FCC RF Test Report

APPLICANT	**:**	**Ubiquiti Networks, Inc.**
EQUIPMENT	**:**	**PRISM Station AC**
BRAND NAME	**:**	**UBIQUITI**
MODEL NAME	**:**	**PS-5AC**
FCC ID	**:**	**SWX-PS5AC**
STANDARD	**:**	**FCC Part 15 Subpart C §15.247**
CLASSIFICATION	**:**	**(DTS) Digital Transmission System**

The product was received on Dec. 24, 2016 and testing was completed on Feb. 17, 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
FR6N2223-01A	Rev. 01	Initial issue of report	Mar. 15, 2017
FR6N2223-01A	Rev. 02	Adding Loop Antenna in section 4	Mar. 27, 2017
FR6N2223-01A	Rev. 03	Adding description of PoE adapter in section 2.2	Mar. 29, 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 0.17 dB at 2483.560 MHz
3.6	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 6.90 dB at 0.150 MHz
3.7	15.203 & 15.247(b)	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

Ubiquiti Networks, Inc.
2580 Orchard Parkway San Jose, CA 95131

1.2 Manufacturer

Ubiquiti Networks, Inc.
2580 Orchard Parkway San Jose, CA 95131

1.3 Product Feature of Equipment Under Test

Wi-Fi 2.4GHz 802.11b/g/n, Wi-Fi 5GHz 802.11a/n/ac, and GPS

Product Specification subjective to this standard	
Antenna Type	WLAN 2.4GHz: Internal Antenna WLAN 5GHz: Horn Antenna GPS: Patch 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. TW0007 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

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

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

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd Rd. Guishan Dist, Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855	
Test Site No.	**Sporton Site No.**	
	03CH10-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 v03r05
- ANSI C63.10-2013

Remark:

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

2 Test Configuration of Equipment Under Test

a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

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.

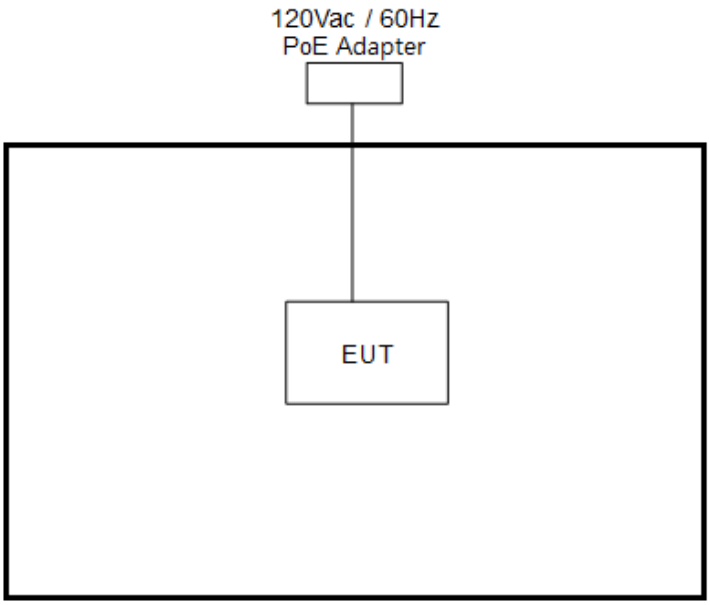
Modulation	Data Rate
802.11b	1 Mbps
802.11g	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0

Remark: For radiated spurious emissions, all tests were performed with PoE adapter 1.

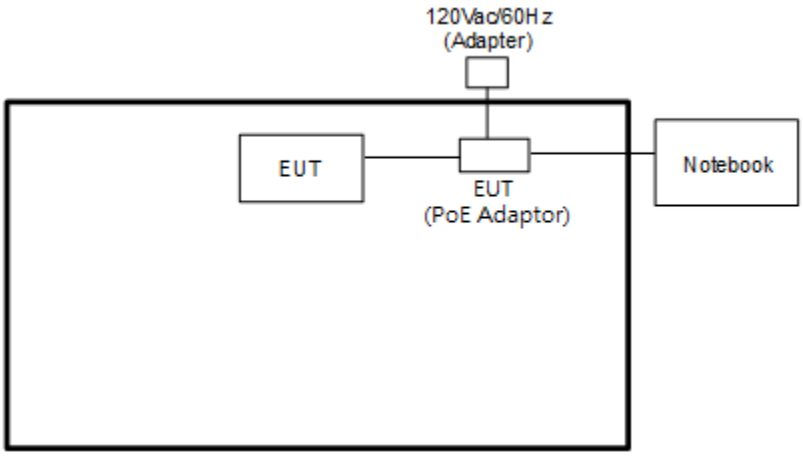
Test Cases	
AC Conducted Emission	Mode 1 : LAN Link + WLAN (2.4GHz) Link + WLAN (5GHz) Idle + GPS Rx + PoE Adapter 1

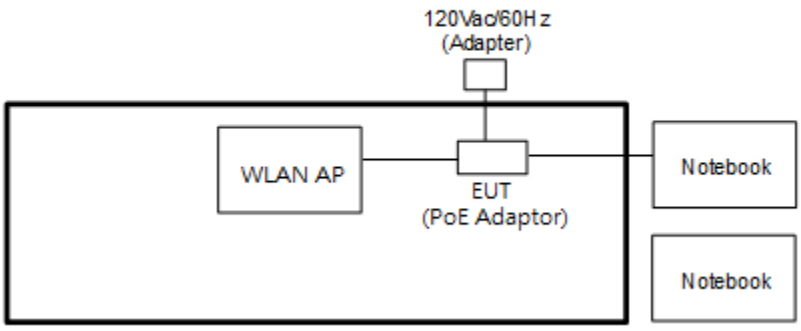
2.3 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>





2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	GPS Station	Pendulum	GSG-54	N/A	N/A	Unshielded, 1.8 m
2.	Notebook	DELL	P20G	FCC DoC/ Contains FCC ID: QDS-BRCM1051	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
3.	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
4.	AP	Ubiquiti	RP-5AC-GEN2	N/A	N/A	Unshielded,1.8m
5.	Antenna	N/A	N/A	N/A	N/A	N/A

2.5 EUT Operation Test Setup

The RF test items, programmed RF utility, “Cmd.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.

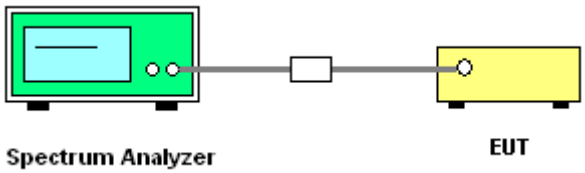
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

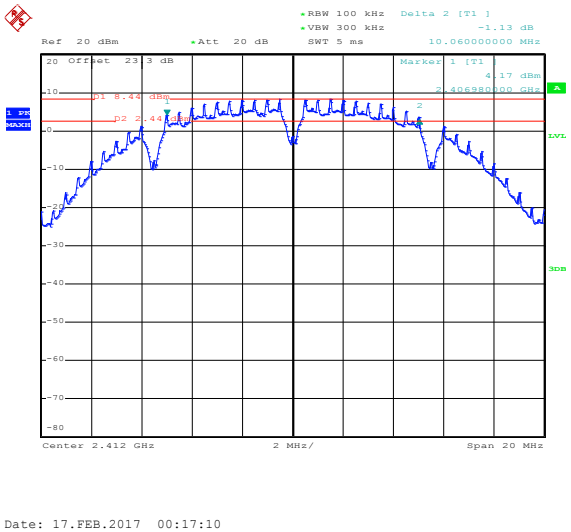
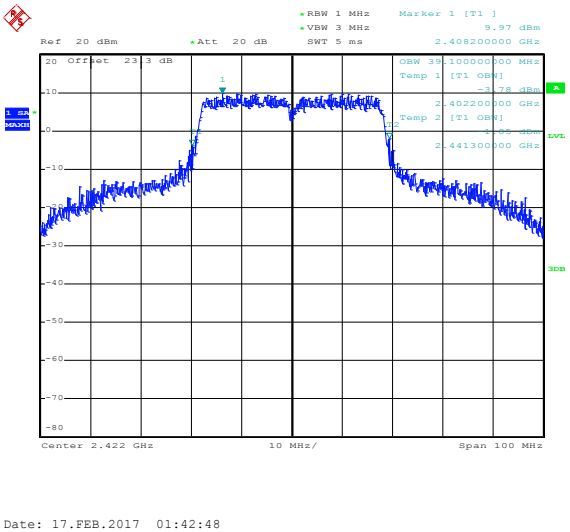
1. The testing follows FCC KDB Publication No. 558074 DTS D01 Meas. Guidance v03r05.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 kHz.
5. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) = 1MHz and set the Video bandwidth (VBW) = 3MHz.
6. Measure and record the results in the test report.

3.1.4 Test Setup



3.1.5 Test Result of 6dB and 99% Occupied Bandwidth

Please refer to Appendix A.

Minimum 6dB Bandwidth	Maximum 99% Occupied Bandwidth
	

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

3.2 Output Power Measurement

3.2.1 Limit of Output Power

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

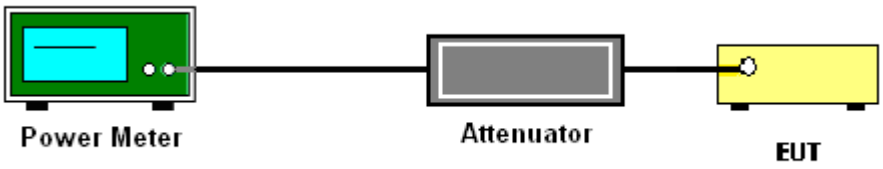
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v03r05 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.

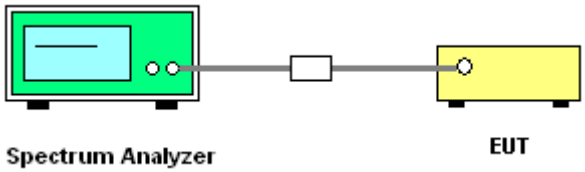
3.3.2 Measuring Instruments

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 v03r05
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.

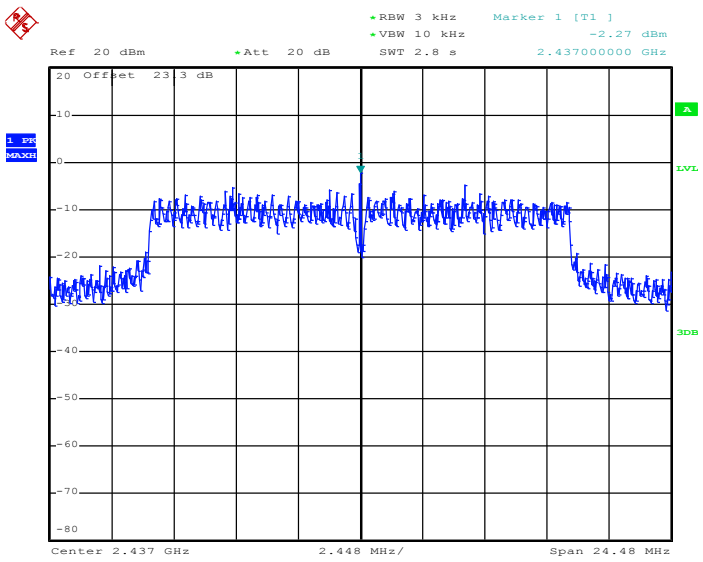
3.3.4 Test Setup



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 and radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

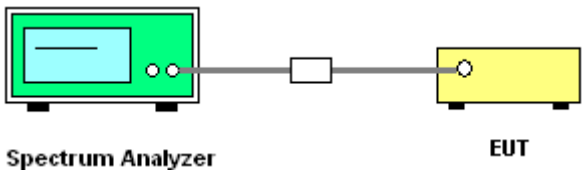
3.4.2 Measuring Instruments

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 v03r05.
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

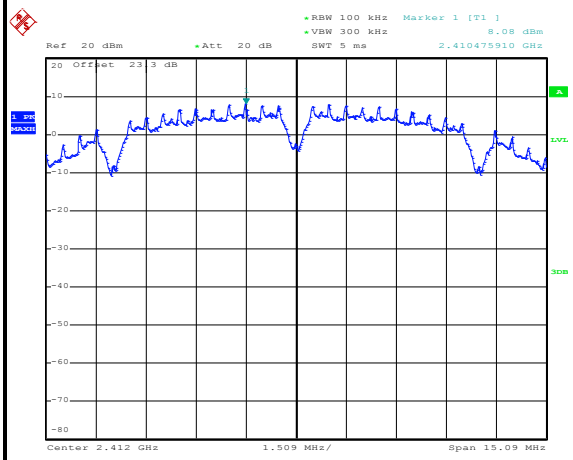


3.4.5 Test Result of Conducted Band Edges and Spurious Emission

Test Mode :	802.11b	**Temperature :**	21~25°C
Test Band :	2.4GHz Low	**Relative Humidity :**	51~54%
Test Channel :	01	**Test Engineer :**	Shiming Liu

WLAN 802.11b Channel 01

100kHz PSD reference Level



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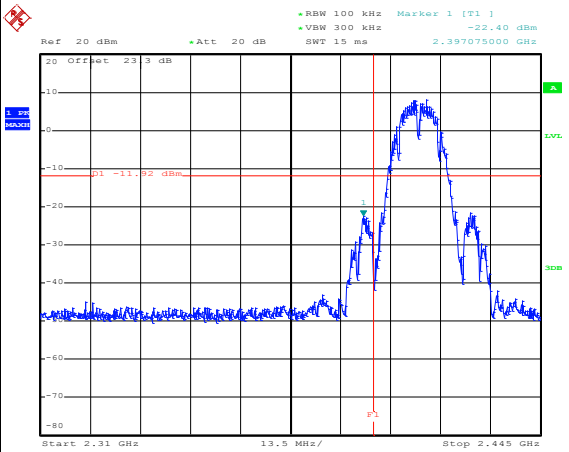
Low Channel Plot



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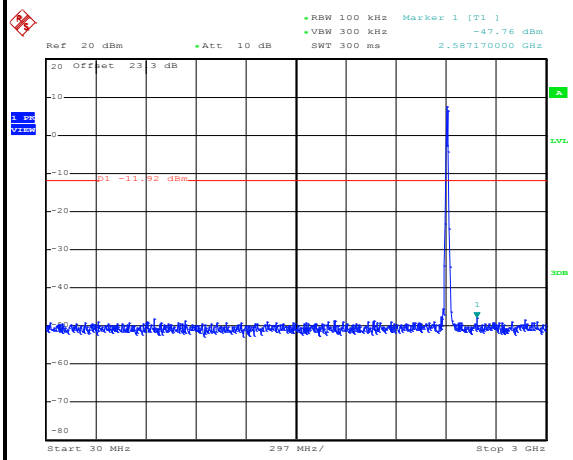
Spurious Emission 30MHz~3GHz



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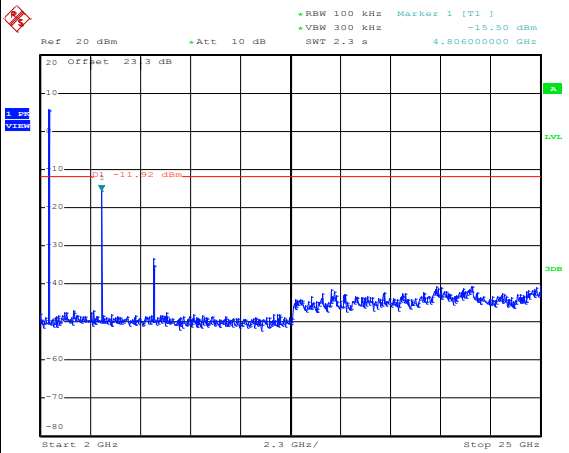
Spurious Emission 2GHz~25GHz



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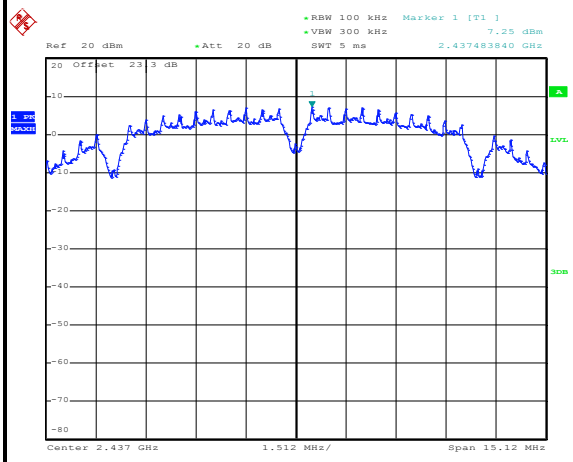
Test Mode :	802.11b	**Temperature :**	21~25°C
Test Band :	2.4GHz Mid	**Relative Humidity :**	51~54%
Test Channel :	06	**Test Engineer :**	Shiming Liu

WLAN 802.11b Channel 06

100kHz PSD reference Level



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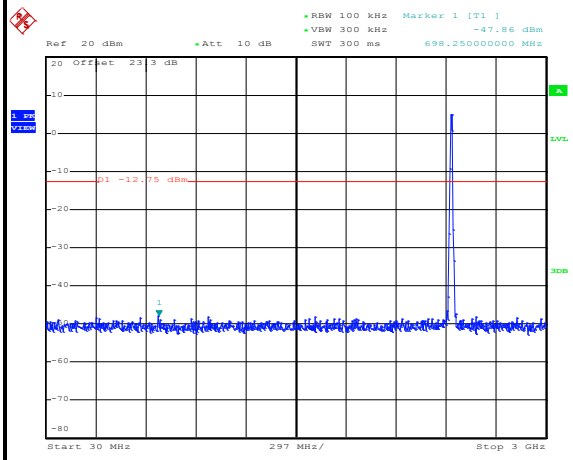
Spurious Emission 30MHz~3GHz



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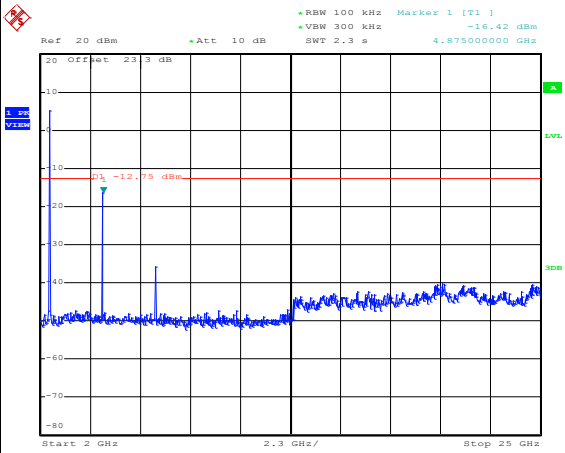
Spurious Emission 2GHz~25GHz



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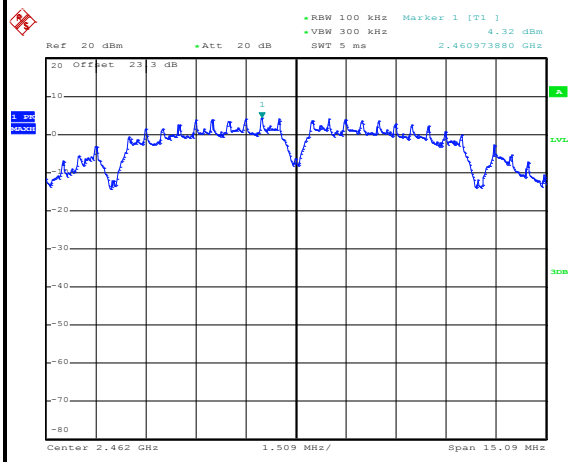
Test Mode :	802.11b	**Temperature :**	21~25°C
Test Band :	2.4GHz High	**Relative Humidity :**	51~54%
Test Channel :	11	**Test Engineer :**	Shiming Liu

WLAN 802.11b Channel 11

100kHz PSD reference Level



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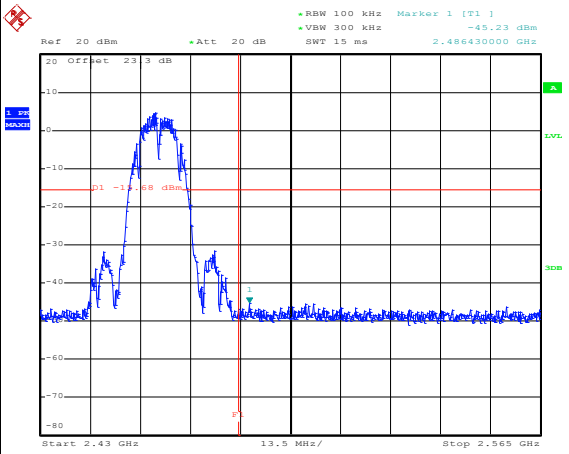
High Channel Plot



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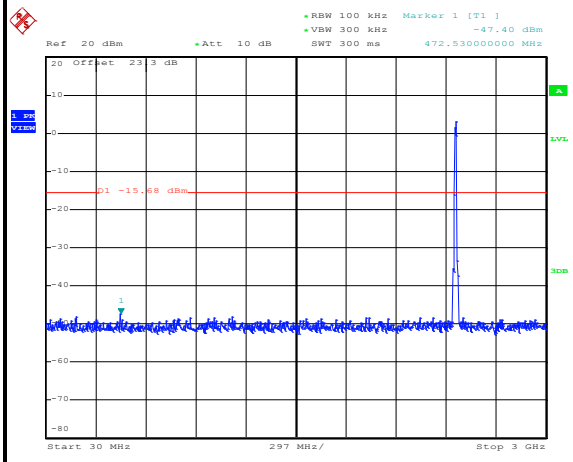
Spurious Emission 30MHz~3GHz



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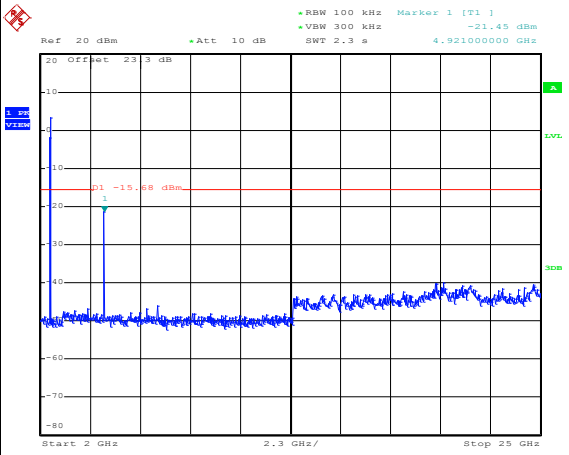
Spurious Emission 2GHz~25GHz



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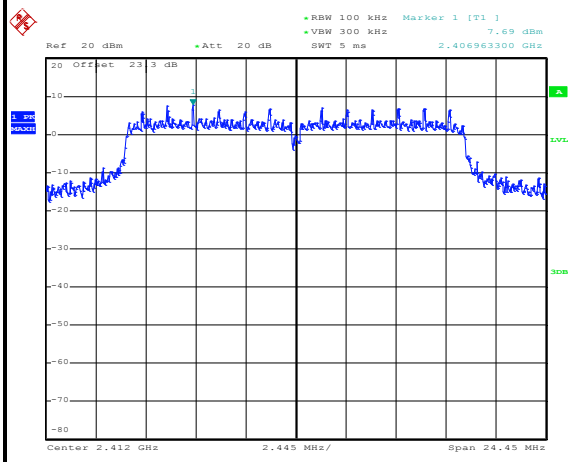
Test Mode :	802.11g	Temperature :	21~25°C
Test Band :	2.4GHz Low	Relative Humidity :	51~54%
Test Channel :	01	Test Engineer :	Shiming Liu

WLAN 802.11g Channel 01

100kHz PSD reference Level



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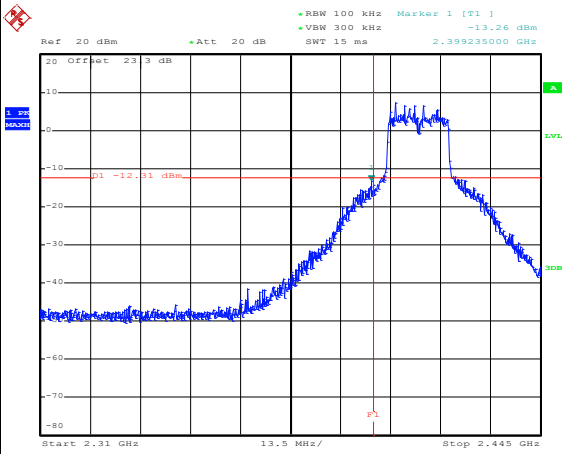
Low Channel Plot



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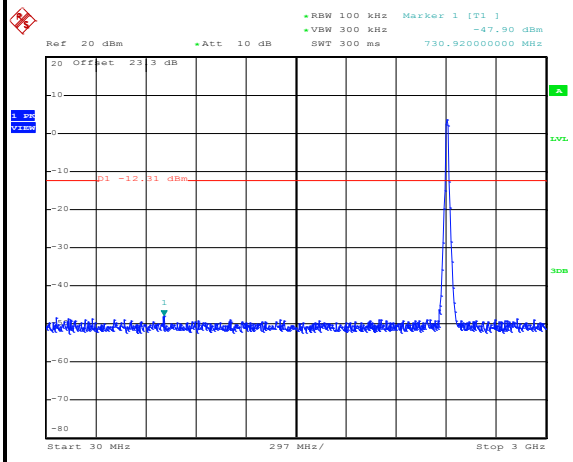
Spurious Emission 30MHz~3GHz



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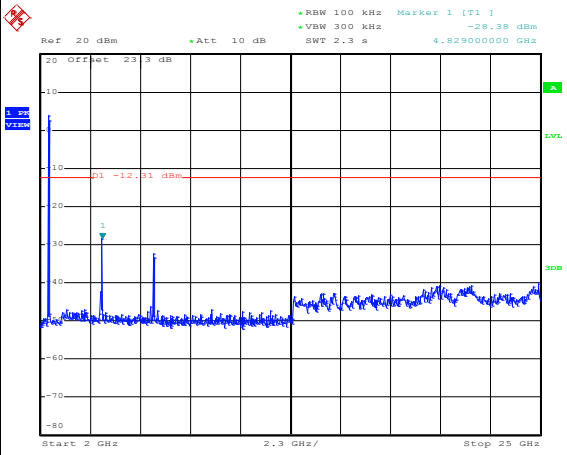
Spurious Emission 2GHz~25GHz



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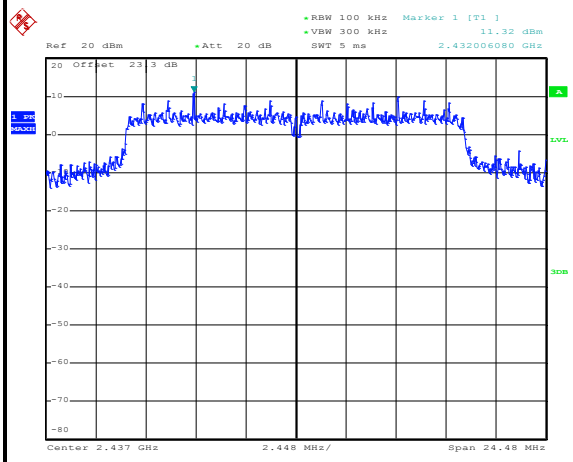
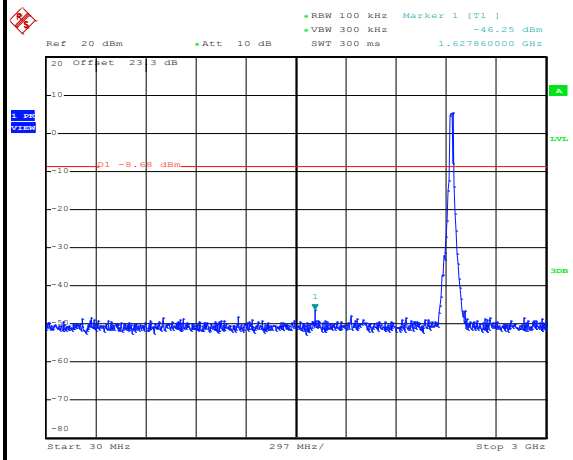
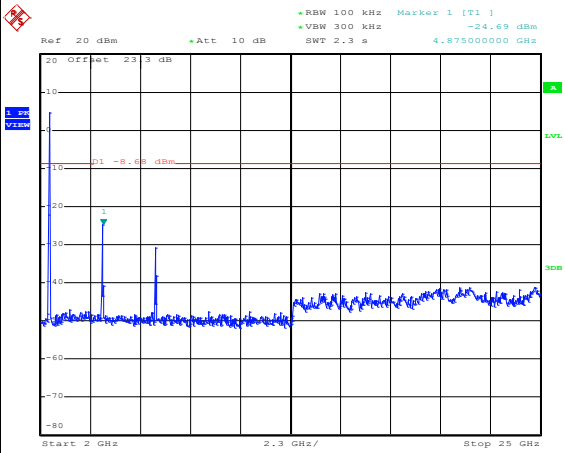
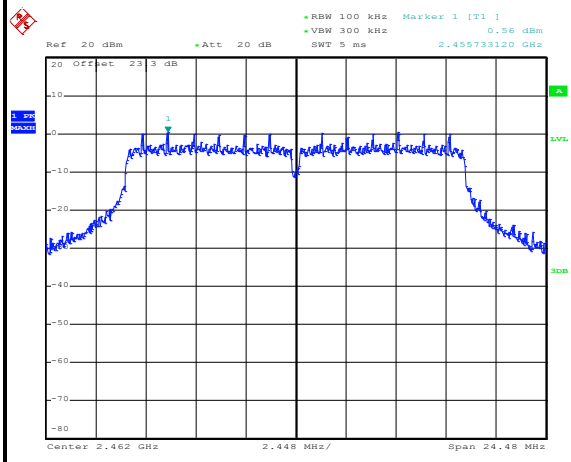
Test Mode :	802.11g	Temperature :	21~25°C
Test Band :	2.4GHz Mid	Relative Humidity :	51~54%
Test Channel :	06	Test Engineer :	Shiming Liu

WLAN 802.11g Channel 06	
100kHz PSD reference Level	
 Date: 17.FEB.2017 01:13:10	
Spurious Emission 30MHz~3GHz	Spurious Emission 2GHz~25GHz
 Date: 17.FEB.2017 01:13:51	 Date: 17.FEB.2017 01:14:00

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

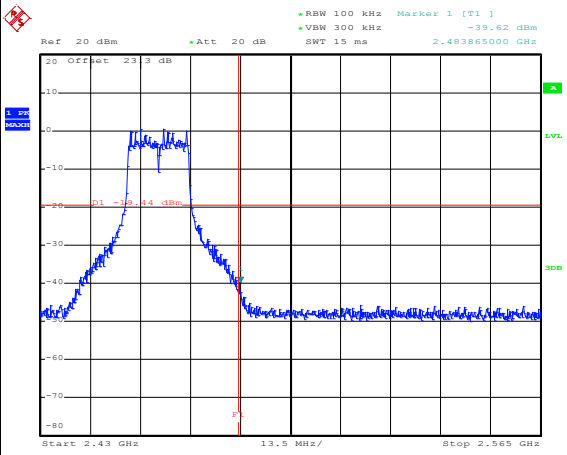
WLAN 802.11g Channel 11

100kHz PSD reference Level



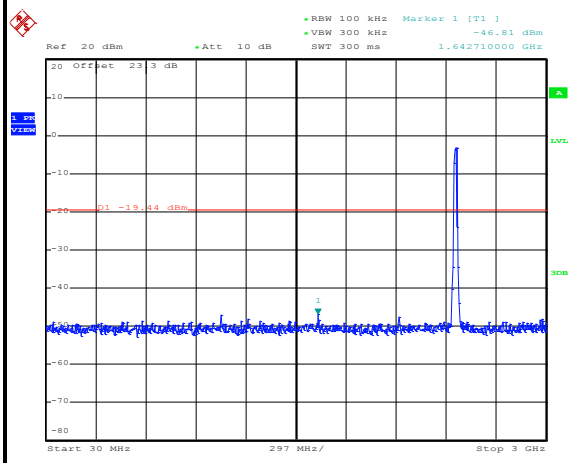
Date: 17.FEB.2017 01:18:57

High Channel Plot



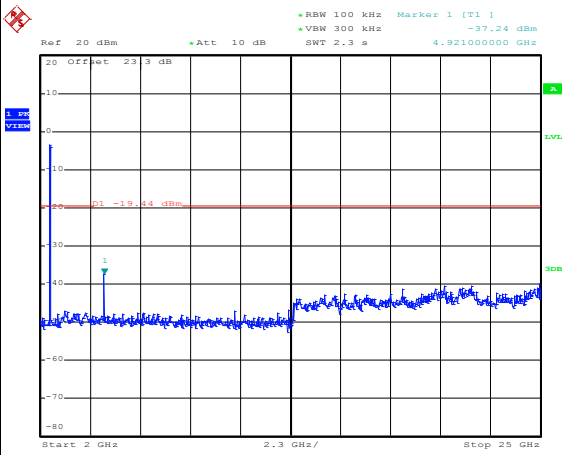
Date: 17.FEB.2017 01:19:31

Spurious Emission 30MHz~3GHz



Date: 17.FEB.2017 01:20:21

Spurious Emission 2GHz~25GHz

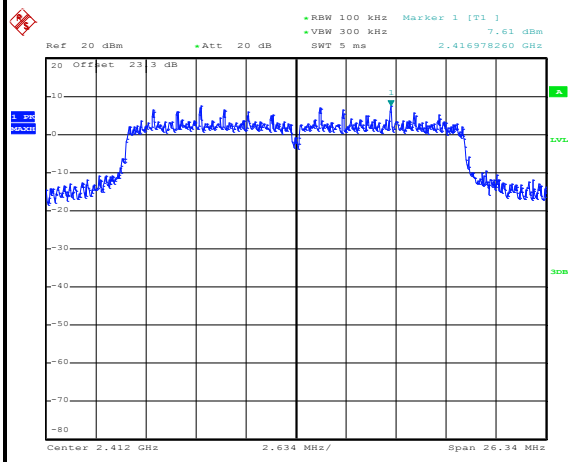


Date: 17.FEB.2017 01:20:30

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

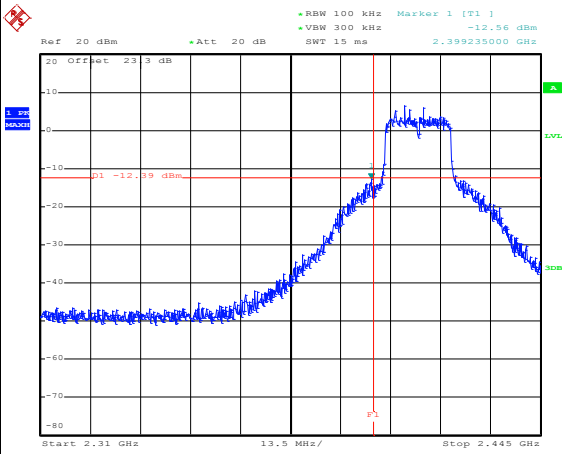
WLAN 802.11n HT20 Channel 01

100kHz PSD reference Level



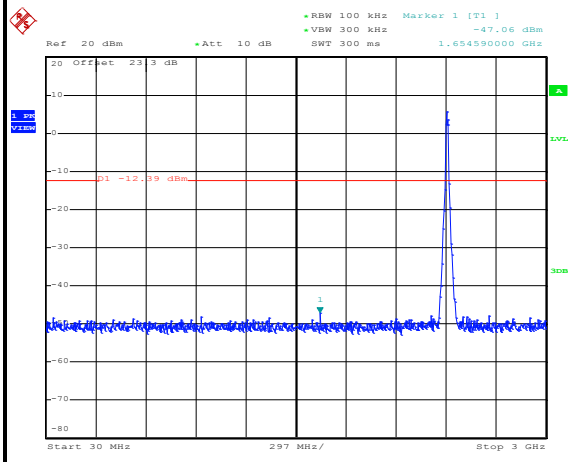
Date: 17.FEB.2017 01:24:39

Low Channel Plot



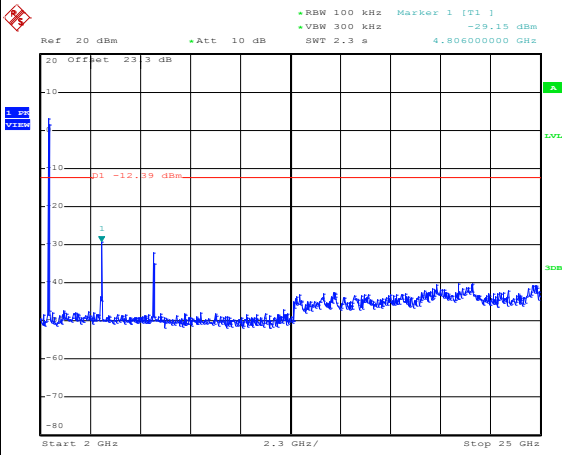
Date: 17.FEB.2017 01:24:48

Spurious Emission 30MHz~3GHz



Date: 17.FEB.2017 01:25:37

Spurious Emission 2GHz~25GHz

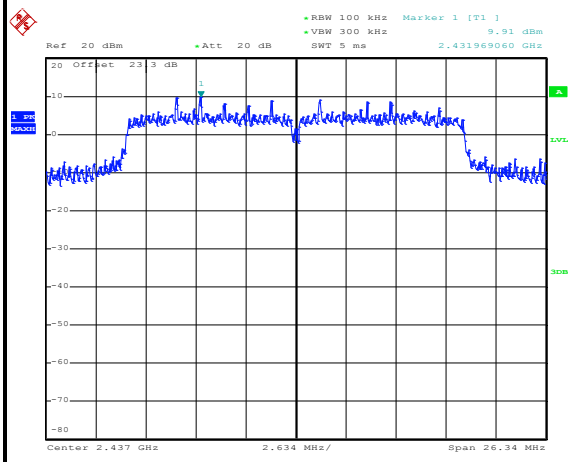


Date: 17.FEB.2017 01:25:46

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

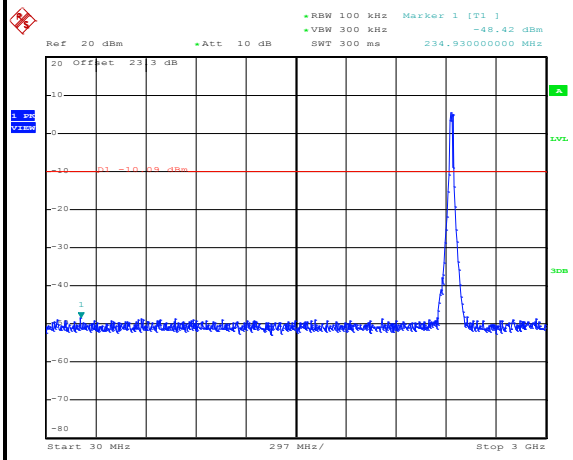
WLAN 802.11n HT20 Channel 06

100kHz PSD reference Level



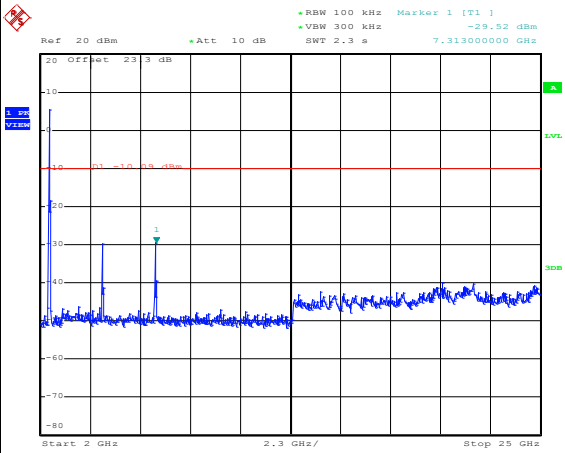
Date: 17.FEB.2017 01:29:42

Spurious Emission 30MHz~3GHz



Date: 17.FEB.2017 01:29:56

Spurious Emission 2GHz~25GHz

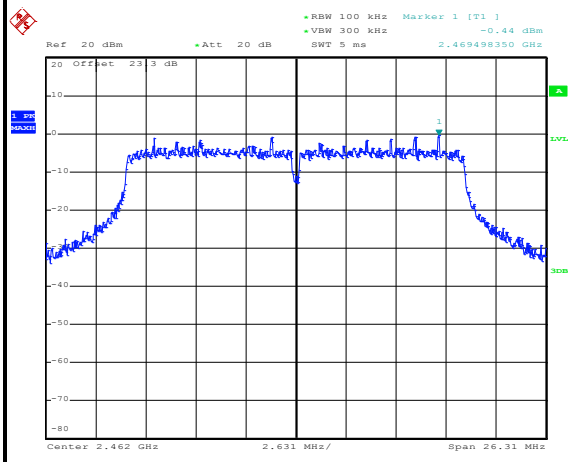


Date: 17.FEB.2017 01:30:05

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

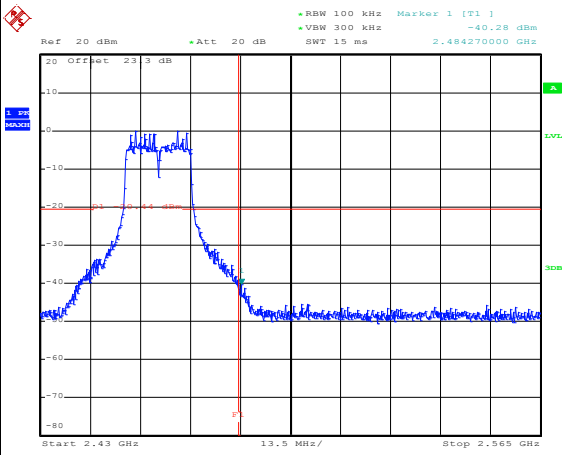
WLAN 802.11n HT20 Channel 11

100kHz PSD reference Level



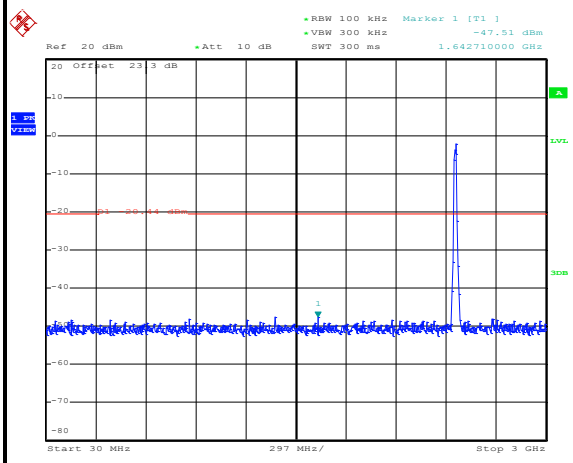
Date: 17.FEB.2017 01:33:06

High Channel Plot



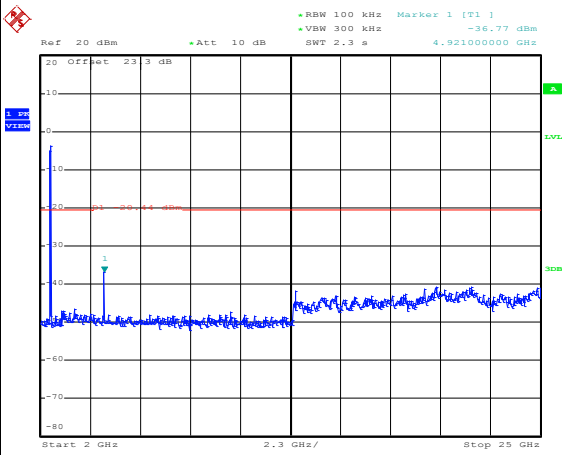
Date: 17.FEB.2017 01:33:29

Spurious Emission 30MHz~3GHz



Date: 17.FEB.2017 01:33:45

Spurious Emission 2GHz~25GHz

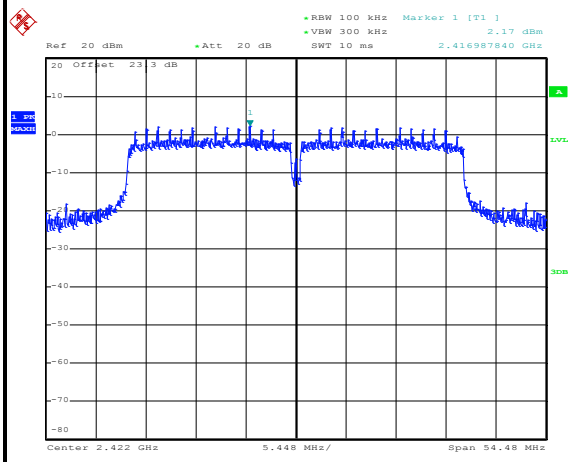


Date: 17.FEB.2017 01:33:53

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

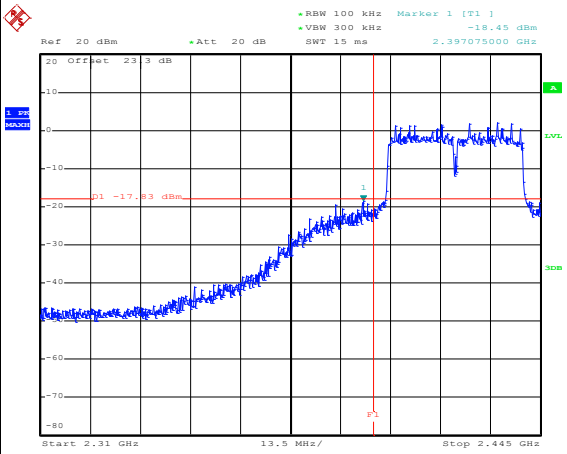
WLAN 802.11n HT40 Channel 03

100kHz PSD reference Level



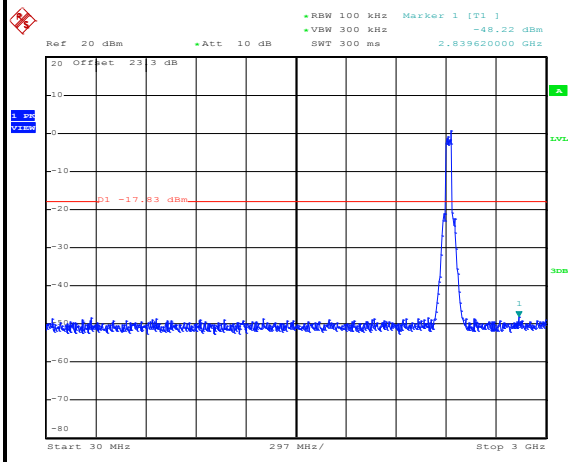
Date: 17.FEB.2017 01:41:55

Low Channel Plot



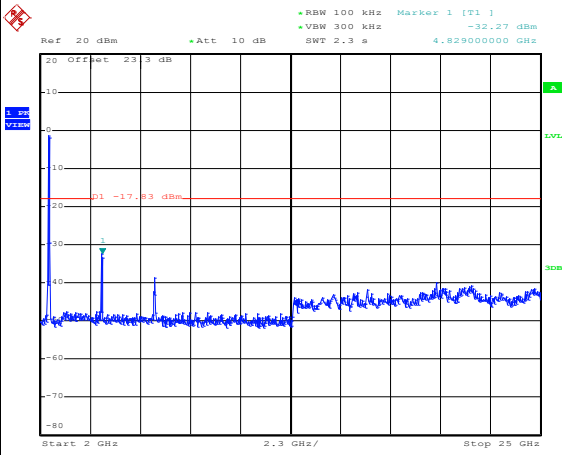
Date: 17.FEB.2017 01:42:05

Spurious Emission 30MHz~3GHz



Date: 17.FEB.2017 01:42:22

Spurious Emission 2GHz~25GHz

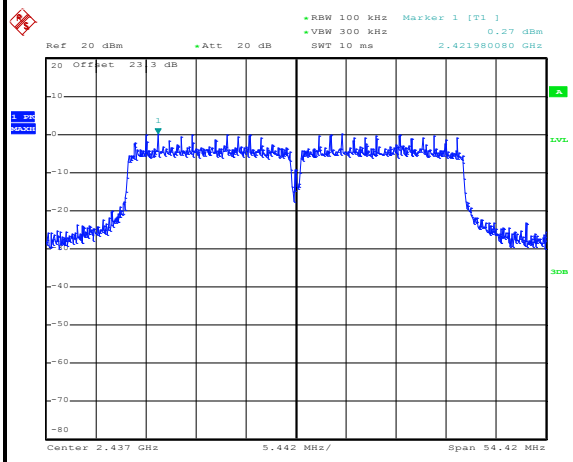


Date: 17.FEB.2017 01:42:31

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

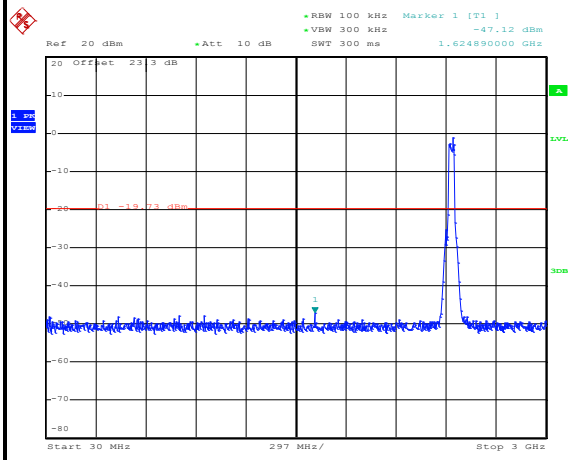
WLAN 802.11n HT40 Channel 06

100kHz PSD reference Level



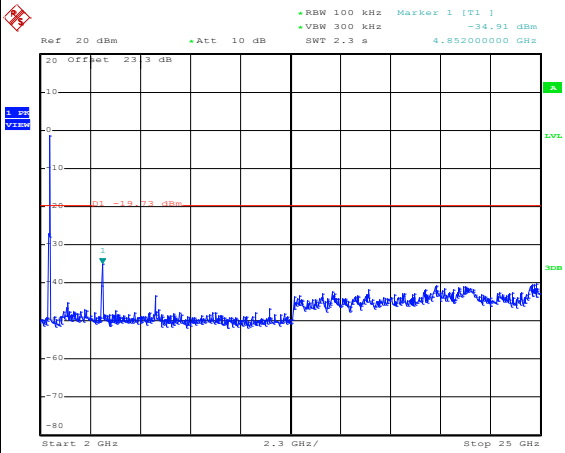
Date: 17.FEB.2017 01:47:16

Spurious Emission 30MHz~3GHz



Date: 17.FEB.2017 01:47:30

Spurious Emission 2GHz~25GHz

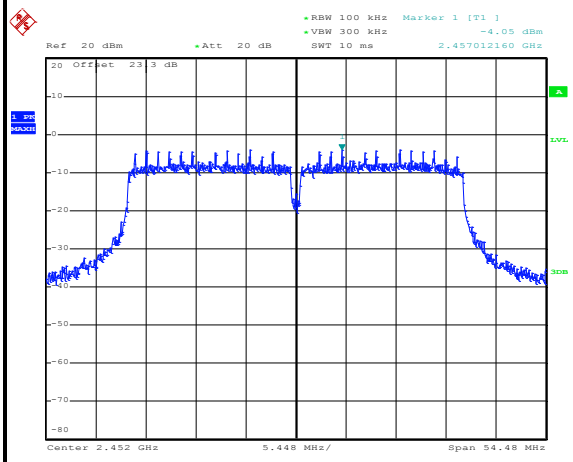


Date: 17.FEB.2017 01:47:38

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

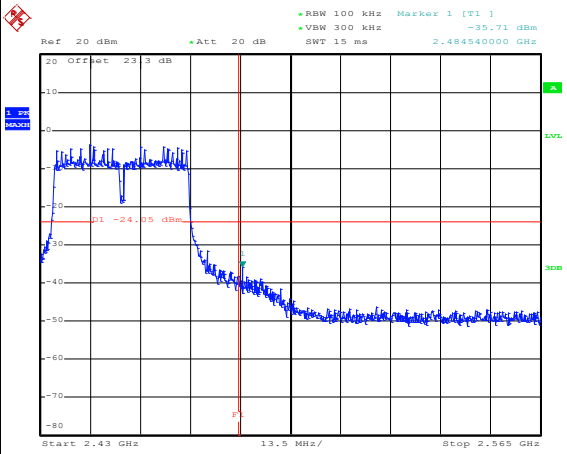
WLAN 802.11n HT40 Channel 09

100kHz PSD reference Level



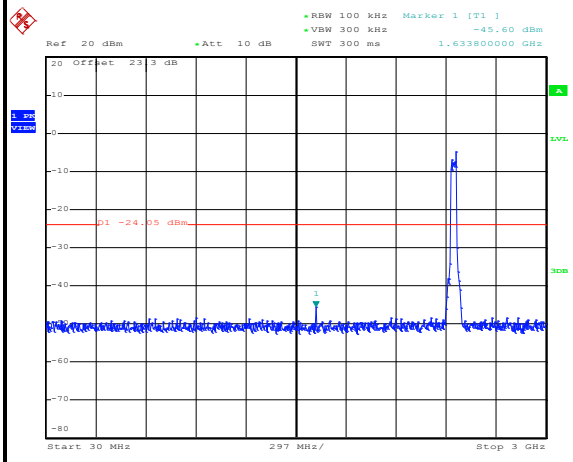
Date: 17.FEB.2017 01:50:43

High Channel Plot



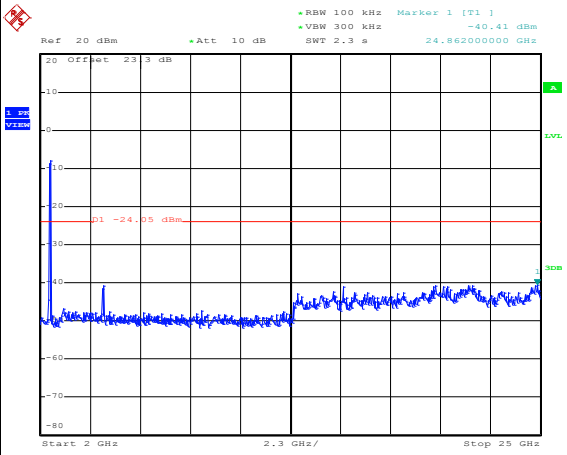
Date: 17.FEB.2017 01:51:06

Spurious Emission 30MHz~3GHz



Date: 17.FEB.2017 01:51:20

Spurious Emission 2GHz~25GHz



Date: 17.FEB.2017 01:51:29

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 FCC section 15.209 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

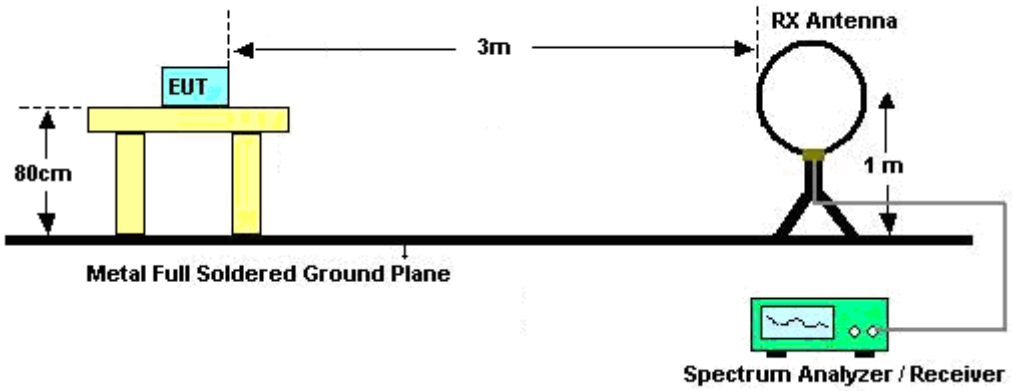
The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

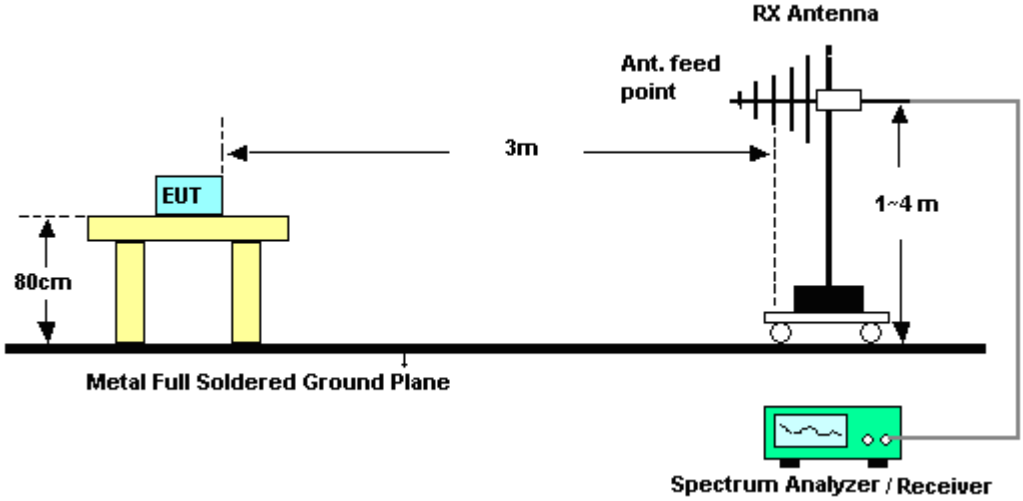
1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r05.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the 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

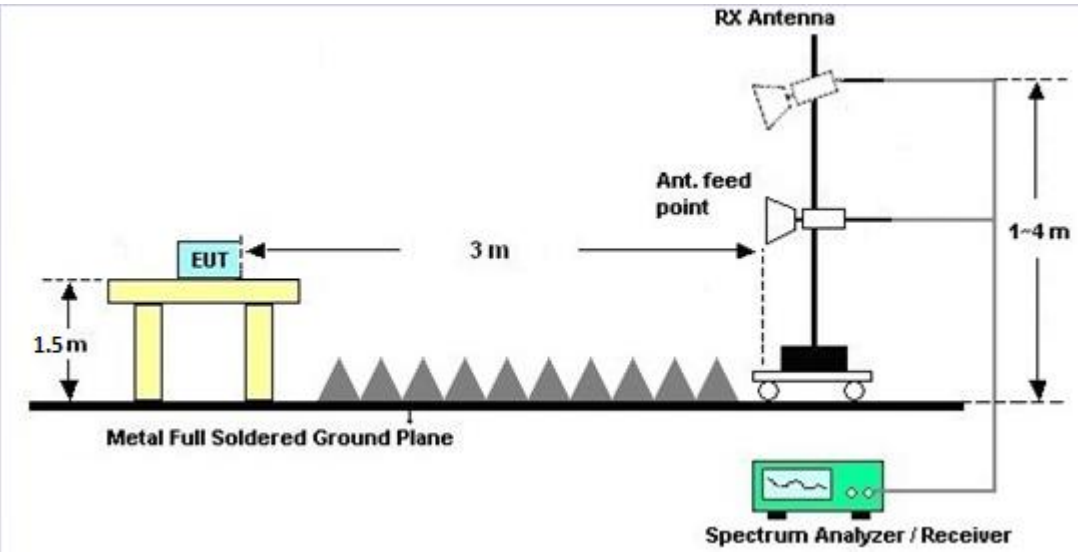
For radiated emissions below 30MHz



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 per 15.31(o) 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.

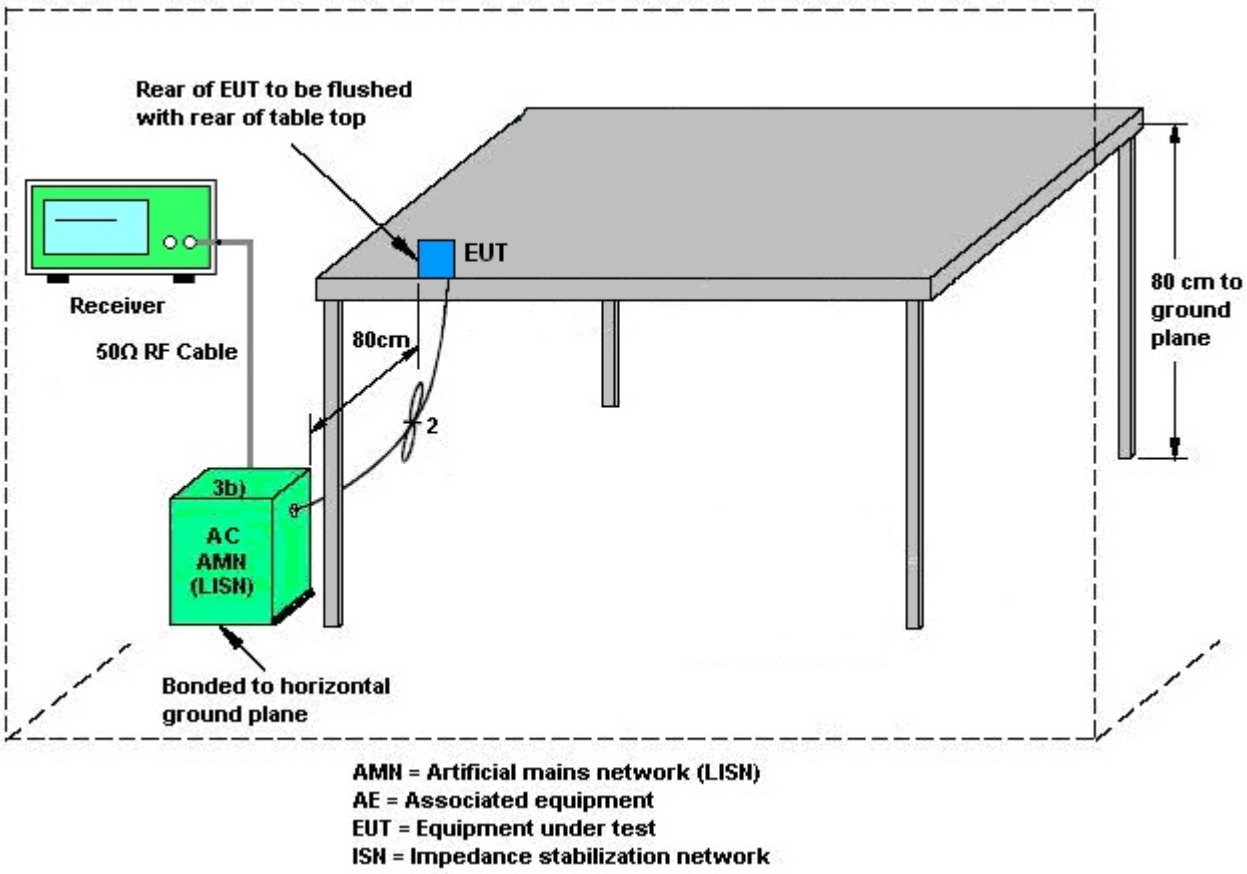
3.6.2 Measuring Instruments

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 FCC 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	Feb. 16, 2017	Sep. 28, 2017	Conducted (TH05-HY)
Power Sensor	Anritsu	MA2411B	0846202	300MHz~40GHz	Sep. 29, 2016	Feb. 16, 2017	Sep. 28, 2017	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz-40GHz	Jul. 17, 2016	Feb. 16, 2017	Jul. 16, 2017	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Feb. 17, 2017	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Aug. 30, 2016	Feb. 17, 2017	Aug. 29, 2017	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Nov. 29, 2016	Feb. 17, 2017	Nov. 28, 2017	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Dec. 06, 2016	Feb. 17, 2017	Dec. 05, 2017	Conduction (CO05-HY)
LF Cable	HUBER + SUHNER	RG-214/U	LF01	N/A	Jan. 05, 2017	Feb. 17, 2017	Jan. 04, 2018	Conduction (CO05-HY)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100851	N/A	Jan. 05, 2017	Feb. 17, 2017	Jan. 04, 2018	Conduction (CO05-HY)
Amplifier	SONOMA	310N	187311	9kHz~1GHz	Oct. 26, 2016	Feb. 14, 2017 ~ Feb. 16, 2017	Oct. 25, 2017	Radiation (03CH10-HY)
Bilog Antenna	TESEQ	CBL 6111D&00800N1D01N-06	35413&02	30MHz~1GHz	Jan. 07, 2017	Feb. 14, 2017 ~ Feb. 16, 2017	Jan. 06, 2018	Radiation (03CH10-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1325	1GHz ~ 18GHz	Sep. 30, 2016	Feb. 14, 2017 ~ Feb. 16, 2017	Sep. 29, 2017	Radiation (03CH10-HY)
Preamplifier	Keysight	83017A	MY53270078	1GHz~26.5GHz	Oct. 26, 2016	Feb. 14, 2017 ~ Feb. 16, 2017	Oct. 25, 2017	Radiation (03CH10-HY)
Spectrum Analyzer	Keysight	N9010A	MY54200485	10Hz ~ 44GHz	Oct. 17, 2016	Feb. 14, 2017 ~ Feb. 16, 2017	Oct. 16, 2017	Radiation (03CH10-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1~4m	N/A	Feb. 14, 2017 ~ Feb. 16, 2017	N/A	Radiation (03CH10-HY)
Turn Table	EMEC	TT 2200	N/A	0~360 Degree	N/A	Feb. 14, 2017 ~ Feb. 16, 2017	N/A	Radiation (03CH10-HY)
Preamplifier	Jet-Power	JPA00101800-30-10P	1601180002	1GHz~18GHz	Jul. 27, 2016	Feb. 14, 2017 ~ Feb. 16, 2017	Jul. 26, 2017	Radiation (03CH10-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170576	18GHz ~ 40GHz	Apr. 15, 2016	Feb. 14, 2017 ~ Feb. 16, 2017	Apr. 14, 2017	Radiation (03CH10-HY)
EMI Test Receiver	Keysight	N9038A(MXE)	MY55420170	N/A	Mar. 10, 2016	Feb. 14, 2017 ~ Feb. 16, 2017	Mar. 09, 2017	Radiation (03CH10-HY)
Preamplifier	MITEQ	JS44-18004000-33-8P	1840917	18GHz ~ 40GHz	Jun. 14, 2016	Feb. 14, 2017 ~ Feb. 16, 2017	Jun. 13, 2017	Radiation (03CH10-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Oct. 20, 2016	Feb. 14, 2017 ~ Feb. 16, 2017	Oct. 19, 2018	Radiation (03CH10-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))	**5.60**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.90**

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. Conducted Test Results

Appendix A. Test Result of Conducted Test Items

Test Engineer:	Shiming Liu	Temperature:	21~25	°C
Test Date:	2017/2/16	Relative Humidity:	51~54	%

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	14.80	10.06	0.50	Pass
11b	1Mbps	1	6	2437	14.70	10.08	0.50	Pass
11b	1Mbps	1	11	2462	14.40	10.06	0.50	Pass
11g	6Mbps	1	1	2412	23.40	16.30	0.50	Pass
11g	6Mbps	1	6	2437	28.85	16.32	0.50	Pass
11g	6Mbps	1	11	2462	18.70	16.32	0.50	Pass
HT20	MCS0	1	1	2412	23.85	17.56	0.50	Pass
HT20	MCS0	1	6	2437	30.60	17.56	0.50	Pass
HT20	MCS0	1	11	2462	19.35	17.54	0.50	Pass
HT40	MCS0	1	3	2422	39.10	36.32	0.50	Pass
HT40	MCS0	1	6	2437	37.50	36.28	0.50	Pass
HT40	MCS0	1	9	2452	37.40	36.32	0.50	Pass

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	19.50	30.00	2.00	21.50	36.00	Pass
11b	1Mbps	1	6	2437	18.84	30.00	2.00	20.84	36.00	Pass
11b	1Mbps	1	11	2462	16.10	30.00	2.00	18.10	36.00	Pass
11g	6Mbps	1	1	2412	22.90	30.00	2.00	24.90	36.00	Pass
11g	6Mbps	1	6	2437	23.42	30.00	2.00	25.42	36.00	Pass
11g	6Mbps	1	11	2462	19.60	30.00	2.00	21.60	36.00	Pass
HT20	MCS0	1	1	2412	22.96	30.00	2.00	24.96	36.00	Pass
HT20	MCS0	1	6	2437	23.40	30.00	2.00	25.40	36.00	Pass
HT20	MCS0	1	11	2462	19.20	30.00	2.00	21.20	36.00	Pass
HT40	MCS0	1	3	2422	22.10	30.00	2.00	24.10	36.00	Pass
HT40	MCS0	1	6	2437	21.40	30.00	2.00	23.40	36.00	Pass
HT40	MCS0	1	9	2452	18.81	30.00	2.00	20.81	36.00	Pass

TEST RESULTS DATA
Average Power Table
(Reporting Only)

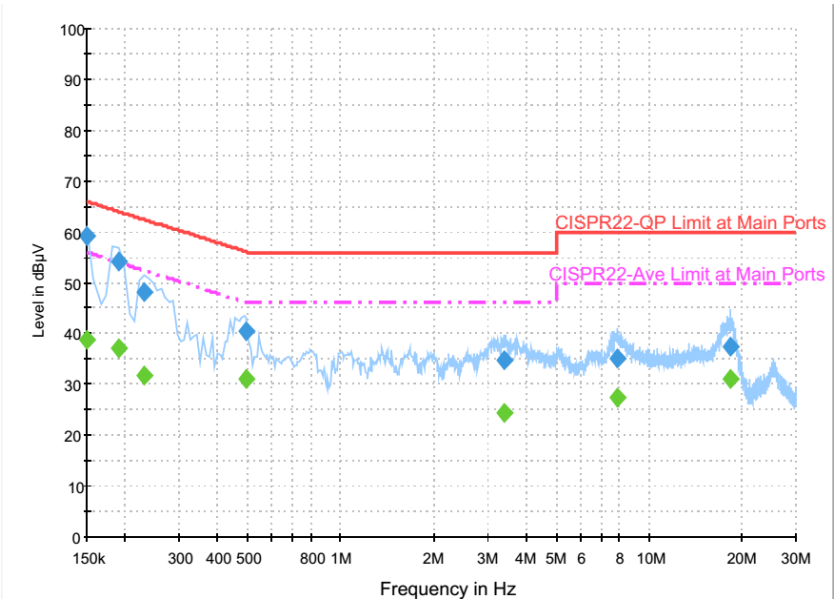
2.4GHz Band						
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)
11b	1Mbps	1	1	2412	0.00	17.51
11b	1Mbps	1	6	2437	0.00	16.64
11b	1Mbps	1	11	2462	0.00	13.66
11g	6Mbps	1	1	2412	0.19	17.84
11g	6Mbps	1	6	2437	0.19	19.96
11g	6Mbps	1	11	2462	0.19	11.39
HT20	MCS0	1	1	2412	0.30	17.90
HT20	MCS0	1	6	2437	0.30	19.97
HT20	MCS0	1	11	2462	0.30	11.00
HT40	MCS0	1	3	2422	0.32	15.92
HT40	MCS0	1	6	2437	0.32	14.12
HT40	MCS0	1	9	2452	0.32	10.27

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	-5.59	2.00	8.00	Pass
11b	1Mbps	1	6	2437	-7.86	2.00	8.00	Pass
11b	1Mbps	1	11	2462	-10.65	2.00	8.00	Pass
11g	6Mbps	1	1	2412	-5.42	2.00	8.00	Pass
11g	6Mbps	1	6	2437	-2.27	2.00	8.00	Pass
11g	6Mbps	1	11	2462	-13.61	2.00	8.00	Pass
HT20	MCS0	1	1	2412	-8.16	2.00	8.00	Pass
HT20	MCS0	1	6	2437	-4.52	2.00	8.00	Pass
HT20	MCS0	1	11	2462	-15.46	2.00	8.00	Pass
HT40	MCS0	1	3	2422	-9.51	2.00	8.00	Pass
HT40	MCS0	1	6	2437	-13.94	2.00	8.00	Pass
HT40	MCS0	1	9	2452	-19.03	2.00	8.00	Pass

Appendix B. AC Conducted Emission Test Results

Test Engineer :	Arthur Hsieh	Temperature :	20~22℃
		Relative Humidity :	50~53%
Test Voltage :	120Vac / 60Hz	Phase :	Line



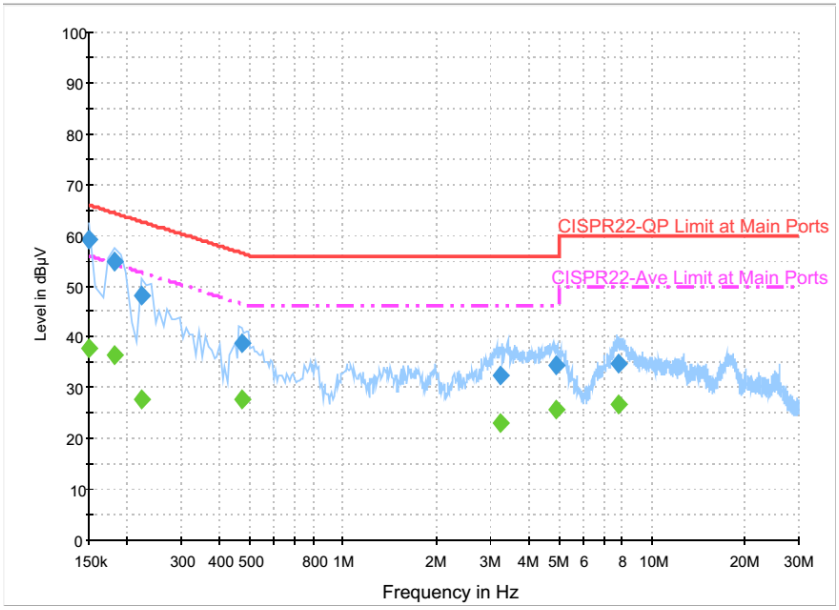
Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	59.1	Off	L1	19.6	6.9	66.0
0.190000	54.1	Off	L1	19.6	9.9	64.0
0.230000	48.2	Off	L1	19.6	14.2	62.4
0.494000	40.4	Off	L1	19.6	15.7	56.1
3.382000	34.8	Off	L1	19.6	21.2	56.0
7.950000	35.2	Off	L1	19.9	24.8	60.0
18.342000	37.5	Off	L1	20.5	22.5	60.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	38.9	Off	L1	19.6	17.1	56.0
0.190000	37.1	Off	L1	19.6	16.9	54.0
0.230000	31.8	Off	L1	19.6	20.6	52.4
0.494000	31.2	Off	L1	19.6	14.9	46.1
3.382000	24.3	Off	L1	19.6	21.7	46.0
7.950000	27.3	Off	L1	19.9	22.7	50.0
18.342000	31.2	Off	L1	20.5	18.8	50.0

Test Engineer :	Arthur Hsieh	Temperature :	20~22℃
		Relative Humidity :	50~53%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral



Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	59.0	Off	N	19.5	7.0	66.0
0.182000	54.8	Off	N	19.5	9.6	64.4
0.222000	48.3	Off	N	19.5	14.4	62.7
0.470000	38.8	Off	N	19.5	17.7	56.5
3.246000	32.5	Off	N	19.6	23.5	56.0
4.910000	34.4	Off	N	19.7	21.6	56.0
7.846000	34.7	Off	N	19.9	25.3	60.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	37.9	Off	N	19.5	18.1	56.0
0.182000	36.4	Off	N	19.5	18.0	54.4
0.222000	27.9	Off	N	19.5	24.8	52.7
0.470000	27.9	Off	N	19.5	18.6	46.5
3.246000	22.9	Off	N	19.6	23.1	46.0
4.910000	25.7	Off	N	19.7	20.3	46.0
7.846000	26.8	Off	N	19.9	23.2	50.0

Appendix C. Radiated Spurious Emission

Test Engineer :	Tsung Lee , Stan Hsieh, Kyle Chuang	Temperature :	21~22°C
		Relative Humidity :	43~45%

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

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		2387.385	51.74	-22.26	74	52.34	27.23	5.39	33.22	254	345	P	H
		2386.23	41.24	-12.76	54	41.84	27.23	5.39	33.22	254	345	A	H
	*	2412	90.91	-	-	91.42	27.28	5.42	33.21	254	345	P	H
	*	2412	87.91	-	-	88.42	27.28	5.42	33.21	254	345	A	H
													H
													H
		2386.965	50.83	-23.17	74	51.43	27.23	5.39	33.22	210	52	P	V
		2386.23	40.96	-13.04	54	41.56	27.23	5.39	33.22	210	52	A	V
	*	2412	90.49	-	-	91	27.28	5.42	33.21	210	52	P	V
	*	2412	87.46	-	-	87.97	27.28	5.42	33.21	210	52	A	V
													V
													V
802.11b CH 06 2437MHz		2388.96	50.78	-23.22	74	51.38	27.23	5.39	33.22	245	344	P	H
		2389.66	39.88	-14.12	54	40.48	27.23	5.39	33.22	245	344	A	H
	*	2437	92.33	-	-	92.73	27.37	5.42	33.19	245	344	P	H
	*	2437	88.86	-	-	89.26	27.37	5.42	33.19	245	344	A	H
		2488.87	51.01	-22.99	74	51.22	27.5	5.46	33.17	245	344	P	H
		2484.32	40.23	-13.77	54	40.48	27.46	5.46	33.17	245	344	A	H
		2333.94	50.6	-23.4	74	51.46	27.05	5.33	33.24	240	52	P	V
		2389.66	39.85	-14.15	54	40.45	27.23	5.39	33.22	240	52	A	V
	*	2437	92.26	-	-	92.66	27.37	5.42	33.19	240	52	P	V
	*	2437	89.2	-	-	89.6	27.37	5.42	33.19	240	52	A	V
		2488.66	50.75	-23.25	74	50.96	27.5	5.46	33.17	240	52	P	V
		2485.65	40.17	-13.83	54	40.42	27.46	5.46	33.17	240	52	A	V

802.11b CH 11 2462MHz	*	2462	90.82	-	-	91.15	27.41	5.44	33.18	240	343	P	H
	*	2462	87.46	-	-	87.79	27.41	5.44	33.18	240	343	A	H
		2483.56	53.62	-20.38	74	53.87	27.46	5.46	33.17	240	343	P	H
		2487.88	47.59	-6.41	54	47.8	27.5	5.46	33.17	240	343	A	H
													H
													H
	*	2462	90.14	-	-	90.47	27.41	5.44	33.18	208	52	P	V
	*	2462	86.61	-	-	86.94	27.41	5.44	33.18	208	52	A	V
		2487.56	52.54	-21.46	74	52.75	27.5	5.46	33.17	208	52	P	V
		2483.52	44.74	-9.26	54	44.99	27.46	5.46	33.17	208	52	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	54.34	-19.66	74	77.2	31.46	7.58	61.9	100	268	P	H
		4824	52.87	-1.13	54	75.73	31.46	7.58	61.9	100	268	A	H
													H
													H
		4824	54.64	-19.36	74	77.5	31.46	7.58	61.9	109	359	P	V
		4824	53.05	-0.95	54	75.91	31.46	7.58	61.9	109	359	A	V
													V
													V
802.11b CH 06 2437MHz		4874	52.72	-21.28	74	75.36	31.56	7.7	61.9	100	0	P	H
		7311	55.31	-18.69	74	71.7	36.18	9.49	62.06	196	288	P	H
		7311	50.51	-3.49	54	66.9	36.18	9.49	62.06	196	288	A	H
													H
		4874	51.45	-22.55	74	74.09	31.56	7.7	61.9	100	0	P	V
		7311	56.57	-17.43	74	72.96	36.18	9.49	62.06	100	359	P	V
		7311	53.6	-0.4	54	69.99	36.18	9.49	62.06	100	359	A	V
													V
802.11b CH 11 2462MHz		4924	46.35	-27.65	74	68.66	31.66	7.93	61.9	100	0	P	H
		7386	56.97	-17.03	74	73.15	36.37	9.53	62.08	191	297	P	H
		7386	53.81	-0.19	54	69.99	36.37	9.53	62.08	191	297	A	H
													H
		4924	46	-28	74	68.31	31.66	7.93	61.9	100	0	P	V
		7386	56.22	-17.78	74	72.4	36.37	9.53	62.08	103	298	P	V
		7386	53.71	-0.29	54	69.89	36.37	9.53	62.08	103	298	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		2389.59	65.68	-8.32	74	66.28	27.23	5.39	33.22	127	33	P	H
		2390	52.72	-1.28	54	53.31	27.23	5.39	33.21	127	33	A	H
	*	2412	95.37	-	-	95.88	27.28	5.42	33.21	127	33	P	H
	*	2412	87.38	-	-	87.89	27.28	5.42	33.21	127	33	A	H
													H
													H
		2389.695	59.96	-14.04	74	60.56	27.23	5.39	33.22	166	58	P	V
		2390	49.91	-4.09	54	50.5	27.23	5.39	33.21	166	58	A	V
	*	2412	94.42	-	-	94.93	27.28	5.42	33.21	166	58	P	V
	*	2412	86.38	-	-	86.89	27.28	5.42	33.21	166	58	A	V
													V
													V
802.11g CH 06 2437MHz		2389.38	57.9	-16.1	74	58.5	27.23	5.39	33.22	118	15	P	H
		2389.8	45.31	-8.69	54	45.9	27.23	5.39	33.21	118	15	A	H
	*	2437	98.53	-	-	98.93	27.37	5.42	33.19	118	15	P	H
	*	2437	91.41	-	-	91.81	27.37	5.42	33.19	118	15	A	H
		2486.14	64.71	-9.29	74	64.96	27.46	5.46	33.17	118	15	P	H
		2483.83	52.67	-1.33	54	52.92	27.46	5.46	33.17	118	15	A	H
		2389.52	55.59	-18.41	74	56.19	27.23	5.39	33.22	110	35	P	V
		2389.94	43.21	-10.79	54	43.8	27.23	5.39	33.21	110	35	A	V
	*	2437	95.87	-	-	96.27	27.37	5.42	33.19	110	35	P	V
	*	2437	87.75	-	-	88.15	27.37	5.42	33.19	110	35	A	V
		2483.83	63.51	-10.49	74	63.76	27.46	5.46	33.17	110	35	P	V
		2483.9	51.08	-2.92	54	51.33	27.46	5.46	33.17	110	35	A	V

802.11g CH 11 2462MHz	*	2462	92.46	-	-	92.79	27.41	5.44	33.18	189	360	P	H
	*	2462	84.19	-	-	84.52	27.41	5.44	33.18	189	360	A	H
		2483.6	66.86	-7.14	74	67.11	27.46	5.46	33.17	189	360	P	H
		2483.56	53.83	-0.17	54	54.08	27.46	5.46	33.17	189	360	A	H
													H
													H
	*	2462	90.84	-	-	91.17	27.41	5.44	33.18	100	315	P	V
	*	2462	82.96	-	-	83.29	27.41	5.44	33.18	100	315	A	V
		2483.92	65.64	-8.36	74	65.89	27.46	5.46	33.17	100	315	P	V
		2483.52	52.23	-1.77	54	52.48	27.46	5.46	33.17	100	315	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	46.98	-27.02	74	69.84	31.46	7.58	61.9	100	0	P	H
													H
													H
													H
		4824	49.94	-24.06	74	72.8	31.46	7.58	61.9	100	0	P	V
													V
													V
													V
802.11g CH 06 2437MHz		4874	51.4	-22.6	74	74.04	31.56	7.7	61.9	100	0	P	H
		7311	61.1	-12.9	74	77.49	36.18	9.49	62.06	100	329	P	H
		7311	50.55	-3.45	54	66.94	36.18	9.49	62.06	100	329	A	H
													H
		4874	49.94	-24.06	74	72.58	31.56	7.7	61.9	100	0	P	V
		7311	61.83	-12.17	74	78.22	36.18	9.49	62.06	100	358	P	V
		7311	53.35	-0.65	54	69.74	36.18	9.49	62.06	100	358	A	V
													V
802.11g CH 11 2462MHz		4924	42.79	-31.21	74	65.1	31.66	7.93	61.9	100	0	P	H
		7386	53.35	-20.65	74	69.53	36.37	9.53	62.08	100	300	P	H
		7386	46.17	-7.83	54	62.35	36.37	9.53	62.08	100	300	A	H
													H
		4924	41.28	-32.72	74	63.59	31.66	7.93	61.9	100	0	P	V
		7386	53.6	-20.4	74	69.78	36.37	9.53	62.08	101	16	P	V
		7386	45.57	-8.43	54	61.75	36.37	9.53	62.08	101	16	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)
		2389.38	64.3	-9.7	74	64.9	27.23	5.39	33.22	308	352	P	H
		2389.8	53.25	-0.75	54	53.84	27.23	5.39	33.21	308	352	A	H
	*	2412	95.32	-	-	95.83	27.28	5.42	33.21	308	352	P	H
	*	2412	86.88	-	-	87.39	27.28	5.42	33.21	308	352	A	H
802.11n													H
HT20													H
CH 01		2390	65.39	-8.61	74	65.98	27.23	5.39	33.21	172	58	P	V
2412MHz		2389.8	51.55	-2.45	54	52.14	27.23	5.39	33.21	172	58	A	V
	*	2412	93.99	-	-	94.5	27.28	5.42	33.21	172	58	P	V
	*	2412	85.93	-	-	86.44	27.28	5.42	33.21	172	58	A	V
													V
													V
		2383.36	58	-16	74	58.64	27.19	5.39	33.22	115	14	P	H
		2389.94	46.39	-7.61	54	46.98	27.23	5.39	33.21	115	14	A	H
	*	2437	99.17	-	-	99.57	27.37	5.42	33.19	115	14	P	H
	*	2437	90.32	-	-	90.72	27.37	5.42	33.19	115	14	A	H
802.11n		2483.69	66.75	-7.25	74	67	27.46	5.46	33.17	115	14	P	H
HT20		2483.55	51.77	-2.23	54	52.02	27.46	5.46	33.17	115	14	A	H
CH 06		2388.82	54.5	-19.5	74	55.1	27.23	5.39	33.22	108	32	P	V
2437MHz		2389.94	43.79	-10.21	54	44.38	27.23	5.39	33.21	108	32	A	V
	*	2437	96.45	-	-	96.85	27.37	5.42	33.19	108	32	P	V
	*	2437	88.81	-	-	89.21	27.37	5.42	33.19	108	32	A	V
		2484.95	61.82	-12.18	74	62.07	27.46	5.46	33.17	108	32	P	V
		2483.76	50.11	-3.89	54	50.36	27.46	5.46	33.17	108	32	A	V

	*	2462	88.87	-	-	89.2	27.41	5.44	33.18	380	356	P	H
	*	2462	81.18	-	-	81.51	27.41	5.44	33.18	380	356	A	H
		2484.36	66.1	-7.9	74	66.35	27.46	5.46	33.17	380	356	P	H
		2483.52	53.03	-0.97	54	53.28	27.46	5.46	33.17	380	356	A	H
802.11n													H
HT20													H
CH 11	*	2462	90.76	-	-	91.09	27.41	5.44	33.18	167	57	P	V
2462MHz	*	2462	82.96	-	-	83.29	27.41	5.44	33.18	167	57	A	V
		2484.08	66.55	-7.45	74	66.8	27.46	5.46	33.17	167	57	P	V
		2483.72	53.3	-0.7	54	53.55	27.46	5.46	33.17	167	57	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)
		4824	48.03	-25.97	74	70.89	31.46	7.58	61.9	100	0	P	H
													H
802.11n													H
HT20													H
CH 01		4824	49.71	-24.29	74	72.57	31.46	7.58	61.9	100	0	P	V
2412MHz													V
													V
													V
		4874	49.5	-24.5	74	72.14	31.56	7.7	61.9	100	0	P	H
		7311	61.14	-12.86	74	77.53	36.18	9.49	62.06	100	329	P	H
802.11n		7311	50.3	-3.7	54	66.69	36.18	9.49	62.06	100	329	A	H
HT20													H
CH 06		4874	52.78	-21.22	74	75.42	31.56	7.7	61.9	100	0	P	V
2437MHz		7311	61.15	-12.85	74	77.54	36.18	9.49	62.06	100	358	P	V
		7311	53.53	-0.47	54	69.92	36.18	9.49	62.06	100	358	A	V
													V
		4924	41.13	-32.87	74	63.44	31.66	7.93	61.9	100	0	P	H
		7386	53.49	-20.51	74	69.67	36.37	9.53	62.08	100	299	P	H
802.11n		7386	44.57	-9.43	54	60.75	36.37	9.53	62.08	100	299	A	H
HT20													H
CH 11		4924	42.09	-31.91	74	64.4	31.66	7.93	61.9	100	0	P	V
2462MHz		7386	50.98	-23.02	74	67.16	36.37	9.53	62.08	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)
		2387.98	62.15	-11.85	74	62.75	27.23	5.39	33.22	249	345	P	H
		2389.66	52.29	-1.71	54	52.89	27.23	5.39	33.22	249	345	A	H
	*	2422	91	-	-	91.45	27.32	5.42	33.19	249	345	P	H
	*	2422	83.47	-	-	83.92	27.32	5.42	33.19	249	345	A	H
802.11n		2483.83	60.43	-13.57	74	60.68	27.46	5.46	33.17	249	345	P	H
HT40		2483.97	47.95	-6.05	54	48.2	27.46	5.46	33.17	249	345	A	H
CH 03		2387.28	60.18	-13.82	74	60.78	27.23	5.39	33.22	197	56	P	V
2422MHz		2388.68	50.39	-3.61	54	50.99	27.23	5.39	33.22	197	56	A	V
	*	2422	90.44	-	-	90.89	27.32	5.42	33.19	197	56	P	V
	*	2422	83.12	-	-	83.57	27.32	5.42	33.19	197	56	A	V
		2485.79	56.99	-17.01	74	57.24	27.46	5.46	33.17	197	56	P	V
		2484.39	46.27	-7.73	54	46.52	27.46	5.46	33.17	197	56	A	V
		2389.8	53.63	-20.37	74	54.22	27.23	5.39	33.21	256	344	P	H
		2389.38	44.19	-9.81	54	44.79	27.23	5.39	33.22	256	344	A	H
	*	2437	89.92	-	-	90.32	27.37	5.42	33.19	256	344	P	H
	*	2437	82.11	-	-	82.51	27.37	5.42	33.19	256	344	A	H
802.11n		2483.62	63.42	-10.58	74	63.67	27.46	5.46	33.17	256	344	P	H
HT40		2483.69	53.53	-0.47	54	53.78	27.46	5.46	33.17	256	344	A	H
CH 06		2389.38	52.65	-21.35	74	53.25	27.23	5.39	33.22	115	58	P	V
2437MHz		2389.24	43.47	-10.53	54	44.07	27.23	5.39	33.22	115	58	A	V
	*	2437	89.4	-	-	89.8	27.37	5.42	33.19	115	58	P	V
	*	2437	81.55	-	-	81.95	27.37	5.42	33.19	115	58	A	V
		2483.55	60.64	-13.36	74	60.89	27.46	5.46	33.17	115	58	P	V
		2483.5	49.36	-4.64	54	49.61	27.46	5.46	33.17	115	58	A	V

		2359.84	50.64	-23.36	74	51.4	27.14	5.33	33.23	121	337	P	H
		2387.28	42.01	-11.99	54	42.61	27.23	5.39	33.22	121	337	A	H
	*	2452	87.54	-	-	87.91	27.37	5.44	33.18	121	337	P	H
	*	2452	79.27	-	-	79.64	27.37	5.44	33.18	121	337	A	H
802.11n		2483.5	63.81	-10.19	74	64.06	27.46	5.46	33.17	121	337	P	H
HT40		2484.11	52.43	-1.57	54	52.68	27.46	5.46	33.17	121	337	A	H
CH 09		2348.92	51.06	-22.94	74	51.86	27.1	5.33	33.23	112	53	P	V
2452MHz		2358.02	41.98	-12.02	54	42.74	27.14	5.33	33.23	112	53	A	V
	*	2452	86.06	-	-	86.43	27.37	5.44	33.18	112	53	P	V
	*	2452	78.46	-	-	78.83	27.37	5.44	33.18	112	53	A	V
		2484.74	62.49	-11.51	74	62.74	27.46	5.46	33.17	112	53	P	V
		2484.25	50.44	-3.56	54	50.69	27.46	5.46	33.17	112	53	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)
		4844	44.21	-29.79	74	66.92	31.49	7.7	61.9	100	0	P	H
		7266	53.12	-20.88	74	69.61	36.11	9.46	62.06	107	341	P	H
802.11n		7266	40.54	-13.46	54	57.03	36.11	9.46	62.06	107	341	A	H
HT40													H
CH 03		4844	46.22	-27.78	74	68.93	31.49	7.7	61.9	100	0	P	V
2422MHz		7266	52.91	-21.09	74	69.4	36.11	9.46	62.06	101	14	P	V
		7266	44.25	-9.75	54	60.74	36.11	9.46	62.06	101	14	A	V
													V
		4874	42.25	-31.75	74	64.89	31.56	7.7	61.9	100	0	P	H
		7311	49.95	-24.05	74	66.34	36.18	9.49	62.06	100	0	P	H
802.11n													H
HT40													H
CH 06		4874	42.23	-31.77	74	64.87	31.56	7.7	61.9	100	0	P	V
2437MHz		7311	49.86	-24.14	74	66.25	36.18	9.49	62.06	100	0	P	V
													V
													V
		4904	41.38	-32.62	74	63.83	31.63	7.82	61.9	100	0	P	H
		7356	46.04	-27.96	74	62.3	36.3	9.51	62.07	100	0	P	H
802.11n													H
HT40													H
CH 09		4904	40.92	-33.08	74	63.37	31.63	7.82	61.9	100	0	P	V
2452MHz		7356	46.73	-27.27	74	62.99	36.3	9.51	62.07	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

Emission below 1GHz

2.4GHz WIFI 802.11b (LF)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11b LF		139.89	35	-8.5	43.5	48.43	18	1.33	32.76	-	-	P	H
		209.82	32.35	-11.15	43.5	47.21	16.27	1.62	32.75	-	-	P	H
		300	42.37	-3.63	46	53.5	19.7	1.88	32.71	-	-	P	H
	*	375	51.37	5.37	46	60.18	21.81	2.13	32.75	100	54	QP	H
	*	375	52.48	6.48	46	61.29	21.81	2.13	32.75	100	54	P	H
		472.2	42.44	-3.56	46	49.35	23.64	2.3	32.85	-	-	P	H
		874.7	44.72	-1.28	46	45.3	28.7	3.16	32.44	-	-	P	H
													H
													H
													H
													H
													H
		40.8	32.96	-7.04	40	45.12	19.94	0.65	32.75	-	-	P	V
		72.39	25.98	-14.02	40	44.85	12.95	0.93	32.75	-	-	P	V
		207.66	29	-14.5	43.5	43.91	16.22	1.62	32.75	-	-	P	V
	*	375	47.84	1.84	46	56.65	21.81	2.13	32.75	100	0	QP	V
	*	375	48.97	2.97	46	57.78	21.81	2.13	32.75	100	0	P	V
		475	41.86	-4.14	46	48.71	23.7	2.3	32.85	-	-	P	V
		874.7	44.68	-1.32	46	45.26	28.7	3.16	32.44	-	-	P	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

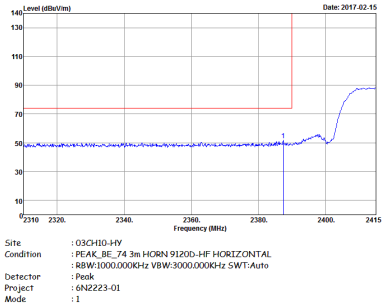
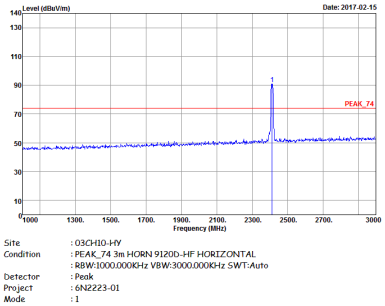
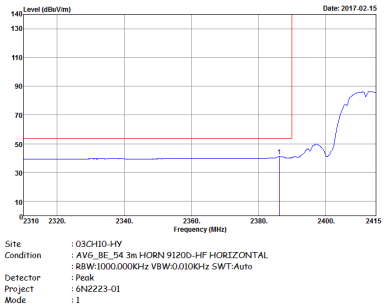
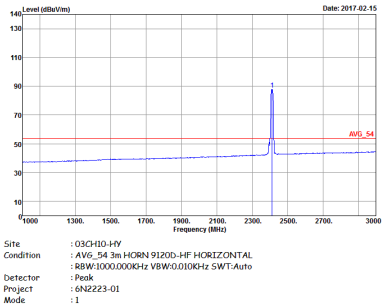
Test Engineer :	Tsung Lee , Stan Hsieh, Kyle Chuang	**Temperature :**	21~22°C
		Relative Humidity :	43~45%

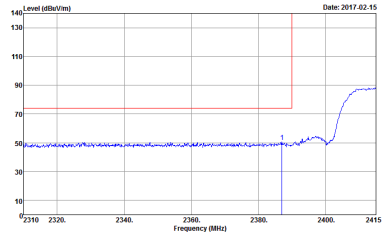
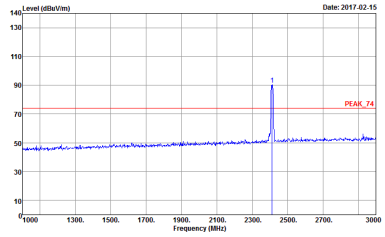
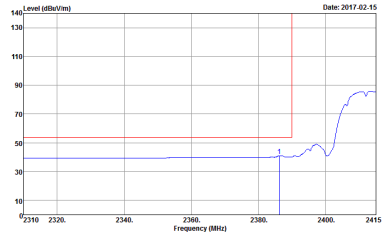
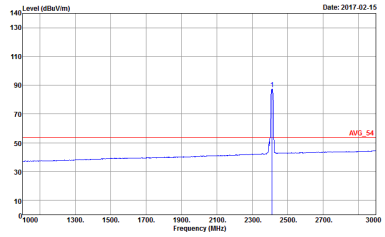
Note symbol

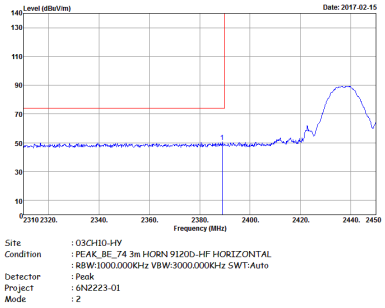
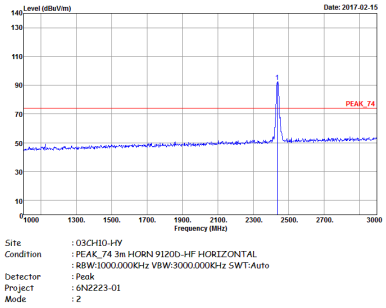
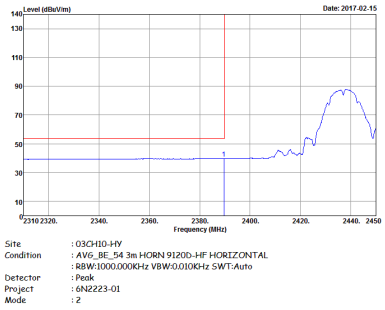
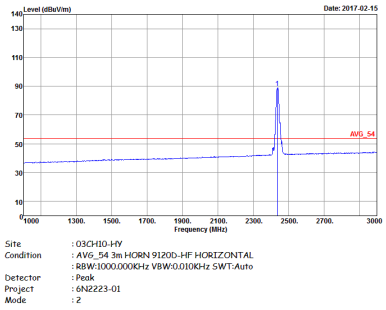
-L	**Low channel location**
-R	**High channel location**

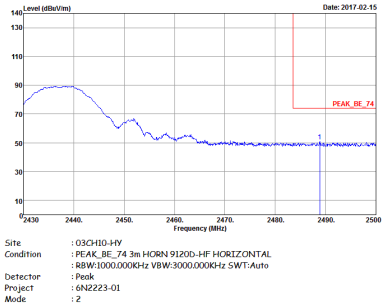
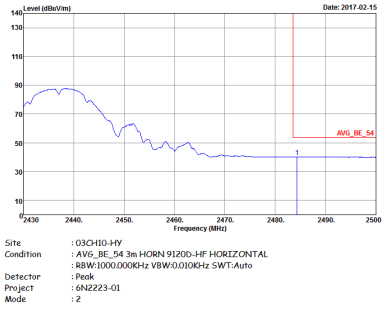
2.4GHz 2400~2483.5MHz

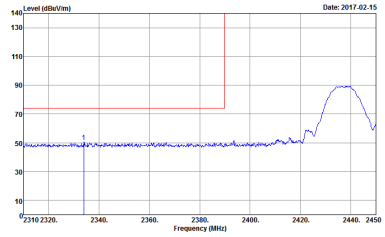
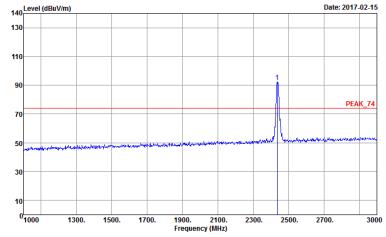
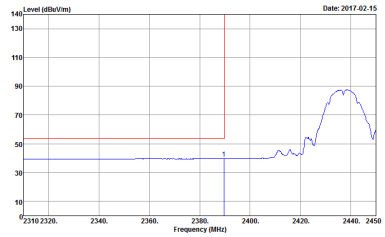
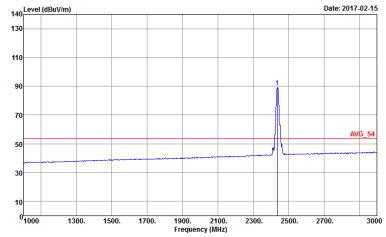
WIFI 802.11b (Band Edge @ 3m)

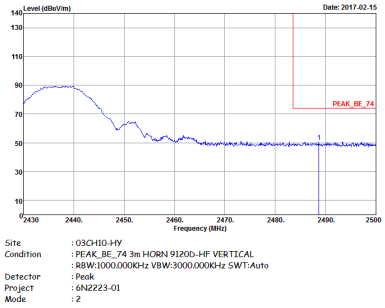
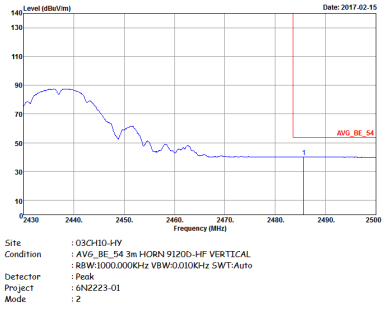
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

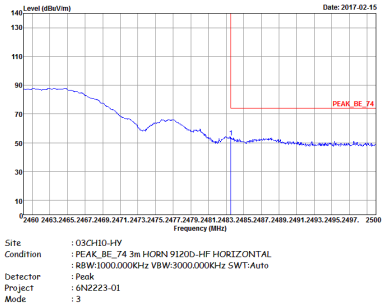
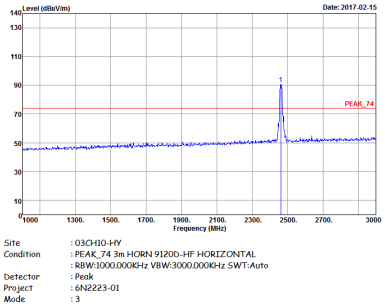
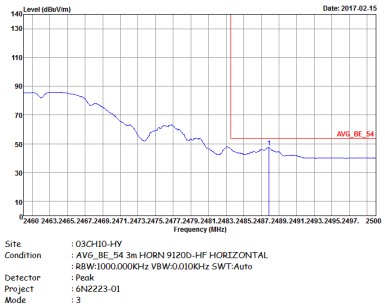
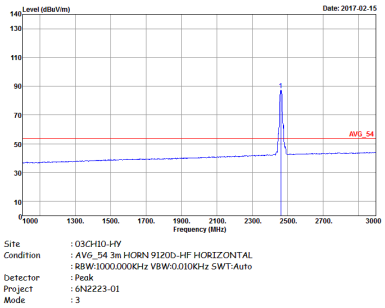
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 1	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 1
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 1	 Site : 03CH10-HY Condition : AVG_54 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 1

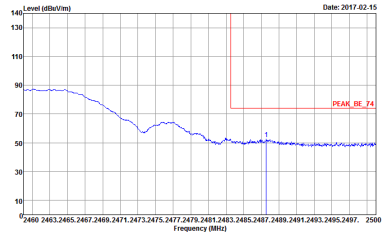
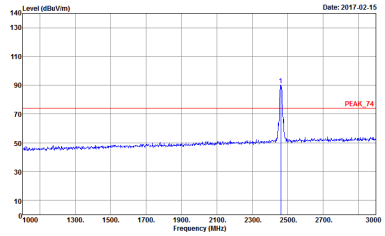
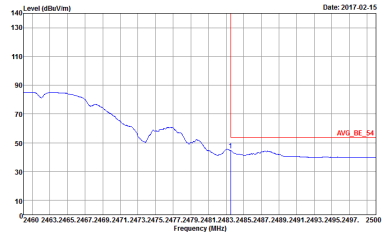
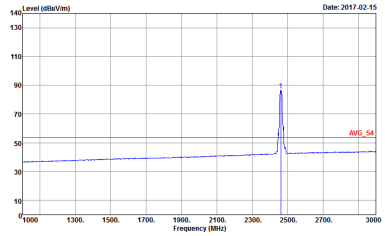
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		

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.		

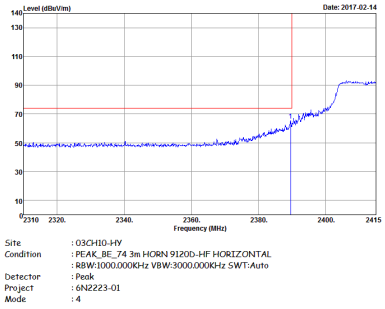
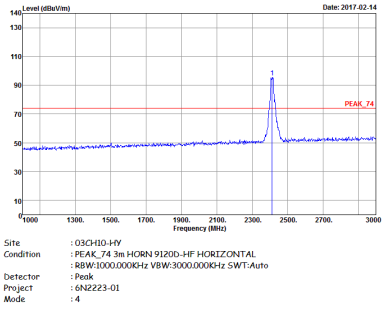
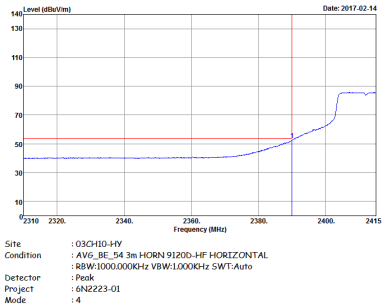
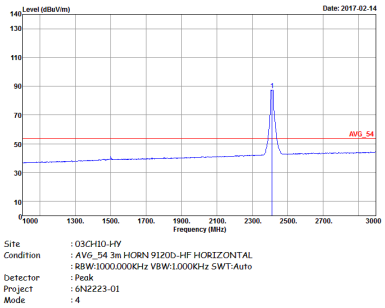
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - R	
1	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

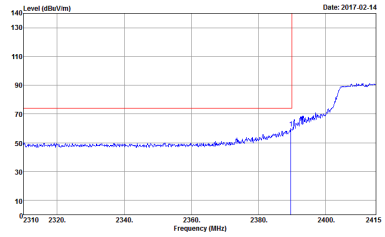
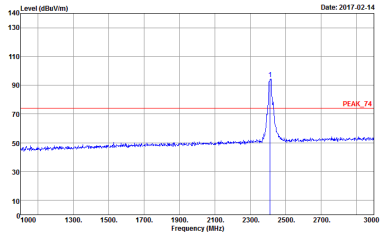
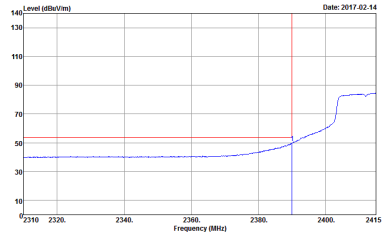
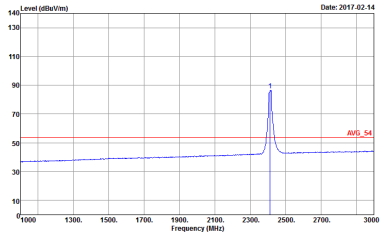
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 3	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 3
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 3	 Site : 03CH10-HY Condition : AVG_54 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 3

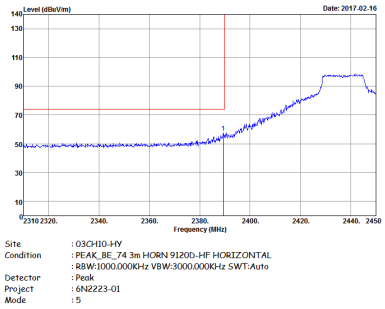
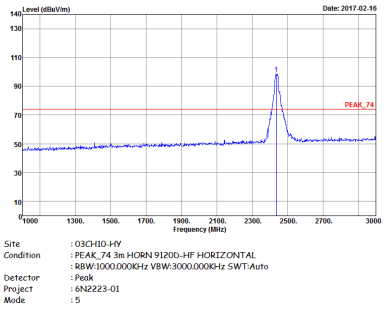
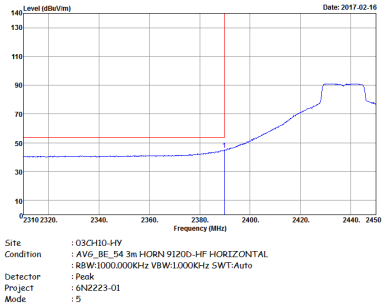
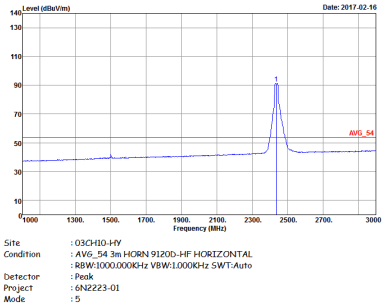
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 3	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 3
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 3	 Site : 03CH10-HY Condition : AVG_54 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 3

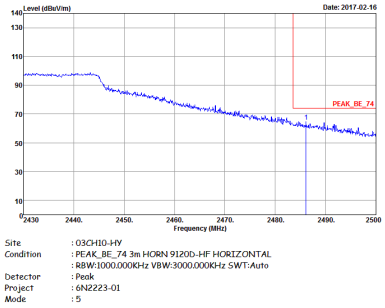
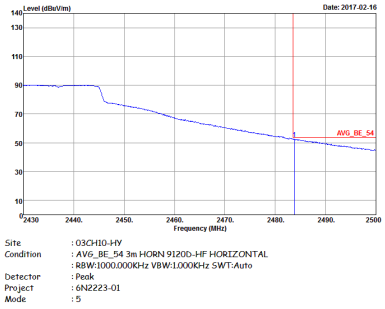
2.4GHz 2400~2483.5MHz

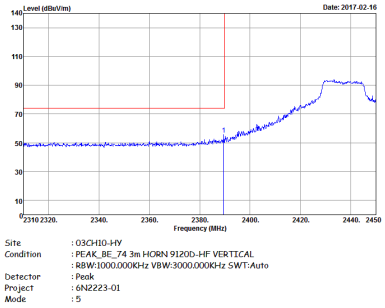
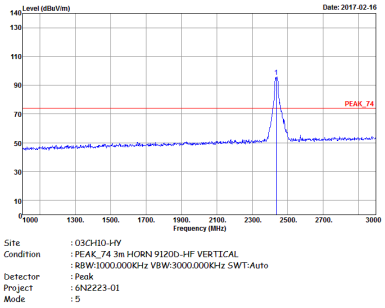
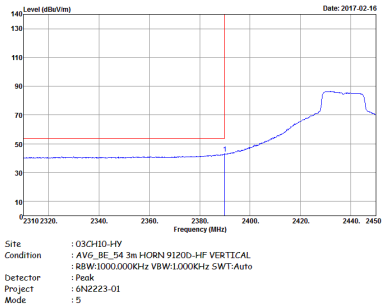
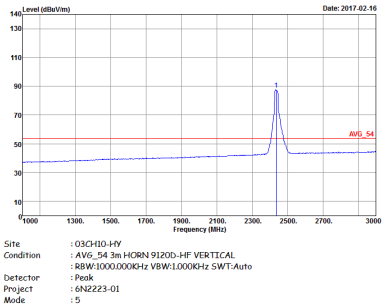
WIFI 802.11g (Band Edge @ 3m)

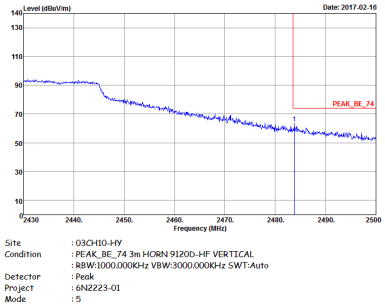
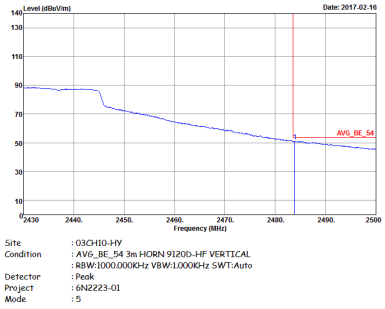
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

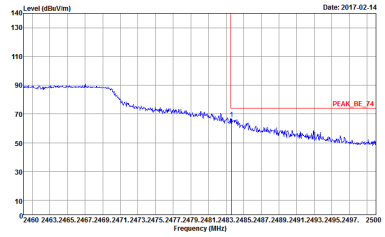
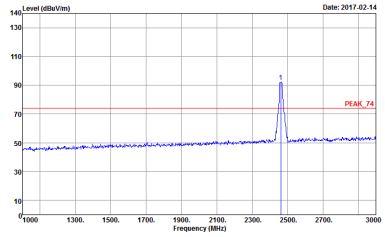
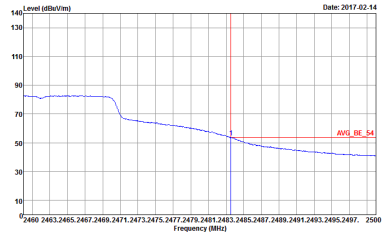
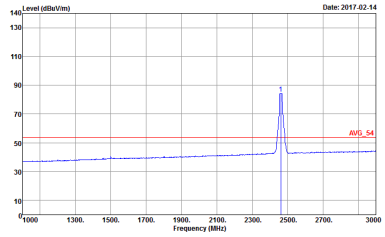
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 4	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 4
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 4	 Site : 03CH10-HY Condition : AVG_54 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 4

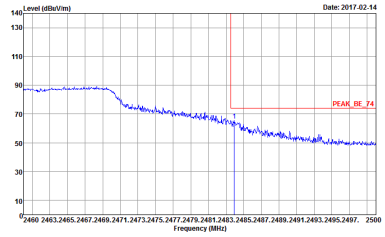
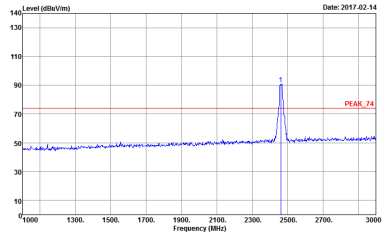
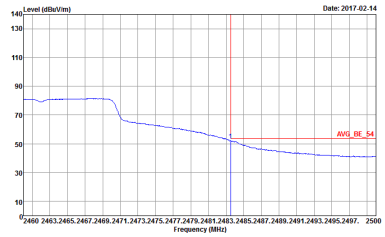
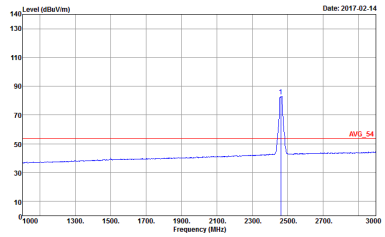
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		

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	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 5	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 5
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 5	 Site : 03CH10-HY Condition : AVG_54 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 5

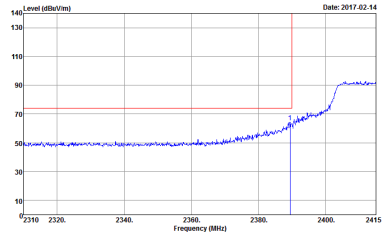
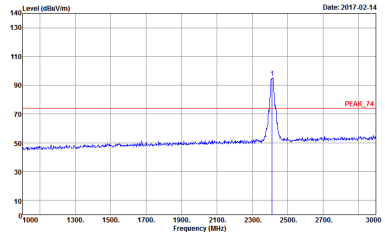
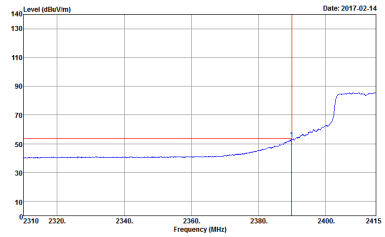
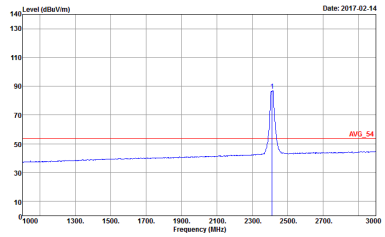
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - R	
1	Vertical	Fundamental
Peak		Left Blank
Avg.		Left Blank

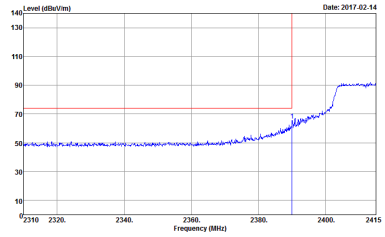
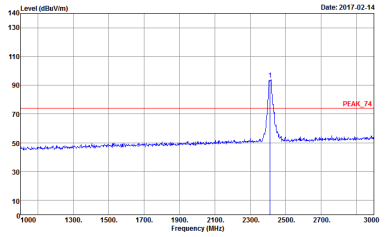
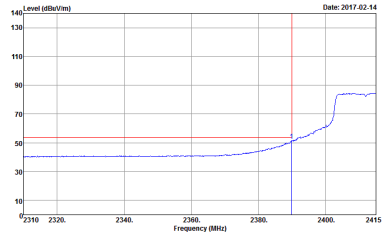
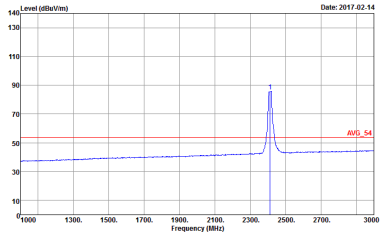
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 9120D-HF HORIZONTAL Detector : Peak Project : 6N2223-01 Mode : 6	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 9120D-HF HORIZONTAL Detector : Peak Project : 6N2223-01 Mode : 6
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 9120D-HF HORIZONTAL Detector : Peak Project : 6N2223-01 Mode : 6	 Site : 03CH10-HY Condition : AVG_54 3m HORN 9120D-HF HORIZONTAL Detector : Peak Project : 6N2223-01 Mode : 6

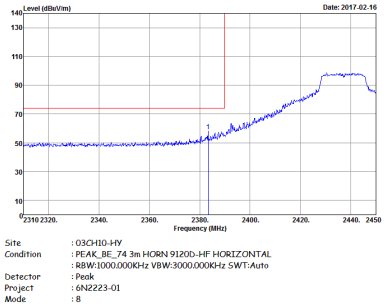
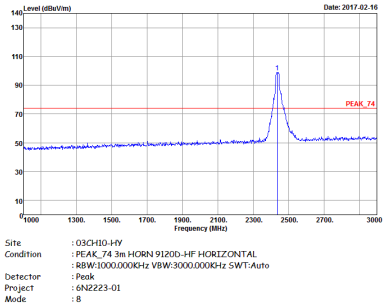
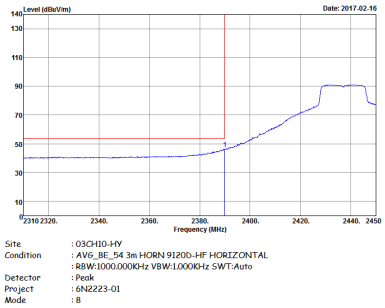
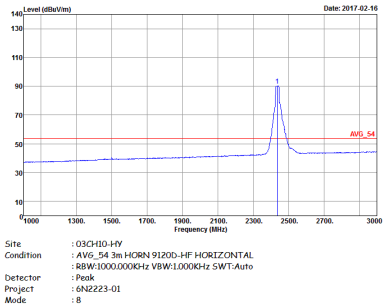
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1	Vertical	Fundamental
Peak		
Avg.		

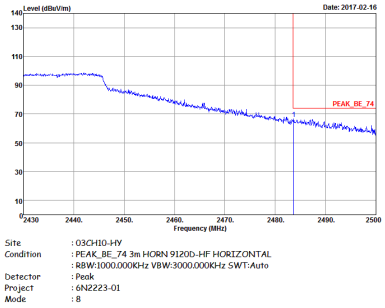
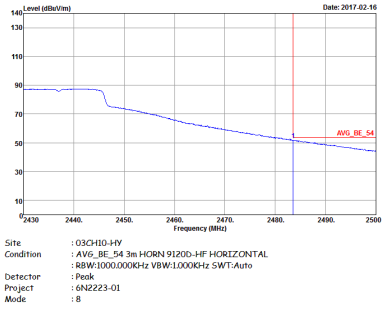
2.4GHz 2400~2483.5MHz

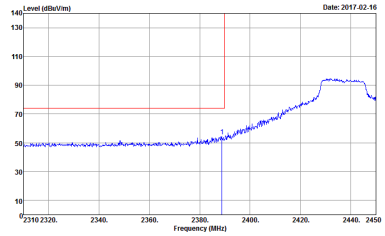
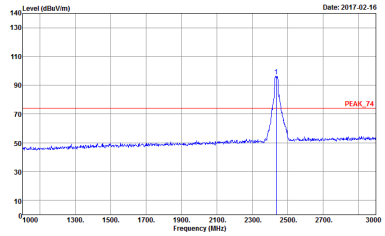
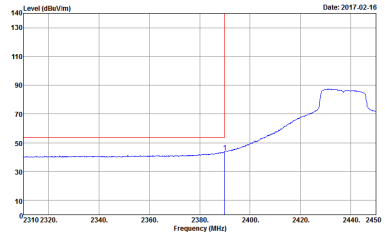
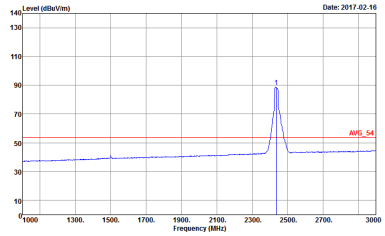
WIFI 802.11n HT20 (Band Edge @ 3m)

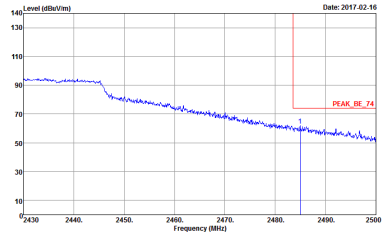
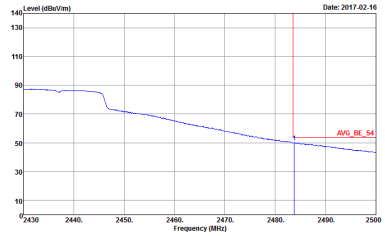
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 7	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 7
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 7	 Site : 03CH10-HY Condition : AVG_54 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 7

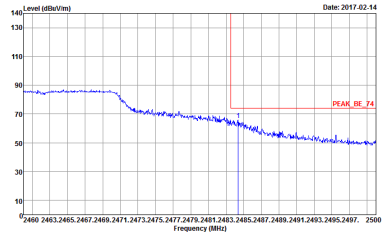
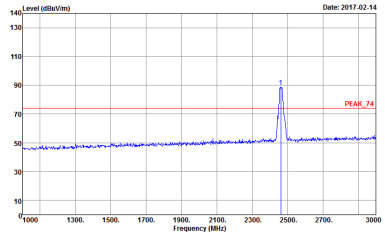
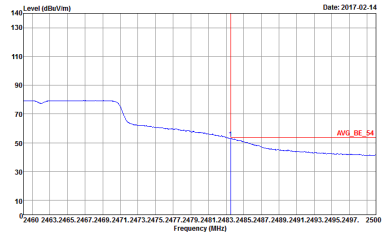
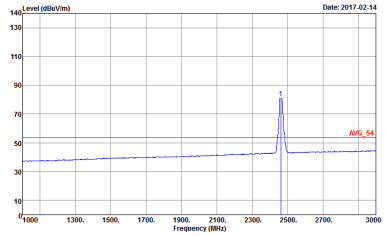
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 7	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 7
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 7	 Site : 03CH10-HY Condition : AVG_54 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 7

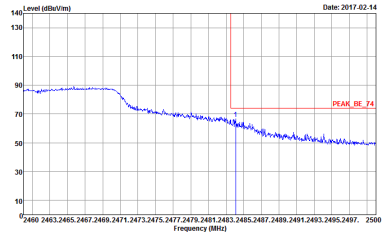
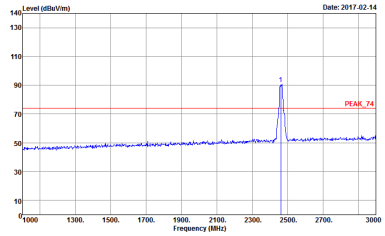
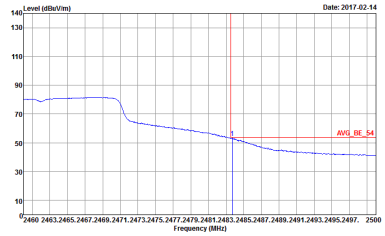
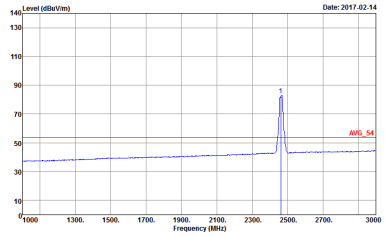
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		

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	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 8	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 8
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 8	 Site : 03CH10-HY Condition : AVG_54 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 8

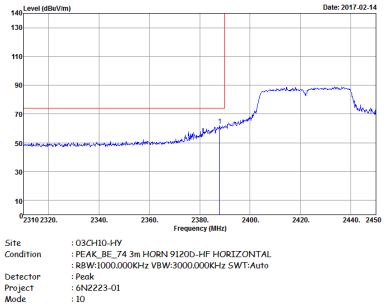
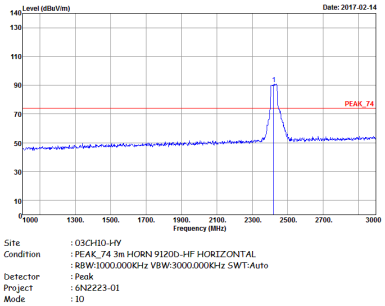
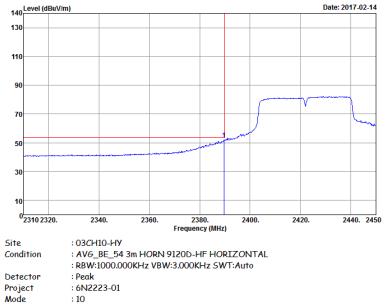
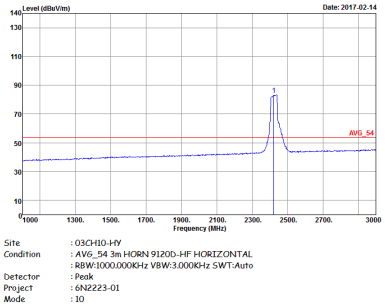
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - R	
1	Vertical	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 8	Left Blank
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 8	Left Blank

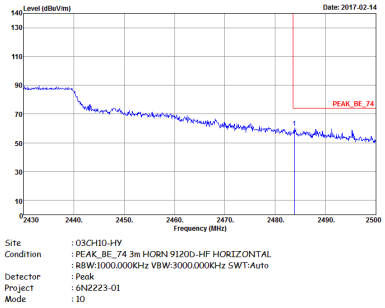
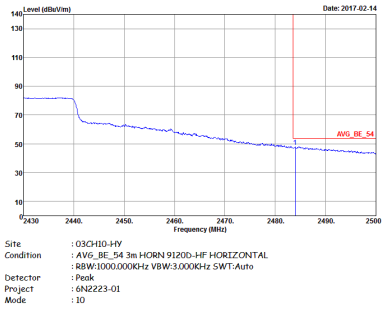
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 9	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 9
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 9	 Site : 03CH10-HY Condition : AVG_54 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 9

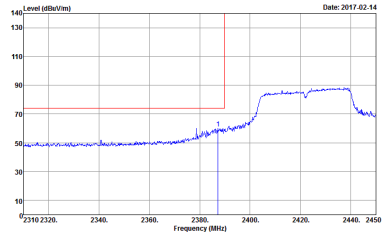
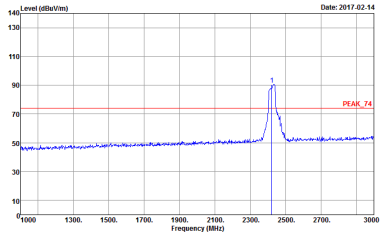
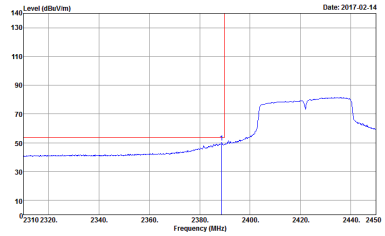
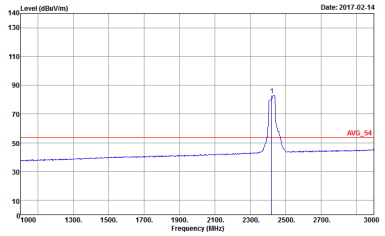
WIFI	2.4GHz 2400~2483.5MHz Fundamental @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 9	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 9
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 9	 Site : 03CH10-HY Condition : AVG_54 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 9

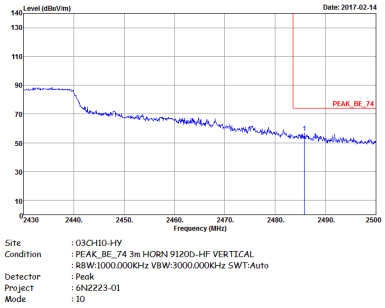
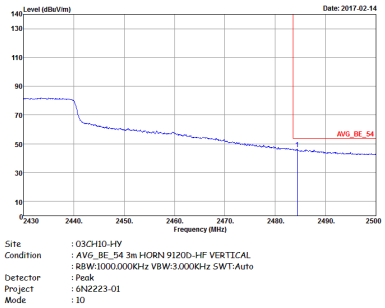
2.4GHz 2400~2483.5MHz

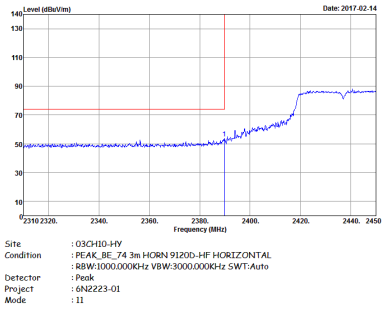
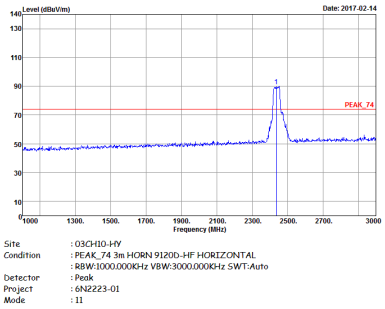
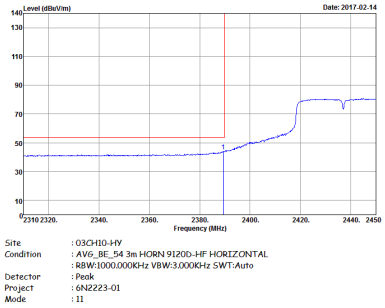
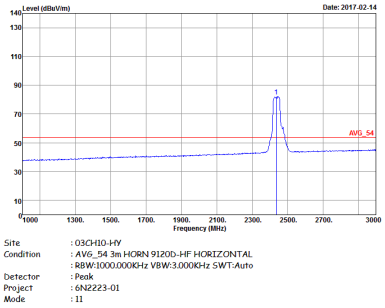
WIFI 802.11n HT40 (Band Edge @ 3m)

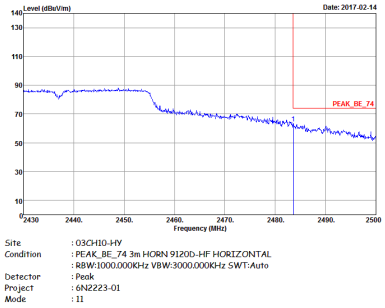
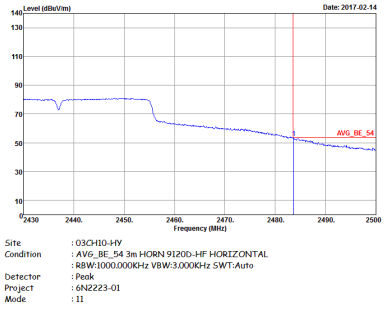
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		

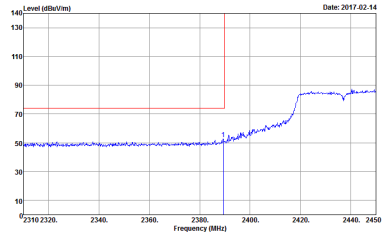
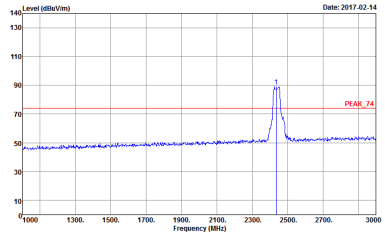
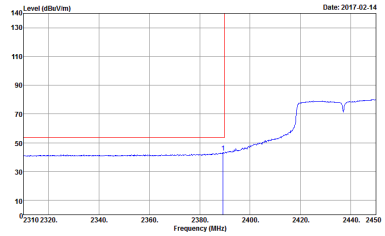
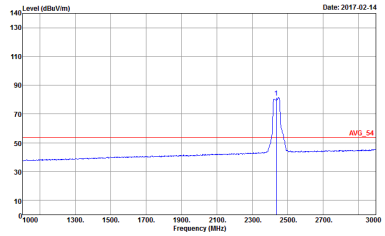
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - R	
1	Horizontal	Fundamental
Peak		Left Blank
Avg.		Left Blank

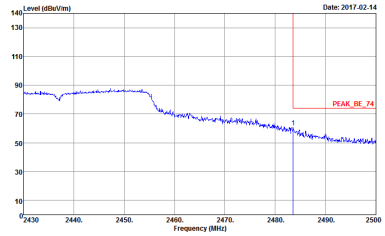
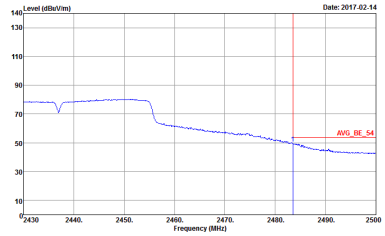
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - L	
1	Vertical	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 10	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 10
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 10	 Site : 03CH10-HY Condition : AVG_54 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 10

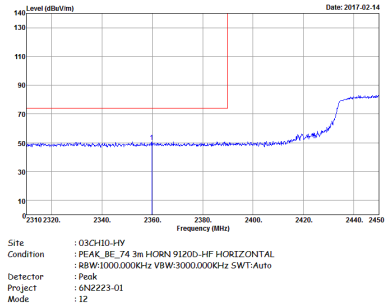
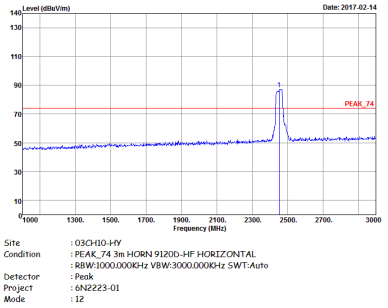
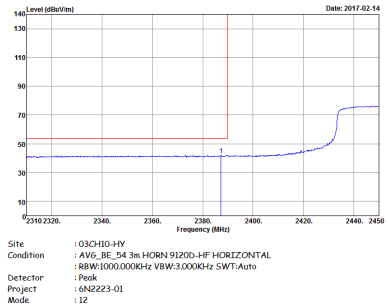
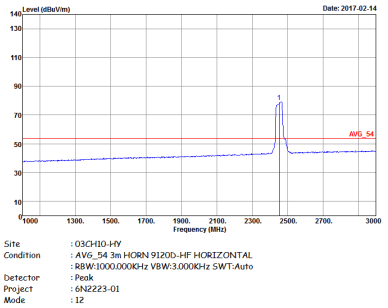
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - R	
1	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

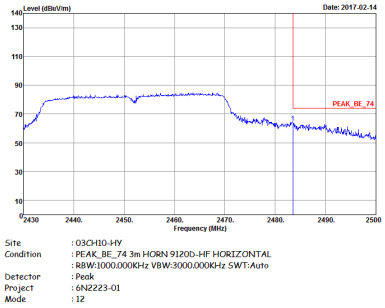
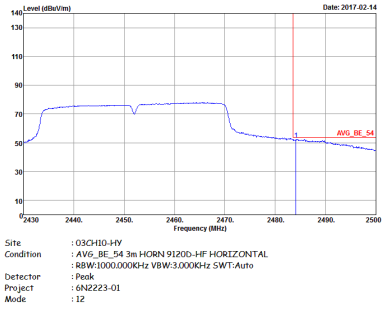
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH06 2437MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		

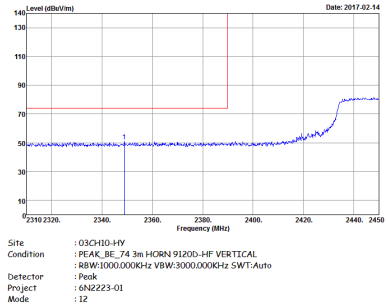
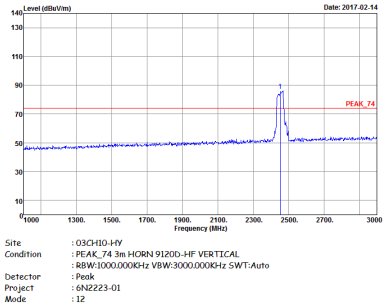
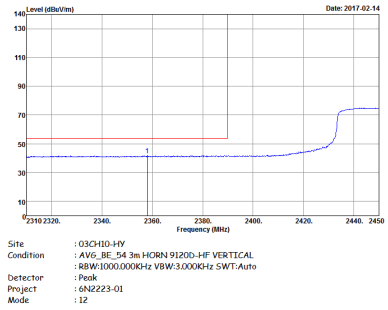
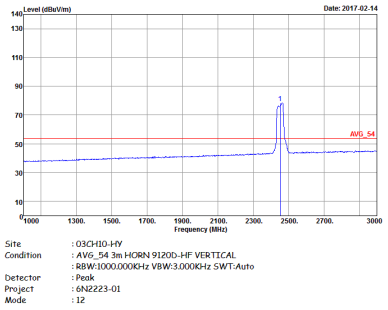
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH06 2437MHz - R	
1	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

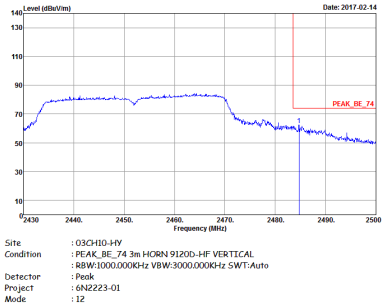
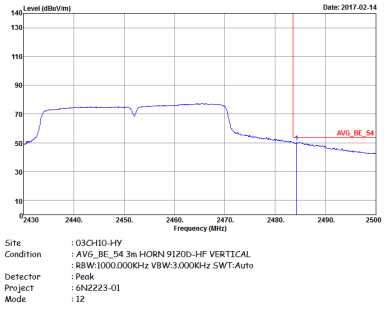
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH06 2437MHz - L	
1	Vertical	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 11	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 11
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 11	 Site : 03CH10-HY Condition : AVG_54 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 11

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH06 2437MHz - R	
1	Horizontal	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 11	Left blank
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 11	Left blank

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH09 2452MHz - L	
1	Horizontal	Fundamental
Peak	 Site : 03CH10-HY Condition : PEAK_BE_74 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 12	 Site : 03CH10-HY Condition : PEAK_74 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 12
Avg.	 Site : 03CH10-HY Condition : AVG_BE_54 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 12	 Site : 03CH10-HY Condition : AVG_54 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 6N2223-01 Mode : 12

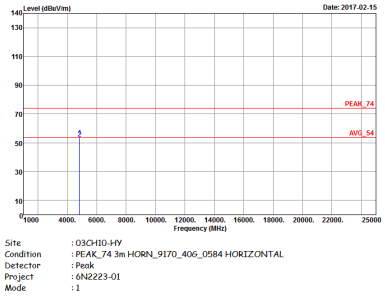
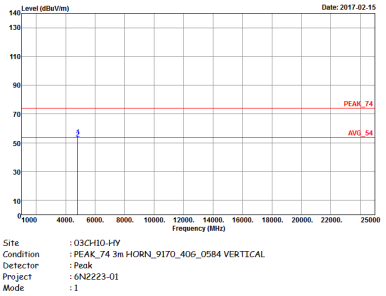
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH09 2452MHz - R	
1	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

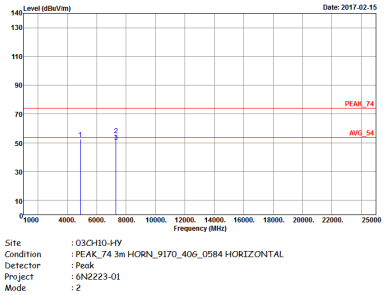
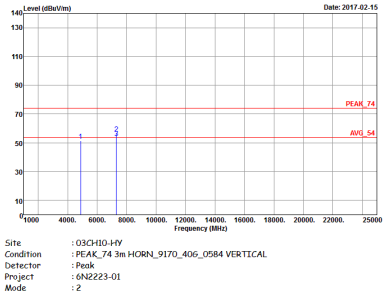
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH09 2452MHz - L	
1	Vertical	Fundamental
Peak		
Avg.		

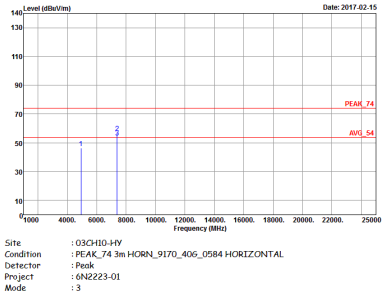
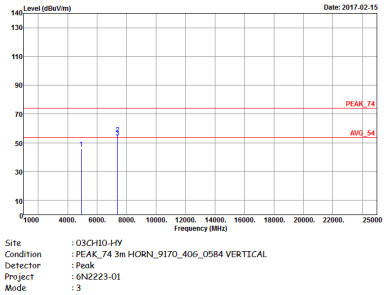
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH09 2452MHz - R	
1	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic @ 3m)

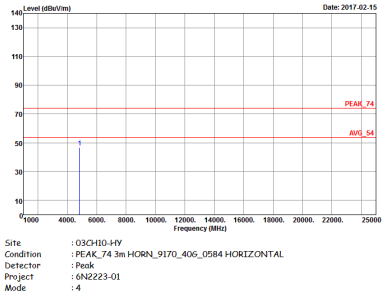
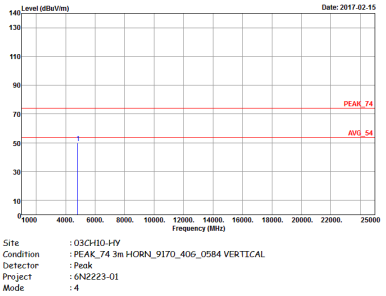
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.		

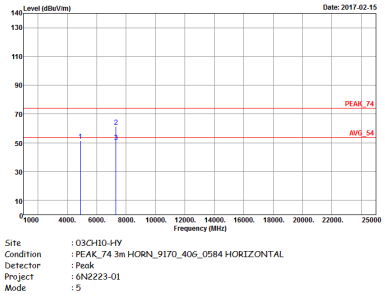
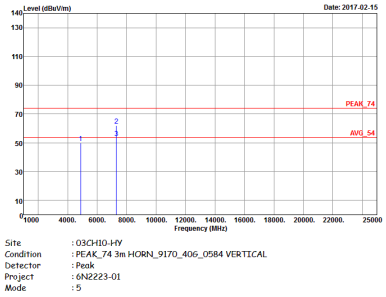
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.		

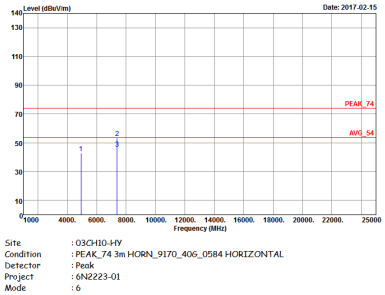
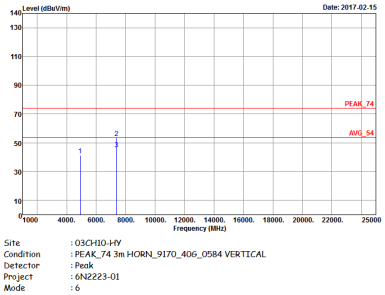
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.		

2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 3m)

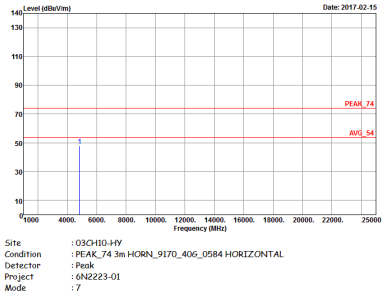
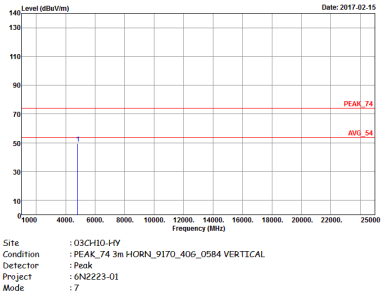
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.		

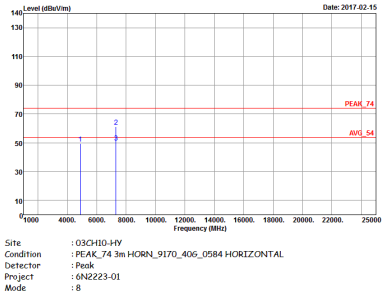
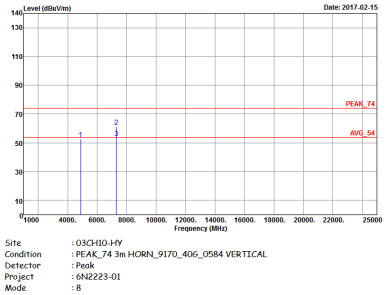
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.		

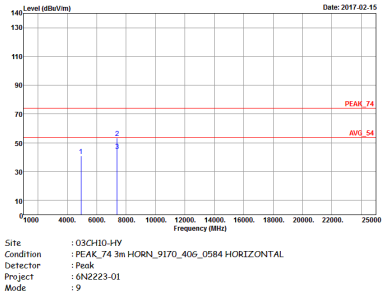
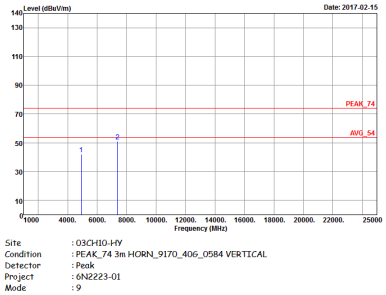
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.		

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

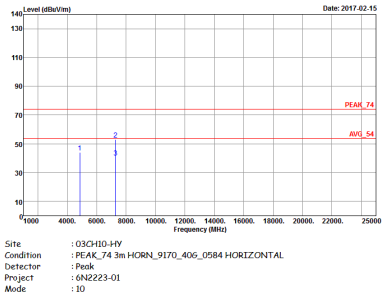
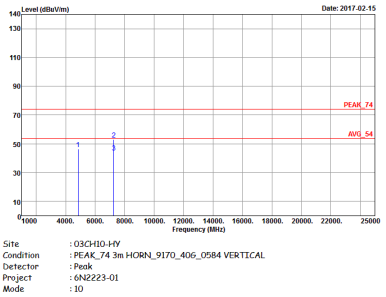
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.		

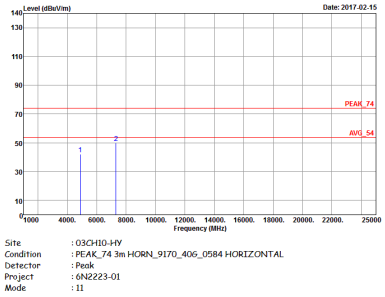
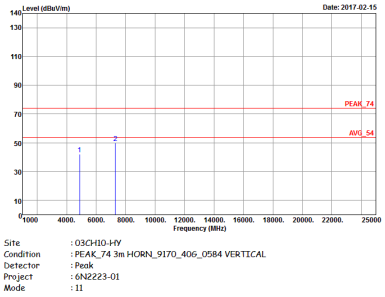
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.		

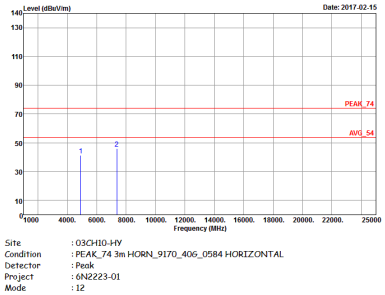
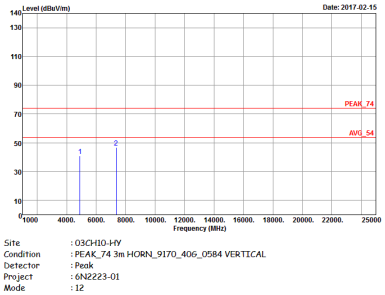
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.		

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT40 (Harmonic @ 3m)

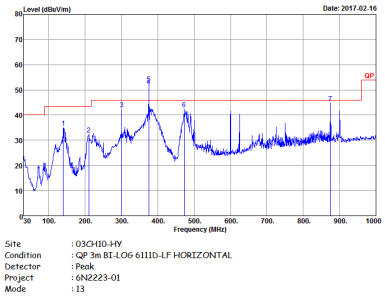
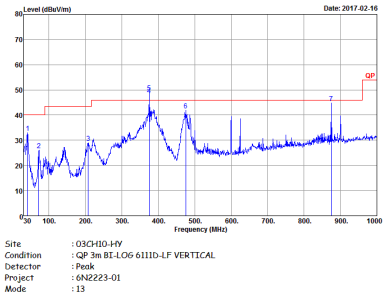
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT40 CH03 2422MHz	
1	Horizontal	Vertical
Peak Avg.		

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.		

Emission below 1GHz

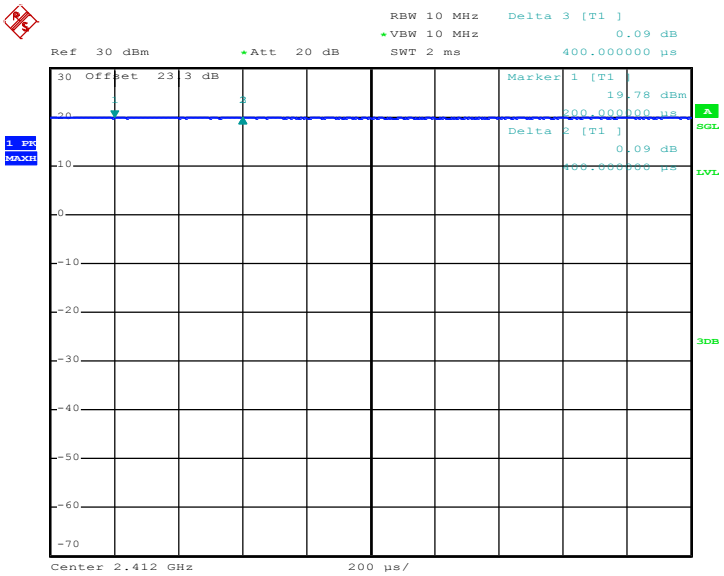
2.4GHz WIFI 802.11b (LF)

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

Appendix E. Duty Cycle Plots

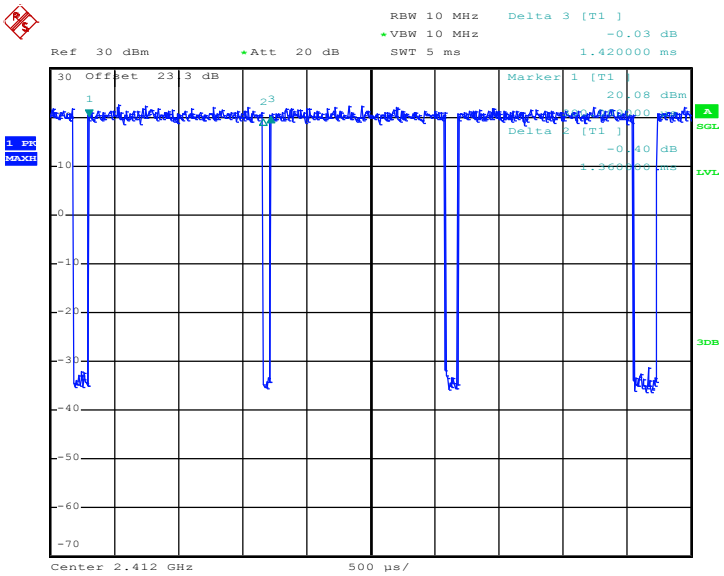
Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
802.11b	100.00	-	-	10Hz
802.11g	95.87	1360	0.74	1kHz
2.4GHz 802.11n HT20	93.38	1270	0.79	1kHz
2.4GHz 802.11n HT40	92.92	630	1.59	3kHz

802.11b



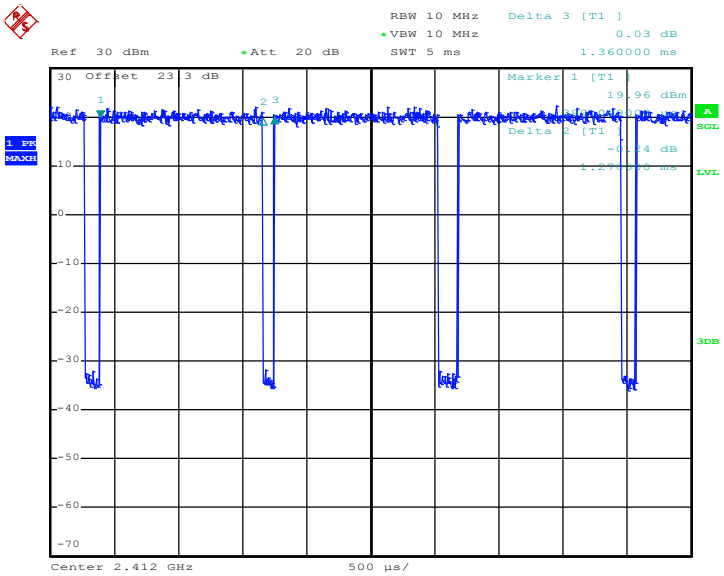
Date: 17.FEB.2017 02:03:29

802.11g



Date: 17.FEB.2017 01:59:16

802.11n HT20



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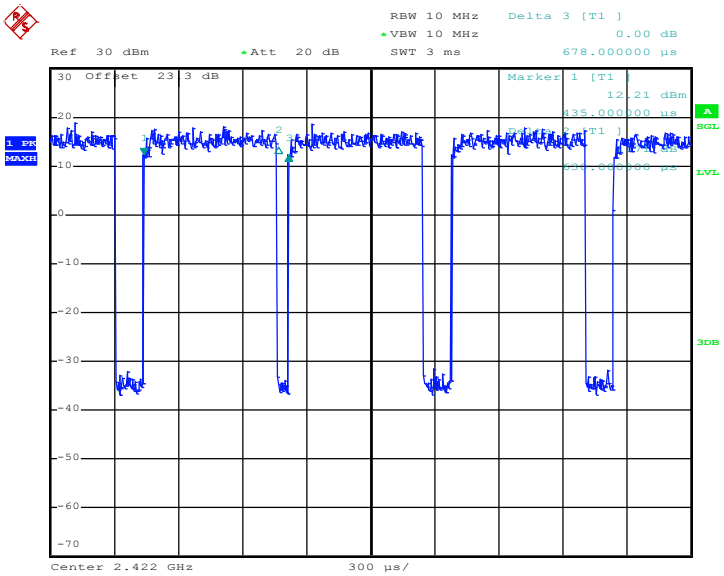
802.11n HT40



Date: 17.FEB.2017 01:38:16