FCC TEST REPORT

REPORT NO.: RF971218L04
MODEL NO.: ESR-9753 (Refer to item 3.1 for more detail)
RECEIVED: Dec. 18, 2008
TESTED: Dec. 22 ~ Dec. 25, 2008
ISSUED: Dec. 31, 2008

APPLICANT: Senao Networks Inc.

ADDRESS: 3F, No. 529, Chung Cheng Rd., Hsintien, Taipei, Taiwan, R.O.C.

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

LAB ADDRESS: No. 47, 14th Ling, Chia Pau Tsuen, Lin Kou Hsiang, Taipei Hsien 244, Taiwan, R.O.C.

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

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1. CERTIFICATION

PRODUCT: Wireless Micro Router

MODEL: ESR-9753 (Refer to item 3.1 for more detail)

BRAND: EnGenius (Refer to item 3.1 for more detail)

APPLICANT: Senao Networks Inc.

TESTED: Dec. 22 ~ Dec. 25, 2008

TEST SAMPLE: R&D SAMPLE

STANDARDS: **FCC Part 15, Subpart C (Section 15.247)**
ANSI C63.4-2003

The above equipment (model: ESR-9753) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch,** and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : Ivy Lin , **DATE:** Dec. 31, 2008
Ivy Lin / Specialist

TECHNICAL ACCEPTANCE : Long Chen , **DATE:** Dec. 31, 2008
Responsible for RF
Long Chen / Senior Engineer

APPROVED BY : Gary Chang , **DATE:** Dec. 31, 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			
Standard Section	**Test Type and Limit**	**Result**	**Remark**
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -13.67dB at 0.193MHz.
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 2490.00MHz.
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	2.44 dB
Radiated emissions	30MHz ~ 200MHz	3.34 dB
	200MHz ~1000MHz	3.35 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

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

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Wireless Micro Router
MODEL NO.	ESR-9753 (Refer to note for more detail)
FCC ID	U2M-SR97908005
POWER SUPPLY	12Vdc from AC adapter
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 150Mbps
FREQUENCY RANGE	2400MHz ~ 2483.5MHz
NUMBER OF CHANNEL	11 for 802.11b, 802.11g, draft 802.11n (20MHz) 7 for draft 802.11n (40MHz)
MAXIMUM OUTPUT POWER	320.627mW
ANTENNA TYPE	Dipole antenna with 2dBi gain
DATA CABLE	NA
I/O PORTS	RJ45
ACCESSORY DEVICES	AC adapter

NOTE:

1. The models as below are identical to each other except for their model and brand name due to marketing requirement.

BRAND NAME	MODEL NO.
EnGenius	ESR-9753
SITECOM	WL-340
corega	CG-WLBAR10
Rosewill	RNX-EasyN400

2. The EUT incorporates an 802.11n function. Physically, the EUT provides one completed transmitter and one receiver.

3. The EUT was powered by the following adapter.

ADAPTER 1	
BRAND:	AMIGO
MODEL:	AMS6-1201000SU
INPUT:	120Vac, 60Hz, 0.5A
OUTPUT:	12Vdc, 1.0A
POWER LINE:	1.8m non-shielded cable without core

ADAPTER 2	
BRAND:	DVE
MODEL:	DSA-12G-12 FUS 120120
INPUT:	100-240Vac, 50/60Hz, 0.3A
OUTPUT:	12Vdc, 1.0A
POWER LINE:	1.8m non-shielded cable without core

4. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 DESCRIPTION OF TEST MODES

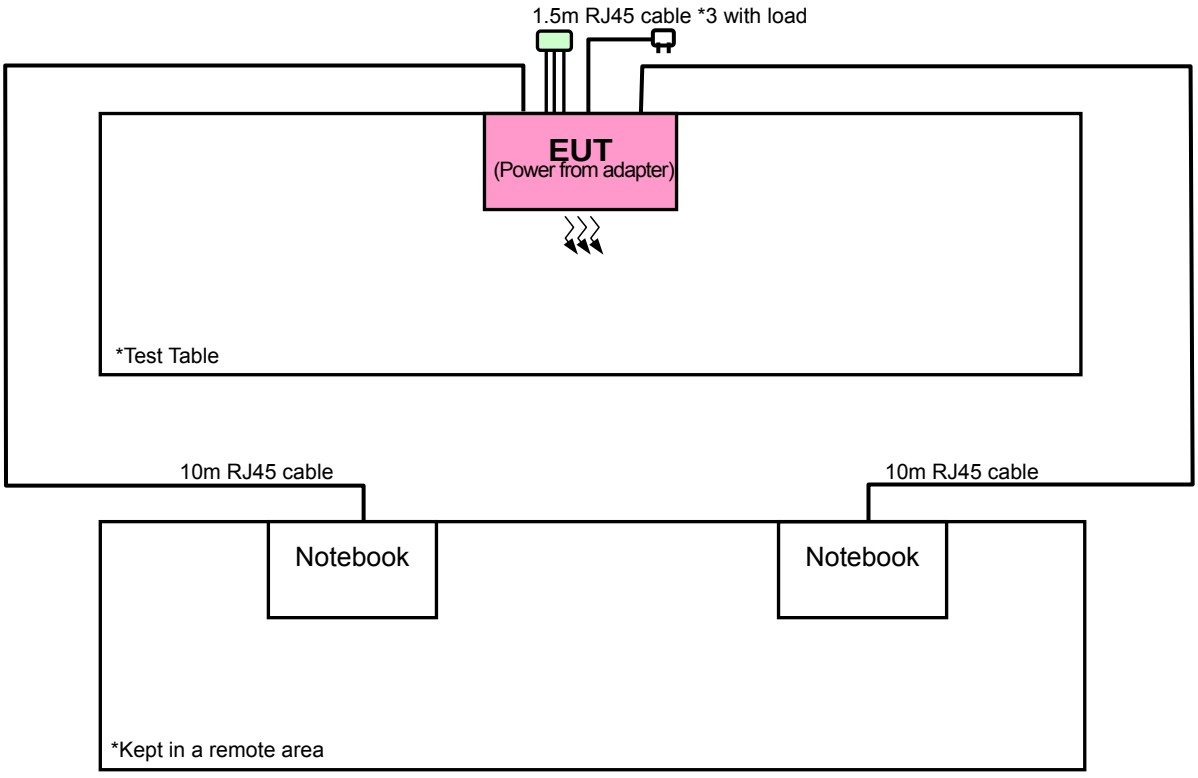
Eleven channels are provided for 802.11b, 802.11g and draft 802.11n (20MHz):

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		

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

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

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST



3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	APCM	
A	√	√	√	√	Power form adapter 1
B	-	√	√	-	Power form adapter 2

Where **PLC:** Power Line Conducted Emission **RE<1G:** Radiated Emission below 1GHz
RE≥1G: Radiated Emission above 1GHz **APCM:** Antenna Port Conducted Measurement
Note: "-" means no effect.

RADIATED EMISSION TEST (ABOVE 1 GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, 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	1, 6, 11	DSSS	DBPSK	1	Z
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6	Z
A	Draft 802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5	Z
A	Draft 802.11n (40MHz)	1 to 7	1, 4, 7	OFDM	BPSK	13.5	Z

RADIATED EMISSION TEST (BELOW 1 GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, 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	802.11g	1 to 11	6	OFDM	BPSK	6	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, B	802.11g	1 to 11	6	OFDM	BPSK	6

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
A	802.11g	1 to 11	1, 11	OFDM	BPSK	6
A	Draft 802.11n (20MHz)	1 to 11	1, 11	OFDM	BPSK	6.5
A	Draft 802.11n (40MHz)	1 to 7	1, 7	OFDM	BPSK	13.5

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
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
A	Draft 802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
A	Draft 802.11n (40MHz)	1 to 7	1, 4, 7	OFDM	BPSK	13.5

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	DELL	PP05L	12130898320	E2K24CLNS
2	NOTEBOOK	DELL	D600	CN-0G5152-48643-485-5636	FCC DoC Approved

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	10m UTP RJ45 cable
2	10m UTP RJ45 cable

NOTE: 1. All power cords of the above support units are non shielded (1.8m).
2. Item 1-2 acted as a communication partner to transfer data.

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.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESI7	100033	Jun. 30, 2008	Jun. 29, 2009
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Apr. 22, 2008	Apr. 21, 2009
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	May 02, 2008	May 01, 2009
HORN Antenna SCHWARZBECK	9120D	9120D-209	Jun. 24, 2008	Jun. 23, 2009
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170243	Dec. 25, 2008	Dec. 24, 2009
Preamplifier Agilent	8447D	2944A10633	Nov. 03, 2008	Nov. 02, 2009
Preamplifier Agilent	8449B	3008A01964	Oct. 23, 2008	Oct. 22, 2009
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	238141/4	May 20, 2008	May 19, 2009
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	12738/6	May 20, 2008	May 19, 2009
Software ADT.	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	017303	NA	NA
Turn Table ADT.	TT100.	TT93021703	NA	NA
Turn Table Controller ADT.	SC100.	SC93021703	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 3.

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

4. The FCC Site Registration No. is 988962.

5. The IC Site Registration No. is IC 7450F-3.

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.

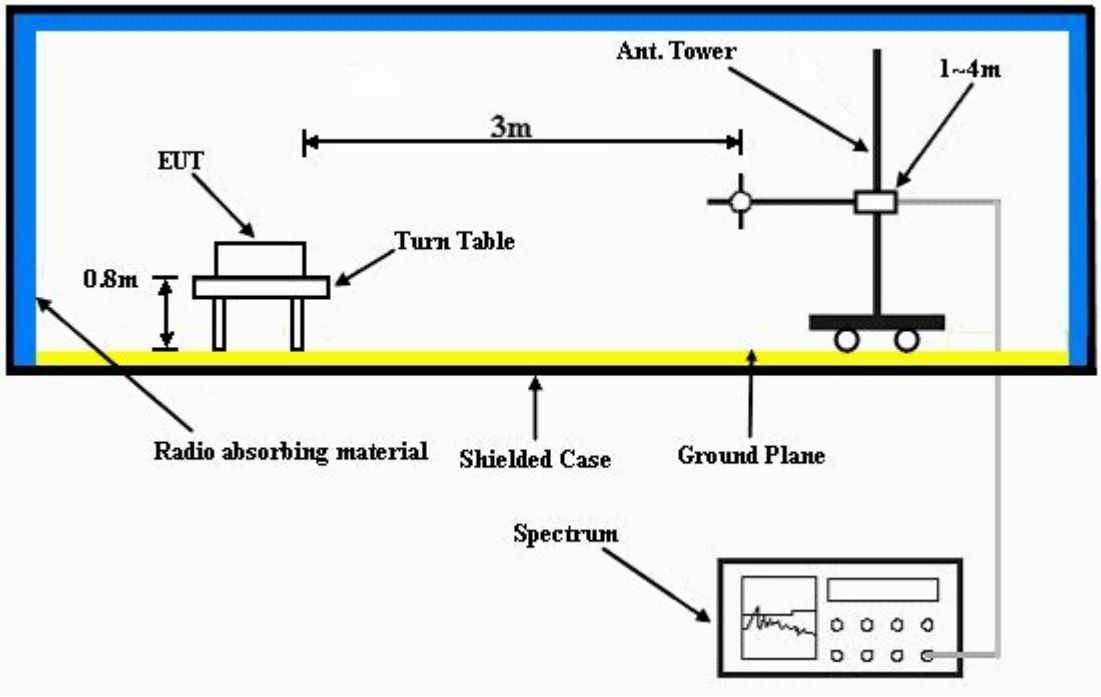
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.
4. 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

a. Placed the EUT on the testing table.
b. Prepared notebook systems to act as a communication partner and placed them outside of testing area.
c. The communication partners connected with EUT via a RJ45 cable and run a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
d. The necessary accessories enable the EUT 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	24deg. C, 64%RH 1024hPa	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2386.00	57.83 PK	74.00	-16.17	1.00 H	8	25.40	32.43
2	2386.00	46.71 AV	54.00	-7.29	1.00 H	8	14.28	32.43
3	*2412.00	99.81 PK			1.00 H	8	67.29	32.52
4	*2412.00	95.30 AV			1.00 H	8	62.78	32.52
5	4824.00	56.72 PK	74.00	-17.28	1.01 H	13	18.42	38.30
6	4824.00	52.44 AV	54.00	-1.56	1.01 H	13	14.14	38.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2386.00	63.79 PK	74.00	-10.21	1.00 V	70	31.36	32.43
2	2386.00	52.65 AV	54.00	-1.35	1.00 V	70	20.22	32.43
3	*2412.00	108.84 PK			1.00 V	66	76.32	32.52
4	*2412.00	104.16 AV			1.00 V	66	71.64	32.52
5	4824.00	55.37 PK	74.00	-18.63	1.00 V	359	17.07	38.30
6	4824.00	51.44 AV	54.00	-2.56	1.00 V	359	13.14	38.30

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	24deg. C, 64%RH 1024hPa	TESTED BY	Brad Wu

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	99.82 PK			1.01 H	6	67.22	32.60
2	*2437.00	95.20 AV			1.01 H	6	62.60	32.60
3	4874.00	55.51 PK	74.00	-18.49	1.33 H	28	17.01	38.50
4	4874.00	51.19 AV	54.00	-2.81	1.33 H	28	12.69	38.50
5	7311.00	60.38 PK	74.00	-13.62	1.56 H	321	15.90	44.48
6	7311.00	52.38 AV	54.00	-1.62	1.56 H	321	7.90	44.48
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	108.33 PK			1.01 V	69	75.73	32.60
2	*2437.00	103.65 AV			1.01 V	69	71.05	32.60
3	4874.00	55.37 PK	74.00	-18.63	1.02 V	27	16.87	38.50
4	4874.00	51.16 AV	54.00	-2.84	1.02 V	27	12.66	38.50
5	7311.00	58.26 PK	74.00	-15.74	1.13 V	219	13.78	44.48
6	7311.00	50.21 AV	54.00	-3.79	1.13 V	219	5.73	44.48

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	24deg. C, 64%RH 1024hPa	TESTED BY	Brad Wu

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	99.21 PK			1.00 H	225	66.53	32.68
2	*2462.00	94.61 AV			1.00 H	225	61.93	32.68
3	2483.50	57.87 PK	74.00	-16.13	1.00 H	225	25.11	32.76
4	2483.50	46.57 AV	54.00	-7.43	1.00 H	225	13.81	32.76
5	4924.00	54.54 PK	74.00	-19.46	1.02 H	41	15.90	38.64
6	4924.00	48.68 AV	54.00	-5.32	1.02 H	41	10.04	38.64
7	7386.00	61.04 PK	74.00	-12.96	1.33 H	285	16.41	44.63
8	7386.00	52.92 AV	54.00	-1.08	1.33 H	285	8.29	44.63
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	107.84 PK			1.16 V	80	75.16	32.68
2	*2462.00	103.12 AV			1.16 V	80	70.44	32.68
3	2483.50	59.52 PK	74.00	-14.48	1.16 V	80	26.76	32.76
4	2483.50	49.72 AV	54.00	-4.28	1.16 V	80	16.96	32.76
5	4924.00	53.50 PK	74.00	-20.50	1.15 V	3	14.86	38.64
6	4924.00	48.64 AV	54.00	-5.36	1.15 V	3	10.00	38.64
7	7386.00	58.78 PK	74.00	-15.22	1.86 V	0	14.15	44.63
8	7386.00	49.88 AV	54.00	-4.12	1.86 V	0	5.25	44.63

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	24deg. C, 64%RH 1024hPa	TESTED BY	Brad Wu

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	57.48 PK	74.00	-16.52	1.00 H	151	25.04	32.44
2	2390.00	45.93 AV	54.00	-8.07	1.00 H	151	13.49	32.44
3	*2412.00	98.69 PK			1.00 H	151	66.17	32.52
4	*2412.00	88.63 AV			1.00 H	151	56.11	32.52
5	4824.00	50.39 PK	74.00	-23.61	1.08 H	232	12.09	38.30
6	4824.00	38.94 AV	54.00	-15.06	1.08 H	232	0.64	38.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	66.58 PK	74.00	-7.42	1.00 V	70	34.14	32.44
2	2390.00	52.03 AV	54.00	-1.97	1.00 V	70	19.59	32.44
3	*2412.00	108.76 PK			1.00 V	66	76.24	32.52
4	*2412.00	98.50 AV			1.00 V	66	65.98	32.52
5	4824.00	50.15 PK	74.00	-23.85	1.07 V	256	11.85	38.30
6	4824.00	38.84 AV	54.00	-15.16	1.07 V	256	0.54	38.30

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	24deg. C, 64%RH 1024hPa	TESTED BY	Brad Wu

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			1.01 H	153	69.21	32.60
2	*2437.00	91.75 AV			1.01 H	153	59.15	32.60
3	4874.00	56.03 PK	74.00	-17.97	1.14 H	238	17.53	38.50
4	4874.00	43.19 AV	54.00	-10.81	1.14 H	238	4.69	38.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2385.00	65.80 PK	74.00	-8.20	1.00 V	43	33.38	32.42
2	2385.00	52.88 AV	54.00	-1.12	1.00 V	43	20.46	32.42
3	*2437.00	112.12 PK			1.00 V	71	79.52	32.60
4	*2437.00	101.02 AV			1.00 V	71	68.42	32.60
5	2489.00	64.59 PK	74.00	-9.41	1.00 V	43	31.82	32.77
6	2489.00	52.67 AV	54.00	-1.33	1.00 V	43	19.90	32.77
7	4874.00	56.36 PK	74.00	-17.64	1.10 V	25	17.86	38.50
8	4874.00	43.58 AV	54.00	-10.42	1.10 V	25	5.08	38.50

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

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

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

4. Margin value = Emission level – Limit value.

5. " * ": 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	24deg. C, 64%RH 1024hPa	TESTED BY	Brad Wu

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	98.83 PK			1.01 H	152	66.15	32.68
2	*2462.00	88.81 AV			1.01 H	152	56.13	32.68
3	2483.50	58.92 PK	74.00	-15.08	1.01 H	152	26.16	32.76
4	2483.50	47.24 AV	54.00	-6.76	1.01 H	152	14.48	32.76
5	4924.00	50.86 PK	74.00	-23.14	1.17 H	231	12.22	38.64
6	4924.00	39.21 AV	54.00	-14.79	1.17 H	231	0.57	38.64
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	108.93 PK			1.00 V	26	76.25	32.68
2	*2462.00	98.06 AV			1.00 V	26	65.38	32.68
3	2483.50	71.39 PK	74.00	-2.61	1.00 V	28	38.63	32.76
4	2483.50	52.90 AV	54.00	-1.10	1.00 V	28	20.14	32.76
5	4924.00	50.23 PK	74.00	-23.77	1.01 V	236	11.59	38.64
6	4924.00	38.94 AV	54.00	-15.06	1.01 V	236	0.30	38.64

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	24deg. C, 64%RH 1024hPa	TESTED BY	Brad Wu

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	57.69 PK	74.00	-16.31	1.01 H	156	25.25	32.44
2	2390.00	46.11 AV	54.00	-7.89	1.01 H	156	13.67	32.44
3	*2412.00	97.53 PK			1.01 H	156	65.01	32.52
4	*2412.00	87.50 AV			1.01 H	156	54.98	32.52
5	4824.00	50.48 PK	74.00	-23.52	1.06 H	238	12.18	38.30
6	4824.00	39.15 AV	54.00	-14.85	1.06 H	238	0.85	38.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	69.12 PK	74.00	-4.88	1.00 V	42	36.68	32.44
2	2390.00	52.56 AV	54.00	-1.44	1.00 V	42	20.12	32.44
3	*2412.00	107.92 PK			1.00 V	66	75.40	32.52
4	*2412.00	97.56 AV			1.00 V	66	65.04	32.52
5	4824.00	49.95 PK	74.00	-24.05	1.04 V	213	11.65	38.30
6	4824.00	38.68 AV	54.00	-15.32	1.04 V	213	0.38	38.30

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	24deg. C, 64%RH 1024hPa	TESTED BY	Brad Wu

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	101.65 PK			1.03 H	162	69.05	32.60
2	*2437.00	91.62 AV			1.03 H	162	59.02	32.60
3	4874.00	50.86 PK	74.00	-23.14	1.13 H	239	12.36	38.50
4	4874.00	39.62 AV	54.00	-14.38	1.13 H	239	1.12	38.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.08 PK	74.00	-6.92	1.00 V	69	34.64	32.44
2	2390.00	52.94 AV	54.00	-1.06	1.00 V	69	20.50	32.44
3	*2437.00	112.32 PK			1.00 V	70	79.72	32.60
4	*2437.00	101.96 AV			1.00 V	70	69.36	32.60
5	2490.00	65.88 PK	74.00	-8.12	1.00 V	24	33.10	32.78
6	**2490.00**	**52.95 AV**	**54.00**	**-1.05**	**1.00 V**	**24**	**20.17**	**32.78**
7	4874.00	56.19 PK	74.00	-17.81	1.09 V	10	17.69	38.50
8	4874.00	43.21 AV	54.00	-10.79	1.09 V	10	4.71	38.50

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

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

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

4. Margin value = Emission level – Limit value.

5. " * ": 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	24deg. C, 64%RH 1024hPa	TESTED BY	Brad Wu

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	98.24 PK			1.03 H	161	65.56	32.68
2	*2462.00	88.21 AV			1.03 H	161	55.53	32.68
3	2483.50	58.95 PK	74.00	-15.05	1.03 H	161	26.19	32.76
4	2483.50	47.43 AV	54.00	-6.57	1.03 H	161	14.67	32.76
5	4924.00	50.95 PK	74.00	-23.05	1.12 H	63	12.31	38.64
6	4924.00	39.83 AV	54.00	-14.17	1.12 H	63	1.19	38.64
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	108.60 PK			1.00 V	26	75.92	32.68
2	*2462.00	97.98 AV			1.00 V	26	65.30	32.68
3	2483.50	68.78 PK	74.00	-5.22	1.01 V	28	36.02	32.76
4	2483.50	52.81 AV	54.00	-1.19	1.01 V	28	20.05	32.76
5	4924.00	50.13 PK	74.00	-23.87	1.05 V	222	11.49	38.64
6	4924.00	38.82 AV	54.00	-15.18	1.05 V	222	0.18	38.64

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	24deg. C, 64%RH 1024hPa	TESTED BY	Brad Wu

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	62.51 PK	74.00	-11.49	1.01 H	10	30.07	32.44
2	2390.00	48.32 AV	54.00	-5.68	1.01 H	10	15.88	32.44
3	*2422.00	93.38 PK			1.01 H	10	60.83	32.55
4	*2422.00	83.04 AV			1.01 H	10	50.49	32.55
5	4844.00	49.65 PK	74.00	-24.35	1.16 H	13	11.27	38.38
6	4844.00	40.28 AV	54.00	-13.72	1.16 H	13	1.90	38.38
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	2390.00	66.78 PK	74.00	-7.22	1.27 V	9	34.34	32.44
2	2390.00	52.52 AV	54.00	-1.48	1.27 V	9	20.08	32.44
3	*2422.00	102.40 PK			1.22 V	69	69.85	32.55
4	*2422.00	91.85 AV			1.22 V	69	59.30	32.55
5	4844.00	49.68 PK	74.00	-24.32	1.05 V	22	11.30	38.38
6	4844.00	38.56 AV	54.00	-15.44	1.05 V	22	0.18	38.38

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	24deg. C, 64%RH 1024hPa	TESTED BY	Brad Wu

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	98.33 PK			1.00 H	9	65.73	32.60
2	*2437.00	87.96 AV			1.00 H	9	55.36	32.60
3	4874.00	49.41 PK	74.00	-24.59	1.18 H	1	10.91	38.50
4	4874.00	40.16 AV	54.00	-13.84	1.18 H	1	1.66	38.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.17 PK	74.00	-6.83	1.00 V	70	34.73	32.44
2	2390.00	52.67 AV	54.00	-1.33	1.00 V	70	20.23	32.44
3	*2437.00	106.09 PK			1.20 V	67	73.49	32.60
4	*2437.00	95.83 AV			1.20 V	67	63.23	32.60
5	2483.50	66.59 PK	74.00	-7.41	1.16 V	67	33.83	32.76
6	2483.50	52.17 AV	54.00	-1.83	1.16 V	67	19.41	32.76
7	4874.00	49.84 PK	74.00	-24.16	1.04 V	329	11.34	38.50
8	4874.00	38.92 AV	54.00	-15.08	1.04 V	329	0.42	38.50

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

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

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

4. Margin value = Emission level – Limit value.

5. " * ": 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	24deg. C, 64%RH 1024hPa	TESTED BY	Brad Wu

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	93.86 PK			1.02 H	12	61.21	32.65
2	*2452.00	83.59 AV			1.02 H	12	50.94	32.65
3	2483.50	50.45 PK	74.00	-23.55	1.02 H	12	17.69	32.76
4	2483.50	48.05 AV	54.00	-5.95	1.02 H	12	15.29	32.76
5	4904.00	49.86 PK	74.00	-24.14	1.10 H	135	11.25	38.61
6	4904.00	40.44 AV	54.00	-13.56	1.10 H	135	1.83	38.61
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	101.82 PK			1.00 V	24	69.17	32.65
2	*2452.00	91.29 AV			1.00 V	24	58.64	32.65
3	2483.50	66.31 PK	74.00	-7.69	1.23 V	0	33.55	32.76
4	2483.50	52.85 AV	54.00	-1.15	1.23 V	0	20.09	32.76
5	4904.00	49.52 PK	74.00	-24.48	1.09 V	34	10.91	38.61
6	4904.00	38.48 AV	54.00	-15.52	1.09 V	34	-0.13	38.61

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：802.11g OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1024hPa	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	105.73	30.24 QP	43.50	-13.26	1.50 H	271	18.72	11.52
2	249.95	44.87 QP	46.00	-1.13	1.06 H	255	31.04	13.83
3	500.42	33.02 QP	46.00	-12.98	1.25 H	262	12.58	20.44
4	533.47	39.17 QP	46.00	-6.83	1.25 H	103	18.05	21.13
5	640.41	40.20 QP	46.00	-5.80	1.00 H	148	16.67	23.53
6	854.28	41.10 QP	46.00	-4.90	1.50 H	16	14.09	27.01
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.60	31.22 QP	40.00	-8.78	1.47 V	245	16.52	14.71
2	55.18	37.50 QP	40.00	-2.50	1.50 V	10	24.47	13.03
3	125.17	37.02 QP	43.50	-6.48	1.00 V	235	25.29	11.73
4	249.60	42.77 QP	46.00	-3.23	1.00 V	85	28.96	13.80
5	500.42	37.92 QP	46.00	-8.08	1.25 V	184	17.49	20.44
6	640.41	40.13 QP	46.00	-5.87	1.50 V	88	16.61	23.53

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 6	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1024hPa	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	249.60	42.49 QP	46.00	-3.51	1.00 H	241	28.68	13.80
2	319.60	31.88 QP	46.00	-14.12	1.00 H	199	17.28	14.60
3	500.42	38.64 QP	46.00	-7.36	1.50 H	97	18.20	20.44
4	533.47	39.37 QP	46.00	-6.63	1.25 H	115	18.24	21.13
5	640.41	39.86 QP	46.00	-6.14	1.00 H	172	16.33	23.53
6	854.28	40.97 QP	46.00	-5.03	2.00 H	343	13.96	27.01
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	55.18	36.98 QP	40.00	-3.02	1.25 V	338	23.95	13.03
2	125.17	37.76 QP	43.50	-5.74	1.00 V	244	26.03	11.73
3	249.60	41.29 QP	46.00	-4.71	1.00 V	79	27.49	13.80
4	500.42	42.94 QP	46.00	-3.06	1.00 V	157	22.51	20.44
5	640.41	39.71 QP	46.00	-6.29	1.50 V	118	16.18	23.53
6	854.28	35.69 QP	46.00	-10.31	1.00 V	190	8.68	27.01

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

NOTE: 1. The lower limit shall apply at the transition frequencies.

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

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100291	Nov. 19, 2008	Nov. 18, 2009
RF signal cable Woken	5D-FB	Cable-HYC01-01	Jan. 04, 2008	Jan. 03, 2009
LISN ROHDE & SCHWARZ	ESH3-Z5	100312	Jun. 13, 2008	Jun. 12, 2009
LISN ROHDE & SCHWARZ	ESH2-Z5	100104	Dec. 04, 2008	Dec. 03, 2009
Software ADT	ADT_Cond_ V7.3.6	NA	NA	NA

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

2. The test was performed in HwaYa Shielded Room 1.
3. The VCCI Site Registration No. is C-2040.

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.

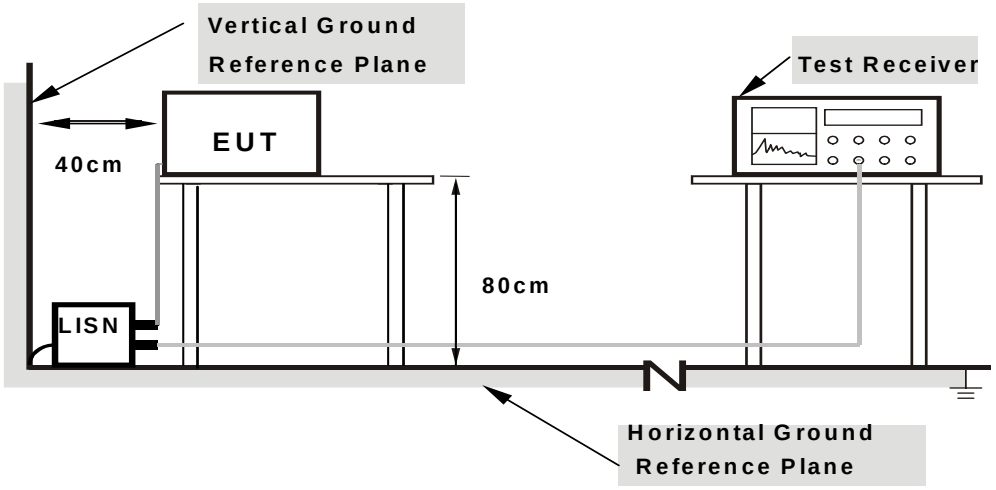
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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.

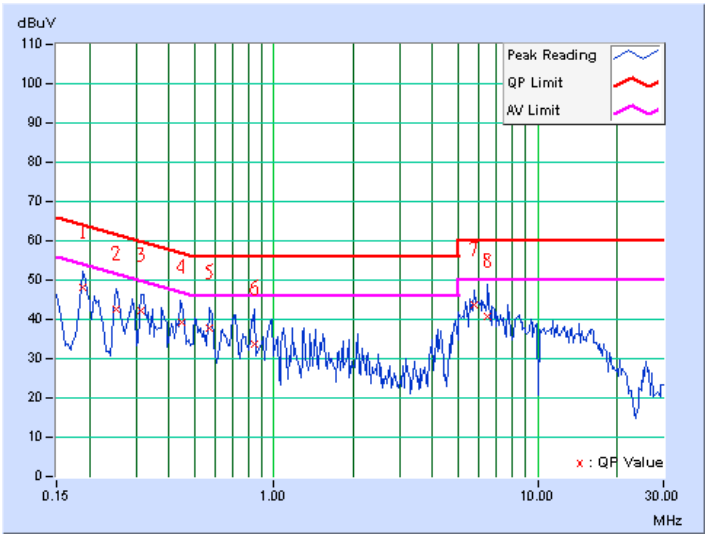
4.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA: 802.11g OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH, 1027hPa	TESTED BY	Antony Lee
TEST MODE	A		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.189	0.13	47.63	-	47.76	-	64.08	54.08	-16.32	-
2	0.252	0.13	42.00	-	42.13	-	61.71	51.71	-19.57	-
3	0.314	0.14	41.82	-	41.96	-	59.86	49.86	-17.91	-
4	0.447	0.14	38.84	-	38.98	-	56.93	46.93	-17.95	-
5	0.572	0.15	37.36	-	37.51	-	56.00	46.00	-18.49	-
6	0.845	0.17	33.07	-	33.24	-	56.00	46.00	-22.76	-
7	5.764	0.46	43.08	-	43.54	-	60.00	50.00	-16.46	-
8	6.475	0.49	40.34	-	40.83	-	60.00	50.00	-19.17	-

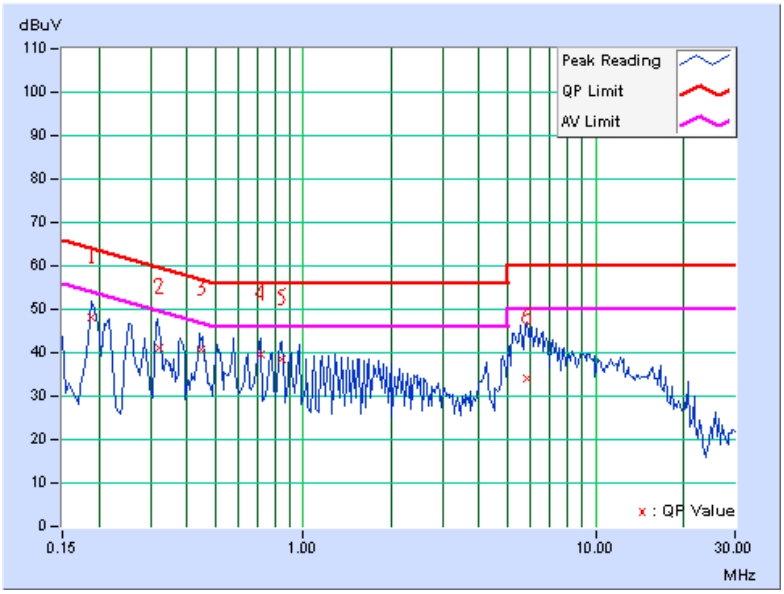
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH, 1027hPa	TESTED BY	Antony Lee
TEST MODE	A		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.189	0.15	47.67	-	47.82	-	64.08	54.08	-16.26	-
2	0.321	0.16	40.68	-	40.84	-	59.69	49.69	-18.86	-
3	0.447	0.16	40.35	-	40.51	-	56.93	46.93	-16.42	-
4	0.713	0.18	39.04	-	39.22	-	56.00	46.00	-16.78	-
5	0.841	0.19	38.05	-	38.24	-	56.00	46.00	-17.76	-
6	5.809	0.48	33.75	-	34.23	-	60.00	50.00	-25.77	-

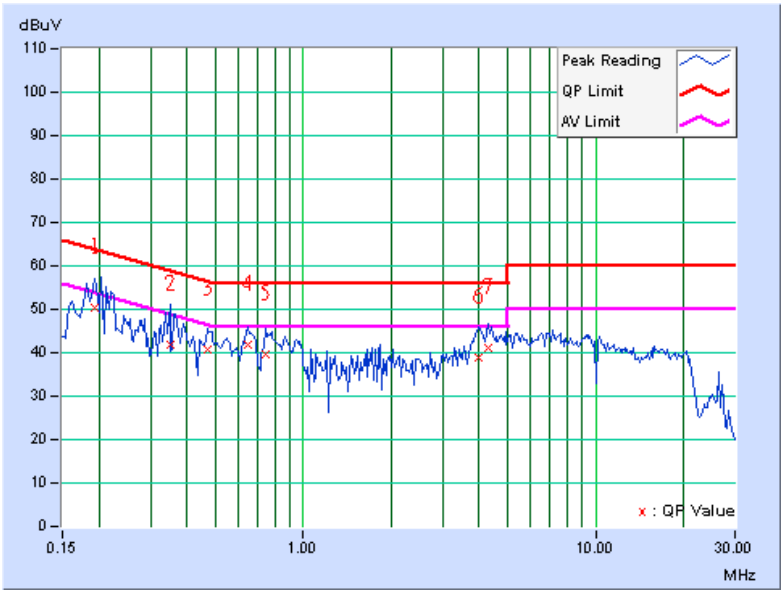
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH, 1027hPa	TESTED BY	Antony Lee
TEST MODE	B		

No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.193	0.13	49.83	-	49.96	-	63.91	53.91	-13.95	-
2	0.349	0.14	41.28	-	41.42	-	58.98	48.98	-17.56	-
3	0.470	0.14	40.35	-	40.49	-	56.51	46.51	-16.01	-
4	0.650	0.16	41.58	-	41.74	-	56.00	46.00	-14.26	-
5	0.744	0.16	39.22	-	39.38	-	56.00	46.00	-16.62	-
6	3.992	0.40	38.48	-	38.88	-	56.00	46.00	-17.12	-
7	4.273	0.41	40.70	-	41.11	-	56.00	46.00	-14.89	-

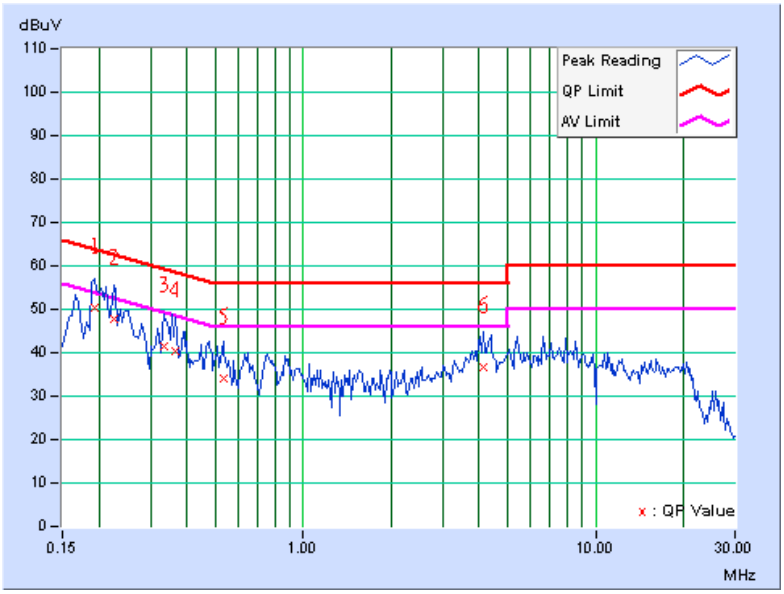
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	6.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	22deg. C, 65%RH, 1027hPa	TESTED BY	Antony Lee
TEST MODE	B		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	**0.193**	**0.15**	**50.09**	**-**	**50.24**	**-**	**63.91**	**53.91**	**-13.67**	**-**
2	0.224	0.15	47.25	-	47.40	-	62.66	52.66	-15.26	-
3	0.334	0.16	41.16	-	41.32	-	59.36	49.36	-18.04	-
4	0.365	0.16	39.83	-	39.99	-	58.62	48.62	-18.63	-
5	0.533	0.17	33.50	-	33.67	-	56.00	46.00	-22.33	-
6	4.148	0.42	36.08	-	36.50	-	56.00	46.00	-19.50	-

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.	DATE OF CALIBRATION	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100041	Apr. 22, 2008	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 100kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation.

4.3.5 TEST SETUP

4.3.6 EUT OPERATING CONDITIONS

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

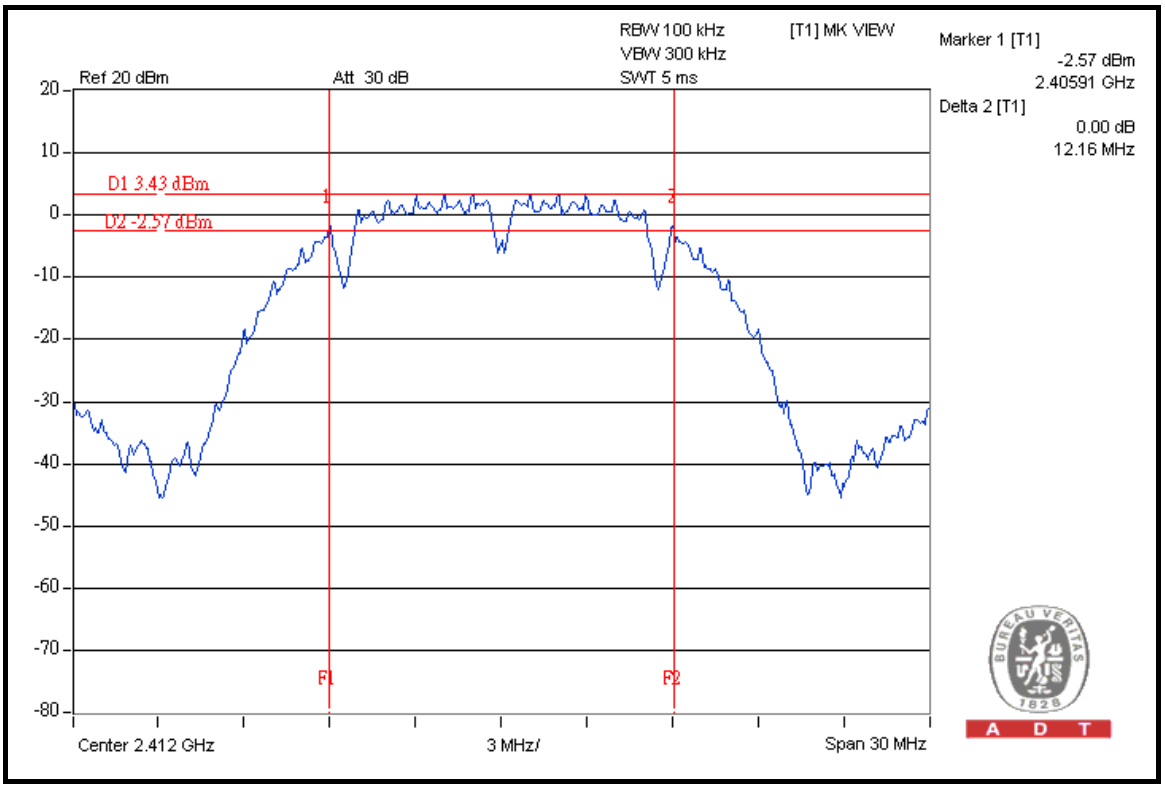
4.3.7 TEST RESULTS

802.11b DSSS MODULATION

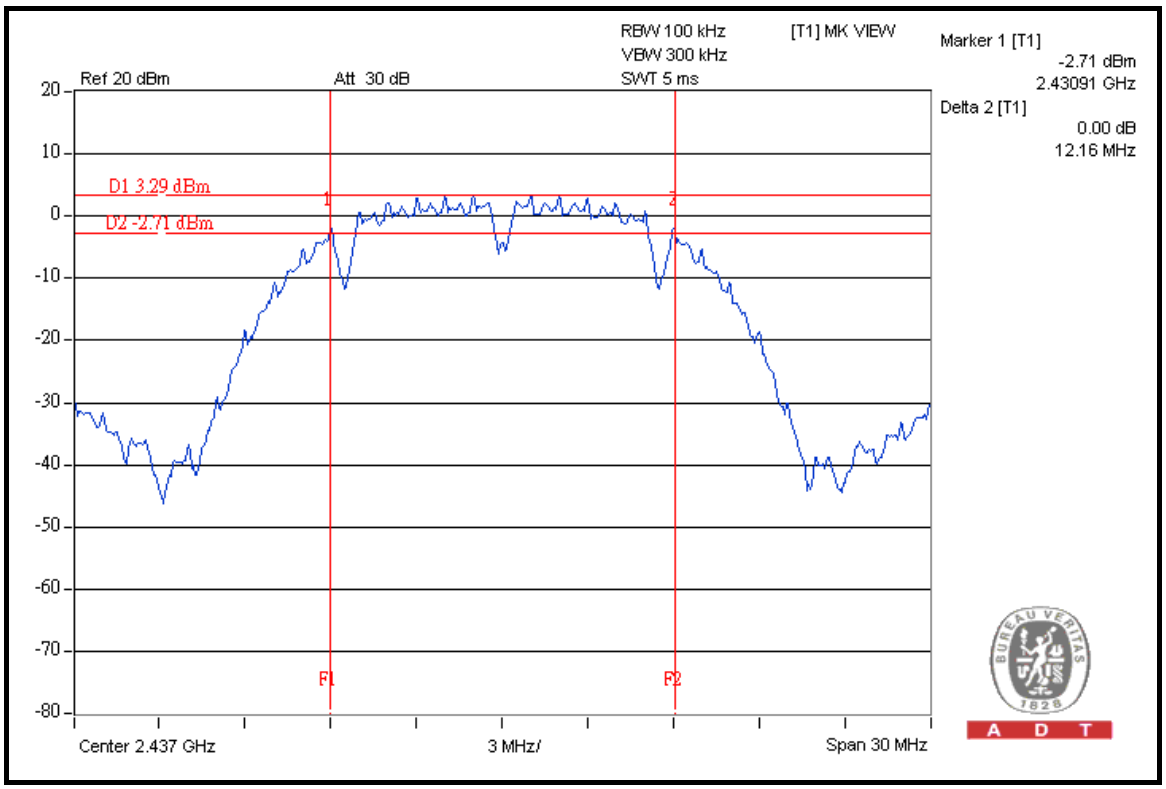
MODULATION TYPE	DBPSK	TRANSFER RATE	1.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 66%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	12.16	0.5	PASS
6	2437	12.16	0.5	PASS
11	2462	12.15	0.5	PASS

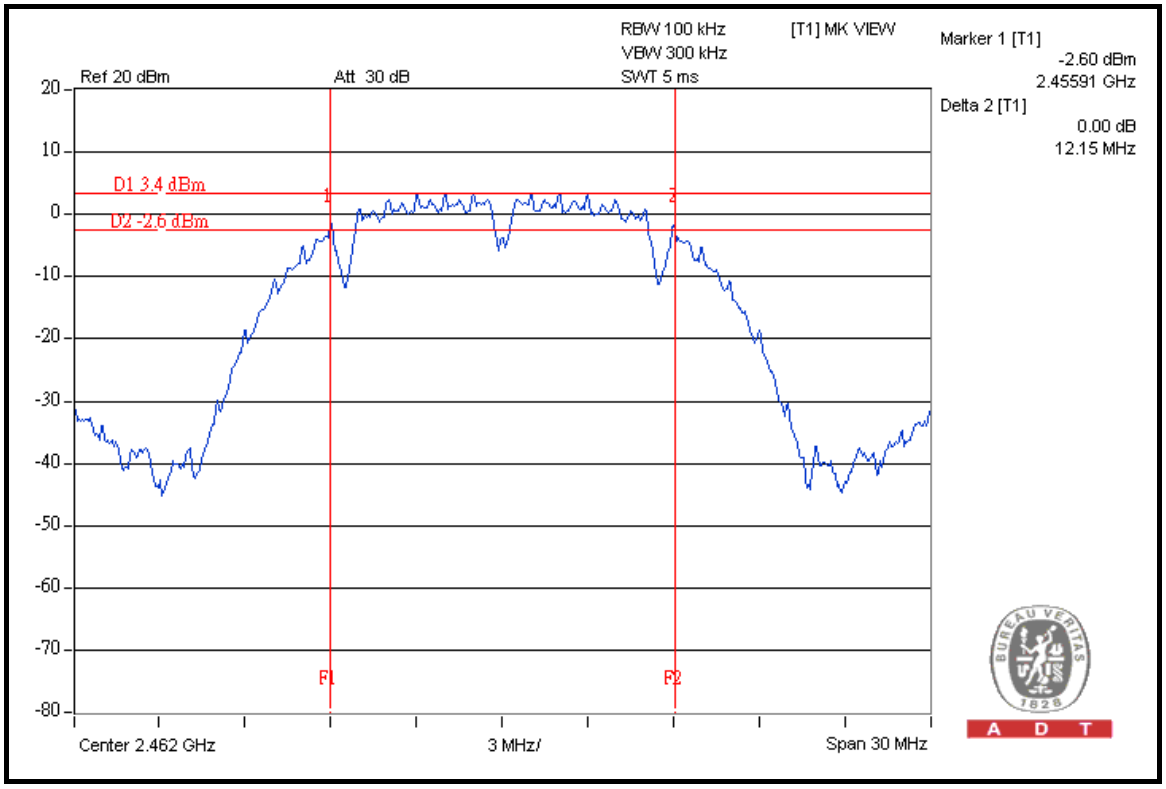
CH 1



CH 6


RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-2.71 dBm
2.43091 GHz
Delta 2 [T1]
0.00 dB
12.16 MHz
Ref 20 dBm
Att 30 dB
D1 3.29 dBm
D2 -2.71 dBm
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 2.437 GHz
3 MHz/
Span 30 MHz

CH 11

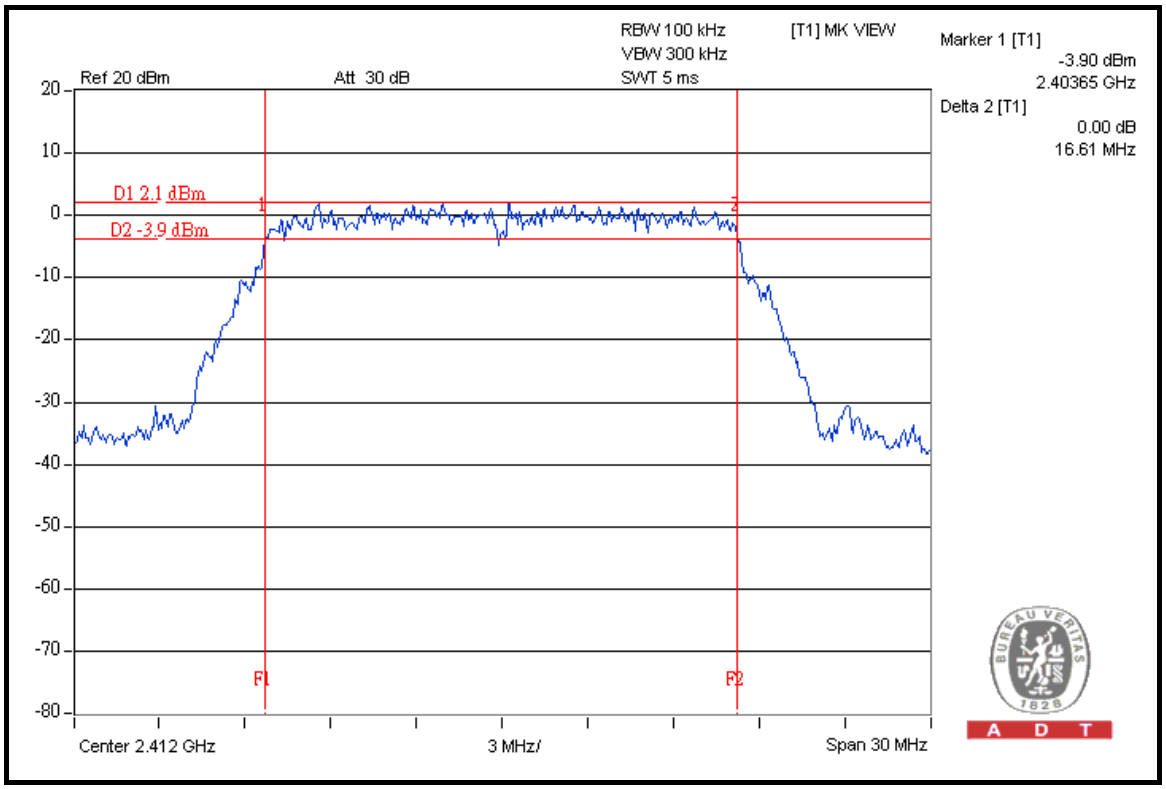

RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-2.60 dBm
2.45591 GHz
Delta 2 [T1]
0.00 dB
12.15 MHz
Ref 20 dBm
Att 30 dB
D1 3.4 dBm
D2 -2.6 dBm
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 2.462 GHz
3 MHz/
Span 30 MHz

802.11g OFDM MODULATION

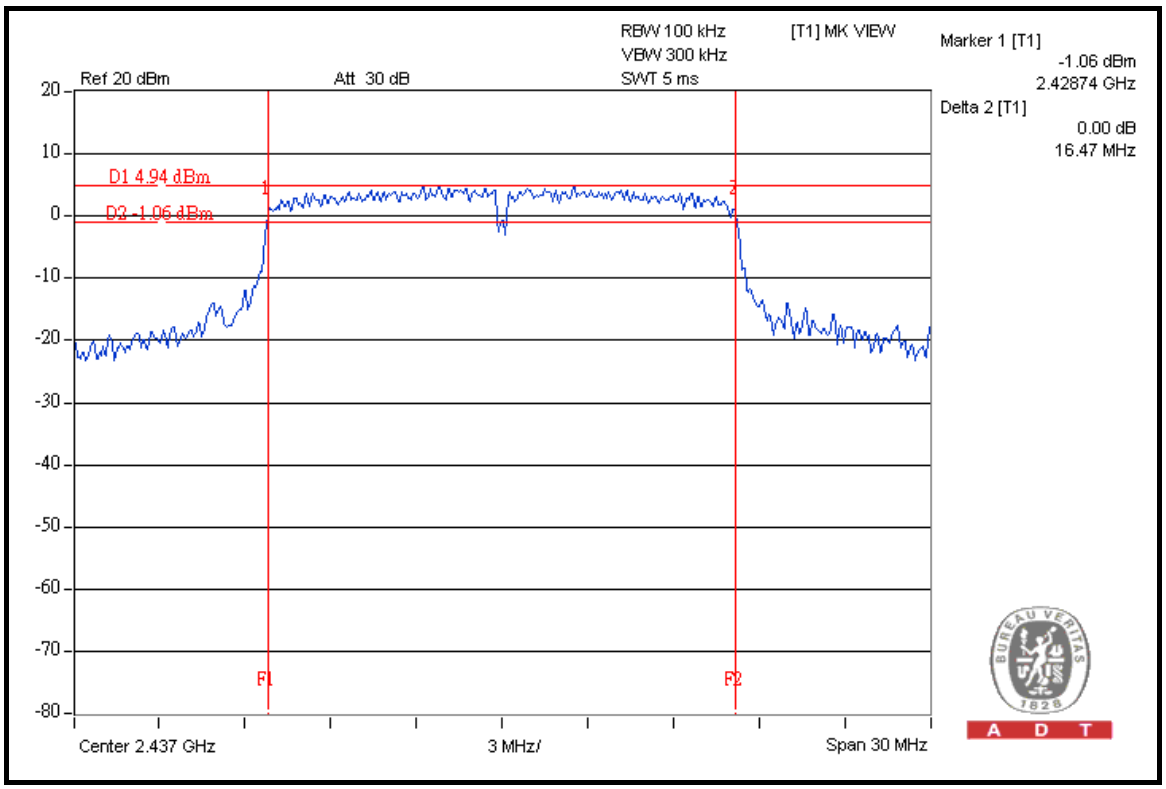
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 66%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.61	0.5	PASS
6	2437	16.47	0.5	PASS
11	2462	16.47	0.5	PASS

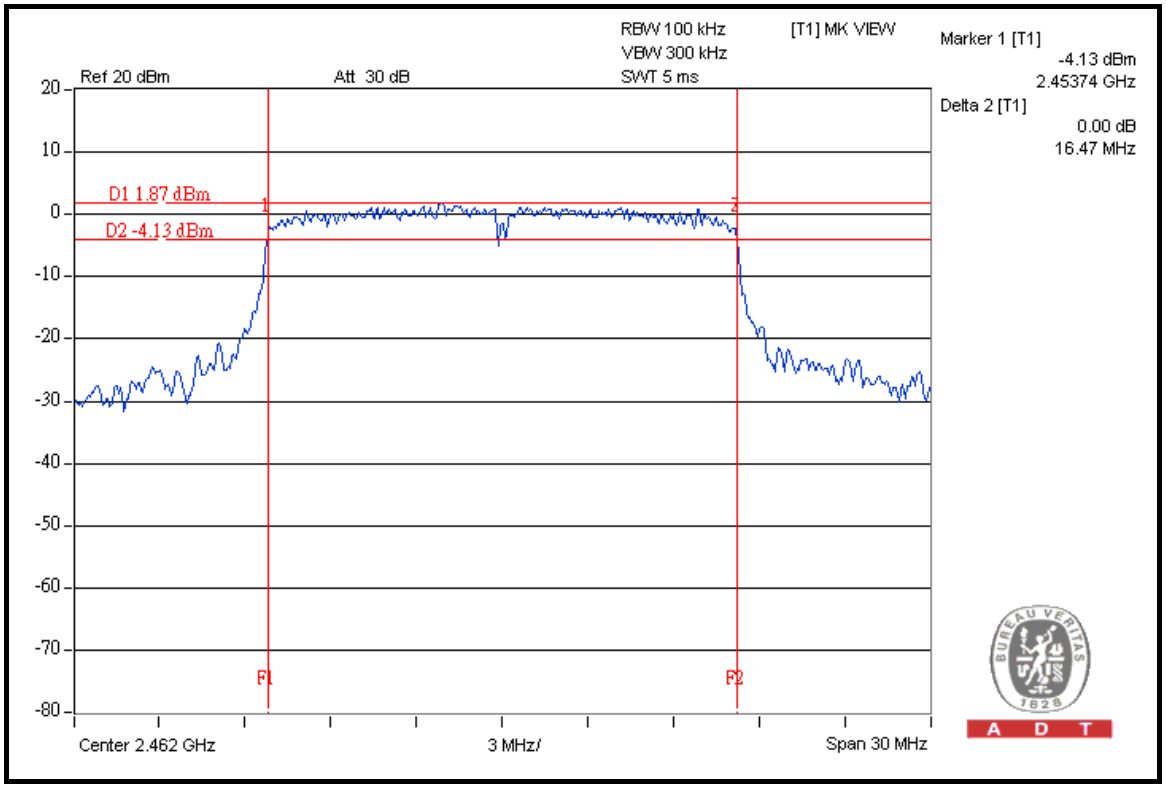
CH 1



CH 6


RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-1.06 dBm
2.42874 GHz
Delta 2 [T1]
0.00 dB
16.47 MHz
Ref 20 dBm
Att 30 dB
D1 4.94 dBm
D2 -1.06 dBm
F1
F2
Center 2.437 GHz
3 MHz/
Span 30 MHz

CH 11

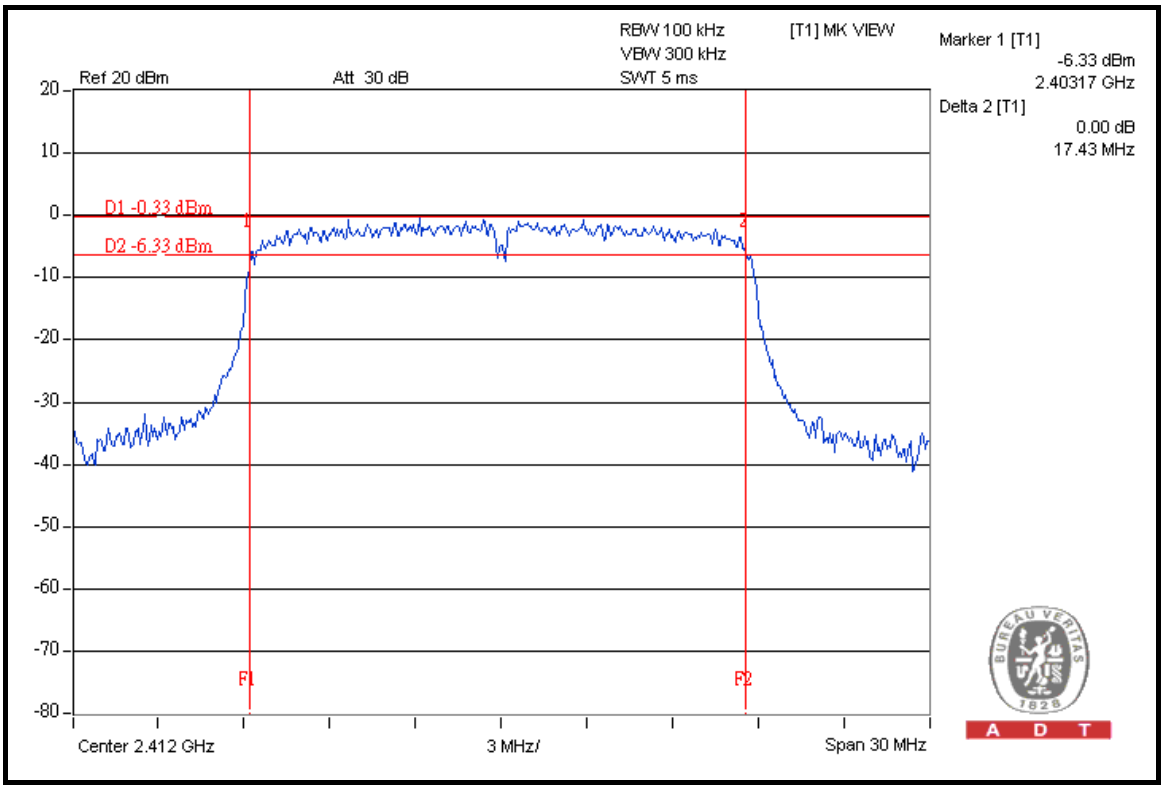

RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-4.13 dBm
2.45374 GHz
Delta 2 [T1]
0.00 dB
16.47 MHz
Ref 20 dBm
Att 30 dB
D1 1.87 dBm
D2 -4.13 dBm
F1
F2
Center 2.462 GHz
3 MHz/
Span 30 MHz

DRAFT 802.11n (20MHz) OFDM MODULATION

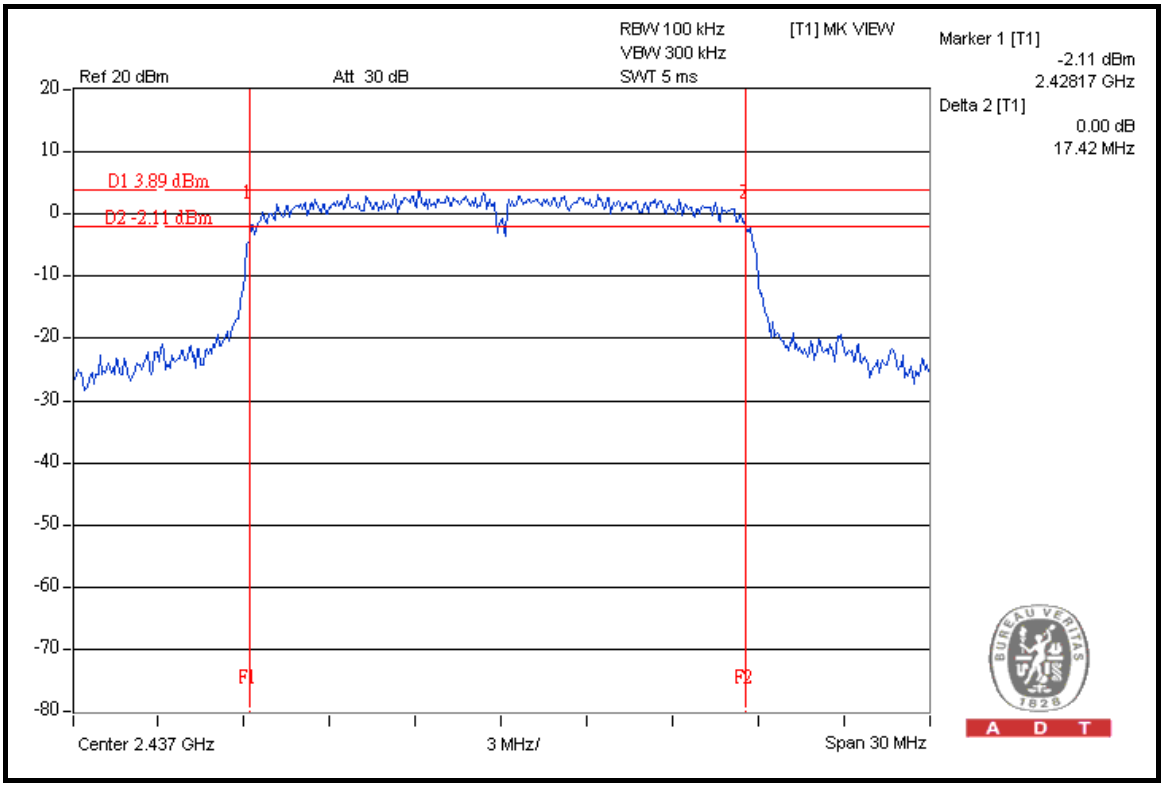
MODULATION TYPE	BPSK	**TRANSFER RATE**	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	23deg.C, 66%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	17.43	0.5	PASS
6	2437	17.42	0.5	PASS
11	2462	17.34	0.5	PASS

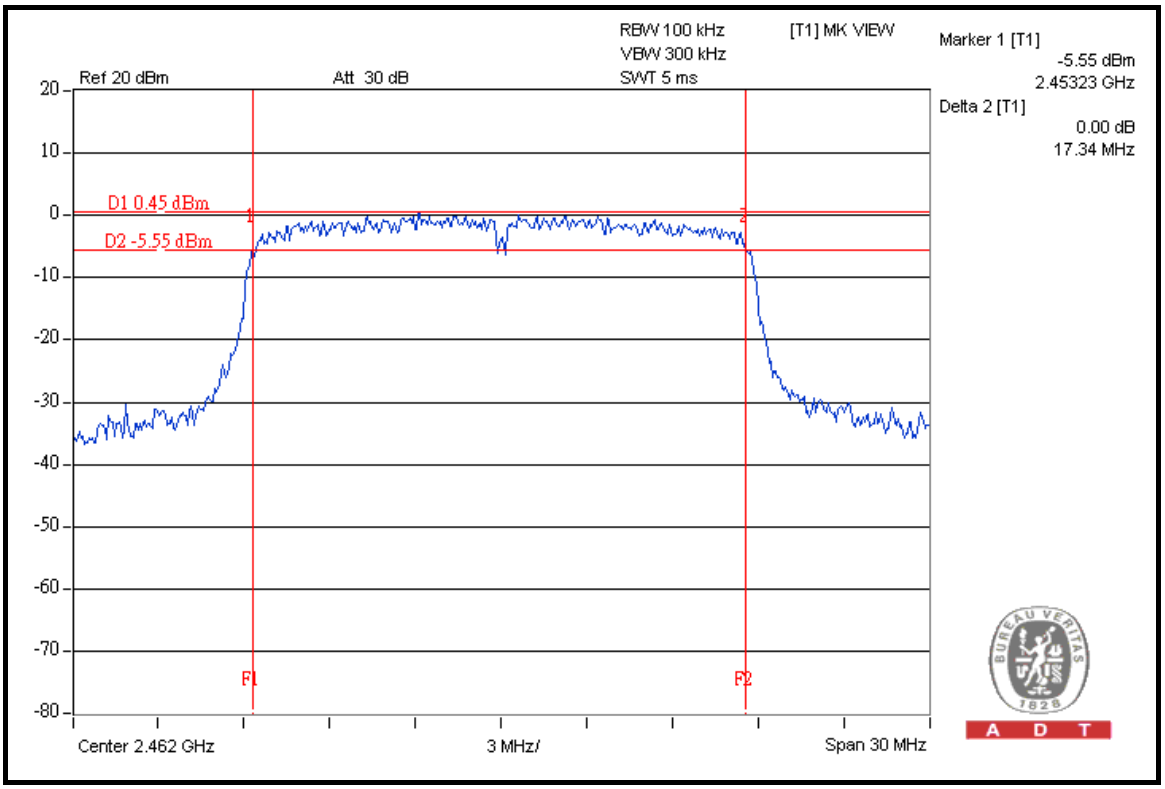
CH 1



CH 6


RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-2.11 dBm
2.42817 GHz
Delta 2 [T1]
0.00 dB
17.42 MHz
Ref 20 dBm
Att 30 dB
D1 3.89 dBm
D2 -2.11 dBm
F1
F2
Center 2.437 GHz
3 MHz/
Span 30 MHz

CH 11

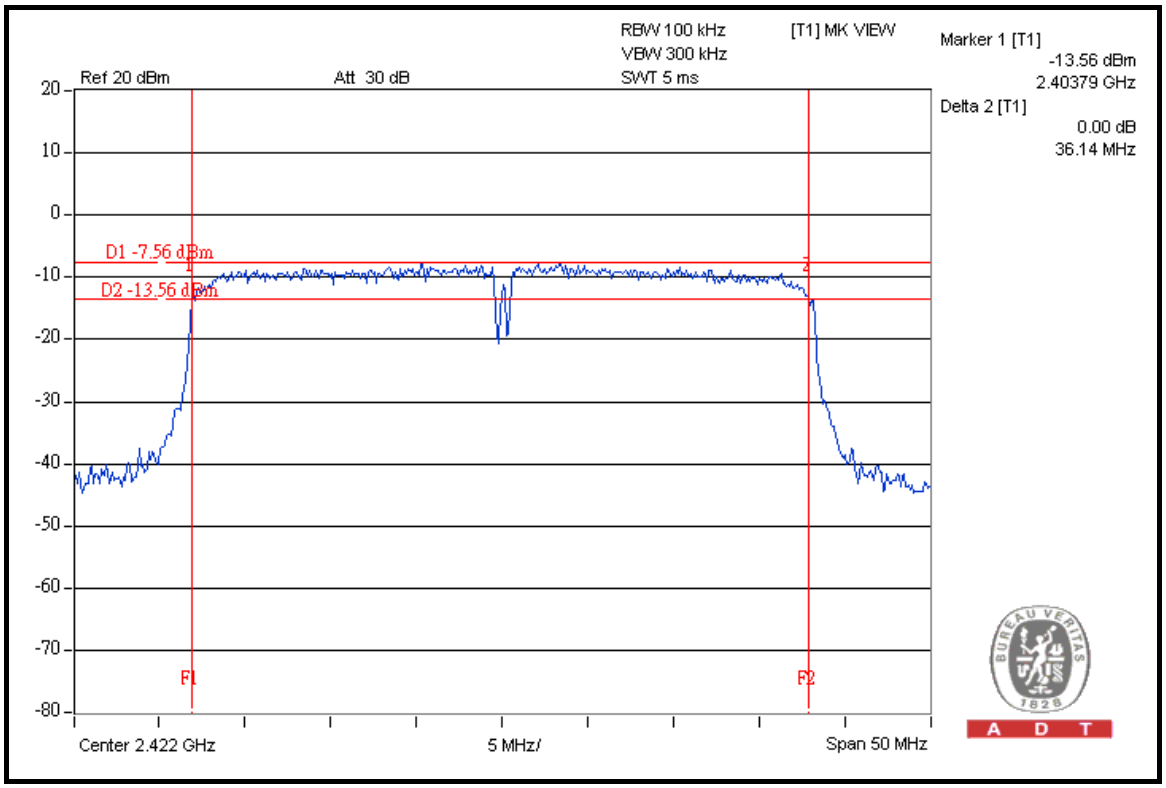

RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-5.55 dBm
2.45323 GHz
Delta 2 [T1]
0.00 dB
17.34 MHz
Ref 20 dBm
Att 30 dB
D1 0.45 dBm
D2 -5.55 dBm
F1
F2
Center 2.462 GHz
3 MHz/
Span 30 MHz

DRAFT 802.11n (40MHz) OFDM MODULATION

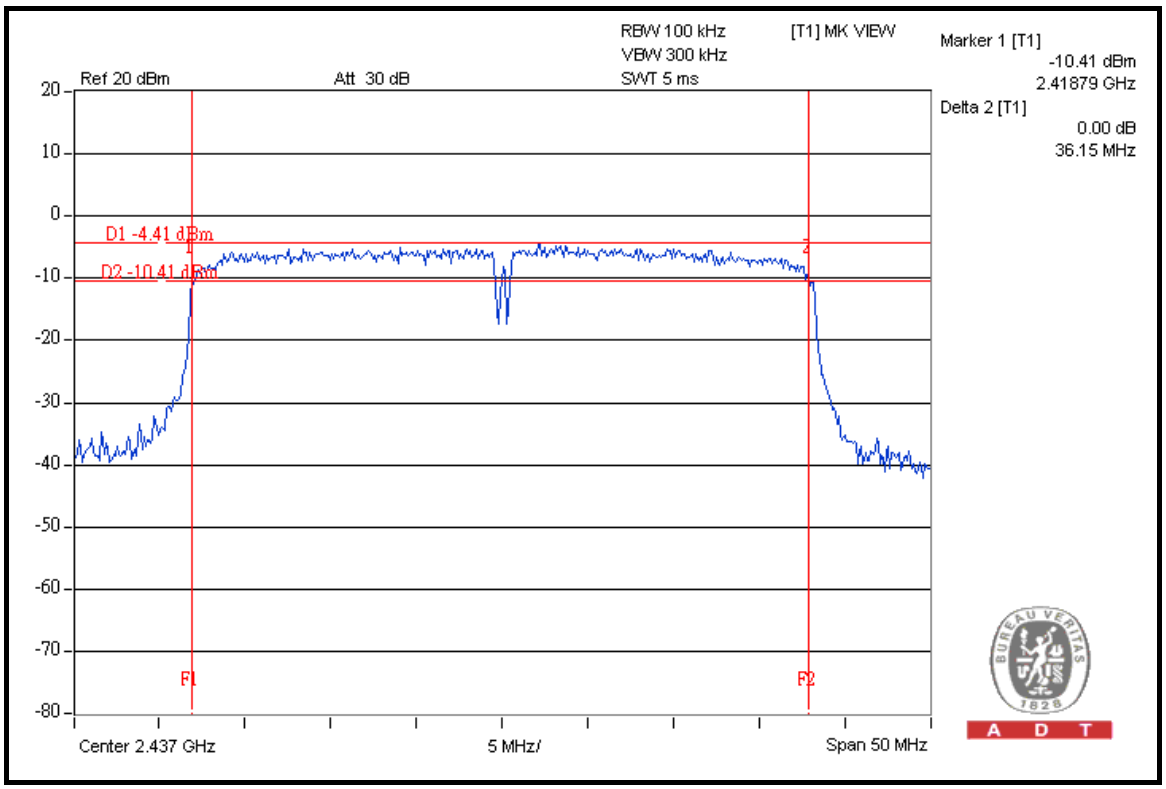
MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 66%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2422	36.14	0.5	PASS
4	2437	36.15	0.5	PASS
7	2452	36.43	0.5	PASS

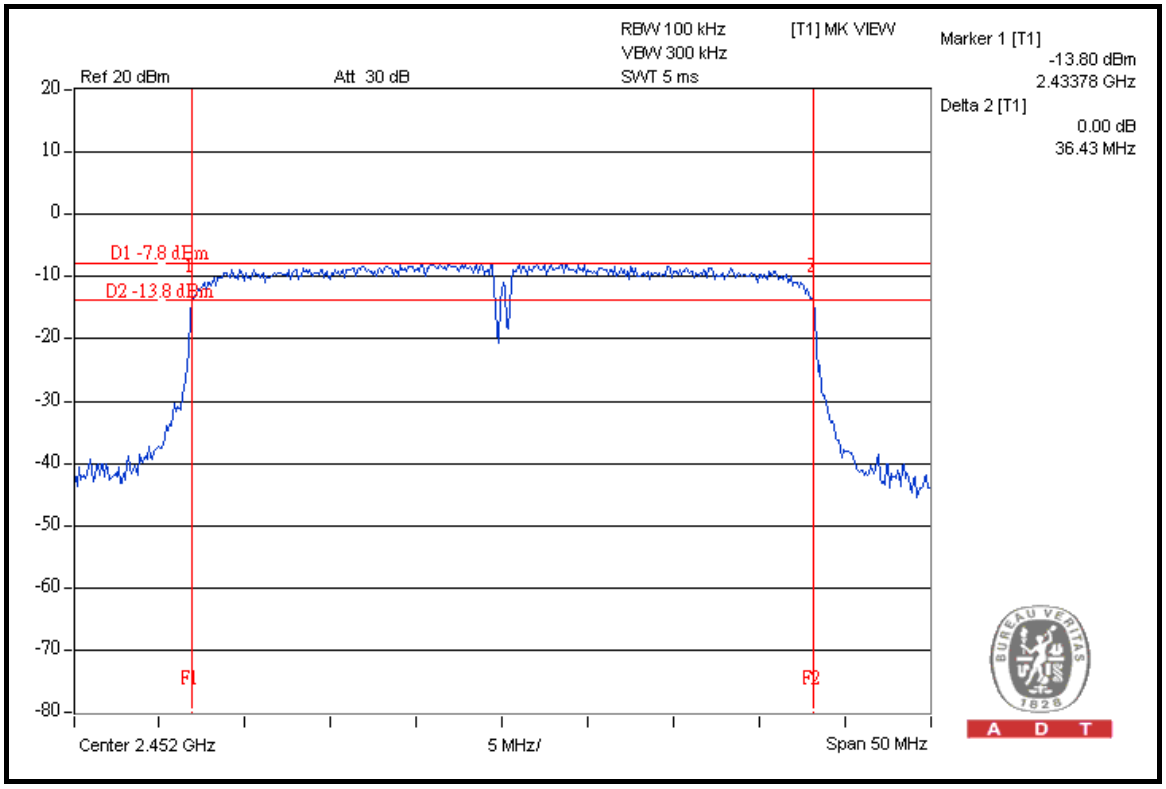
CH 1



CH 4


RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-10.41 dBm
2.41879 GHz
Delta 2 [T1]
0.00 dB
36.15 MHz
Ref 20 dBm
Att 30 dB
D1 -4.41 dBm
D2 -10.41 dBm
F1
F2
Center 2.437 GHz
5 MHz/
Span 50 MHz

CH 7


RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-13.80 dBm
2.43378 GHz
Delta 2 [T1]
0.00 dB
36.43 MHz
Ref 20 dBm
Att 30 dB
D1 -7.8 dBm
D2 -13.8 dBm
F1
F2
Center 2.452 GHz
5 MHz/
Span 50 MHz

4.4 MAXIMUM PEAK OUTPUT POWER

4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

4.4.2 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	CALIBRATED UNTIL
High Speed Peak Power Meter	ML2495A	0824012	Aug. 04, 2008	Aug. 03, 2009
Power Sensor	MA2444B	0738138	Aug. 04, 2008	Aug. 03, 2009

NOTE:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Measurement Bandwidth of ML2495A is 65MHz greater than 6dB bandwidth of emission.

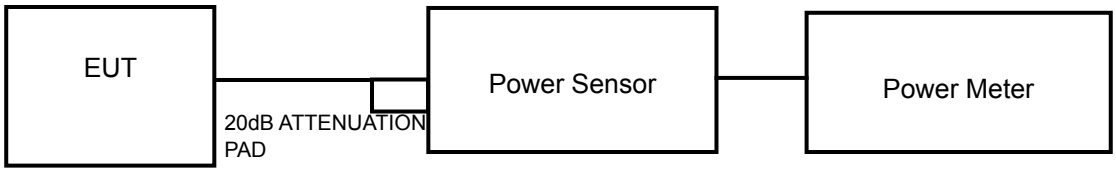
4.4.3 TEST PROCEDURES

A power sensor was used on the output port of the EUT. A power meter was used to read the response of the power sensor. 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, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 66%RH, 991hPa
TESTED BY	Brad Wu		

CHAN	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	50.466	17.03	30	PASS
6	2437	50.582	17.04	30	PASS
11	2462	50.816	17.06	30	PASS

802.11g OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 66%RH, 991hPa
TESTED BY	Brad Wu		

CHAN	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	159.221	22.02	30	PASS
6	2437	320.627	25.06	30	PASS
11	2462	160.325	22.05	30	PASS

DRAFT 802.11n (20MHz) OFDM MODULATION

MODULATION TYPE	BPSK	**TRANSFER RATE**	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	23deg.C, 66%RH, 991hPa
TESTED BY	Brad Wu		

CHAN	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	126.765	21.03	30	PASS
6	2437	319.890	25.05	30	PASS
11	2462	161.436	22.08	30	PASS

DRAFT 802.11n (40MHz) OFDM MODULATION

MODULATION TYPE	BPSK	**TRANSFER RATE**	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	23deg.C, 66%RH, 991hPa
TESTED BY	Brad Wu		

CHAN	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2422	63.533	18.03	30	PASS
4	2437	127.350	21.05	30	PASS
7	2452	63.973	18.06	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.	DATE OF CALIBRATION	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100041	Apr. 22, 2008	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.

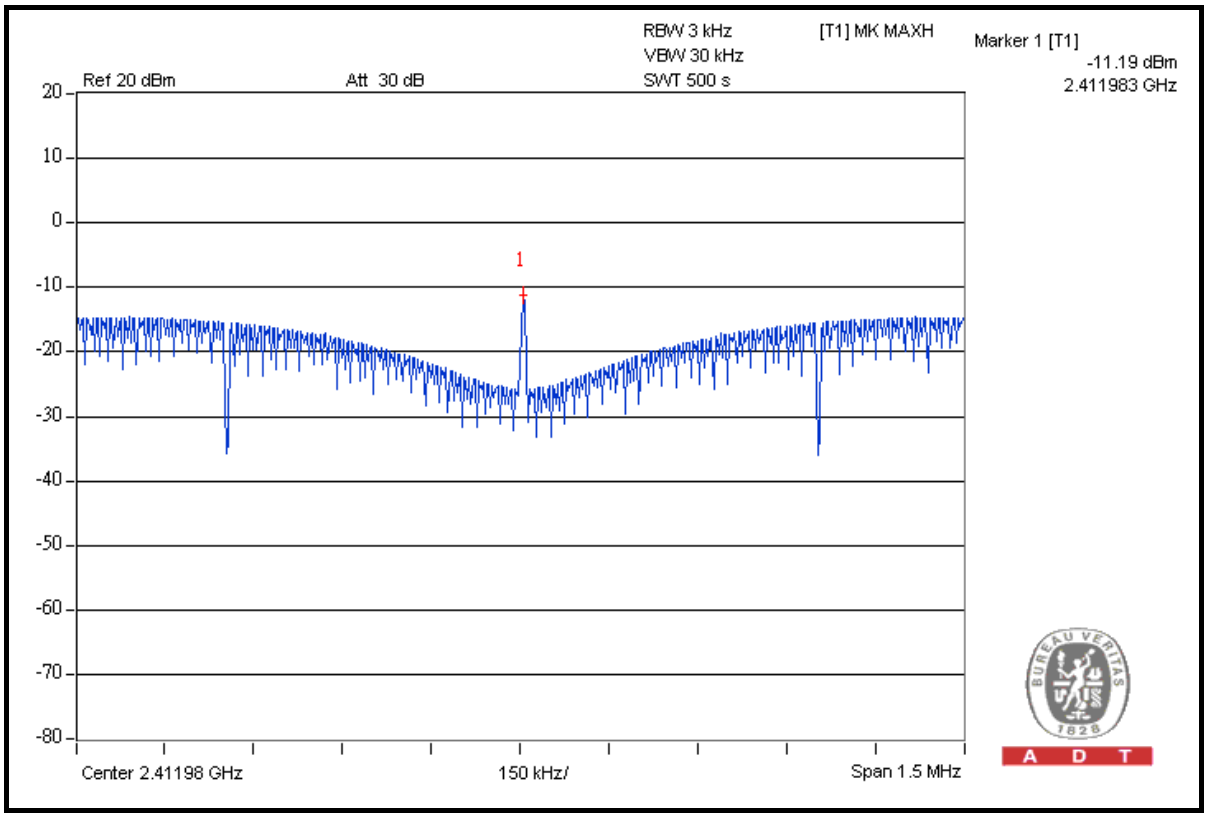
4.5.7 TEST RESULTS

802.11b DSSS MODULATION

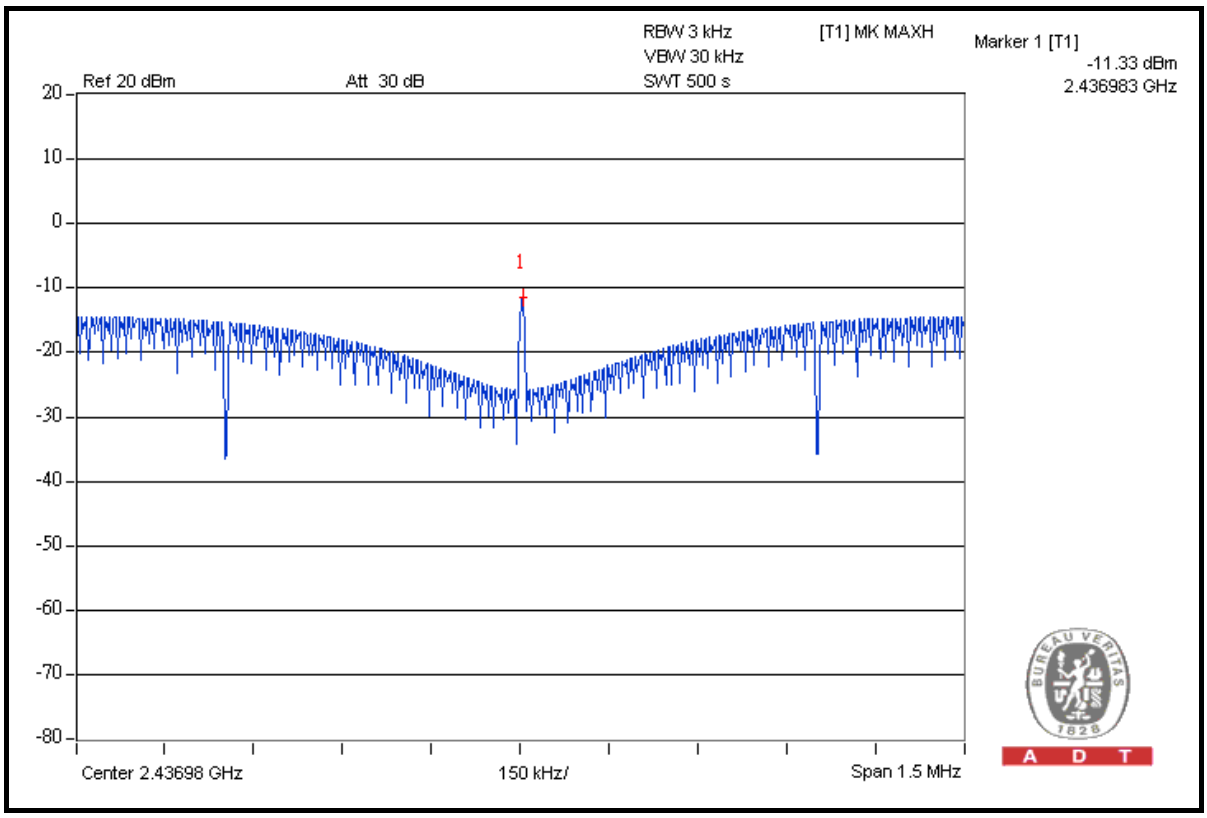
MODULATION TYPE	DBPSK	TRANSFER RATE	1.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 66%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-11.19	8	PASS
6	2437	-11.33	8	PASS
11	2462	-11.34	8	PASS

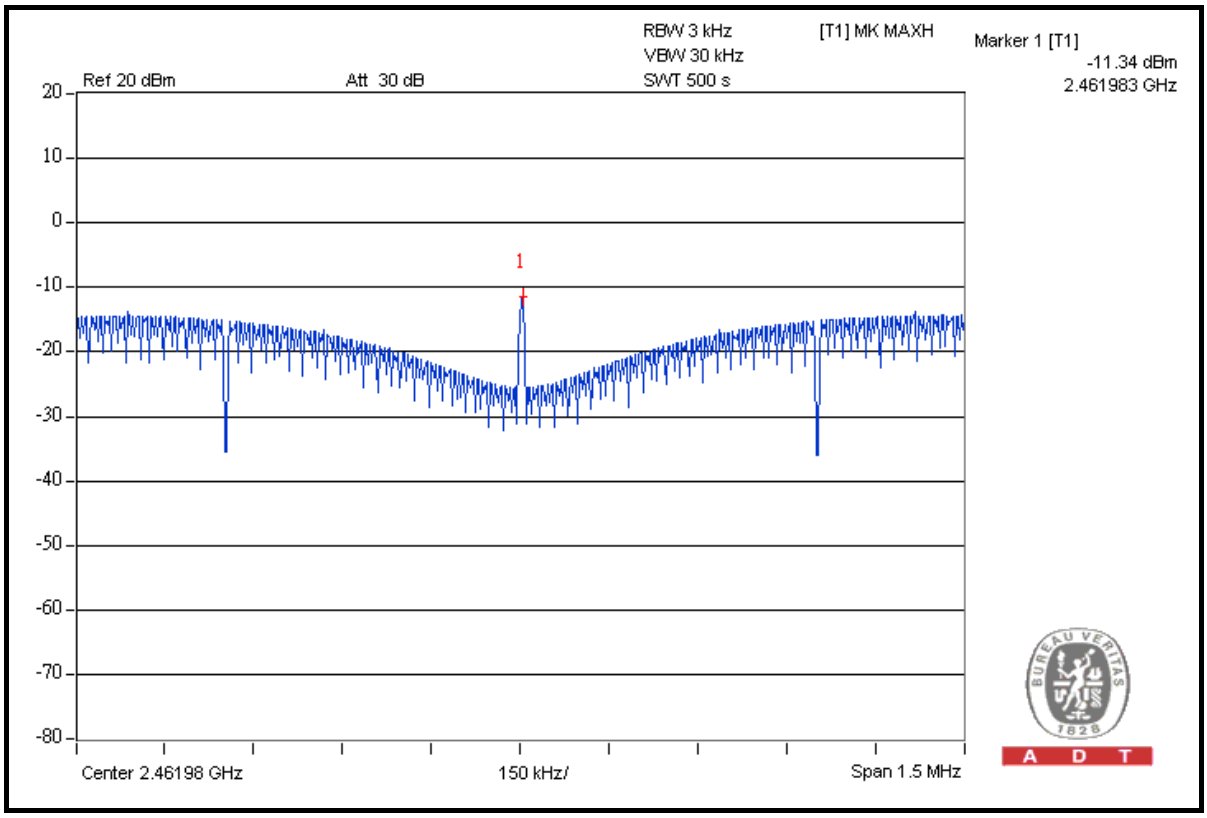
CH 1



CH 6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-11.33 dBm
2.436983 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 2.43698 GHz
150 kHz/
Span 1.5 MHz

CH 11

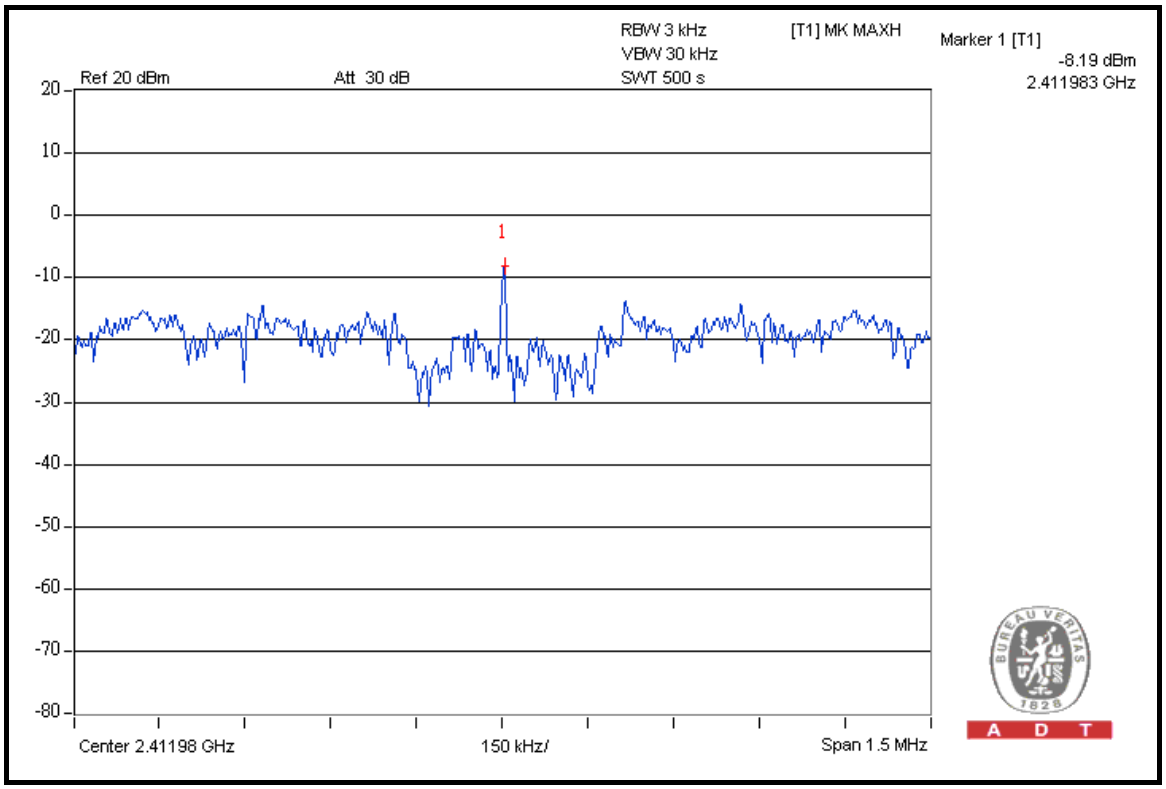

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-11.34 dBm
2.461983 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 2.46198 GHz
150 kHz/
Span 1.5 MHz

802.11g OFDM MODULATION

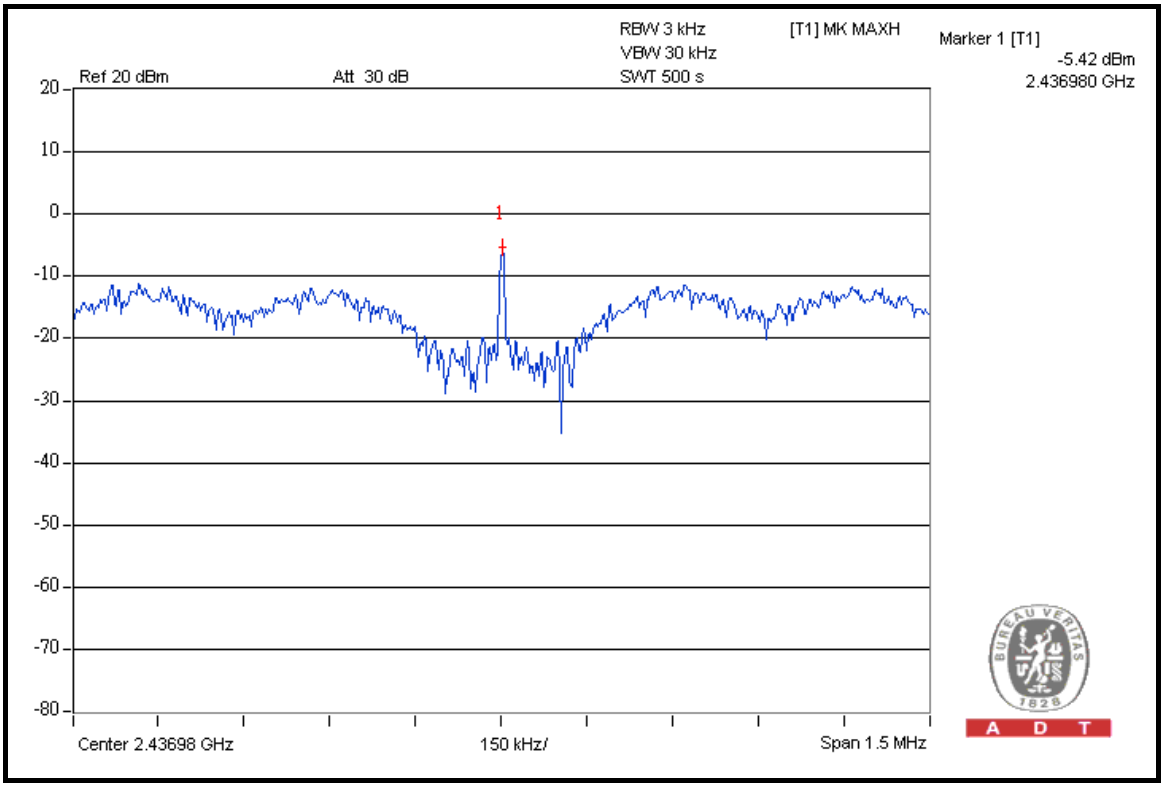
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 66%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-8.19	8	PASS
6	2437	-5.42	8	PASS
11	2462	-8.07	8	PASS

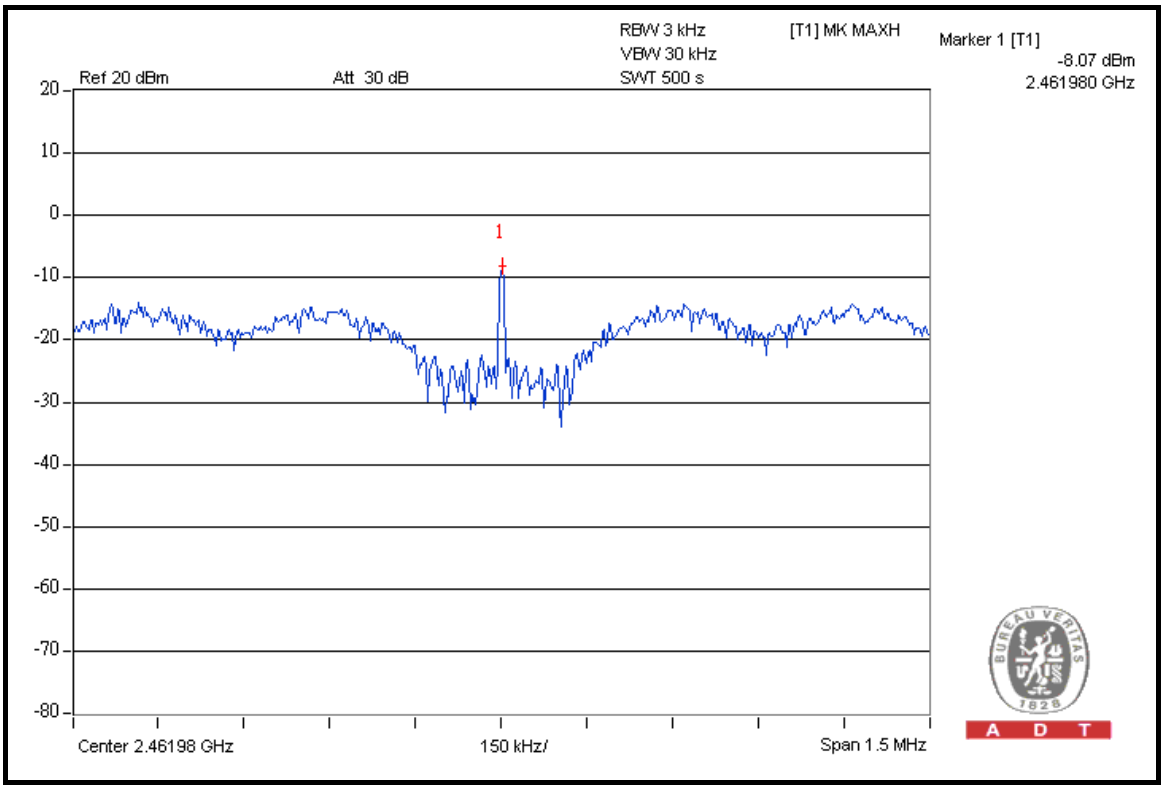
CH 1



CH 6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-5.42 dBm
2.436980 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.43698 GHz
150 kHz/
Span 1.5 MHz

CH 11

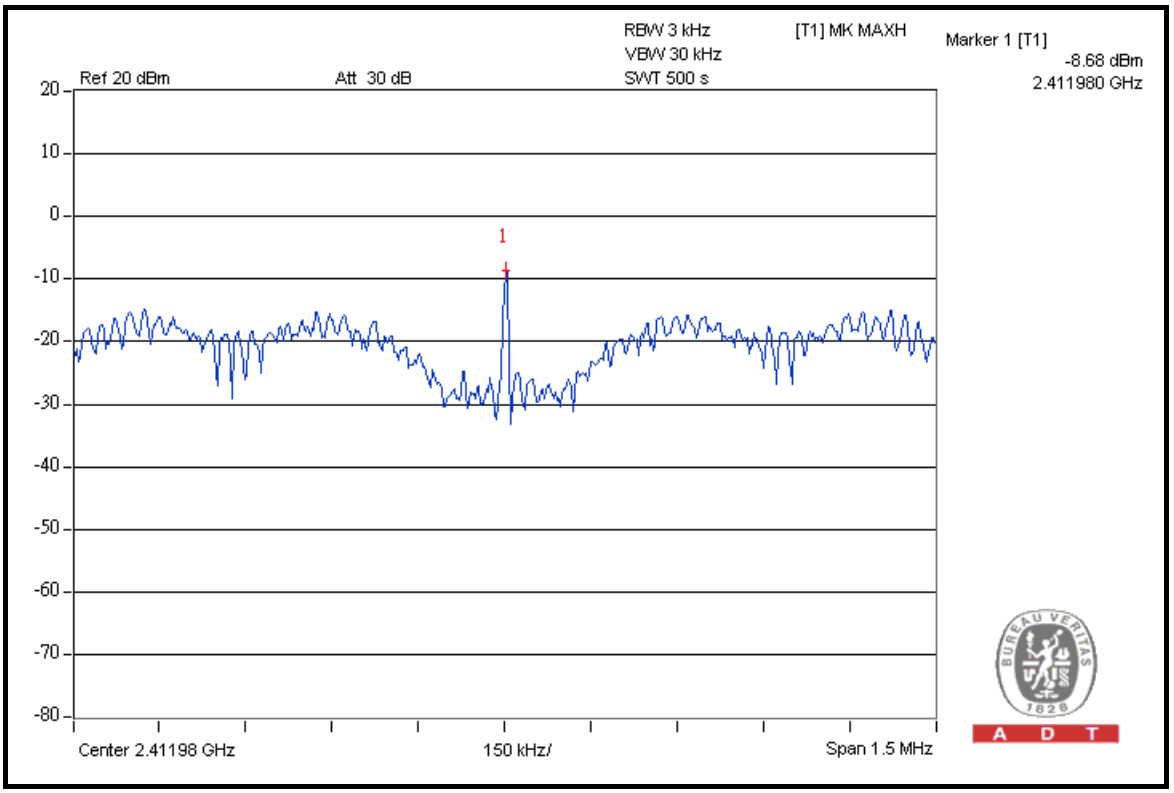

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-8.07 dBm
2.461980 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.46198 GHz
150 kHz/
Span 1.5 MHz

DRAFT 802.11n (20MHz) OFDM MODULATION

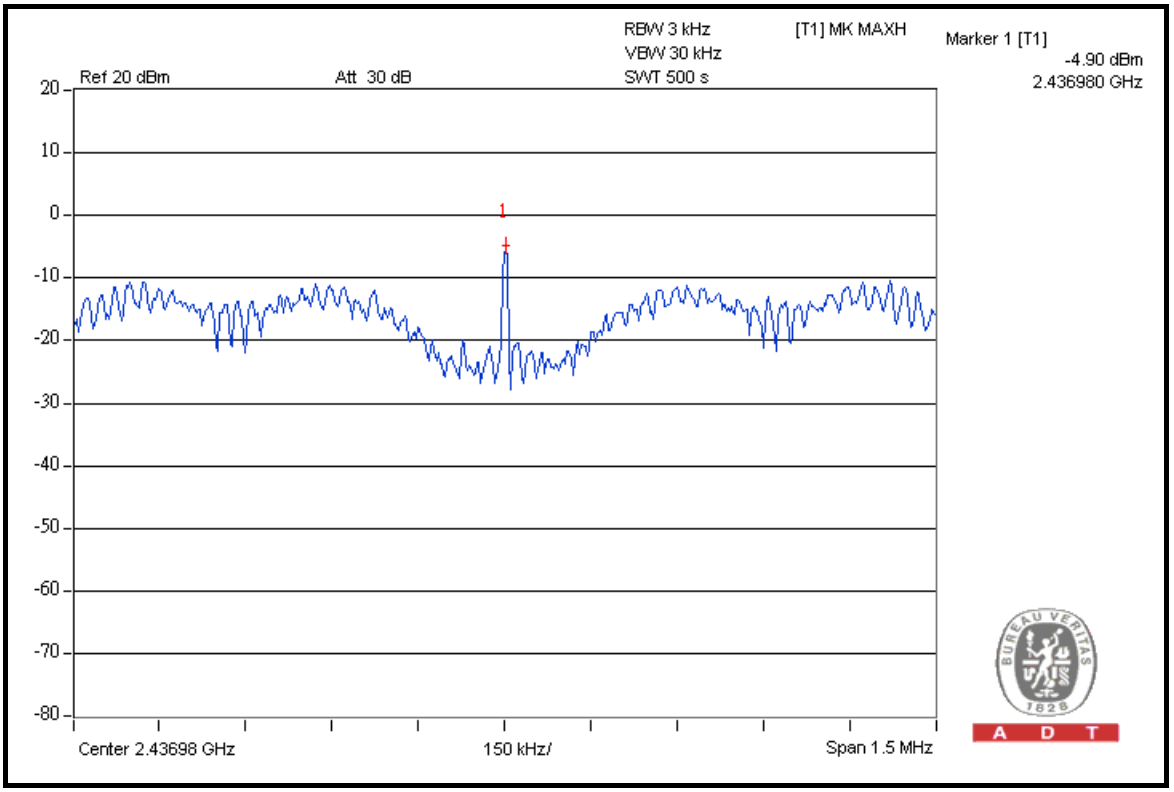
MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 66%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-8.68	8	PASS
6	2437	-4.90	8	PASS
11	2462	-7.81	8	PASS

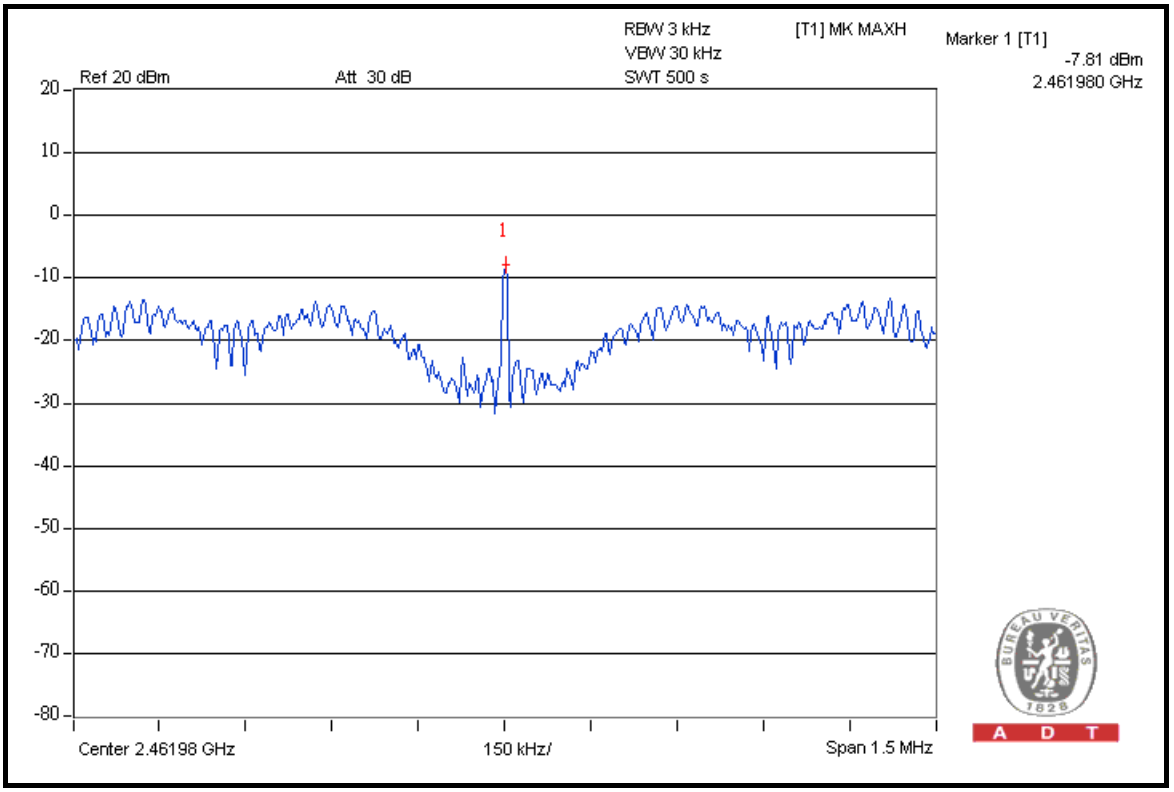
CH 1



CH 6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-4.90 dBm
2.436980 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.43698 GHz
150 kHz/
Span 1.5 MHz

CH 11

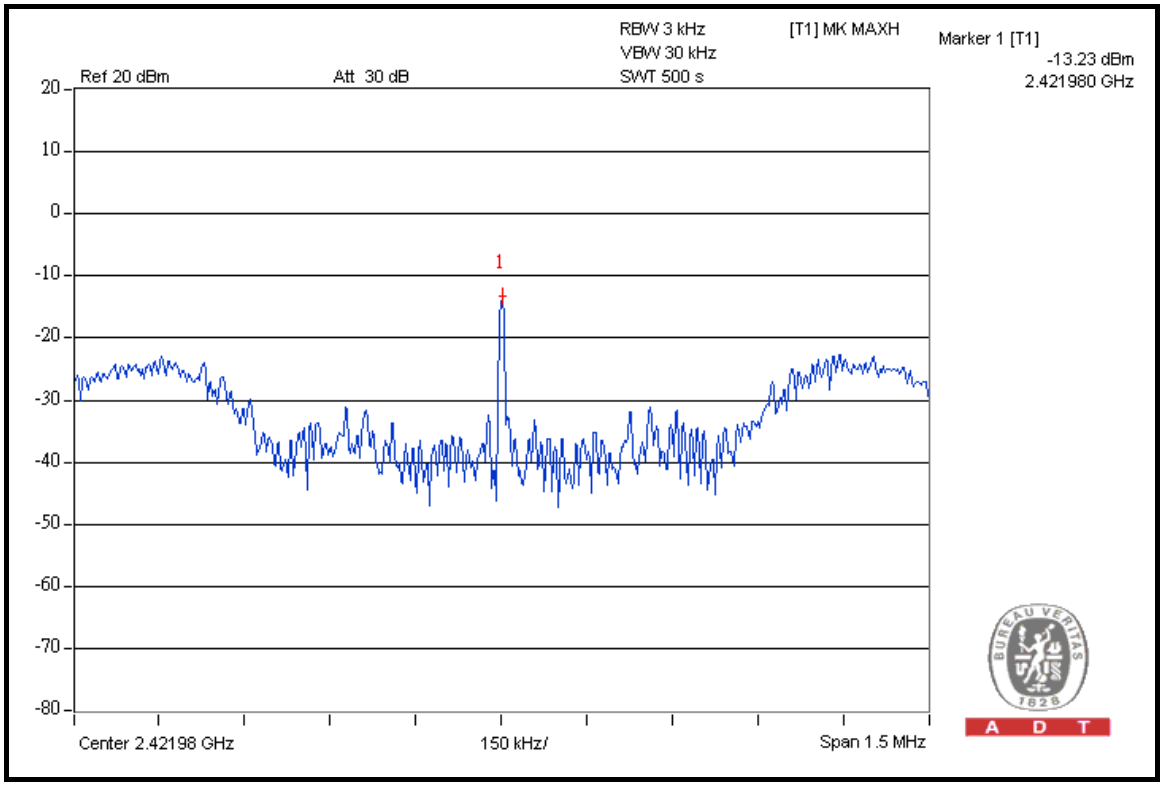

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-7.81 dBm
2.461980 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.46198 GHz
150 kHz/
Span 1.5 MHz

DRAFT 802.11n (40MHz) OFDM MODULATION

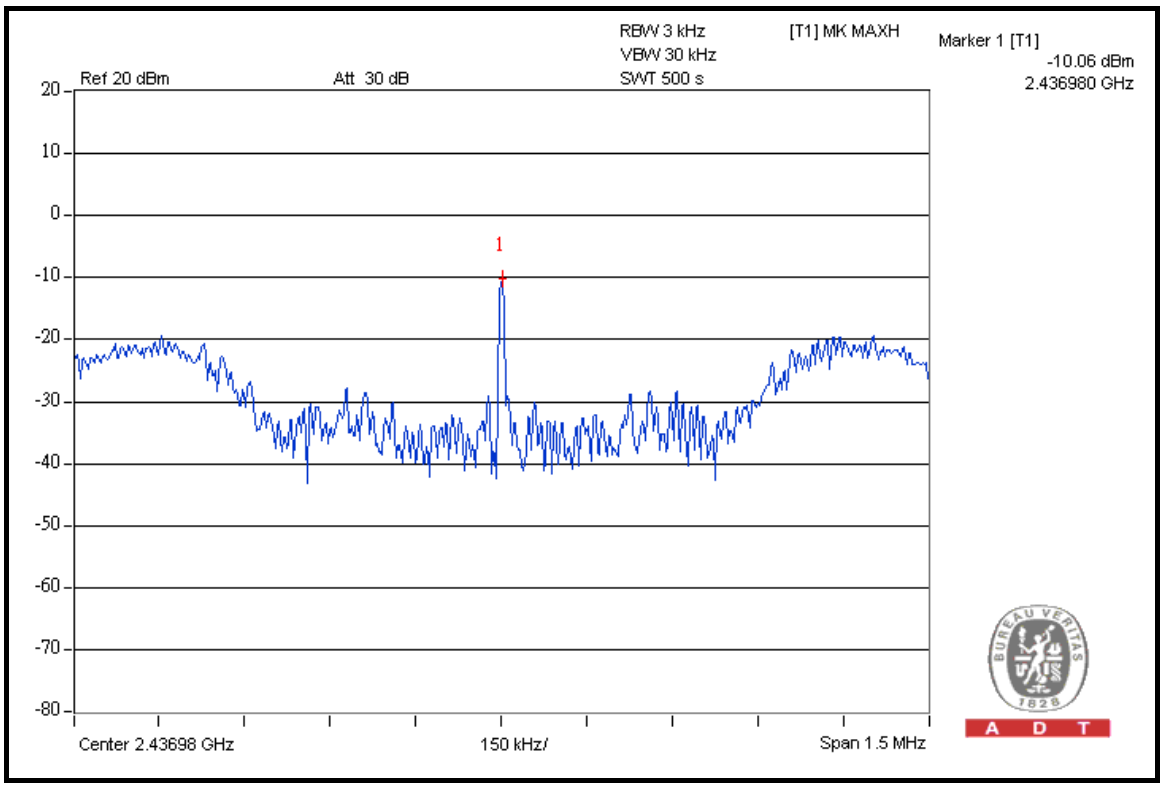
MODULATION TYPE	BPSK	TRANSFER RATE	13.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	23deg.C, 66%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2422	-13.23	8	PASS
4	2437	-10.06	8	PASS
7	2452	-13.30	8	PASS

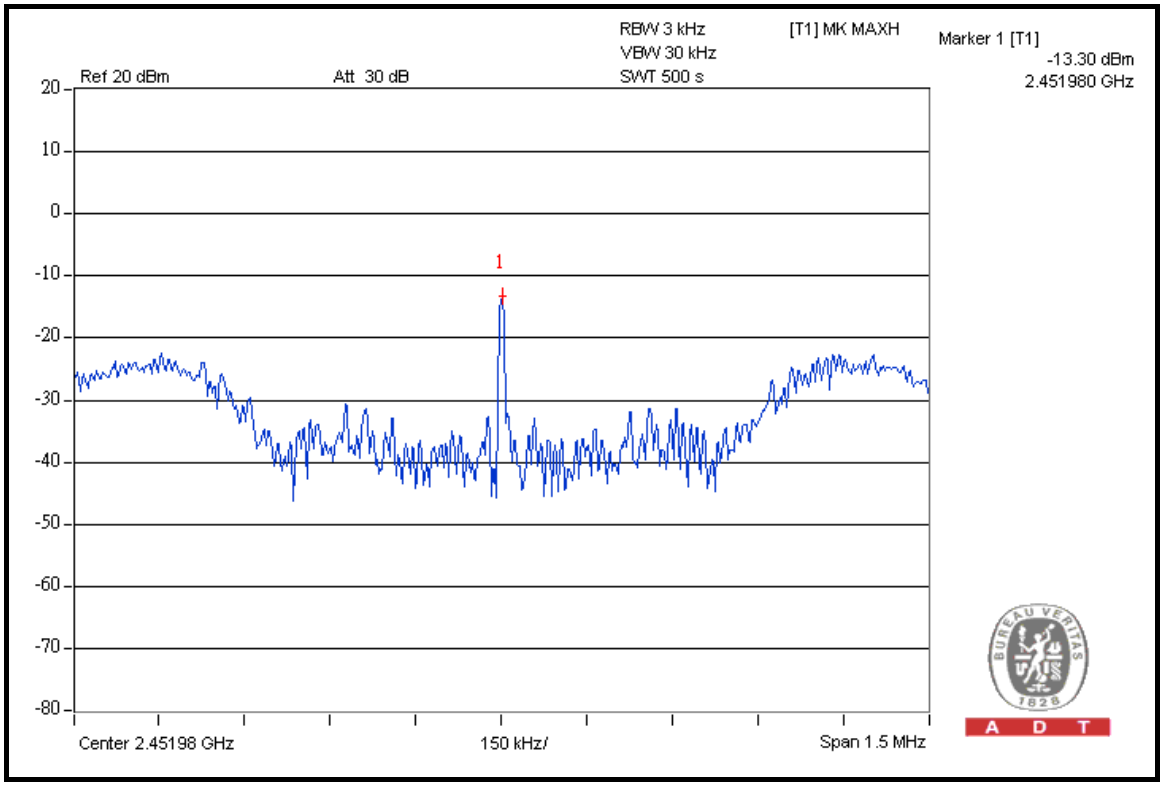
CH 1



CH 4


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-10.06 dBm
2.436980 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 2.43698 GHz
150 kHz/
Span 1.5 MHz

CH 7


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-13.30 dBm
2.451980 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 2.45198 GHz
150 kHz/
Span 1.5 MHz

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.	DATE OF CALIBRATION	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100041	Apr. 22, 2008	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 lose 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 was measured and recorded.

The spectrum plots (Peak RBW = 100kHz, VBW = 300kHz; Average RBW = 1MHz, VBW = 10Hz) 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 24 images. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).

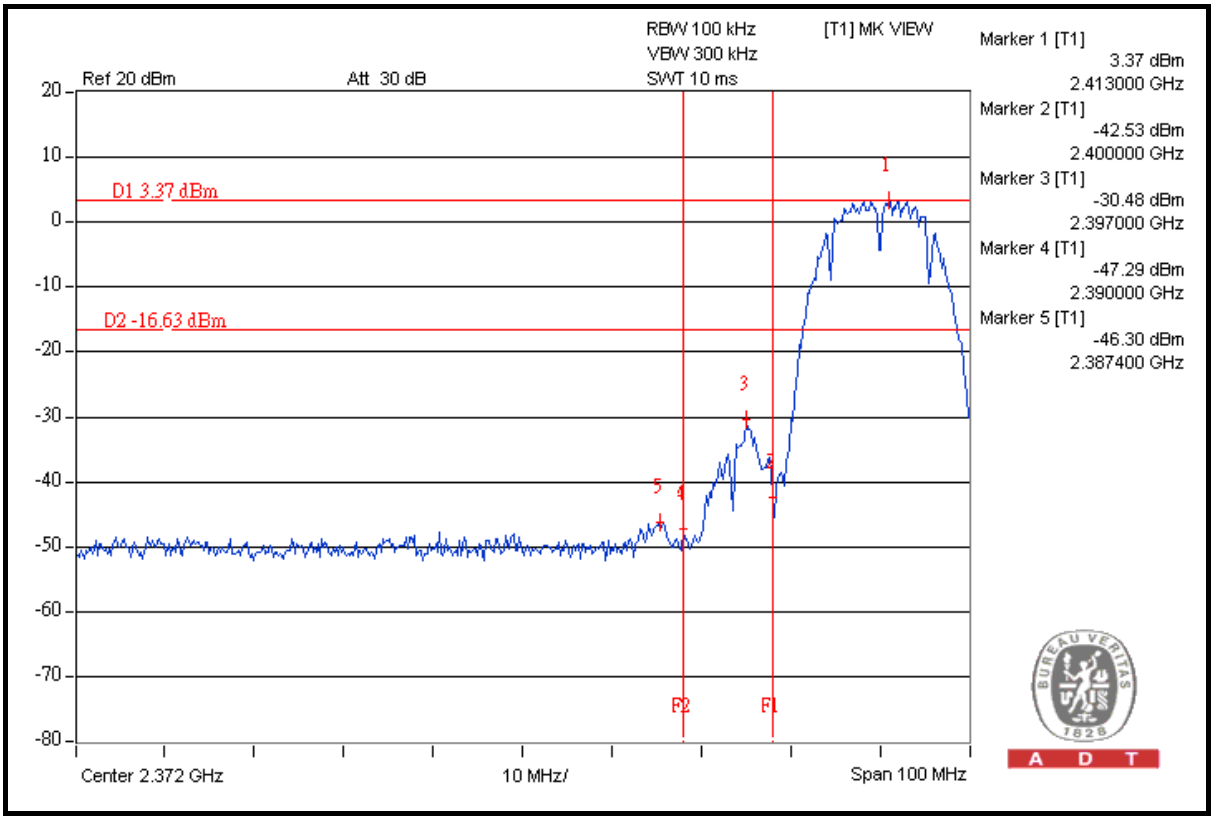
802.11b DSSS MODULATION

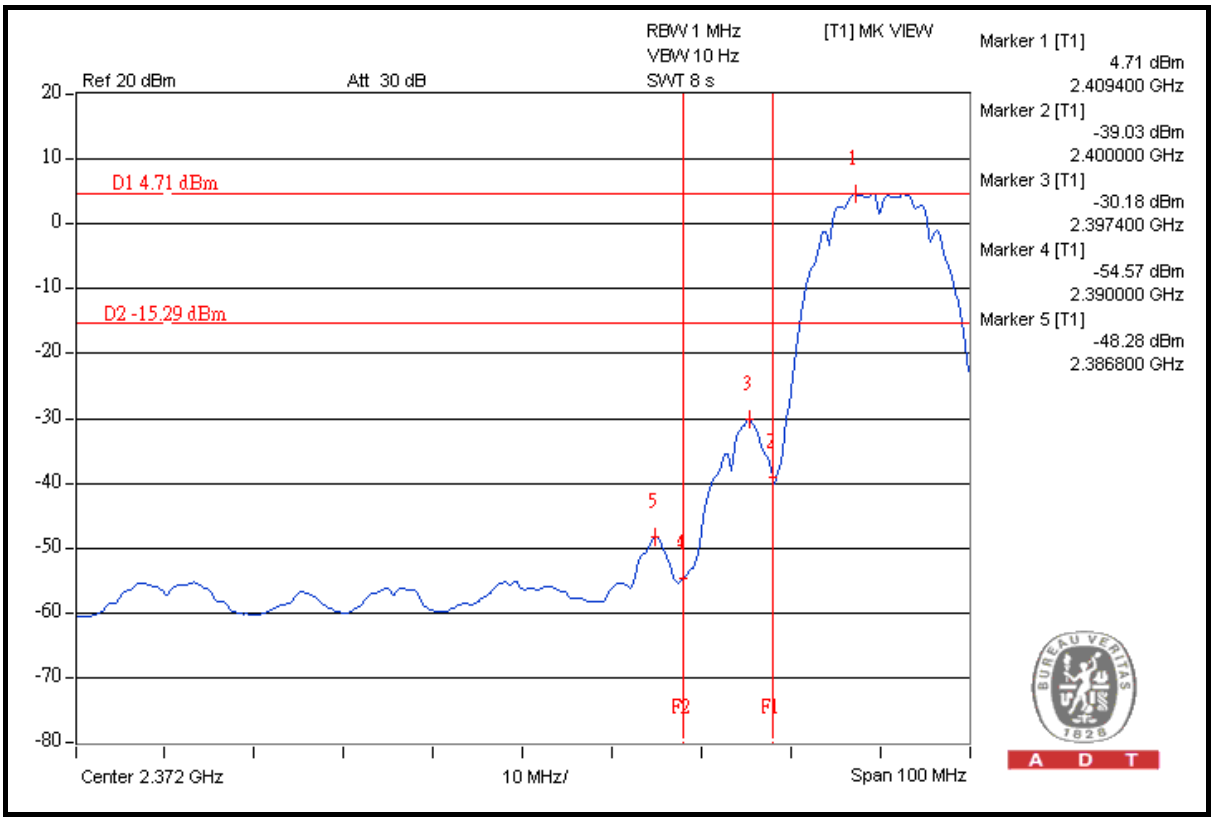
NOTE 1: The band edge emission plot on the next page shows 49.67dBc between carrier maximum power and local maximum emission in restrict band (2.38740GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.1.7 is 108.84dBuV/m (Peak), so the maximum field strength in restrict band is 108.84 – 49.67 = 59.17dBuV/m which is under 74dBuV/m limit.

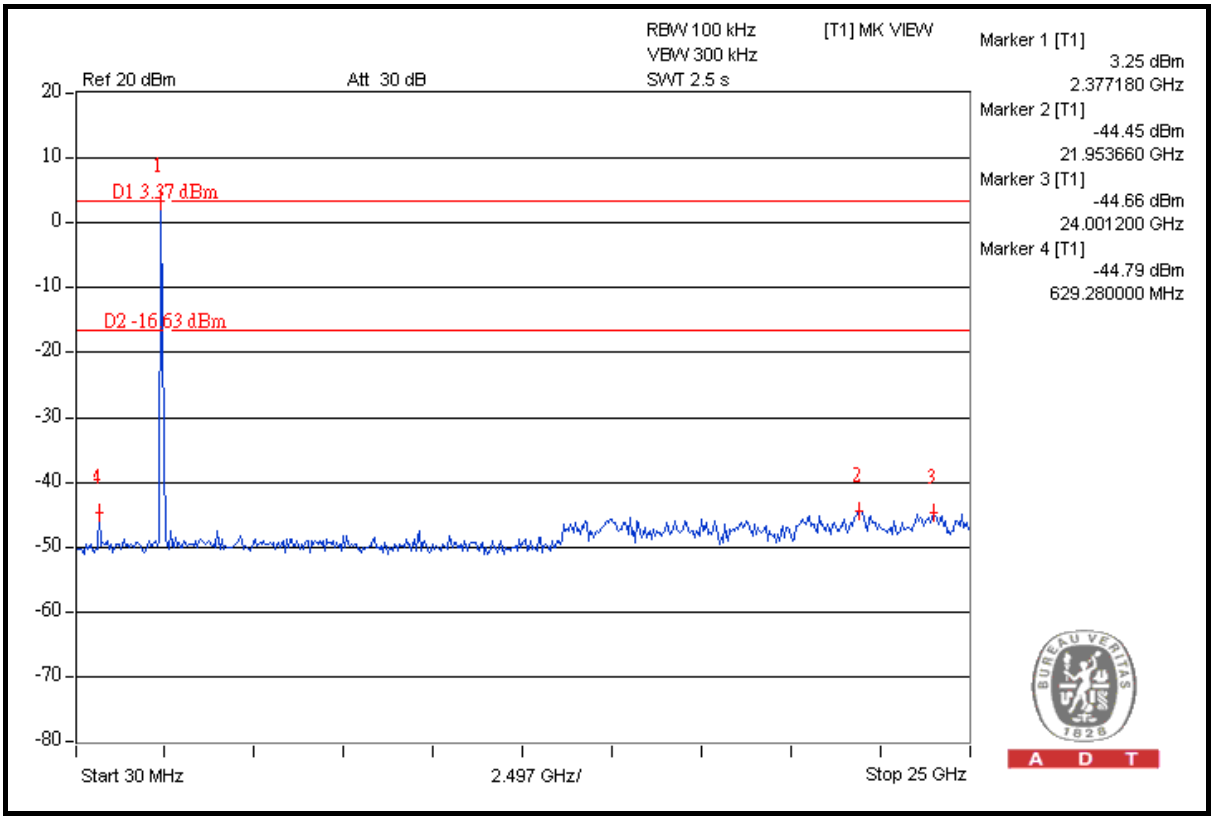
The band edge emission plot on the next page shows 52.99dBc between carrier maximum power and local maximum emission in restrict band (2.38680GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.1.7 is 104.16dBuV/m (Average), so the maximum field strength in restrict band is 104.16 – 52.99 = 51.17dBuV/m which is under 54dBuV/m limit.

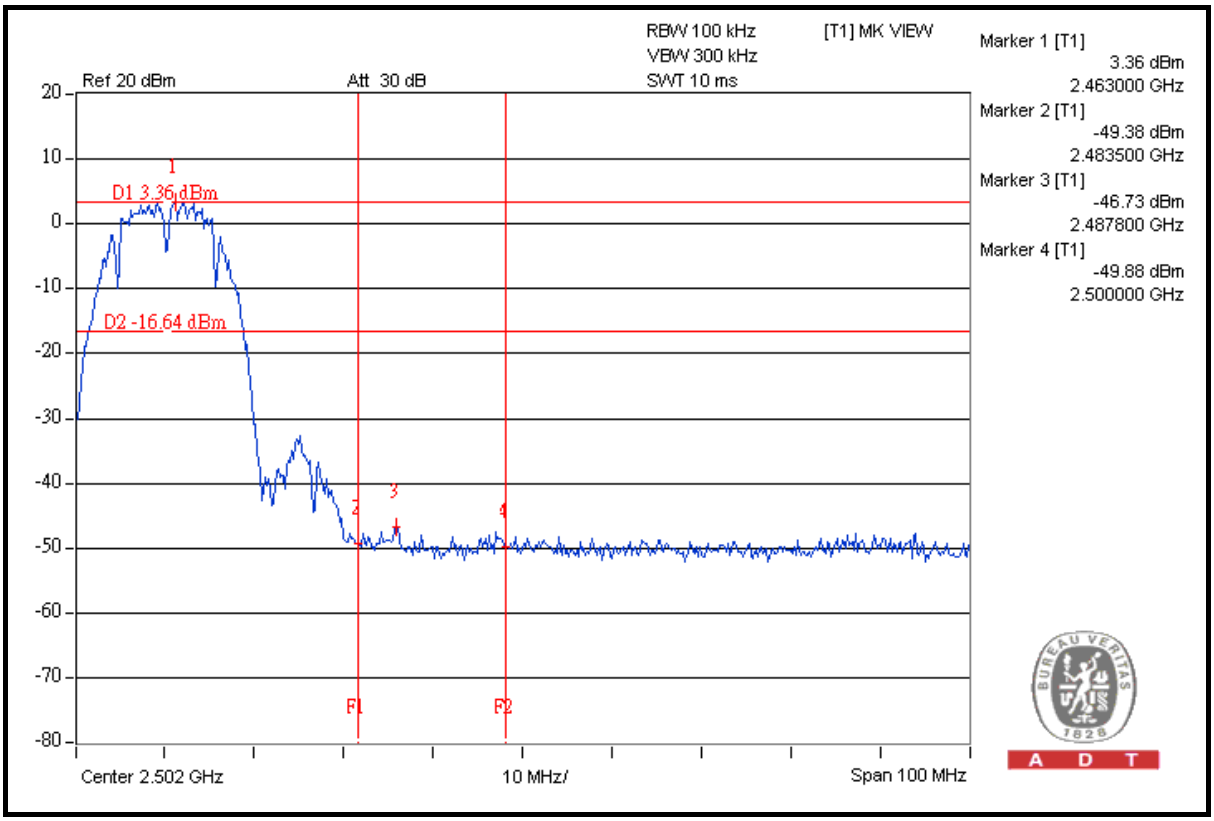
NOTE 2: The band edge emission plot on the next second page shows 50.09dBc between carrier maximum power and local maximum emission in restrict band (2.48780GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.1.7 is 107.84dBuV/m (Peak), so the maximum field strength in restrict band is 107.84 – 50.09 = 57.75dBuV/m which is under 74dBuV/m limit.

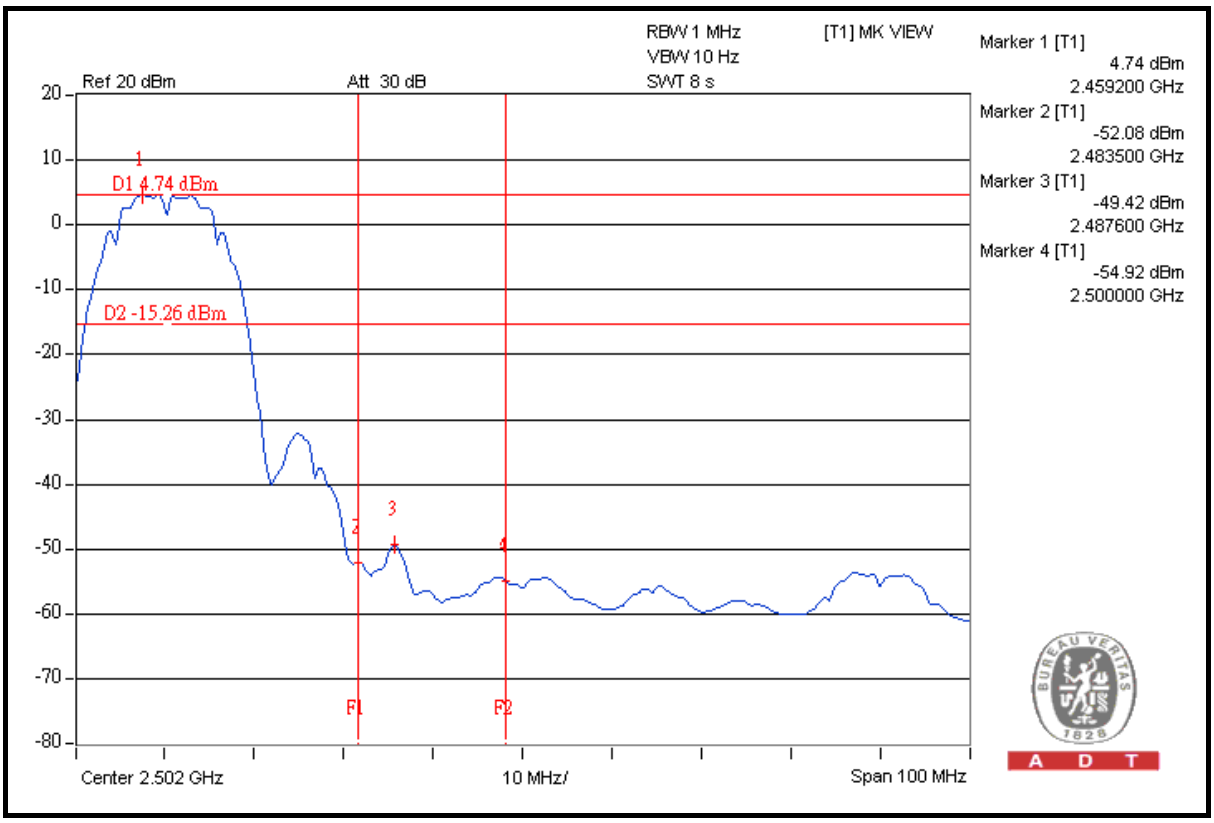
The band edge emission plot on the next third page shows 54.16dBc between carrier maximum power and local maximum emission in restrict band (2.48760GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.1.7 is 103.12dBuV/m (Average), so the maximum field strength in restrict band is 103.12 – 54.16 = 48.96dBuV/m which is under 54dBuV/m limit.

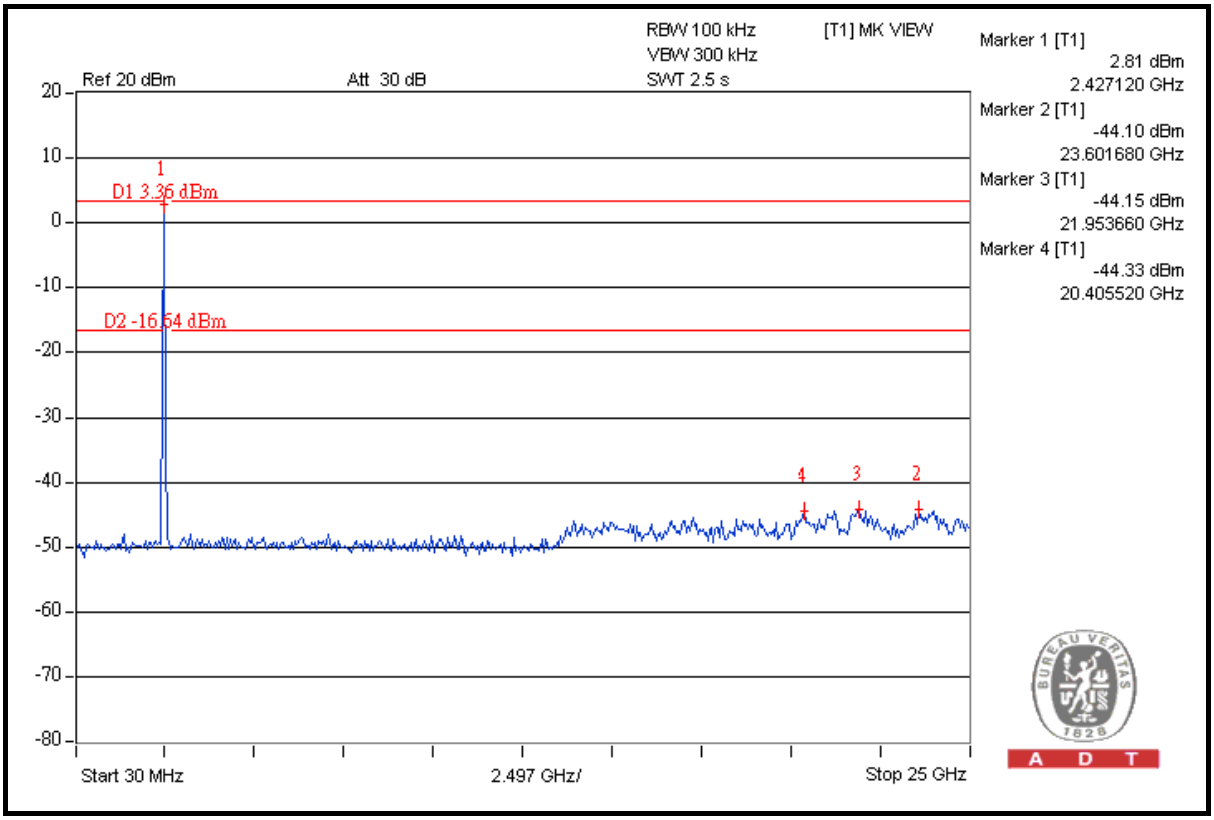

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 3.37 dBm
D2 -16.63 dBm
Marker 1 [T1]
3.37 dBm
2.413000 GHz
Marker 2 [T1]
-42.53 dBm
2.400000 GHz
Marker 3 [T1]
-30.48 dBm
2.397000 GHz
Marker 4 [T1]
-47.29 dBm
2.390000 GHz
Marker 5 [T1]
-46.30 dBm
2.387400 GHz
F2
F1
Center 2.372 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 10 Hz
SWT 8 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 4.71 dBm
D2 -15.29 dBm
Marker 1 [T1]
4.71 dBm
2.409400 GHz
Marker 2 [T1]
-39.03 dBm
2.400000 GHz
Marker 3 [T1]
-30.18 dBm
2.397400 GHz
Marker 4 [T1]
-54.57 dBm
2.390000 GHz
Marker 5 [T1]
-48.28 dBm
2.386800 GHz
F2
F1
Center 2.372 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 3.37 dBm
D2 -16.63 dBm
Marker 1 [T1]
3.25 dBm
2.377180 GHz
Marker 2 [T1]
-44.45 dBm
21.953660 GHz
Marker 3 [T1]
-44.66 dBm
24.001200 GHz
Marker 4 [T1]
-44.79 dBm
629.280000 MHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz


RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 3.36 dBm
D2 -16.64 dBm
Marker 1 [T1]
3.36 dBm
2.463000 GHz
Marker 2 [T1]
-49.38 dBm
2.483500 GHz
Marker 3 [T1]
-46.73 dBm
2.487800 GHz
Marker 4 [T1]
-49.88 dBm
2.500000 GHz
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 10 Hz
SWT 8 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 4.74 dBm
D2 -15.26 dBm
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz
Marker 1 [T1]
4.74 dBm
2.459200 GHz
Marker 2 [T1]
-52.08 dBm
2.483500 GHz
Marker 3 [T1]
-49.42 dBm
2.487600 GHz
Marker 4 [T1]
-54.92 dBm
2.500000 GHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 3.36 dBm
D2 -16.64 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz
Marker 1 [T1]
2.81 dBm
2.427120 GHz
Marker 2 [T1]
-44.10 dBm
23.601680 GHz
Marker 3 [T1]
-44.15 dBm
21.953660 GHz
Marker 4 [T1]
-44.33 dBm
20.405520 GHz

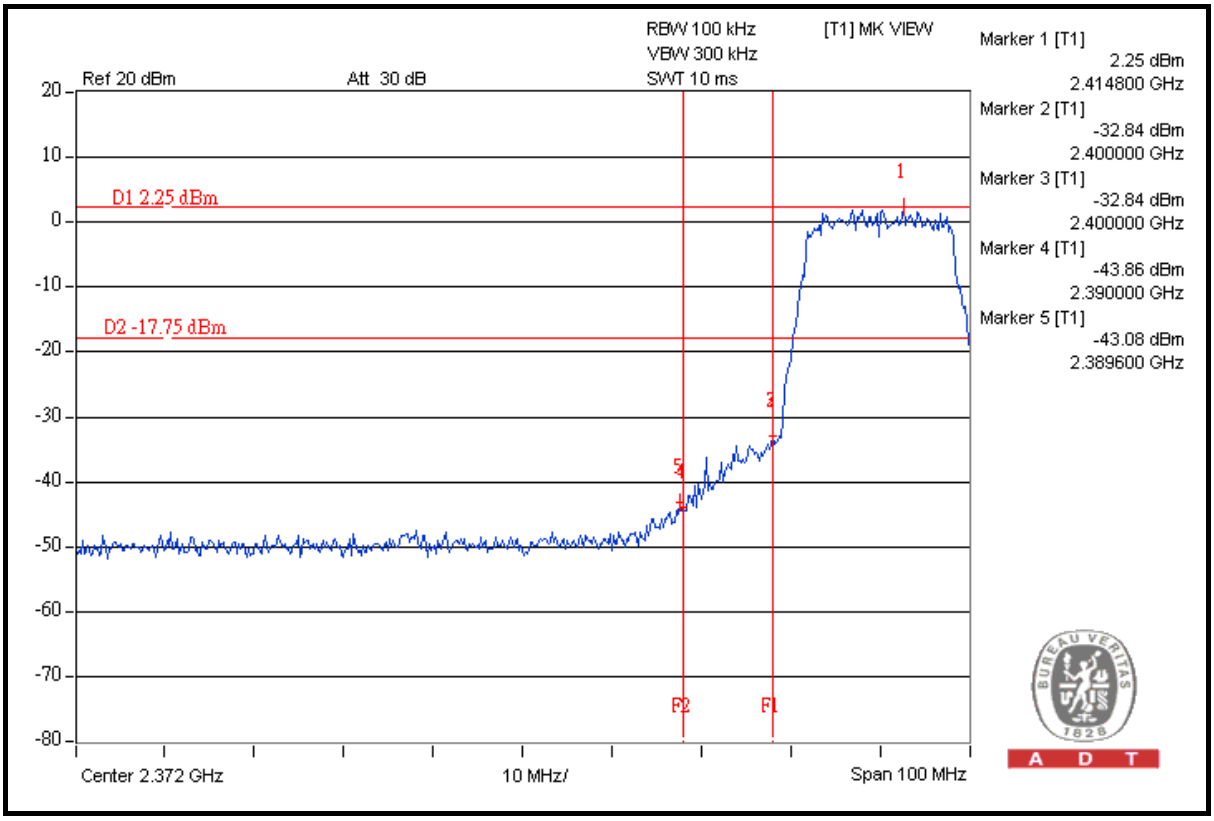
802.11g OFDM MODULATION

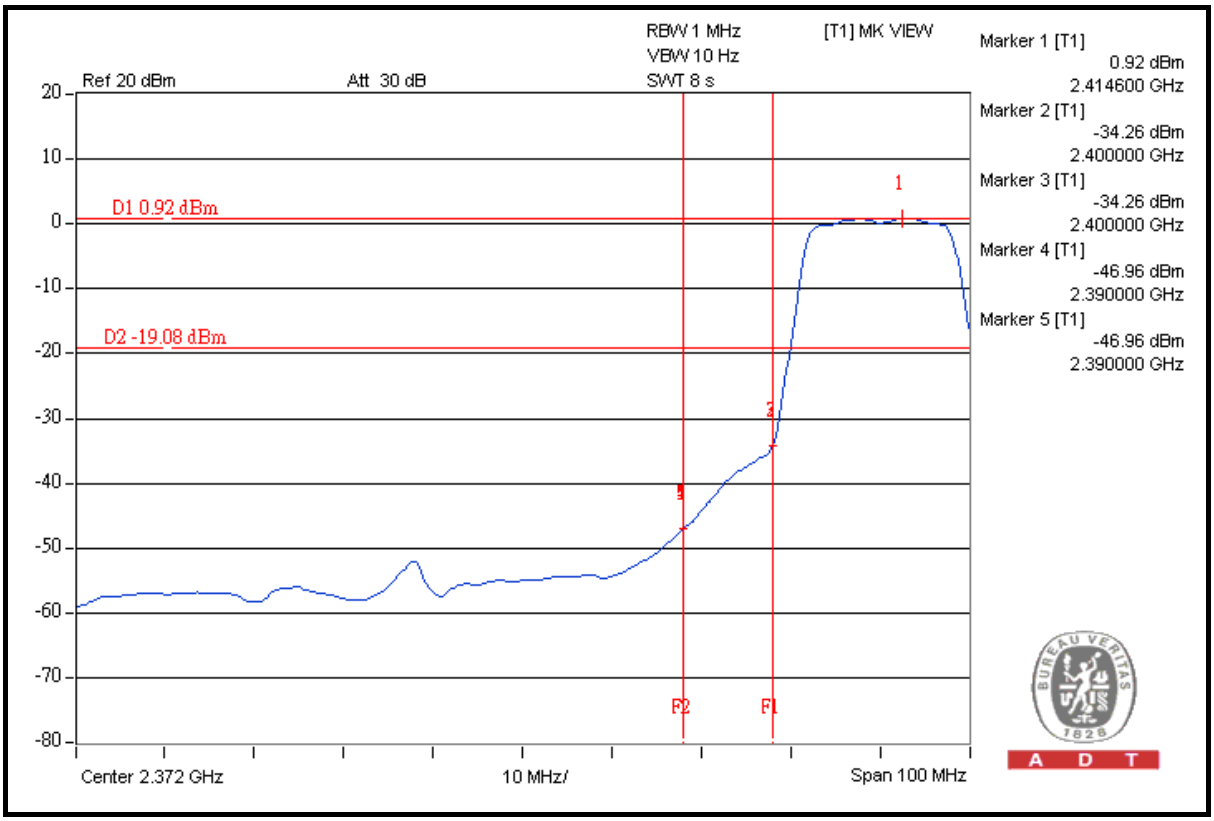
NOTE 1: The band edge emission plot on the next page shows 45.33dBc between carrier maximum power and local maximum emission in restrict band (2.38960GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.1.7 is 108.76dBuV/m (Peak), so the maximum field strength in restrict band is 108.76 – 45.33 = 63.43dBuV/m which is under 74dBuV/m limit.

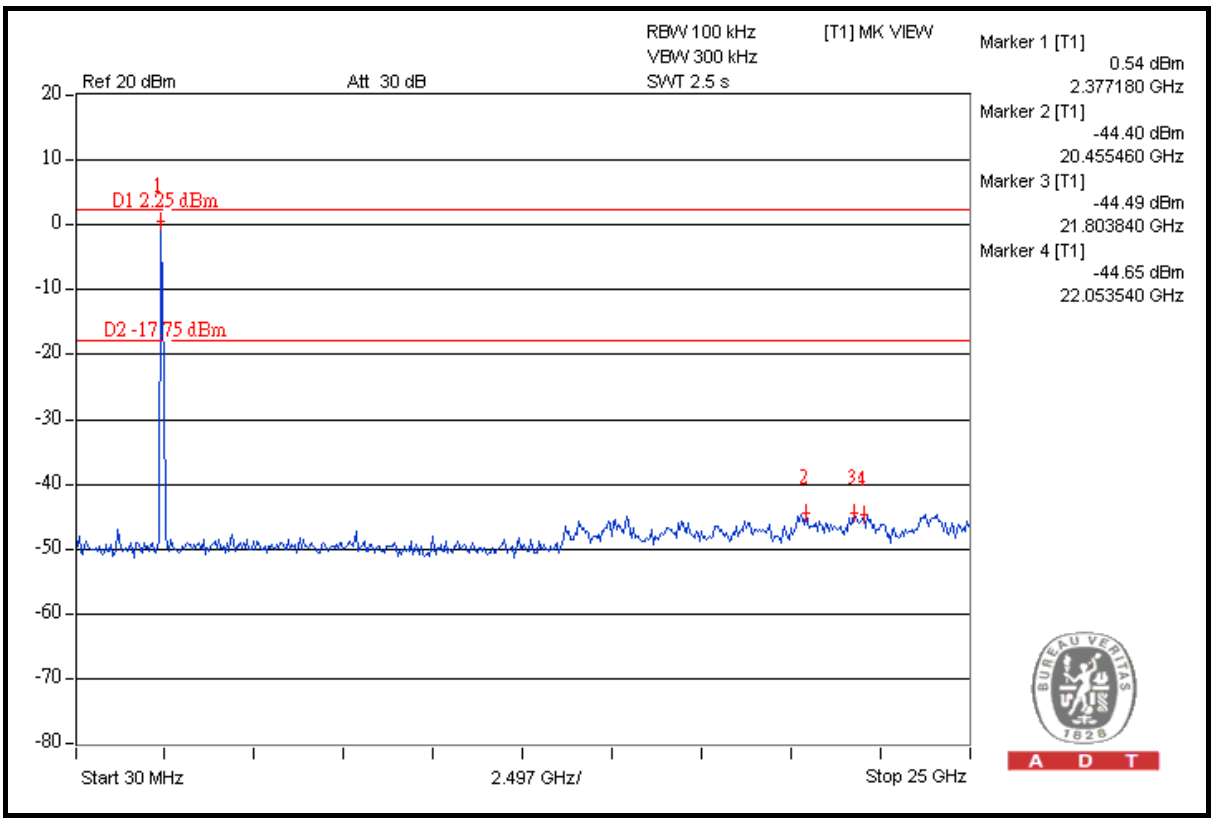
The band edge emission plot on the next page shows 47.88dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.1.7 is 98.50dBuV/m (Average), so the maximum field strength in restrict band is 98.50 – 47.88 = 50.62dBuV/m which is under 54dBuV/m limit.

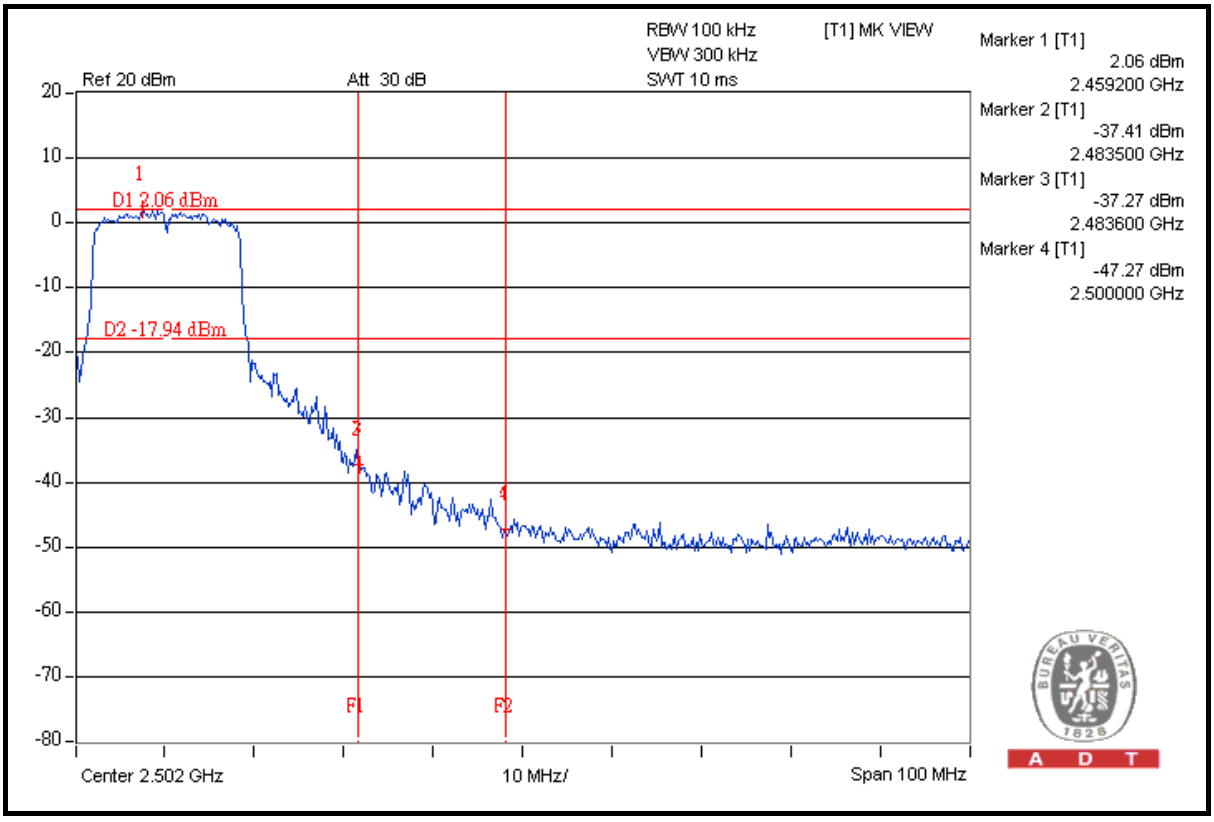
NOTE 2: The band edge emission plot on the next second page shows 39.33dBc between carrier maximum power and local maximum emission in restrict band (2.48360GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.1.7 is 108.93dBuV/m (Peak), so the maximum field strength in restrict band is 108.93 – 39.33 = 69.60dBuV/m which is under 74dBuV/m limit.

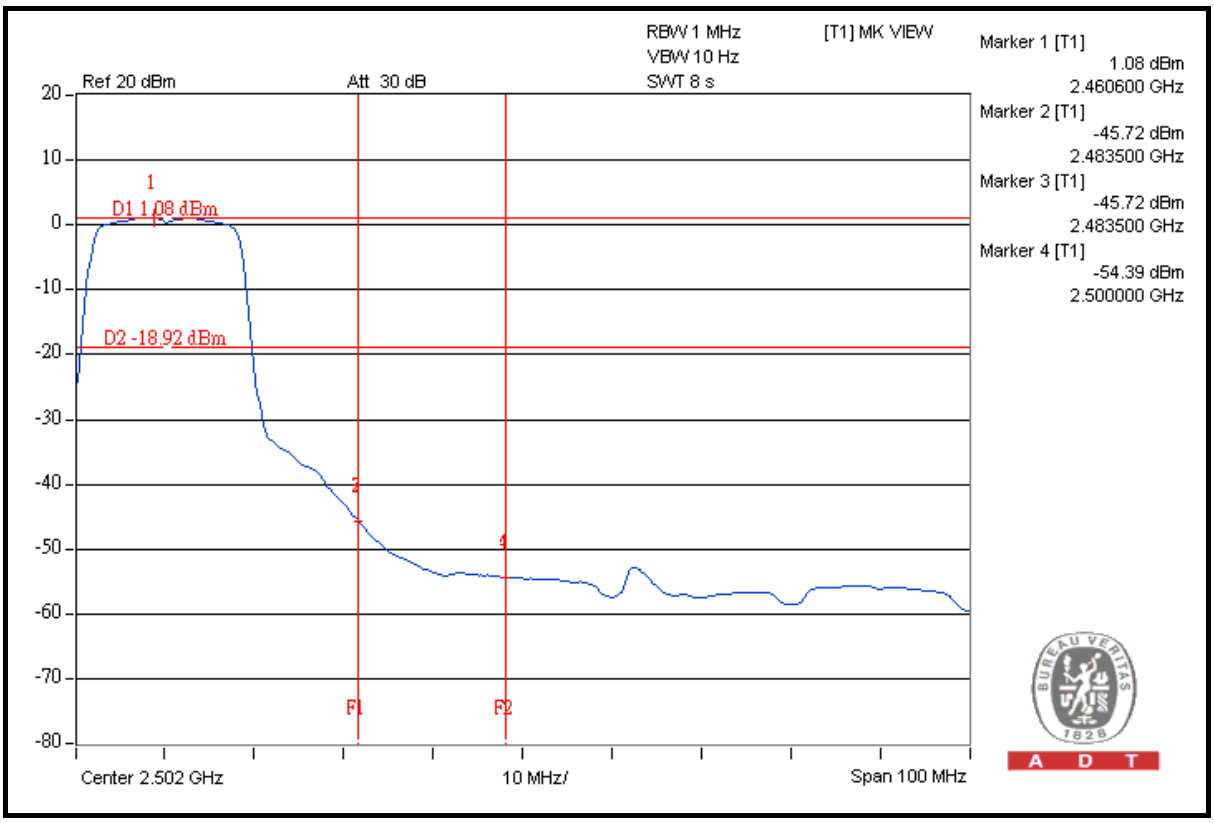
The band edge emission plot on the next third page shows 46.80dBc between carrier maximum power and local maximum emission in restrict band (2.48350GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.1.7 is 98.06dBuV/m (Average), so the maximum field strength in restrict band is 98.06 – 46.80 = 51.26dBuV/m which is under 54dBuV/m limit.

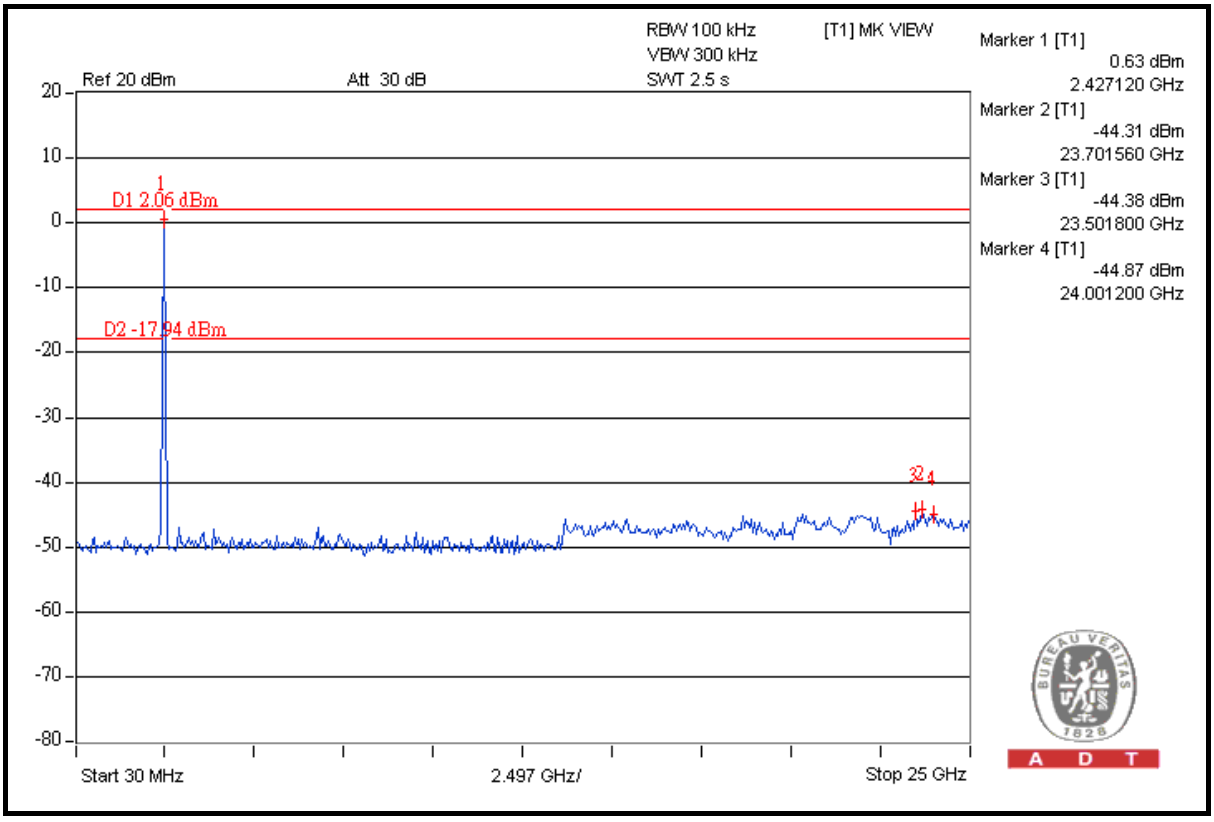

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 2.25 dBm
D2 -17.75 dBm
Marker 1 [T1]
2.25 dBm
2.414800 GHz
Marker 2 [T1]
-32.84 dBm
2.400000 GHz
Marker 3 [T1]
-32.84 dBm
2.400000 GHz
Marker 4 [T1]
-43.86 dBm
2.390000 GHz
Marker 5 [T1]
-43.08 dBm
2.389600 GHz
F2
F1
Center 2.372 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 10 Hz
SWT 8 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 0.92 dBm
D2 -19.08 dBm
Marker 1 [T1]
0.92 dBm
2.414600 GHz
Marker 2 [T1]
-34.26 dBm
2.400000 GHz
Marker 3 [T1]
-34.26 dBm
2.400000 GHz
Marker 4 [T1]
-46.96 dBm
2.390000 GHz
Marker 5 [T1]
-46.96 dBm
2.390000 GHz
F2
F1
Center 2.372 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 2.25 dBm
D2 -17.75 dBm
Marker 1 [T1]
0.54 dBm
2.377180 GHz
Marker 2 [T1]
-44.40 dBm
20.455460 GHz
Marker 3 [T1]
-44.49 dBm
21.803840 GHz
Marker 4 [T1]
-44.65 dBm
22.053540 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz


RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 2.06 dBm
D2 -17.94 dBm
Marker 1 [T1]
2.06 dBm
2.459200 GHz
Marker 2 [T1]
-37.41 dBm
2.483500 GHz
Marker 3 [T1]
-37.27 dBm
2.483600 GHz
Marker 4 [T1]
-47.27 dBm
2.500000 GHz
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 10 Hz
SWT 8 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 1.08 dBm
D2 -18.92 dBm
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz
Marker 1 [T1]
1.08 dBm
2.460600 GHz
Marker 2 [T1]
-45.72 dBm
2.483500 GHz
Marker 3 [T1]
-45.72 dBm
2.483500 GHz
Marker 4 [T1]
-54.39 dBm
2.500000 GHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 2.06 dBm
D2 -17.94 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz
Marker 1 [T1]
0.63 dBm
2.427120 GHz
Marker 2 [T1]
-44.31 dBm
23.701560 GHz
Marker 3 [T1]
-44.38 dBm
23.501800 GHz
Marker 4 [T1]
-44.87 dBm
24.001200 GHz

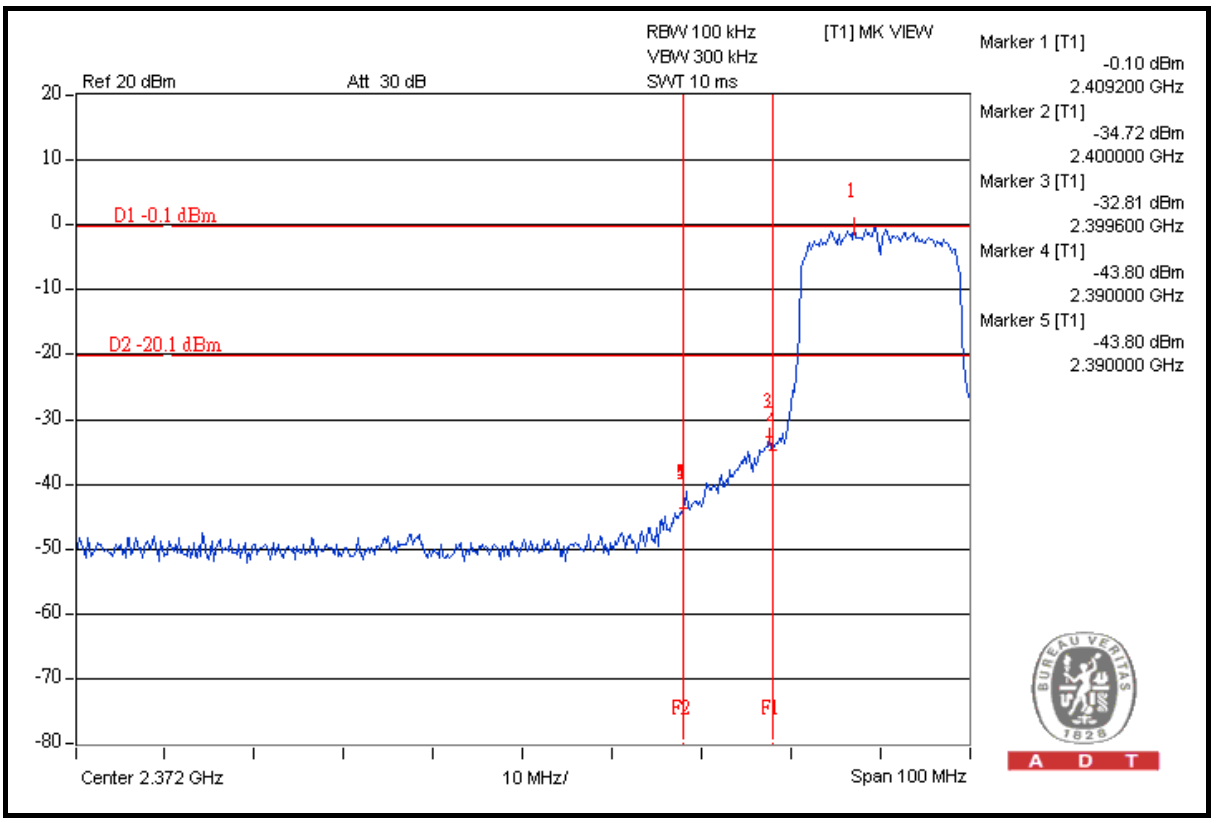
DRAFT 802.11n (20MHz) OFDM MODULATION

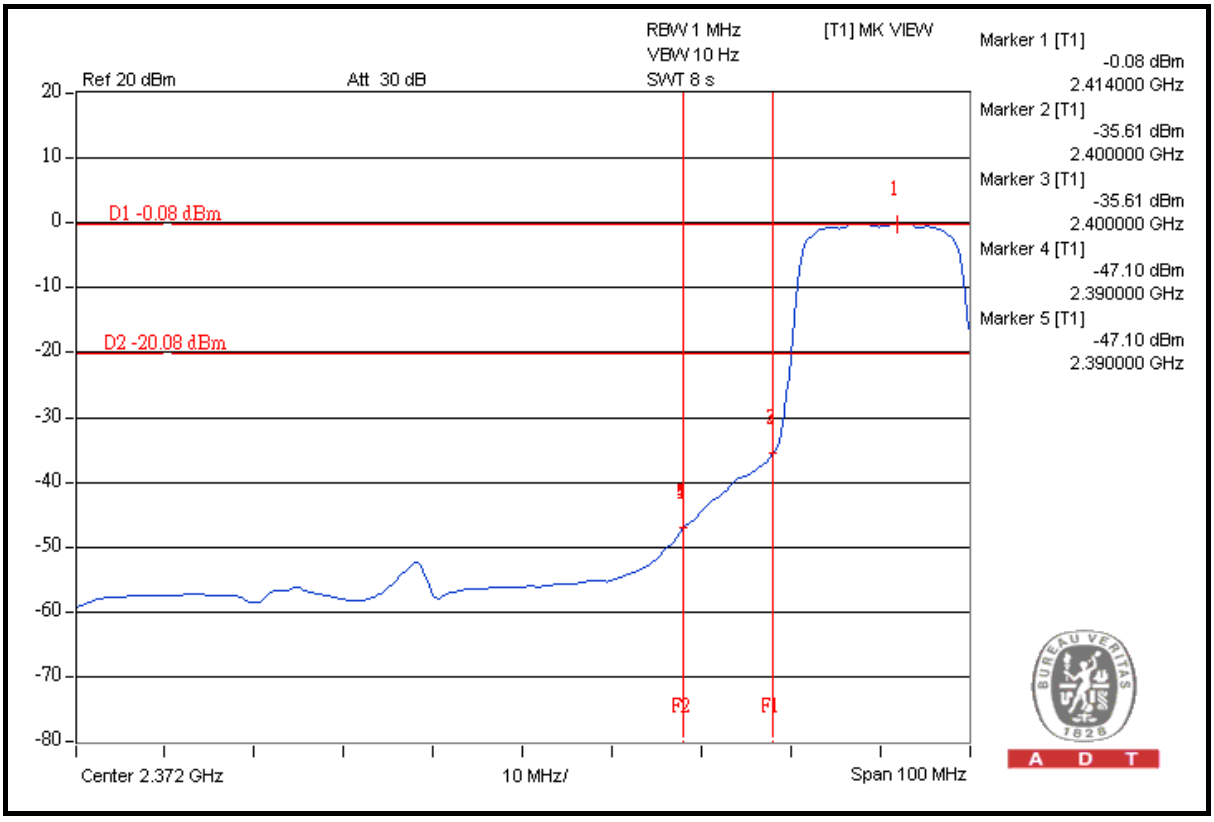
NOTE 1: The band edge emission plot on the next page shows 43.70dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.1.7 is 107.92dBuV/m (Peak), so the maximum field strength in restrict band is 107.92 – 43.70= 64.22dBuV/m which is under 74dBuV/m limit.

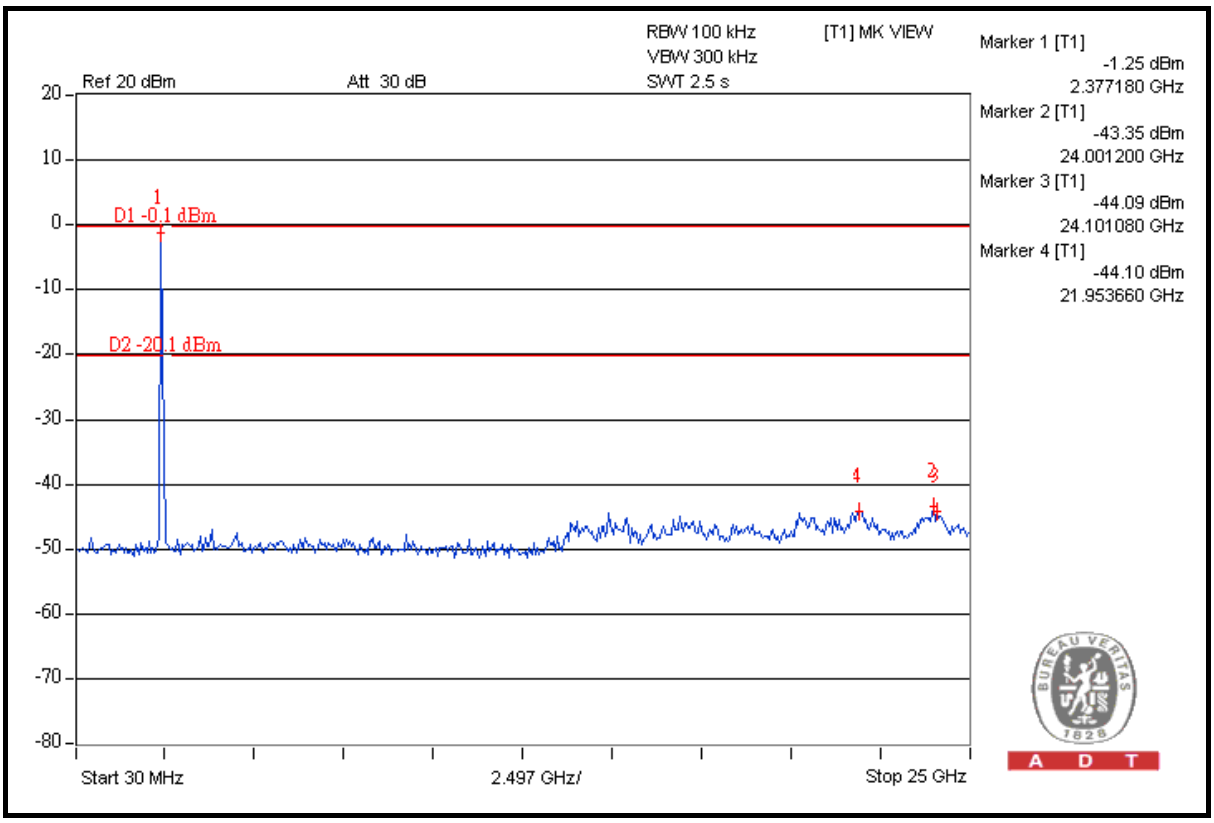
The band edge emission plot on the next page shows 47.02dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.1.7 is 97.56dBuV/m (Average), so the maximum field strength in restrict band is 97.56 – 47.02 = 50.54dBuV/m which is under 54dBuV/m limit.

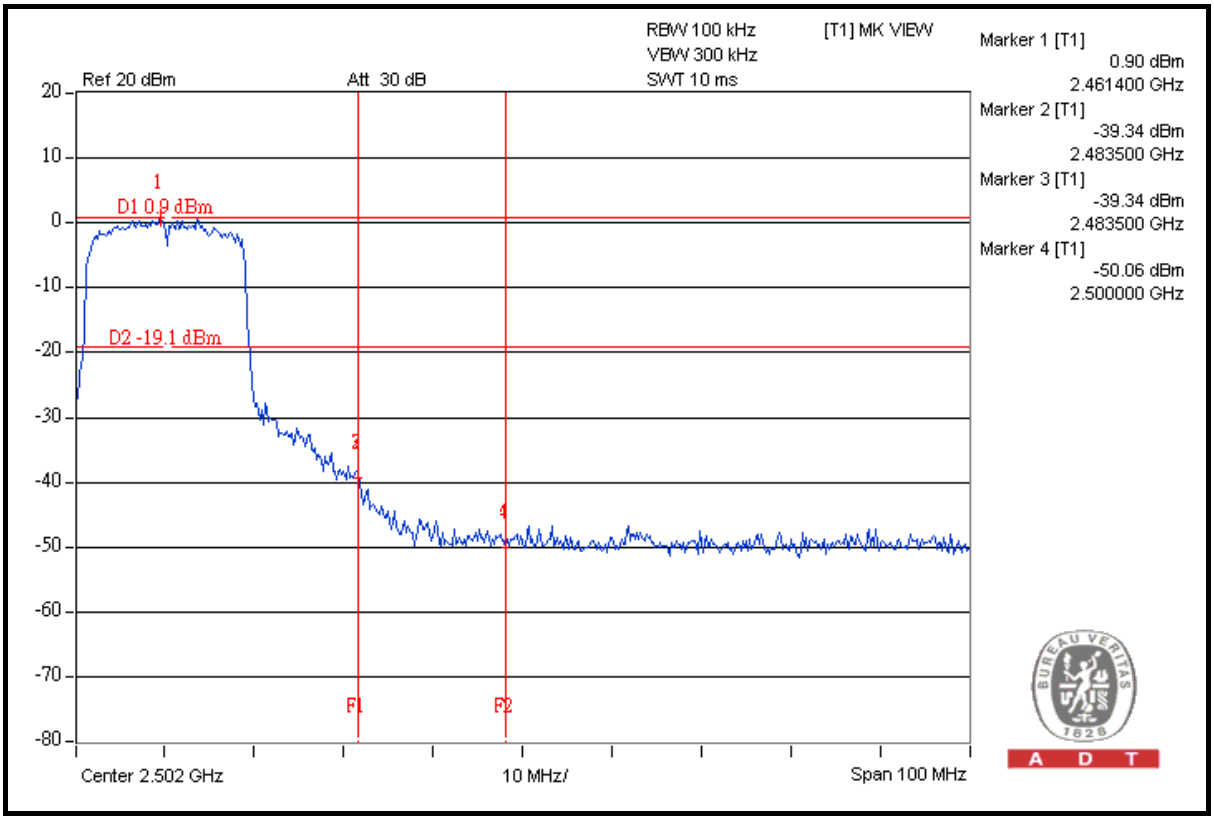
NOTE 2: The band edge emission plot on the next second page shows 40.24dBc between carrier maximum power and local maximum emission in restrict band (2.48350GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.1.7 is 108.60dBuV/m (Peak), so the maximum field strength in restrict band is 108.60 – 40.24 = 68.36dBuV/m which is under 74dBuV/m limit.

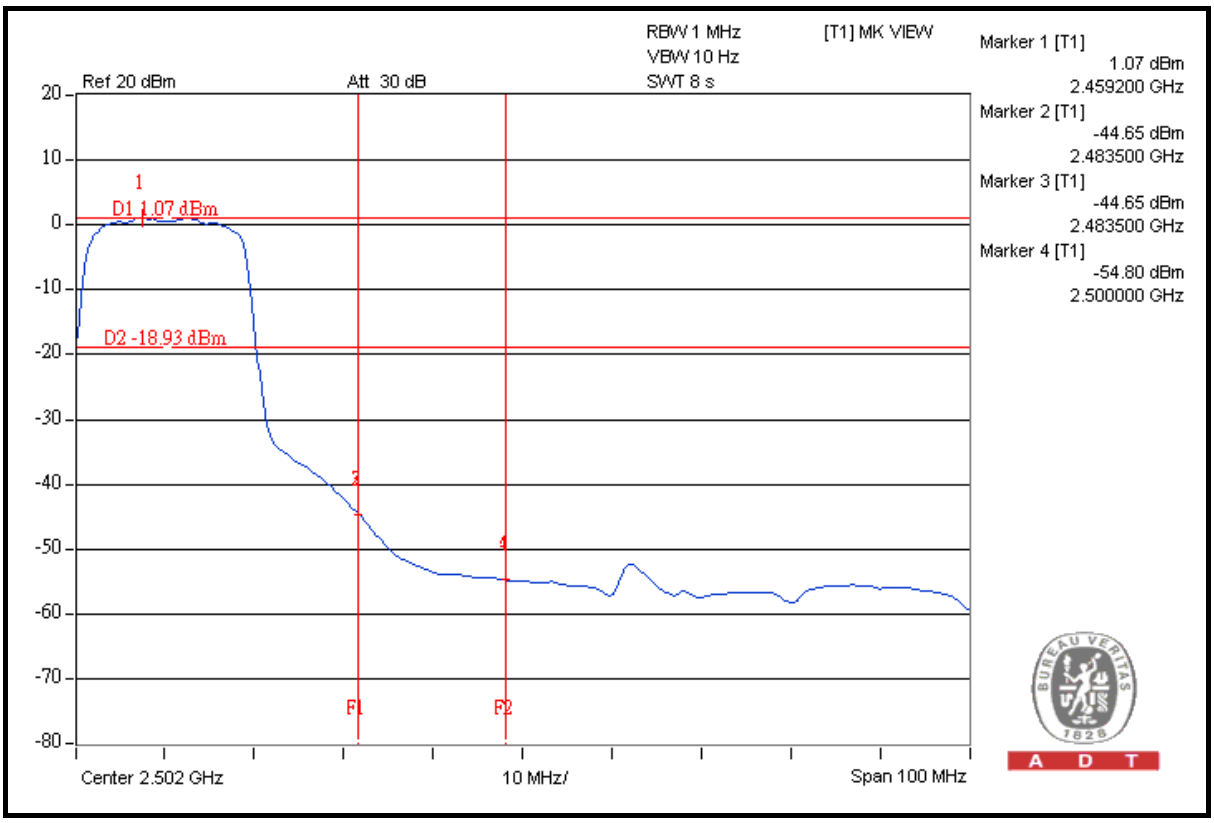
The band edge emission plot on the next third page shows 45.72dBc between carrier maximum power and local maximum emission in restrict band (2.48350GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.1.7 is 97.98dBuV/m (Average), so the maximum field strength in restrict band is 97.98 – 45.72 = 52.26dBuV/m which is under 54dBuV/m limit.

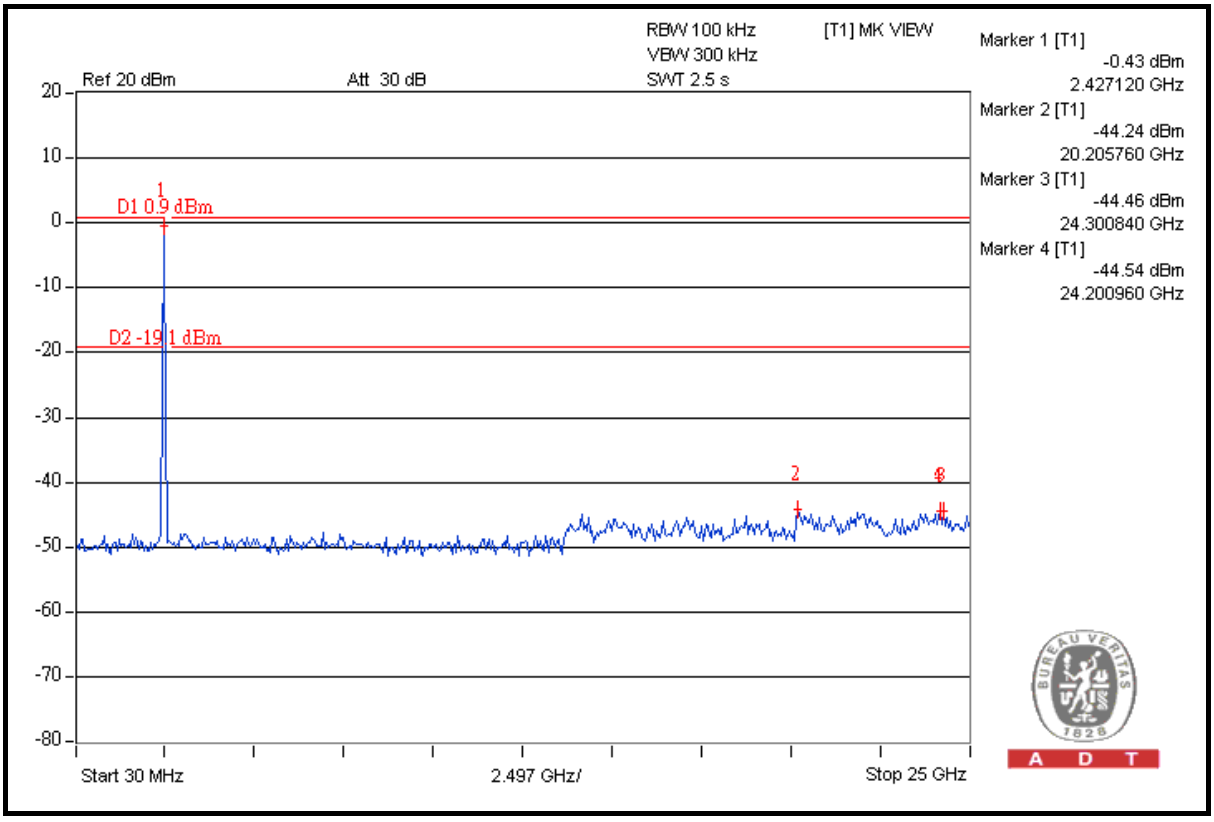

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 -0.1 dBm
D2 -20.1 dBm
Marker 1 [T1]
-0.10 dBm
2.409200 GHz
Marker 2 [T1]
-34.72 dBm
2.400000 GHz
Marker 3 [T1]
-32.81 dBm
2.399600 GHz
Marker 4 [T1]
-43.80 dBm
2.390000 GHz
Marker 5 [T1]
-43.80 dBm
2.390000 GHz
F2
F1
Center 2.372 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 10 Hz
SWT 8 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 -0.08 dBm
D2 -20.08 dBm
Marker 1 [T1]
-0.08 dBm
2.414000 GHz
Marker 2 [T1]
-35.61 dBm
2.400000 GHz
Marker 3 [T1]
-35.61 dBm
2.400000 GHz
Marker 4 [T1]
-47.10 dBm
2.390000 GHz
Marker 5 [T1]
-47.10 dBm
2.390000 GHz
F2
F1
Center 2.372 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 -0.1 dBm
D2 -20.1 dBm
Marker 1 [T1]
-1.25 dBm
2.377180 GHz
Marker 2 [T1]
-43.35 dBm
24.001200 GHz
Marker 3 [T1]
-44.09 dBm
24.101080 GHz
Marker 4 [T1]
-44.10 dBm
21.953660 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz


RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 0.9 dBm
D2 -19.1 dBm
Marker 1 [T1]
0.90 dBm
2.461400 GHz
Marker 2 [T1]
-39.34 dBm
2.483500 GHz
Marker 3 [T1]
-39.34 dBm
2.483500 GHz
Marker 4 [T1]
-50.06 dBm
2.500000 GHz
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 10 Hz
SWT 8 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
Marker 1 [T1]
1.07 dBm
2.459200 GHz
Marker 2 [T1]
-44.65 dBm
2.483500 GHz
Marker 3 [T1]
-44.65 dBm
2.483500 GHz
Marker 4 [T1]
-54.80 dBm
2.500000 GHz
D1 1.07 dBm
D2 -18.93 dBm
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
Marker 1 [T1]
-0.43 dBm
2.427120 GHz
Marker 2 [T1]
-44.24 dBm
20.205760 GHz
Marker 3 [T1]
-44.46 dBm
24.300840 GHz
Marker 4 [T1]
-44.54 dBm
24.200960 GHz
D1 0.9 dBm
D2 -19.1 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

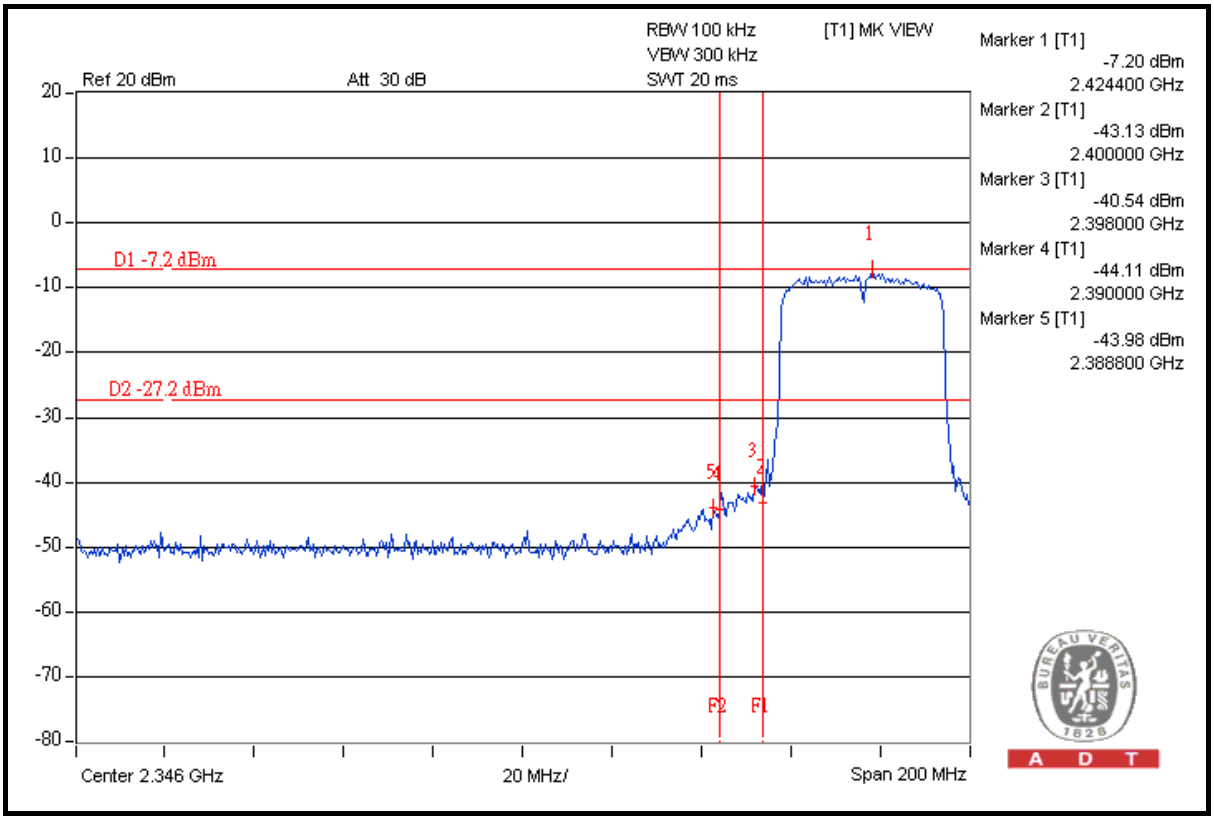
DRAFT 802.11n (40MHz) OFDM MODULATION

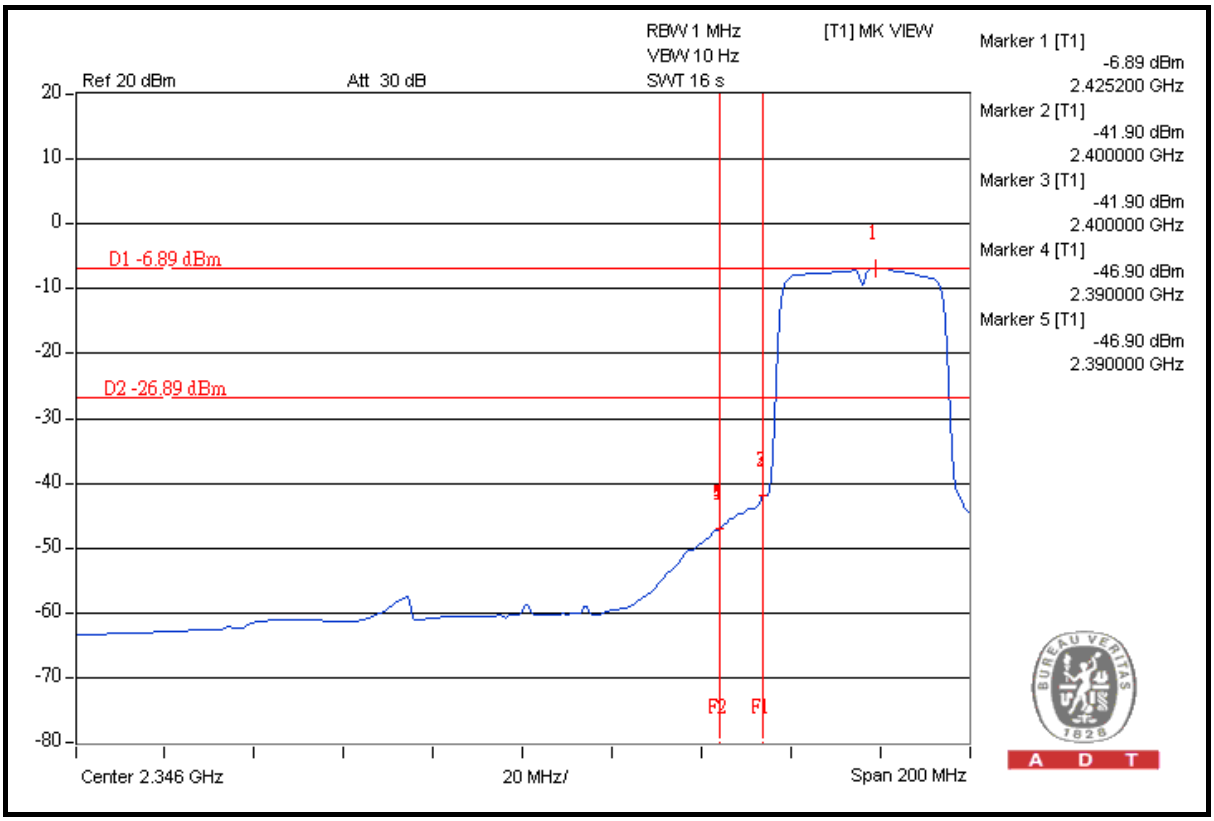
NOTE 1: The band edge emission plot on the next page shows 36.78dBc between carrier maximum power and local maximum emission in restrict band (2.38880GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.1.7 is 102.40dBuV/m (Peak), so the maximum field strength in restrict band is 102.40 – 36.78 = 65.62dBuV/m which is under 74dBuV/m limit.

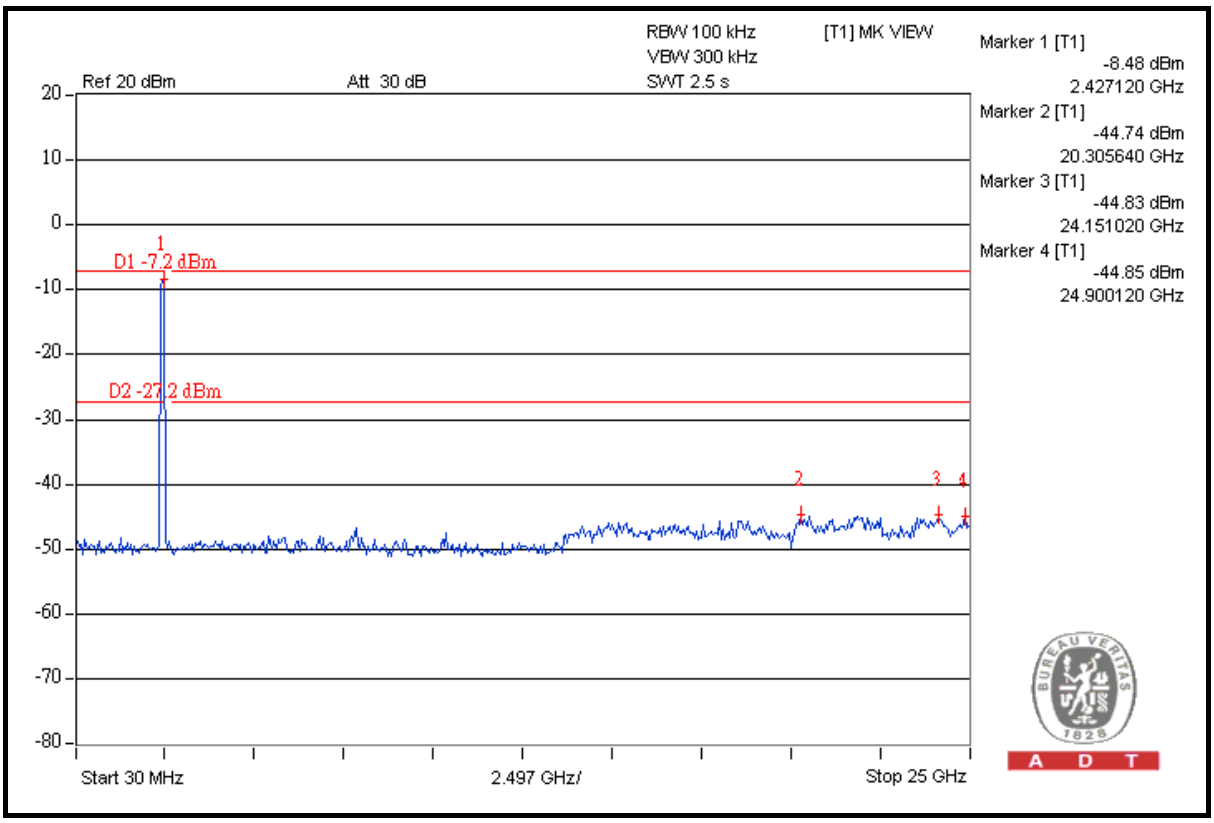
The band edge emission plot on the next page shows 40.01dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.1.7 is 91.85dBuV/m (Average), so the maximum field strength in restrict band is 91.85 – 40.01 = 51.84dBuV/m which is under 54dBuV/m limit.

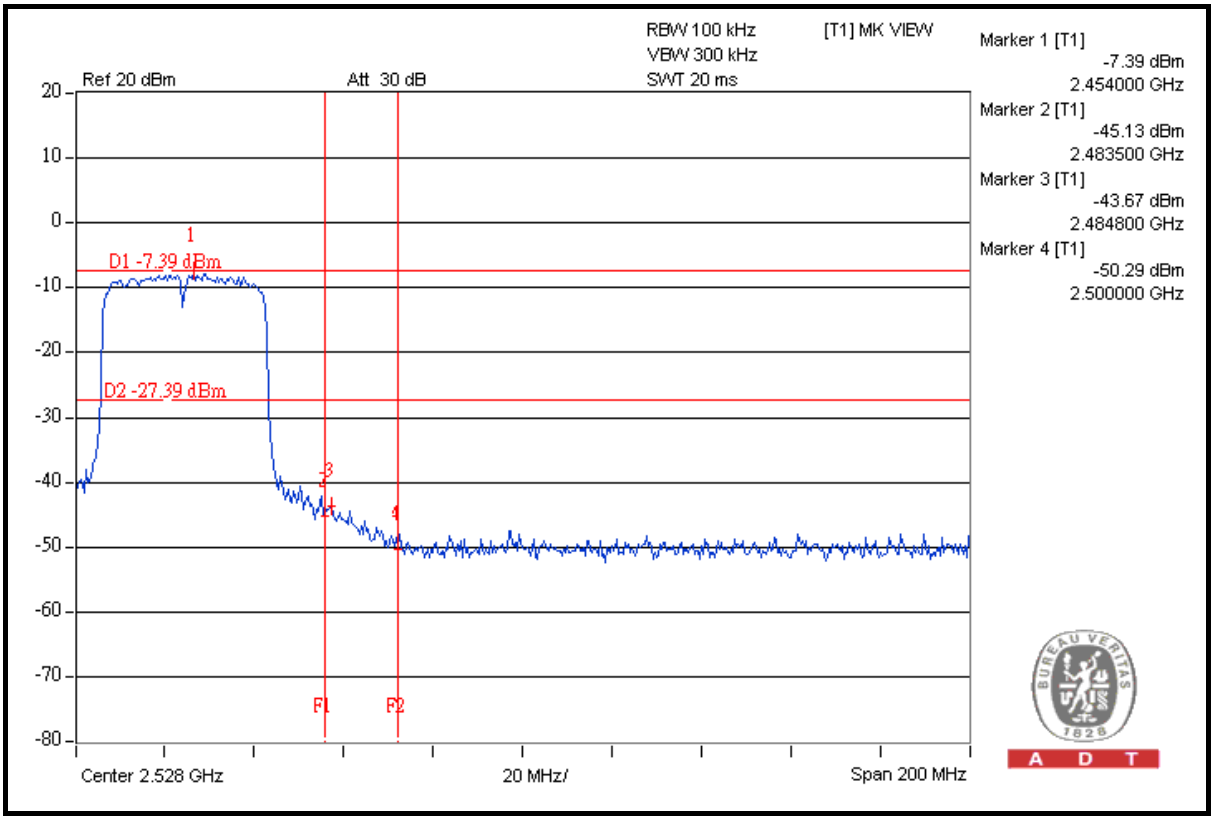
NOTE 2: The band edge emission plot on the next second page shows 36.28dBc between carrier maximum power and local maximum emission in restrict band (2.48480GHz). The emission of carrier strength list in the test result of channel 7 at the item 4.1.7 is 101.82dBuV/m (Peak), so the maximum field strength in restrict band is 101.82 – 36.28 = 65.54dBuV/m which is under 74dBuV/m limit.

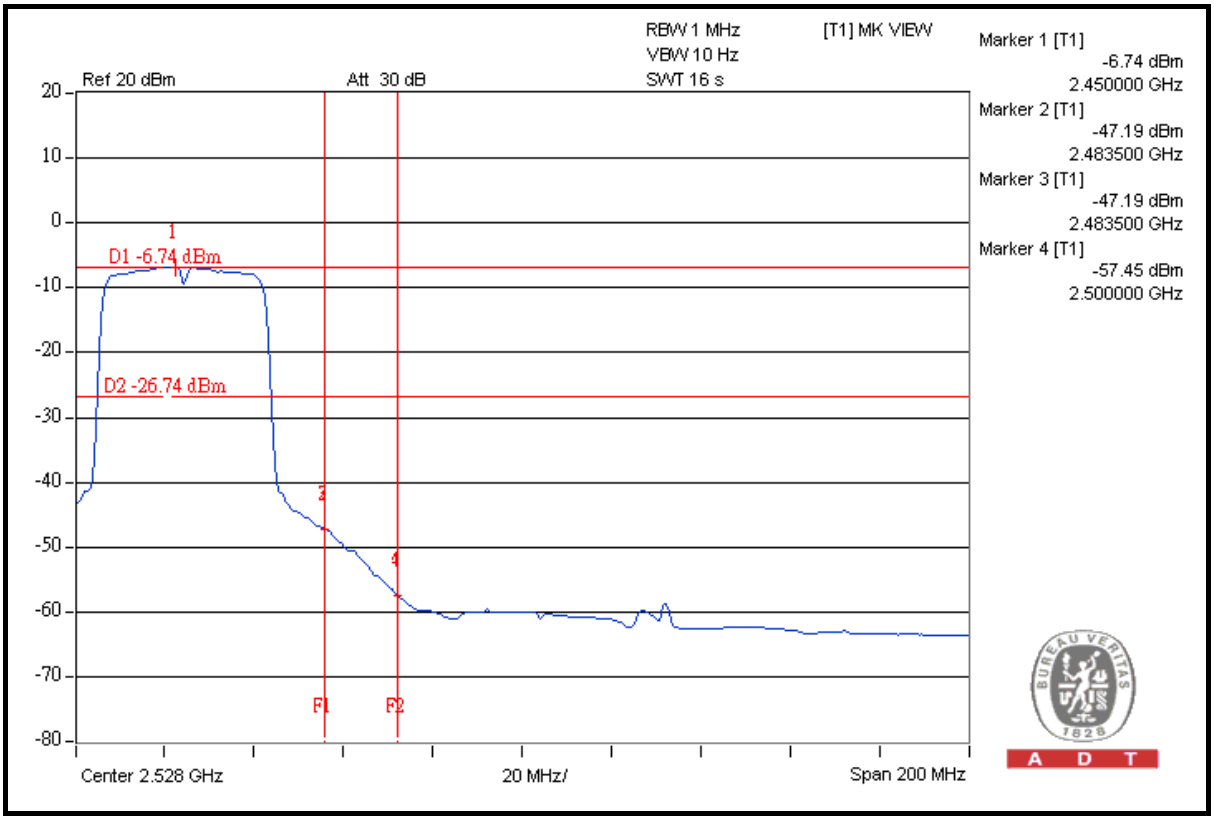
The band edge emission plot on the next third page shows 40.45dBc between carrier maximum power and local maximum emission in restrict band (2.48350GHz). The emission of carrier strength list in the test result of channel 7 at the item 4.1.7 is 91.29dBuV/m (Average), so the maximum field strength in restrict band is 91.29 – 40.45 = 50.84dBuV/m which is under 54dBuV/m limit.

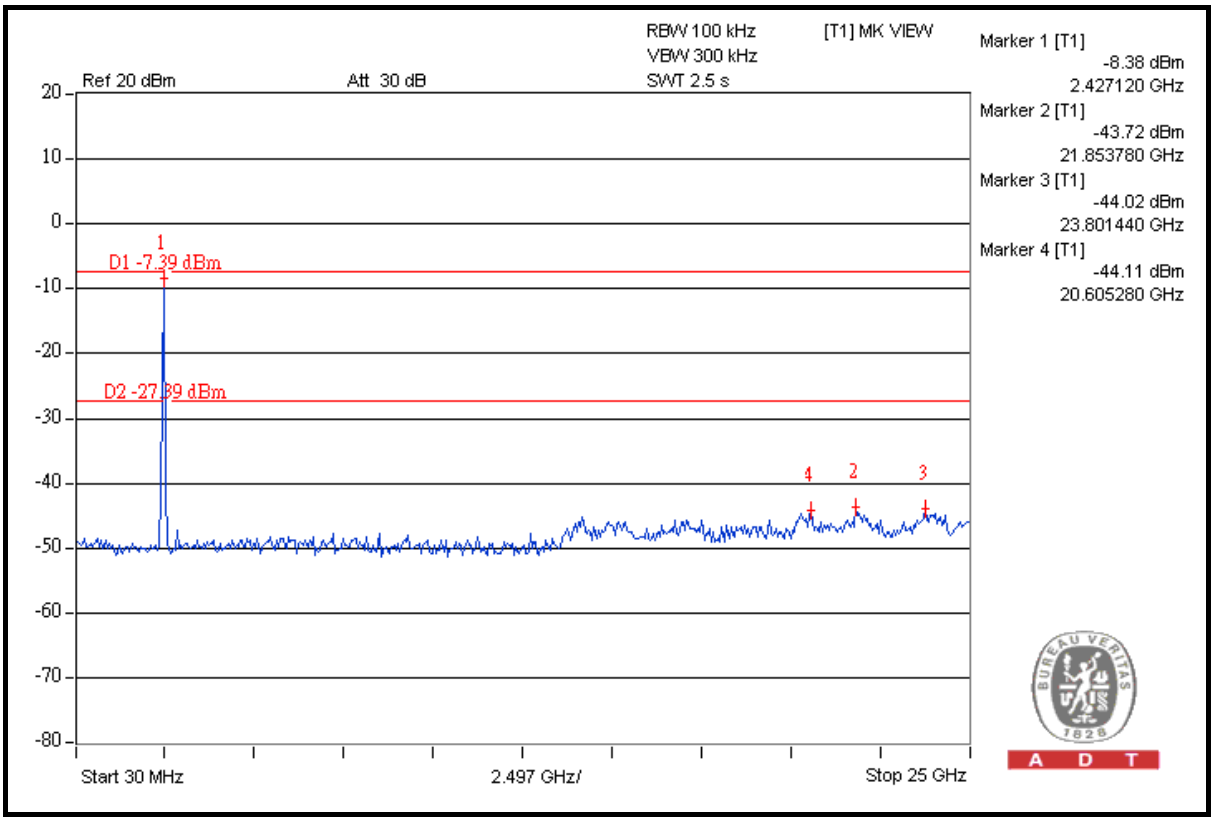

RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 -7.2 dBm
D2 -27.2 dBm
Marker 1 [T1]
-7.20 dBm
2.424400 GHz
Marker 2 [T1]
-43.13 dBm
2.400000 GHz
Marker 3 [T1]
-40.54 dBm
2.398000 GHz
Marker 4 [T1]
-44.11 dBm
2.390000 GHz
Marker 5 [T1]
-43.98 dBm
2.388800 GHz
F2
F1
Center 2.346 GHz
20 MHz/
Span 200 MHz


RBW 1 MHz
VBW 10 Hz
SWT 16 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
D1 -6.89 dBm
D2 -26.89 dBm
Marker 1 [T1]
-6.89 dBm
2.425200 GHz
Marker 2 [T1]
-41.90 dBm
2.400000 GHz
Marker 3 [T1]
-41.90 dBm
2.400000 GHz
Marker 4 [T1]
-46.90 dBm
2.390000 GHz
Marker 5 [T1]
-46.90 dBm
2.390000 GHz
F2
F1
Center 2.346 GHz
20 MHz/
Span 200 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
Marker 1 [T1]
-8.48 dBm
2.427120 GHz
Marker 2 [T1]
-44.74 dBm
20.305640 GHz
Marker 3 [T1]
-44.83 dBm
24.151020 GHz
Marker 4 [T1]
-44.85 dBm
24.900120 GHz
D1 -7.2 dBm
D2 -27.2 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz


RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
Marker 1 [T1]
-7.39 dBm
2.454000 GHz
Marker 2 [T1]
-45.13 dBm
2.483500 GHz
Marker 3 [T1]
-43.67 dBm
2.484800 GHz
Marker 4 [T1]
-50.29 dBm
2.500000 GHz
D1 -7.39 dBm
D2 -27.39 dBm
F1
F2
Center 2.528 GHz
20 MHz/
Span 200 MHz


RBW 1 MHz
VBW 10 Hz
SWT 16 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
Marker 1 [T1]
-6.74 dBm
2.450000 GHz
Marker 2 [T1]
-47.19 dBm
2.483500 GHz
Marker 3 [T1]
-47.19 dBm
2.483500 GHz
Marker 4 [T1]
-57.45 dBm
2.500000 GHz
D1 -6.74 dBm
D2 -26.74 dBm
F1
F2
Center 2.528 GHz
20 MHz/
Span 200 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 20 dBm
Att 30 dB
Marker 1 [T1]
-8.38 dBm
2.427120 GHz
Marker 2 [T1]
-43.72 dBm
21.853780 GHz
Marker 3 [T1]
-44.02 dBm
23.801440 GHz
Marker 4 [T1]
-44.11 dBm
20.605280 GHz
D1 -7.39 dBm
D2 -27.39 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

4.7 ANTENNA REQUIREMENT

4.7.1 STANDARD APPLICABLE

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

4.7.2 ANTENNA CONNECTED CONSTRUCTION

The antenna used in this product is Dipole antenna with R-SMA antenna connector. The maximum Gain of the antenna is 2dBi.

5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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

6. INFORMATION ON THE TESTING LABORATORIES

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

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

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

Linko EMC/RF Lab:
Tel: 886-2-26052180
Fax: 886-2-26051924

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 ---