FCC TEST REPORT

REPORT NO.: RF980616L05

MODEL NO.: SR-300

RECEIVED: Jun. 16, 2009

TESTED: Jun. 16 ~ Jun. 23, 2009

ISSUED: Jun. 26, 2009

APPLICANT: Sorenson Communications, Inc.

ADDRESS: 4192 South Riverboat Road, Ste 100, Salt Lake City, UT 84123

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.

TABLE OF CONTENTS

1. CERTIFICATION

PRODUCT:	wireless n router
MODEL:	SR-300
BRAND:	Sorenson
APPLICANT:	Sorenson Communications, Inc.
TEST SAMPLE:	ENGINEERING SAMPLE
TESTED:	Jun. 16 ~ Jun. 23, 2009
STANDARDS:	**FCC Part 15, Subpart C (Section 15.247)**
	ANSI C63.4-2003

The above equipment (Model: SR-300) 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 : Peggy Chen , **DATE :** Jun. 26, 2009
Peggy Chen / Specialist

TECHNICAL ACCEPTANCE : Long Chen , **DATE :** Jun. 26, 2009
Responsible for RF
Long Chen / Senior Engineer

APPROVED BY : Gary Chang , **DATE :** Jun. 26, 2009
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 -10.77dB at 18.242MHz.
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 -1.00dB at 2483.5MHz.
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	150kHz~30MHz	2.44dB
Radiated emissions	30MHz ~ 200MHz	3.19dB
	200MHz ~1000MHz	3.21dB
	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	wireless n router
MODEL NO.	SR-300
FCC ID	XHUSR3000001
POWER SUPPLY	5Vdc from 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 300.0Mbps
OPERATING FREQUENCY	2412.0 ~ 2462.0MHz
NUMBER OF CHANNEL	11 for 802.11b, 802.11g, draft 802.11n (20MHz) 7 for draft 802.11n (40MHz)
OUTPUT POWER	343.535mW
ANTENNA TYPE	Dipole antenna with 2dBi gain
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Adapter

NOTE:

1. The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers.

MODULATION MODE	TX FUNCTION
802.11b	2TX
802.11g	2TX
Draft 802.11n (20MHz)	2TX
Draft 802.11n (40MHz)	2TX

2. The EUT was operated with following power adapters:

Adapter 1	
BRAND	JENTEC TECHNOLOGY CO., LTD.
MODEL	AF1805-A
INPUT POWER	100-120Vac, 50-60Hz, 0.4A
OUTPUT POWER	5Vdc, 2.5A
POWER LINE	1.8m non-shielded cable without core

Adapter 2	
BRAND	JENTEC TECHNOLOGY CO., LTD.
MODEL	CF1505-B
INPUT POWER	100-120Vac, 50-60Hz, 0.4A
OUTPUT POWER	5Vdc, 2.5A
POWER LINE	1.8m non-shielded cable without core

3. 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

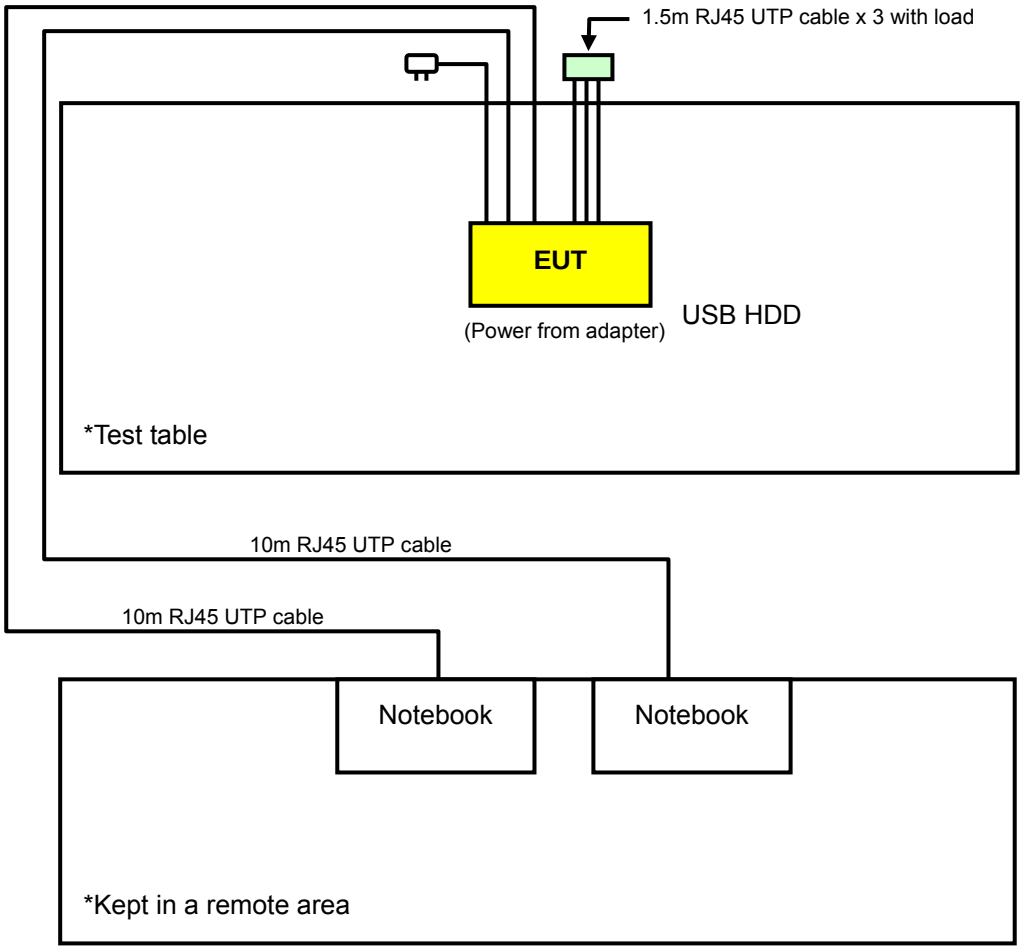
11 channels are provided for 802.11b, 802.11g and draft 802.11n (20MHz):

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
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 from adapter: AF1805-A
B	-	√	√	-	Power from adapter: CF1505-B

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

NOTE: "-": Means no effect.

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	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0	X
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	

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, B	Draft 802.11n (20MHz)	1 to 11	11	OFDM	BPSK	7.2	X

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	Draft 802.11n (20MHz)	1 to 11	11	OFDM	BPSK	7.2

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	DELL	PP05L	12130898320	E2K24CLNS
2	NOTEBOOK	DELL	PP05L	9954115984	E2K24CLNS

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

NOTE:
1. All power cords of the above support units are non shielded (1.8m).
2. Item 1, 2 acted as communication partners 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	ESIB7	100212	May 25, 2009	May 24, 2010
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Aug. 08, 2008	Aug. 07, 2009
BILOG Antenna SCHWARZBECK	VULB9168	9168-156	Apr. 30, 2009	Apr. 29, 2010
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Aug. 06, 2008	Aug. 05, 2009
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170242	Jan. 06, 2009	Jan. 05, 2010
Preamplifier Agilent	8449B	3008A01911	Sep. 10, 2008	Sep. 09, 2009
Preamplifier Agilent	8447D	2944A10638	Dec. 26, 2008	Dec. 25, 2009
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	218190/4 231241/4	May 13, 2009	May 12, 2010
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 09, 2008	Aug. 08, 2009
Software	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower &Turn Table Controller EMCO	2090	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 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 FCC Site Registration No. is 460141.

5. The IC Site Registration No. is IC 7450F-4.

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.

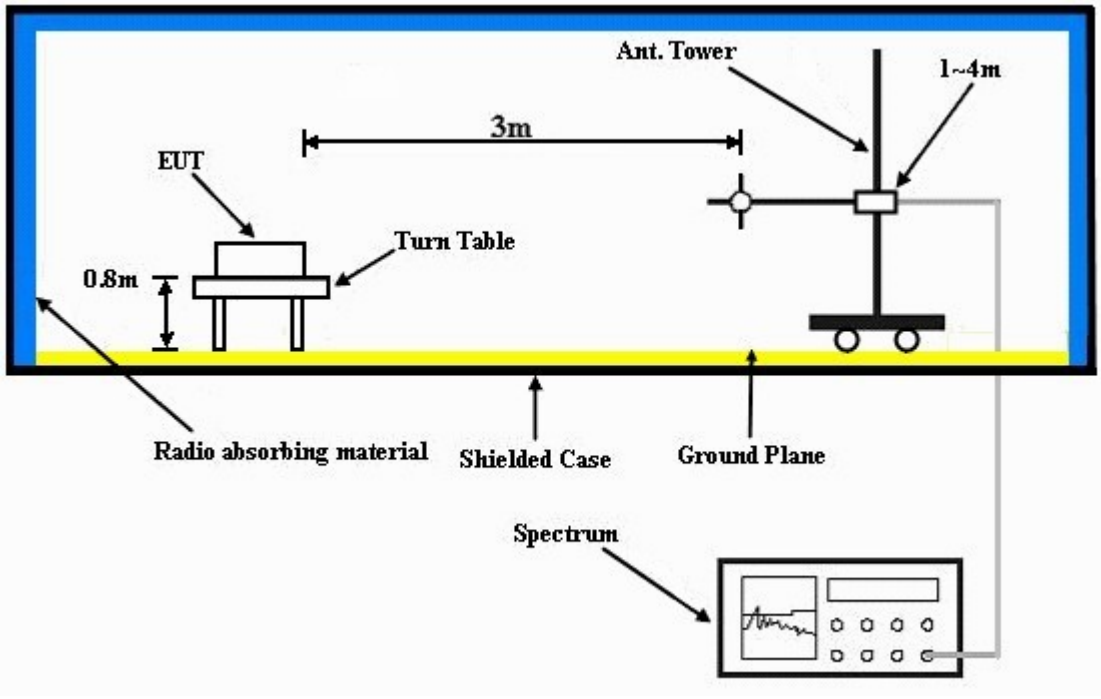
NOTE:

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

a. Placed the EUT on the testing table.
b. Prepared two notebook systems outside of testing area to act as communication partner.
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 communication partner sent data to EUT by command "PING".

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	23deg. C, 70%RH 1002 hPa	TESTED BY	Lori Chiu

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	58.16 PK	74.00	-15.84	1.00 H	218	25.94	32.22
2	2390.00	47.82 AV	54.00	-6.18	1.00 H	218	15.60	32.22
3	*2412.00	112.88 PK			1.00 H	219	80.58	32.30
4	*2412.00	108.26 AV			1.00 H	219	75.96	32.30
5	4824.00	49.38 PK	74.00	-24.62	1.00 H	201	11.05	38.33
6	4824.00	35.33 AV	54.00	-18.67	1.00 H	201	-3.00	38.33
7	#7236.00	58.25 PK	92.88	-34.63	1.00 H	90	13.80	44.45
8	#7236.00	50.54 AV	88.26	-37.72	1.00 H	90	6.09	44.45
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	61.85 PK	74.00	-12.15	1.18 V	193	29.63	32.22
2	2390.00	50.65 AV	54.00	-3.35	1.18 V	193	18.43	32.22
3	*2412.00	118.58 PK			1.24 V	184	86.28	32.30
4	*2412.00	114.35 AV			1.24 V	184	82.05	32.30
5	4824.00	51.28 PK	74.00	-22.72	1.23 V	181	12.95	38.33
6	4824.00	42.22 AV	54.00	-11.78	1.23 V	181	3.89	38.33
7	#7236.00	62.02 PK	98.58	-36.56	1.06 V	151	17.57	44.45
8	#7236.00	55.90 AV	94.35	-38.45	1.06 V	151	11.45	44.45

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH 1002 hPa	TESTED BY	Lori Chiu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	112.78 PK			1.00 H	217	80.39	32.39
2	*2437.00	107.43 AV			1.00 H	217	75.04	32.39
3	4874.00	49.39 PK	74.00	-24.61	1.00 H	16	10.98	38.41
4	4874.00	35.53 AV	54.00	-18.47	1.00 H	16	-2.88	38.41
5	7311.00	56.20 PK	74.00	-17.80	1.00 H	119	11.57	44.64
6	7311.00	46.78 AV	54.00	-7.22	1.00 H	119	2.15	44.64
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	*2437.00	117.26 PK			1.00 V	199	84.87	32.39
2	*2437.00	112.97 AV			1.00 V	199	80.58	32.39
3	4874.00	50.69 PK	74.00	-23.31	1.22 V	165	12.28	38.41
4	4874.00	36.69 AV	54.00	-17.31	1.22 V	165	-1.72	38.41
5	7311.00	60.08 PK	74.00	-13.92	1.80 V	13	15.45	44.64
6	7311.00	52.87 AV	54.00	-1.13	1.80 V	13	8.24	44.64

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.

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	23deg. C, 70%RH 1002 hPa	TESTED BY	Lori Chiu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	111.46 PK			1.05 H	216	77.98	33.48
2	*2462.00	107.13 AV			1.05 H	216	73.65	33.48
3	2483.50	57.64 PK	74.00	-16.36	1.05 H	216	24.09	33.55
4	2483.50	47.46 AV	54.00	-6.54	1.05 H	216	13.91	33.55
5	4924.00	47.97 PK	74.00	-26.03	1.15 H	270	8.08	39.89
6	4924.00	35.67 AV	54.00	-18.33	1.15 H	270	-4.22	39.89
7	7386.00	57.53 PK	74.00	-16.47	1.42 H	122	10.87	46.67
8	7386.00	48.59 AV	54.00	-5.41	1.42 H	122	1.92	46.67
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	116.67 PK			1.15 V	349	83.19	33.48
2	*2462.00	112.57 AV			1.15 V	349	79.09	33.48
3	2483.50	59.67 PK	74.00	-14.33	1.14 V	8	26.12	33.55
4	2483.50	49.25 AV	54.00	-4.75	1.14 V	8	15.70	33.55
5	4924.00	48.68 PK	74.00	-25.32	1.00 V	5	8.79	39.89
6	4924.00	37.41 AV	54.00	-16.59	1.00 V	5	-2.48	39.89
7	7386.00	60.05 PK	74.00	-13.95	1.25 V	21	13.39	46.67
8	7386.00	52.37 AV	54.00	-1.62	1.25 V	21	5.71	46.67

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	23deg. C, 70%RH 1002 hPa	TESTED BY	Lori Chiu

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	66.49 PK	74.00	-7.51	1.00 H	214	33.27	33.22
2	2390.00	50.26 AV	54.00	-3.74	1.00 H	214	17.04	33.22
3	*2412.00	112.88 PK			1.00 H	214	79.58	33.30
4	*2412.00	102.14 AV			1.00 H	214	68.84	33.30
5	4824.00	48.55 PK	74.00	-25.45	1.00 H	201	8.90	39.64
6	4824.00	36.41 AV	54.00	-17.59	1.00 H	201	-3.24	39.64
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	2390.00	68.72 PK	74.00	-5.28	1.29 V	194	35.50	33.22
2	2390.00	52.76 AV	54.00	-1.24	1.29 V	194	19.54	33.22
3	*2412.00	117.56 PK			1.02 V	194	84.26	33.30
4	*2412.00	106.55 AV			1.02 V	194	73.25	33.30
5	4824.00	49.12 PK	74.00	-24.88	1.00 V	241	9.47	39.64
6	4824.00	36.33 AV	54.00	-17.67	1.00 V	241	-3.32	39.64

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.

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	23deg. C, 70%RH 1002 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	59.52 PK	74.00	-14.48	1.00 H	214	26.30	33.22
2	2390.00	48.91 AV	54.00	-5.09	1.00 H	214	15.69	33.22
3	*2437.00	112.58 PK			1.00 H	214	79.19	33.39
4	*2437.00	101.81 AV			1.00 H	214	68.42	33.39
5	2483.50	60.45 PK	74.00	-13.55	1.00 H	214	26.90	33.55
6	2483.50	49.34 AV	54.00	-4.66	1.00 H	214	15.79	33.55
7	4874.00	49.92 PK	74.00	-24.08	1.00 H	263	10.16	39.75
8	4874.00	36.98 AV	54.00	-17.02	1.00 H	263	-2.78	39.75
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	63.60 PK	74.00	-10.40	1.06 V	196	30.38	33.22
2	2390.00	51.46 AV	54.00	-2.54	1.06 V	196	18.24	33.22
3	*2437.00	117.12 PK			1.06 V	196	83.73	33.39
4	*2437.00	106.32 AV			1.06 V	196	72.93	33.39
5	2483.50	62.93 PK	74.00	-11.07	1.06 V	196	29.38	33.55
6	2483.50	51.20 AV	54.00	-2.80	1.06 V	196	17.65	33.55
7	4874.00	49.93 PK	74.00	-24.07	1.00 V	266	10.17	39.75
8	4874.00	36.83 AV	54.00	-17.17	1.00 V	266	-2.93	39.75

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	23deg. C, 70%RH 1002 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	113.69 PK			1.00 H	215	80.21	33.48
2	*2462.00	102.54 AV			1.00 H	215	69.06	33.48
3	2483.50	66.27 PK	74.00	-7.73	1.00 H	216	32.72	33.55
4	2483.50	51.18 AV	54.00	-2.82	1.00 H	216	17.63	33.55
5	4924.00	50.14 PK	74.00	-23.86	1.00 H	12	10.25	39.89
6	4924.00	37.06 AV	54.00	-16.94	1.00 H	12	-2.83	39.89
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	118.27 PK			1.00 V	196	84.79	33.48
2	*2462.00	107.30 AV			1.00 V	196	73.82	33.48
3	2483.50	68.80 PK	74.00	-5.20	1.00 V	197	35.25	33.55
4	**2483.50**	**53.00 AV**	**54.00**	**-1.00**	**1.00 V**	**197**	**19.45**	**33.55**
5	4924.00	49.16 PK	74.00	-24.84	1.02 V	233	9.27	39.89
6	4924.00	36.83 AV	54.00	-17.17	1.02 V	233	-3.06	39.89

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	23deg. C, 70%RH 1002 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	66.26 PK	74.00	-7.74	1.00 H	215	33.04	33.22
2	2390.00	51.74 AV	54.00	-2.26	1.00 H	215	18.52	33.22
3	*2412.00	112.24 PK			1.00 H	211	78.94	33.30
4	*2412.00	101.64 AV			1.00 H	211	68.34	33.30
5	4824.00	48.96 PK	74.00	-25.04	1.00 H	211	9.32	39.64
6	4824.00	36.79 AV	54.00	-17.21	1.00 H	211	-2.85	39.64
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	2390.00	69.63 PK	74.00	-4.37	1.30 V	193	36.41	33.22
2	2390.00	52.96 AV	54.00	-1.04	1.30 V	193	19.74	33.22
3	*2412.00	116.53 PK			1.30 V	197	83.23	33.30
4	*2412.00	105.70 AV			1.30 V	197	72.40	33.30
5	4824.00	49.83 PK	74.00	-24.17	1.00 V	255	10.19	39.64
6	4824.00	36.58 AV	54.00	-17.42	1.00 V	255	-3.06	39.64

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.

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	23deg. C, 70%RH 1002 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	60.24 PK	74.00	-13.76	1.00 H	217	27.02	33.22
2	2390.00	48.84 AV	54.00	-5.16	1.00 H	217	15.62	33.22
3	*2437.00	113.49 PK			1.00 H	217	80.10	33.39
4	*2437.00	102.18 AV			1.00 H	217	68.79	33.39
5	2483.50	59.34 PK	74.00	-14.66	1.00 H	217	25.79	33.55
6	2483.50	49.78 AV	54.00	-4.22	1.00 H	217	16.23	33.55
7	4874.00	49.96 PK	74.00	-24.04	1.00 H	258	10.21	39.75
8	4874.00	36.95 AV	54.00	-17.05	1.00 H	258	-2.80	39.75
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	61.49 PK	74.00	-12.51	1.00 V	195	28.27	33.22
2	2390.00	51.02 AV	54.00	-2.98	1.00 V	195	17.80	33.22
3	*2437.00	117.15 PK			1.00 V	196	83.76	33.39
4	*2437.00	106.26 AV			1.00 V	196	72.87	33.39
5	2483.50	61.49 PK	74.00	-12.51	1.00 V	195	27.94	33.55
6	2483.50	51.57 AV	54.00	-2.43	1.00 V	195	18.02	33.55
7	4874.00	50.23 PK	74.00	-23.77	1.00 V	271	10.48	39.75
8	4874.00	37.15 AV	54.00	-16.85	1.00 V	271	-2.60	39.75

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	23deg. C, 70%RH 1002 hPa	TESTED BY	Antony Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	114.63 PK			1.00 H	216	81.15	33.48
2	*2462.00	103.39 AV			1.00 H	216	69.91	33.48
3	2483.50	66.67 PK	74.00	-7.33	1.00 H	215	33.12	33.55
4	2483.50	51.43 AV	54.00	-2.57	1.00 H	215	17.88	33.55
5	4924.00	50.22 PK	74.00	-23.78	1.00 H	16	10.33	39.89
6	4924.00	37.14 AV	54.00	-16.86	1.00 H	16	-2.75	39.89
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	118.04 PK			1.00 V	195	84.56	33.48
2	*2462.00	107.45 AV			1.00 V	195	73.97	33.48
3	2483.50	70.36 PK	74.00	-3.64	1.00 V	191	36.81	33.55
4	2483.50	52.96 AV	54.00	-1.04	1.00 V	191	19.41	33.55
5	4924.00	49.23 PK	74.00	-24.77	1.01 V	235	9.34	39.89
6	4924.00	36.85 AV	54.00	-17.15	1.01 V	235	-3.04	39.89

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	23deg. C, 70%RH 1002 hPa	TESTED BY	Lori Chiu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	72.11 PK	74.00	-1.89	1.00 H	216	38.89	33.22
2	2390.00	52.01 AV	54.00	-1.99	1.00 H	216	18.79	33.22
3	*2422.00	107.83 PK			1.00 H	215	74.49	33.34
4	*2422.00	96.37 AV			1.00 H	215	63.03	33.34
5	4844.00	49.70 PK	74.00	-24.30	1.00 H	210	10.01	39.69
6	4844.00	37.63 AV	54.00	-16.37	1.00 H	210	-2.06	39.69
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	71.13 PK	74.00	-2.87	1.17 V	156	37.91	33.22
2	2390.00	52.78 AV	54.00	-1.22	1.17 V	156	19.56	33.22
3	*2422.00	110.93 PK			1.13 V	234	77.59	33.34
4	*2422.00	99.39 AV			1.13 V	234	66.05	33.34
5	4844.00	48.88 PK	74.00	-25.12	1.00 V	211	9.19	39.69
6	4844.00	36.60 AV	54.00	-17.40	1.00 V	211	-3.09	39.69

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	23deg. C, 70%RH 1002 hPa	TESTED BY	Lori Chiu

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	60.89 PK	74.00	-13.11	1.00 H	215	27.67	33.22
2	2390.00	49.55 AV	54.00	-4.45	1.00 H	215	16.33	33.22
3	*2437.00	107.68 PK			1.00 H	215	74.29	33.39
4	*2437.00	96.10 AV			1.00 H	215	62.71	33.39
5	2483.50	59.55 PK	74.00	-14.45	1.00 H	215	26.00	33.55
6	2483.50	50.42 AV	54.00	-3.58	1.00 H	215	16.87	33.55
7	4874.00	48.59 PK	74.00	-25.41	1.00 H	186	8.84	39.75
8	4874.00	36.74 AV	54.00	-17.26	1.00 H	186	-3.01	39.75
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	60.79 PK	74.00	-13.21	1.00 V	197	27.57	33.22
2	2390.00	51.54 AV	54.00	-2.46	1.00 V	197	18.32	33.22
3	*2437.00	112.10 PK			1.00 V	196	78.71	33.39
4	*2437.00	100.21 AV			1.00 V	196	66.82	33.39
5	2483.50	64.58 PK	74.00	-9.42	1.00 V	197	31.03	33.55
6	2483.50	52.72 AV	54.00	-1.28	1.00 V	197	19.17	33.55
7	4874.00	49.62 PK	74.00	-24.38	1.00 V	235	9.87	39.75
8	4874.00	37.25 AV	54.00	-16.75	1.00 V	235	-2.50	39.75

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	23deg. C, 70%RH 1002 hPa	TESTED BY	Lori Chiu

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	109.14 PK			1.00 H	212	75.70	33.44
2	*2452.00	96.78 AV			1.00 H	212	63.34	33.44
3	2483.50	72.14 PK	74.00	-1.86	1.00 H	212	38.59	33.55
4	2483.50	52.25 AV	54.00	-1.75	1.00 H	212	18.70	33.55
5	4904.00	49.26 PK	74.00	-24.74	1.00 H	233	9.44	39.82
6	4904.00	37.05 AV	54.00	-16.95	1.00 H	233	-2.77	39.82
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	112.12 PK			1.14 V	157	78.68	33.44
2	*2452.00	100.78 AV			1.14 V	157	67.34	33.44
3	2483.50	72.86 PK	74.00	-1.14	1.14 V	16	39.31	33.55
4	2483.50	52.85 AV	54.00	-1.15	1.14 V	16	19.30	33.55
5	4904.00	50.23 PK	74.00	-23.77	1.00 V	251	10.41	39.82
6	4904.00	37.29 AV	54.00	-16.71	1.00 V	251	-2.53	39.82

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：DRAFT 802.11n (20MHz) OFDM 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	23deg. C, 63%RH 1000 hPa	TESTED BY	Antony Lee
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	88.23	34.20 QP	43.50	-9.30	2.00 H	268	25.18	9.02
2	249.60	39.43 QP	46.00	-6.57	1.00 H	292	26.62	12.81
3	370.15	36.16 QP	46.00	-9.84	1.00 H	355	20.83	15.33
4	500.42	36.84 QP	46.00	-9.16	1.00 H	271	17.59	19.25
5	599.58	35.16 QP	46.00	-10.84	1.50 H	190	13.26	21.90
6	949.55	32.13 QP	46.00	-13.87	1.25 H	256	5.64	26.49
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	35.59 QP	40.00	-4.41	1.00 V	181	23.37	12.22
2	88.23	39.74 QP	43.50	-3.76	1.00 V	262	30.72	9.02
3	249.60	37.66 QP	46.00	-8.34	1.50 V	163	24.85	12.81
4	368.21	30.75 QP	46.00	-15.25	1.75 V	169	15.46	15.29
5	500.42	35.42 QP	46.00	-10.58	2.00 V	169	16.17	19.25
6	947.60	34.80 QP	46.00	-11.20	1.25 V	61	8.33	26.47

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	23deg. C, 70%RH 1000 hPa	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	181.55	28.56 QP	43.50	-14.94	1.75 H	271	16.49	12.07
2	249.60	34.35 QP	46.00	-11.65	1.00 H	277	21.54	12.81
3	360.43	35.96 QP	46.00	-10.04	1.00 H	10	20.86	15.10
4	399.31	33.55 QP	46.00	-12.45	2.00 H	31	17.51	16.04
5	500.42	31.11 QP	46.00	-14.89	1.75 H	70	11.86	19.25
6	599.58	35.65 QP	46.00	-10.35	1.50 H	10	13.75	21.90
7	751.23	31.15 QP	46.00	-14.85	1.00 H	190	7.17	23.98
8	799.84	33.13 QP	46.00	-12.87	1.00 H	349	7.81	25.32
9	951.49	31.32 QP	46.00	-14.68	1.50 H	196	4.82	26.50
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	92.12	33.84 QP	43.50	-9.66	1.25 V	220	24.59	9.24
2	103.78	36.73 QP	43.50	-6.77	1.50 V	292	26.94	9.79
3	249.60	31.26 QP	46.00	-14.74	1.00 V	172	18.44	12.81
4	364.32	31.70 QP	46.00	-14.30	1.50 V	310	16.51	15.19
5	399.31	33.83 QP	46.00	-12.17	1.75 V	313	17.78	16.04
6	500.42	32.54 QP	46.00	-13.46	1.00 V	172	13.29	19.25
7	751.23	31.33 QP	46.00	-14.67	1.25 V	172	7.35	23.98
8	799.84	31.69 QP	46.00	-14.31	1.50 V	268	6.38	25.32
9	947.60	33.71 QP	46.00	-12.29	1.00 V	358	7.24	26.47

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 0.50MHz.

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.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Sep. 22, 2008	Sep. 21, 2009
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 31, 2008	Dec. 30, 2009
LISN ROHDE & SCHWARZ	ESH2-Z5	100100	Dec. 29, 2008	Dec. 28, 2009
LISN ROHDE & SCHWARZ	ESH3-Z5	100311	Jul. 30, 2008	Jul. 29, 2009
Software ADT	ADT_Cond_ V7.3.7	NA	NA	NA

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

2. The test was performed in 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.

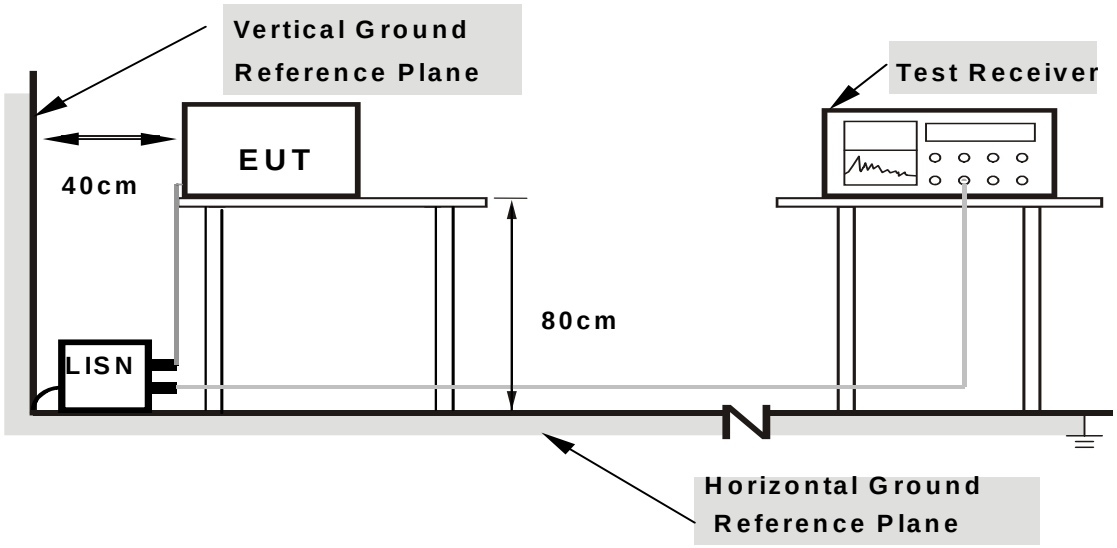
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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.

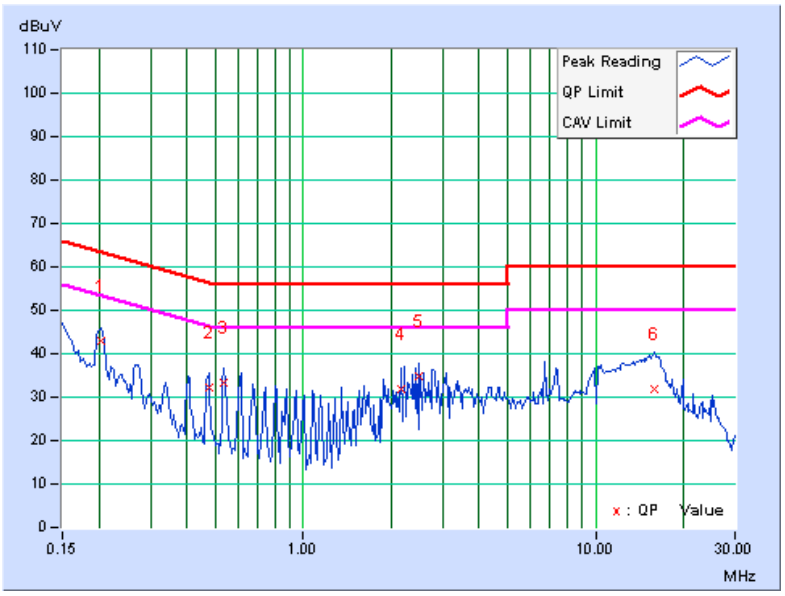
4.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA：DRAFT 802.11n (20MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER	120Vac, 60Hz
TRANSFER RATE	7.2Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	22deg. C, 66%RH, 1011hPa	TESTED BY	Antony Lee
TEST MODE	A		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.205	0.13	42.88	-	43.01	-	63.42	53.42	-20.41	-
2	0.474	0.14	31.93	-	32.07	-	56.44	46.44	-24.37	-
3	0.537	0.15	33.06	-	33.21	-	56.00	46.00	-22.79	-
4	2.160	0.20	31.58	-	31.78	-	56.00	46.00	-24.22	-
5	2.492	0.21	34.66	-	34.87	-	56.00	46.00	-21.13	-
6	15.930	0.58	31.29	-	31.87	-	60.00	50.00	-28.13	-

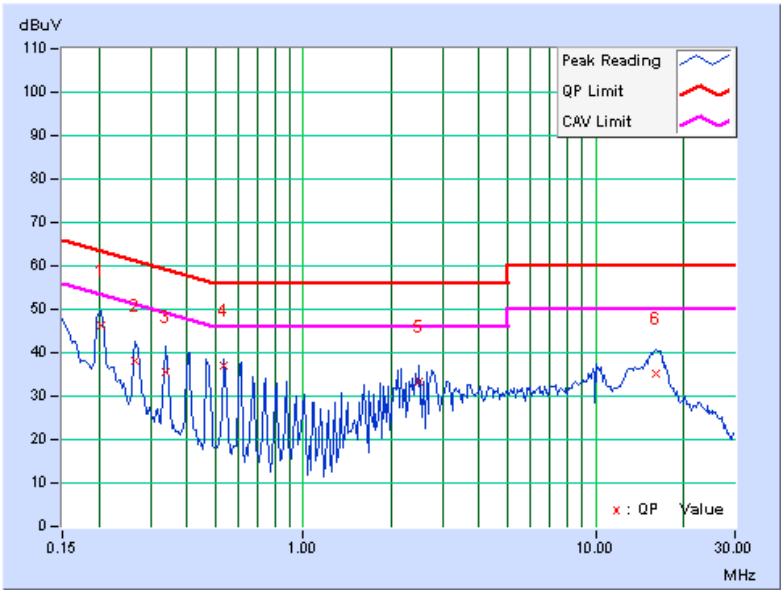
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER	120Vac, 60Hz
TRANSFER RATE	7.2Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	22deg. C, 66%RH, 1011hPa	TESTED BY	Antony Lee
TEST MODE	A		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.205	0.13	46.27	-	46.40	-	63.42	53.42	-17.02	-
2	0.267	0.14	38.13	-	38.27	-	61.20	51.20	-22.94	-
3	0.338	0.14	35.37	-	35.51	-	59.26	49.26	-23.75	-
4	0.537	0.15	37.03	-	37.18	-	56.00	46.00	-18.82	-
5	2.496	0.22	33.26	-	33.48	-	56.00	46.00	-22.52	-
6	16.117	0.70	34.59	-	35.29	-	60.00	50.00	-24.71	-

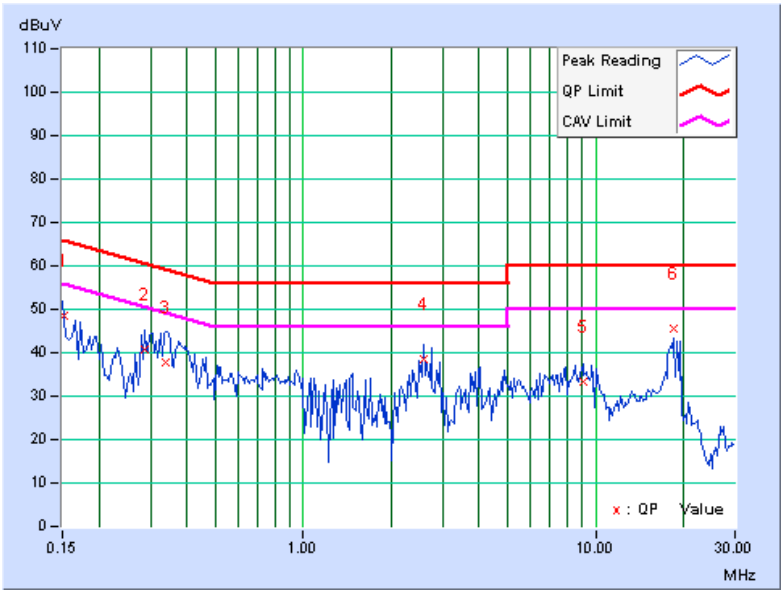
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission 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 1
MODULATION TYPE	BPSK	INPUT POWER	120Vac, 60Hz
TRANSFER RATE	7.2Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	24deg. C, 66%RH, 1011hPa	TESTED BY	Antony Lee
TEST MODE	B		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.151	0.13	48.40	-	48.53	-	65.93	55.93	-17.40	-
2	0.287	0.13	40.59	-	40.72	-	60.62	50.62	-19.89	-
3	0.338	0.14	37.62	-	37.76	-	59.26	49.26	-21.51	-
4	2.578	0.22	38.17	-	38.39	-	56.00	46.00	-17.61	-
5	9.047	0.41	32.77	-	33.18	-	60.00	50.00	-26.82	-
6	18.488	0.64	44.86	-	45.50	-	60.00	50.00	-14.50	-

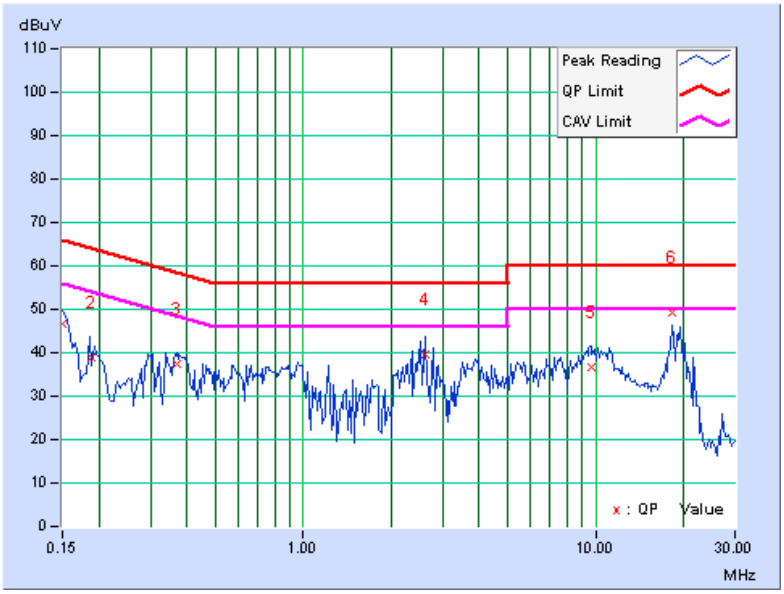
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER	120Vac, 60Hz
TRANSFER RATE	7.2Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	22deg. C, 66%RH, 1011hPa	TESTED BY	Antony Lee
TEST MODE	B		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.13	46.58	-	46.71	-	66.00	56.00	-19.29	-
2	0.189	0.13	38.69	-	38.82	-	64.08	54.08	-25.26	-
3	0.369	0.15	37.13	-	37.28	-	58.53	48.53	-21.25	-
4	2.609	0.23	39.53	-	39.76	-	56.00	46.00	-16.24	-
5	9.707	0.49	36.20	-	36.69	-	60.00	50.00	-23.31	-
6	**18.242**	**0.77**	**48.46**	**-**	**49.23**	**-**	**60.00**	**50.00**	**-10.77**	**-**

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.



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	DUE DATE OF CALIBRATION
R&S SPECTRUM ANALYZER	FSP40	100040	Jul. 04, 2008	Jul. 03, 2009

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

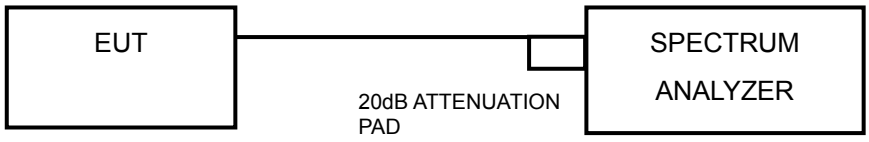
4.3.3 TEST PROCEDURE

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.

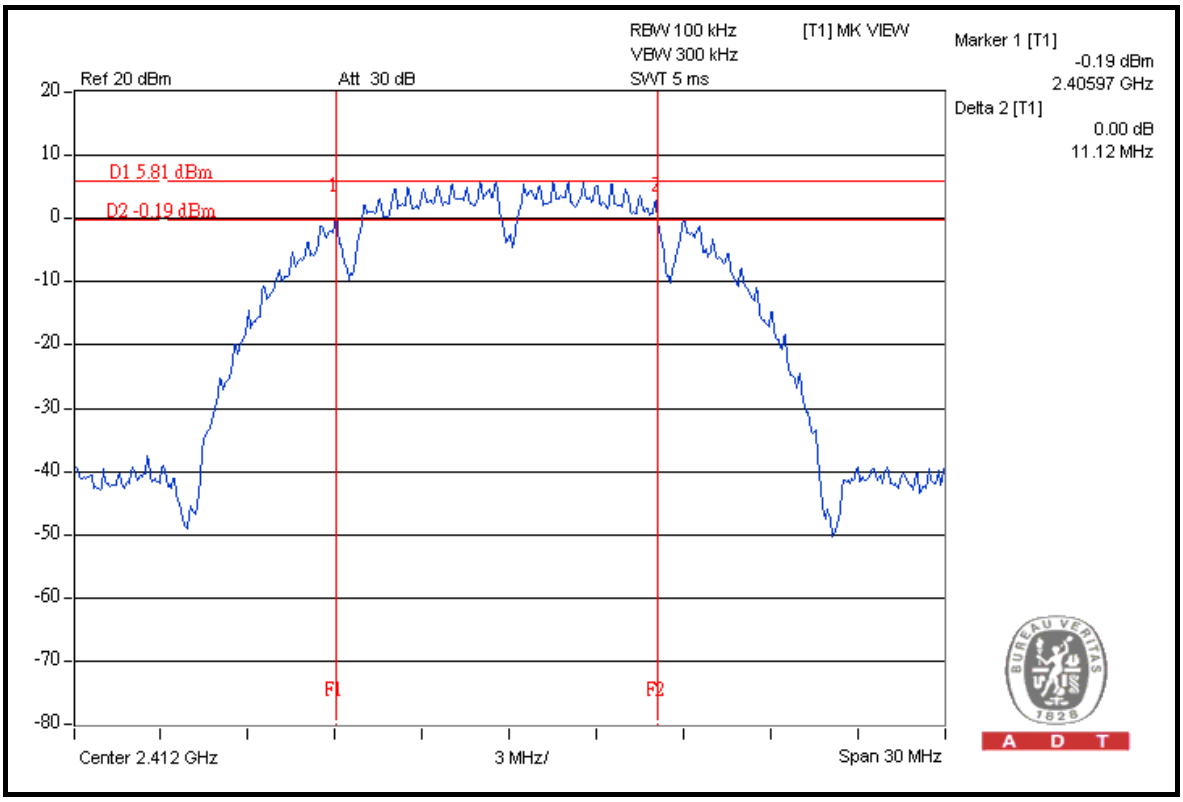
4.3.7 TEST RESULTS

802.11b DSSS MODULATION

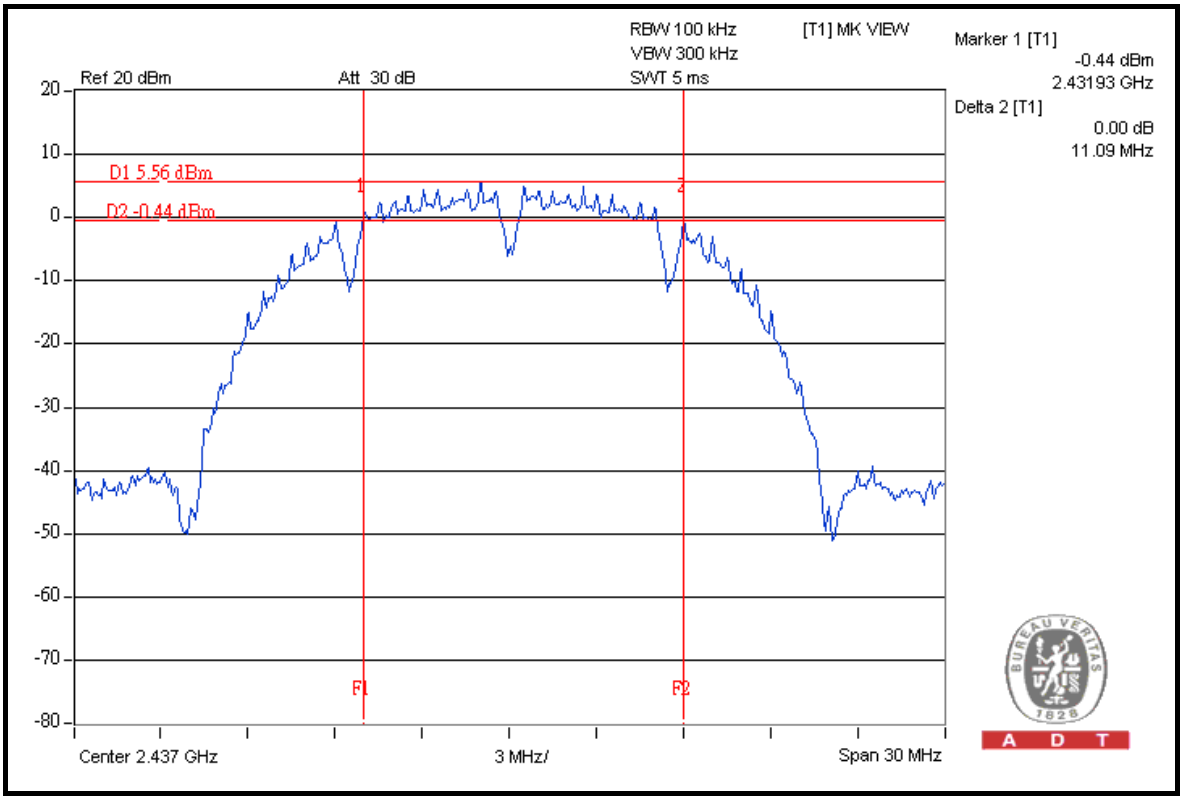
MODULATION TYPE	DBPSK	**TRANSFER RATE**	1.0Mbps
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	23 deg.C, 70 %RH, 1009hPa
TESTED BY	Lori Chiu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	11.12	11.18	0.5	PASS
6	2437	11.09	12.13	0.5	PASS
11	2462	11.11	12.08	0.5	PASS

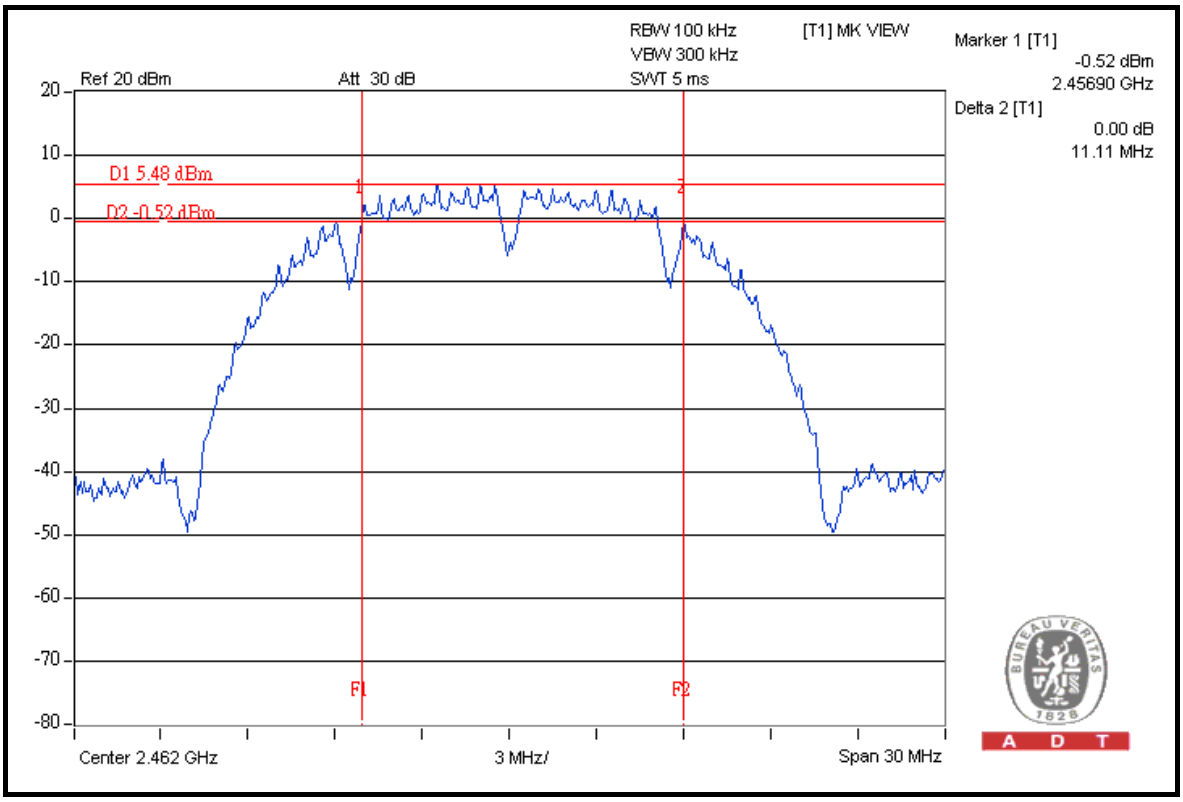
FOR CHAIN 0: CH 1



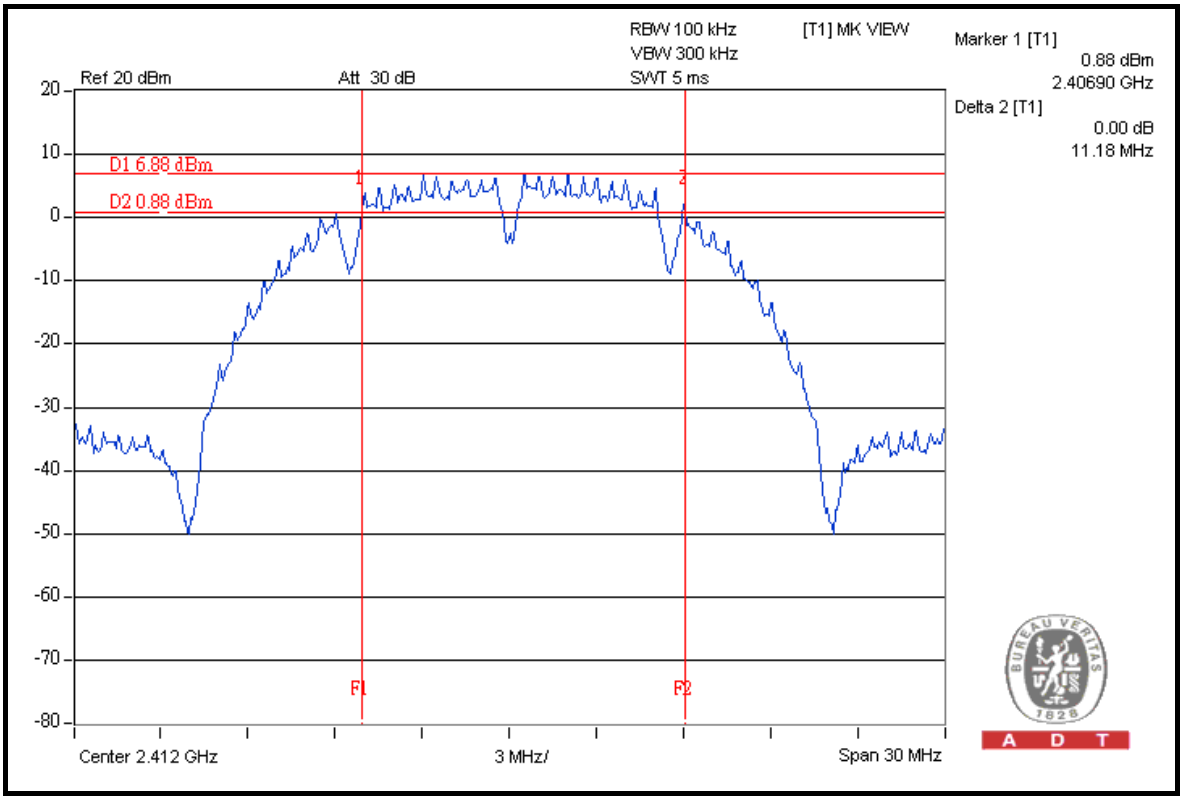
CH 6



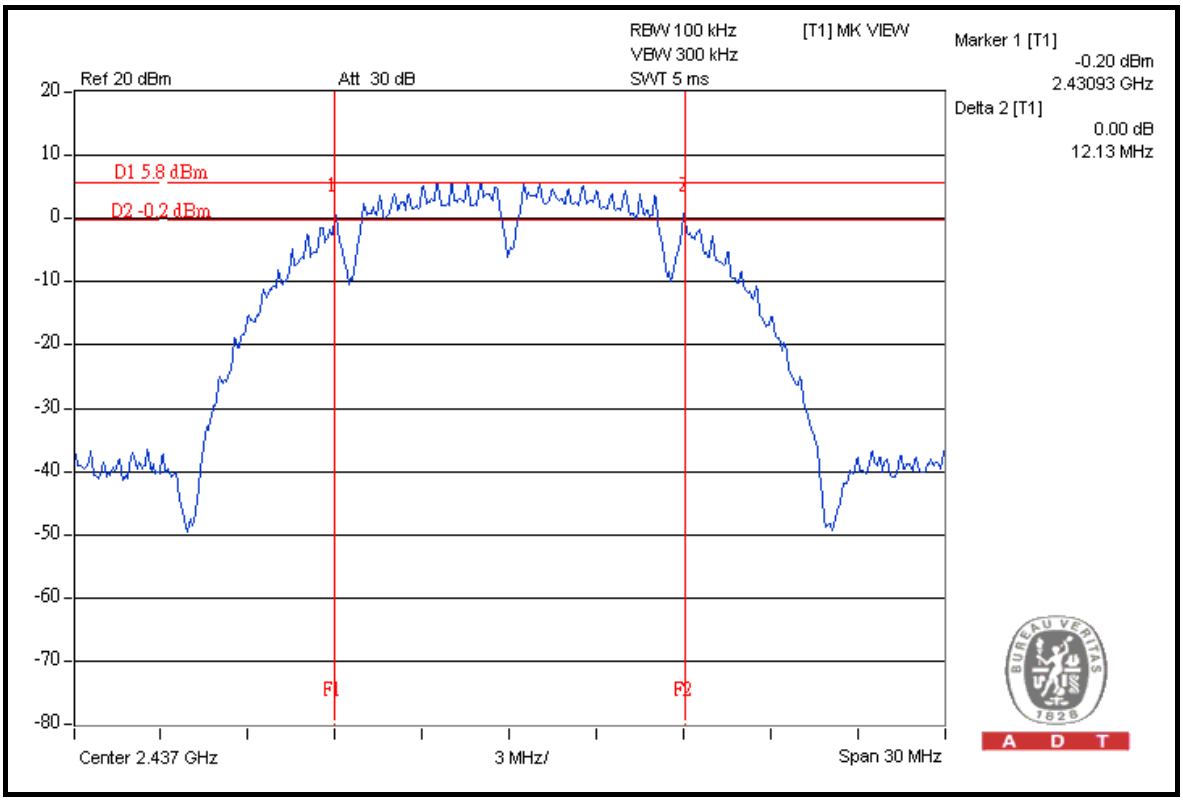
CH 11



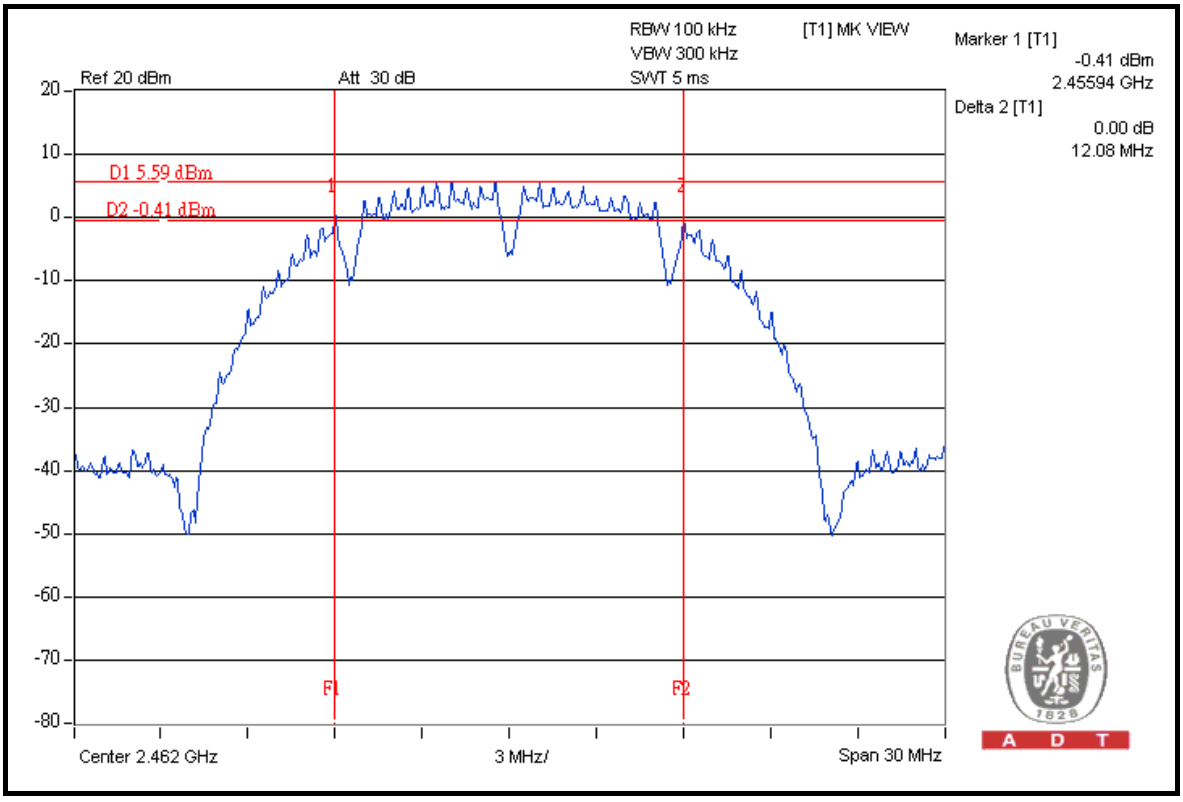
FOR CHAIN 1: CH 1



CH 6


RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-0.20 dBm
2.43093 GHz
Delta 2 [T1]
0.00 dB
12.13 MHz
Ref 20 dBm
Att 30 dB
D1 5.8 dBm
D2 -0.2 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

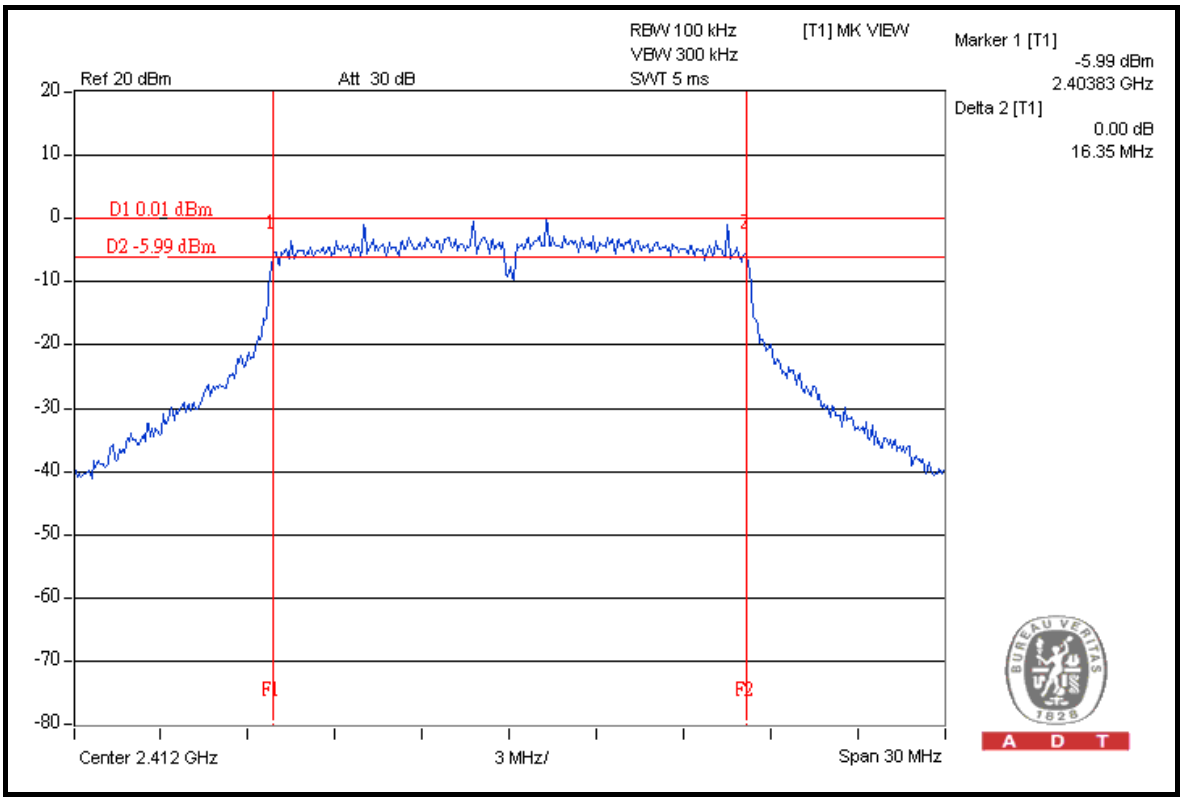

RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-0.41 dBm
2.45594 GHz
Delta 2 [T1]
0.00 dB
12.08 MHz
Ref 20 dBm
Att 30 dB
D1 5.59 dBm
D2 -0.41 dBm
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
F1
F2
Center 2.462 GHz
3 MHz/
Span 30 MHz

802.11g OFDM MODULATION

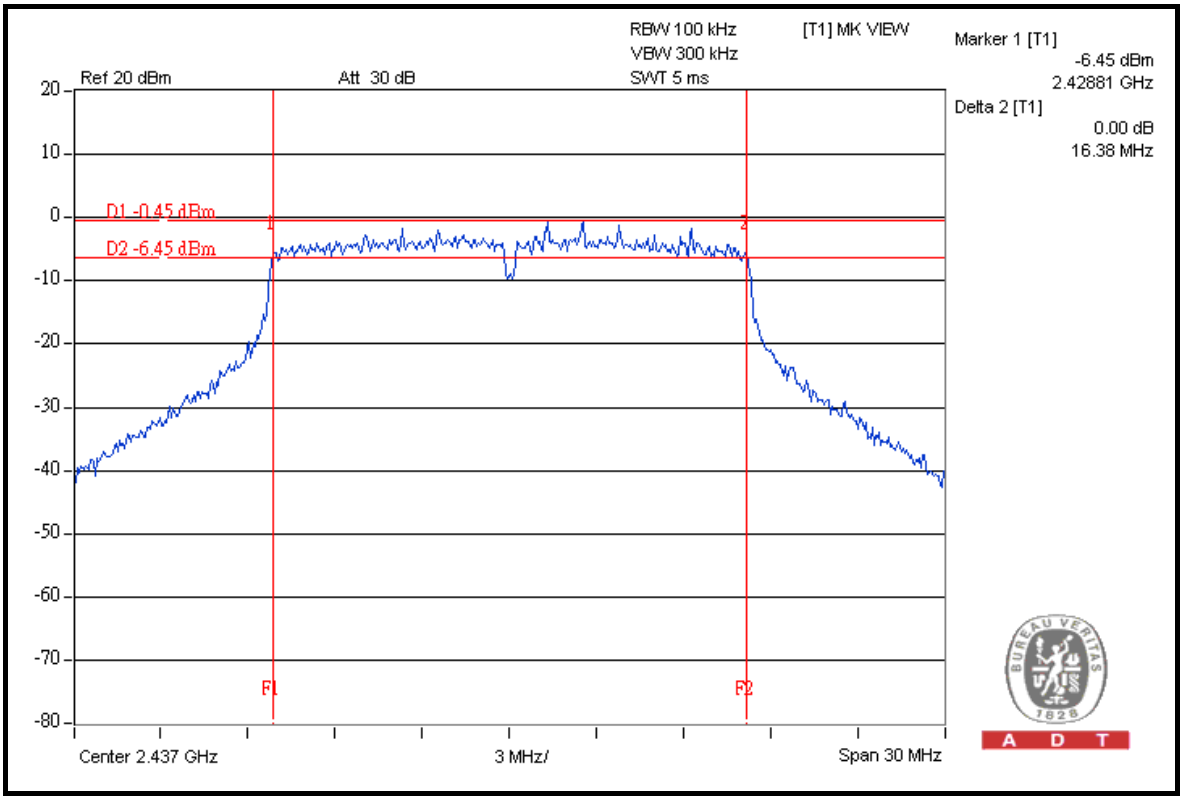
MODULATION TYPE	BPSK	**TRANSFER RATE**	6.0Mbps
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	23 deg.C, 70 %RH, 1009hPa
TESTED BY	Lori Chiu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	16.35	16.41	0.5	PASS
6	2437	16.38	16.42	0.5	PASS
11	2462	16.37	16.42	0.5	PASS

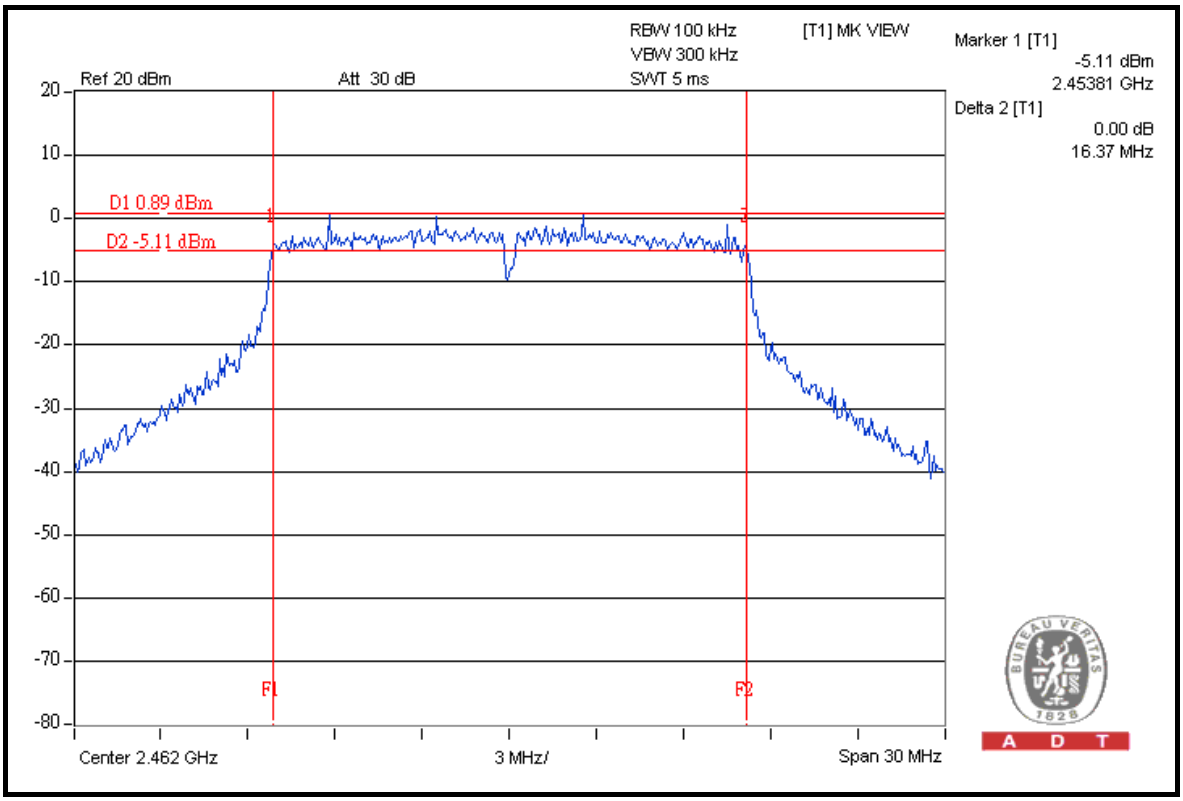
FOR CHAIN 0: CH 1



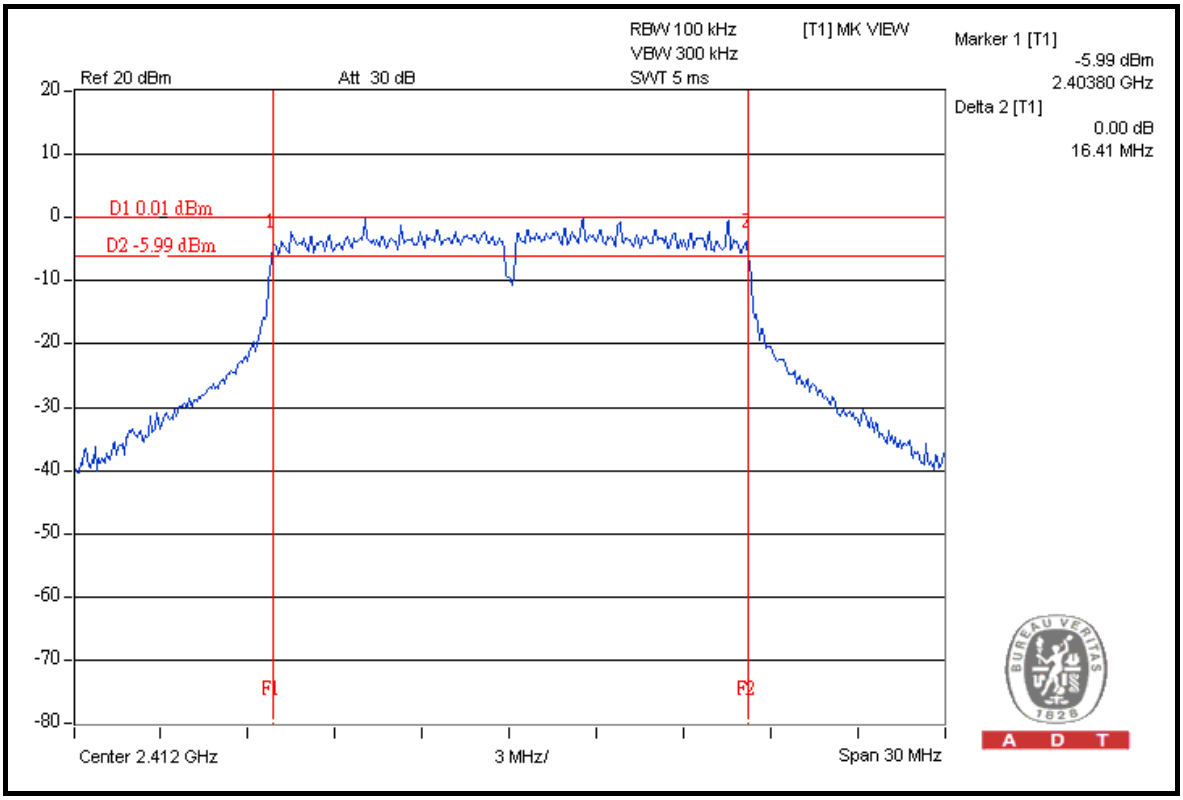
CH 6



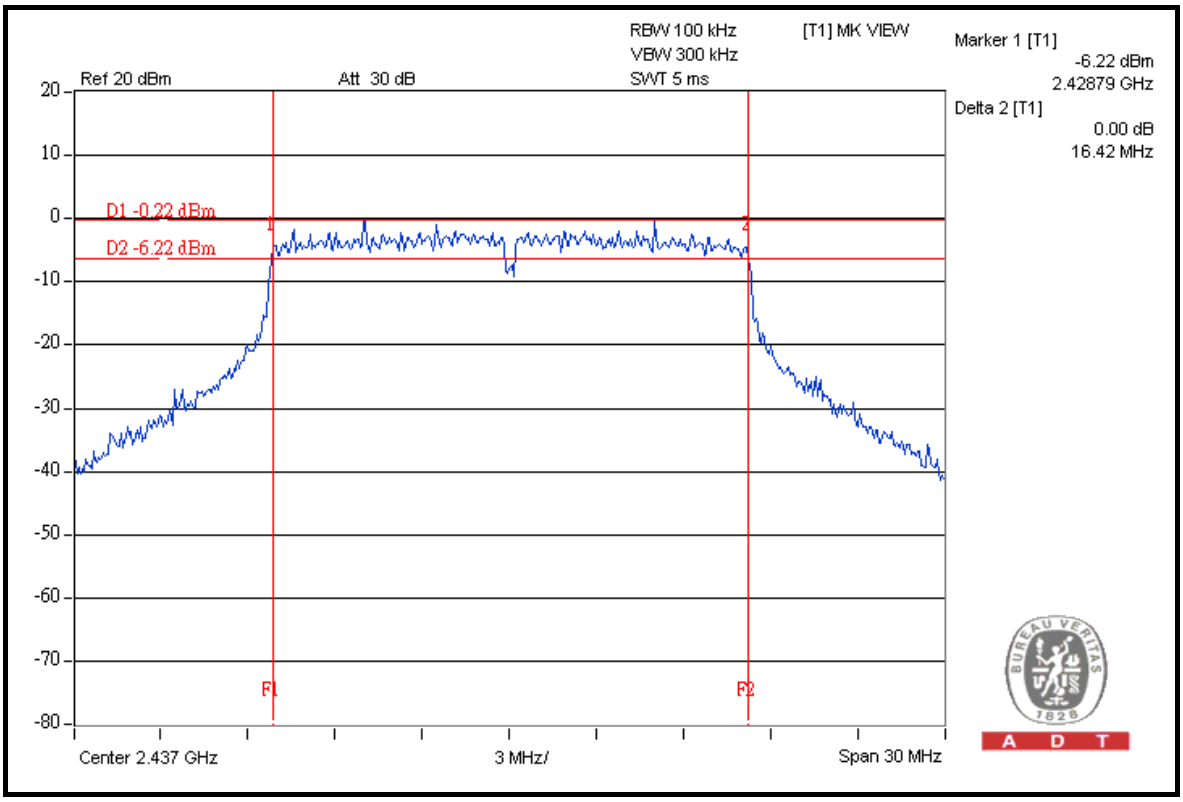
CH 11



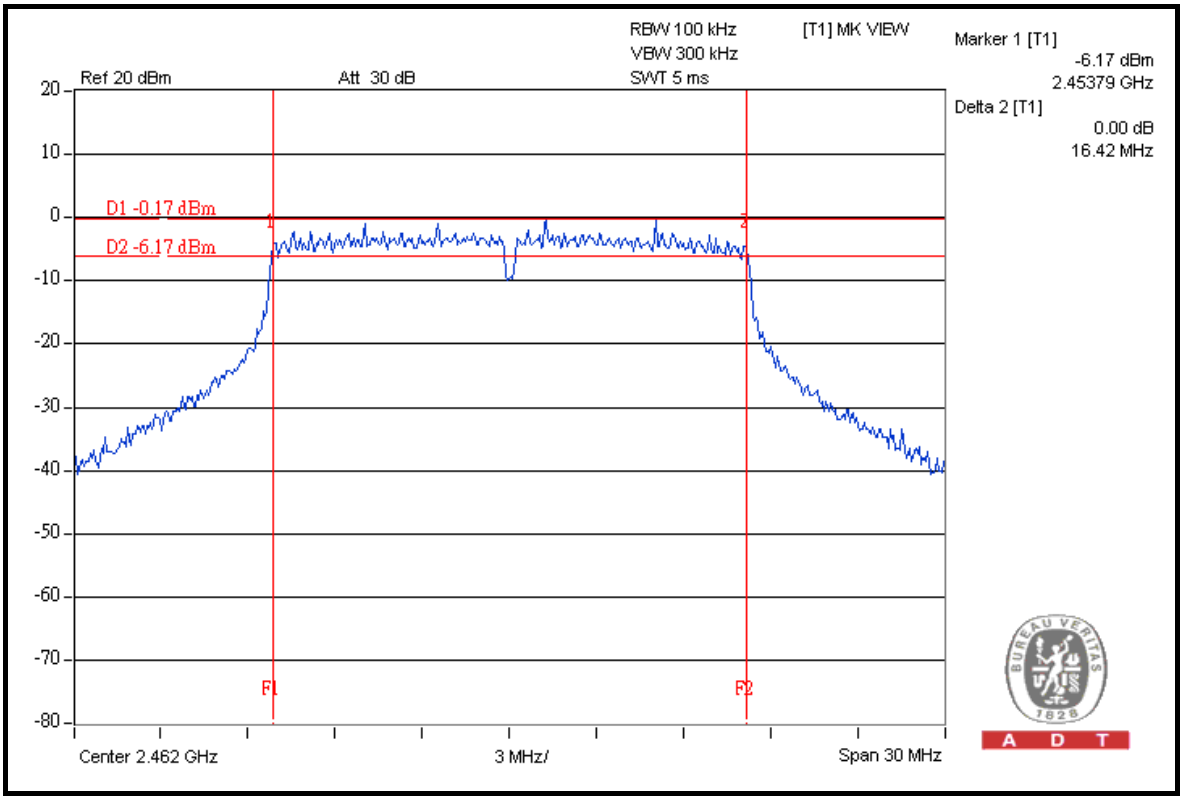
FOR CHAIN 1: CH 1



CH 6


RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-6.22 dBm
2.42879 GHz
Delta 2 [T1]
0.00 dB
16.42 MHz
Ref 20 dBm
Att 30 dB
D1 -0.22 dBm
D2 -6.22 dBm
F1
F2
Center 2.437 GHz
3 MHz/
Span 30 MHz

CH 11

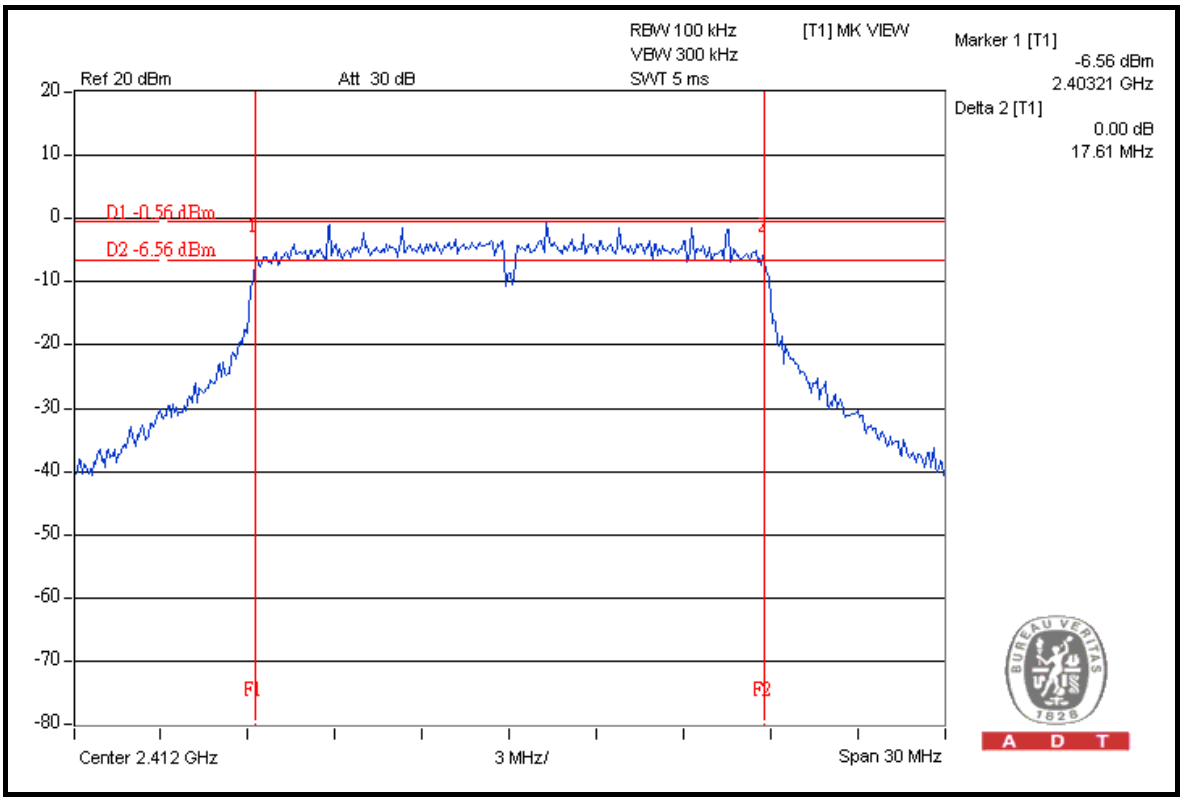

RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-6.17 dBm
2.45379 GHz
Delta 2 [T1]
0.00 dB
16.42 MHz
Ref 20 dBm
Att 30 dB
D1 -0.17 dBm
D2 -6.17 dBm
F1
F2
Center 2.462 GHz
3 MHz/
Span 30 MHz

DRAFT 802.11n (20MHz) OFDM MODULATION

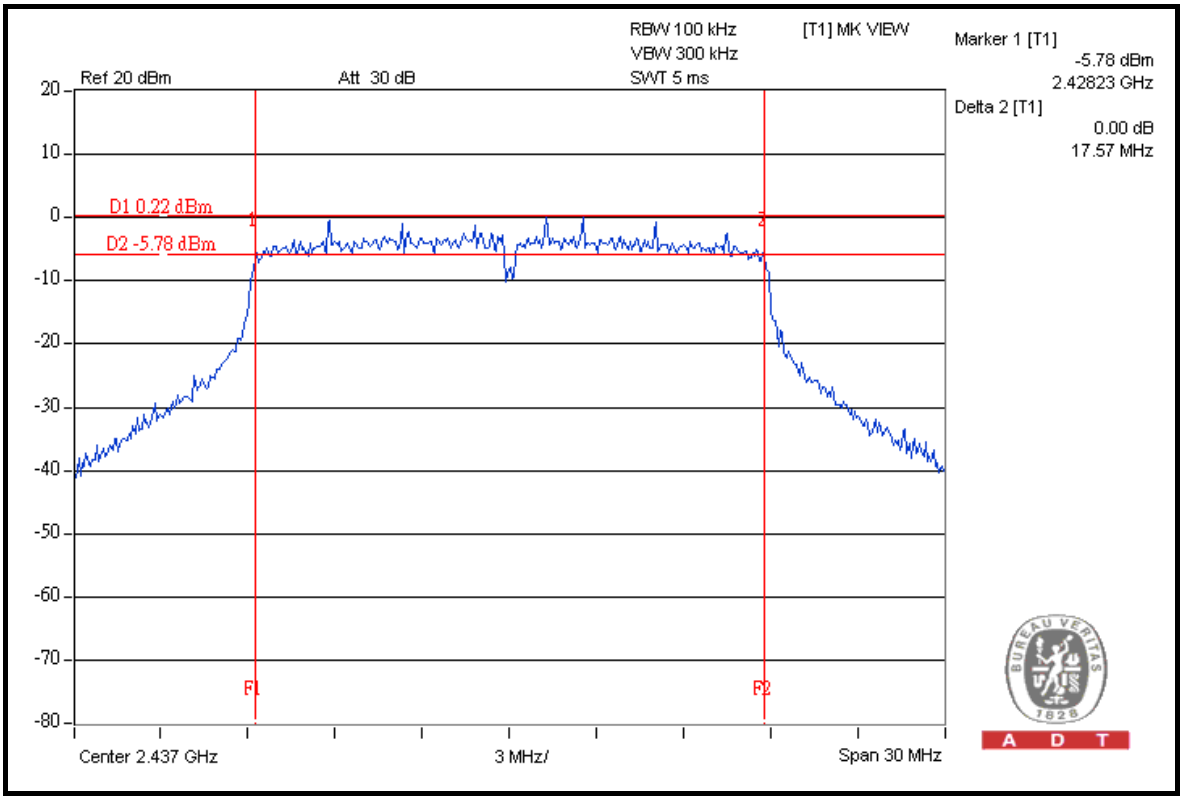
MODULATION TYPE	BPSK	**TRANSFER RATE**	7.2Mbps
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	23 deg.C, 70 %RH, 1009hPa
TESTED BY	Lori Chiu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	17.61	17.61	0.5	PASS
6	2437	17.57	17.36	0.5	PASS
11	2462	17.60	17.62	0.5	PASS

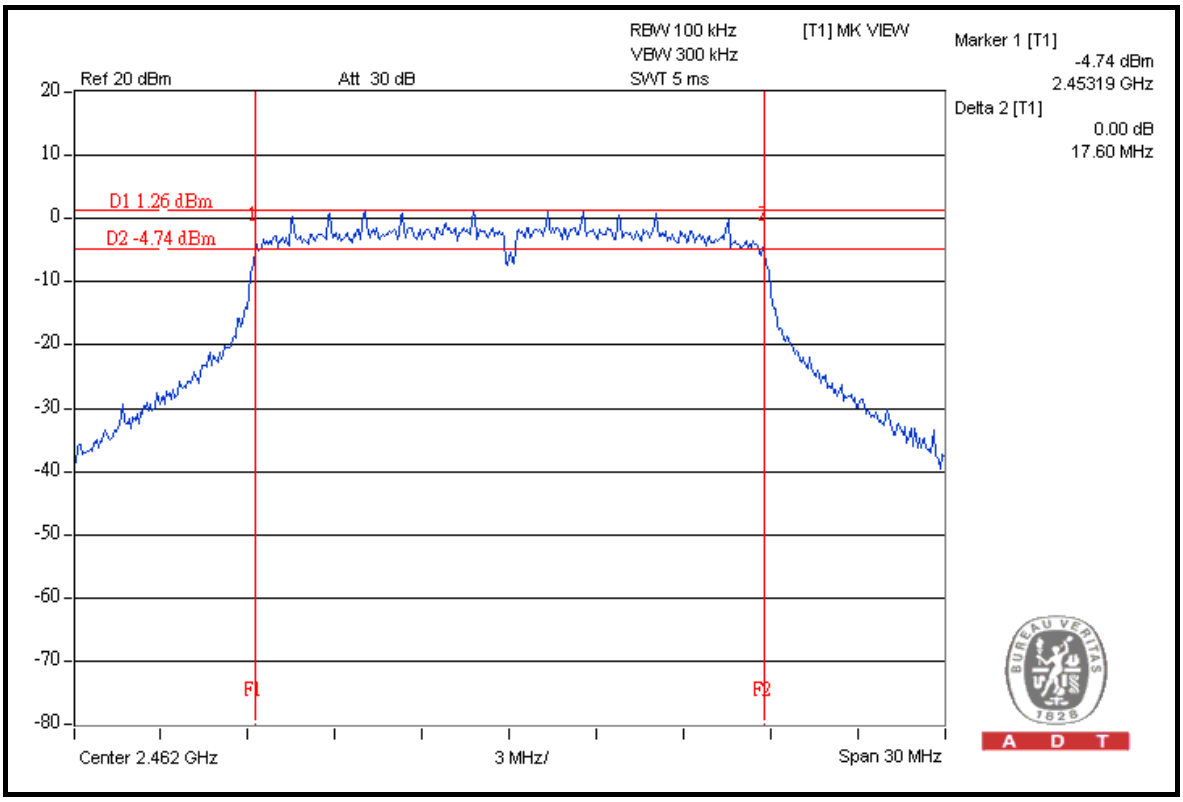
FOR CHAIN 0: CH 1



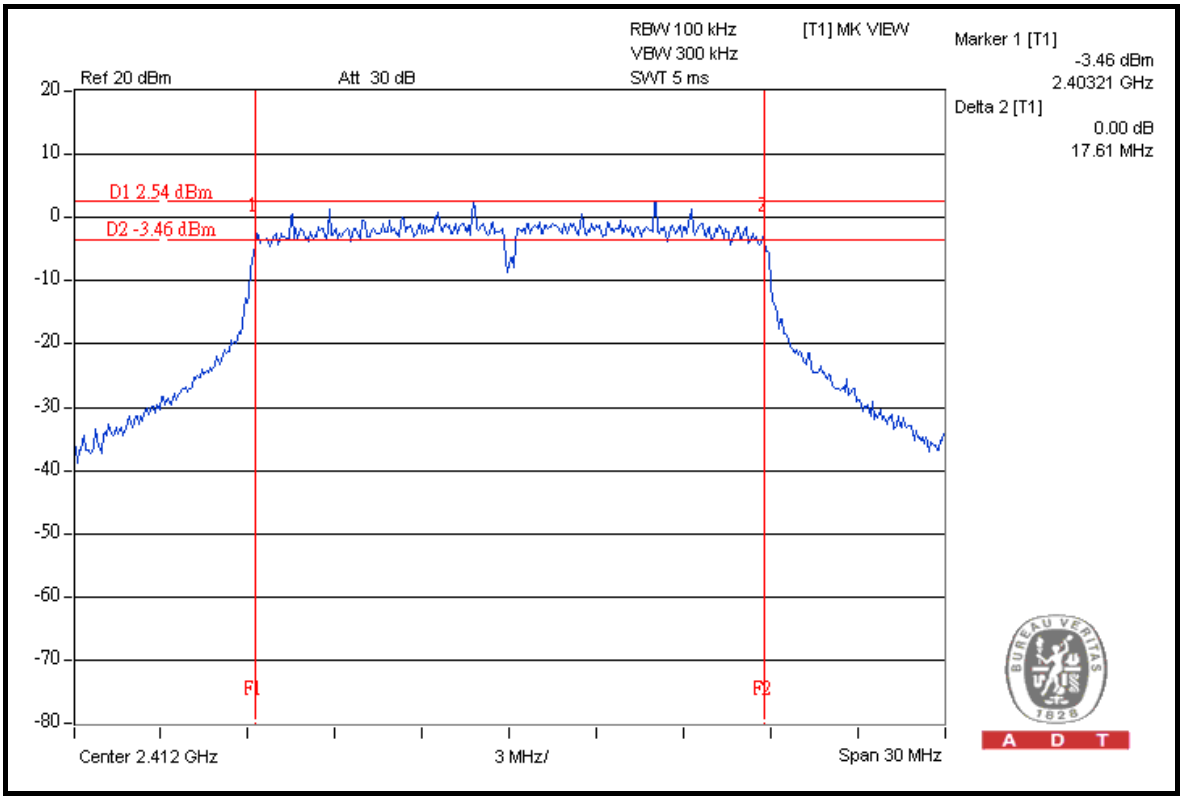
CH 6



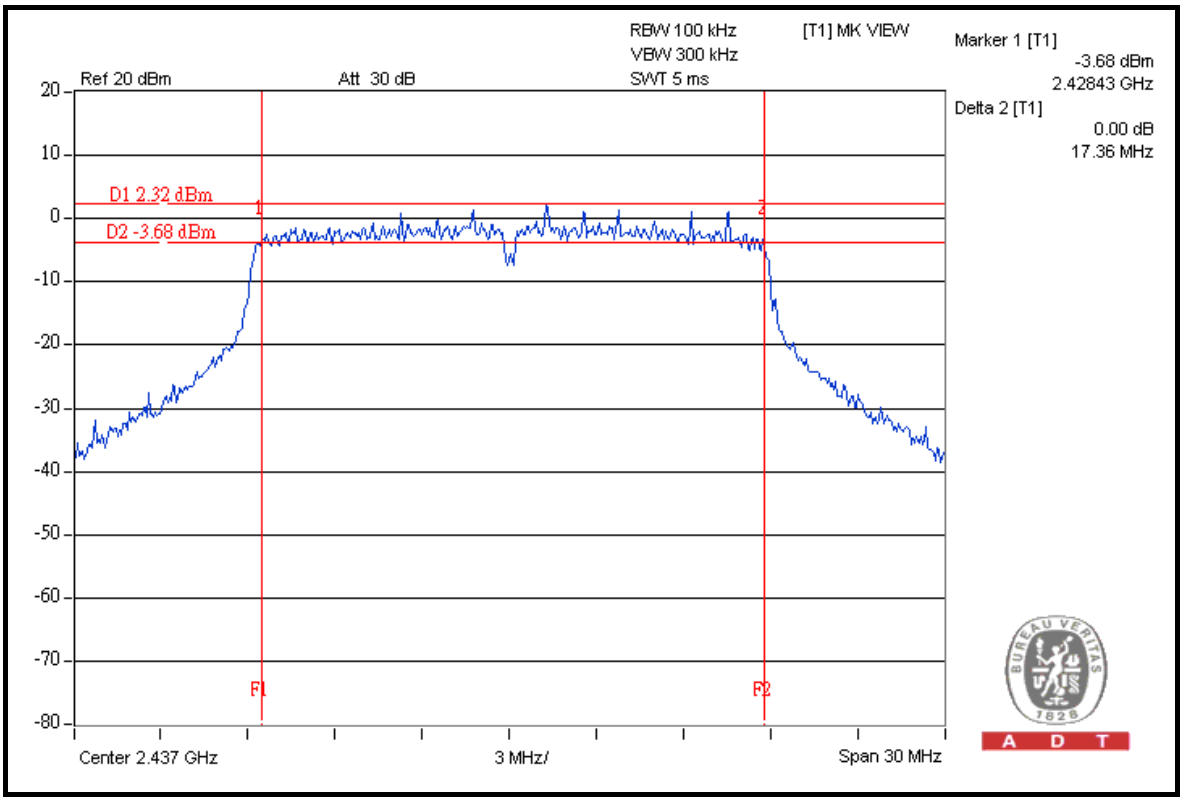
CH 11



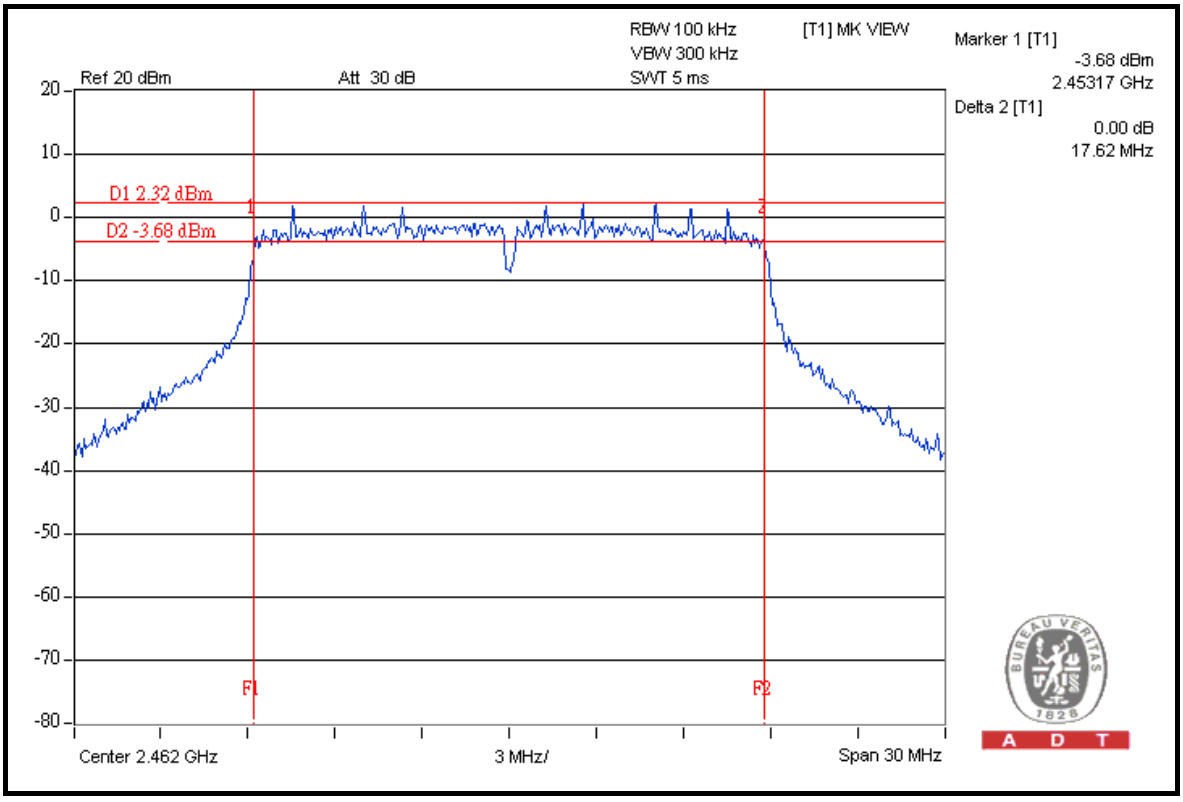
FOR CHAIN 1: CH 1



CH 6


RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-3.68 dBm
2.42843 GHz
Delta 2 [T1]
0.00 dB
17.36 MHz
Ref 20 dBm
Att 30 dB
D1 2.32 dBm
D2 -3.68 dBm
F1
F2
Center 2.437 GHz
3 MHz/
Span 30 MHz

CH 11

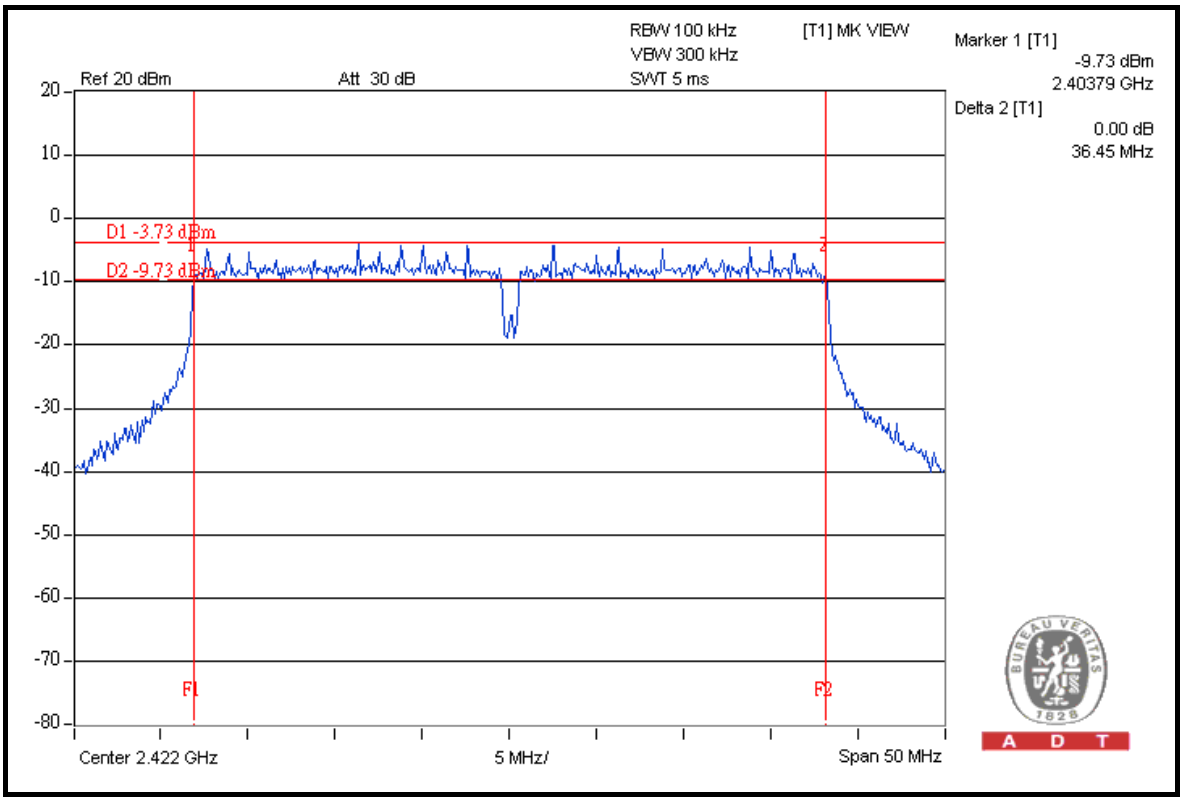

RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-3.68 dBm
2.45317 GHz
Delta 2 [T1]
0.00 dB
17.62 MHz
Ref 20 dBm
Att 30 dB
D1 2.32 dBm
D2 -3.68 dBm
F1
F2
Center 2.462 GHz
3 MHz/
Span 30 MHz

DRAFT 802.11n (40MHz) OFDM MODULATION

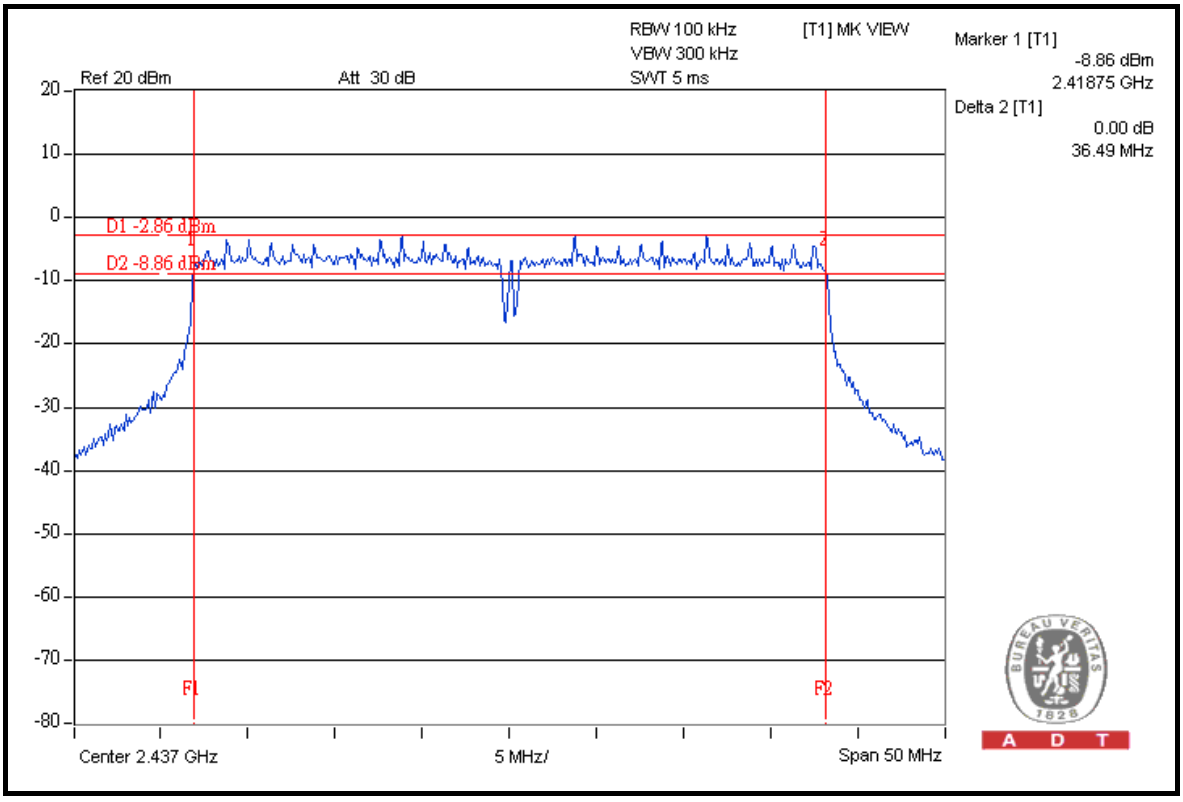
MODULATION TYPE	BPSK	**TRANSFER RATE**	15.0Mbps
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	23 deg.C, 70 %RH, 1009hPa
TESTED BY	Lori Chiu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2422	36.45	36.47	0.5	PASS
4	2437	36.49	36.53	0.5	PASS
7	2452	36.49	36.52	0.5	PASS

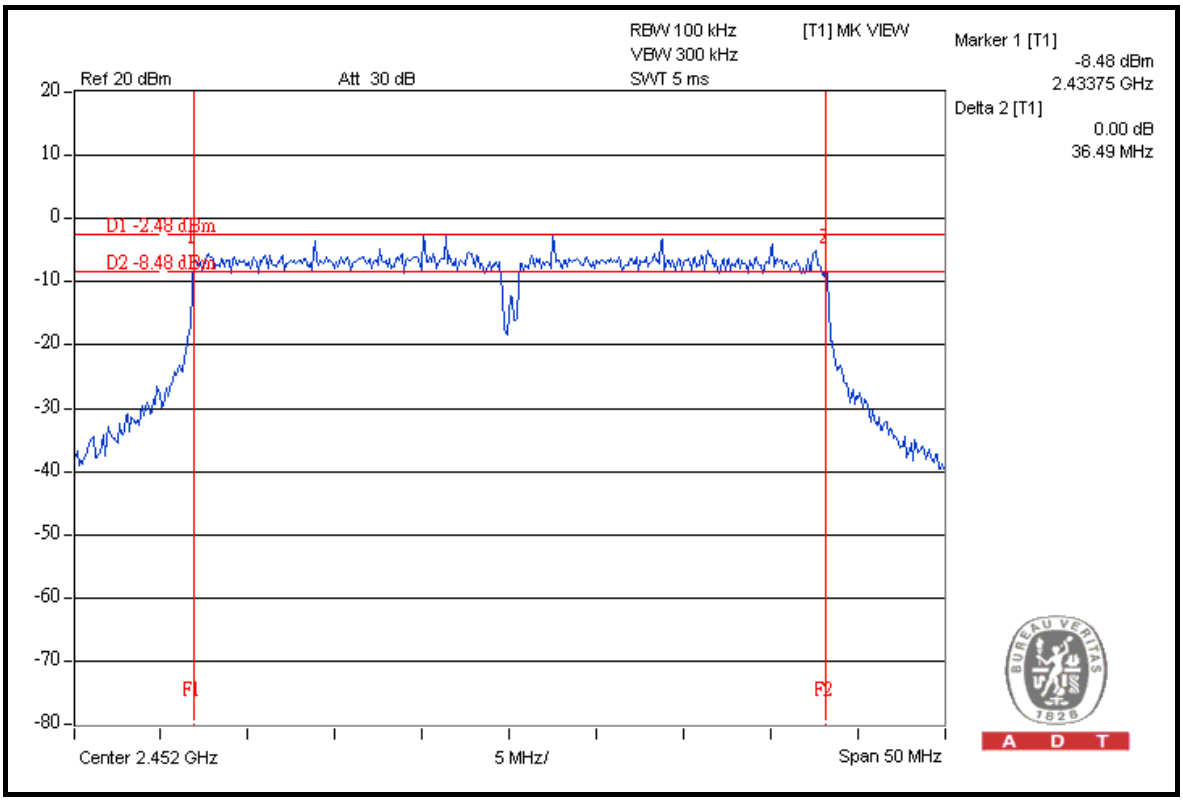
FOR CHAIN 0: CH 1



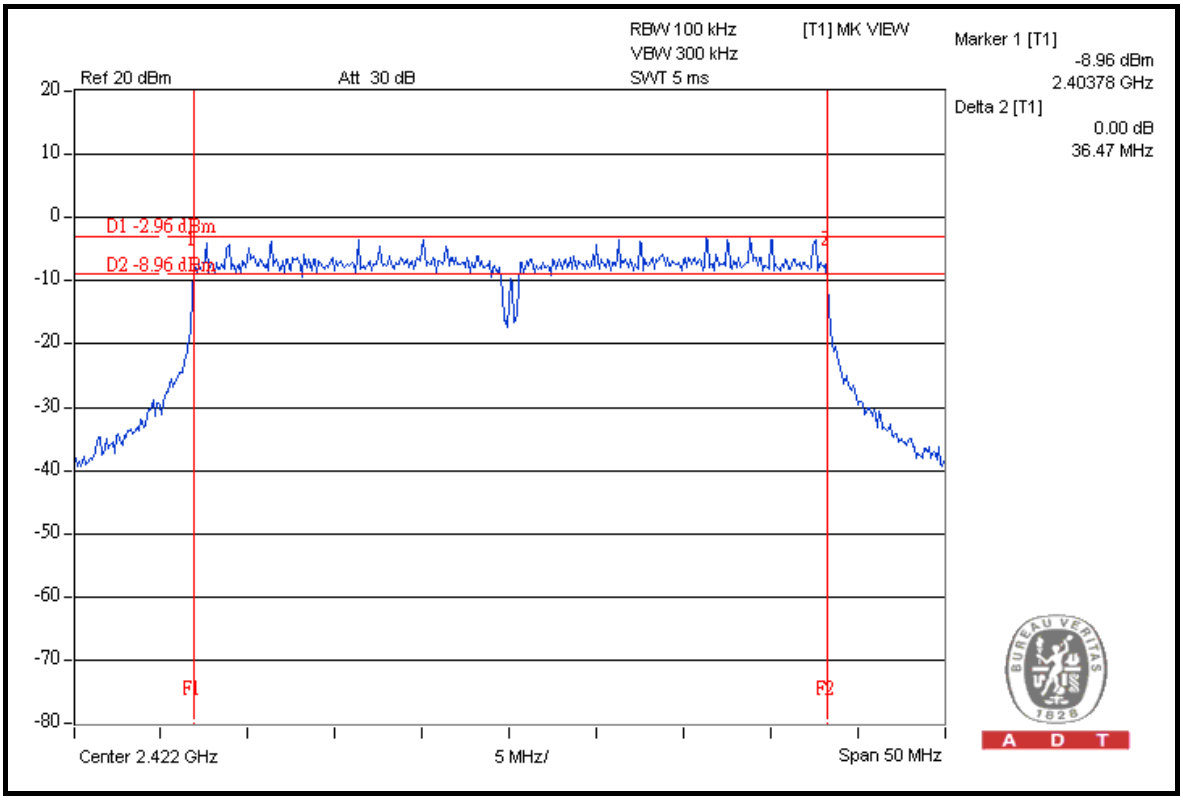
CH 4



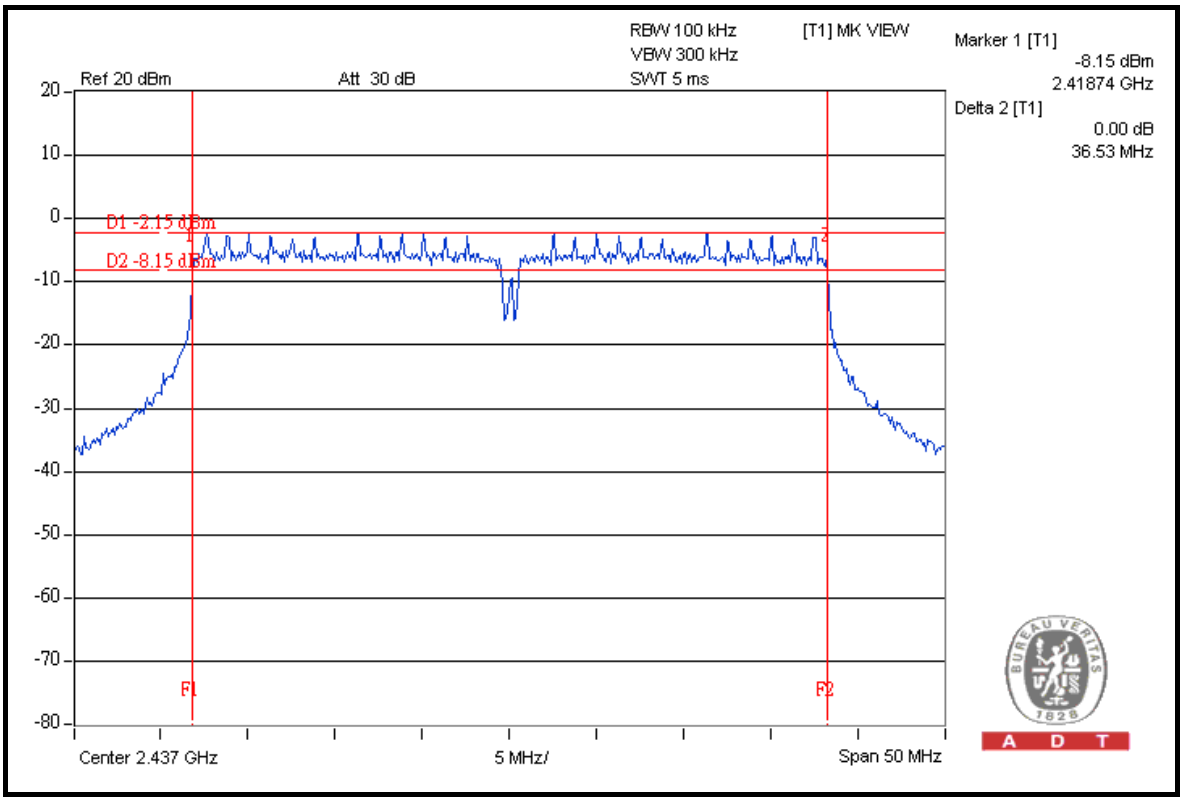
CH 7



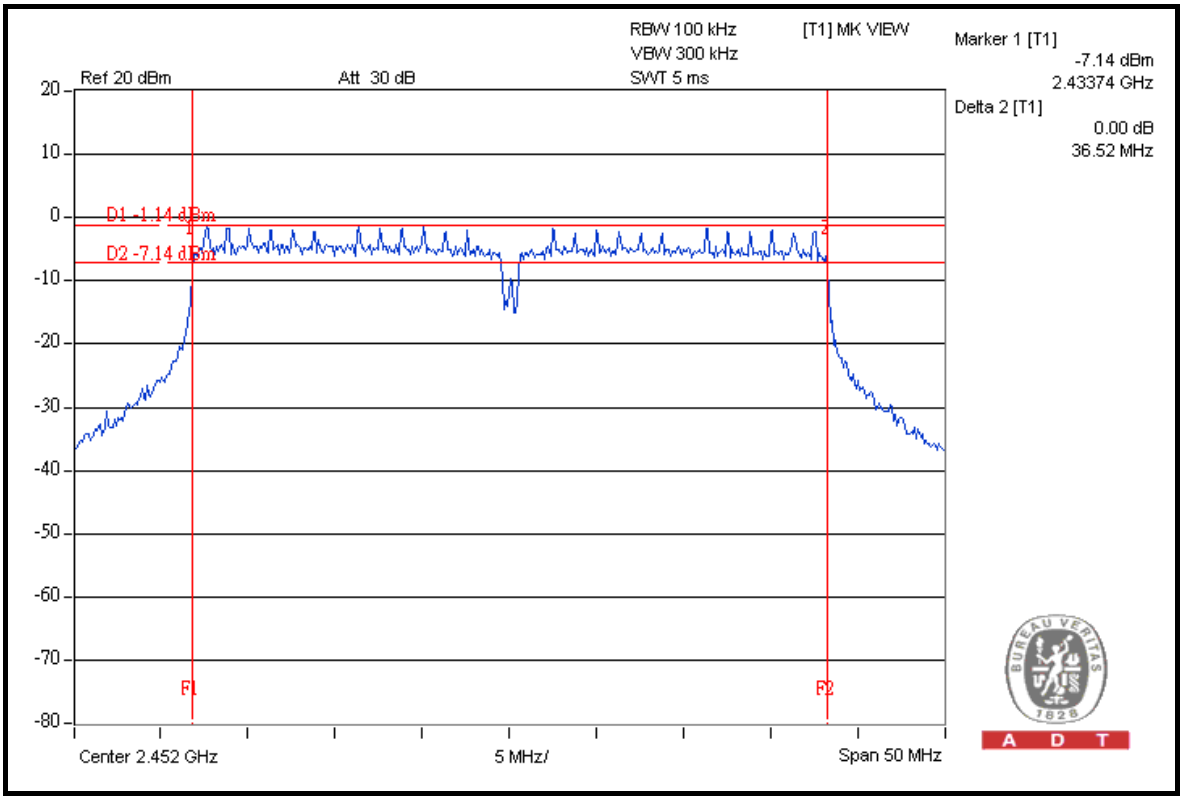
FOR CHAIN 1: CH 1



CH 4


RBW 100 kHz
VBW 300 kHz
SWT 5 ms
[T1] MK VIEW
Marker 1 [T1]
-8.15 dBm
2.41874 GHz
Delta 2 [T1]
0.00 dB
36.53 MHz
Ref 20 dBm
Att 30 dB
D1 -2.15 dBm
D2 -8.15 dBm
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
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]
-7.14 dBm
2.43374 GHz
Delta 2 [T1]
0.00 dB
36.52 MHz
Ref 20 dBm
Att 30 dB
D1 -1.14 dBm
D2 -7.14 dBm
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
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	DUE DATE OF CALIBRATION
High Speed Peak Power Meter	ML2495A	0824012	Aug. 04, 2008	Aug. 03, 2009
Power Sensor	MA2411B	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.

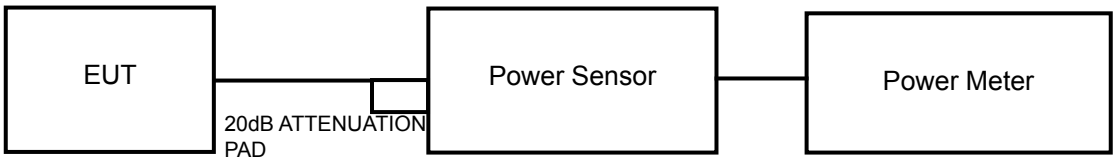
4.4.3 TEST PROCEDURES

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	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	23 deg.C, 70 %RH, 1009hPa
TESTED BY	Lori Chiu		

CHAN.	CHAN. FREQ. (MHz)	PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	20.04	20.53	213.905	23.30	30	PASS
6	2437	19.55	19.56	180.522	22.57	30	PASS
11	2462	19.57	19.05	170.926	22.33	30	PASS

802.11g OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	23 deg.C, 70 %RH, 1009hPa
TESTED BY	Lori Chiu		

CHAN.	CHAN. FREQ. (MHz)	PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	21.05	21.53	269.583	24.31	30	PASS
6	2437	20.56	21.51	255.342	24.07	30	PASS
11	2462	22.01	21.57	302.404	24.81	30	PASS

DRAFT 802.11n (20MHz) OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	7.2Mbps
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	23 deg.C, 70 %RH, 1009hPa
TESTED BY	Lori Chiu		

CHAN.	CHAN. FREQ. (MHz)	PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	21.04	21.56	270.276	24.32	30	PASS
6	2437	22.06	21.52	302.600	24.81	30	PASS
11	2462	23.01	21.57	**343.535**	25.36	30	PASS

DRAFT 802.11n (40MHz) OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	15.0Mbps
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	23 deg.C, 70 %RH, 1009hPa
TESTED BY	Lori Chiu		

CHAN.	CHAN. FREQ. (MHz)	PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2422	19.02	19.04	159.967	22.04	30	PASS
4	2437	20.07	20.05	202.783	23.07	30	PASS
7	2452	20.04	21.06	228.569	23.59	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	DUE DATE OF CALIBRATION
R&S SPECTRUM ANALYZER	FSP40	100040	Jul. 04, 2008	Jul. 03, 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

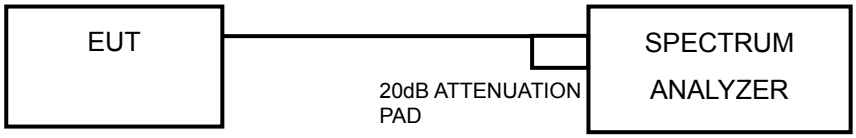
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

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

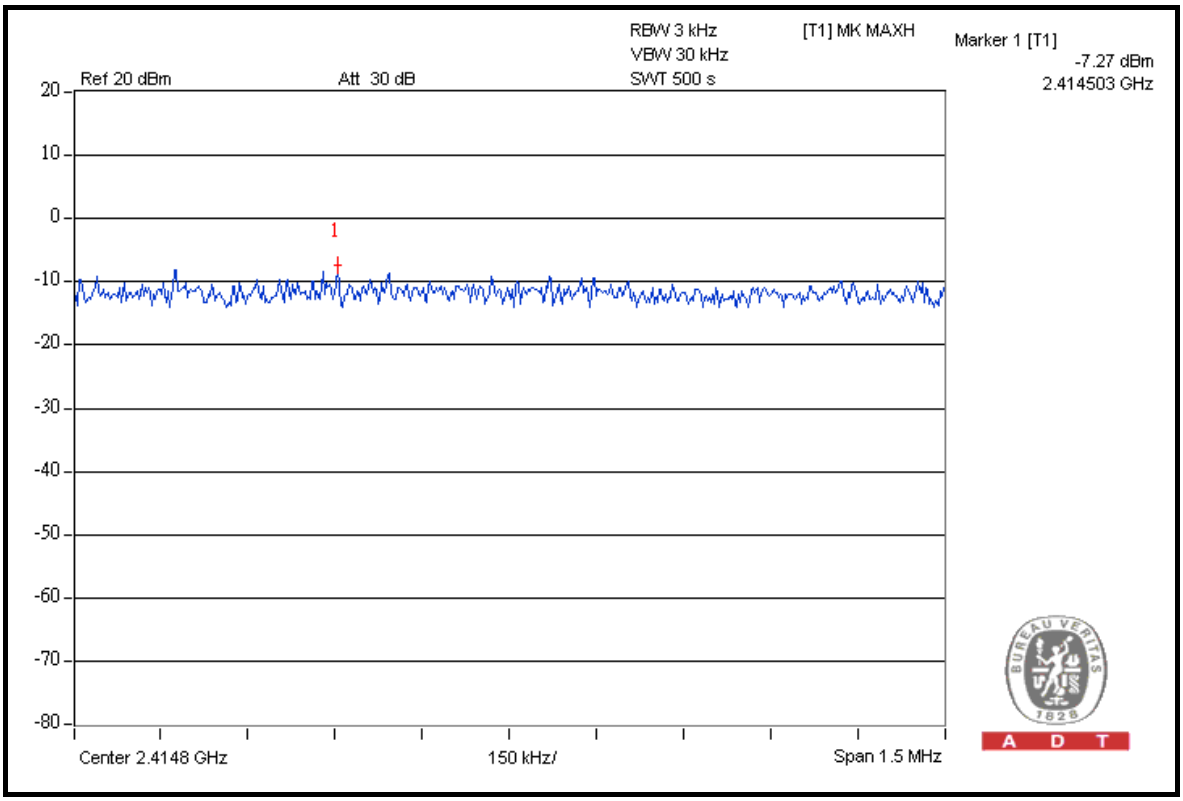
4.5.7 TEST RESULTS

802.11b DSSS MODULATION

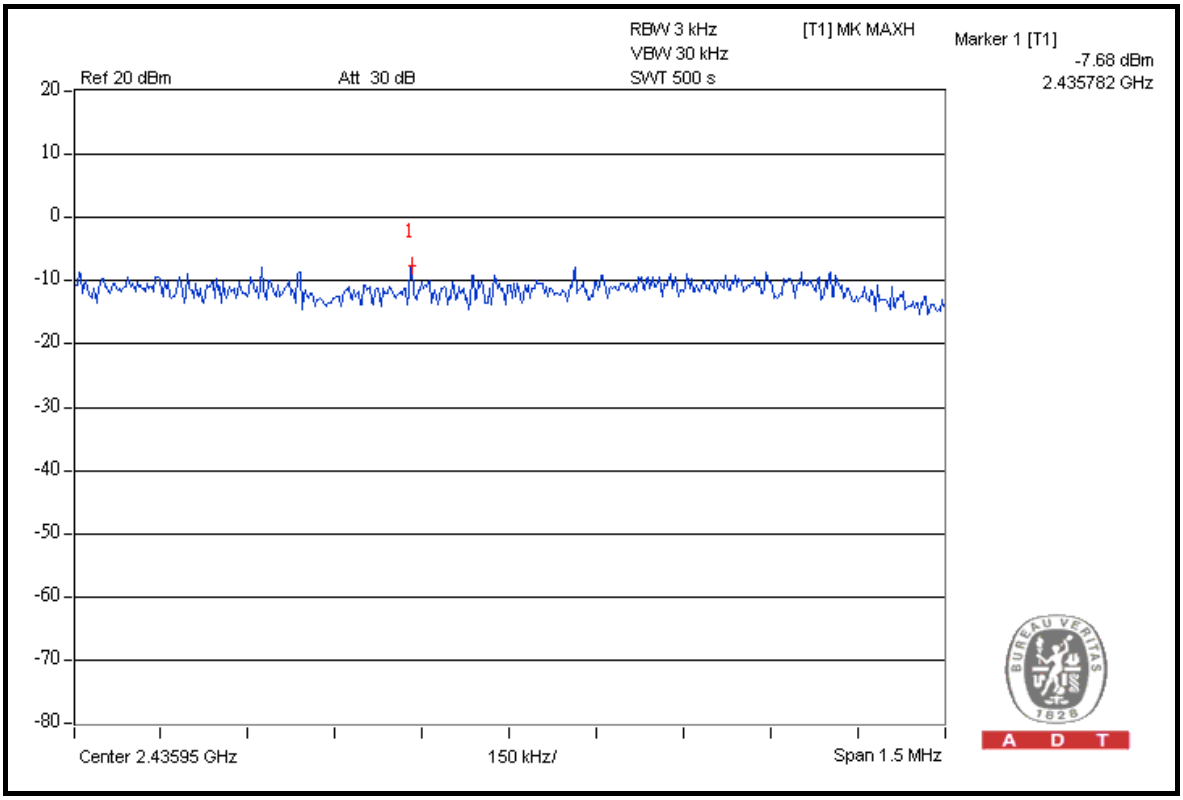
MODULATION TYPE	DBPSK	**TRANSFER RATE**	1.0Mbps
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	23 deg.C, 70 %RH, 1009hPa
TESTED BY	Lori Chiu		

CHAN.	CHAN. FREQ. (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	-7.27	-5.95	0.442	-3.55	8	PASS
6	2437	-7.68	-7.11	0.365	-4.38	8	PASS
11	2462	-7.58	-7.51	0.352	-4.53	8	PASS

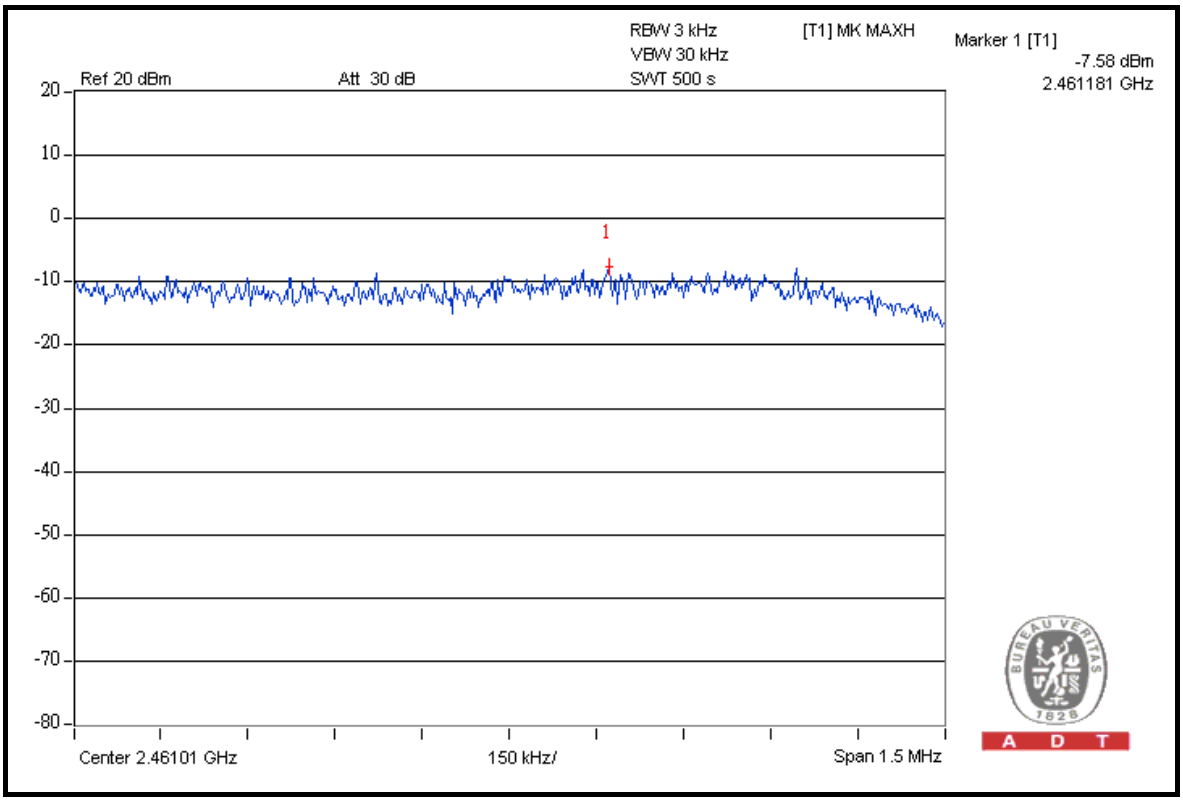
FOR CHAIN 0: CH 1



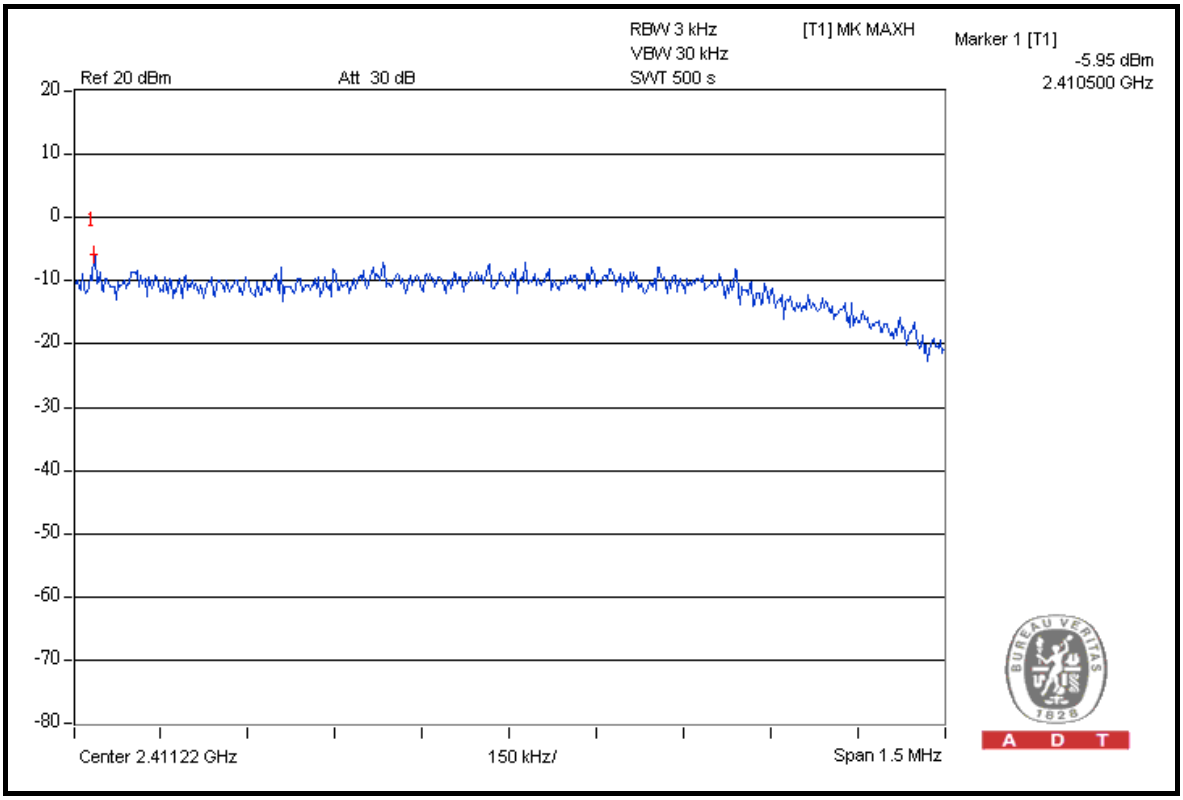
CH 6



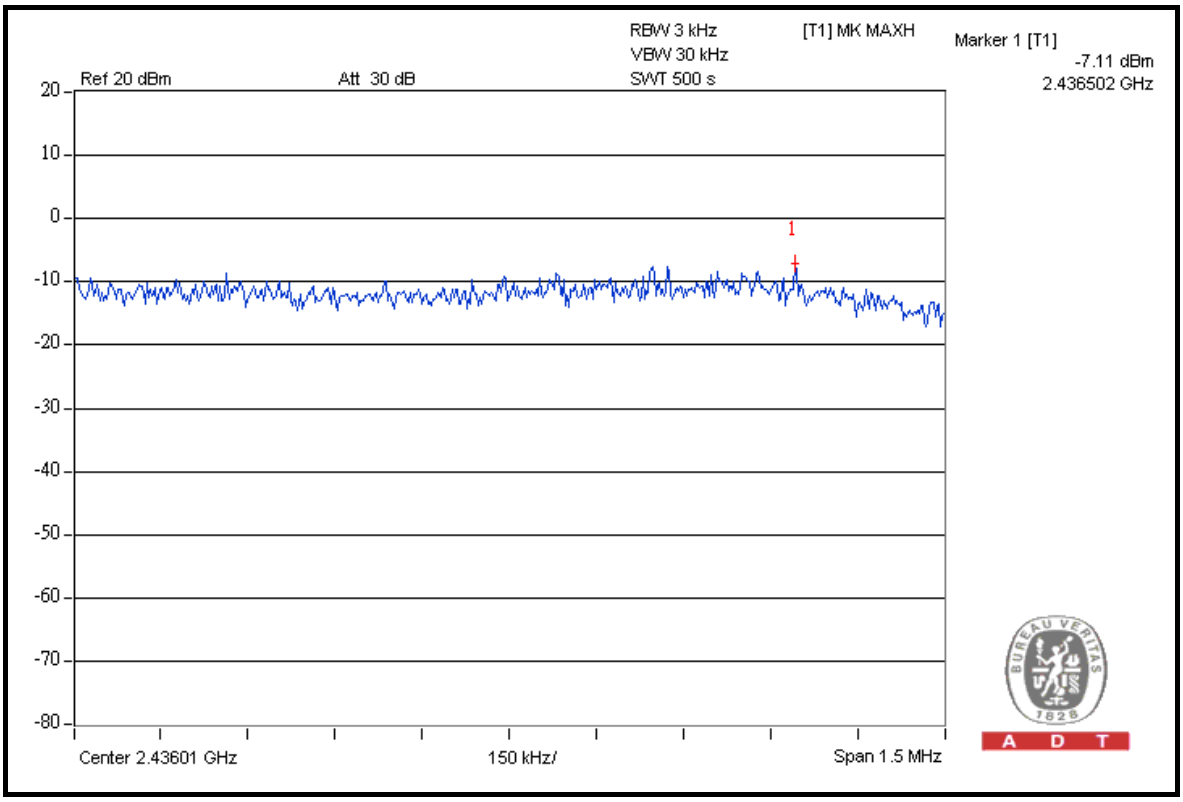
CH 11



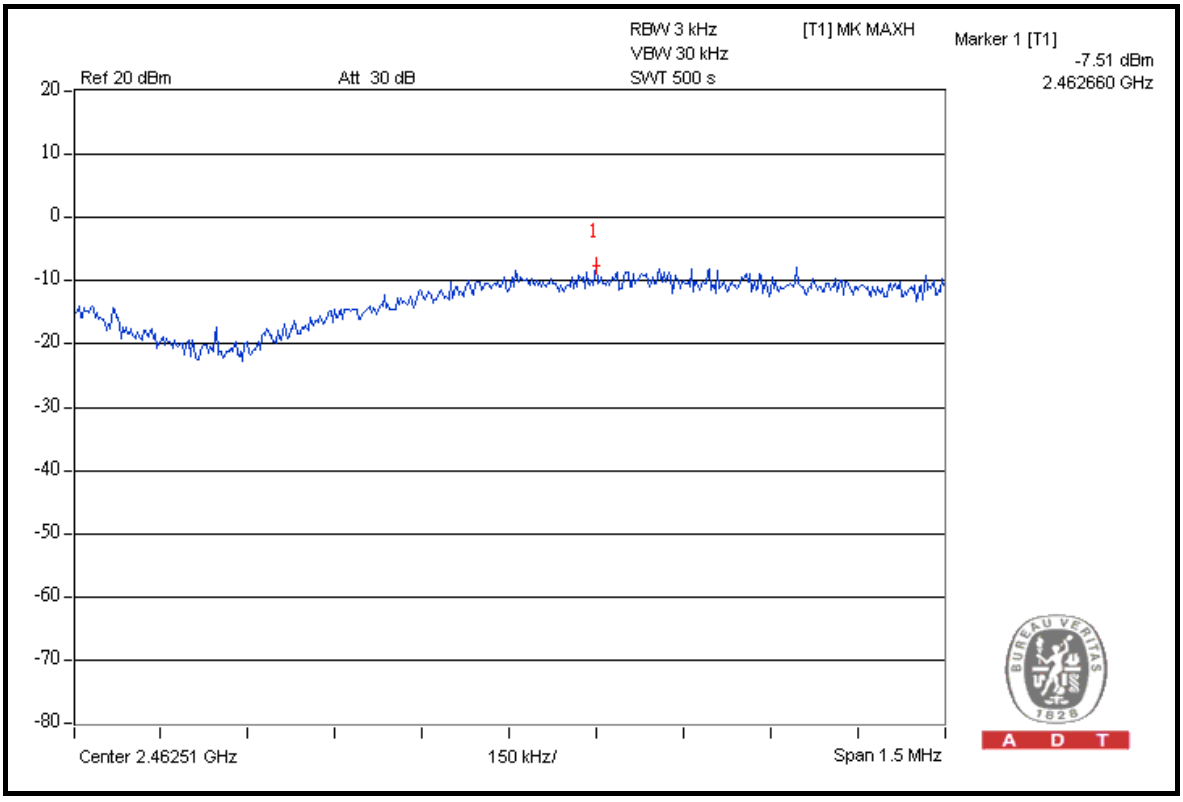
FOR CHAIN 1: CH 1



CH 6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-7.11 dBm
2.436502 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 2.43601 GHz
150 kHz/
Span 1.5 MHz

CH 11

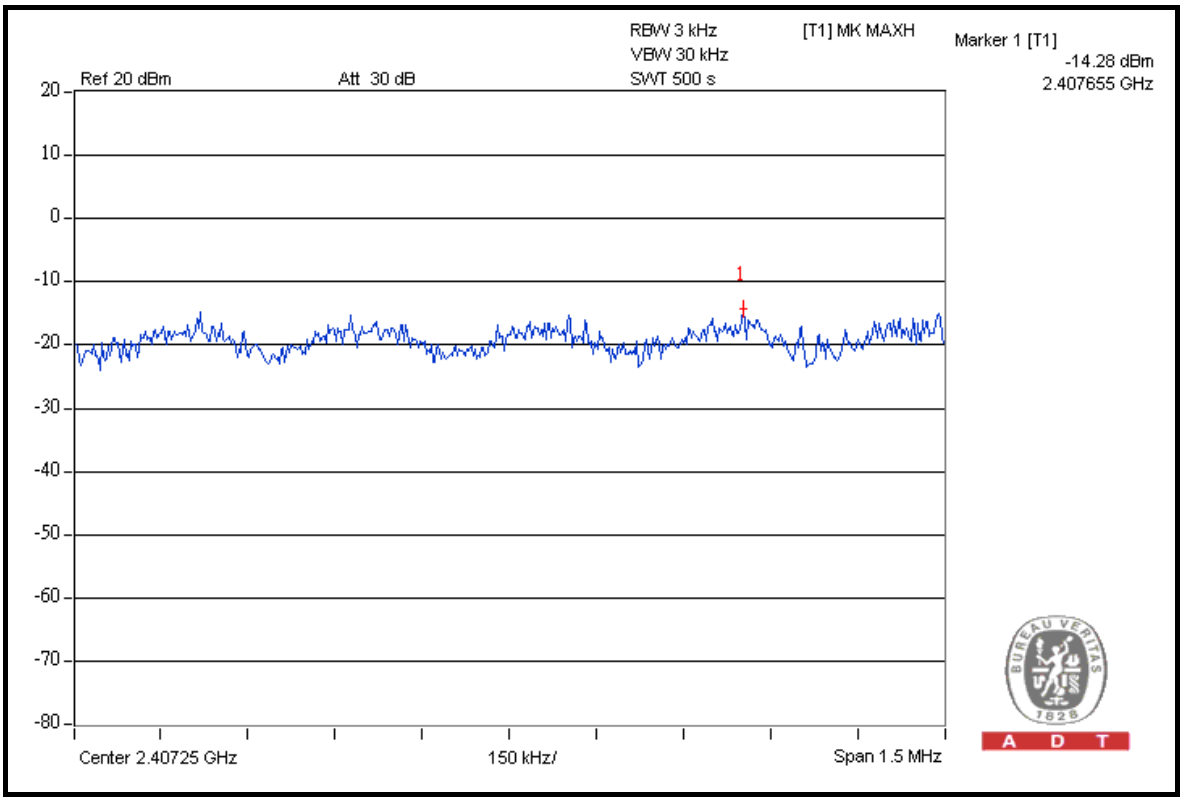

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-7.51 dBm
2.462660 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 2.46251 GHz
150 kHz/
Span 1.5 MHz

802.11g OFDM MODULATION

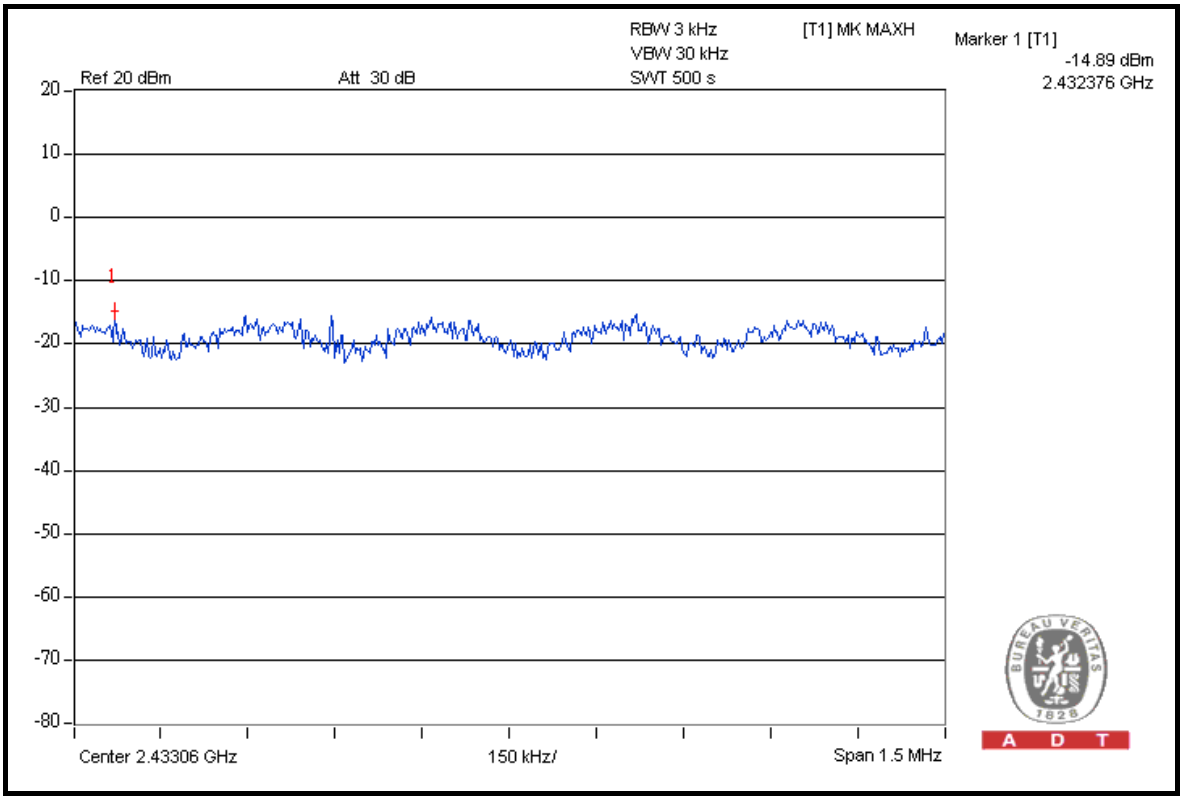
MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	23 deg.C, 70 %RH, 1009hPa
TESTED BY	Lori Chiu		

CHAN.	CHAN. FREQ. (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	-14.28	-12.44	0.094	-10.25	8	PASS
6	2437	-14.89	-12.51	0.089	-10.53	8	PASS
11	2462	-13.43	-12.53	0.101	-9.95	8	PASS

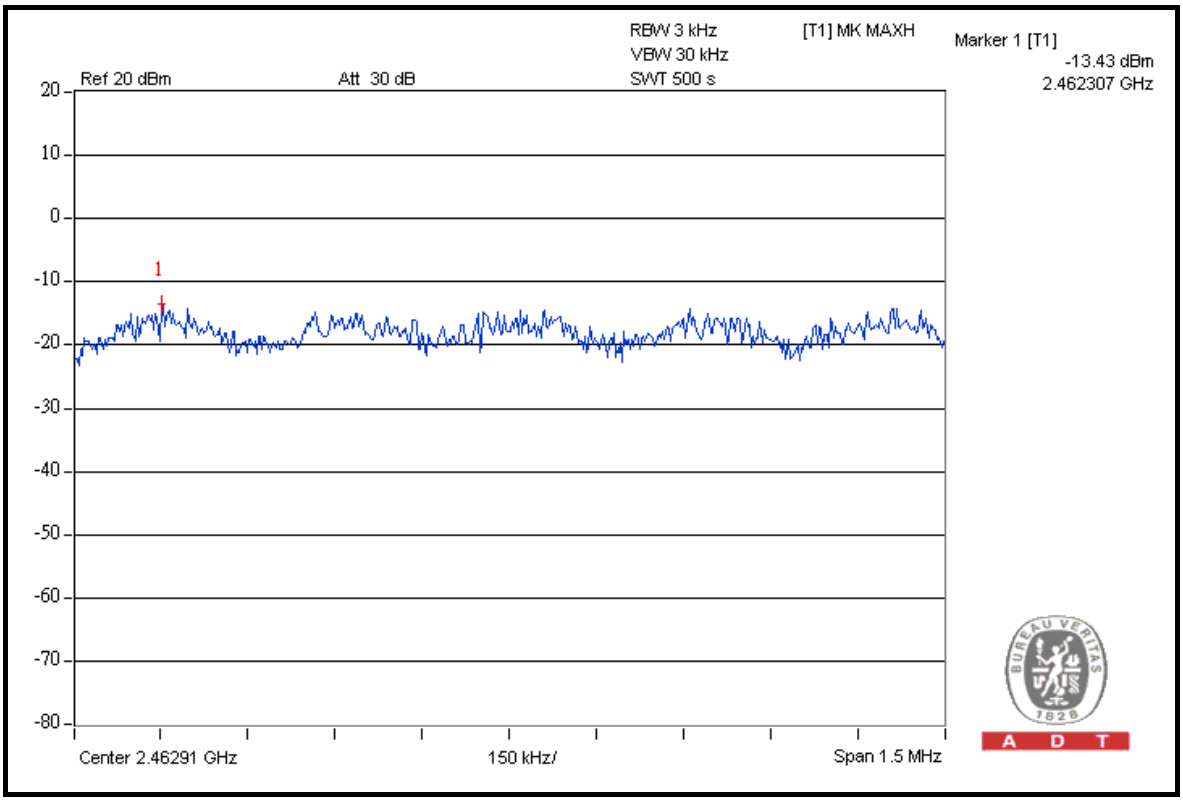
FOR CHAIN 0: CH 1



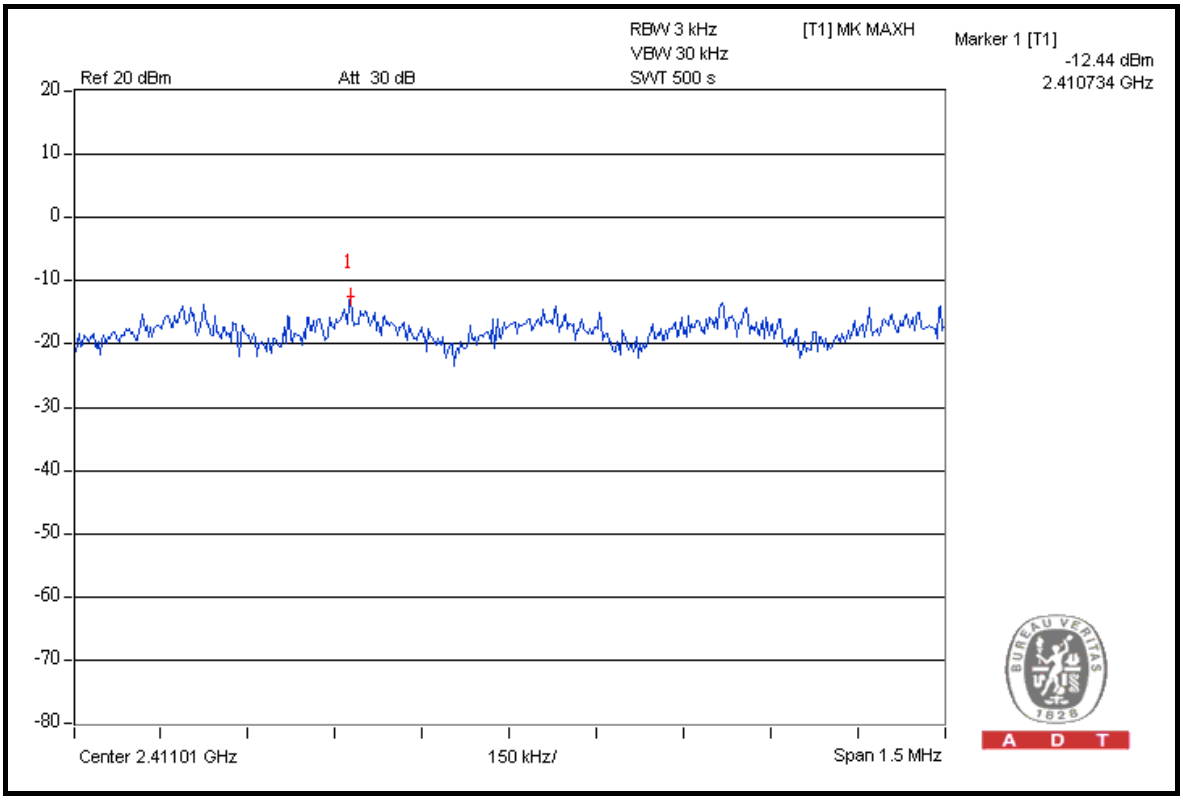
CH 6



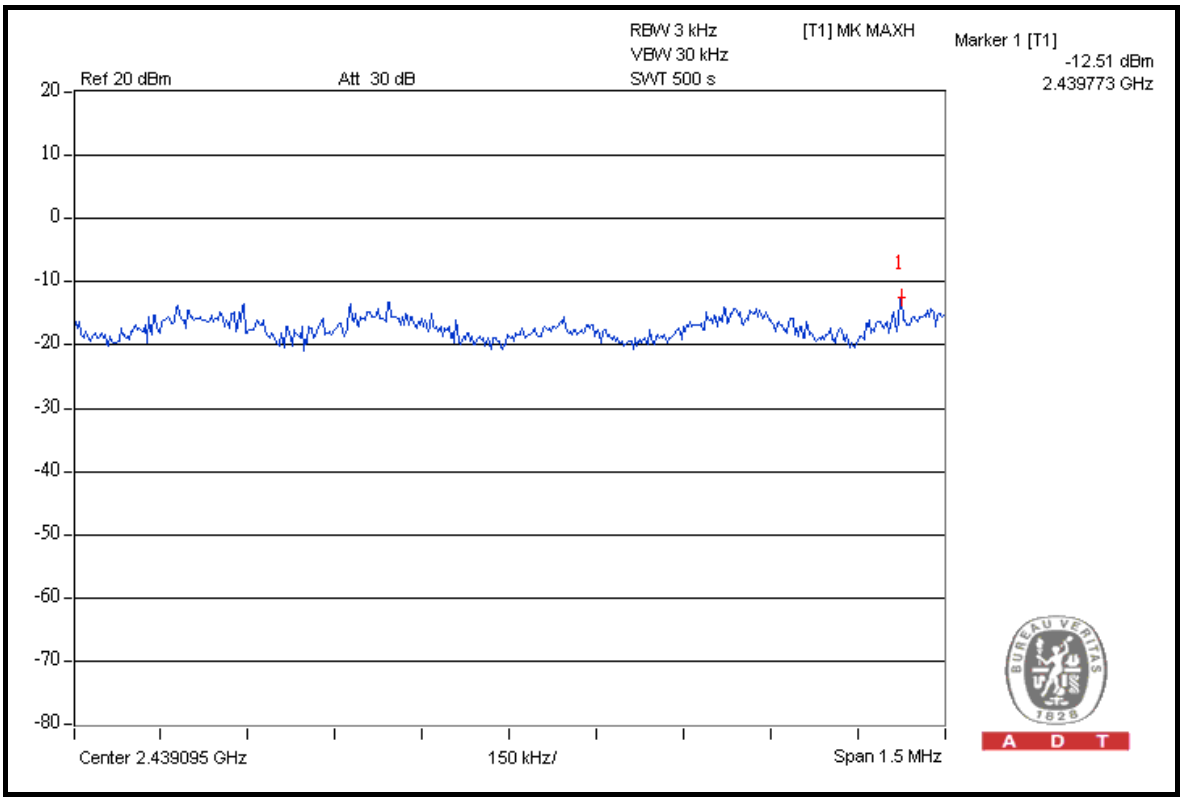
CH 11



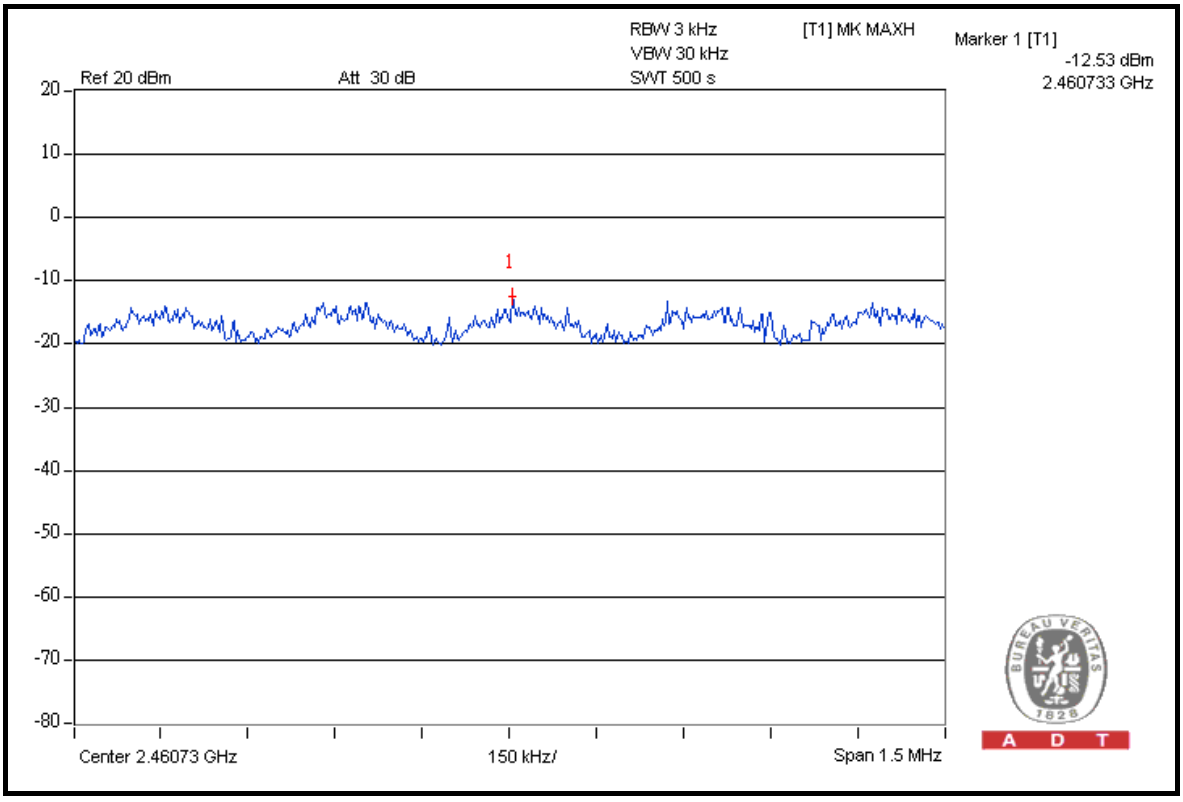
FOR CHAIN 1: CH 1



CH 6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-12.51 dBm
2.439773 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 2.439095 GHz
150 kHz/
Span 1.5 MHz

CH 11

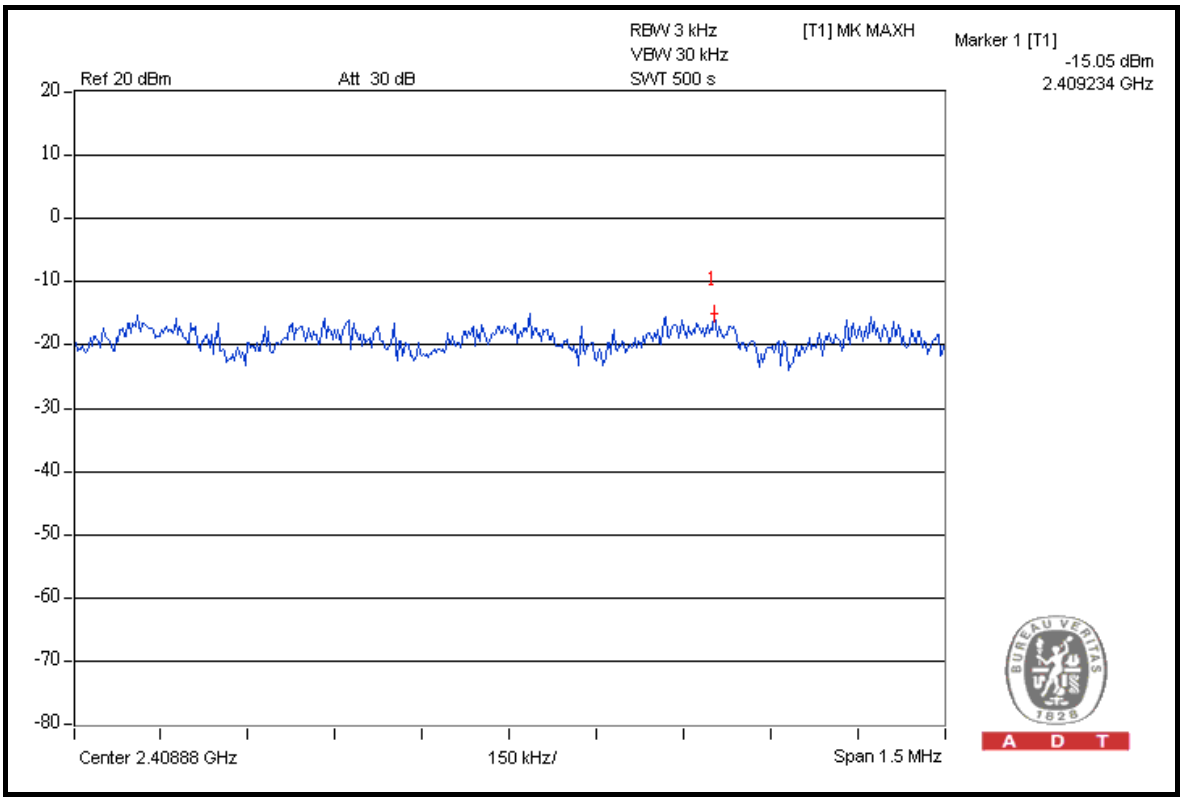

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-12.53 dBm
2.460733 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 2.46073 GHz
150 kHz/
Span 1.5 MHz

DRAFT 802.11n (20MHz) OFDM MODULATION

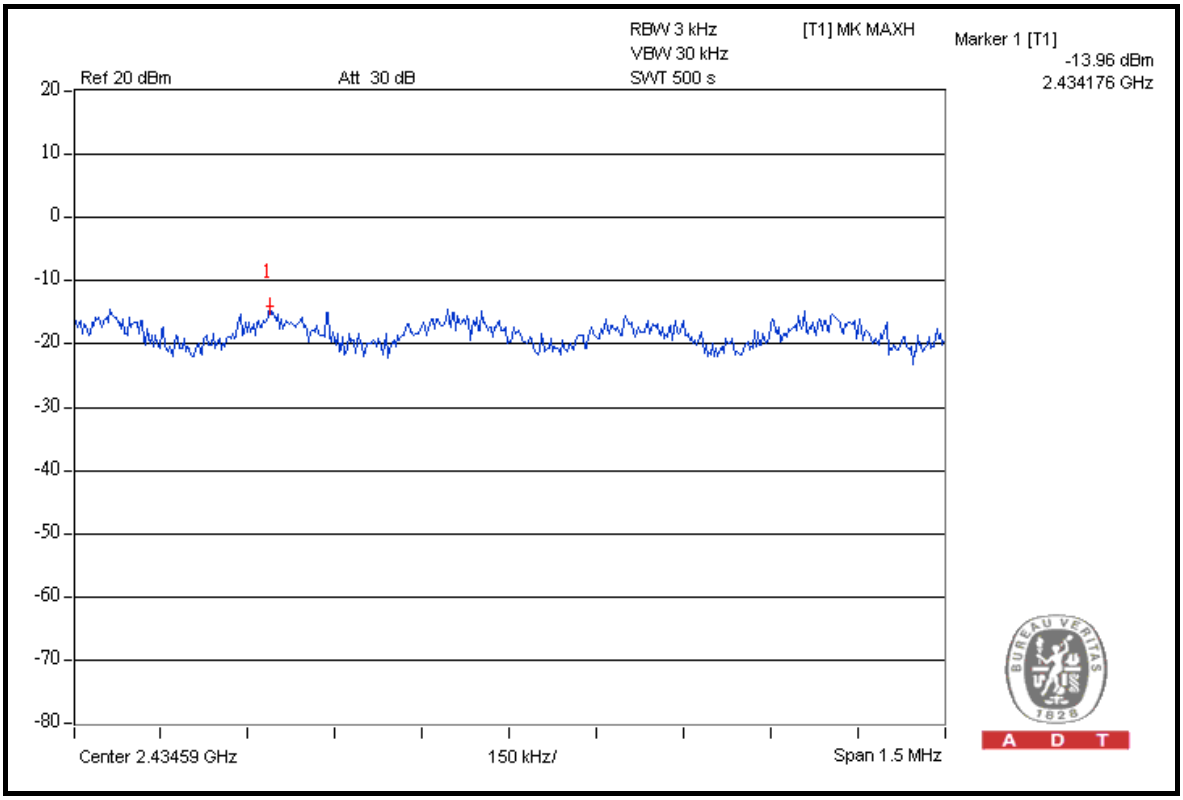
MODULATION TYPE	BPSK	**TRANSFER RATE**	7.2Mbps
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	23 deg.C, 70 %RH, 1009hPa
TESTED BY	Lori Chiu		

CHAN.	CHAN. FREQ. (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	-15.05	-11.63	0.100	-10.00	8	PASS
6	2437	-13.96	-11.53	0.110	-9.57	8	PASS
11	2462	-12.83	-11.40	0.125	-9.05	8	PASS

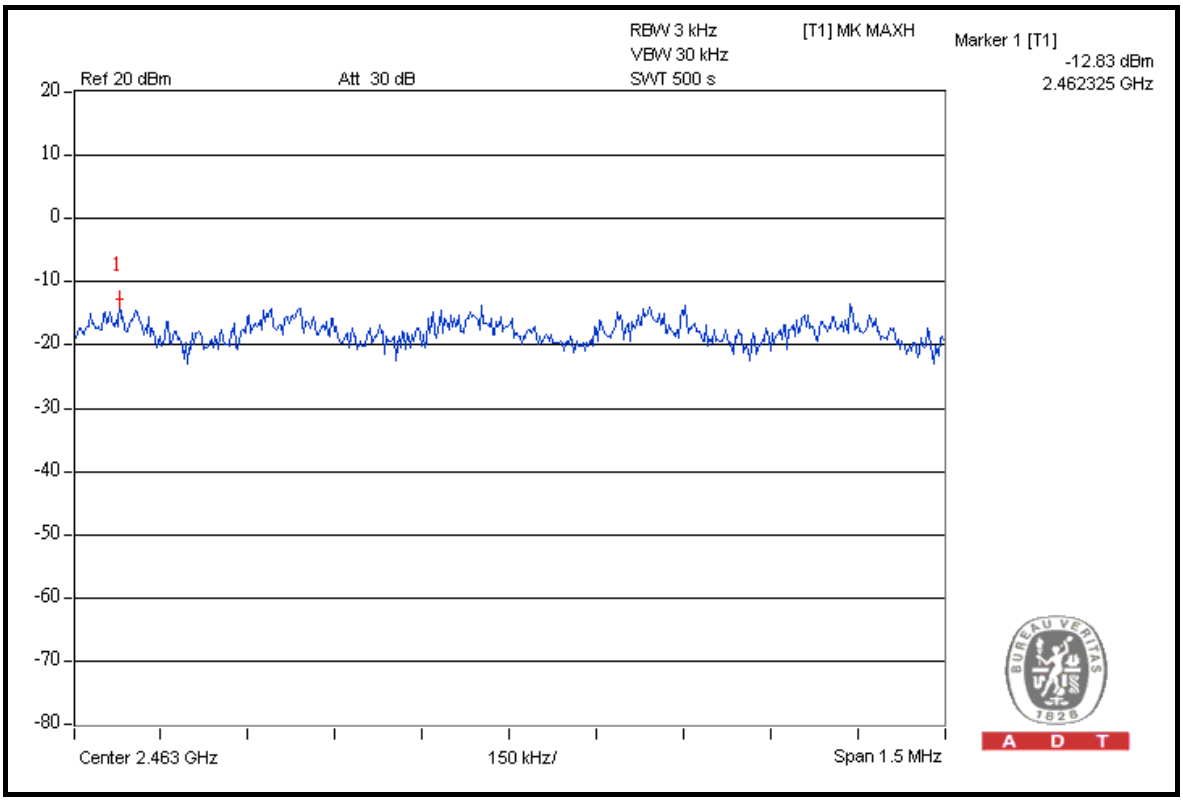
FOR CHAIN 0: CH 1



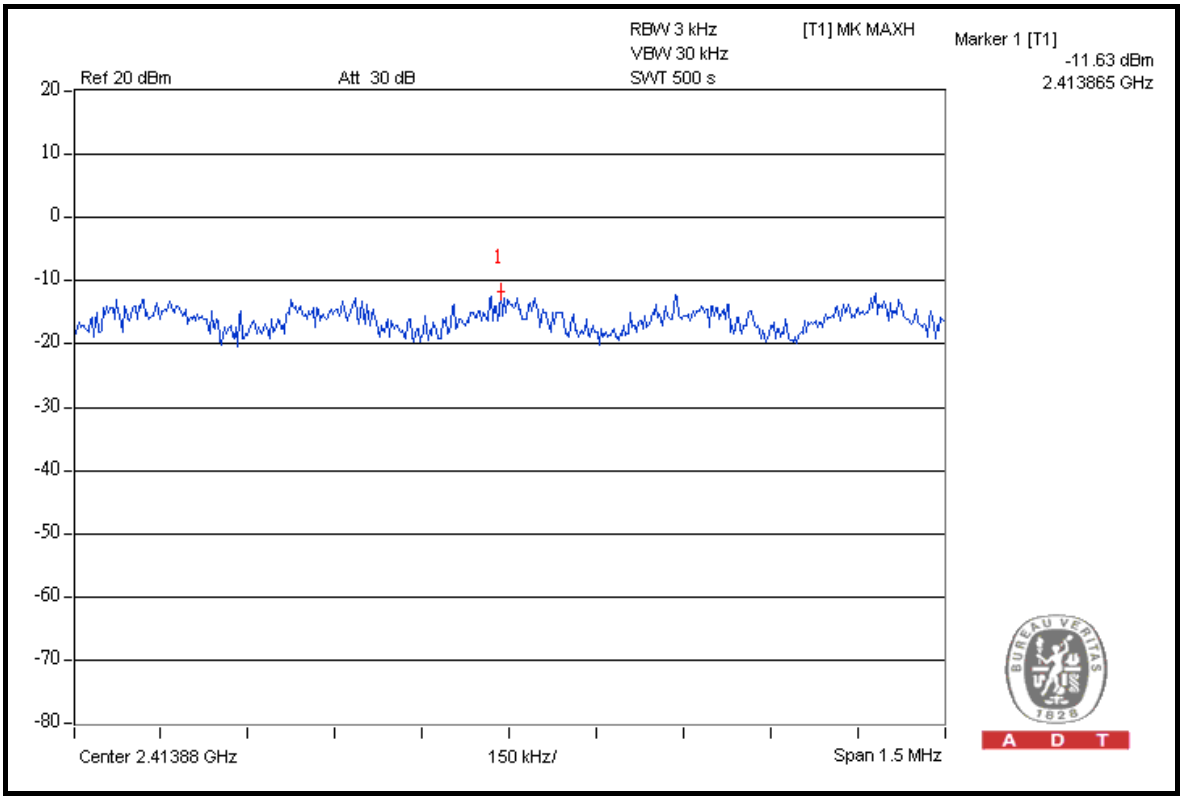
CH 6



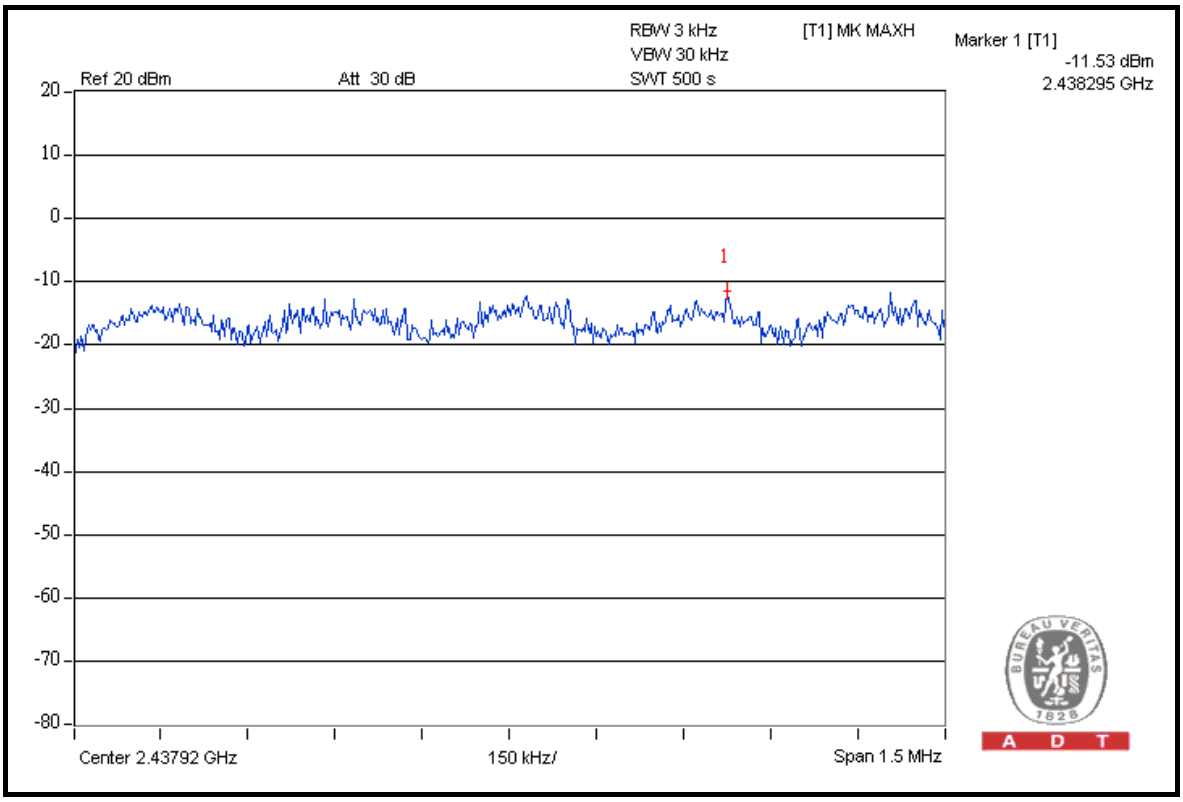
CH 11



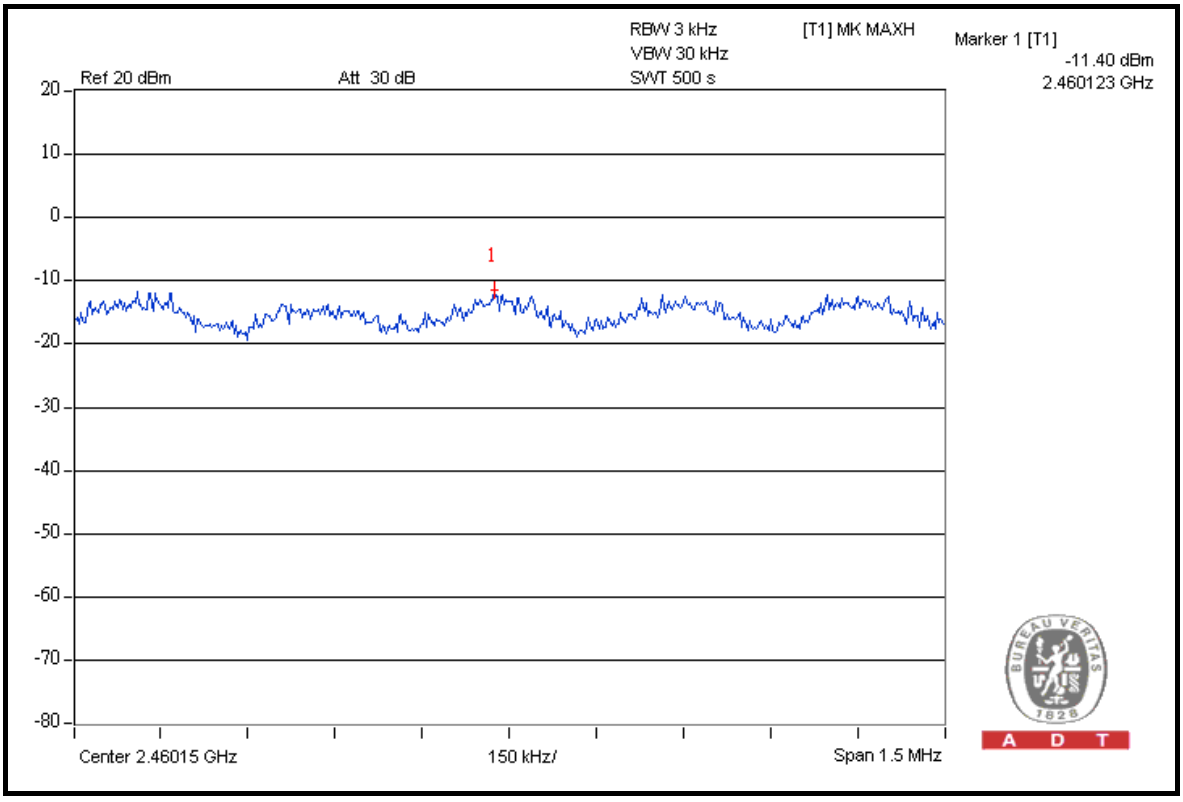
FOR CHAIN 1: CH 1



CH 6


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-11.53 dBm
2.438295 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 2.43792 GHz
150 kHz/
Span 1.5 MHz

CH 11

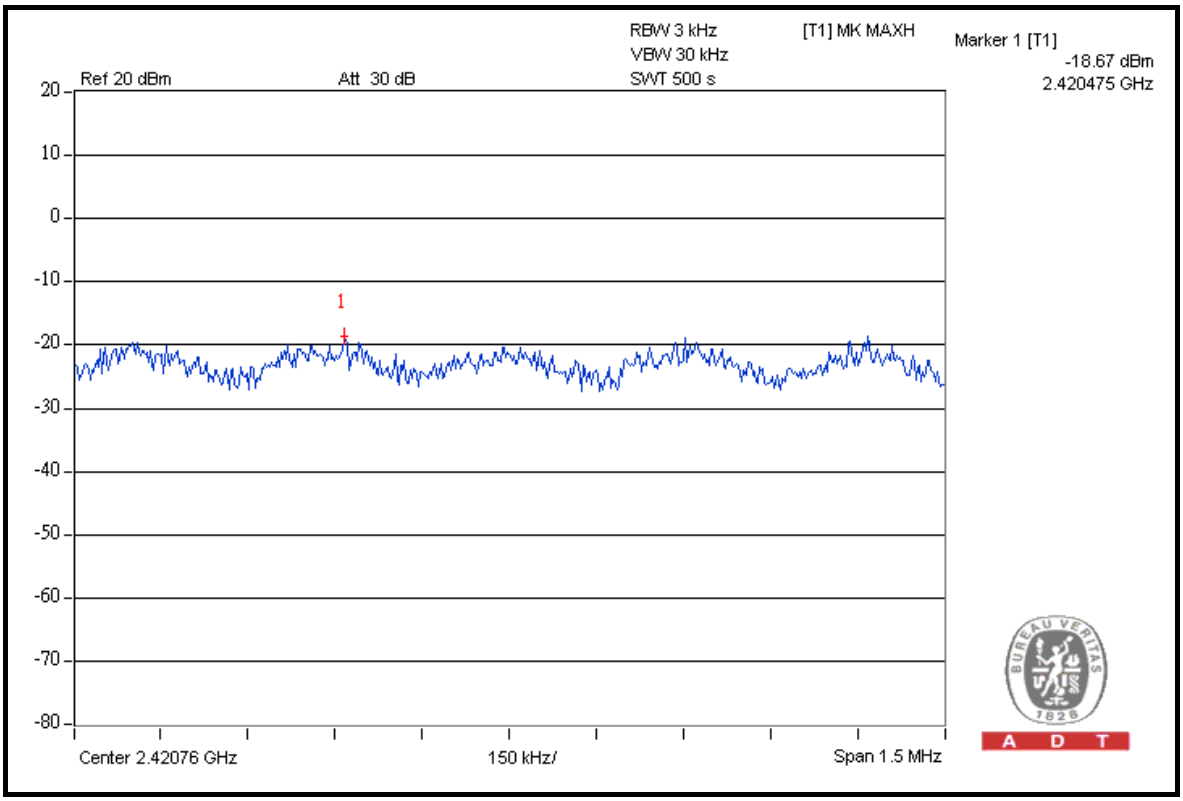

RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-11.40 dBm
2.460123 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 2.46015 GHz
150 kHz/
Span 1.5 MHz

DRAFT 802.11n (40MHz) OFDM MODULATION

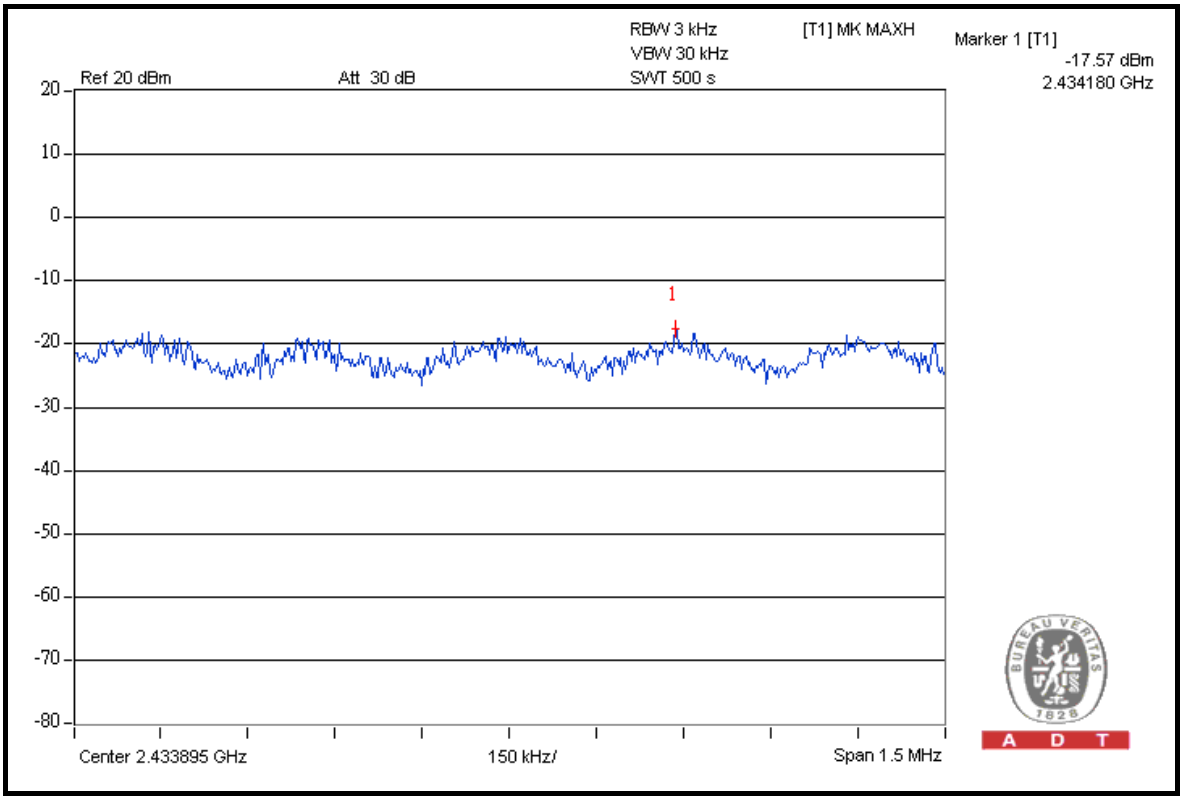
MODULATION TYPE	BPSK	**TRANSFER RATE**	15.0Mbps
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	23 deg.C, 70 %RH, 1009hPa
TESTED BY	Lori Chiu		

CHAN.	CHAN. FREQ. (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2422	-18.67	-11.95	0.077	-11.11	8	PASS
4	2437	-17.57	-13.73	0.060	-12.23	8	PASS
7	2452	-17.52	-10.04	0.117	-9.33	8	PASS

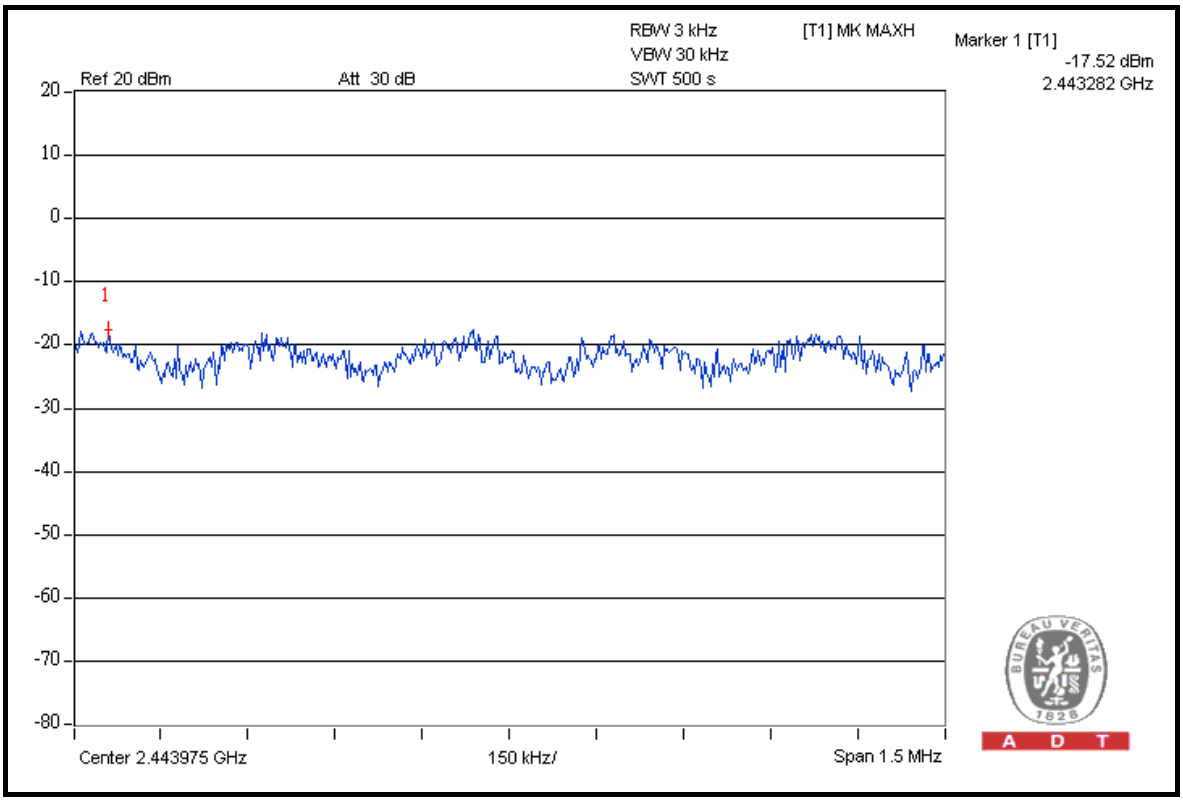
FOR CHAIN 0: CH 1



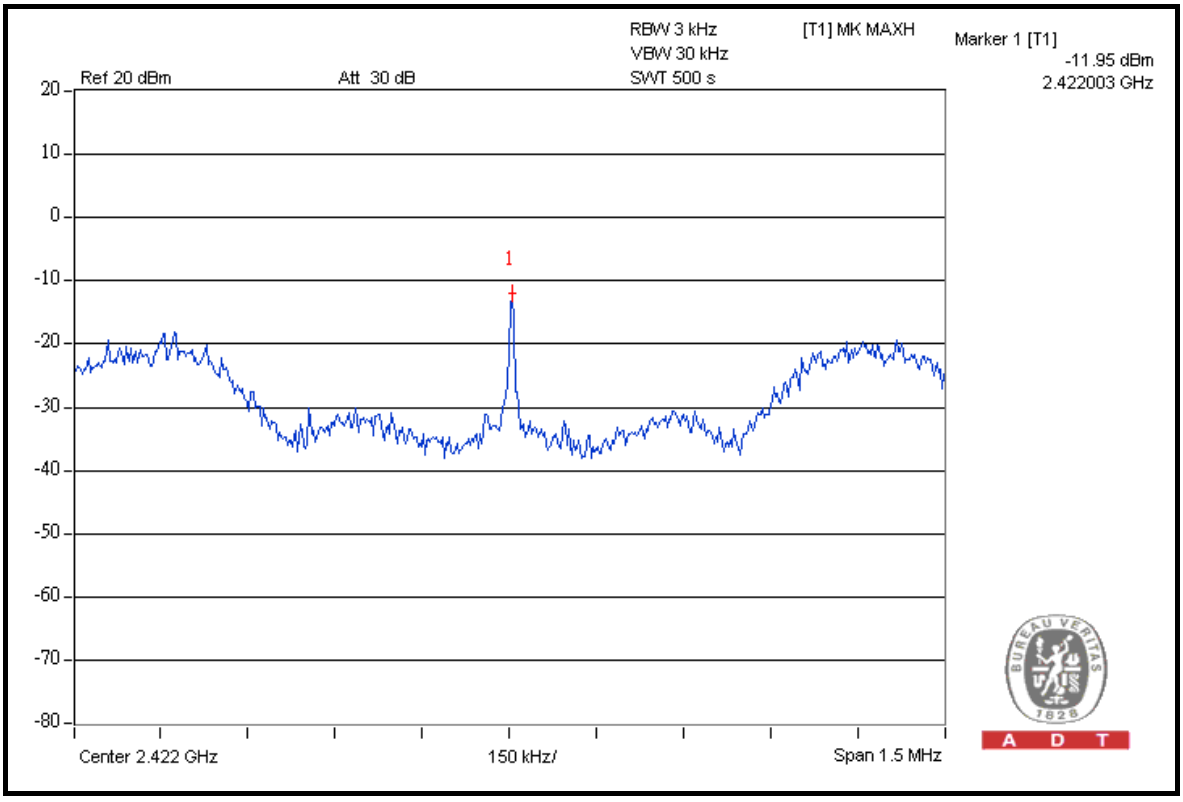
CH 4



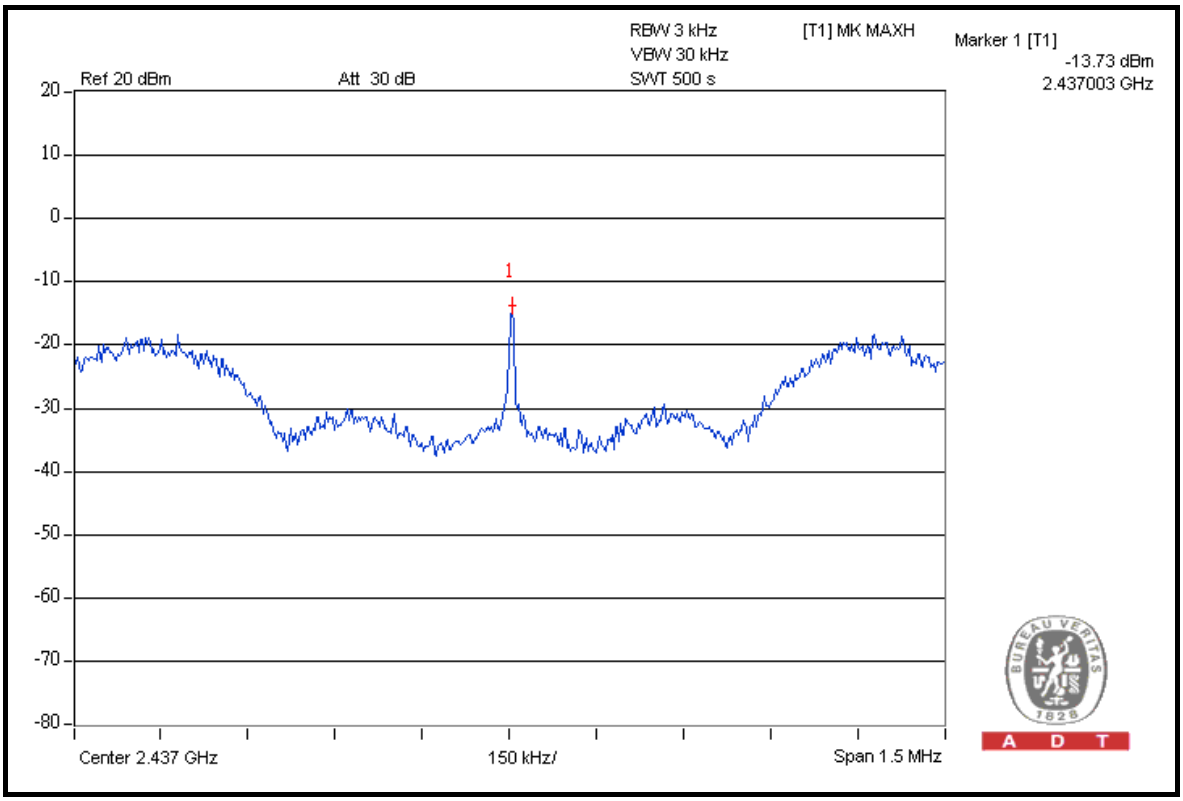
CH 7



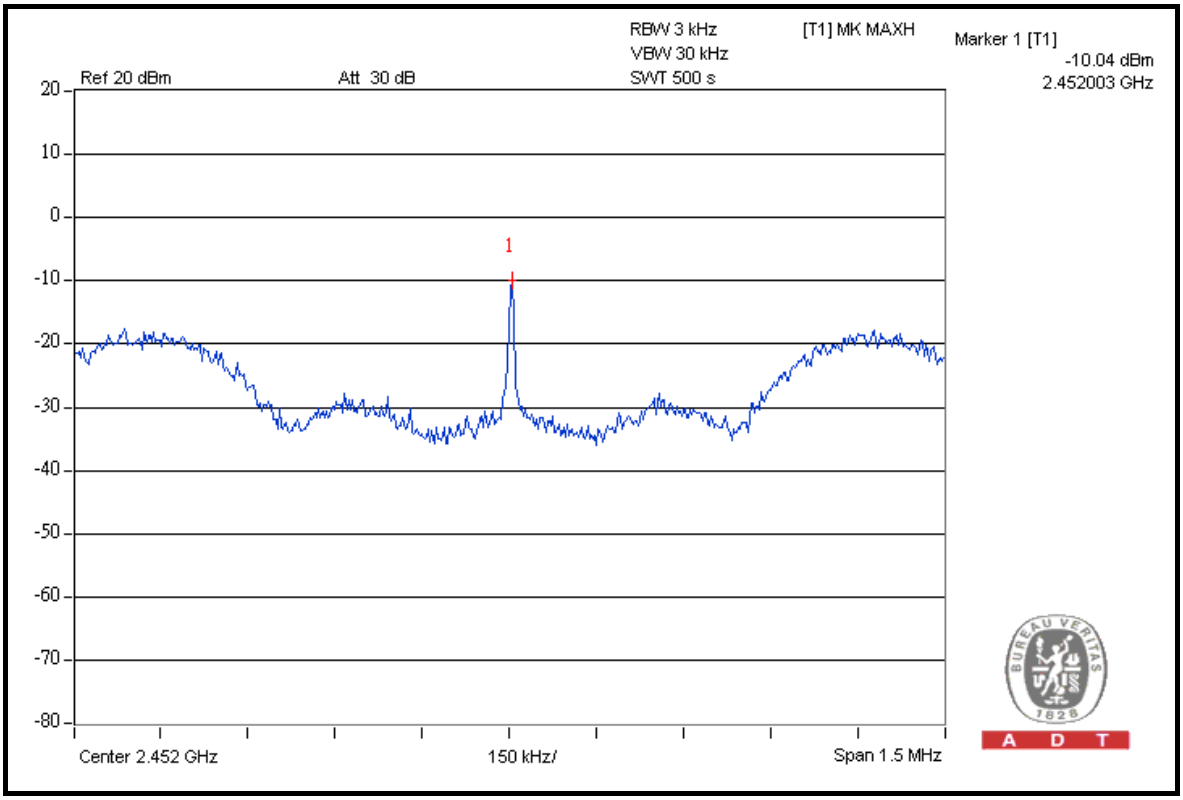
FOR CHAIN 1: CH 1



CH 4


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-13.73 dBm
2.437003 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 2.437 GHz
150 kHz/
Span 1.5 MHz

CH 7


RBW 3 kHz
VBW 30 kHz
SWT 500 s
[T1] MK MAXH
Marker 1 [T1]
-10.04 dBm
2.452003 GHz
Ref 20 dBm
Att 30 dB
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
Center 2.452 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	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESIB7	100212	May 25, 2009	May 24, 2010
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Aug. 08, 2008	Aug. 07, 2009
BILOG Antenna SCHWARZBECK	VULB9168	9168-156	Apr. 30, 2009	Apr. 29, 2010
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Aug. 06, 2008	Aug. 05, 2009
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170242	Jan. 06, 2009	Jan. 05, 2010
Preamplifier Agilent	8449B	3008A01911	Sep. 10, 2008	Sep. 09, 2009
Preamplifier Agilent	8447D	2944A10638	Dec. 26, 2008	Dec. 25, 2009
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	218190/4 231241/4	May 13, 2009	May 12, 2010
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 09, 2008	Aug. 08, 2009
Software	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower &Turn Table Controller EMCO	2090	NA	NA	NA
Turn Table Controller ADT.	SC100.	SC93021704	NA	NA

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

4.6.3 TEST PROCEDURE

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. 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) are attached on the following pages.

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

4.6.4 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).

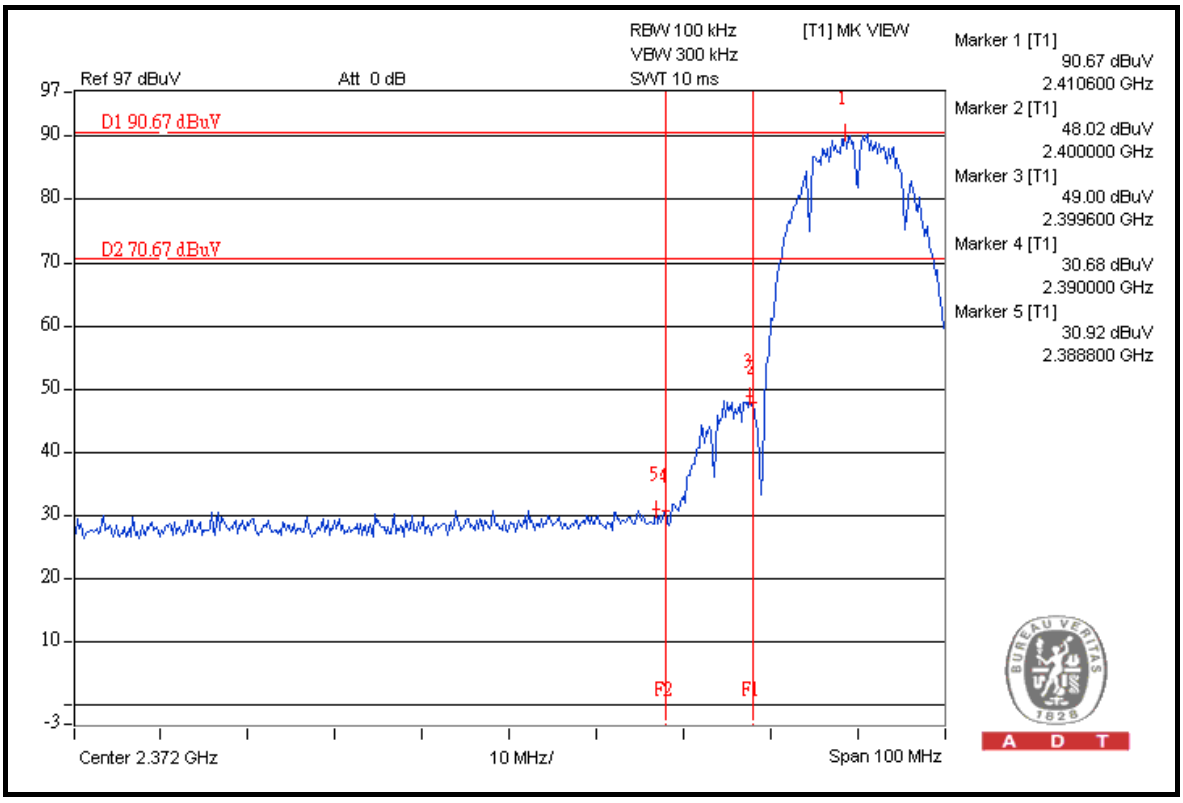
802.11b DSSS MODULATION

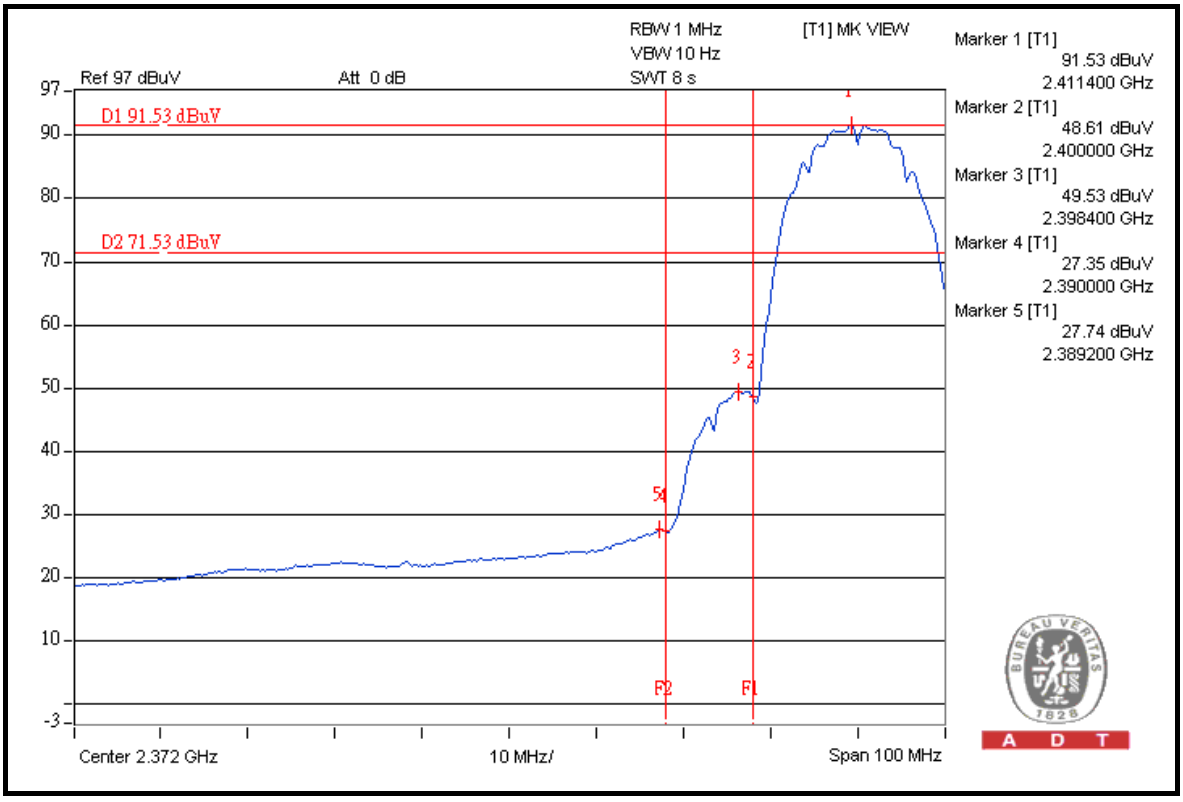
NOTE 1: The band edge emission plot on the next page shows 59.75dBc between carrier maximum power and local maximum emission in restrict band (2.38880GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.1.7 is 118.58dBuV/m (Peak), so the maximum field strength in restrict band is 118.58 – 59.75 = 58.83dBuV/m which is under 74dBuV/m limit.

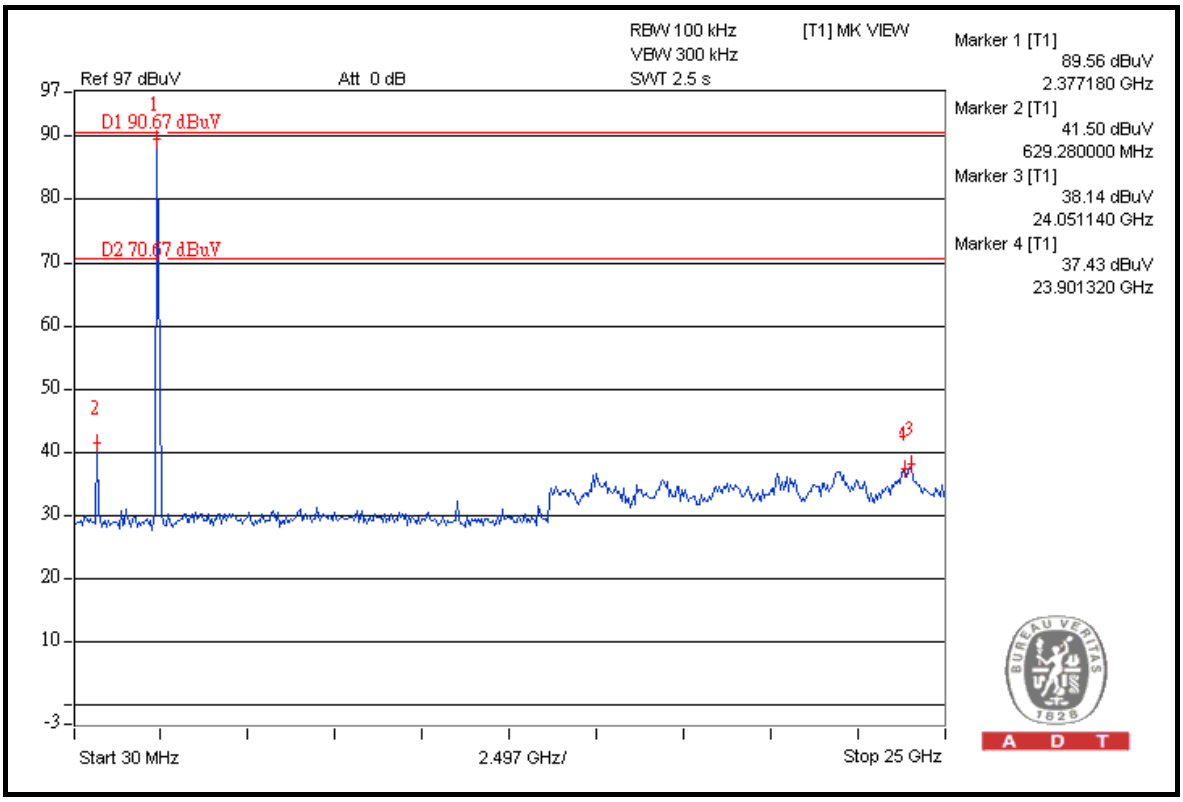
The band edge emission plot of on the next page shows 63.79dBc between carrier maximum power and local maximum emission in restrict band (2.38920GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.1.7 is 114.35dBuV/m (Average), so the maximum field strength in restrict band is 114.35 – 63.79 = 50.56dBuV/m which is under 54dBuV/m limit.

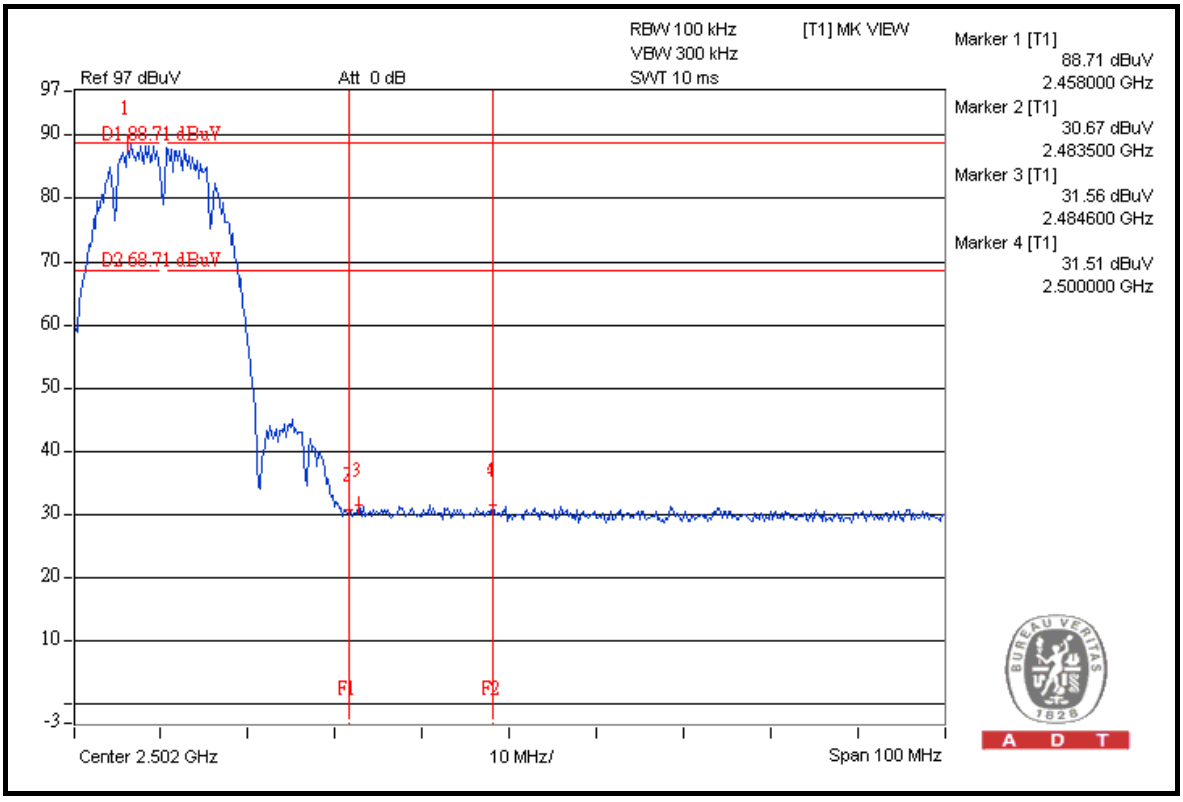
NOTE 2: The band edge emission plot on the next second page shows 57.15dBc between carrier maximum power and local maximum emission in restrict band (2.48460GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.1.7 is 116.67dBuV/m (Peak), so the maximum field strength in restrict band is 116.67 – 57.15 = 59.52dBuV/m which is under 74dBuV/m limit.

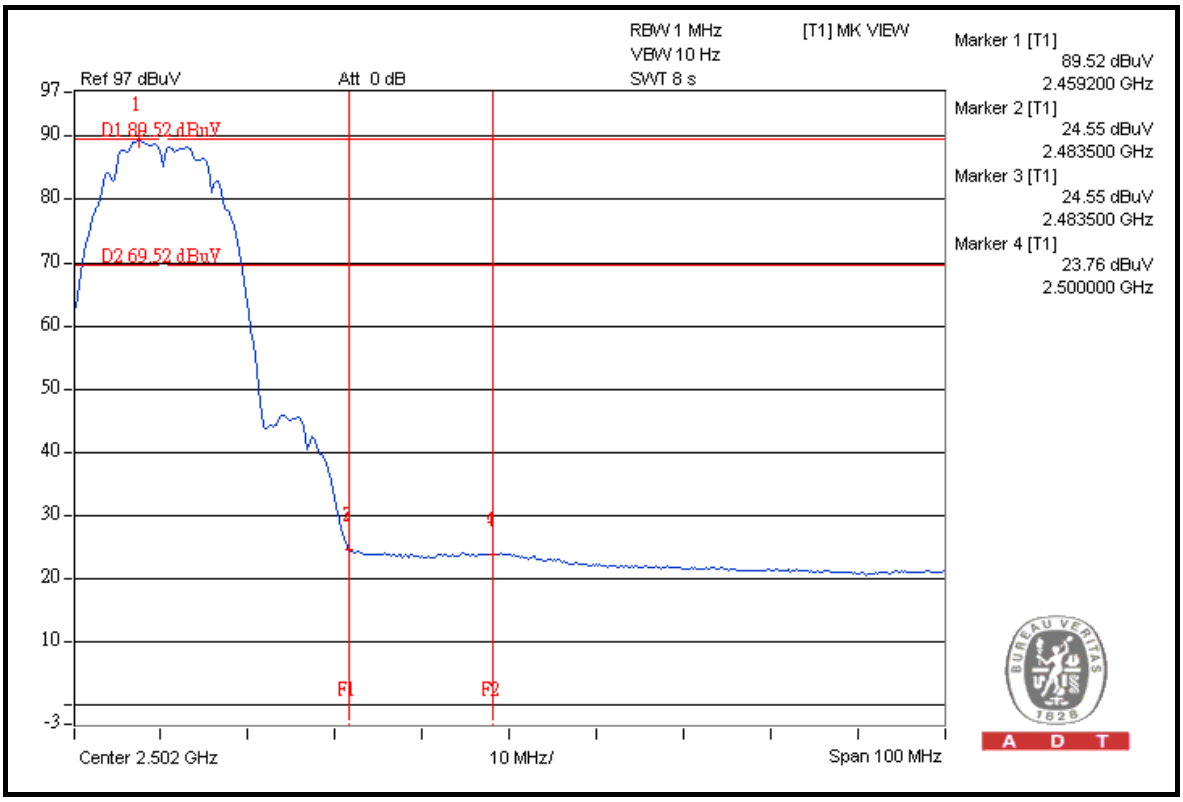
The band edge emission plot on the next third page shows 64.97dBc between carrier maximum power and local maximum emission in restrict band (2.48350GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.1.7 is 112.57dBuV/m (Average), so the maximum field strength in restrict band is 112.57 – 64.97 = 47.60dBuV/m which is under 54dBuV/m limit.

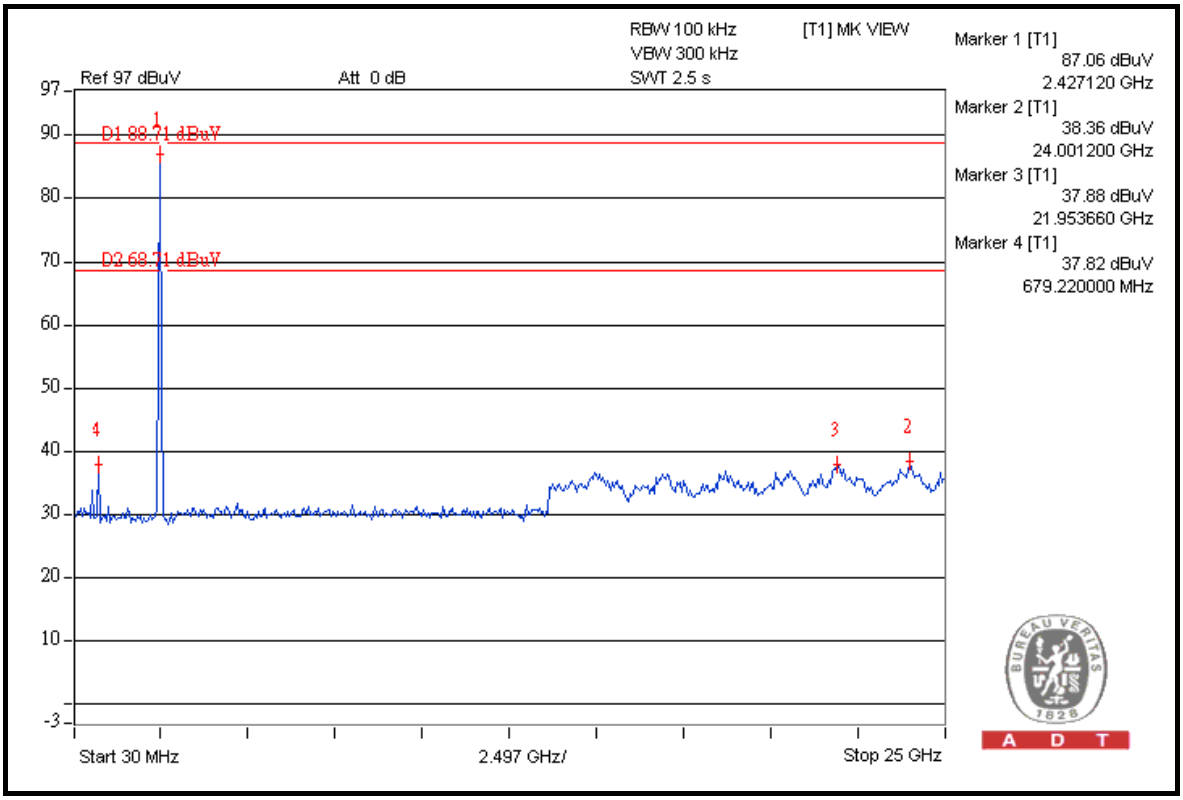

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 90.67 dBuV
D2 70.67 dBuV
Marker 1 [T1]
90.67 dBuV
2.410600 GHz
Marker 2 [T1]
48.02 dBuV
2.400000 GHz
Marker 3 [T1]
49.00 dBuV
2.399600 GHz
Marker 4 [T1]
30.68 dBuV
2.390000 GHz
Marker 5 [T1]
30.92 dBuV
2.388800 GHz
Center 2.372 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 10 Hz
SWT 8 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 91.53 dBuV
D2 71.53 dBuV
Marker 1 [T1]
91.53 dBuV
2.411400 GHz
Marker 2 [T1]
48.61 dBuV
2.400000 GHz
Marker 3 [T1]
49.53 dBuV
2.398400 GHz
Marker 4 [T1]
27.35 dBuV
2.390000 GHz
Marker 5 [T1]
27.74 dBuV
2.389200 GHz
Center 2.372 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 90.67 dBuV
D2 70.67 dBuV
Marker 1 [T1]
89.56 dBuV
2.377180 GHz
Marker 2 [T1]
41.50 dBuV
629.280000 MHz
Marker 3 [T1]
38.14 dBuV
24.051140 GHz
Marker 4 [T1]
37.43 dBuV
23.901320 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz


RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 88.71 dBuV
D2 68.71 dBuV
Marker 1 [T1]
88.71 dBuV
2.458000 GHz
Marker 2 [T1]
30.67 dBuV
2.483500 GHz
Marker 3 [T1]
31.56 dBuV
2.484600 GHz
Marker 4 [T1]
31.51 dBuV
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 97 dBuV
Att 0 dB
D1 89.52 dBuV
D2 69.52 dBuV
Marker 1 [T1]
89.52 dBuV
2.459200 GHz
Marker 2 [T1]
24.55 dBuV
2.483500 GHz
Marker 3 [T1]
24.55 dBuV
2.483500 GHz
Marker 4 [T1]
23.76 dBuV
2.500000 GHz
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 88.71 dBuV
D2 68.71 dBuV
Marker 1 [T1]
87.06 dBuV
2.427120 GHz
Marker 2 [T1]
38.36 dBuV
24.001200 GHz
Marker 3 [T1]
37.88 dBuV
21.953660 GHz
Marker 4 [T1]
37.82 dBuV
679.220000 MHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz

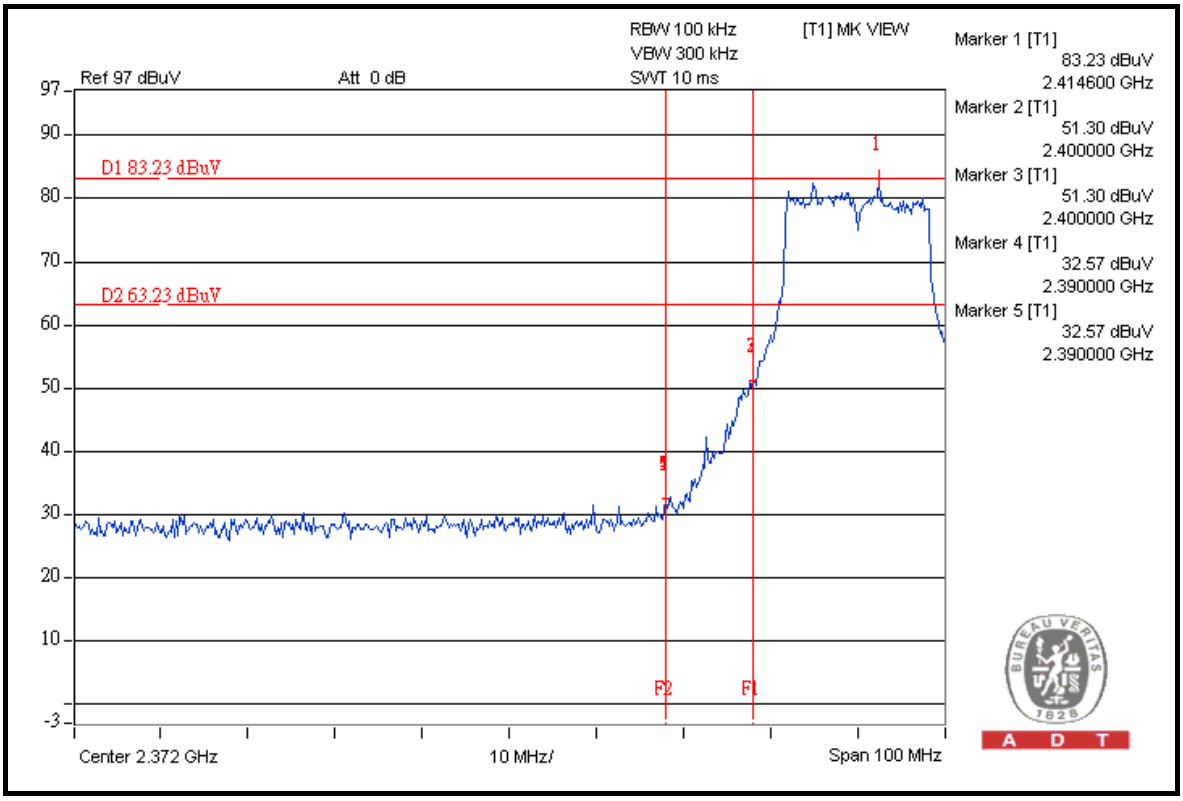
802.11g OFDM MODULATION

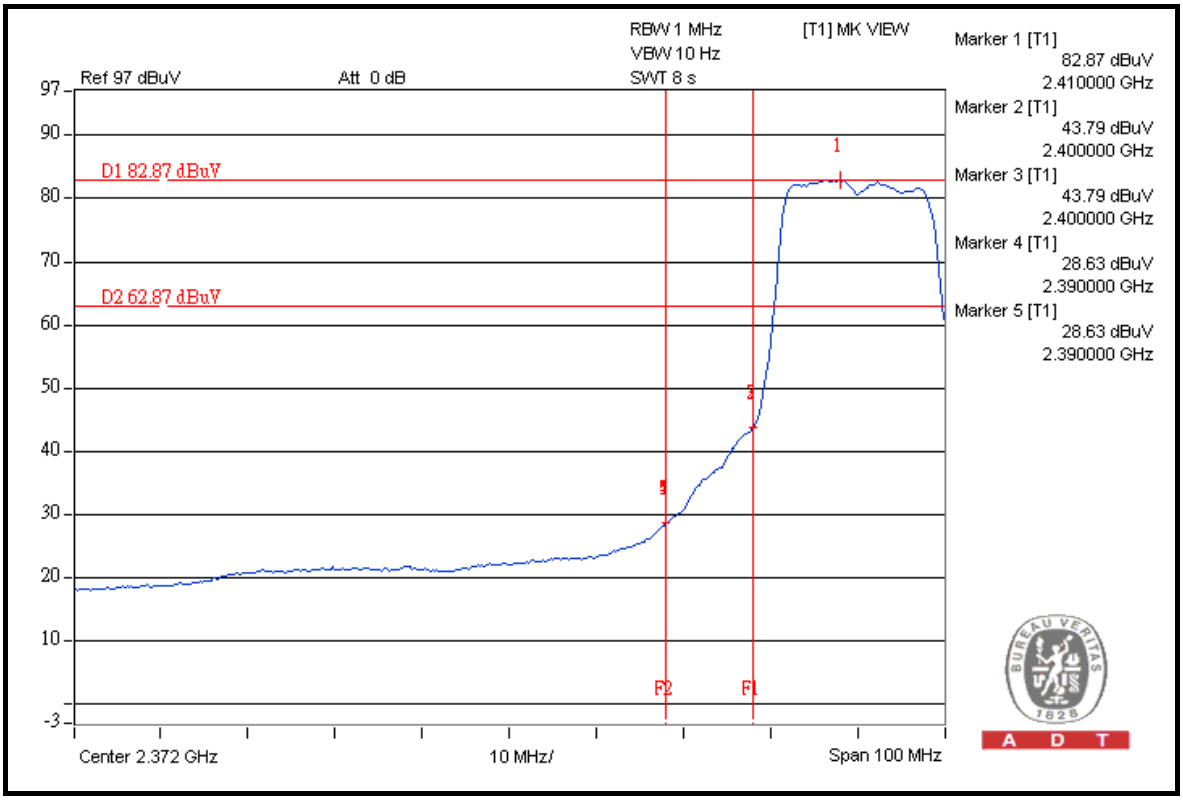
NOTE 1: The band edge emission plot on the next page shows 50.66dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.1.7 is 117.56dBuV/m (Peak), so the maximum field strength in restrict band is 117.56 – 50.66 = 66.90dBuV/m which is under 74dBuV/m limit.

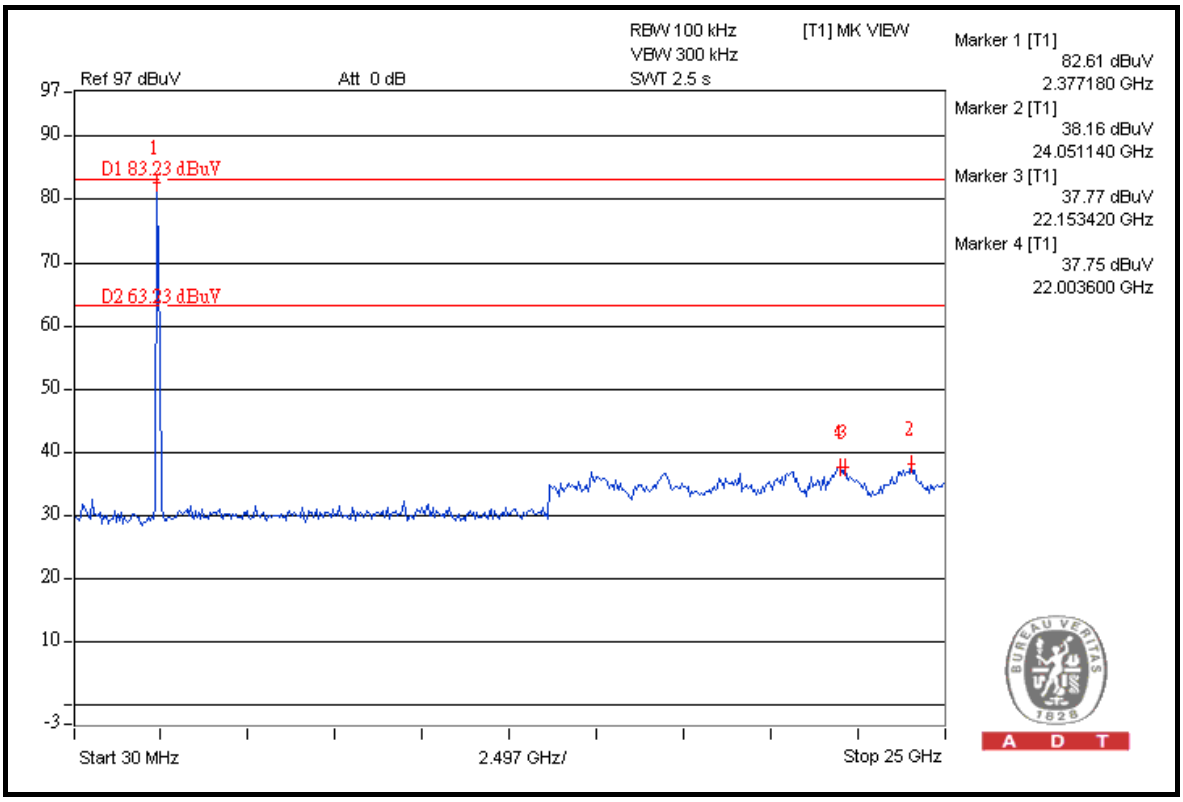
The band edge emission plot of on the next page shows 54.24dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.1.7 is 106.55dBuV/m (Average), so the maximum field strength in restrict band is 106.55 – 54.24 = 52.31dBuV/m which is under 54dBuV/m limit.

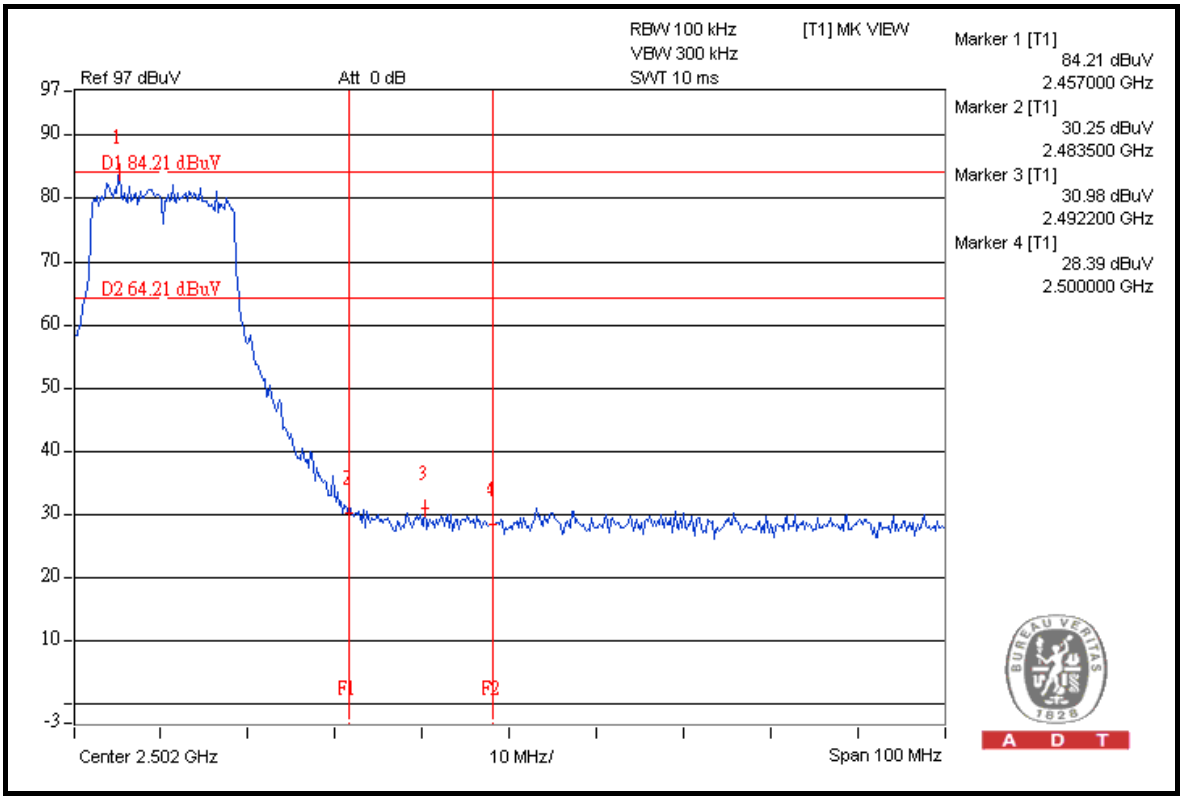
NOTE 2: The band edge emission plot on the next second page shows 53.23dBc between carrier maximum power and local maximum emission in restrict band (2.49220GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.1.7 is 118.27dBuV/m (Peak), so the maximum field strength in restrict band is 118.27 – 53.23 = 65.04dBuV/m which is under 74dBuV/m limit.

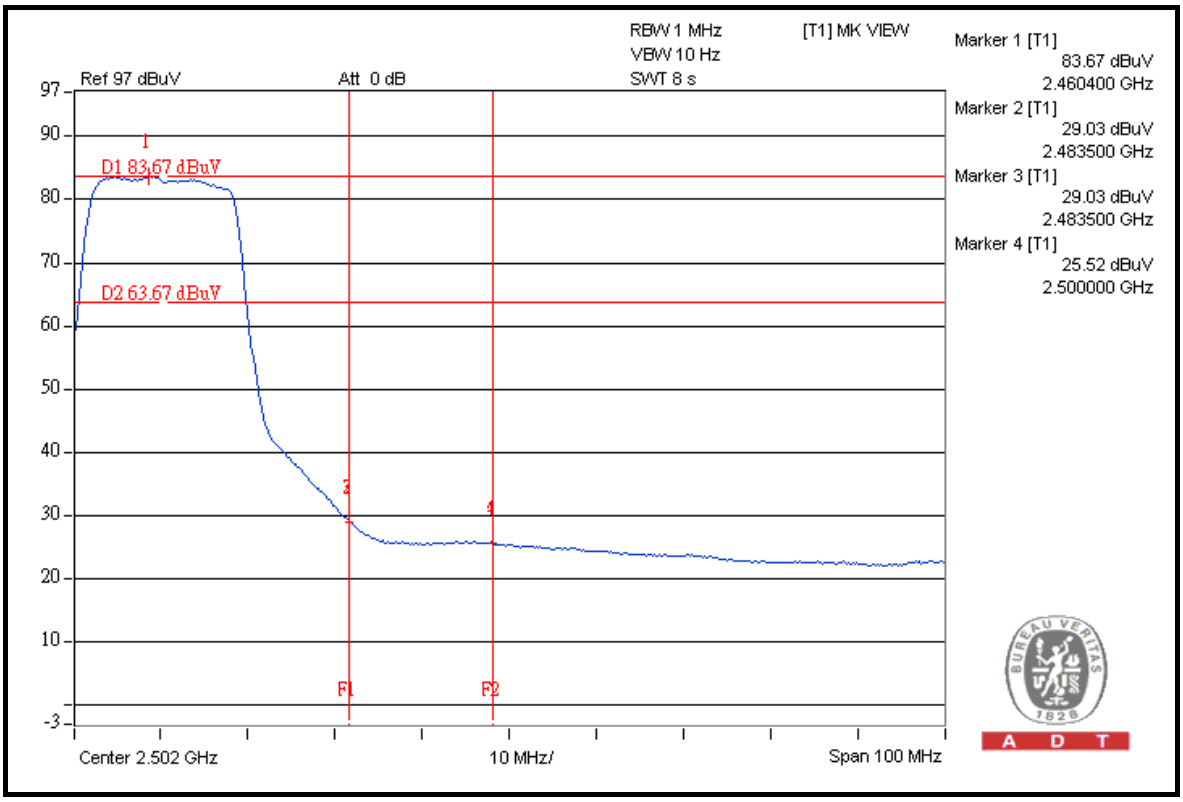
The band edge emission plot on the next third page shows 54.64dBc between carrier maximum power and local maximum emission in restrict band (2.48350GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.1.7 is 107.30dBuV/m (Average), so the maximum field strength in restrict band is 107.30 – 54.64 = 52.66dBuV/m which is under 54dBuV/m limit.

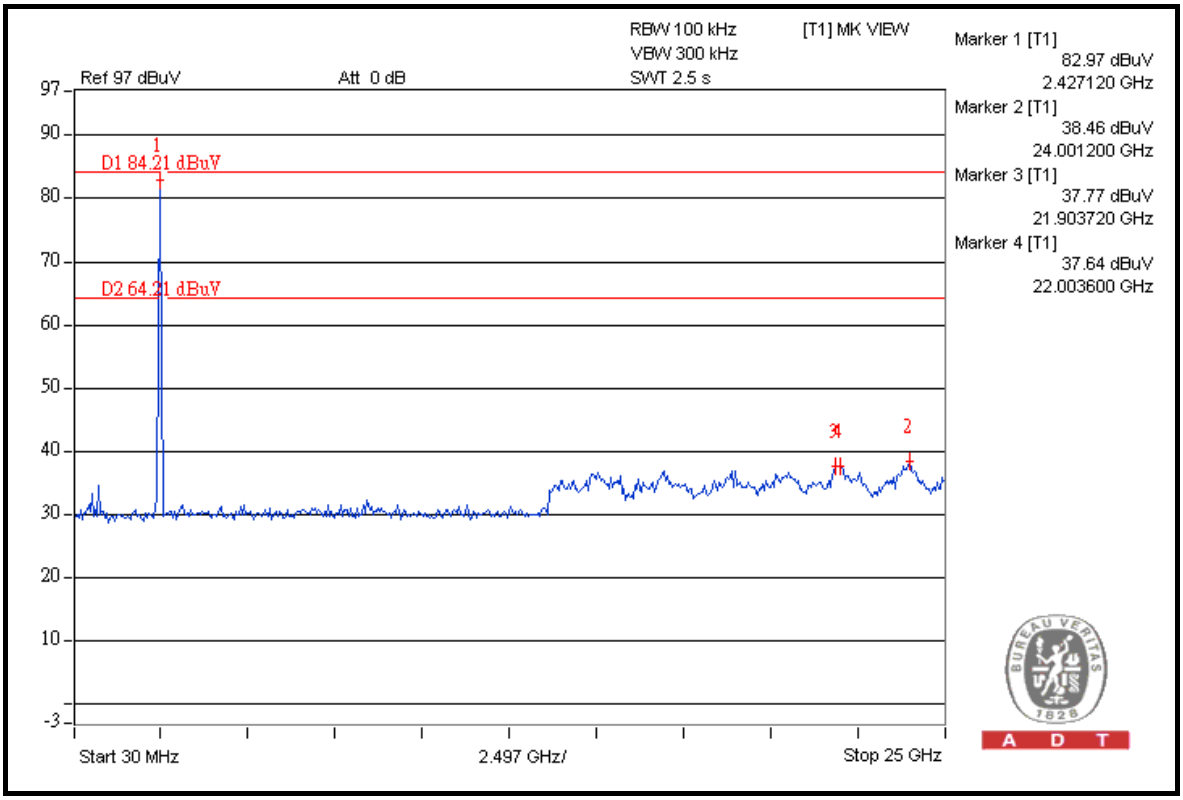

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 83.23 dBuV
D2 63.23 dBuV
Marker 1 [T1]
83.23 dBuV
2.414600 GHz
Marker 2 [T1]
51.30 dBuV
2.400000 GHz
Marker 3 [T1]
51.30 dBuV
2.400000 GHz
Marker 4 [T1]
32.57 dBuV
2.390000 GHz
Marker 5 [T1]
32.57 dBuV
2.390000 GHz
Center 2.372 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 10 Hz
SWT 8 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 82.87 dBuV
D2 62.87 dBuV
Marker 1 [T1]
82.87 dBuV
2.410000 GHz
Marker 2 [T1]
43.79 dBuV
2.400000 GHz
Marker 3 [T1]
43.79 dBuV
2.400000 GHz
Marker 4 [T1]
28.63 dBuV
2.390000 GHz
Marker 5 [T1]
28.63 dBuV
2.390000 GHz
Center 2.372 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 83.23 dBuV
D2 63.23 dBuV
Marker 1 [T1]
82.61 dBuV
2.377180 GHz
Marker 2 [T1]
38.16 dBuV
24.051140 GHz
Marker 3 [T1]
37.77 dBuV
22.153420 GHz
Marker 4 [T1]
37.75 dBuV
22.003600 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz


RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 84.21 dBuV
D2 64.21 dBuV
Marker 1 [T1]
84.21 dBuV
2.457000 GHz
Marker 2 [T1]
30.25 dBuV
2.483500 GHz
Marker 3 [T1]
30.98 dBuV
2.492200 GHz
Marker 4 [T1]
28.39 dBuV
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 97 dBuV
Att 0 dB
D1 83.67 dBuV
D2 63.67 dBuV
Marker 1 [T1]
83.67 dBuV
2.460400 GHz
Marker 2 [T1]
29.03 dBuV
2.483500 GHz
Marker 3 [T1]
29.03 dBuV
2.483500 GHz
Marker 4 [T1]
25.52 dBuV
2.500000 GHz
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 84.21 dBuV
D2 64.21 dBuV
Marker 1 [T1]
82.97 dBuV
2.427120 GHz
Marker 2 [T1]
38.46 dBuV
24.001200 GHz
Marker 3 [T1]
37.77 dBuV
21.903720 GHz
Marker 4 [T1]
37.64 dBuV
22.003600 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz

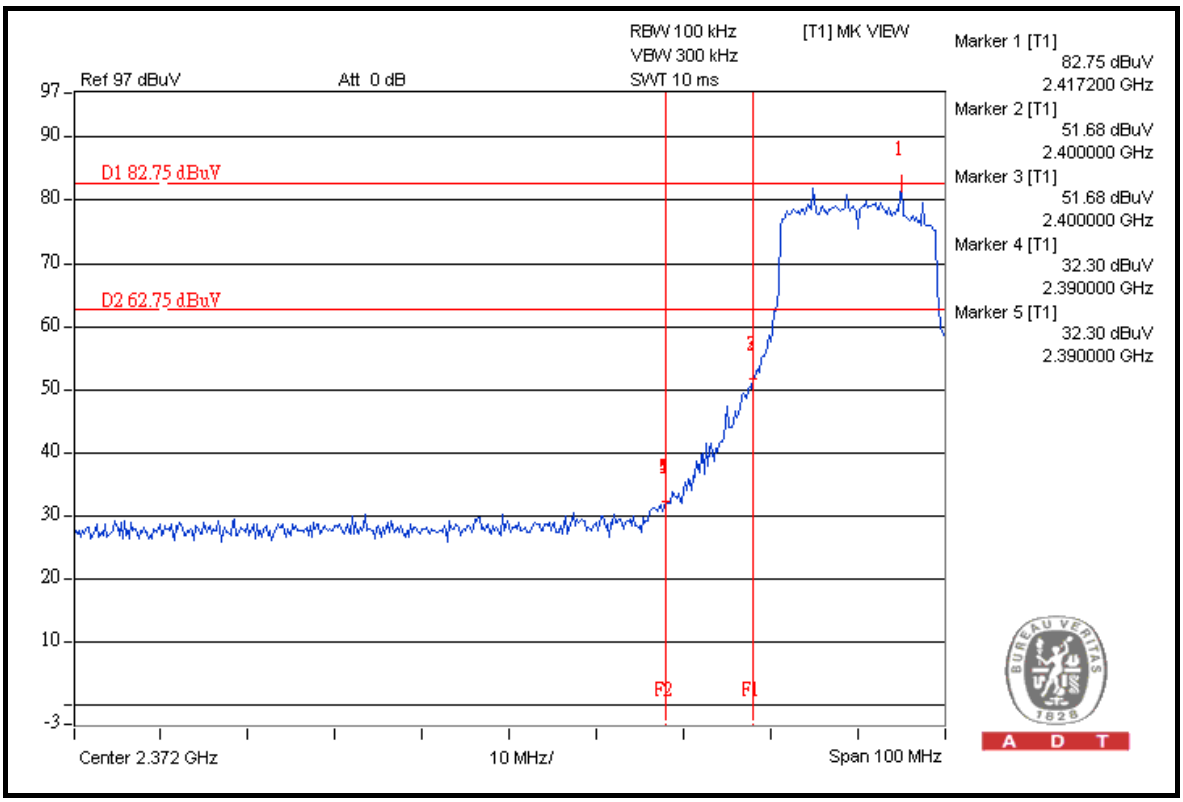
DRAFT 802.11n (20MHz) OFDM MODULATION

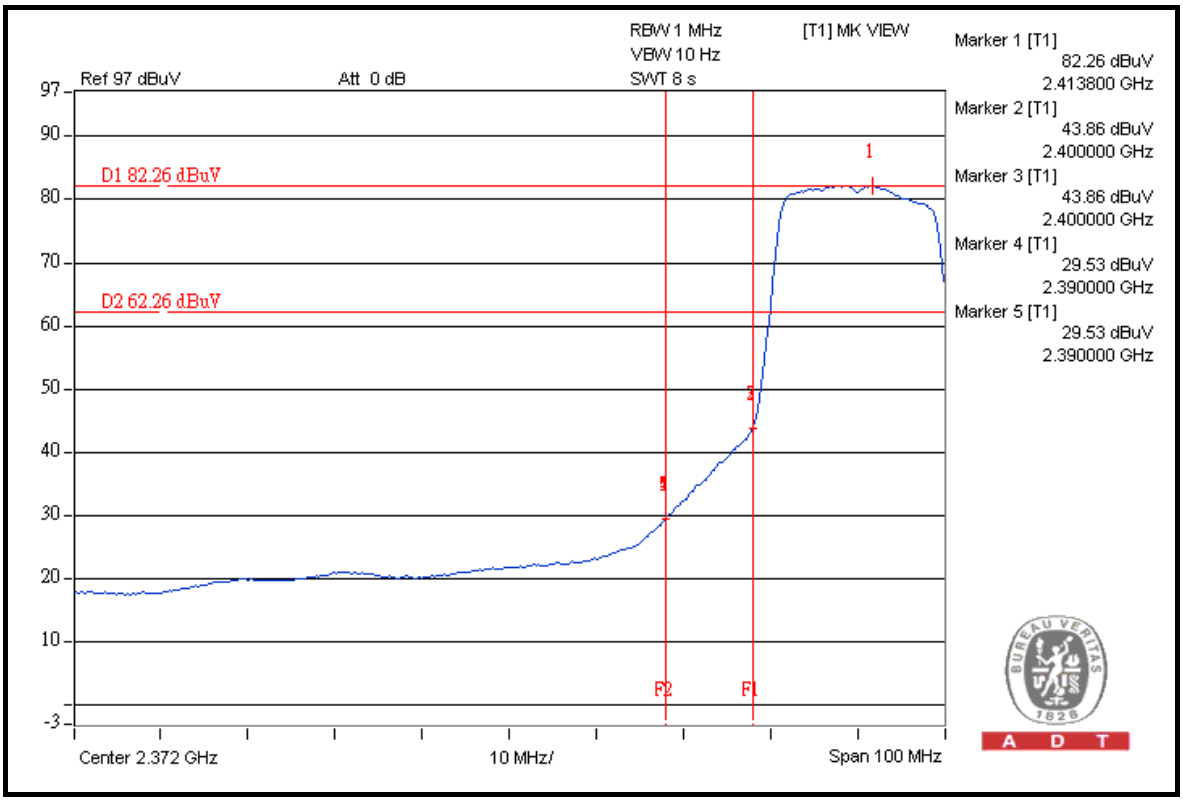
NOTE 1: The band edge emission plot on the next page shows 50.45dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.1.7 is 116.53dBuV/m (Peak), so the maximum field strength in restrict band is 116.53 – 50.45 = 66.08dBuV/m which is under 74dBuV/m limit.

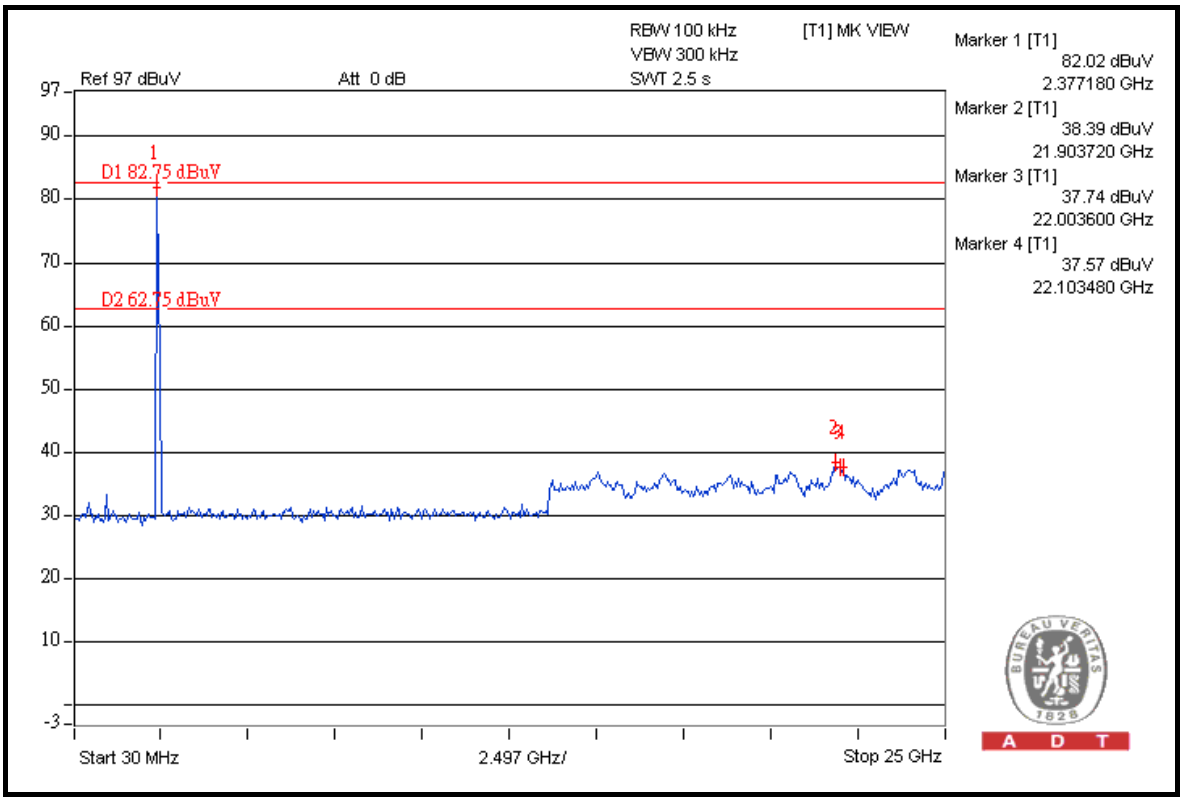
The band edge emission plot of on the next page shows 52.73dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.1.7 is 105.70dBuV/m (Average), so the maximum field strength in restrict band is 105.70 – 52.73 = 52.97dBuV/m which is under 54dBuV/m limit.

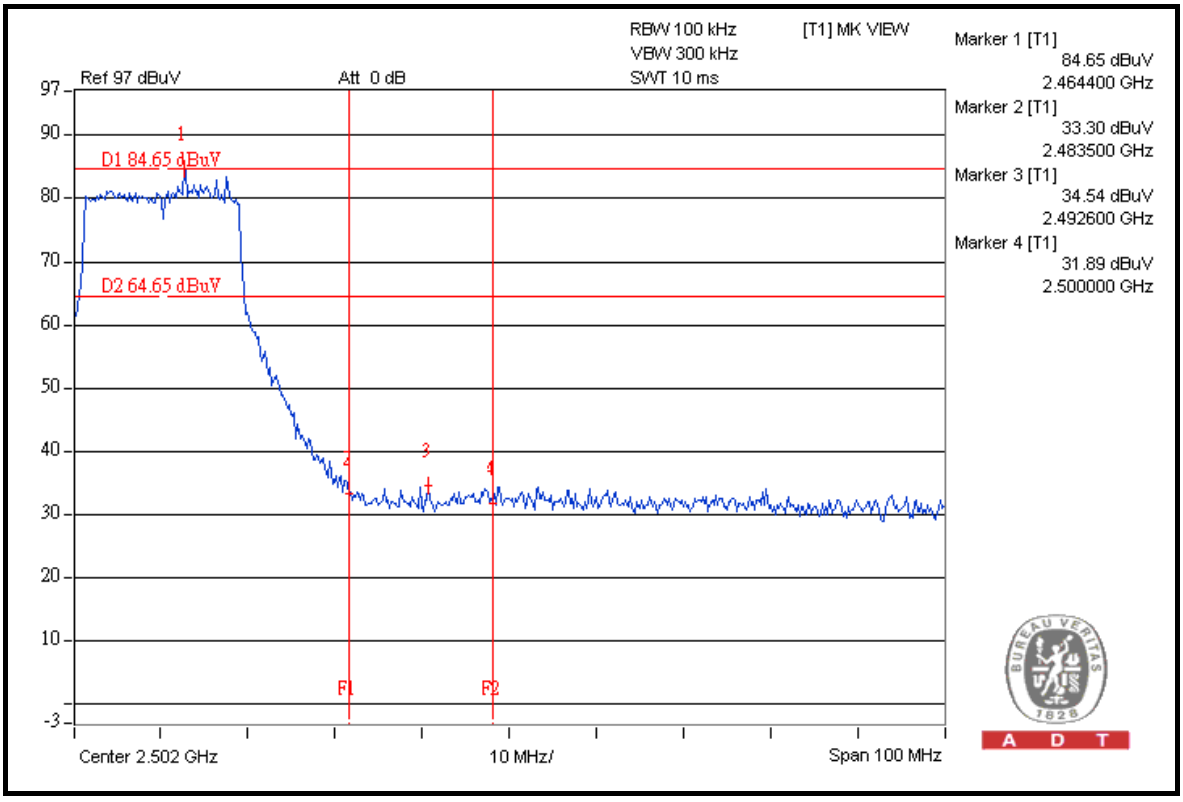
NOTE 2: The band edge emission plot on the next second page shows 50.11dBc between carrier maximum power and local maximum emission in restrict band (2.49260GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.1.7 is 118.04dBuV/m (Peak), so the maximum field strength in restrict band is 118.04 – 50.11 = 67.93dBuV/m which is under 74dBuV/m limit.

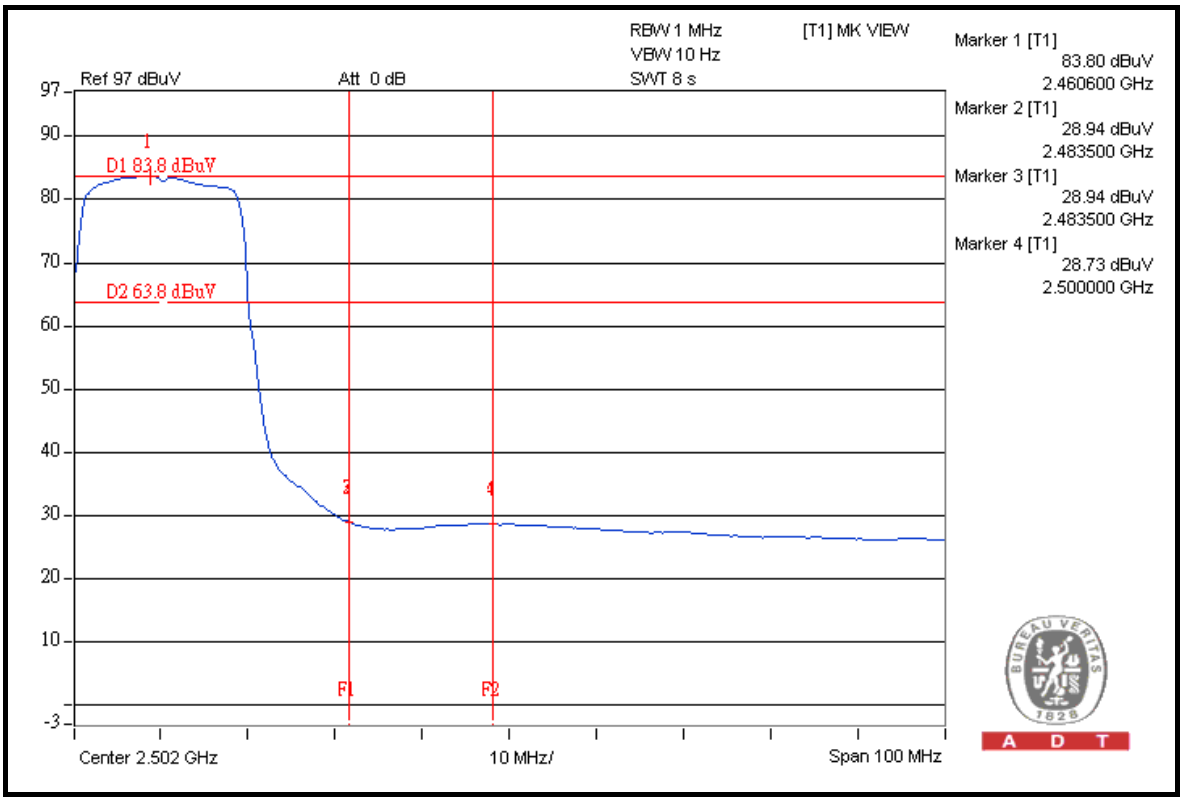
The band edge emission plot on the next third page shows 54.86dBc between carrier maximum power and local maximum emission in restrict band (2.48350GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.1.7 is 107.45dBuV/m (Average), so the maximum field strength in restrict band is 107.45 – 54.86 = 52.59dBuV/m which is under 54dBuV/m limit.

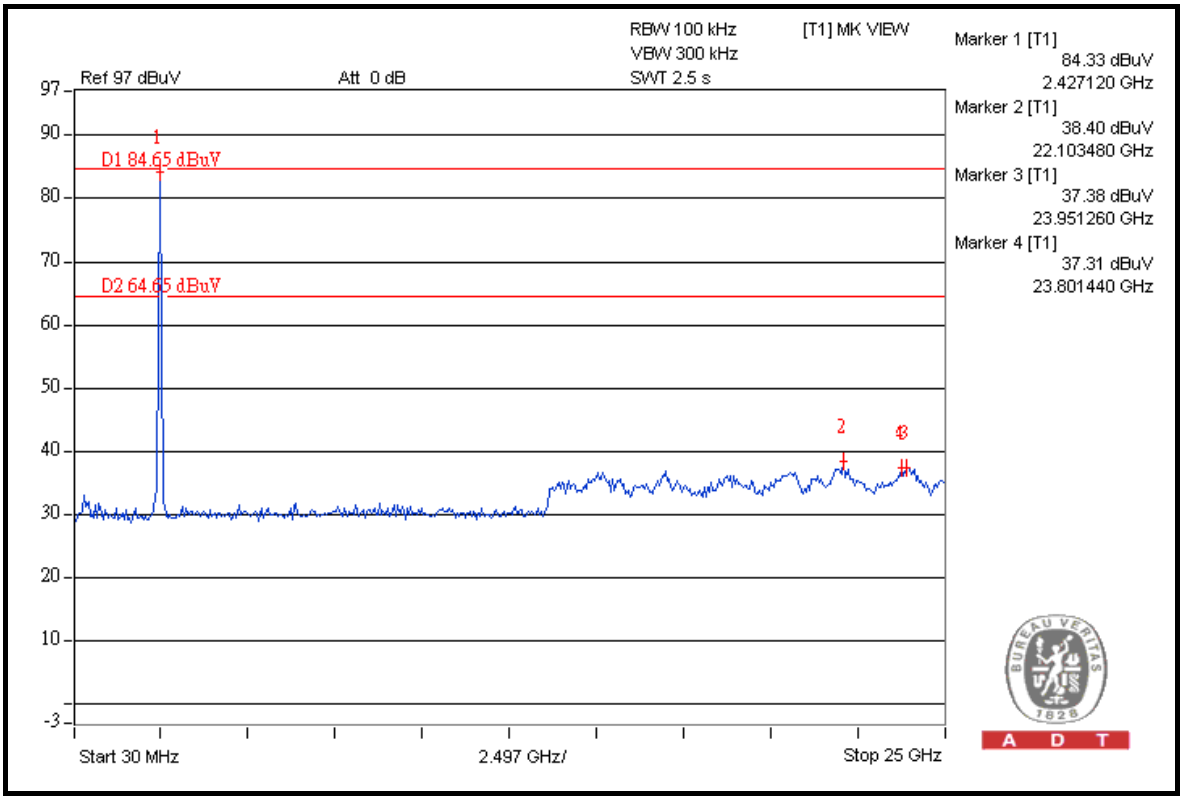

RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 82.75 dBuV
D2 62.75 dBuV
Marker 1 [T1]
82.75 dBuV
2.417200 GHz
Marker 2 [T1]
51.68 dBuV
2.400000 GHz
Marker 3 [T1]
51.68 dBuV
2.400000 GHz
Marker 4 [T1]
32.30 dBuV
2.390000 GHz
Marker 5 [T1]
32.30 dBuV
2.390000 GHz
Center 2.372 GHz
10 MHz/
Span 100 MHz


RBW 1 MHz
VBW 10 Hz
SWT 8 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 82.26 dBuV
D2 62.26 dBuV
Marker 1 [T1]
82.26 dBuV
2.413800 GHz
Marker 2 [T1]
43.86 dBuV
2.400000 GHz
Marker 3 [T1]
43.86 dBuV
2.400000 GHz
Marker 4 [T1]
29.53 dBuV
2.390000 GHz
Marker 5 [T1]
29.53 dBuV
2.390000 GHz
Center 2.372 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 82.75 dBuV
D2 62.75 dBuV
Marker 1 [T1]
82.02 dBuV
2.377180 GHz
Marker 2 [T1]
38.39 dBuV
21.903720 GHz
Marker 3 [T1]
37.74 dBuV
22.003600 GHz
Marker 4 [T1]
37.57 dBuV
22.103480 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz


RBW 100 kHz
VBW 300 kHz
SWT 10 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 84.65 dBuV
D2 64.65 dBuV
Marker 1 [T1]
84.65 dBuV
2.464400 GHz
Marker 2 [T1]
33.30 dBuV
2.483500 GHz
Marker 3 [T1]
34.54 dBuV
2.492600 GHz
Marker 4 [T1]
31.89 dBuV
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 97 dBuV
Att 0 dB
D1 83.8 dBuV
D2 63.8 dBuV
Marker 1 [T1]
83.80 dBuV
2.460600 GHz
Marker 2 [T1]
28.94 dBuV
2.483500 GHz
Marker 3 [T1]
28.94 dBuV
2.483500 GHz
Marker 4 [T1]
28.73 dBuV
2.500000 GHz
Center 2.502 GHz
10 MHz/
Span 100 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 84.65 dBuV
D2 64.65 dBuV
Marker 1 [T1]
84.33 dBuV
2.427120 GHz
Marker 2 [T1]
38.40 dBuV
22.103480 GHz
Marker 3 [T1]
37.38 dBuV
23.951260 GHz
Marker 4 [T1]
37.31 dBuV
23.801440 GHz
Start 30 MHz
2.497 GHz/
Stop 25 GHz

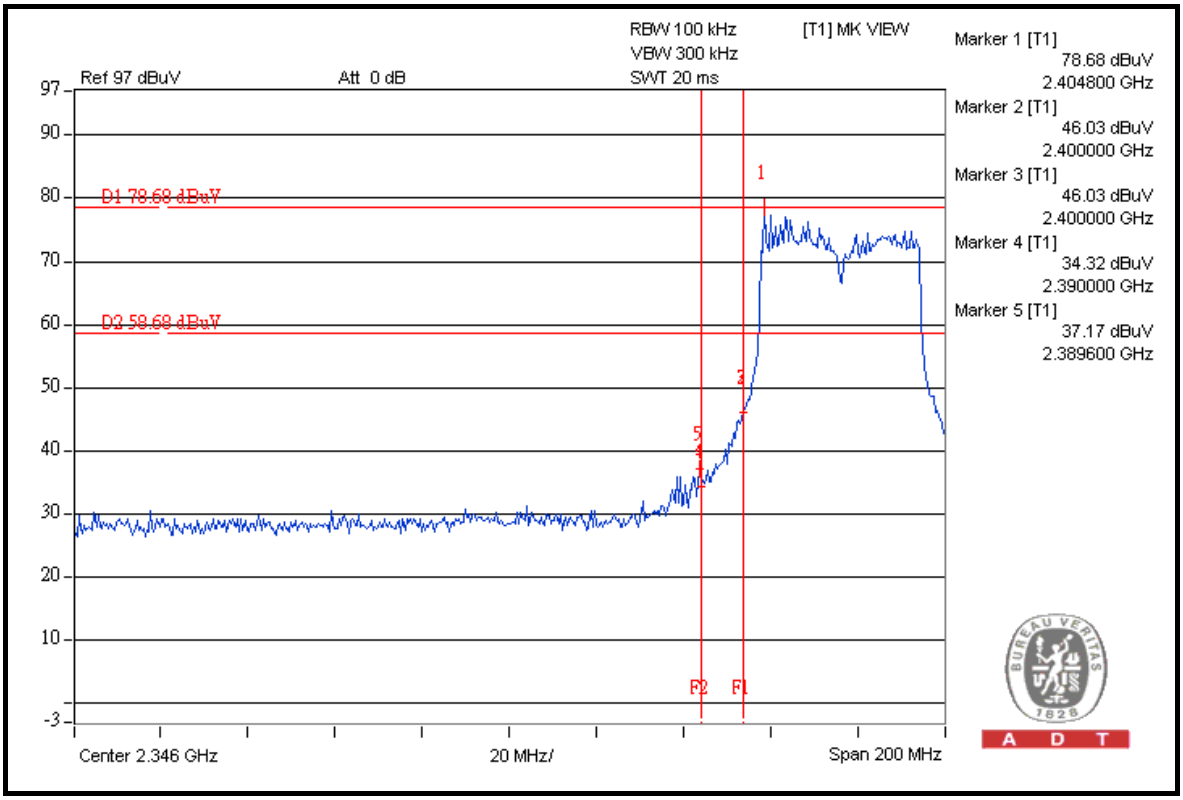
DRAFT 802.11n (40MHz) OFDM MODULATION

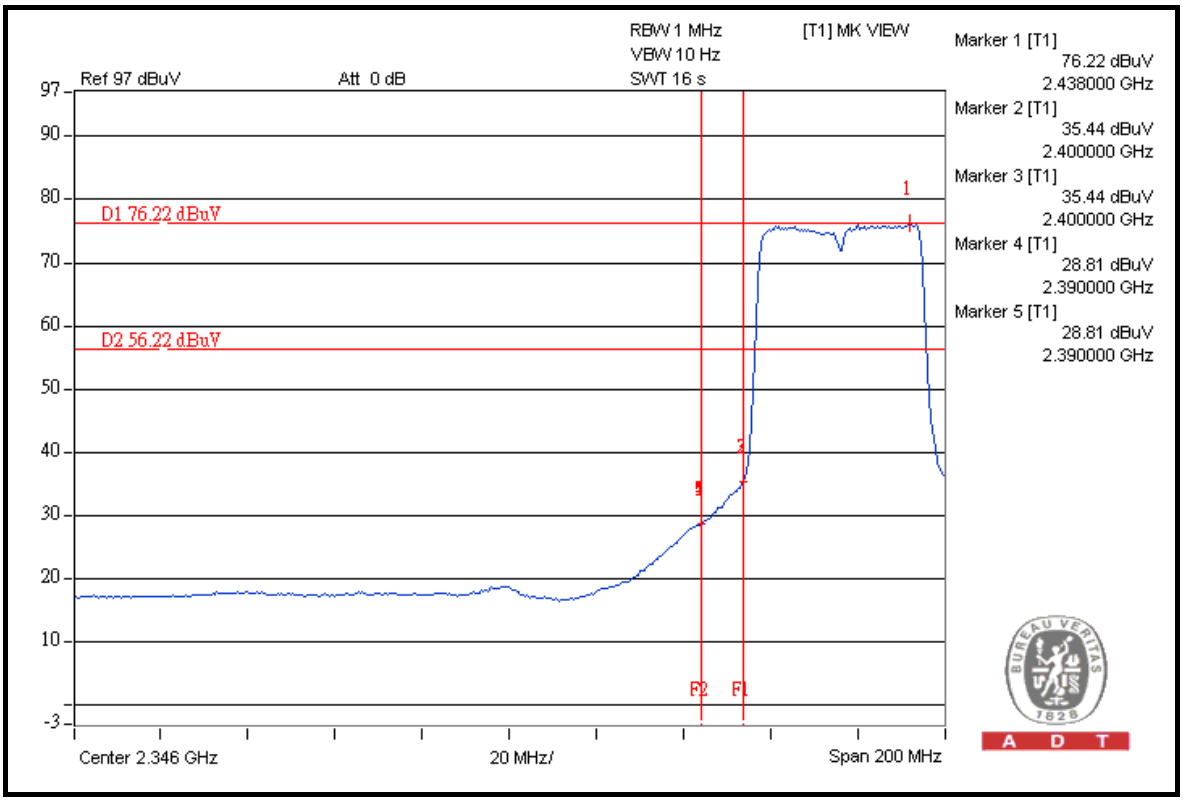
NOTE 1: The band edge emission plot on the next page shows 41.51dBc between carrier maximum power and local maximum emission in restrict band (2.38960GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.1.7 is 110.93dBuV/m (Peak), so the maximum field strength in restrict band is 110.93 – 41.51 = 69.42dBuV/m which is under 74dBuV/m limit.

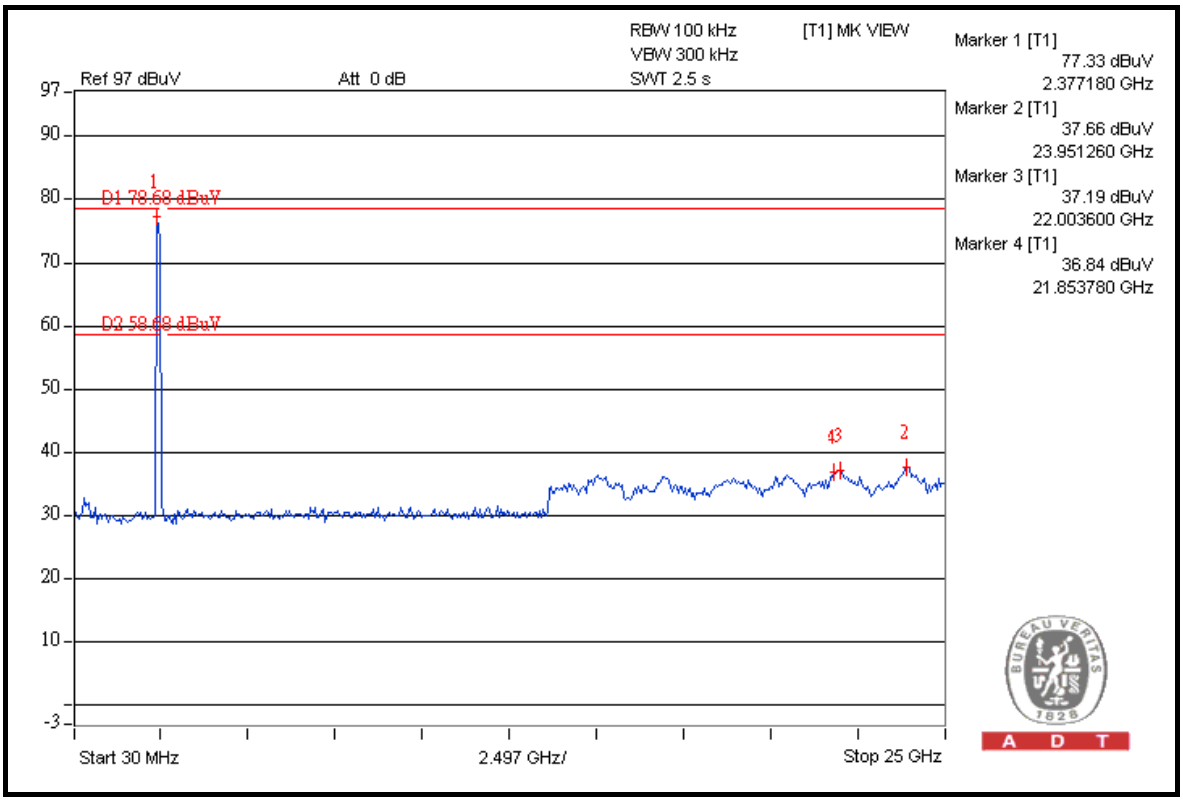
The band edge emission plot of on the next page shows 47.41dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.1.7 is 99.39dBuV/m (Average), so the maximum field strength in restrict band is 99.39 – 47.41 = 51.98dBuV/m which is under 54dBuV/m limit.

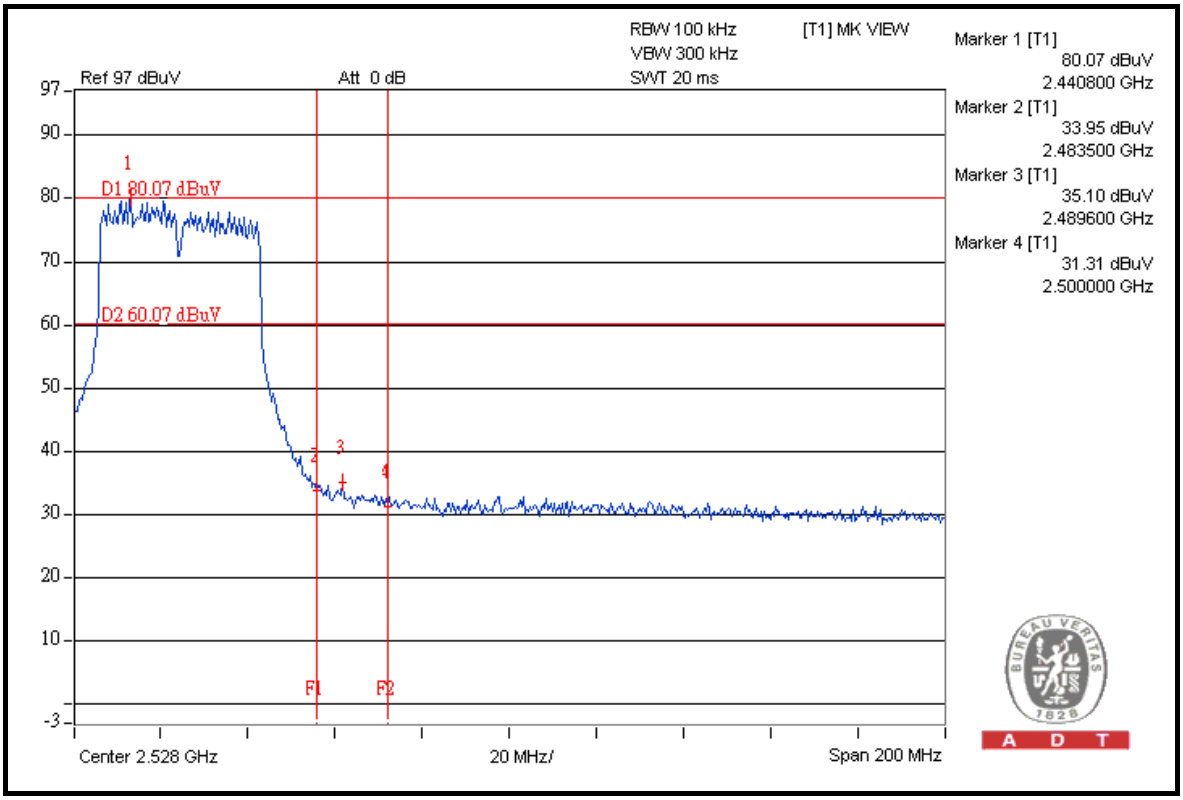
NOTE 2: The band edge emission plot on the next second page shows 44.97dBc between carrier maximum power and local maximum emission in restrict band (2.48960GHz). The emission of carrier strength list in the test result of channel 7 at the item 4.1.7 is 112.12dBuV/m (Peak), so the maximum field strength in restrict band is 112.12 – 44.97 = 67.15dBuV/m which is under 74dBuV/m limit.

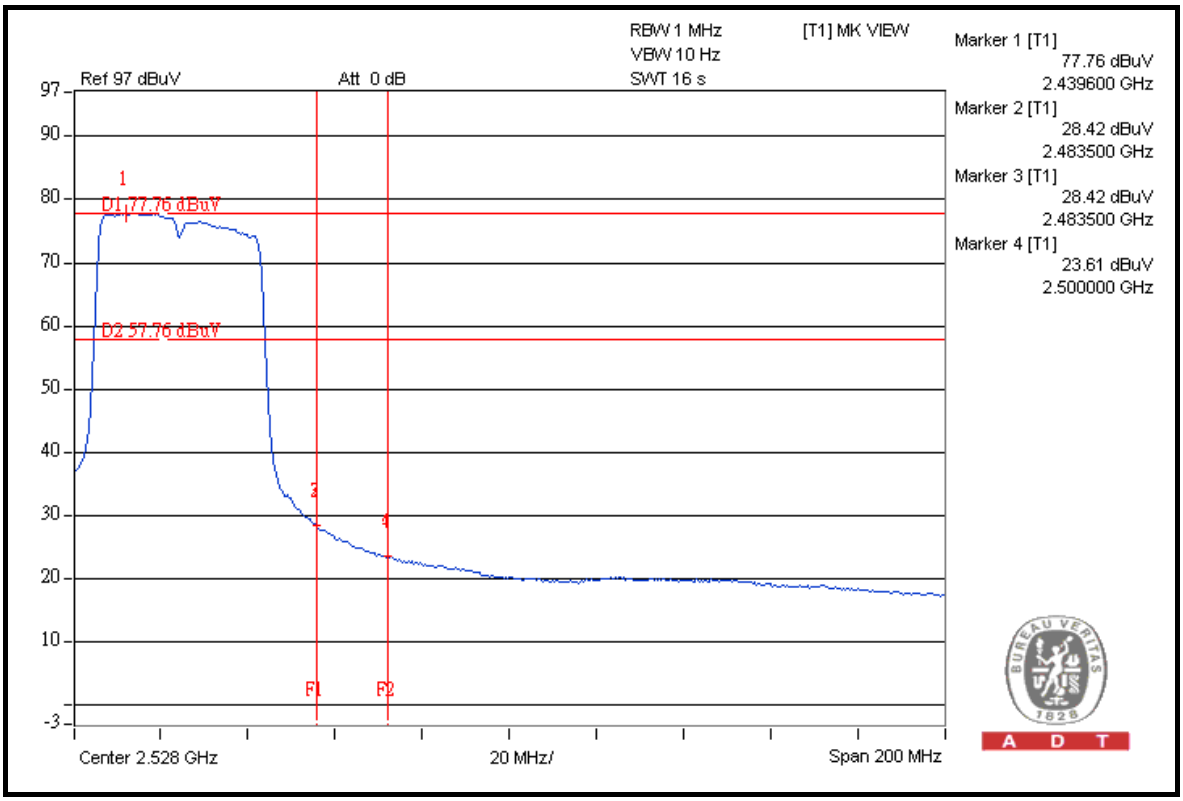
The band edge emission plot on the next third page shows 49.34dBc between carrier maximum power and local maximum emission in restrict band (2.48350GHz). The emission of carrier strength list in the test result of channel 7 at the item 4.1.7 is 100.78dBuV/m (Average), so the maximum field strength in restrict band is 100.78 – 49.34 = 51.44dBuV/m which is under 54dBuV/m limit.

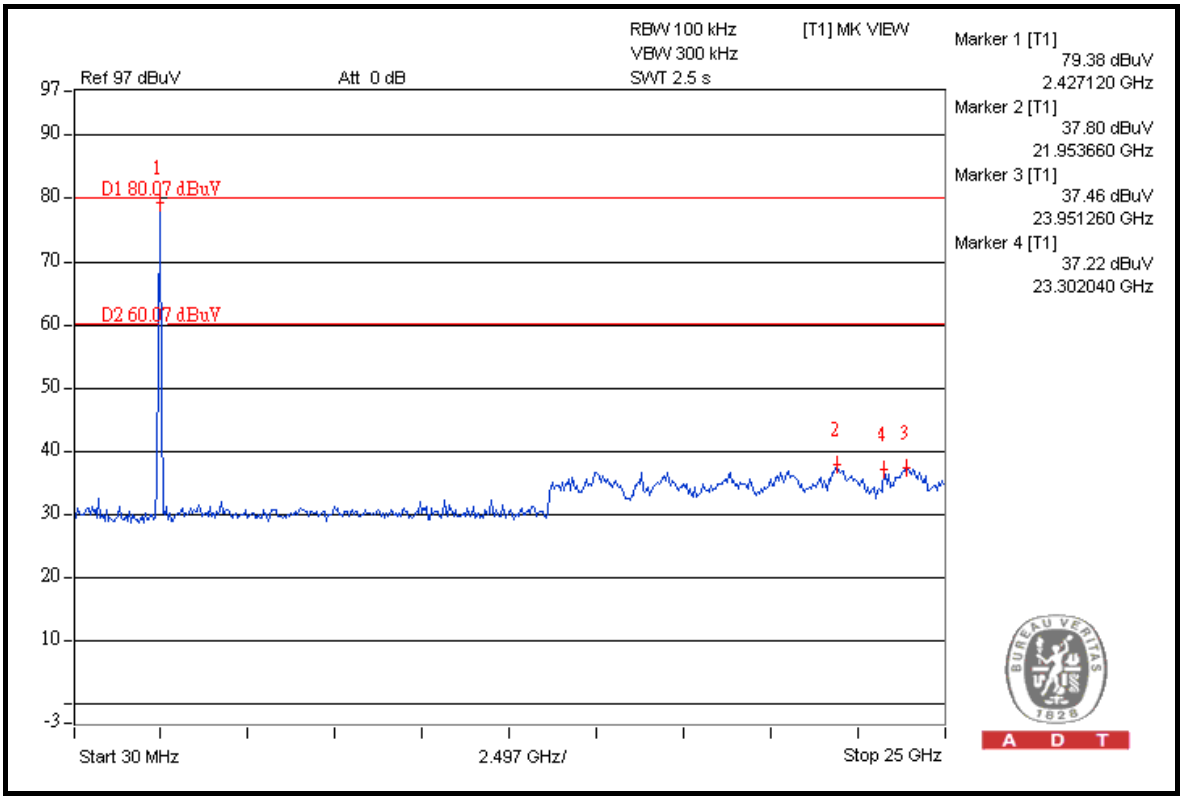

RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 78.68 dBuV
D2 58.68 dBuV
Marker 1 [T1]
78.68 dBuV
2.404800 GHz
Marker 2 [T1]
46.03 dBuV
2.400000 GHz
Marker 3 [T1]
46.03 dBuV
2.400000 GHz
Marker 4 [T1]
34.32 dBuV
2.390000 GHz
Marker 5 [T1]
37.17 dBuV
2.389600 GHz
Center 2.346 GHz
20 MHz/
Span 200 MHz


RBW 1 MHz
VBW 10 Hz
SWT 16 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
D1 76.22 dBuV
D2 56.22 dBuV
Marker 1 [T1]
76.22 dBuV
2.438000 GHz
Marker 2 [T1]
35.44 dBuV
2.400000 GHz
Marker 3 [T1]
35.44 dBuV
2.400000 GHz
Marker 4 [T1]
28.81 dBuV
2.390000 GHz
Marker 5 [T1]
28.81 dBuV
2.390000 GHz
Center 2.346 GHz
20 MHz/
Span 200 MHz


RBW 100 kHz
VBW 300 kHz
SWT 2.5 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
77.33 dBuV
2.377180 GHz
Marker 2 [T1]
37.66 dBuV
23.951260 GHz
Marker 3 [T1]
37.19 dBuV
22.003600 GHz
Marker 4 [T1]
36.84 dBuV
21.853780 GHz
D1 78.68 dBuV
D2 58.68 dBuV
Start 30 MHz
2.497 GHz/
Stop 25 GHz


RBW 100 kHz
VBW 300 kHz
SWT 20 ms
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
80.07 dBuV
2.440800 GHz
Marker 2 [T1]
33.95 dBuV
2.483500 GHz
Marker 3 [T1]
35.10 dBuV
2.489600 GHz
Marker 4 [T1]
31.31 dBuV
2.500000 GHz
D1 80.07 dBuV
D2 60.07 dBuV
F1
F2
Center 2.528 GHz
20 MHz/
Span 200 MHz


RBW 1 MHz
VBW 10 Hz
SWT 16 s
[T1] MK VIEW
Ref 97 dBuV
Att 0 dB
Marker 1 [T1]
77.76 dBuV
2.439600 GHz
Marker 2 [T1]
28.42 dBuV
2.483500 GHz
Marker 3 [T1]
28.42 dBuV
2.483500 GHz
Marker 4 [T1]
23.61 dBuV
2.500000 GHz
D1 77.76 dBuV
D2 57.76 dBuV
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 97 dBuV
Att 0 dB
Marker 1 [T1]
79.38 dBuV
2.427120 GHz
Marker 2 [T1]
37.80 dBuV
21.953660 GHz
Marker 3 [T1]
37.46 dBuV
23.951260 GHz
Marker 4 [T1]
37.22 dBuV
23.302040 GHz
D1 80.07 dBuV
D2 60.07 dBuV
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 without 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---