



FCC RF Test Report

APPLICANT : Sling Net LLC
EQUIPMENT : Digital Media Receiver
MODEL NAME : VN94DQ
FCC ID : 2ALBE-0301
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System

The testing was completed on Aug. 10, 2017. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR742716-01C	Rev. 01	Initial issue of report	Aug. 17, 2017



SUMMARY OF TEST RESULT

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



1 General Description

1.1 Applicant

Sling Net LLC

125 Half Mile Road Suite 200 Red Bank, New Jersey 07701-6749

1.2 Product Feature of Equipment Under Test

Product Feature	
Equipment	Digital Media Receiver
Model Name	VN94DQ
FCC ID	2ALBE-0301
EUT supports Radios application	WLAN 11b/g/n HT20 WLAN 11a/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE



1.3 Product Specification of Equipment Under Test

Standards-related Product Specification											
Tx/Rx Channel Frequency Range	2412 MHz ~ 2472 MHz										
Maximum (Peak) Output Power to antenna	<Ant. 1> 802.11b : 23.59 dBm (0.2286 W) 802.11g : 25.55 dBm (0.3589 W) 802.11n HT20 : 25.50 dBm (0.3548 W) <Ant. 2> 802.11b : 23.50 dBm (0.2239 W) 802.11g : 25.60 dBm (0.3631 W) 802.11n HT20 : 25.73 dBm (0.3741 W) MIMO <Ant. 1 + 2> 802.11g : 28.33 dBm (0.6808 W) 802.11n HT20 : 28.35 dBm (0.6839 W)										
99% Occupied Bandwidth	<Ant. 1> 802.11b : 11.65MHz 802.11g : 18.70MHz 802.11n HT20 : 19.45MHz <Ant. 2> 802.11b : 11.70MHz 802.11g : 18.45MHz 802.11n HT20 : 19.20MHz MIMO<Ant. 1> 802.11g : 18.75MHz 802.11n HT20 : 19.60MHz MIMO<Ant. 2> 802.11g : 18.30MHz 802.11n HT20 : 19.25MHz										
Antenna Type / Gain	<Ant 1> Fixed Internal Antenna with gain 1.90 dBi <Ant 2> Fixed Internal Antenna with gain 0.70 dBi										
Type of Modulation	802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)										
Antenna Function for Transmitter	<table border="1"><tr><td></td><td>Ant. 1</td><td>Ant. 2</td></tr><tr><td>802.11 b</td><td>V</td><td>V</td></tr><tr><td>802.11 g/n MIMO</td><td>V</td><td>V</td></tr></table>			Ant. 1	Ant. 2	802.11 b	V	V	802.11 g/n MIMO	V	V
	Ant. 1	Ant. 2									
802.11 b	V	V									
802.11 g/n MIMO	V	V									

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

1.4 Modification of EUT

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



1.5 Testing Location

Sportun Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW0007 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

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

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

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd Rd. Guishan Dist, Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855	
Test Site No.	Sportun Site No.	
	03CH12-HY	

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

1.6 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ FCC Part 15 Subpart C §15.247
- ♦ FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v04
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ♦ ANSI C63.10-2013

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.



2 Test Configuration of Equipment Under Test

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

2.1 Carrier Frequency and Channel

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



2.2 Test Mode

Final test mode of conducted test items and radiated spurious emissions are considering the modulation and worse data rates as below table.

Single Antenna

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

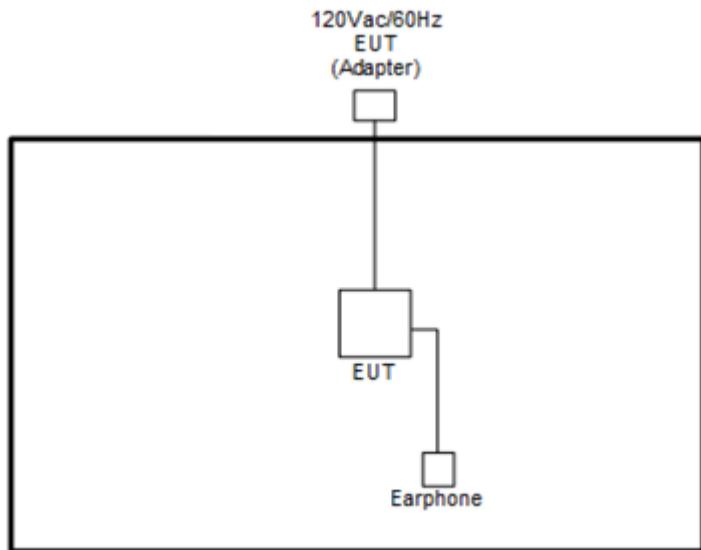
MIMO Antenna

Modulation	Data Rate
802.11g	6 Mbps
802.11n HT20	MCS0

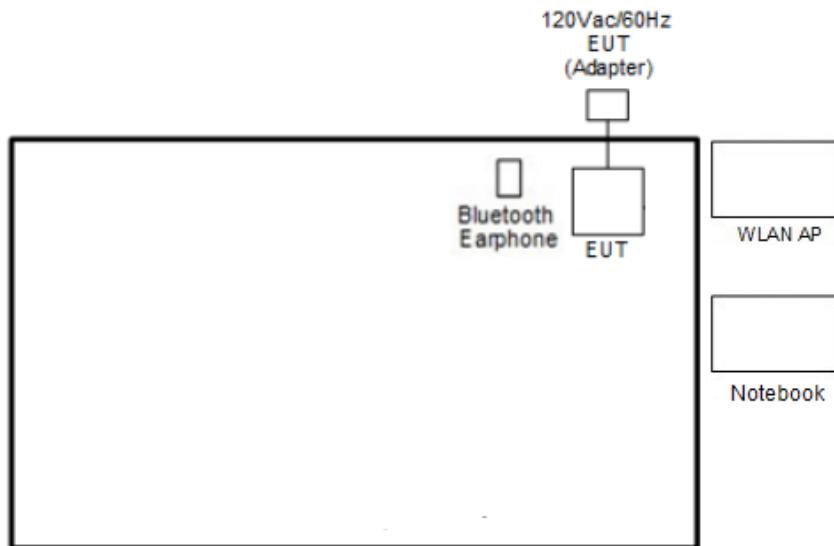
Test Cases	
AC Conducted Emission	Mode 1 :WLAN (2.4GHz) Link + Bluetooth Link + MPEG4 + Adapter 1

2.3 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>





2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
2.	iPod Earphone	Apple	N/A	Verification	Unshielded, 1.2m	N/A
3.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8 m
4.	Notebook	DELL	Latitude E6320	FCC DoC/ Contains FCC ID: QDS-BRCM1054	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m

2.5 EUT Operation Test Setup

The RF test items, programmed RF utility, "Compliance Tool" installed in the notebook make the EUT provide functions like channel selection and power level for continuous transmitting and receiving signals.

2.6 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example:

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

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



3 Test Result

3.1 6dB and 99% Bandwidth Measurement

3.1.1 Limit of 6dB and 99% Bandwidth

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

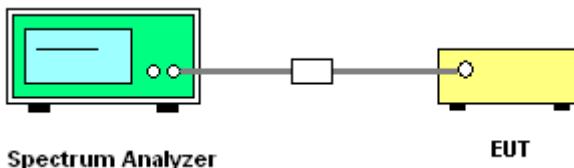
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 DTS D01 Meas. Guidance v04.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz.
Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 kHz.
5. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) = 1MHz and set the Video bandwidth (VBW) = 3MHz.
6. Measure and record the results in the test report.

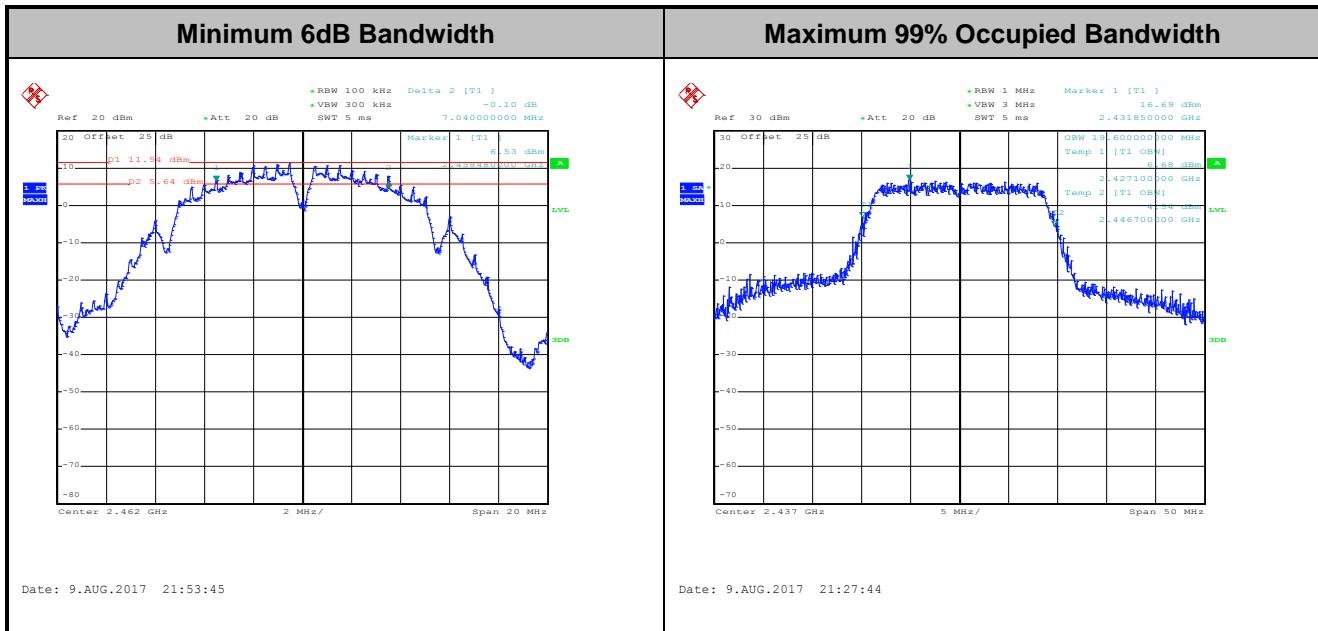
3.1.4 Test Setup





3.1.5 Test Result of 6dB and 99% Occupied Bandwidth

Please refer to Appendix A.



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



3.2 Peak Output Power Measurement

3.2.1 Limit of Peak Output Power

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

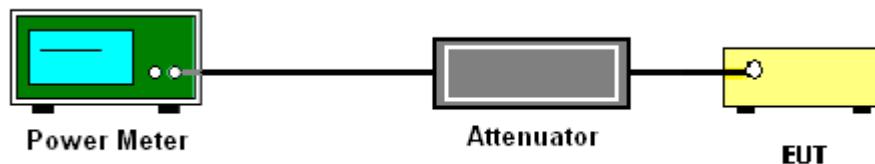
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v04 section 9.1.3 PKPM1 Peak power meter method.
2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.
5. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

3.2.4 Test Setup



3.2.5 Test Result of Peak Output Power

Please refer to Appendix A.

3.2.6 Test Result of Average output Power (Reporting Only)

Please refer to Appendix A



3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.

3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

1. The testing follows Measurement Procedure 10.2 Method PKPSD of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v04.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
6. Measure and record the results in the test report.
7. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

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

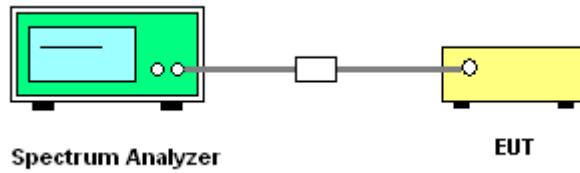
Method (1): Measure and sum the spectra across the outputs.

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

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

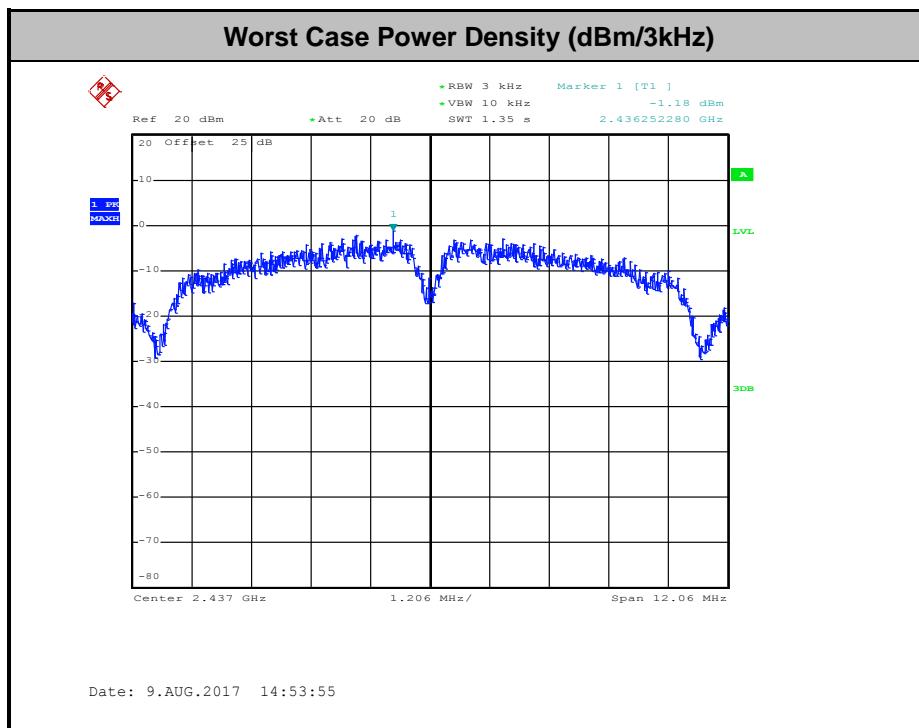


3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.





3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission Measurement

In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement.

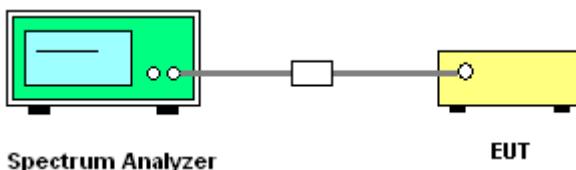
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v04.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.
5. Measure and record the results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.4.4 Test Setup

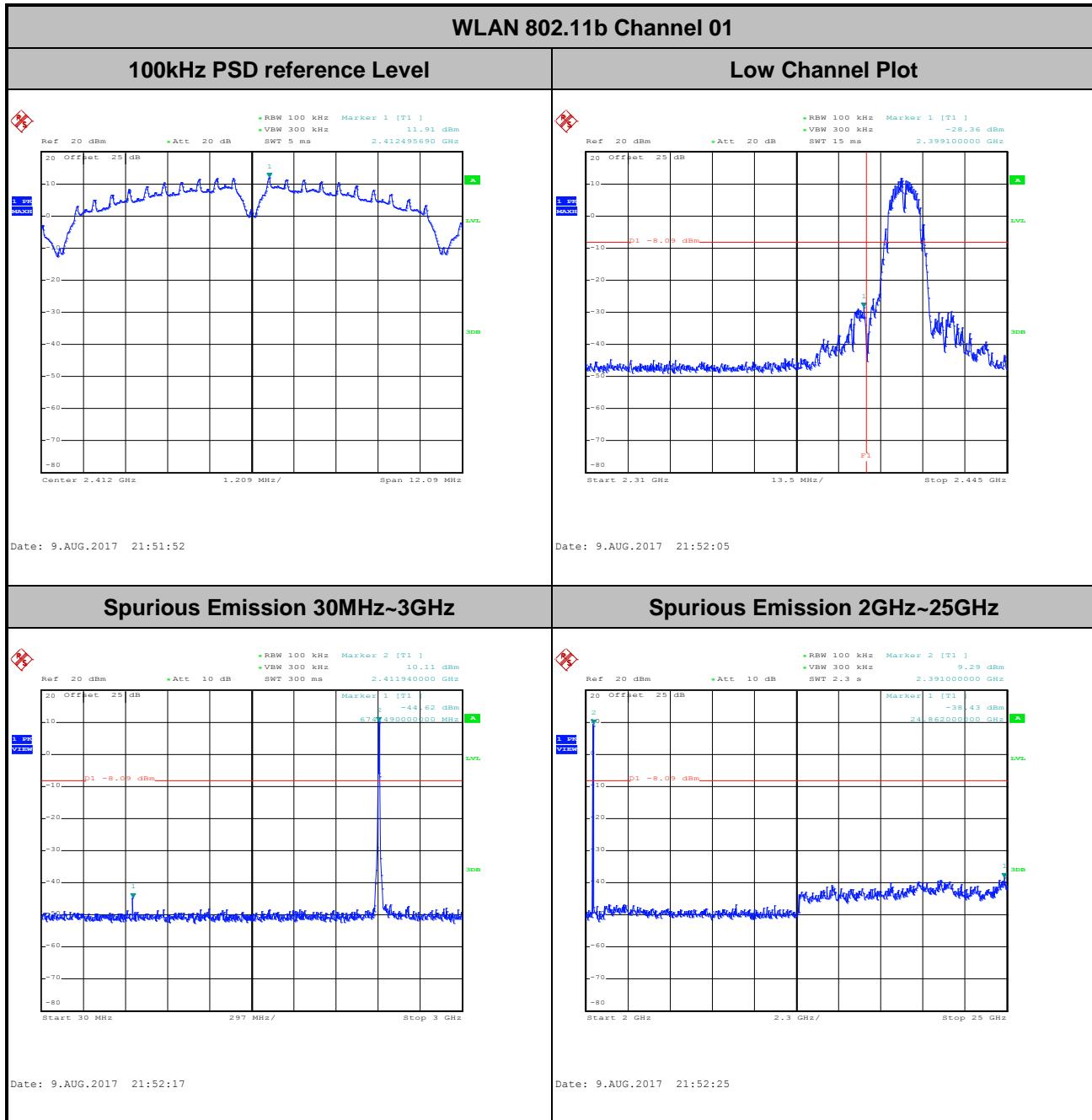




3.4.5 Test Result of Conducted Band Edges and Spurious Emission

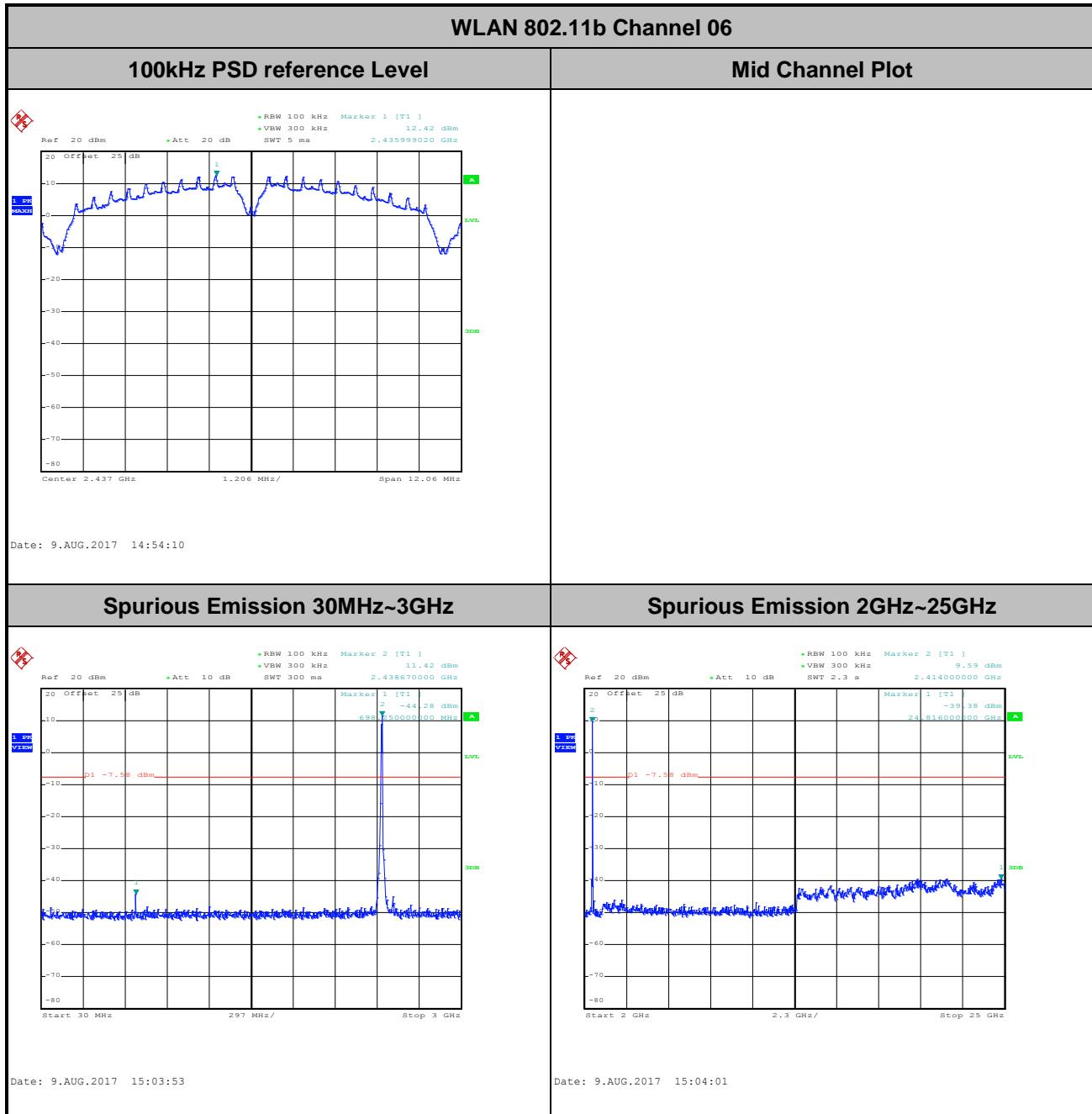
Number of TX = 1, Ant. 1 (Measured)

Number of TX	1	Ant. :	1
Test Mode :	802.11b	Temperature :	21~25°C
Test Band :	2.4GHz Low	Relative Humidity :	51~54%
Test Channel :	01	Test Engineer :	Tommy Lee and Aking Chang





Number of TX :	1	Ant. :	1
Test Mode :	802.11b	Temperature :	21~25°C
Test Band :	2.4GHz Mid	Relative Humidity :	51~54%
Test Channel :	06	Test Engineer :	Tommy Lee and Aking Chang

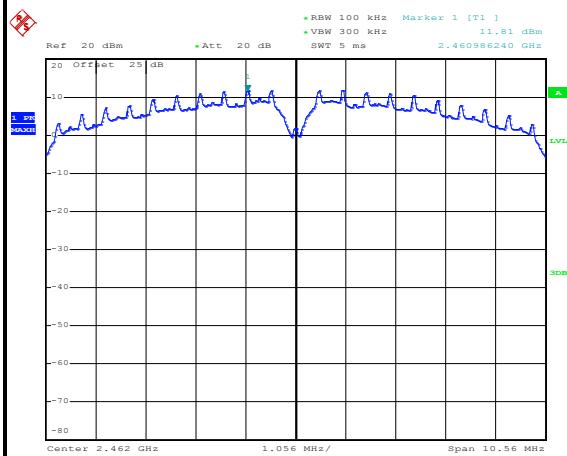




Number of TX :	1	Ant. :	1
Test Mode :	802.11b	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	11	Test Engineer :	Tommy Lee and Aking Chang

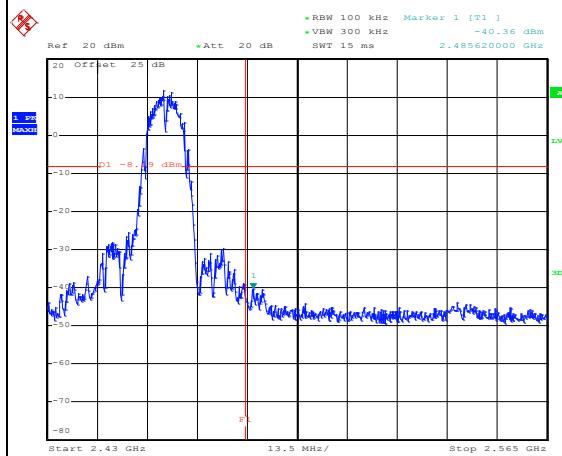
WLAN 802.11b Channel 11

100kHz PSD reference Level



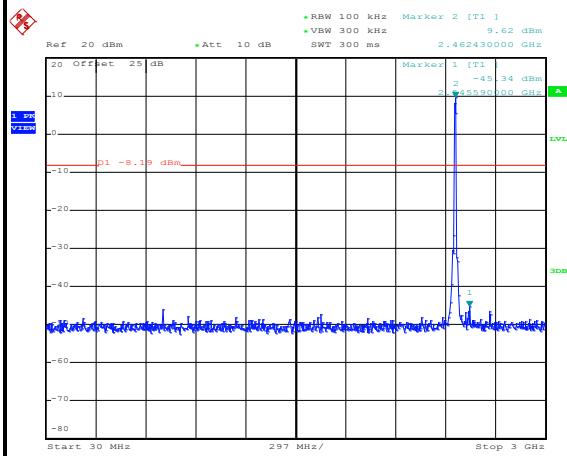
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High Channel Plot



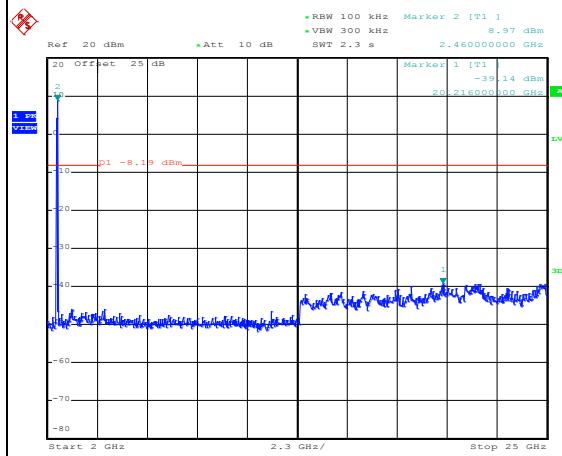
Date: 9.AUG.2017 21:54:59

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2017 21:55:10

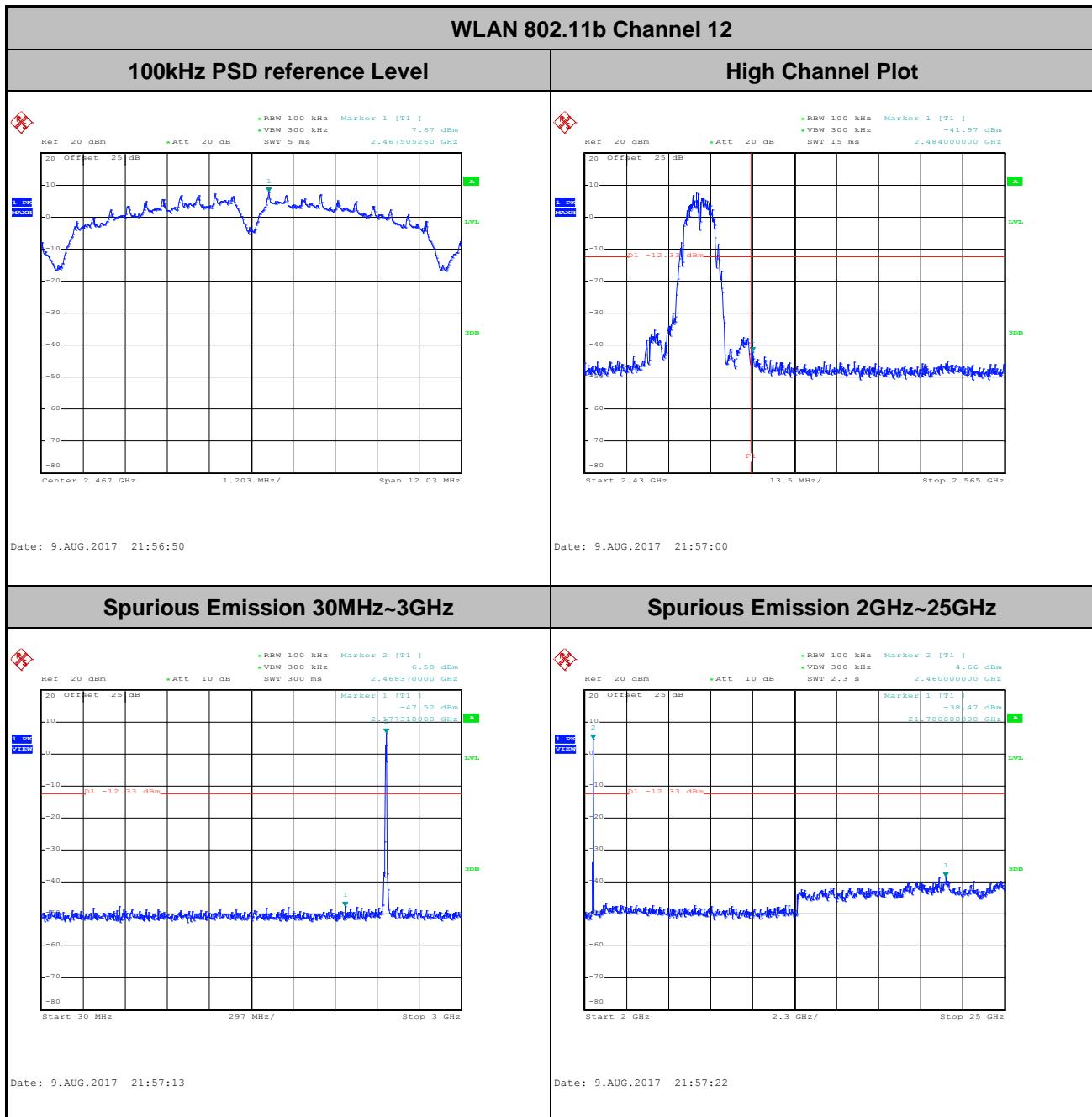
Spurious Emission 2GHz~25GHz



Date: 9.AUG.2017 21:55:19



Number of TX :	1	Ant. :	1
Test Mode :	802.11b	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	12	Test Engineer :	Tommy Lee and Aking Chang

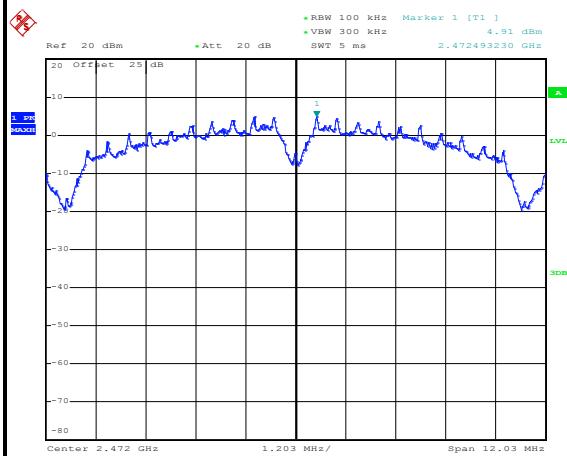




Number of TX :	1	Ant. :	1
Test Mode :	802.11b	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	13	Test Engineer :	Tommy Lee and Aking Chang

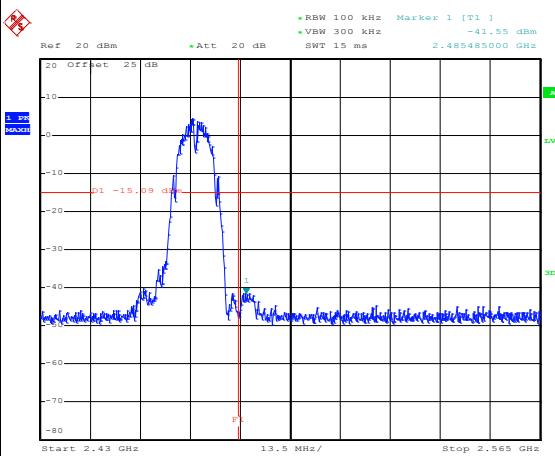
WLAN 802.11b Channel 13

100kHz PSD reference Level



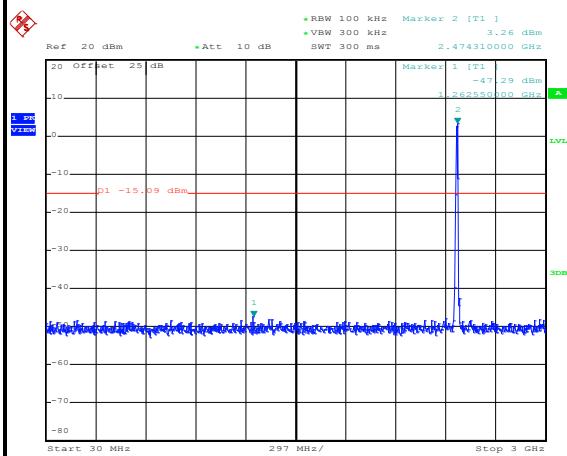
Date: 9.AUG.2017 22:00:05

High Channel Plot



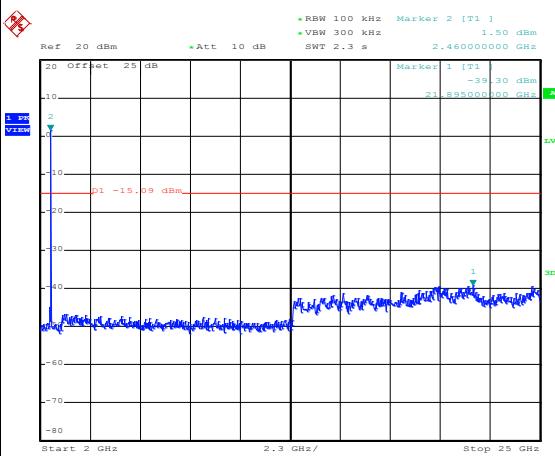
Date: 9.AUG.2017 22:00:17

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2017 22:00:29

Spurious Emission 2GHz~25GHz



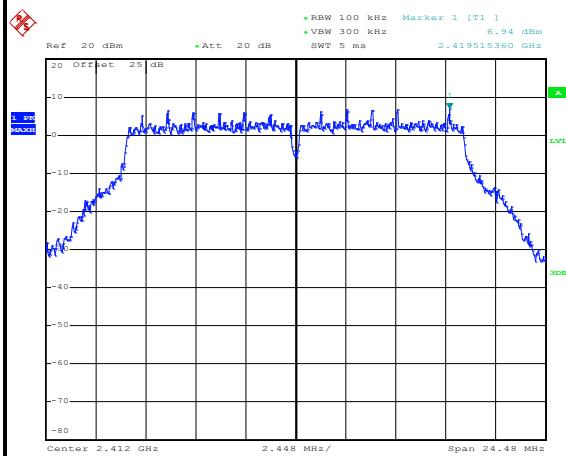
Date: 9.AUG.2017 22:00:37



Number of TX :	1	Ant. :	1
Test Mode :	802.11g	Temperature :	21~25°C
Test Band :	2.4GHz Low	Relative Humidity :	51~54%
Test Channel :	01	Test Engineer :	Tommy Lee and Aking Chang

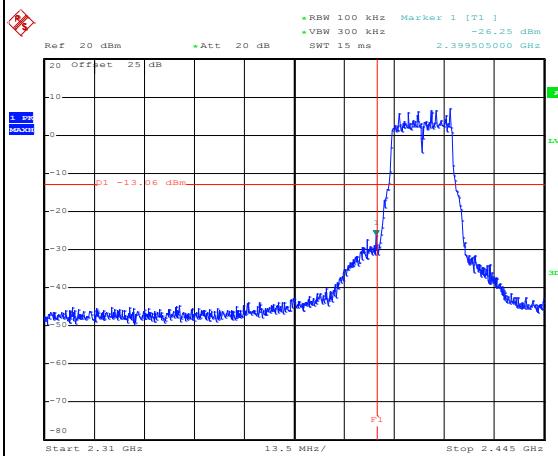
WLAN 802.11g Channel 01

100kHz PSD reference Level



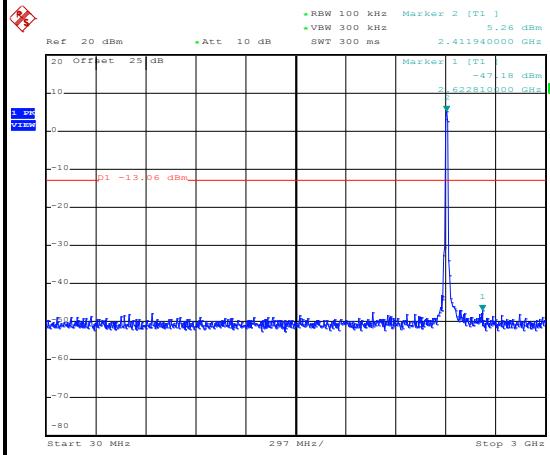
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Low Channel Plot



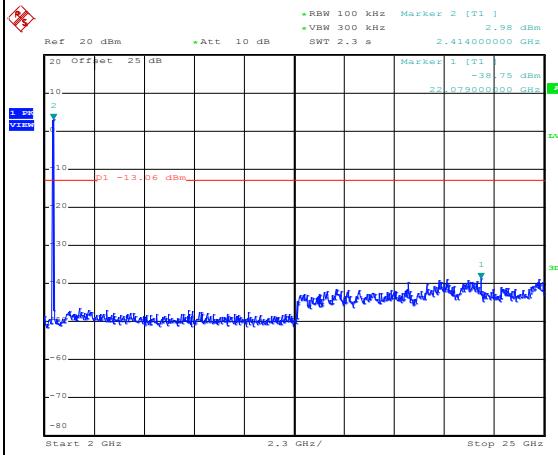
Date: 9.AUG.2017 22:16:15

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2017 22:16:27

Spurious Emission 2GHz~25GHz



Date: 9.AUG.2017 22:16:36

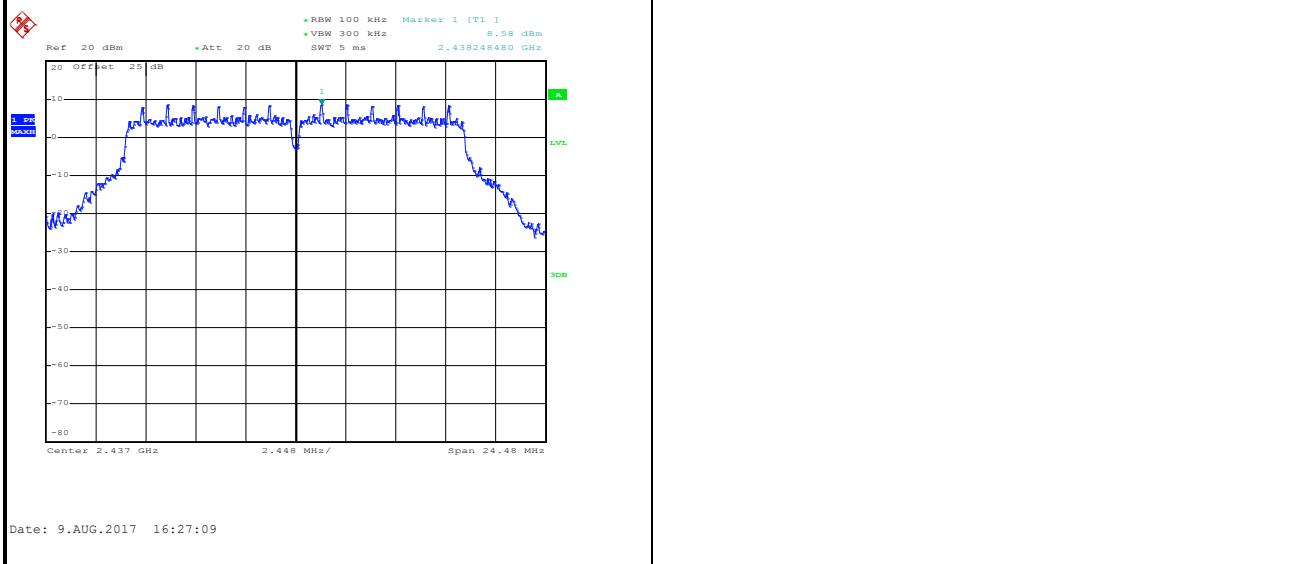


Number of TX :	1	Ant. :	1
Test Mode :	802.11g	Temperature :	21~25°C
Test Band :	2.4GHz Mid	Relative Humidity :	51~54%
Test Channel :	06	Test Engineer :	Tommy Lee and Aking Chang

WLAN 802.11g Channel 06

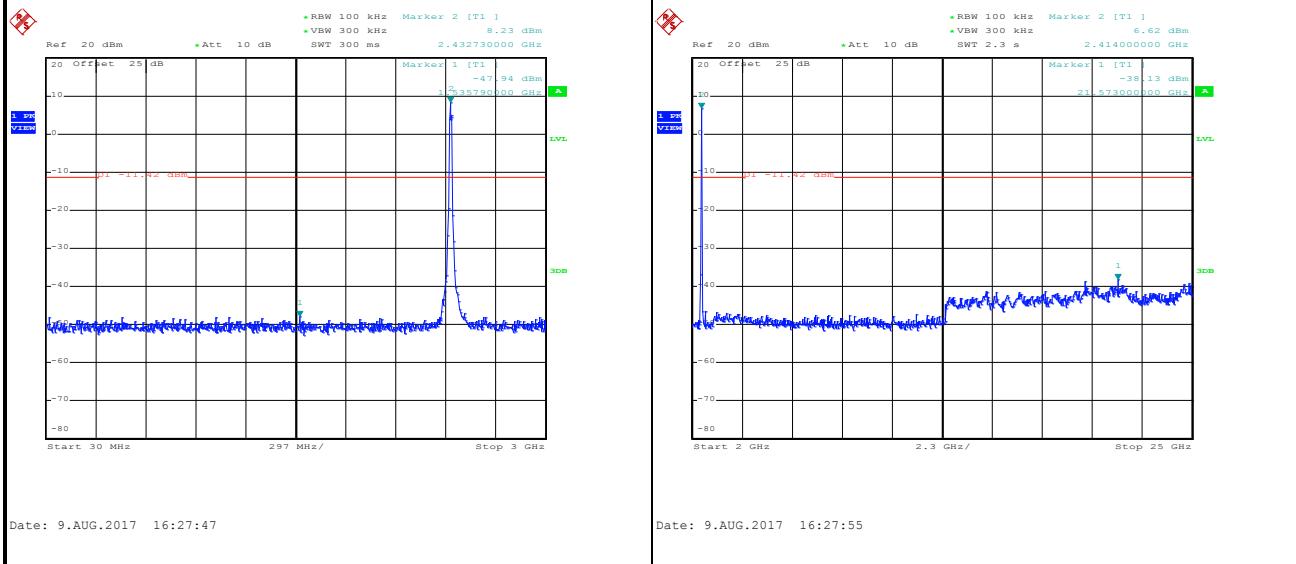
100kHz PSD reference Level

Mid Channel Plot



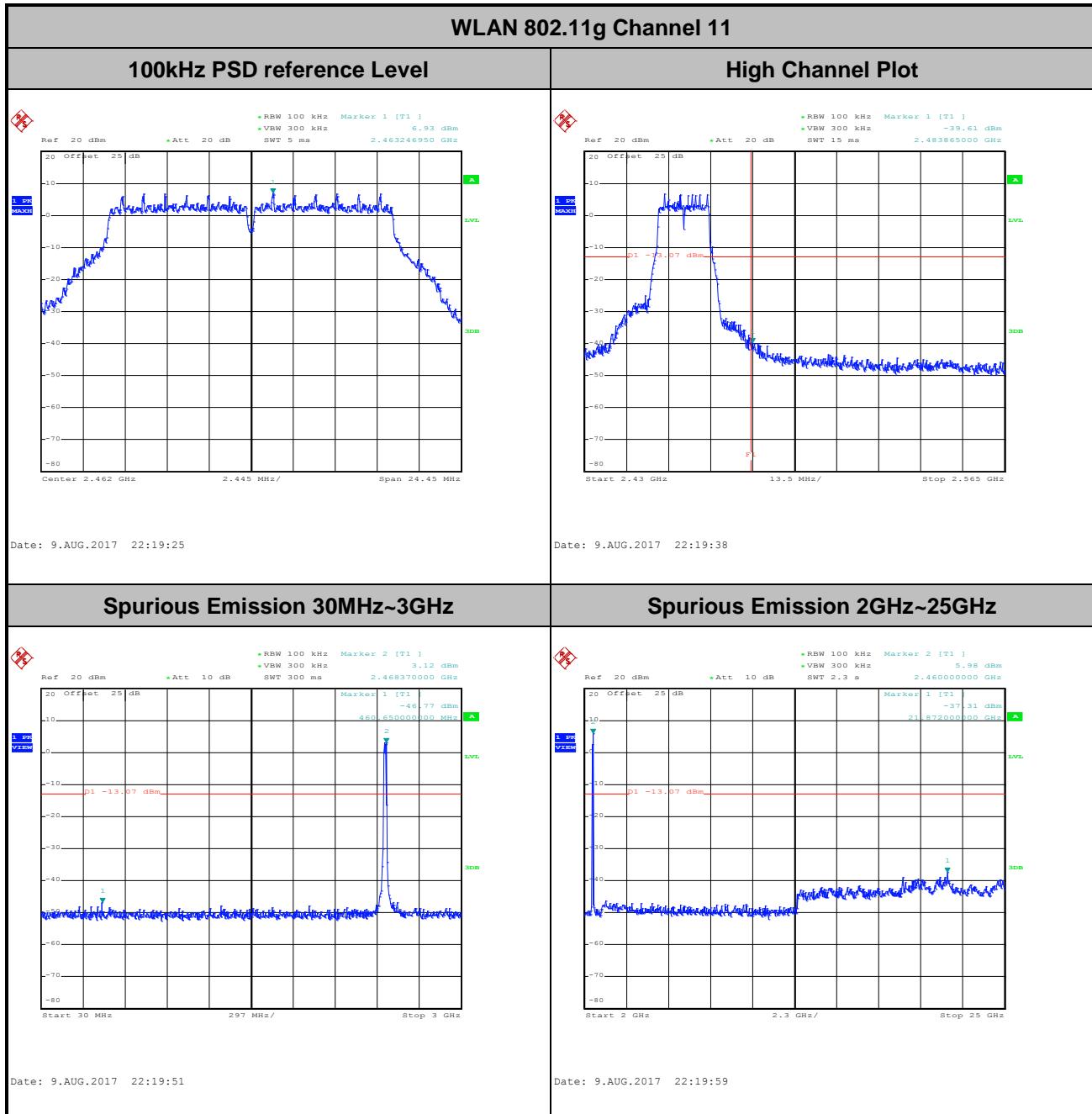
Spurious Emission 30MHz~3GHz

Spurious Emission 2GHz~25GHz





Number of TX :	1	Ant. :	1
Test Mode :	802.11g	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	11	Test Engineer :	Tommy Lee and Aking Chang

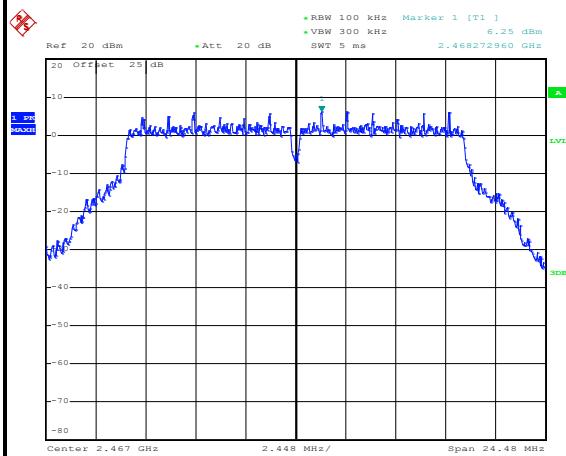




Number of TX :	1	Ant. :	1
Test Mode :	802.11g	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	12	Test Engineer :	Tommy Lee and Aking Chang

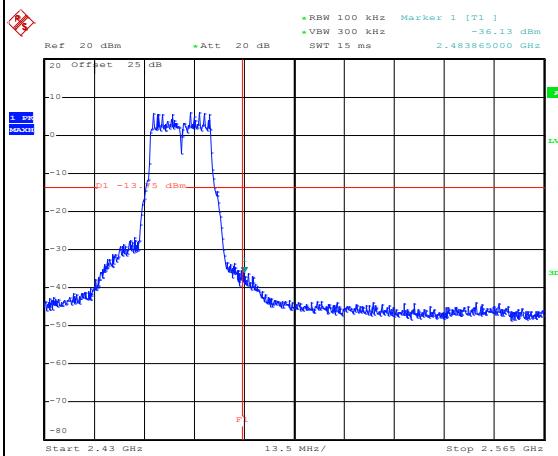
WLAN 802.11g Channel 12

100kHz PSD reference Level



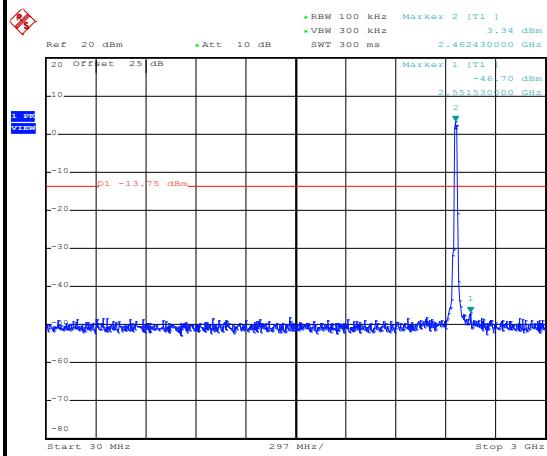
Date: 9.AUG.2017 22:22:36

High Channel Plot



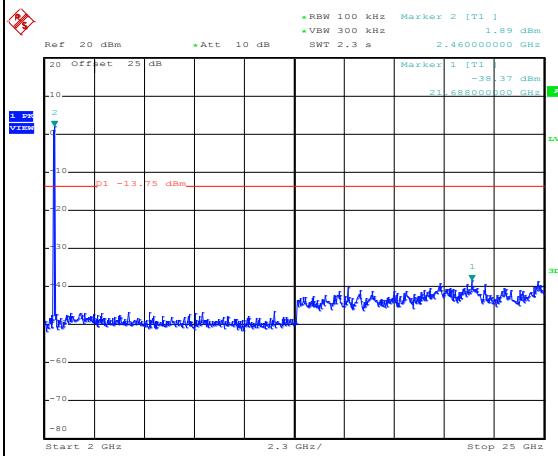
Date: 9.AUG.2017 22:23:00

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2017 22:23:19

Spurious Emission 2GHz~25GHz



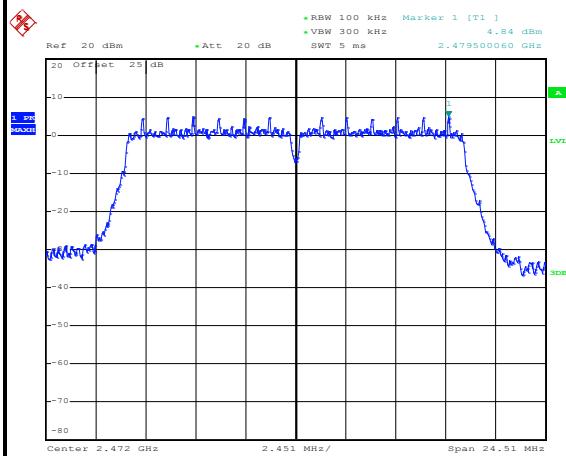
Date: 9.AUG.2017 22:23:28



Number of TX :	1	Ant. :	1
Test Mode :	802.11g	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	13	Test Engineer :	Tommy Lee and Aking Chang

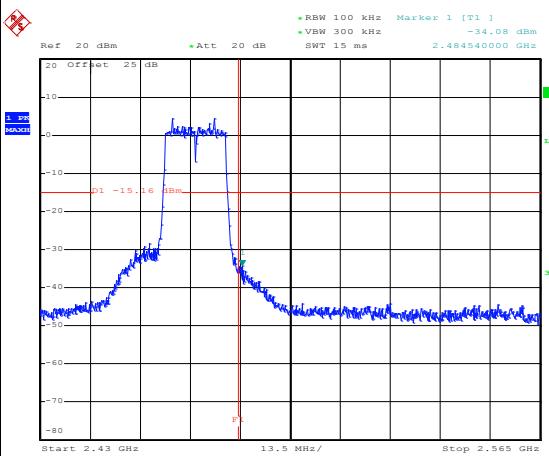
WLAN 802.11g Channel 13

100kHz PSD reference Level



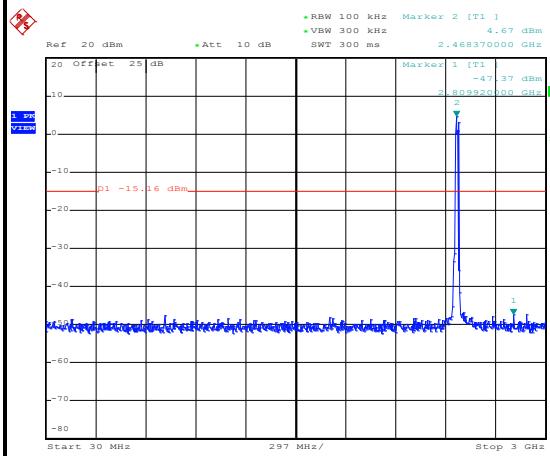
Date: 9.AUG.2017 22:26:46

High Channel Plot



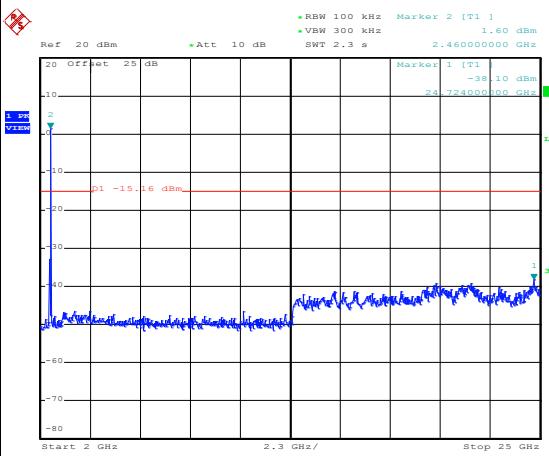
Date: 9.AUG.2017 22:26:58

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2017 22:27:10

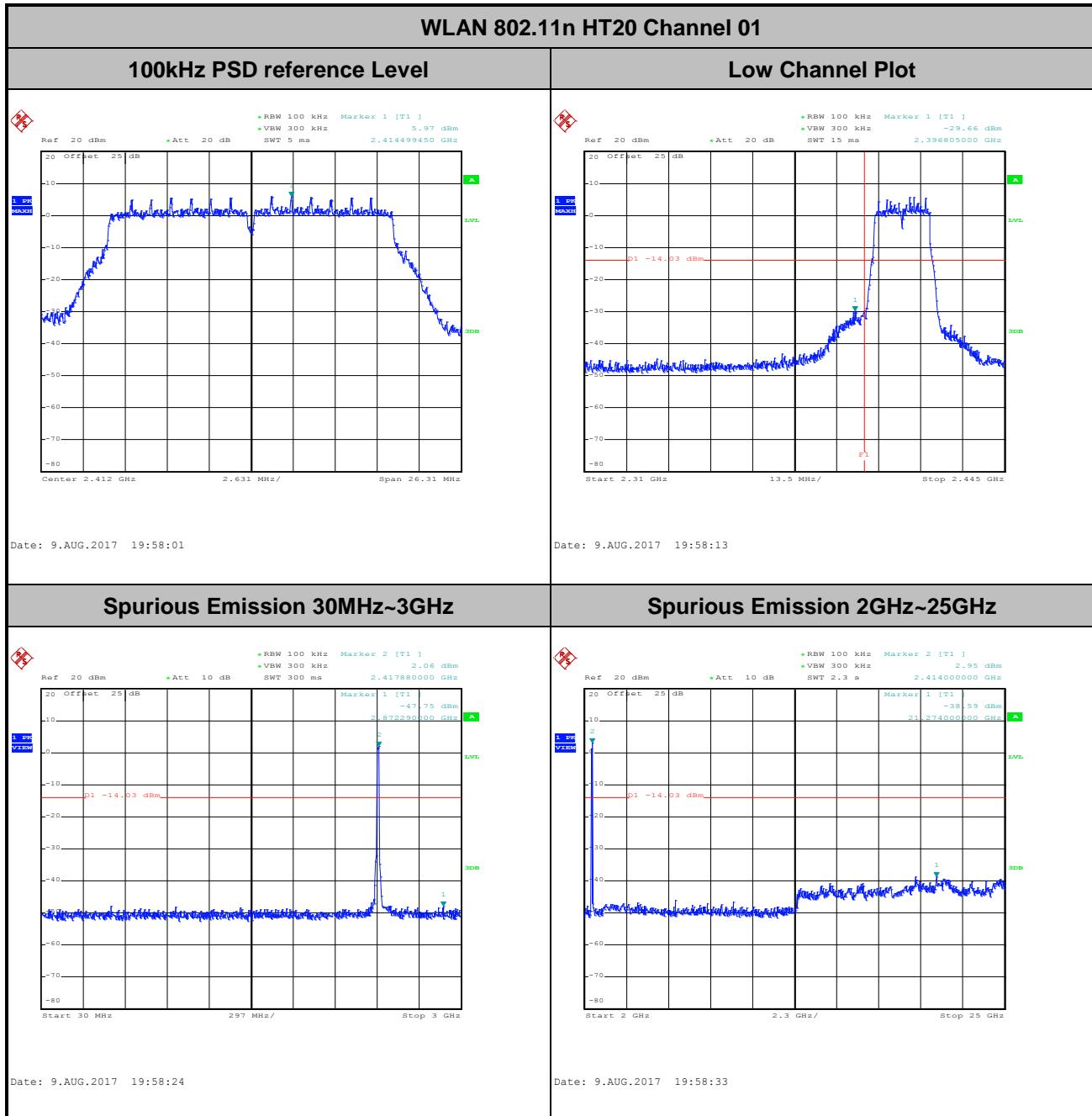
Spurious Emission 2GHz~25GHz



Date: 9.AUG.2017 22:27:18

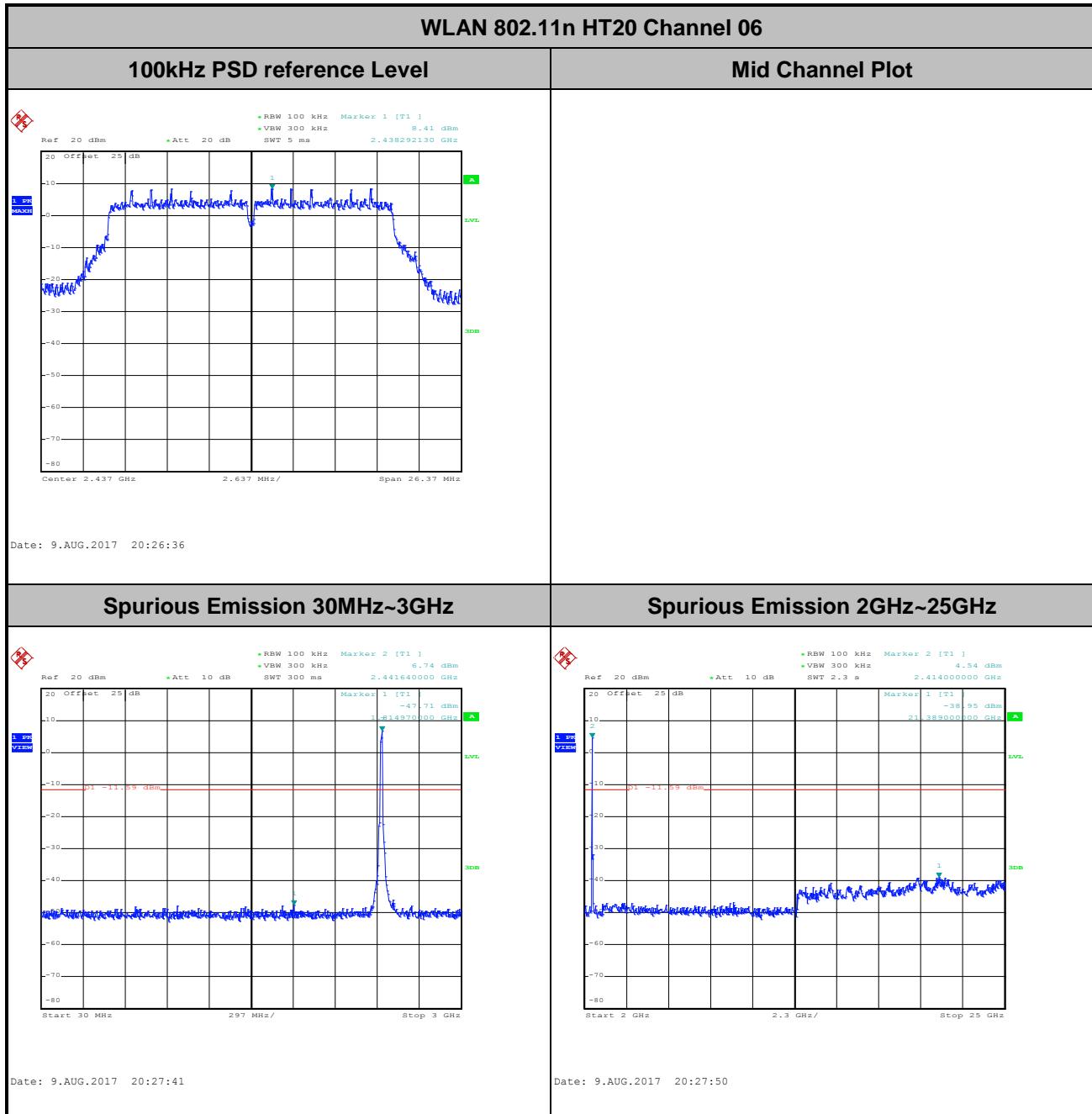


Number of TX :	1	Ant. :	1
Test Mode :	802.11n HT20	Temperature :	21~25°C
Test Band :	2.4GHz Low	Relative Humidity :	51~54%
Test Channel :	01	Test Engineer :	Tommy Lee and Aking Chang



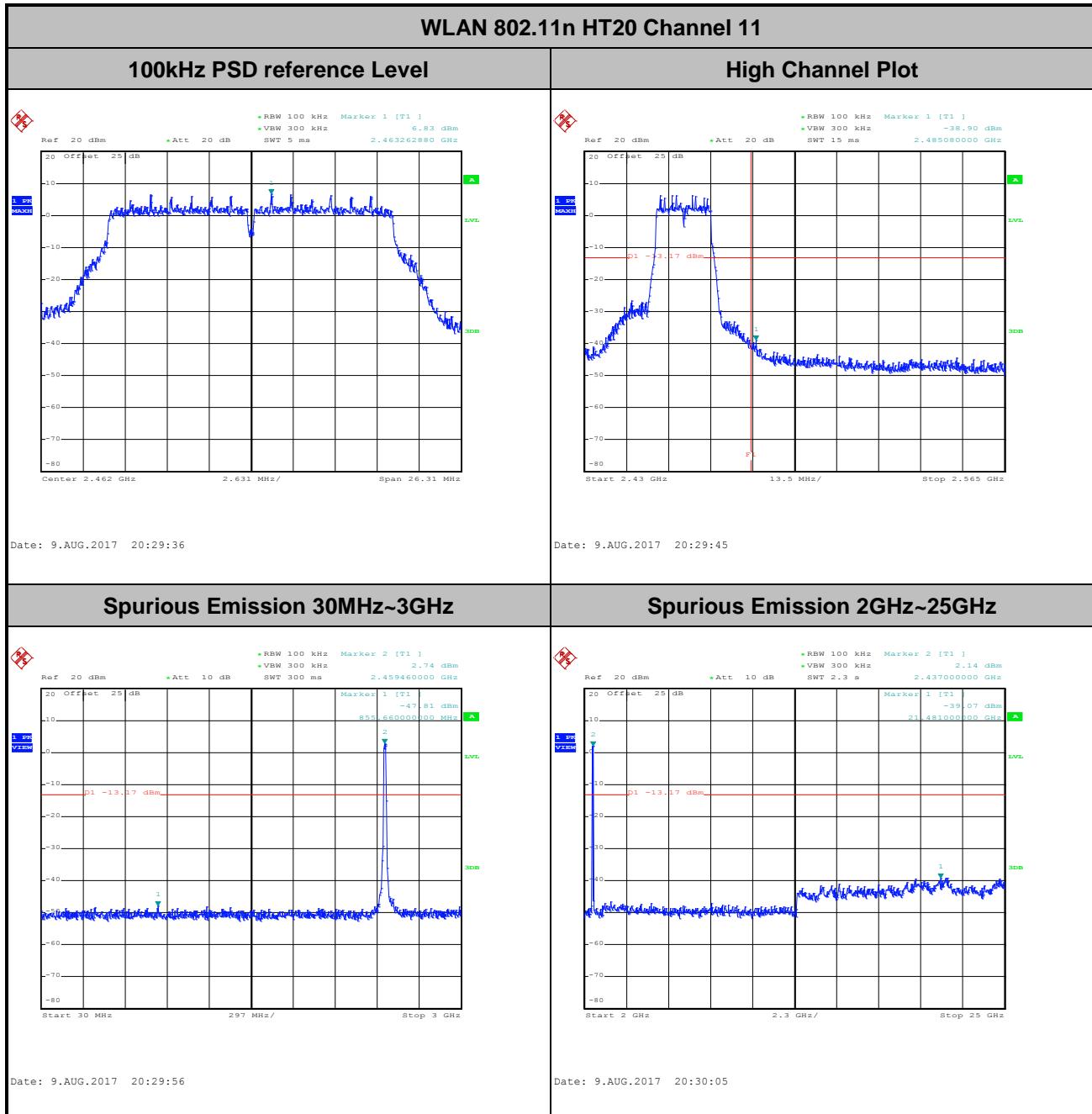


Number of TX :	1	Ant. :	1
Test Mode :	802.11n HT20	Temperature :	21~25°C
Test Band :	2.4GHz Mid	Relative Humidity :	51~54%
Test Channel :	06	Test Engineer :	Tommy Lee and Aking Chang



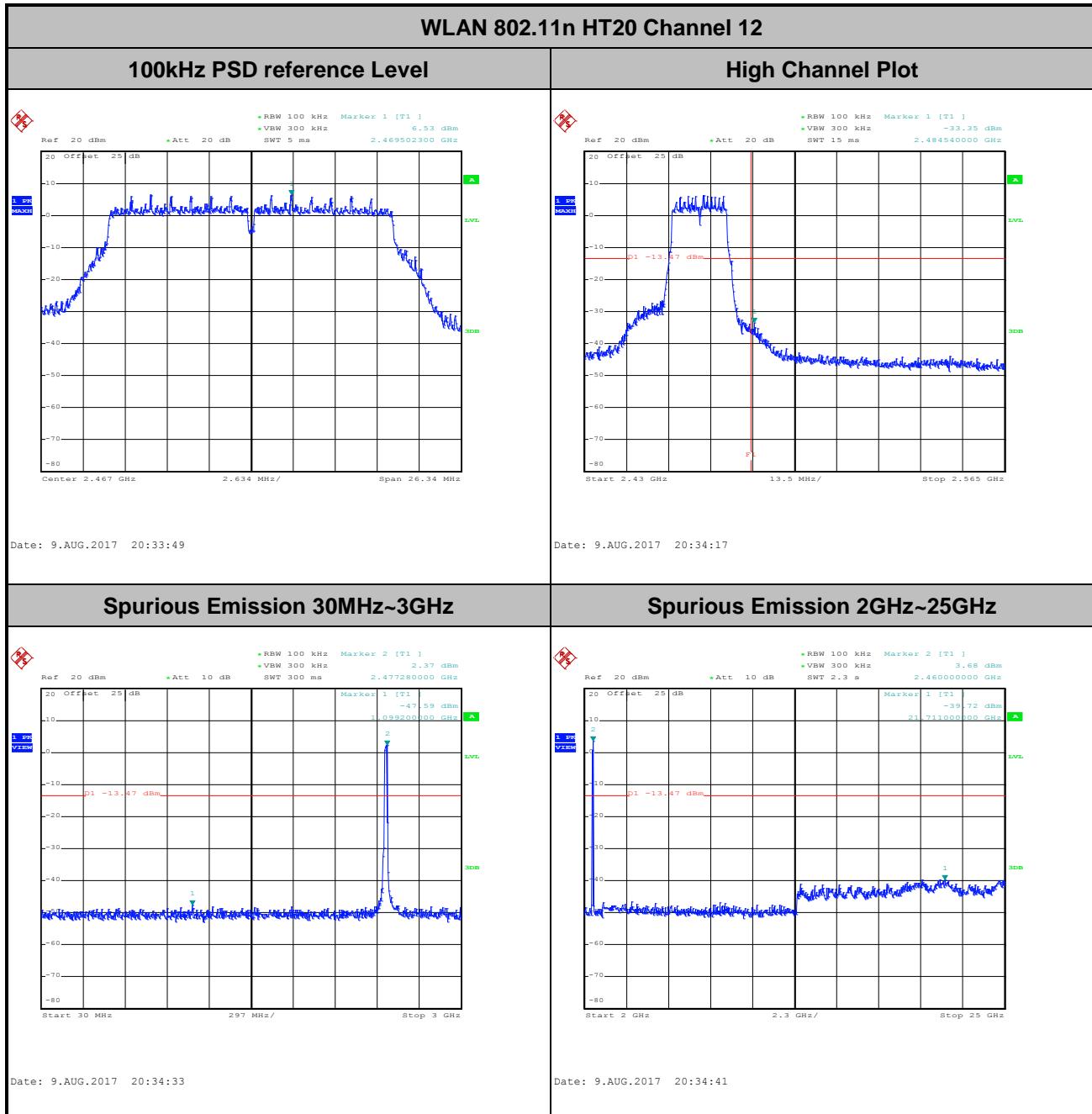


Number of TX :	1	Ant. :	1
Test Mode :	802.11n HT20	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	11	Test Engineer :	Tommy Lee and Aking Chang



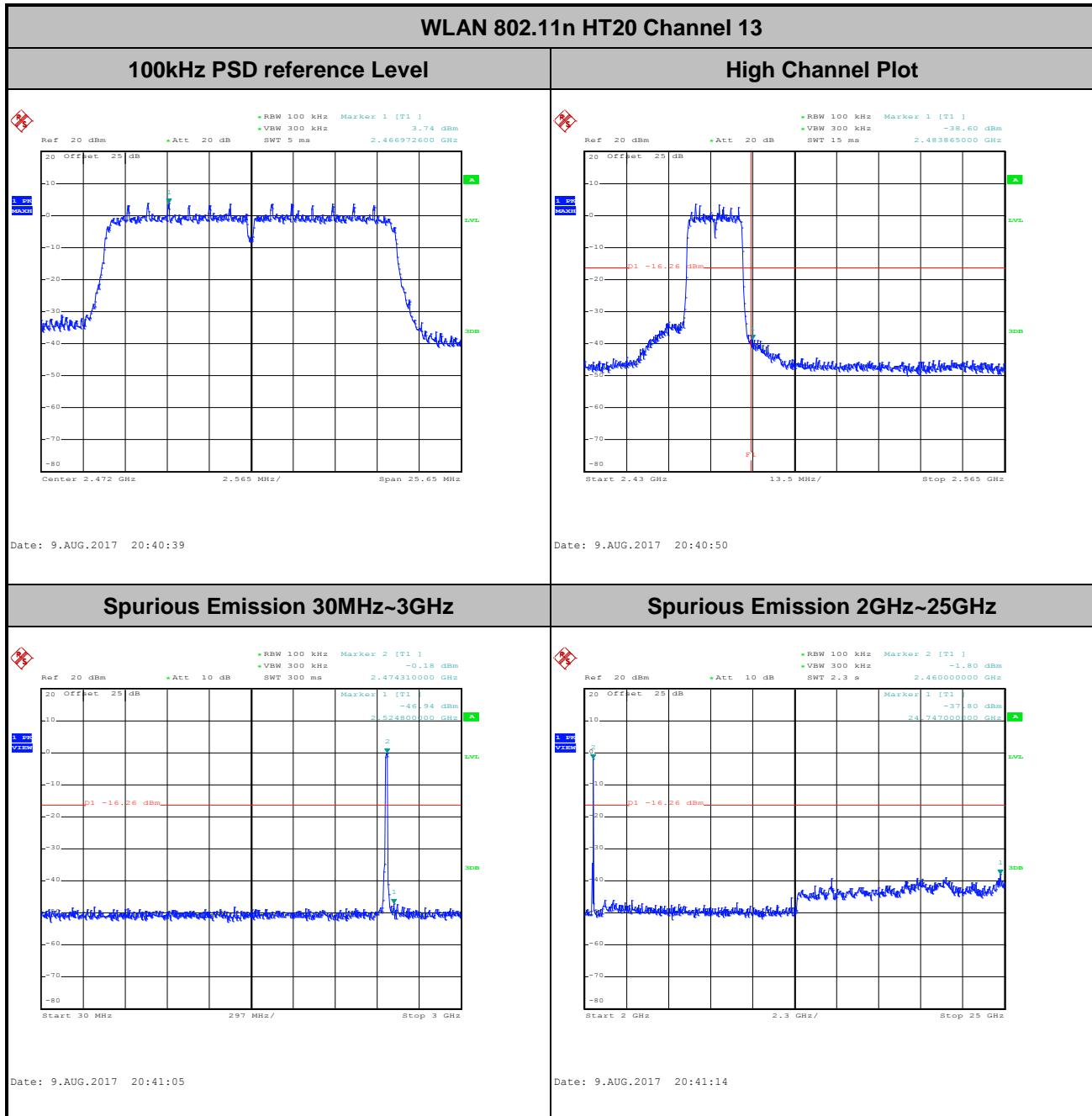


Number of TX :	1	Ant. :	1
Test Mode :	802.11n HT20	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	12	Test Engineer :	Tommy Lee and Aking Chang





Number of TX :	1	Ant. :	1
Test Mode :	802.11n HT20	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	13	Test Engineer :	Tommy Lee and Aking Chang



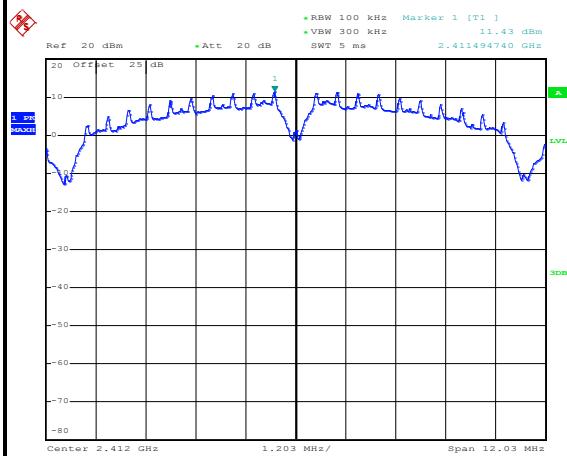


Number of TX = 1, Ant. 2 (Measured)

Number of TX	1	Ant. :	2
Test Mode :	802.11b	Temperature :	21~25°C
Test Band :	2.4GHz Low	Relative Humidity :	51~54%
Test Channel :	01	Test Engineer :	Tommy Lee and Aking Chang

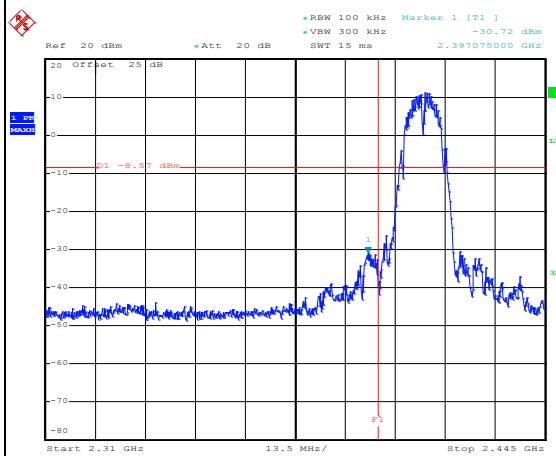
WLAN 802.11b Channel 01

100kHz PSD reference Level



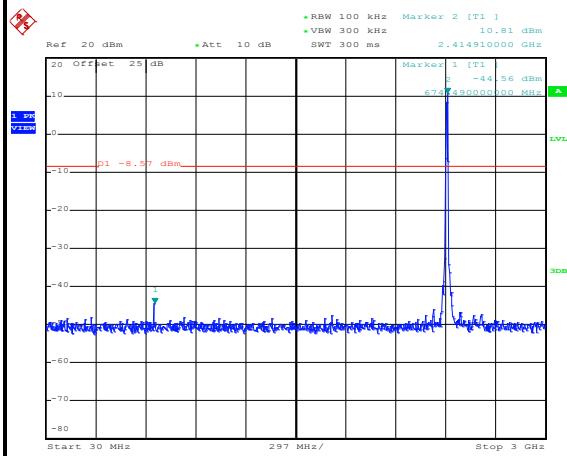
Date: 9.AUG.2017 22:04:29

Low Channel Plot



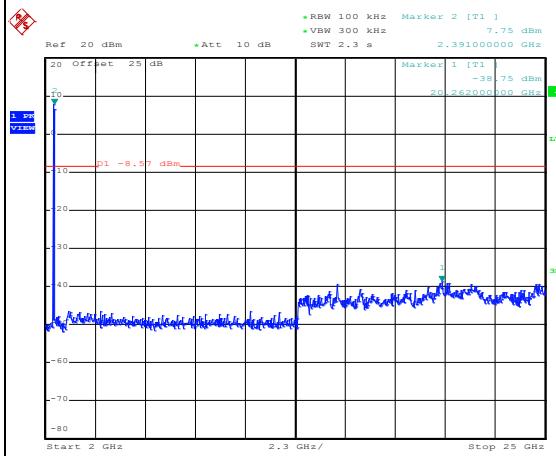
Date: 9.AUG.2017 22:05:13

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2017 22:05:31

Spurious Emission 2GHz~25GHz



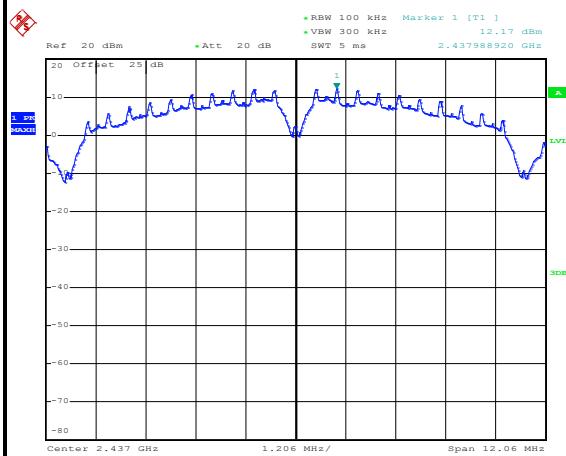
Date: 9.AUG.2017 22:05:40



Number of TX :	1	Ant. :	2
Test Mode :	802.11b	Temperature :	21~25°C
Test Band :	2.4GHz Mid	Relative Humidity :	51~54%
Test Channel :	06	Test Engineer :	Tommy Lee and Aking Chang

WLAN 802.11b Channel 06

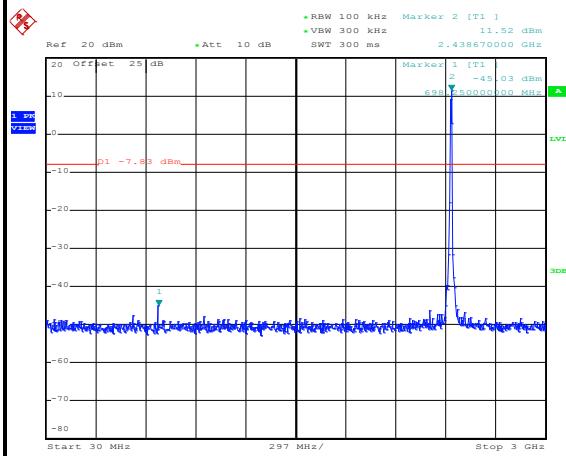
100kHz PSD reference Level



Mid Channel Plot

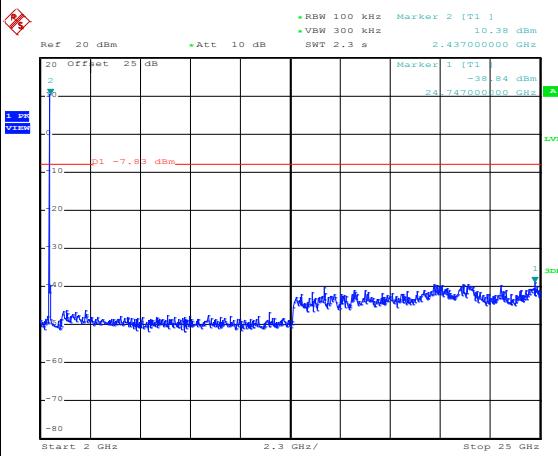
Date: 9.AUG.2017 15:42:56

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2017 15:43:23

Spurious Emission 2GHz~25GHz



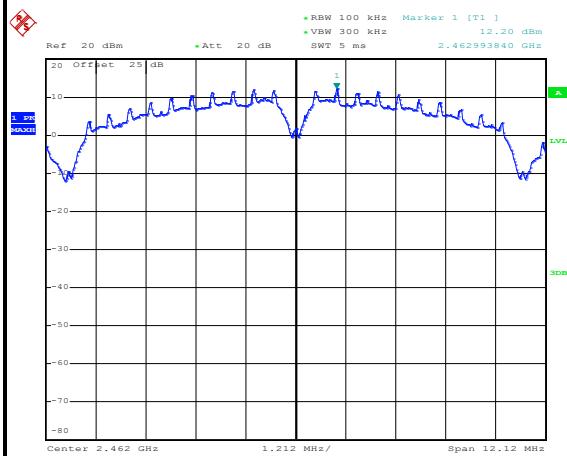
Date: 9.AUG.2017 15:43:31



Number of TX :	1	Ant. :	2
Test Mode :	802.11b	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	11	Test Engineer :	Tommy Lee and Aking Chang

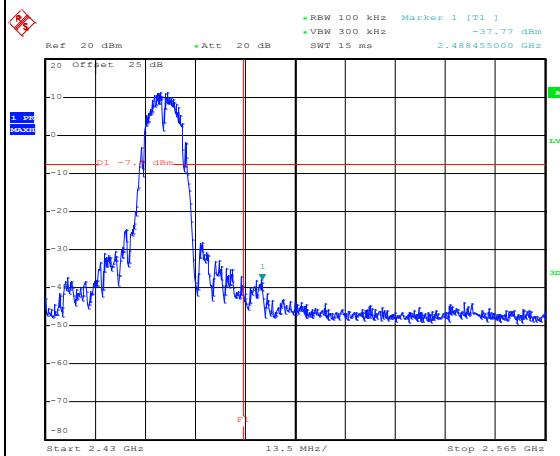
WLAN 802.11b Channel 11

100kHz PSD reference Level



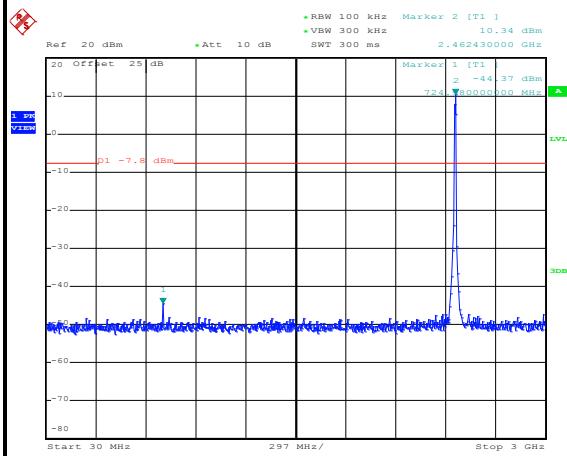
Date: 9.AUG.2017 15:46:06

High Channel Plot



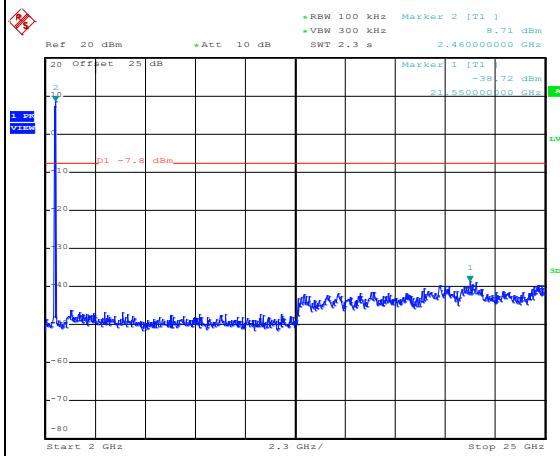
Date: 9.AUG.2017 15:46:18

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2017 15:46:29

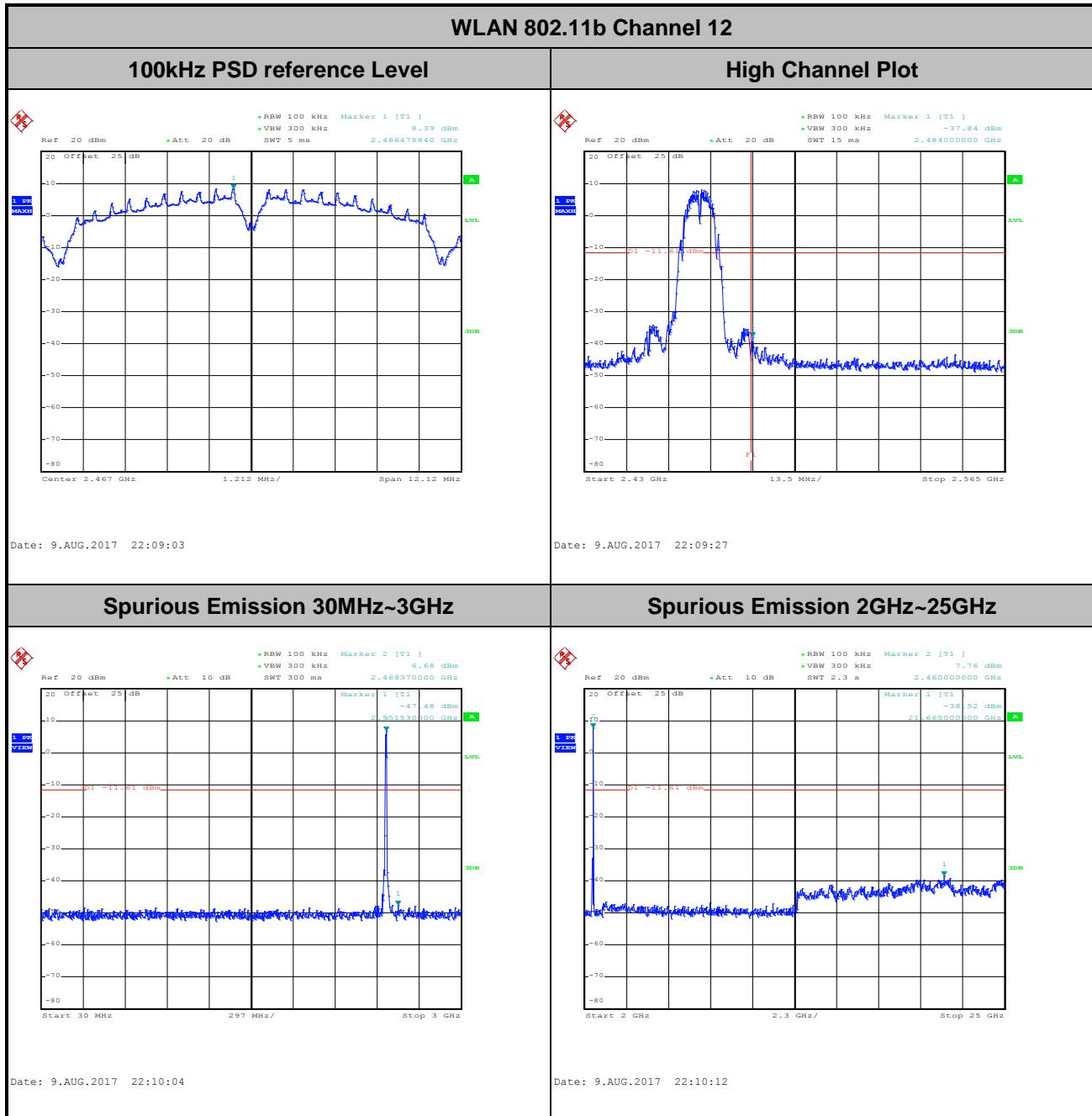
Spurious Emission 2GHz~25GHz



Date: 9.AUG.2017 15:46:38



Number of TX :	1	Ant. :	2
Test Mode :	802.11b	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	12	Test Engineer :	Tommy Lee and Aking Chang

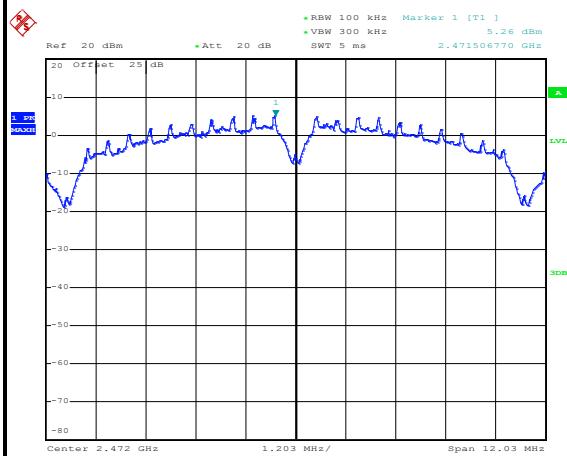




Number of TX :	1	Ant. :	2
Test Mode :	802.11b	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	13	Test Engineer :	Tommy Lee and Aking Chang

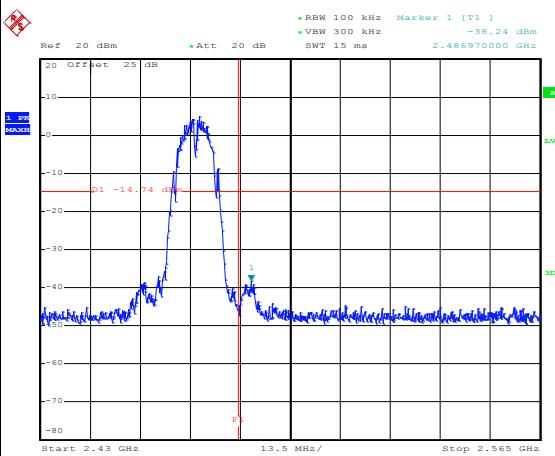
WLAN 802.11b Channel 13

100kHz PSD reference Level



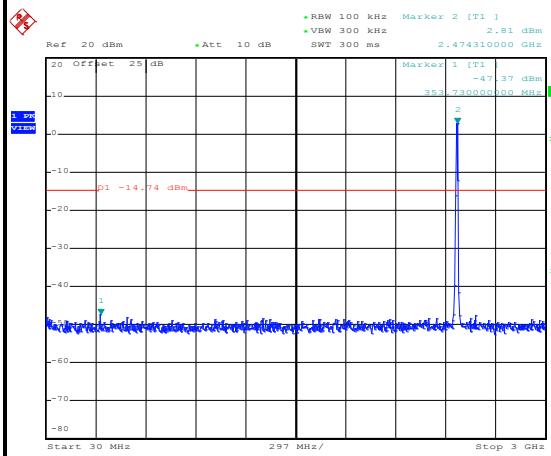
Date: 9.AUG.2017 22:12:52

High Channel Plot



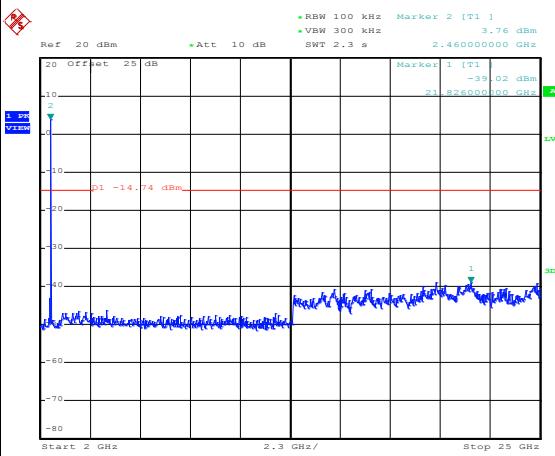
Date: 9.AUG.2017 22:13:15

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2017 22:13:29

Spurious Emission 2GHz~25GHz



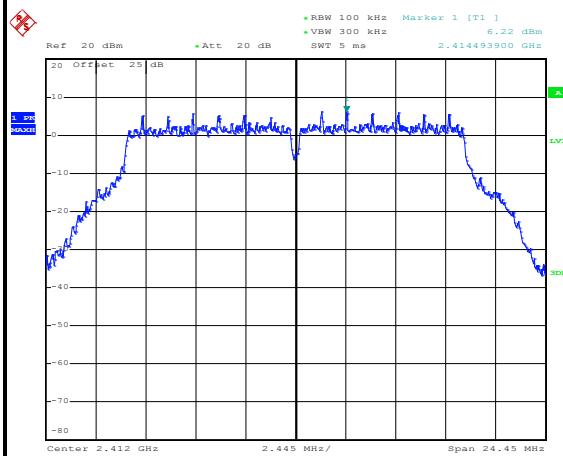
Date: 9.AUG.2017 22:13:38



Number of TX :	1	Ant. :	2
Test Mode :	802.11g	Temperature :	21~25°C
Test Band :	2.4GHz Low	Relative Humidity :	51~54%
Test Channel :	01	Test Engineer :	Tommy Lee and Aking Chang

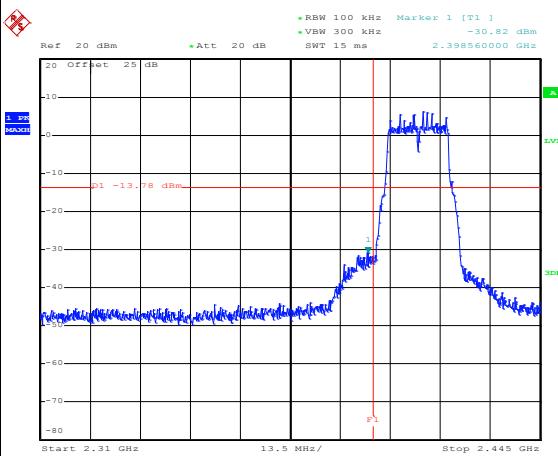
WLAN 802.11g Channel 01

100kHz PSD reference Level



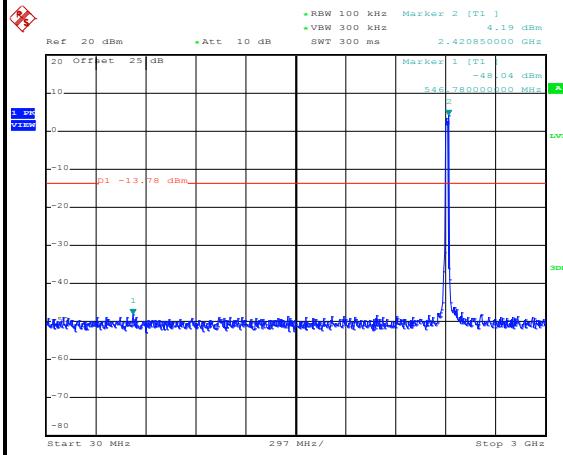
Date: 9.AUG.2017 22:34:00

Low Channel Plot



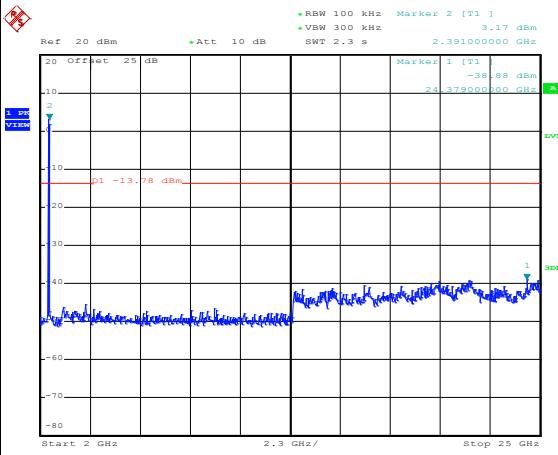
Date: 9.AUG.2017 22:34:10

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2017 22:34:25

Spurious Emission 2GHz~25GHz



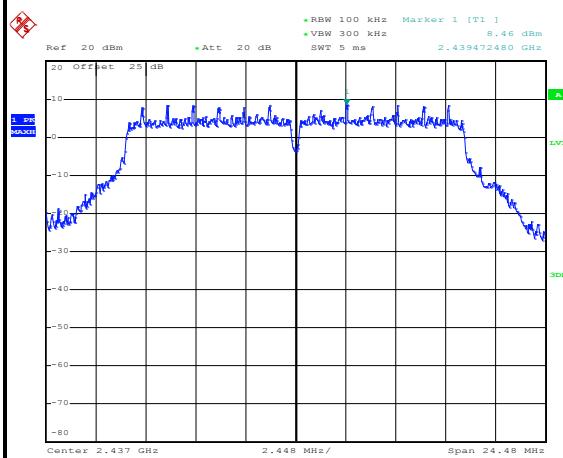
Date: 9.AUG.2017 22:34:33



Number of TX :	1	Ant. :	2
Test Mode :	802.11g	Temperature :	21~25°C
Test Band :	2.4GHz Mid	Relative Humidity :	51~54%
Test Channel :	06	Test Engineer :	Tommy Lee and Aking Chang

WLAN 802.11g Channel 06

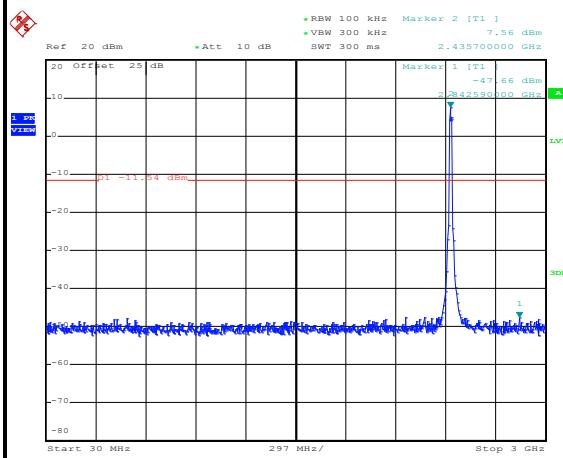
100kHz PSD reference Level



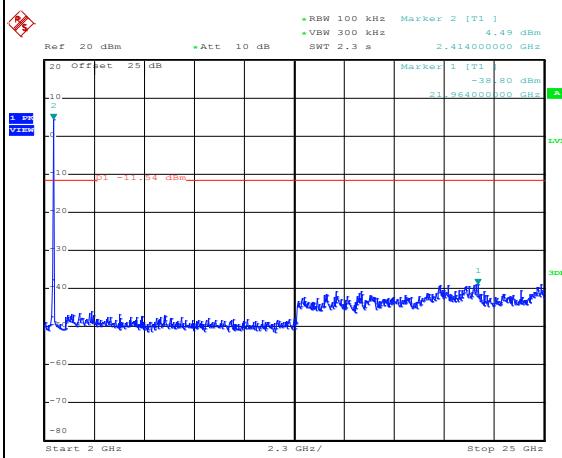
Mid Channel Plot

Date: 9.AUG.2017 17:31:20

Spurious Emission 30MHz~3GHz



Spurious Emission 2GHz~25GHz



Date: 9.AUG.2017 17:31:35

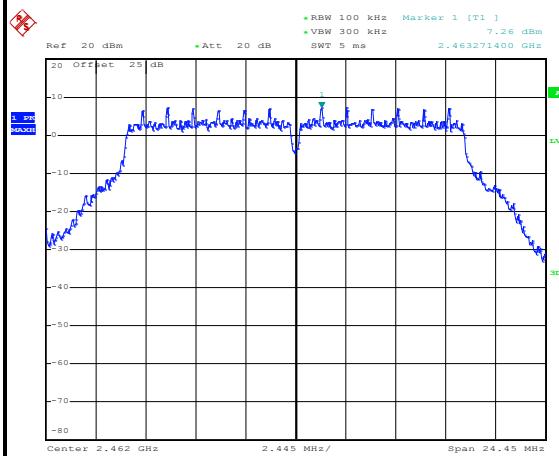
Date: 9.AUG.2017 17:31:44



Number of TX :	1	Ant. :	2
Test Mode :	802.11g	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	11	Test Engineer :	Tommy Lee and Aking Chang

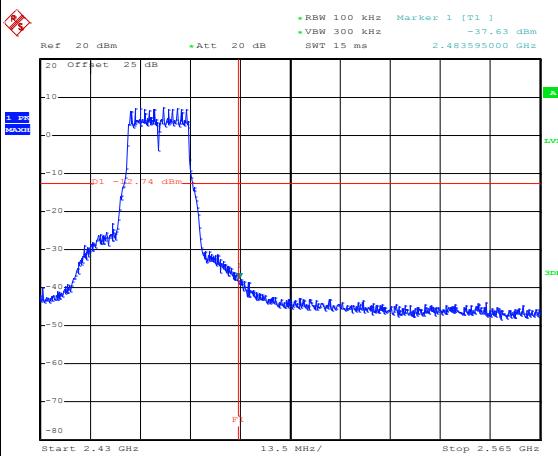
WLAN 802.11g Channel 11

100kHz PSD reference Level



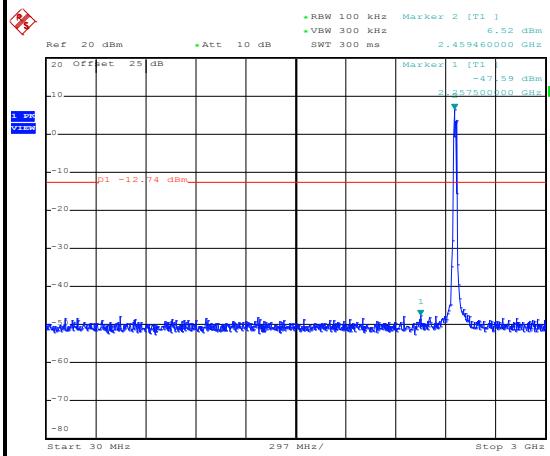
Date: 9.AUG.2017 22:37:54

High Channel Plot



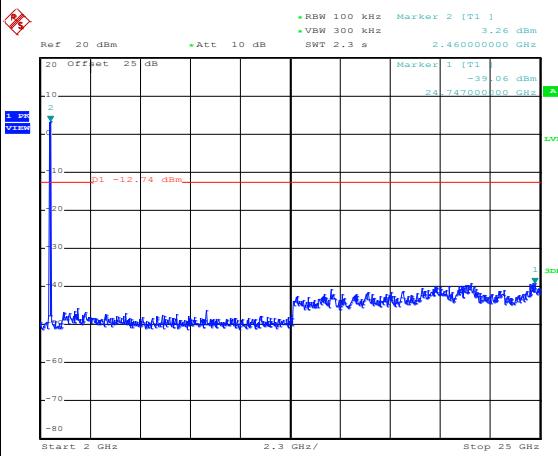
Date: 9.AUG.2017 22:38:19

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2017 22:38:32

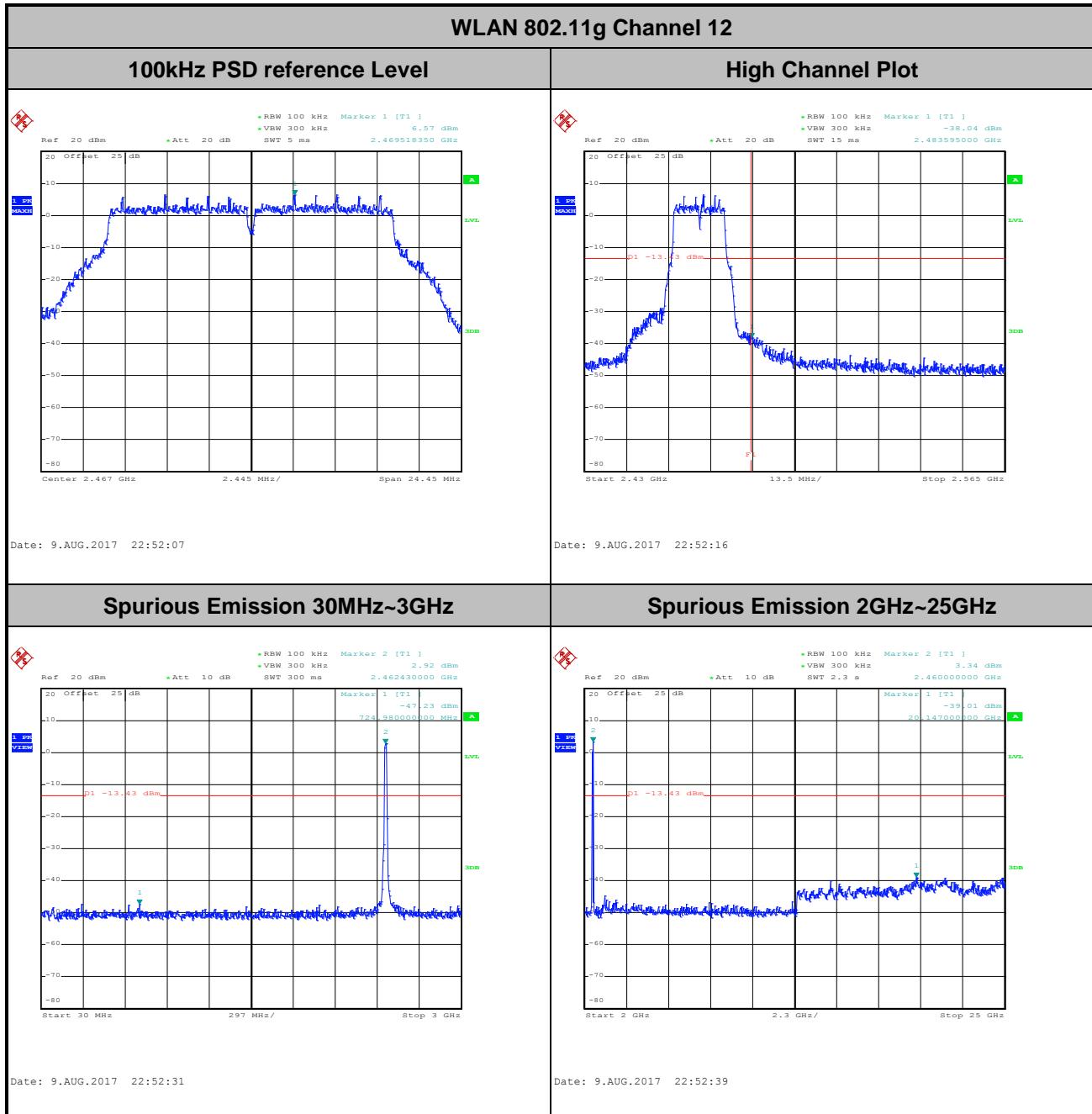
Spurious Emission 2GHz~25GHz



Date: 9.AUG.2017 22:38:40



Number of TX :	1	Ant. :	2
Test Mode :	802.11g	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	12	Test Engineer :	Tommy Lee and Aking Chang

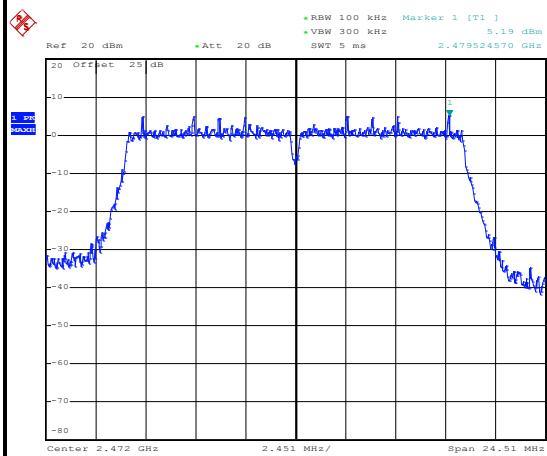




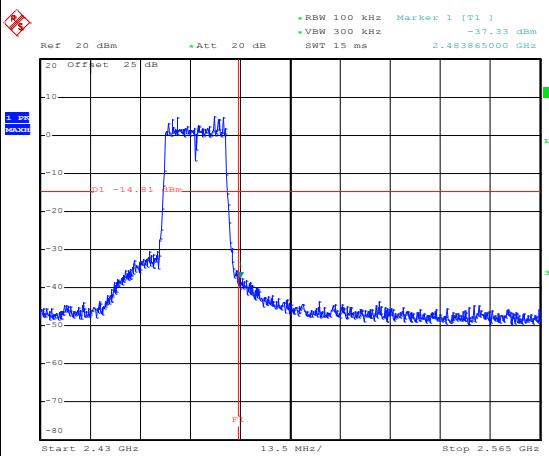
Number of TX :	1	Ant. :	2
Test Mode :	802.11g	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	13	Test Engineer :	Tommy Lee and Aking Chang

WLAN 802.11g Channel 13

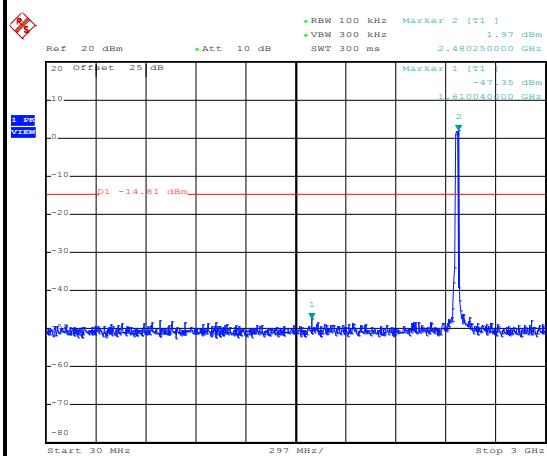
100kHz PSD reference Level



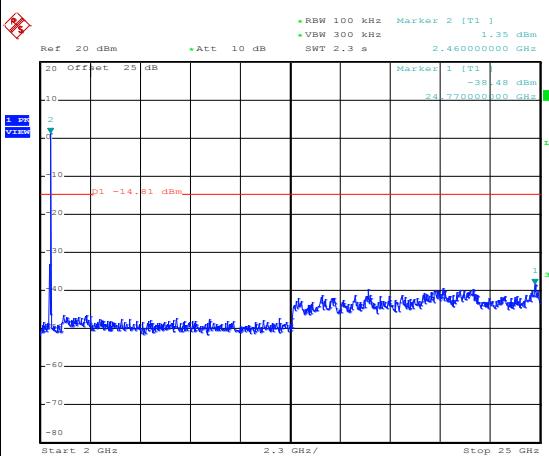
High Channel Plot



Spurious Emission 30MHz~3GHz

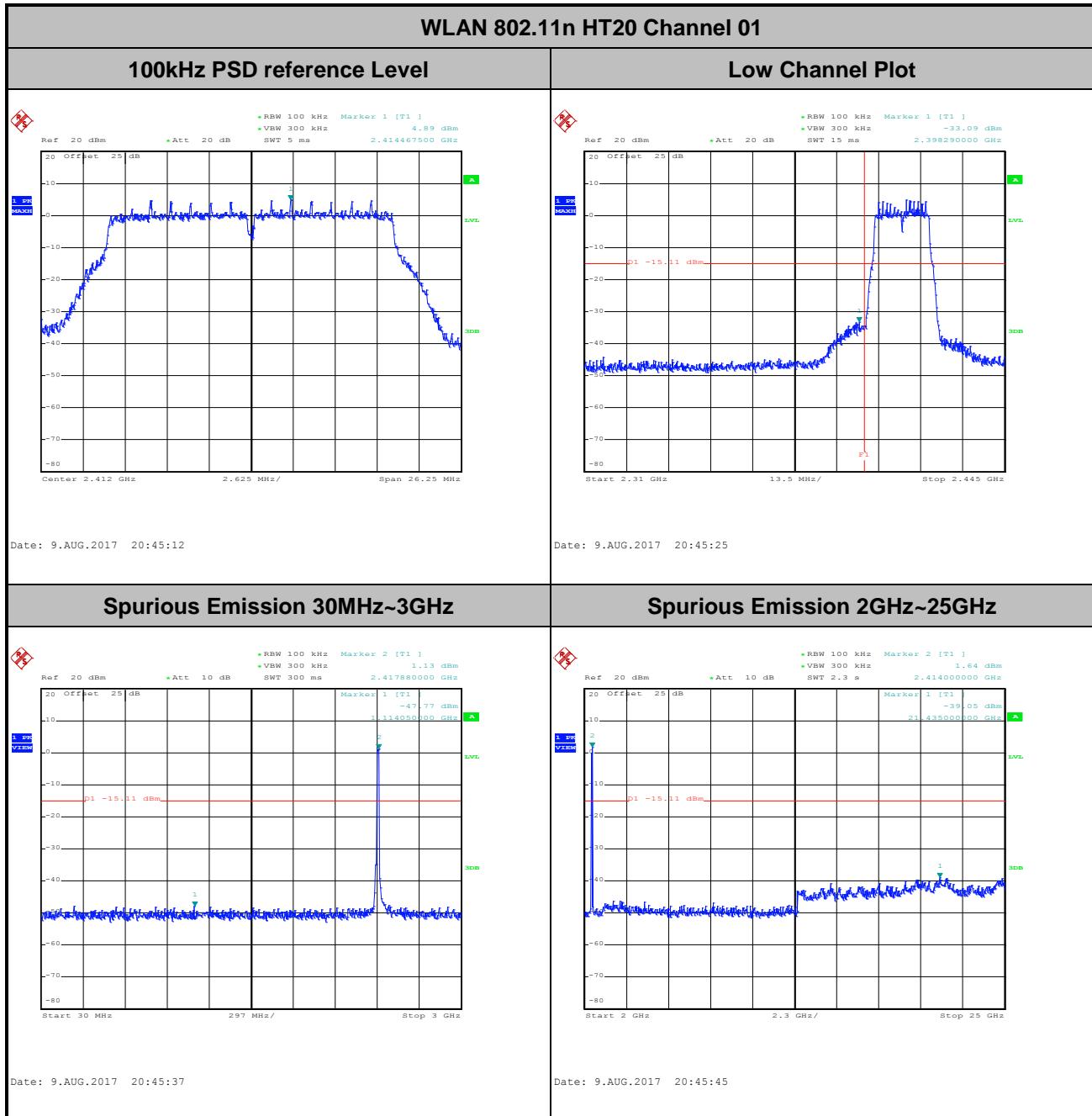


Spurious Emission 2GHz~25GHz



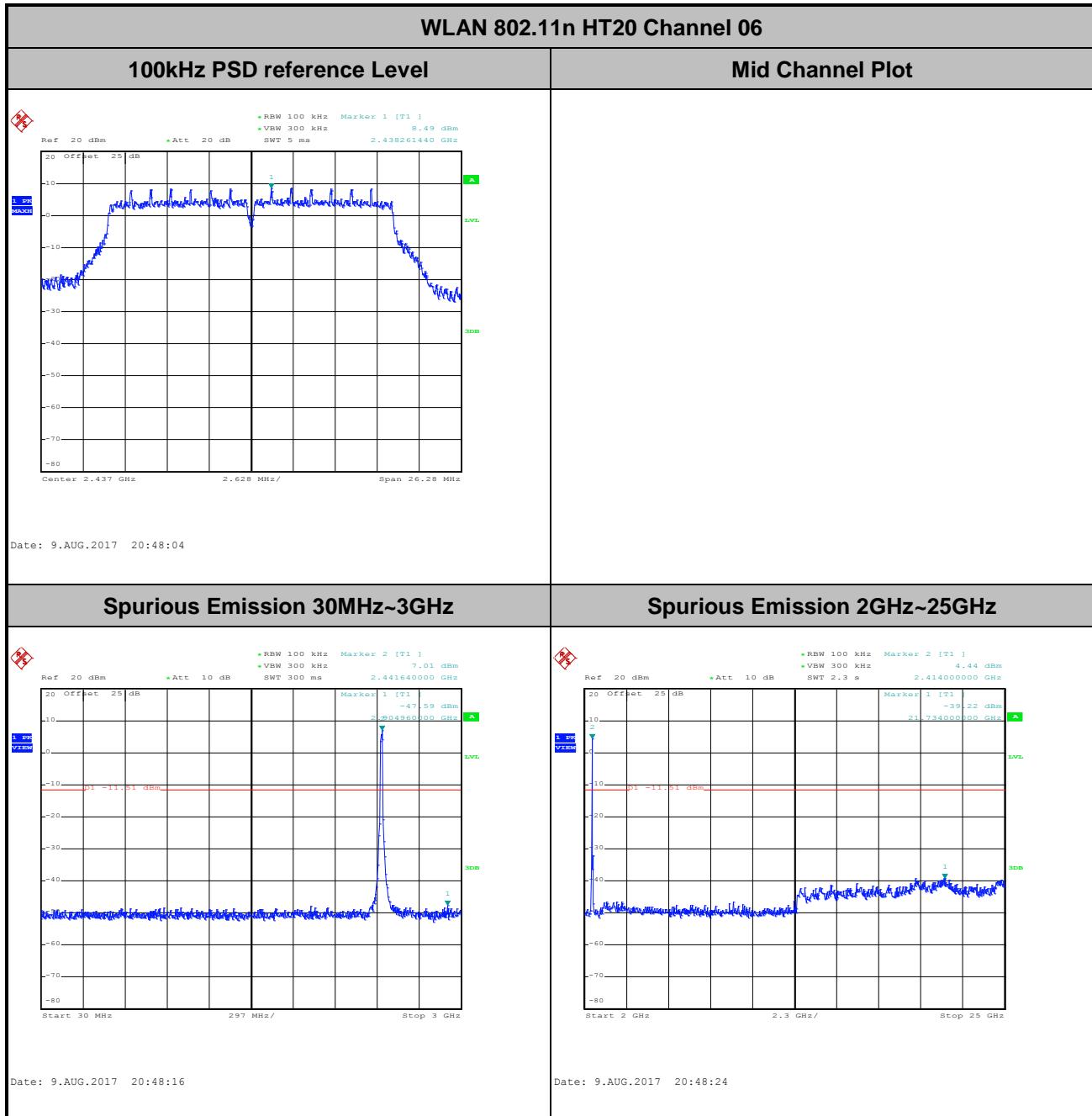


Number of TX :	1	Ant. :	2
Test Mode :	802.11n HT20	Temperature :	21~25°C
Test Band :	2.4GHz Low	Relative Humidity :	51~54%
Test Channel :	01	Test Engineer :	Tommy Lee and Aking Chang



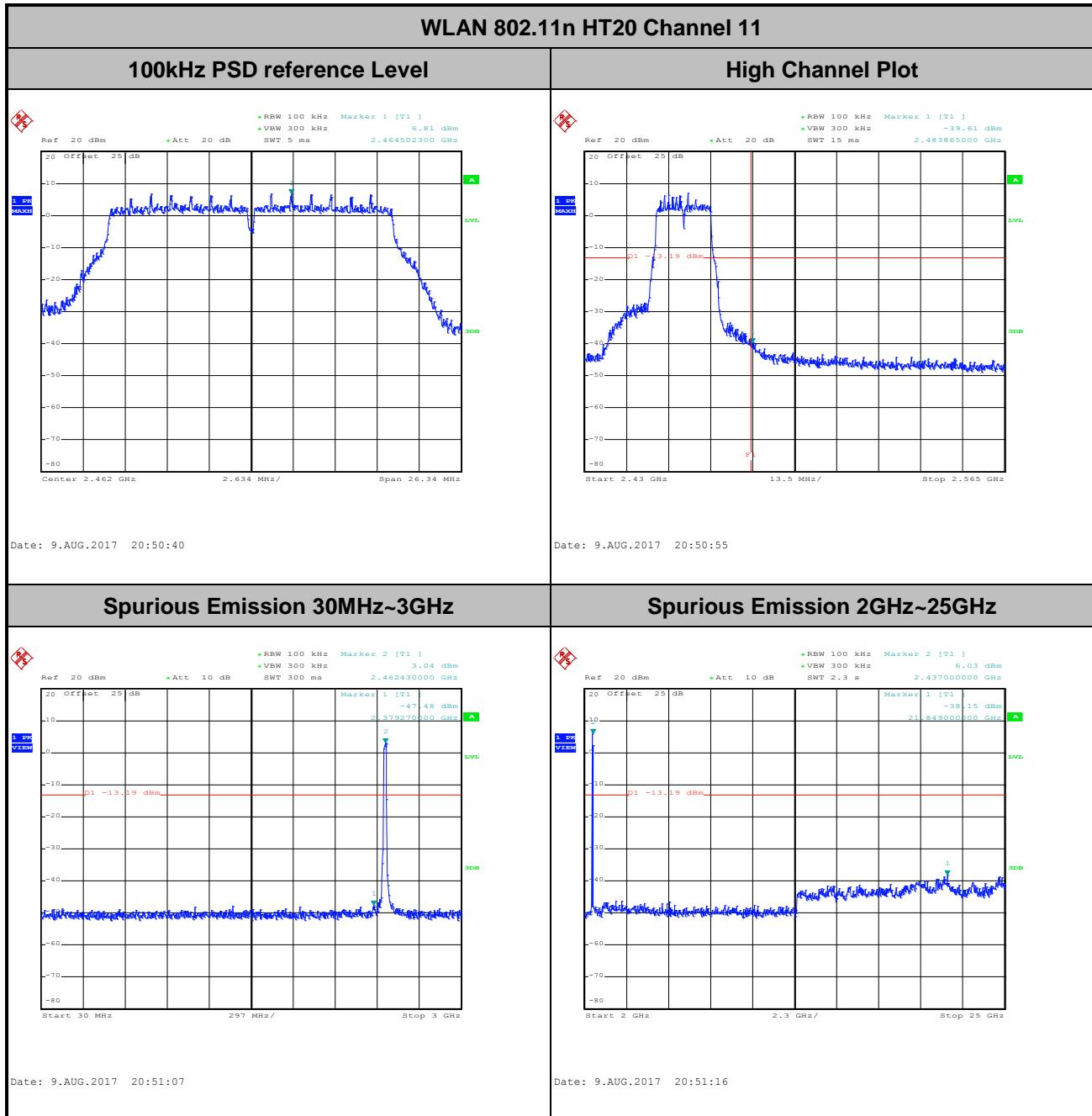


Number of TX :	1	Ant. :	2
Test Mode :	802.11n HT20	Temperature :	21~25°C
Test Band :	2.4GHz Mid	Relative Humidity :	51~54%
Test Channel :	06	Test Engineer :	Tommy Lee and Aking Chang



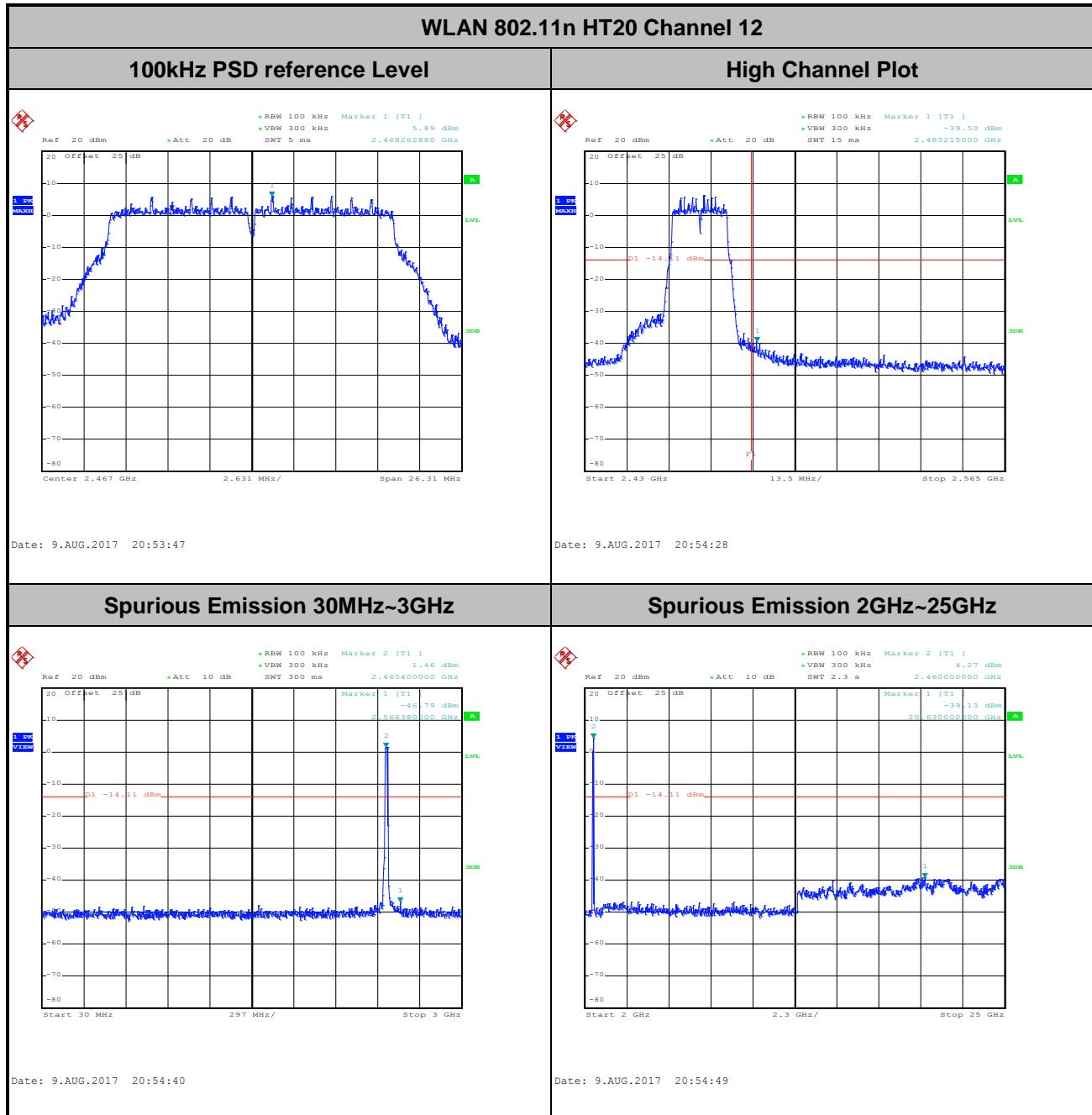


Number of TX :	1	Ant. :	2
Test Mode :	802.11n HT20	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	11	Test Engineer :	Tommy Lee and Aking Chang



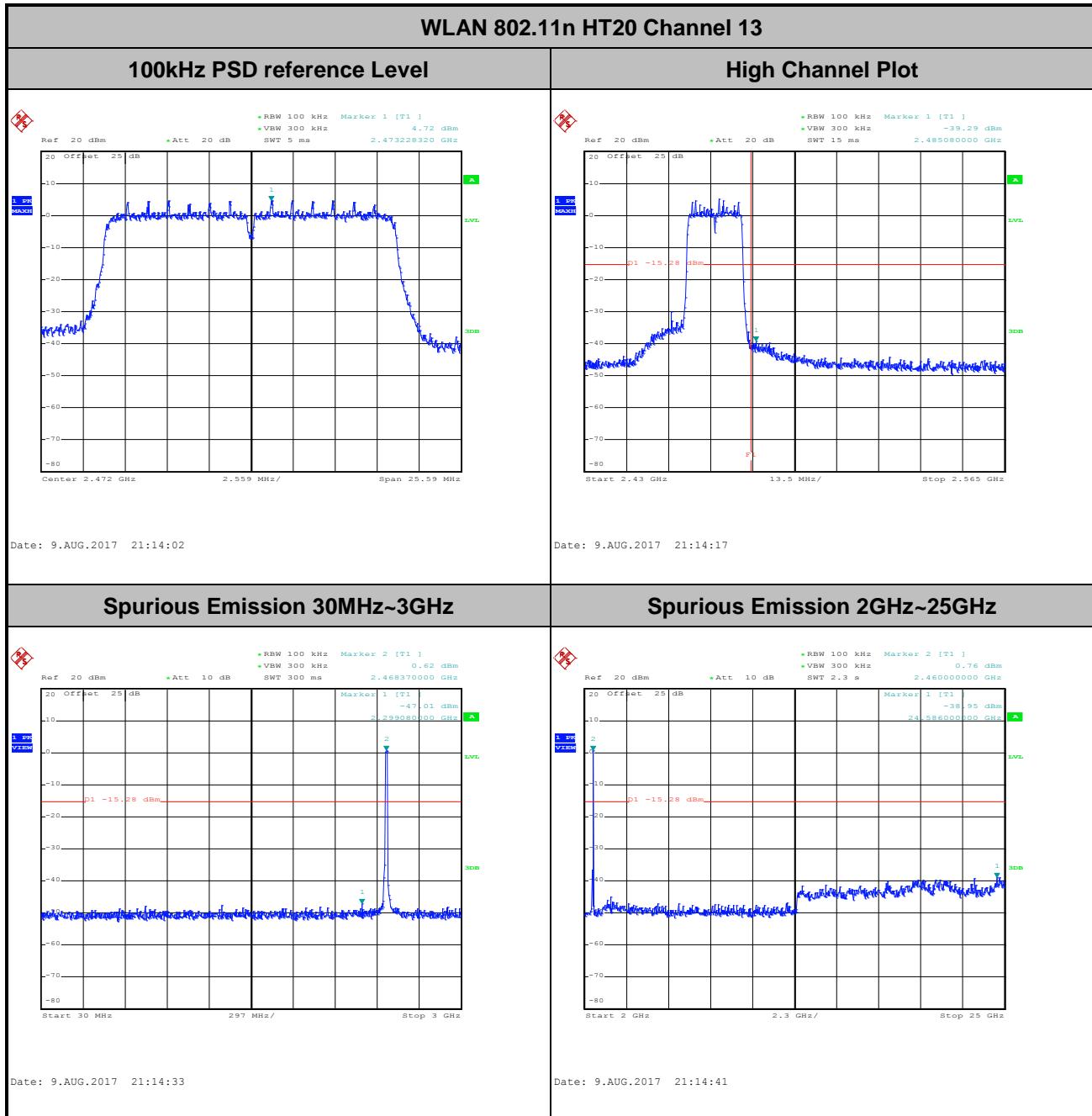


Number of TX :	1	Ant. :	2
Test Mode :	802.11n HT20	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	12	Test Engineer :	Tommy Lee and Aking Chang





Number of TX :	1	Ant. :	2
Test Mode :	802.11n HT20	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	13	Test Engineer :	Tommy Lee and Aking Chang



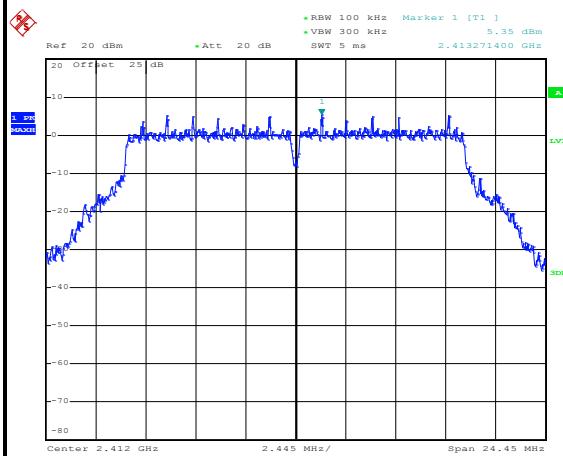


Number of TX = 2, Ant. 1 (Measured)

Number of TX :	2	Ant. :	1
Test Mode :	802.11g	Temperature :	21~25°C
Test Band :	2.4GHz Low	Relative Humidity :	51~54%
Test Channel :	01	Test Engineer :	Tommy Lee and Aking Chang

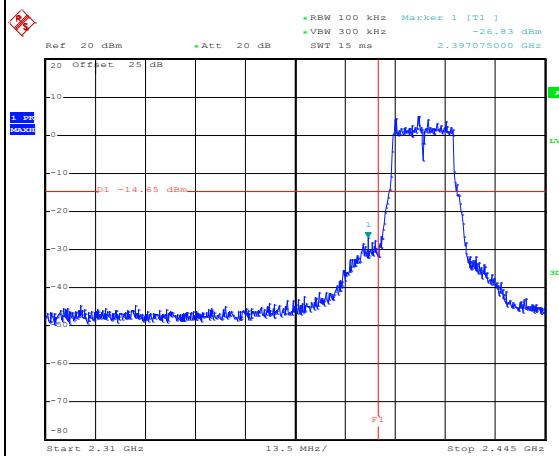
WLAN 802.11g Channel 01

100kHz PSD reference Level



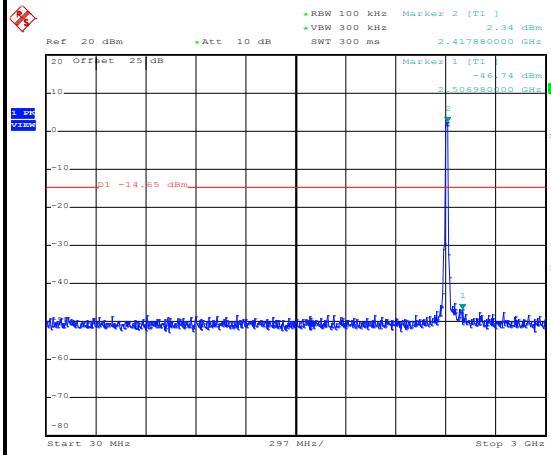
Date: 9.AUG.2017 22:57:40

Low Channel Plot



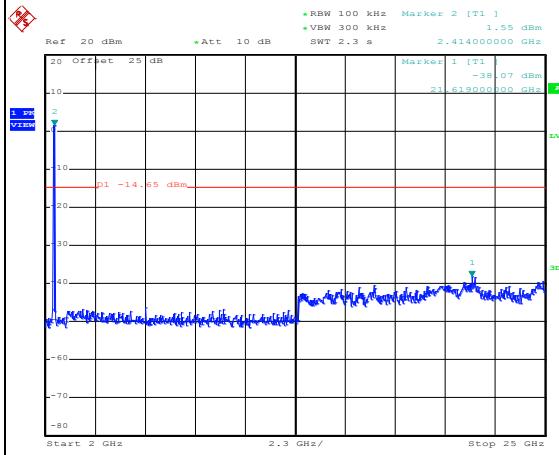
Date: 9.AUG.2017 22:57:50

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2017 22:58:02

Spurious Emission 2GHz~25GHz



Date: 9.AUG.2017 22:58:11

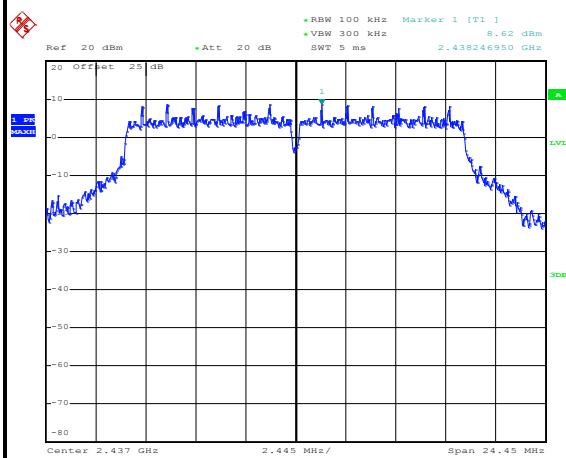


Number of TX :	2	Ant. :	1
Test Mode :	802.11g	Temperature :	21~25°C
Test Band :	2.4GHz Mid	Relative Humidity :	51~54%
Test Channel :	06	Test Engineer :	Tommy Lee and Aking Chang

WLAN 802.11g Channel 06

100kHz PSD reference Level

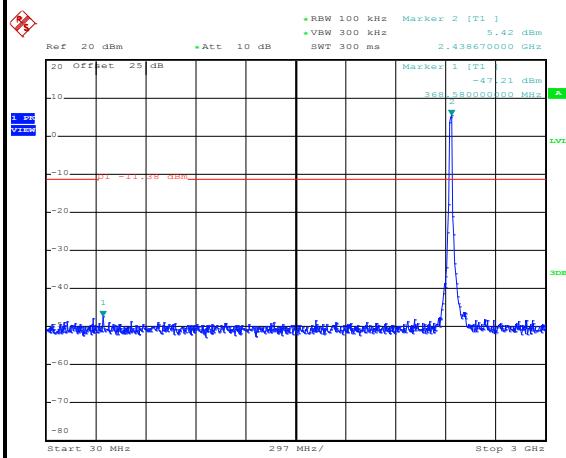
Mid Channel Plot



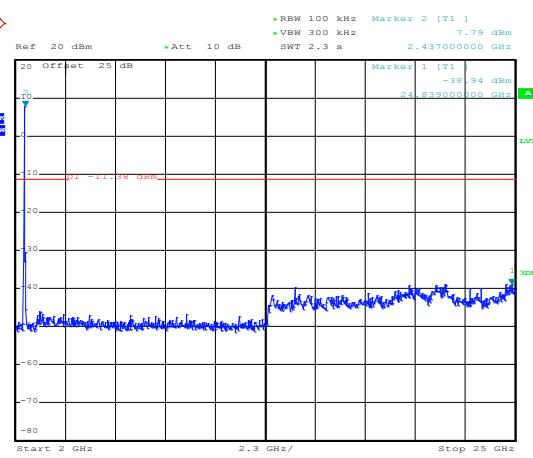
Date: 9.AUG.2017 23:02:39

Spurious Emission 30MHz~3GHz

Spurious Emission 2GHz~25GHz



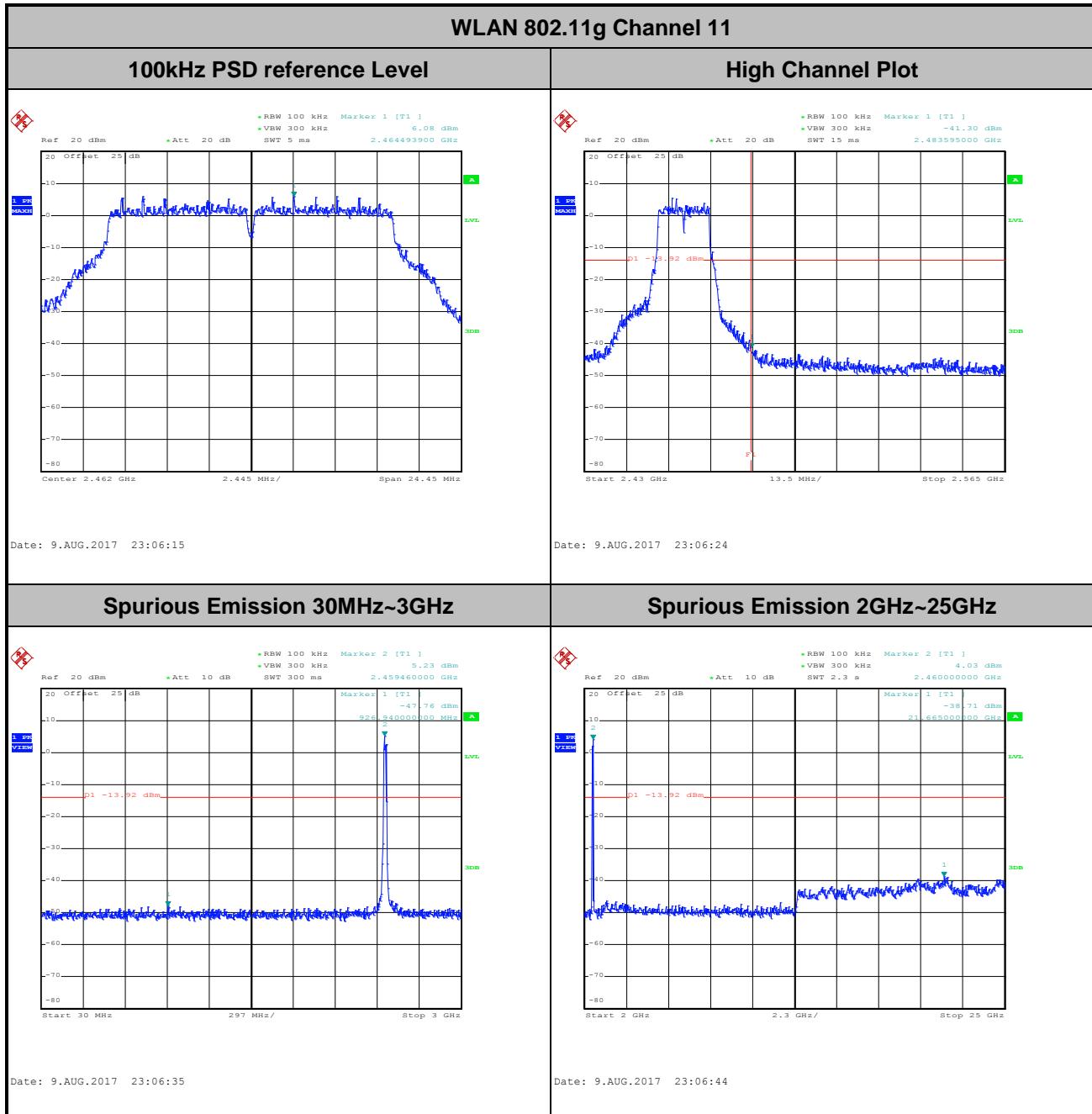
Date: 9.AUG.2017 23:02:54



Date: 9.AUG.2017 23:03:03



Number of TX :	2	Ant. :	1
Test Mode :	802.11g	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	11	Test Engineer :	Tommy Lee and Aking Chang

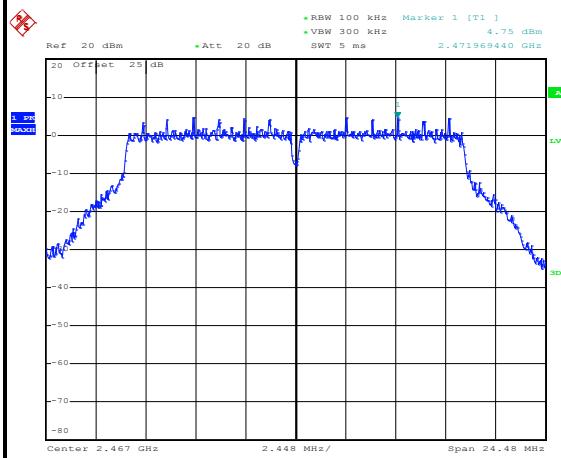




Number of TX :	2	Ant. :	1
Test Mode :	802.11g	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	12	Test Engineer :	Tommy Lee and Aking Chang

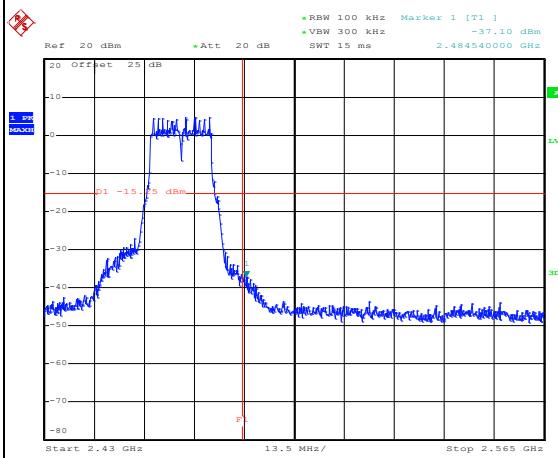
WLAN 802.11g Channel 12

100kHz PSD reference Level



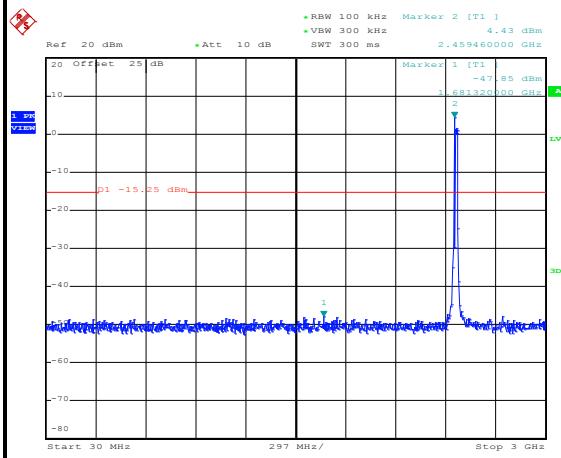
Date: 9.AUG.2017 23:10:47

High Channel Plot



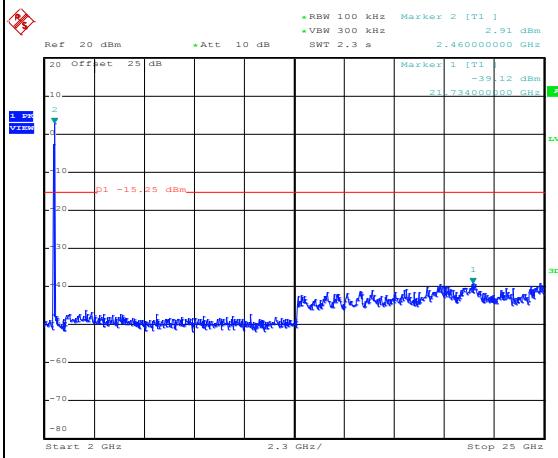
Date: 9.AUG.2017 23:11:18

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2017 23:11:31

Spurious Emission 2GHz~25GHz



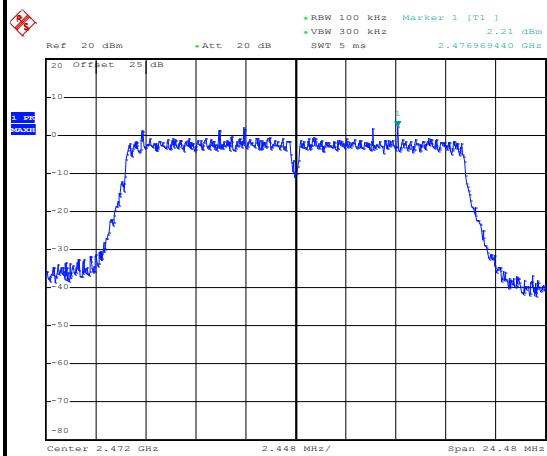
Date: 9.AUG.2017 23:11:40



Number of TX :	2	Ant. :	1
Test Mode :	802.11g	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	13	Test Engineer :	Tommy Lee and Aking Chang

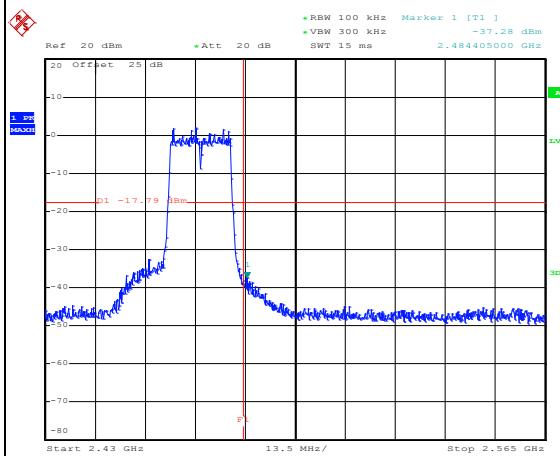
WLAN 802.11g Channel 13

100kHz PSD reference Level



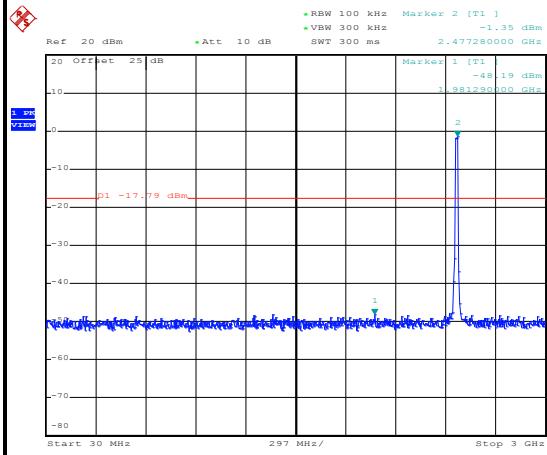
Date: 9.AUG.2017 23:15:36

High Channel Plot



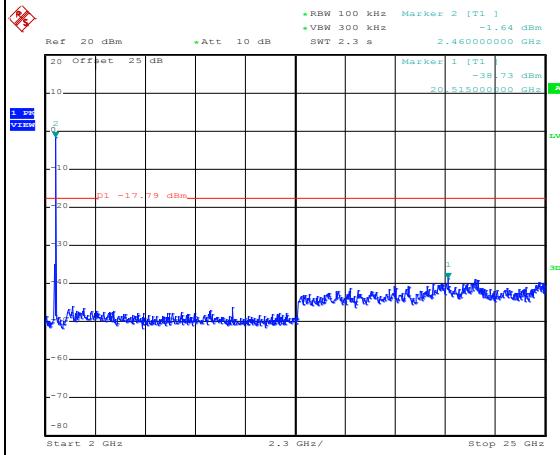
Date: 9.AUG.2017 23:15:47

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2017 23:15:58

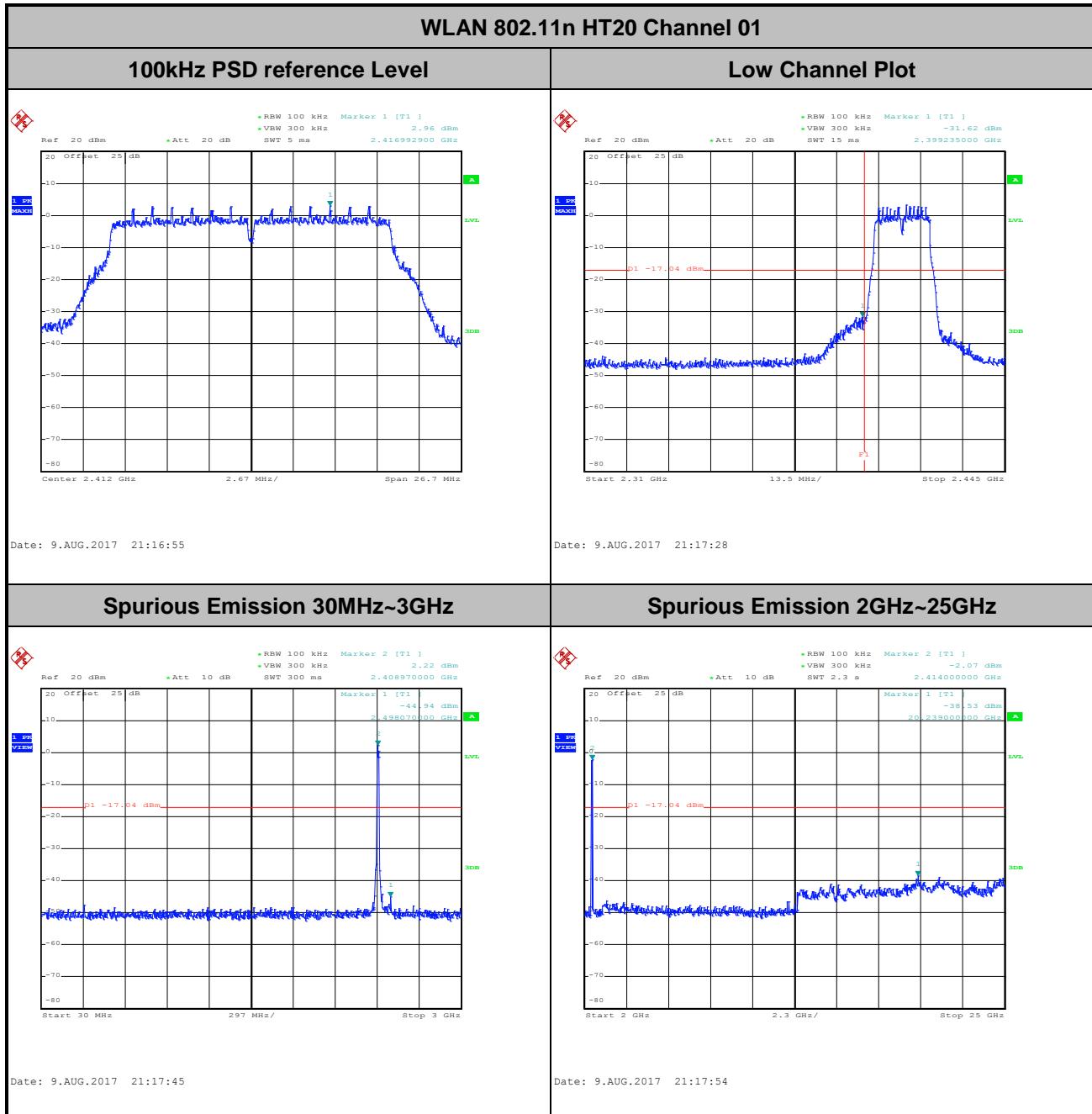
Spurious Emission 2GHz~25GHz



Date: 9.AUG.2017 23:16:07

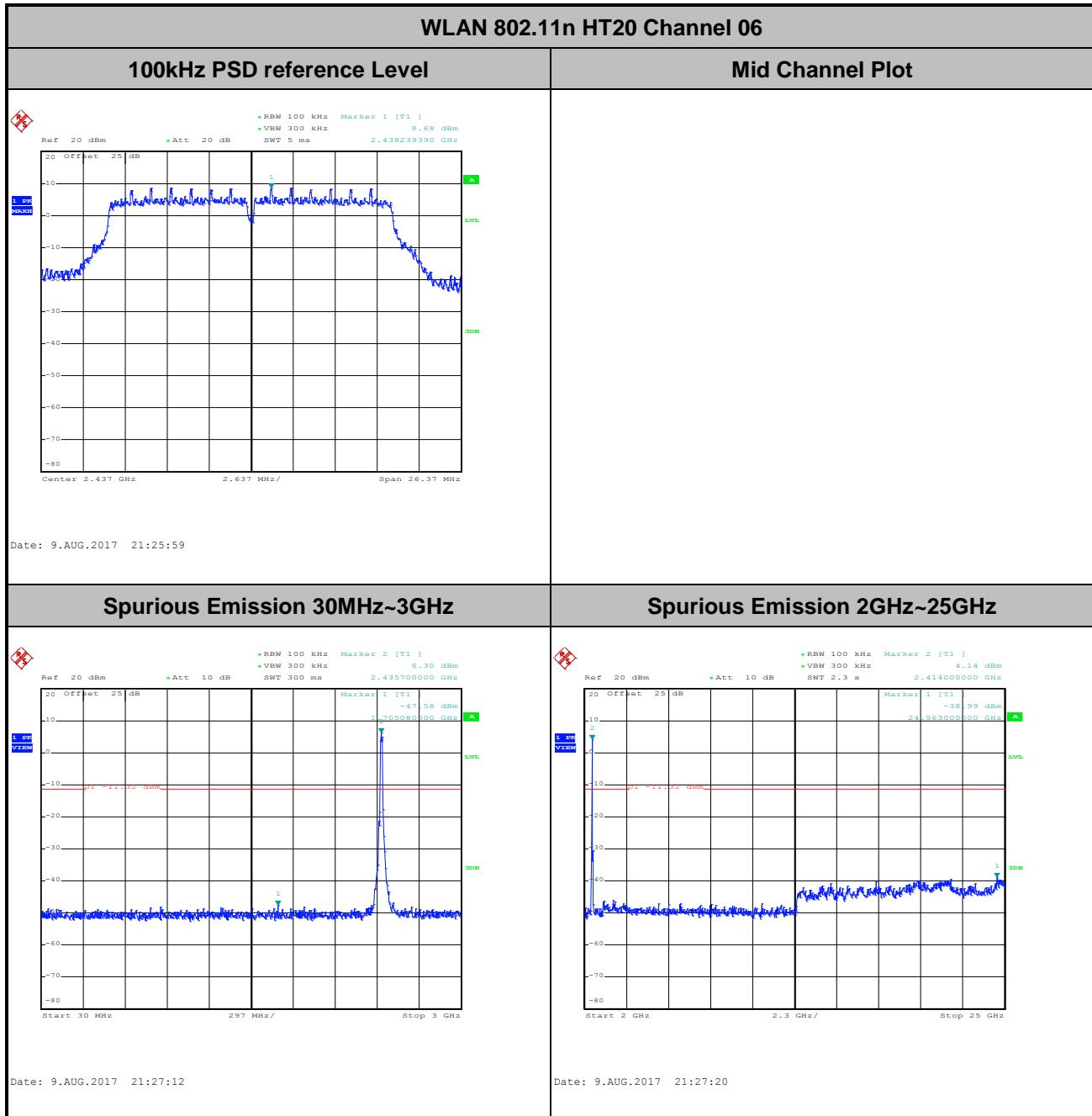


Number of TX :	2	Ant. :	1
Test Mode :	802.11n HT20	Temperature :	21~25°C
Test Band :	2.4GHz Low	Relative Humidity :	51~54%
Test Channel :	01	Test Engineer :	Tommy Lee and Aking Chang



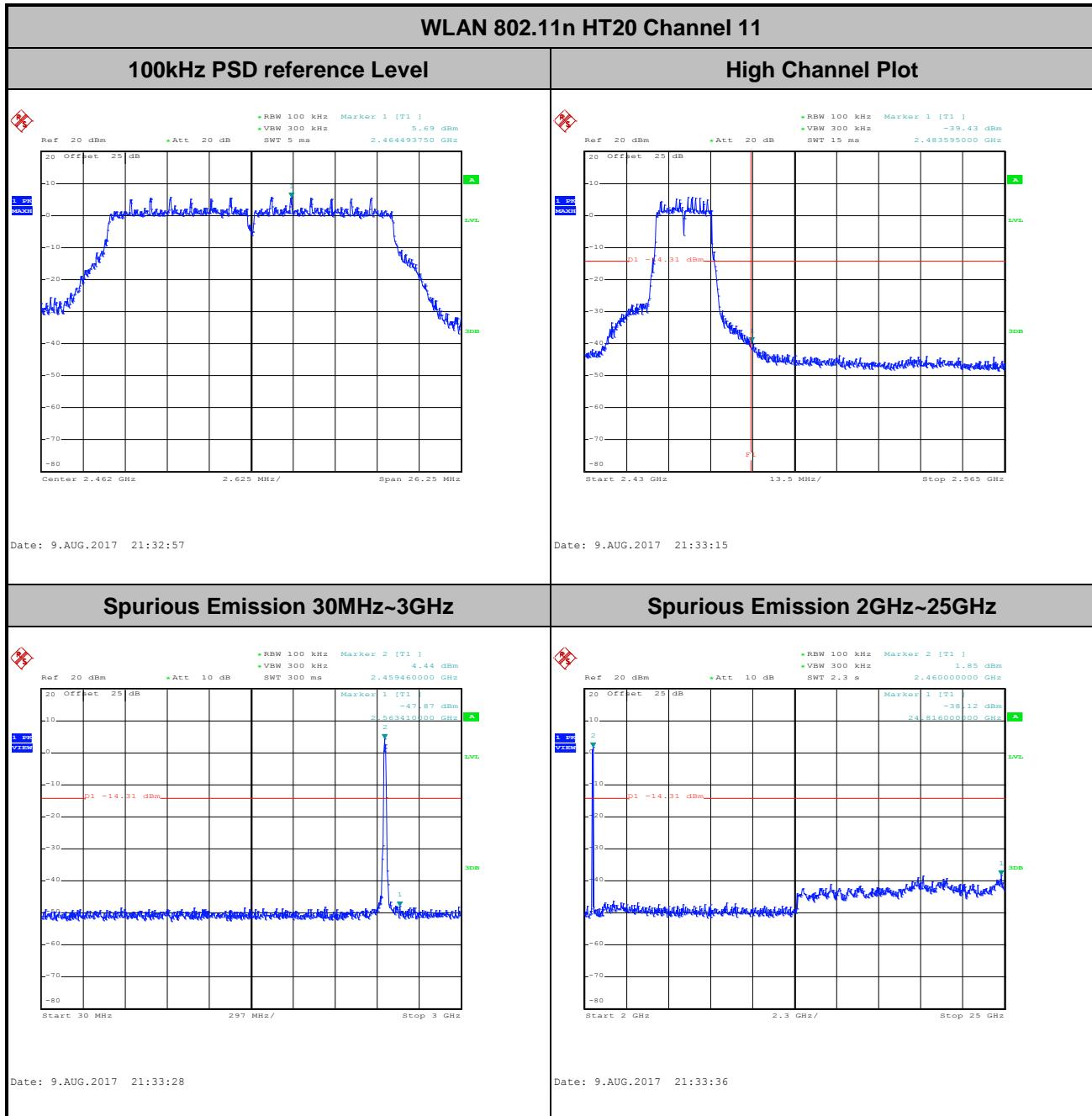


Number of TX :	2	Ant. :	1
Test Mode :	802.11n HT20	Temperature :	21~25°C
Test Band :	2.4GHz Mid	Relative Humidity :	51~54%
Test Channel :	06	Test Engineer :	Tommy Lee and Aking Chang



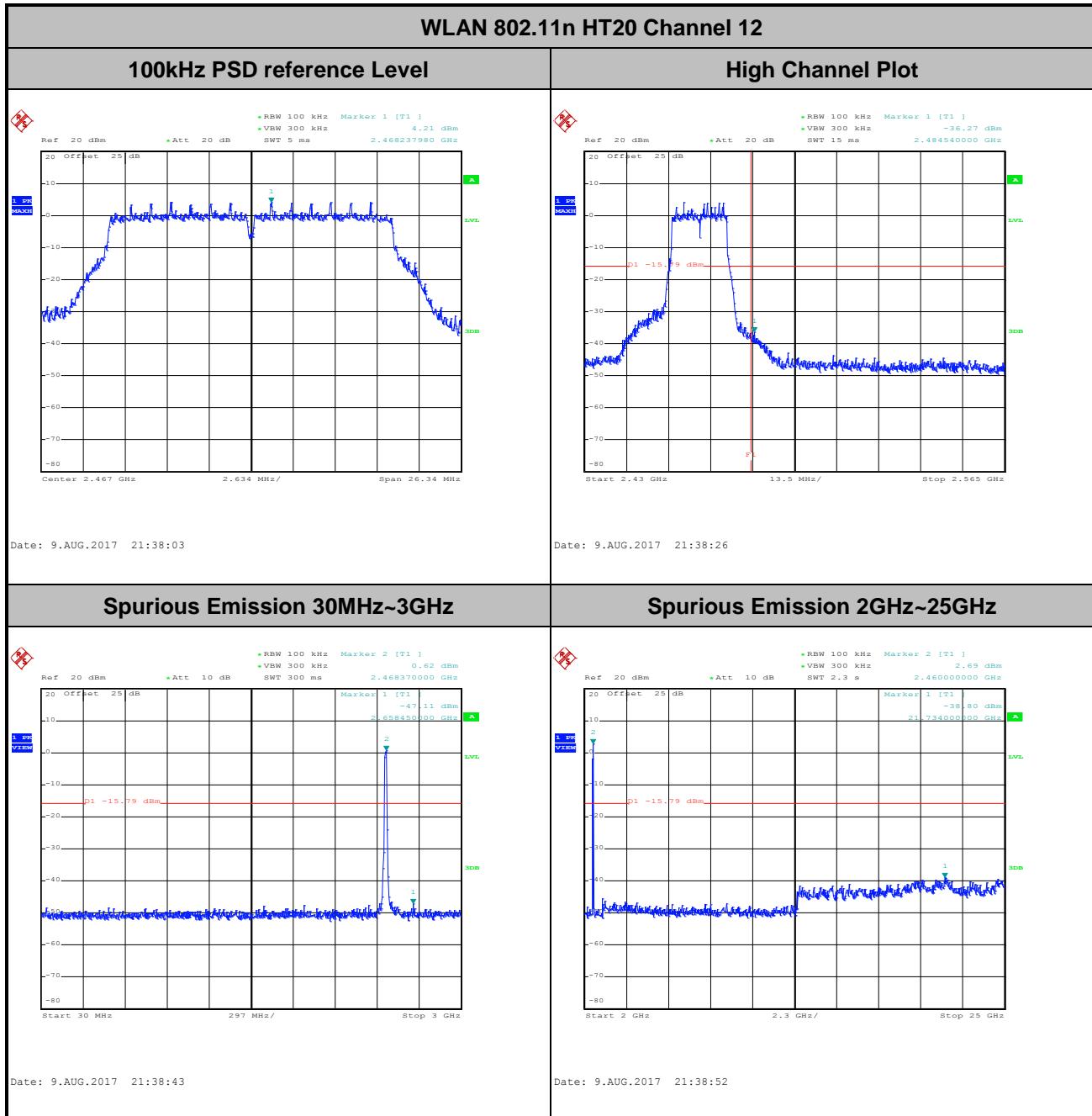


Number of TX :	2	Ant. :	1
Test Mode :	802.11n HT20	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	11	Test Engineer :	Tommy Lee and Aking Chang



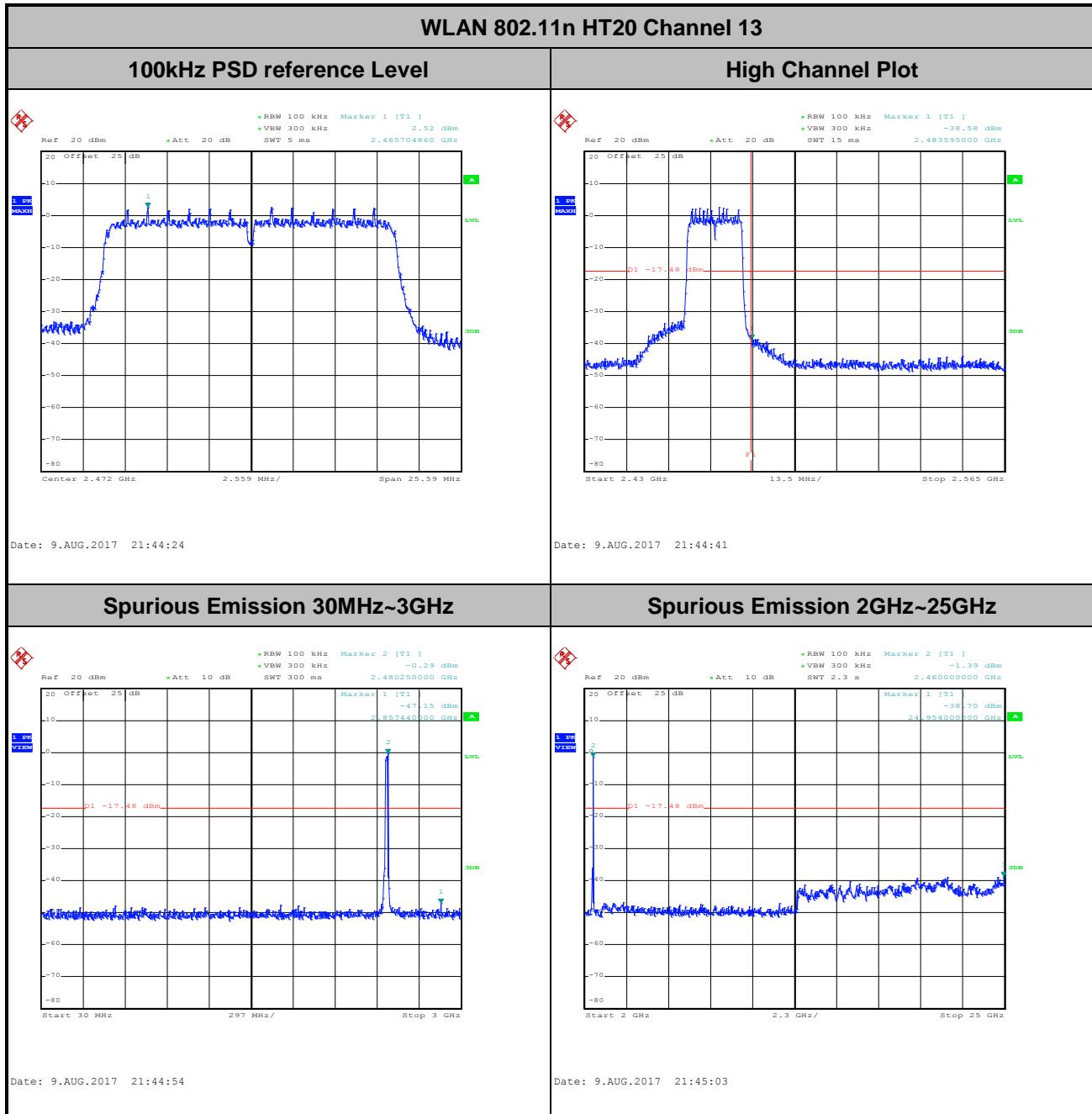


Number of TX :	2	Ant. :	1
Test Mode :	802.11n HT20	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	12	Test Engineer :	Tommy Lee and Aking Chang





Number of TX :	2	Ant. :	1
Test Mode :	802.11n HT20	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	13	Test Engineer :	Tommy Lee and Aking Chang



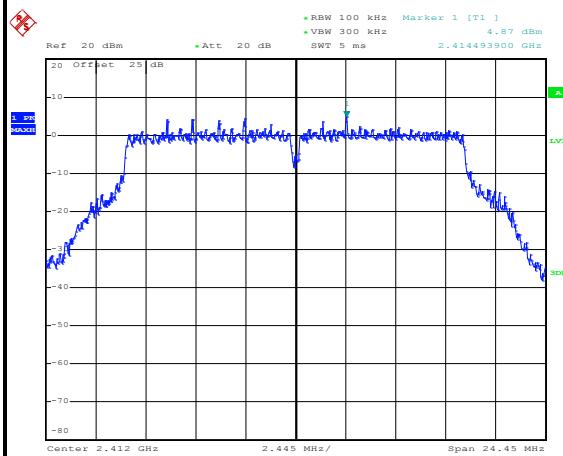


Number of TX = 2, Ant. 2 (Measured)

Number of TX :	2	Ant. :	2
Test Mode :	802.11g	Temperature :	21~25°C
Test Band :	2.4GHz Low	Relative Humidity :	51~54%
Test Channel :	01	Test Engineer :	Tommy Lee and Aking Chang

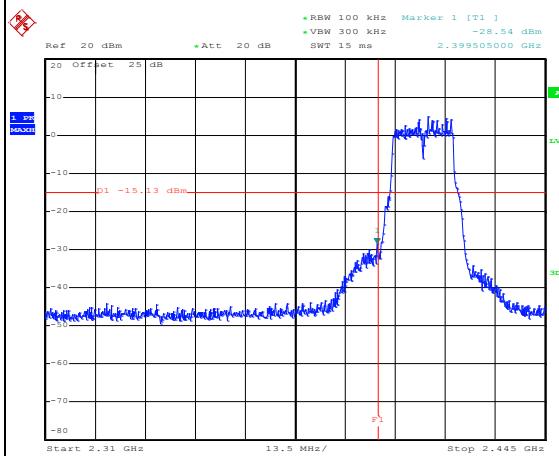
WLAN 802.11g Channel 01

100kHz PSD reference Level



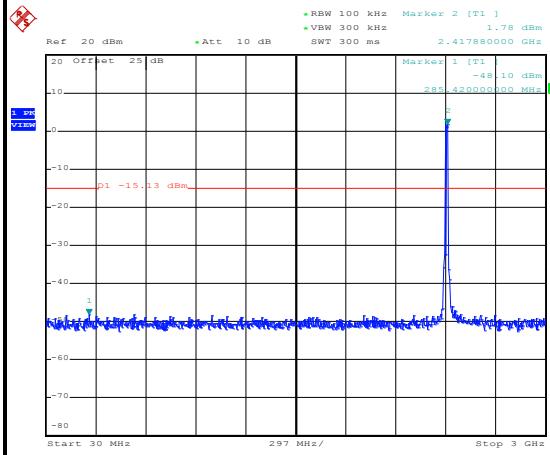
Date: 9.AUG.2017 22:59:35

Low Channel Plot



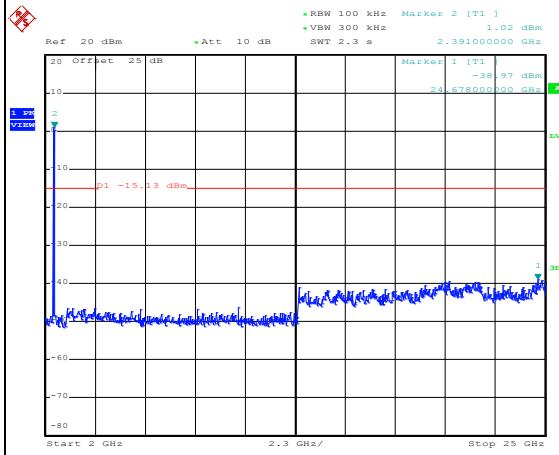
Date: 9.AUG.2017 22:59:49

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2017 23:00:00

Spurious Emission 2GHz~25GHz



Date: 9.AUG.2017 23:00:09

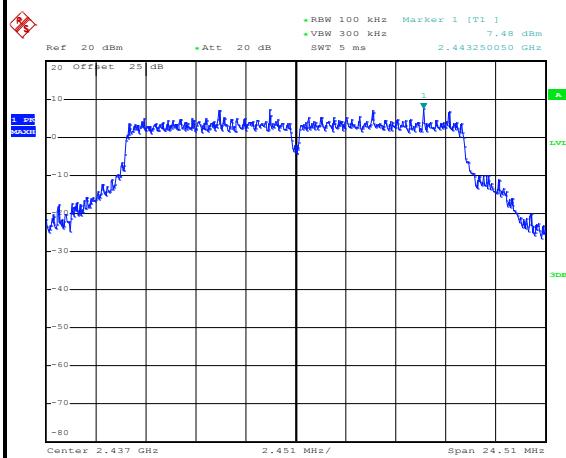


Number of TX :	2	Ant. :	2
Test Mode :	802.11g	Temperature :	21~25°C
Test Band :	2.4GHz Mid	Relative Humidity :	51~54%
Test Channel :	06	Test Engineer :	Tommy Lee and Aking Chang

WLAN 802.11g Channel 06

100kHz PSD reference Level

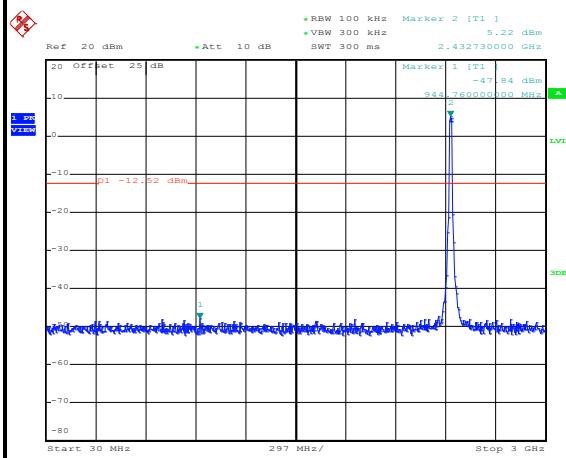
Mid Channel Plot



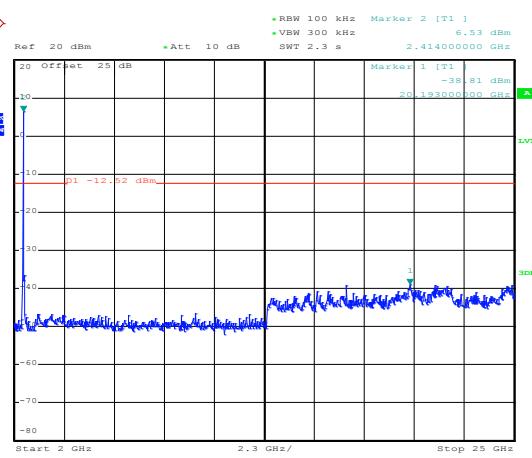
Date: 9.AUG.2017 23:04:27

Spurious Emission 30MHz~3GHz

Spurious Emission 2GHz~25GHz



Date: 9.AUG.2017 23:04:39



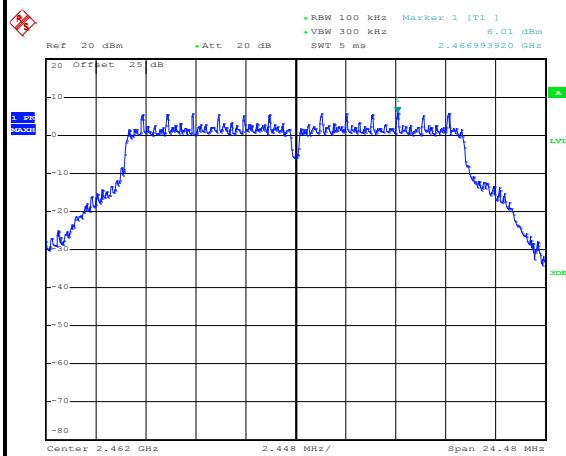
Date: 9.AUG.2017 23:04:47



Number of TX :	2	Ant. :	2
Test Mode :	802.11g	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	11	Test Engineer :	Tommy Lee and Aking Chang

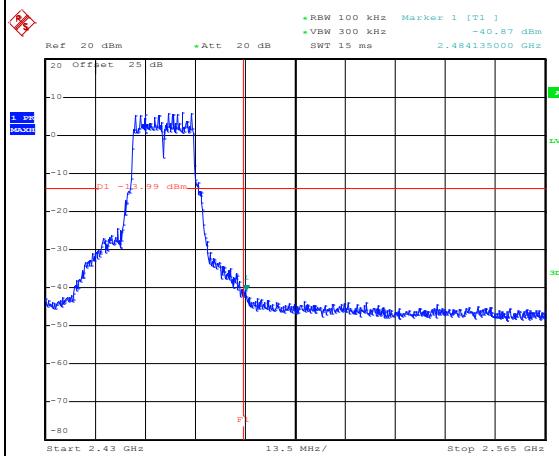
WLAN 802.11g Channel 11

100kHz PSD reference Level



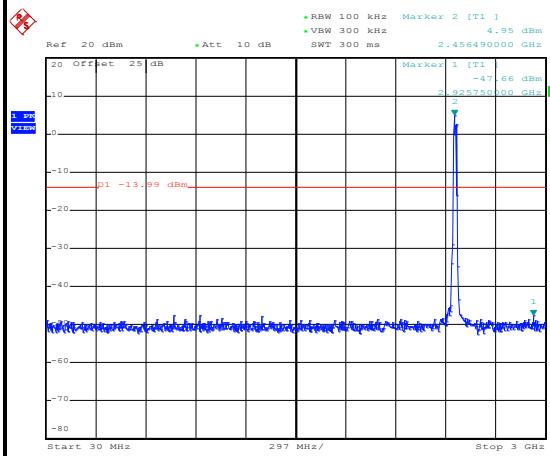
Date: 9.AUG.2017 23:08:26

High Channel Plot



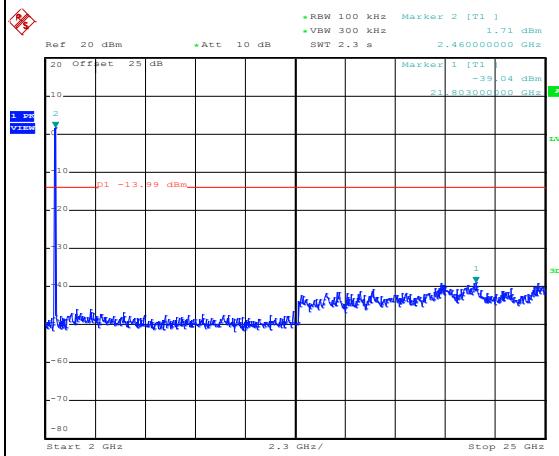
Date: 9.AUG.2017 23:08:44

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2017 23:08:57

Spurious Emission 2GHz~25GHz



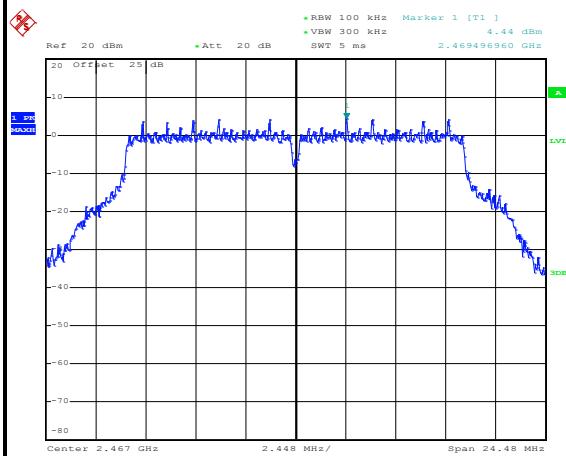
Date: 9.AUG.2017 23:09:05



Number of TX :	2	Ant. :	2
Test Mode :	802.11g	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	12	Test Engineer :	Tommy Lee and Aking Chang

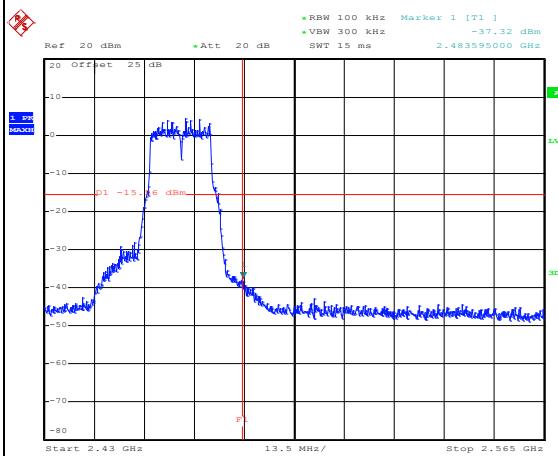
WLAN 802.11g Channel 12

100kHz PSD reference Level



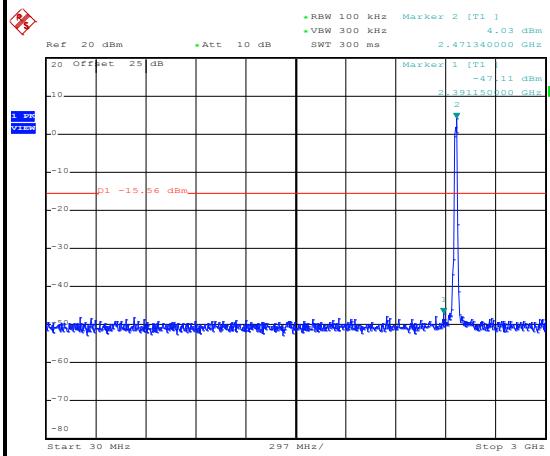
Date: 9.AUG.2017 23:13:00

High Channel Plot



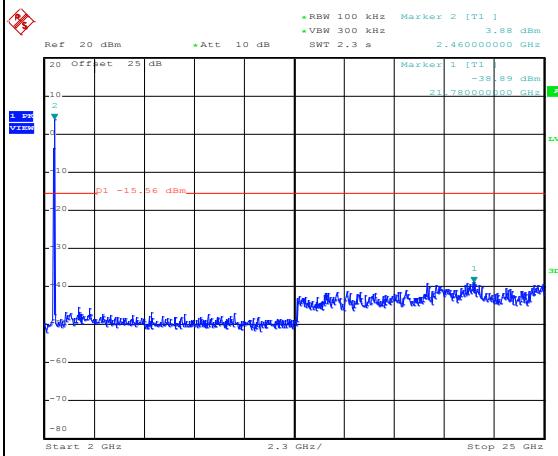
Date: 9.AUG.2017 23:13:31

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2017 23:13:48

Spurious Emission 2GHz~25GHz



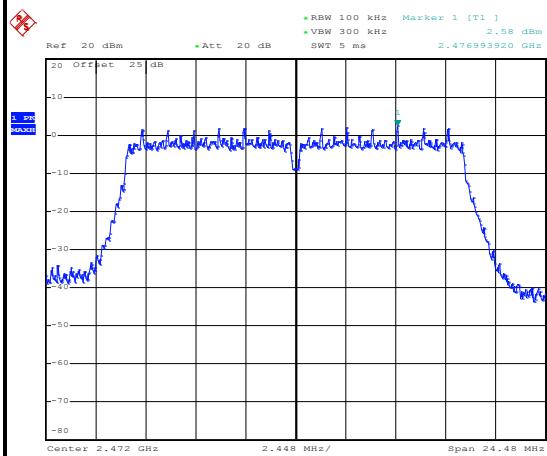
Date: 9.AUG.2017 23:13:57



Number of TX :	2	Ant. :	2
Test Mode :	802.11g	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	13	Test Engineer :	Tommy Lee and Aking Chang

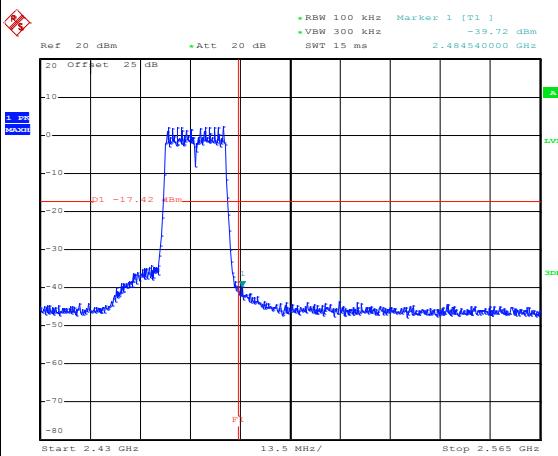
WLAN 802.11g Channel 13

100kHz PSD reference Level



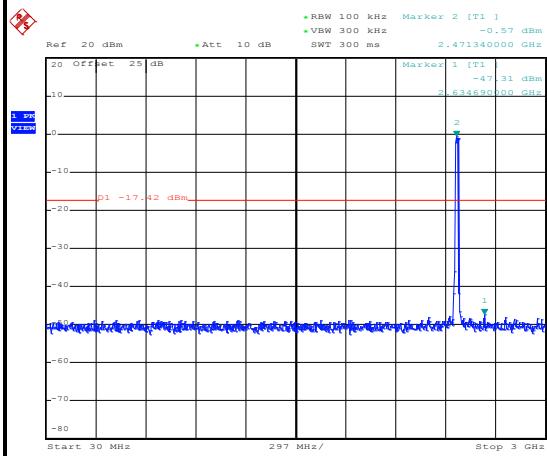
Date: 9.AUG.2017 23:17:39

High Channel Plot



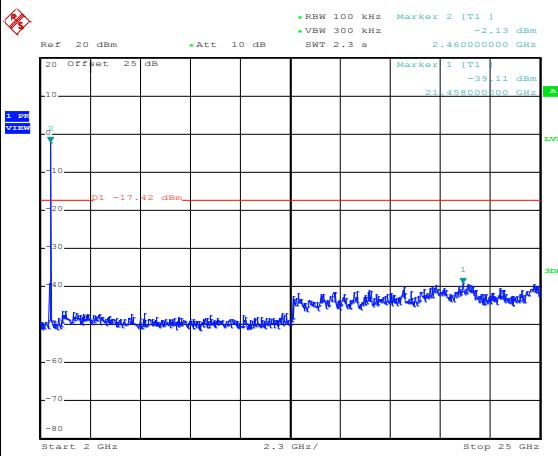
Date: 9.AUG.2017 23:18:21

Spurious Emission 30MHz~3GHz



Date: 9.AUG.2017 23:19:57

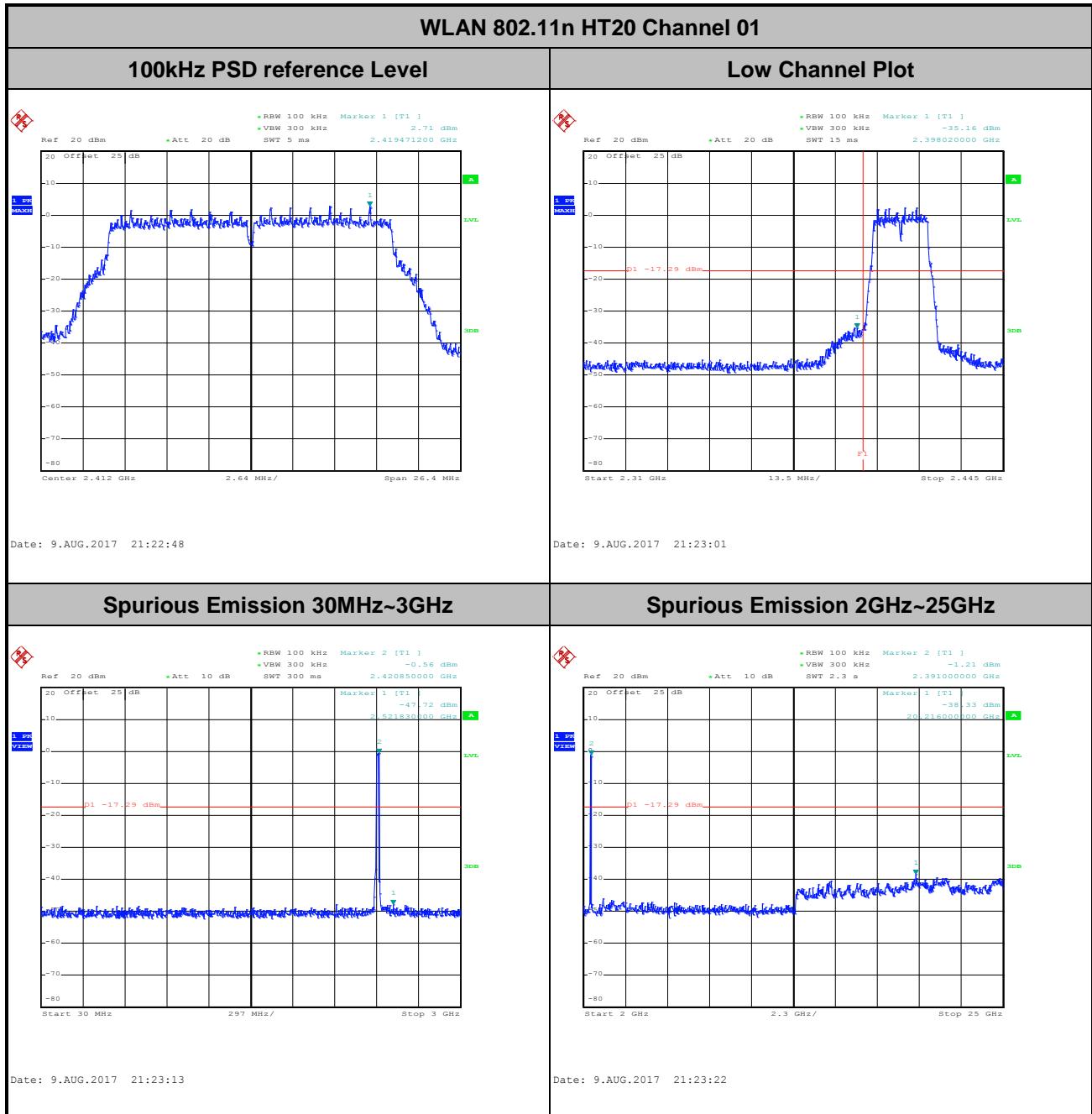
Spurious Emission 2GHz~25GHz



Date: 9.AUG.2017 23:20:06

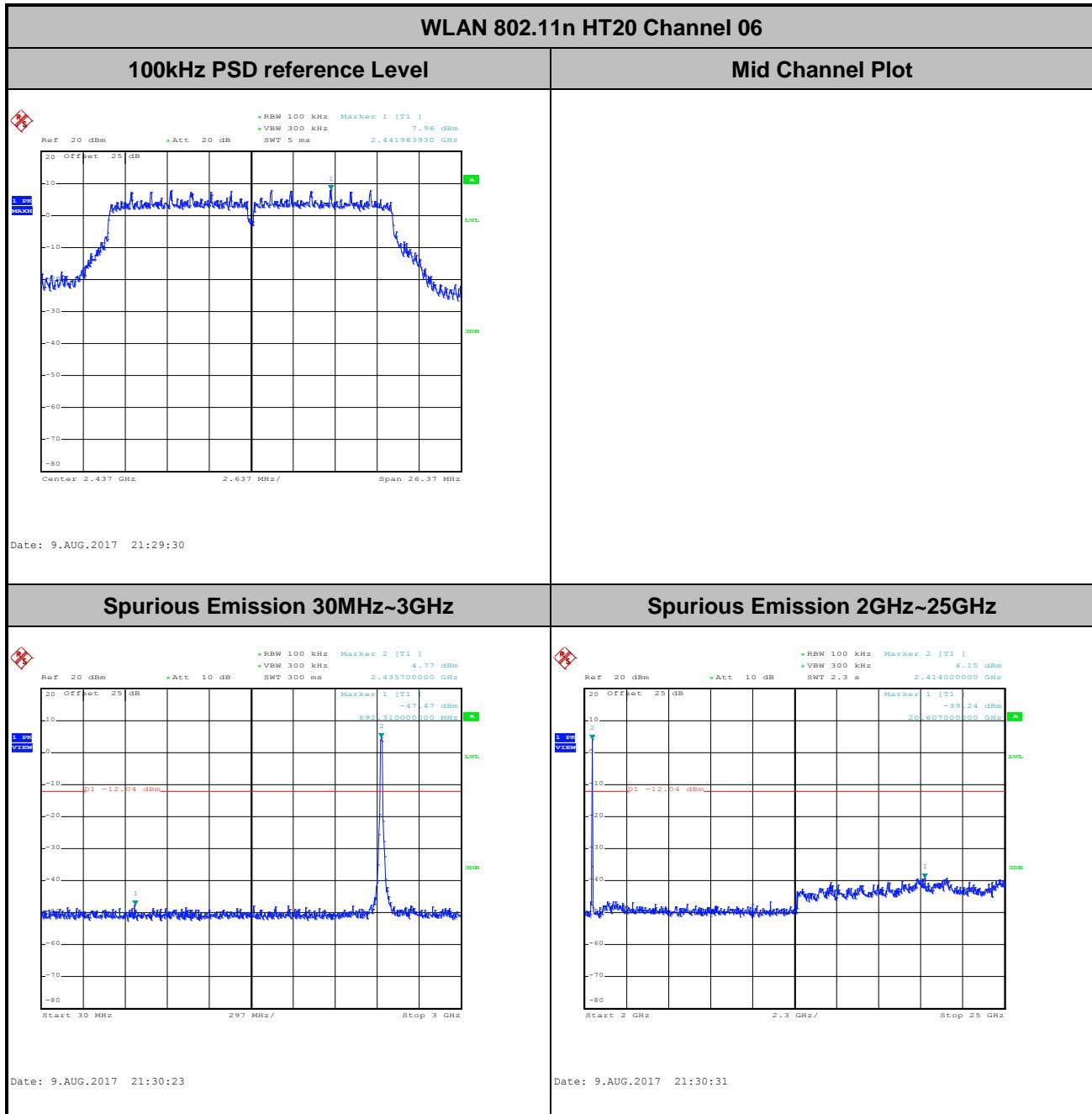


Number of TX :	2	Ant. :	2
Test Mode :	802.11n HT20	Temperature :	21~25°C
Test Band :	2.4GHz Low	Relative Humidity :	51~54%
Test Channel :	01	Test Engineer :	Tommy Lee and Aking Chang



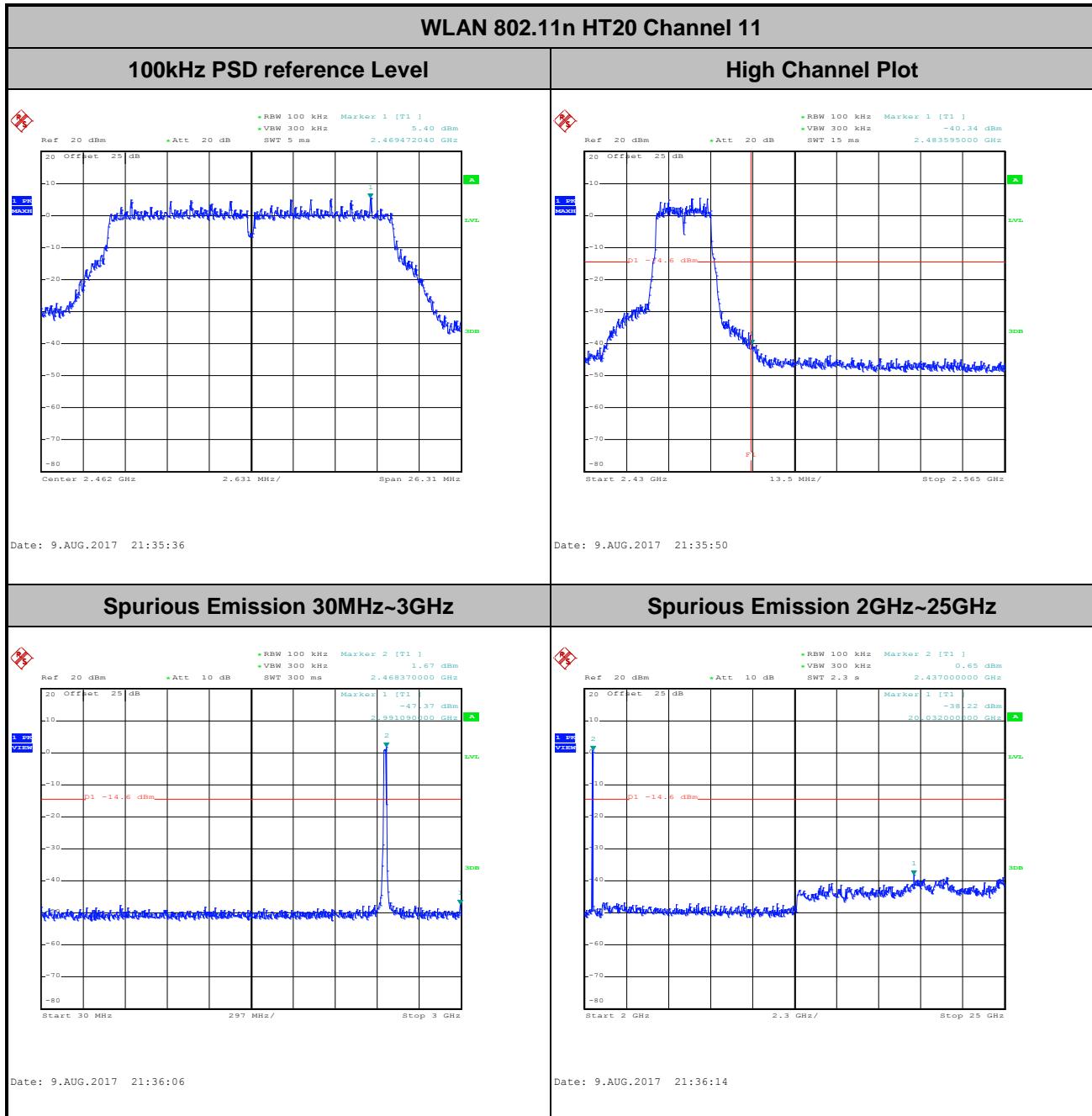


Number of TX :	2	Ant. :	2
Test Mode :	802.11n HT20	Temperature :	21~25°C
Test Band :	2.4GHz Mid	Relative Humidity :	51~54%
Test Channel :	06	Test Engineer :	Tommy Lee and Aking Chang



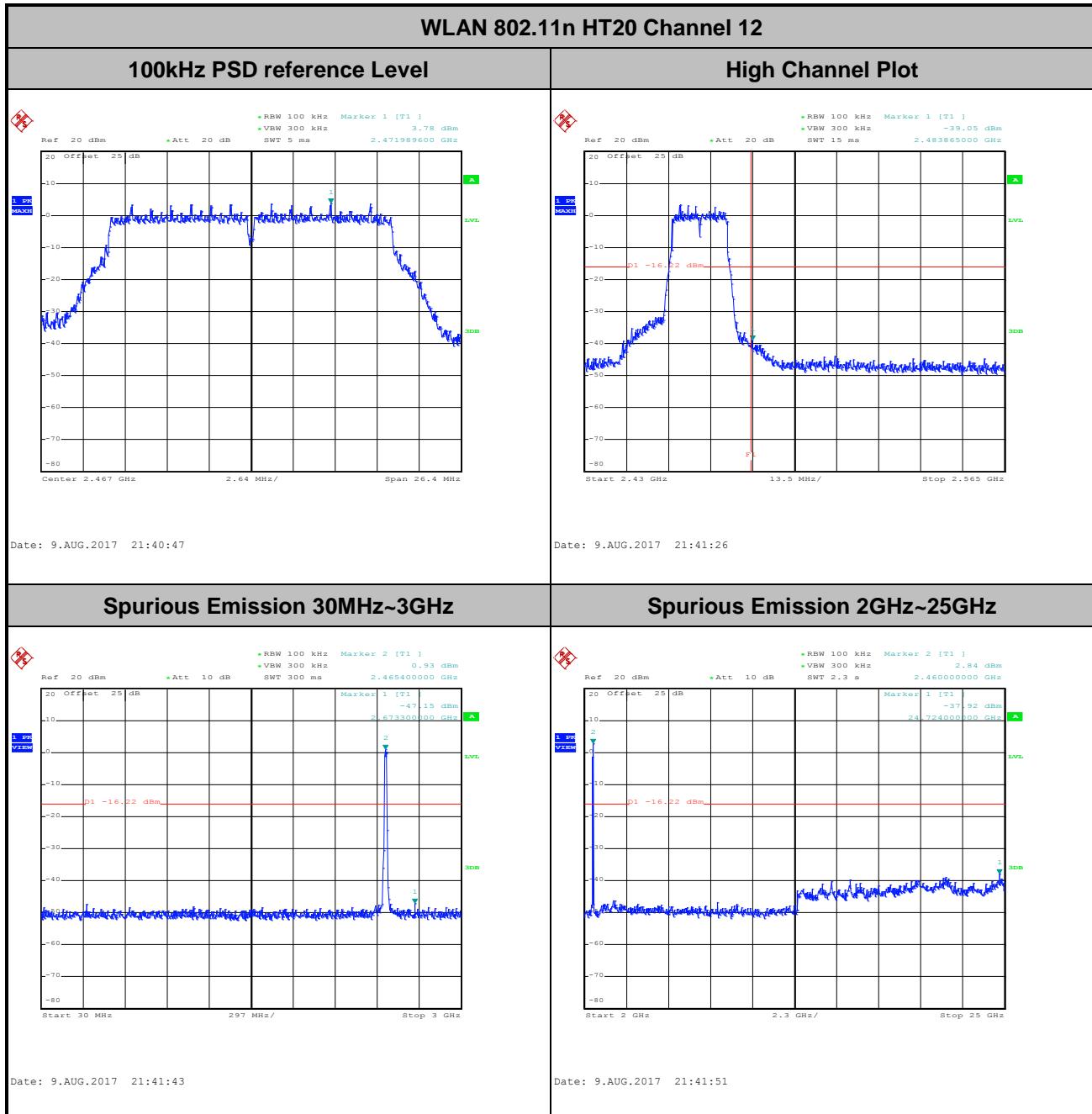


Number of TX :	2	Ant. :	2
Test Mode :	802.11n HT20	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	11	Test Engineer :	Tommy Lee and Aking Chang



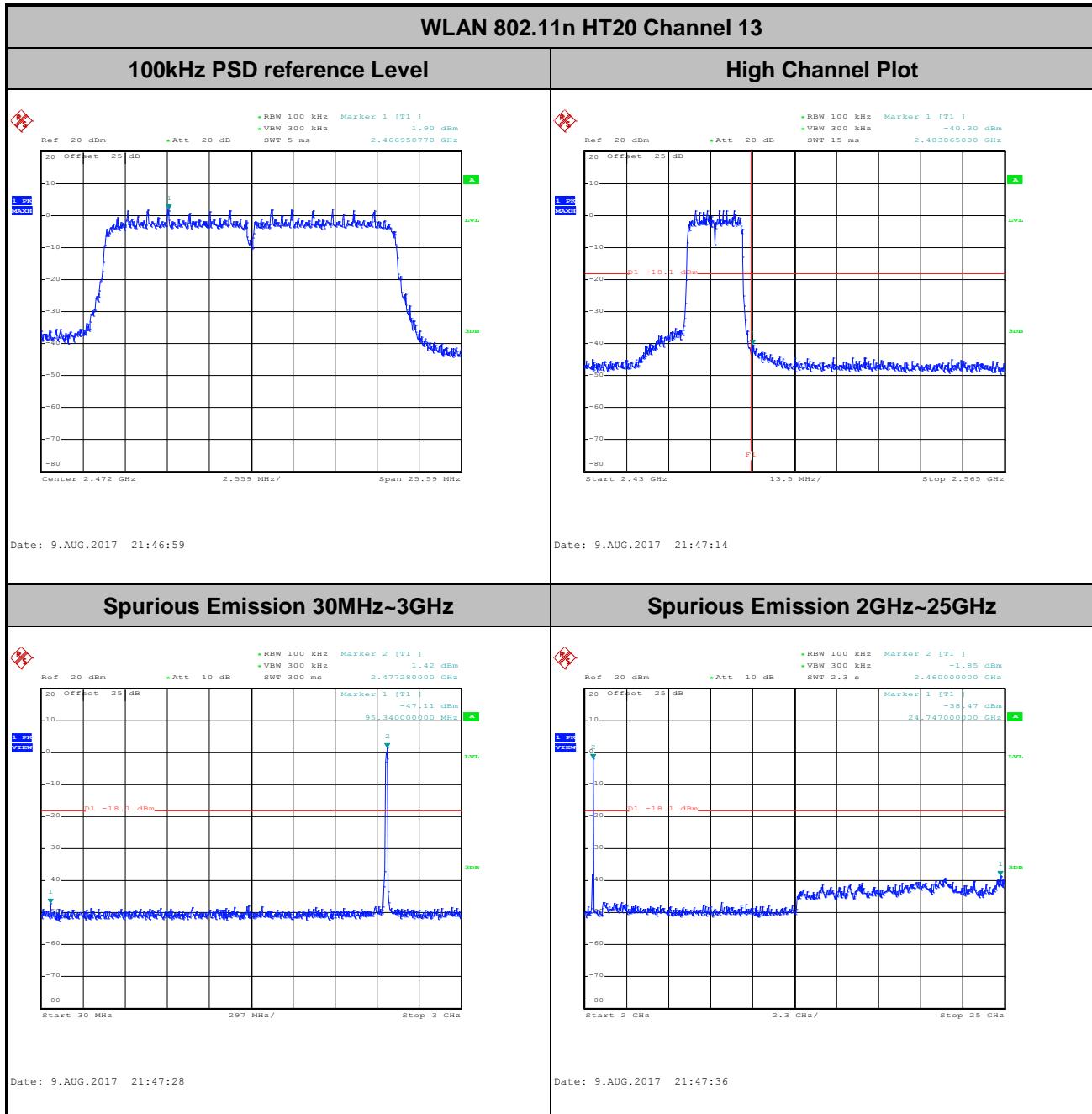


Number of TX :	2	Ant. :	2
Test Mode :	802.11n HT20	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	12	Test Engineer :	Tommy Lee and Aking Chang





Number of TX :	2	Ant. :	2
Test Mode :	802.11n HT20	Temperature :	21~25°C
Test Band :	2.4GHz High	Relative Humidity :	51~54%
Test Channel :	13	Test Engineer :	Tommy Lee and Aking Chang





3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated band edge and Spurious Emission Measurement

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the limits as below.

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 – 960	200	3
Above 960	500	3

3.5.2 Measuring Instruments

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



3.5.3 Test Procedures

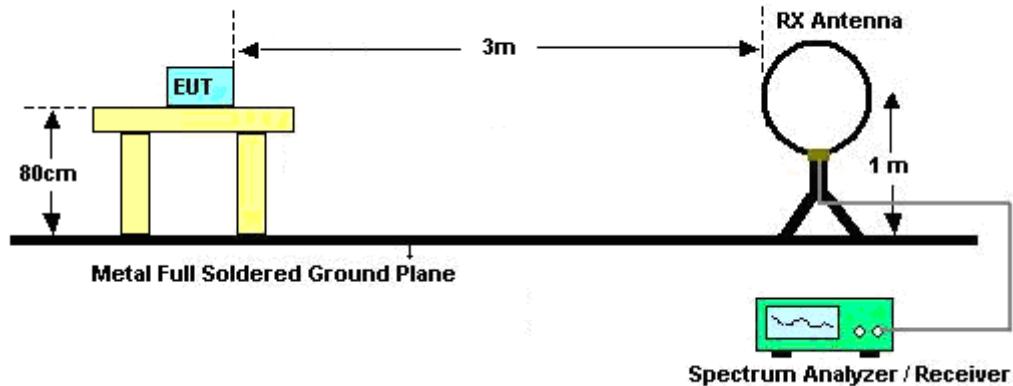
1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v04.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
8. 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:

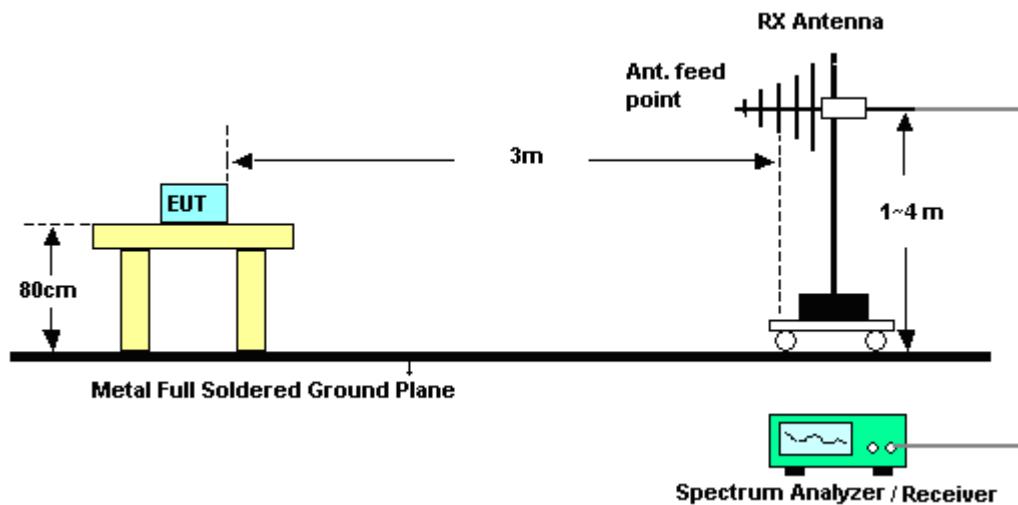
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - $VBW \geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

3.5.4 Test Setup

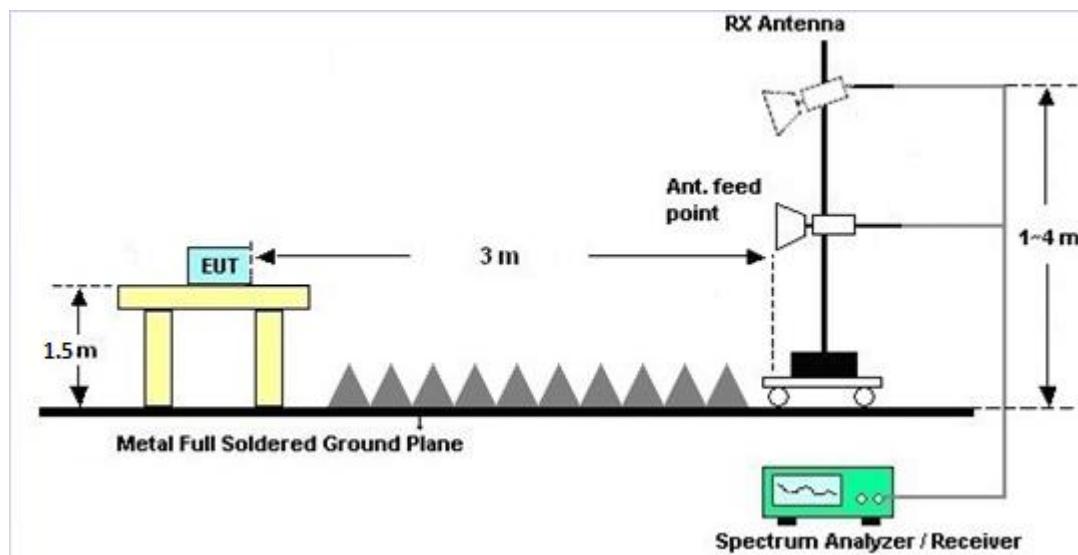
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.5.5 Test Results of Radiated Spurious Emissions (9kHz ~ 30MHz)

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C and D.

3.5.7 Duty Cycle

Please refer to Appendix E.

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

Please refer to Appendix C and D.



3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of Emission (MHz)	Conducted Limit (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.

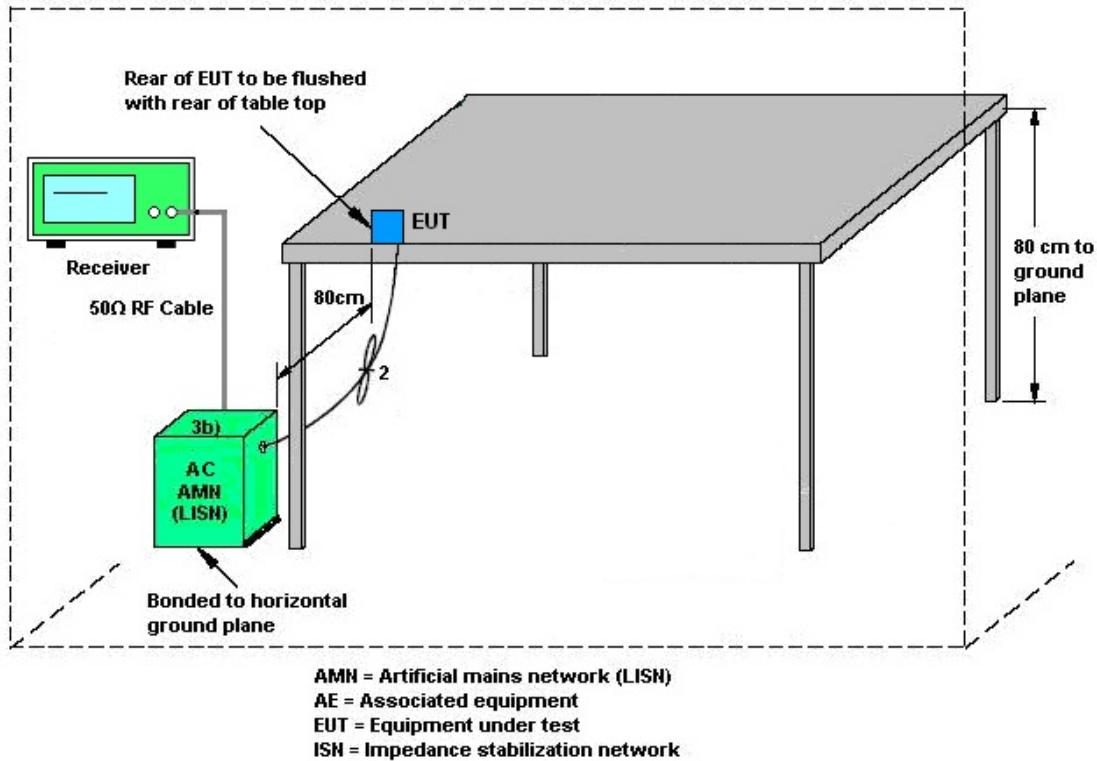
3.6.2 Measuring Instruments

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



3.6.5 Test Result of AC Conducted Emission

Please refer to Appendix B.



3.7 Antenna Requirements

3.7.1 Standard Applicable

If directional gain of transmitting Antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. The use of a permanently attached Antenna or of an Antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the rule.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 Antenna Gain

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.

For power, the directional gain G_{ANT} is set equal to the antenna having the highest gain, i.e., F2)f)i).

For PSD, the directional gain calculation is following F2)f)ii) of KDB 662911 D01 v02r01.

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

The directional gain "DG" is calculated as following table.

			DG for Power	DG for PSD	Power Limit	PSD Limit
	Ant. 1 (dBi)	Ant. 2 (dBi)	(dBi)	(dBi)	(dB)	(dB)
2.4 GHz	1.90	0.70	1.90	4.33	0.00	0.00

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

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



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Power Meter	Anritsu	ML2495A	0932001	N/A	Sep. 29, 2016	Jul. 19, 2017 ~ Aug. 09, 2017	Sep. 28, 2017	Conducted (TH05-HY)
Power Sensor	Anritsu	MA2411B	0846202	300MHz~40GHz	Sep. 29, 2016	Jul. 19, 2017 ~ Aug. 09, 2017	Sep. 28, 2017	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100057	9kHz-40GHz	Nov. 25, 2016	Jul. 19, 2017 ~ Aug. 09, 2017	Nov. 24, 2017	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Aug. 03, 2017	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Aug. 30, 2016	Aug. 03, 2017	Aug. 29, 2017	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Nov. 29, 2016	Aug. 03, 2017	Nov. 28, 2017	Conduction (CO05-HY)
Amplifier	SONOMA	310N	187312	9kHz~1GHz	Nov. 10, 2016	Jul. 27, 2017 ~ Aug. 10, 2017	Nov. 09, 2017	Radiation (03CH12-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Oct. 20, 2016	Jul. 27, 2017 ~ Aug. 10, 2017	Oct. 19, 2018	Radiation (03CH12-HY)
Bilog Antenna	TESEQ	CBL 6111D&00800 N1D01N-06	37059&01	30MHz~1GHz	Oct. 15, 2016	Jul. 27, 2017 ~ Aug. 10, 2017	Oct. 14, 2017	Radiation (03CH12-HY)
EMI Test Receiver	Rohde & Schwarz	ESU26	100390	20Hz~26.5GHz	Dec. 23, 2016	Jul. 27, 2017 ~ Aug. 10, 2017	Dec. 22, 2017	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1328	1GHz ~ 18GHz	Oct. 25, 2016	Jul. 27, 2017 ~ Aug. 10, 2017	Oct. 24, 2017	Radiation (03CH12-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1815698	1GHz~18GHz	Dec. 01, 2016	Jul. 27, 2017 ~ Aug. 10, 2017	Nov. 30, 2017	Radiation (03CH12-HY)
Preamplifier	Keysight	83017A	MY532701 48	1GHz~26.5GHz	Jan. 12, 2017	Jul. 27, 2017 ~ Aug. 10, 2017	Jan. 11, 2018	Radiation (03CH12-HY)
Filter	Wainwright	WLJ4-1000-1 530-6000-40S T	SN3	1.53 GHz Lowpass	Mar. 24, 2017	Jul. 27, 2017 ~ Aug. 10, 2017	Mar. 23, 2018	Radiation (03CH12-HY)
Filter	Wainwright	WPKX12-270 0-3000-18000 -60ST	SN2	3 GHz Highpass	Jul. 17, 2017	Jul. 27, 2017 ~ Aug. 10 2017	Jul. 16, 2018	Radiation (03CH12-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Jul. 27, 2017 ~ Aug. 10, 2017	N/A	Radiation (03CH12-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Jul. 27, 2017 ~ Aug. 10, 2017	N/A	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170 576	BBHA9170 576	18GHz ~ 40GHz	Apr. 27, 2017	Jul. 27, 2017 ~ Aug. 10, 2017	Apr. 26, 2018	Radiation (03CH12-HY)
Preamplifier	MITEQ	TTA1840-35-HG	1887435	18GHz~40GHz	Oct. 13, 2016	Jul. 27, 2017 ~ Aug. 10, 2017	Oct. 12, 2017	Radiation (03CH12-HY)



5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_{c(y)}$)	2.70
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_{c(y)}$)	5.10
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_{c(y)}$)	5.20
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_{c(y)}$)	4.70
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Appendix A. Test Result of Conducted Test Items

Test Engineer:	Tommy Lee / Aking chang	Temperature:	21~25	°C
Test Date:	2017/7/19~2017/8/9	Relative Humidity:	51~54	%

TEST RESULTS DATA
6dB and 99% Occupied Bandwidth

2.4GHz Band										
Mod.	Data Rate	Ntx	CH.	Freq. (MHz)	99% Occupied BW (MHz)		6dB BW (MHz)		6dB BW Limit (MHz)	Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2		
11b	1Mbps	1	1	2412	11.65	11.70	8.06	8.02	0.50	Pass
11b	1Mbps	1	6	2437	11.60	11.65	8.04	8.04	0.50	Pass
11b	1Mbps	1	11	2462	11.60	11.65	7.04	8.08	0.50	Pass
11b	1Mbps	1	12	2467	11.55	11.65	8.02	8.08	0.50	Pass
11b	1Mbps	1	13	2472	11.60	11.65	8.02	8.02	0.50	Pass
11g	6Mbps	1	1	2412	18.40	18.15	16.32	16.30	0.50	Pass
11g	6Mbps	1	6	2437	18.70	18.45	16.32	16.32	0.50	Pass
11g	6Mbps	1	11	2462	18.35	18.45	16.30	16.30	0.50	Pass
11g	6Mbps	1	12	2467	18.35	18.25	16.32	16.30	0.50	Pass
11g	6Mbps	1	13	2472	17.40	17.25	16.34	16.34	0.50	Pass
HT20	MCS0	1	1	2412	19.15	19.10	17.54	17.50	0.50	Pass
HT20	MCS0	1	6	2437	19.45	19.15	17.58	17.52	0.50	Pass
HT20	MCS0	1	11	2462	19.30	19.20	17.54	17.56	0.50	Pass
HT20	MCS0	1	12	2467	19.05	19.15	17.56	17.54	0.50	Pass
HT20	MCS0	1	13	2472	17.95	18.05	17.10	17.06	0.50	Pass
11g	6Mbps	2	1	2412	18.25	18.05	16.30	16.30	0.50	Pass
11g	6Mbps	2	6	2437	18.75	18.30	16.30	16.34	0.50	Pass
11g	6Mbps	2	11	2462	18.35	18.25	16.30	16.32	0.50	Pass
11g	6Mbps	2	12	2467	18.20	18.30	16.32	16.32	0.50	Pass
11g	6Mbps	2	13	2472	17.20	17.20	16.32	16.32	0.50	Pass
HT20	MCS0	2	1	2412	19.15	19.00	17.80	17.60	0.50	Pass
HT20	MCS0	2	6	2437	19.60	19.25	17.58	17.58	0.50	Pass
HT20	MCS0	2	11	2462	19.05	18.90	17.50	17.54	0.50	Pass
HT20	MCS0	2	12	2467	19.05	19.00	17.56	17.60	0.50	Pass
HT20	MCS0	2	13	2472	18.00	18.00	17.06	17.06	0.50	Pass

TEST RESULTS DATA
Peak Output Power

2.4GHz Band																
Mod.	Data Rate	Ntx	CH.	Freq. (MHz)	Peak Conducted Power (dBm)			Conducted Power Limit (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)		Pass /Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	
11b	1Mbps	1	1	2412	22.80	22.53		30.00	30.00	1.90	0.70	24.70	23.23	36.00	36.00	Pass
11b	1Mbps	1	6	2437	23.59	23.50		30.00	30.00	1.90	0.70	25.49	24.20	36.00	36.00	Pass
11b	1Mbps	1	11	2462	22.85	23.48		30.00	30.00	1.90	0.70	24.75	24.18	36.00	36.00	Pass
11b	1Mbps	1	12	2467	19.30	19.95		30.00	30.00	1.90	0.70	21.20	20.65	36.00	36.00	Pass
11b	1Mbps	1	13	2472	16.26	16.55		30.00	30.00	1.90	0.70	18.16	17.25	36.00	36.00	Pass
11g	6Mbps	1	1	2412	25.06	24.25		30.00	30.00	1.90	0.70	26.96	24.95	36.00	36.00	Pass
11g	6Mbps	1	6	2437	25.55	25.60		30.00	30.00	1.90	0.70	27.45	26.30	36.00	36.00	Pass
11g	6Mbps	1	11	2462	25.00	25.30		30.00	30.00	1.90	0.70	26.90	26.00	36.00	36.00	Pass
11g	6Mbps	1	12	2467	24.55	25.05		30.00	30.00	1.90	0.70	26.45	25.75	36.00	36.00	Pass
11g	6Mbps	1	13	2472	24.50	24.69		30.00	30.00	1.90	0.70	26.40	25.39	36.00	36.00	Pass
HT20	MCS0	1	1	2412	24.25	23.15		30.00	30.00	1.90	0.70	26.15	23.85	36.00	36.00	Pass
HT20	MCS0	1	6	2437	25.50	25.73		30.00	30.00	1.90	0.70	27.40	26.43	36.00	36.00	Pass
HT20	MCS0	1	11	2462	25.05	24.85		30.00	30.00	1.90	0.70	26.95	25.55	36.00	36.00	Pass
HT20	MCS0	1	12	2467	24.73	24.49		30.00	30.00	1.90	0.70	26.63	25.19	36.00	36.00	Pass
HT20	MCS0	1	13	2472	23.35	24.47		30.00	30.00	1.90	0.70	25.25	25.17	36.00	36.00	Pass
11g	6Mbps	2	1	2412	23.82	23.14	26.50	30.00		1.90		28.40		36.00		Pass
11g	6Mbps	2	6	2437	25.41	25.23	28.33	30.00		1.90		30.23		36.00		Pass
11g	6Mbps	2	11	2462	24.61	24.35	27.49	30.00		1.90		29.39		36.00		Pass
11g	6Mbps	2	12	2467	23.40	22.95	26.19	30.00		1.90		28.09		36.00		Pass
11g	6Mbps	2	13	2472	21.96	21.25	24.63	30.00		1.90		26.53		36.00		Pass
HT20	MCS0	2	1	2412	21.48	20.80	24.16	30.00		1.90		26.06		36.00		Pass
HT20	MCS0	2	6	2437	25.40	25.28	28.35	30.00		1.90		30.25		36.00		Pass
HT20	MCS0	2	11	2462	24.42	23.82	27.14	30.00		1.90		29.04		36.00		Pass
HT20	MCS0	2	12	2467	23.15	22.45	25.82	30.00		1.90		27.72		36.00		Pass
HT20	MCS0	2	13	2472	22.62	21.35	25.04	30.00		1.90		26.94		36.00		Pass

TEST RESULTS DATA
Average Output Power

2.4GHz Band									
Mod.	Data Rate	Ntx	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)		
					Ant 1	Ant 2	Ant 1	Ant 2	SUM
11b	1Mbps	1	1	2412	0.05	0.05	19.81	19.45	
11b	1Mbps	1	6	2437	0.05	0.05	20.30	20.31	
11b	1Mbps	1	11	2462	0.05	0.05	19.80	20.30	
11b	1Mbps	1	12	2467	0.05	0.05	16.15	16.54	
11b	1Mbps	1	13	2472	0.05	0.05	12.95	13.25	
11g	6Mbps	1	1	2412	0.35	0.35	18.18	17.47	
11g	6Mbps	1	6	2437	0.35	0.35	19.95	19.99	
11g	6Mbps	1	11	2462	0.35	0.35	18.30	18.62	
11g	6Mbps	1	12	2467	0.35	0.35	17.68	18.06	
11g	6Mbps	1	13	2472	0.35	0.35	16.30	16.70	
HT20	MCS0	1	1	2412	0.31	0.38	17.06	16.03	
HT20	MCS0	1	6	2437	0.31	0.38	19.79	19.83	
HT20	MCS0	1	11	2462	0.31	0.38	18.01	17.88	
HT20	MCS0	1	12	2467	0.31	0.38	17.56	17.33	
HT20	MCS0	1	13	2472	0.31	0.38	14.76	15.98	
11g	6Mbps	2	1	2412	0.29	0.29	16.51	16.01	19.28
11g	6Mbps	2	6	2437	0.29	0.29	19.93	19.30	22.64
11g	6Mbps	2	11	2462	0.29	0.29	17.64	17.18	20.43
11g	6Mbps	2	12	2467	0.29	0.29	16.05	15.89	18.98
11g	6Mbps	2	13	2472	0.29	0.29	14.01	13.71	16.88
HT20	MCS0	2	1	2412	0.34	0.34	14.19	13.95	17.08
HT20	MCS0	2	6	2437	0.34	0.34	19.84	19.23	22.56
HT20	MCS0	2	11	2462	0.34	0.34	17.14	16.36	19.78
HT20	MCS0	2	12	2467	0.34	0.34	15.62	15.03	18.35
HT20	MCS0	2	13	2472	0.34	0.34	13.84	13.36	16.62

TEST RESULTS DATA
Peak Power Spectral Density

2.4GHz Band												
Mod.	Data Rate	N _{Tx}	CH.	Freq. (MHz)	Peak PSD (dBm/3kHz)			DG (dBi)		Peak PSD Limit (dBm/3kHz)		Pass/Fail
					Ant 1	Ant 2	Worse + 3.01	Ant 1	Ant 2	Ant 1	Ant 2	
11b	1Mbps	1	1	2412	-2.36	-3.60		1.90	0.70	8.00	8.00	Pass
11b	1Mbps	1	6	2437	-1.18	-2.17		1.90	0.70	8.00	8.00	Pass
11b	1Mbps	1	11	2462	-2.22	-2.21		1.90	0.70	8.00	8.00	Pass
11b	1Mbps	1	12	2467	-7.04	-5.06		1.90	0.70	8.00	8.00	Pass
11b	1Mbps	1	13	2472	-9.08	-9.63		1.90	0.70	8.00	8.00	Pass
11g	6Mbps	1	1	2412	-8.02	-8.36		1.90	0.70	8.00	8.00	Pass
11g	6Mbps	1	6	2437	-4.79	-6.26		1.90	0.70	8.00	8.00	Pass
11g	6Mbps	1	11	2462	-7.43	-6.87		1.90	0.70	8.00	8.00	Pass
11g	6Mbps	1	12	2467	-8.04	-8.54		1.90	0.70	8.00	8.00	Pass
11g	6Mbps	1	13	2472	-9.40	-9.24		1.90	0.70	8.00	8.00	Pass
HT20	MCS0	1	1	2412	-8.82	-10.09		1.90	0.70	8.00	8.00	Pass
HT20	MCS0	1	6	2437	-6.61	-5.85		1.90	0.70	8.00	8.00	Pass
HT20	MCS0	1	11	2462	-8.08	-8.36		1.90	0.70	8.00	8.00	Pass
HT20	MCS0	1	12	2467	-8.85	-8.23		1.90	0.70	8.00	8.00	Pass
HT20	MCS0	1	13	2472	-11.05	-10.50		1.90	0.70	8.00	8.00	Pass
11g	6Mbps	2	1	2412	-9.58	-10.34	-6.57	4.33		8.00		Pass
11g	6Mbps	2	6	2437	-5.49	-5.78	-2.48	4.33		8.00		Pass
11g	6Mbps	2	11	2462	-8.18	-8.89	-5.17	4.33		8.00		Pass
11g	6Mbps	2	12	2467	-8.88	-9.99	-5.87	4.33		8.00		Pass
11g	6Mbps	2	13	2472	-11.52	-12.26	-8.51	4.33		8.00		Pass
HT20	MCS0	2	1	2412	-12.28	-12.18	-9.17	4.33		8.00		Pass
HT20	MCS0	2	6	2437	-5.52	-7.10	-2.51	4.33		8.00		Pass
HT20	MCS0	2	11	2462	-8.61	-9.04	-5.60	4.33		8.00		Pass
HT20	MCS0	2	12	2467	-10.85	-10.05	-7.04	4.33		8.00		Pass
HT20	MCS0	2	13	2472	-12.01	-12.14	-9.00	4.33		8.00		Pass



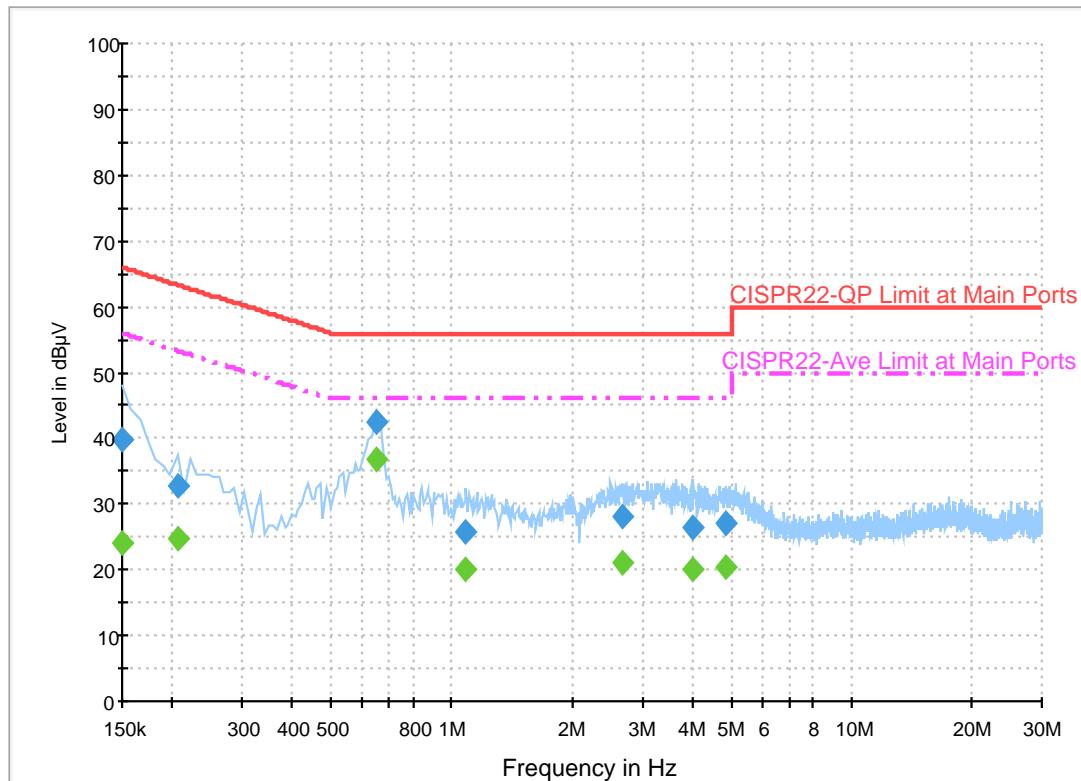
Appendix B. AC Conducted Emission Test Results

Test Engineer :	Kai-Chun Chu	Temperature :	26~27°C
		Relative Humidity :	52~53%

EUT Information

Report NO : 742716-01
 Test Mode : Mode 1
 Test Voltage : 120Vac/60Hz
 Phase : Line

ENV216 Auto Test FCC Power Bar - L



Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.150000	39.8	Off	L1	19.6	26.2	66.0
0.206000	32.8	Off	L1	19.6	30.6	63.4
0.646000	42.4	Off	L1	19.6	13.6	56.0
1.086000	25.7	Off	L1	19.6	30.3	56.0
2.686000	28.1	Off	L1	19.4	27.9	56.0
3.990000	26.5	Off	L1	19.7	29.5	56.0
4.838000	27.1	Off	L1	19.8	28.9	56.0

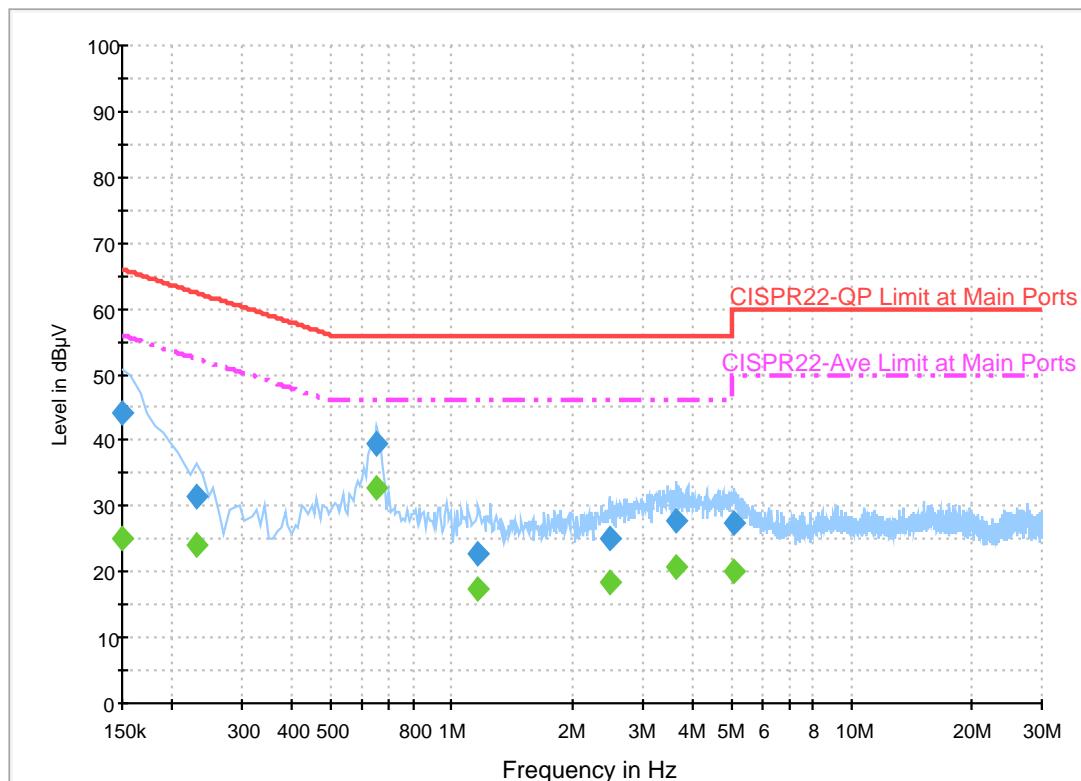
Final Result 2

Frequency (MHz)	Average (dB μ V)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.150000	24.2	Off	L1	19.6	31.8	56.0
0.206000	24.8	Off	L1	19.6	28.6	53.4
0.646000	36.8	Off	L1	19.6	9.2	46.0
1.086000	20.1	Off	L1	19.6	25.9	46.0
2.686000	21.1	Off	L1	19.4	24.9	46.0
3.990000	20.1	Off	L1	19.7	25.9	46.0
4.838000	20.4	Off	L1	19.8	25.6	46.0

EUT Information

Report NO : 742716-01
Test Mode : Mode 1
Test Voltage : 120Vac/60Hz
Phase : Neutral

ENV216 Auto Test FCC Power Bar - N



Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.150000	44.2	Off	N	19.5	21.8	66.0
0.230000	31.4	Off	N	19.5	31.0	62.4
0.646000	39.3	Off	N	19.5	16.7	56.0
1.166000	22.7	Off	N	19.6	33.3	56.0
2.478000	25.2	Off	N	19.2	30.8	56.0
3.662000	27.7	Off	N	19.7	28.3	56.0
5.118000	27.4	Off	N	19.8	32.6	60.0

Final Result 2

Frequency (MHz)	Average (dB μ V)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.150000	25.0	Off	N	19.5	31.0	56.0
0.230000	24.2	Off	N	19.5	28.2	52.4
0.646000	32.8	Off	N	19.5	13.2	46.0
1.166000	17.5	Off	N	19.6	28.5	46.0
2.478000	18.3	Off	N	19.2	27.7	46.0
3.662000	20.9	Off	N	19.7	25.1	46.0
5.118000	20.0	Off	N	19.8	30.0	50.0



Appendix C. Radiated Spurious Emission

Test Engineer :	Nick Yu, Peter Liao, and Ray Chen	Temperature :		23~25°C	
		Relative Humidity :		57~62%	

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.		(MHz)	(dB μ V/m)	(dB)	(dB μ V/m)	(dB μ V)	(dB/m)	(dB)	(dB)	(cm)	Pos	Pos	Avg.
802.11b CH 01 2412MHz	1	2386.125	59.35	-14.65	74	49.72	27.06	4.03	31.49	100	216	P	H
		2387.28	53	-1	54	43.37	27.06	4.03	31.49	100	216	A	H
	*	2412	110.18	-	-	100.45	27.14	4.05	31.49	100	216	P	H
	*	2412	106.2	-	-	96.47	27.14	4.05	31.49	100	216	A	H
		2386.125	56.22	-17.78	74	46.59	27.06	4.03	31.49	104	23	P	V
		2385.81	48.09	-5.91	54	38.46	27.06	4.03	31.49	104	23	A	V
	*	2412	106.89	-	-	97.16	27.14	4.05	31.49	104	23	P	V
	*	2412	102.88	-	-	93.15	27.14	4.05	31.49	104	23	A	V
802.11b CH 06 2437MHz		2387.98	53.21	-20.79	74	43.58	27.06	4.03	31.49	100	101	P	H
		2389.94	41.96	-12.04	54	32.32	27.07	4.03	31.49	100	101	A	H
	*	2437	111.09	-	-	101.26	27.21	4.07	31.48	100	101	P	H
	*	2437	107.14	-	-	97.31	27.21	4.07	31.48	100	101	A	H
		2487.33	53.51	-20.49	74	43.48	27.36	4.11	31.47	100	101	P	H
		2483.76	41.69	-12.31	54	31.67	27.35	4.11	31.47	100	101	A	H
		2374.68	52.46	-21.54	74	42.89	27.02	4.01	31.49	100	24	P	V
		2389.94	40.2	-13.8	54	30.56	27.07	4.03	31.49	100	24	A	V
	*	2437	108.33	-	-	98.5	27.21	4.07	31.48	100	24	P	V
	*	2437	104.34	-	-	94.51	27.21	4.07	31.48	100	24	A	V
		2491.46	54.32	-19.68	74	44.28	27.37	4.11	31.47	100	24	P	V
		2483.83	41.83	-12.17	54	31.81	27.35	4.11	31.47	100	24	A	V



802.11b CH 11 2462MHz	*	2462	110.68	-	-	100.75	27.29	4.08	31.47	100	98	P	H
	*	2462	106.66	-	-	96.73	27.29	4.08	31.47	100	98	A	H
		2488.44	58.74	-15.26	74	48.7	27.37	4.11	31.47	100	98	P	H
		2483.52	53	-1	54	42.98	27.35	4.11	31.47	100	98	A	H
	*	2462	108.14	-	-	98.21	27.29	4.08	31.47	100	24	P	V
	*	2462	104.15	-	-	94.22	27.29	4.08	31.47	100	24	A	V
		2483.84	58.29	-15.71	74	48.27	27.35	4.11	31.47	100	24	P	V
		2483.52	52.21	-1.79	54	42.19	27.35	4.11	31.47	100	24	A	V
	*	2467	108.07	-	-	98.12	27.3	4.09	31.47	145	216	P	H
802.11b CH 12 2467MHz	*	2467	103.99	-	-	94.04	27.3	4.09	31.47	145	216	A	H
		2483.52	61.47	-12.53	74	51.45	27.35	4.11	31.47	145	216	P	H
		2484.2	52.84	-1.16	54	42.82	27.35	4.11	31.47	145	216	A	H
	*	2467	103.66	-	-	93.71	27.3	4.09	31.47	105	0	P	V
	*	2467	99.75	-	-	89.8	27.3	4.09	31.47	105	0	A	V
		2483.84	57.84	-16.16	74	47.82	27.35	4.11	31.47	105	0	P	V
		2484.2	49.19	-4.81	54	39.17	27.35	4.11	31.47	105	0	A	V
	*	2472	104.91	-	-	94.94	27.32	4.09	31.47	144	219	P	H
802.11b CH 13 2472MHz	*	2472	100.87	-	-	90.9	27.32	4.09	31.47	144	219	A	H
		2485.84	59.43	-14.57	74	49.4	27.36	4.11	31.47	144	219	P	H
		2485.72	53.15	-0.85	54	43.12	27.36	4.11	31.47	144	219	A	H
	*	2472	101.18	-	-	91.21	27.32	4.09	31.47	179	353	P	V
	*	2472	97.23	-	-	87.26	27.32	4.09	31.47	179	353	A	V
		2484.76	57.86	-16.14	74	47.84	27.35	4.11	31.47	179	353	P	V
		2485.76	49.68	-4.32	54	39.65	27.36	4.11	31.47	179	353	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	Note	Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	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		2494	58.4	-15.6	74	48.34	27.38	4.11	31.46	100	216	P	H
		2494	47.94	-6.06	54	37.88	27.38	4.11	31.46	100	216	A	H
		4824	49.97	-24.03	74	69.4	32.18	6.17	58.31	100	0	P	H
		2494	58.65	-15.35	74	48.59	27.38	4.11	31.46	104	23	P	V
		2494	47.79	-6.21	54	37.73	27.38	4.11	31.46	104	23	A	V
		4824	49.61	-24.39	74	69.04	32.18	6.17	58.31	100	0	P	V
802.11b CH 06 2437MHz		4874	51.52	-22.48	74	70.76	32.27	6.21	58.24	108	212	P	H
		4874	47.98	-6.02	54	67.22	32.27	6.21	58.24	108	212	A	H
		7311	54.11	-19.89	74	68.16	36.97	7.72	59.09	103	88	P	H
		7311	47.1	-6.9	54	61.15	36.97	7.72	59.09	103	88	A	H
		4874	51.04	-22.96	74	70.28	32.27	6.21	58.24	308	86	P	V
		4874	47.74	-6.26	54	66.98	32.27	6.21	58.24	308	86	A	V
		7311	52.5	-21.5	74	66.55	36.97	7.72	59.09	106	85	P	V
		7311	44.87	-9.13	54	58.92	36.97	7.72	59.09	106	85	A	V
802.11b CH 11 2462MHz		4924	49.86	-24.14	74	68.95	32.36	6.23	58.18	100	0	P	H
		7386	53.39	-20.61	74	67.34	37.18	7.72	59.14	102	102	P	H
		7386	46.4	-7.6	54	60.35	37.18	7.72	59.14	102	102	A	H
		4924	49.49	-24.51	74	68.58	32.36	6.23	58.18	100	0	P	V
		7386	49.55	-24.45	74	63.5	37.18	7.72	59.14	100	0	P	V
802.11b CH 12 2467MHz		4934	47.02	-26.98	74	66.08	32.38	6.24	58.18	100	0	P	H
		7401	46.73	-27.27	74	60.66	37.22	7.72	59.15	100	0	P	H
		4934	48.39	-25.61	74	67.45	32.38	6.24	58.18	100	0	P	V
		7401	45.91	-28.09	74	59.84	37.22	7.72	59.15	100	0	P	V
802.11b CH 13 2472MHz		4944	45.36	-28.64	74	64.39	32.4	6.24	58.16	100	0	P	H
		7416	44.11	-29.89	74	57.97	37.26	7.74	59.15	100	0	P	H
		4944	44.62	-29.38	74	63.65	32.4	6.24	58.16	100	0	P	V
		7416	44.67	-29.33	74	58.53	37.26	7.74	59.15	100	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 802.11g (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	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		2389.275	63.39	-10.61	74	53.75	27.07	4.03	31.49	147	230	P	H
		2390	52.52	-1.48	54	42.88	27.07	4.03	31.49	147	230	A	H
	*	2412	110.43	-	-	100.7	27.14	4.05	31.49	147	230	P	H
	*	2412	100.21	-	-	90.48	27.14	4.05	31.49	147	230	A	H
		2389.59	60.33	-13.67	74	50.69	27.07	4.03	31.49	105	24	P	V
		2389.905	48.69	-5.31	54	39.05	27.07	4.03	31.49	105	24	A	V
	*	2412	106.64	-	-	96.91	27.14	4.05	31.49	105	24	P	V
	*	2412	96.19	-	-	86.46	27.14	4.05	31.49	105	24	A	V
802.11g CH 06 2437MHz		2389.24	61.15	-12.85	74	51.51	27.07	4.03	31.49	365	190	P	H
		2389.66	48.85	-5.15	54	39.21	27.07	4.03	31.49	365	190	A	H
	*	2437	112.19	-	-	102.36	27.21	4.07	31.48	365	190	P	H
	*	2437	102.19	-	-	92.36	27.21	4.07	31.48	365	190	A	H
		2483.5	59.03	-14.97	74	49.01	27.35	4.11	31.47	365	190	P	H
		2484.46	47.99	-6.01	54	37.97	27.35	4.11	31.47	365	190	A	H
		2389.8	55.57	-18.43	74	45.93	27.07	4.03	31.49	360	97	P	V
		2388.96	44.57	-9.43	54	34.93	27.07	4.03	31.49	360	97	A	V
	*	2437	109.26	-	-	99.43	27.21	4.07	31.48	360	97	P	V
	*	2437	99.39	-	-	89.56	27.21	4.07	31.48	360	97	A	V
		2483.76	57.63	-16.37	74	47.61	27.35	4.11	31.47	360	97	P	V
		2484.6	46.81	-7.19	54	36.79	27.35	4.11	31.47	360	97	A	V



802.11g CH 11 2462MHz	*	2462	110.44	-	-	100.51	27.29	4.08	31.47	355	212	P	H
	*	2462	100.93	-	-	91	27.29	4.08	31.47	355	212	A	H
		2484.44	62.19	-11.81	74	52.17	27.35	4.11	31.47	355	212	P	H
		2483.56	50.14	-3.86	54	40.12	27.35	4.11	31.47	355	212	A	H
	*	2462	107.54	-	-	97.61	27.29	4.08	31.47	400	97	P	V
	*	2462	97.79	-	-	87.86	27.29	4.08	31.47	400	97	A	V
		2484.68	62.45	-11.55	74	52.43	27.35	4.11	31.47	400	97	P	V
		2483.52	49.31	-4.69	54	39.29	27.35	4.11	31.47	400	97	A	V
	*	2467	110.17	-	-	100.22	27.3	4.09	31.47	356	210	P	H
802.11g CH 12 2467MHz	*	2467	100.16	-	-	90.21	27.3	4.09	31.47	356	210	A	H
		2485.88	63.14	-10.86	74	53.11	27.36	4.11	31.47	356	210	P	H
		2483.6	51.05	-2.95	54	41.03	27.35	4.11	31.47	356	210	A	H
	*	2467	107.89	-	-	97.94	27.3	4.09	31.47	394	97	P	V
	*	2467	97.67	-	-	87.72	27.3	4.09	31.47	394	97	A	V
		2483.88	62.96	-11.04	74	52.94	27.35	4.11	31.47	394	97	P	V
		2483.6	50.53	-3.47	54	40.51	27.35	4.11	31.47	394	97	A	V
802.11g CH 13 2472MHz	*	2472	107.69	-	-	97.72	27.32	4.09	31.47	357	211	P	H
	*	2472	98.64	-	-	88.67	27.32	4.09	31.47	357	211	A	H
		2484.24	65.15	-8.85	74	55.13	27.35	4.11	31.47	357	211	P	H
		2483.52	53.16	-0.84	54	43.14	27.35	4.11	31.47	357	211	A	H
	*	2472	106.6	-	-	96.63	27.32	4.09	31.47	396	97	P	V
	*	2472	96.38	-	-	86.41	27.32	4.09	31.47	396	97	A	V
		2484.24	65.06	-8.94	74	55.04	27.35	4.11	31.47	396	97	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 802.11g (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	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		2490	57.67	-16.33	74	47.63	27.37	4.11	31.47	147	230	P	H
		2490	45.3	-8.7	54	35.26	27.37	4.11	31.47	147	230	A	H
		4824	43.99	-30.01	74	63.42	32.18	6.17	58.31	400	0	P	H
		2498	58.07	-15.93	74	48	27.39	4.11	31.46	105	24	P	V
		2498	45.42	-8.58	54	35.35	27.39	4.11	31.46	105	24	A	V
		4824	43.73	-30.27	74	63.16	32.18	6.17	58.31	100	0	P	V
802.11g CH 06 2437MHz		3654	40.37	-33.63	74	63.81	29.35	5.37	58.99	100	0	P	H
		4874	44.39	-29.61	74	63.63	32.27	6.21	58.24	100	0	P	H
		7311	55.87	-18.13	74	69.92	36.97	7.72	59.09	100	97	P	H
		7311	40.05	-13.95	54	54.1	36.97	7.72	59.09	100	97	A	H
		3654	43.44	-30.56	74	66.88	29.35	5.37	58.99	100	0	P	V
		4874	46.17	-27.83	74	65.41	32.27	6.21	58.24	100	0	P	V
802.11g CH 11 2462MHz		7311	49.27	-24.73	74	63.32	36.97	7.72	59.09	100	0	P	V
		4924	44.69	-29.31	74	63.78	32.36	6.23	58.18	100	0	P	H
		7386	49.97	-24.03	74	63.92	37.18	7.72	59.14	100	0	P	H
		4924	45.51	-28.49	74	64.6	32.36	6.23	58.18	100	0	P	V
802.11g CH 12 2467MHz		7386	47.25	-26.75	74	61.2	37.18	7.72	59.14	100	0	P	V
		4934	44.31	-29.69	74	63.37	32.38	6.24	58.18	100	0	P	H
		7401	46.4	-27.6	74	60.33	37.22	7.72	59.15	100	0	P	H
		4934	45.44	-28.56	74	64.5	32.38	6.24	58.18	100	0	P	V
802.11g CH 13 2472MHz		7401	47.07	-26.93	74	61	37.22	7.72	59.15	100	0	P	V
		4944	46.05	-27.95	74	65.08	32.4	6.24	58.16	100	0	P	H
		7416	45.47	-28.53	74	59.33	37.26	7.74	59.15	100	0	P	H
		4944	43.87	-30.13	74	62.9	32.4	6.24	58.16	100	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 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	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		2389.59	65.84	-8.16	74	56.2	27.07	4.03	31.49	210	217	P	H
		2390	52.75	-1.25	54	43.11	27.07	4.03	31.49	210	217	A	H
	*	2412	109.91	-	-	100.18	27.14	4.05	31.49	210	217	P	H
	*	2412	99.69	-	-	89.96	27.14	4.05	31.49	210	217	A	H
		2389.065	64.13	-9.87	74	54.49	27.07	4.03	31.49	100	40	P	V
		2389.905	50.74	-3.26	54	41.1	27.07	4.03	31.49	100	40	A	V
	*	2412	106.73	-	-	97	27.14	4.05	31.49	100	40	P	V
	*	2412	96.39	-	-	86.66	27.14	4.05	31.49	100	40	A	V
802.11n HT20 CH 06 2437MHz		2381.68	57.59	-16.41	74	47.97	27.05	4.03	31.49	313	136	P	H
		2389.66	44.92	-9.08	54	35.28	27.07	4.03	31.49	313	136	A	H
	*	2437	111.48	-	-	101.65	27.21	4.07	31.48	313	136	P	H
	*	2437	100.92	-	-	91.09	27.21	4.07	31.48	313	136	A	H
		2484.39	60.01	-13.99	74	49.99	27.35	4.11	31.47	313	136	P	H
		2483.62	48.5	-5.5	54	38.48	27.35	4.11	31.47	313	136	A	H
		2389.38	59.19	-14.81	74	49.55	27.07	4.03	31.49	100	42	P	V
		2389.94	46.88	-7.12	54	37.24	27.07	4.03	31.49	100	42	A	V
	*	2437	109.27	-	-	99.44	27.21	4.07	31.48	100	42	P	V
	*	2437	98.94	-	-	89.11	27.21	4.07	31.48	100	42	A	V
		2483.76	57.33	-16.67	74	47.31	27.35	4.11	31.47	100	42	P	V
		2483.55	45.89	-8.11	54	35.87	27.35	4.11	31.47	100	42	A	V



802.11n HT20 CH 11 2462MHz	*	2462	109.75	-	-	99.82	27.29	4.08	31.47	100	227	P	H
	*	2462	99.67	-	-	89.74	27.29	4.08	31.47	100	227	A	H
		2484.32	65.16	-8.84	74	55.14	27.35	4.11	31.47	100	227	P	H
		2483.72	51.23	-2.77	54	41.21	27.35	4.11	31.47	100	227	A	H
	*	2462	108.22	-	-	98.29	27.29	4.08	31.47	400	242	P	V
	*	2462	97.74	-	-	87.81	27.29	4.08	31.47	400	242	A	V
		2483.72	65.24	-8.76	74	55.22	27.35	4.11	31.47	400	242	P	V
		2483.52	49.42	-4.58	54	39.4	27.35	4.11	31.47	400	242	A	V
802.11n HT20 CH 12 2467MHz	*	2467	108.67	-	-	98.72	27.3	4.09	31.47	102	141	P	H
	*	2467	98.66	-	-	88.71	27.3	4.09	31.47	102	141	A	H
		2483.8	64.92	-9.08	74	54.9	27.35	4.11	31.47	102	141	P	H
		2483.56	52.5	-1.5	54	42.48	27.35	4.11	31.47	102	141	A	H
	*	2467	107.28	-	-	97.33	27.3	4.09	31.47	400	242	P	V
	*	2467	97.05	-	-	87.1	27.3	4.09	31.47	400	242	A	V
		2484.32	63.19	-10.81	74	53.17	27.35	4.11	31.47	400	242	P	V
		2483.72	51.01	-2.99	54	40.99	27.35	4.11	31.47	400	242	A	V
802.11n HT20 CH 13 2472MHz	*	2472	107.3	-	-	97.33	27.32	4.09	31.47	130	141	P	H
	*	2472	97.13	-	-	87.16	27.32	4.09	31.47	130	141	A	H
		2483.68	62.66	-11.34	74	52.64	27.35	4.11	31.47	130	141	P	H
		2483.52	51.66	-2.34	54	41.64	27.35	4.11	31.47	130	141	A	H
	*	2472	104.59	-	-	94.62	27.32	4.09	31.47	400	242	P	V
	*	2472	94.8	-	-	84.83	27.32	4.09	31.47	400	242	A	V
		2484.44	60.17	-13.83	74	50.15	27.35	4.11	31.47	400	242	P	V
		2483.52	48.82	-5.18	54	38.8	27.35	4.11	31.47	400	242	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	Note	Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	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		2490	59.57	-14.43	74	49.53	27.37	4.11	31.47	210	217	P	H
		2490	45.65	-8.35	54	35.61	27.37	4.11	31.47	210	217	A	H
		4824	42.67	-31.33	74	62.1	32.18	6.17	58.31	100	0	P	H
		2490	56.28	-17.72	74	46.24	27.37	4.11	31.47	100	40	P	V
		2490	42.27	-11.73	54	32.23	27.37	4.11	31.47	100	40	A	V
		4824	43.17	-30.83	74	62.6	32.18	6.17	58.31	100	0	P	V
802.11n HT20 CH 06 2437MHz		4874	45.74	-28.26	74	64.98	32.27	6.21	58.24	100	0	P	H
		7311	50.21	-23.79	74	64.26	36.97	7.72	59.09	100	0	P	H
		4874	44.93	-29.07	74	64.17	32.27	6.21	58.24	100	0	P	V
		7311	47.11	-26.89	74	61.16	36.97	7.72	59.09	100	0	P	V
802.11n HT20 CH 11 2462MHz		4924	44.83	-29.17	74	63.92	32.36	6.23	58.18	100	0	P	H
		7386	48.2	-25.8	74	62.15	37.18	7.72	59.14	100	0	P	H
		4924	44.5	-29.5	74	63.59	32.36	6.23	58.18	100	0	P	V
		7386	45.78	-28.22	74	59.73	37.18	7.72	59.14	100	0	P	V
802.11n HT20 CH 12 2467MHz		4934	44.76	-29.24	74	63.82	32.38	6.24	58.18	100	0	P	H
		7401	47.34	-26.66	74	61.27	37.22	7.72	59.15	100	0	P	H
		4934	44.54	-29.46	74	63.6	32.38	6.24	58.18	100	0	P	V
		7401	46.78	-27.22	74	60.71	37.22	7.72	59.15	100	0	P	V
802.11n HT20 CH 13 2472MHz		4944	43.95	-30.05	74	62.98	32.4	6.24	58.16	100	0	P	H
		7416	45.57	-28.43	74	59.43	37.26	7.74	59.15	100	0	P	H
		4944	42.78	-31.22	74	61.81	32.4	6.24	58.16	100	0	P	V
		7416	44.9	-29.1	74	58.76	37.26	7.74	59.15	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission below 1GHz

2.4GHz WIFI 802.11g for Ant. 1 (LF)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dB μ V/m)	(dB)	(dB μ V/m)	(dB μ V)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11g LF		31.62	19.63	-20.37	40	28.26	23.42	0.48	32.49	-	-	P	H
		165.54	26.77	-16.73	43.5	41.82	16.12	1.09	32.42	-	-	P	H
		286.23	18.33	-27.67	46	30.23	19	1.35	32.37	-	-	P	H
		565.3	35.23	-10.77	46	39.54	26.09	1.92	32.43	100	0	P	H
		872.6	27.87	-18.13	46	27.86	29.28	2.39	31.8	-	-	P	H
		985.3	30.49	-23.51	54	27.66	30.95	2.53	30.88	-	-	P	H
		74.55	23.37	-16.63	40	42.51	12.62	0.68	32.49	-	-	P	V
		165.54	27.73	-15.77	43.5	42.78	16.12	1.09	32.42	-	-	P	V
		286.5	17.83	-28.17	46	29.73	19	1.35	32.37	-	-	P	V
		565.3	39.21	-6.79	46	43.52	26.09	1.92	32.43	100	0	P	V
		857.9	27.87	-18.13	46	27.84	29.42	2.36	31.88	-	-	P	V
		965.7	30.7	-23.3	54	27.93	31.09	2.51	31.06	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		(MHz)	(dB μ V/m)	(dB)	(dB μ V/m)	(dB μ V)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2386.65	58.9	-15.1	74	49.27	27.06	4.03	31.49	109	287	P	H
		2387.28	52.68	-1.32	54	43.05	27.06	4.03	31.49	109	287	A	H
	*	2412	109.49	-	-	99.76	27.14	4.05	31.49	109	287	P	H
	*	2412	105.36	-	-	95.63	27.14	4.05	31.49	109	287	A	H
		2386.965	56.57	-17.43	74	46.94	27.06	4.03	31.49	372	96	P	V
		2387.28	49.35	-4.65	54	39.72	27.06	4.03	31.49	372	96	A	V
	*	2412	106.88	-	-	97.15	27.14	4.05	31.49	372	96	P	V
	*	2412	101.44	-	-	91.71	27.14	4.05	31.49	372	96	A	V
802.11b CH 06 2437MHz		2359.42	55.64	-18.36	74	46.12	26.98	4.01	31.5	100	147	P	H
		2356.06	45.5	-8.5	54	36	26.97	4	31.5	100	147	A	H
	*	2437	110.31	-	-	100.48	27.21	4.07	31.48	100	147	P	H
	*	2437	105.8	-	-	95.97	27.21	4.07	31.48	100	147	A	H
		2484.6	54.73	-19.27	74	44.71	27.35	4.11	31.47	100	147	P	H
		2483.83	42.04	-11.96	54	32.02	27.35	4.11	31.47	100	147	A	H
		2358.16	53.02	-20.98	74	43.51	26.97	4.01	31.5	397	103	P	V
		2355.36	41.73	-12.27	54	32.23	26.97	4	31.5	397	103	A	V
	*	2437	105.77	-	-	95.94	27.21	4.07	31.48	397	103	P	V
	*	2437	101.42	-	-	91.59	27.21	4.07	31.48	397	103	A	V
		2497.69	53.78	-20.22	74	43.71	27.39	4.11	31.46	397	103	P	V
		2483.83	40.84	-13.16	54	30.82	27.35	4.11	31.47	397	103	A	V



802.11b CH 11 2462MHz	*	2462	110.02	-	-	100.09	27.29	4.08	31.47	100	146	P	H
	*	2462	106.02	-	-	96.09	27.29	4.08	31.47	100	146	A	H
		2488.48	59.48	-14.52	74	49.44	27.37	4.11	31.47	100	146	P	H
		2488.16	53.48	-0.52	54	43.45	27.36	4.11	31.47	100	146	A	H
	*	2462	105.97	-	-	96.04	27.29	4.08	31.47	400	100	P	V
	*	2462	101.96	-	-	92.03	27.29	4.08	31.47	400	100	A	V
		2488.32	57.23	-16.77	74	47.2	27.36	4.11	31.47	400	100	P	V
		2488.16	49.57	-4.43	54	39.54	27.36	4.11	31.47	400	100	A	V
	*	2467	106.7	-	-	96.75	27.3	4.09	31.47	136	145	P	H
802.11b CH 12 2467MHz	*	2467	102.56	-	-	92.61	27.3	4.09	31.47	136	145	A	H
		2483.72	59.98	-14.02	74	49.96	27.35	4.11	31.47	136	145	P	H
		2484.2	53.05	-0.95	54	43.03	27.35	4.11	31.47	136	145	A	H
	*	2467	102.01	-	-	92.06	27.3	4.09	31.47	400	89	P	V
	*	2467	97.99	-	-	88.04	27.3	4.09	31.47	400	89	A	V
		2483.96	57.78	-16.22	74	47.76	27.35	4.11	31.47	400	89	P	V
		2484.2	50	-4	54	39.98	27.35	4.11	31.47	400	89	A	V
802.11b CH 13 2472MHz	*	2472	103.38	-	-	93.41	27.32	4.09	31.47	137	143	P	H
	*	2472	99.02	-	-	89.05	27.32	4.09	31.47	137	143	A	H
		2483.6	63.36	-10.64	74	53.34	27.35	4.11	31.47	137	143	P	H
		2486.72	53.42	-0.58	54	43.39	27.36	4.11	31.47	137	143	A	H
	*	2472	98.17	-	-	88.2	27.32	4.09	31.47	400	91	P	V
	*	2472	94.55	-	-	84.58	27.32	4.09	31.47	400	91	A	V
		2485.64	57.73	-16.27	74	47.7	27.36	4.11	31.47	400	91	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 802.11b (Harmonic @ 3m)

WIFI Ant. 2	Note	Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	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		2492	57.86	-16.14	74	47.8	27.38	4.11	31.46	109	287	P	H
		2492	46.29	-7.71	54	36.23	27.38	4.11	31.46	109	287	A	H
		4824	48.6	-25.4	74	68.03	32.18	6.17	58.31	100	0	P	H
		2494	56.62	-17.38	74	46.56	27.38	4.11	31.46	372	96	P	V
		2494	42.91	-11.09	54	32.85	27.38	4.11	31.46	372	96	A	V
		3618	42.82	-31.18	74	66.36	29.22	5.35	58.97	100	0	P	V
		4824	47.3	-26.7	74	66.73	32.18	6.17	58.31	100	0	P	V
802.11b CH 06 2437MHz		4874	52.19	-21.81	74	71.43	32.27	6.21	58.24	109	240	P	H
		4874	49.12	-4.88	54	68.36	32.27	6.21	58.24	109	240	A	H
		7311	52.81	-21.19	74	66.86	36.97	7.72	59.09	100	298	P	H
		7311	44.6	-9.4	54	58.65	36.97	7.72	59.09	100	298	A	H
		3660	43.2	-30.8	74	66.61	29.38	5.37	58.99	100	0	P	V
		4874	49.56	-24.44	74	68.8	32.27	6.21	58.24	100	0	P	V
		7311	53.52	-20.48	74	67.57	36.97	7.72	59.09	218	334	P	V
		7311	45.44	-8.56	54	59.49	36.97	7.72	59.09	218	334	A	V
802.11b CH 11 2462MHz		2384	58.41	-15.59	74	48.79	27.05	4.03	31.49	100	146	P	H
		2384	48.16	-5.84	54	38.54	27.05	4.03	31.49	100	146	A	H
		3690	38.53	-35.47	74	61.86	29.48	5.39	59.01	100	0	P	H
		4924	51.81	-22.19	74	70.9	32.36	6.23	58.18	100	235	P	H
		4924	45.81	-8.19	54	64.9	32.36	6.23	58.18	100	235	A	H
		7386	49.11	-24.89	74	63.06	37.18	7.72	59.14	100	0	P	H
		2384	55.91	-18.09	74	46.29	27.05	4.03	31.49	400	100	P	V
		2384	43.46	-10.54	54	33.84	27.05	4.03	31.49	400	100	A	V
		3690	43.52	-30.48	74	66.85	29.48	5.39	59.01	100	0	P	V
		4924	51.11	-22.89	74	70.2	32.36	6.23	58.18	300	321	P	V
		4924	44.8	-9.2	54	63.89	32.36	6.23	58.18	300	321	A	V
		7386	49.15	-24.85	74	63.1	37.18	7.72	59.14	100	0	P	V



			2386	56.84	-17.16	74	47.21	27.06	4.03	31.49	136	145	P	H
802.11b CH 12 2467MHz			2386	45.99	-8.01	54	36.36	27.06	4.03	31.49	136	145	A	H
			3702	39.11	-34.89	74	62.41	29.53	5.39	59.02	100	0	P	H
			4934	48.43	-25.57	74	67.49	32.38	6.24	58.18	100	0	P	H
			7401	45.51	-28.49	74	59.44	37.22	7.72	59.15	100	0	P	H
			2390	55.64	-18.36	74	46	27.07	4.03	31.49	400	89	P	V
			2390	43.04	-10.96	54	33.4	27.07	4.03	31.49	400	89	A	V
			3696	43.96	-30.04	74	67.27	29.51	5.39	59.02	100	0	P	V
			4934	47.81	-26.19	74	66.87	32.38	6.24	58.18	100	0	P	V
			7401	45.73	-28.27	74	59.66	37.22	7.72	59.15	100	0	P	V
			2390	53.11	-20.89	74	43.47	27.07	4.03	31.49	137	143	P	H
802.11b CH 13 2472MHz			2390	45.59	-8.41	54	35.95	27.07	4.03	31.49	137	143	A	H
			3708	39.29	-34.71	74	62.57	29.55	5.39	59.02	100	0	P	H
			4944	45.76	-28.24	74	64.79	32.4	6.24	58.16	100	0	P	H
			7416	44.39	-29.61	74	58.25	37.26	7.74	59.15	100	0	P	H
			2392	54.56	-19.44	74	44.91	27.08	4.03	31.49	400	91	P	V
			2392	41.47	-12.53	54	31.82	27.08	4.03	31.49	400	91	A	V
			3708	44.28	-29.72	74	67.56	29.55	5.39	59.02	100	0	P	V
			4944	43.68	-30.32	74	62.71	32.4	6.24	58.16	100	0	P	V
			7416	43.84	-30.16	74	57.7	37.26	7.74	59.15	100	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 802.11g (Band Edge @ 3m)

WIFI Ant. 2	Note	Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	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		2389.485	66.03	-7.97	74	56.39	27.07	4.03	31.49	146	146	P	H
		2390	52.76	-1.24	54	43.12	27.07	4.03	31.49	146	146	A	H
	*	2412	108.93	-	-	99.2	27.14	4.05	31.49	146	146	P	H
	*	2412	99.04	-	-	89.31	27.14	4.05	31.49	146	146	A	H
		2388.96	62.83	-11.17	74	53.19	27.07	4.03	31.49	374	94	P	V
		2390	49.68	-4.32	54	40.04	27.07	4.03	31.49	374	94	A	V
	*	2412	105.57	-	-	95.84	27.14	4.05	31.49	374	94	P	V
	*	2412	94.93	-	-	85.2	27.14	4.05	31.49	374	94	A	V
802.11g CH 06 2437MHz		2389.52	57.67	-16.33	74	48.03	27.07	4.03	31.49	112	144	P	H
		2389.66	46.63	-7.37	54	36.99	27.07	4.03	31.49	112	144	A	H
	*	2437	111.26	-	-	101.43	27.21	4.07	31.48	112	144	P	H
	*	2437	101.2	-	-	91.37	27.21	4.07	31.48	112	144	A	H
		2485.86	57.66	-16.34	74	47.63	27.36	4.11	31.47	112	144	P	H
		2483.62	46.92	-7.08	54	36.9	27.35	4.11	31.47	112	144	A	H
		2388.26	54.69	-19.31	74	45.06	27.06	4.03	31.49	398	102	P	V
		2387.7	42.39	-11.61	54	32.76	27.06	4.03	31.49	398	102	A	V
	*	2437	107.53	-	-	97.7	27.21	4.07	31.48	398	102	P	V
	*	2437	97.31	-	-	87.48	27.21	4.07	31.48	398	102	A	V
		2484.95	54.45	-19.55	74	44.43	27.35	4.11	31.47	398	102	P	V
		2483.97	43.79	-10.21	54	33.77	27.35	4.11	31.47	398	102	A	V



802.11g CH 11 2462MHz	*	2462	109.6	-	-	99.67	27.29	4.08	31.47	136	162	P	H
	*	2462	99.54	-	-	89.61	27.29	4.08	31.47	136	162	A	H
		2483.84	64.26	-9.74	74	54.24	27.35	4.11	31.47	136	162	P	H
		2483.52	51.18	-2.82	54	41.16	27.35	4.11	31.47	136	162	A	H
	*	2462	105.96	-	-	96.03	27.29	4.08	31.47	400	105	P	V
	*	2462	95.75	-	-	85.82	27.29	4.08	31.47	400	105	A	V
		2483.92	59.85	-14.15	74	49.83	27.35	4.11	31.47	400	105	P	V
		2483.52	47.39	-6.61	54	37.37	27.35	4.11	31.47	400	105	A	V
	*	2467	109.65	-	-	99.7	27.3	4.09	31.47	137	142	P	H
802.11g CH 12 2467MHz	*	2467	99.07	-	-	89.12	27.3	4.09	31.47	137	142	A	H
		2485	65.41	-8.59	74	55.39	27.35	4.11	31.47	137	142	P	H
		2483.52	52.72	-1.28	54	42.7	27.35	4.11	31.47	137	142	A	H
	*	2467	105.3	-	-	95.35	27.3	4.09	31.47	400	89	P	V
	*	2467	94.81	-	-	84.86	27.3	4.09	31.47	400	89	A	V
		2484.16	61.26	-12.74	74	51.24	27.35	4.11	31.47	400	89	P	V
		2483.56	48.73	-5.27	54	38.71	27.35	4.11	31.47	400	89	A	V
	*	2472	108.24	-	-	98.27	27.32	4.09	31.47	135	144	P	H
802.11g CH 13 2472MHz	*	2472	97.91	-	-	87.94	27.32	4.09	31.47	135	144	A	H
		2484.16	65.41	-8.59	74	55.39	27.35	4.11	31.47	135	144	P	H
		2483.68	53.47	-0.53	54	43.45	27.35	4.11	31.47	135	144	A	H
	*	2472	103.61	-	-	93.64	27.32	4.09	31.47	400	88	P	V
	*	2472	93.55	-	-	83.58	27.32	4.09	31.47	400	88	A	V
		2483.84	62.3	-11.7	74	52.28	27.35	4.11	31.47	400	88	P	V
		2483.56	50.2	-3.8	54	40.18	27.35	4.11	31.47	400	88	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. 2	Note	Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	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		2486	57.85	-16.15	74	47.82	27.36	4.11	31.47	146	146	P	H
		2486	44.21	-9.79	54	34.18	27.36	4.11	31.47	146	146	A	H
		3618	38.57	-35.43	74	62.11	29.22	5.35	58.97	100	0	P	H
		4824	45.51	-28.49	74	64.94	32.18	6.17	58.31	100	0	P	H
		3618	42.36	-31.64	74	65.9	29.22	5.35	58.97	100	0	P	V
		4824	43.84	-30.16	74	63.27	32.18	6.17	58.31	100	0	P	V
802.11g CH 06 2437MHz		3656	39.27	-34.73	74	62.7	29.36	5.37	58.99	100	0	P	H
		4874	45.58	-28.42	74	64.82	32.27	6.21	58.24	100	0	P	H
		7311	54.54	-19.46	74	68.59	36.97	7.72	59.09	101	299	P	H
		7311	39.14	-14.86	54	53.19	36.97	7.72	59.09	101	299	A	H
		3656	43.55	-30.45	74	66.98	29.36	5.37	58.99	100	0	P	V
		4874	44.73	-29.27	74	63.97	32.27	6.21	58.24	100	0	P	V
		7311	56.07	-17.93	74	70.12	36.97	7.72	59.09	206	333	P	V
		7311	40.12	-13.88	54	54.17	36.97	7.72	59.09	206	333	A	V
802.11g CH 11 2462MHz		2388	58.93	-15.07	74	49.3	27.06	4.03	31.49	136	162	P	H
		2388	44.94	-9.06	54	35.31	27.06	4.03	31.49	136	162	A	H
		3690	38.92	-35.08	74	62.25	29.48	5.39	59.01	100	0	P	H
		4924	45.82	-28.18	74	64.91	32.36	6.23	58.18	100	0	P	H
		7386	47.05	-26.95	74	61	37.18	7.72	59.14	100	0	P	H
		2384	54.87	-19.13	74	45.25	27.05	4.03	31.49	400	105	P	V
		2384	42.26	-11.74	54	32.64	27.05	4.03	31.49	400	105	A	V
		3690	43.3	-30.7	74	66.63	29.48	5.39	59.01	100	0	P	V
		4924	45.05	-28.95	74	64.14	32.36	6.23	58.18	100	0	P	V
		7386	47.79	-26.21	74	61.74	37.18	7.72	59.14	100	0	P	V



802.11g CH 12 2467MHz		2386	57.66	-16.34	74	48.03	27.06	4.03	31.49	137	142	P	H
		2386	44.08	-9.92	54	34.45	27.06	4.03	31.49	137	142	A	H
		3702	39.1	-34.9	74	62.4	29.53	5.39	59.02	100	0	P	H
		4934	39.47	-34.53	74	58.53	32.38	6.24	58.18	100	0	P	H
		7401	44.81	-29.19	74	58.74	37.22	7.72	59.15	100	0	P	H
		2386	54.9	-19.1	74	45.27	27.06	4.03	31.49	400	89	P	V
		2386	42.11	-11.89	54	32.48	27.06	4.03	31.49	400	89	A	V
		3702	43.02	-30.98	74	66.32	29.53	5.39	59.02	100	0	P	V
		4934	39.74	-34.26	74	58.8	32.38	6.24	58.18	100	0	P	V
		7401	44.22	-29.78	74	58.15	37.22	7.72	59.15	100	0	P	V
802.11g CH 13 2472MHz		2390	56.17	-17.83	74	46.53	27.07	4.03	31.49	135	144	P	H
		2390	44.16	-9.84	54	34.52	27.07	4.03	31.49	135	144	A	H
		3708	39.6	-34.4	74	62.88	29.55	5.39	59.02	100	0	P	H
		4944	46	-28	74	65.03	32.4	6.24	58.16	100	0	P	H
		7416	45.35	-28.65	74	59.21	37.26	7.74	59.15	100	0	P	H
		2390	55.76	-18.24	74	46.12	27.07	4.03	31.49	400	88	P	V
		2390	41.83	-12.17	54	32.19	27.07	4.03	31.49	400	88	A	V
		3708	44.28	-29.72	74	67.56	29.55	5.39	59.02	100	0	P	V
		4944	44.5	-29.5	74	63.53	32.4	6.24	58.16	100	0	P	V
		7416	45.18	-28.82	74	59.04	37.26	7.74	59.15	100	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 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 2	Note	Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	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		2389.275	67.59	-6.41	74	57.95	27.07	4.03	31.49	105	298	P	H
		2390	53.43	-0.57	54	43.79	27.07	4.03	31.49	105	298	A	H
	*	2412	106.78	-	-	97.05	27.14	4.05	31.49	105	298	P	H
	*	2412	96.87	-	-	87.14	27.14	4.05	31.49	105	298	A	H
		2388.855	63.4	-10.6	74	53.76	27.07	4.03	31.49	372	109	P	V
		2389.905	49.38	-4.62	54	39.74	27.07	4.03	31.49	372	109	A	V
	*	2412	102.75	-	-	93.02	27.14	4.05	31.49	372	109	P	V
	*	2412	92.46	-	-	82.73	27.14	4.05	31.49	372	109	A	V
802.11n HT20 CH 06 2437MHz		2384.34	58.11	-15.89	74	48.49	27.05	4.03	31.49	108	299	P	H
		2389.52	46.17	-7.83	54	36.53	27.07	4.03	31.49	108	299	A	H
	*	2437	110.21	-	-	100.38	27.21	4.07	31.48	108	299	P	H
	*	2437	99.7	-	-	89.87	27.21	4.07	31.48	108	299	A	H
		2487.47	57.88	-16.12	74	47.85	27.36	4.11	31.47	108	299	P	H
		2484.11	46	-8	54	35.98	27.35	4.11	31.47	108	299	A	H
		2389.52	55.17	-18.83	74	45.53	27.07	4.03	31.49	400	113	P	V
		2388.82	43.72	-10.28	54	34.08	27.07	4.03	31.49	400	113	A	V
	*	2437	106.99	-	-	97.16	27.21	4.07	31.48	400	113	P	V
	*	2437	96.5	-	-	86.67	27.21	4.07	31.48	400	113	A	V
		2486.35	55.05	-18.95	74	45.02	27.36	4.11	31.47	400	113	P	V
		2483.5	44.11	-9.89	54	34.09	27.35	4.11	31.47	400	113	A	V



802.11n HT20 CH 11 2462MHz	*	2462	109.98	-	-	100.05	27.29	4.08	31.47	136	154	P	H
	*	2462	99.06	-	-	89.13	27.29	4.08	31.47	136	154	A	H
		2483.6	63.5	-10.5	74	53.48	27.35	4.11	31.47	136	154	P	H
		2483.64	49.19	-4.81	54	39.17	27.35	4.11	31.47	136	154	A	H
	*	2462	105.62	-	-	95.69	27.29	4.08	31.47	400	115	P	V
	*	2462	95.26	-	-	85.33	27.29	4.08	31.47	400	115	A	V
		2484.84	58.45	-15.55	74	48.43	27.35	4.11	31.47	400	115	P	V
		2483.64	45.6	-8.4	54	35.58	27.35	4.11	31.47	400	115	A	V
802.11n HT20 CH 12 2467MHz	*	2467	108.99	-	-	99.04	27.3	4.09	31.47	138	152	P	H
	*	2467	98.36	-	-	88.41	27.3	4.09	31.47	138	152	A	H
		2483.56	64.21	-9.79	74	54.19	27.35	4.11	31.47	138	152	P	H
		2483.56	51.8	-2.2	54	41.78	27.35	4.11	31.47	138	152	A	H
	*	2467	104.48	-	-	94.53	27.3	4.09	31.47	400	116	P	V
	*	2467	93.97	-	-	84.02	27.3	4.09	31.47	400	116	A	V
		2483.64	59.37	-14.63	74	49.35	27.35	4.11	31.47	400	116	P	V
		2483.56	46.39	-7.61	54	36.37	27.35	4.11	31.47	400	116	A	V
802.11n HT20 CH 13 2472MHz	*	2472	106.8	-	-	96.83	27.32	4.09	31.47	107	293	P	H
	*	2472	96.62	-	-	86.65	27.32	4.09	31.47	107	293	A	H
		2483.68	66.38	-7.62	74	56.36	27.35	4.11	31.47	107	293	P	H
		2483.52	53.17	-0.83	54	43.15	27.35	4.11	31.47	107	293	A	H
	*	2472	102.54	-	-	92.57	27.32	4.09	31.47	400	109	P	V
	*	2472	92.21	-	-	82.24	27.32	4.09	31.47	400	109	A	V
		2483.68	62.05	-11.95	74	52.03	27.35	4.11	31.47	400	109	P	V
		2483.76	49.79	-4.21	54	39.77	27.35	4.11	31.47	400	109	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. 2	Note	Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	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		2458	59.51	-14.49	74	49.6	27.27	4.08	31.47	105	298	P	H
		2458	45.55	-8.45	54	35.64	27.27	4.08	31.47	105	298	A	H
		4824	43.71	-30.29	74	63.14	32.18	6.17	58.31	100	0	P	H
		4824	42.48	-31.52	74	61.91	32.18	6.17	58.31	100	0	P	V
802.11n HT20 CH 06 2437MHz		4874	48.14	-25.86	74	67.38	32.27	6.21	58.24	100	0	P	H
		7311	46.14	-27.86	74	60.19	36.97	7.72	59.09	100	0	P	H
		4874	44.48	-29.52	74	63.72	32.27	6.21	58.24	100	0	P	V
		7311	48.27	-25.73	74	62.32	36.97	7.72	59.09	100	0	P	V
802.11n HT20 CH 11 2462MHz		2386	57.16	-16.84	74	47.53	27.06	4.03	31.49	136	154	P	H
		2386	44.72	-9.28	54	35.09	27.06	4.03	31.49	136	154	A	H
		4924	46.05	-27.95	74	65.14	32.36	6.23	58.18	100	0	P	H
		7386	45.57	-28.43	74	59.52	37.18	7.72	59.14	100	0	P	H
		2384	55.62	-18.38	74	46	27.05	4.03	31.49	400	115	P	V
		2384	42.76	-11.24	54	33.14	27.05	4.03	31.49	400	115	A	V
		4924	43.17	-30.83	74	62.26	32.36	6.23	58.18	100	0	P	V
		7386	45.14	-28.86	74	59.09	37.18	7.72	59.14	100	0	P	V



802.11n HT20 CH 12 2467MHz		2388	56.93	-17.07	74	47.3	27.06	4.03	31.49	138	152	P	H
		2388	44.3	-9.7	54	34.67	27.06	4.03	31.49	138	152	A	H
		4934	45.71	-28.29	74	64.77	32.38	6.24	58.18	100	0	P	H
		7401	44.79	-29.21	74	58.72	37.22	7.72	59.15	100	0	P	H
		2384	54.32	-19.68	74	44.7	27.05	4.03	31.49	400	116	P	V
		2384	42.1	-11.9	54	32.48	27.05	4.03	31.49	400	116	A	V
		4934	43.93	-30.07	74	62.99	32.38	6.24	58.18	100	0	P	V
		7401	44.53	-29.47	74	58.46	37.22	7.72	59.15	100	0	P	V
		2389	55.51	-18.49	74	45.87	27.07	4.03	31.49	107	293	P	H
802.11n HT20 CH 13 2472MHz		2389	44.83	-9.17	54	35.19	27.07	4.03	31.49	107	293	A	H
		4944	43.81	-30.19	74	62.84	32.4	6.24	58.16	100	0	P	H
		7416	44.6	-29.4	74	58.46	37.26	7.74	59.15	100	0	P	H
		4944	41.77	-32.23	74	60.8	32.4	6.24	58.16	100	0	P	V
		7416	44.16	-29.84	74	58.02	37.26	7.74	59.15	100	0	P	V
	Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.											



Emission below 1GHz

2.4GHz WIFI 802.11b (LF)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		(MHz)	(dB μ V/m)	(dB)	(dB μ V/m)	(dB μ V)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11b LF		36.75	20.82	-19.18	40	31.8	21.05	0.48	32.49	-	-	P	H
		163.65	27.7	-15.8	43.5	42.63	16.31	1.02	32.42	-	-	P	H
		270.57	18.95	-27.05	46	30.45	19.42	1.32	32.38	-	-	P	H
		565.3	36.54	-9.46	46	40.85	26.09	1.92	32.43	100	0	P	H
		932.1	30.16	-15.84	46	28.61	30.23	2.47	31.37	-	-	P	H
		992.3	30.75	-23.25	54	27.99	30.8	2.55	30.81	-	-	P	H
		36.75	30.26	-9.74	40	41.24	21.05	0.48	32.49	-	-	P	V
		164.73	27.99	-15.51	43.5	43.02	16.21	1.02	32.42	-	-	P	V
		270.57	18.47	-27.53	46	29.97	19.42	1.32	32.38	-	-	P	V
		565.3	38.79	-7.21	46	43.1	26.09	1.92	32.43	100	0	P	V
		614.3	32.91	-13.09	46	37.16	26.12	2	32.46	-	-	P	V
		963.6	30.34	-23.66	54	27.58	31.1	2.51	31.08	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11g (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dB μ V/m)	(dB)	(dB μ V/m)	(dB μ V)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11g CH 01 2412MHz		2388.855	66.35	-7.65	74	56.71	27.07	4.03	31.49	144	150	P	H
		2390	52.85	-1.15	54	43.21	27.07	4.03	31.49	144	150	A	H
	*	2412	112.8	-	-	103.07	27.14	4.05	31.49	144	150	P	H
	*	2412	102.48	-	-	92.75	27.14	4.05	31.49	144	150	A	H
		2389.905	62.06	-11.94	74	52.42	27.07	4.03	31.49	400	89	P	V
		2389.695	49.81	-4.19	54	40.17	27.07	4.03	31.49	400	89	A	V
	*	2412	107.03	-	-	97.3	27.14	4.05	31.49	400	89	P	V
	*	2412	97.23	-	-	87.5	27.14	4.05	31.49	400	89	A	V
802.11g CH 06 2437MHz		2389.94	63.6	-10.4	74	53.96	27.07	4.03	31.49	197	179	P	H
		2389.94	49.8	-4.2	54	40.16	27.07	4.03	31.49	197	179	A	H
	*	2437	115.43	-	-	105.6	27.21	4.07	31.48	197	179	P	H
	*	2437	105.3	-	-	95.47	27.21	4.07	31.48	197	179	A	H
		2484.11	61.59	-12.41	74	51.57	27.35	4.11	31.47	197	179	P	H
		2483.97	49.48	-4.52	54	39.46	27.35	4.11	31.47	197	179	A	H
		2384.2	58.25	-15.75	74	48.63	27.05	4.03	31.49	400	93	P	V
		2389.8	45.09	-8.91	54	35.45	27.07	4.03	31.49	400	93	A	V
	*	2437	111.99	-	-	102.16	27.21	4.07	31.48	400	93	P	V
	*	2437	102	-	-	92.17	27.21	4.07	31.48	400	93	A	V
		2483.69	58.47	-15.53	74	48.45	27.35	4.11	31.47	400	93	P	V
		2483.97	47.52	-6.48	54	37.5	27.35	4.11	31.47	400	93	A	V
802.11g CH 11 2462MHz	*	2462	113.48	-	-	103.55	27.29	4.08	31.47	137	178	P	H
	*	2462	103.47	-	-	93.54	27.29	4.08	31.47	137	178	A	H
		2483.72	64.68	-9.32	74	54.66	27.35	4.11	31.47	137	178	P	H
		2483.88	52.78	-1.22	54	42.76	27.35	4.11	31.47	137	178	A	H
	*	2462	110.26	-	-	100.33	27.29	4.08	31.47	400	93	P	V
	*	2462	100.2	-	-	90.27	27.29	4.08	31.47	400	93	A	V
		2483.56	60.81	-13.19	74	50.79	27.35	4.11	31.47	400	93	P	V
		2483.52	50.22	-3.78	54	40.2	27.35	4.11	31.47	400	93	A	V



802.11g CH 12 2467MHz	*	2467	111.82	-	-	101.87	27.3	4.09	31.47	140	178	P	H
	*	2467	101.99	-	-	92.04	27.3	4.09	31.47	140	178	A	H
		2484.52	64.37	-9.63	74	54.35	27.35	4.11	31.47	140	178	P	H
		2483.72	53.21	-0.79	54	43.19	27.35	4.11	31.47	140	178	A	H
	*	2467	108.75	-	-	98.8	27.3	4.09	31.47	400	91	P	V
	*	2467	98.87	-	-	88.92	27.3	4.09	31.47	400	91	A	V
		2483.64	60.74	-13.26	74	50.72	27.35	4.11	31.47	400	91	P	V
		2483.56	50.45	-3.55	54	40.43	27.35	4.11	31.47	400	91	A	V
	*	2472	109.87	-	-	99.9	27.32	4.09	31.47	140	178	P	H
802.11g CH 13 2472MHz	*	2472	99.82	-	-	89.85	27.32	4.09	31.47	140	178	A	H
		2484.24	63.9	-10.1	74	53.88	27.35	4.11	31.47	140	178	P	H
		2484.12	52.59	-1.41	54	42.57	27.35	4.11	31.47	140	178	A	H
	*	2472	106.75	-	-	96.78	27.32	4.09	31.47	400	92	P	V
	*	2472	96.64	-	-	86.67	27.32	4.09	31.47	400	92	A	V
		2483.64	61.1	-12.9	74	51.08	27.35	4.11	31.47	400	92	P	V
		2483.64	50.29	-3.71	54	40.27	27.35	4.11	31.47	400	92	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	Note	Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	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		2488	59.06	-14.94	74	49.03	27.36	4.11	31.47	144	150	P	H
		2488	46.91	-7.09	54	36.88	27.36	4.11	31.47	144	150	A	H
		4824	46.15	-27.85	74	65.58	32.18	6.17	58.31	100	0	P	H
		2498	56.78	-17.22	74	46.71	27.39	4.11	31.46	400	89	P	V
		2498	45.31	-8.69	54	35.24	27.39	4.11	31.46	400	89	A	V
		4824	44.54	-29.46	74	63.97	32.18	6.17	58.31	100	0	P	V
802.11g CH 06 2437MHz		4874	49.44	-24.56	74	68.68	32.27	6.21	58.24	100	0	P	H
		7311	53.11	-20.89	74	67.16	36.97	7.72	59.09	100	0	P	H
		4874	46.99	-27.01	74	66.23	32.27	6.21	58.24	100	0	P	V
		7311	53.81	-20.19	74	67.86	36.97	7.72	59.09	100	0	P	V
802.11g CH 11 2462MHz		2386	57.78	-16.22	74	48.15	27.06	4.03	31.49	137	178	P	H
		2386	45.52	-8.48	54	35.89	27.06	4.03	31.49	137	178	A	H
		4924	47.29	-26.71	74	66.38	32.36	6.23	58.18	100	0	P	H
		7386	49.46	-24.54	74	63.41	37.18	7.72	59.14	100	0	P	H
		2388	54.93	-19.07	74	45.3	27.06	4.03	31.49	400	93	P	V
		2388	42.87	-11.13	54	33.24	27.06	4.03	31.49	400	93	A	V
		4924	46.97	-27.03	74	66.06	32.36	6.23	58.18	100	0	P	V
		7386	47.66	-26.34	74	61.61	37.18	7.72	59.14	100	0	P	V



			2389	57.02	-16.98	74	47.38	27.07	4.03	31.49	140	178	P	H
802.11g CH 12 2467MHz			2389	44.47	-9.53	54	34.83	27.07	4.03	31.49	140	178	A	H
			4934	46.17	-27.83	74	65.23	32.38	6.24	58.18	100	0	P	H
			7401	46.79	-27.21	74	60.72	37.22	7.72	59.15	100	0	P	H
			2388	54.03	-19.97	74	44.4	27.06	4.03	31.49	400	91	P	V
			2388	41.78	-12.22	54	32.15	27.06	4.03	31.49	400	91	A	V
			4934	45.85	-28.15	74	64.91	32.38	6.24	58.18	100	0	P	V
			7401	46.94	-27.06	74	60.87	37.22	7.72	59.15	100	0	P	V
802.11g CH 13 2472MHz			2388	54.79	-19.21	74	45.16	27.06	4.03	31.49	140	178	P	H
			2388	43.65	-10.35	54	34.02	27.06	4.03	31.49	140	178	A	H
			4944	44.33	-29.67	74	63.36	32.4	6.24	58.16	100	0	P	H
			7416	44.77	-29.23	74	58.63	37.26	7.74	59.15	100	0	P	H
			2388	53.25	-20.75	74	43.62	27.06	4.03	31.49	400	92	P	V
			2388	41.72	-12.28	54	32.09	27.06	4.03	31.49	400	92	A	V
			4944	43.47	-30.53	74	62.5	32.4	6.24	58.16	100	0	P	V
			7416	44.25	-29.75	74	58.11	37.26	7.74	59.15	100	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 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	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		2389.275	65.41	-8.59	74	55.77	27.07	4.03	31.49	144	150	P	H
		2389.905	52.97	-1.03	54	43.33	27.07	4.03	31.49	144	150	A	H
	*	2412	109.44	-	-	99.71	27.14	4.05	31.49	144	150	P	H
	*	2412	99.1	-	-	89.37	27.14	4.05	31.49	144	150	A	H
		2390	64	-10	74	54.36	27.07	4.03	31.49	374	97	P	V
		2389.8	50.86	-3.14	54	41.22	27.07	4.03	31.49	374	97	A	V
	*	2412	105.19	-	-	95.46	27.14	4.05	31.49	374	97	P	V
802.11n HT20 CH 06 2437MHz	*	2412	95.68	-	-	85.95	27.14	4.05	31.49	374	97	A	V
		2389.94	63.13	-10.87	74	53.49	27.07	4.03	31.49	117	180	P	H
		2388.68	50.73	-3.27	54	41.09	27.07	4.03	31.49	117	180	A	H
	*	2437	114.31	-	-	104.48	27.21	4.07	31.48	117	180	P	H
	*	2437	104.12	-	-	94.29	27.21	4.07	31.48	117	180	A	H
		2483.62	61.63	-12.37	74	51.61	27.35	4.11	31.47	117	180	P	H
		2483.76	50.21	-3.79	54	40.19	27.35	4.11	31.47	117	180	A	H
		2387.56	57.78	-16.22	74	48.15	27.06	4.03	31.49	400	93	P	V
		2389.94	45.88	-8.12	54	36.24	27.07	4.03	31.49	400	93	A	V
	*	2437	110.79	-	-	100.96	27.21	4.07	31.48	400	93	P	V
	*	2437	100.83	-	-	91	27.21	4.07	31.48	400	93	A	V
		2485.58	59.11	-14.89	74	49.08	27.36	4.11	31.47	400	93	P	V
		2484.39	47.05	-6.95	54	37.03	27.35	4.11	31.47	400	93	A	V



802.11n HT20 CH 11 2462MHz	*	2462	111.51	-	-	101.58	27.29	4.08	31.47	137	178	P	H
	*	2462	101.74	-	-	91.81	27.29	4.08	31.47	137	178	A	H
		2483.88	64.07	-9.93	74	54.05	27.35	4.11	31.47	137	178	P	H
		2483.68	52.52	-1.48	54	42.5	27.35	4.11	31.47	137	178	A	H
	*	2462	108.69	-	-	98.76	27.29	4.08	31.47	400	92	P	V
	*	2462	98.76	-	-	88.83	27.29	4.08	31.47	400	92	A	V
		2484.84	62.39	-11.61	74	52.37	27.35	4.11	31.47	400	92	P	V
		2484.44	48.83	-5.17	54	38.81	27.35	4.11	31.47	400	92	A	V
802.11n HT20 CH 12 2467MHz	*	2467	110.08	-	-	100.13	27.3	4.09	31.47	138	178	P	H
	*	2467	100.47	-	-	90.52	27.3	4.09	31.47	138	178	A	H
		2483.92	64.86	-9.14	74	54.84	27.35	4.11	31.47	138	178	P	H
		2483.52	53.09	-0.91	54	43.07	27.35	4.11	31.47	138	178	A	H
	*	2467	107.12	-	-	97.17	27.3	4.09	31.47	400	91	P	V
	*	2467	97.26	-	-	87.31	27.3	4.09	31.47	400	91	A	V
		2484.84	59.63	-14.37	74	49.61	27.35	4.11	31.47	400	91	P	V
		2484.8	49.11	-4.89	54	39.09	27.35	4.11	31.47	400	91	A	V
802.11n HT20 CH 13 2472MHz	*	2472	107.9	-	-	97.93	27.32	4.09	31.47	178	177	P	H
	*	2472	98.55	-	-	88.58	27.32	4.09	31.47	178	177	A	H
		2483.8	63.48	-10.52	74	53.46	27.35	4.11	31.47	178	177	P	H
		2483.52	52.23	-1.77	54	42.21	27.35	4.11	31.47	178	177	A	H
	*	2472	105.59	-	-	95.62	27.32	4.09	31.47	400	93	P	V
	*	2472	95.56	-	-	85.59	27.32	4.09	31.47	400	93	A	V
		2484.56	58.62	-15.38	74	48.6	27.35	4.11	31.47	400	93	P	V
		2484.76	48.69	-5.31	54	38.67	27.35	4.11	31.47	400	93	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	Note	Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	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		2490	57.22	-16.78	74	47.18	27.37	4.11	31.47	144	150	P	H
		2490	45.31	-8.69	54	35.27	27.37	4.11	31.47	144	150	A	H
		4824	43.25	-30.75	74	62.68	32.18	6.17	58.31	100	0	P	H
		2498	55.41	-18.59	74	45.34	27.39	4.11	31.46	374	97	P	V
		2498	42.48	-11.52	54	32.41	27.39	4.11	31.46	374	97	A	V
		4824	42.74	-31.26	74	62.17	32.18	6.17	58.31	100	0	P	V
802.11n HT20 CH 06 2437MHz		4874	46.58	-27.42	74	65.82	32.27	6.21	58.24	100	0	P	H
		7311	56.34	-17.66	74	70.39	36.97	7.72	59.09	100	92	P	H
		7311	42.2	-11.8	54	56.25	36.97	7.72	59.09	100	92	A	H
		4874	45.46	-28.54	74	64.7	32.27	6.21	58.24	100	0	P	V
		7311	53.56	-20.44	74	67.61	36.97	7.72	59.09	100	323	P	V
		7311	39.3	-14.7	54	53.35	36.97	7.72	59.09	100	323	A	V
802.11n HT20 CH 11 2462MHz		2388	57.96	-16.04	74	48.33	27.06	4.03	31.49	137	178	P	H
		2388	44.57	-9.43	54	34.94	27.06	4.03	31.49	137	178	A	H
		4924	44.57	-29.43	74	63.66	32.36	6.23	58.18	100	0	P	H
		7386	46.72	-27.28	74	60.67	37.18	7.72	59.14	100	0	P	H
		2388	55.66	-18.34	74	46.03	27.06	4.03	31.49	400	92	P	V
		2388	42.31	-11.69	54	32.68	27.06	4.03	31.49	400	92	A	V
		4924	44.12	-29.88	74	63.21	32.36	6.23	58.18	100	0	P	V
		7386	46.12	-27.88	74	60.07	37.18	7.72	59.14	100	0	P	V



802.11n HT20 CH 12 2467MHz		2388	56.02	-17.98	74	46.39	27.06	4.03	31.49	138	178	P	H
		2388	44.09	-9.91	54	571.36	27.06	4.29	58.62	138	178	A	H
		4934	44.96	-29.04	74	64.02	32.38	6.24	58.18	100	0	P	H
		7401	45.99	-28.01	74	59.92	37.22	7.72	59.15	100	0	P	H
		2386	54.2	-19.8	74	44.57	27.06	4.03	31.49	400	91	P	V
		2386	42.05	-11.95	54	32.42	27.06	4.03	31.49	400	91	A	V
		4934	43.8	-30.2	74	62.86	32.38	6.24	58.18	100	0	P	V
		7401	45.78	-28.22	74	59.71	37.22	7.72	59.15	100	0	P	V
		2389	53.83	-20.17	74	44.19	27.07	4.03	31.49	178	177	P	H
802.11n HT20 CH 13 2472MHz		2389	42.82	-11.18	54	33.18	27.07	4.03	31.49	178	177	A	H
		4944	42.72	-31.28	74	61.75	32.4	6.24	58.16	100	0	P	H
		7416	44.09	-29.91	74	57.95	37.26	7.74	59.15	100	0	P	H
		2388	52.62	-21.38	74	42.99	27.06	4.03	31.49	400	93	P	V
		2388	41.69	-12.31	54	32.06	27.06	4.03	31.49	400	93	A	V
		4944	40.6	-33.4	74	59.63	32.4	6.24	58.16	100	0	P	V
		7416	44.64	-29.36	74	58.5	37.26	7.74	59.15	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission below 1GHz

2.4GHz WIFI 802.11g (LF)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dB μ V/m)	(dB)	(dB μ V/m)	(dB μ V)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11g LF		30.27	20.83	-19.17	40	28.54	24.35	0.48	32.5	-	-	P	H
		163.65	28.46	-15.04	43.5	43.39	16.31	1.02	32.42	-	-	P	H
		240.06	20.5	-25.5	46	33.98	17.47	1.28	32.38	-	-	P	H
		565.3	36.85	-9.15	46	41.16	26.09	1.92	32.43	100	0	P	H
		856.5	28.29	-17.71	46	28.31	29.38	2.36	31.89	-	-	P	H
		986	31.11	-22.89	54	28.29	30.93	2.53	30.87	-	-	P	H
		36.75	30.81	-9.19	40	41.79	21.05	0.48	32.49	-	-	P	V
		84.81	23.99	-16.01	40	41.64	14.01	0.76	32.48	-	-	P	V
		296.49	17.78	-28.22	46	29.42	19.24	1.39	32.37	-	-	P	V
		565.3	37.46	-8.54	46	41.77	26.09	1.92	32.43	100	0	P	V
		614.3	32.57	-13.43	46	36.82	26.12	2	32.46	-	-	P	V
		974.1	30.75	-23.25	54	27.88	31.09	2.53	30.98	-	-	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	Peak or Average
H/V	Horizontal or Vertical



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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dB μ V/m)	(dB)	(dB μ V/m)	(dB μ V)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

$$1. \text{ Level(dB}\mu\text{V/m)} =$$

$$= \text{Antenna Factor(dB/m)} + \text{Cable Loss(dB)} + \text{Read Level(dB}\mu\text{V)} - \text{Preamp Factor(dB)}$$

$$2. \text{ Over Limit(dB)} = \text{Level(dB}\mu\text{V/m)} - \text{Limit Line(dB}\mu\text{V/m)}$$

For Peak Limit @ 2390MHz:

$$1. \text{ Level(dB}\mu\text{V/m)}$$

$$= \text{Antenna Factor(dB/m)} + \text{Cable Loss(dB)} + \text{Read Level(dB}\mu\text{V)} - \text{Preamp Factor(dB)}$$

$$= 32.22(\text{dB/m}) + 4.58(\text{dB}) + 54.51(\text{dB}\mu\text{V}) - 35.86 (\text{dB})$$

$$= 55.45 (\text{dB}\mu\text{V/m})$$

$$2. \text{ Over Limit(dB)}$$

$$= \text{Level(dB}\mu\text{V/m)} - \text{Limit Line(dB}\mu\text{V/m)}$$

$$= 55.45(\text{dB}\mu\text{V/m}) - 74(\text{dB}\mu\text{V/m})$$

$$= -18.55(\text{dB})$$

For Average Limit @ 2390MHz:

$$1. \text{ Level(dB}\mu\text{V/m)}$$

$$= \text{Antenna Factor(dB/m)} + \text{Cable Loss(dB)} + \text{Read Level(dB}\mu\text{V)} - \text{Preamp Factor(dB)}$$

$$= 32.22(\text{dB/m}) + 4.58(\text{dB}) + 42.6(\text{dB}\mu\text{V}) - 35.86 (\text{dB})$$

$$= 43.54 (\text{dB}\mu\text{V/m})$$

$$2. \text{ Over Limit(dB)}$$

$$= \text{Level(dB}\mu\text{V/m)} - \text{Limit Line(dB}\mu\text{V/m)}$$

$$= 43.54(\text{dB}\mu\text{V/m}) - 54(\text{dB}\mu\text{V/m})$$

$$= -10.46(\text{dB})$$

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