

FCC TEST REPORT

REPORT NO.: RF970425L14

MODEL NO.: LR802UKN

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TESTED: May 07 ~ Jun. 26, 2008

ISSUED: Jun. 30, 2008

APPLICANT: Qcom Technology Inc.

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ISSUED BY: Advance Data Technology Corporation

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1. CERTIFICATION

PRODUCT: 802.11 b/g/n Wireless USB module

MODEL: LR802UKN

BRAND: Qcom Technology Inc.

APPLICANT: Qcom Technology Inc.

TESTED: May 07 ~ Jun. 26, 2008

TEST SAMPLE: ENGINEERING SAMPLE

STANDARDS: FCC Part 15, Subpart C (Section 15.247)

ANSI C63.4-2003

The above equipment (Model: LR802UKN) 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 : Rennie Wang , **DATE:** Jun. 30, 2008
Rennie Wang / Senior Specialist

TECHNICAL
ACCEPTANCE : Long Chen , **DATE:** Jun. 30, 2008
Responsible for RF Long Chen / Senior Engineer

APPROVED BY : Gary Chang , **DATE:** Jun. 30, 2008
Gary Chang / Assistant Manager

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247)			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -15.95dB at 0.199MHz
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Limit: min. 500kHz	PASS	Meet the requirement of limit.
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit.
15.247(d)	Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit. Minimum passing margin is -1.05dB at 960.00MHz
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:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz ~ 30MHz	2.44dB
Radiated emissions	30MHz ~ 200MHz	2.93dB
	200MHz ~ 1000MHz	2.95dB
	1GHz ~ 18GHz	2.26dB
	18GHz ~ 40GHz	1.94dB

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

EUT	802.11 b/g/n Wireless USB module
MODEL NO.	LR802UKN
FCC ID	RUJ-LR802UKN
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: 11.0/ 5.5/ 2.0/ 1.0Mbps 802.11g: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps Draft 802.11n: up to 150.0Mbps
FREQUENCY RANGE	2400 ~ 2483.5MHz
NUMBER OF CHANNEL	11 for 802.11b, 802.11g, draft 802.11n (20MHz) 7 for draft 802.11n (40MHz)
OUTPUT POWER	12.942mW
ANTENNA TYPE	Refer to NOTE 2
DATA CABLE	NA
I/O PORTS	USB
ACCESSORY DEVICES	NA

NOTE:

- The EUT incorporates a MIMO function. Physically, the EUT provides one completed transmitter and two receivers.

MODULATION MODE	TX FUNCTION
802.11b	1TX
802.11g	1TX
Draft 802.11n (20MHz)	1TX
Draft 802.11n (40MHz)	1TX

- The following antennas are used in this EUT.

NO.	BRAND	MODEL	TYPE	GAIN (dBi)	CONNECTOR
1	Quanta	A06	PIFA	Main Ant.: 2.08 (black)	U.FL
				Aux. Ant.: 2.06 (gray)	
2	Mo-Bits	TP3	PIFA	-1.48	U.FL
3	Mo-Bits	WPB-01-110	PCB	-0.54	U.FL

We have tested two configurations with antenna 1

1) stand-alone

2) fixed in specific platform

And found 2) is the worst case, therefore all the test results came out from this.

- 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

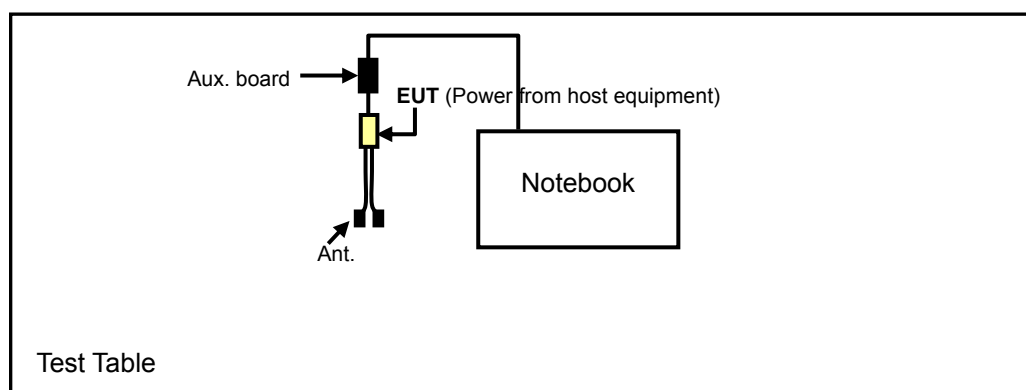
11 channels are provided for 802.11b, 802.11g and draft 802.11n (20MHz):

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		

7 channels are provided for draft 802.11n (40MHz):

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

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST



3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE \geq 1G	RE<1G	PLC	APCM	
A	√	√	√	√	With antenna no 1
B	√	√	-	-	With antenna no 3

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

RADIATED EMISSION TEST (ABOVE 1GHz):

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

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	AXIS
A ; B	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0	Z
A ; B	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	Z
A ; B	Draft 802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	7.2	Z
A ; B	Draft 802.11n (40MHz)	1 to 7	1, 4, 7	OFDM	BPSK	15.0	Z

RADIATED EMISSION TEST (BELOW 1GHz):

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

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	AXIS
A	802.11b	1 to 11	11	DSSS	DBPSK	1.0	Z
B	802.11b	1 to 11	11	DSSS	DBPSK	1.0	Z

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.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11b	1 to 11	11	DSSS	DBPSK	1.0

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.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11b	1 to 11	1, 11	DSSS	DBPSK	1.0
A	802.11g	1 to 11	1, 11	OFDM	BPSK	6.0
A	Draft 802.11n (20MHz)	1 to 11	1, 11	OFDM	BPSK	7.2
A	Draft 802.11n (40MHz)	1 to 7	1, 7	OFDM	BPSK	15.0

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.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
A	Draft 802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	7.2
A	Draft 802.11n (40MHz)	1 to 7	1, 4, 7	OFDM	BPSK	15.0

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	DELL	PP05L	12130898320	E2K24CLNS

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	1.0m shielded USB cable without core

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

4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION MEASUREMENT

4.1.1 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.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Jul. 27, 2008
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Aug. 05, 2008
BILOG Antenna SCHWARZBECK	VULB9168	9168-153	Jan. 03, 2009
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Jul. 30, 2008
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170242	Jan. 06, 2009
Preamplifier Agilent	8449B	3008A01910	Sep. 19, 2008
Preamplifier Agilent	8447D	2944A10638	Dec. 19, 2008
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	274039/223650	Nov. 07, 2008
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 09, 2008
Software	ADT_Radiated_V7.6	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA
Turn Table EMCO	2087-2.03	NA	NA
Antenna Tower & Turn Table Controller EMCO	2090	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 Chamber 9.
 3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 4. The IC Site Registration No. is IC3789B-9.

4.1.3 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.

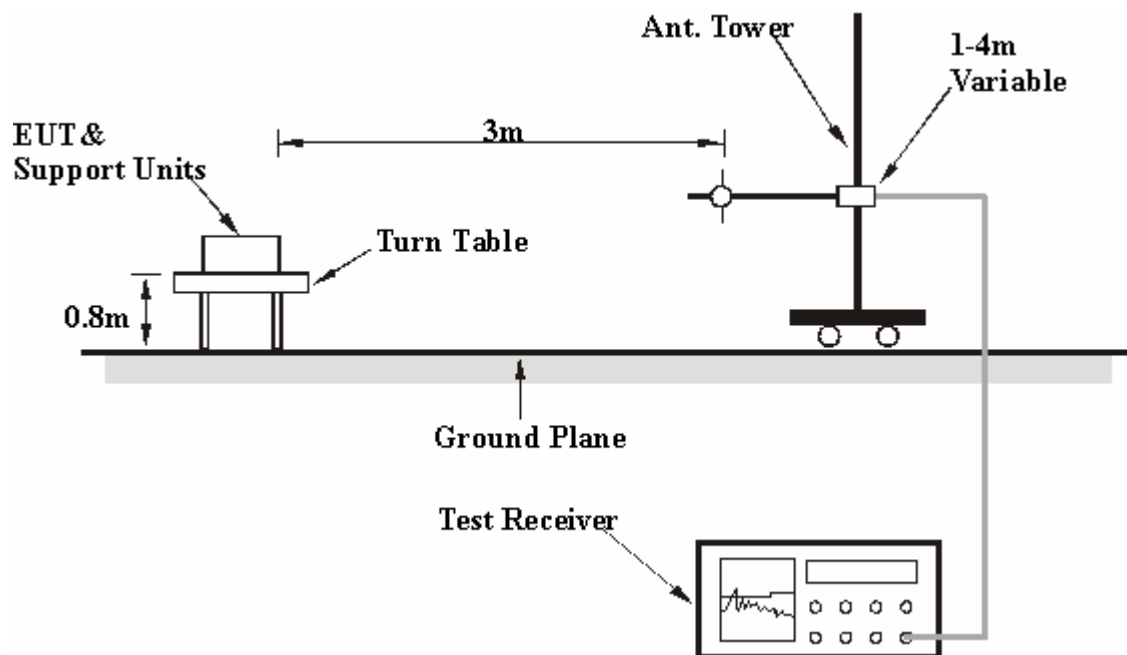
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.6 EUT OPERATING CONDITIONS

- Connected the EUT with auxiliary board to notebook (via USB cable) and placed on a testing table.
- The notebook ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
- The necessary accessories enable the system in full functions.

4.1.7 TEST RESULTS

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, 65%RH 993hPa	TESTED BY	Brad Wu
TEST MODE	A		

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	55.94 PK	74.00	-18.06	1.01 H	102	23.62	32.32
2	2390.00	46.34 AV	54.00	-7.66	1.01 H	102	14.02	32.32
3	*2412.00	99.40 PK			1.01 H	102	67.08	32.32
4	*2412.00	95.12 AV			1.01 H	102	62.80	32.32
5	4824.00	50.42 PK	74.00	-23.58	1.14 H	25	12.42	38.00
6	4824.00	38.63 AV	54.00	-15.37	1.14 H	25	0.63	38.00
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	56.86 PK	74.00	-17.14	1.15 V	181	24.54	32.32
2	2390.00	47.07 AV	54.00	-6.93	1.15 V	181	14.75	32.32
3	*2412.00	101.15 PK			1.15 V	181	68.83	32.32
4	*2412.00	97.08 AV			1.15 V	181	64.76	32.32
5	4824.00	49.85 PK	74.00	-24.15	1.03 V	154	11.85	38.00
6	4824.00	38.34 AV	54.00	-15.66	1.03 V	154	0.34	38.00

- 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, 65%RH 993hPa	TESTED BY	Brad Wu
TEST MODE	A		

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	99.52 PK			1.02 H	105	67.18	32.34
2	*2437.00	95.25 AV			1.02 H	105	62.91	32.34
3	4874.00	50.65 PK	74.00	-23.35	1.09 H	26	12.53	38.12
4	4874.00	38.84 AV	54.00	-15.16	1.09 H	26	0.72	38.12
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	101.53 PK			1.14 V	182	69.19	32.34
2	*2437.00	97.12 AV			1.14 V	182	64.78	32.34
3	4874.00	50.13 PK	74.00	-23.87	1.10 V	235	12.01	38.12
4	4874.00	38.46 AV	54.00	-15.54	1.10 V	235	0.34	38.12

- 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, 65%RH 993hPa	TESTED BY	Brad Wu
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	99.86 PK			1.03 H	108	67.49	32.37
2	*2462.00	95.78 AV			1.03 H	108	63.41	32.37
3	2483.50	57.64 PK	74.00	-16.36	1.03 H	108	25.25	32.39
4	2483.50	46.75 AV	54.00	-7.25	1.03 H	108	14.36	32.39
5	4924.00	50.48 PK	74.00	-23.52	1.14 H	228	12.25	38.23
6	4924.00	38.93 AV	54.00	-15.07	1.14 H	228	0.70	38.23
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	101.60 PK			1.16 V	184	69.23	32.37
2	*2462.00	97.65 AV			1.16 V	184	65.28	32.37
3	2483.50	58.22 PK	74.00	-15.78	1.16 V	184	25.83	32.39
4	2483.50	47.31 AV	54.00	-6.69	1.16 V	184	14.92	32.39
5	4924.00	50.24 PK	74.00	-23.76	1.13 V	29	12.01	38.23
6	4924.00	38.62 AV	54.00	-15.38	1.13 V	29	0.39	38.23

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.

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, 65%RH 993hPa	TESTED BY	Brad Wu
TEST MODE	B		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	57.15 PK	74.00	-16.85	1.14 H	21	24.91	32.24
2	2390.00	47.04 AV	54.00	-6.96	1.14 H	21	14.80	32.24
3	*2412.00	100.86 PK			1.14 H	21	68.54	32.32
4	*2412.00	96.45 AV			1.14 H	21	64.13	32.32
5	4824.00	50.14 PK	74.00	-23.86	1.00 H	286	12.01	38.13
6	4824.00	37.39 AV	54.00	-16.61	1.00 H	286	-0.74	38.13
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	2390.00	56.66 PK	74.00	-17.34	1.00 V	177	24.42	32.24
2	2390.00	46.53 AV	54.00	-7.47	1.00 V	177	14.29	32.24
3	*2412.00	97.58 PK			1.00 V	177	65.26	32.32
4	*2412.00	93.23 AV			1.00 V	177	60.91	32.32
5	4824.00	50.34 PK	74.00	-23.66	1.11 V	234	12.21	38.13
6	4824.00	37.86 AV	54.00	-16.14	1.11 V	234	-0.27	38.13

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

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, 65%RH 993hPa	TESTED BY	Brad Wu
TEST MODE	B		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	100.82 PK			1.13 H	14	68.42	32.40
2	*2437.00	96.44 AV			1.13 H	14	64.04	32.40
3	4874.00	50.36 PK	74.00	-23.64	1.04 H	211	12.04	38.32
4	4874.00	38.03 AV	54.00	-15.97	1.04 H	211	-0.29	38.32
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	97.46 PK			1.01 V	179	65.06	32.40
2	*2437.00	93.11 AV			1.01 V	179	60.71	32.40
3	4874.00	50.66 PK	74.00	-23.34	1.11 V	25	12.34	38.32
4	4874.00	38.35 AV	54.00	-15.65	1.11 V	25	0.03	38.32

- 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, 65%RH 993hPa	TESTED BY	Brad Wu
TEST MODE	B		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	100.86 PK			1.11 H	23	68.38	32.48
2	*2462.00	96.42 AV			1.11 H	23	63.94	32.48
3	2483.50	57.58 PK	74.00	-16.42	1.11 H	23	25.02	32.56
4	2483.50	47.31 AV	54.00	-6.69	1.11 H	23	14.75	32.56
5	4924.00	50.28 PK	74.00	-23.72	1.12 H	35	11.82	38.46
6	4924.00	37.96 AV	54.00	-16.04	1.12 H	35	-0.50	38.46
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	97.58 PK			1.02 V	181	65.10	32.48
2	*2462.00	93.25 AV			1.02 V	181	60.77	32.48
3	2483.50	57.03 PK	74.00	-16.97	1.02 V	181	24.47	32.56
4	2483.50	46.82 AV	54.00	-7.18	1.02 V	181	14.26	32.56
5	4924.00	50.61 PK	74.00	-23.39	1.24 V	53	12.15	38.46
6	4924.00	38.22 AV	54.00	-15.78	1.24 V	53	-0.24	38.46

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.

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, 65%RH 993hPa	TESTED BY	Brad Wu
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	57.67 PK	74.00	-16.33	1.10 H	262	25.35	32.32
2	2390.00	46.26 AV	54.00	-7.74	1.10 H	262	13.94	32.32
3	*2412.00	100.13 PK			1.10 H	262	67.81	32.32
4	*2412.00	91.35 AV			1.10 H	262	59.03	32.32
5	4824.00	50.31 PK	74.00	-23.69	1.14 H	129	12.31	38.00
6	4824.00	38.92 AV	54.00	-15.08	1.14 H	129	0.92	38.00
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	58.19 PK	74.00	-15.81	1.15 V	183	25.87	32.32
2	2390.00	46.84 AV	54.00	-7.16	1.15 V	183	14.52	32.32
3	*2412.00	102.28 PK			1.15 V	183	69.96	32.32
4	*2412.00	92.89 AV			1.15 V	183	60.57	32.32
5	4824.00	49.53 PK	74.00	-24.47	1.13 V	201	11.53	38.00
6	4824.00	38.04 AV	54.00	-15.96	1.13 V	201	0.04	38.00

- 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, 65%RH 993hPa	TESTED BY	Brad Wu
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	100.86 PK			1.11 H	265	68.52	32.34
2	*2437.00	91.69 AV			1.11 H	265	59.35	32.34
3	4874.00	50.46 PK	74.00	-23.54	1.13 H	28	12.34	38.12
4	4874.00	39.11 AV	54.00	-14.89	1.13 H	28	0.99	38.12
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	102.56 PK			1.18 V	185	70.22	32.34
2	*2437.00	93.50 AV			1.18 V	185	61.16	32.34
3	4874.00	49.26 PK	74.00	-24.74	1.15 V	23	11.14	38.12
4	4874.00	38.11 AV	54.00	-15.89	1.15 V	23	-0.01	38.12

- 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, 65%RH 993hPa	TESTED BY	Brad Wu
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	101.28 PK			1.12 H	269	68.91	32.37
2	*2462.00	92.91 AV			1.12 H	269	60.54	32.37
3	2483.50	59.41 PK	74.00	-14.59	1.12 H	269	27.02	32.39
4	2483.50	46.98 AV	54.00	-7.02	1.12 H	269	14.59	32.39
5	4924.00	50.34 PK	74.00	-23.66	1.13 H	22	12.11	38.23
6	4924.00	39.46 AV	54.00	-14.54	1.13 H	22	1.23	38.23
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	103.14 PK			1.15 V	182	70.77	32.37
2	*2462.00	93.68 AV			1.15 V	182	61.31	32.37
3	2483.50	60.07 PK	74.00	-13.93	1.15 V	181	27.68	32.39
4	2483.50	47.52 AV	54.00	-6.48	1.15 V	181	15.13	32.39
5	4924.00	49.86 PK	74.00	-24.14	1.10 V	29	11.63	38.23
6	4924.00	39.12 AV	54.00	-14.88	1.10 V	29	0.89	38.23

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.

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, 65%RH 993hPa	TESTED BY	Brad Wu
TEST MODE	B		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	57.07 PK	74.00	-16.93	1.14 H	12	24.83	32.24
2	2390.00	46.80 AV	54.00	-7.20	1.14 H	12	14.56	32.24
3	*2412.00	102.00 PK			1.14 H	12	69.68	32.32
4	*2412.00	92.05 AV			1.14 H	12	59.73	32.32
5	4824.00	50.36 PK	74.00	-23.64	1.03 H	29	12.23	38.13
6	4824.00	38.11 AV	54.00	-15.89	1.03 H	29	-0.02	38.13
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	2390.00	57.58 PK	74.00	-16.42	1.08 V	265	25.34	32.24
2	2390.00	46.27 AV	54.00	-7.73	1.08 V	265	14.03	32.24
3	*2412.00	97.14 PK			1.08 V	265	64.82	32.32
4	*2412.00	86.96 AV			1.08 V	265	54.64	32.32
5	4824.00	50.65 PK	74.00	-23.35	1.13 V	234	12.52	38.13
6	4824.00	38.44 AV	54.00	-15.56	1.13 V	234	0.31	38.13

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

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, 65%RH 993hPa	TESTED BY	Brad Wu
TEST MODE	B		

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	102.34 PK			1.15 H	13	69.94	32.40
2	*2437.00	92.41 AV			1.15 H	13	60.01	32.40
3	4874.00	50.46 PK	74.00	-23.54	1.10 H	95	12.14	38.32
4	4874.00	38.32 AV	54.00	-15.68	1.10 H	95	0.00	38.32
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	97.35 PK			1.09 V	266	64.95	32.40
2	*2437.00	87.18 AV			1.09 V	266	54.78	32.40
3	4874.00	50.46 PK	74.00	-23.54	1.03 V	92	12.14	38.32
4	4874.00	38.22 AV	54.00	-15.78	1.03 V	92	-0.10	38.32

- 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, 65%RH 993hPa	TESTED BY	Brad Wu
TEST MODE	B		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	102.43 PK			1.14 H	12	69.95	32.48
2	*2462.00	92.52 AV			1.14 H	12	60.04	32.48
3	2483.50	57.52 PK	74.00	-16.48	1.14 H	12	24.96	32.56
4	2483.50	47.40 AV	54.00	-6.60	1.14 H	12	14.84	32.56
5	4924.00	50.23 PK	74.00	-23.77	1.17 H	29	11.77	38.46
6	4924.00	38.06 AV	54.00	-15.94	1.17 H	29	-0.40	38.46
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	97.44 PK			1.10 V	261	64.96	32.48
2	*2462.00	87.26 AV			1.10 V	261	54.78	32.48
3	2483.50	57.19 PK	74.00	-16.81	1.10 V	261	24.63	32.56
4	2483.50	47.07 AV	54.00	-6.93	1.10 V	261	14.51	32.56
5	4924.00	50.35 PK	74.00	-23.65	1.05 V	26	11.89	38.46
6	4924.00	38.16 AV	54.00	-15.84	1.05 V	26	-0.30	38.46

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.

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, 65%RH 993hPa	TESTED BY	Brad Wu
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	57.42 PK	74.00	-16.58	1.11 H	265	25.10	32.32
2	2390.00	46.03 AV	54.00	-7.97	1.11 H	265	13.71	32.32
3	*2412.00	99.53 PK			1.11 H	265	67.21	32.32
4	*2412.00	89.84 AV			1.11 H	265	57.52	32.32
5	4824.00	50.43 PK	74.00	-23.57	1.11 H	134	12.43	38.00
6	4824.00	39.08 AV	54.00	-14.92	1.11 H	134	1.08	38.00
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	58.03 PK	74.00	-15.97	1.15 V	183	25.71	32.32
2	2390.00	46.71 AV	54.00	-7.29	1.15 V	183	14.39	32.32
3	*2412.00	101.72 PK			1.15 V	183	69.40	32.32
4	*2412.00	91.85 AV			1.15 V	183	59.53	32.32
5	4824.00	49.68 PK	74.00	-24.32	1.04 V	62	11.68	38.00
6	4824.00	38.21 AV	54.00	-15.79	1.04 V	62	0.21	38.00

- 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, 65%RH 993hPa	TESTED BY	Brad Wu
TEST MODE	A		

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	99.72 PK			1.10 H	268	67.38	32.34
2	*2437.00	90.14 AV			1.10 H	268	57.80	32.34
3	4874.00	50.62 PK	74.00	-23.38	1.10 H	28	12.50	38.12
4	4874.00	39.25 AV	54.00	-14.75	1.10 H	28	1.13	38.12
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	102.03 PK			1.19 V	183	69.69	32.34
2	*2437.00	91.94 AV			1.19 V	183	59.60	32.34
3	4874.00	49.66 PK	74.00	-24.34	1.16 V	221	11.54	38.12
4	4874.00	38.53 AV	54.00	-15.47	1.16 V	221	0.41	38.12

- 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, 65%RH 993hPa	TESTED BY	Brad Wu
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	99.92 PK			1.11 H	271	67.55	32.37
2	*2462.00	90.32 AV			1.11 H	271	57.95	32.37
3	2483.50	59.21 PK	74.00	-14.79	1.11 H	271	26.82	32.39
4	2483.50	46.83 AV	54.00	-7.17	1.11 H	271	14.44	32.39
5	4924.00	50.13 PK	74.00	-23.87	1.04 H	222	11.90	38.23
6	4924.00	39.24 AV	54.00	-14.76	1.04 H	222	1.01	38.23
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	102.71 PK			1.14 V	181	70.34	32.37
2	*2462.00	92.22 AV			1.14 V	181	59.85	32.37
3	2483.50	59.86 PK	74.00	-14.14	1.14 V	181	27.47	32.39
4	2483.50	47.31 AV	54.00	-6.69	1.14 V	181	14.92	32.39
5	4924.00	50.11 PK	74.00	-23.89	1.13 V	46	11.88	38.23
6	4924.00	39.42 AV	54.00	-14.58	1.13 V	46	1.19	38.23

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.

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, 65%RH 993hPa	TESTED BY	Brad Wu
TEST MODE	B		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	56.92 PK	74.00	-17.08	1.13 H	16	24.68	32.24
2	2390.00	46.62 AV	54.00	-7.38	1.13 H	16	14.38	32.24
3	*2412.00	101.53 PK			1.13 H	16	69.21	32.32
4	*2412.00	91.58 AV			1.13 H	16	59.26	32.32
5	4824.00	50.45 PK	74.00	-23.55	1.17 H	59	12.32	38.13
6	4824.00	38.24 AV	54.00	-15.76	1.17 H	59	0.11	38.13
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	2390.00	57.42 PK	74.00	-16.58	1.09 V	268	25.18	32.24
2	2390.00	46.13 AV	54.00	-7.87	1.09 V	268	13.89	32.24
3	*2412.00	96.63 PK			1.09 V	268	64.31	32.32
4	*2412.00	86.44 AV			1.09 V	268	54.12	32.32
5	4824.00	50.48 PK	74.00	-23.52	1.13 V	28	12.35	38.13
6	4824.00	38.33 AV	54.00	-15.67	1.13 V	28	0.20	38.13

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

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, 65%RH 993hPa	TESTED BY	Brad Wu
TEST MODE	B		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	101.81 PK			1.14 H	15	69.41	32.40
2	*2437.00	91.92 AV			1.14 H	15	59.52	32.40
3	4874.00	50.32 PK	74.00	-23.68	1.06 H	293	12.00	38.32
4	4874.00	38.14 AV	54.00	-15.86	1.06 H	293	-0.18	38.32
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	96.82 PK			1.10 V	264	64.42	32.40
2	*2437.00	87.71 AV			1.10 V	264	55.31	32.40
3	4874.00	50.35 PK	74.00	-23.65	1.14 V	303	12.03	38.32
4	4874.00	38.17 AV	54.00	-15.83	1.14 V	303	-0.15	38.32

- 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, 65%RH 993hPa	TESTED BY	Brad Wu
TEST MODE	B		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	101.91 PK			1.13 H	14	69.43	32.48
2	*2462.00	92.02 AV			1.13 H	14	59.54	32.48
3	2483.50	57.13 PK	74.00	-16.87	1.13 H	14	24.57	32.56
4	2483.50	47.03 AV	54.00	-6.97	1.13 H	14	14.47	32.56
5	4924.00	50.43 PK	74.00	-23.57	1.11 H	58	11.97	38.46
6	4924.00	38.25 AV	54.00	-15.75	1.11 H	58	-0.21	38.46
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	96.92 PK			1.08 V	264	64.44	32.48
2	*2462.00	86.74 AV			1.08 V	264	54.26	32.48
3	2483.50	56.86 PK	74.00	-17.14	1.08 V	264	24.30	32.56
4	2483.50	46.71 AV	54.00	-7.29	1.08 V	264	14.15	32.56
5	4924.00	50.58 PK	74.00	-23.42	1.17 V	64	12.12	38.46
6	4924.00	38.39 AV	54.00	-15.61	1.17 V	64	-0.07	38.46

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.

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, 65%RH 993hPa	TESTED BY	Brad Wu
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	59.42 PK	74.00	-14.58	1.09 H	268	27.10	32.32
2	2390.00	46.95 AV	54.00	-7.05	1.09 H	268	14.63	32.32
3	*2422.00	98.85 PK			1.09 H	268	66.52	32.33
4	*2422.00	89.68 AV			1.09 H	268	57.35	32.33
5	4844.00	50.13 PK	74.00	-23.87	1.14 H	231	12.08	38.05
6	4844.00	38.65 AV	54.00	-15.35	1.14 H	231	0.60	38.05
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	59.87 PK	74.00	-14.13	1.14 V	181	27.55	32.32
2	2390.00	47.38 AV	54.00	-6.62	1.14 V	181	15.06	32.32
3	*2422.00	100.76 PK			1.14 V	181	68.43	32.33
4	*2422.00	90.46 AV			1.14 V	181	58.13	32.33
5	4844.00	49.61 PK	74.00	-24.39	1.15 V	213	11.56	38.05
6	4844.00	38.18 AV	54.00	-15.82	1.15 V	213	0.13	38.05

- 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, 65%RH 993hPa	TESTED BY	Brad Wu
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	98.96 PK			1.10 H	271	66.62	32.34
2	*2437.00	89.90 AV			1.10 H	271	57.56	32.34
3	4874.00	50.22 PK	74.00	-23.78	1.01 H	76	12.10	38.12
4	4874.00	38.84 AV	54.00	-15.16	1.01 H	76	0.72	38.12
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	101.28 PK			1.15 V	183	68.94	32.34
2	*2437.00	90.77 AV			1.15 V	183	58.43	32.34
3	4874.00	49.86 PK	74.00	-24.14	1.12 V	59	11.74	38.12
4	4874.00	38.42 AV	54.00	-15.58	1.12 V	59	0.30	38.12

- 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, 65%RH 993hPa	TESTED BY	Brad Wu
TEST MODE	A		

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	99.28 PK			1.11 H	265	66.92	32.36
2	*2452.00	90.13 AV			1.11 H	265	57.77	32.36
3	2483.50	59.24 PK	74.00	-14.76	1.11 H	265	26.85	32.39
4	2483.50	46.78 AV	54.00	-7.22	1.11 H	265	14.39	32.39
5	4904.00	49.96 PK	74.00	-24.04	1.13 H	109	11.77	38.19
6	4904.00	38.54 AV	54.00	-15.46	1.13 H	109	0.35	38.19
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	101.62 PK			1.14 V	185	69.26	32.36
2	*2452.00	90.91 AV			1.14 V	185	58.55	32.36
3	2483.50	59.68 PK	74.00	-14.32	1.14 V	185	27.29	32.39
4	2483.50	47.16 AV	54.00	-6.84	1.14 V	185	14.77	32.39
5	4904.00	49.68 PK	74.00	-24.32	1.15 V	262	11.49	38.19
6	4904.00	38.23 AV	54.00	-15.77	1.15 V	262	0.04	38.19

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 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 993hPa	TESTED BY	Brad Wu
TEST MODE	B		

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	62.82 PK	74.00	-11.18	1.13 H	14	30.58	32.24
2	2390.00	48.64 AV	54.00	-5.36	1.13 H	14	16.40	32.24
3	*2422.00	100.03 PK			1.13 H	14	67.68	32.35
4	*2422.00	89.85 AV			1.13 H	14	57.50	32.35
5	4844.00	49.46 PK	74.00	-24.54	1.15 H	266	11.25	38.21
6	4844.00	38.21 AV	54.00	-15.79	1.15 H	266	0.00	38.21
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	62.25 PK	74.00	-11.75	1.11 V	272	30.01	32.24
2	2390.00	48.03 AV	54.00	-5.97	1.11 V	272	15.79	32.24
3	*2422.00	94.96 PK			1.11 V	272	62.61	32.35
4	*2422.00	84.82 AV			1.11 V	272	52.47	32.35
5	4844.00	49.93 PK	74.00	-24.07	1.05 V	28	11.72	38.21
6	4844.00	38.42 AV	54.00	-15.58	1.05 V	28	0.21	38.21

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, 65%RH 993hPa	TESTED BY	Brad Wu
TEST MODE	B		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	100.15 PK			1.15 H	16	67.75	32.40
2	*2437.00	90.02 AV			1.15 H	16	57.62	32.40
3	4874.00	49.68 PK	74.00	-24.32	1.13 H	52	11.36	38.32
4	4874.00	38.43 AV	54.00	-15.57	1.13 H	52	0.11	38.32
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	95.25 PK			1.09 V	276	62.85	32.40
2	*2437.00	85.13 AV			1.09 V	276	52.73	32.40
3	4874.00	50.11 PK	74.00	-23.89	1.09 V	82	11.79	38.32
4	4874.00	38.65 AV	54.00	-15.35	1.09 V	82	0.33	38.32

- 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, 65%RH 993hPa	TESTED BY	Brad Wu
TEST MODE	B		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	100.26 PK			1.16 H	18	67.78	32.48
2	*2462.00	90.15 AV			1.16 H	18	57.67	32.48
3	2483.50	63.18 PK	74.00	-10.82	1.16 H	18	30.62	32.56
4	2483.50	48.89 AV	54.00	-5.11	1.16 H	18	16.33	32.56
5	4904.00	50.25 PK	74.00	-23.75	1.14 H	213	11.82	38.43
6	4904.00	38.53 AV	54.00	-15.47	1.14 H	213	0.10	38.43
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	95.46 PK			1.12 V	281	62.98	32.48
2	*2462.00	85.35 AV			1.12 V	281	52.87	32.48
3	2483.50	62.86 PK	74.00	-11.14	1.12 V	281	30.30	32.56
4	2483.50	48.52 AV	54.00	-5.48	1.12 V	281	15.96	32.56
5	4904.00	50.45 PK	74.00	-23.55	1.10 V	29	12.02	38.43
6	4904.00	38.62 AV	54.00	-15.38	1.10 V	29	0.19	38.43

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

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	27deg. C, 60%RH 993hPa	TESTED BY	Lori Chiu
TEST MODE	A		

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	113.50	38.84 QP	43.50	-4.66	1.50 H	127	27.88	10.96
2	144.61	41.95 QP	43.50	-1.55	1.25 H	112	28.83	13.12
3	360.43	37.60 QP	46.00	-8.40	1.00 H	202	22.55	15.05
4	479.03	40.79 QP	46.00	-5.21	1.50 H	121	22.35	18.44
5	599.58	41.78 QP	46.00	-4.22	1.50 H	127	20.28	21.50
6	840.67	42.12 QP	46.00	-3.88	1.00 H	139	16.82	25.31
7	960.00	44.95 QP	46.00	-1.05	1.25 H	118	18.57	26.38
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	47.40	36.32 QP	40.00	-3.68	1.00 V	100	23.25	13.07
2	113.50	36.90 QP	43.50	-6.60	1.25 V	13	25.94	10.96
3	208.77	34.58 QP	43.50	-8.92	1.00 V	169	23.65	10.94
4	479.03	41.40 QP	46.00	-4.60	1.00 V	184	22.96	18.44
5	599.58	39.45 QP	46.00	-6.55	1.50 V	178	17.95	21.50
6	840.67	38.10 QP	46.00	-7.90	1.25 V	202	12.80	25.31
7	933.99	44.75 QP	46.00	-1.25	1.00 V	67	18.58	26.17

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
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	27deg. C, 60%RH 993hPa	TESTED BY	Lori Chiu
TEST MODE	B		

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	113.50	31.82 QP	43.50	-11.68	1.50 H	124	20.86	10.96
2	317.65	33.42 QP	46.00	-12.58	1.00 H	136	19.40	14.02
3	360.43	35.41 QP	46.00	-10.59	1.00 H	10	20.37	15.05
4	479.03	36.30 QP	46.00	-9.70	1.50 H	358	17.86	18.44
5	599.58	40.35 QP	46.00	-5.65	1.25 H	229	18.85	21.50
6	840.67	38.21 QP	46.00	-7.79	1.50 H	304	12.91	25.31
7	959.90	44.85 QP	46.00	-1.15	1.50 H	127	18.47	26.38
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	31.84	26.35 QP	40.00	-13.65	1.00 V	73	14.21	12.14
2	113.50	36.20 QP	43.50	-7.30	1.00 V	37	25.24	10.96
3	479.03	34.85 QP	46.00	-11.15	1.00 V	10	16.41	18.44
4	599.58	33.80 QP	46.00	-12.20	1.00 V	196	12.30	21.50
5	840.67	31.18 QP	46.00	-14.82	1.00 V	283	5.87	25.31
6	961.21	44.51 QP	54.00	-9.49	1.00 V	193	18.12	26.39

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 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

- NOTE:** 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.
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.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Sep. 21, 2008
RF signal cable Woken	5D-FB	Cable-HYCO3-01	Jan. 06, 2009
LISN ROHDE & SCHWARZ	ESH2-Z5	100100	Jan. 09, 2009
LISN SCHWARZBECK	ESH3-Z5	100311	Jan. 21, 2009
Software ADT	ADT_Cond_V3	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.

4.2.3 TEST PROCEDURES

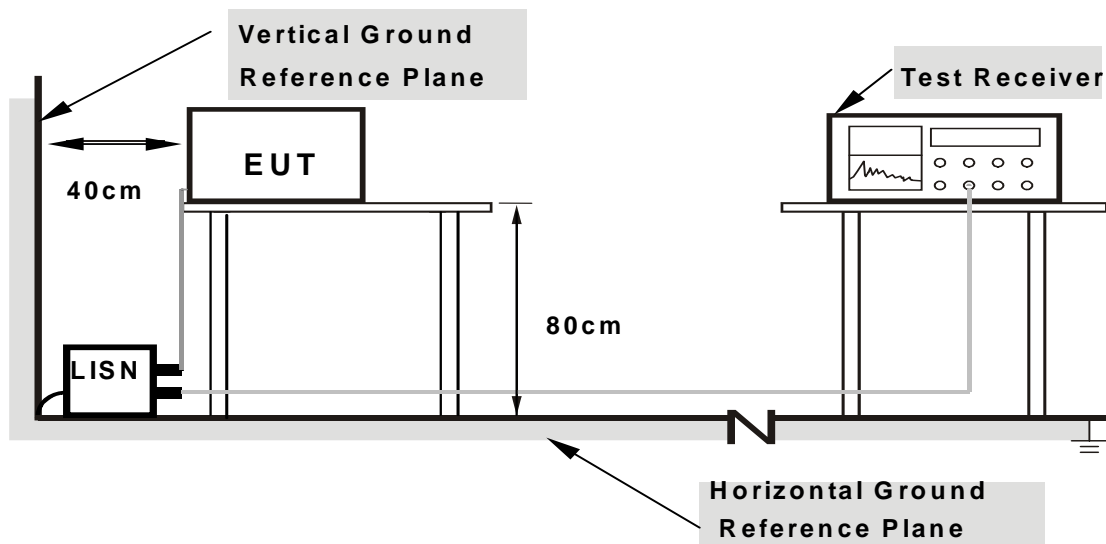
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

NOTE: All modes of operation were investigated and the worst-case emissions are reported.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 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 attached file (Test Setup Photo).

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

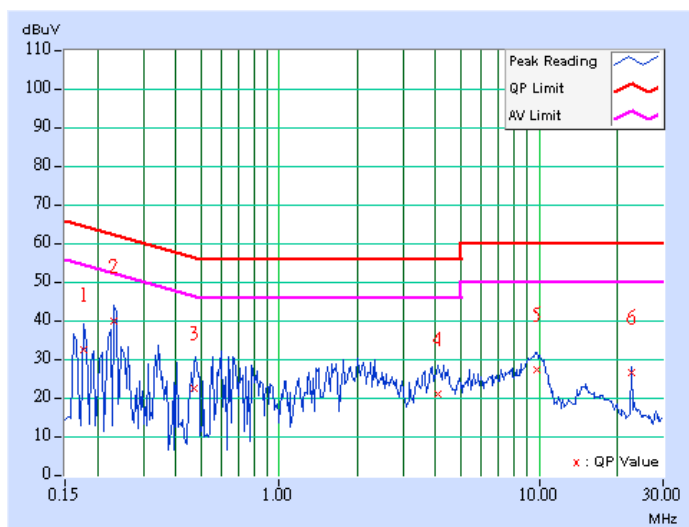
4.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA : 802.11b DSSS MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	PHASE	Line 1
MODULATION TYPE	DBPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	1.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	20deg. C, 70%RH, 982hPa	TESTED BY	Mark Liao

No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.177	0.10	32.04	-	32.14	-	64.61	54.61	-32.47	-
2	0.232	0.10	39.35	-	39.45	-	62.37	52.37	-22.92	-
3	0.470	0.10	21.96	-	22.06	-	56.51	46.51	-34.45	-
4	4.078	0.28	20.48	-	20.76	-	56.00	46.00	-35.24	-
5	9.793	0.33	26.63	-	26.96	-	60.00	50.00	-33.04	-
6	22.570	0.70	25.82	-	26.52	-	60.00	50.00	-33.48	-

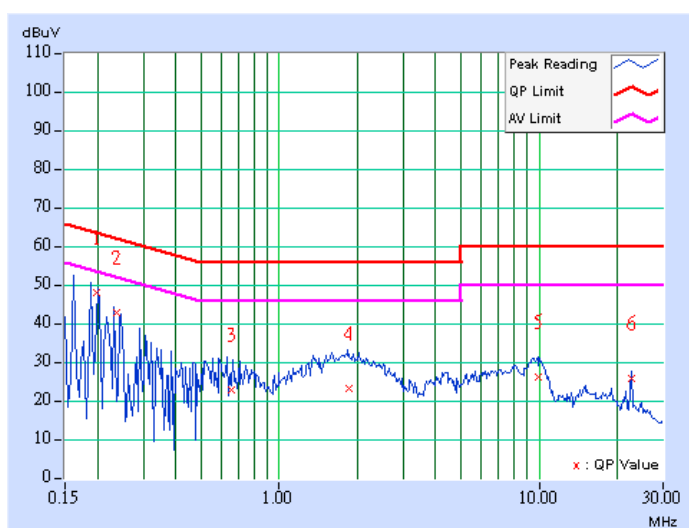
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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	Line 2
MODULATION TYPE	DBPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	1.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	20deg. C, 70%RH, 982hPa	TESTED BY	Mark Liao

No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.199	0.10	47.59	-	47.69	-	63.64	53.64	-15.95	-
2	0.237	0.10	42.14	-	42.24	-	62.18	52.18	-19.94	-
3	0.653	0.15	22.43	-	22.58	-	56.00	46.00	-33.42	-
4	1.845	0.22	22.75	-	22.97	-	56.00	46.00	-33.03	-
5	9.941	0.43	25.60	-	26.03	-	60.00	50.00	-33.97	-
6	22.570	0.65	25.43	-	26.08	-	60.00	50.00	-33.92	-

- 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.



4.3 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	100041	Apr. 21, 2009

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

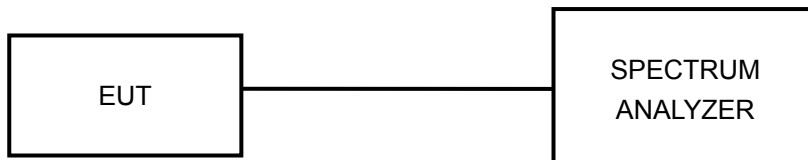
4.3.3 TEST PROCEDURE

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

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

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

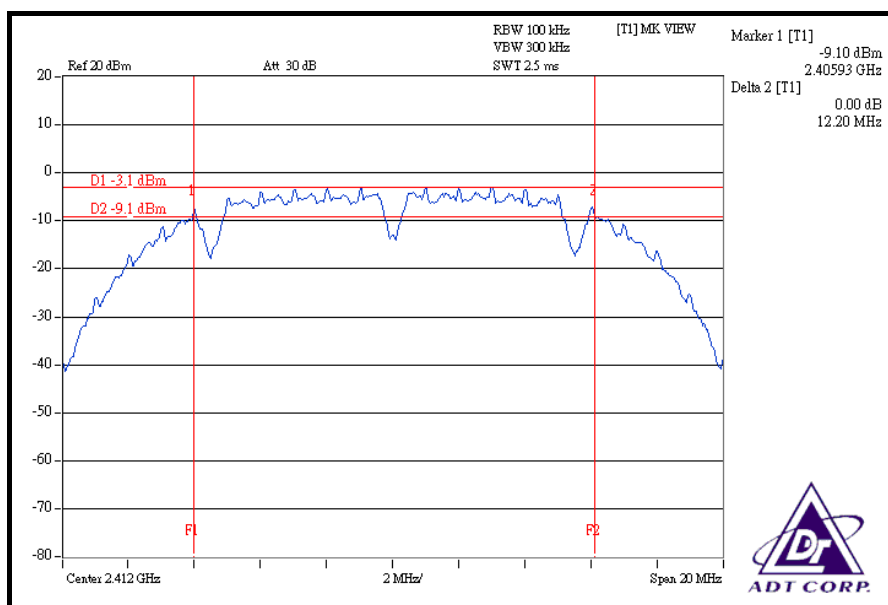
4.3.7 TEST RESULTS

802.11b DSSS MODULATION

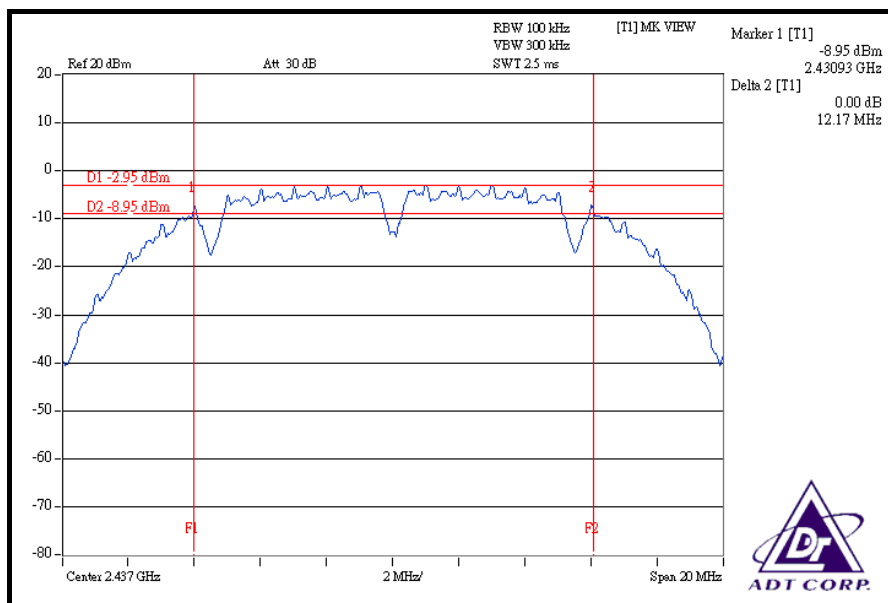
MODULATION TYPE	DBPSK	TRANSFER RATE	1.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	27 deg.C, 66 %RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	12.20	0.5	PASS
6	2437	12.17	0.5	PASS
11	2462	12.17	0.5	PASS

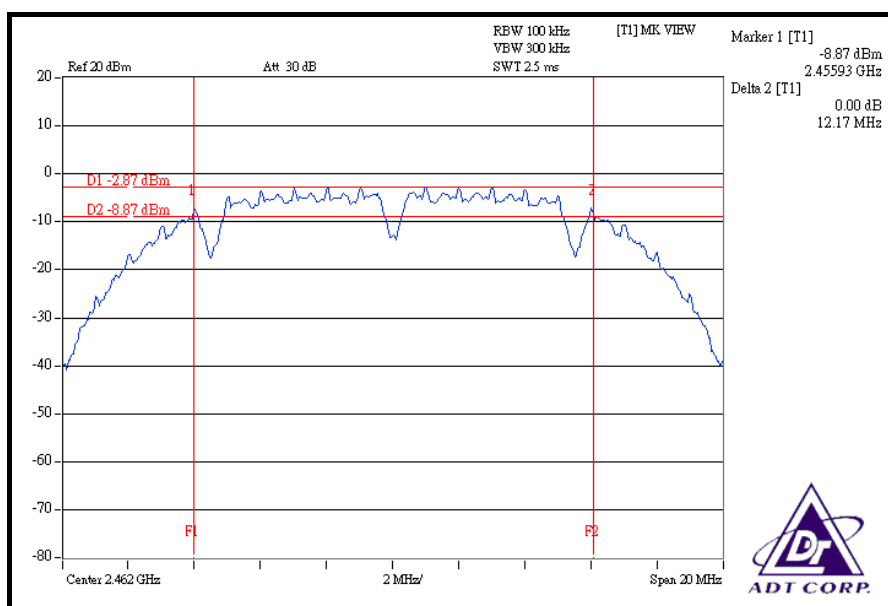
CH 1



CH 6



CH 11

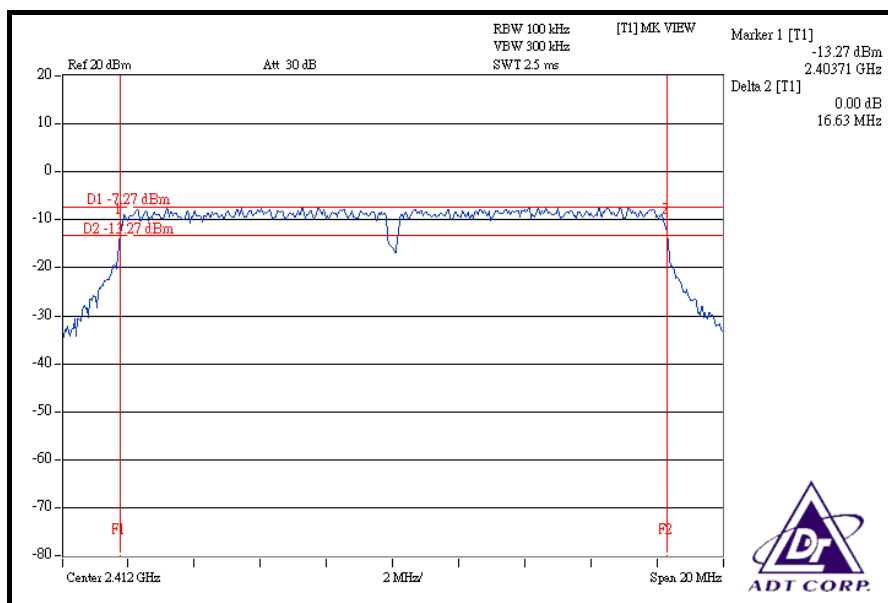


802.11g OFDM MODULATION

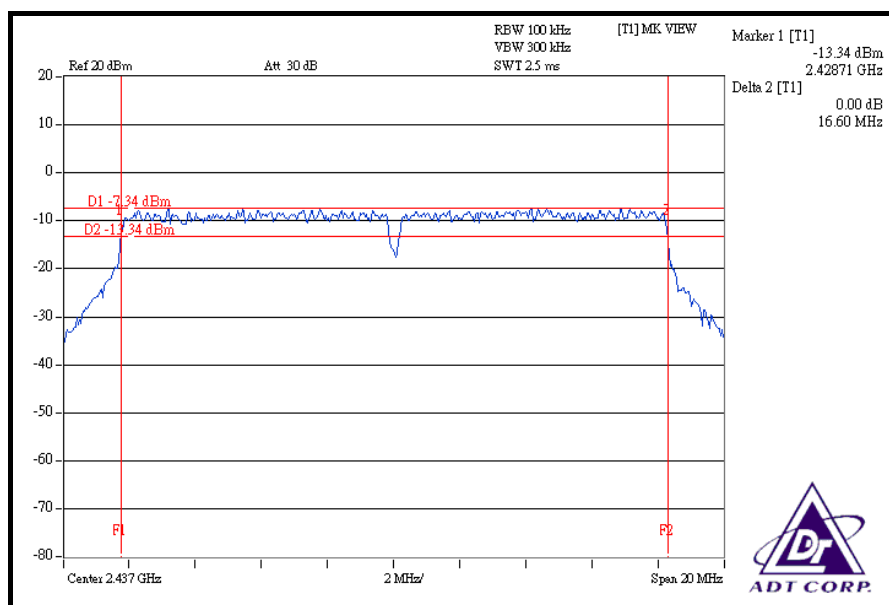
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	27 deg.C, 66 %RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.63	0.5	PASS
6	2437	16.60	0.5	PASS
11	2462	16.61	0.5	PASS

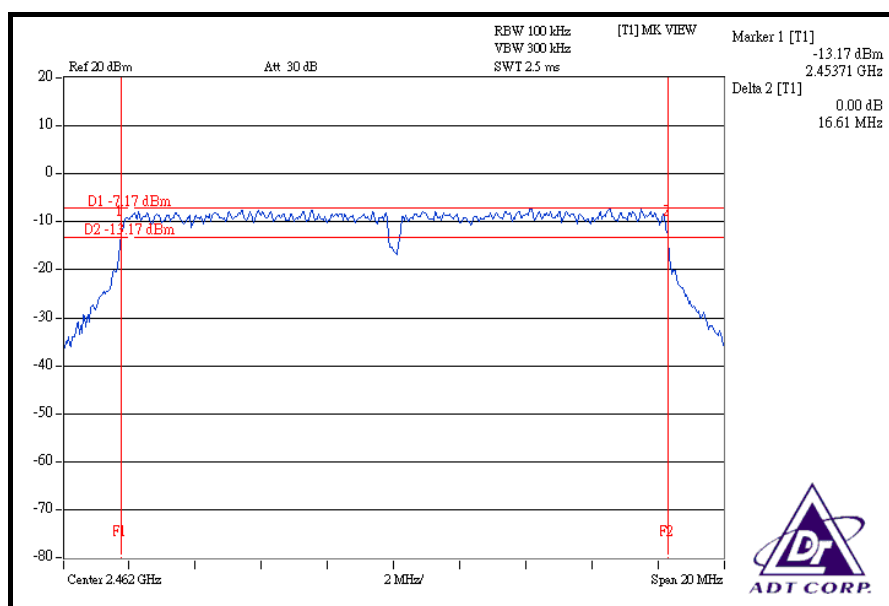
CH 1



CH 6



CH 11

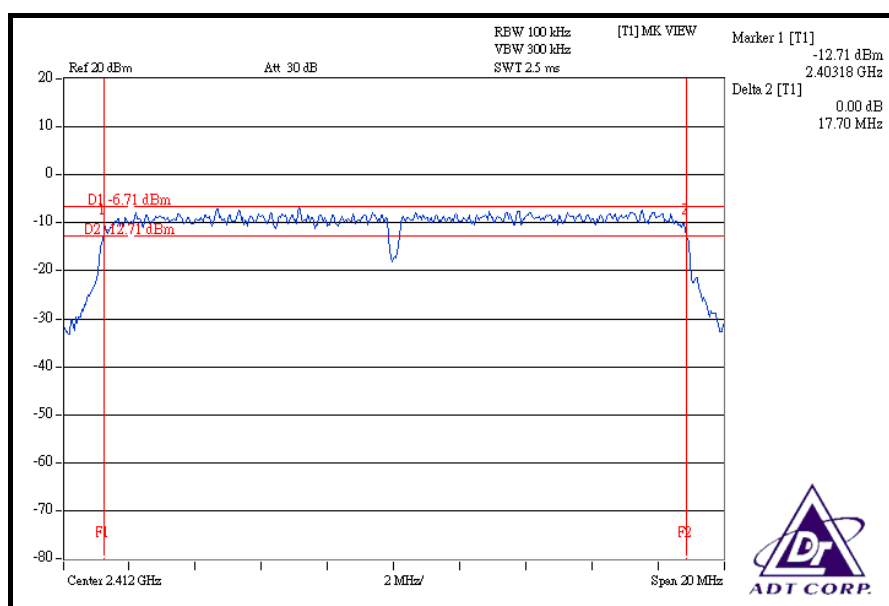


DRAFT 802.11n (20MHz) OFDM MODULATION

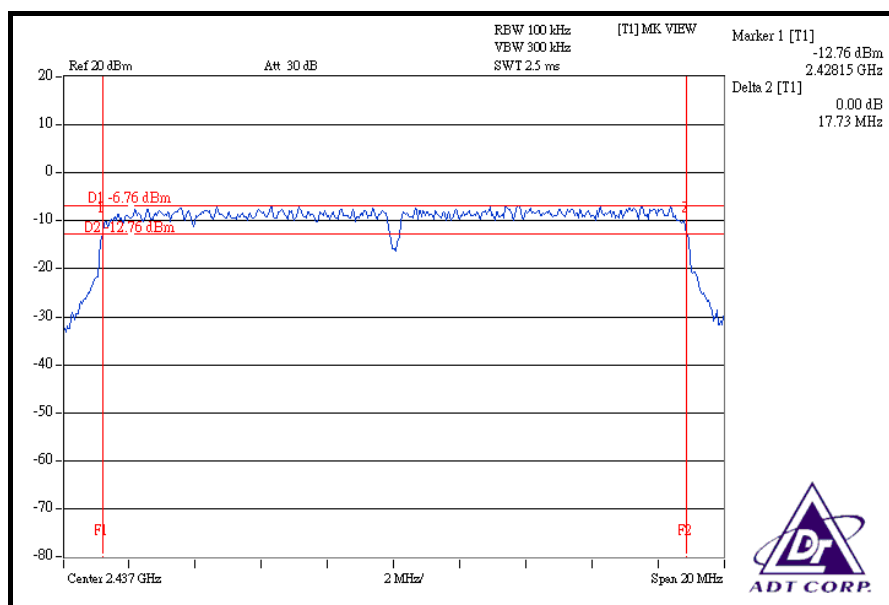
MODULATION TYPE	BPSK	TRANSFER RATE	7.2Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	27 deg.C, 66 %RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	17.70	0.5	PASS
6	2437	17.73	0.5	PASS
11	2462	17.76	0.5	PASS

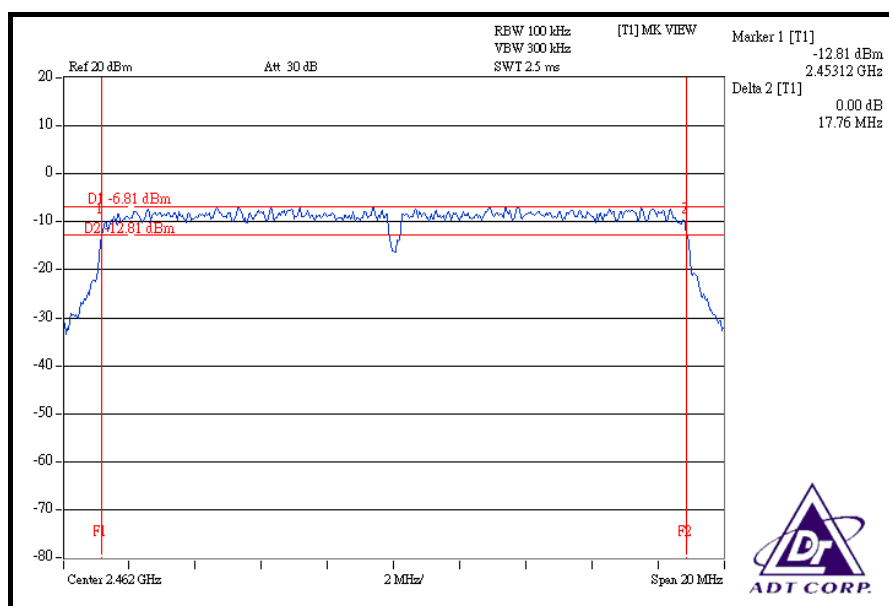
CH 1



CH 6



CH 11

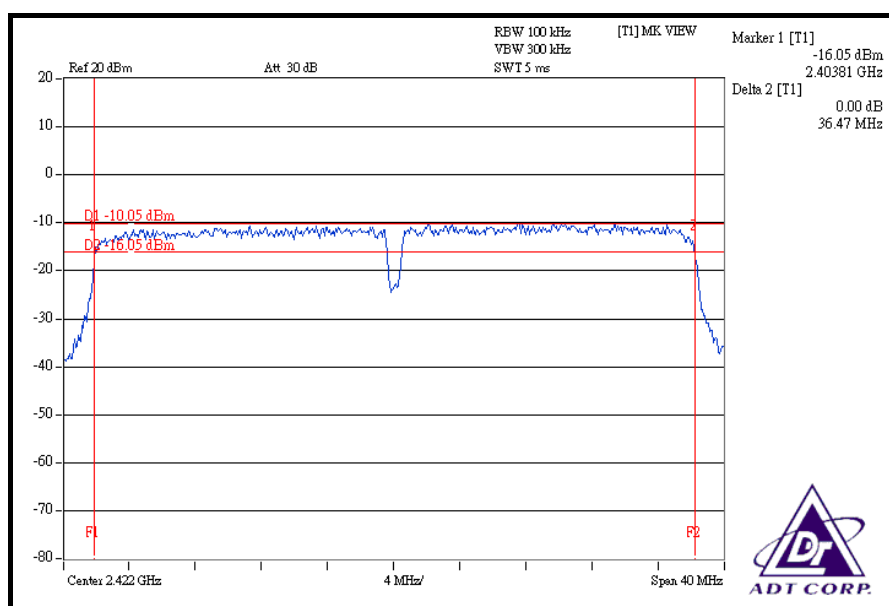


DRAFT 802.11n (40MHz) OFDM MODULATION

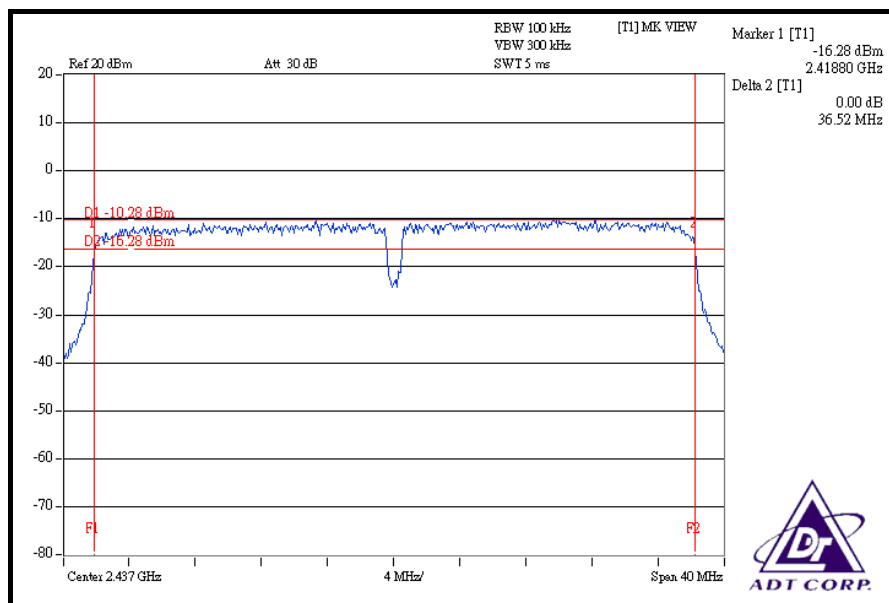
MODULATION TYPE	BPSK	TRANSFER RATE	15.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	27 deg.C, 66 %RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2422	36.47	0.5	PASS
4	2437	36.52	0.5	PASS
7	2452	36.54	0.5	PASS

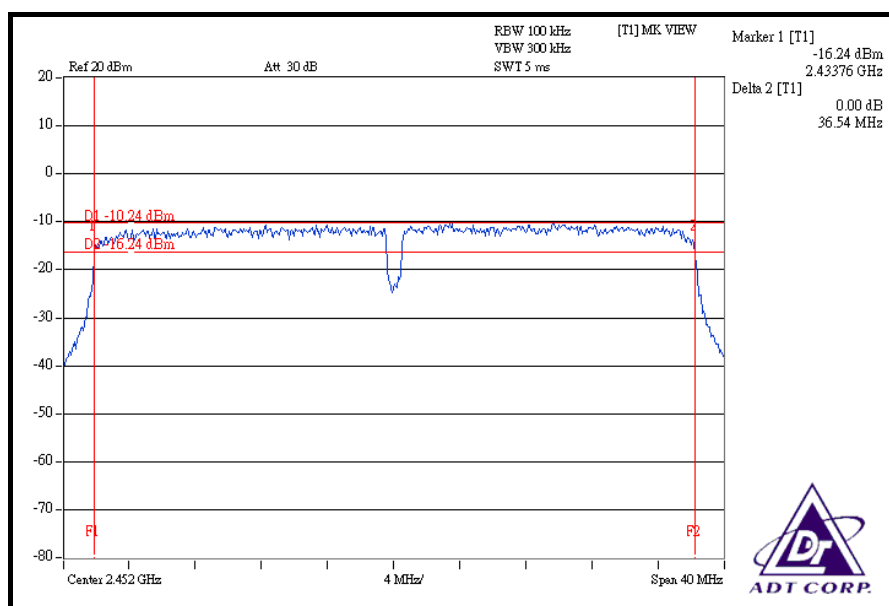
CH 1



CH 4



CH 7



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	100041	Apr. 21, 2009
AGILENT SYNTHESIZED SIGNAL GENERATOR	E8257C	MY43320668	Dec. 25, 2008
DIGITAL RT OSCILLOSCOPE	TDS1012	C037299	Nov. 21, 2008
NARDA DETECTOR	4503A	FSCM99899	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

- A detector was used on the output port of the EUT. An oscilloscope was used to read the response of the detector.
- Replaced the EUT by the signal generator. The center frequency of the S.G was adjusted to the center frequency of the measured channel.
- Adjusted the power to have the same reading on oscilloscope. 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	1.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	27 deg.C, 66 %RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	12.823	11.08	30	PASS
6	2437	12.942	11.12	30	PASS
11	2462	12.764	11.06	30	PASS

802.11g OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	27 deg.C, 66 %RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	12.794	11.07	30	PASS
6	2437	12.677	11.03	30	PASS
11	2462	12.942	11.12	30	PASS

DRAFT 802.11n (20MHz) OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	7.2Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	27 deg.C, 66 %RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	12.942	11.12	30	PASS
6	2437	12.735	11.05	30	PASS
11	2462	12.912	11.11	30	PASS

DRAFT 802.11n (40MHz) OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	15.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	27 deg.C, 66 %RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2422	12.706	11.04	30	PASS
4	2437	12.794	11.07	30	PASS
7	2452	12.882	11.10	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 UNTIL
R&S SPECTRUM ANALYZER	FSP40	100041	Apr. 21, 2009

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

4.5.3 TEST PROCEDURE

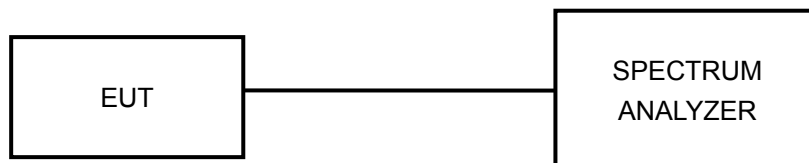
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

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

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6

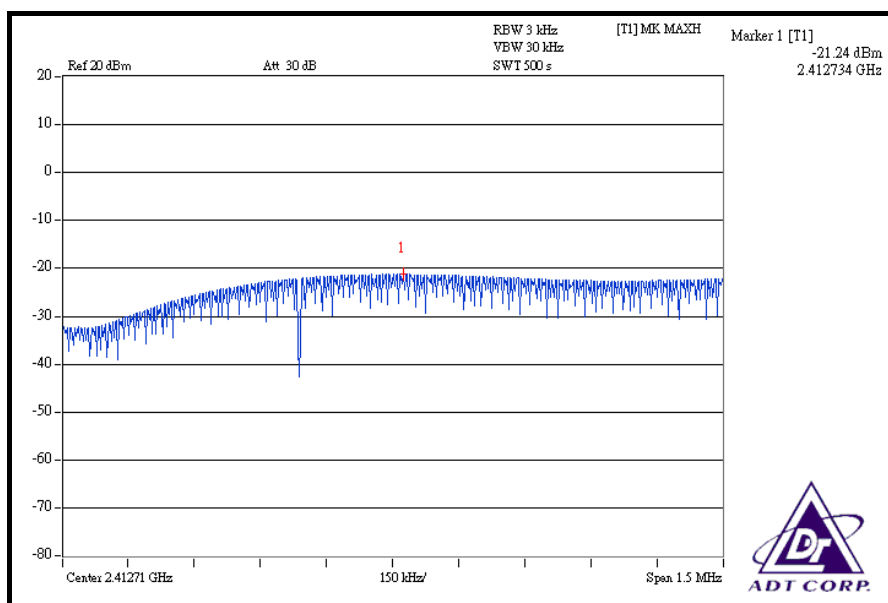
4.5.7 TEST RESULTS

802.11b DSSS MODULATION

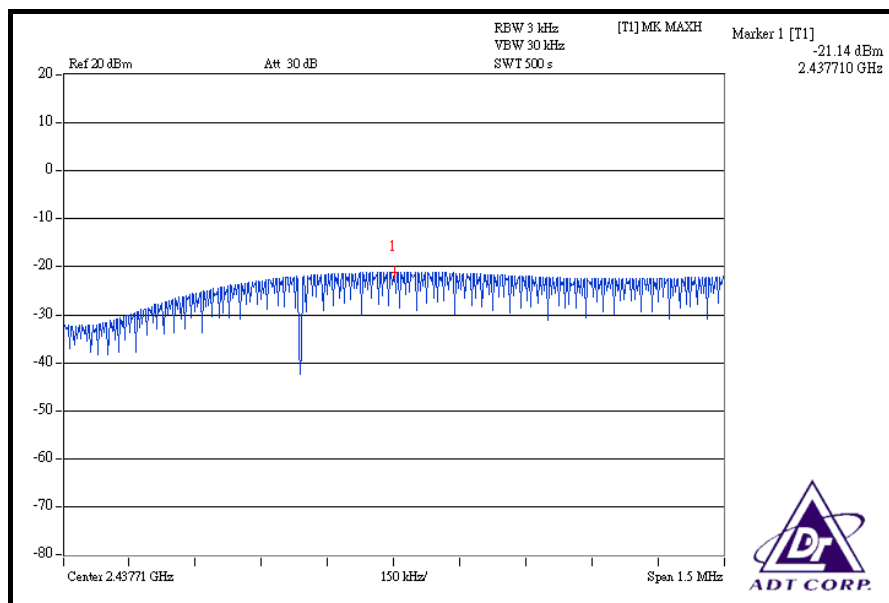
MODULATION TYPE	DBPSK	TRANSFER RATE	1.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	27 deg.C, 66 %RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-21.24	8	PASS
6	2437	-21.14	8	PASS
11	2462	-21.00	8	PASS

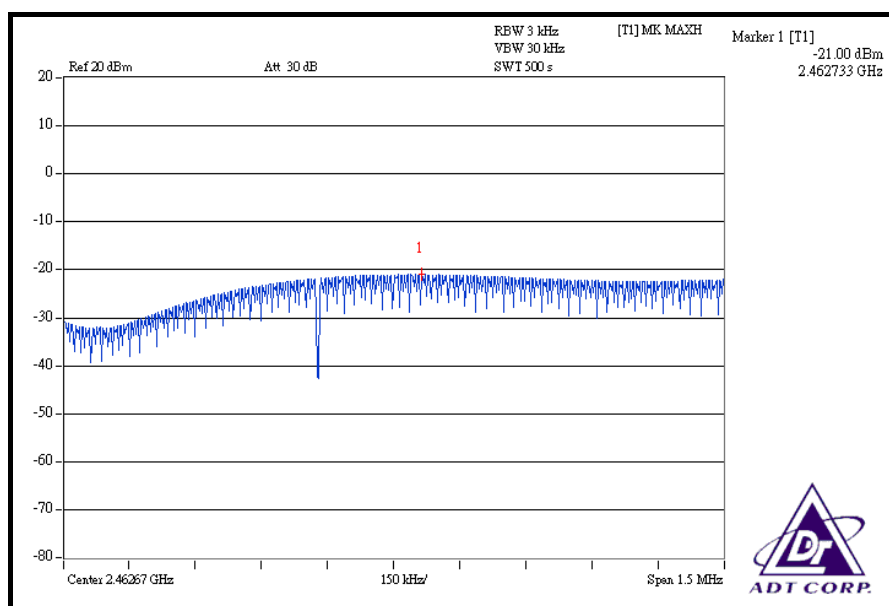
CH 1



CH 6



CH 11

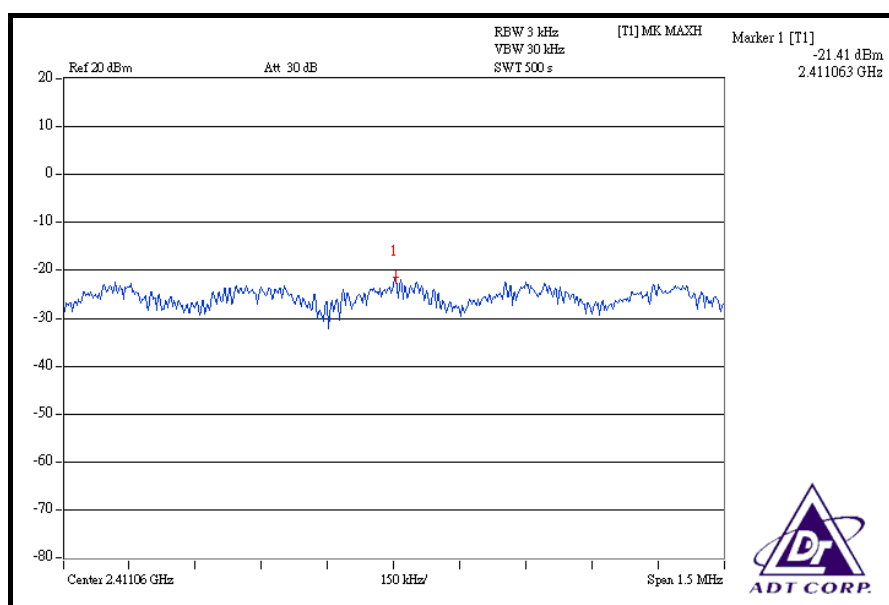


802.11g OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	27 deg.C, 66 %RH, 991hPa
TESTED BY	Long Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-21.41	8	PASS
6	2437	-21.49	8	PASS
11	2462	-21.31	8	PASS

CH 1

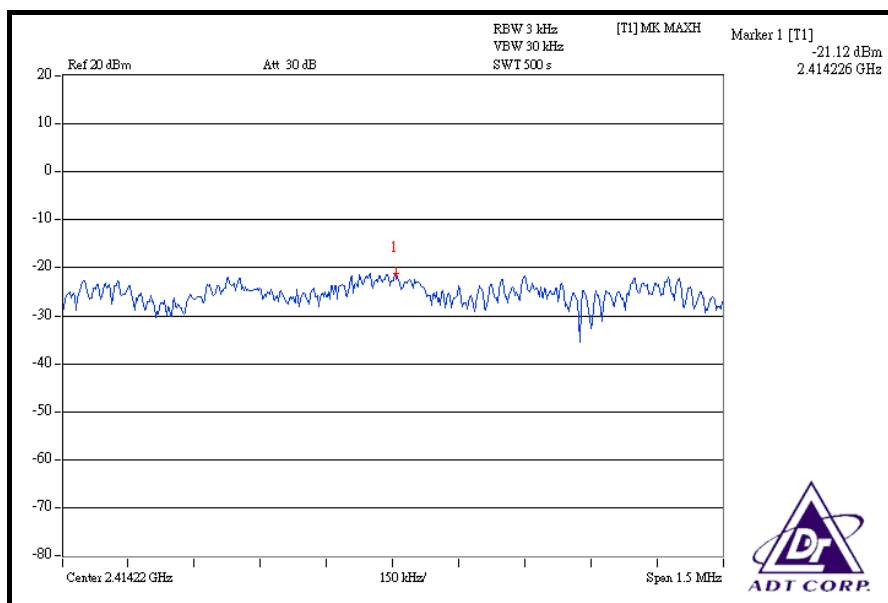


DRAFT 802.11n (20MHz) OFDM MODULATION

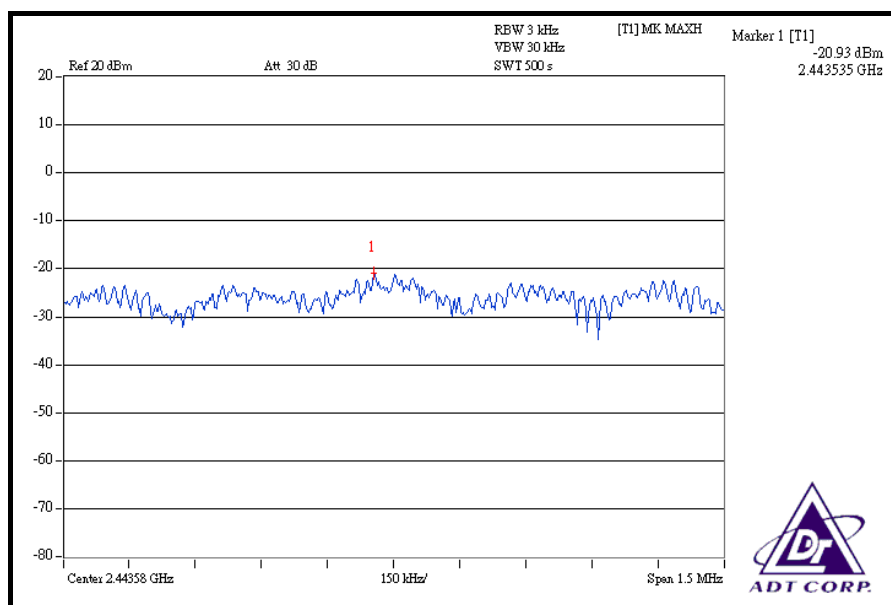
MODULATION TYPE	BPSK	TRANSFER RATE	7.2Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	27 deg.C, 66 %RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-21.12	8	PASS
6	2437	-20.93	8	PASS
11	2462	-21.18	8	PASS

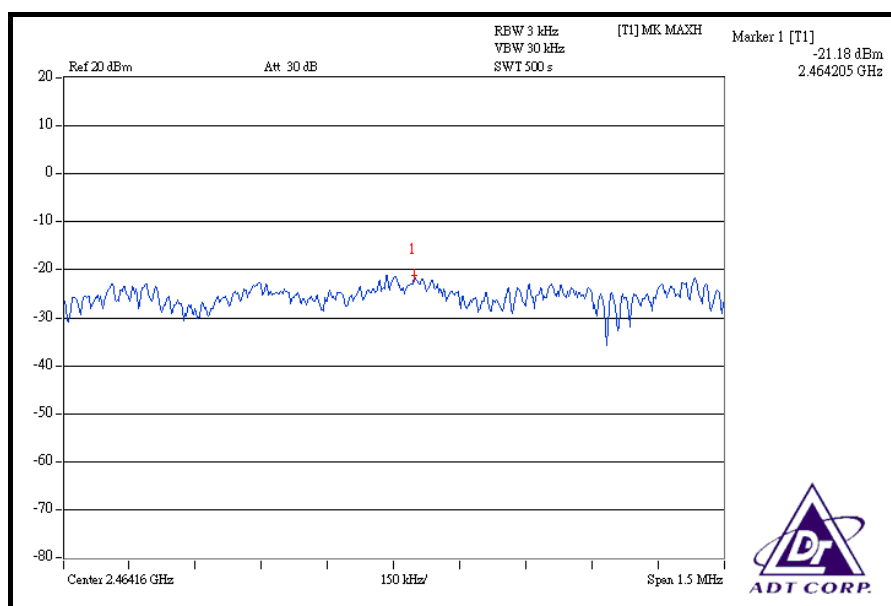
CH 1



CH 6



CH 11

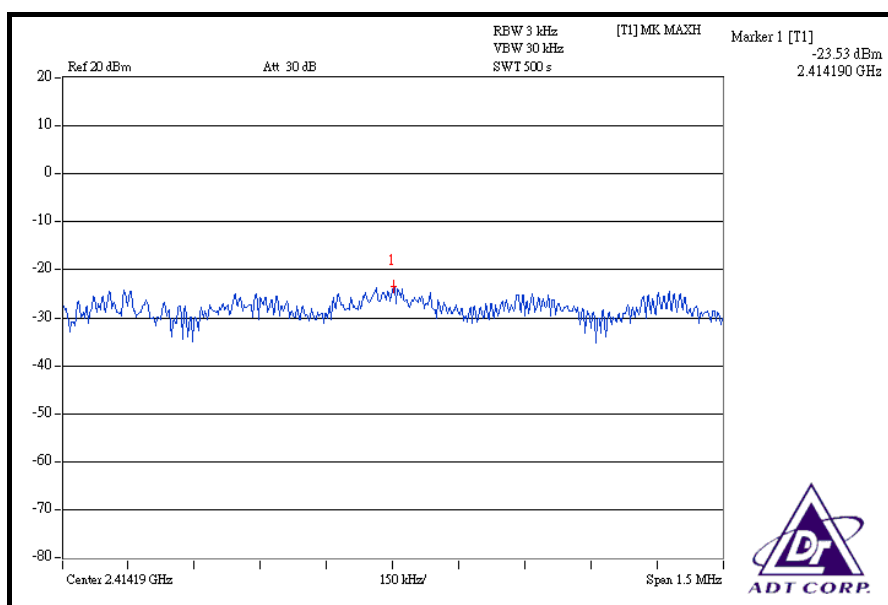


DRAFT 802.11n (40MHz) OFDM MODULATION

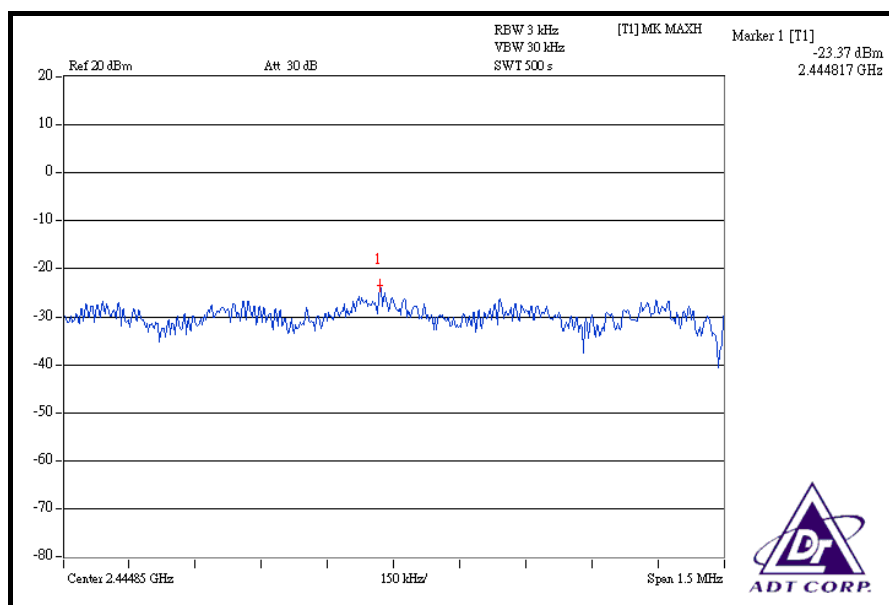
MODULATION TYPE	BPSK	TRANSFER RATE	15.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	27 deg.C, 66 %RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2422	-23.53	8	PASS
4	2437	-23.37	8	PASS
7	2452	-23.31	8	PASS

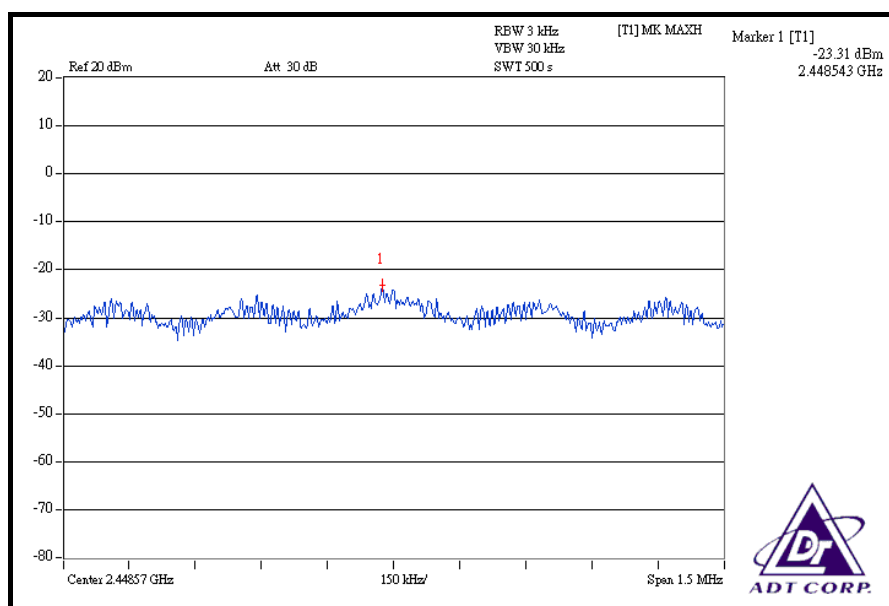
CH 1



CH 4



CH 7



4.6 BAND EDGES MEASUREMENT

4.6.1 LIMITS OF 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 UNTIL
R&S SPECTRUM ANALYZER	FSP40	100041	Apr. 21, 2009

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

4.6.3 TEST PROCEDURE

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

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

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 EUT OPERATING CONDITION

Same as Item 4.3.6

4.6.6 TEST RESULTS

The spectrum plots are attached on the following 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_FOR TEST MODE A

NOTE 1: The band edge emission plot on the next second page shows 44.58dBc between carrier maximum power and local maximum emission in restrict band (2.36640GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 101.15dBuV/m (Peak), so the maximum field strength in restrict band is $101.15 - 44.58 = 56.57$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next second page shows 57.55dBc between carrier maximum power and local maximum emission in restrict band (2.38980GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 97.08dBuV/m (Average), so the maximum field strength in restrict band is $97.08 - 57.55 = 39.53$ dBuV/m which is under 54dBuV/m limit.

NOTE 2: The band edge emission plot on the next third page shows 44.46dBc between carrier maximum power and local maximum emission in restrict band (2.48460GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 101.60dBuV/m (Peak), so the maximum field strength in restrict band is $101.60 - 44.46 = 57.14$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next fourth page shows 56.38dBc between carrier maximum power and local maximum emission in restrict band (2.48380GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 97.65dBuV/m (Average), so the maximum field strength in restrict band is $97.65 - 56.38 = 41.27$ dBuV/m which is under 54dBuV/m limit.

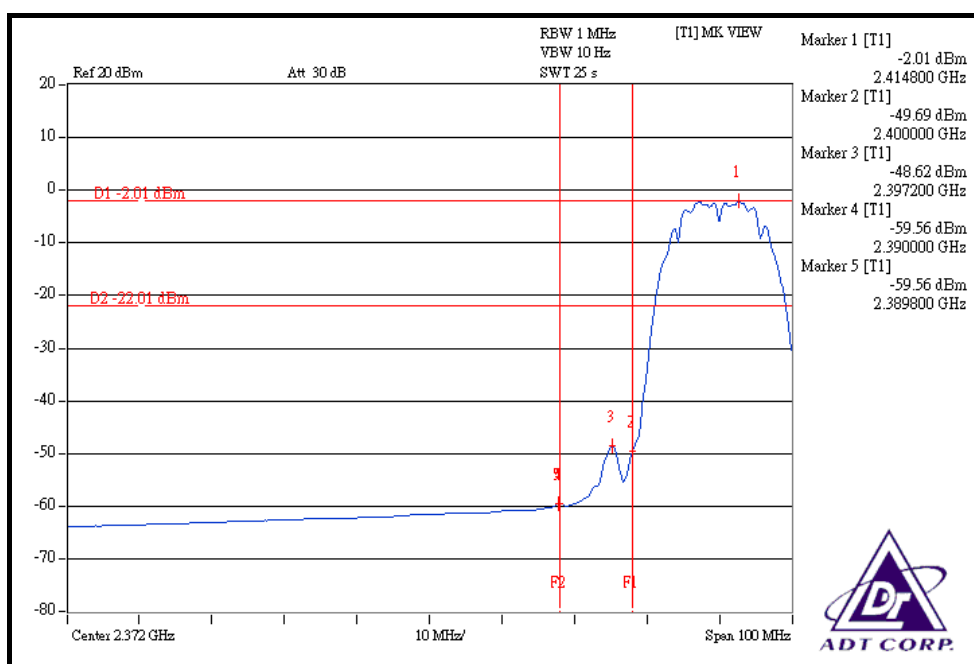
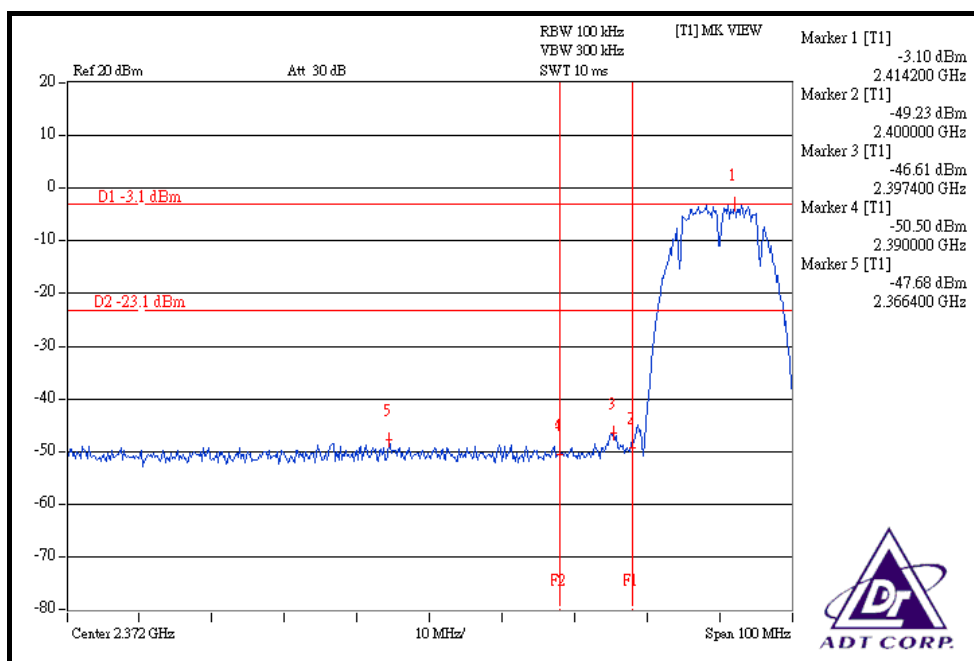
FOR TEST MODE B

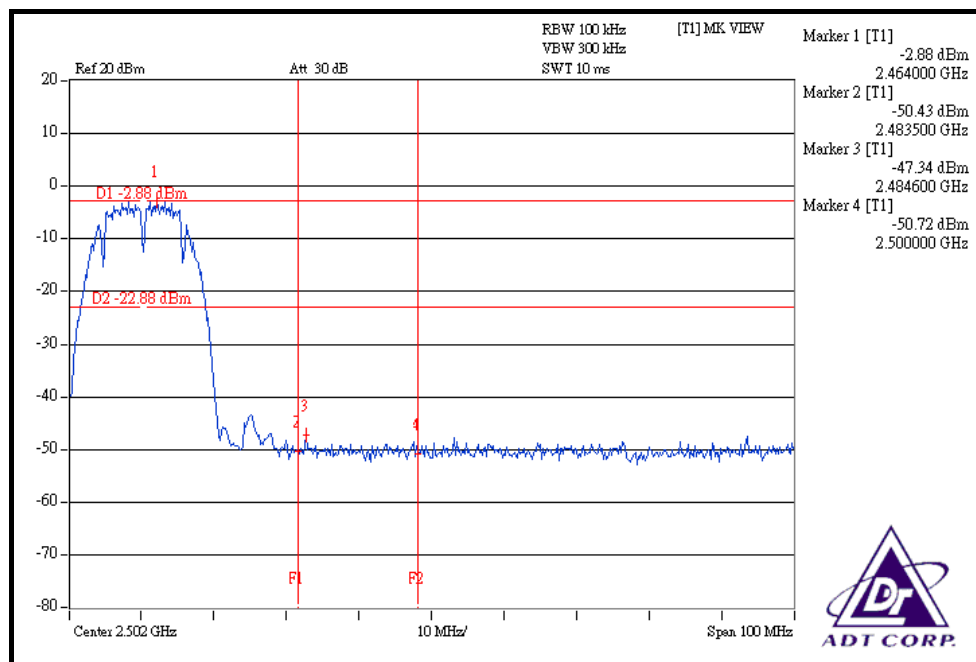
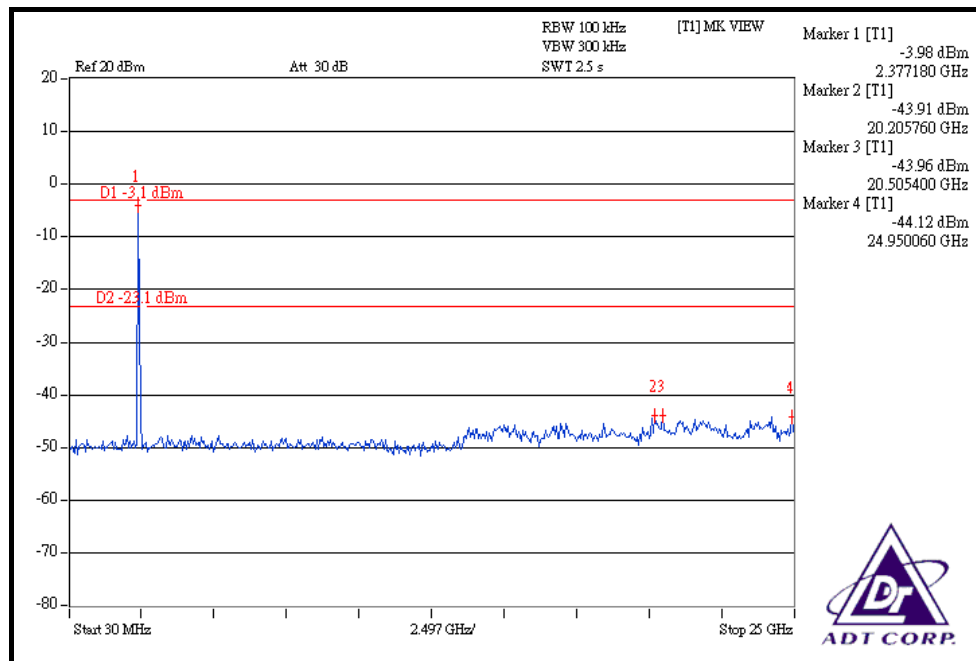
NOTE 1: The band edge emission plot on the next page shows 44.58dBc between carrier maximum power and local maximum emission in restrict band (2.36640GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 100.86dBuV/m (Peak), so the maximum field strength in restrict band is $100.86 - 44.58 = 56.28\text{dBuV/m}$ which is under 74dBuV/m limit.

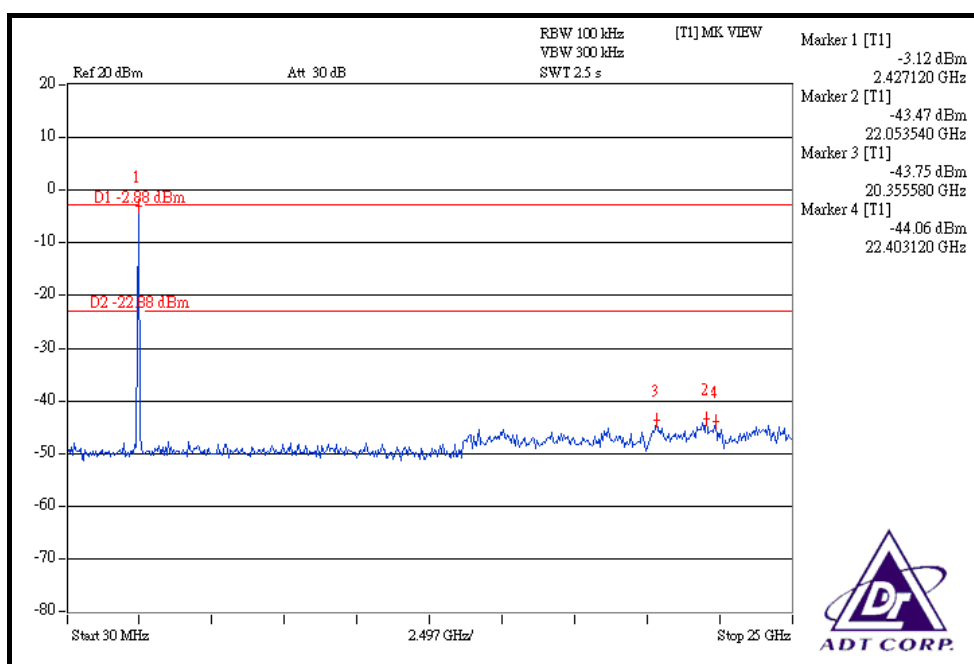
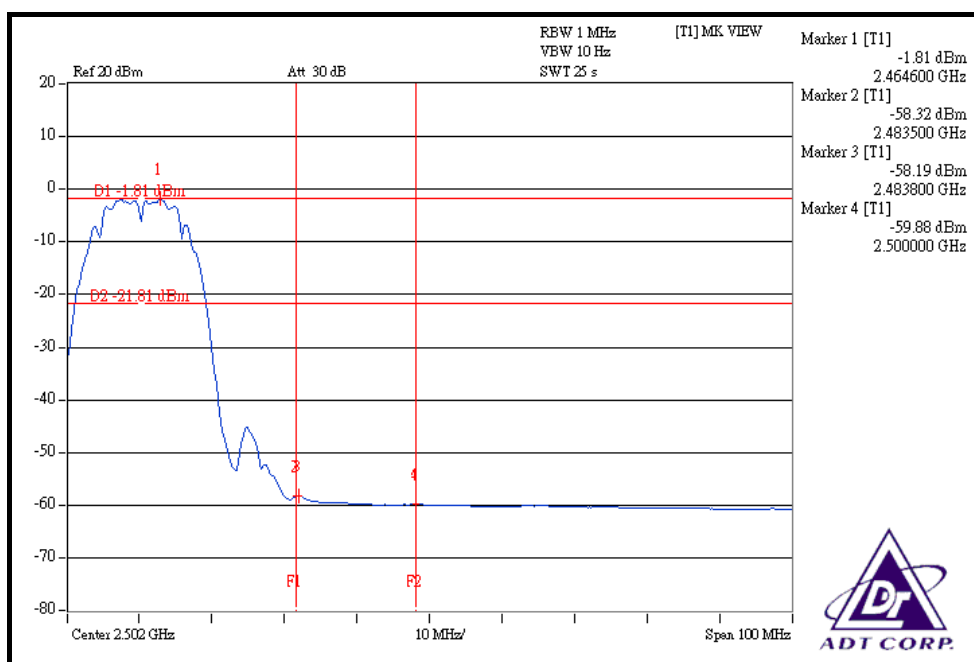
The band edge emission plot on the next page shows 57.55dBc between carrier maximum power and local maximum emission in restrict band (2.38980GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 96.45dBuV/m (Average), so the maximum field strength in restrict band is $96.45 - 57.55 = 38.90\text{dBuV/m}$ which is under 54dBuV/m limit.

NOTE 2: The band edge emission plot on the next second page shows 44.46dBc between carrier maximum power and local maximum emission in restrict band (2.48460GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 100.86dBuV/m (Peak), so the maximum field strength in restrict band is $100.86 - 44.46 = 56.40\text{dBuV/m}$ which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 56.38dBc between carrier maximum power and local maximum emission in restrict band (2.48380GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 96.42dBuV/m (Average), so the maximum field strength in restrict band is $96.42 - 56.38 = 40.04\text{dBuV/m}$ which is under 54dBuV/m limit.







802.11g OFDM MODULATION _FOR TEST MODE A

NOTE 1: The band edge emission plot on the next second page shows 41.17dBc between carrier maximum power and local maximum emission in restrict band (2.37980GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 102.28dBuV/m (Peak), so the maximum field strength in restrict band is $102.28 - 41.17 = 61.11$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next second page shows 52.83dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 92.89dBuV/m (Average), so the maximum field strength in restrict band is $92.89 - 52.83 = 40.06$ dBuV/m which is under 54dBuV/m limit.

NOTE 2: The band edge emission plot on the next third page shows 41.08dBc between carrier maximum power and local maximum emission in restrict band (2.49040GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 103.14dBuV/m (Peak), so the maximum field strength in restrict band is $103.14 - 41.08 = 62.06$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next fourth page shows 50.49dBc between carrier maximum power and local maximum emission in restrict band (2.48350GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 93.68dBuV/m (Average), so the maximum field strength in restrict band is $93.68 - 50.49 = 43.19$ dBuV/m which is under 54dBuV/m limit.

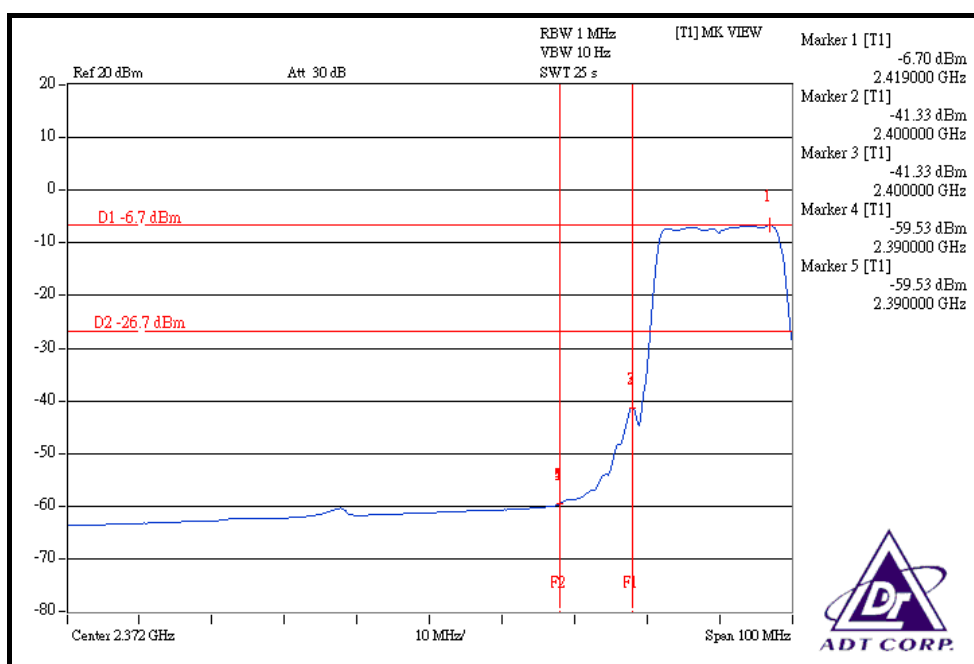
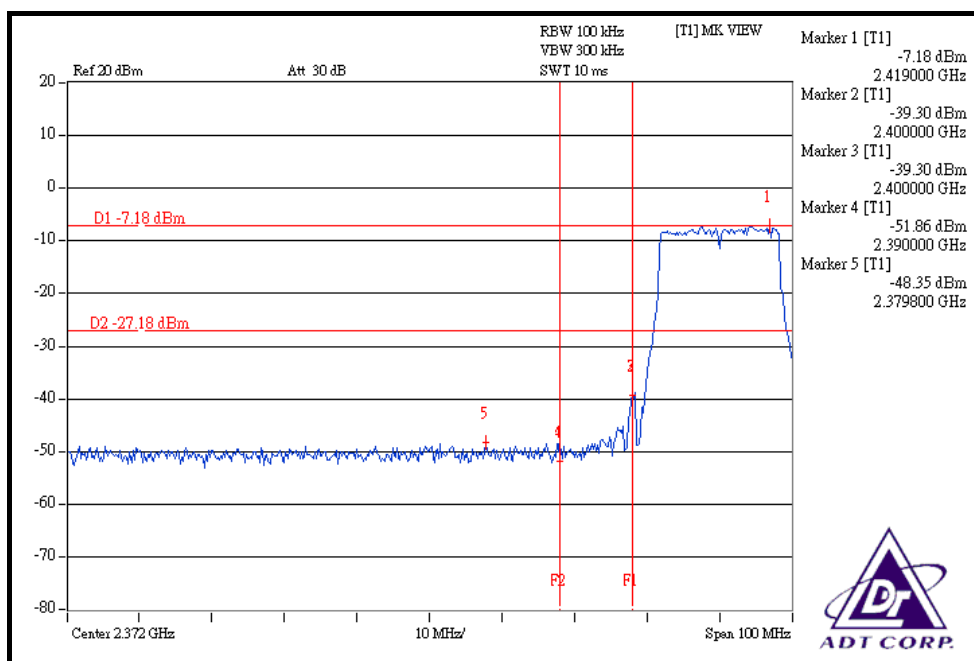
FOR TEST MODE B

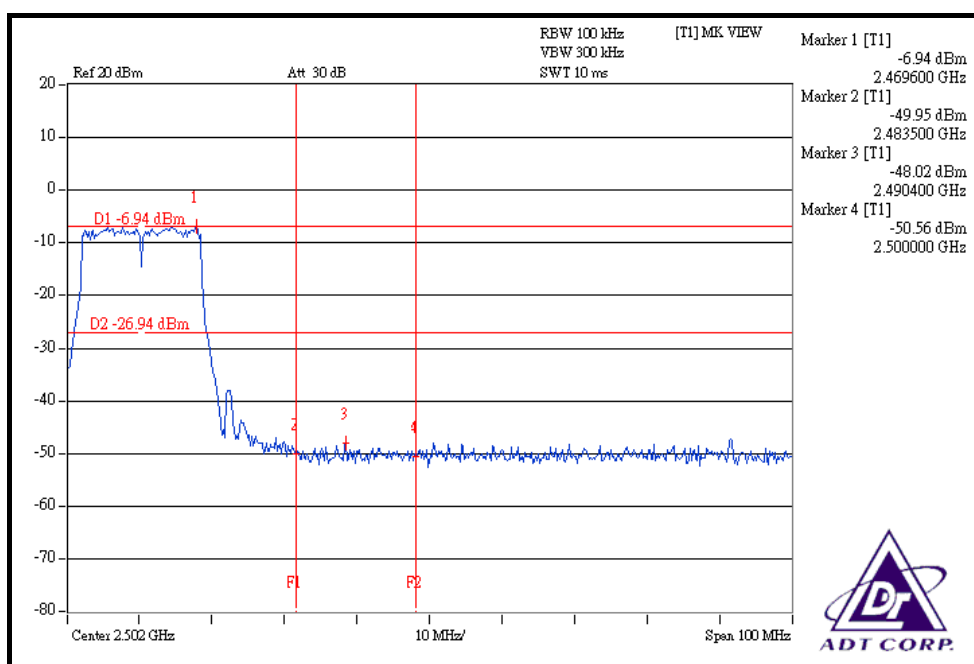
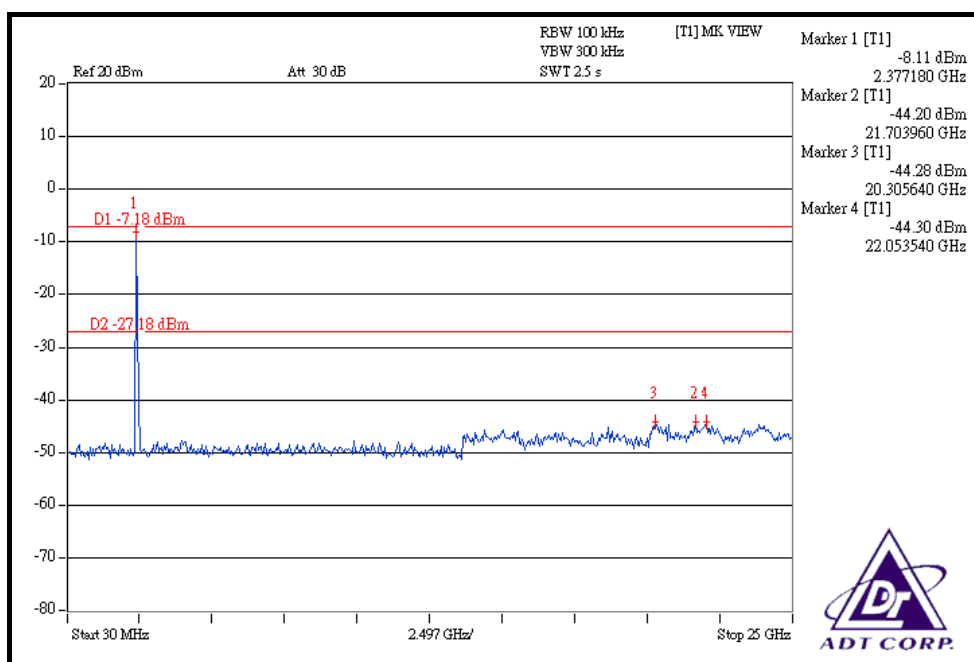
NOTE 1: The band edge emission plot on the next page shows 41.17dBc between carrier maximum power and local maximum emission in restrict band (2.37980GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 102.00dBuV/m (Peak), so the maximum field strength in restrict band is $102.00 - 41.17 = 60.83\text{dBuV/m}$ which is under 74dBuV/m limit.

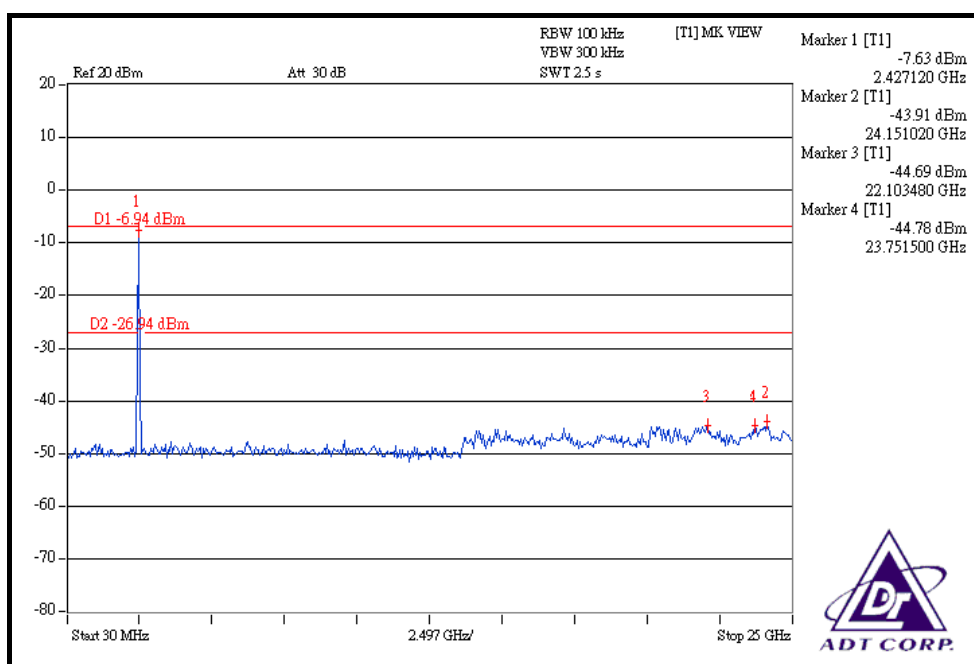
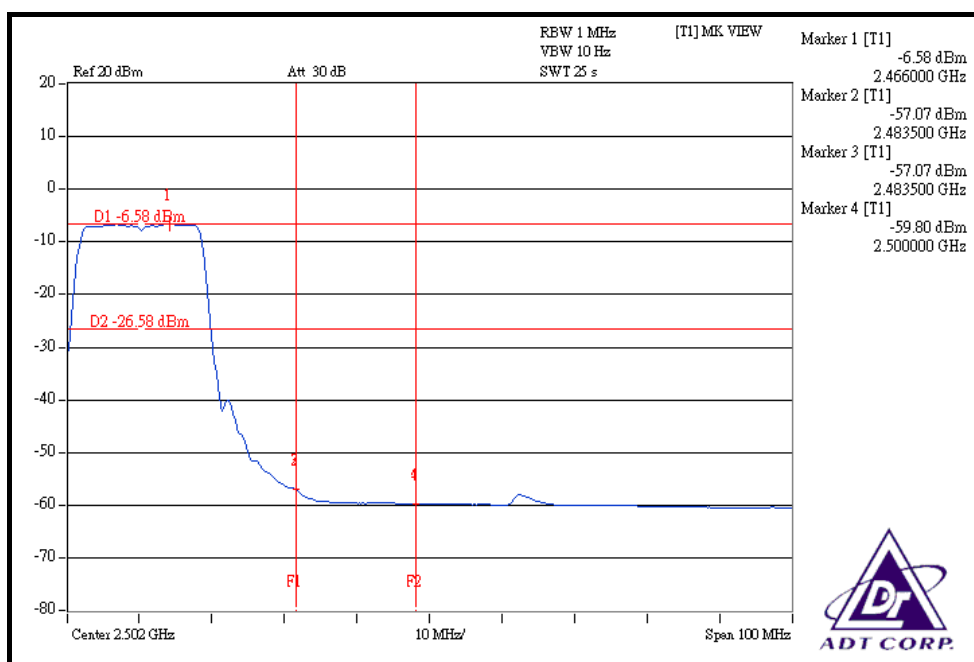
The band edge emission plot on the next page shows 52.83dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 92.05dBuV/m (Average), so the maximum field strength in restrict band is $92.05 - 52.83 = 39.22\text{dBuV/m}$ which is under 54dBuV/m limit.

NOTE 2: The band edge emission plot on the next second page shows 41.08dBc between carrier maximum power and local maximum emission in restrict band (2.49040GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 102.43dBuV/m (Peak), so the maximum field strength in restrict band is $102.43 - 41.08 = 61.35\text{dBuV/m}$ which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 50.49dBc between carrier maximum power and local maximum emission in restrict band (2.48350GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 92.52dBuV/m (Average), so the maximum field strength in restrict band is $92.52 - 50.49 = 42.03\text{dBuV/m}$ which is under 54dBuV/m limit.







DRAFT 802.11n (20MHz) OFDM MODULATION_TEST MODE A

NOTE 1: The band edge emission plot on the next second page shows 40.53dBc between carrier maximum power and local maximum emission in restrict band (2.38180GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 101.72dBuV/m (Peak), so the maximum field strength in restrict band is $101.72 - 40.53 = 61.19$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next second page shows 52.19dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 91.85dBuV/m (Average), so the maximum field strength in restrict band is $91.85 - 52.19 = 39.66$ dBuV/m which is under 54dBuV/m limit.

NOTE 2: The band edge emission plot on the next third page shows 40.46dBc between carrier maximum power and local maximum emission in restrict band (2.49500GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 102.71dBuV/m (Peak), so the maximum field strength in restrict band is $102.71 - 40.46 = 62.25$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next fourth page shows 49.58dBc between carrier maximum power and local maximum emission in restrict band (2.48350GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 92.22dBuV/m (Average), so the maximum field strength in restrict band is $92.22 - 49.58 = 42.64$ dBuV/m which is under 54dBuV/m limit.

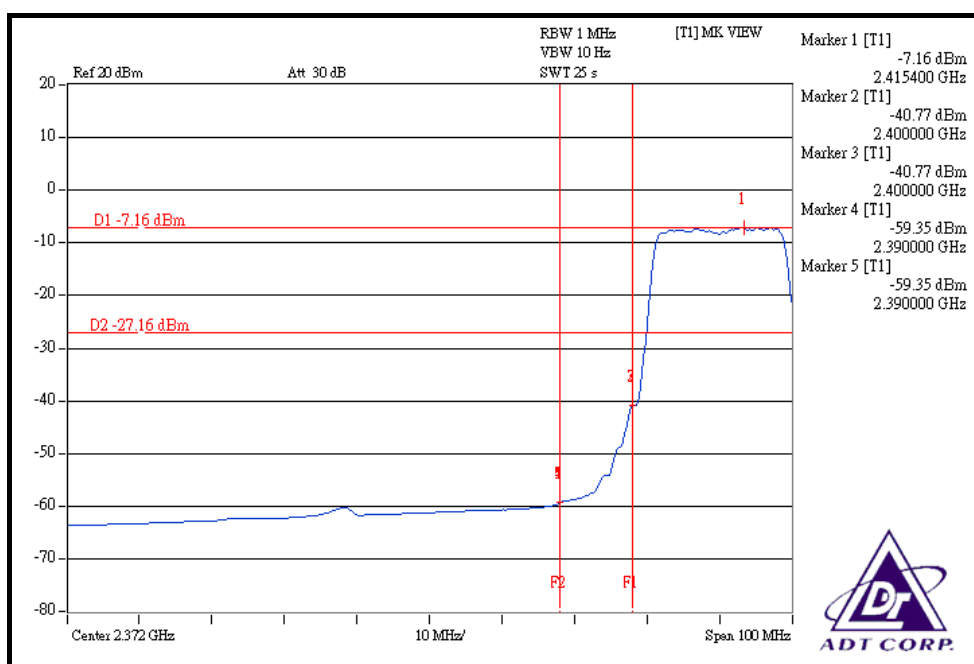
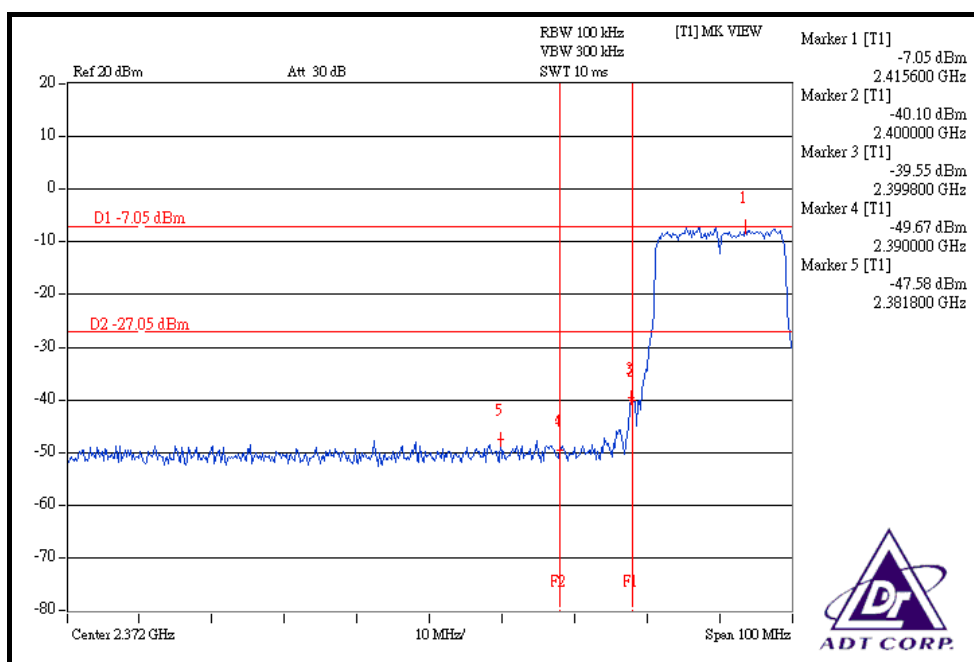
FOR TEST MODE B

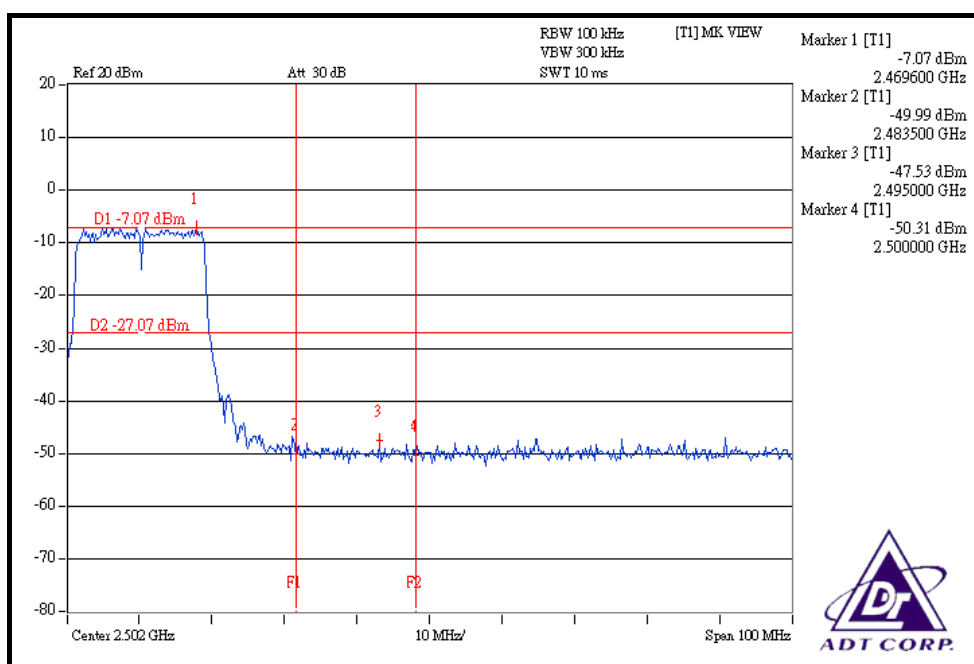
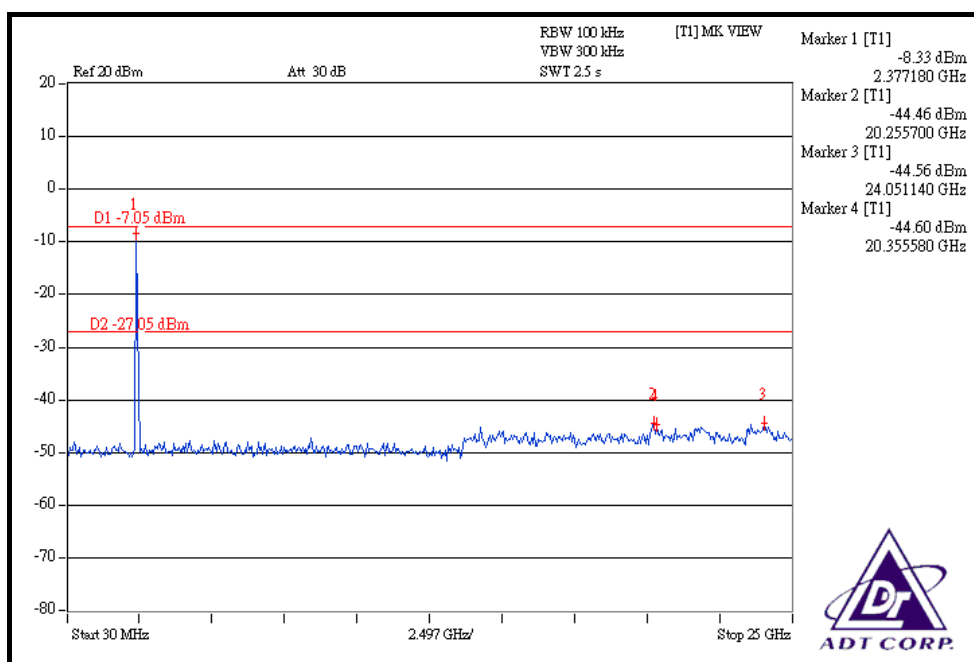
NOTE 1: The band edge emission plot on the next page shows 40.53dBc between carrier maximum power and local maximum emission in restrict band (2.38180GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 101.53dBuV/m (Peak), so the maximum field strength in restrict band is $101.53 - 40.53 = 61.00\text{dBuV/m}$ which is under 74dBuV/m limit.

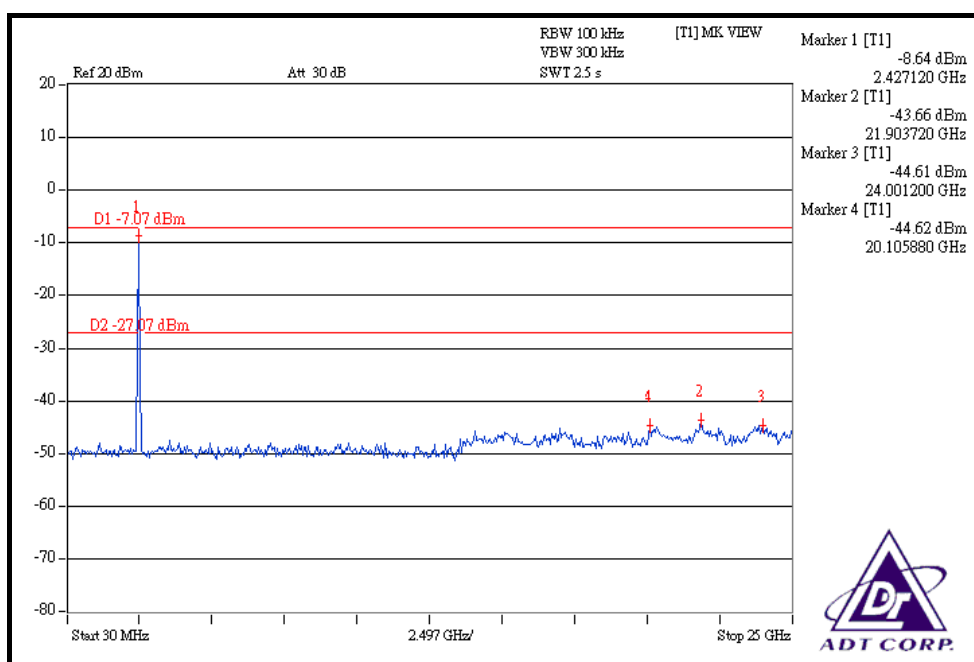
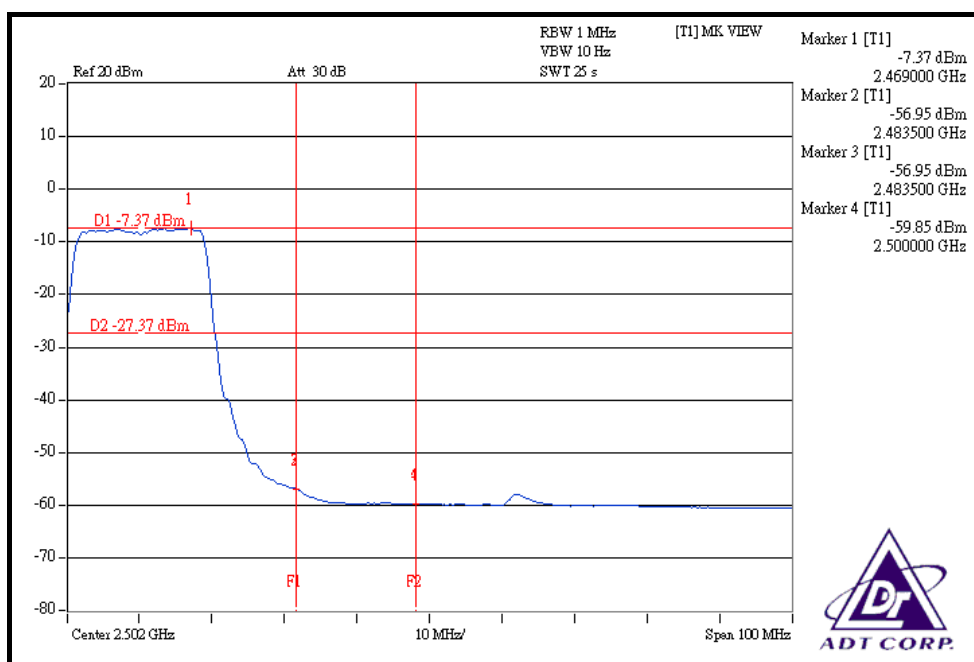
The band edge emission plot on the next page shows 52.19dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 91.58dBuV/m (Average), so the maximum field strength in restrict band is $91.58 - 52.19 = 39.39\text{dBuV/m}$ which is under 54dBuV/m limit.

NOTE 2: The band edge emission plot on the next second page shows 40.46dBc between carrier maximum power and local maximum emission in restrict band (2.49500GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 101.91dBuV/m (Peak), so the maximum field strength in restrict band is $101.91 - 40.46 = 61.45\text{dBuV/m}$ which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 49.58dBc between carrier maximum power and local maximum emission in restrict band (2.48350GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 92.02dBuV/m (Average), so the maximum field strength in restrict band is $92.02 - 49.58 = 42.44\text{dBuV/m}$ which is under 54dBuV/m limit.







DRAFT 802.11n (40MHz) OFDM MODULATION_TEST MODE A

NOTE 1: The band edge emission plot on the next second page shows 37.61dBc between carrier maximum power and local maximum emission in restrict band (2.38720GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 100.76dBuV/m (Peak), so the maximum field strength in restrict band is $100.76 - 37.61 = 63.15\text{dBuV/m}$ which is under 74dBuV/m limit.

The band edge emission plot on the next second page shows 46.72dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 90.46dBuV/m (Average), so the maximum field strength in restrict band is $90.46 - 46.72 = 43.74\text{dBuV/m}$ which is under 54dBuV/m limit.

NOTE 2: The band edge emission plot on the next third page shows 36.66dBc between carrier maximum power and local maximum emission in restrict band (2.48400GHz). The emission of carrier strength list in the test result of channel 7 at the item 4.2.7 is 101.62dBuV/m (Peak), so the maximum field strength in restrict band is $101.62 - 36.66 = 64.96\text{dBuV/m}$ which is under 74dBuV/m limit.

The band edge emission plot on the next fourth page shows 42.31dBc between carrier maximum power and local maximum emission in restrict band (2.48400GHz). The emission of carrier strength list in the test result of channel 7 at the item 4.2.7 is 90.91dBuV/m (Average), so the maximum field strength in restrict band is $90.91 - 42.31 = 48.60\text{dBuV/m}$ which is under 54dBuV/m limit.

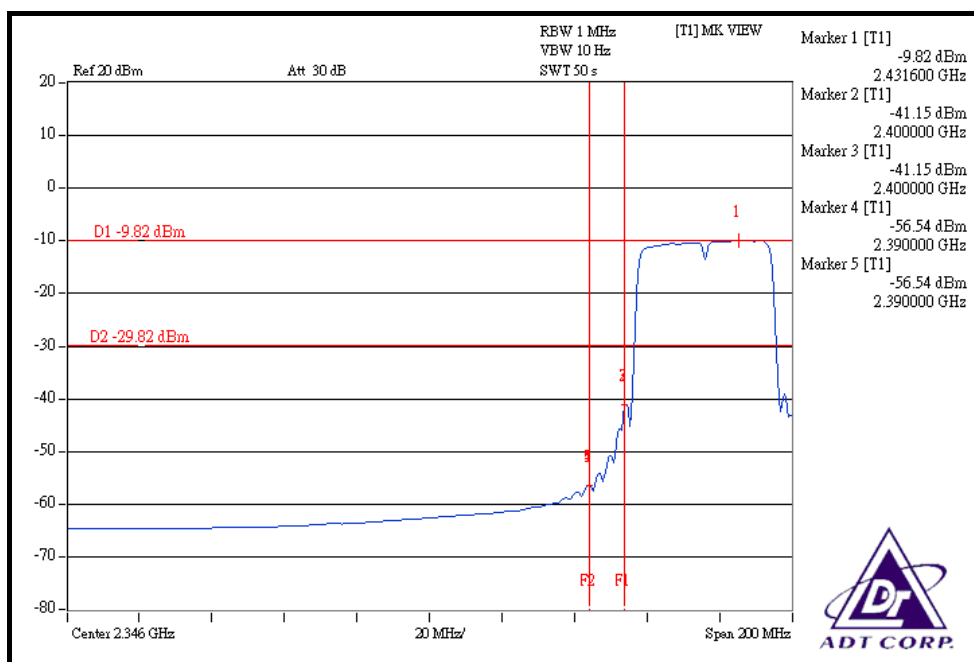
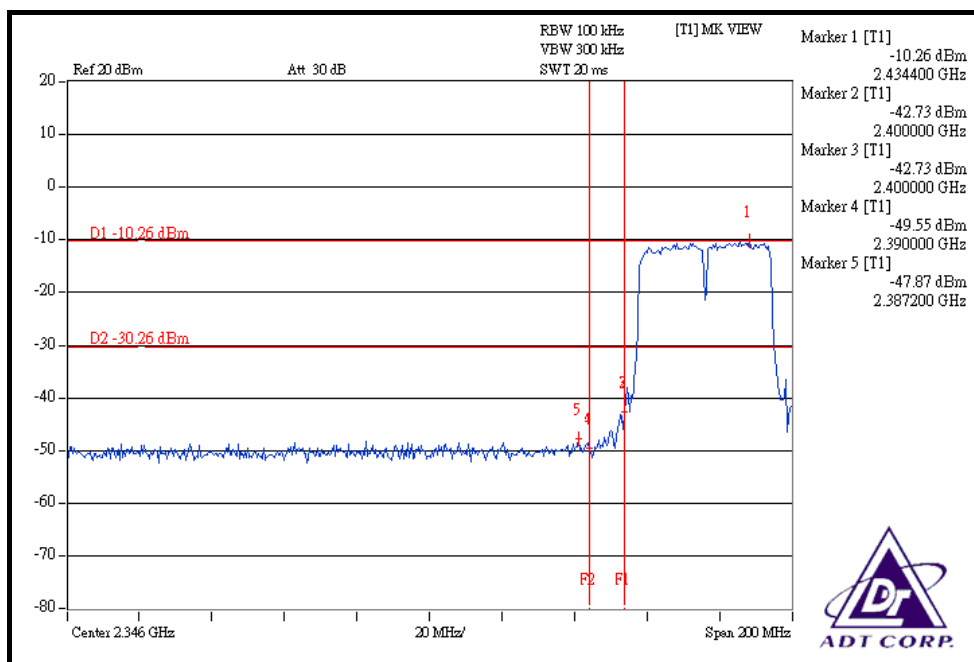
FOR TEST MODE B

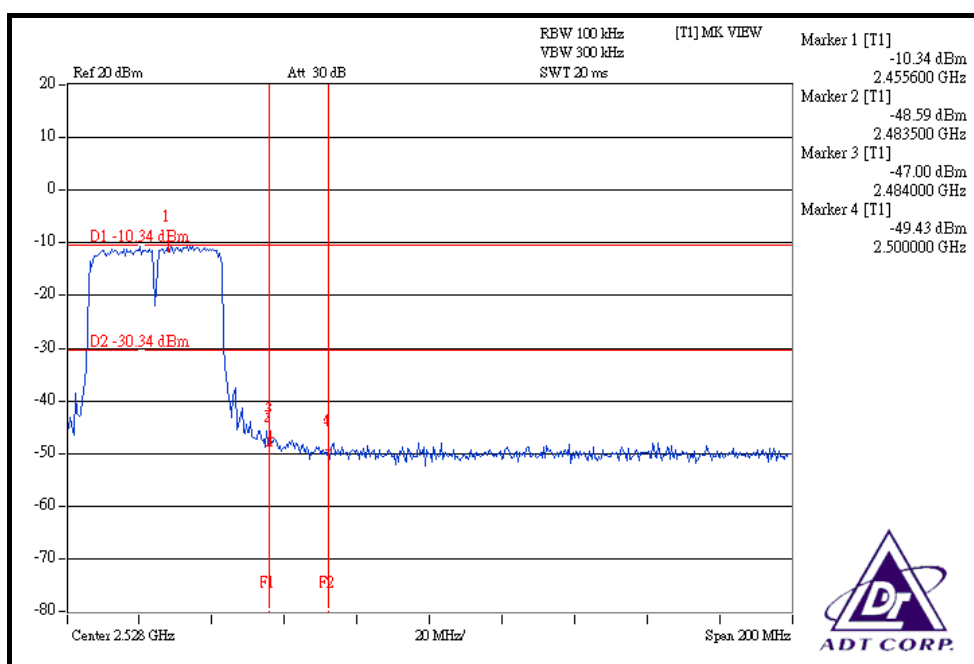
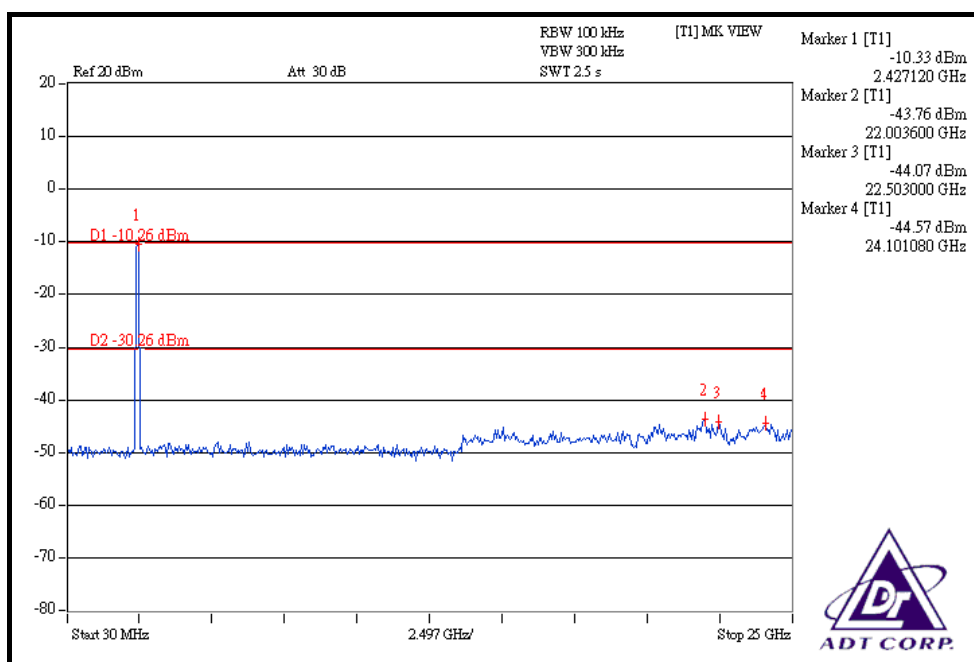
NOTE 1: The band edge emission plot on the next page shows 37.61dBc between carrier maximum power and local maximum emission in restrict band (2.38720GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 100.03dBuV/m (Peak), so the maximum field strength in restrict band is $100.03 - 37.61 = 62.42\text{dBuV/m}$ which is under 74dBuV/m limit.

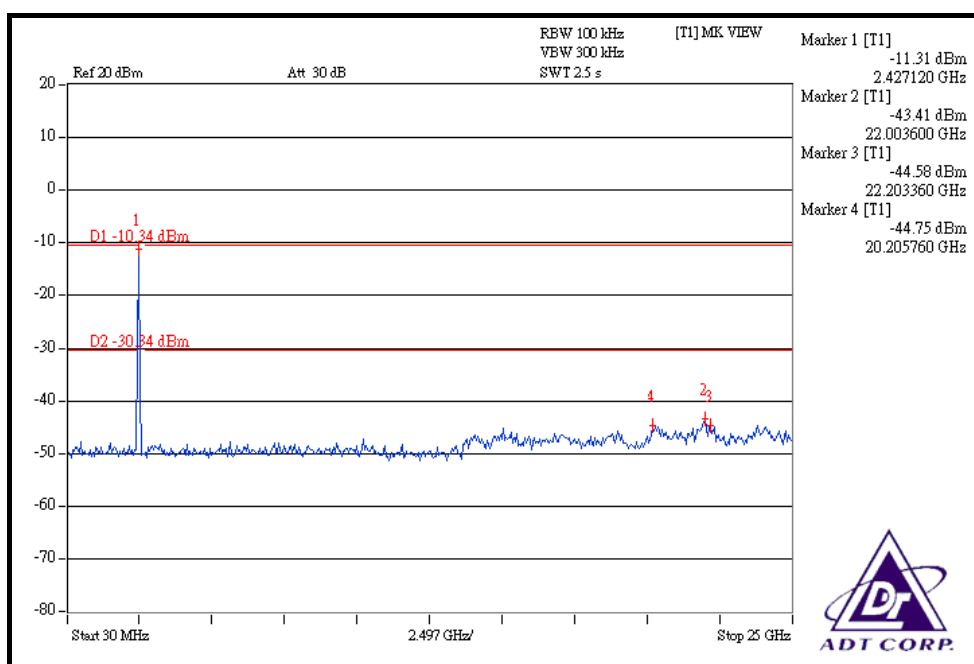
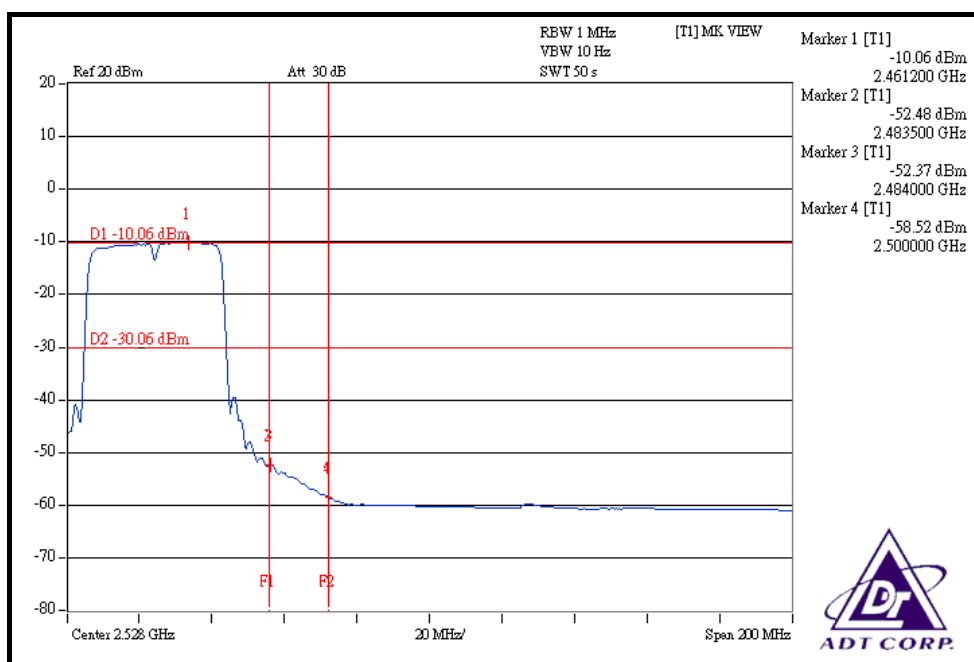
The band edge emission plot on the next page shows 46.72dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 89.85dBuV/m (Average), so the maximum field strength in restrict band is $89.85 - 46.72 = 43.13\text{dBuV/m}$ which is under 54dBuV/m limit.

NOTE 2: The band edge emission plot on the next second page shows 36.66dBc between carrier maximum power and local maximum emission in restrict band (2.48400GHz). The emission of carrier strength list in the test result of channel 7 at the item 4.2.7 is 100.26dBuV/m (Peak), so the maximum field strength in restrict band is $100.26 - 36.66 = 63.60\text{dBuV/m}$ which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 42.31dBc between carrier maximum power and local maximum emission in restrict band (2.48400GHz). The emission of carrier strength list in the test result of channel 7 at the item 4.2.7 is 90.15dBuV/m (Average), so the maximum field strength in restrict band is $90.15 - 42.31 = 47.84\text{dBuV/m}$ which is under 54dBuV/m limit.







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 antennas used in this product are PIFA antenna and PCB antenna with U.FL connector. The maximum Gain of the antenna is 2.08dBi.

5. PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).

6. INFORMATION ON THE TESTING LABORATORIES

We, ADT Corp., 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, UL, A2LA
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: 886-2-26051924

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.

7. 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---