FCC RF Test Report

APPLICANT	:	**Sony Mobile Communications Inc.**
EQUIPMENT	:	**GSM/WCDMA/LTE Phone + Bluetooth, DTS/UNII a/b/g/n/ac, ANT+, and NFC**
BRAND NAME	:	**Sony**
FCC ID	:	**PY7-PM0903**
STANDARD	:	**FCC Part 15 Subpart C §15.247**
CLASSIFICATION	:	**(DTS) Digital Transmission System**

The product was received on Jul. 16, 2015 and testing was completed on Aug. 26, 2015. 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

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
FR571615C	Rev. 01	Initial issue of report	Sep. 14, 2015

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	6dB Bandwidth	≥ 0.5MHz	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 1.83 dB at 2390.000 MHz
3.6	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 21.00 dB at 0.686 MHz
3.7	15.203 & 15.247(b)	Antenna Requirement	N/A	Pass	-

Remark: The FR571615C report reuses test data from the FR571610C report.

1 General Description

1.1 Applicant

Sony Mobile Communications Inc.
Nya Vattentornet, 22188 Lund, Sweden

1.2 Manufacturer

Sony Mobile Communications Inc.
1-8-15 Konan, Minato-ku, Tokyo, 108-0075, Japan

1.3 Product Feature of Equipment Under Test

GSM/WCDMA/LTE, Bluetooth, DTS/UNII a/b/g/n/ac, ANT+, NFC and GPS

Product Specification subjective to this standard	
Antenna Type / Gain	**<Ant 1>** 802.11b/g/n : Monopole Antenna with gain -1.60 dBi **<Ant 2>** 802.11b/g/n : Monopole Antenna with gain -4.10 dBi

EUT Information List				
IMEI	HW Version	SW Version	S/N	Performed Test Item
IMEI : 004402455309058	A	32.0.A.0.323	CB5A276KW9	RF conducted measurement
IMEI : 004402455308407			CB5A27412G	Radiated Spurious Emission
IMEI : 004402455306211			CB5A2741RU	Conducted Emission

Accessory List	
AC Adapter	Model No. : UCH20
	Type No. : AC-0061-US
	S/N : 5815W22500081 (for radiated spurious emission) 2115W15500021 (for conducted emission)
Earphone	Model No. : MDR-NC31E
	Type No. : AG-1110
USB Cable	Model No. : UCB11
	Type No. : AI-0120
	S/N : 10115W02400028C(for radiated spurious emission) 1522A73000065C4(for conducted emission)

Note:

1. Above EUT list and accessory list used are electrically identical per declared by manufacturer.
2. Above the accessories list are used to exercise the EUT during test.
3. For other wireless features of this EUT, test report will be issued separately.

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. TW1022 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 2009 requirement.

Test Site	SPORTON INTERNATIONAL INC.
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd Rd. Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C. TEL: +886-3-327-0855
Test Site No.	**Sporton Site No.**
	03CH10-HY

Note: The test site complies with ANSI C63.4 2009 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 v03r03
- FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ANSI C63.10-2009

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. FCC permits the use of the 1.5 meter table for frequency above 1GHz as an alternative in C63.10-2013 through inquiry tracking number 961829.

2 Test Configuration of Equipment Under Test

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: conducted emission (150 kHz to 30 MHz) and radiated emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y plane for antenna 1 and antenna 1+2 ; Z plane for antenna 2) were recorded in this report.

The final configuration from all the combinations and the worst-case data rates were investigated by measuring the maximum power across all the data rates and modulation modes under section 2.2.

Based on the worst configuration found above, the RF power setting is set individually to meet FCC compliance limit for the final conducted and radiated tests shown in section 2.3.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
2400-2483.5 MHz	1	2412	8	2447
	2	2417	9	2452
	3	2422	10	2457
	4	2427	11	2462
	5	2432	12	2467
	6	2437	13	2472
	7	2442		

2.2 Pre-Scanned RF Power

The data rates were set in

1 Mbps for 802.11b, 6Mbps for 802.11g, and MCS0 for 802.11n HT20 for Ant. 1 and Ant. 2;

6Mbps for 802.11g and MCS8 for 802.11n HT20 for MIMO <Ant. 1 + 2>, due to the customer declared.

<Ant. 1>

802.11b					
Data Rate (MHz)	1M bps				
Channel	01	06	11	12	13
Frequency (MHz)	2412	2437	2462	2467	2472
Peak Power (dBm)	16.74	16.90	**17.03**	16.87	16.85

<Ant. 2>

802.11b					
Data Rate (MHz)	1M bps				
Channel	01	06	11	12	13
Frequency (MHz)	2412	2437	2462	2467	2472
Peak Power (dBm)	16.48	16.67	**16.73**	16.61	15.67

SISO <Ant. 1>

802.11g					
Data Rate (MHz)	6M bps				
Channel	01	06	11	12	13
Frequency (MHz)	2412	2437	2462	2467	2472
Peak Power (dBm)	20.52	20.42	**20.57**	17.49	11.30

2.4GHz 802.11n HT20					
Data Rate (MHz)	MCS0				
Channel	01	06	11	12	13
Frequency (MHz)	2412	2437	2462	2467	2472
Peak Power (dBm)	**20.71**	20.39	20.14	15.91	10.14

SISO <Ant. 2>

802.11g					
Data Rate (MHz)	6M bps				
Channel	01	06	11	12	13
Frequency (MHz)	2412	2437	2462	2467	2472
Peak Power (dBm)	20.25	**20.66**	20.35	17.29	9.91

2.4GHz 802.11n HT20					
Data Rate (MHz)	MCS0				
Channel	01	06	11	12	13
Frequency (MHz)	2412	2437	2462	2467	2472
Peak Power (dBm)	**20.20**	19.98	19.78	14.31	9.20

MIMO <Ant. 1+2>

802.11g					
Data Rate (MHz)	6M bps				
Channel	01	06	11	12	13
Frequency (MHz)	2412	2437	2462	2467	2472
Peak Power (dBm)	23.53	**23.67**	23.61	20.51	13.61

2.4GHz 802.11n HT20					
Data Rate (MHz)	MCS8				
Channel	01	06	11	12	13
Frequency (MHz)	2412	2437	2462	2467	2472
Peak Power (dBm)	**23.72**	23.40	23.15	18.13	12.11

Note: MIMO Ant. 1+2 is a calculated result from sum of the power MIMO Ant. 1 and MIMO Ant. 2.

2.3 Test Mode

Final test mode of conducted test items and radiated spurious emissions are considering the modulation and worse data rates from the power table described in section 2.2.

Single Antenna

<2.4GHz>

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

MIMO Antenna

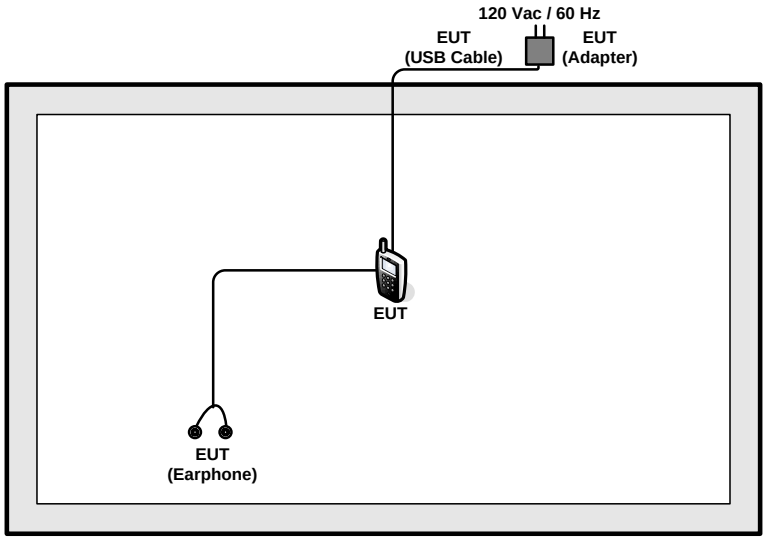
<2.4GHz>

Modulation	Data Rate
802.11g	6 Mbps
802.11n HT20	MCS8

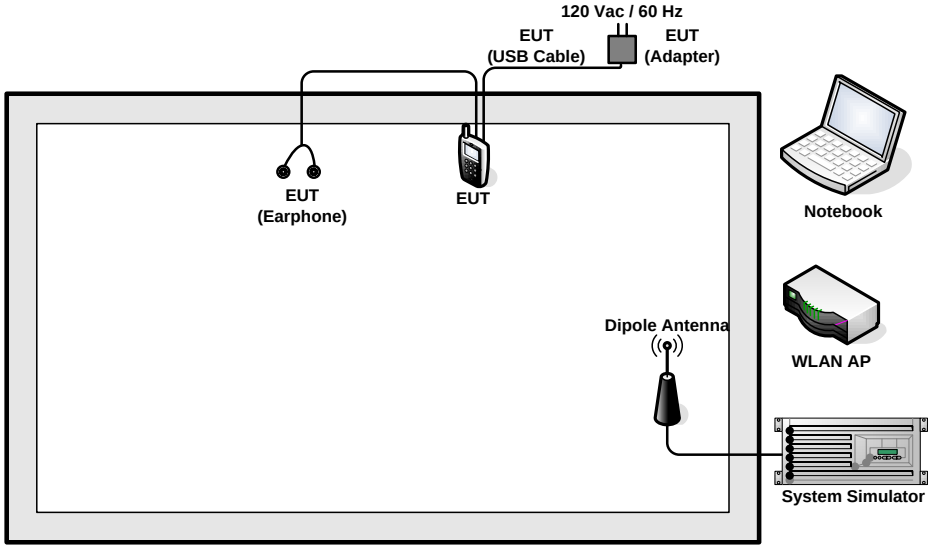
Test Cases	
AC Conducted Emission	Mode 1 : WLAN 2.4GHz Link + USB Cable(Charging from Adapter) + Earphone

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.5 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	WLAN AP	D-Link	DIR-865L	KA2IR865LA1	N/A	Unshielded, 1.8 m
2.	Notebook	DELL	Latitude E6320	FCC DoC/ Contains FCC ID: QDS-BRCM1054	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
3.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A

2.6 EUT Operation Test Setup

For WLAN RF test items, an engineering test program was provided and enabled to make EUT continuous transmit/receive.

2.7 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 Bandwidth Measurement

3.1.1 Limit of 6dB Bandwidth

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

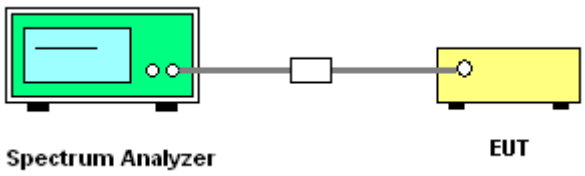
3.1.2 Measuring Instruments

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 v03r03.
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. Measure and record the results in the test report.

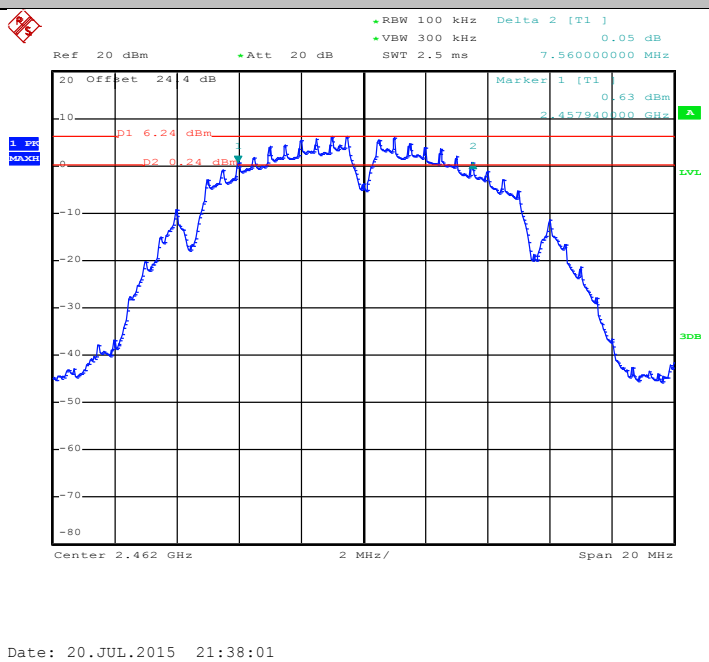
3.1.4 Test Setup



3.1.5 Test Result of 6dB Bandwidth

Please refer to Appendix A of this test report.

Minimum 6dB Bandwidth



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

3.2 Peak Output Power Measurement

3.2.1 Limit of Peak Output Power

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm. If transmitting antenna with directional gain greater than 6dBi is 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.

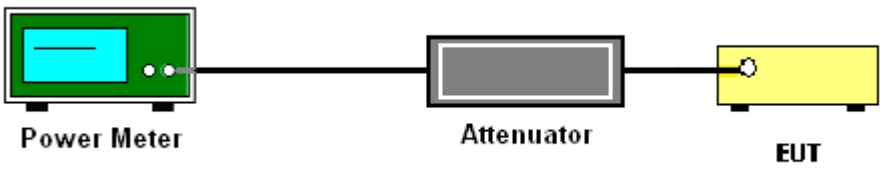
3.2.2 Measuring Instruments

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 v03r03.
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.
5. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

3.2.4 Test Setup



3.2.5 Test Result of Peak Output Power

Please refer to Appendix A of this test report.

3.2.6 Test Result of Average output Power (Reporting Only)

Please refer to Appendix A of this test report.

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 v03r03
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.
7. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

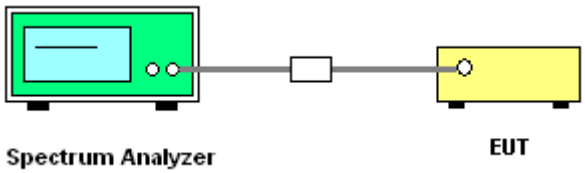
   If measurements performed using method (2) plus 10 log (N) exceeds the emission limit, the test should choose method (1) before declaring that the device fails the emission limit.

   Method (1): Measure and sum the spectra across the outputs.

   The total final Power Spectral Density is from a device with 2 transmitter outputs. The spectrum measurements of the individual outputs are all performed with the same span and number of points, the spectrum value in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 to obtain the value for the first frequency bin of the summed spectrum.

   Method (2): Measure and add 10 log (N) dB, where N is the number of outputs. (N=2)

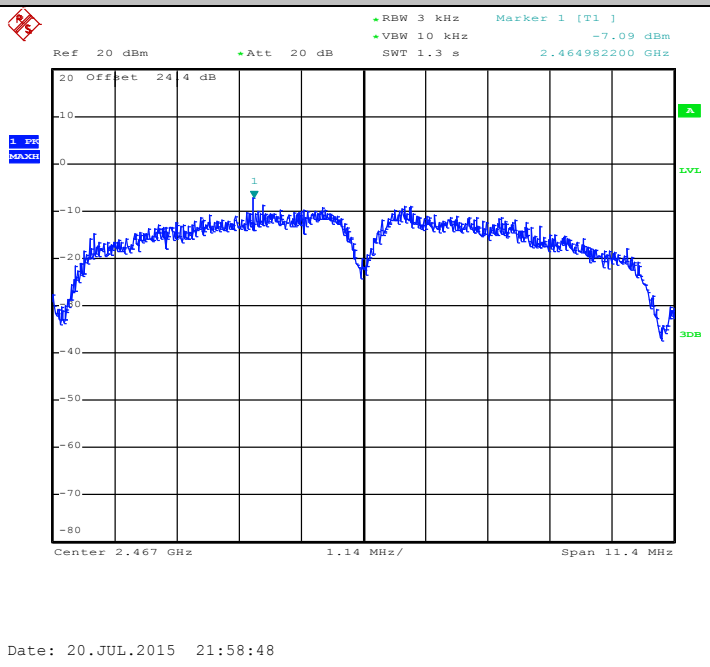
3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A of this test report.

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).

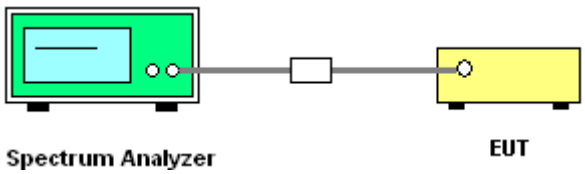
3.4.2 Measuring Instruments

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 v03r03.
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



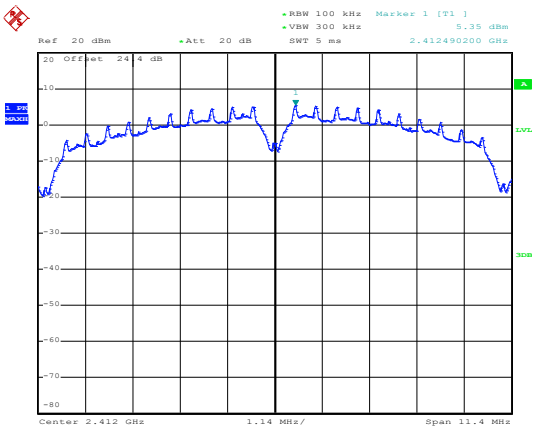
3.4.5 Test Result of Conducted Band Edges and Spurious Emission

Number of TX = 1, Ant. 1 (Measured)

Number of TX	1	**Ant. :**	1
Test Mode :	802.11b	**Temperature :**	22~26℃
Test Band :	2.4GHz Low	**Relative Humidity :**	45~53%
Test Channel :	01	**Test Engineer :**	Osolemio Chang

WLAN 802.11b Channel 01

100kHz PSD reference Level



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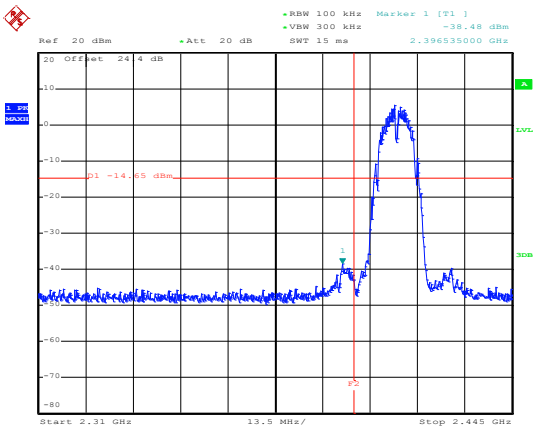
Low Channel Plot



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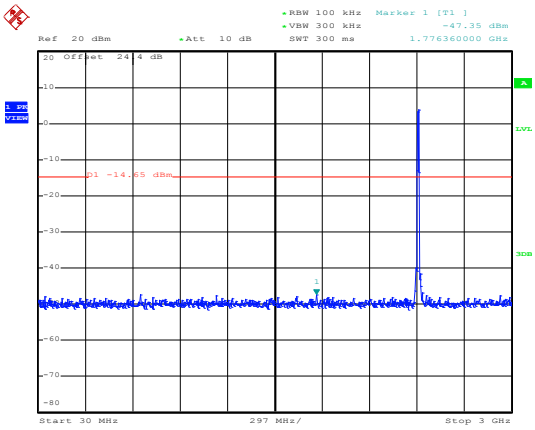
Spurious Emission 30MHz~3GHz



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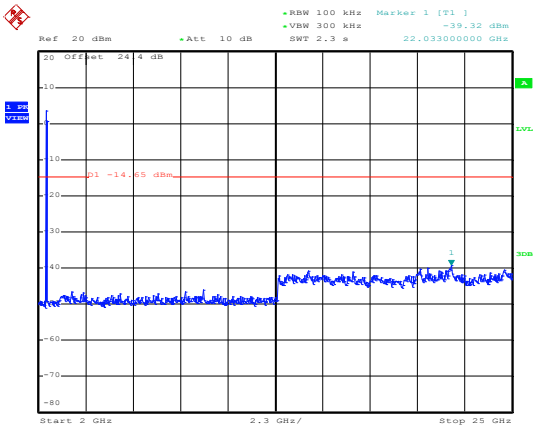
Spurious Emission 2GHz~25GHz



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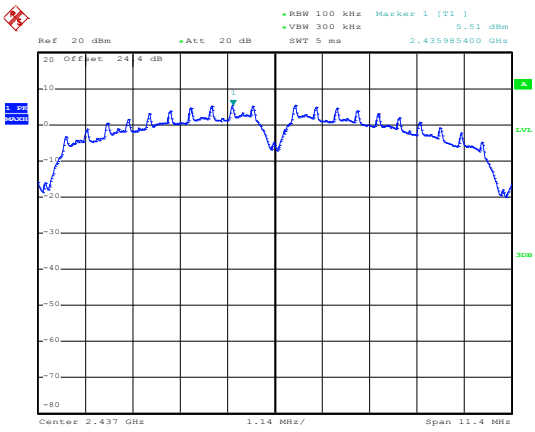
Number of TX :	1	**Ant. :**	1
Test Mode :	802.11b	**Temperature :**	22~26℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	45~53%
Test Channel :	06	**Test Engineer :**	Osolemio Chang

WLAN 802.11b Channel 06

100kHz PSD reference Level



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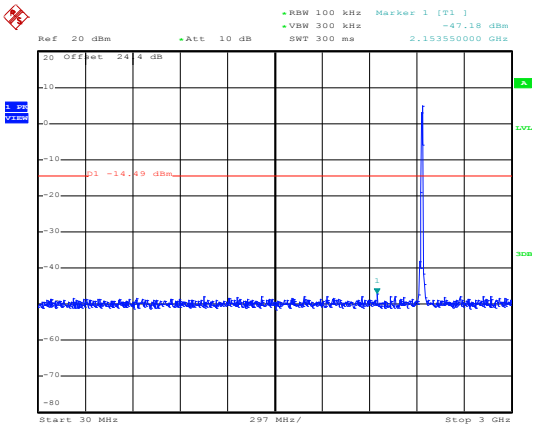
Spurious Emission 30MHz~3GHz



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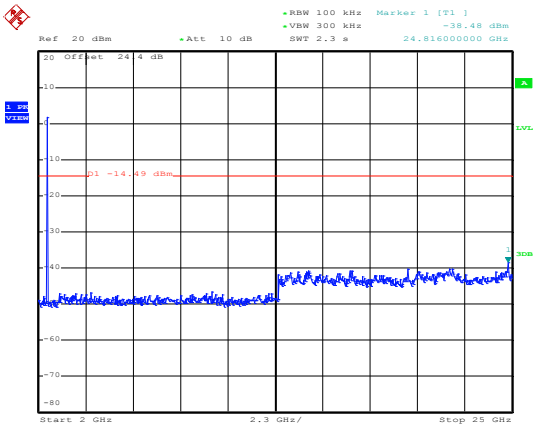
Spurious Emission 2GHz~25GHz



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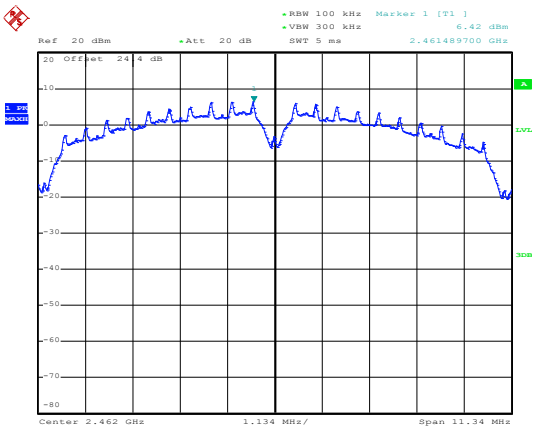
Number of TX :	1	**Ant. :**	1
Test Mode :	802.11b	**Temperature :**	22~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	45~53%
Test Channel :	11	**Test Engineer :**	Osolemio Chang

WLAN 802.11b Channel 11

100kHz PSD reference Level



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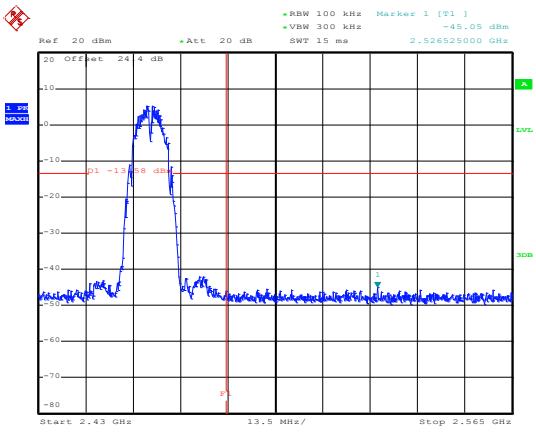
High Channel Plot



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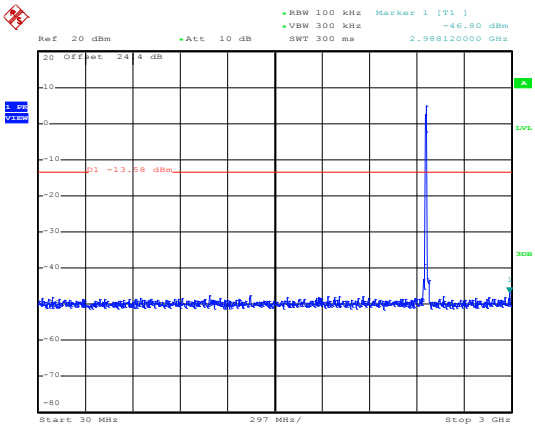
Spurious Emission 30MHz~3GHz



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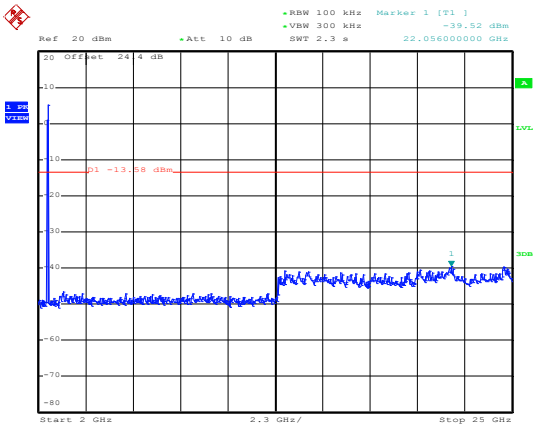
Spurious Emission 2GHz~25GHz



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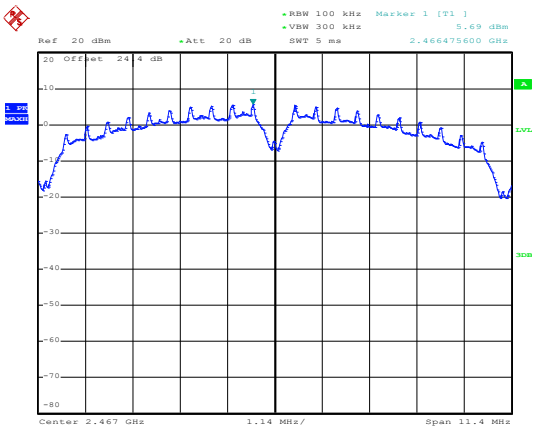
Number of TX :	1	**Ant. :**	1
Test Mode :	802.11b	**Temperature :**	22~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	45~53%
Test Channel :	12	**Test Engineer :**	Osolemio Chang

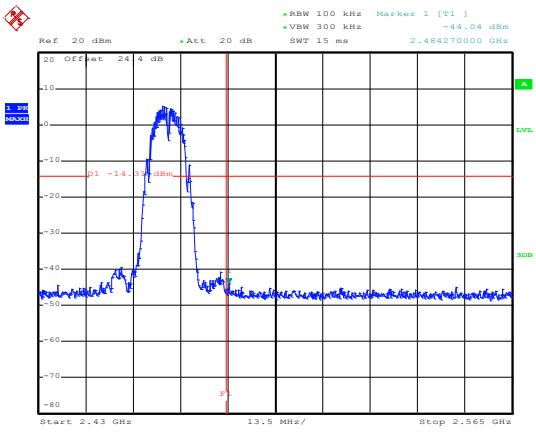
WLAN 802.11b Channel 12

100kHz PSD reference Level



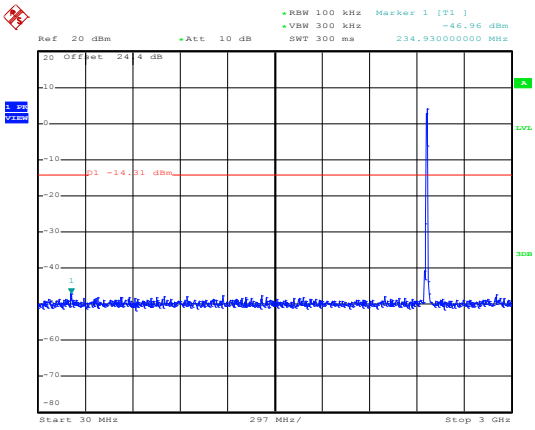
Date: 20.JUL.2015 22:00:19

High Channel Plot



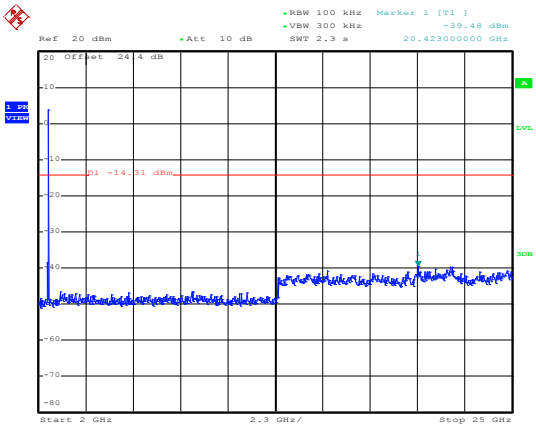
Date: 14.AUG.2015 22:18:21

Spurious Emission 30MHz~3GHz



Date: 20.JUL.2015 22:01:00

Spurious Emission 2GHz~25GHz

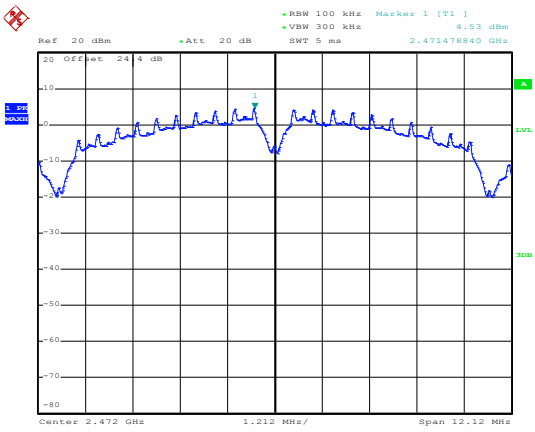


Date: 20.JUL.2015 22:01:18

Number of TX :	1	**Ant. :**	1
Test Mode :	802.11b	**Temperature :**	22~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	45~53%
Test Channel :	13	**Test Engineer :**	Osolemio Chang

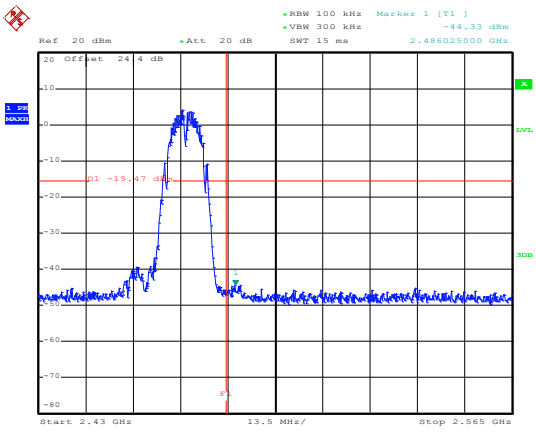
WLAN 802.11b Channel 13

100kHz PSD reference Level



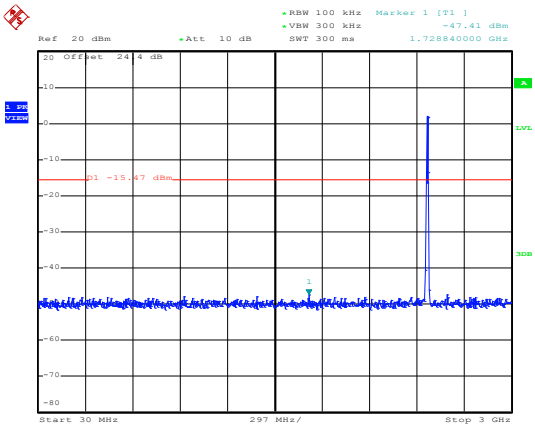
Date: 20.JUL.2015 22:05:28

High Channel Plot



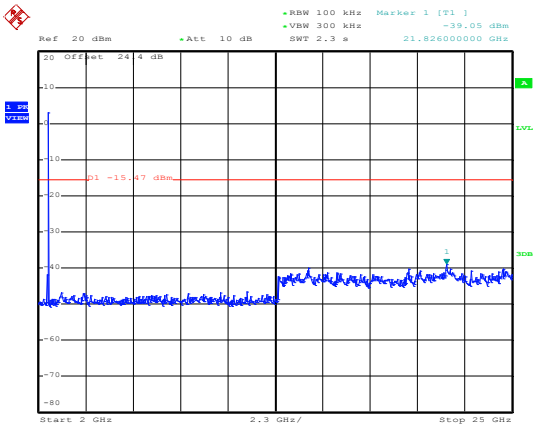
Date: 20.JUL.2015 22:08:54

Spurious Emission 30MHz~3GHz



Date: 20.JUL.2015 22:06:49

Spurious Emission 2GHz~25GHz



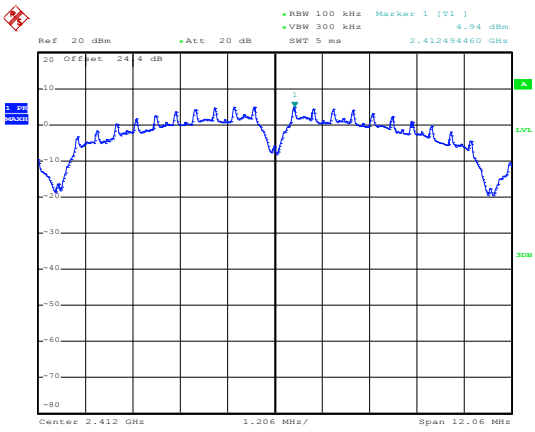
Date: 20.JUL.2015 22:07:07

Number of TX = 1, Ant. 2 (Measured)

Number of TX	1	**Ant. :**	2
Test Mode :	802.11b	**Temperature :**	22~26℃
Test Band :	2.4GHz Low	**Relative Humidity :**	45~53%
Test Channel :	01	**Test Engineer :**	Osolemio Chang

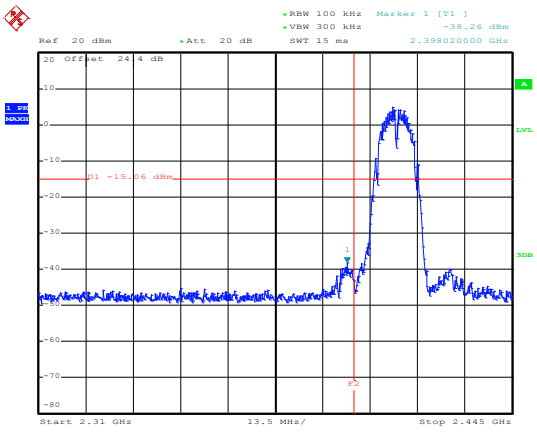
WLAN 802.11b Channel 01

100kHz PSD reference Level



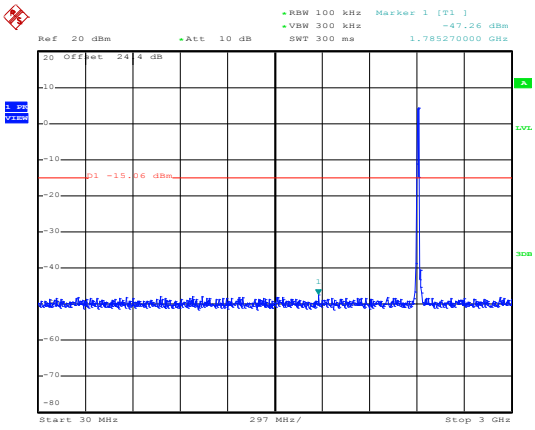
Date: 20.JUL.2015 22:15:36

Low Channel Plot



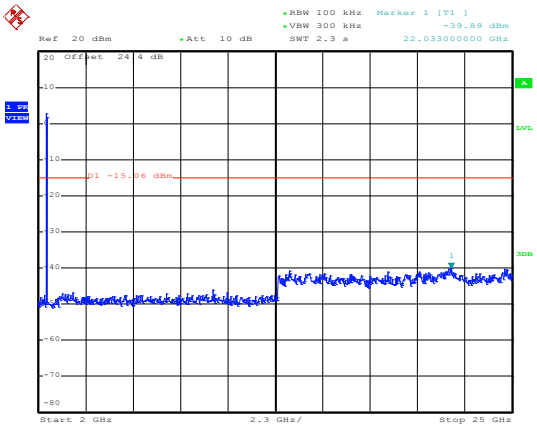
Date: 20.JUL.2015 22:15:58

Spurious Emission 30MHz~3GHz



Date: 20.JUL.2015 22:19:10

Spurious Emission 2GHz~25GHz

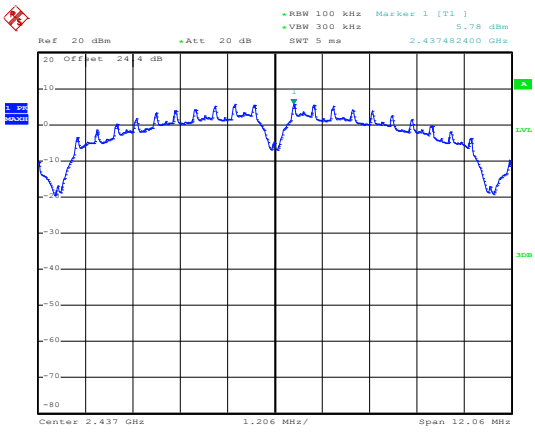


Date: 20.JUL.2015 22:19:28

Number of TX	1	**Ant. :**	2
Test Mode :	802.11b	**Temperature :**	22~26℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	45~53%
Test Channel :	06	**Test Engineer :**	Osolemio Chang

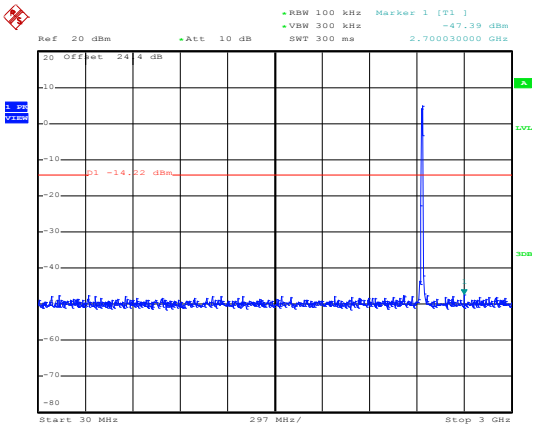
WLAN 802.11b Channel 06

100kHz PSD reference Level



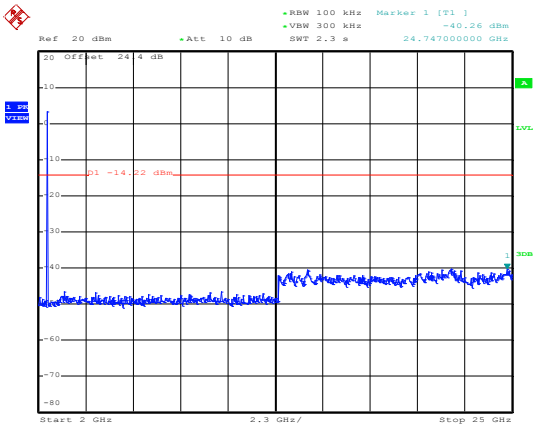
Date: 20.JUL.2015 22:22:59

Spurious Emission 30MHz~3GHz



Date: 20.JUL.2015 22:24:44

Spurious Emission 2GHz~25GHz

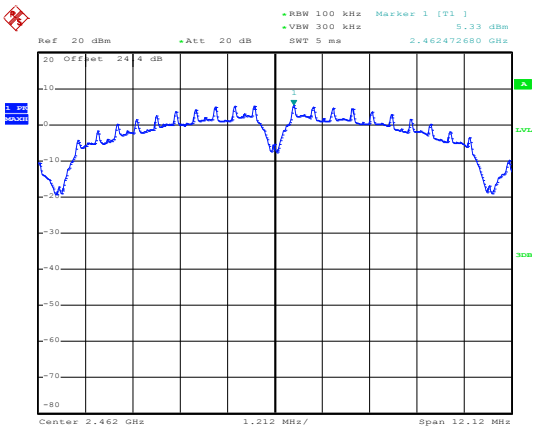


Date: 20.JUL.2015 22:25:02

Number of TX	1	**Ant. :**	2
Test Mode :	802.11b	**Temperature :**	22~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	45~53%
Test Channel :	11	**Test Engineer :**	Osolemio Chang

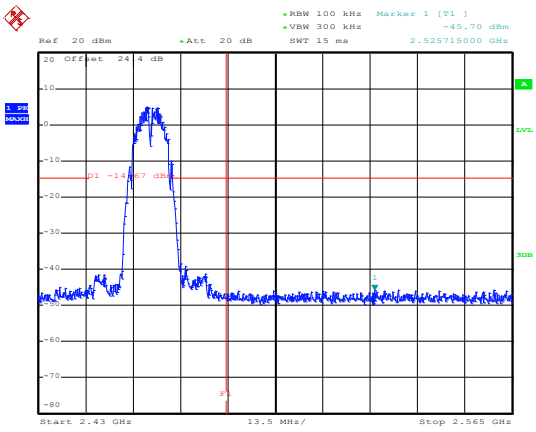
WLAN 802.11b Channel 11

100kHz PSD reference Level



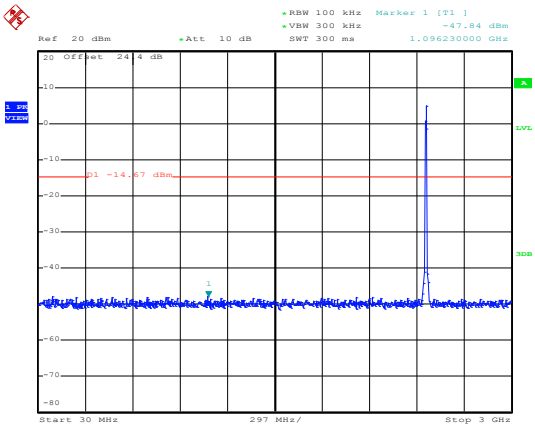
Date: 20.JUL.2015 22:41:40

High Channel Plot



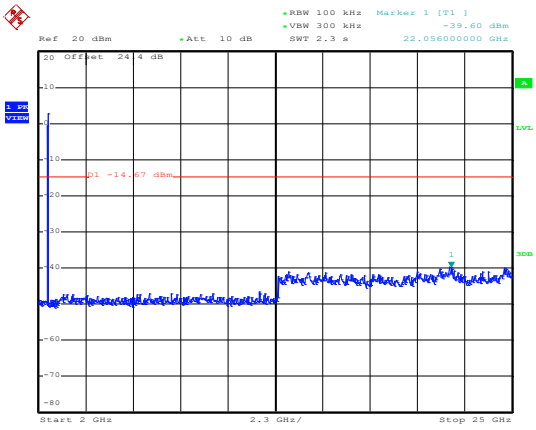
Date: 20.JUL.2015 22:42:02

Spurious Emission 30MHz~3GHz



Date: 20.JUL.2015 22:42:42

Spurious Emission 2GHz~25GHz

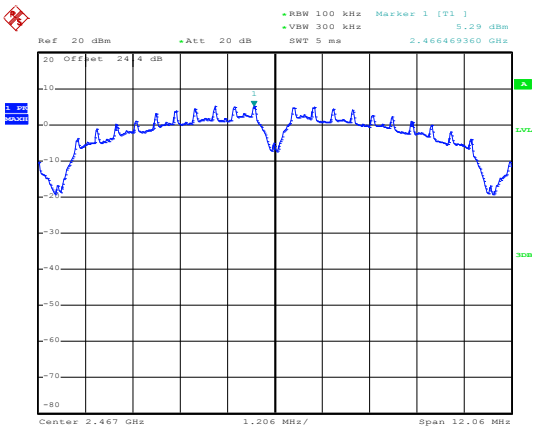


Date: 20.JUL.2015 22:42:59

Number of TX	1	**Ant. :**	2
Test Mode :	802.11b	**Temperature :**	22~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	45~53%
Test Channel :	12	**Test Engineer :**	Osolemio Chang

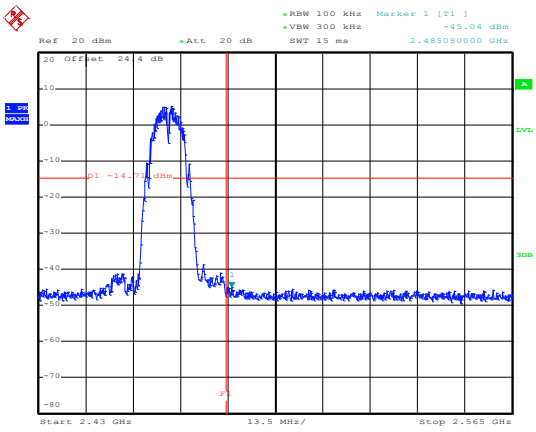
WLAN 802.11b Channel 12

100kHz PSD reference Level



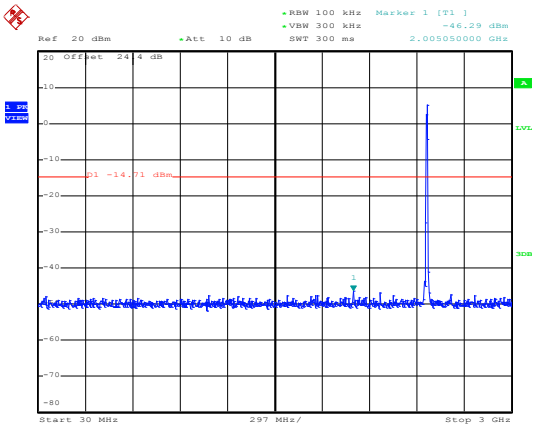
Date: 20.JUL.2015 22:48:48

High Channel Plot



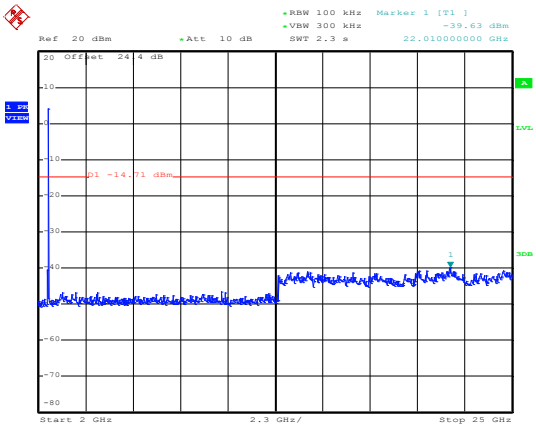
Date: 14.AUG.2015 22:20:02

Spurious Emission 30MHz~3GHz



Date: 20.JUL.2015 22:49:55

Spurious Emission 2GHz~25GHz

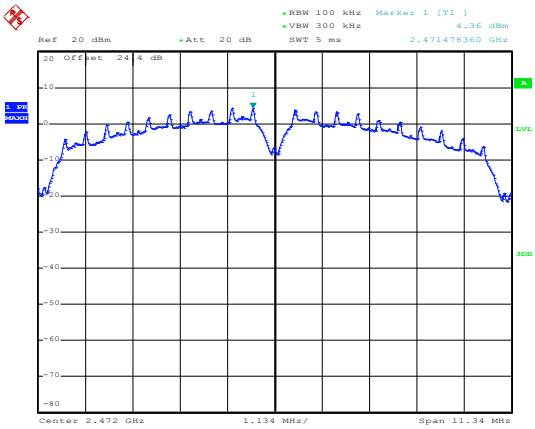


Date: 20.JUL.2015 22:50:13

Number of TX	1	**Ant. :**	2
Test Mode :	802.11b	**Temperature :**	22~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	45~53%
Test Channel :	13	**Test Engineer :**	Osolemio Chang

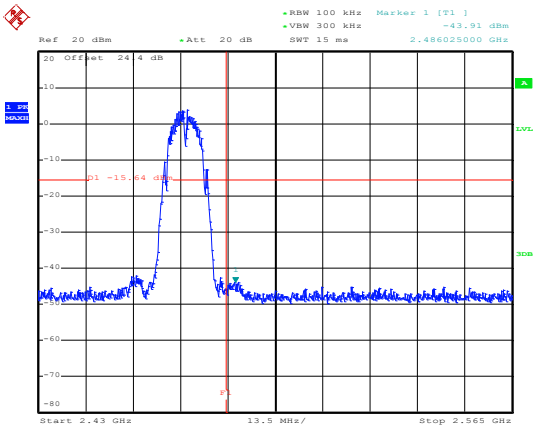
WLAN 802.11b Channel 13

100kHz PSD reference Level



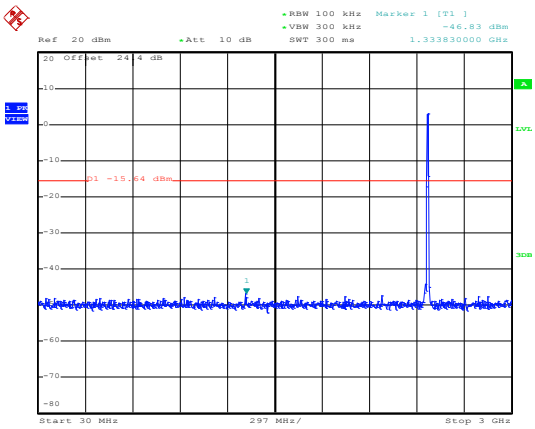
Date: 20.JUL.2015 22:54:42

High Channel Plot



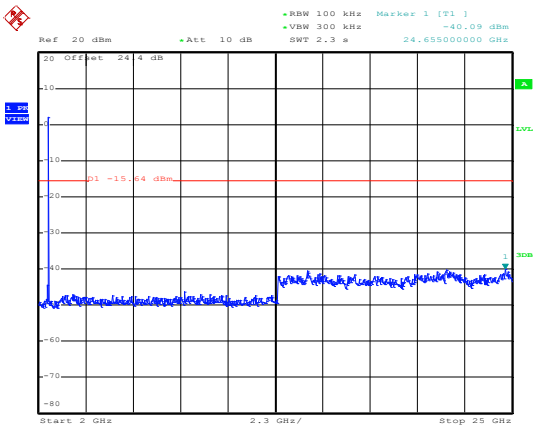
Date: 20.JUL.2015 22:57:36

Spurious Emission 30MHz~3GHz



Date: 20.JUL.2015 22:55:29

Spurious Emission 2GHz~25GHz



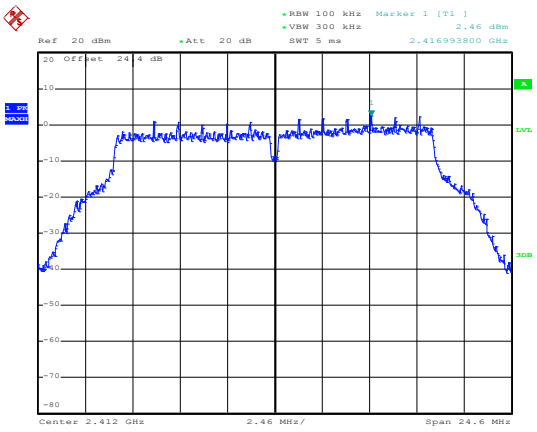
Date: 20.JUL.2015 22:55:47

Number of TX = 2, Ant. 1(Measured)

Number of TX :	2	**Ant. :**	1
Test Mode :	802.11g	**Temperature :**	22~26℃
Test Band :	2.4GHz Low	**Relative Humidity :**	45~53%
Test Channel :	01	**Test Engineer :**	Osolemio Chang

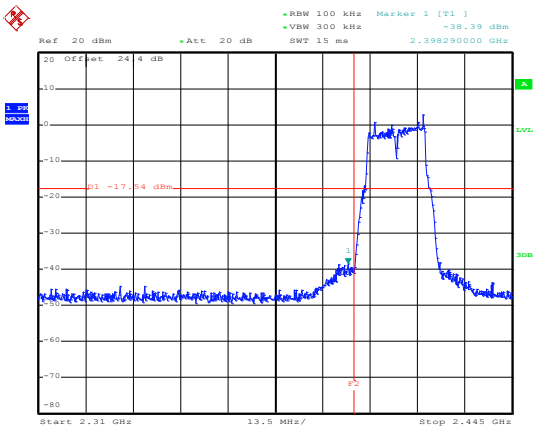
WLAN 802.11g Channel 01

100kHz PSD reference Level



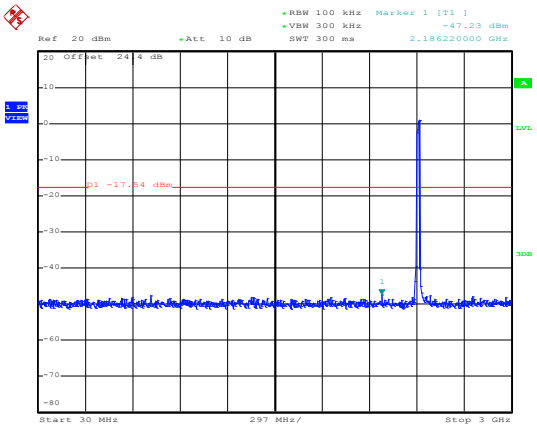
Date: 27.JUL.2015 21:38:04

Low Channel Plot



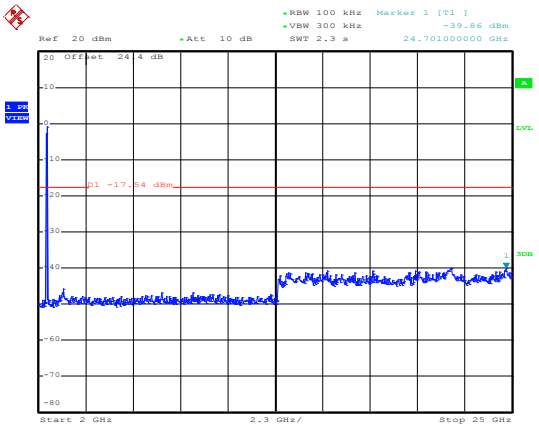
Date: 27.JUL.2015 21:38:52

Spurious Emission 30MHz~3GHz



Date: 27.JUL.2015 21:41:36

Spurious Emission 2GHz~25GHz

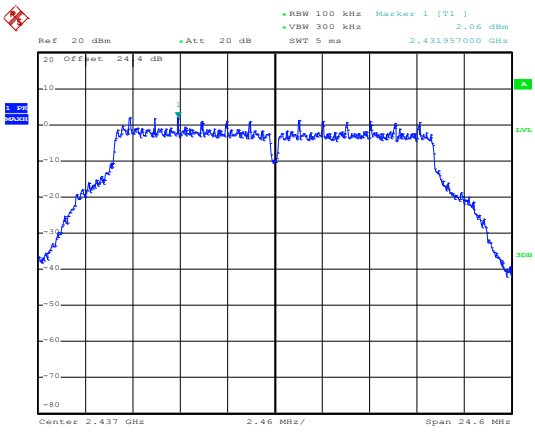


Date: 27.JUL.2015 21:41:54

Number of TX :	2	**Ant. :**	1
Test Mode :	802.11g	**Temperature :**	22~26℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	45~53%
Test Channel :	06	**Test Engineer :**	Osolemio Chang

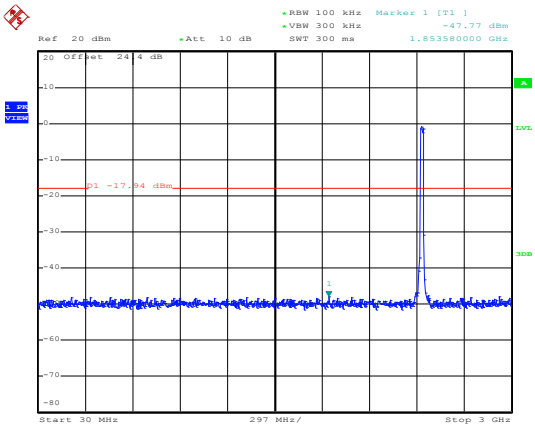
WLAN 802.11g Channel 06

100kHz PSD reference Level



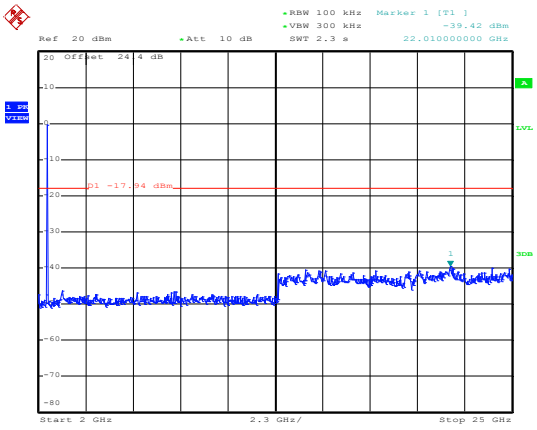
Date: 27.JUL.2015 21:55:45

Spurious Emission 30MHz~3GHz



Date: 27.JUL.2015 21:56:45

Spurious Emission 2GHz~25GHz

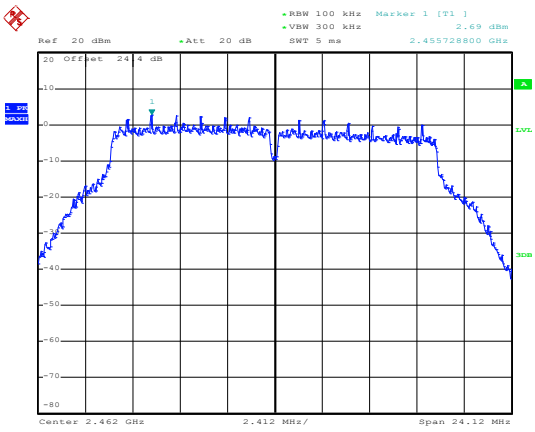


Date: 27.JUL.2015 21:57:03

Number of TX :	2	**Ant. :**	1
Test Mode :	802.11g	**Temperature :**	22~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	45~53%
Test Channel :	11	**Test Engineer :**	Osolemio Chang

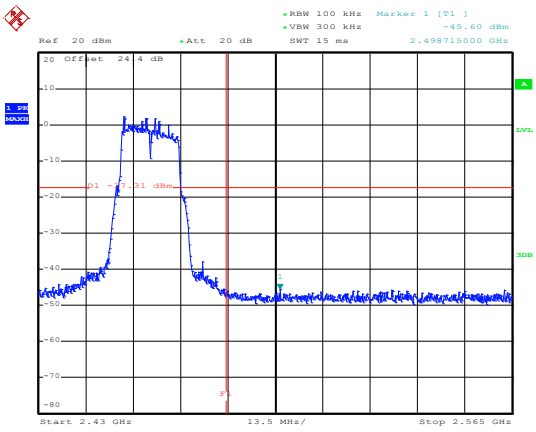
WLAN 802.11g Channel 11

100kHz PSD reference Level



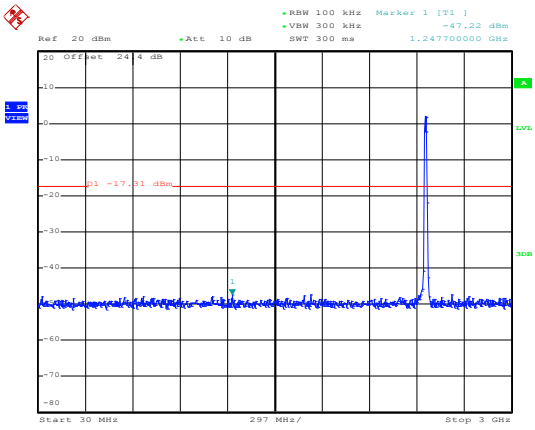
Date: 27.JUL.2015 22:27:26

High Channel Plot



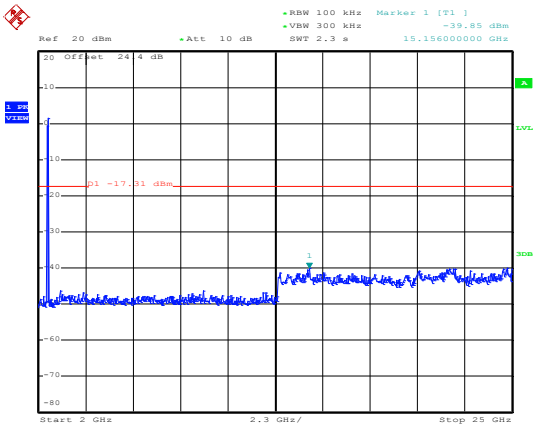
Date: 27.JUL.2015 22:28:25

Spurious Emission 30MHz~3GHz



Date: 27.JUL.2015 22:30:35

Spurious Emission 2GHz~25GHz

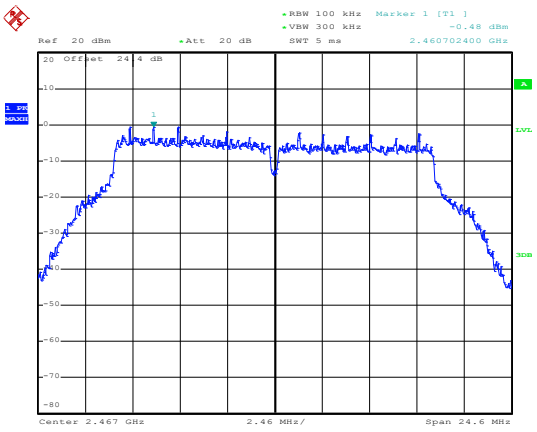


Date: 27.JUL.2015 22:30:52

Number of TX :	2	**Ant. :**	1
Test Mode :	802.11g	**Temperature :**	22~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	45~53%
Test Channel :	12	**Test Engineer :**	Osolemio Chang

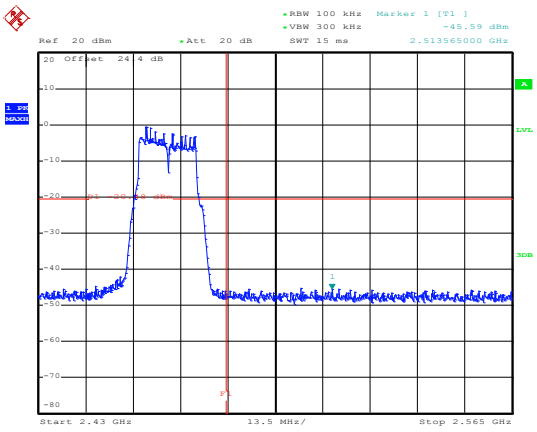
WLAN 802.11g Channel 12

100kHz PSD reference Level



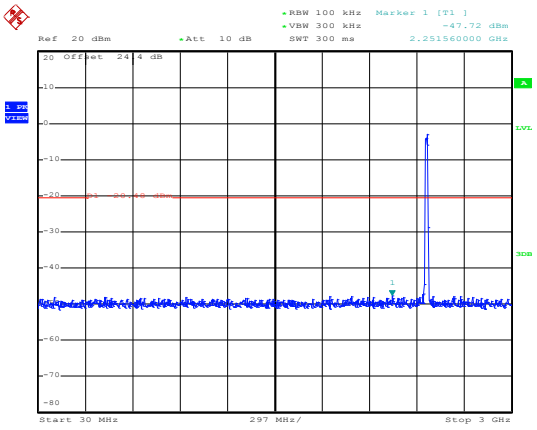
Date: 27.JUL.2015 23:18:40

High Channel Plot



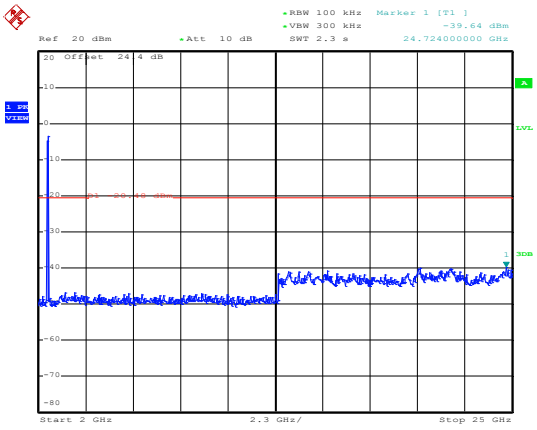
Date: 14.AUG.2015 22:16:06

Spurious Emission 30MHz~3GHz



Date: 27.JUL.2015 23:19:06

Spurious Emission 2GHz~25GHz

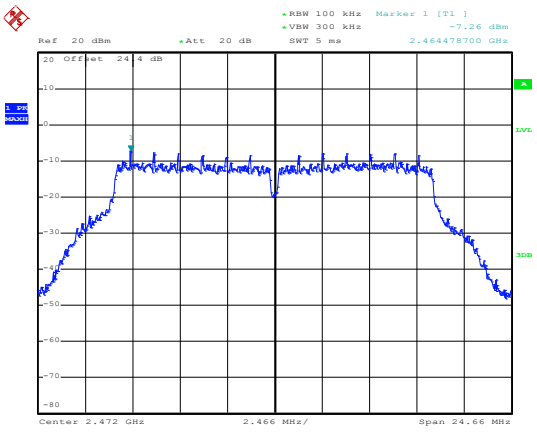


Date: 27.JUL.2015 23:19:23

Number of TX :	2	**Ant. :**	1
Test Mode :	802.11g	**Temperature :**	22~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	45~53%
Test Channel :	13	**Test Engineer :**	Osolemio Chang

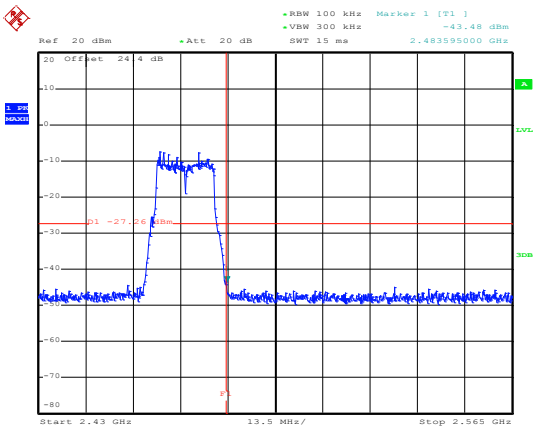
WLAN 802.11g Channel 13

100kHz PSD reference Level



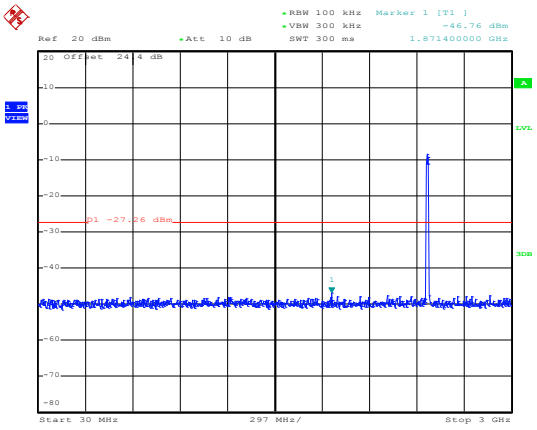
Date: 27.JUL.2015 23:28:24

High Channel Plot



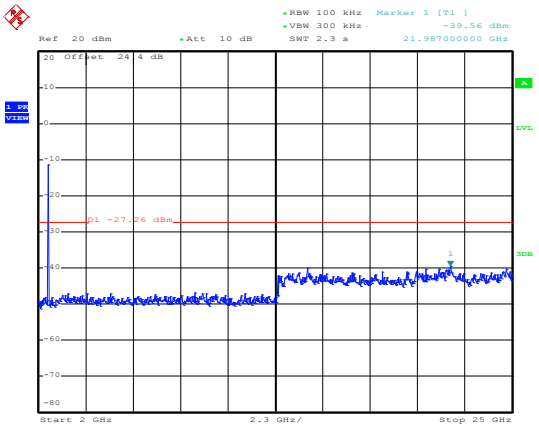
Date: 27.JUL.2015 23:30:11

Spurious Emission 30MHz~3GHz



Date: 27.JUL.2015 23:30:56

Spurious Emission 2GHz~25GHz

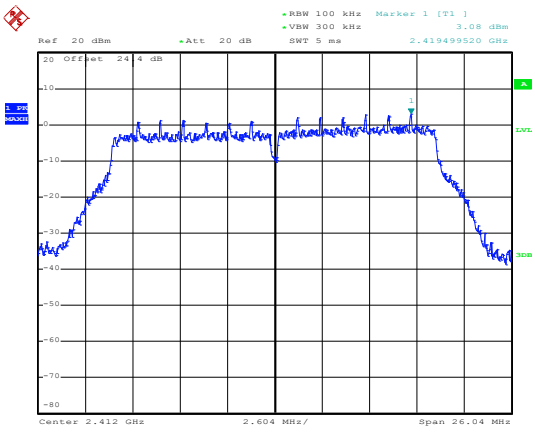


Date: 27.JUL.2015 23:31:14

Number of TX :	2	**Ant. :**	1
Test Mode :	802.11n HT20	**Temperature :**	22~26℃
Test Band :	2.4GHz Low	**Relative Humidity :**	45~53%
Test Channel :	01	**Test Engineer :**	Osolemio Chang

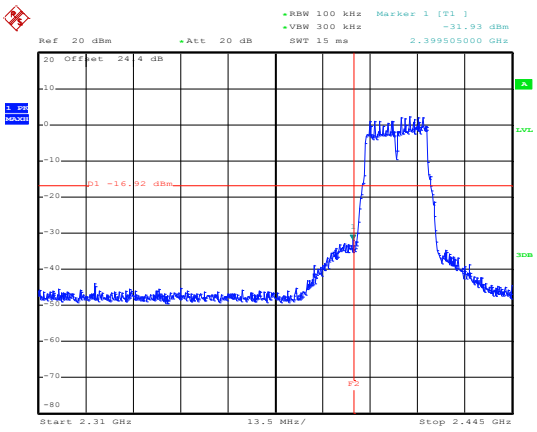
WLAN 802.11n HT20 Channel 01

100kHz PSD reference Level



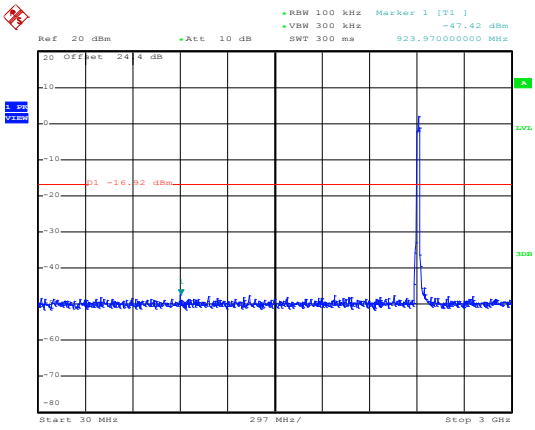
Date: 27.JUL.2015 23:42:21

Low Channel Plot



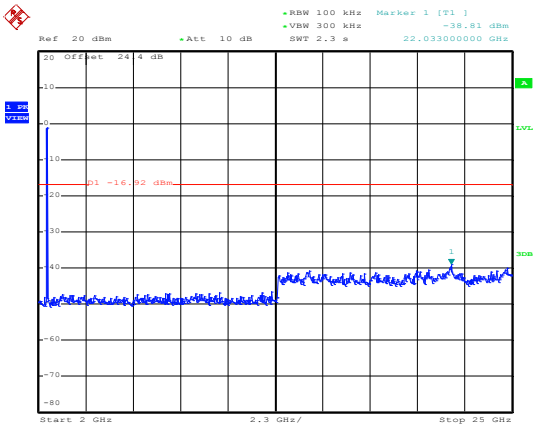
Date: 27.JUL.2015 23:42:50

Spurious Emission 30MHz~3GHz



Date: 27.JUL.2015 23:43:14

Spurious Emission 2GHz~25GHz

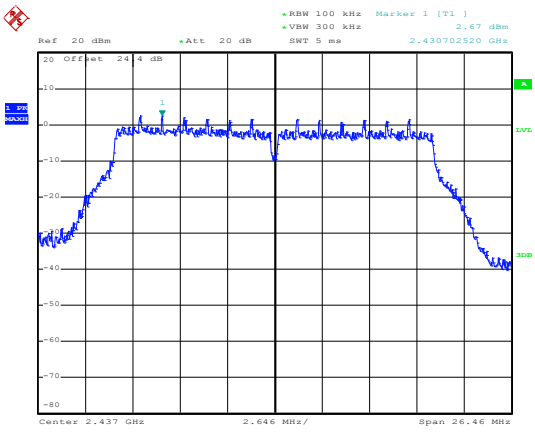


Date: 27.JUL.2015 23:43:31

Number of TX :	2	**Ant. :**	1
Test Mode :	802.11n HT20	**Temperature :**	22~26℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	45~53%
Test Channel :	06	**Test Engineer :**	Osolemio Chang

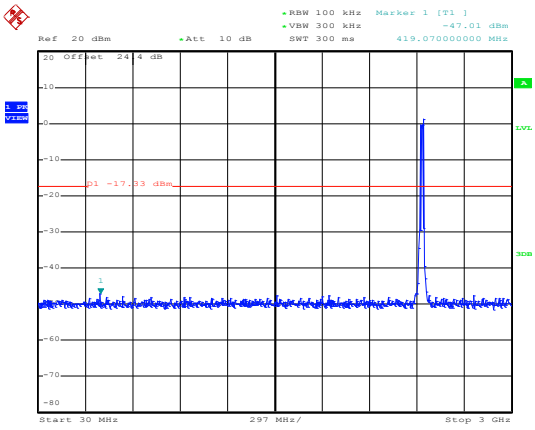
WLAN 802.11n HT20 Channel 06

100kHz PSD reference Level



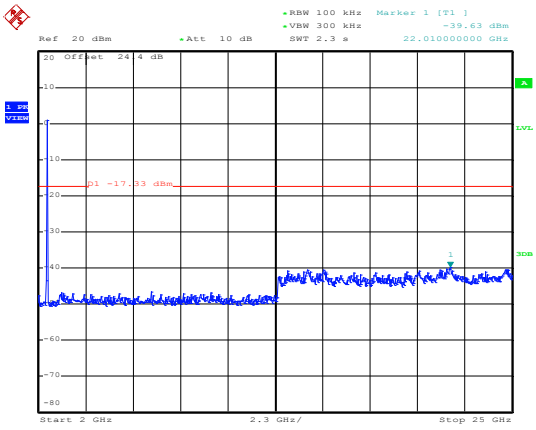
Date: 27.JUL.2015 23:54:08

Spurious Emission 30MHz~3GHz



Date: 27.JUL.2015 23:54:40

Spurious Emission 2GHz~25GHz

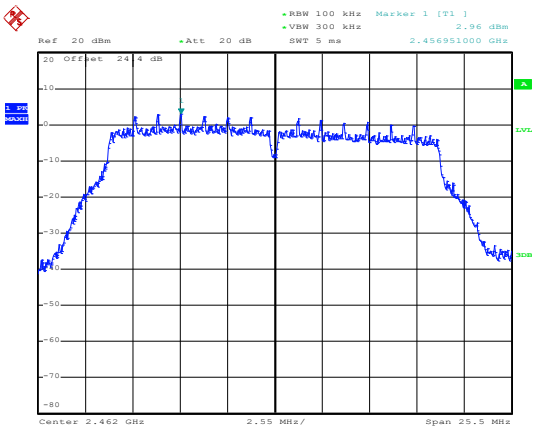


Date: 27.JUL.2015 23:54:58

Number of TX :	2	**Ant. :**	1
Test Mode :	802.11n HT20	**Temperature :**	22~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	45~53%
Test Channel :	11	**Test Engineer :**	Osolemio Chang

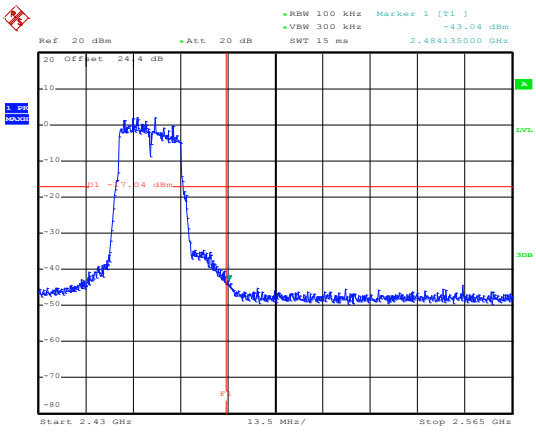
WLAN 802.11n HT20 Channel 11

100kHz PSD reference Level



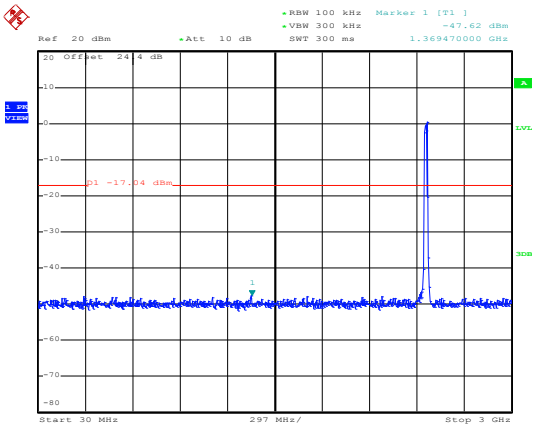
Date: 28.JUL.2015 00:03:32

High Channel Plot



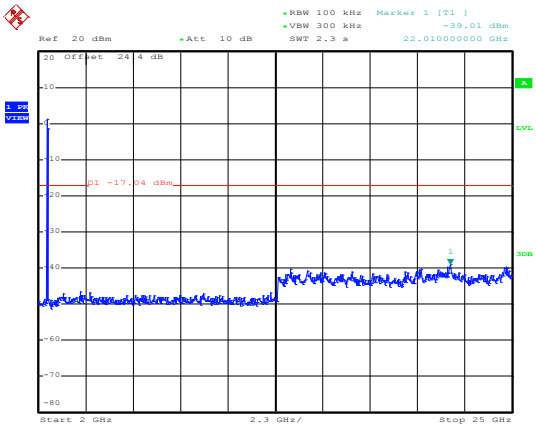
Date: 28.JUL.2015 00:04:11

Spurious Emission 30MHz~3GHz



Date: 28.JUL.2015 00:04:34

Spurious Emission 2GHz~25GHz

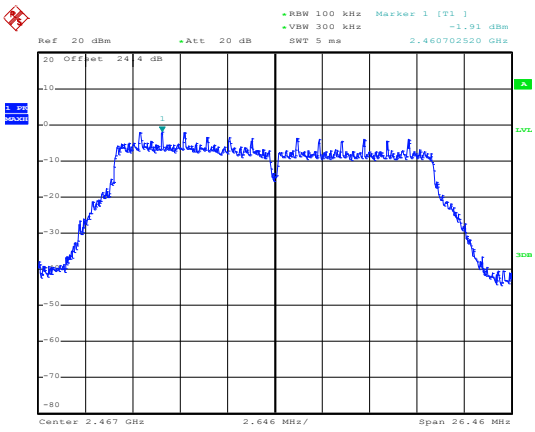


Date: 28.JUL.2015 00:04:52

Number of TX :	2	**Ant. :**	1
Test Mode :	802.11n HT20	**Temperature :**	22~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	45~53%
Test Channel :	12	**Test Engineer :**	Osolemio Chang

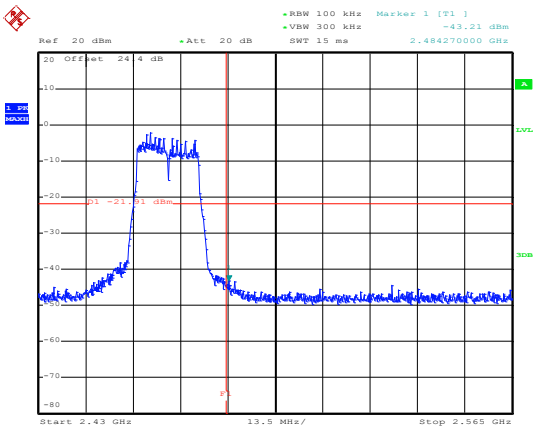
WLAN 802.11n HT20 Channel 12

100kHz PSD reference Level



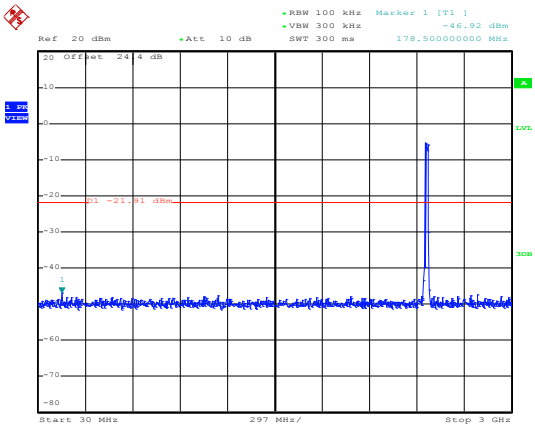
Date: 28.JUL.2015 00:17:55

High Channel Plot



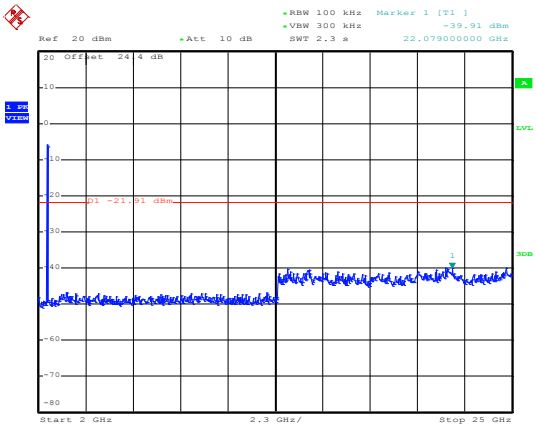
Date: 14.AUG.2015 22:22:56

Spurious Emission 30MHz~3GHz



Date: 28.JUL.2015 00:18:25

Spurious Emission 2GHz~25GHz

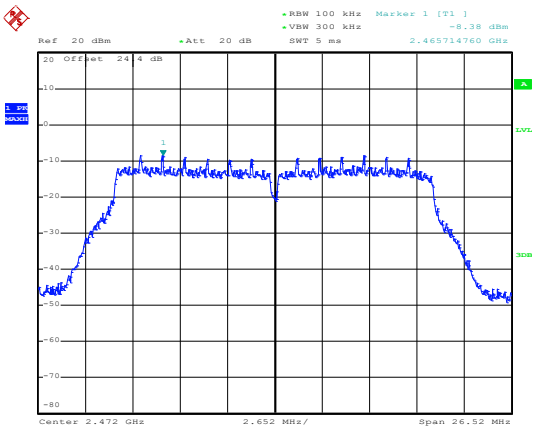


Date: 28.JUL.2015 00:18:42

Number of TX :	2	**Ant. :**	1
Test Mode :	802.11n HT20	**Temperature :**	22~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	45~53%
Test Channel :	13	**Test Engineer :**	Osolemio Chang

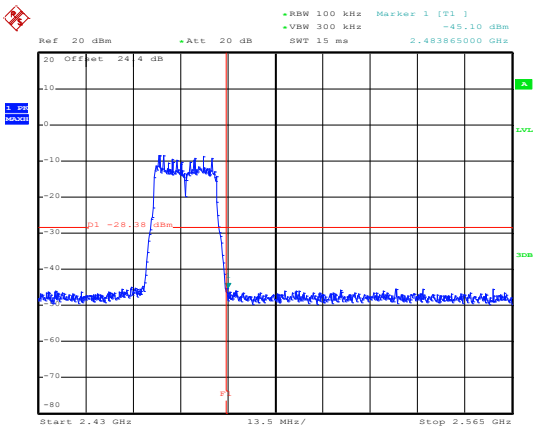
WLAN 802.11n HT20 Channel 13

100kHz PSD reference Level



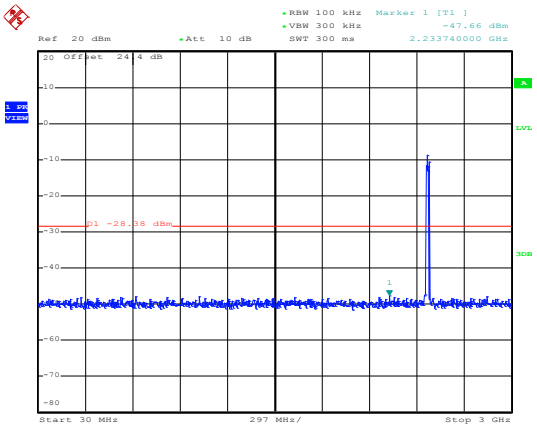
Date: 28.JUL.2015 00:28:11

High Channel Plot



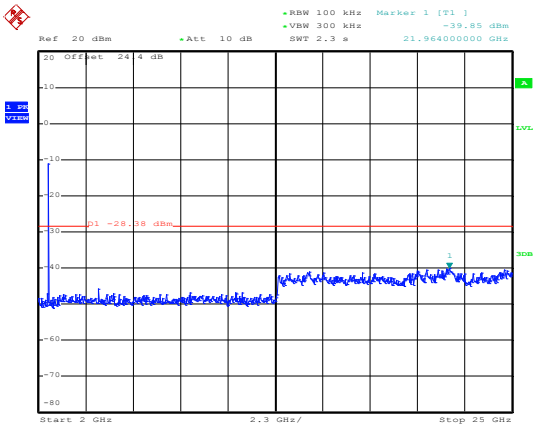
Date: 28.JUL.2015 00:36:44

Spurious Emission 30MHz~3GHz



Date: 28.JUL.2015 00:37:22

Spurious Emission 2GHz~25GHz



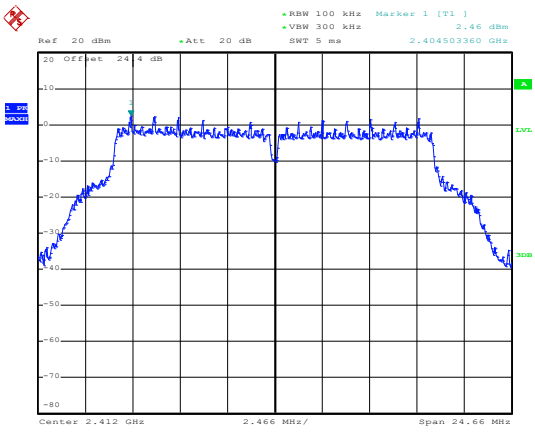
Date: 28.JUL.2015 00:37:39

Number of TX = 2, Ant. 2 (Measured)

Number of TX :	2	**Ant. :**	2
Test Mode :	802.11g	**Temperature :**	22~26℃
Test Band :	2.4GHz Low	**Relative Humidity :**	45~53%
Test Channel :	01	**Test Engineer :**	Osolemio Chang

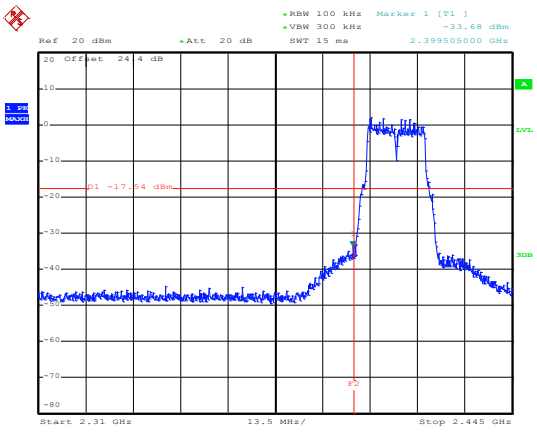
WLAN 802.11g Channel 01

100kHz PSD reference Level



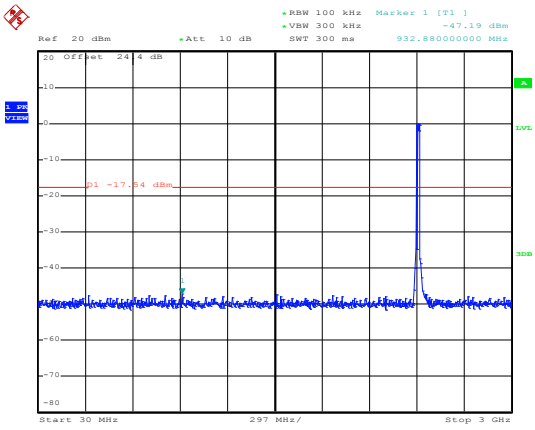
Date: 27.JUL.2015 21:48:26

Low Channel Plot



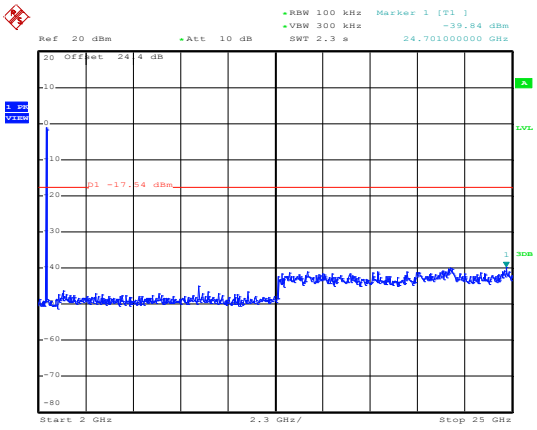
Date: 27.JUL.2015 21:49:28

Spurious Emission 30MHz~3GHz



Date: 27.JUL.2015 21:49:54

Spurious Emission 2GHz~25GHz

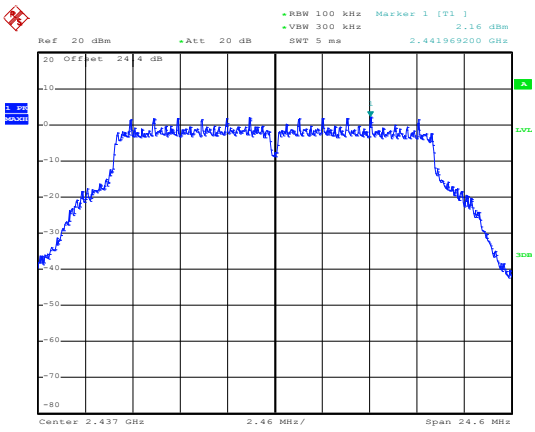


Date: 27.JUL.2015 21:50:12

Number of TX :	2	**Ant. :**	2
Test Mode :	802.11g	**Temperature :**	22~26℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	45~53%
Test Channel :	06	**Test Engineer :**	Osolemio Chang

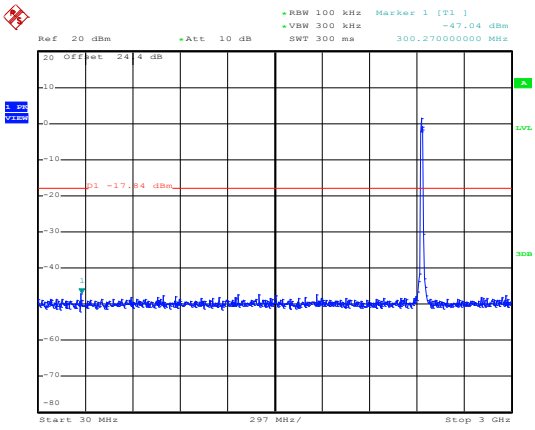
WLAN 802.11g Channel 06

100kHz PSD reference Level



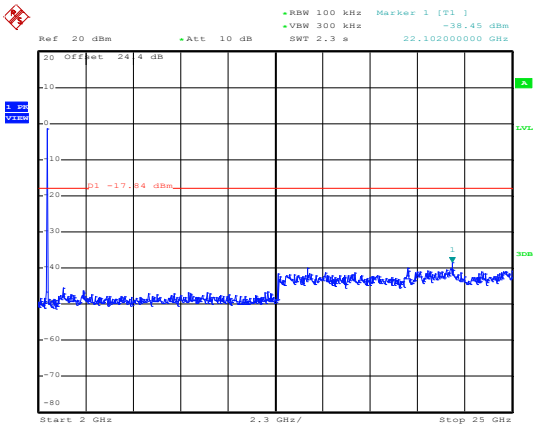
Date: 27.JUL.2015 22:06:32

Spurious Emission 30MHz~3GHz



Date: 27.JUL.2015 22:08:13

Spurious Emission 2GHz~25GHz

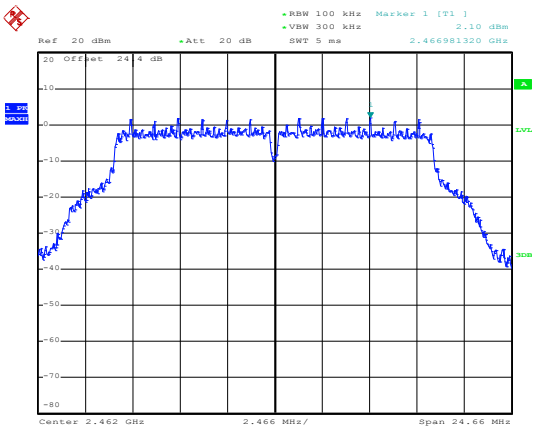


Date: 27.JUL.2015 22:08:31

Number of TX :	2	**Ant. :**	2
Test Mode :	802.11g	**Temperature :**	22~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	45~53%
Test Channel :	11	**Test Engineer :**	Osolemio Chang

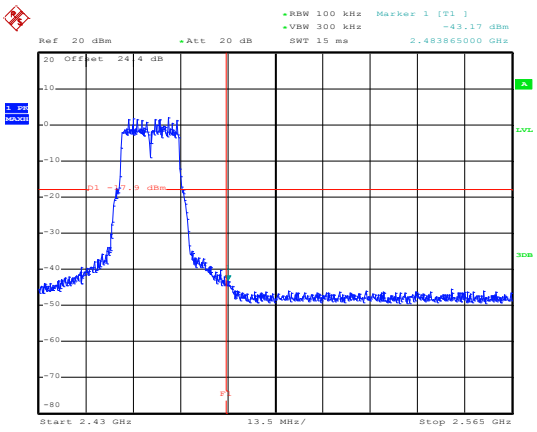
WLAN 802.11g Channel 11

100kHz PSD reference Level



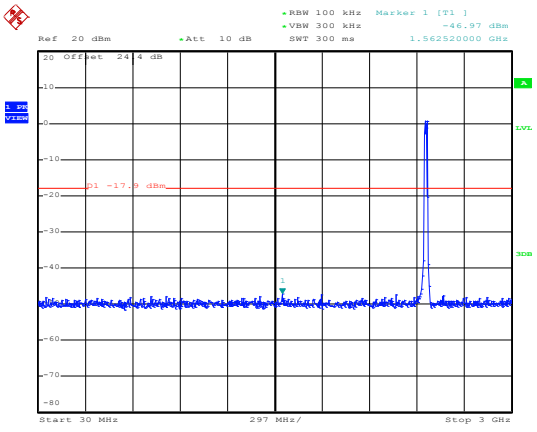
Date: 27.JUL.2015 22:52:18

High Channel Plot



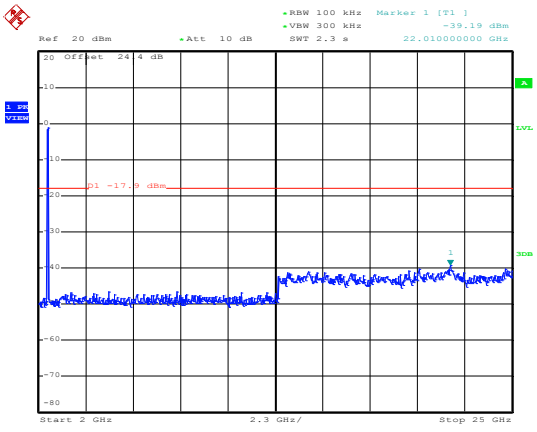
Date: 27.JUL.2015 22:53:53

Spurious Emission 30MHz~3GHz



Date: 27.JUL.2015 22:54:57

Spurious Emission 2GHz~25GHz

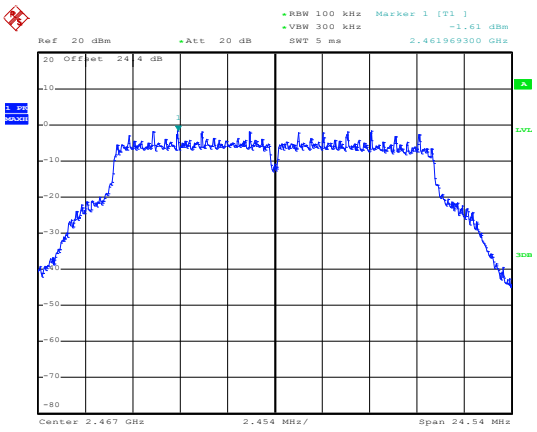


Date: 27.JUL.2015 22:55:15

Number of TX :	2	**Ant. :**	2
Test Mode :	802.11g	**Temperature :**	22~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	45~53%
Test Channel :	12	**Test Engineer :**	Osolemio Chang

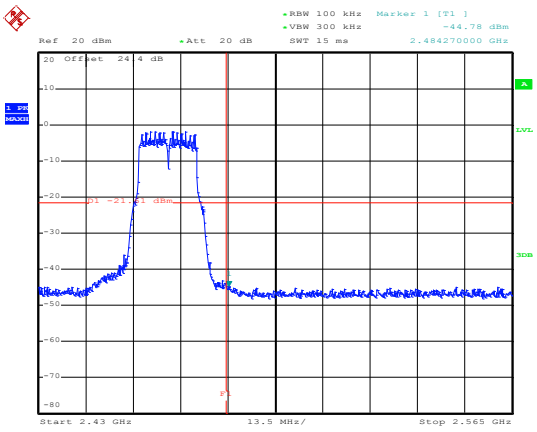
WLAN 802.11g Channel 12

100kHz PSD reference Level



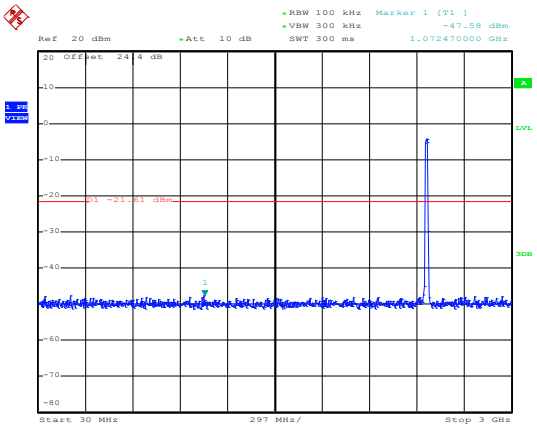
Date: 27.JUL.2015 23:23:08

High Channel Plot



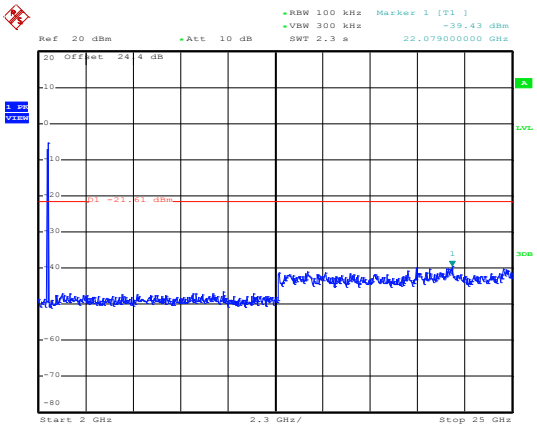
Date: 14.AUG.2015 22:13:34

Spurious Emission 30MHz~3GHz



Date: 27.JUL.2015 23:23:45

Spurious Emission 2GHz~25GHz

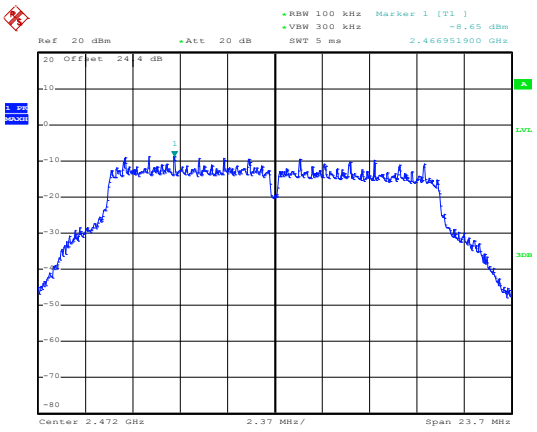


Date: 27.JUL.2015 23:24:03

Number of TX :	2	**Ant. :**	2
Test Mode :	802.11g	**Temperature :**	22~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	45~53%
Test Channel :	13	**Test Engineer :**	Osolemio Chang

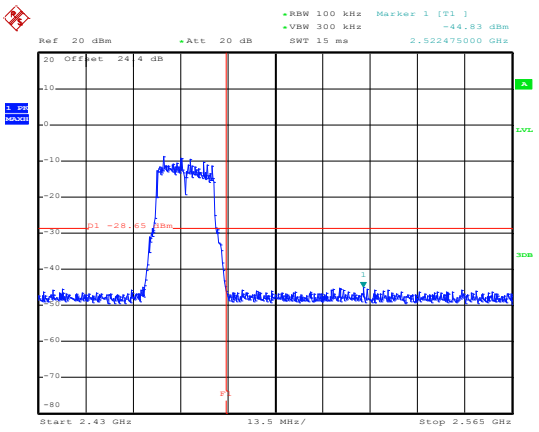
WLAN 802.11g Channel 13

100kHz PSD reference Level



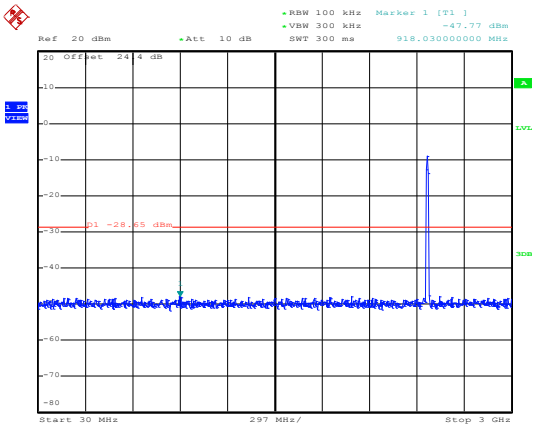
Date: 27.JUL.2015 23:35:53

High Channel Plot



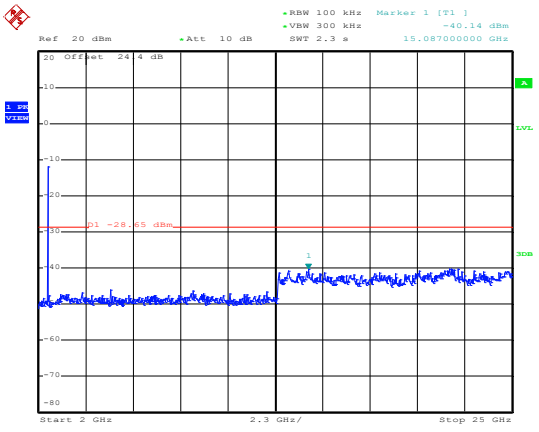
Date: 27.JUL.2015 23:36:20

Spurious Emission 30MHz~3GHz



Date: 27.JUL.2015 23:36:59

Spurious Emission 2GHz~25GHz

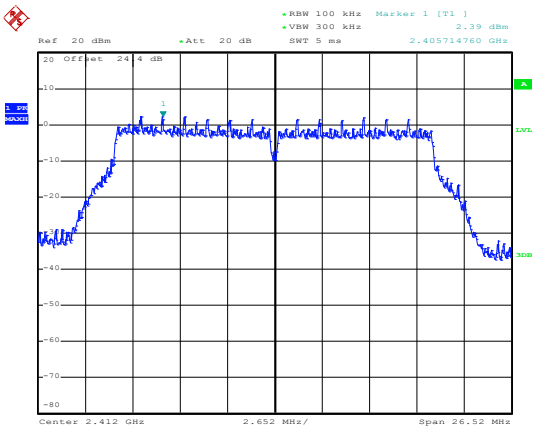


Date: 27.JUL.2015 23:37:16

Number of TX :	2	**Ant. :**	2
Test Mode :	802.11n HT20	**Temperature :**	22~26℃
Test Band :	2.4GHz Low	**Relative Humidity :**	45~53%
Test Channel :	01	**Test Engineer :**	Osolemio Chang

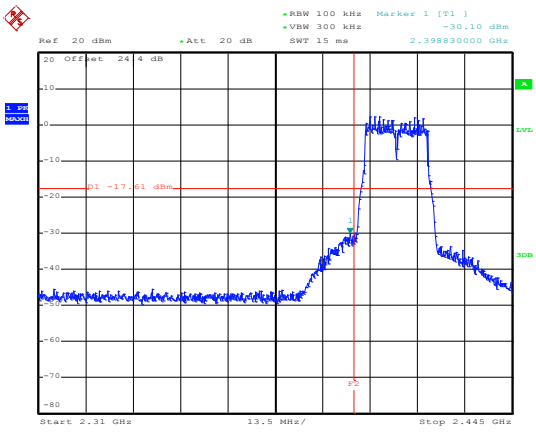
WLAN 802.11n HT20 Channel 01

100kHz PSD reference Level



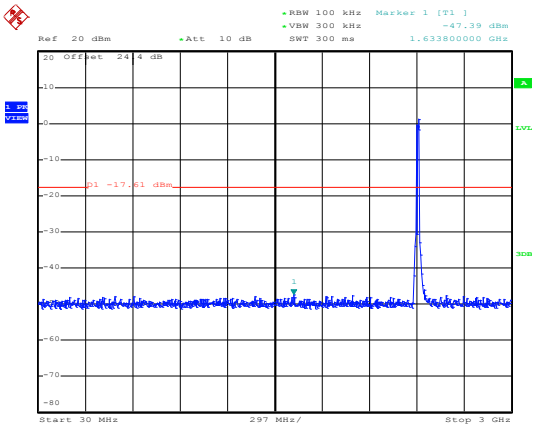
Date: 27.JUL.2015 23:48:06

Low Channel Plot



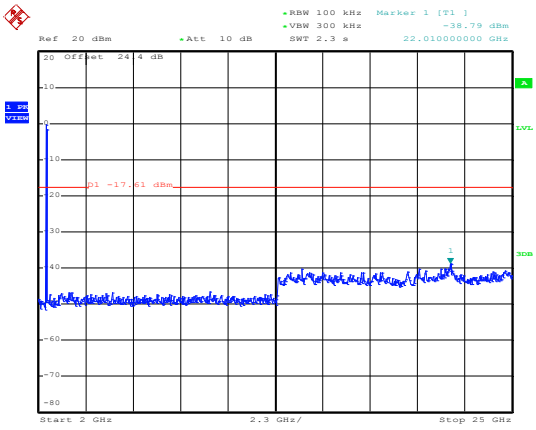
Date: 27.JUL.2015 23:48:32

Spurious Emission 30MHz~3GHz



Date: 27.JUL.2015 23:49:12

Spurious Emission 2GHz~25GHz

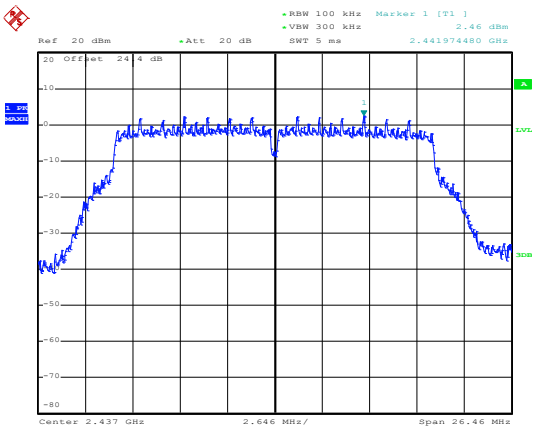


Date: 27.JUL.2015 23:49:29

Number of TX :	2	**Ant. :**	2
Test Mode :	802.11n HT20	**Temperature :**	22~26℃
Test Band :	2.4GHz Mid	**Relative Humidity :**	45~53%
Test Channel :	06	**Test Engineer :**	Osolemio Chang

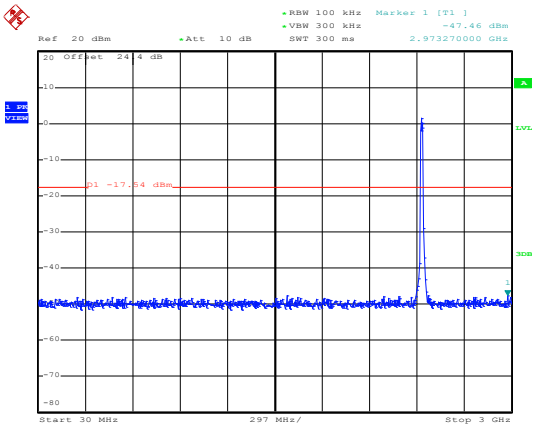
WLAN 802.11n HT20 Channel 06

100kHz PSD reference Level



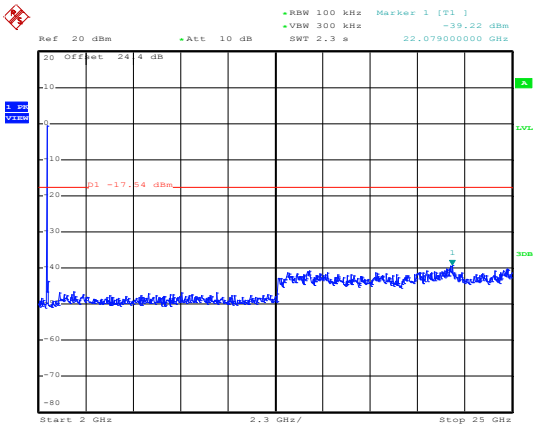
Date: 27.JUL.2015 23:58:28

Spurious Emission 30MHz~3GHz



Date: 27.JUL.2015 23:58:51

Spurious Emission 2GHz~25GHz

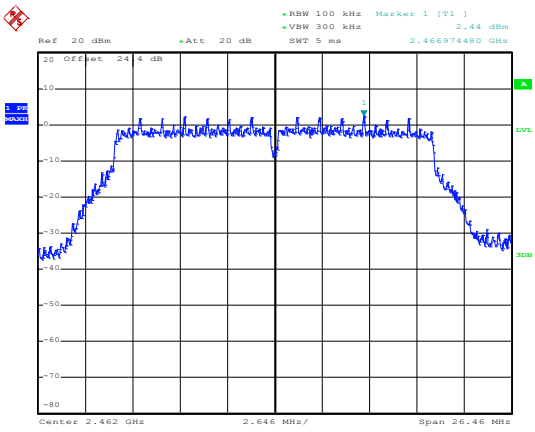


Date: 27.JUL.2015 23:59:09

Number of TX :	2	**Ant. :**	2
Test Mode :	802.11n HT20	**Temperature :**	22~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	45~53%
Test Channel :	11	**Test Engineer :**	Osolemio Chang

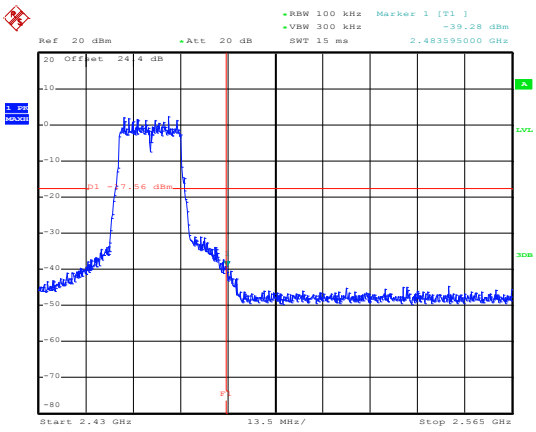
WLAN 802.11n HT20 Channel 11

100kHz PSD reference Level



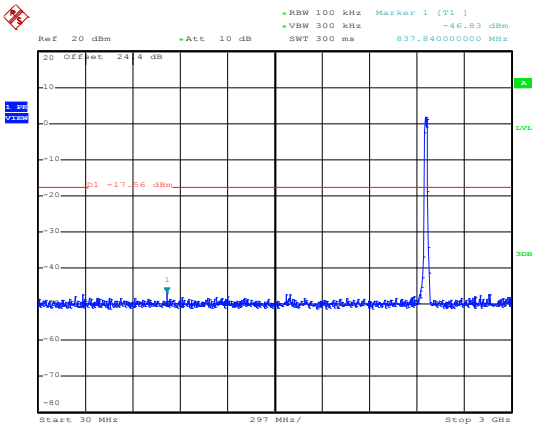
Date: 28.JUL.2015 00:10:16

High Channel Plot



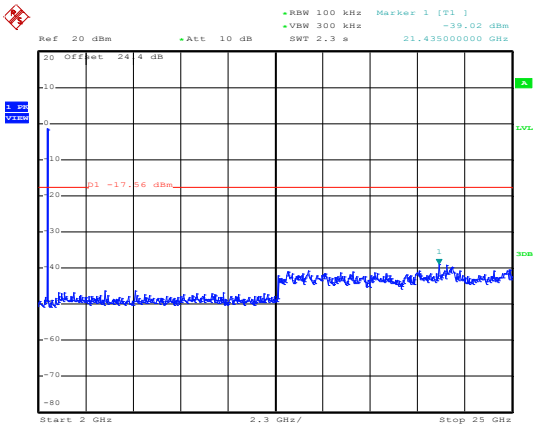
Date: 28.JUL.2015 00:11:53

Spurious Emission 30MHz~3GHz



Date: 28.JUL.2015 00:13:24

Spurious Emission 2GHz~25GHz

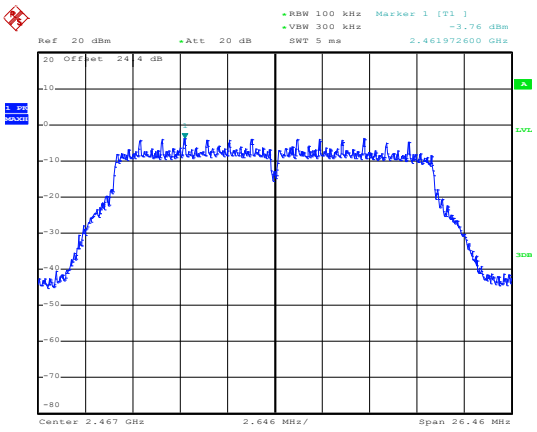


Date: 28.JUL.2015 00:13:42

Number of TX :	2	**Ant. :**	2
Test Mode :	802.11n HT20	**Temperature :**	22~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	45~53%
Test Channel :	12	**Test Engineer :**	Osolemio Chang

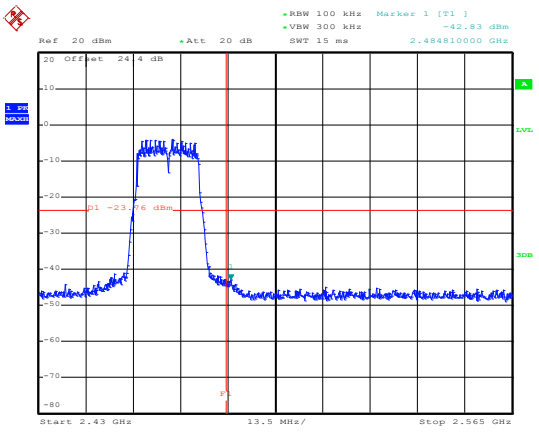
WLAN 802.11n HT20 Channel 12

100kHz PSD reference Level



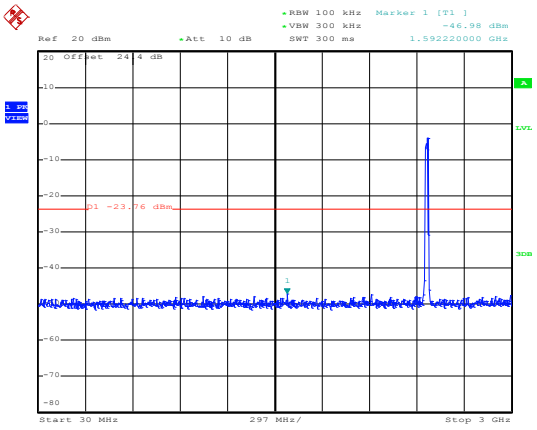
Date: 28.JUL.2015 00:22:01

High Channel Plot



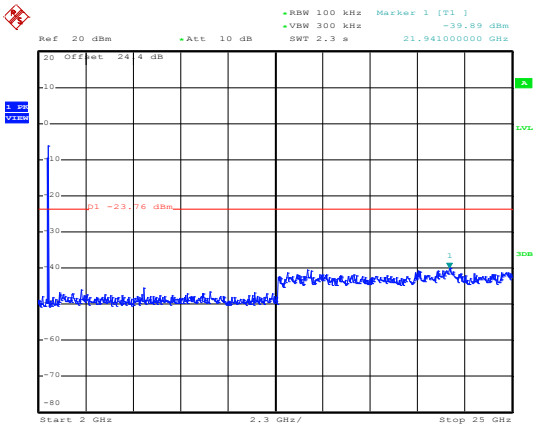
Date: 14.AUG.2015 22:24:14

Spurious Emission 30MHz~3GHz



Date: 28.JUL.2015 00:23:06

Spurious Emission 2GHz~25GHz

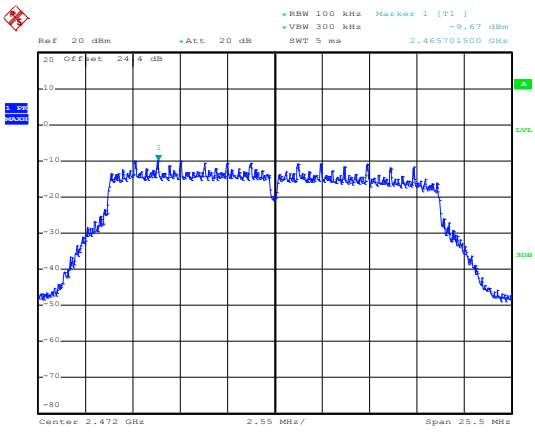


Date: 28.JUL.2015 00:23:24

Number of TX :	2	**Ant. :**	2
Test Mode :	802.11n HT20	**Temperature :**	22~26℃
Test Band :	2.4GHz High	**Relative Humidity :**	45~53%
Test Channel :	13	**Test Engineer :**	Osolemio Chang

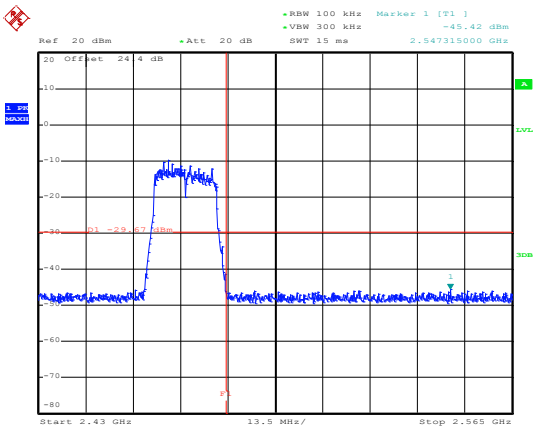
WLAN 802.11n HT20 Channel 13

100kHz PSD reference Level



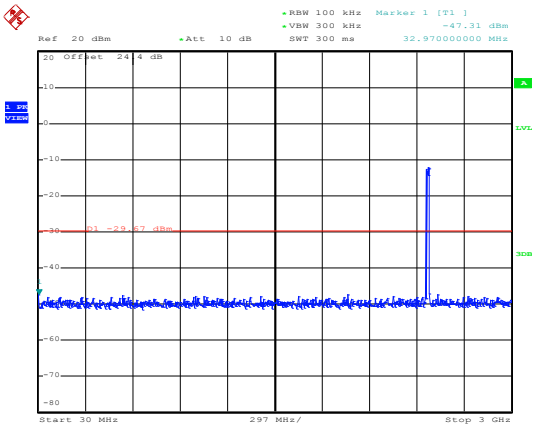
Date: 28.JUL.2015 00:41:50

High Channel Plot



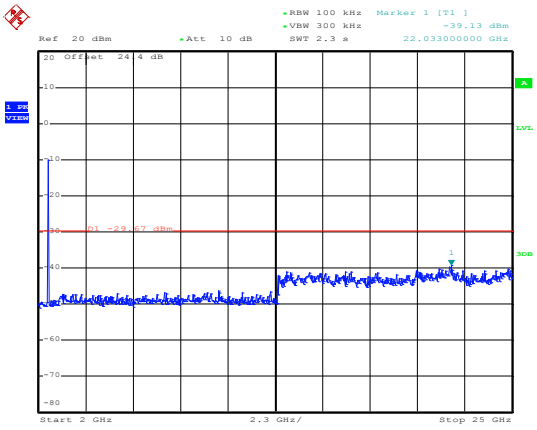
Date: 28.JUL.2015 00:42:10

Spurious Emission 30MHz~3GHz



Date: 28.JUL.2015 00:42:43

Spurious Emission 2GHz~25GHz



Date: 28.JUL.2015 00:43:01

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.

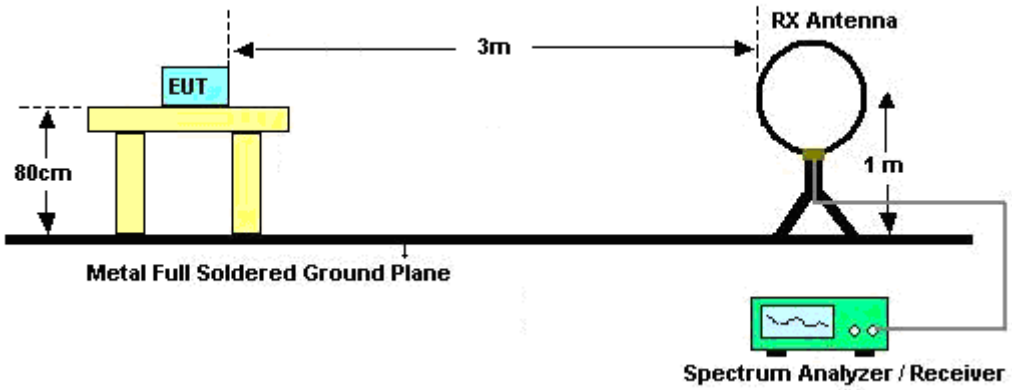
3.5.3 Test Procedure

1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r03.
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.

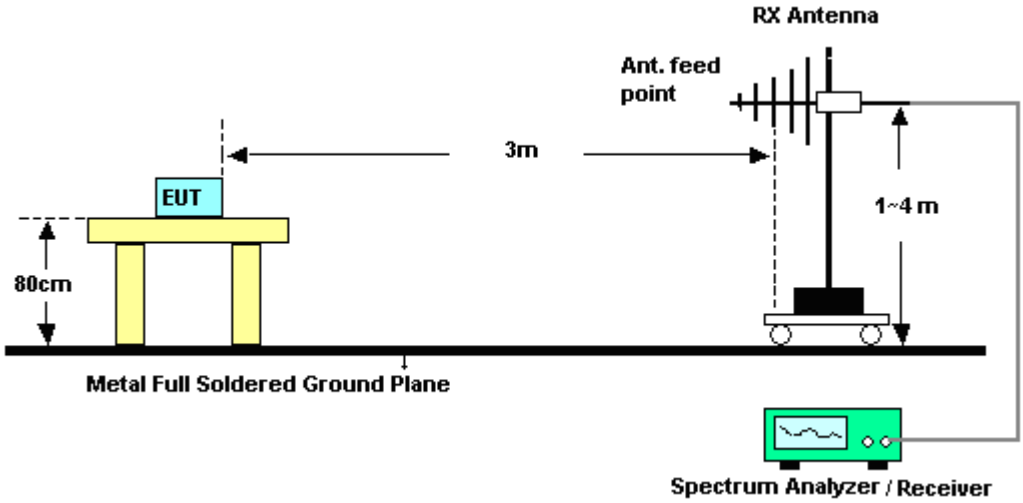
Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
0	802.11b	99.11	-	-	10Hz
1	802.11b	99.1	-	-	
0+1	2.4GHz 802.11g for Ant 1	100	-	-	
0+1	2.4GHz 802.11g for Ant 2	100	-	-	
0+1	2.4GHz 802.11n HT20 for Ant 1	98.67	-	-	
0+1	2.4GHz 802.11n HT20 for Ant 2	98.67	-	-	

3.5.4 Test Setup

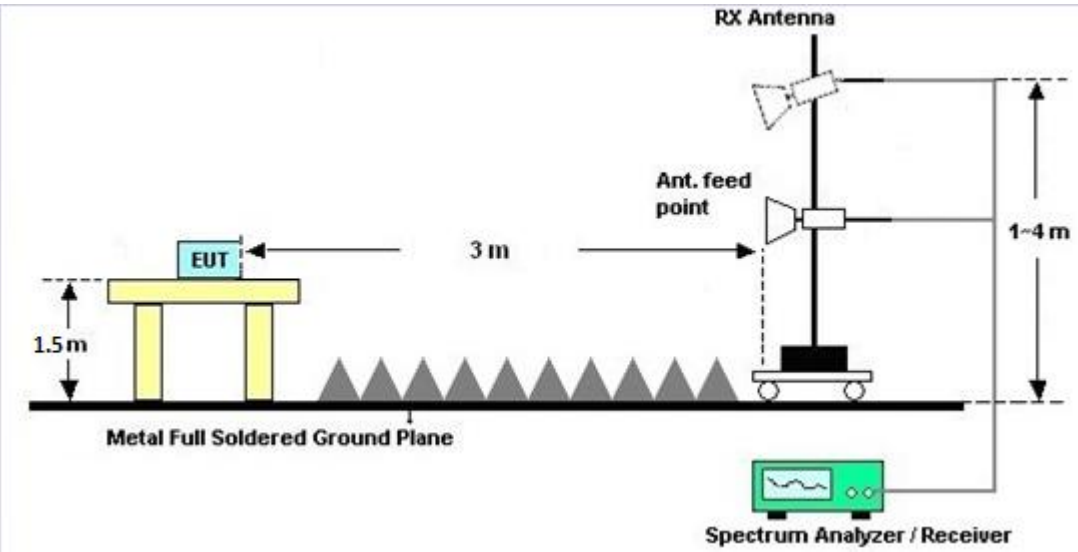
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.5.5 Test Results of Radiated 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 B and C of this test report.

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

Please refer to Appendix B and C of this test report.

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.

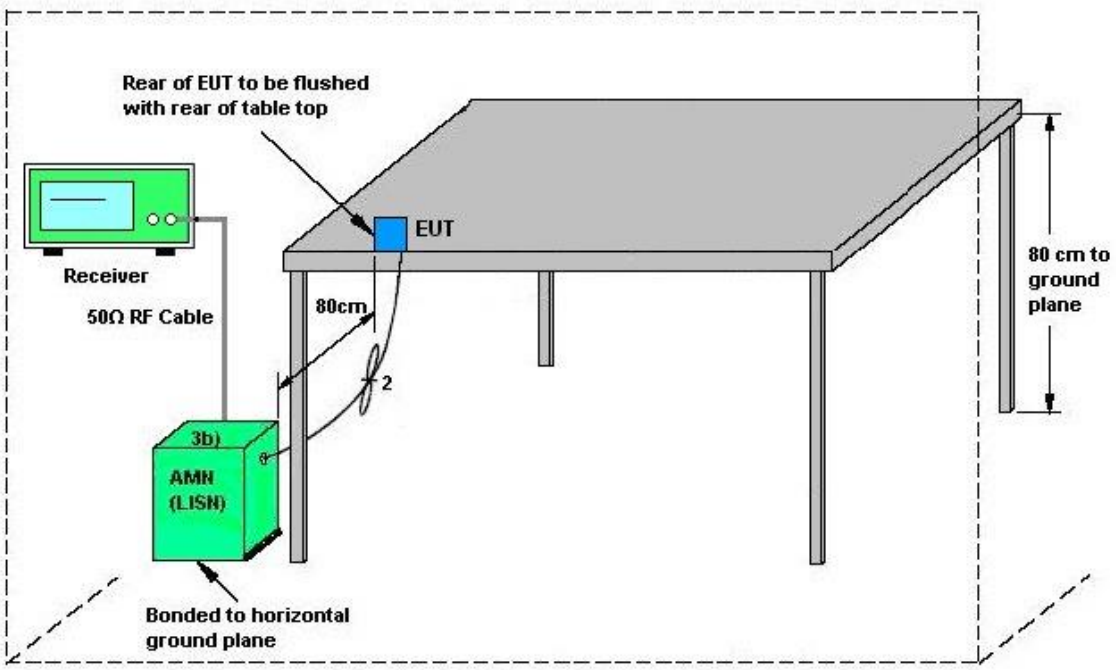
3.6.2 Measuring Instruments

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.

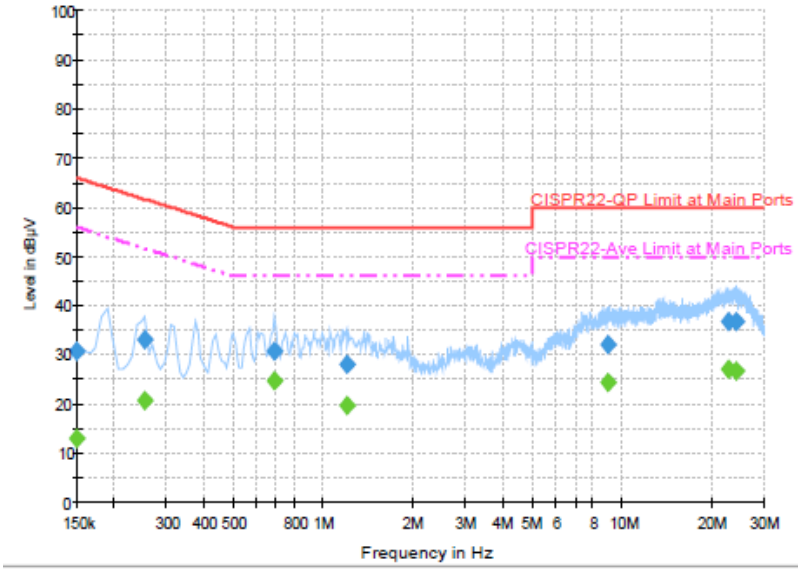
3.6.4 Test Setup



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

Test Mode :	Mode 1	Temperature :	23~25℃
Test Engineer :	Eric Jeng	Relative Humidity :	58~61%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN 2.4GHz Link + USB Cable(Charging from Adapter) + Earphone		



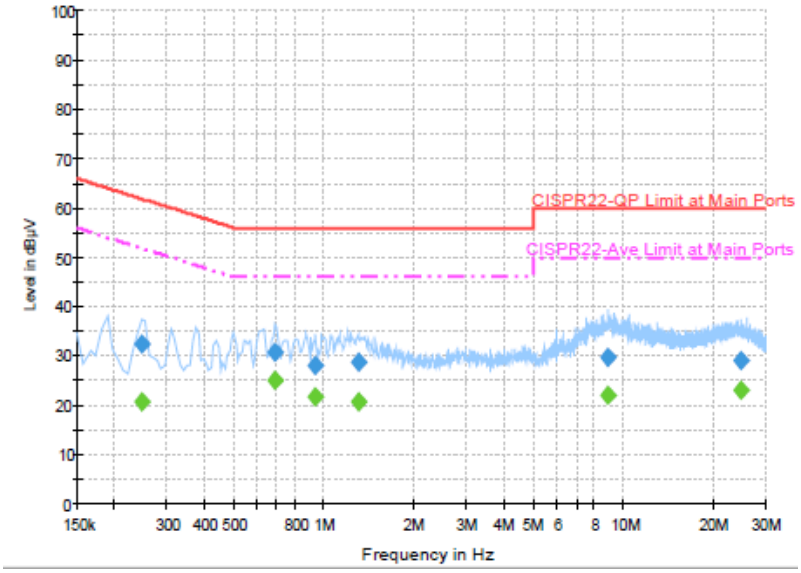
Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	30.9	Off	L1	19.5	35.1	66.0
0.254000	33.2	Off	L1	19.4	28.4	61.6
0.686000	30.8	Off	L1	19.6	25.2	56.0
1.198000	28.0	Off	L1	19.6	28.0	56.0
8.974000	32.1	Off	L1	19.9	27.9	60.0
22.910000	36.7	Off	L1	20.0	23.3	60.0
24.334000	36.8	Off	L1	20.0	23.2	60.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	12.9	Off	L1	19.5	43.1	56.0
0.254000	20.8	Off	L1	19.4	30.8	51.6
0.686000	24.8	Off	L1	19.6	21.2	46.0
1.198000	19.7	Off	L1	19.6	26.3	46.0
8.974000	24.4	Off	L1	19.9	25.6	50.0
22.910000	27.0	Off	L1	20.0	23.0	50.0
24.334000	26.9	Off	L1	20.0	23.1	50.0

Test Mode :	Mode 1	Temperature :	23~25℃
Test Engineer :	Eric Jeng	Relative Humidity :	58~61%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN 2.4GHz Link + USB Cable(Charging from Adapter) + Earphone		



Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.246000	32.5	Off	N	19.5	29.4	61.9
0.686000	30.7	Off	N	19.6	25.3	56.0
0.942000	28.1	Off	N	19.6	27.9	56.0
1.302000	28.6	Off	N	19.6	27.4	56.0
8.870000	29.7	Off	N	19.9	30.3	60.0
24.662000	29.1	Off	N	20.2	30.9	60.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.246000	20.9	Off	N	19.5	31.0	51.9
0.686000	25.0	Off	N	19.6	21.0	46.0
0.942000	21.7	Off	N	19.6	24.3	46.0
1.302000	20.8	Off	N	19.6	25.2	46.0
8.870000	22.0	Off	N	19.9	28.0	50.0
24.662000	23.2	Off	N	20.2	26.8	50.0

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

FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

For CDD and beamforming transmissions, directional gain is calculated as

$$Directional Gain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$$

where

Each antenna is driven by no more than one spatial stream;

N_{SS} = the number of independent spatial streams of data;

N_{ANT} = the total number of antennas

$g_{j,k} = 10^{G_k / 20}$ if the kth antenna is being fed by spatial stream j, or zero if it is not;

G_k is the gain in dBi of the kth antenna.

The EUT supports CDD mode and beamforming.

The power and PSD limit should be modified if the directional gain of EUT is over 6 dBi,

The directional gain “DG” is calculated as following table.

	Ant. 1 (dBi)	Ant. 2 (dBi)	DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
2.4 GHz	-1.60	-4.10	0.25	0.25	0.00	0.00

Power Limit Reduction = DG(Power) – 6dBi, (min = 0)

PSD Limit Reduction = DG(PSD) – 6dBi, (min = 0)

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Power Meter	Anritsu	ML2495A	1218006	300MHz~40GHz	Oct. 18, 2014	Jul. 20, 2015~ Aug. 14, 2015	Oct. 17, 2015	Conducted (TH05-HY)
Power Sensor	Anritsu	MA2411B	1126017	300MHz~40GHz	Oct. 18, 2014	Jul. 20, 2015~ Aug. 14, 2015	Oct. 17, 2015	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz-40GHz	Jun. 18, 2015	Jul. 20, 2015~ Aug. 14, 2015	Jun. 17, 2016	Conducted (TH05-HY)
Hygrometer	Testo	608-H1	34897199	N/A	May 04, 2015	Jul. 20, 2015~ Aug. 14, 2015	May 03, 2016	Conducted (TH05-HY)
RF Cable	HARBOUR INDUSTRIES	LL142	Infinet CA3601-360 1-DLL	0.1MHz~40GHz	Mar. 06, 2015	Jul. 20, 2015~ Aug. 14, 2015	Mar. 05, 2016	Conducted (TH05-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9170	BBHA91705 84	18GHz- 40GHz	Nov. 03, 2014	Aug. 06, 2015~ Aug. 26, 2015	Nov. 02, 2015	Radiation (03CH10-HY)
Loop Antenna	TESEQ	HLA 6120	31244	9kHZ~30MHz	Feb. 02, 2015	Aug. 06, 2015~ Aug. 26, 2015	Feb. 01, 2016	Radiation (03CH10-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY84209521	9kHz~1GHz	Dec. 04, 2014	Aug. 06, 2015~ Aug. 26, 2015	Dec. 03, 2015	Radiation (03CH10-HY)
Amplifier	SONOMA	310N	187311	9kHz~1GHz	Nov. 24, 2014	Aug. 06, 2015~ Aug. 26, 2015	Nov. 23, 2015	Radiation (03CH10-HY)
Bilog Antenna	TESEQ	CBL 6111D	35413	30MHz~1GHz	Oct. 24, 2014	Aug. 06, 2015~ Aug. 26, 2015	Oct. 23, 2015	Radiation (03CH10-HY)
EMI Test Receiver	Keysight	N9038A	MY54130085	20Hz ~ 8.4GHz	Nov. 05, 2014	Aug. 06, 2015~ Aug. 26, 2015	Nov. 04, 2015	Radiation (03CH10-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	9120D-1325	1GHz ~ 18GHz	Oct. 03, 2014	Aug. 06, 2015~ Aug. 26, 2015	Oct. 02, 2015	Radiation (03CH10-HY)
Hygrometer	TECPEL	DTM-303B	TP140320	N/A	Nov. 17, 2014	Aug. 06, 2015~ Aug. 26, 2015	Nov. 16, 2015	Radiation (03CH10-HY)
Preamplifier	Keysight	83017A	MY53270078	1GHz~26.5GHz	Nov. 20, 2014	Aug. 06, 2015~ Aug. 26, 2015	Nov. 19, 2015	Radiation (03CH10-HY)
Preamplifier	MITEQ	AMF-7D-00101 800-30-10P	1902246	1GHz~18GHz	Nov. 25, 2014	Aug. 06, 2015~ Aug. 26, 2015	Nov. 24, 2015	Radiation (03CH10-HY)
Spectrum Analyzer	Keysight	N9010A	MY54200485	10Hz ~ 44GHZ	Oct. 14, 2014	Aug. 06, 2015~ Aug. 26, 2015	Oct. 13, 2015	Radiation (03CH10-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY249564 MY249524 MY283184	25GHz~40GHz	Nov. 06, 2014	Aug. 06, 2015~ Aug. 26, 2015	Nov. 05, 2015	Radiation (03CH10-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY249564 MY249524 MY283184	30MHz~1GHz	Nov. 06, 2014	Aug. 06, 2015~ Aug. 26, 2015	Nov. 05, 2015	Radiation (03CH10-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY249564 MY249524 MY283184	1GHz~25GHz	Nov. 06, 2014	Aug. 06, 2015~ Aug. 26, 2015	Nov. 05, 2015	Radiation (03CH10-HY)
Controller	EMEC	EM 1000	N/A	Control Turn table & Ant Mast	N/A	Aug. 06, 2015~ Aug. 26, 2015	N/A	Radiation (03CH10-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1~4m	N/A	Aug. 06, 2015~ Aug. 26, 2015	N/A	Radiation (03CH10-HY)
Turn Table	EMEC	TT 2200	N/A	0-360 degree	N/A	Aug. 06, 2015~ Aug. 26, 2015	N/A	Radiation (03CH10-HY)
Preamplifier	MITEQ	JS44-1800400 0-33-8P	1840917	18GHz ~ 40GHz	Jun. 02, 2015	Aug. 06, 2015~ Aug. 26, 2015	Jun. 01, 2016	Radiation (03CH10-HY)
Test Software	Audix	E3	6.2009-8-24	N/A	N/A	Aug. 06, 2015~ Aug. 26, 2015	N/A	Radiation (03CH10-HY)
Filter	Wainwright	WLKS1200-8S S	SN3	1.2G Low Pass	Oct. 01, 2014	Aug. 06, 2015~ Aug. 26, 2015	Sep. 30, 2015	Radiation (03CH10-HY)
Filter	Microwave	H3G018G1	SN477220	3.0G High Pass	Oct. 01, 2014	Aug. 06, 2015~ Aug. 26, 2015	Sep. 30, 2015	Radiation (03CH10-HY)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Test Receiver	Rohde & Schwarz	ESCS 30	100356	9kHz – 2.75GHz	Dec. 01, 2014	Aug. 15, 2015	Nov. 30, 2015	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Apr. 20, 2015	Aug. 15, 2015	Apr. 19, 2016	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Dec. 02, 2014	Aug. 15, 2015	Dec. 01, 2015	Conduction (CO05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Aug. 15, 2015	N/A	Conduction (CO05-HY)
LF Cable	HUBER + SUHNER	RG-214/U	LF01	N/A	Jan. 07, 2015	Aug. 15, 2015	Jan. 06, 2016	Conduction (CO05-HY)
Test Software	N/A	EMC32	8.40.0	N/A	N/A	Aug. 15, 2015	N/A	Conduction (CO05-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.26**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.90**

Appendix A. Conducted Test Results

Report Number : FR571615C

Test Engineer:	Osolemio Chang	Temperature:	22~23	°C
Test Date:	2015/7/20~2015/8/14	Relative Humidity:	52~53	%

TEST RESULTS DATA
6dB Bandwidth

2.4GHz Band								
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	6dB BW (MHz)		6dB BW Limit (MHz)	Pass/Fail
					Ant 1	Ant 2		
11b	1Mbps	1	1	2412	7.60	8.04	0.50	Pass
11b	1Mbps	1	6	2437	7.60	8.04	0.50	Pass
11b	1Mbps	1	11	2462	7.56	8.08	0.50	Pass
11b	1Mbps	1	12	2467	7.60	8.04	0.50	Pass
11b	1Mbps	1	13	2472	8.08	7.56	0.50	Pass
11g	6Mbps	2	1	2412	16.40	16.44	0.50	Pass
11g	6Mbps	2	6	2437	16.40	16.40	0.50	Pass
11g	6Mbps	2	11	2462	16.08	16.44	0.50	Pass
11g	6Mbps	2	12	2467	16.40	16.36	0.50	Pass
11g	6Mbps	2	13	2472	16.44	15.80	0.50	Pass
HT20	MCS8	2	1	2412	17.36	17.68	0.50	Pass
HT20	MCS8	2	6	2437	17.64	17.64	0.50	Pass
HT20	MCS8	2	11	2462	17.00	17.64	0.50	Pass
HT20	MCS8	2	12	2467	17.64	17.64	0.50	Pass
HT20	MCS8	2	13	2472	17.68	17.00	0.50	Pass

Report Number : FR571615C

TEST RESULTS DATA
Peak Output Power

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
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	
11b	1Mbps	1	1	2412	16.74	16.48		30.00	30.00	-1.60	-4.10	15.14	12.38	36.00	36.00	Pass
11b	1Mbps	1	6	2437	16.90	16.67		30.00	30.00	-1.60	-4.10	15.30	12.57	36.00	36.00	Pass
11b	1Mbps	1	11	2462	17.03	16.73		30.00	30.00	-1.60	-4.10	15.43	12.63	36.00	36.00	Pass
11b	1Mbps	1	12	2467	16.87	16.61		30.00	30.00	-1.60	-4.10	15.27	12.51	36.00	36.00	Pass
11b	1Mbps	1	13	2472	16.85	15.67		30.00	30.00	-1.60	-4.10	15.25	11.57	36.00	36.00	Pass
11g	6Mbps	2	1	2412	20.62	20.41	23.53	30.00		0.25		23.78		36.00		Pass
11g	6Mbps	2	6	2437	20.56	20.75	23.67	30.00		0.25		23.92		36.00		Pass
11g	6Mbps	2	11	2462	20.73	20.47	23.61	30.00		0.25		23.86		36.00		Pass
11g	6Mbps	2	12	2467	17.48	17.51	20.51	30.00		0.25		20.76		36.00		Pass
11g	6Mbps	2	13	2472	11.31	9.76	13.61	30.00		0.25		13.86		36.00		Pass
HT20	MCS8	2	1	2412	20.85	20.56	23.72	30.00		0.25		23.97		36.00		Pass
HT20	MCS8	2	6	2437	20.53	20.25	23.40	30.00		0.25		23.65		36.00		Pass
HT20	MCS8	2	11	2462	20.21	20.06	23.15	30.00		0.25		23.40		36.00		Pass
HT20	MCS8	2	12	2467	15.90	14.17	18.13	30.00		0.25		18.38		36.00		Pass
HT20	MCS8	2	13	2472	9.89	8.14	12.11	30.00		0.25		12.36		36.00		Pass

Note: Measured power (dBm) has offset with cable loss.

TEST RESULTS DATA
Average Output Power

2.4GHz Band									
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)		
					Ant 1	Ant 2	Ant 1	Ant 2	SUM
11b	1Mbps	1	1	2412	0.04	0.04	13.35	13.40	
11b	1Mbps	1	6	2437	0.04	0.04	13.50	13.50	
11b	1Mbps	1	11	2462	0.04	0.04	13.75	13.61	
11b	1Mbps	1	12	2467	0.04	0.04	13.65	13.47	
11b	1Mbps	1	13	2472	0.04	0.04	12.62	12.41	
11g	6Mbps	2	1	2412	0.00	0.00	13.57	13.52	16.56
11g	6Mbps	2	6	2437	0.00	0.00	13.65	13.78	16.73
11g	6Mbps	2	11	2462	0.00	0.00	13.63	13.52	16.59
11g	6Mbps	2	12	2467	0.00	0.00	10.00	9.74	12.88
11g	6Mbps	2	13	2472	0.00	0.00	4.09	2.52	6.39
HT20	MCS8	2	1	2412	0.06	0.06	13.88	13.80	16.85
HT20	MCS8	2	6	2437	0.06	0.06	13.68	13.80	16.75
HT20	MCS8	2	11	2462	0.06	0.06	13.48	13.61	16.55
HT20	MCS8	2	12	2467	0.06	0.06	8.89	7.73	11.36
HT20	MCS8	2	13	2472	0.06	0.06	2.73	1.21	5.04

Note: Measured power (dBm) has offset with cable loss.

TEST RESULTS DATA
Peak Power Spectral Density

2.4GHz Band												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Peak PSD (dBm/3kHz)			DG (dBi)		Peak PSD Limit (dBm/3kHz)		Pass/Fail
					Ant 1	Ant 2	Worse + 3.01	Ant 1	Ant 2	Ant 1	Ant 2	
11b	1Mbps	1	1	2412	-8.65	-8.68		-1.60	-4.10	8.00	8.00	Pass
11b	1Mbps	1	6	2437	-7.89	-8.55		-1.60	-4.10	8.00	8.00	Pass
11b	1Mbps	1	11	2462	-8.29	-9.16		-1.60	-4.10	8.00	8.00	Pass
11b	1Mbps	1	12	2467	-7.09	-8.61		-1.60	-4.10	8.00	8.00	Pass
11b	1Mbps	1	13	2472	-9.79	-10.07		-1.60	-4.10	8.00	8.00	Pass
11g	6Mbps	2	1	2412	-12.20	-11.62	-8.61	0.25		8.00		Pass
11g	6Mbps	2	6	2437	-11.58	-11.48	-8.47	0.25		8.00		Pass
11g	6Mbps	2	11	2462	-10.99	-11.83	-7.98	0.25		8.00		Pass
11g	6Mbps	2	12	2467	-13.79	-15.40	-10.78	0.25		8.00		Pass
11g	6Mbps	2	13	2472	-21.81	-23.31	-18.80	0.25		8.00		Pass
HT20	MCS8	2	1	2412	-11.15	-11.73	-8.14	0.25		8.00		Pass
HT20	MCS8	2	6	2437	-11.71	-11.25	-8.24	0.25		8.00		Pass
HT20	MCS8	2	11	2462	-11.95	-12.09	-8.94	0.25		8.00		Pass
HT20	MCS8	2	12	2467	-16.90	-18.54	-13.89	0.25		8.00		Pass
HT20	MCS8	2	13	2472	-22.65	-20.83	-17.82	0.25		8.00		Pass

Measured power density (dBm) has offset with cable loss.

Appendix B. Radiated Spurious Emission

Test Engineer :	Elvis Chen, Stan Hsieh and Karl Hou	Temperature :	24~25°C
		Relative Humidity :	53~54%

2.4GHz 2400~2483.5MHz

WIFI 802.11b (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)
802.11b CH 01 2412MHz		2388.12	53.37	-20.63	74	53.99	27.23	5.39	33.24	193	148	P	H
		2390	43.12	-10.88	54	43.72	27.23	5.39	33.22	193	148	A	H
	*	2413.28	104.85	-	-	105.37	27.28	5.42	33.22	193	148	P	H
	*	2412.86	102.16	-	-	102.68	27.28	5.42	33.22	193	148	A	H
													H
													H
		2314.59	52.46	-21.54	74	53.44	27.01	5.27	33.26	109	103	P	V
		2390	41.75	-12.25	54	42.35	27.23	5.39	33.22	109	103	A	V
	*	2413.28	95.19	-	-	95.71	27.28	5.42	33.22	109	103	P	V
	*	2413.19	92.68	-	-	93.2	27.28	5.42	33.22	109	103	A	V
													V
													V
802.11b CH 06 2437MHz		2375.97	53.09	-20.91	74	53.75	27.19	5.39	33.24	198	151	P	H
		2390	42.2	-11.8	54	42.8	27.23	5.39	33.22	198	151	A	H
	*	2438.24	104.84	-	-	105.26	27.37	5.42	33.21	198	151	P	H
	*	2438.08	101.33	-	-	101.75	27.37	5.42	33.21	198	151	A	H
		2484.4	54.89	-19.11	74	55.15	27.46	5.46	33.18	198	151	P	H
		2483.92	42.47	-11.53	54	42.73	27.46	5.46	33.18	198	151	A	H
		2380.83	52.59	-21.41	74	53.25	27.19	5.39	33.24	359	77	P	V
		2389.74	41.74	-12.26	54	42.36	27.23	5.39	33.24	359	77	A	V
	*	2435.82	93.21	-	-	93.68	27.32	5.42	33.21	359	77	P	V
	*	2435.99	90.71	-	-	91.18	27.32	5.42	33.21	359	77	A	V
		2486.6	53.95	-20.05	74	54.21	27.46	5.46	33.18	359	77	P	V
		2484.4	41.99	-12.01	54	42.25	27.46	5.46	33.18	359	77	A	V

802.11b CH 11 2462MHz	*	2460.87	105.18	-	-	105.53	27.41	5.44	33.2	305	37	P	H
	*	2460.87	101.74	-	-	102.09	27.41	5.44	33.2	305	37	A	H
		2484.12	54.8	-19.2	74	55.06	27.46	5.46	33.18	305	37	P	H
		2483.52	42.84	-11.16	54	43.1	27.46	5.46	33.18	305	37	A	H
													H
													H
	*	2460.87	94.58	-	-	94.93	27.41	5.44	33.2	344	51	P	V
	*	2460.87	91.12	-	-	91.47	27.41	5.44	33.2	344	51	A	V
		2493.04	52.63	-21.37	74	52.84	27.5	5.46	33.17	344	51	P	V
		2483.64	42.02	-11.98	54	42.28	27.46	5.46	33.18	344	51	A	V
													V
													V
802.11b CH 12 2467MHz	*	2465.8	103.36	-	-	103.71	27.41	5.44	33.2	249	19	P	H
	*	2465.88	100.91	-	-	101.26	27.41	5.44	33.2	249	19	A	H
		2484.08	58.39	-15.61	74	58.65	27.46	5.46	33.18	249	19	P	H
		2483.52	46.72	-7.28	54	46.98	27.46	5.46	33.18	249	19	A	H
													H
													H
	*	2465.88	93.66	-	-	94.01	27.41	5.44	33.2	344	93	P	V
	*	2465.88	91.18	-	-	91.53	27.41	5.44	33.2	344	93	A	V
		2484.12	53.44	-20.56	74	53.7	27.46	5.46	33.18	344	93	P	V
		2483.52	42.54	-11.46	54	42.8	27.46	5.46	33.18	344	93	A	V
													V
													V

802.11b CH 13 2472MHz	*	2473.31	102.55	-	-	102.83	27.46	5.44	33.18	219	158	P	H
	*	2473.15	100.07	-	-	100.35	27.46	5.44	33.18	219	158	A	H
		2483.8	63.46	-10.54	74	63.72	27.46	5.46	33.18	219	158	P	H
		2485.88	49.02	-4.98	54	49.28	27.46	5.46	33.18	219	158	A	H
													H
													H
	*	2470.89	92.6	-	-	92.88	27.46	5.44	33.18	345	94	P	V
	*	2470.98	90.12	-	-	90.4	27.46	5.44	33.18	345	94	A	V
		2483.68	53.8	-20.2	74	54.06	27.46	5.46	33.18	345	94	P	V
		2485.84	42.93	-11.07	54	43.19	27.46	5.46	33.18	345	94	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	39.85	-34.15	74	61.42	31.46	7.58	60.61	100	0	P	H
													H
													H
													H
		4824	40.17	-33.83	74	61.74	31.46	7.58	60.61	100	0	P	V
													V
													V
													V
802.11b CH 06 2437MHz		4872	38.06	-35.94	74	59.32	31.56	7.7	60.52	100	0	P	H
		7308	43.31	-30.69	74	58.57	36.18	9.49	60.93	100	0	P	H
													H
													H
		4872	38.56	-35.44	74	59.82	31.56	7.7	60.52	100	0	P	V
		7308	42.95	-31.05	74	58.21	36.18	9.49	60.93	100	0	P	V
													V
													V
802.11b CH 11 2462MHz		4926	38.78	-35.22	74	59.61	31.66	7.93	60.42	100	0	P	H
		7386	42.28	-31.72	74	57.57	36.37	9.53	61.19	100	0	P	H
													H
													H
		4926	38.78	-35.22	74	59.61	31.66	7.93	60.42	100	0	P	V
		7386	42.5	-31.5	74	57.79	36.37	9.53	61.19	100	0	P	V
													V
													V

802.11b CH 12 2467MHz		4932	39.08	-34.92	74	59.91	31.66	7.93	60.42	100	0	P	H
		7404	42.82	-31.18	74	58.04	36.41	9.61	61.24	100	0	P	H
													H
													H
		4932	39.33	-34.67	74	60.16	31.66	7.93	60.42	100	0	P	V
		7404	42.74	-31.26	74	57.96	36.41	9.61	61.24	100	0	P	V
													V
													V
802.11b CH 13 2472MHz		4944	39.42	-34.58	74	60.18	31.7	7.93	60.39	100	0	P	H
		7416	43.65	-30.35	74	58.87	36.41	9.61	61.24	100	0	P	H
													H
													H
		4944	39.16	-34.84	74	59.92	31.7	7.93	60.39	100	0	P	V
		7416	45.22	-28.78	74	60.44	36.41	9.61	61.24	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission below 1GHz

2.4GHz WIFI 802.11b (LF)

WIFI	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)
2.4GHz 802.11b LF		32.16	17.09	-22.91	40	30.34	18.92	0.65	32.82	-	-	P	H
		101.01	17.05	-26.45	43.5	38.04	10.5	1.14	32.63	-	-	P	H
		201.99	18.45	-25.05	43.5	39.55	10.15	1.48	32.73	-	-	P	H
		730.5	23.2	-22.8	46	32.04	21.21	2.91	32.96	-	-	P	H
		829.2	23.99	-22.01	46	31.29	22.34	3.07	32.71	-	-	P	H
		941.2	26.48	-19.52	46	30.94	24.11	3.29	31.86	100	114	P	H
													H
													H
													H
													H
													H
													H
		30.27	23.8	-16.2	40	35.97	20	0.65	32.82	-	-	P	V
		39.72	24.73	-15.27	40	42.38	14.5	0.65	32.8	100	84	P	V
		60.24	17.21	-22.79	40	42.93	6.1	0.93	32.75	-	-	P	V
		762.7	22.87	-23.13	46	31.15	21.73	2.91	32.92	-	-	P	V
		878.2	25.61	-20.39	46	32	22.89	3.16	32.44	-	-	P	V
		958.7	26.25	-19.75	46	30.35	24.27	3.29	31.66	-	-	P	V
													V
													V
													V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												

Note symbol

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

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

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

1. Level(dBµV/m) =

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

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

For Peak Limit @ 2390MHz:

1. Level(dBµV/m)

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

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

= 55.45 (dBµV/m)

2. Over Limit(dB)

= Level(dBµV/m) – Limit Line(dBµV/m)

= 55.45(dBµV/m) – 74(dBµV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBµV/m)

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

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

= 43.54 (dBµV/m)

2. Over Limit(dB)

= Level(dBµV/m) – Limit Line(dBµV/m)

= 43.54(dBµV/m) – 54(dBµV/m)

= -10.46(dB)

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

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.	
2		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2389.65	56.21	-17.79	74	56.83	27.23	5.39	33.24	110	122	P	H
		2390	43.86	-10.14	54	44.46	27.23	5.39	33.22	110	122	A	H
	*	2410.94	101.14	-	-	101.66	27.28	5.42	33.22	110	122	P	H
	*	2410.94	98.62	-	-	99.14	27.28	5.42	33.22	110	122	A	H
													H
													H
		2389.2	56.43	-17.57	74	57.05	27.23	5.39	33.24	124	299	P	V
		2390	43.12	-10.88	54	43.72	27.23	5.39	33.22	124	299	A	V
	*	2410.86	98.52	-	-	99.04	27.28	5.42	33.22	124	299	P	V
	*	2410.94	96	-	-	96.52	27.28	5.42	33.22	124	299	A	V
													V
													V
802.11b CH 06 2437MHz		2318.37	53.67	-20.33	74	54.61	27.05	5.27	33.26	252	136	P	H
		2389.74	42.29	-11.71	54	42.91	27.23	5.39	33.24	252	136	A	H
	*	2437	102.28	-	-	102.7	27.37	5.42	33.21	252	136	P	H
	*	2437	99.75	-	-	100.17	27.37	5.42	33.21	252	136	A	H
		2485.44	53.22	-20.78	74	53.48	27.46	5.46	33.18	252	136	P	H
		2484.28	42.67	-11.33	54	42.93	27.46	5.46	33.18	252	136	A	H
		2319	52.88	-21.12	74	53.82	27.05	5.27	33.26	100	336	P	V
		2389.92	42.08	-11.92	54	42.68	27.23	5.39	33.22	100	336	A	V
	*	2435	98.51	-	-	98.98	27.32	5.42	33.21	100	336	P	V
	*	2435	95.83	-	-	96.3	27.32	5.42	33.21	100	336	A	V
		2486.44	53.27	-20.73	74	53.53	27.46	5.46	33.18	100	336	P	V
		2483.76	42.33	-11.67	54	42.59	27.46	5.46	33.18	100	336	A	V

	*	2463.21	101.98	-	-	102.33	27.41	5.44	33.2	104	135	P	H
	*	2463.04	99.48	-	-	99.83	27.41	5.44	33.2	104	135	A	H
		2484.2	55.02	-18.98	74	55.28	27.46	5.46	33.18	104	135	P	H
		2483.52	43.05	-10.95	54	43.31	27.46	5.46	33.18	104	135	A	H
													H
802.11b													H
CH 11	*	2463.21	101.2	-	-	101.55	27.41	5.44	33.2	108	270	P	V
2462MHz	*	2463.21	97.7	-	-	98.05	27.41	5.44	33.2	108	270	A	V
		2484.12	53.33	-20.67	74	53.59	27.46	5.46	33.18	108	270	P	V
		2483.52	42.96	-11.04	54	43.22	27.46	5.46	33.18	108	270	A	V
													V
													V
	*	2466.97	98.58	-	-	98.91	27.41	5.44	33.18	131	134	P	H
	*	2465.97	96.05	-	-	96.4	27.41	5.44	33.2	131	134	A	H
		2483.64	54.28	-19.72	74	54.54	27.46	5.46	33.18	131	134	P	H
		2483.52	44.63	-9.37	54	44.89	27.46	5.46	33.18	131	134	A	H
													H
802.11b													H
CH 12	*	2468.22	99.77	-	-	100.1	27.41	5.44	33.18	110	267	P	V
2467MHz	*	2465.88	97.16	-	-	97.51	27.41	5.44	33.2	110	267	A	V
		2483.6	54.63	-19.37	74	54.89	27.46	5.46	33.18	110	267	P	V
		2483.52	45.23	-8.77	54	45.49	27.46	5.46	33.18	110	267	A	V
													V
													V

802.11b CH 13 2472MHz	*	2470.81	98.26	-	-	98.54	27.46	5.44	33.18	101	141	P	H
	*	2470.89	95.82	-	-	96.1	27.46	5.44	33.18	101	141	A	H
		2484.44	55.54	-18.46	74	55.8	27.46	5.46	33.18	101	141	P	H
		2485.76	47.14	-6.86	54	47.4	27.46	5.46	33.18	101	141	A	H
													H
													H
	*	2470.89	100.39	-	-	100.67	27.46	5.44	33.18	278	83	P	V
	*	2470.89	97.94	-	-	98.22	27.46	5.44	33.18	278	83	A	V
		2483.68	57.59	-16.41	74	57.85	27.46	5.46	33.18	278	83	P	V
		2485.8	49.3	-4.7	54	49.56	27.46	5.46	33.18	278	83	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. 2	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	38.5	-35.5	74	60.07	31.46	7.58	60.61	100	0	P	H
													H
													H
													H
		4824	37.91	-36.09	74	59.48	31.46	7.58	60.61	100	0	P	V
													V
													V
													V
802.11b CH 06 2437MHz		4872	37.49	-36.51	74	58.75	31.56	7.7	60.52	100	0	P	H
		7308	43.5	-30.5	74	58.76	36.18	9.49	60.93	100	0	P	H
													H
													H
		4872	38.27	-35.73	74	59.53	31.56	7.7	60.52	100	0	P	V
		7308	43.84	-30.16	74	59.1	36.18	9.49	60.93	100	0	P	V
													V
													V
802.11b CH 11 2462MHz		4926	39.88	-34.12	74	60.71	31.66	7.93	60.42	100	0	P	H
		7386	42.5	-31.5	74	57.79	36.37	9.53	61.19	100	0	P	H
													H
													H
		4926	38.11	-35.89	74	58.94	31.66	7.93	60.42	100	0	P	V
		7386	42.48	-31.52	74	57.77	36.37	9.53	61.19	100	0	P	V
													V
													V

802.11b CH 12 2467MHz		4932	39.5	-34.5	74	60.33	31.66	7.93	60.42	100	0	P	H
		7404	42.28	-31.72	74	57.5	36.41	9.61	61.24	100	0	P	H
													H
													H
		4932	39.61	-34.39	74	60.44	31.66	7.93	60.42	100	0	P	V
		7404	43.78	-30.22	74	59	36.41	9.61	61.24	100	0	P	V
													V
													V
802.11b CH 13 2472MHz		4944	39.49	-34.51	74	60.25	31.7	7.93	60.39	100	0	P	H
		7416	43.42	-30.58	74	58.64	36.41	9.61	61.24	100	0	P	H
													H
													H
		4944	39.91	-34.09	74	60.67	31.7	7.93	60.39	100	0	P	V
		7416	43.73	-30.27	74	58.95	36.41	9.61	61.24	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission below 1GHz

2.4GHz WIFI 802.11b (LF)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11b LF		30.54	17.04	-22.96	40	29.75	19.46	0.65	32.82	-	-	P	H
		101.01	17.77	-25.73	43.5	38.76	10.5	1.14	32.63	-	-	P	H
		201.72	19.51	-23.99	43.5	40.61	10.15	1.48	32.73	-	-	P	H
		761.3	23.63	-22.37	46	31.92	21.72	2.91	32.92	-	-	P	H
		826.4	24.68	-21.32	46	32.03	22.31	3.07	32.73	-	-	P	H
		897.1	26.42	-19.58	46	32.39	23.16	3.2	32.33	100	59	P	H
													H
													H
													H
													H
													H
													H
		30	23.26	-16.74	40	35.43	20	0.65	32.82	-	-	P	V
		39.72	23.32	-16.68	40	40.97	14.5	0.65	32.8	100	82	P	V
		61.86	15.51	-24.49	40	41.1	6.22	0.93	32.74	-	-	P	V
		754.3	22.54	-23.46	46	30.91	21.65	2.91	32.93	-	-	P	V
		855.8	24.2	-21.8	46	31.02	22.58	3.16	32.56	-	-	P	V
		958	25.9	-20.1	46	30.01	24.27	3.29	31.67	-	-	P	V
													V
													V
													V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												

Note symbol

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

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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		(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

3. Level(dBµV/m) =

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

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

For Peak Limit @ 2390MHz:

3. 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)

4. Over Limit(dB)

= Level(dBµV/m) – Limit Line(dBµV/m)

= 55.45(dBµV/m) – 74(dBµV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

3. 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)

4. 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".

2.4GHz 2400~2483.5MHz

WIFI 802.11g (Band Edge @ 3m)

WIFI Ant. 1+2	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		2388.93	58.2	-15.8	74	58.82	27.23	5.39	33.24	284	29	P	H
		2390	47.08	-6.92	54	47.68	27.23	5.39	33.22	284	29	A	H
	*	2414	107.22	-	-	107.74	27.28	5.42	33.22	284	29	P	H
	*	2414	99.78	-	-	100.3	27.28	5.42	33.22	284	29	A	H
													H
													H
		2390	59.49	-14.51	74	60.09	27.23	5.39	33.22	103	268	P	V
		2390	46.43	-7.57	54	47.03	27.23	5.39	33.22	103	268	A	V
	*	2410	104.39	-	-	104.91	27.28	5.42	33.22	103	268	P	V
	*	2410	96.07	-	-	96.59	27.28	5.42	33.22	103	268	A	V
													V
													V
802.11g CH 06 2437MHz		2388.75	53.27	-20.73	74	53.89	27.23	5.39	33.24	231	16	P	H
		2390	44.27	-9.73	54	44.87	27.23	5.39	33.22	231	16	A	H
	*	2435	107.13	-	-	107.6	27.32	5.42	33.21	231	16	P	H
	*	2435	99.72	-	-	100.19	27.32	5.42	33.21	231	16	A	H
		2483.92	54.11	-19.89	74	54.37	27.46	5.46	33.18	231	16	P	H
		2483.52	43.86	-10.14	54	44.12	27.46	5.46	33.18	231	16	A	H
		2384.34	52.63	-21.37	74	53.29	27.19	5.39	33.24	360	108	P	V
		2389.74	42.37	-11.63	54	42.99	27.23	5.39	33.24	360	108	A	V
	*	2435	104.16	-	-	104.63	27.32	5.42	33.21	360	108	P	V
	*	2439	96.73	-	-	97.15	27.37	5.42	33.21	360	108	A	V
		2486.08	52.73	-21.27	74	52.99	27.46	5.46	33.18	360	108	P	V
		2483.56	42.43	-11.57	54	42.69	27.46	5.46	33.18	360	108	A	V

	*	2460	108.03	-	-	108.38	27.41	5.44	33.2	106	37	P	H
	*	2460	100.56	-	-	100.91	27.41	5.44	33.2	106	37	A	H
		2483.72	59.16	-14.84	74	59.42	27.46	5.46	33.18	106	37	P	H
		2483.52	47.53	-6.47	54	47.79	27.46	5.46	33.18	106	37	A	H
													H
802.11g													H
CH 11	*	2460	104.34	-	-	104.69	27.41	5.44	33.2	321	63	P	V
2462MHz	*	2460	96.76	-	-	97.11	27.41	5.44	33.2	321	63	A	V
		2483.52	57.19	-16.81	74	57.45	27.46	5.46	33.18	321	63	P	V
		2483.52	45.88	-8.12	54	46.14	27.46	5.46	33.18	321	63	A	V
													V
													V
	*	2465	104.11	-	-	104.46	27.41	5.44	33.2	146	34	P	H
	*	2465	96.75	-	-	97.1	27.41	5.44	33.2	146	34	A	H
		2485.96	54.94	-19.06	74	55.2	27.46	5.46	33.18	146	34	P	H
		2483.52	44.26	-9.74	54	44.52	27.46	5.46	33.18	146	34	A	H
													H
802.11g													H
CH 12	*	2462	101.2	-	-	101.55	27.41	5.44	33.2	311	63	P	V
2467MHz	*	2465	93.49	-	-	93.84	27.41	5.44	33.2	311	63	A	V
		2465	56.72	-17.28	74	57.07	27.41	5.44	33.2	311	63	P	V
		2483.52	45.32	-8.68	54	45.58	27.46	5.46	33.18	311	63	A	V
													V
													V

802.11g CH 13 2472MHz	*	2474	95.7	-	-	95.98	27.46	5.44	33.18	204	147	P	H
	*	2474	87.92	-	-	88.2	27.46	5.44	33.18	204	147	A	H
		2483.52	63.07	-10.93	74	63.33	27.46	5.46	33.18	204	147	P	H
		2483.52	50.97	-3.03	54	51.23	27.46	5.46	33.18	204	147	A	H
													H
													H
	*	2470	92.6	-	-	92.93	27.41	5.44	33.18	193	84	P	V
	*	2470	84.91	-	-	85.24	27.41	5.44	33.18	193	84	A	V
		2483.6	57.83	-16.17	74	58.09	27.46	5.46	33.18	193	84	P	V
		2483.52	47.61	-6.39	54	47.87	27.46	5.46	33.18	193	84	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+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		4824	40.89	-33.11	74	62.46	31.46	7.58	60.61	100	0	P	H
													H
													H
													H
		4824	40.15	-33.85	74	61.72	31.46	7.58	60.61	100	0	P	V
													V
													V
													V
802.11g CH 06 2437MHz		4874	37.76	-36.24	74	59.02	31.56	7.7	60.52	100	0	P	H
		7311	43.37	-30.63	74	58.63	36.18	9.49	60.93	100	0	P	H
													H
													H
		4874	38.61	-35.39	74	59.87	31.56	7.7	60.52	100	0	P	V
		7311	43.06	-30.94	74	58.32	36.18	9.49	60.93	100	0	P	V
													V
													V
802.11g CH 11 2462MHz		4924	40.08	-33.92	74	60.91	31.66	7.93	60.42	100	0	P	H
		7386	42.33	-31.67	74	57.62	36.37	9.53	61.19	100	0	P	H
													H
													H
		4924	38.86	-35.14	74	59.69	31.66	7.93	60.42	100	0	P	V
		7386	42.28	-31.72	74	57.57	36.37	9.53	61.19	100	0	P	V
													V
													V

802.11g CH 12 2467MHz		4934	38.78	-35.22	74	59.61	31.66	7.93	60.42	100	0	P	H
		7401	42.52	-31.48	74	57.74	36.41	9.61	61.24	100	0	P	H
													H
													H
		4934	40.65	-33.35	74	61.48	31.66	7.93	60.42	100	0	P	V
		7401	42.16	-31.84	74	57.38	36.41	9.61	61.24	100	0	P	V
													V
													V
802.11g CH 13 2472MHz		4944	40.1	-33.9	74	60.86	31.7	7.93	60.39	100	0	P	H
		7416	42.53	-31.47	74	57.75	36.41	9.61	61.24	100	0	P	H
													H
													H
		4944	39.09	-34.91	74	59.85	31.7	7.93	60.39	100	0	P	V
		7416	42.35	-31.65	74	57.57	36.41	9.61	61.24	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 HT20 (Band Edge @ 3m)

WIFI Ant. 1+2	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)
		2389.2	63.9	-10.1	74	64.52	27.23	5.39	33.24	256	29	P	H
		2390	52.17	-1.83	54	52.77	27.23	5.39	33.22	256	29	A	H
	*	2414	105.65	-	-	106.17	27.28	5.42	33.22	256	29	P	H
	*	2414	97.27	-	-	97.79	27.28	5.42	33.22	256	29	A	H
802.11n													H
HT20													H
CH 01		2389.65	60.47	-13.53	74	61.09	27.23	5.39	33.24	100	88	P	V
2412MHz		2390	48.51	-5.49	54	49.11	27.23	5.39	33.22	100	88	A	V
	*	2410.35	100.45	-	-	100.97	27.28	5.42	33.22	100	88	P	V
	*	2414	91.33	-	-	91.85	27.28	5.42	33.22	100	88	A	V
													V
													V
		2389.92	54.47	-19.53	74	55.07	27.23	5.39	33.22	100	38	P	H
		2390	44.27	-9.73	54	44.87	27.23	5.39	33.22	100	38	A	H
	*	2435.39	105.37	-	-	105.84	27.32	5.42	33.21	100	38	P	H
	*	2435.31	97.02	-	-	97.49	27.32	5.42	33.21	100	38	A	H
802.11n		2484.08	54.25	-19.75	74	54.51	27.46	5.46	33.18	100	38	P	H
HT20		2483.52	43.93	-10.07	54	44.19	27.46	5.46	33.18	100	38	A	H
CH 06		2331.69	52.06	-21.94	74	52.94	27.05	5.33	33.26	100	283	P	V
2437MHz		2388.84	42.01	-11.99	54	42.63	27.23	5.39	33.24	100	283	A	V
	*	2439.26	99.98	-	-	100.4	27.37	5.42	33.21	100	283	P	V
	*	2439.42	91.23	-	-	91.65	27.37	5.42	33.21	100	283	A	V
		2483.52	52.87	-21.13	74	53.13	27.46	5.46	33.18	100	283	P	V
		2483.52	42.43	-11.57	54	42.69	27.46	5.46	33.18	100	283	A	V

	*	2460	105.54	-	-	105.89	27.41	5.44	33.2	225	24	P	H
	*	2460	97.86	-	-	98.21	27.41	5.44	33.2	225	24	A	H
		2484.16	65.36	-8.64	74	65.62	27.46	5.46	33.18	225	24	P	H
		2483.52	52.02	-1.98	54	52.28	27.46	5.46	33.18	225	24	A	H
802.11n													H
HT20													H
CH 11	*	2460	103.57	-	-	103.92	27.41	5.44	33.2	222	59	P	V
2462MHz	*	2460	93.83	-	-	94.18	27.41	5.44	33.2	222	59	A	V
		2483.68	64.75	-9.25	74	65.01	27.46	5.46	33.18	222	59	P	V
		2483.52	51.34	-2.66	54	51.6	27.46	5.46	33.18	222	59	A	V
													V
													V
	*	2465.62	101.6	-	-	101.95	27.41	5.44	33.2	283	20	P	H
	*	2465.37	93.48	-	-	93.83	27.41	5.44	33.2	283	20	A	H
		2483.52	63.39	-10.61	74	63.65	27.46	5.46	33.18	283	20	P	H
		2483.52	51.45	-2.55	54	51.71	27.46	5.46	33.18	283	20	A	H
802.11n													H
HT20													H
CH 12	*	2467.97	98.73	-	-	99.06	27.41	5.44	33.18	313	100	P	V
2467MHz	*	2465.29	89.35	-	-	89.7	27.41	5.44	33.2	313	100	A	V
		2483.56	59.98	-14.02	74	60.24	27.46	5.46	33.18	313	100	P	V
		2483.52	48.85	-5.15	54	49.11	27.46	5.46	33.18	313	100	A	V
													V
													V

	*	2474	94.17	-	-	94.45	27.46	5.44	33.18	217	29	P	H
	*	2474	86.3	-	-	86.58	27.46	5.44	33.18	217	29	A	H
		2483.52	62.09	-11.91	74	62.35	27.46	5.46	33.18	217	29	P	H
		2483.52	49.51	-4.49	54	49.77	27.46	5.46	33.18	217	29	A	H
802.11n													H
HT20													H
CH 13	*	2470	91.07	-	-	91.4	27.41	5.44	33.18	193	119	P	V
2472MHz	*	2470	81.76	-	-	82.09	27.41	5.44	33.18	193	119	A	V
		2483.6	57.15	-16.85	74	57.41	27.46	5.46	33.18	193	119	P	V
		2483.52	46.19	-7.81	54	46.45	27.46	5.46	33.18	193	119	A	V
													V
													V

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1+2	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	38.32	-35.68	74	59.89	31.46	7.58	60.61	100	0	P	H
													H
802.11n													H
HT20													H
CH 01		4824	38.48	-35.52	74	60.05	31.46	7.58	60.61	100	0	P	V
2412MHz													V
													V
													V
		4874	38.22	-35.78	74	59.48	31.56	7.7	60.52	100	0	P	H
		7311	42.31	-31.69	74	57.57	36.18	9.49	60.93	100	0	P	H
802.11n													H
HT20													H
CH 06		4874	38.11	-35.89	74	59.37	31.56	7.7	60.52	100	0	P	V
2437MHz		7311	42.83	-31.17	74	58.09	36.18	9.49	60.93	100	0	P	V
													V
													V
		4924	38.91	-35.09	74	59.74	31.66	7.93	60.42	100	0	P	H
		7386	42.03	-31.97	74	57.32	36.37	9.53	61.19	100	0	P	H
802.11n													H
HT20													H
CH 11		4924	38.66	-35.34	74	59.49	31.66	7.93	60.42	100	0	P	V
2462MHz		7386	41.62	-32.38	74	56.91	36.37	9.53	61.19	100	0	P	V
													V
													V

		4934	38.54	-35.46	74	59.37	31.66	7.93	60.42	100	0	P	H
		7401	42.81	-31.19	74	58.03	36.41	9.61	61.24	100	0	P	H
802.11n													H
HT20													H
CH 12		4934	38.9	-35.1	74	59.73	31.66	7.93	60.42	100	0	P	V
2467MHz		7401	41.83	-32.17	74	57.05	36.41	9.61	61.24	100	0	P	V
													V
													V
		4944	39.74	-34.26	74	60.5	31.7	7.93	60.39	100	0	P	H
		7416	42.29	-31.71	74	57.51	36.41	9.61	61.24	100	0	P	H
802.11n													H
HT20													H
CH 13		4944	38.67	-35.33	74	59.43	31.7	7.93	60.39	100	0	P	V
2472MHz		7416	42.32	-31.68	74	57.54	36.41	9.61	61.24	100	0	P	V
													V
													V

Remark

1. No other spurious found.
2. All results are PASS against Peak and Average limit line.

Emission below 1GHz

2.4GHz WIFI 802.11g (LF)

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+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11g LF		30.81	17.53	-22.47	40	30.24	19.46	0.65	32.82			P	H
		101.01	18.1	-25.4	43.5	39.09	10.5	1.14	32.63			P	H
		201.72	17.83	-25.67	43.5	38.93	10.15	1.48	32.73			P	H
		646.5	20.96	-25.04	46	31.14	20.16	2.67	33.01			P	H
		758.5	23.48	-22.52	46	31.81	21.69	2.91	32.93			P	H
		950.3	26.39	-19.61	46	30.56	24.3	3.29	31.76	100	73	P	H
													H
													H
													H
													H
													H
													H
		30.27	23.09	-16.91	40	35.26	20	0.65	32.82	100	44	P	V
		39.45	22.93	-17.07	40	40.58	14.5	0.65	32.8			P	V
		60.24	19.3	-20.7	40	45.02	6.1	0.93	32.75			P	V
		722.8	22.17	-23.83	46	31.26	21.05	2.82	32.96			P	V
		819.4	23.71	-22.29	46	31.15	22.26	3.07	32.77			P	V
		915.3	26.19	-19.81	46	31.59	23.55	3.2	32.15			P	V
													V
													V
													V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												

Emission below 1GHz

2.4GHz WIFI 802.11n HT20 (LF)

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+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		31.62	17.06	-22.94	40	30.31	18.92	0.65	32.82			P	H
		101.01	17.81	-25.69	43.5	38.8	10.5	1.14	32.63			P	H
		202.26	17.62	-25.88	43.5	38.69	10.18	1.48	32.73			P	H
		706.7	22.05	-23.95	46	31.47	20.74	2.82	32.98			P	H
		826.4	23.89	-22.11	46	31.24	22.31	3.07	32.73			P	H
		948.2	25.96	-20.04	46	30.17	24.28	3.29	31.78	100	19	P	H
													H
													H
													H
													H
2.4GHz													H
802.11n													H
HT20		30.27	22.8	-17.2	40	34.97	20	0.65	32.82			P	V
LF		39.99	23.8	-16.2	40	41.45	14.5	0.65	32.8	100	131	P	V
		65.1	17.91	-22.09	40	43.32	6.4	0.93	32.74			P	V
		799.1	23.65	-22.35	46	31.47	22.09	2.97	32.88			P	V
		880.3	25.17	-20.83	46	31.5	22.93	3.16	32.42			P	V
		952.4	26.09	-19.91	46	30.25	24.29	3.29	31.74			P	V
													V
													V
													V
													V
													V
													V

Remark

1. No other spurious found.
2. All results are PASS against limit line.

Note symbol

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

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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(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

5. Level(dBµV/m) =

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

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

For Peak Limit @ 2390MHz:

5. 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)

6. Over Limit(dB)

= Level(dBµV/m) – Limit Line(dBµV/m)

= 55.45(dBµV/m) – 74(dBµV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

5. 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)

6. Over Limit(dB)

= Level(dBµV/m) – Limit Line(dBµV/m)

= 43.54(dBµV/m) – 54(dBµV/m)

= -10.46(dB)

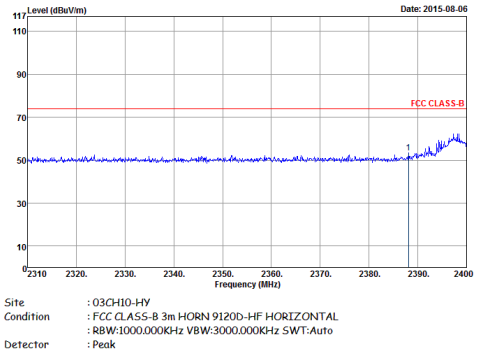
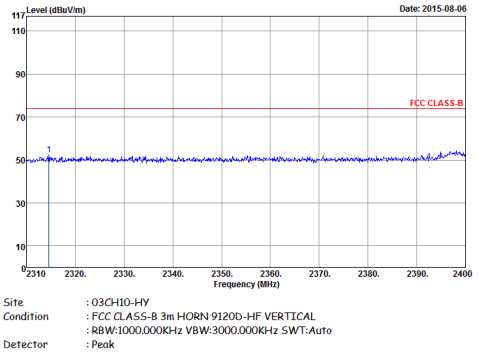
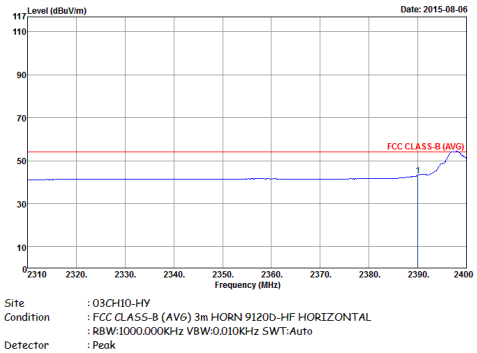
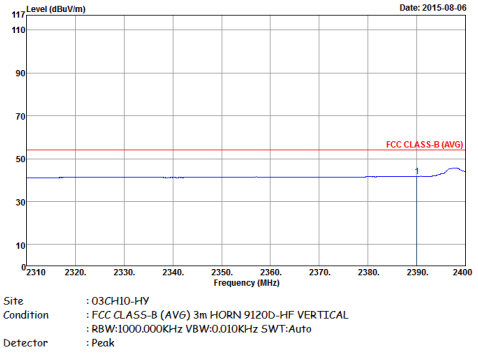
Both peak and average measured complies with the limit line, so test result is "PASS".

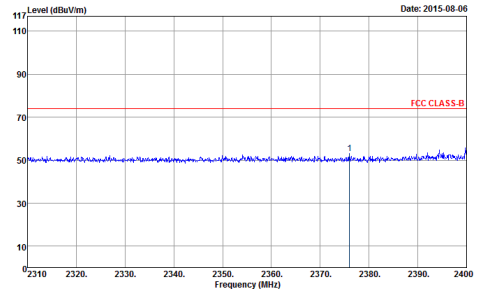
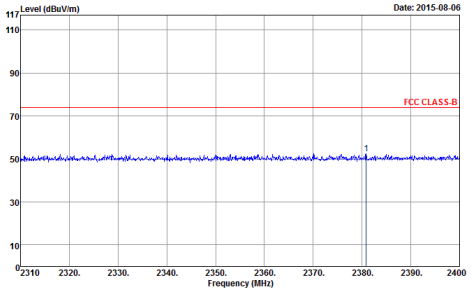
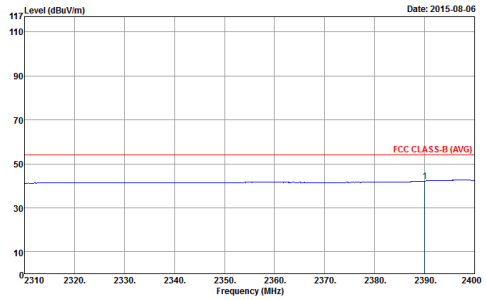
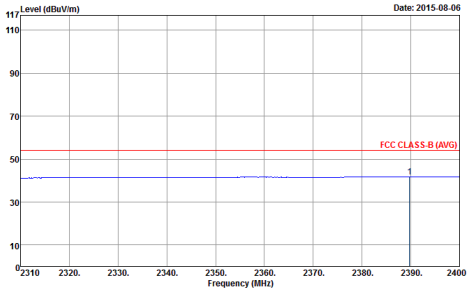
Appendix C. Radiated Spurious Emission Plots

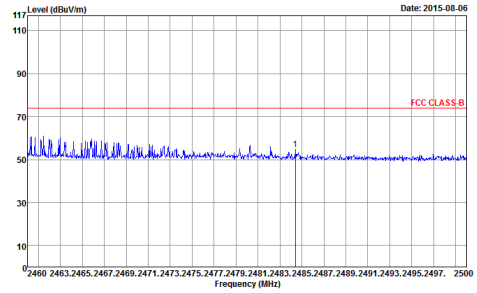
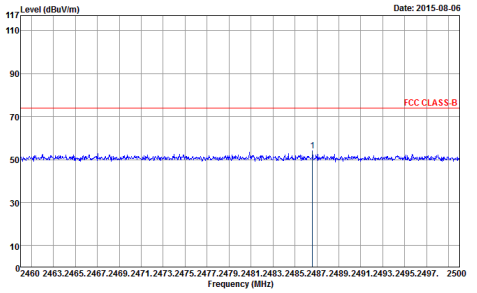
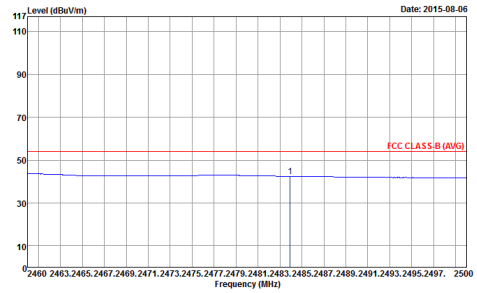
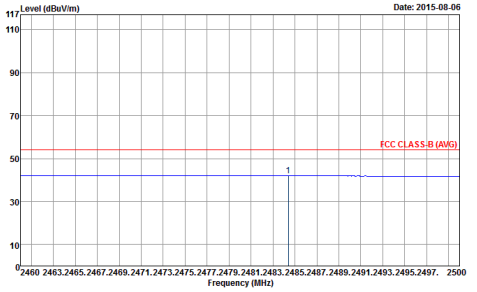
Test Engineer :	Elvis Chen, Stan Hsieh and Karl Hou	Temperature :	24~25°C
		Relative Humidity :	53~54%

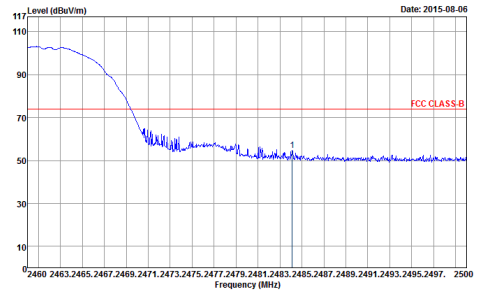
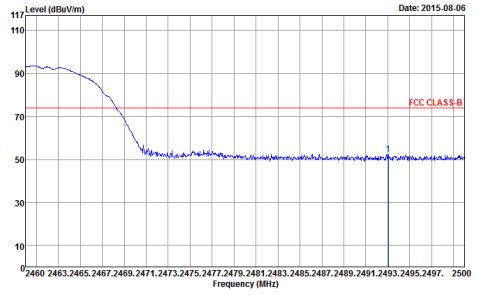
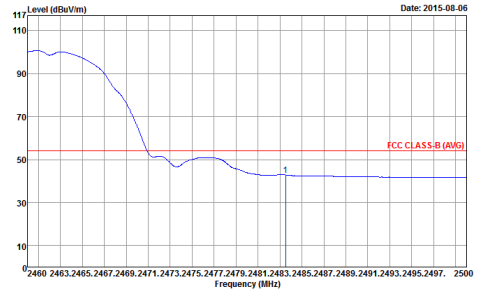
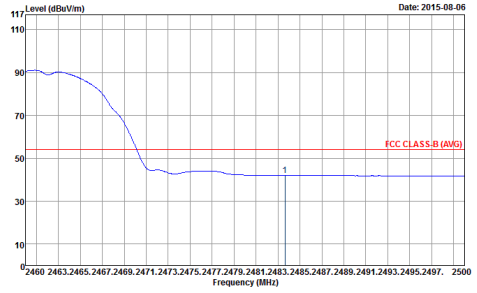
2.4GHz 2400~2483.5MHz

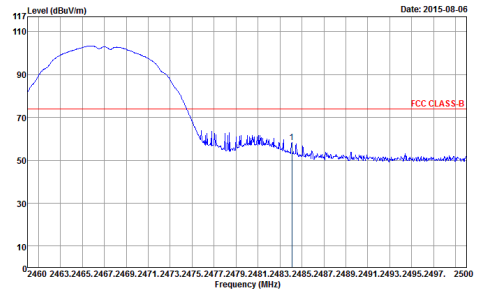
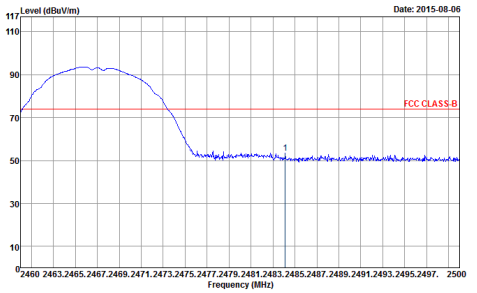
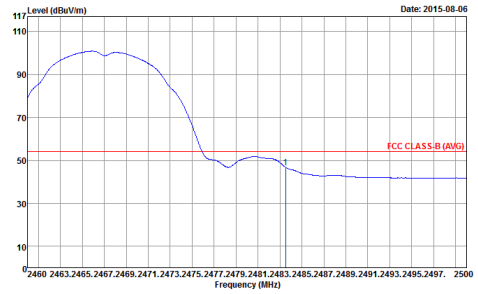
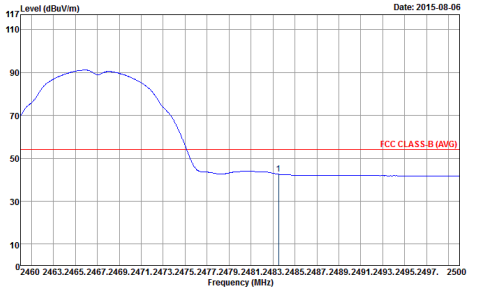
WIFI 802.11b (Band Edge @ 3m)

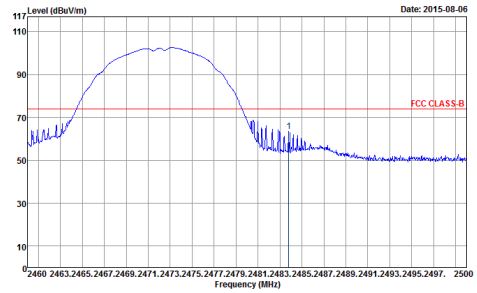
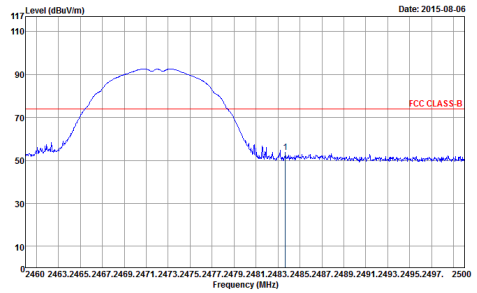
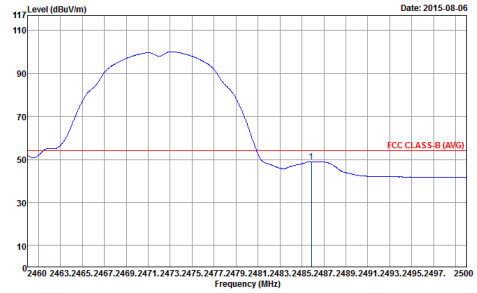
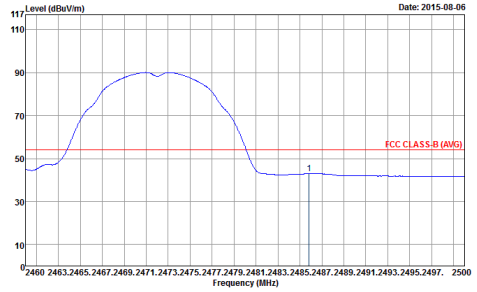
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1	Horizontal	Vertical
Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz – Low channel location	
1	Horizontal	Vertical
Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - High channel location	
1	Horizontal	Vertical
Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak

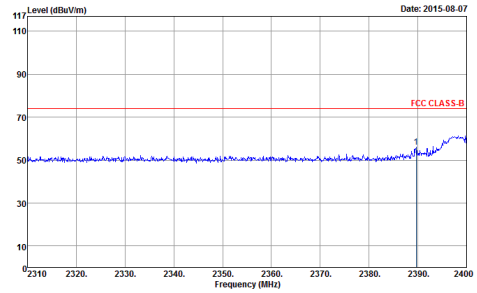
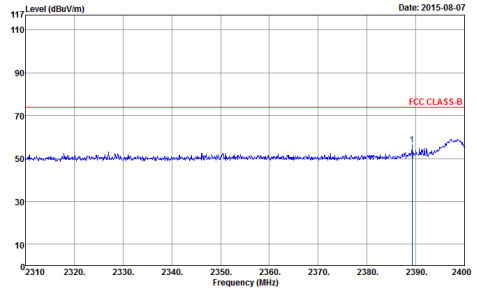
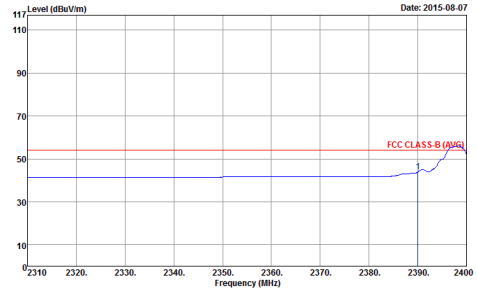
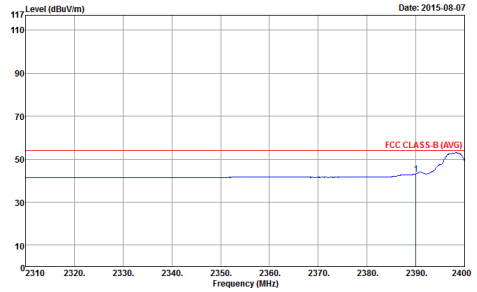
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1	Horizontal	Vertical
Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak

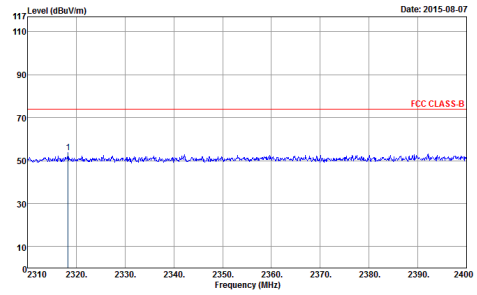
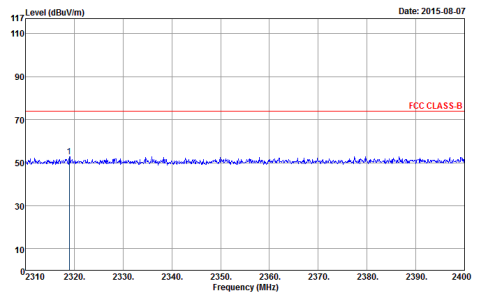
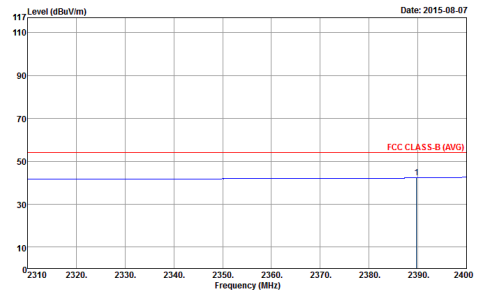
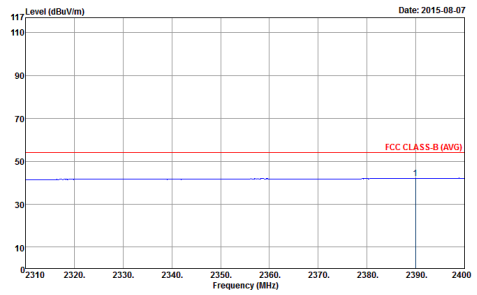
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH12 2467MHz	
1	Horizontal	Vertical
Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B (AV6) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B (AV6) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak

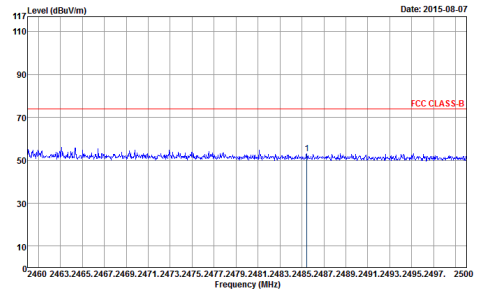
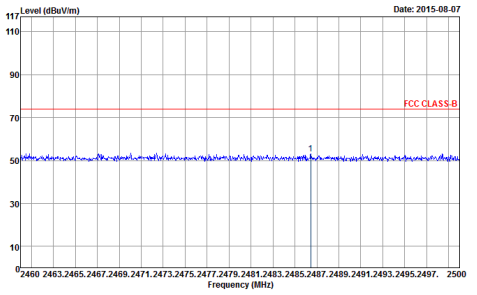
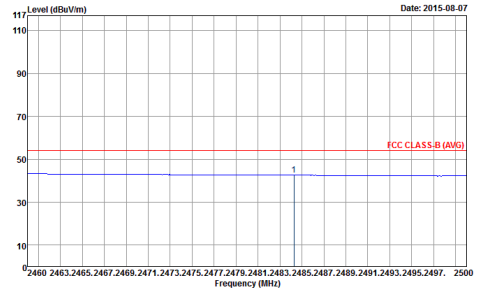
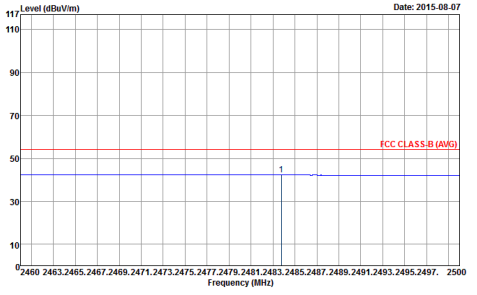
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH13 2472MHz	
1	Horizontal	Vertical
Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B (AV6) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B (AV6) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak

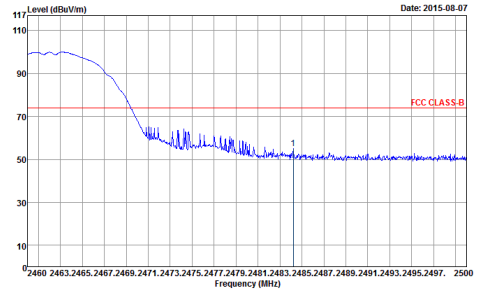
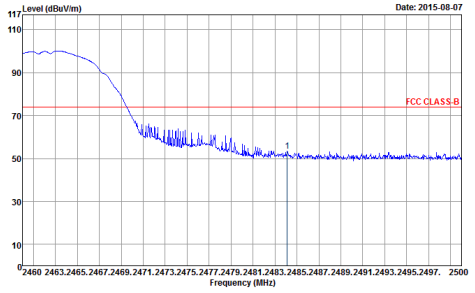
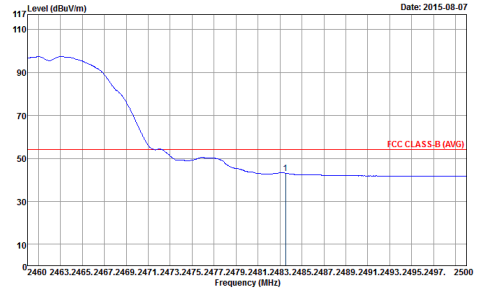
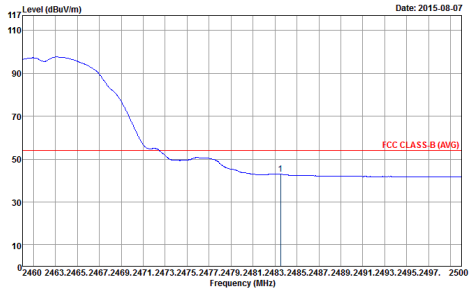
2.4GHz 2400~2483.5MHz

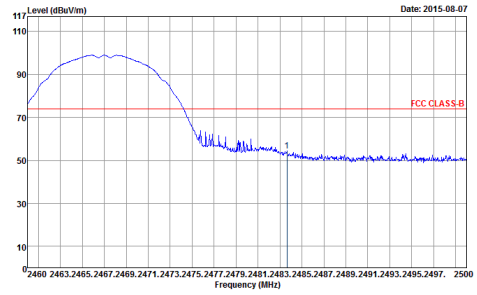
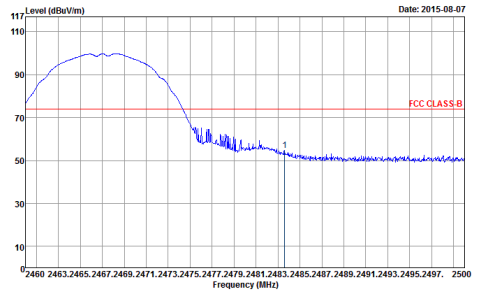
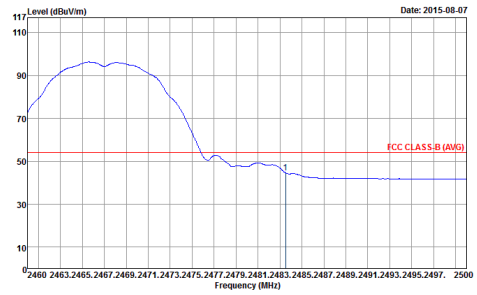
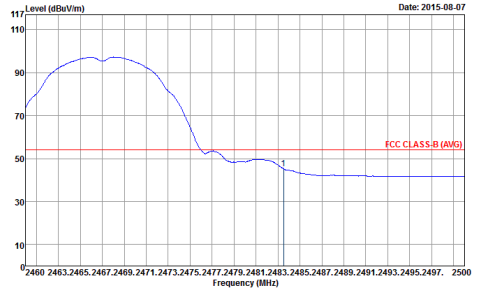
WIFI 802.11b (Band Edge @ 3m)

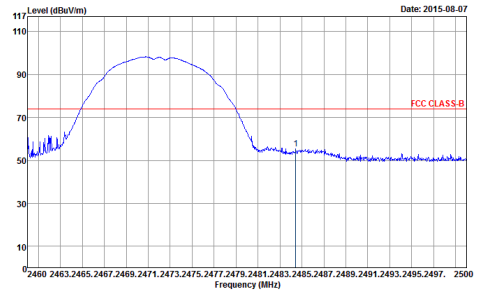
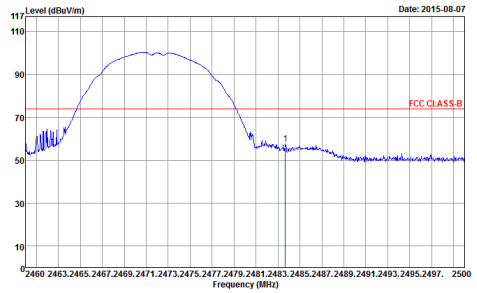
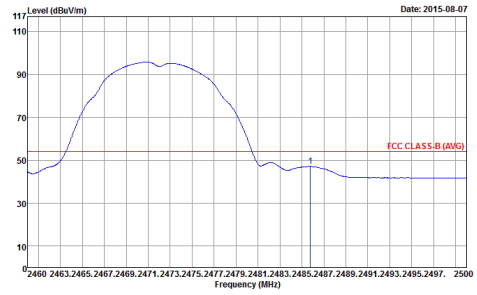
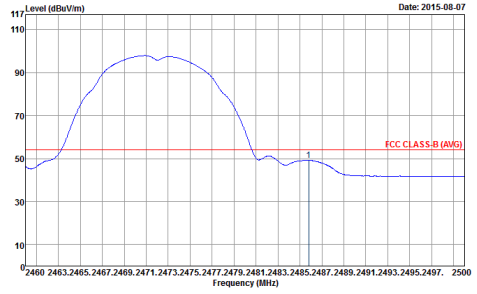
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
2	Horizontal	Vertical
Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B (AV6) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B (AV6) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - Low channel location	
2	Horizontal	Vertical
Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz -High channel location	
2	Horizontal	Vertical
Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak

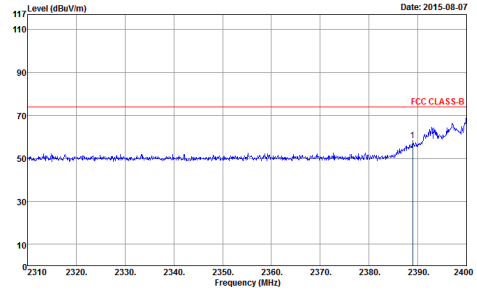
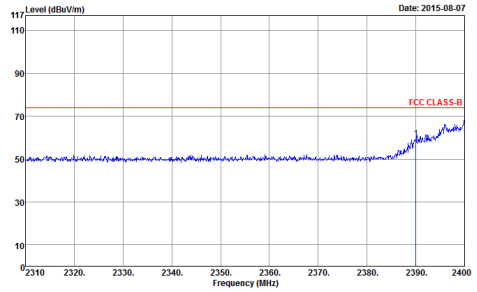
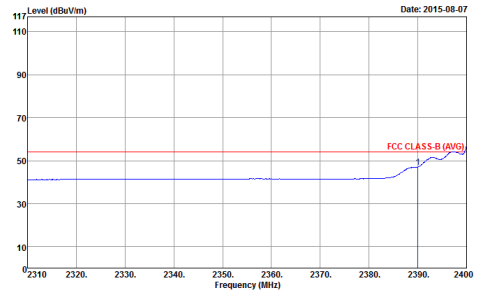
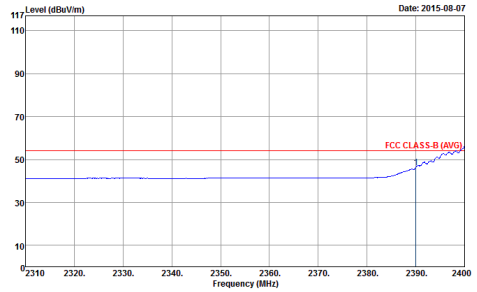
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
2	Horizontal	Vertical
Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B (AV6) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B (AV6) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak

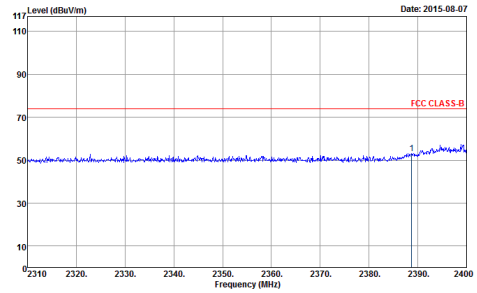
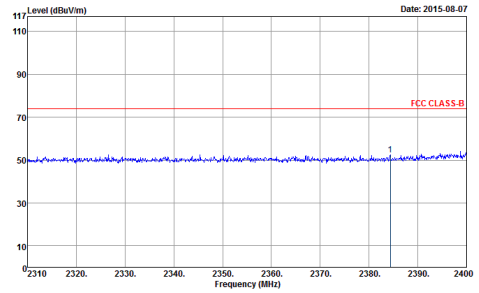
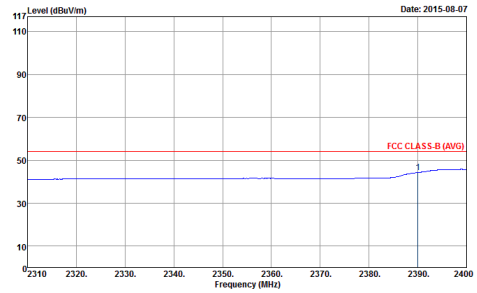
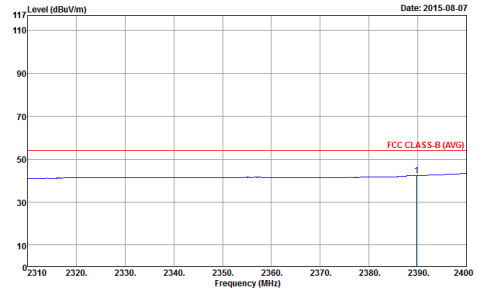
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH12 2467MHz	
2	Horizontal	Vertical
Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B (AV6) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B (AV6) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak

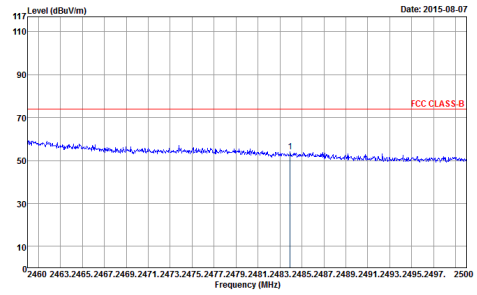
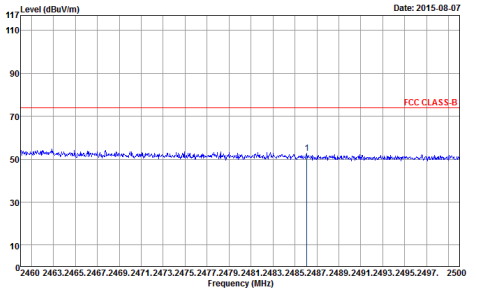
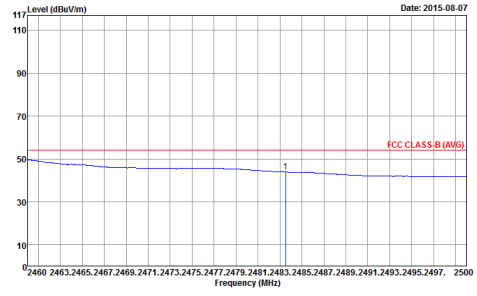
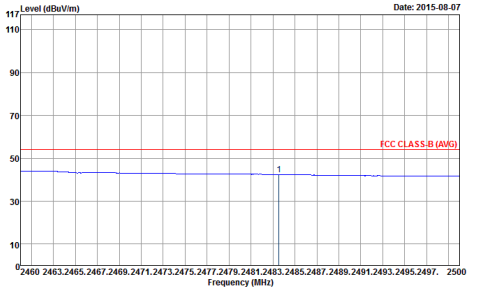
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH13 2472MHz	
2	Horizontal	Vertical
Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak

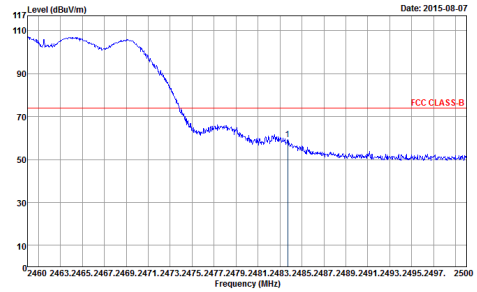
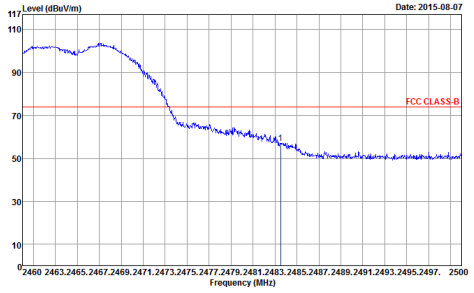
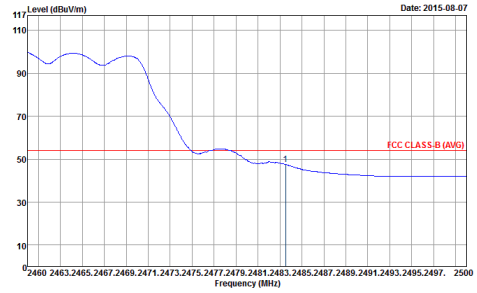
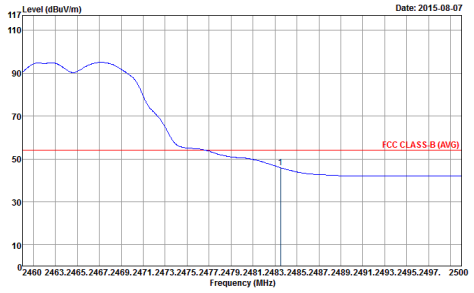
2.4GHz 2400~2483.5MHz

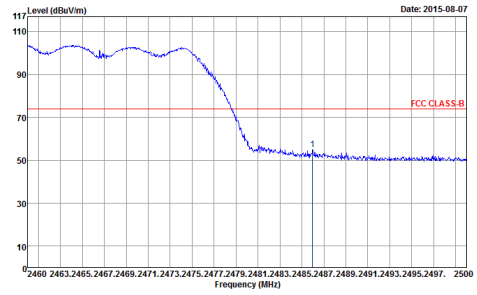
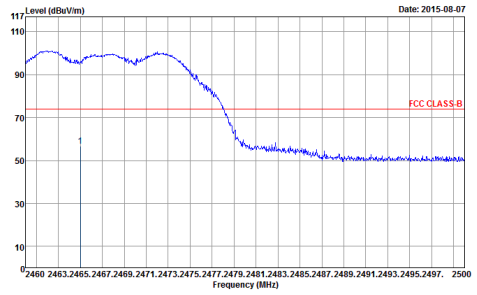
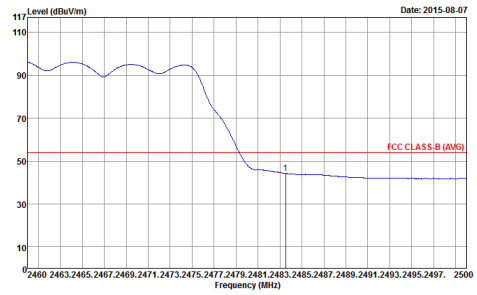
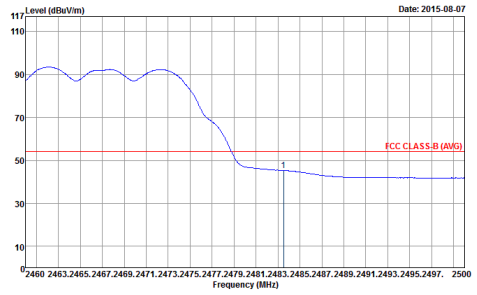
WIFI 802.11g (Band Edge @ 3m)

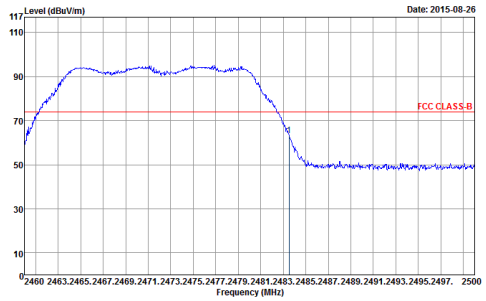
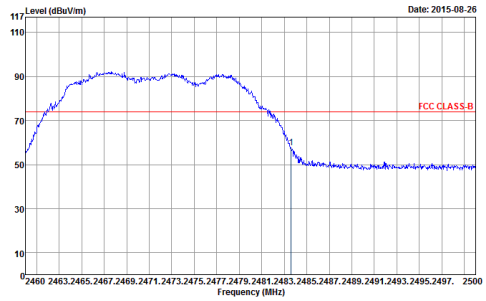
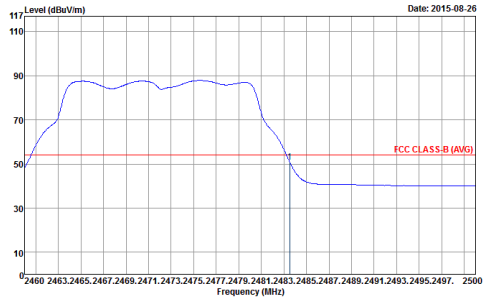
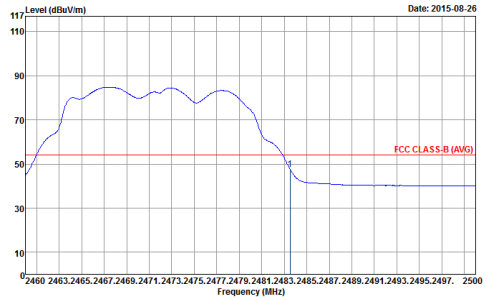
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
1+2	Horizontal	Vertical
Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - Low channel location	
1+2	Horizontal	Vertical
Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B (AV6) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B (AV6) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - High channel location	
1+2	Horizontal	Vertical
Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak

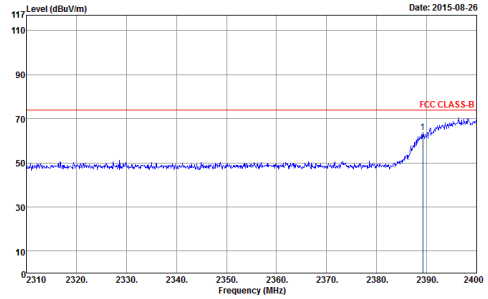
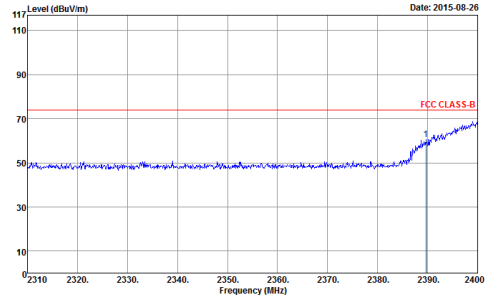
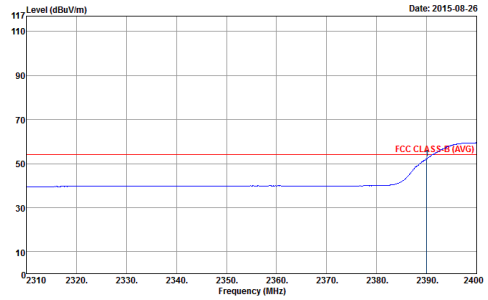
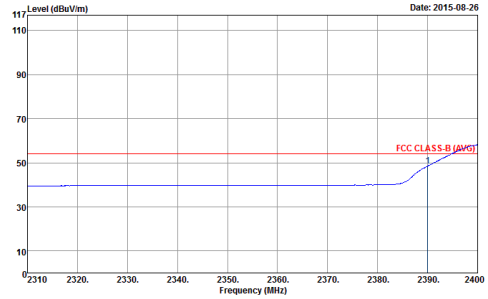
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1+2	Horizontal	Vertical
Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B (AV6) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B (AV6) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak

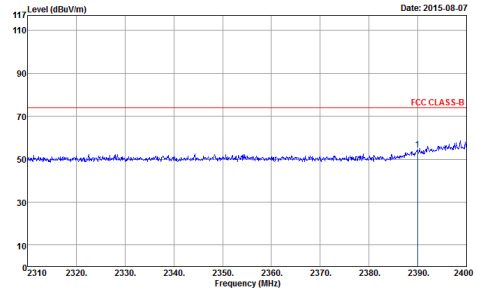
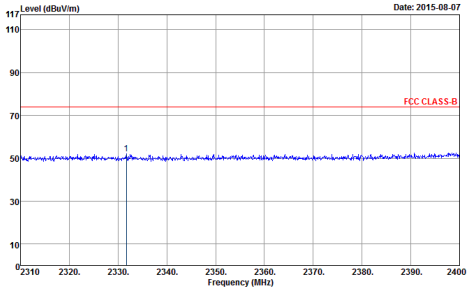
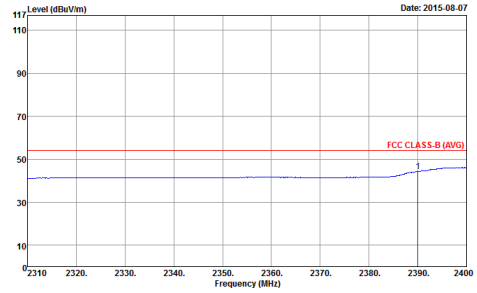
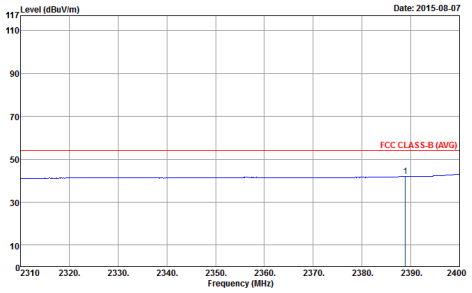
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH12 2467MHz	
1+2	Horizontal	Vertical
Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak

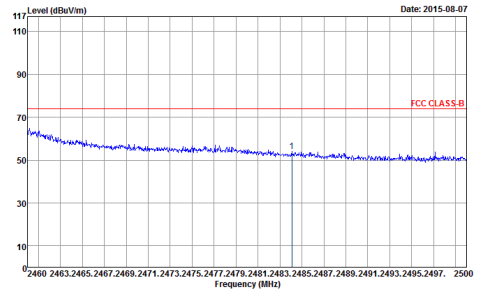
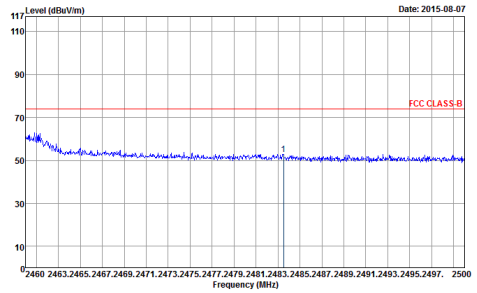
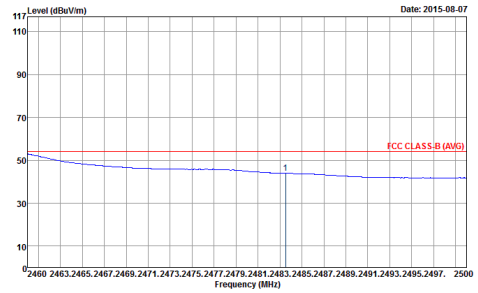
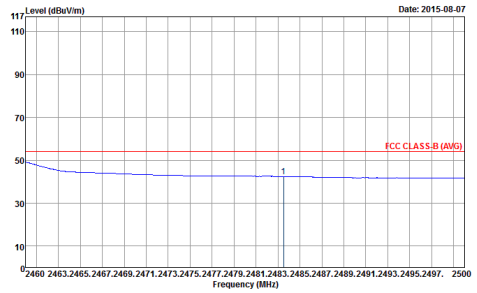
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH013 2472MHz	
1+2	Horizontal	Vertical
Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak : RBW(6dB)	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak : RBW(6dB)
Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B (AV6) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak : RBW(6dB)	 Site : 03CH10-HY Condition : FCC CLASS-B (AV6) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak : RBW(6dB)

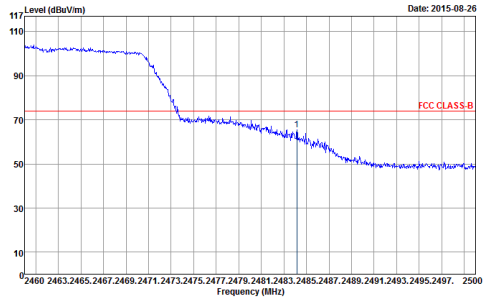
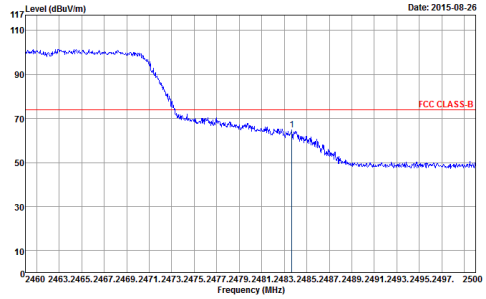
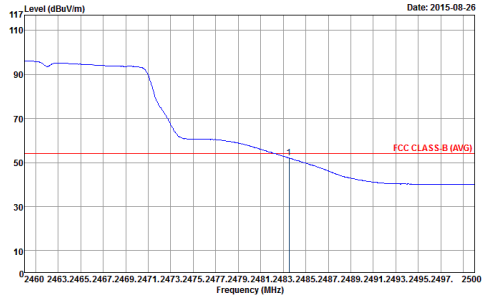
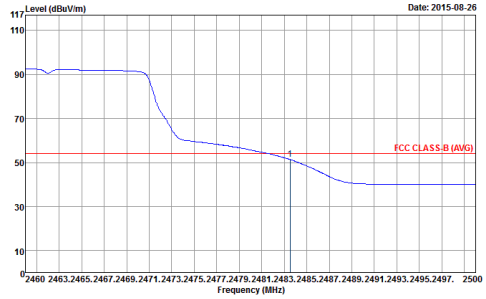
2.4GHz 2400~2483.5MHz

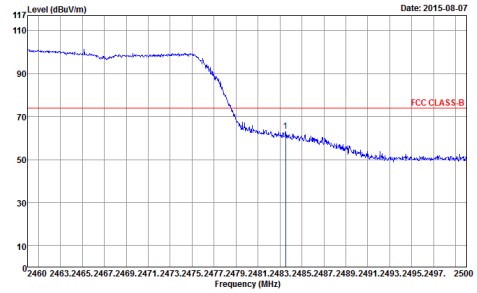
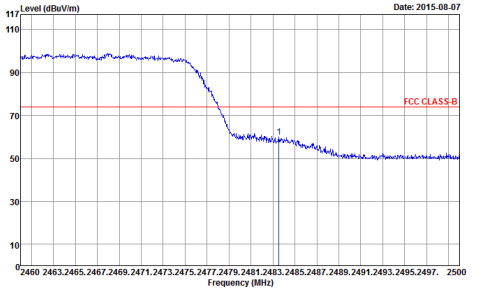
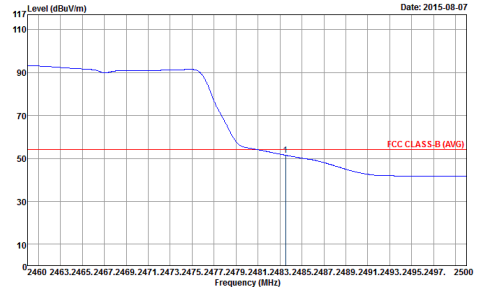
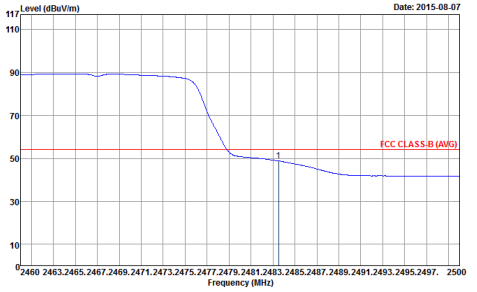
WIFI 802.11n HT20 (Band Edge @ 3m)

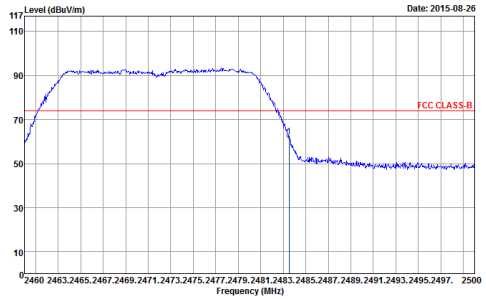
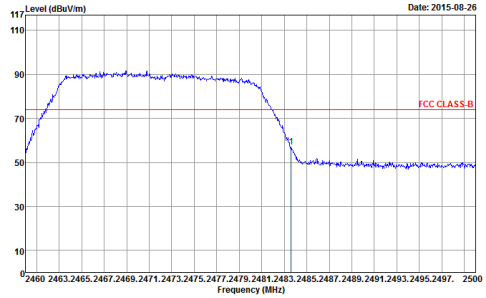
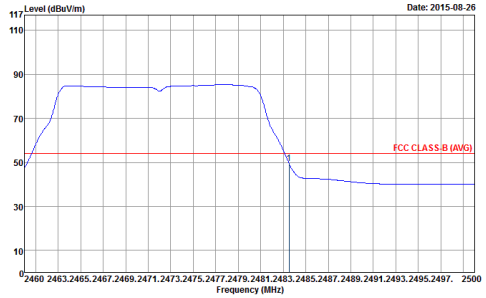
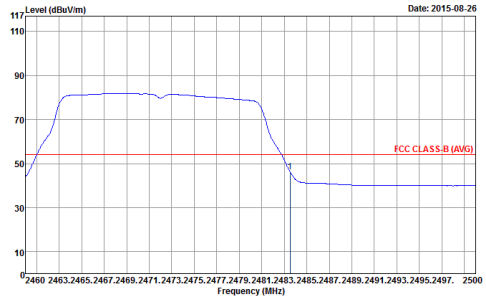
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1+2	Horizontal	Vertical
Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak : RBW(6dB)	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak : RBW(6dB)
Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak : RBW(6dB)	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak : RBW(6dB)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - Low channel location	
1+2	Horizontal	Vertical
Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - High channel location	
1+2	Horizontal	Vertical
Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak

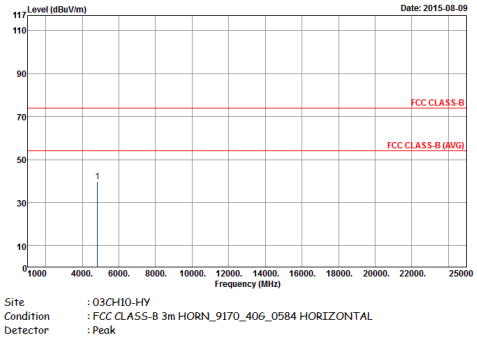
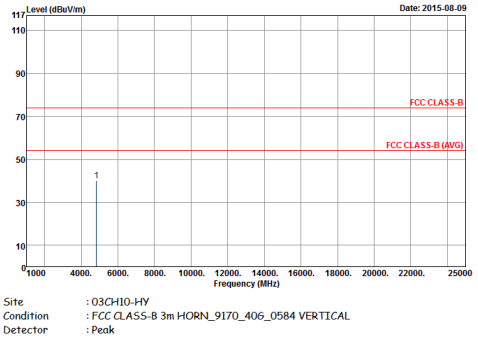
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1+2	Horizontal	Vertical
Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak : RBW(6dB)	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak : RBW(6dB)
Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B (AV6) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak : RBW(6dB)	 Site : 03CH10-HY Condition : FCC CLASS-B (AV6) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak : RBW(6dB)

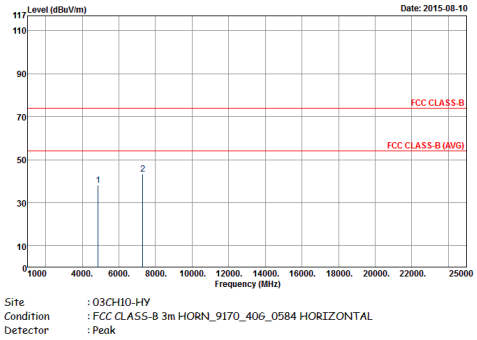
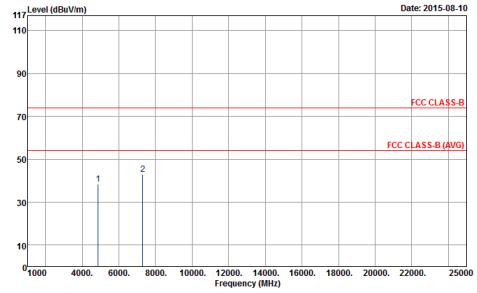
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH12 2467MHz	
1+2	Horizontal	Vertical
Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak
Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B (AV6) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B (AV6) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak

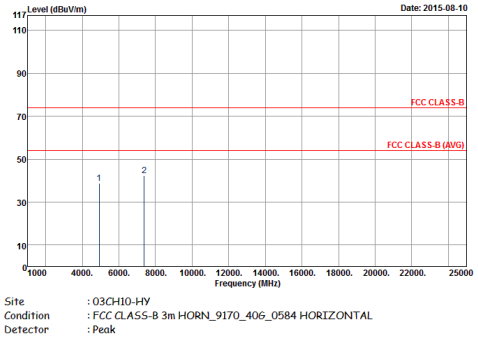
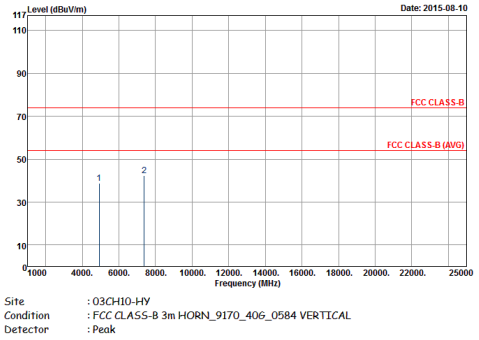
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH13 2472MHz	
1+2	Horizontal	Vertical
Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak : RBW(6dB)	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak : RBW(6dB)
Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B (AV6) 3m HORN 9120D-HF HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak : RBW(6dB)	 Site : 03CH10-HY Condition : FCC CLASS-B (AV6) 3m HORN 9120D-HF VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak : RBW(6dB)

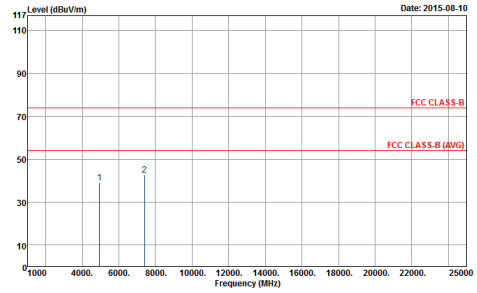
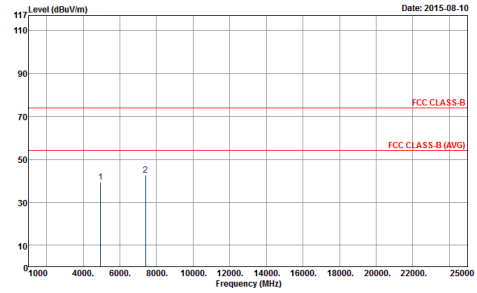
2.4GHz 2400~2483.5MHz

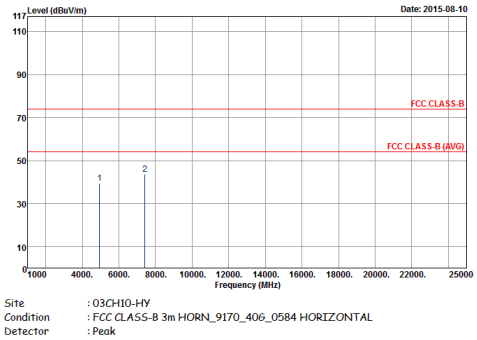
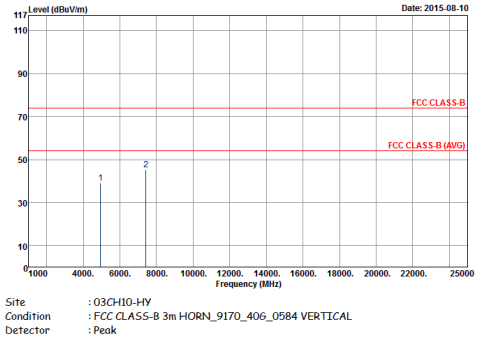
WIFI 802.11b (Harmonic @ 3m)

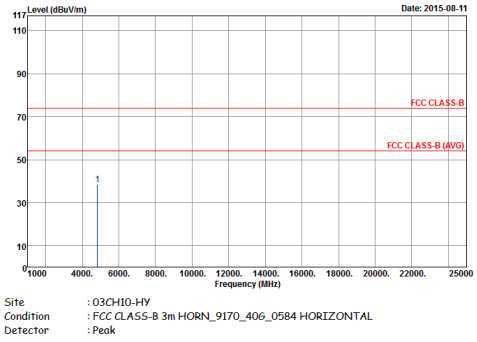
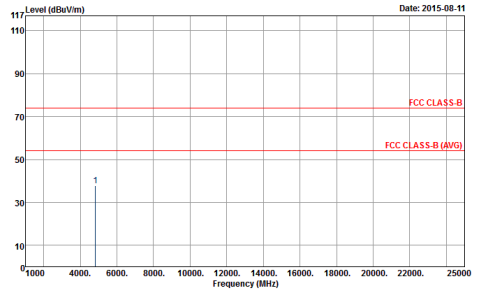
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.		

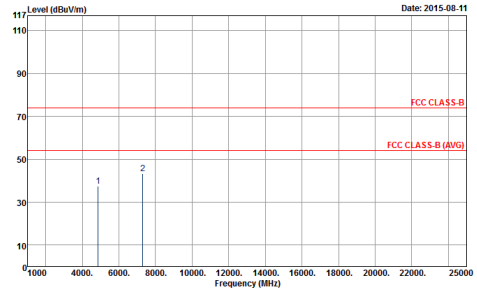
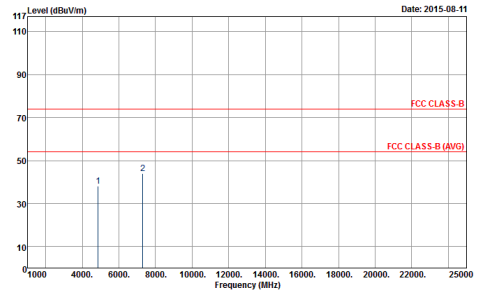
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 HORIZONTAL Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 VERTICAL Detector : Peak

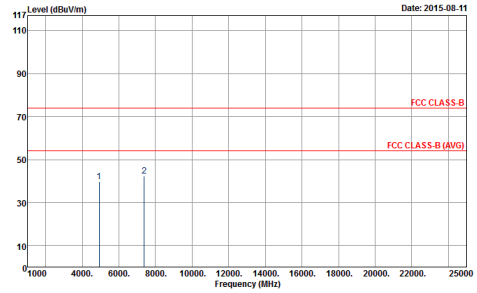
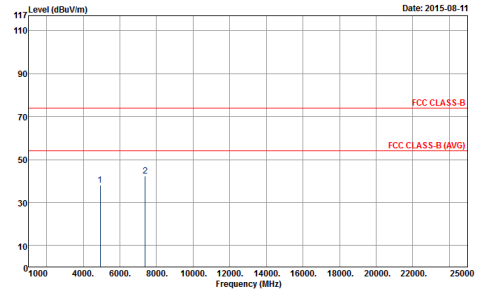
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.		

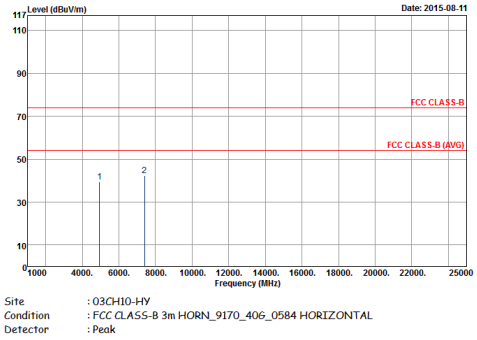
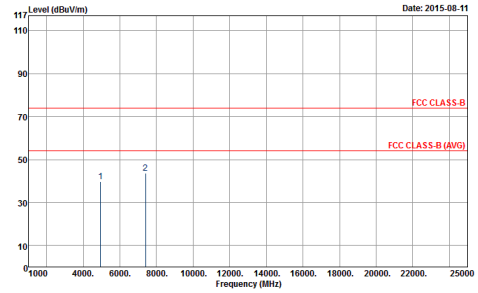
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH12 2467MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 HORIZONTAL Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 VERTICAL Detector : Peak

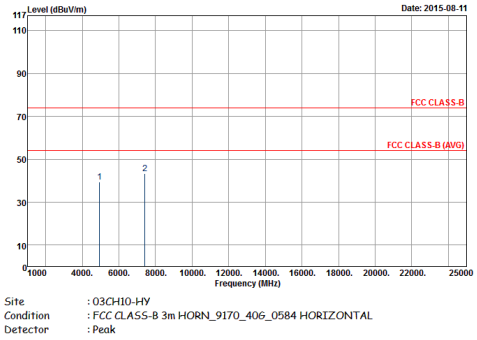
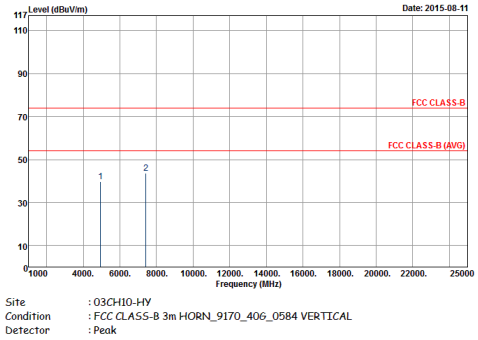
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH13 2472MHz	
1	Horizontal	Vertical
Peak		

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH01 2412MHz	
2	Horizontal	Vertical
Peak Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 HORIZONTAL Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 VERTICAL Detector : Peak

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH06 2437MHz	
2	Horizontal	Vertical
Peak Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 HORIZONTAL Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 VERTICAL Detector : Peak

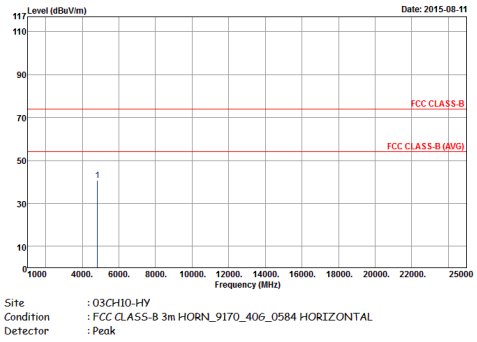
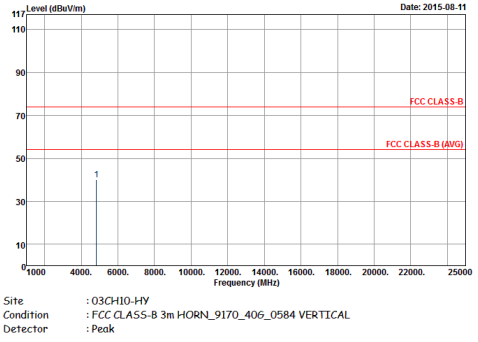
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH11 2462MHz	
2	Horizontal	Vertical
Peak Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 HORIZONTAL Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 VERTICAL Detector : Peak

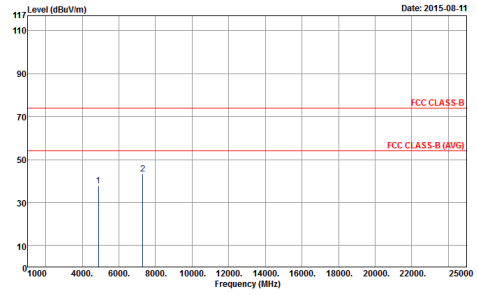
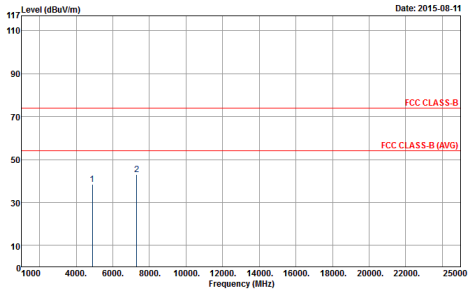
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH12 2467MHz	
2	Horizontal	Vertical
Peak Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 HORIZONTAL Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 VERTICAL Detector : Peak

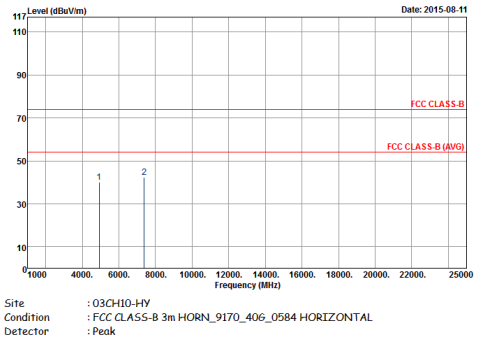
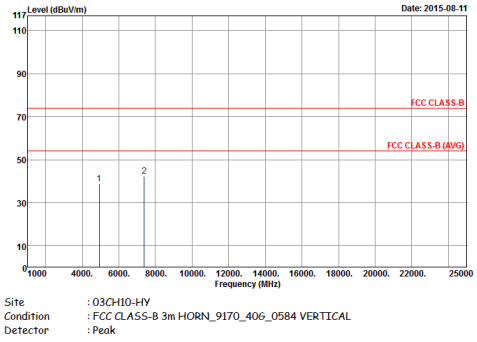
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH13 2472MHz	
2	Horizontal	Vertical
Peak Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 HORIZONTAL Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 VERTICAL Detector : Peak

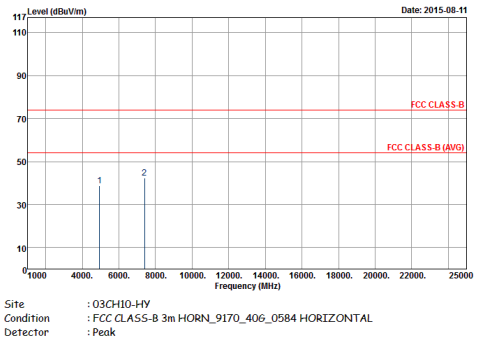
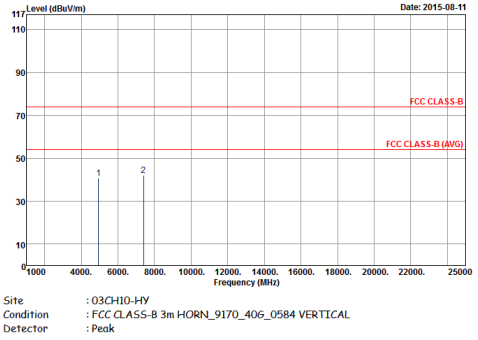
2.4GHz 2400~2483.5MHz

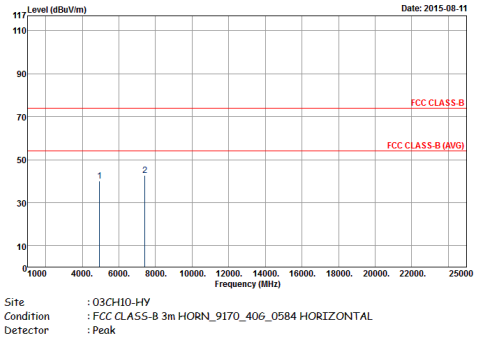
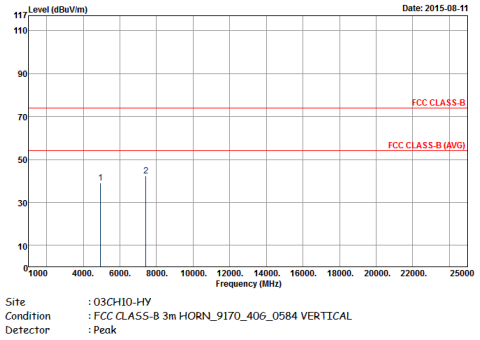
WIFI 802.11g (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH01 2412MHz	
1+2	Horizontal	Vertical
Peak Avg.		

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH06 2437MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 HORIZONTAL Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 VERTICAL Detector : Peak

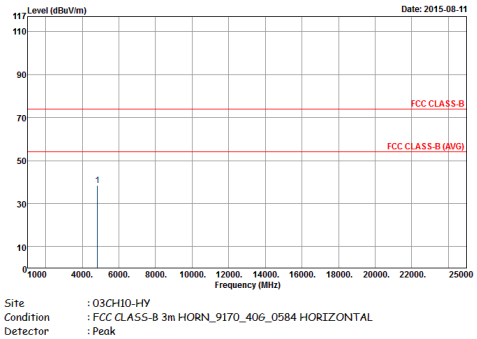
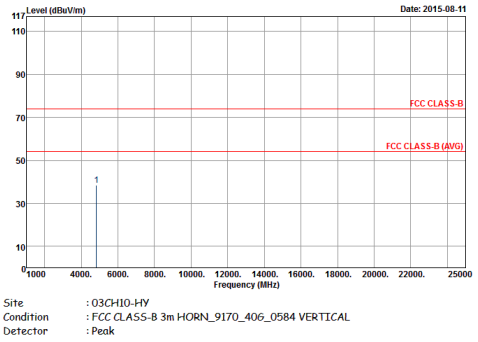
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH11 2462MHz	
1+2	Horizontal	Vertical
Peak Avg.		

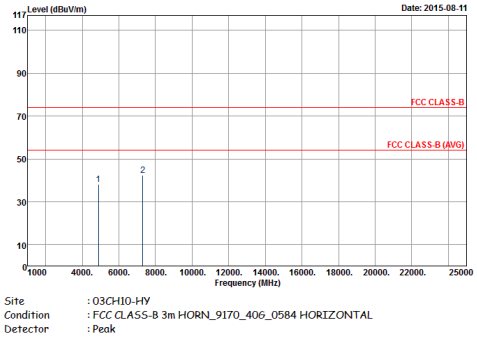
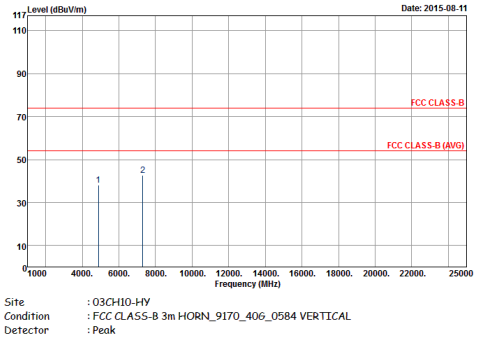
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH12 2467MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 HORIZONTAL Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 VERTICAL Detector : Peak

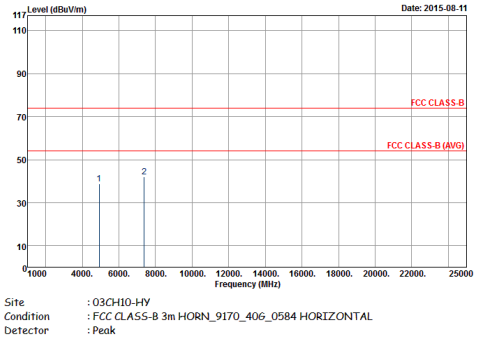
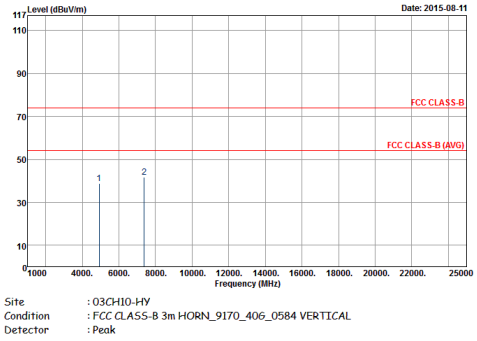
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH13 2472MHz	
1+2	Horizontal	Vertical
Peak Avg.		

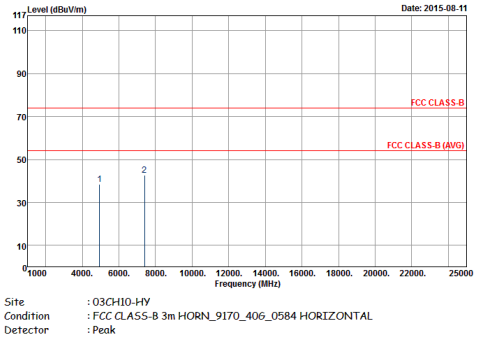
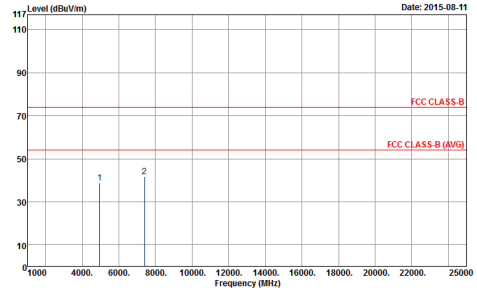
2.4GHz 2400~2483.5MHz

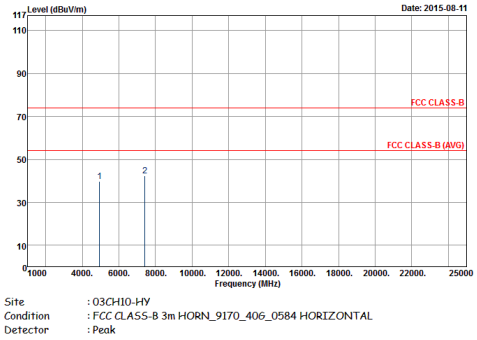
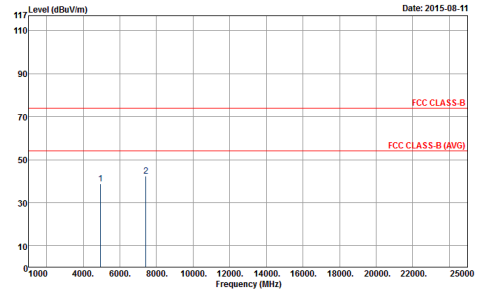
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1+2	Horizontal	Vertical
Peak Avg.		

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH06 2437MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 HORIZONTAL Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 VERTICAL Detector : Peak

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1+2	Horizontal	Vertical
Peak Avg.		

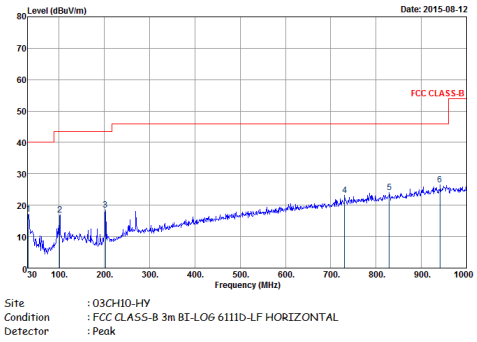
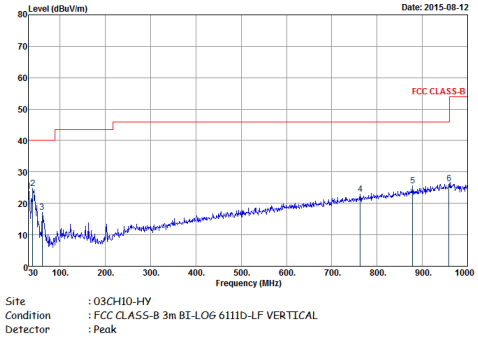
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH12 2467MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 HORIZONTAL Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 VERTICAL Detector : Peak

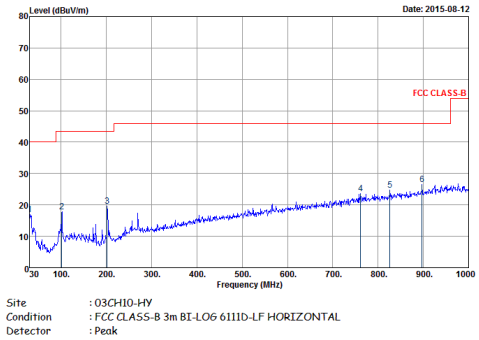
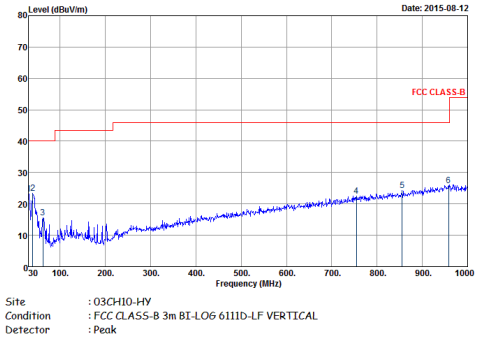
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH13 2472MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 HORIZONTAL Detector : Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 VERTICAL Detector : Peak

2.4GHz 2400~2483.5MHz

Emission below 1GHz

2.4GHz WIFI 802.11b (LF)

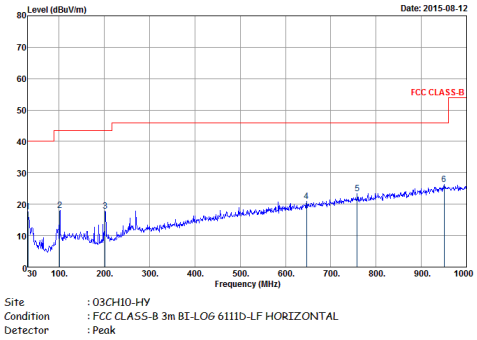
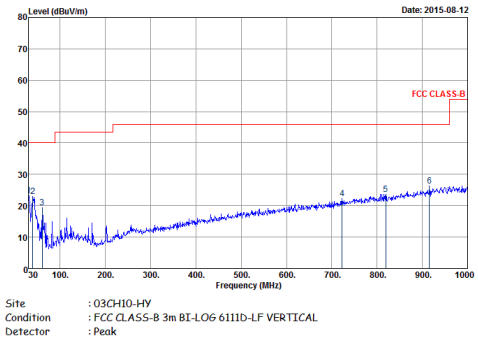
WIFI	2.4GHz 2400~2483.5MHz	
ANT	802.11b LF	
1	Horizontal	Vertical
QP / Peak		

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

2.4GHz 2400~2483.5MHz

Emission below 1GHz

2.4GHz WIFI 802.11g (LF)

WIFI	2.4GHz 2400~2483.5MHz	
ANT	802.11g LF	
1+2	Horizontal	Vertical
QP / Peak		

2.4GHz 2400~2483.5MHz

Emission below 1GHz

2.4GHz WIFI 802.11n HT20 (LF)

WIFI	2.4GHz 2400~2483.5MHz	
ANT	802.11n HT20 LF	
1+2	Horizontal	Vertical
QP / Peak