FCC RF Test Report

APPLICANT	:	Texas Instruments Incorporated
EQUIPMENT	:	2.4GHz Wi-Fi Module
BRAND NAME	:	Texas Instruments
MODEL NAME	:	CC3220MODASF12MON CC3220MODASM2MON CC3220MODSF12MOB CC3220MODSM2MOB
MARKETING NAME	:	SimpleLink™ Wi-Fi® CC3220MOD Wireless Microcontroller Module
FCC ID	:	Z64-CC3220MOD
STANDARD	:	FCC Part 15 Subpart C §15.247
CLASSIFICATION	:	(DTS) Digital Transmission System

The product was received on Mar. 16, 2017 and testing was completed on May 31, 2017. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager

Testing Laboratory
1190

SPORTON INTERNATIONAL INC.
No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C.

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR731625	Rev. 01	Initial issue of report	Jun. 16, 2017

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	6dB Bandwidth	≥ 0.5MHz	Pass	-
3.1	-	99% Bandwidth	-	Pass	-
3.2	15.247(b)	Power Output Measurement	≤ 30dBm	Pass	-
3.3	15.247(e)	Power Spectral Density	≤ 8dBm/3kHz	Pass	-
3.4	15.247(d)	Conducted Band Edges	≤ 20dBc	Pass	-
		Conducted Spurious Emission		Pass	-
3.5	15.247(d)	Band Edges and Spurious Emission in the Restricted Band	15.209(a) & 15.247(d)	Pass	Under limit 3.83 dB at 2355.78 MHz
3.6	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 14.70 dB at 0.150 MHz
3.7	15.203 & 15.247(b)	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

Texas Instruments Incorporated
12500 TI BLVD., Dallas Texas, 75243

1.2 Manufacturer

Texas Instruments Incorporated
12500 TI BLVD., Dallas Texas, 75243

1.3 Product Feature of Equipment Under Test

Wi-Fi 2.4GHz 802.11b/g/n.

Antenna Information				
	Brand	Antenna Type	Model	2.4GHz gain
1	FoxCon	PCB	T77H533	2.5dBi
2	Ethertronics	Dipole	1000423	-0.6dBi
3	LSR	Rubber Whip / Dipole	001-0012	2dBi
4			080-0013	2dBi
5			080-0014	2dBi
6		PIFA	001-0016	2.5dBi
7			001-0021	2.5dBi
8	Laird	PCB	CAF94504	2dBi
9			CAF9405	2dBi
10	ACX	Multilayer Chip	AT3216-BR2R7HAA	0.5dBi
11			AT312-T2R4PAA	1.5dBi
12	TDK	Multilayer Ceramic Chip Antenna	ANT016008LCD2442MA1	1.6dBi
13			ANT016008LCD2442MA2	2.5dBi
14	Mitsubishi Material	Chip Antenna	AM03DP-ST01	1.6dBi
15		Antenna Unit	UB18CP-100ST01	-1.0dBi
16	Taiyo Yuden	Chip Antenna / Herical Monopole	AF216M245001	1.5dBi
17		Chip Antenna /Monopole Type	AH212M245001	1.3dBi
18			AH316M245001	1.9dBi
19	Antenna Technology	Dipole	AA2402SPU	2.0dBi
20			AA2402RSPU	2.0dBi
21			AA2402A-UFLLP	2.0dBi
22			AA2402AU-UFLLP	2.0dBi
23	Staf	Mono-pole	1019-016	2.14dBi
24			1019-017	2.14dBi
25			1019-018	2.14dBi
26			1019-019	2.14dBi
27	Map Electronics	Rubber Whip	MEIWX-2411SAXX-2400	2.0dBi
28			MEIWX-2411RSXX-2400	2.0dBi
29			MEIWX-282XSAXX-2400	2.0dBi
30			MEIWX-282XRSXX-2400	2.0dBi
31			MEIWF-HP01RS2X-2400	2.0dBi
32	Yageo	Chip	ANT3216A063R2400A	1.69dBi
33	Mag Layers Scientific	Chip	LTA-3216-2G4S3-A1	1dBi
34			LTA-3216-2G4S3-A3	2dBi
35	Advantech	Rubber Whip / Dipole	AN2450-5706RS	2.38dBi

Note: the EUT used a 2.4GHz Chip antenna (Antenna 18 from Taiyo Yuden)

1.4 Modification of EUT

No modifications are made to the EUT during all test items.

1.5 Testing Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW0007 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978	
Test Site No.	**Sporton Site No.**	
	TH05-HY	CO05-HY

Note: The test site complies with ANSI C63.4 2014 requirement.

Test Site	SPORTON INTERNATIONAL INC.
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd Rd. Guishan Dist, Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	**Sporton Site No.**
	03CH13-HY / 03CH15-HY

Note: The test site complies with ANSI C63.4 2014 requirement.

1.6 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart C §15.247
- FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v04
- ANSI C63.10-2013

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Z plane) were recorded in this report.

b. AC power line Conducted Emission was tested under maximum output power.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
2400-2483.5 MHz	1	2412	7	2442
	2	2417	8	2447
	3	2422	9	2452
	4	2427	10	2457
	5	2432	11	2462
	6	2437	-	-

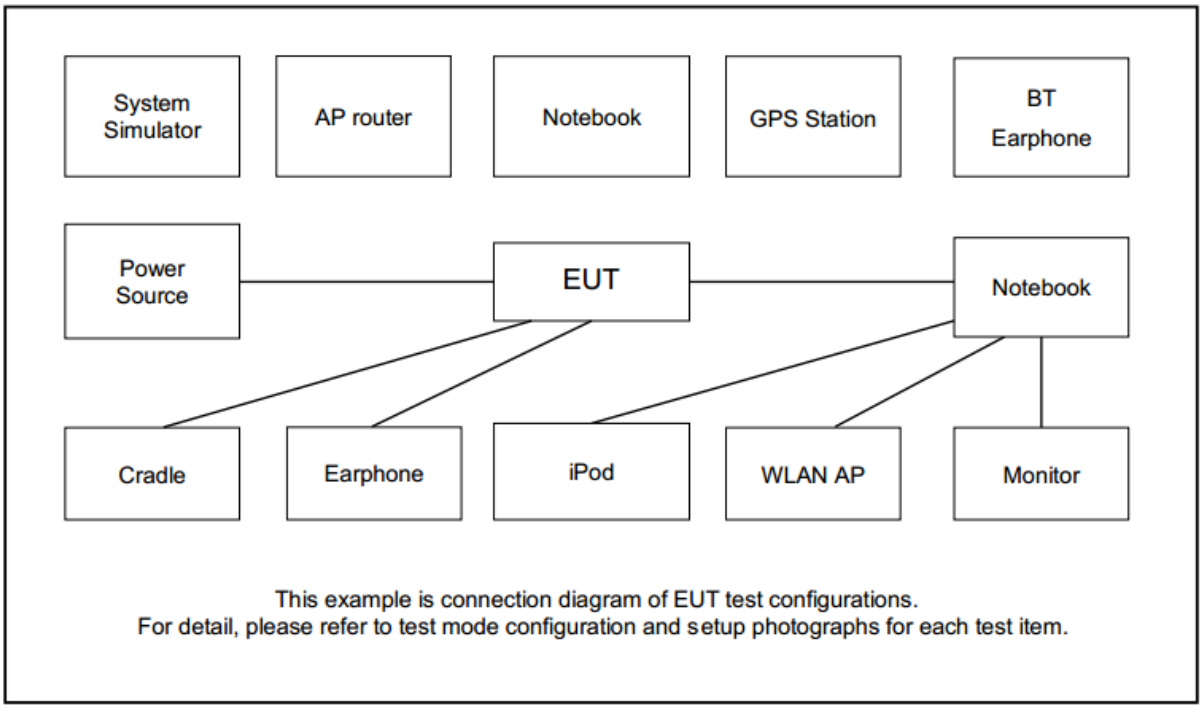
2.2 Test Mode

Final test mode of conducted test items and radiated spurious emissions are considering the modulation and worse data rates as below table.

Modulation	Data Rate
802.11b	**1 Mbps**
802.11g	**6 Mbps**
802.11n HT20	**MCS0**

Test Cases	
AC Conducted Emission	Mode 1 : WLAN Link

2.3 Connection Diagram of Test System



2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8 m
2.	iPod	Apple	A1199	FCC DoC	Shielded, 1.0 m	N/A
3.	Notebook	DELL	Latitude E3340	FCC DoC/ Contains FCC ID: PD97260NGU	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m

2.5 EUT Operation Test Setup

The RF test items, programmed RF utility, “Radio Tool” installed in the notebook make the EUT provide functions like channel selection and power level for continuous transmitting and receiving signals.

2.6 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example :

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

= 4.2 + 10 = 14.2 (dB)

3 Test Result

3.1 6dB and 99% Bandwidth Measurement

3.1.1 Limit of 6dB and 99% Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz.

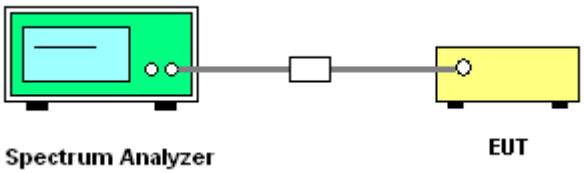
3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedures

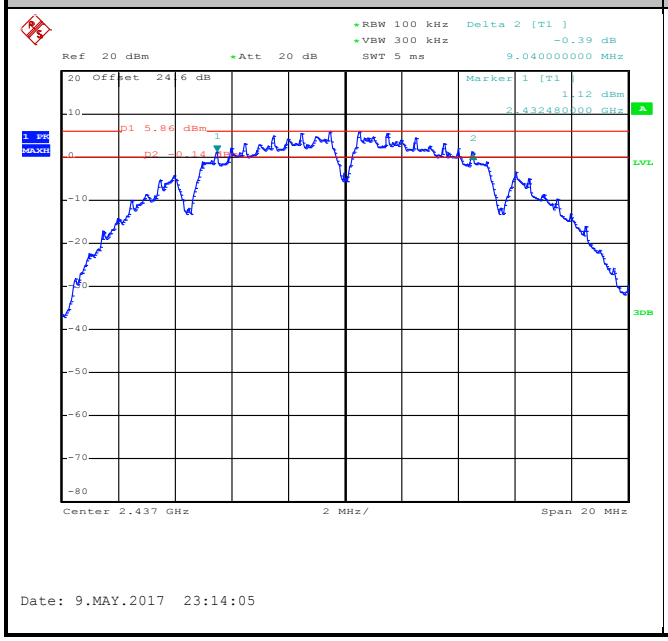
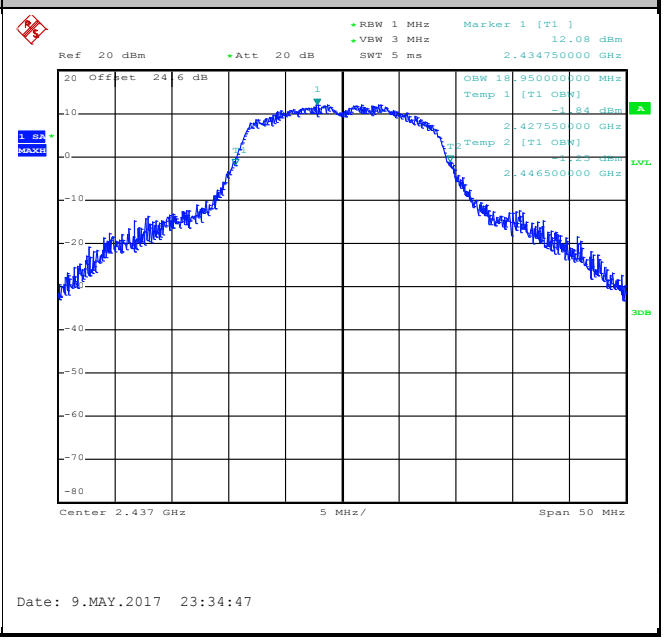
1. The testing follows FCC KDB Publication No. 558074 DTS D01 Meas. Guidance v04.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 kHz.
5. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) = 1MHz and set the Video bandwidth (VBW) = 3MHz.
6. Measure and record the results in the test report.

3.1.4 Test Setup



3.1.5 Test Result of 6dB and 99% Occupied Bandwidth

Please refer to Appendix A.

Minimum 6dB Bandwidth	Maximum 99% Occupied Bandwidth
	

Note : The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

3.2 Output Power Measurement

3.2.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm. If transmitting antenna of directional gain greater than 6dBi are used the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

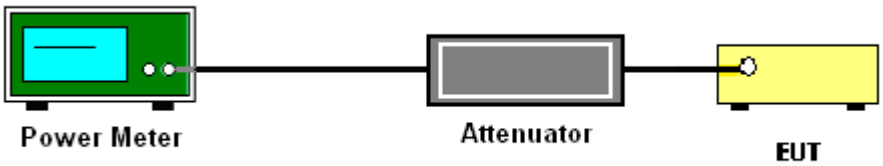
3.2.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.2.3 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v04 section 9.1.2 PKPM1 Peak power meter method.
2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.

3.2.4 Test Setup



3.2.5 Test Result of Peak Output Power

Please refer to Appendix A.

3.2.6 Test Result of Average output Power (Reporting Only)

Please refer to Appendix A.

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.

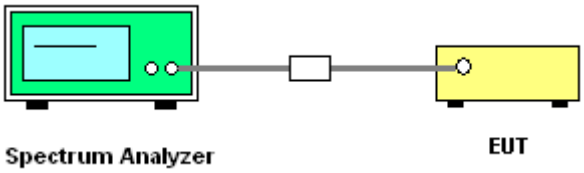
3.3.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.3.3 Test Procedures

1. The testing follows Measurement Procedure 10.2 Method PKPSD of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v04
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
6. Measure and record the results in the test report.

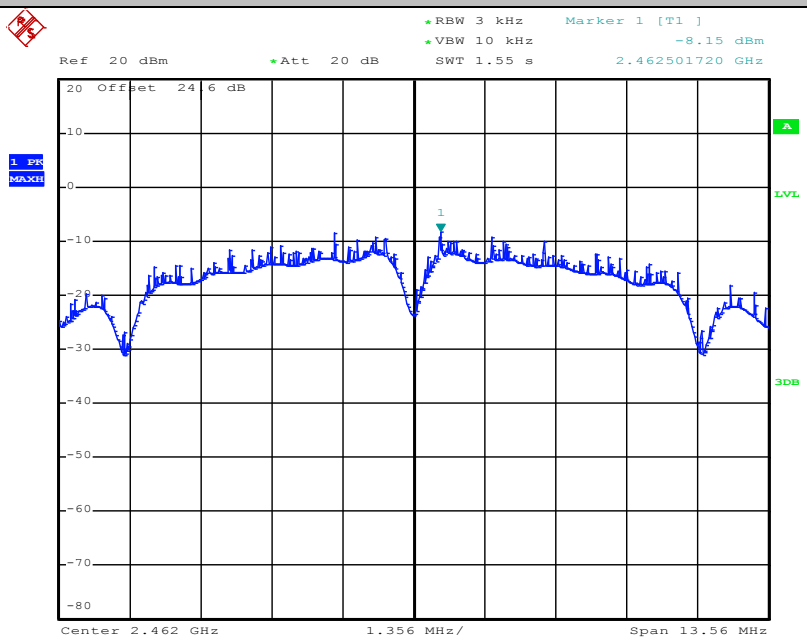
3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

Worst Case Power Density (dBm/3kHz)



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3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission Measurement

In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement.

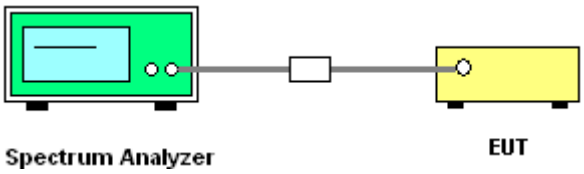
3.4.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.4.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v04.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d).
5. Measure and record the results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.4.4 Test Setup

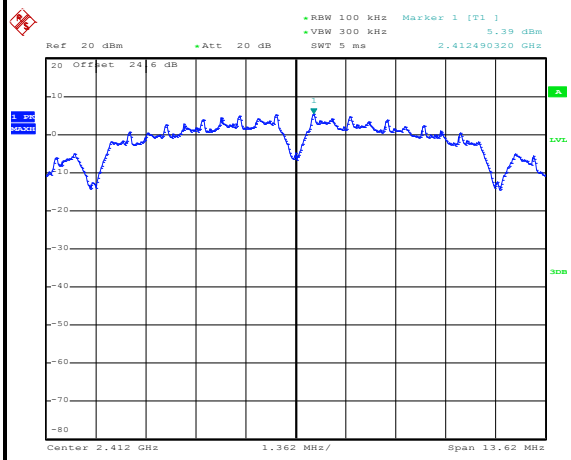


3.4.5 Test Result of Conducted Band Edges and Spurious Emission

Test Mode :	802.11b	**Temperature :**	21~25℃
Test Band :	2.4GHz Low	**Relative Humidity :**	51~54%
Test Channel :	01	**Test Engineer :**	Derek Hsu

WLAN 802.11b Channel 01

100kHz PSD reference Level



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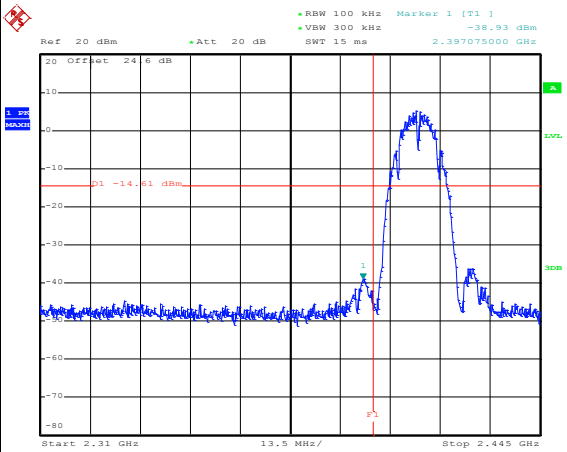
Low Channel Plot



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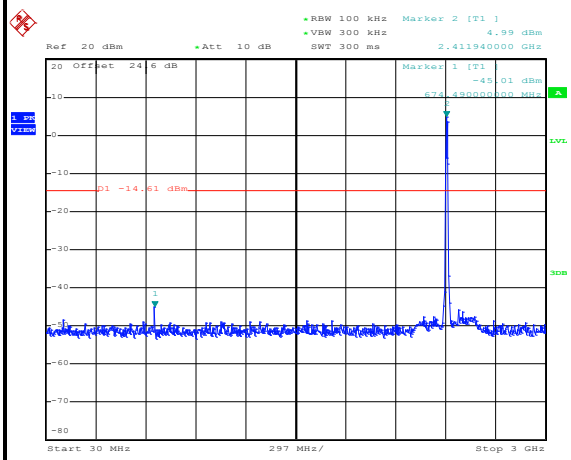
Spurious Emission 30MHz~3GHz



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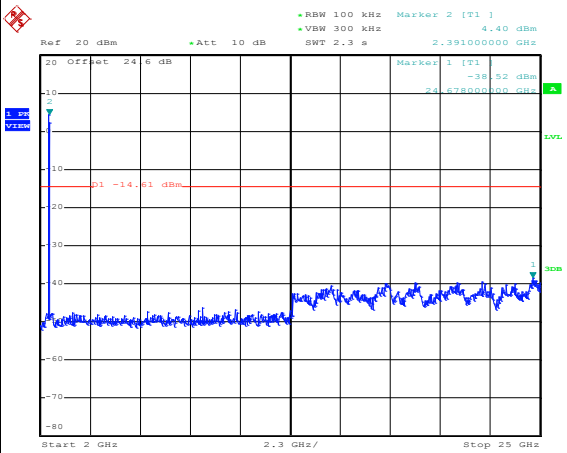
Spurious Emission 2GHz~25GHz



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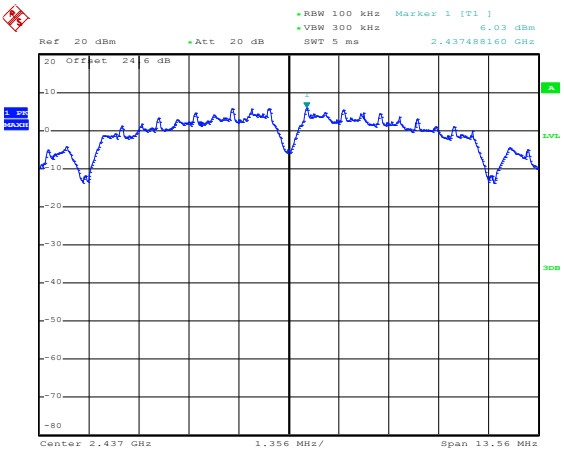
Test Mode :	802.11b	**Temperature :**	21~25℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	51~54%
Test Channel :	06	**Test Engineer :**	Derek Hsu

WLAN 802.11b Channel 06

100kHz PSD reference Level



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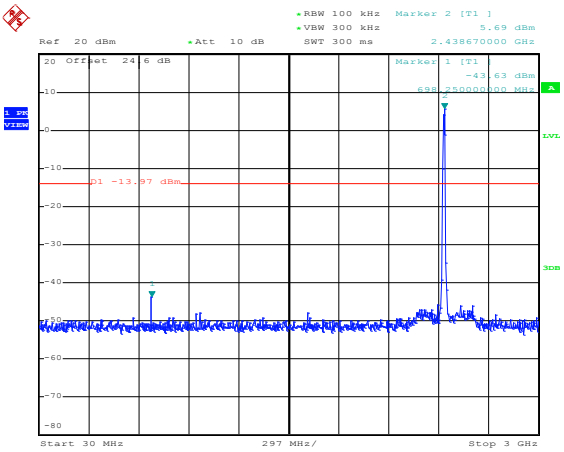
Spurious Emission 30MHz~3GHz



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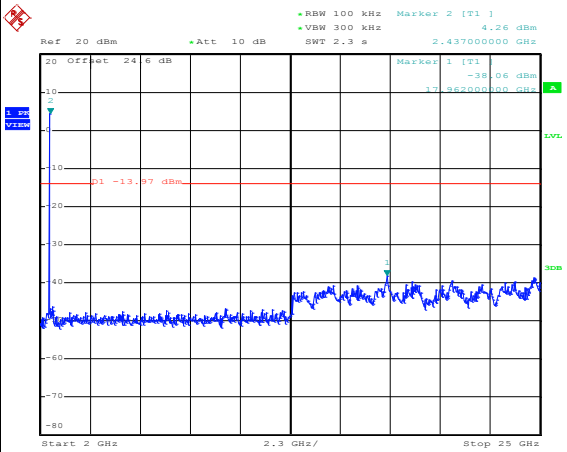
Spurious Emission 2GHz~25GHz



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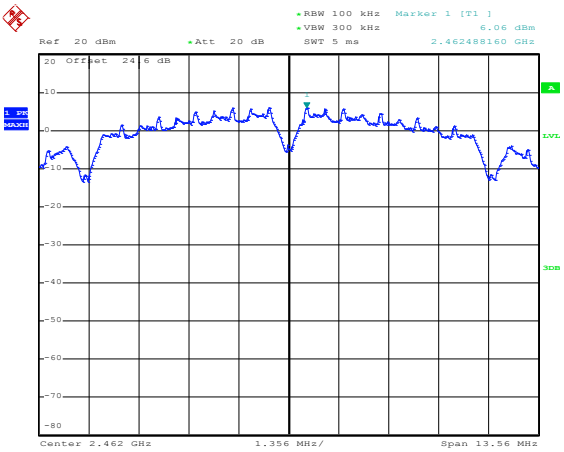
Test Mode :	802.11b	**Temperature :**	21~25℃
Test Band :	2.4GHz High	**Relative Humidity :**	51~54%
Test Channel :	11	**Test Engineer :**	Derek Hsu

WLAN 802.11b Channel 11

100kHz PSD reference Level



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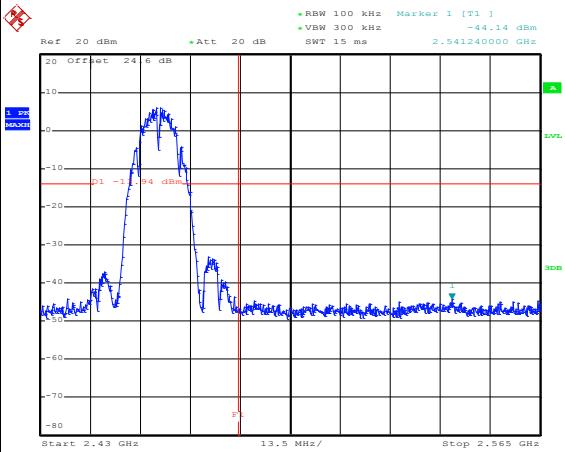
High Channel Plot



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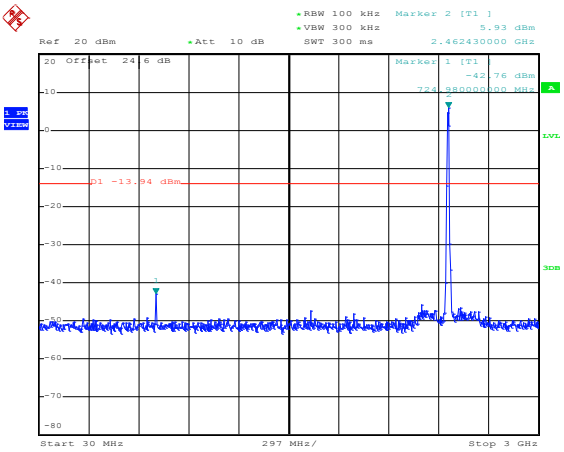
Spurious Emission 30MHz~3GHz



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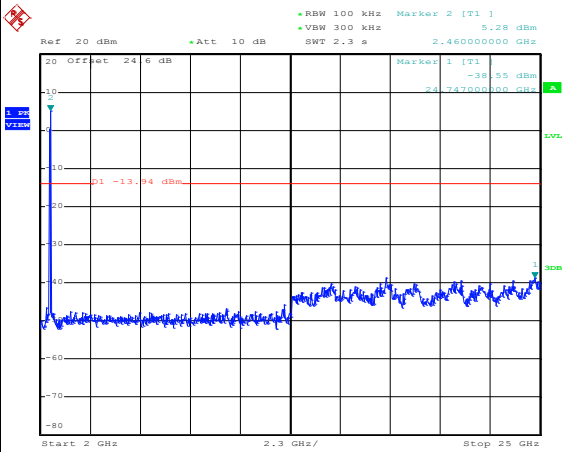
Spurious Emission 2GHz~25GHz



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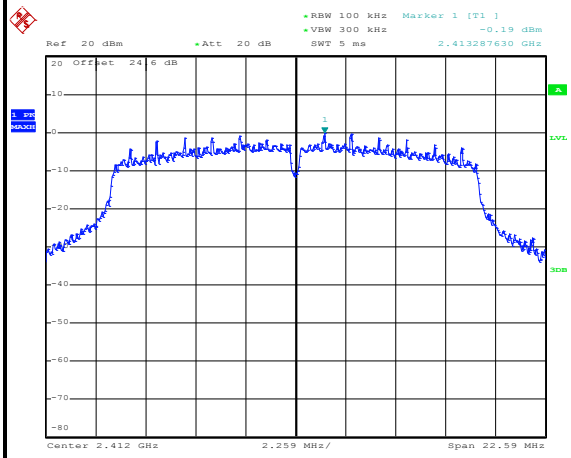
Test Mode :	802.11g	**Temperature :**	21~25℃
Test Band :	2.4GHz Low	**Relative Humidity :**	51~54%
Test Channel :	01	**Test Engineer :**	Derek Hsu

WLAN 802.11g Channel 01

100kHz PSD reference Level



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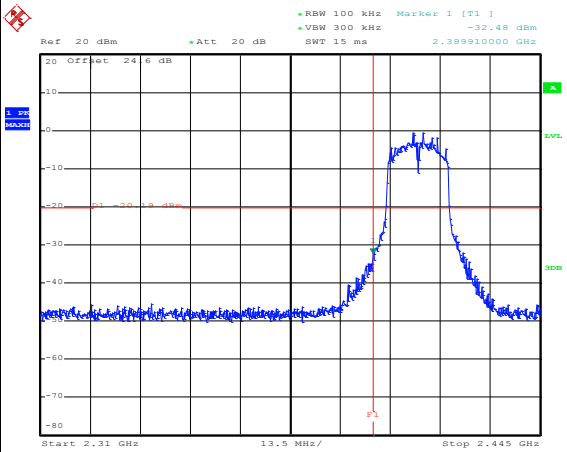
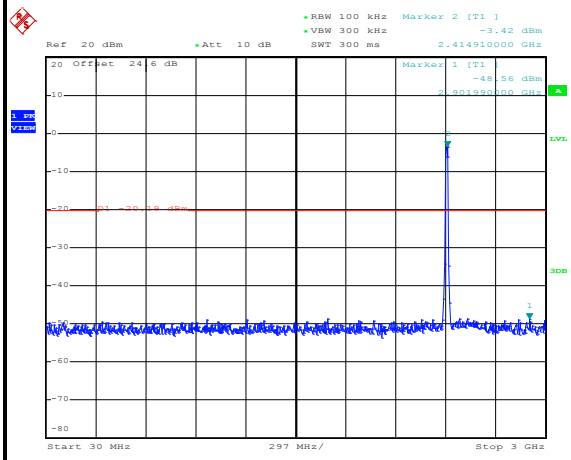
Low Channel Plot



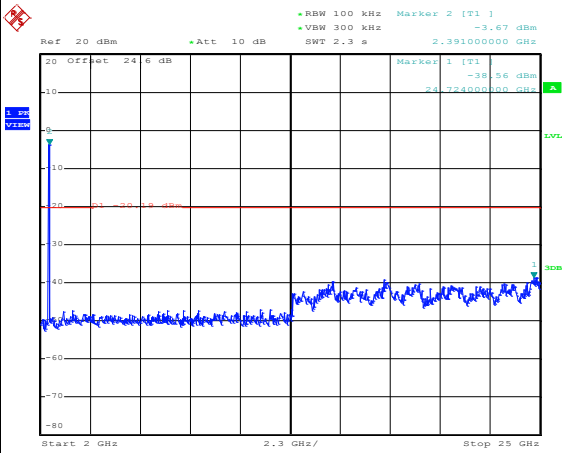
Date: 9.MAY.2017 23:20:08

Spurious Emission 30MHz~3GHz



Date: 9.MAY.2017 23:20:21

Spurious Emission 2GHz~25GHz

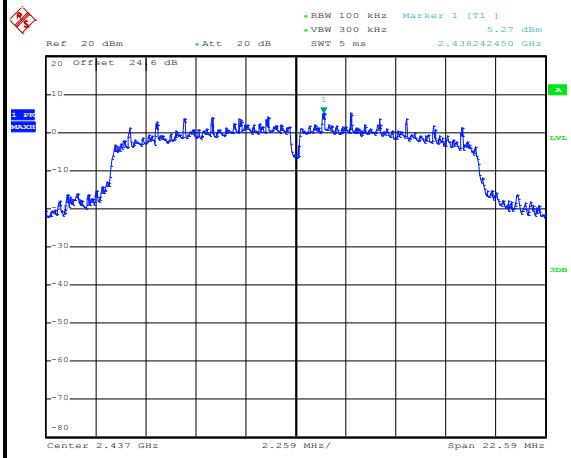


Date: 9.MAY.2017 23:20:30

Test Mode :	802.11g	**Temperature :**	21~25℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	51~54%
Test Channel :	06	**Test Engineer :**	Derek Hsu

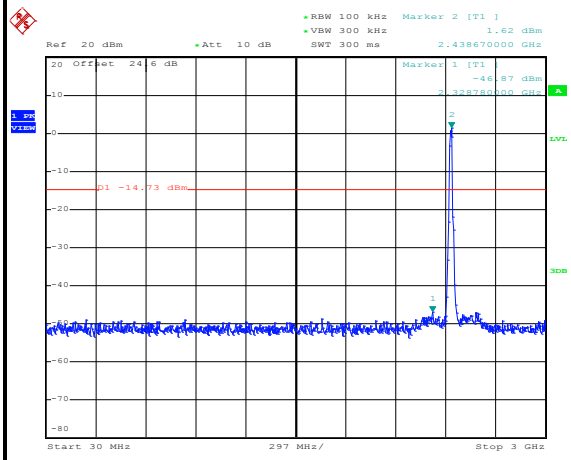
WLAN 802.11g Channel 06

100kHz PSD reference Level



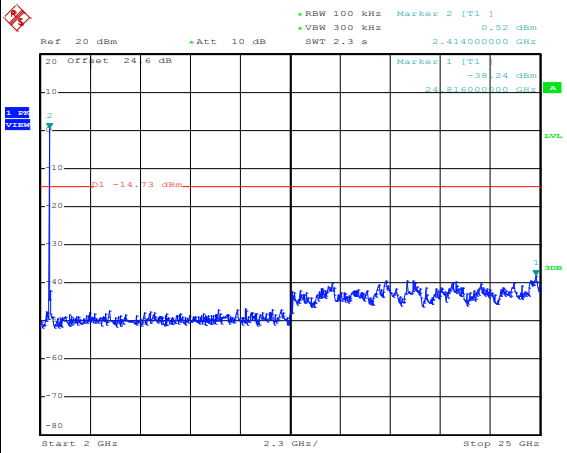
Date: 9.MAY.2017 23:22:48

Spurious Emission 30MHz~3GHz



Date: 9.MAY.2017 23:22:59

Spurious Emission 2GHz~25GHz

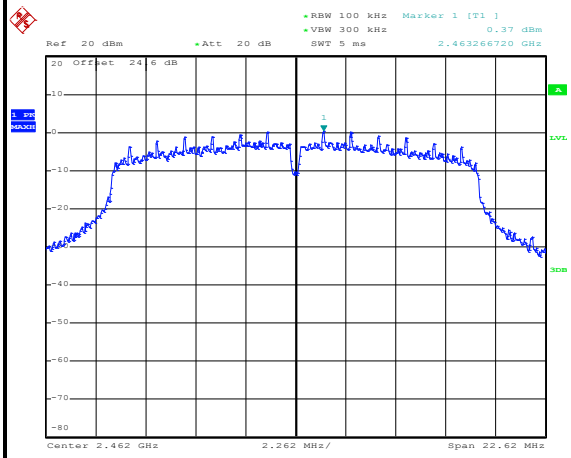


Date: 9.MAY.2017 23:23:08

Test Mode :	802.11g	**Temperature :**	21~25℃
Test Band :	2.4GHz High	**Relative Humidity :**	51~54%
Test Channel :	11	**Test Engineer :**	Derek Hsu

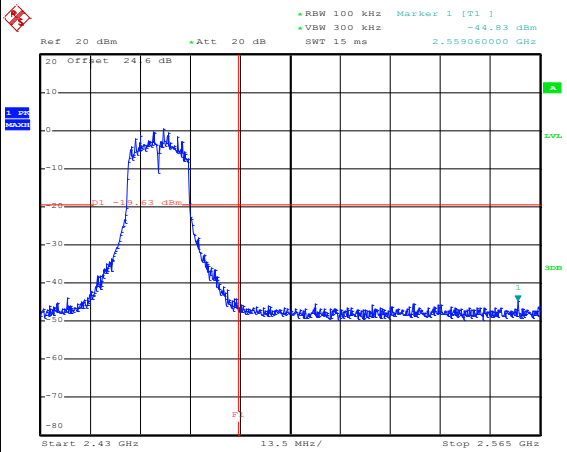
WLAN 802.11g Channel 11

100kHz PSD reference Level



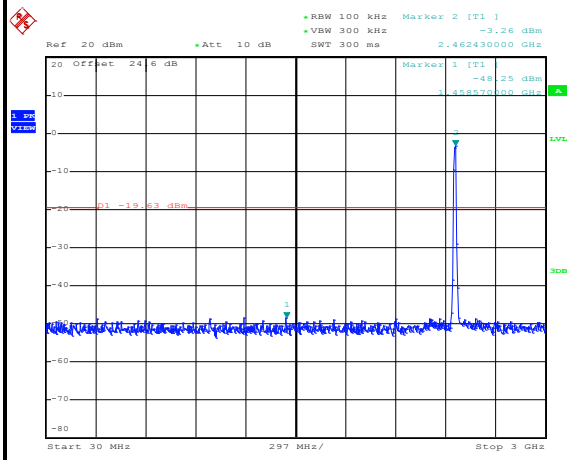
Date: 9.MAY.2017 23:27:17

High Channel Plot



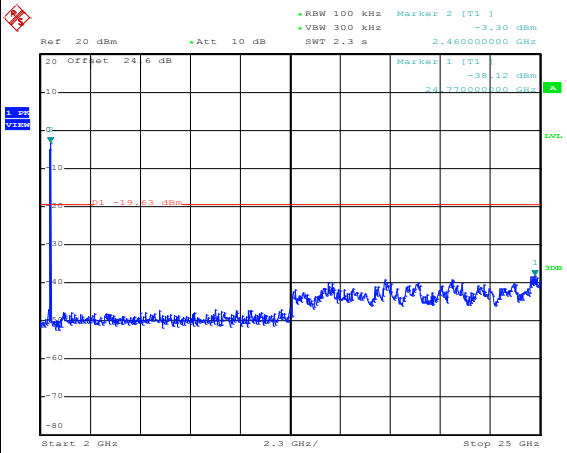
Date: 9.MAY.2017 23:27:31

Spurious Emission 30MHz~3GHz



Date: 9.MAY.2017 23:27:44

Spurious Emission 2GHz~25GHz

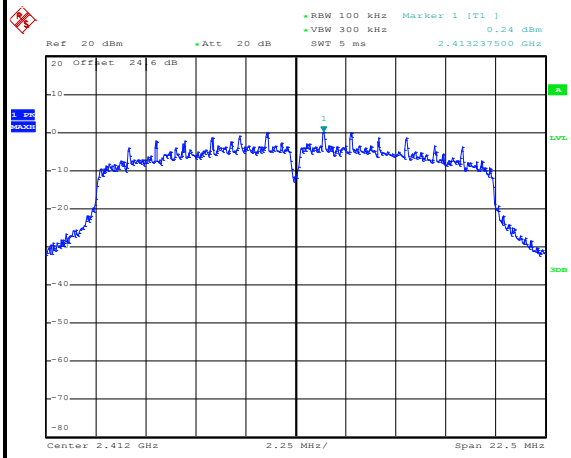


Date: 9.MAY.2017 23:27:52

Test Mode :	802.11n HT20	**Temperature :**	21~25℃
Test Band :	2.4GHz Low	**Relative Humidity :**	51~54%
Test Channel :	01	**Test Engineer :**	Derek Hsu

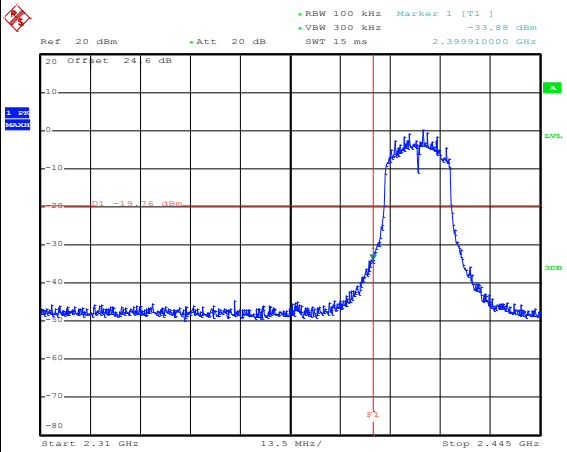
WLAN 802.11n HT20 Channel 01

100kHz PSD reference Level



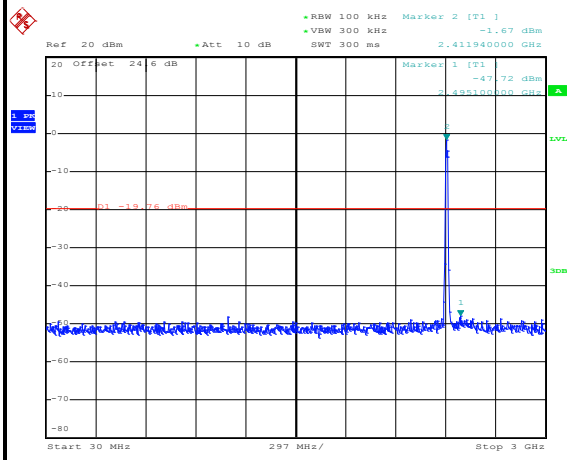
Date: 9.MAY.2017 23:30:33

Low Channel Plot



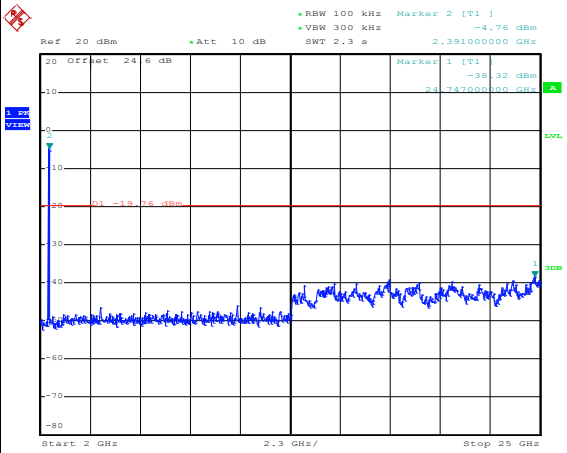
Date: 9.MAY.2017 23:30:50

Spurious Emission 30MHz~3GHz



Date: 9.MAY.2017 23:31:06

Spurious Emission 2GHz~25GHz

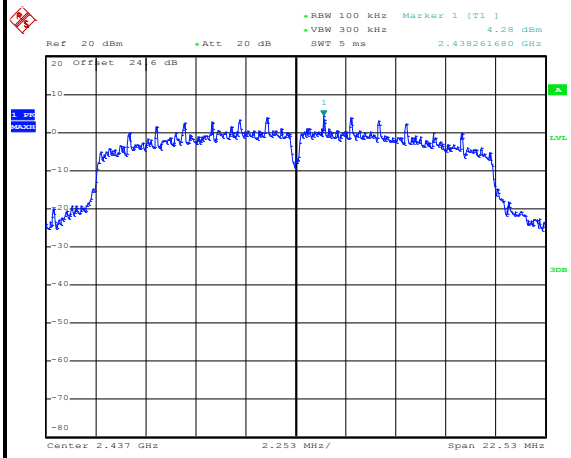


Date: 9.MAY.2017 23:31:14

Test Mode :	802.11n HT20	**Temperature :**	21~25℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	51~54%
Test Channel :	06	**Test Engineer :**	Derek Hsu

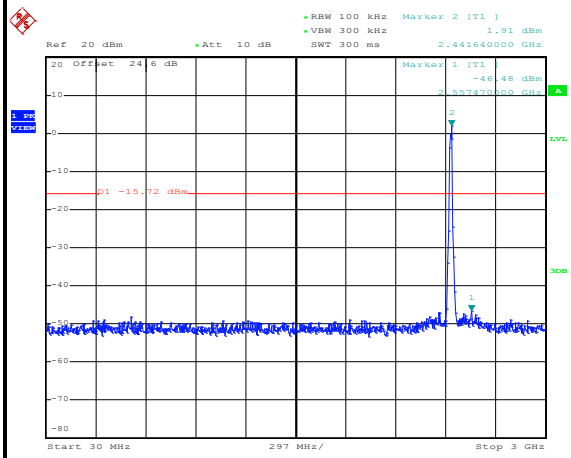
WLAN 802.11n HT20 Channel 06

100kHz PSD reference Level



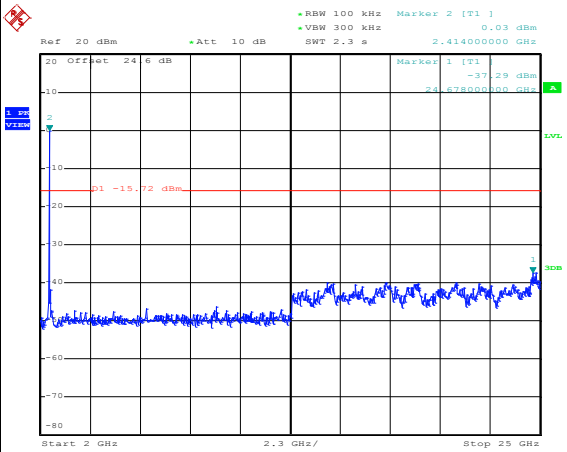
Date: 9.MAY.2017 23:33:43

Spurious Emission 30MHz~3GHz



Date: 9.MAY.2017 23:33:56

Spurious Emission 2GHz~25GHz

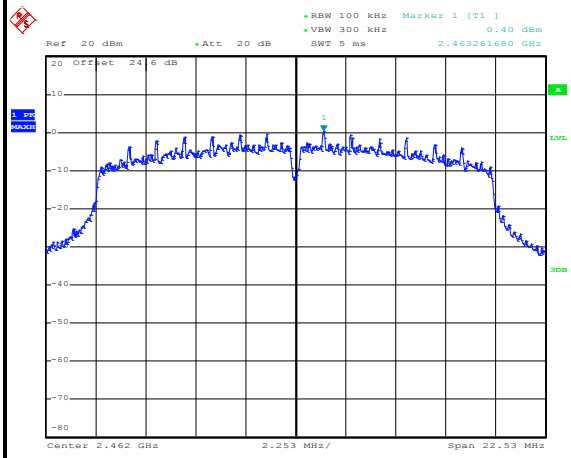


Date: 9.MAY.2017 23:34:05

Test Mode :	802.11n HT20	**Temperature :**	21~25℃
Test Band :	2.4GHz High	**Relative Humidity :**	51~54%
Test Channel :	11	**Test Engineer :**	Derek Hsu

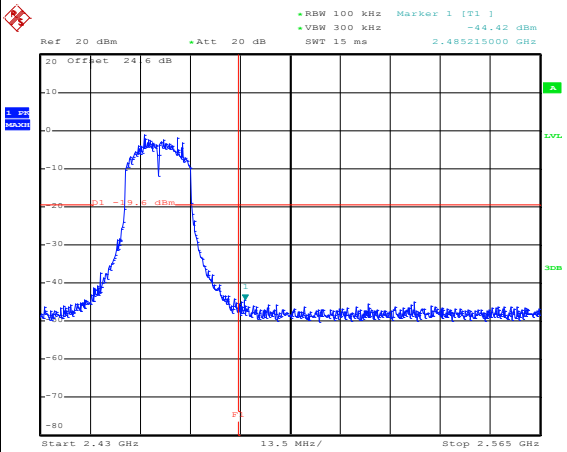
WLAN 802.11n HT20 Channel 11

100kHz PSD reference Level



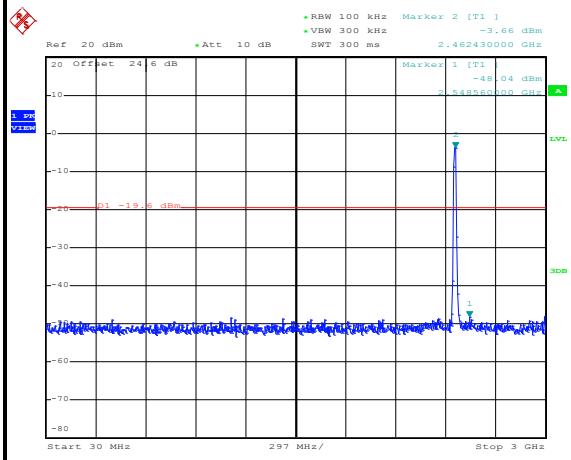
Date: 9.MAY.2017 23:51:37

High Channel Plot



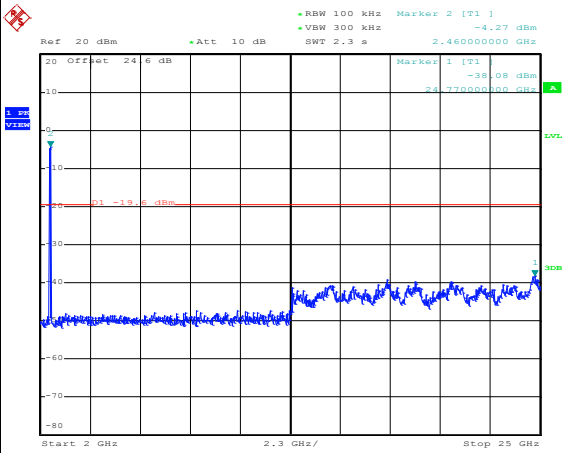
Date: 9.MAY.2017 23:51:50

Spurious Emission 30MHz~3GHz



Date: 9.MAY.2017 23:52:28

Spurious Emission 2GHz~25GHz



Date: 9.MAY.2017 23:52:36

3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated band edge and Spurious Emission Measurement

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the limits as below.

Frequency (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

3.5.2 Measuring Instruments

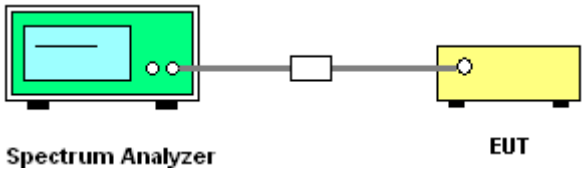
The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

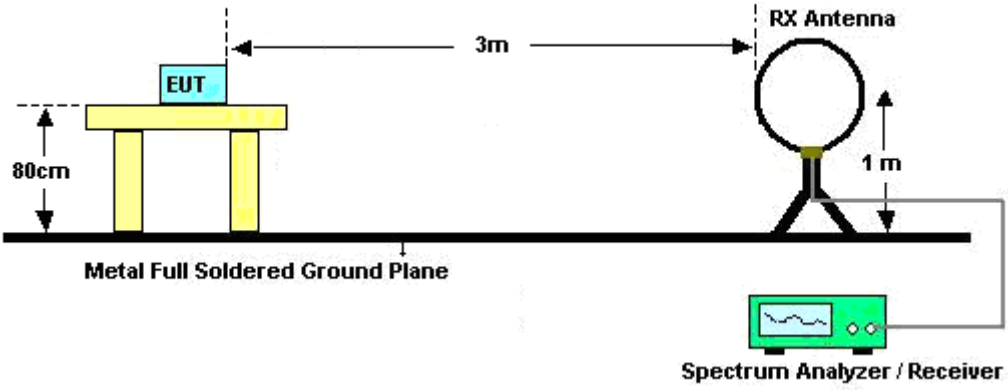
1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v04.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
7. Use the following spectrum analyzer settings:
   (1) Span shall wide enough to fully capture the emission being measured;
   (2) Set RBW=100 kHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
   (3) Set RBW = 1 MHz, VBW= 3MHz for f ≥ 1 GHz for peak measurement.
   For average measurement:
   - VBW = 10 Hz, when duty cycle is no less than 98 percent.
   - VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

3.5.4 Test Setup

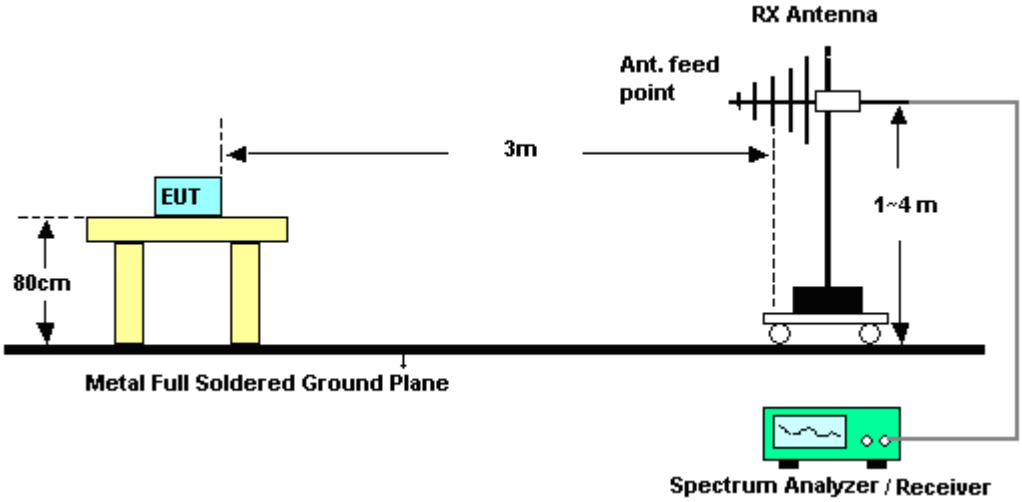
For Conducted Measurement Setup:



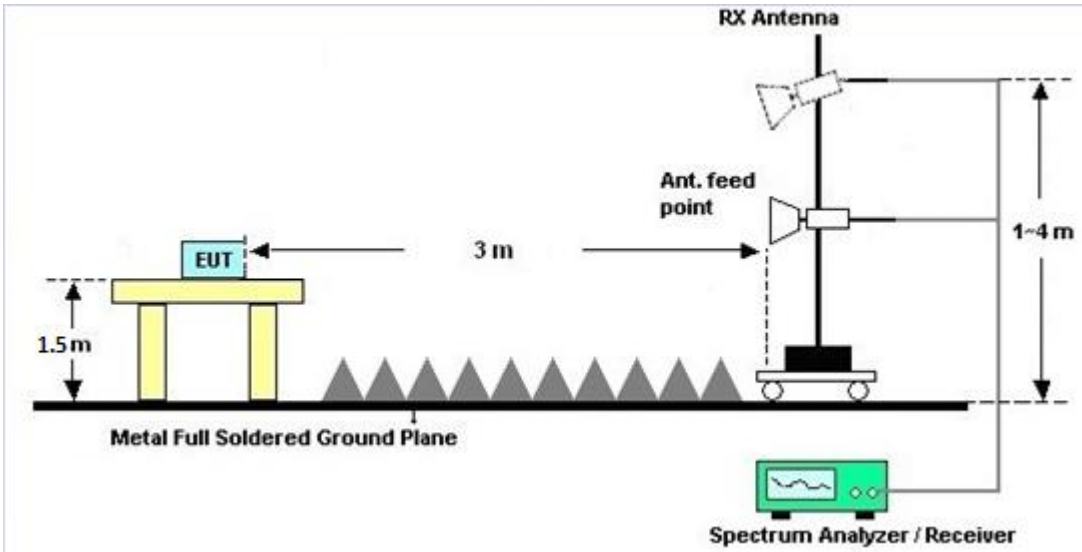
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.5.5 Test Results of Radiated Spurious Emissions (9kHz ~ 30MHz)

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

3.5.6 Test Result of Conducted Spurious at Band Edges in the Restricted Band

Please refer to Appendix C and D.

3.5.7 Test Result of Conducted Spurious Emission in the Restricted Band

Please refer to Appendix C and D.

3.5.8 Test Result of Cabinet Radiated Spurious at Band Edges

Please refer to Appendix E and F.

3.5.9 Test Result of Cabinet Radiated Spurious Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix E and F.

3.5.10 Duty Cycle

Please refer to Appendix G.

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

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

*Decreases with the logarithm of the frequency.

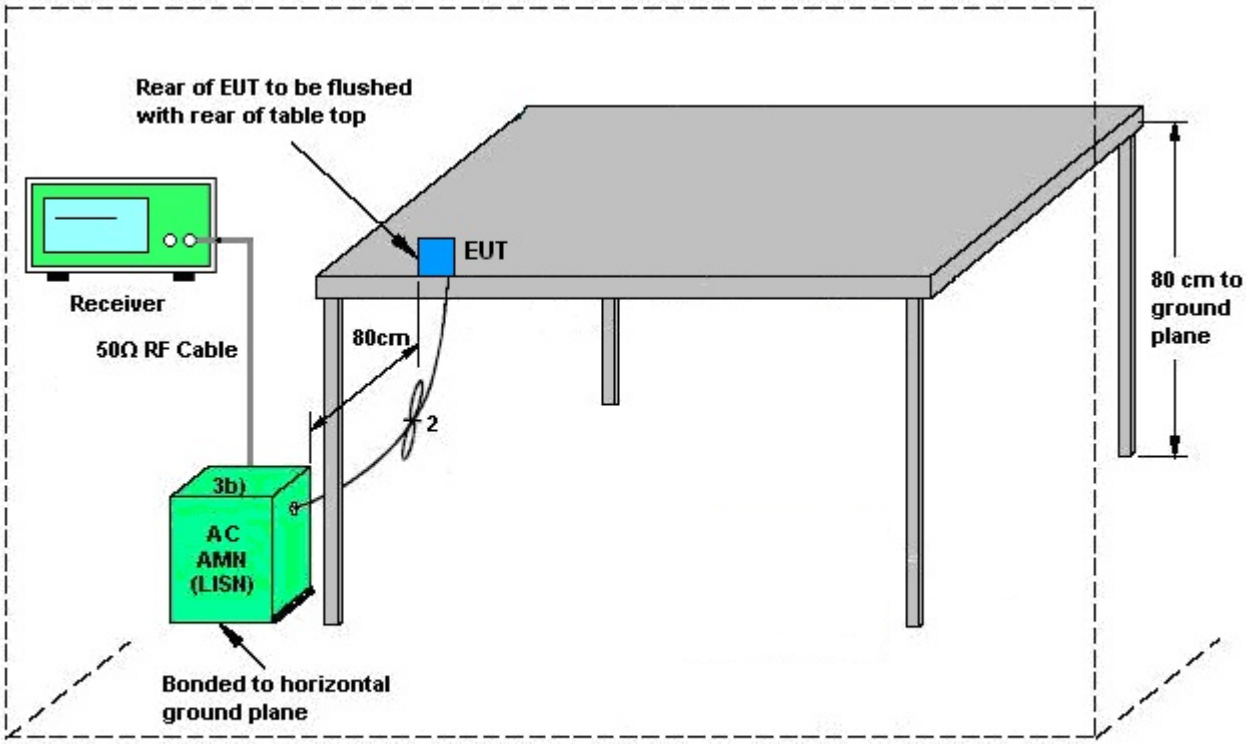
3.6.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.6.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF bandwidth = 9kHz) with Maximum Hold Mode.

3.6.4 Test Setup



AMN = Artificial mains network (LISN)
AE = Associated equipment
EUT = Equipment under test
ISN = Impedance stabilization network

3.6.5 Test Result of AC Conducted Emission

Please refer to Appendix B.

3.7 Antenna Requirements

3.7.1 Standard Applicable

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the rule.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Power Meter	Anritsu	ML2495A	0932001	300MHz~40GHz	Sep. 29, 2016	Apr. 19, 2017 ~ May 10, 2017	Sep. 28, 2017	Conducted (TH05-HY)
Power Sensor	Anritsu	MA2411B	0846202	300MHz~40GHz	Sep. 29, 2016	Apr. 19, 2017 ~ May 10, 2017	Sep. 28, 2017	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz-40GHz	Jul. 17, 2016	Apr. 19, 2017 ~ May 10, 2017	Jul. 16, 2017	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Apr. 18, 2017	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Aug. 30, 2016	Apr. 18, 2017	Aug. 29, 2017	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Nov. 29, 2016	Apr. 18, 2017	Nov. 28, 2017	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Dec. 06, 2016	Apr. 18, 2017	Dec. 05, 2017	Conduction (CO05-HY)
Spectrum Analyzer	Agilent	N9030A	MY52350276	3Hz~44GHz	Mar. 23, 2017	May 07, 2017	Mar. 22, 2018	Radiation (03CH13-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Oct. 20, 2016	May 30, 2017 ~ May 31, 2017	Oct. 19, 2018	Radiation (03CH15-HY)
EMI Test Receiver	Keysight	N9038A (MXE)	MY55420170	N/A	Mar. 03, 2017	May 30, 2017 ~ May 31, 2017	Mar. 02, 2018	Radiation (03CH15-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170576	18GHz ~ 40GHz	Apr. 27, 2017	May 30, 2017 ~ May 31, 2017	Apr. 26, 2018	Radiation (03CH15-HY)
Preamplifier	MITEQ	JS44-18004000-33-8P	1840917	18GHz ~ 40GHz	Jun. 14, 2016	May 30, 2017 ~ May 31, 2017	Jun. 13, 2017	Radiation (03CH15-HY)
Amplifier	SONOMA	310N	363440	9kHz~1GHz	Nov. 09, 2016	May 30, 2017 ~ May 31, 2017	Nov. 08, 2017	Radiation (03CH15-HY)
Bilog Antenna	TESEQ	CBL6111D&00800N1D01N-06	41912&05	30MHz to 1GHz	Jan. 07, 2017	May 30, 2017 ~ May 31, 2017	Jan. 06, 2018	Radiation (03CH15-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1620	1G~18GHz	Sep. 30, 2016	May 30, 2017 ~ May 31, 2017	Sep. 29, 2017	Radiation (03CH15-HY)
Preamplifier	Keysight	83017A	MY53270195	1GHz~26.5GHz	Aug. 24, 2016	May 30, 2017 ~ May 31, 2017	Aug. 23, 2017	Radiation (03CH15-HY)
Preamplifier	MITEQ	AMF-7D-00101800	2025787	1GHZ~18GHZ	Feb. 13, 2017	May 30, 2017 ~ May 31, 2017	Feb. 12, 2018	Radiation (03CH15-HY)
Spectrum Analyzer	Agilent	N9030A	MY52350276	3Hz~44GHz	Mar. 23, 2017	May 30, 2017 ~ May 31, 2017	Mar. 22, 2018	Radiation (03CH15-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	May 30, 2017 ~ May 31, 2017	N/A	Radiation (03CH15-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	May 30, 2017 ~ May 31, 2017	N/A	Radiation (03CH15-HY)

5 Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.70

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.14

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.48

Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.12

Appendix A. Test Result of Conducted Test Items

Test Engineer:	Derek Hsu	Temperature:	21~25	°C
Test Date:	2017/4/19~2017/05/10	Relative Humidity:	51~54	%

TEST RESULTS DATA
6dB and 99% Occupied Bandwidth

2.4GHz Band								
Mod.	Data Rate	N_{TX}	CH.	Freq. (MHz)	99% Occupied BW (MHz)	6dB BW (MHz)	6dB BW Limit (MHz)	Pass/Fail
11b	1Mbps	1	1	2412	14.15	9.08	0.50	Pass
11b	1Mbps	1	6	2437	14.15	9.04	0.50	Pass
11b	1Mbps	1	11	2462	14.15	9.04	0.50	Pass
11g	6Mbps	1	1	2412	17.45	15.06	0.50	Pass
11g	6Mbps	1	6	2437	18.55	15.06	0.50	Pass
11g	6Mbps	1	11	2462	17.20	15.08	0.50	Pass
HT20	MCS0	1	1	2412	18.30	15.00	0.50	Pass
HT20	MCS0	1	6	2437	18.95	15.02	0.50	Pass
HT20	MCS0	1	11	2462	18.30	15.02	0.50	Pass

Report Number : FR731625

TEST RESULTS DATA
Peak Power Table

2.4GHz Band										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Peak Conducted Power (dBm)	Conducted Power Limit (dBm)	DG (dBi)	EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail
11b	1Mbps	1	1	2412	18.11	30.00	2.50	20.61	36.00	Pass
11b	1Mbps	1	6	2437	18.50	30.00	2.50	21.00	36.00	Pass
11b	1Mbps	1	11	2462	18.56	30.00	2.50	21.06	36.00	Pass
11g	6Mbps	1	1	2412	19.65	30.00	2.50	22.15	36.00	Pass
11g	6Mbps	1	6	2437	20.31	30.00	2.50	22.81	36.00	Pass
11g	6Mbps	1	11	2462	19.56	30.00	2.50	22.06	36.00	Pass
HT20	MCS0	1	1	2412	19.48	30.00	2.50	21.98	36.00	Pass
HT20	MCS0	1	6	2437	20.08	30.00	2.50	22.58	36.00	Pass
HT20	MCS0	1	11	2462	19.47	30.00	2.50	21.97	36.00	Pass

Report Number : FR731625

TEST RESULTS DATA
Average Power Table
(Reporting Only)

2.4GHz Band						
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)
11b	1Mbps	1	1	2412	0.17	16.60
11b	1Mbps	1	6	2437	0.17	16.70
11b	1Mbps	1	11	2462	0.17	16.80
11g	6Mbps	1	1	2412	0.39	11.90
11g	6Mbps	1	6	2437	0.39	16.30
11g	6Mbps	1	11	2462	0.39	11.90
HT20	MCS0	1	1	2412	0.33	12.00
HT20	MCS0	1	6	2437	0.33	16.30
HT20	MCS0	1	11	2462	0.33	11.90

Report Number : FR731625

TEST RESULTS DATA
Peak Power Density

2.4GHz Band								
Mod.	Data Rate	N_{TX}	CH.	Freq. (MHz)	Peak PSD (dBm /3kHz)	DG (dBi)	Peak PSD Limit (dBm /3kHz)	Pass/Fail
11b	1Mbps	1	1	2412	-9.00	2.50	8.00	Pass
11b	1Mbps	1	6	2437	-9.53	2.50	8.00	Pass
11b	1Mbps	1	11	2462	-8.15	2.50	8.00	Pass
11g	6Mbps	1	1	2412	-16.65	2.50	8.00	Pass
11g	6Mbps	1	6	2437	-11.46	2.50	8.00	Pass
11g	6Mbps	1	11	2462	-14.68	2.50	8.00	Pass
HT20	MCS0	1	1	2412	-16.53	2.50	8.00	Pass
HT20	MCS0	1	6	2437	-12.14	2.50	8.00	Pass
HT20	MCS0	1	11	2462	-14.80	2.50	8.00	Pass

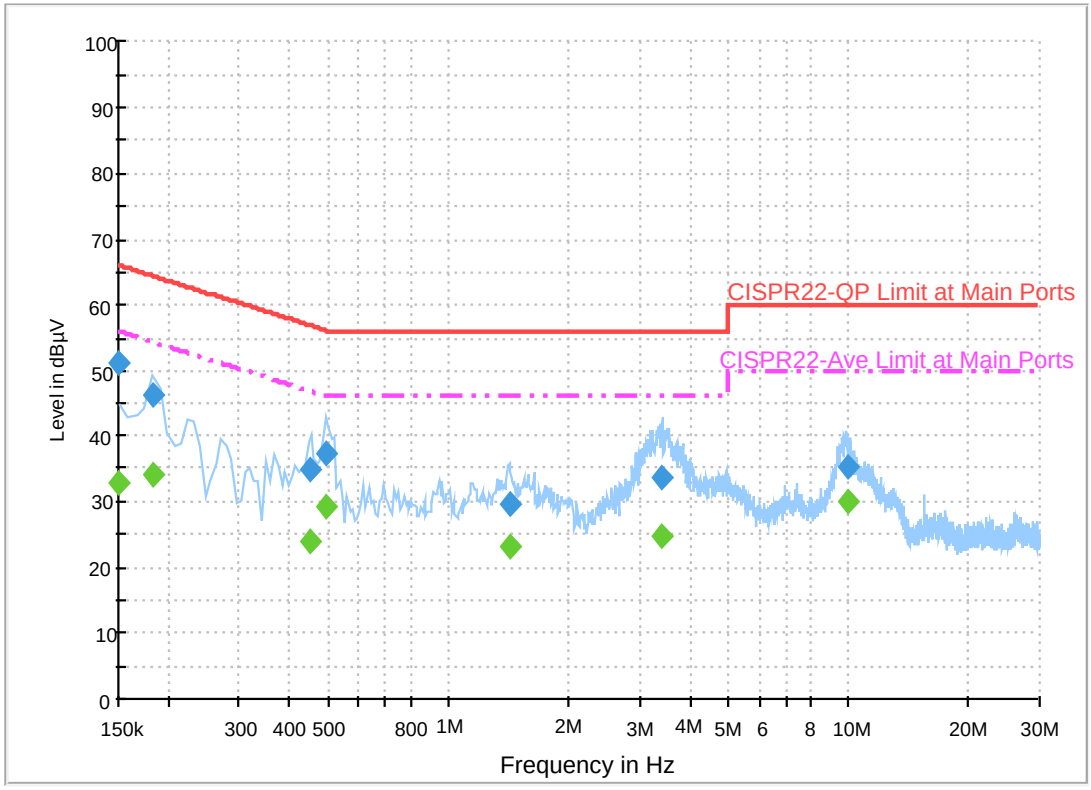
Appendix B. AC Conducted Emission Test Results

Test Engineer :	Eric Jeng	Temperature :	23~25℃
		Relative Humidity :	52~56%

EUT Information

Report NO : 710607-1
Test Mode : Mode 1
Test Voltage : 120Vac/60Hz
Phase : Line

ENV216 Auto Test-L



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	51.3	Off	L1	19.6	14.7	66.0
0.182000	46.2	Off	L1	19.5	18.2	64.4
0.454000	35.2	Off	L1	19.5	21.6	56.8
0.494000	37.5	Off	L1	19.5	18.6	56.1
1.422000	29.8	Off	L1	19.5	26.2	56.0
3.422000	33.8	Off	L1	19.5	22.2	56.0
9.958000	35.3	Off	L1	19.7	24.7	60.0

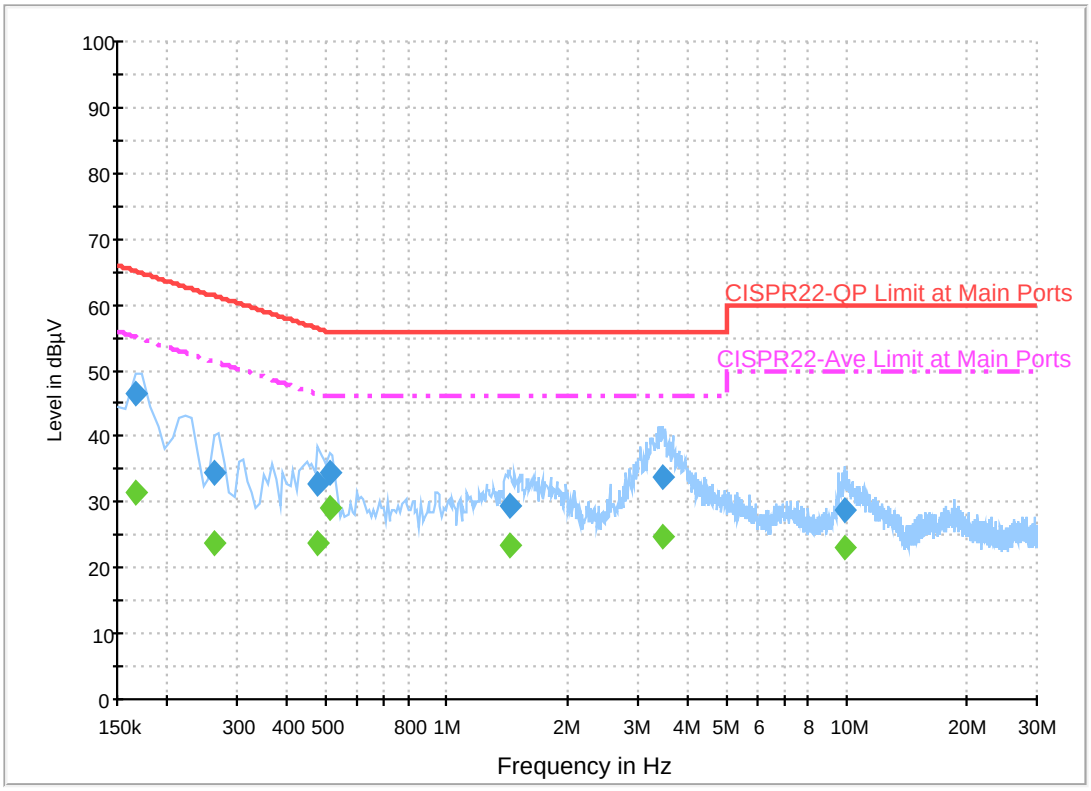
Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	32.8	Off	L1	19.6	23.2	56.0
0.182000	34.0	Off	L1	19.5	20.4	54.4
0.454000	24.1	Off	L1	19.5	22.7	46.8
0.494000	29.1	Off	L1	19.5	17.0	46.1
1.422000	23.4	Off	L1	19.5	22.6	46.0
3.422000	24.8	Off	L1	19.5	21.2	46.0
9.958000	30.1	Off	L1	19.7	19.9	50.0

EUT Information

Report NO :	731625
Test Mode :	Mode 1
Test Voltage :	120Vac/60Hz
Phase :	Neutral

ENV216 Auto Test-N



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.166000	46.7	Off	N	19.5	18.5	65.2
0.262000	34.4	Off	N	19.5	27.0	61.4
0.478000	32.7	Off	N	19.5	23.7	56.4
0.510000	34.5	Off	N	19.5	21.5	56.0
1.438000	29.6	Off	N	19.5	26.4	56.0
3.486000	33.8	Off	N	19.5	22.2	56.0
9.950000	28.8	Off	N	19.7	31.2	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.166000	31.6	Off	N	19.5	23.6	55.2
0.262000	23.8	Off	N	19.5	27.6	51.4
0.478000	23.7	Off	N	19.5	22.7	46.4
0.510000	29.1	Off	N	19.5	16.9	46.0
1.438000	23.3	Off	N	19.5	22.7	46.0
3.486000	24.7	Off	N	19.5	21.3	46.0
9.950000	23.0	Off	N	19.7	27.0	50.0

Appendix C. Conducted Spurious Emission

Test Engineer :	Karl Hou	Temperature :	22~24°C
		Relative Humidity :	45~47%

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Gain	Path Loss	MIMO Factor	Grounding Factor	Peak Avg.
1		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(P/A)
802.11b CH 01 2412MHz		2331.84	-37.59	-16.39	-21.2	-43.07	2.5	2.98	0	0	P
		2330.895	-45.81	-4.61	-41.2	-51.29	2.5	2.98	0	0	A
	*	2412	13.78	-	-	8.22	2.5	3.06	0	0	P
	*	2412	10.42	-	-	4.86	2.5	3.06	0	0	A
802.11b CH 06 2437MHz		2355.78	-36.57	-15.37	-21.2	-42.07	2.5	3	0	0	P
		2355.78	-45.03	-3.83	-41.2	-50.53	2.5	3	0	0	A
	*	2437	14.11	-	-	8.55	2.5	3.06	0	0	P
	*	2437	10.89	-	-	5.33	2.5	3.06	0	0	A
		2499.23	-39.19	-17.99	-21.2	-44.78	2.5	3.09	0	0	P
		2490.06	-47.34	-6.14	-41.2	-52.93	2.5	3.09	0	0	A
802.11b CH 11 2462MHz	*	2462	14.04	-	-	8.47	2.5	3.07	0	0	P
	*	2462	10.81	-	-	5.24	2.5	3.07	0	0	A
		2489.99	-38.26	-17.06	-21.2	-43.85	2.5	3.09	0	0	P
		2485.92	-46.73	-5.53	-41.2	-52.32	2.5	3.09	0	0	A
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.										

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBm)	Over Limit (dB)	Limit Line (dBm)	Read Level (dBm)	Antenna Gain (dBi)	Path Loss (dB)	MIMO Factor (dB)	Grounding Factor (dB)	Peak Avg. (P/A)
802.11b CH 01 2412MHz		4018.7	-51.19	-29.99	-21.2	-58.38	2.5	4.69	0	0	P
		4824	-56.78	-35.58	-21.2	-64.23	2.5	4.95	0	0	P
802.11b CH 06 2437MHz		4061.4	-50.06	-28.86	-21.2	-57.27	2.5	4.71	0	0	P
		4874	-56.59	-35.39	-21.2	-64.05	2.5	4.96	0	0	P
		7311	-49.42	-28.22	-21.2	-58.42	2.5	6.5	0	0	P
802.11b CH 11 2462MHz		4104.1	-51.13	-29.93	-21.2	-58.37	2.5	4.74	0	0	P
		4924	-51.97	-30.77	-21.2	-59.43	2.5	4.96	0	0	P
		7386	-49.52	-28.32	-21.2	-58.57	2.5	6.55	0	0	P
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.										

2.4GHz 2400~2483.5MHz

WIFI 802.11g (Band Edge)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	MIMO	Grounding	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Avg.
1		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(P/A)
802.11g CH 01 2412MHz		2389.8	-36.89	-15.69	-21.2	-42.42	2.5	3.03	0	0	P
		2390	-47.08	-5.88	-41.2	-52.61	2.5	3.03	0	0	A
	*	2412	11.53	-	-	5.97	2.5	3.06	0	0	P
	*	2412	2.6	-	-	-2.96	2.5	3.06	0	0	A
802.11g CH 06 2437MHz		2362.22	-36.67	-15.47	-21.2	-42.18	2.5	3.01	0	0	P
		2353.96	-46.63	-5.43	-41.2	-52.13	2.5	3	0	0	A
	*	2437	16.31	-	-	10.75	2.5	3.06	0	0	P
	*	2437	7.29	-	-	1.73	2.5	3.06	0	0	A
		2495.59	-38.57	-17.37	-21.2	-44.16	2.5	3.09	0	0	P
		2499.86	-48.75	-7.55	-41.2	-54.34	2.5	3.09	0	0	A
802.11g CH 11 2462MHz	*	2462	11.21	-	-	5.64	2.5	3.07	0	0	P
	*	2462	2.33	-	-	-3.24	2.5	3.07	0	0	A
		2483.5	-36.33	-15.13	-21.2	-41.92	2.5	3.09	0	0	P
		2483.72	-47.57	-6.37	-41.2	-53.16	2.5	3.09	0	0	A
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.										

2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBm)	Over Limit (dB)	Limit Line (dBm)	Read Level (dBm)	Antenna Gain (dBi)	Path Loss (dB)	MIMO Factor (dB)	Grounding Factor (dB)	Peak Avg. (P/A)
802.11g CH 01 2412MHz		4024.8	-54.83	-33.63	-21.2	-62.02	2.5	4.69	0	0	P
		4824	-62.9	-41.7	-21.2	-70.35	2.5	4.95	0	0	P
802.11g CH 06 2437MHz		4061.4	-48.49	-27.29	-21.2	-55.7	2.5	4.71	0	0	P
		4874	-55.91	-34.71	-21.2	-63.37	2.5	4.96	0	0	P
		7311	-49.77	-28.57	-21.2	-58.77	2.5	6.5	0	0	P
802.11g CH 11 2462MHz		4104.1	-54.85	-33.65	-21.2	-62.09	2.5	4.74	0	0	P
		4924	-63.21	-42.01	-21.2	-70.67	2.5	4.96	0	0	P
		7386	-55.34	-34.14	-21.2	-64.39	2.5	6.55	0	0	P
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.										

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Band Edge)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	MIMO	Grounding	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Avg.
1		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(P/A)
802.11n HT20 CH 01 2412MHz		2389.8	-32.23	-11.03	-21.2	-37.76	2.5	3.03	0	0	P
		2389.485	-46.45	-5.25	-41.2	-51.98	2.5	3.03	0	0	A
	*	2412	11.11	-	-	5.55	2.5	3.06	0	0	P
	*	2412	2.53	-	-	-3.03	2.5	3.06	0	0	A
802.11n HT20 CH 06 2437MHz		2359	-37.43	-16.23	-21.2	-42.94	2.5	3.01	0	0	P
		2354.94	-46.43	-5.23	-41.2	-51.93	2.5	3	0	0	A
	*	2437	15.66	-	-	10.1	2.5	3.06	0	0	P
	*	2437	7.24	-	-	1.68	2.5	3.06	0	0	A
		2496.85	-38.89	-17.69	-21.2	-44.48	2.5	3.09	0	0	P
		2499.93	-48.77	-7.57	-41.2	-54.36	2.5	3.09	0	0	A
802.11n HT20 CH 11 2462MHz	*	2462	11.1	-	-	5.53	2.5	3.07	0	0	P
	*	2462	2.1	-	-	-3.47	2.5	3.07	0	0	A
		2484.32	-34.55	-13.35	-21.2	-40.14	2.5	3.09	0	0	P
		2483.68	-46.56	-5.36	-41.2	-52.15	2.5	3.09	0	0	A
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.										

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Harmonic)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBm)	Over Limit (dB)	Limit Line (dBm)	Read Level (dBm)	Antenna Gain (dBi)	Path Loss (dB)	MIMO Factor (dB)	Grounding Factor (dB)	Peak Avg. (P/A)
802.11n HT20 CH 01 2412MHz		4024.8	-54.13	-32.93	-21.2	-61.32	2.5	4.69	0	0	P
		4824	-64.41	-43.21	-21.2	-71.86	2.5	4.95	0	0	P
802.11n HT20 CH 06 2437MHz		4061.4	-51.52	-30.32	-21.2	-58.73	2.5	4.71	0	0	P
		4874	-55.84	-34.64	-21.2	-63.3	2.5	4.96	0	0	P
		7311	-43.47	-22.27	-21.2	-52.47	2.5	6.5	0	0	P
802.11n HT20 CH 11 2462MHz		4104.1	-53.9	-32.7	-21.2	-61.14	2.5	4.74	0	0	P
		4924	-59.99	-38.79	-21.2	-67.45	2.5	4.96	0	0	P
		7386	-53.17	-31.97	-21.2	-62.22	2.5	6.55	0	0	P
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.										

Emission below 1GHz

2.4GHz WIFI 802.11b (LF)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBm)	Over Limit (dB)	Limit Line (dBm)	Read Level (dBm)	Antenna Gain (dBi)	Path Loss (dB)	MIMO Factor (dB)	Grounding Factor (dB)	Peak Avg. (P/A)
2.4GHz 802.11b LF		47.55	-87.97	-32.77	-55.2	-95.58	2.5	0.41	0	4.7	P
		87.24	-88.01	-32.81	-55.2	-95.74	2.5	0.53	0	4.7	P
		167.16	-85.05	-33.35	-51.7	-93	2.5	0.75	0	4.7	P
		468	-86.93	-37.73	-49.2	-95.35	2.5	1.22	0	4.7	P
		728.4	-85.88	-36.68	-49.2	-94.64	2.5	1.56	0	4.7	P
		813.1	-69.78	-20.58	-49.2	-78.64	2.5	1.66	0	4.7	P
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.										

Note symbol

*	**Fundamental Frequency** which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is **over limit** line.
P/A	**P**eak or **A**verage

A calculation example for radiated spurious emission is shown as below:

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	MIMO	Grounding	Peak
Ant.				Limit	Line	Level	Gain	Loss	Factor	Factor	Avg.
1		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dBi)	(dB)	(dB)	(dB)	(P/A)
802.11b CH 01 2412MHz		2386.545	-39.03	-17.83	-21.2	-44.06	2	3.03	0	0	P
		2386.125	-48.1	-6.9	-41.2	-53.13	2	3.03	0	0	A

1. Level(dBm) =

Antenna Gain(dBi) + Path Loss(dB) + Read Level(dBm) + MIMO Factor(dB) + Grounding Factor(dB)

2. Over Limit(dB) = Level(dBm) – Limit Line(dBm)

For Peak Limit @ 2386.545MHz:

1. Level(dBm)

= Antenna Gain(dBi) + Path Loss(dB) + Read Level(dBm) + MIMO Factor(dB) + Grounding Factor(dB)

= 2(dB) + 3.03(dB) – 44.06(dBm)

= -39.03(dBm)

2. Over Limit(dB)

= Level(dBm) – Limit Line(dBm)

= -39.03(dBm) + 21.2(dBm)

= -17.83(dB)

For Average Limit @ 2386.125MHz:

1. Level(dBm)

= Antenna Gain(dBi) + Path Loss(dB) + Read Level(dBm) + MIMO Factor(dB) + Grounding Factor(dB)

= 2(dBi) + 3.03(dB) – 53.13(dBm)

= -48.1(dBm)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

= -6.9(dB)

Both peak and average measured complies with the limit line, so test result is "PASS".

Appendix D. Conducted Spurious Emission Plots

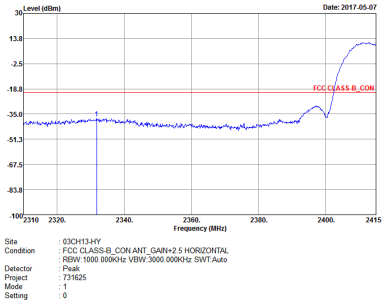
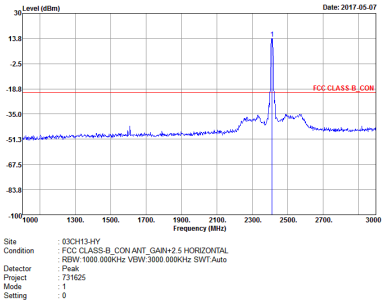
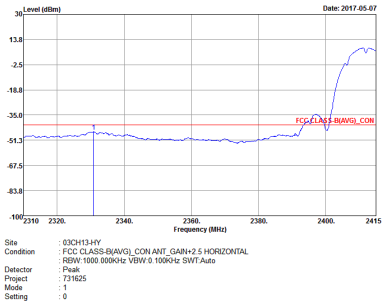
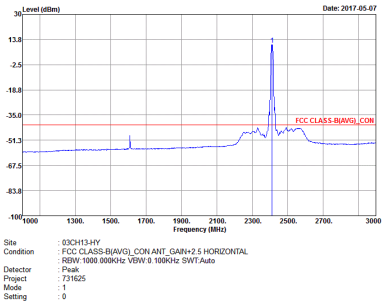
Test Engineer :	Karl Hou	**Temperature :**	22~24°C
		Relative Humidity :	45~47%

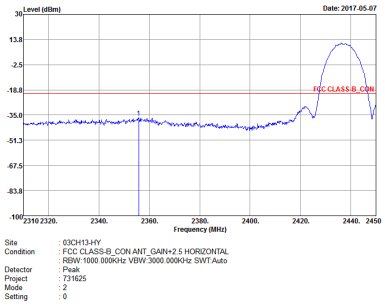
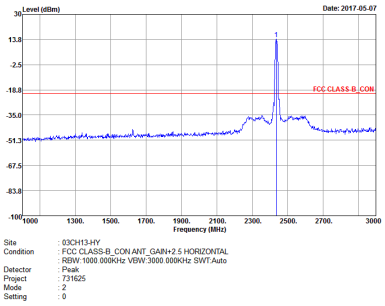
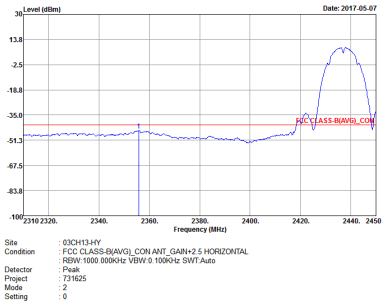
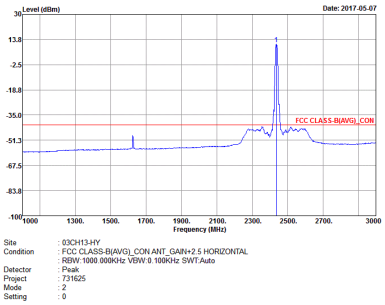
Note symbol

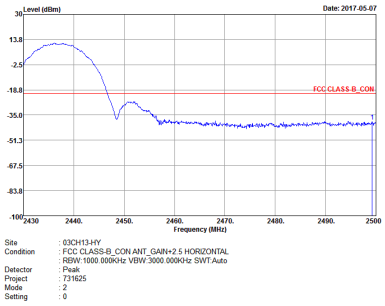
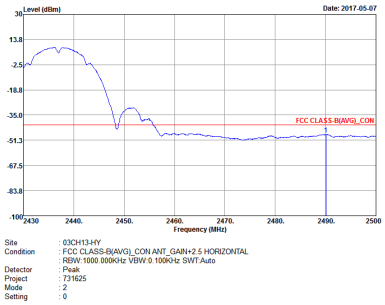
-L	**Low channel location**
-R	**High channel location**

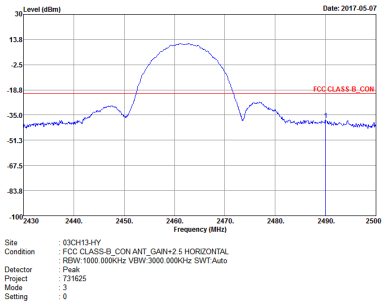
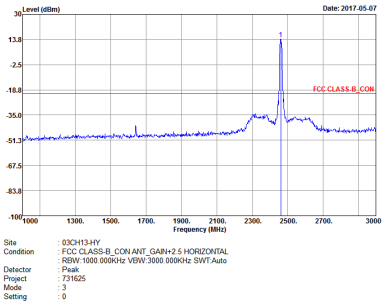
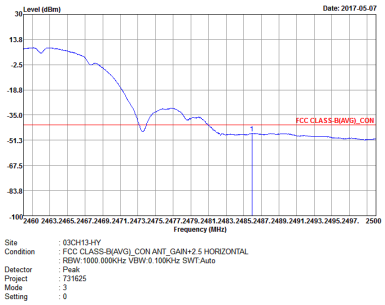
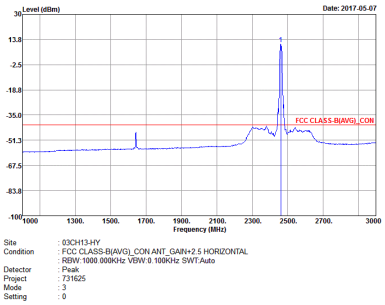
2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge)

WIFI	2.4GHz 2400~2483.5MHz Band Edge	
ANT	802.11b CH01 2412MHz	
1	CSE	Fundamental
Peak		
Avg.		

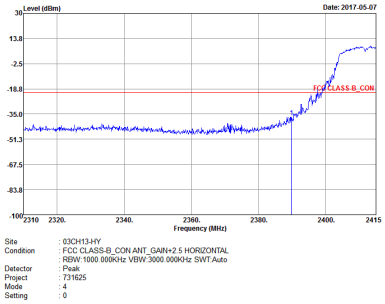
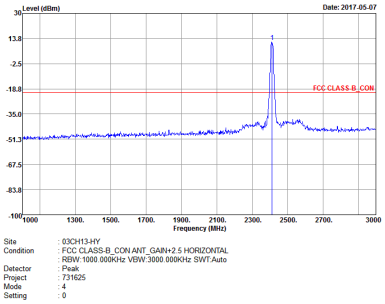
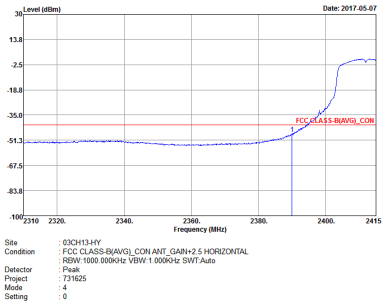
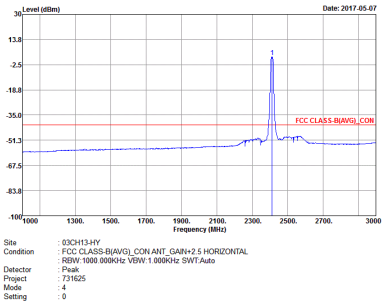
WIFI	2.4GHz 2400~2483.5MHz Band Edge	
ANT	802.11b CH06 2437MHz - L	
1	CSE	Fundamental
Peak		
Avg.		

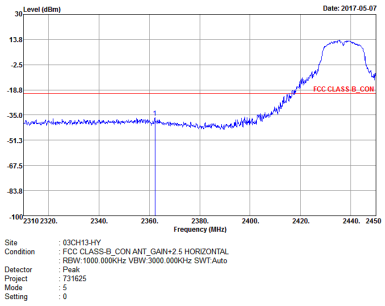
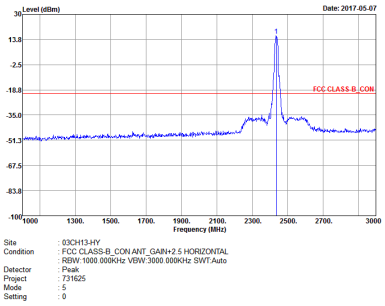
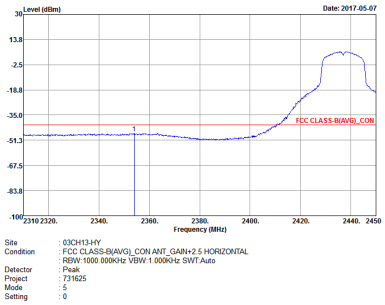
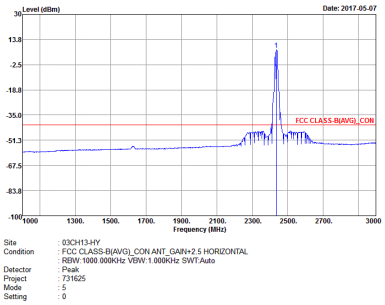
WIFI	2.4GHz 2400~2483.5MHz Band Edge	
ANT	802.11b CH06 2437MHz - R	
1	CSE	Fundamental
Peak		Left blank
Avg.		Left blank

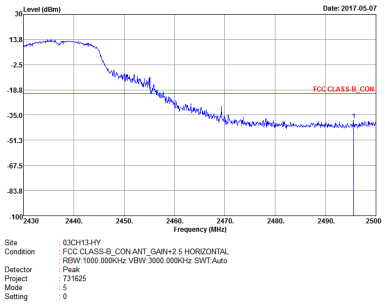
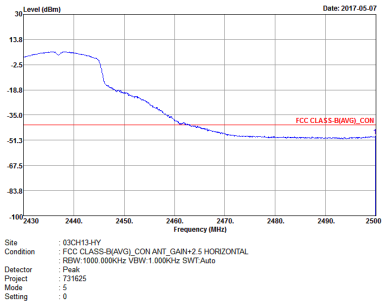
WIFI	2.4GHz 2400~2483.5MHz Band Edge	
ANT	802.11b CH11 2462MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

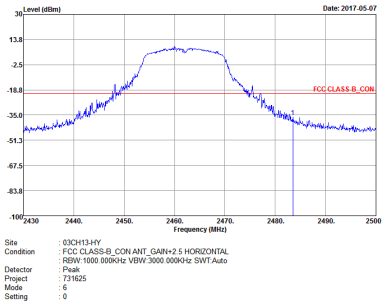
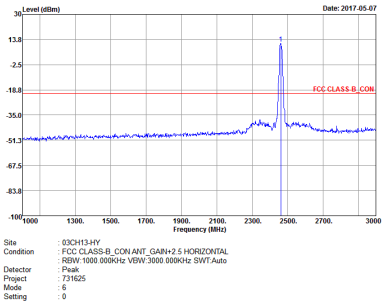
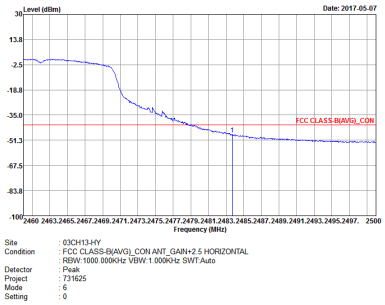
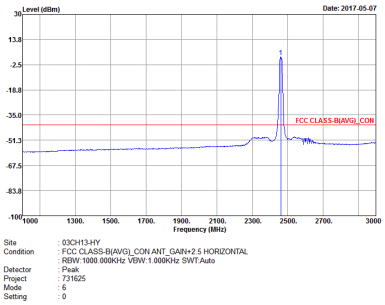
2.4GHz 2400~2483.5MHz

WIFI 802.11g (Band Edge)

WIFI	2.4GHz 2400~2483.5MHz Band Edge	
ANT	802.11g CH01 2412MHz	
1	CSE	Fundamental
Peak		
Avg.		

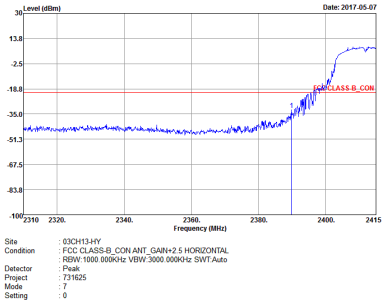
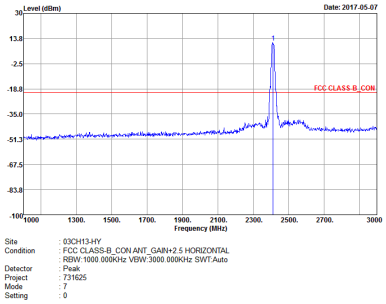
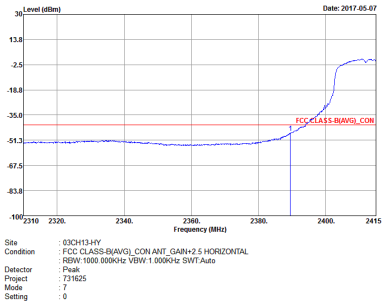
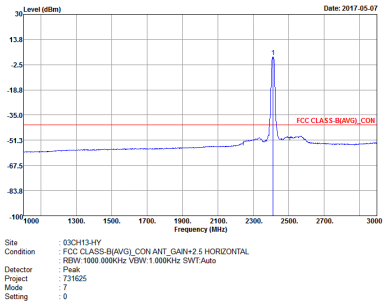
WIFI	2.4GHz 2400~2483.5MHz Band Edge	
ANT	802.11g CH06 2437MHz - L	
1	CSE	Fundamental
Peak		
Avg.		

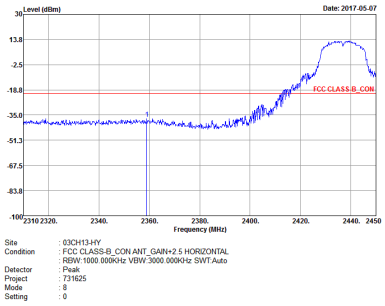
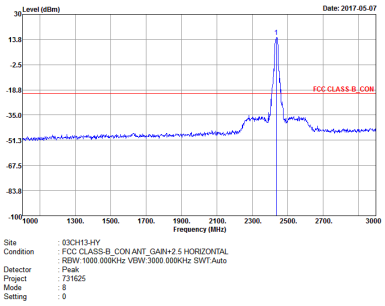
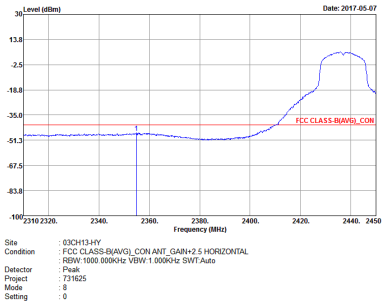
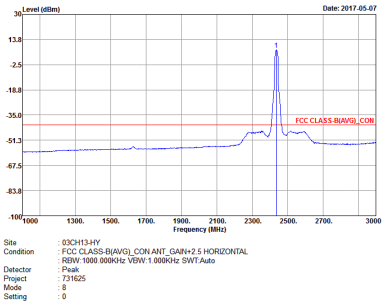
WIFI	2.4GHz 2400~2483.5MHz Band Edge	
ANT	802.11g CH06 2437MHz - R	
1	CSE	Fundamental
Peak		Left blank
Avg.		Left blank

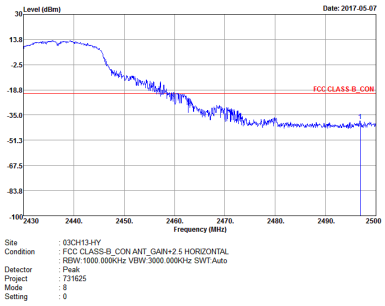
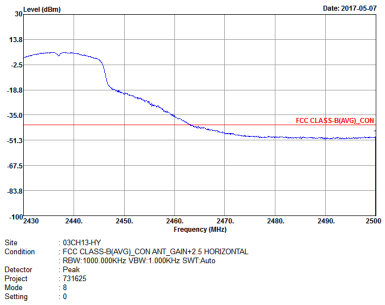
WIFI	2.4GHz 2400~2483.5MHz Band Edge	
ANT	802.11g CH11 2462MHz	
1	CSE	Fundamental
Peak		
Avg.		

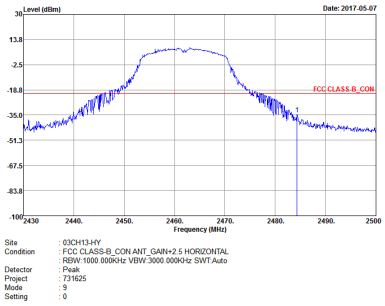
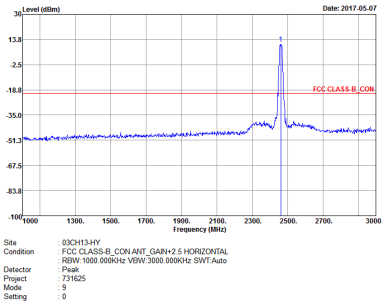
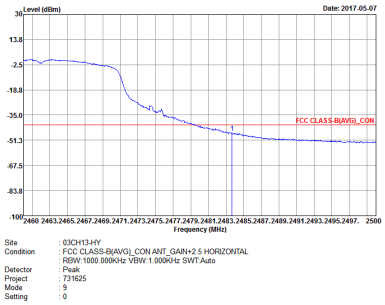
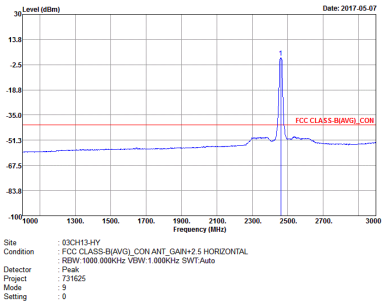
2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Band Edge)

WIFI	2.4GHz 2400~2483.5MHz Band Edge	
ANT	802.11n HT20 CH01 2412MHz	
1	CSE	Fundamental
Peak		
Avg.		

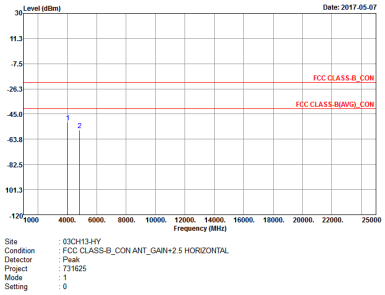
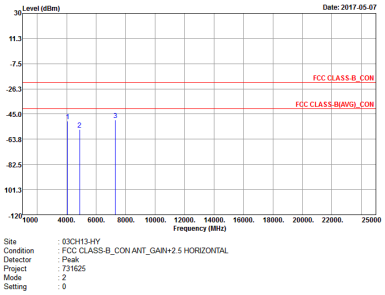
WIFI	2.4GHz 2400~2483.5MHz Band Edge	
ANT	802.11n HT20 CH06 2437MHz - L	
1	CSE	Fundamental
Peak		
Avg.		

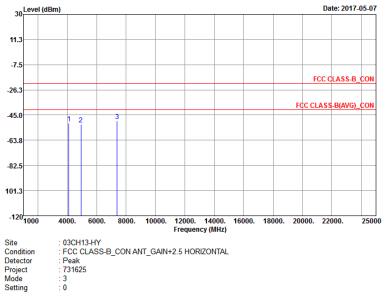
WIFI	2.4GHz 2400~2483.5MHz Band Edge	
ANT	802.11n HT20 CH06 2437MHz - R	
1	CSE	Fundamental
Peak		Left blank
Avg.		Left blank

WIFI	2.4GHz 2400~2483.5MHz Band Edge	
ANT	802.11n HT20 CH11 2462MHz	
1	CSE	Fundamental
Peak		
Avg.		

2.4GHz 2400~2483.5MHz

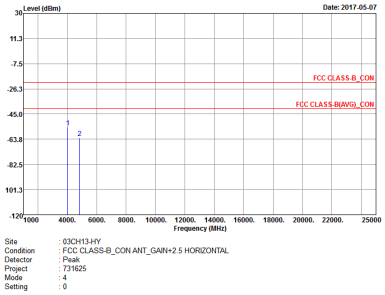
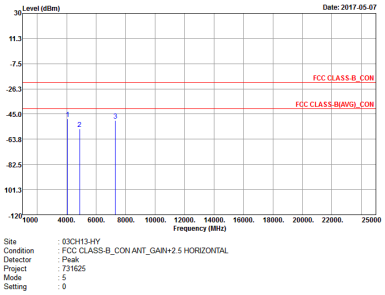
WIFI 802.11b (Harmonic)

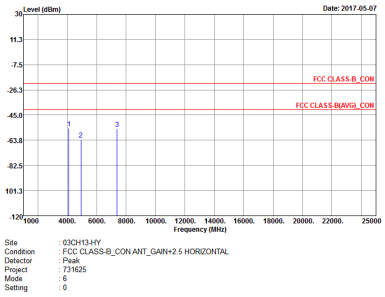
WIFI	2.4GHz 2400~2483.5MHz Harmonic	
ANT	802.11b	
1	CH01 2412MHz	CH06 2437MHz
Peak Avg.		

WIFI	2.4GHz 2400~2483.5MHz Harmonic	
ANT	802.11b	
1	CH11 2462MHz	-
Peak Avg.		Left blank

2.4GHz 2400~2483.5MHz

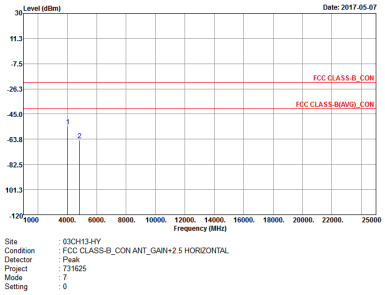
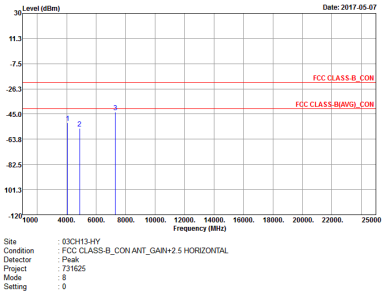
WIFI 802.11g (Harmonic)

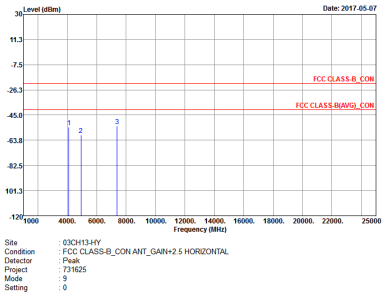
WIFI	2.4GHz 2400~2483.5MHz Harmonic	
ANT	802.11g	
1	CH01 2412MHz	CH06 2437MHz
Peak Avg.		

WIFI	2.4GHz 2400~2483.5MHz Harmonic	
ANT	802.11g	
1	CH11 2462MHz	-
Peak Avg.		Left blank

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Harmonic)

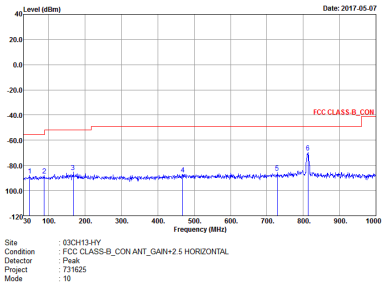
WIFI	2.4GHz 2400~2483.5MHz Harmonic	
ANT	802.11n HT20	
1	CH01 2412MHz	CH06 2437MHz
Peak Avg.		

WIFI	2.4GHz 2400~2483.5MHz Harmonic	
ANT	802.11n HT20	
1	CH11 2462MHz	-
Peak Avg.		Left blank

2.4GHz 2400~2483.5MHz

Emission below 1GHz

2.4GHz WIFI 802.11b (LF)

WIFI	2.4GHz 2400~2483.5MHz	
ANT	802.11b	
1	LF	-
QP / Peak		Left blank

Appendix E. Cabinet Radiated Spurious Emission

Test Engineer :	Watt Tseng and Stan Hsieh	Temperature :	21~23°C
		Relative Humidity :	44~46%

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI Ant.	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11b CH 01 2412MHz		2383.71	50.78	-23.22	74	40.82	27.01	3.96	30.93	110	208	P	H
		2389.38	40.26	-13.74	54	30.24	27.07	3.96	30.93	110	208	A	H
	*	2412	80.44	-	-	70.33	27.12	3.99	30.92	110	208	P	H
	*	2412	76.14	-	-	66.03	27.12	3.99	30.92	110	208	A	H
													H
													H
		2386.34	50.54	-23.46	74	40.52	27.07	3.96	30.93	217	180	P	V
		2388.33	40.26	-13.74	54	30.24	27.07	3.96	30.93	217	180	A	V
	*	2412	79.87	-	-	69.76	27.12	3.99	30.92	217	180	P	V
	*	2412	75.67	-	-	65.56	27.12	3.99	30.92	217	180	A	V
													V
													V
802.11b CH 06 2437MHz		2344.44	50.62	-23.38	74	40.83	26.9	3.92	30.95	107	208	P	H
		2386.44	40.26	-13.74	54	30.24	27.07	3.96	30.93	107	208	A	H
	*	2437	80.28	-	-	70.04	27.23	4	30.91	107	208	P	H
	*	2437	76.06	-	-	65.82	27.23	4	30.91	107	208	A	H
		2484.04	50.99	-23.01	74	40.58	27.34	4.04	30.89	107	208	P	H
		2495.87	40.87	-13.13	54	30.39	27.4	4.04	30.88	107	208	A	H
		2382.1	51.03	-22.97	74	41.07	27.01	3.96	30.93	269	168	P	V
		2380.42	40.32	-13.68	54	30.36	27.01	3.96	30.93	269	168	A	V
	*	2437	80.85	-	-	70.61	27.23	4	30.91	269	168	P	V
	*	2437	76.82	-	-	66.58	27.23	4	30.91	269	168	A	V
		2486	50.95	-23.05	74	40.54	27.34	4.04	30.89	269	168	P	V
		2487.68	40.88	-13.12	54	30.41	27.4	4.04	30.89	269	168	A	V

802.11b CH 11 2462MHz	*	2462	79.79	-	-	69.47	27.29	4.01	30.9	105	209	P	H
	*	2462	75.56	-	-	65.24	27.29	4.01	30.9	105	209	A	H
		2490.92	51.35	-22.65	74	40.88	27.4	4.04	30.89	105	209	P	H
		2488.16	40.83	-13.17	54	30.36	27.4	4.04	30.89	105	209	A	H
													H
													H
	*	2462	80.63	-	-	70.31	27.29	4.01	30.9	248	167	P	V
	*	2462	76.51	-	-	66.19	27.29	4.01	30.9	248	167	A	V
		2499.04	51.2	-22.8	74	40.72	27.4	4.04	30.88	248	167	P	V
		2492.04	40.81	-13.19	54	30.33	27.4	4.04	30.88	248	167	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11b CH 01 2412MHz		3213.5	40.63	-33.37	74	70.32	28.62	5.24	64.78	100	0	P	H
		4018.7	46.14	-27.86	74	74.33	29.89	5.88	64.63	100	0	P	H
		4824	44.11	-29.89	74	70.24	31.69	6.46	64.74	100	0	P	H
		5629.1	44.26	-29.74	74	69.34	32.14	7.08	64.73	100	0	P	H
		6434.3	60.28	-13.72	74	82.93	33.94	7.57	64.59	100	0	P	H
													H
		3213.5	42.96	-31.04	74	72.65	28.62	5.24	64.78	100	0	P	V
		4018.7	50.04	-23.96	74	78.23	29.89	5.88	64.63	100	0	P	V
		4824	46.68	-27.32	74	72.81	31.69	6.46	64.74	100	0	P	V
		5623	47.8	-26.2	74	72.89	32.14	7.07	64.73	100	0	P	V
		6434.3	61.56	-12.44	74	84.21	33.94	7.57	64.59	100	0	P	V
													V
802.11b CH 06 2437MHz		3250.1	41.66	-32.34	74	71.4	28.6	5.26	64.76	100	0	P	H
		4061.4	46.2	-27.8	74	74.32	29.97	5.91	64.65	100	0	P	H
		4874	45.49	-28.51	74	71.44	31.78	6.51	64.7	100	0	A	H
		5690.1	44.27	-29.73	74	69.15	32.28	7.1	64.69	100	0	P	H
		6495.3	58.23	-15.77	74	80.75	34.06	7.6	64.6	100	0	P	H
		7311	46.36	-27.64	74	65.88	36.73	8.08	64.82	100	0	P	H
		3250.1	41.86	-32.14	74	71.6	28.6	5.26	64.76	100	0	P	V
		4061.4	52.21	-21.79	74	80.33	29.97	5.91	64.65	103	341	P	V
		4061.4	47.79	-6.21	54	75.91	29.97	5.91	64.65	103	341	A	V
		4874	48.16	-25.84	74	74.11	31.78	6.51	64.7	100	0	P	V
		5690.1	49.07	-24.93	74	73.95	32.28	7.1	64.69	100	0	P	V
		6495.3	61.03	-12.97	74	83.55	34.06	7.6	64.6	100	0	P	V
		7311	48.94	-25.06	74	68.46	36.73	8.08	64.82	100	0	P	V

802.11b CH 11 2462MHz		3280.6	42.96	-31.04	74	72.69	28.59	5.29	64.73	100	0	P	H
		4104.1	47.18	-26.82	74	75.18	30.1	5.95	64.69	100	0	P	H
		4924	46.36	-27.64	74	72.13	31.88	6.55	64.66	100	0	P	H
		5745	45.07	-28.93	74	69.8	32.38	7.13	64.66	100	0	P	H
		6562.4	55.84	-18.16	74	78.12	34.28	7.64	64.61	100	0	P	H
		7386	46.93	-27.07	74	66.27	36.99	8.09	64.86	100	0	P	H
		3280.6	42.99	-31.01	74	72.72	28.59	5.29	64.73	100	0	P	V
		4104.1	52.09	-21.91	74	80.09	30.1	5.95	64.69	103	339	P	V
		4104.1	47.5	-6.5	54	75.5	30.1	5.95	64.69	103	339	A	V
		4924	46.83	-27.17	74	72.6	31.88	6.55	64.66	100	0	P	V
		5745	50.18	-23.82	74	74.91	32.38	7.13	64.66	100	0	P	V
		6562.4	60.44	-13.56	74	82.72	34.28	7.64	64.61	100	0	P	V
		7386	48.53	-25.47	74	67.87	36.99	8.09	64.86	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11g (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		2331.42	50.62	-23.38	74	40.9	26.85	3.91	30.96	107	208	P	H
		2354.21	41.13	-12.87	54	31.28	26.96	3.92	30.95	107	208	A	H
	*	2412	77.83	-	-	67.72	27.12	3.99	30.92	107	208	P	H
	*	2412	69.94	-	-	59.83	27.12	3.99	30.92	107	208	A	H
													H
													H
		2340.66	50.21	-23.79	74	40.42	26.9	3.92	30.95	216	181	P	V
		2382.77	41.03	-12.97	54	31.07	27.01	3.96	30.93	216	181	A	V
	*	2412	78.13	-	-	68.02	27.12	3.99	30.92	216	181	P	V
	*	2412	69.14	-	-	59.03	27.12	3.99	30.92	216	181	A	V
													V
													V
802.11g CH 06 2437MHz		2337.72	50.6	-23.4	74	40.83	26.9	3.91	30.96	107	209	P	H
		2386.3	41.11	-12.89	54	31.09	27.07	3.96	30.93	107	209	A	H
	*	2437	82.3	-	-	72.06	27.23	4	30.91	107	209	P	H
	*	2437	73.87	-	-	63.63	27.23	4	30.91	107	209	A	H
		2495.87	51.41	-22.59	74	40.93	27.4	4.04	30.88	107	209	P	H
		2486.84	41.56	-12.44	54	31.15	27.34	4.04	30.89	107	209	A	H
		2346.96	50.93	-23.07	74	41.14	26.9	3.92	30.95	270	170	P	V
		2373.14	40.96	-13.04	54	31.02	27.01	3.94	30.93	270	170	A	V
	*	2437	82.64	-	-	72.4	27.23	4	30.91	270	170	P	V
	*	2437	74.3	-	-	64.06	27.23	4	30.91	270	170	A	V
		2487.47	50.57	-23.43	74	40.16	27.34	4.04	30.89	270	170	P	V
		2491.6	41.47	-12.53	54	31	27.4	4.04	30.89	270	170	A	V

802.11g CH 11 2462MHz	*	2462	77.03	-	-	66.71	27.29	4.01	30.9	106	210	P	H
	*	2462	68.6	-	-	58.28	27.29	4.01	30.9	106	210	A	H
		2492.36	51.43	-22.57	74	40.95	27.4	4.04	30.88	106	210	P	H
		2498.2	41.59	-12.41	54	31.11	27.4	4.04	30.88	106	210	A	H
													H
													H
	*	2462	78.4	-	-	68.08	27.29	4.01	30.9	184	166	P	V
	*	2462	69.84	-	-	59.52	27.29	4.01	30.9	184	166	A	V
		2490.04	51.52	-22.48	74	41.05	27.4	4.04	30.89	184	166	P	V
		2498.48	41.53	-12.47	54	31.05	27.4	4.04	30.88	184	166	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		4018.7	42.96	-31.04	74	71.15	29.89	5.88	64.63	100	0	P	H
		4824	38.73	-35.27	74	64.86	31.69	6.46	64.74	100	0	P	H
		5623	41.29	-32.71	74	66.38	32.14	7.07	64.73	100	0	P	H
		6434.3	59.76	-14.24	74	82.41	33.94	7.57	64.59	100	0	P	H
													H
													H
		4018.7	47.03	-26.97	74	75.22	29.89	5.88	64.63	100	0	P	V
		4824	40.91	-33.09	74	67.04	31.69	6.46	64.74	100	0	P	V
		5629.1	43.79	-30.21	74	68.87	32.14	7.08	64.73	100	0	P	V
		6434.3	61.08	-12.92	74	83.73	33.94	7.57	64.59	100	0	P	V
													V
													V
802.11g CH 06 2437MHz		4061.4	53.14	-20.86	74	81.26	29.97	5.91	64.65	104	340	P	H
		4061.4	44.67	-9.33	54	72.79	29.97	5.91	64.65	104	340	A	H
		4874	46.94	-27.06	74	72.89	31.78	6.51	64.7	100	0	P	H
		5684	50.89	-23.11	74	75.77	32.28	7.1	64.69	100	0	P	H
		6495.3	60.9	-13.1	74	83.42	34.06	7.6	64.6	100	0	P	H
		7311	54.63	-19.37	74	74.15	36.73	8.08	64.82	100	10	P	H
		7311	44.21	-9.79	54	63.73	36.73	8.08	64.82	100	10	A	H
		4061.4	53.14	-20.86	74	81.26	29.97	5.91	64.65	104	340	P	V
		4061.4	44.67	-9.33	54	72.79	29.97	5.91	64.65	104	340	A	V
		4874	46.94	-27.06	74	72.89	31.78	6.51	64.7	100	0	P	V
		5684	50.89	-23.11	74	75.77	32.28	7.1	64.69	100	0	P	V
		6495.3	60.9	-13.1	74	83.42	34.06	7.6	64.6	100	0	P	V
		7311	54.63	-19.37	74	74.15	36.73	8.08	64.82	100	10	P	V
		7311	44.21	-9.79	54	63.73	36.73	8.08	64.82	100	10	A	V

		4098	44.42	-29.58	74	72.46	30.06	5.94	64.68	100	0	P	H
		4924	40.99	-33.01	74	66.76	31.88	6.55	64.66	100	0	P	H
		6562.4	55.56	-18.44	74	77.84	34.28	7.64	64.61	100	0	P	H
		7386	45.06	-28.94	74	64.4	36.99	8.09	64.86	100	0	P	H
													H
802.11g													H
CH 11		3189.1	44.42	-29.58	74	74.12	28.62	5.22	64.79	100	0	P	V
2462MHz		4098	47.28	-26.72	74	75.32	30.06	5.94	64.68	100	0	P	V
		4924	41.2	-32.8	74	66.97	31.88	6.55	64.66	100	0	P	V
		4994.7	46.85	-27.15	74	72.38	32	6.61	64.6	100	0	P	V
		5745	46.51	-27.49	74	71.24	32.38	7.13	64.66	100	0	P	V
		6562.4	58.96	-15.04	74	81.24	34.28	7.64	64.61	100	0	P	
		7386	44.42	-29.58	74	63.76	36.99	8.09	64.86	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 01 2412MHz		2337.93	51.81	-22.19	74	42.04	26.9	3.91	30.96	111	209	P	H
		2383.92	40.81	-13.19	54	30.85	27.01	3.96	30.93	111	209	A	H
	*	2412	77.98	-	-	67.87	27.12	3.99	30.92	111	209	P	H
	*	2412	69.37	-	-	59.26	27.12	3.99	30.92	111	209	A	H
													H
													H
		2318.19	51.31	-22.69	74	41.61	26.85	3.89	30.96	215	180	P	V
		2355.15	40.98	-13.02	54	31.13	26.96	3.92	30.95	215	180	A	V
	*	2412	77.72	-	-	67.61	27.12	3.99	30.92	215	180	P	V
	*	2412	68.52	-	-	58.41	27.12	3.99	30.92	215	180	A	V
													V
													V
802.11n HT20 CH 06 2437MHz		2385.18	50.68	-23.32	74	40.72	27.01	3.96	30.93	110	210	P	H
		2359.42	41	-13	54	31.13	26.96	3.94	30.95	110	210	A	H
	*	2437	81.68	-	-	71.44	27.23	4	30.91	110	210	P	H
	*	2437	73.52	-	-	63.28	27.23	4	30.91	110	210	A	H
		2494.47	51.06	-22.94	74	40.58	27.4	4.04	30.88	110	210	P	H
		2498.6	41.46	-12.54	54	30.98	27.4	4.04	30.88	110	210	A	H
		2347.52	51.09	-22.91	74	41.3	26.9	3.92	30.95	270	170	P	V
		2354.94	40.91	-13.09	54	31.06	26.96	3.92	30.95	270	170	A	V
	*	2437	82.02	-	-	71.78	27.23	4	30.91	270	170	P	V
	*	2437	73.79	-	-	63.55	27.23	4	30.91	270	170	A	V
		2495.73	51.43	-22.57	74	40.95	27.4	4.04	30.88	270	170	P	V
		2499.37	41.66	-12.34	54	31.18	27.4	4.04	30.88	270	170	A	V

	*	2462	76.46	-	-	66.14	27.29	4.01	30.9	105	210	P	H
	*	2462	68.19	-	-	57.87	27.29	4.01	30.9	105	210	A	H
		2498.04	51.28	-22.72	74	40.8	27.4	4.04	30.88	105	210	P	H
		2496.08	41.62	-12.38	54	31.14	27.4	4.04	30.88	105	210	A	H
802.11n													H
HT20													H
CH 11	*	2462	78.34	-	-	68.02	27.29	4.01	30.9	183	166	P	V
2462MHz	*	2462	69.6	-	-	59.28	27.29	4.01	30.9	183	166	A	V
		2487.24	51.34	-22.66	74	40.93	27.34	4.04	30.89	183	166	P	V
		2485.4	41.56	-12.44	54	31.15	27.34	4.04	30.89	183	166	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 01 2412MHz		4018.7	42.76	-31.24	74	70.95	29.89	5.88	64.63	100	0	P	H
		4824	39.29	-34.71	74	65.42	31.69	6.46	64.74	100	0	P	H
		6434.3	59.15	-14.85	74	81.8	33.94	7.57	64.59	100	0	P	H
													H
													H
													H
		3195.2	43.3	-30.7	74	73	28.62	5.22	64.79	100	0	P	V
		4012.6	47.31	-26.69	74	75.53	29.84	5.88	64.61	100	0	P	V
		4824	39.98	-34.02	74	66.11	31.69	6.46	64.74	100	0	P	V
		4994.7	43.05	-30.95	74	68.58	32	6.61	64.6	100	0	P	V
		5629.1	42.71	-31.29	74	67.79	32.14	7.08	64.73	100	0	P	V
		6434.3	60.65	-13.35	74	83.3	33.94	7.57	64.59	100	0	P	V
802.11n HT20 CH 06 2437MHz		4061.4	45.4	-28.6	74	73.52	29.97	5.91	64.65	100	0	P	H
		4874	44.94	-29.06	74	70.89	31.78	6.51	64.7	100	0	P	H
		5684	46.35	-27.65	74	71.23	32.28	7.1	64.69	100	0	P	H
		6495.3	58.41	-15.59	74	80.93	34.06	7.6	64.6	100	0	P	H
		7311	47.77	-26.23	74	67.29	36.73	8.08	64.82	100	0	P	H
													H
		4061.4	49.61	-24.39	74	77.73	29.97	5.91	64.65	100	0	P	V
		4874	46.39	-27.61	74	72.34	31.78	6.51	64.7	100	0	P	V
		5677.9	49.35	-24.65	74	74.29	32.24	7.09	64.7	100	0	P	V
		6495.3	60.77	-13.23	74	83.29	34.06	7.6	64.6	100	0	P	V
		7311	54.33	-19.67	74	73.85	36.73	8.08	64.82	100	9	P	V
		7311	41.73	-12.27	54	61.25	36.73	8.08	64.82	100	9	A	V

802.11n HT20 CH 11 2462MHz		3140.3	47.16	-26.84	74	76.6	28.64	5.18	64.82	100	0	P	H
		4104.1	43.75	-30.25	74	71.75	30.1	5.95	64.69	100	0	P	H
		4924	40.24	-33.76	74	66.01	31.88	6.55	64.66	100	0	P	H
		6562.4	54.83	-19.17	74	77.11	34.28	7.64	64.61	100	0	P	H
		7386	44.58	-29.42	74	63.92	36.99	8.09	64.86	100	0	P	H
													H
		4104.1	47.05	-26.95	74	75.05	30.1	5.95	64.69	100	0	P	V
		4924	41.66	-32.34	74	67.43	31.88	6.55	64.66	100	0	P	V
		5738.9	45.5	-28.5	74	70.23	32.38	7.13	64.66	100	0	P	V
		6562.4	59.62	-14.38	74	81.9	34.28	7.64	64.61	100	0	P	V
		7386	44.3	-29.7	74	63.64	36.99	8.09	64.86	100	0	P	V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission below 1GHz

2.4GHz WIFI 802.11b (LF)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
2.4GHz 802.11b LF		99.93	34.54	-8.96	43.5	50.22	16.04	0.79	32.6	-	-	P	H
		104.79	34.16	-9.34	43.5	49.31	16.57	0.79	32.59	-	-	P	H
		120.18	34.38	-9.12	43.5	48.68	17.36	0.86	32.58	-	-	P	H
		311.2	33.76	-12.24	46	45.34	19.47	1.4	32.56	-	-	P	H
		370.7	39.34	-6.66	46	49.27	21.03	1.51	32.56	100	0	P	H
		491.1	36.37	-9.63	46	43.18	23.93	1.78	32.62	-	-	P	H
													H
													H
													H
													H
													H
													H
		30.54	31.47	-8.53	40	39.36	24.24	0.46	32.59	-	-	P	V
		37.29	31.58	-8.42	40	43.2	20.49	0.46	32.58	100	0	P	V
		59.97	30.09	-9.91	40	49.99	11.96	0.67	32.58	-	-	P	V
		377.7	34.51	-11.49	46	44.31	21.16	1.51	32.56	-	-	P	V
		510	29.38	-16.62	46	35.95	24.14	1.8	32.63	-	-	P	V
		951	31.92	-14.08	46	29.7	30.84	2.44	31.31	-	-	P	V
													V
													V
													V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												

Note symbol

*	**Fundamental Frequency** which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is **over limit** line.
P/A	**P**eak or **A**verage
H/V	**H**orizontal or **V**ertical

A calculation example for radiated spurious emission is shown as below:

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Level(dBμV/m) =

Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

2. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

= -10.46(dB)

Both peak and average measured complies with the limit line, so test result is "PASS".

Appendix F. Cabinet Radiated Spurious Emission Plots

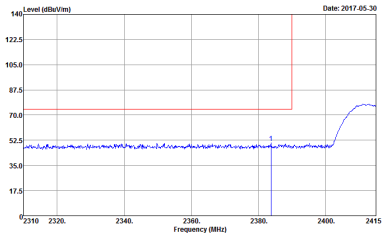
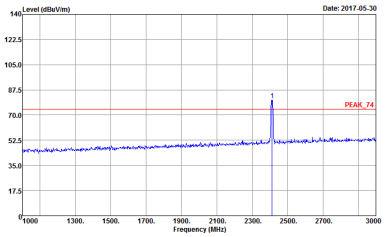
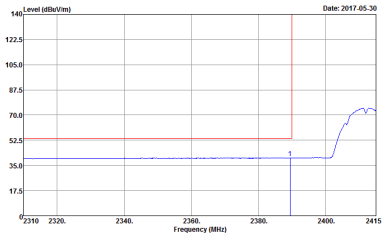
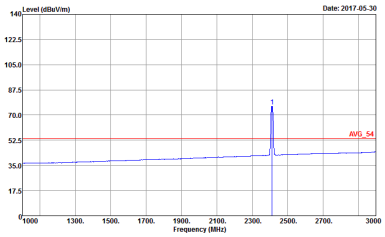
Test Engineer :	Watt Tseng and Stan Hsieh	**Temperature :**	21~23°C
		Relative Humidity :	44~46%

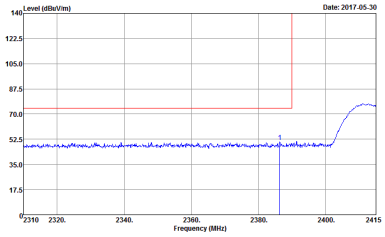
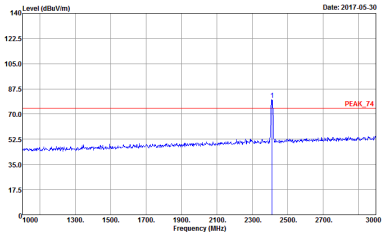
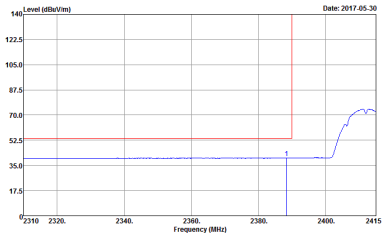
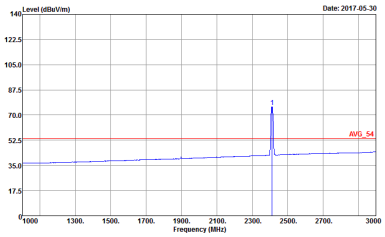
Note symbol

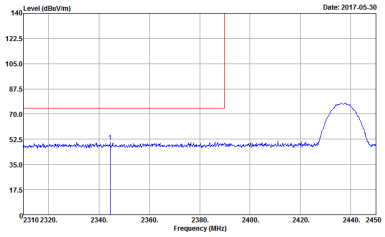
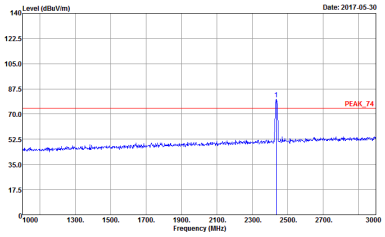
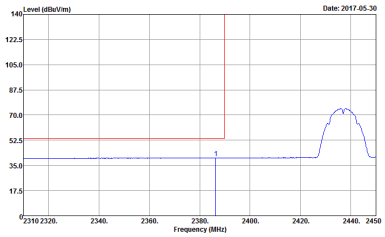
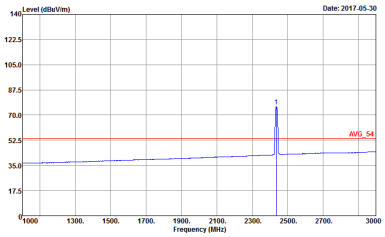
-L	**Low channel location**
-R	**High channel location**

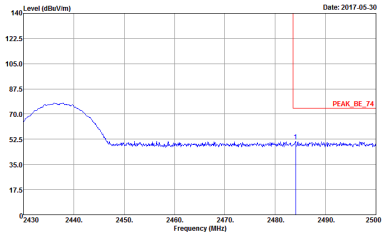
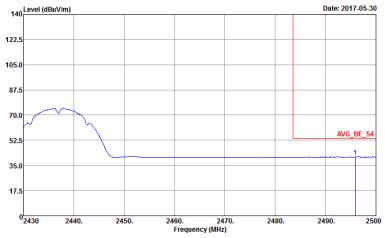
2.4GHz 2400~2483.5MHz

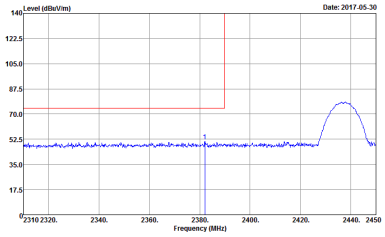
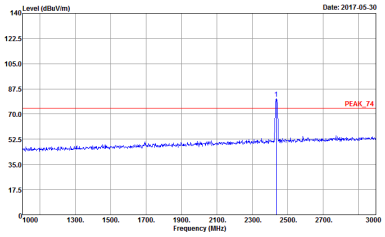
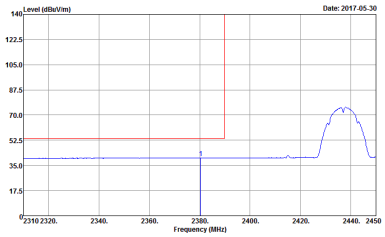
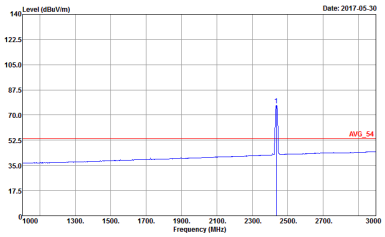
WIFI 802.11b (Band Edge @ 3m)

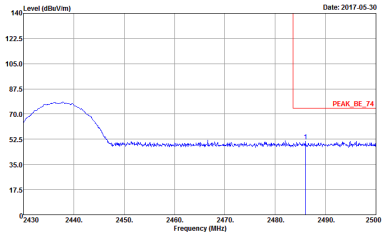
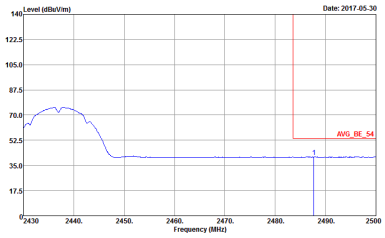
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 1	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 1
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:0.100KHz SWT:Auto Detector : Peak Project : 731625 Mode : 1	 Site : 03CH15-HY Condition : AVG_54 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:0.100KHz SWT:Auto Detector : Peak Project : 731625 Mode : 1

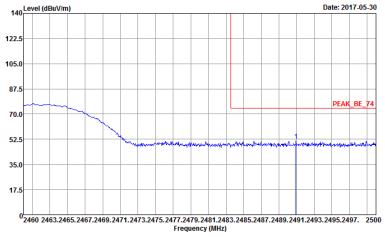
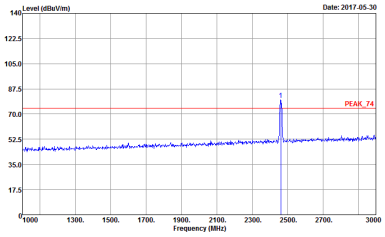
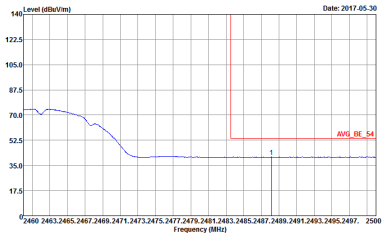
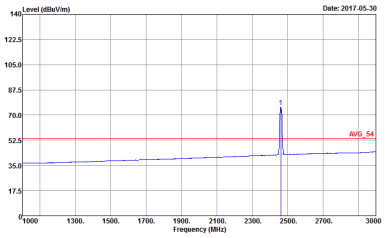
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 1	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 1
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:0.100KHz SWT:Auto Detector : Peak Project : 731625 Mode : 1	 Site : 03CH15-HY Condition : AVG_54 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:0.100KHz SWT:Auto Detector : Peak Project : 731625 Mode : 1

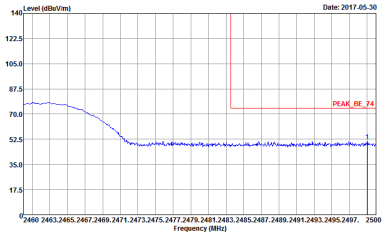
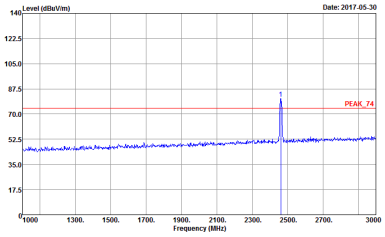
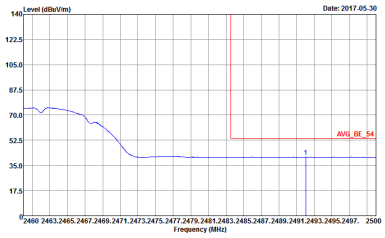
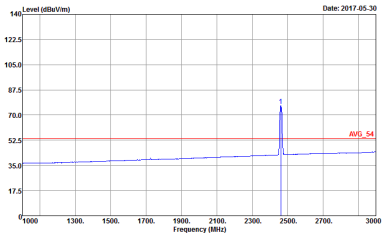
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
1	Horizontal	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 2	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 2
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:0.100KHz SWT:Auto Detector : Peak Project : 731625 Mode : 2	 Site : 03CH15-HY Condition : AVG_54 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:0.100KHz SWT:Auto Detector : Peak Project : 731625 Mode : 2

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - R	
1	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
1	Vertical	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 2	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 2
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:0.100KHz SWT:Auto Detector : Peak Project : 731625 Mode : 2	 Site : 03CH15-HY Condition : AVG_54 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:0.100KHz SWT:Auto Detector : Peak Project : 731625 Mode : 2

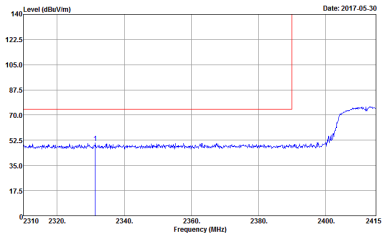
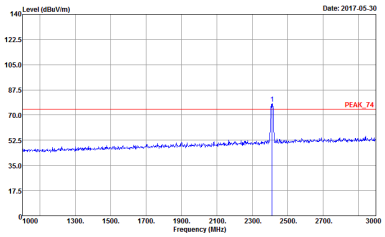
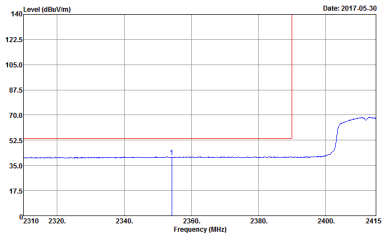
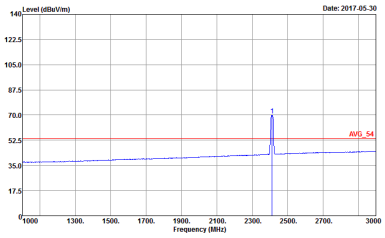
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - R	
1	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

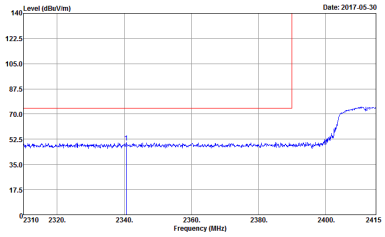
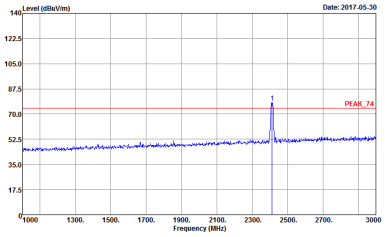
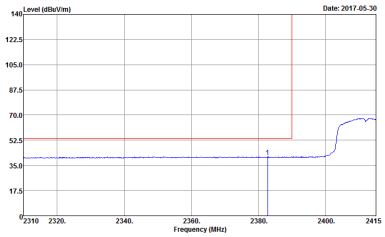
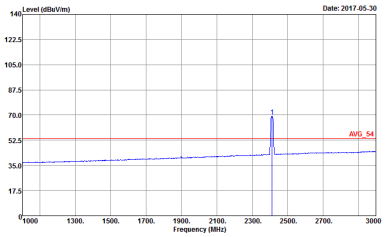
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 3	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 3
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:0.100KHz SWT:Auto Detector : Peak Project : 731625 Mode : 3	 Site : 03CH15-HY Condition : AVG_54 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:0.100KHz SWT:Auto Detector : Peak Project : 731625 Mode : 3

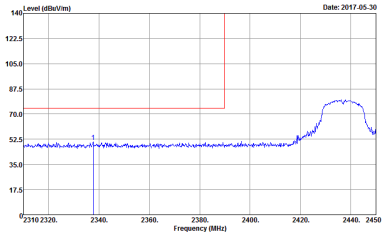
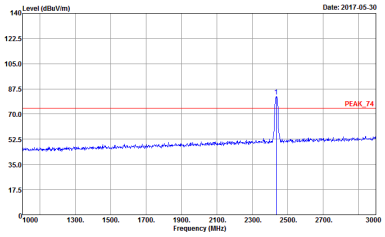
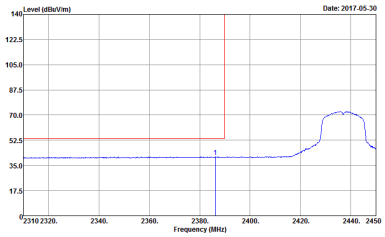
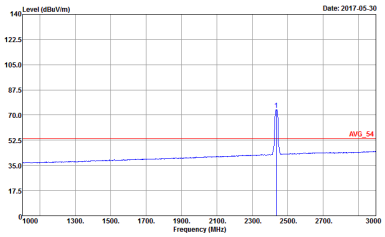
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 3	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 3
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:0.100KHz SWT:Auto Detector : Peak Project : 731625 Mode : 3	 Site : 03CH15-HY Condition : AVG_54 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:0.100KHz SWT:Auto Detector : Peak Project : 731625 Mode : 3

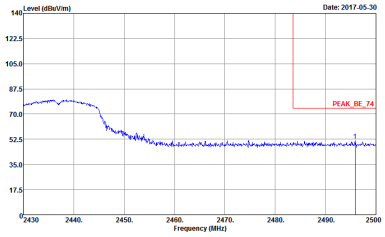
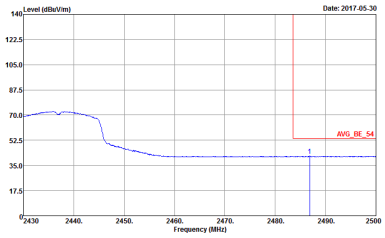
2.4GHz 2400~2483.5MHz

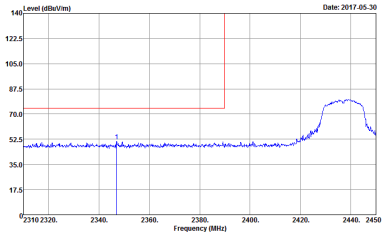
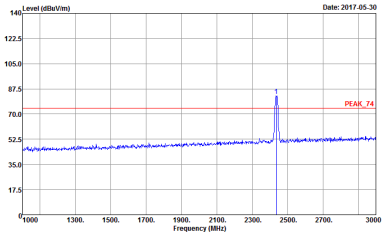
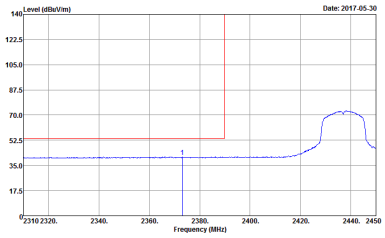
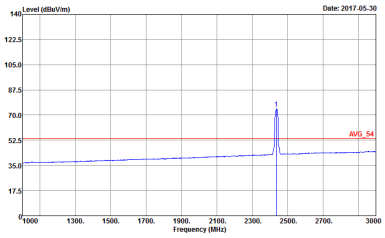
WIFI 802.11g (Band Edge @ 3m)

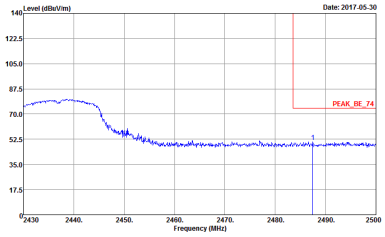
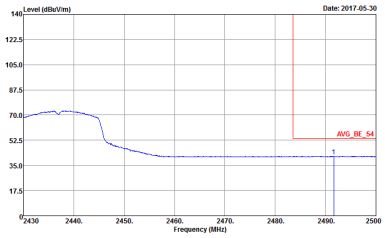
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 4	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 4
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 4	 Site : 03CH15-HY Condition : AVG_54 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 4

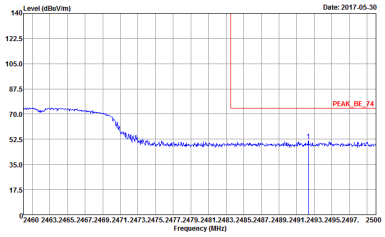
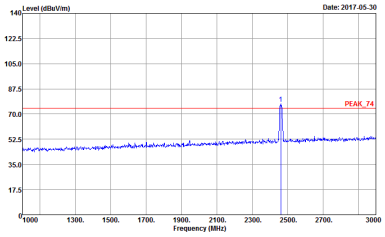
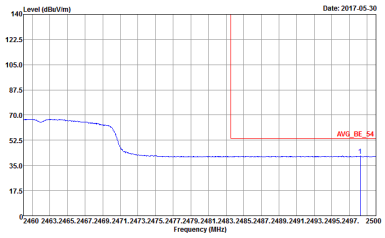
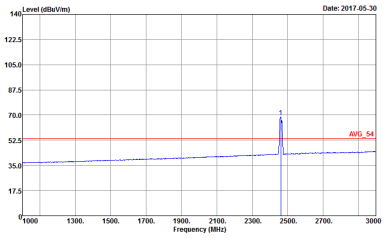
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 4	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 4
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 4	 Site : 03CH15-HY Condition : AVG_54 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 4

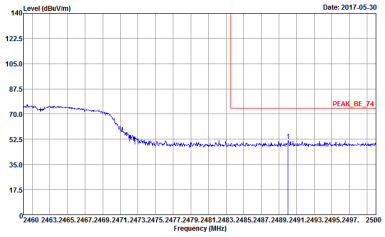
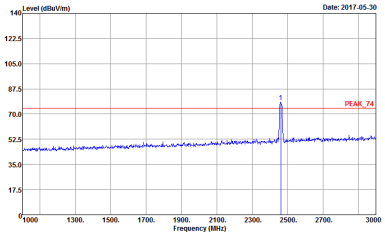
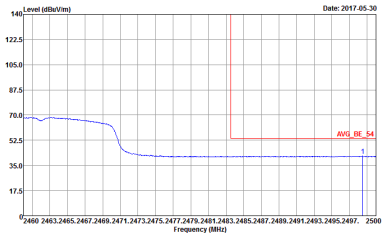
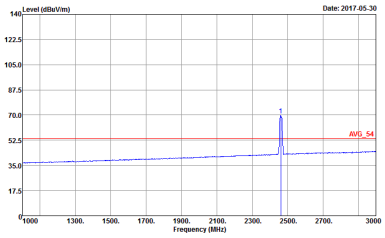
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - L	
1	Horizontal	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 5	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 5
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 5	 Site : 03CH15-HY Condition : AVG_54 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 5

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - R	
1	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - L	
1	Vertical	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 5	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 5
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 5	 Site : 03CH15-HY Condition : AVG_54 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 5

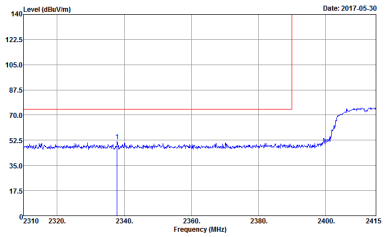
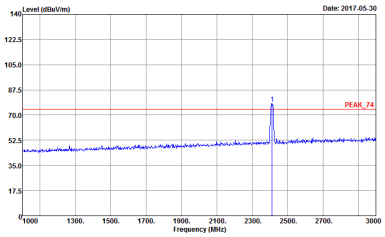
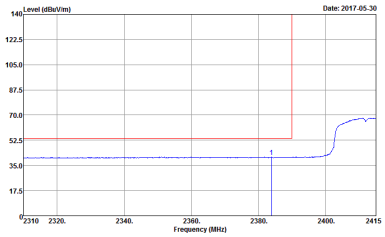
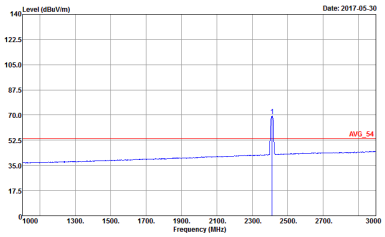
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - R	
1	Vertical	Fundamental
Peak		Left Blank
Avg.		Left Blank

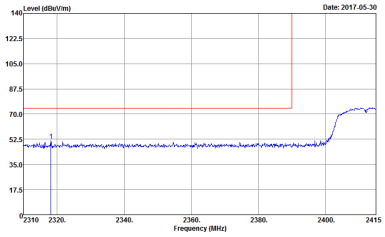
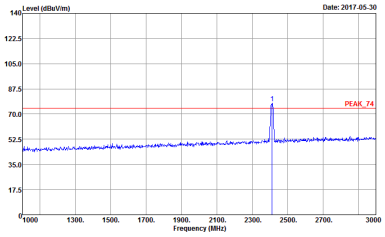
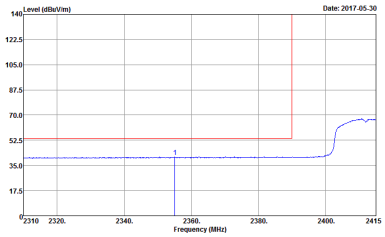
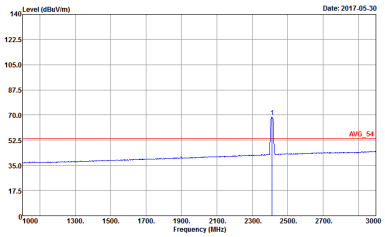
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 6	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 6
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 6	 Site : 03CH15-HY Condition : AVG_54 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 6

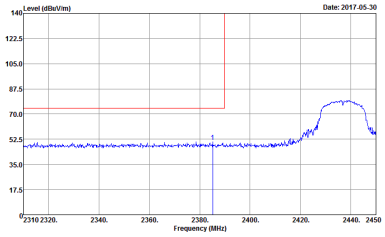
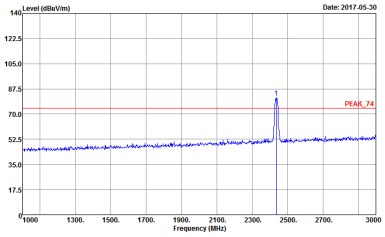
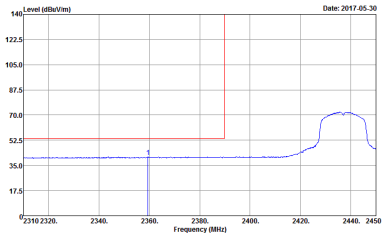
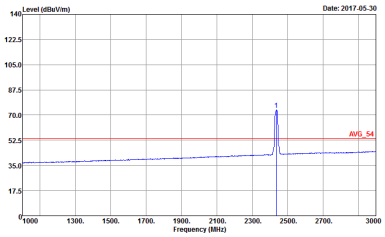
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 6	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 6
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 6	 Site : 03CH15-HY Condition : AVG_54 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 6

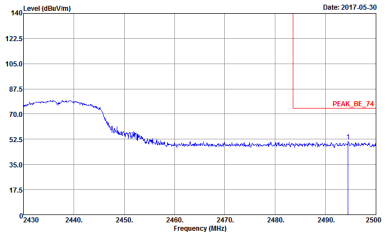
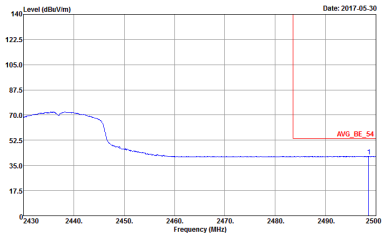
2.4GHz 2400~2483.5MHz

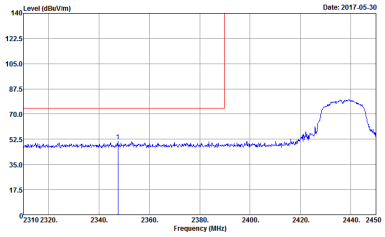
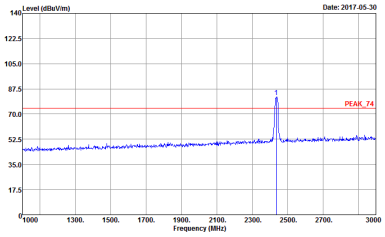
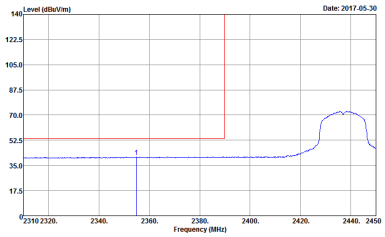
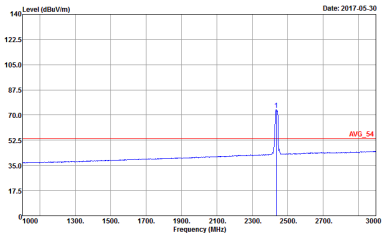
WIFI 802.11n HT20 (Band Edge @ 3m)

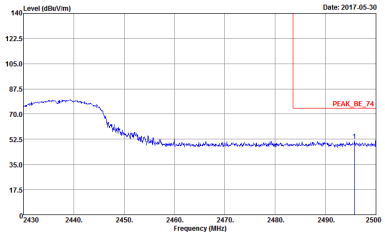
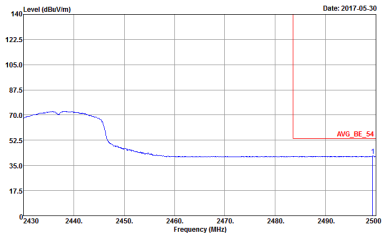
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 7	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 7
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 7	 Site : 03CH15-HY Condition : AVG_54 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 7

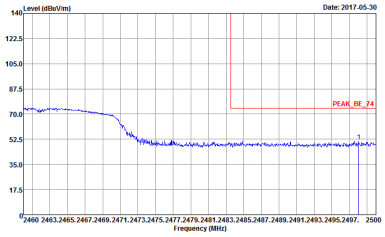
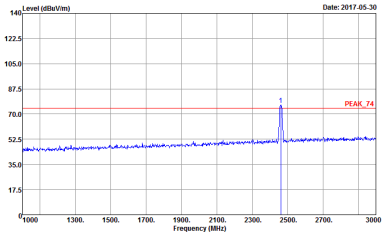
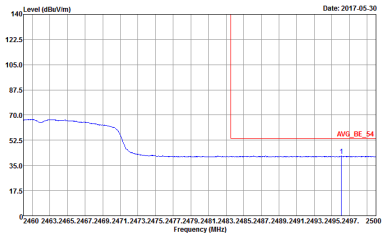
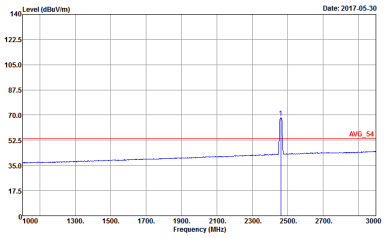
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 7	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 7
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 7	 Site : 03CH15-HY Condition : AVG_54 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 7

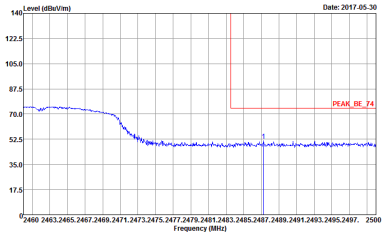
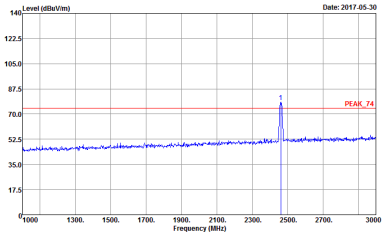
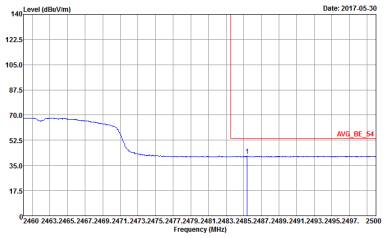
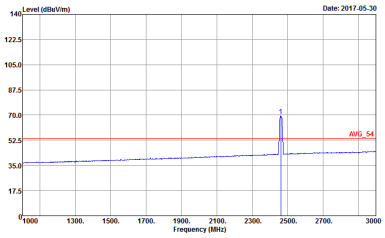
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - L	
1	Horizontal	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 8	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 8
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 8	 Site : 03CH15-HY Condition : AVG_54 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 8

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - R	
1	Horizontal	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 8	Left blank
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 8	Left blank

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - L	
1	Vertical	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 8	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 8
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 8	 Site : 03CH15-HY Condition : AVG_54 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 8

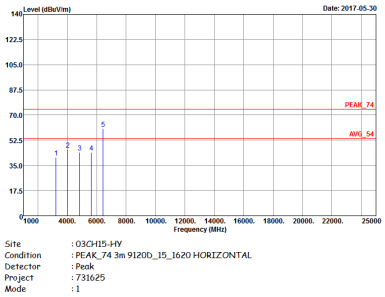
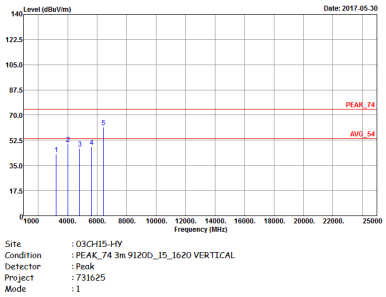
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - R	
1	Vertical	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 8	Left Blank
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 8	Left Blank

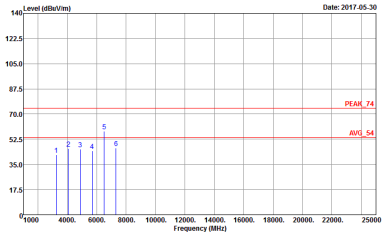
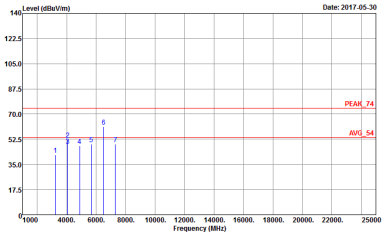
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 9	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 9
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 9	 Site : 03CH15-HY Condition : AVG_54 3m 9120D_15_1620 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 9

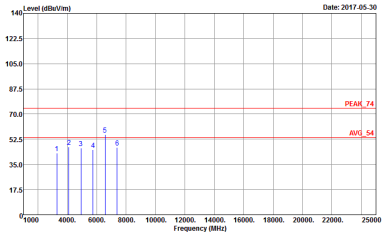
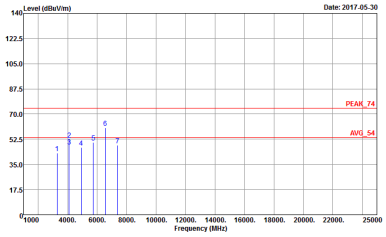
WIFI	2.4GHz 2400~2483.5MHz Fundamental @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH15-HY Condition : PEAK_BE_74 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 9	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 9
Avg.	 Site : 03CH15-HY Condition : AVG_BE_54 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 9	 Site : 03CH15-HY Condition : AVG_54 3m 9120D_15_1620 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 731625 Mode : 9

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic @ 3m)

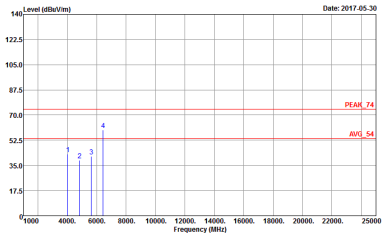
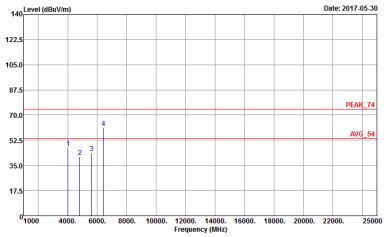
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.		

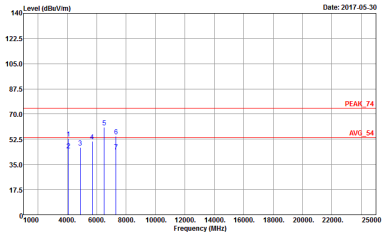
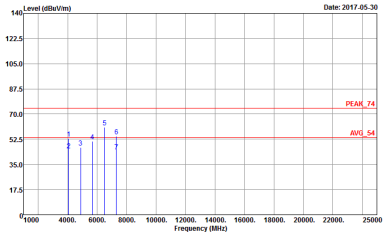
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 HORIZONTAL Detector : Peak Project : 731625 Mode : 2	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 VERTICAL Detector : Peak Project : 731625 Mode : 2

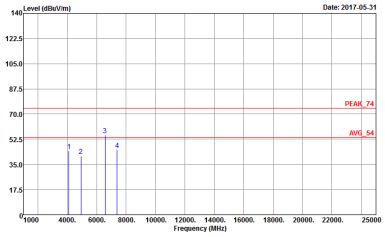
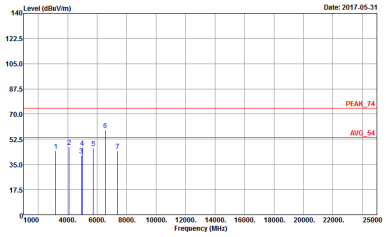
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 HORIZONTAL Detector : Peak Project : 731625 Mode : 3	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 VERTICAL Detector : Peak Project : 731625 Mode : 3

2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 3m)

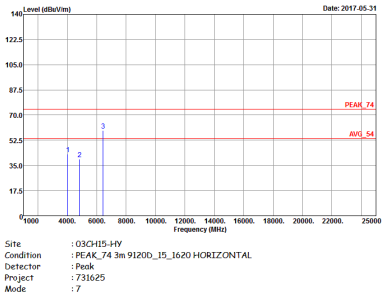
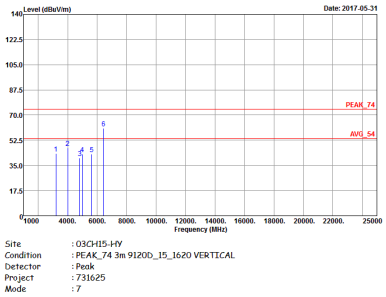
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 HORIZONTAL Detector : Peak Project : 731625 Mode : 4	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 VERTICAL Detector : Peak Project : 731625 Mode : 4

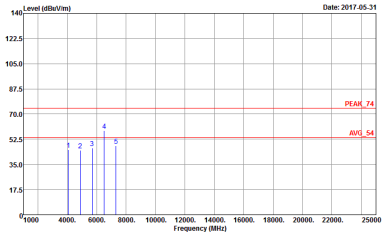
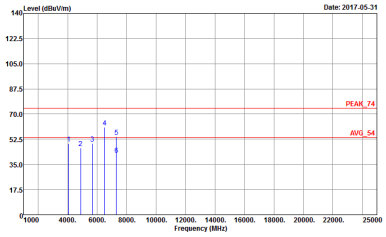
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 HORIZONTAL Detector : Peak Project : 731625 Mode : 5	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 VERTICAL Detector : Peak Project : 731625 Mode : 5

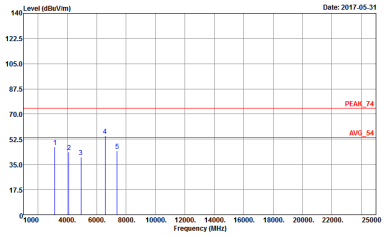
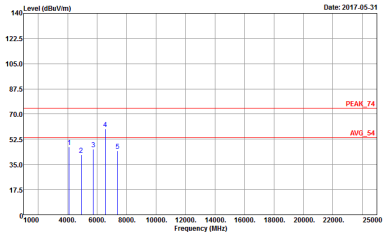
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 HORIZONTAL Detector : Peak Project : 731625 Mode : 6	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 VERTICAL Detector : Peak Project : 731625 Mode : 6

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.	 	

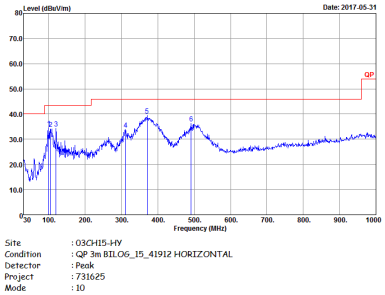
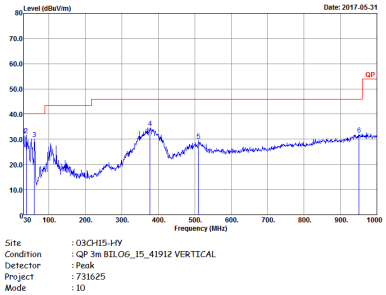
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 HORIZONTAL Detector : Peak Project : 731625 Mode : 8	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 VERTICAL Detector : Peak Project : 731625 Mode : 8

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 HORIZONTAL Detector : Peak Project : 731625 Mode : 9	 Site : 03CH15-HY Condition : PEAK_74 3m 9120D_15_1620 VERTICAL Detector : Peak Project : 731625 Mode : 9

2.4GHz 2400~2483.5MHz

Emission below 1GHz

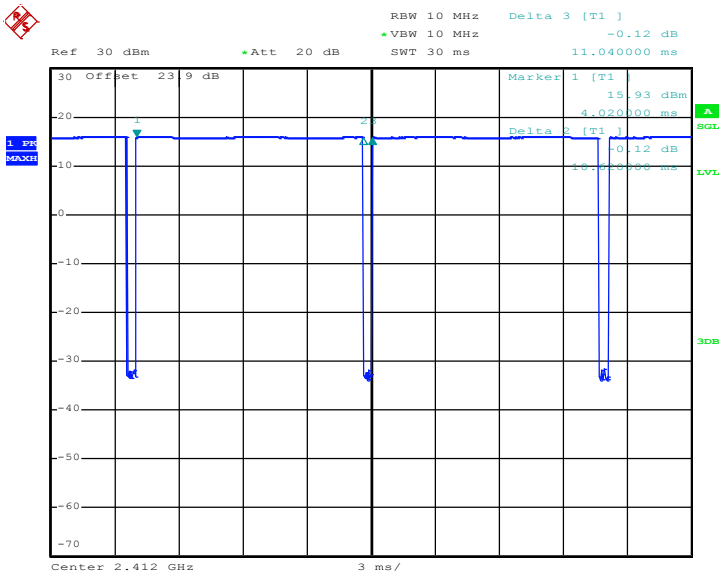
2.4GHz WIFI 802.11b (LF)

WIFI	2.4GHz 2400~2483.5MHz	
ANT	802.11b LF	
1	Horizontal	Vertical
QP / Peak		

Appendix G. Duty Cycle Plots

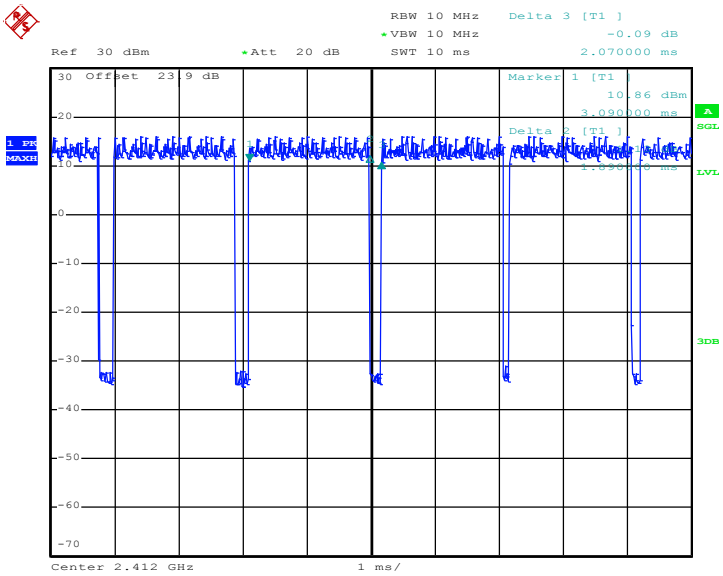
Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
802.11b	96.2	10620	0.09	100Hz
802.11g	91.34	1890	0.53	1kHz
2.4GHz 802.11n HT20	92.63	1760	0.57	1kHz

802.11b



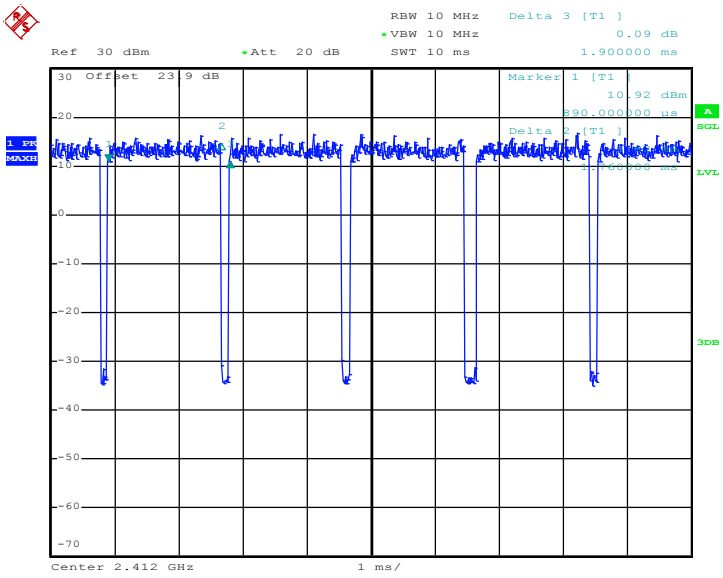
Date: 19.APR.2017 21:47:56

802.11g



Date: 19.APR.2017 22:21:42

802.11n HT20



Date: 19.APR.2017 22:28:01