



FCC TEST REPORT (15.247)

REPORT NO.: RF960808L14

MODEL NO.: WLI-TX4-AG300N

RECEIVED: Aug. 08, 2007

TESTED: Oct. 15 ~ Dec. 25, 2007

ISSUED: Dec. 30, 2008

APPLICANT: Buffalo Inc.

ADDRESS: 15, Shibata Hondori 4-chome, Minami-ku,
Nagoya 457-8520, Japan

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.

This test report consists of 88 pages in total. It may be duplicated completely for legal use with the approval of the applicant. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product endorsement by TAF or any government agencies. The test results in the report only apply to the tested sample.





TABLE OF CONTENTS

1.	CERTIFICATION.....	4
2.	SUMMARY OF TEST RESULTS	5
2.1	MEASUREMENT UNCERTAINTY.....	5
3.	GENERAL INFORMATION.....	6
3.1	GENERAL DESCRIPTION OF EUT	6
3.2	DESCRIPTION OF TEST MODES	8
3.2.1	CONFIGURATION OF SYSTEM UNDER TEST	9
3.2.2	TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL	10
3.3	GENERAL DESCRIPTION OF APPLIED STANDARDS	12
3.4	DESCRIPTION OF SUPPORT UNITS	12
4.	TEST TYPES AND RESULTS	13
4.1	RADIATED EMISSION MEASUREMENT	13
4.1.1	LIMITS OF RADIATED EMISSION MEASUREMENT.....	13
4.1.2	TEST INSTRUMENTS.....	14
4.1.3	TEST PROCEDURES	15
4.1.4	DEVIATION FROM TEST STANDARD	15
4.1.5	TEST SETUP.....	16
4.1.6	EUT OPERATING CONDITIONS	16
4.1.7	TEST RESULTS	17
4.2	CONDUCTED EMISSION MEASUREMENT	30
4.2.1	LIMITS OF CONDUCTED EMISSION MEASUREMENT	30
4.2.2	TEST INSTRUMENTS.....	30
4.2.3	TEST PROCEDURES	31
4.2.4	DEVIATION FROM TEST STANDARD	31
4.2.5	TEST SETUP.....	32
4.2.6	EUT OPERATING CONDITIONS	32
4.2.7	TEST RESULTS	33
4.3	6dB BANDWIDTH MEASUREMENT	35
4.3.1	LIMITS OF 6dB BANDWIDTH MEASUREMENT	35
4.3.2	TEST INSTRUMENTS.....	35
4.3.3	TEST PROCEDURE.....	35
4.3.4	DEVIATION FROM TEST STANDARD	35
4.3.5	TEST SETUP.....	36
4.3.6	EUT OPERATING CONDITIONS	36
4.3.7	TEST RESULTS	37
4.4	MAXIMUM PEAK OUTPUT POWER	49
4.4.1	LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT	49
4.4.2	INSTRUMENTS.....	49
4.4.3	TEST PROCEDURES	49
4.4.4	DEVIATION FROM TEST STANDARD	50
4.4.5	TEST SETUP.....	50
4.4.6	EUT OPERATING CONDITIONS	50
4.4.7	TEST RESULTS	51
4.5	POWER SPECTRAL DENSITY MEASUREMENT.....	53
4.5.1	LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT	53
4.5.2	TEST INSTRUMENTS.....	53
4.5.3	TEST PROCEDURE.....	53
4.5.4	DEVIATION FROM TEST STANDARD	54
4.5.5	TEST SETUP.....	54



A D T

4.5.6	EUT OPERATING CONDITION.....	54
4.5.7	TEST RESULTS	55
4.6	BAND EDGES MEASUREMENT	67
4.6.1	LIMITS OF BAND EDGES MEASUREMENT	67
4.6.2	TEST INSTRUMENTS.....	67
4.6.3	TEST PROCEDURE.....	68
4.6.4	DEVIATION FROM TEST STANDARD	68
4.6.5	EUT OPERATING CONDITION.....	68
4.6.6	TEST RESULTS	69
4.7	ANTENNA REQUIREMENT	85
4.7.1	STANDARD APPLICABLE	85
4.7.2	ANTENNA CONNECTED CONSTRUCTION	85
5.	PHOTOGRAPHS OF THE TEST CONFIGURATION.....	86
6.	INFORMATION ON THE TESTING LABORATORIES	87
7.	APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB.....	88



1. CERTIFICATION

PRODUCT: AirStation Wireless-N NFINITI Ethernet Converter

MODEL: WLI-TX4-AG300N

BRAND: Buffalo

APPLICANT: Buffalo Inc.

TEST SAMPLE: ENGINEERING SAMPLE

TESTED: Oct. 15 ~ Dec. 25, 2007

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

The above equipment (Model: WLI-TX4-AG300N) 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:** Dec. 30, 2008
Peggy Chen / Specialist

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

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



2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart C (Section 15.247)			
Standard Section	Test Type and Limit	Result	Remark
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -9.33dB at 0.181MHz.
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 -0.72dB at 2390.00MHz.
15.247(e)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit.
15.247(d)	Band Edge Measurement Limit: 30dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit.

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

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

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



A D T

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	AirStation Wireless-N NFINITI Ethernet Converter
MODEL NO.	WLI-TX4-AG300N
FCC ID	FDI-09102074-0
POWER SUPPLY	12Vdc from AC Adapter
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b: 11.0/ 5.5/ 2.0/ 1.0Mbps 802.11g: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps Draft 802.11n: up to 300Mbps
FREQUENCY RANGE	2.4GHz: 2400.0 ~ 2483.5MHz 5.0GHz: 5150.0 ~ 5350.0MHz, 5470.0 ~ 5725.0MHz
NUMBER OF CHANNEL	2.4GHz: 11 for 802.11b, 802.11g, draft 802.11n (20MHz) 7 for draft 802.11n (40MHz) 5.0GHz: 5150 ~ 5350MHz: 8 for 802.11a, draft 802.11n (20MHz) 4 for draft 802.11n (40MHz) 5470 ~ 5725MHz: 11 for 802.11a, draft 802.11n (20MHz) 5 for draft 802.11n (40MHz)
OUTPUT POWER	121.192mW for 2400 ~ 2483.5MHz 63.392mW for 5150 ~ 5350MHz 51.409mW for 5470 ~ 5425MHz
ANTENNA TYPE	2.4GHz: Monopole antenna with 4.66dBi gain (for 2.4GHz) 5.0GHz: Monopole antenna with 4.01dBi gain (for 5150 ~ 5350MHz) Monopole antenna with 4.32dBi gain (for 5470 ~ 5725MHz)
DATA CABLE	NA
I/O PORTS	RJ45
ACCESSORY DEVICES	Adapter



NOTE:

1. The EUT is other data processing machines. The functions of EUT listed as below:

	TEST STANDARD	REFERENCE REPORT
WLAN 802.11b/g	FCC Part 15, Subpart C (Section 15.247)	RF960808L14
WLAN 802.11a (5150~5350MHz, 5470~5725MHz)	FCC Part 15, Subpart E (Section 15.407)	RF960808L14-1

2. The frequency bands used in this EUT are listed as follows:

Frequency Band (MHz)	2400~2483.5	5150~5350	5470~5725
802.11b	√	-	-
802.11g	√	-	-
802.11a	-	√	√
Draft 802.11n (20MHz)	√	√	√
Draft 802.11n (40MHz)	√	√	√

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

MODULATION MODE	TX FUNCTION
802.11b	1TX
802.11g	1TX
802.11a	1TX
Draft 802.11n (20MHz)	2TX
Draft 802.11n (40MHz)	2TX

4. The EUT was operated with following adapter.

BRAND:	BUFFALO
MODEL:	UI315-12
INPUT:	100-240Vac, 50-60Hz, 0.4A
OUTPUT:	12Vdc, 1.25A
POWER LINE:	DC: 1.8m non-shielded cable with one core AC: 0.5m non-shielded cable without core

5. 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

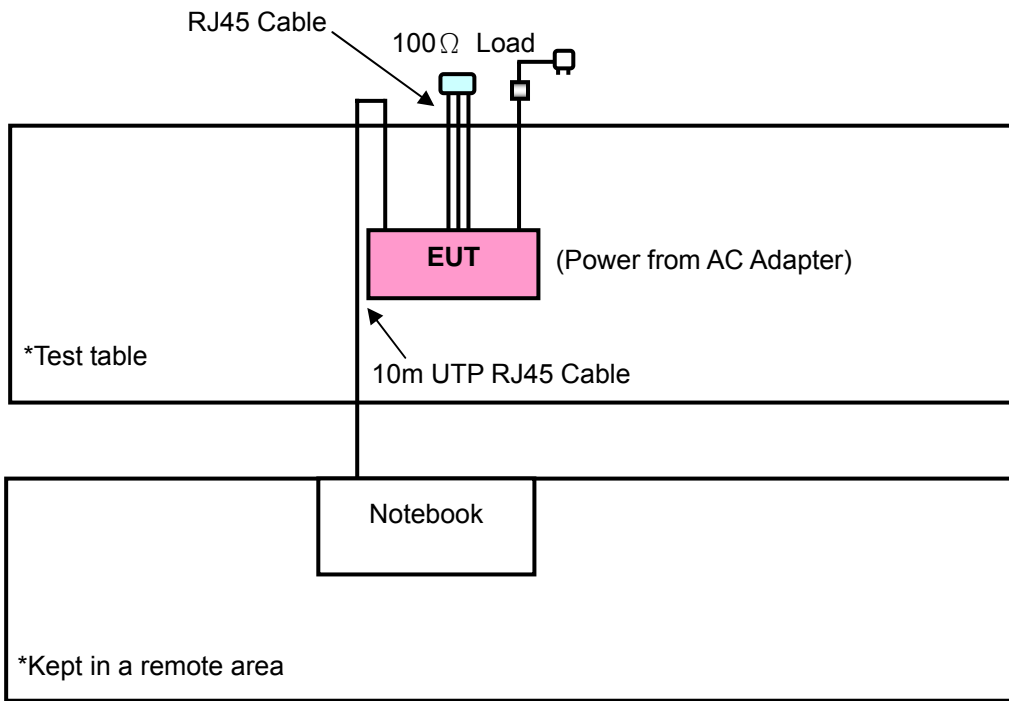
11 channels are provided for 802.11b, 802.11g, draft 802.11n (20MHz):

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 \geq 1G	RE $<$ 1G	PLC	APCM	
-	√	√	√	√	-

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

RADIATED EMISSION TEST (ABOVE 1GHz):

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
Draft 802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	7.2
Draft 802.11n (40MHz)	1 to 7	1, 4, 7	OFDM	BPSK	15

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 and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
Draft 802.11n (20MHz)	1 to 11	6	OFDM	BPSK	7.2

POWER LINE CONDUCTED EMISSION TEST:

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
Draft 802.11n (20MHz)	1 to 11	6	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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 11	OFDM	BPSK	6
Draft 802.11n (20MHz)	1 to 11	1, 11	OFDM	BPSK	7.2
Draft 802.11n (40MHz)	1 to 7	1, 7	OFDM	BPSK	15

ANTENNA PORT CONDUCTED MEASUREMENT:

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
Draft 802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	7.2
Draft 802.11n (40MHz)	1 to 7	1, 4, 7	OFDM	BPSK	15

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart C (15.247)
ANSI C63.4-2003

All test items have been performed and recorded as per the above standards.

NOTE: The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

3.4 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP05L	12130898320	E2K24CLNS

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

NOTE 1: All power cords of the above support units are non shielded (1.8m).

NOTE 2: Item 1 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	ESI7	838496/016	Dec. 26, 2007	Dec. 25, 2008
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Dec. 03, 2007	Dec. 02, 2008
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Jan. 05, 2007	Jan. 04, 2008
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-405	Dec. 18, 2007	Dec. 17, 2008
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170242	Jan. 17, 2007	Jan. 16, 2008
Preamplifier Agilent	8449B	3008A01910	Sep. 20, 2007	Sep. 19, 2008
Preamplifier Agilent	8447D	2944A10634	Dec. 13, 2007	Dec. 12, 2008
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	274397/4	Nov. 08, 2007	Nov. 07, 2008
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	283401/4	Nov. 08, 2007	Nov. 07, 2008
Software ADT.	ADT_Radiated_V7.6	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	019303	NA	NA
Turn Table ADT.	TT100.	TT93021704	NA	NA
Turn Table Controller ADT.	SC100.	SC93021704	NA	NA

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Chamber 4.
 3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 4. The FCC Site Registration No. is 988962.
 5. The IC Site Registration No. is IC7450F-4.

4.1.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

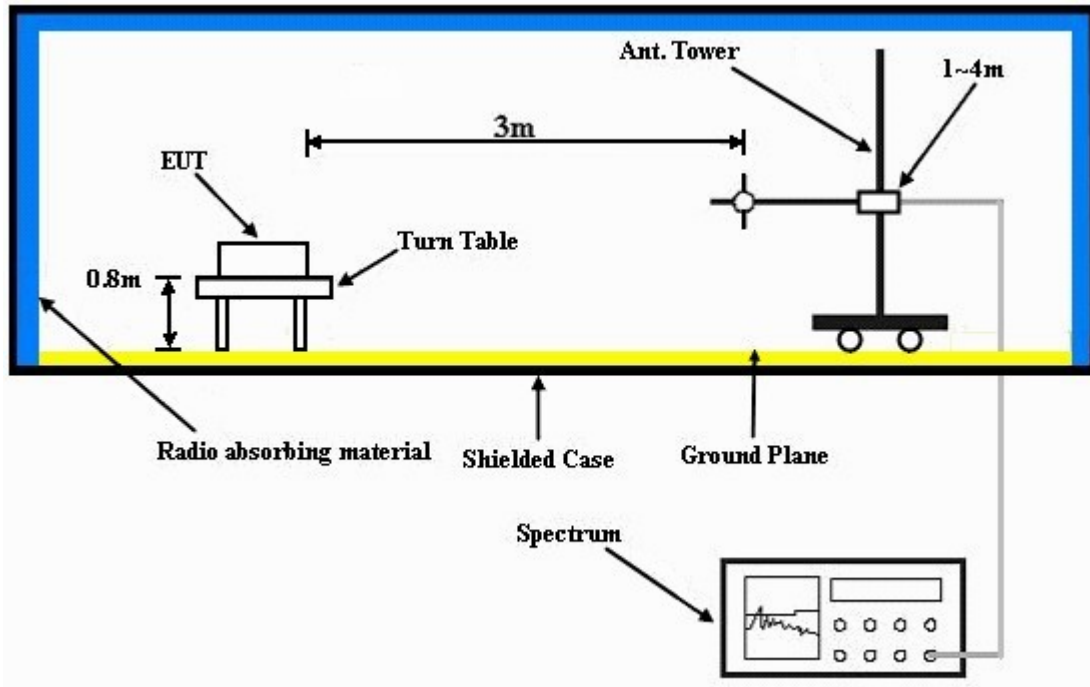
NOTE:

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

- Placed the EUT on a testing table.
- Prepared a notebook computer and placed it outside of testing area to act as communication partner for EUT.
- The EUT ran a test program (provided by manufacturer) to enable all functions under transmission condition continuously at specific channel frequency.
- The necessary accessories enable the EUT in full functions.



A D T

4.1.7 TEST RESULTS

ABOVE 1GHz DATA: 802.11b DSSS MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH 1020hPa	TESTED BY	Kevin Liang

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	60.06 PK	74.00	-13.94	1.38 H	158	27.83	32.23
2	2390.00	49.19 AV	54.00	-4.81	1.38 H	158	16.96	32.23
3	*2412.00	109.12 PK			1.39 H	158	76.80	32.32
4	*2412.00	104.41 AV			1.39 H	158	72.09	32.32
5	4824.00	50.92 PK	74.00	-23.08	1.42 H	289	12.43	38.49
6	4824.00	43.96 AV	54.00	-10.04	1.42 H	289	5.47	38.49
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	2390.00	62.63 PK	74.00	-11.37	1.16 V	194	30.40	32.23
2	2390.00	52.48 AV	54.00	-1.52	1.16 V	194	20.25	32.23
3	*2412.00	108.01 PK			1.16 V	194	75.69	32.32
4	*2412.00	103.55 AV			1.16 V	194	71.23	32.32
5	4824.00	50.99 PK	74.00	-23.01	1.45 V	218	12.50	38.49
6	4824.00	43.61 AV	54.00	-10.39	1.45 V	218	5.12	38.49

- 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.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH 1020hPa	TESTED BY	Kevin Liang

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	112.00 PK			1.23 H	258	79.59	32.41
2	*2437.00	107.65 AV			1.23 H	258	75.24	32.41
3	4874.00	50.96 PK	74.00	-23.04	1.37 H	343	12.27	38.69
4	4874.00	43.60 AV	54.00	-10.40	1.37 H	343	4.91	38.69
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	*2437.00	111.37 PK			1.16 V	179	78.96	32.41
2	*2437.00	106.79 AV			1.16 V	179	74.38	32.41
3	4874.00	51.05 PK	74.00	-22.95	1.38 V	268	12.36	38.69
4	4874.00	41.57 AV	54.00	-12.43	1.38 V	268	2.88	38.69

- 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.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH 1020hPa	TESTED BY	Kevin Liang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	110.99 PK			1.21 H	260	78.48	32.51
2	*2462.00	106.70 AV			1.21 H	260	74.19	32.51
3	2483.50	61.23 PK	74.00	-12.77	1.21 H	260	28.64	32.59
4	2483.50	50.95 AV	54.00	-3.05	1.21 H	260	18.36	32.59
5	4924.00	49.67 PK	74.00	-24.33	1.52 H	4	10.82	38.85
6	4924.00	40.35 AV	54.00	-13.65	1.52 H	4	1.50	38.85
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	109.12 PK			1.10 V	214	76.61	32.51
2	*2462.00	104.58 AV			1.10 V	214	72.07	32.51
3	2483.50	61.56 PK	74.00	-12.44	1.10 V	214	28.97	32.59
4	2483.50	52.39 AV	54.00	-1.61	1.10 V	214	19.80	32.59
5	4924.00	48.62 PK	74.00	-25.38	1.36 V	148	9.77	38.85
6	4924.00	37.65 AV	54.00	-16.35	1.36 V	148	-1.20	38.85

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



A D T

802.11g OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH 1020hPa	TESTED BY	Kevin Liang

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	70.26 PK	74.00	-3.74	1.89 H	251	38.03	32.23
2	2390.00	53.28 AV	54.00	-0.72	1.89 H	251	21.05	32.23
3	*2412.00	109.96 PK			1.89 H	251	77.64	32.32
4	*2412.00	99.76 AV			1.89 H	251	67.44	32.32
5	4824.00	51.22 PK	74.00	-22.78	1.32 H	183	12.73	38.49
6	4824.00	38.47 AV	54.00	-15.53	1.32 H	183	-0.02	38.49

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	2390.00	65.14 PK	74.00	-8.86	1.16 V	179	32.91	32.23
2	2390.00	50.70 AV	54.00	-3.30	1.16 V	179	18.47	32.23
3	*2412.00	106.71 PK			1.16 V	180	74.39	32.32
4	*2412.00	96.60 AV			1.16 V	180	64.28	32.32
5	4824.00	51.22 PK	74.00	-22.78	1.32 V	183	12.73	38.49
6	4824.00	38.47 AV	54.00	-15.53	1.32 V	183	-0.02	38.49

- 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.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH 1020hPa	TESTED BY	Kevin Liang

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	112.26 PK			1.24 H	278	79.85	32.41
2	*2437.00	101.65 AV			1.24 H	278	69.24	32.41
3	4874.00	48.31 PK	74.00	-25.69	1.17 H	285	9.62	38.69
4	4874.00	36.40 AV	54.00	-17.60	1.17 H	285	-2.29	38.69
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	*2437.00	109.85 PK			1.15 V	181	77.44	32.41
2	*2437.00	99.60 AV			1.15 V	181	67.19	32.41
3	4874.00	48.90 PK	74.00	-25.10	1.00 V	73	10.21	38.69
4	4874.00	35.61 AV	54.00	-18.39	1.00 V	73	-3.08	38.69

- 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.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH 1020hPa	TESTED BY	Kevin Liang

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	111.08 PK			1.24 H	276	78.57	32.51
2	*2462.00	100.71 AV			1.24 H	276	68.20	32.51
3	2483.50	70.09 PK	74.00	-3.91	1.24 H	276	37.50	32.59
4	2483.50	52.08 AV	54.00	-1.92	1.24 H	276	19.49	32.59
5	4924.00	48.12 PK	74.00	-25.88	1.10 H	313	9.27	38.85
6	4924.00	35.77 AV	54.00	-18.23	1.10 H	313	-3.08	38.85

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	108.53 PK			1.11 V	215	76.02	32.51
2	*2462.00	98.11 AV			1.11 V	215	65.60	32.51
3	2483.50	68.25 PK	74.00	-5.75	1.11 V	215	35.66	32.59
4	2483.50	49.84 AV	54.00	-4.16	1.11 V	215	17.25	32.59
5	4924.00	47.56 PK	74.00	-26.44	1.28 V	175	8.71	38.85
6	4924.00	34.95 AV	54.00	-19.05	1.28 V	175	-3.90	38.85

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



A D T

DRAFT 802.11n (20MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH 1020hPa	TESTED BY	Kevin Liang

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	72.51 PK	74.00	-1.49	1.28 H	279	40.28	32.23
2	2390.00	52.96 AV	54.00	-1.04	1.28 H	279	20.73	32.23
3	*2412.00	106.85 PK			1.28 H	279	74.53	32.32
4	*2412.00	96.51 AV			1.28 H	279	64.19	32.32
5	4824.00	49.40 PK	74.00	-24.60	1.10 H	350	10.91	38.49
6	4824.00	36.13 AV	54.00	-17.87	1.10 H	350	-2.36	38.49
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	2390.00	69.00 PK	74.00	-5.00	1.09 V	192	36.77	32.23
2	2390.00	50.02 AV	54.00	-3.98	1.09 V	192	17.79	32.23
3	*2412.00	107.14 PK			1.09 V	192	74.82	32.32
4	*2412.00	96.71 AV			1.09 V	192	64.39	32.32
5	4824.00	49.74 PK	74.00	-24.26	1.31 V	336	11.25	38.49
6	4824.00	36.11 AV	54.00	-17.89	1.31 V	336	-2.38	38.49

- 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.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH 1020hPa	TESTED BY	Kevin Liang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	110.90 PK			1.94 H	276	78.49	32.41
2	*2437.00	100.54 AV			1.94 H	276	68.13	32.41
3	4874.00	49.72 PK	74.00	-24.28	1.32 H	174	11.03	38.69
4	4874.00	36.41 AV	54.00	-17.59	1.32 H	174	-2.28	38.69
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	*2437.00	111.60 PK			1.15 V	196	79.19	32.41
2	*2437.00	101.24 AV			1.15 V	196	68.83	32.41
3	4874.00	48.22 PK	74.00	-25.78	1.29 V	151	9.53	38.69
4	4874.00	35.07 AV	54.00	-18.93	1.29 V	151	-3.62	38.69

- 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.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH 1020hPa	TESTED BY	Kevin Liang

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	108.68 PK			2.18 H	268	76.17	32.51
2	*2462.00	97.99 AV			2.18 H	268	65.48	32.51
3	2483.50	72.85 PK	74.00	-1.15	2.18 H	268	40.26	32.59
4	2483.50	51.84 AV	54.00	-2.16	2.18 H	268	19.25	32.59
5	4924.00	49.43 PK	74.00	-24.57	1.26 H	232	10.58	38.85
6	4924.00	36.41 AV	54.00	-17.59	1.26 H	232	-2.44	38.85

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	109.89 PK			1.12 V	166	77.38	32.51
2	*2462.00	99.68 AV			1.12 V	166	67.17	32.51
3	2483.50	72.97 PK	74.00	-1.03	1.12 V	166	40.38	32.59
4	2483.50	52.95 AV	54.00	-1.05	1.12 V	166	20.36	32.59
5	4924.00	55.61 PK	74.00	-18.39	1.09 V	215	16.76	38.85
6	4924.00	40.62 AV	54.00	-13.38	1.09 V	215	1.77	38.85

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



A D T

DRAFT 802.11n (40MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH 1020hPa	TESTED BY	Kevin Liang

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	65.51 PK	74.00	-8.49	1.28 H	261	33.28	32.23
2	2390.00	52.28 AV	54.00	-1.72	1.28 H	261	20.05	32.23
3	*2422.00	103.16 PK			1.28 H	261	70.81	32.35
4	*2422.00	92.69 AV			1.28 H	261	60.34	32.35
5	4844.00	48.03 PK	74.00	-25.97	1.00 H	63	9.46	38.57
6	4844.00	34.91 AV	54.00	-19.09	1.00 H	63	-3.66	38.57

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	66.52 PK	74.00	-7.48	1.13 V	178	34.29	32.23
2	2390.00	51.98 AV	54.00	-2.02	1.13 V	178	19.75	32.23
3	*2422.00	103.93 PK			1.13 V	178	71.58	32.35
4	*2422.00	93.32 AV			1.13 V	178	60.97	32.35
5	4844.00	48.99 PK	74.00	-25.01	1.06 V	307	10.42	38.57
6	4844.00	34.87 AV	54.00	-19.13	1.06 V	307	-3.70	38.57

- 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.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH 1020hPa	TESTED BY	Kevin Liang

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	107.39 PK			1.90 H	253	74.98	32.41
2	*2437.00	97.18 AV			1.90 H	253	64.77	32.41
3	4874.00	47.68 PK	74.00	-26.32	1.12 H	296	8.99	38.69
4	4874.00	35.10 AV	54.00	-18.90	1.12 H	296	-3.59	38.69
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	*2437.00	109.21 PK			1.13 V	195	76.80	32.41
2	*2437.00	99.07 AV			1.13 V	195	66.66	32.41
3	4874.00	50.59 PK	74.00	-23.41	1.10 V	217	11.90	38.69
4	4874.00	37.80 AV	54.00	-16.20	1.10 V	217	-0.89	38.69

- 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.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 7	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH 1020hPa	TESTED BY	Kevin Liang

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	105.57 PK			1.86 H	257	73.10	32.47
2	*2452.00	94.18 AV			1.86 H	257	61.71	32.47
3	2483.50	67.69 PK	74.00	-6.31	1.86 H	257	35.10	32.59
4	2483.50	52.44 AV	54.00	-1.56	1.86 H	257	19.85	32.59
5	4904.00	47.68 PK	74.00	-26.32	1.13 H	172	8.87	38.81
6	4904.00	34.96 AV	54.00	-19.04	1.13 H	172	-3.85	38.81

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	106.90 PK			1.12 V	216	74.43	32.47
2	*2452.00	95.90 AV			1.12 V	216	63.43	32.47
3	2483.50	67.65 PK	74.00	-6.35	1.12 V	216	35.06	32.59
4	2483.50	50.98 AV	54.00	-3.02	1.12 V	216	18.39	32.59
5	4904.00	48.83 PK	74.00	-25.17	1.12 V	64	10.02	38.81
6	4904.00	34.90 AV	54.00	-19.10	1.12 V	64	-3.91	38.81

- 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.



A D T

BELOW 1GHz WORST-CASE DATA: DRAFT 802.11n (20MHz) OFDM MODULATION:

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	24deg. C, 64%RH 1020hPa	TESTED BY	Match Tsui

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	119.34	32.10 QP	43.50	-11.40	1.50 H	148	19.94	12.15
2	132.95	31.67 QP	43.50	-11.83	2.00 H	190	18.67	13.00
3	183.50	34.65 QP	43.50	-8.85	1.50 H	208	22.17	12.47
4	216.55	37.40 QP	46.00	-8.60	2.00 H	34	25.28	12.12
5	274.88	37.07 QP	46.00	-8.93	1.00 H	247	22.86	14.22
6	300.16	34.77 QP	46.00	-11.23	1.00 H	238	20.03	14.74
7	399.31	36.47 QP	46.00	-9.53	1.00 H	253	19.15	17.31
8	533.47	36.33 QP	46.00	-9.67	1.50 H	166	14.94	21.39
9	667.63	37.18 QP	46.00	-8.82	1.00 H	193	12.57	24.61
10	799.84	40.43 QP	46.00	-5.57	1.00 H	184	14.00	26.43
11	933.99	34.80 QP	46.00	-11.20	2.50 H	73	6.46	28.34

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	29.90	32.93 QP	40.00	-7.07	1.00 V	49	20.45	12.48
2	66.84	32.12 QP	40.00	-7.88	1.00 V	106	19.43	12.69
3	96.01	33.10 QP	43.50	-10.40	1.00 V	70	23.56	9.54
4	129.06	30.78 QP	43.50	-12.72	1.00 V	115	18.01	12.77
5	667.63	36.00 QP	46.00	-10.00	1.00 V	274	11.38	24.61
6	799.84	34.58 QP	46.00	-11.42	1.50 V	292	8.15	26.43
7	933.99	35.72 QP	46.00	-10.28	1.50 V	289	7.38	28.34

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

4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Sep. 22, 2007	Sep. 21, 2008
RF signal cable Woken	5D-FB	Cable-HYCO3-01	Jan. 07, 2007	Jan. 06, 2008
LISN ROHDE & SCHWARZ	ESH2-Z5	100100	Jan. 09, 2007	Jan. 08, 2008
LISN ROHDE & SCHWARZ	ESH3-Z5	100311	Jan. 17, 2007	Jan. 16, 2008
Software ADT	ADT_Cond_V3	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

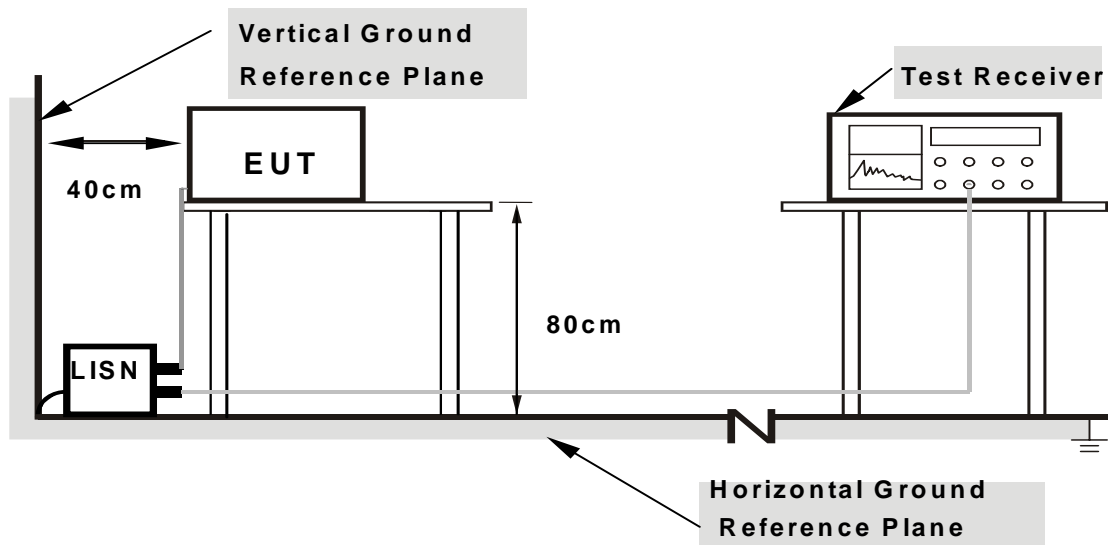
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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



A D T

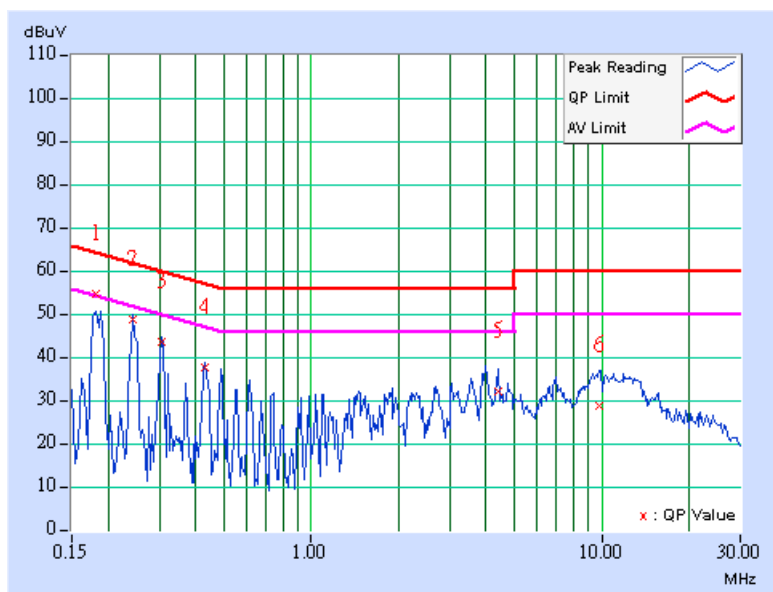
4.2.7 TEST RESULTS

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	PHASE	Line 1
MODULATION TYPE	BPSK	INPUT POWER	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	6dB BANDWIDTH	9kHz
TESTED BY	Match Tsui		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.181	0.10	54.44	45.00	54.54	45.10	64.43	54.43	-9.89	-9.33
2	0.244	0.10	48.53	-	48.63	-	61.97	51.97	-13.34	-
3	0.306	0.10	43.56	-	43.66	-	60.07	50.07	-16.41	-
4	0.431	0.10	37.33	-	37.43	-	57.23	47.23	-19.80	-
5	4.418	0.28	31.83	-	32.11	-	56.00	46.00	-23.89	-
6	9.793	0.33	28.64	-	28.97	-	60.00	50.00	-31.03	-

- 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.



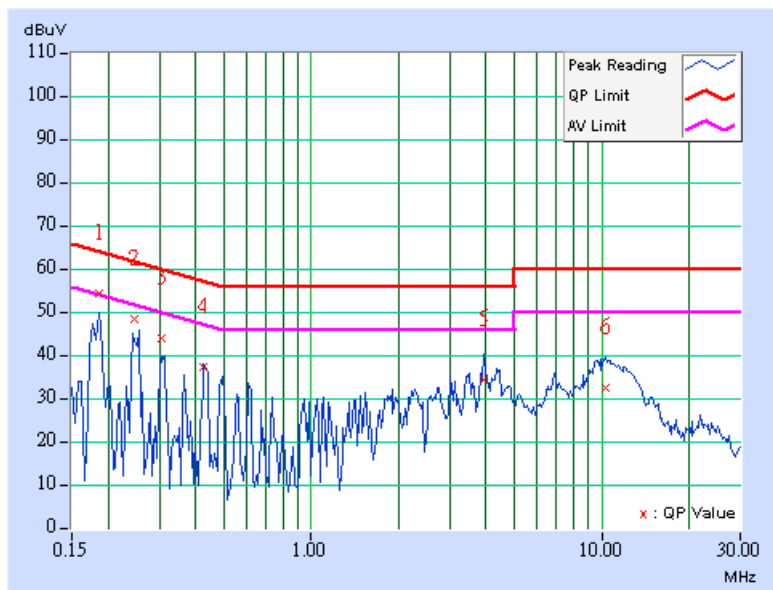


A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	PHASE	Line 2
MODULATION TYPE	BPSK	INPUT POWER	120Vac, 60Hz
ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa	6dB BANDWIDTH	9kHz
TESTED BY	Match Tsui		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.185	0.10	54.08	-	54.18	-	64.25	54.25	-10.07	-
2	0.245	0.10	47.97	-	48.07	-	61.91	51.91	-13.84	-
3	0.305	0.10	43.60	-	43.70	-	60.10	50.10	-16.40	-
4	0.427	0.11	37.06	-	37.17	-	57.30	47.30	-20.14	-
5	3.930	0.28	33.86	-	34.14	-	56.00	46.00	-21.86	-
6	10.293	0.43	32.31	-	32.74	-	60.00	50.00	-27.26	-

- 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	Jun. 29, 2007	Jun. 28, 2008

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

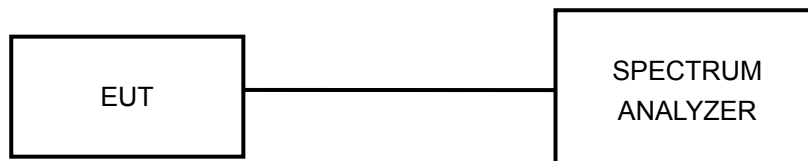
4.3.3 TEST PROCEDURE

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.



A D T

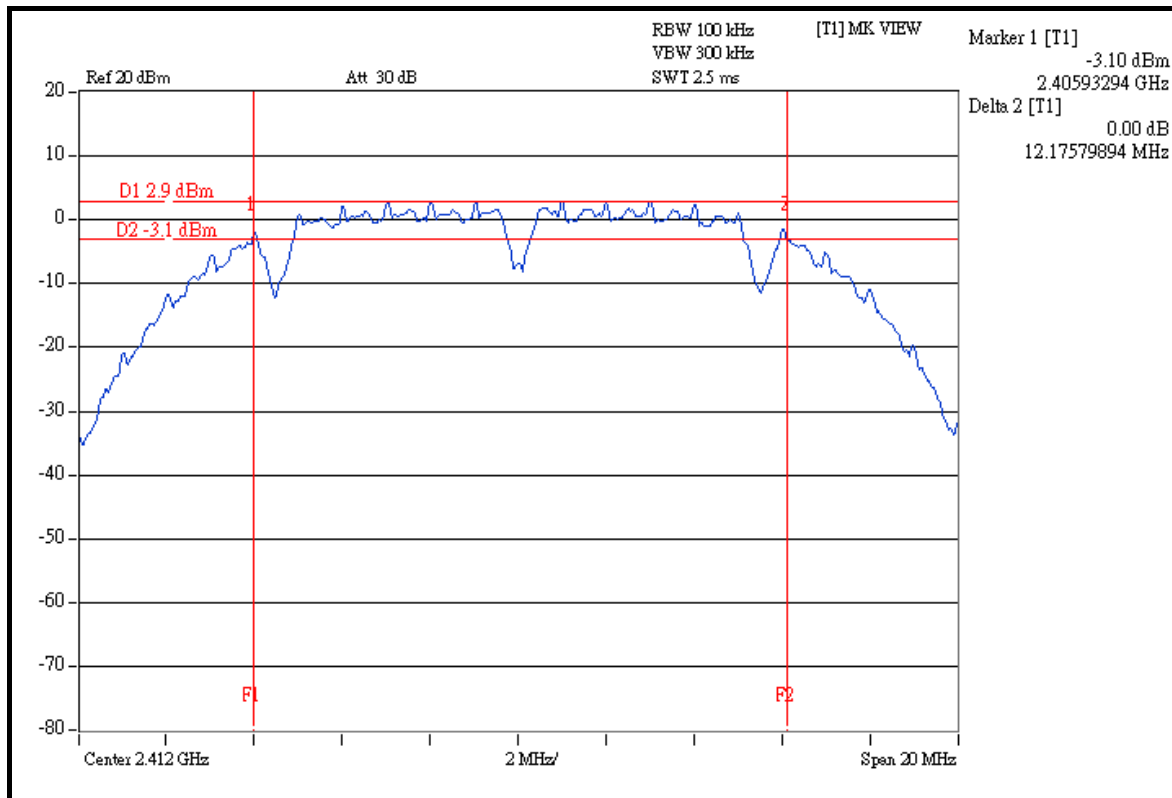
4.3.7 TEST RESULTS

802.11b DSSS MODULATION:

MODULATION TYPE	DBPSK	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
INPUT POWER	120Vac, 60Hz	TESTED BY	Long Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	12.18	0.5	PASS
6	2437	12.15	0.5	PASS
11	2462	12.16	0.5	PASS

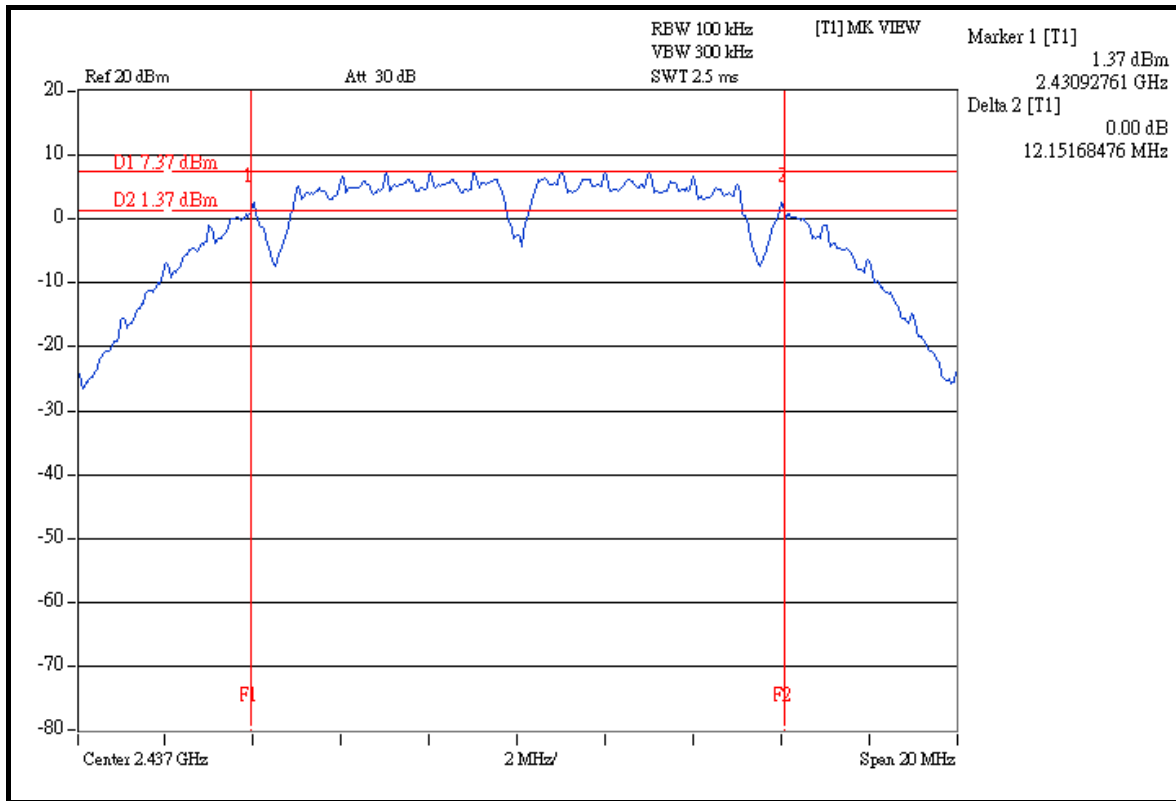
CH 1



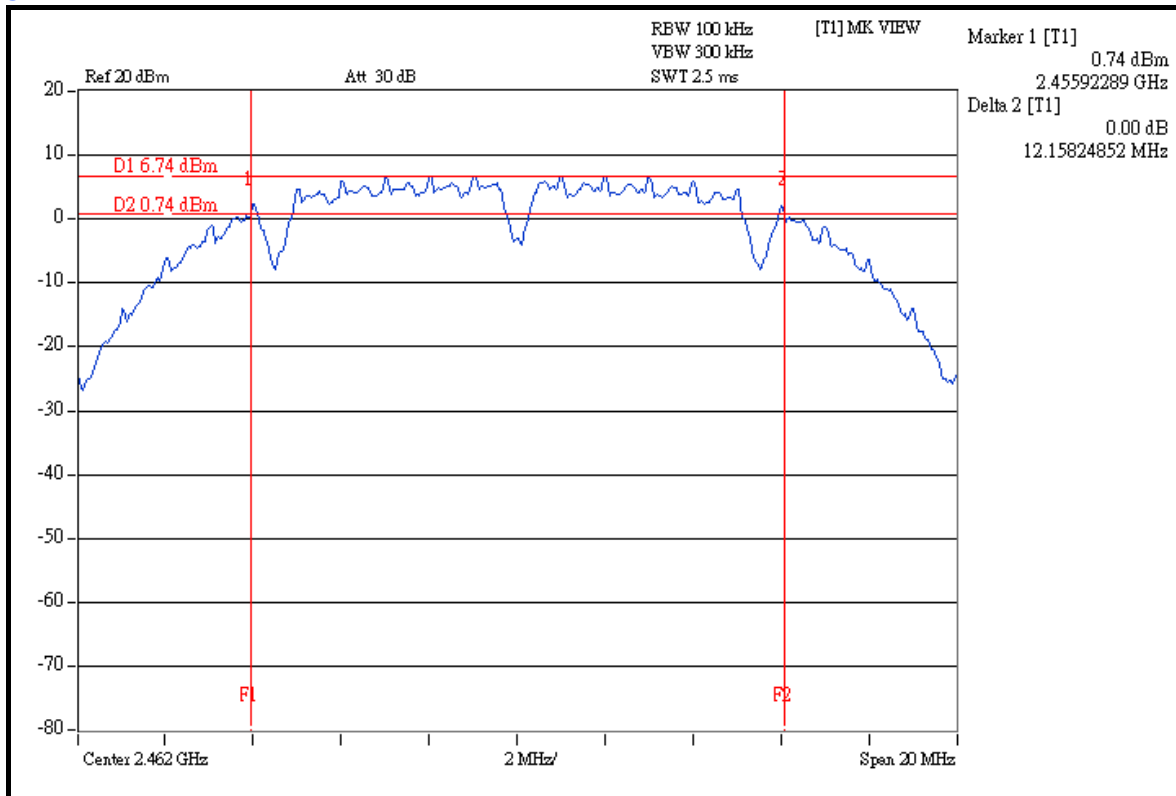


A D T

CH 6



CH 11





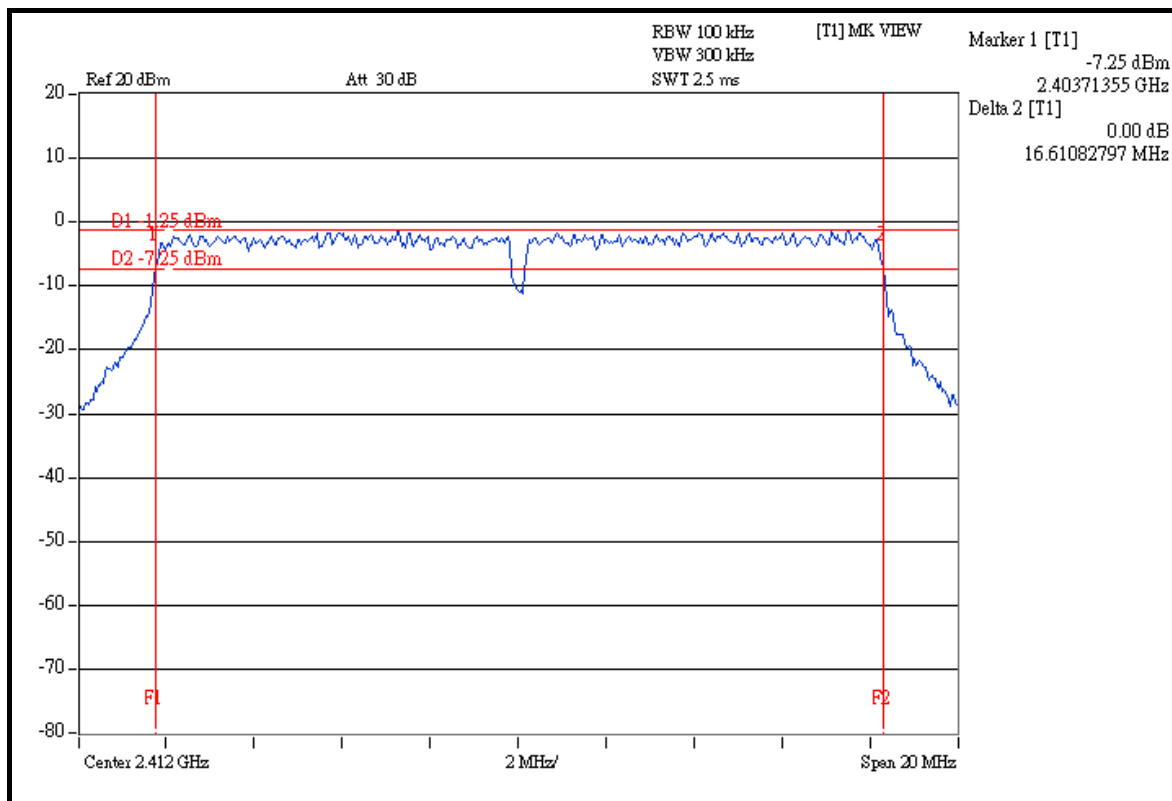
A D T

802.11g OFDM MODULATION:

MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
INPUT POWER	120Vac, 60Hz	TESTED BY	Long Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.61	0.5	PASS
6	2437	16.60	0.5	PASS
11	2462	16.58	0.5	PASS

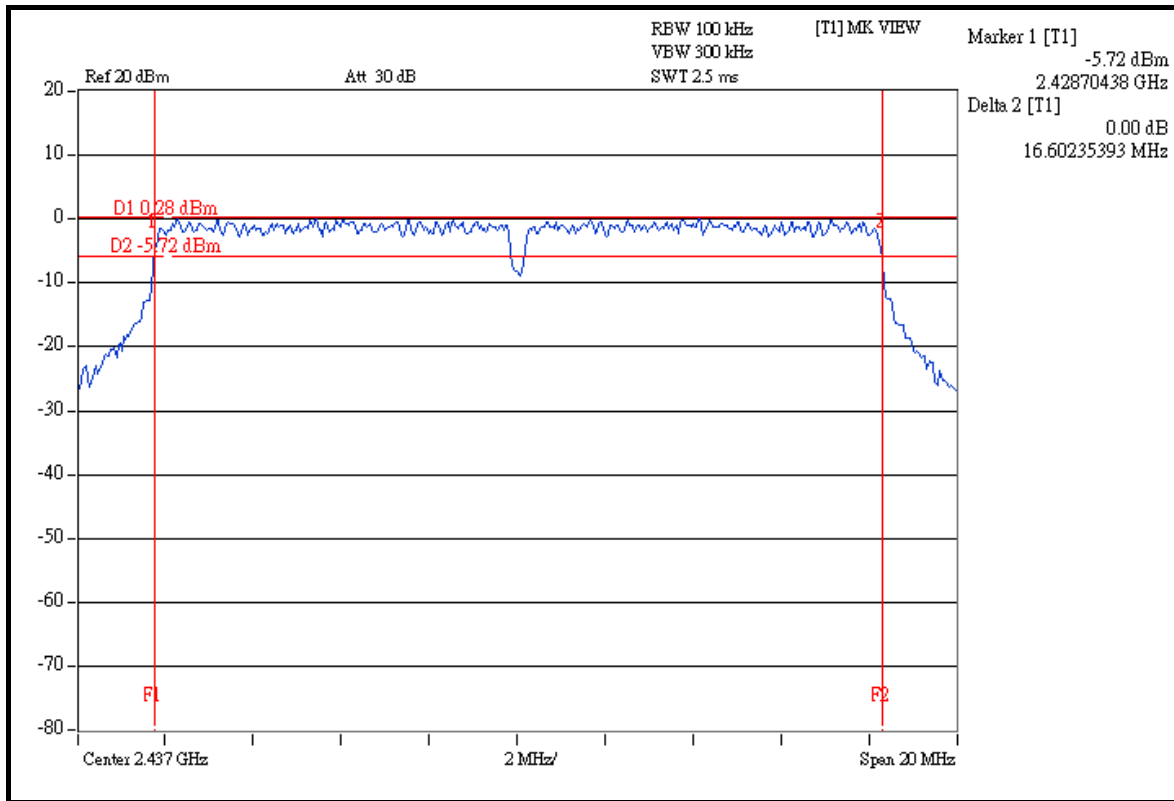
CH 1



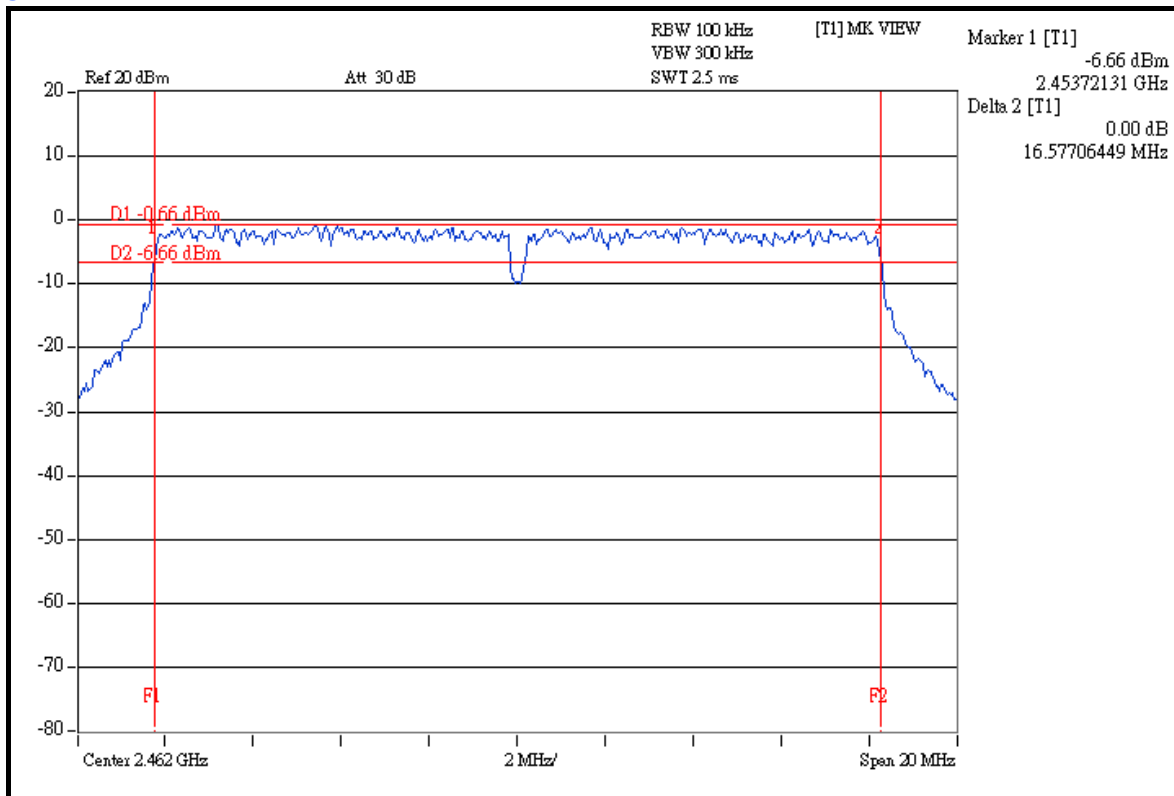


A D T

CH 6



CH 11





A D T

DRAFT 802.11n (20MHz) OFDM MODULATION:

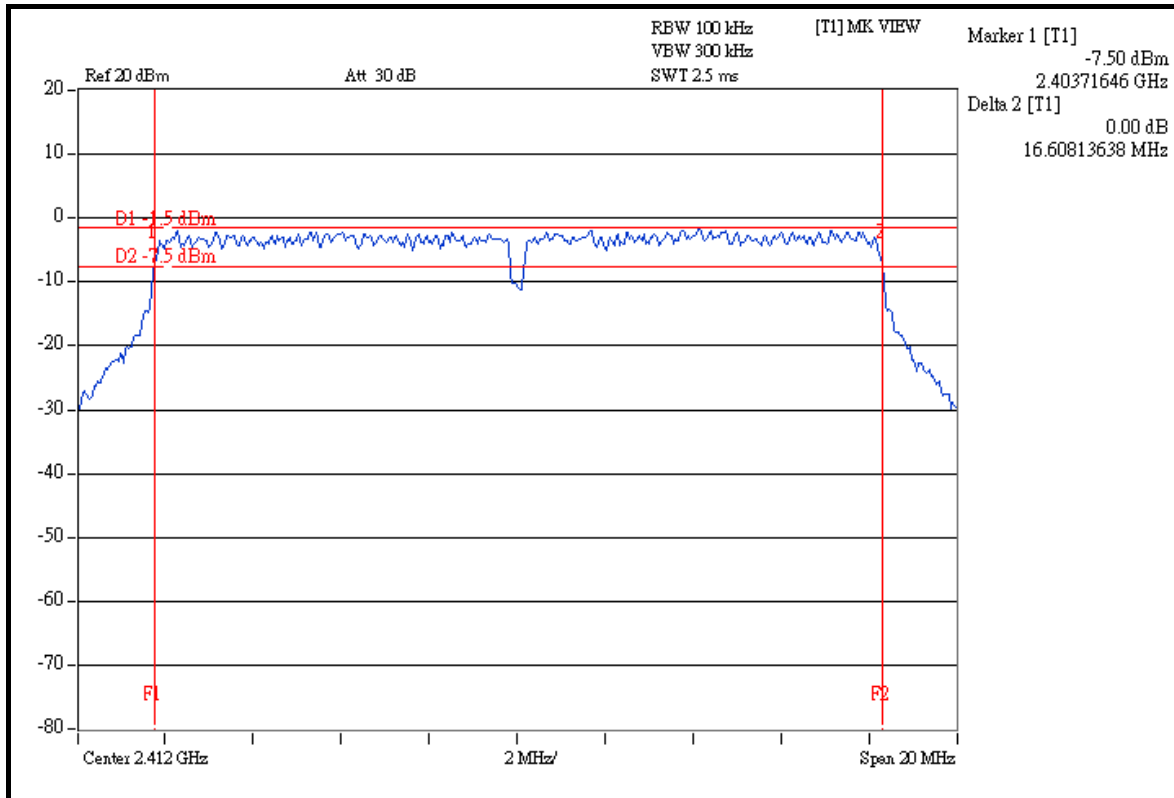
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
INPUT POWER	120Vac, 60Hz	TESTED BY	Long Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	16.61	16.62	0.5	PASS
6	2437	16.60	16.59	0.5	PASS
11	2462	16.63	16.59	0.5	PASS

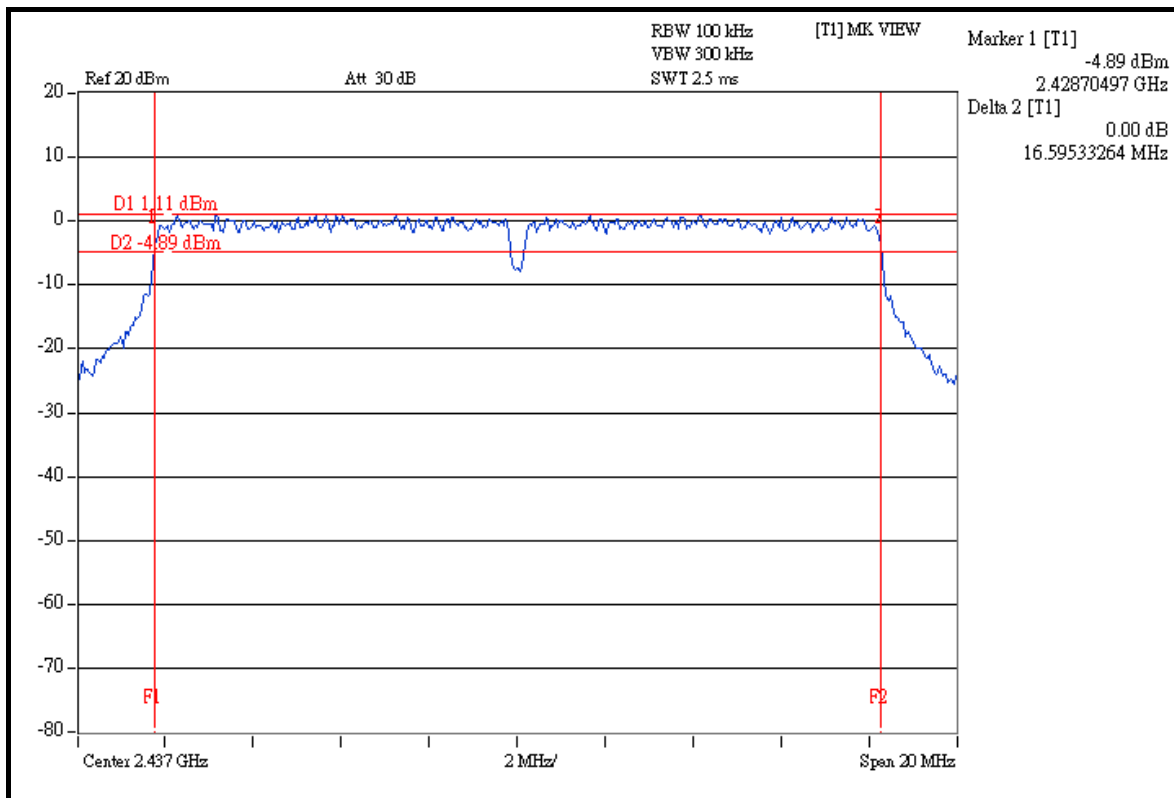


A D T

FOR CHAIN 0: CH 1



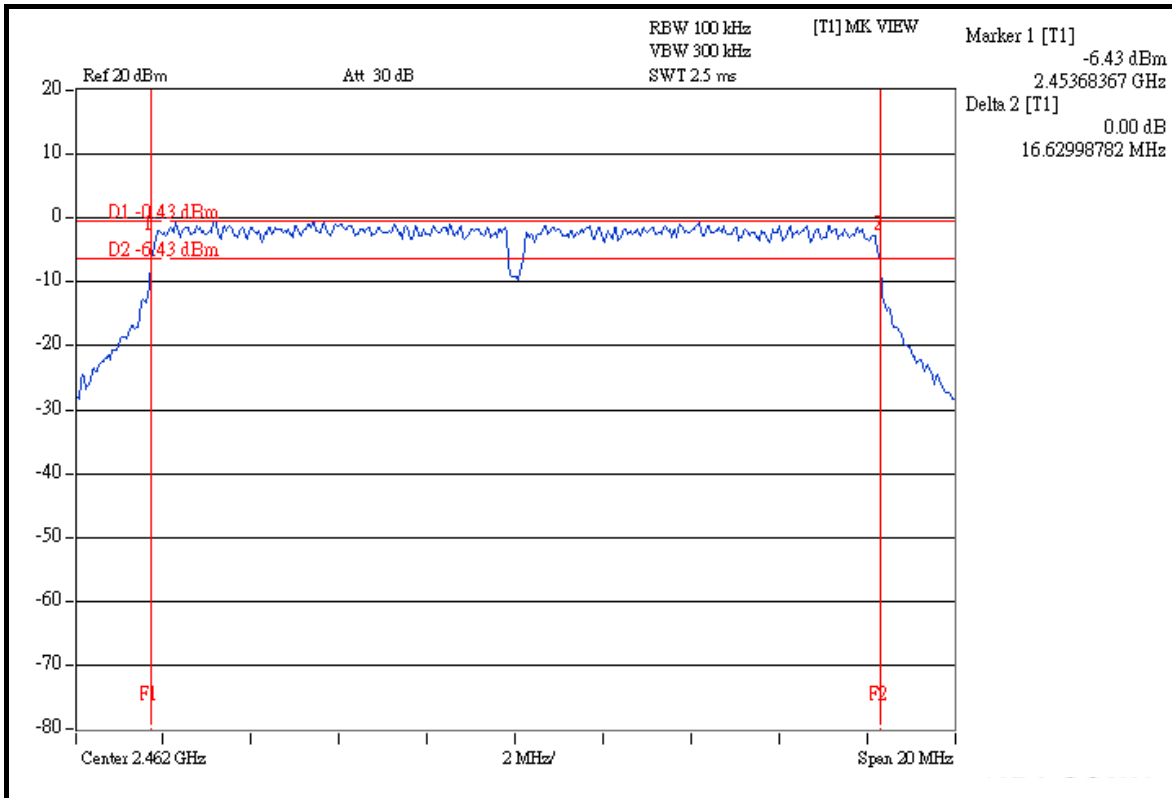
CH 6



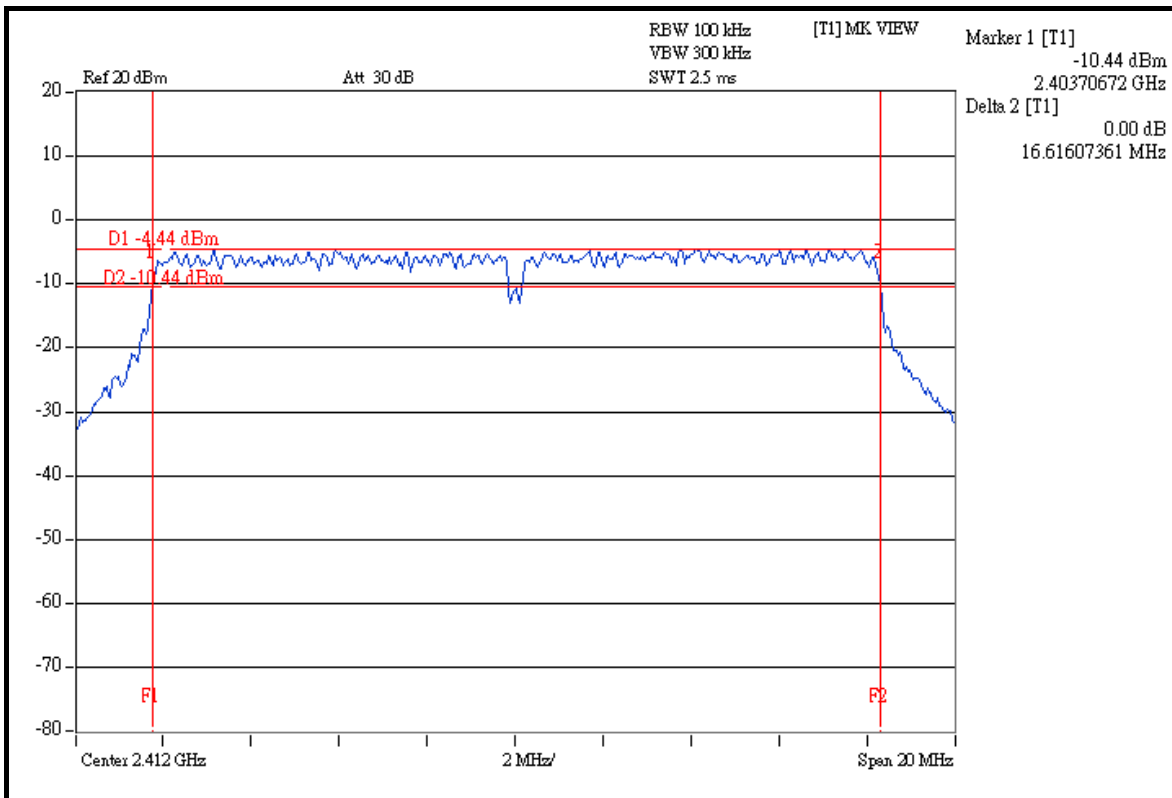


A D T

CH 11



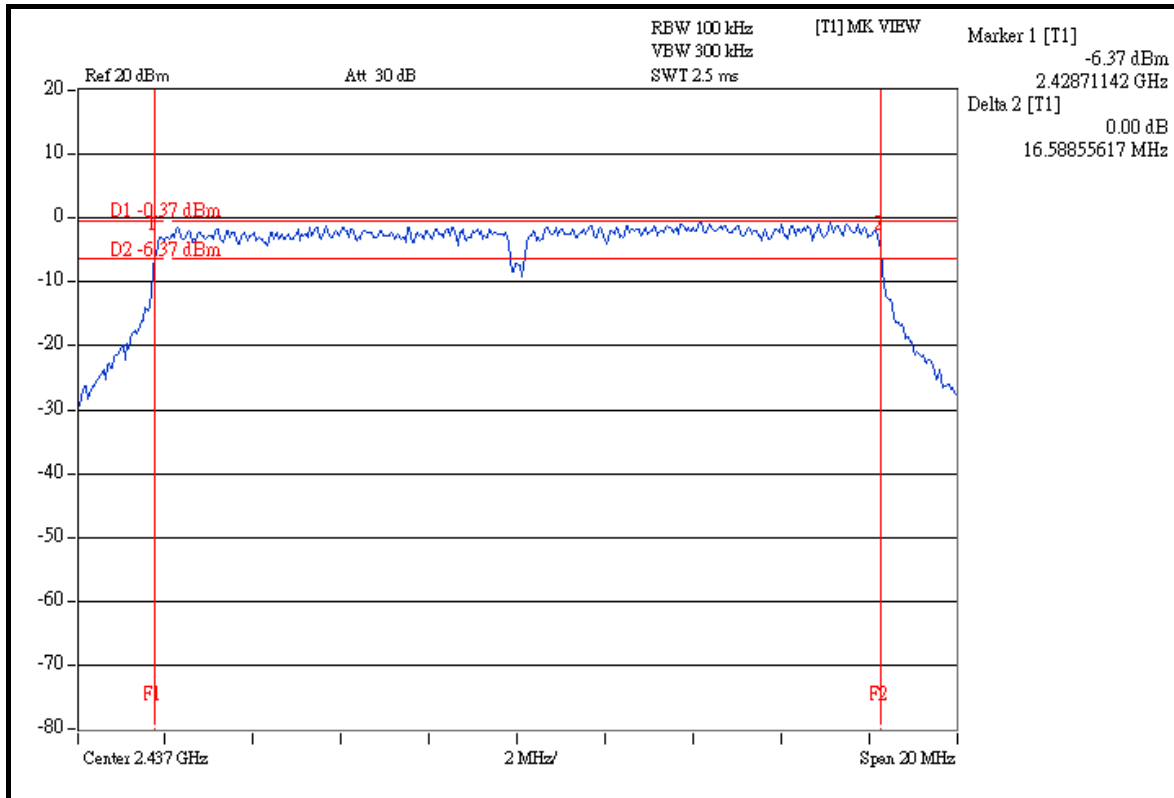
FOR CHAIN 1: CH 1



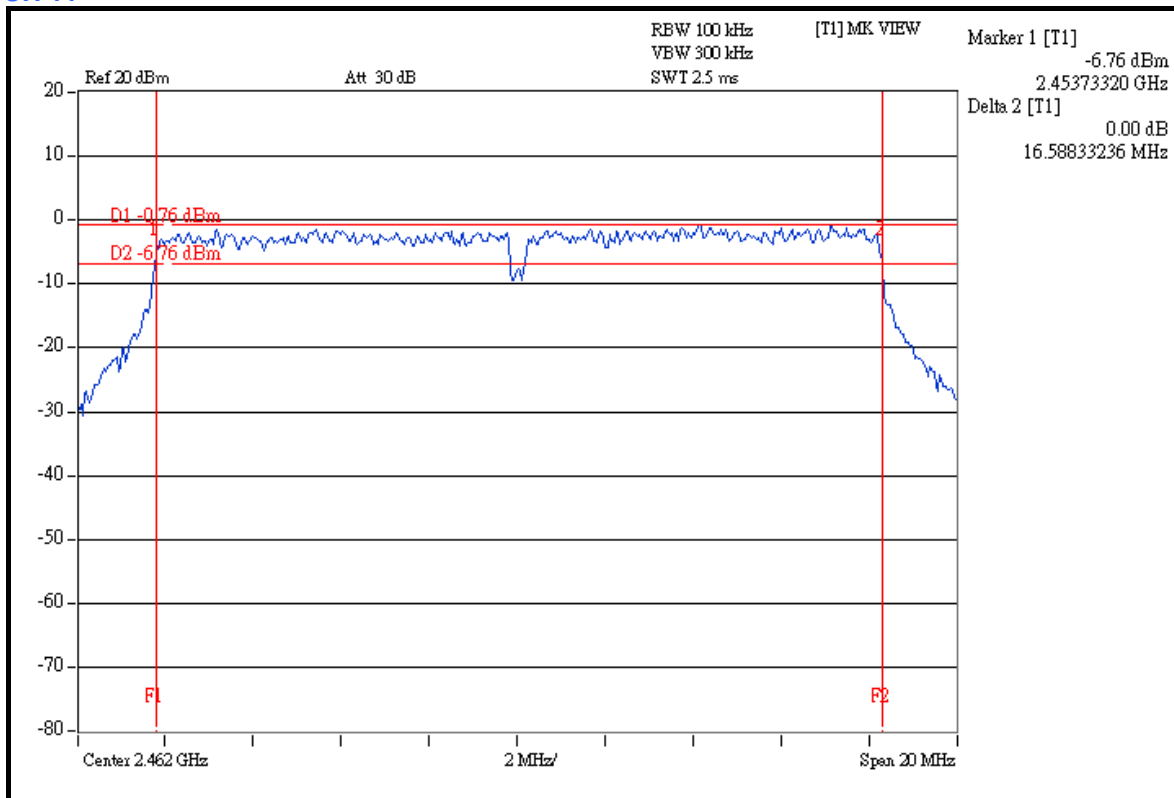


A D T

CH 6



CH 11





A D T

DRAFT 802.11n (40MHz) OFDM MODULATION:

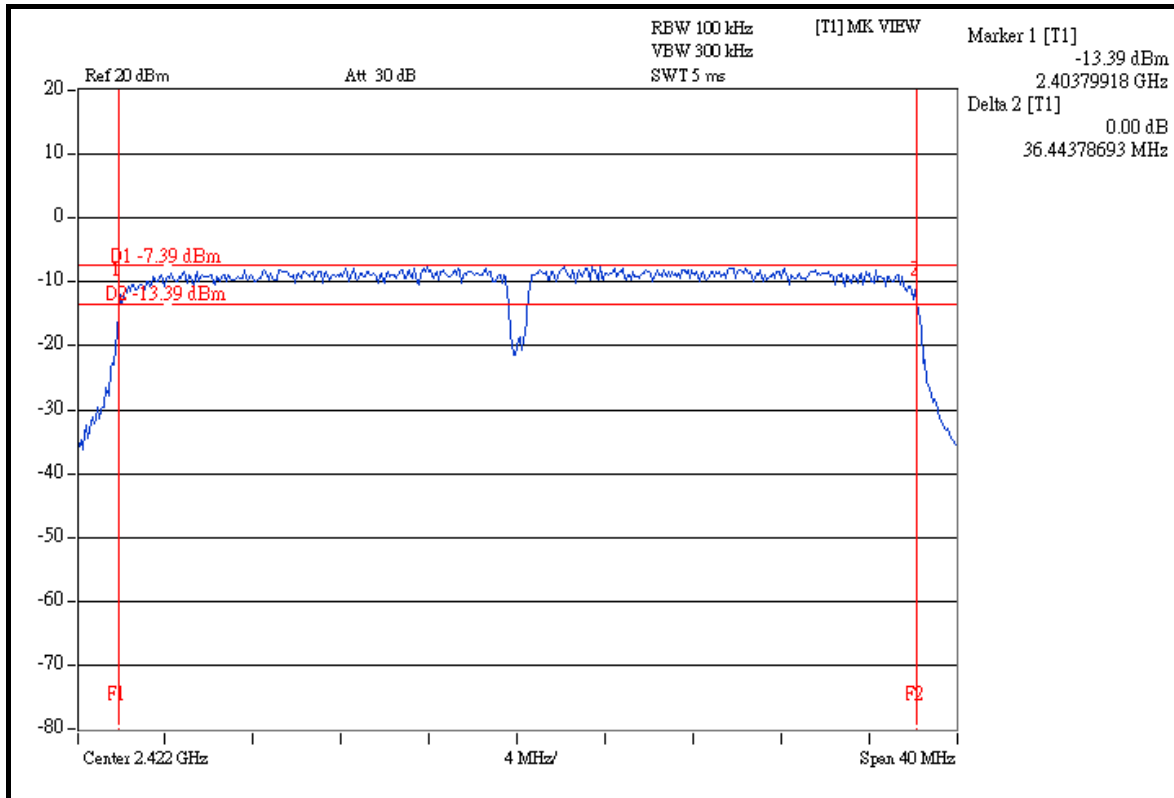
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
INPUT POWER	120Vac, 60Hz	TESTED BY	Long Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2422	36.44	36.49	0.5	PASS
4	2437	36.50	36.50	0.5	PASS
7	2452	36.54	36.51	0.5	PASS

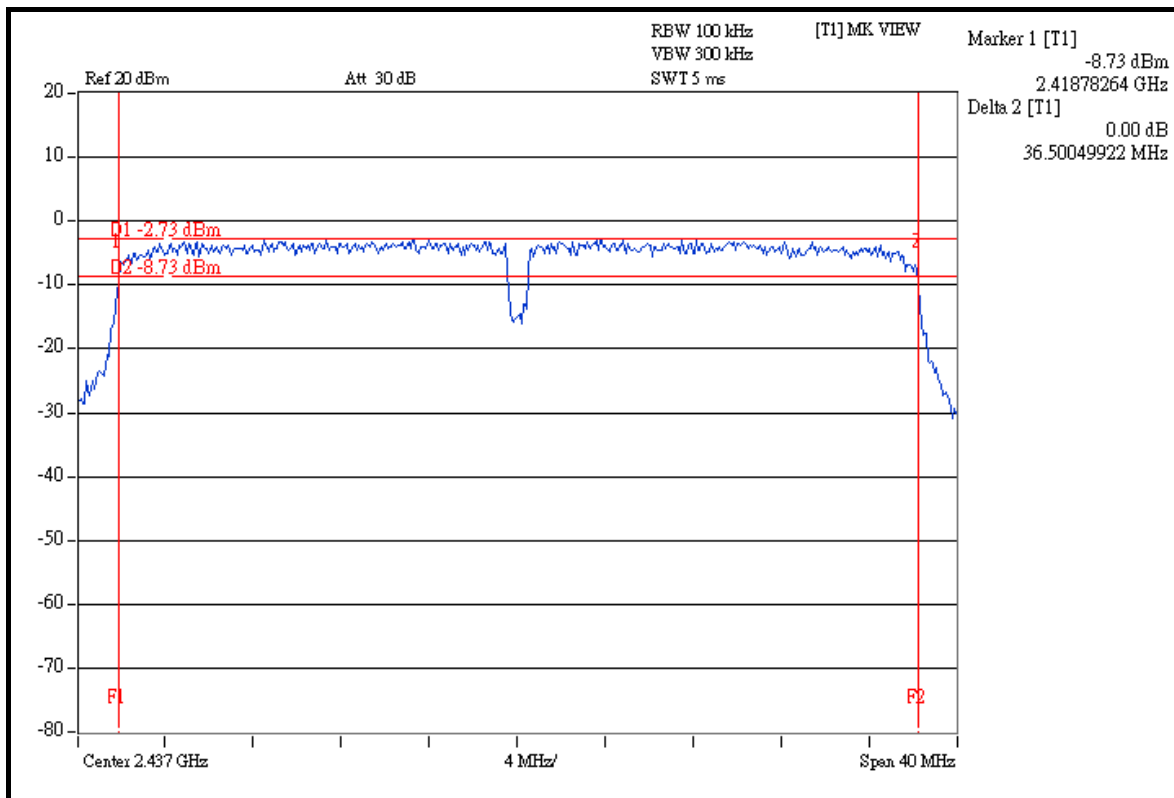


A D T

FOR CHAIN 0: CH 1



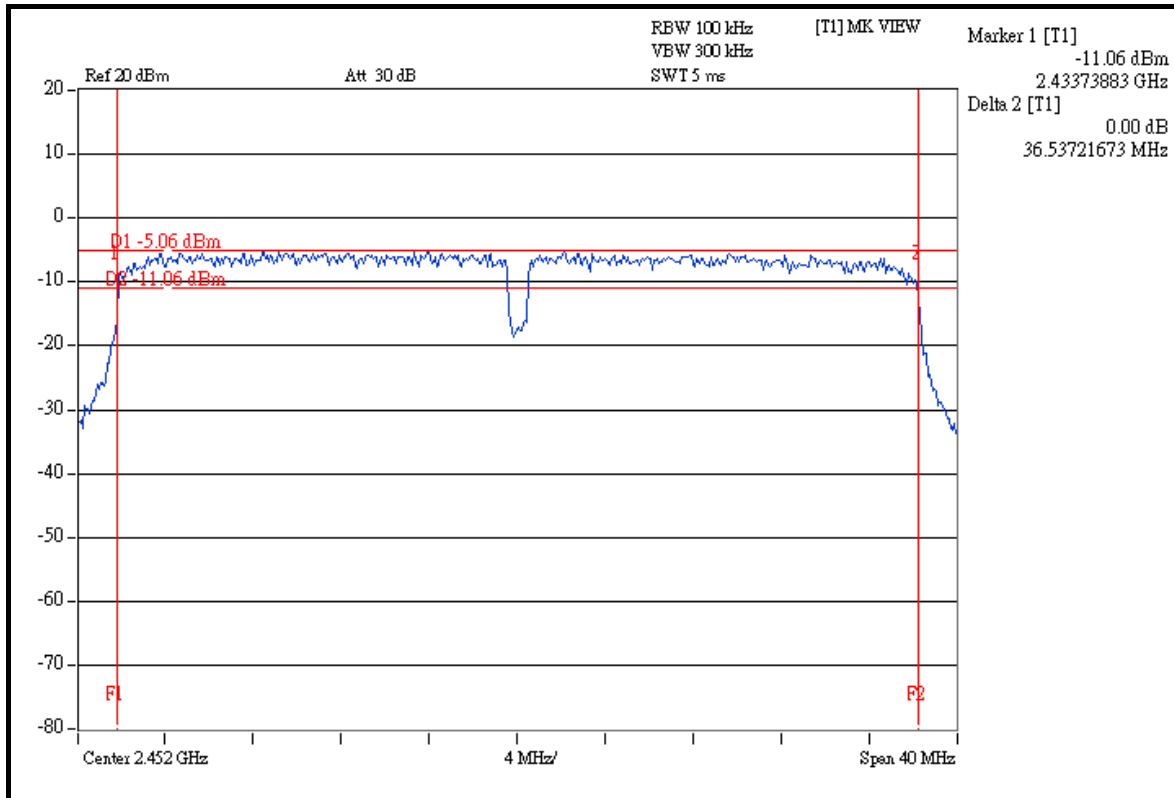
CH 4



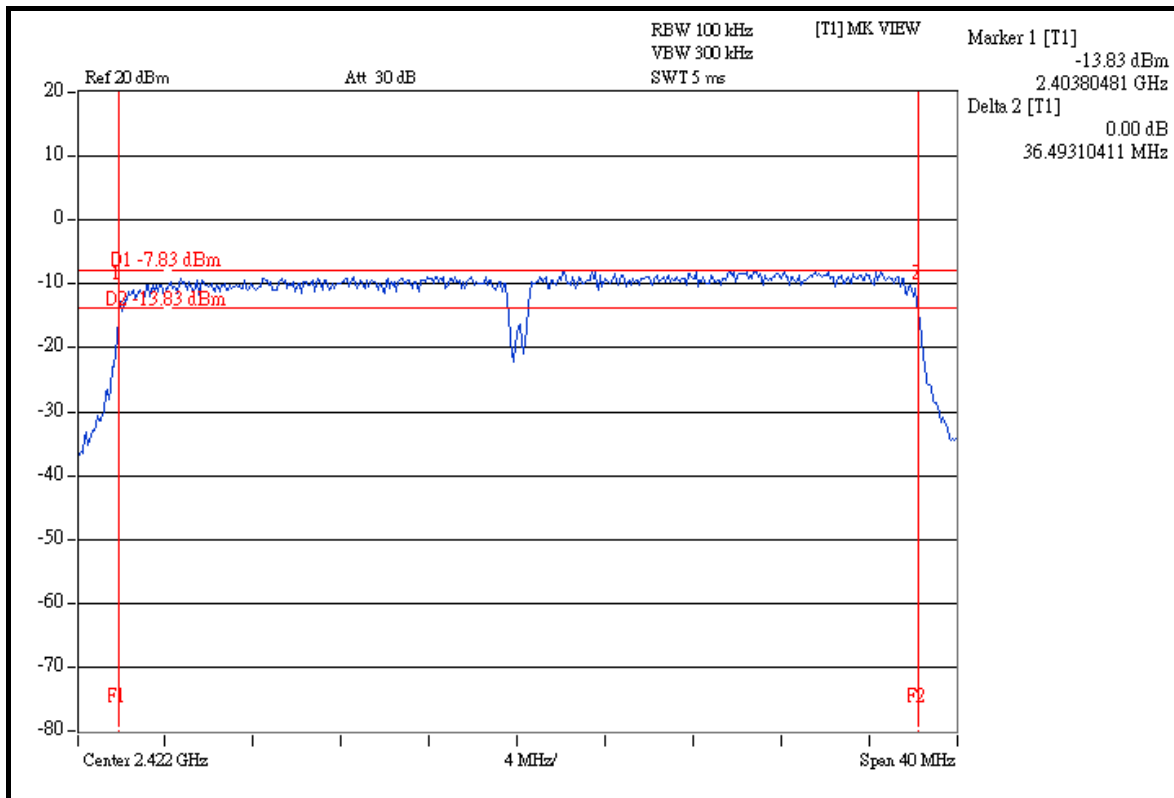


A D T

CH 7



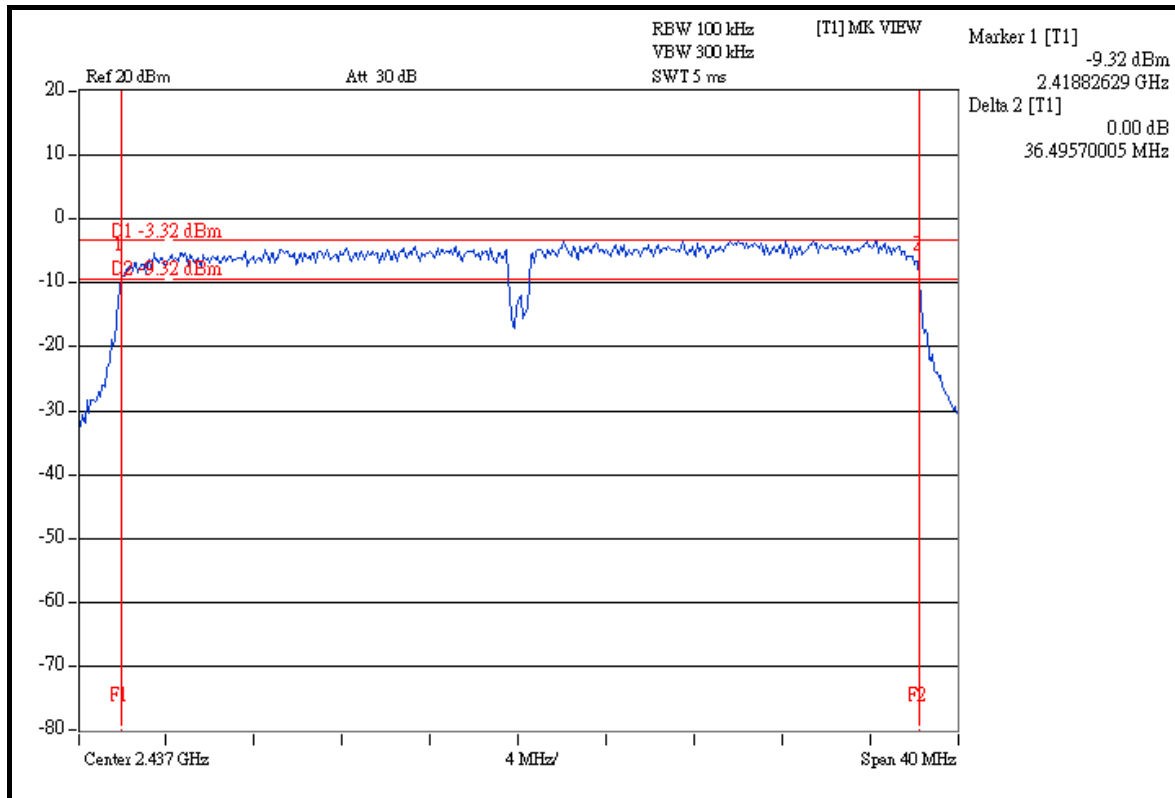
FOR CHAIN 1: CH 1



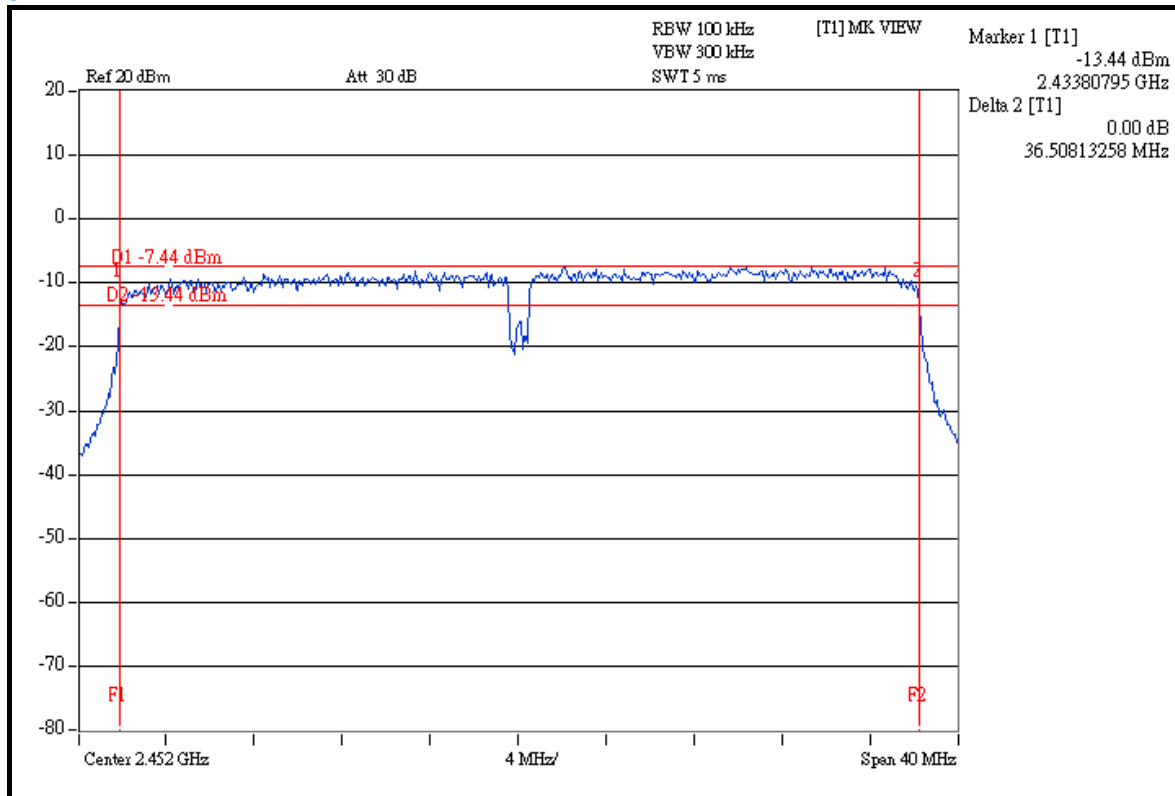


A D T

CH 4



CH 7





4.4 MAXIMUM PEAK OUTPUT POWER

4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

4.4.2 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
R&S SPECTRUM ANALYZER	FSP40	100040	Jun. 29, 2007	Jun. 28, 2008
ANRITSU SYNTHESIZED SIGNAL GENERATOR	68247B	984703	May 19, 2007	May 18, 2008
DIGITAL RT OSCILLOSCOPE	TDS1012	C037299	Nov. 22, 2007	Nov. 21, 2008
NARDA DETECTOR	4503A	FSCM99899	NA	NA

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

4.4.3 TEST PROCEDURES

1. A detector was used on the output port of the EUT. An oscilloscope was used to read the response of the detector.
2. Replaced the EUT by the signal generator. The center frequency of the S.G was adjusted to the center frequency of the measured channel.
3. Adjusted the power to have the same reading on oscilloscope. Record the power level.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6



A D T

4.4.7 TEST RESULTS

802.11b DSSS MODULATION:

MODULATION TYPE	DBPSK	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
INPUT POWER	120Vac, 60Hz	TESTED BY	Long Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	32.211	15.08	30	PASS
6	2437	90.782	19.58	30	PASS
11	2462	79.799	19.02	30	PASS

802.11g OFDM MODULATION:

MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
INPUT POWER	120Vac, 60Hz	TESTED BY	Long Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	51.286	17.10	30	PASS
6	2437	70.958	18.51	30	PASS
11	2462	56.754	17.54	30	PASS



A D T

DRAFT 802.11n (20MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
INPUT POWER	120Vac, 60Hz	TESTED BY	Long Chen

CHAN.	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)		PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1				
1	2412	39.994	22.803	16.02	13.58	62.797	17.98	30	PASS
6	2437	70.958	50.234	18.51	17.01	121.192	20.83	30	PASS
11	2462	50.350	50.933	17.02	17.07	101.283	20.06	30	PASS

DRAFT 802.11n (40MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	26deg.C, 65%RH, 991hPa
INPUT POWER	120Vac, 60Hz	TESTED BY	Long Chen

CHAN.	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)		PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1				
1	2422	22.803	20.324	13.58	13.08	43.127	16.35	30	PASS
4	2437	63.826	50.933	18.05	17.07	114.759	20.60	30	PASS
7	2452	35.810	22.542	15.54	13.53	58.352	17.66	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	Jun. 29, 2007	Jun. 28, 2008

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

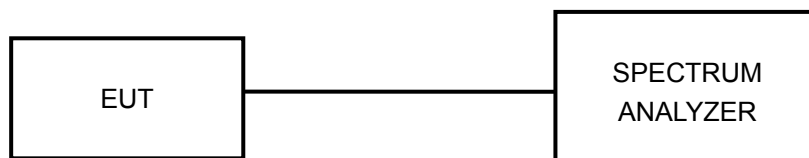
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

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



A D T

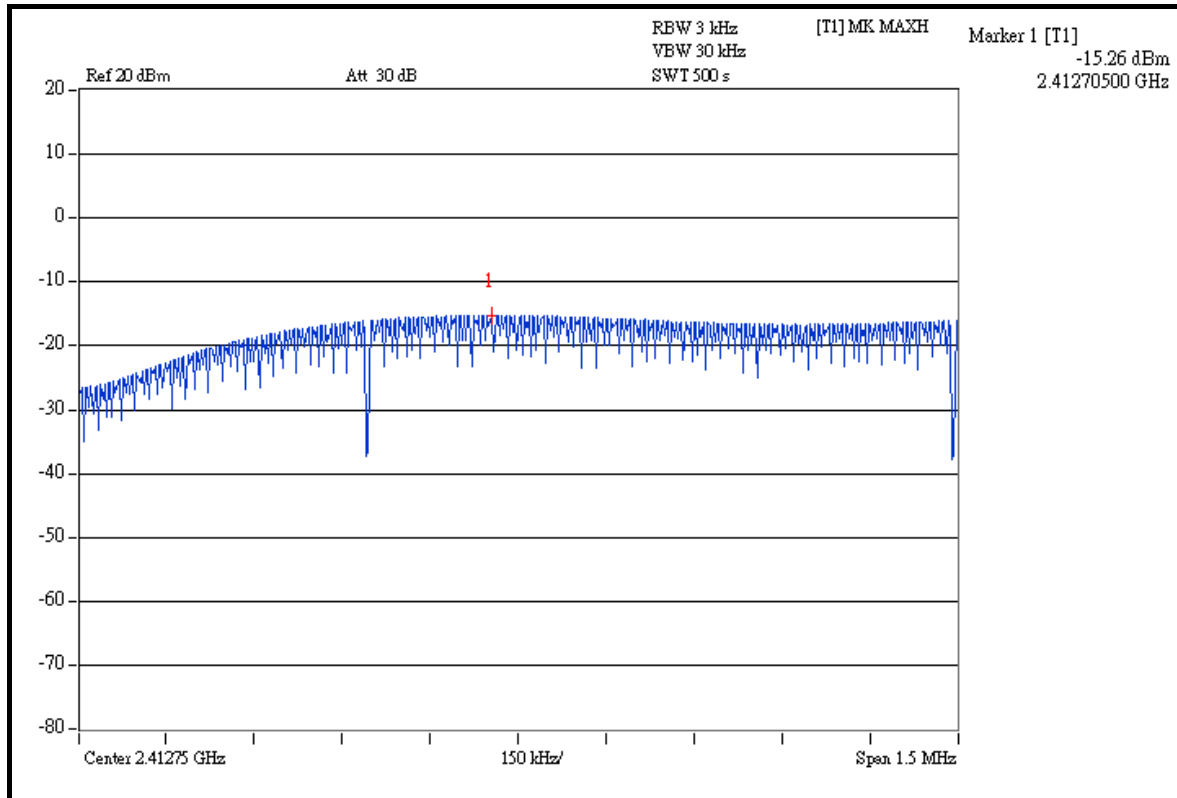
4.5.7 TEST RESULTS

802.11b DSSS MODULATION:

MODULATION TYPE	DBPSK	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
INPUT POWER	120Vac, 60Hz	TESTED BY	Long Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-15.26	8	PASS
6	2437	-10.78	8	PASS
11	2462	-11.37	8	PASS

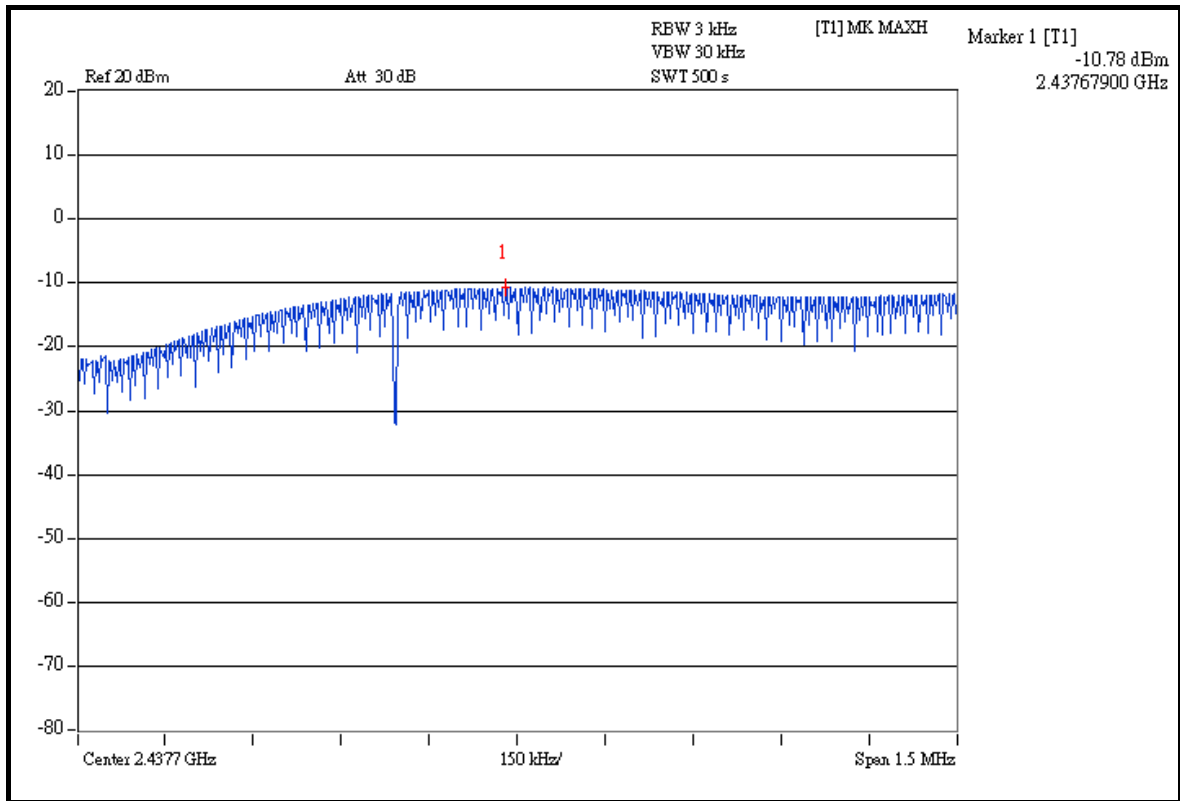
CH 1



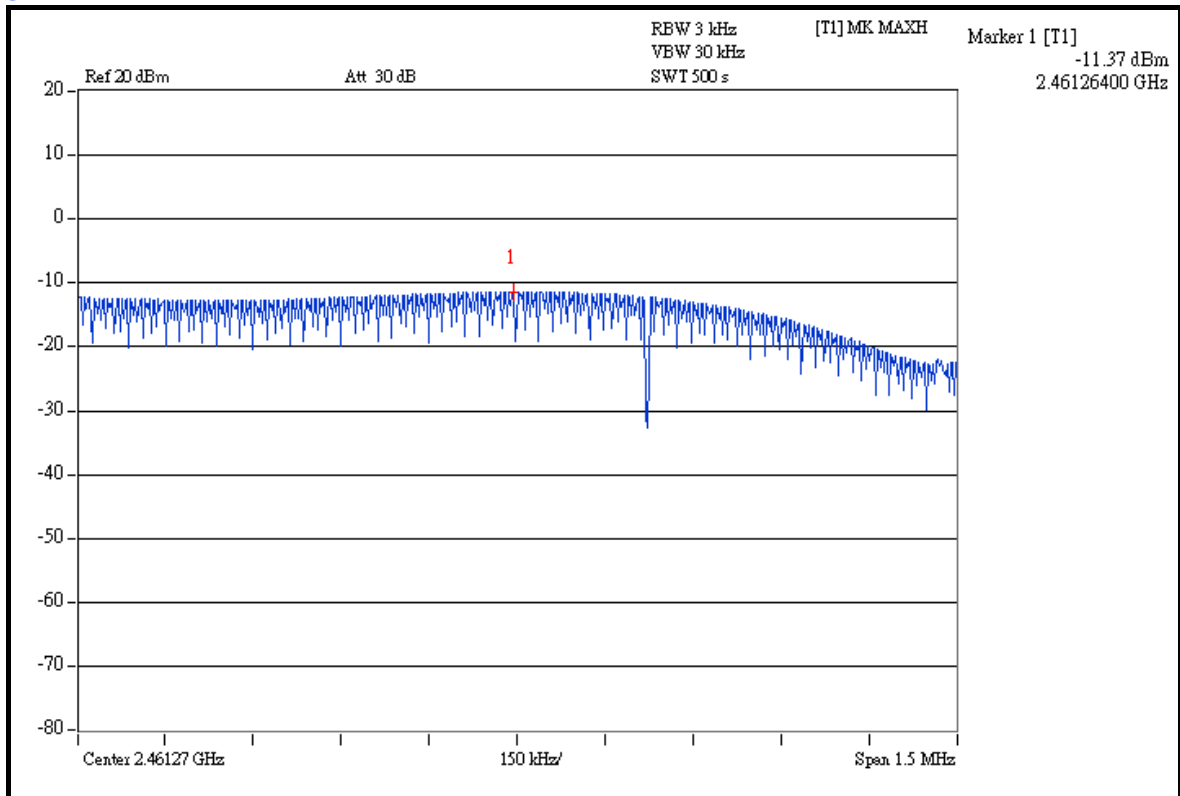


A D T

CH 6



CH 11





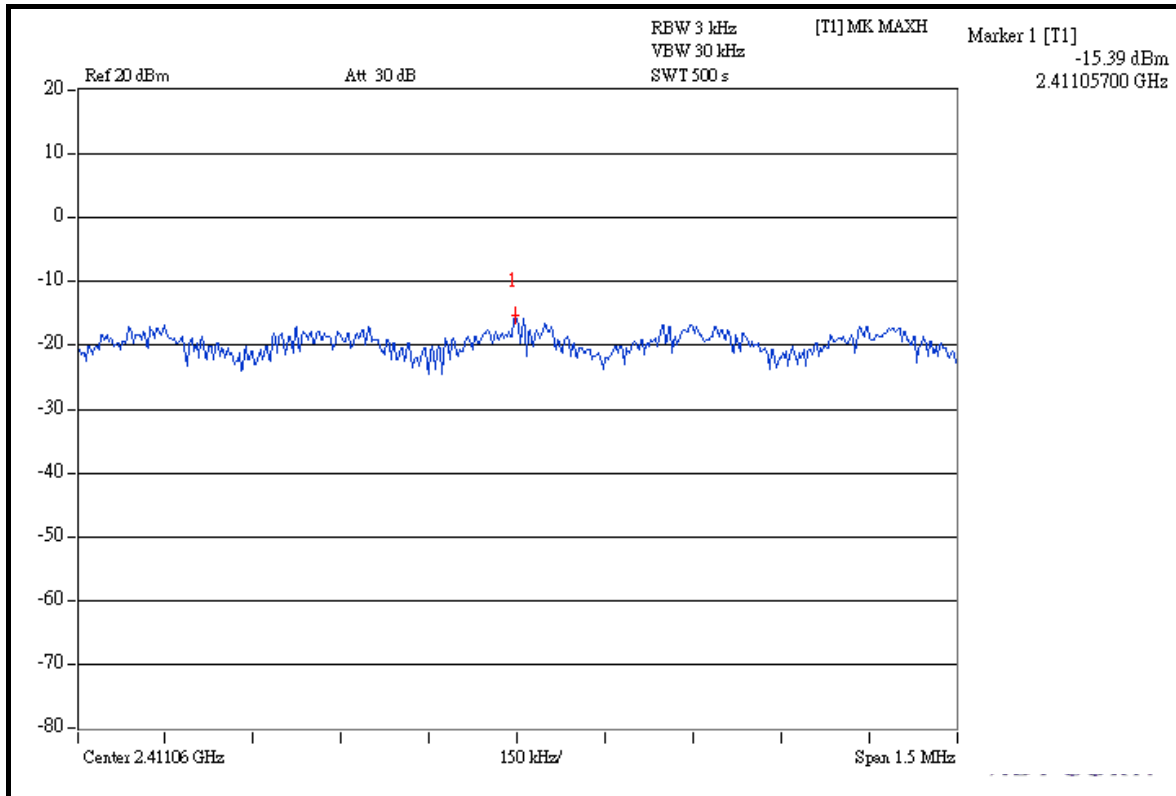
A D T

802.11g OFDM MODULATION:

MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
INPUT POWER	120Vac, 60Hz	TESTED BY	Long Chen

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-15.39	8	PASS
6	2437	-13.84	8	PASS
11	2462	-14.72	8	PASS

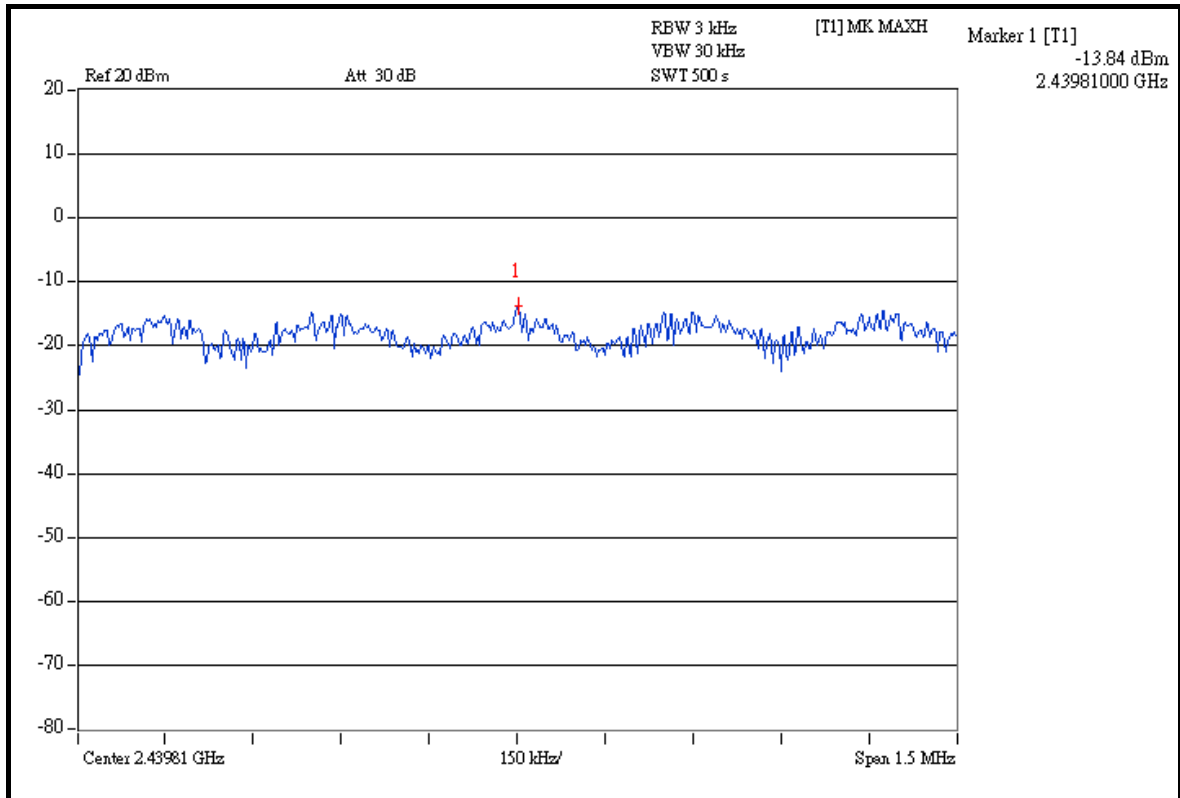
CH 1



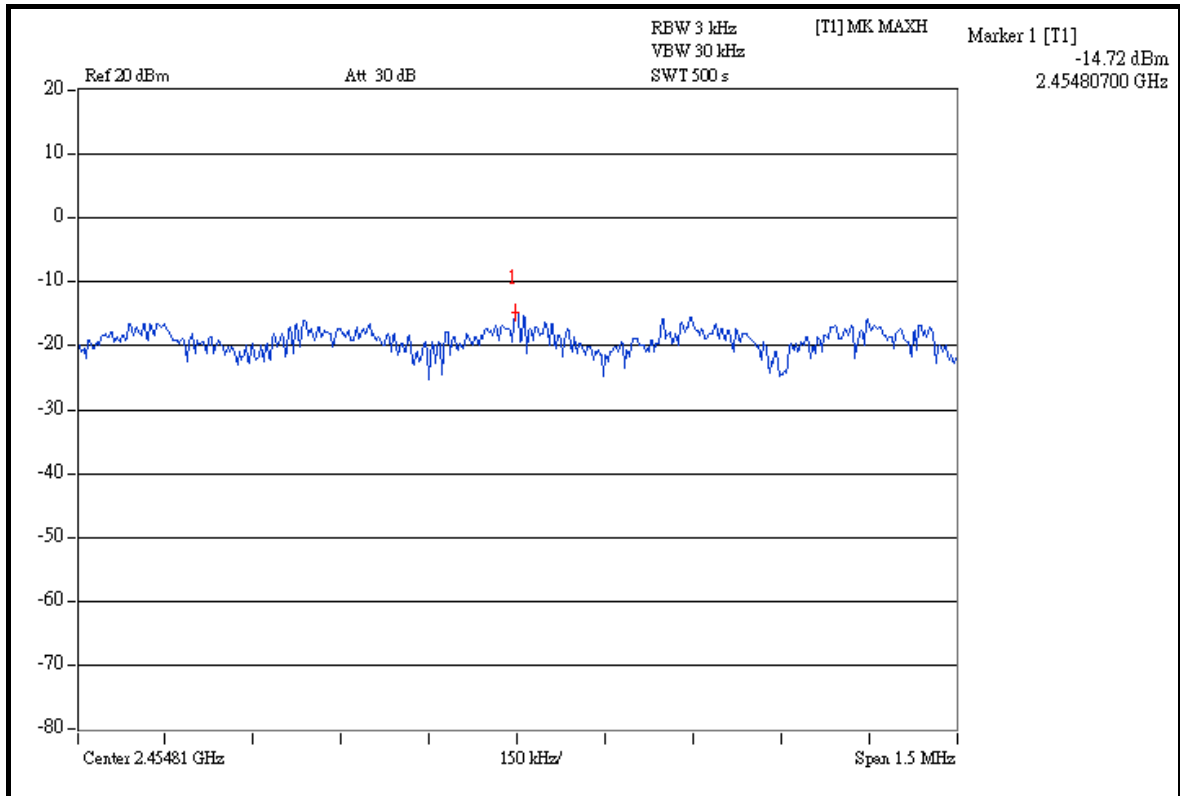


A D T

CH 6



CH 11





A D T

DRAFT 802.11n (20MHz) OFDM MODULATION:

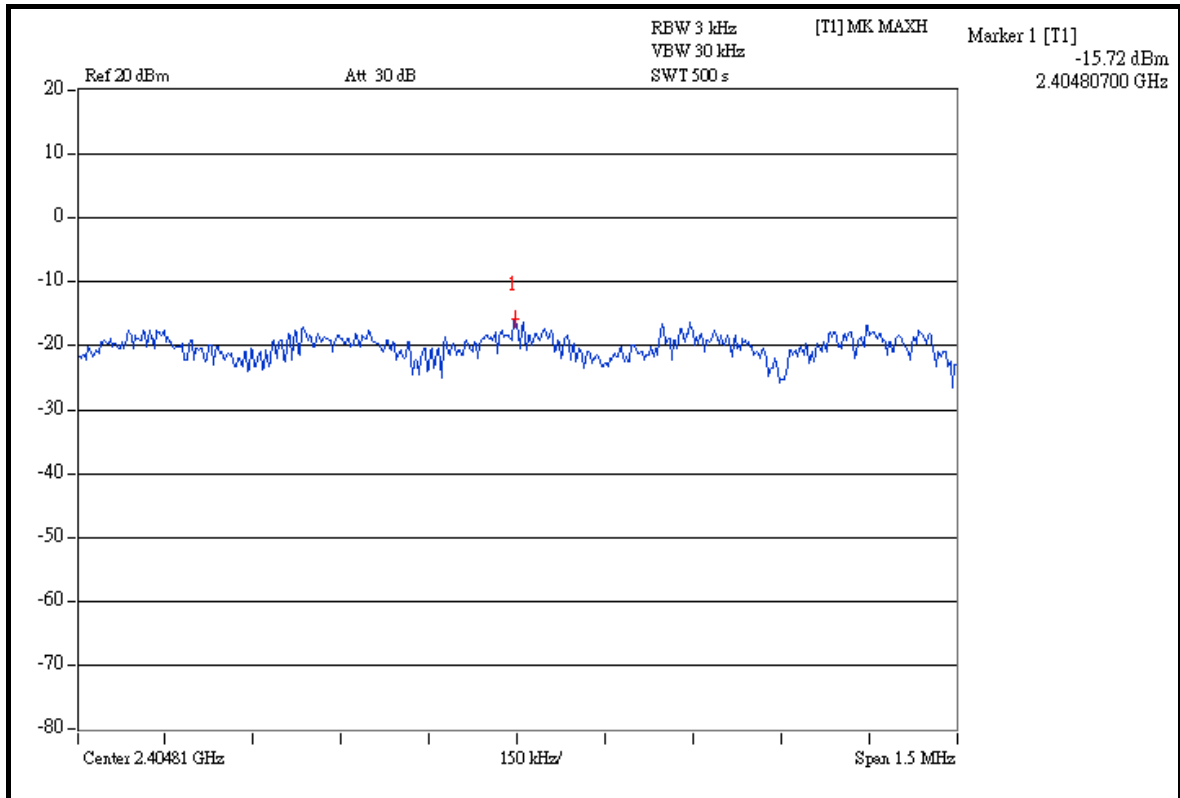
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
INPUT POWER	120Vac, 60Hz	TESTED BY	Long Chen

CHAN.	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (mW)		RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1				
1	2412	0.027	0.013	-15.72	-18.82	0.040	-13.99	8	PASS
6	2437	0.050	0.031	-13.03	-15.12	0.081	-10.94	8	PASS
11	2462	0.035	0.030	-14.62	-15.20	0.065	-11.89	8	PASS

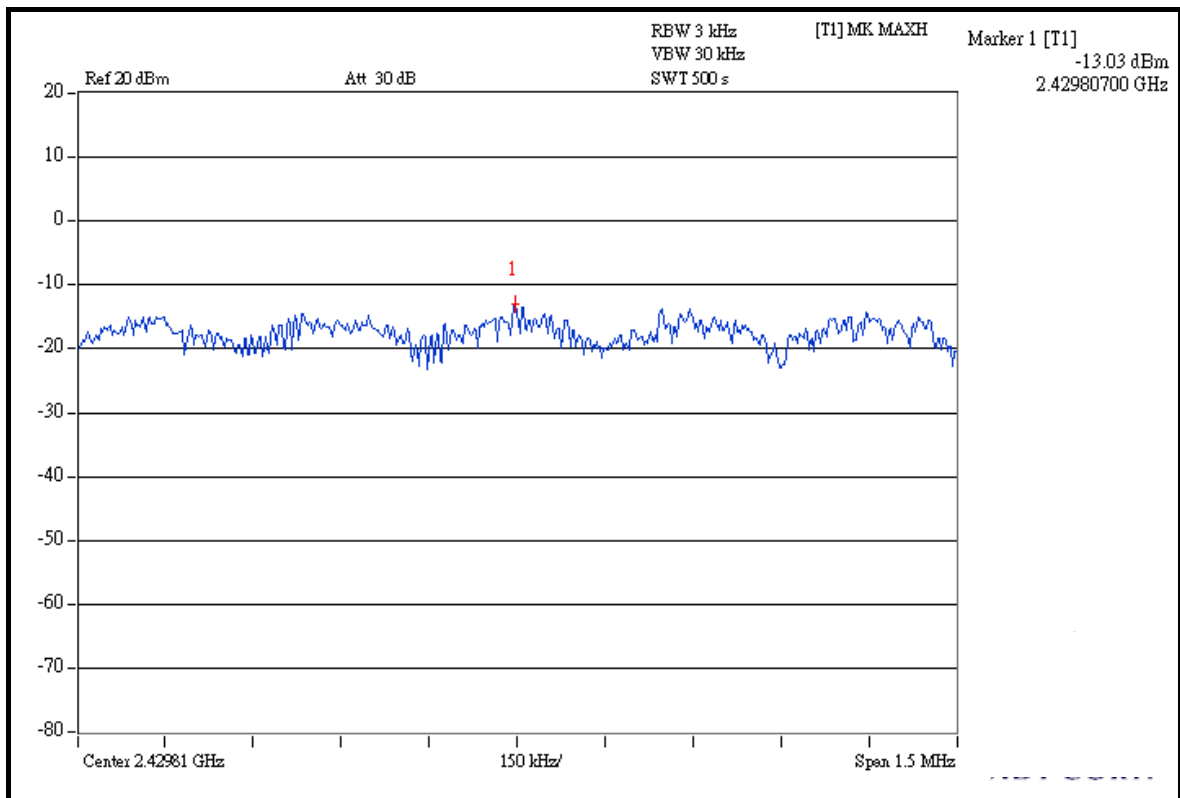


A D T

FOR CHAIN 0: CH 1



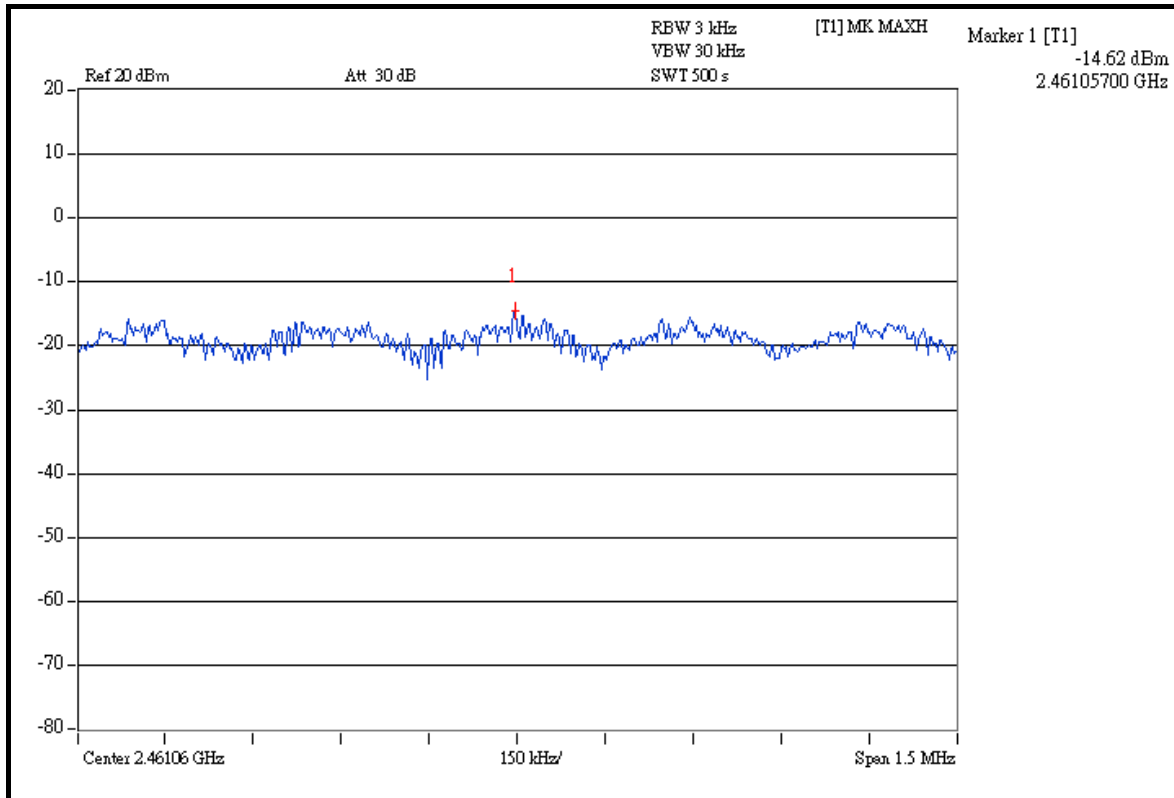
CH 6



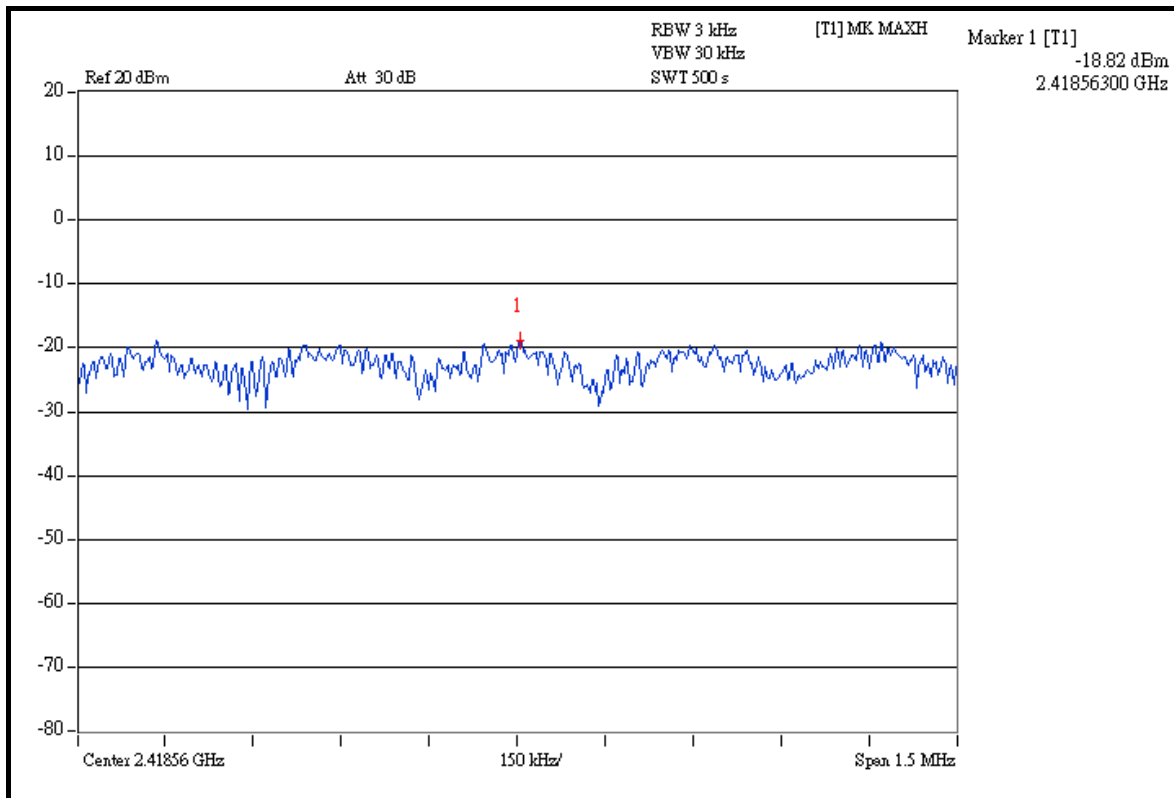


A D T

CH 11



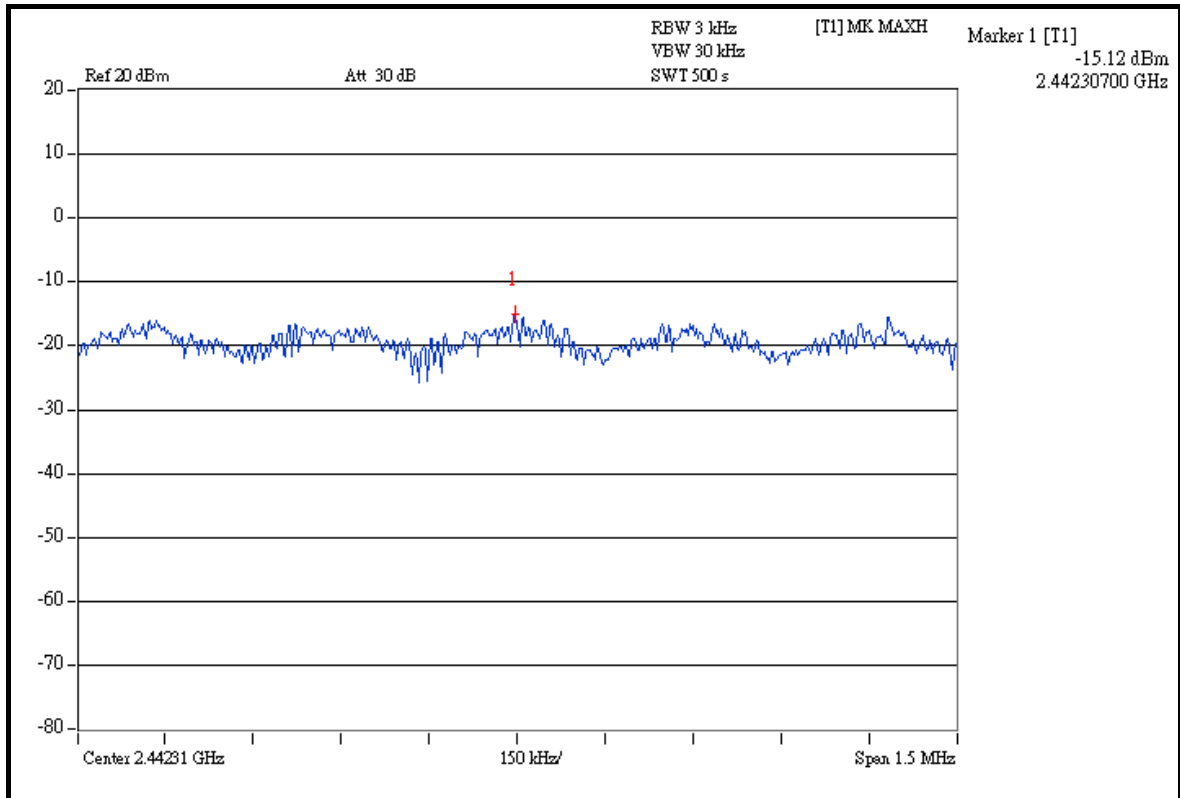
FOR CHAIN 1: CH 1



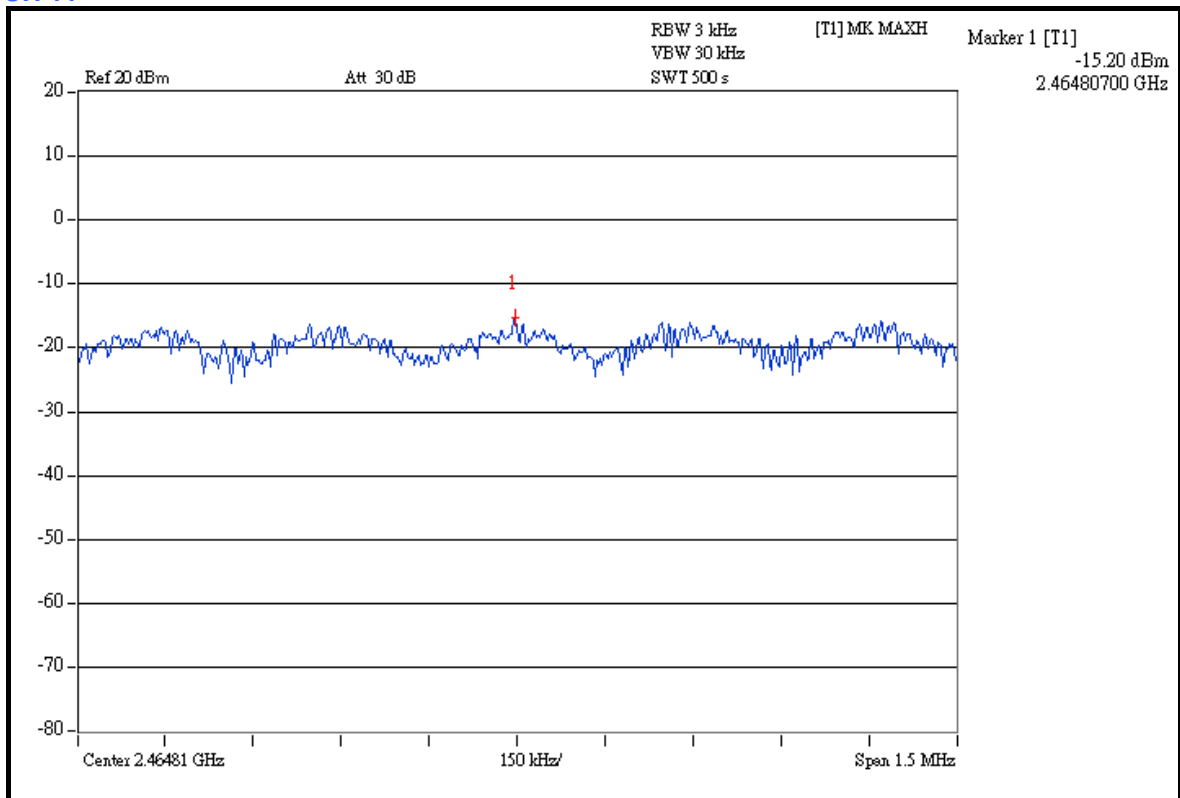


A D T

CH 6



CH 11





A D T

DRAFT 802.11n (40MHz) OFDM MODULATION:

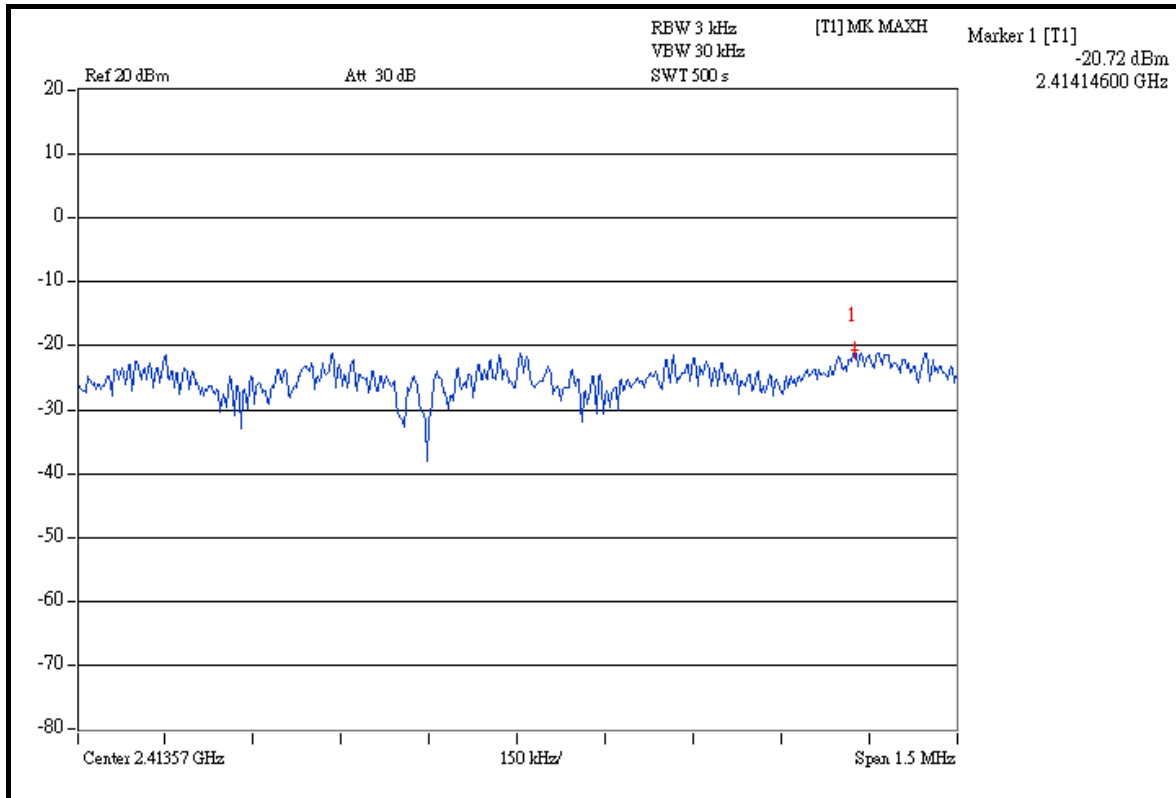
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
INPUT POWER	120Vac, 60Hz	TESTED BY	Long Chen

CHAN.	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (mW)		RF POWER LEVEL IN 3kHz BW (dBm)		TOTAL POWER DENSITY (mW)	TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1				
1	2422	0.008	0.010	-20.72	-19.93	0.019	-17.30	8	PASS
4	2437	0.024	0.025	-16.13	-16.09	0.049	-13.10	8	PASS
7	2452	0.013	0.012	-18.72	-19.37	0.025	-16.02	8	PASS

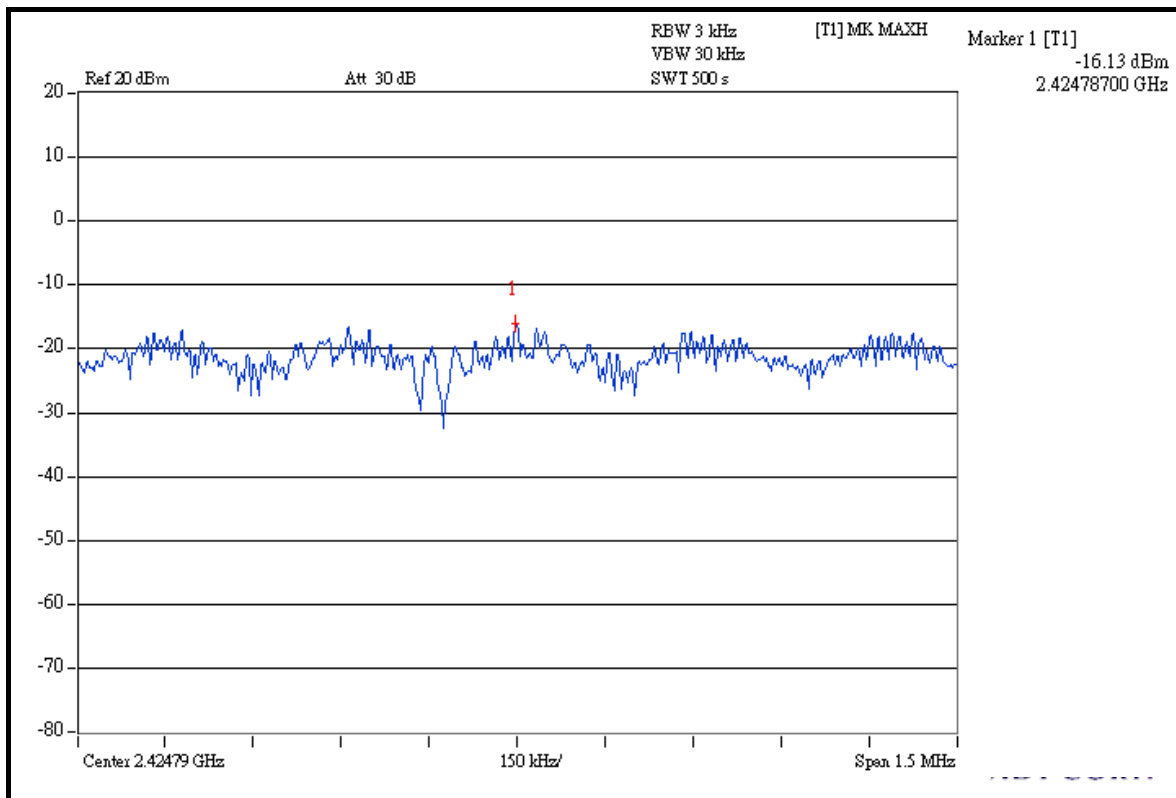


A D T

FOR CHAIN 0: CH 1



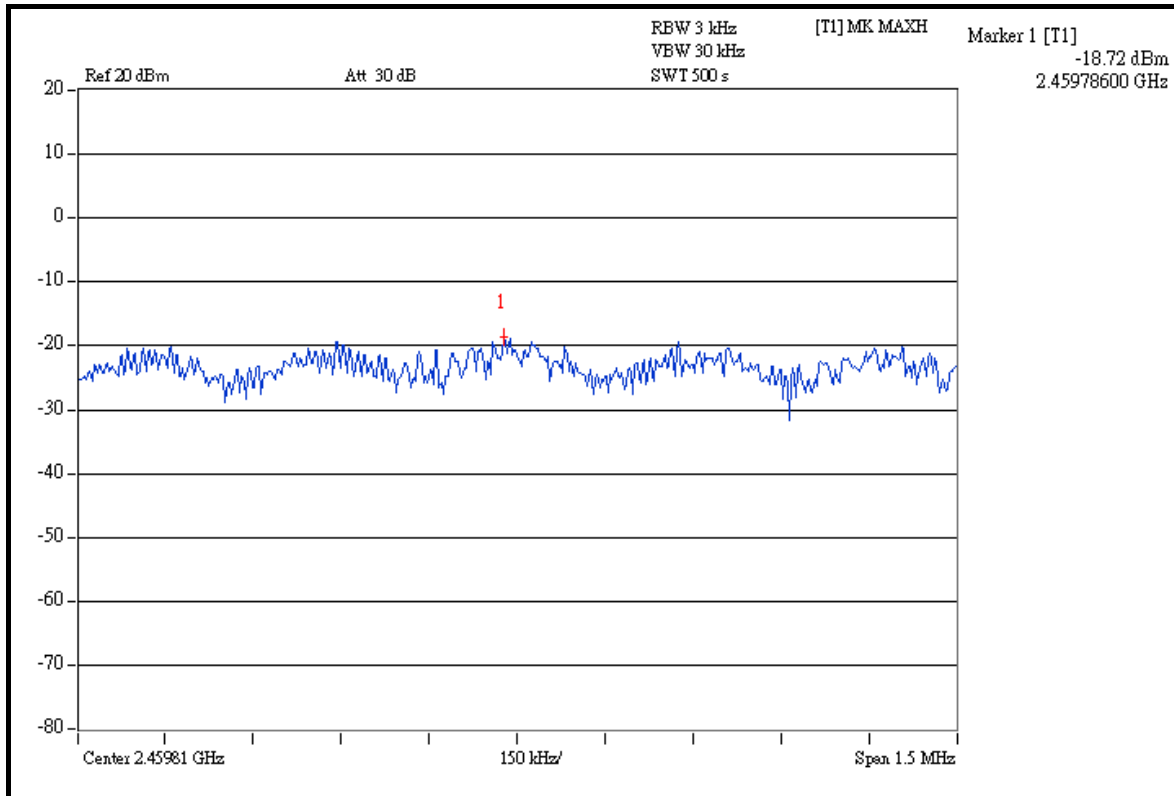
CH 4



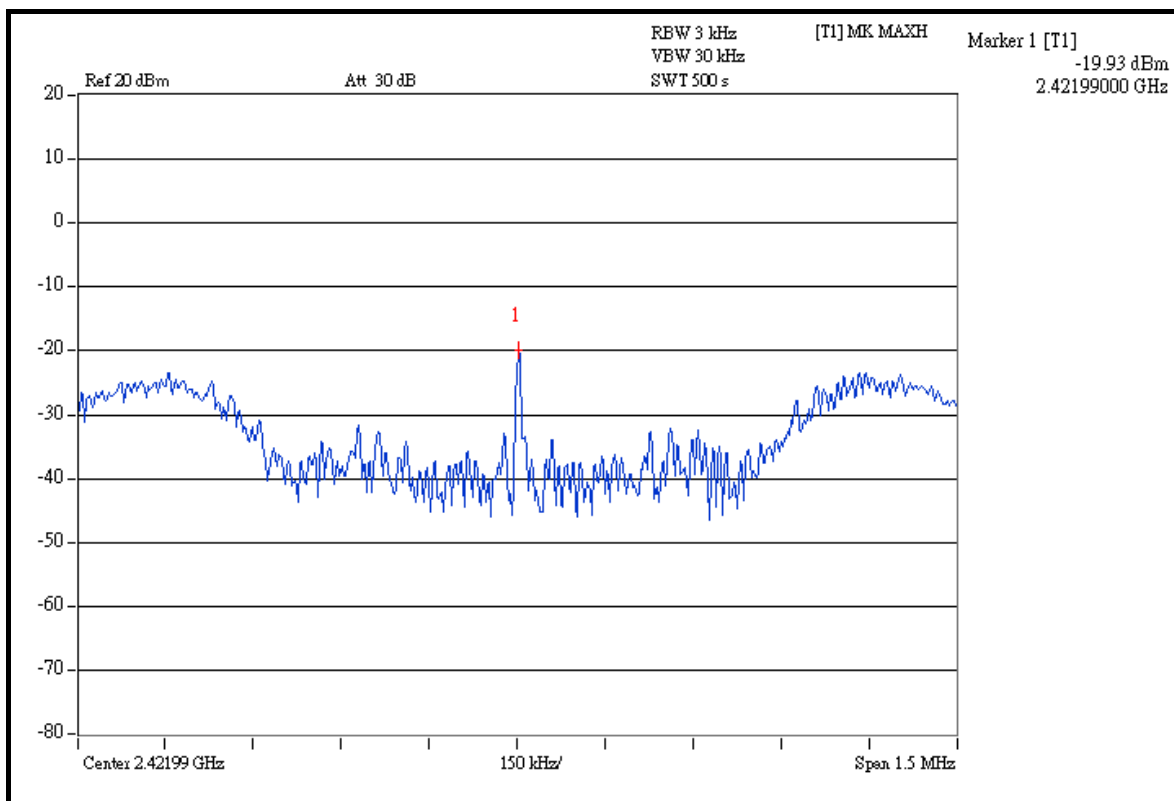


A D T

CH 7



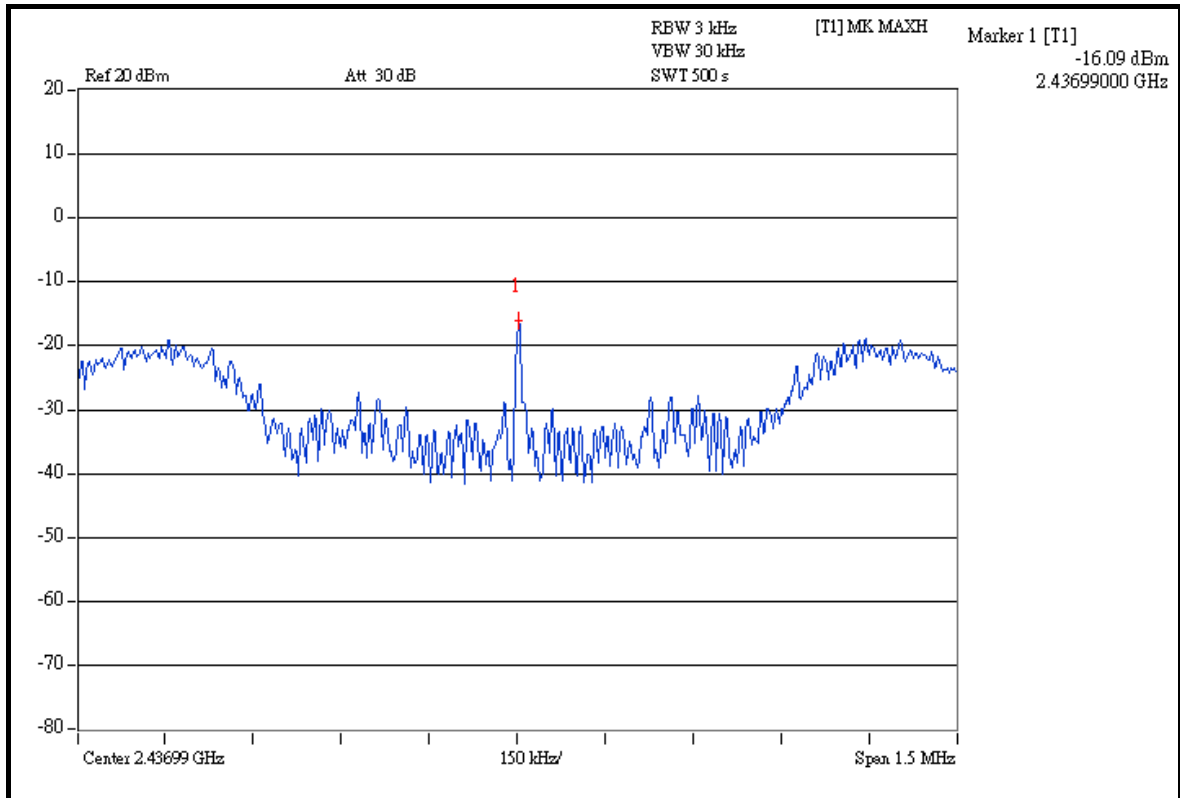
FOR CHAIN 1: CH 1



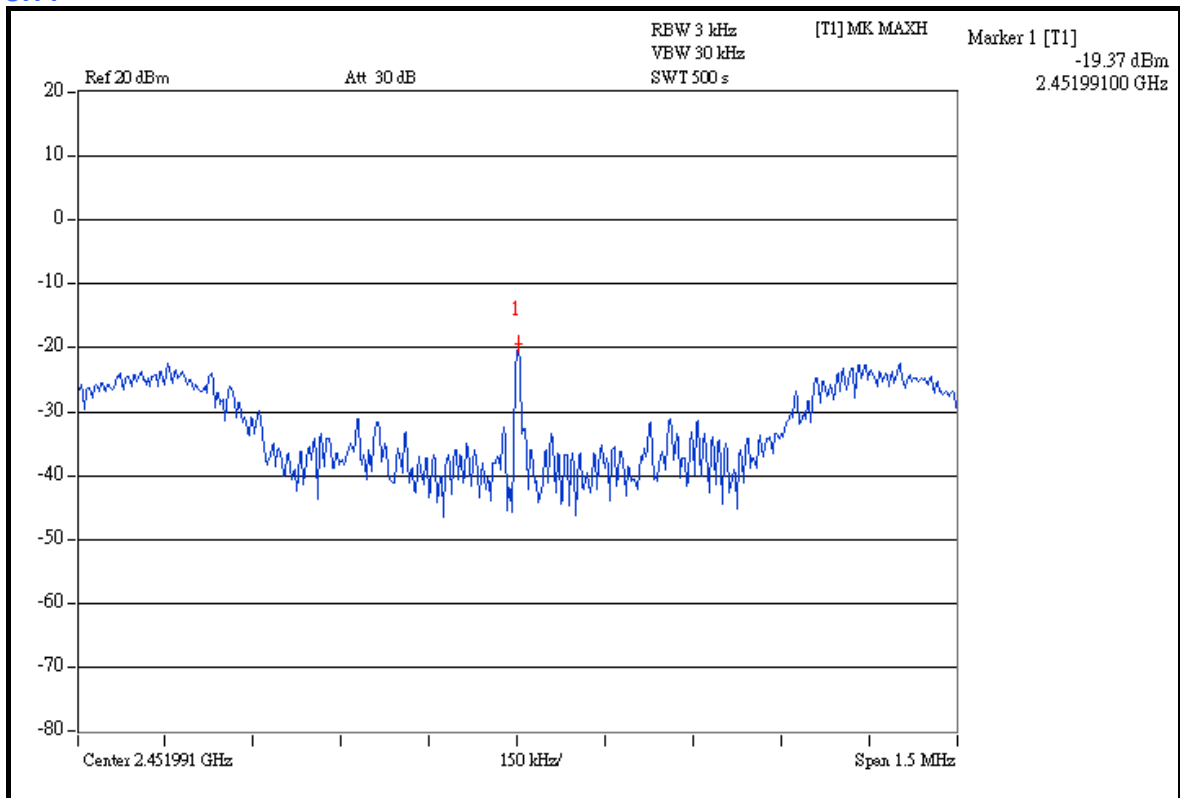


A D T

CH 4



CH 7





4.6 BAND EDGES MEASUREMENT

4.6.1 LIMITS OF BAND EDGES MEASUREMENT

Below -20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
802.11b, 802.11g:				
R&S SPECTRUM ANALYZER	FSP40	100040	Jun. 29, 2007	Jun. 28, 2008
DRAFT 802.11n (20MHz), DRAFT 802.11n (40MHz):				
Test Receiver ROHDE & SCHWARZ	ESI7	838496/016	Dec. 26, 2007	Dec. 25, 2008
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Jan. 05, 2007	Jan. 04, 2008
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-405	Dec. 18, 2007	Dec. 17, 2008
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170242	Jan. 17, 2007	Jan. 16, 2008
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	274397/4	Nov. 08, 2007	Nov. 07, 2008
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	283401/4	Nov. 08, 2007	Nov. 07, 2008
Software ADT.	ADT_Radiated_V7.6	NA	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	019303	NA	NA
Turn Table ADT.	TT100.	TT93021704	NA	NA
Turn Table Controller ADT.	SC100.	SC93021704	NA	NA

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

802.11b, 802.11g:

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

The spectrum plots (Peak RBW = 100kHz, VBW = 300kHz; Average RBW = 1MHz, VBW = 10Hz) are attached on the following pages.

DRAFT 802.11n (20MHz), DRAFT 802.11n (40MHz):

- 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 with suitable frequency span including 100MHz bandwidth from band edge. The band edges was measured and recorded.

The spectrum plots (Peak RBW = VBW = 100kHz) 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 50.14dBc between carrier maximum power and local maximum emission in restrict band (2.38560GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 109.12dBuV/m (Peak), so the maximum field strength in restrict band is $109.12 - 50.14 = 58.98$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next page shows 56.91dBc between carrier maximum power and local maximum emission in restrict band (2.38620GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 104.41dBuV/m (Average), so the maximum field strength in restrict band is $104.41 - 56.91 = 47.50$ dBuV/m which is under 54dBuV/m limit.

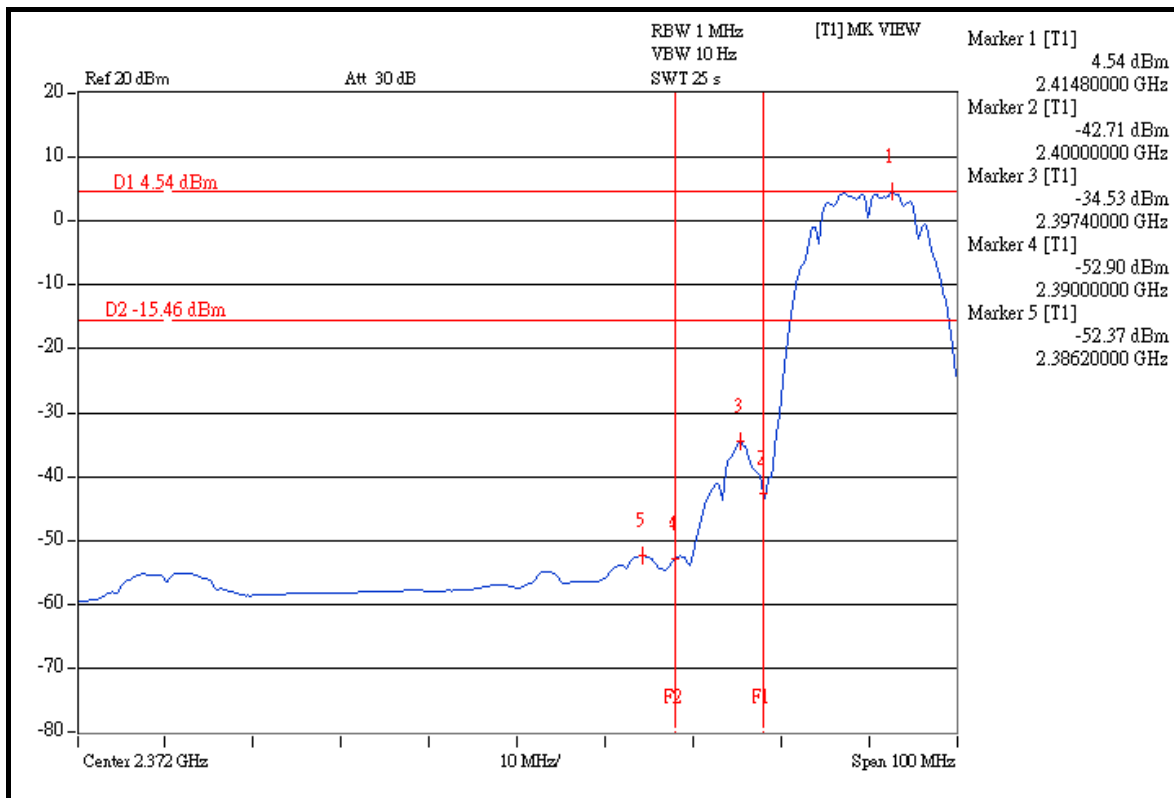
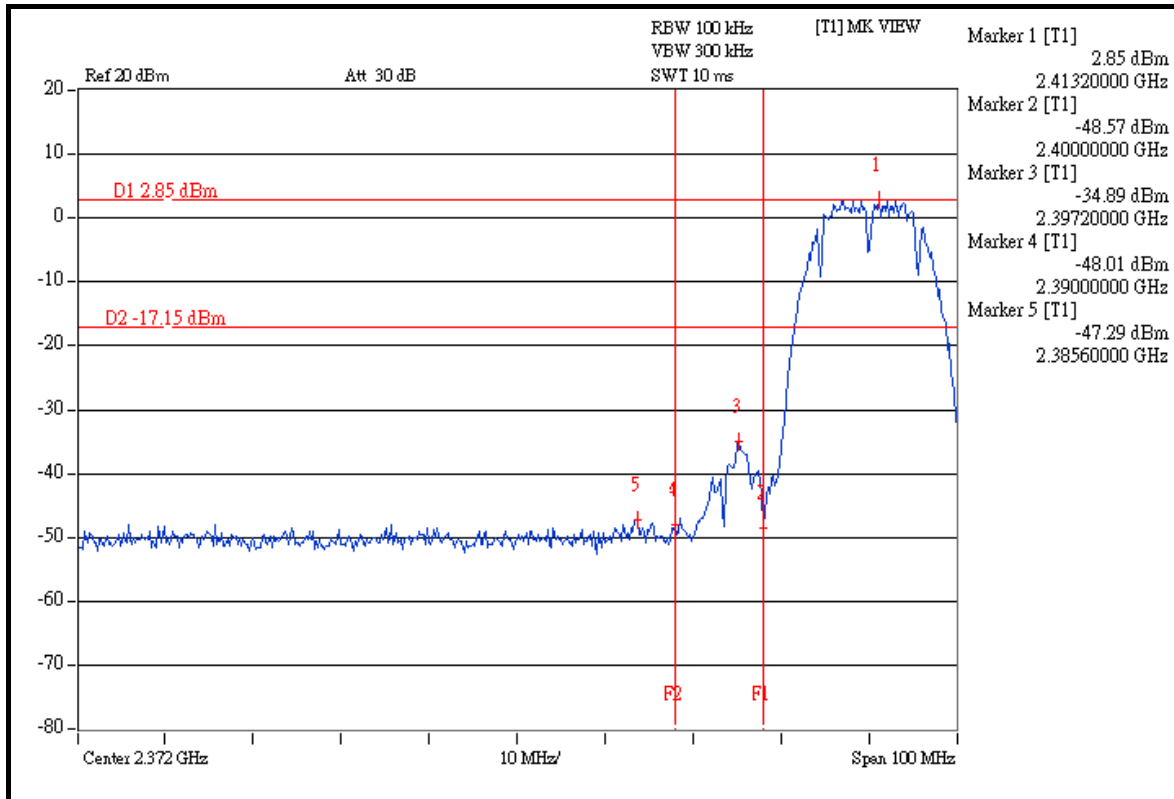
NOTE 2:

The band edge emission plot on the next second page shows 47.90dBc between carrier maximum power and local maximum emission in restrict band (2.48800GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 110.99dBuV/m (Peak), so the maximum field strength in restrict band is $110.99 - 47.90 = 63.09$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 54.81dBc between carrier maximum power and local maximum emission in restrict band (2.48360GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 106.70dBuV/m (Average), so the maximum field strength in restrict band is $106.70 - 54.81 = 51.89$ dBuV/m which is under 54dBuV/m limit.

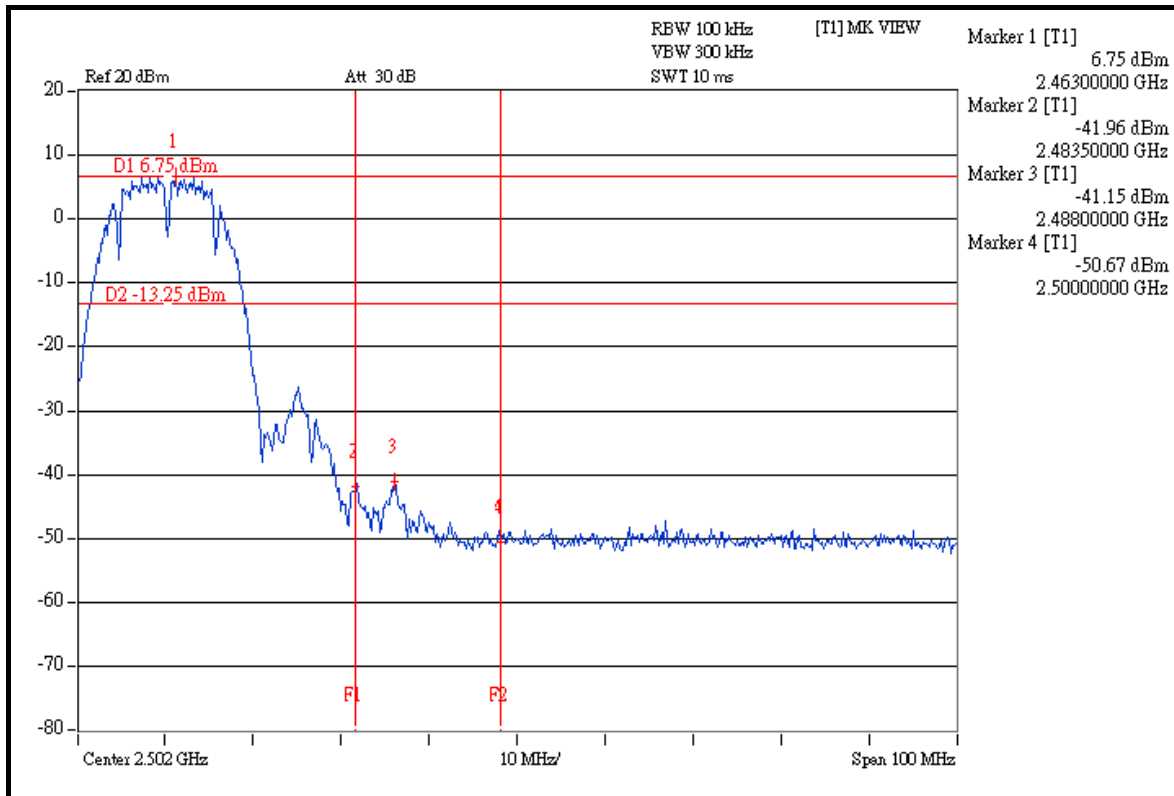
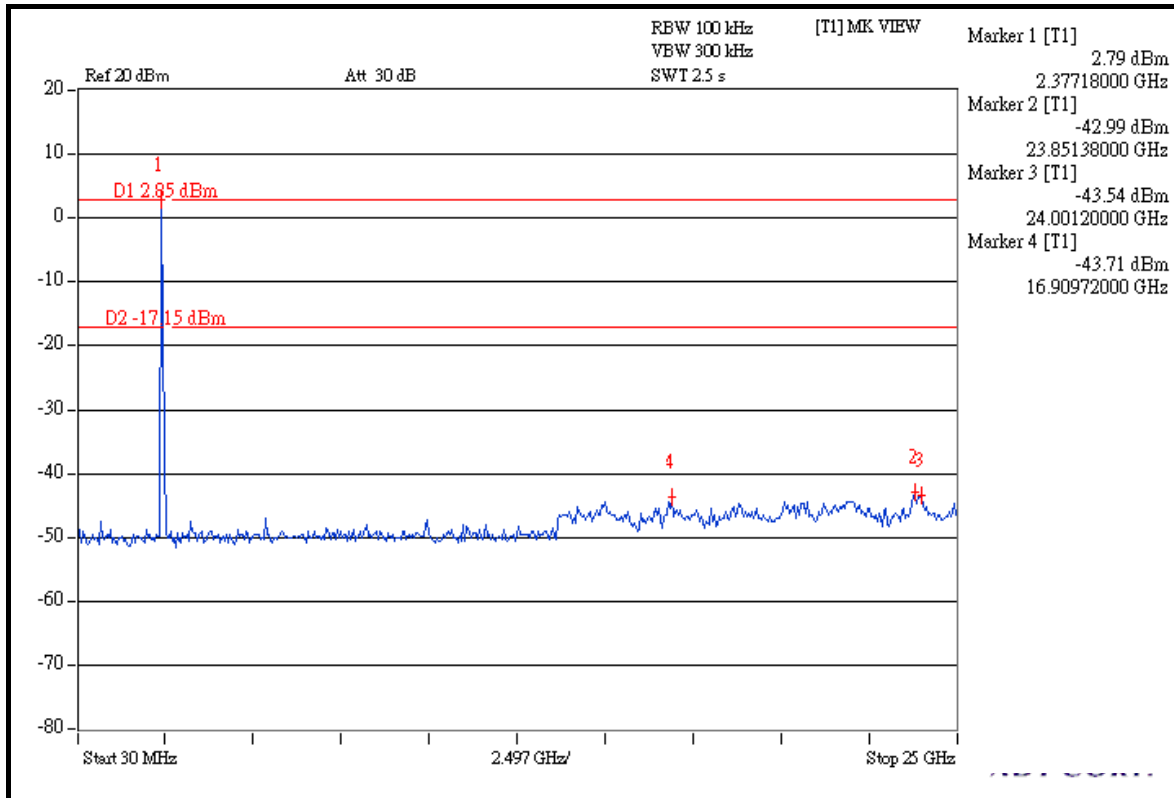


A D T



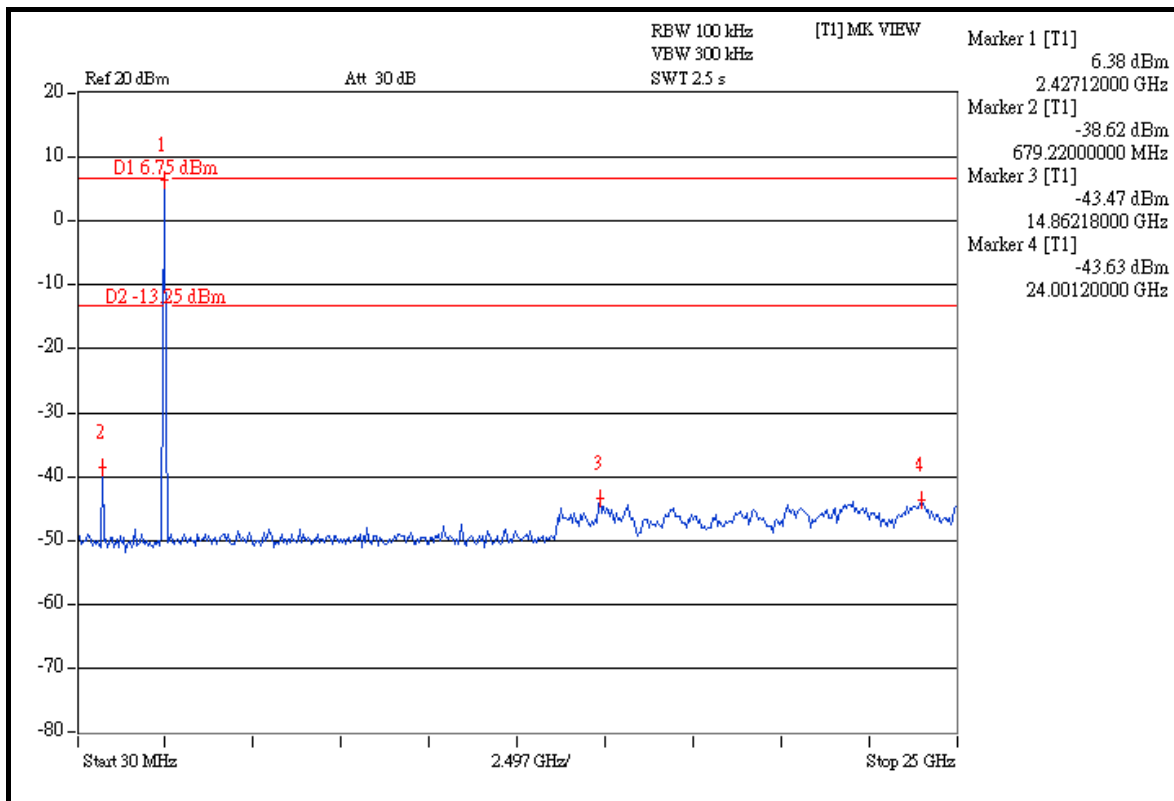
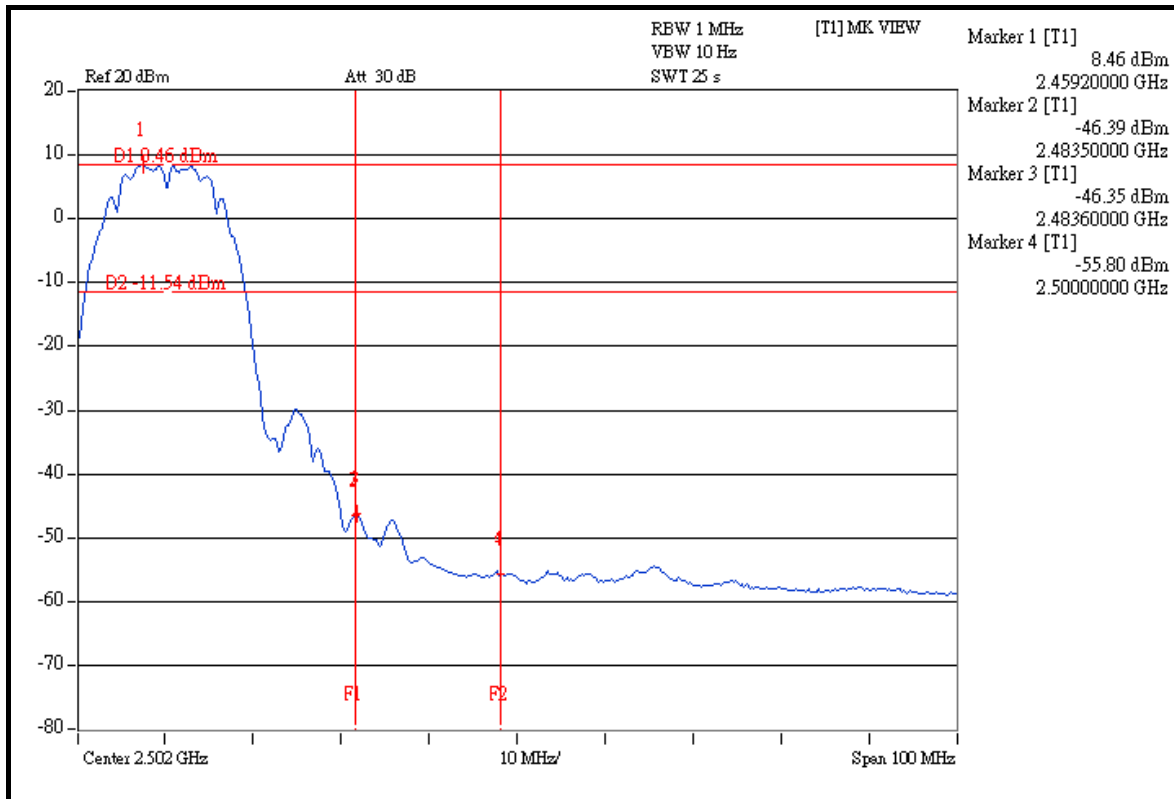


A D T





A D T



802.11g OFDM MODULATION

NOTE 1:

The band edge emission plot on the next page shows 42.75dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 109.96dBuV/m (Peak), so the maximum field strength in restrict band is $109.96 - 42.75 = 67.21$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next page shows 47.83dBc between carrier maximum power and local maximum emission in restrict band (2.3900GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 99.76dBuV/m (Average), so the maximum field strength in restrict band is $99.76 - 47.83 = 51.93$ dBuV/m which is under 54dBuV/m limit.

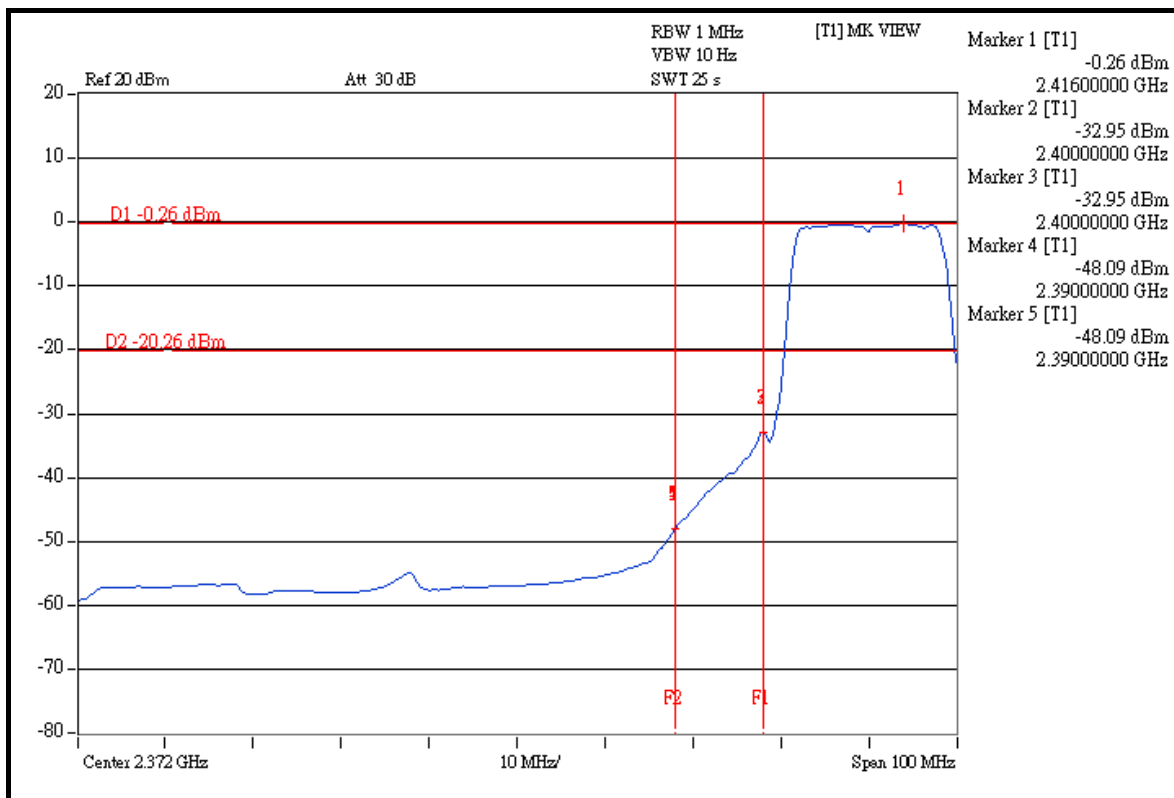
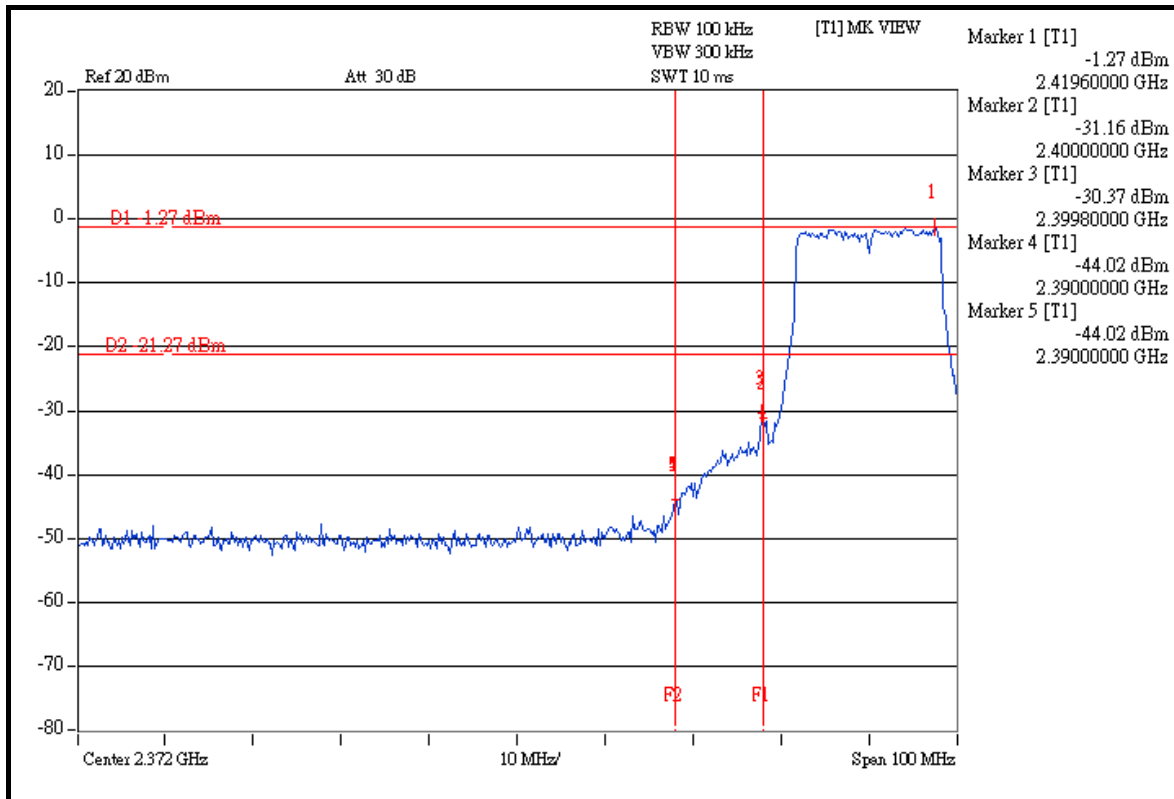
NOTE 2:

The band edge emission plot on the next second page shows 42.95dBc between carrier maximum power and local maximum emission in restrict band (2.48360GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 111.08dBuV/m (Peak), so the maximum field strength in restrict band is $111.08 - 42.95 = 68.13$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 51.87dBc between carrier maximum power and local maximum emission in restrict band (2.48350GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 100.71dBuV/m (Average), so the maximum field strength in restrict band is $100.71 - 51.87 = 48.84$ dBuV/m which is under 54dBuV/m limit.

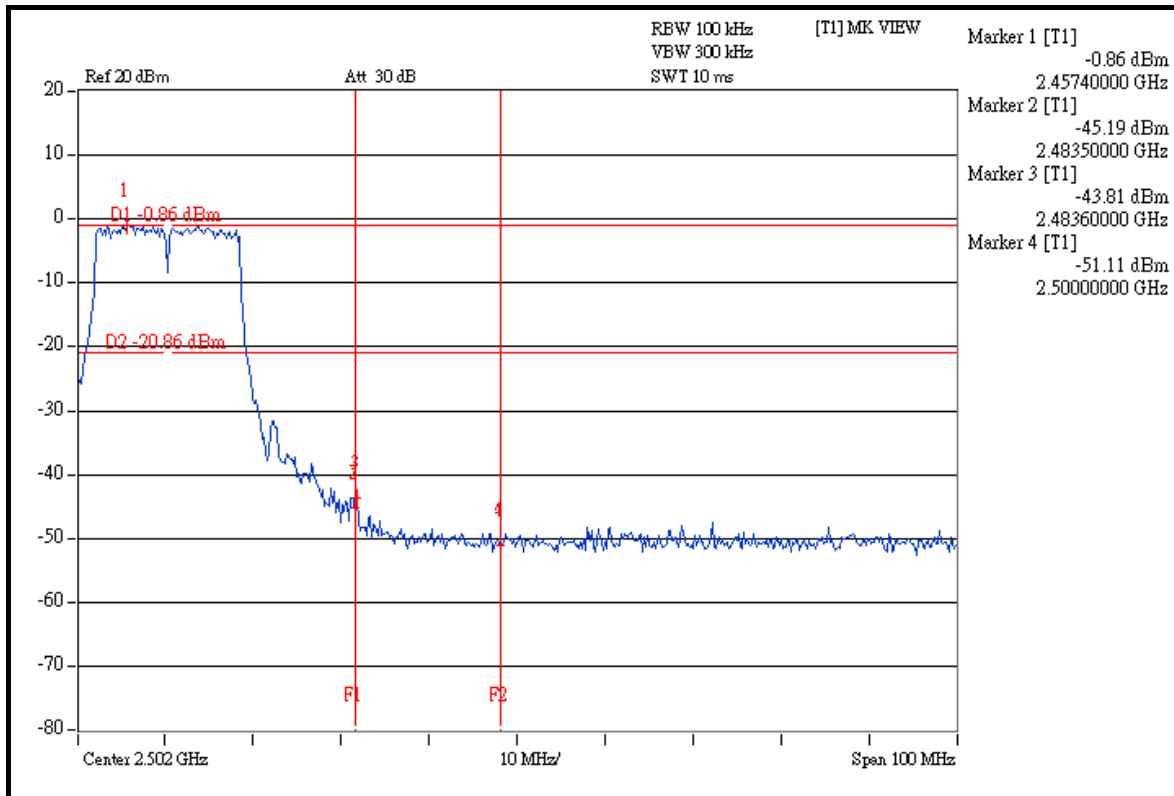
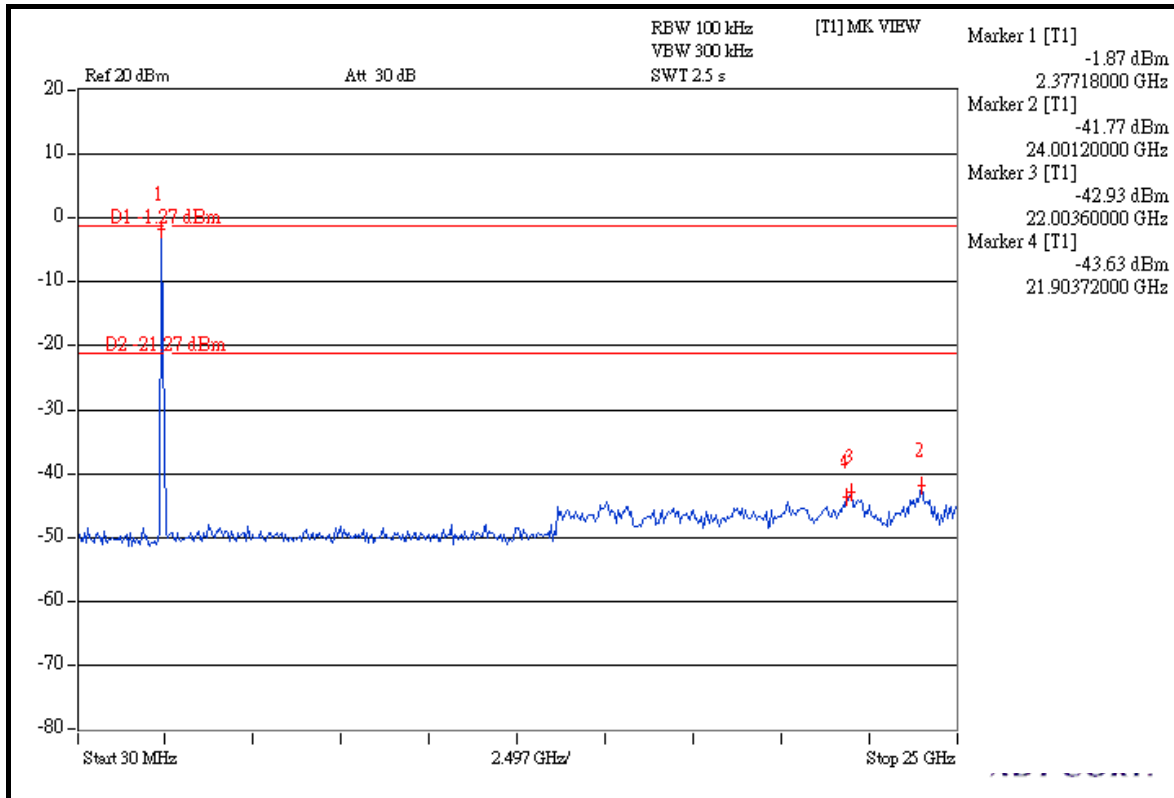


A D T



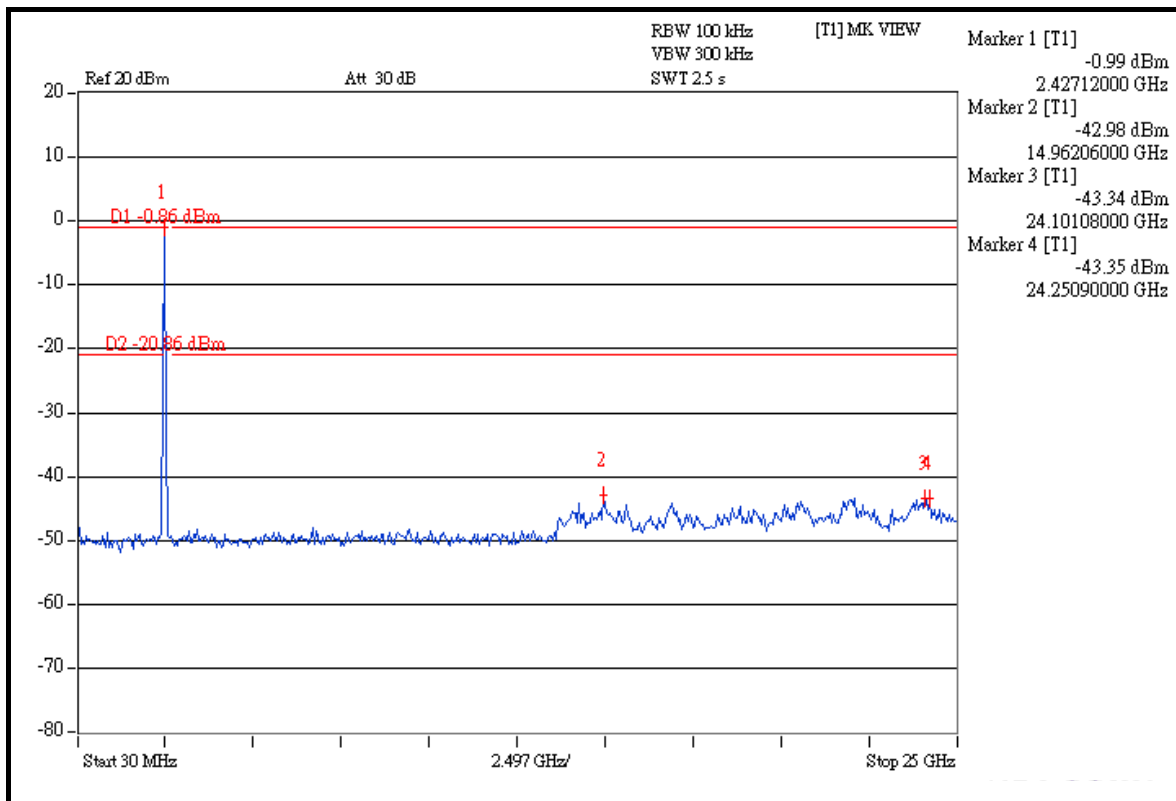
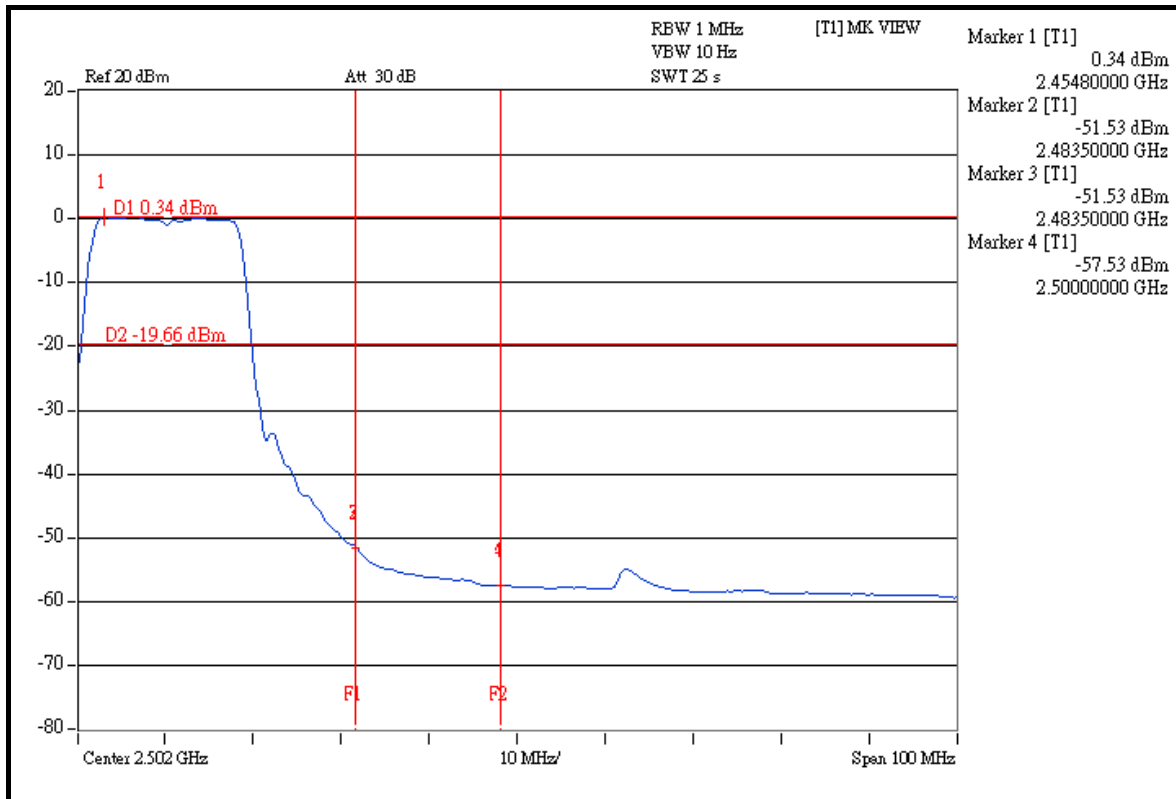


A D T





A D T



DRAFT 802.11n (20MHz) OFDM MODULATION:

NOTE 1:

The band edge emission plot on the next page shows 41.82dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 107.14dBuV/m (Peak), so the maximum field strength in restrict band is $107.14 - 41.82 = 65.32$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next page shows 47.97dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 96.71dBuV/m (Average), so the maximum field strength in restrict band is $96.71 - 47.97 = 48.74$ dBuV/m which is under 54dBuV/m limit.

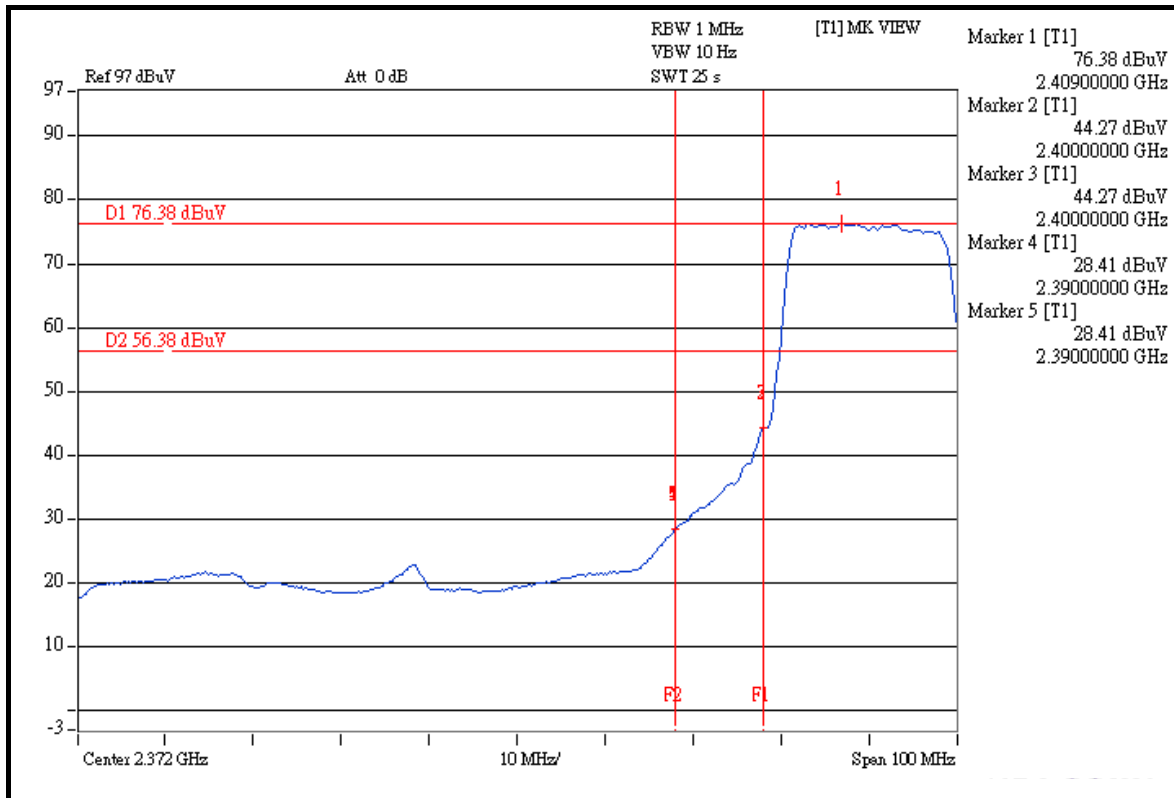
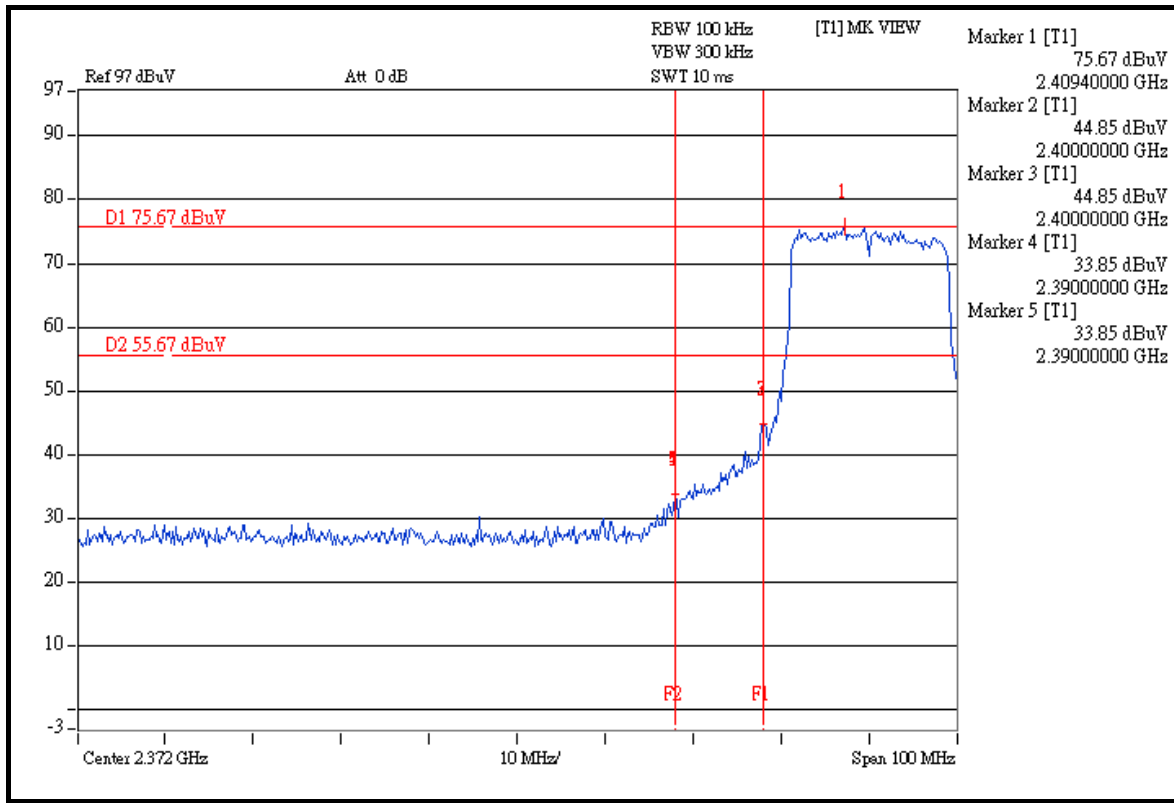
NOTE 2:

The band edge emission plot on the next second page shows 43.14dBc between carrier maximum power and local maximum emission in restrict band (2.48400GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 109.89dBuV/m (Peak), so the maximum field strength in restrict band is $109.89 - 43.14 = 66.75$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 49.45dBc between carrier maximum power and local maximum emission in restrict band (2.48350GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 99.68dBuV/m (Average), so the maximum field strength in restrict band is $99.68 - 49.45 = 50.23$ dBuV/m which is under 54dBuV/m limit.

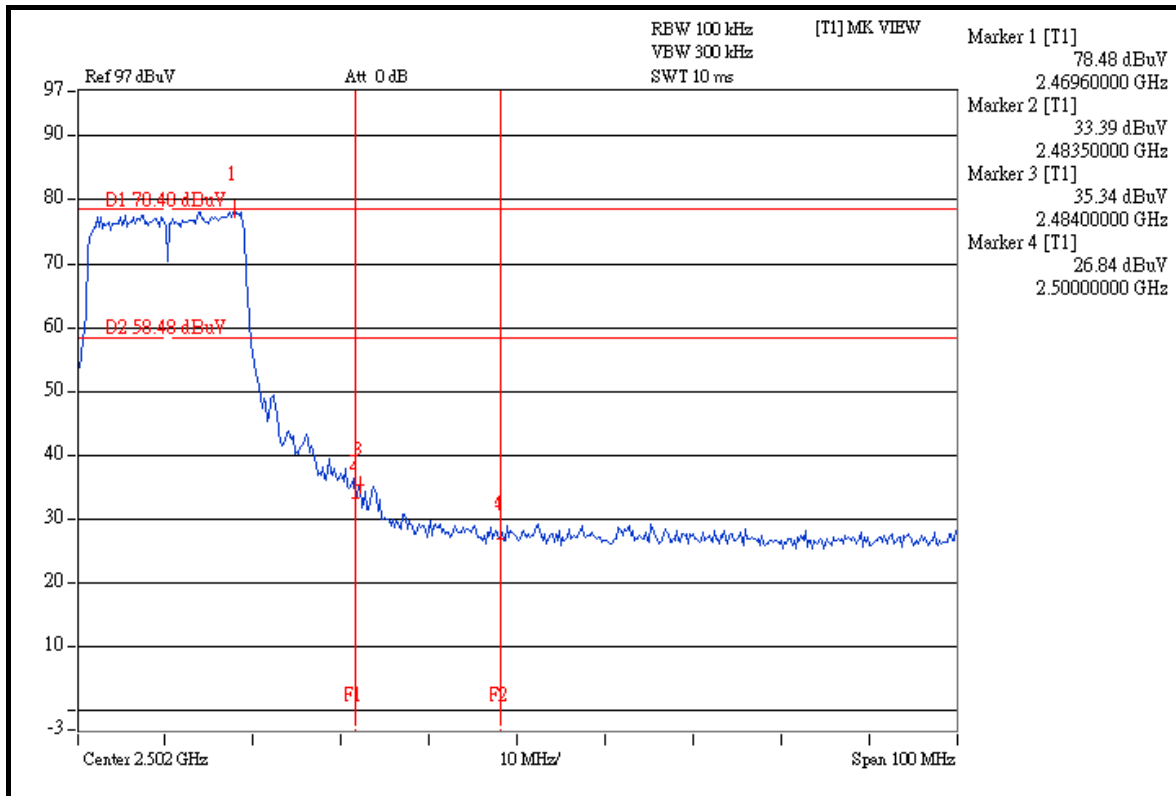
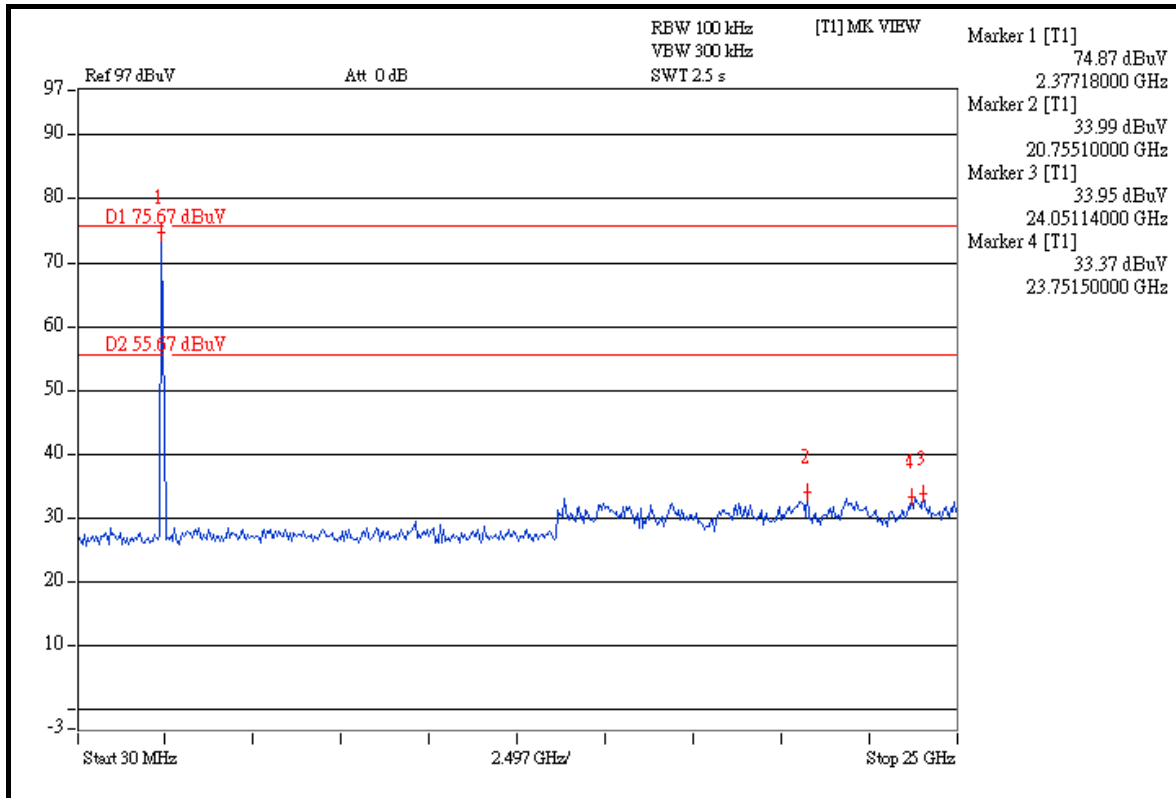


A D T



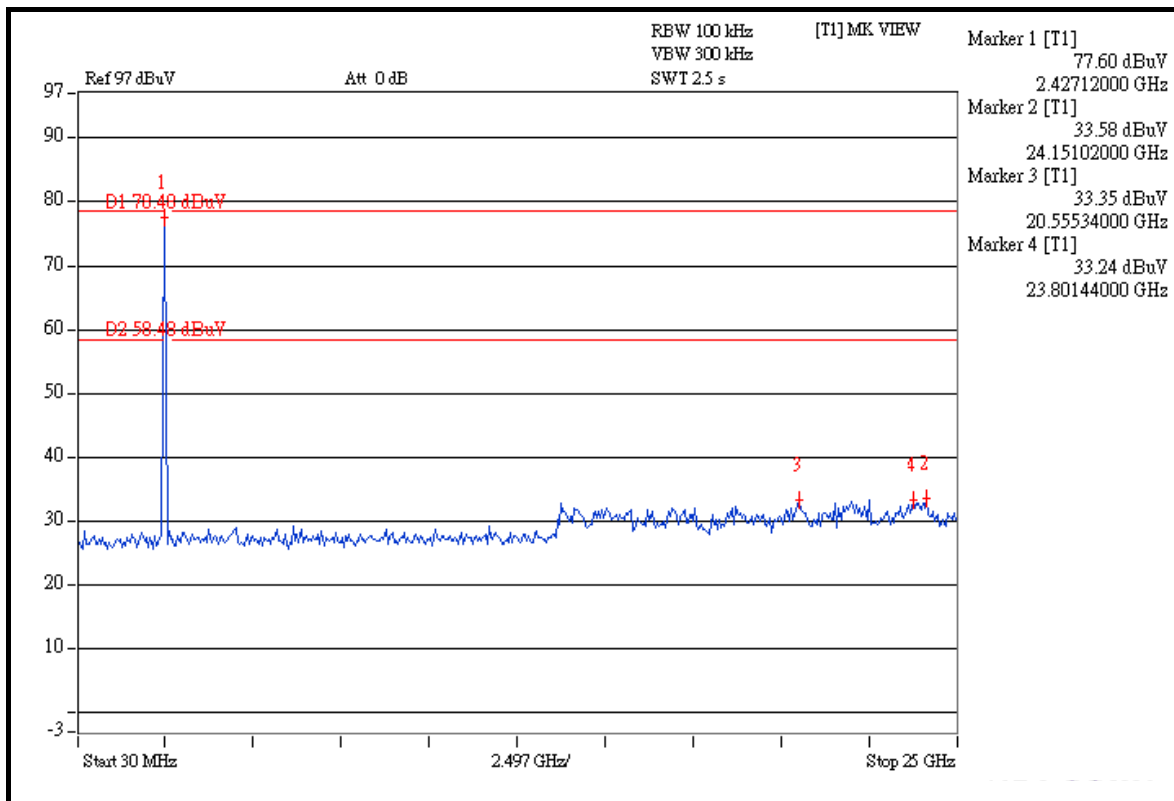
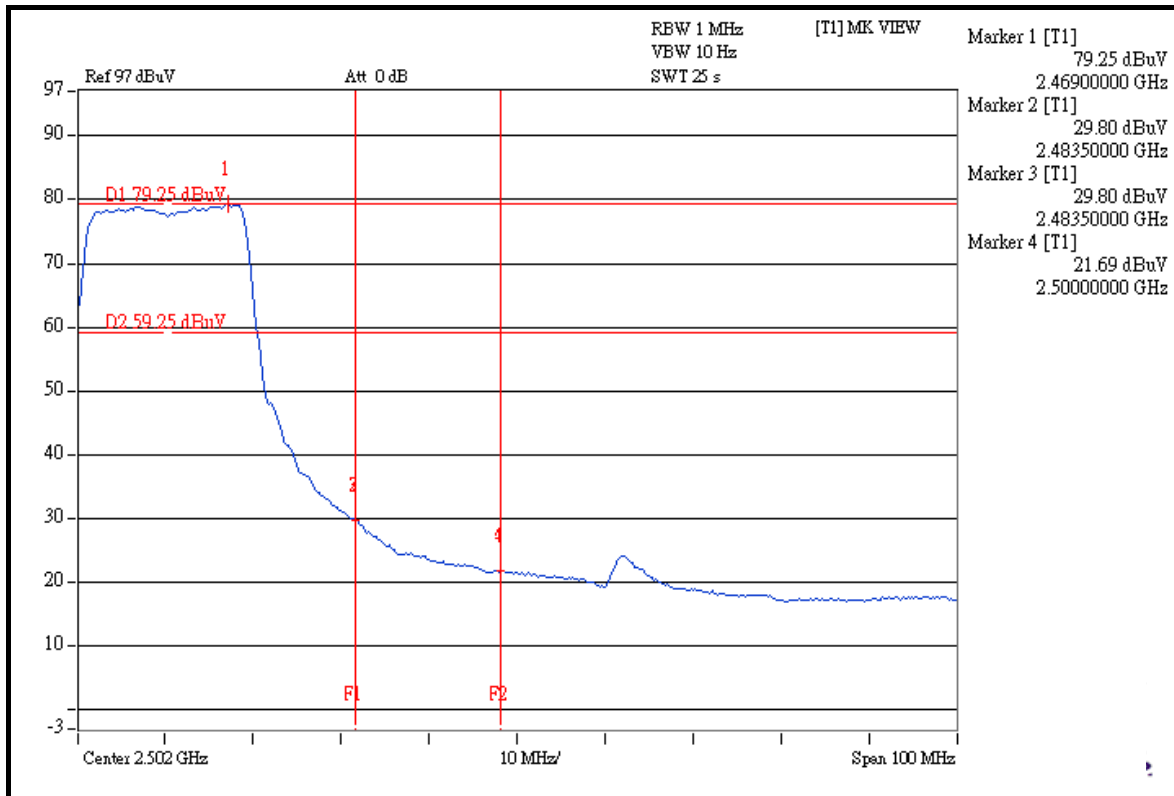


A D T





A D T



DRAFT 802.11n (40MHz) OFDM MODULATION:

NOTE 1:

The band edge emission plot on the next page shows 35.27dBc 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 4.2.7 is 103.93dBuV/m (Peak), so the maximum field strength in restrict band is $103.93 - 35.27 = 68.66$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next page shows 41.70dBc between carrier maximum power and local maximum emission in restrict band (2.3900GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 93.32dBuV/m (Average), so the maximum field strength in restrict band is $93.32 - 41.70 = 51.62$ dBuV/m which is under 54dBuV/m limit.

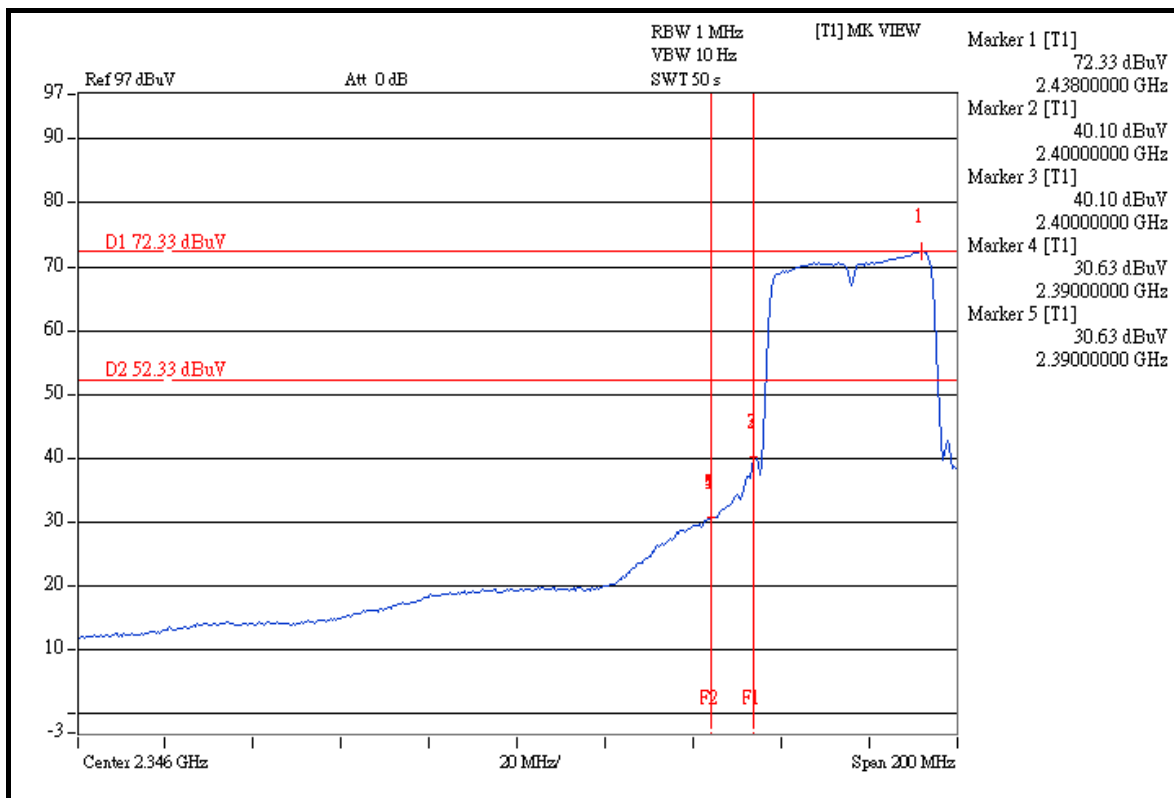
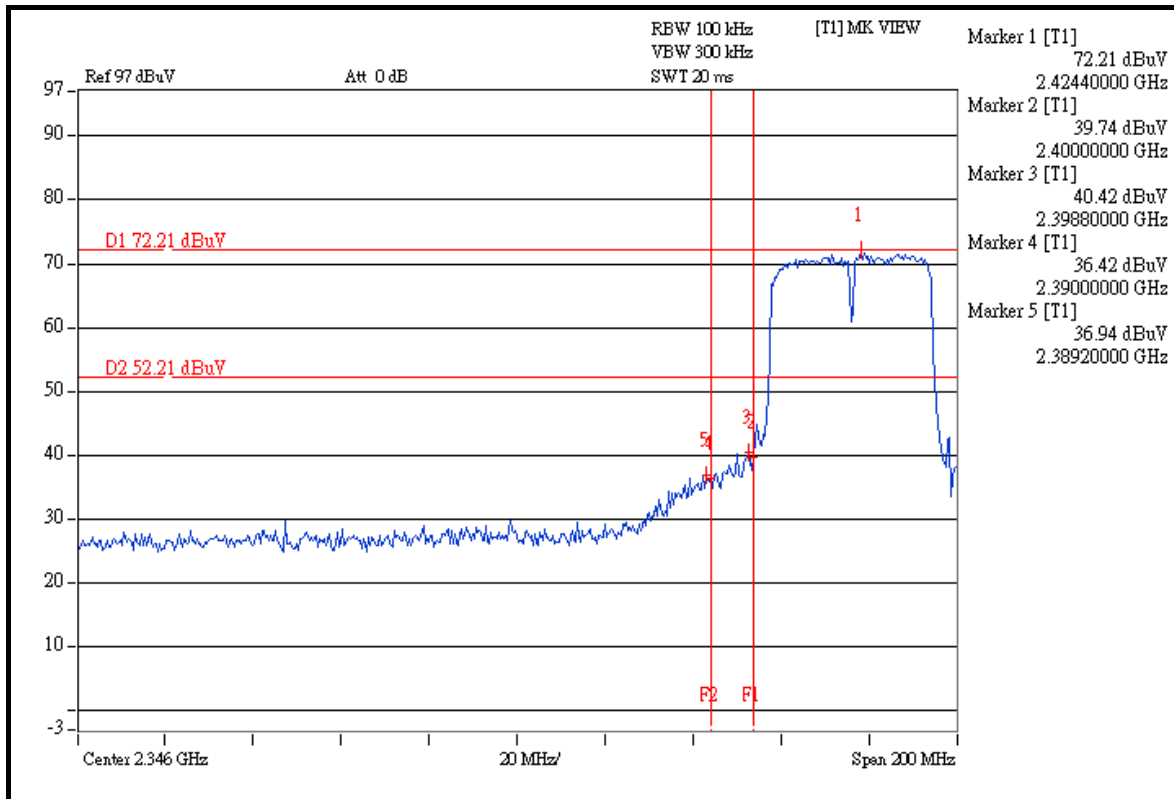
NOTE 2:

The band edge emission plot on the next second page shows 40.06dBc between carrier maximum power and local maximum emission in restrict band (2.49000GHz). The emission of carrier strength list in the test result of channel 7 at the item 4.2.7 is 106.90dBuV/m (Peak), so the maximum field strength in restrict band is $106.90 - 40.06 = 66.84$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 45.38dBc between carrier maximum power and local maximum emission in restrict band (2.48400GHz). The emission of carrier strength list in the test result of channel 7 at the item 4.2.7 is 95.90dBuV/m (Average), so the maximum field strength in restrict band is $95.90 - 45.38 = 50.52$ dBuV/m which is under 54dBuV/m limit.

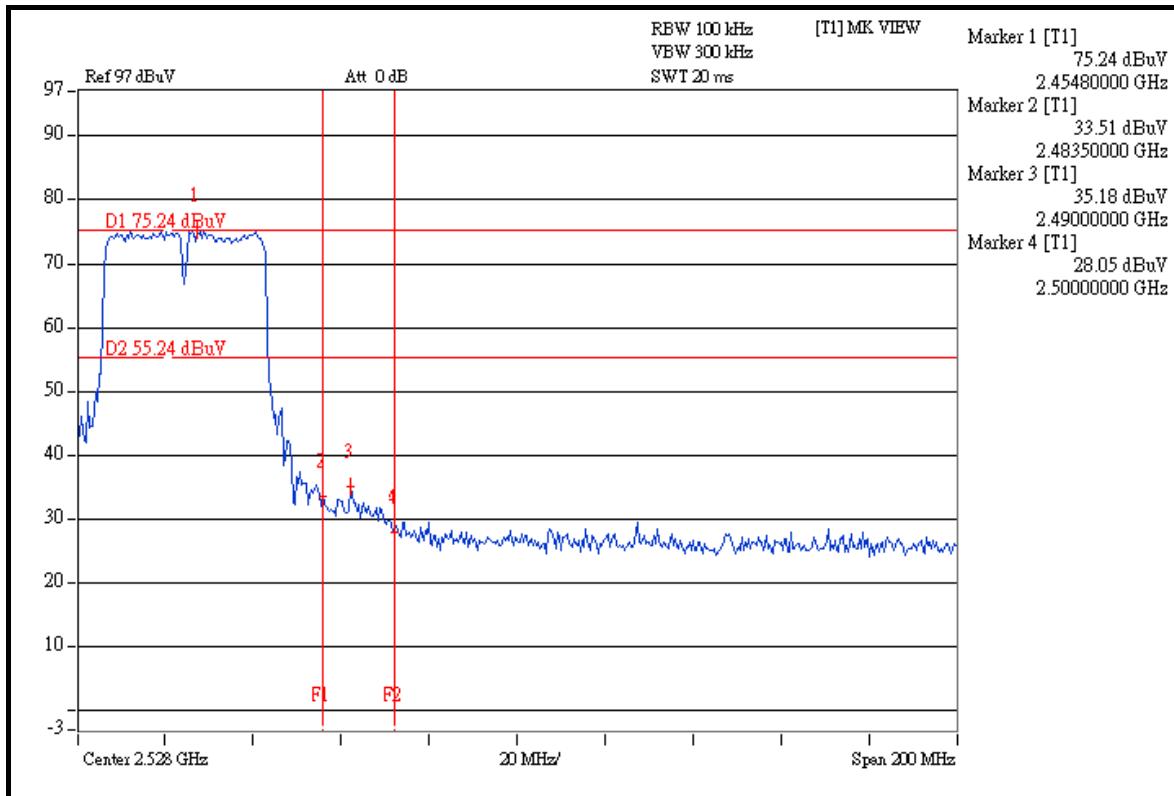
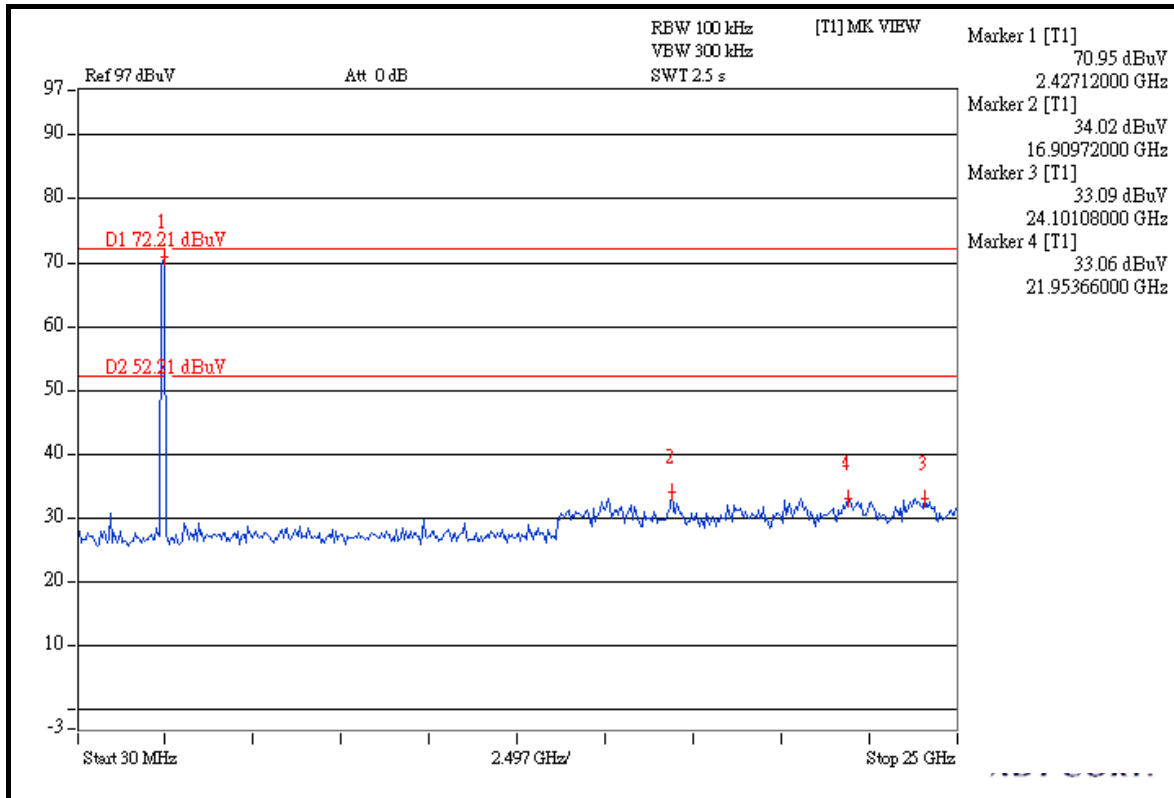


A D T



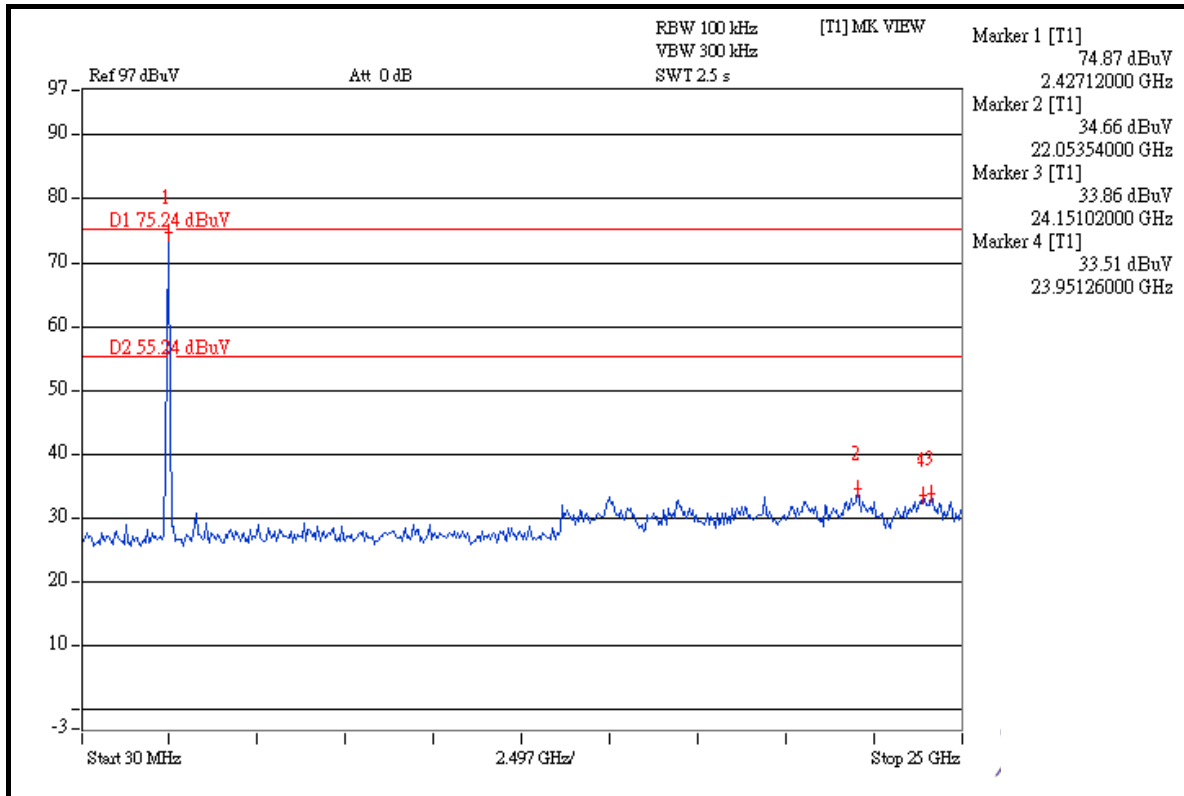
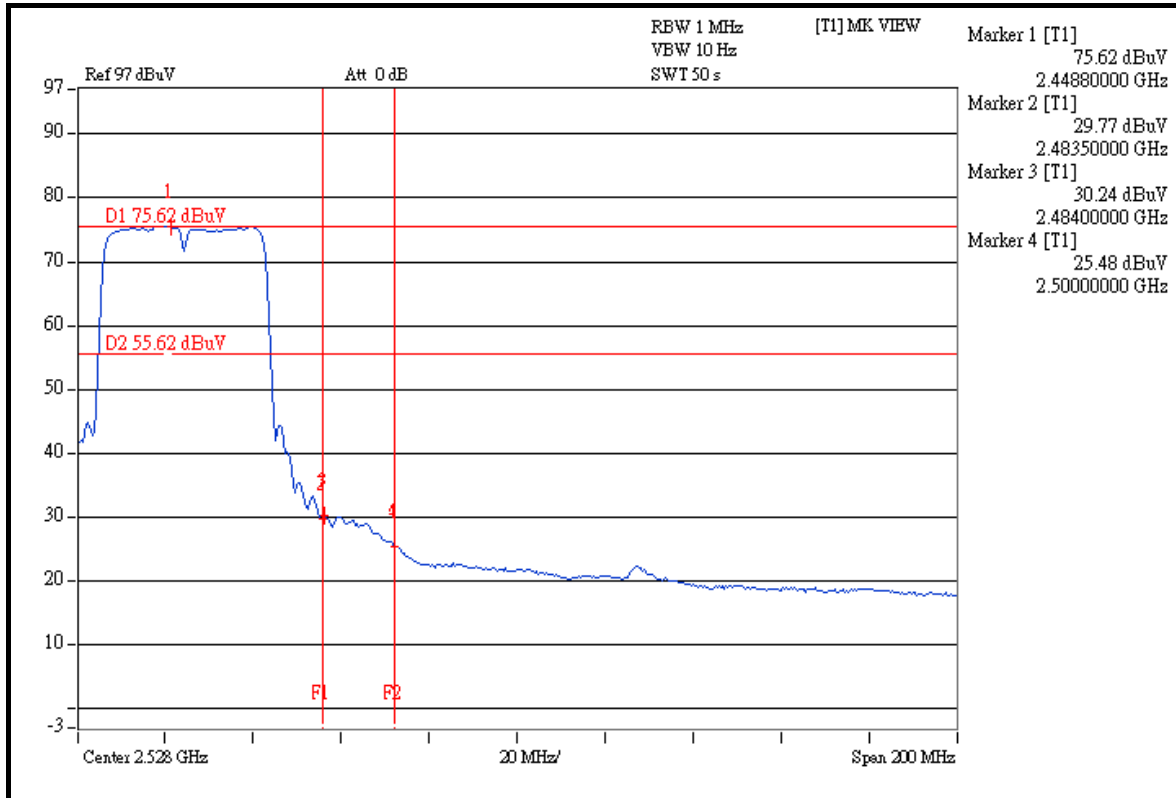


A D T





A D T



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 monopole antenna without connector. The maximum Gain of the antenna is 4.66dBi.

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---