



FCC RF Test Report

APPLICANT : TP-LINK TECHNOLOGIES CO., LTD.
EQUIPMENT : AC1900 Wireless Dual Band Gigabit Access Point
BRAND NAME : TP-LINK
MODEL NAME : EAP330
FCC ID : TE7EAP330
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System

The product was received on Apr. 05, 2016 and testing was completed on May 31, 2016. We, SPORTON INTERNATIONAL (SHENZHEN) 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 (SHENZHEN) INC., the test report shall not be reproduced except in full.

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TABLE OF CONTENTS

REVISION HISTORY	3
SUMMARY OF TEST RESULT	4
1 GENERAL DESCRIPTION	5
1.1 Applicant	5
1.2 Manufacturer	5
1.3 Product Feature of Equipment Under Test.....	5
1.4 Product Specification of Equipment Under Test.....	6
1.5 Modification of EUT	7
1.6 Testing Location	7
1.7 Applicable Standards.....	8
2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST	9
2.1 Carrier Frequency and Channel	9
2.2 Pre-Scanned RF Power.....	10
2.3 Test Mode.....	11
2.4 Connection Diagram of Test System.....	12
2.5 Support Unit used in test configuration and system	13
2.6 EUT Operation Test Setup	13
2.7 Measurement Results Explanation Example.....	13
3 TEST RESULT	14
3.1 6dB and 99% Bandwidth Measurement	14
3.2 Maximum Average Output Power Measurement	16
3.3 Power Spectral Density Measurement	18
3.4 Conducted Band Edges and Spurious Emission Measurement	20
3.5 Radiated Band Edges and Spurious Emission Measurement	75
3.6 AC Conducted Emission Measurement.....	79
3.7 Antenna Requirements.....	83
4 LIST OF MEASURING EQUIPMENT	85
5 UNCERTAINTY OF EVALUATION	86
APPENDIX A. CONDUCTED TEST RESULTS	
APPENDIX B. RADIATED TEST RESULTS	
APPENDIX C. DUTY CYCLE PLOTS	
APPENDIX D. SETUP PHOTOGRAPHS	



REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR640501A	Rev. 01	Initial issue of report	Jul. 08, 2016



SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	RSS-247 5.2(1)	6dB Bandwidth	$\geq 0.5\text{MHz}$	Pass	-
3.1	-	RSS-Gen 6.6	99% Bandwidth	-	Pass	-
3.2	15.247(b)	RSS-247 A5.4(4)	Power Output Measurement	$\leq 30\text{dBm}$	Pass	-
3.3	15.247(e)	RSS-247 5.2(2)	Power Spectral Density	$\leq 8\text{dBm/3kHz}$	Pass	-
3.4	15.247(d)	RSS-247 5.5	Conducted Band Edges	$\leq 20\text{dBc}$	Pass	-
			Conducted Spurious Emission		Pass	-
3.5	15.247(d)	RSS-247 5.5	Radiated Band Edges and Radiated Spurious Emission	15.209(a) & 15.247(d)	Pass	Under limit 0.14 dB at 2483.800 MHz
3.6	15.207	RSS-GEN 8.8	AC Conducted Emission	15.207(a)	Pass	Under limit 3.08 dB at 0.450 MHz
3.7	15.203 & 15.247(b)	N/A	Antenna Requirement	N/A	Pass	-



1 General Description

1.1 Applicant

TP-LINK TECHNOLOGIES CO., LTD.

Building 24 (floors 1,3,4,5) and 28 (floors1-4) Central Science and Technology Park, Shennan Rd.,
Nanshan, Shenzhen, China

1.2 Manufacturer

TP-LINK TECHNOLOGIES CO., LTD.

Building 24 (floors 1,3,4,5) and 28 (floors1-4) Central Science and Technology Park, Shennan Rd.,
Nanshan, Shenzhen, China

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	AC1900 Wireless Dual Band Gigabit Access Point
Brand Name	TP-LINK
Model Name	EAP330
FCC ID	TE7EAP330
EUT supports Radios application	WLAN2.4GHz 802.11b/g/n HT20/HT40 WLAN2.4GHz 802.11ac VHT20/VHT40 WLAN5GHz 802.11a/n HT20/HT40 WLAN5GHz 802.11ac VHT20/VHT40/VHT80
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		802.11b/g/n/ac : 2412 MHz ~ 2462 MHz			
Maximum (Average) Output Power to antenna		802.11b : 26.58 dBm (0.4550 W) 802.11g : 28.60 dBm (0.7244 W) 802.11n HT20 : 27.98 dBm (0.6281 W) 802.11n HT40 : 22.46 dBm (0.1762 W) 802.11ac VHT20 : 27.70 dBm (0.5888 W) 802.11ac VHT40 : 20.99 dBm (0.1256 W)			
99% Occupied Bandwidth		802.11b : 13.60MHz 802.11g : 20.10MHz 802.11n HT20 : 19.95MHz 802.11n HT40 : 36.80MHz 802.11ac VHT20 : 20.15MHz 802.11ac VHT40 : 36.80MHz			
Antenna Type		<Ant 1> 802.11b/g/n/ac : PIFA Antenna with gain 5.89 dBi <Ant 2> 802.11b/g/n/ac : PIFA Antenna with gain 4.77 dBi <Ant 3> 802.11b/g/n/ac : PIFA Antenna with gain 5.14 dBi			
Type of Modulation		802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)			
Antenna Function for Transmitter					
			Chain Port 0 Ant. 1	Chain Port 1 Ant. 2	Chain Port 2 Ant. 3
		802.11 b/g/n/ac MIMO	V	V	V



1.5 Modification of EUT

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

1.6 Testing Location

Test Site	SPORTON INTERNATIONAL (SHENZHEN) INC.	
Test Site Location	1F & 2F,Building A, Morning Business Center, No. 4003 ShiGu Rd., Xili Town, Nanshan District, Shenzhen, Guangdong, P. R. China TEL: +86-755-8637-9589 FAX: +86-755-8637-9595	
Test Site No.	Sporton Site No.	
	TH01-SZ	CO01-SZ

Test Site	SPORTON INTERNATIONAL (SHENZHEN) INC.	
Test Site Location	No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, Nanshan District, Shenzhen, Guangdong, P. R. China TEL: +86-755- 3320-2398	
Test Site No.	Sporton Site No.	FCC/IC Registration No.
	03CH03-SZ	565805/4086F

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 v03r05
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ♦ FCC KDB 644545 D03 Guidance for IEEE 802 11ac New Rules v01
- ♦ ANSI C63.10-2013
- ♦ IC RSS-247 Issue 1
- ♦ IC RSS-Gen Issue 4

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).

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.

802.11b				
Data Rate (MHz)	1M bps	2M bps	5.5M bps	11M bps
Average Power (dBm)	26.58	26.54	26.53	26.52

802.11g								
Data Rate (MHz)	6M bps	9M bps	12M bps	18M bps	24M bps	36M bps	48M bps	54M bps
Average Power (dBm)	28.60	28.56	28.56	28.55	28.54	28.52	28.56	28.55

2.4GHz 802.11n HT20								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Average Power (dBm)	27.98	27.95	27.94	27.95	27.96	27.95	27.95	27.95

2.4GHz 802.11n HT40								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Average Power (dBm)	22.46	22.41	22.40	22.40	22.43	22.44	22.44	22.42

2.4GHz 802.11ac VHT20 mode									
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8
Average Power (dBm)	27.70	27.64	27.65	27.65	27.65	27.63	27.61	27.61	27.64

2.4GHz 802.11ac VHT40 mode										
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
Average Power (dBm)	20.99	20.89	20.91	20.85	20.75	20.71	20.70	20.67	20.68	20.66

Note: MIMO Ant. 1+2+3 is a calculated result from sum of the power MIMO Ant. 1, MIMO Ant. 2 and MIMO Ant. 3.

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

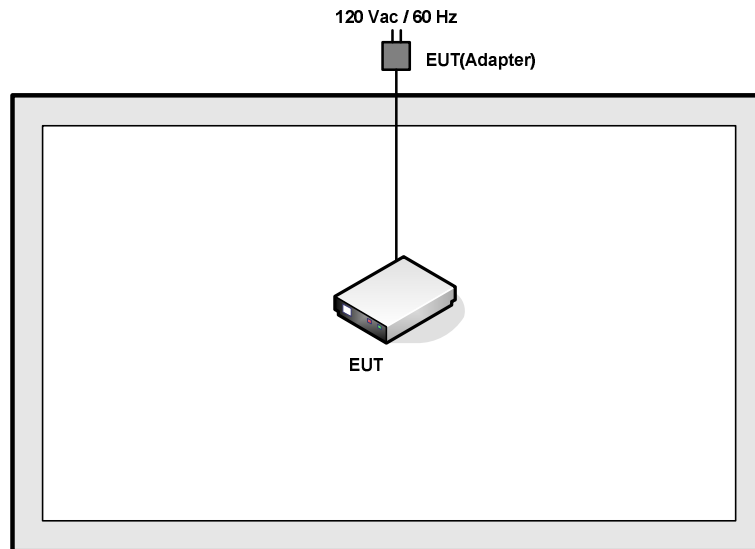
<2.4GHz>

Modulation	Data Rate
802.11b	1 Mbps
802.11g	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0
802.11ac VHT20	MCS0
802.11ac VHT40	MCS0

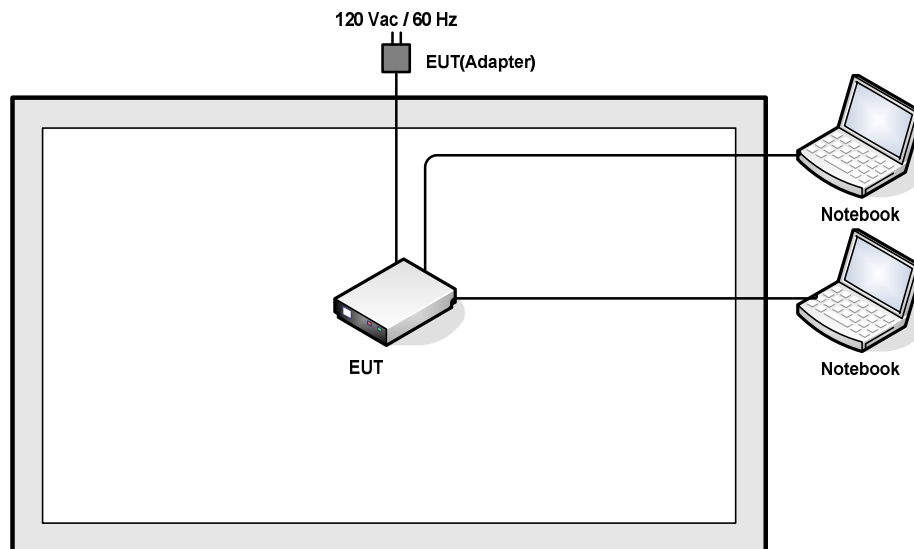
Test Cases	
AC Conducted Emission	Mode 1 : WLAN (2.4G) Link + Adapter + Data Link (POE Port) + Data Link (LAN Port)

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	Lenovo	E540	FCC DoC	N/A	Shielded cable DC O/P 1.8 m Unshielded AC I/P cable1.2 m
2.	Notebook	Dell	Vostro1440	FCC DoC	N/A	Shielded cable DC O/P 1.8 m Unshielded AC I/P cable1.2 m

2.6 EUT Operation Test Setup

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

For AC power line conducted emissions, the EUT was set to connect with the Notebook under large package sizes transmission.

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 5.0 dB and 10dB attenuator.

$$\begin{aligned}\text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)} \\ &= 5.0 + 10 = 15.0 \text{ (dB)}\end{aligned}$$

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.

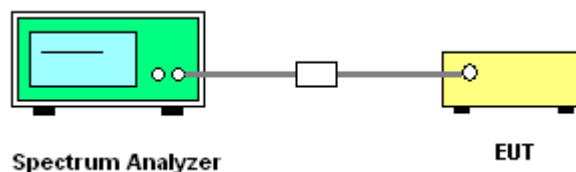
3.1.2 Measuring Instruments

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 v03r05.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 kHz.
5. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) = 1MHz and set the Video bandwidth (VBW) = 3MHz.
6. Measure and record the results in the test report.

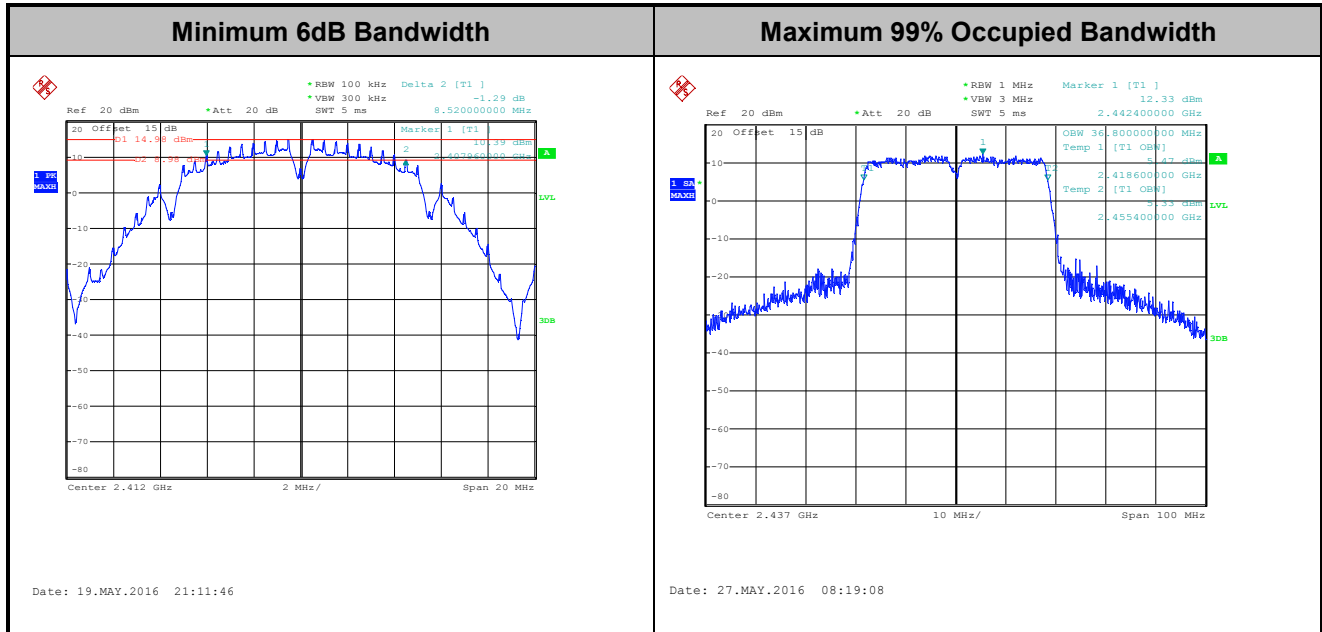
3.1.4 Test Setup





3.1.5 Test Result of 6dB and 99% Occupied Bandwidth

Please refer to Appendix A of this report.



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

3.2 Maximum Average Output Power Measurement

3.2.1 Limit of Average Output Power

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

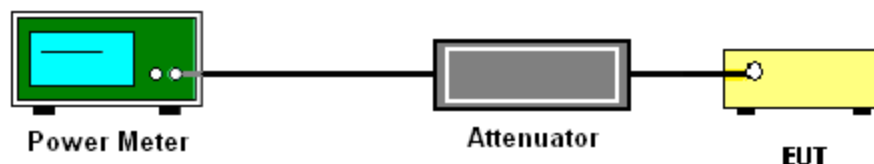
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v03r05 section 9.2.3.1 Method AVGPM (Measurement using an RF average power meter).
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 AVGPS-3 of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r05.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
5. Detector = RMS, Sweep time = auto couple. Allow max hold to run for at least 60 s, or longer as needed to allow the trace to stabilize. Use the peak marker function to determine the maximum power level.
6. Number of points in sweep $\geq 2 \text{ Span} / \text{RBW}$. (This ensures that bin-to-bin spacing is $\leq \text{RBW}/2$, so that narrowband signals are not lost between frequency bins)
7. Measure and record the results in the test report.
8. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

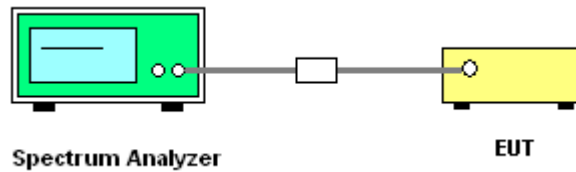
If measurements performed using method (2) plus $10 \log(N)$ exceeds the emission limit, the test should choose method (1) before declaring that the device fails the emission limit.

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.

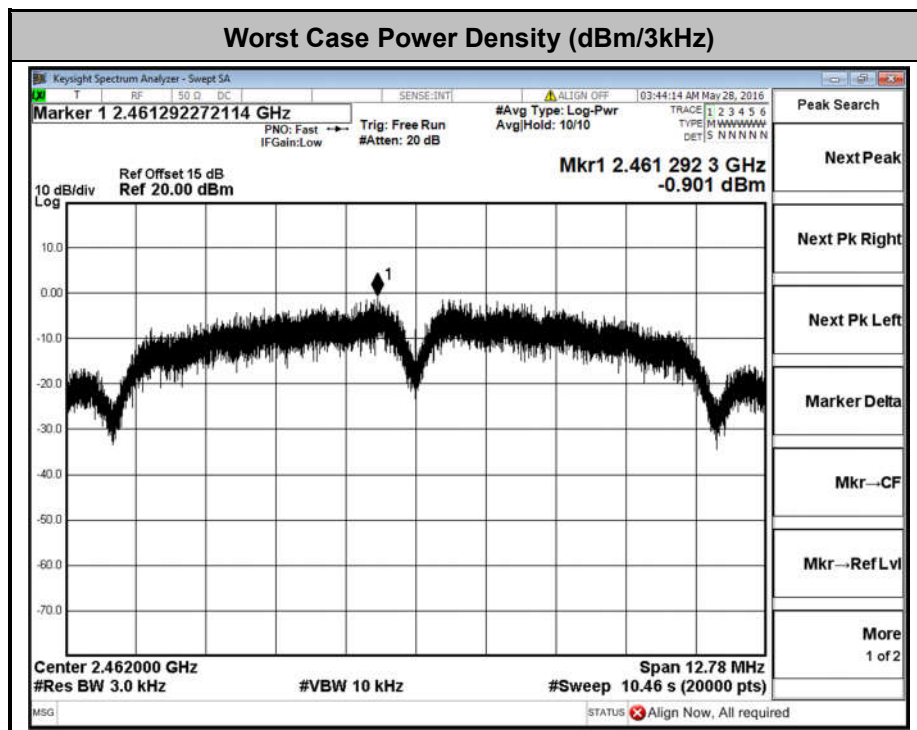
Method (2): Measure and add $10 \log(N)$ dB, where N is the number of outputs. (N=3)

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A of this report.



3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission Measurement

In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement and radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

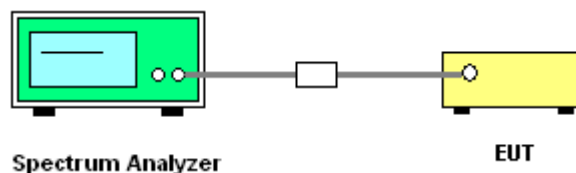
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r05.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d).
5. Measure and record the results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.4.4 Test Setup

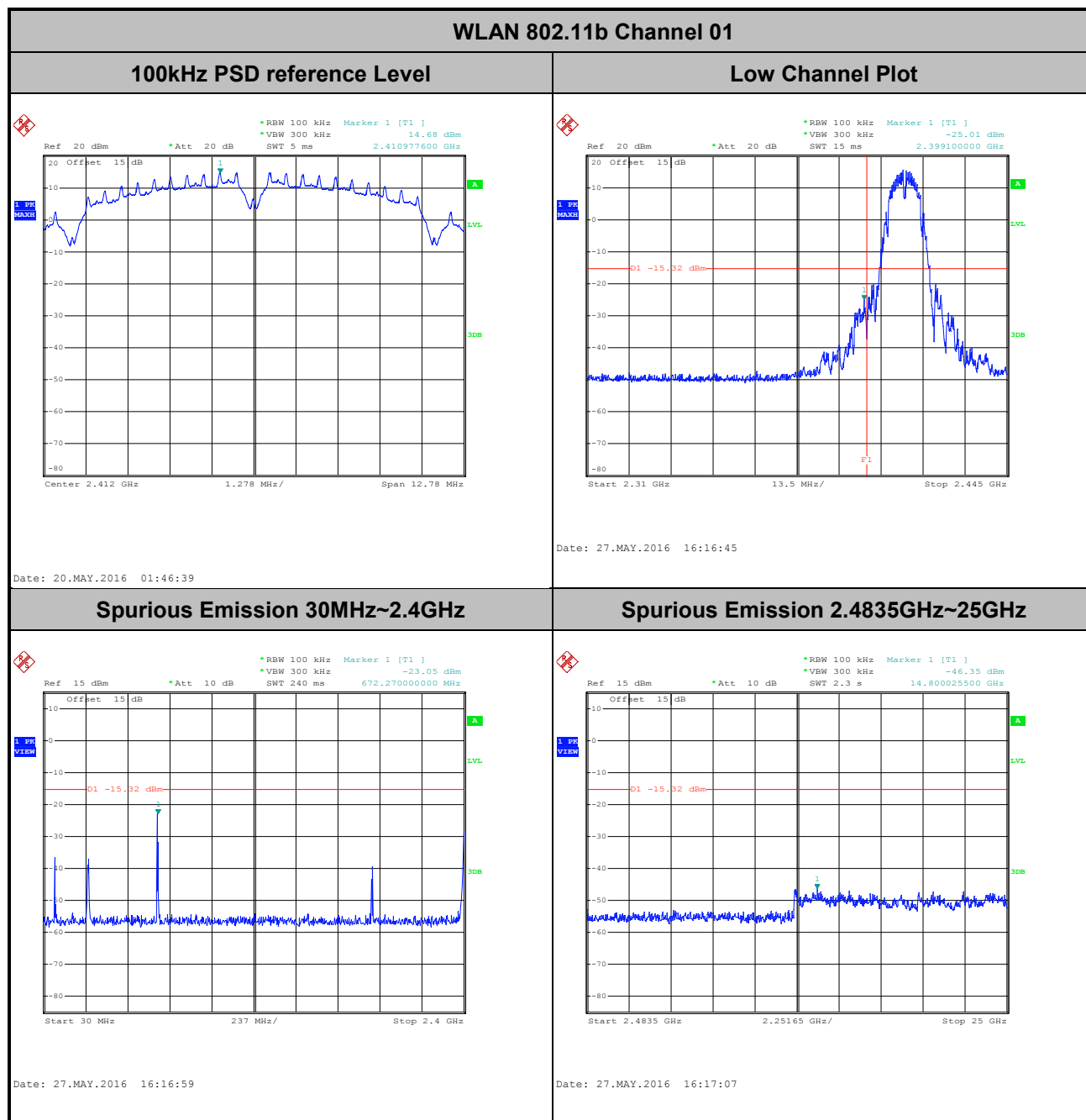




3.4.5 Test Result of Conducted Band Edges and Spurious Emission

Number of TX = 3, Ant. 1 (Measured)

Number of TX	3	Ant. :	1
Test Mode :	802.11b	Temperature :	24~26°C
Test Band :	2.4GHz Low	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Mygai Mo

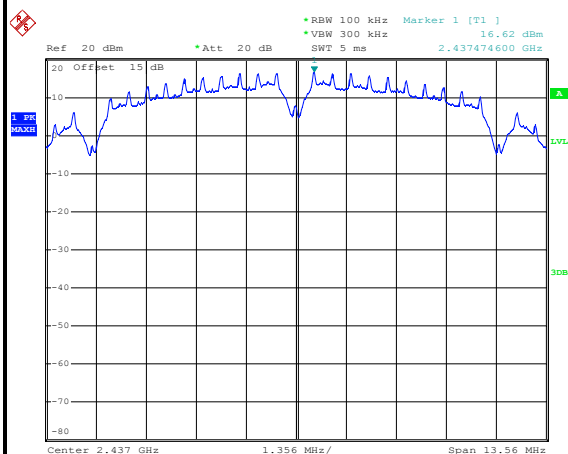




Number of TX :	3	Ant. :	1
Test Mode :	802.11b	Temperature :	24~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Mygai Mo

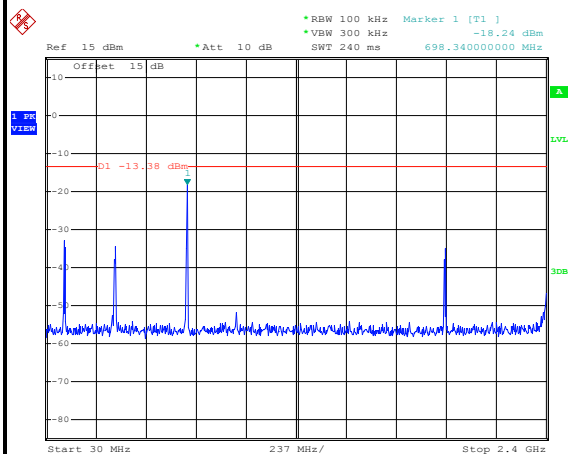
WLAN 802.11b Channel 06

100kHz PSD reference Level



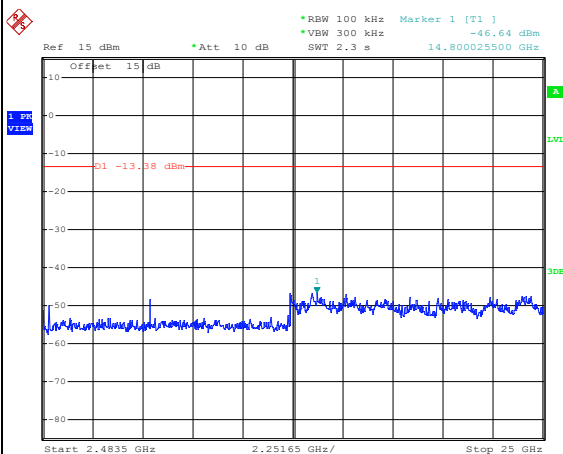
Date: 20.MAY.2016 01:41:14

Spurious Emission 30MHz~2.4GHz



Date: 27.MAY.2016 16:18:00

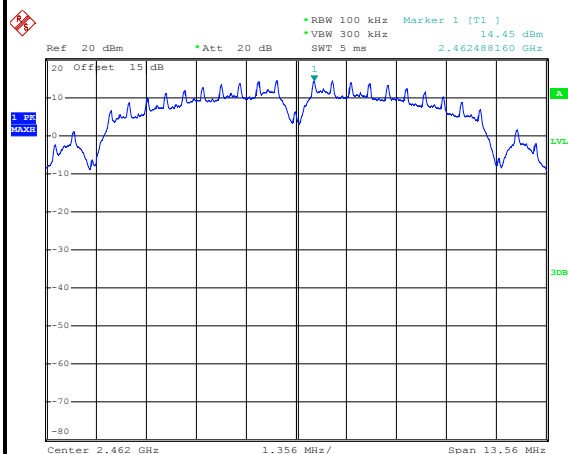
Spurious Emission 2.4835GHz~25GHz



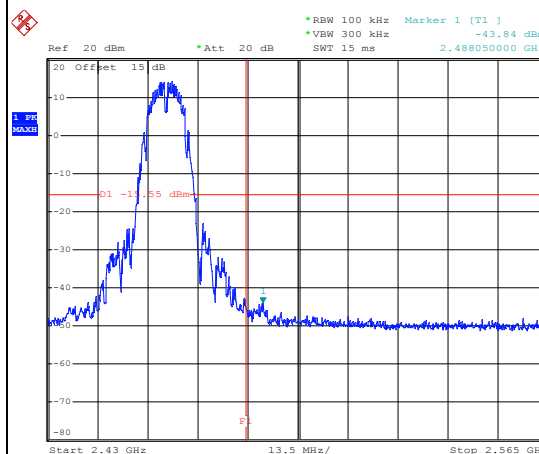
Date: 27.MAY.2016 16:18:08



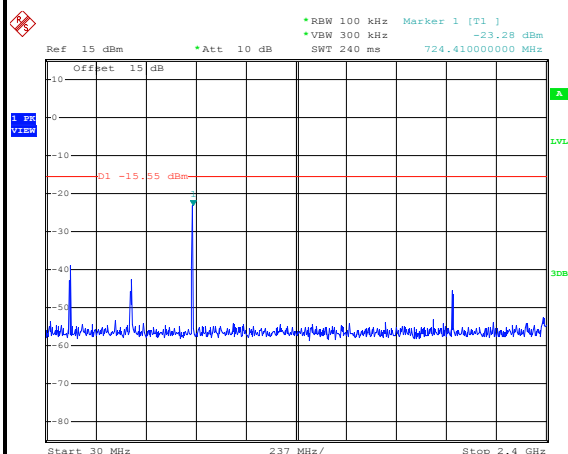
Number of TX :	3	Ant. :	1
Test Mode :	802.11b	Temperature :	24~26°C
Test Band :	2.4GHz High	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Mygai Mo

WLAN 802.11b Channel 11**100kHz PSD reference Level**

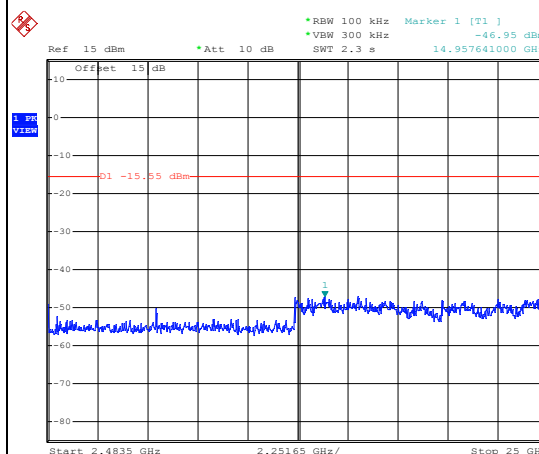
Date: 20.MAY.2016 01:51:51

High Channel Plot

Date: 27.MAY.2016 16:33:48

Spurious Emission 30MHz~2.4GHz

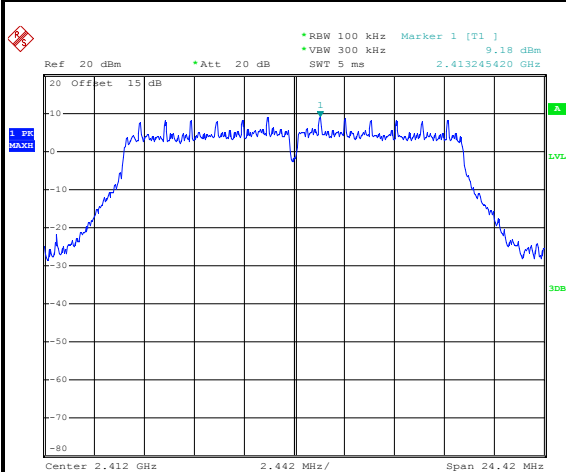
Date: 27.MAY.2016 16:24:43

Spurious Emission 2.4835GHz~25GHz

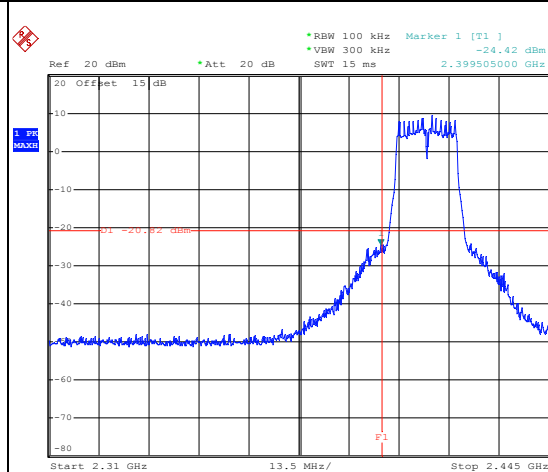
Date: 27.MAY.2016 16:24:52



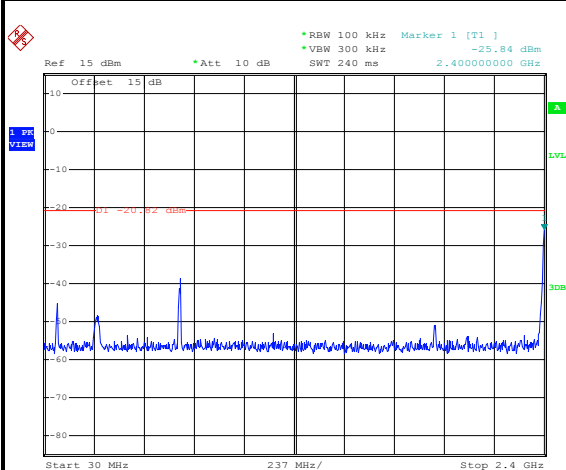
Number of TX :	3	Ant. :	1
Test Mode :	802.11g	Temperature :	24~26°C
Test Band :	2.4GHz Low	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Mygai Mo

WLAN 802.11g Channel 01**100kHz PSD reference Level**

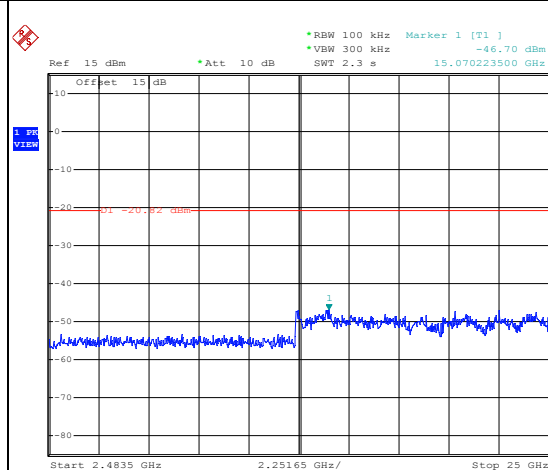
Date: 27.MAY.2016 16:04:08

Low Channel Plot

Date: 27.MAY.2016 16:05:10

Spurious Emission 30MHz~2.4GHz

Date: 27.MAY.2016 16:05:42

Spurious Emission 2.4835GHz~25GHz

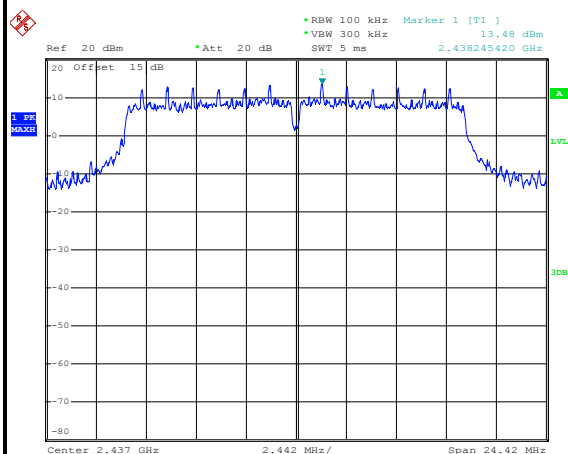
Date: 27.MAY.2016 16:05:50



Number of TX :	3	Ant. :	1
Test Mode :	802.11g	Temperature :	24~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Mygai Mo

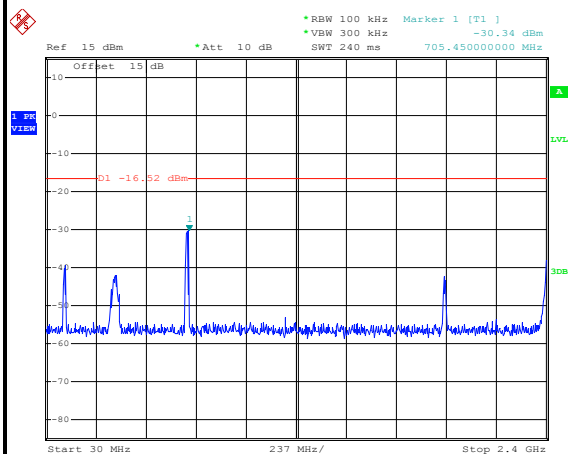
WLAN 802.11g Channel 06

100kHz PSD reference Level



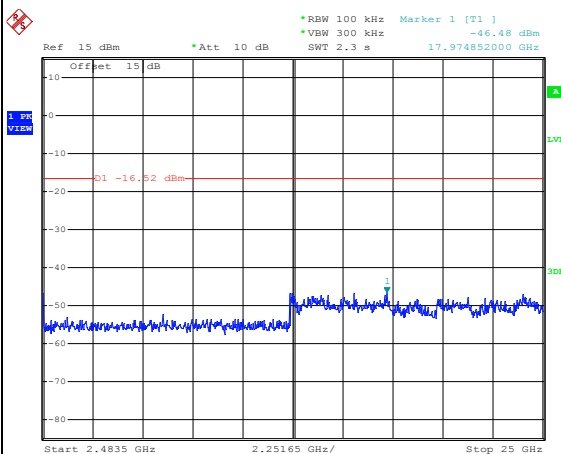
Date: 20.MAY.2016 02:11:23

Spurious Emission 30MHz~2.4GHz



Date: 27.MAY.2016 16:07:47

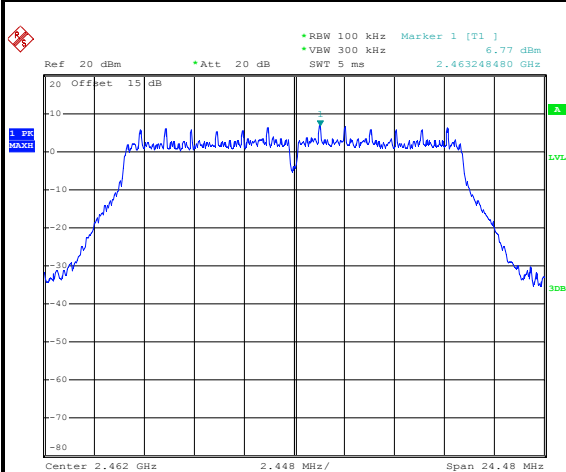
Spurious Emission 2.4835GHz~25GHz



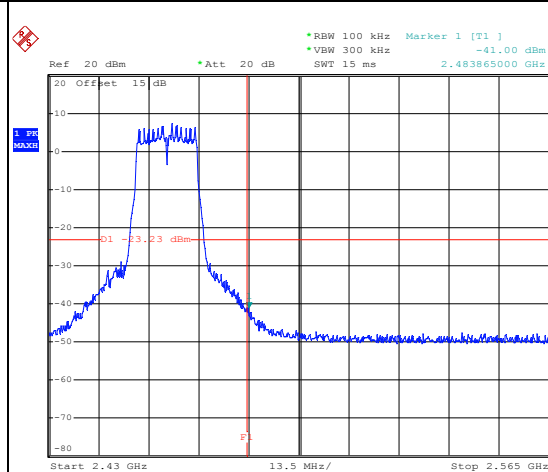
Date: 27.MAY.2016 16:07:55



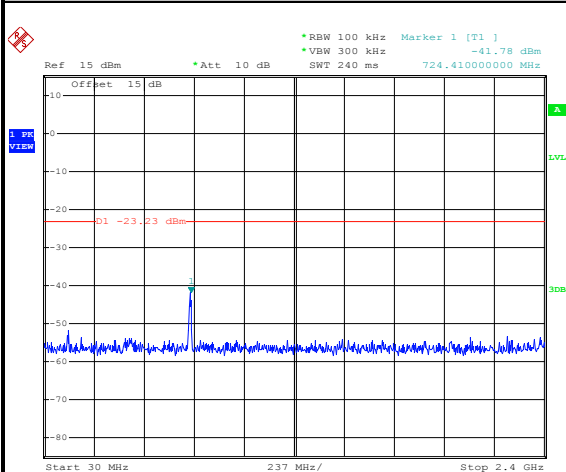
Number of TX :	3	Ant. :	1
Test Mode :	802.11g	Temperature :	24~26°C
Test Band :	2.4GHz High	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Mygai Mo

WLAN 802.11g Channel 11**100kHz PSD reference Level**

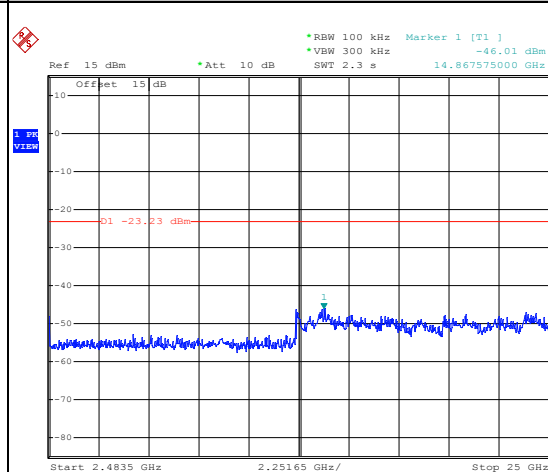
Date: 20.MAY.2016 02:18:53

High Channel Plot

Date: 27.MAY.2016 16:12:23

Spurious Emission 30MHz~2.4GHz

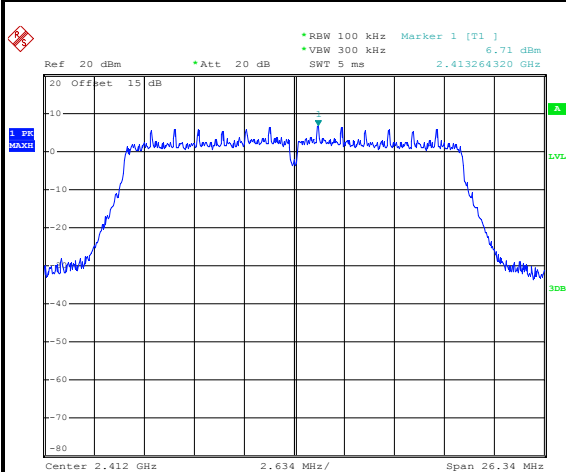
Date: 27.MAY.2016 16:12:40

Spurious Emission 2.4835GHz~25GHz

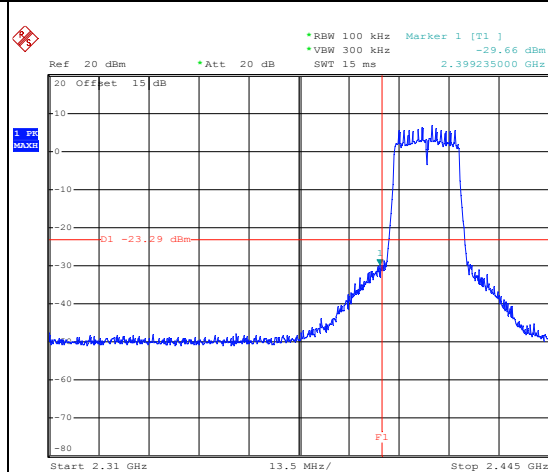
Date: 27.MAY.2016 16:12:48



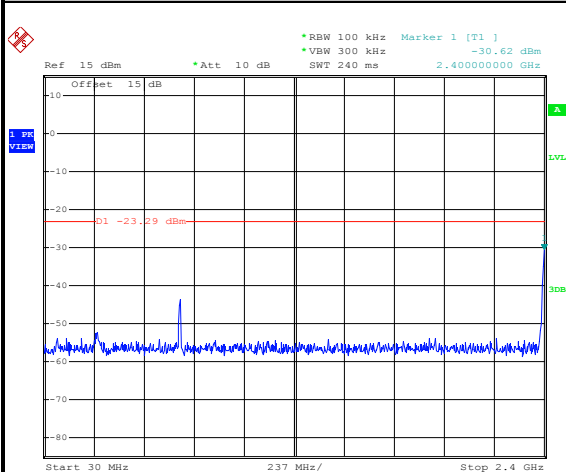
Number of TX :	3	Ant. :	1
Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Band :	2.4GHz Low	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Mygai Mo

WLAN 802.11n HT20 Channel 01**100kHz PSD reference Level**

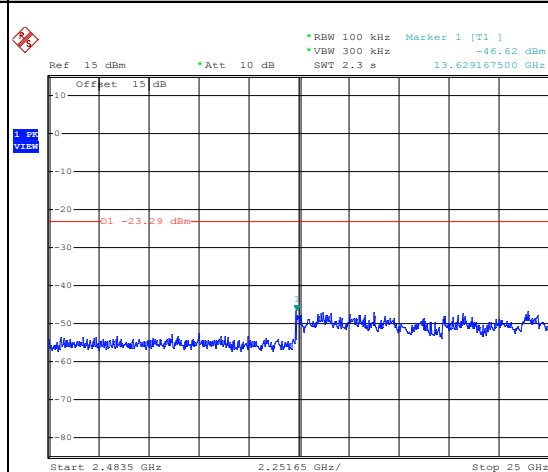
Date: 27.MAY.2016 06:17:45

Low Channel Plot

Date: 27.MAY.2016 06:19:12

Spurious Emission 30MHz~2.4GHz

Date: 27.MAY.2016 06:19:45

Spurious Emission 2.4835GHz~25GHz

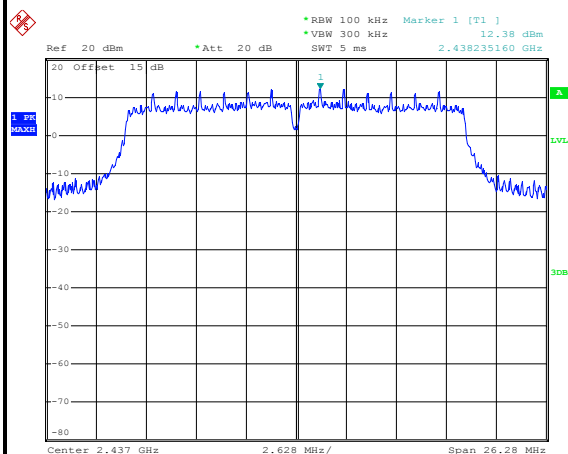
Date: 27.MAY.2016 06:19:53



Number of TX :	3	Ant. :	1
Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Mygai Mo

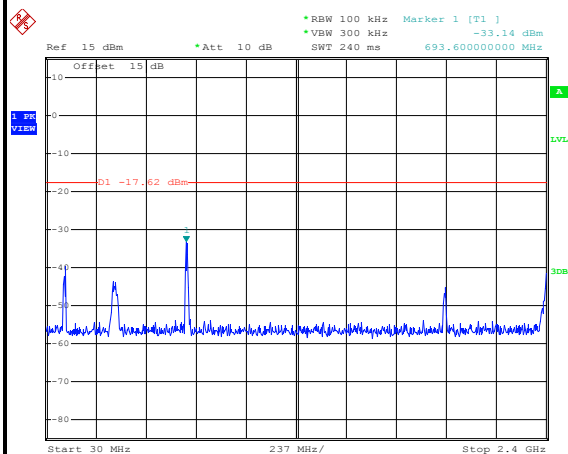
WLAN 802.11n HT20 Channel 06

100kHz PSD reference Level



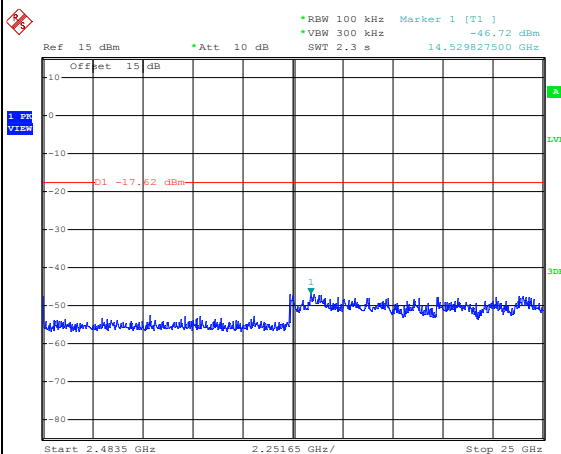
Date: 27.MAY.2016 06:43:25

Spurious Emission 30MHz~2.4GHz



Date: 27.MAY.2016 06:48:55

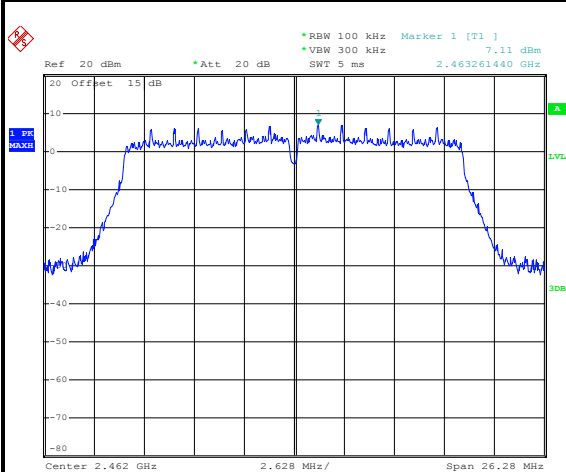
Spurious Emission 2.4835GHz~25GHz



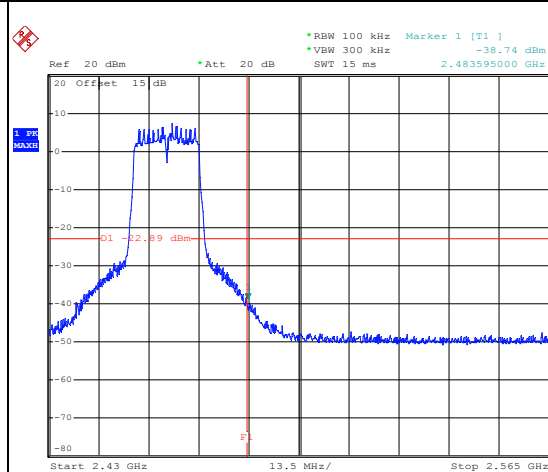
Date: 27.MAY.2016 06:49:03



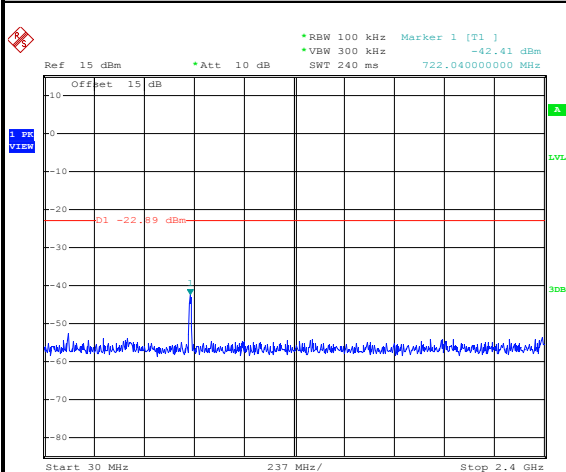
Number of TX :	3	Ant. :	1
Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Band :	2.4GHz High	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Mygai Mo

WLAN 802.11n HT20 Channel 11**100kHz PSD reference Level**

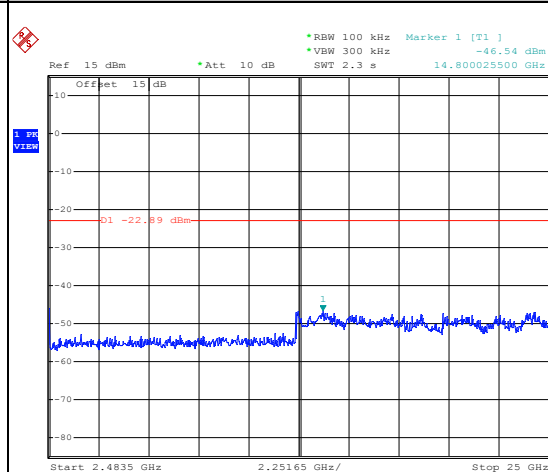
Date: 27.MAY.2016 06:27:10

High Channel Plot

Date: 27.MAY.2016 06:32:00

Spurious Emission 30MHz~2.4GHz

Date: 27.MAY.2016 06:35:49

Spurious Emission 2.4835GHz~25GHz

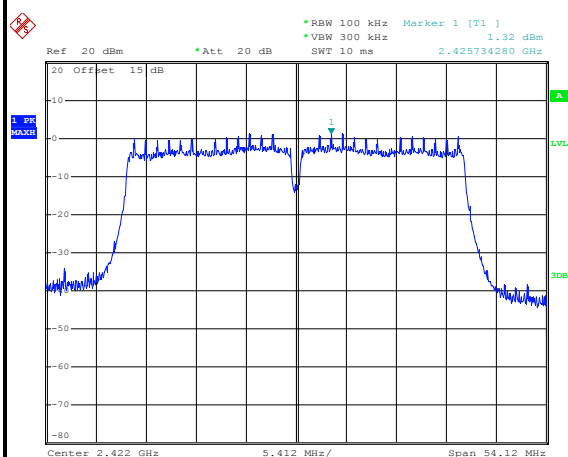
Date: 27.MAY.2016 06:36:45



Number of TX :	3	Ant. :	1
Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Band :	2.4GHz Low	Relative Humidity :	50~53%
Test Channel :	03	Test Engineer :	Mygai Mo

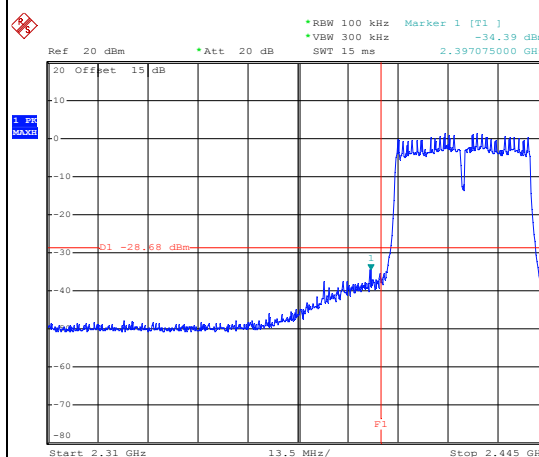
WLAN 802.11n HT40 Channel 03

100kHz PSD reference Level



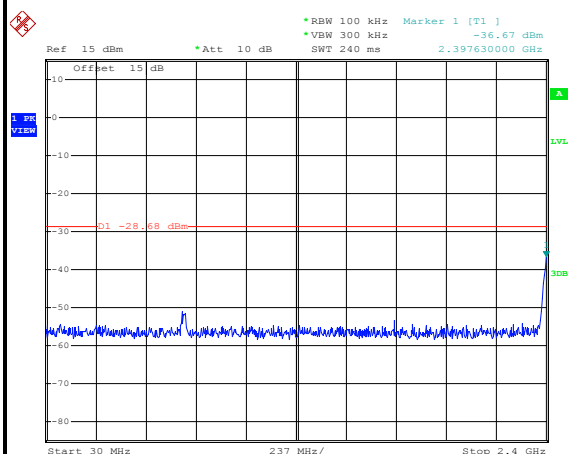
Date: 27.MAY.2016 08:23:37

Low Channel Plot



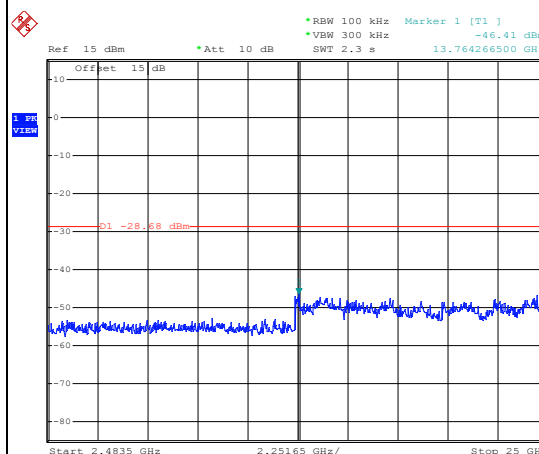
Date: 27.MAY.2016 08:25:05

Spurious Emission 30MHz~2.4GHz



Date: 27.MAY.2016 08:25:53

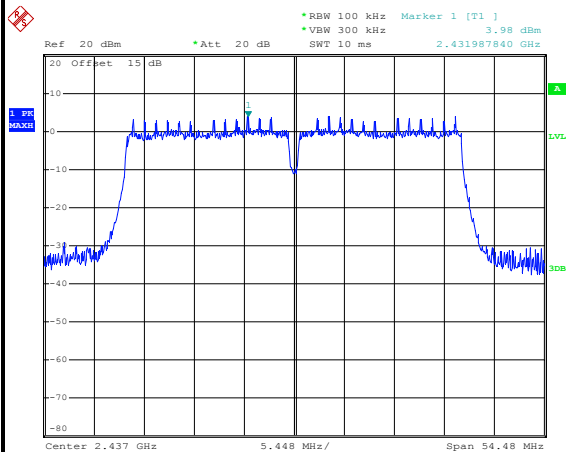
Spurious Emission 2.4835GHz~25GHz



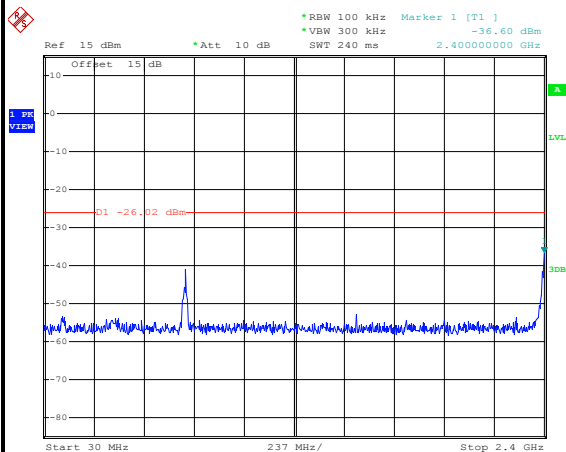
Date: 27.MAY.2016 08:26:01



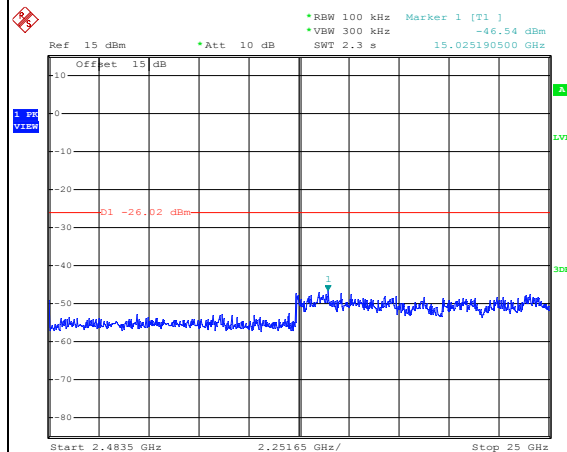
Number of TX :	3	Ant. :	1
Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Mygai Mo

WLAN 802.11n HT40 Channel 06**100kHz PSD reference Level**

Date: 27.MAY.2016 08:18:03

Spurious Emission 30MHz~2.4GHz

Date: 27.MAY.2016 08:19:21

Spurious Emission 2.4835GHz~25GHz

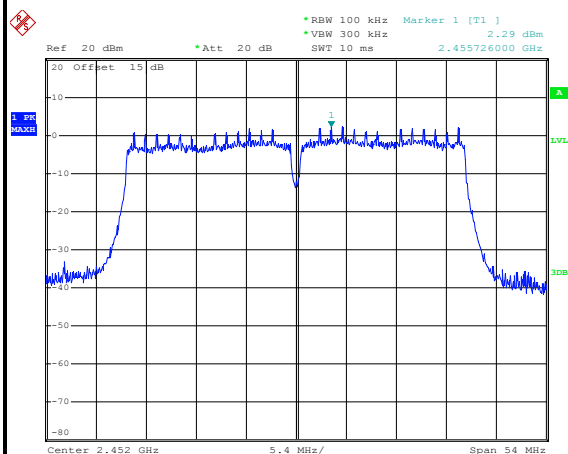
Date: 27.MAY.2016 08:19:29



Number of TX :	3	Ant. :	1
Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Band :	2.4GHz High	Relative Humidity :	50~53%
Test Channel :	09	Test Engineer :	Mygai Mo

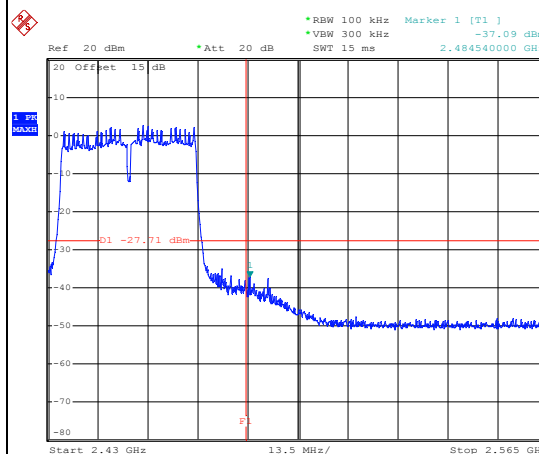
WLAN 802.11n HT40 Channel 09

100kHz PSD reference Level



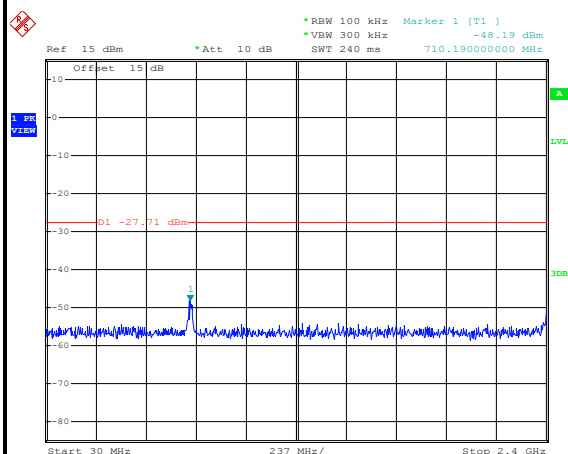
Date: 27.MAY.2016 07:49:11

High Channel Plot



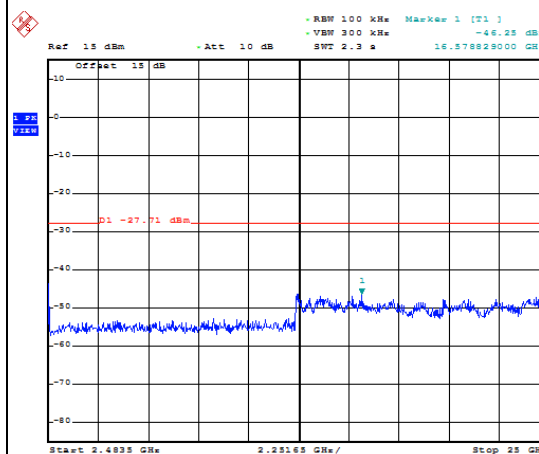
Date: 27.MAY.2016 07:53:41

Spurious Emission 30MHz~2.4GHz



Date: 27.MAY.2016 07:54:18

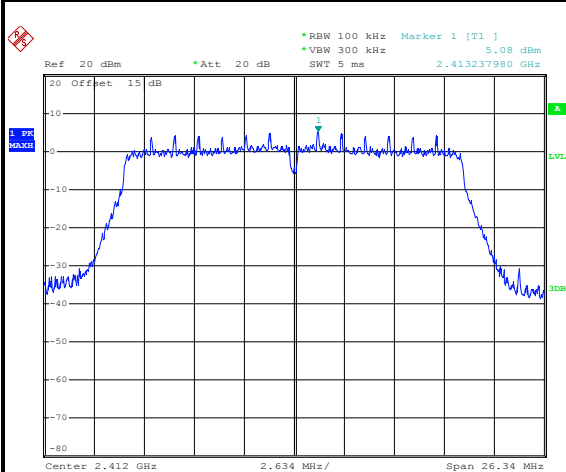
Spurious Emission 2GHz~25GHz



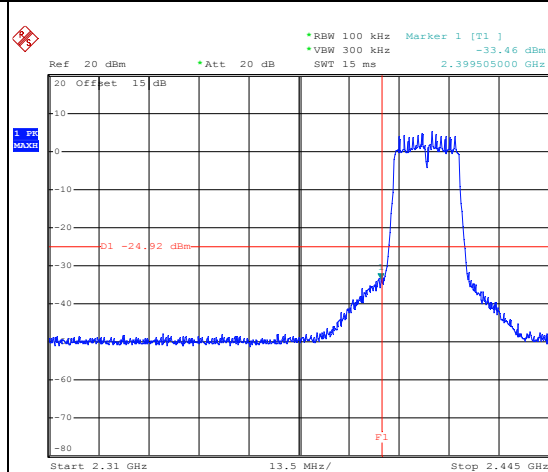
Date: 27.MAY.2016 08:14:26



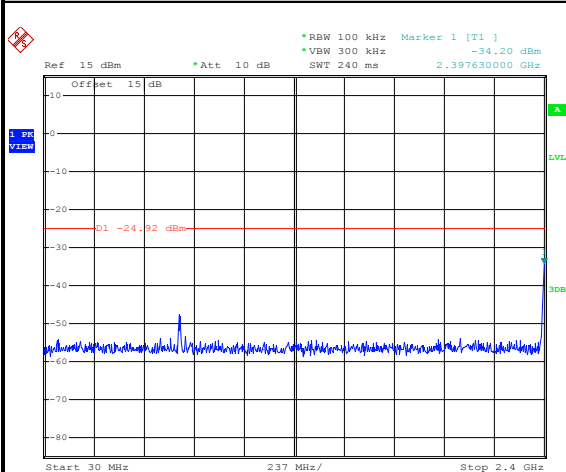
Number of TX :	3	Ant. :	1
Test Mode :	802.11ac VHT20	Temperature :	24~26°C
Test Band :	2.4GHz Low	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Mygai Mo

WLAN 802.11ac VHT20 Channel 01**100kHz PSD reference Level**

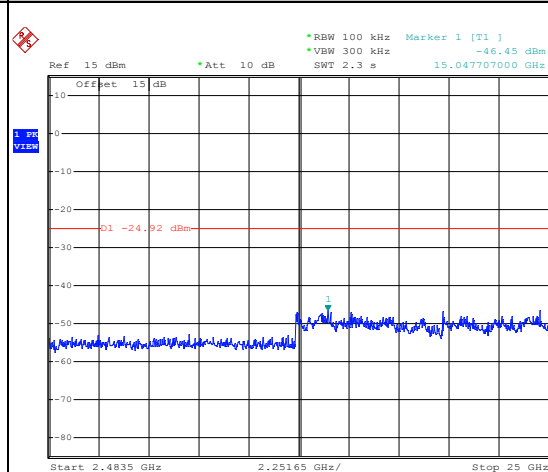
Date: 27.MAY.2016 07:02:46

Low Channel Plot

Date: 27.MAY.2016 07:04:17

Spurious Emission 30MHz~2.4GHz

Date: 27.MAY.2016 07:05:53

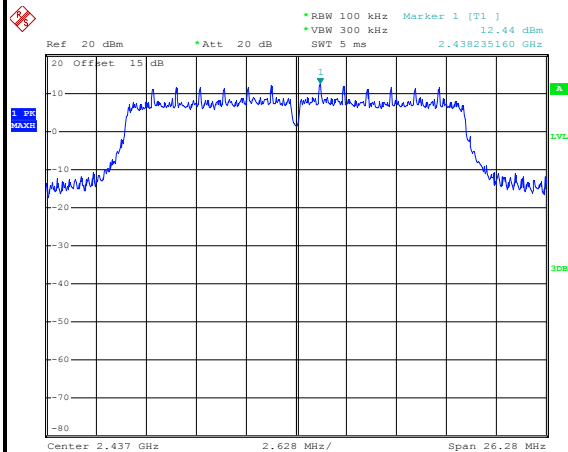
Spurious Emission 2.4835GHz~25GHz

Date: 27.MAY.2016 07:06:01

Number of TX :	3	Ant. :	1
Test Mode :	802.11ac VHT20	Temperature :	24~26℃
Test Band :	2.4GHz Mid	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Mygai Mo

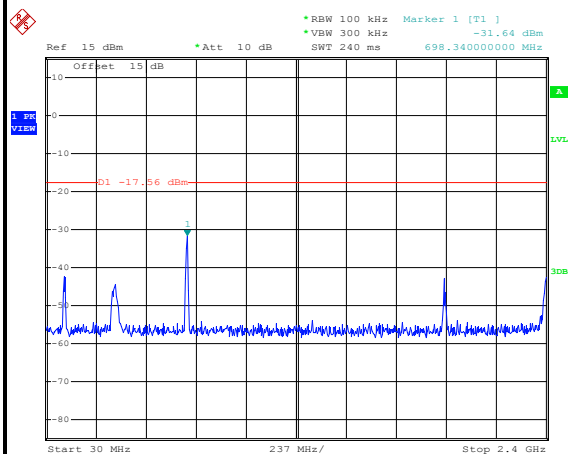
WLAN 802.11ac VHT20 Channel 06

100kHz PSD reference Level



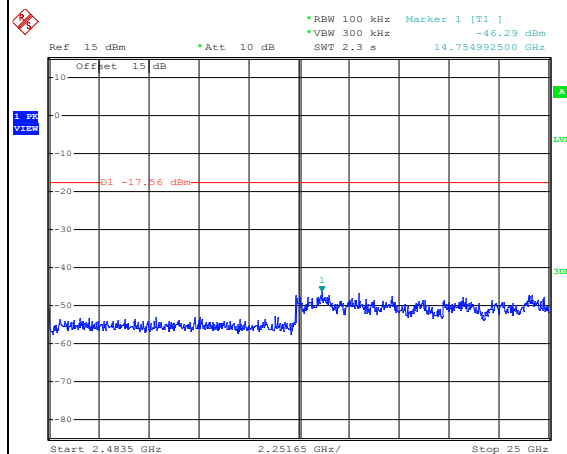
Date: 27.MAY.2016 06:56:57

Spurious Emission 30MHz~2.4GHz



Date: 27.MAY.2016 06:59:10

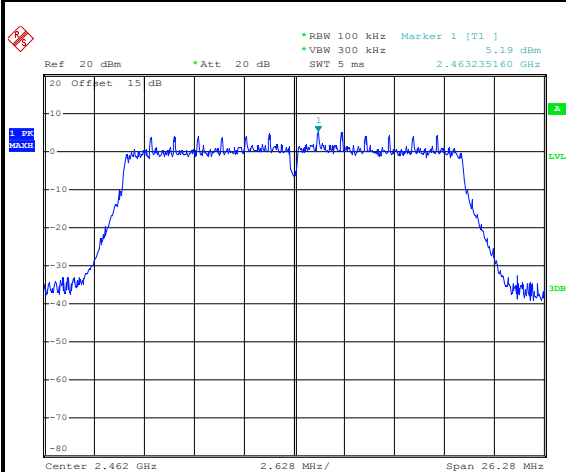
Spurious Emission 2.4835GHz~25GHz



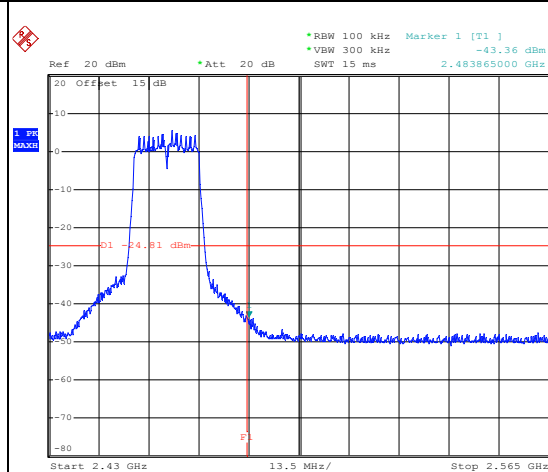
Date: 27.MAY.2016 06:59:18



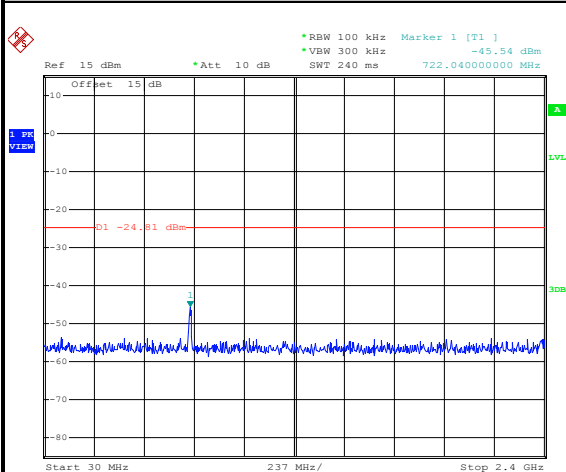
Number of TX :	3	Ant. :	1
Test Mode :	802.11ac VHT20	Temperature :	24~26°C
Test Band :	2.4GHz High	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Mygai Mo

WLAN 802.11ac VHT20 Channel 11**100kHz PSD reference Level**

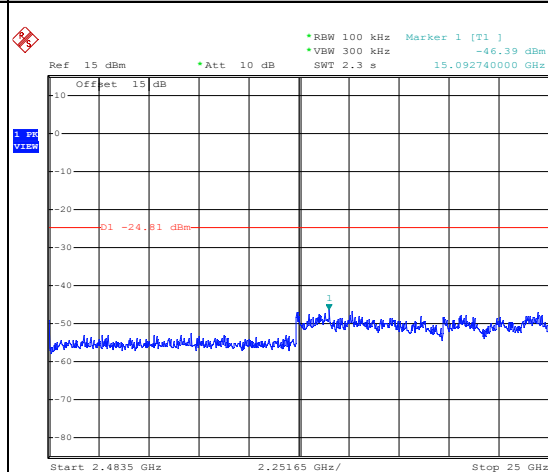
Date: 27.MAY.2016 07:08:50

High Channel Plot

Date: 27.MAY.2016 07:11:48

Spurious Emission 30MHz~2.4GHz

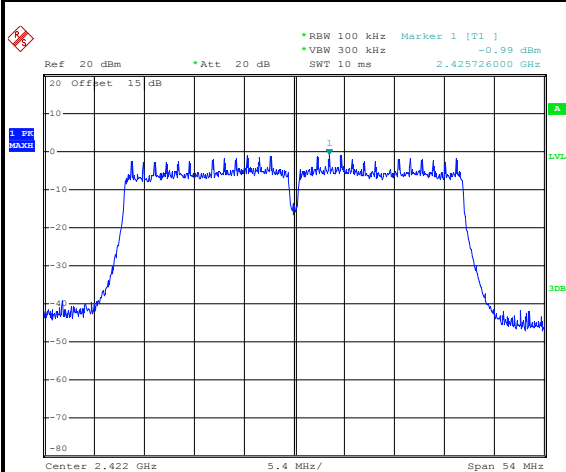
Date: 27.MAY.2016 07:12:18

Spurious Emission 2.4835GHz~25GHz

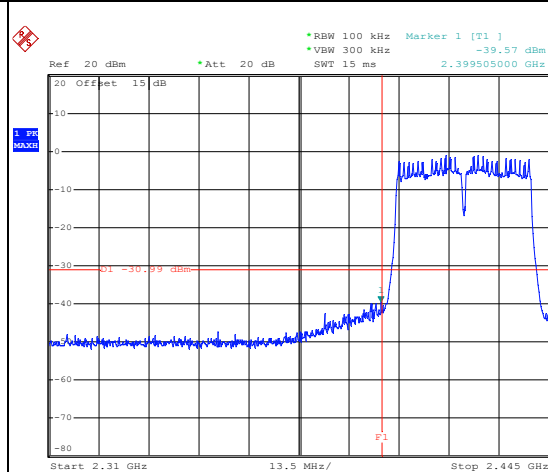
Date: 27.MAY.2016 07:12:27



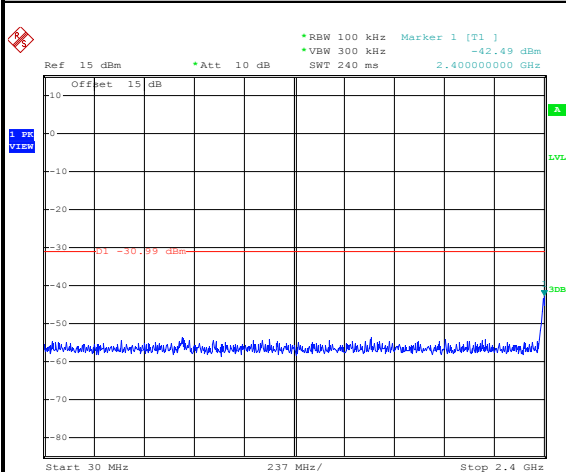
Number of TX :	3	Ant. :	1
Test Mode :	802.11ac VHT40	Temperature :	24~26°C
Test Band :	2.4GHz Low	Relative Humidity :	50~53%
Test Channel :	03	Test Engineer :	Mygai Mo

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

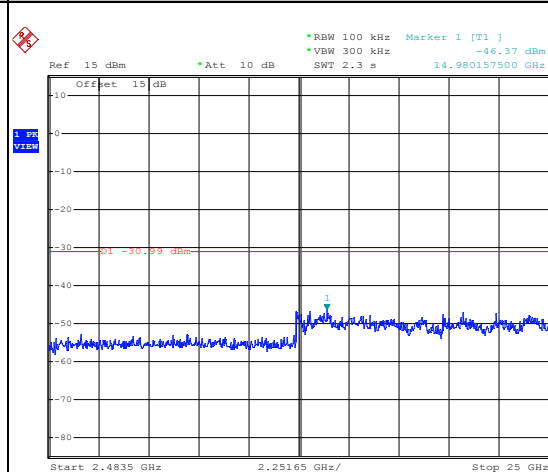
Date: 27.MAY.2016 07:19:32

Low Channel Plot

Date: 27.MAY.2016 07:20:14

Spurious Emission 30MHz~2.4GHz

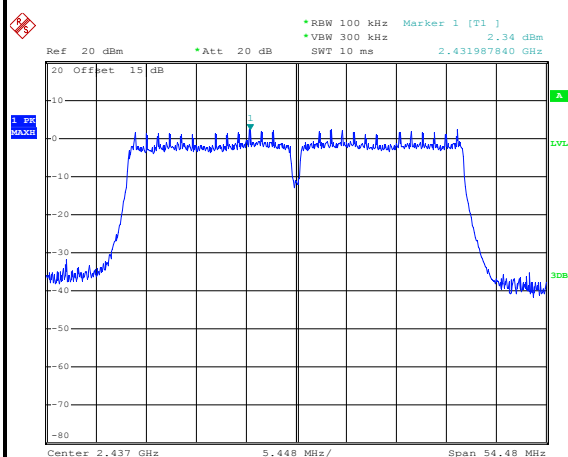
Date: 27.MAY.2016 07:22:47

Spurious Emission 2.4835GHz~25GHz

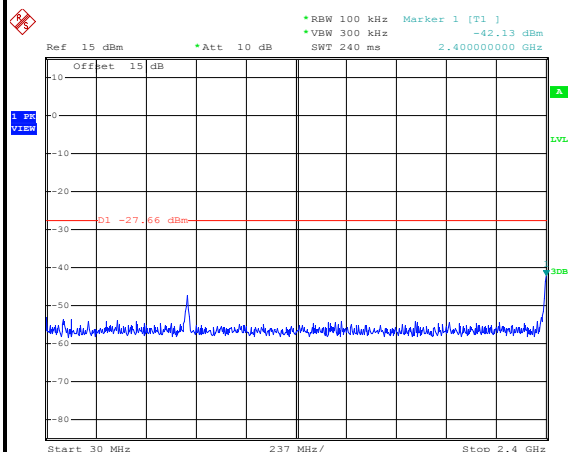
Date: 27.MAY.2016 07:22:55



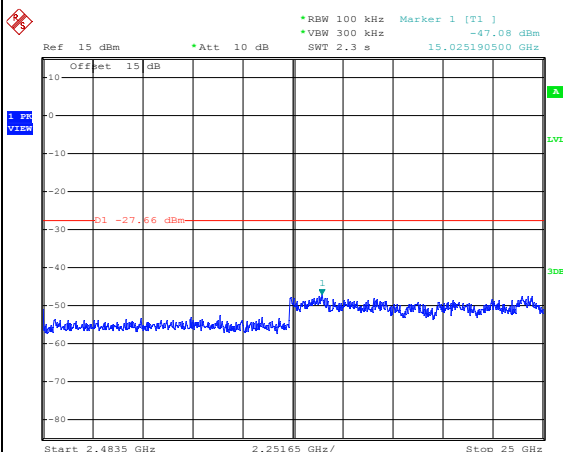
Number of TX :	3	Ant. :	1
Test Mode :	802.11ac VHT40	Temperature :	24~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Mygai Mo

WLAN 802.11ac VHT40 Channel 06**100kHz PSD reference Level**

Date: 27.MAY.2016 07:30:56

Spurious Emission 30MHz~2.4GHz

Date: 27.MAY.2016 07:33:18

Spurious Emission 2.4835GHz~25GHz

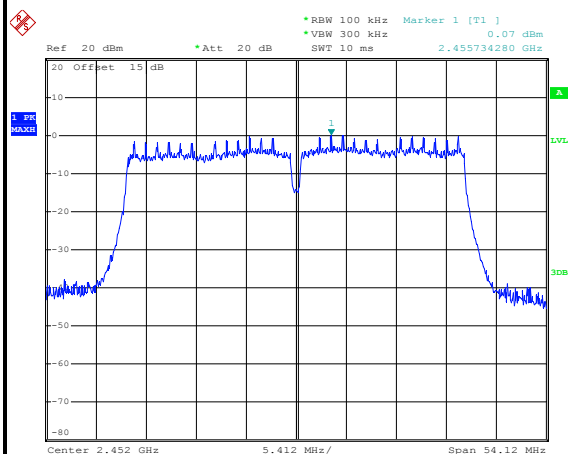
Date: 27.MAY.2016 07:33:27



Number of TX :	3	Ant. :	1
Test Mode :	802.11ac VHT40	Temperature :	24~26°C
Test Band :	2.4GHz High	Relative Humidity :	50~53%
Test Channel :	09	Test Engineer :	Mygai Mo

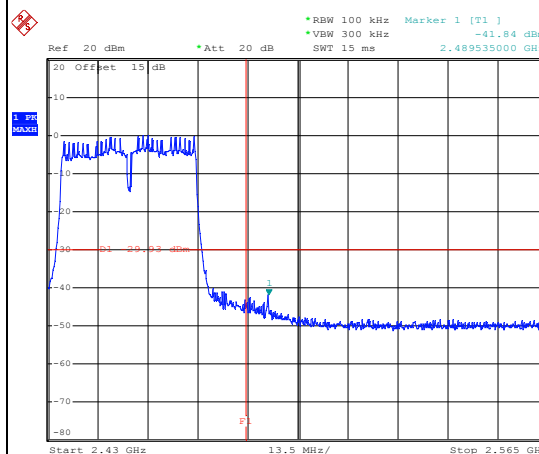
WLAN 802.11ac VHT40 Channel 09

100kHz PSD reference Level



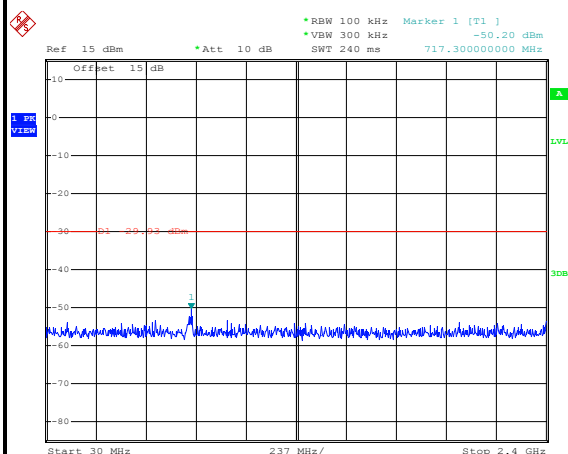
Date: 27.MAY.2016 07:38:04

High Channel Plot



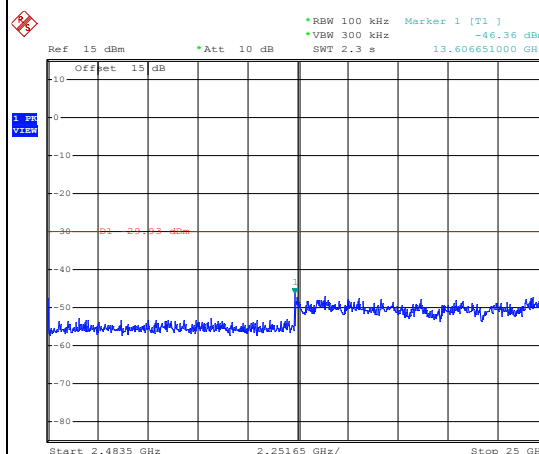
Date: 27.MAY.2016 07:42:03

Spurious Emission 30MHz~2.4GHz



Date: 27.MAY.2016 07:42:16

Spurious Emission 2.4835GHz~25GHz



Date: 27.MAY.2016 07:42:24

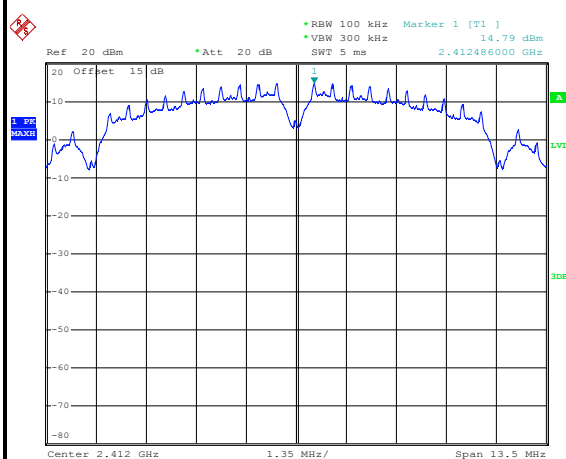


Number of TX = 3, Ant. 2 (Measured)

Number of TX	3	Ant. :	2
Test Mode :	802.11b	Temperature :	24~26°C
Test Band :	2.4GHz Low	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Mygai Mo

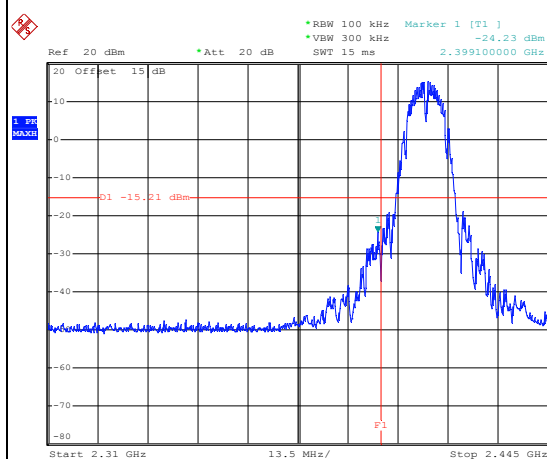
WLAN 802.11b Channel 01

100kHz PSD reference Level



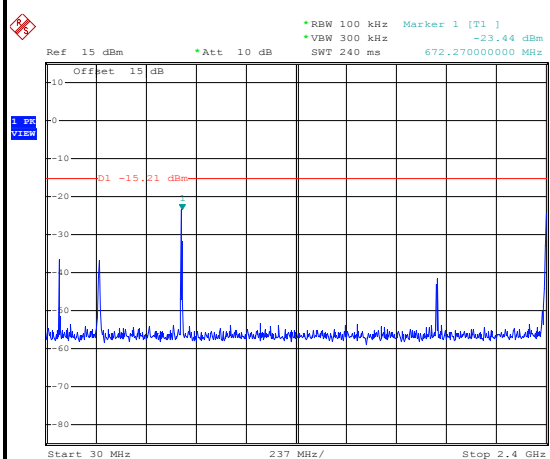
Date: 20.MAY.2016 01:29:38

Low Channel Plot



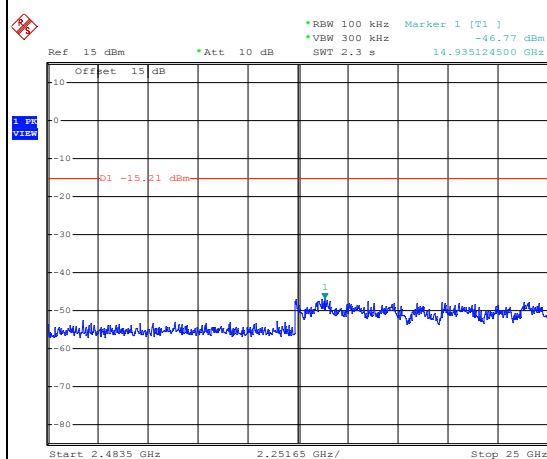
Date: 27.MAY.2016 15:23:03

Spurious Emission 30MHz~2.4GHz



Date: 27.MAY.2016 15:23:16

Spurious Emission 2.4835GHz~25GHz



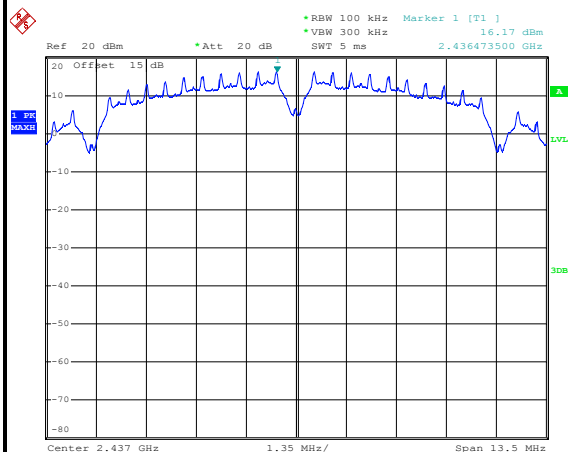
Date: 27.MAY.2016 15:23:24



Number of TX :	3	Ant. :	2
Test Mode :	802.11b	Temperature :	24~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Mygai Mo

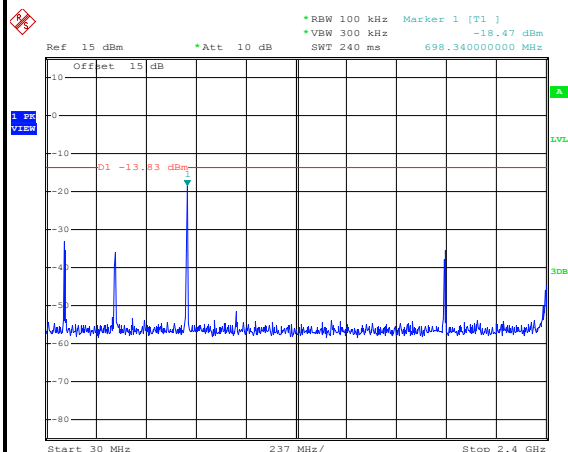
WLAN 802.11b Channel 06

100kHz PSD reference Level



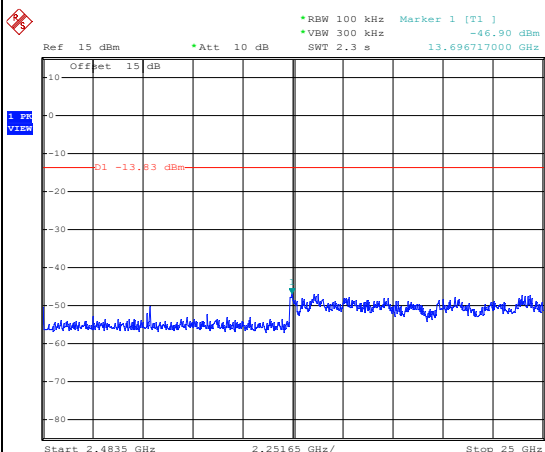
Date: 20.MAY.2016 01:36:03

Spurious Emission 30MHz~2.4GHz



Date: 27.MAY.2016 15:25:43

Spurious Emission 2.4835GHz~25GHz



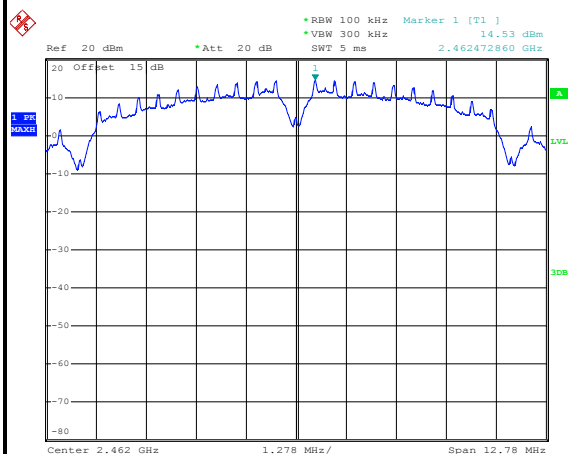
Date: 27.MAY.2016 15:25:51



Number of TX :	3	Ant. :	2
Test Mode :	802.11b	Temperature :	24~26°C
Test Band :	2.4GHz High	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Mygai Mo

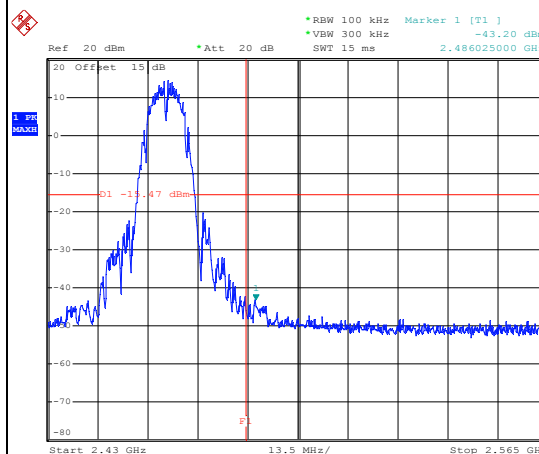
WLAN 802.11b Channel 11

100kHz PSD reference Level



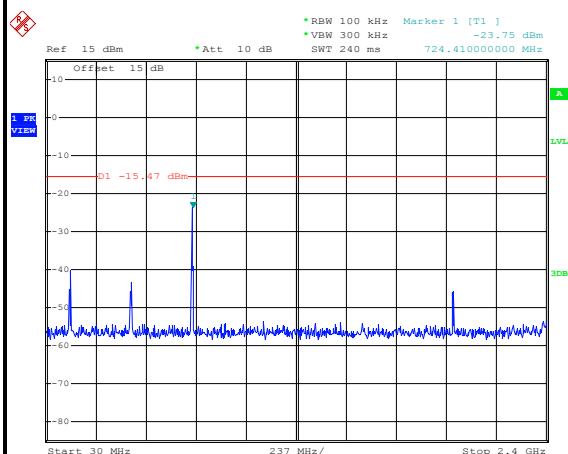
Date: 20.MAY.2016 01:03:00

High Channel Plot



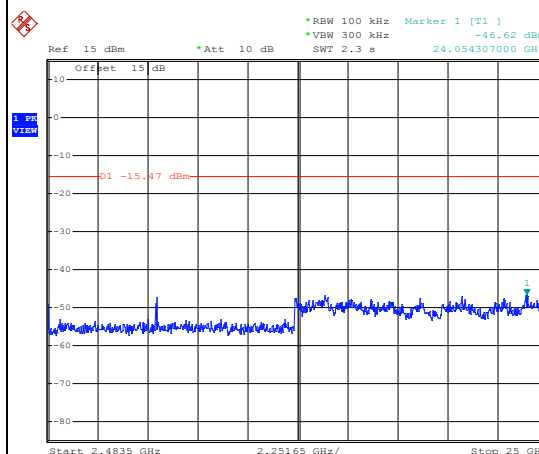
Date: 27.MAY.2016 15:37:28

Spurious Emission 30MHz~2.4GHz



Date: 27.MAY.2016 15:35:30

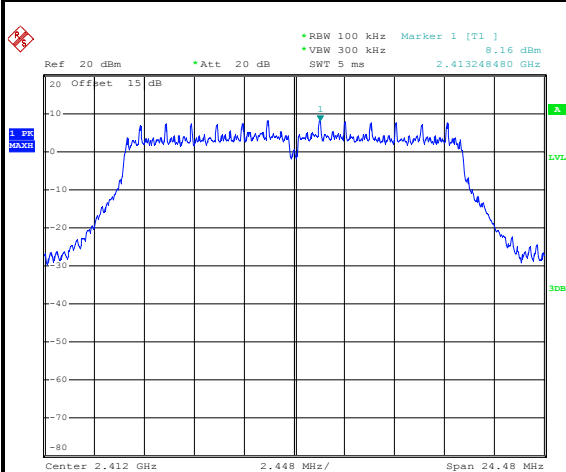
Spurious Emission 2.4835GHz~25GHz



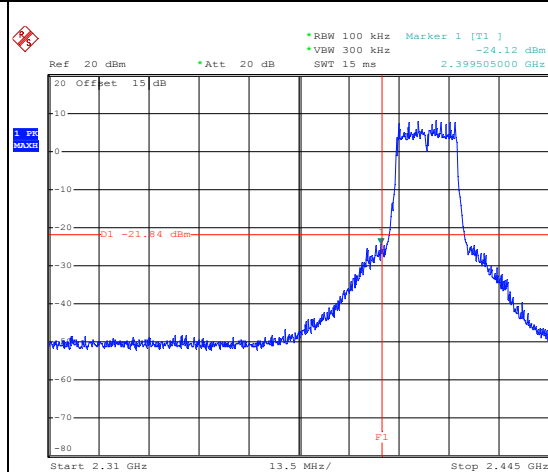
Date: 27.MAY.2016 15:35:39



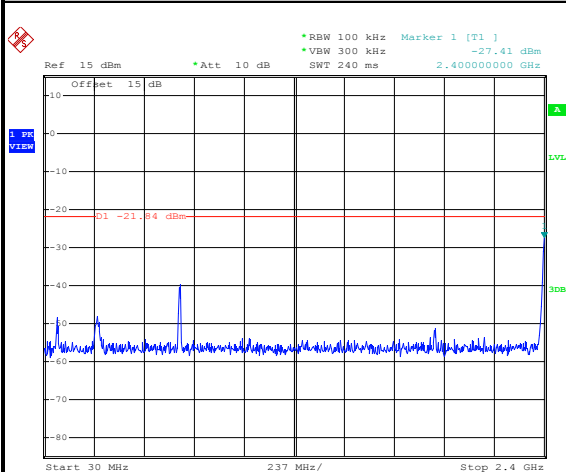
Number of TX :	3	Ant. :	2
Test Mode :	802.11g	Temperature :	24~26°C
Test Band :	2.4GHz Low	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Mygai Mo

WLAN 802.11g Channel 01**100kHz PSD reference Level**

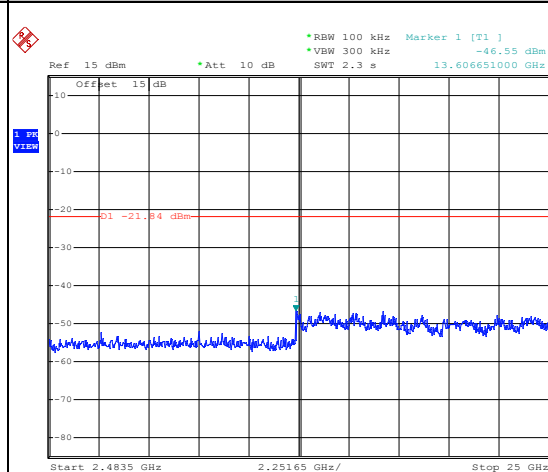
Date: 20.MAY.2016 01:24:55

Low Channel Plot

Date: 27.MAY.2016 15:43:59

Spurious Emission 30MHz~2.4GHz

Date: 27.MAY.2016 15:44:26

Spurious Emission 2.4835GHz~25GHz

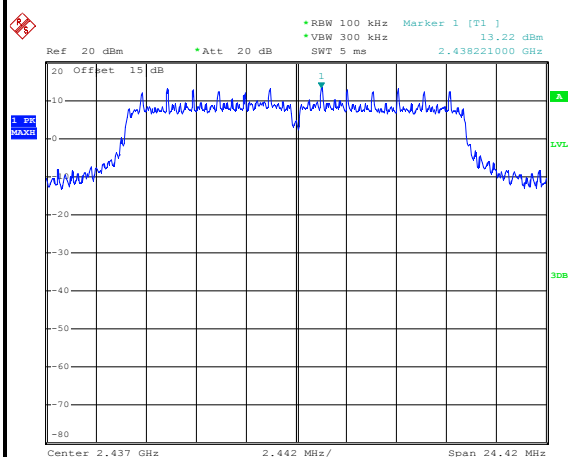
Date: 27.MAY.2016 15:44:34



Number of TX :	3	Ant. :	2
Test Mode :	802.11g	Temperature :	24~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Mygai Mo

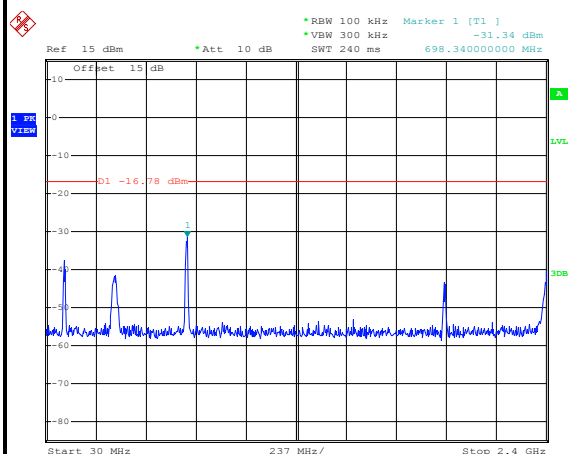
WLAN 802.11g Channel 06

100kHz PSD reference Level



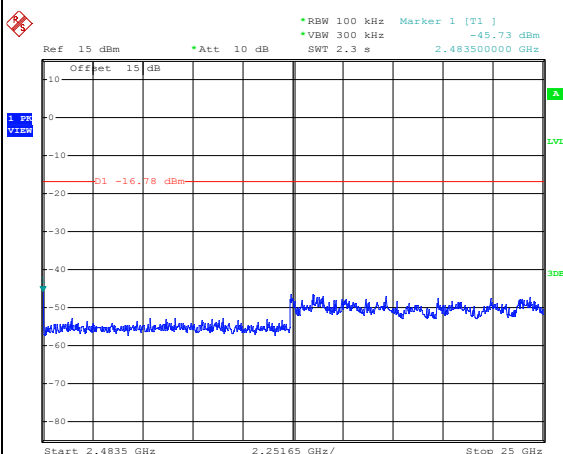
Date: 20.MAY.2016 01:22:18

Spurious Emission 30MHz~2.4GHz



Date: 27.MAY.2016 15:46:39

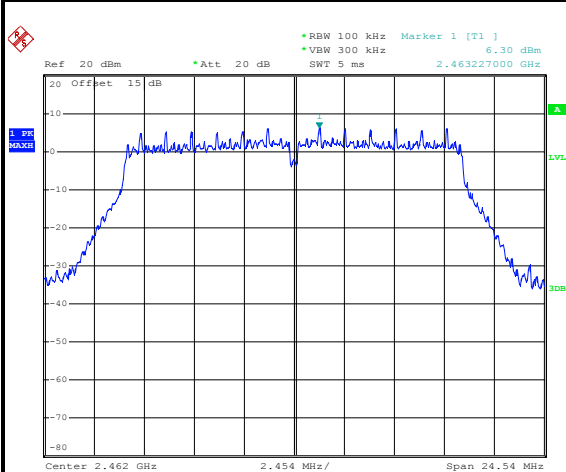
Spurious Emission 2.4835GHz~25GHz



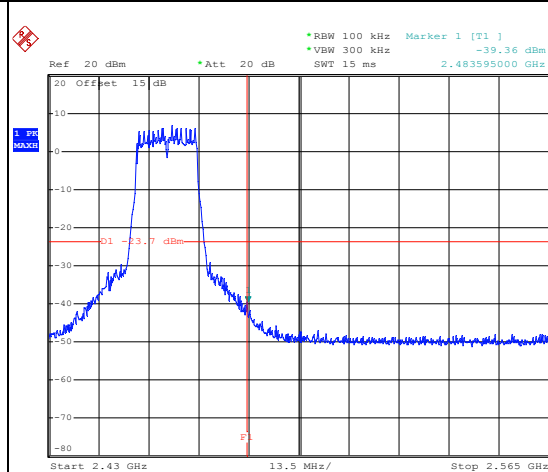
Date: 27.MAY.2016 15:46:47



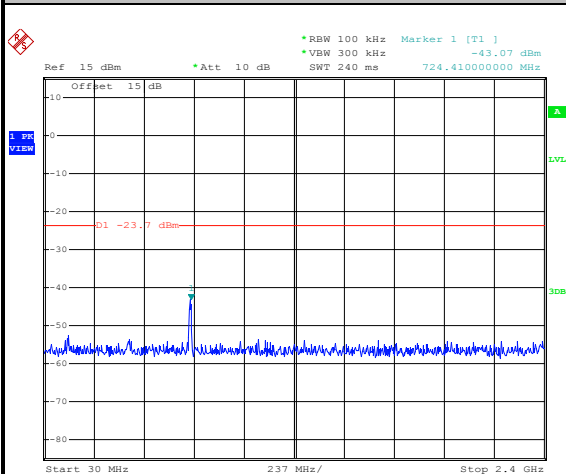
Number of TX :	3	Ant. :	2
Test Mode :	802.11g	Temperature :	24~26°C
Test Band :	2.4GHz High	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Mygai Mo

WLAN 802.11g Channel 11**100kHz PSD reference Level**

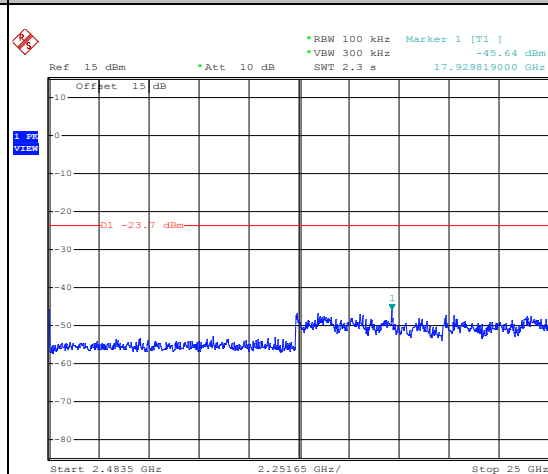
Date: 20.MAY.2016 01:19:21

High Channel Plot

Date: 27.MAY.2016 15:54:54

Spurious Emission 30MHz~2.4GHz

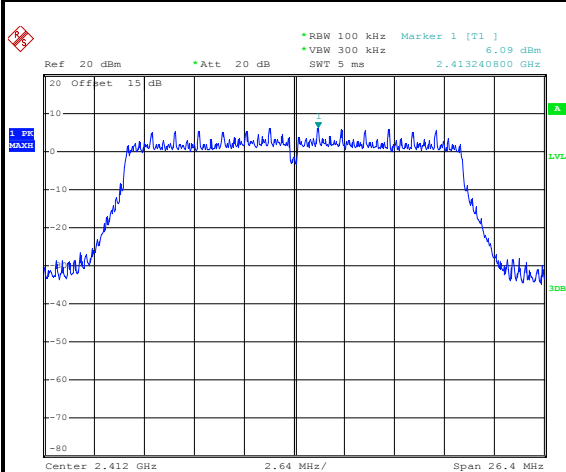
Date: 27.MAY.2016 15:53:22

Spurious Emission 2.4835GHz~25GHz

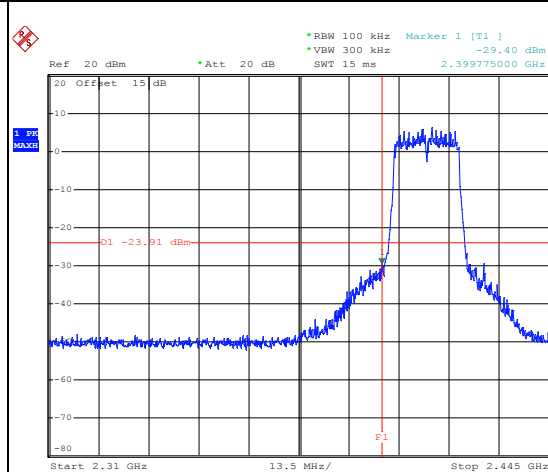
Date: 27.MAY.2016 15:53:30



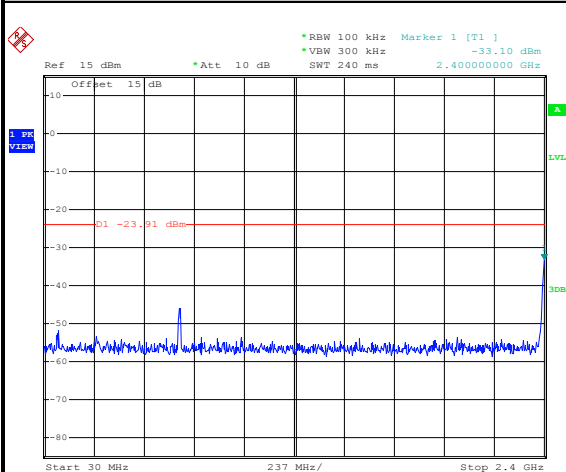
Number of TX :	3	Ant. :	2
Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Band :	2.4GHz Low	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Mygai Mo

WLAN 802.11n HT20 Channel 01**100kHz PSD reference Level**

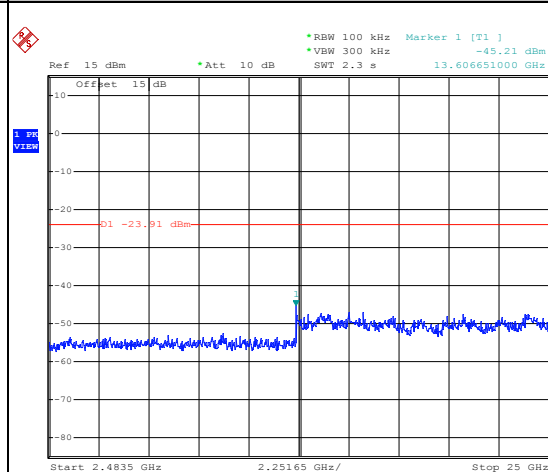
Date: 27.MAY.2016 05:01:23

Low Channel Plot

Date: 27.MAY.2016 05:02:12

Spurious Emission 30MHz~2.4GHz

Date: 27.MAY.2016 05:02:58

Spurious Emission 2.4835GHz~25GHz

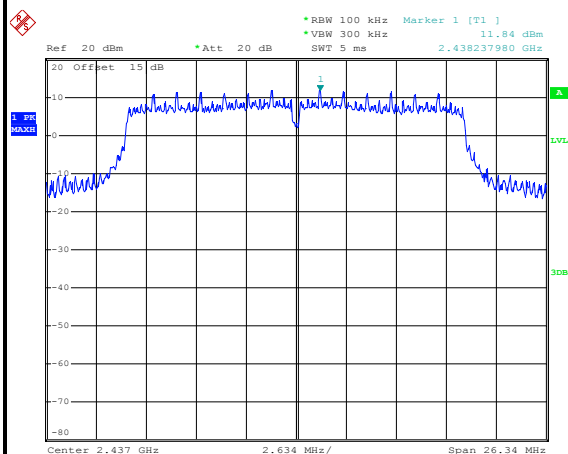
Date: 27.MAY.2016 05:03:06



Number of TX :	3	Ant. :	2
Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Mygai Mo

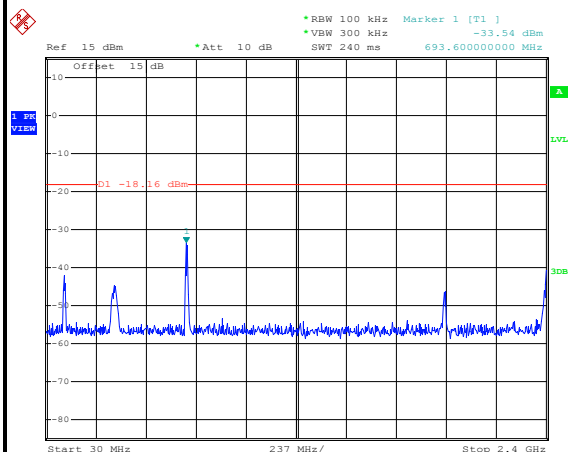
WLAN 802.11n HT20 Channel 06

100kHz PSD reference Level



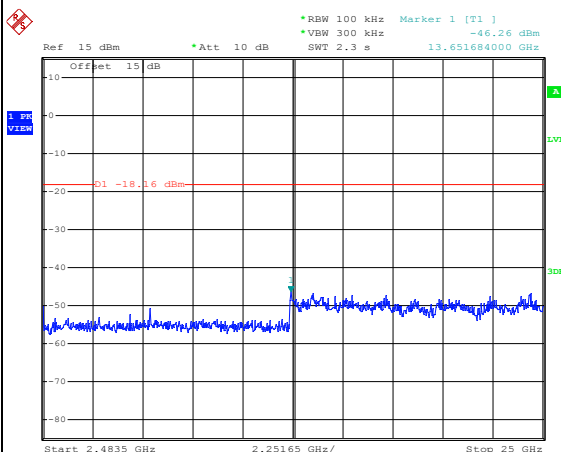
Date: 27.MAY.2016 05:19:59

Spurious Emission 30MHz~2.4GHz



Date: 27.MAY.2016 05:24:25

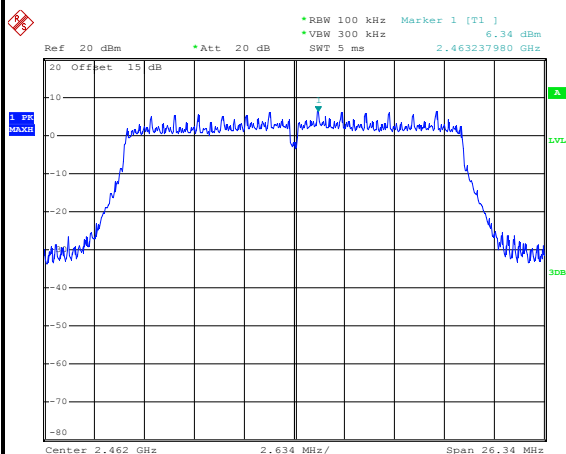
Spurious Emission 2.4835GHz~25GHz



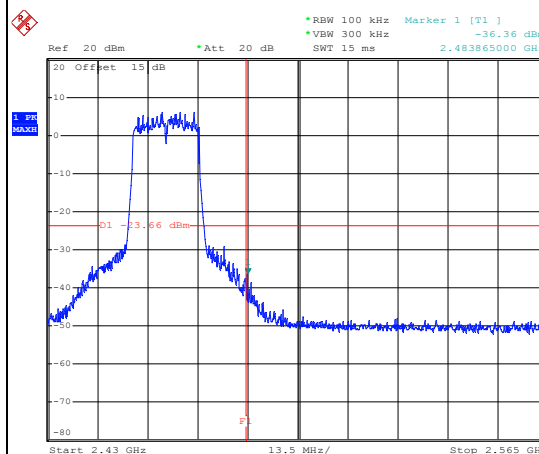
Date: 27.MAY.2016 05:24:33



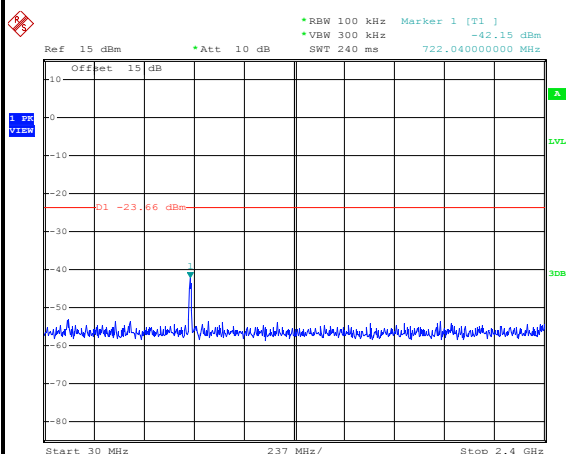
Number of TX :	3	Ant. :	2
Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Band :	2.4GHz High	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Mygai Mo

WLAN 802.11n HT20 Channel 11**100kHz PSD reference Level**

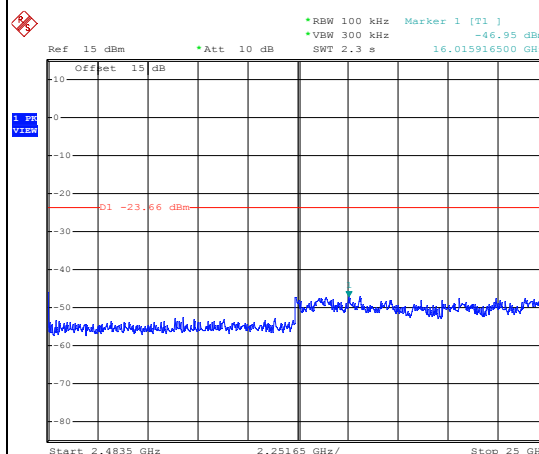
Date: 27.MAY.2016 05:08:13

High Channel Plot

Date: 27.MAY.2016 05:11:21

Spurious Emission 30MHz~2.4GHz

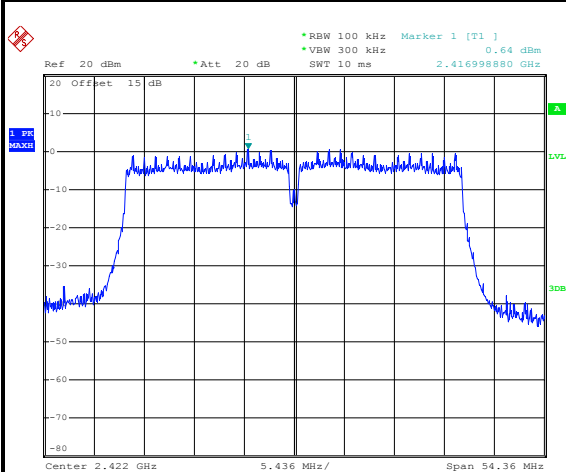
Date: 27.MAY.2016 05:12:31

Spurious Emission 2.4835GHz~25GHz

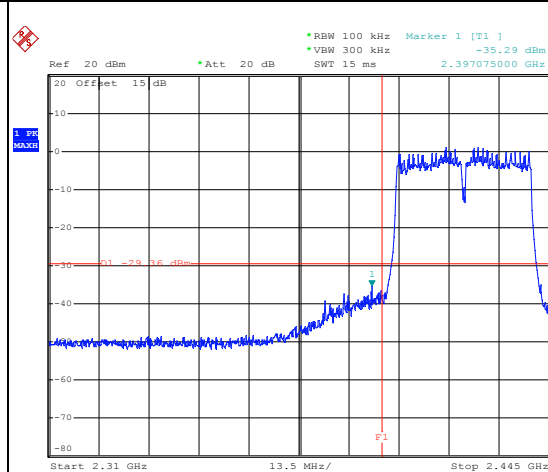
Date: 27.MAY.2016 05:13:51



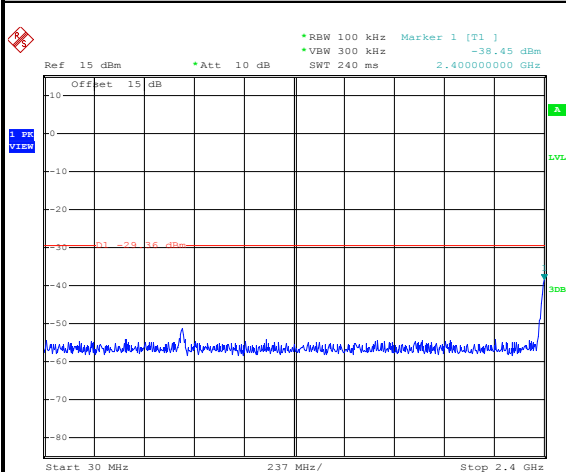
Number of TX :	3	Ant. :	2
Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Band :	2.4GHz Low	Relative Humidity :	50~53%
Test Channel :	03	Test Engineer :	Mygai Mo

WLAN 802.11n HT40 Channel 03**100kHz PSD reference Level**

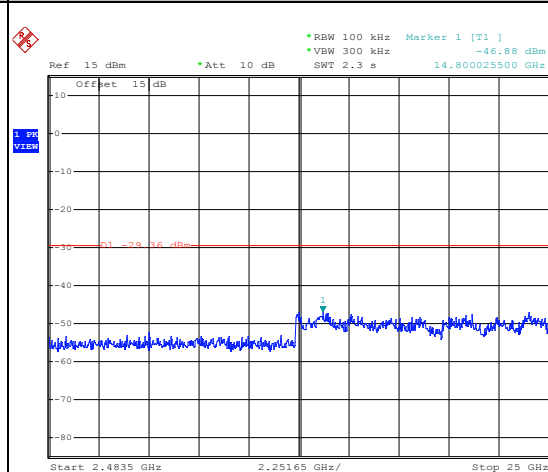
Date: 27.MAY.2016 03:34:57

Low Channel Plot

Date: 27.MAY.2016 04:57:10

Spurious Emission 30MHz~2.4GHz

Date: 27.MAY.2016 04:57:25

Spurious Emission 2.4835GHz~25GHz

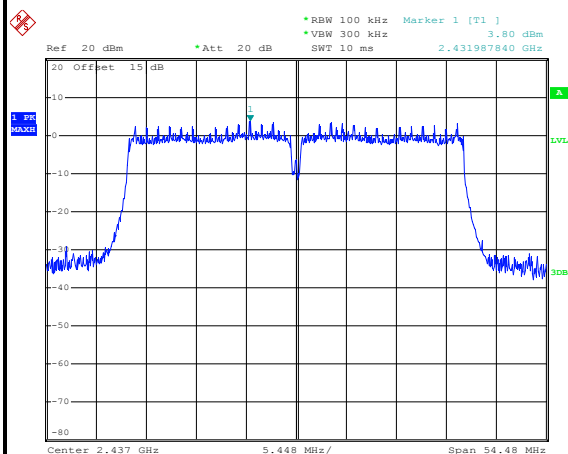
Date: 27.MAY.2016 04:57:33



Number of TX :	3	Ant. :	2
Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Mygai Mo

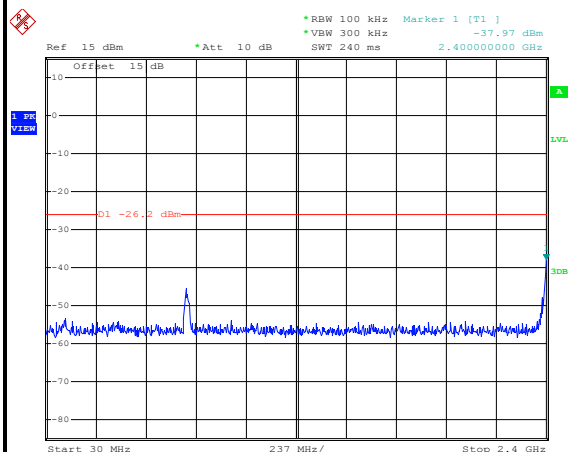
WLAN 802.11n HT40 Channel 06

100kHz PSD reference Level



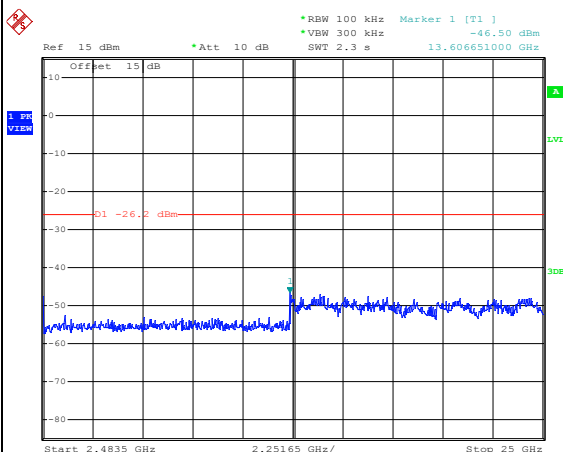
Date: 27.MAY.2016 03:44:03

Spurious Emission 30MHz~2.4GHz



Date: 27.MAY.2016 04:56:02

Spurious Emission 2.4835GHz~25GHz



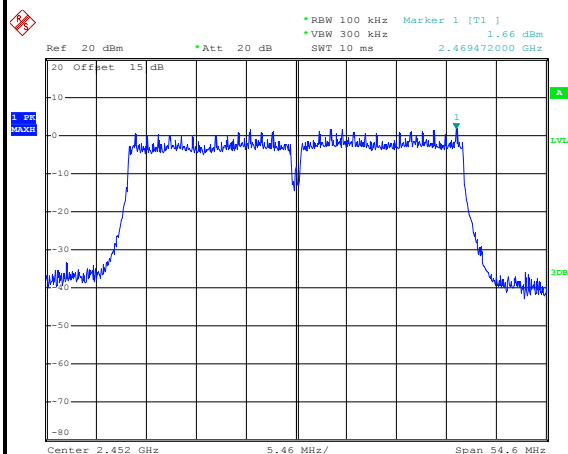
Date: 27.MAY.2016 04:56:10



Number of TX :	3	Ant. :	2
Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Band :	2.4GHz High	Relative Humidity :	50~53%
Test Channel :	09	Test Engineer :	Mygai Mo

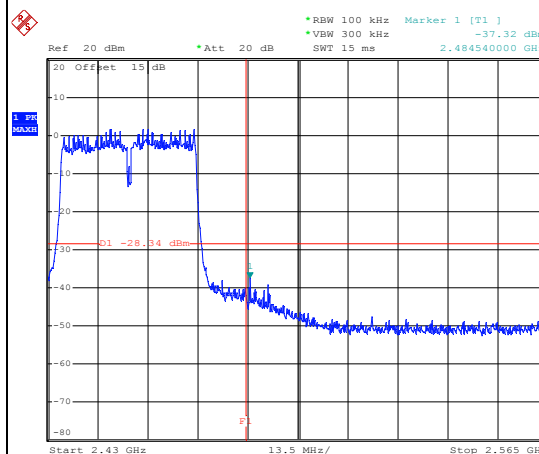
WLAN 802.11n HT40 Channel 09

100kHz PSD reference Level



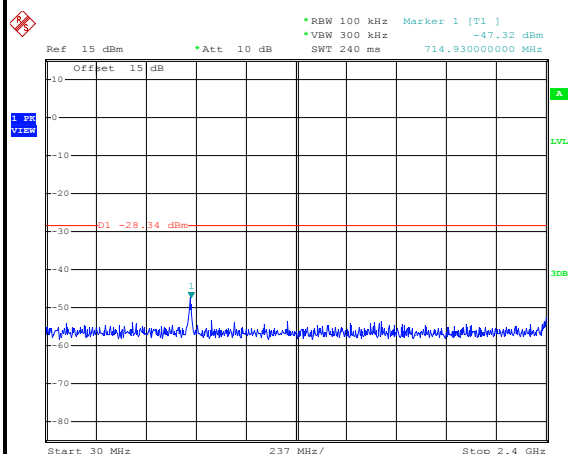
Date: 27.MAY.2016 03:50:39

High Channel Plot



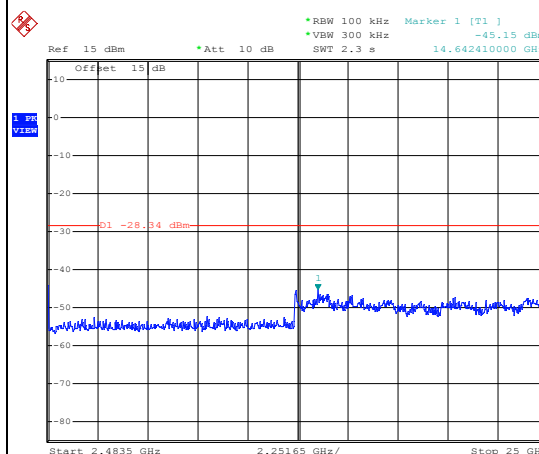
Date: 27.MAY.2016 04:54:08

Spurious Emission 30MHz~2.4GHz



Date: 27.MAY.2016 04:54:54

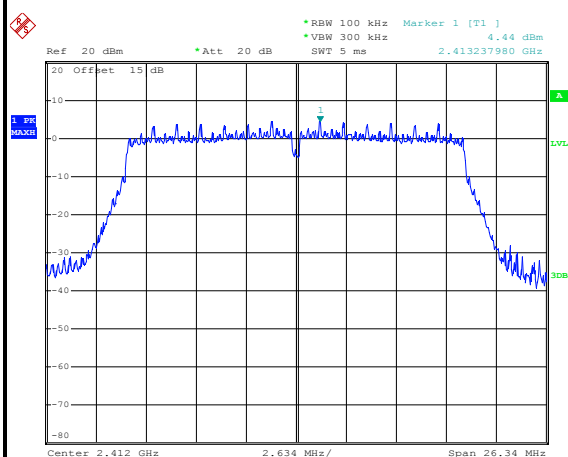
Spurious Emission 2.4835GHz~25GHz



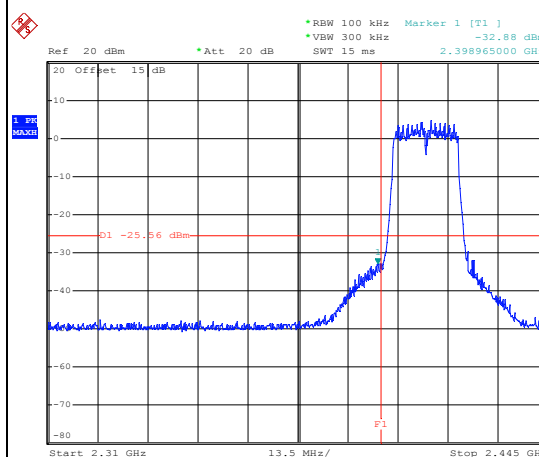
Date: 27.MAY.2016 06:08:44



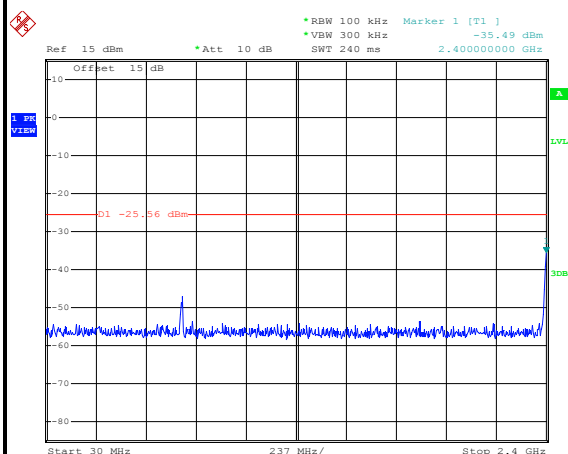
Number of TX :	3	Ant. :	2
Test Mode :	802.11ac VHT20	Temperature :	24~26°C
Test Band :	2.4GHz Low	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Mygai Mo

WLAN 802.11ac VHT20 Channel 01**100kHz PSD reference Level**

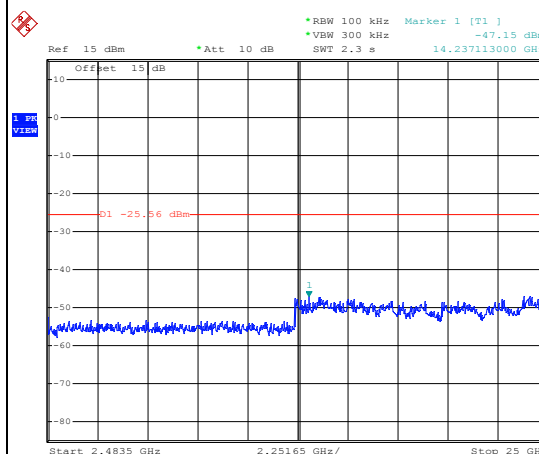
Date: 27.MAY.2016 05:50:14

Low Channel Plot

Date: 27.MAY.2016 05:53:02

Spurious Emission 30MHz~2.4GHz

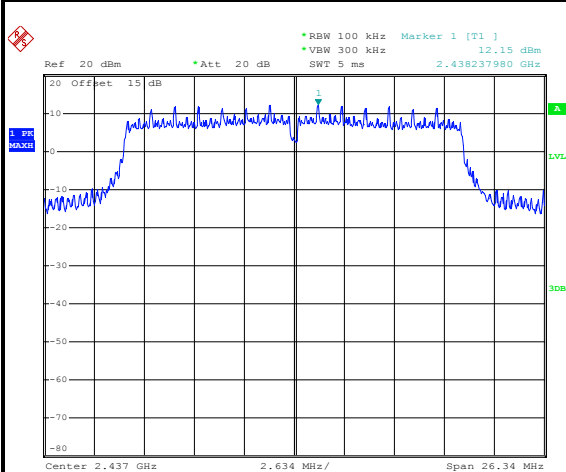
Date: 27.MAY.2016 05:55:11

Spurious Emission 2.4835GHz~25GHz

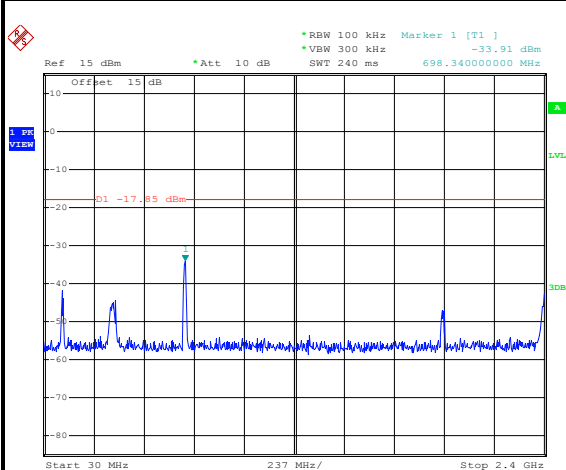
Date: 27.MAY.2016 05:55:20



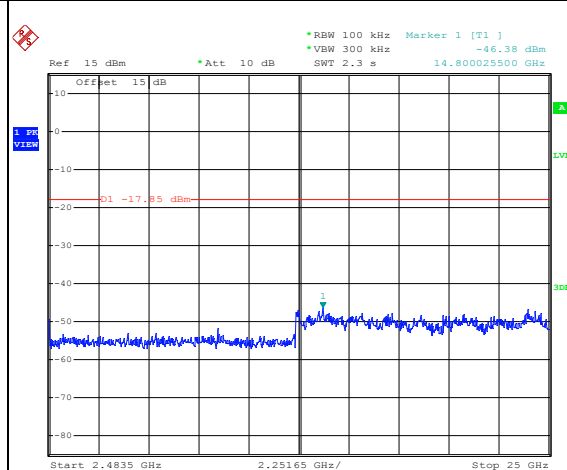
Number of TX :	3	Ant. :	2
Test Mode :	802.11ac VHT20	Temperature :	24~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Mygai Mo

WLAN 802.11ac VHT20 Channel 06**100kHz PSD reference Level**

Date: 27.MAY.2016 05:41:58

Spurious Emission 30MHz~2.4GHz

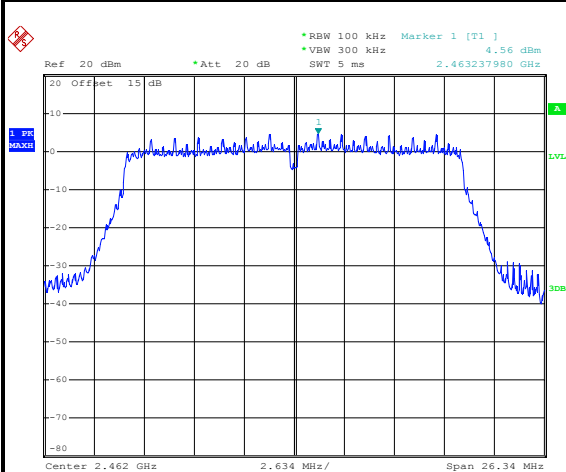
Date: 27.MAY.2016 05:43:36

Spurious Emission 2.4835GHz~25GHz

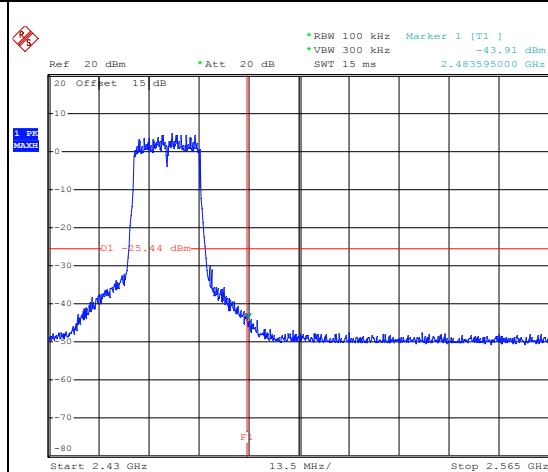
Date: 27.MAY.2016 05:43:44



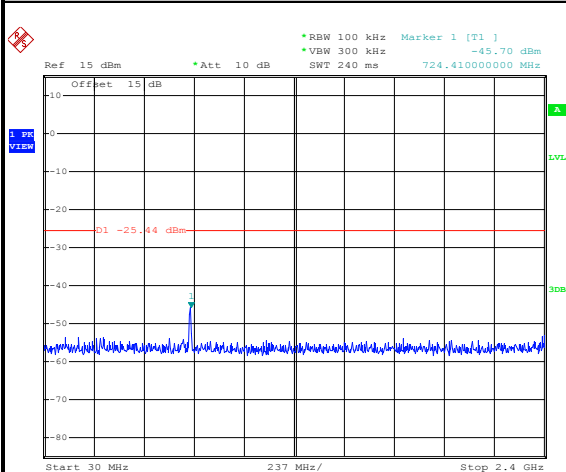
Number of TX :	3	Ant. :	2
Test Mode :	802.11ac VHT20	Temperature :	24~26°C
Test Band :	2.4GHz High	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Mygai Mo

WLAN 802.11ac VHT20 Channel 11**100kHz PSD reference Level**

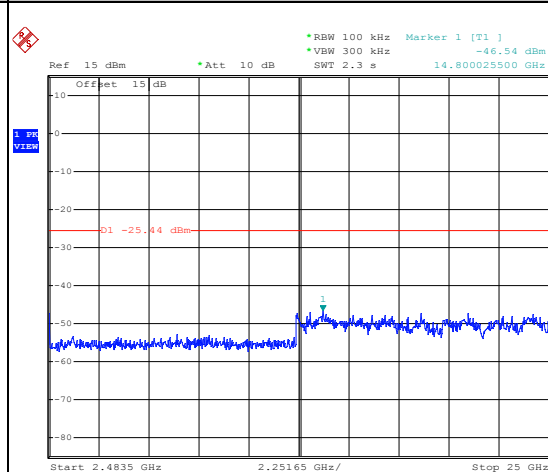
Date: 27.MAY.2016 06:01:40

High Channel Plot

Date: 27.MAY.2016 06:04:32

Spurious Emission 30MHz~2.4GHz

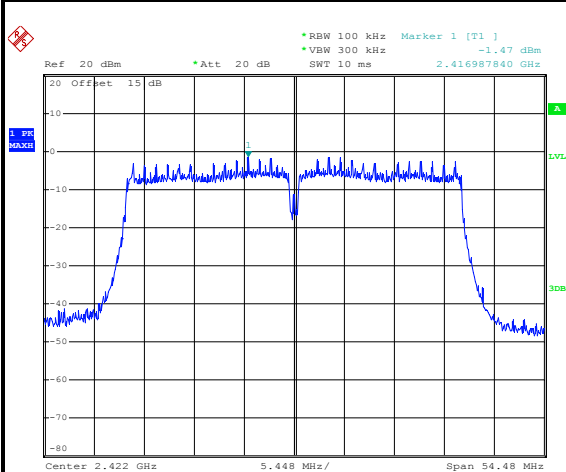
Date: 27.MAY.2016 06:06:07

Spurious Emission 2.4835GHz~25GHz

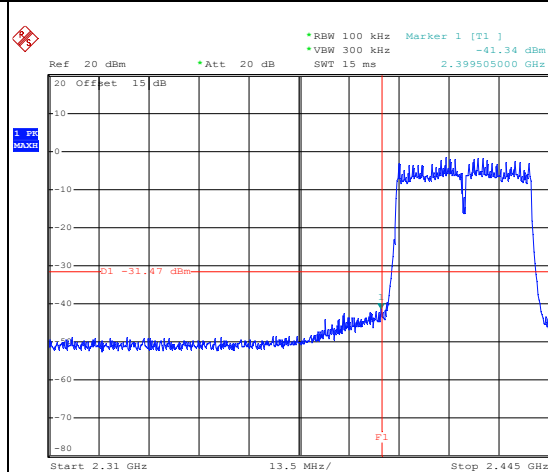
Date: 27.MAY.2016 06:06:15



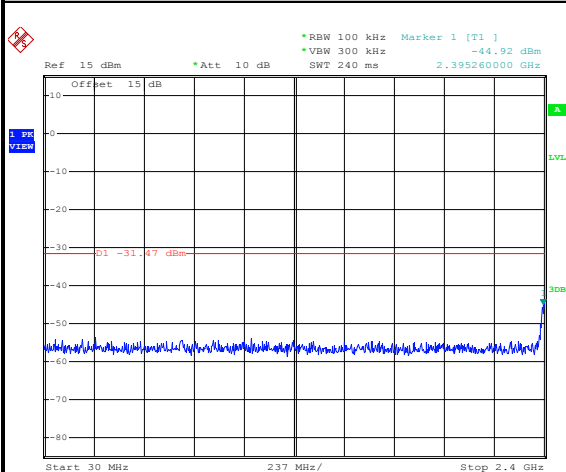
Number of TX :	3	Ant. :	2
Test Mode :	802.11ac VHT40	Temperature :	24~26°C
Test Band :	2.4GHz Low	Relative Humidity :	50~53%
Test Channel :	03	Test Engineer :	Mygai Mo

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

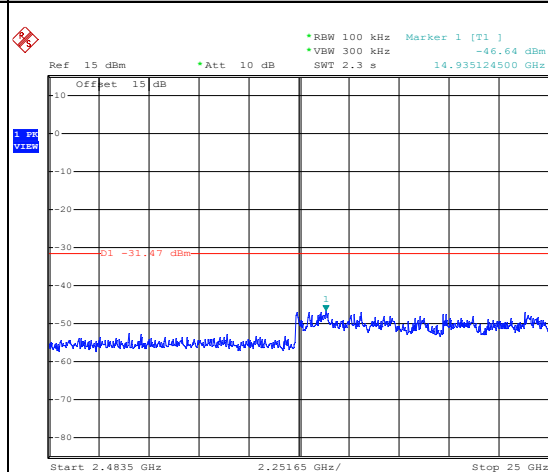
Date: 27.MAY.2016 04:49:56

Low Channel Plot

Date: 27.MAY.2016 04:50:23

Spurious Emission 30MHz~2.4GHz

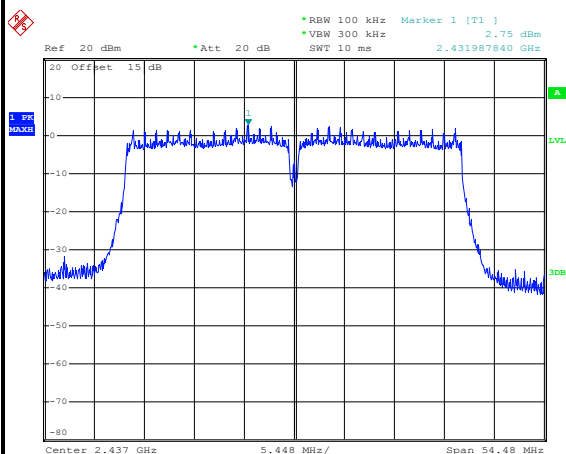
Date: 27.MAY.2016 04:51:29

Spurious Emission 2.4835GHz~25GHz

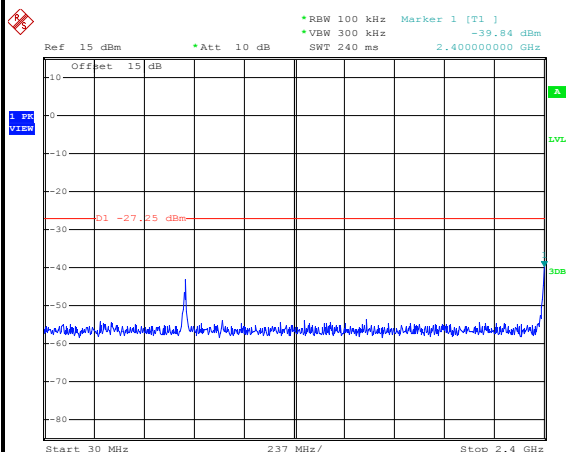
Date: 27.MAY.2016 04:51:38



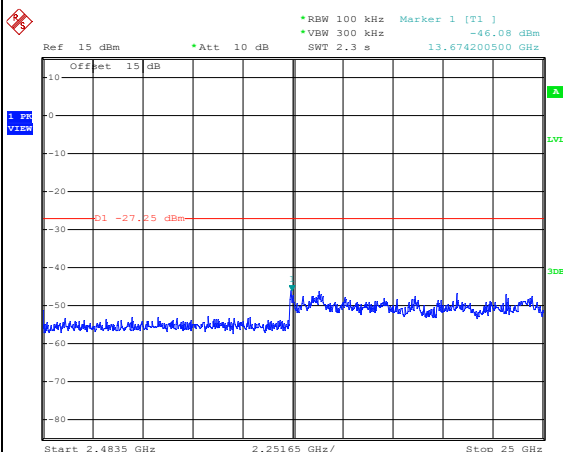
Number of TX :	3	Ant. :	2
Test Mode :	802.11ac VHT40	Temperature :	24~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Mygai Mo

WLAN 802.11ac VHT40 Channel 06**100kHz PSD reference Level**

Date: 27.MAY.2016 04:36:39

Spurious Emission 30MHz~2.4GHz

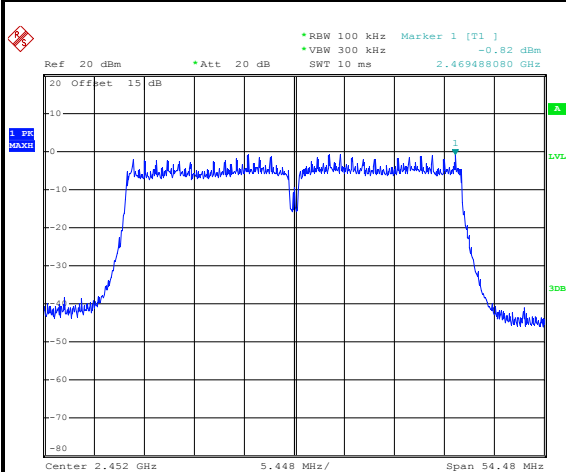
Date: 27.MAY.2016 04:46:03

Spurious Emission 2.4835GHz~25GHz

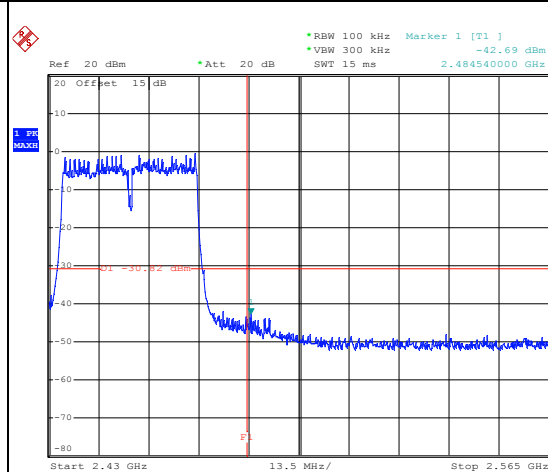
Date: 27.MAY.2016 04:46:11



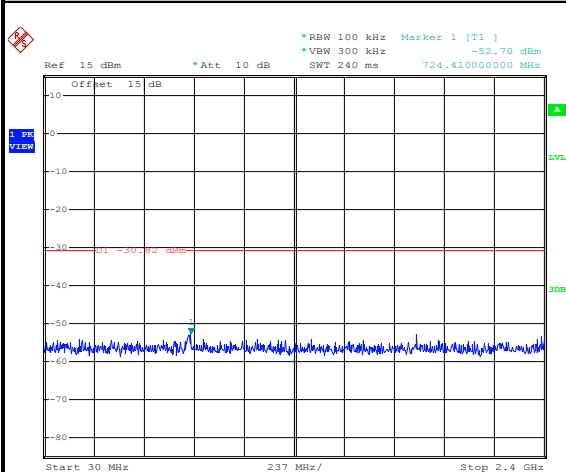
Number of TX :	3	Ant. :	2
Test Mode :	802.11ac VHT40	Temperature :	24~26°C
Test Band :	2.4GHz High	Relative Humidity :	50~53%
Test Channel :	09	Test Engineer :	Mygai Mo

WLAN 802.11ac VHT40 Channel 09**100kHz PSD reference Level**

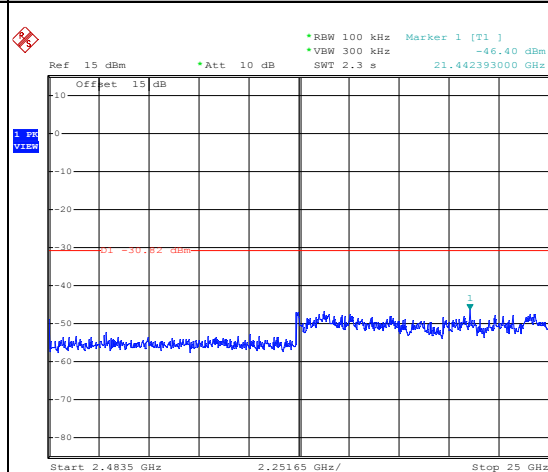
Date: 27.MAY.2016 04:25:44

High Channel Plot

Date: 27.MAY.2016 04:52:31

Spurious Emission 30MHz~2.4GHz

Date: 27.MAY.2016 04:52:46

Spurious Emission 2.4835GHz~25GHz

Date: 27.MAY.2016 04:52:55

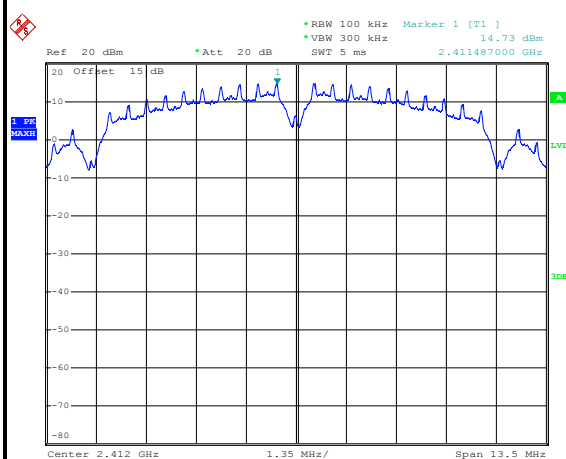


Number of TX = 3, Ant. 3 (Measured)

Number of TX	3	Ant. :	3
Test Mode :	802.11b	Temperature :	24~26°C
Test Band :	2.4GHz Low	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Mygai Mo

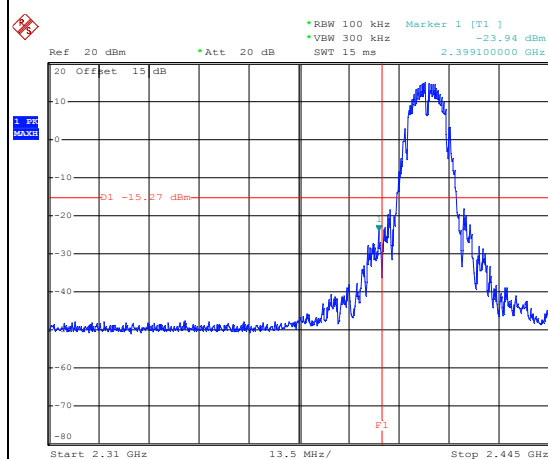
WLAN 802.11b Channel 01

100kHz PSD reference Level



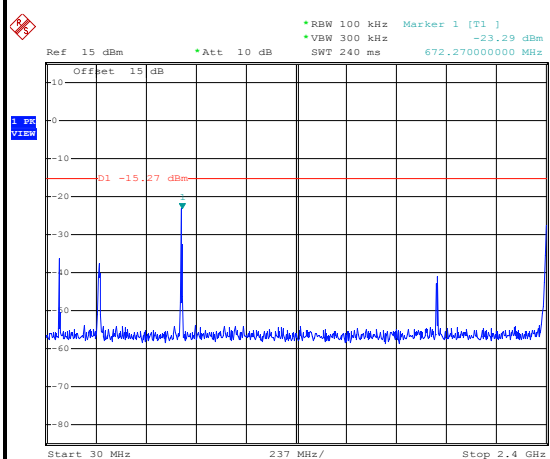
Date: 20.MAY.2016 00:04:02

Low Channel Plot



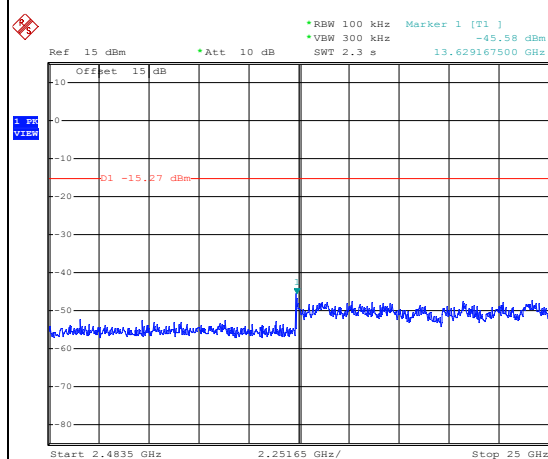
Date: 27.MAY.2016 12:45:40

Spurious Emission 30MHz~2.4GHz



Date: 27.MAY.2016 12:45:59

Spurious Emission 2.4835GHz~25GHz



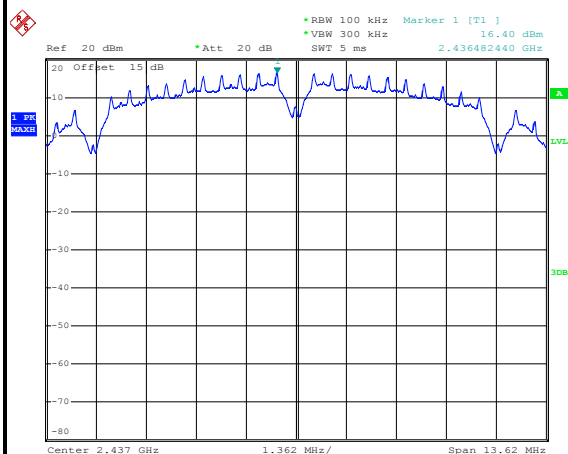
Date: 27.MAY.2016 12:46:07



Number of TX :	3	Ant. :	3
Test Mode :	802.11b	Temperature :	24~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Mygai Mo

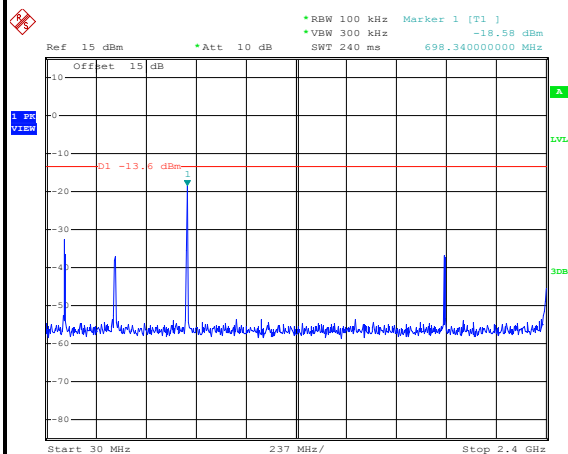
WLAN 802.11b Channel 06

100kHz PSD reference Level



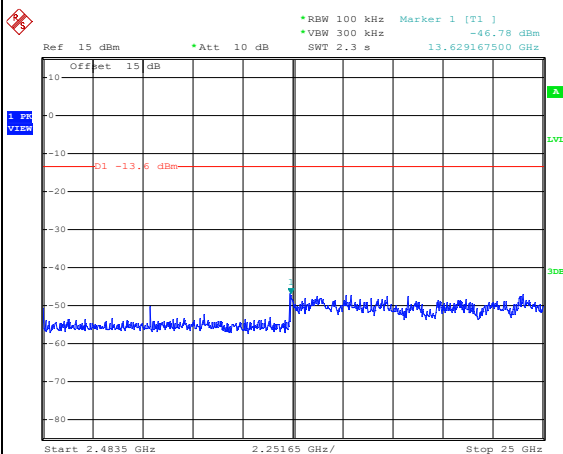
Date: 20.MAY.2016 00:12:37

Spurious Emission 30MHz~2.4GHz



Date: 27.MAY.2016 12:47:13

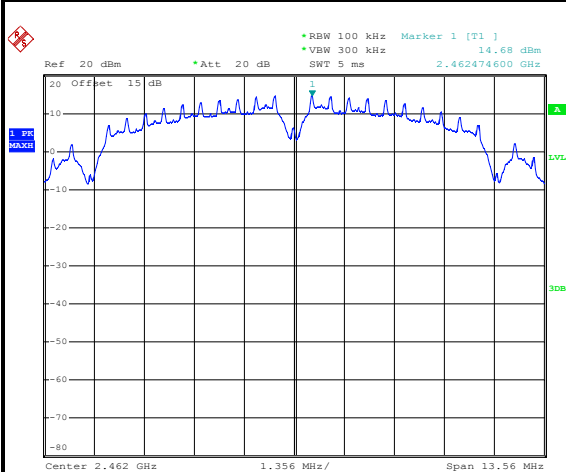
Spurious Emission 2.4835GHz~25GHz



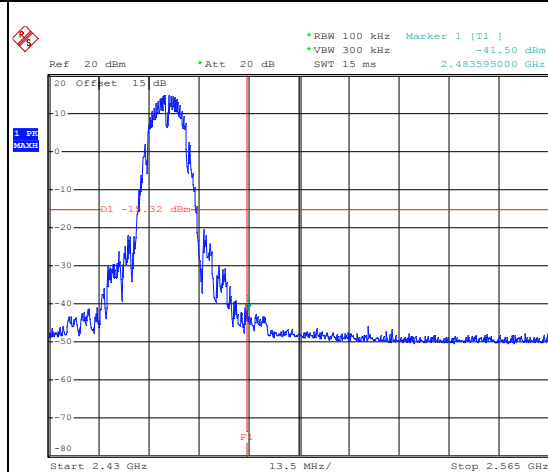
Date: 27.MAY.2016 12:47:21



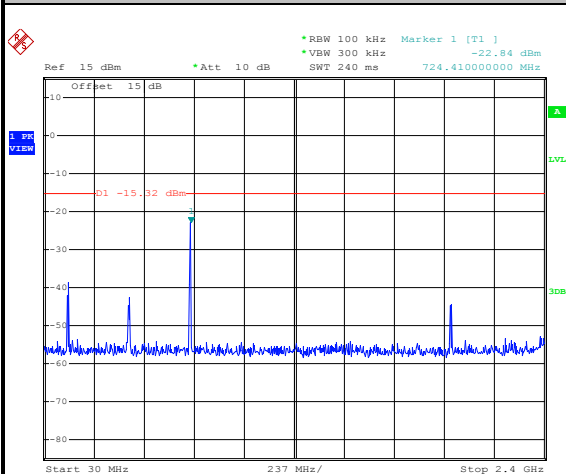
Number of TX :	3	Ant. :	3
Test Mode :	802.11b	Temperature :	24~26°C
Test Band :	2.4GHz High	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Mygai Mo

WLAN 802.11b Channel 11**100kHz PSD reference Level**

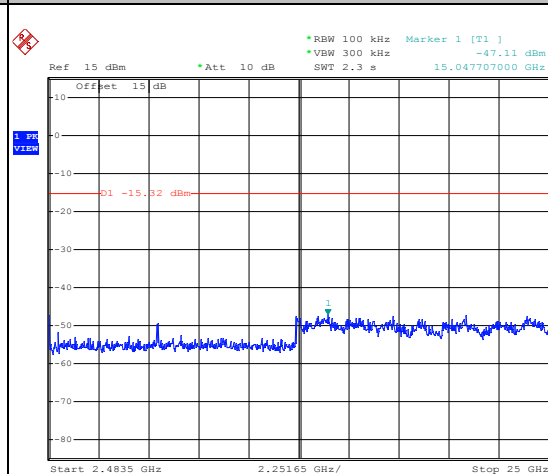
Date: 20.MAY.2016 00:21:35

High Channel Plot

Date: 27.MAY.2016 12:50:48

Spurious Emission 30MHz~2.4GHz

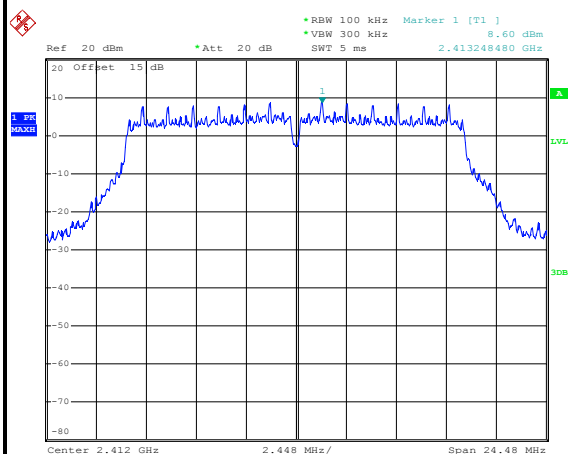
Date: 27.MAY.2016 12:51:03

Spurious Emission 2.4835GHz~25GHz

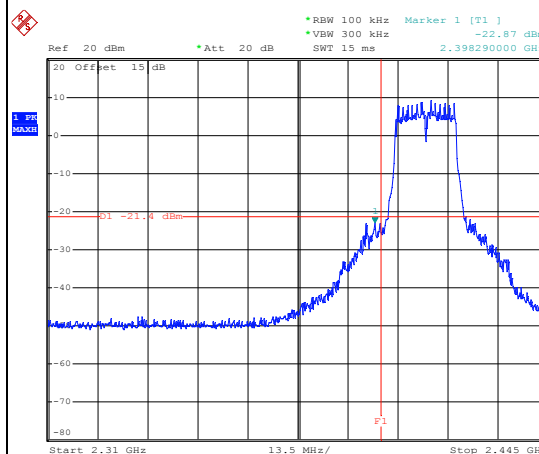
Date: 27.MAY.2016 12:51:11



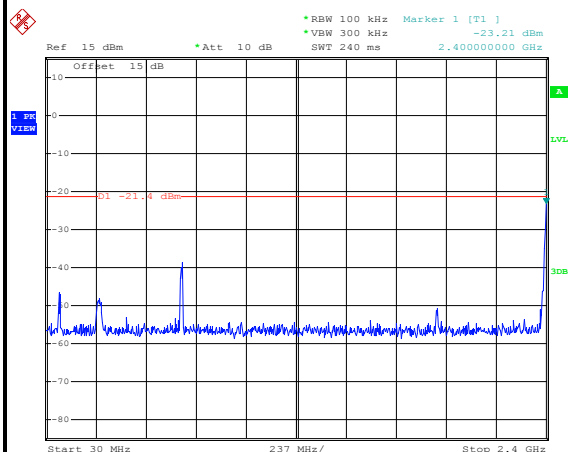
Number of TX :	3	Ant. :	3
Test Mode :	802.11g	Temperature :	24~26°C
Test Band :	2.4GHz Low	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Mygai Mo

WLAN 802.11g Channel 01**100kHz PSD reference Level**

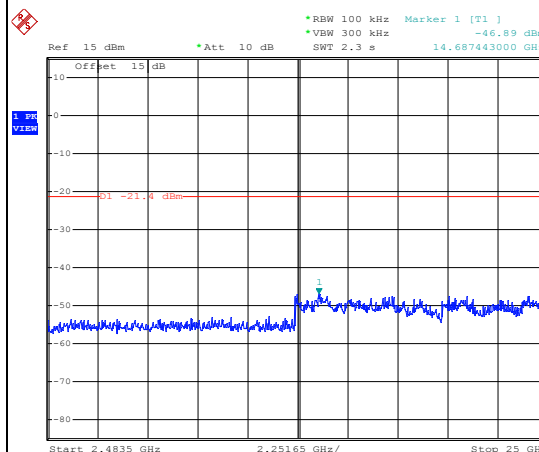
Date: 19.MAY.2016 23:52:00

Low Channel Plot

Date: 27.MAY.2016 12:59:15

Spurious Emission 30MHz~2.4GHz

Date: 27.MAY.2016 12:59:46

Spurious Emission 2.4835GHz~25GHz

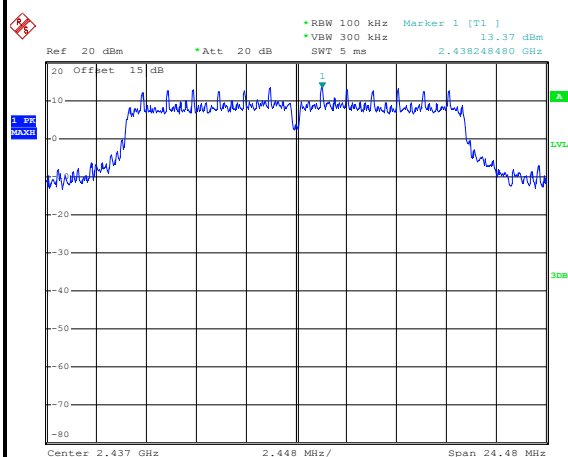
Date: 27.MAY.2016 12:59:54



Number of TX :	3	Ant. :	3
Test Mode :	802.11g	Temperature :	24~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Mygai Mo

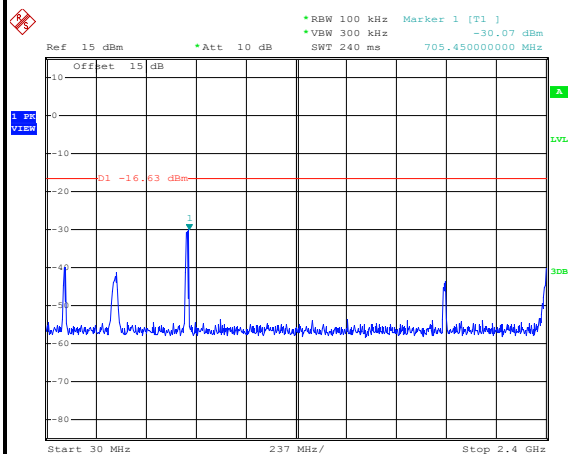
WLAN 802.11g Channel 06

100kHz PSD reference Level



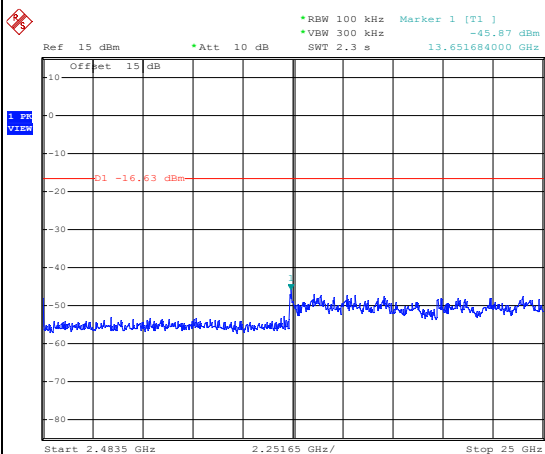
Date: 19.MAY.2016 23:36:51

Spurious Emission 30MHz~2.4GHz



Date: 27.MAY.2016 13:01:06

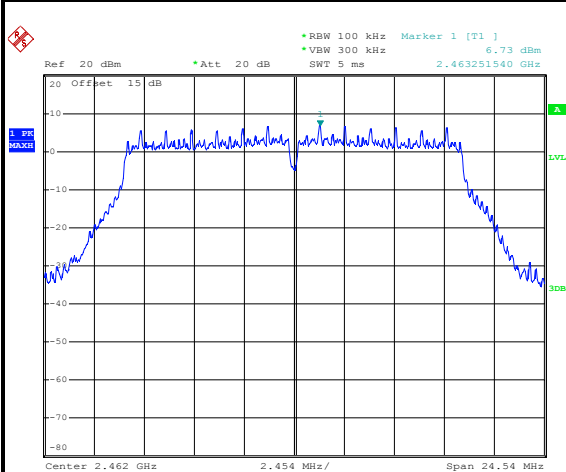
Spurious Emission 2.4835GHz~25GHz



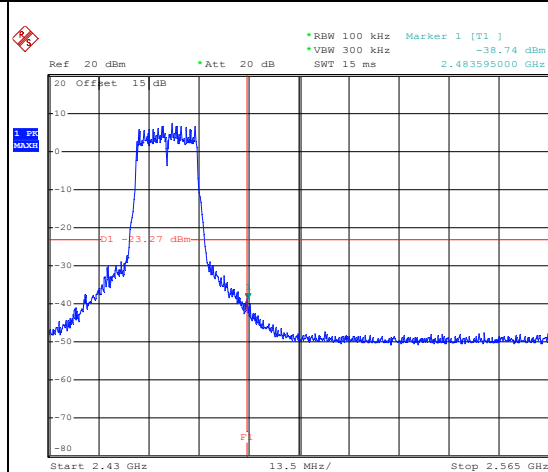
Date: 27.MAY.2016 13:01:14



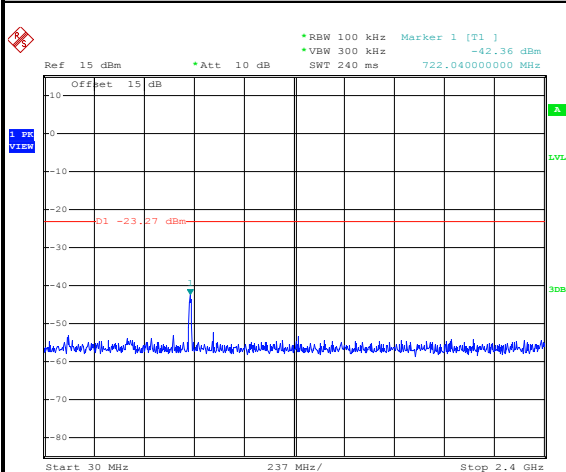
Number of TX :	3	Ant. :	3
Test Mode :	802.11g	Temperature :	24~26°C
Test Band :	2.4GHz High	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Mygai Mo

WLAN 802.11g Channel 11**100kHz PSD reference Level**

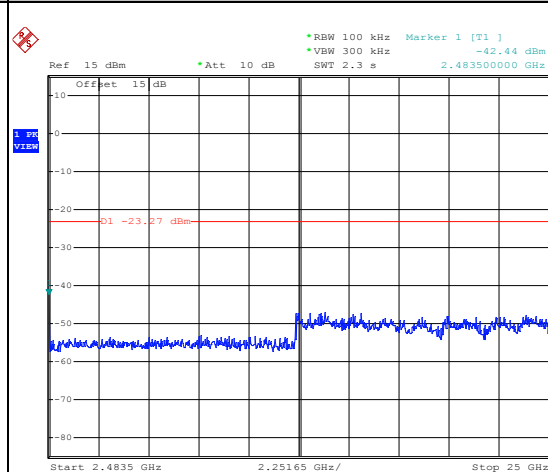
Date: 19.MAY.2016 23:23:07

High Channel Plot

Date: 27.MAY.2016 13:05:28

Spurious Emission 30MHz~2.4GHz

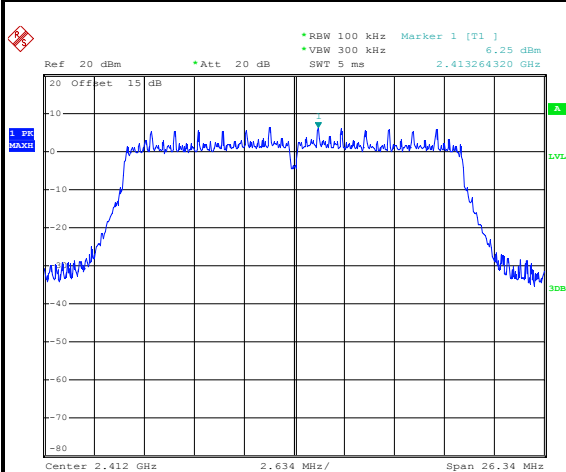
Date: 27.MAY.2016 13:05:43

Spurious Emission 2.4835GHz~25GHz

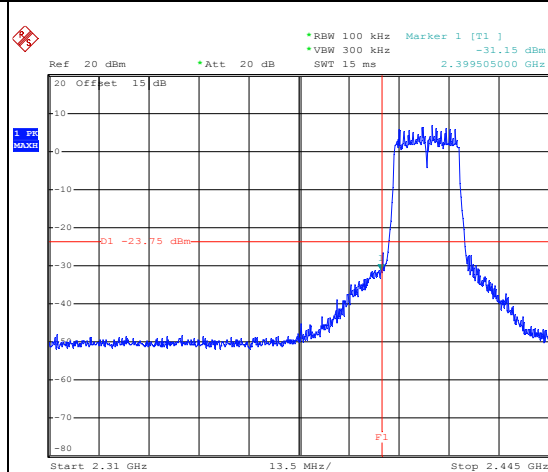
Date: 27.MAY.2016 13:05:51



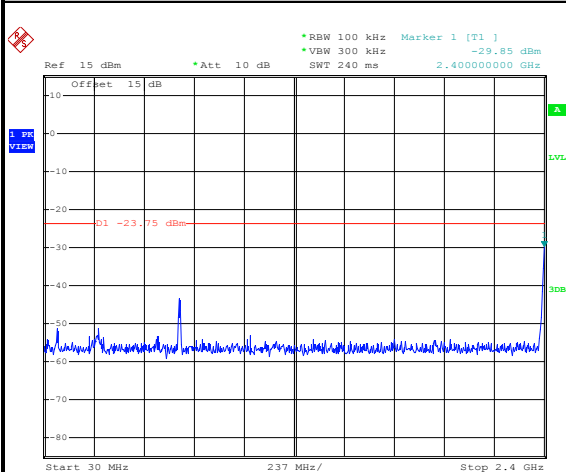
Number of TX :	3	Ant. :	3
Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Band :	2.4GHz Low	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Mygai Mo

WLAN 802.11n HT20 Channel 01**100kHz PSD reference Level**

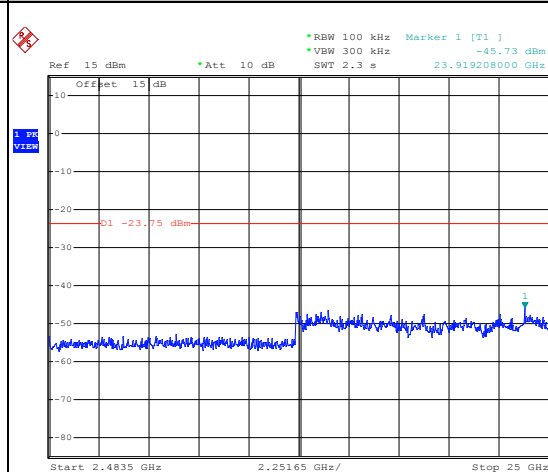
Date: 27.MAY.2016 01:22:46

Low Channel Plot

Date: 27.MAY.2016 11:17:21

Spurious Emission 30MHz~2.4GHz

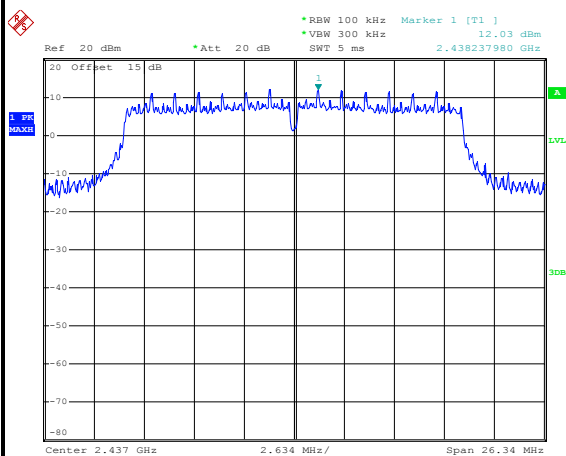
Date: 27.MAY.2016 11:17:34

Spurious Emission 2.4835GHz~25GHz

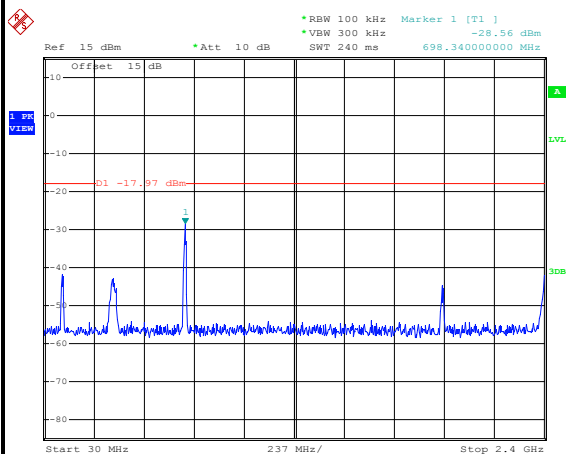
Date: 27.MAY.2016 11:17:42



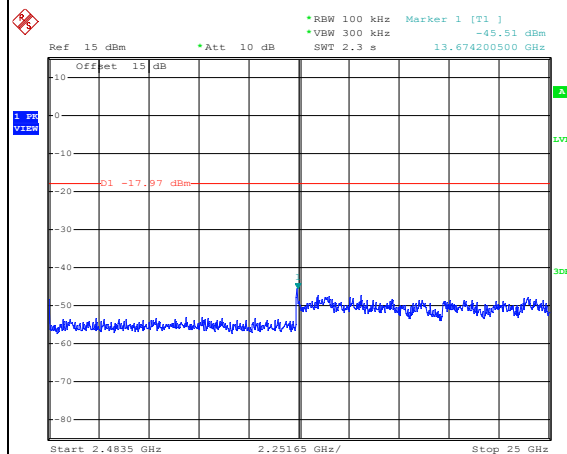
Number of TX :	3	Ant. :	3
Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Mygai Mo

WLAN 802.11n HT20 Channel 06**100kHz PSD reference Level**

Date: 27.MAY.2016 01:34:40

Spurious Emission 30MHz~2.4GHz

Date: 27.MAY.2016 11:21:12

Spurious Emission 2.4835GHz~25GHz

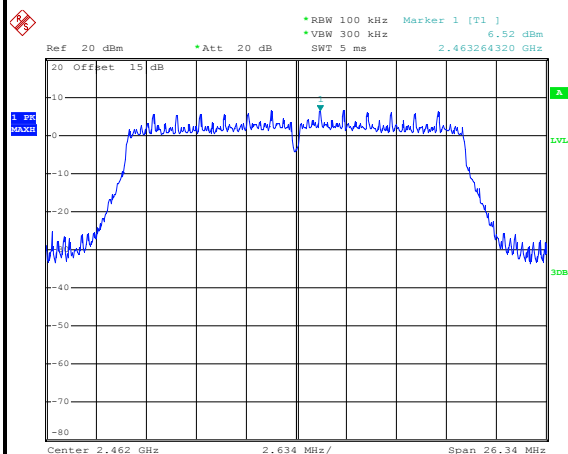
Date: 27.MAY.2016 11:21:20



Number of TX :	3	Ant. :	3
Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Band :	2.4GHz High	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Mygai Mo

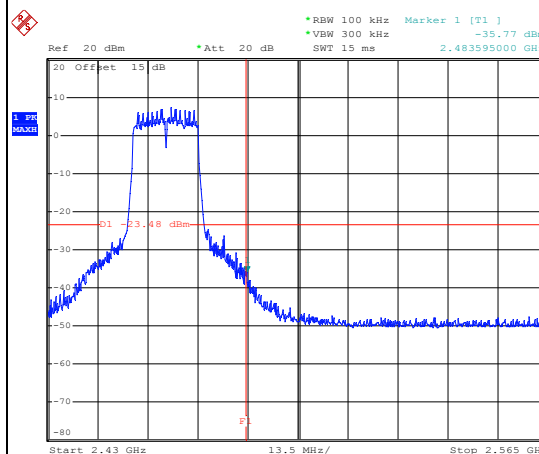
WLAN 802.11n HT20 Channel 11

100kHz PSD reference Level



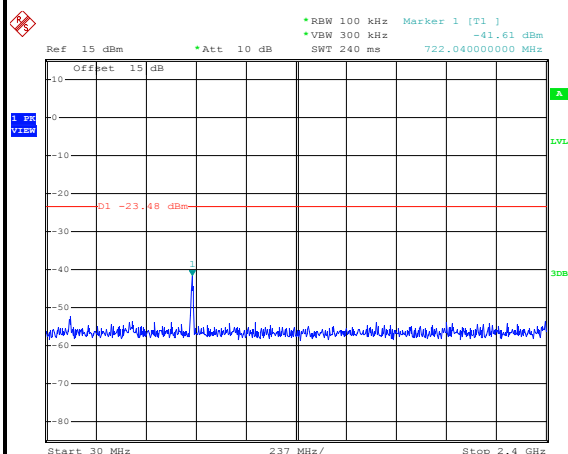
Date: 27.MAY.2016 01:41:05

High Channel Plot



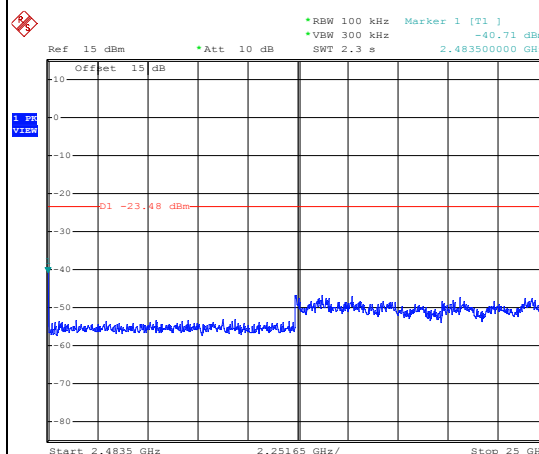
Date: 27.MAY.2016 11:26:01

Spurious Emission 30MHz~2.4GHz



Date: 27.MAY.2016 11:26:18

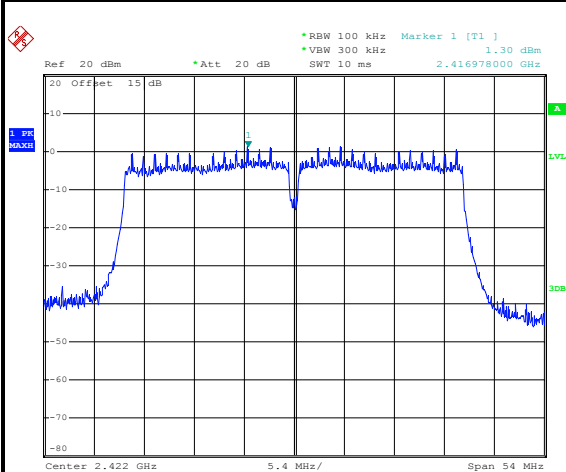
Spurious Emission 2.4835GHz~25GHz



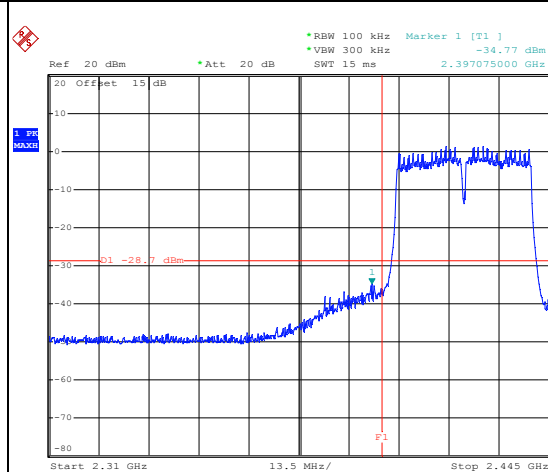
Date: 27.MAY.2016 11:26:26



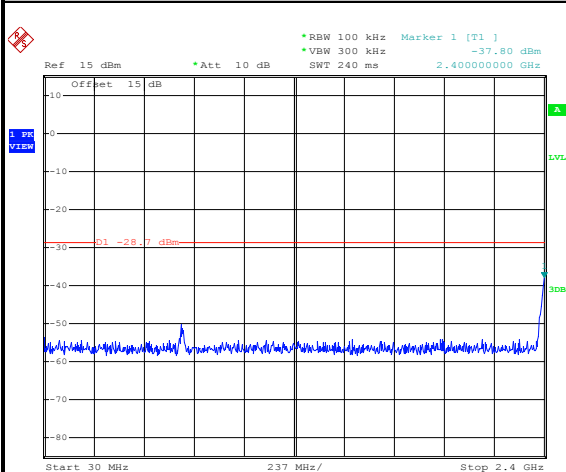
Number of TX :	3	Ant. :	3
Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Band :	2.4GHz Low	Relative Humidity :	50~53%
Test Channel :	03	Test Engineer :	Mygai Mo

WLAN 802.11n HT40 Channel 03**100kHz PSD reference Level**

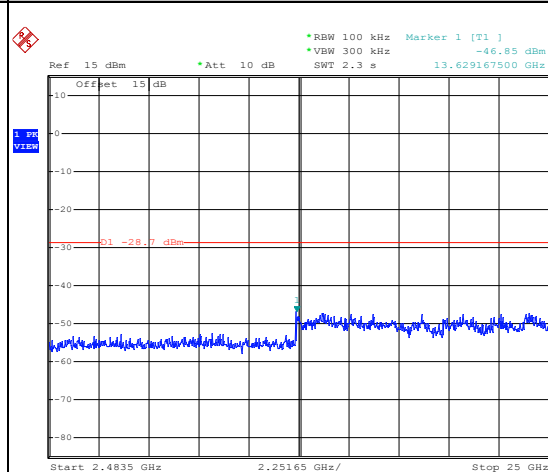
Date: 27.MAY.2016 03:06:10

Low Channel Plot

Date: 27.MAY.2016 11:30:41

Spurious Emission 30MHz~2.4GHz

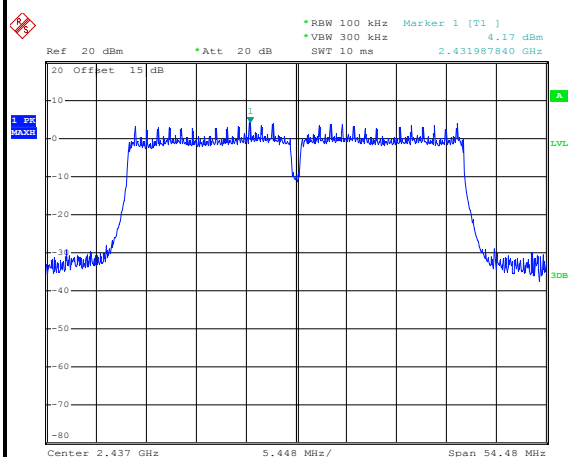
Date: 27.MAY.2016 11:30:57

Spurious Emission 2.4835GHz~25GHz

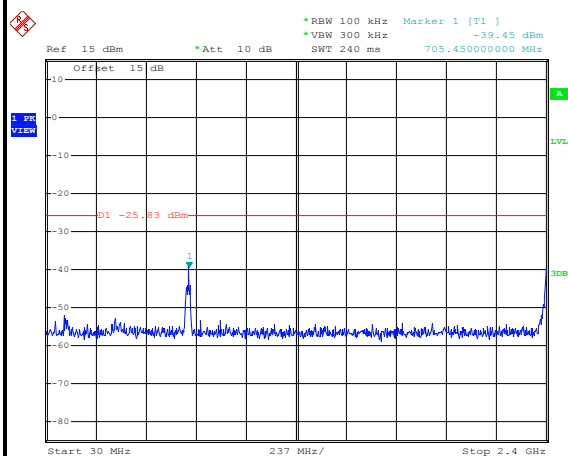
Date: 27.MAY.2016 11:31:05



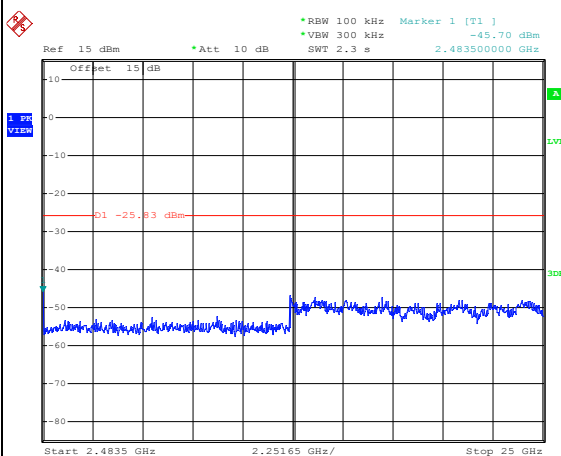
Number of TX :	3	Ant. :	3
Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Mygai Mo

WLAN 802.11n HT40 Channel 06**100kHz PSD reference Level**

Date: 27.MAY.2016 03:00:02

Spurious Emission 30MHz~2.4GHz

Date: 27.MAY.2016 11:33:11

Spurious Emission 2.4835GHz~25GHz

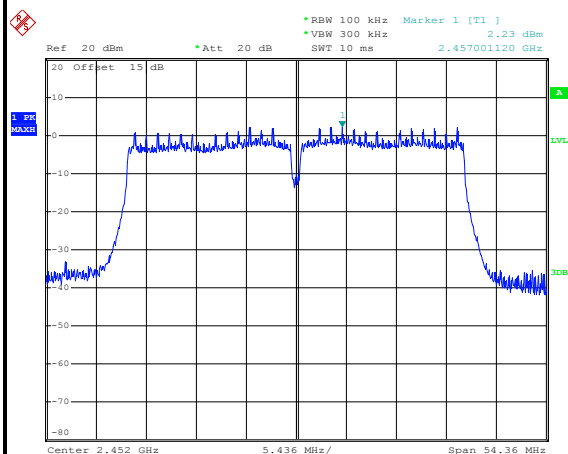
Date: 27.MAY.2016 11:33:20



Number of TX :	3	Ant. :	3
Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Band :	2.4GHz High	Relative Humidity :	50~53%
Test Channel :	09	Test Engineer :	Mygai Mo

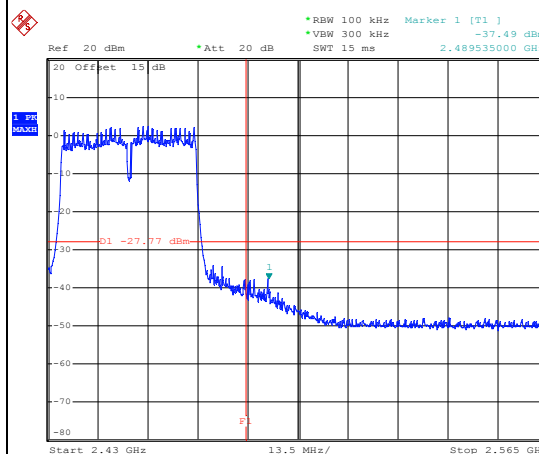
WLAN 802.11n HT40 Channel 09

100kHz PSD reference Level



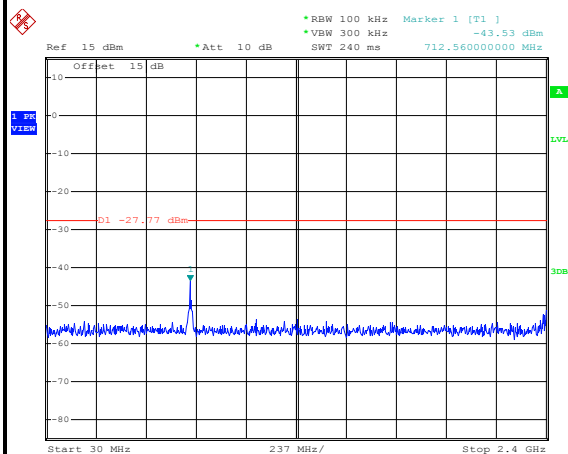
Date: 27.MAY.2016 02:50:26

High Channel Plot



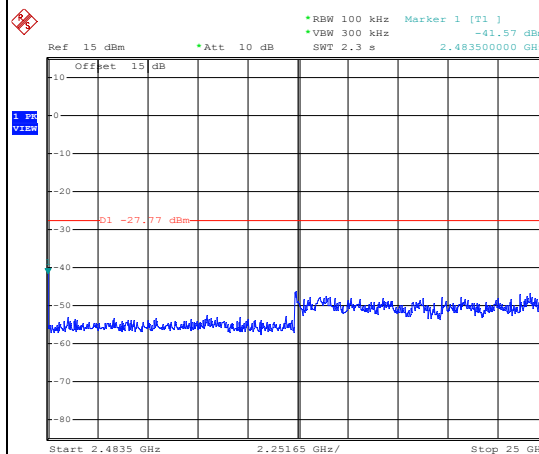
Date: 27.MAY.2016 11:36:25

Spurious Emission 30MHz~2.4GHz



Date: 27.MAY.2016 11:36:45

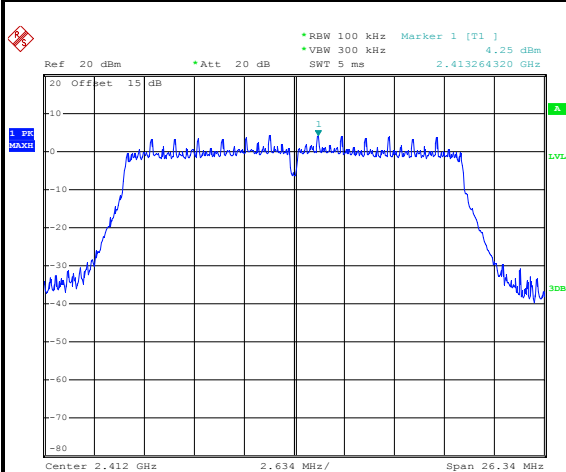
Spurious Emission 2.4835GHz~25GHz



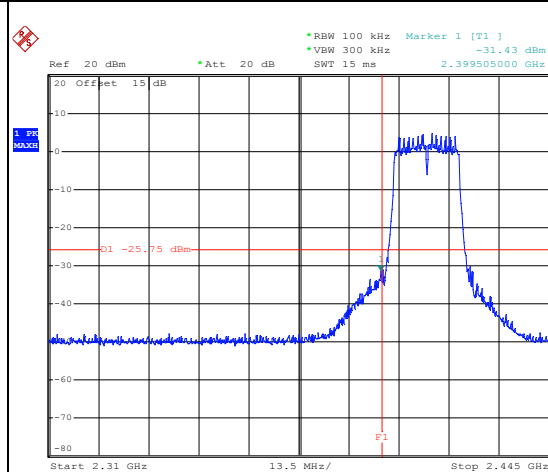
Date: 27.MAY.2016 11:36:53



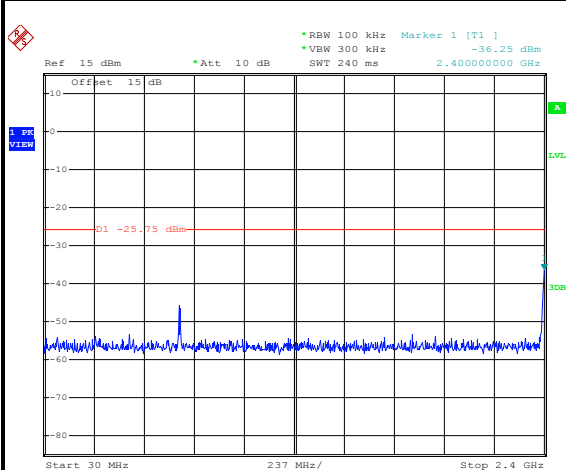
Number of TX :	3	Ant. :	3
Test Mode :	802.11ac VHT20	Temperature :	24~26°C
Test Band :	2.4GHz Low	Relative Humidity :	50~53%
Test Channel :	01	Test Engineer :	Mygai Mo

WLAN 802.11ac VHT20 Channel 01**100kHz PSD reference Level**

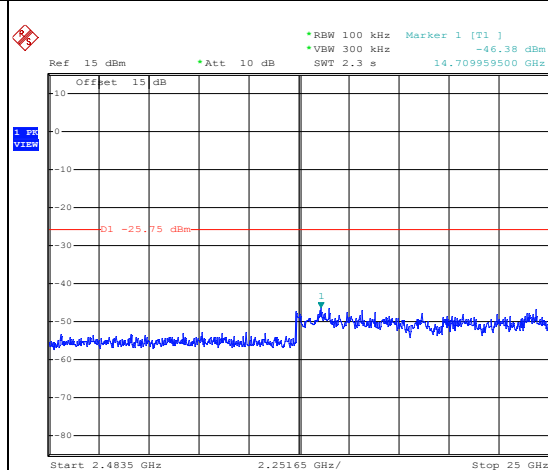
Date: 27.MAY.2016 02:02:38

Low Channel Plot

Date: 27.MAY.2016 11:54:41

Spurious Emission 30MHz~2.4GHz

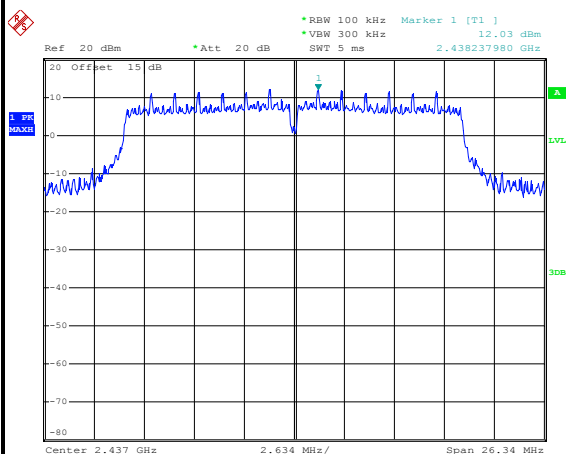
Date: 27.MAY.2016 11:58:22

Spurious Emission 2.4835GHz~25GHz

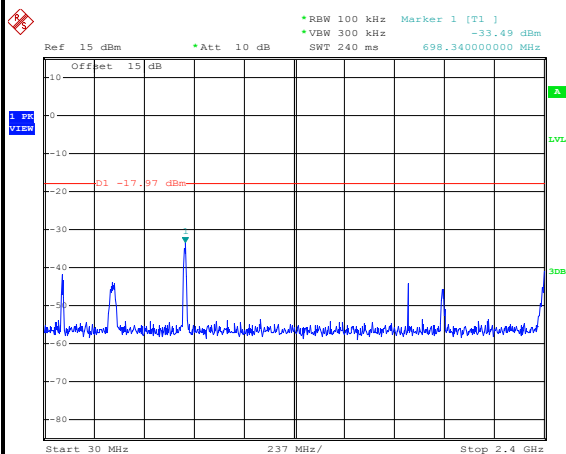
Date: 27.MAY.2016 11:58:30



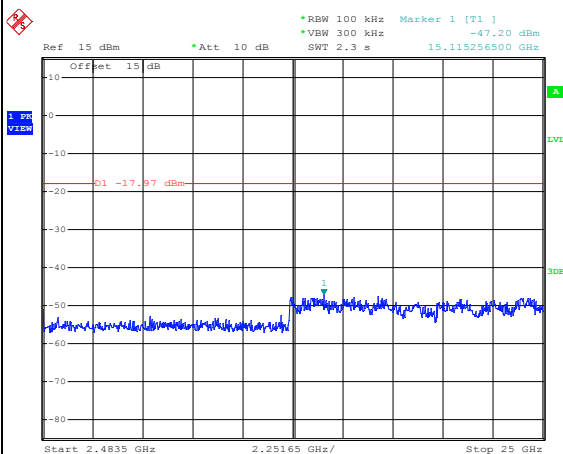
Number of TX :	3	Ant. :	3
Test Mode :	802.11ac VHT20	Temperature :	24~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Mygai Mo

WLAN 802.11ac VHT20 Channel 06**100kHz PSD reference Level**

Date: 27.MAY.2016 02:10:02

Spurious Emission 30MHz~2.4GHz

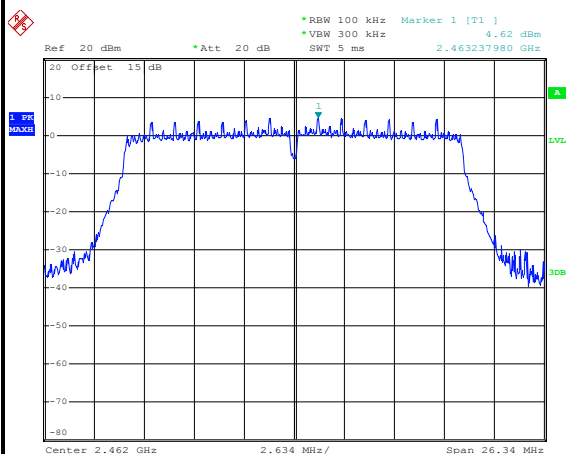
Date: 27.MAY.2016 12:02:31

Spurious Emission 2.4835GHz~25GHz

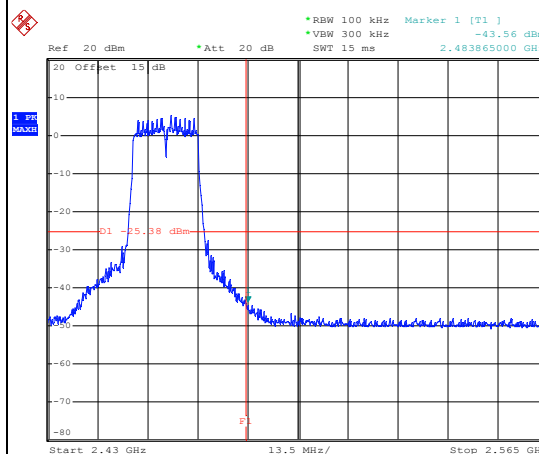
Date: 27.MAY.2016 12:02:40



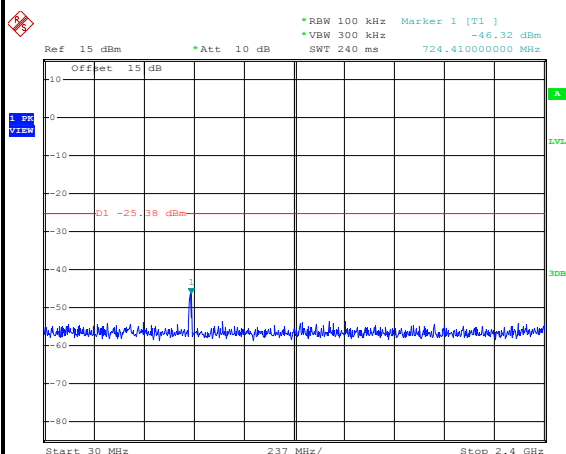
Number of TX :	3	Ant. :	3
Test Mode :	802.11ac VHT20	Temperature :	24~26°C
Test Band :	2.4GHz High	Relative Humidity :	50~53%
Test Channel :	11	Test Engineer :	Mygai Mo

WLAN 802.11ac VHT20 Channel 11**100kHz PSD reference Level**

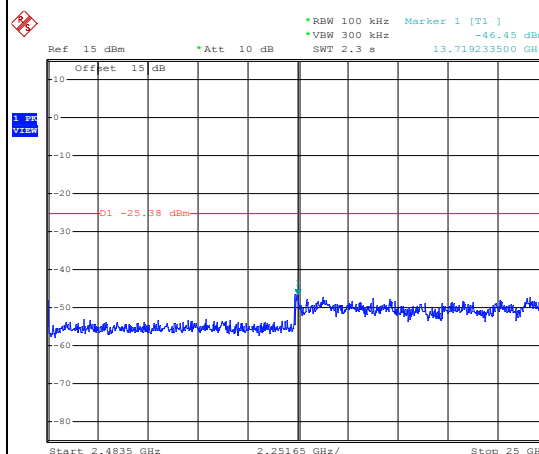
Date: 27.MAY.2016 01:52:46

High Channel Plot

Date: 27.MAY.2016 12:06:59

Spurious Emission 30MHz~2.4GHz

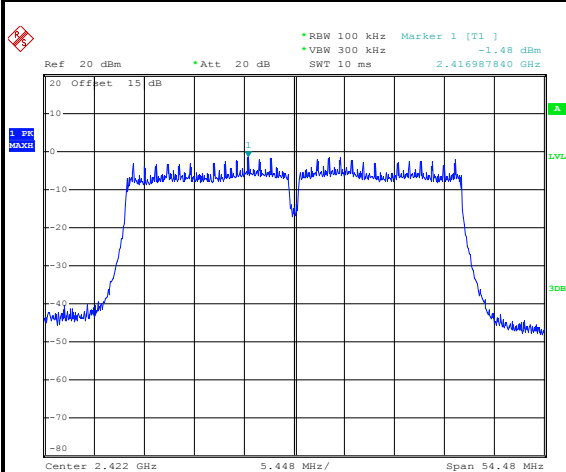
Date: 27.MAY.2016 12:07:16

Spurious Emission 2.4835GHz~25GHz

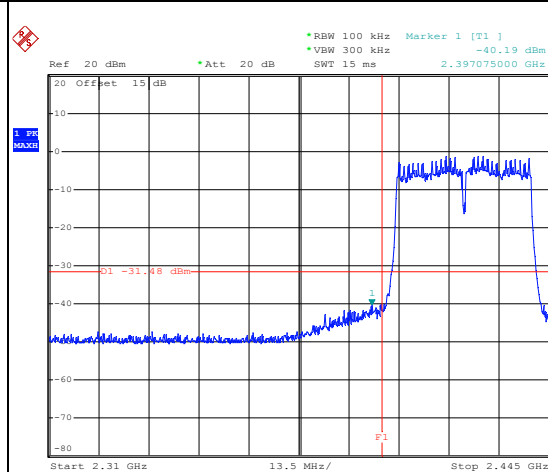
Date: 27.MAY.2016 12:07:25



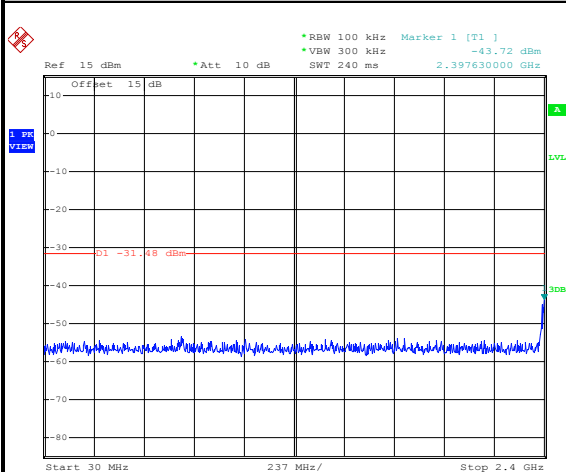
Number of TX :	3	Ant. :	3
Test Mode :	802.11ac VHT40	Temperature :	24~26°C
Test Band :	2.4GHz Low	Relative Humidity :	50~53%
Test Channel :	03	Test Engineer :	Mygai Mo

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

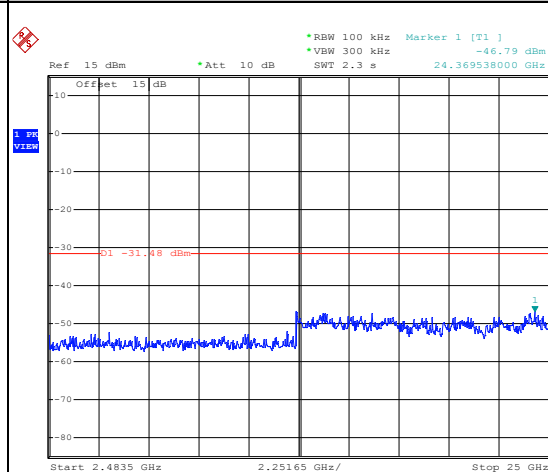
Date: 27.MAY.2016 02:21:33

Low Channel Plot

Date: 27.MAY.2016 12:12:52

Spurious Emission 30MHz~2.4GHz

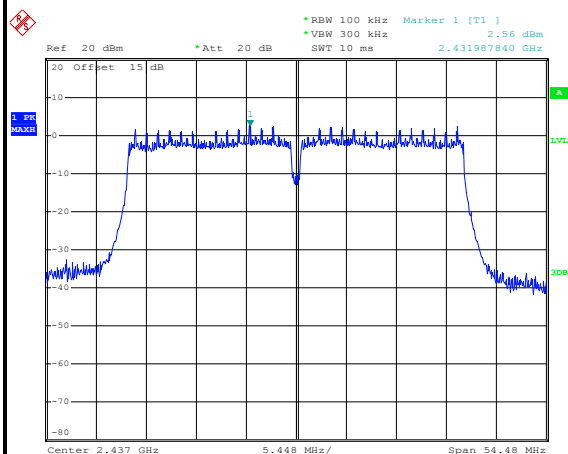
Date: 27.MAY.2016 12:13:11

Spurious Emission 2.4835GHz~25GHz

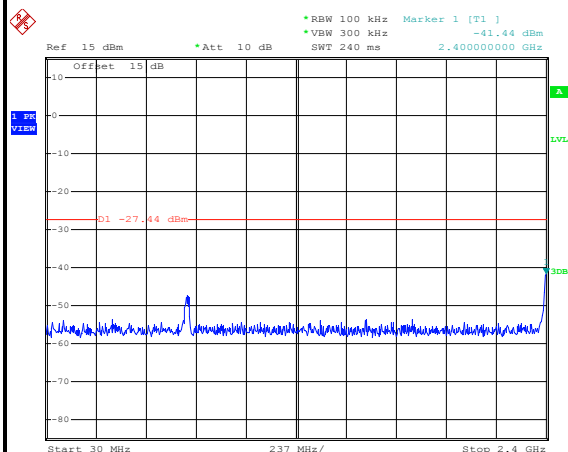
Date: 27.MAY.2016 12:13:19



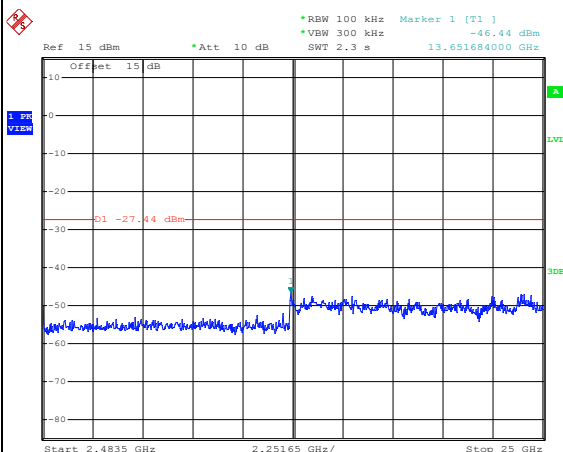
Number of TX :	3	Ant. :	3
Test Mode :	802.11ac VHT40	Temperature :	24~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	50~53%
Test Channel :	06	Test Engineer :	Mygai Mo

WLAN 802.11ac VHT40 Channel 06**100kHz PSD reference Level**

Date: 27.MAY.2016 02:32:13

Spurious Emission 30MHz~2.4GHz

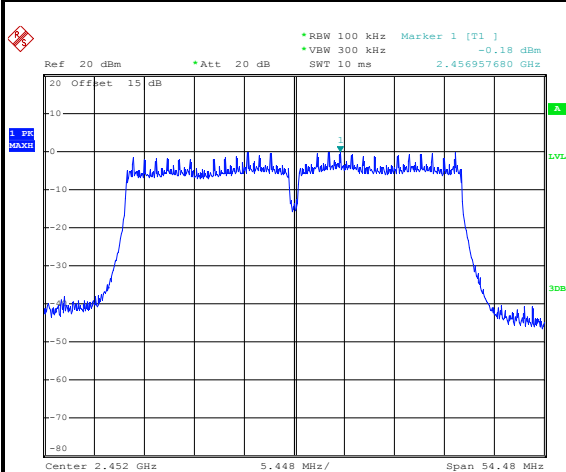
Date: 27.MAY.2016 12:17:02

Spurious Emission 2.4835GHz~25GHz

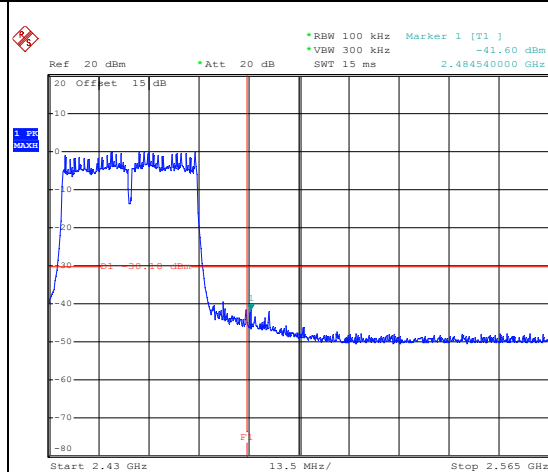
Date: 27.MAY.2016 12:17:10



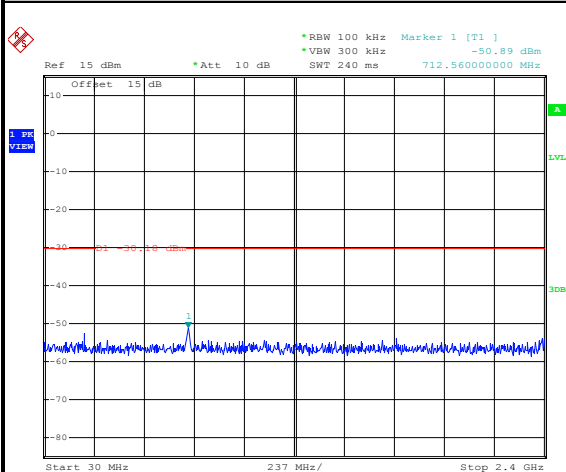
Number of TX :	3	Ant. :	3
Test Mode :	802.11ac VHT40	Temperature :	24~26°C
Test Band :	2.4GHz High	Relative Humidity :	50~53%
Test Channel :	09	Test Engineer :	Mygai Mo

WLAN 802.11ac VHT40 Channel 09**100kHz PSD reference Level**

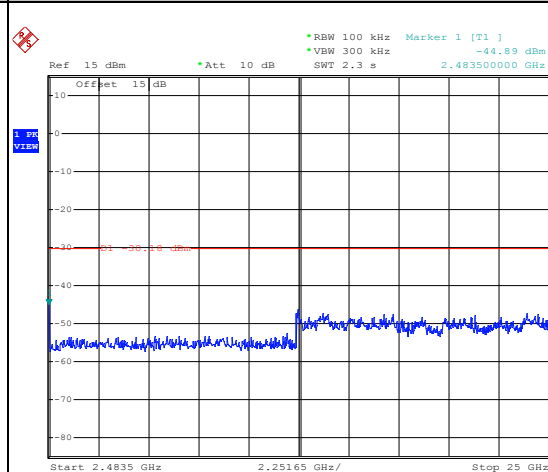
Date: 27.MAY.2016 02:40:27

High Channel Plot

Date: 27.MAY.2016 12:21:10

Spurious Emission 30MHz~2.4GHz

Date: 27.MAY.2016 12:22:48

Spurious Emission 2.4835GHz~25GHz

Date: 27.MAY.2016 12:22:57

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

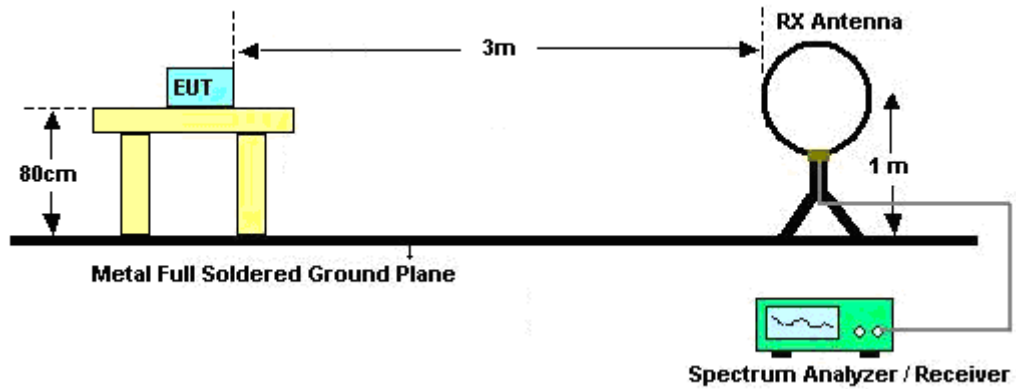
1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r05.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
7. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW=100 kHz for $f < 1$ GHz; VBW $\geq$ 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:

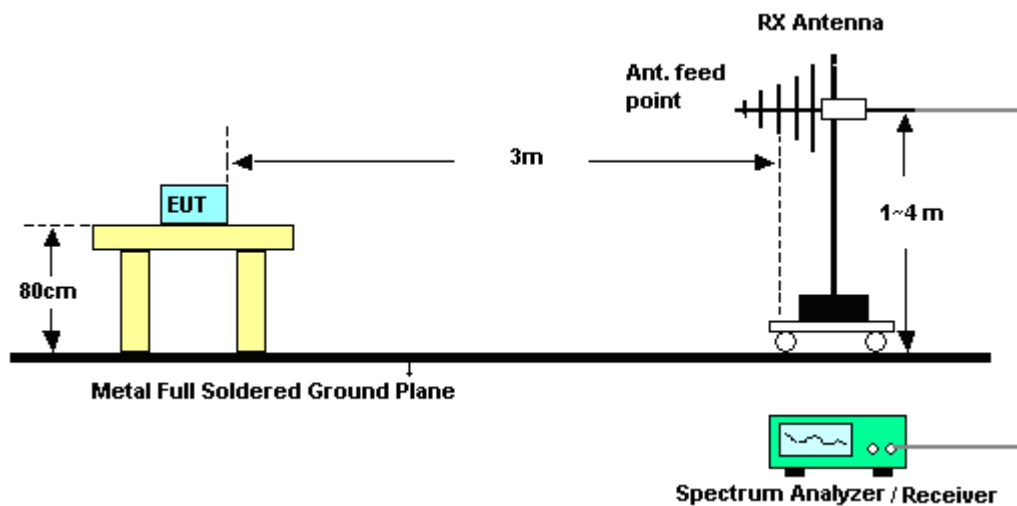
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW $\geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

3.5.4 Test Setup

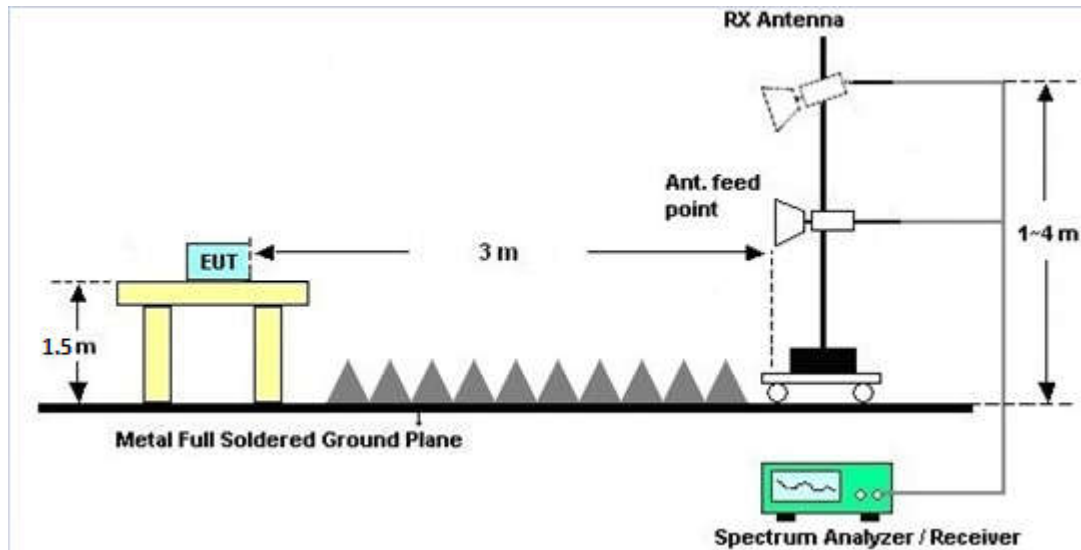
For radiated emissions below 30MHz



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 of this report.

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

Please refer to Appendix B 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 (dB μ V)	
	Quasi-Peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

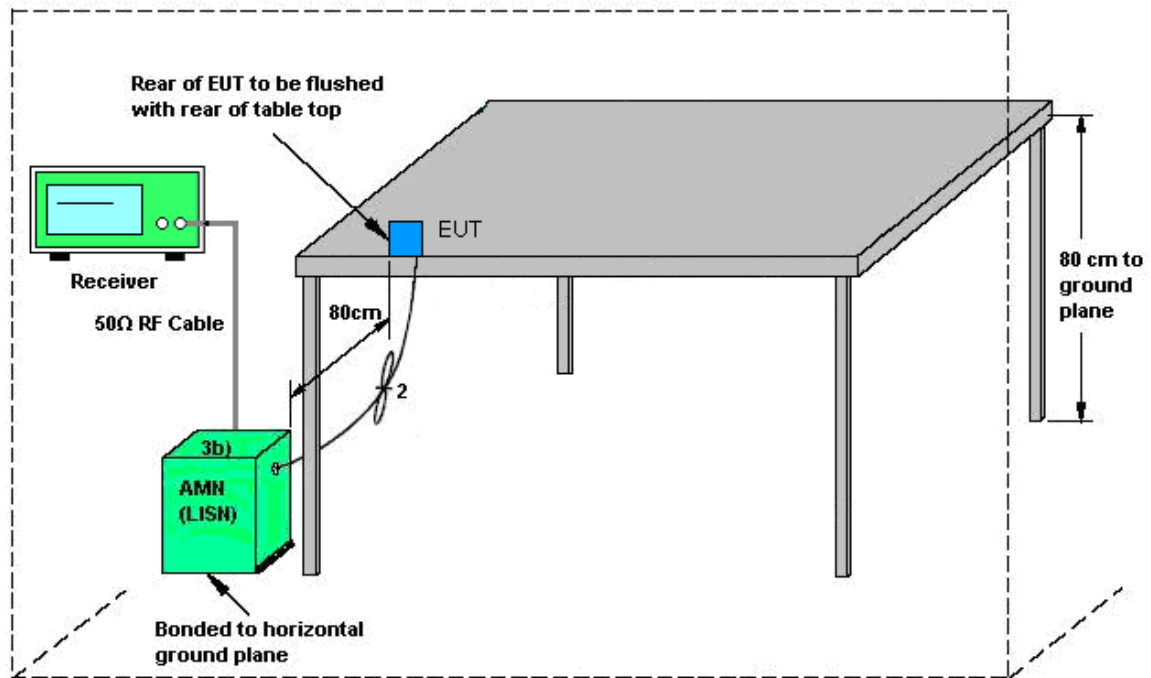
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

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

3.6.4 Test Setup

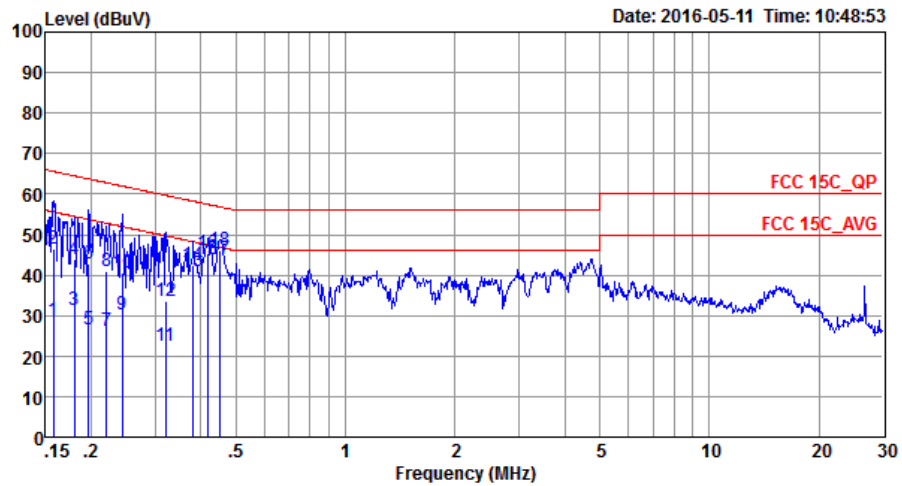


AMN = Artificial mains network (LISN)
 AE = Associated equipment
 EUT = Equipment under test
 ISN = Impedance stabilization network



3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	21~23℃
Test Engineer :	Tao Cheng	Relative Humidity :	41~42%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN (2.4G) Link + Adapter + Data Link (POE Port) + Data Link (LAN Port)		

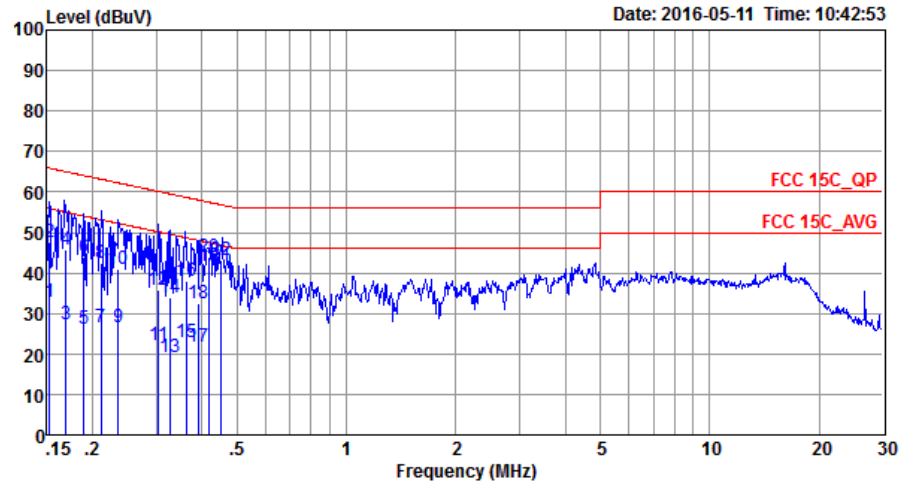


Site : CO01-SZ
Condition: FCC 15C_QP LISN_20160509 LINE
Project : (FR) 640501
Mode : Mode 1
IMEI : N/A

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.16	28.62	-26.98	55.60	17.91	0.13	10.58	Average
2	0.16	46.62	-18.98	65.60	35.91	0.13	10.58	QP
3	0.18	31.46	-23.04	54.50	20.80	0.12	10.54	Average
4	0.18	44.06	-20.44	64.50	33.40	0.12	10.54	QP
5	0.20	26.72	-27.04	53.76	16.10	0.11	10.51	Average
6	0.20	42.92	-20.84	63.76	32.30	0.11	10.51	QP
7	0.22	26.09	-26.70	52.79	15.50	0.11	10.48	Average
8	0.22	40.99	-21.80	62.79	30.40	0.11	10.48	QP
9	0.24	30.17	-21.83	52.00	19.60	0.11	10.46	Average
10	0.24	40.57	-21.43	62.00	30.00	0.11	10.46	QP
11	0.32	22.59	-27.12	49.71	12.10	0.11	10.38	Average
12	0.32	33.49	-26.22	59.71	23.00	0.11	10.38	QP
13	0.38	40.89	-7.36	48.25	30.50	0.11	10.28	Average
14	0.38	42.39	-15.86	58.25	32.00	0.11	10.28	QP
15	0.42	44.05	-3.46	47.51	33.70	0.11	10.24	Average
16	0.42	45.55	-11.96	57.51	35.20	0.11	10.24	QP
17 *	0.45	43.74	-3.08	46.82	33.40	0.11	10.23	Average
18	0.45	45.94	-10.88	56.82	35.60	0.11	10.23	QP



Test Mode :	Mode 1	Temperature :	21~23°C
Test Engineer :	Tao Cheng	Relative Humidity :	41~42%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN (2.4G) Link + Adapter + Data Link (POE Port) + Data Link (LAN Port)		



Site : CO01-SZ
Condition: FCC 15C_QP LISN_20160509 NEUTRAL
Project : (FR)640501
Mode : Mode 1
IMEI : N/A

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15	32.83	-23.04	55.87	22.10	0.14	10.59	Average
2	0.15	47.53	-18.34	65.87	36.80	0.14	10.59	QP
3	0.17	27.48	-27.51	54.99	16.79	0.13	10.56	Average
4	0.17	45.68	-19.31	64.99	34.99	0.13	10.56	QP
5	0.19	26.03	-28.03	54.06	15.39	0.12	10.52	Average
6	0.19	43.93	-20.13	64.06	33.29	0.12	10.52	QP
7	0.21	26.60	-26.54	53.14	16.00	0.11	10.49	Average
8	0.21	42.50	-20.64	63.14	31.90	0.11	10.49	QP
9	0.24	26.58	-25.68	52.26	16.00	0.11	10.47	Average
10	0.24	40.78	-21.48	62.26	30.20	0.11	10.47	QP
11	0.30	22.22	-27.93	50.15	11.70	0.11	10.41	Average
12	0.30	35.82	-24.33	60.15	25.30	0.11	10.41	QP
13	0.33	19.08	-30.41	49.49	8.60	0.11	10.37	Average
14	0.33	33.98	-25.51	59.49	23.50	0.11	10.37	QP
15	0.36	22.82	-25.87	48.69	12.40	0.11	10.31	Average
16	0.36	38.02	-20.67	58.69	27.60	0.11	10.31	QP
17	0.39	21.67	-26.36	48.03	11.30	0.11	10.26	Average
18	0.39	32.57	-25.46	58.03	22.20	0.11	10.26	QP
19	0.42	41.75	-5.76	47.51	31.40	0.11	10.24	Average
20	0.42	43.85	-13.66	57.51	33.50	0.11	10.24	QP
21 *	0.45	41.74	-5.08	46.82	31.40	0.11	10.23	Average
22	0.45	43.24	-13.58	56.82	32.90	0.11	10.23	QP

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 $N_{ANT} \leq 4$.

Directional gain may be calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain;

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.

5.2G Band Antenna	DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
1	5.89	5.89	0.00	0.00
2	4.77	4.77	0.00	0.00
3	5.14	5.14	0.00	0.00
1+2	5.89	8.36	0.00	2.36
1+3	5.89	8.53	0.00	2.53
2+3	5.14	7.97	0.00	1.97
1+2+3	5.89	10.05	0.00	4.05

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

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



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150246	10Hz~44GHz;	May 08, 2015	Apr. 06, 2016~May 28, 2016	May 07, 2016	Conducted (TH01-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150246	10Hz~44GHz;	May 07, 2016	Apr. 06, 2016~May 28, 2016	May 06, 2017	Conducted (TH01-SZ)
Spectrum Analyzer	R&S	FSP30	101400	9kHz~40GHz	Jan. 12, 2016	Apr. 06, 2016~May 28, 2016	Jan. 11, 2017	Conducted (TH01-SZ)
Pulse Power Sensor	Anritsu	MA2411B	1207253	30MHz~40GHz	Jan. 12, 2016	Apr. 06, 2016~May 28, 2016	Jan. 11, 2017	Conducted (TH01-SZ)
Power Meter	Anritsu	ML2495A	1218010	50MHz Bandwidth	Jan. 12, 2016	Apr. 06, 2016~May 28, 2016	Jan. 11, 2017	Conducted (TH01-SZ)
EMI Test Receiver&SA	KEYSIGHT	N9038A	MY54450083	20Hz~8.4GHz	May 07, 2016	May 31, 2016	May 06, 2017	Radiation (03CH03-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150246	10Hz~44GHz;	May 07, 2016	May 31, 2016	May 06, 2017	Radiation (03CH03-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	May 07, 2016	May 31, 2016	May 06, 2017	Radiation (03CH03-SZ)
Bilog Antenna	TeseQ	CBL6112D	35408	30MHz~2GHz	May 21, 2016	May 31, 2016	May 20, 2017	Radiation (03CH03-SZ)
Double Ridge Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-1355	1GHz~18GHz	May 07, 2016	May 31, 2016	May 06, 2017	Radiation (03CH03-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18GHz~40GHz	Aug. 19, 2015	May 31, 2016	Aug. 18, 2016	Radiation (03CH03-SZ)
Amplifier	PREAMPLIFIER	BPA-530	102210	0.01Hz~3000MHz	Oct. 20, 2015	May 31, 2016	Oct. 19, 2016	Radiation (03CH03-SZ)
Amplifier	Agilent Technologies	83017A	MY39501302	500MHz~26.5GHz	Jan. 12, 2016	May 31, 2016	Jan. 11, 2017	Radiation (03CH03-SZ)
HF Amplifier	MITEQ	AMF-7D-00101800-30-10P-R	1943528	1GHz~18GHz	Oct. 20, 2015	May 31, 2016	Oct. 19, 2016	Radiation (03CH03-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 18, 2015	May 31, 2016	Jul. 17, 2016	Radiation (03CH03-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	NCR	May 31, 2016	NCR	Radiation (03CH03-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	May 31, 2016	NCR	Radiation (03CH03-SZ)
EMI Test Receiver	R&S	ESR7	101404	9kHz~7GHz;Max 30dBm	Oct. 20, 2015	May 11, 2016	Oct. 19, 2016	Conduction (CO01-SZ)
AC LISN	EMCO	3816/2SH	00103892	9kHz~30MHz	Jan. 12, 2016	May 11, 2016	Jan. 11, 2017	Conduction (CO01-SZ)
AC LISN (for auxiliary equipment)	MessTec	3816/2SH	00103912	9kHz~30MHz	Jan. 12, 2016	May 11, 2016	Jan. 11, 2017	Conduction (CO01-SZ)
AC Power Source	Chroma	61602	616020000891	100Vac~250Vac	Aug. 07, 2015	May 11, 2016	Aug. 06, 2016	Conduction (CO01-SZ)
Pulse Limiter	COM-POWER	LIT-153 Transient Limiter	53139	150kHz~30MHz	Oct. 20, 2015	May 11, 2016	Oct. 19, 2016	Conduction (CO01-SZ)

NCR: No Calibration Required

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.3 dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0 dB
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Uncertainty of Radiated Emission Measurement (1GHz ~ 18GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.8dB
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Uncertainty of Radiated Emission Measurement (18GHz ~ 40GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0dB
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Appendix A. Conducted Test Results

Test Engineer:	Mygai Mo	Temperature:	24~26	°C
Test Date:	2016/4/06~2016/5/28	Relative Humidity:	50~53	%

TEST RESULTS DATA
6dB and 99% Occupied Bandwidth

2.4GHz Band												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Occupied BW (MHz)			6dB BW (MHz)			6dB BW Limit (MHz)	Pass/Fail
					Ant 1	Ant 2	Ant 3	Ant 1	Ant 2	Ant 3		
11b	1Mbps	3	1	2412	12.05	12.20	12.15	8.52	9.00	9.00	0.50	Pass
11b	1Mbps	3	6	2437	13.30	13.25	13.60	9.04	9.00	9.08	0.50	Pass
11b	1Mbps	3	11	2462	12.00	12.05	12.00	9.04	8.52	9.04	0.50	Pass
11g	6Mbps	3	1	2412	17.90	17.90	18.00	16.28	16.32	16.32	0.50	Pass
11g	6Mbps	3	6	2437	19.20	20.10	19.90	16.28	16.28	16.32	0.50	Pass
11g	6Mbps	3	11	2462	18.10	17.80	17.85	16.32	16.36	16.36	0.50	Pass
HT20	MCS0	3	1	2412	18.50	18.60	18.60	17.56	17.60	17.56	0.50	Pass
HT20	MCS0	3	6	2437	19.95	19.75	19.75	17.52	17.56	17.56	0.50	Pass
HT20	MCS0	3	11	2462	18.65	18.55	18.65	17.52	17.56	17.56	0.50	Pass
HT40	MCS0	3	3	2422	36.60	36.60	36.60	36.08	36.24	36.00	0.50	Pass
HT40	MCS0	3	6	2437	36.80	36.80	36.80	36.32	36.32	36.32	0.50	Pass
HT40	MCS0	3	9	2452	36.70	36.70	36.70	36.00	36.40	36.24	0.50	Pass
VHT20	MCS0	3	1	2412	18.75	18.65	18.65	17.56	17.56	17.56	0.50	Pass
VHT20	MCS0	3	6	2437	20.15	19.70	20.15	17.52	17.56	17.56	0.50	Pass
VHT20	MCS0	3	11	2462	18.65	18.65	18.60	17.52	17.56	17.56	0.50	Pass
VHT40	MCS0	3	3	2422	36.60	36.60	36.60	36.00	36.32	36.32	0.50	Pass
VHT40	MCS0	3	6	2437	36.80	36.80	36.80	36.32	36.32	36.32	0.50	Pass
VHT40	MCS0	3	9	2452	36.80	36.80	36.60	36.08	36.32	36.32	0.50	Pass

TEST RESULTS DATA
Peak Output Power
(Reporting Only)

2.4GHz Band											
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Peak Conducted Power (dBm)				DG (dBi)		
					Ant 1	Ant 2	Ant 3	SUM	Ant 1	Ant 2	Ant 3
11b	1Mbps	3	1	2412	24.88	24.72	25.02	29.65	5.89		
11b	1Mbps	3	6	2437	25.24	24.93	25.16	29.88	5.89		
11b	1Mbps	3	11	2462	25.33	25.02	25.25	29.97	5.89		
11g	6Mbps	3	1	2412	27.58	27.31	27.37	32.19	5.89		
11g	6Mbps	3	6	2437	28.70	28.26	28.31	33.20	5.89		
11g	6Mbps	3	11	2462	27.01	26.51	26.86	31.57	5.89		
HT20	MCS0	3	1	2412	26.81	26.27	26.53	31.31	5.89		
HT20	MCS0	3	6	2437	28.72	28.07	26.40	32.61	5.89		
HT20	MCS0	3	11	2462	27.37	26.78	27.02	31.83	5.89		
HT40	MCS0	3	3	2422	25.41	24.95	25.19	29.96	5.89		
HT40	MCS0	3	6	2437	27.36	26.26	27.05	31.69	5.89		
HT40	MCS0	3	9	2452	26.14	25.84	25.90	30.73	5.89		
VHT20	MCS0	3	1	2412	15.77	25.21	25.34	28.52	5.89		
VHT20	MCS0	3	6	2437	28.91	28.23	28.46	33.31	5.89		
VHT20	MCS0	3	11	2462	26.15	25.51	25.87	30.62	5.89		
VHT40	MCS0	3	3	2422	23.89	23.15	23.63	28.34	5.89		
VHT40	MCS0	3	6	2437	26.59	25.93	26.25	31.04	5.89		
VHT40	MCS0	3	9	2452	24.61	24.28	24.46	29.22	5.89		

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

TEST RESULTS DATA
Average Output Power

2.4GHz Band															
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)			Average Conducted Power with Duty Factor (dBm)				Conducted Power Limit (dBm)			Pass /Fail
					Ant 1	Ant 2	Ant 3	Ant 1	Ant 2	Ant 3	SUM	Ant 1	Ant 2	Ant 3	
11b	1Mbps	3	1	2412	0.00	0.00	0.00	21.34	21.27	21.56	26.16	30.00			Pass
11b	1Mbps	3	6	2437	0.00	0.00	0.00	21.70	21.47	21.69	26.39	30.00			Pass
11b	1Mbps	3	11	2462	0.00	0.00	0.00	21.93	21.59	21.89	26.58	30.00			Pass
11g	6Mbps	3	1	2412	0.00	0.00	0.00	19.45	19.19	19.37	24.11	30.00			Pass
11g	6Mbps	3	6	2437	0.00	0.00	0.00	23.89	23.74	23.85	28.60	30.00			Pass
11g	6Mbps	3	11	2462	0.00	0.00	0.00	17.78	17.45	17.79	22.45	30.00			Pass
HT20	MCS0	3	1	2412	0.00	0.00	0.00	17.44	17.04	17.39	22.07	30.00			Pass
HT20	MCS0	3	6	2437	0.00	0.00	0.00	22.97	23.71	22.91	27.98	30.00			Pass
HT20	MCS0	3	11	2462	0.00	0.00	0.00	17.85	17.46	17.78	22.47	30.00			Pass
HT40	MCS0	3	3	2422	0.00	0.00	0.00	14.95	14.27	14.78	19.45	30.00			Pass
HT40	MCS0	3	6	2437	0.00	0.00	0.00	17.85	17.38	17.83	22.46	30.00			Pass
HT40	MCS0	3	9	2452	0.00	0.00	0.00	16.08	15.50	16.02	20.64	30.00			Pass
VHT20	MCS0	3	1	2412	0.00	0.00	0.00	15.69	15.09	15.33	20.15	30.00			Pass
VHT20	MCS0	3	6	2437	0.00	0.00	0.00	23.02	22.79	22.98	27.70	30.00			Pass
VHT20	MCS0	3	11	2462	0.00	0.00	0.00	16.12	15.48	16.00	20.65	30.00			Pass
VHT40	MCS0	3	3	2422	0.00	0.00	0.00	12.27	11.94	12.20	16.91	30.00			Pass
VHT40	MCS0	3	6	2437	0.00	0.00	0.00	16.49	15.89	16.26	20.99	30.00			Pass
VHT40	MCS0	3	9	2452	0.00	0.00	0.00	13.71	12.88	13.46	18.13	30.00			Pass

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

TEST RESULTS DATA
Average Power Spectral Density

2.4GHz Band															
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average PSD (dBm/3kHz)				DG (dBi)			Average PSD Limit (dBm/3kHz)			Pass/Fail
					Ant 1	Ant 2	Ant 3	Worse + 3.01	Ant 1	Ant 2	Ant 3	Ant 1	Ant 2	Ant 3	
11b	1Mbps	3	1	2412	-1.35	-1.43	-0.92	3.85	10.05			3.95			Pass
11b	1Mbps	3	6	2437	-1.00	-0.94	-1.07	3.83	10.05			3.95			Pass
11b	1Mbps	3	11	2462	-1.06	-0.90	-0.91	3.87	10.05			3.95			Pass
11g	6Mbps	3	1	2412	-6.00	-5.39	-4.79	-0.02	10.05			3.95			Pass
11g	6Mbps	3	6	2437	-1.85	-1.22	-0.96	3.81	10.05			3.95			Pass
11g	6Mbps	3	11	2462	-6.73	-7.78	-7.05	-1.96	10.05			3.95			Pass
HT20	MCS0	3	1	2412	-7.93	-7.69	-7.19	-2.42	10.05			3.95			Pass
HT20	MCS0	3	6	2437	-2.91	-2.31	-1.40	3.37	10.05			3.95			Pass
HT20	MCS0	3	11	2462	-7.24	-7.75	-6.48	-1.71	10.05			3.95			Pass
HT40	MCS0	3	3	2422	-13.10	-13.39	-11.52	-6.75	10.05			3.95			Pass
HT40	MCS0	3	6	2437	-9.95	-10.83	-10.24	-5.18	10.05			3.95			Pass
HT40	MCS0	3	9	2452	-11.95	-11.86	-12.27	-7.09	10.05			3.95			Pass
VHT20	MCS0	3	1	2412	-9.11	-9.89	-8.78	-4.01	10.05			3.95			Pass
VHT20	MCS0	3	6	2437	-1.37	-1.75	-2.26	3.40	10.05			3.95			Pass
VHT20	MCS0	3	11	2462	-9.16	-9.86	-9.17	-4.39	10.05			3.95			Pass
VHT40	MCS0	3	3	2422	-14.74	-15.81	-15.37	-9.97	10.05			3.95			Pass
VHT40	MCS0	3	6	2437	-10.71	-11.91	-10.86	-5.94	10.05			3.95			Pass
VHT40	MCS0	3	9	2452	-14.29	-14.01	-14.36	-9.24	10.05			3.95			Pass

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



Appendix B. Radiated Spurious Emission

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2+3		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2389.83	56.93	-17.07	74	59.89	27.25	4.79	35	229	282	P	H
		2390	47.9	-6.1	54	50.86	27.25	4.79	35	229	282	A	H
	*	2412	109.53	-	-	112.4	27.31	4.82	35	229	282	P	H
	*	2412	105.71	-	-	108.58	27.31	4.82	35	229	282	A	H
		2389.83	58.89	-15.11	74	61.85	27.25	4.79	35	199	309	P	V
		2390	52.19	-1.81	54	55.15	27.25	4.79	35	199	309	A	V
	*	2412	112.76	-	-	115.63	27.31	4.82	35	199	309	P	V
	*	2412	108.84	-	-	111.71	27.31	4.82	35	199	309	A	V
802.11b CH 06 2437MHz		2389.47	53.1	-20.9	74	56.08	27.25	4.79	35.02	250	279	P	H
		2390	43.62	-10.38	54	46.58	27.25	4.79	35	250	279	A	H
	*	2437	113.54	-	-	116.27	27.42	4.82	34.97	250	279	P	H
	*	2437	109.7	-	-	112.43	27.42	4.82	34.97	250	279	A	H
		2485.4	54.05	-19.95	74	56.58	27.54	4.85	34.92	250	279	P	H
		2483.8	44.38	-9.62	54	46.91	27.54	4.85	34.92	250	279	A	H
		2389.74	54.04	-19.96	74	57.02	27.25	4.79	35.02	250	319	P	V
		2390	44.05	-9.95	54	47.01	27.25	4.79	35	250	319	A	V
	*	2437	114.6	-	-	117.33	27.42	4.82	34.97	250	319	P	V
	*	2437	111.46	-	-	114.19	27.42	4.82	34.97	250	319	A	V
		2483.76	57.37	-16.63	74	59.9	27.54	4.85	34.92	250	319	P	V
		2484.08	47.34	-6.66	54	49.87	27.54	4.85	34.92	250	319	A	V



802.11b CH 11 2462MHz	*	2462	108.19	-	-	110.81	27.48	4.85	34.95	236	195	P	H
	*	2462	104.98	-	-	107.6	27.48	4.85	34.95	236	195	A	H
		2484.12	53.59	-20.41	74	56.12	27.54	4.85	34.92	236	195	P	H
		2483.52	45.42	-8.58	54	47.95	27.54	4.85	34.92	236	195	A	H
	*	2462	112.54	-	-	115.16	27.48	4.85	34.95	227	223	P	V
	*	2462	108.93	-	-	111.55	27.48	4.85	34.95	227	223	A	V
		2484.24	57.47	-16.53	74	60	27.54	4.85	34.92	227	223	P	V
		2483.52	52.21	-1.79	54	54.74	27.54	4.85	34.92	227	223	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 802.11b (Harmonic @ 3m)

WIFI Ant. 1+2+3	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11b CH 01 2412MHz		4824	46.22	-27.78	74	66.59	31.05	6.97	58.39	250	0	P	H
		4824	47.94	-26.06	74	68.31	31.05	6.97	58.39	250	0	P	V
802.11b CH 06 2437MHz		4874	42.87	-31.13	74	63.42	31.12	6.99	58.66	250	0	P	H
		7311	52.36	-21.64	74	66.8	35.96	8.22	58.62	150	200	P	H
		7311	45.67	-8.33	54	60.11	35.96	8.22	58.62	150	200	A	H
		4874	46.05	-27.95	74	66.6	31.12	6.99	58.66	250	0	P	V
		7311	55.49	-18.51	74	69.93	35.96	8.22	58.62	236	324	P	V
		7311	50.06	-3.94	54	64.5	35.96	8.22	58.62	236	324	A	V
802.11b CH 11 2462MHz		4924	47.76	-26.24	74	68.09	31.19	7	58.52	250	0	P	H
		7386	52.57	-21.43	74	66.76	36.08	8.27	58.54	242	77	P	H
		7386	44.82	-9.18	54	59.01	36.08	8.27	58.54	242	77	A	H
		4924	48.78	-25.22	74	69.11	31.19	7	58.52	250	0	P	V
		7386	53.82	-20.18	74	68.01	36.08	8.27	58.54	178	330	P	V
		7386	48.11	-5.89	54	62.3	36.08	8.27	58.54	178	330	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 802.11g (Band Edge @ 3m)

WIFI Ant. 1+2+3	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		2389.83	64.56	-9.44	74	67.52	27.25	4.79	35	169	275	P	H
		2389.91	48.66	-5.34	54	51.62	27.25	4.79	35	169	275	A	H
	*	2412	104.39	-	-	107.26	27.31	4.82	35	169	275	P	H
	*	2412	96.72	-	-	99.59	27.31	4.82	35	169	275	A	H
		2389.29	68.57	-5.43	74	71.55	27.25	4.79	35.02	208	128	P	V
		2389.02	53.43	-0.57	54	56.41	27.25	4.79	35.02	208	128	A	V
	*	2412	112	-	-	114.87	27.31	4.82	35	208	128	P	V
	*	2412	103.17	-	-	106.04	27.31	4.82	35	208	128	A	V
802.11g CH 06 2437MHz		2387.13	56.82	-17.18	74	59.8	27.25	4.79	35.02	250	193	P	H
		2387.85	42.03	-11.97	54	45.01	27.25	4.79	35.02	250	193	A	H
	*	2437	109.95	-	-	112.68	27.42	4.82	34.97	250	193	P	H
	*	2437	101.88	-	-	104.61	27.42	4.82	34.97	250	193	A	H
		2487.28	57.52	-16.48	74	60.05	27.54	4.85	34.92	250	193	P	H
		2484.64	42.58	-11.42	54	45.11	27.54	4.85	34.92	250	193	A	H
		2388.48	66.31	-7.69	74	69.29	27.25	4.79	35.02	250	132	P	V
		2389.91	49.42	-4.58	54	52.38	27.25	4.79	35	250	132	A	V
	*	2437	117.77	-	-	120.5	27.42	4.82	34.97	250	132	P	V
	*	2437	109.45	-	-	112.18	27.42	4.82	34.97	250	132	A	V
		2483.84	67.72	-6.28	74	70.25	27.54	4.85	34.92	250	132	P	V
		2484.16	51.53	-2.47	54	54.06	27.54	4.85	34.92	250	132	P	V



802.11g CH 11 2462MHz	*	2462	103.74	-	-	106.36	27.48	4.85	34.95	156	159	P	H
	*	2462	95.47	-	-	98.09	27.48	4.85	34.95	156	159	A	H
		2483.6	61.32	-12.68	74	63.85	27.54	4.85	34.92	156	159	P	H
		2483.8	44.03	-9.97	54	46.56	27.54	4.85	34.92	156	159	A	H
	*	2462	111.21	-	-	113.83	27.48	4.85	34.95	250	133	P	V
	*	2462	102.95	-	-	105.57	27.48	4.85	34.95	250	133	A	V
		2483.52	69.67	-4.33	74	72.2	27.54	4.85	34.92	250	133	P	V
		2483.72	52.1	-1.9	54	54.63	27.54	4.85	34.92	250	133	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 802.11g (Harmonic @ 3m)

WIFI Ant. 1+2+3	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		4824	40.44	-33.56	74	60.81	31.05	6.97	58.39	250	0	P	H
		4824	41.92	-32.08	74	62.29	31.05	6.97	58.39	250	0	P	V
802.11g CH 06 2437MHz		4874	42.42	-31.58	74	62.97	31.12	6.99	58.66	150	360	P	H
		7311	55.88	-18.12	74	70.32	35.96	8.22	58.62	152	116	P	H
		7311	44.24	-9.76	54	58.68	35.96	8.22	58.62	152	116	P	H
		4874	46.69	-27.31	74	67.24	31.12	6.99	58.66	150	360	P	V
		7311	57.07	-16.93	74	71.51	35.96	8.22	58.62	150	183	P	V
		7311	43.89	-10.11	54	58.33	35.96	8.22	58.62	150	183	P	V
802.11g CH 11 2462MHz		4924	42.27	-31.73	74	62.6	31.19	7	58.52	150	347	P	H
		7386	46.77	-27.23	74	60.96	36.08	8.27	58.54	150	274	P	H
		4924	43.92	-30.08	74	64.25	31.19	7	58.52	150	347	P	V
		7386	47.22	-26.78	74	61.41	36.08	8.27	58.54	150	274	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz
WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1+2+3	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 01 2412MHz		2389.47	59.72	-14.28	74	62.7	27.25	4.79	35.02	235	136	P	H
		2389.56	43.07	-10.93	54	46.05	27.25	4.79	35.02	235	136	A	H
	*	2412	96.31	-	-	99.18	27.31	4.82	35	235	136	P	H
	*	2412	88.62	-	-	91.49	27.31	4.82	35	235	136	A	H
		2389.56	68.58	-5.42	74	71.56	27.25	4.79	35.02	250	136	P	V
		2389.91	53.12	-0.88	54	56.08	27.25	4.79	35	250	136	A	V
	*	2412	108.29	-	-	111.16	27.31	4.82	35	250	136	P	V
	*	2412	100.1	-	-	102.97	27.31	4.82	35	250	136	A	V
802.11n HT20 CH 06 2437MHz		2386.23	60.3	-13.7	74	63.28	27.25	4.79	35.02	163	197	P	H
		2389.56	45.99	-8.01	54	48.97	27.25	4.79	35.02	163	197	A	H
	*	2437	111.83	-	-	114.56	27.42	4.82	34.97	163	197	P	H
	*	2437	104.9	-	-	107.63	27.42	4.82	34.97	163	197	A	H
		2486.76	59.71	-14.29	74	62.24	27.54	4.85	34.92	163	197	P	H
		2484.36	45.49	-8.51	54	48.02	27.54	4.85	34.92	163	197	A	H
		2387.13	69.48	-4.52	74	72.46	27.25	4.79	35.02	250	138	P	V
		2389.92	53.37	-0.63	54	56.33	27.25	4.79	35	250	138	A	V
	*	2437	118.93	-	-	121.66	27.42	4.82	34.97	250	138	P	V
	*	2437	111.83	-	-	114.56	27.42	4.82	34.97	250	138	A	V
		2485.08	69.68	-4.32	74	72.21	27.54	4.85	34.92	250	138	P	V
		2483.52	52.18	-1.82	54	54.71	27.54	4.85	34.92	250	138	A	V



802.11n HT20 CH 11 2462MHz	*	2462	102.69	-	-	105.31	27.48	4.85	34.95	177	157	P	H
	*	2462	94.5	-	-	97.12	27.48	4.85	34.95	177	157	A	H
		2484.2	62.95	-11.05	74	65.48	27.54	4.85	34.92	177	157	P	H
		2484.6	45.73	-8.27	54	48.26	27.54	4.85	34.92	177	157	A	H
	*	2462	109.69	-	-	112.31	27.48	4.85	34.95	250	130	P	V
	*	2462	101.46	-	-	104.08	27.48	4.85	34.95	250	130	A	V
		2484.28	70.96	-3.04	74	73.49	27.54	4.85	34.92	250	130	P	V
		2484.24	53	-1	54	55.53	27.54	4.85	34.92	250	130	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1+2+3	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 01 2412MHz		4824	40.53	-33.47	74	60.9	31.05	6.97	58.39	150	360	P	H
		4824	41.14	-32.86	74	61.51	31.05	6.97	58.39	150	360	P	V
802.11n HT20 CH 06 2437MHz		4874	42.22	-31.78	74	62.77	31.12	6.99	58.66	150	360	P	H
		7311	55.3	-18.7	74	69.74	35.96	8.22	58.62	154	189	P	H
		7311	43.97	-10.03	54	58.41	35.96	8.22	58.62	154	189	A	H
		4874	46.19	-27.81	74	66.74	31.12	6.99	58.66	150	360	P	V
		7311	57.68	-16.32	74	72.12	35.96	8.22	58.62	162	233	P	V
		7311	45	-9	54	59.44	35.96	8.22	58.62	162	233	A	V
802.11n HT20 CH 11 2462MHz		4924	41	-33	74	61.33	31.19	7	58.52	150	347	P	H
		7386	47.5	-26.5	74	61.69	36.08	8.27	58.54	150	274	A	H
		4924	43.03	-30.97	74	63.36	31.19	7	58.52	150	347	P	V
		7386	47.37	-26.63	74	61.56	36.08	8.27	58.54	150	274	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz
WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1+2+3	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 03 2422MHz		2386.68	56.46	-17.54	74	59.44	27.25	4.79	35.02	173	192	P	H
		2386.59	46.1	-7.9	54	49.08	27.25	4.79	35.02	173	192	A	H
	*	2422	97.51	-	-	100.29	27.37	4.82	34.97	173	192	P	H
	*	2422	89.38	-	-	92.16	27.37	4.82	34.97	173	192	A	H
		2499.2	48.86	-25.14	74	51.27	27.6	4.89	34.9	173	192	P	H
		2494.04	38.78	-15.22	54	41.19	27.6	4.89	34.9	173	192	A	H
		2384.88	63.47	-10.53	74	66.51	27.19	4.79	35.02	193	134	P	V
		2389.74	52.93	-1.07	54	55.91	27.25	4.79	35.02	193	134	A	V
	*	2422	103.39	-	-	106.17	27.37	4.82	34.97	193	134	P	V
	*	2422	95.15	-	-	97.93	27.37	4.82	34.97	193	134	A	V
		2485.8	49.79	-24.21	74	52.32	27.54	4.85	34.92	193	134	P	V
		2491	39.8	-14.2	54	42.23	27.6	4.89	34.92	193	134	A	V
802.11n HT40 CH 06 2437MHz		2386.59	56.41	-17.59	74	59.39	27.25	4.79	35.02	218	191	P	H
		2387.13	43.99	-10.01	54	46.97	27.25	4.79	35.02	218	191	A	H
	*	2437	100.3	-	-	103.03	27.42	4.82	34.97	218	191	P	H
	*	2437	92.03	-	-	94.76	27.42	4.82	34.97	218	191	A	H
		2487.56	57.84	-16.16	74	60.31	27.6	4.85	34.92	218	191	P	H
		2487.04	42.29	-11.71	54	44.82	27.54	4.85	34.92	218	191	A	H
		2388.75	63.07	-10.93	74	66.05	27.25	4.79	35.02	250	133	P	V
		2389.92	52.35	-1.65	54	55.31	27.25	4.79	35	250	133	A	V
	*	2437	106.34	-	-	109.07	27.42	4.82	34.97	250	133	P	V
	*	2437	98.71	-	-	101.44	27.42	4.82	34.97	250	133	A	V
		2485.44	67.17	-6.83	74	69.7	27.54	4.85	34.92	250	133	P	V
		2484.56	50.18	-3.82	54	52.71	27.54	4.85	34.92	250	133	A	V



802.11n HT40 CH 09 2452MHz		2385.6	49.16	-24.84	74	52.14	27.25	4.79	35.02	150	192	P	H
		2385.96	37.95	-16.05	54	40.93	27.25	4.79	35.02	150	192	A	H
	*	2452	98.13	-	-	100.81	27.42	4.85	34.95	150	192	P	H
	*	2452	90.4	-	-	93.08	27.42	4.85	34.95	150	192	A	H
		2486.88	58.79	-15.21	74	61.32	27.54	4.85	34.92	150	192	P	H
		2487.04	44.82	-9.18	54	47.35	27.54	4.85	34.92	150	192	A	H
		2385.78	52.52	-21.48	74	55.5	27.25	4.79	35.02	250	133	P	V
		2389.91	40.68	-13.32	54	43.64	27.25	4.79	35	250	133	A	V
	*	2452	105.22	-	-	107.9	27.42	4.85	34.95	250	133	P	V
	*	2452	97.2	-	-	99.88	27.42	4.85	34.95	250	133	A	V
		2484.96	67.66	-6.34	74	70.19	27.54	4.85	34.92	250	133	P	V
		2485.04	53.8	-0.2	54	56.33	27.54	4.85	34.92	250	133	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz
WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 1+2+3	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 03 2422MHz		4844	38.1	-35.9	74	58.54	31.07	6.97	58.48	150	360	P	H
		7266	45.91	-28.09	74	60.34	35.91	8.19	58.53	200	360	P	H
		4844	39.06	-34.94	74	59.5	31.07	6.97	58.48	150	360	P	V
		7266	46.81	-27.19	74	61.24	35.91	8.19	58.53	200	360	P	V
802.11n HT40 CH 06 2437MHz		4874	39.7	-34.3	74	60.25	31.12	6.99	58.66	150	163	P	H
		7311	47.42	-26.58	74	61.86	35.96	8.22	58.62	150	360	P	H
		4874	42.07	-31.93	74	62.62	31.12	6.99	58.66	150	163	P	V
		7311	46.42	-27.58	74	60.86	35.96	8.22	58.62	150	360	P	V
802.11n HT40 CH 09 2452MHz		4904	39.25	-34.75	74	59.72	31.17	7	58.64	150	360	P	H
		7356	46.38	-27.62	74	60.67	36.03	8.25	58.57	150	320	P	H
		4904	40.67	-33.33	74	61.14	31.17	7	58.64	150	360	P	V
		7356	47.42	-26.58	74	61.71	36.03	8.25	58.57	150	320	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI Ant. 1+2+3	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		2389.02	69.63	-4.37	74	72.61	27.25	4.79	35.02	174	233	P	H
		2389.47	53.45	-0.55	54	56.43	27.25	4.79	35.02	174	233	A	H
	*	2412	111.99	-	-	114.86	27.31	4.82	35	174	233	P	H
	*	2412	103.17	-	-	106.04	27.31	4.82	35	174	233	A	H
		2389.47	63.83	-10.17	74	66.81	27.25	4.79	35.02	157	138	P	V
		2389.38	48.94	-5.06	54	51.92	27.25	4.79	35.02	157	138	A	V
	*	2412	107.45	-	-	110.32	27.31	4.82	35	157	138	P	V
	*	2412	99.57	-	-	102.44	27.31	4.82	35	157	138	A	V
802.11ac VHT20 CH 06 2437MHz		2386.32	68.26	-5.74	74	71.24	27.25	4.79	35.02	244	231	P	H
		2389.11	51.72	-2.28	54	54.7	27.25	4.79	35.02	244	231	A	H
	*	2437	118.38	-	-	121.11	27.42	4.82	34.97	244	231	P	H
	*	2437	110.86	-	-	113.59	27.42	4.82	34.97	244	231	A	H
		2483.68	70.87	-3.13	74	73.4	27.54	4.85	34.92	244	231	P	H
		2483.6	52.77	-1.23	54	55.3	27.54	4.85	34.92	244	231	A	H
		2383.89	62.69	-11.31	74	65.73	27.19	4.79	35.02	226	138	P	V
		2386.68	46.64	-7.36	54	49.62	27.25	4.79	35.02	226	138	A	V
	*	2437	115	-	-	117.73	27.42	4.82	34.97	226	138	P	V
	*	2437	106.95	-	-	109.68	27.42	4.82	34.97	226	138	A	V
		2487.8	60.97	-13.03	74	63.44	27.6	4.85	34.92	226	138	P	V
		2484.04	46	-8	54	48.53	27.54	4.85	34.92	226	138	A	V



802.11ac VHT20 CH 11 2462MHz	*	2462	113.04	-	-	115.66	27.48	4.85	34.95	245	237	P	H
	*	2462	104.33	-	-	106.95	27.48	4.85	34.95	245	237	A	H
		2483.6	69.92	-4.08	74	72.45	27.54	4.85	34.92	245	237	P	H
		2483.8	53.86	-0.14	54	56.39	27.54	4.85	34.92	245	237	A	H
	*	2462	106.78	-	-	109.4	27.48	4.85	34.95	174	153	P	V
	*	2462	98.72	-	-	101.34	27.48	4.85	34.95	174	153	A	V
		2484.16	63.31	-10.69	74	65.84	27.54	4.85	34.92	174	153	P	V
		2483.88	48.78	-5.22	54	51.31	27.54	4.85	34.92	174	153	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 VHT20 (Harmonic @ 3m)

WIFI Ant. 1+2+3	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	39.38	-34.62	74	59.75	31.05	6.97	58.39	250	0	P	H
		4824	39.64	-34.36	74	60.01	31.05	6.97	58.39	250	0	P	V
802.11ac VHT20 CH 06 2437MHz		4874	47.05	-26.95	74	67.6	31.12	6.99	58.66	250	0	P	H
		7311	59.46	-14.54	74	73.9	35.96	8.22	58.62	150	213	A	H
		7311	48.11	-5.89	54	62.55	35.96	8.22	58.62	150	213	A	H
		4874	45.35	-28.65	74	65.9	31.12	6.99	58.66	250	0	P	V
		7311	61.09	-12.91	74	75.53	35.96	8.22	58.62	150	173	A	V
		7311	49.88	-4.12	54	64.32	35.96	8.22	58.62	150	173	A	V
802.11ac VHT20 CH 11 2462MHz		4924	40.88	-33.12	74	61.21	31.19	7	58.52	250	0	P	H
		7386	45.84	-28.16	74	60.03	36.08	8.27	58.54	150	0	P	H
		4924	42.25	-31.75	74	62.58	31.19	7	58.52	250	0	P	V
		7386	45.91	-28.09	74	60.1	36.08	8.27	58.54	150	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI Ant. 1+2+3	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		2388.21	64.58	-9.42	74	67.56	27.25	4.79	35.02	150	131	P	H
		2388.21	53.55	-0.45	54	56.53	27.25	4.79	35.02	150	131	A	H
	*	2422	105.27	-	-	108.05	27.37	4.82	34.97	150	131	P	H
	*	2422	97.1	-	-	99.88	27.37	4.82	34.97	150	131	A	H
		2492	51.49	-22.51	74	53.9	27.6	4.89	34.9	150	131	P	H
		2497.48	42.01	-11.99	54	44.42	27.6	4.89	34.9	150	131	A	H
		2386.5	59.53	-14.47	74	62.51	27.25	4.79	35.02	150	140	P	V
		2386.95	48.47	-5.53	54	51.45	27.25	4.79	35.02	150	140	A	V
	*	2422	102.35	-	-	105.13	27.37	4.82	34.97	150	140	P	V
	*	2422	94.53	-	-	97.31	27.37	4.82	34.97	150	140	A	V
		2485.56	50.44	-23.56	74	52.97	27.54	4.85	34.92	150	140	P	V
		2499.72	40.15	-13.85	54	42.56	27.6	4.89	34.9	150	140	A	V
802.11ac VHT40 CH 06 2437MHz		2387.85	66.84	-7.16	74	69.82	27.25	4.79	35.02	150	114	P	H
		2387.67	53.18	-0.82	54	56.16	27.25	4.79	35.02	150	114	A	H
	*	2437	108.89	-	-	111.62	27.42	4.82	34.97	150	114	P	H
	*	2437	100.89	-	-	103.62	27.42	4.82	34.97	150	114	A	H
		2486.92	65.09	-8.91	74	67.62	27.54	4.85	34.92	150	114	P	H
		2483.52	49.74	-4.26	54	52.27	27.54	4.85	34.92	150	114	A	H
		2386.77	62.52	-11.48	74	65.5	27.25	4.79	35.02	230	139	P	V
		2387.04	47.99	-6.01	54	50.97	27.25	4.79	35.02	230	139	A	V
	*	2437	106.5	-	-	109.23	27.42	4.82	34.97	230	139	P	V
	*	2437	98.66	-	-	101.39	27.42	4.82	34.97	230	139	A	V
		2485.12	57.92	-16.08	74	60.45	27.54	4.85	34.92	230	139	P	V
		2483.96	44.44	-9.56	54	46.97	27.54	4.85	34.92	230	139	A	V



802.11ac VHT40 CH 09 2452MHz		2388.03	52.82	-21.18	74	55.8	27.25	4.79	35.02	150	111	P	H
		2383.62	40.99	-13.01	54	44.03	27.19	4.79	35.02	150	111	A	H
	*	2452	107.16	-	-	109.84	27.42	4.85	34.95	150	111	P	H
	*	2452	99.02	-	-	101.7	27.42	4.85	34.95	150	111	A	H
		2487.92	67.22	-6.78	74	69.69	27.6	4.85	34.92	150	111	P	H
		2487.64	53.09	-0.91	54	55.56	27.6	4.85	34.92	150	111	A	H
		2388.39	50.13	-23.87	74	53.11	27.25	4.79	35.02	156	156	P	V
		2389.65	40.34	-13.66	54	43.32	27.25	4.79	35.02	156	156	A	V
	*	2452	103.02	-	-	105.7	27.42	4.85	34.95	156	156	P	V
	*	2452	94.95	-	-	97.63	27.42	4.85	34.95	156	156	A	V
		2484.48	62.82	-11.18	74	65.35	27.54	4.85	34.92	156	156	P	V
		2489.32	50.25	-3.75	54	52.68	27.6	4.89	34.92	156	156	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+3	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		4844	38.54	-35.46	74	58.98	31.07	6.97	58.48	250	0	P	H
VHT40		7266	47.35	-26.65	74	61.78	35.91	8.19	58.53	150	0	P	H
CH 03		4844	37.53	-36.47	74	57.97	31.07	6.97	58.48	250	0	P	V
2422MHz		7266	44.85	-29.15	74	59.28	35.91	8.19	58.53	150	0	P	V
802.11ac		4874	38.79	-35.21	74	59.34	31.12	6.99	58.66	250	0	P	H
VHT40		7311	46.68	-27.32	74	61.12	35.96	8.22	58.62	150	0	P	H
CH 06		4874	40.42	-33.58	74	60.97	31.12	6.99	58.66	250	0	P	V
2437MHz		7311	47.36	-26.64	74	61.8	35.96	8.22	58.62	150	0	P	V
802.11ac		4904	38.89	-35.11	74	59.36	31.17	7	58.64	250	0	P	H
VHT40		7356	45.68	-28.32	74	59.97	36.03	8.25	58.57	150	0	P	H
CH 09		4904	38.65	-35.35	74	59.12	31.17	7	58.64	250	0	P	V
2452MHz		7356	46.99	-27.01	74	61.28	36.03	8.25	58.57	150	0	P	V
Remark	3. No other spurious found. 4. All results are PASS against Peak and Average limit line.												



Emission below 1GHz

2.4GHz WIFI 802.11n VHT20 (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+3		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11n VHT20 LF		82.38	19.65	-20.35	40	40.43	9.74	1.14	31.66	-	-	P	H
		167.74	24.64	-18.86	43.5	43.67	10.8	1.53	31.36	100	200	P	H
		224.97	21.56	-24.44	46	40	11.03	1.8	31.27	-	-	P	H
		292.87	18.85	-27.15	46	34.68	13.55	1.94	31.32	-	-	P	H
		450.98	22.89	-23.11	46	34.56	17.21	2.31	31.19	-	-	P	H
		520.82	22.52	-23.48	46	33.2	18.08	2.41	31.17	-	-	P	H
		42.61	35.04	-4.96	40	53.98	11.81	1	31.75	100	200	P	V
		75.59	25.51	-14.49	40	47.5	8.55	1.14	31.68	-	-	P	V
		126.03	24.41	-19.09	43.5	42.8	11.72	1.38	31.49	-	-	P	V
		168.71	26.88	-16.62	43.5	45.92	10.78	1.53	31.35	-	-	P	V
		445.16	21.33	-24.67	46	33.18	17.13	2.22	31.2	-	-	P	V
		525.67	23.32	-22.68	46	33.95	18.13	2.41	31.17	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												

**Note symbol**

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



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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b		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)

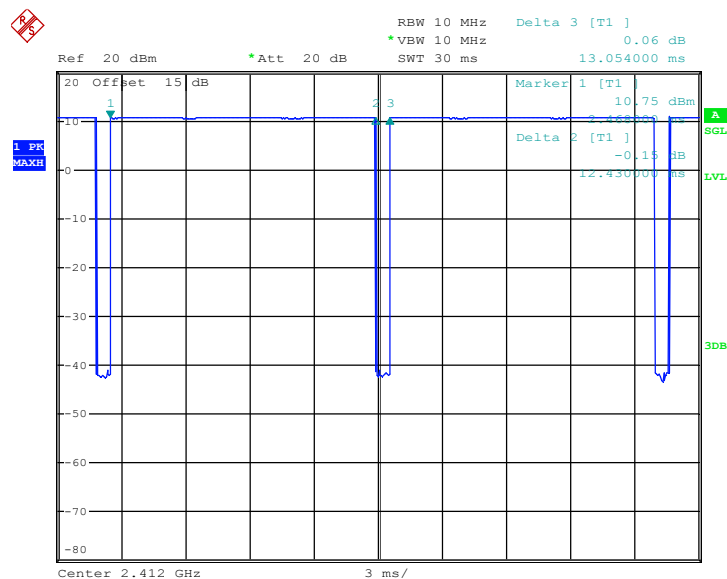
= -10.46(dB)

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

Appendix C. Duty Cycle Plots

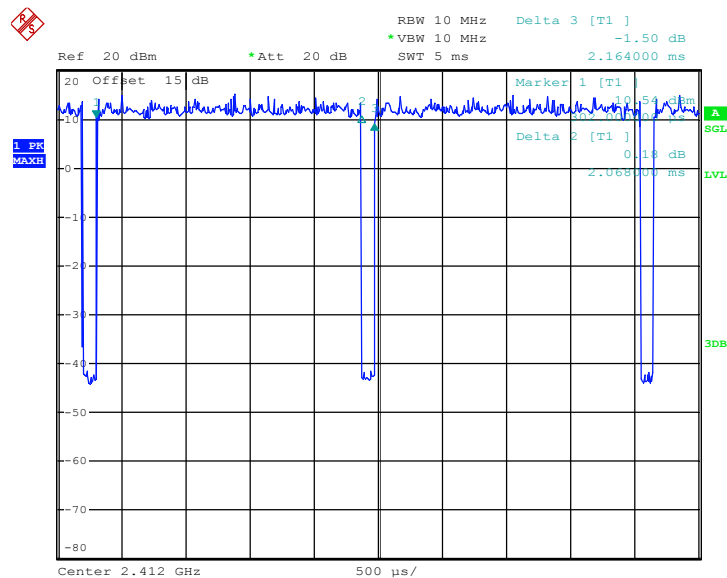
Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
2.4GHz 802.11b	95.37	12.43	0.08	100Hz
2.4GHz 802.11g	95.19	2.06	0.49	1KHz
2.4GHz 802.11n HT20	95.07	1.93	0.52	1KHz
2.4GHz 802.11n HT40	91.26	0.94	1.06	3KHz
2.4GHz 802.11ac VHT20	98.67	-	-	10Hz
2.4GHz 802.11ac VHT40	98.67	-	-	10Hz

802.11b



Date: 6.APR.2016 22:10:11

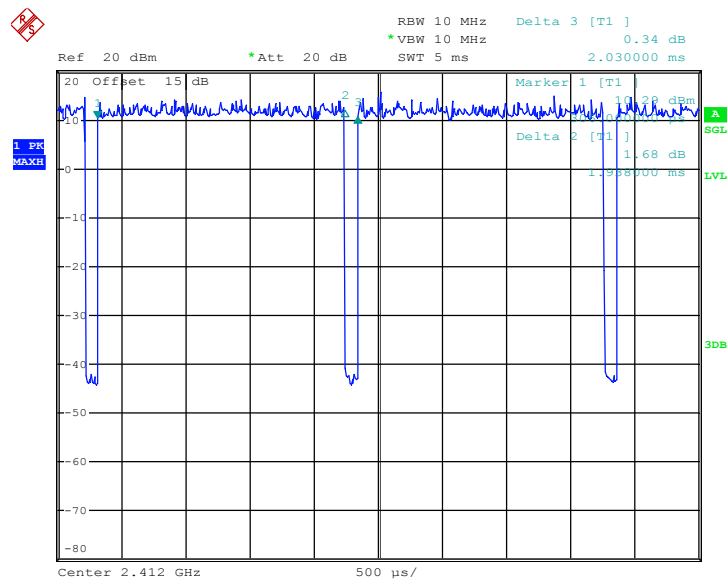
802.11g



Date: 6.APR.2016 22:02:40

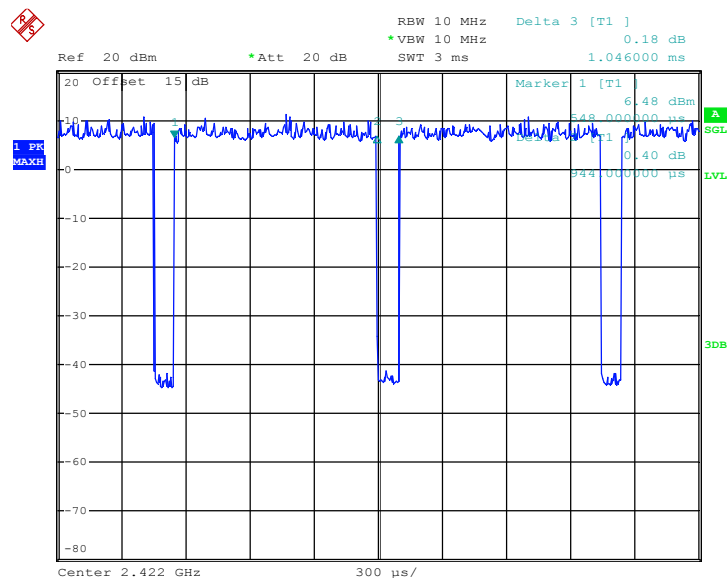


802.11n HT20



Date: 6.APR.2016 22:15:58

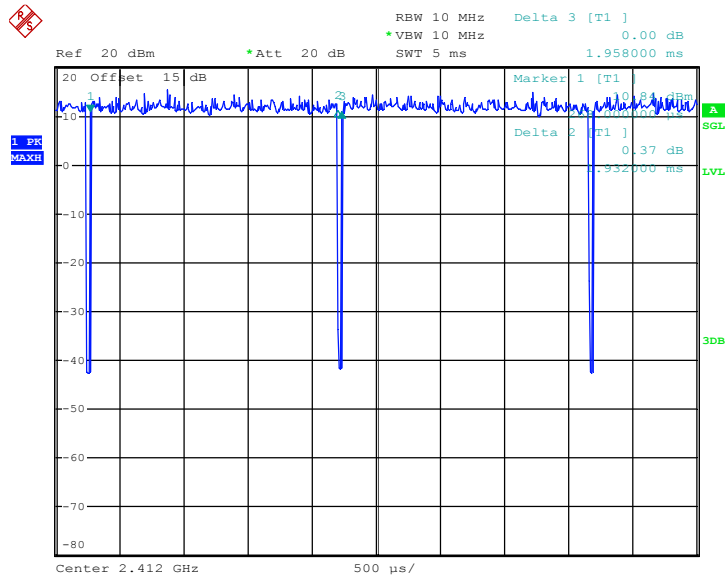
802.11n HT40



Date: 6.APR.2016 21:47:17

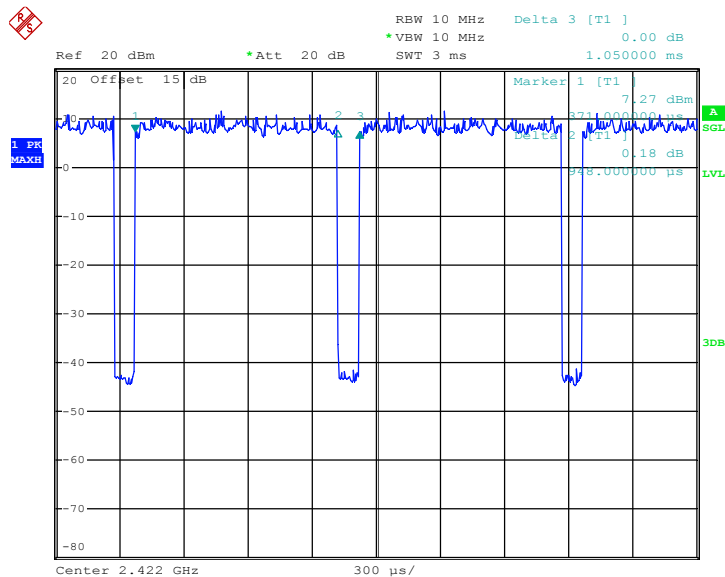


802.11ac VHT20



Date: 17.MAY.2016 00:30:53

802.11ac VHT40



Date: 6.APR.2016 21:39:29