APPLICATION CERTIFICATION FCC Part 15C
On Behalf of
Xiamen Prima Technology Inc

WiFi module

Model No.: M632USA1

FCC ID: 2ADID-M632USA

Prepared for	:	Xiamen Prima Technology Inc.
Address	:	No.178, Xinfeng Road, Xiamen, Fujian, P.R. China
Prepared by	:	Shenzhen Accurate Technology Co., Ltd.
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Report No.	:	ATE20172553
Date of Test	:	Jan. 09, 2018-Feb. 26, 2018
Date of Report	:	Feb. 27, 2018

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Description Page

Test Report Certification

Applicant	:	Xiamen Prima Technology Inc.
Address	:	No.178, Xinfeng Road, Xiamen, Fujian, P.R. China.
Manufacturer	:	Xiamen Prima Technology Inc.
Address	:	No.178, Xinfeng Road, Xiamen, Fujian, P.R. China.
Product	:	WiFi module
Model No.	:	M632USA1
Trade name	:	PRIMA

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C Section 15.247
ANSI C63.10: 2013

The EUT was tested according to DTS test procedure of Apr 05, 2017 KDB558074 D01 DTS Meas Guidance v04 for compliance to FCC 47CFR 15.247 requirements

The device described above is tested by SHENZHEN ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.247 limits. The measurement results are contained in this test report and SHENZHEN ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of SHENZHEN ACCURATE TECHNOLOGY CO. LTD.

Date of Test : Jan. 09, 2018-Feb. 26, 2018

Date of Report : Feb. 27, 2018

Prepared by :

(Tim[illegible]g Eng[illegible]er)

Approved & Authorized Signer :

(Sean Liu, Manager)

1. GENERAL INFORMATION

1.1.Description of Device (EUT)

EUT	:	WiFi module
Model Number	:	M632USA1
Frequency Range	:	802.11b/g/n(20MHz): 2412-2462MHz 802.11n(40MHz): 2422-2452MHz
Number of Channels	:	802.11b/g/n (20MHz):11 802.11n (40MHz): 7
$G_{ANT\ MAX}$	:	2dBi(two antennas have the same gain)
Directional gain	:	5.01
Type of Antenna	:	MIMO Antenna
Power Supply	:	DC 3.3V
Data Rate	:	802.11b: 11, 5.5, 2, 1 Mbps 802.11g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps 802.11n: up to 150Mbps
Modulation Type	:	CCK, OFDM
Applicant	:	Xiamen Prima Technology Inc
Address	:	No.178, Xinfeng Road, Xiamen, Fujian, P.R. China.
Manufacturer	:	Xiamen Prima Technology Inc
Address	:	Wanlida, Industry Zone Building C, Nanjing Fujian, P.R. China.
Date of sample received	:	Jan. 09, 2018
Date of Test	:	Jan. 09, 2018-Feb. 26, 2018

1.2.Special Accessory and Auxiliary Equipment

PC	Manufacturer: LENOVO M/N: 4290-RT8 S/N: R9-FW93G 11/08

1.3.Description of Test Facility

EMC Lab	:	Recognition of accreditation by Federal Communications Commission (FCC) The Designation Number is CN1189 The Registration Number is 708358 Listed by Innovation, Science and Economic Development Canada (ISEDC) The Registration Number is 5077A-2 Accredited by China National Accreditation Service for Conformity Assessment (CNAS) The Registration Number is CNAS L3193 Accredited by American Association for Laboratory Accreditation (A2LA) The Certificate Number is 4297.01
Name of Firm	:	Shenzhen Accurate Technology Co., Ltd
Site Location	:	1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China

1.4.Measurement Uncertainty

Conducted Emission Expanded Uncertainty	=	2.23dB, k=2
Radiated emission expanded uncertainty (9kHz-30MHz)	=	3.08dB, k=2
Radiated emission expanded uncertainty (30MHz-1000MHz)	=	4.42dB, k=2
Radiated emission expanded uncertainty (Above 1GHz)	=	4.06dB, k=2

2. MEASURING DEVICE AND TEST EQUIPMENT

Table 1: List of Test and Measurement Equipment

Kind of equipment	Manufacturer	Type	S/N	Calibrated dates	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 06, 2018	Jan. 05, 2019
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 06, 2018	Jan. 05, 2019
Spectrum Analyzer	Rohde&Schwarz	FSV-40	101495	Jan. 06, 2018	Jan. 05, 2019
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 06, 2018	Jan. 05, 2019
Pre-Amplifier	Rohde&Schwarz	CBLU1183540-01	3791	Jan. 06, 2018	Jan. 05, 2019
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 06, 2018	Jan. 05, 2019
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 06, 2018	Jan. 05, 2019
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 06, 2018	Jan. 05, 2019
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Jan. 06, 2018	Jan. 05, 2019
Open Switch and Control Unit	Rohde&Schwarz	OSP120 + OSP-B157	101244 + 100866	Jan. 06, 2018	Jan. 05, 2019
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 06, 2018	Jan. 05, 2019
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 06, 2018	Jan. 05, 2019
Highpass Filter	Wainwright Instruments	WHKX3.6/18G-10SS	N/A	Jan. 06, 2018	Jan. 05, 2019
Band Reject Filter	Wainwright Instruments	WRCG2400/2485-2375/2510-60/11SS	N/A	Jan. 06, 2018	Jan. 05, 2019

3. OPERATION OF EUT DURING TESTING

3.1.Operating Mode

The mode is used: **1.802.11b Transmitting mode**
Low Channel: 2412MHz
Middle Channel: 2437MHz
High Channel: 2462MHz

2.802.11g Transmitting mode
Low Channel: 2412MHz
Middle Channel: 2437MHz
High Channel: 2462MHz

3.802.11n (20MHz) Transmitting mode
Low Channel: 2412MHz
Middle Channel: 2437MHz
High Channel: 2462MHz

4.802.11n (40MHz) Transmitting mode
Low Channel: 2422MHz
Middle Channel: 2437MHz
High Channel: 2452MHz

3.2.Carrier Frequency of Channels

802.11b, 802.11g, 802.11n (20MHz)

Channel	Frequency(MHz)	Channel	Frequency(MHz)
01	2412	07	2442
02	2417	08	2447
03	2422	09	2452
04	2427	10	2457
05	2432	11	2462
06	2437	---	---

802.11n (40MHz)

Channel	Frequency(MHz)	Channel	Frequency(MHz)
---	---	07	2442
---	---	08	2447
03	2422	09	2452
04	2427	---	---
05	2432	---	---
06	2437	---	---

3.3.Configuration and peripherals

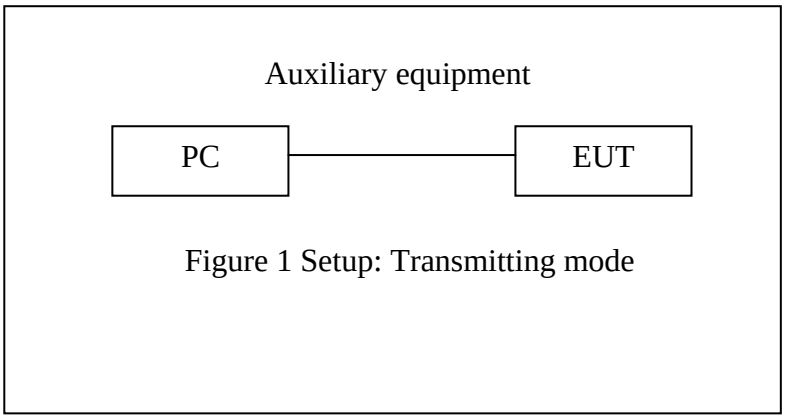


Figure 1 Setup: Transmitting mode

(EUT: WiFi module)

Note: The EUT have two antenna(1 and 2), They can transmit simultaneously.

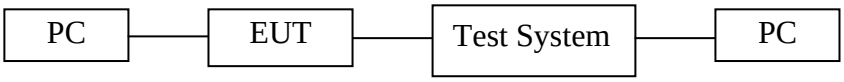
4. TEST PROCEDURES AND RESULTS

FCC Rules	Description of Test	Result
Section 15.207	AC power Line Conducted Emission Test	N/A
Section 15.247(a)(2)	6dB Occupied Bandwidth Test	Compliant
KDB558074 D01 DTS Meas Guidance v04	Duty cycle	Compliant
KDB558074 D01 DTS Meas Guidance v04	OBW	Compliant
Section 15.247(b)(3)	Maximum conducted (average) output power	Compliant
Section 15.247(e)	Power Spectral Density Test	Compliant
Section 15.205 Section 15.209	Radiated Spurious Emissions Test	Compliant
Section 15.247(d)	Band Edge Compliance Test	Compliant
Section 15.203	Antenna Requirement	Compliant

Note: The power supply mode of the EUT is DC 3.3V, According to the FCC standard requirements, conducted emission is not applicable.

5. 6DB OCCUPIED BANDWIDTH TEST

5.1.Block Diagram of Test Setup



5.2.The Requirement For Section 15.247(a)(1)

Section 15.247(a)(2): Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB band-width shall be at least 500 kHz

5.3.EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

5.4.Operating Condition of EUT

5.4.1.Setup the EUT and simulator as shown as Section 5.1.

5.4.2.Turn on the power of all equipment.

5.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462 and 2422-2452MHz. We select 2412MHz, 2437MHz, 2462MHz and 2422MHz, 2437MHz, 2452MHz TX frequency to transmit.

5.5.Test Procedure

5.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.

5.5.2.Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz.

5.5.3.The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

5.6.Test Result

The test was performed with 802.11b				
Channel	Frequency (MHz)	6dB Bandwidth ANT 1 (MHz)	6dB Bandwidth ANT 2(MHz)	Limit (MHz)
Low	2412	10.24	10.24	> 0.5MHz
Middle	2437	10.20	10.20	> 0.5MHz
High	2462	10.24	10.24	> 0.5MHz

The test was performed with 802.11g				
Channel	Frequency (MHz)	6dB Bandwidth ANT 1 (MHz)	6dB Bandwidth ANT 2(MHz)	Limit (MHz)
Low	2412	16.52	16.52	> 0.5MHz
Middle	2437	16.48	16.48	> 0.5MHz
High	2462	16.48	16.48	> 0.5MHz

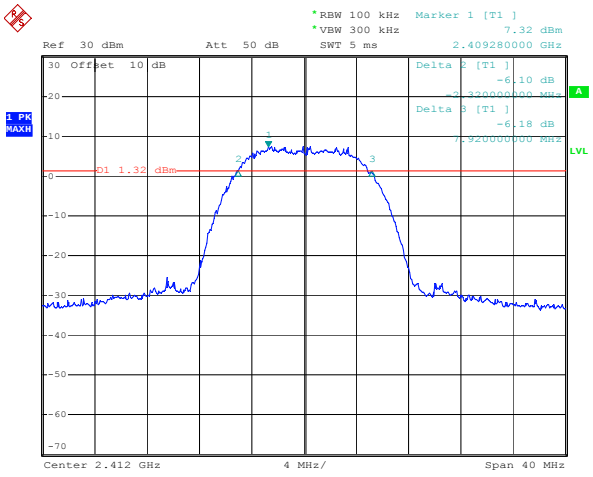
The test was performed with 802.11n (Bandwidth: 20 MHz)				
Channel	Frequency (MHz)	6dB Bandwidth ANT 1 (MHz)	6dB Bandwidth ANT 2(MHz)	Limit (MHz)
Low	2412	17.20	16.88	> 0.5MHz
Middle	2437	16.92	16.92	> 0.5MHz
High	2462	16.96	16.96	> 0.5MHz

The test was performed with 802.11n (Bandwidth: 40 MHz)				
Channel	Frequency (MHz)	6dB Bandwidth ANT 1 (MHz)	6dB Bandwidth ANT 2(MHz)	Limit (MHz)
Low	2422	35.68	35.68	> 0.5MHz
Middle	2437	35.84	35.84	> 0.5MHz
High	2452	35.52	35.52	> 0.5MHz

The spectrum analyzer plots are attached as below.

6dB Bandwidth

ANT 1(802.11b)



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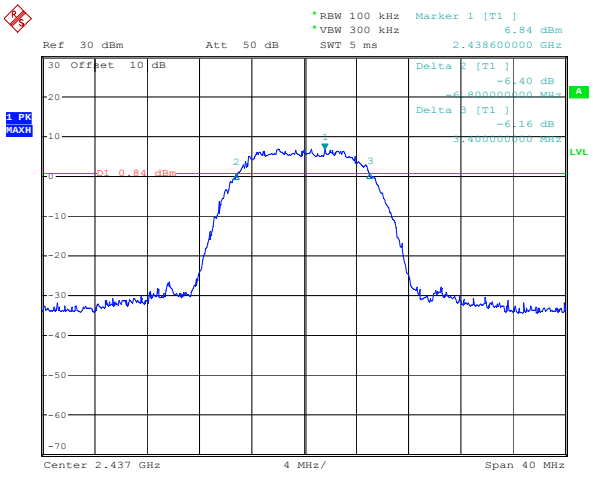

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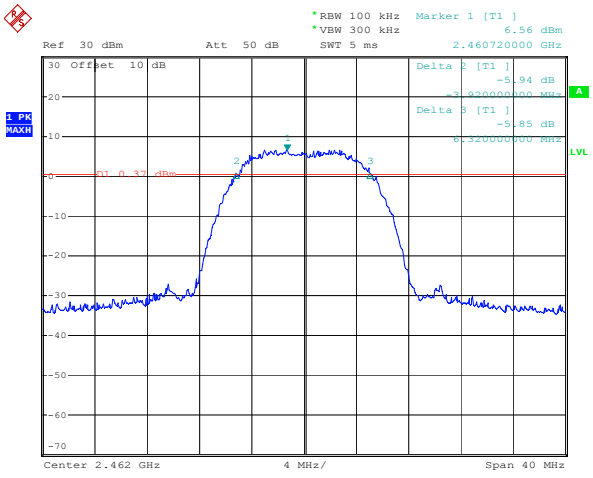

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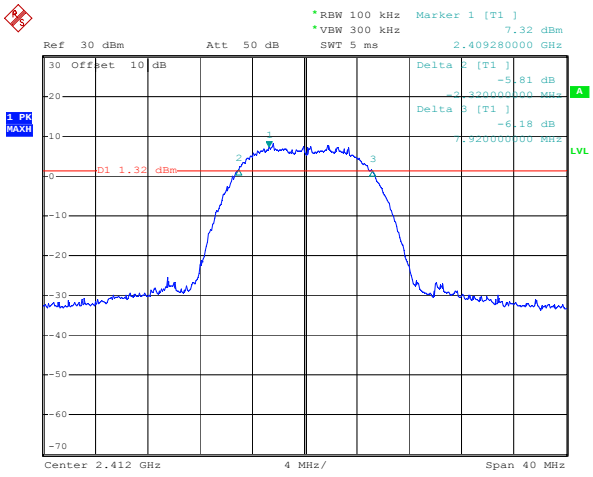
ANT 2(802.11b)



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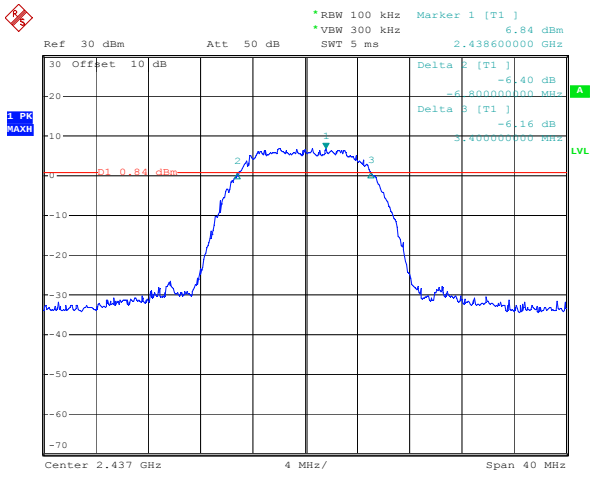

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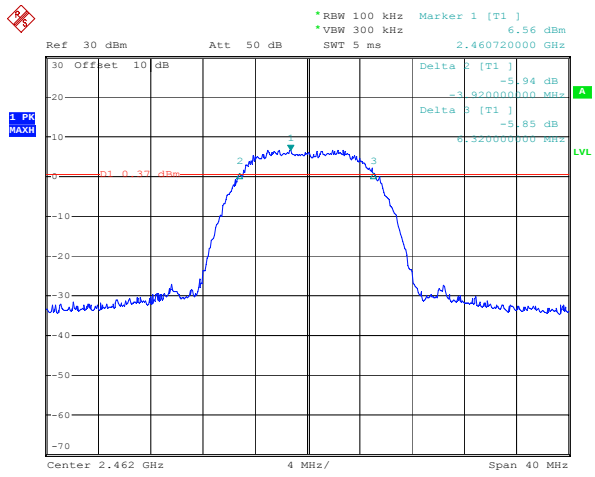

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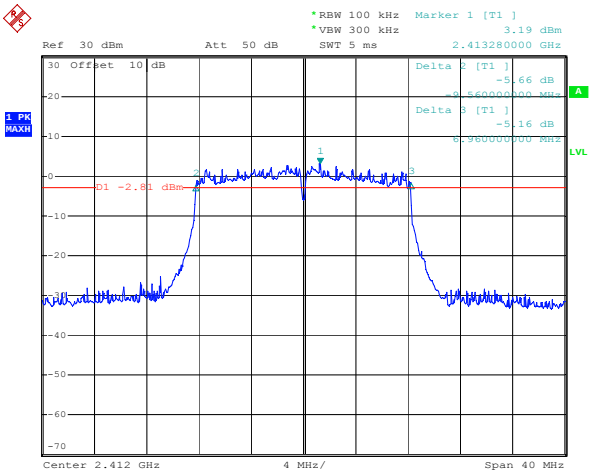
ANT 1(802.11g)



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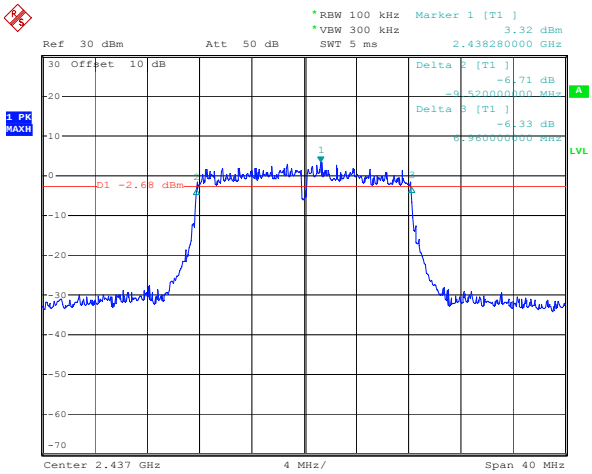

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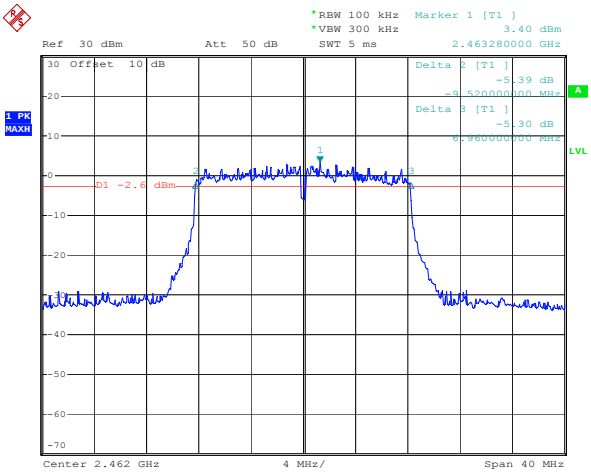

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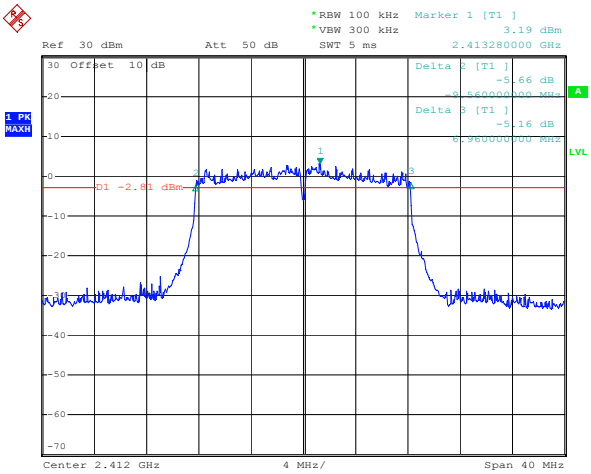
ANT 2(802.11g)



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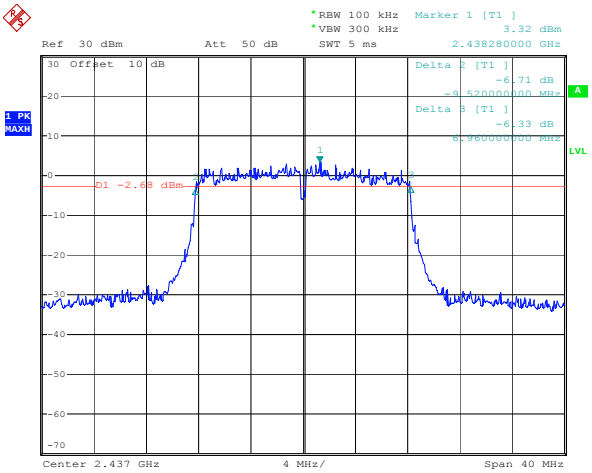

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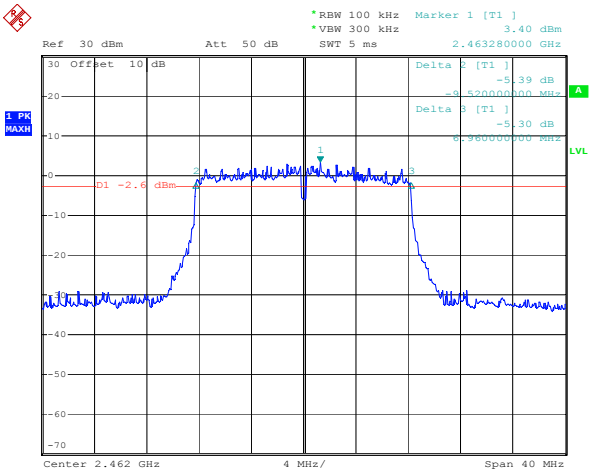

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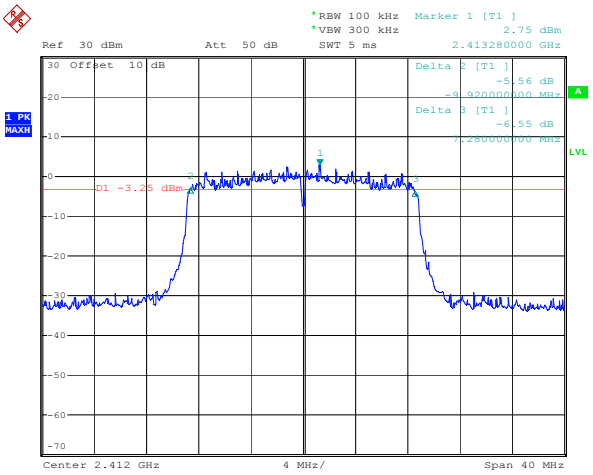
ANT 1(802.11n20)



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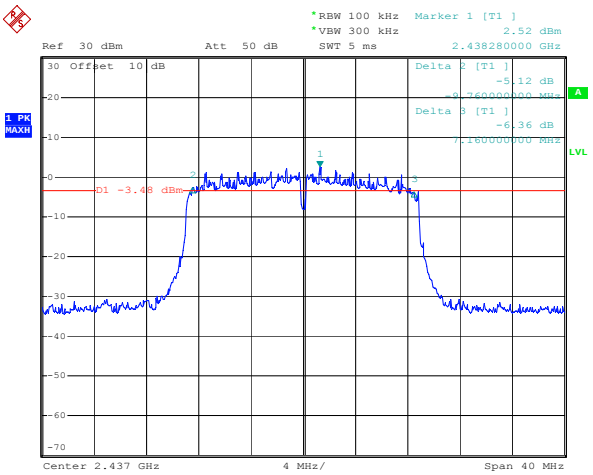

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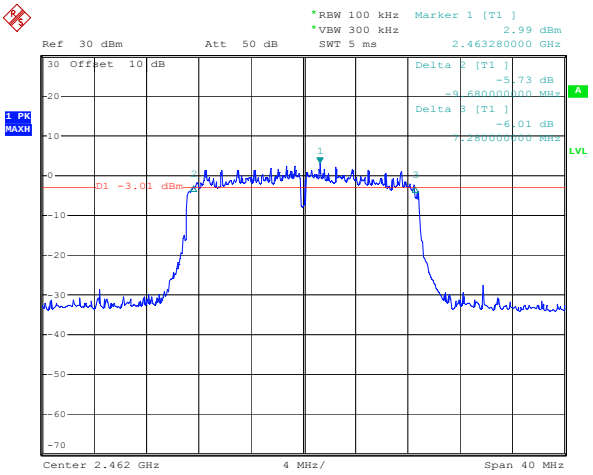

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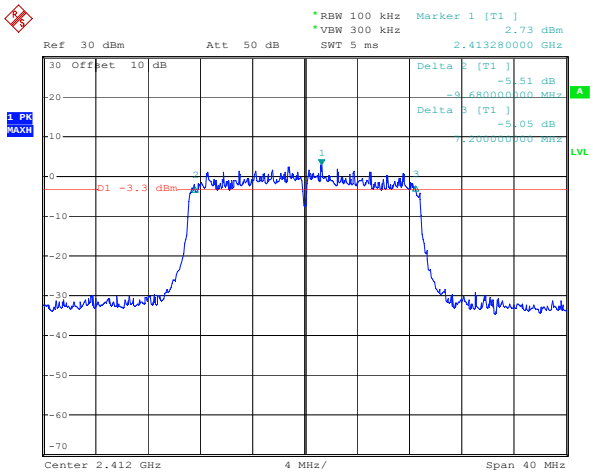

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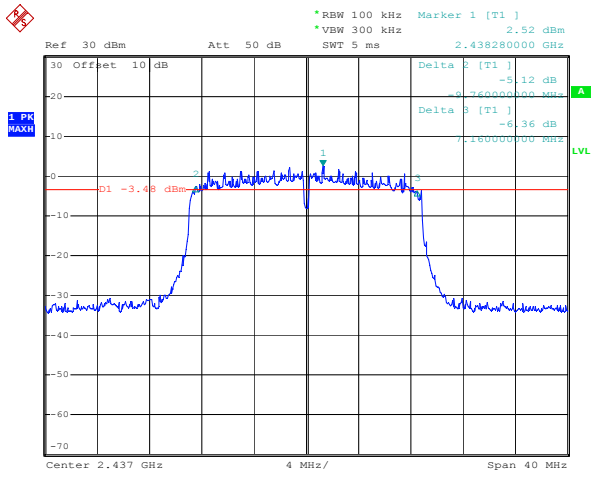

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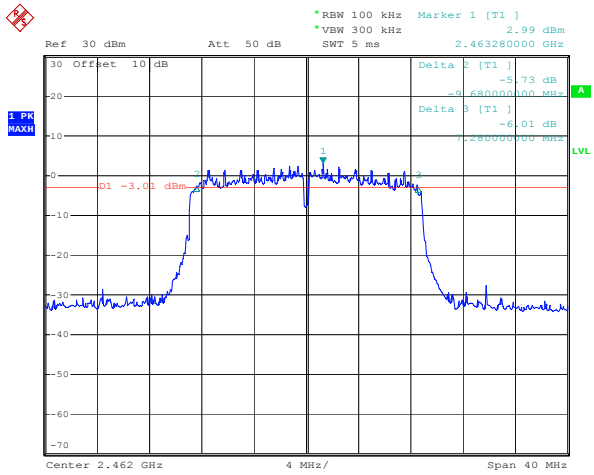

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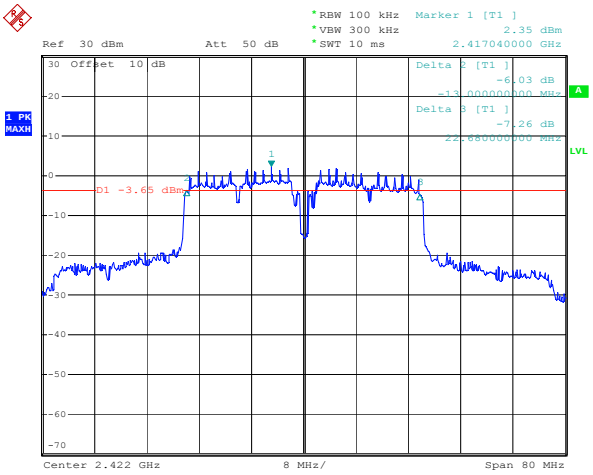
ANT 1(802.11n40)



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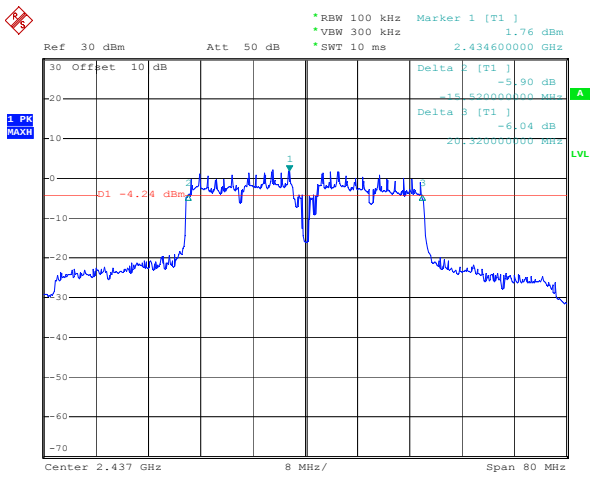

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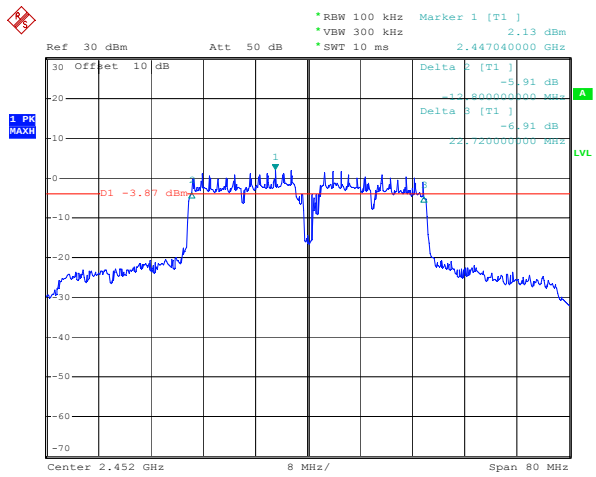

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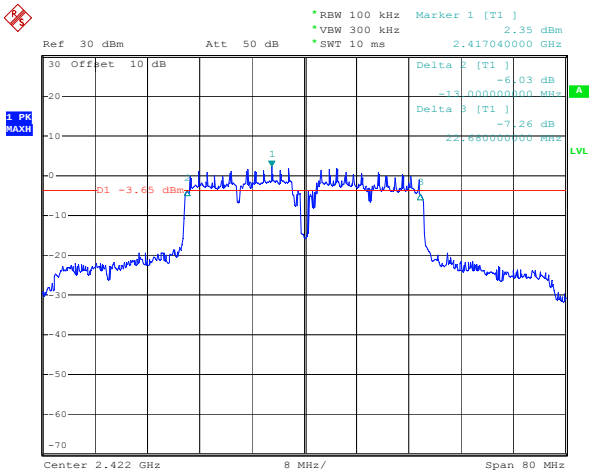

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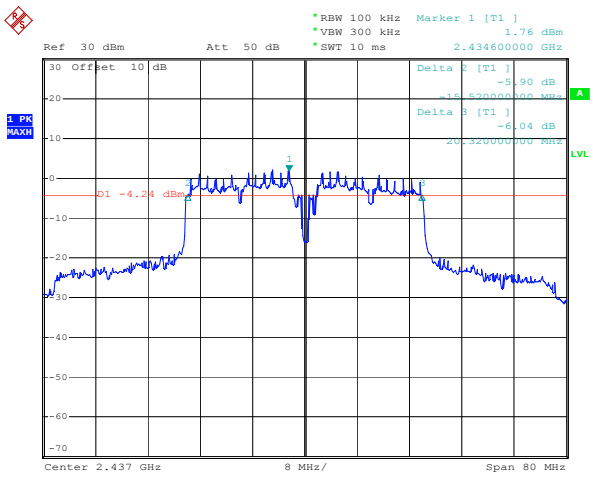

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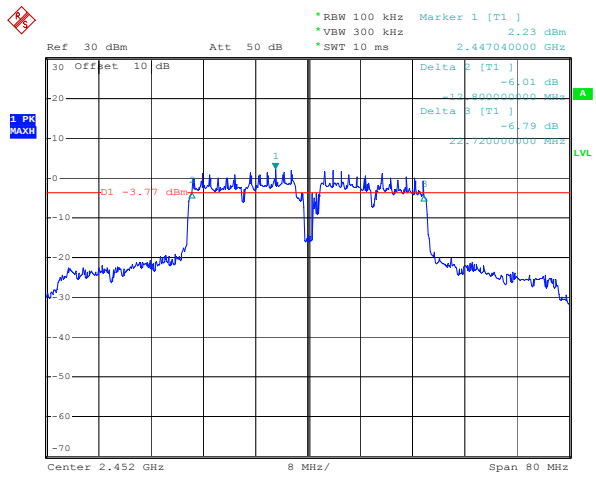

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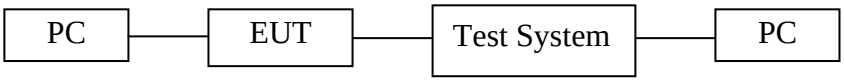
6. 99% OCCUPIED BANDWIDTH

6.1.Block Diagram of Test Setup



6.2.EUT Configuration on Measurement

The following equipment is installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

6.3.Operating Condition of EUT

6.3.1.Setup the EUT and simulator as shown as Section 6.1.

6.3.2.Turn on the power of all equipment.

6.3.3.Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462 and 2422-2452MHz. We select 2412MHz, 2437MHz, 2462MHz and 2422MHz, 2437MHz, 2452MHz TX frequency to transmit.

6.4.Test Procedure

6.4.1.The transmitter output was connected to the spectrum analyzer through a low loss cable. The transmitter shall be operated at its maximum carrier power measured under normal test conditions. The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts.

6.4.2.The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the occupied bandwidth (OBW) and video bandwidth (VBW) shall be approximately 3x RBW.

6.4.3.A peak, or peak hold, may be used in place of the sampling detector as this may produce a wider bandwidth than the actual bandwidth (worst-case measurement). Use of a peak hold may be necessary to determine the occupied bandwidth if the device is not transmitting continuously.

6.4.4.Set SPA “Meas” function, Select “Occupied Bandwidth” function, Select “99% Power Bandwidth”. The frequency of the upper and lower markers indicating the edges of the transmitters “99% Power” emission bandwidth shall be recorded to automate by SPA.

6.5.Measurement Result

The test was performed with 802.11b			
Channel	Frequency (MHz)	99% Occupied Bandwidth ANT1 (MHz)	99% Occupied Bandwidth ANT2 (MHz)
Low	2412	12.32	12.24
Middle	2437	12.24	12.24
High	2462	12.24	12.24

The test was performed with 802.11g			
Channel	Frequency (MHz)	99% Occupied Bandwidth ANT1 (MHz)	99% Occupied Bandwidth ANT2 (MHz)
Low	2412	16.64	16.64
Middle	2437	16.64	16.64
High	2462	16.56	16.64

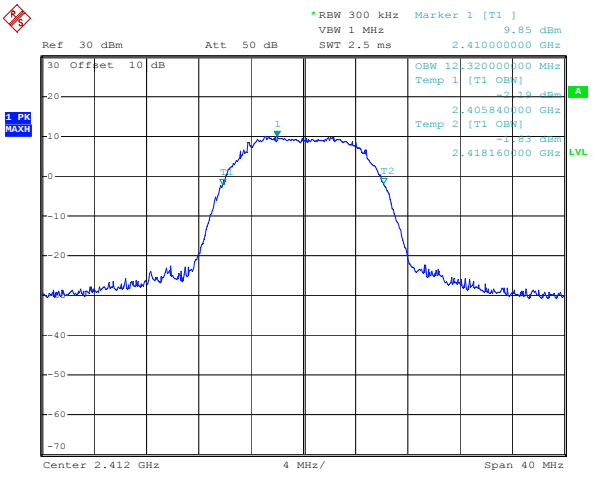
The test was performed with 802.11 n20			
Channel	Frequency (MHz)	99% Occupied Bandwidth ANT1 (MHz)	99% Occupied Bandwidth ANT2 (MHz)
Low	2412	17.60	17.60
Middle	2437	17.60	17.68
High	2462	17.60	17.60

The test was performed with 802.11n40			
Channel	Frequency (MHz)	99% Occupied Bandwidth ANT1 (MHz)	99% Occupied Bandwidth ANT2 (MHz)
Low	2412	36.16	36.16
Middle	2437	36.16	36.16
High	2462	36.16	36.16

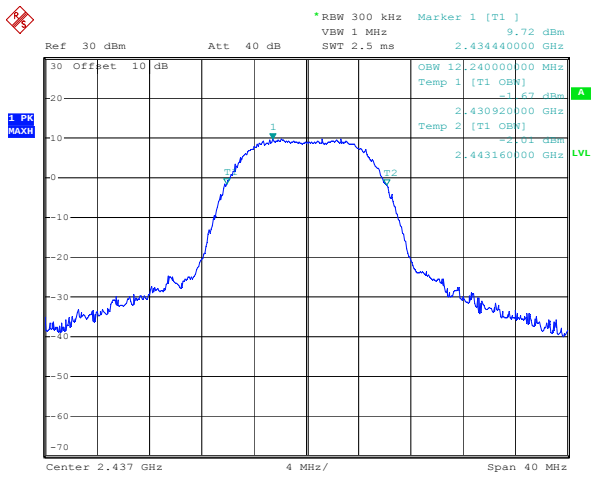
The spectrum analyzer plots are attached as below.

99% Bandwidth

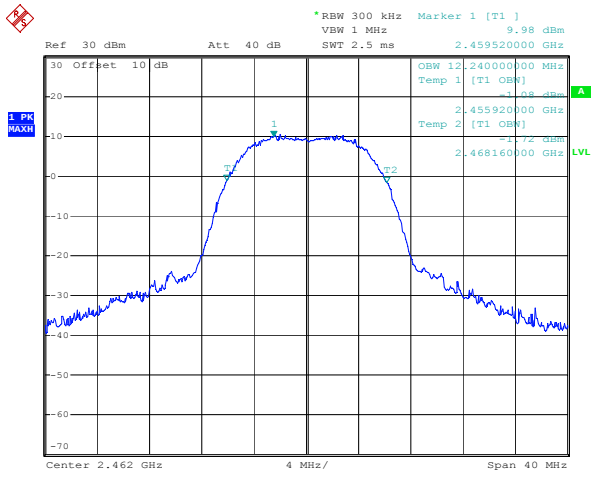
ANT 1(802.11b)



Comment A:
Date: 19.JAN.2018 09:17:03

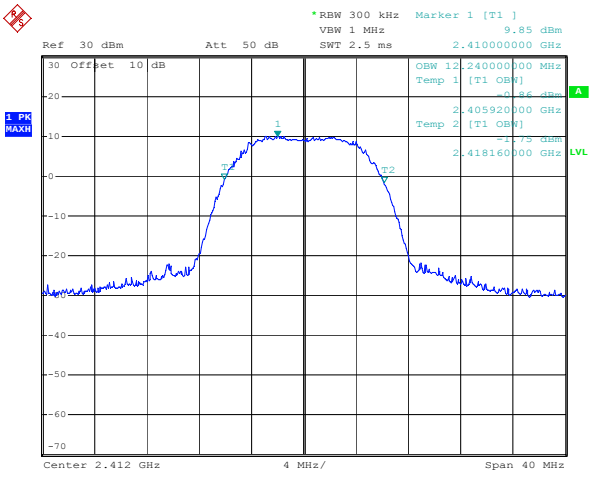


Comment A:
Date: 19.JAN.2018 09:17:58

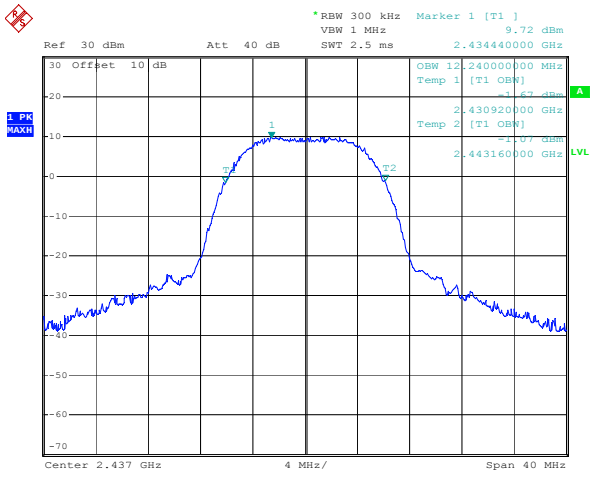


Comment A:
Date: 19.JAN.2018 09:18:58

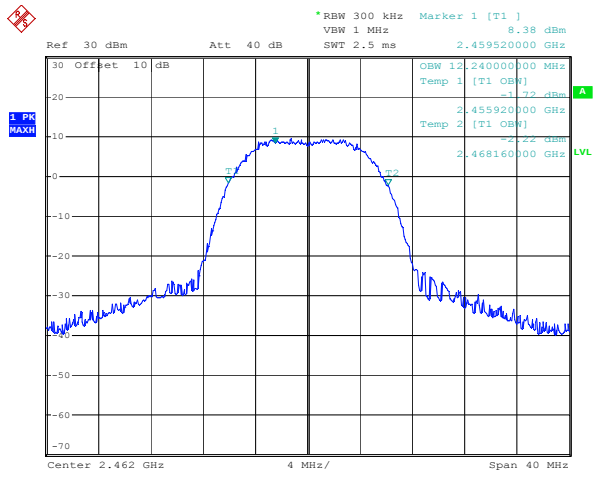
ANT 2(802.11b)



Comment A:
Date: 19.JAN.2018 09:17:20

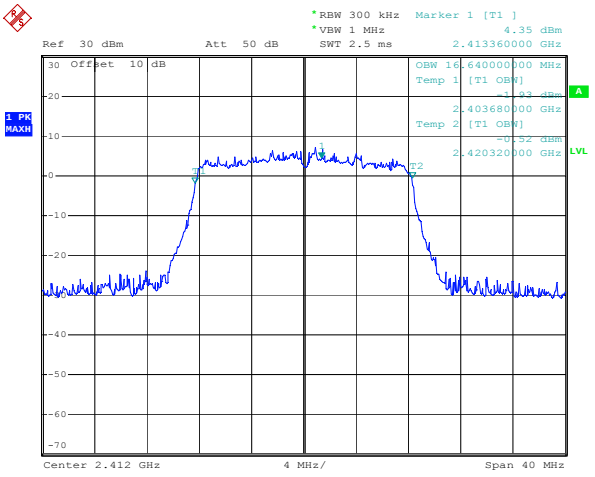


Comment A:
Date: 19.JAN.2018 09:18:09

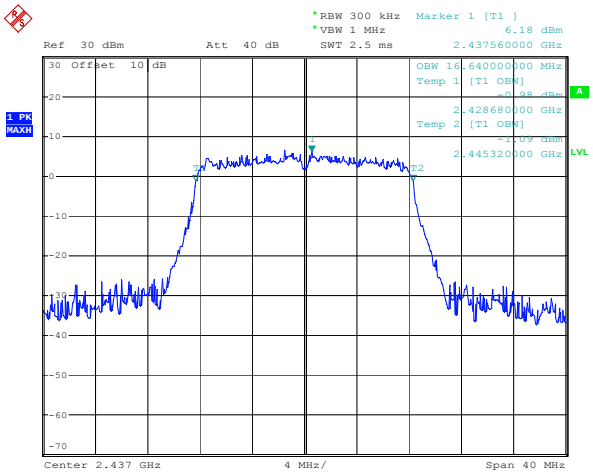


Comment A:
Date: 19.JAN.2018 09:19:50

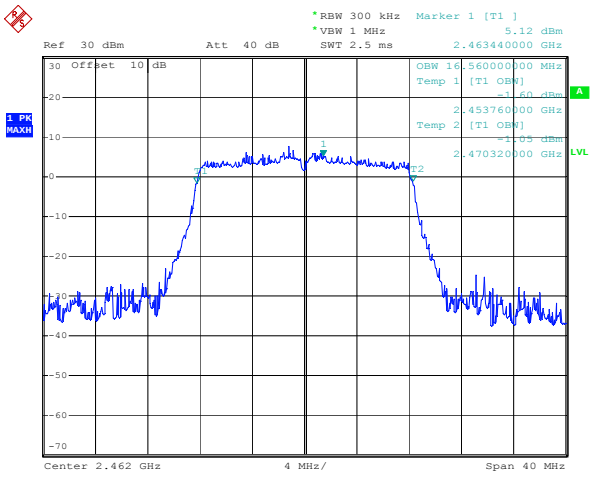
ANT 1(802.11g)



Comment A:
Date: 19.JAN.2018 10:44:41

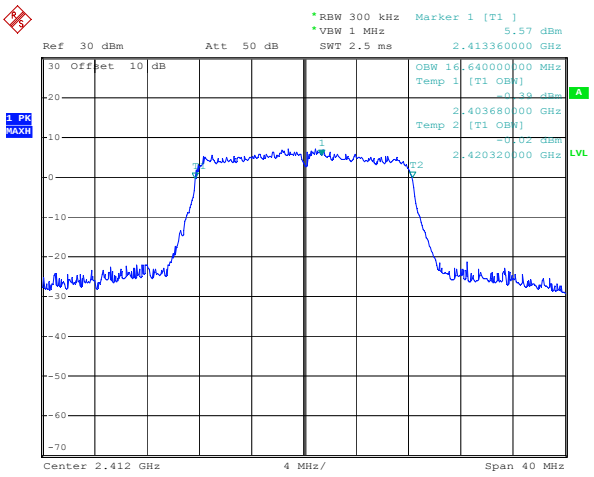


Comment A:
Date: 19.JAN.2018 10:46:47

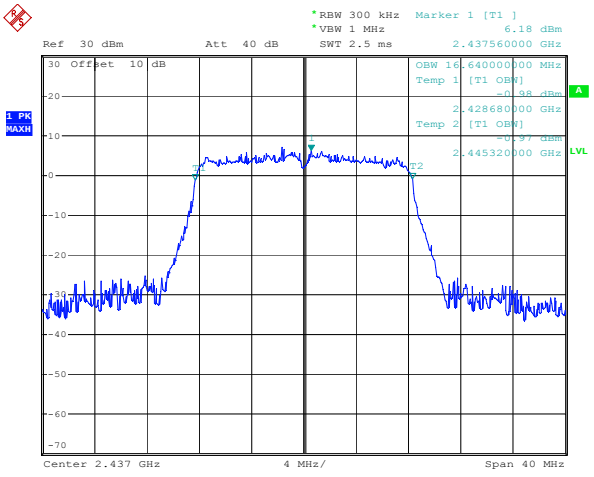


Comment A:
Date: 19.JAN.2018 10:47:26

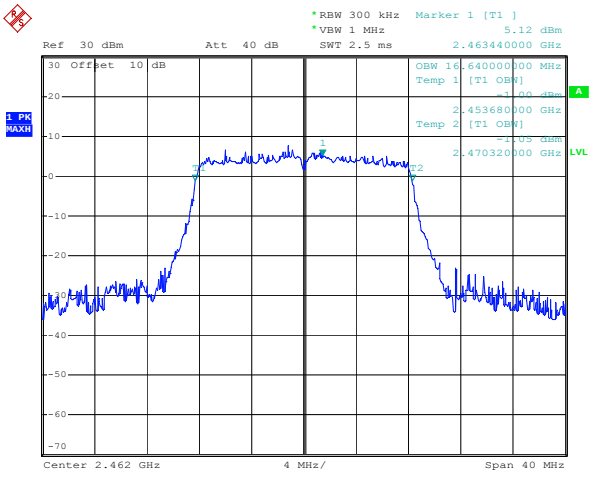
ANT 2(802.11g)



Comment A:
Date: 19.JAN.2018 10:46:10

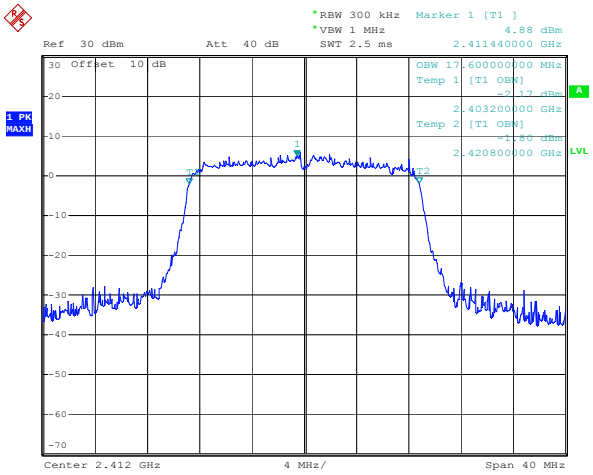


Comment A:
Date: 19.JAN.2018 10:46:54

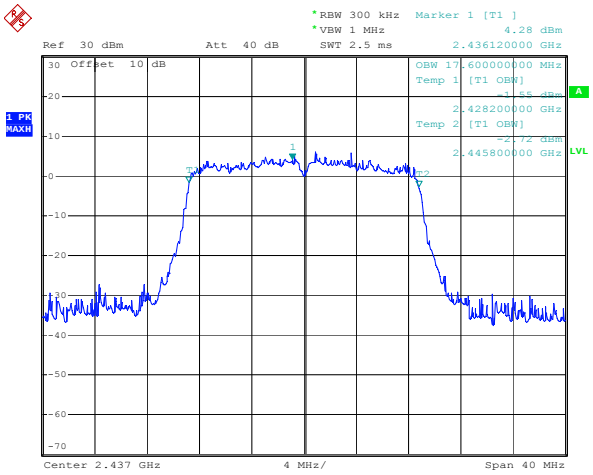


Comment A:
Date: 19.JAN.2018 10:47:33

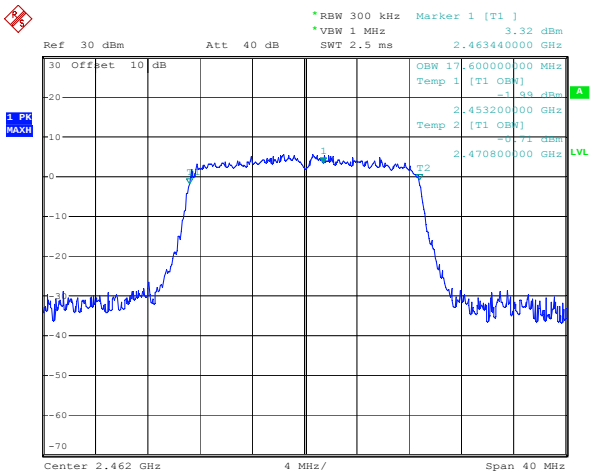
ANT 1(802.11n20)



Comment A:
Date: 19.JAN.2018 10:50:26

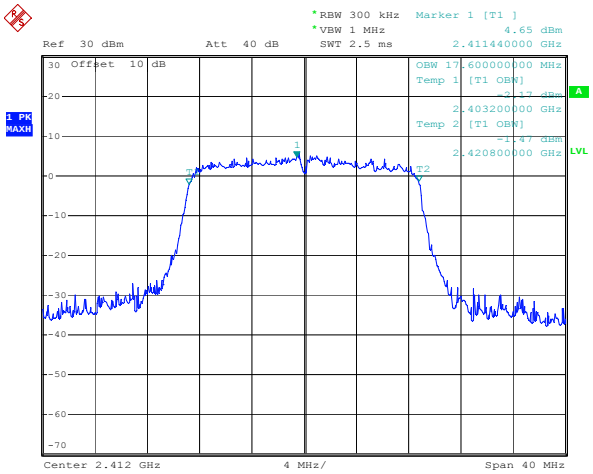


Comment A:
Date: 19.JAN.2018 10:49:27

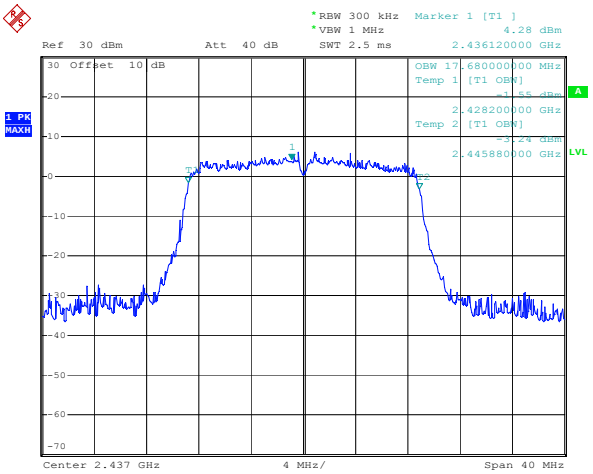


Comment A:
Date: 19.JAN.2018 10:48:53

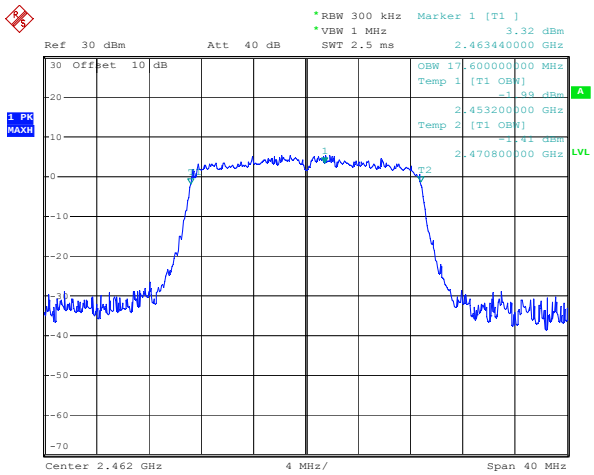
ANT 2(802.11 n20)



Comment A:
Date: 19.JAN.2018 10:50:55

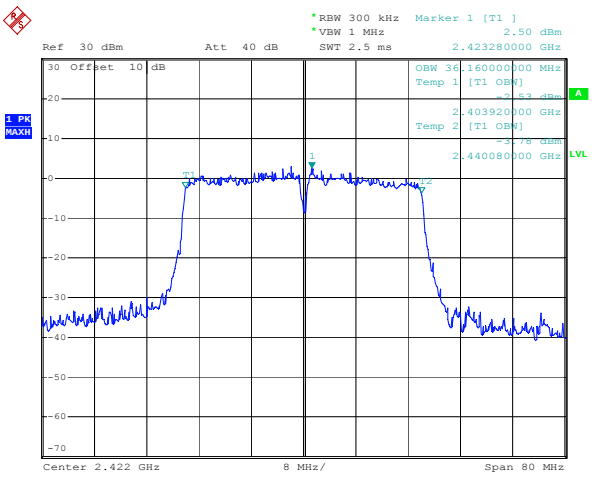


Comment A:
Date: 19.JAN.2018 10:49:35

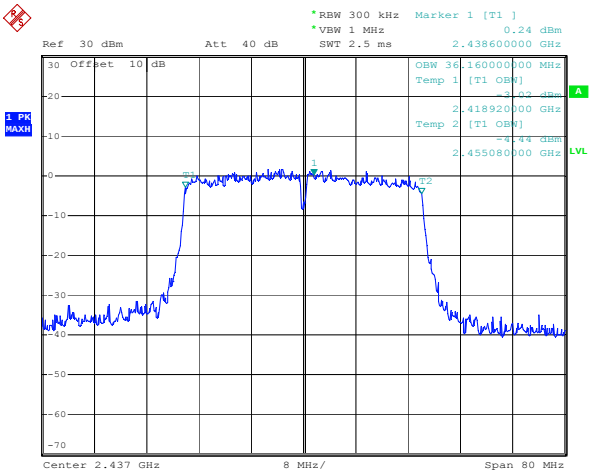


Comment A:
Date: 19.JAN.2018 10:48:45

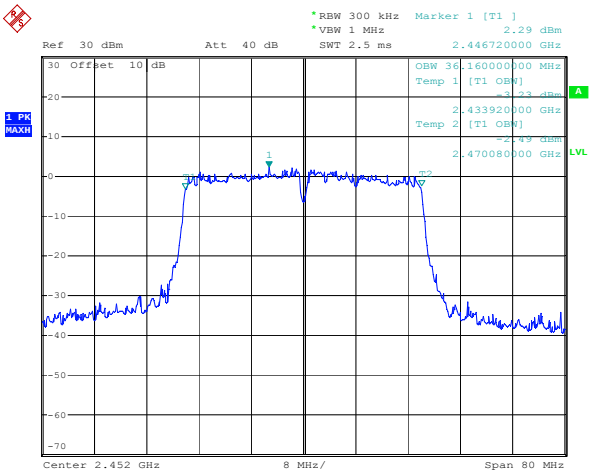
ANT 1(802.11n40)



Comment A:
Date: 19.JAN.2018 10:55:45

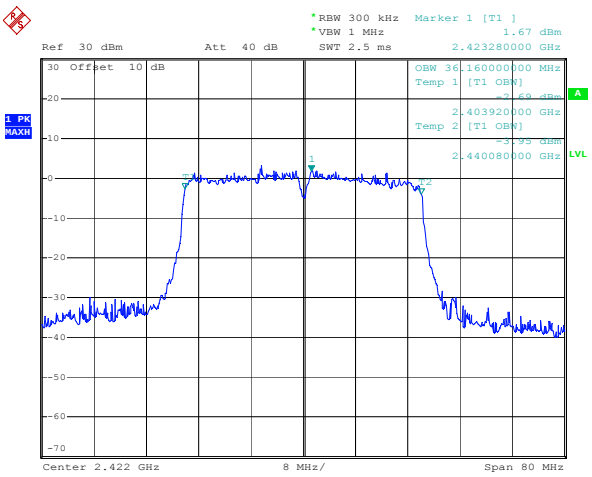


Comment A:
Date: 19.JAN.2018 10:55:05

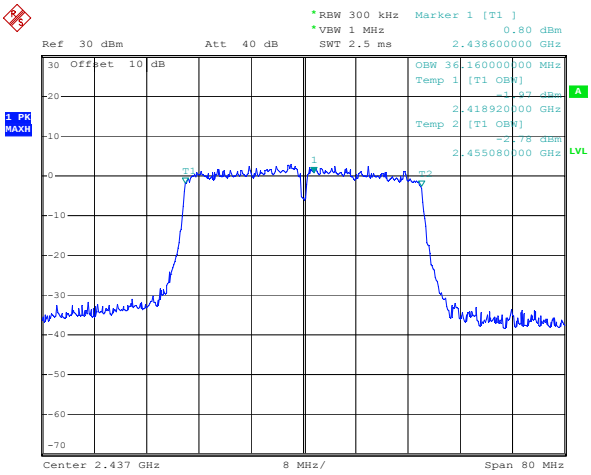


Comment A:
Date: 19.JAN.2018 10:56:42

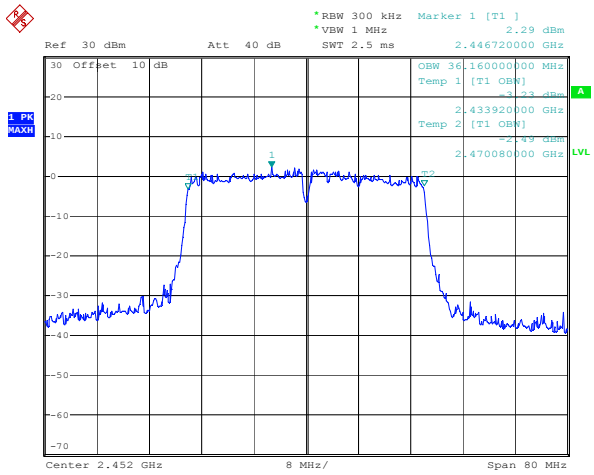
ANT 2(802.11n40)



Comment A:
Date: 19.JAN.2018 10:56:06



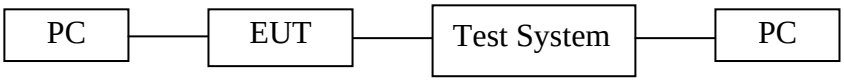
Comment A:
Date: 19.JAN.2018 10:54:53



Comment A:
Date: 19.JAN.2018 10:56:42

7. DUTY CYCLE MEASUREMENT

7.1.Block Diagram of Test Setup



7.2.EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

7.3.Operating Condition of EUT

7.3.1.Setup the EUT and simulator as shown as Section 7.1.

7.3.2.Turn on the power of all equipment.

7.3.3.Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462 and 2422-2452MHz. We select 2437MHz TX frequency to transmit.

7.4.Test Procedure

Measurements of duty cycle and transmission duration shall be performed using one of the following techniques:
1. A diode detector and an oscilloscope that together have sufficiently short response time to permit accurate measurements of the on- and off-times of the transmitted signal.
2. The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on- and off-times of the transmitted signal
a. Set the center frequency of the instrument to the centre frequency of the transmission
b. Set RBW ≥ OBW if possible; otherwise, set RBW to the largest available value(10MHz).
c. Set detector = Peak or average.
d. The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T and the number of sweep points across duration T exceeds 100.
(For example, if VBW and/or RBW are limited to 3MHz, then the zero-span method of measuring duty cycle shall not be used if T≤16.7 microseconds.)

7.5.Test Result

The test was performed with 802.11b					
Channel	Frequency (MHz)	duty cycle(x) ANT 1	10log(1/x) ANT 1	duty cycle(x) ANT 2	10log(1/x) ANT 2
Middle	2437	97.74%	0.10	97.74%	0.10

The test was performed with 802.11g					
Channel	Frequency (MHz)	duty cycle(x) ANT 1	10log(1/x) ANT 1	duty cycle(x) ANT 2	10log(1/x) ANT 2
Middle	2437	87.65%	0.57	88.48%	0.53

The test was performed with 802.11n20					
Channel	Frequency (MHz)	duty cycle(x) ANT 1	10log(1/x) ANT 1	duty cycle(x) ANT 2	10log(1/x) ANT 2
Middle	2437	87.01%	0.60	87.01%	0.60

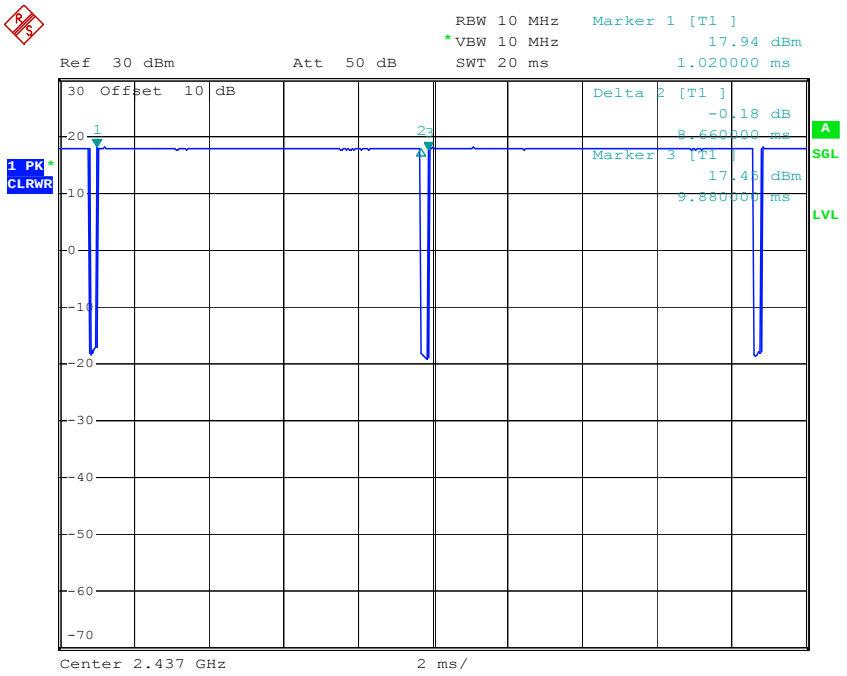
The test was performed with 802.11n40					
Channel	Frequency (MHz)	duty cycle(x) ANT 1	10log(1/x) ANT 1	duty cycle(x) ANT 2	10log(1/x) ANT 2
Middle	2437	75.00%	1.25	73.33%	1.35

Note: The duty cycle's parameter settings for each mode(802.11b,g,n) are the same, Therefore, other channels can refer to the test data of the middle channel.

The spectrum analyzer plots are attached as below.

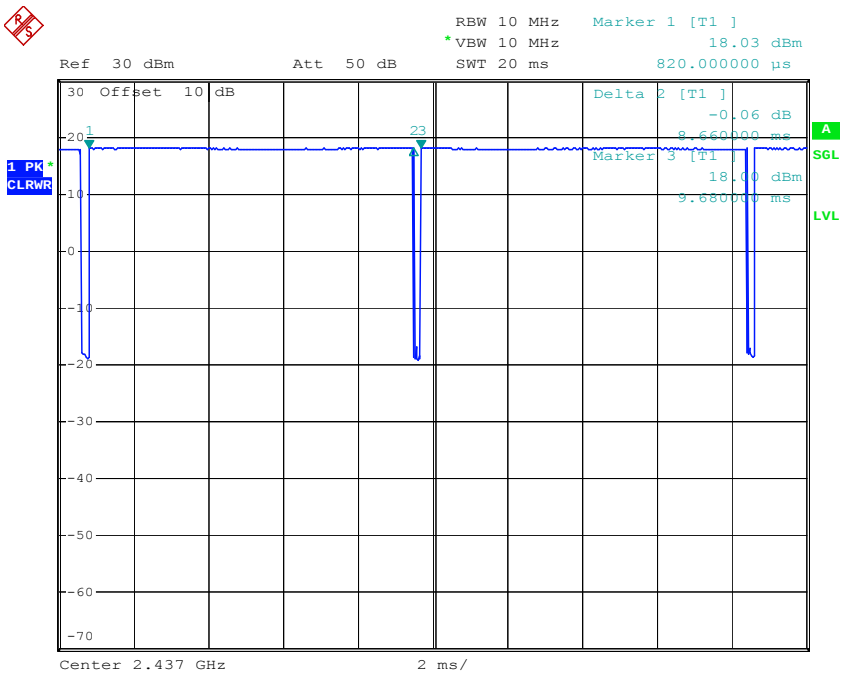
duty cycle

802.11b Channel Middle 2437MHz(ANT 1)



Comment A:
Date: 19.JAN.2018 11:05:45

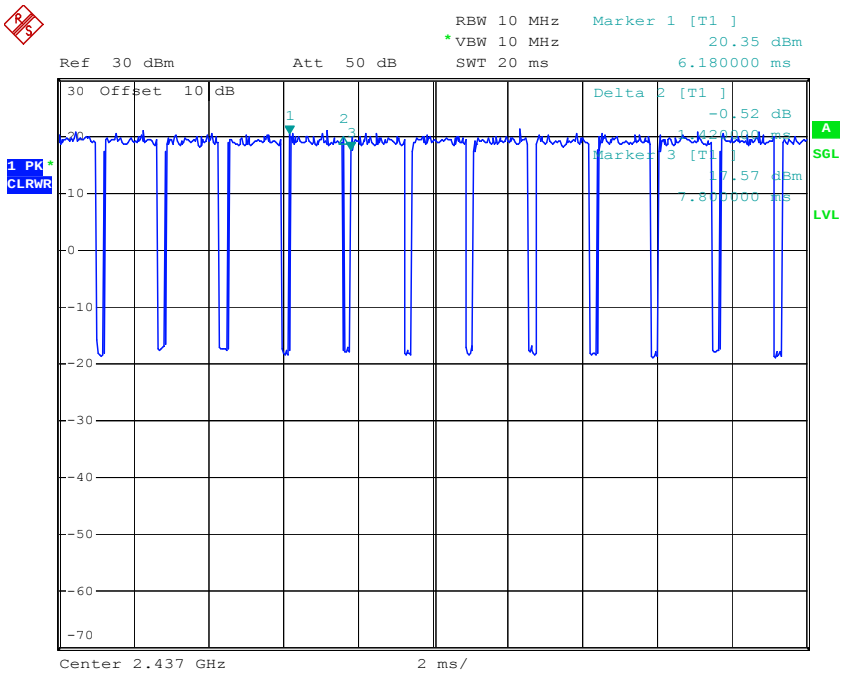
802.11b Channel Middle 2437MHz(ANT 2)



Comment A:
Date: 19.JAN.2018 11:06:17

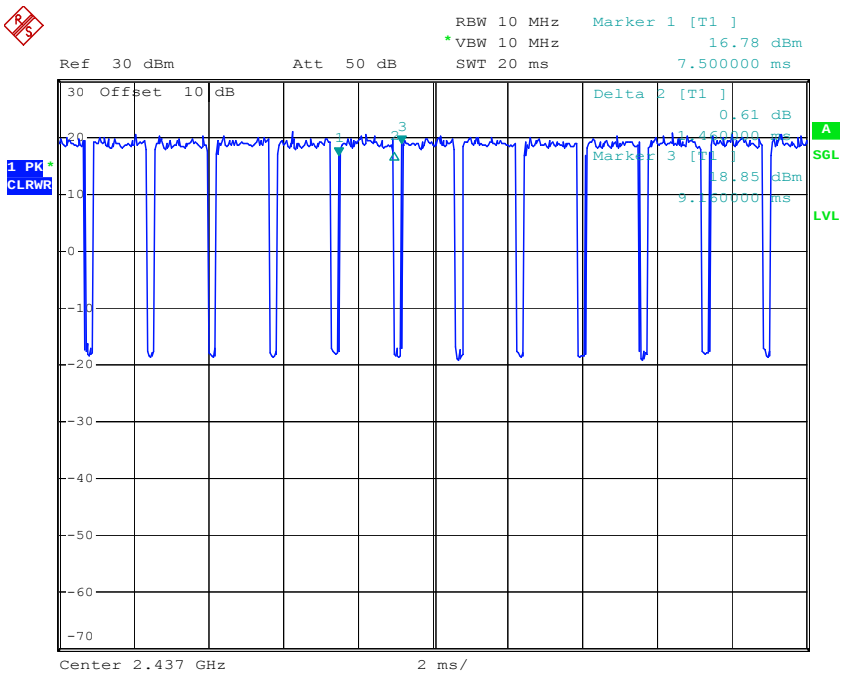
duty cycle

802.11g Channel Middle 2437MHz(ANT 1)



Comment A:
Date: 19.JAN.2018 11:08:18

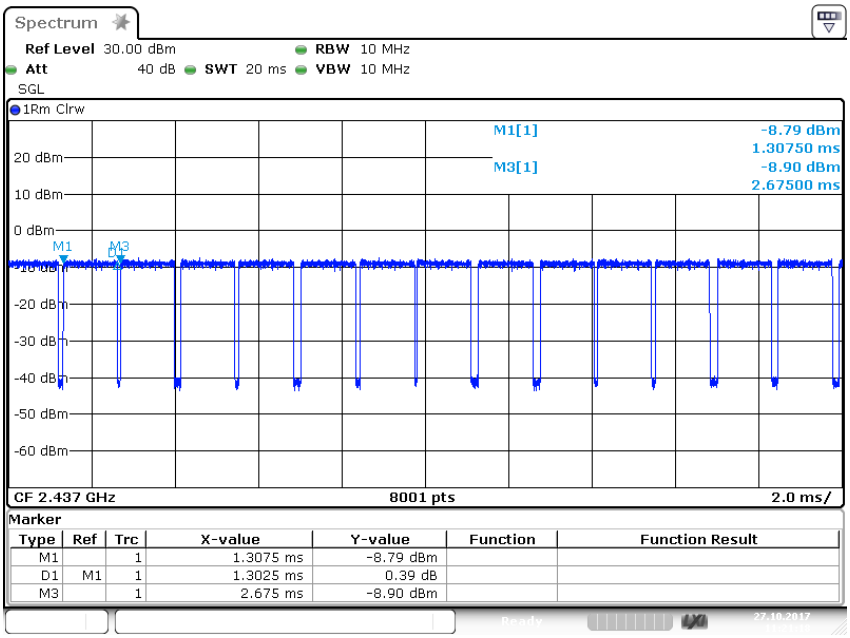
802.11g Channel Middle 2437MHz(ANT 2)



Comment A:
Date: 19.JAN.2018 11:07:45

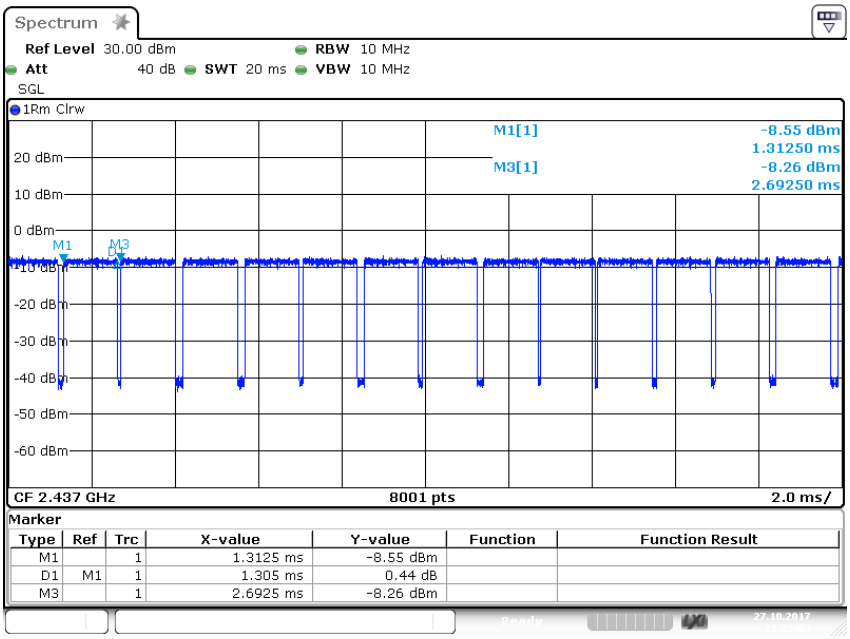
duty cycle

802.11n20 Channel Middle 2437MHz(ANT 1)



Date: 27.OCT.2017 11:21:17

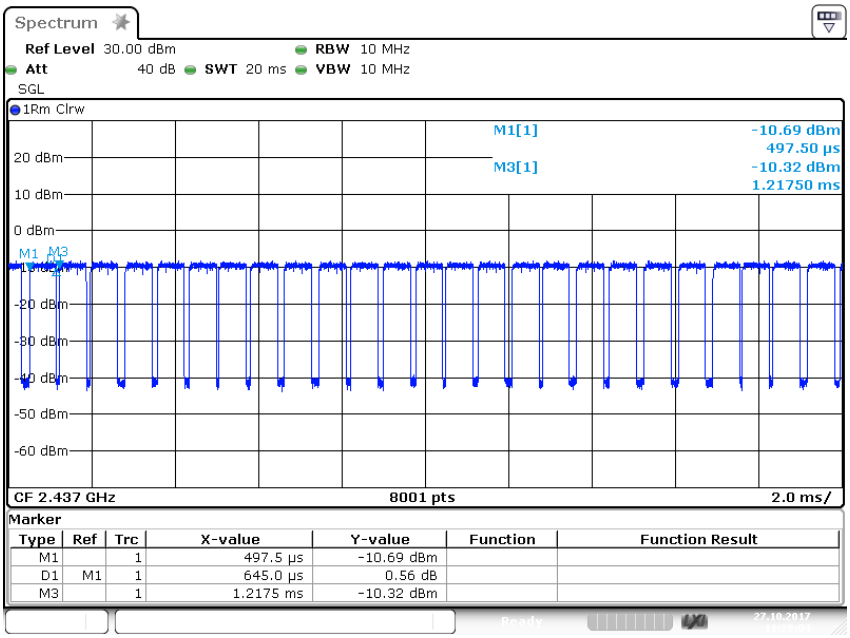
802.11n20 Channel Middle 2437MHz(ANT 2)



Date: 27.OCT.2017 11:23:03

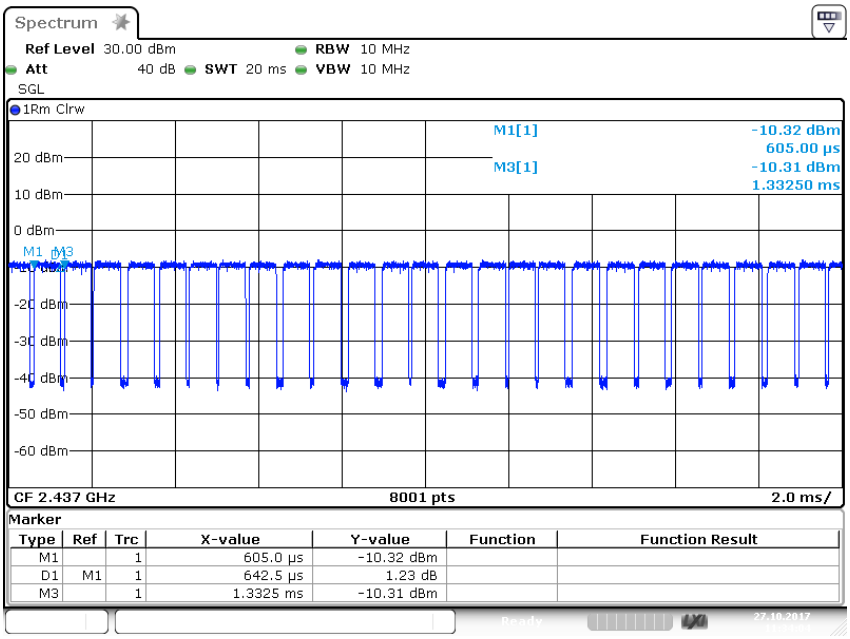
duty cycle

802.11n40 Channel Middle 2437MHz(ANT 1)



Date: 27.OCT.2017 11:28:04

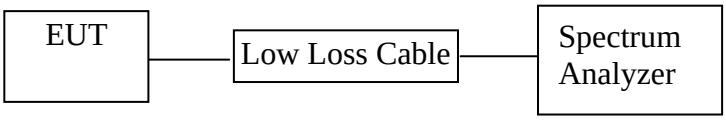
802.11n40 Channel Middle 2437MHz(ANT 2)



Date: 27.OCT.2017 11:34:04

8. POWER SPECTRAL DENSITY TEST

8.1.Block Diagram of Test Setup



8.2.The Requirement For Section 15.247(e)

Section 15.247(e): For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

8.3.EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

8.4.Operating Condition of EUT

8.4.1.Setup the EUT and simulator as shown as Section 8.1.

8.4.2.Turn on the power of all equipment.

8.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462 and 2422-2452MHz. We select 2412MHz, 2437MHz, 2462MHz and 2422MHz, 2437MHz, 2452MHz TX frequency to transmit.

8.5.Test Procedure

8.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.

8.5.2.Measurement Procedure PKPSD:

This procedure must be used if maximum peak conducted output power was used to demonstrate compliance to the fundamental output power limit, and is optional if the maximum (average) conducted output power was used to demonstrate compliance.

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. Set the RBW 3 kHz $\leqslant$ RBW $\leqslant$ 100 kHz.

4. Set the VBW ≥ 3 x RBW.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

8.5.3.Measurement the maximum power spectral density.

8.6.Test Result

PASS

The test was performed with 802.11b(SISO)							
Frequency (MHz)	Power Spectral Density ANT 1 (dBm)	Power Spectral Density ANT 2 (dBm)	10log(1/x) ANT 1	10log(1/x) ANT 2	Final Power Spectral Density ANT 1 (dBm)	Final Power Spectral Density ANT 2 (dBm)	Limits (dBm)
2412	-10.70	-9.17	0.10	0.10	-10.60	-9.07	8 dBm
2437	-8.46	-7.90	0.10	0.10	-8.36	-7.80	8 dBm
2462	-8.77	-8.77	0.10	0.10	-8.67	-8.67	8 dBm

The test was performed with 802.11g(SISO)							
Frequency (MHz)	Power Spectral Density ANT 1 (dBm)	Power Spectral Density ANT 2 (dBm)	10log(1/x) ANT 1	10log(1/x) ANT 2	Final Power Spectral Density ANT 1 (dBm)	Final Power Spectral Density ANT 2 (dBm)	Limits (dBm)
2412	-13.50	-14.08	0.57	0.53	-12.93	-13.55	8 dBm
2437	-13.42	-14.28	0.57	0.53	-12.85	-13.75	8 dBm
2462	-14.65	-13.81	0.57	0.53	-14.08	-13.28	8 dBm

The test was performed with 802.11n20(SISO)							
Frequency (MHz)	Power Spectral Density ANT 1 (dBm)	Power Spectral Density ANT 2 (dBm)	10log(1/x) ANT 1	10log(1/x) ANT 2	Final Power Spectral Density ANT 1 (dBm)	Final Power Spectral Density ANT 2 (dBm)	Limits (dBm)
2412	-13.03	-14.08	0.60	0.60	-12.43	-13.48	8 dBm
2437	-13.42	-14.28	0.60	0.60	-12.82	-13.68	8 dBm
2462	-14.65	-13.81	0.60	0.60	-14.05	-13.21	8 dBm

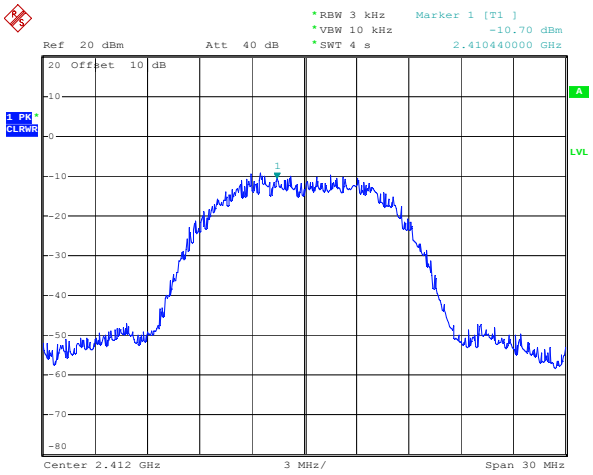
The test was performed with 802.11n40(SISO)							
Frequency (MHz)	Power Spectral Density ANT 1 (dBm)	Power Spectral Density ANT 2 (dBm)	10log(1/x) ANT 1	10log(1/x) ANT 2	Final Power Spectral Density ANT 1 (dBm)	Final Power Spectral Density ANT 2 (dBm)	Limits (dBm)
2422	-18.20	-17.29	1.25	1.35	-16.95	-15.94	8 dBm
2437	-19.33	-18.27	1.25	1.35	-18.08	-16.92	8 dBm
2452	-19.03	-19.69	1.25	1.35	-17.78	-18.34	8 dBm

The test was performed with 802.11n20(MIMO)								
Frequency (MHz)	Power Spectral Density ANT 1 (dBm)	Power Spectral Density ANT 2 (dBm)	10log(1/x) ANT 1	10log(1/x) ANT 2	Final Power Spectral Density ANT 1 (dBm)	Final Power Spectral Density ANT 2 (dBm)	Total Power Spectral Density (dBm)	Limits (dBm)
2412	-11.93	-14.03	0.60	0.60	-11.33	-13.43	-9.24	8 dBm
2437	-14.13	-13.50	0.60	0.60	-13.53	-12.90	-10.19	8 dBm
2462	-12.68	-14.67	0.60	0.60	-12.08	-14.07	-9.95	8 dBm

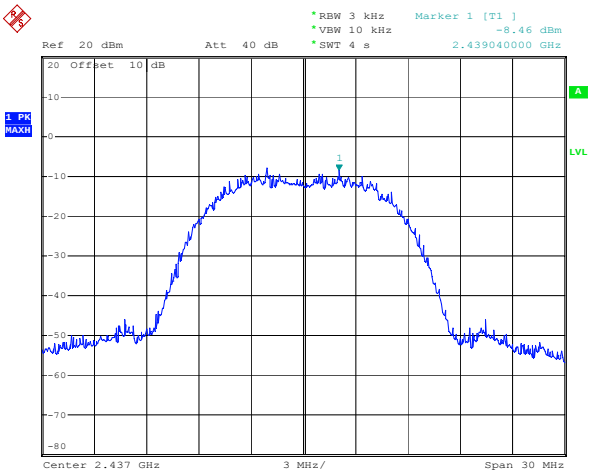
The test was performed with 802.11n40(MIMO)								
Frequency (MHz)	Power Spectral Density ANT 1 (dBm)	Power Spectral Density ANT 2 (dBm)	10log(1/x) ANT 1	10log(1/x) ANT 2	Final Power Spectral Density ANT 1 (dBm)	Final Power Spectral Density ANT 2 (dBm)	Total Power Spectral Density (dBm)	Limits (dBm)
2422	-19.25	-19.26	1.25	1.35	-18.00	-17.91	-14.94	8 dBm
2437	-17.87	-18.32	1.25	1.35	-16.62	-16.97	-13.78	8 dBm
2452	-19.32	-17.99	1.25	1.35	-18.07	-16.64	-14.29	8 dBm

Test mode: SISO
The spectrum analyzer plots are attached as below.

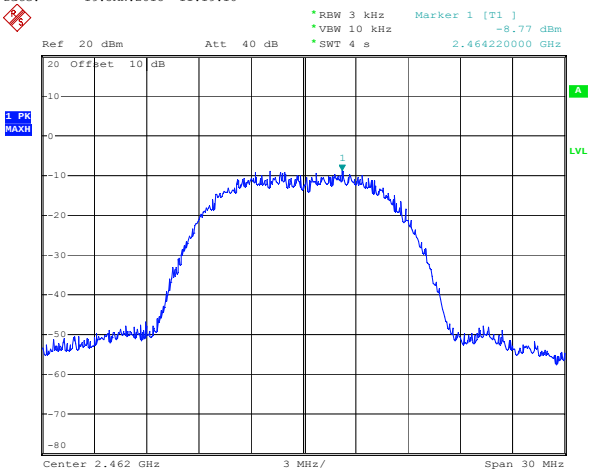
ANT 1(802.11b)



Comment A:
Date: 19.JAN.2018 11:17:38

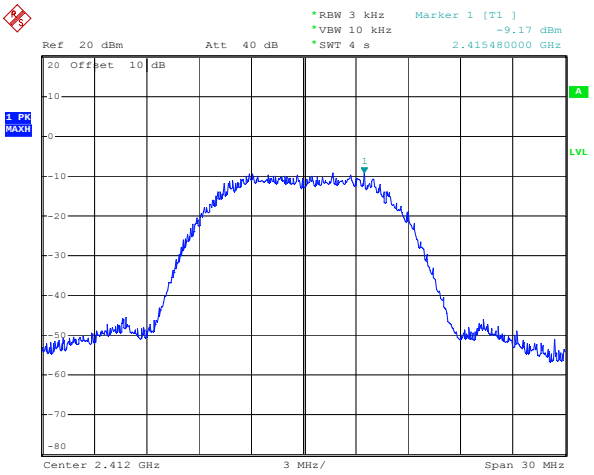


Comment A:
Date: 19.JAN.2018 11:19:10

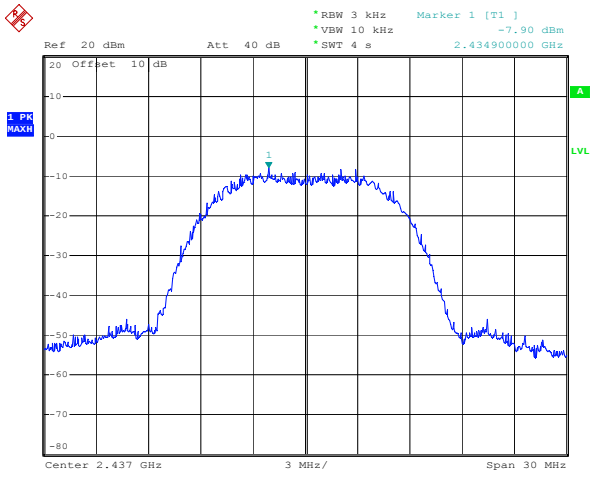


Comment A:
Date: 19.JAN.2018 11:19:58

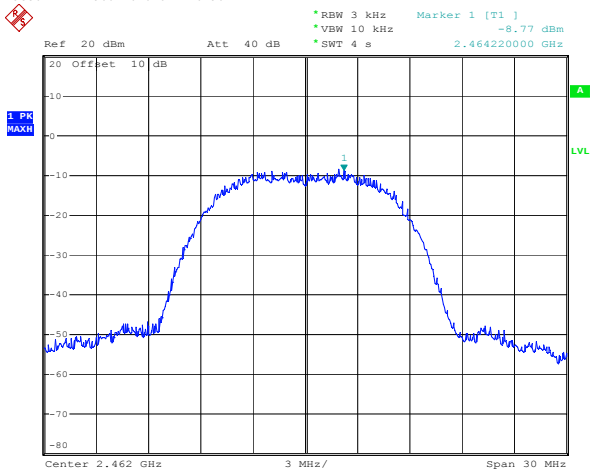
ANT 2(802.11b)



Comment A:
Date: 19.JAN.2018 11:18:24

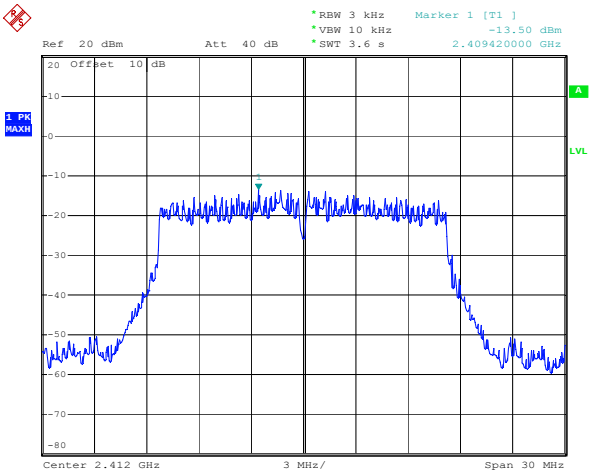


Comment A:
Date: 19.JAN.2018 11:19:21

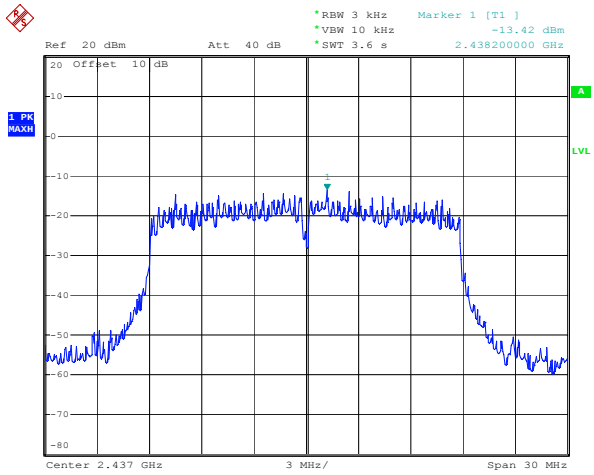


Comment A:
Date: 19.JAN.2018 11:20:13

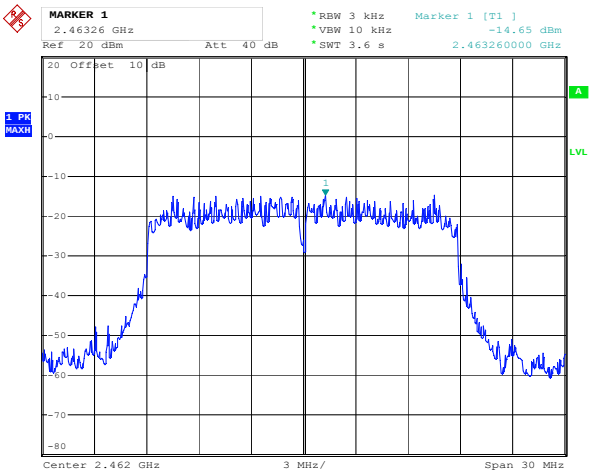
ANT 1(802.11g)



Comment A:
Date: 19.JAN.2018 11:23:04

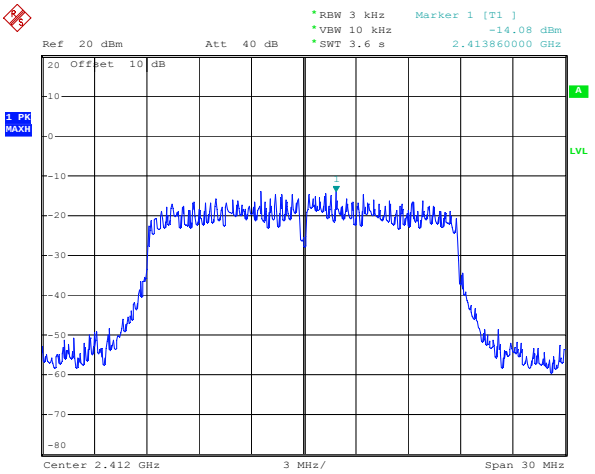


Comment A:
Date: 19.JAN.2018 11:25:02

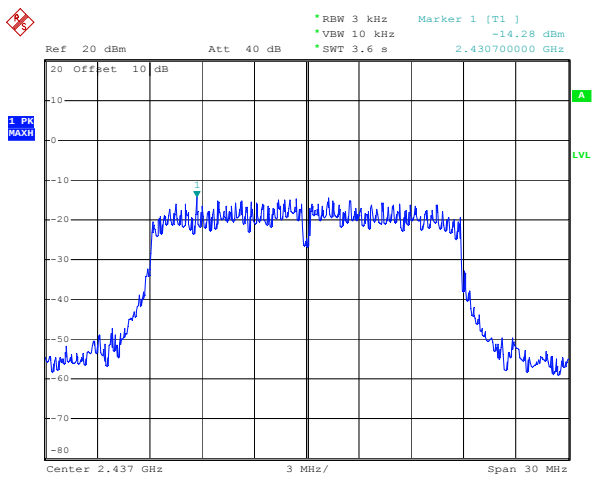


Comment A:
Date: 19.JAN.2018 11:26:19

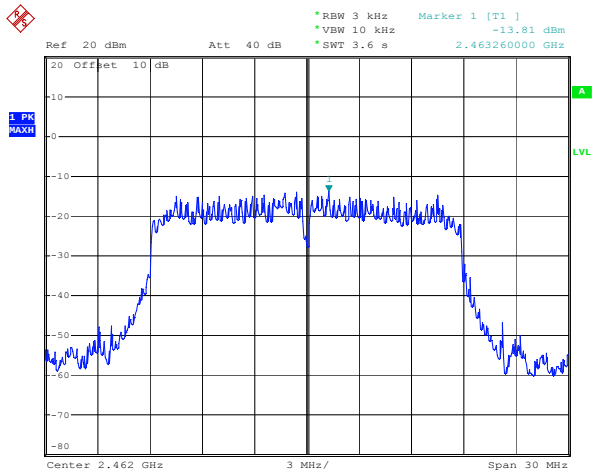
ANT 2(802.11g)



Comment A:
Date: 19.JAN.2018 11:24:29

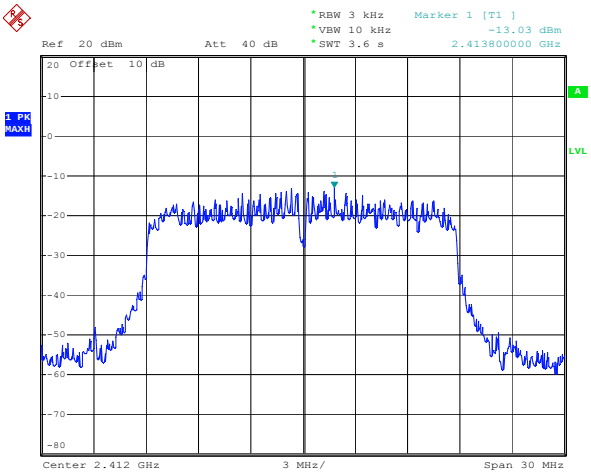


Comment A:
Date: 19.JAN.2018 11:25:27

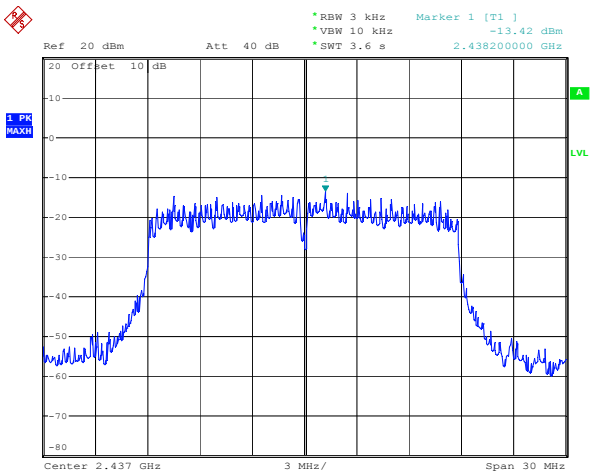


Comment A:
Date: 19.JAN.2018 11:26:25

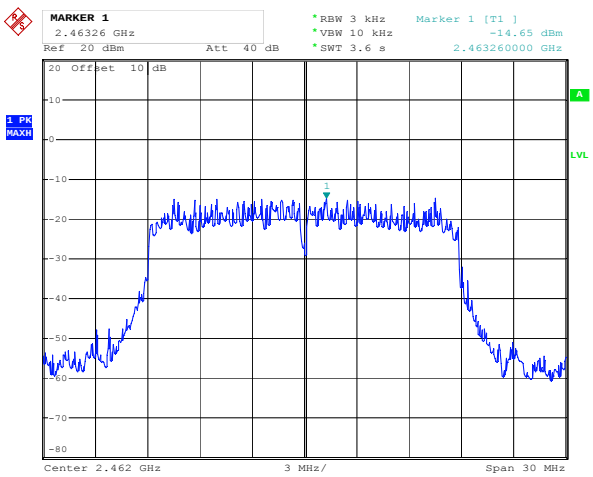
ANT 1(802.11n20)



Comment A:
Date: 19.JAN.2018 11:24:01

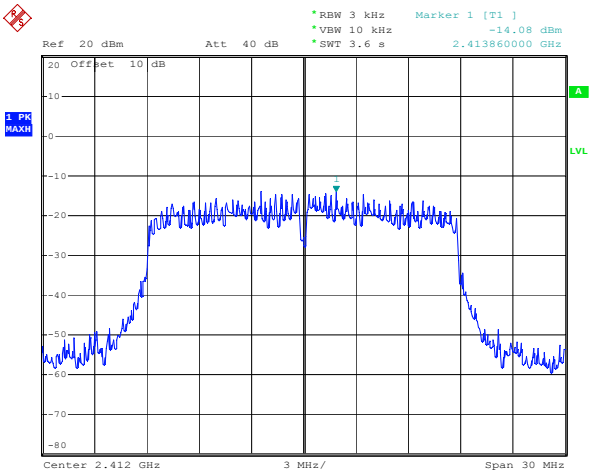


Comment A:
Date: 19.JAN.2018 11:25:02

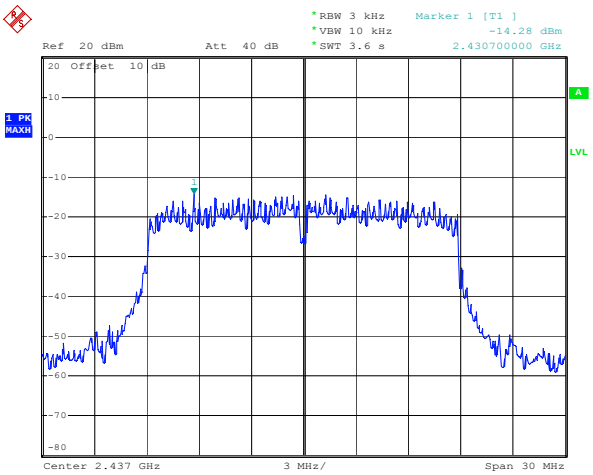


Comment A:
Date: 19.JAN.2018 11:26:19

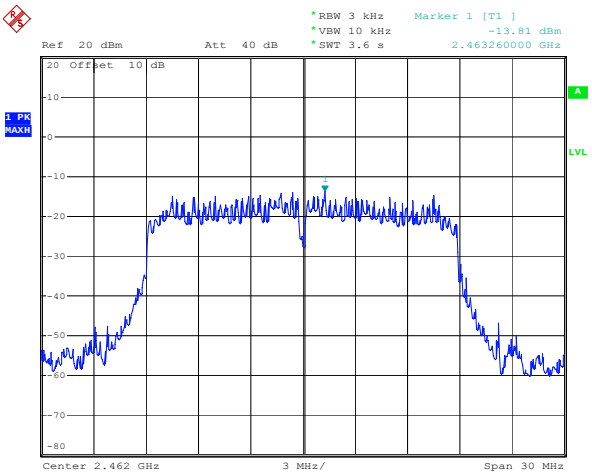
ANT 2(802.11 n20)



Comment A:
Date: 19.JAN.2018 11:24:29

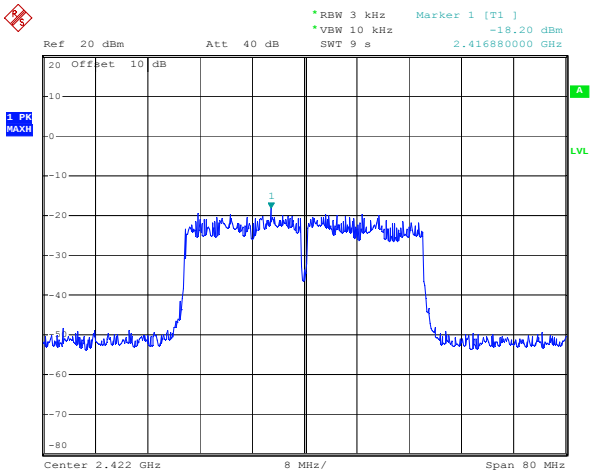


Comment A:
Date: 19.JAN.2018 11:25:27

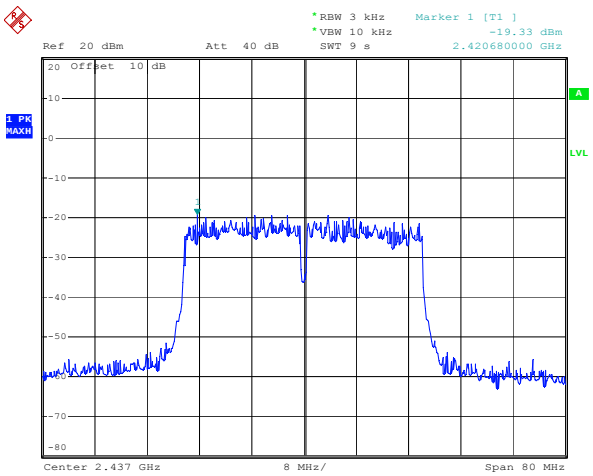


Comment A:
Date: 19.JAN.2018 11:26:25

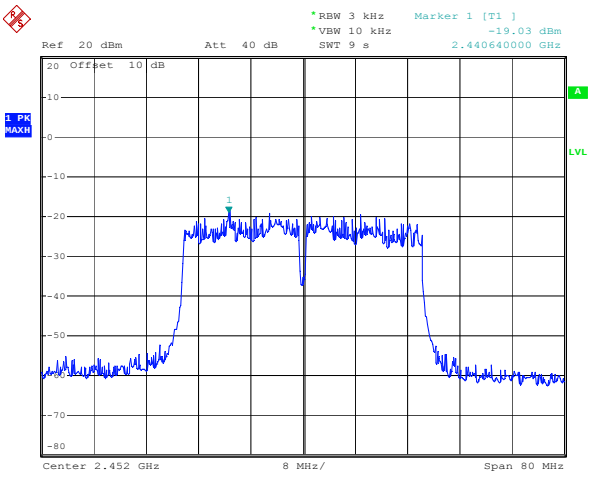
ANT 1(802.11n40)



Comment A:
Date: 19.JAN.2018 11:29:27

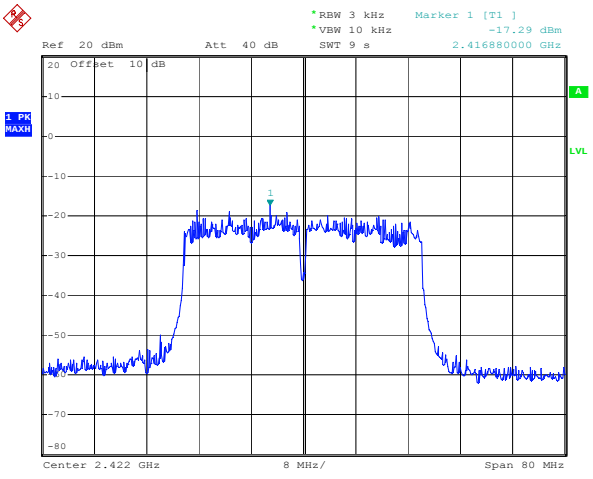


Comment A:
Date: 19.JAN.2018 11:30:45

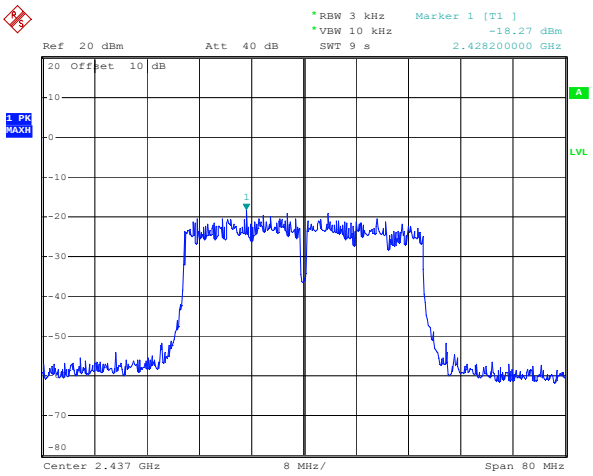


Comment A:
Date: 19.JAN.2018 11:31:57

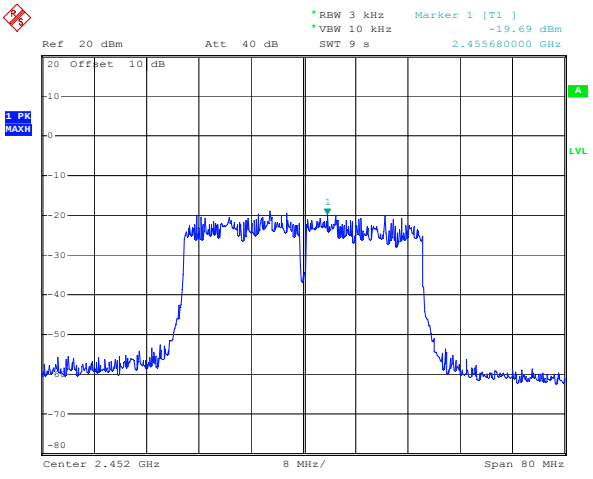
ANT 2(802.11n40)



Comment A:
Date: 19.JAN.2018 11:30:00



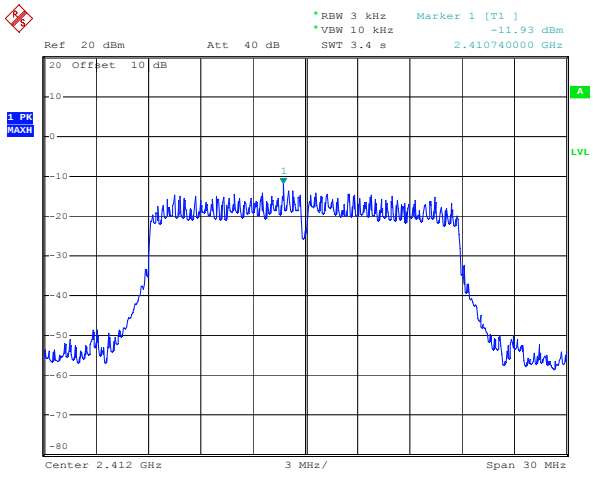
Comment A:
Date: 19.JAN.2018 11:31:16



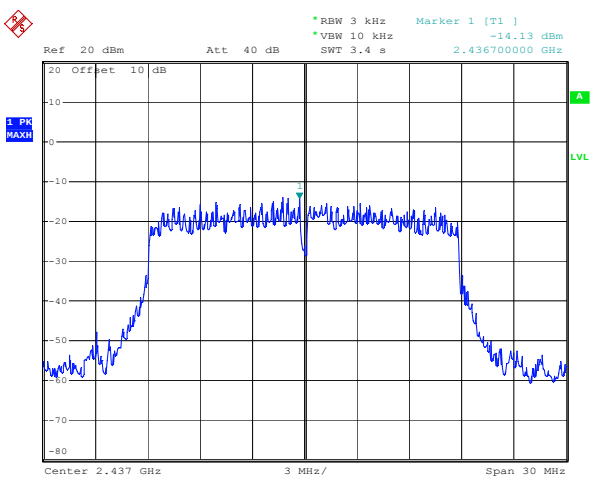
Comment A:
Date: 19.JAN.2018 11:32:27

Test mode: MIMO
The spectrum analyzer plots are attached as below.

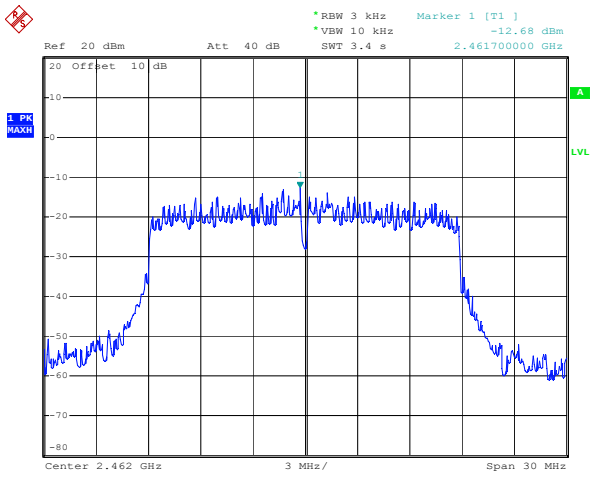
ANT 1(802.11n20)



Comment A:
Date: 19.JAN.2018 11:47:42

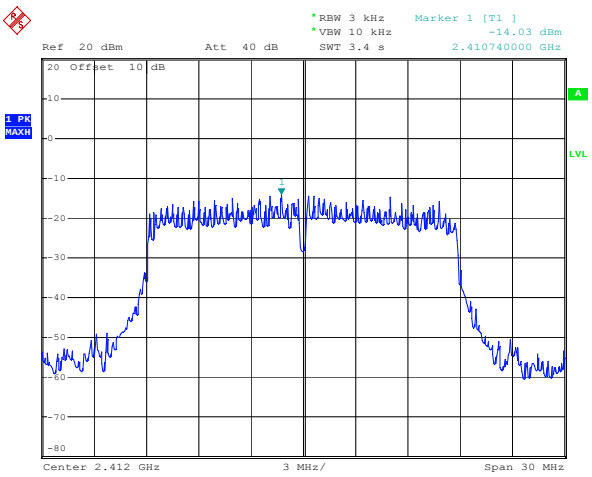


Comment A:
Date: 19.JAN.2018 11:48:55

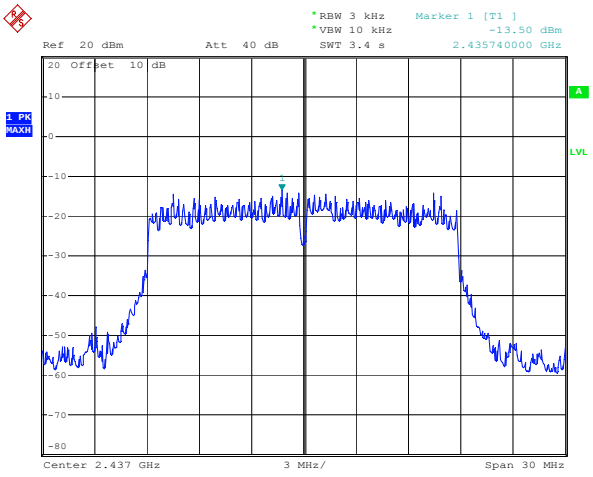


Comment A:
Date: 19.JAN.2018 11:49:36

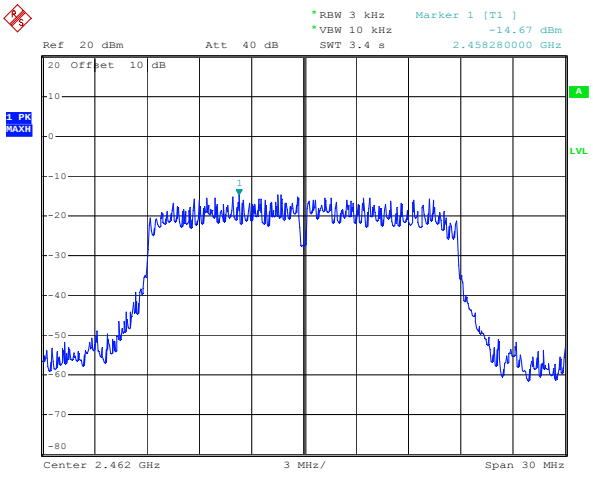
ANT 2(802.11 n20)



Comment A:
Date: 19.JAN.2018 11:48:20

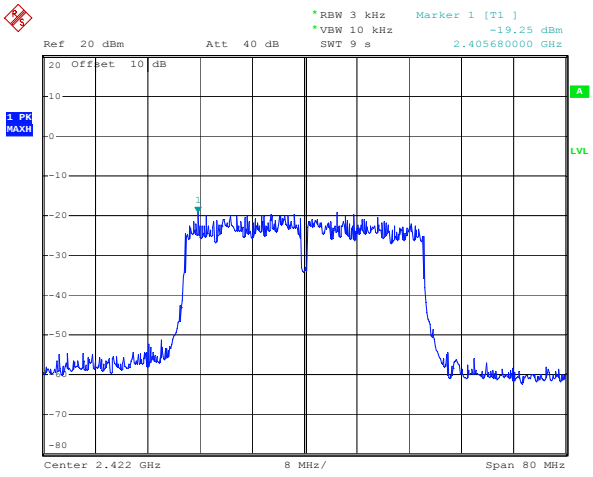


Comment A:
Date: 19.JAN.2018 11:49:08

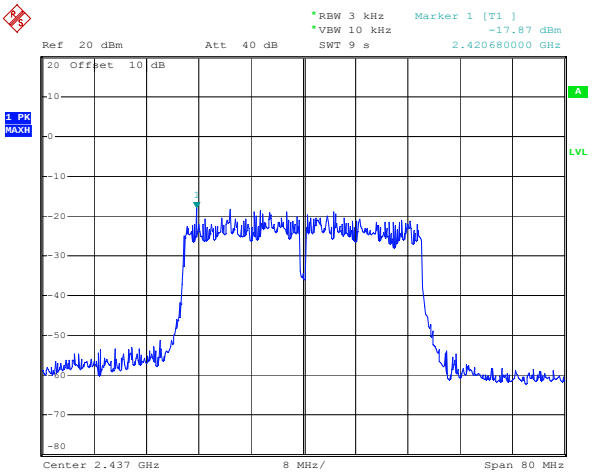


Comment A:
Date: 19.JAN.2018 11:49:56

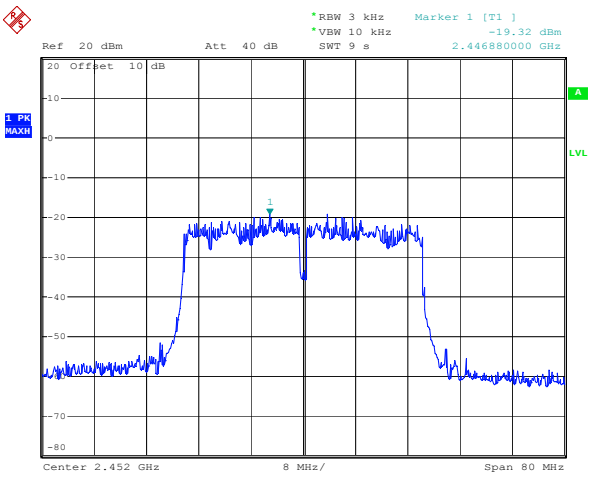
ANT 1(802.11n40)



Comment A:
Date: 19.JAN.2018 11:45:41

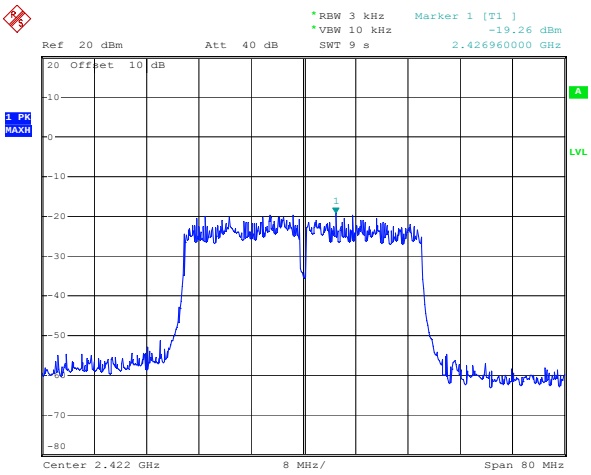


Comment A:
Date: 19.JAN.2018 11:44:30

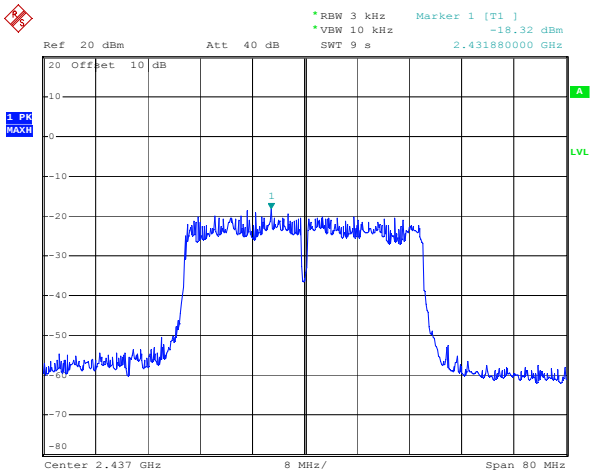


Comment A:
Date: 19.JAN.2018 11:43:17

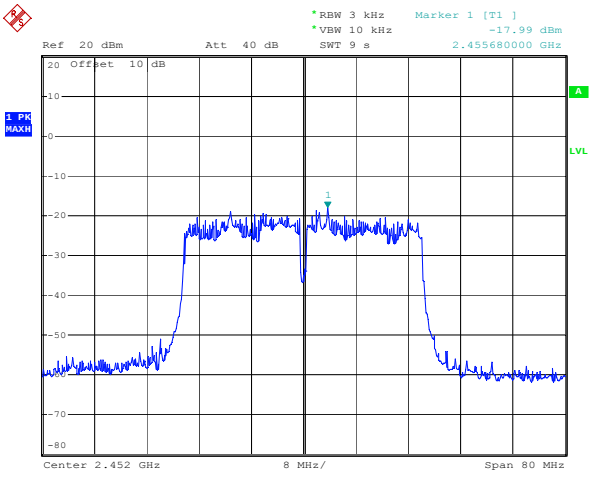
ANT 2(802.11n40)



Comment A:
Date: 19.JAN.2018 11:45:30



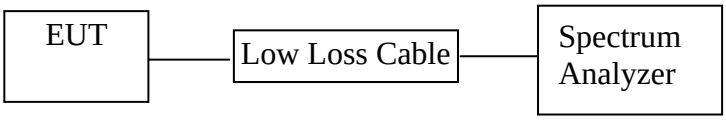
Comment A:
Date: 19.JAN.2018 11:44:02



Comment A:
Date: 19.JAN.2018 11:42:33

9. MAXIMUM CONDUCTED (AVERAGE) OUTPUT POWER

9.1.Block Diagram of Test Setup



9.2.The Requirement For Section 15.247(b)(3)

Section 15.247(b)(3): For systems using digital modulation in the 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz bands: 1 Watt.

9.3.EUT Configuration on Measurement

The equipment is installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

9.4.Operating Condition of EUT

9.4.1.Setup the EUT and simulator as shown as Section 9.1.

9.4.2.Turn on the power of all equipment.

9.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462 and 2422-2452MHz. We select 2412MHz, 2437MHz, 2462MHz and 2422MHz, 2437MHz, 2452MHz TX frequency to transmit.

9.5.Test Procedure

9.5.1.The EUT was tested according to DTS test procedure of Apr 05, 2017 KDB558074 D01 DTS Meas Guidance v04 for compliance to FCC 47CFR 15.247 requirements.

9.5.2.The transmitter output was connected to the spectrum analyzer through a low loss cable.

9.5.3.Set RBW = 1-5% of the OBW, not to exceed 1 MHz, VBW $\geqslant$ 3 x RBW, Sweep time = auto, Set span to at least 1.5 times the OBW, Detector = RMS.

9.5.4.Measurement the Maximum conducted (average) output power.

9.6.Test Result

Final power= Ave output power+10log(1/ duty cycle)

The test was performed with 802.11b							
Frequency (MHz)	Ave output power ANT 1(dBm)	Ave output power ANT 2 (dBm)	10log(1/ duty cycle) ANT 1	10log(1/ duty cycle) ANT 2	Final output power ANT 1 (dBm)	Final output power ANT 2 (dBm)	Limits dBm / W
2412	13.25	13.16	0.10	0.10	13.35	13.26	30dBm/1W
2437	13.36	13.52	0.10	0.10	13.46	13.62	30dBm/1W
2462	13.18	13.35	0.10	0.10	13.28	13.45	30dBm/1W

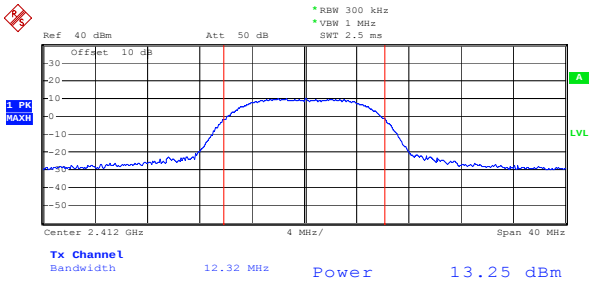
The test was performed with 802.11g							
Frequency (MHz)	Ave output power ANT 1(dBm)	Ave output power ANT 2 (dBm)	10log(1/ duty cycle) ANT 1	10log(1/ duty cycle) ANT 2	Final output power ANT 1 (dBm)	Final output power ANT 2 (dBm)	Limits dBm / W
2412	10.94	11.38	0.57	0.53	11.51	11.91	30dBm/1W
2437	10.74	11.15	0.57	0.53	11.31	11.68	30dBm/1W
2462	11.04	10.76	0.57	0.53	11.61	11.29	30dBm/1W

The test was performed with 802.11n20								
Frequency (MHz)	Ave output power ANT1 (dBm)	Ave output power ANT 2 (dBm)	10log(1/ duty cycle) ANT 1	10log(1/ duty cycle) ANT 2	Final output power ANT 1 (dBm)	Final output power ANT 2 (dBm)	Total output power (dBm)	Limits dBm
2412	10.21	10.51	0.60	0.60	10.81	11.11	13.97	30dBm/1W
2437	9.98	10.19	0.60	0.60	10.58	10.79	13.70	30dBm/1W
2462	10.69	10.07	0.60	0.60	11.29	10.67	14.00	30dBm/1W

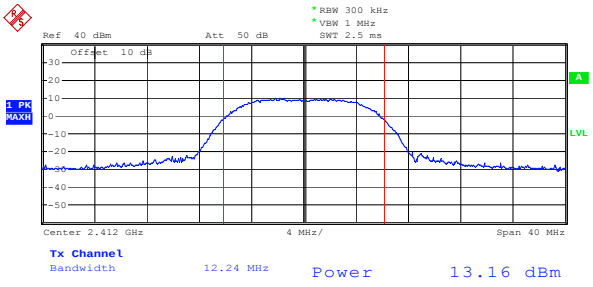
The test was performed with 802.11n40								
Frequency (MHz)	Ave output power ANT 1(dBm)	Ave output power ANT 2 (dBm)	10log(1/ duty cycle) ANT 1	10log(1/ duty cycle) ANT 2	Final output power ANT 1 (dBm)	Final output power ANT 2 (dBm)	Total output power (dBm)	Limits dBm
2422	10.33	9.66	1.25	1.35	11.58	11.01	14.31	30dBm/1W
2437	10.36	10.91	1.25	1.35	11.61	12.26	14.96	30dBm/1W
2452	10.05	9.87	1.25	1.35	11.30	11.22	14.27	30dBm/1W

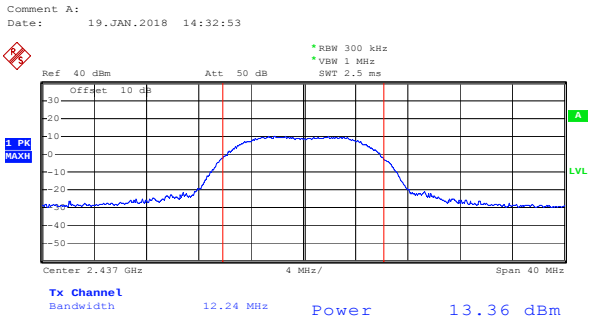
The spectrum analyzer plots are attached as below.

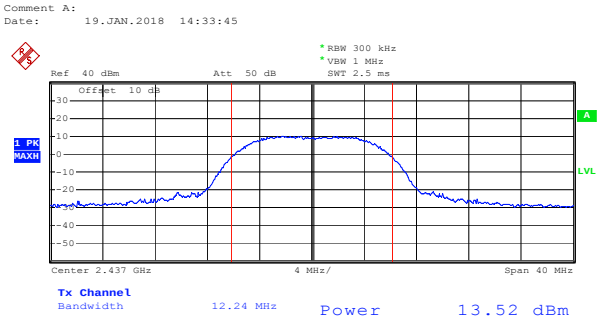
ANT 1(802.11b)

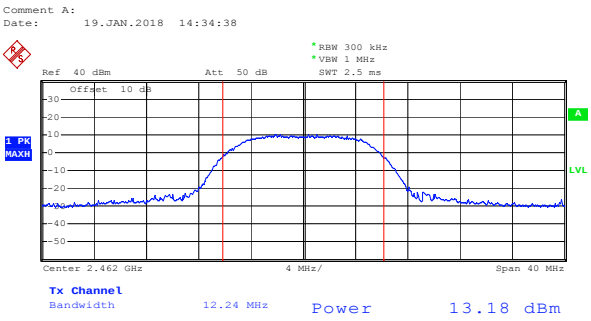


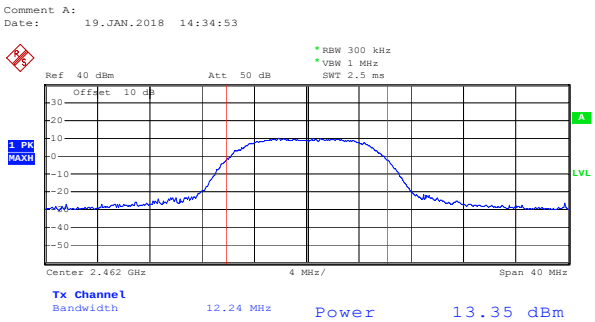
ANT 2(802.11b)

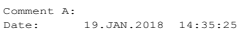


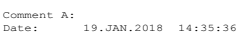




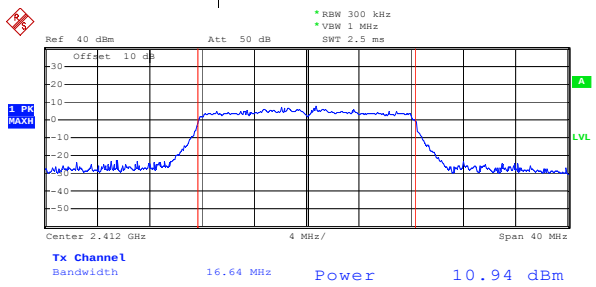




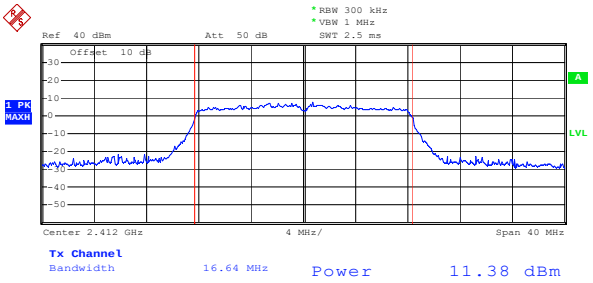




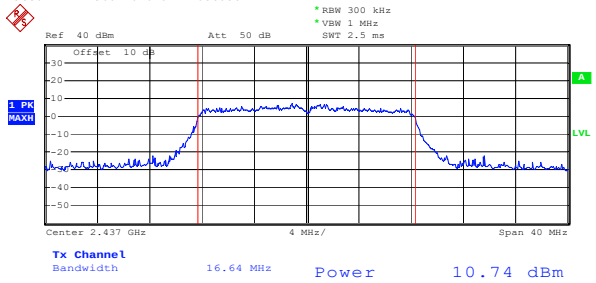
ANT 1(802.11g)



ANT 2(802.11g)



Comment A:
Date: 19.JAN.2018 14:36:36



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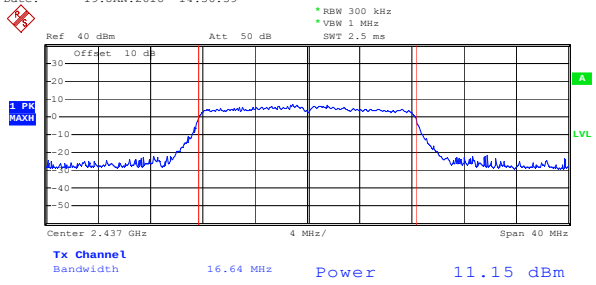

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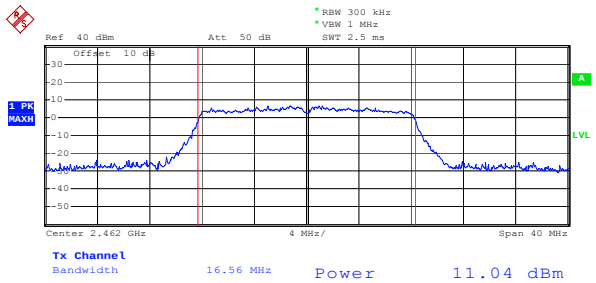

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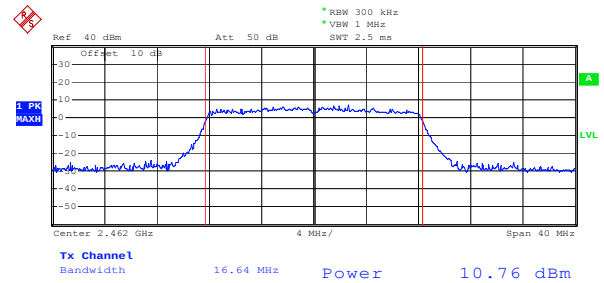
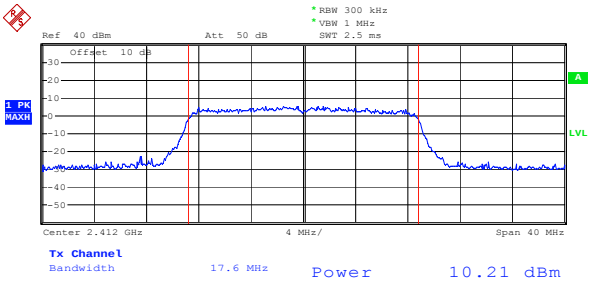
Date: 19.JAN.2018 14:37:42



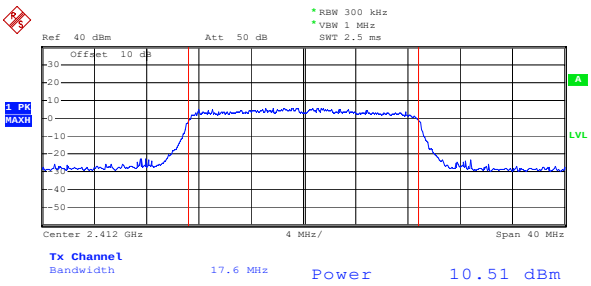
Comment A:
Date: 19.JAN.2018 14:38:35

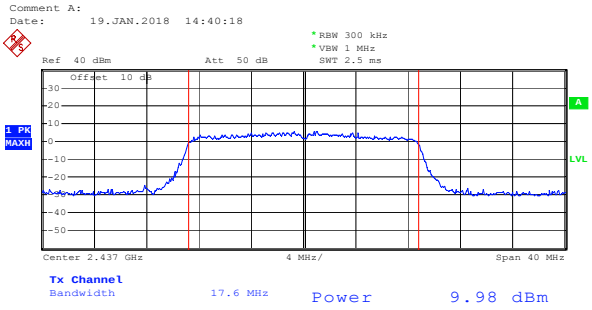
Comment A:
Date: 19.JAN.2018 14:39:04

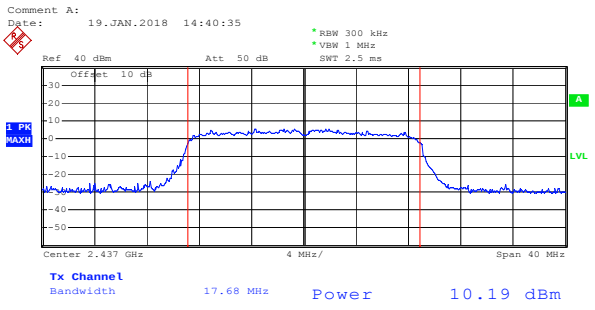
ANT 1(802.11n20)

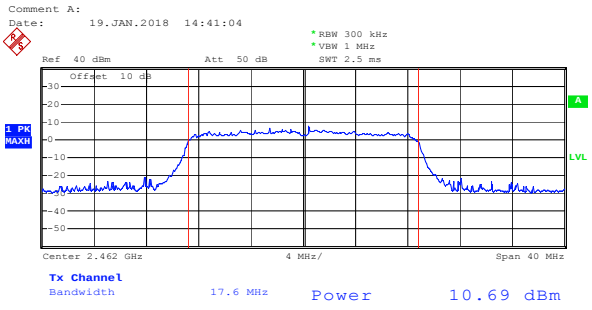


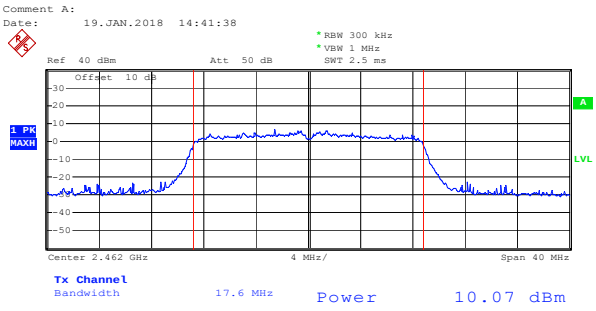
ANT 2(802.11 n20)

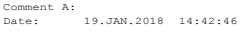




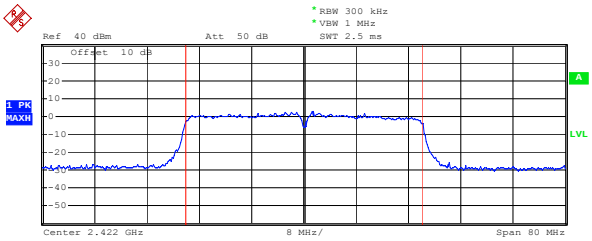


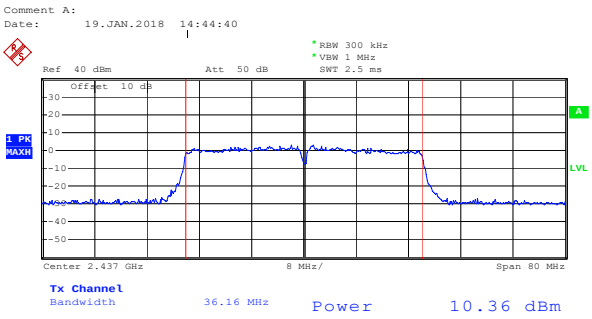


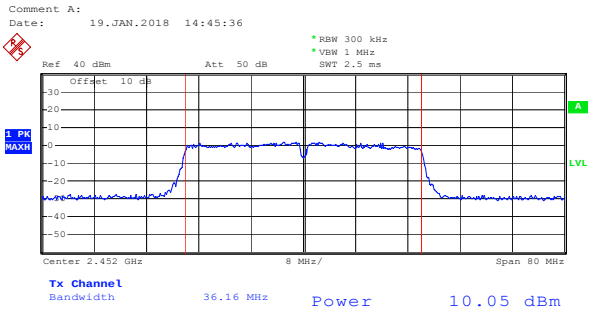




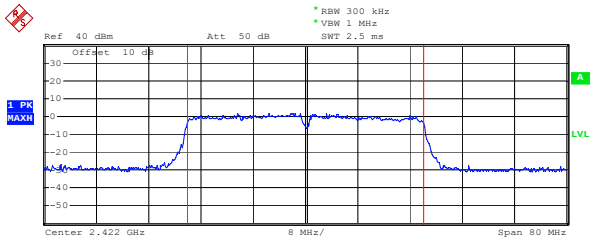
ANT 1(802.11n40)

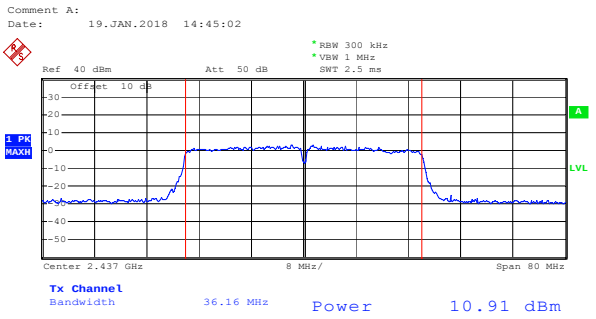


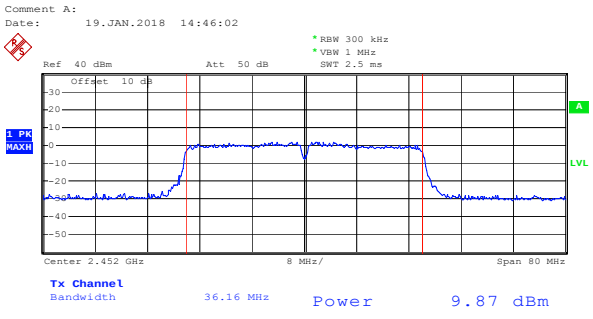




ANT 2(802.11n40)







10.RADIATED SPURIOUS EMISSION TEST

10.1.Block Diagram of Test Setup

10.1.1.Block diagram of connection between the EUT and peripherals

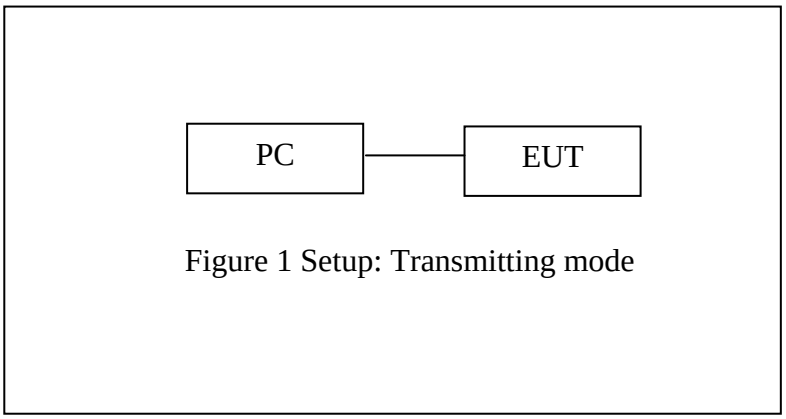
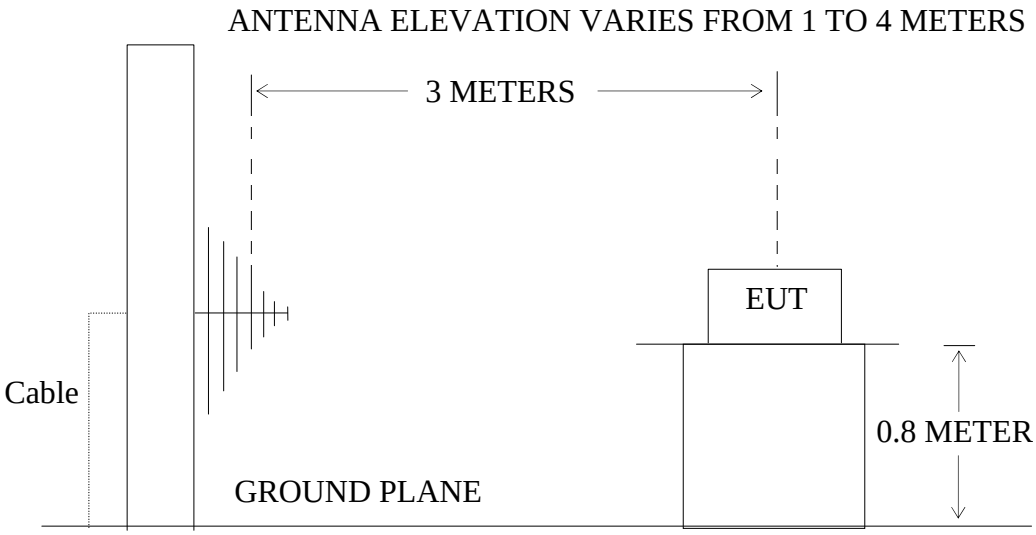


Figure 1 Setup: Transmitting mode

10.1.2.Semi-Anechoic Chamber Test Setup Diagram



10.2.The Limit For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the

general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

10.3.Restricted bands of operation

10.3.1.FCC Part 15.205 Restricted bands of operation

(a) Except as shown in paragraph (d) of this section, Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	([2])
13.36-13.41			

[1]Until February 1, 1999, this restricted band shall be 0.490-0.510
[2]Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emission appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000MHz, Compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000MHz, compliance with the emission limits in Section15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

10.4.Configuration of EUT on Measurement

The equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

10.5.Operating Condition of EUT

10.5.1.Setup the EUT and simulator as shown as Section 10.1.

10.5.2.Turn on the power of all equipment.

10.5.3.Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462 and 2422-2452MHz. We select 2412MHz, 2437MHz, 2462MHz and 2422MHz, 2437MHz, 2452MHz TX frequency to transmit.

10.6.Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground(Below 1GHz). The EUT and its simulators are placed on a turntable, which is 1.5 meter high above ground(Above 1GHz). The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bi-log antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the EUT location must be manipulated according to ANSI C63.10:2013 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

The worst-case data rate for this channel to be 1Mbps for 802.11b mode and 6Mbps for 802.11g mode and 150Mbps for 802.11n mode, based on previous with 802.11 WLAN product design architectures.

The frequency range from 30MHz to 25000MHz is checked.
Result = Reading + Corrected Factor
Where Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain
During the radiated emission test, the spectrum analyzer was set with the following configurations:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for peak measurement with peak detector at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average measurement with peak detection at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

10.7.The Field Strength of Radiation Emission Measurement Results

Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.

2. *: Denotes restricted band of operation.

3. The fundamental radiated emissions were reduced by Band Reject Filter in the attached plots.

4. The EUT is tested radiation emission at each test mode (802.11b/g/n) in three axes. Besides, We have tested the single antenna transmit mode and the dual antenna emission mode. The worst emissions(the dual antenna emission mode) are reflected in the following plots.

5. The radiation emissions from 18-25GHz are not reported, because the test values lower than the limits of 20dB
6. The average measurement was not performed when peak measured data under the limit of average detection.

Below 1G

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Site: 1# Chamber
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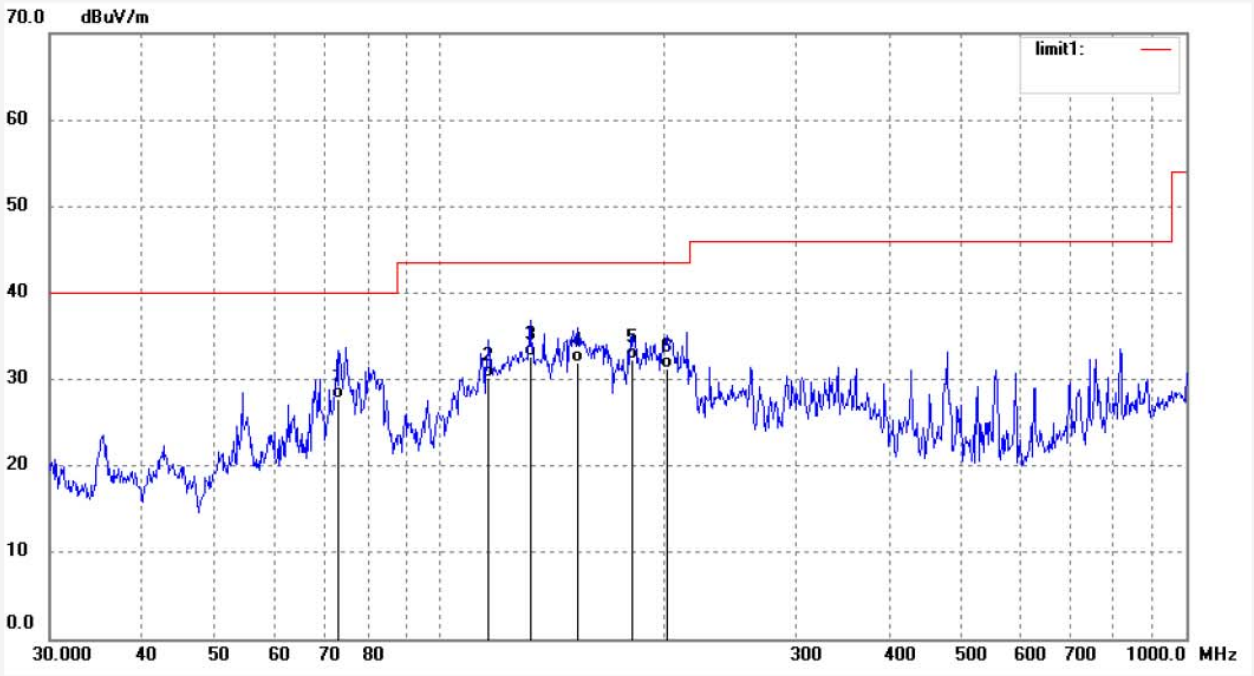
Fax:+86-0755-26503396

Job No.: frank2018 #108	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: DC 3.3V
Test item: Radiation Test	Date: 2018/01/23
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 17:31:52
EUT: Wifi module	Engineer Signature:
Mode: TX Channel 1(802.11b)	Distance: 3m
Model: M632USA1	
Manufacturer: Xiamen Prima Technology Inc.	

Note: Report NO.:ATE20172553



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	73.2330	55.31	-27.63	27.68	40.00	-12.32	QP	200	168	
2	116.0391	57.60	-27.37	30.23	43.50	-13.27	QP	200	102	
3	132.1489	60.38	-27.77	32.61	43.50	-10.89	QP	200	154	
4	153.1627	59.64	-27.77	31.87	43.50	-11.63	QP	200	315	
5	180.6639	58.17	-25.97	32.20	43.50	-11.30	QP	200	81	
6	201.4539	55.62	-24.30	31.32	43.50	-12.18	QP	200	195	

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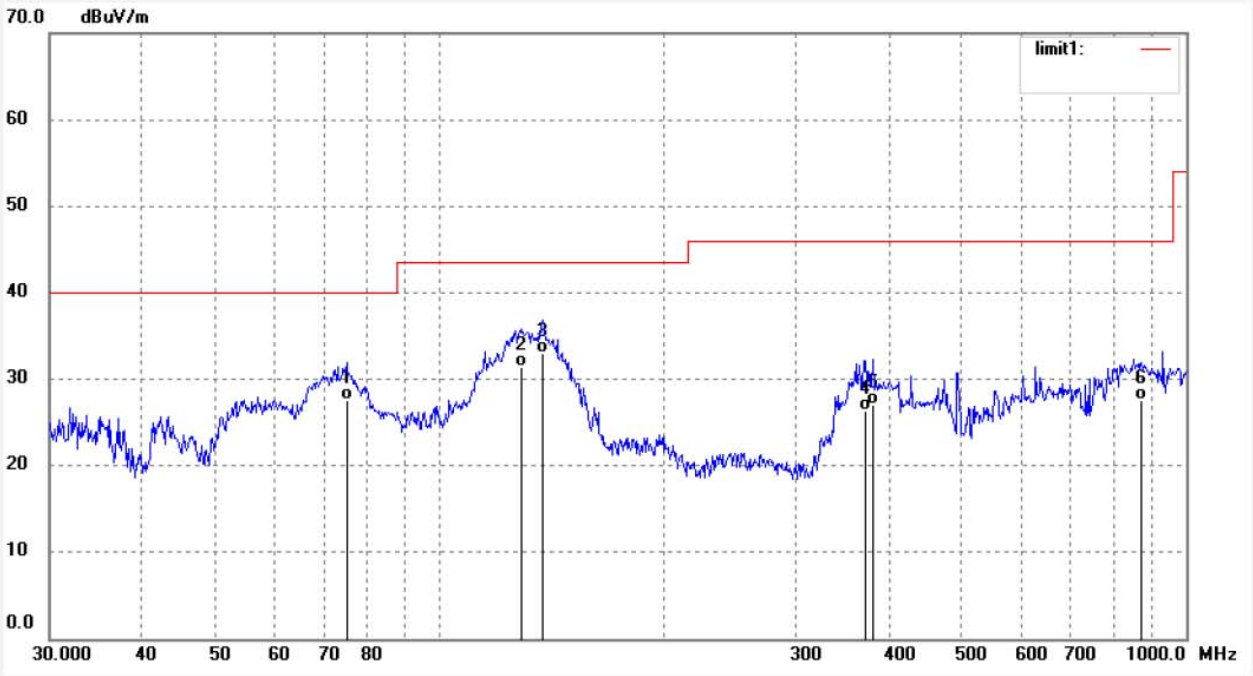
Fax:+86-0755-26503396

Job No.: frank2018 #107
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Wifi module
Mode: TX Channel 1(802.11b)
Model: M632USA1
Manufacturer: Xiamen Prima Technology Inc.

Polarization: Vertical
Power Source: DC 3.3V
Date: 2018/01/23
Time: 17:29:25
Engineer Signature:
Distance: 3m

Note: Report NO.:ATE20172553



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	75.0566	55.32	-27.70	27.62	40.00	-12.38	QP	100	62	
2	128.4858	59.15	-27.67	31.48	43.50	-12.02	QP	100	248	
3	137.3565	60.95	-27.89	33.06	43.50	-10.44	QP	100	156	
4	372.5747	45.16	-18.74	26.42	46.00	-19.58	QP	100	320	
5	380.5126	45.62	-18.61	27.01	46.00	-18.99	QP	100	122	
6	871.9442	35.29	-7.67	27.62	46.00	-18.38	QP	100	198	

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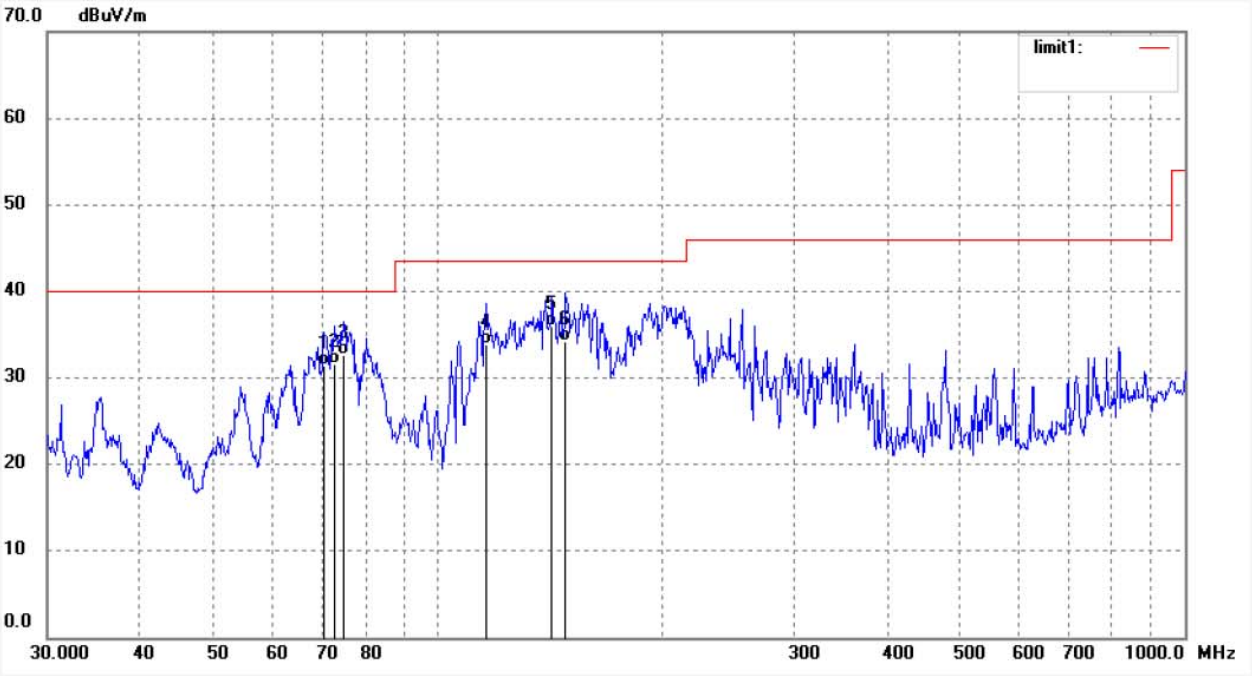
Fax:+86-0755-26503396

Job No.: frank2018 #109
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Wifi module
Mode: TX Channel 6(802.11b)
Model: M632USA1
Manufacturer: Xiamen Prima Technology Inc.

Polarization: Horizontal
Power Source: DC 3.3V
Date: 2018/01/23
Time: 17:35:47
Engineer Signature:
Distance: 3m

Note: Report NO.:ATE20172553



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	70.4566	58.91	-27.50	31.41	40.00	-8.59	QP	200	235	
2	72.7202	59.25	-27.60	31.65	40.00	-8.35	QP	200	196	
3	74.7934	60.37	-27.69	32.68	40.00	-7.32	QP	200	184	
4	116.0391	61.26	-27.37	33.89	43.50	-9.61	QP	200	81	
5	142.2684	63.91	-27.99	35.92	43.50	-7.58	QP	200	102	
6	148.3951	62.32	-28.05	34.27	43.50	-9.23	QP	200	159	

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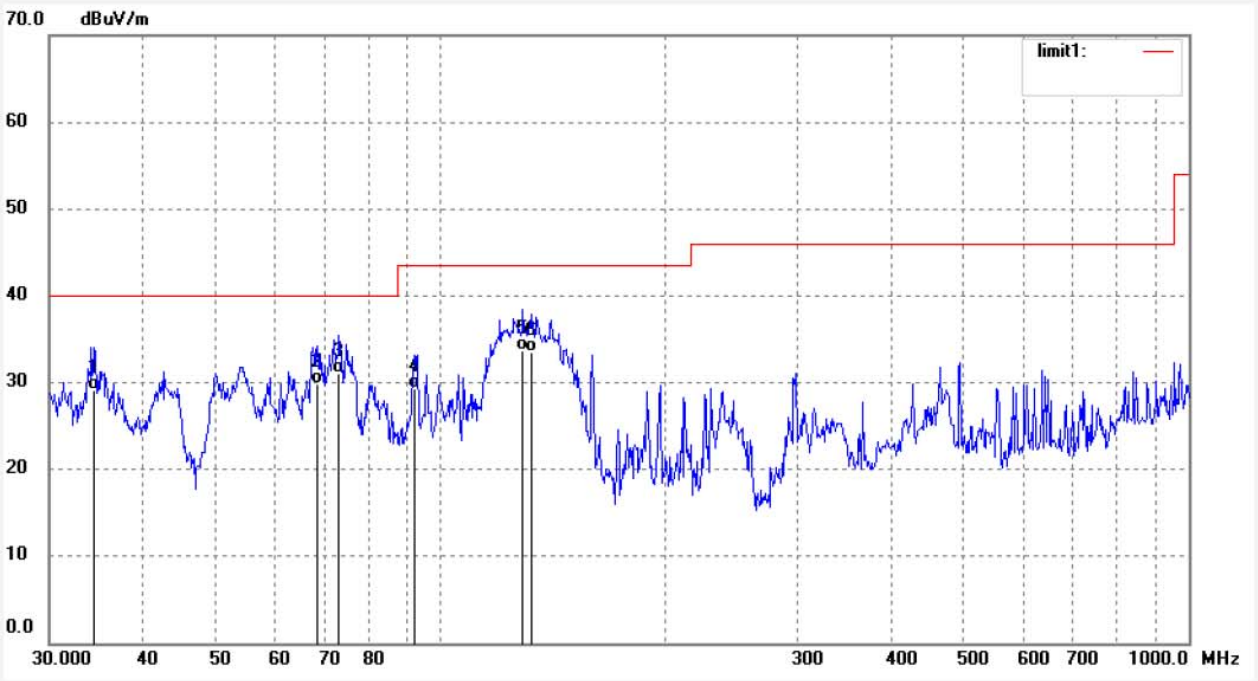
Fax:+86-0755-26503396

Job No.: frank2018 #110
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Wifi module
Mode: TX Channel 6(802.11b)
Model: M632USA1
Manufacturer: Xiamen Prima Technology Inc.

Polarization: Vertical
Power Source: DC 3.3V
Date: 2018/01/23
Time: 17:36:54
Engineer Signature:
Distance: 3m

Note: Report NO.:ATE20172553



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	34.4059	50.38	-21.30	29.08	40.00	-10.92	QP	100	301	
2	68.5037	57.31	-27.42	29.89	40.00	-10.11	QP	100	265	
3	73.2330	58.61	-27.63	30.98	40.00	-9.02	QP	100	158	
4	92.3461	56.66	-27.42	29.24	43.50	-14.26	QP	100	294	
5	128.9385	61.37	-27.69	33.68	43.50	-9.82	QP	100	215	
6	132.1489	61.28	-27.77	33.51	43.50	-9.99	QP	100	103	

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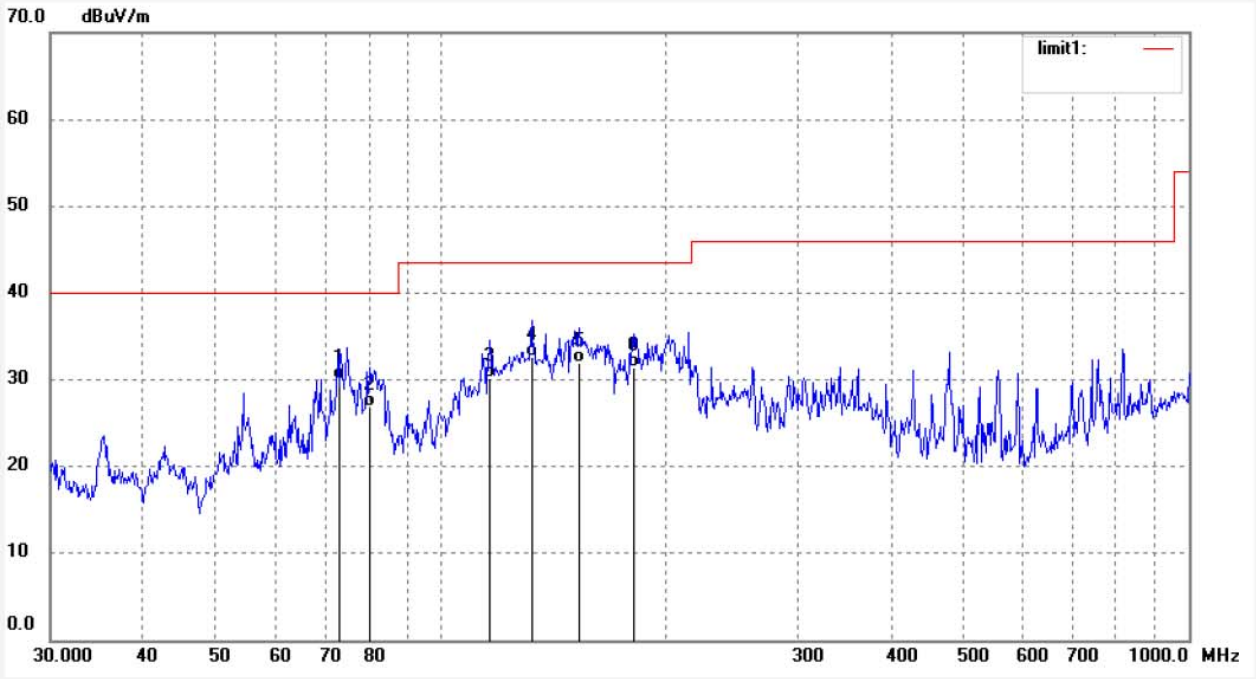
Fax:+86-0755-26503396

Job No.: frank2018 #112
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Wifi module
Mode: TX Channel 11(802.11b)
Model: M632USA1
Manufacturer: Xiamen Prima Technology Inc.

Polarization: Horizontal
Power Source: DC 3.3V
Date: 2018/01/23
Time: 17:31:52
Engineer Signature:
Distance: 3m

Note: Report NO.:ATE20172553



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	73.2330	57.62	-27.63	29.99	40.00	-10.01	QP	200	198	
2	80.2382	54.32	-27.40	26.92	40.00	-13.08	QP	200	122	
3	116.0391	57.61	-27.37	30.24	43.50	-13.26	QP	200	97	
4	132.1489	60.38	-27.77	32.61	43.50	-10.89	QP	200	158	
5	153.1627	59.69	-27.77	31.92	43.50	-11.58	QP	200	102	
6	180.6639	57.34	-25.97	31.37	43.50	-12.13	QP	200	34	

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Site: 1# Chamber
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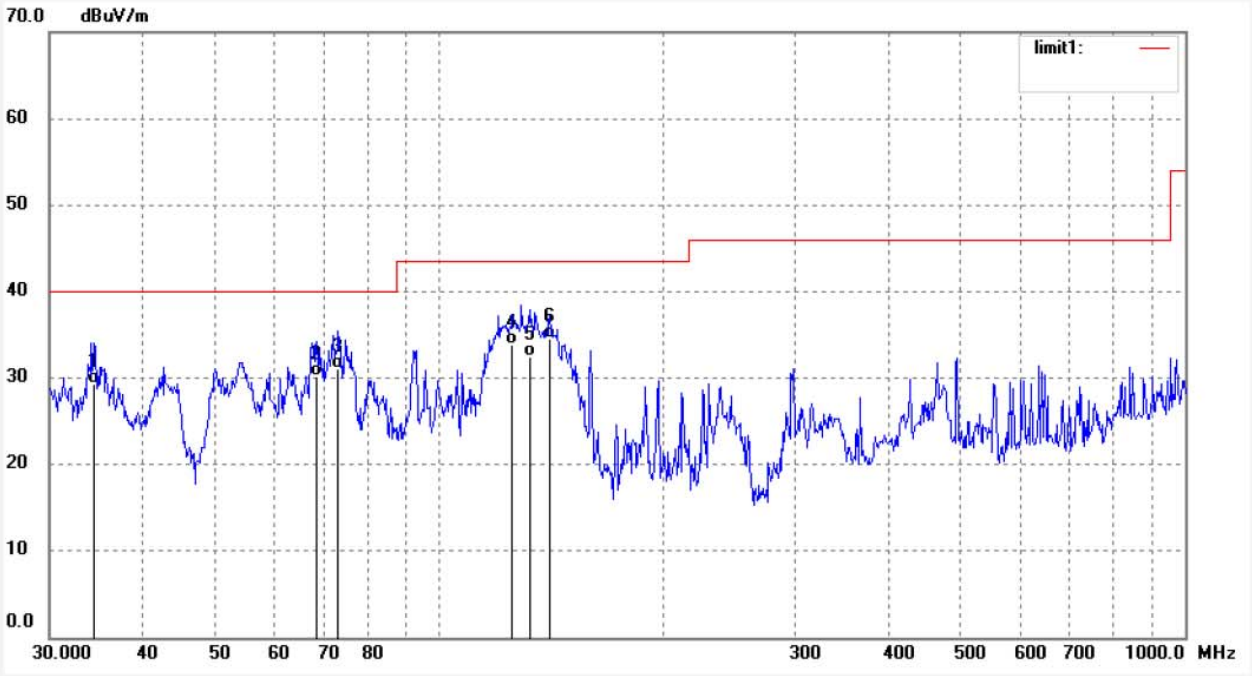
Fax:+86-0755-26503396

Job No.: frank2018 #111
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Wifi module
Mode: TX Channel 11(802.11b)
Model: M632USA1
Manufacturer: Xiamen Prima Technology Inc.

Polarization: Vertical
Power Source: DC 3.3V
Date: 2018/01/23
Time: 17:36:54
Engineer Signature:
Distance: 3m

Note: Report NO.:ATE20172553



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	34.4059	50.69	-21.30	29.39	40.00	-10.61	QP	100	256	
2	68.5036	57.65	-27.42	30.23	40.00	-9.77	QP	100	67	
3	73.2330	58.62	-27.63	30.99	40.00	-9.01	QP	100	284	
4	125.3645	61.37	-27.59	33.78	43.50	-9.72	QP	100	103	
5	132.1489	60.15	-27.77	32.38	43.50	-11.12	QP	100	195	
6	140.7767	62.48	-27.96	34.52	43.50	-8.98	QP	100	62	

Above 1G

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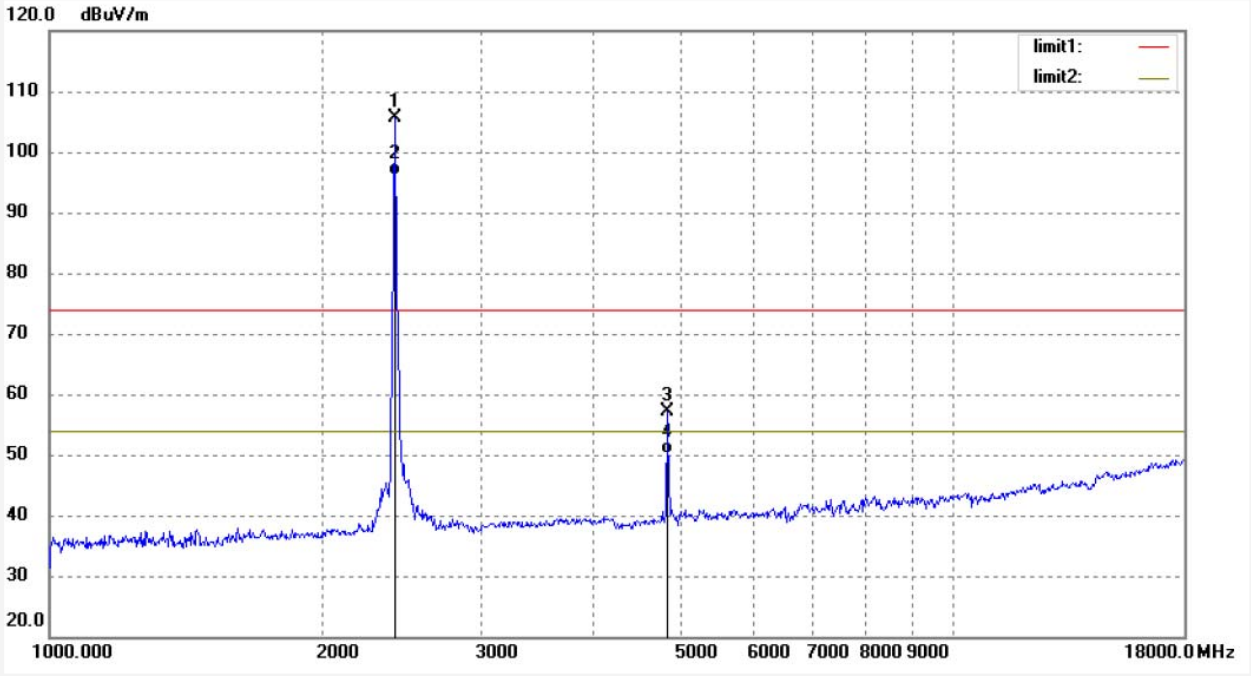
Job No.: FRANK2018 #168	Polarization: Horizontal
Standard: FCC PK	Power Source: DC 3.3V
Test item: Radiation Test	Date: 2018/01/26
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 17:29:42
EUT: Wifi module	Engineer Signature:
Mode: TX Channel 1(802.11b)	Distance: 3m
Model: M632USA1	
Manufacturer: Xiamen Prima Technology Inc.	

Note: Report NO.:ATE20182553



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2412.103	104.69	0.91	105.60			peak	250	198	
2	2412.103	95.15	0.91	96.06			AVG	200	261	
3	4824.016	49.62	7.53	57.15	74.00	-16.85	peak	250	214	
4	4824.016	42.48	7.53	50.01	54.00	-3.99	AVG	200	107	

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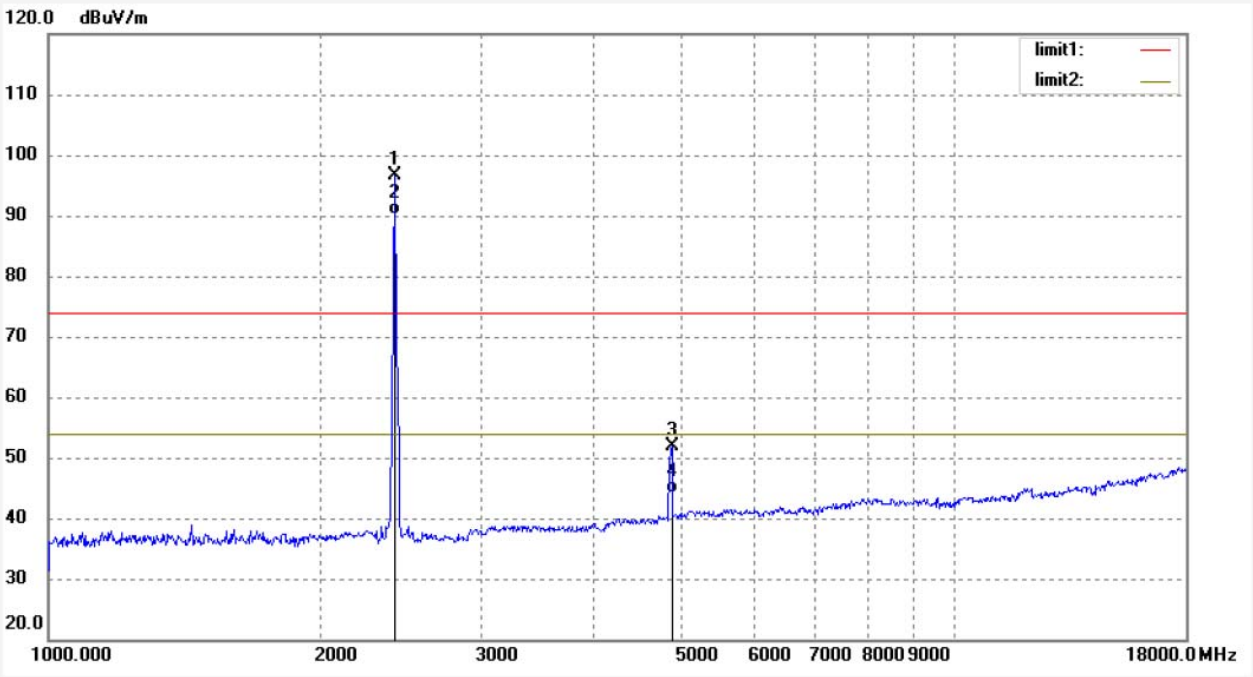
Job No.: FRANK2018 #169	Polarization: Vertical
Standard: FCC PK	Power Source: DC 3.3V
Test item: Radiation Test	Date: 2018/01/26
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 17:30:55
EUT: Wifi module	Engineer Signature:
Mode: TX Channel 1(802.11b)	Distance: 3m
Model: M632USA1	
Manufacturer: Xiamen Prima Technology Inc.	

Note: Report NO.:ATE20182553



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2412.172	95.64	0.94	96.58			peak	250	168	
2	2412.172	89.15	0.94	90.09			AVG	200	213	
3	4824.243	43.81	8.04	51.85	74.00	-22.15	peak	250	54	
4	4824.243	36.15	8.04	44.19	54.00	-9.81	AVG	200	216	

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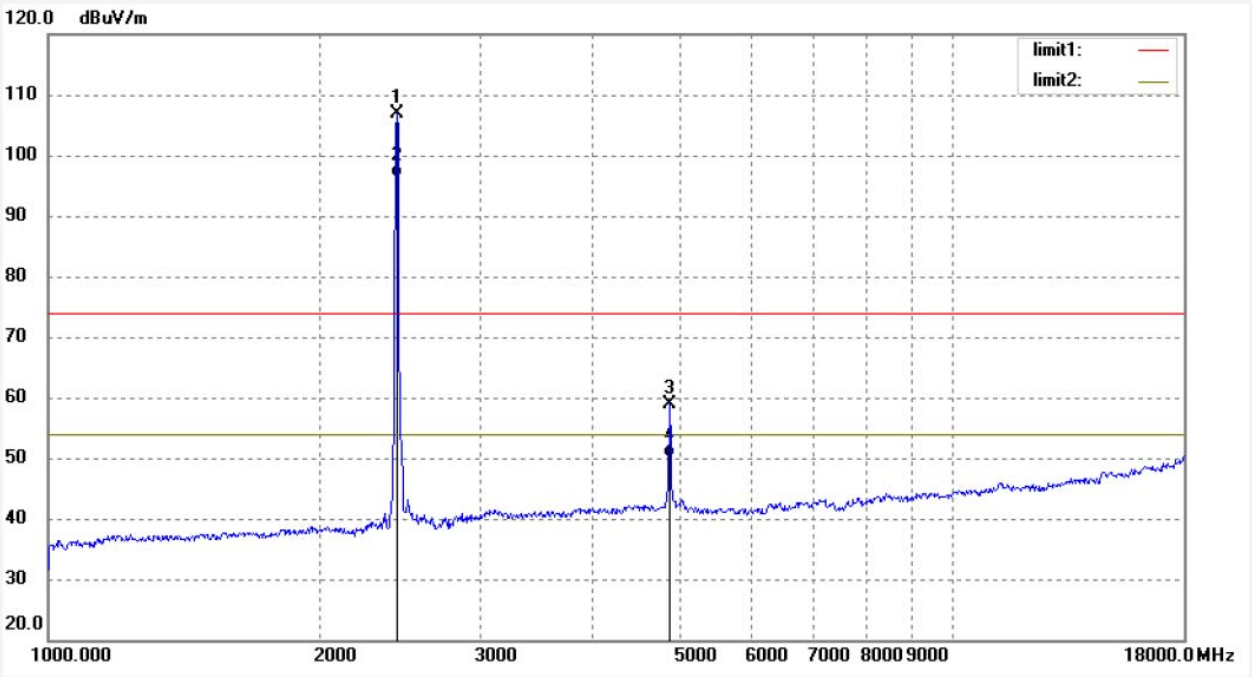
Job No.: FRANK2018 #171
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Wifi module
Mode: TX Channel 6(802.11b)
Model: M632USA1
Manufacturer: Xiamen Prima Technology Inc.

Polarization: Horizontal
Power Source: DC 3.3V
Date: 2018/01/26
Time: 17:33:02
Engineer Signature:
Distance: 3m

Note: Report NO.:ATE20182553



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2437.471	105.86	1.00	106.86			peak	250	46	
2	2437.471	95.34	1.00	96.34			AVG	250	92	
3	4874.975	50.99	7.92	58.91	74.00	-15.09	peak	250	197	
4	4874.975	42.19	7.92	50.11	54.00	-3.89	AVG	250	102	

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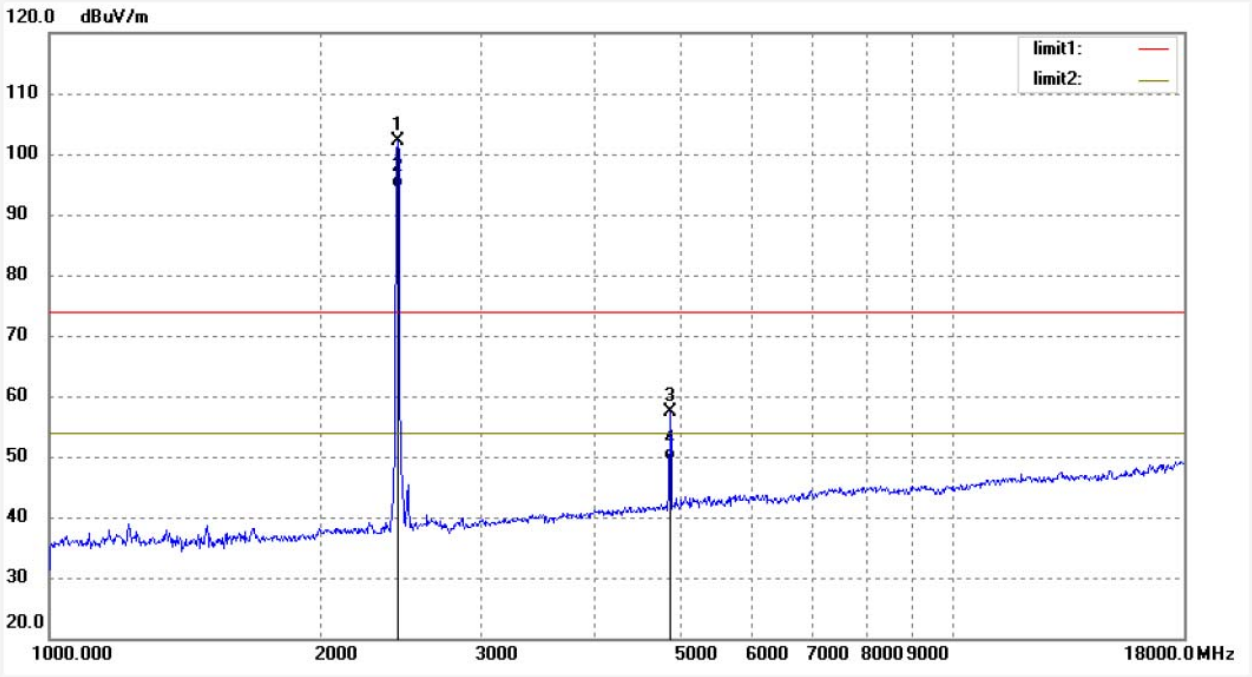
Job No.: FRANK2018 #170
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Wifi module
Mode: TX Channel 6(802.11b)
Model: M632USA1
Manufacturer: Xiamen Prima Technology Inc.

Polarization: Vertical
Power Source: DC 3.3V
Date: 2018/01/26
Time: 17:32:26
Engineer Signature:
Distance: 3m

Note: Report NO.:ATE20182553



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2437.471	101.20	1.00	102.20			peak	250	193	
2	2437.471	93.45	1.00	94.45			AVG	200	152	
3	4874.975	49.36	7.92	57.28	74.00	-16.72	peak	250	47	
4	4874.975	41.38	7.92	49.30	54.00	-4.70	AVG	150	311	

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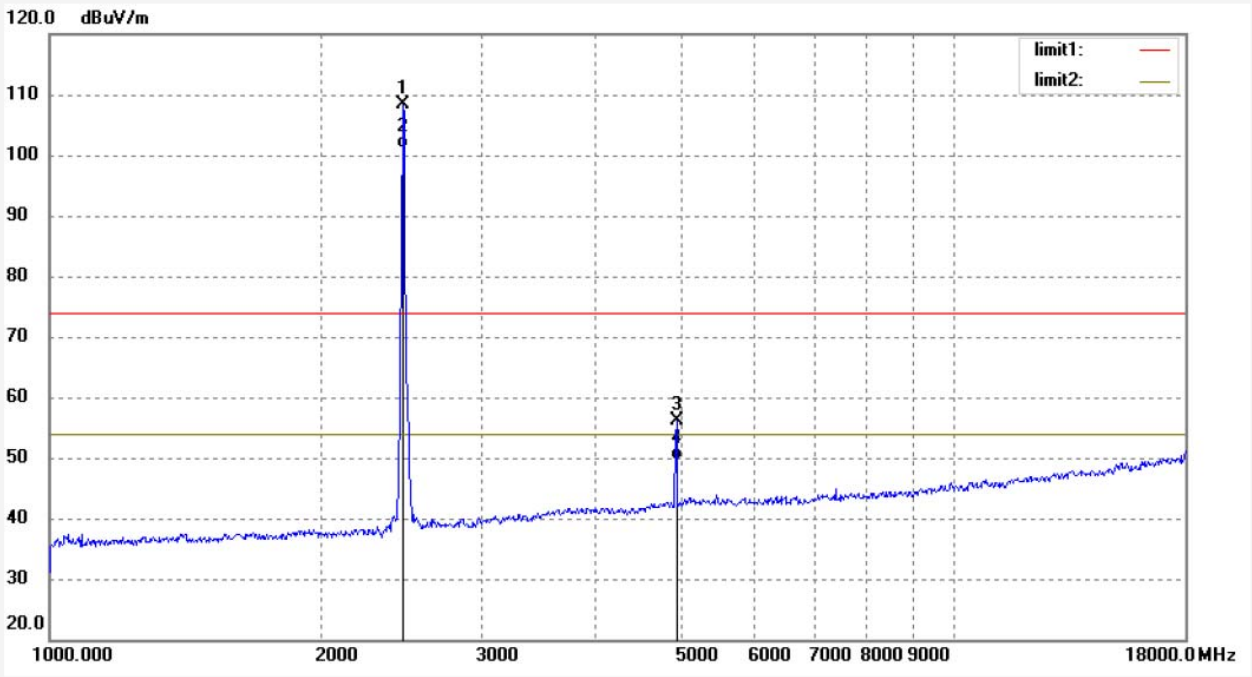
Job No.: FRANK2018 #172	Polarization: Horizontal
Standard: FCC PK	Power Source: DC 3.3V
Test item: Radiation Test	Date: 2018/01/26
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 17:35:49
EUT: Wifi module	Engineer Signature:
Mode: TX Channel 11(802.11b)	Distance: 3m
Model: M632USA1	
Manufacturer: Xiamen Prima Technology Inc.	

Note: Report NO.:ATE20182553



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2462.413	107.22	1.09	108.31			peak	250	139	
2	2462.413	100.16	1.09	101.25			AVG	250	213	
3	4924.721	47.58	8.44	56.02	74.00	-17.98	peak	300	82	
4	4924.721	41.30	8.44	49.74	54.00	-4.26	AVG	250	164	

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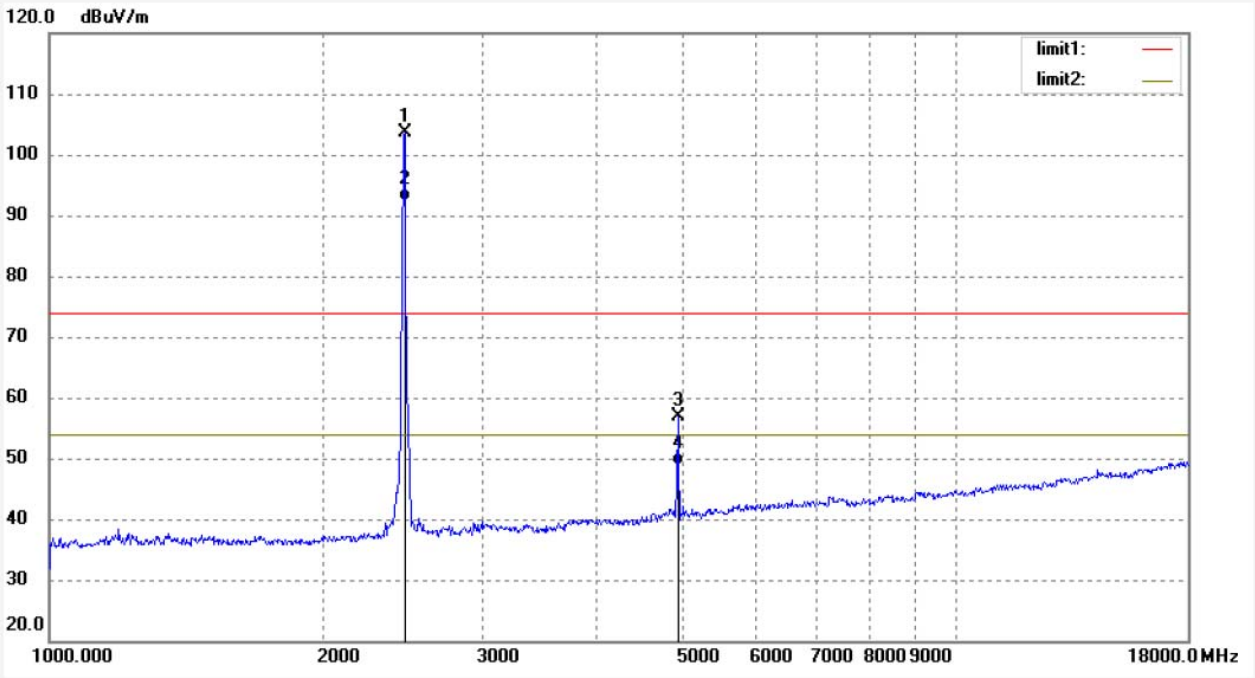
Job No.: FRANK2018 #173
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Wifi module
Mode: TX Channel 11(802.11b)
Model: M632USA1
Manufacturer: Xiamen Prima Technology Inc.

Polarization: Vertical
Power Source: DC 3.3V
Date: 2018/01/26
Time: 17:36:52
Engineer Signature:
Distance: 3m

Note: Report NO.:ATE20182553



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2462.324	102.60	1.09	103.69			peak	250	196	
2	2462.324	91.35	1.09	92.44			AVG	150	234	
3	4924.721	48.36	8.44	56.80	74.00	-17.20	peak	250	156	
4	4924.721	40.36	8.44	48.80	54.00	-5.20	AVG	200	161	

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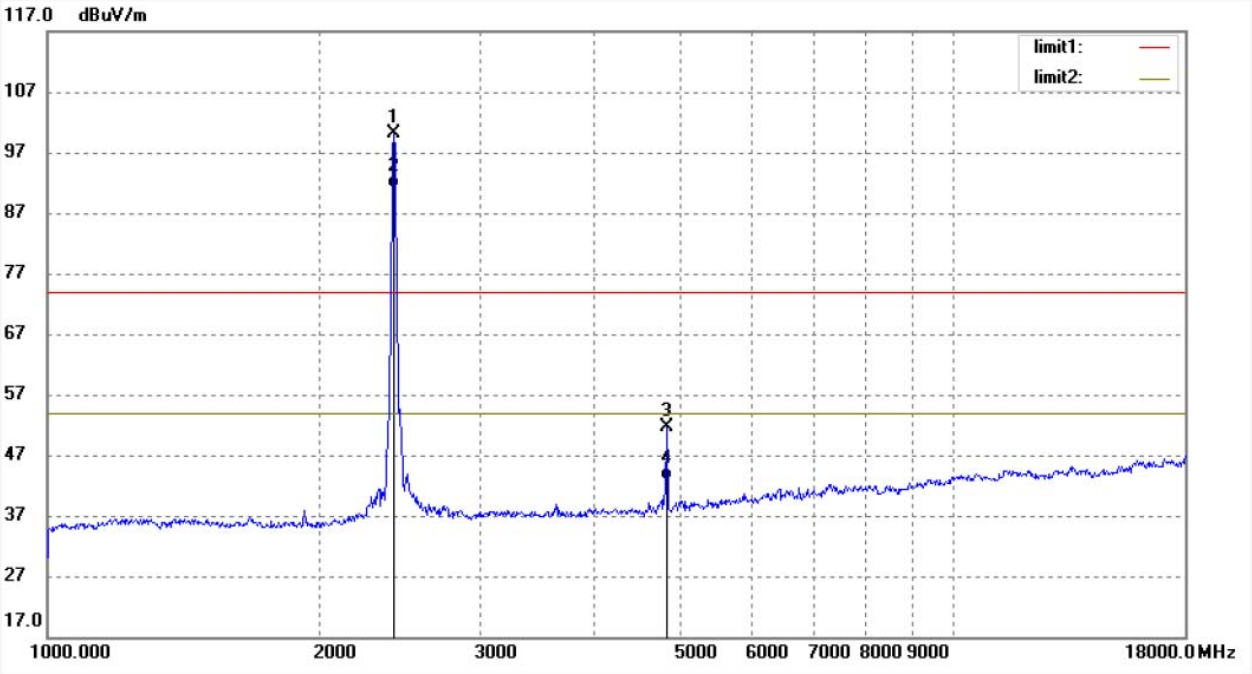
Job No.: FRANK2018 #179
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Wifi module
Mode: TX Channel 1(802.11G)
Model: M632USA1
Manufacturer: Xiamen Prima Technology Inc.

Polarization: Horizontal
Power Source: DC 3.3V
Date: 2018/01/26
Time: 17:45:02
Engineer Signature:
Distance: 3m

Note: Report NO.:ATE20182553



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2412.072	99.33	0.91	100.24			peak	300	193	
2	2412.072	90.15	0.91	91.06			AVG	250	245	
3	4824.016	43.90	7.65	51.55	74.00	-22.45	peak	250	191	
4	4824.016	35.19	7.65	42.84	54.00	-11.16	AVG	250	83	

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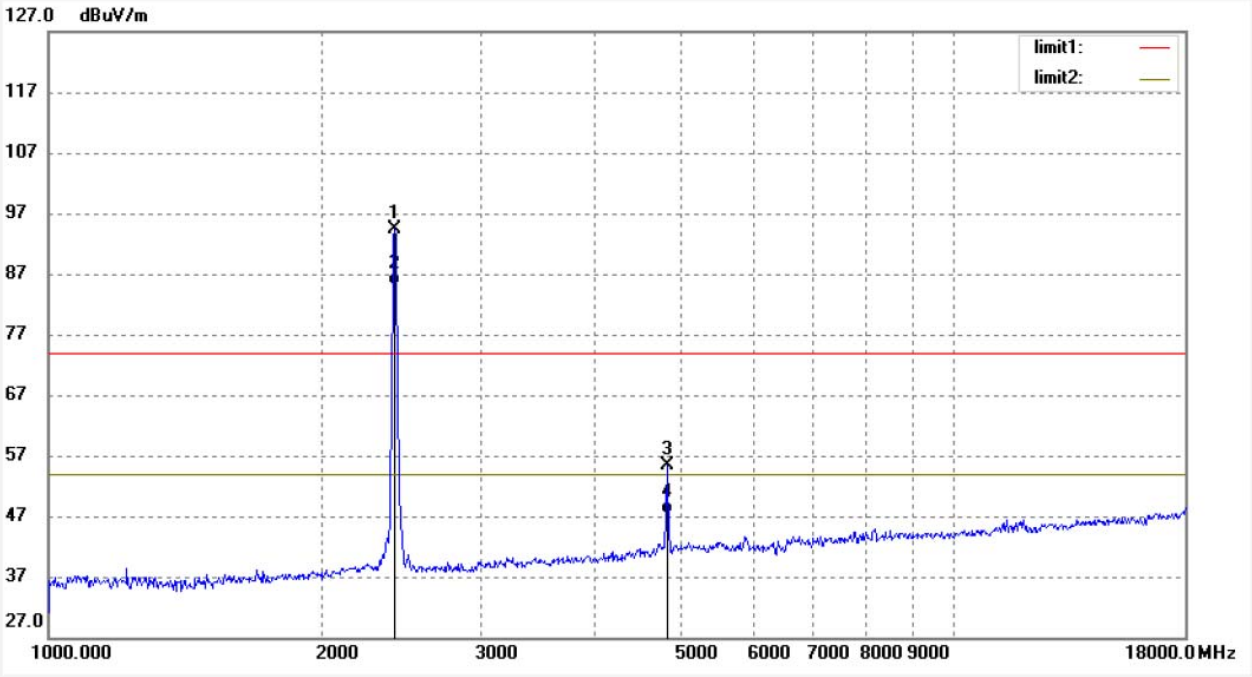
Job No.: FRANK2018 #178
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Wifi module
Mode: TX Channel 1(802.11G)
Model: M632USA1
Manufacturer: Xiamen Prima Technology Inc.

Polarization: Vertical
Power Source: DC 3.3V
Date: 2018/01/26
Time: 17:43:53
Engineer Signature:
Distance: 3m

Note: Report NO.:ATE20182553



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2412.072	93.44	0.94	94.38			peak	300	196	
2	2412.072	84.22	0.94	85.16			AVG	200	49	
3	4824.016	47.81	7.53	55.34	74.00	-18.66	peak	250	302	
4	4824.016	39.97	7.53	47.50	54.00	-6.50	AVG	200	71	

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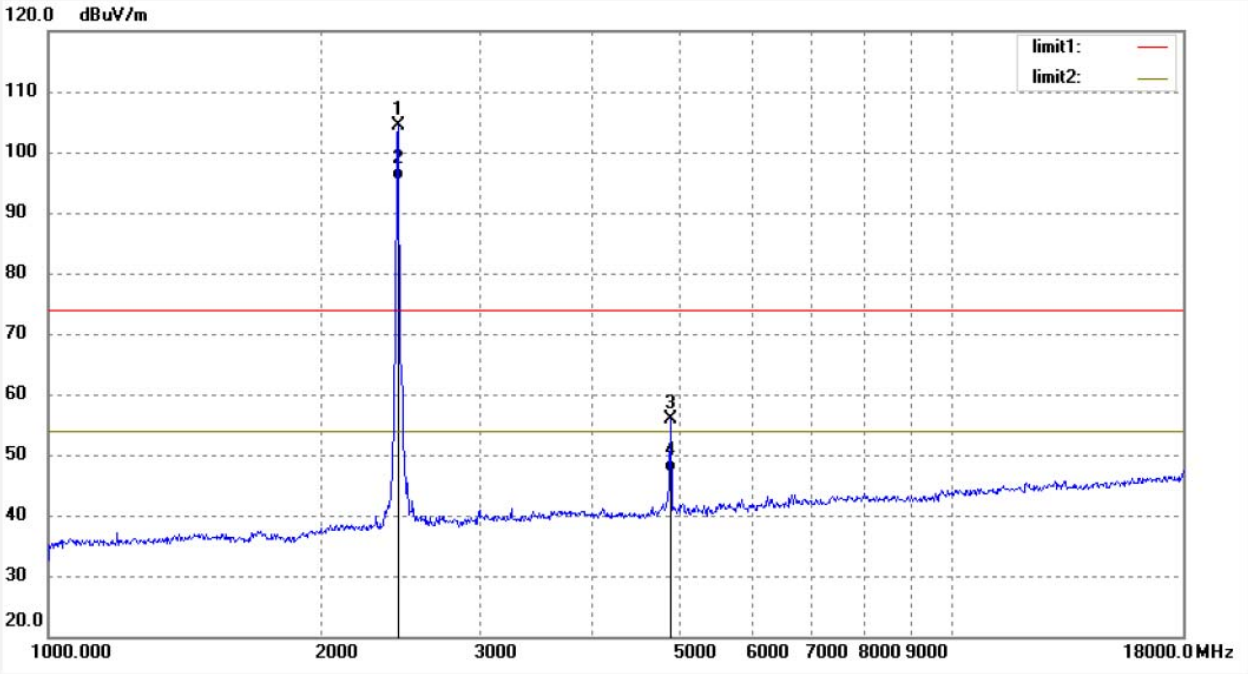
Job No.: FRANK2018 #176	Polarization: Horizontal
Standard: FCC PK	Power Source: DC 3.3V
Test item: Radiation Test	Date: 2018/01/26
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 17:40:55
EUT: Wifi module	Engineer Signature:
Mode: TX Channel 6(802.11G)	Distance: 3m
Model: M632USA1	
Manufacturer: Xiamen Prima Technology Inc.	

Note: Report NO.:ATE20182553



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2462.313	103.43	1.03	104.46			peak	250	130	
2	2462.313	94.32	1.03	95.35			AVG	250	297	
3	4924.721	47.90	8.04	55.94	74.00	-18.06	peak	250	63	
4	4924.721	39.12	8.04	47.16	54.00	-6.84	AVG	200	192	

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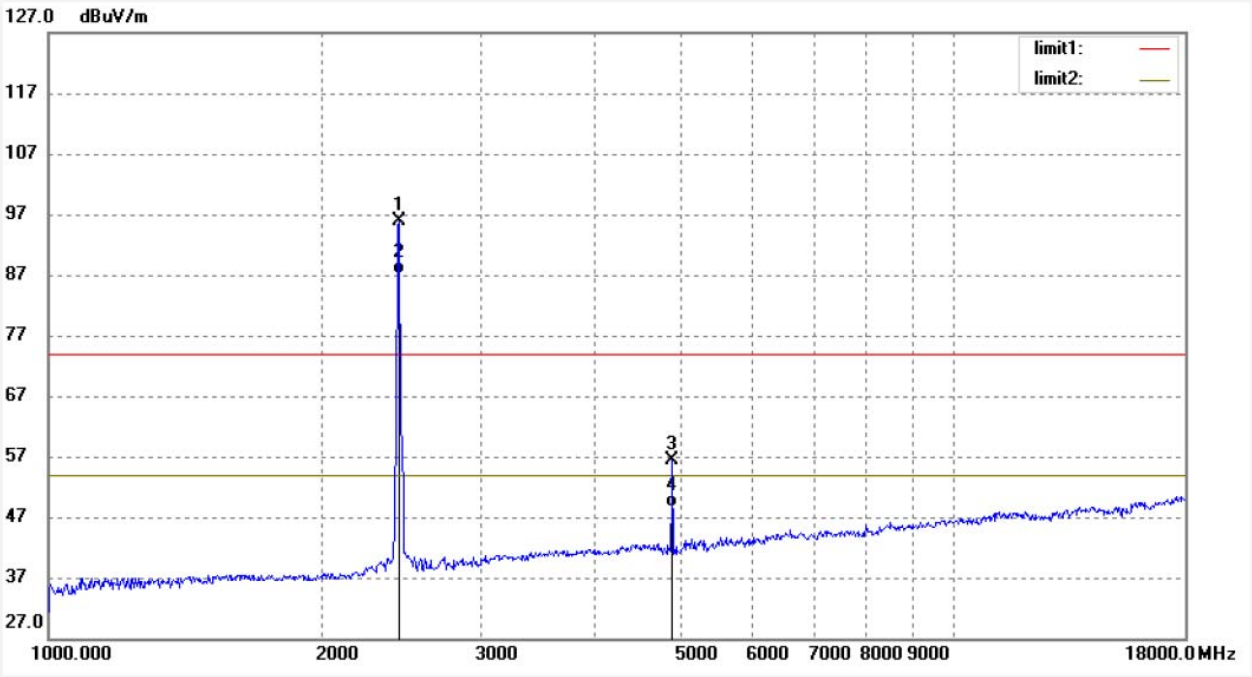
Job No.: FRANK2018 #177	Polarization: Vertical
Standard: FCC PK	Power Source: DC 3.3V
Test item: Radiation Test	Date: 2018/01/26
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 17:42:05
EUT: Wifi module	Engineer Signature:
Mode: TX Channel 6(802.11G)	Distance: 3m
Model: M632USA1	
Manufacturer: Xiamen Prima Technology Inc.	

Note: Report NO.:ATE20182553



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2437.001	94.83	1.03	95.86			peak	250	193	
2	2437.001	86.22	1.03	87.25			AVG	200	130	
3	4874.151	48.30	8.17	56.47	74.00	-17.53	peak	250	95	
4	4874.151	40.38	8.17	48.55	54.00	-5.45	AVG	150	168	

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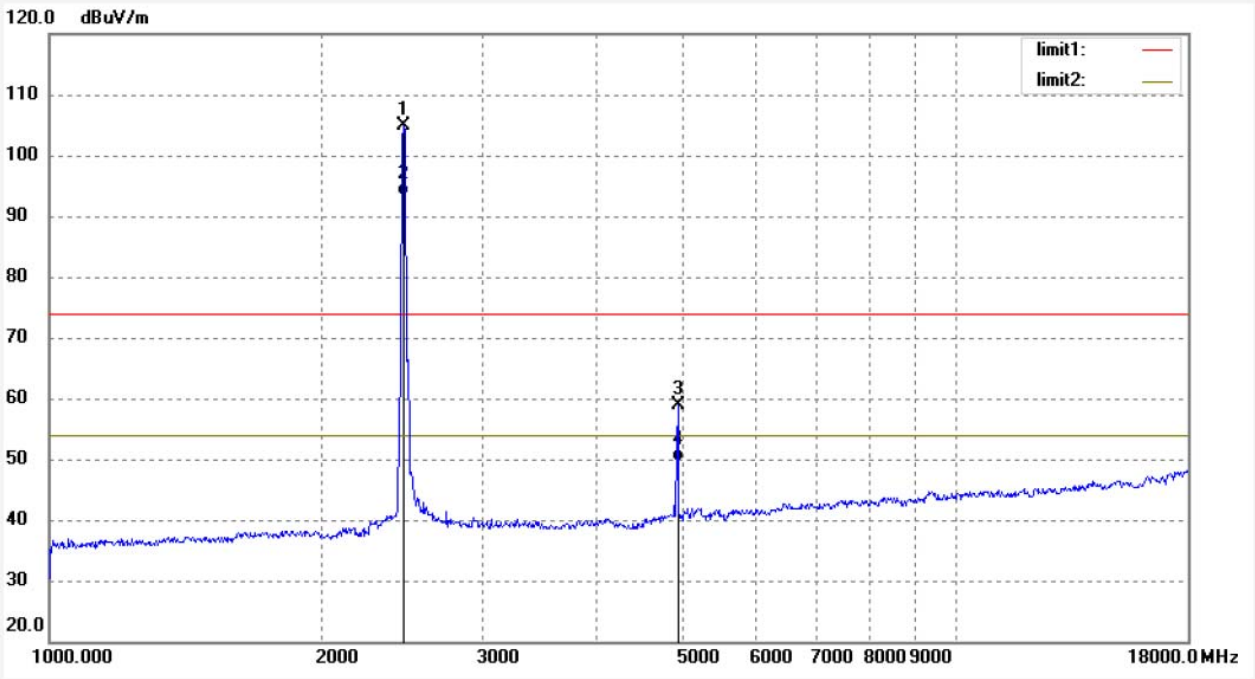
Job No.: FRANK2018 #175
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Wifi module
Mode: TX Channel 11(802.11G)
Model: M632USA1
Manufacturer: Xiamen Prima Technology Inc.

Polarization: Horizontal
Power Source: DC 3.3V
Date: 2018/01/26
Time: 17:39:22
Engineer Signature:
Distance: 3m

Note: Report NO.:ATE20182553



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2462.313	103.79	1.09	104.88			peak	300	196	
2	2462.313	92.34	1.09	93.43			AVG	250	255	
3	4924.721	50.42	8.44	58.86	74.00	-15.14	peak	250	164	
4	4924.721	41.19	8.44	49.63	54.00	-4.37	AVG	250	19	

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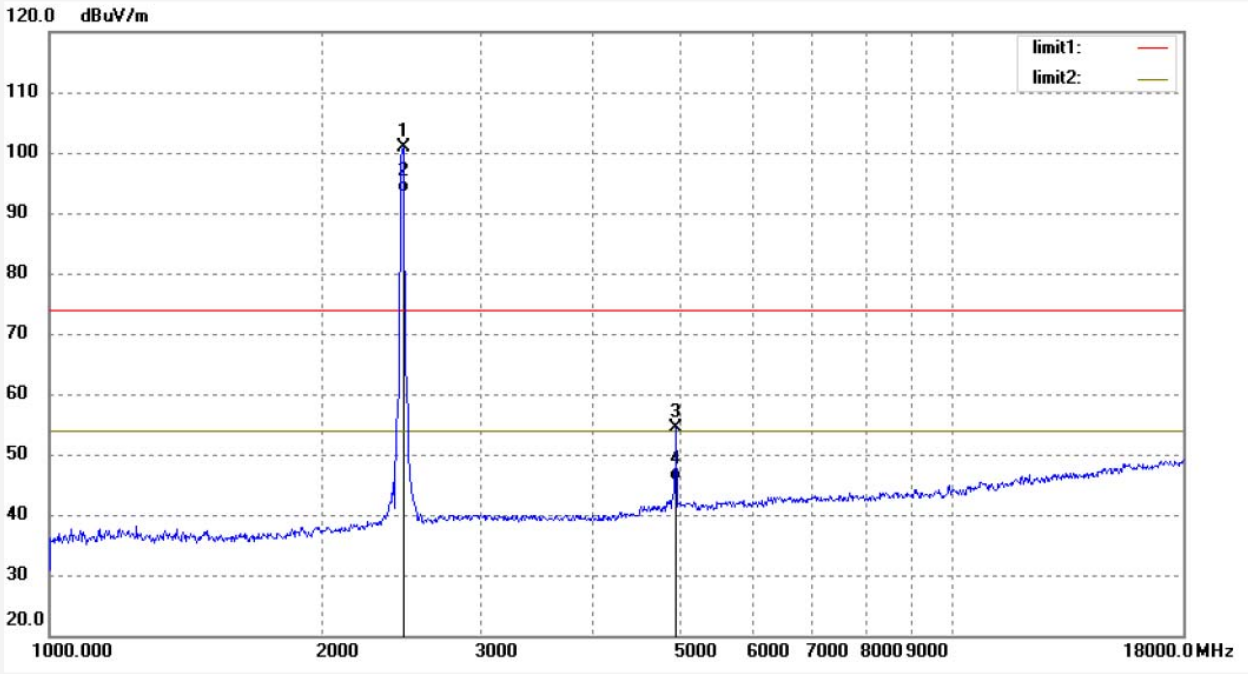
Job No.: FRANK2018 #174
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Wifi module
Mode: TX Channel 11(802.11G)
Model: M632USA1
Manufacturer: Xiamen Prima Technology Inc.

Polarization: Vertical
Power Source: DC 3.3V
Date: 2018/01/26
Time: 17:38:46
Engineer Signature:
Distance: 3m

Note: Report NO.:ATE20182553



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2462.024	99.82	1.09	100.91			peak	250	139	
2	2462.024	92.37	1.09	93.46			AVG	150	154	
3	4924.993	45.82	8.52	54.34	74.00	-19.66	peak	250	31	
4	4924.993	37.15	8.52	45.67	54.00	-8.33	AVG	200	101	