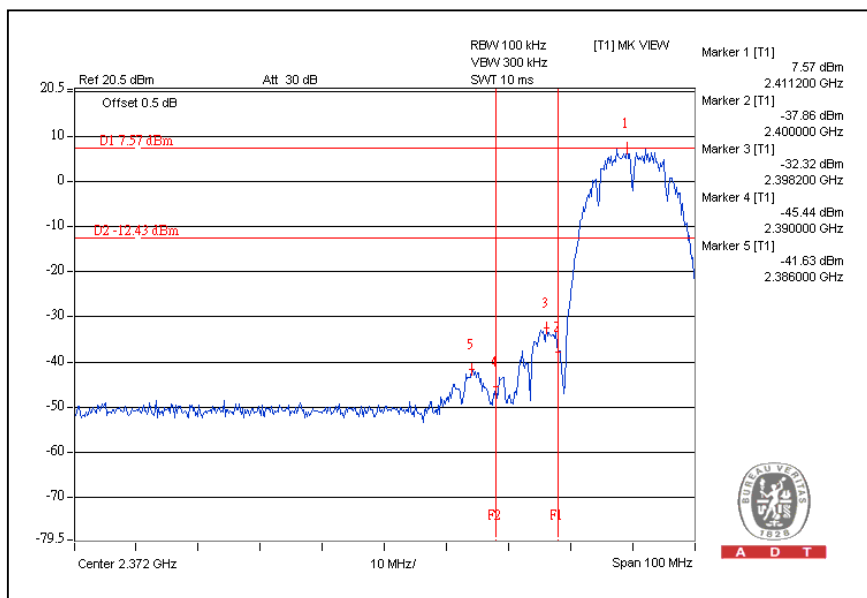
Same as Item 4.2.6

4.6.6 TEST RESULTS

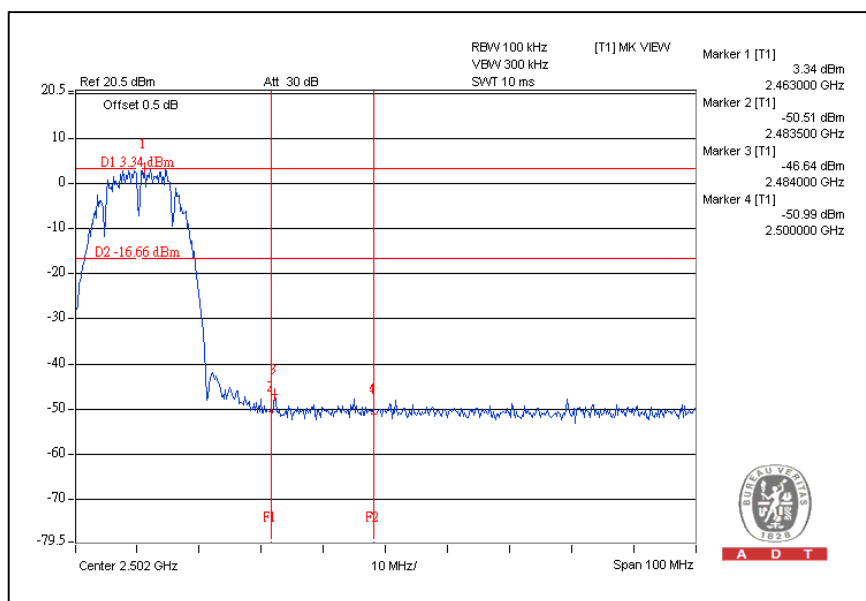
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).

802.11b DSSS MODULATION:

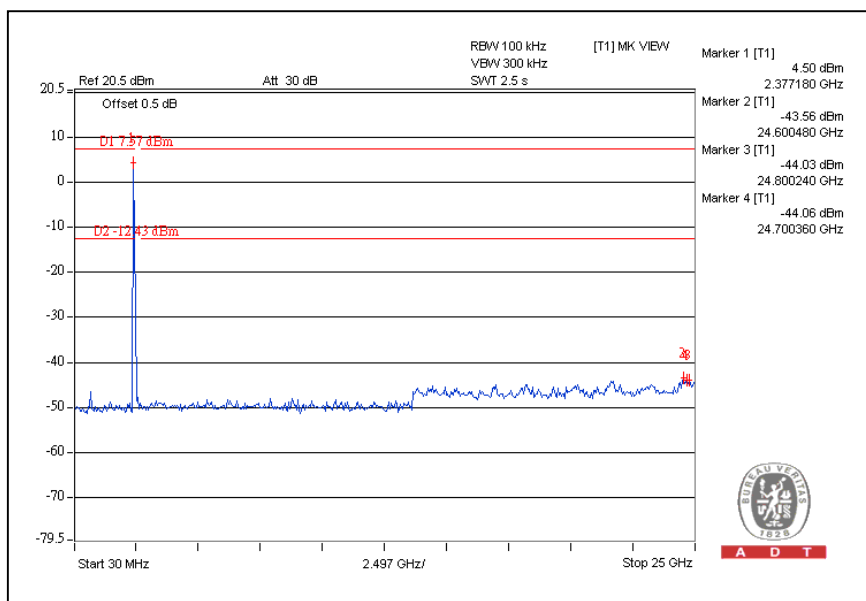
CH1



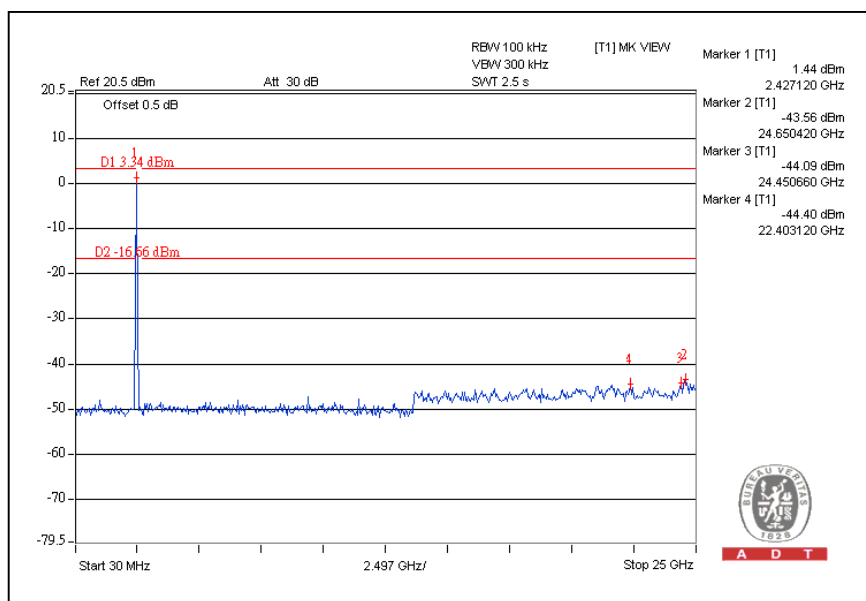
CH11



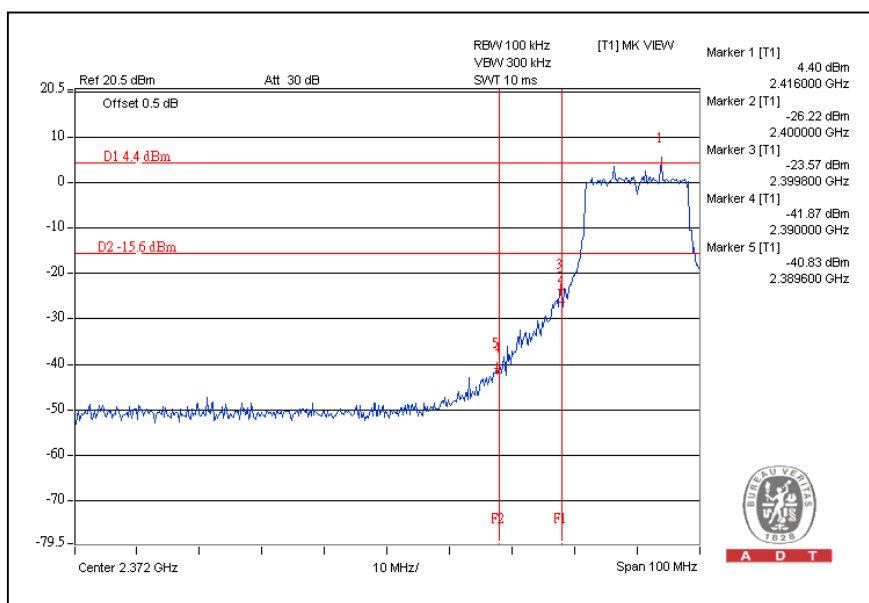
CH1



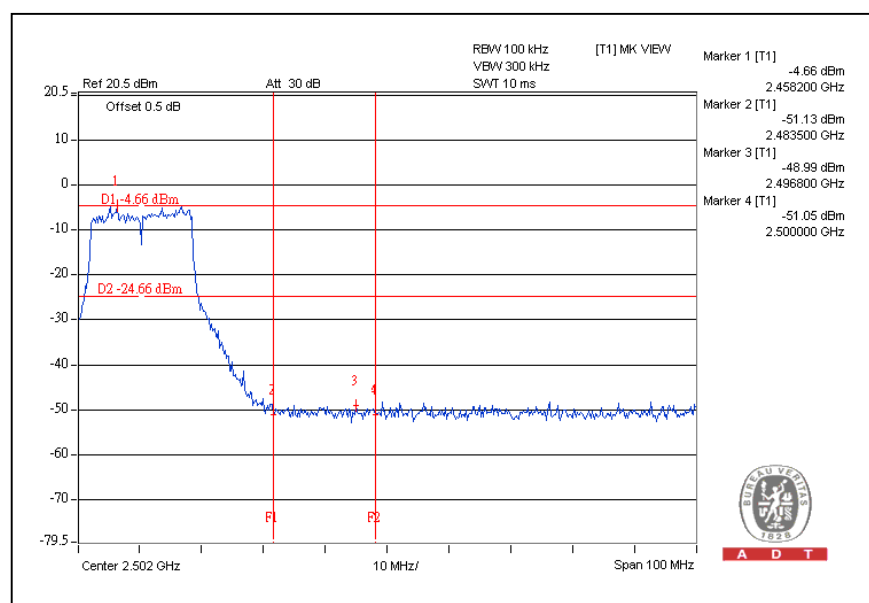
CH11



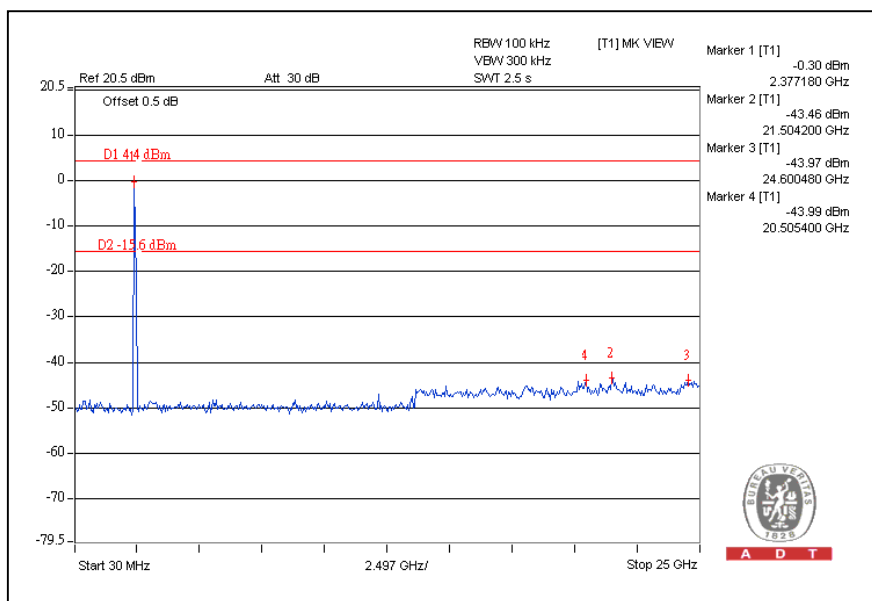
802.11g OFDM MODULATION: For Chain (0):CH1



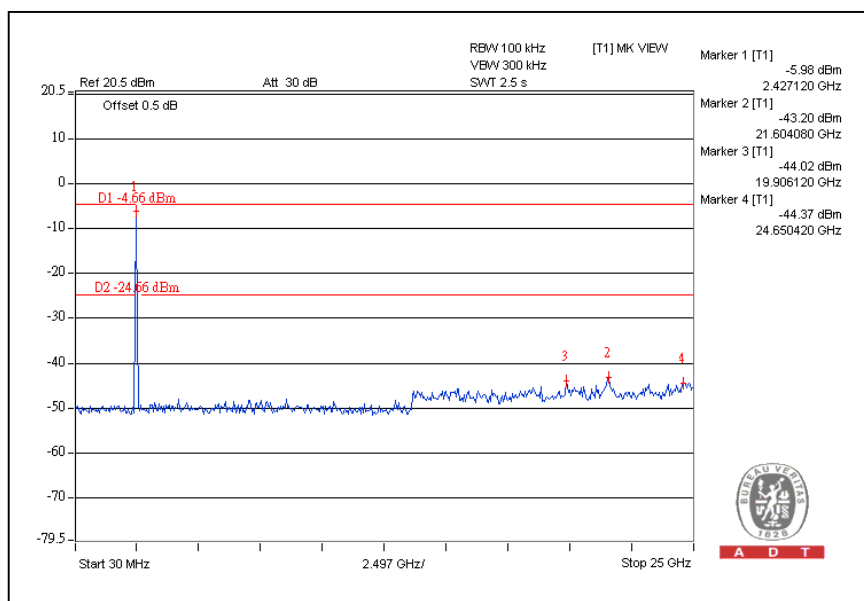
CH11



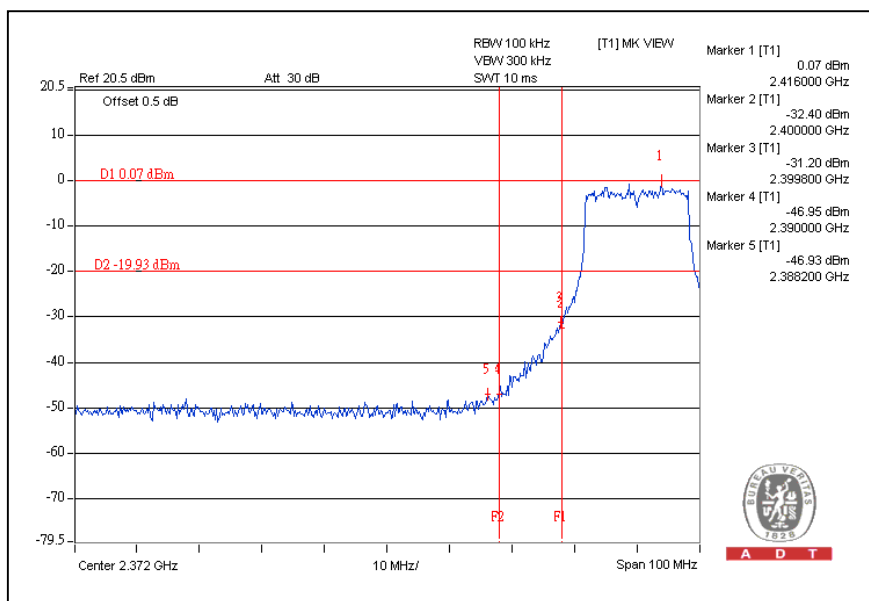
CH1



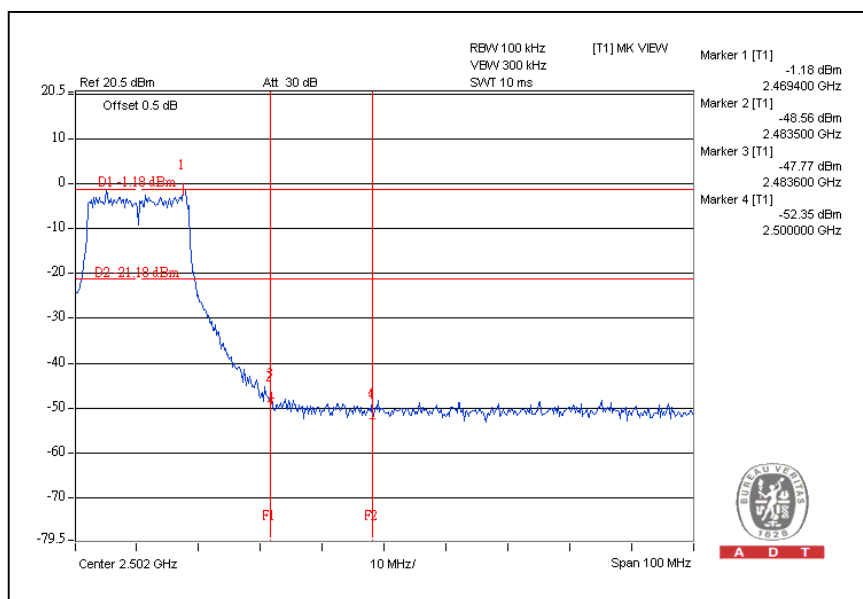
CH11



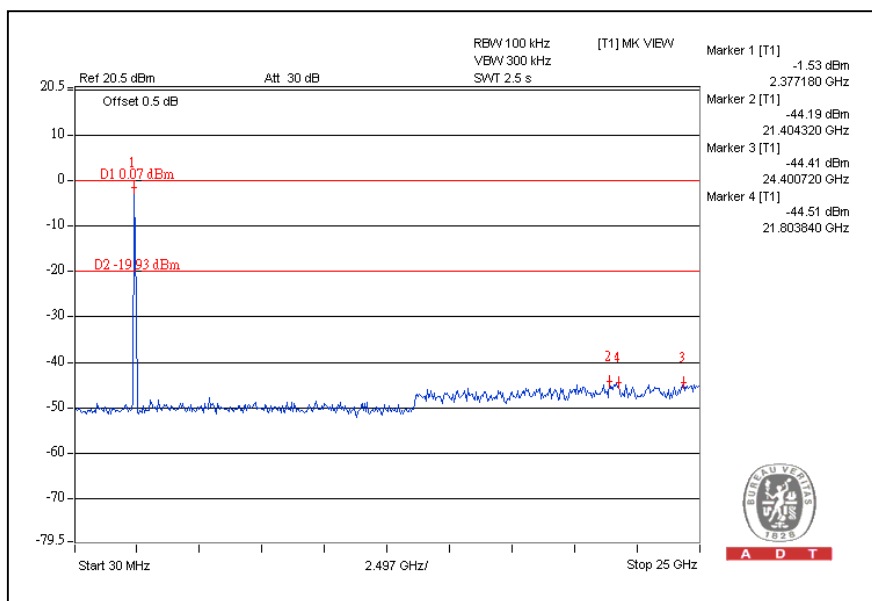
For Chain (1):CH1



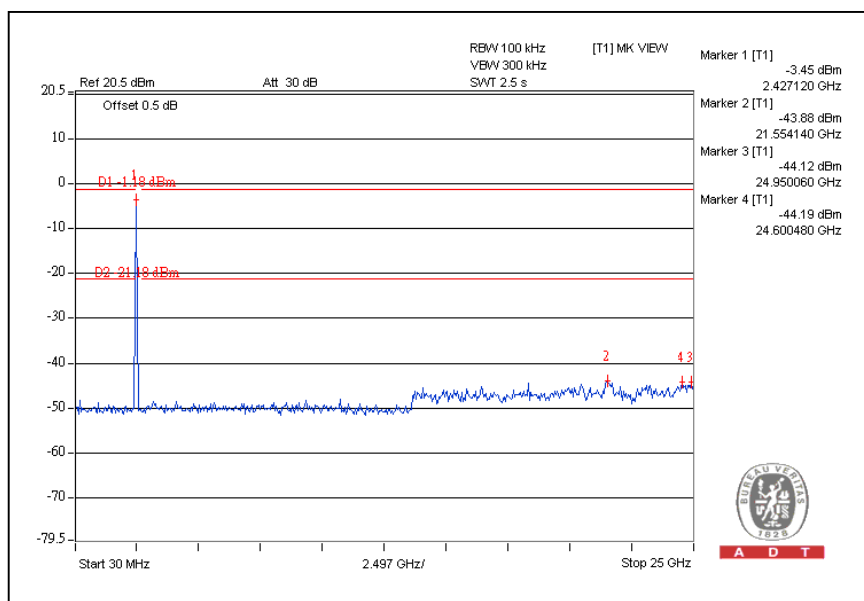
CH11



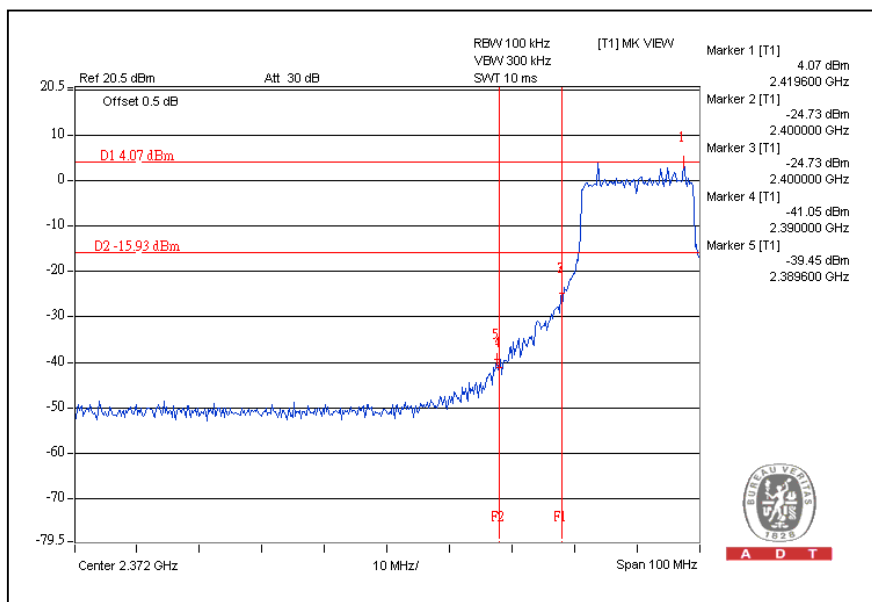
CH1



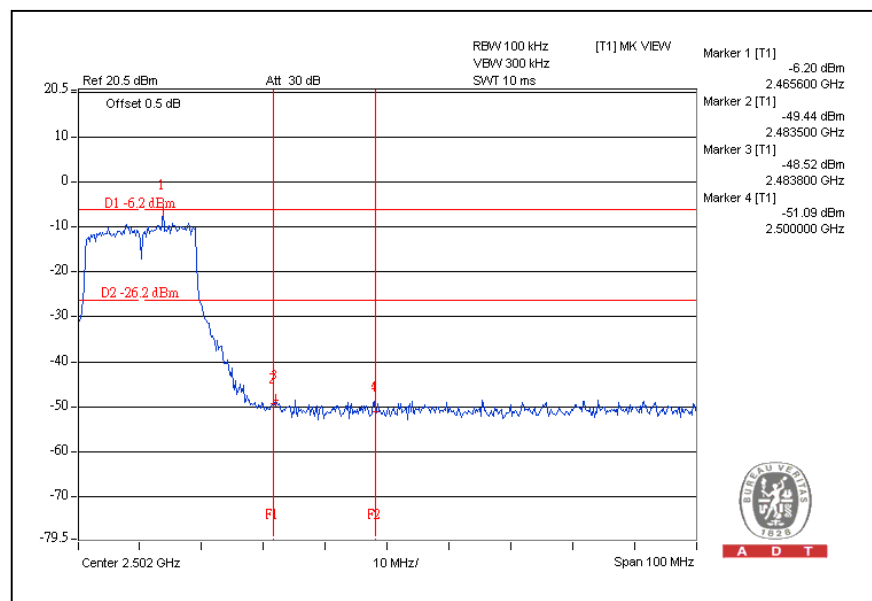
CH11



DRAFT 802.11n (20MHz) OFDM MODULATION: For Chain (0):CH1



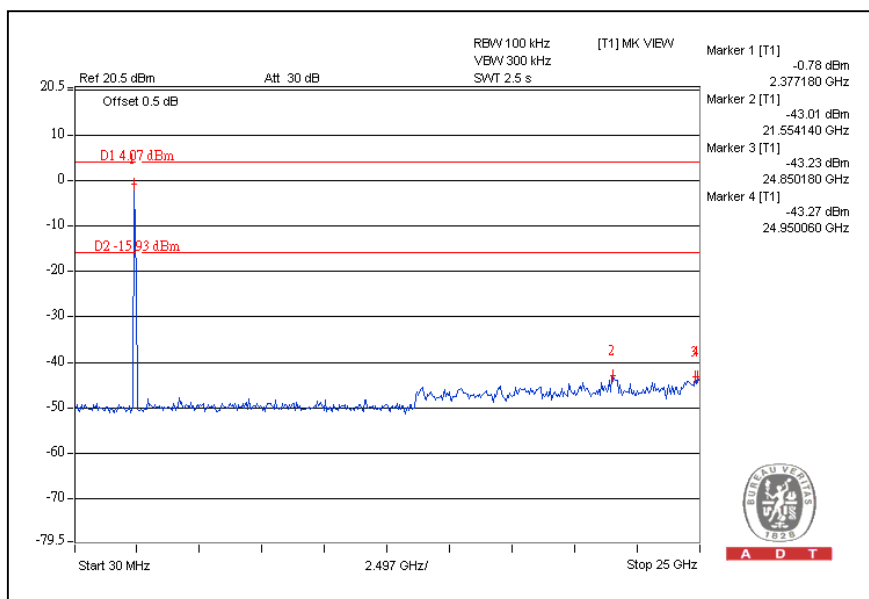
CH11





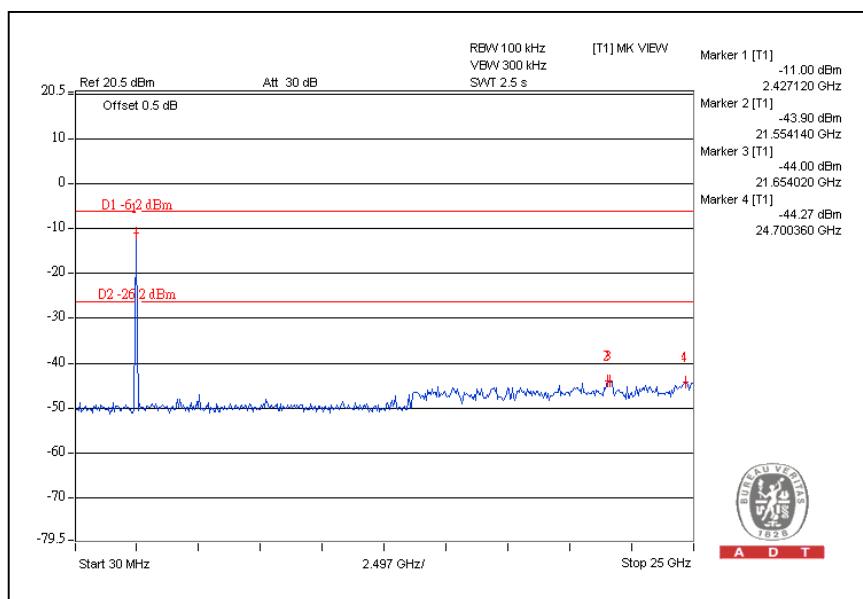
A D T

CH1



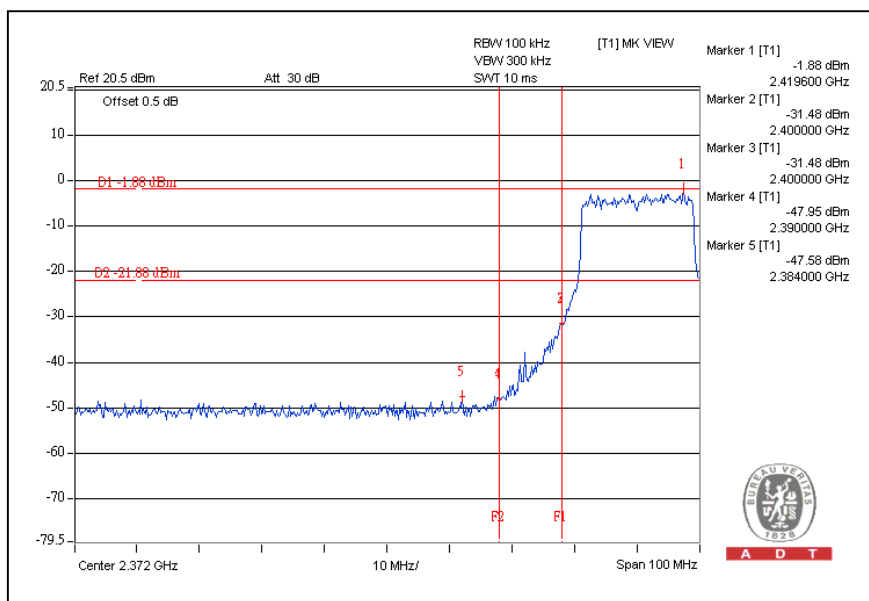
A D T

CH11

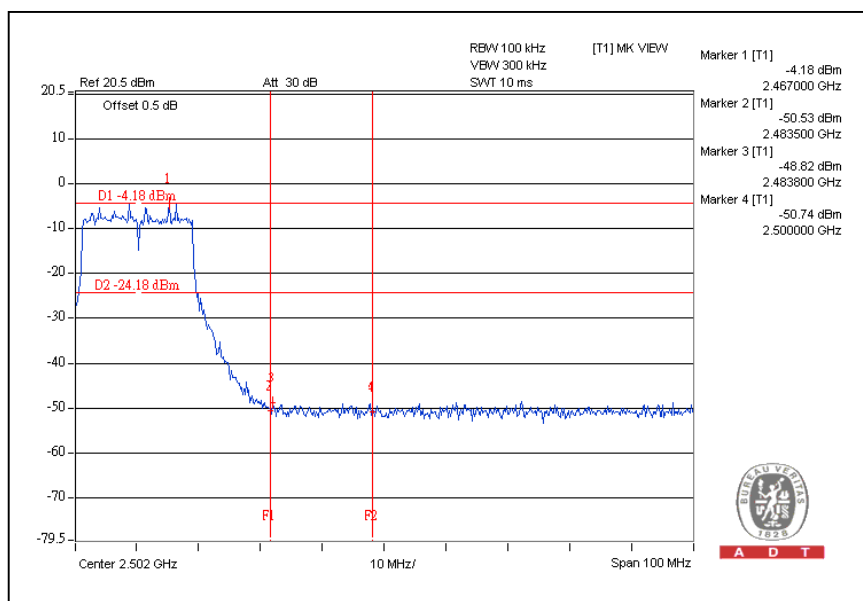


A D T

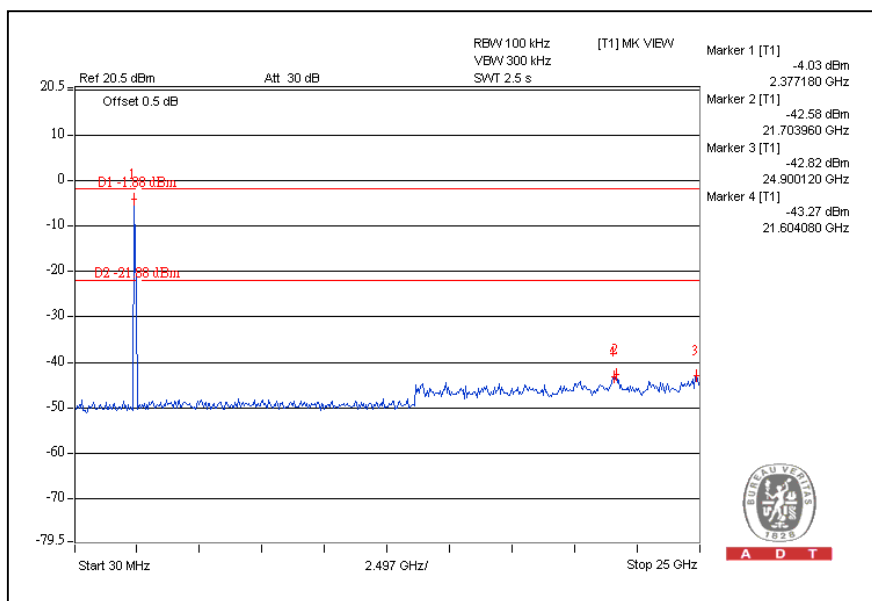
For Chain (1):CH1



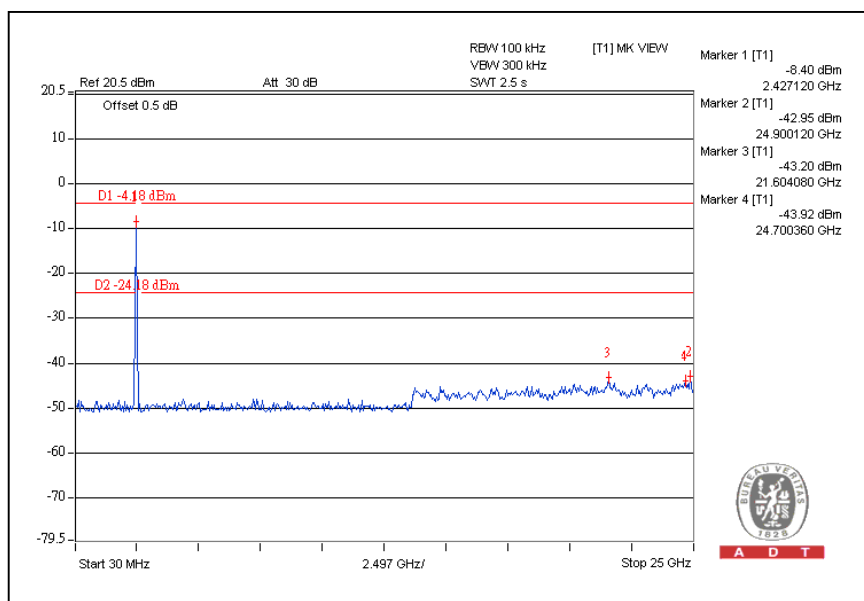
CH11



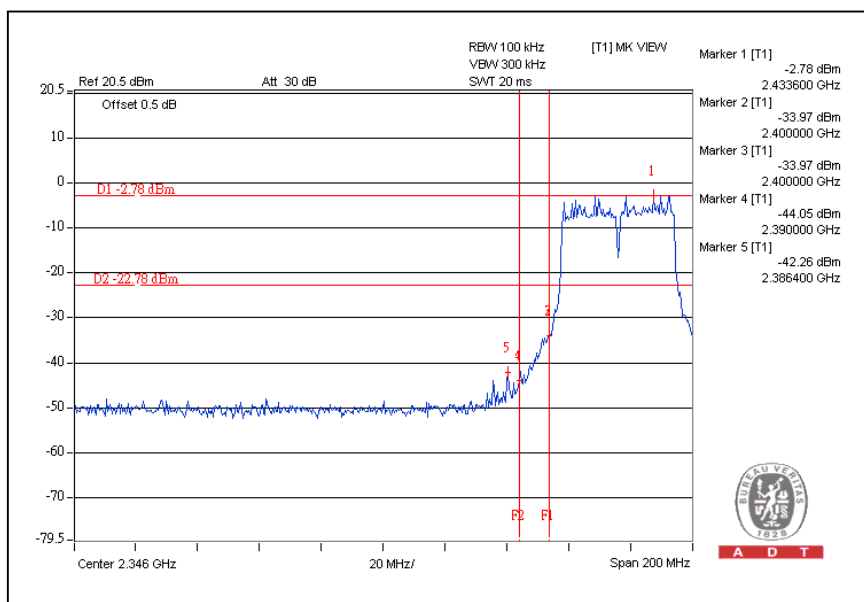
CH1



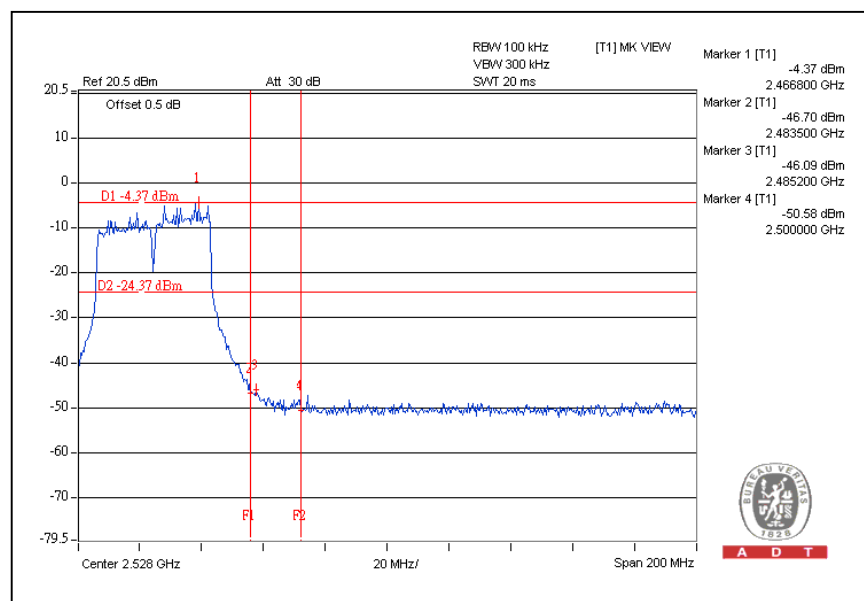
CH11



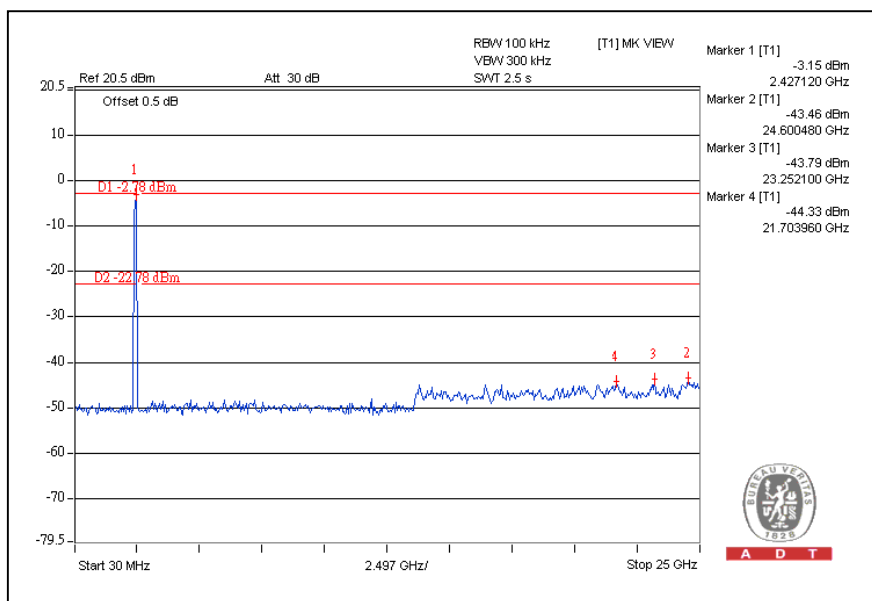
DRAFT 802.11n (40MHz) OFDM MODULATION: For Chain (0):CH1



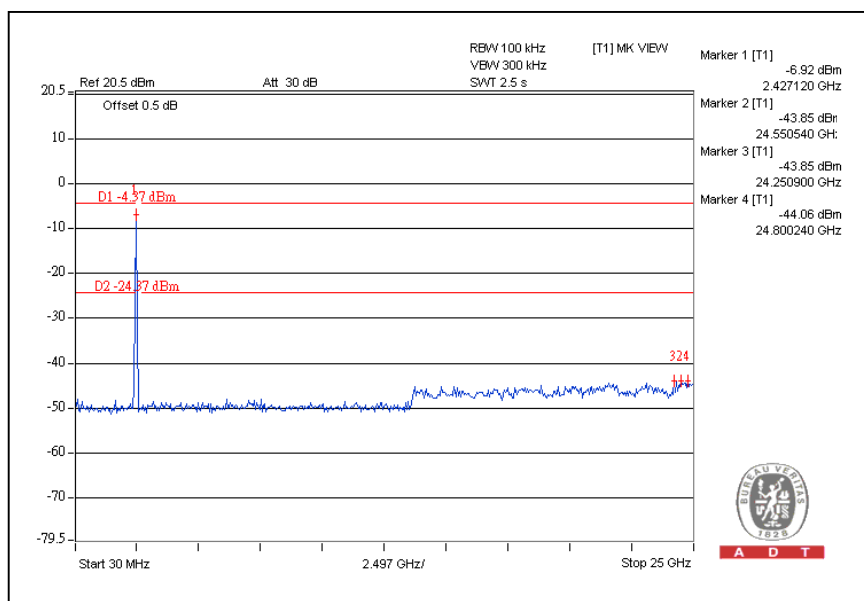
CH7



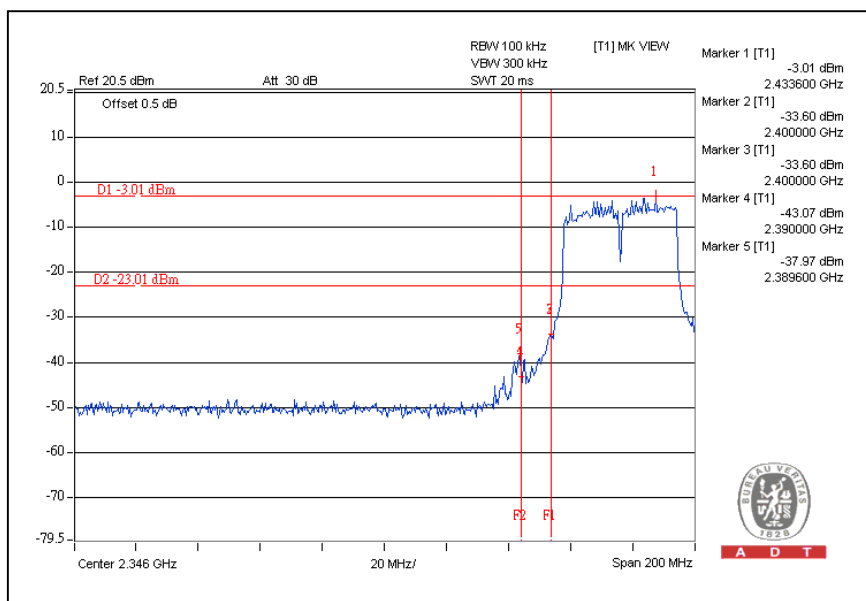
CH1



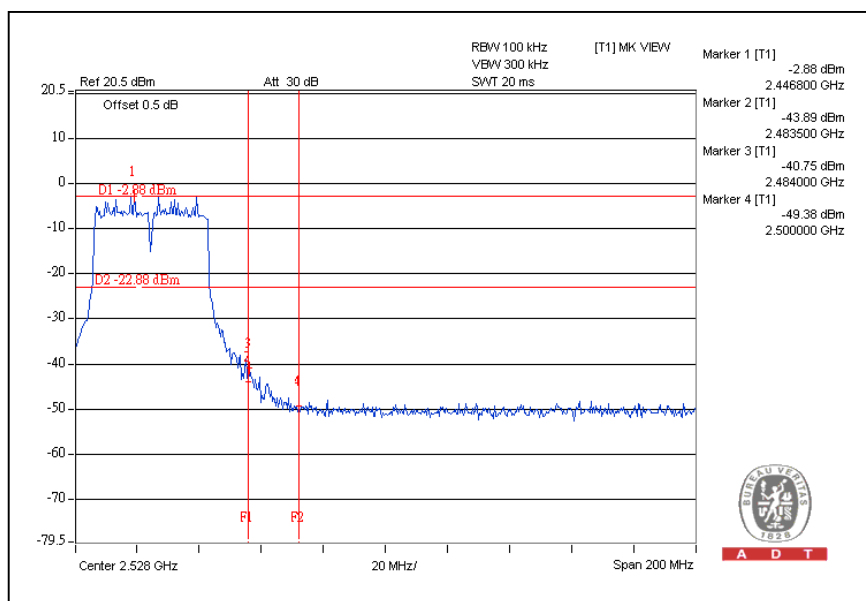
CH7



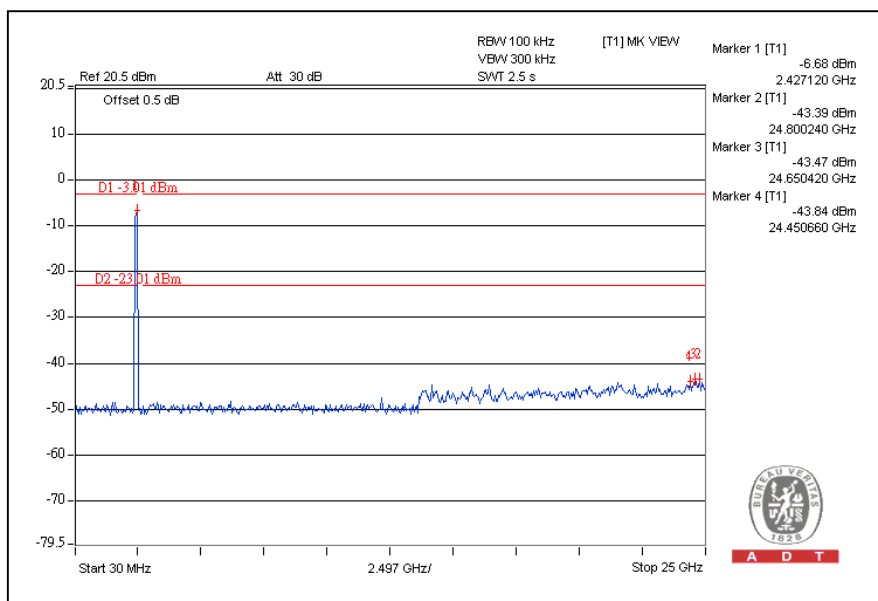
For Chain (1):CH1



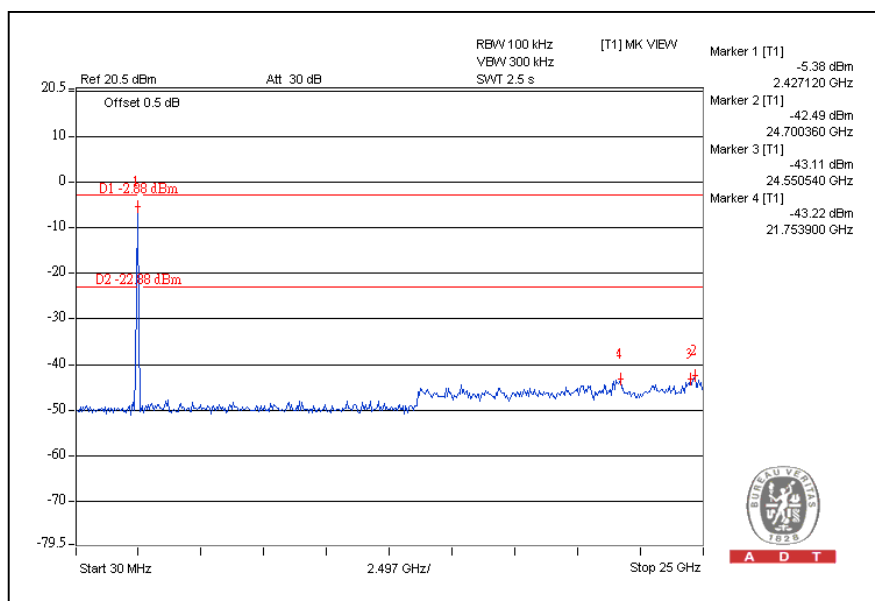
CH7



CH1



CH7



4.7 ANTENNA REQUIREMENT

4.7.1 STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

4.7.2 ANTENNA CONNECTED CONSTRUCTION

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

Set No.	Transmitter Circuit	Antenna Type	Antenna Gain (dBi)	Antenna Connector
Set 1	Chain(0)	PIFA	3.47654	NA
	Chain(1)			
Set 2	Chain(0)	Dipole	4.98	MMCX
	Chain(1)			

**A D T**

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 by the following approval agencies according to ISO/IEC 17025.

USA	FCC, NVLAP
Germany	TUV Rheinland
Japan	VCCI
Norway	NEMKO
Canada	INDUSTRY CANADA, CSA
R.O.C.	TAF, BSMI, NCC
Netherlands	Telefication
Singapore	GOST-ASIA(MOU)
Russia	CERTIS(MOU)

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

Linko EMC/RF Lab:

Tel: 886-2-26052180

Fax: 886-2-26052943

Hsin Chu EMC/RF Lab:

Tel: 886-3-5935343

Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab:

Tel: 886-3-3183232

Fax: 886-3-3185050

Web Site: www.adt.com.tw

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



A D T

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

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

--- END ---