FCC TEST REPORT

REPORT NO.: RF950414H05
MODEL NO.: WN511B
RECEIVED: April 14, 2006
TESTED: April 14 to 18, 2006
ISSUED: April 19, 2006

APPLICANT: NETGEAR, Inc.

ADDRESS: 4500 Great America Parkway, Santa Clara, CA 95054 USA

ISSUED BY: Advance Data Technology Corporation

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

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0536

No. 2177-01

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1. CERTIFICATION

PRODUCT : NEXT Wireless Notebook Adapter
MODEL NO.: WN511B
BRAND: NETGEAR
APPLICANT : NETGEAR, Inc.
TESTED: April 14 to 18, 2006
TEST SAMPLE: ENGINEERING SAMPLE
STANDARDS : FCC Part 15, Subpart C (Section 15.247), ANSI C63.4-2003

The above equipment (Model: WN511B) has been tested by **Advance Data Technology Corporation**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : Carol Liao , **DATE:** April 19, 2006
(Carol Liao)

TECHNICAL ACCEPTANCE : Hank Chung , **DATE:** April 19, 2006
Responsible for RF
(Hank Chung)

APPROVED BY : , **DATE:** April 19, 2006
(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 –19.56dB at 0.154MHz.
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 –0.2dB at 2390.00MHz and 2484.20MHz.
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:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz ~ 30MHz	2.26 dB
Radiated emissions	30MHz ~ 1000MHz	2.98 dB
	1GHz ~ 18GHz	2.21 dB
	18GHz ~ 40GHz	1.88 dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	NEXT Wireless Notebook Adapter
MODEL NO.	WN511B
FCC ID	PY306200043
POWER SUPPLY	3.3Vdc from host equipment
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): 130/117/104/78/65/58.5/52/39/26/19.5/13/6.5Mbps Draft 802.11n (40MHz): 270/ 243/ 216/ 162/135/121.5/108/81/54/40.5/27/13.5Mbps
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: 210.378mW 802.11g: 251.924mW draft 802.11n (20MHz): 246.694mW draft 802.11n (40MHz): 259.232mW
ANTENNA TYPE	Printed antenna with 3.49dBi gain
DATA CABLE	NA
I/O PORTS	NA

NOTE:

1. The EUT incorporates a MIMO function with 802.11b, 802.11g, draft 802.11n. Physically, the card provides two completed transmit and two receivers.
2. The EUT is 2 * 2 spatial MIMO without beam forming function. Spatial multiplexing modes for simultaneous transmission using 2 antennas , and for simultaneous receiver using 2 antennas.
3. When the EUT operating in draft 802.11n, the software operation, which is defined by manufacturer, MCS (Modulation and Coding Schemes) from 0 to 15.
4. The EUT complies with draft 802.11n standards and backwards compatible with 802.11b, 802.11g products.
5. The EUT operates in the 2.4GHz frequency spectrum with throughput of up to 270Mbps.
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

COMBINATION MODE:

COMBINATION MODE	OPERATION MODE	ANTENNA 1	ANTENNA 2
A	802.11 B	✓	
B	802.11G	✓	✓
C	DRAFT 802.11n(20MHz)	✓	✓
D	DRAFT 802.11n(40MHz)	✓	✓

Note:
1. The above information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.
2. All of Antennas are printed antenna.
3. From above mode, the different modes was chosen for final test and its data were recorded in this report.
4. All of the modes are different operation mode or antenna combination, we choose the worst mode (decided by pretest) for final test. Mode A, B, C, D the worst modes, was selected as representative mode for the test.

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

Where **PLC:** Power Line Conducted Emission **RE < 1G:** Radiated Emission below 1GHz
RE ≥ 1G: Radiated Emission above 1GHz **APCM:** Antenna Port Conducted Measurement

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)	TX CONDITION
802.11g	1 to 11	11	OFDM	BPSK	6	Dual
Draft 802.11n (20MHz)	1 to 11	11	OFDM	BPSK	6.5	Dual
Draft 802.11n (40MHz)	1 to 7	7	OFDM	BPSK	13.5	Dual

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)	TX CONDITION
802.11g	1 to 11	1	OFDM	BPSK	6	Dual
Draft 802.11n (20MHz)	1 to 11	1	OFDM	BPSK	6.5	Dual
Draft 802.11n (40MHz)	1 to 7	1	OFDM	BPSK	13.5	Dual

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)	TX CONDITION
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1	Single
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6	Dual
Draft 802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5	Dual
Draft 802.11n (40MHz)	1 to 7	1, 4, 7	OFDM	BPSK	13.5	Dual

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)	TX CONDITION
802.11b	1 to 11	1, 11	DSSS	DBPSK	1	Single
802.11g	1 to 11	1, 11	OFDM	BPSK	6	Dual
Draft 802.11n (20MHz)	1 to 11	1, 11	OFDM	BPSK	6.5	Dual
Draft 802.11n (40MHz)	1 to 7	1, 7	OFDM	BPSK	13.5	Dual

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)	TX CONDITION
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1	Single
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6	Dual
Draft 802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5	Dual
Draft 802.11n (40MHz)	1 to 7	1, 4, 7	OFDM	BPSK	13.5	Dual

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

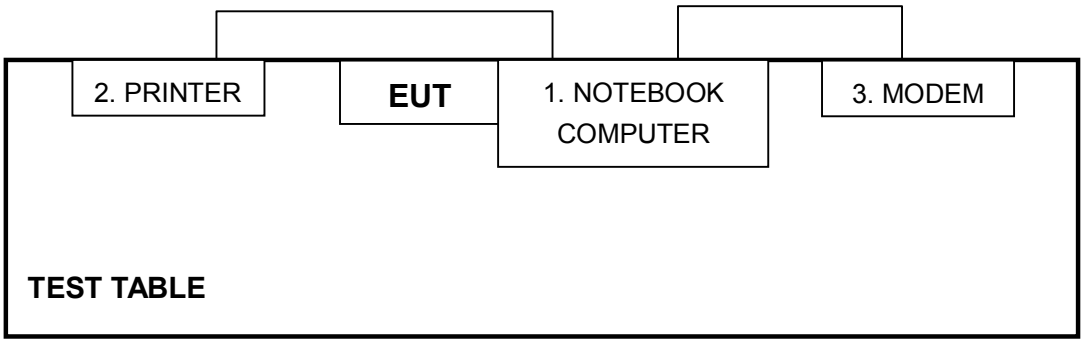
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	ASUS	A2400H	49NG038481	DoC
2	PRINTER	HP	C2642A	MY79F1C3MZ	B94C2642X
3	MODEM (only for conduction test)	ACEEX	1414	0206026775	IFAXDM1414

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	1.6 m braid shielded wire, terminated with DB25 connector via metallic frame, w/o core
3	1.5 m braid shielded wire, terminated with DB25 and DB9 connector via metallic frame, w/o core.

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

3.5 CONFIGURATION OF SYSTEM UNDER TEST



NOTE: 1. Please refer to the photos of test configuration in Item 5 also.

4. TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver	ESCS 30	100375	Sep. 19, 2006
Line-Impedance Stabilization Network(for EUT)	ENV-216	100071	Nov. 10, 2006
ROHDE & SCHWARZ LISN	KNW-407	8/1395/12	Jul. 19, 2006
RF Signal Cable	RG233/U	Cable_CA_02	Dec. 10, 2006
Terminator(for KYORITSU)	50	2	Oct. 08, 2006
Software	ADT_Cond_V7.3.2	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 ADT Shielded Room No. B.
3. The VCCI Con B Registration No. is C-2193.

4.1.3 TEST PROCEDURES

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

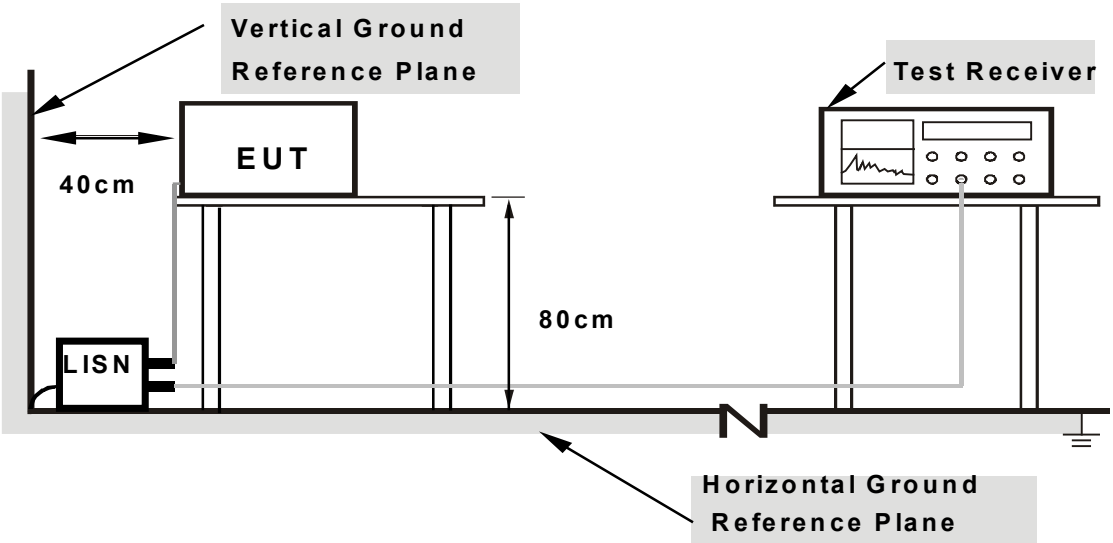
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

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

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



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

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

4.1.6 EUT OPERATING CONDITIONS

a. Plug the EUT into the support unit 1 (Notebook computer) and placed it on the testing table.
b. The support unit 1 (Notebook computer) ran a test program “Broadcom MFG tool” to enable EUT under transmission condition continuously at specific channel frequency.
c. Notebook computer sends "H" messages to printer, and the printer prints them on paper.
d. Notebook computer sends "H" messages to modem.

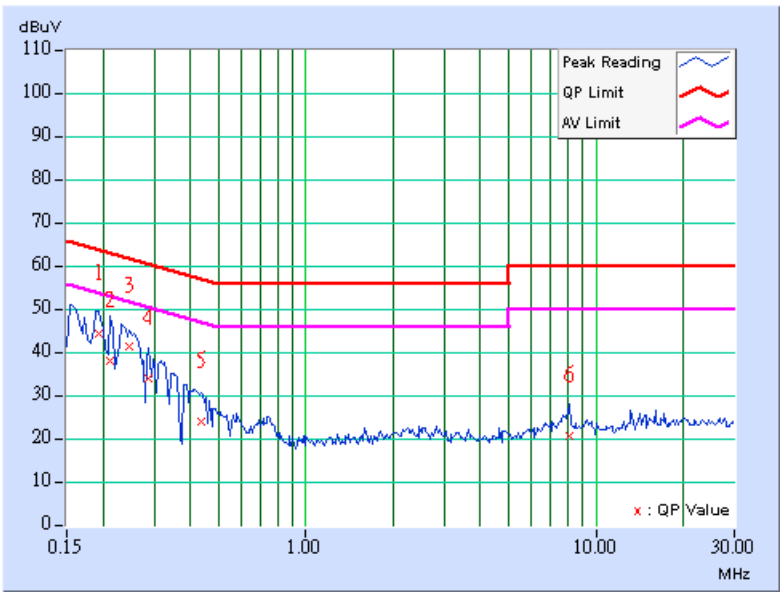
4.1.7 TEST RESULTS

CONDUCTED WORST-CASE DATA: 802.11g OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	PHASE	Line (L)
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 964hPa	TESTED BY	Eric Lee

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	0.193	9.60	34.63	-	44.23	-	63.91	53.91	-19.68	-
2	0.213	9.60	28.49	-	38.09	-	63.11	53.11	-25.02	-
3	0.248	9.60	31.57	-	41.17	-	61.84	51.84	-20.67	-
4	0.287	9.60	24.36	-	33.96	-	60.62	50.62	-26.66	-
5	0.435	9.60	14.23	-	23.83	-	57.15	47.15	-33.32	-
6	8.117	9.84	10.98	-	20.82	-	60.00	50.00	-39.18	-

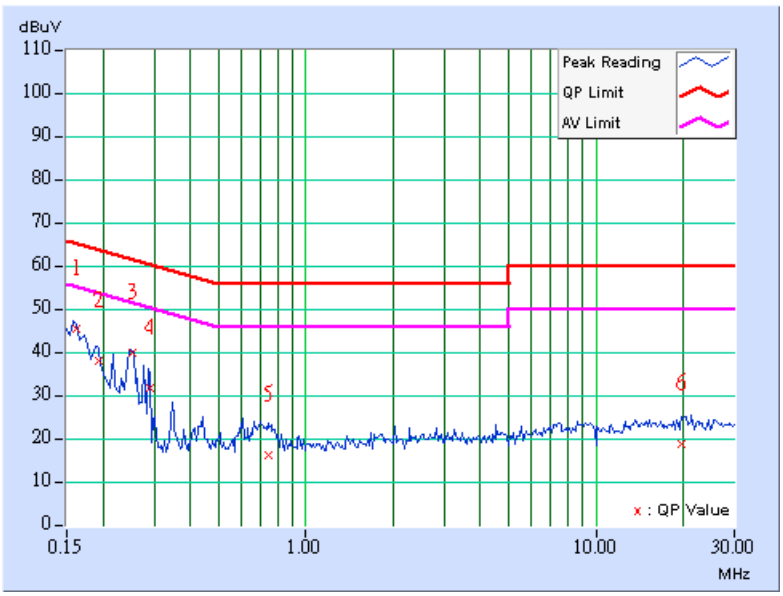
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	PHASE	Neutral (N)
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 964hPa	TESTED BY	Eric Lee

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	9.60	35.47	-	45.07	-	65.38	55.38	-20.31	-
2	0.193	9.60	28.13	-	37.73	-	63.91	53.91	-26.18	-
3	0.251	9.60	29.77	-	39.37	-	61.71	51.71	-22.34	-
4	0.291	9.60	21.88	-	31.48	-	60.51	50.51	-29.03	-
5	0.740	9.60	6.05	-	15.65	-	56.00	46.00	-40.35	-
6	19.711	10.09	8.96	-	19.05	-	60.00	50.00	-40.95	-

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.

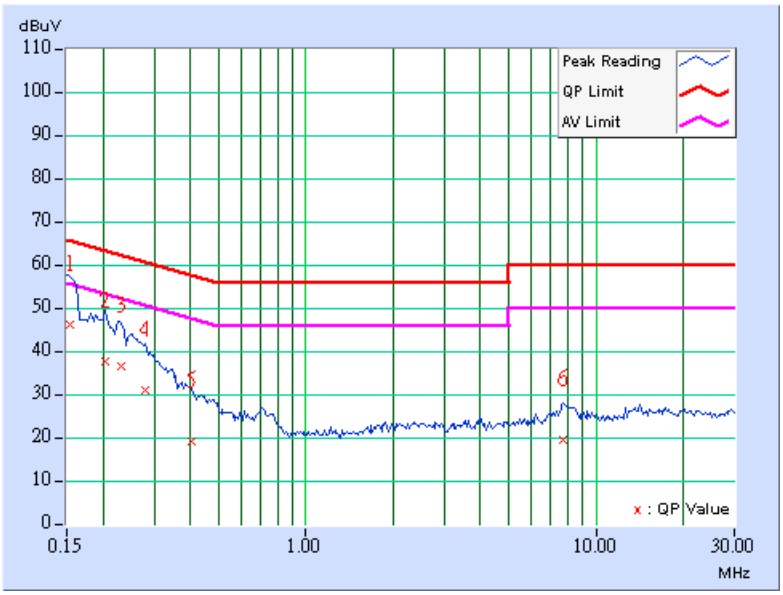


DRAFT 802.11n (20MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	PHASE	Line (L)
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	6.5Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 964hPa	TESTED BY	Eric Lee

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	**0.154**	**9.60**	**36.63**	**-**	**46.23**	**-**	**65.79**	**55.79**	**-19.56**	**-**
2	0.205	9.60	27.91	-	37.51	-	63.42	53.42	-25.91	-
3	0.232	9.60	26.67	-	36.27	-	62.38	52.38	-26.11	-
4	0.279	9.60	21.38	-	30.98	-	60.85	50.85	-29.87	-
5	0.404	9.60	9.51	-	19.11	-	57.77	47.77	-38.66	-
6	7.738	9.82	9.95	-	19.77	-	60.00	50.00	-40.23	-

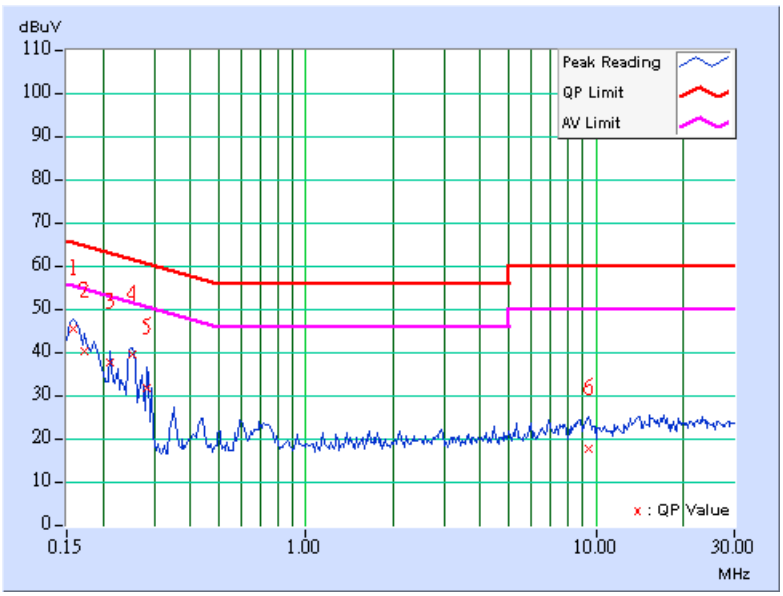
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	PHASE	Neutral (N)
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	6.5Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 964hPa	TESTED BY	Eric Lee

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	0.158	9.60	35.83	-	45.43	-	65.58	55.58	-20.15	-
2	0.173	9.60	30.43	-	40.03	-	64.79	54.79	-24.76	-
3	0.213	9.60	27.79	-	37.39	-	63.11	53.11	-25.72	-
4	0.252	9.60	29.90	-	39.50	-	61.71	51.71	-22.21	-
5	0.283	9.60	22.10	-	31.70	-	60.73	50.73	-29.03	-
6	9.414	9.88	7.99	-	17.87	-	60.00	50.00	-42.13	-

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.

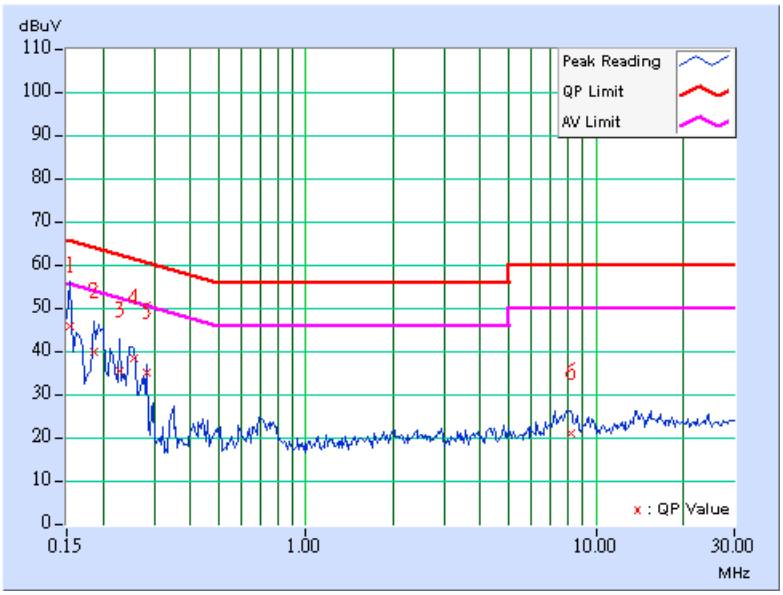


DRAFT 802.11n (40MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 7	PHASE	Line (L)
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	13.5Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 964hPa	TESTED BY	Eric Lee

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	0.154	9.60	36.14	-	45.74	-	65.79	55.79	-20.05	-
2	0.185	9.60	30.10	-	39.70	-	64.25	54.25	-24.55	-
3	0.228	9.60	25.89	-	35.49	-	62.52	52.52	-27.03	-
4	0.255	9.60	28.69	-	38.29	-	61.58	51.58	-23.29	-
5	0.283	9.60	25.32	-	34.92	-	60.73	50.73	-25.81	-
6	8.172	9.84	11.37	-	21.21	-	60.00	50.00	-38.79	-

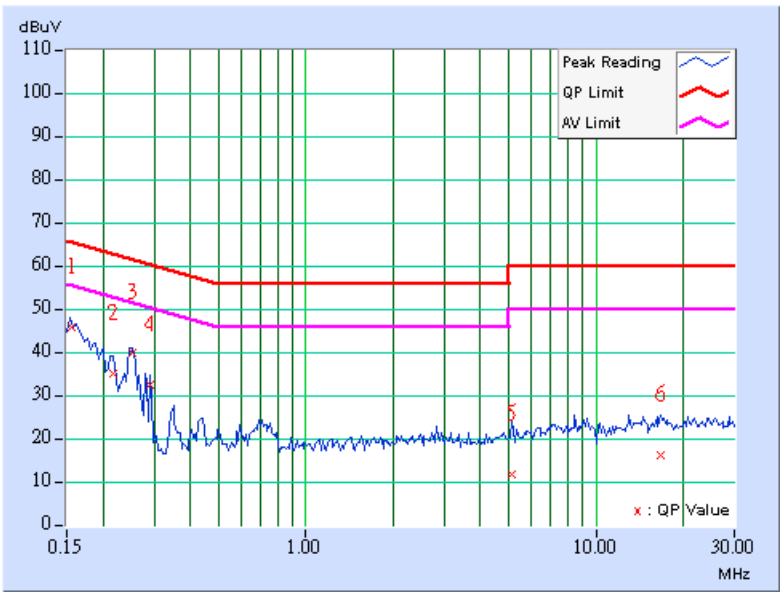
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 7	PHASE	Neutral (N)
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	13.5Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 964hPa	TESTED BY	Eric Lee

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	0.156	9.60	35.94	-	45.54	-	65.70	55.70	-20.16	-
2	0.216	9.60	25.25	-	34.85	-	62.96	52.96	-28.11	-
3	0.252	9.60	29.81	-	39.41	-	61.71	51.71	-22.30	-
4	0.291	9.60	22.40	-	32.00	-	60.51	50.51	-28.51	-
5	5.113	9.74	1.86	-	11.60	-	60.00	50.00	-48.40	-
6	16.746	10.03	6.42	-	16.45	-	60.00	50.00	-43.55	-

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



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

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

NOTE:

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

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
ADVANTEST Spectrum Analyzer	R3271A	85060311	July 07, 2006
HP Pre_Amplifier	8449B	3008A01922	Oct. 02, 2006
ROHDE & SCHWARZ Test Receiver	ESCS30	100287	Dec. 08, 2006
CHASE Broadband Antenna	VULB9168	138	Dec. 21, 2006
Schwarzbeck Horn_Antenna	BBHA9120	D124	Dec. 11, 2006
Schwarzbeck Horn_Antenna	BBHA 9170	BBHA9170153	Jan. 05, 2007
SCHWARZBECK Biconical Antenna	VHBA9123	459	Jun. 26, 2006
SCHWARZBECK Periodic Antenna	UPA6108	1148	Jun. 26, 2006
RF Switches (ARNITSU)	CS-201	1565157	NA
RF CABLE (Chaintek)	SF102	22054-2	Nov. 16. 2006
RF Cable(RICHTEC)	9913-30M	STCCAB-30M-1GHz-021	Jul. 16, 2006
Software	ADT_Radiated_V 5.14	NA	NA
CHANCE MOST Antenna Tower	AT-100	0203	NA
CHANCE MOST Turn Table	TT-100	0203	NA

Note: 1. The calibration interval of the above test instruments is 12 months (36 months for Periodic Antenna)and the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in ADT 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 4824-3.

4.2.3 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters 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 Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

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

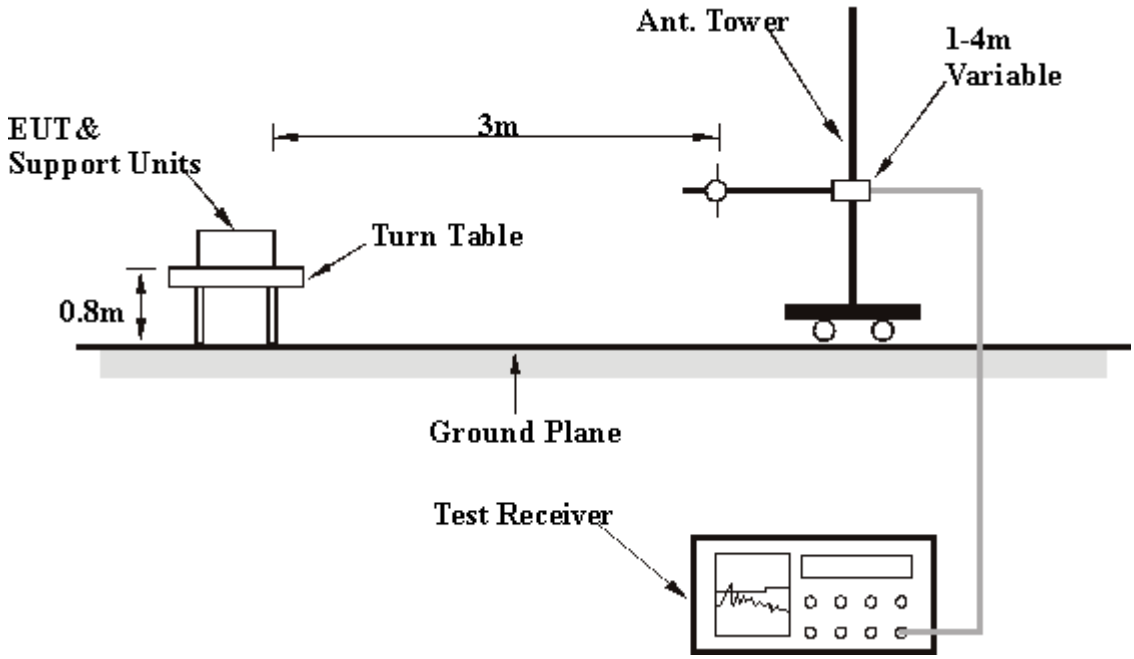
NOTE:

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

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP



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

4.2.6 EUT OPERATING CONDITIONS

a. Plug the EUT into the support unit 1 (Notebook computer) and placed it on the testing table.
b. The support unit 1 (Notebook computer) ran a test program “Broadcom MFG tool” to enable EUT under transmission condition continuously at specific channel frequency.
c. Notebook computer sends "H" messages to printer, and the printer prints them on paper.

4.2.7 TEST RESULTS

BELOW 1GHz WORST-CASE DATA:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	**FREQUENCY RANGE**	Below 1000MHz
MODULATION TYPE	BPSK for 802.11g	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
TRANSFER RATE	6Mbps	**DETECTOR FUNCTION**	Quasi-Peak
ENVIRONMENTAL CONDITIONS	22deg. C, 68%RH, 964hPa	**TESTED BY**	Sky 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	200.00	21.60 QP	43.50	-21.90	1.50 H	56	10.50	11.20
2	250.00	19.40 QP	46.00	-26.60	1.26 H	302	6.10	13.30
3	350.02	20.80 QP	46.00	-25.20	1.77 H	279	4.00	16.80
4	400.00	22.90 QP	46.00	-23.10	1.45 H	212	4.50	18.40
5	480.03	24.50 QP	46.00	-21.50	1.56 H	21	4.10	20.40
6	500.03	20.10 QP	46.00	-25.90	1.52 H	21	-0.80	20.90
7	599.96	22.50 QP	46.00	-23.50	1.60 H	122	-1.10	23.50
8	800.00	24.20 QP	46.00	-21.80	1.79 H	21	-2.40	26.60

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	200.00	18.60 QP	43.50	-24.90	1.00 V	327	7.50	11.20
2	250.01	19.30 QP	46.00	-26.70	1.00 V	203	6.00	13.30
3	350.02	24.40 QP	46.00	-21.60	1.64 V	237	7.60	16.80
4	400.02	27.10 QP	46.00	-18.90	1.35 V	244	8.80	18.40
5	480.03	25.90 QP	46.00	-20.10	1.08 V	273	5.50	20.40
6	500.03	25.70 QP	46.00	-20.30	1.00 V	269	4.80	20.90
7	600.02	21.40 QP	46.00	-24.60	1.00 V	1	-2.10	23.50
8	800.05	24.20 QP	46.00	-21.80	1.29 V	195	-2.50	26.60

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK for draft 802.11n (20MHz)	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TRANSFER RATE	6.5Mbps	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	22deg. C, 68%RH, 964hPa	TESTED BY	Sky 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	240.02	19.40 QP	46.00	-26.60	1.13 H	21	6.50	12.90
2	320.02	23.40 QP	46.00	-22.60	1.00 H	210	6.90	16.50
3	400.02	27.30 QP	46.00	-18.70	1.00 H	83	8.90	18.40
4	480.00	20.00 QP	46.00	-26.00	1.09 H	357	-0.40	20.40
5	600.00	26.00 QP	46.00	-20.00	1.05 H	96	2.50	23.50
6	720.06	28.60 QP	46.00	-17.40	1.00 H	35	3.10	25.50
7	800.00	26.60 QP	46.00	-19.40	1.00 H	228	0.00	26.60
8	960.00	27.90 QP	46.00	-18.10	1.40 H	21	-1.00	28.90

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	240.02	20.20 QP	46.00	-25.80	1.00 V	21	7.30	12.90
2	320.02	22.00 QP	46.00	-24.00	1.32 V	3	5.50	16.50
3	400.02	24.70 QP	46.00	-21.30	1.20 V	266	6.30	18.40
4	480.04	26.60 QP	46.00	-19.40	1.00 V	286	6.20	20.40
5	500.04	24.70 QP	46.00	-21.30	1.10 V	92	3.80	20.90
6	600.00	23.00 QP	46.00	-23.00	1.00 V	344	-0.50	23.50
7	799.98	25.60 QP	46.00	-20.40	1.12 V	145	-1.00	26.60
8	960.00	28.30 QP	46.00	-17.70	1.04 V	277	-0.60	28.90

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 7	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK for draft 802.11n (40MHz)	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TRANSFER RATE	13.5Mbps	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	22deg. C, 68%RH, 964hPa	TESTED BY	Sky 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	240.00	22.60 QP	46.00	-23.40	1.22 H	162	9.70	12.90
2	320.01	22.90 QP	46.00	-23.10	1.25 H	22	6.40	16.50
3	400.01	26.90 QP	46.00	-19.10	1.02 H	36	8.50	18.40
4	480.00	26.30 QP	46.00	-19.70	1.42 H	15	5.90	20.40
5	500.02	26.20 QP	46.00	-19.80	1.36 H	62	5.30	20.90
6	600.00	26.20 QP	46.00	-19.80	1.14 H	72	2.70	23.50
7	720.00	24.90 QP	46.00	-21.10	1.21 H	108	-0.60	25.50
8	960.00	26.40 QP	46.00	-19.60	1.05 H	305	-2.50	28.90

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	240.00	22.40 QP	46.00	-23.60	1.62 V	16	9.50	12.90
2	320.04	25.20 QP	46.00	-20.80	1.05 V	28	8.70	16.50
3	400.01	26.40 QP	46.00	-19.60	1.07 V	42	8.00	18.40
4	480.02	24.80 QP	46.00	-21.20	1.06 V	62	4.40	20.40
5	500.00	23.30 QP	46.00	-22.70	1.07 V	236	2.40	20.90
6	600.00	22.30 QP	46.00	-23.70	1.06 V	175	-1.20	23.50
7	720.00	25.70 QP	46.00	-20.30	1.18 V	125	0.20	25.50
8	960.02	29.40 QP	54.00	-24.60	1.06 V	28	0.50	28.90

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.

802.11b DSSS MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	DBPSK	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TRANSFER RATE	1Mbps	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	27deg. C, 60%RH, 964hPa	TESTED BY	Moris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	54.00 PK	74.00	-20.00	1.23 H	325	24.30	29.70
1	2390.00	48.20 AV	54.00	-5.80	1.23 H	325	18.50	29.70
2	*2412.00	113.20 PK			1.23 H	359	83.40	29.80
2	*2412.00	105.80 AV			1.23 H	359	76.00	29.80
3	3216.00	47.70 PK	74.00	-26.30	1.54 H	57	15.70	32.00
3	3216.00	41.00 AV	54.00	-13.00	1.54 H	57	9.00	32.00
4	4824.00	55.10 PK	74.00	-18.90	1.25 H	32	20.00	35.10
4	4824.00	49.00 AV	54.00	-5.00	1.25 H	32	13.90	35.10
5	7236.00	58.00 PK	74.00	-16.00	1.32 H	65	17.50	40.50
5	7236.00	46.90 AV	54.00	-7.10	1.32 H	65	6.40	40.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	56.10 PK	74.00	-17.90	1.23 V	176	26.40	29.70
1	2390.00	45.50 AV	54.00	-8.50	1.23 V	176	15.80	29.70
2	*2412.00	103.20 PK			1.63 V	91	73.40	29.80
2	*2412.00	95.90 AV			1.63 V	91	66.10	29.80
3	3216.00	45.20 PK	74.00	-28.80	1.17 V	325	13.20	32.00
3	3216.00	35.90 AV	54.00	-18.10	1.17 V	325	3.90	32.00
4	4824.00	50.10 PK	74.00	-23.90	1.62 V	0	15.00	35.10
4	4824.00	44.30 AV	54.00	-9.70	1.62 V	0	9.20	35.10
5	7236.00	54.90 PK	74.00	-19.10	1.30 V	26	14.40	40.50
5	7236.00	43.70 AV	54.00	-10.30	1.30 V	26	3.20	40.50

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. The limit value is defined as per 15.247.
6. " * ": Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	DBPSK	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TRANSFER RATE	1Mbps	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	27deg. C, 60%RH, 964hPa	TESTED BY	Moris Lin

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	112.10 PK			1.32 H	359	82.20	29.90
1	*2437.00	104.60 AV			1.32 H	359	74.70	29.90
2	3249.00	47.30 PK	74.00	-26.70	1.54 H	24	15.20	32.10
2	3249.00	42.30 AV	54.00	-11.70	1.54 H	24	10.20	32.10
3	4874.00	56.00 PK	74.00	-18.00	1.16 H	328	20.70	35.30
3	4874.00	49.00 AV	54.00	-5.00	1.16 H	328	13.70	35.30
4	7311.00	58.20 PK	74.00	-15.80	1.23 H	65	17.50	40.70
4	7311.00	47.80 AV	54.00	-6.20	1.23 H	65	7.10	40.70

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	102.90 PK			1.25 V	340	73.00	29.90
1	*2437.00	95.20 AV			1.25 V	340	65.30	29.90
2	3249.00	44.00 PK	74.00	-30.00	1.30 V	24	11.90	32.10
2	3249.00	35.50 AV	54.00	-18.50	1.30 V	24	3.40	32.10
3	4874.00	49.70 PK	74.00	-24.30	1.71 V	8	14.40	35.30
3	4874.00	43.10 AV	54.00	-10.90	1.71 V	8	7.80	35.30
4	7311.00	53.20 PK	74.00	-20.80	1.54 V	24	12.50	40.70
4	7311.00	42.90 AV	54.00	-11.10	1.54 V	24	2.20	40.70

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. The limit value is defined as per 15.247.
6. " * ": Fundamental frequency.

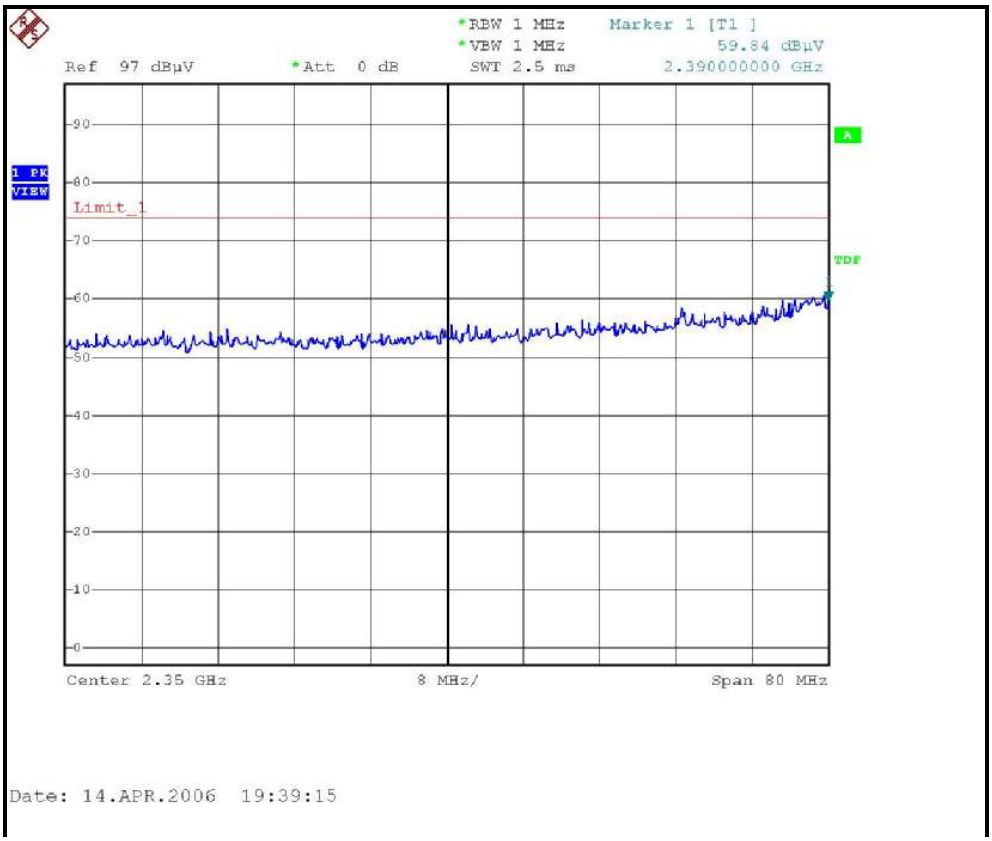
EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	DBPSK	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TRANSFER RATE	1Mbps	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	27deg. C, 60%RH, 964hPa	TESTED BY	Moris Lin

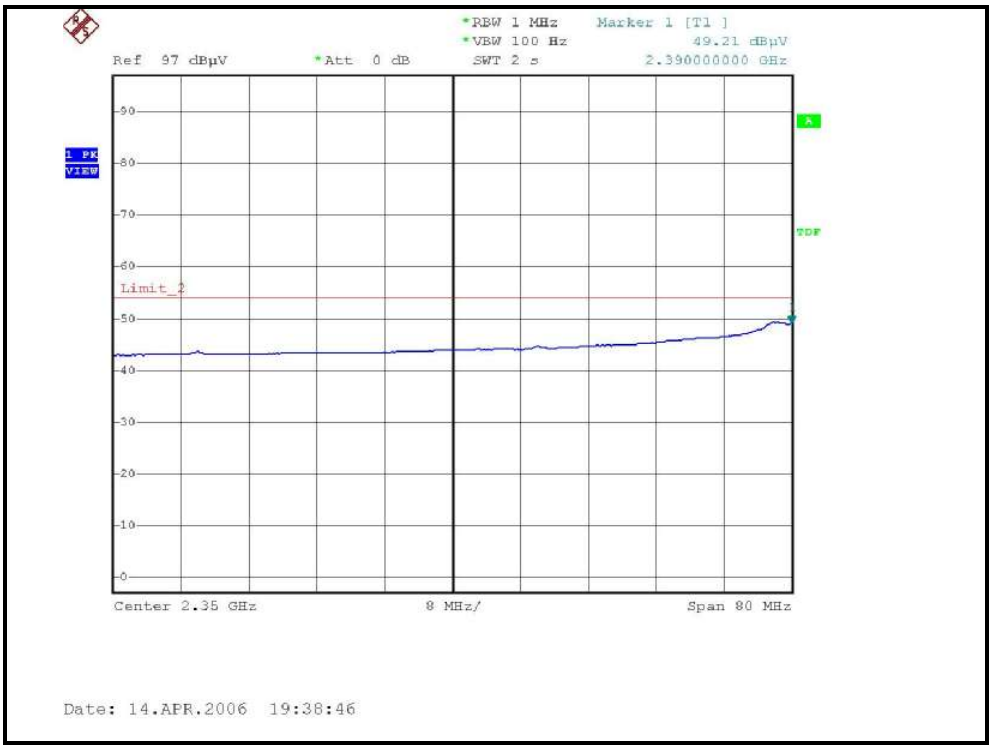
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	110.90 PK			1.00 H	1	80.90	30.00
1	*2462.00	104.80 AV			1.00 H	1	74.80	30.00
2	2483.50	57.80 PK	74.00	-16.20	1.32 H	238	27.70	30.10
2	2483.50	48.10 AV	54.00	-5.90	1.32 H	238	18.00	30.10
3	3282.00	49.10 PK	74.00	-24.90	1.78 H	1	16.90	32.20
3	3282.00	44.20 AV	54.00	-9.80	1.78 H	1	12.10	32.20
4	4924.00	56.00 PK	74.00	-18.00	1.23 H	23	20.40	35.50
4	4924.00	50.00 AV	54.00	-4.00	1.23 H	23	14.40	35.50
5	7386.00	58.90 PK	74.00	-15.10	1.80 H	33	18.10	40.80
5	7386.00	48.80 AV	54.00	-5.20	1.80 H	33	8.00	40.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	101.50 PK			1.83 V	92	71.50	30.00
1	*2462.00	94.00 AV			1.83 V	92	64.00	30.00
2	2483.50	51.80 PK	74.00	-22.20	1.00 V	150	21.70	30.10
2	2483.50	43.60 AV	54.00	-10.40	1.00 V	150	13.50	30.10
3	3282.00	44.20 PK	74.00	-29.80	1.00 V	359	12.10	32.20
3	3282.00	36.50 AV	54.00	-17.50	1.00 V	359	4.40	32.20
4	4924.00	57.60 PK	74.00	-16.40	1.54 V	24	22.00	35.50
4	4924.00	45.90 AV	54.00	-8.10	1.54 V	24	10.30	35.50
5	7386.00	52.40 PK	74.00	-21.60	1.00 V	247	11.60	40.80
5	7386.00	43.70 AV	54.00	-10.30	1.00 V	247	2.90	40.80

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. The limit value is defined as per 15.247.
6. " * ": Fundamental frequency.

RESTRICTED BANDEDGE (802.11b MODE,CH1, HORIZONTAL)





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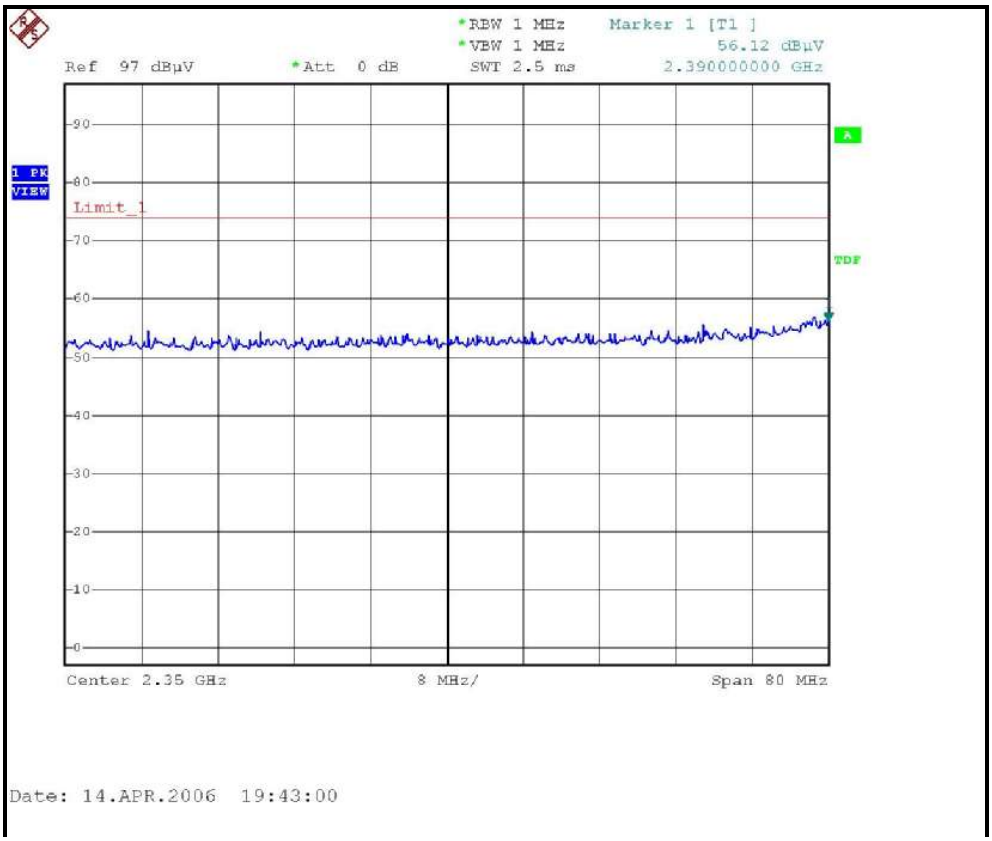

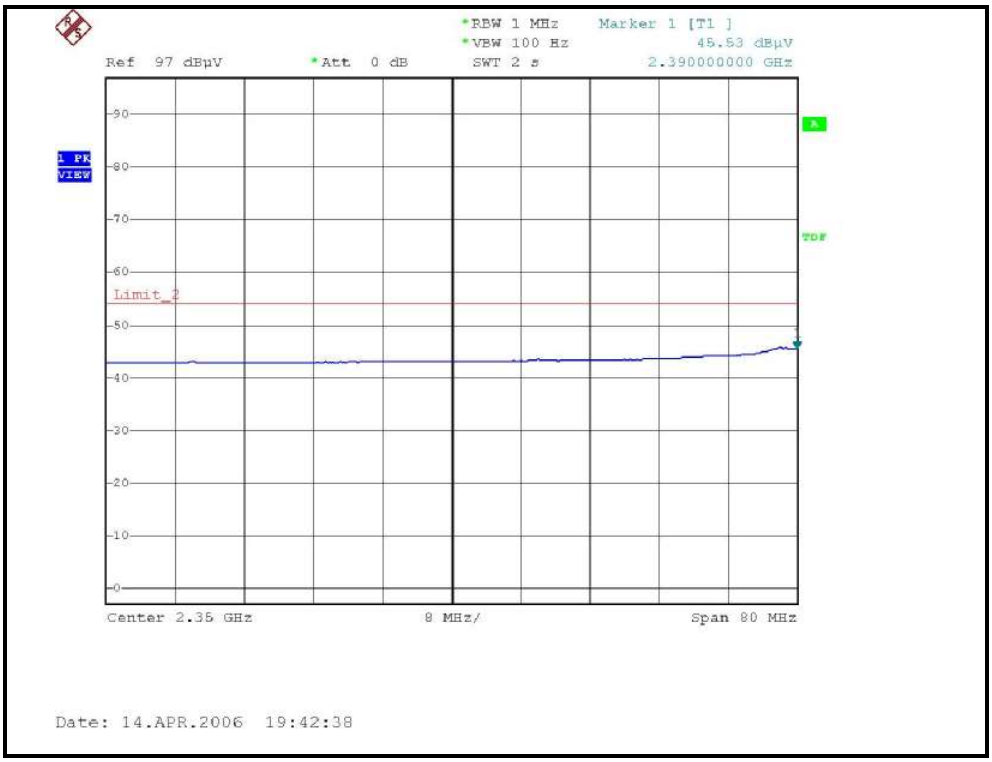

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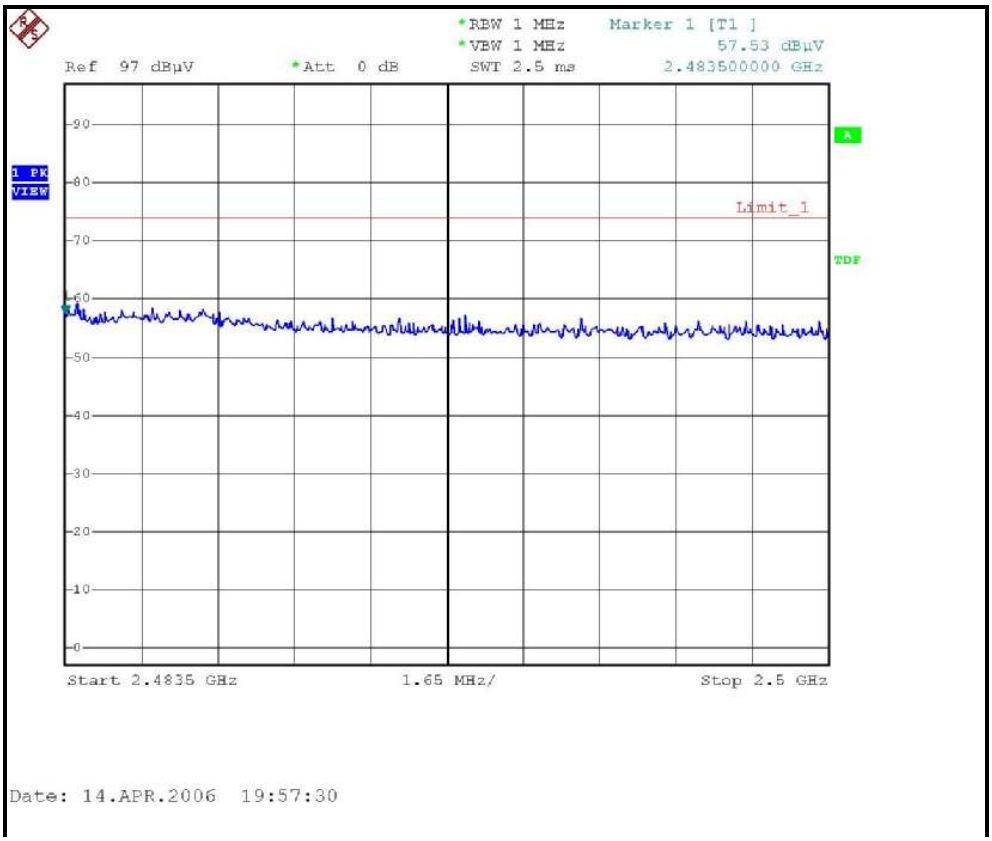
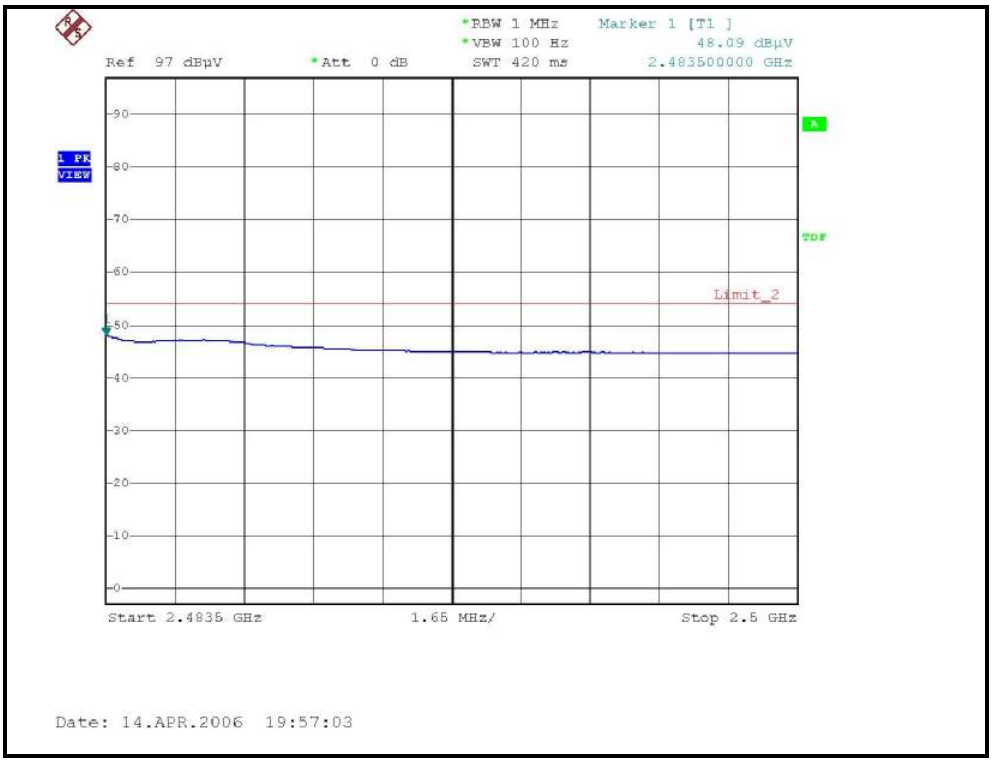
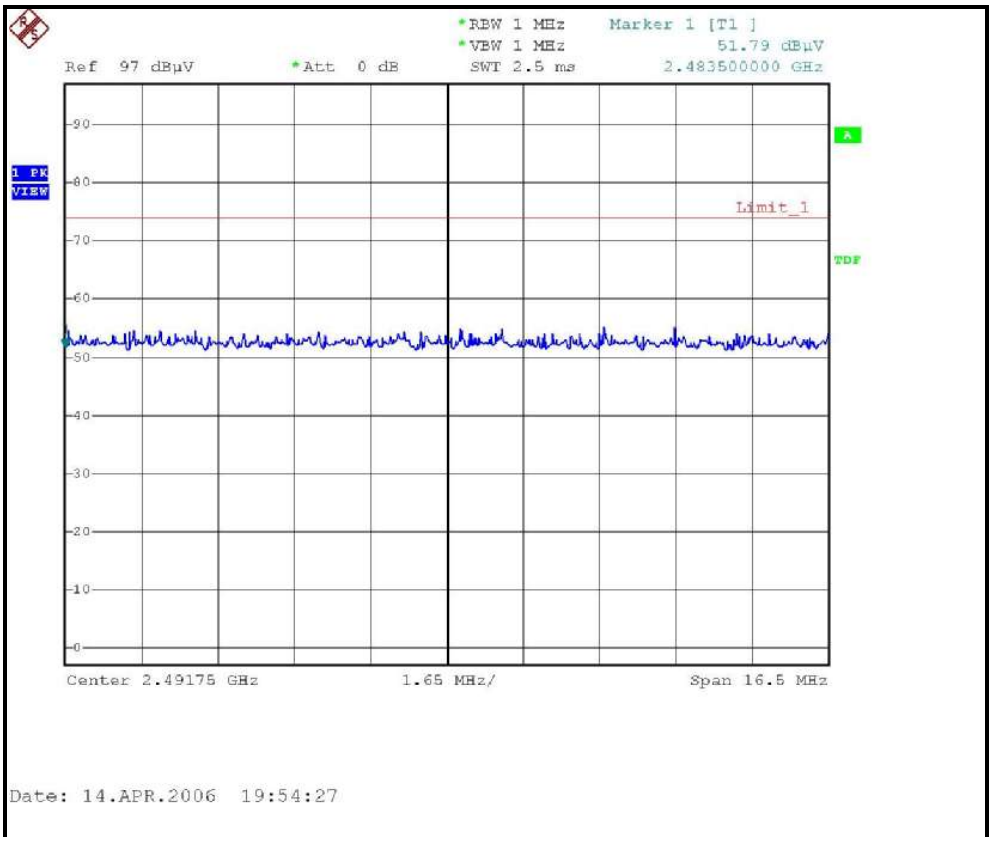
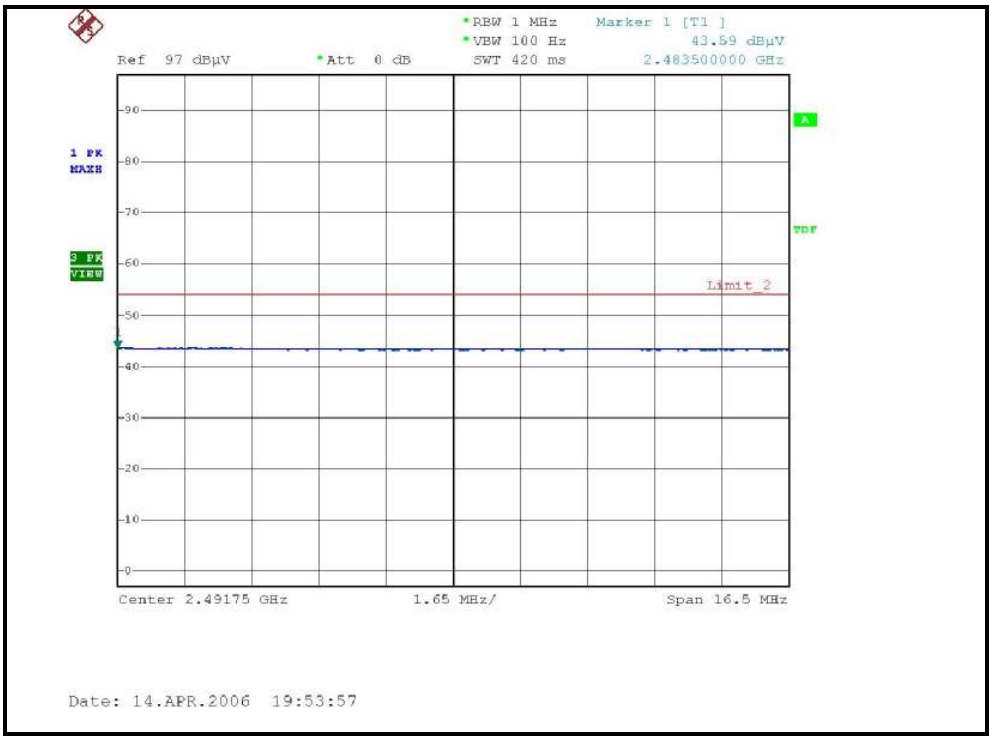




RESTRICTED BANDEDGE (802.11b MODE,CH11, VERTICAL)





802.11g OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TRANSFER RATE	6Mbps	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	27deg. C, 60%RH, 964hPa	TESTED BY	Moris Lin

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	53.50 PK	74.00	-20.50	1.00 H	1	23.80	29.70
1	2390.00	48.10 AV	54.00	-5.90	1.00 H	1	18.40	29.70
2	*2412.00	112.80 PK			1.24 H	2	83.00	29.80
2	*2412.00	101.70 AV			1.24 H	2	71.90	29.80
3	3216.00	55.10 PK	74.00	-18.90	1.00 H	359	23.10	32.00
3	3216.00	44.30 AV	54.00	-9.70	1.00 H	359	12.30	32.00
4	4824.00	55.80 PK	74.00	-18.20	1.35 H	358	20.70	35.10
4	4824.00	48.60 AV	54.00	-5.40	1.35 H	358	13.50	35.10
5	7236.00	51.00 PK	74.00	-23.00	1.54 H	24	10.50	40.50
5	7236.00	42.70 AV	54.00	-11.30	1.54 H	24	2.20	40.50

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	51.90 PK	74.00	-22.10	1.72 V	165	22.20	29.70
1	2390.00	42.70 AV	54.00	-11.30	1.72 V	165	13.00	29.70
2	*2412.00	101.30 PK			1.32 V	165	71.50	29.80
2	*2412.00	91.10 AV			1.32 V	165	61.30	29.80
3	3216.00	50.70 PK	74.00	-23.30	1.12 V	331	18.70	32.00
3	3216.00	40.10 AV	54.00	-13.90	1.12 V	331	8.10	32.00
4	4824.00	58.00 PK	74.00	-16.00	1.22 V	21	22.90	35.10
4	4824.00	46.80 AV	54.00	-7.20	1.22 V	21	11.70	35.10
5	7236.00	51.40 PK	74.00	-22.60	1.52 V	24	10.90	40.50
5	7236.00	42.10 AV	54.00	-11.90	1.52 V	24	1.60	40.50

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. The limit value is defined as per 15.247.
6. " * ": Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TRANSFER RATE	6Mbps	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	27deg. C, 60%RH, 964hPa	TESTED BY	Moris Lin

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	111.20 PK			1.84 H	0	81.30	29.90
1	*2437.00	100.10 AV			1.84 H	0	70.20	29.90
2	3249.00	53.80 PK	74.00	-20.20	1.52 H	24	21.70	32.10
2	3249.00	44.30 AV	54.00	-9.70	1.52 H	24	12.20	32.10
3	4874.00	55.20 PK	74.00	-18.80	1.00 H	263	19.90	35.30
3	4874.00	48.20 AV	54.00	-5.80	1.00 H	263	12.90	35.30
4	7311.00	50.20 PK	74.00	-23.80	1.54 H	24	9.60	40.70
4	7311.00	42.60 AV	54.00	-11.40	1.54 H	24	1.90	40.70

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	102.70 PK			1.08 V	116	72.80	29.90
1	*2437.00	92.50 AV			1.08 V	116	62.60	29.90
2	3249.00	50.60 PK	74.00	-23.40	1.20 V	227	18.50	32.10
2	3249.00	39.70 AV	54.00	-14.30	1.20 V	227	7.60	32.10
3	4874.00	57.30 PK	74.00	-16.70	1.29 V	327	22.00	35.30
3	4874.00	46.10 AV	54.00	-7.90	1.29 V	327	10.80	35.30
4	7311.00	50.20 PK	74.00	-23.80	1.24 V	24	9.60	40.70
4	7311.00	42.60 AV	54.00	-11.40	1.24 V	24	1.90	40.70

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. The limit value is defined as per 15.247.
6. " * ": Fundamental frequency.

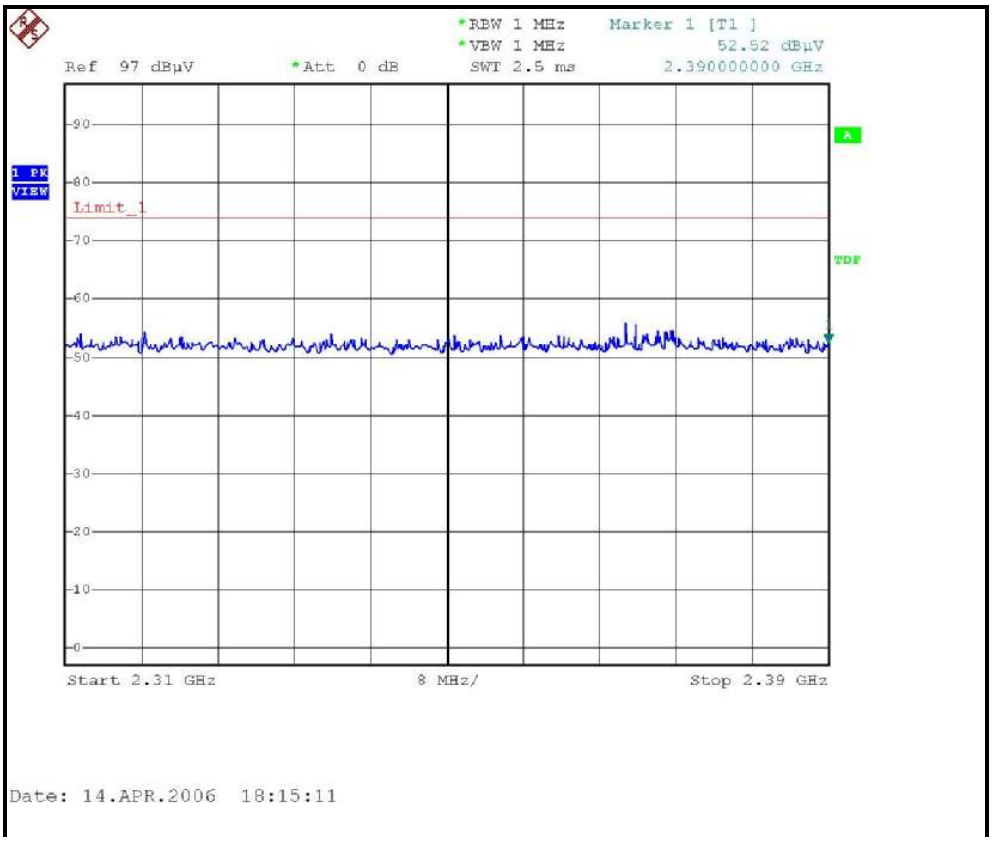
EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TRANSFER RATE	6Mbps	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	27deg. C, 60%RH, 964hPa	TESTED BY	Moris Lin

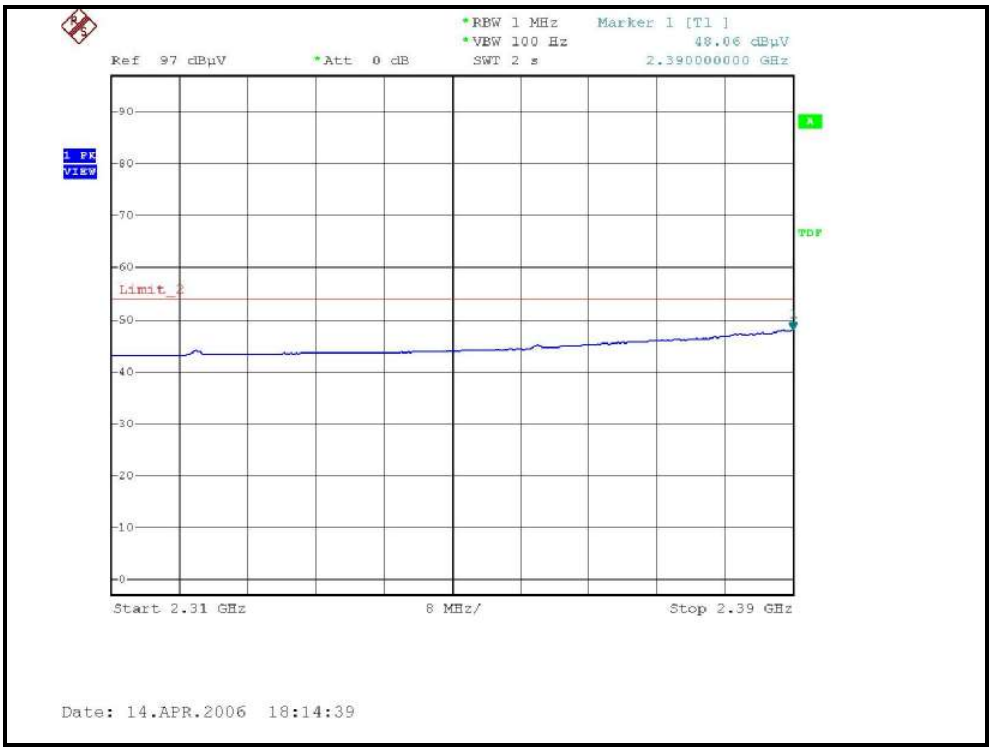
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	111.20 PK			1.33 H	3	81.20	30.00
1	*2462.00	100.70 AV			1.33 H	3	70.70	30.00
2	2483.50	63.10 PK	74.00	-10.90	1.54 H	24	33.00	30.10
2	2483.50	48.10 AV	54.00	-5.90	1.54 H	24	18.00	30.10
3	3282.00	49.20 PK	74.00	-24.80	1.21 H	322	17.10	32.20
3	3282.00	43.40 AV	54.00	-10.60	1.21 H	322	11.20	32.20
4	4924.00	57.60 PK	74.00	-16.40	1.00 H	10	22.00	35.50
4	4924.00	47.60 AV	54.00	-6.40	1.00 H	10	12.00	35.50
5	7386.00	59.00 PK	74.00	-15.00	1.22 H	260	18.20	40.80
5	7386.00	44.20 AV	54.00	-9.80	1.22 H	260	3.30	40.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	102.50 PK			1.18 V	121	72.50	30.00
1	*2462.00	90.60 AV			1.18 V	121	60.60	30.00
2	2483.50	51.90 PK	74.00	-22.10	1.00 V	1	21.80	30.10
2	2483.50	43.20 AV	54.00	-10.80	1.00 V	1	13.10	30.10
3	3282.00	51.20 PK	74.00	-22.80	1.00 V	350	19.10	32.20
3	3282.00	38.80 AV	54.00	-15.20	1.00 V	350	6.70	32.20
4	4924.00	56.20 PK	74.00	-17.80	1.14 V	24	20.70	35.50
4	4924.00	47.10 AV	54.00	-6.90	1.14 V	24	11.60	35.50
5	7386.00	51.00 PK	74.00	-23.00	1.54 V	24	10.20	40.80
5	7386.00	43.20 AV	54.00	-10.80	1.54 V	24	2.40	40.80

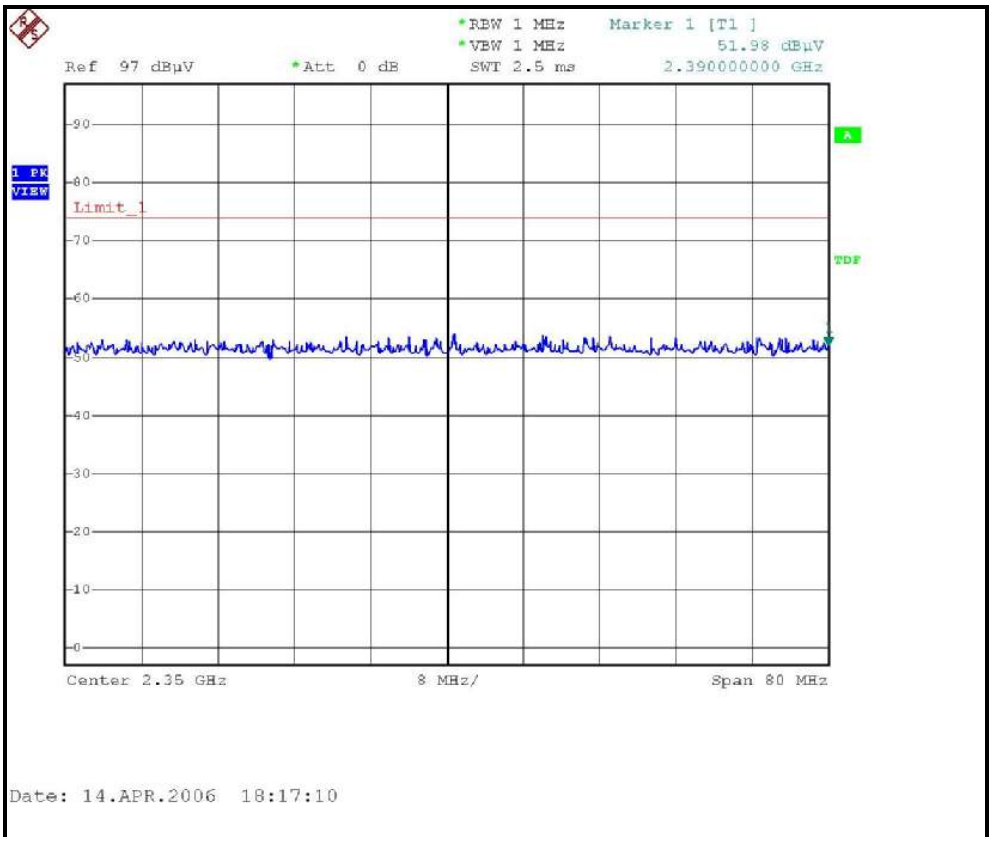
REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. The limit value is defined as per 15.247.
6. " * ": Fundamental frequency.

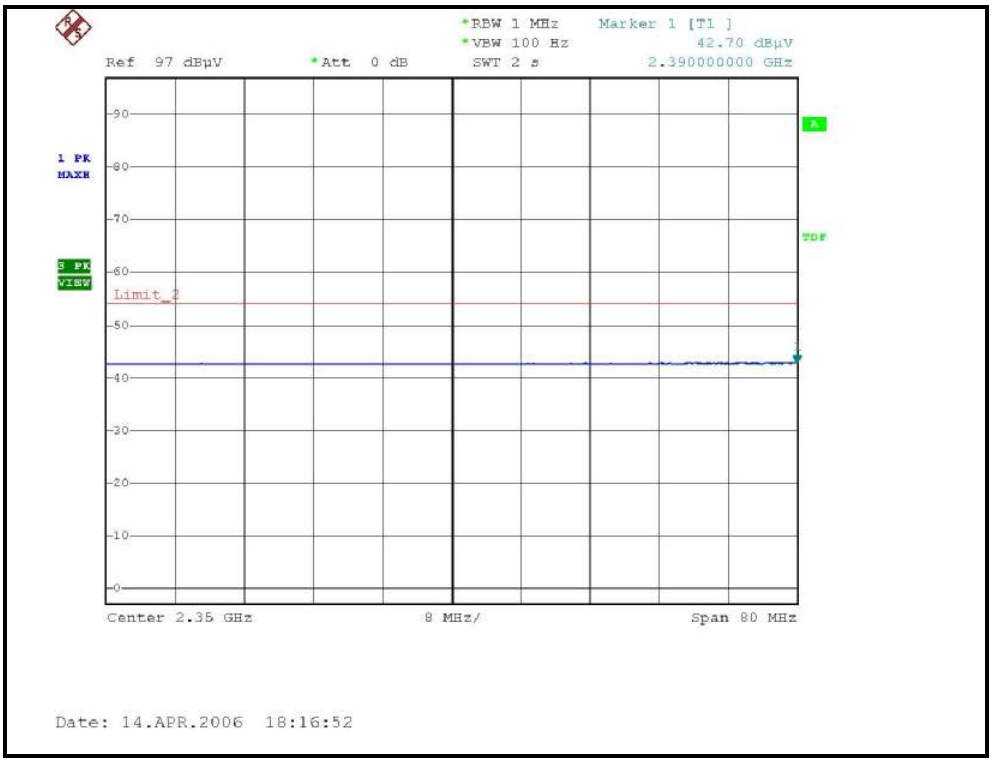
RESTRICTED BANDEDGE (802.11g MODE,CH1, HORIZONTAL)



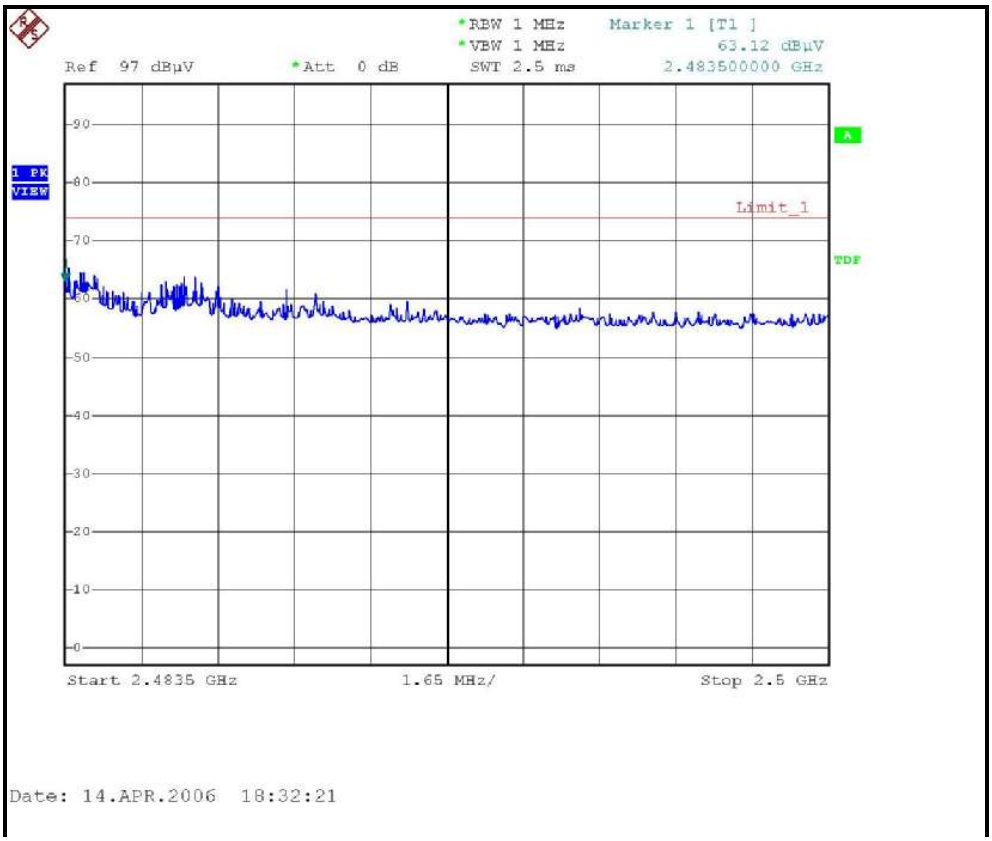


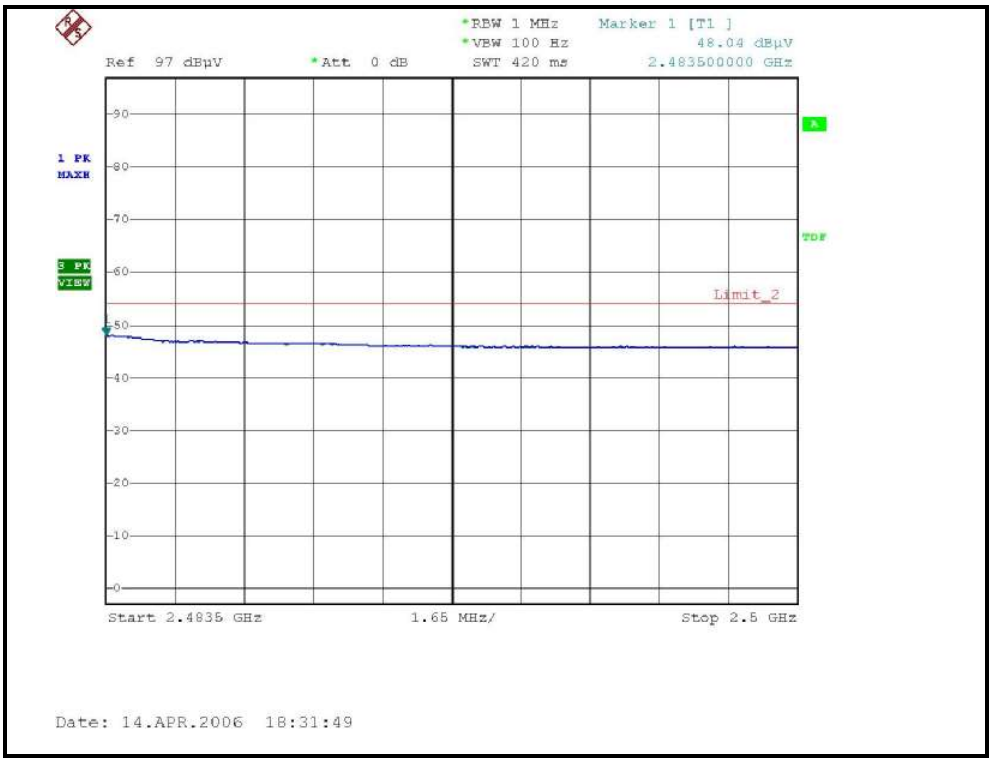
RESTRICTED BANDEDGE (802.11g MODE,CH1, VERTICAL)



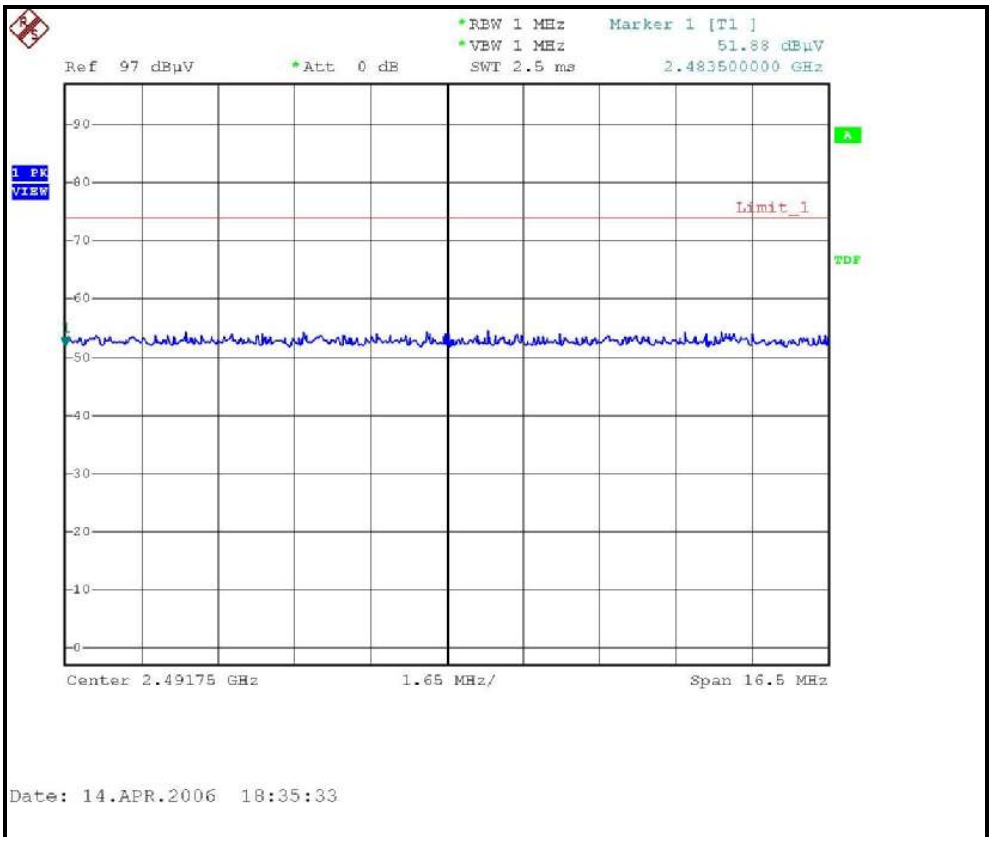


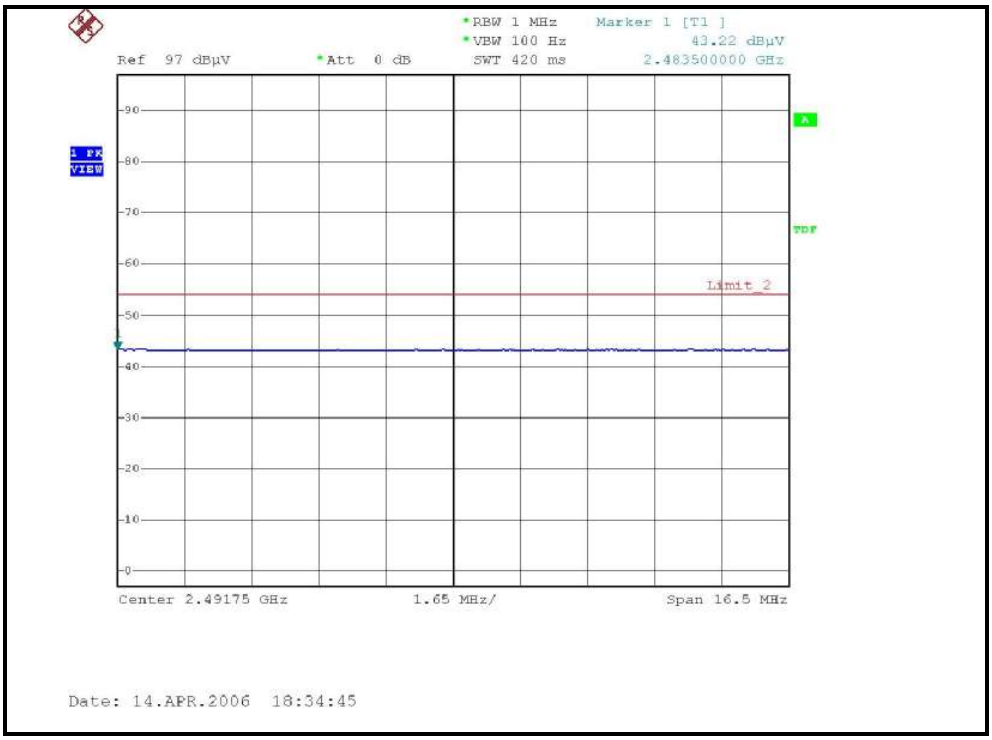
RESTRICTED BANDEDGE (802.11g MODE,CH11, HORIZONTAL)





RESTRICTED BANDEDGE (802.11g MODE,CH11, VERTICAL)





DRAFT 802.11n (20MHz) OFDM MODULATION: DUAL TX:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TRANSFER RATE	6.5Mbps	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	27deg. C, 60%RH, 964hPa	TESTED BY	Moris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.20 PK	74.00	-5.80	1.20 H	1	38.50	29.70
1	2390.00	51.10 AV	54.00	-2.90	1.20 H	1	21.40	29.70
2	*2412.00	112.30 PK			1.00 H	1	82.50	29.80
2	*2412.00	102.60 AV			1.00 H	1	72.80	29.80
3	3216.00	47.50 PK	74.00	-26.50	1.80 H	1	15.50	32.00
3	3216.00	43.60 AV	54.00	-10.40	1.80 H	1	11.60	32.00
4	4824.00	54.50 PK	74.00	-19.50	1.54 H	24	19.40	35.10
4	4824.00	44.00 AV	54.00	-10.00	1.54 H	24	8.90	35.10
5	7236.00	56.20 PK	74.00	-17.80	1.24 H	24	15.70	40.50
5	7236.00	42.70 AV	54.00	-11.30	1.24 H	24	2.20	40.50

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	61.30 PK	74.00	-12.70	1.23 V	175	31.60	29.70
1	2390.00	45.20 AV	54.00	-8.80	1.23 V	175	15.50	29.70
2	*2412.00	102.90 PK			1.22 V	176	73.10	29.80
2	*2412.00	93.10 AV			1.22 V	176	63.30	29.80
3	3216.00	46.30 PK	74.00	-27.70	1.17 V	18	14.30	32.00
3	3216.00	39.50 AV	54.00	-14.50	1.17 V	18	7.50	32.00
4	4824.00	52.40 PK	74.00	-21.60	1.31 V	317	17.30	35.10
4	4824.00	44.90 AV	54.00	-9.10	1.31 V	317	9.80	35.10
5	7236.00	53.00 PK	74.00	-21.00	1.20 V	300	12.50	40.50
5	7236.00	41.90 AV	54.00	-12.10	1.20 V	300	1.40	40.50

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. The limit value is defined as per 15.247.
6. " * ": Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TRANSFER RATE	6.5Mbps	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	27deg. C, 60%RH, 964hPa	TESTED BY	Moris Lin

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	110.80 PK			1.92 H	1	80.90	29.90
1	*2437.00	100.90 AV			1.92 H	1	71.00	29.90
2	3249.00	47.90 PK	74.00	-26.10	1.75 H	60	15.80	32.10
2	3249.00	41.80 AV	54.00	-12.20	1.75 H	60	9.70	32.10
3	4874.00	55.00 PK	74.00	-19.00	1.37 H	1	19.70	35.30
3	4874.00	44.70 AV	54.00	-9.30	1.37 H	1	9.40	35.30
4	7311.00	57.20 PK	74.00	-16.80	1.75 H	24	16.50	40.70
4	7311.00	43.60 AV	54.00	-10.40	1.75 H	24	2.90	40.70

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	99.30 PK			1.00 V	34	69.40	29.90
1	*2437.00	89.70 AV			1.00 V	34	59.80	29.90
2	3249.00	45.40 PK	74.00	-28.60	1.90 V	45	13.30	32.10
2	3249.00	39.20 AV	54.00	-14.80	1.90 V	45	7.10	32.10
3	4874.00	52.50 PK	74.00	-21.50	1.26 V	100	17.20	35.30
3	4874.00	47.80 AV	54.00	-6.20	1.26 V	100	12.50	35.30
4	7311.00	54.80 PK	74.00	-19.20	1.65 V	265	14.10	40.70
4	7311.00	41.90 AV	54.00	-12.10	1.65 V	265	1.20	40.70

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. The limit value is defined as per 15.247.
6. " * ": Fundamental frequency.

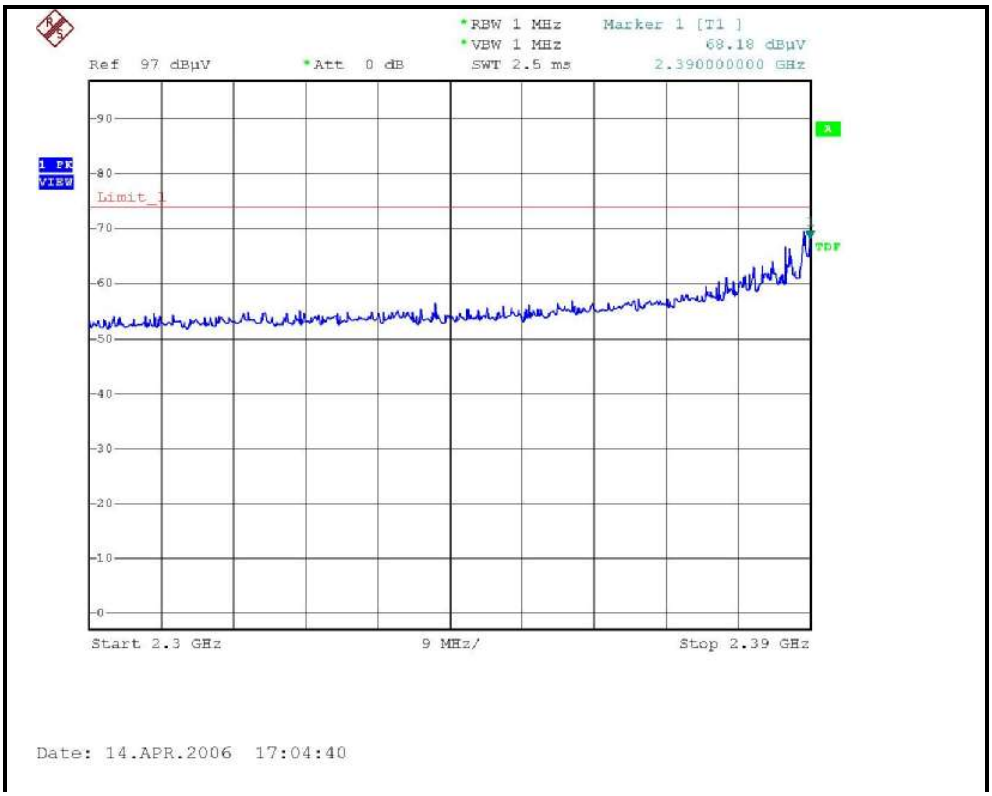
EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TRANSFER RATE	6.5Mbps	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	27deg. C, 60%RH, 964hPa	TESTED BY	Moris Lin

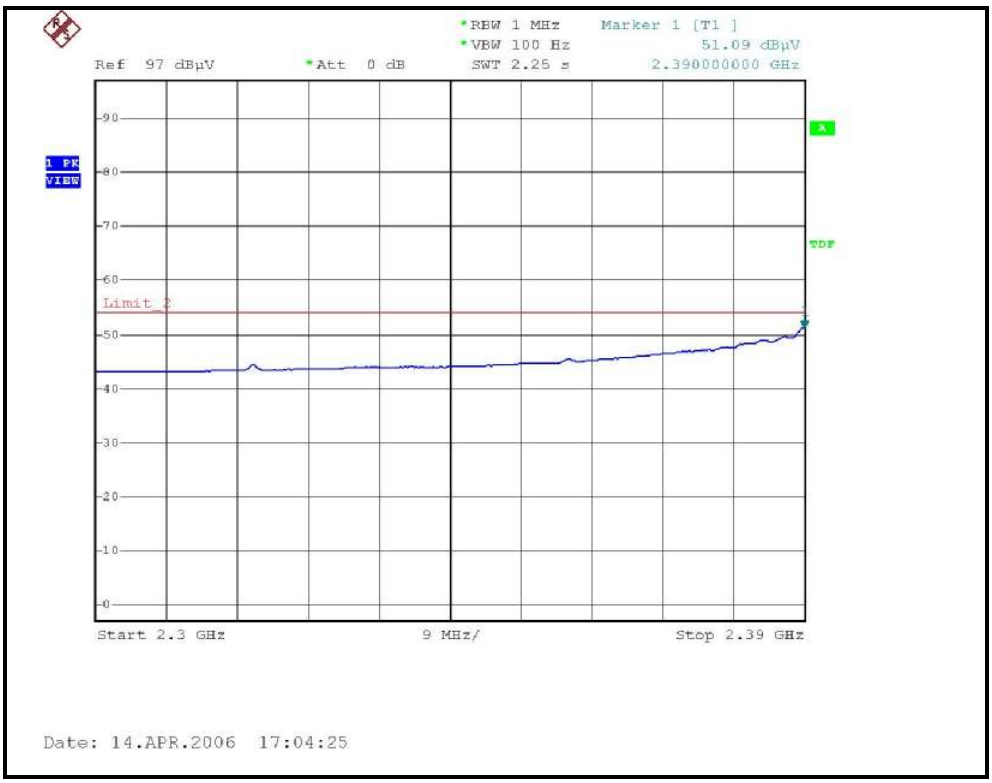
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	109.90 PK			1.13 H	356	79.90	30.00
1	*2462.00	100.40 AV			1.13 H	356	70.40	30.00
2	2483.50	63.60 PK	74.00	-10.40	1.12 H	24	33.50	30.10
2	2483.50	48.80 AV	54.00	-5.20	1.12 H	24	18.70	30.10
3	3282.00	48.40 PK	74.00	-25.60	1.54 H	24	16.30	32.20
3	3282.00	44.40 AV	54.00	-9.60	1.54 H	24	12.30	32.20
4	4924.00	49.70 PK	74.00	-24.30	1.58 H	1	14.10	35.50
4	4924.00	44.00 AV	54.00	-10.00	1.58 H	1	8.40	35.50
5	7386.00	57.80 PK	74.00	-16.20	1.54 H	248	17.00	40.80
5	7386.00	44.30 AV	54.00	-9.70	1.54 H	248	3.50	40.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	101.70 PK			1.18 V	360	71.70	30.00
1	*2462.00	92.90 AV			1.18 V	360	62.90	30.00
2	2483.50	52.80 PK	74.00	-21.20	1.12 V	25	22.70	30.10
2	2483.50	43.20 AV	54.00	-10.80	1.12 V	25	13.10	30.10
3	3282.00	45.80 PK	74.00	-28.20	1.66 V	201	13.70	32.20
3	3282.00	38.70 AV	54.00	-15.30	1.66 V	201	6.60	32.20
4	4924.00	56.30 PK	74.00	-17.70	1.36 V	331	20.70	35.50
4	4924.00	44.80 AV	54.00	-9.20	1.36 V	331	9.20	35.50
5	7386.00	55.80 PK	74.00	-18.20	1.71 V	84	15.00	40.80
5	7386.00	42.40 AV	54.00	-11.60	1.71 V	84	1.60	40.80

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. The limit value is defined as per 15.247.
6. " * ": Fundamental frequency.

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





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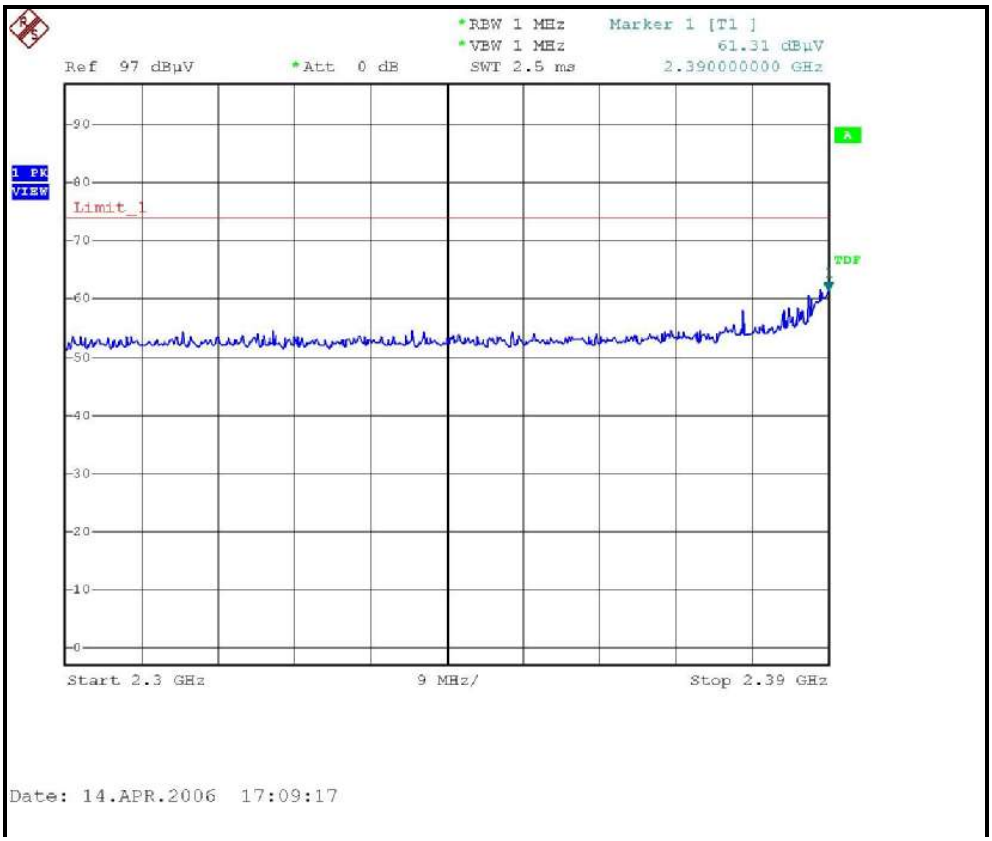
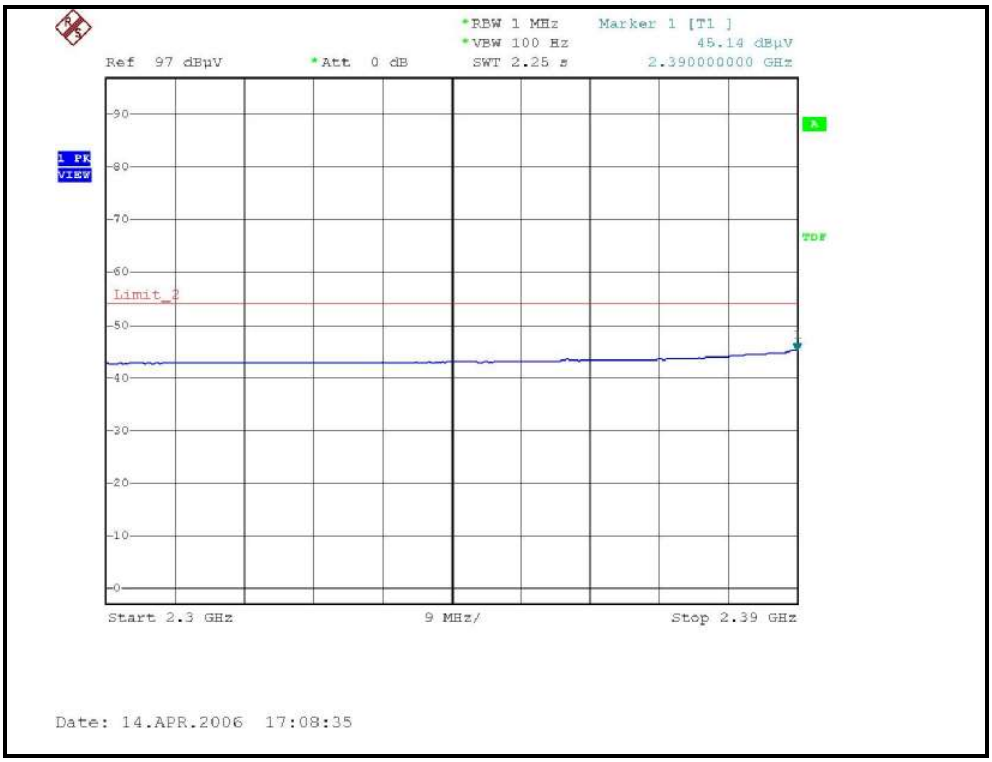
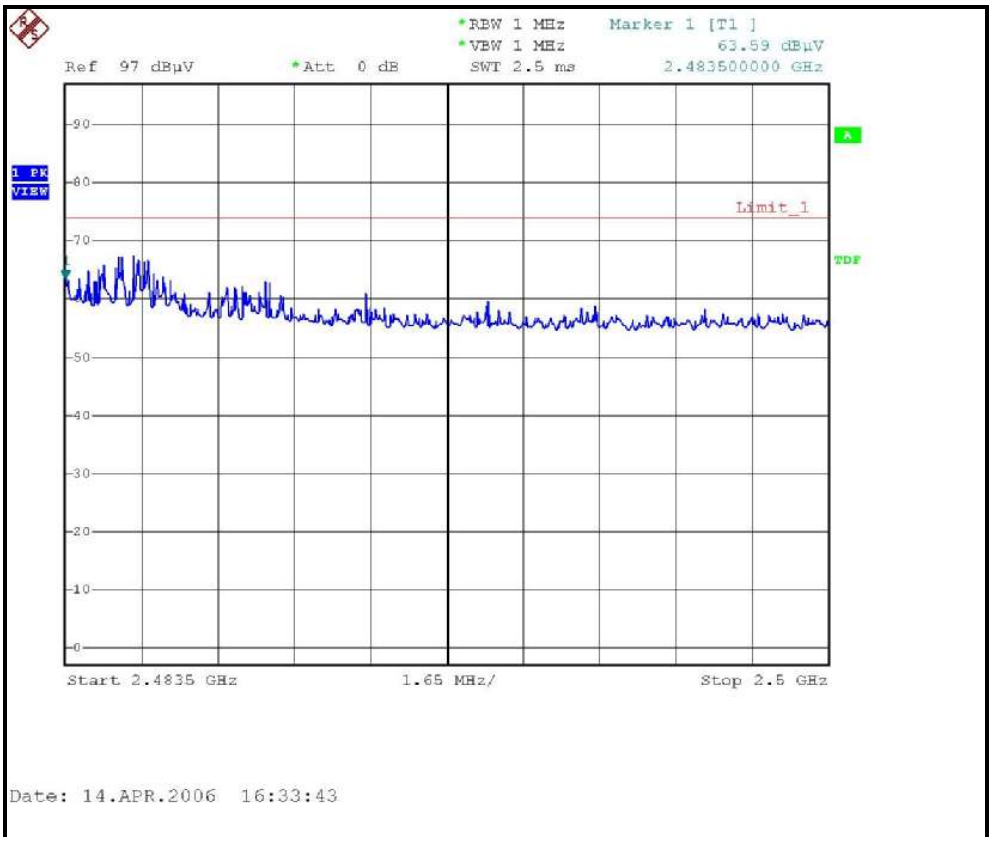
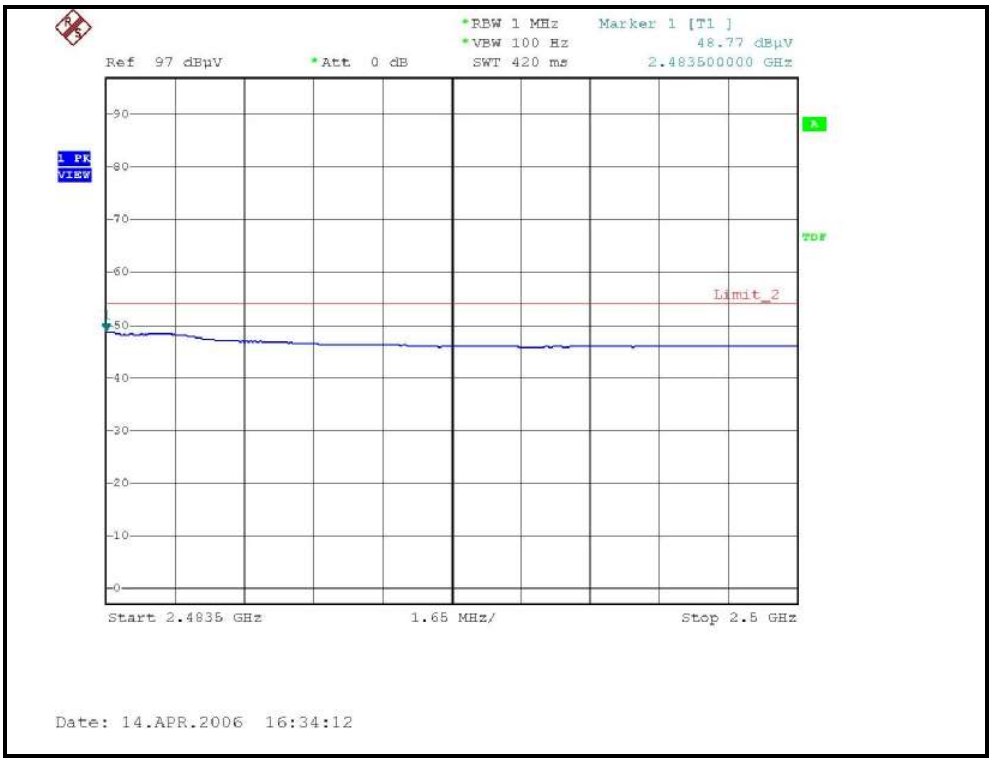




RESTRICTED BANDEDGE (DRAFT 802.11n (20MHz) MODE,CH11, HORIZONTAL)





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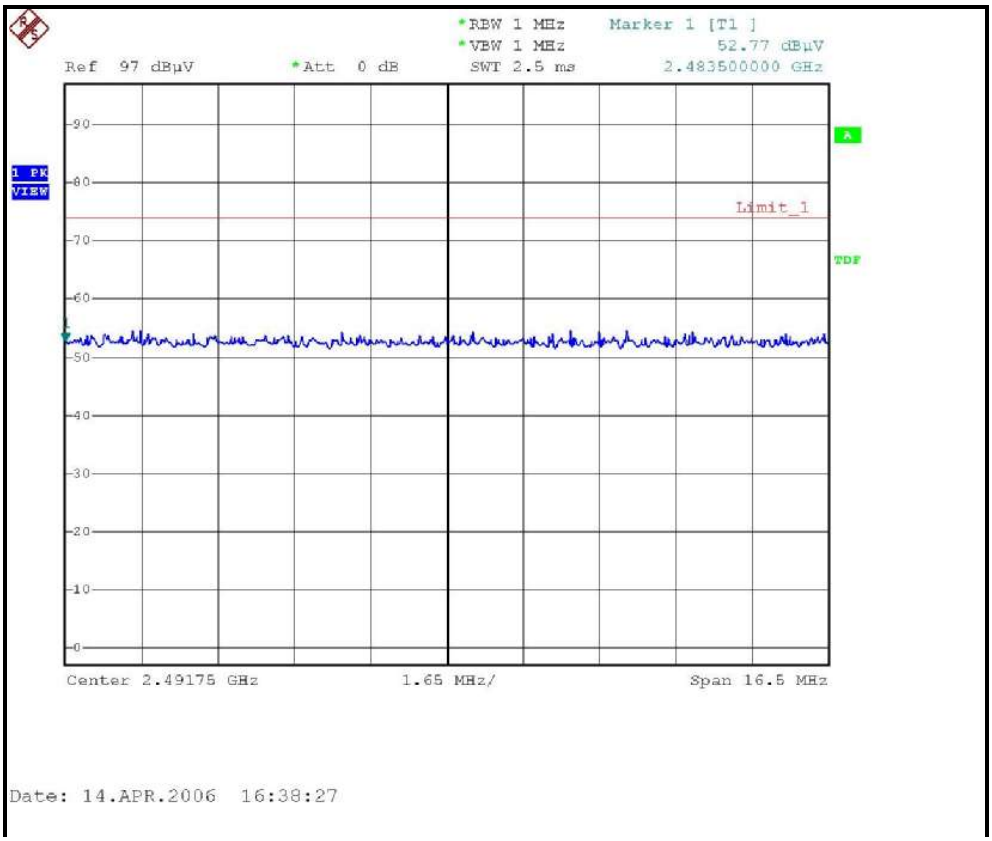
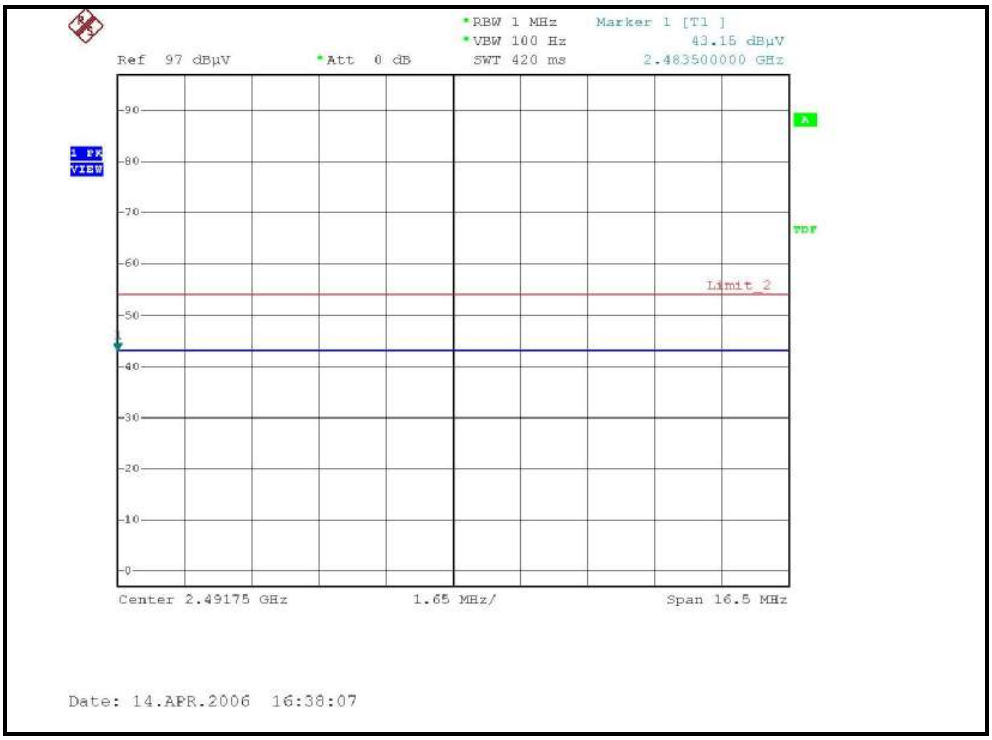




DRAFT 802.11n (40MHz) OFDM MODULATION: DUAL TX:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TRANSFER RATE	13.5Mbps	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	27deg. C, 60%RH, 964hPa	TESTED BY	Moris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.10 PK	74.00	-5.90	1.67 H	5	38.40	29.70
1	**2390.00**	**53.80 AV**	**54.00**	**-0.20**	**1.67 H**	**5**	**24.10**	**29.70**
2	*2422.00	110.60 PK			1.67 H	5	80.70	29.90
2	*2422.00	99.30 AV			1.67 H	5	69.40	29.90
3	3229.00	47.70 PK	74.00	-26.30	1.39 H	347	15.70	32.10
3	3229.00	42.70 AV	54.00	-11.30	1.39 H	347	10.70	32.10
4	4844.00	52.00 PK	74.00	-22.00	1.22 H	62	16.80	35.20
4	4844.00	42.00 AV	54.00	-12.00	1.22 H	62	6.80	35.20
5	7266.00	55.30 PK	74.00	-18.70	1.71 H	1	14.70	40.60
5	7266.00	43.00 AV	54.00	-11.00	1.71 H	1	2.40	40.60

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	60.10 PK	74.00	-13.90	1.00 V	174	30.40	29.70
1	2390.00	45.90 AV	54.00	-8.10	1.00 V	174	16.20	29.70
2	*2422.00	100.80 PK			1.20 V	136	70.90	29.90
2	*2422.00	90.50 AV			1.20 V	136	60.60	29.90
3	3229.00	46.60 PK	74.00	-27.40	1.12 V	20	14.60	32.10
3	3229.00	39.10 AV	54.00	-14.90	1.12 V	20	7.10	32.10
4	4844.00	48.10 PK	74.00	-25.90	1.29 V	353	12.90	35.20
4	4844.00	37.70 AV	54.00	-16.30	1.29 V	353	2.50	35.20
5	7266.00	52.00 PK	74.00	-22.00	1.54 V	24	11.40	40.60
5	7266.00	40.50 AV	54.00	-13.50	1.54 V	24	-0.10	40.60

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. The limit value is defined as per 15.247.
6. " * ": Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TRANSFER RATE	13.5Mbps	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	27deg. C, 60%RH, 964hPa	TESTED BY	Moris Lin

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	108.60 PK			1.68 H	4	78.70	29.90
1	*2437.00	100.30 AV			1.68 H	4	70.40	29.90
2	3249.00	46.70 PK	74.00	-27.30	1.57 H	354	14.60	32.10
2	3249.00	41.30 AV	54.00	-12.70	1.57 H	354	9.20	32.10
3	4874.00	53.20 PK	74.00	-20.80	1.54 H	24	17.90	35.30
3	4874.00	44.20 AV	54.00	-9.80	1.54 H	24	8.90	35.30
4	7311.00	50.30 PK	74.00	-23.70	1.52 H	21	9.60	40.70
4	7311.00	42.60 AV	54.00	-11.40	1.52 H	21	1.90	40.70

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	100.90 PK			1.23 V	134	71.00	29.90
1	*2437.00	92.10 AV			1.23 V	134	62.20	29.90
2	3249.00	45.10 PK	74.00	-28.90	1.10 V	18	13.00	32.10
2	3249.00	38.90 AV	54.00	-15.10	1.10 V	18	6.80	32.10
3	4874.00	47.80 PK	74.00	-26.20	1.52 V	105	12.50	35.30
3	4874.00	41.00 AV	54.00	-13.00	1.52 V	105	5.70	35.30
4	7311.00	50.80 PK	74.00	-23.20	1.24 V	81	10.10	40.70
4	7311.00	38.00 AV	54.00	-16.00	1.24 V	81	-2.70	40.70

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. The limit value is defined as per 15.247.
6. " * ": Fundamental frequency.

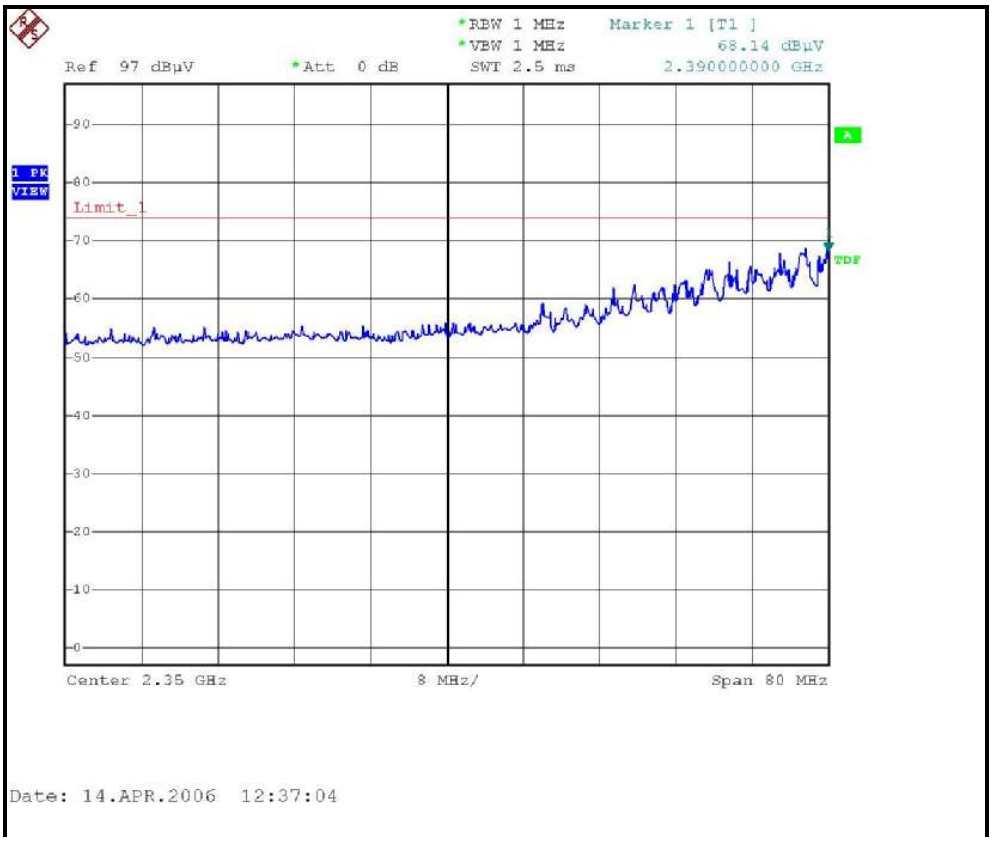
EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 7	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TRANSFER RATE	13.5Mbps	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	27deg. C, 60%RH, 964hPa	TESTED BY	Moris Lin

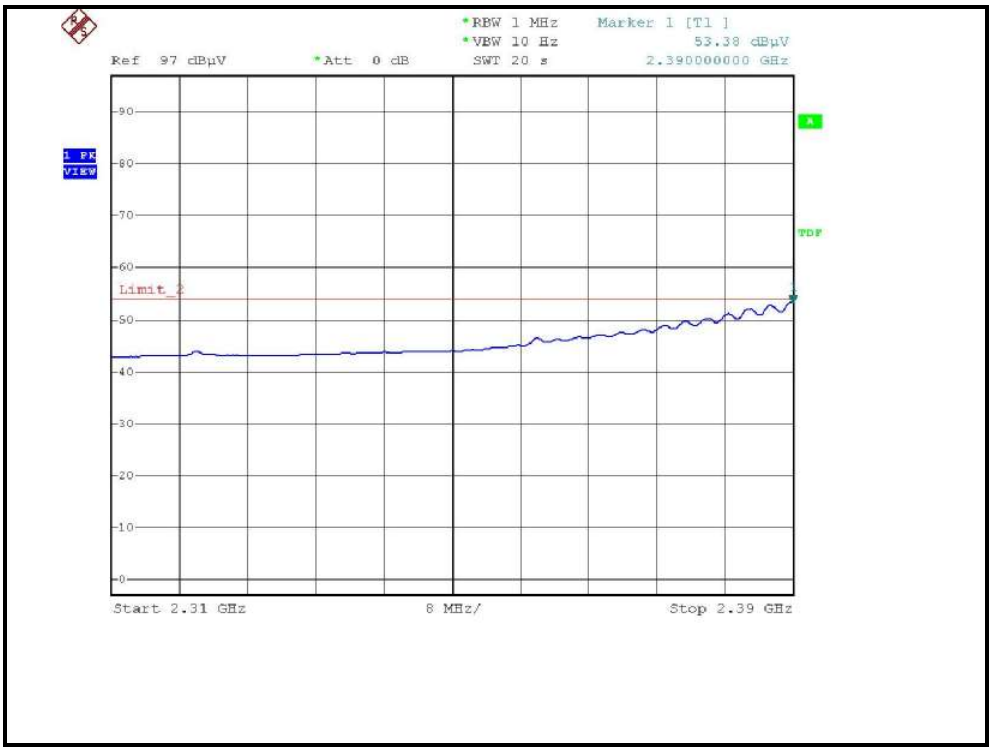
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	108.50 PK			1.00 H	359	78.50	30.00
1	*2452.00	97.80 AV			1.00 H	359	67.80	30.00
2	2483.50	62.80 PK	74.00	-11.20	1.34 H	0	32.70	30.10
2	2483.50	52.10 AV	54.00	-1.90	1.34 H	0	22.00	30.10
3	2484.20	65.80 PK	74.00	-8.20	1.34 H	359	35.70	30.10
3	**2484.20**	**53.80 AV**	**54.00**	**-0.20**	**1.34 H**	**359**	**23.70**	**30.10**
4	3269.00	47.60 PK	74.00	-26.40	1.45 H	24	15.50	32.10
4	3269.00	41.80 AV	54.00	-12.20	1.45 H	24	9.70	32.10
5	4904.00	54.70 PK	74.00	-19.30	1.01 H	21	19.20	35.40
5	4904.00	43.50 AV	54.00	-10.50	1.01 H	21	8.00	35.40
6	7356.00	54.40 PK	74.00	-19.60	1.00 H	14	13.70	40.80
6	7356.00	35.00 AV	54.00	-19.00	1.00 H	14	-5.70	40.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	98.50 PK			1.00 V	13	68.50	30.00
1	*2452.00	88.80 AV			1.00 V	13	58.80	30.00
2	2483.50	56.70 PK	74.00	-17.30	1.13 V	118	26.60	30.10
2	2483.50	46.80 AV	54.00	-7.20	1.13 V	118	16.70	30.10
3	2484.20	61.40 PK	74.00	-12.60	1.13 V	118	31.30	30.10
3	2484.20	47.90 AV	54.00	-6.10	1.13 V	118	17.80	30.10
4	3269.00	48.30 PK	74.00	-25.70	1.04 V	300	16.20	32.10
4	3269.00	39.20 AV	54.00	-14.80	1.04 V	300	7.00	32.10
5	4904.00	56.40 PK	74.00	-17.60	1.35 V	328	20.90	35.40
5	4904.00	44.90 AV	54.00	-9.10	1.35 V	328	9.40	35.40
6	7356.00	54.50 PK	74.00	-19.50	1.91 V	104	13.80	40.80
6	7356.00	41.30 AV	54.00	-12.70	1.91 V	104	0.60	40.80

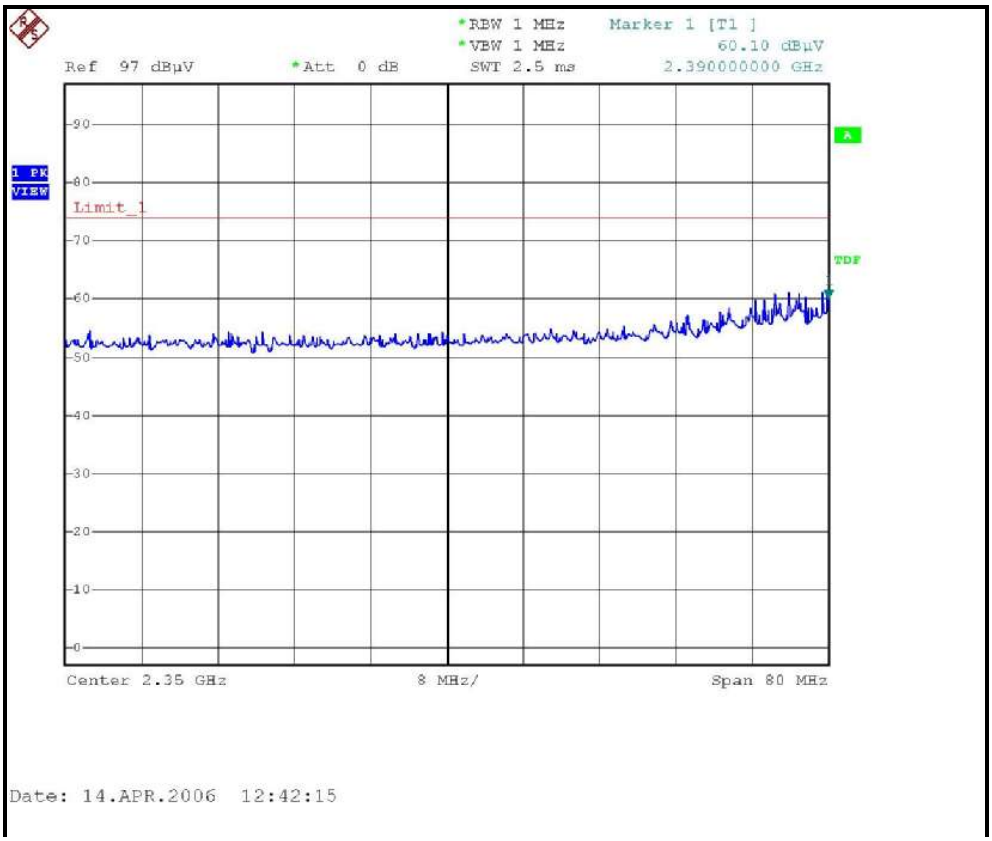
REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. The limit value is defined as per 15.247.
6. " * ": Fundamental frequency.

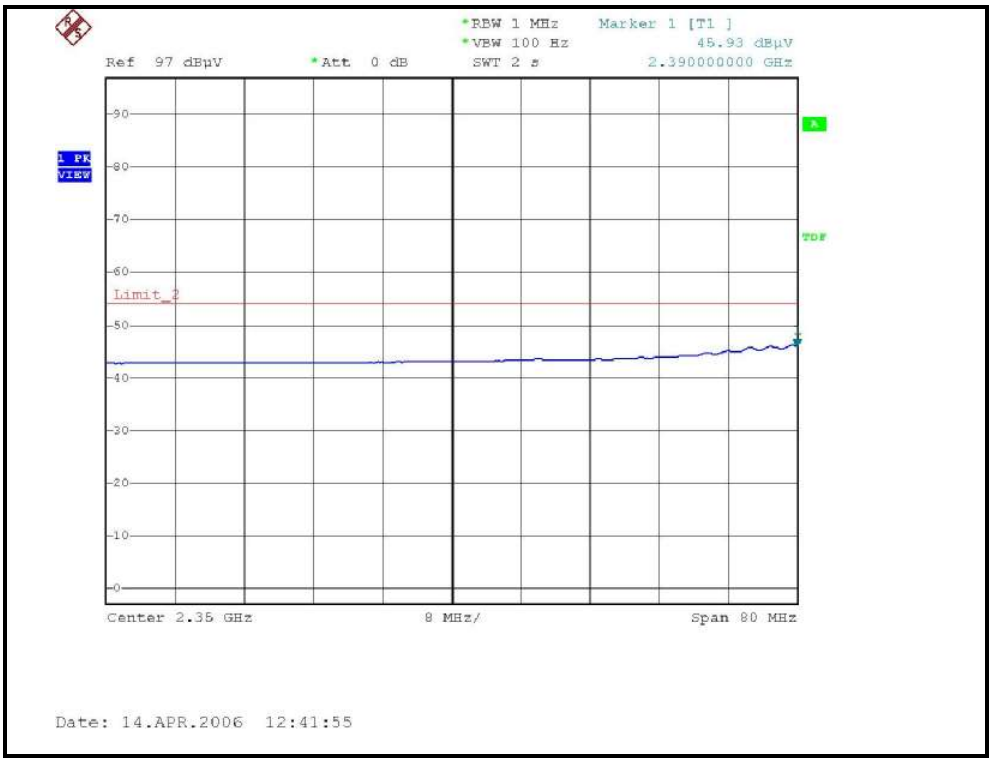
RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE,CH1, HORIZONTAL)





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





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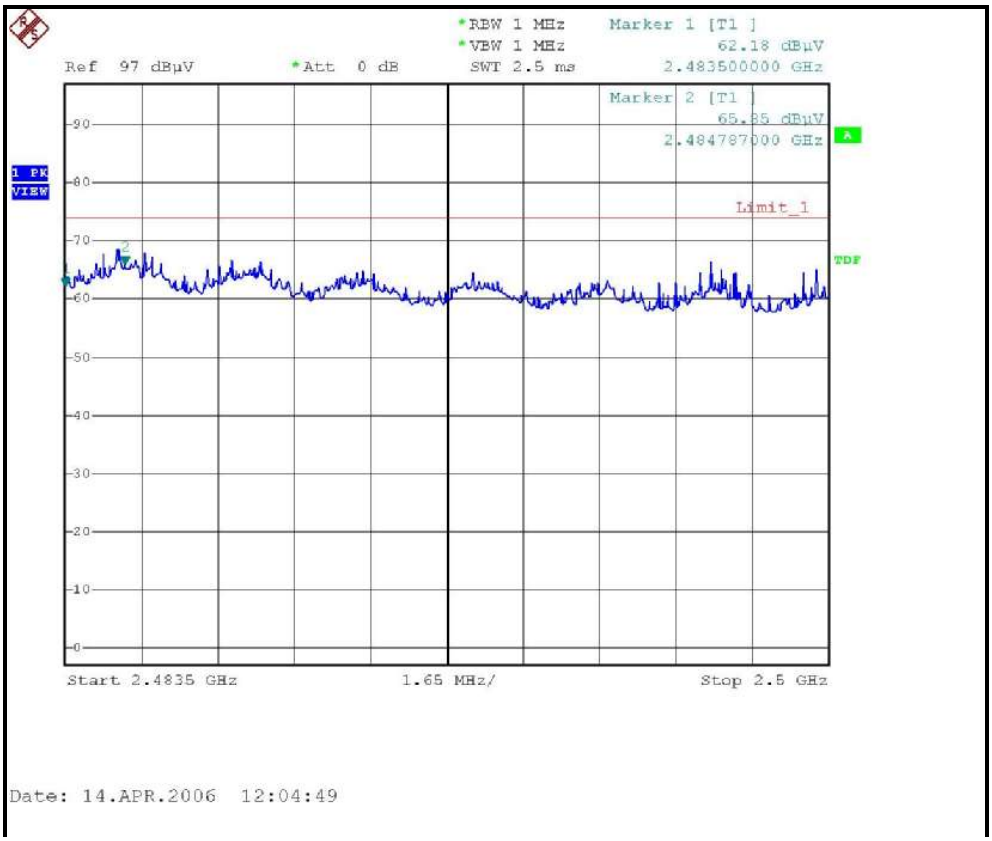
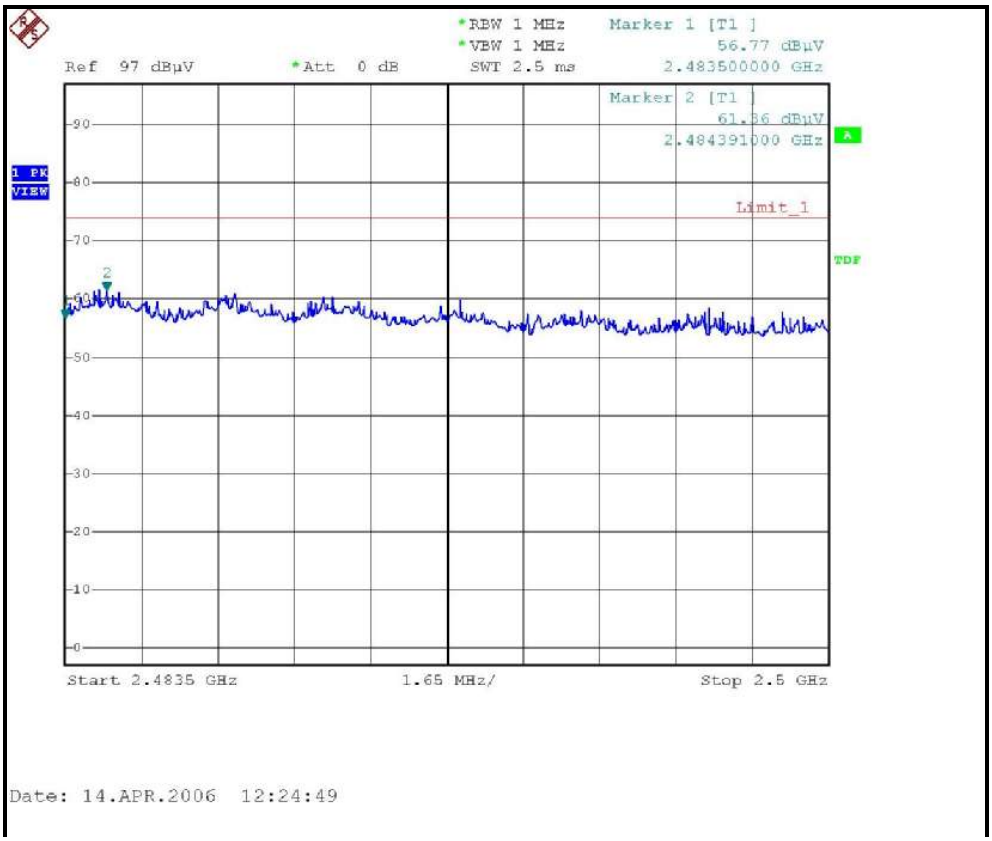
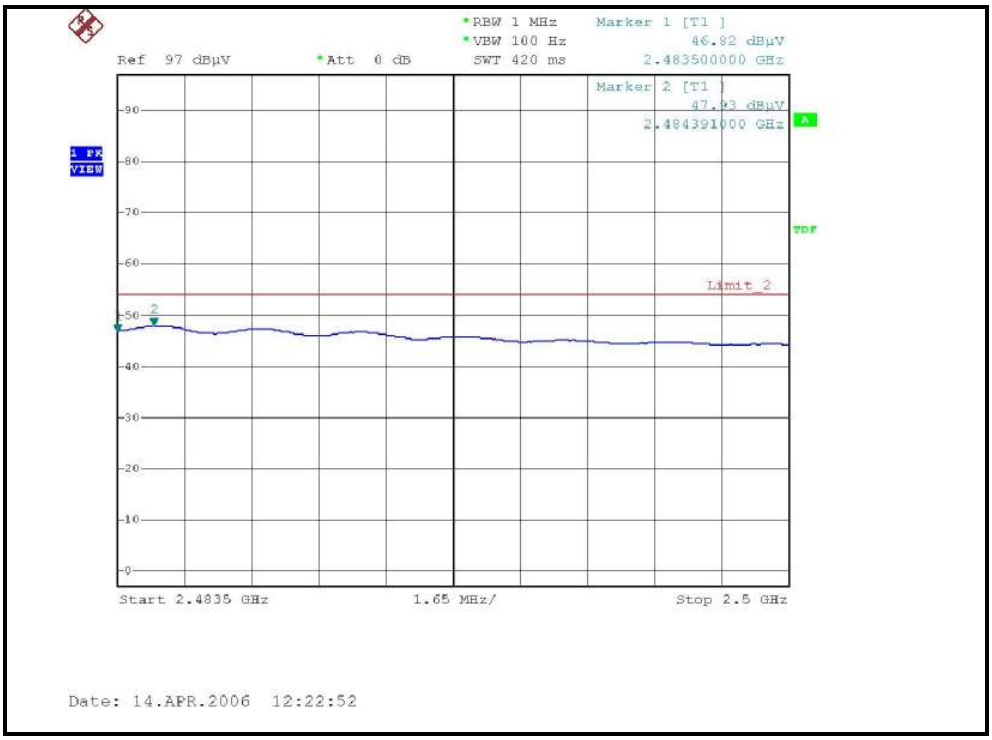


RESTRICTED BANDEDGE (DRAFT 802.11n (40MHz) MODE,CH7, VERTICAL)





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 Until
R&S SPECTRUM ANALYZER	FSP40	100036	Nov. 23, 2006

NOTE:

1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
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.

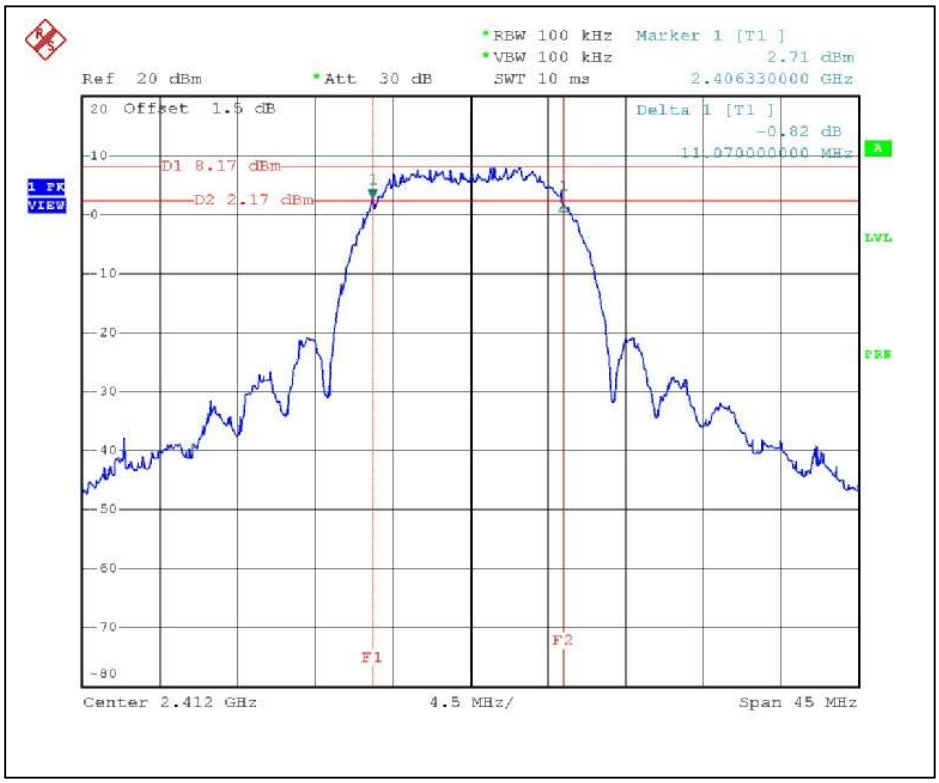
4.3.7 TEST RESULTS

802.11b DSSS MODULATION:

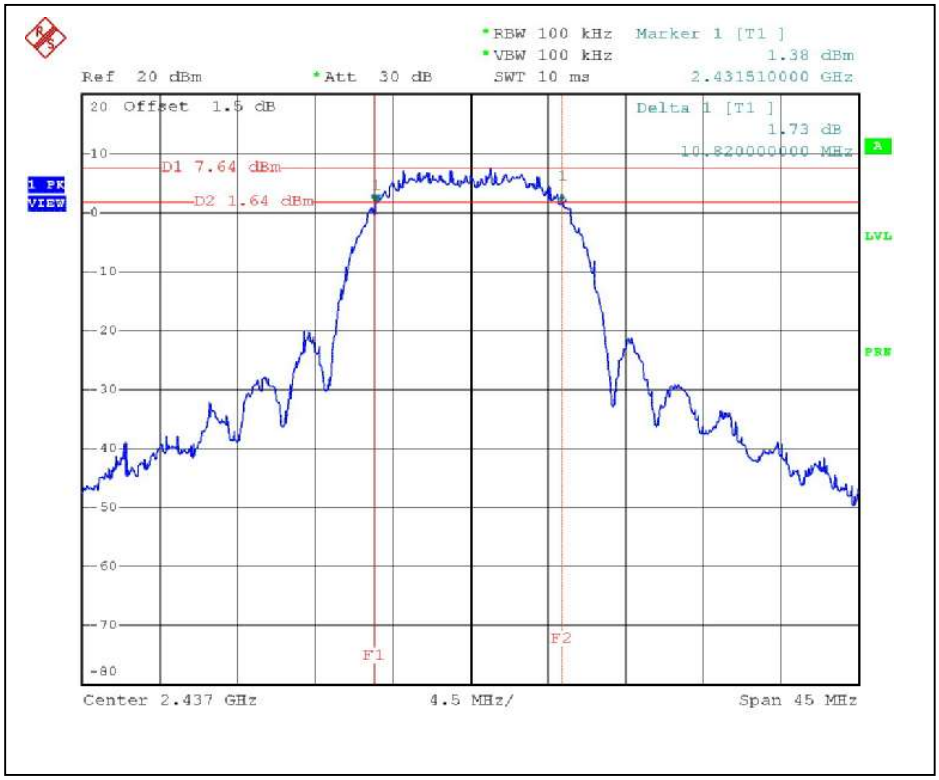
MODULATION TYPE	DBPSK	TRANSFER RATE	1Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 60%RH, 964hPa
TESTED BY	Moris Lin		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	11.07	0.5	PASS
6	2437	10.82	0.5	PASS
11	2462	11.11	0.5	PASS

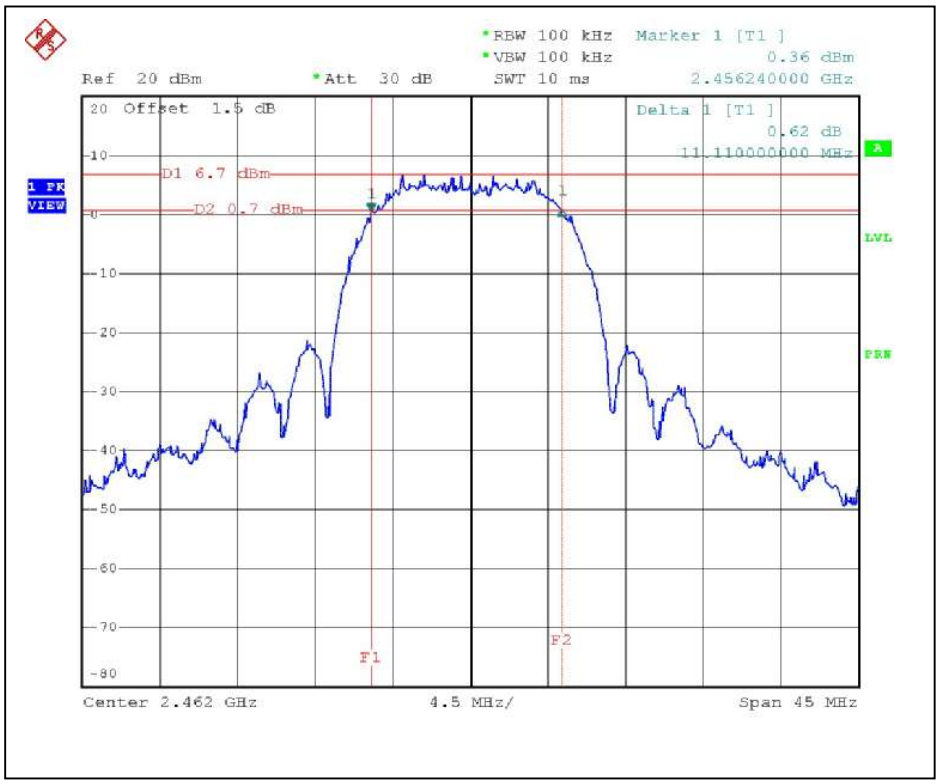
CH1



CH6


RBW 100 kHz
VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
1.38 dBm
2.431510000 GHz
Ref 20 dBm
Att 30 dB
20 Offset 1.5 dB
Delta 1 [T1]
1.73 dB
10.820000000 MHz
D1 7.64 dBm
D2 1.64 dBm
1 PK
VIEW
A
LVL
PRN
F1
F2
Center 2.437 GHz
4.5 MHz/
Span 45 MHz

CH11

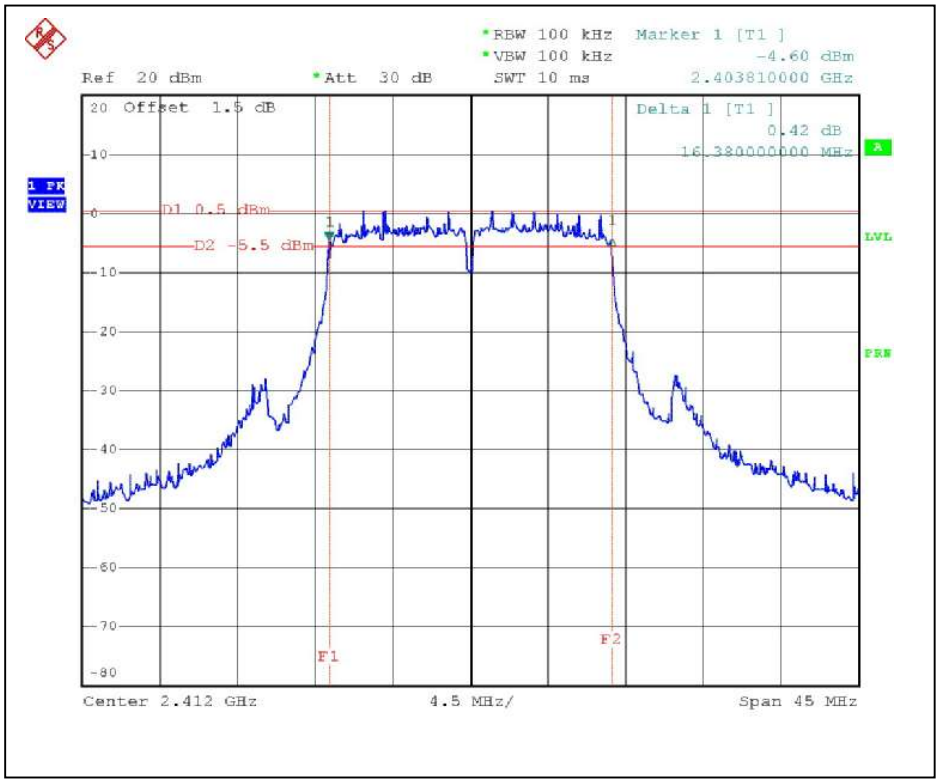

RBW 100 kHz
VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
0.36 dBm
2.456240000 GHz
Ref 20 dBm
Att 30 dB
20 Offset 1.5 dB
Delta 1 [T1]
0.62 dB
11.110000000 MHz
D1 6.7 dBm
D2 0.7 dBm
1 PK
VIEW
A
LVL
PRN
F1
F2
Center 2.462 GHz
4.5 MHz/
Span 45 MHz

802.11g OFDM MODULATION:

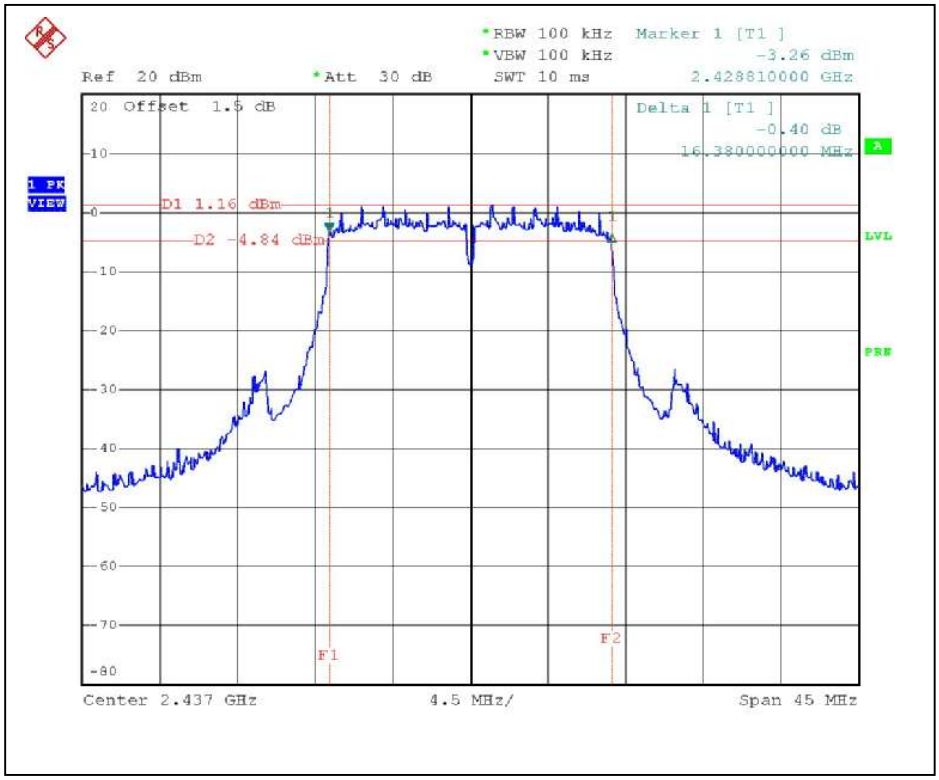
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 60%RH, 964hPa
TESTED BY	Moris Lin		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	16.38	16.38	0.5	PASS
6	2437	16.38	16.38	0.5	PASS
11	2462	16.29	16.38	0.5	PASS

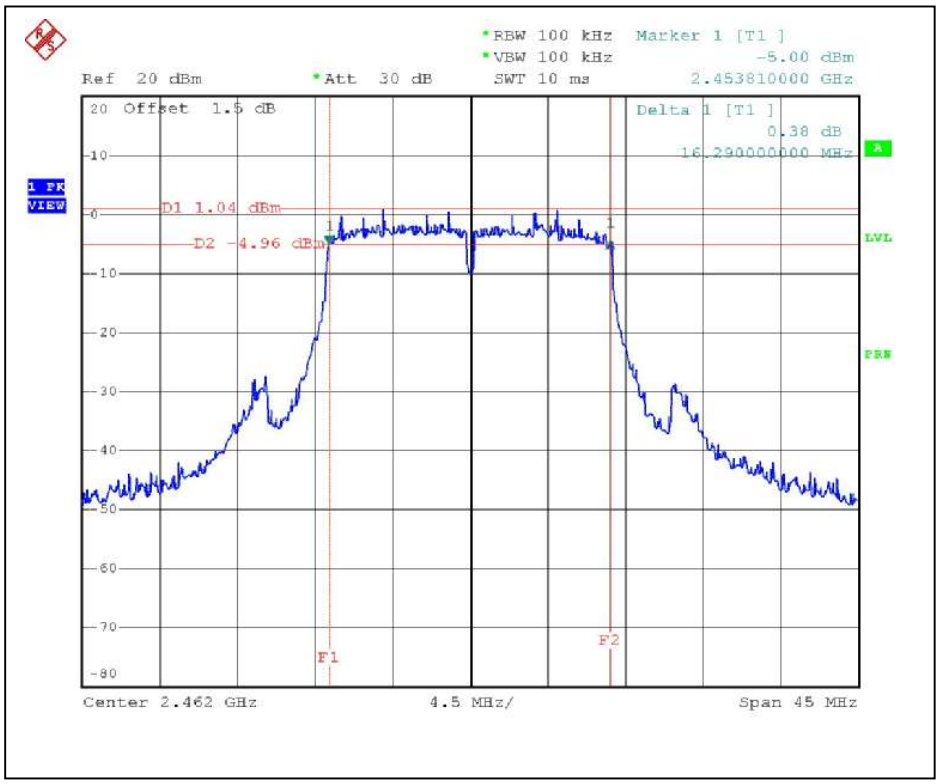
FOR CHAIN 0: CH1



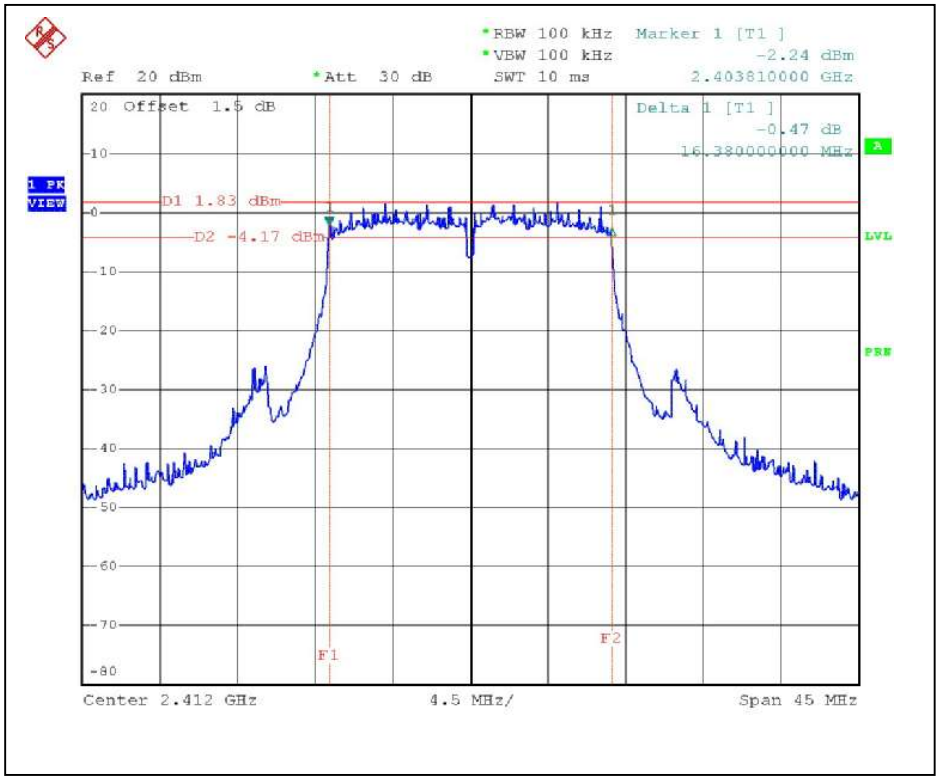
CH6


RBW 100 kHz
VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
-3.26 dBm
2.428810000 GHz
Ref 20 dBm
Att 30 dB
20 Offset 1.5 dB
Delta 1 [T1]
-0.40 dB
16.380000000 MHz
D1 1.16 dBm
D2 -4.84 dBm
1 PK
VIEW
A
LVL
PRN
F1
F2
Center 2.437 GHz
4.5 MHz/
Span 45 MHz

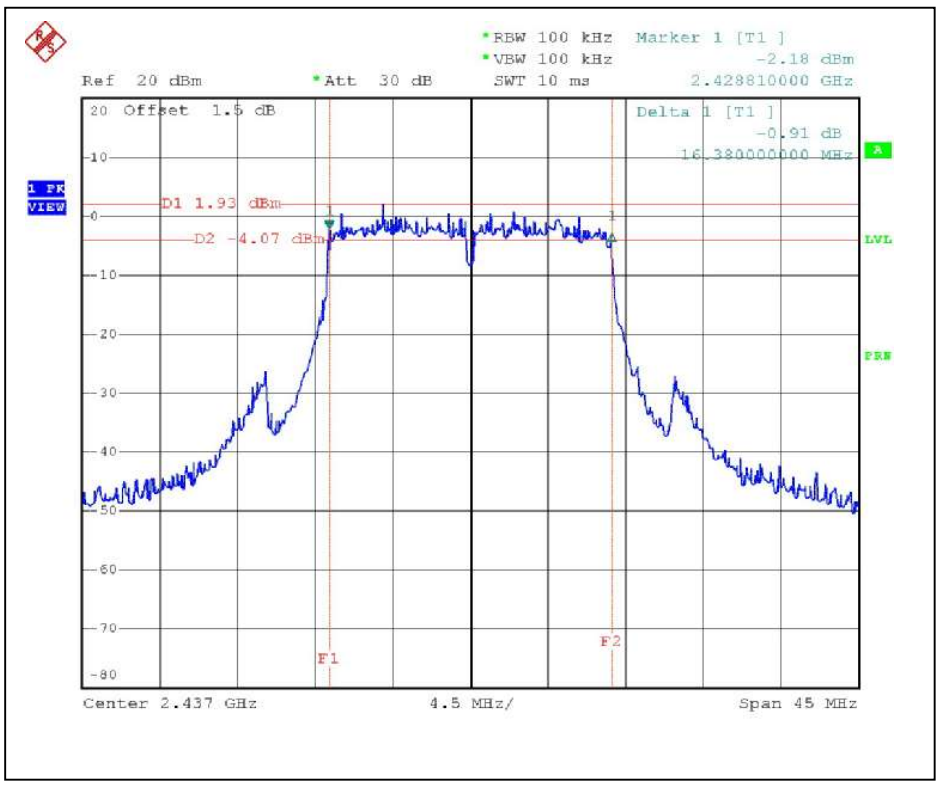
CH11


RBW 100 kHz
VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
-5.00 dBm
2.453810000 GHz
Ref 20 dBm
Att 30 dB
20 Offset 1.5 dB
Delta 1 [T1]
0.38 dB
16.290000000 MHz
D1 1.04 dBm
D2 -4.96 dBm
1 PK
VIEW
A
LVL
PRN
F1
F2
Center 2.462 GHz
4.5 MHz/
Span 45 MHz

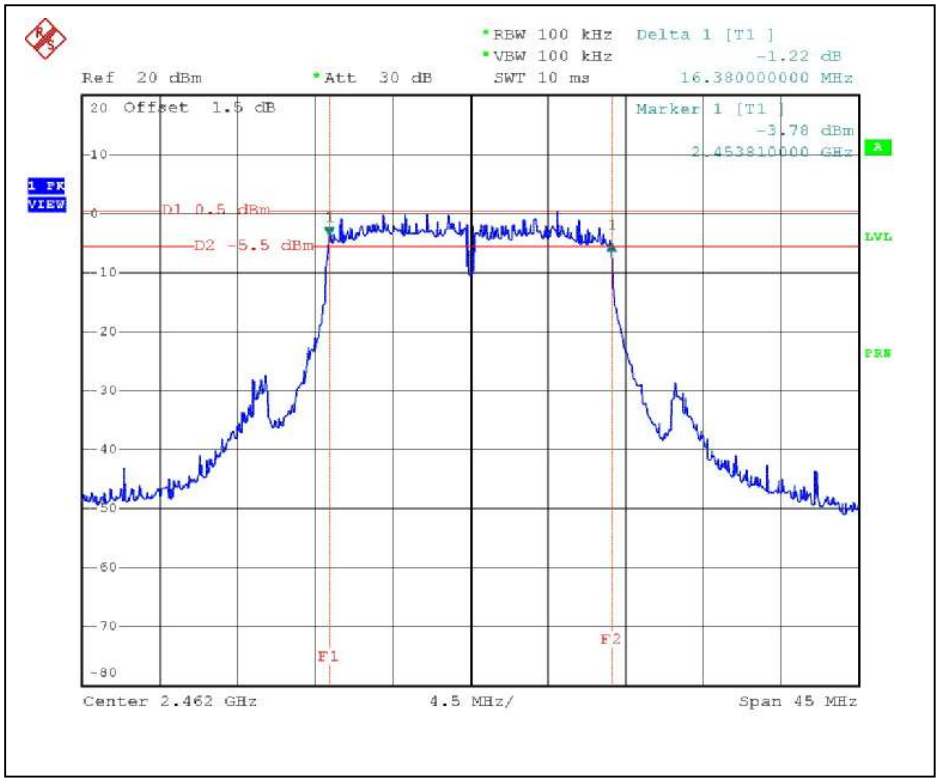
FOR CHAIN 1: CH1



CH6



CH11

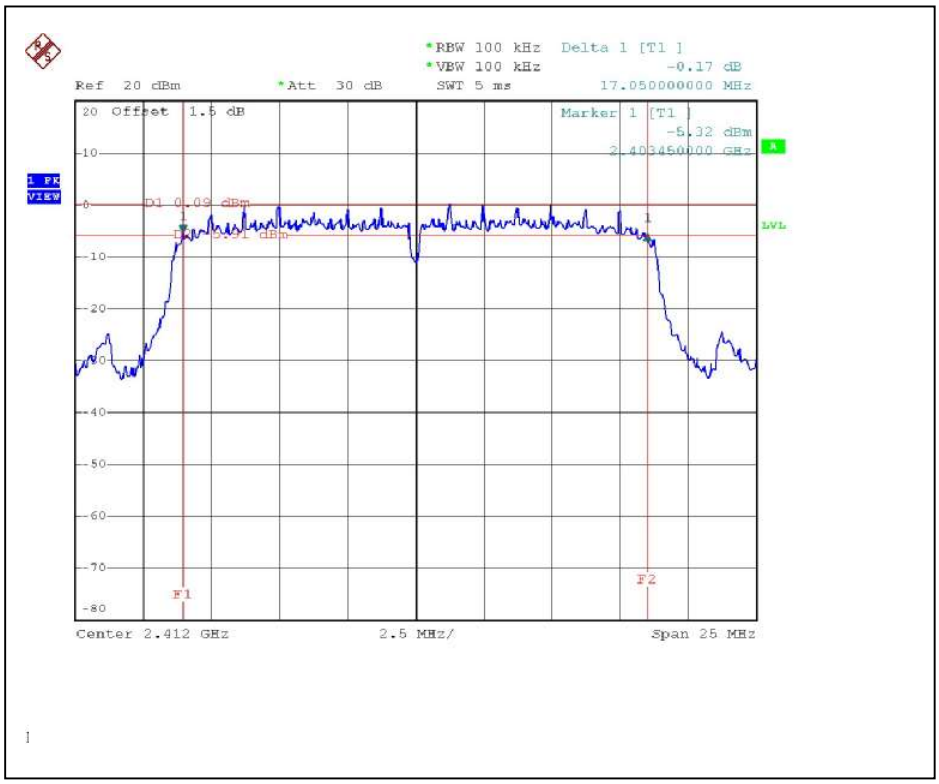

RBW 100 kHz
VBW 100 kHz
SWT 10 ms
Delta 1 [T1]
-1.22 dB
16.380000000 MHz
Ref 20 dBm
Att 30 dB
20 Offset 1.5 dB
Marker 1 [T1]
-3.78 dBm
2.453810000 GHz
D1 0.5 dBm
D2 -5.5 dBm
F1
F2
Center 2.462 GHz
4.5 MHz/
Span 45 MHz

DRAFT 802.11n (20MHz) OFDM MODULATION: DUAL TX:

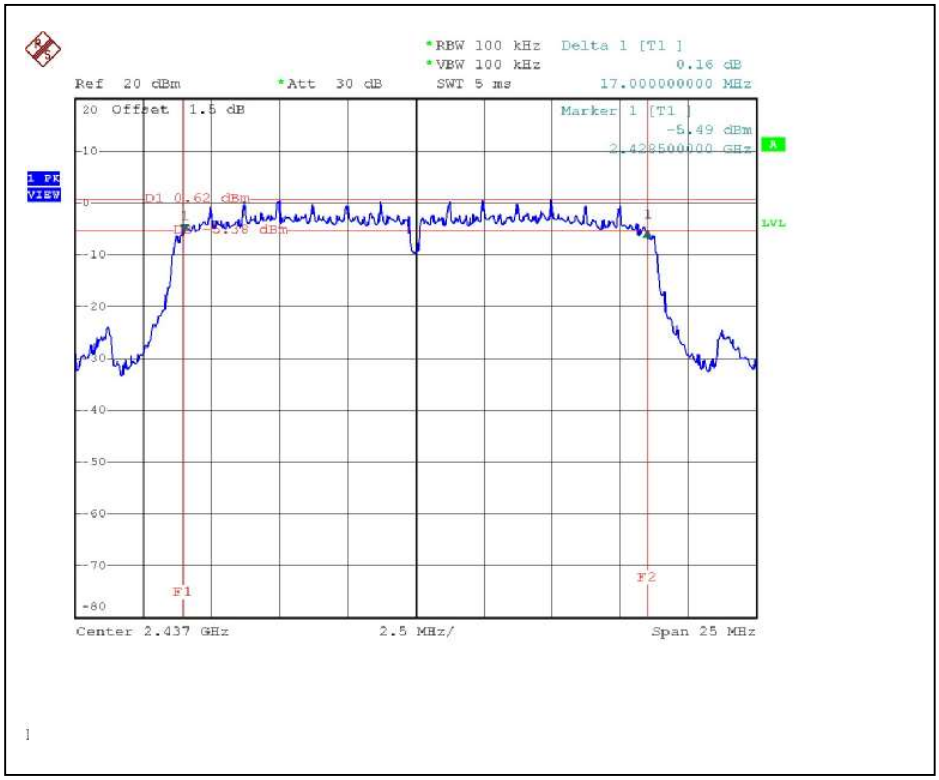
MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 60%RH, 964hPa
TESTED BY	Moris Lin		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	17.05	17.3	0.5	PASS
6	2437	17.0	17.55	0.5	PASS
11	2462	17.1	17.2	0.5	PASS

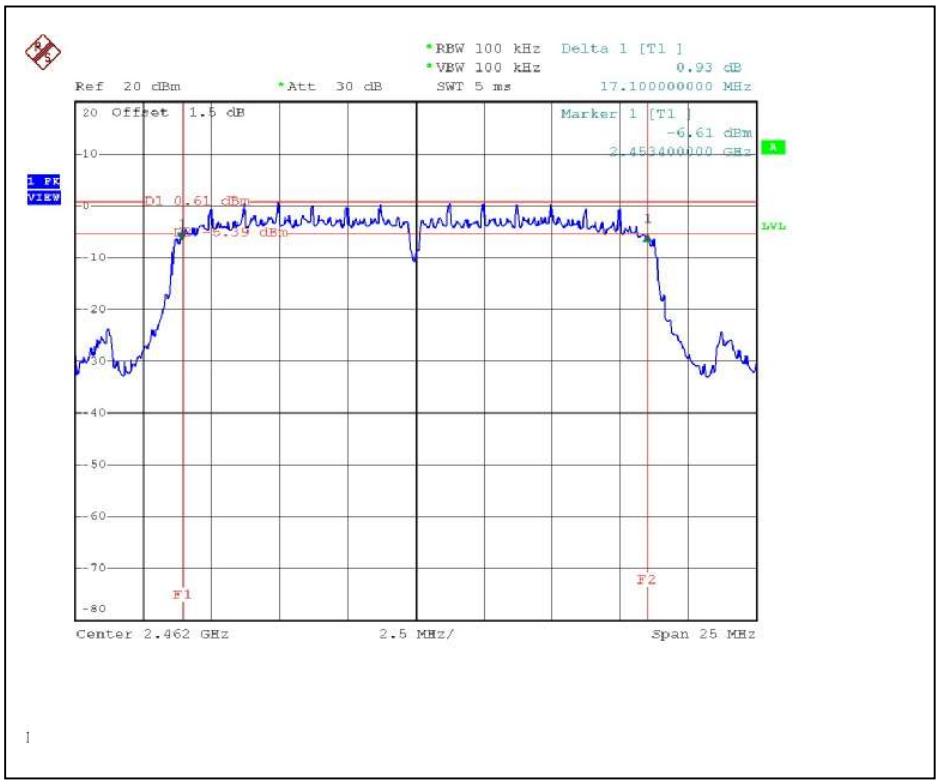
FOR CHAIN 0: CH1



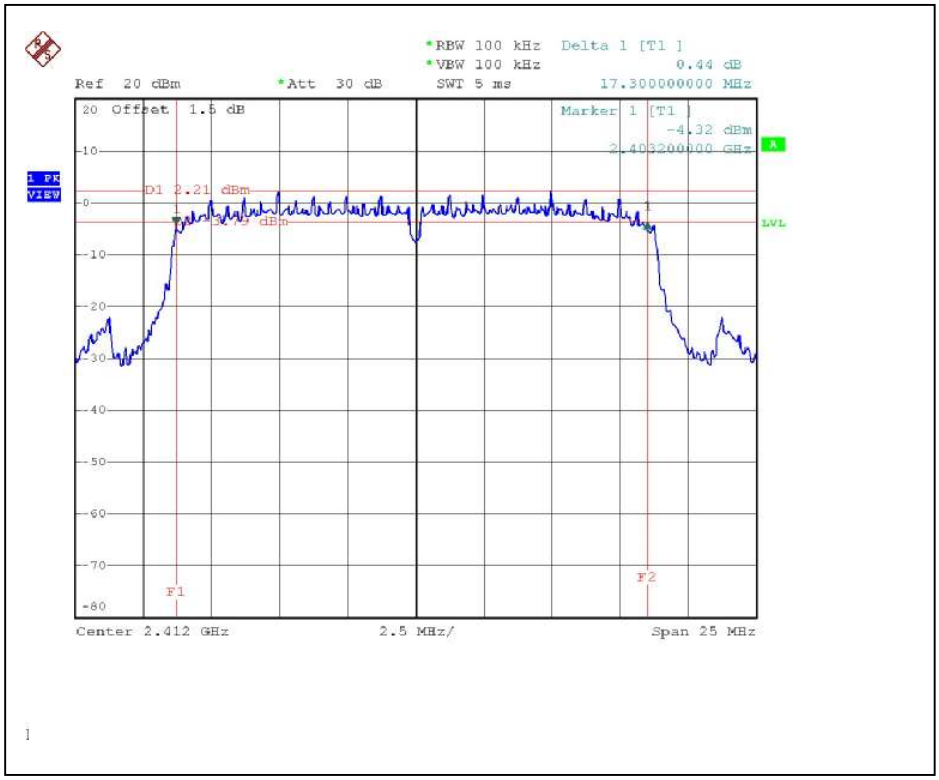
CH6


*RBW 100 kHz
Delta 1 [T1]
*VBW 100 kHz
0.16 dB
Ref 20 dBm
*Att 30 dB
SWT 5 ms
17.000000000 MHz
20 Offset 1.5 dB
Marker 1 [T1]
-5.49 dBm
2.428500000 GHz
D1 0.62 dBm
F1
F2
Center 2.437 GHz
2.5 MHz/
Span 25 MHz

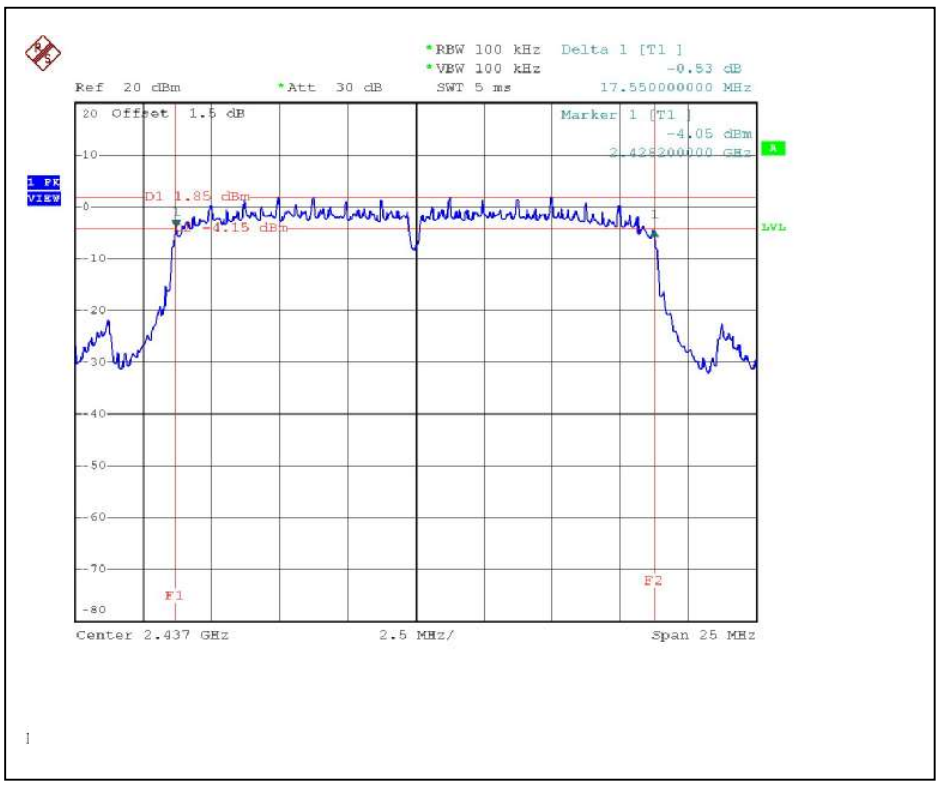
CH11


*RBW 100 kHz
Delta 1 [T1]
*VBW 100 kHz
0.93 dB
Ref 20 dBm
*Att 30 dB
SWT 5 ms
17.100000000 MHz
20 Offset 1.5 dB
Marker 1 [T1]
-6.61 dBm
2.453400000 GHz
D1 0.61 dBm
F1
F2
Center 2.462 GHz
2.5 MHz/
Span 25 MHz

FOR CHAIN 1: CH1



CH6



CH11

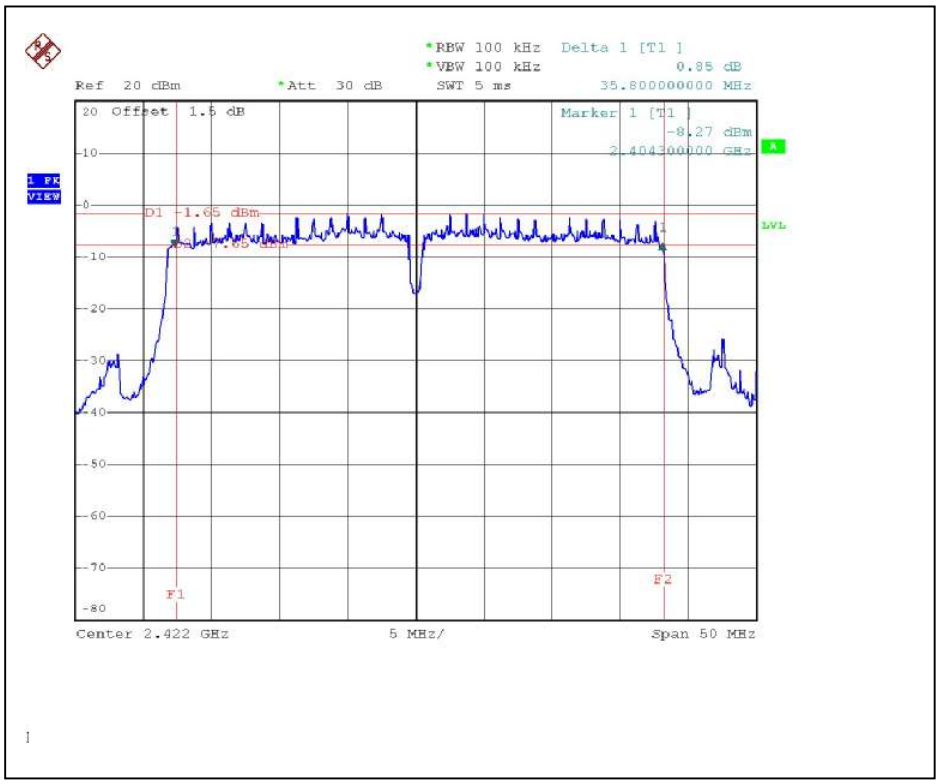
*RBW 100 kHz
Delta 1 [T1]
*VBW 100 kHz
1.07 dB
Ref 20 dBm
*Att 30 dB
SWT 5 ms
17.200000000 MHz
20 Offset 1.5 dB
Marker 1 [T1]
-6.15 dBm
2.453150000 GHz
D1 1.03 dBm
-4.97 dBm
1 PK
VIEW
A
LVL
F1
F2
Center 2.462 GHz
2.5 MHz/
Span 25 MHz

DRAFT 802.11n (40MHz) OFDM MODULATION: DUAL TX:

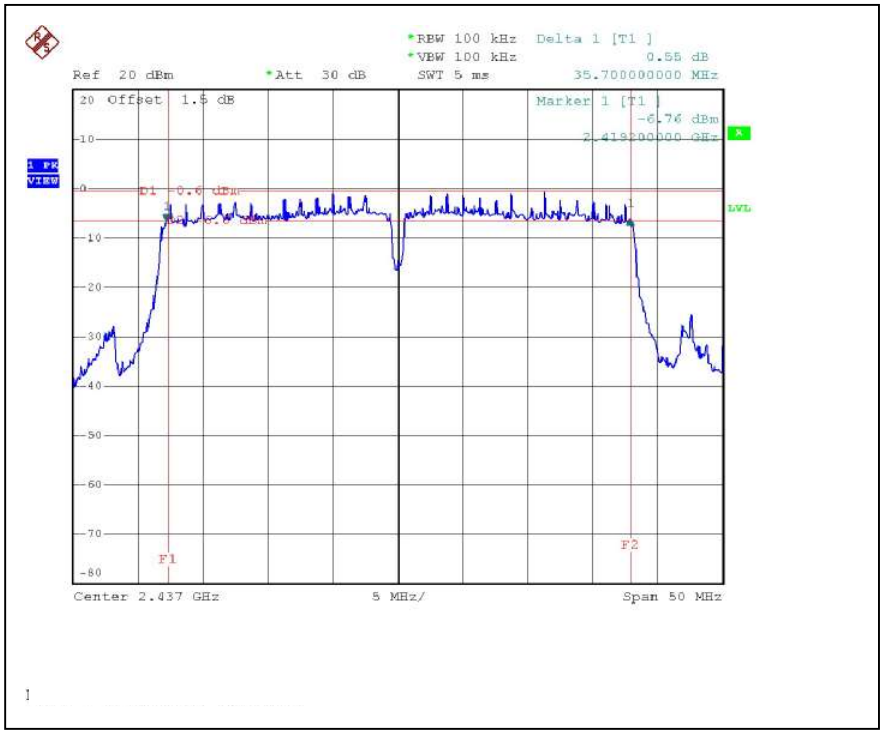
MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 60%RH, 964hPa
TESTED BY	Moris Lin		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2422	35.8	36.3	0.5	PASS
4	2437	35.7	36.4	0.5	PASS
7	2452	36.0	36.4	0.5	PASS

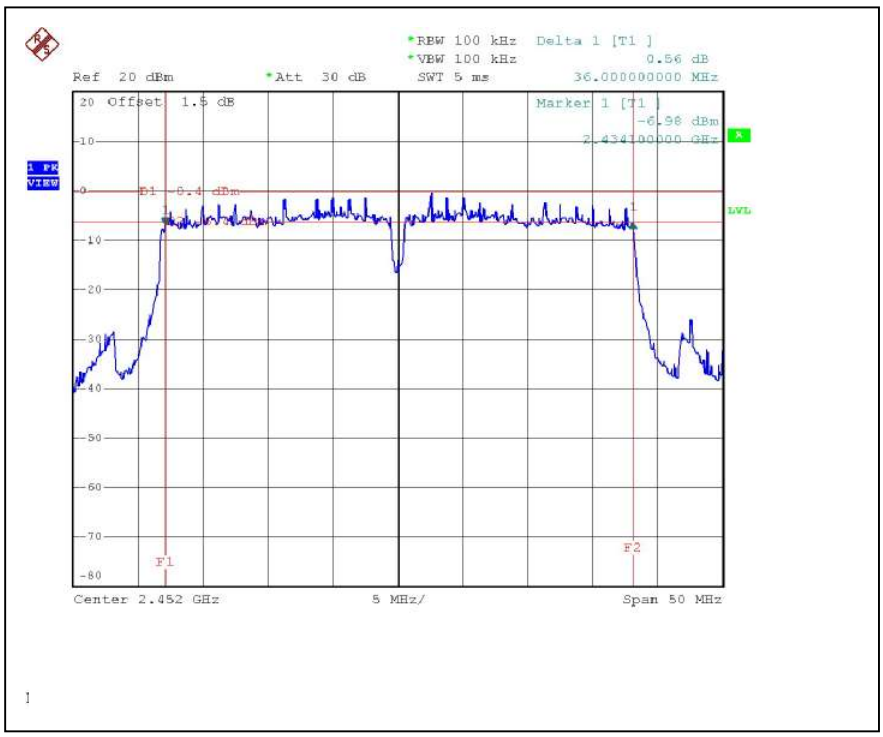
FOR CHAIN 0: CH1



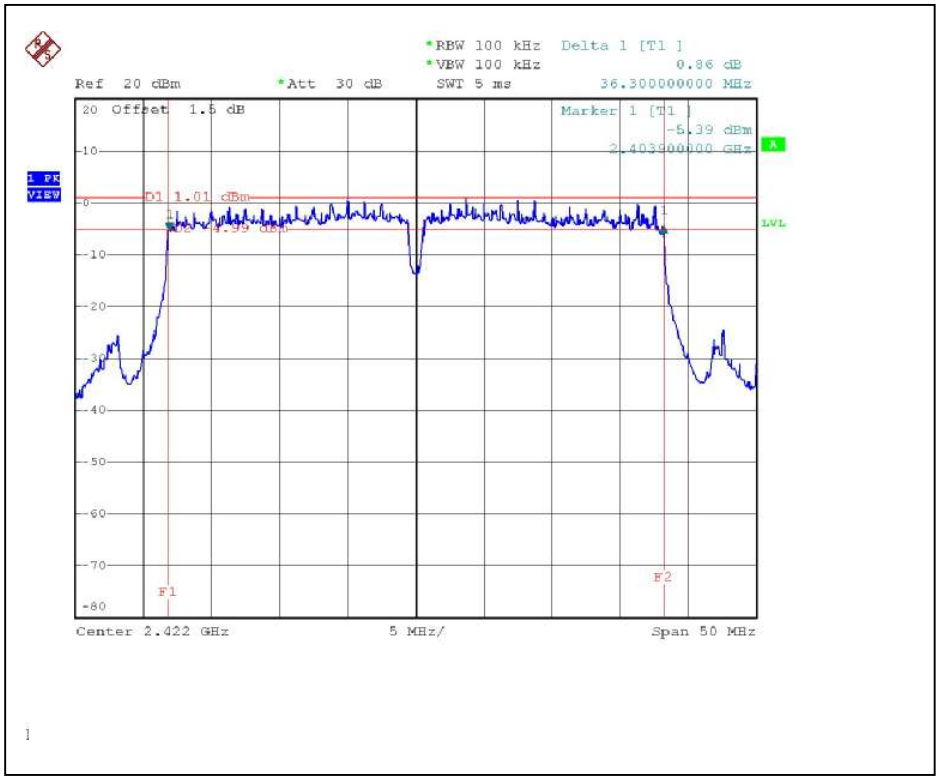
CH4


*RBW 100 kHz
*VBW 100 kHz
Delta 1 [T1]
0.55 dB
Ref 20 dBm
*Att 30 dB
SWT 5 ms
35.700000000 MHz
20 Offset 1.5 dB
Marker 1 [T1]
-6.76 dBm
2.419200000 GHz
D1 -0.6 dBm
F1
F2
Center 2.437 GHz
5 MHz/
Span 50 MHz

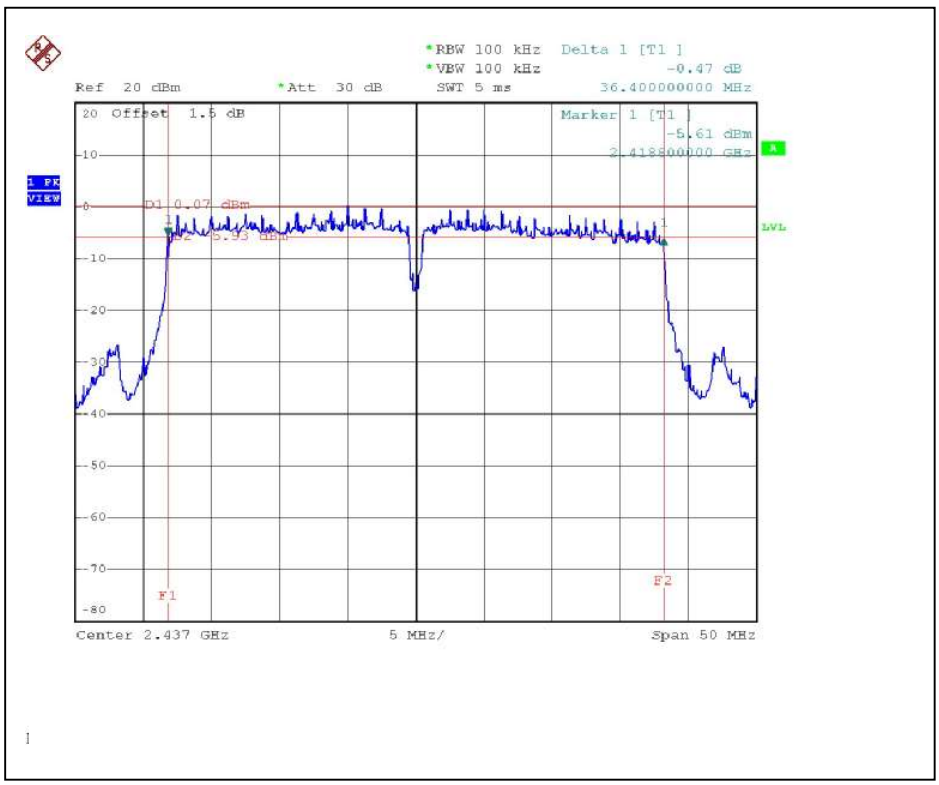
CH7


*RBW 100 kHz
*VBW 100 kHz
Delta 1 [T1]
0.56 dB
Ref 20 dBm
*Att 30 dB
SWT 5 ms
36.000000000 MHz
20 Offset 1.5 dB
Marker 1 [T1]
-6.98 dBm
2.434100000 GHz
D1 -0.4 dBm
F1
F2
Center 2.452 GHz
5 MHz/
Span 50 MHz

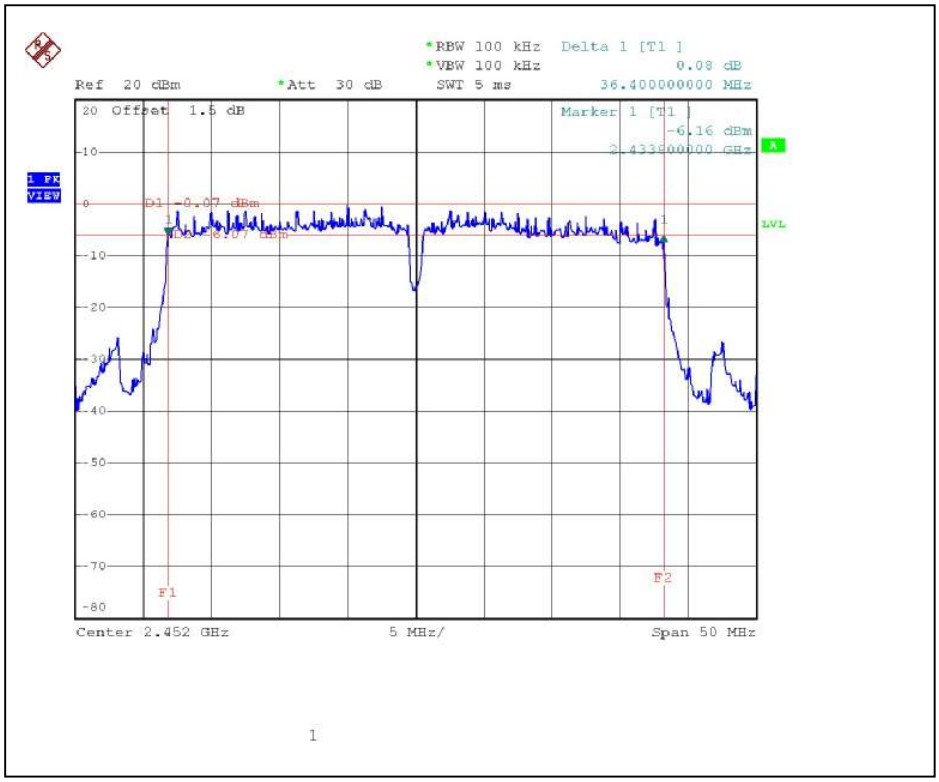
FOR CHAIN 1: CH1



CH4



CH7


*RBW 100 kHz
*VBW 100 kHz
Delta 1 [T1]
0.08 dB
Ref 20 dBm
*Att 30 dB
SWT 5 ms
36.400000000 MHz
20 Offset 1.5 dB
Marker 1 [T1]
-6.16 dBm
2.433800000 GHz
1 PK
VIEW
D1 -0.07 dBm
LVL
F1
F2
Center 2.452 GHz
5 MHz/
Span 50 MHz
1

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 Until
R&S SPECTRUM ANALYZER	FSP40	100036	Nov. 23, 2006

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

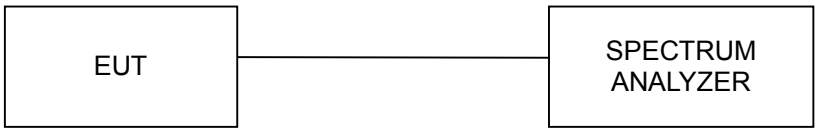
4.4.3 TEST PROCEDURES

The transmitter output was connected to the spectrum analyzer through an attenuator, the internal channel power was measured with the channel power function of spectrum analyzer that bandwidth greater than or equal to the 99% bandwidth. The maximum power was measured and recorded.

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

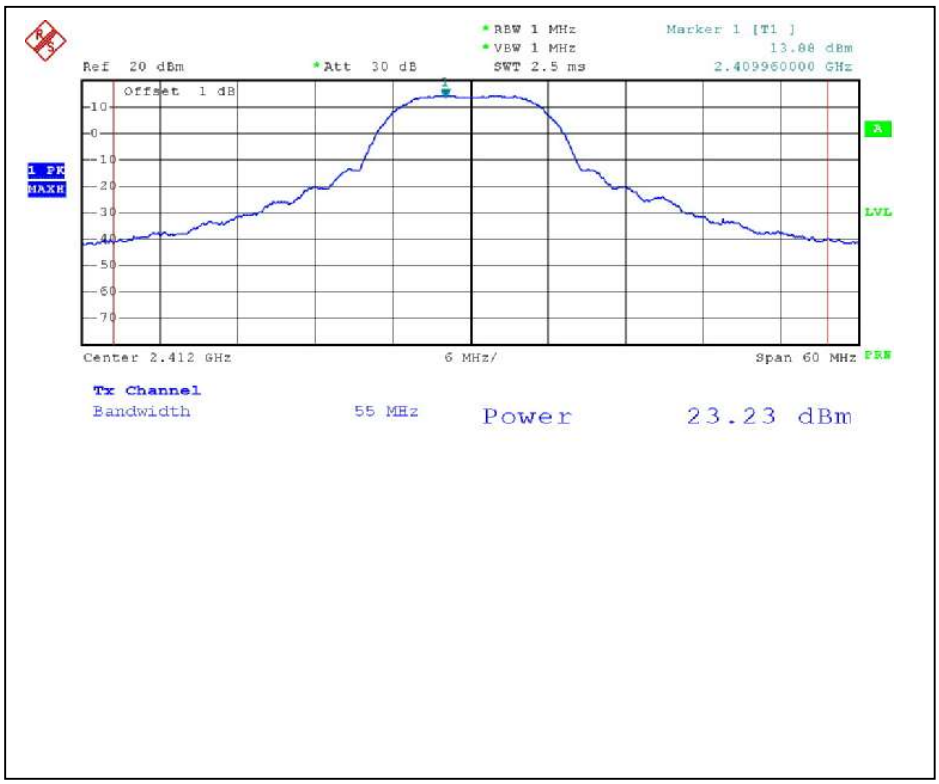
4.4.7 TEST RESULTS

802.11b DSSS MODULATION:

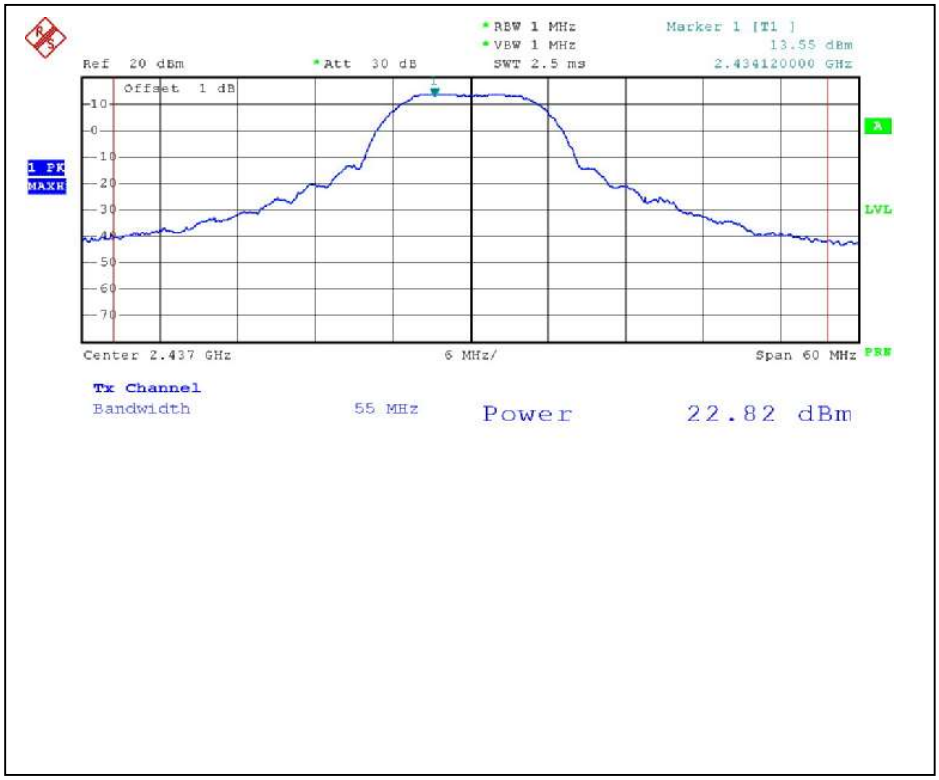
MODULATION TYPE	DBPSK	TRANSFER RATE	1Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 60%RH, 964hPa
TESTED BY	Moris Lin		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	210.378	23.23	30	PASS
6	2437	191.426	22.82	30	PASS
11	2462	155.955	21.93	30	PASS

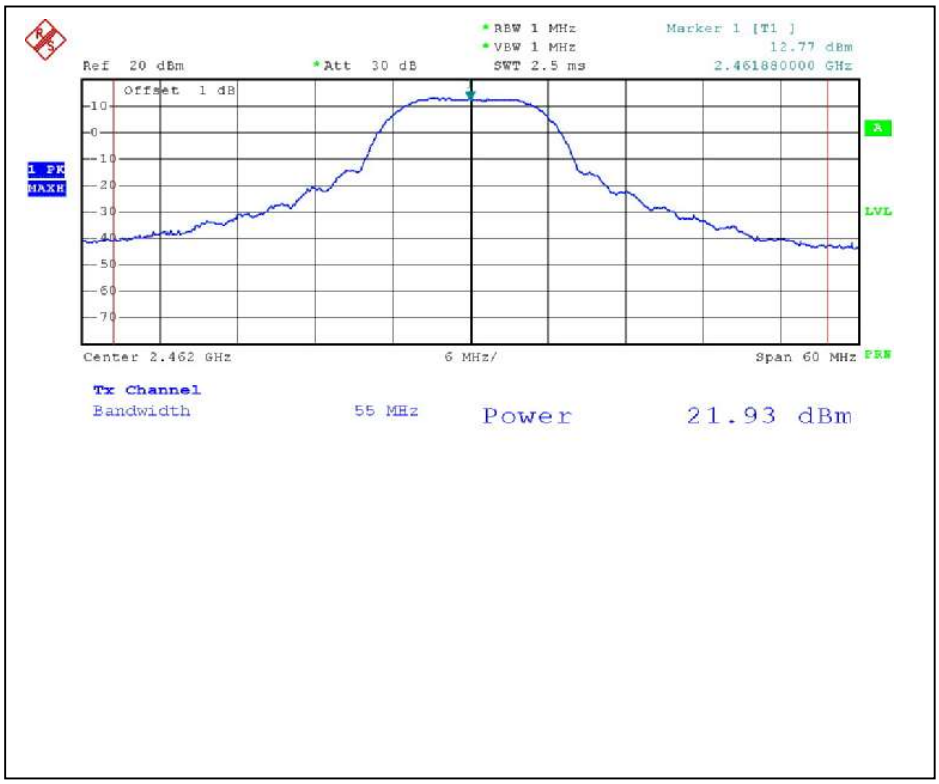
CH1



CH6


RBW 1 MHz
VBW 1 MHz
SWT 2.5 ms
Marker 1 [T1]
13.55 dBm
2.434120000 GHz
Ref 20 dBm
Att 30 dB
Offset 1 dB
1 PK
MAXH
A
LVL
Center 2.437 GHz
6 MHz/
Span 60 MHz
Tx Channel
Bandwidth
55 MHz
Power
22.82 dBm

CH11

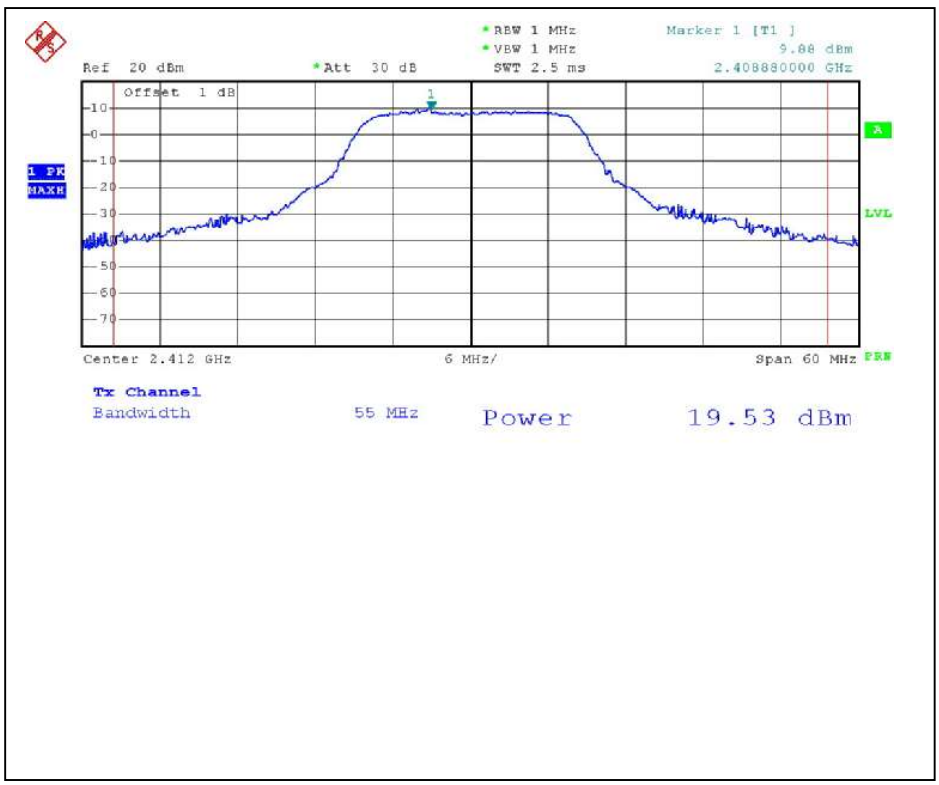

RBW 1 MHz
VBW 1 MHz
SWT 2.5 ms
Marker 1 [T1]
12.77 dBm
2.461880000 GHz
Ref 20 dBm
Att 30 dB
Offset 1 dB
1 PK
MAXH
A
LVL
Center 2.462 GHz
6 MHz/
Span 60 MHz
Tx Channel
Bandwidth
55 MHz
Power
21.93 dBm

802.11g OFDM MODULATION:

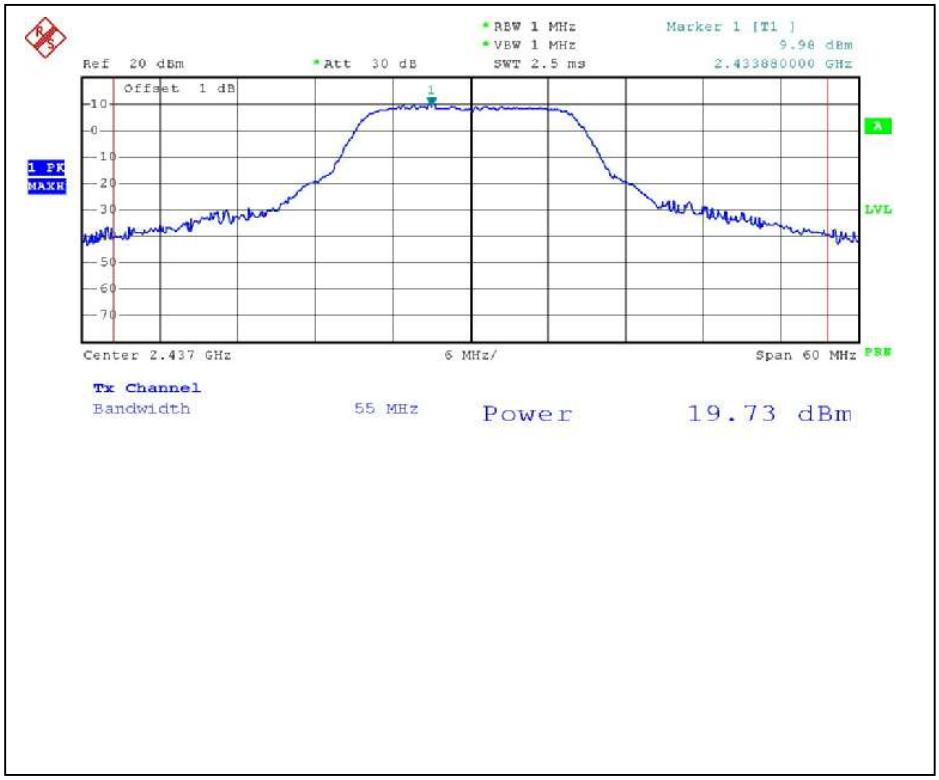
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	20deg.C, 60%RH, 964hPa
TESTED BY	Moris Lin		

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	89.74	162.18	19.53	22.10	251.924	24.0	30	PASS
6	2437	93.97	135.83	19.73	21.33	229.804	23.6	30	PASS
11	2462	86.70	114.02	19.38	20.57	200.721	23.0	30	PASS

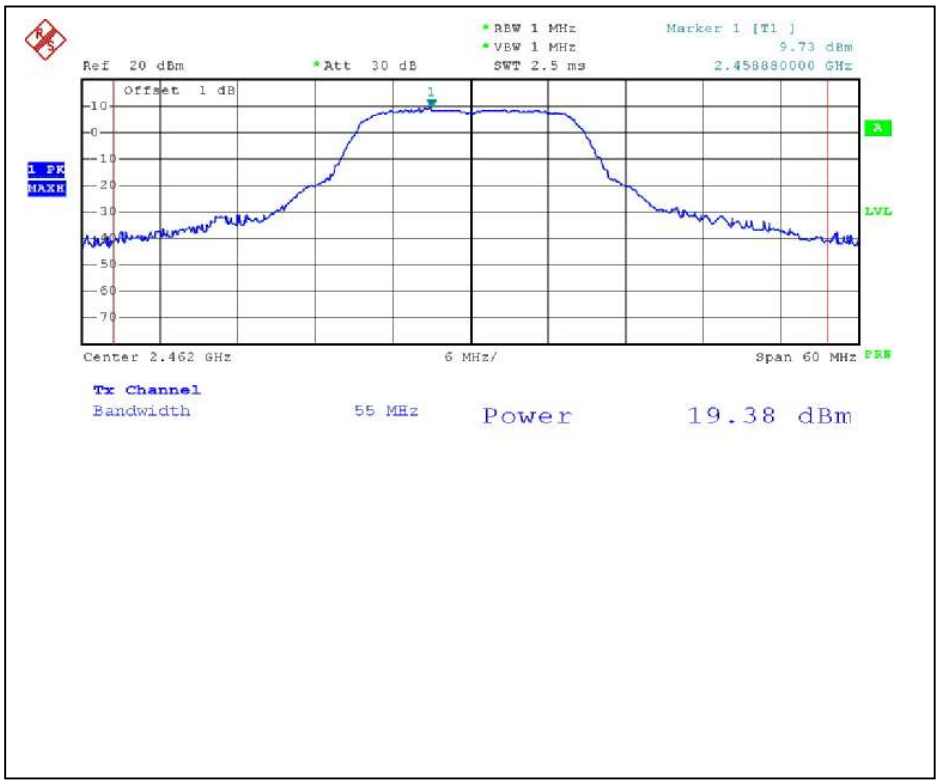
FOR CHAIN 0: CH1



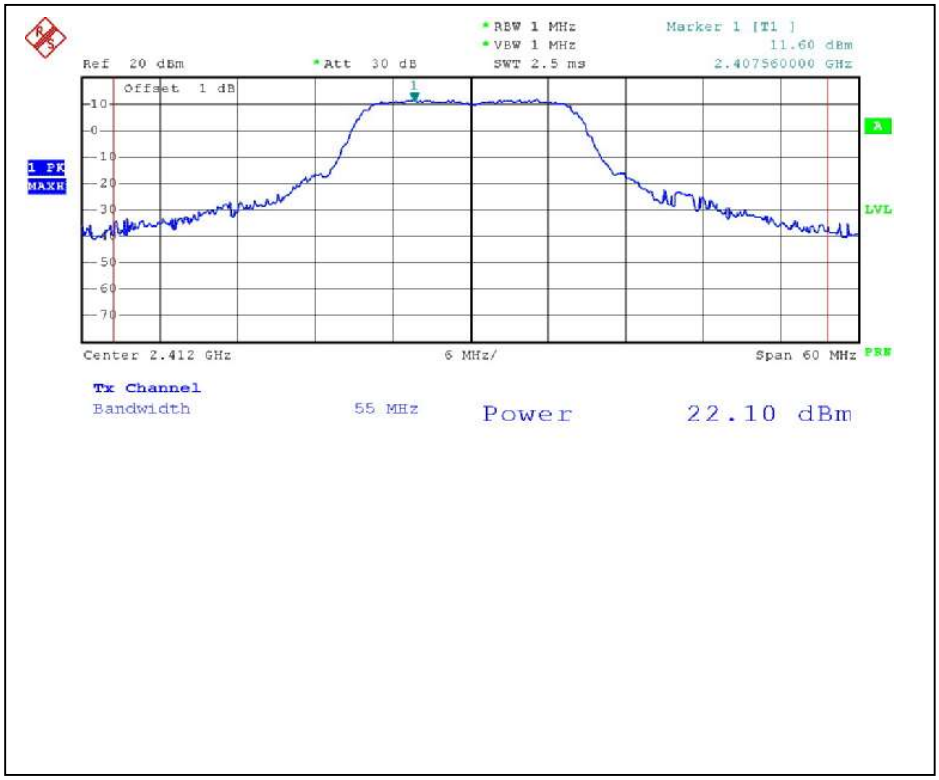
CH6


RBW 1 MHz
VBW 1 MHz
SWT 2.5 ms
Marker 1 [T1]
9.98 dBm
2.433880000 GHz
Ref 20 dBm
Att 30 dB
Offset 1 dB
1 PK
MAXH
A
LVL
Center 2.437 GHz
6 MHz/
Span 60 MHz
Tx Channel
Bandwidth
55 MHz
Power
19.73 dBm

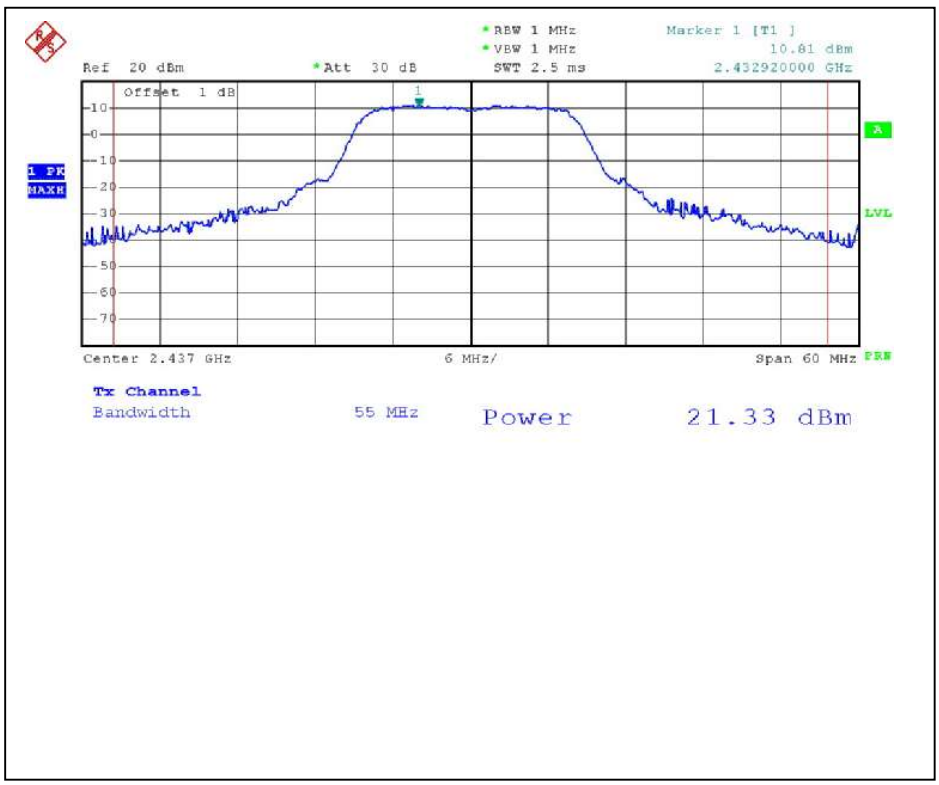
CH11


RBW 1 MHz
VBW 1 MHz
SWT 2.5 ms
Marker 1 [T1]
9.73 dBm
2.458880000 GHz
Ref 20 dBm
Att 30 dB
Offset 1 dB
1 PK
MAXH
A
LVL
Center 2.462 GHz
6 MHz/
Span 60 MHz
Tx Channel
Bandwidth
55 MHz
Power
19.38 dBm

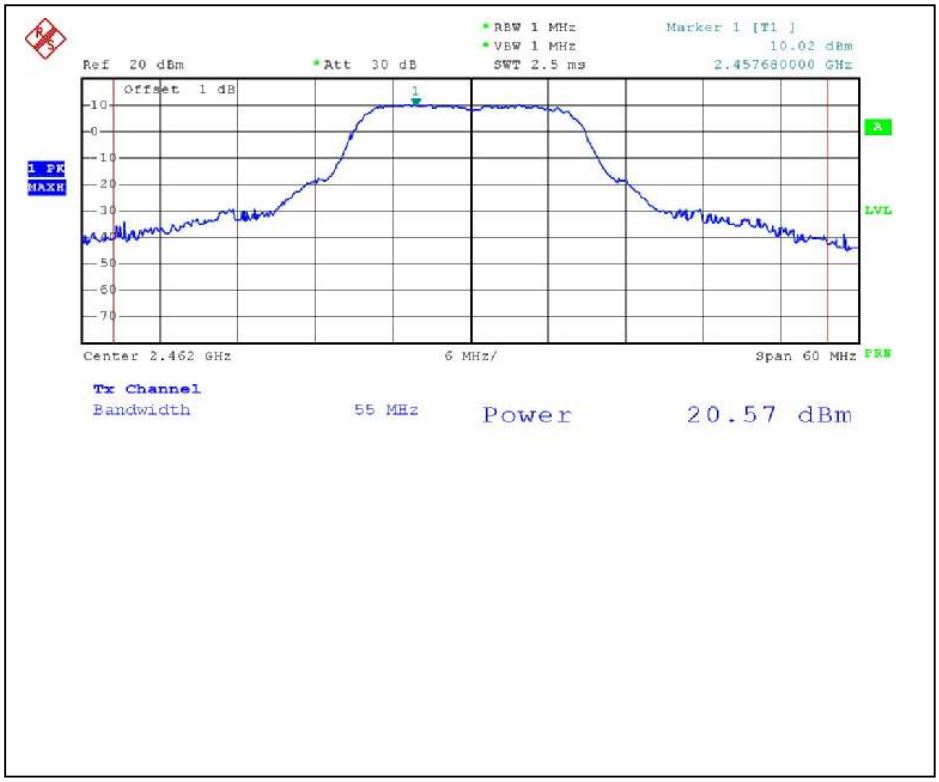
FOR CHAIN 1: CH1



CH6



CH11

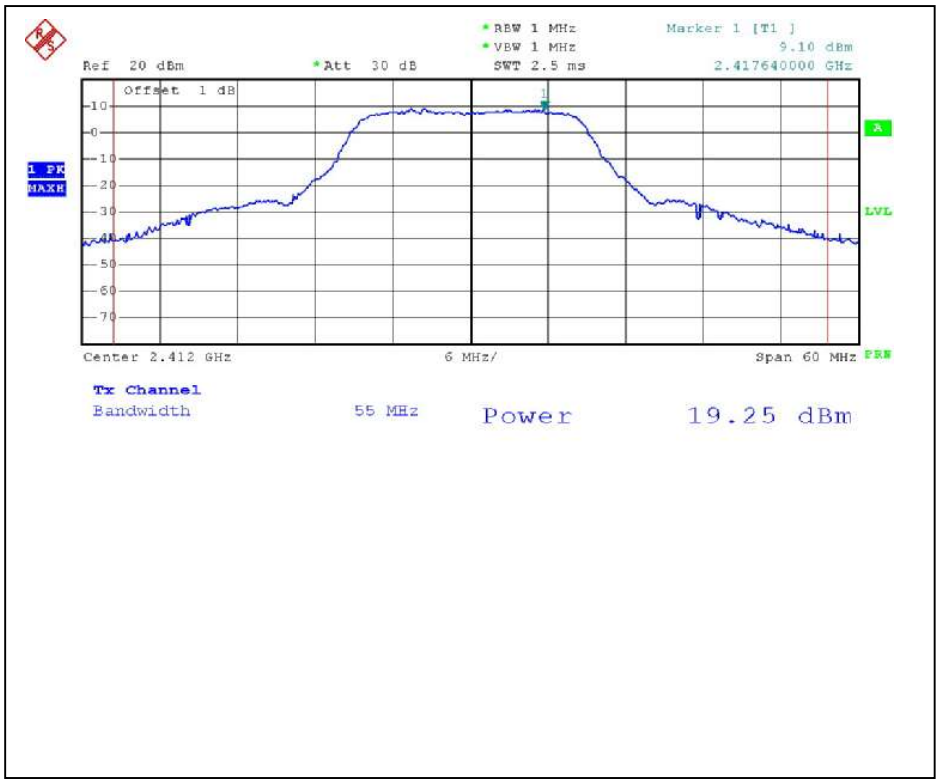

RBW 1 MHz
VBW 1 MHz
SWT 2.5 ms
Marker 1 [T1]
10.02 dBm
2.457680000 GHz
Ref 20 dBm
Att 30 dB
Offset 1 dB
1 PK
MAXH
A
LVL
PRN
Center 2.462 GHz
6 MHz/
Span 60 MHz
Tx Channel
Bandwidth
55 MHz
Power
20.57 dBm

DRAFT 802.11n (20MHz) OFDM MODULATION: DUAL TX:

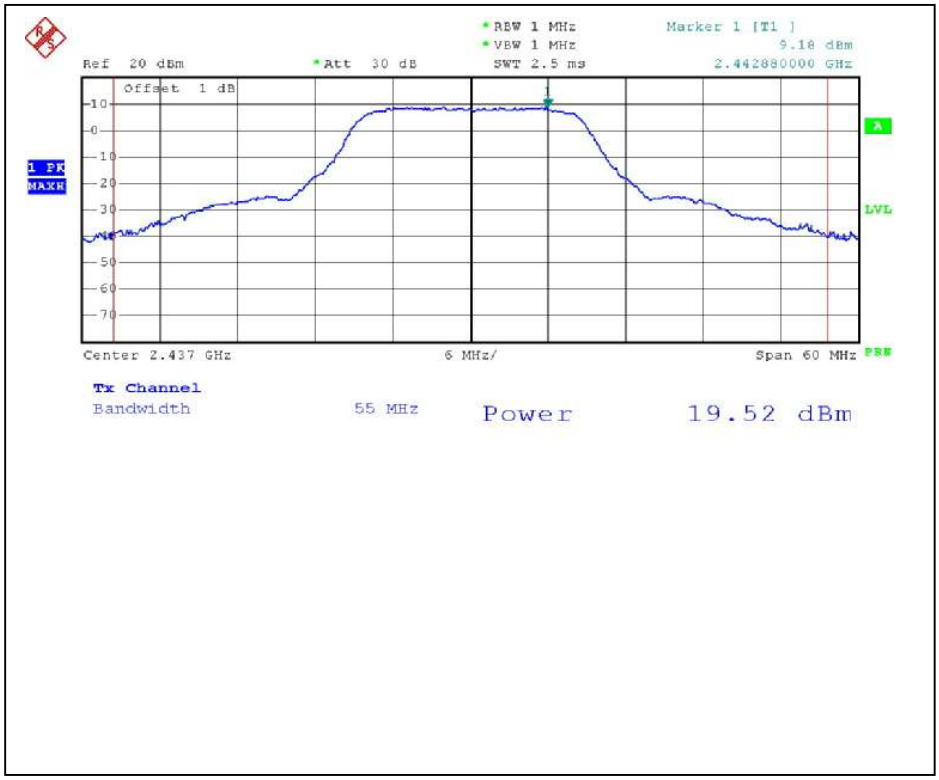
MODULATION TYPE	BPSK	**TRANSFER RATE**	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	20deg.C, 60%RH, 964hPa
TESTED BY	Moris Lin		

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	84.14	162.55	19.25	22.11	246.694	23.9	30	PASS
6	2437	89.54	139.96	19.52	21.46	229.495	23.6	30	PASS
11	2462	84.72	109.14	19.28	20.38	193.867	22.9	30	PASS

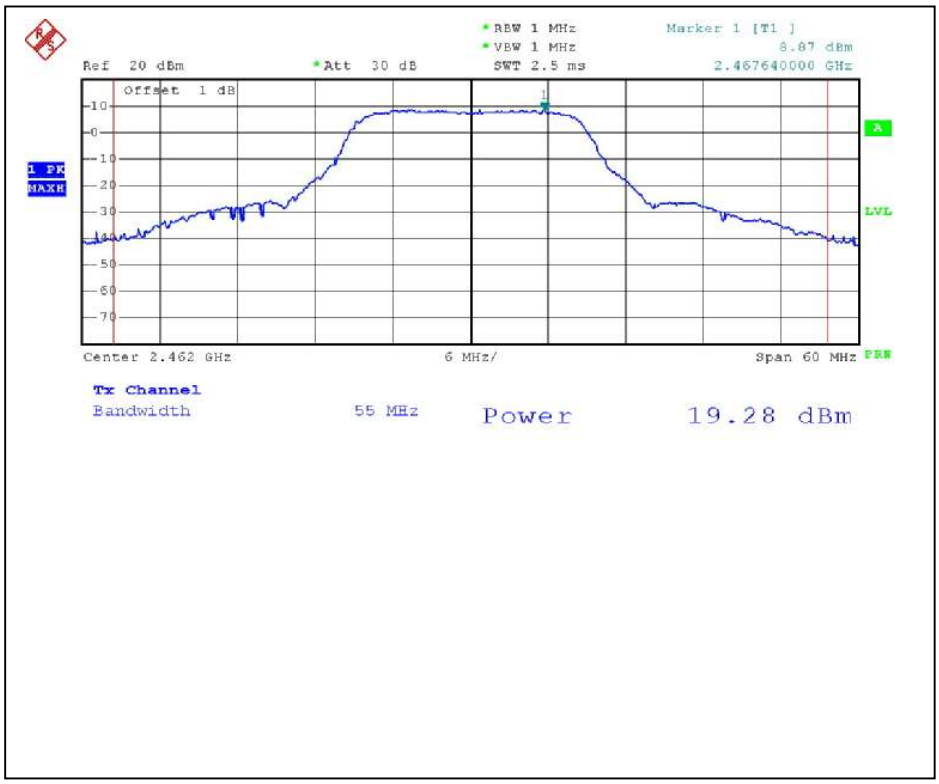
FOR CHAIN 0: CH1



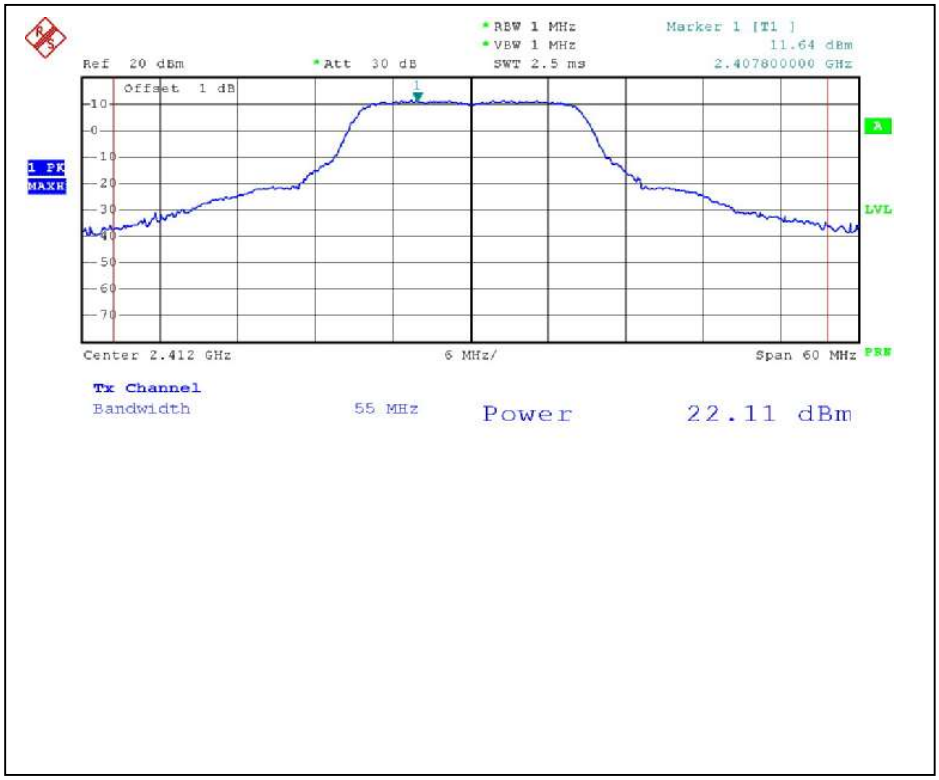
CH6


RBW 1 MHz
VBW 1 MHz
SWT 2.5 ms
Marker 1 [T1]
9.18 dBm
2.442880000 GHz
Ref 20 dBm
Att 30 dB
Offset 1 dB
1 PK
MAXH
A
LVL
Center 2.437 GHz
6 MHz/
Span 60 MHz
Tx Channel
Bandwidth
55 MHz
Power
19.52 dBm

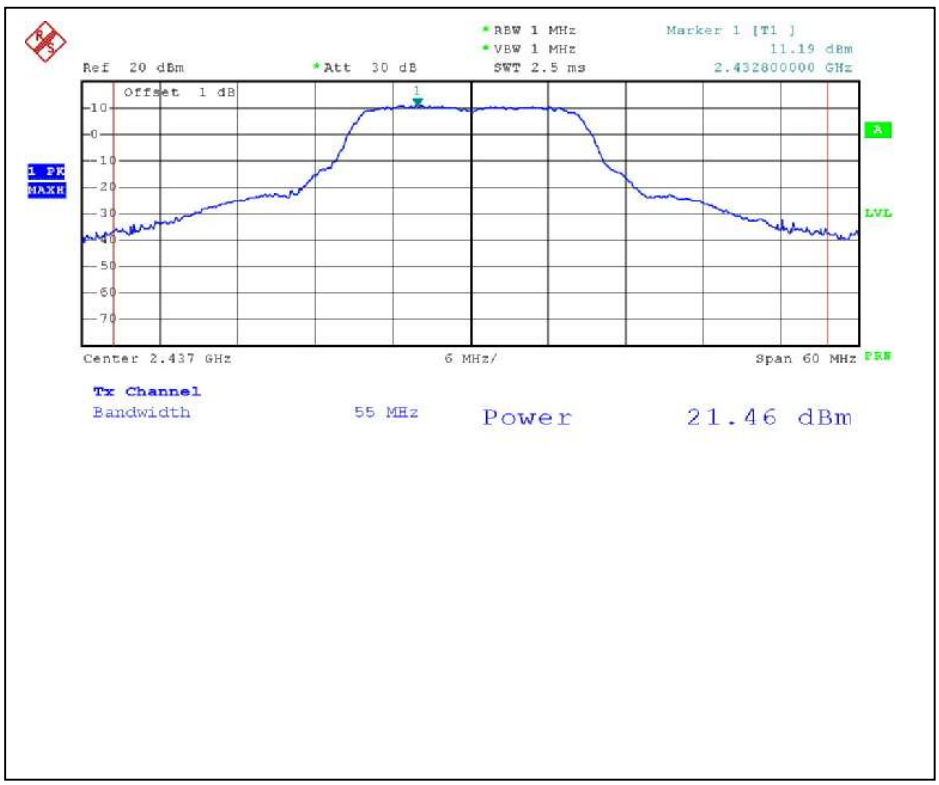
CH11


RBW 1 MHz
VBW 1 MHz
SWT 2.5 ms
Marker 1 [T1]
8.87 dBm
2.467640000 GHz
Ref 20 dBm
Att 30 dB
Offset 1 dB
1 PK
MAXH
A
LVL
Center 2.462 GHz
6 MHz/
Span 60 MHz
Tx Channel
Bandwidth
55 MHz
Power
19.28 dBm

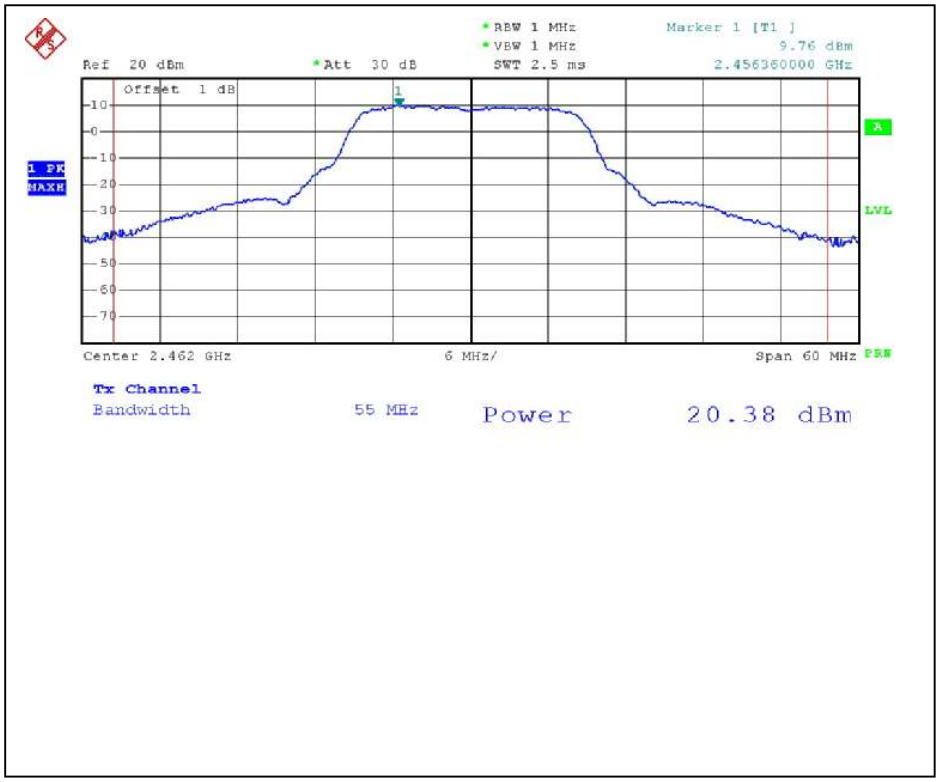
FOR CHAIN 1: CH1



CH6



CH11


RBW 1 MHz
VBW 1 MHz
SWT 2.5 ms
Marker 1 [T1]
9.76 dBm
2.456360000 GHz
Ref 20 dBm
Att 30 dB
Offset 1 dB
1 PK
MAXH
A
LVL
PRN
Center 2.462 GHz
6 MHz/
Span 60 MHz
Tx Channel
Bandwidth
55 MHz
Power
20.38 dBm