FCC TEST REPORT

REPORT NO.: RF971208H06

MODEL NO.: WRT160N v3

RECEIVED: Dec. 08, 2008

TESTED: Dec. 08 to 24, 2008

ISSUED: Dec. 25, 2008

APPLICANT: Cisco-Linksys LLC

ADDRESS: 121 Theory Drive Irvine, CA 92617 (USA)

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

ADDRESS: No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan

TEST LAB (1): Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory

LAB LOCATION: No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan

TEST LAB (2): Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories

LAB LOCATION: No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan

Lin Kou Laboratories

Hsin Chu Laboratory

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1. CERTIFICATION

PRODUCT :	Wireless-N Broadband Router
MODEL NO.:	WRT160N v3
BRAND :	Linksys
APPLICANT :	Cisco-Linksys LLC
TESTED :	Dec. 08 to 24, 2008
TEST SAMPLE :	ENGINEERING SAMPLE
STANDARDS :	FCC Part 15, Subpart C (Section 15.247), ANSI C63.4-2003

We, **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, declare that the equipment above has been tested in our facility and found compliance with the requirement limits of applicable standards. The test record, data evaluation and Equipment Under Test (EUT) configurations represented herein are true and accurate under the standards herein specified. This report contains conducted emission test data and radiated emission test data (below 1 GHz) that were produced under subcontract by Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories.

PREPARED BY : Sunny Wen , **DATE:** Dec. 25, 2008
(Sunny Wen, Specialist)

TECHNICAL ACCEPTANCE : , **DATE:** Dec. 25, 2008
Responsible for RF
(Hank Chung, Deputy Manager)

APPROVED BY : , **DATE:** Dec. 25, 2008
(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 -13.30dB at 0.185MHz.
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 -0.51dB at 4824.00MHz.
15.247(e)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit.
15.247(d)	Band Edge 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.

For Lab 1:

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

For Lab 2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	3.19 dB
	200MHz ~1000MHz	3.21 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Wireless-N Broadband Router
MODEL NO.	WRT160N v3
FCC ID	Q87-WRT160NV3
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): 65 / 58.5 / 52 / 39 / 26 / 19.5 / 13 / 6.5Mbps Draft 802.11n (40MHz, 800ns GI): 135 / 121.5 / 108 / 81 / 54 / 40.5 / 27 / 13.5Mbps Draft 802.11n (20MHz, 400ns GI): 72.2 / 65 / 57.8 / 43.3 / 28.9 / 21.7 / 14.4 / 7.2Mbps Draft 802.11n (40MHz, 400ns GI): 150 / 135 / 120 / 90 / 60 / 45 / 30 / 15Mbps
FREQUENCY RANGE	2412MHz ~ 2462MHz
NUMBER OF CHANNEL	11 for 802.11b, 802.11g, draft 802.11n (20MHz) 7 for draft 802.11n (40MHz)
MAXIMUM OUTPUT POWER	802.11b: 144.544mW 802.11g: 301.995mW draft 802.11n (20MHz): 769.642mW draft 802.11n (40MHz): 824.249mW
ANTENNA TYPE	Pifa antenna without connecter (Antenna gain : 1.5dBi)
DATA CABLE	NA
I/O PORT	WAN Port x 1, LAN Port x 4
ASSOCIATED DEVICES	Adapter x 1

NOTE:

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

Brand:	Bestec
Model No.:	EA0061WAA
Input power :	AC100-240V, 0.5A, 50-60Hz
Output power :	DC 12V, 0.5A DC output cable (Unshielded, 1.8m)

2. The EUT was pre-tested in chamber under the following modes:

Test Mode	**Description**
Mode A	Level-set (Put on tabletop)
Mode B	**Tower-set (Wall-mounted)**

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

3. The EUT incorporates a MIMO function with draft 802.11n. Physically, the card provides two completed transmits and two receivers.

4. 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 antennas. Spatial multiplexing modes for simultaneous transmission using 2 antennas, and for simultaneous receiver using 2 antennas.

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

6. 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 ³ 1G	APCM	
-	√	√	√	√	-

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

RE ³ 1G: Radiated Emission above 1GHz **APCM:** Antenna Port Conducted Measurement

POWER LINE CONDUCTED EMISSION TEST:

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

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
Draft 802.11n (40MHz)	1 to 7	4	OFDM	BPSK	27

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)
Draft 802.11n (40MHz)	1 to 7	4	OFDM	BPSK	27

RADIATED EMISSION TEST (ABOVE 1 GHZ):

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

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
Draft 802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	13
Draft 802.11n (40MHz)	1 to 7	1, 4, 7	OFDM	BPSK	27

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)
802.11b	1 to 11	1, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 11	OFDM	BPSK	6
Draft 802.11n (20MHz)	1 to 11	1, 11	OFDM	BPSK	13
Draft 802.11n (40MHz)	1 to 7	1, 7	OFDM	BPSK	27

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)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
Draft 802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	13
Draft 802.11n (40MHz)	1 to 7	1, 4, 7	OFDM	BPSK	27

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart C. (15.247)

ANSI C63.4-2003

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.

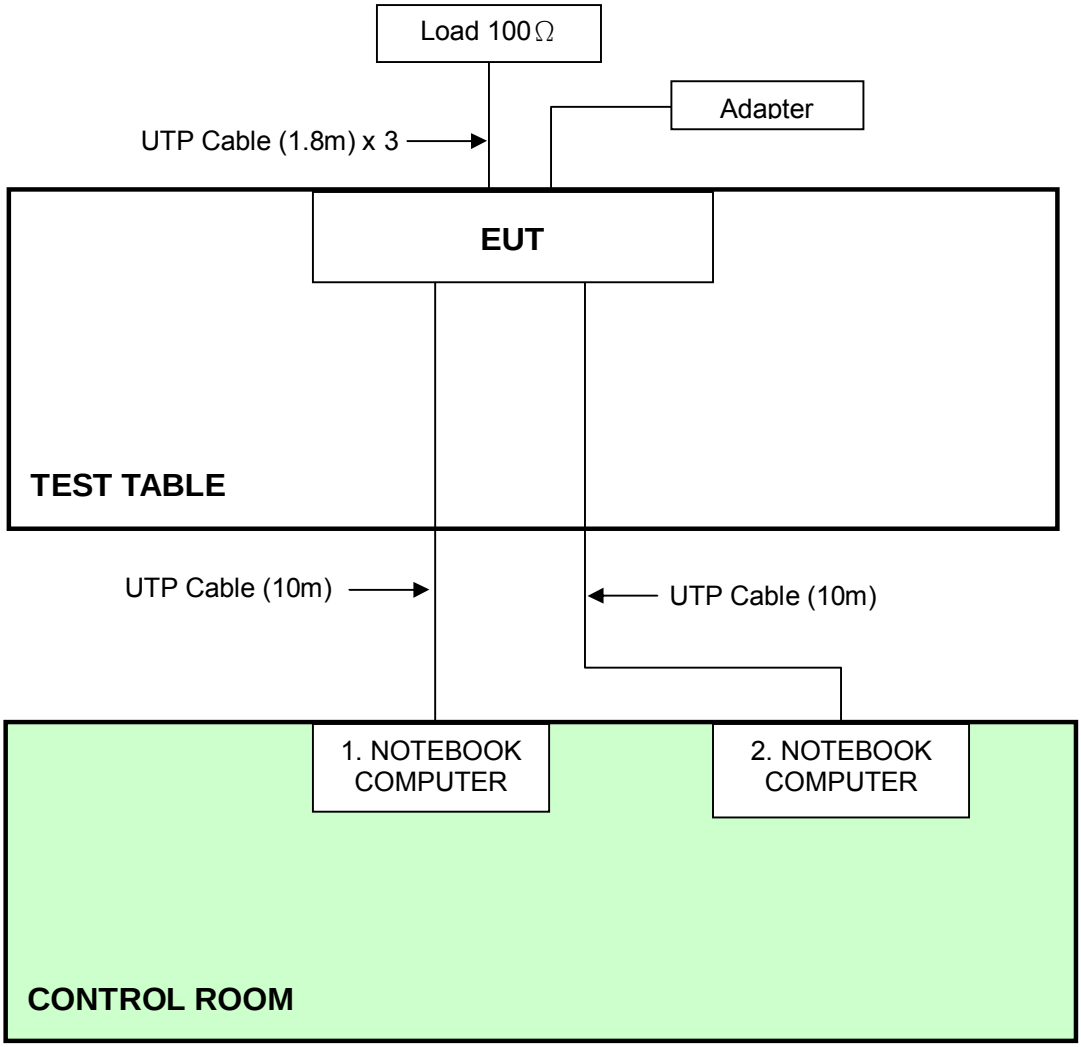
Conducted test and Radiated test – below 1 GHz					
NO.	**PRODUCT**	**BRAND**	**MODEL NO.**	**SERIAL NO.**	**FCC ID**
1	NOTEBOOK COMPUTER	DELL	PP18L	D1T5W1S 28407620224	QDS-BRCM1019
2	NOTEBOOK COMPUTER	DELL	PP05L	14307680656	E2K24CLNS
Radiated test – above 1 GHz					
NO.	**PRODUCT**	**BRAND**	**MODEL NO.**	**SERIAL NO.**	**FCC ID**
1	NOTEBOOK COMPUTER	DELL	PP18L	6976685584	DoC
2	NOTEBOOK COMPUTER	DELL	PP19L	CN-OHC416-70166 -5CA-0448	PIW632500516610
3	HUB	AVSYS	110H8	01-20E-000002	DoC

Conducted test and Radiated test – below 1 GHz	
NO.	**SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS**
1	NA
2	NA
Radiated test – above 1 GHz	
NO.	**SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS**
1	NA
2	NA
3	NA

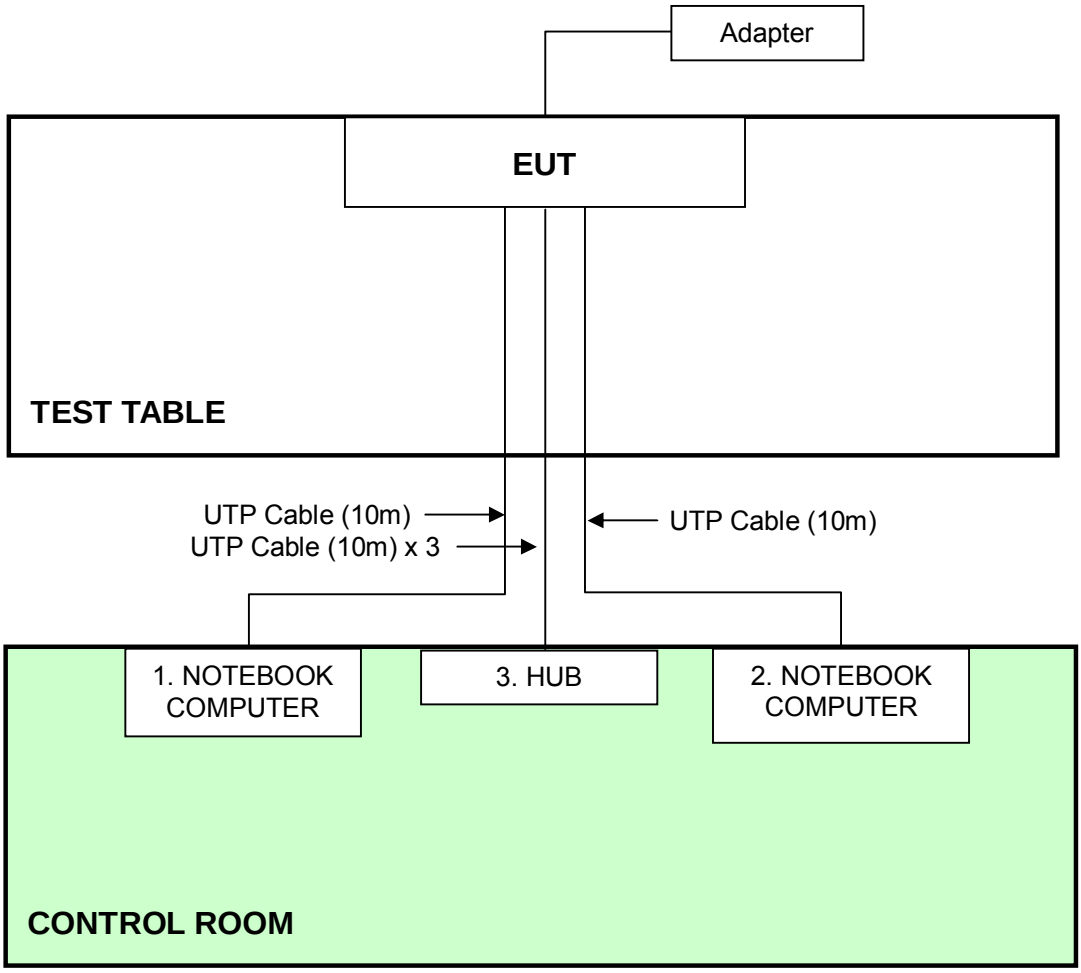
NOTE: All power cords of the above support units are non shielded (1.8m).

3.5 CONFIGURATION OF SYSTEM UNDER TEST

For Conducted & Radiated test - below 1 GHz:



For Radiated test - above 1 GHz:



4. TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Sep. 22, 2008	Sep. 21, 2009
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Jan. 04, 2008	Jan. 03, 2009
LISN ROHDE & SCHWARZ	ESH2-Z5	100100	Jan. 10, 2008	Jan. 09, 2009
LISN ROHDE & SCHWARZ	ESH3-Z5	100311	Jul. 30, 2008	Jul. 29, 2009
Software ADT	ADT_Cond_ V7.3.6	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 HwaYa Shielded Room 2.
3. The VCCI Site Registration No. is C-2047.

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.

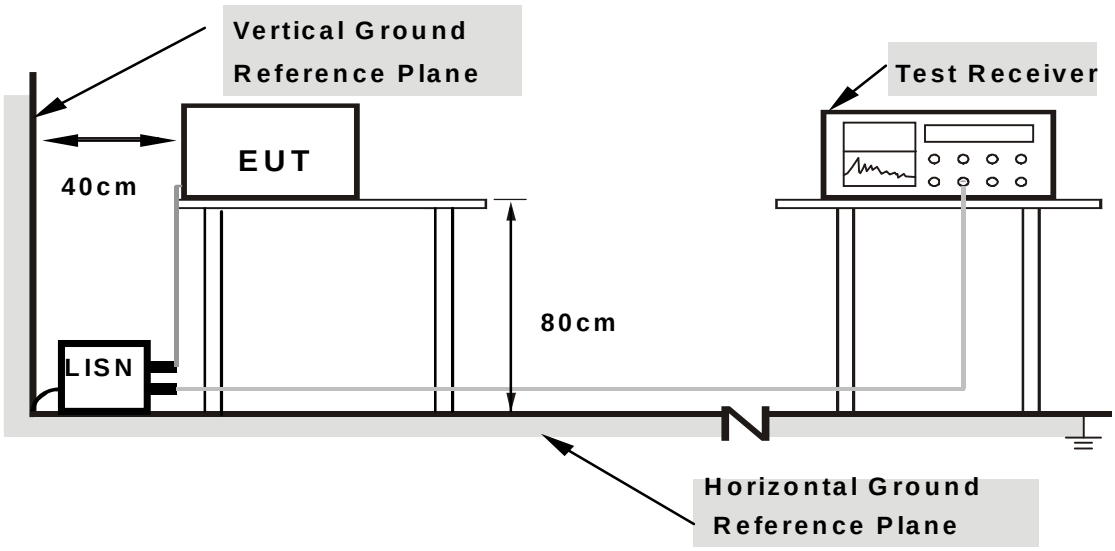
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

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 “MFGTEST” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

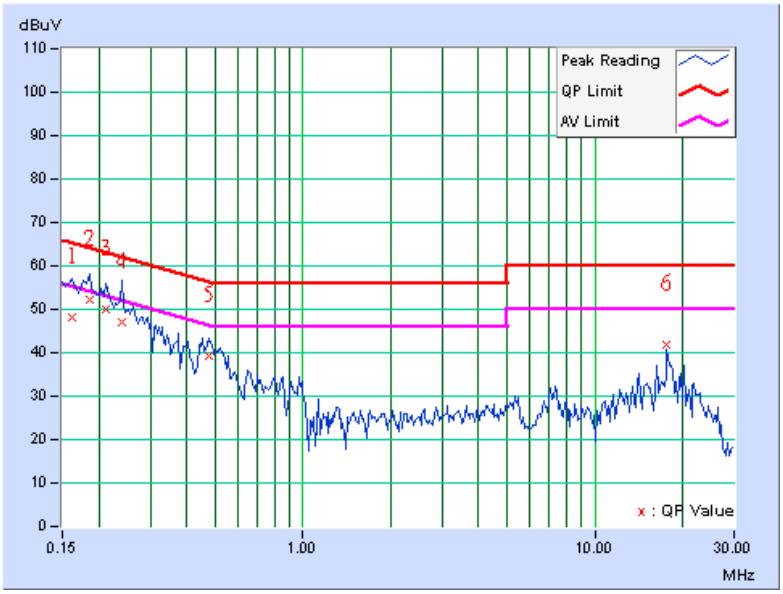
4.1.7 TEST RESULTS (SUBCONTRACT ITEM)

DRAFT 802.11N (40MHZ) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	PHASE	Line (L)
MODULATION TYPE	OFDM	6dB BANDWIDTH	9 kHz
TRANSFER RATE	27Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 963hPa	TESTED BY	Daniel Lin

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.162	0.14	46.63	-	46.77	-	65.38	55.38	-18.61	-
2	**0.185**	**0.13**	**50.82**	**-**	**50.95**	**-**	**64.25**	**54.25**	**-13.30**	**-**
3	0.213	0.12	48.55	-	48.67	-	63.11	53.11	-14.44	-
4	0.240	0.12	45.80	-	45.92	-	62.10	52.10	-16.18	-
5	0.474	0.12	37.67	-	37.79	-	56.44	46.44	-18.64	-
6	17.695	1.41	40.41	-	41.82	-	60.00	50.00	-18.18	-

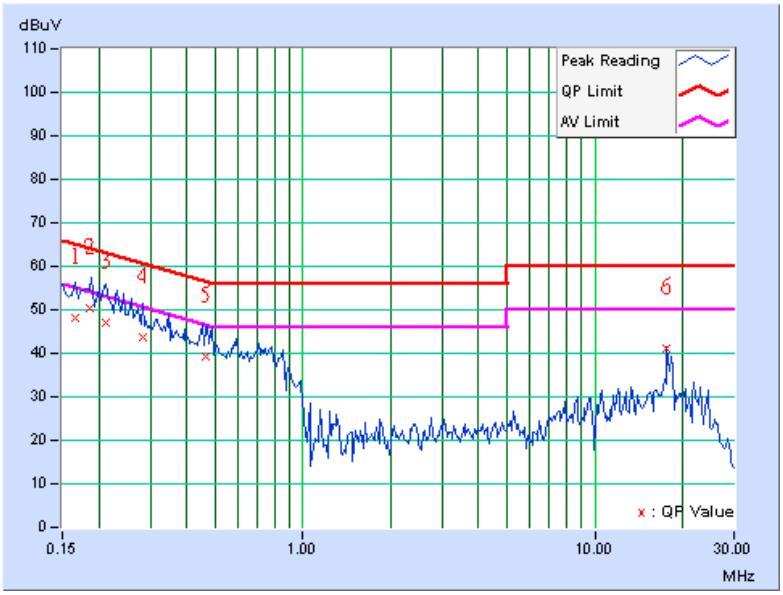
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	PHASE	Line (L)
MODULATION TYPE	OFDM	6dB BANDWIDTH	9 kHz
TRANSFER RATE	27Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 60%RH, 963hPa	TESTED BY	Daniel Lin

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.166	0.10	46.91	-	47.01	-	65.18	55.18	-18.17	-
2	0.185	0.10	49.46	-	49.56	-	64.25	54.25	-14.69	-
3	0.213	0.10	45.87	-	45.97	-	63.11	53.11	-17.14	-
4	0.283	0.10	42.58	-	42.68	-	60.73	50.73	-18.05	-
5	0.466	0.11	38.27	-	38.38	-	56.58	46.58	-18.20	-
6	17.695	1.06	39.97	-	41.03	-	60.00	50.00	-18.97	-

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



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

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

NOTE:

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

4.2.2 TEST INSTRUMENTS

Below 1 GHz:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESI7	838496/016	Dec. 26, 2007	Dec. 25, 2008
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Dec. 08, 2008	Dec. 07, 2009
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Apr. 30, 2008	Apr. 29, 2009
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-408	Jan. 22, 2008	Jan. 21, 2009
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170242	Jan. 07, 2008	Jan. 06, 2009
Preamplifier Agilent	8449B	3008A01960	Nov. 03, 2008	Nov. 02, 2009
Preamplifier Agilent	8447D	2944A10631	Nov. 03, 2008	Nov. 02, 2009
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	274041/4	Aug. 21, 2008	Aug. 20, 2009
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	283397/4	Aug. 21, 2008	Aug. 20, 2009
Software ADT.	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	019303	NA	NA
Turn Table ADT.	TT100.	TT93021704	NA	NA
Turn Table Controller ADT.	SC100.	SC93021704	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	07026401	Aug. 27, 2008	Aug. 26, 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.

2. The test was performed in HwaYa Chamber 4.

3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.

4. The FCC Site Registration No. is 988962.

5. The IC Site Registration No. is IC7450F-4.

Above 1 GHz:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ADVANTEST Spectrum Analyzer	R3271A	85060311	July 16, 2008	July 15, 2009
HP Pre_Amplifier	8449B	3008A01922	Sep. 25, 2008	Sep. 24, 2009
ROHDE & SCHWARZ Test Receiver	ESCS30	100375	April 01, 2008	Mar. 31, 2009
SCHWARZBECK TRILOG Broadband Antenna	VULB 9168	138	April 30, 2008	April 29, 2009
Schwarzbeck Horn_Antenna	BBHA9120	D124	Dec. 09, 2008	Dec. 08, 2009
Schwarzbeck Horn_Antenna	BBHA 9170	BBHA9170153	Jan. 28, 2008	Jan. 27, 2009
RF Switches	EMH-011	08009	Oct. 07, 2008	Oct. 06, 2009
RF CABLE (Chaintek)	SF102	22054-2	Dec. 07, 2008	Dec. 06, 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: R3271A) 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

Below 1 GHz:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi- anechoic chamber. 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 quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.

Above 1 GHz:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10-meter open field 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 and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

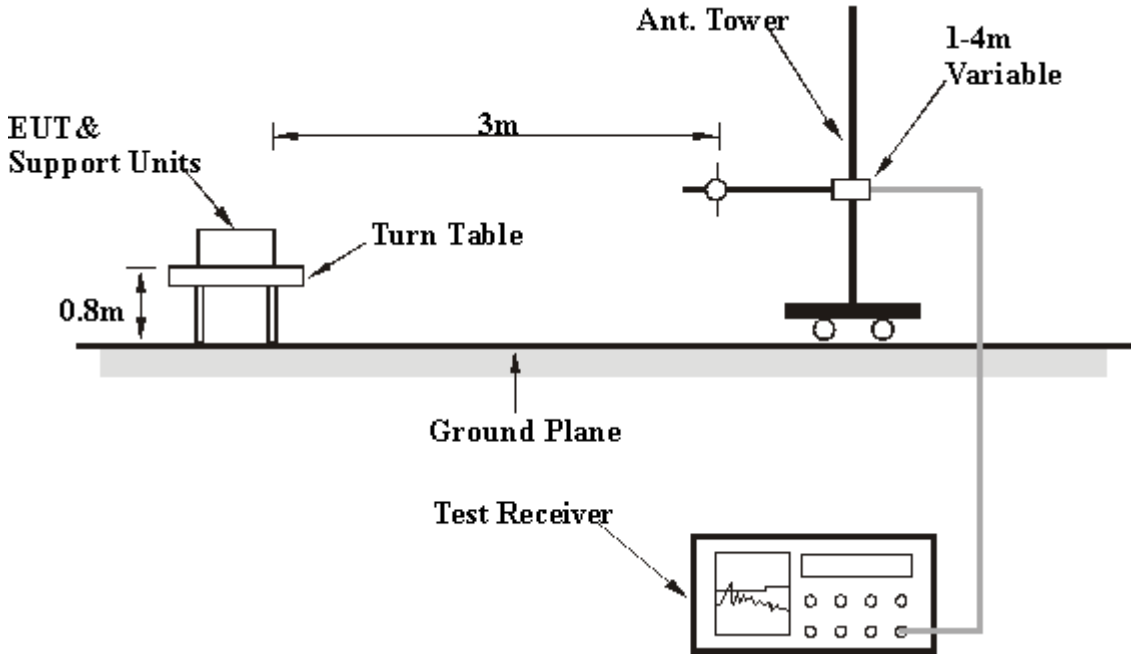
NOTE:

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

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP



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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6

4.2.7 TEST RESULTS – below 1GHz (SUBCONTRACT ITEM)

BELOW 1GHz WORST-CASE DATA：DRAFT 802.11n (40MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 963hPa	TESTED BY	Mark Liao

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	181.55	34.95 QP	43.50	-8.55	1.25 H	298	22.39	12.56
2	249.60	39.33 QP	46.00	-6.67	1.00 H	88	25.65	13.68
3	266.64	44.58 QP	46.00	-1.42	1.01 H	86	30.54	14.04
4	399.31	37.51 QP	46.00	-8.49	1.00 H	52	20.22	17.29
5	599.58	42.06 QP	46.00	-3.94	1.25 H	34	18.95	23.11
6	976.77	36.68 QP	54.00	-17.32	2.00 H	313	7.55	29.13
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	37.68	37.94 QP	40.00	-2.06	2.00 V	37	25.42	12.52
2	70.00	36.11 QP	40.00	-3.89	2.51 V	260	24.13	11.98
3	399.31	38.90 QP	46.00	-7.10	1.25 V	10	21.61	17.29
4	599.58	40.15 QP	46.00	-5.85	1.00 V	76	17.04	23.11
5	751.23	36.82 QP	46.00	-9.18	1.50 V	325	10.95	25.87
6	1000.00	38.72 QP	54.00	-15.28	1.00 V	55	9.20	29.52

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

4.2.8 TEST RESULTS – above 1GHz

802.11b DSSS MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 66%RH 963hPa	TESTED BY	Eric Lee

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	2387.00	63.34 PK	74.00	-10.66	1.31 H	20	33.29	30.05
2	2390.00	46.43 AV	54.00	-7.57	1.31 H	20	16.37	30.06
3	*2412.00	108.78 PK			1.30 H	20	78.63	30.15
4	*2412.00	102.98 AV			1.30 H	20	72.83	30.15
5	4824.00	55.73 PK	74.00	-18.27	1.24 H	98	20.27	35.46
6	**4824.00**	**53.49 AV**	**54.00**	**-0.51**	**1.24 H**	**98**	**18.03**	**35.46**
7	#7236.00	53.26 PK	88.78	-35.52	1.45 H	47	11.41	41.85
8	#7236.00	39.32 AV	82.98	-43.66	1.45 H	47	-2.53	41.85
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2386.00	59.21 PK	74.00	-14.79	1.38 V	339	29.16	30.05
2	2390.00	44.54 AV	54.00	-9.46	1.38 V	339	14.48	30.06
3	*2412.00	107.55 PK			1.38 V	351	77.40	30.15
4	*2412.00	98.85 AV			1.38 V	351	68.70	30.15
5	4824.00	53.42 PK	74.00	-20.58	1.20 V	353	17.96	35.46
6	4824.00	50.04 AV	54.00	-3.96	1.20 V	353	14.58	35.46
7	#7236.00	51.30 PK	87.55	-36.25	1.02 V	45	9.45	41.85
8	#7236.00	37.40 AV	78.85	-41.45	1.02 V	45	-4.45	41.85

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.
6. "#":The radiated frequency is out the restricted band.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 66%RH 963hPa	TESTED BY	Eric Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	109.19 PK			1.29 H	82	78.95	30.24
2	*2437.00	103.72 AV			1.29 H	82	73.48	30.24
3	4874.00	59.25 PK	74.00	-14.75	1.28 H	213	23.70	35.55
4	4874.00	48.07 AV	54.00	-5.93	1.28 H	213	12.52	35.55
5	7311.00	53.65 PK	74.00	-20.35	1.11 H	254	11.61	42.04
6	7311.00	39.69 AV	54.00	-14.31	1.11 H	254	-2.35	42.04
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	108.09 PK			1.32 V	354	77.85	30.24
2	*2437.00	99.32 AV			1.32 V	354	69.08	30.24
3	4874.00	55.68 PK	74.00	-18.32	1.44 V	190	20.13	35.55
4	4874.00	52.51 AV	54.00	-1.49	1.44 V	190	16.96	35.55
5	7311.00	52.30 PK	74.00	-21.70	1.04 V	39	10.26	42.04
6	7311.00	38.10 AV	54.00	-15.90	1.04 V	39	-3.94	42.04

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 66%RH 963hPa	TESTED BY	Eric Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	109.01 PK			1.31 H	83	78.67	30.34
2	*2462.00	103.50 AV			1.31 H	83	73.16	30.34
3	2483.50	70.04 PK	74.00	-3.96	1.92 H	272	39.61	30.43
4	2485.50	48.53 AV	54.00	-5.47	1.92 H	272	18.10	30.43
5	4924.00	56.27 PK	74.00	-17.73	1.01 H	280	20.64	35.63
6	4924.00	53.41 AV	54.00	-0.59	1.01 H	280	17.78	35.63
7	7386.00	53.23 PK	74.00	-20.77	1.11 H	24	11.00	42.23
8	7386.00	39.32 AV	54.00	-14.68	1.11 H	24	-2.91	42.23
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	108.06 PK			1.30 V	342	77.72	30.34
2	*2462.00	99.16 AV			1.30 V	342	68.82	30.34
3	2484.00	59.84 PK	74.00	-14.16	1.47 V	69	29.41	30.43
4	2483.50	44.33 AV	54.00	-9.67	1.47 V	69	13.90	30.43
5	4924.00	55.99 PK	74.00	-18.01	1.00 V	173	20.36	35.63
6	4924.00	52.86 AV	54.00	-1.14	1.00 V	173	17.23	35.63
7	7386.00	52.53 PK	74.00	21.47	1.07 V	41	10.30	42.23
8	7386.00	38.74 AV	54.00	-15.26	1.07 V	41	-3.49	42.23

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

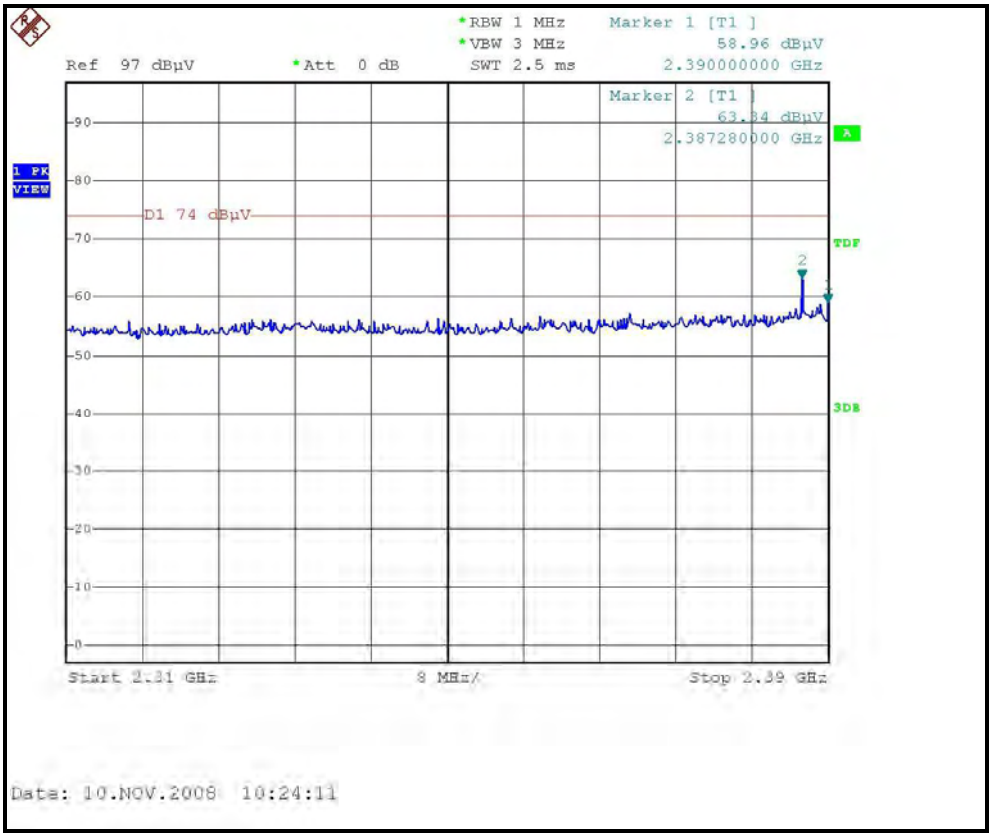
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

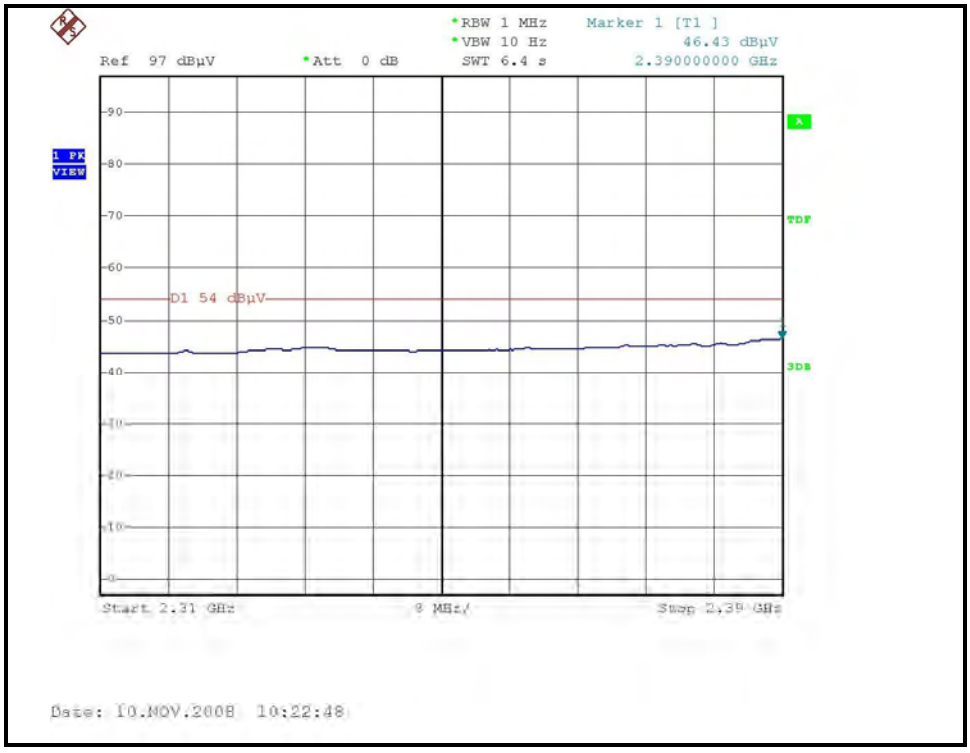
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

RESTRICTED BANDEDGE (802.11b MODE,CH1, HORIZONTAL)





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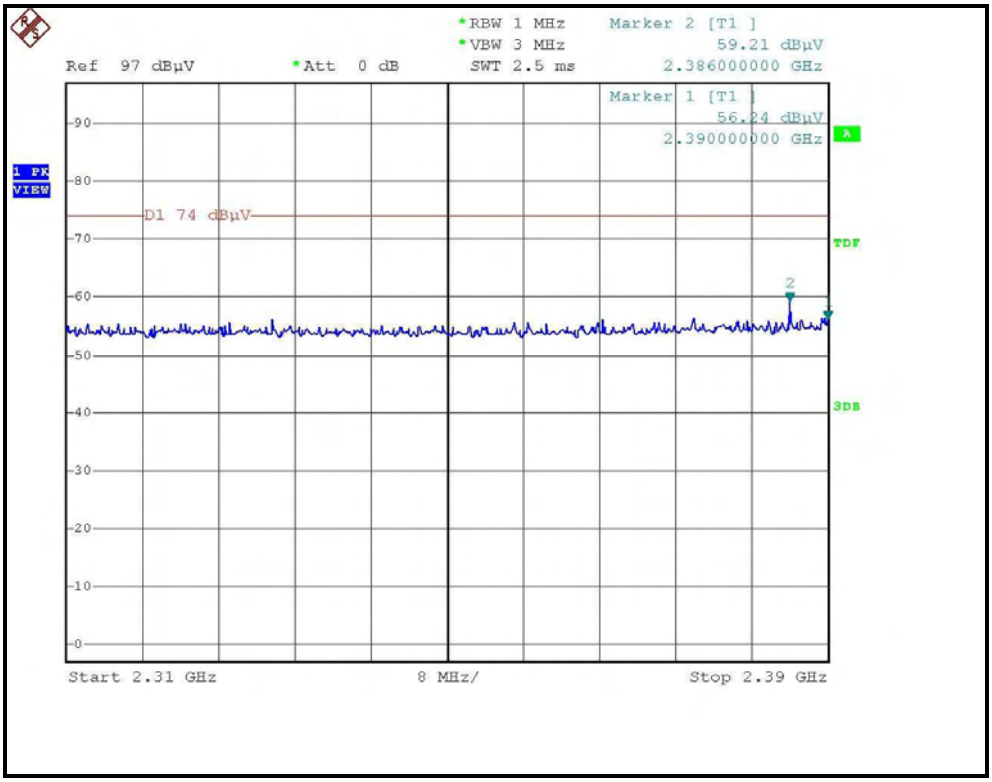

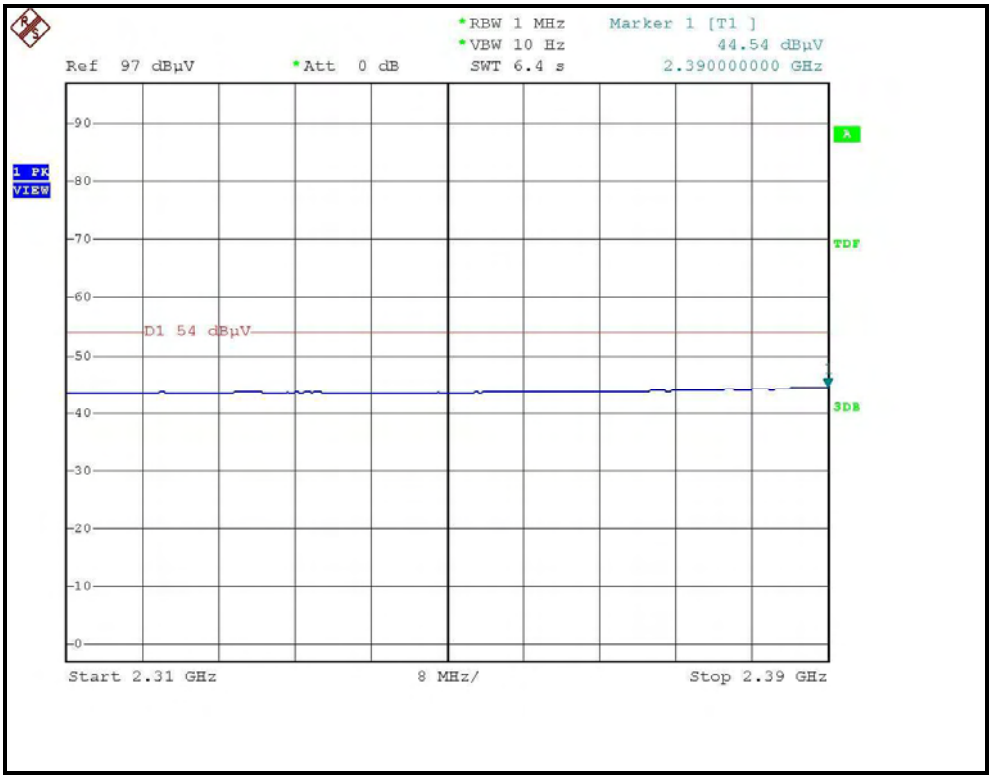

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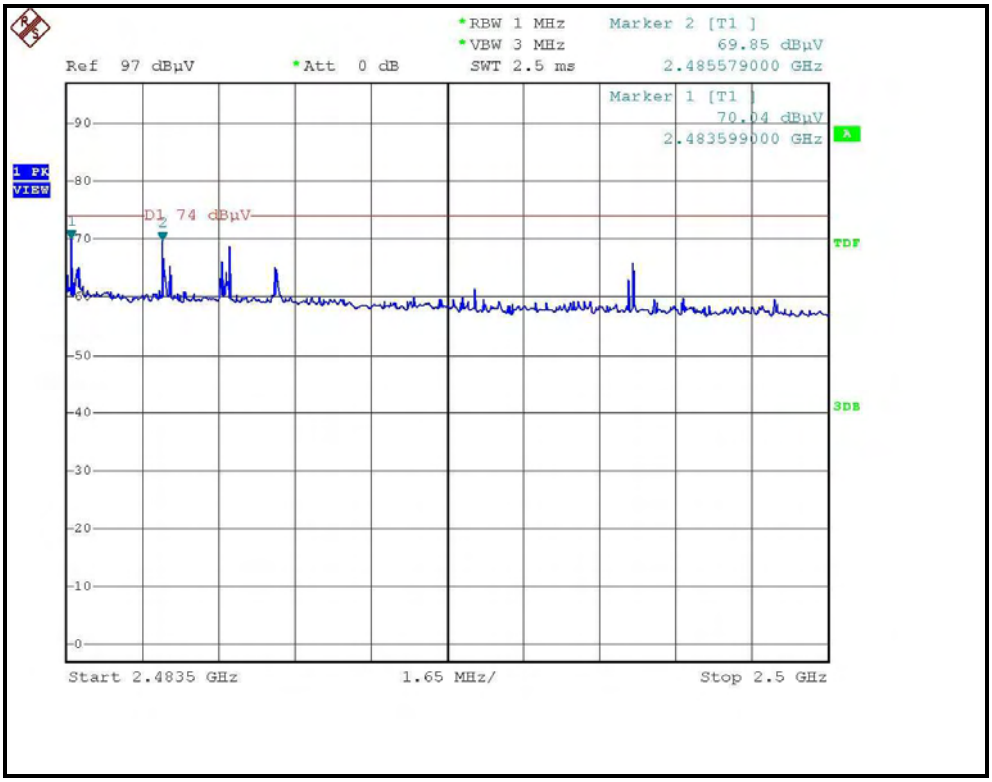
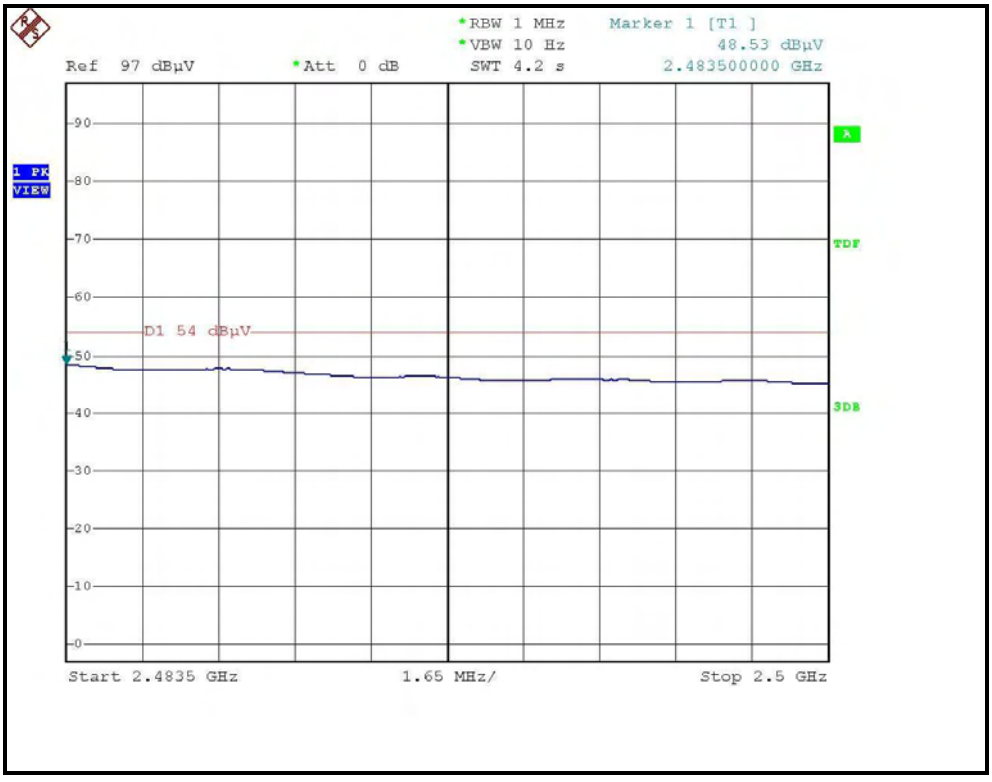
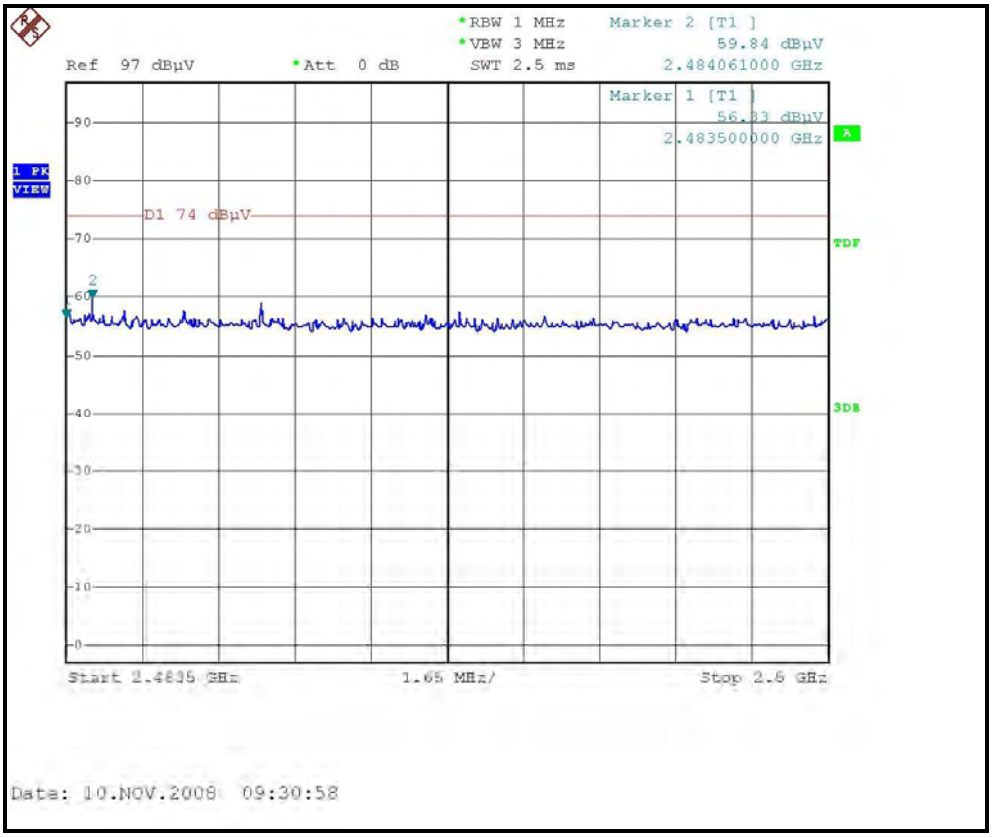
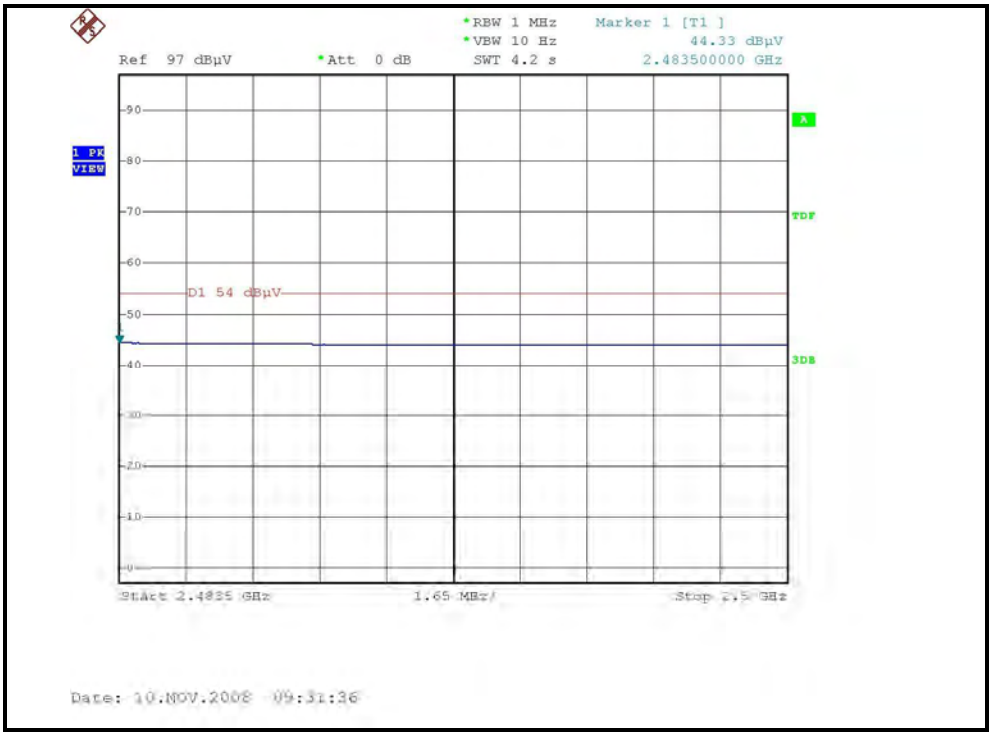




RESTRICTED BANDEDGE (802.11b MODE,CH11, VERTICAL)





802.11g OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 66%RH 963hPa	TESTED BY	Eric Lee

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	73.34 PK	74.00	-0.66	1.58 H	284	43.28	30.06
2	2390.00	51.18 AV	54.00	-2.82	1.58 H	284	21.12	30.06
3	*2412.00	113.72 PK			1.58 H	239	83.57	30.15
4	*2412.00	101.40 AV			1.58 H	239	71.25	30.15
5	4824.00	56.73 PK	74.00	-17.27	1.43 H	58	21.27	35.46
6	4824.00	43.22 AV	54.00	-10.78	1.43 H	58	7.76	35.46
7	#7236.00	53.60 PK	93.72	-40.12	1.61 H	172	11.75	41.85
8	#7236.00	39.73 AV	81.40	-41.67	1.61 H	172	-2.12	41.85
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	62.74 PK	74.00	-11.26	1.64 V	1	32.68	30.06
2	2390.00	44.92 AV	54.00	-9.08	1.64 V	1	14.86	30.06
3	*2412.00	104.58 PK			1.61 V	357	74.43	30.15
4	*2412.00	91.67 AV			1.61 V	357	61.52	30.15
5	4824.00	52.08 PK	74.00	-21.92	1.53 V	78	16.62	35.46
6	4824.00	43.29 AV	54.00	-10.71	1.53 V	78	7.83	35.46
7	#7236.00	51.49 PK	84.58	-33.09	1.26 V	119	9.64	41.85
8	#7236.00	37.89 AV	71.67	-33.78	1.26 V	119	-3.96	41.85

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.
6. "#":The radiated frequency is out the restricted band.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 66%RH 963hPa	TESTED BY	Eric Lee

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	114.81 PK			1.60 H	240	84.57	30.24
2	*2437.00	101.50 AV			1.60 H	240	71.26	30.24
3	4874.00	57.08 PK	74.00	-16.92	1.38 H	90	21.53	35.55
4	4874.00	43.19 AV	54.00	-10.81	1.38 H	90	7.64	35.55
5	7311.00	52.74 PK	74.00	-21.26	1.58 H	270	10.70	42.04
6	7311.00	38.63 AV	54.00	-15.37	1.58 H	270	-3.41	42.04
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	104.63 PK			1.70 V	359	74.39	30.24
2	*2437.00	92.01 AV			1.70 V	359	61.77	30.24
3	4874.00	51.04 PK	74.00	-22.96	1.41 V	62	15.49	35.55
4	4874.00	44.55 AV	54.00	-9.45	1.41 V	62	9.00	35.55
5	7311.00	52.80 PK	74.00	-21.20	1.50 V	326	10.76	42.04
6	7311.00	38.71 AV	54.00	-15.29	1.50 V	326	-3.33	42.04

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

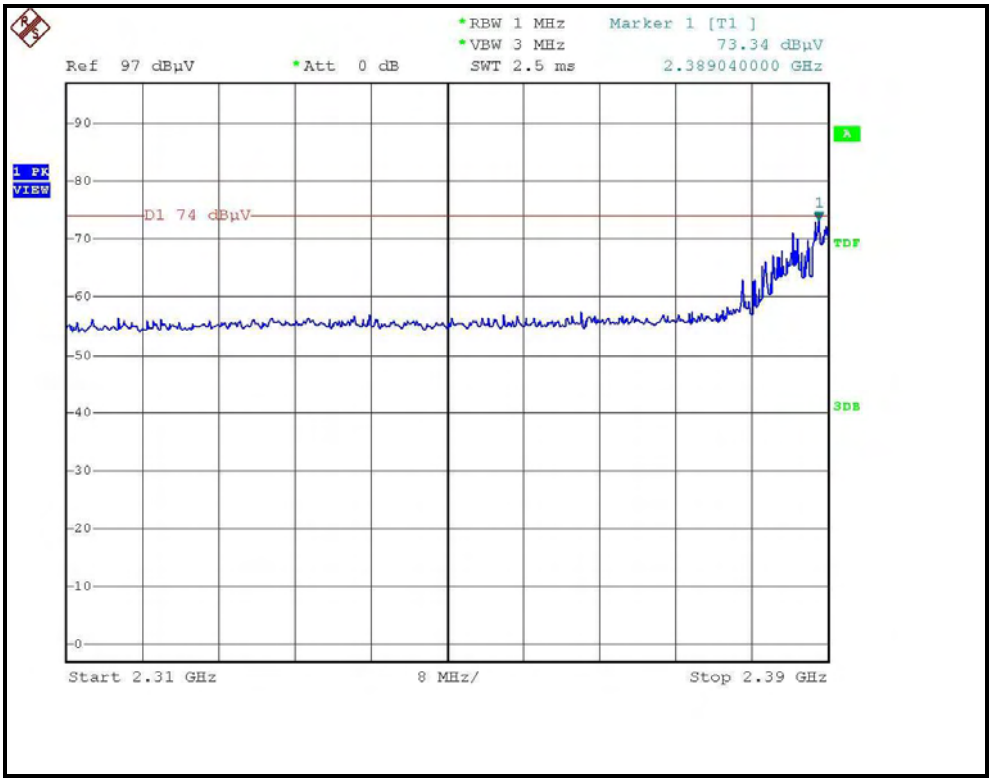
EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 66%RH 963hPa	TESTED BY	Eric Lee

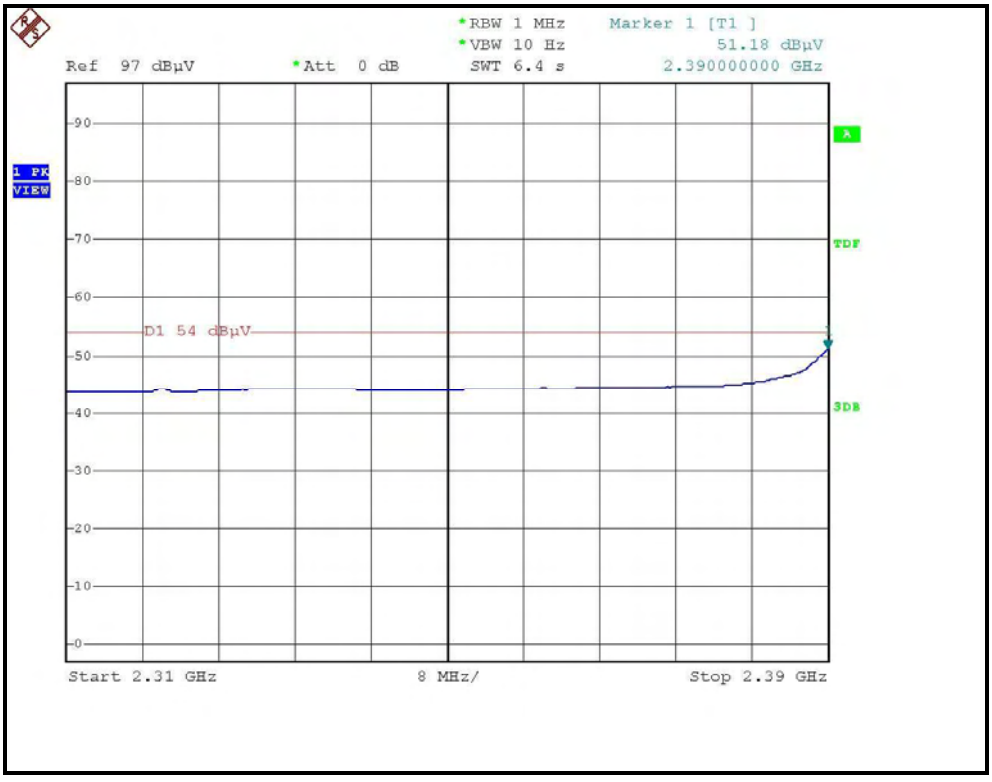
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	113.71 PK			1.51 H	254	83.37	30.34
2	*2462.00	101.12 AV			1.51 H	254	70.78	30.34
3	2483.50	72.35 PK	74.00	-1.65	1.49 H	107	41.92	30.43
4	2483.50	49.90 AV	54.00	-4.10	1.49 H	107	19.47	30.43
5	4924.00	49.12 PK	74.00	-24.88	1.22 H	277	13.49	35.63
6	4924.00	36.49 AV	54.00	-17.51	1.22 H	277	0.86	35.63
7	7386.00	53.71 PK	74.00	-20.29	1.63 H	300	11.48	42.23
8	7386.00	38.84 AV	54.00	-15.16	1.63 H	300	-3.39	42.23
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	104.47 PK			1.59 V	358	74.13	30.34
2	*2462.00	91.50 AV			1.59 V	358	61.16	30.34
3	2483.50	68.38 PK	74.00	-5.62	1.52 V	357	37.95	30.43
4	2483.50	47.62 AV	54.00	-6.38	1.52 V	357	17.19	30.43
5	4924.00	48.68 PK	74.00	-25.32	1.13 V	126	13.05	35.63
6	4924.00	34.11 AV	54.00	-19.89	1.13 V	126	-1.52	35.63
7	7386.00	53.62 PK	74.00	-20.38	1.42 V	311	11.39	42.23
8	7386.00	39.22 AV	54.00	-14.78	1.42 V	311	-3.01	42.23

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

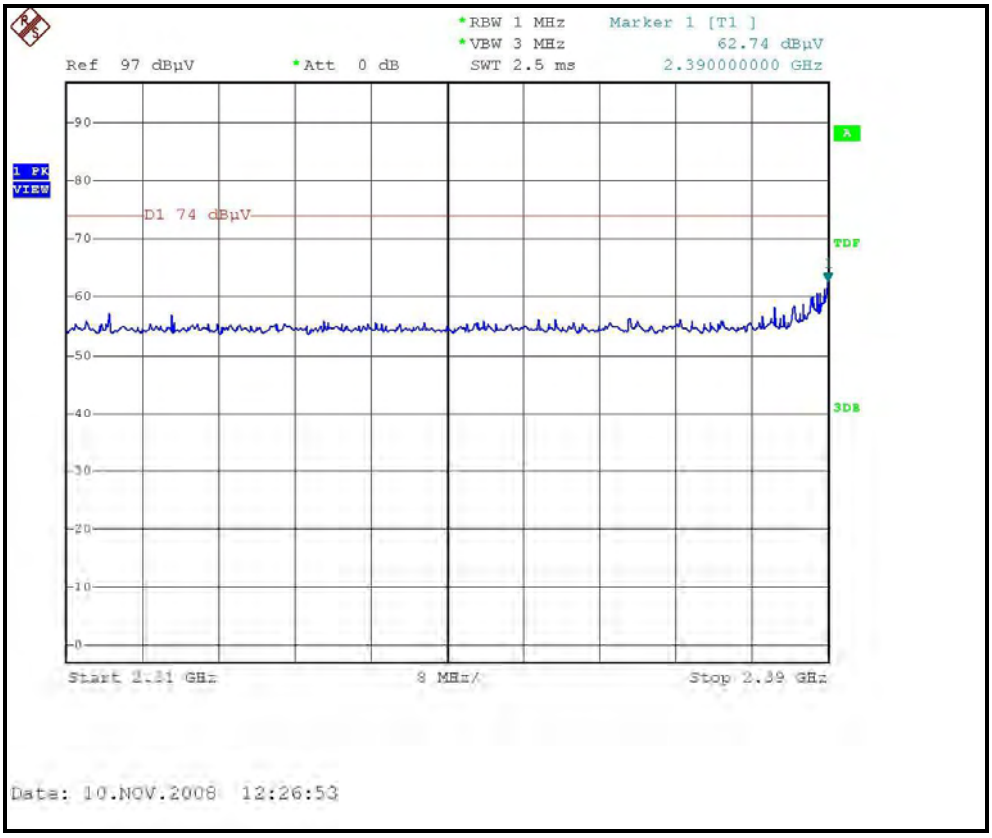
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

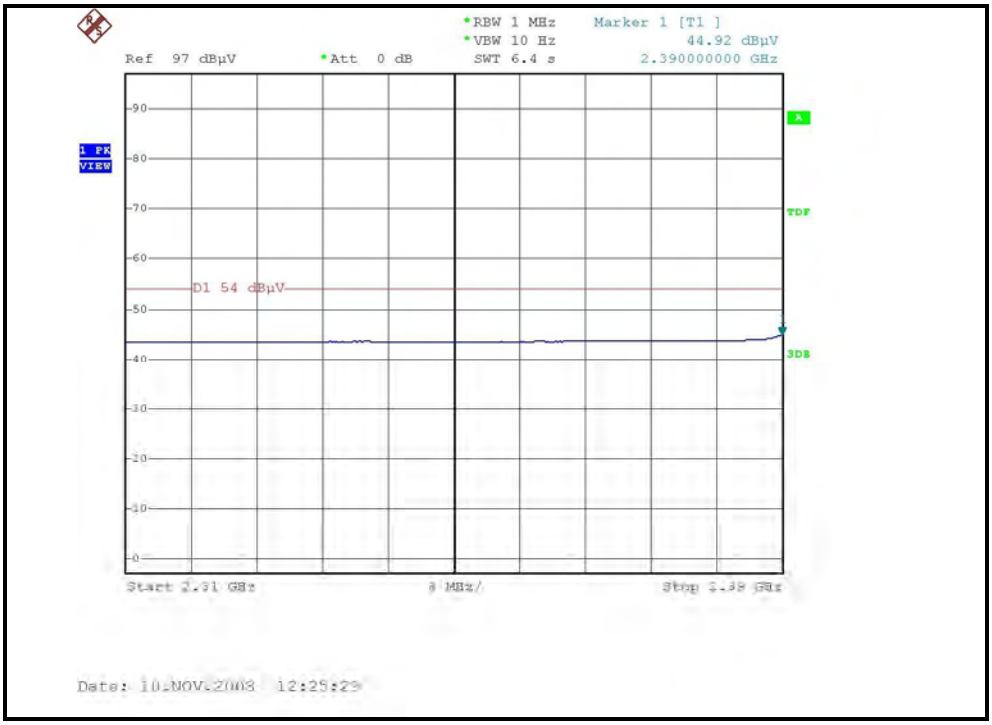
RESTRICTED BANDEDGE (802.11g MODE,CH1, HORIZONTAL)





RESTRICTED BANDEDGE (802.11g MODE,CH1, VERTICAL)





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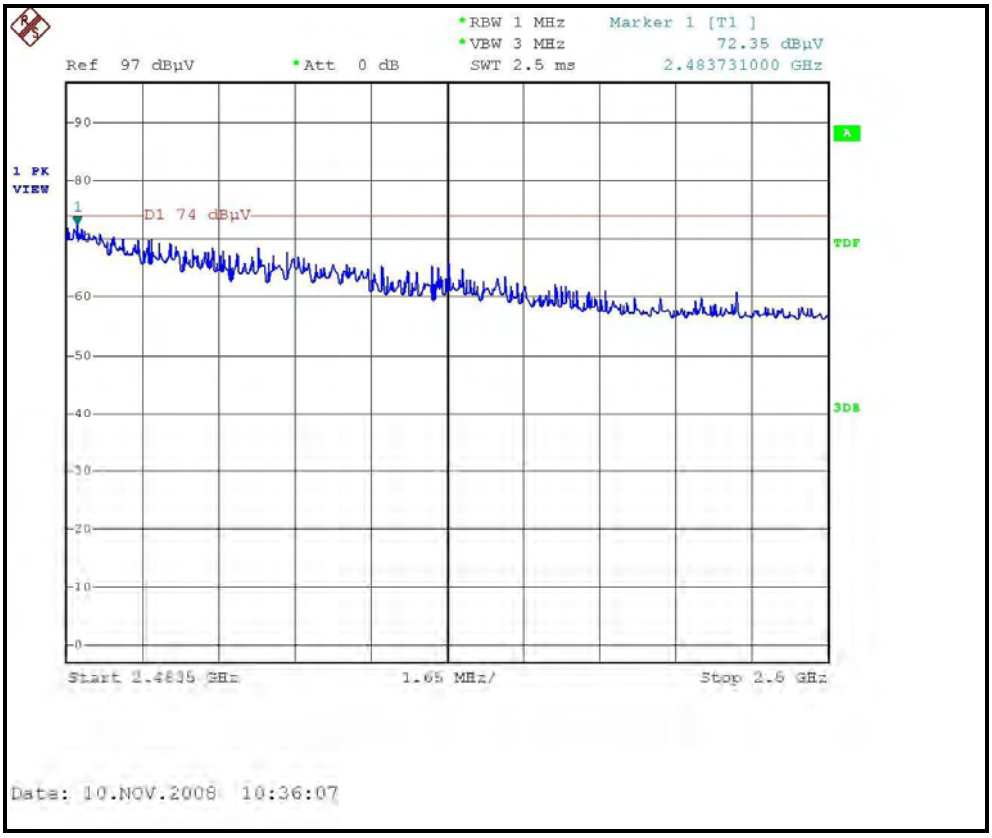
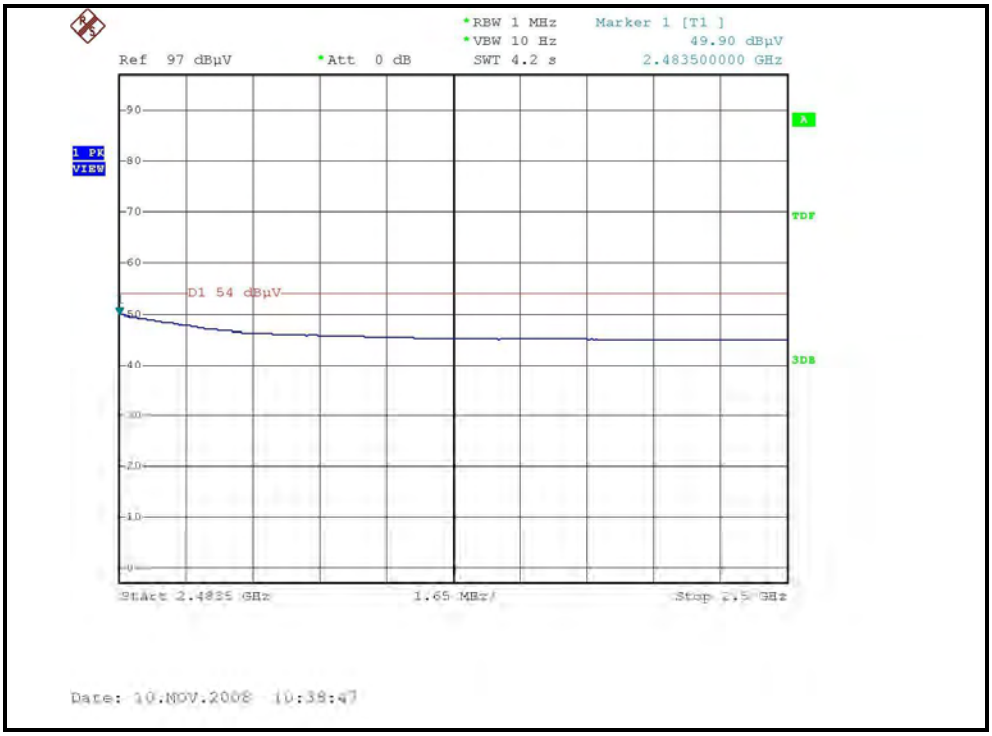
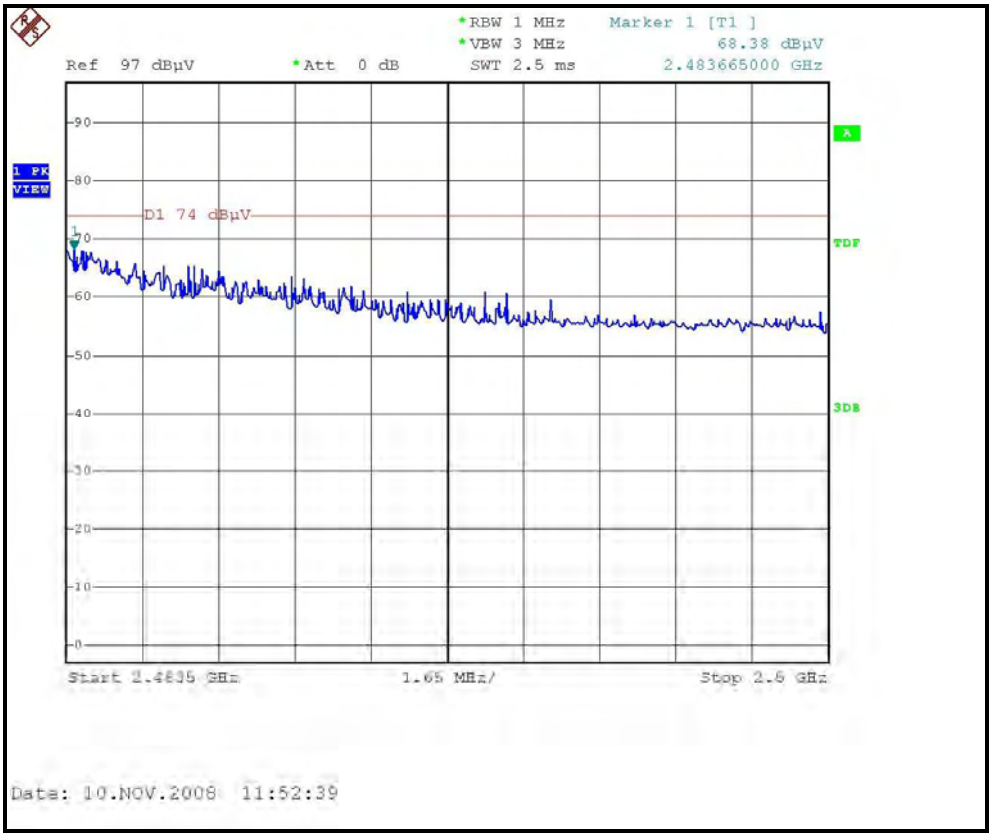
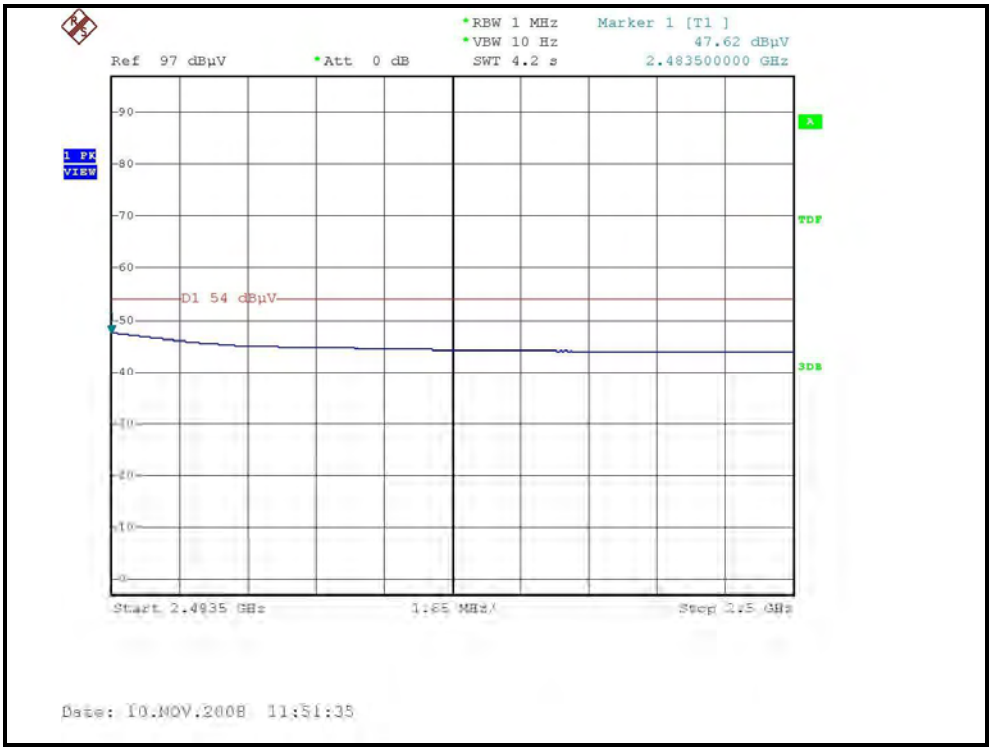




RESTRICTED BANDEDGE (802.11g MODE,CH11, VERTICAL)





DRAFT 802.11n (20MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 66%RH 963hPa	TESTED BY	Eric Lee

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	73.12 PK	74.00	-0.88	1.84 H	172	43.06	30.06
2	2390.00	48.32 AV	54.00	-5.68	1.84 H	172	18.26	30.06
3	*2412.00	108.62 PK			1.57 H	222	78.47	30.15
4	*2412.00	95.34 AV			1.57 H	222	65.19	30.15
5	4824.00	52.08 PK	74.00	-21.92	1.32 H	63	16.62	35.46
6	4824.00	43.29 AV	54.00	-10.71	1.32 H	63	7.83	35.46
7	#7236.00	51.50 PK	88.62	-37.12	1.21 H	314	9.65	41.85
8	#7236.00	38.75 AV	75.34	-36.59	1.21 H	314	-3.10	41.85
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	64.44 PK	74.00	-9.56	1.66 V	55	34.38	30.06
2	2390.00	44.83 AV	54.00	-9.17	1.66 V	55	14.77	30.06
3	*2412.00	101.04 PK			1.23 V	350	70.89	30.15
4	*2412.00	90.89 AV			1.23 V	350	60.74	30.15
5	4824.00	51.82 PK	74.00	-22.18	1.30 V	209	16.36	35.46
6	4824.00	40.11 AV	54.00	-13.89	1.30 V	209	4.65	35.46
7	#7236.00	50.45 PK	81.04	-30.59	1.69 V	183	8.60	41.85
8	#7236.00	36.29 AV	70.89	-34.60	1.69 V	183	-5.56	41.85

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 66%RH 963hPa	TESTED BY	Eric Lee

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	110.44 PK			1.13 H	281	80.20	30.24
2	*2437.00	97.35 AV			1.13 H	281	67.11	30.24
3	2483.50	56.00 PK	74.00	-18.00	1.66 H	352	25.57	30.43
4	2483.50	44.89 AV	54.00	-9.11	1.66 H	352	14.46	30.43
5	4874.00	52.63 PK	74.00	-21.37	1.58 H	218	17.08	35.55
6	4874.00	43.11 AV	54.00	-10.89	1.58 H	218	7.56	35.55
7	7311.00	52.91 PK	74.00	-21.09	1.20 H	305	10.87	42.04
8	7311.00	39.50 AV	54.00	-14.50	1.20 H	305	-2.54	42.04
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	102.78 PK			1.21 V	331	72.54	30.24
2	*2437.00	92.27 AV			1.21 V	331	62.03	30.24
3	2483.50	53.17 PK	74.00	-20.83	1.59 V	40	22.74	30.43
4	2483.50	44.02 AV	54.00	-9.98	1.59 V	40	13.59	30.43
5	4874.00	52.26 PK	74.00	-21.74	1.22 V	176	16.71	35.55
6	4874.00	40.53 AV	54.00	-13.47	1.22 V	176	4.98	35.55
7	7311.00	51.68 PK	74.00	-22.32	1.22 V	20	9.64	42.04
8	7311.00	37.99 AV	54.00	-16.01	1.22 V	20	-4.05	42.04

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

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

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

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 66%RH 963hPa	TESTED BY	Eric Lee

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	106.78 PK			1.63 H	288	76.44	30.34
2	*2462.00	93.89 AV			1.63 H	288	63.55	30.34
3	2483.50	72.67 PK	74.00	-1.33	1.72 H	246	42.24	30.43
4	2483.50	47.19 AV	54.00	-6.81	1.72 H	246	16.76	30.43
5	4924.00	51.04 PK	74.00	-22.96	1.58 H	291	15.41	35.63
6	4924.00	44.04 AV	54.00	-9.96	1.58 H	291	8.41	35.63
7	7386.00	53.72 PK	74.00	-20.28	1.32 H	65	11.49	42.23
8	7386.00	38.69 AV	54.00	-15.31	1.32 H	65	-3.54	42.23
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	100.73 PK			1.32 V	359	70.39	30.34
2	*2462.00	89.42 AV			1.32 V	359	59.08	30.34
3	2483.50	61.99 PK	74.00	-12.01	1.73 V	132	31.56	30.43
4	2483.50	44.04 AV	54.00	-9.96	1.73 V	132	13.61	30.43
5	4924.00	51.89 PK	74.00	-22.11	1.50 V	62	16.26	35.63
6	4924.00	41.24 AV	54.00	-12.76	1.50 V	62	5.61	35.63
7	7386.00	52.07 PK	74.00	-21.93	1.00 V	257	9.84	42.23
8	7386.00	38.04 AV	54.00	-15.96	1.00 V	257	-4.19	42.23

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

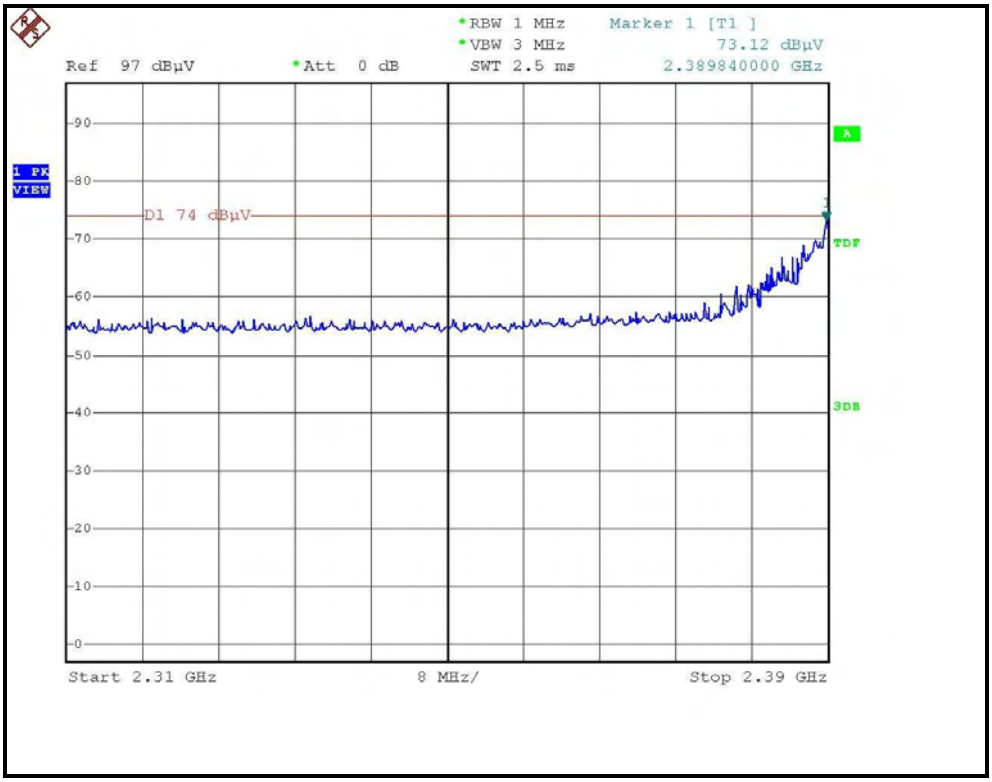
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

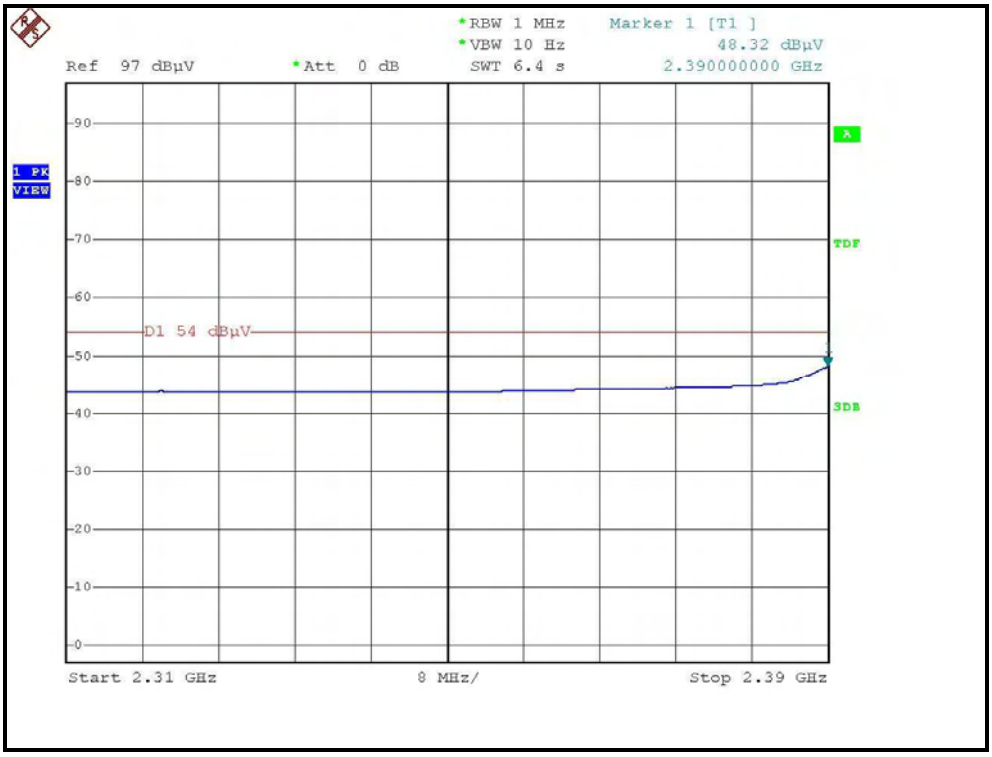
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

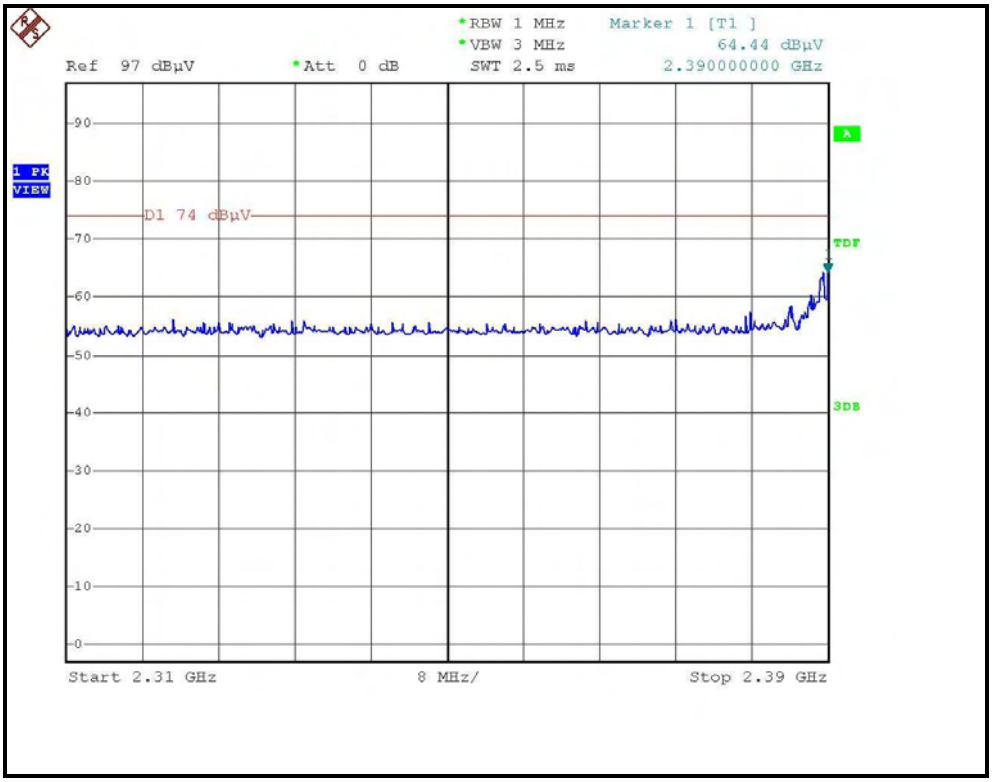
5. " * ": Fundamental frequency.

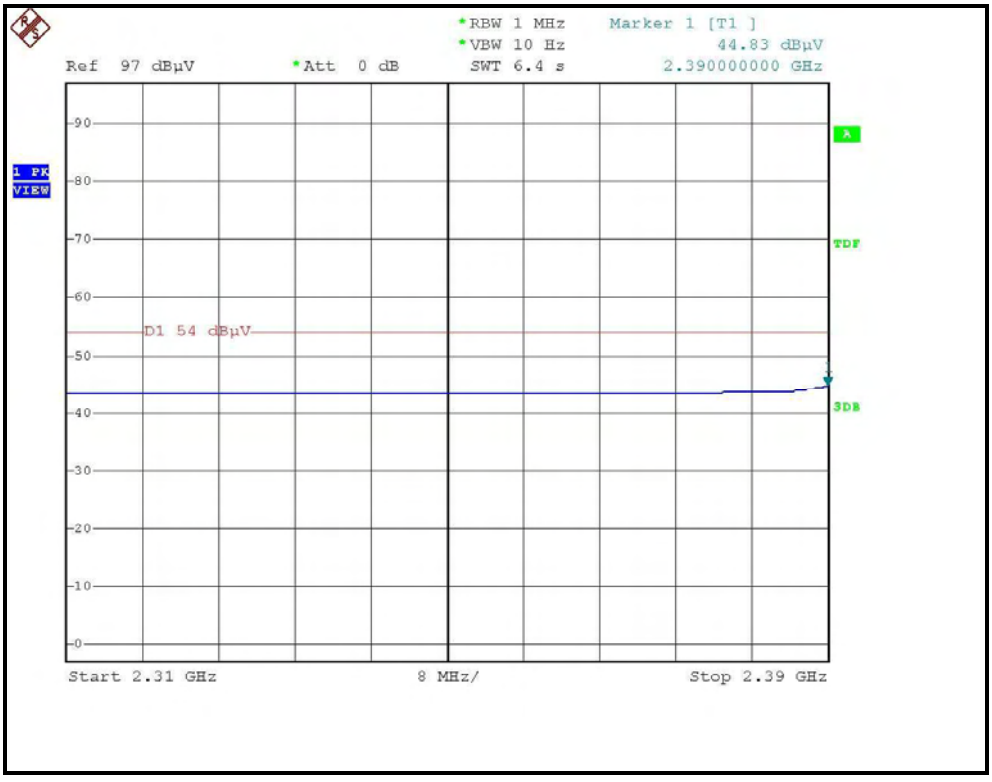
RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH1, HORIZONTAL)



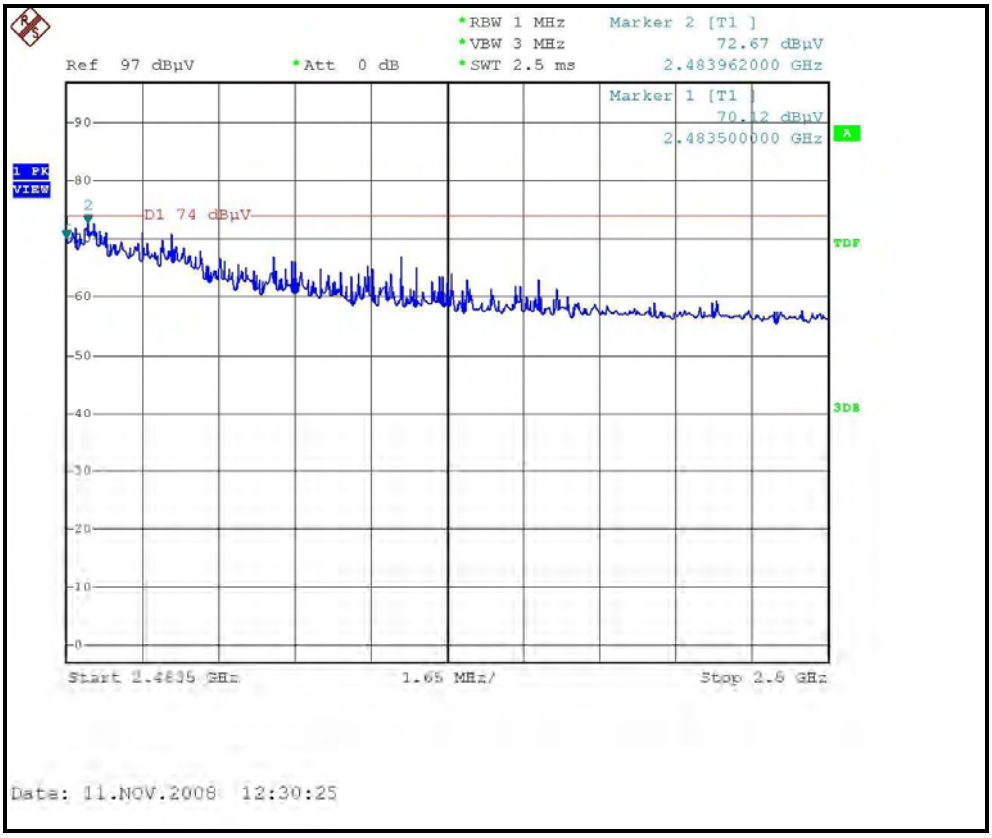


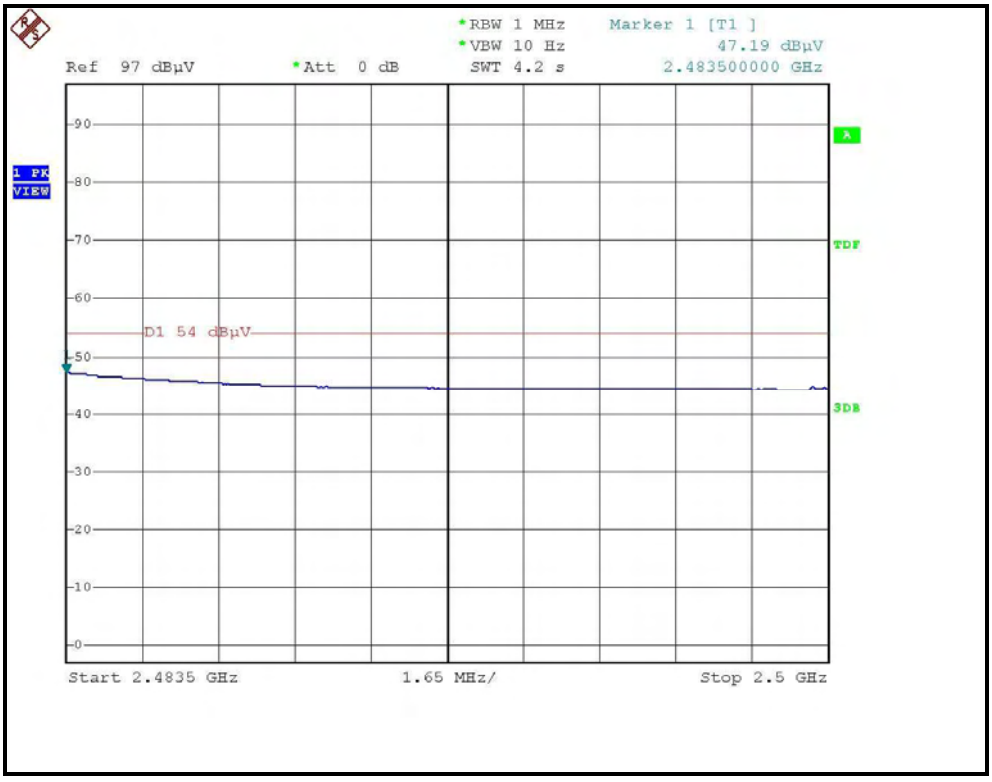
RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH1, VERTICAL)



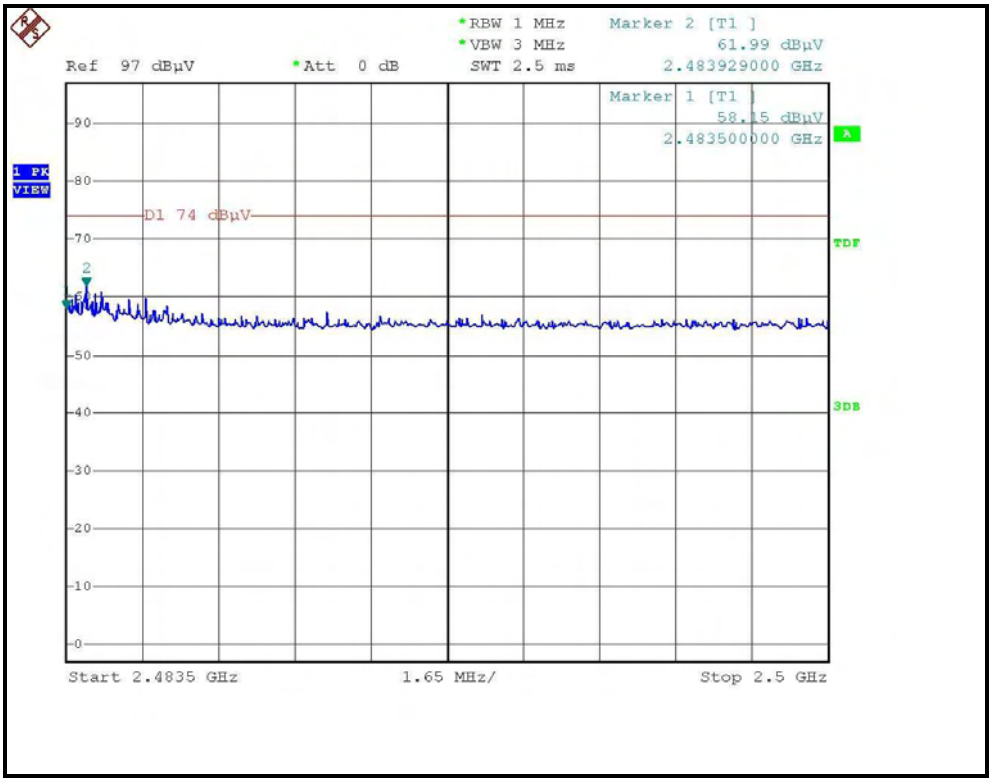


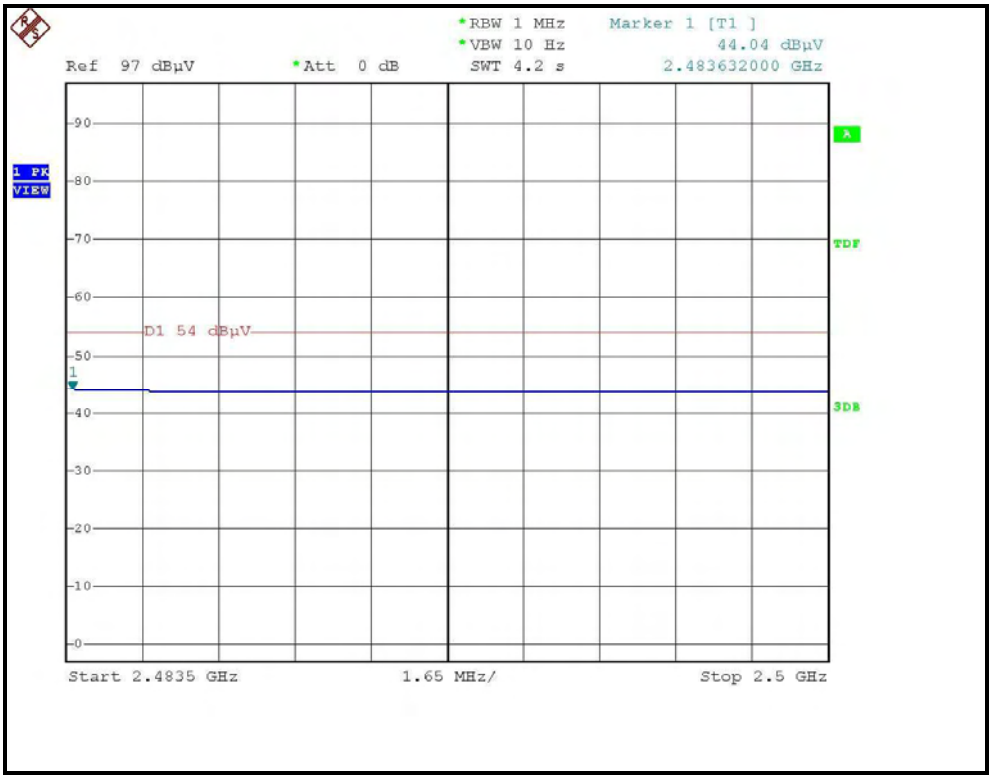
RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH11, HORIZONTAL)





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





DRAFT 802.11n (40MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 66%RH 963hPa	TESTED BY	Eric Lee

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	2388.00	73.45 PK	74.00	-0.55	1.53 H	267	43.40	30.05
2	2388.00	46.25 AV	54.00	-7.75	1.53 H	267	16.20	30.05
3	*2422.00	107.43 PK			1.40 H	172	77.24	30.19
4	*2422.00	92.73 AV			1.40 H	172	62.54	30.19
5	4844.00	51.33 PK	74.00	-22.67	1.62 H	69	15.83	35.50
6	4844.00	36.89 AV	54.00	-17.11	1.62 H	69	1.39	35.50
7	7366.00	53.62 PK	74.00	-20.38	1.11 H	25	11.44	42.18
8	7366.00	39.43 AV	54.00	-14.57	1.11 H	25	-2.75	42.18
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	61.26 PK	74.00	-12.74	1.88 V	76	31.20	30.06
2	2390.00	44.08 AV	54.00	-9.92	1.88 V	76	14.02	30.06
3	*2422.00	95.89 PK			1.19 V	320	65.70	30.19
4	*2422.00	85.42 AV			1.19 V	320	55.23	30.19
5	4844.00	49.24 PK	74.00	-24.76	1.20 V	69	13.74	35.50
6	4844.00	34.73 AV	54.00	-19.27	1.20 V	69	-0.77	35.50
7	7266.00	51.75 PK	74.00	-22.25	1.38 V	154	9.82	41.93
8	7266.00	38.49 AV	54.00	-15.51	1.38 V	154	-3.44	41.93

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 66%RH 963hPa	TESTED BY	Eric Lee

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	108.14 PK			1.45 H	85	77.90	30.24
2	*2437.00	93.22 AV			1.45 H	85	62.98	30.24
3	2483.50	71.58 PK	74.00	-2.42	1.00 H	114	41.15	30.43
4	2483.50	51.54 AV	54.00	-2.46	1.00 H	114	21.11	30.43
5	4874.00	50.52 PK	74.00	-23.48	1.09 H	108	14.97	35.55
6	4874.00	35.59 AV	54.00	-18.41	1.09 H	108	0.04	35.55
7	7311.00	52.19 PK	74.00	-21.81	1.53 H	69	10.15	42.04
8	7311.00	38.12 AV	54.00	-15.88	1.53 H	69	-3.92	42.04
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	97.88 PK			1.20 V	319	67.64	30.24
2	*2437.00	86.68 AV			1.20 V	319	56.44	30.24
3	2483.50	68.90 PK	74.00	-5.10	1.25 V	341	38.47	30.43
4	2483.50	50.72 AV	54.00	-3.28	1.25 V	341	20.29	30.43
5	4874.00	48.88 PK	74.00	-25.12	1.11 V	92	13.33	35.55
6	4874.00	34.61 AV	54.00	-19.39	1.11 V	92	-0.94	35.55
7	7311.00	52.41 PK	74.00	-21.59	1.30 V	149	10.37	42.04
8	7311.00	38.29 AV	54.00	-15.71	1.30 V	149	-3.75	42.04

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

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

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

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 7	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 66%RH 963hPa	TESTED BY	Eric Lee

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	106.83 PK			1.42 H	192	76.53	30.30
2	*2452.00	92.22 AV			1.42 H	192	61.92	30.30
3	2483.50	73.18 PK	74.00	-0.82	1.69 H	242	42.75	30.43
4	2483.50	46.09 AV	54.00	-7.91	1.69 H	242	15.66	30.43
5	4904.00	51.26 PK	74.00	-22.74	1.71 H	100	15.66	35.60
6	4904.00	37.94 AV	54.00	-16.06	1.71 H	100	2.34	35.60
7	7356.00	52.98 PK	74.00	-21.02	1.64 H	2	10.82	42.16
8	7356.00	40.58 AV	54.00	-13.42	1.64 H	2	-1.58	42.16
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	95.71 PK			1.23 V	319	65.41	30.30
2	*2452.00	84.84 AV			1.23 V	319	54.54	30.30
3	2483.50	66.41 PK	74.00	-7.59	1.54 V	357	35.98	30.43
4	2483.50	44.77 AV	54.00	-9.23	1.54 V	357	14.34	30.43
5	4904.00	48.93 PK	74.00	-25.07	1.30 V	43	13.33	35.60
6	4904.00	35.11 AV	54.00	-18.89	1.30 V	43	-0.49	35.60
7	7356.00	53.65 PK	74.00	-20.35	1.10 V	358	11.49	42.16
8	7356.00	37.69 AV	54.00	-16.31	1.10 V	358	-4.47	42.16

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

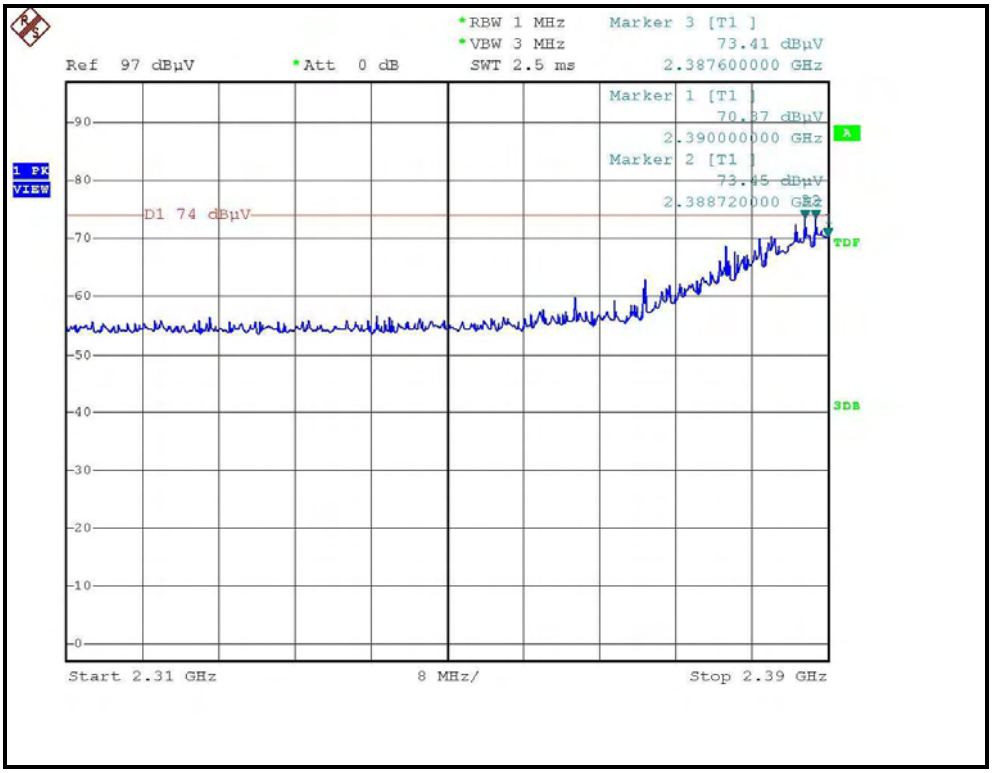
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

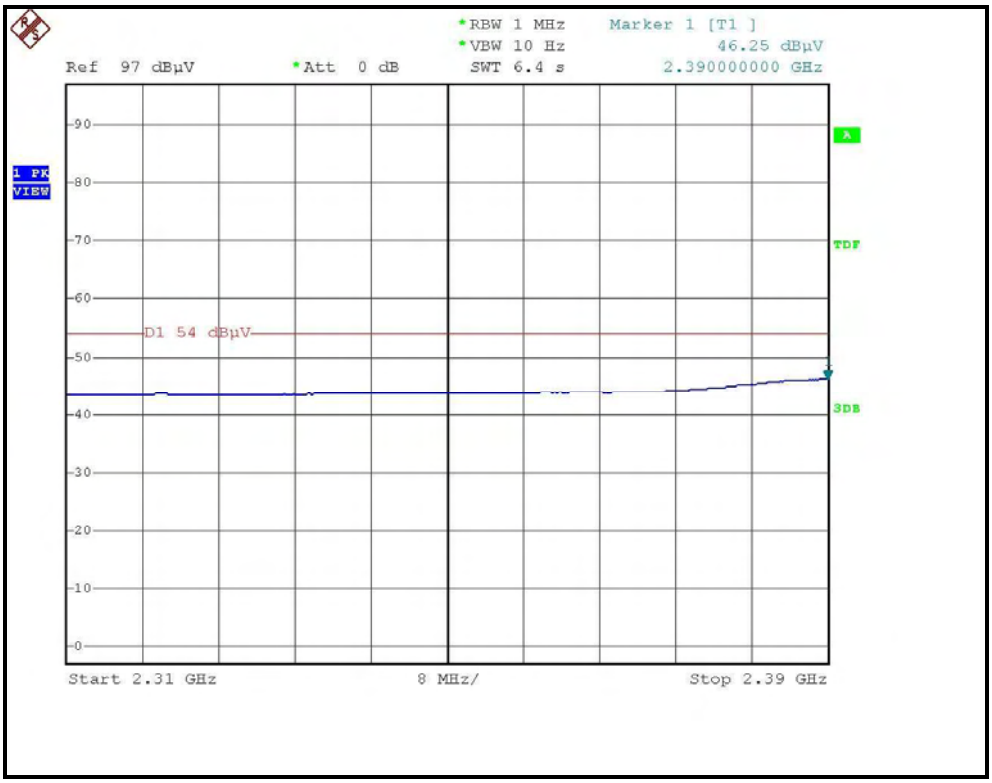
3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

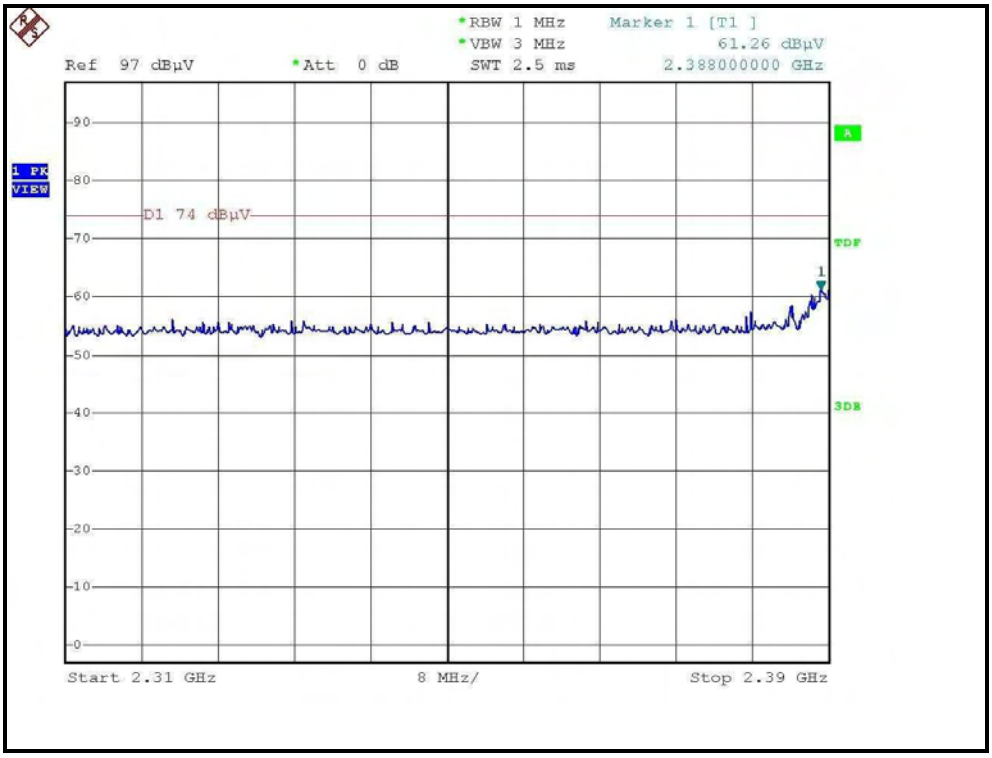
5. " * ": Fundamental frequency.

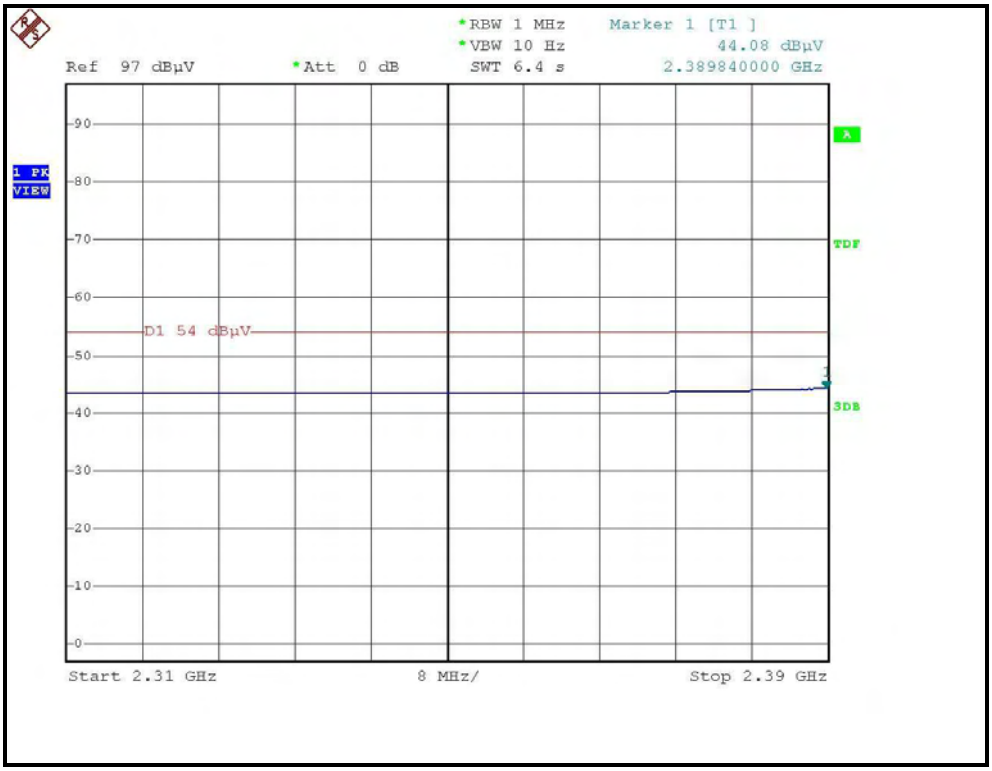
RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE,CH1, HORIZONTAL)



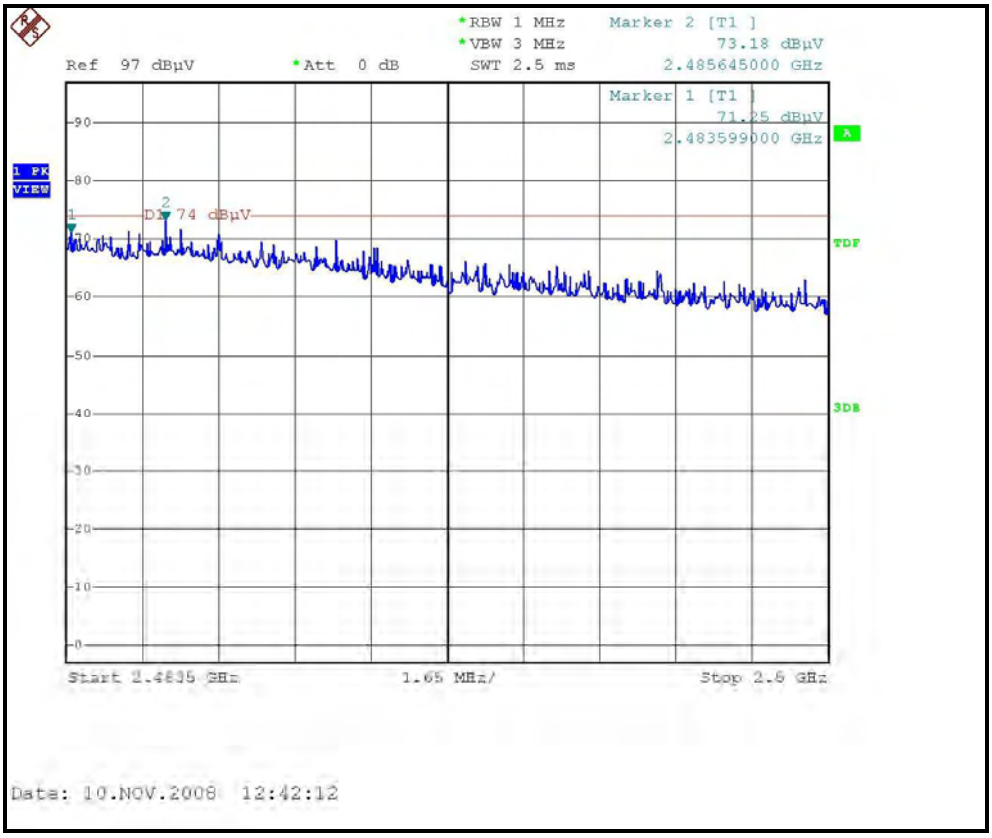


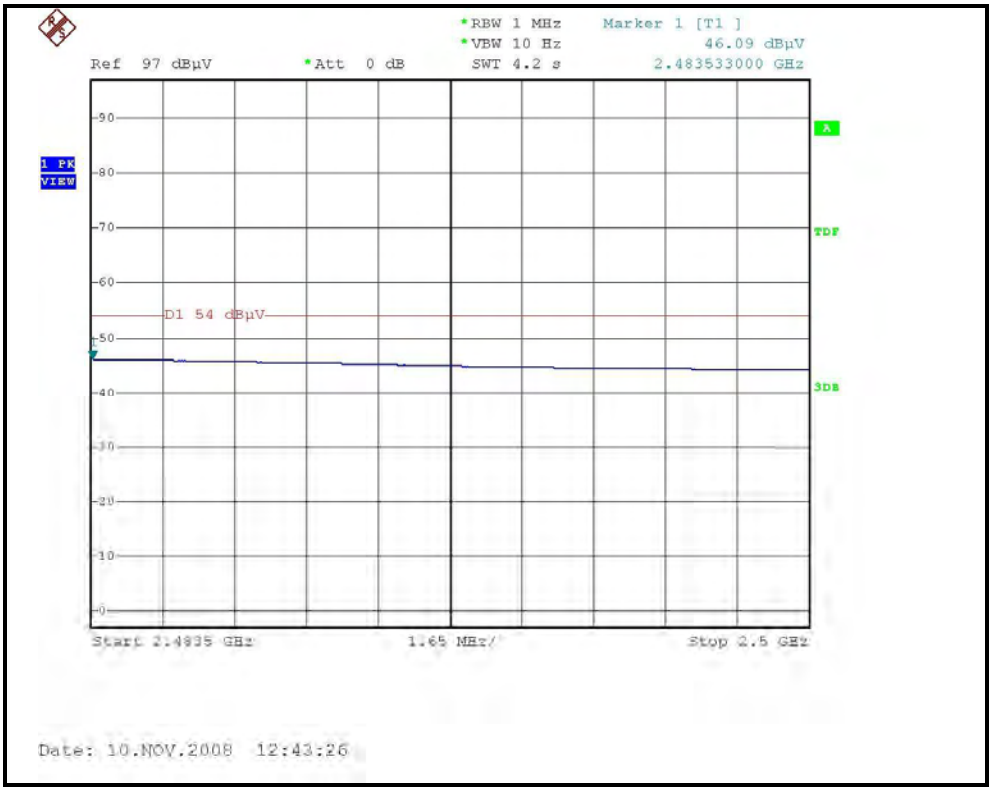
RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE,CH1, VERTICAL)



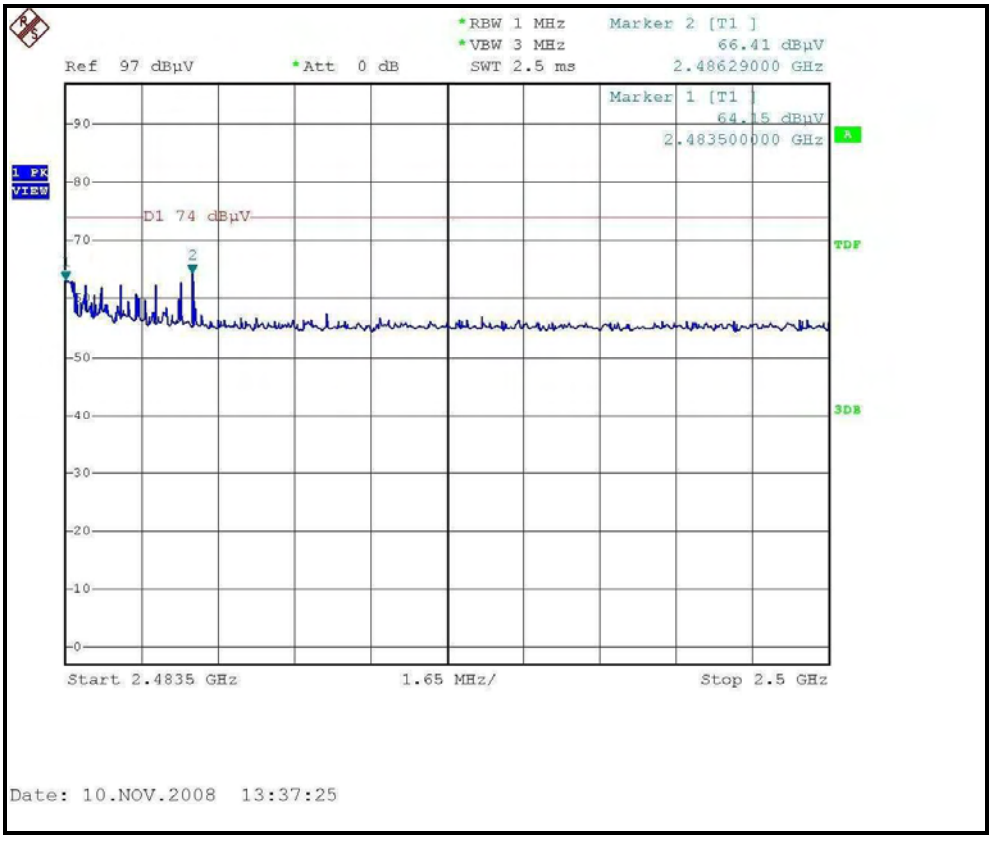


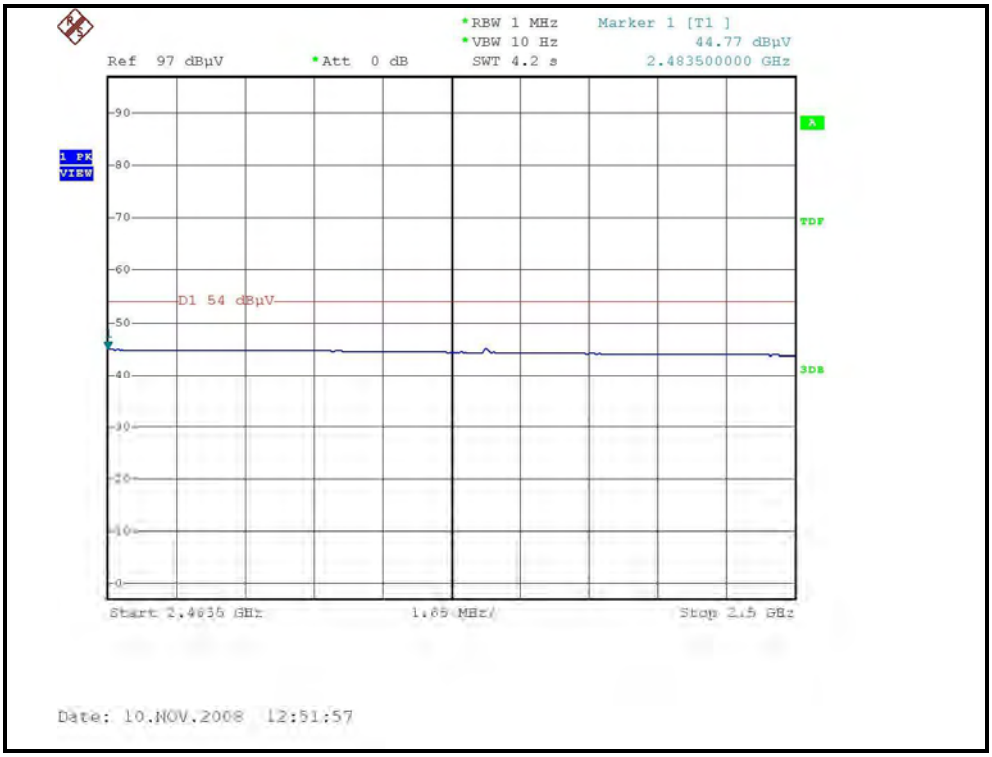
RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE,CH7, HORIZONTAL)





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





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 measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

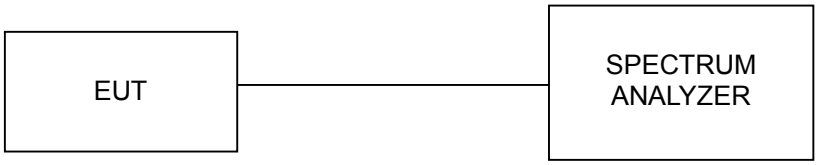
4.3.3 TEST PROCEDURE

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.

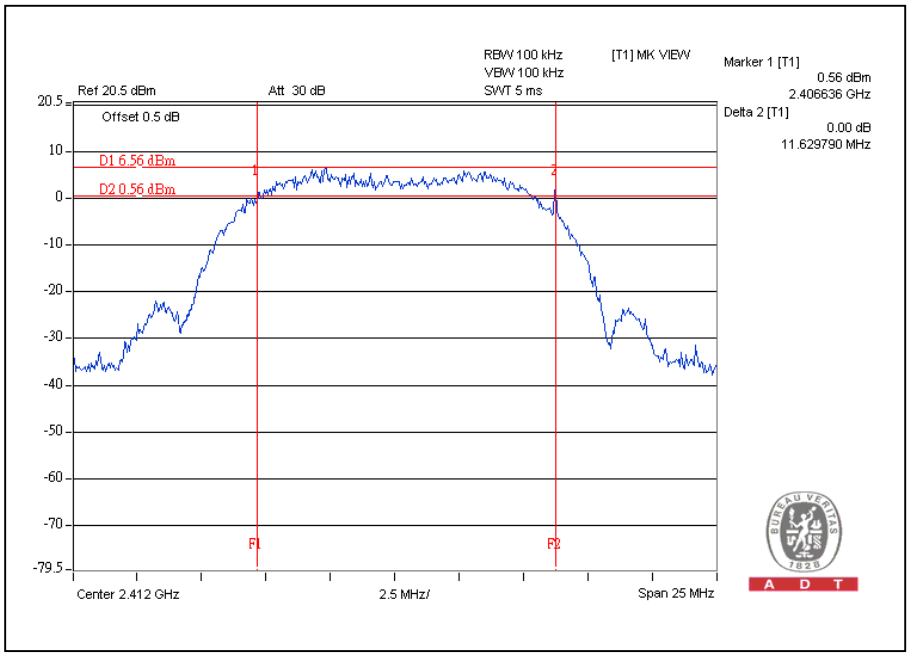
4.3.7 TEST RESULTS

802.11b DSSS MODULATION:

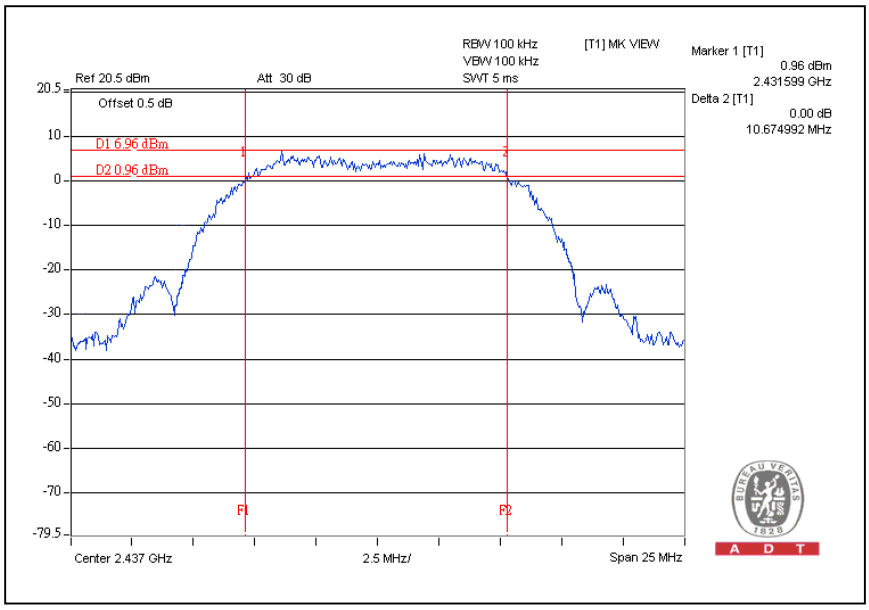
MODULATION TYPE	DBPSK	TRANSFER RATE	1Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 963hPa
TESTED BY	Frank Liu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	11.629	0.5	PASS
6	2437	10.674	0.5	PASS
11	2462	10.818	0.5	PASS

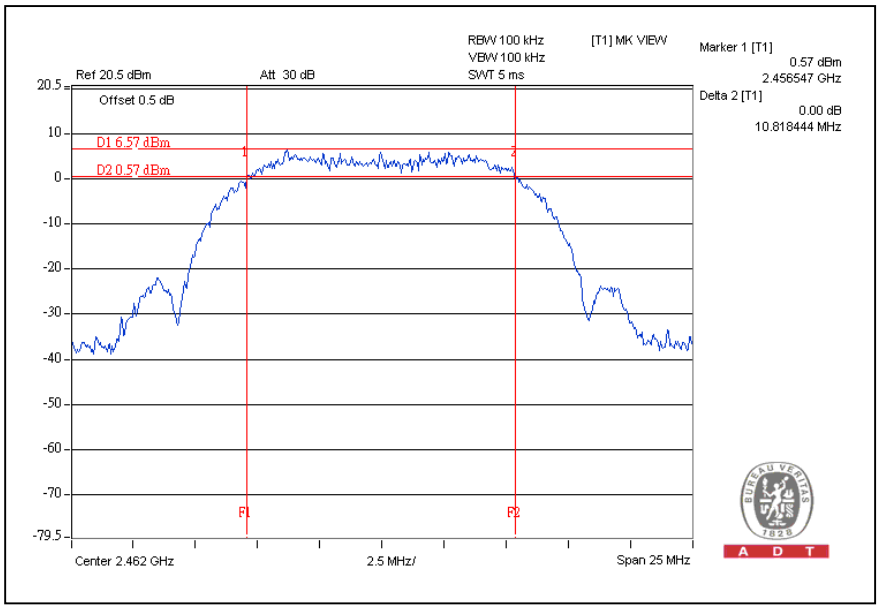
CH1



CH6


RBW 100 kHz
VBW 100 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
0.96 dBm
2.431599 GHz
Delta 2 [T1]
0.00 dB
10.674992 MHz
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 6.96 dBm
D2 0.96 dBm
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
F1
F2
Center 2.437 GHz
2.5 MHz/
Span 25 MHz

CH11

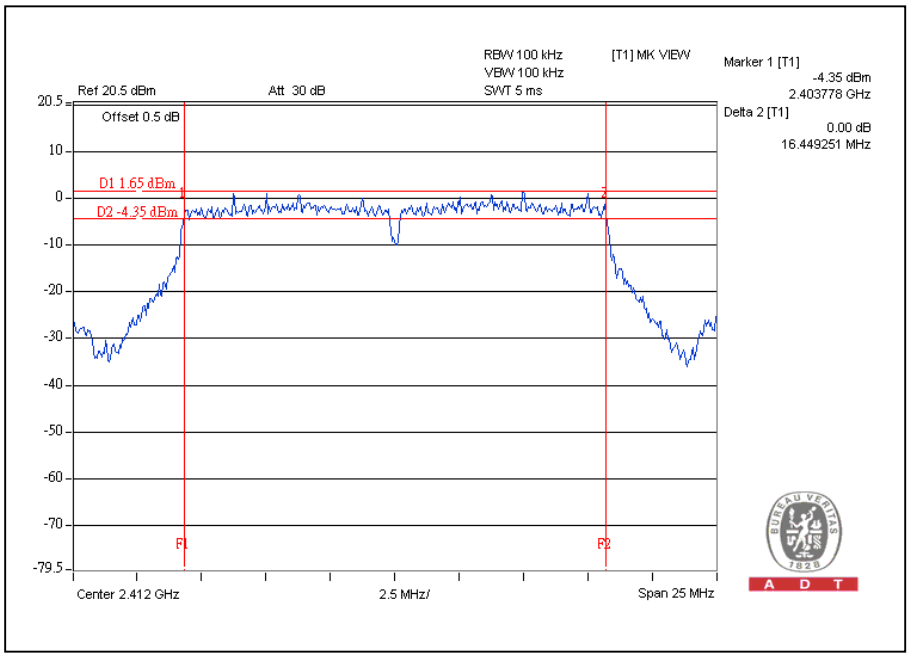

RBW 100 kHz
VBW 100 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
0.57 dBm
2.456547 GHz
Delta 2 [T1]
0.00 dB
10.818444 MHz
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 6.57 dBm
D2 0.57 dBm
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
F1
F2
Center 2.462 GHz
2.5 MHz/
Span 25 MHz

802.11g OFDM MODULATION:

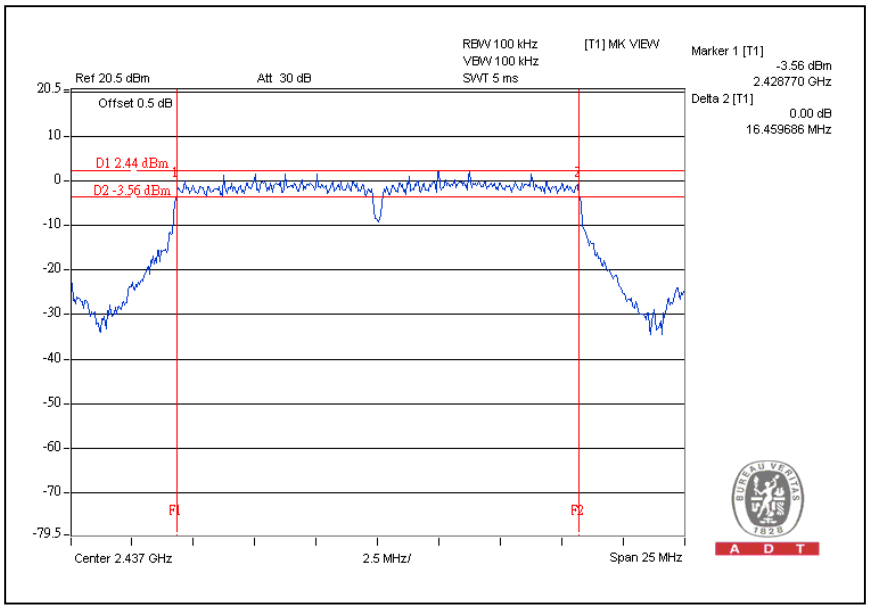
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 963hPa
TESTED BY	Frank Liu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.449	0.5	PASS
6	2437	16.459	0.5	PASS
11	2462	16.445	0.5	PASS

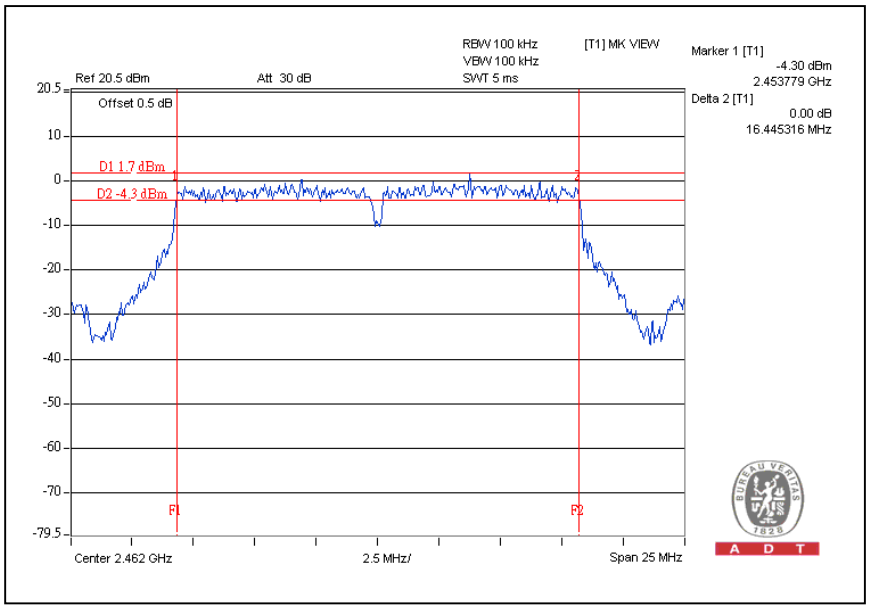
CH1



CH6


RBW 100 kHz
VBW 100 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-3.56 dBm
2.428770 GHz
Delta 2 [T1]
0.00 dB
16.459686 MHz
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 2.44 dBm
D2 -3.56 dBm
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
F1
F2
Center 2.437 GHz
2.5 MHz/
Span 25 MHz

CH11

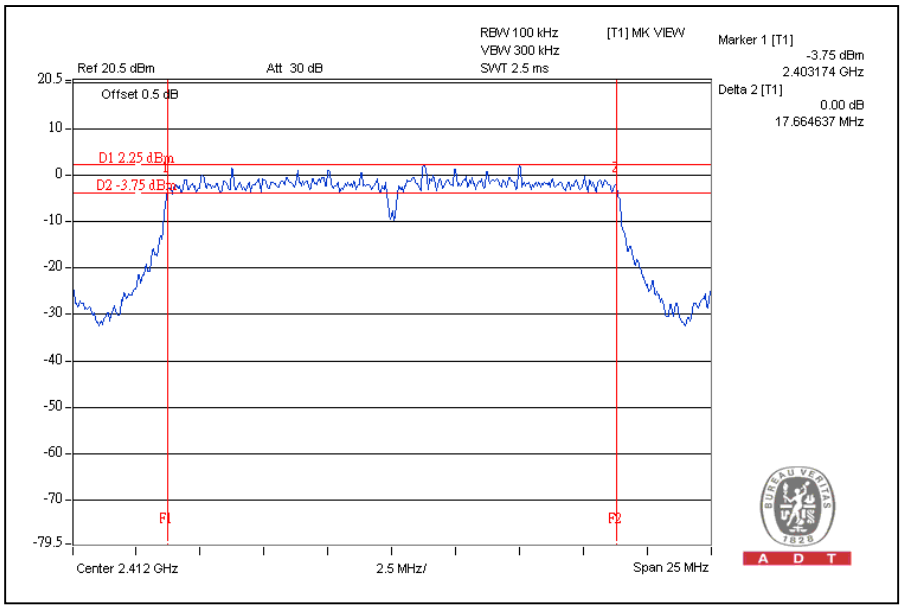

RBW 100 kHz
VBW 100 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-4.30 dBm
2.453779 GHz
Delta 2 [T1]
0.00 dB
16.445316 MHz
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 1.7 dBm
D2 -4.3 dBm
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
F1
F2
Center 2.462 GHz
2.5 MHz/
Span 25 MHz

DRAFT 802.11n (20MHz) OFDM MODULATION:

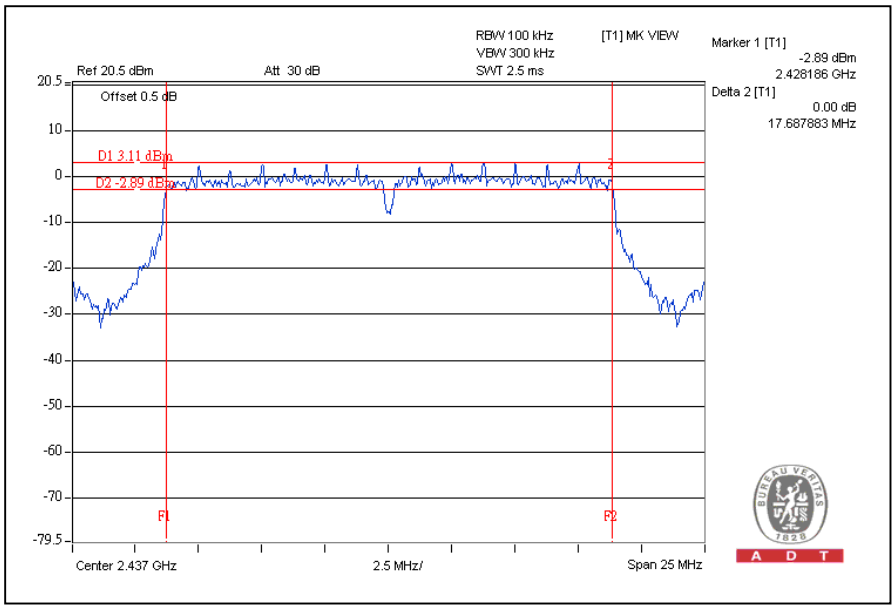
MODULATION TYPE	BPSK	TRANSFER RATE	13Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 963hPa
TESTED BY	Frank Liu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
1	2412	17.664	17.651	0.5	PASS
6	2437	17.687	17.678	0.5	PASS
11	2462	17.661	17.698	0.5	PASS

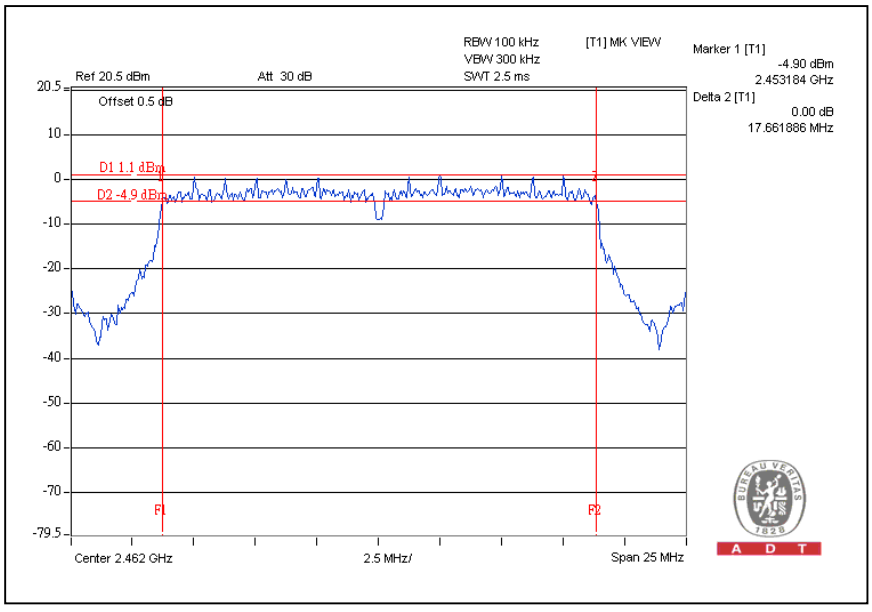
For Chain(0): CH1



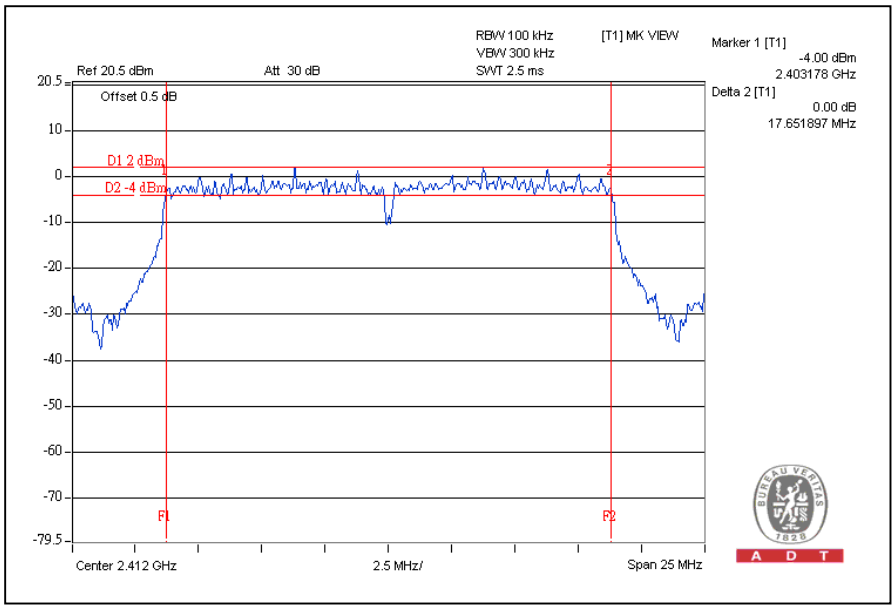
CH6


RBW 100 kHz
VBW 300 kHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
-2.89 dBm
2.428186 GHz
Delta 2 [T1]
0.00 dB
17.687883 MHz
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 3.11 dBm
D2 -2.89 dBm
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
F1
F2
Center 2.437 GHz
2.5 MHz/
Span 25 MHz

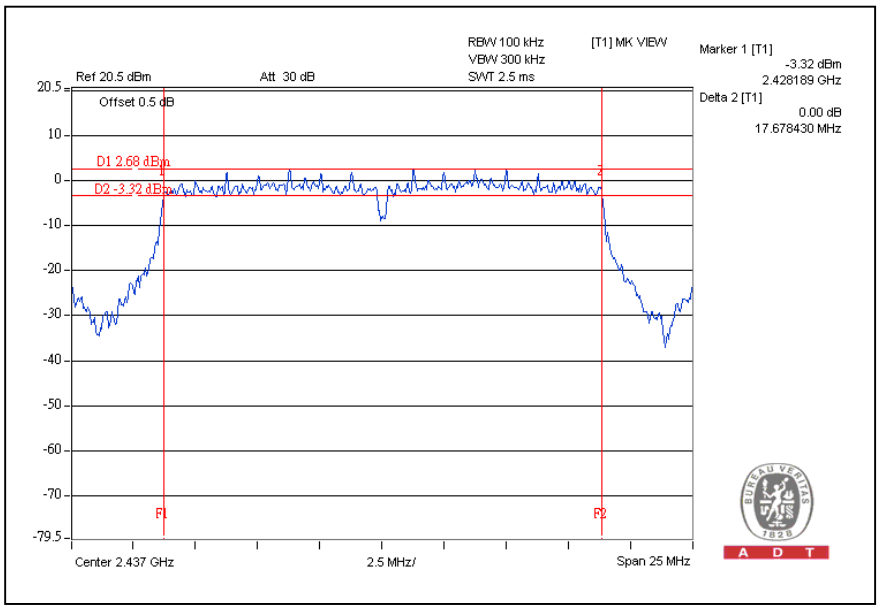
CH11


RBW 100 kHz
VBW 300 kHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
-4.90 dBm
2.453184 GHz
Delta 2 [T1]
0.00 dB
17.661886 MHz
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 1.1 dBm
D2 -4.9 dBm
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
F1
F2
Center 2.462 GHz
2.5 MHz/
Span 25 MHz

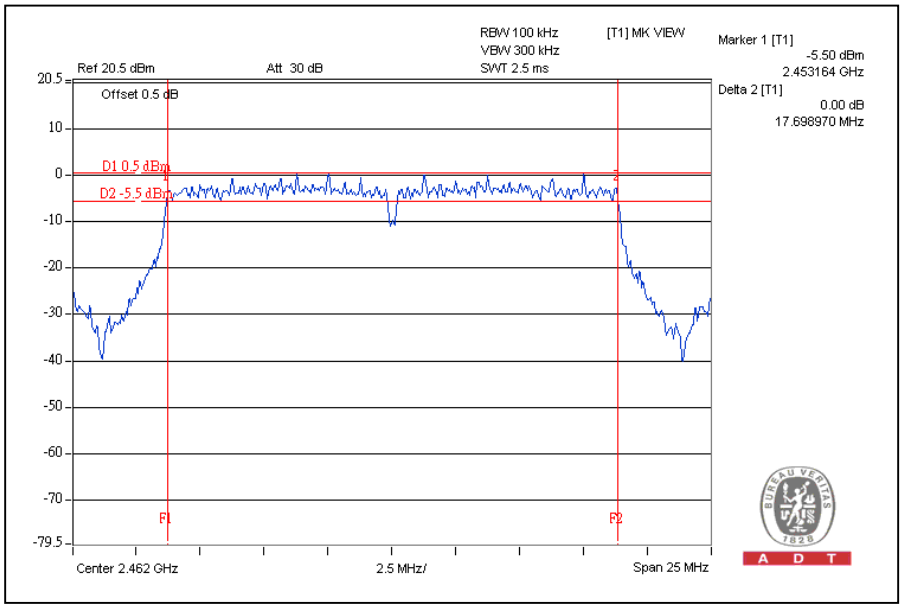
For CHAIN(1): CH1



CH6



CH11

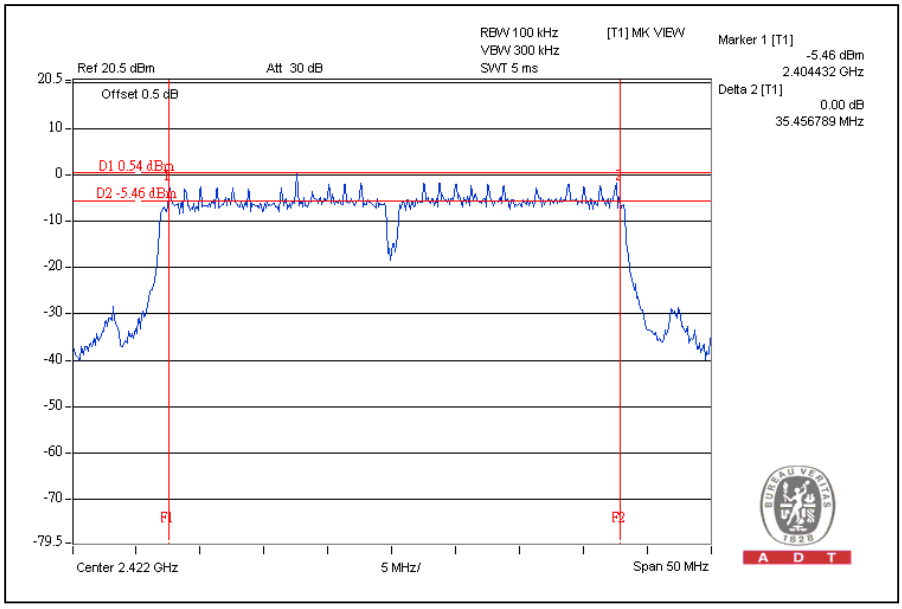

RBW 100 kHz
VBW 300 kHz
SWT 2.5 ms
[T1] MK VIEW
Marker 1 [T1]
-5.50 dBm
2.453164 GHz
Delta 2 [T1]
0.00 dB
17.698970 MHz
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 0.5 dBm
D2 -5.5 dBm
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
F1
F2
Center 2.462 GHz
2.5 MHz/
Span 25 MHz

DRAFT 802.11n (40MHz) OFDM MODULATION:

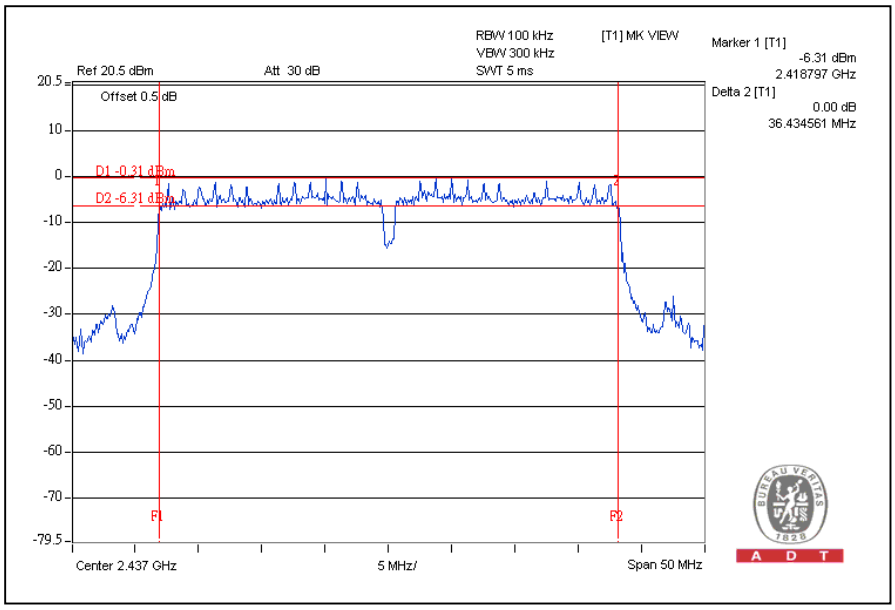
MODULATION TYPE	BPSK	TRANSFER RATE	27Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 963hPa
TESTED BY	Frank Liu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
1	2422	35.456	35.833	0.5	PASS
4	2437	36.434	36.440	0.5	PASS
7	2452	36.415	36.417	0.5	PASS

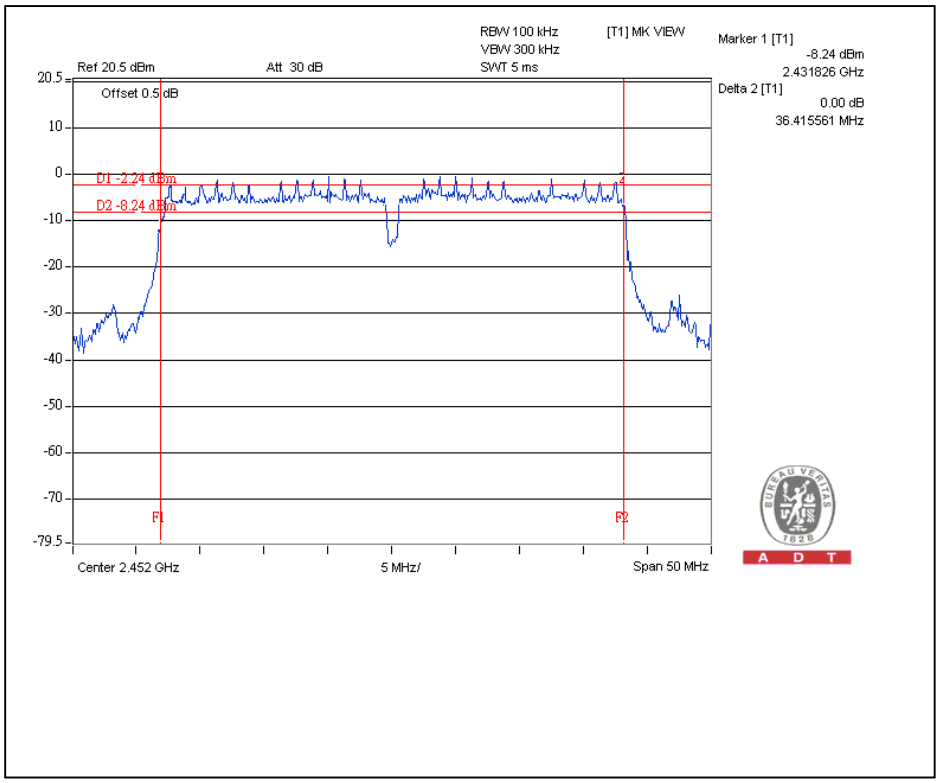
For Chain (0): CH1



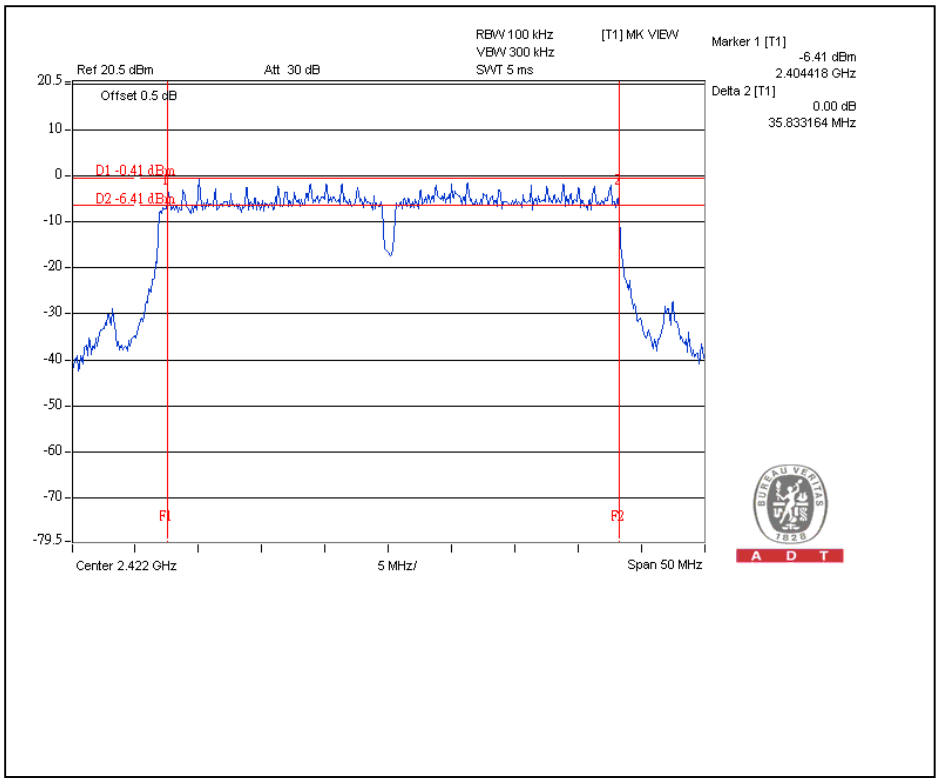
CH4


RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-6.31 dBm
2.418797 GHz
Delta 2 [T1]
0.00 dB
36.434561 MHz
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 -0.31 dBm
D2 -6.31 dBm
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
F1
F2
Center 2.437 GHz
5 MHz/
Span 50 MHz

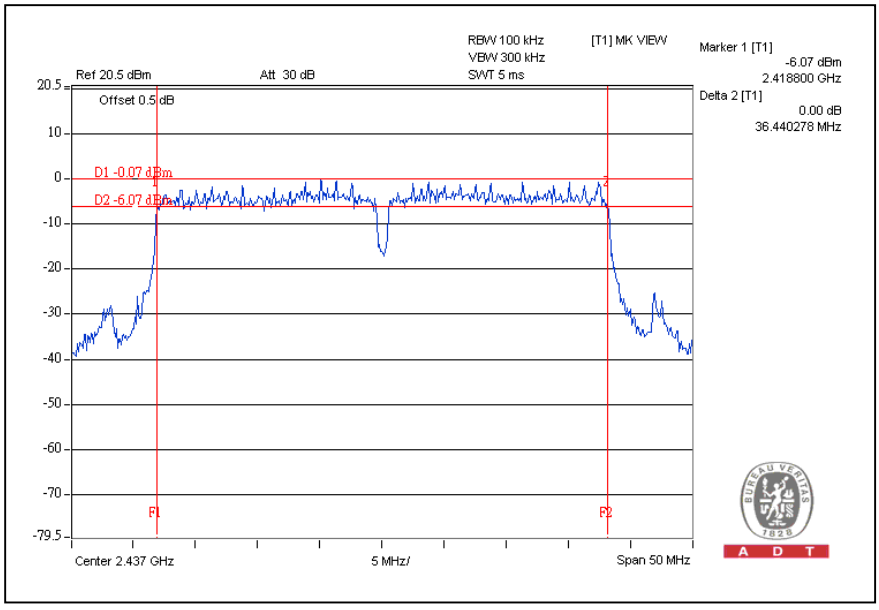
CH7


RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-8.24 dBm
2.431826 GHz
Delta 2 [T1]
0.00 dB
36.415561 MHz
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 -2.24 dBm
D2 -8.24 dBm
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
F1
F2
Center 2.452 GHz
5 MHz/
Span 50 MHz

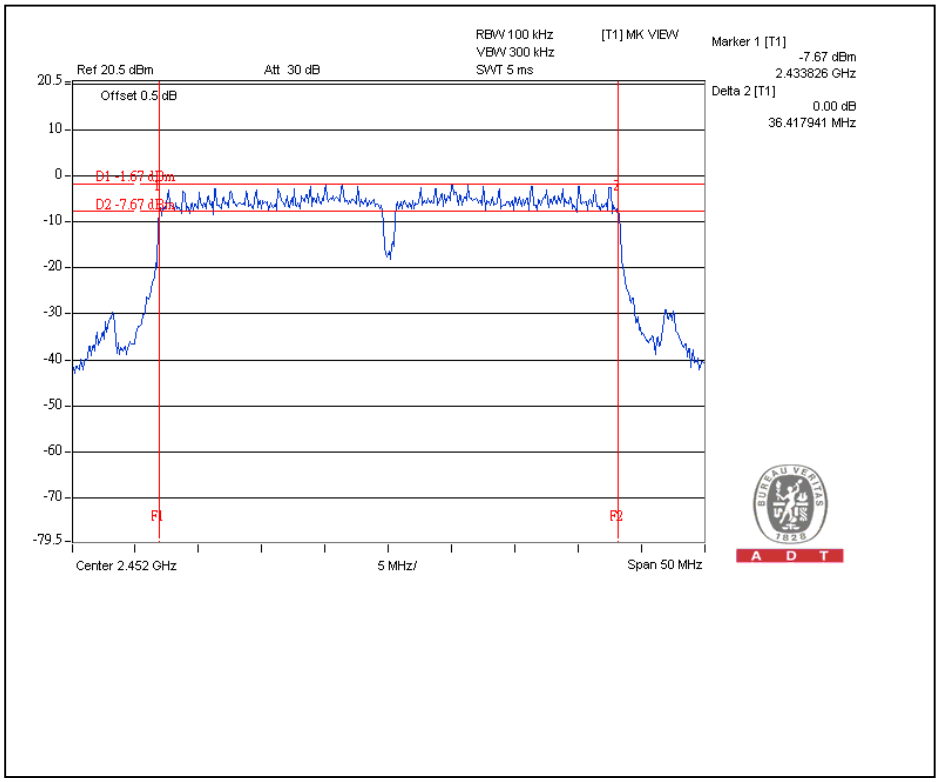
For Chain (1): CH1



CH4



CH7


RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-7.67 dBm
2.433826 GHz
Delta 2 [T1]
0.00 dB
36.417941 MHz
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
D1 -1.67 dBm
D2 -7.67 dBm
F1
F2
Center 2.452 GHz
5 MHz/
Span 50 MHz

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
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 13, 2008	Aug. 12, 2009
Agilent SIGNAL GENERATOR	E8257C	MY43320668	Dec. 26, 2007	Dec. 25, 2008
Anritsu Power Meter	ML2495A	0824006	NA	NA
Pulse Power Sensor	MA2411B	0738172	NA	NA

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

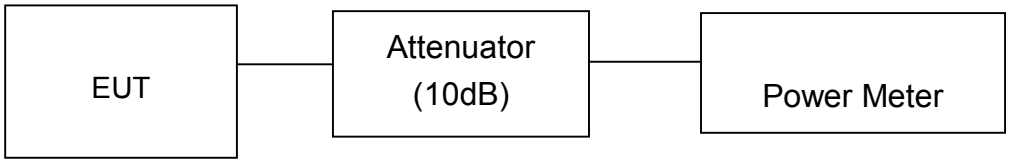
4.4.3 TEST PROCEDURES

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

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6

4.4.7 TEST RESULTS

802.11b DSSS MODULATION:

MODULATION TYPE	DBPSK	TRANSFER RATE	1Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 963hPa
TESTED BY	Frank Liu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	134.896	21.30	30	PASS
6	2437	144.544	21.60	30	PASS
11	2462	134.896	21.30	30	PASS

802.11g OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 963hPa
TESTED BY	Frank Liu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	263.027	24.20	30	PASS
6	2437	301.995	24.80	30	PASS
11	2462	288.403	24.60	30	PASS

DRAFT 802.11n (20MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	**TRANSFER RATE**	13Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 60%RH, 963hPa
TESTED BY	Frank Liu		

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	398.107	371.535	26.00	25.70	769.642	28.86	30	PASS
6	2437	380.189	371.535	25.80	25.70	751.724	28.76	30	PASS
11	2462	363.078	331.131	25.60	25.20	694.209	28.41	30	PASS

DRAFT 802.11n (40MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	**TRANSFER RATE**	27Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 60%RH, 963hPa
TESTED BY	Frank Liu		

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	363.078	338.844	25.60	25.30	701.922	28.46	30	PASS
4	2437	416.869	407.380	26.20	26.10	824.249	29.16	30	PASS
7	2452	380.189	346.737	25.80	25.40	726.926	28.61	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 measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
2. 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

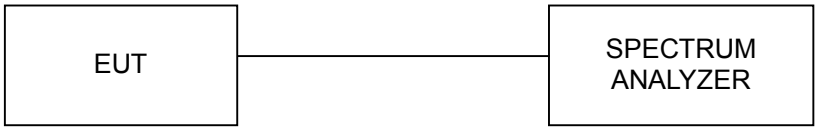
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

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 4.1.6

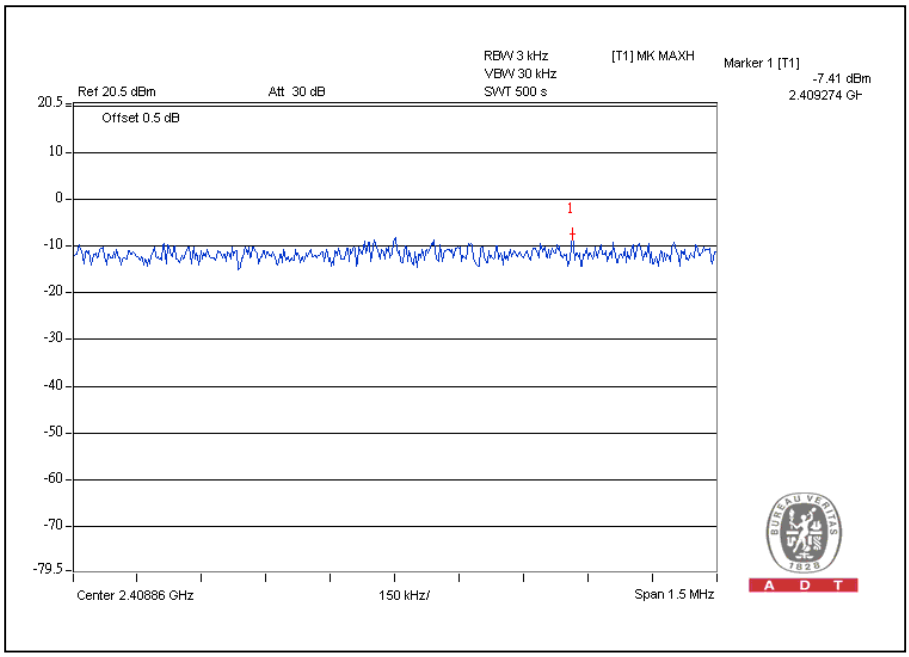
4.5.7 TEST RESULTS

802.11b DSSS MODULATION:

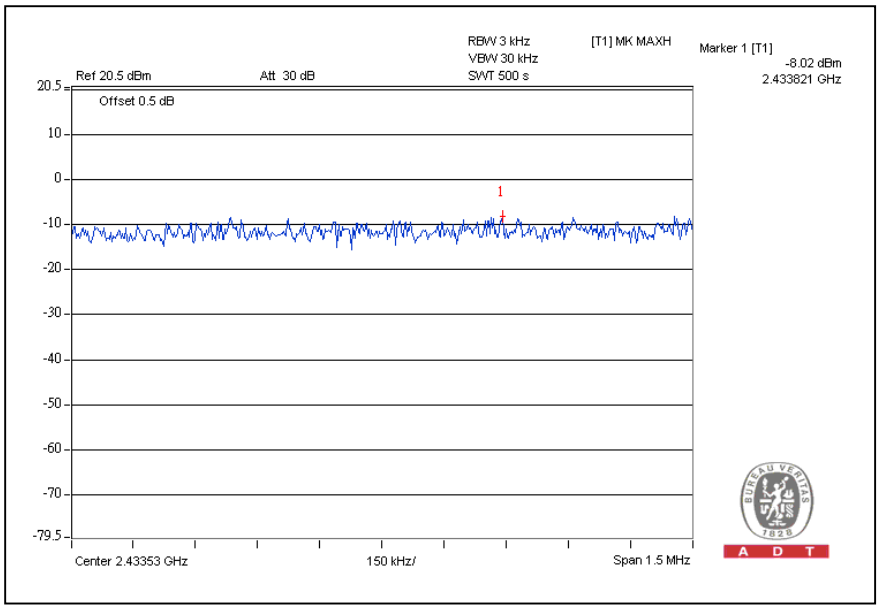
MODULATION TYPE	DBPSK	TRANSFER RATE	1Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 963hPa
TESTED BY	Frank Liu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-7.41	8	PASS
6	2437	-8.02	8	PASS
11	2462	-6.10	8	PASS

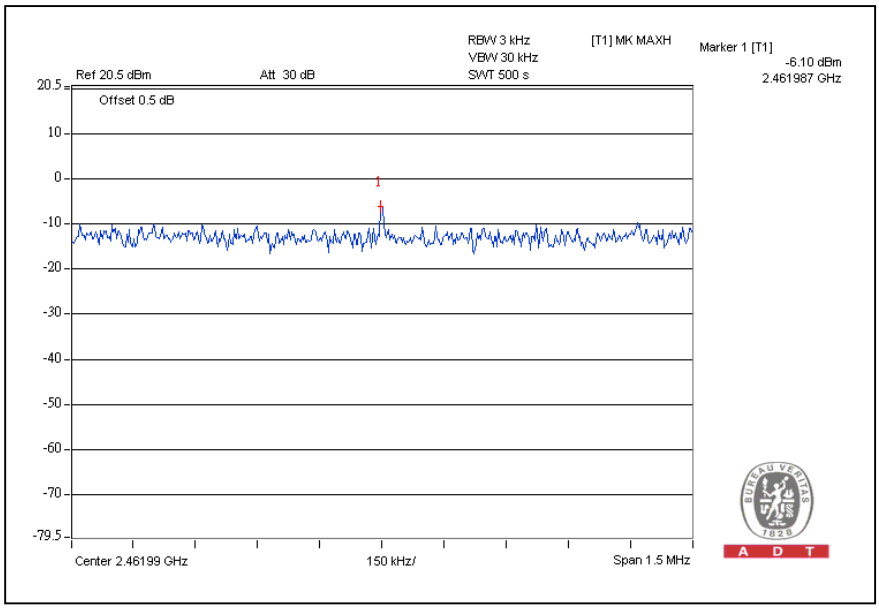
CH1



CH6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-8.02 dBm
2.433821 GHz
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Center 2.43353 GHz
150 kHz/
Span 1.5 MHz

CH11

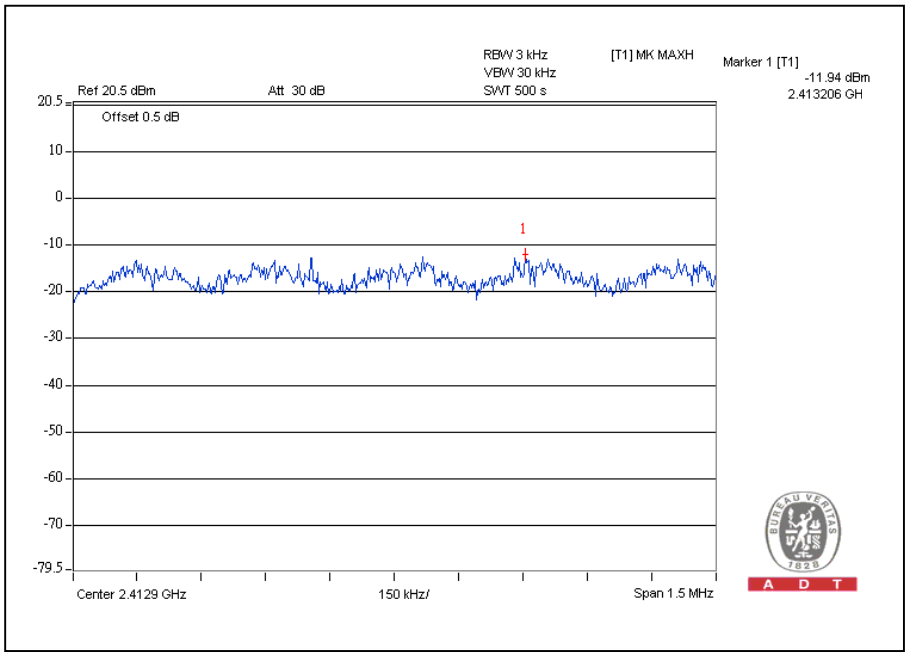

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-6.10 dBm
2.461987 GHz
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Center 2.46199 GHz
150 kHz/
Span 1.5 MHz

802.11g OFDM MODULATION:

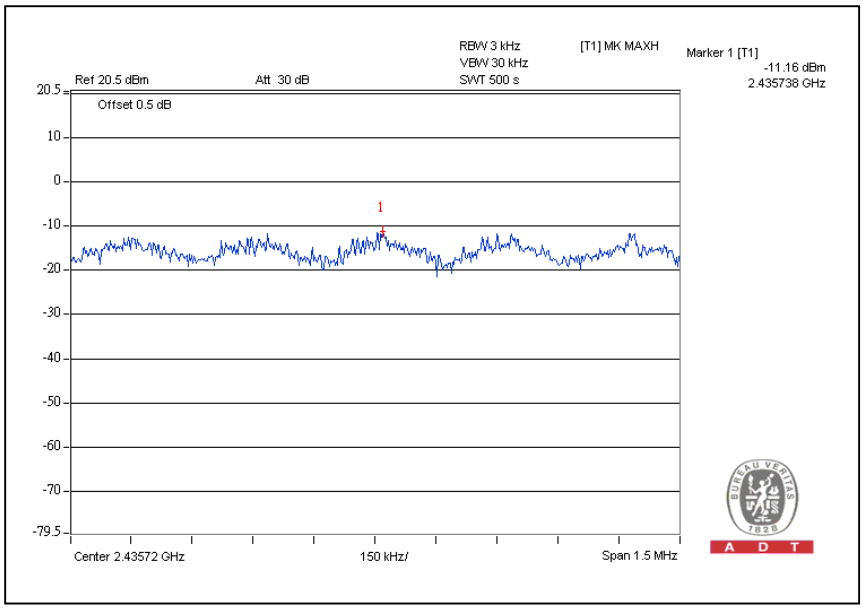
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 963hPa
TESTED BY	Frank Liu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-11.94	8	PASS
6	2437	-11.16	8	PASS
11	2462	-11.81	8	PASS

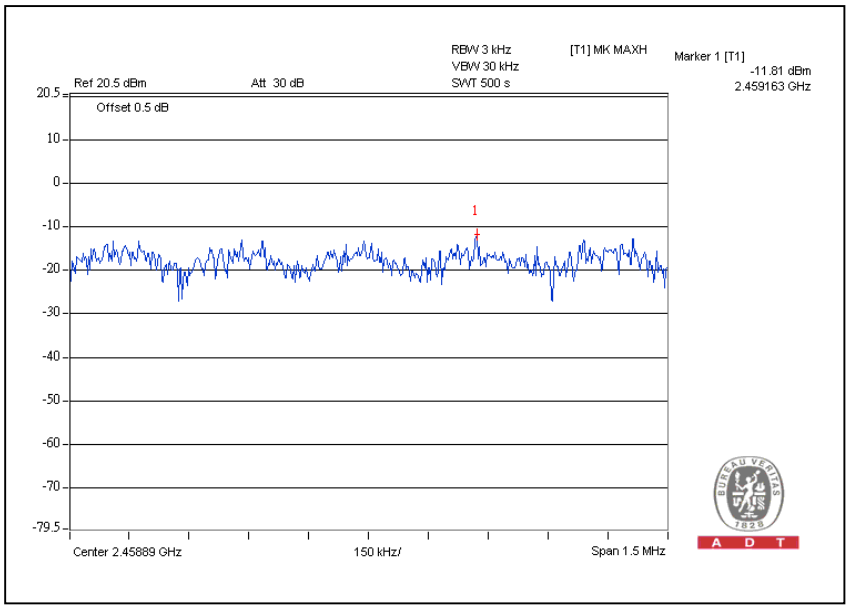
CH1



CH6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-11.16 dBm
2.435738 GHz
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Center 2.43572 GHz
150 kHz/
Span 1.5 MHz

CH11

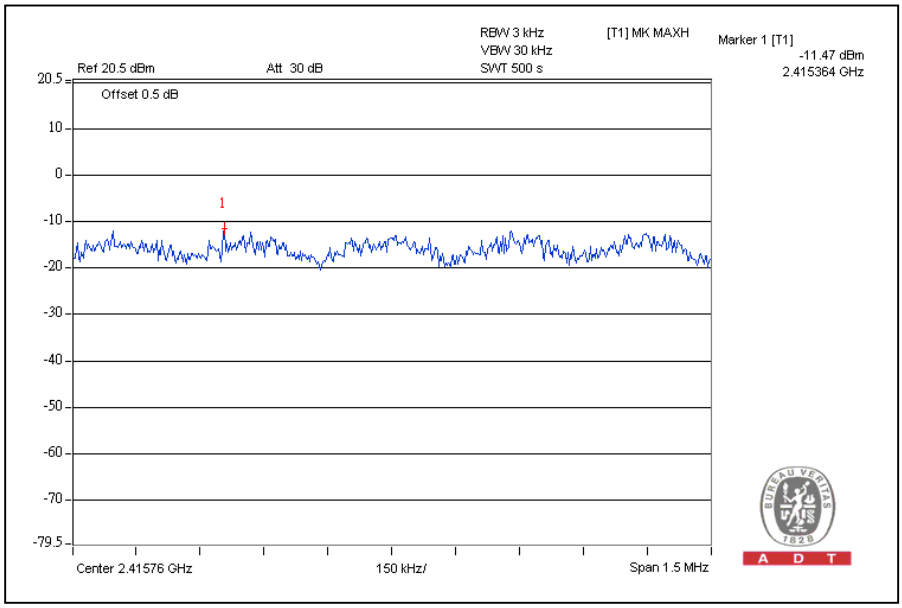

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-11.81 dBm
2.459163 GHz
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Center 2.45889 GHz
150 kHz/
Span 1.5 MHz

DRAFT 802.11n (20MHz) OFDM MODULATION:

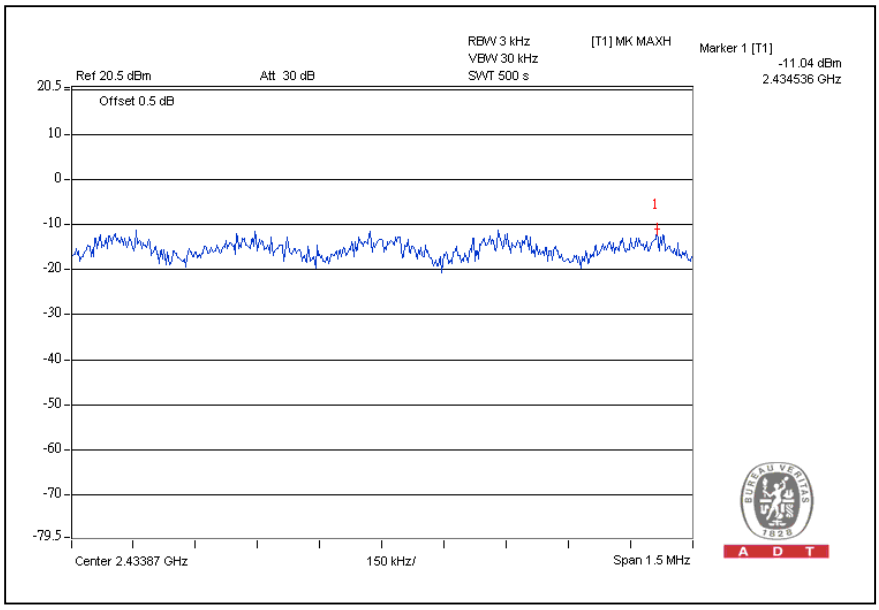
MODULATION TYPE	BPSK	TRANSFER RATE	13Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 963hPa
TESTED BY	Frank Liu		

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	0.071	0.089	-11.47	-10.52	0.160	-7.96	8	PASS
6	2437	0.079	0.076	-11.04	-11.19	0.155	-8.10	8	PASS
11	2462	0.078	0.039	-11.09	-14.09	0.117	-9.32	8	PASS

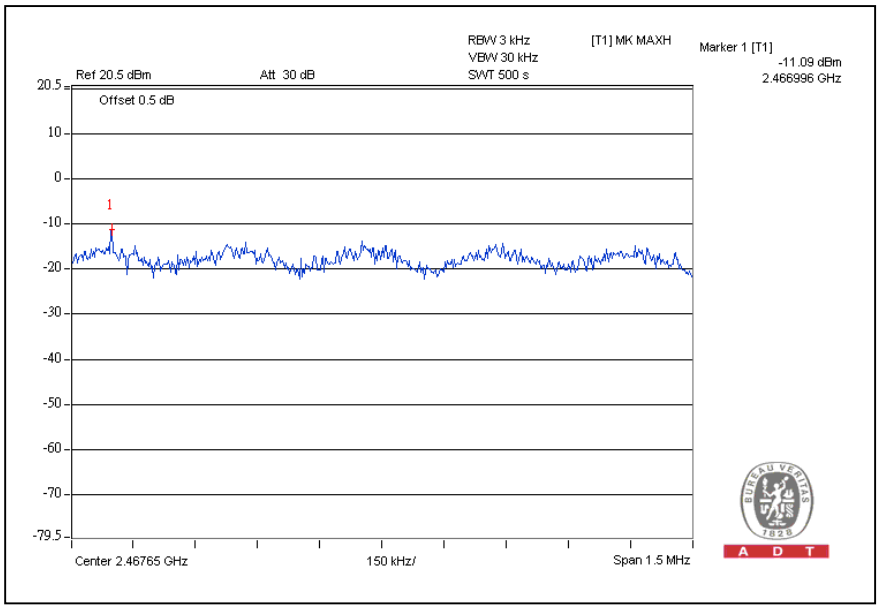
For Chain(0): CH1



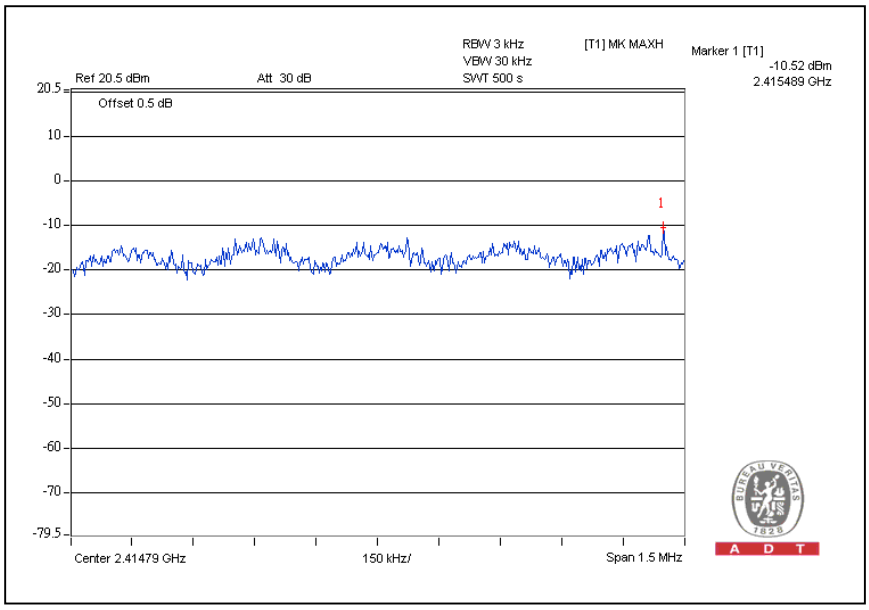
CH6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-11.04 dBm
2.434536 GHz
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Center 2.43387 GHz
150 kHz/
Span 1.5 MHz

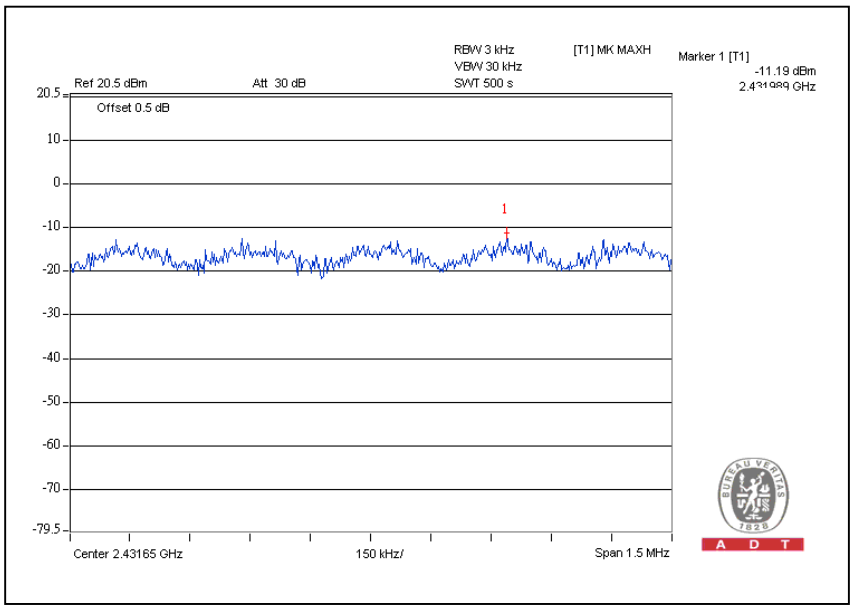
CH11


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-11.09 dBm
2.466996 GHz
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Center 2.46765 GHz
150 kHz/
Span 1.5 MHz

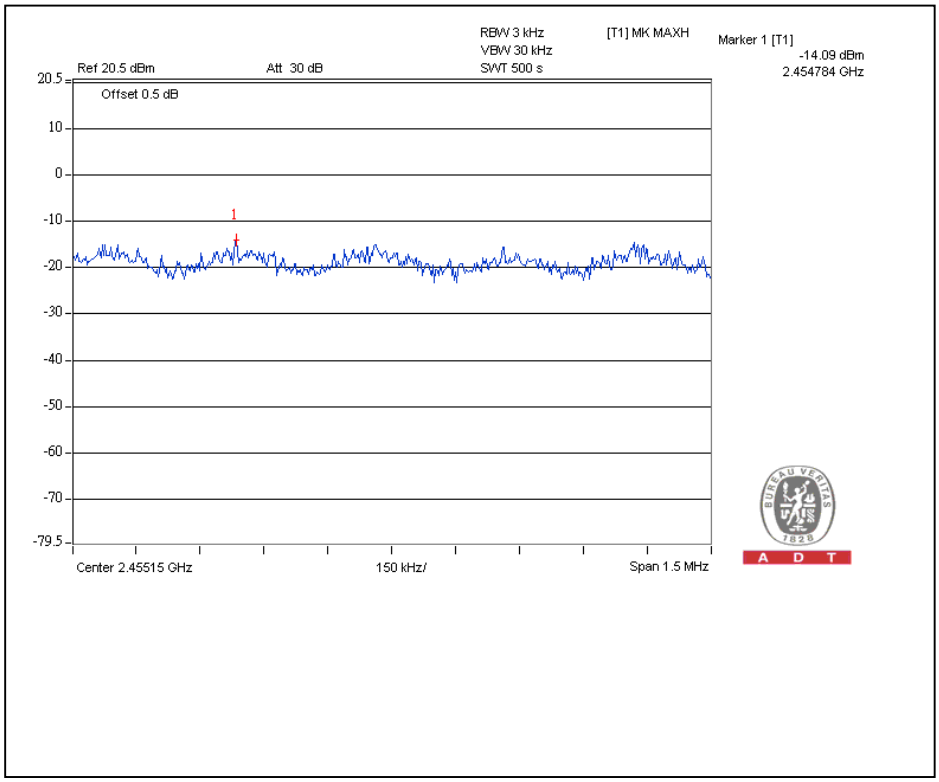
For Chain (1): CH1



CH6



CH11

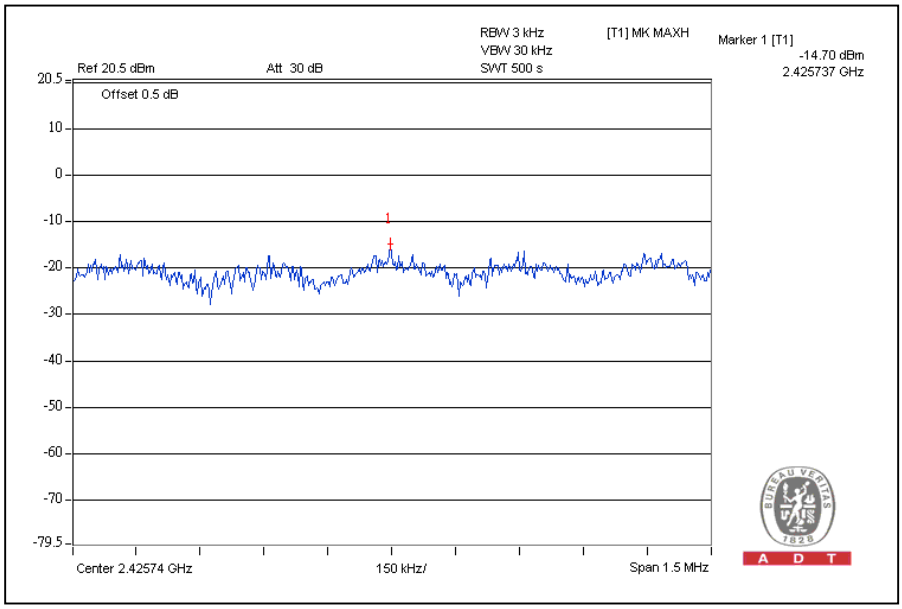

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-14.09 dBm
2.454784 GHz
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Center 2.45515 GHz
150 kHz/
Span 1.5 MHz

DRAFT 802.11n (40MHz) OFDM MODULATION:

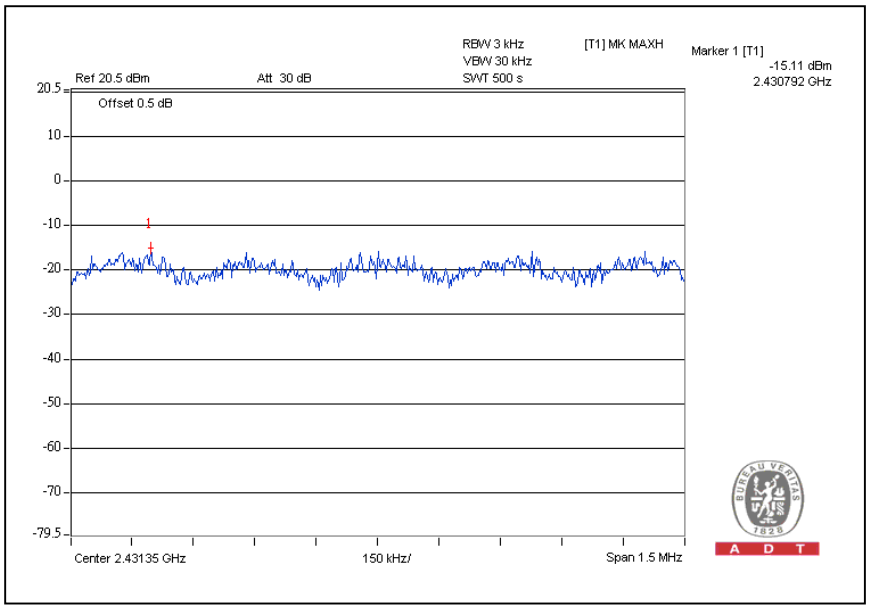
MODULATION TYPE	BPSK	TRANSFER RATE	27Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 963hPa
TESTED BY	Frank Liu		

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	0.034	0.029	-14.70	-15.41	0.063	-12.01	8	PASS
4	2437	0.031	0.042	-15.11	-13.75	0.073	-11.37	8	PASS
7	2452	0.018	0.023	-17.33	-16.32	0.041	-13.87	8	PASS

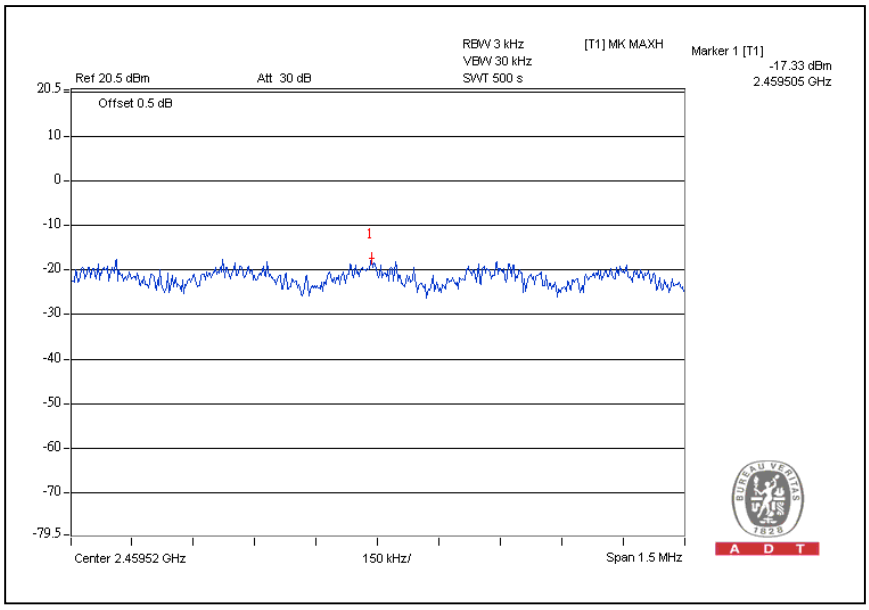
For Chain (0): CH1



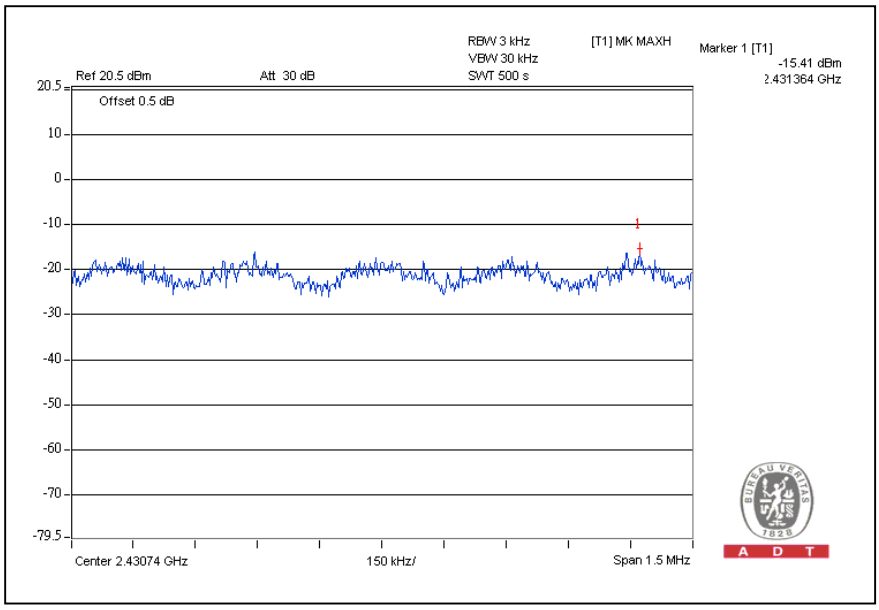
CH4


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-15.11 dBm
2.430792 GHz
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Center 2.43135 GHz
150 kHz/
Span 1.5 MHz

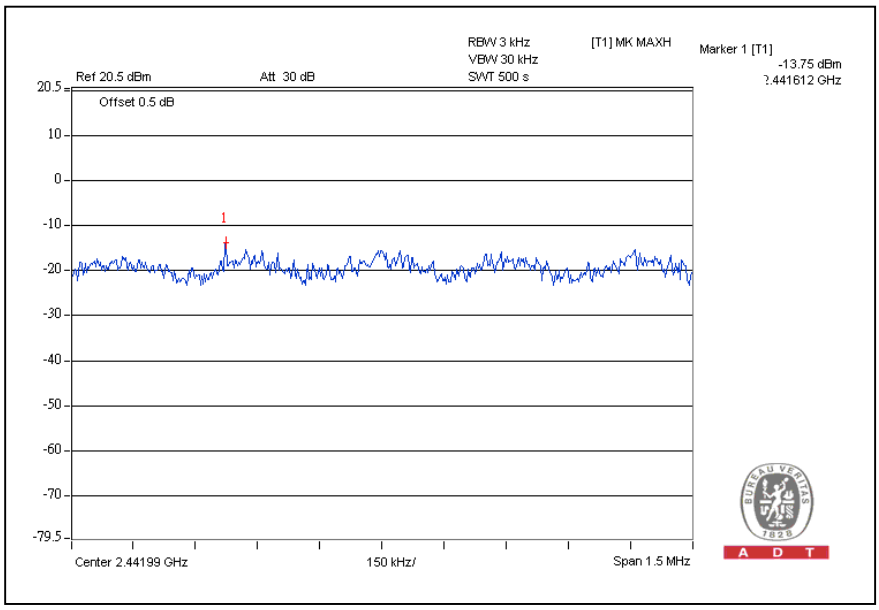
CH7


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-17.33 dBm
2.459505 GHz
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Center 2.45952 GHz
150 kHz/
Span 1.5 MHz

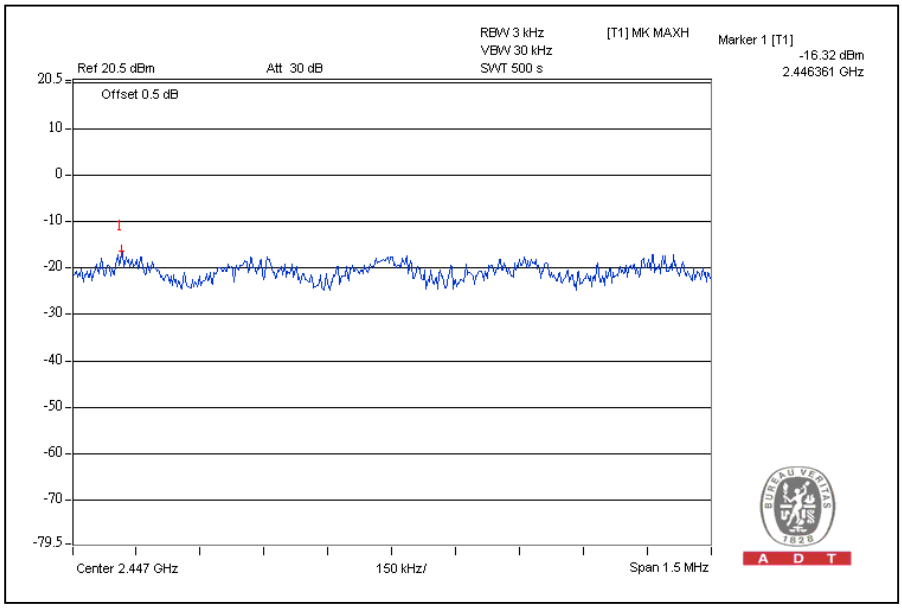
For Chain (1): CH1



CH4



CH7


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-16.32 dBm
2.446361 GHz
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Center 2.447 GHz
150 kHz/
Span 1.5 MHz

4.6 CONDUCTED EMISSION AND BAND EDGES MEASUREMENT

4.6.1 LIMITS OF CONDTCTED EMISSION AND BAND EDGES 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 measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
2. 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

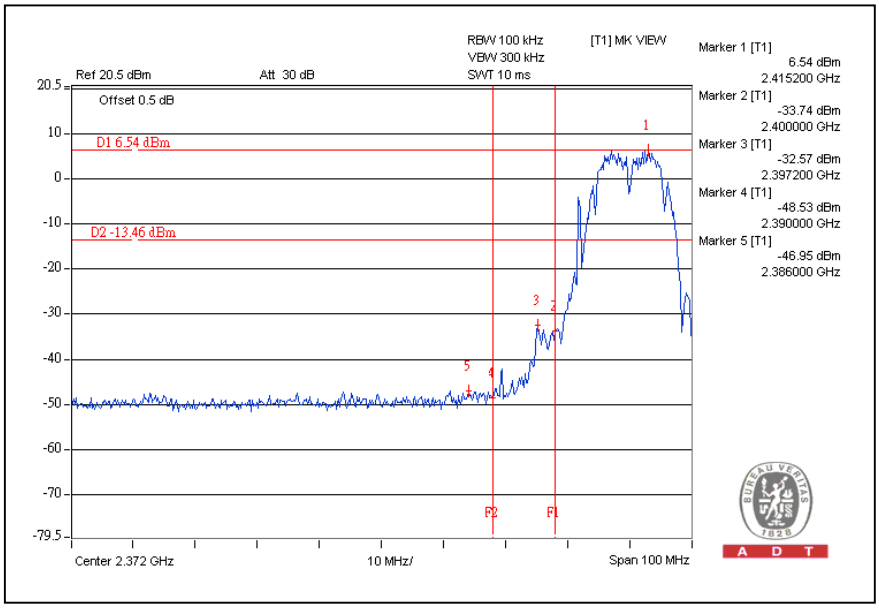
Same as Item 4.1.6

4.6.6 TEST RESULTS

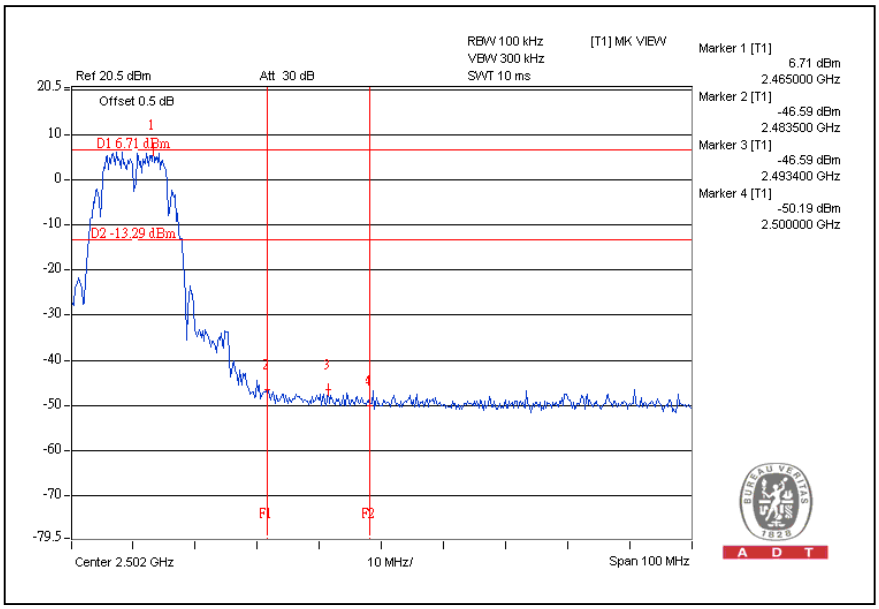
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).

802.11b DSSS MODULATION:

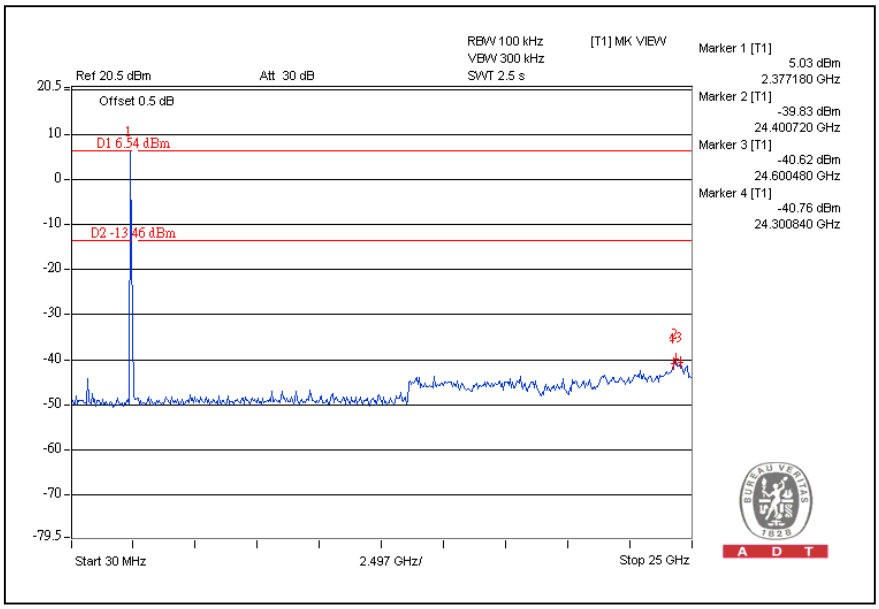
CH1



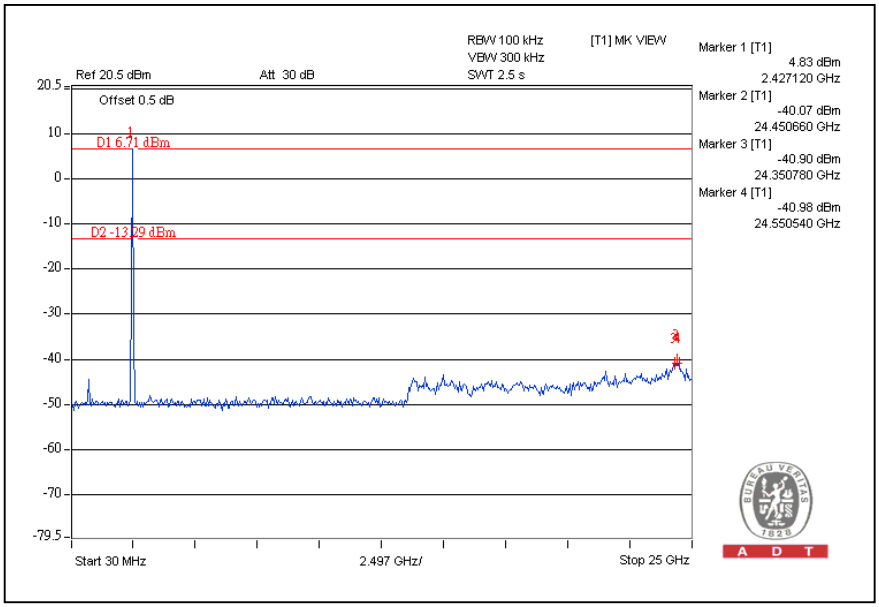
CH11



CH1

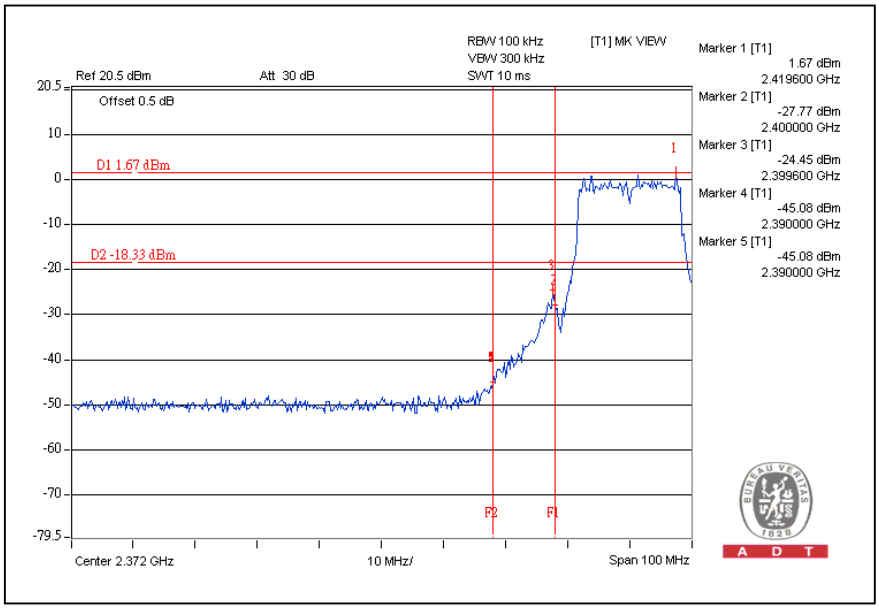

RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 6.54 dBm
D2 -13.46 dBm
Marker 1 [T1]
5.03 dBm
2.377180 GHz
Marker 2 [T1]
-39.83 dBm
24.400720 GHz
Marker 3 [T1]
-40.62 dBm
24.600480 GHz
Marker 4 [T1]
-40.76 dBm
24.300840 GHz
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Start 30 MHz
2.497 GHz/
Stop 25 GHz

CH11

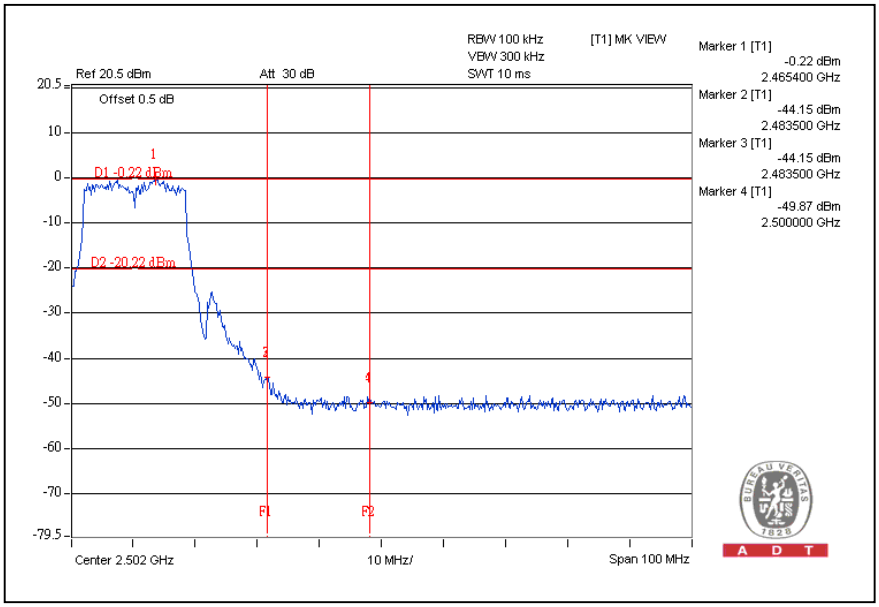

RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 6.71 dBm
D2 -13.29 dBm
Marker 1 [T1]
4.83 dBm
2.427120 GHz
Marker 2 [T1]
-40.07 dBm
24.450660 GHz
Marker 3 [T1]
-40.90 dBm
24.350780 GHz
Marker 4 [T1]
-40.98 dBm
24.550540 GHz
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Start 30 MHz
2.497 GHz/
Stop 25 GHz

802.11g OFDM MODULATION:

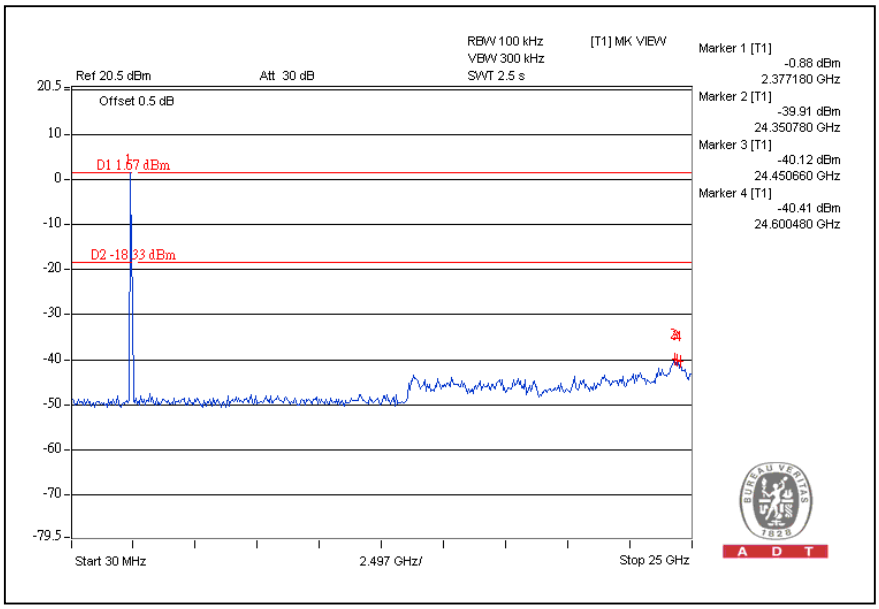
CH 1



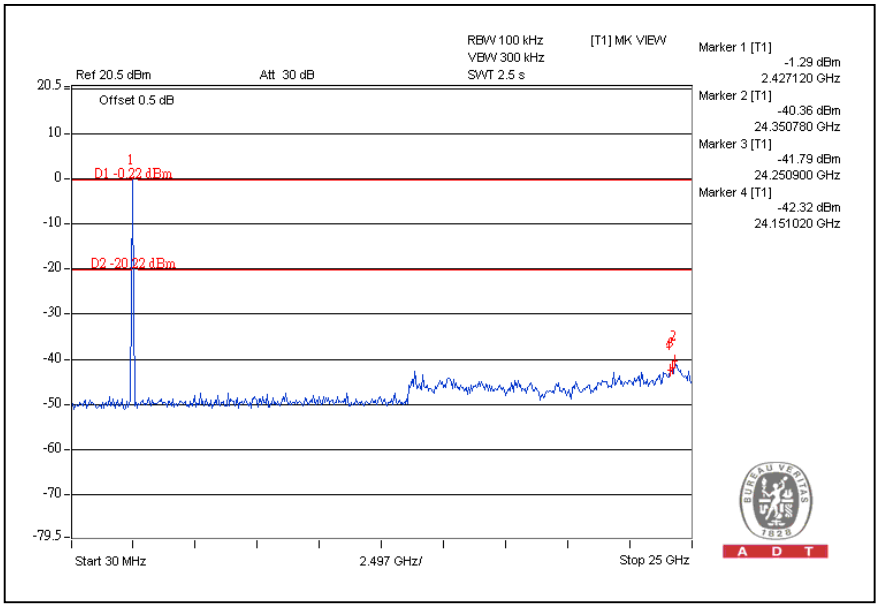
CH11



CH1

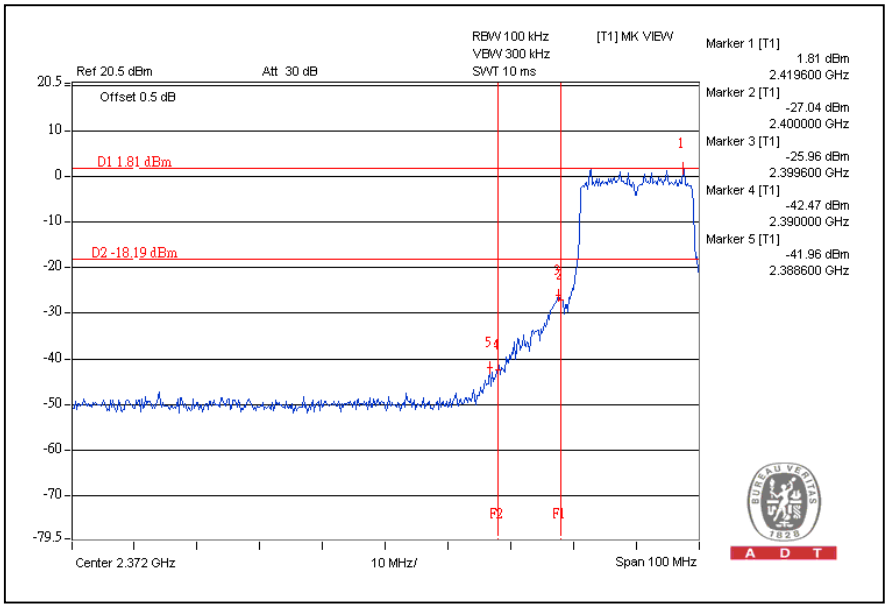

RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 1.57 dBm
D2 -18.33 dBm
Marker 1 [T1]
-0.88 dBm
2.377180 GHz
Marker 2 [T1]
-39.91 dBm
24.350780 GHz
Marker 3 [T1]
-40.12 dBm
24.450660 GHz
Marker 4 [T1]
-40.41 dBm
24.600480 GHz
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Start 30 MHz
2.497 GHz/
Stop 25 GHz

CH11

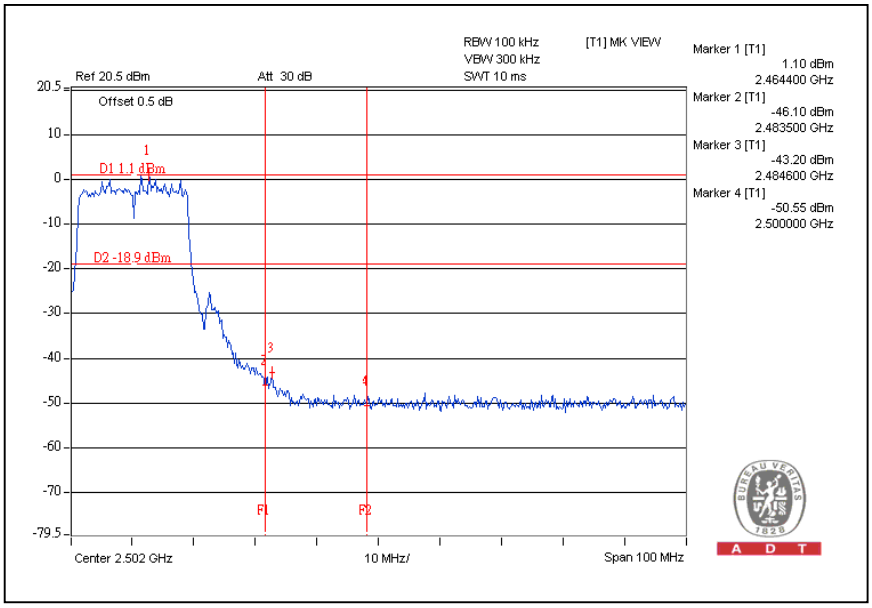

RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 -0.22 dBm
D2 -20.22 dBm
Marker 1 [T1]
-1.29 dBm
2.427120 GHz
Marker 2 [T1]
-40.36 dBm
24.350780 GHz
Marker 3 [T1]
-41.79 dBm
24.250900 GHz
Marker 4 [T1]
-42.32 dBm
24.151020 GHz
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Start 30 MHz
2.497 GHz/
Stop 25 GHz

DRAFT 802.11n (20MHz) OFDM MODULATION:

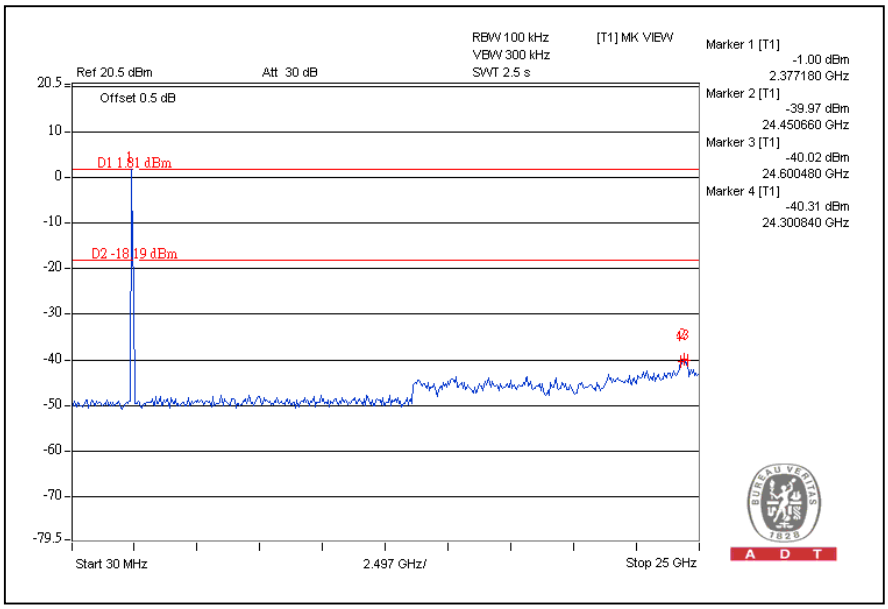
For Chain (0):CH1



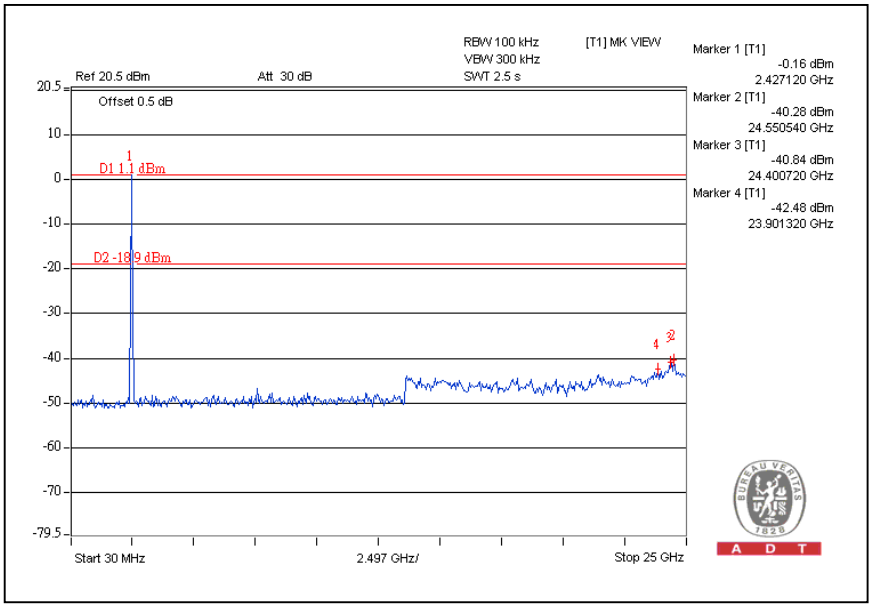
CH11



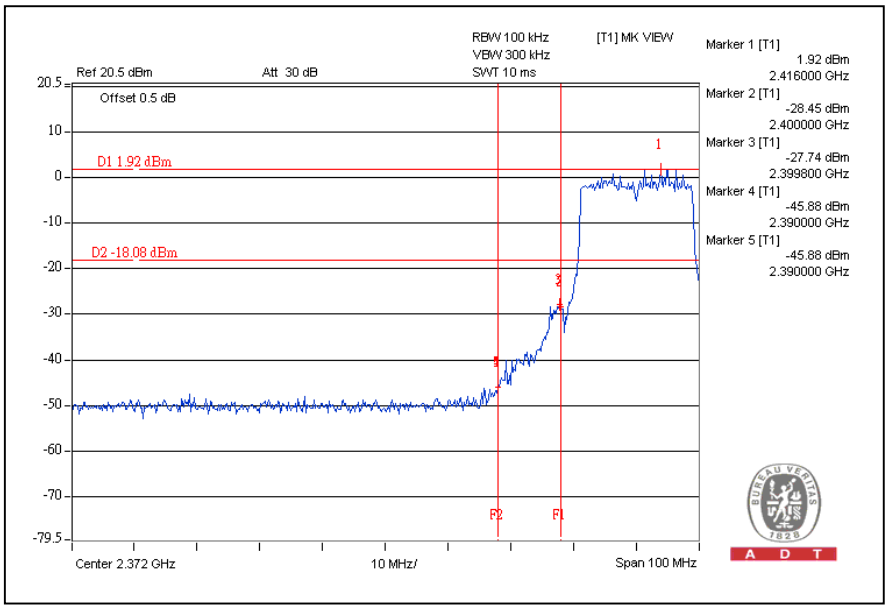
CH1


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 1.81 dBm
D2 -18.19 dBm
Marker 1 [T1]
-1.00 dBm
2.377180 GHz
Marker 2 [T1]
-39.97 dBm
24.450660 GHz
Marker 3 [T1]
-40.02 dBm
24.600480 GHz
Marker 4 [T1]
-40.31 dBm
24.300840 GHz
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Start 30 MHz
2.497 GHz/
Stop 25 GHz

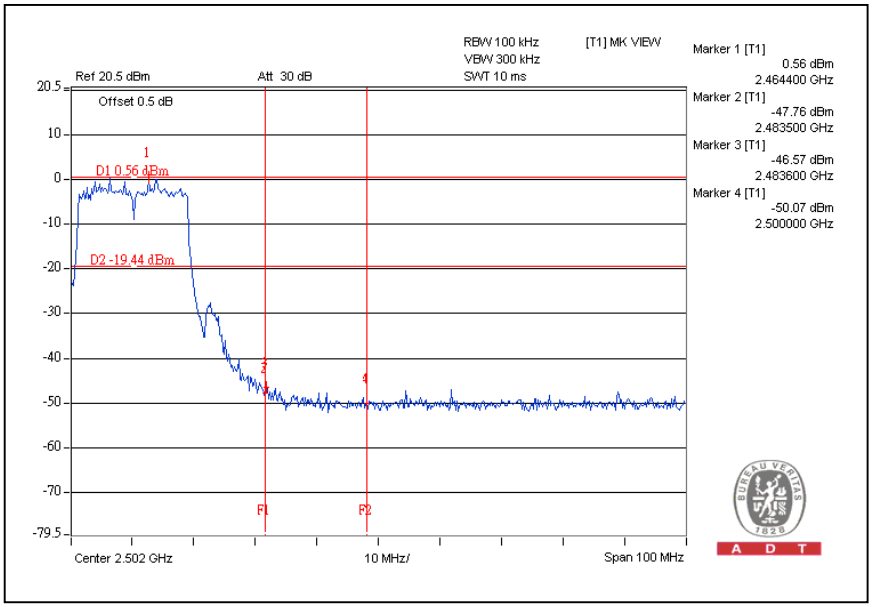
CH11


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 1.1 dBm
D2 -18.9 dBm
Marker 1 [T1]
-0.16 dBm
2.427120 GHz
Marker 2 [T1]
-40.28 dBm
24.550540 GHz
Marker 3 [T1]
-40.84 dBm
24.400720 GHz
Marker 4 [T1]
-42.48 dBm
23.901320 GHz
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Start 30 MHz
2.497 GHz/
Stop 25 GHz

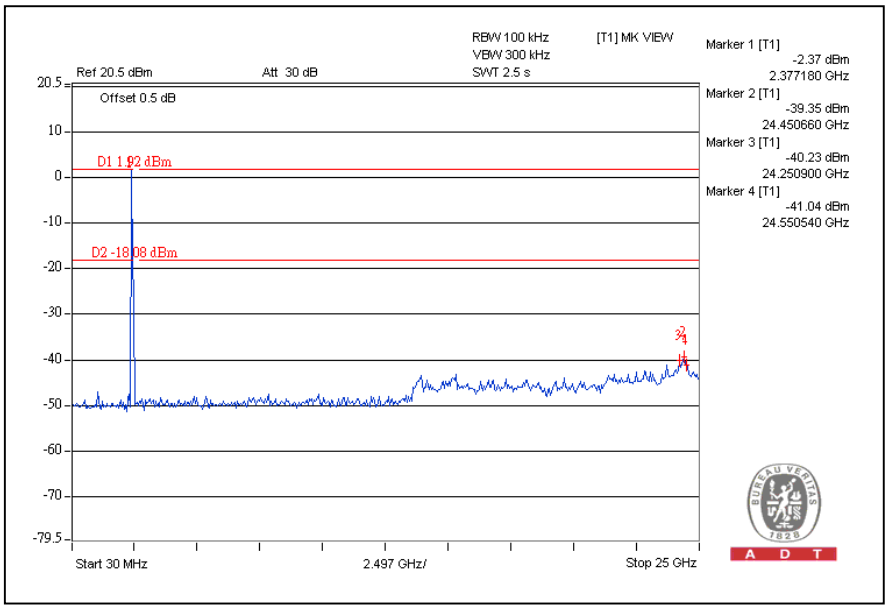
For Chain (1):CH1



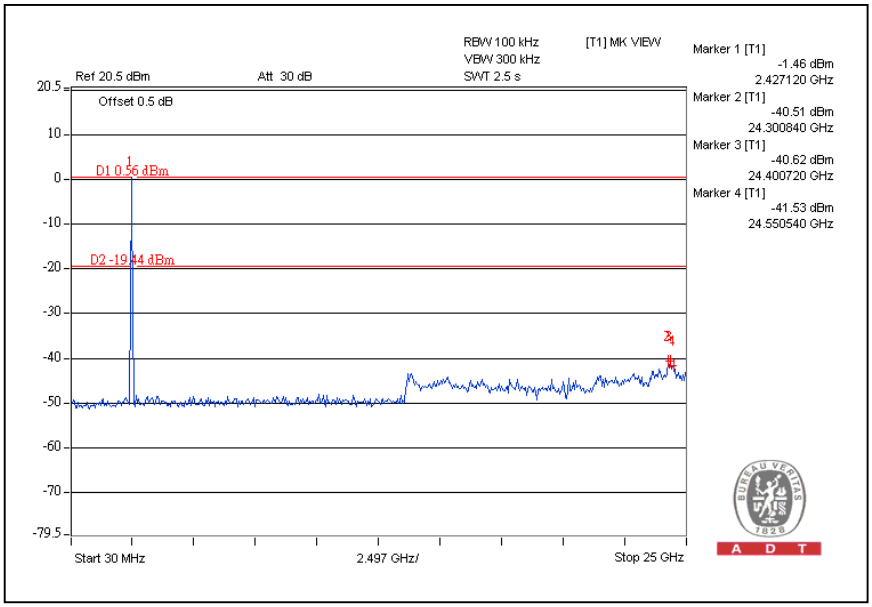
CH11



CH1

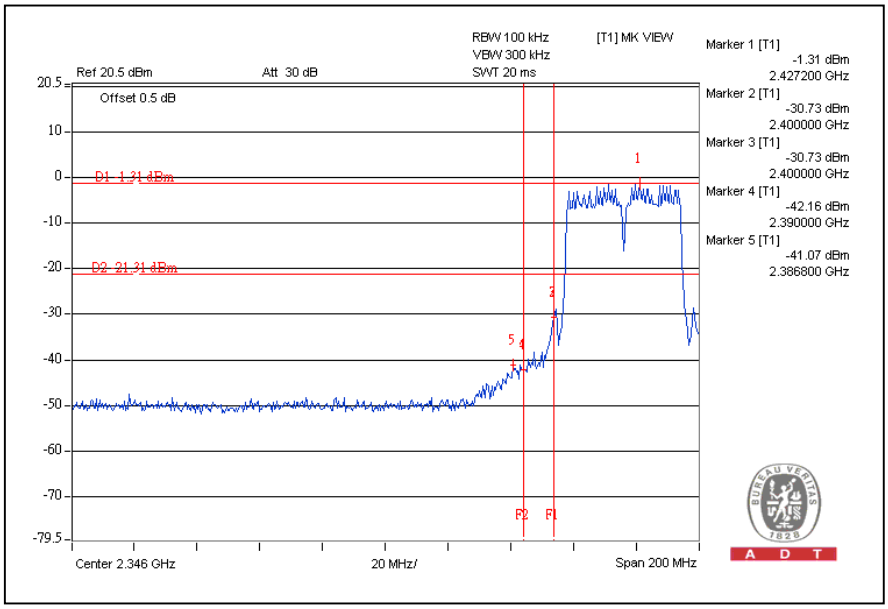

RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 1.92 dBm
D2 -18.08 dBm
Marker 1 [T1]
-2.37 dBm
2.377180 GHz
Marker 2 [T1]
-39.35 dBm
24.450660 GHz
Marker 3 [T1]
-40.23 dBm
24.250900 GHz
Marker 4 [T1]
-41.04 dBm
24.550540 GHz
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Start 30 MHz
2.497 GHz/
Stop 25 GHz

CH11

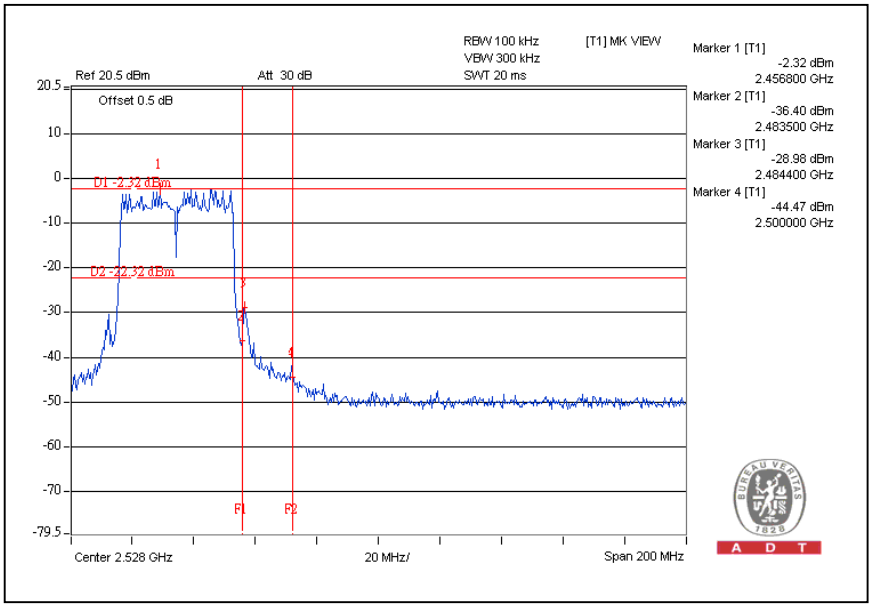

RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 0.56 dBm
D2 -19.44 dBm
Marker 1 [T1]
-1.46 dBm
2.427120 GHz
Marker 2 [T1]
-40.51 dBm
24.300840 GHz
Marker 3 [T1]
-40.62 dBm
24.400720 GHz
Marker 4 [T1]
-41.53 dBm
24.550540 GHz
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Start 30 MHz
2.497 GHz/
Stop 25 GHz

DRAFT 802.11n (40MHz) OFDM MODULATION:

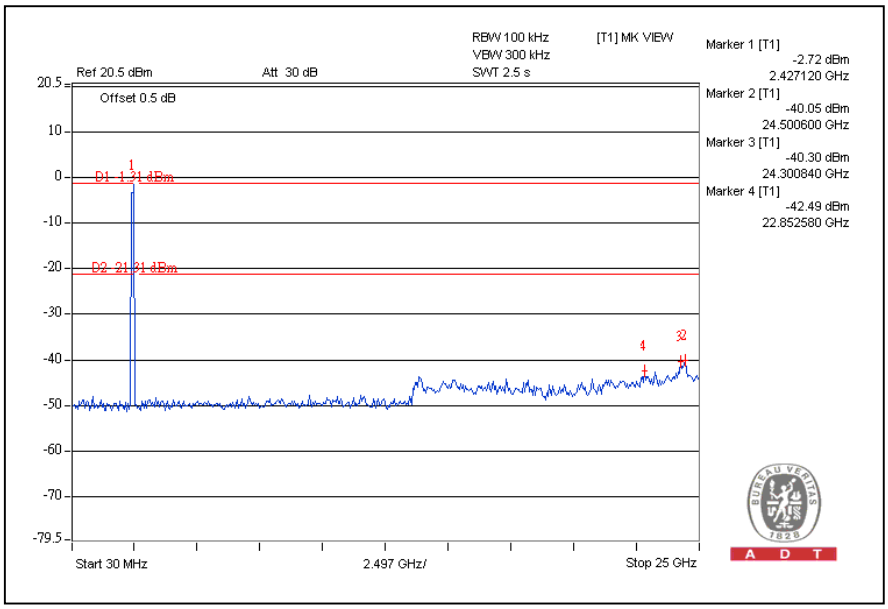
For Chain (0):CH1



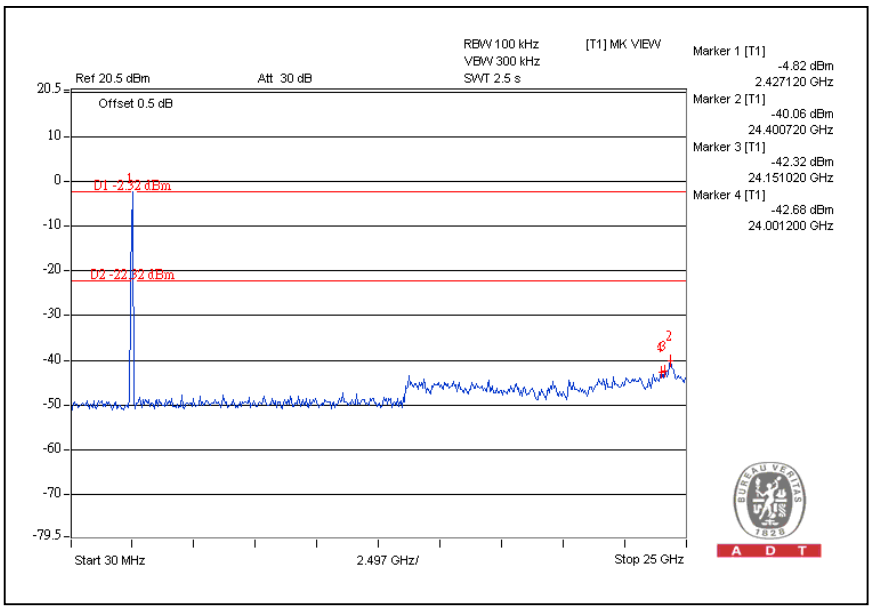
CH7



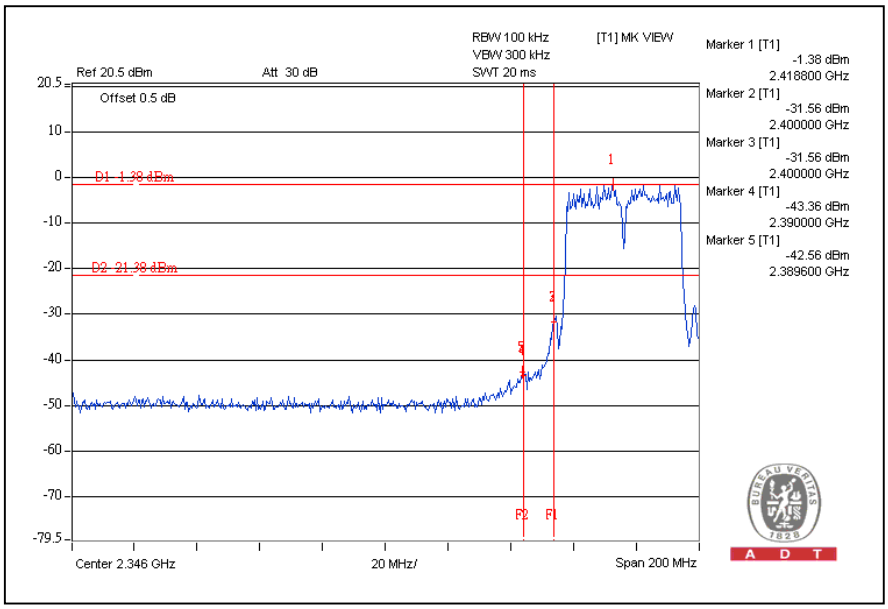
CH1


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 1.21 dBm
D2 21.21 dBm
Marker 1 [T1]
-2.72 dBm
2.427120 GHz
Marker 2 [T1]
-40.05 dBm
24.500600 GHz
Marker 3 [T1]
-40.30 dBm
24.300840 GHz
Marker 4 [T1]
-42.49 dBm
22.852580 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz

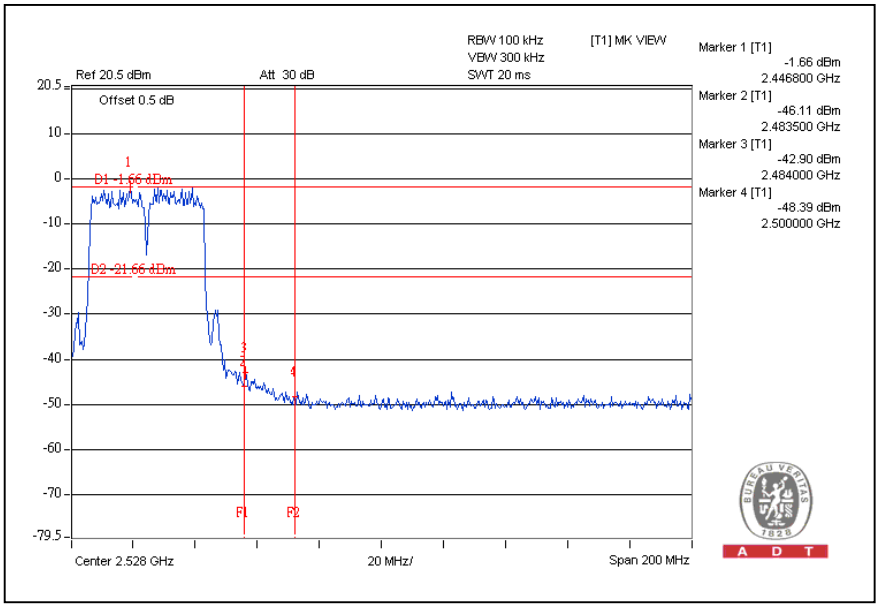
CH7


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 -2.32 dBm
D2 -22.32 dBm
Marker 1 [T1]
-4.82 dBm
2.427120 GHz
Marker 2 [T1]
-40.06 dBm
24.400720 GHz
Marker 3 [T1]
-42.32 dBm
24.151020 GHz
Marker 4 [T1]
-42.68 dBm
24.001200 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz

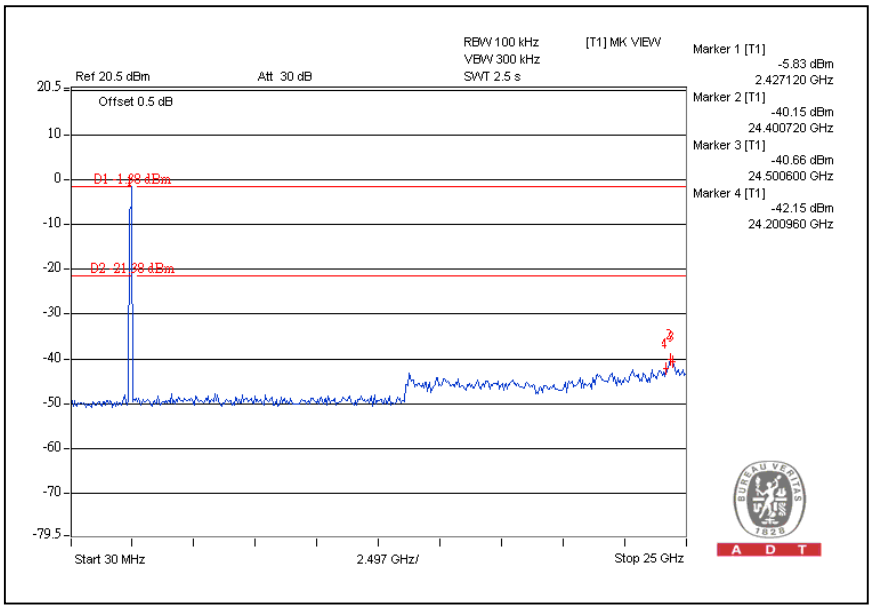
For Chain (1):CH1



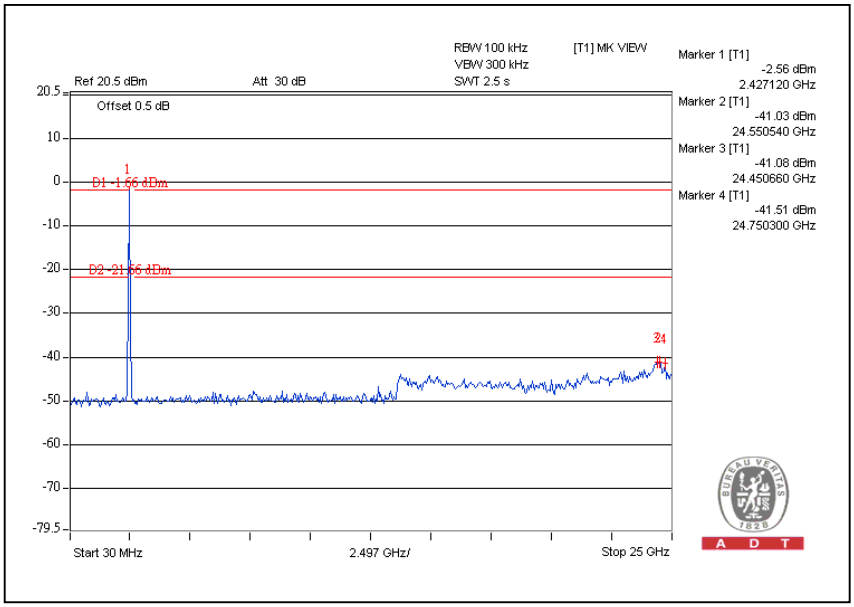
CH7



CH1


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 -1.68 dBm
D2 -21.68 dBm
Marker 1 [T1]
-5.83 dBm
2.427120 GHz
Marker 2 [T1]
-40.15 dBm
24.400720 GHz
Marker 3 [T1]
-40.66 dBm
24.500600 GHz
Marker 4 [T1]
-42.15 dBm
24.200960 GHz
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Start 30 MHz
2.497 GHz/
Stop 25 GHz

CH7


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 -1.56 dBm
D2 -21.56 dBm
Marker 1 [T1]
-2.56 dBm
2.427120 GHz
Marker 2 [T1]
-41.03 dBm
24.550540 GHz
Marker 3 [T1]
-41.08 dBm
24.450660 GHz
Marker 4 [T1]
-41.51 dBm
24.750300 GHz
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Start 30 MHz
2.497 GHz/
Stop 25 GHz

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

The antenna used in this product is Pifa antenna without Connector. The maximum Gain of the antenna is 1.5dBi.

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.

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 ---