FCC RF Test Report

APPLICANT	:	Amazipoint technology Ltd.
EQUIPMENT	:	WiFi 2.4G Module
BRAND NAME	:	Amazipoint
MODEL NAME	:	W708
MARKETING NAME	:	W708
FCC ID	:	2ALWN-W708
STANDARD	:	FCC Part 15 Subpart C §15.247
CLASSIFICATION	:	(DTS) Digital Transmission System

The product was received on Apr. 05, 2017 and testing was completed on May 11, 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
FR740506	Rev. 01	Initial issue of report	May 26, 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)	Radiated Band Edges and Radiated Spurious Emission	15.209(a) & 15.247(d)	Pass	Under limit 0.57 dB at 7386.000 MHz
3.6	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 14.70 dB at 0.542 MHz
3.7	15.203 & 15.247(b)	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

Amazipoint technology Ltd.
2F,No. 113, Zhongyang Rd., Xindian Dist., New Taipei City, Taiwan(R.O.C)

1.2 Manufacturer

Amazipoint technology Ltd.
2F,No. 113, Zhongyang Rd., Xindian Dist., New Taipei City, Taiwan(R.O.C)

1.3 Product Feature of Equipment Under Test

Wi-Fi 2.4GHz 802.11b/g/n

Product Specification subjective to this standard	
Antenna Type	WLAN: Dipole Antenna

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. TW1190 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.**		
	TH02-HY	CO05-HY	03CH07-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: All test items were verified and recorded according to the standards and without any deviation during the test.

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).

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	-	-

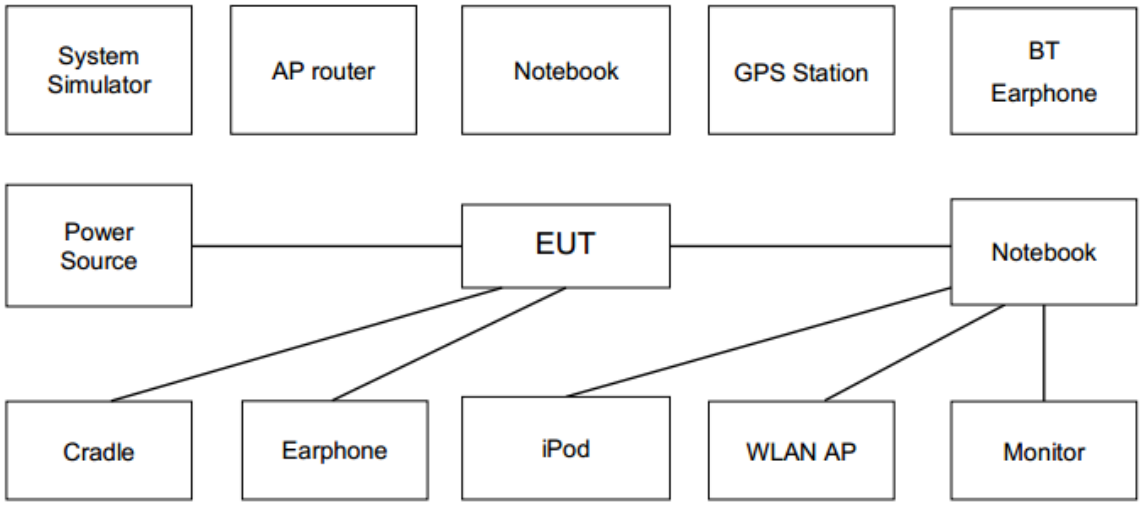
2.2 Test Mode

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
802.11n HT40	MCS0

Test Cases	
AC Conducted Emission	Mode 1 : WLAN (2.4GHz) Link (Tx)

2.3 Connection Diagram of Test System



This example is connection diagram of EUT test configurations.
For detail, please refer to test mode configuration and setup photographs for each test item.

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.	Notebook	DELL	Latitude E6320	FCC DoC/ Contains FCC ID: QDS-BRCM1054	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
3.	LCD Monitor	DELL	U2410	FCC DoC	Shielded, 1.6 m	Unshielded, 1.8 m

2.5 EUT Operation Test Setup

The RF test items, programmed RF utility, “RF tool (QA Tool_Dbg.exe)” 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.

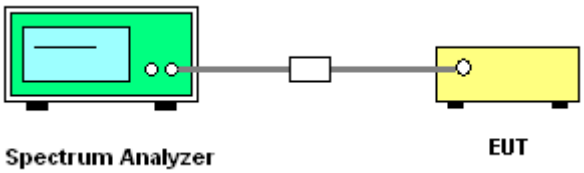
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

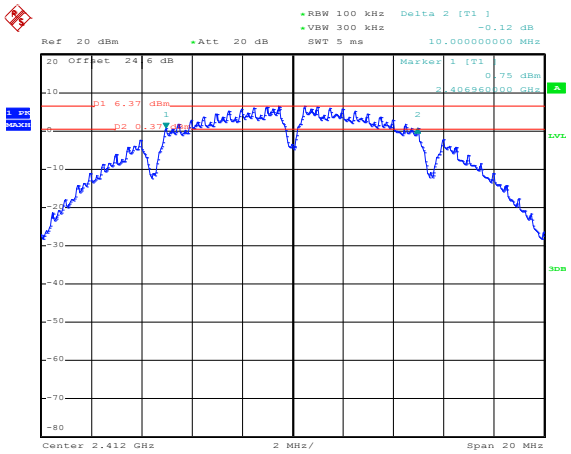
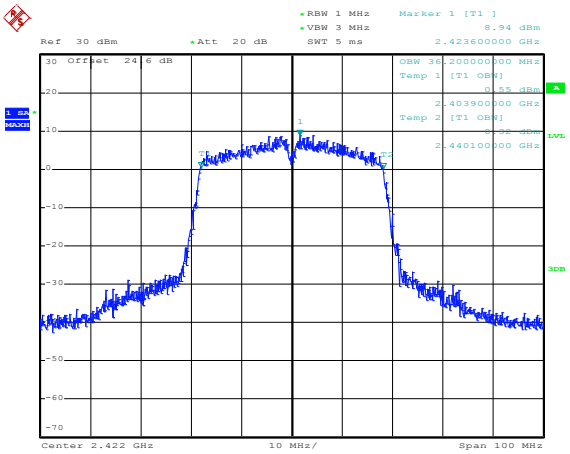
1. The testing follows FCC KDB Publication No. 558074 DTS D01 Meas. Guidance v04.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit 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
	
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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.

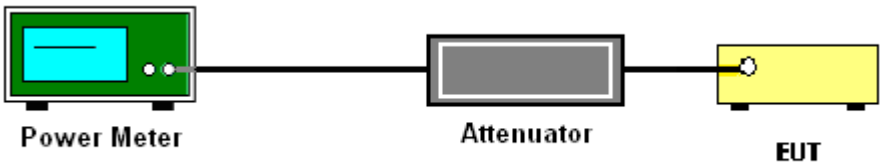
3.2.2 Measuring Instruments

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.

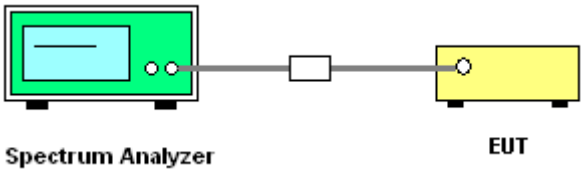
3.3.2 Measuring Instruments

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.

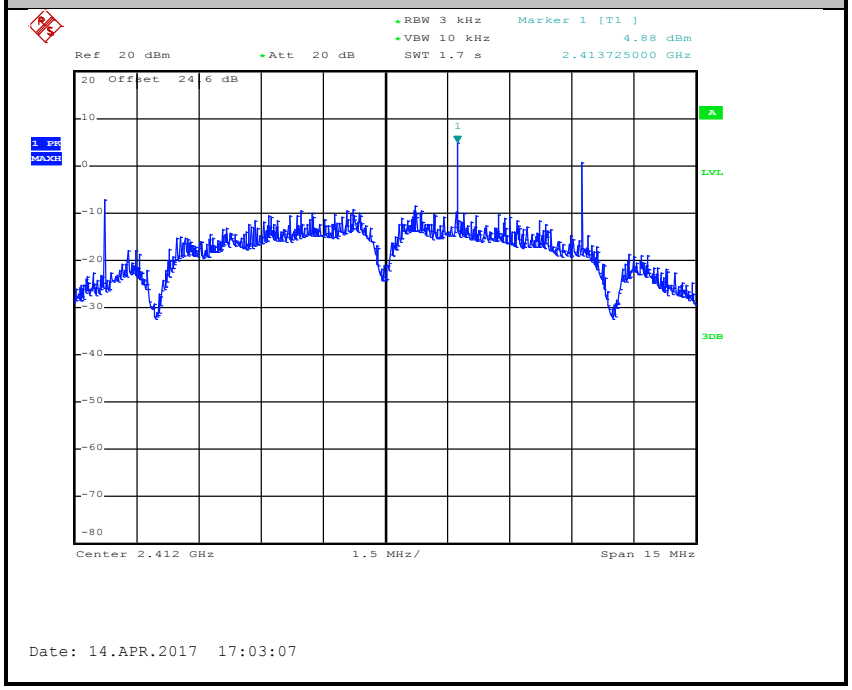
3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

Worst Case Power Density (dBm/3kHz)



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.

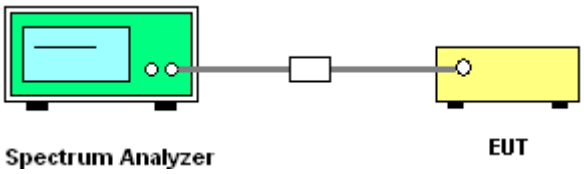
3.4.2 Measuring Instruments

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

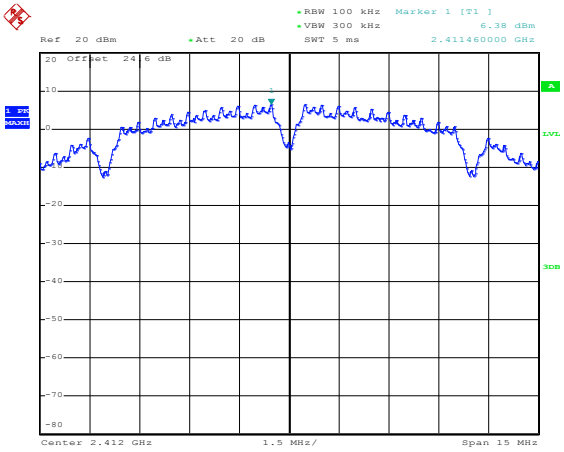


3.4.5 Test Result of Conducted Band Edges and Spurious Emission

Test Mode :	802.11b	**Temperature :**	21~25°C
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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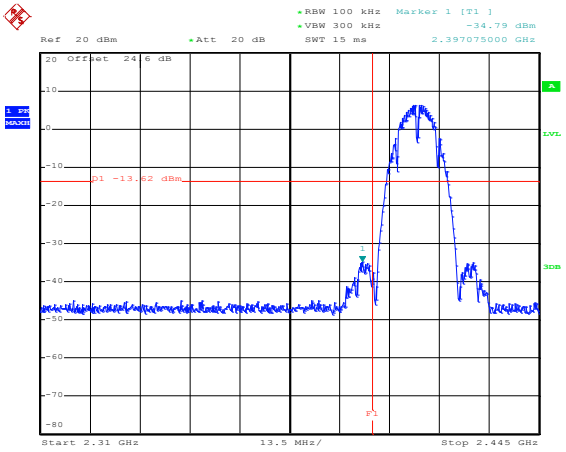
Low Channel Plot



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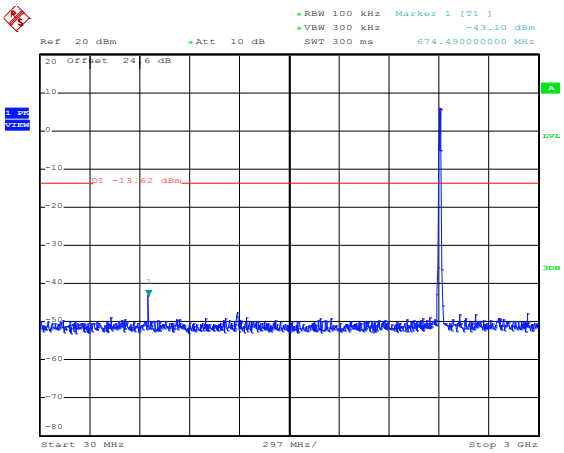
Spurious Emission 30MHz~3GHz



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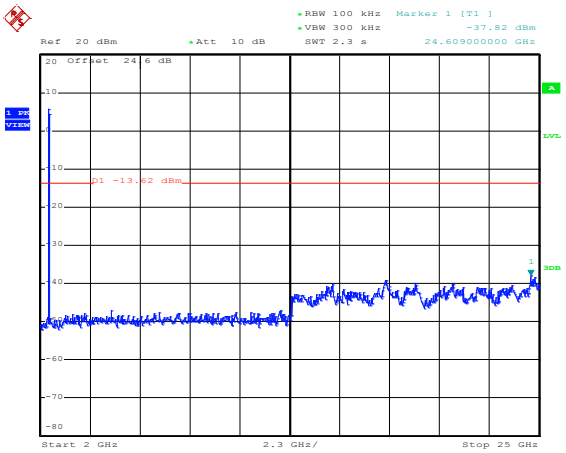
Spurious Emission 2GHz~25GHz



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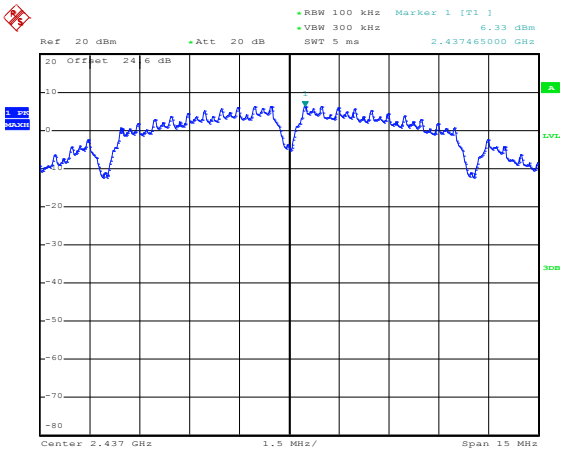
Test Mode :	802.11b	**Temperature :**	21~25°C
Test Band :	2.4GHz Mid	**Relative Humidity :**	51~54%
Test Channel :	06	**Test Engineer :**	Derek Hsu

WLAN 802.11b Channel 06

100kHz PSD reference Level



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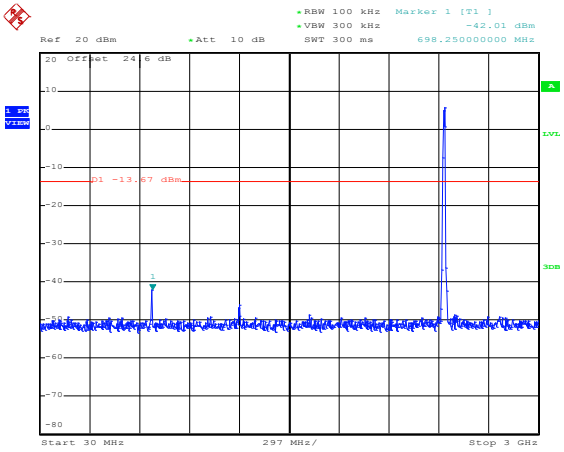
Spurious Emission 30MHz~3GHz



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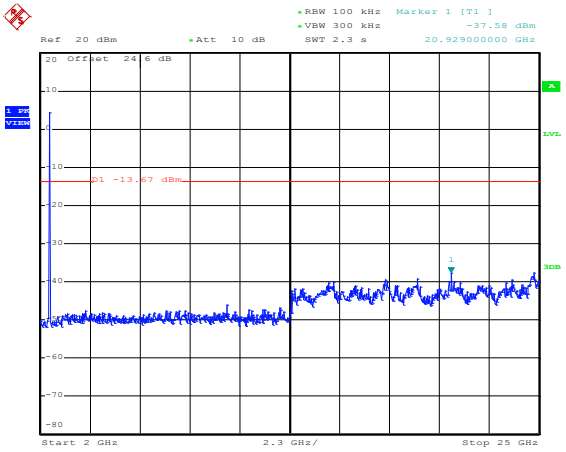
Spurious Emission 2GHz~25GHz



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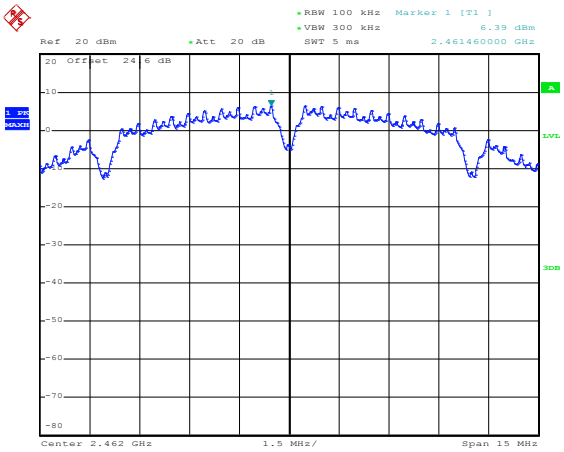
Test Mode :	802.11b	**Temperature :**	21~25°C
Test Band :	2.4GHz High	**Relative Humidity :**	51~54%
Test Channel :	11	**Test Engineer :**	Derek Hsu

WLAN 802.11b Channel 11

100kHz PSD reference Level



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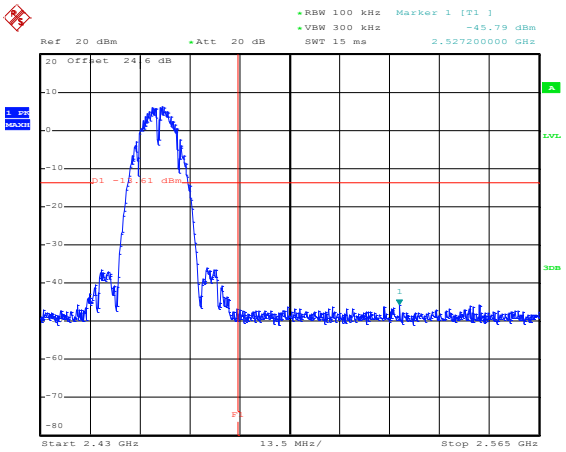
High Channel Plot



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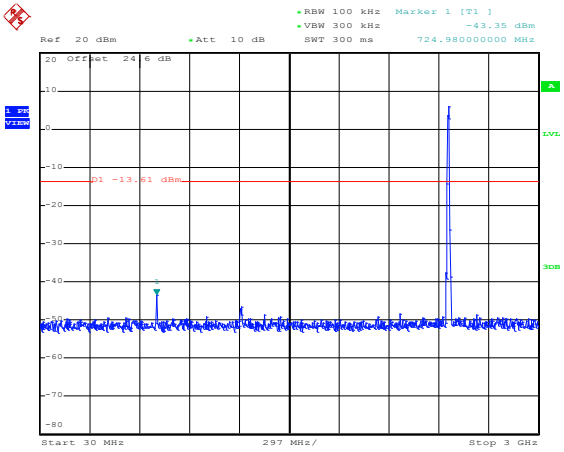
Spurious Emission 30MHz~3GHz



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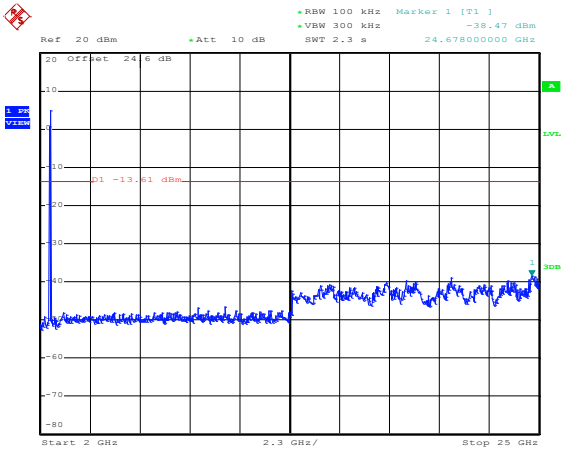
Spurious Emission 2GHz~25GHz



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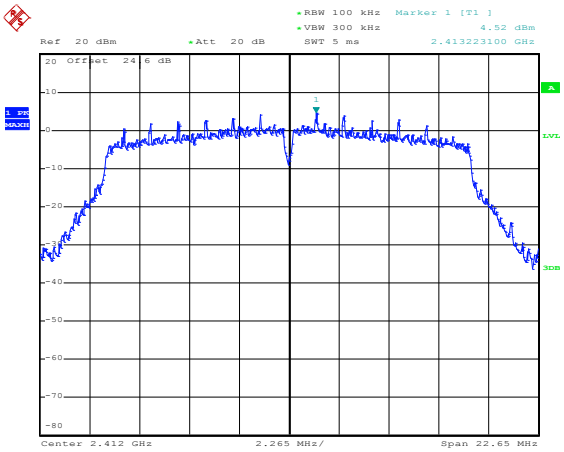
Test Mode :	802.11g	**Temperature :**	21~25°C
Test Band :	2.4GHz Low	**Relative Humidity :**	51~54%
Test Channel :	01	**Test Engineer :**	Derek Hsu

WLAN 802.11g Channel 01

100kHz PSD reference Level



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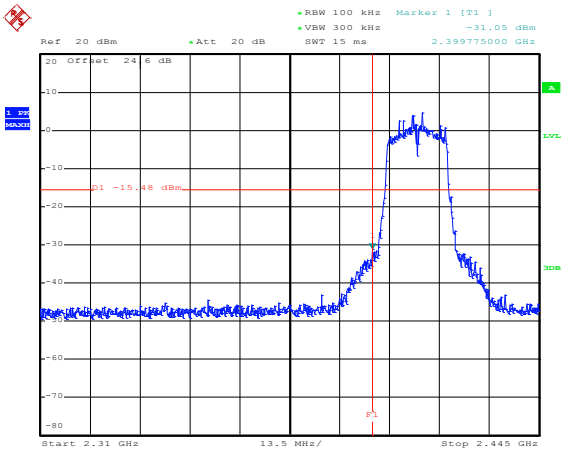
Low Channel Plot



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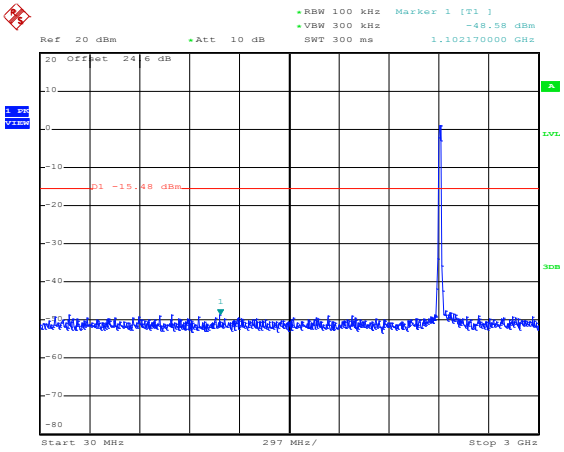
Spurious Emission 30MHz~3GHz



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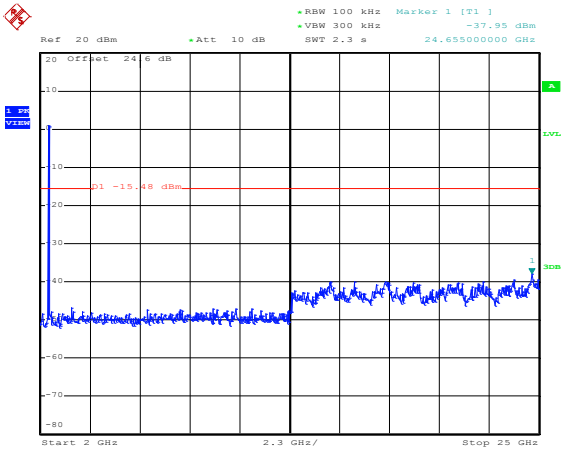
Spurious Emission 2GHz~25GHz



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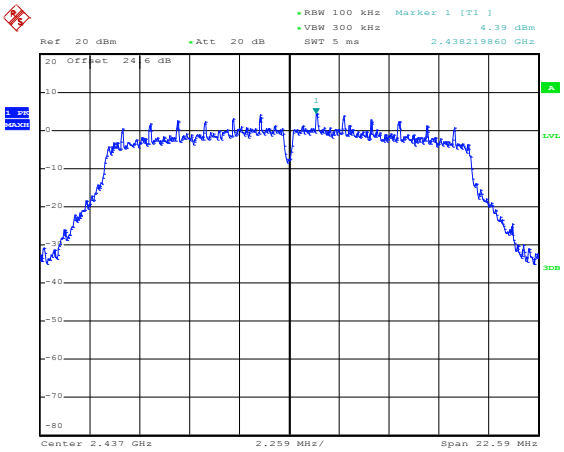
Test Mode :	802.11g	**Temperature :**	21~25°C
Test Band :	2.4GHz Mid	**Relative Humidity :**	51~54%
Test Channel :	06	**Test Engineer :**	Derek Hsu

WLAN 802.11g Channel 06

100kHz PSD reference Level



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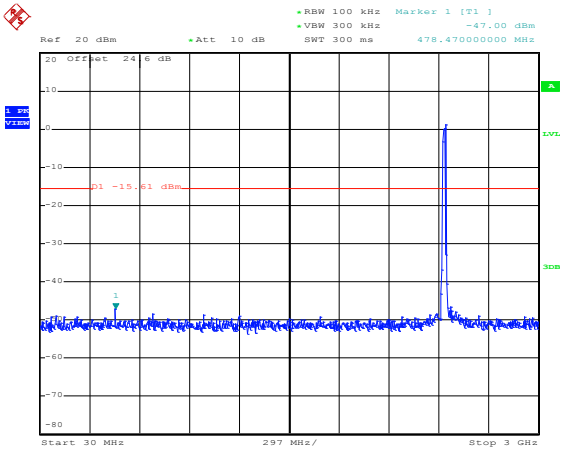
Spurious Emission 30MHz~3GHz



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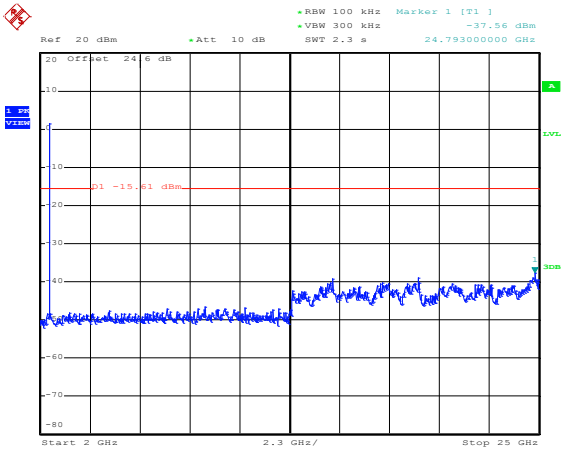
Spurious Emission 2GHz~25GHz

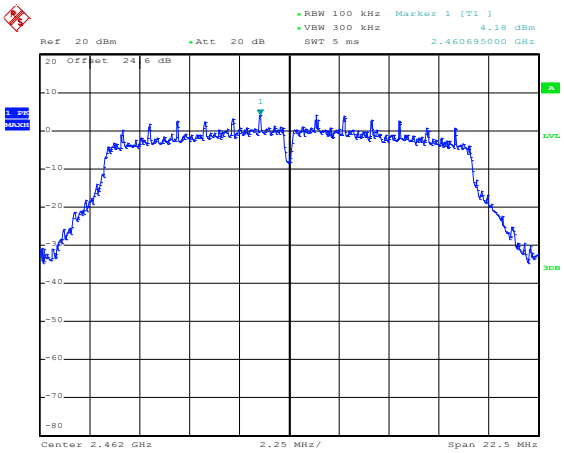


Date: 14.APR.2017 17:15:19

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

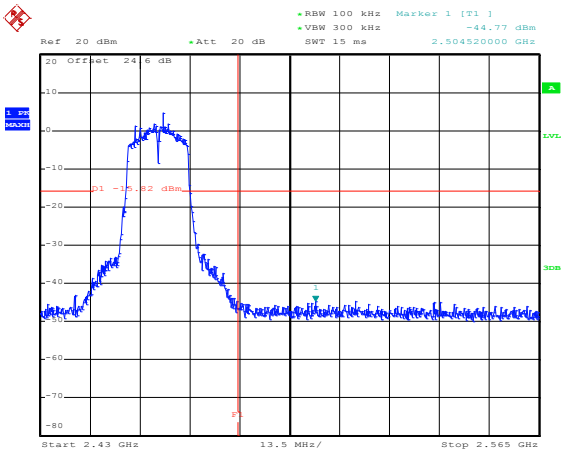
WLAN 802.11g Channel 11

100kHz PSD reference Level



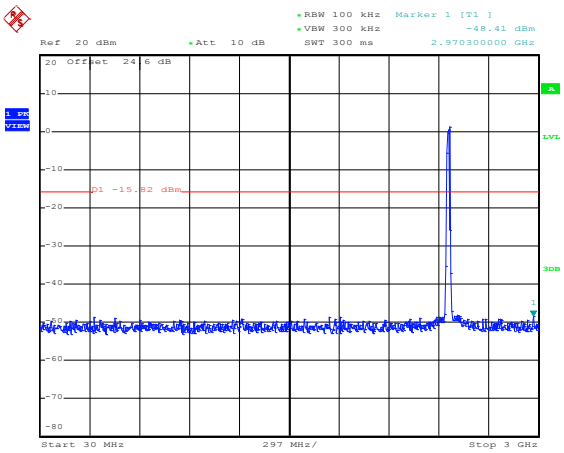
Date: 14.APR.2017 17:17:20

High Channel Plot



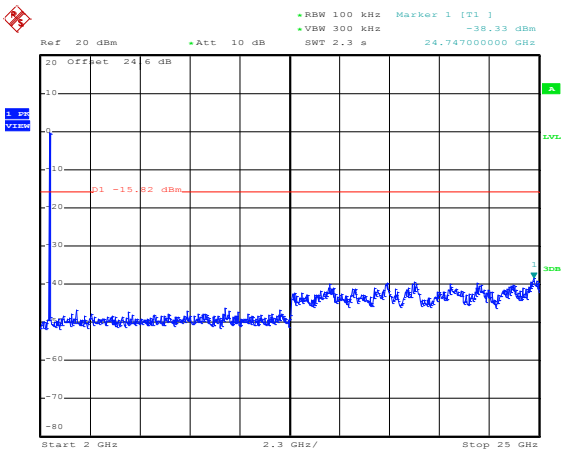
Date: 14.APR.2017 17:17:46

Spurious Emission 30MHz~3GHz



Date: 14.APR.2017 17:17:59

Spurious Emission 2GHz~25GHz

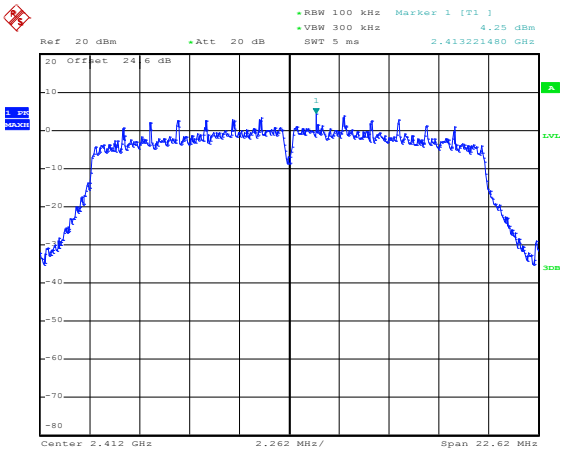


Date: 14.APR.2017 17:18:07

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

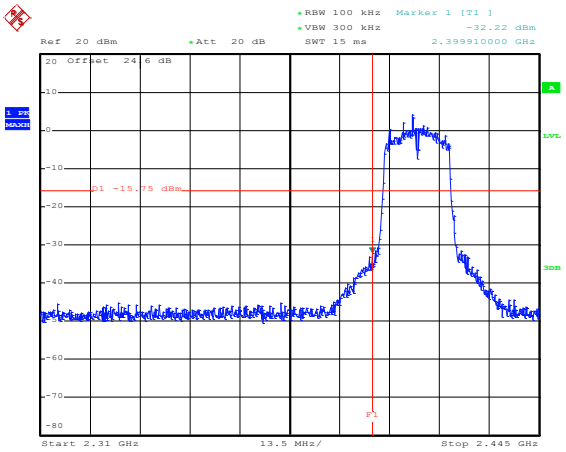
WLAN 802.11n HT20 Channel 01

100kHz PSD reference Level



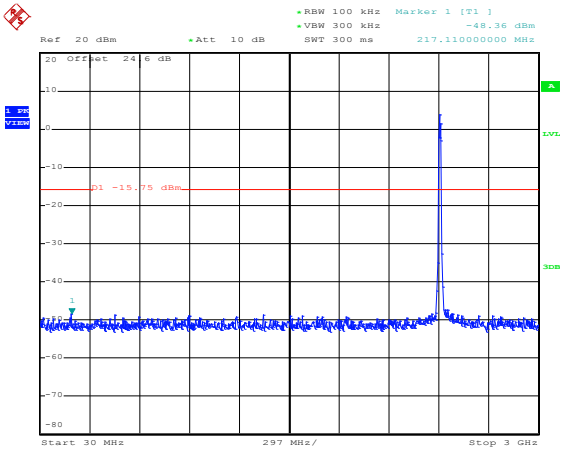
Date: 14.APR.2017 17:20:42

Low Channel Plot



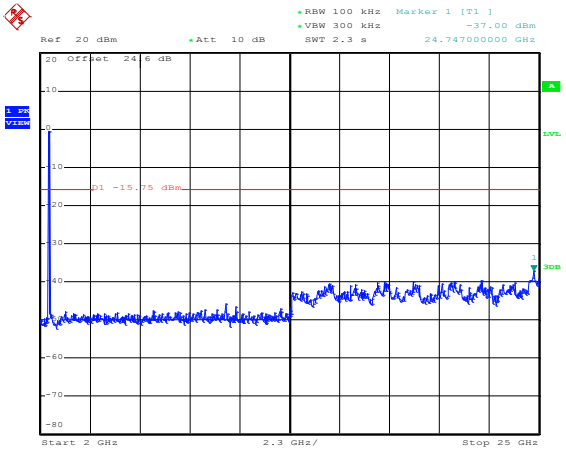
Date: 14.APR.2017 17:20:53

Spurious Emission 30MHz~3GHz



Date: 14.APR.2017 17:21:08

Spurious Emission 2GHz~25GHz

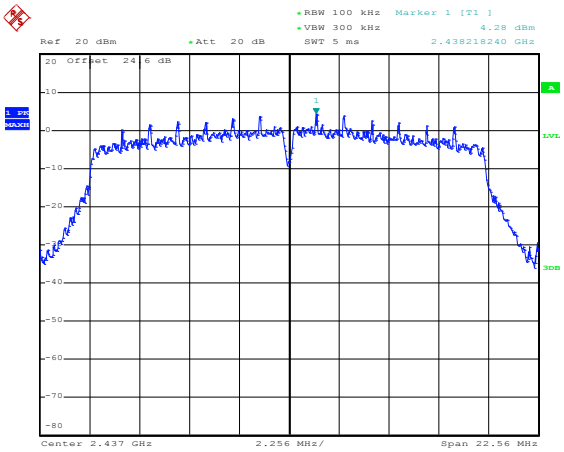


Date: 14.APR.2017 17:21:17

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

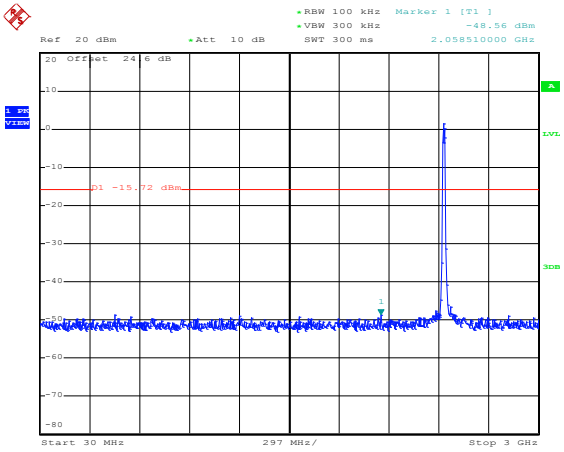
WLAN 802.11n HT20 Channel 06

100kHz PSD reference Level



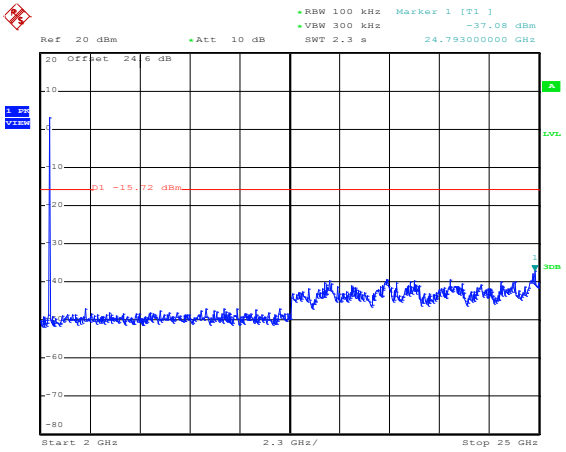
Date: 14.APR.2017 17:23:29

Spurious Emission 30MHz~3GHz



Date: 14.APR.2017 17:23:42

Spurious Emission 2GHz~25GHz

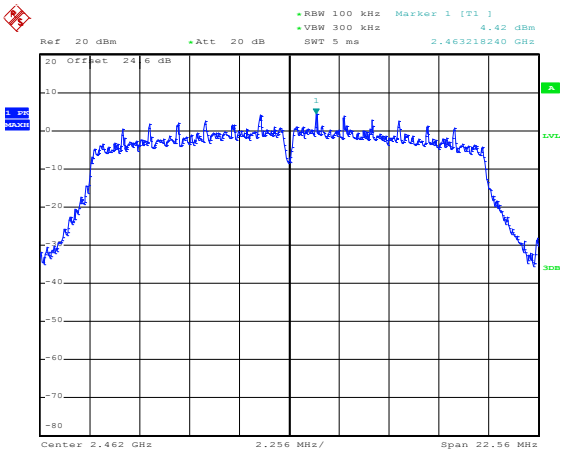


Date: 14.APR.2017 17:23:51

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

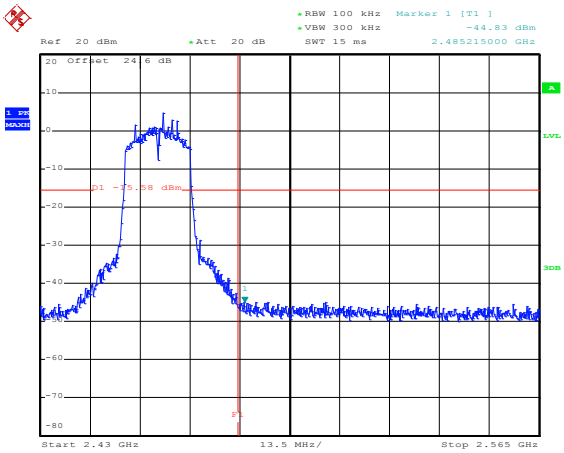
WLAN 802.11n HT20 Channel 11

100kHz PSD reference Level



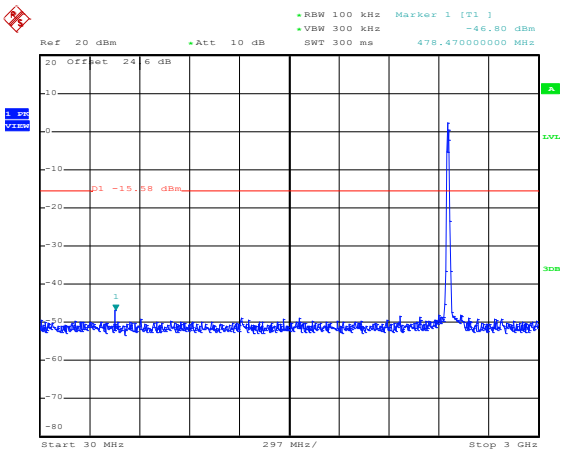
Date: 14.APR.2017 17:27:43

High Channel Plot



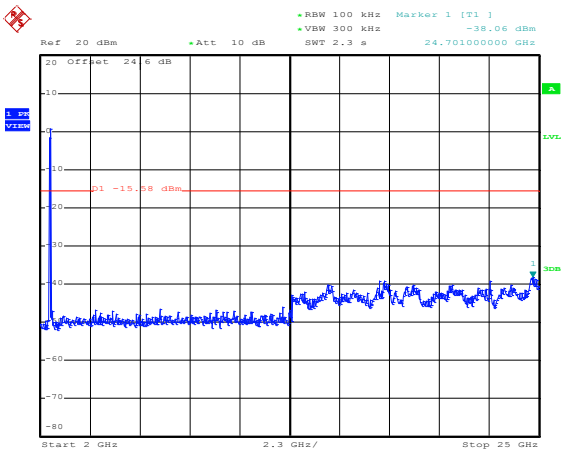
Date: 14.APR.2017 17:28:27

Spurious Emission 30MHz~3GHz



Date: 14.APR.2017 17:28:39

Spurious Emission 2GHz~25GHz

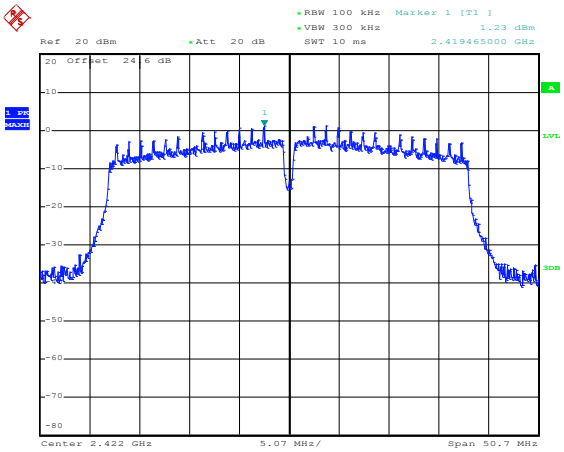


Date: 14.APR.2017 17:28:47

Test Mode :	802.11n HT40	**Temperature :**	21~25°C
Test Band :	2.4GHz Low	**Relative Humidity :**	51~54%
Test Channel :	03	**Test Engineer :**	Derek Hsu

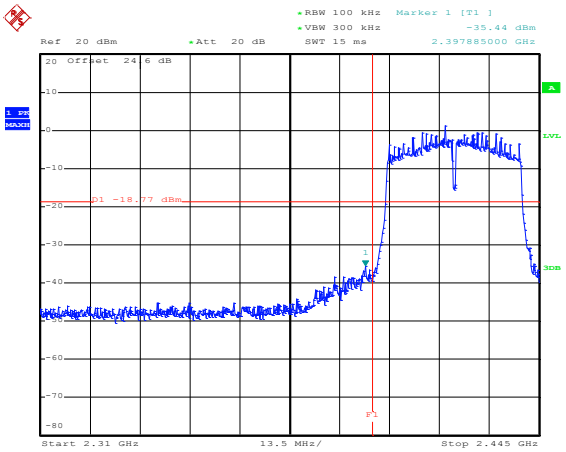
WLAN 802.11n HT40 Channel 03

100kHz PSD reference Level



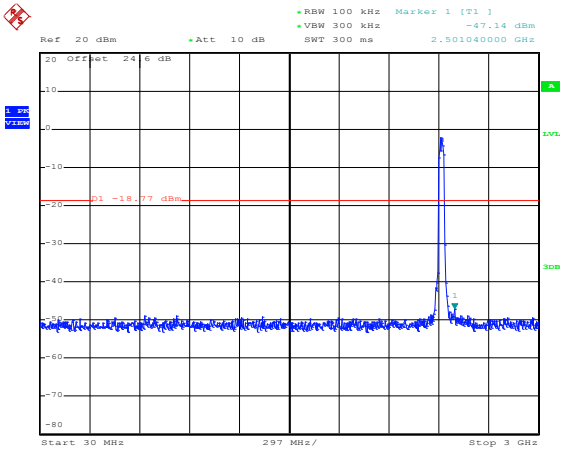
Date: 14.APR.2017 17:31:52

Low Channel Plot



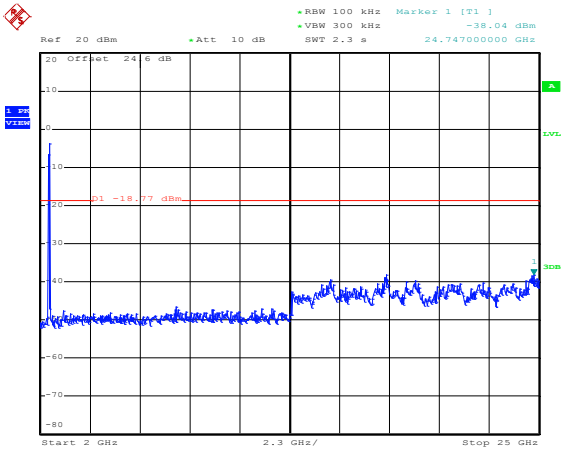
Date: 14.APR.2017 17:32:07

Spurious Emission 30MHz~3GHz



Date: 14.APR.2017 17:32:57

Spurious Emission 2GHz~25GHz

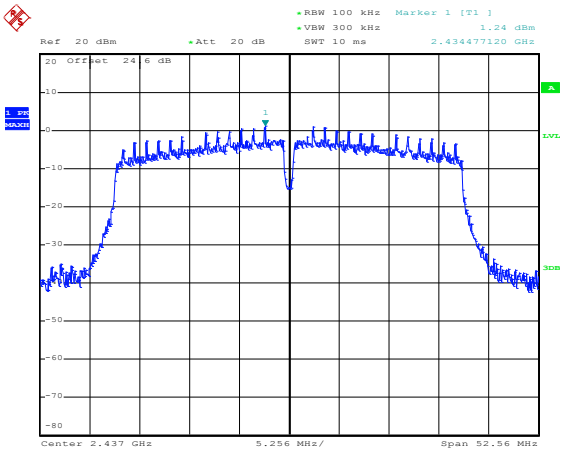


Date: 14.APR.2017 17:33:05

Test Mode :	802.11n HT40	**Temperature :**	21~25°C
Test Band :	2.4GHz Mid	**Relative Humidity :**	51~54%
Test Channel :	06	**Test Engineer :**	Derek Hsu

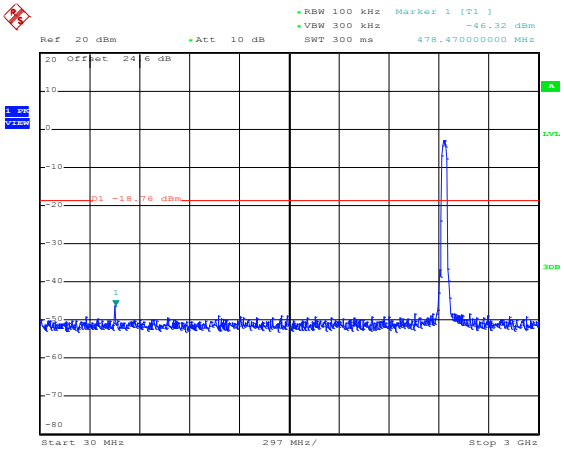
WLAN 802.11n HT40 Channel 06

100kHz PSD reference Level



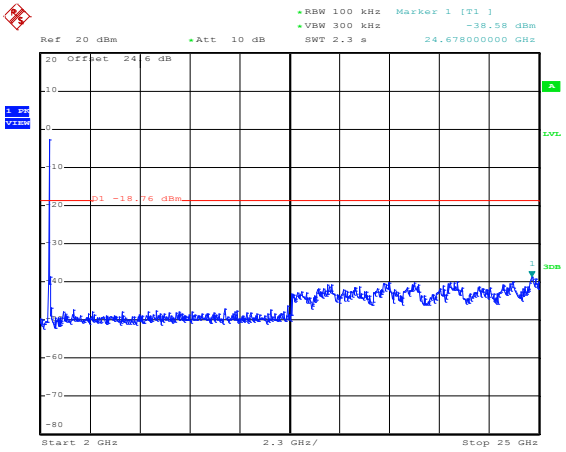
Date: 14.APR.2017 17:35:16

Spurious Emission 30MHz~3GHz



Date: 14.APR.2017 17:35:28

Spurious Emission 2GHz~25GHz

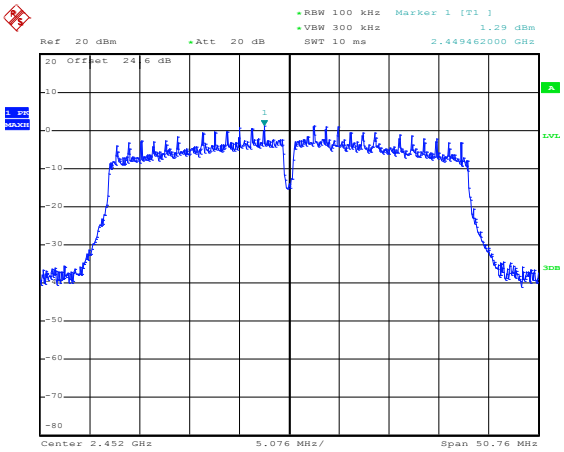


Date: 14.APR.2017 17:35:37

Test Mode :	802.11n HT40	**Temperature :**	21~25°C
Test Band :	2.4GHz High	**Relative Humidity :**	51~54%
Test Channel :	09	**Test Engineer :**	Derek Hsu

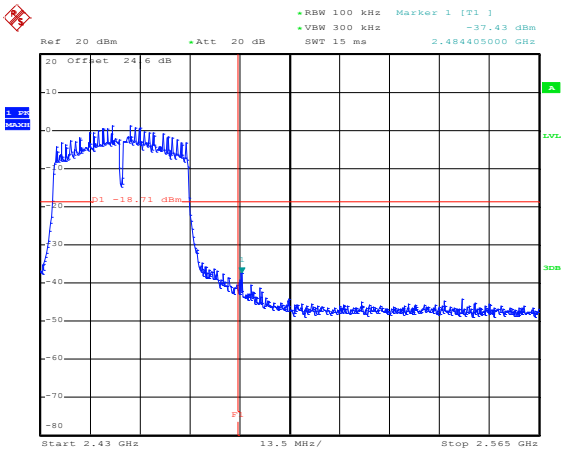
WLAN 802.11n HT40 Channel 09

100kHz PSD reference Level



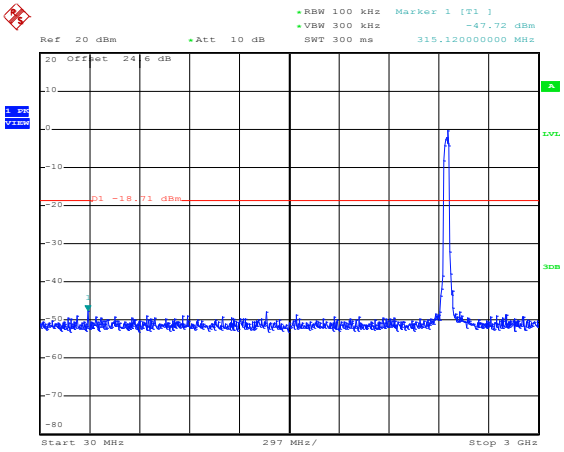
Date: 14.APR.2017 17:38:48

High Channel Plot



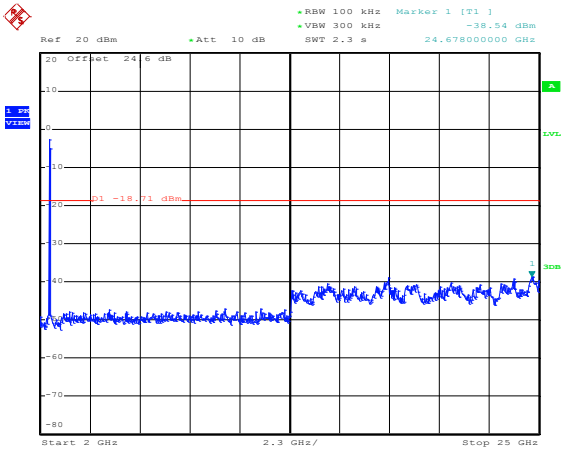
Date: 14.APR.2017 17:39:11

Spurious Emission 30MHz~3GHz



Date: 14.APR.2017 17:39:27

Spurious Emission 2GHz~25GHz



Date: 14.APR.2017 17:39:35

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

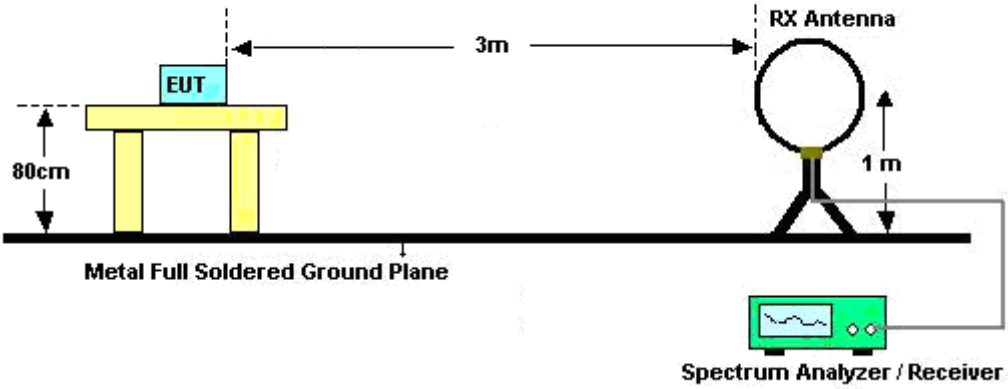
The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

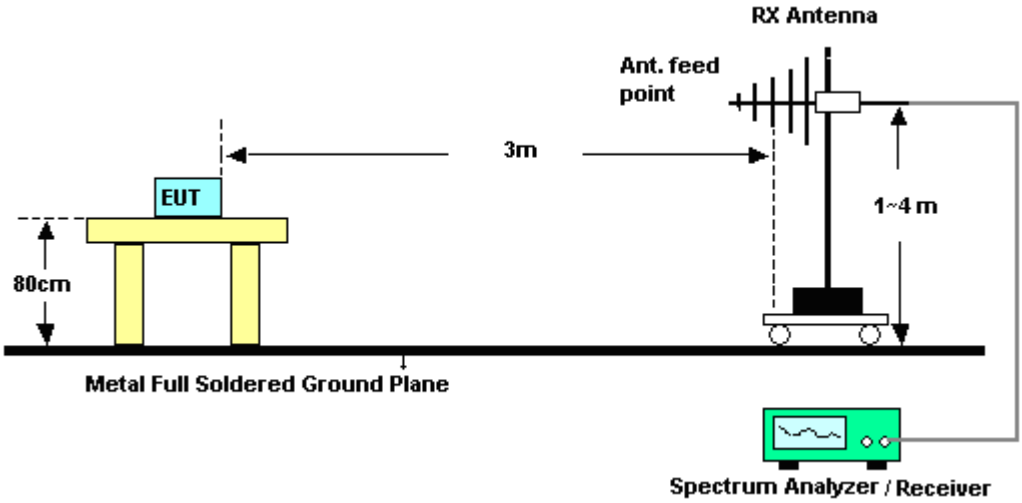
1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v04.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test 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

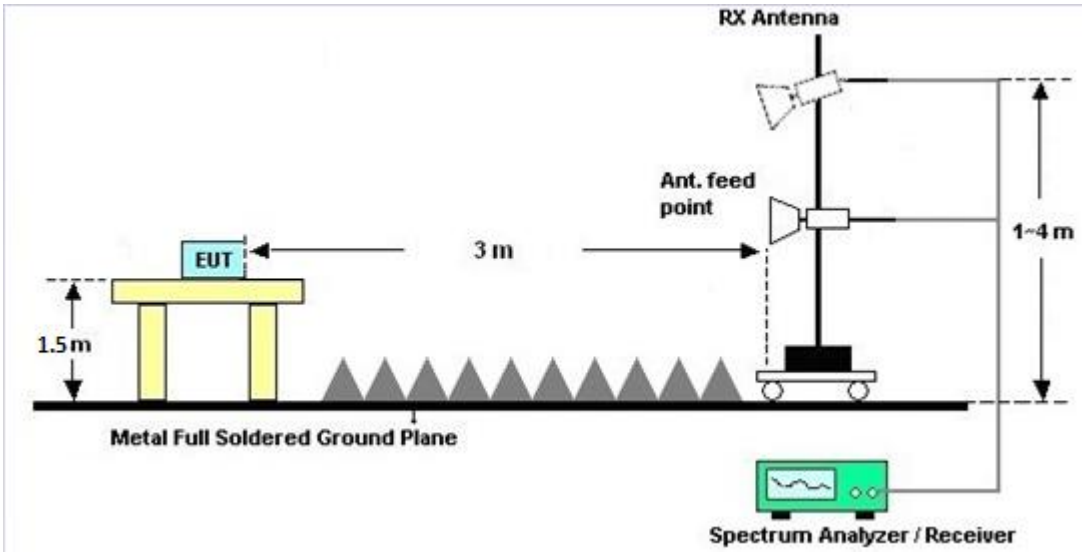
For radiated emissions below 30MHz



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 Radiated Spurious at Band Edges

Please refer to Appendix C and D.

3.5.7 Duty Cycle

Please refer to Appendix E.

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

Please refer to Appendix C and D.

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.

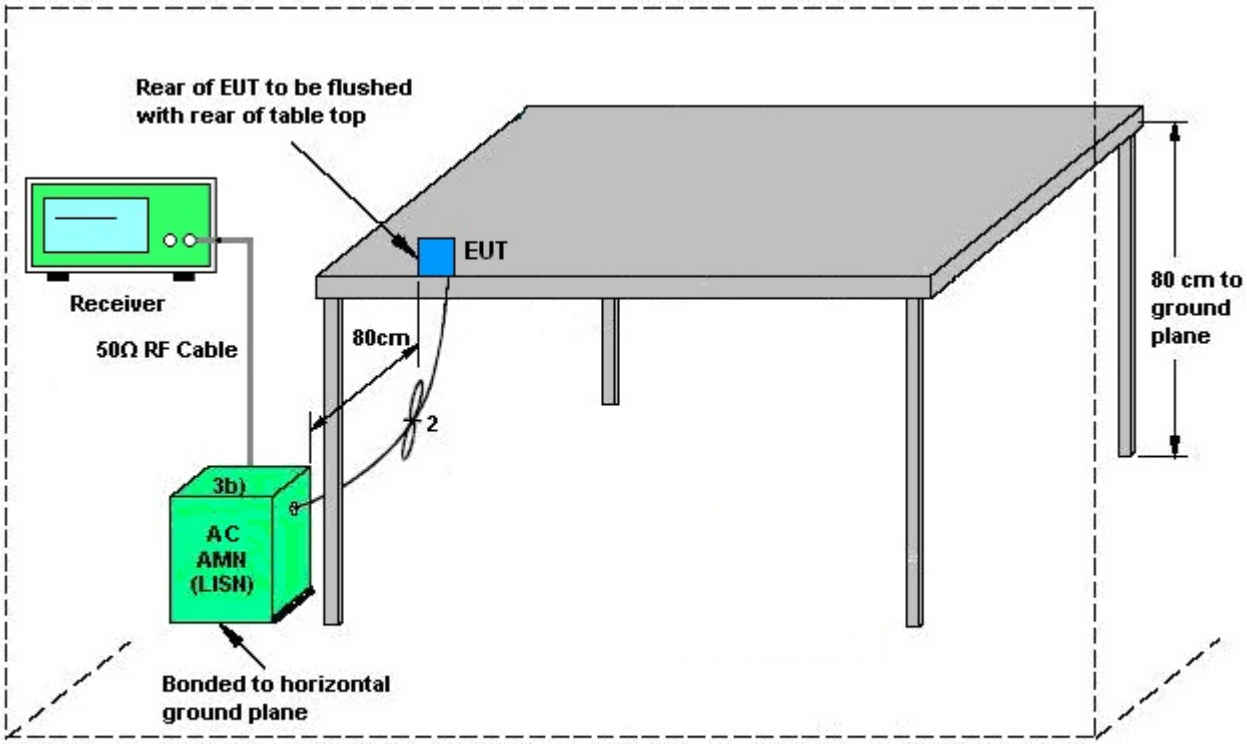
3.6.2 Measuring Instruments

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. 14, 2017	Sep. 28, 2017	Conducted (TH05-HY)
Power Sensor	Anritsu	MA2411B	0846202	300MHz~40GHz	Sep. 29, 2016	Apr. 14, 2017	Sep. 28, 2017	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz-40GHz	Jul. 17, 2016	Apr. 14, 2017	Jul. 16, 2017	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	May 11, 2017	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Aug. 30, 2016	May 11, 2017	Aug. 29, 2017	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Nov. 29, 2016	May 11, 2017	Nov. 28, 2017	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Dec. 06, 2016	May 11, 2017	Dec. 05, 2017	Conduction (CO05-HY)
Bilog Antenna	TESEQ	CBL 6111D&00800N1D01N-06	35419&03	30MHz to 1GHz	Jan. 07, 2017	May 02, 2017 ~ May 05, 2017	Jan. 06, 2018	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 19, 2016	May 02, 2017 ~ May 05, 2017	Aug. 18, 2017	Radiation (03CH07-HY)
EMI Test Receiver	Keysight	N9038A(MXE)	MY54130085	20Hz ~ 8.4GHz	Oct. 26, 2016	May 02, 2017 ~ May 05, 2017	Oct. 25, 2017	Radiation (03CH07-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Sep. 02, 2015	May 02, 2017 ~ May 05, 2017	Sep. 01, 2017	Radiation (03CH07-HY)
Preamplifier	MITEQ	AMF-7D-00101800-30-10P	1590075	1GHz ~ 18GHz	Apr. 25, 2017	May 02, 2017 ~ May 05, 2017	Apr. 24, 2018	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10MHz-1GHz	Mar. 14, 2017	May 02, 2017 ~ May 05, 2017	Mar. 13, 2018	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~ 26.5GHz	Oct. 12, 2016	May 02, 2017 ~ May 05, 2017	Oct. 11, 2017	Radiation (03CH07-HY)
Spectrum Analyzer	Agilent	N9010A	MY53470118	10Hz~44GHz	Apr. 17, 2017	May 02, 2017 ~ May 05, 2017	Apr. 16, 2018	Radiation (03CH07-HY)
Antenna Mast	Max-Full	MFA520BS	N/A	1m~4m	N/A	May 02, 2017 ~ May 05, 2017	N/A	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 Degree	N/A	May 02, 2017 ~ May 05, 2017	N/A	Radiation (03CH07-HY)
Preamplifier	MITEQ	JS44-18004000-33-8P	1840917	18GHz ~ 40GHz	Jun. 14, 2016	May 02, 2017 ~ May 05, 2017	Jun. 13, 2017	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170584	18GHz- 40GHz	Nov. 08, 2016	May 02, 2017 ~ May 05, 2017	Nov. 07, 2017	Radiation (03CH07-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))	5.70

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.50

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.20

Appendix A. Test Result of Conducted Test Items

Test Engineer:	Derek Hsu	Temperature:	21~25	°C
Test Date:	2017/4/14	Relative Humidity:	51~54	%

Report Number : FR740506

TEST RESULTS DATA
6dB and 99% Occupied Bandwidth

2.4GHz Band								
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Occupied BW (MHz)	6dB BW (MHz)	6dB BW Limit (MHz)	Pass/Fail
11b	1Mbps	1	1	2412	14.55	10.00	0.50	Pass
11b	1Mbps	1	6	2437	14.50	10.00	0.50	Pass
11b	1Mbps	1	11	2462	14.45	10.00	0.50	Pass
11g	6Mbps	1	1	2412	17.25	15.10	0.50	Pass
11g	6Mbps	1	6	2437	17.20	15.06	0.50	Pass
11g	6Mbps	1	11	2462	17.25	15.00	0.50	Pass
HT20	MCS0	1	1	2412	18.10	15.08	0.50	Pass
HT20	MCS0	1	6	2437	18.00	15.04	0.50	Pass
HT20	MCS0	1	11	2462	18.10	15.04	0.50	Pass
HT40	MCS0	1	3	2422	36.20	33.80	0.50	Pass
HT40	MCS0	1	6	2437	36.10	35.04	0.50	Pass
HT40	MCS0	1	9	2452	36.00	33.84	0.50	Pass

Report Number : FR740506

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	18.59	30.00	4.00	22.59	36.00	Pass
11b	1Mbps	1	6	2437	17.90	30.00	4.00	21.90	36.00	Pass
11b	1Mbps	1	11	2462	17.89	30.00	4.00	21.89	36.00	Pass
11g	6Mbps	1	1	2412	23.74	30.00	4.00	27.74	36.00	Pass
11g	6Mbps	1	6	2437	23.70	30.00	4.00	27.70	36.00	Pass
11g	6Mbps	1	11	2462	23.47	30.00	4.00	27.47	36.00	Pass
HT20	MCS0	1	1	2412	23.80	30.00	4.00	27.80	36.00	Pass
HT20	MCS0	1	6	2437	23.75	30.00	4.00	27.75	36.00	Pass
HT20	MCS0	1	11	2462	23.55	30.00	4.00	27.55	36.00	Pass
HT40	MCS0	1	3	2422	22.95	30.00	4.00	26.95	36.00	Pass
HT40	MCS0	1	6	2437	22.75	30.00	4.00	26.75	36.00	Pass
HT40	MCS0	1	9	2452	22.71	30.00	4.00	26.71	36.00	Pass

Report Number : FR740506

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	0.14	16.76
11b	1Mbps	1	6	2437	0.14	16.20
11b	1Mbps	1	11	2462	0.14	16.05
11g	6Mbps	1	1	2412	0.47	14.81
11g	6Mbps	1	6	2437	0.47	14.77
11g	6Mbps	1	11	2462	0.47	14.71
HT20	MCS0	1	1	2412	0.61	14.81
HT20	MCS0	1	6	2437	0.61	14.78
HT20	MCS0	1	11	2462	0.61	14.61
HT40	MCS0	1	3	2422	1.63	14.83
HT40	MCS0	1	6	2437	1.63	14.80
HT40	MCS0	1	9	2452	1.63	14.78

Report Number : FR740506

TEST RESULTS DATA
Peak Power Density

2.4GHz Band								
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Peak PSD (dBm /3kHz)	DG (dBi)	Peak PSD Limit (dBm /3kHz)	Pass/Fail
11b	1Mbps	1	1	2412	4.88	4.00	8.00	Pass
11b	1Mbps	1	6	2437	4.64	4.00	8.00	Pass
11b	1Mbps	1	11	2462	4.17	4.00	8.00	Pass
11g	6Mbps	1	1	2412	-12.40	4.00	8.00	Pass
11g	6Mbps	1	6	2437	-11.68	4.00	8.00	Pass
11g	6Mbps	1	11	2462	-12.36	4.00	8.00	Pass
HT20	MCS0	1	1	2412	-12.62	4.00	8.00	Pass
HT20	MCS0	1	6	2437	-12.50	4.00	8.00	Pass
HT20	MCS0	1	11	2462	-11.78	4.00	8.00	Pass
HT40	MCS0	1	3	2422	-15.14	4.00	8.00	Pass
HT40	MCS0	1	6	2437	-14.39	4.00	8.00	Pass
HT40	MCS0	1	9	2452	-14.51	4.00	8.00	Pass

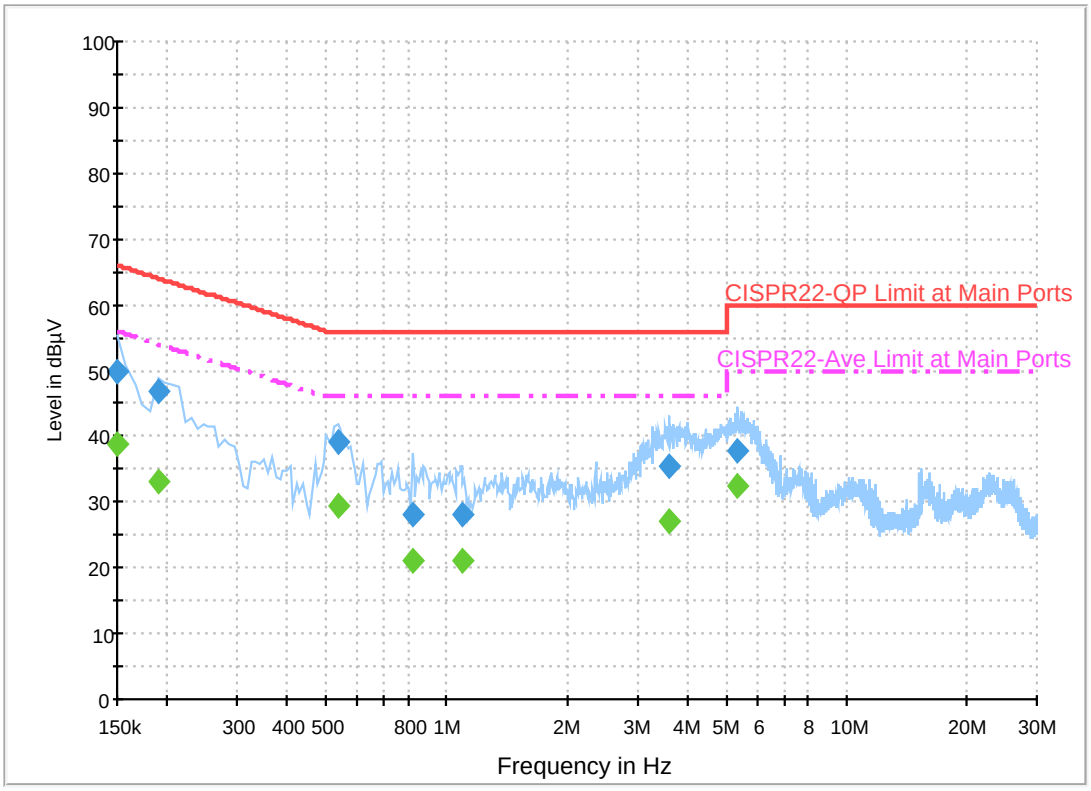
Appendix B. AC Conducted Emission Test Results

Test Engineer :	Kai-Chun Chu	**Temperature :**	22~23℃
		Relative Humidity :	52~53%

EUT Information

Report NO :	740506
Test Mode :	Mode 1
Test Voltage :	Power Form System
Phase :	Line

ENV216 Auto Test-L



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	49.7	Off	L1	19.6	16.3	66.0
0.190000	46.8	Off	L1	19.5	17.2	64.0
0.534000	39.3	Off	L1	19.5	16.7	56.0
0.822000	27.9	Off	L1	19.5	28.1	56.0
1.094000	27.9	Off	L1	19.5	28.1	56.0
3.606000	35.3	Off	L1	19.6	20.7	56.0
5.366000	37.9	Off	L1	19.6	22.1	60.0

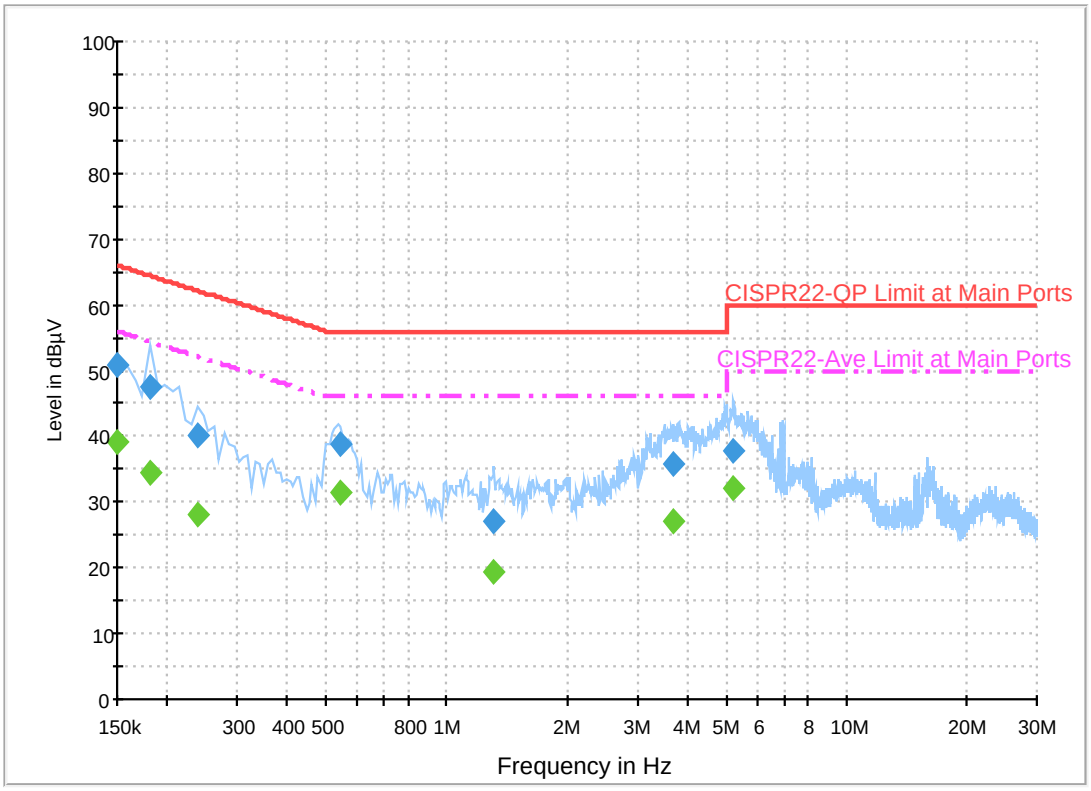
Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	38.8	Off	L1	19.6	17.2	56.0
0.190000	33.3	Off	L1	19.5	20.7	54.0
0.534000	29.4	Off	L1	19.5	16.6	46.0
0.822000	20.9	Off	L1	19.5	25.1	46.0
1.094000	20.9	Off	L1	19.5	25.1	46.0
3.606000	27.1	Off	L1	19.6	18.9	46.0
5.366000	32.6	Off	L1	19.6	17.4	50.0

EUT Information

Report NO :	740506
Test Mode :	Mode 1
Test Voltage :	Power Form System
Phase :	Neutral

ENV216 Auto Test-N



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	51.0	Off	N	19.5	15.0	66.0
0.182000	47.4	Off	N	19.5	17.0	64.4
0.238000	40.2	Off	N	19.5	22.0	62.2
0.542000	38.6	Off	N	19.5	17.4	56.0
1.310000	27.0	Off	N	19.5	29.0	56.0
3.678000	35.7	Off	N	19.5	20.3	56.0
5.238000	37.8	Off	N	19.6	22.2	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	39.0	Off	N	19.5	17.0	56.0
0.182000	34.4	Off	N	19.5	20.0	54.4
0.238000	28.2	Off	N	19.5	24.0	52.2
0.542000	31.3	Off	N	19.5	14.7	46.0
1.310000	19.3	Off	N	19.5	26.7	46.0
3.678000	27.2	Off	N	19.5	18.8	46.0
5.238000	32.2	Off	N	19.6	17.8	50.0

Appendix C. Radiated Spurious Emission

Test Engineer :	James Chiu and Jesse Wang	Temperature :	24~27°C
		Relative Humidity :	47~54%

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		2359.98	55.77	-18.23	74	50.39	32.09	8.26	34.97	300	238	P	H
		2384.34	45.06	-8.94	54	39.65	32.14	8.24	34.97	300	238	A	H
	*	2412	94.77	-	-	89.27	32.24	8.24	34.98	300	238	P	H
	*	2412	91.75	-	-	86.25	32.24	8.24	34.98	300	238	A	H
													H
													H
		2331.525	56.32	-17.68	74	51.02	31.98	8.28	34.96	281	327	P	V
		2386.545	45.92	-8.08	54	40.46	32.19	8.24	34.97	281	327	A	V
	*	2412	108.52	-	-	103.02	32.24	8.24	34.98	281	327	P	V
	*	2412	105.33	-	-	99.83	32.24	8.24	34.98	281	327	A	V
													V
													V
802.11b CH 06 2437MHz		2322.18	55.78	-18.22	74	50.48	31.98	8.28	34.96	291	334	P	H
		2375.1	45.06	-8.94	54	39.63	32.14	8.26	34.97	291	334	A	H
	*	2437	93.92	-	-	88.3	32.34	8.27	34.99	291	334	P	H
	*	2437	90.81	-	-	85.19	32.34	8.27	34.99	291	334	A	H
		2500	55.83	-18.17	74	50.04	32.5	8.3	35.01	291	334	P	H
		2490.27	45.48	-8.52	54	39.68	32.5	8.3	35	291	334	A	H
		2329.74	55.6	-18.4	74	50.3	31.98	8.28	34.96	303	328	P	V
		2385.04	45.39	-8.61	54	39.98	32.14	8.24	34.97	303	328	A	V
	*	2437	108.63	-	-	103.01	32.34	8.27	34.99	303	328	P	V
	*	2437	105.5	-	-	99.88	32.34	8.27	34.99	303	328	A	V
		2490.76	56.12	-17.88	74	50.32	32.5	8.3	35	303	328	P	V
		2491.04	45.83	-8.17	54	40.03	32.5	8.3	35	303	328	A	V

802.11b CH 11 2462MHz	*	2462	96.39	-	-	90.68	32.4	8.3	34.99	300	167	P	H
	*	2462	93.16	-	-	87.45	32.4	8.3	34.99	300	167	A	H
		2488.72	55.85	-18.15	74	50.05	32.5	8.3	35	300	167	P	H
		2492.84	45.5	-8.5	54	39.71	32.5	8.3	35.01	300	167	A	H
													H
													H
	*	2462	109	-	-	103.29	32.4	8.3	34.99	240	166	P	V
	*	2462	105.93	-	-	100.22	32.4	8.3	34.99	240	166	A	V
		2490.56	56.1	-17.9	74	50.3	32.5	8.3	35	240	166	P	V
		2487.72	46.2	-7.8	54	40.4	32.5	8.3	35	240	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 802.11b (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		4824	43.31	-30.69	74	57.12	33.64	11.93	59.38	100	0	P	H
													H
													H
													H
		4824	44.66	-29.34	74	58.47	33.64	11.93	59.38	100	0	P	V
													V
													V
													V
802.11b CH 06 2437MHz		4874	41.76	-32.24	74	55.61	33.54	11.9	59.29	100	0	P	H
		7311	54.69	-19.31	74	63.11	34.69	14.94	58.05	100	251	P	H
		7311	50.98	-3.02	54	59.4	34.69	14.94	58.05	100	251	A	H
													H
		4874	42.85	-31.15	74	56.7	33.54	11.9	59.29	100	0	P	V
		7311	54.79	-19.21	74	63.21	34.69	14.94	58.05	100	242	P	V
		7311	51.91	-2.09	54	60.33	34.69	14.94	58.05	100	242	A	V
													V
802.11b CH 11 2462MHz		4924	40.96	-33.04	74	54.86	33.44	11.87	59.21	100	0	P	H
		7386	54.64	-19.36	74	63.21	34.47	15.08	58.12	100	252	P	H
		7386	51.02	-2.98	54	59.59	34.47	15.08	58.12	100	252	A	H
													H
		4924	42.02	-31.98	74	55.92	33.44	11.87	59.21	100	0	P	V
		7386	56.22	-17.78	74	64.79	34.47	15.08	58.12	125	270	P	V
		7386	53.43	-0.57	54	62	34.47	15.08	58.12	125	270	A	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 (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		2352.105	55.43	-18.57	74	50.05	32.09	8.26	34.97	346	239	P	H
		2380.455	45.73	-8.27	54	40.32	32.14	8.24	34.97	346	239	A	H
	*	2412	97.34	-	-	91.84	32.24	8.24	34.98	346	239	P	H
	*	2412	89.88	-	-	84.38	32.24	8.24	34.98	346	239	A	H
													H
													H
		2388.75	58.81	-15.19	74	53.35	32.19	8.24	34.97	280	330	P	V
		2389.8	48.88	-5.12	54	43.43	32.19	8.24	34.98	280	330	A	V
	*	2412	109.78	-	-	104.28	32.24	8.24	34.98	280	330	P	V
	*	2412	102.28	-	-	96.78	32.24	8.24	34.98	280	330	A	V
													V
													V
802.11g CH 06 2437MHz		2317.7	55.6	-18.4	74	50.3	31.98	8.28	34.96	299	273	P	H
		2386.86	45.69	-8.31	54	40.23	32.19	8.24	34.97	299	273	A	H
	*	2437	98.99	-	-	93.37	32.34	8.27	34.99	299	273	P	H
	*	2437	91.43	-	-	85.81	32.34	8.27	34.99	299	273	A	H
		2487.82	55.73	-18.27	74	49.93	32.5	8.3	35	299	273	P	H
		2485.44	45.93	-8.07	54	40.18	32.45	8.3	35	299	273	A	H
		2363.2	56.31	-17.69	74	50.93	32.09	8.26	34.97	302	325	P	V
		2387.84	46.62	-7.38	54	41.16	32.19	8.24	34.97	302	325	A	V
	*	2437	109.93	-	-	104.31	32.34	8.27	34.99	302	325	P	V
	*	2437	101.9	-	-	96.28	32.34	8.27	34.99	302	325	A	V
		2496.64	57.21	-16.79	74	51.42	32.5	8.3	35.01	302	325	P	V
		2484.18	47.64	-6.36	54	41.89	32.45	8.3	35	302	325	A	V

802.11g CH 11 2462MHz	*	2462	97.64	-	-	91.93	32.4	8.3	34.99	300	167	P	H
	*	2462	89.88	-	-	84.17	32.4	8.3	34.99	300	167	A	H
		2493.04	56.3	-17.7	74	50.51	32.5	8.3	35.01	300	167	P	H
		2490.24	46	-8	54	40.2	32.5	8.3	35	300	167	A	H
													H
													H
	*	2462	110.03	-	-	104.32	32.4	8.3	34.99	236	167	P	V
	*	2462	102.47	-	-	96.76	32.4	8.3	34.99	236	167	A	V
		2483.88	58.19	-15.81	74	52.44	32.45	8.3	35	236	167	P	V
		2483.52	48.9	-5.1	54	43.15	32.45	8.3	35	236	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 802.11g (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		4824	40.56	-33.44	74	54.37	33.64	11.93	59.38	100	0	P	H
													H
													H
													H
		4824	41.26	-32.74	74	55.07	33.64	11.93	59.38	100	0	P	V
													V
													V
													V
802.11g CH 06 2437MHz		4874	39.96	-34.04	74	53.81	33.54	11.9	59.29	100	0	P	H
		7311	59.56	-14.44	74	67.98	34.69	14.94	58.05	100	252	P	H
		7311	46.99	-7.01	54	55.41	34.69	14.94	58.05	100	252	A	H
													H
		4874	39.56	-34.44	74	53.41	33.54	11.9	59.29	100	0	P	V
		7311	59.69	-14.31	74	68.11	34.69	14.94	58.05	100	242	P	V
		7311	48.16	-5.84	54	56.58	34.69	14.94	58.05	100	242	A	V
													V
802.11g CH 11 2462MHz		4924	39.48	-34.52	74	53.38	33.44	11.87	59.21	100	0	P	H
		7386	58.83	-15.17	74	67.4	34.47	15.08	58.12	100	250	P	H
		7386	47.29	-6.71	54	55.86	34.47	15.08	58.12	100	250	A	H
													H
		4924	40.07	-33.93	74	53.97	33.44	11.87	59.21	100	0	P	V
		7386	58.55	-15.45	74	67.12	34.47	15.08	58.12	100	251	P	V
		7386	46.78	-7.22	54	55.35	34.47	15.08	58.12	100	251	A	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 (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		2339.61	55.33	-18.67	74	49.99	32.03	8.28	34.97	300	238	P	H
		2388.225	45.44	-8.56	54	39.98	32.19	8.24	34.97	300	238	A	H
	*	2412	95.29	-	-	89.79	32.24	8.24	34.98	300	238	P	H
	*	2412	87.75	-	-	82.25	32.24	8.24	34.98	300	238	A	H
													H
													H
		2390	59.83	-14.17	74	54.38	32.19	8.24	34.98	280	330	P	V
		2389.905	49.62	-4.38	54	44.17	32.19	8.24	34.98	280	330	A	V
	*	2412	109.41	-	-	103.91	32.24	8.24	34.98	280	330	P	V
	*	2412	101.88	-	-	96.38	32.24	8.24	34.98	280	330	A	V
													V
													V
802.11n HT20 CH 06 2437MHz		2345.98	55.56	-18.44	74	50.24	32.03	8.26	34.97	292	276	P	H
		2389.1	45.65	-8.35	54	40.19	32.19	8.24	34.97	292	276	A	H
	*	2437	97.33	-	-	91.71	32.34	8.27	34.99	292	276	P	H
	*	2437	89.95	-	-	84.33	32.34	8.27	34.99	292	276	A	H
		2493.49	56.04	-17.96	74	50.25	32.5	8.3	35.01	292	276	P	H
		2488.8	46.11	-7.89	54	40.31	32.5	8.3	35	292	276	A	H
		2358.3	56.13	-17.87	74	50.75	32.09	8.26	34.97	238	282	P	V
		2366.7	46.53	-7.47	54	41.15	32.09	8.26	34.97	238	282	A	V
	*	2437	109.65	-	-	104.03	32.34	8.27	34.99	238	282	P	V
	*	2437	102.07	-	-	96.45	32.34	8.27	34.99	238	282	A	V
		2486.35	57.7	-16.3	74	51.95	32.45	8.3	35	238	282	P	V
		2494.33	47.91	-6.09	54	42.12	32.5	8.3	35.01	238	282	A	V

802.11n HT20 CH 11 2462MHz	*	2462	97.65	-	-	91.94	32.4	8.3	34.99	300	189	P	H
	*	2462	90.15	-	-	84.44	32.4	8.3	34.99	300	189	A	H
		2494.08	55.74	-18.26	74	49.95	32.5	8.3	35.01	300	189	P	H
		2492.72	46	-8	54	40.21	32.5	8.3	35.01	300	189	A	H
													H
													H
	*	2462	108.98	-	-	103.27	32.4	8.3	34.99	242	200	P	V
	*	2462	101.41	-	-	95.7	32.4	8.3	34.99	242	200	A	V
		2483.76	60.52	-13.48	74	54.77	32.45	8.3	35	242	200	P	V
		2483.52	49.62	-4.38	54	43.87	32.45	8.3	35	242	200	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		4824	44.19	-29.81	74	58	33.64	11.93	59.38	100	0	P	H
													H
													H
													H
		4824	42.38	-31.62	74	56.19	33.64	11.93	59.38	100	0	P	V
													V
													V
													V
802.11n HT20 CH 06 2437MHz		4872	45.57	-28.43	74	59.42	33.54	11.9	59.29	100	0	P	H
		7311	61.07	-12.93	74	69.49	34.69	14.94	58.05	100	60	P	H
		7311	47.58	-6.42	54	56	34.69	14.94	58.05	100	60	A	H
													H
		4872	42.3	-31.7	74	56.15	33.54	11.9	59.29	100	0	P	V
		7311	50.97	-23.03	74	59.39	34.69	14.94	58.05	100	0	P	V
													V
													V
802.11n HT20 CH 11 2462MHz		4926	40	-34	74	53.9	33.44	11.87	59.21	100	0	P	H
		7386	59.1	-14.9	74	67.67	34.47	15.08	58.12	100	60	P	H
		7386	45.86	-8.14	54	54.43	34.47	15.08	58.12	100	60	A	H
													H
		4926	39.61	-34.39	74	53.51	33.44	11.87	59.21	100	0	P	V
		7386	50.23	-23.77	74	58.8	34.47	15.08	58.12	100	0	P	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 HT40 (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 HT40 CH 03 2422MHz		2348.36	55.41	-18.59	74	50.09	32.03	8.26	34.97	296	270	P	H
		2385.6	46.32	-7.68	54	40.86	32.19	8.24	34.97	296	270	A	H
	*	2422	94.1	-	-	88.53	32.29	8.27	34.99	296	270	P	H
	*	2422	86.5	-	-	80.93	32.29	8.27	34.99	296	270	A	H
		2491.74	56.39	-17.61	74	50.59	32.5	8.3	35	296	270	P	H
		2487.54	46.83	-7.17	54	41.03	32.5	8.3	35	296	270	A	H
		2389.94	59.83	-14.17	74	54.38	32.19	8.24	34.98	300	298	P	V
		2389.66	51.09	-2.91	54	45.63	32.19	8.24	34.97	300	298	A	V
	*	2422	105.43	-	-	99.86	32.29	8.27	34.99	300	298	P	V
	*	2422	98.21	-	-	92.64	32.29	8.27	34.99	300	298	A	V
		2487.89	56.64	-17.36	74	50.84	32.5	8.3	35	300	298	P	V
		2494.05	48.05	-5.95	54	42.26	32.5	8.3	35.01	300	298	A	V
802.11n HT40 CH 06 2437MHz		2365.16	55.25	-18.75	74	49.87	32.09	8.26	34.97	291	276	P	H
		2385.18	46.23	-7.77	54	40.82	32.14	8.24	34.97	291	276	A	H
	*	2437	95.2	-	-	89.58	32.34	8.27	34.99	291	276	P	H
	*	2437	87.5	-	-	81.88	32.34	8.27	34.99	291	276	A	H
		2499.65	55.49	-18.51	74	49.7	32.5	8.3	35.01	291	276	P	H
		2492.37	46.83	-7.17	54	41.04	32.5	8.3	35.01	291	276	A	H
		2361.52	55.57	-18.43	74	50.19	32.09	8.26	34.97	238	234	P	V
		2373.42	47.14	-6.86	54	41.71	32.14	8.26	34.97	238	234	A	V
	*	2437	106.45	-	-	100.83	32.34	8.27	34.99	238	234	P	V
	*	2437	99.01	-	-	93.39	32.34	8.27	34.99	238	234	A	V
		2484.88	57.5	-16.5	74	51.75	32.45	8.3	35	238	234	P	V
		2496.01	48.15	-5.85	54	42.36	32.5	8.3	35.01	238	234	A	V

802.11n HT40 CH 09 2452MHz		2311.4	55.68	-18.32	74	50.42	31.93	8.28	34.95	296	277	P	H
		2341.08	46.27	-7.73	54	40.95	32.03	8.26	34.97	296	277	A	H
	*	2452	95.55	-	-	89.93	32.34	8.27	34.99	296	277	P	H
	*	2452	88.23	-	-	82.61	32.34	8.27	34.99	296	277	A	H
		2484.04	56.91	-17.09	74	51.16	32.45	8.3	35	296	277	P	H
		2484.25	47.2	-6.8	54	41.45	32.45	8.3	35	296	277	A	H
		2378.18	55.45	-18.55	74	50.02	32.14	8.26	34.97	300	201	P	V
		2384.2	46.7	-7.3	54	41.29	32.14	8.24	34.97	300	201	A	V
	*	2452	106.16	-	-	100.54	32.34	8.27	34.99	300	201	P	V
	*	2452	98.85	-	-	93.23	32.34	8.27	34.99	300	201	A	V
		2484.53	62.54	-11.46	74	56.79	32.45	8.3	35	300	201	P	V
		2484.39	50.34	-3.66	54	44.59	32.45	8.3	35	300	201	A	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 HT40 (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 HT40 CH 03 2422MHz		4842	41.07	-32.93	74	54.88	33.61	11.93	59.35	100	0	P	H
		7266	56.17	-17.83	74	64.54	34.78	14.87	58.02	100	62	P	H
		7266	47.56	-6.44	54	55.93	34.78	14.87	58.02	100	62	A	H
													H
		4842	39.78	-34.22	74	53.59	33.61	11.93	59.35	100	0	P	V
		7266	50.75	-23.25	74	59.12	34.78	14.87	58.02	100	0	P	V
													V
													V
802.11n HT40 CH 06 2437MHz		4872	40.48	-33.52	74	54.33	33.54	11.9	59.29	100	0	P	H
		7308	49.48	-24.52	74	57.9	34.69	14.94	58.05	100	0	P	H
													H
													H
		4872	39.31	-34.69	74	53.16	33.54	11.9	59.29	100	0	P	V
		7308	50.33	-23.67	74	58.75	34.69	14.94	58.05	100	0	P	V
													V
													V
802.11n HT40 CH 09 2452MHz		4902	38.71	-35.29	74	52.61	33.47	11.87	59.24	100	0	P	H
		7356	48.88	-25.12	74	57.4	34.56	15.01	58.09	100	0	P	H
													H
													H
		4902	38.87	-35.13	74	52.77	33.47	11.87	59.24	100	0	P	V
		7356	47.85	-26.15	74	56.37	34.56	15.01	58.09	100	0	P	V
													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		35.94	24.41	-15.59	40	31.41	22.72	1.71	31.43	-	-	P	H
		145.83	33.77	-9.73	43.5	44.82	17.84	2.62	31.51	-	-	P	H
		295.95	37.07	-8.93	46	45.34	19.76	3.28	31.31	-	-	P	H
		306.3	41.61	-4.39	46	49.48	19.99	3.43	31.29	100	114	P	H
		479.9	31.86	-14.14	46	35.04	23.76	4.07	31.01	-	-	P	H
		933.5	34.46	-11.54	46	29.85	29.8	5.33	30.52	-	-	P	H
													H
													H
													H
													H
													H
													H
		33.51	29.61	-10.39	40	35.46	23.84	1.71	31.4	-	-	P	V
		206.31	33.49	-10.01	43.5	46.02	16.19	2.72	31.44	-	-	P	V
		290.01	36.99	-9.01	46	45.32	19.7	3.28	31.31	100	267	P	V
		306.3	33.22	-12.78	46	41.09	19.99	3.43	31.29	-	-	P	V
		715.8	31.58	-14.42	46	30.79	26.65	4.81	30.67	-	-	P	V
		944	35.18	-10.82	46	30.24	30.06	5.4	30.52	-	-	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 D. Radiated Spurious Emission Plots

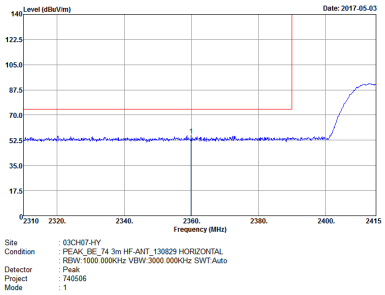
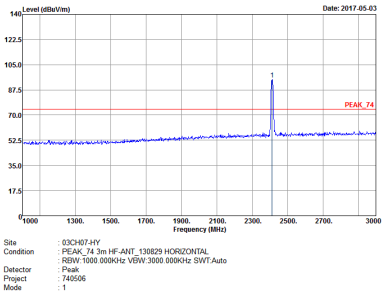
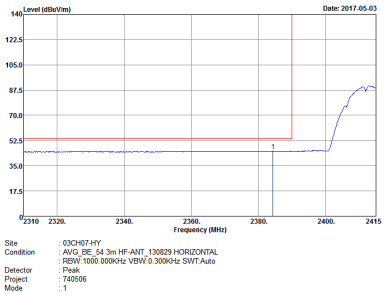
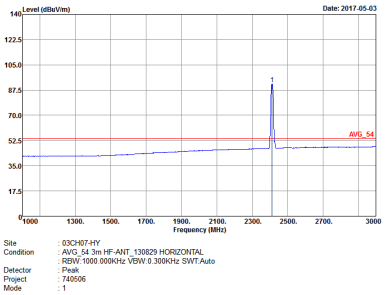
Test Engineer :	James Chiu and Jesse Wang	**Temperature :**	24~27°C
		Relative Humidity :	47~54%

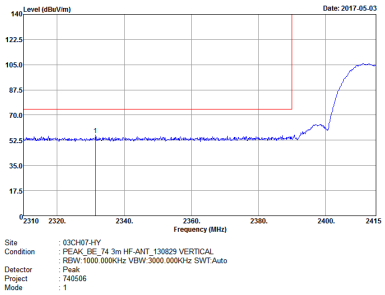
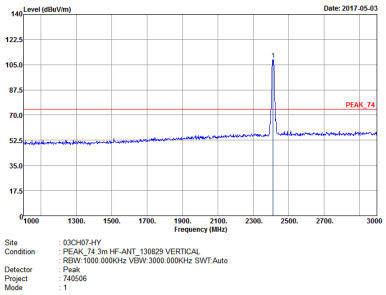
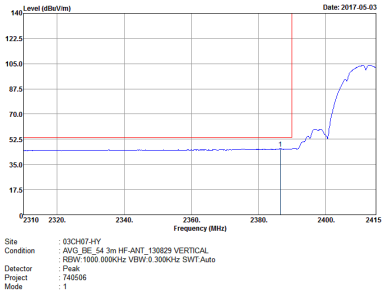
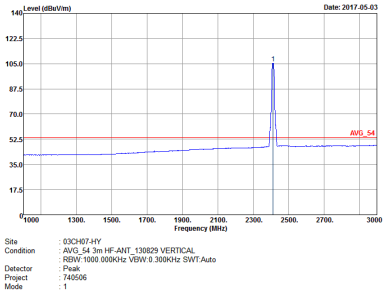
Note symbol

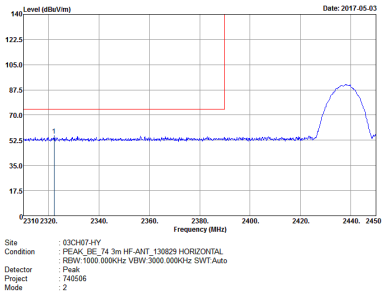
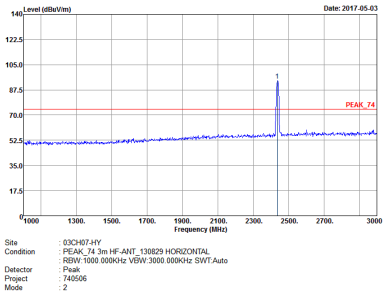
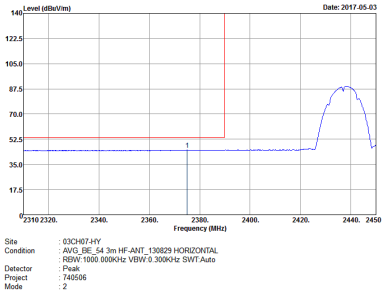
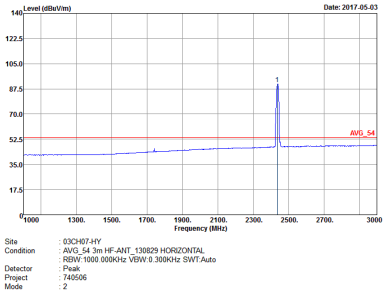
-L	**Low channel location**
-R	**High channel location**

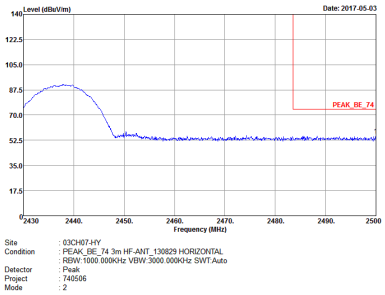
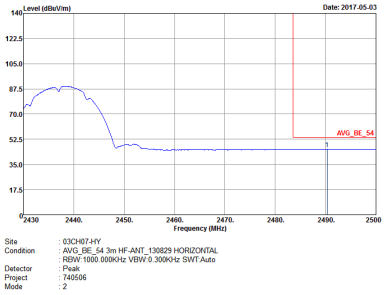
2.4GHz 2400~2483.5MHz

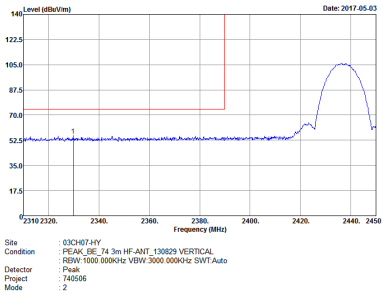
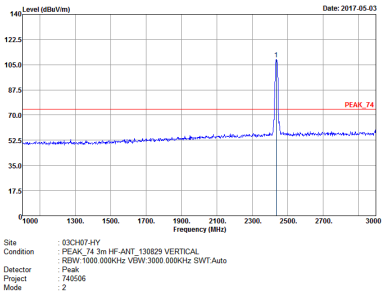
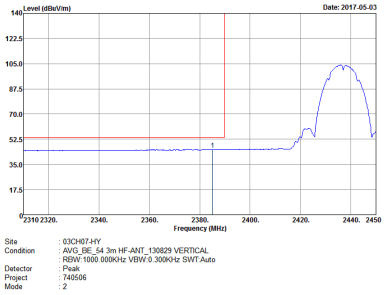
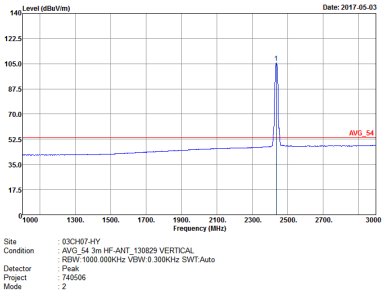
WIFI 802.11b (Band Edge @ 3m)

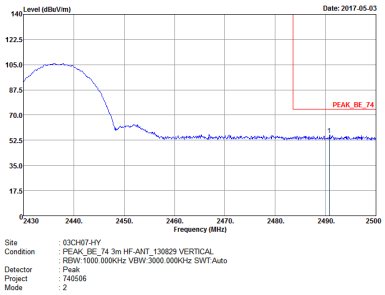
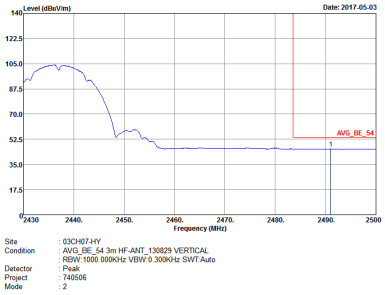
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

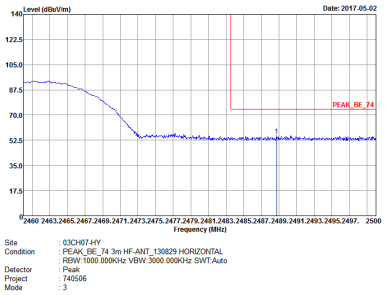
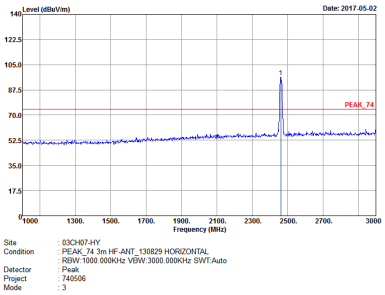
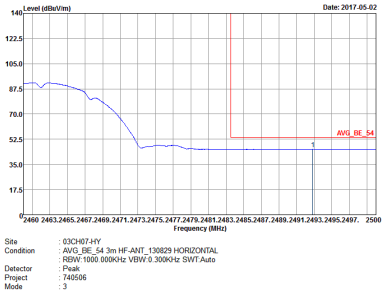
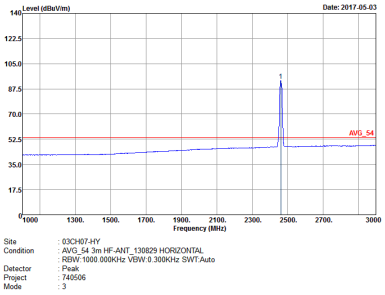
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1	Vertical	Fundamental
Peak		
Avg.		

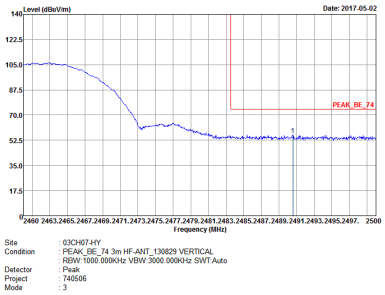
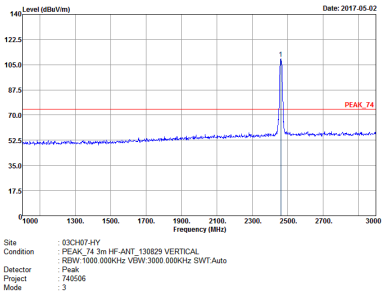
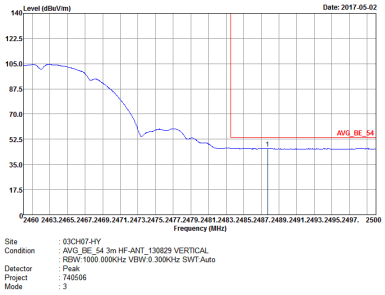
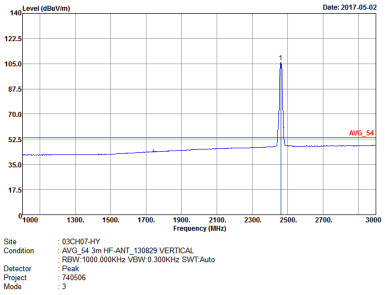
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		

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		
Avg.		

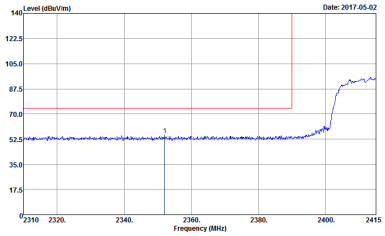
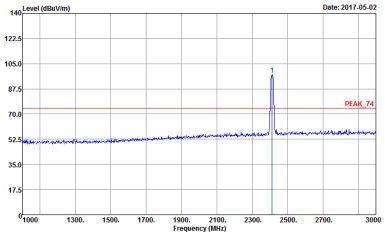
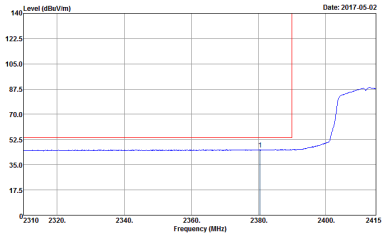
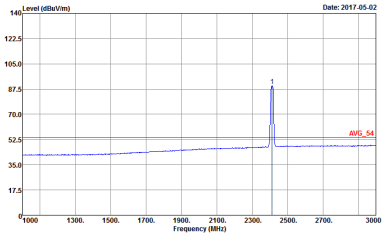
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - R	
1	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

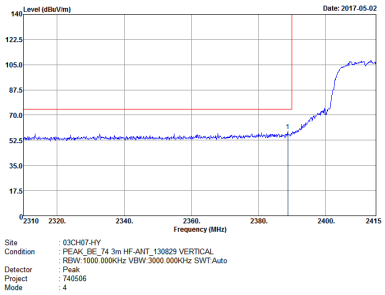
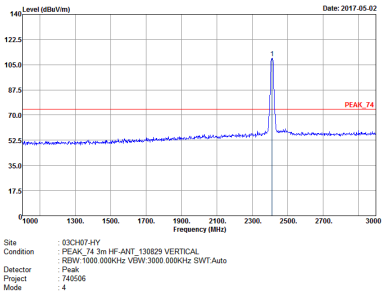
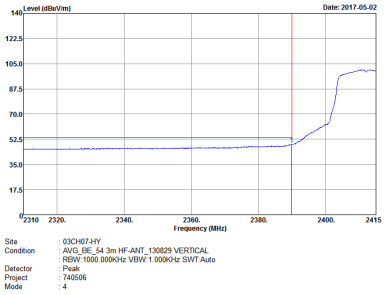
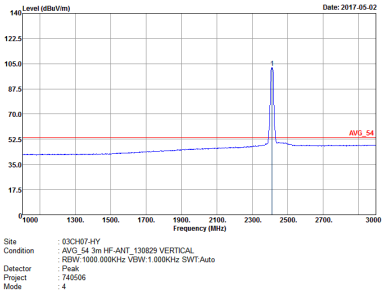
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

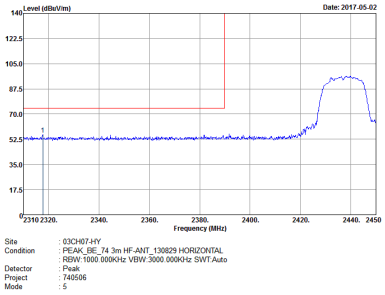
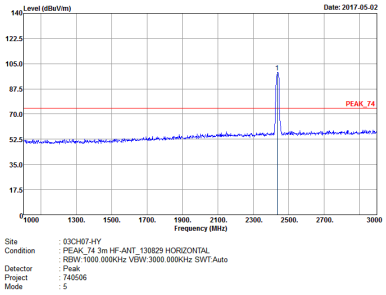
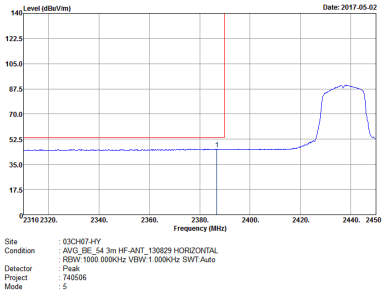
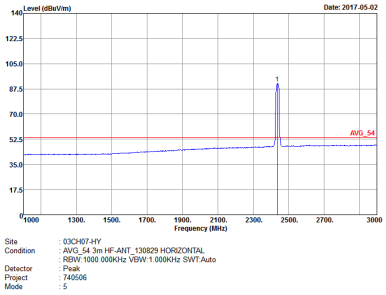
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1	Vertical	Fundamental
Peak		
Avg.		

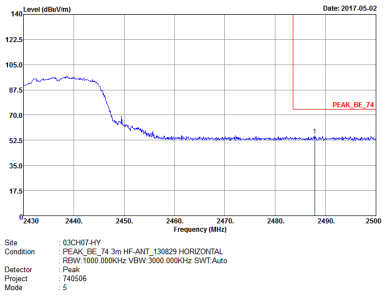
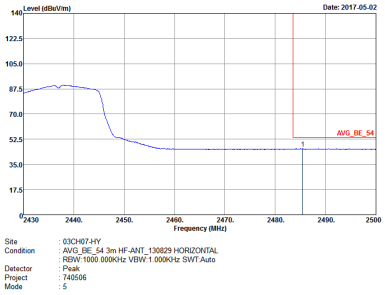
2.4GHz 2400~2483.5MHz

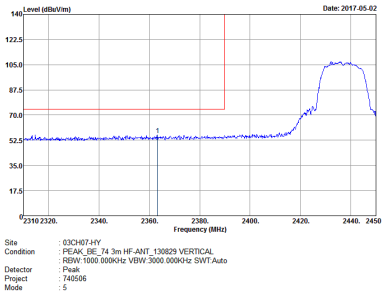
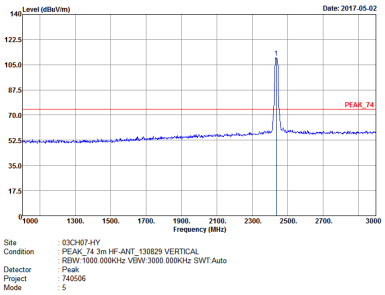
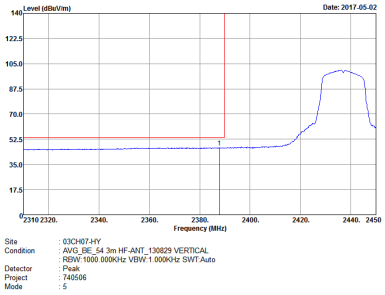
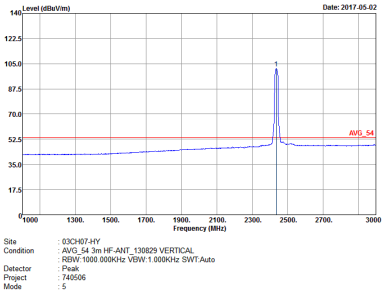
WIFI 802.11g (Band Edge @ 3m)

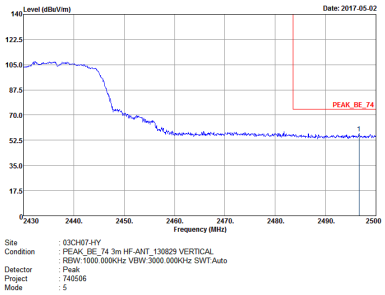
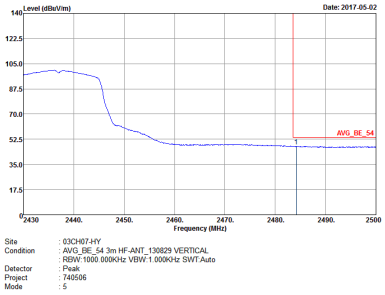
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE_74 3m HF-ANT_130829 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 740506 Mode : 4	 Site : 03CH07-HY Condition : PEAK_74 3m HF-ANT_130829 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 740506 Mode : 4
Avg.	 Site : 03CH07-HY Condition : AVG_BE_54 3m HF-ANT_130829 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 740506 Mode : 4	 Site : 03CH07-HY Condition : AVG_54 3m HF-ANT_130829 HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 740506 Mode : 4

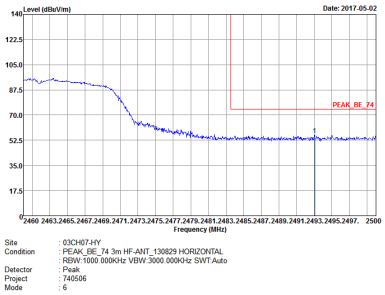
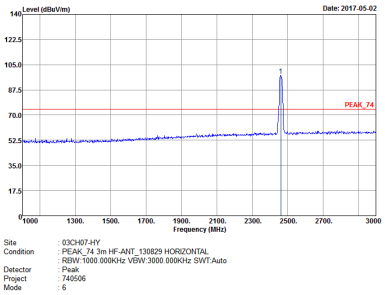
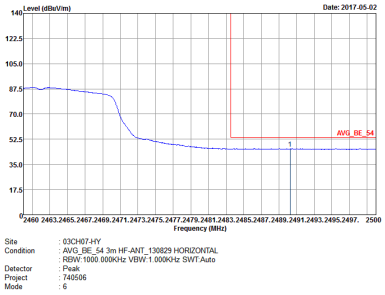
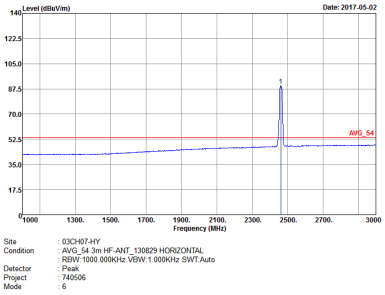
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
1	Vertical	Fundamental
Peak		
Avg.		

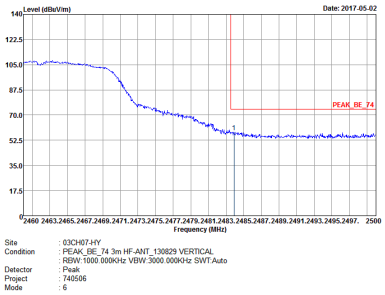
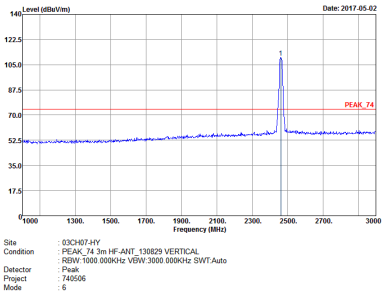
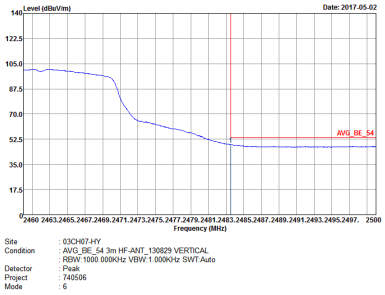
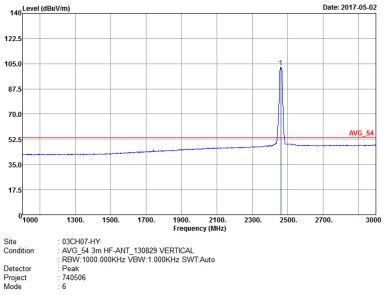
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		

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		
Avg.		

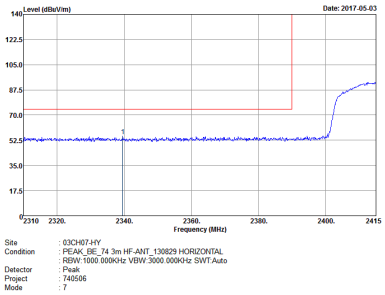
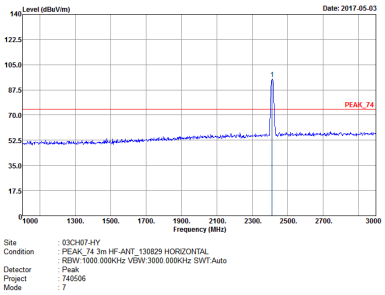
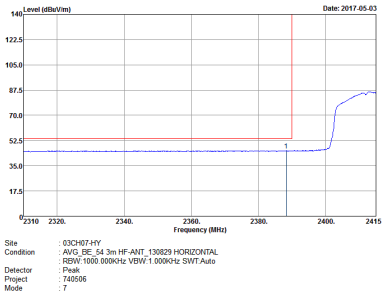
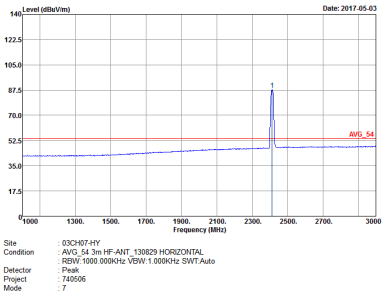
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - R	
1	Vertical	Fundamental
Peak		Left Blank
Avg.		Left Blank

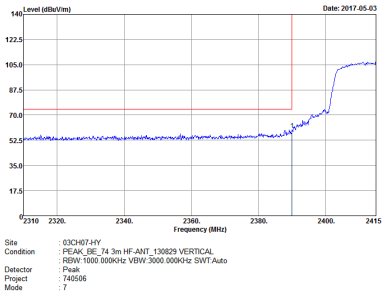
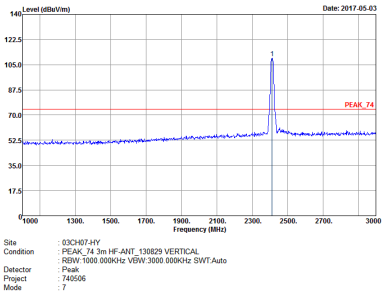
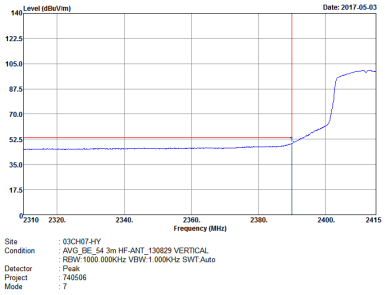
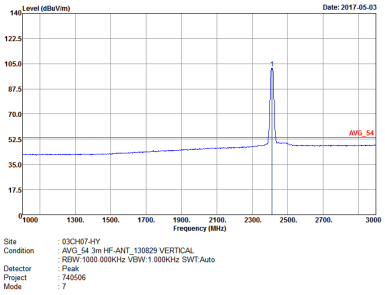
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

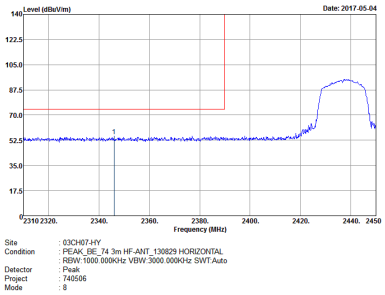
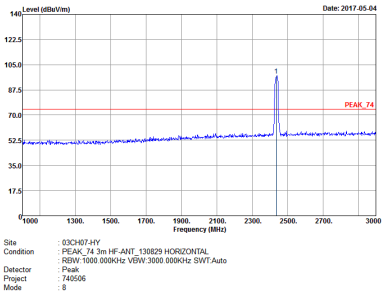
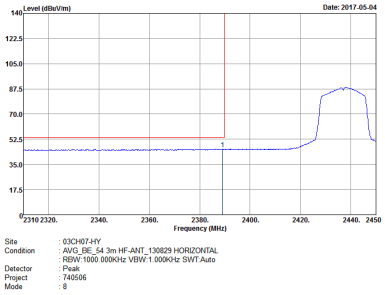
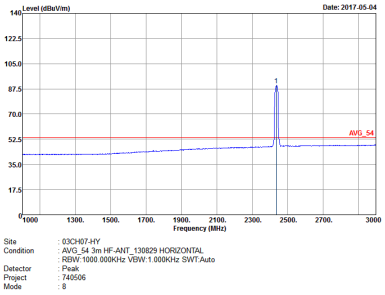
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1	Vertical	Fundamental
Peak		
Avg.		

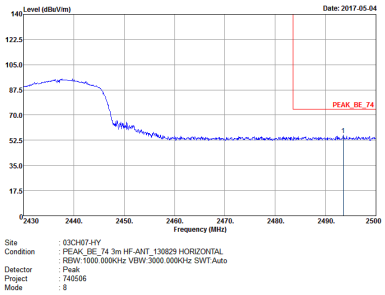
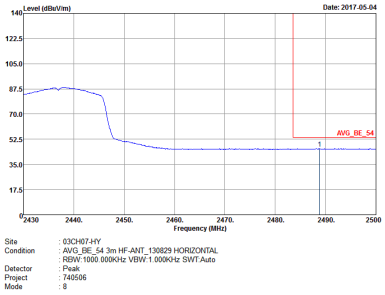
2.4GHz 2400~2483.5MHz

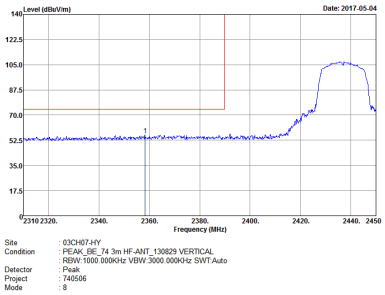
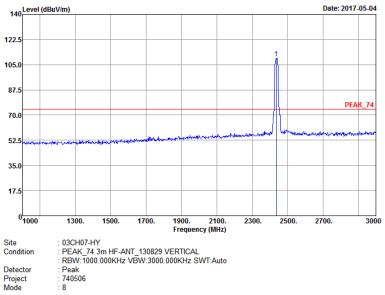
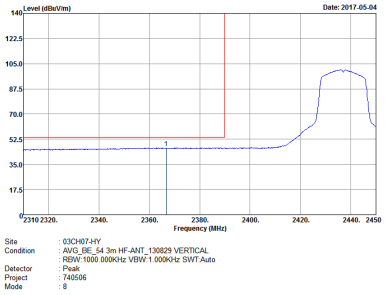
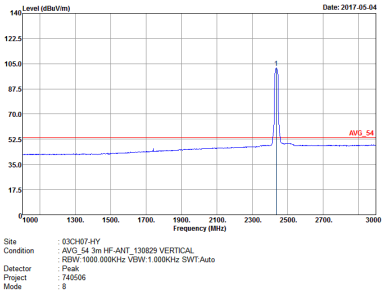
WIFI 802.11n HT20 (Band Edge @ 3m)

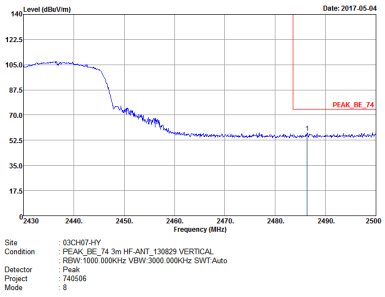
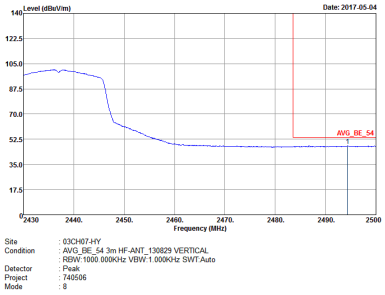
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

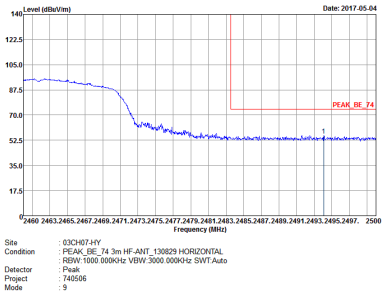
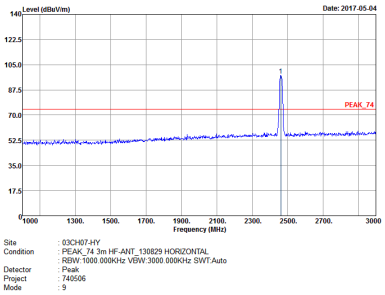
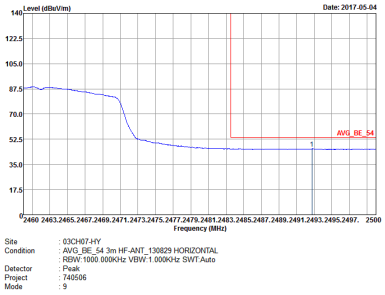
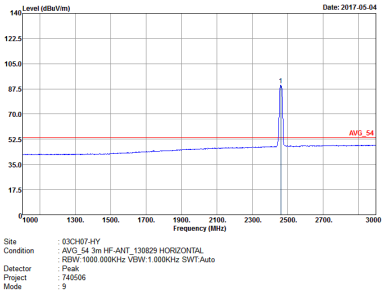
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1	Vertical	Fundamental
Peak		
Avg.		

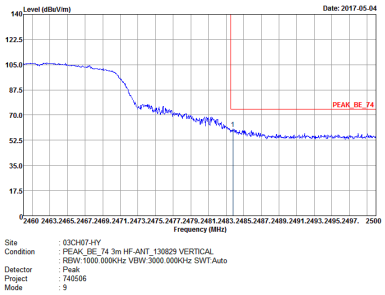
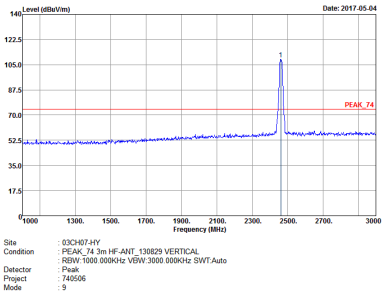
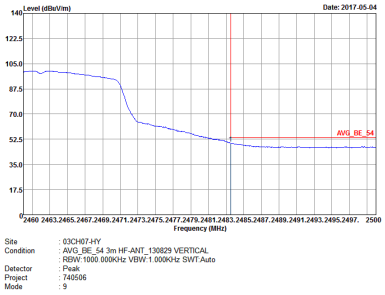
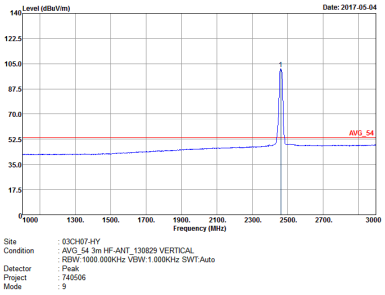
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - R	
1	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - L	
1	Vertical	Fundamental
Peak		
Avg.		

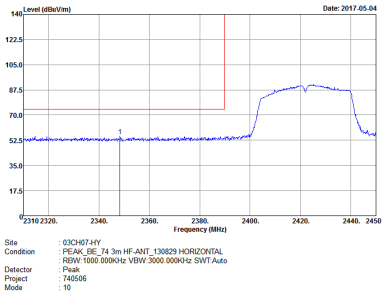
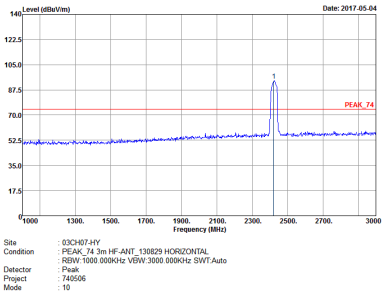
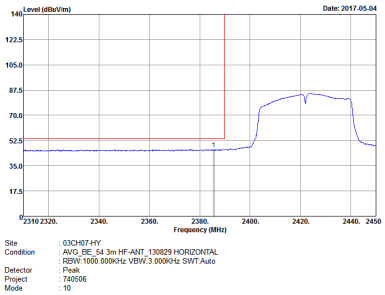
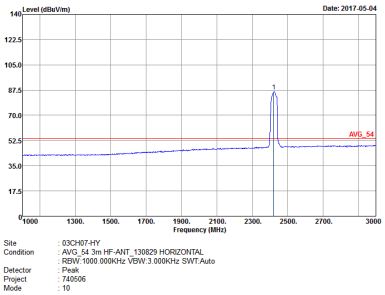
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - R	
1	Vertical	Fundamental
Peak		Left Blank
Avg.		Left Blank

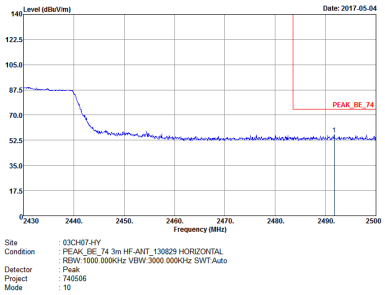
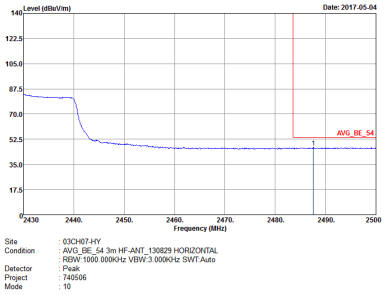
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

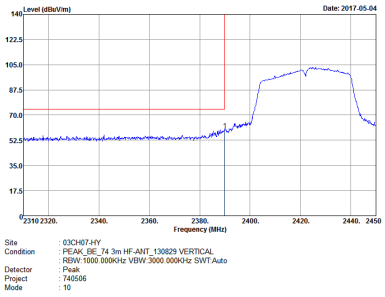
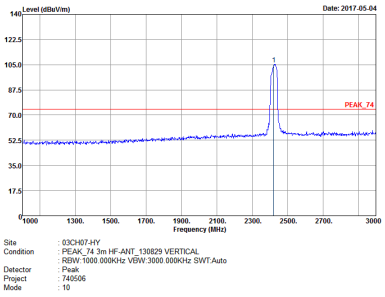
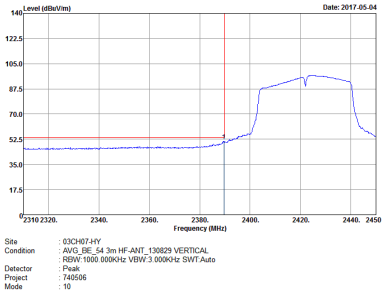
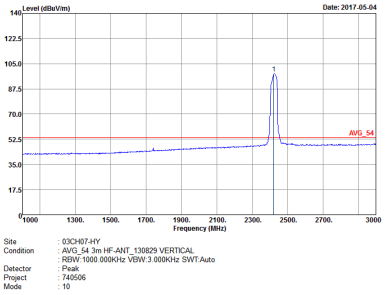
WIFI	2.4GHz 2400~2483.5MHz Fundamental @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1	Vertical	Fundamental
Peak		
Avg.		

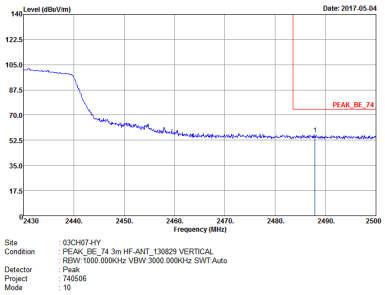
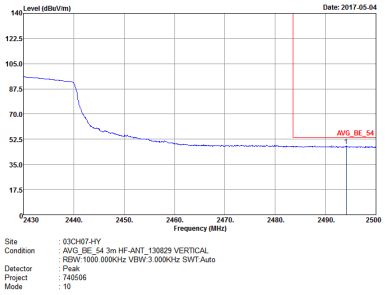
2.4GHz 2400~2483.5MHz

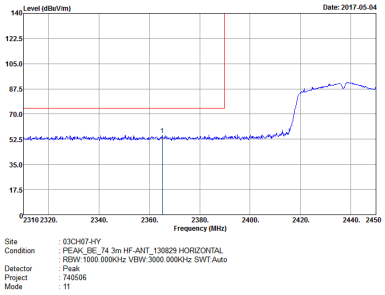
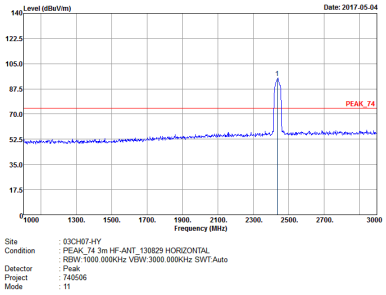
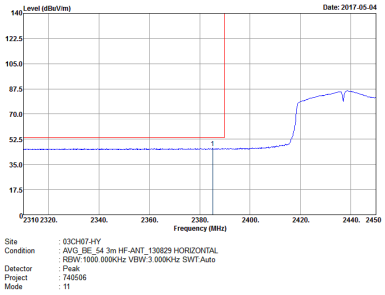
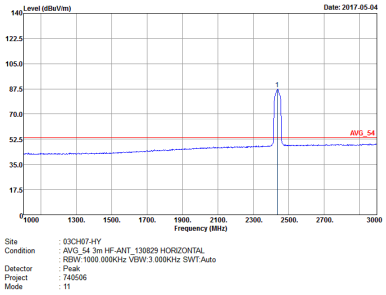
WIFI 802.11n HT40 (Band Edge @ 3m)

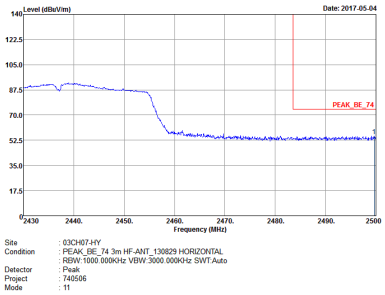
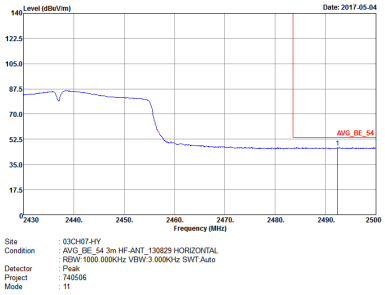
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		

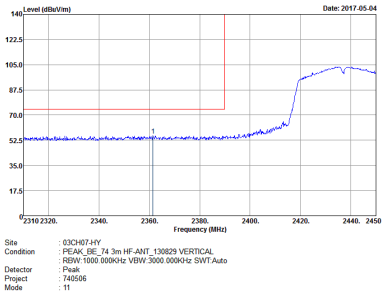
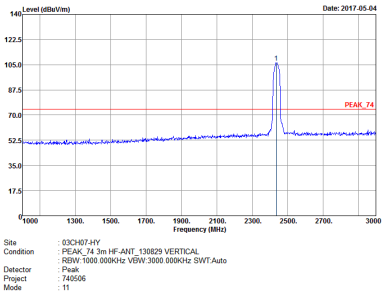
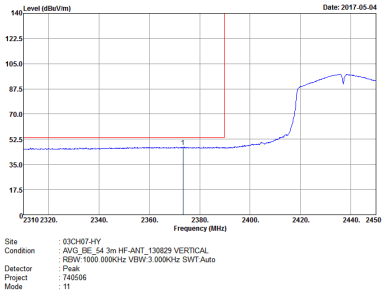
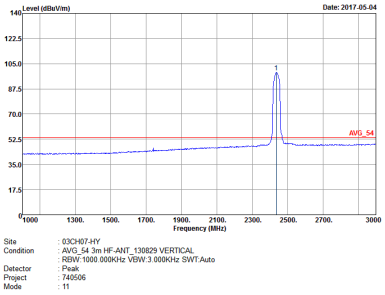
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - R	
1	Horizontal	Fundamental
Peak		Left Blank
Avg.		Left Blank

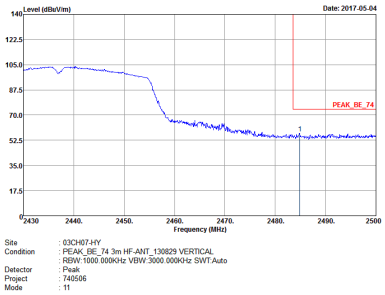
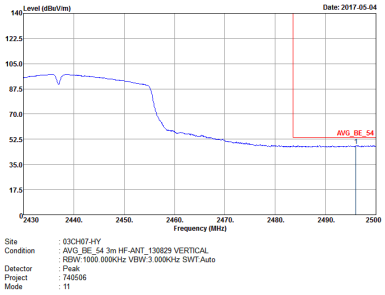
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - L	
1	Vertical	Fundamental
Peak		
Avg.		

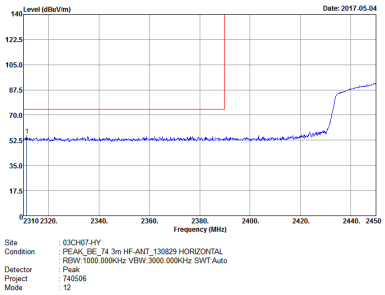
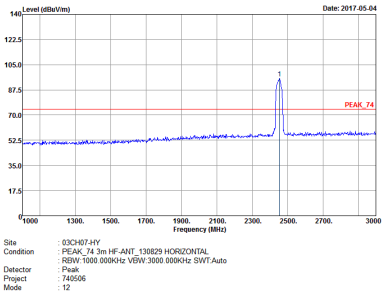
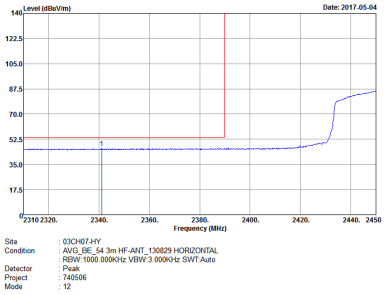
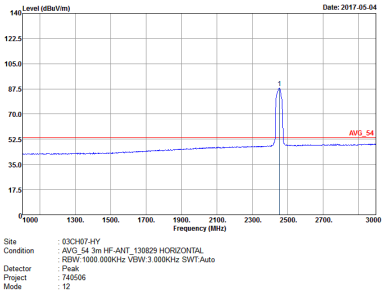
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - R	
1	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

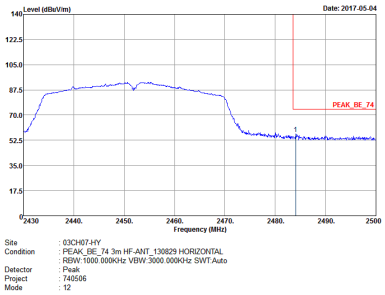
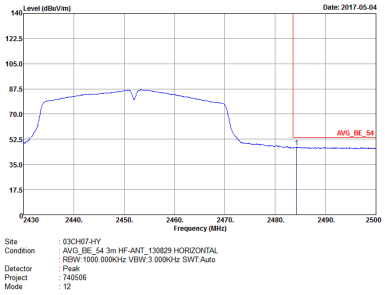
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH06 2437MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		

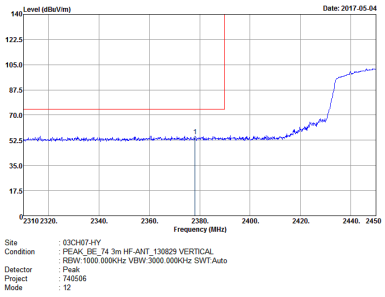
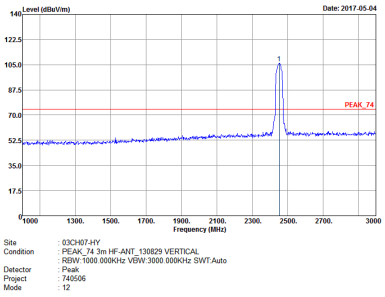
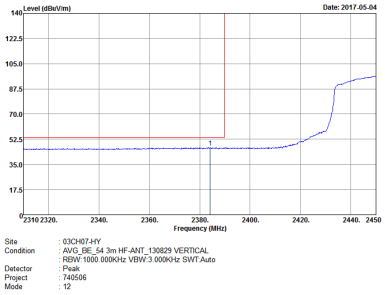
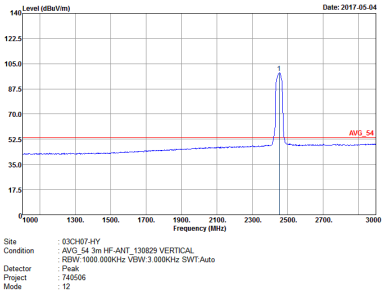
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH06 2437MHz - R	
1	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

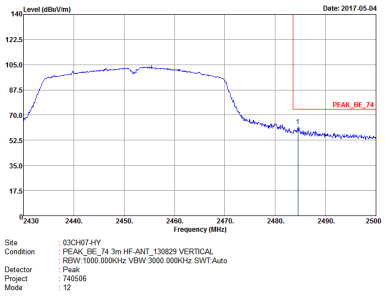
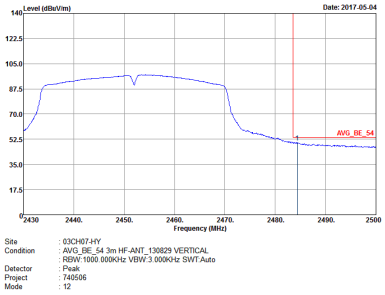
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH06 2437MHz - L	
1	Vertical	Fundamental
Peak		
Avg.		

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH06 2437MHz - R	
1	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH09 2452MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		

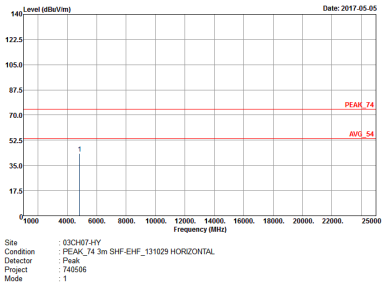
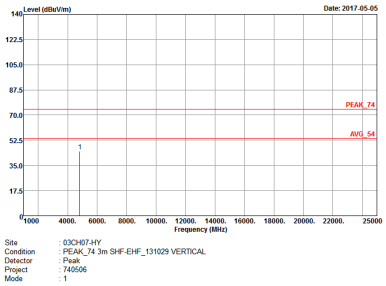
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH09 2452MHz - R	
1	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

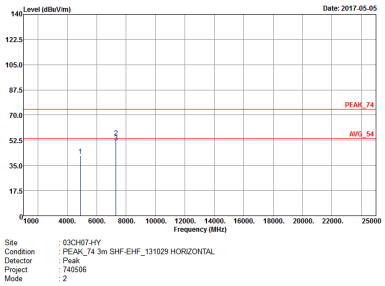
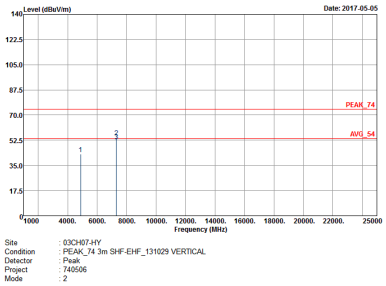
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH09 2452MHz - L	
1	Vertical	Fundamental
Peak		
Avg.		

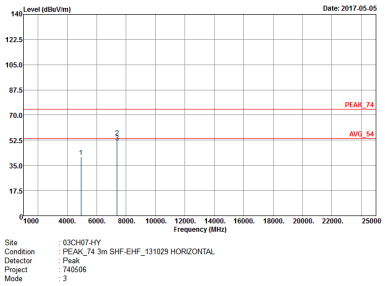
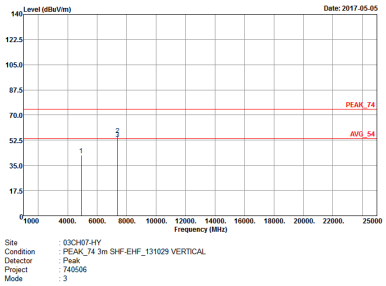
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH09 2452MHz - R	
1	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic @ 3m)

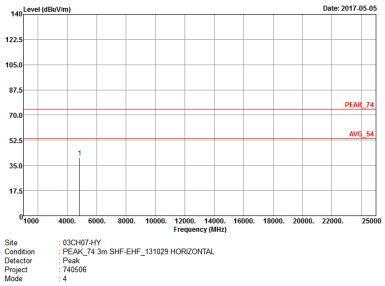
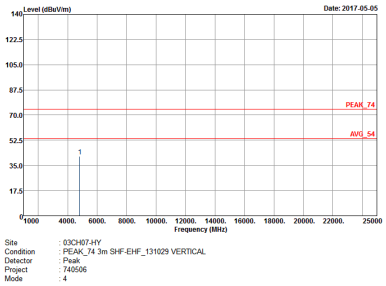
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.		

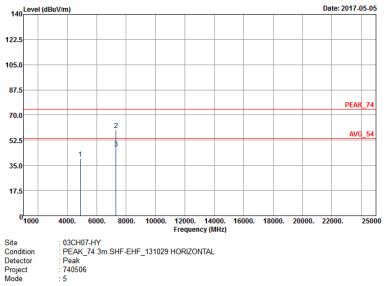
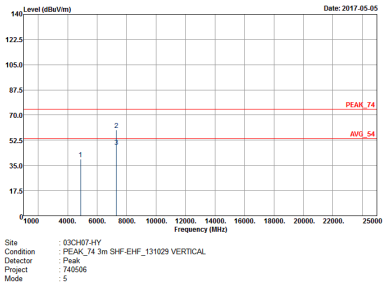
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.		

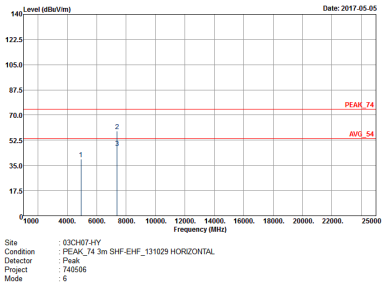
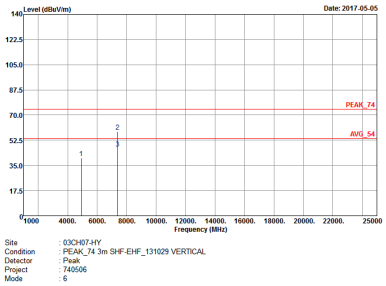
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.		

2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 3m)

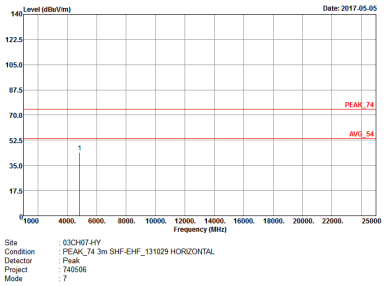
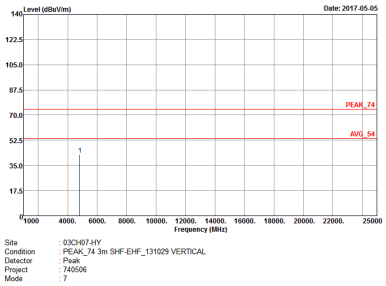
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.		

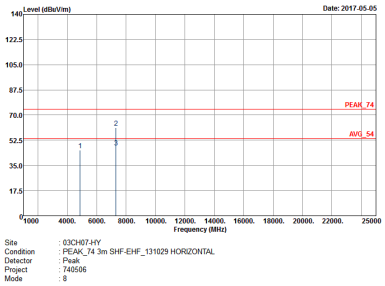
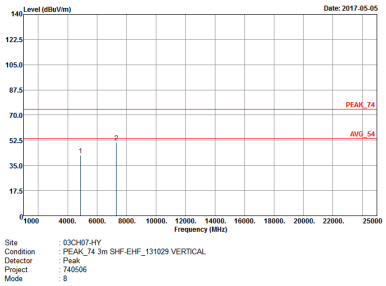
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.		

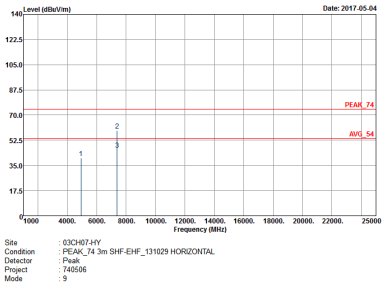
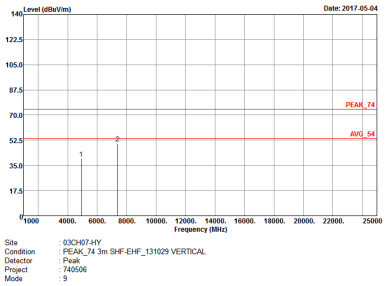
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.		

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

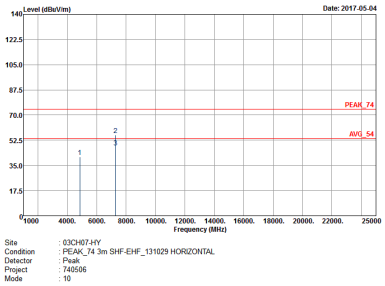
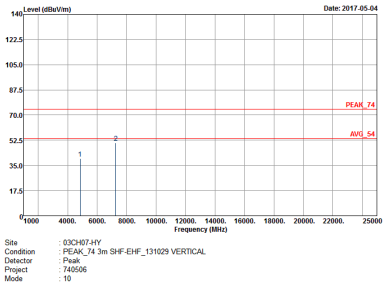
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.		

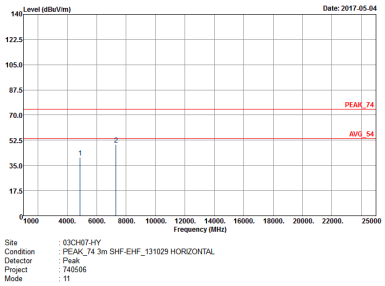
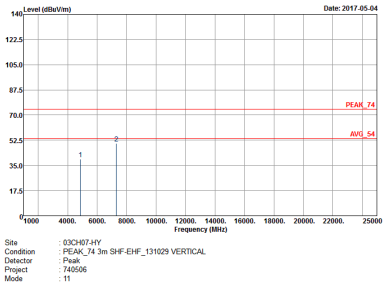
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.		

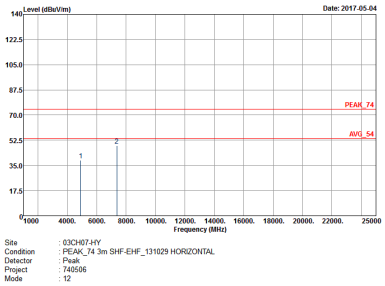
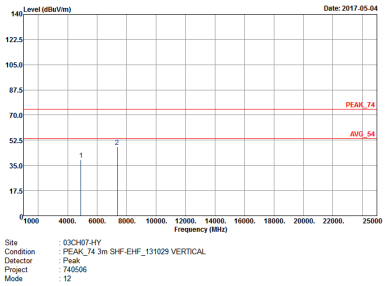
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.		

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT40 CH03 2422MHz	
1	Horizontal	Vertical
Peak Avg.		

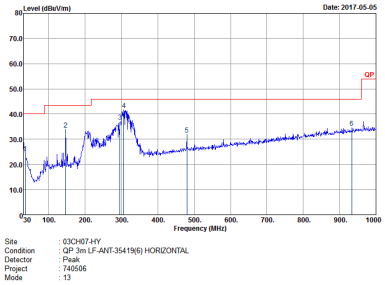
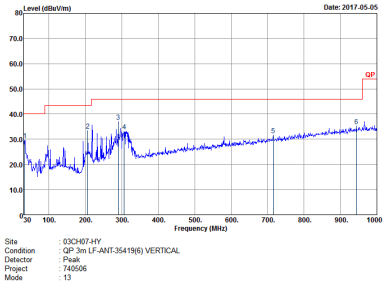
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT40 CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.		

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT40 CH09 2452MHz	
1	Horizontal	Vertical
Peak Avg.		

2.4GHz 2400~2483.5MHz

Emission below 1GHz

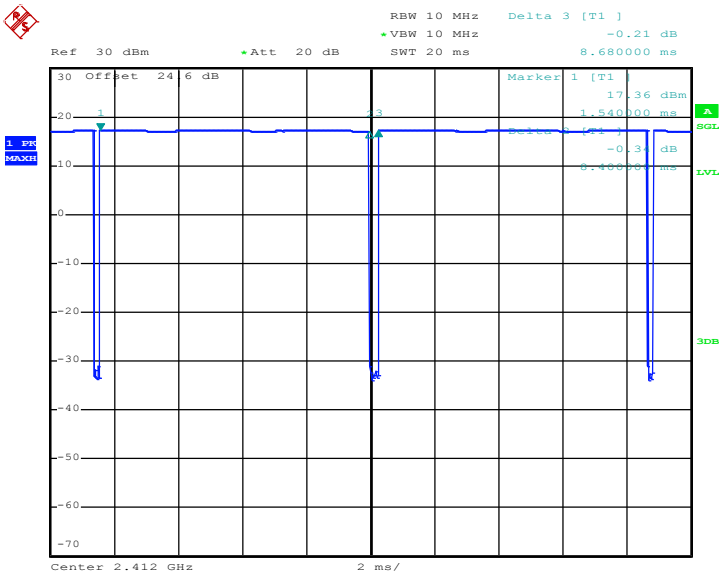
2.4GHz WIFI 802.11b (LF)

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

Appendix E. Duty Cycle Plots

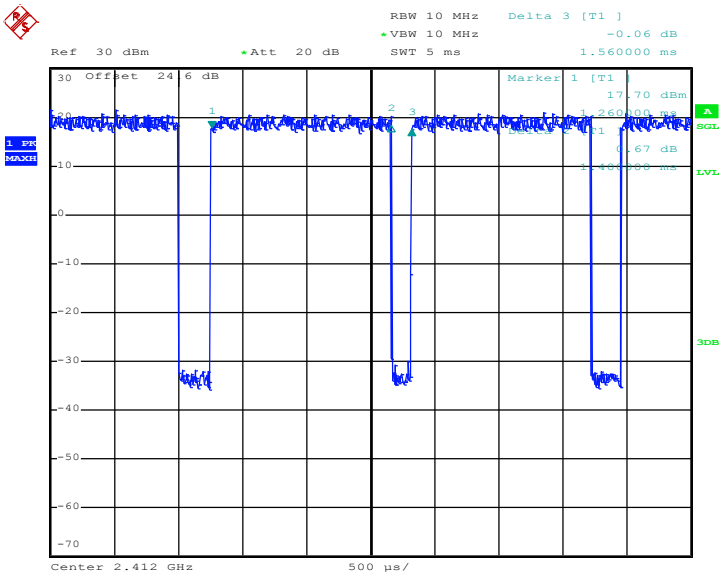
Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
802.11b	96.77	8400	0.12	300Hz
802.11g	89.74	1400	0.71	1kHz
2.4GHz 802.11n HT20	86.8	1315	0.76	1kHz
2.4GHz 802.11n HT40	68.66	644	1.55	3kHz

802.11b



Date: 14.APR.2017 16:14:50

802.11g



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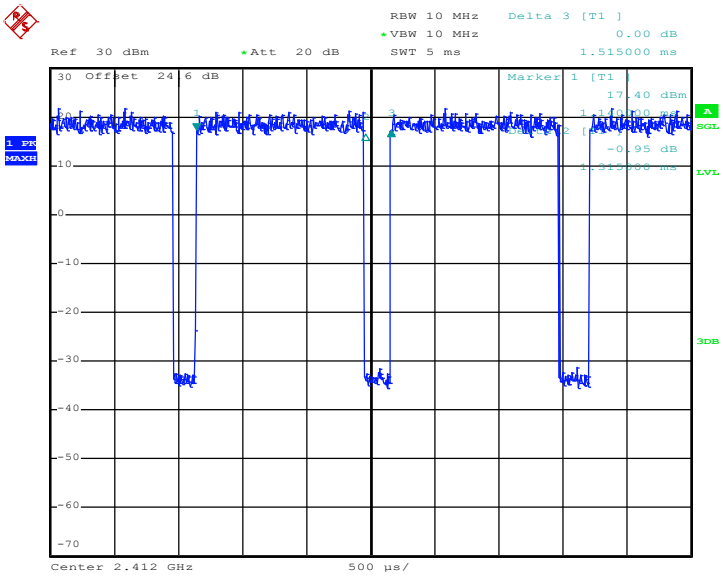
802.11n HT20



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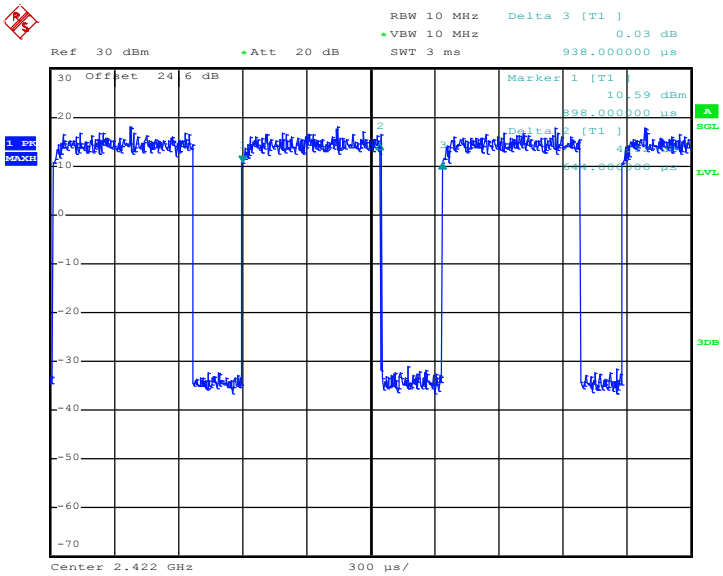
802.11n HT40



Date: 14.APR.2017 16:40:02