Qbic technology Co., Ltd

Application
For
Certification

FCC ID: 2AF82-BXP300

BOX PC

Models: BXP-301, BXP-300, BXP-202

BXP-3*1, BXP-3*0, BXP-2*2(The letters "*" in the model no. can be 0 to 9, A to Z or blank, for marketing use only.)

2.4GHz WiFi Transceiver

Report No.: 160407015SZN-001

We hereby certify that the sample of the above item is considered to comply with the requirements of FCC Part 15, Subpart C for Intentional Radiator, mention 47 CFR [10-1-14]

Prepared and Checked by:

Sign on file

Harry Wu
Engineer

Approved by:

Digitally signed by Andy Yan
Location: Intertek Testing Services

Andy Yan
Technical Supervisor
Date: May 24, 2016

TRF no.: FCC 15C_Tx_c

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LIST OF EXHIBITS

MEASUREMENT/TECHNICAL REPORT

BOX PC

Models: BXP-301, BXP-300, BXP-202

FCC ID: 2AF82-BXP300

This report concerns (check one) Original Grant __X__ Class I Change ____

Equipment Type: DTS - Part 15 Digital Transmission Systems (WiFi transmitter portion)

Deferred grant requested per 47 CFR 0.457(d)(1)(ii)? Yes _____ No ___ X _____

If yes, defer until : _____ date

Company Name agrees to notify the Commission by: _____ date

of the intended date of announcement of the product so that the grant can be issued on that date.

Transition Rules Request per 15.37? Yes _____ No ___X__

If no, assumed Part 15, Subpart C for intentional radiator - the new 47 CFR [10-01-14] Edition] provision.

Report prepared by:

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Table of Contents

List of attached file

Exhibit type	File Description	Filename
Test Report	Test Report	report.pdf
Test Setup Photo	Radiated Emission	radiated photos.pdf
Test Setup Photo	Conducted Emission	conducted photos.pdf
External Photo	External Photo	external photos.pdf
Internal Photo	Internal Photo	internal photos.pdf
Block Diagram	Block Diagram	block.pdf
Schematics	Circuit Diagram	circuit.pdf
Operation Description	Technical Description	descri.pdf
ID Label/Location	Label Artwork and Location	label.pdf
User Manual	User Manual	manual.pdf
Cover Letter	Confidentiality Letter	request.pdf
Analysis Report	RF Exposure	RF Exposure.pdf
Cover Letter	Letter of Agency	agency.pdf

EXHIBIT 1

SUMMARY OF TEST RESULTS

1.0 Summary of Test results

Box PC

Models: BXP-301, BXP-300, BXP-202
FCC ID: 2AF82-BXP300

TEST	REFERENCE	RESULTS
Max. Output power	15.247(b)(3)	Pass
6 dB Bandwidth	15.247(a)(2)	Pass
Max. Power Density	15.247(e)	Pass
Out of Band Antenna Conducted Emission	15.247(d)	Pass
Radiated Emission in Restricted Bands	15.247(d)	Pass
AC Conducted Emission	15.207	Pass
Antenna Requirement	15.203	Pass (See Notes)

Notes: The EUT uses a dedicated Antenna with nonstandard antenna jack which in accordance to Section 15.203 is considered sufficient to comply with the provisions of this section.

EXHIBIT 2

GENERAL DESCRIPTION

2.0 General Description

2.1 Product Description

The Equipment Under Test (EUT) is a BOX PC with WiFi function operating at 2412-2462MHz for 802.11b/g/n-HT20, 11 channels with 5MHz channel spacing. The EUT was powered by AC/DC adaptor through AC120V/60Hz. For more detailed features description, please refer to the user's manual.

Type of Modulation: BPSK, QPSK, 16QAM, 64QAM for OFDM. CCK, DQPSK, DBPSK for DSSS.

Antenna Type: Dedicated Antenna with nonstandard antenna jack.

The Models: BXP-3*1 (The letters "*" in the model no. can be 0 to 9, A to Z or blank, for marketing use only.) are the same as the Model: BXP-301 in hardware and electronic aspect. BXP-3*0 (The letters "*" in the model no. can be 0 to 9, A to Z or blank, for marketing use only.) are the same as the Model: BXP-300 in hardware and electronic aspect. BXP-2*2 (The letters "*" in the model no. can be 0 to 9, A to Z or blank, for marketing use only.) are the same as the Model: BXP-202 in hardware and electronic aspect. The difference in model number and appearance, brand name serves as marketing strategy.

The Models: BXP-301, BXP-300, BXP-202 use the same PCB main board, same operating configuration except with/without HDMI In and HDMI Out function, please refer list as below. The models are difference in packaging and marketing purpose.

Model / Function	BXP-301	BXP-300	BXP-202	Clarification
HDMI Out 1	☑	☑	☑	Same
HDMI Out 2	☒	☒	☑	Only with or without HDMI Out connector
HDMI In	☑	☒	☒	Only with or without HDMI In connector
Wi-Fi function	☑	☑	☑	Same
MCU Main function	☑	☑	☑	Same

Note: Symbol ☑ indicates with this function;
Symbol ☒ indicates without this function.

2.2 Related Submittal(s) Grants

This is an application for certification of:
DTS- Part 15 Digital Transmission Systems (WiFi transmitter portion)

Remaining portions are subject to the following procedures:
1. Receiver portion of WiFi: exempt from technical requirement of this Part.
2. Other Digital Function: Subject to FCC Part 15B DoC .

2.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (2009) and KDB 558074 v03r05. Radiated emission measurement was performed in semi-anechoic chamber and conducted emission measurement was performed in shield room. For radiated emission measurement, preliminary scans were performed in the semi-anechoic chamber only to determine the worst case modes. All radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "**Justification Section**" of this Application. All other measurements were made in accordance with the procedures in part 2 of CFR 47.

2.4 Test Facility

The Semi-Anechoic chamber and shield room used to collect the radiated data and conducted data are **Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch** and located at 6F, Block D, Huahan Building, Langshan Road, Nanshan District, Shenzhen, P. R. China. This test facility and site measurement data have been fully placed on file with the FCC (Registration Number: 242492).

EXHIBIT 3

SYSTEM TEST CONFIGURATION

3.0 System Test Configuration

3.1 Justification

For emissions testing, the equipment under test (EUT) setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, all cables were manipulated to produce worst case emissions. The EUT was powered by AC/DC adaptor through AC120V/ 60Hz during the testing. All the data rate of 802.11b/g/n-HT20 was tested and only the worst case data was reported.

The signal is maximized through rotation and placement in the three orthogonal axes. The antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters. Radiated emissions are taken at three meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance.

The rear of unit shall be flushed with the rear of the table.

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance. Analyzer resolution is 100 kHz or greater for frequencies below 1000 MHz. The resolution is 1 MHz or greater for frequencies above 1000 MHz. The spurious emissions more than 20 dB below the permissible value are not reported.

Radiated emission measurement were performed the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

3.2 EUT Exercising Software

The EUT exercise program (provided by client) used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The worst case configuration is used in all specified testing.

The parameters of test software setting:
During the test, Channel and power controlling software provided by the applicant was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the application and is going to be fixed on the firmware of the end product.

3.3 Special Accessories

NA.

3.4 Measurement Uncertainty

When determining of the test conclusion, the Measurement Uncertainty of test has been considered.

Uncertainty and Compliance – Unless the standard specifically states that measured values are to be extended by the measurement uncertainty in determining compliance, all compliance determinations are based on the actual measured value.

3.5 Equipment Modification

Any modifications installed previous to testing by Qbic technology Co., Ltd will be incorporated in each production model sold / leased in the United States.

No modifications were installed by Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch.

3.6 Support Equipment List and Description

This product was tested in the following configuration:

Refer List:

Description	Manufacturer	Detail
Network cable (RJ45)	Smart.drive	unshielded, Length 500cm
RJ45 Terminal	N/A	N/A
2 x HDMI cable	N/A	unshielded, Length 150cm
Earphone	N/A	unshielded, Length 150cm
Monitor	DELL	E2213
Optical Cable with Terminal	NA	unshielded, Length 500cm
USB Cable with USB Terminal	N/A	2GB
Mini SD Card	SanDisk	1GB
Keyboard	Lenovo	K4803A
USB Disk	SanDisk	4GB
Mouse	Lenovo	M4806A
Adapter	KUANTECH	Model: KSASB0241200150D5 Input: AC 100-240V, 50/60Hz, 0.6A Output: DC 12V, 1.5A for main unit

EXHIBIT 4

MEASUREMENT RESULTS

Applicant: Qbic technology Co., Ltd
Date of Test: May 10, 2016
Model: BXP-301

4.0 **Measurement Results**

4.1 Maximum Conducted Output Power at Antenna Terminals, FCC Rules 15.247(b)(3):

The antenna power of the EUT was connected to the input of a broadband peak RF power meter. The power meter have a video bandwidth that is greater than DTS bandwidth and utilize a fast-responding diode detector. Power was read directly at the EUT antenna terminals with cable loss added.

For antennas with gains of 6 dBi or less, maximum allowed Transmitter output is 1 watt (+30 dBm).

IEEE 802.11b (Antenna Gain = -1.0dBi) (CCK, 1Mbps)		
Frequency (MHz)	Output in dBm	Output in mWatt
Low Channel: 2412	16.2	41.7
Middle Channel: 2437	16.1	40.7
High Channel: 2462	15.1	32.4

IEEE 802.11g (Antenna Gain = -1.0dBi) (16QAM, 6Mbps)		
Frequency (MHz)	Output in dBm	Output in mWatt
Low Channel: 2412	15.1	32.4
Middle Channel: 2437	15.6	36.3
High Channel: 2462	15.1	32.4

IEEE 802.11n-HT20 (Antenna Gain = -1.0dBi) (16QAM, 6.5Mbps)		
Frequency (MHz)	Output in dBm	Output in mWatt
Low Channel: 2412	15.0	31.6
Middle Channel: 2437	15.4	34.7
High Channel: 2462	15.1	32.4

Cable loss: 0.5 dB External Attenuation: 0 dB

Cable loss, external attenuation has been included in OFFSET function

EUT max output level = 16.2 dBm

For RF Exposure, the information is saved with filename: RF exposure.pdf.

Applicant: Qbic technology Co., Ltd
Date of Test: May 10, 2016
Model: BXP-301

4.2 Minimum 6 dB RF Bandwidth, FCC Rule 15.247(a)(2):

The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RES BW was set to 100 KHz according to FCC KDB 558074. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A PEAK output reading was taken, a DISPLAY line was drawn 6 dB lower than PEAK level. The 6dB bandwidth was determined from where the channel output spectrum intersected the display line.

Limit: The 6 dB Bandwidth is at least 500 kHz.

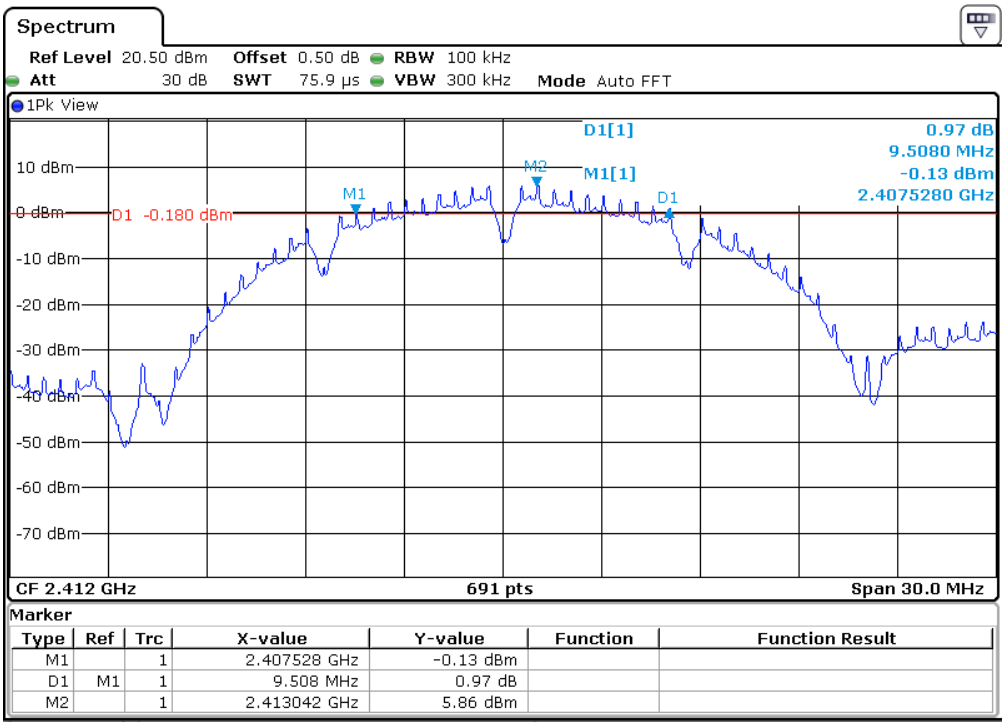
IEEE 802.11b (CCK, 1Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2412	9.508
2437	10.029
2462	9.508

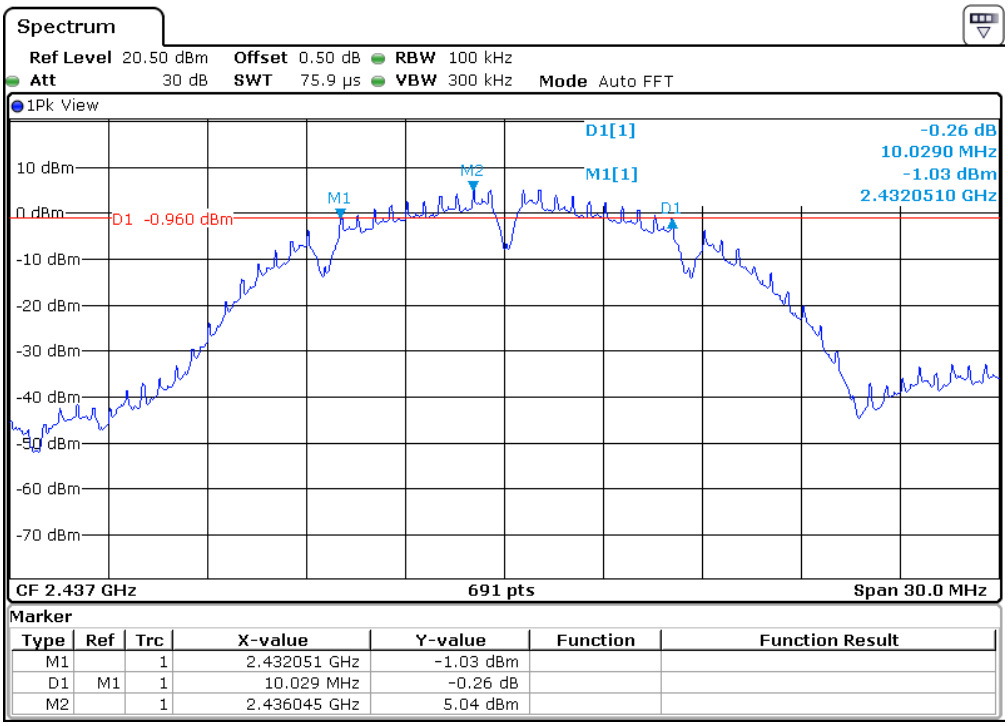
IEEE 802.11g (16QAM, 6Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2412	14.414
2437	15.022
2462	15.065

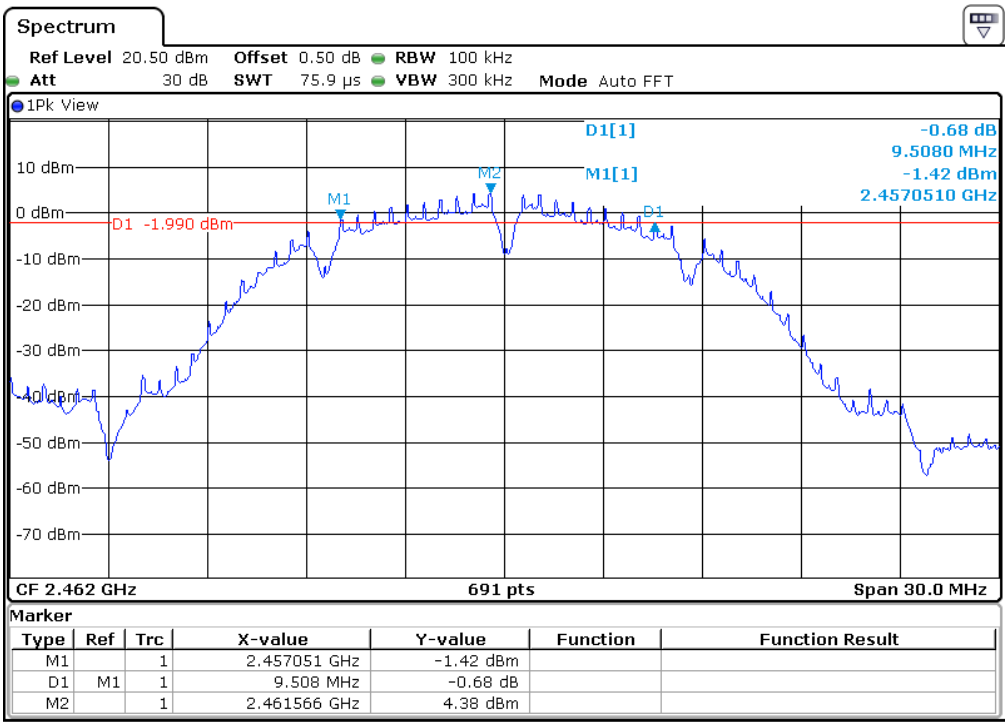
IEEE 802.11n-HT20 (16QAM, 6.5Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2412	13.198
2437	15.022
2462	15.022

The test plots are attached as below.

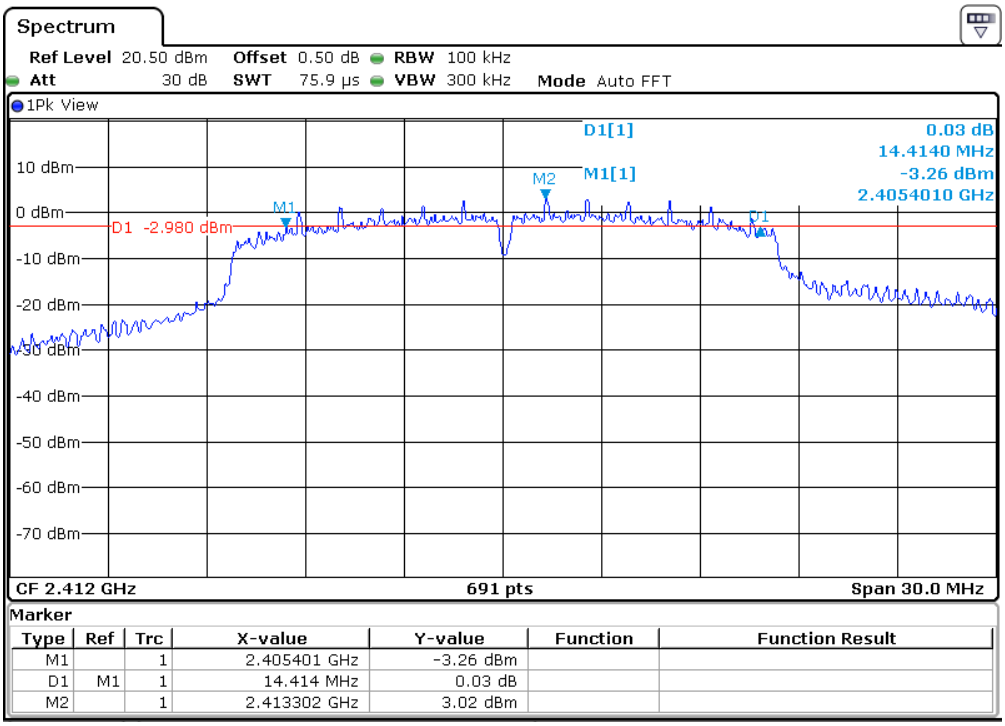
802.11b

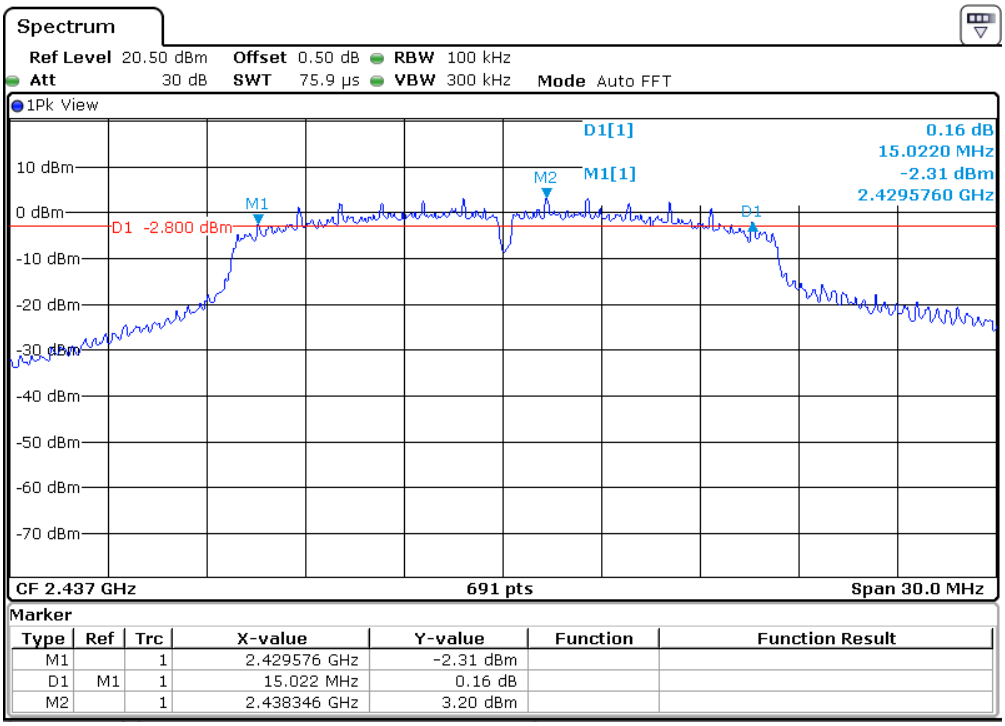

Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] 0.97 dB
9.5080 MHz
M1[1] -0.13 dBm
2.4075280 GHz
D1 -0.180 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.412 GHz
691 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.407528 GHz -0.13 dBm
D1 M1 1 9.508 MHz 0.97 dB
M2 1 2.413042 GHz 5.86 dBm

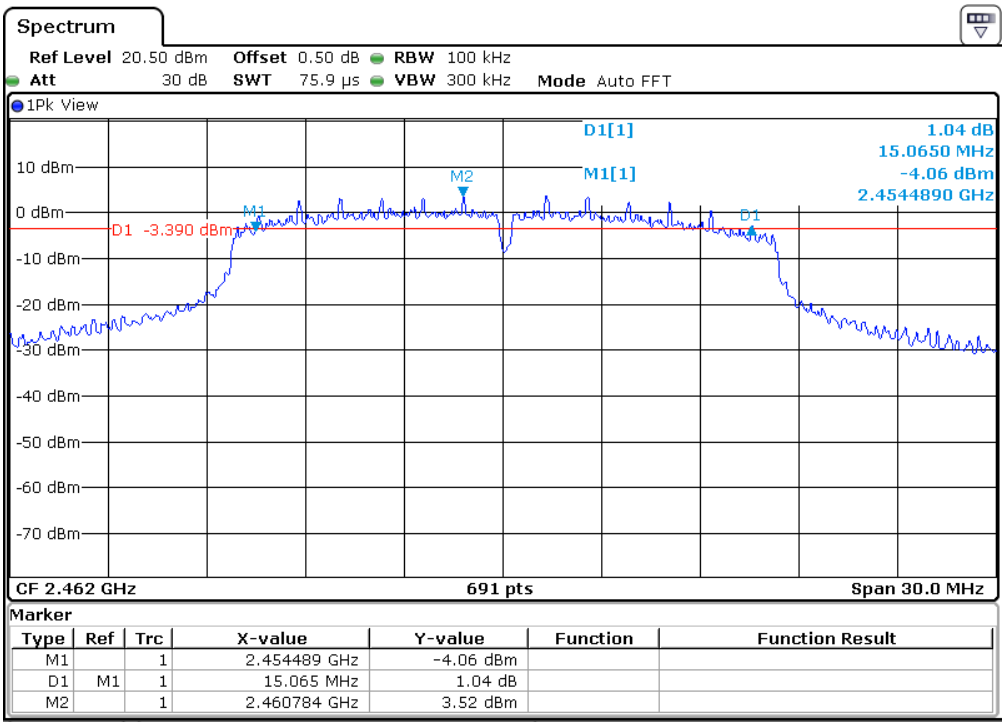

Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] -0.26 dB
10.0290 MHz
M1[1] -1.03 dBm
2.4320510 GHz
D1 -0.960 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.437 GHz
691 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.432051 GHz -1.03 dBm
D1 M1 1 10.029 MHz -0.26 dB
M2 1 2.436045 GHz 5.04 dBm


Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] -0.68 dB
9.5080 MHz
M1[1] -1.42 dBm
2.4570510 GHz
D1 -1.990 dBm
CF 2.462 GHz
691 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.457051 GHz -1.42 dBm
D1 M1 1 9.508 MHz -0.68 dB
M2 1 2.461566 GHz 4.38 dBm

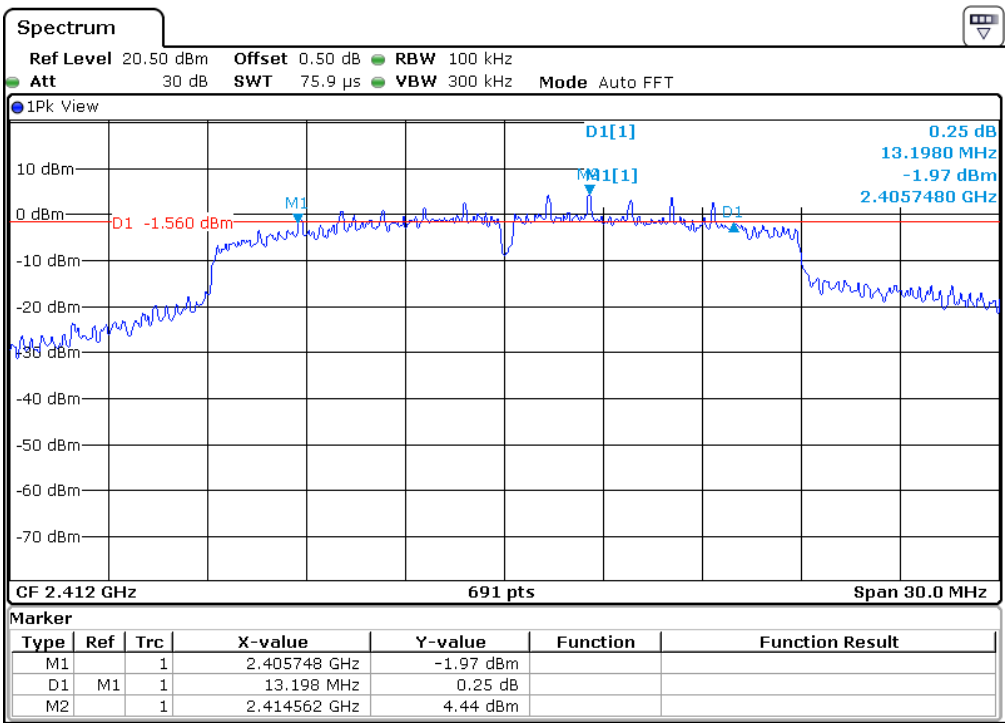
802.11g

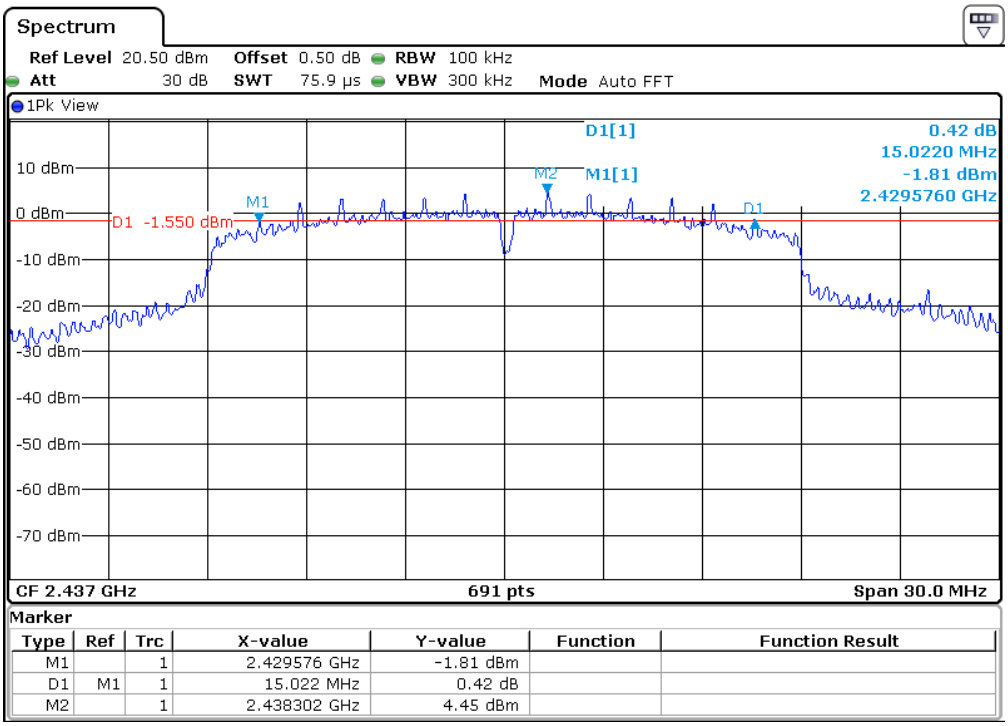

Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] 0.03 dB
14.4140 MHz
M1[1] -3.26 dBm
2.4054010 GHz
D1 -2.980 dBm
CF 2.412 GHz
691 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.405401 GHz -3.26 dBm
D1 M1 1 14.414 MHz 0.03 dB
M2 1 2.413302 GHz 3.02 dBm

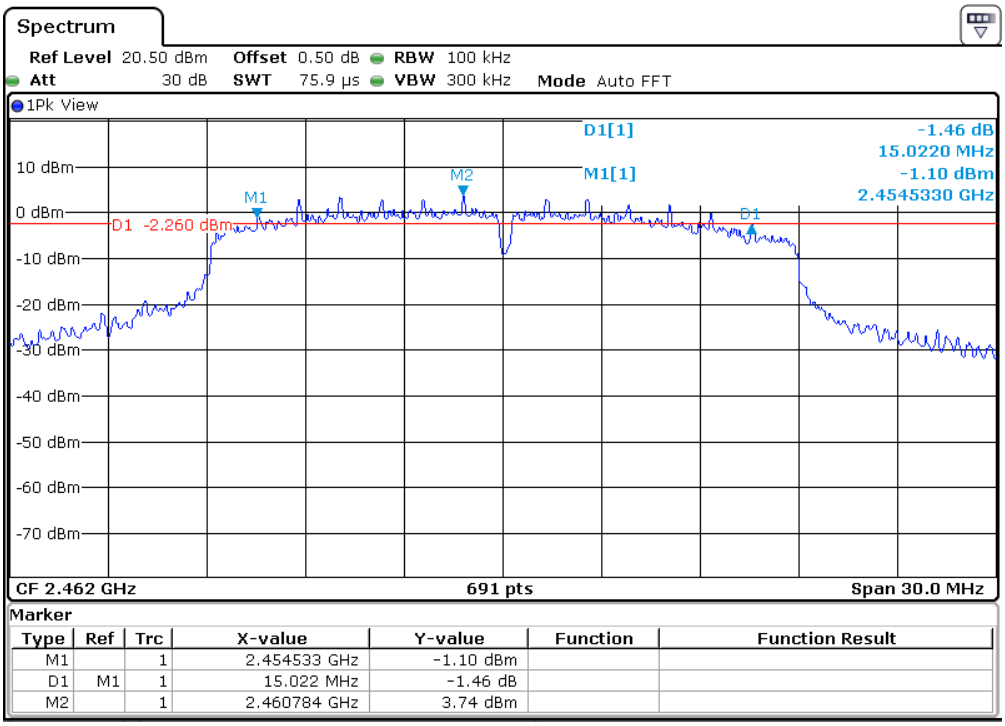

Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] 0.16 dB
15.0220 MHz
M1[1] -2.31 dBm
2.4295760 GHz
10 dBm
0 dBm
D1 -2.800 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
M2
D1
CF 2.437 GHz
691 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.429576 GHz -2.31 dBm
D1 M1 1 15.022 MHz 0.16 dB
M2 1 2.438346 GHz 3.20 dBm


Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] 1.04 dB
15.0650 MHz
M1[1] -4.06 dBm
2.4544890 GHz
10 dBm
0 dBm
D1 -3.390 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
M2
D1
CF 2.462 GHz
691 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.454489 GHz -4.06 dBm
D1 M1 1 15.065 MHz 1.04 dB
M2 1 2.460784 GHz 3.52 dBm

802.11 n-HT20


Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] 0.25 dB
13.1980 MHz
M1[1] -1.97 dBm
2.4057480 GHz
10 dBm
0 dBm
D1 -1.560 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.412 GHz
691 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.405748 GHz -1.97 dBm
D1 M1 1 13.198 MHz 0.25 dB
M2 1 2.414562 GHz 4.44 dBm


Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] 0.42 dB
15.0220 MHz
M1[1] -1.81 dBm
2.4295760 GHz
10 dBm
0 dBm
D1 -1.550 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.437 GHz
691 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.429576 GHz -1.81 dBm
D1 M1 1 15.022 MHz 0.42 dB
M2 1 2.438302 GHz 4.45 dBm


Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] -1.46 dB
15.0220 MHz
M1[1] -1.10 dBm
2.4545330 GHz
10 dBm
0 dBm
D1 -2.260 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
M2
D1
CF 2.462 GHz
691 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.454533 GHz -1.10 dBm
D1 M1 1 15.022 MHz -1.46 dB
M2 1 2.460784 GHz 3.74 dBm

Applicant: Qbic technology Co., Ltd
Date of Test: May 10, 2016
Model: BXP-301

4.3 Maximum Power Density Reading, FCC Rule 15.247(e):

The Measurement Procedure PKPSD was set according to the FCC KDB 558074.

Antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are compensated for with the analyzer OFFSET function.

Limit: The Power Density does not exceed 8dBm/3 kHz.

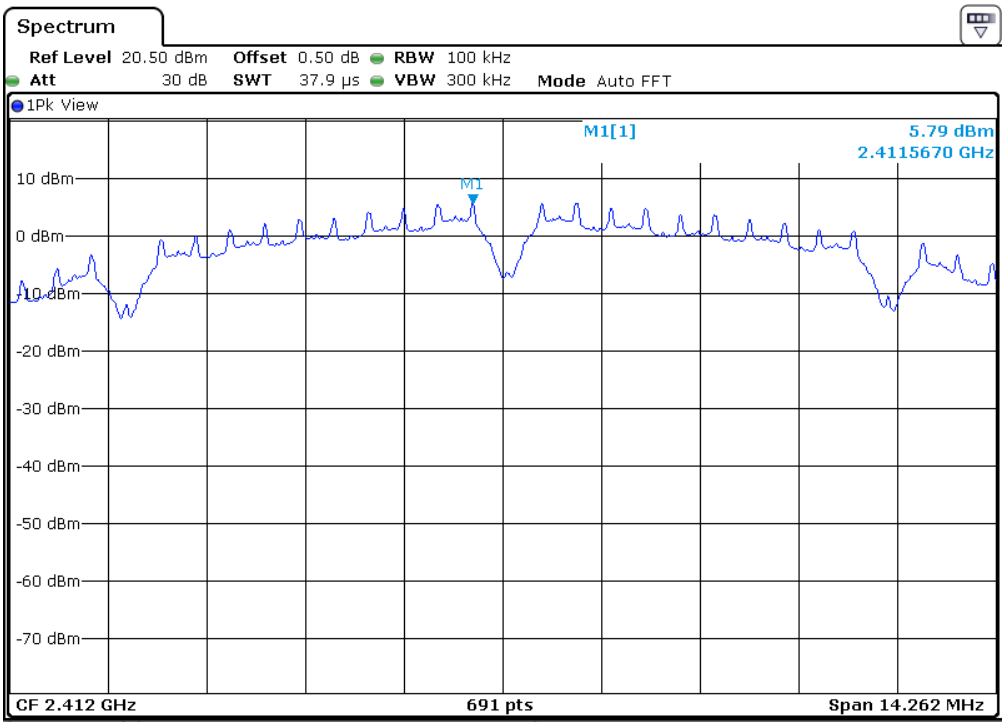
IEEE 802.11b (CCK, 1Mbps)	
Frequency (MHz)	Power Density with RBW 100KHz
2412	5.79
2437	5.28
2462	4.50

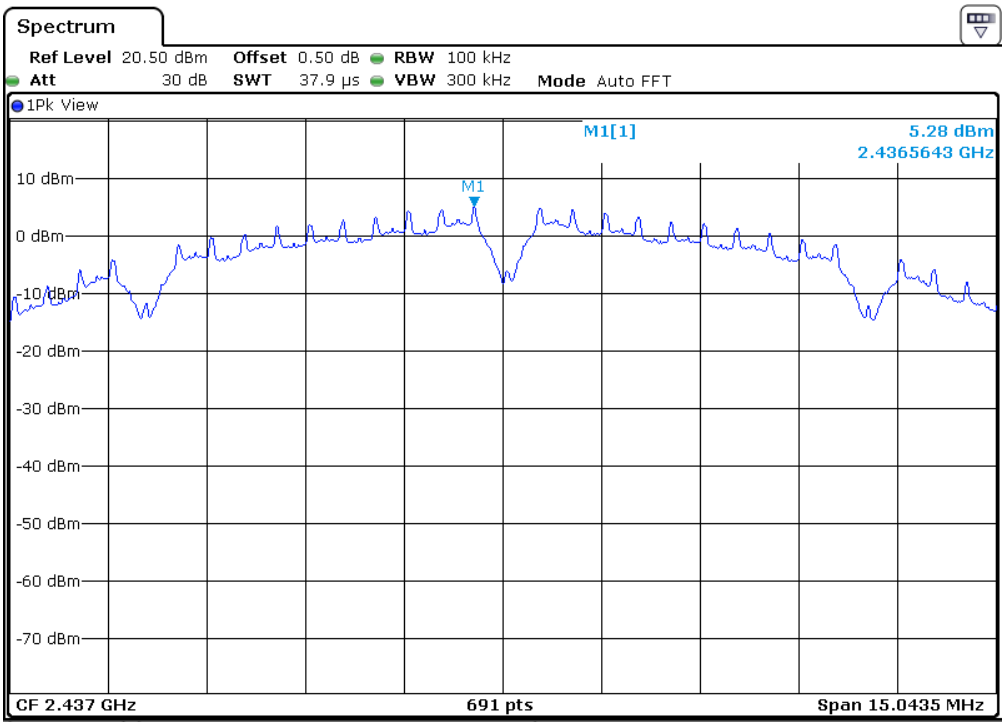
IEEE 802.11g (16QAM, 6Mbps)	
Frequency (MHz)	Power Density with RBW 100KHz
2412	4.68
2437	4.63
2462	3.23

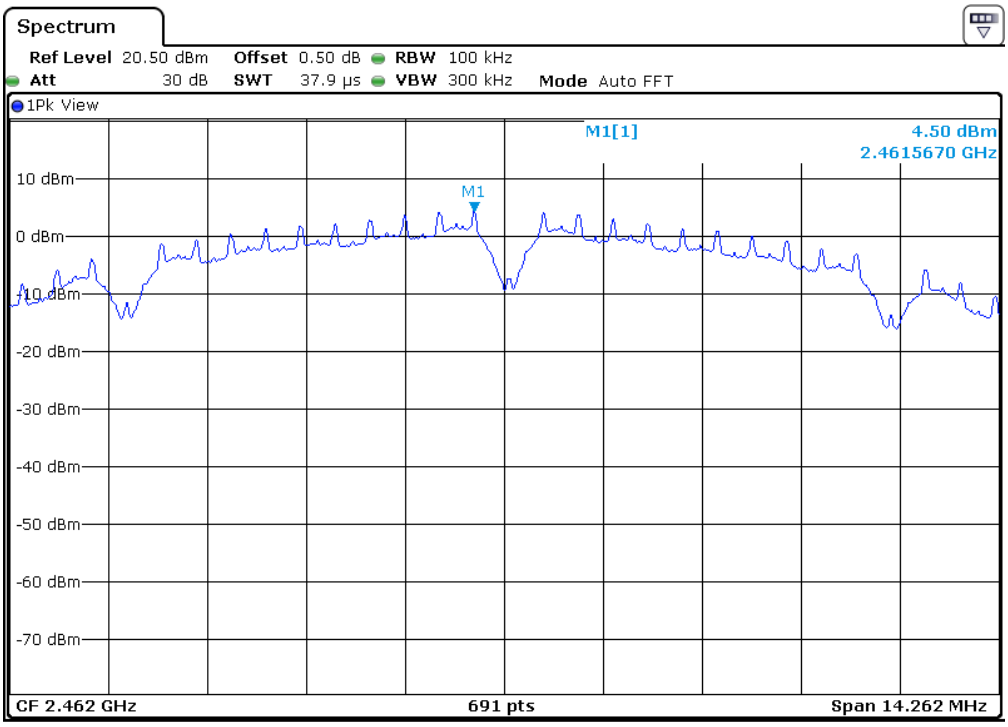
IEEE 802.11n-HT20 (16QAM, 6.5Mbps)	
Frequency (MHz)	Power Density with RBW 100KHz
2412	4.09
2437	4.10
2462	3.26

The test plots are attached as below.

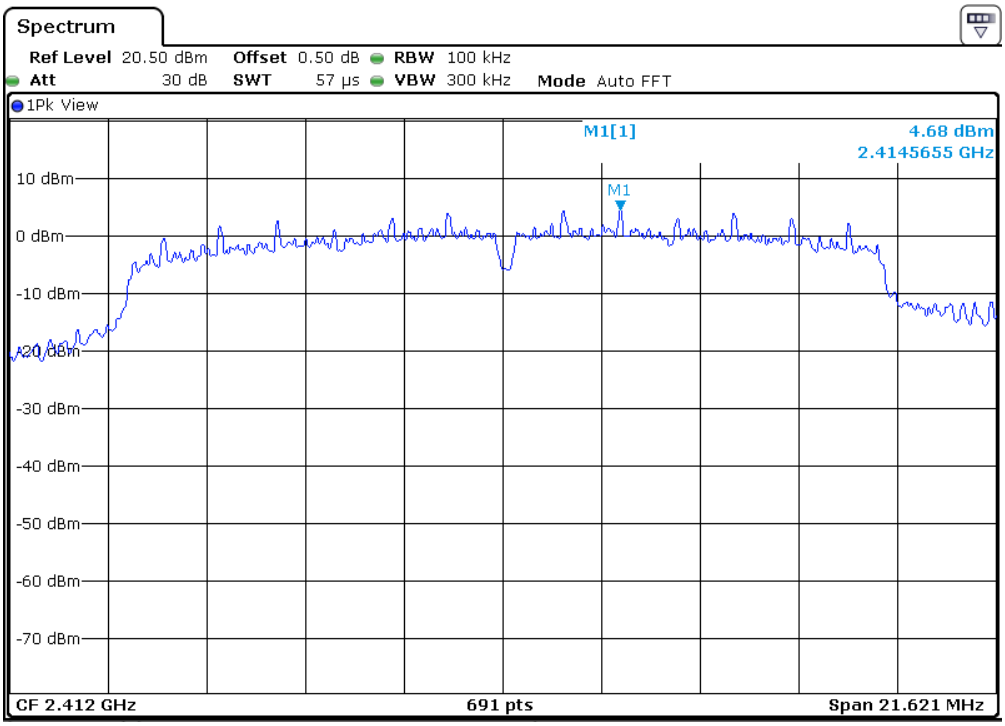
802.11b

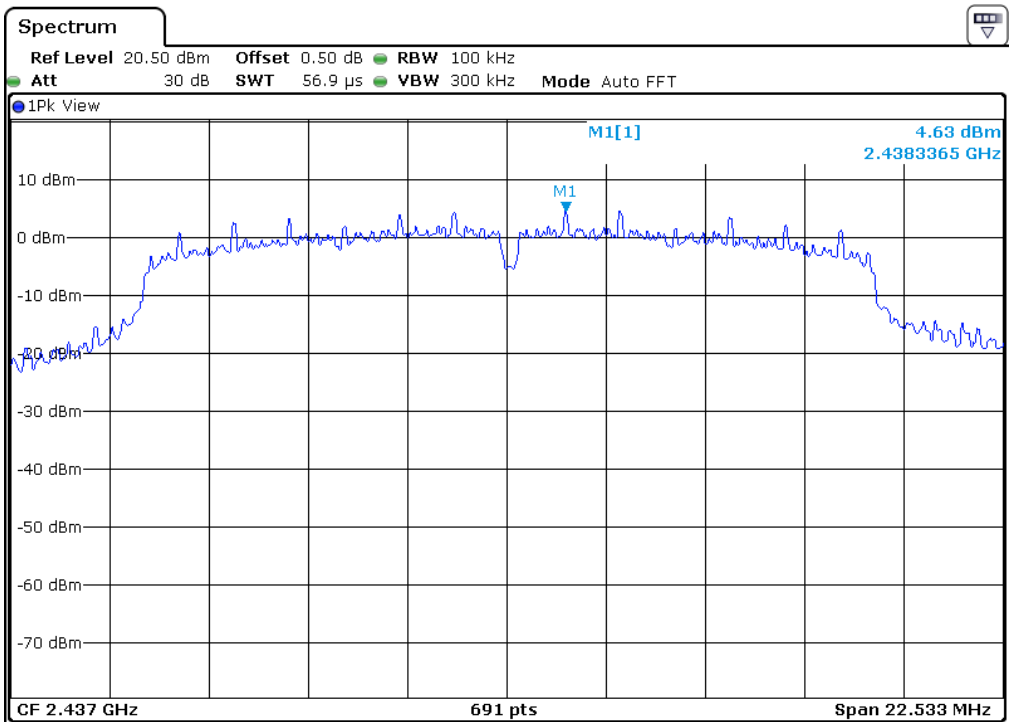

Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 37.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] 5.79 dBm
2.4115670 GHz
M1
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.412 GHz
691 pts
Span 14.262 MHz

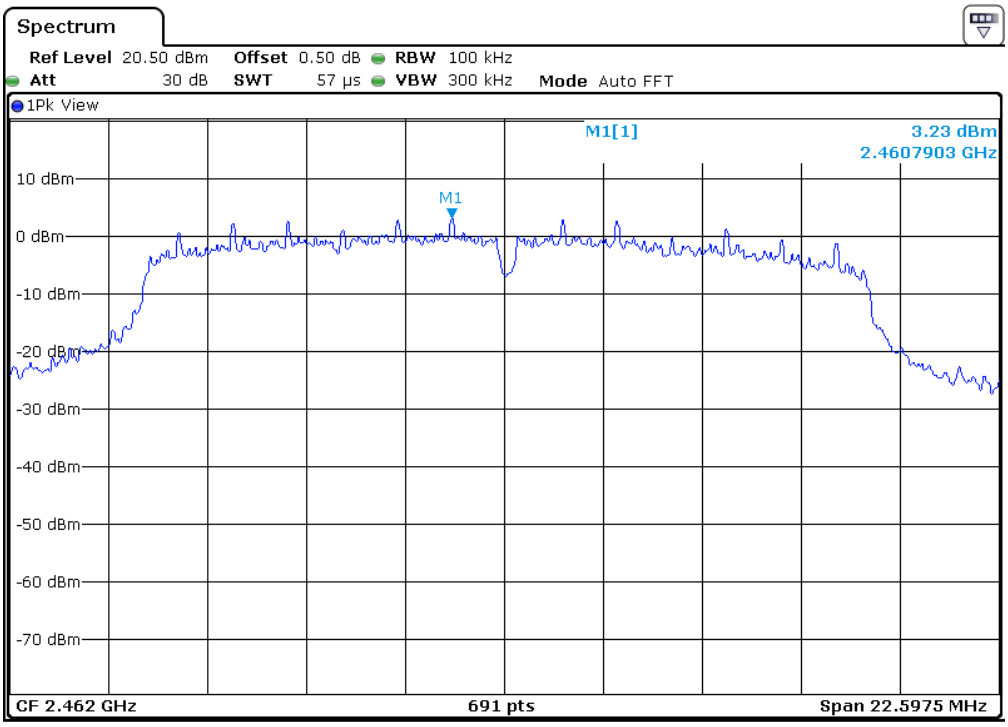

Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 37.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] 5.28 dBm
2.4365643 GHz
M1
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.437 GHz
691 pts
Span 15.0435 MHz


Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 37.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] 4.50 dBm
2.4615670 GHz
M1
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.462 GHz
691 pts
Span 14.262 MHz

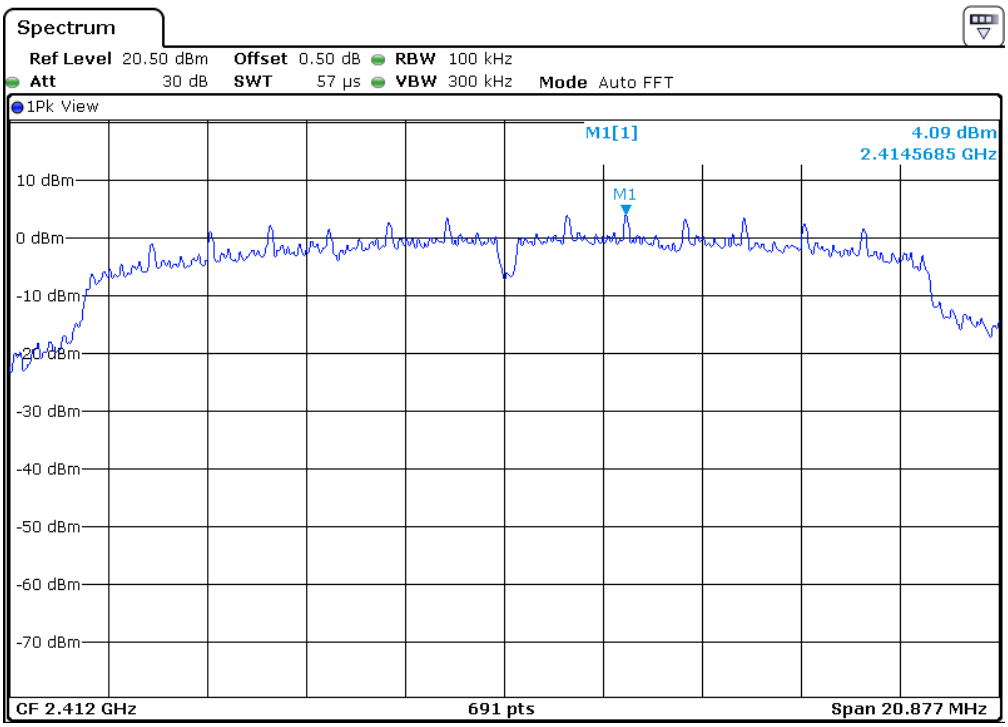
802.11g

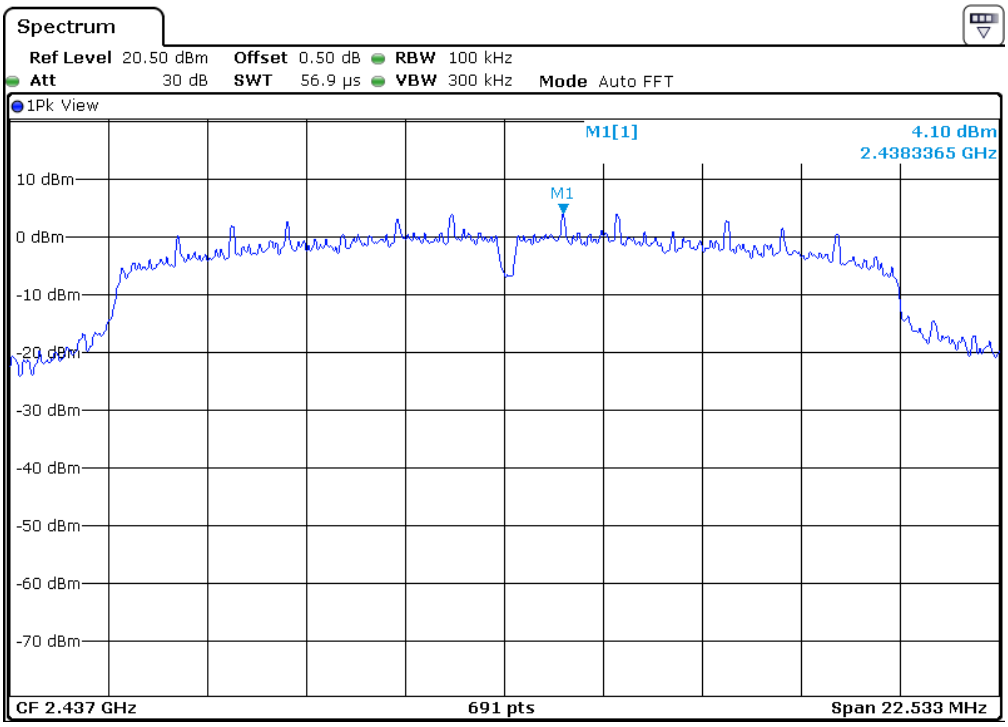

Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 57 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] 4.68 dBm
2.4145655 GHz
M1
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.412 GHz
691 pts
Span 21.621 MHz

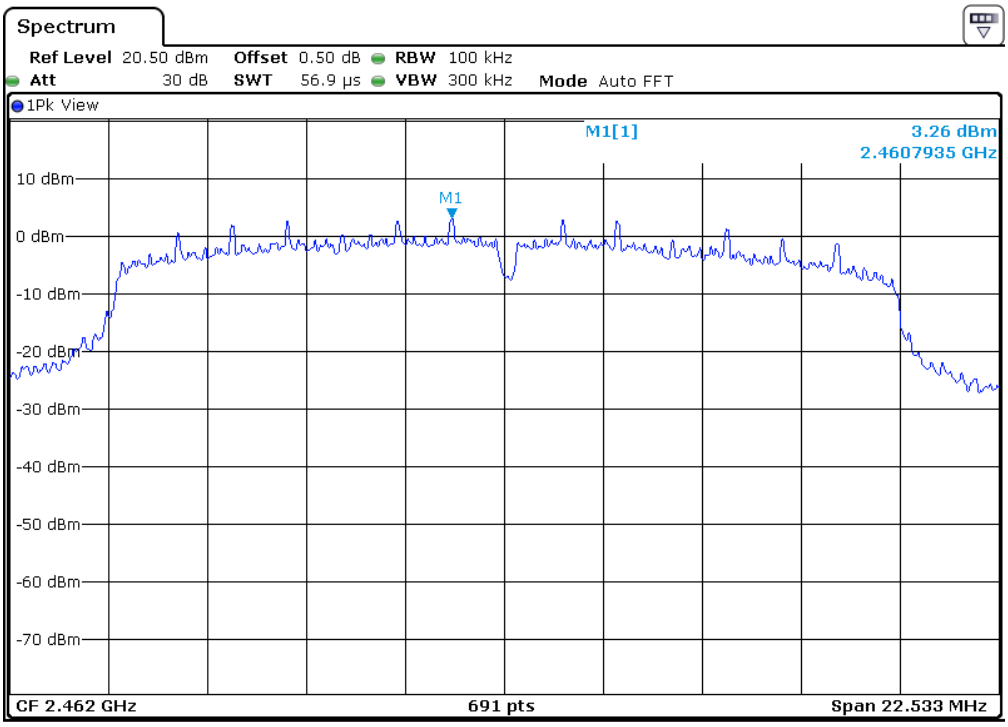

Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 56.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] 4.63 dBm
2.4383365 GHz
M1
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.437 GHz
691 pts
Span 22.533 MHz


Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 57 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] 3.23 dBm
2.4607903 GHz
M1
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.462 GHz
691 pts
Span 22.5975 MHz

802.11 n-HT20


Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 57 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] 4.09 dBm
2.4145685 GHz
M1
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.412 GHz
691 pts
Span 20.877 MHz


Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 56.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] 4.10 dBm
2.4383365 GHz
M1
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.437 GHz
691 pts
Span 22.533 MHz


Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 56.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] 3.26 dBm
2.4607935 GHz
M1
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.462 GHz
691 pts
Span 22.533 MHz

Applicant: Qbic technology Co., Ltd
Date of Test: May 10, 2016
Model: BXP-301, BXP-300, BXP-202

4.4 Out of Band Conducted Emissions, FCC Rule 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. The Measurement Procedure was set according to the FCC KDB 558074.

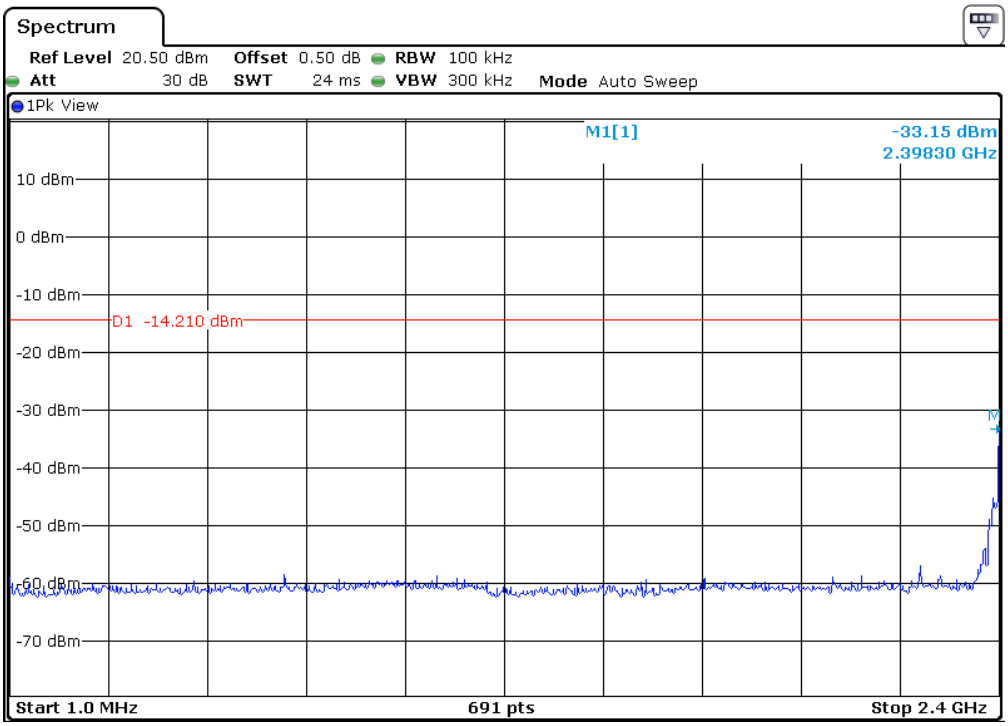
All other types of emissions from the EUT shall meet the general limits for radiated frequencies outside the passband.

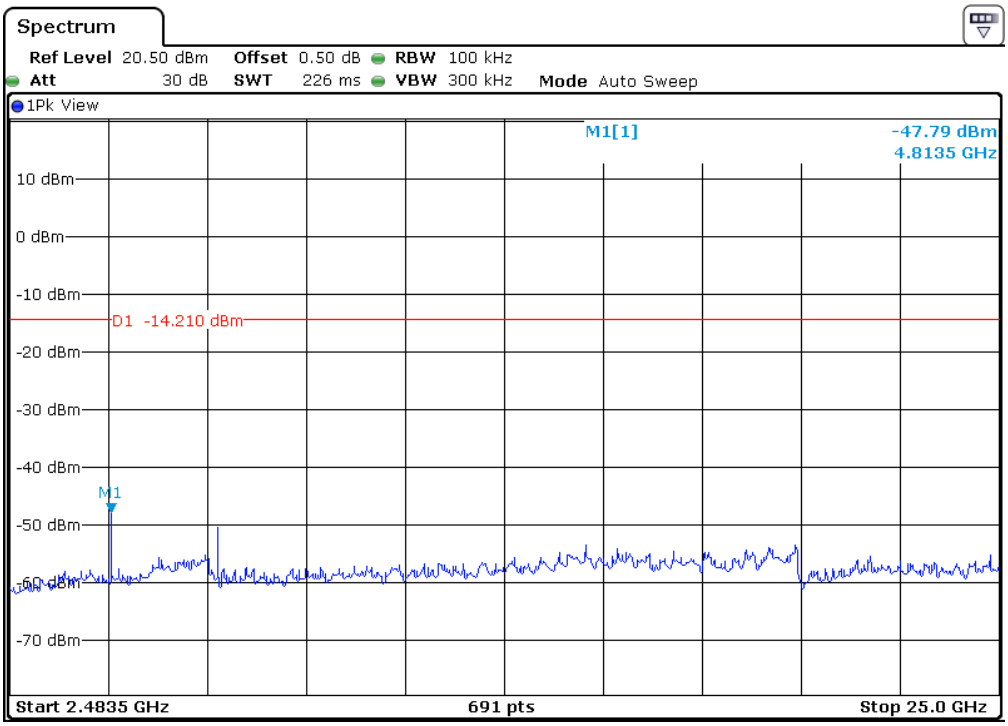
Refer to the attached test plots for out of band conducted emissions data with rate of 1Mbps for 802.11b, 6Mbps for 802.11g and 6.5Mbps for 802.11n-HT20.

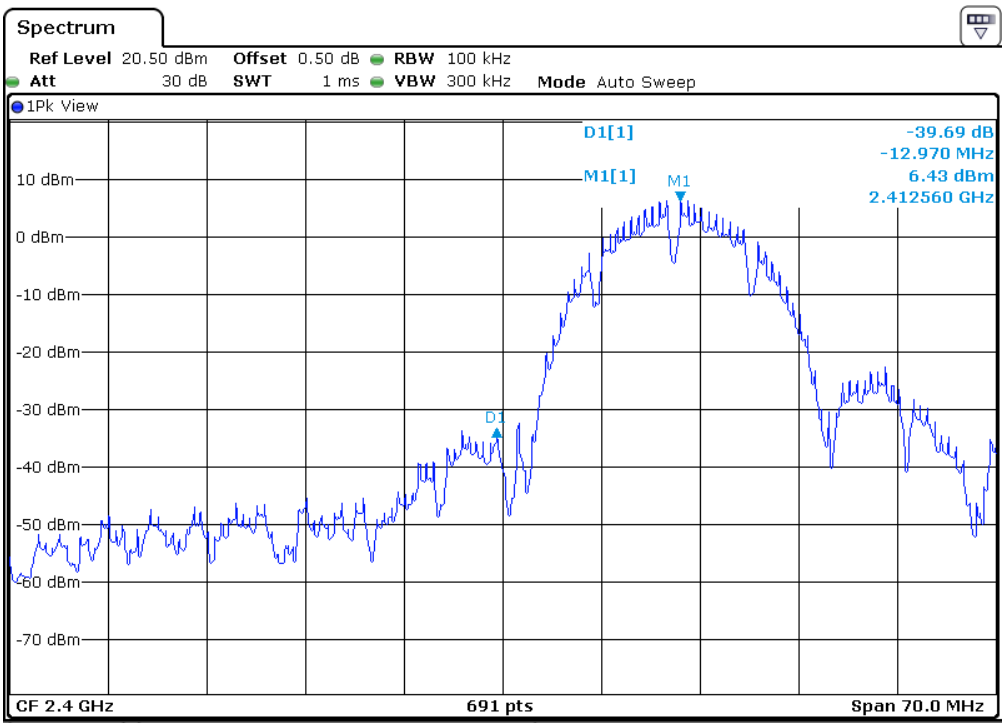
The test plots showed all spurious emission up to the tenth harmonic were measured and they were found to be at least 20 dB below the highest level of the desired power in the passband.

The test plots are attached as below.

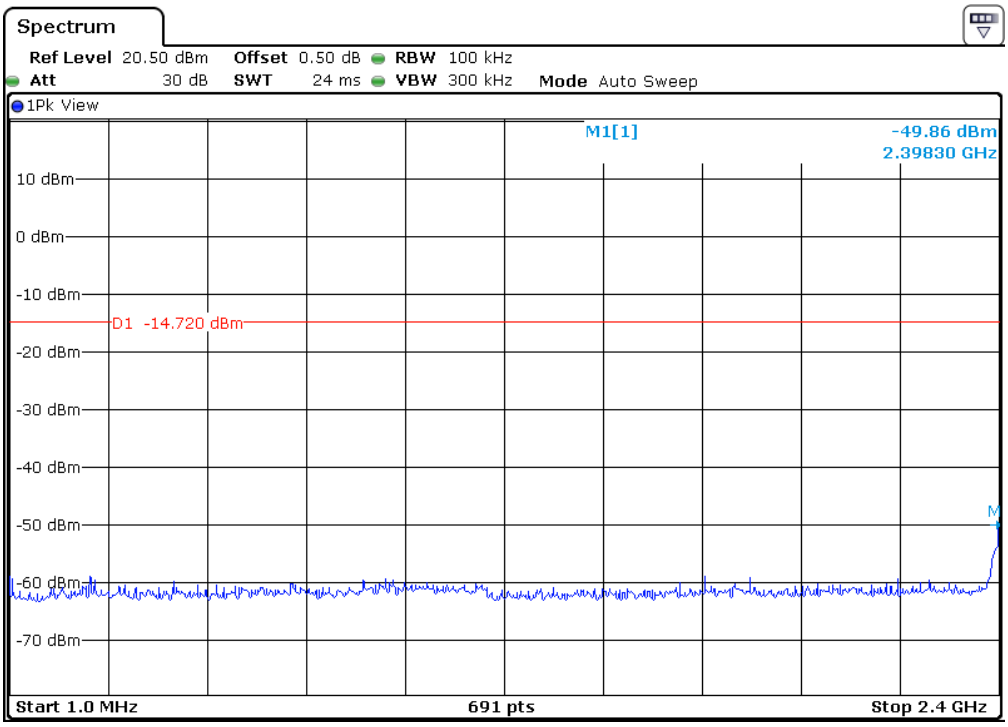
802.11b
Channel 01 (2412MHz) Reference Level: 5.79dBm

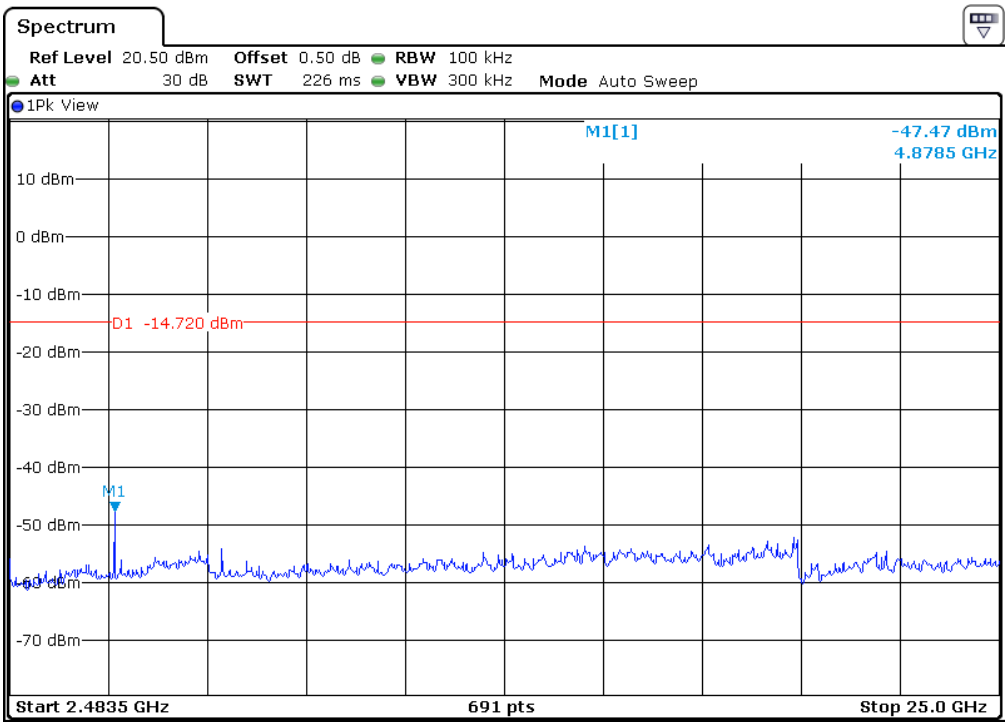




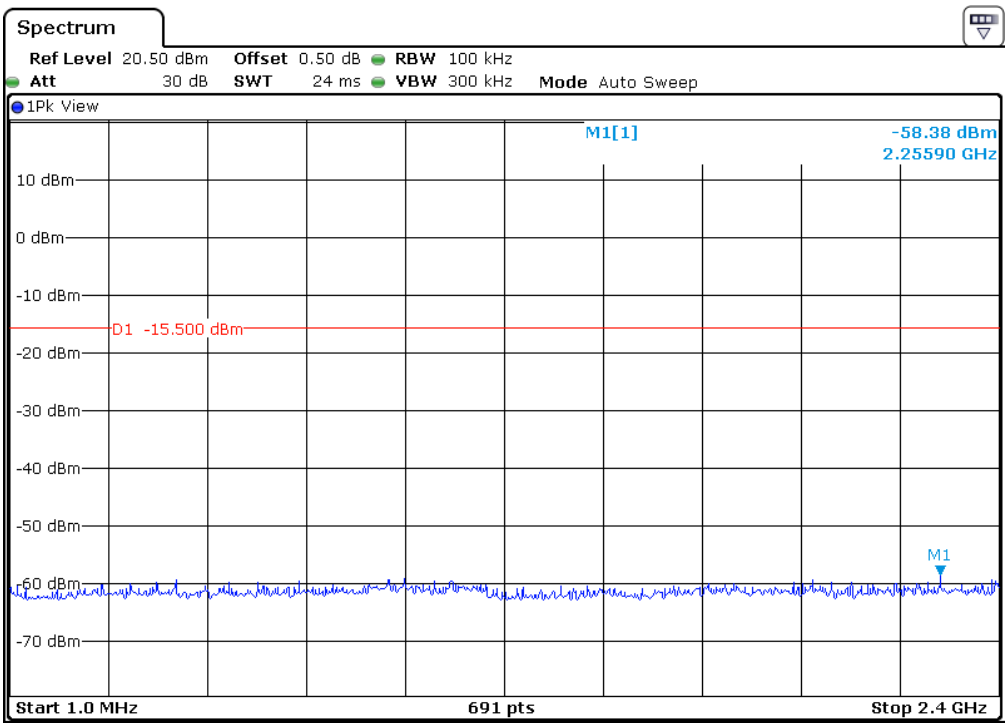

Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 1 ms VBW 300 kHz Mode Auto Sweep
1Pk View
D1[1] -39.69 dB
-12.970 MHz
M1[1] 6.43 dBm
2.412560 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
D1
CF 2.4 GHz
691 pts
Span 70.0 MHz

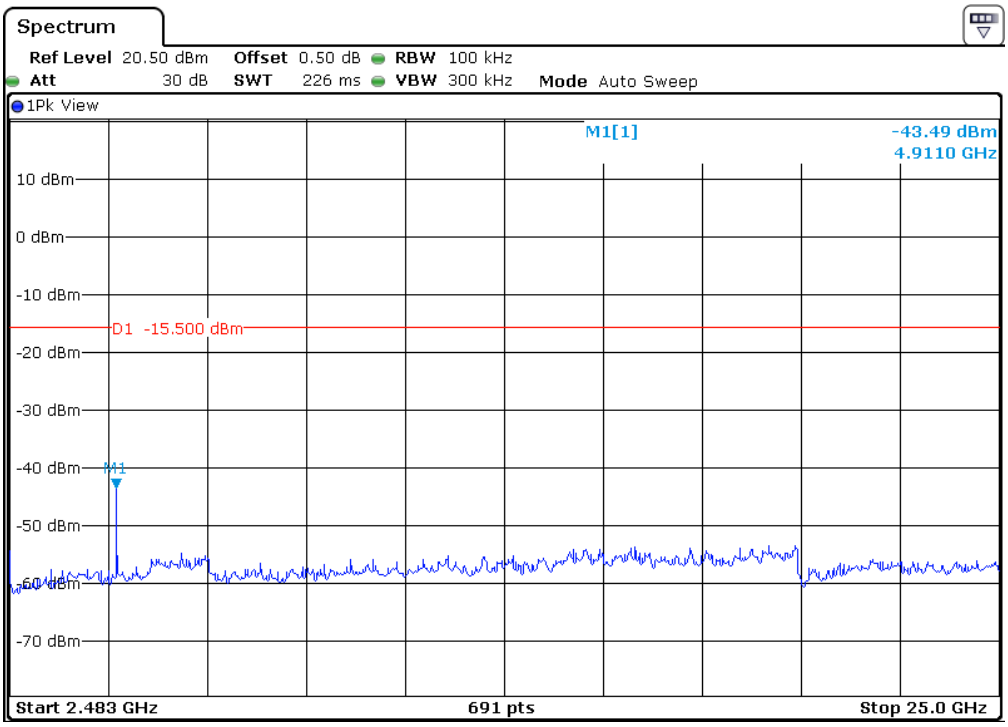
Channel 06 (2437MHz) Reference Level: 5.28dBm

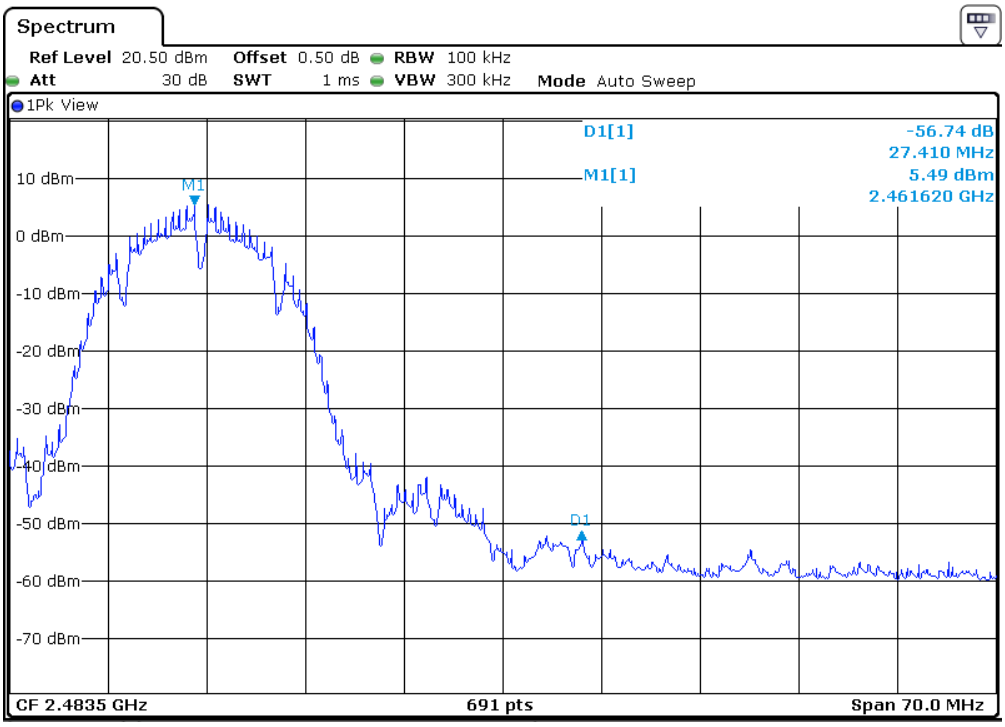




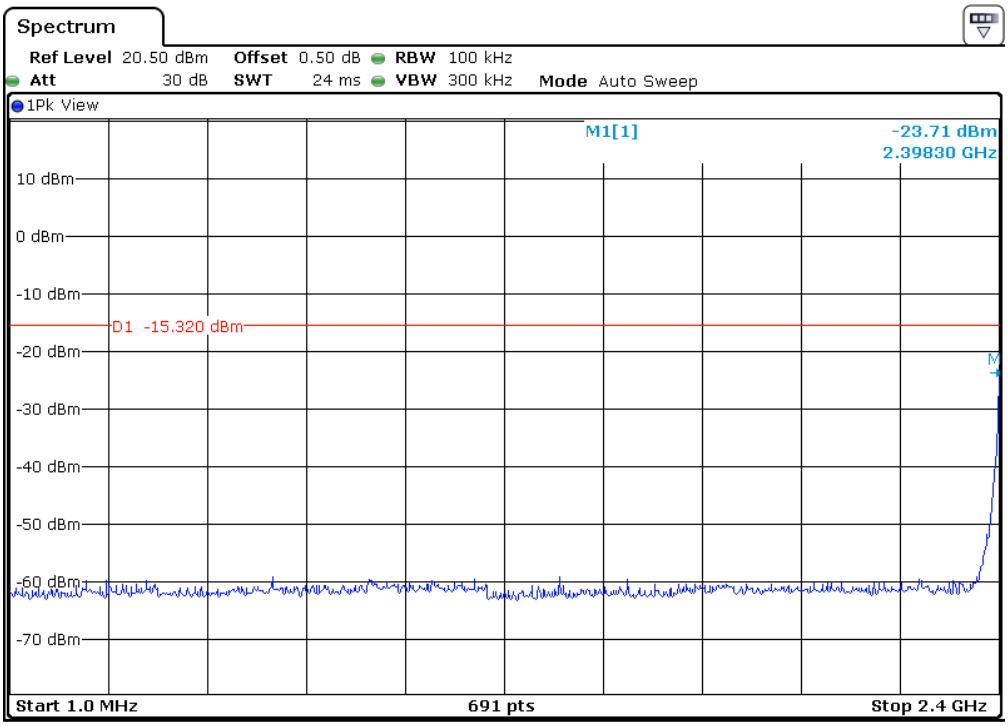
Channel 11 (2462MHz) Reference Level: 4.50dBm

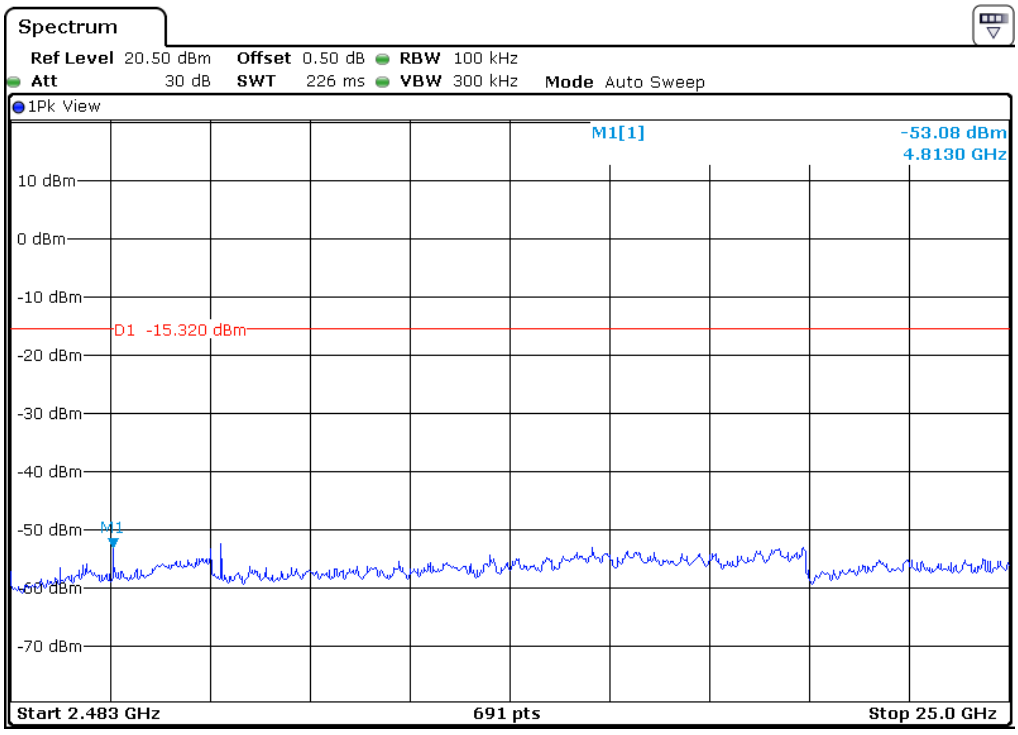


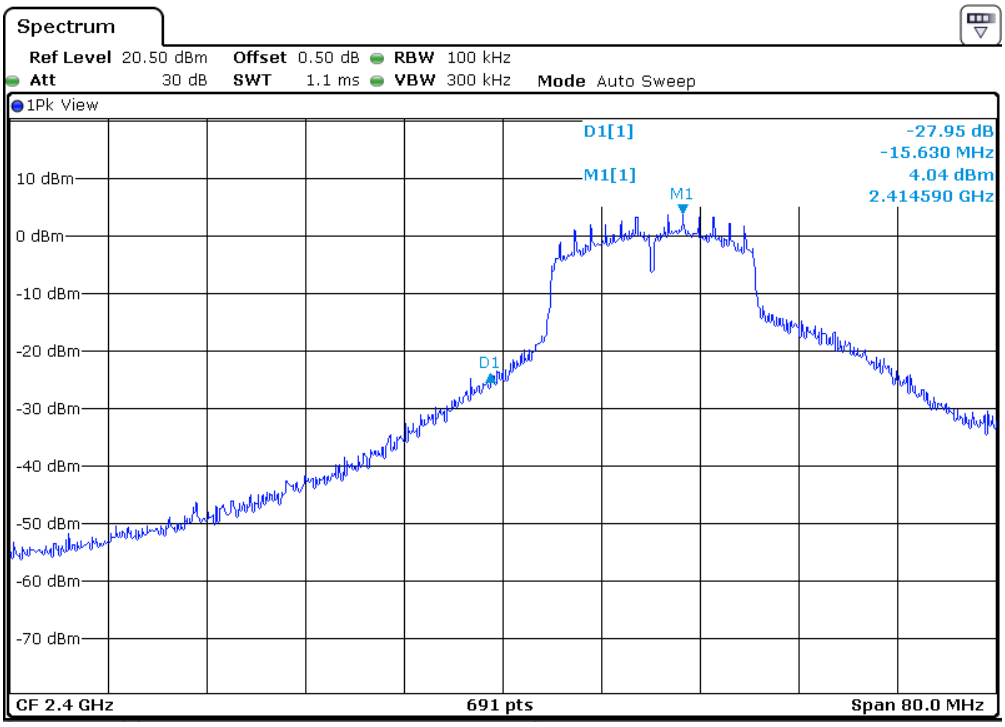



Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 1 ms VBW 300 kHz Mode Auto Sweep
1Pk View
D1[1] -56.74 dB
27.410 MHz
M1[1] 5.49 dBm
2.461620 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
D1
CF 2.4835 GHz
691 pts
Span 70.0 MHz

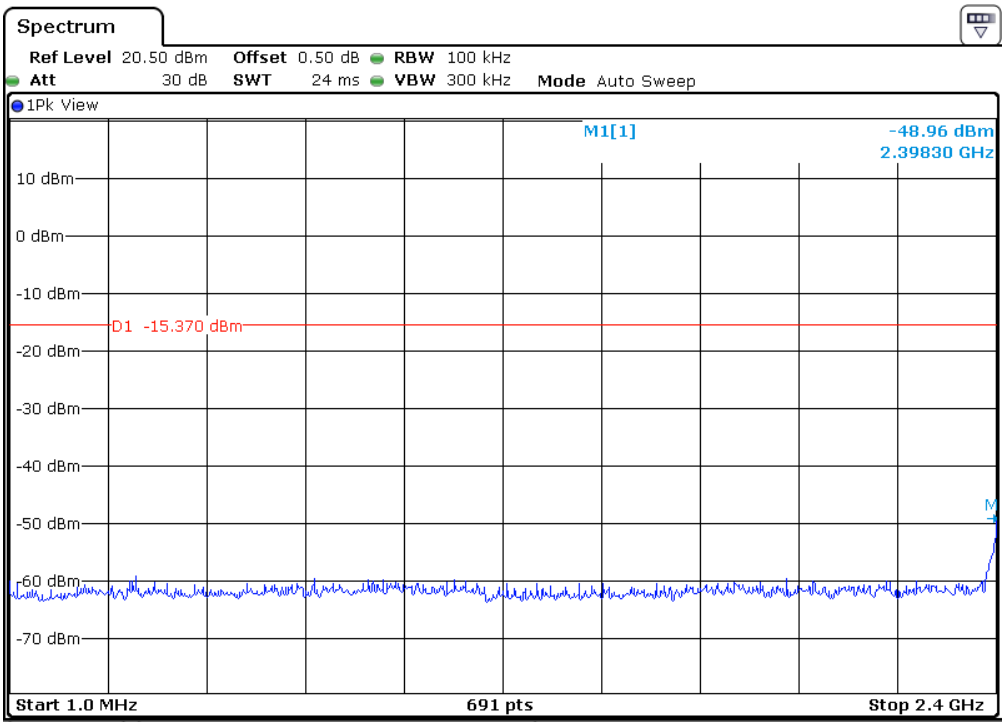
802.11g
Channel 01 (2412MHz) Reference Level: 4.68dBm

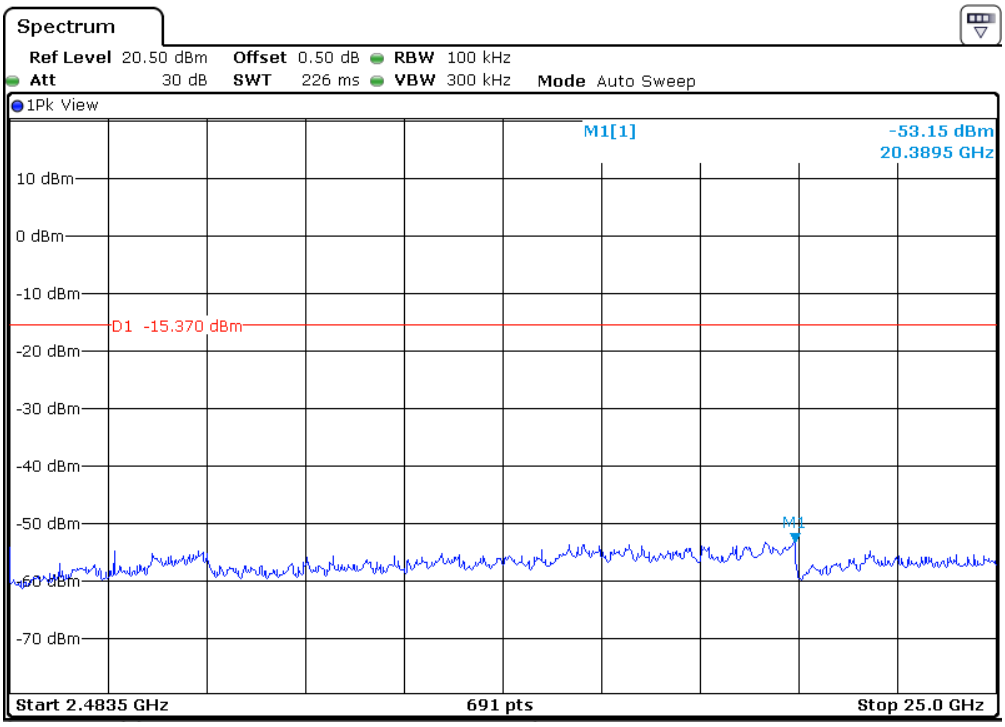




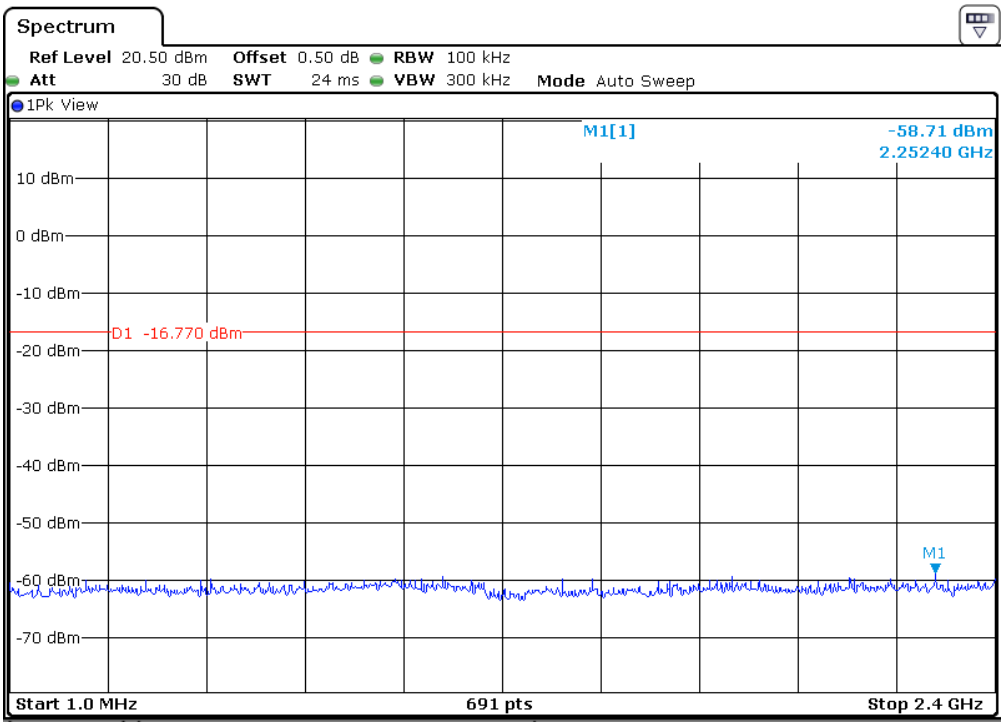

Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 1.1 ms VBW 300 kHz Mode Auto Sweep
1Pk View
D1[1] -27.95 dB
-15.630 MHz
M1[1] 4.04 dBm
2.414590 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
D1
CF 2.4 GHz
691 pts
Span 80.0 MHz

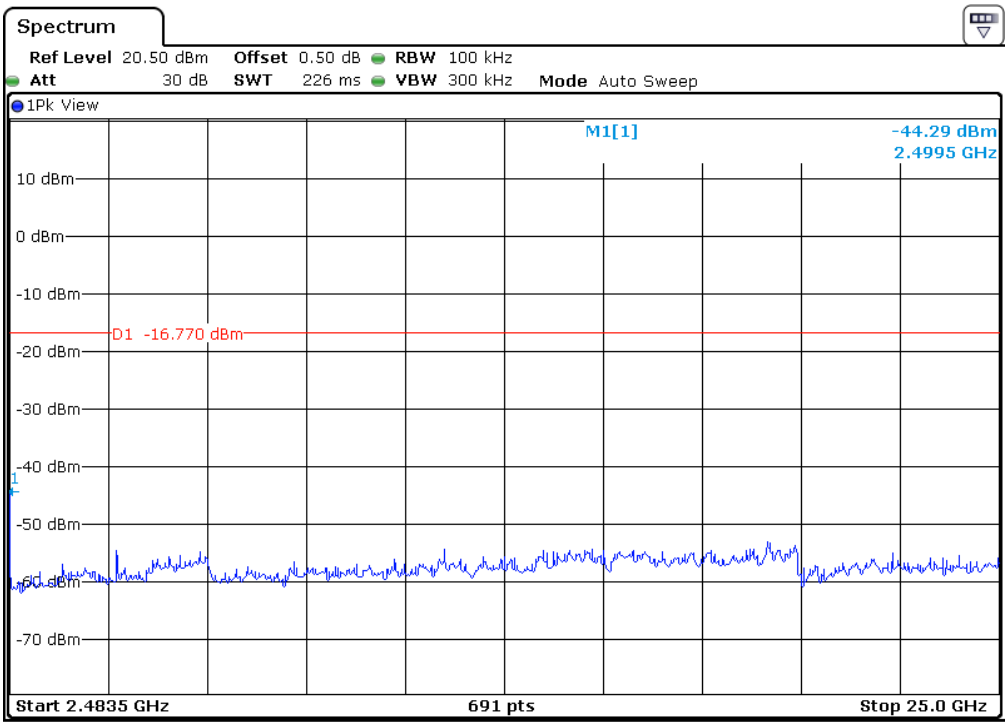
Channel 06 (2437MHz) Reference Level: 4.63dBm

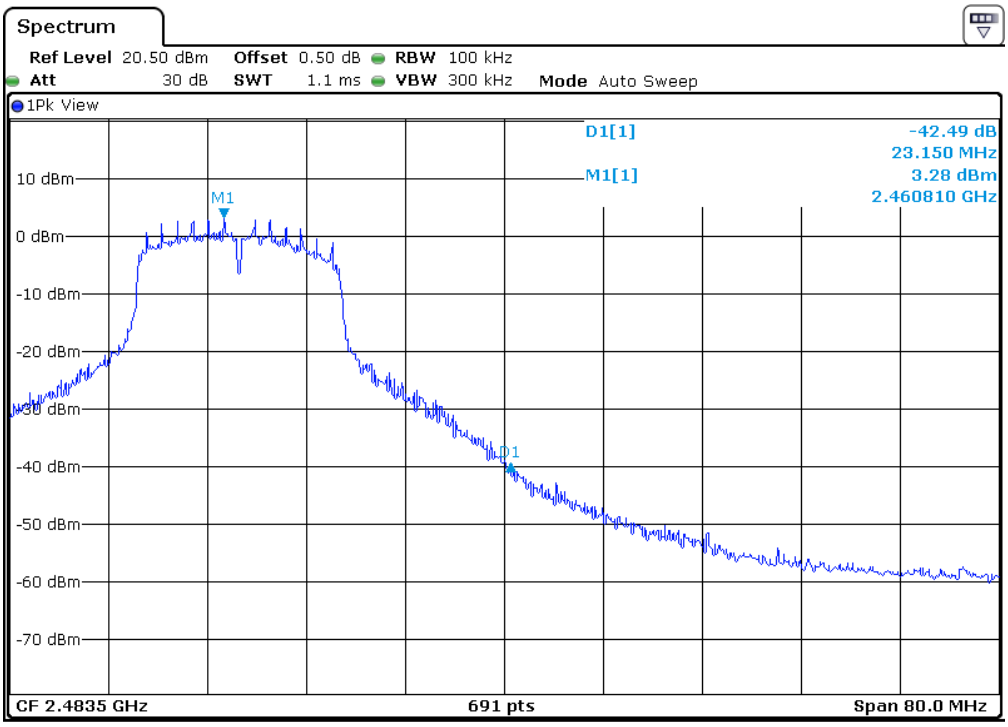




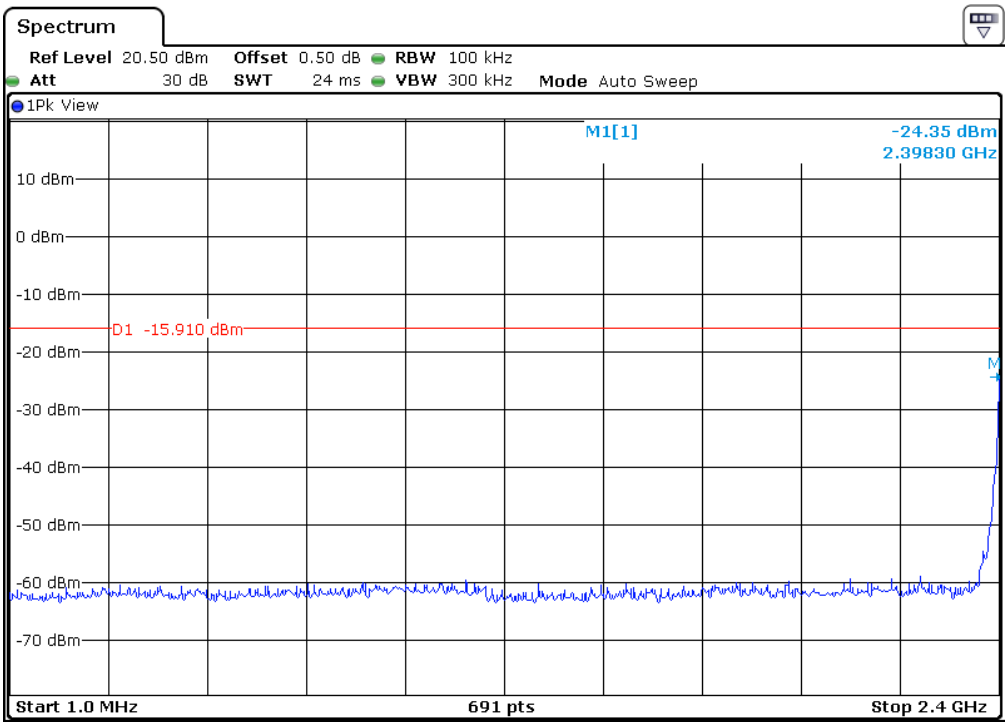
Channel 11 (2462MHz) Reference Level: 3.23dBm

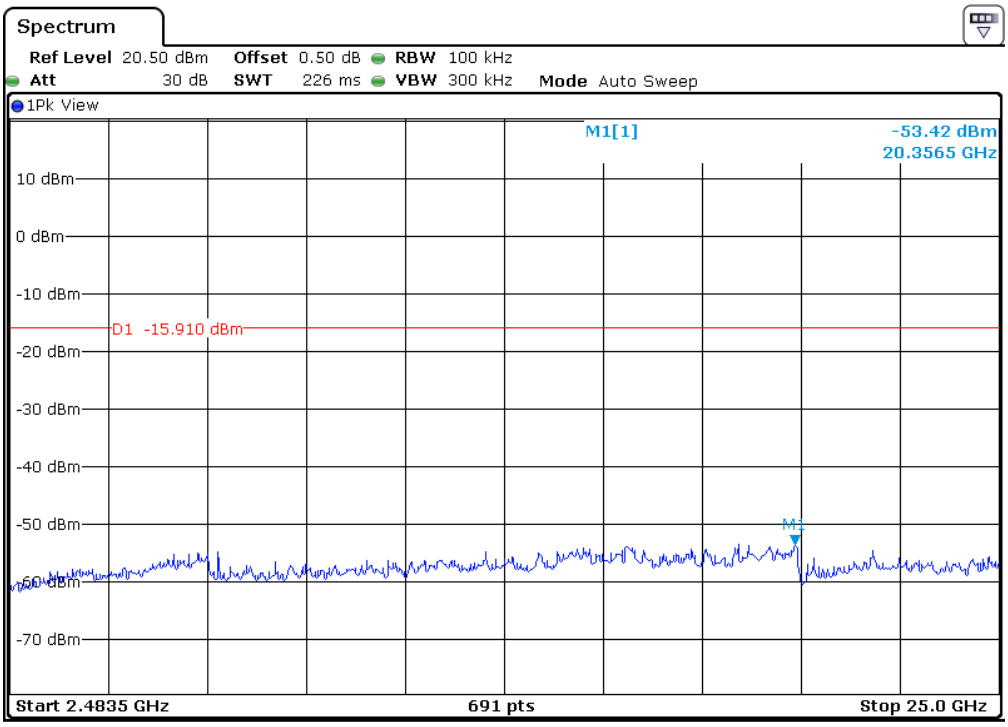


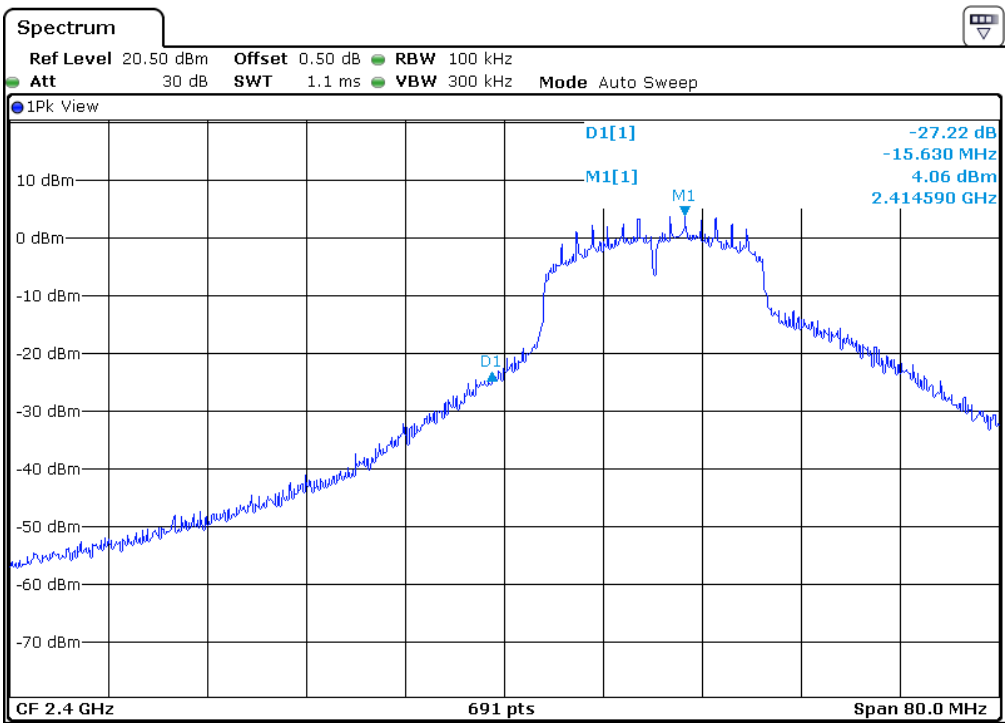



Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 1.1 ms VBW 300 kHz Mode Auto Sweep
1Pk View
D1[1] -42.49 dB
23.150 MHz
M1[1] 3.28 dBm
2.460810 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
D1
CF 2.4835 GHz
691 pts
Span 80.0 MHz

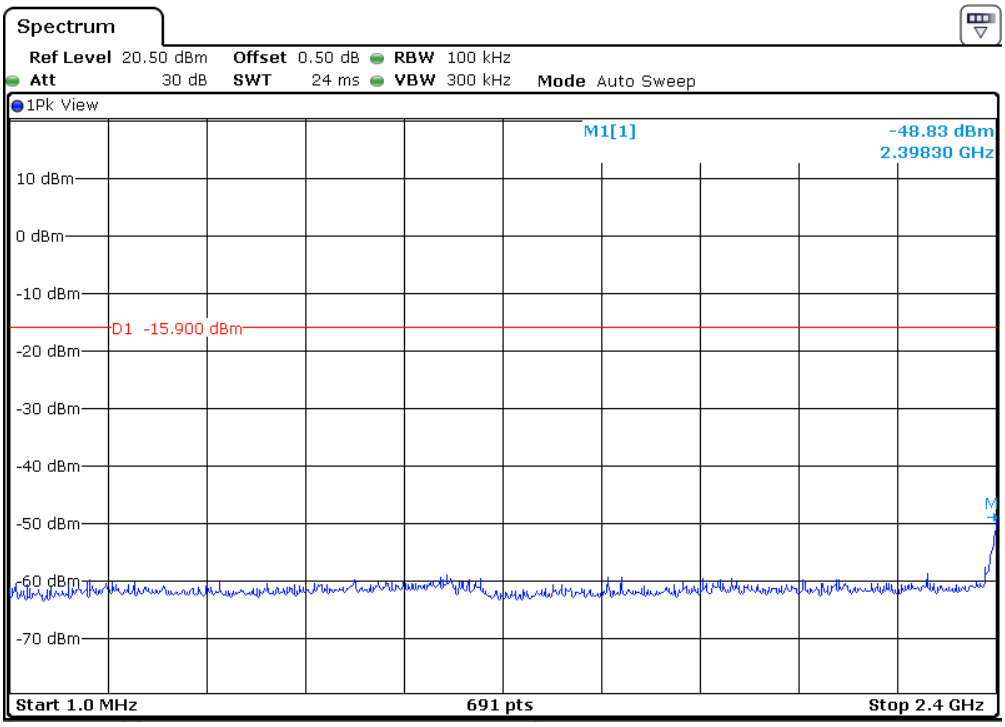
802.11 n-HT20
Channel 01 (2412MHz) Reference Level: 4.09dBm

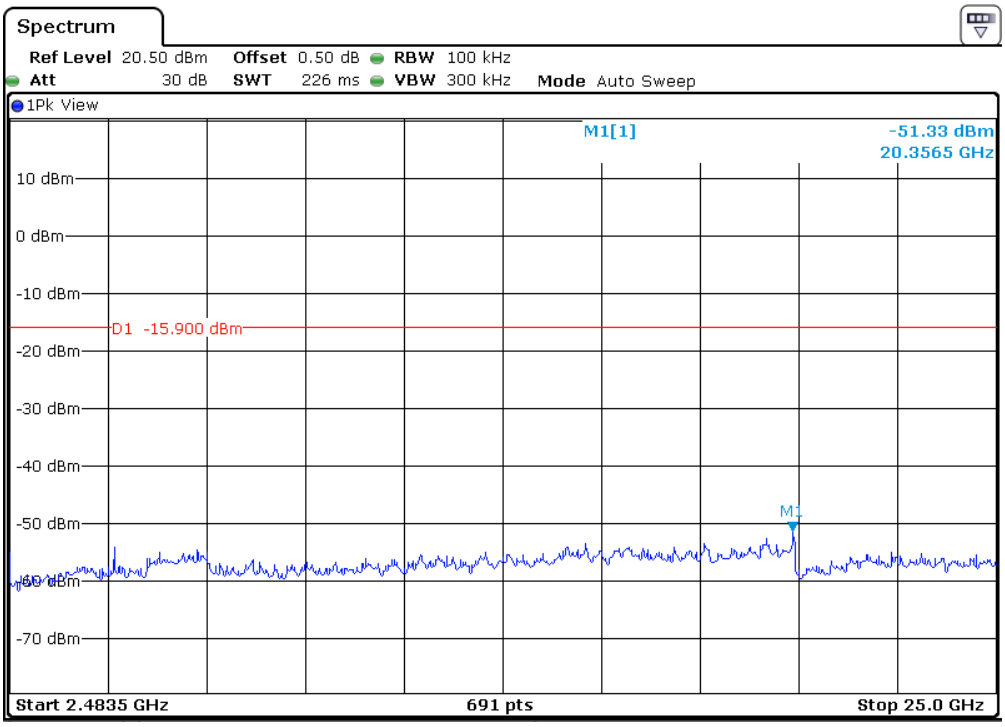




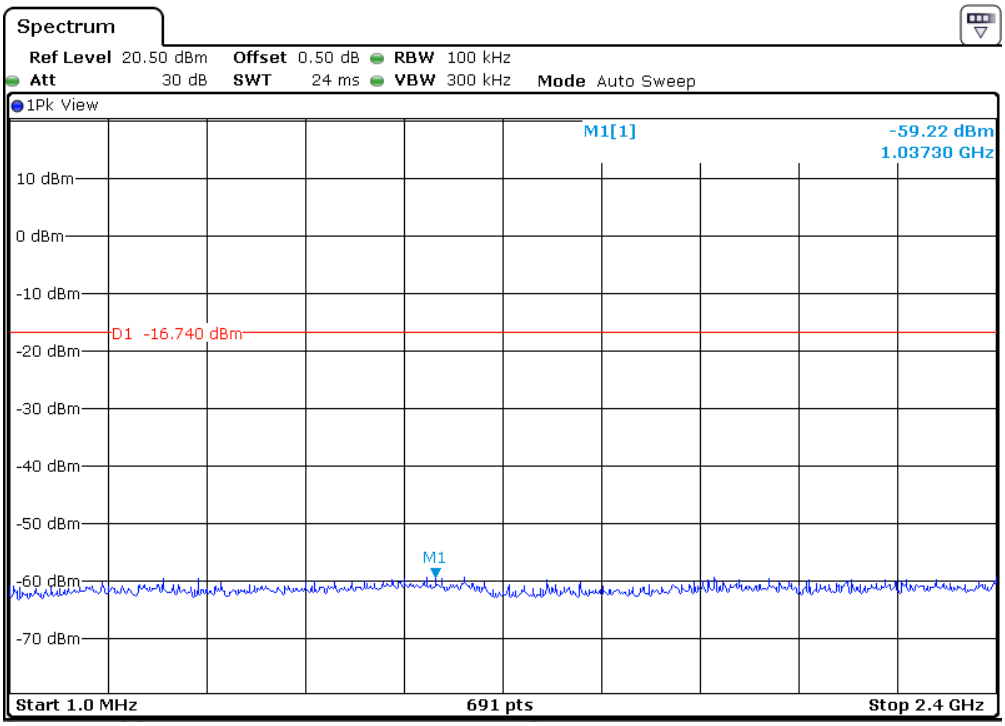

Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 1.1 ms VBW 300 kHz Mode Auto Sweep
1Pk View
D1[1] -27.22 dB
-15.630 MHz
M1[1] 4.06 dBm
2.414590 GHz
M1
D1
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.4 GHz
691 pts
Span 80.0 MHz

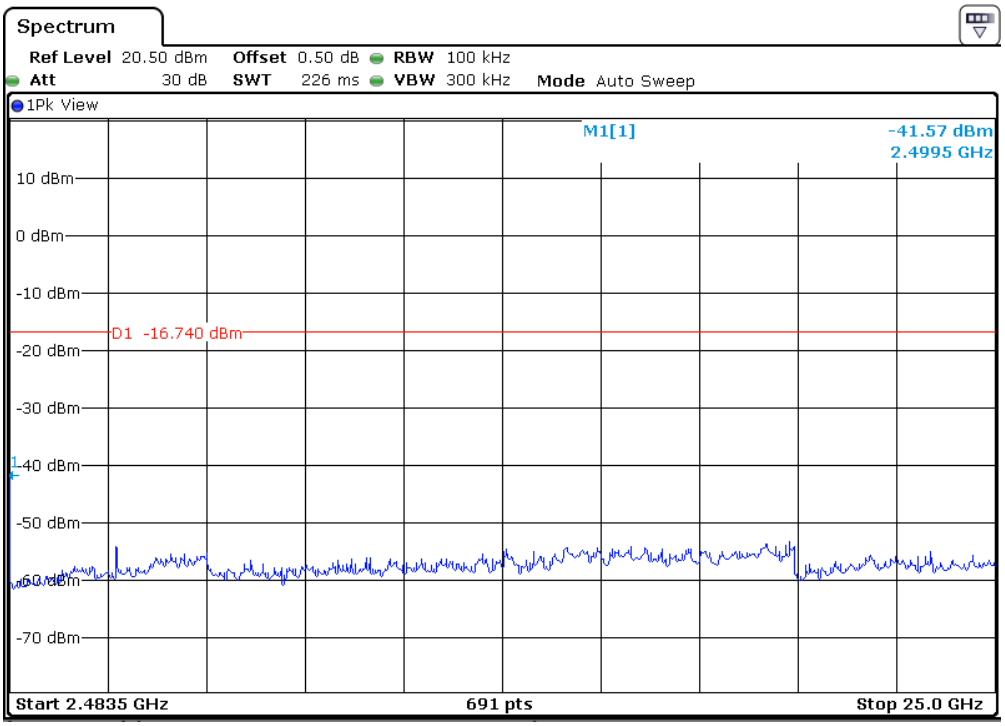
Channel 06 (2437MHz) Reference Level: 4.10dBm

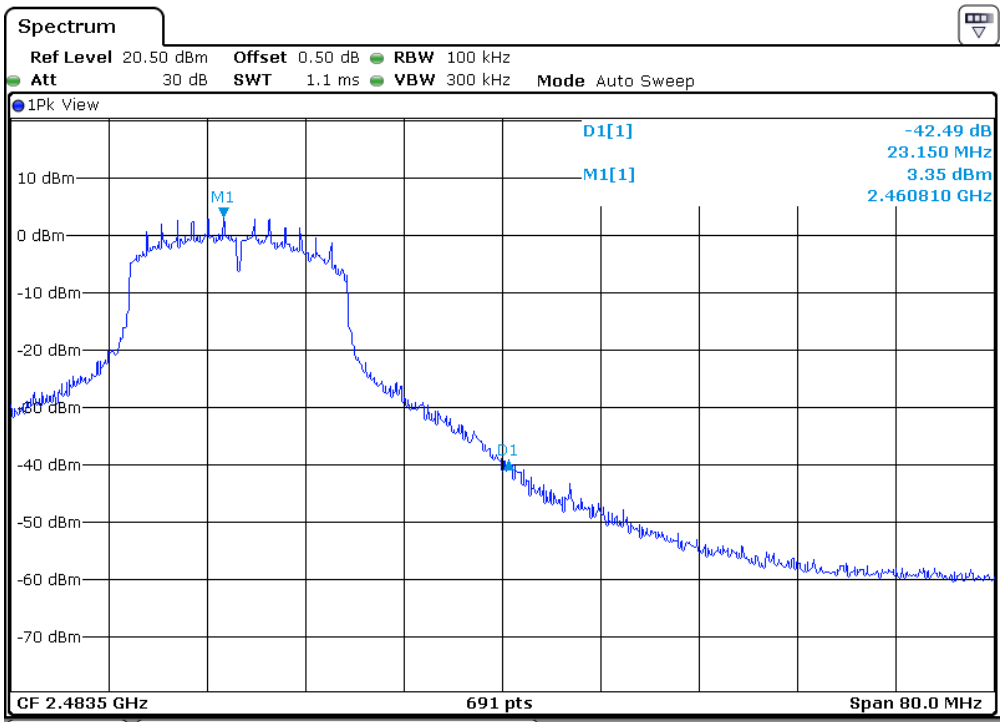




Channel 11 (2462MHz) Reference Level: 3.26dBm






Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 1.1 ms VBW 300 kHz Mode Auto Sweep
1Pk View
D1[1] -42.49 dB
23.150 MHz
M1[1] 3.35 dBm
2.460810 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
D1
CF 2.4835 GHz
691 pts
Span 80.0 MHz

Applicant: Qbic technology Co., Ltd
Date of Test: May 10, 2016
Model: BXP-301

4.5 Out of Band Radiated Emissions (for emissions in 4.4 above that are less than 20dB below carrier), FCC Rule 15.247(d):

For out of band emissions that are close to or that exceed the 20dB attenuation requirement described in the specification, radiated measurements were performed at a 3m separation distance to determine whether these emissions complied with the general radiated emission requirement.

[×] Not required, since all emissions are more than 20dB below fundamental.
[ ] See attached data sheet.

Applicant: Qbic technology Co., Ltd
Date of Test: May 10, 2016
Model: BXP-301

4.6 Transmitter Radiated Emissions in Restricted Bands, FCC Rule 15.35(b), (c):

Data is included of the worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included. All measurements were performed with peak detection unless otherwise specified.

The data on the following pages list the significant emission frequencies, the limit and the margin of compliance.

Applicant: Qbic technology Co., Ltd
Date of Test: May 10, 2016
Model: BXP-301

4.7 Field Strength Calculation

The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

FS = RA + AF + CF - AG + PD

Where FS = Field Strength in dBμV/m
RA = Receiver Amplitude (including preamplifier) in dBμV
CF = Cable Attenuation Factor in dB
AF = Antenna Factor in dB
AG = Amplifier Gain in dB
PD = Pulse Desensitization in dB

In the radiated emission table which follows, the reading shown on the data table may reflect the preamplifier gain. An example of the calculations, where the reading does not reflect the preamplifier gain, follows:

FS = RA + AF + CF - AG + PD

Example

Assume a receiver reading of 62.0 dBμV is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted. The pulse desensitization factor of the spectrum analyzer was 0 dB. The net field strength for comparison to the appropriate emission limit is 42 dBμV/m. This value in dBμV/m was converted to its corresponding level in μV/m.

RA = 62.0 dBμV
AF = 7.4 dB
CF = 1.6 dB
AG = 29.0 dB
PD = 0 dB
FS = 62 + 7.4 + 1.6 - 29 + 0 = 42 dBμV/m

Level in mV/m = Common Antilogarithm [(42 dBμV/m)/20] = 125.9 μV/m

Applicant: Qbic technology Co., Ltd
Date of Test: May 10, 2016
Model: BXP-301

4.8 Radiated Spurious Emission

Worst Case Radiated Spurious Emission at (802. 11-HT20) 750.225MHz is passed by 5.1 dB margin.

For the electronic filing, the worst case radiated emission configuration photographs are saved with filename: radiated photos.pdf.

Applicant: Qbic technology Co., Ltd
Date of Test: May 10, 2016
Model: BXP-301
Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 01)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	296.760	42.7	20.0	16.4	39.1	46.0	-6.9
Horizontal	750.225	34.2	20.0	26.7	40.9	46.0	-5.1
Horizontal	875.355	31.7	20.0	27.6	39.3	46.0	-6.7
Vertical	288.505	41.2	20.0	16.2	37.4	46.0	-8.6
Vertical	625.080	35.0	20.0	25.7	40.7	46.0	-5.3
Vertical	742.465	32.7	20.0	26.6	39.3	46.0	-6.7

NOTES: 1. Quasi-Peak detector is used except for others stated.

2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. All emissions are below the QP limit.

Applicant: Qbic technology Co., Ltd
Date of Test: May 10, 2016
Model: BXP-301
Worst Case Operating Mode: 802.11b (TX-Channel 01)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4824.000	57.1	36.1	34.2	55.2	74.0	-18.8
Horizontal	*2389.137	52.1	20.0	28.2	60.3	74.0	-13.7

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4824.000	47.7	36.1	34.2	45.8	54.0	-8.2
Horizontal	*2389.137	39.0	20.0	28.2	47.2	54.0	-6.8

NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Qbic technology Co., Ltd
Date of Test: May 10, 2016
Model: BXP-301
Worst Case Operating Mode: 802.11b (TX-Channel 06)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	56.1	36.1	34.6	54.6	74.0	-19.4
Horizontal	*7311.000	55.4	35.6	37.1	56.9	74.0	-17.1

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	47.0	36.1	34.6	45.5	54.0	-8.5
Horizontal	*7311.000	43.4	35.6	37.1	44.9	54.0	-9.1

NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Qbic technology Co., Ltd
Date of Test: May 10, 2016
Model: BXP-301
Worst Case Operating Mode: 802.11b (TX-Channel 11)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	59.5	36.1	34.6	58.0	74.0	-16.0
Horizontal	*7386.000	54.0	35.6	37.2	55.6	74.0	-18.4
Horizontal	*2483.841	51.3	20.0	28.0	59.3	74.0	-14.7

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	48.2	36.1	34.6	46.7	54.0	-7.3
Horizontal	*7386.000	41.9	35.6	37.2	43.5	54.0	-10.5
Horizontal	*2483.841	39.2	20.0	28.0	47.2	54.0	-6.8

NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Qbic technology Co., Ltd
Date of Test: May 10, 2016
Model: BXP-301
Worst Case Operating Mode: 802.11g (TX-Channel 01)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4824.000	58.2	36.1	34.2	56.3	74.0	-17.7
Horizontal	*2389.479	50.5	20.0	28.2	58.7	74.0	-15.3

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4824.000	47.7	36.1	34.2	45.8	54.0	-8.2
Horizontal	*2389.479	34.4	20.0	28.2	42.6	54.0	-11.4

NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Qbic technology Co., Ltd
Date of Test: May 10, 2016
Model: BXP-301
Worst Case Operating Mode: 802.11g (TX-Channel 06)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	56.8	36.1	34.6	55.3	74.0	-18.7
Horizontal	*7311.000	52.5	35.6	37.1	54.0	74.0	-20.0

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	42.1	36.1	34.6	40.6	54.0	-13.4
Horizontal	*7311.000	42.1	35.6	37.1	43.6	54.0	-10.4

NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Qbic technology Co., Ltd
Date of Test: May 10, 2016
Model: BXP-301
Worst Case Operating Mode: 802.11g (TX-Channel 11)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	59.3	36.1	34.6	57.8	74.0	-16.2
Horizontal	*7386.000	54.4	35.6	37.2	56.0	74.0	-18.0
Horizontal	*2484.552	44.9	20.0	28.0	52.9	74.0	-21.1

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	42.0	36.1	34.6	40.5	54.0	-13.5
Horizontal	*7386.000	41.0	35.6	37.2	42.6	54.0	-11.4
Horizontal	*2484.552	36.9	20.0	28.0	44.9	54.0	-9.1

NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Qbic technology Co., Ltd
Date of Test: May 10, 2016
Model: BXP-301
Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 01)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4824.000	55.5	36.1	34.2	53.6	74.0	-20.4
Horizontal	*2388.590	46.7	20.0	28.2	54.9	74.0	-19.1

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4824.000	41.5	36.1	34.2	39.6	54.0	-14.4
Horizontal	*2388.590	34.3	20.0	28.2	42.5	54.0	-11.5

NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Qbic technology Co., Ltd
Date of Test: May 10, 2016
Model: BXP-301
Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 06)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	57.7	36.1	34.2	55.8	74.0	-18.2
Horizontal	*7311.000	54.9	35.6	37.1	56.4	74.0	-17.6

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	41.8	36.1	34.2	39.9	54.0	-14.1
Horizontal	*7311.000	40.6	35.6	37.1	42.1	54.0	-11.9

NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Qbic technology Co., Ltd
Date of Test: May 10, 2016
Model: BXP-301
Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 11)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	55.8	36.1	34.6	54.3	74.0	-19.7
Horizontal	*7386.000	54.6	35.6	37.2	56.2	74.0	-17.8
Horizontal	*2485.378	50.4	20.0	28.0	58.4	74.0	-15.6

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	40.1	36.1	34.6	38.6	54.0	-15.4
Horizontal	*7386.000	38.7	35.6	37.2	40.3	54.0	-13.7
Horizontal	*2485.378	20.6	20.0	28.0	28.6	54.0	-25.4

NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

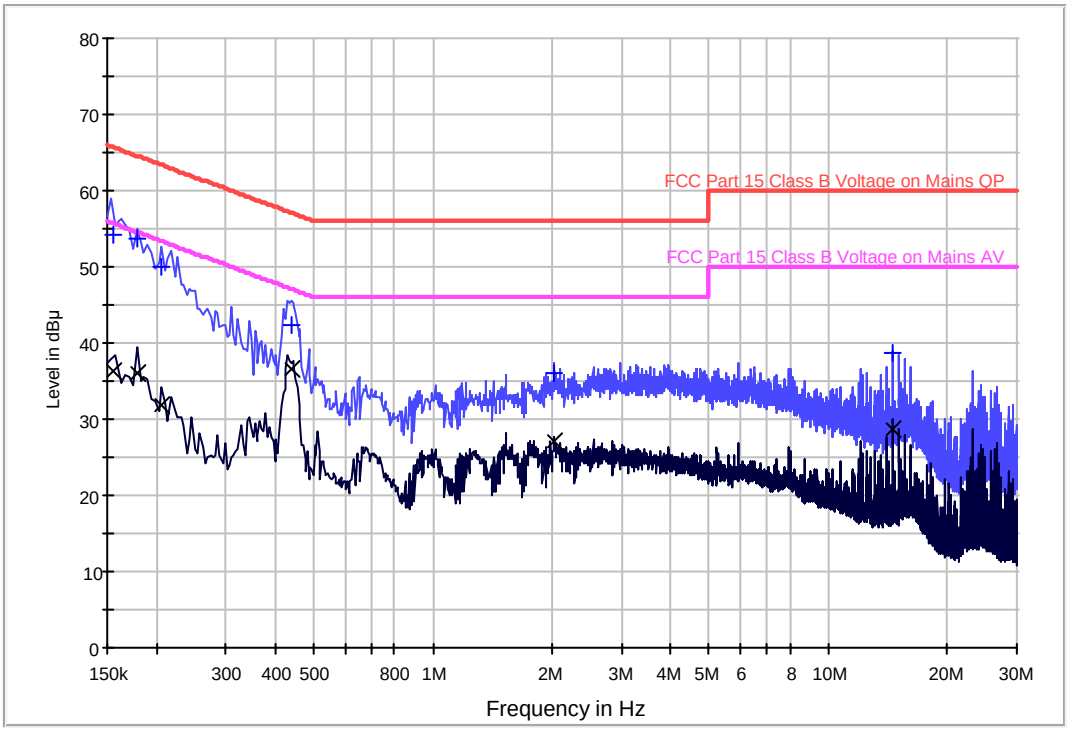
* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

4.9 Conducted Emission

Worst Case Conducted emission at 0.438MHz is Passed by 10.4 dB margin

For electronic filing, the worst case conducted emission configuration photograph is saved with filename: conducted photos.pdf.

Applicant: Qbic technology Co., Ltd
Date of Test: May 10, 2016
Model: BXP-301
Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 01)
Line: Live
Conducted Emission Test - FCC



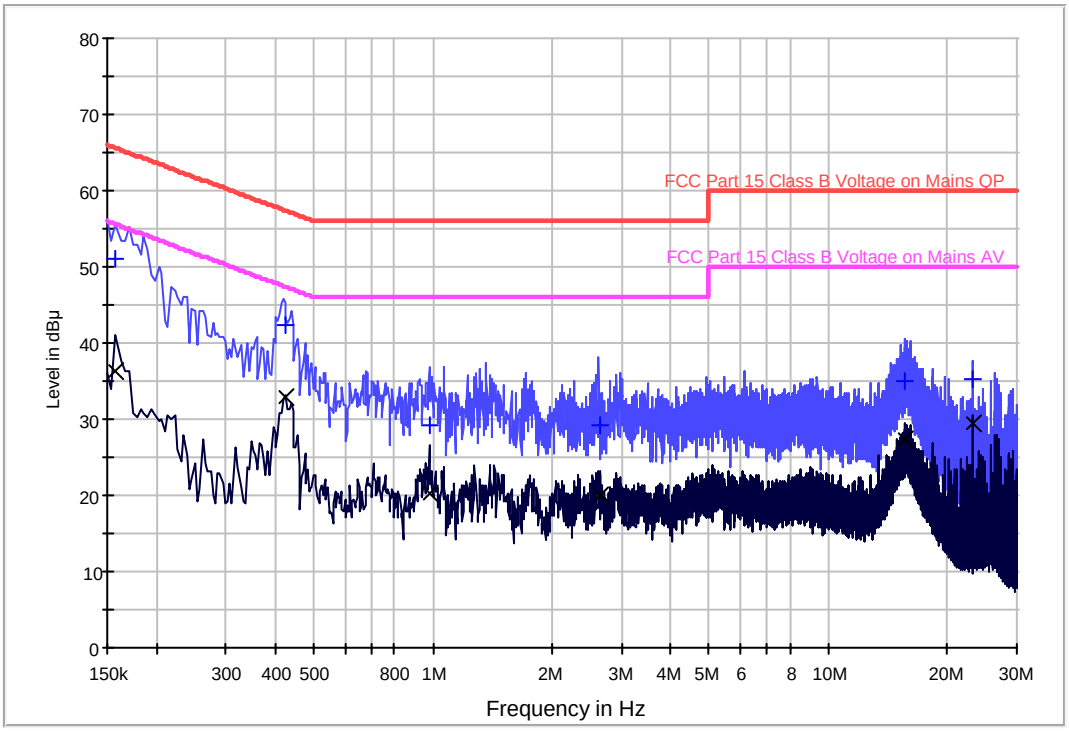
Limit and Margin QP

Frequency (MHz)	QuasiPeak (dBµV)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.156000	54.2	L1	9.8	11.5	65.7
0.178000	53.6	L1	9.8	11.0	64.6
0.206000	50.1	L1	9.8	13.3	63.4
0.438000	42.5	L1	9.9	14.6	57.1
2.030000	36.1	L1	9.9	19.9	56.0
14.626000	38.7	L1	9.9	21.3	60.0

Limit and Margin AV

Frequency (MHz)	Average (dBµV)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.156000	36.4	L1	9.8	19.3	55.7
0.178000	36.1	L1	9.8	18.5	54.6
0.206000	31.8	L1	9.8	21.6	53.4
0.438000	36.7	L1	9.9	10.4	47.1
2.030000	27.1	L1	9.9	18.9	46.0
14.626000	28.6	L1	9.9	21.4	50.0

Applicant: Qbic technology Co., Ltd
Date of Test: May 10, 2016
Model: BXP-301
Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 01)
Line: Neutral
Conducted Emission Test - FCC



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.158000	51.0	N	9.6	14.6	65.6
0.426000	42.4	N	9.6	14.9	57.3
0.978000	29.3	N	9.6	26.7	56.0
2.646000	29.2	N	9.6	26.8	56.0
15.618000	34.9	N	10.0	25.1	60.0
23.130000	35.2	N	10.6	24.8	60.0

Limit and Margin AV

Frequency (MHz)	Average (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.158000	36.3	N	9.6	19.3	55.6
0.426000	33.0	N	9.6	14.3	47.3
0.978000	20.3	N	9.6	25.7	46.0
2.646000	20.1	N	9.6	25.9	46.0
15.618000	27.4	N	10.0	22.6	50.0
23.130000	29.6	N	10.6	20.4	50.0

Applicant: Qbic technology Co., Ltd
Date of Test: May 10, 2016
Model: BXP-301

4.10 Radiated Emissions from Digital Section of Transceiver, FCC Ref: 15.109

[ ] Not required - No digital part

[ ] Test results are attached

[x] Included in the separated report.

Applicant: Qbic technology Co., Ltd
Date of Test: May 10, 2016
Model: BXP-301

4.11 Transmitter Duty Cycle Calculation and Measurements, FCC Rule 15.35(b), (c)

The EUT antenna output port was connected to the input of the spectrum analyzer. The analyzer center frequency was set to EUT RF channel carrier. The SWEP function on the analyzer was set to ZERO SPAN. The Transmitter ON time was determined from the resultant time-amplitude display:

	See attached spectrum analyzer chart (s) for Transmitter timing
	See Transmitter timing diagram provided by manufacturer
x	Not applicable, duty cycle was not used.

EXHIBIT 5

EQUIPMENT PHOTOGRAPHS

5.0 Equipment Photographs

For electronic filing, the photographs are saved with filename: external photos.pdf & internal photos.pdf.

EXHIBIT 6

PRODUCT LABELLING

6.0 **Product Labeling**

For electronic filing, the FCC ID label artwork and location is saved with filename: label.pdf.

EXHIBIT 7

TECHNICAL SPECIFICATIONS

7.0 Technical Specifications

For electronic filing, the block diagram and circuit diagram are saved with filename: block.pdf and circuit.pdf respectively.

EXHIBIT 8

INSTRUCTION MANUAL

8.0 **Instruction Manual**

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf.

This manual will be provided to the end-user with each unit sold/leased in the United States.

EXHIBIT 9

CONFIDENTIALITY REQUEST

9.0 **Confidentiality Request**

For electronic filing, the confidentiality request of the tested EUT is saved with filename: request.pdf.

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EXHIBIT 10

MISCELLANEOUS INFORMATION

10.0 **Discussion of Pulse Desensitization**

The determination of pulse desensitivity was made in accordance with Hewlett Packard Application Note 150-2, *Spectrum Analysis ... Pulsed RF.*

Pulse desensitivity is not applicable for this device since the transmitter transmits the RF signal continuously.

EXHIBIT 11

TEST EQUIPMENT LIST

11.0 Test Equipment List

Equipment No.	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
SZ182-02	RF Power Meter	Anritsu	ML2496A	1302005	20-May-2015	20-May-2016
SZ182-02-01	Power Sensor	Anritsu	MA2411B	1207429	20-May-2015	20-May-2016
SZ061-12	BiConiLog Antenna	ETS	3142E	00166158	15-Sep-2015	15-Sep-2016
SZ185-01	EMI Receiver	R&S	ESCI	100547	23-Jan-2016	23-Jan-2017
SZ061-08	Horn Antenna	ETS	3115	00092346	17-Oct-2015	17-Oct-2016
SZ061-06	Active Loop Antenna	Electro-Metrics	EM-6876	217	6-Apr-2016	6-Oct-2016
SZ056-03	Spectrum Analyzer	R&S	FSP 30	101148	08-Jun-2015	08-Jun-2016
SZ056-06	Signal Analyzer	R&S	FSV 40	101101	08-Jul-2015	08-Jul-2016
SZ181-04	Preamplifier	Agilent	8449B	3008A02474	23-Jan-2016	23-Jan-2017
SZ188-01	Anechoic Chamber	ETS	RFD-F/A-100	4102	16-Apr-2016	16-Apr-2018
SZ062-02	RF Cable	RADIALL	RG 213U	--	28-Dec-2015	28-Jun-2016
SZ062-05	RF Cable	RADIALL	0.04-26.5 GHz	--	6-Apr-2016	6-Oct-2016
SZ062-12	RF Cable	RADIALL	0.04-26.5 GHz	--	6-Apr-2016	6-Oct-2016
SZ067-04	Notch Filter	Micro-Tronics	BRM50702-02	--	20-May-2015	20-May-2016
SZ185-02	EMI Test Receiver	R&S	ESCI	100692	03-Nov-2015	03-Nov-2016
SZ187-01	Two-Line V-Network	R&S	ENV216	100072	03-Nov-2015	03-Nov-2016
SZ187-02	Two-Line V-Network	R&S	ENV216	100073	24-Jun-2015	24-Jun-2016
SZ188-03	Shielding Room	ETS	RFD-100	4100	23-Aug-2014	23-Aug-2016