

FCC RF Test Report

APPLICANT : Ubiquiti Networks, Inc.
EQUIPMENT : NanoBeam® ac
BRAND NAME : UBIQUITI
MODEL NAME : NBE-2AC-13
FCC ID : SWX-NBE2AC13
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System

The product was received on Dec. 30, 2015 and testing was completed on Jan. 21, 2016. 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
FR5D3042	Rev. 01	Initial issue of report	Feb. 01, 2016
FR5D3042	Rev. 02	Adding PTP and PTMP description in section 1.4.	Feb. 04, 2016

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	6dB Bandwidth	$\geq 0.5\text{MHz}$	Pass	-
3.1	-	99% Bandwidth	-	Pass	-
3.2	15.247(b) 15.247(c)(1)(i)	Power Output Measurement	$\leq 30\text{dBm}$	Pass	-
3.3	15.247(e)	Power Spectral Density	$\leq 8\text{dBm}/3\text{kHz}$	Pass	-
3.4	15.247(d)	Conducted Band Edges	$\leq 20\text{dBc}$	Pass	-
		Conducted Spurious Emission		Pass	-
3.5	15.247(d)	Radiated Band Edges and Radiated Spurious Emission	15.209(a) & 15.247(d)	Pass	Under limit 0.07 dB at 2389.200 MHz
3.6	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 26.40 dB at 0.526 MHz
3.7	15.203 & 15.247(b)	Antenna Requirement	N/A	Pass	-



1 General Description

1.1 Applicant

Ubiquiti Networks, Inc.

12F, No.105, Song Ren Rd.,SinYi District, Taipei 110,Taiwan

1.2 Manufacturer

Ubiquiti Networks, Inc.

12F, No.105, Song Ren Rd.,SinYi District, Taipei 110,Taiwan

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	NanoBeam® ac
Brand Name	UBIQUITI
Model Name	NBE-2AC-13
FCC ID	SWX-NBE2AC13
EUT supports Radios application	WLAN 11ac VHT20 (10MHz) WLAN 11ac VHT20 WLAN 11ac VHT40
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification									
Tx/Rx Channel Frequency Range		802.11ac : 2412 MHz ~ 2462 MHz							
Maximum Output Power to antenna		MIMO<Ant. 1 + 2> <PTP> 802.11ac VHT20(10M) : 27.79 dBm (0.6012 W) 802.11ac VHT20 : 27.71 dBm (0.5902 W) 802.11ac VHT40 : 21.44 dBm (0.1393 W) <PTMP> 802.11ac VHT20(10M) : 22.59 dBm (0.1816 W) 802.11ac VHT20 : 22.86 dBm (0.1932 W) 802.11ac VHT40 : 21.44 dBm (0.1393 W)							
99% Occupied Bandwidth		<PTP> 802.11ac VHT20(10M) : 10.38MHz 802.11ac VHT20 : 18.70MHz 802.11ac VHT40 : 37.00MHz <PTMP> 802.11ac VHT20(10M) : 10.35MHz 802.11ac VHT20 : 18.70MHz 802.11ac VHT40 : 37.00MHz							
Antenna Type		<Ant. Port 1> 802.11ac : Dish Antenna type with gain 13.00 dBi <Ant. Port 2> 802.11ac : Dish Antenna type with gain 13.00 dBi							
Type of Modulation		802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)							
Antenna Function for Transmitter		<table><tr><td></td><td>Ant. Port 1</td><td>Ant. Port 2</td></tr><tr><td>802.11 ac MIMO</td><td>V</td><td>V</td></tr></table>			Ant. Port 1	Ant. Port 2	802.11 ac MIMO	V	V
	Ant. Port 1	Ant. Port 2							
802.11 ac MIMO	V	V							

Remark:

1. PTP: fixed point-to-point operation
2. PTMP: fixed point-to-multipoint operation

1.5 Modification of EUT

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

1.6 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 1 st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978	
Test Site No.	Sporton Site No.	
	TH05-HY	CO05-HY

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

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd Rd., Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C. TEL: +886-3-327-0868 FAX: +886-3-327-0855	
Test Site No.	Sporton Site No.	
	03CH10-HY	

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

1.7 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.
- FCC KDB 644545 D03 Guidance for IEEE 802 11ac New Rules v01
- ANSI C63.10-2013

Remark:

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



2 Test Configuration of Equipment Under Test

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) 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	7	2442
	2	2417	8	2447
	3	2422	9	2452
	4	2427	10	2457
	5	2432	11	2462
	6	2437		

2.2 Pre-Scanned RF Power

Preliminary tests were performed in different data rate and data rate associated with the highest power were chosen for full test shown in the following tables.

<PTP>

MIMO <Ant. 1+2>

2.4GHz 802.11ac VHT20(10M) mode									
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8
Peak Power (dBm)	27.79	27.72	27.63	27.12	27.10	27.17	27.34	27.38	27.28

2.4GHz 802.11ac VHT20 mode									
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8
Peak Power (dBm)	27.71	27.60	27.60	27.12	27.19	27.01	27.44	27.14	27.24

2.4GHz 802.11ac VHT40 mode										
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
Peak Power (dBm)	21.44	21.40	21.36	20.77	20.73	21.19	20.93	20.59	20.34	20.39

<PTMP>

MIMO <Ant. 1+2>

2.4GHz 802.11ac VHT20(10M) mode									
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8
Peak Power (dBm)	22.59	22.51	22.50	21.91	22.00	22.02	22.36	22.34	21.96

2.4GHz 802.11ac VHT20 mode									
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8
Peak Power (dBm)	22.86	22.79	22.80	22.25	22.10	21.96	22.53	22.18	22.10

2.4GHz 802.11ac VHT40 mode										
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
Peak Power (dBm)	21.44	21.40	21.36	20.77	20.73	21.19	20.93	20.59	20.34	20.39

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.

MIMO Antenna

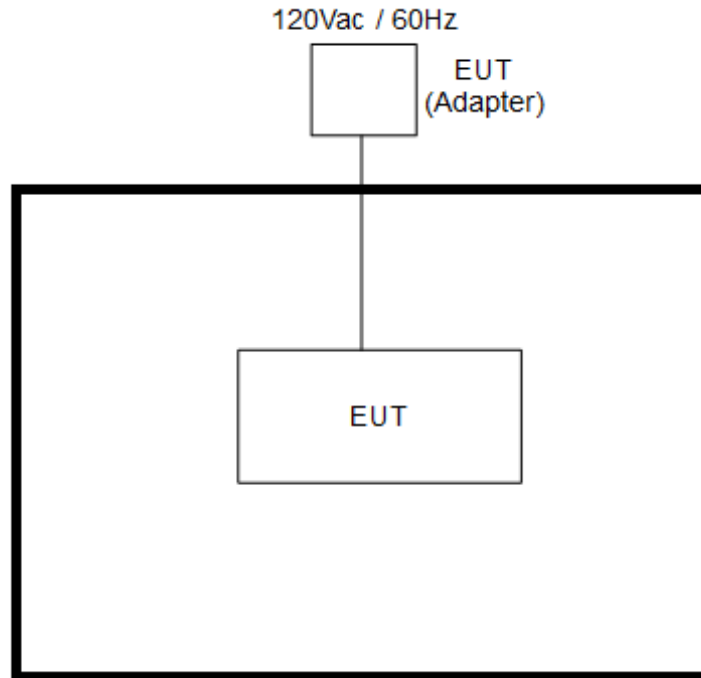
<2.4GHz>

Modulation	Data Rate
802.11ac VHT20(10M)	MCS0
802.11ac VHT20	MCS0
802.11ac VHT40	MCS0

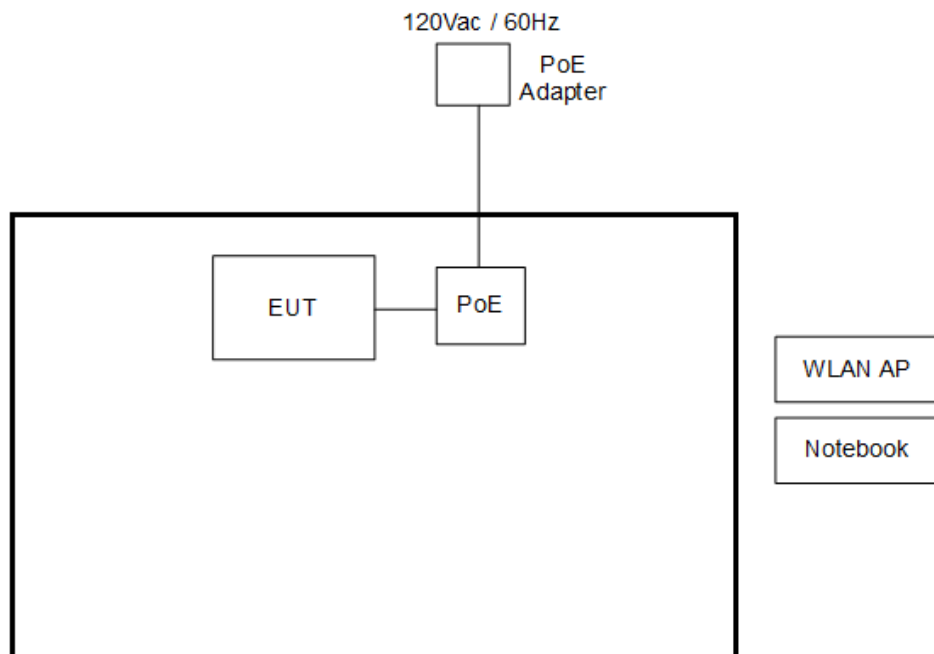
Test Cases	
AC Conducted Emission	Mode 1 : WLAN Link + PoE + LAN Link

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.	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
2.	Notebook	DELL	P20G	FCC DoC/ Contains FCC ID: QDS-BRCM1051	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
3.	WLAN AP	Ubiquiti	NBE-2AC-13	N/A	N/A	Unshielded, 0.5 m

2.6 EUT Operation Test Setup

The programmed RF utility “cart.exe tools”, is installed in EUT to provide channel selection, power level, data rate and the application type. RF Utility can send transmitting signal for all testing. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

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.

$$\begin{aligned} \text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)}. \\ &= 4.2 + 10 = 14.2 \text{ (dB)} \end{aligned}$$

3 Test Result

3.1 6dB and 99% Bandwidth Measurement

3.1.1 Limit of 6dB and 99% Bandwidth

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

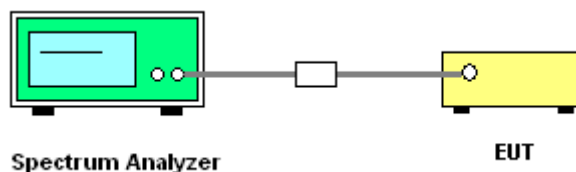
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 DTS D01 Meas. Guidance 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. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) = 1MHz and set the Video bandwidth (VBW) = 3MHz.
6. Measure and record the results in the test report.

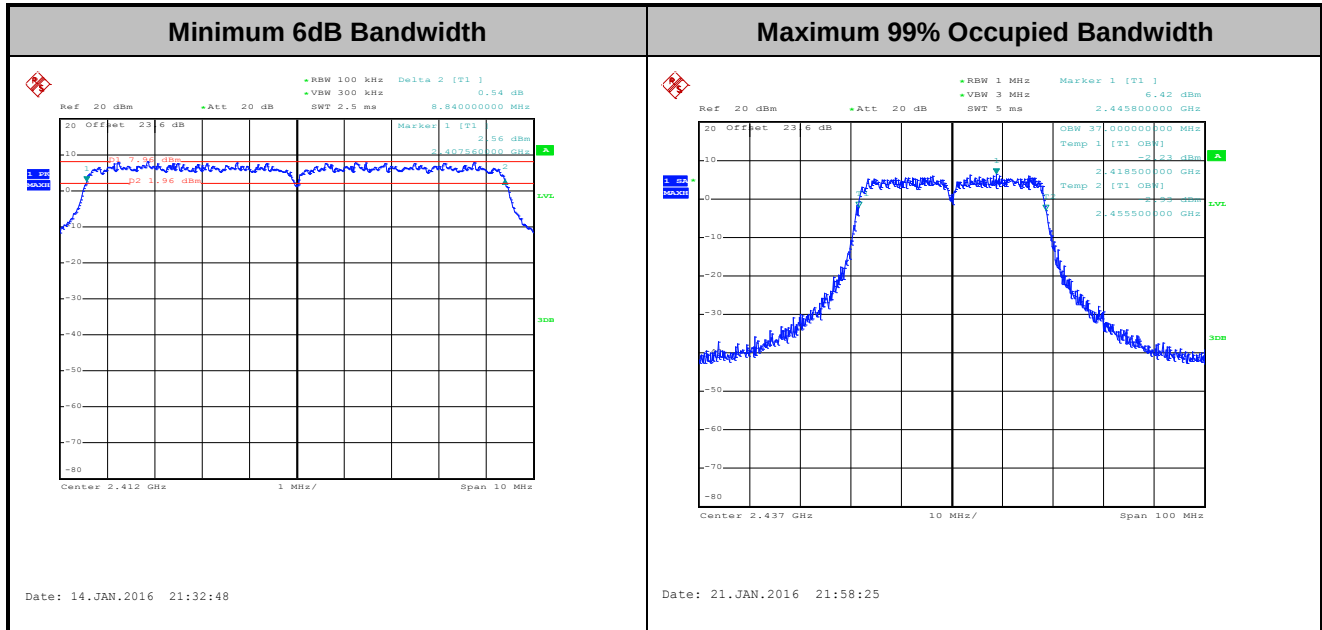
3.1.4 Test Setup



3.1.5 Test Result of 6dB and 99% Occupied Bandwidth

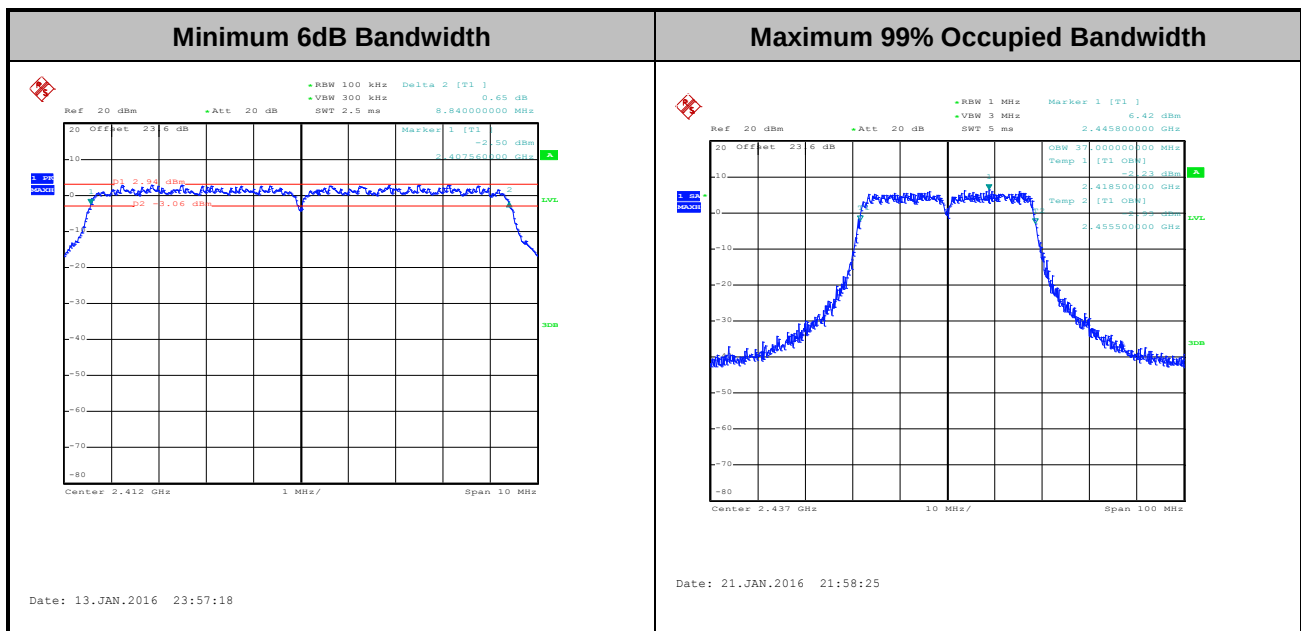
Please refer to Appendix A of this report.

<PTP>



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

<PTMP>



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 and of point-to-multi-point operation, the limit has to be reduced by 1dB for every 1dB that the directional gain of the antenna exceeds 6dBi.

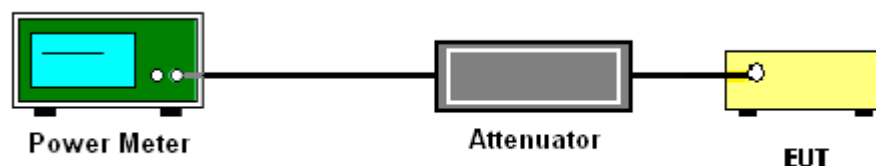
3.2.2 Measuring Instruments

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 section 9.1.2 PKPM1 Peak power meter method.
2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.
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 report.

3.2.6 Test Result of Average output Power (Reporting Only)

Please refer to Appendix A of this 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.

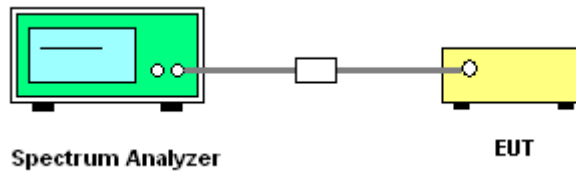
If measurements performed using method (2) plus $10 \log(N)$ exceeds the emission limit, the test should choose method (1) before declaring that the device fails the emission limit.

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)

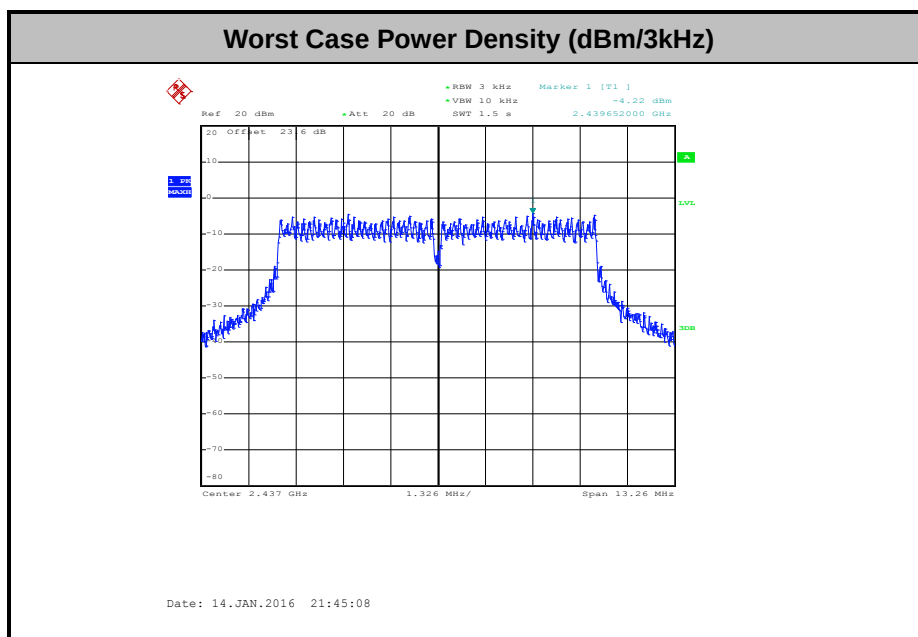
3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

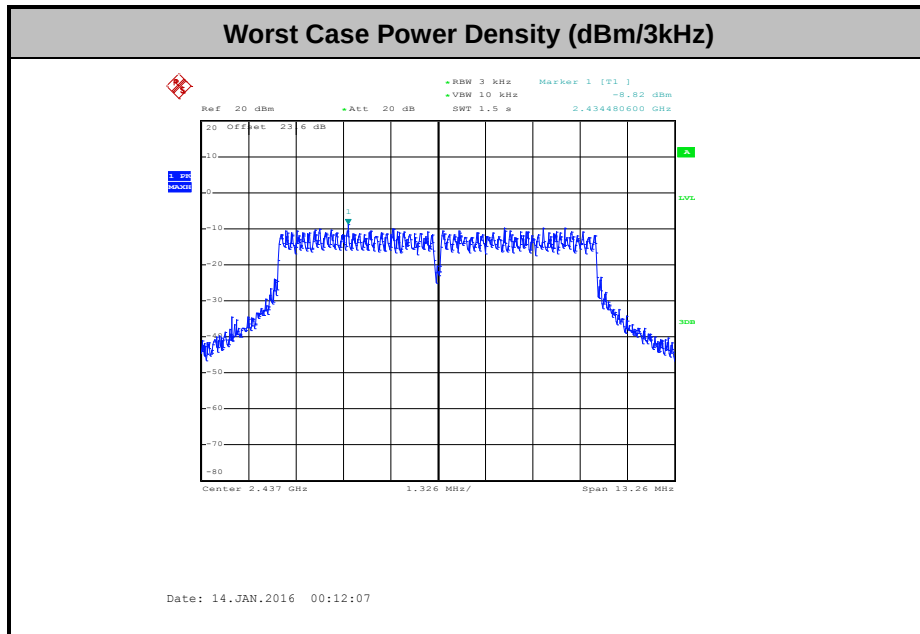
Please refer to Appendix A of this report.

<PTP>





<PTMP>



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).

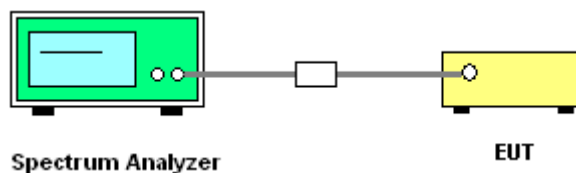
3.4.2 Measuring Instruments

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

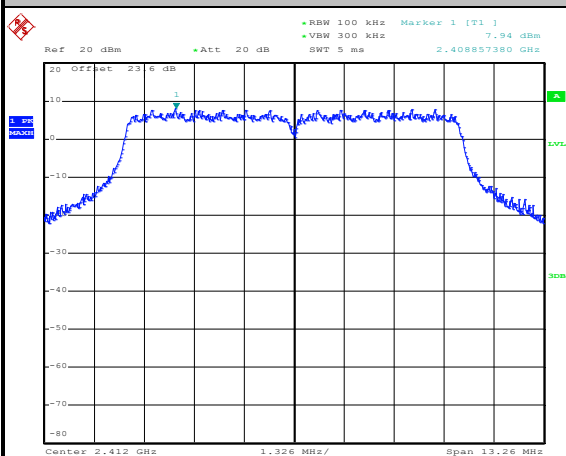
<PTP>

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

Number of TX :	2	Ant. :	1
Test Mode :	802.11ac VHT20(10M)	Temperature :	22~26℃
Test Band :	2.4GHz Low	Relative Humidity :	45~53%
Test Channel :	01	Test Engineer :	Osolemio Chang

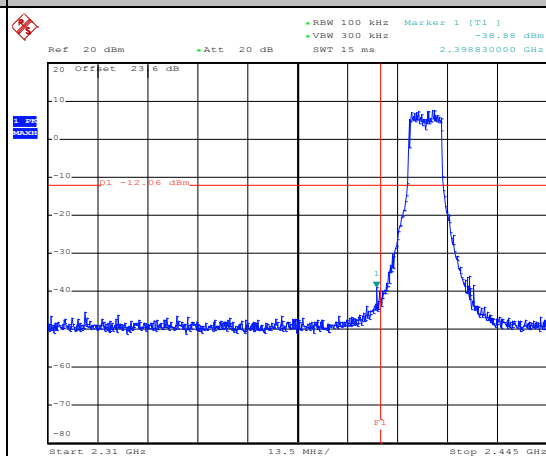
WLAN 802.11ac VHT20(10M) Channel 01

100kHz PSD reference Level



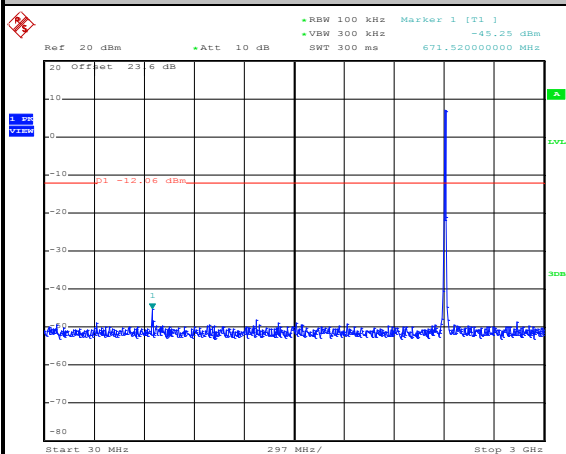
Date: 14.JAN.2016 21:34:00

Low Channel Plot



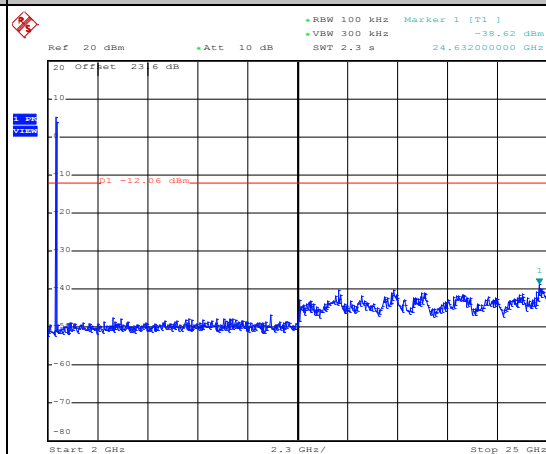
Date: 14.JAN.2016 21:34:11

Spurious Emission 30MHz~3GHz



Date: 14.JAN.2016 21:34:24

Spurious Emission 2GHz~25GHz



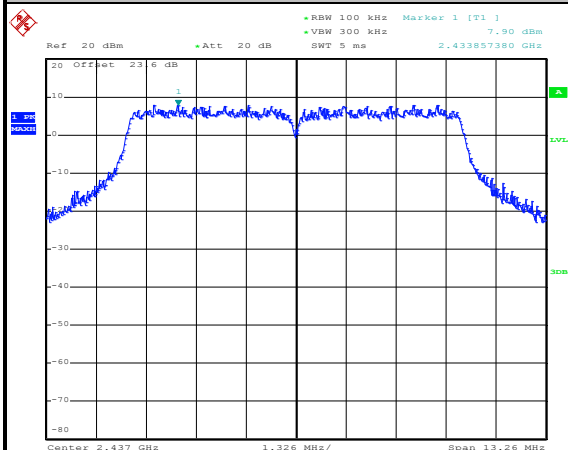
Date: 14.JAN.2016 21:34:32



Number of TX :	2	Ant. :	1
Test Mode :	802.11ac VHT20(10M)	Temperature :	22~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	45~53%
Test Channel :	06	Test Engineer :	Osolemio Chang

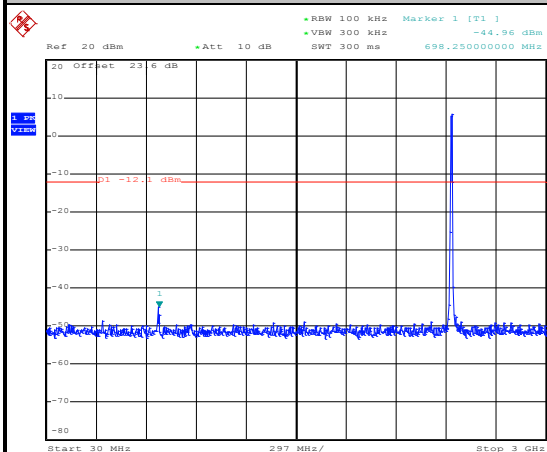
WLAN 802.11ac VHT20(10M) Channel 06

100kHz PSD reference Level



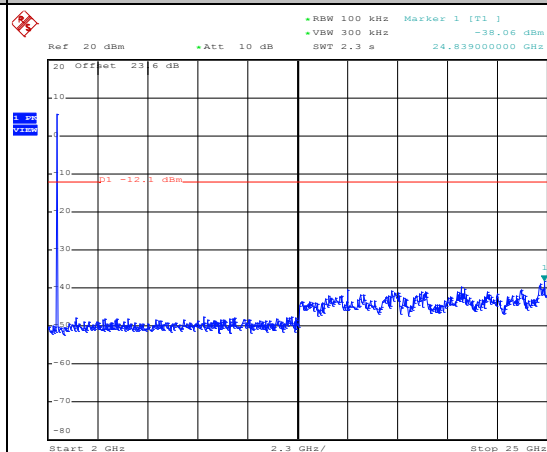
Date: 14.JAN.2016 21:42:33

Spurious Emission 30MHz~3GHz



Date: 14.JAN.2016 21:42:47

Spurious Emission 2GHz~25GHz



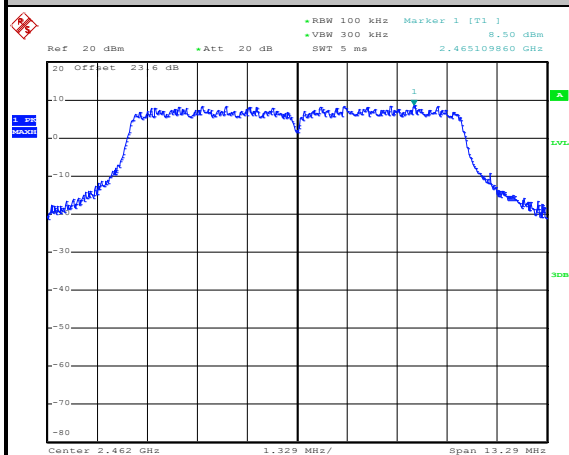
Date: 14.JAN.2016 21:42:56



Number of TX :	2	Ant. :	1
Test Mode :	802.11ac VHT20(10M)	Temperature :	22~26°C
Test Band :	2.4GHz High	Relative Humidity :	45~53%
Test Channel :	11	Test Engineer :	Osolemio Chang

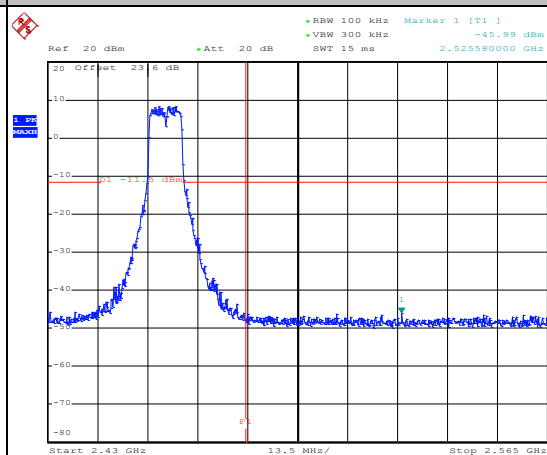
WLAN 802.11ac VHT20(10M) Channel 11

100kHz PSD reference Level



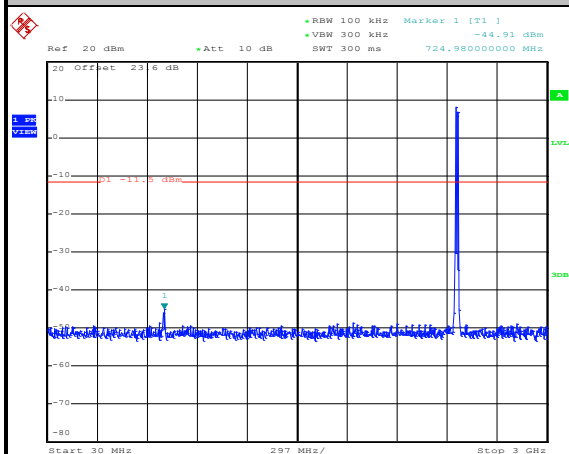
Date: 14.JAN.2016 21:49:43

High Channel Plot



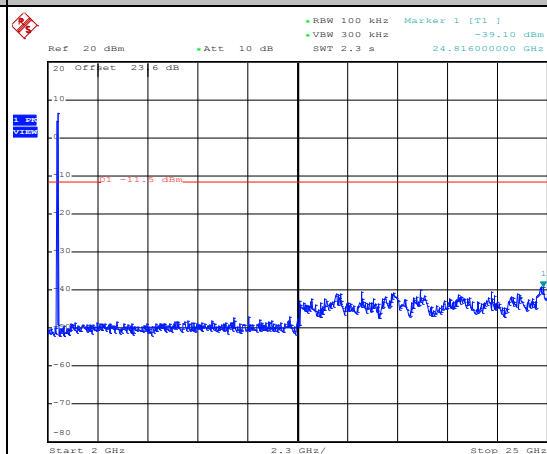
Date: 14.JAN.2016 21:50:09

Spurious Emission 30MHz~3GHz



Date: 14.JAN.2016 21:50:23

Spurious Emission 2GHz~25GHz



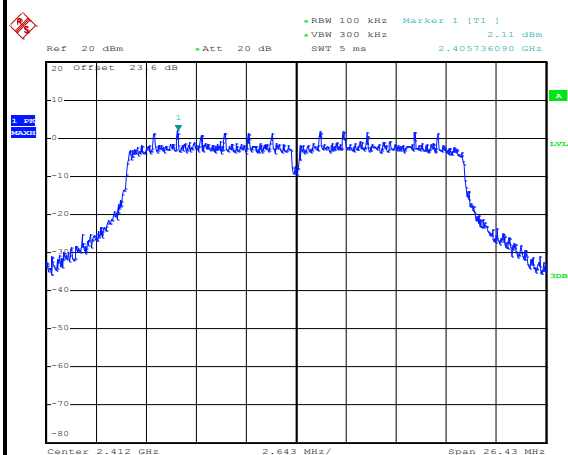
Date: 14.JAN.2016 21:50:31



Number of TX :	2	Ant. :	1
Test Mode :	802.11ac VHT20	Temperature :	22~26°C
Test Band :	2.4GHz Low	Relative Humidity :	45~53%
Test Channel :	01	Test Engineer :	Osolemio Chang

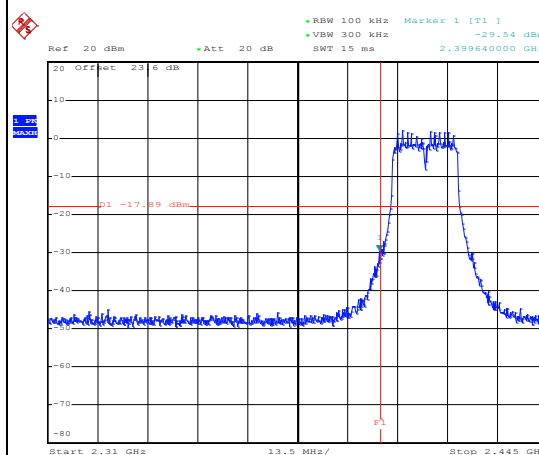
WLAN 802.11ac VHT20 Channel 01

100kHz PSD reference Level



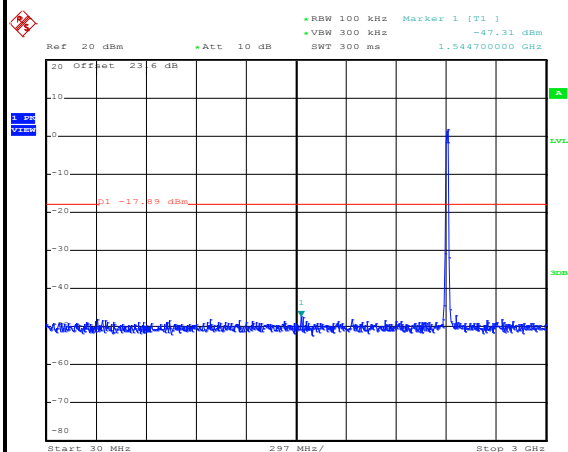
Date: 21.JAN.2016 21:05:47

Low Channel Plot



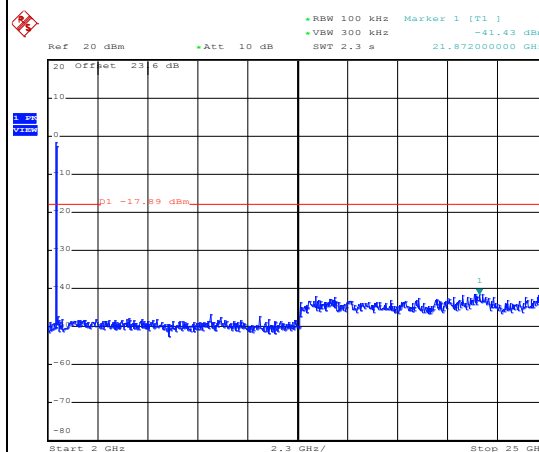
Date: 21.JAN.2016 21:06:13

Spurious Emission 30MHz~3GHz



Date: 21.JAN.2016 21:08:52

Spurious Emission 2GHz~25GHz



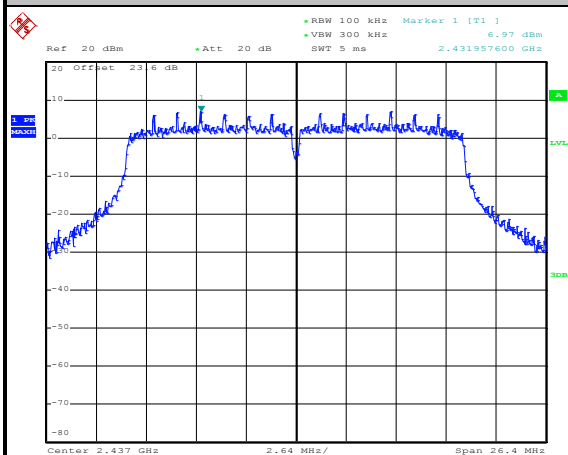
Date: 21.JAN.2016 21:09:12



Number of TX :	2	Ant. :	1
Test Mode :	802.11ac VHT20	Temperature :	22~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	45~53%
Test Channel :	06	Test Engineer :	Osolemio Chang

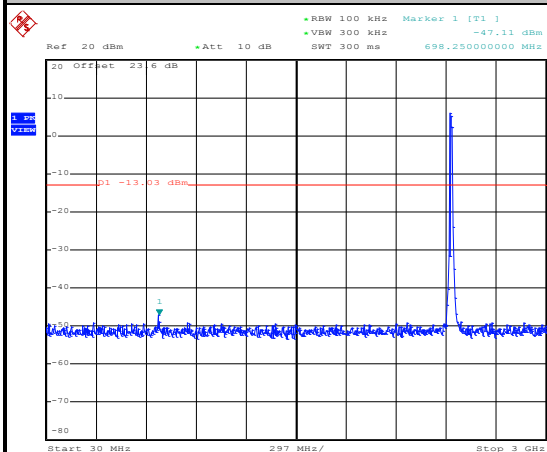
WLAN 802.11ac VHT20 Channel 06

100kHz PSD reference Level



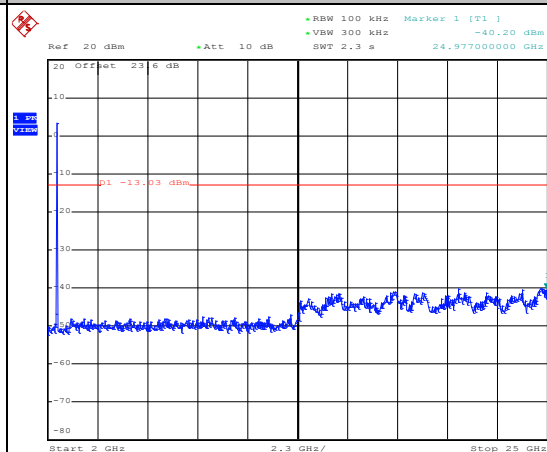
Date: 14.JAN.2016 22:05:48

Spurious Emission 30MHz~3GHz



Date: 14.JAN.2016 22:06:16

Spurious Emission 2GHz~25GHz



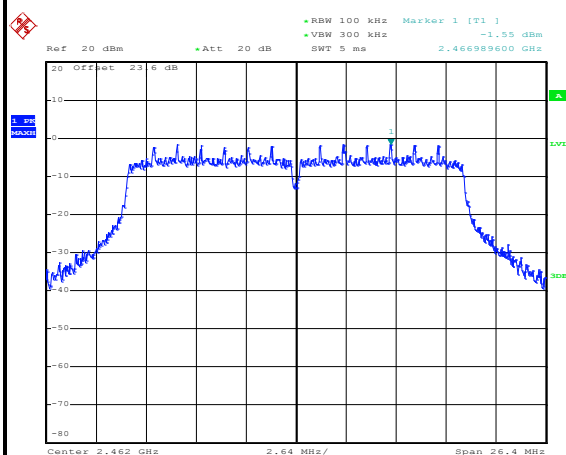
Date: 14.JAN.2016 22:06:25



Number of TX :	2	Ant. :	1
Test Mode :	802.11ac VHT20	Temperature :	22~26°C
Test Band :	2.4GHz High	Relative Humidity :	45~53%
Test Channel :	11	Test Engineer :	Osolemio Chang

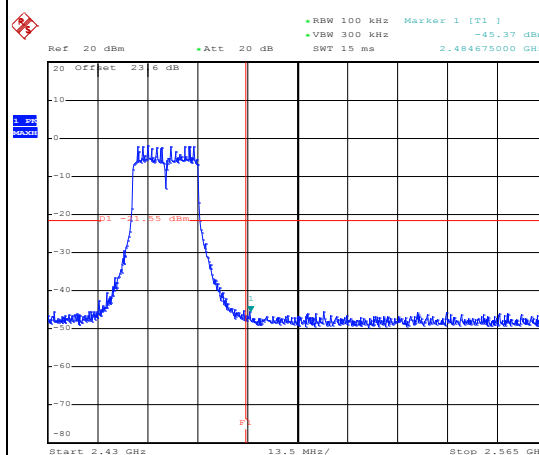
WLAN 802.11ac VHT20 Channel 11

100kHz PSD reference Level



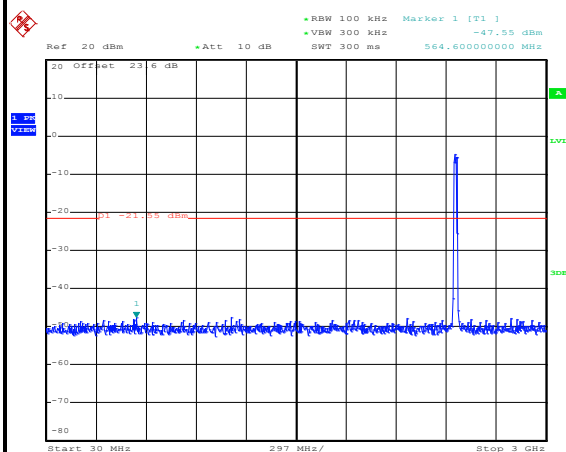
Date: 21.JAN.2016 21:13:31

High Channel Plot



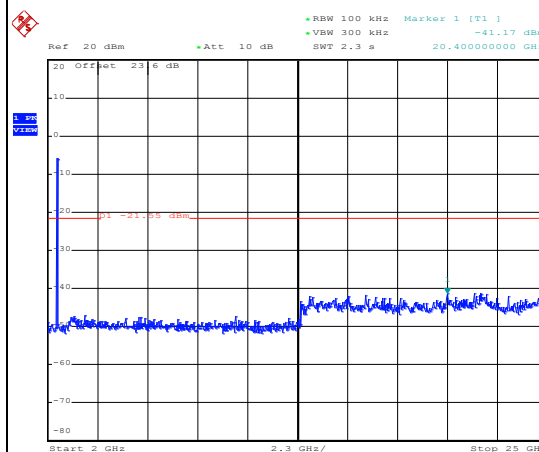
Date: 21.JAN.2016 21:13:53

Spurious Emission 30MHz~3GHz



Date: 21.JAN.2016 21:14:07

Spurious Emission 2GHz~25GHz



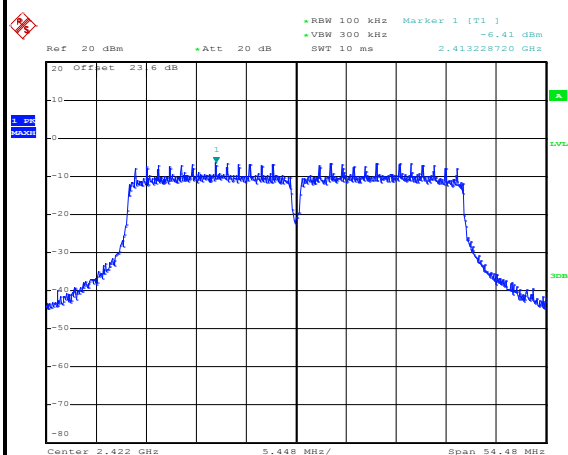
Date: 21.JAN.2016 21:14:16



Number of TX :	2	Ant. :	1
Test Mode :	802.11ac VHT40	Temperature :	22~26°C
Test Band :	2.4GHz Low	Relative Humidity :	45~53%
Test Channel :	03	Test Engineer :	Osolemio Chang

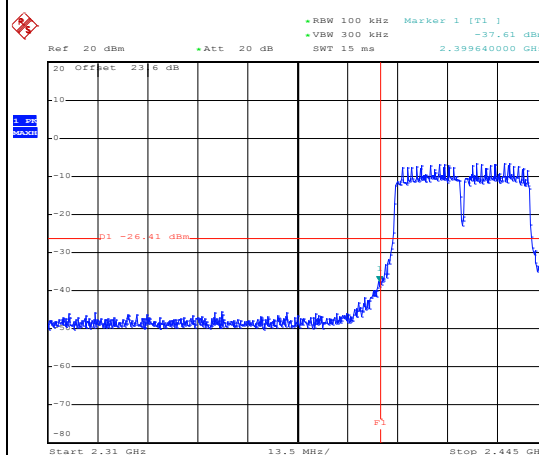
WLAN 802.11ac VHT40 Channel 03

100kHz PSD reference Level



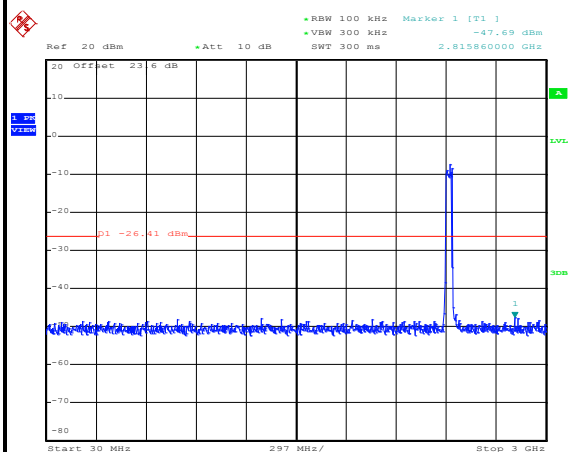
Date: 21.JAN.2016 21:28:33

Low Channel Plot



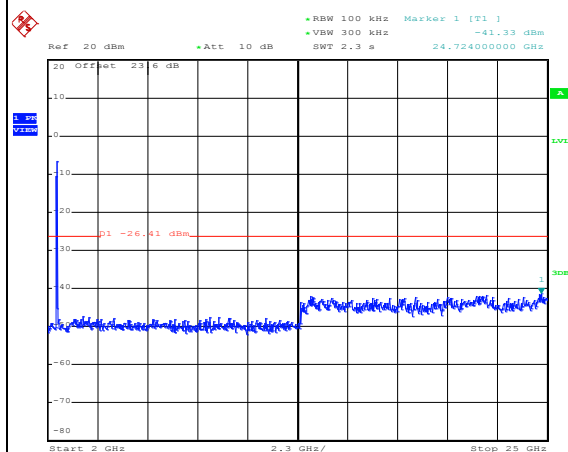
Date: 21.JAN.2016 21:28:48

Spurious Emission 30MHz~3GHz



Date: 21.JAN.2016 21:29:02

Spurious Emission 2GHz~25GHz



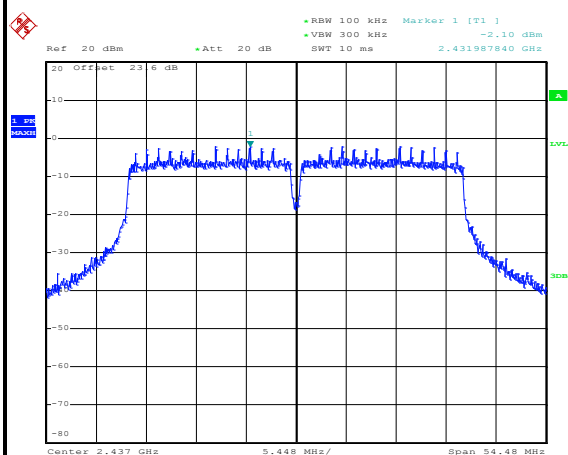
Date: 21.JAN.2016 21:29:11



Number of TX :	2	Ant. :	1
Test Mode :	802.11ac VHT40	Temperature :	22~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	45~53%
Test Channel :	06	Test Engineer :	Osolemio Chang

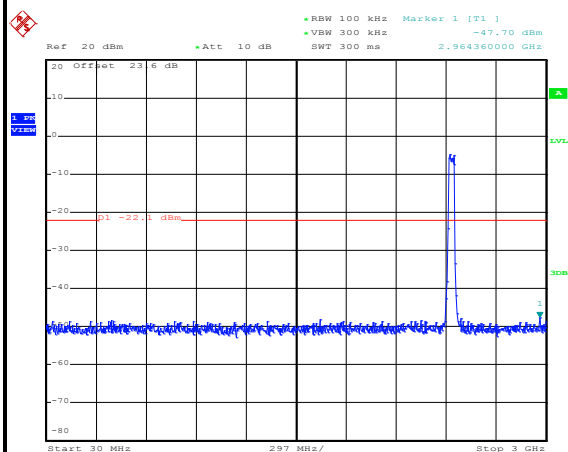
WLAN 802.11ac VHT40 Channel 06

100kHz PSD reference Level



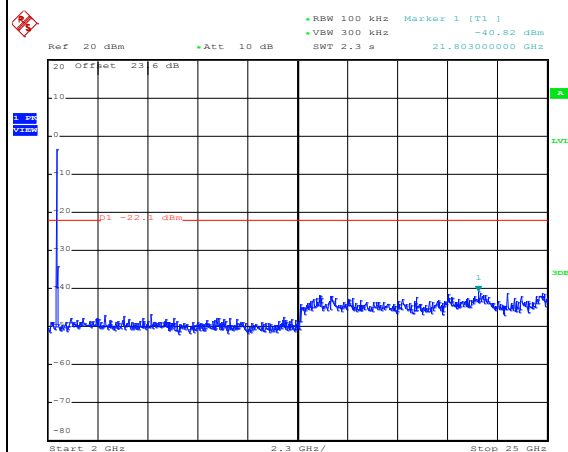
Date: 21.JAN.2016 21:32:55

Spurious Emission 30MHz~3GHz



Date: 21.JAN.2016 21:34:04

Spurious Emission 2GHz~25GHz



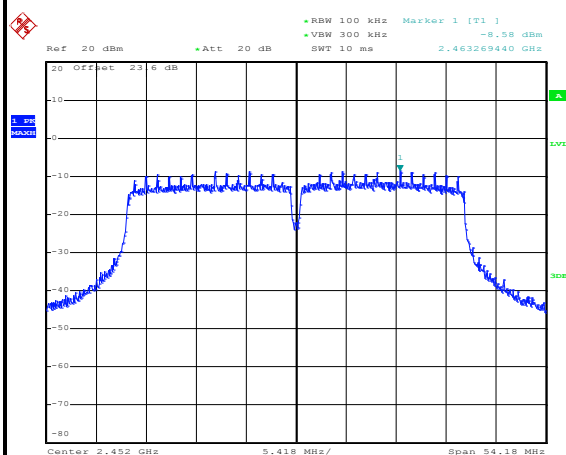
Date: 21.JAN.2016 21:34:12



Number of TX :	2	Ant. :	1
Test Mode :	802.11ac VHT40	Temperature :	22~26°C
Test Band :	2.4GHz High	Relative Humidity :	45~53%
Test Channel :	09	Test Engineer :	Osolemio Chang

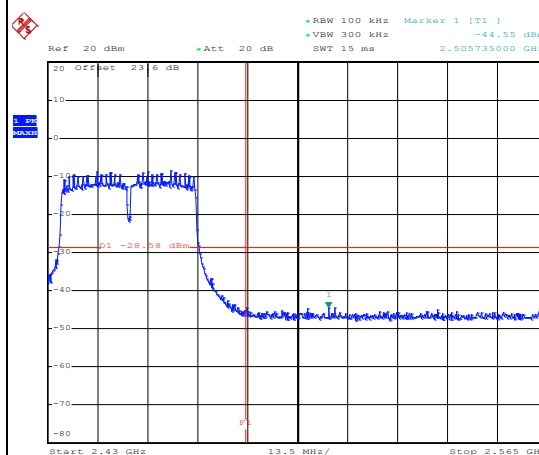
WLAN 802.11ac VHT40 Channel 09

100kHz PSD reference Level



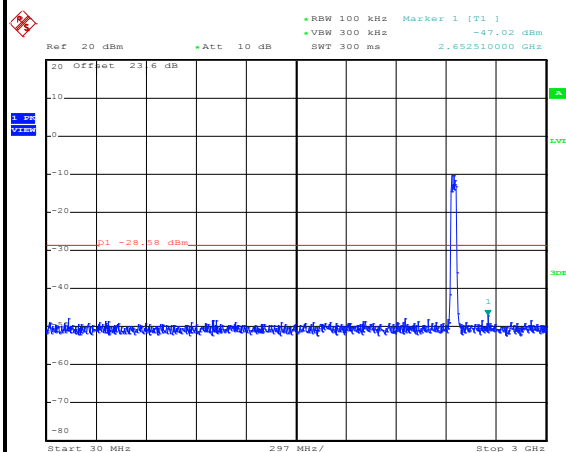
Date: 21.JAN.2016 21:40:43

High Channel Plot



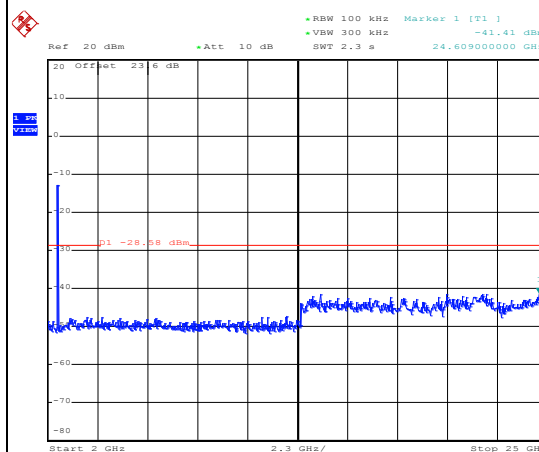
Date: 21.JAN.2016 21:45:18

Spurious Emission 30MHz~3GHz



Date: 21.JAN.2016 21:45:30

Spurious Emission 2GHz~25GHz



Date: 21.JAN.2016 21:45:39

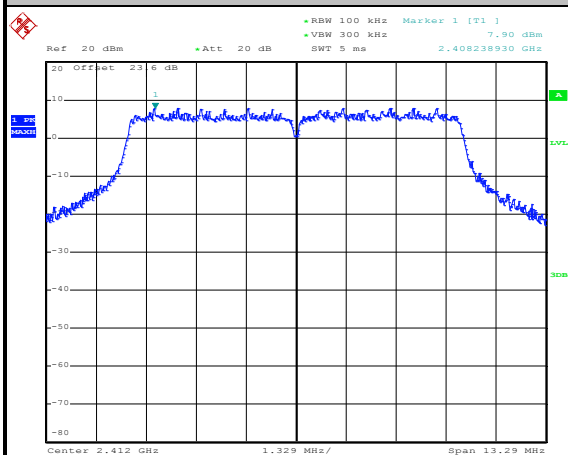


Number of TX = 2, Ant. 2 (Measured)

Number of TX :	2	Ant. :	2
Test Mode :	802.11ac VHT20(10M)	Temperature :	22~26°C
Test Band :	2.4GHz Low	Relative Humidity :	45~53%
Test Channel :	01	Test Engineer :	Osolemio Chang

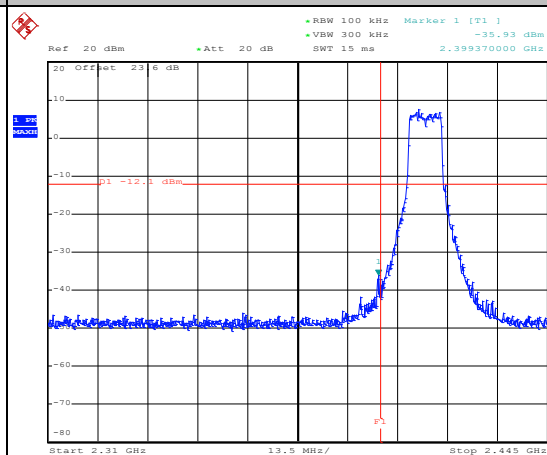
WLAN 802.11ac VHT20(10M) Channel 01

100kHz PSD reference Level



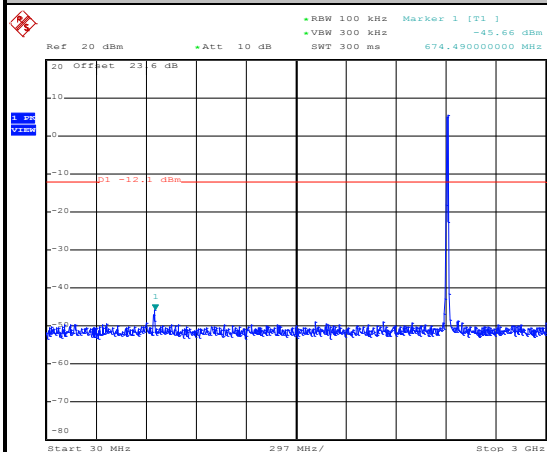
Date: 14.JAN.2016 21:38:20

Low Channel Plot



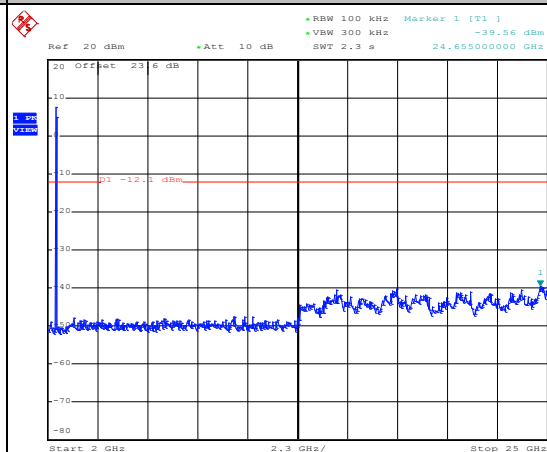
Date: 14.JAN.2016 21:38:49

Spurious Emission 30MHz~3GHz



Date: 14.JAN.2016 21:39:02

Spurious Emission 2GHz~25GHz



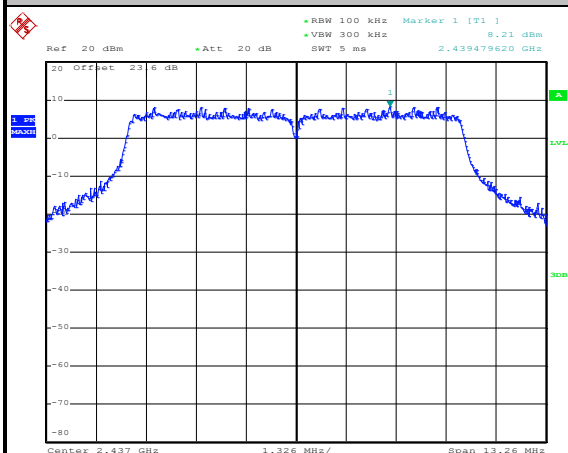
Date: 14.JAN.2016 21:39:11



Number of TX :	2	Ant. :	2
Test Mode :	802.11ac VHT20(10M)	Temperature :	22~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	45~53%
Test Channel :	06	Test Engineer :	Osolemio Chang

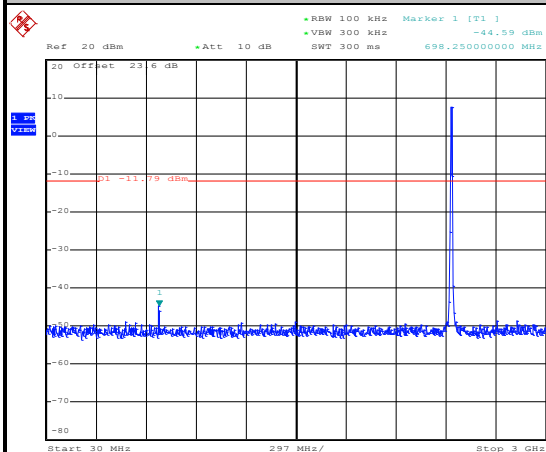
WLAN 802.11ac VHT20(10M) Channel 06

100kHz PSD reference Level



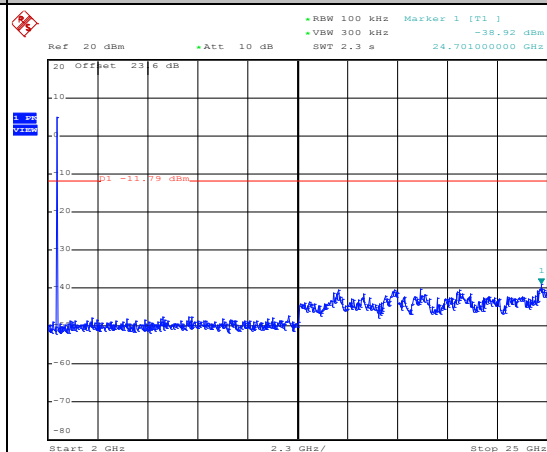
Date: 14.JAN.2016 21:45:29

Spurious Emission 30MHz~3GHz



Date: 14.JAN.2016 21:45:43

Spurious Emission 2GHz~25GHz



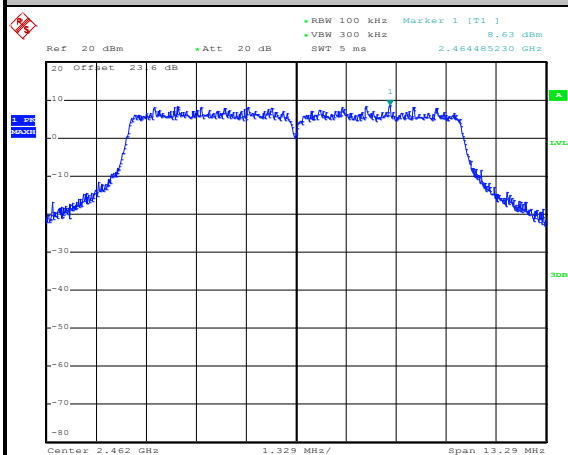
Date: 14.JAN.2016 21:45:51



Number of TX :	2	Ant. :	2
Test Mode :	802.11ac VHT20(10M)	Temperature :	22~26°C
Test Band :	2.4GHz High	Relative Humidity :	45~53%
Test Channel :	11	Test Engineer :	Osolemio Chang

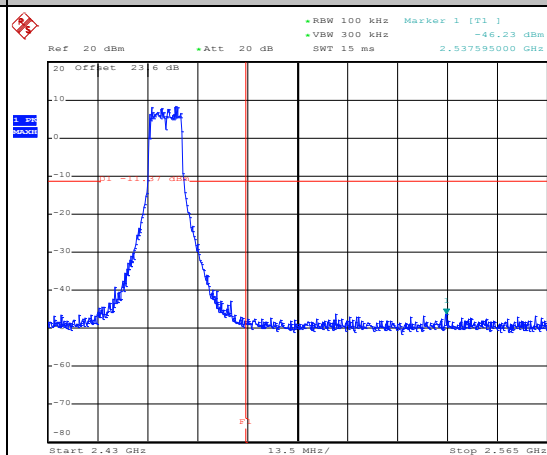
WLAN 802.11ac VHT20(10M) Channel 11

100kHz PSD reference Level



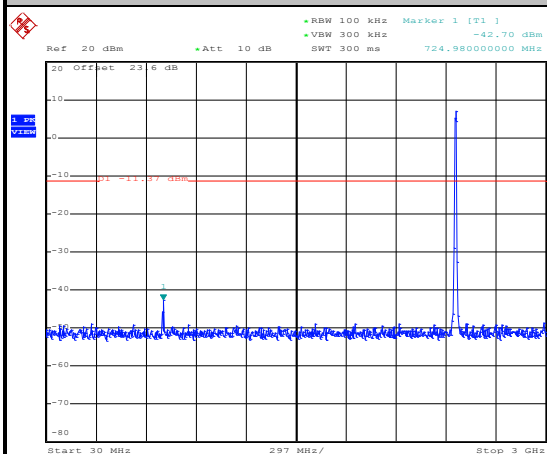
Date: 14.JAN.2016 21:54:40

High Channel Plot



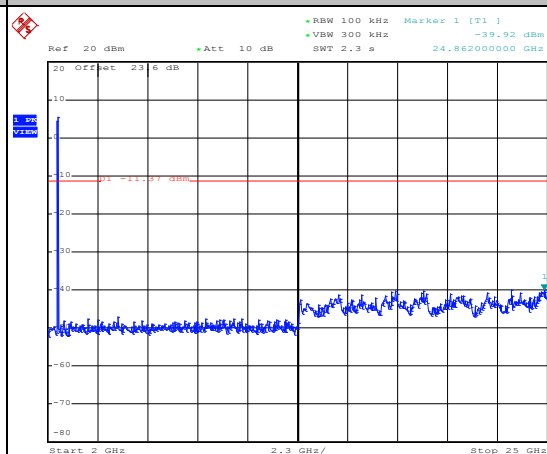
Date: 14.JAN.2016 21:54:54

Spurious Emission 30MHz~3GHz



Date: 14.JAN.2016 21:55:07

Spurious Emission 2GHz~25GHz



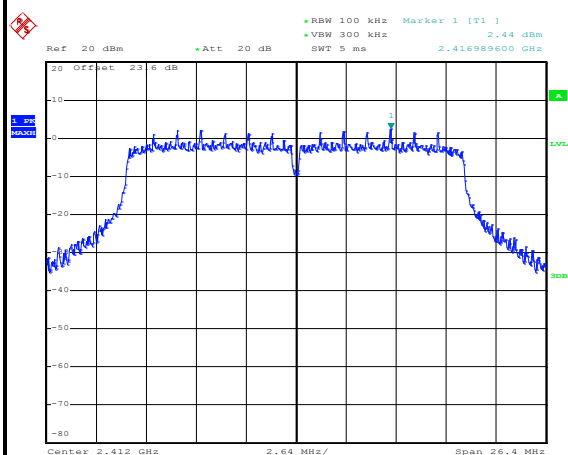
Date: 14.JAN.2016 21:55:15



Number of TX :	2	Ant. :	2
Test Mode :	802.11ac VHT20	Temperature :	22~26°C
Test Band :	2.4GHz Low	Relative Humidity :	45~53%
Test Channel :	01	Test Engineer :	Osolemio Chang

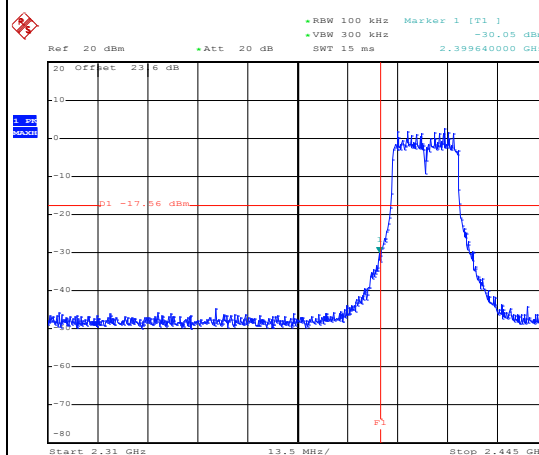
WLAN 802.11ac VHT20 Channel 01

100kHz PSD reference Level



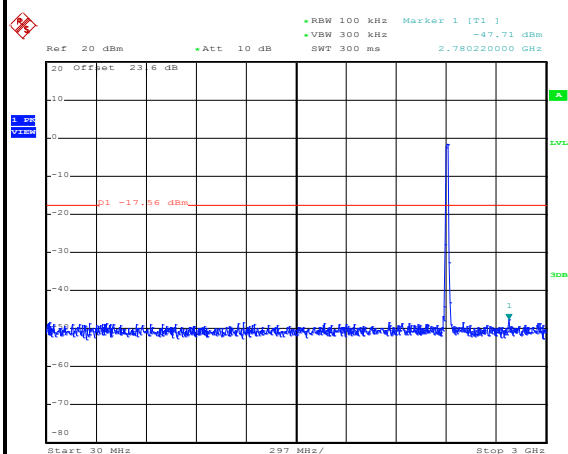
Date: 21.JAN.2016 21:22:48

Low Channel Plot



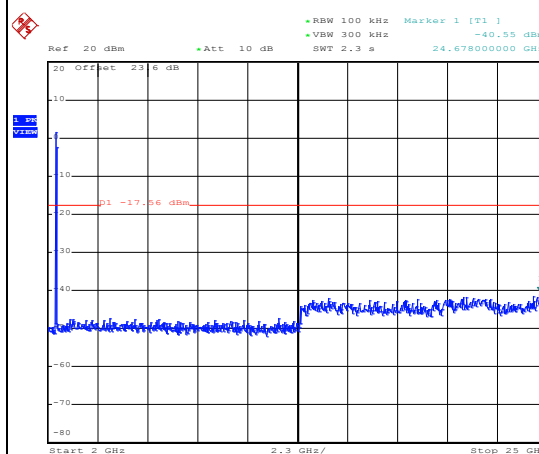
Date: 21.JAN.2016 21:23:10

Spurious Emission 30MHz~3GHz



Date: 21.JAN.2016 21:23:29

Spurious Emission 2GHz~25GHz



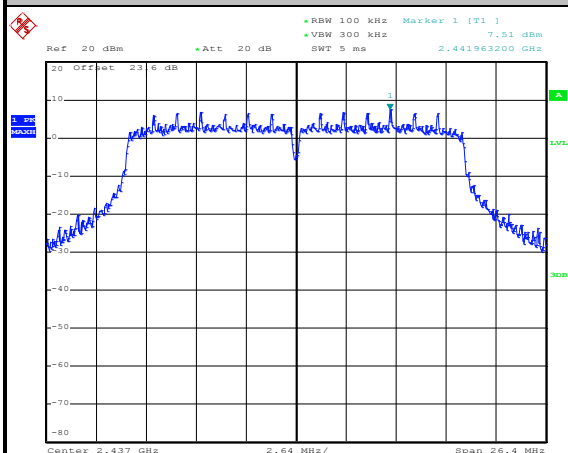
Date: 21.JAN.2016 21:23:37



Number of TX :	2	Ant. :	2
Test Mode :	802.11ac VHT20	Temperature :	22~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	45~53%
Test Channel :	06	Test Engineer :	Osolemio Chang

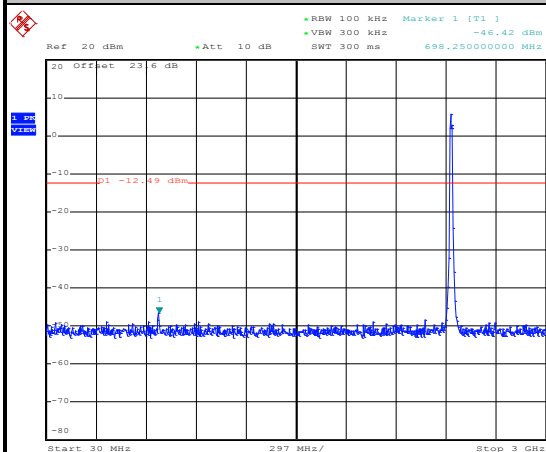
WLAN 802.11ac VHT20 Channel 06

100kHz PSD reference Level



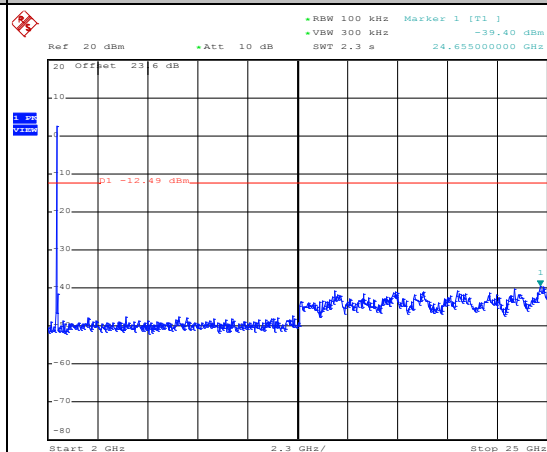
Date: 14.JAN.2016 22:09:21

Spurious Emission 30MHz~3GHz



Date: 14.JAN.2016 22:09:57

Spurious Emission 2GHz~25GHz



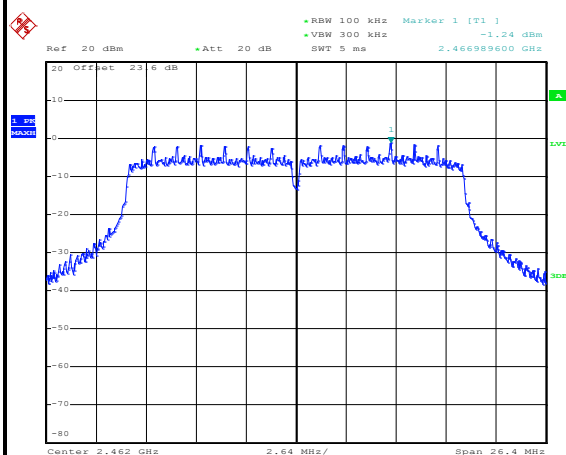
Date: 14.JAN.2016 22:10:05



Number of TX :	2	Ant. :	2
Test Mode :	802.11ac VHT20	Temperature :	22~26°C
Test Band :	2.4GHz High	Relative Humidity :	45~53%
Test Channel :	11	Test Engineer :	Osolemio Chang

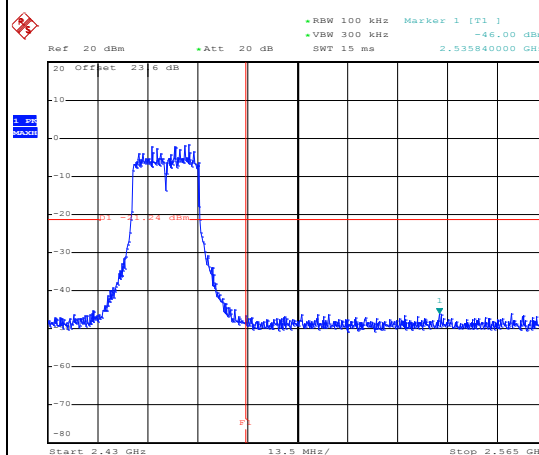
WLAN 802.11ac VHT20 Channel 11

100kHz PSD reference Level



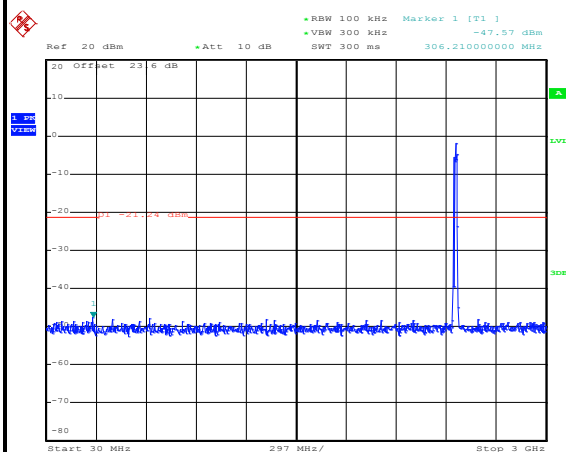
Date: 21.JAN.2016 21:18:52

High Channel Plot



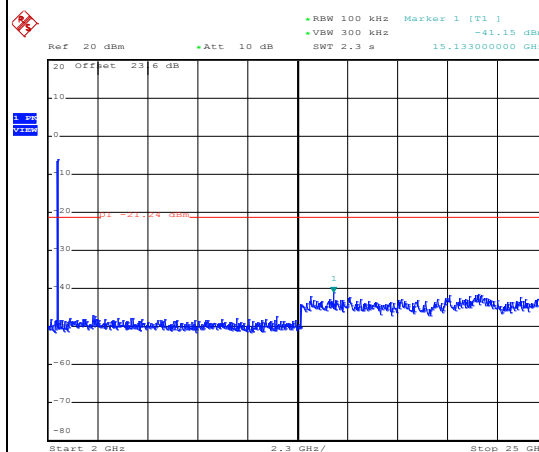
Date: 21.JAN.2016 21:19:04

Spurious Emission 30MHz~3GHz



Date: 21.JAN.2016 21:19:31

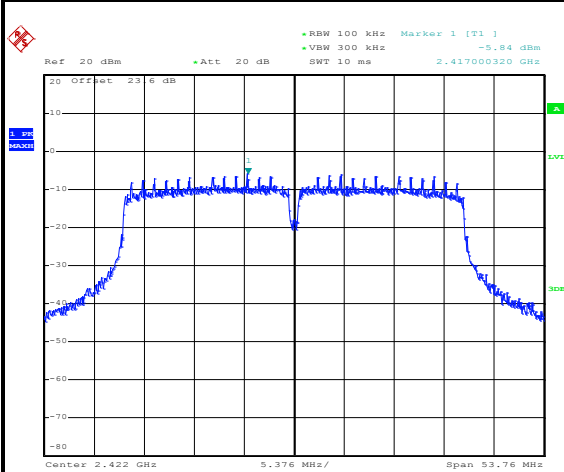
Spurious Emission 2GHz~25GHz



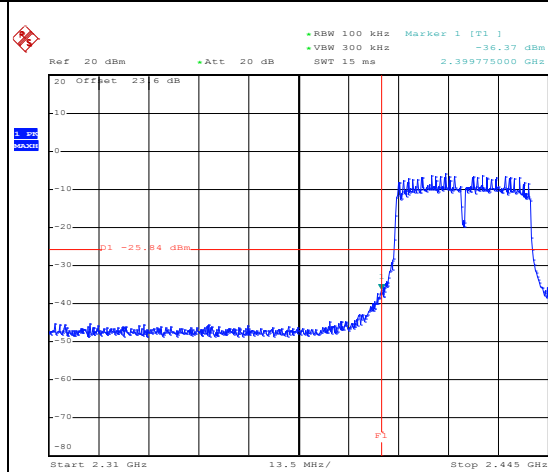
Date: 21.JAN.2016 21:19:39



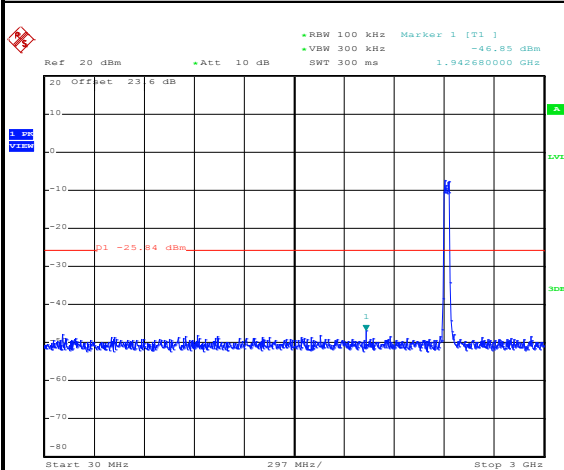
Number of TX :	2	Ant. :	2
Test Mode :	802.11ac VHT40	Temperature :	22~26°C
Test Band :	2.4GHz Low	Relative Humidity :	45~53%
Test Channel :	03	Test Engineer :	Osolemio Chang

WLAN 802.11ac VHT40 Channel 03**100kHz PSD reference Level**

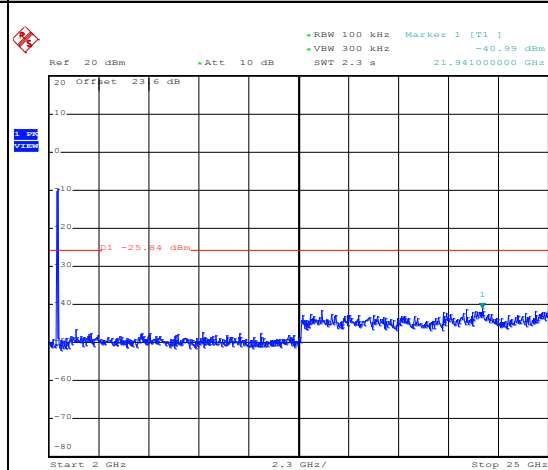
Date: 21.JAN.2016 22:03:07

Low Channel Plot

Date: 21.JAN.2016 22:04:37

Spurious Emission 30MHz~3GHz

Date: 21.JAN.2016 22:07:44

Spurious Emission 2GHz~25GHz

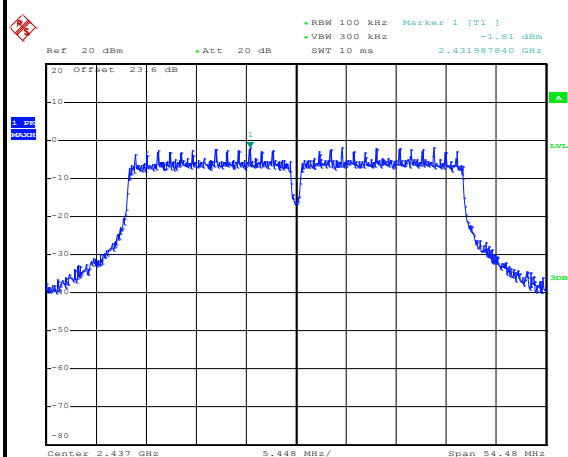
Date: 21.JAN.2016 22:07:52



Number of TX :	2	Ant. :	2
Test Mode :	802.11ac VHT40	Temperature :	22~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	45~53%
Test Channel :	06	Test Engineer :	Osolemio Chang

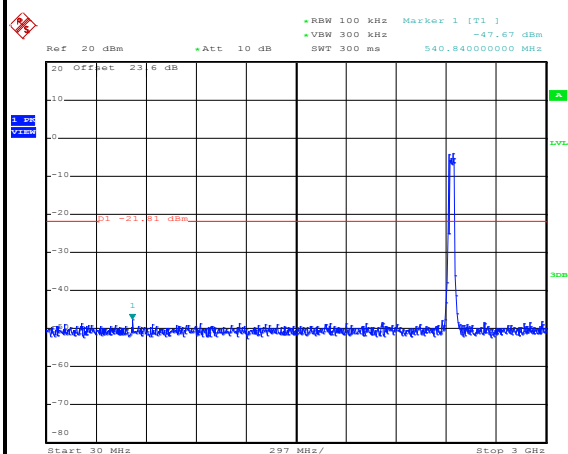
WLAN 802.11ac VHT40 Channel 06

100kHz PSD reference Level



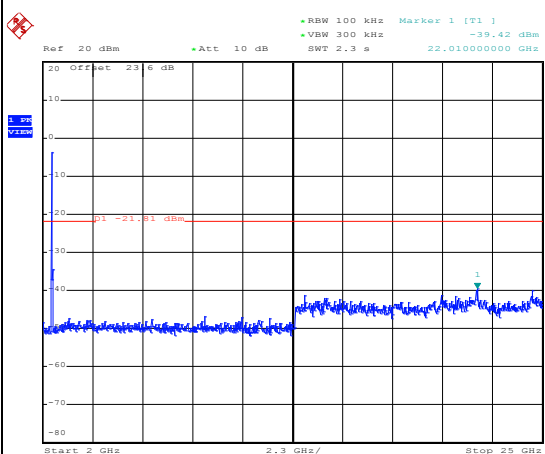
Date: 21.JAN.2016 21:56:12

Spurious Emission 30MHz~3GHz



Date: 21.JAN.2016 21:57:13

Spurious Emission 2GHz~25GHz



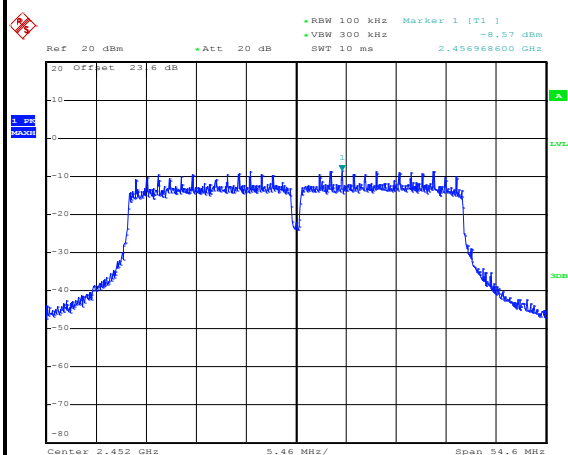
Date: 21.JAN.2016 21:57:21



Number of TX :	2	Ant. :	2
Test Mode :	802.11ac VHT40	Temperature :	22~26°C
Test Band :	2.4GHz High	Relative Humidity :	45~53%
Test Channel :	09	Test Engineer :	Osolemio Chang

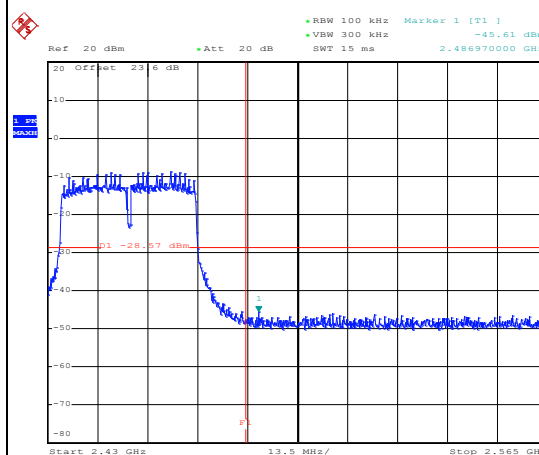
WLAN 802.11ac VHT40 Channel 09

100kHz PSD reference Level



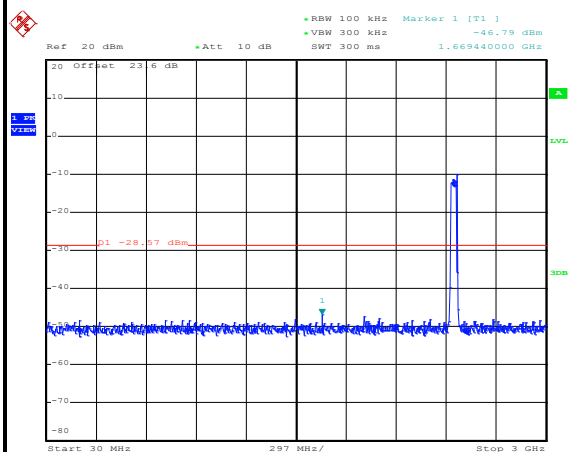
Date: 21.JAN.2016 21:49:13

High Channel Plot



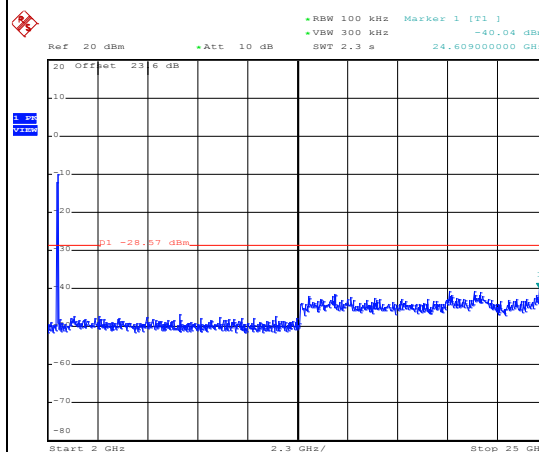
Date: 21.JAN.2016 21:49:28

Spurious Emission 30MHz~3GHz



Date: 21.JAN.2016 21:51:12

Spurious Emission 2GHz~25GHz



Date: 21.JAN.2016 21:51:21



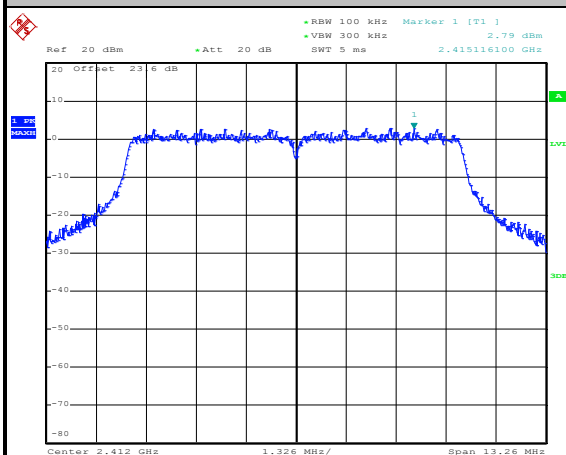
<PTMP>

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

Number of TX	2	Ant. :	1
Test Mode :	802.11ac VHT20(10M)	Temperature :	22~26°C
Test Band :	2.4GHz Low	Relative Humidity :	45~53%
Test Channel :	01	Test Engineer :	Osolemio Chang

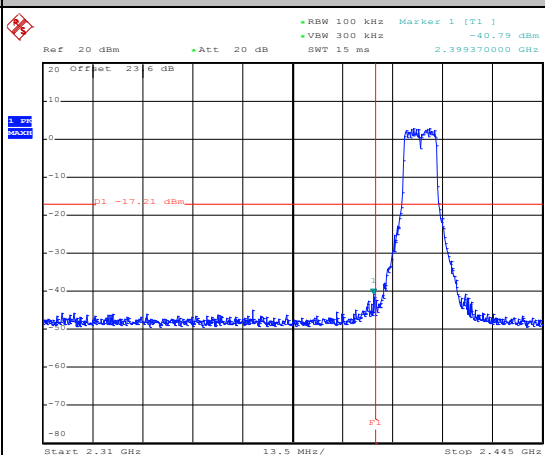
WLAN 802.11ac VHT20(10M) Channel 01

100kHz PSD reference Level



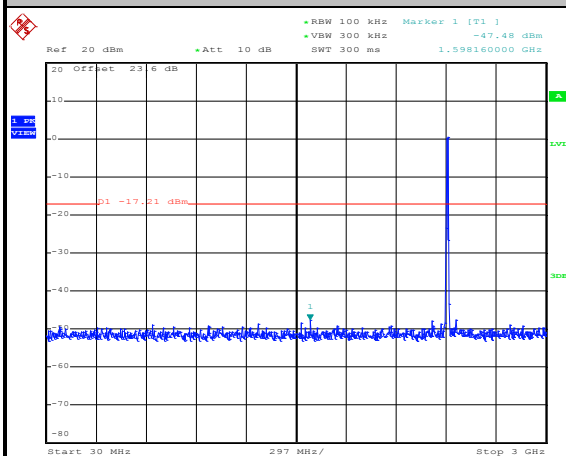
Date: 13.JAN.2016 23:58:01

Low Channel Plot



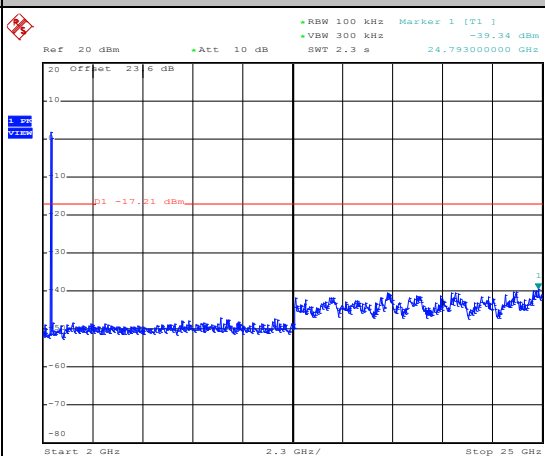
Date: 13.JAN.2016 23:58:29

Spurious Emission 30MHz~3GHz



Date: 13.JAN.2016 23:58:42

Spurious Emission 2GHz~25GHz



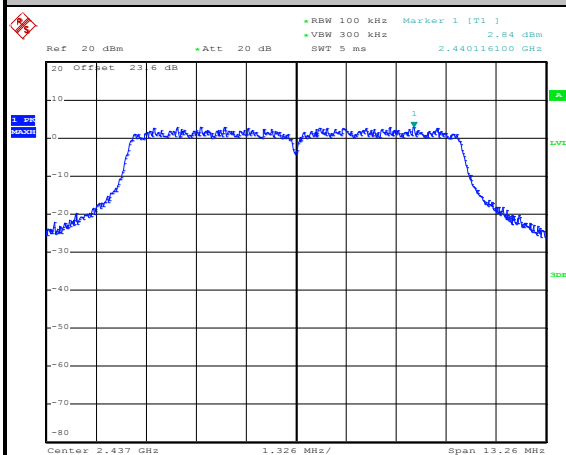
Date: 13.JAN.2016 23:58:50



Number of TX :	2	Ant. :	1
Test Mode :	802.11ac VHT20(10M)	Temperature :	22~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	45~53%
Test Channel :	06	Test Engineer :	Osolemio Chang

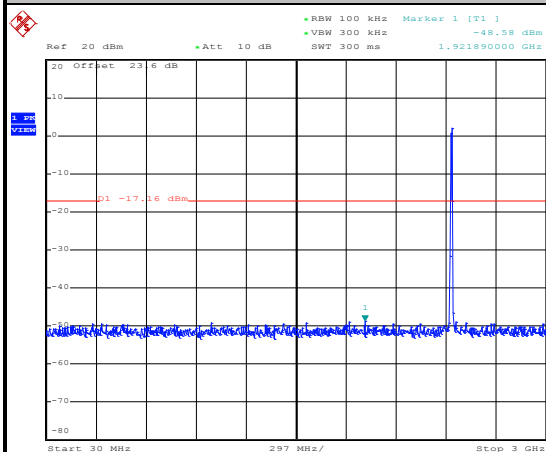
WLAN 802.11ac VHT20(10M) Channel 06

100kHz PSD reference Level



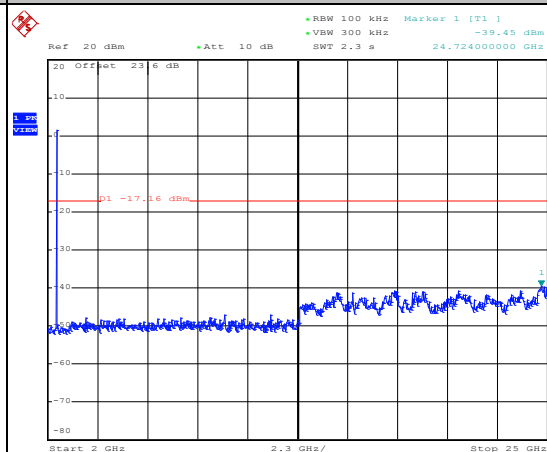
Date: 14.JAN.2016 00:06:48

Spurious Emission 30MHz~3GHz



Date: 14.JAN.2016 00:09:52

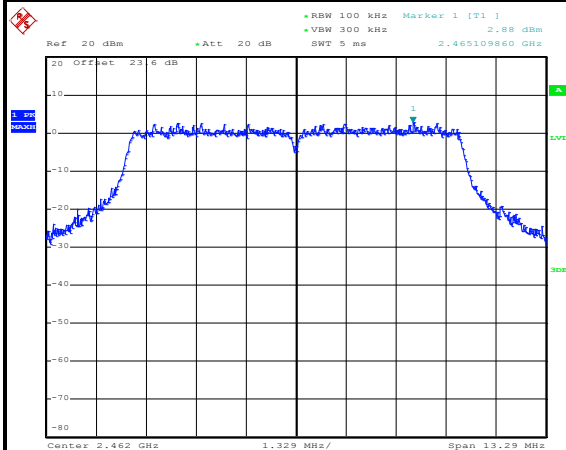
Spurious Emission 2GHz~25GHz



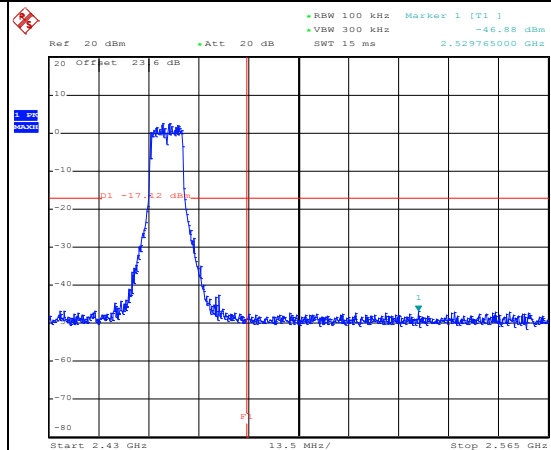
Date: 14.JAN.2016 00:10:00



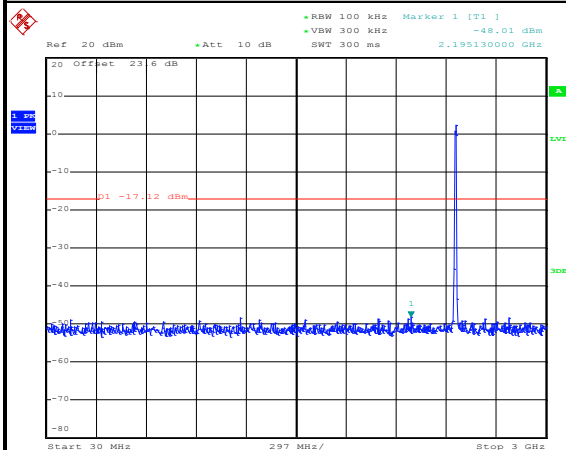
Number of TX :	2	Ant. :	1
Test Mode :	802.11ac VHT20(10M)	Temperature :	22~26°C
Test Band :	2.4GHz High	Relative Humidity :	45~53%
Test Channel :	11	Test Engineer :	Osolemio Chang

WLAN 802.11ac VHT20(10M) Channel 11**100kHz PSD reference Level**

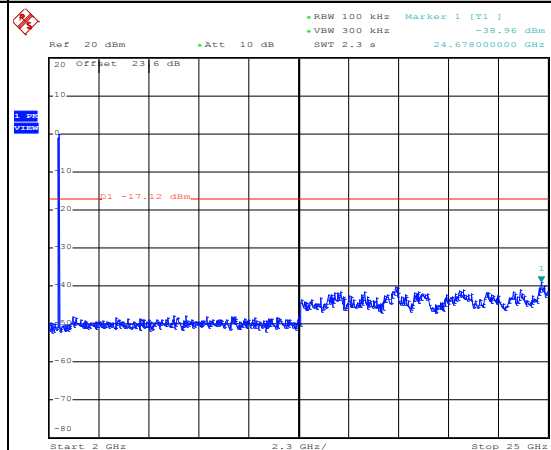
Date: 14.JAN.2016 00:16:56

High Channel Plot

Date: 14.JAN.2016 00:17:10

Spurious Emission 30MHz~3GHz

Date: 14.JAN.2016 00:18:24

Spurious Emission 2GHz~25GHz

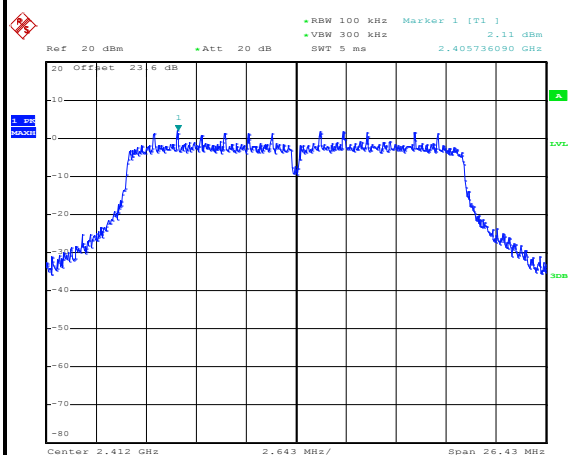
Date: 14.JAN.2016 00:18:33



Number of TX :	2	Ant. :	1
Test Mode :	802.11ac VHT20	Temperature :	22~26°C
Test Band :	2.4GHz Low	Relative Humidity :	45~53%
Test Channel :	01	Test Engineer :	Osolemio Chang

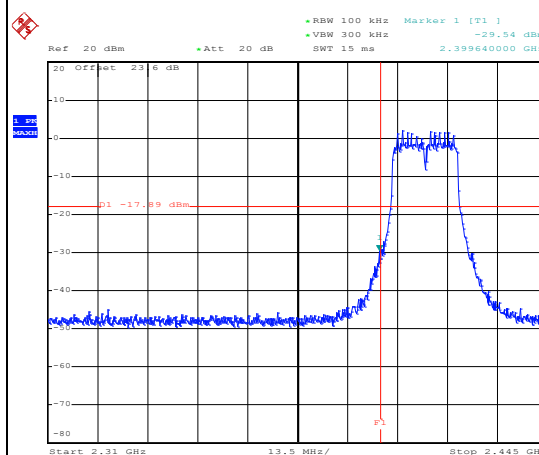
WLAN 802.11ac VHT20 Channel 01

100kHz PSD reference Level



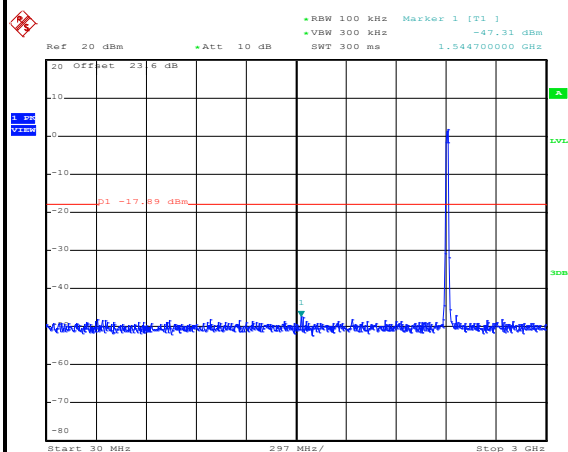
Date: 21.JAN.2016 21:05:47

Low Channel Plot



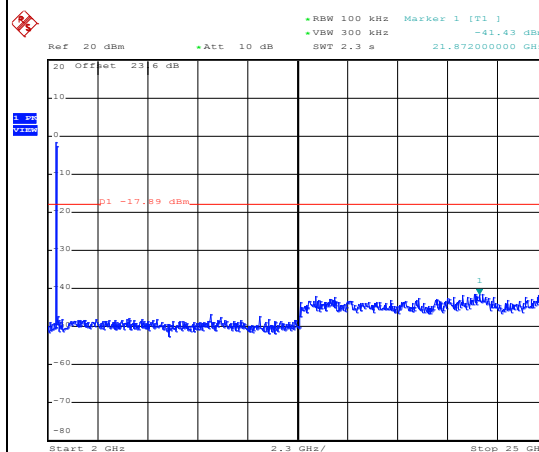
Date: 21.JAN.2016 21:06:13

Spurious Emission 30MHz~3GHz



Date: 21.JAN.2016 21:08:52

Spurious Emission 2GHz~25GHz



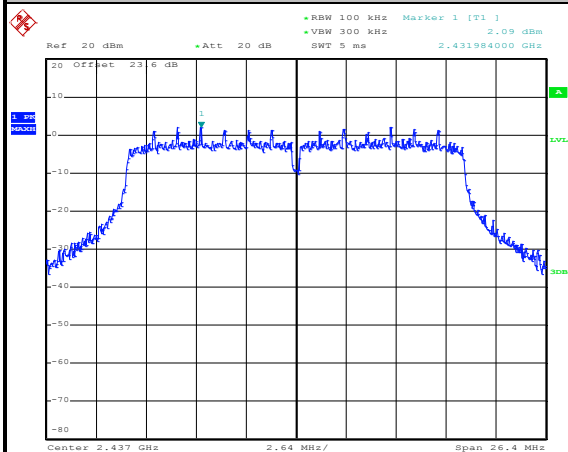
Date: 21.JAN.2016 21:09:12



Number of TX :	2	Ant. :	1
Test Mode :	802.11ac VHT20	Temperature :	22~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	45~53%
Test Channel :	06	Test Engineer :	Osolemio Chang

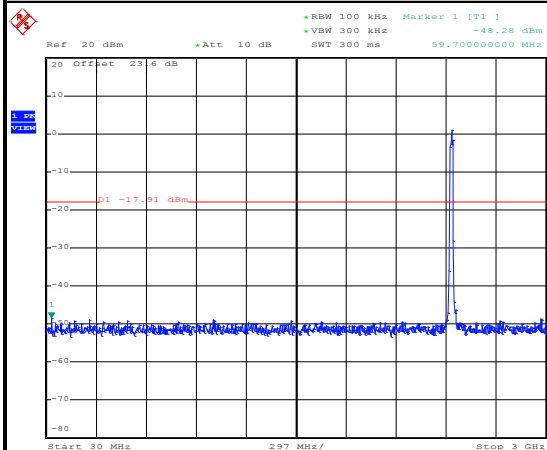
WLAN 802.11ac VHT20 Channel 06

100kHz PSD reference Level



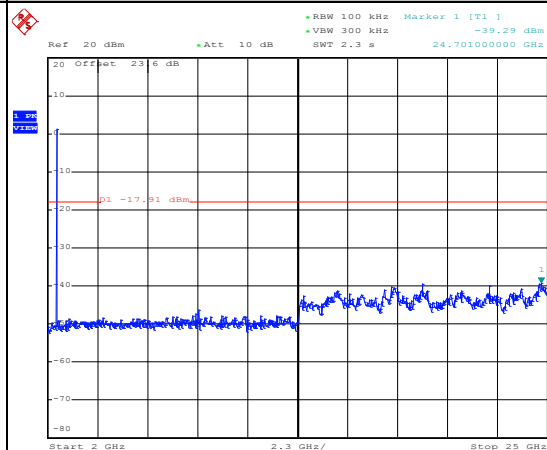
Date: 14.JAN.2016 00:40:10

Spurious Emission 30MHz~3GHz



Date: 14.JAN.2016 00:40:40

Spurious Emission 2GHz~25GHz



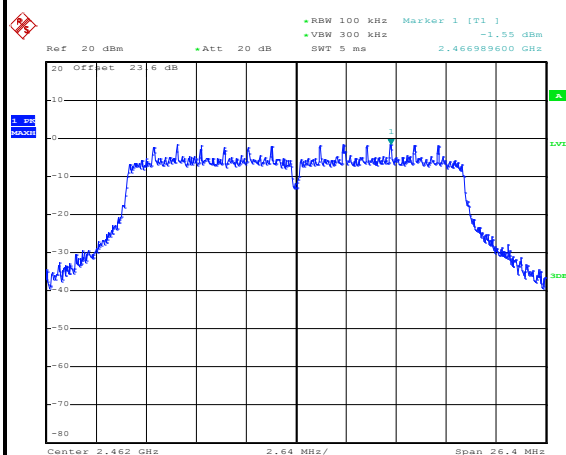
Date: 14.JAN.2016 00:40:49



Number of TX :	2	Ant. :	1
Test Mode :	802.11ac VHT20	Temperature :	22~26°C
Test Band :	2.4GHz High	Relative Humidity :	45~53%
Test Channel :	11	Test Engineer :	Osolemio Chang

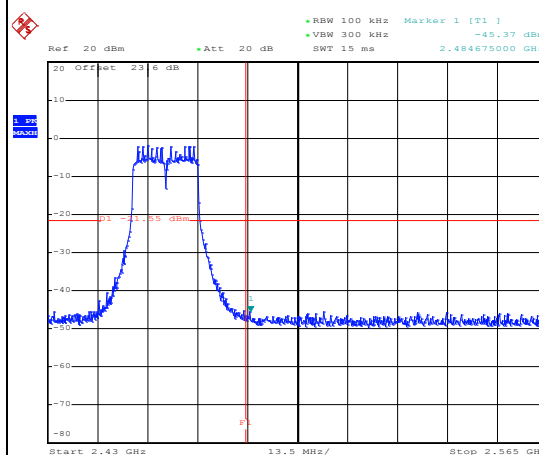
WLAN 802.11ac VHT20 Channel 11

100kHz PSD reference Level



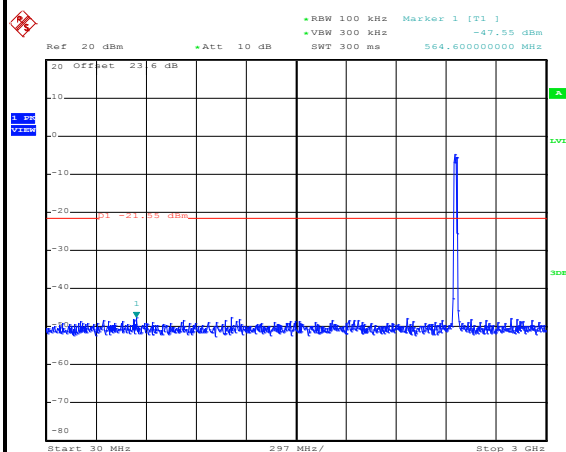
Date: 21.JAN.2016 21:13:31

High Channel Plot



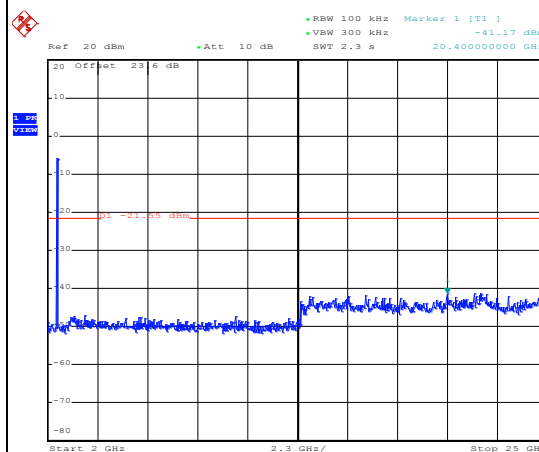
Date: 21.JAN.2016 21:13:53

Spurious Emission 30MHz~3GHz



Date: 21.JAN.2016 21:14:07

Spurious Emission 2GHz~25GHz



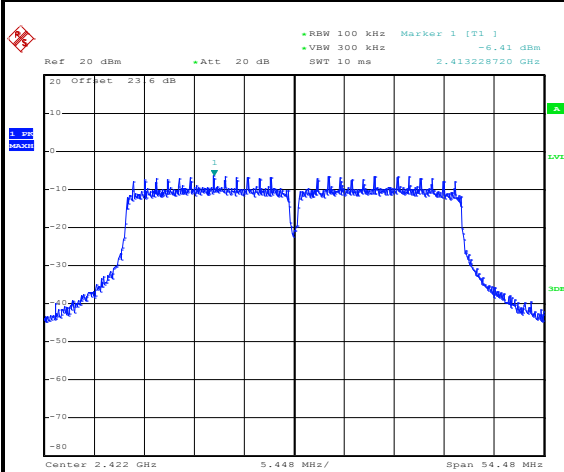
Date: 21.JAN.2016 21:14:16



Number of TX :	2	Ant. :	1
Test Mode :	802.11ac VHT40	Temperature :	22~26°C
Test Band :	2.4GHz Low	Relative Humidity :	45~53%
Test Channel :	03	Test Engineer :	Osolemio Chang

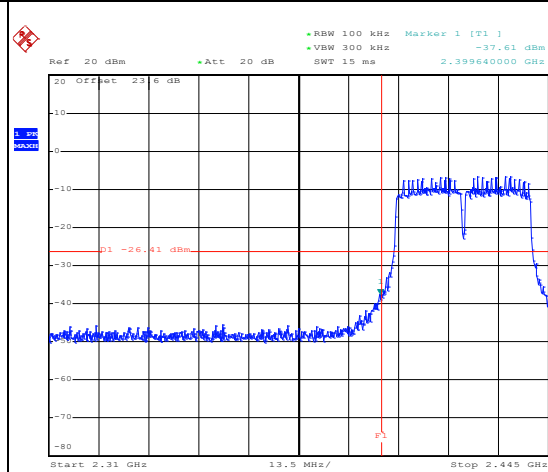
WLAN 802.11ac VHT40 Channel 03

100kHz PSD reference Level



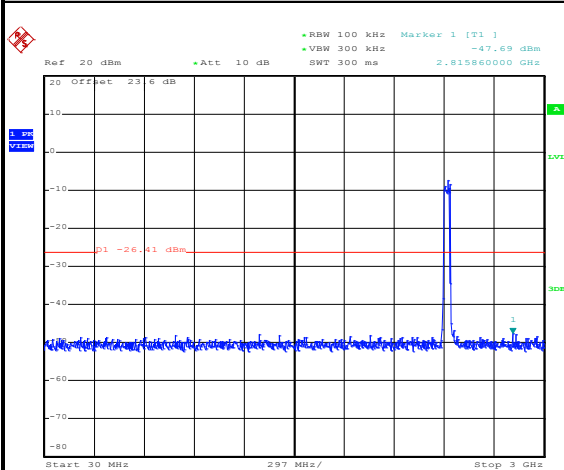
Date: 21.JAN.2016 21:28:33

Low Channel Plot



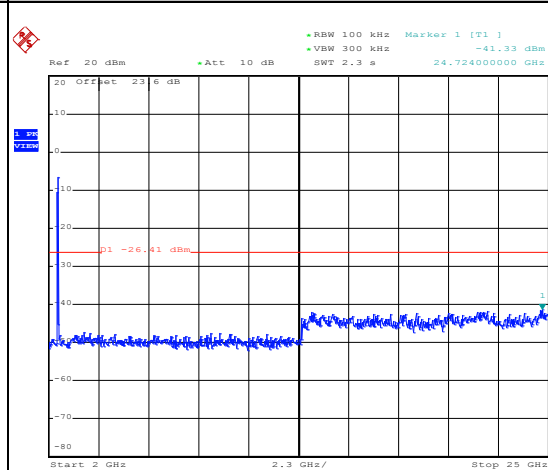
Date: 21.JAN.2016 21:28:48

Spurious Emission 30MHz~3GHz



Date: 21.JAN.2016 21:29:02

Spurious Emission 2GHz~25GHz



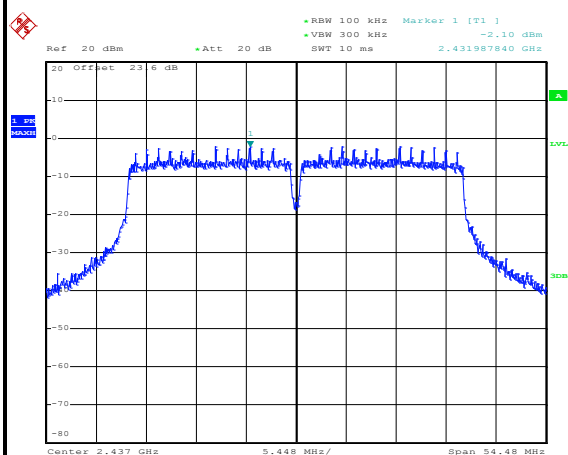
Date: 21.JAN.2016 21:29:11



Number of TX :	2	Ant. :	1
Test Mode :	802.11ac VHT40	Temperature :	22~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	45~53%
Test Channel :	06	Test Engineer :	Osolemio Chang

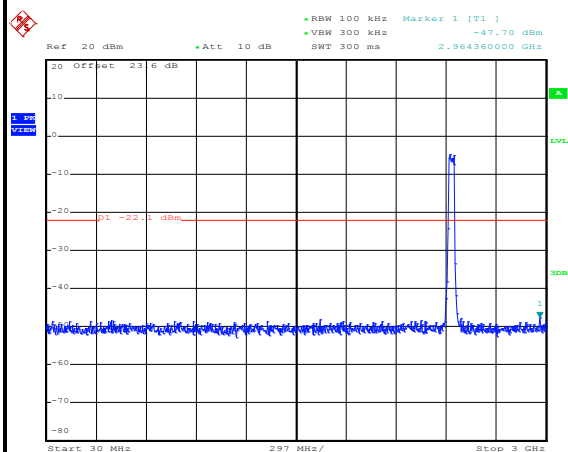
WLAN 802.11ac VHT40 Channel 06

100kHz PSD reference Level



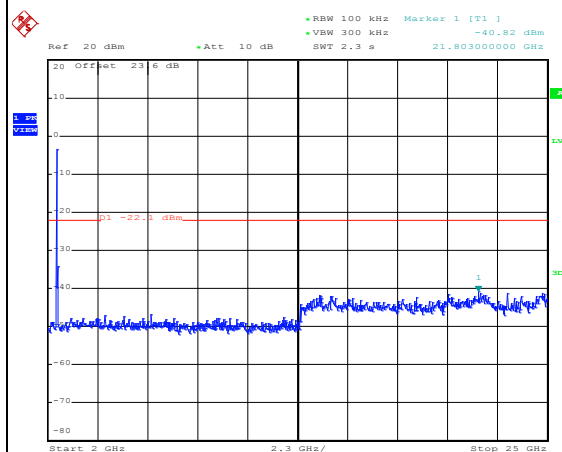
Date: 21.JAN.2016 21:32:55

Spurious Emission 30MHz~3GHz



Date: 21.JAN.2016 21:34:04

Spurious Emission 2GHz~25GHz



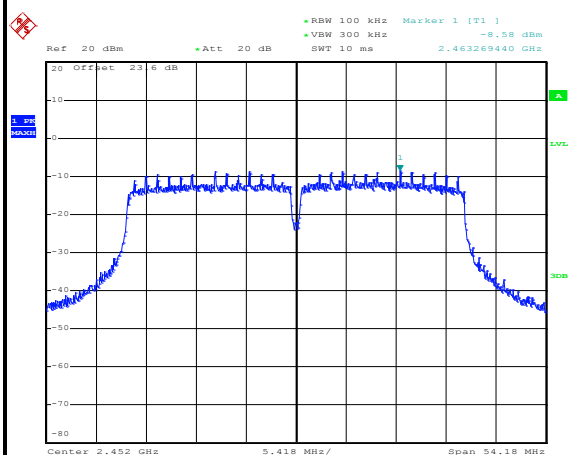
Date: 21.JAN.2016 21:34:12



Number of TX :	2	Ant. :	1
Test Mode :	802.11ac VHT40	Temperature :	22~26°C
Test Band :	2.4GHz High	Relative Humidity :	45~53%
Test Channel :	09	Test Engineer :	Osolemio Chang

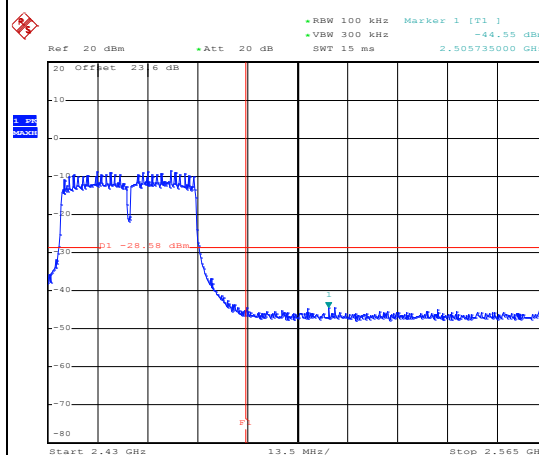
WLAN 802.11ac VHT40 Channel 09

100kHz PSD reference Level



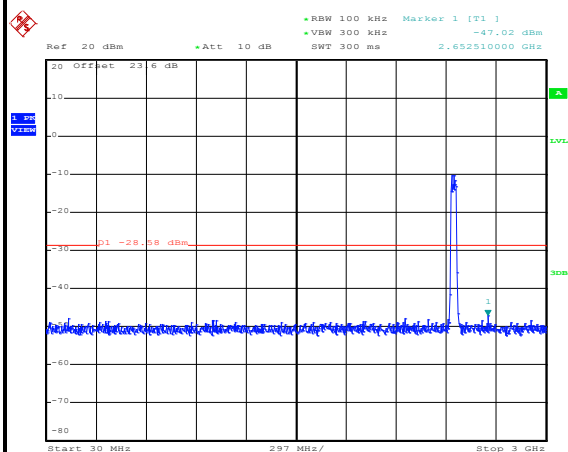
Date: 21.JAN.2016 21:40:43

High Channel Plot



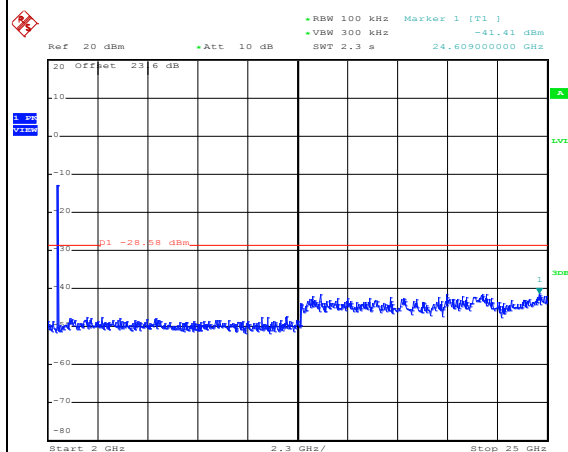
Date: 21.JAN.2016 21:45:18

Spurious Emission 30MHz~3GHz



Date: 21.JAN.2016 21:45:30

Spurious Emission 2GHz~25GHz



Date: 21.JAN.2016 21:45:39

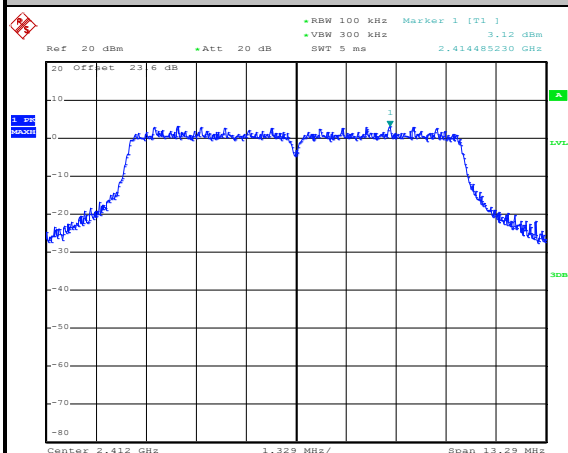


Number of TX = 2, Ant. 2 (Measured)

Number of TX :	2	Ant. :	2
Test Mode :	802.11ac VHT20(10M)	Temperature :	22~26°C
Test Band :	2.4GHz Low	Relative Humidity :	45~53%
Test Channel :	01	Test Engineer :	Osolemio Chang

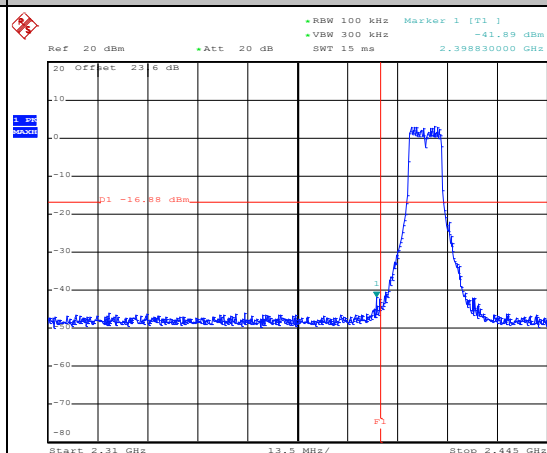
WLAN 802.11ac VHT20(10M) Channel 01

100kHz PSD reference Level



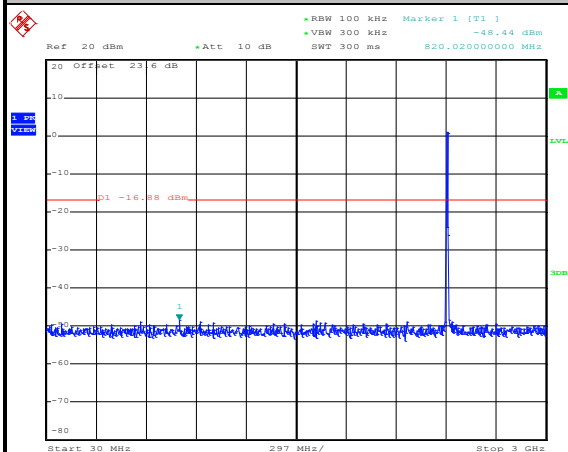
Date: 14.JAN.2016 00:01:16

Low Channel Plot



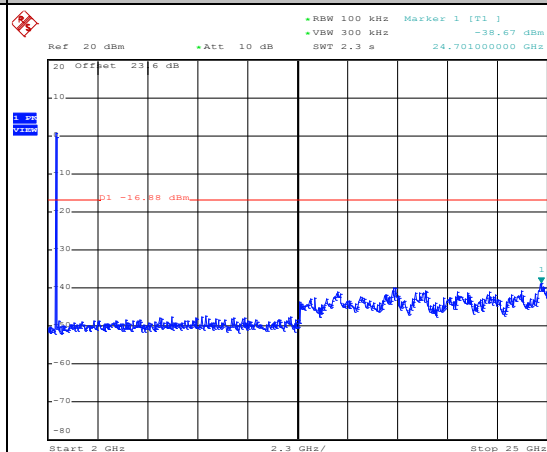
Date: 14.JAN.2016 00:01:43

Spurious Emission 30MHz~3GHz



Date: 14.JAN.2016 00:01:56

Spurious Emission 2GHz~25GHz



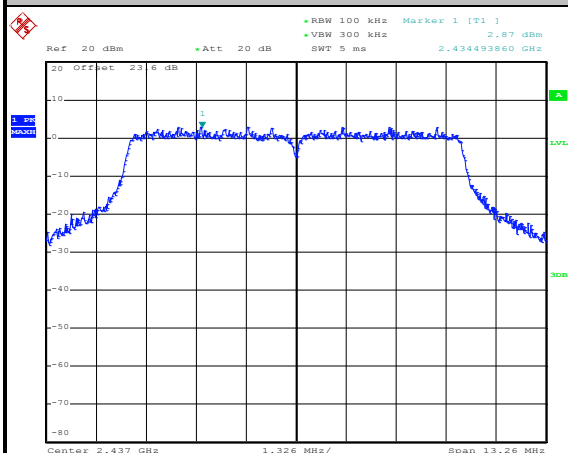
Date: 14.JAN.2016 00:02:04



Number of TX :	2	Ant. :	2
Test Mode :	802.11ac VHT20(10M)	Temperature :	22~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	45~53%
Test Channel :	06	Test Engineer :	Osolemio Chang

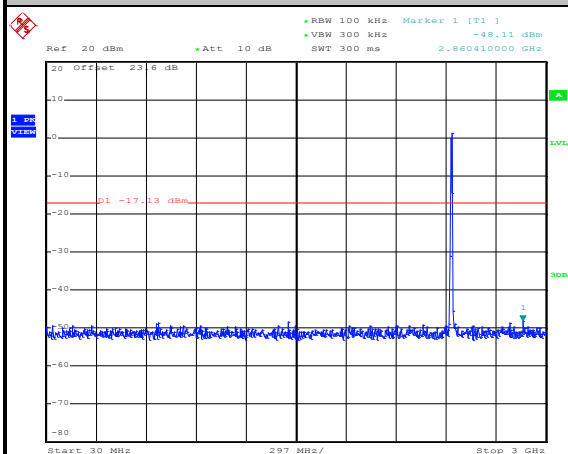
WLAN 802.11ac VHT20(10M) Channel 06

100kHz PSD reference Level



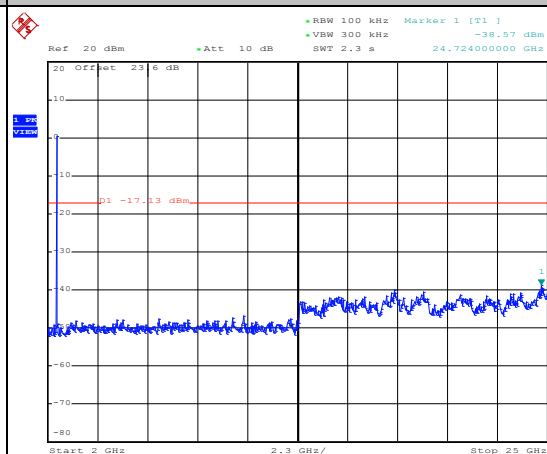
Date: 14.JAN.2016 00:12:22

Spurious Emission 30MHz~3GHz



Date: 14.JAN.2016 00:12:35

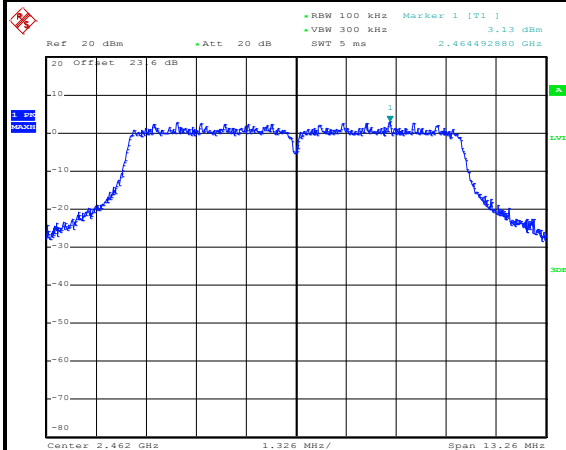
Spurious Emission 2GHz~25GHz



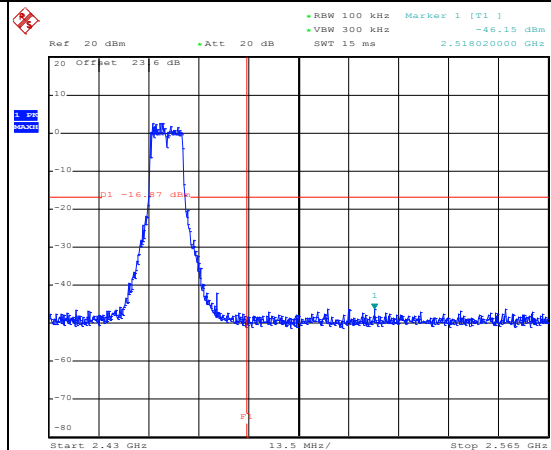
Date: 14.JAN.2016 00:12:44



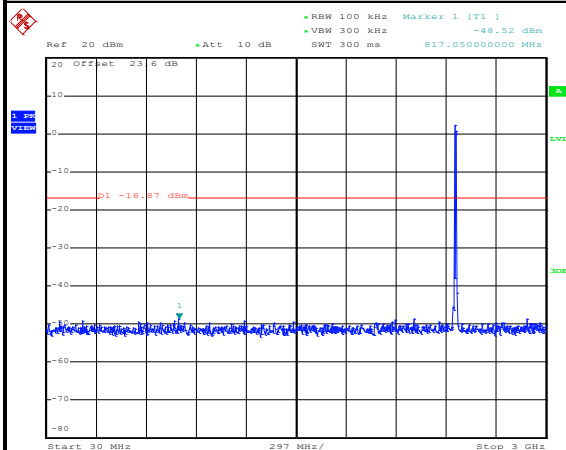
Number of TX :	2	Ant. :	2
Test Mode :	802.11ac VHT20(10M)	Temperature :	22~26°C
Test Band :	2.4GHz High	Relative Humidity :	45~53%
Test Channel :	11	Test Engineer :	Osolemio Chang

WLAN 802.11ac VHT20(10M) Channel 11**100kHz PSD reference Level**

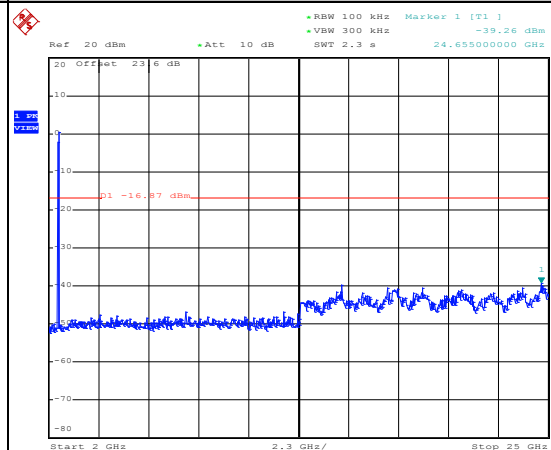
Date: 14.JAN.2016 00:21:39

High Channel Plot

Date: 14.JAN.2016 00:21:53

Spurious Emission 30MHz~3GHz

Date: 14.JAN.2016 00:22:16

Spurious Emission 2GHz~25GHz

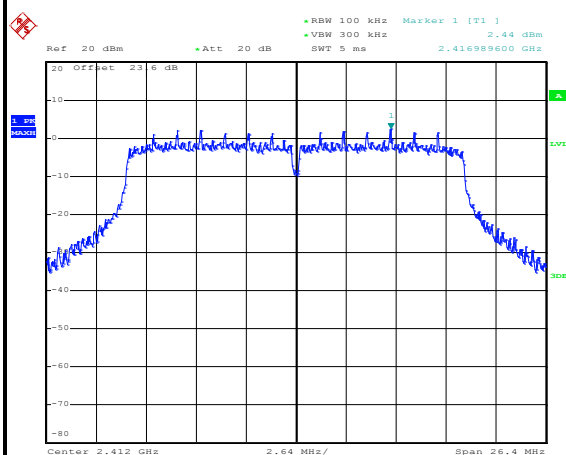
Date: 14.JAN.2016 00:22:24



Number of TX :	2	Ant. :	2
Test Mode :	802.11ac VHT20	Temperature :	22~26°C
Test Band :	2.4GHz Low	Relative Humidity :	45~53%
Test Channel :	01	Test Engineer :	Osolemio Chang

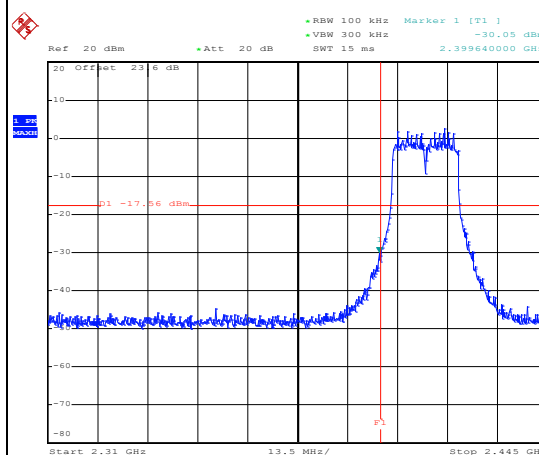
WLAN 802.11ac VHT20 Channel 01

100kHz PSD reference Level



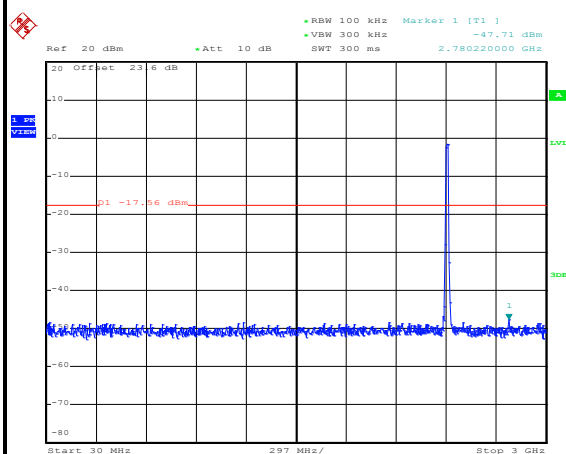
Date: 21.JAN.2016 21:22:48

Low Channel Plot



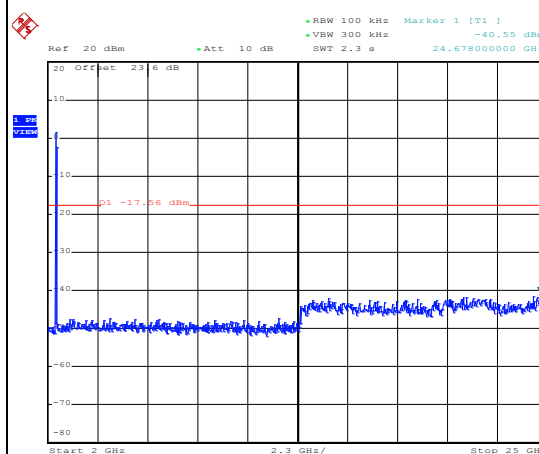
Date: 21.JAN.2016 21:23:10

Spurious Emission 30MHz~3GHz



Date: 21.JAN.2016 21:23:29

Spurious Emission 2GHz~25GHz



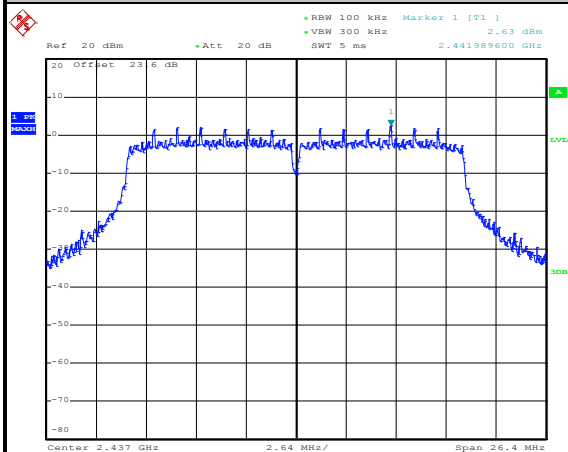
Date: 21.JAN.2016 21:23:37



Number of TX :	2	Ant. :	2
Test Mode :	802.11ac VHT20	Temperature :	22~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	45~53%
Test Channel :	06	Test Engineer :	Osolemio Chang

WLAN 802.11ac VHT20 Channel 06

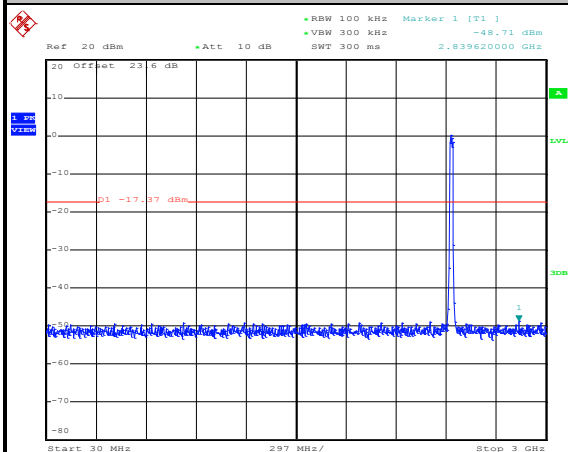
100kHz PSD reference Level



Date: 14.JAN.2016 00:44:06

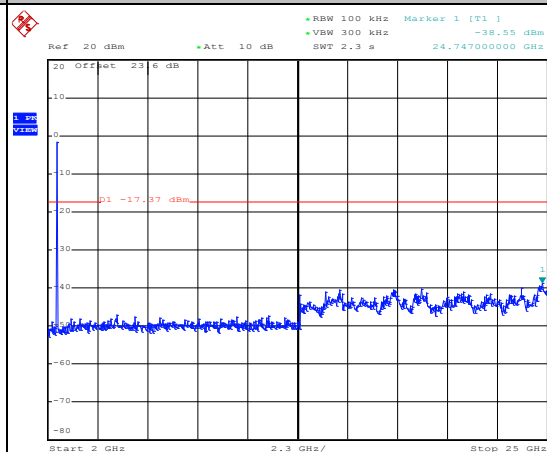
Mid Channel Plot

Spurious Emission 30MHz~3GHz



Date: 14.JAN.2016 00:45:17

Spurious Emission 2GHz~25GHz



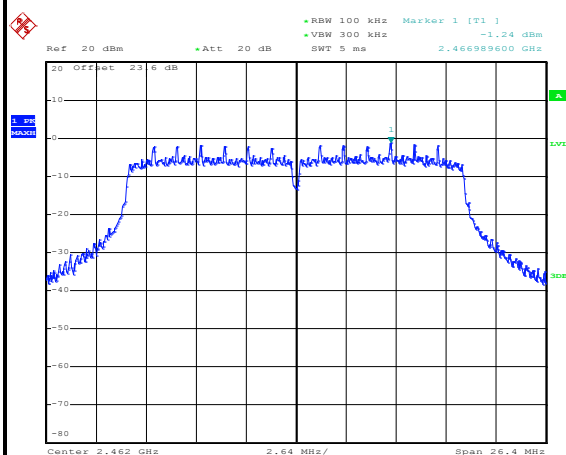
Date: 14.JAN.2016 00:45:27



Number of TX :	2	Ant. :	2
Test Mode :	802.11ac VHT20	Temperature :	22~26°C
Test Band :	2.4GHz High	Relative Humidity :	45~53%
Test Channel :	11	Test Engineer :	Osolemio Chang

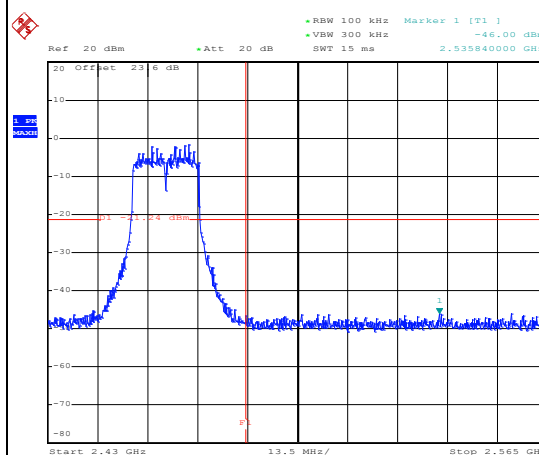
WLAN 802.11ac VHT20 Channel 11

100kHz PSD reference Level



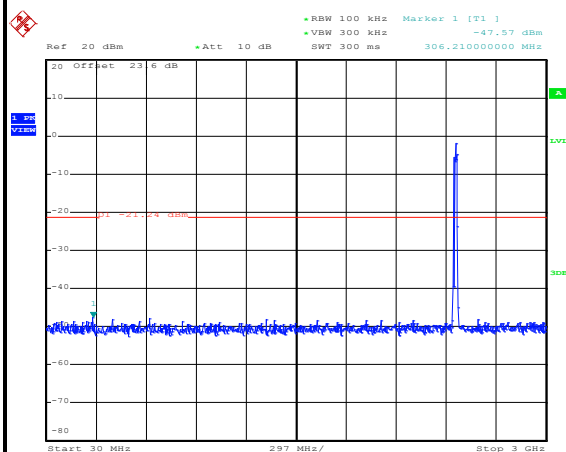
Date: 21.JAN.2016 21:18:52

High Channel Plot



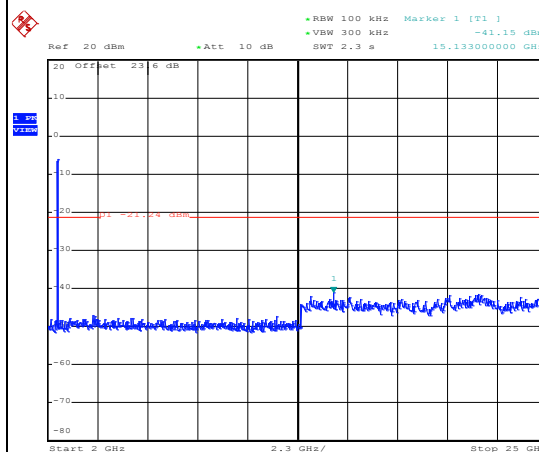
Date: 21.JAN.2016 21:19:04

Spurious Emission 30MHz~3GHz



Date: 21.JAN.2016 21:19:31

Spurious Emission 2GHz~25GHz



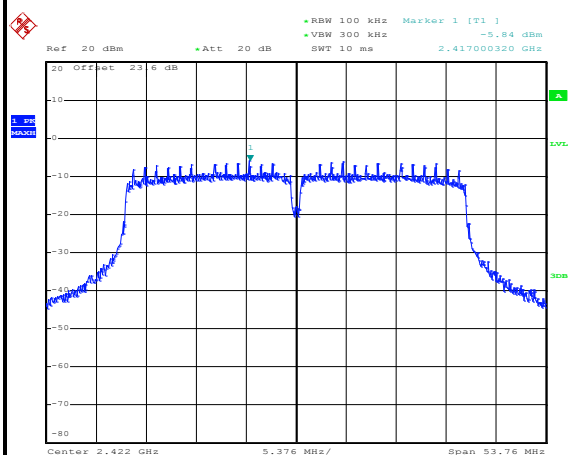
Date: 21.JAN.2016 21:19:39



Number of TX :	2	Ant. :	2
Test Mode :	802.11ac VHT40	Temperature :	22~26°C
Test Band :	2.4GHz Low	Relative Humidity :	45~53%
Test Channel :	03	Test Engineer :	Osolemio Chang

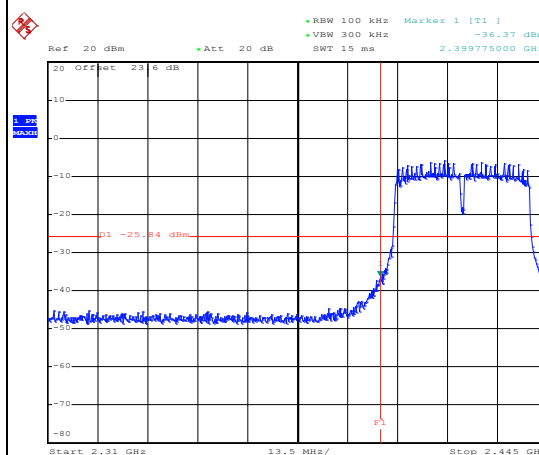
WLAN 802.11ac VHT40 Channel 03

100kHz PSD reference Level



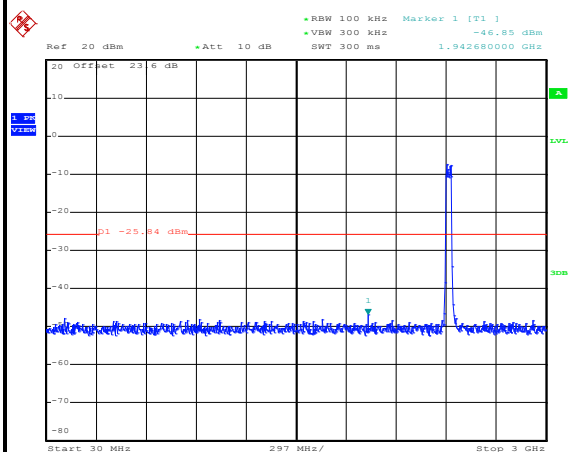
Date: 21.JAN.2016 22:03:07

Low Channel Plot



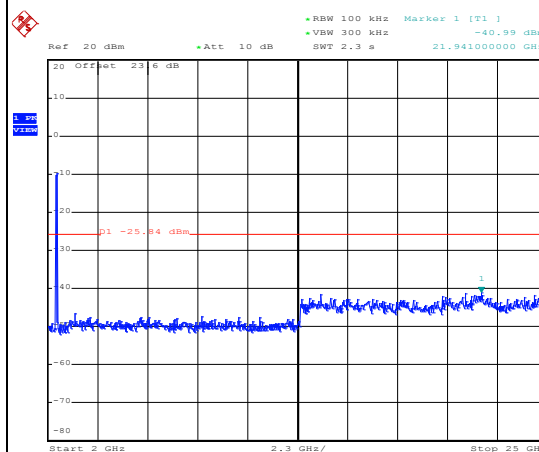
Date: 21.JAN.2016 22:04:37

Spurious Emission 30MHz~3GHz



Date: 21.JAN.2016 22:07:44

Spurious Emission 2GHz~25GHz



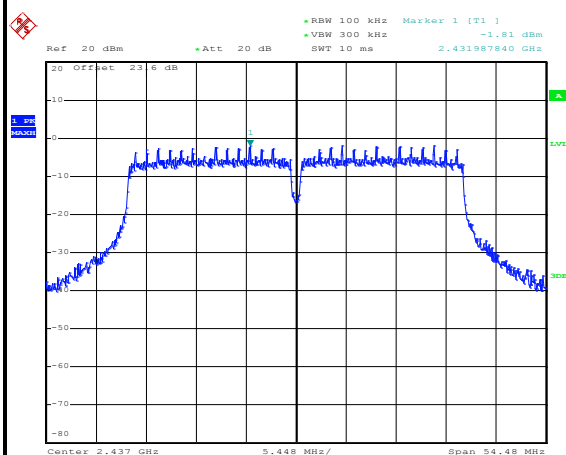
Date: 21.JAN.2016 22:07:52



Number of TX :	2	Ant. :	2
Test Mode :	802.11ac VHT40	Temperature :	22~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	45~53%
Test Channel :	06	Test Engineer :	Osolemio Chang

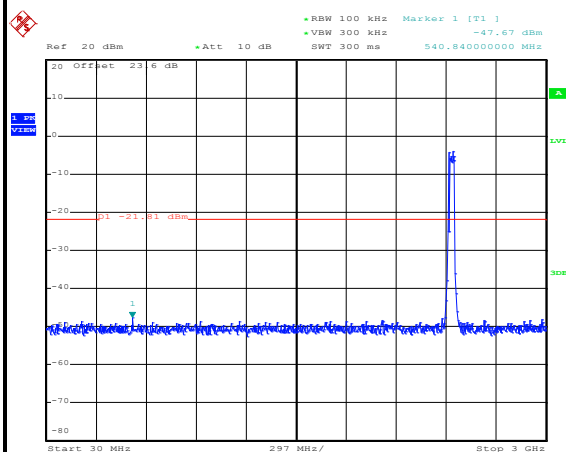
WLAN 802.11ac VHT40 Channel 06

100kHz PSD reference Level



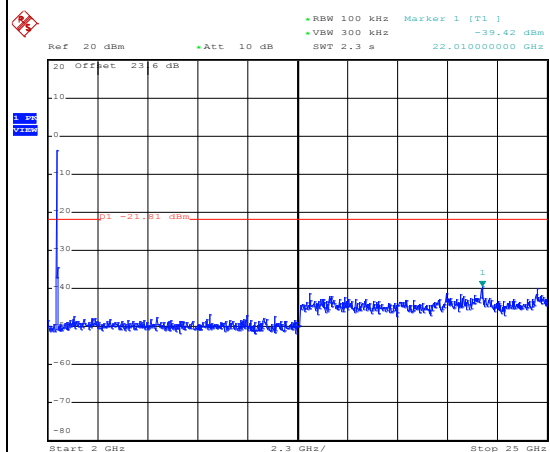
Date: 21.JAN.2016 21:56:12

Spurious Emission 30MHz~3GHz



Date: 21.JAN.2016 21:57:13

Spurious Emission 2GHz~25GHz



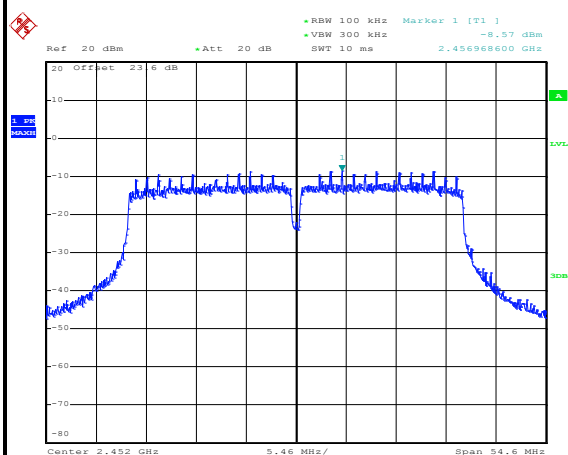
Date: 21.JAN.2016 21:57:21



Number of TX :	2	Ant. :	2
Test Mode :	802.11ac VHT40	Temperature :	22~26°C
Test Band :	2.4GHz High	Relative Humidity :	45~53%
Test Channel :	09	Test Engineer :	Osolemio Chang

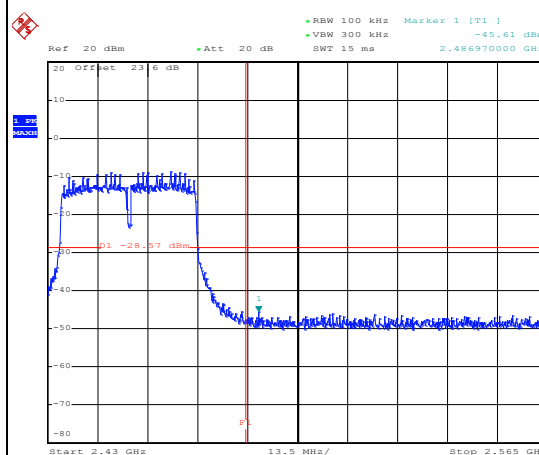
WLAN 802.11ac VHT40 Channel 09

100kHz PSD reference Level



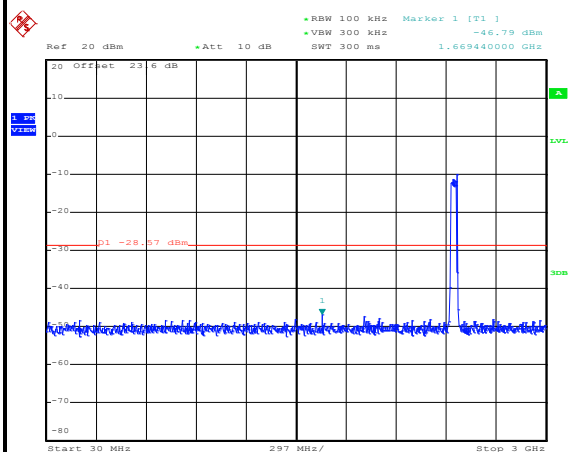
Date: 21.JAN.2016 21:49:13

High Channel Plot



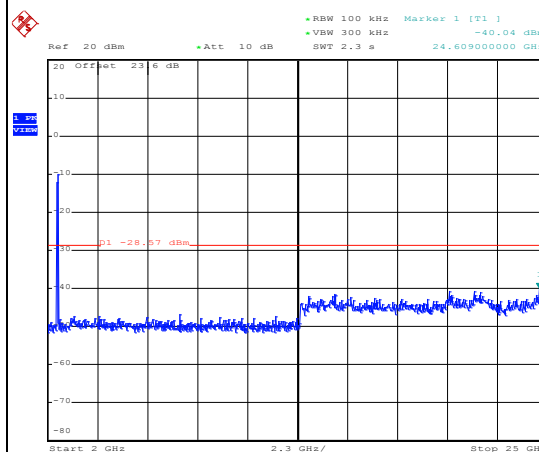
Date: 21.JAN.2016 21:49:28

Spurious Emission 30MHz~3GHz



Date: 21.JAN.2016 21:51:12

Spurious Emission 2GHz~25GHz



Date: 21.JAN.2016 21:51:21



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 $\geq$ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement.

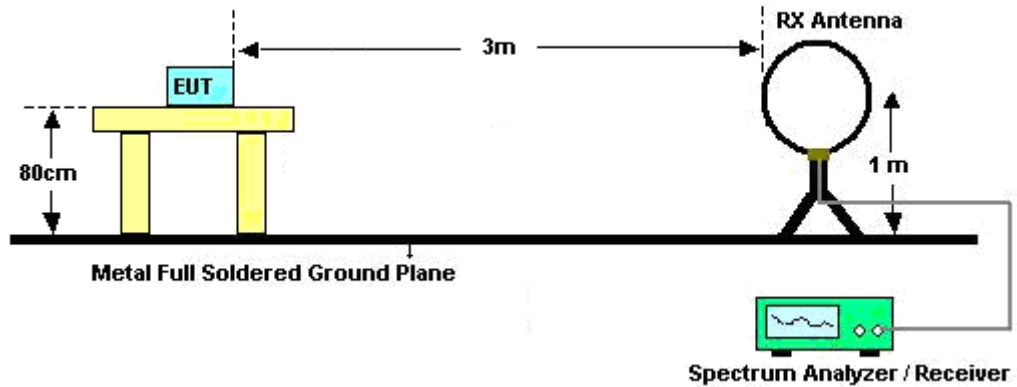
For average measurement:

 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW $\geq 1/T$, 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.

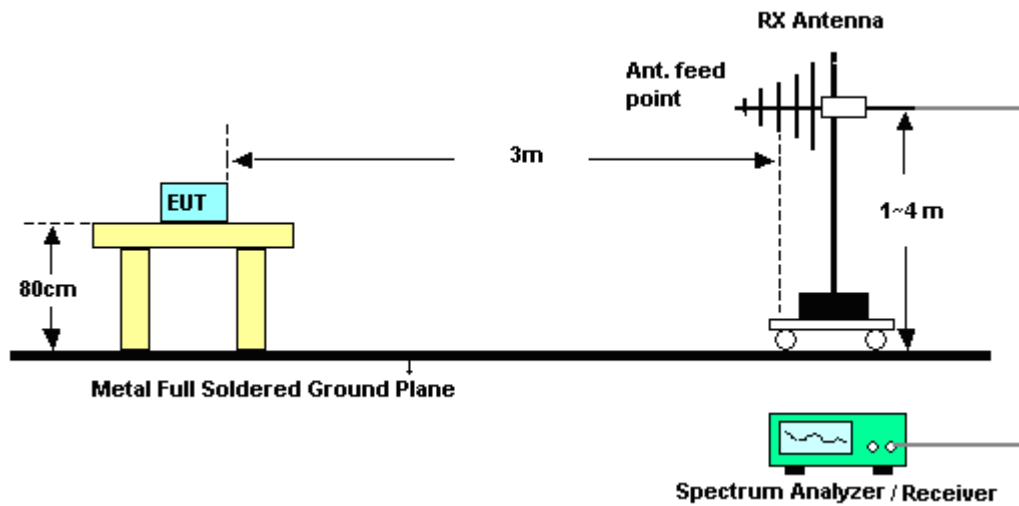
Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
0+1	2.4GHz 802.11ac20 (10M) for Ant 1	96.95	2540	0.39	1kHz
0+1	2.4GHz 802.11ac20 (10M) for Ant 2	96.21	2540	0.39	1kHz
0+1	2.4GHz 802.11ac20 for Ant 1	94.07	1270	0.79	1kHz
0+1	2.4GHz 802.11ac20 for Ant 2	94.78	1270	0.79	1kHz
0+1	2.4GHz 802.11ac40 for Ant 1	88.73	630	1.59	3kHz
0+1	2.4GHz 802.11ac40 for Ant 2	88.73	630	1.59	3kHz

3.5.4 Test Setup

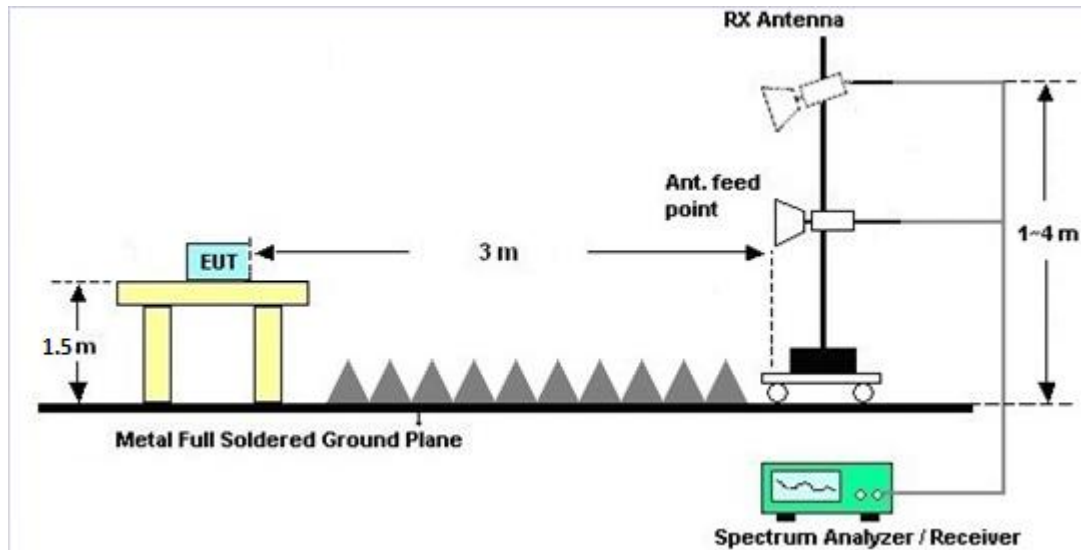
For radiated emissions below 30MHz



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 report.

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

Please refer to Appendix B and C of this 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 (dBuV)	
	Quasi-peak	Average
0.15-0.5	79	66
0.5-30	73	60

*Decreases with the logarithm of the frequency.

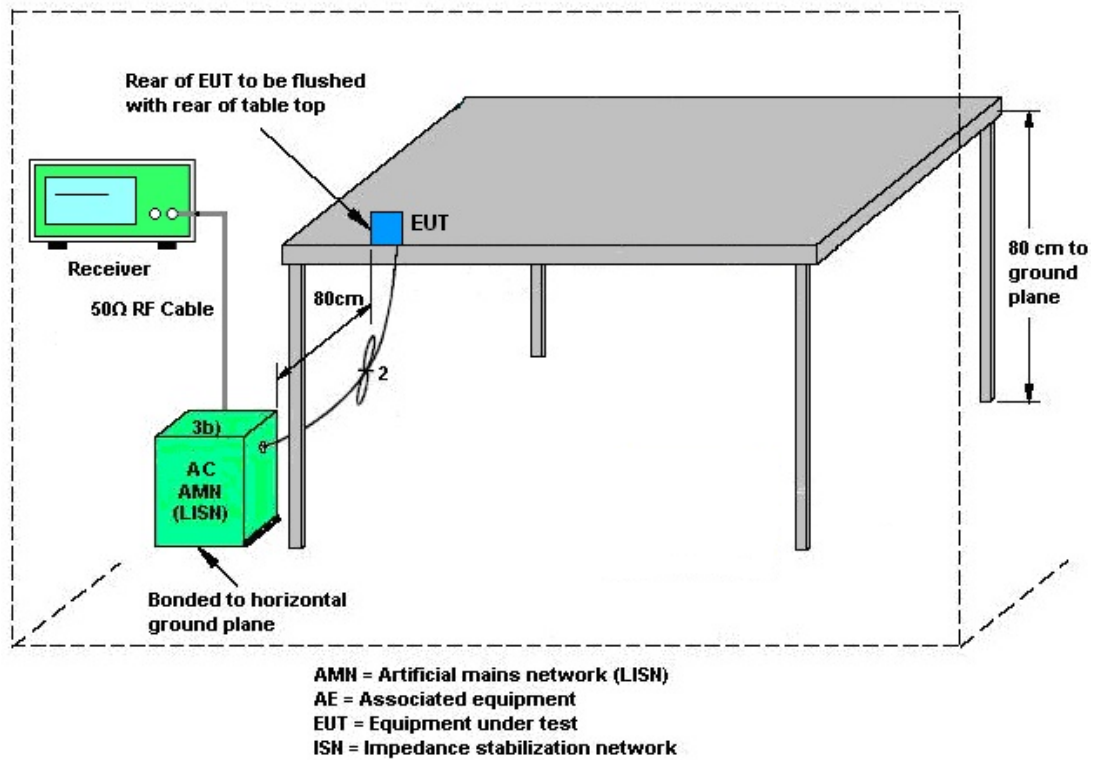
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

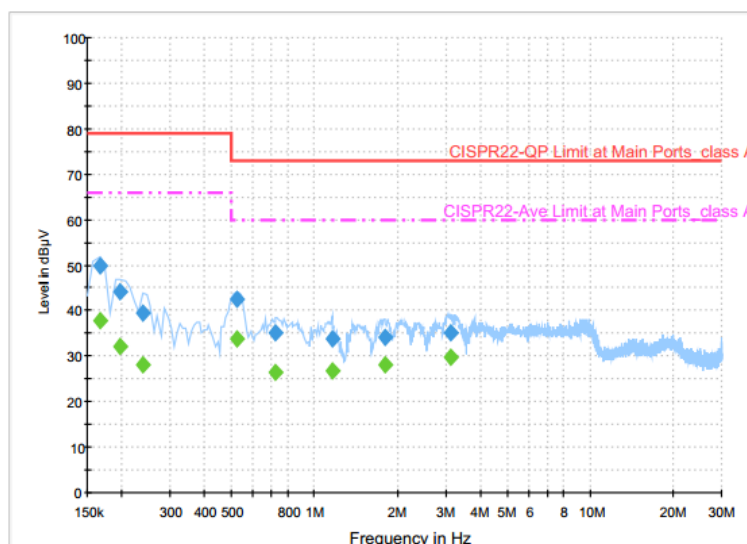
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other 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



3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	23~24℃
Test Engineer :	Kai-Chun Chu	Relative Humidity :	60~61%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN Link + PoE + LAN Link		



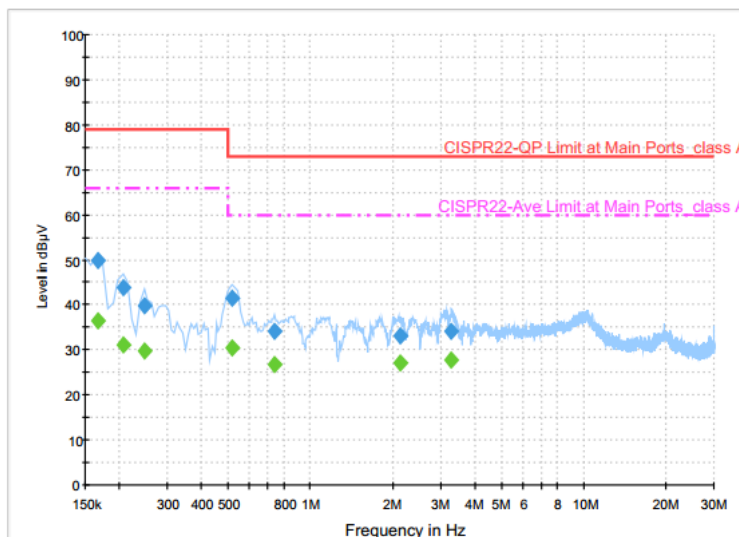
Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.166000	49.9	Off	L1	19.7	29.1	79.0
0.198000	44.0	Off	L1	19.7	35.0	79.0
0.238000	39.6	Off	L1	19.7	39.4	79.0
0.526000	42.6	Off	L1	19.7	30.4	73.0
0.726000	35.2	Off	L1	19.7	37.8	73.0
1.158000	33.7	Off	L1	19.7	39.3	73.0
1.798000	34.0	Off	L1	19.7	39.0	73.0
3.110000	35.2	Off	L1	19.7	37.8	73.0

Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.166000	37.9	Off	L1	19.7	28.1	66.0
0.198000	32.2	Off	L1	19.7	33.8	66.0
0.238000	28.2	Off	L1	19.7	37.8	66.0
0.526000	33.6	Off	L1	19.7	26.4	60.0
0.726000	26.5	Off	L1	19.7	33.5	60.0
1.158000	26.7	Off	L1	19.7	33.3	60.0
1.798000	28.1	Off	L1	19.7	31.9	60.0
3.110000	29.7	Off	L1	19.7	30.3	60.0

Test Mode :	Mode 1	Temperature :	23~24°C
Test Engineer :	Kai-Chun Chu	Relative Humidity :	60~61%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN Link + PoE + LAN Link		


Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.166000	49.8	Off	N	19.7	29.2	79.0
0.206000	43.9	Off	N	19.7	35.1	79.0
0.246000	39.8	Off	N	19.7	39.2	79.0
0.518000	41.4	Off	N	19.7	31.6	73.0
0.742000	34.0	Off	N	19.6	39.0	73.0
2.134000	33.0	Off	N	19.6	40.0	73.0
3.294000	34.1	Off	N	19.7	38.9	73.0

Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.166000	36.5	Off	N	19.7	29.5	66.0
0.206000	31.0	Off	N	19.7	35.0	66.0
0.246000	29.6	Off	N	19.7	36.4	66.0
0.518000	30.4	Off	N	19.7	29.6	60.0
0.742000	26.9	Off	N	19.6	33.1	60.0
2.134000	26.9	Off	N	19.6	33.1	60.0
3.294000	27.7	Off	N	19.7	32.3	60.0

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 transmissions, directional gain is calculated as

Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

For power spectral density (PSD) measurements on all devices,

Array Gain = $10 \log(N_{ANT}/N_{SS}=1)$ dB.

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$.

The EUT supports CDD mode.

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.

			DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
	Ant. 1 (dBi)	Ant. 2 (dBi)				
2.4 GHz	13.00	13.00	13.00	16.01	7.00	10.01

Power Limit Reduction = $DG(\text{Power}) - 6\text{dBi}$, (min = 0)

PSD Limit Reduction = $DG(\text{PSD}) - 6\text{dBi}$, (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	1132003	300MHz~40GHz	Aug. 12, 2015	Jan. 13, 2016~ Jan. 21, 2016	Aug. 11, 2016	Conducted (TH05-HY)
Power Sensor	Anritsu	MA2411B	1126017	300MHz~40GHz	Aug. 12, 2015	Jan. 13, 2016~ Jan. 21, 2016	Aug. 11, 2016	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100057	9kHz~40GHz	Nov. 23, 2015	Jan. 13, 2016~ Jan. 21, 2016	Nov. 22, 2016	Conducted (TH05-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Sep. 02, 2015	Jan. 18, 2016~ Jan. 19, 2016	Sep. 01, 2016	Radiation (03CH10-HY)
Amplifier	SONOMA	310N	187311	9kHz~1GHz	Nov. 16, 2015	Jan. 18, 2016~ Jan. 19, 2016	Nov. 15, 2016	Radiation (03CH10-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1325	1GHz ~ 18GHz	Sep. 30, 2015	Jan. 18, 2016~ Jan. 19, 2016	Sep. 29, 2016	Radiation (03CH10-HY)
Preamplifier	Keysight	83017A	MY53270078	1GHz~26.5GHz	Nov. 13, 2015	Jan. 18, 2016~ Jan. 19, 2016	Nov. 12, 2016	Radiation (03CH10-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1902246	1GHz~18GHz	Nov. 16, 2015	Jan. 18, 2016~ Jan. 19, 2016	Nov. 15, 2016	Radiation (03CH10-HY)
Spectrum Analyzer	Keysight	N9010A	MY54200485	10Hz ~ 44GHz	Oct. 15, 2015	Jan. 18, 2016~ Jan. 19, 2016	Oct. 14, 2016	Radiation (03CH10-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1~4m	N/A	Jan. 18, 2016~ Jan. 19, 2016	N/A	Radiation (03CH10-HY)
Turn Table	EMEC	TT 2200	N/A	0-360 degree	N/A	Jan. 18, 2016~ Jan. 19, 2016	N/A	Radiation (03CH10-HY)
Bilog Antenna	TESEQ	CBL 6111D	37059	30MHz~1GHz	Dec. 29, 2015	Jan. 18, 2016~ Jan. 19, 2016	Dec. 28, 2016	Radiation (03CH10-HY)
EMI Test Receiver	Rohde & Schwarz	ESU26	100390	20Hz~26.5GHz	Dec. 21, 2015	Jan. 18, 2016~ Jan. 19, 2016	Dec. 20, 2016	Radiation (03CH10-HY)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170584	18GHz- 40GHz	Nov. 02, 2015	Jan. 18, 2016~ Jan. 19, 2016	Nov. 01, 2016	Radiation (03CH10-HY)
Preamplifier	MITEQ	JS44-180040 00-33-8P	1840917	18GHz ~ 40GHz	Jun. 02, 2015	Jan. 18, 2016~ Jan. 19, 2016	Jun. 01, 2016	Radiation (03CH10-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Jan. 05, 2016	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Aug. 26, 2015	Jan. 05, 2016	Aug. 25, 2016	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Dec. 02, 2015	Jan. 05, 2016	Dec. 01, 2016	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
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.90
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Appendix A. Conducted Test Results

<PTP>

Test Engineer:	osolemio Chang	Temperature:	23.4 ~ 24.5	°C
Test Date:	2016/1/13 ~ 2016/1/21	Relative Humidity:	52.9 ~ 54.1	%

TEST RESULTS DATA
6dB and 99% Occupied Bandwidth

2.4GHz Band										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	99% Occupied BW (MHz)		6dB BW (MHz)		6dB BW Limit (MHz)	Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2		
VHT20(10M	MCS0	2	1	2412	10.23	10.23	8.84	8.86	0.50	Pass
VHT20(10M	MCS0	2	6	2437	10.33	10.30	8.84	8.84	0.50	Pass
VHT20(10M	MCS0	2	11	2462	10.38	10.18	8.86	8.86	0.50	Pass
VHT20	MCS0	2	1	2412	18.55	18.70	17.62	17.60	0.50	Pass
VHT20	MCS0	2	6	2437	18.50	18.55	17.60	17.60	0.50	Pass
VHT20	MCS0	2	11	2462	18.65	18.45	17.60	17.60	0.50	Pass
VHT40	MCS0	2	3	2422	36.60	36.60	36.32	35.84	0.50	Pass
VHT40	MCS0	2	6	2437	36.70	37.00	36.32	36.32	0.50	Pass
VHT40	MCS0	2	9	2452	36.70	36.80	36.12	36.40	0.50	Pass

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)				Pass /Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2			
VHT20(10M	MCS0	2	1	2412	24.40	24.43	27.43	28.00		13.00		40.43				Pass
VHT20(10M	MCS0	2	6	2437	24.70	24.61	27.67	28.00		13.00		40.67				Pass
VHT20(10M	MCS0	2	11	2462	24.73	24.83	27.79	28.00		13.00		40.79				Pass
VHT20	MCS0	2	1	2412	19.64	19.63	22.65	28.00		13.00		35.65				Pass
VHT20	MCS0	2	6	2437	24.61	24.78	27.71	28.00		13.00		40.71				Pass
VHT20	MCS0	2	11	2462	15.77	15.81	18.80	28.00		13.00		31.80				Pass
VHT40	MCS0	2	3	2422	14.04	14.44	17.25	28.00		13.00		30.25				Pass
VHT40	MCS0	2	6	2437	18.36	18.49	21.44	28.00		13.00		34.44				Pass
VHT40	MCS0	2	9	2452	18.36	11.55	14.48	28.00		13.00		27.48				Pass

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

TEST RESULTS DATA
Average Output Power

2.4GHz Band									
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)		
					Ant 1	Ant 2	Ant 1	Ant 2	SUM
VHT20(10M)	MCS0	2	1	2412	0.13	0.17	18.60	18.49	21.56
VHT20(10M)	MCS0	2	6	2437	0.13	0.17	18.66	18.49	21.70
VHT20(10M)	MCS0	2	11	2462	0.13	0.17	18.68	18.49	21.80
VHT20	MCS0	2	1	2412	0.27	0.23	13.45	13.36	16.41
VHT20	MCS0	2	6	2437	0.27	0.23	18.50	13.36	21.77
VHT20	MCS0	2	11	2462	0.27	0.23	9.51	13.36	12.56
VHT40	MCS0	2	3	2422	0.52	0.52	7.97	7.99	10.99
VHT40	MCS0	2	6	2437	0.52	0.52	12.19	12.07	15.19
VHT40	MCS0	2	9	2452	0.52	0.52	5.28	5.31	8.30

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	
VHT20(10M)	MCS0	2	1	2412	-3.97	-4.61	-0.96	16.01		5.00		Pass
VHT20(10M)	MCS0	2	6	2437	-4.41	-4.22	-1.21	16.01		5.00		Pass
VHT20(10M)	MCS0	2	11	2462	-4.55	-3.74	-0.73	16.01		5.00		Pass
VHT20	MCS0	2	1	2412	-12.06	-12.59	-9.05	16.01		5.00		Pass
VHT20	MCS0	2	6	2437	-7.12	-8.16	-4.11	16.01		5.00		Pass
VHT20	MCS0	2	11	2462	-16.02	-15.43	-12.42	16.01		5.00		Pass
VHT40	MCS0	2	3	2422	-20.45	-21.00	-17.44	16.01		5.00		Pass
VHT40	MCS0	2	6	2437	-16.10	-15.77	-12.76	16.01		5.00		Pass
VHT40	MCS0	2	9	2452	-22.41	-22.41	-19.40	16.01		5.00		Pass

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



<PTMP>

Test Engineer:	osolemio Chang	Temperature:	22.7 ~ 23.5	°C
Test Date:	2016/1/13 ~ 2016/1/21	Relative Humidity:	52.4 ~ 53.8	%

TEST RESULTS DATA
6dB and 99% Occupied Bandwidth

2.4GHz Band										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	99% Occupied BW (MHz)		6dB BW (MHz)		6dB BW Limit (MHz)	Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2		
VHT20(10M	MCS0	2	1	2412	10.18	10.33	8.84	8.86	0.50	Pass
VHT20(10M	MCS0	2	6	2437	10.35	10.28	8.84	8.84	0.50	Pass
VHT20(10M	MCS0	2	11	2462	10.25	10.20	8.86	8.84	0.50	Pass
VHT20	MCS0	2	1	2412	18.55	18.70	17.62	17.60	0.50	Pass
VHT20	MCS0	2	6	2437	18.65	18.65	17.60	17.60	0.50	Pass
VHT20	MCS0	2	11	2462	18.65	18.45	17.60	17.60	0.50	Pass
VHT40	MCS0	2	3	2422	36.60	36.60	36.32	35.84	0.50	Pass
VHT40	MCS0	2	6	2437	36.70	37.00	36.32	36.32	0.50	Pass
VHT40	MCS0	2	9	2452	36.70	36.80	36.12	36.40	0.50	Pass

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	
VHT20(10M	MCS0	2	1	2412	19.41	19.62	22.53	23.00		13.00		35.53		36.00		Pass
VHT20(10M	MCS0	2	6	2437	19.45	19.71	22.59	23.00		13.00		35.59		36.00		Pass
VHT20(10M	MCS0	2	11	2462	19.42	19.24	22.34	23.00		13.00		35.34		36.00		Pass
VHT20	MCS0	2	1	2412	19.64	19.88	22.77	23.00		13.00		35.77		36.00		Pass
VHT20	MCS0	2	6	2437	19.72	19.97	22.86	23.00		13.00		35.86		36.00		Pass
VHT20	MCS0	2	11	2462	15.77	15.81	18.80	23.00		13.00		31.80		36.00		Pass
VHT40	MCS0	2	3	2422	14.04	14.44	17.25	23.00		13.00		30.25		36.00		Pass
VHT40	MCS0	2	6	2437	18.36	18.49	21.44	23.00		13.00		34.44		36.00		Pass
VHT40	MCS0	2	9	2452	18.36	11.55	14.48	23.00		13.00		27.48		36.00		Pass

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

TEST RESULTS DATA
Average Output Power

2.4GHz Band									
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)		
					Ant 1	Ant 2	Ant 1	Ant 2	SUM
VHT20(10M)	MCS0	2	1	2412	0.13	0.17	13.22	13.64	16.45
VHT20(10M)	MCS0	2	6	2437	0.13	0.17	13.57	13.84	16.72
VHT20(10M)	MCS0	2	11	2462	0.13	0.17	13.27	13.14	16.22
VHT20	MCS0	2	1	2412	0.27	0.23	13.45	13.53	16.50
VHT20	MCS0	2	6	2437	0.27	0.23	13.59	13.53	16.65
VHT20	MCS0	2	11	2462	0.27	0.23	9.51	13.53	12.56
VHT40	MCS0	2	3	2422	0.52	0.52	7.97	7.99	10.99
VHT40	MCS0	2	6	2437	0.52	0.52	12.19	12.07	15.19
VHT40	MCS0	2	9	2452	0.52	0.52	5.28	5.31	8.30

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	
VHT20(10M	MCS0	2	1	2412	-9.71	-9.39	-6.38	16.01		-2.01		Pass
VHT20(10M	MCS0	2	6	2437	-9.28	-8.82	-5.81	16.01		-2.01		Pass
VHT20(10M	MCS0	2	11	2462	-9.34	-10.26	-6.33	16.01		-2.01		Pass
VHT20	MCS0	2	1	2412	-12.06	-12.59	-9.05	16.01		-2.01		Pass
VHT20	MCS0	2	6	2437	-12.06	-12.42	-9.05	16.01		-2.01		Pass
VHT20	MCS0	2	11	2462	-16.02	-15.43	-12.42	16.01		-2.01		Pass
VHT40	MCS0	2	3	2422	-20.45	-21.00	-17.44	16.01		-2.01		Pass
VHT40	MCS0	2	6	2437	-16.10	-15.77	-12.76	16.01		-2.01		Pass
VHT40	MCS0	2	9	2452	-22.41	-22.41	-19.40	16.01		-2.01		Pass

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



Appendix B. Radiated Spurious Emission

Test Engineer :	Stan Hsieh, Ray Lee, and Tsung Lee	Temperature :	22~24°C
		Relative Humidity :	45~48%



2.4GHz 2400~2483.5MHz

WIFI 802.11ac VHT20 (10MHz) (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac VHT20 (10MHz) CH 01 2412MHz		2389.92	68.46	-5.54	74	69.06	27.23	5.39	33.22	213	184	P	H
		2390	51.94	-2.06	54	52.54	27.23	5.39	33.22	213	184	A	H
	*	2410.438	124.3	-	-	124.82	27.28	5.42	33.22	213	184	P	H
	*	2410.771	115.65	-	-	116.17	27.28	5.42	33.22	213	184	A	H
													H
													H
		2389.47	69.28	-4.72	74	69.9	27.23	5.39	33.24	251	182	P	V
		2389.92	51.23	-2.77	54	51.83	27.23	5.39	33.22	251	182	A	V
	*	2414	123.6	-	-	124.12	27.28	5.42	33.22	251	182	P	V
	*	2414	115.18	-	-	115.7	27.28	5.42	33.22	251	182	A	V
													V
													V
802.11ac VHT20 (10MHz) CH 06 2437MHz		2389.83	58.39	-15.61	74	58.99	27.23	5.39	33.22	231	183	P	H
		2389.38	47.45	-6.55	54	48.07	27.23	5.39	33.24	231	183	A	H
	*	2435.905	125.05	-	-	125.52	27.32	5.42	33.21	231	183	P	H
	*	2435.905	116.33	-	-	116.8	27.32	5.42	33.21	231	183	A	H
		2483.88	57.56	-16.44	74	57.82	27.46	5.46	33.18	231	183	P	H
		2483.6	48.1	-5.9	54	48.36	27.46	5.46	33.18	231	183	A	H
		2388.93	55.04	-18.96	74	55.66	27.23	5.39	33.24	249	179	P	V
		2390	46.19	-7.81	54	46.79	27.23	5.39	33.22	249	179	A	V
	*	2439	124.42	-	-	124.84	27.37	5.42	33.21	249	179	P	V
	*	2439	115.72	-	-	116.14	27.37	5.42	33.21	249	179	A	V
		2483.6	57.71	-16.29	74	57.97	27.46	5.46	33.18	249	179	P	V
		2483.52	46.04	-7.96	54	46.3	27.46	5.46	33.18	249	179	A	V



802.11ac VHT20 (10MHz) CH 11 2462MHz	*	2464	124.88	-	-	125.23	27.41	5.44	33.2	231	186	P	H
	*	2464	117.04	-	-	117.39	27.41	5.44	33.2	231	186	A	H
		2483.84	67.35	-6.65	74	67.61	27.46	5.46	33.18	231	186	P	H
		2484.48	53.51	-0.49	54	53.77	27.46	5.46	33.18	231	186	A	H
													H
													H
	*	2460	124.78	-	-	125.13	27.41	5.44	33.2	242	183	P	V
	*	2460.287	115.94	-	-	116.29	27.41	5.44	33.2	242	183	A	V
		2484	67.17	-6.83	74	67.43	27.46	5.46	33.18	242	183	P	V
		2483.52	51.85	-2.15	54	52.11	27.46	5.46	33.18	242	183	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 802.11ac VHT20 (10MHz) (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)
802.11ac VHT20 (10MHz) CH 01 2412MHz		4824	48.1	-25.9	74	69.67	31.46	7.58	60.61	100	0	P	H
													H
													H
													H
		4824	43.83	-30.17	74	65.4	31.46	7.58	60.61	100	0	P	V
													V
													V
802.11ac VHT20 (10MHz) CH 06 2437MHz		4874	47.44	-26.56	74	68.7	31.56	7.7	60.52	100	0	P	H
		7311	59.22	-14.78	74	74.48	36.18	9.49	60.93	203	346	P	H
		7311	52.9	-1.1	54	68.16	36.18	9.49	60.93	203	346	A	H
													H
		4874	48.4	-25.6	74	69.66	31.56	7.7	60.52	100	0	P	V
		7311	54.17	-19.83	74	69.43	36.18	9.49	60.93	309	11	P	V
		7311	48.91	-5.09	54	64.17	36.18	9.49	60.93	309	11	A	V
802.11ac VHT20 (10MHz) CH 11 2462MHz													V
		4924	51.3	-22.7	74	72.13	31.66	7.93	60.42	100	0	P	H
		7386	60.53	-13.47	74	75.82	36.37	9.53	61.19	235	348	P	H
		7386	50.79	-3.21	54	66.08	36.37	9.53	61.19	235	348	A	H
													H
		4924	52.24	-21.76	74	73.07	31.66	7.93	60.42	100	0	P	V
		7386	54.78	-19.22	74	70.07	36.37	9.53	61.19	281	6	P	V
Remark		7386	47.57	-6.43	54	62.86	36.37	9.53	61.19	281	6	A	V
													V
1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



2.4GHz 2400~2483.5MHz

WIFI 802.11ac VHT20 (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)
802.11ac VHT20 CH 01 2412MHz		2389.47	65.05	-8.95	74	65.67	27.23	5.39	33.24	234	181	P	H
		2390	53.67	-0.33	54	54.27	27.23	5.39	33.22	234	181	A	H
	*	2414	115.59	-	-	116.11	27.28	5.42	33.22	234	181	P	H
	*	2414	108.08	-	-	108.6	27.28	5.42	33.22	234	181	A	H
													H
													H
		2389.38	64.18	-9.82	74	64.8	27.23	5.39	33.24	251	182	P	V
		2390	53.54	-0.46	54	54.14	27.23	5.39	33.22	251	182	A	V
	*	2414	114.89	-	-	115.41	27.28	5.42	33.22	251	182	P	V
	*	2414	107.4	-	-	107.92	27.28	5.42	33.22	251	182	A	V
													V
													V
802.11ac VHT20 CH 06 2437MHz		2389.47	58.05	-15.95	74	58.67	27.23	5.39	33.24	233	184	P	H
		2389.47	48.23	-5.77	54	48.85	27.23	5.39	33.24	233	184	A	H
	*	2439	121.22	-	-	121.64	27.37	5.42	33.21	233	184	P	H
	*	2439	113.57	-	-	113.99	27.37	5.42	33.21	233	184	A	H
		2484.08	60.49	-13.51	74	60.75	27.46	5.46	33.18	233	184	P	H
		2483.96	50.23	-3.77	54	50.49	27.46	5.46	33.18	233	184	A	H
		2387.94	55.86	-18.14	74	56.48	27.23	5.39	33.24	248	183	P	V
		2389.92	47.18	-6.82	54	47.78	27.23	5.39	33.22	248	183	A	V
	*	2435	121.39	-	-	121.86	27.32	5.42	33.21	248	183	P	V
	*	2435	112.76	-	-	113.23	27.32	5.42	33.21	248	183	A	V
		2485.64	56.87	-17.13	74	57.13	27.46	5.46	33.18	248	183	P	V
		2483.6	46.83	-7.17	54	47.09	27.46	5.46	33.18	248	183	A	V



802.11ac VHT20 CH 11 2462MHz	*	2464	112.62	-	-	112.97	27.41	5.44	33.2	230	184	P	H
	*	2464	105.24	-	-	105.59	27.41	5.44	33.2	230	184	A	H
		2484.52	62.99	-11.01	74	63.25	27.46	5.46	33.18	230	184	P	H
		2483.56	52.32	-1.68	54	52.58	27.46	5.46	33.18	230	184	A	H
													H
													H
	*	2460	112.52	-	-	112.87	27.41	5.44	33.2	246	180	P	V
	*	2460	104.24	-	-	104.59	27.41	5.44	33.2	246	180	A	V
		2483.76	62.3	-11.7	74	62.56	27.46	5.46	33.18	246	180	P	V
		2483.6	50.67	-3.33	54	50.93	27.46	5.46	33.18	246	180	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 802.11ac VHT20 (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)
802.11ac VHT20 CH 01 2412MHz		4824	42.38	-31.62	74	63.95	31.46	7.58	60.61	100	0	P	H
													H
													H
													H
		4824	36.81	-37.19	74	58.38	31.46	7.58	60.61	100	0	P	V
													V
													V
802.11ac VHT20 CH 06 2437MHz		4874	46.27	-27.73	74	67.53	31.56	7.7	60.52	100	0	P	H
		7311	56.19	-17.81	74	71.45	36.18	9.49	60.93	207	345	P	H
		7311	48	-6	54	63.26	36.18	9.49	60.93	207	345	A	H
													H
		4874	44.43	-29.57	74	65.69	31.56	7.7	60.52	100	0	P	V
		7311	56.07	-17.93	74	71.33	36.18	9.49	60.93	290	6	P	V
		7311	45.49	-8.51	54	60.75	36.18	9.49	60.93	290	6	A	V
802.11ac VHT20 CH 11 2462MHz													V
		4924	36.78	-37.22	74	57.61	31.66	7.93	60.42	100	0	P	H
		7386	41.15	-32.85	74	56.44	36.37	9.53	61.19	100	0	P	H
													H
													H
		4924	36.49	-37.51	74	57.32	31.66	7.93	60.42	100	0	P	V
		7386	41.18	-32.82	74	56.47	36.37	9.53	61.19	100	0	P	V
Remark													V
													V

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



2.4GHz 2400~2483.5MHz

WIFI 802.11ac VHT40 (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)
802.11ac VHT40 CH 03 2422MHz		2390	61.93	-12.07	74	62.53	27.23	5.39	33.22	218	180	P	H
		2390	52.94	-1.06	54	53.54	27.23	5.39	33.22	218	180	A	H
	*	2420.541	108.33	-	-	108.8	27.32	5.42	33.21	218	180	P	H
	*	2420	100.04	-	-	100.51	27.32	5.42	33.21	218	180	A	H
		2483.8	56.38	-17.62	74	56.64	27.46	5.46	33.18	218	180	P	H
		2486.48	47.22	-6.78	54	47.48	27.46	5.46	33.18	218	180	A	H
		2390	63.16	-10.84	74	63.76	27.23	5.39	33.22	250	182	P	V
		2389.2	53.93	-0.07	54	54.55	27.23	5.39	33.24	250	182	A	V
	*	2424	107.46	-	-	107.93	27.32	5.42	33.21	250	182	P	V
	*	2424	99.87	-	-	100.34	27.32	5.42	33.21	250	182	A	V
		2496.92	52.98	-21.02	74	53.19	27.5	5.46	33.17	250	182	P	V
		2486.2	44.39	-9.61	54	44.65	27.46	5.46	33.18	250	182	A	V
802.11ac VHT40 CH 06 2437MHz		2389.56	58.98	-15.02	74	59.6	27.23	5.39	33.24	230	183	P	H
		2389.92	50.67	-3.33	54	51.27	27.23	5.39	33.22	230	183	A	H
	*	2435	111.52	-	-	111.99	27.32	5.42	33.21	230	183	P	H
	*	2435	104.32	-	-	104.79	27.32	5.42	33.21	230	183	A	H
		2485.24	61.44	-12.56	74	61.7	27.46	5.46	33.18	230	183	P	H
		2483.6	52.38	-1.62	54	52.64	27.46	5.46	33.18	230	183	A	H
		2388.03	58.48	-15.52	74	59.1	27.23	5.39	33.24	241	183	P	V
		2389.83	49.78	-4.22	54	50.38	27.23	5.39	33.22	241	183	A	V
	*	2439	111.93	-	-	112.35	27.37	5.42	33.21	241	183	P	V
	*	2439	104.06	-	-	104.48	27.37	5.42	33.21	241	183	A	V
		2483.72	62.73	-11.27	74	62.99	27.46	5.46	33.18	241	183	P	V
		2483.72	52.64	-1.36	54	52.9	27.46	5.46	33.18	241	183	A	V



802.11ac VHT40 CH 09 2452MHz		2389.56	53.6	-20.4	74	54.22	27.23	5.39	33.24	226	182	P	H
		2389.83	44.32	-9.68	54	44.92	27.23	5.39	33.22	226	182	A	H
	*	2454	105.75	-	-	106.1	27.41	5.44	33.2	226	182	P	H
	*	2454	98.43	-	-	98.78	27.41	5.44	33.2	226	182	A	H
		2483.92	64.28	-9.72	74	64.54	27.46	5.46	33.18	226	182	P	H
		2483.68	53.17	-0.83	54	53.43	27.46	5.46	33.18	226	182	A	H
		2388.84	52.6	-21.4	74	53.22	27.23	5.39	33.24	242	181	P	V
		2389.83	44.07	-9.93	54	44.67	27.23	5.39	33.22	242	181	A	V
	*	2454	106.12	-	-	106.47	27.41	5.44	33.2	242	181	P	V
	*	2454	97.93	-	-	98.28	27.41	5.44	33.2	242	181	A	V
		2483.52	62.94	-11.06	74	63.2	27.46	5.46	33.18	242	181	P	V
		2483.56	52.31	-1.69	54	52.57	27.46	5.46	33.18	242	181	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11ac VHT40 (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)
802.11ac VHT40 CH 03 2422MHz		4844	35.83	-38.17	74	57.22	31.49	7.7	60.58	100	0	P	H
		7266	40.42	-33.58	74	55.68	36.11	9.46	60.83	100	0	P	H
													H
													H
		4844	35.48	-38.52	74	56.87	31.49	7.7	60.58	100	0	P	V
		7266	40.95	-33.05	74	56.21	36.11	9.46	60.83	100	0	P	V
													V
													V
802.11ac VHT40 CH 06 2437MHz		4874	39.3	-34.7	74	60.56	31.56	7.7	60.52	100	0	P	H
		7311	46.2	-27.8	74	61.46	36.18	9.49	60.93	100	0	P	H
													H
													H
		4874	35.72	-38.28	74	56.98	31.56	7.7	60.52	100	0	P	V
		7311	43.56	-30.44	74	58.82	36.18	9.49	60.93	100	0	P	V
													V
													V
802.11ac VHT40 CH 09 2452MHz		4902	36.1	-37.9	74	57.11	31.63	7.82	60.46	100	0	P	H
		7356	41.11	-32.89	74	56.39	36.3	9.51	61.09	100	0	P	H
													H
													H
		4902	36.15	-37.85	74	57.16	31.63	7.82	60.46	100	0	P	V
		7356	41.97	-32.03	74	57.25	36.3	9.51	61.09	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission below 1GHz

2.4GHz WIFI 802.11ac VHT40 (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 802.11ac VHT40 LF		125.04	37.56	-5.94	43.5	51.09	17.8	1.33	32.66			P	H
		129.9	36.96	-6.54	43.5	50.29	18	1.33	32.66			P	H
		214.95	38.58	-4.92	43.5	53.64	16.05	1.62	32.73	100	133	P	H
		325.2	35.7	-10.3	46	46.27	20.25	1.94	32.76			P	H
		400.1	38.83	-7.17	46	47.32	22.22	2.13	32.84			P	H
		724.9	33.15	-12.85	46	36.21	26.99	2.91	32.96			P	H
													H
													H
													H
													H
													H
													H
		125.04	34.89	-8.61	43.5	48.42	17.8	1.33	32.66			P	V
		200.1	33.87	-9.63	43.5	49.32	15.8	1.48	32.73			P	V
		214.95	37.1	-6.4	43.5	52.16	16.05	1.62	32.73	100	162	P	V
		328	32.92	-13.08	46	43.4	20.34	1.94	32.76			P	V
		400.1	36.31	-9.69	46	44.8	22.22	2.13	32.84			P	V
		957.3	32.04	-13.96	46	30.22	30.21	3.29	31.68			P	V
													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	Peak or Average
H/V	Horizontal or Vertical



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		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 01													
2412MHz		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Level(dBμV/m) =

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

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

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

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

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

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

= -10.46(dB)

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



Appendix C. Radiated Spurious Emission Plots

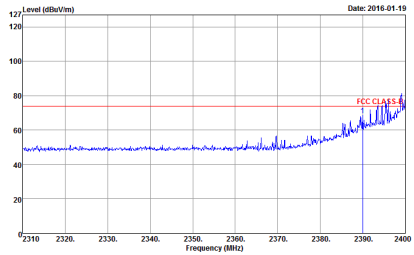
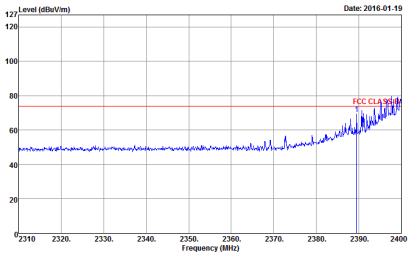
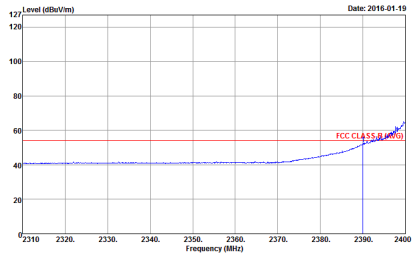
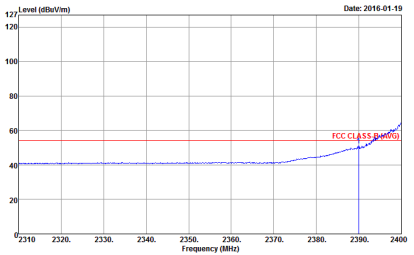
Note symbol

-L	Low channel location
-R	High channel location



2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ac VHT20 (10MHz) CH01 2412MHz	
1+2	Horizontal	Vertical
Peak	 Level (dBuV/m) Frequency (MHz) Date: 2016-01-19 FCC CLASS-B Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 5D3042 Mode : 1	 Level (dBuV/m) Frequency (MHz) Date: 2016-01-19 FCC CLASS-B Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 5D3042 Mode : 1
Avg.	 Level (dBuV/m) Frequency (MHz) Date: 2016-01-19 FCC CLASS-B (AVG) Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 5D3042	 Level (dBuV/m) Frequency (MHz) Date: 2016-01-19 FCC CLASS-B (AVG) Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 5D3042

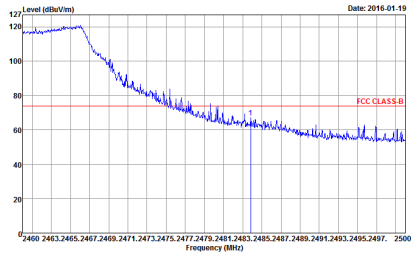
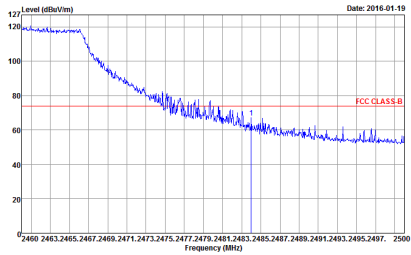
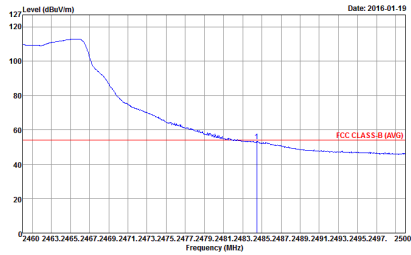
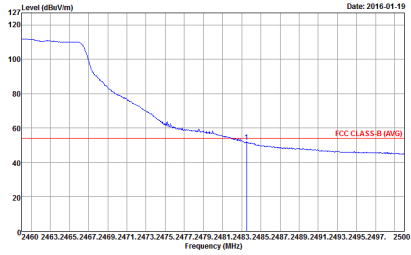


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ac VHT20 (10MHz) CH06 2437MHz - L	
1+2	Horizontal	Vertical
Peak	Level (dBuV/m) vs Frequency (MHz) for Horizontal Peak. The plot shows a blue line representing the measured signal and a red line for the FCC CLASS-B limit. A sharp peak is visible at 2437 MHz. The date is 2016-01-19. Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 5D3042	Level (dBuV/m) vs Frequency (MHz) for Vertical Peak. The plot shows a blue line representing the measured signal and a red line for the FCC CLASS-B limit. A sharp peak is visible at 2437 MHz. The date is 2016-01-19. Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 5D3042
Avg.	Level (dBuV/m) vs Frequency (MHz) for Horizontal Average. The plot shows a blue line representing the measured signal and a red line for the FCC CLASS-B (AVG) limit. The signal is relatively flat with a slight rise at 2437 MHz. The date is 2016-01-19. Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 5D3042	Level (dBuV/m) vs Frequency (MHz) for Vertical Average. The plot shows a blue line representing the measured signal and a red line for the FCC CLASS-B (AVG) limit. The signal is relatively flat with a slight rise at 2437 MHz. The date is 2016-01-19. Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 5D3042

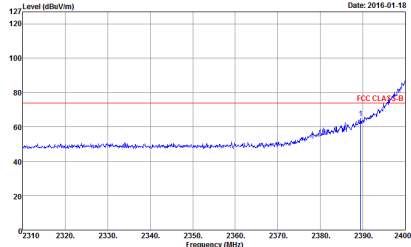
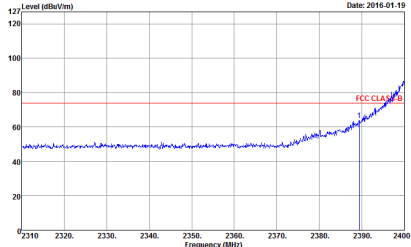
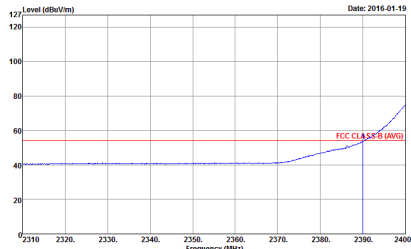
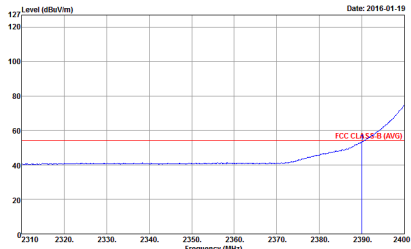


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ac VHT20 (10MHz) CH06 2437MHz - R	
1+2	Horizontal	Vertical
Peak	Horizontal Peak Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz). The plot displays a blue line representing the measured signal, a red horizontal line at approximately 75 dBuV/m labeled 'FCC CLASS-B', and a vertical blue line at 2437 MHz. The x-axis ranges from 2460 to 2500 MHz, and the y-axis ranges from 0 to 120 dBuV/m. Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 5D3042	Vertical Peak Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz). The plot displays a blue line representing the measured signal, a red horizontal line at approximately 75 dBuV/m labeled 'FCC CLASS-B', and a vertical blue line at 2437 MHz. The x-axis ranges from 2460 to 2500 MHz, and the y-axis ranges from 0 to 120 dBuV/m. Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 5D3042
Avg.	Horizontal Avg. Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz). The plot displays a blue line representing the averaged signal, a red horizontal line at approximately 55 dBuV/m labeled 'FCC CLASS-B (AVG)', and a vertical blue line at 2437 MHz. The x-axis ranges from 2460 to 2500 MHz, and the y-axis ranges from 0 to 120 dBuV/m. Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 5D3042	Vertical Avg. Spectrum Plot showing Level (dBuV/m) vs Frequency (MHz). The plot displays a blue line representing the averaged signal, a red horizontal line at approximately 55 dBuV/m labeled 'FCC CLASS-B (AVG)', and a vertical blue line at 2437 MHz. The x-axis ranges from 2460 to 2500 MHz, and the y-axis ranges from 0 to 120 dBuV/m. Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 5D3042



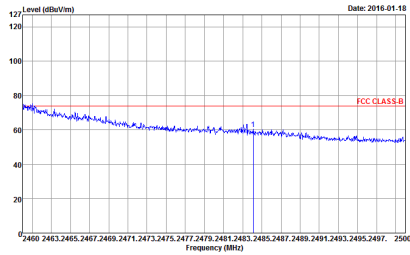
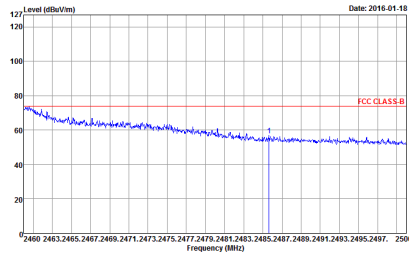
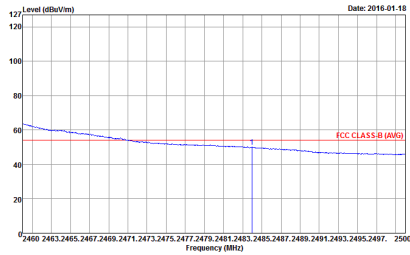
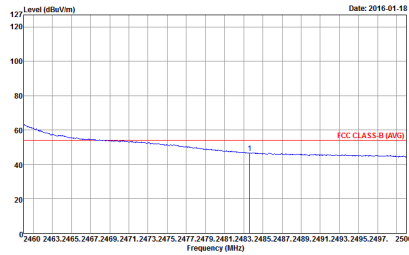
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ac VHT20 (10MHz) CH11 2462MHz	
1+2	Horizontal	Vertical
Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 5D3042	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 5D3042
Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 5D3042	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 5D3042

**2.4GHz 2400~2483.5MHz****WIFI 802.11ac VHT20 (Band Edge @ 3m)**

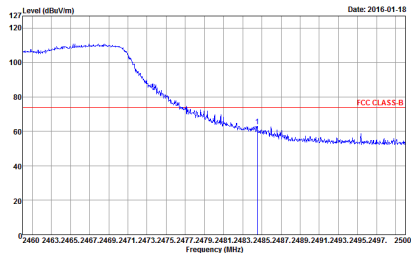
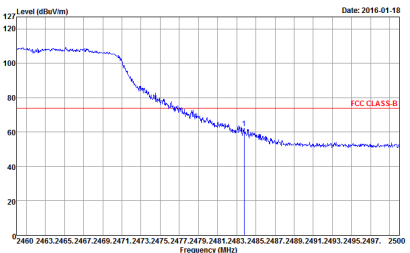
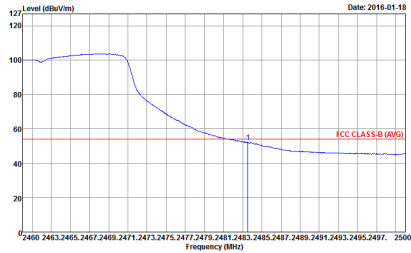
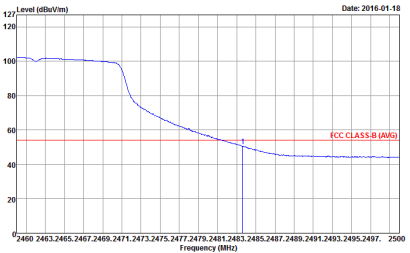
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH01 2412MHz	
1+2	Horizontal	Vertical
Peak	 Level (dBuV/m) vs Frequency (MHz) plot for Horizontal polarization. The plot shows a blue line representing the measured signal and a red horizontal line at approximately 75 dBuV/m labeled 'FCC CLASS-B'. The signal level is below the limit until about 2380 MHz, then rises to meet the limit at 2400 MHz. Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 5D3042	 Level (dBuV/m) vs Frequency (MHz) plot for Vertical polarization. The plot shows a blue line representing the measured signal and a red horizontal line at approximately 75 dBuV/m labeled 'FCC CLASS-B'. The signal level is below the limit until about 2380 MHz, then rises to meet the limit at 2400 MHz. Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 5D3042
Avg.	 Level (dBuV/m) vs Frequency (MHz) plot for Horizontal polarization. The plot shows a blue line representing the measured signal and a red horizontal line at approximately 55 dBuV/m labeled 'FCC CLASS-B (AVG)'. The signal level is below the limit until about 2380 MHz, then rises to meet the limit at 2400 MHz. Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 5D3042	 Level (dBuV/m) vs Frequency (MHz) plot for Vertical polarization. The plot shows a blue line representing the measured signal and a red horizontal line at approximately 55 dBuV/m labeled 'FCC CLASS-B (AVG)'. The signal level is below the limit until about 2380 MHz, then rises to meet the limit at 2400 MHz. Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 5D3042



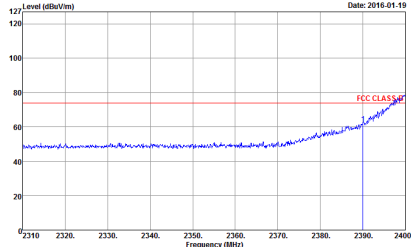
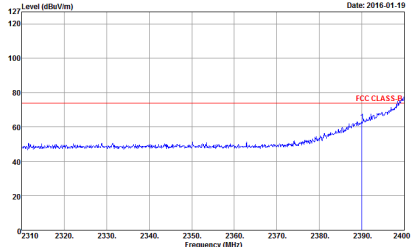
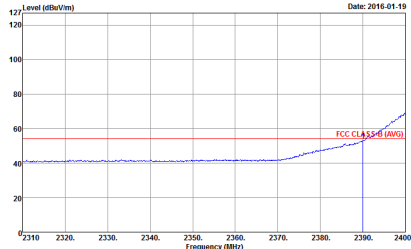
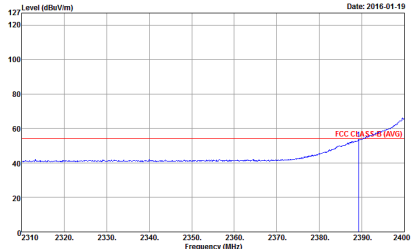
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ac VHT20 CH06 2437MHz - L	
1+2	Horizontal	Vertical
Peak	Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 5D3042	Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 5D3042
Avg.	Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 5D3042	Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 5D3042

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ac VH20 CH06 2437MHz - R	
1+2	Horizontal	Vertical
Peak	 Level (dBuV/m) vs Frequency (MHz) plot for Horizontal polarization. The plot shows a blue line representing the measured signal and a red line for the FCC CLASS-B limit. A peak is marked at 2437 MHz. Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 5D3042	 Level (dBuV/m) vs Frequency (MHz) plot for Vertical polarization. The plot shows a blue line representing the measured signal and a red line for the FCC CLASS-B limit. A peak is marked at 2437 MHz. Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 5D3042
Avg.	 Level (dBuV/m) vs Frequency (MHz) plot for Horizontal polarization. The plot shows a blue line representing the measured signal and a red line for the FCC CLASS-B (AVG) limit. A peak is marked at 2437 MHz. Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 5D3042	 Level (dBuV/m) vs Frequency (MHz) plot for Vertical polarization. The plot shows a blue line representing the measured signal and a red line for the FCC CLASS-B (AVG) limit. A peak is marked at 2437 MHz. Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 5D3042



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ac VH20 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 Project : 5D3042	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 5D3042
Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 5D3042	 Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto Detector : Peak Project : 5D3042

**2.4GHz 2400~2483.5MHz****WIFI 802.11ac VHT40 (Band Edge @ 3m)**

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ac VH40 CH03 2422MHz - L	
1+2	Horizontal	Vertical
Peak	 Level (dBuV/m) vs Frequency (MHz) plot for Horizontal polarization. The plot shows a blue line representing the measured signal level, which is mostly flat around 50 dBuV/m until approximately 2380 MHz, where it begins to rise. A red horizontal line at 75 dBuV/m is labeled 'FCC CLASS-B'. A vertical blue line is drawn at 2390 MHz. The x-axis ranges from 2310 to 2400 MHz, and the y-axis ranges from 0 to 120 dBuV/m. Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 5D3042	 Level (dBuV/m) vs Frequency (MHz) plot for Vertical polarization. The plot shows a blue line representing the measured signal level, which is mostly flat around 50 dBuV/m until approximately 2380 MHz, where it begins to rise. A red horizontal line at 75 dBuV/m is labeled 'FCC CLASS-B'. A vertical blue line is drawn at 2390 MHz. The x-axis ranges from 2310 to 2400 MHz, and the y-axis ranges from 0 to 120 dBuV/m. Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 5D3042
Avg.	 Level (dBuV/m) vs Frequency (MHz) plot for Horizontal polarization. The plot shows a blue line representing the average signal level, which is mostly flat around 40 dBuV/m until approximately 2380 MHz, where it begins to rise. A red horizontal line at 60 dBuV/m is labeled 'FCC CLASS-B (AVG)'. A vertical blue line is drawn at 2390 MHz. The x-axis ranges from 2310 to 2400 MHz, and the y-axis ranges from 0 to 120 dBuV/m. Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 5D3042	 Level (dBuV/m) vs Frequency (MHz) plot for Vertical polarization. The plot shows a blue line representing the average signal level, which is mostly flat around 40 dBuV/m until approximately 2380 MHz, where it begins to rise. A red horizontal line at 60 dBuV/m is labeled 'FCC CLASS-B (AVG)'. A vertical blue line is drawn at 2390 MHz. The x-axis ranges from 2310 to 2400 MHz, and the y-axis ranges from 0 to 120 dBuV/m. Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 5D3042



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ac VH40 CH03 2422MHz - R	
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 Project : 5D3042	Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 5D3042
Avg.	Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 5D3042	Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 5D3042



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ac VH40 CH06 2437MHz - L	
1+2	Horizontal	Vertical
Peak	Level (dBuV/m) vs Frequency (MHz) for Horizontal orientation. The plot shows a blue line representing the signal level, which is mostly flat around 50 dBuV/m, with a slight rise towards 2400 MHz. A red horizontal line at approximately 75 dBuV/m is labeled 'FCC CLASS-B'. A vertical blue line marks the peak at 2437 MHz. The date is 2016-01-19. Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 5D3042	Level (dBuV/m) vs Frequency (MHz) for Vertical orientation. The plot shows a blue line representing the signal level, which is mostly flat around 50 dBuV/m, with a slight rise towards 2400 MHz. A red horizontal line at approximately 75 dBuV/m is labeled 'FCC CLASS-B'. A vertical blue line marks the peak at 2437 MHz. The date is 2016-01-19. Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 5D3042
Avg.	Level (dBuV/m) vs Frequency (MHz) for Horizontal orientation. The plot shows a blue line representing the average signal level, which is mostly flat around 45 dBuV/m, with a slight rise towards 2400 MHz. A red horizontal line at approximately 60 dBuV/m is labeled 'FCC CLASS-B (AVG)'. A vertical blue line marks the peak at 2437 MHz. The date is 2016-01-19. Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 5D3042	Level (dBuV/m) vs Frequency (MHz) for Vertical orientation. The plot shows a blue line representing the average signal level, which is mostly flat around 45 dBuV/m, with a slight rise towards 2400 MHz. A red horizontal line at approximately 60 dBuV/m is labeled 'FCC CLASS-B (AVG)'. A vertical blue line marks the peak at 2437 MHz. The date is 2016-01-19. Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 5D3042



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ac VH40 CH06 2437MHz - R	
1+2	Horizontal	Vertical
Peak	Level (dBuV/m) vs Frequency (MHz) for Horizontal orientation. The plot shows a blue line representing the signal level, which is mostly below the red line indicating the FCC CLASS-B limit. A sharp peak is visible at 2437 MHz. Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 5D3042	Level (dBuV/m) vs Frequency (MHz) for Vertical orientation. The plot shows a blue line representing the signal level, which is mostly below the red line indicating the FCC CLASS-B limit. A sharp peak is visible at 2437 MHz. Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 5D3042
Avg.	Level (dBuV/m) vs Frequency (MHz) for Horizontal orientation. The plot shows a blue line representing the average signal level, which is mostly below the red line indicating the FCC CLASS-B (AVG) limit. A sharp peak is visible at 2437 MHz. Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 5D3042	Level (dBuV/m) vs Frequency (MHz) for Vertical orientation. The plot shows a blue line representing the average signal level, which is mostly below the red line indicating the FCC CLASS-B (AVG) limit. A sharp peak is visible at 2437 MHz. Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 5D3042



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ac VH40 CH09 2452MHz - L	
1+2	Horizontal	Vertical
Peak	Level (dBuV/m) vs Frequency (MHz) plot for Horizontal polarization. The plot shows a blue line representing the measured signal and a red line for the FCC CLASS-B limit. A sharp peak is visible at 2390 MHz, reaching approximately 100 dBuV/m. The x-axis ranges from 2310 to 2400 MHz, and the y-axis ranges from 0 to 120 dBuV/m. Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 5D3042	Level (dBuV/m) vs Frequency (MHz) plot for Vertical polarization. The plot shows a blue line representing the measured signal and a red line for the FCC CLASS-B limit. A sharp peak is visible at 2390 MHz, reaching approximately 100 dBuV/m. The x-axis ranges from 2310 to 2400 MHz, and the y-axis ranges from 0 to 120 dBuV/m. Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 5D3042
Avg.	Level (dBuV/m) vs Frequency (MHz) plot for Horizontal polarization. The plot shows a blue line representing the measured signal and a red line for the FCC CLASS-B (AVG) limit. The signal is relatively flat around 40 dBuV/m, with a small peak at 2390 MHz. The x-axis ranges from 2310 to 2400 MHz, and the y-axis ranges from 0 to 120 dBuV/m. Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 5D3042	Level (dBuV/m) vs Frequency (MHz) plot for Vertical polarization. The plot shows a blue line representing the measured signal and a red line for the FCC CLASS-B (AVG) limit. The signal is relatively flat around 40 dBuV/m, with a small peak at 2390 MHz. The x-axis ranges from 2310 to 2400 MHz, and the y-axis ranges from 0 to 120 dBuV/m. Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 5D3042

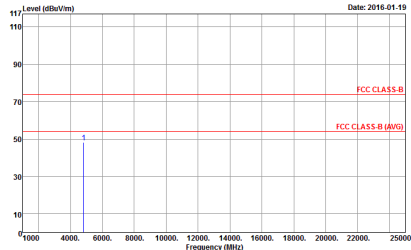
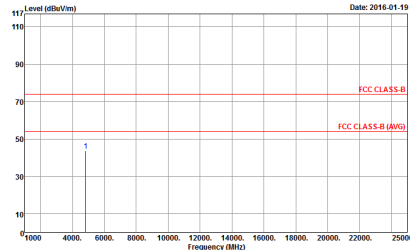


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ac VH40 CH09 2452MHz - R	
1+2	Horizontal	Vertical
Peak	Level (dBuV/m) vs Frequency (MHz) for Horizontal orientation. The plot shows a blue line representing the signal level, which starts at approximately 100 dBuV/m at 2400 MHz and decreases to about 55 dBuV/m at 2500 MHz. A red horizontal line indicates the FCC CLASS-B limit at approximately 75 dBuV/m. A vertical blue line marks the peak at 2452 MHz. Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 5D3042	Level (dBuV/m) vs Frequency (MHz) for Vertical orientation. The plot shows a blue line representing the signal level, which starts at approximately 100 dBuV/m at 2400 MHz and decreases to about 55 dBuV/m at 2500 MHz. A red horizontal line indicates the FCC CLASS-B limit at approximately 75 dBuV/m. A vertical blue line marks the peak at 2452 MHz. Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN 9120D-HF VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 5D3042
Avg.	Level (dBuV/m) vs Frequency (MHz) for Horizontal orientation. The plot shows a blue line representing the average signal level, which starts at approximately 100 dBuV/m at 2400 MHz and decreases to about 45 dBuV/m at 2500 MHz. A red horizontal line indicates the FCC CLASS-B (AVG) limit at approximately 55 dBuV/m. A vertical blue line marks the peak at 2452 MHz. Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF HORIZONTAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 5D3042	Level (dBuV/m) vs Frequency (MHz) for Vertical orientation. The plot shows a blue line representing the average signal level, which starts at approximately 100 dBuV/m at 2400 MHz and decreases to about 45 dBuV/m at 2500 MHz. A red horizontal line indicates the FCC CLASS-B (AVG) limit at approximately 55 dBuV/m. A vertical blue line marks the peak at 2452 MHz. Site : 03CH10-HY Condition : FCC CLASS-B (AVG) 3m HORN 9120D-HF VERTICAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 5D3042

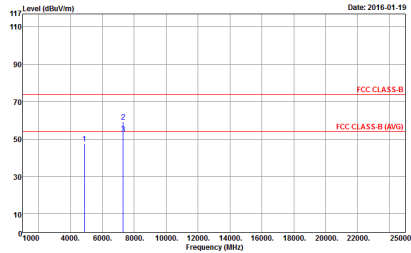
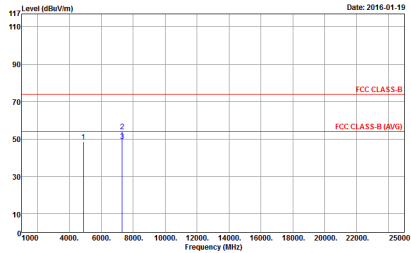


2.4GHz 2400~2483.5MHz

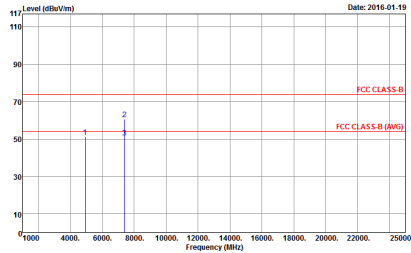
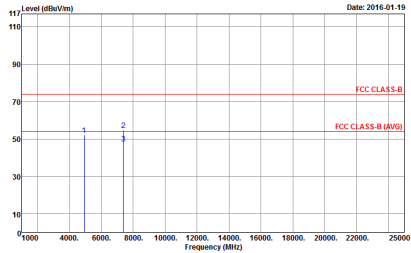
WIFI 802.11b (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11ac VHT20 (10MHz) CH01 2412MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 HORIZONTAL Detector : Peak Project : 5D3042	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 VERTICAL Detector : Peak Project : 5D3042



WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11ac VHT20 (10MHz) CH06 2437MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0984 HORIZONTAL Detector : Peak Project : 5D3042	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0984 VERTICAL Detector : Peak Project : 5D3042



WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11ac VHT20 (10MHz) CH11 2462MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0984 HORIZONTAL Detector : Peak Project : 5D3042	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0984 VERTICAL Detector : Peak Project : 5D3042



2.4GHz 2400~2483.5MHz

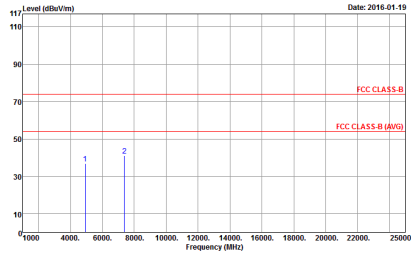
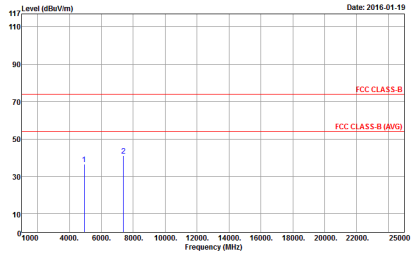
WIFI 802.11ac VHT20 (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11ac VHT20 CH01 2412MHz	
1+2	Horizontal	Vertical
Peak Avg.	Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 HORIZONTAL Detector : Peak Project : 5D3042	Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 VERTICAL Detector : Peak Project : 5D3042



WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11ac VHT20 CH06 2437MHz	
1+2	Horizontal	Vertical
Peak Avg.	Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0984 HORIZONTAL Detector : Peak Project : 5D3042	Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0984 VERTICAL Detector : Peak Project : 5D3042

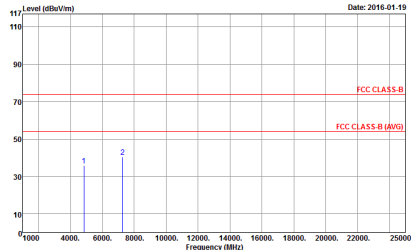
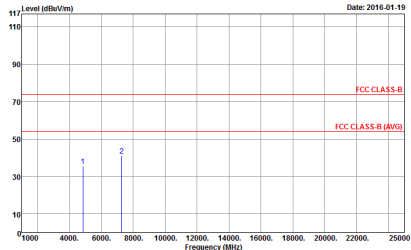


WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11ac VHT20 CH11 2462MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 HORIZONTAL Detector : Peak Project : 5D3042	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 VERTICAL Detector : Peak Project : 5D3042



2.4GHz 2400~2483.5MHz

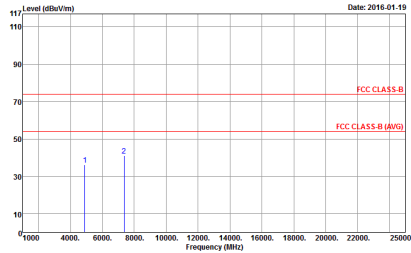
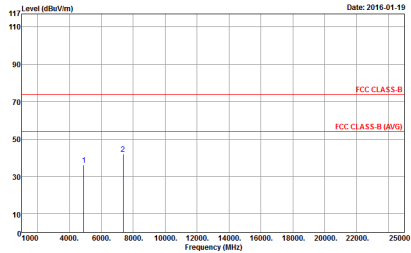
WIFI 802.11ac VHT40 (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11ac VHT40 CH03 2422MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 HORIZONTAL Detector : Peak Project : 5D3042	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 VERTICAL Detector : Peak Project : 5D3042



WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11ac VHT40 CH06 2437MHz	
1+2	Horizontal	Vertical
Peak Avg.	Horizontal Peak and Average graphs showing Level (dBuV/m) vs Frequency (MHz). The Peak graph shows two peaks labeled 1 and 2. The Average graph shows two peaks labeled 1 and 2. Both graphs include FCC CLASS-B and FCC CLASS-B (AVG) limits. Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0984 HORIZONTAL Detector : Peak Project : 5D3042	Vertical Peak and Average graphs showing Level (dBuV/m) vs Frequency (MHz). The Peak graph shows two peaks labeled 1 and 2. The Average graph shows two peaks labeled 1 and 2. Both graphs include FCC CLASS-B and FCC CLASS-B (AVG) limits. Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0984 VERTICAL Detector : Peak Project : 5D3042



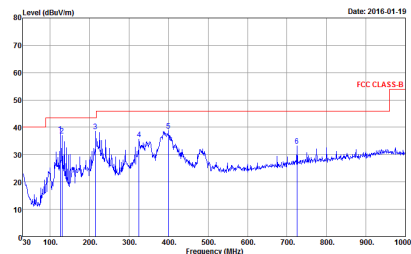
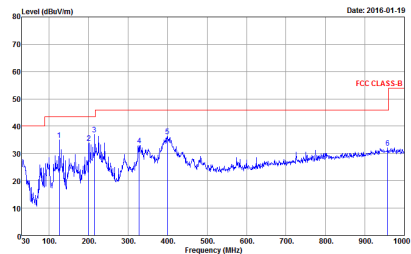
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11ac VHT40 CH09 2452MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 HORIZONTAL Detector : Peak Project : 5D3042	 Site : 03CH10-HY Condition : FCC CLASS-B 3m HORN_9170_406_0584 VERTICAL Detector : Peak Project : 5D3042



2.4GHz 2400~2483.5MHz

Emission below 1GHz

2.4GHz WIFI 802.11ac VHT40 (LF)

WIFI	2.4GHz 2400~2483.5MHz	
ANT	802.11ac VHT40 LF	
1+2	Horizontal	Vertical
QP / Peak	 Site : 03CH10-HY Condition : FCC CLASS-B 3m CBL6111D-37059 HORIZONTAL Detector : Peak Project : 5D3042	 Site : 03CH10-HY Condition : FCC CLASS-B 3m CBL6111D-37059 VERTICAL Detector : Peak Project : 5D3042