

2GIG Technologies, Inc

Application
For
Certification

FCC ID: WDQ-SP2GC3

Wireless Touch Screen

Model: 2GIG-SP2-GC3
Brand name: 2GIG

2.4GHz WiFi Transceiver

Report No.: 170515051GZU-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 [10-1-15]

Prepared and Checked by:

Approved by:

Sign on file

Sunny Zhou
Project Engineer

Kidd Yang
Senior Project Engineer
Date: May 17, 2017

- The test results reported in this test report shall refer only to the sample actually tested and shall not refer or be deemed to refer to bulk from which such a sample may be said to have been obtained.
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TRF no.: FCC 15C_Tx_c

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MEASUREMENT/TECHNICAL REPORT

Wireless Touch Screen

Model: 2GIG-SP2-GC3

Brand name: 2GIG

FCC ID: WDQ-SP2GC3

This report concerns (check one) Original Grant Class II 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

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

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

Report prepared by:

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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
Cover Letter	Letter of Agency	agency.pdf

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EXHIBIT 1

SUMMARY OF TEST RESULTS

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1.0 Summary of Test results

Wireless Touch Screen

Model: 2GIG-SP2-GC3

Brand name: 2GIG

FCC ID: WDQ-SP2GC3

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 an Integral Antenna which in accordance to Section 15.203 is considered sufficient to comply with the provisions of this section.

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EXHIBIT 2

GENERAL DESCRIPTION

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2.0 General Description

2.1 Product Description

The Equipment Under Test (EUT) is a Wireless Touch Screen with WiFi function operating at 2412-2462MHz for 802.11b/g/n-HT20, 11 channels with 5MHz channel spacing and 2422-2452MHz for 802.11n-HT40, 9 channels with 5MHz channel spacing. The EUT was powered by the fully-charged DC 3.7V, 2000mAh new rechargeable battery which was charged by AC/DC Adapter (Input: 100-240Vac, 50/60Hz, Output: 5Vdc, 1000mA). For more detailed features description, please refer to the user's manual.

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

Antenna Type: Integral Antenna.

For electronic filing, the brief circuit description is saved with filename: descri.pdf.

2.2 Related Submittal(s) Grants

This is an application for certification of:

DTS- Part 15 Digital Transmission Systems (WiFi transmitter portion). Other digital functions were reported in the verification report: 170515055GZU-001

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2.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.10: 2013 and KDB 558074 D01 v04. 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. Guangzhou Branch** and located at Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD Guangzhou, China. This test facility and site measurement data have been fully placed on file with the FCC (Registration Number: 549654).

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EXHIBIT 3

SYSTEM TEST CONFIGURATION

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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 the fully-charged DC 3.7V, 2000mAh new rechargeable battery which was charged by adapter with AC 120V/60Hz during the test. Only the worst case data was reported.

On 802.11b, g, n (20MHz and 40MHz) mode, only one antenna is used, and all data rate were tested and only the worst case data is shown in the report.

For maximizing emissions, the EUT was rotated through 360°, the EUT was placed on the styrene turntable with 0.8m up to 1GHz and 1.5 m above 1GHz. 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 was 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.

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3.3 Special Accessories

N/A.

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 2GIG Technologies, Inc will be incorporated in each production model sold / leased in the United States.

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

3.6 Support Equipment List and Description

This product was tested in the following configuration:

Refer List:

Description	Manufacturer	Model No.
AC/DC adaptor	SURE-POWER	SW-050100A (Input: AC 100-240V, 50/60Hz, 0.2A Max Output: DC 5.0V, 1000mA)

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EXHIBIT 4

MEASUREMENT RESULTS

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Applicant: 2GIG Technologies, Inc

Date of Test: April 12, 2017

Model: 2GIG-SP2-GC3

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 = 0dBi) (CCK, 1Mbps)		
Frequency (MHz)	Output in dBm	Output in mWatt
Low Channel: 2412	15.88	38.73
Middle Channel: 2437	16.40	43.65
High Channel: 2462	16.60	45.71

IEEE 802.11g (Antenna Gain = 0dBi) (16QAM, 6Mbps)		
Frequency (MHz)	Output in dBm	Output in mWatt
Low Channel: 2412	16.57	45.39
Middle Channel: 2437	16.81	47.97
High Channel: 2462	16.90	48.98

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IEEE 802.11n-HT20 (Antenna Gain = 0dBi) (16QAM, 6.5Mbps)		
Frequency (MHz)	Output in dBm	Output in mWatt
Low Channel: 2412	16.33	42.95
Middle Channel: 2437	16.68	46.56
High Channel: 2462	16.93	49.32

IEEE 802.11n-HT40 (Antenna Gain = 0dBi) (64QAM, 13.5Mbps)		
Frequency (MHz)	Output in dBm	Output in mWatt
Low Channel: 2422	16.32	42.85
Middle Channel: 2437	16.69	46.67
High Channel: 2452	16.83	48.19

Cable loss: 1.0 dB External Attenuation: 0 dB

Cable loss, external attenuation has been included in OFFSET function

EUT max. output level = 16.93dBm

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

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Applicant: 2GIG Technologies, Inc

Date of Test: April 12, 2017

Model: 2GIG-SP2-GC3

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 D01 v04. 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	10.116
2437	10.116
2462	10.203

IEEE 802.11g (16QAM, 6Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2412	16.614
2437	16.614
2462	16.614

IEEE 802.11n-HT20 (16QAM, 6.5Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2412	17.829
2437	17.829
2462	17.829

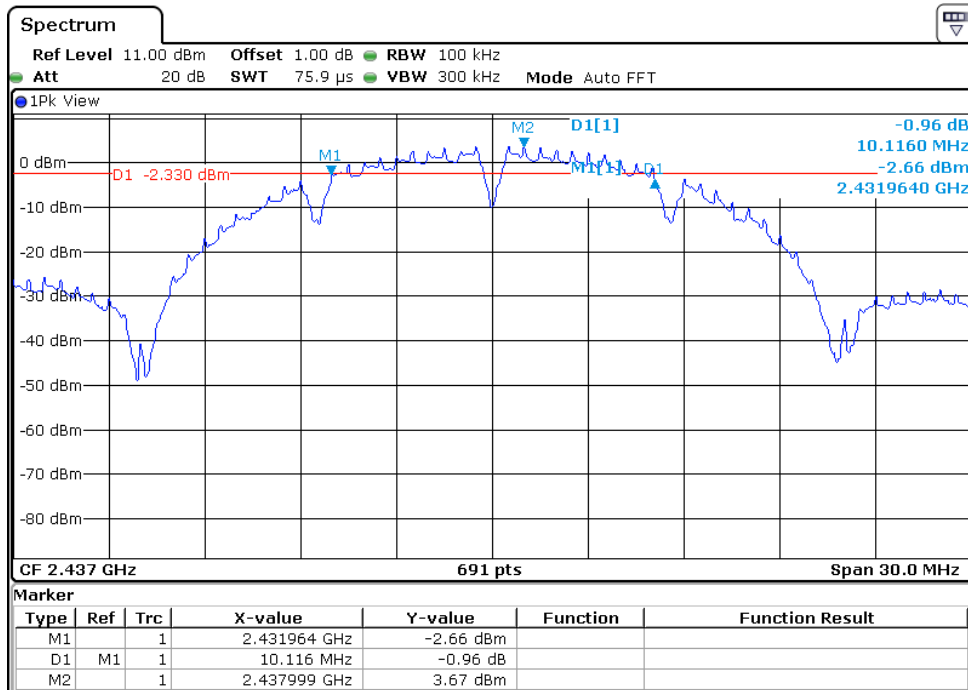
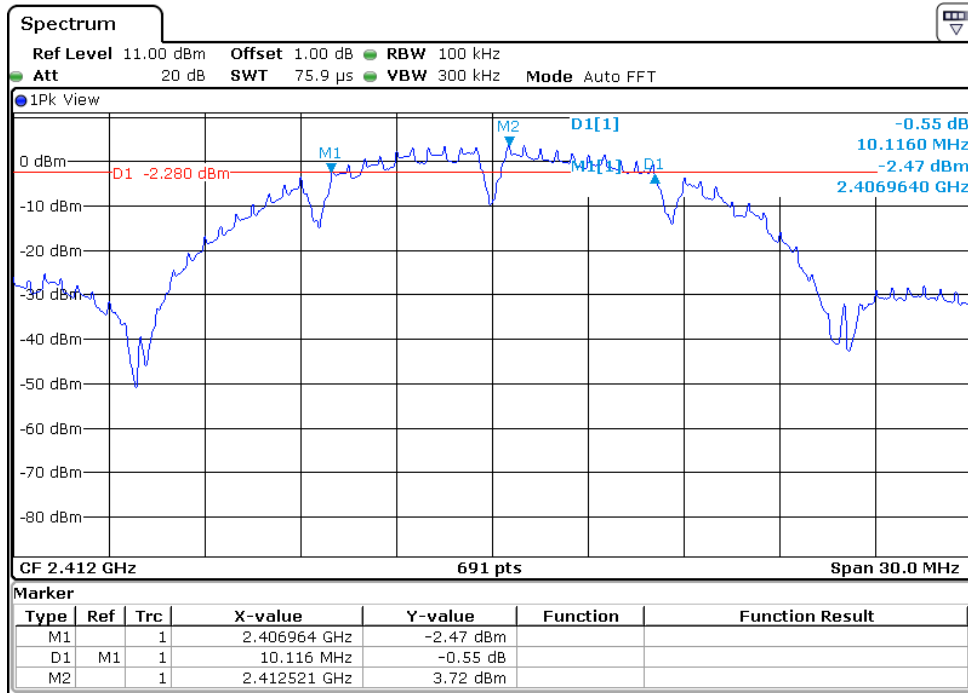
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IEEE 802.11n-HT40 (64QAM, 13.5Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2422	36.462
2437	36.469
2452	36.469

The test plots are attached as below.

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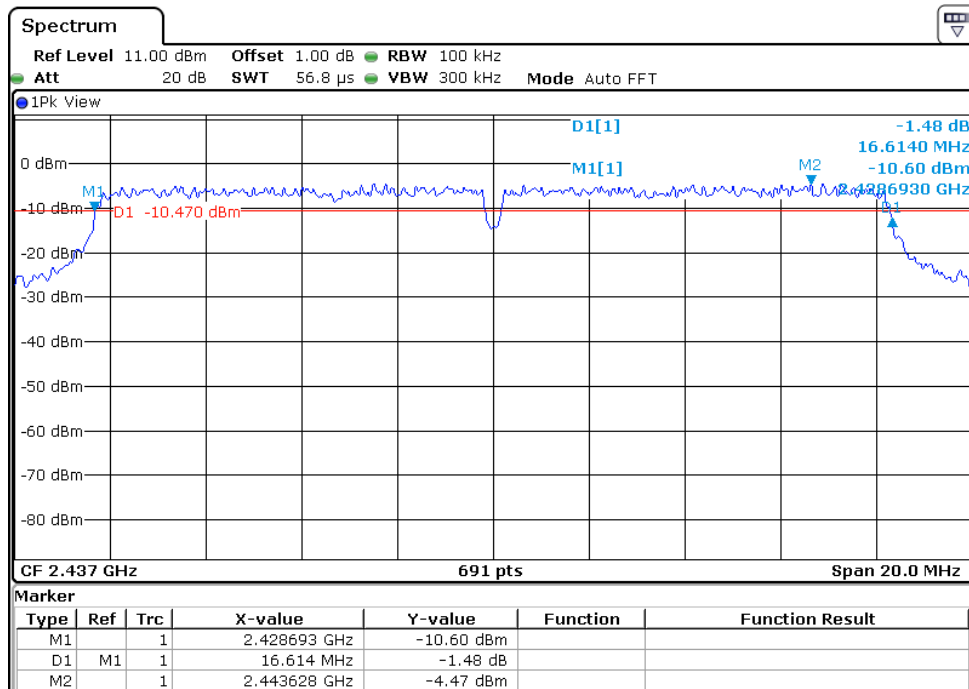
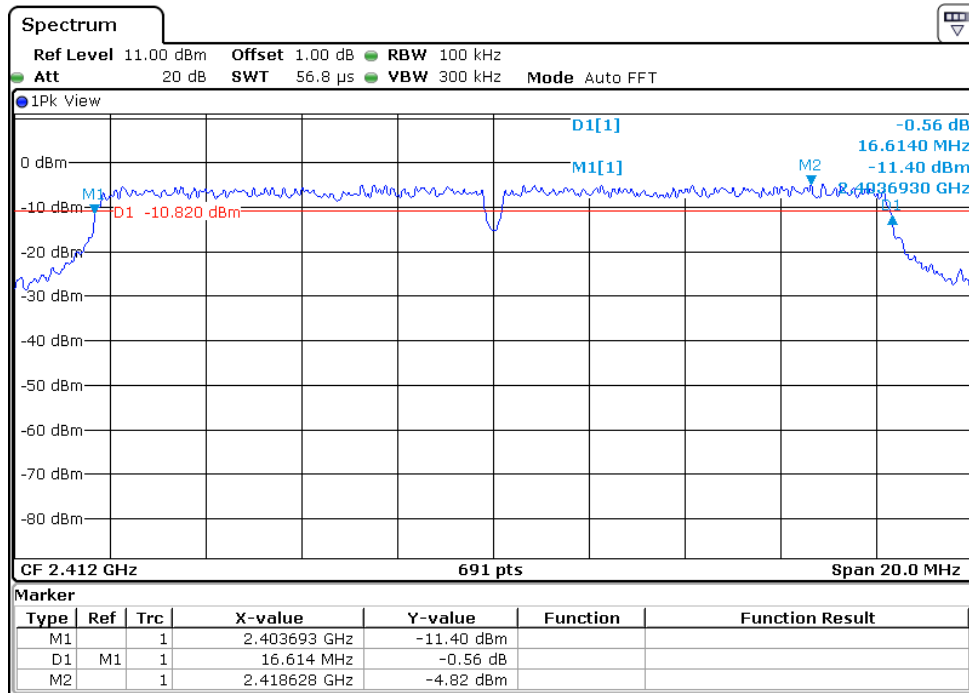
802.11b



TRF no.: FCC 15C_TX_c
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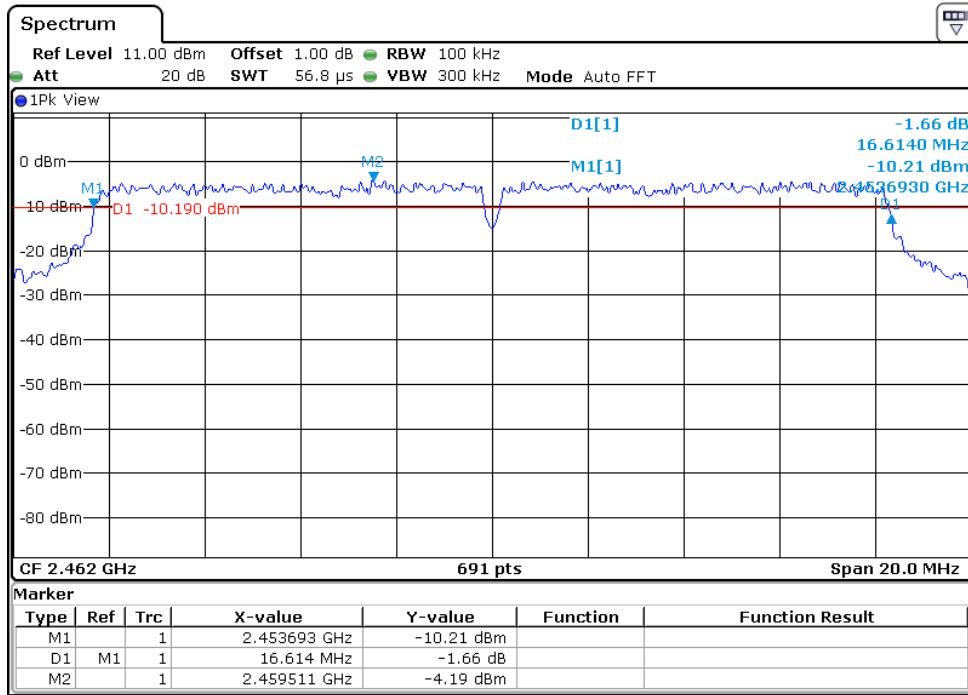
INTERTEK TESTING SERVICES

802.11g



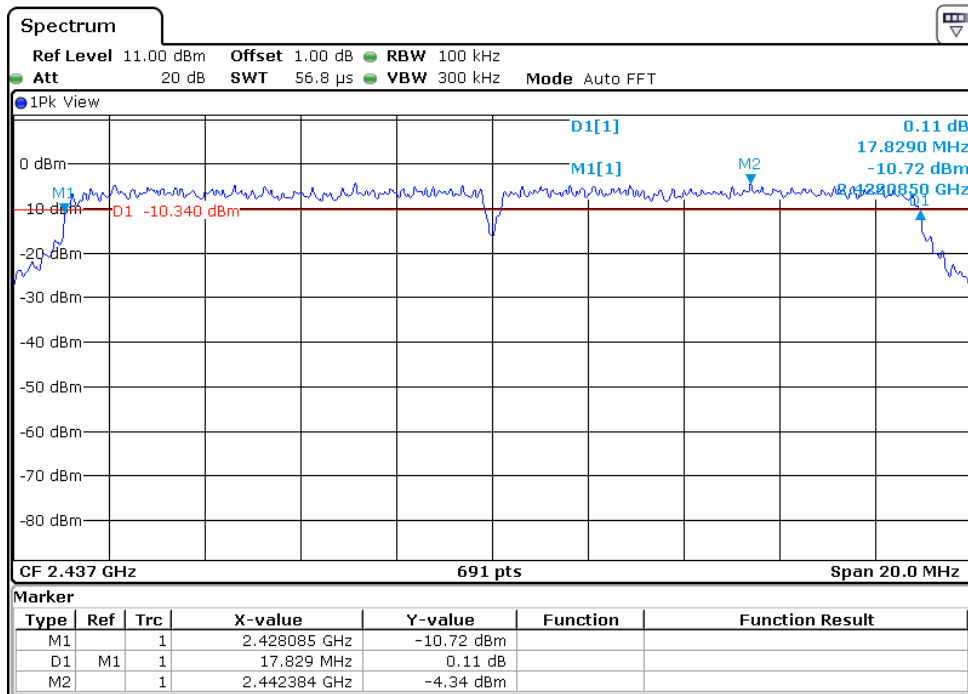
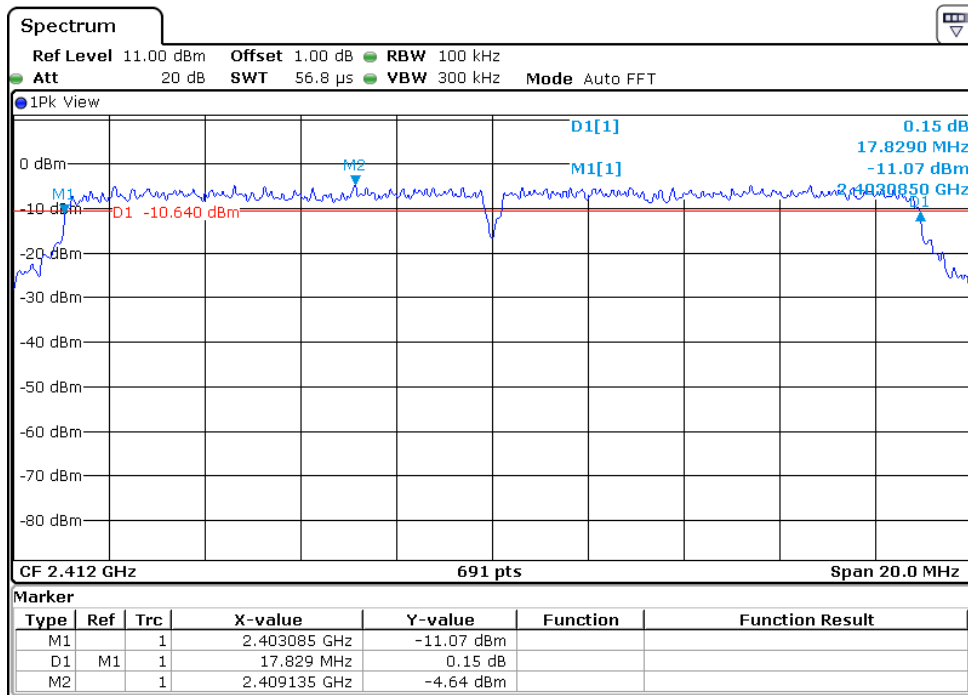
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 FCC ID: WDQ-SP2GC3
 Report No.: 170515051GZU-001

INTERTEK TESTING SERVICES



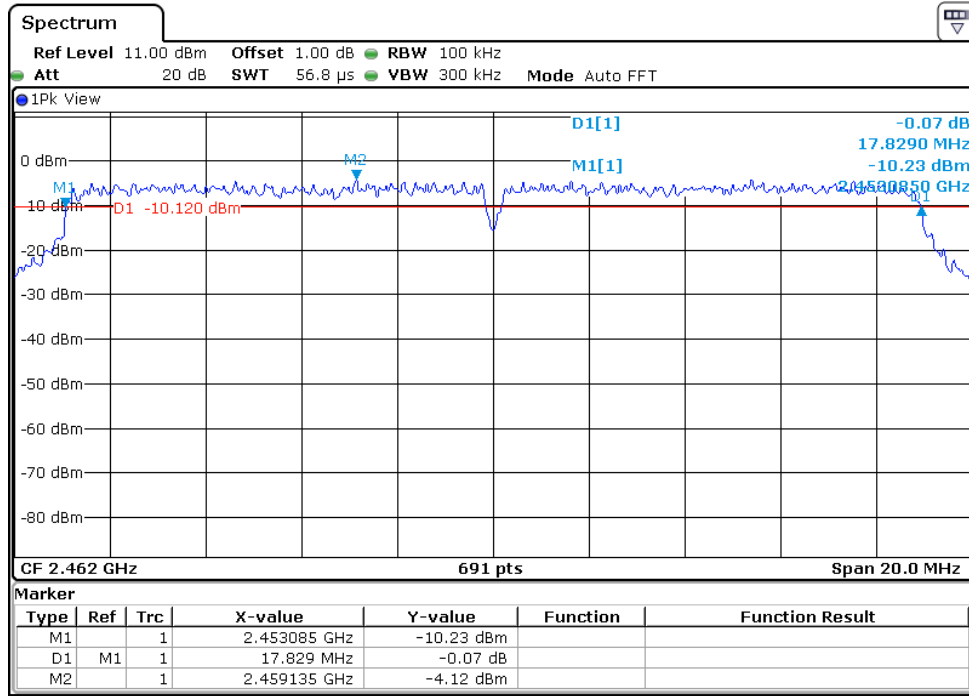
INTERTEK TESTING SERVICES

802.11n-HT20



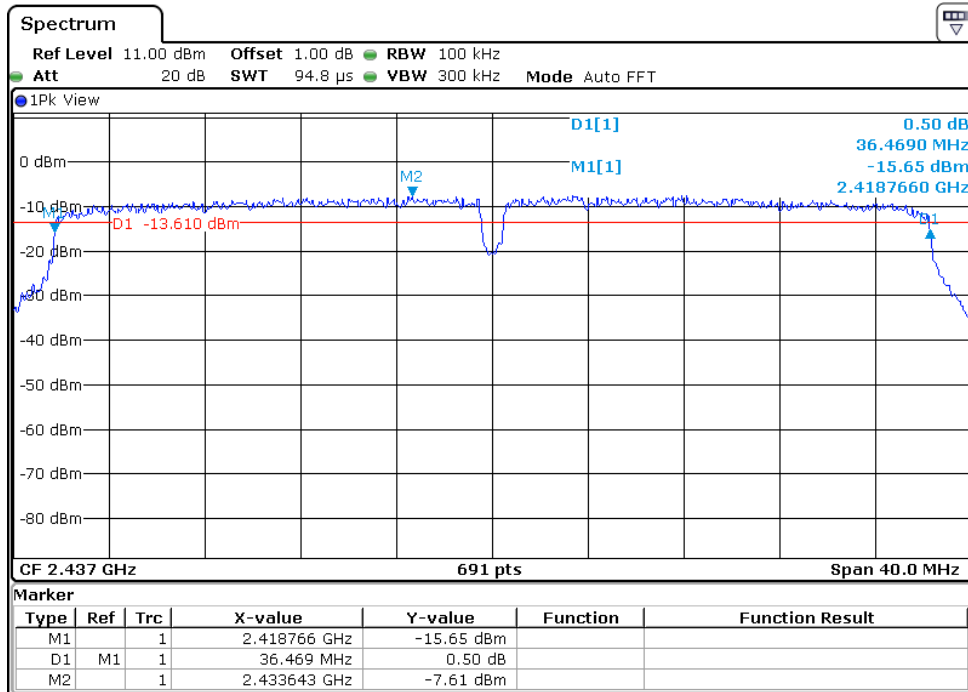
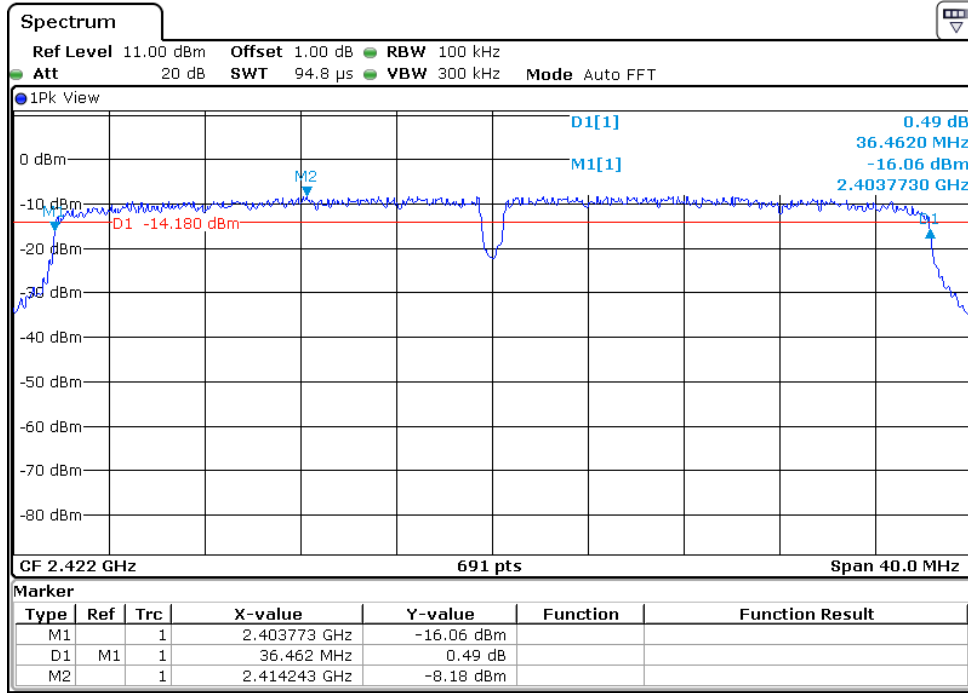
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 Report No.: 170515051GZU-001

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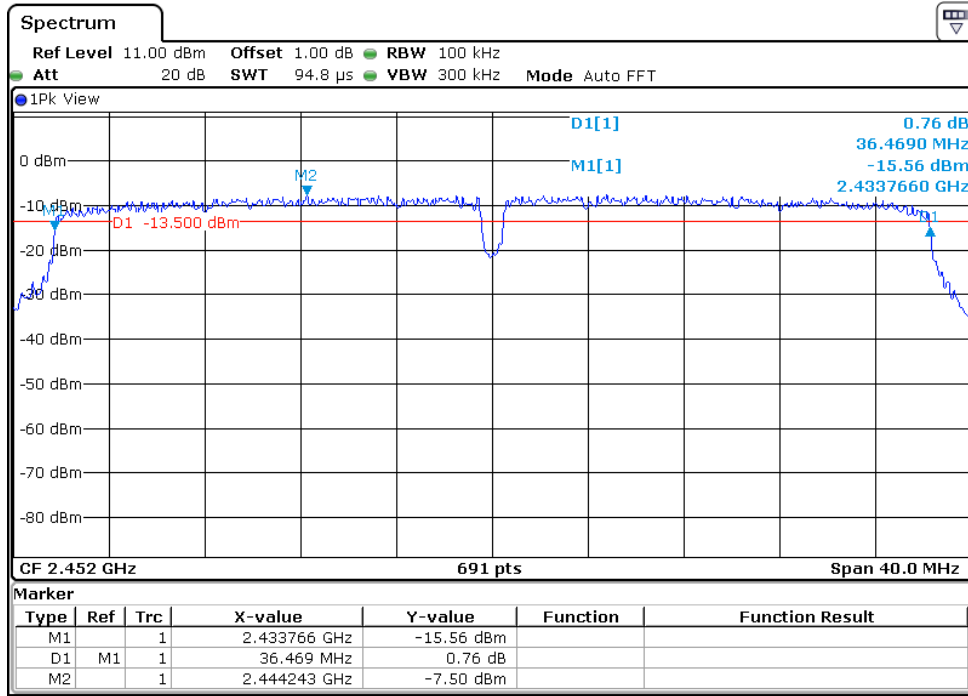
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802.11n-HT40



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 FCC ID: WDQ-SP2GC3
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Applicant: 2GIG Technologies, Inc

Date of Test: April 12, 2017

Model: 2GIG-SP2-GC3

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

The Measurement Procedure PKPSD was set according to the FCC KDB 558074 D01 v04.

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	3.66
2437	3.56
2462	3.68

IEEE 802.11g (16QAM, 6Mbps)	
Frequency (MHz)	Power Density with RBW 100KHz
2412	-4.82
2437	-4.47
2462	-4.29

IEEE 802.11n-HT20 (16QAM, 6.5Mbps)	
Frequency (MHz)	Power Density with RBW 100KHz
2412	-4.73
2437	-4.40
2462	-4.48

IEEE 802.11n-HT40 (64QAM, 13.5Mbps)	
Frequency (MHz)	Power Density with RBW 100KHz
2422	-7.89
2437	-8.01
2452	-7.53

The test plots are attached as below.

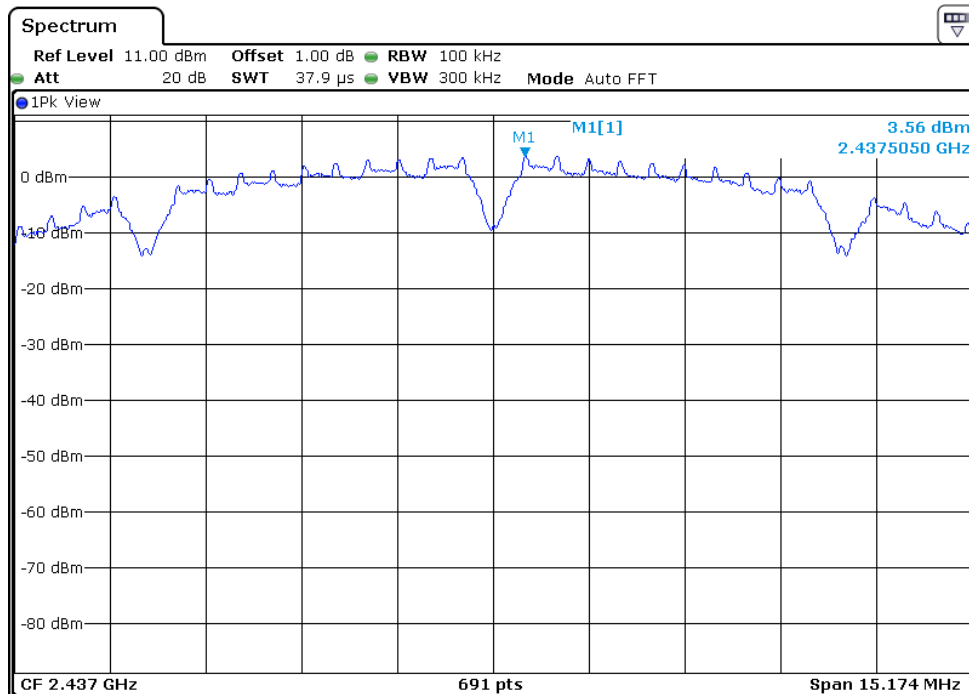
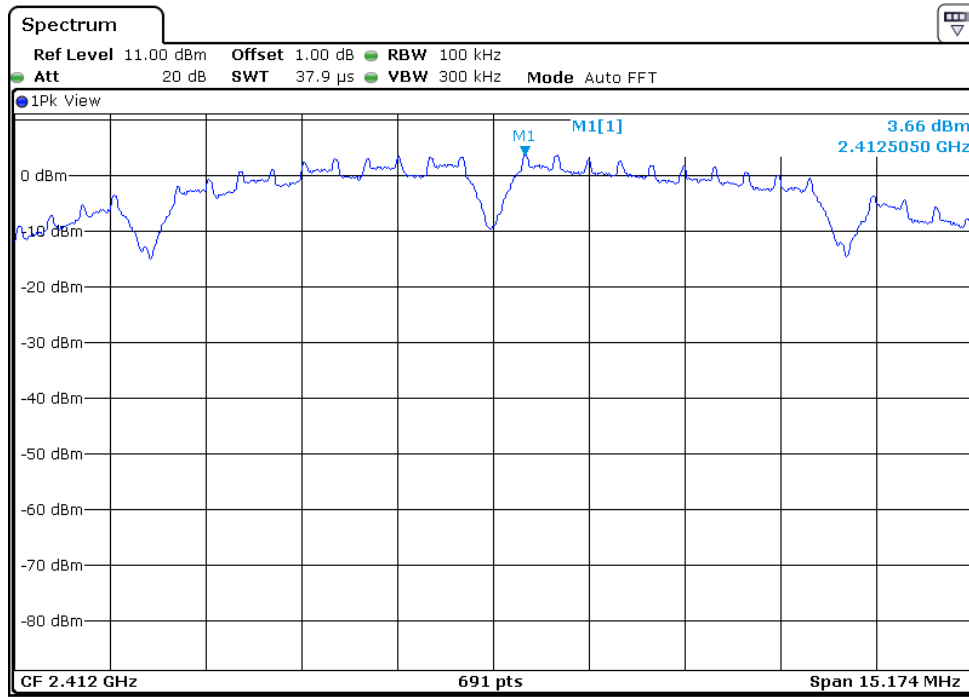
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Report No.: 170515051GZU-001

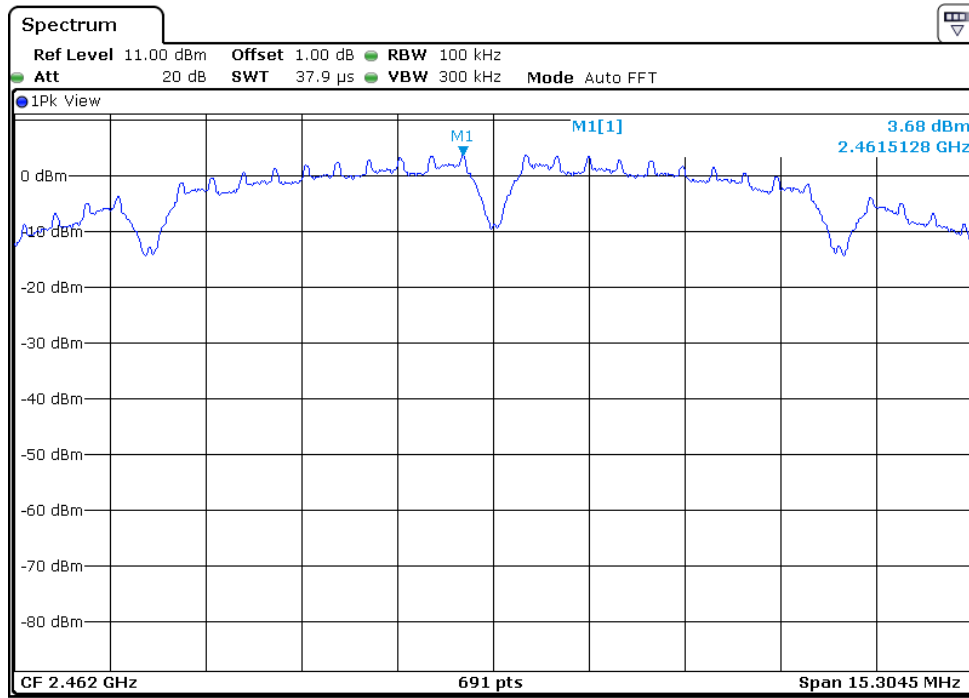
INTERTEK TESTING SERVICES

802.11b



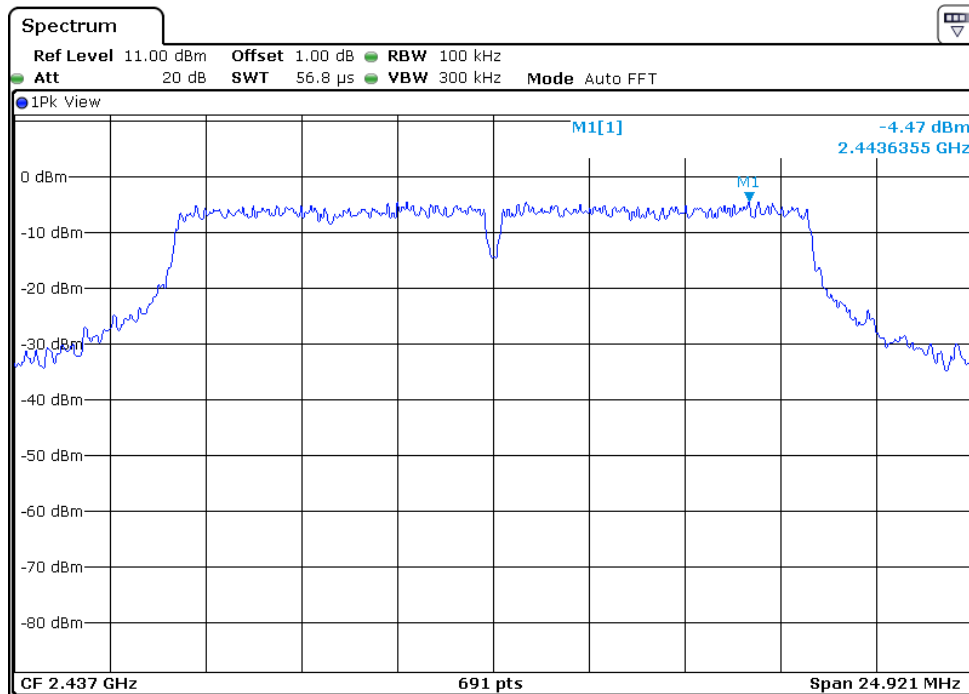
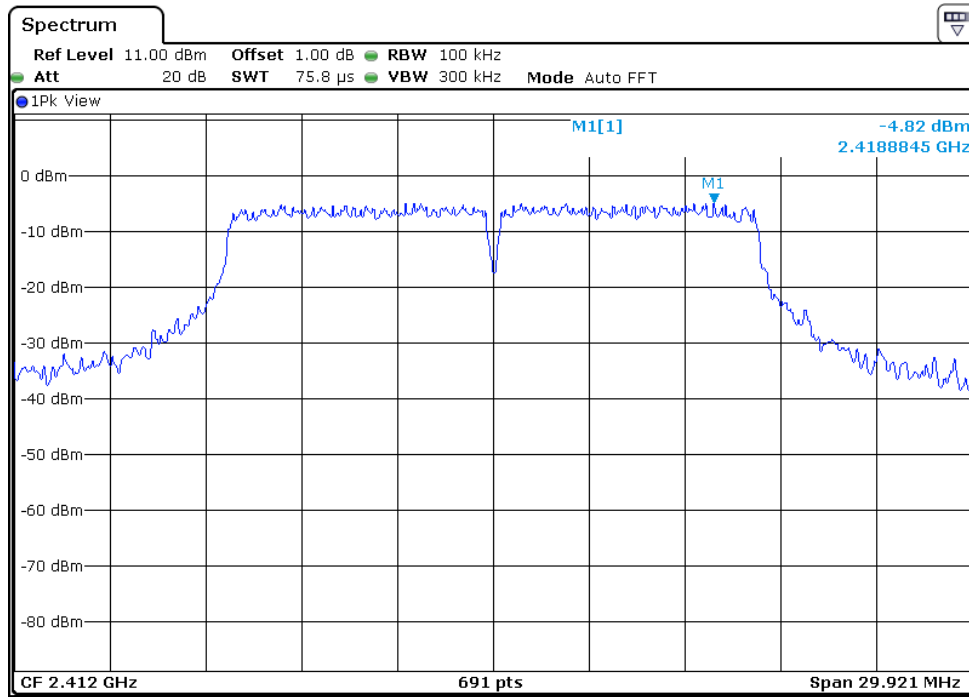
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INTERTEK TESTING SERVICES



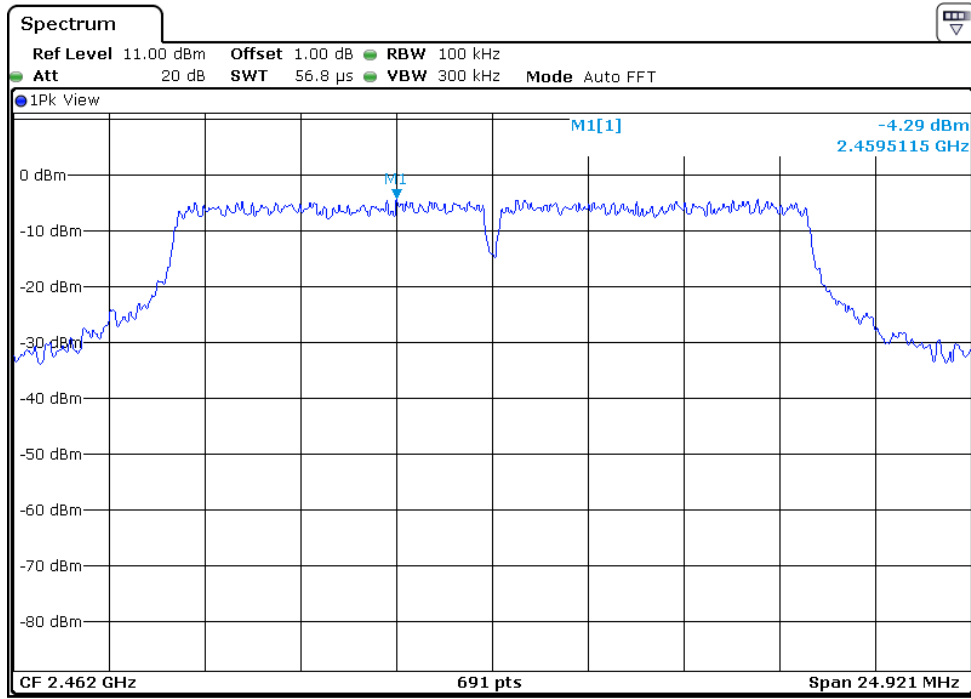
INTERTEK TESTING SERVICES

802.11g



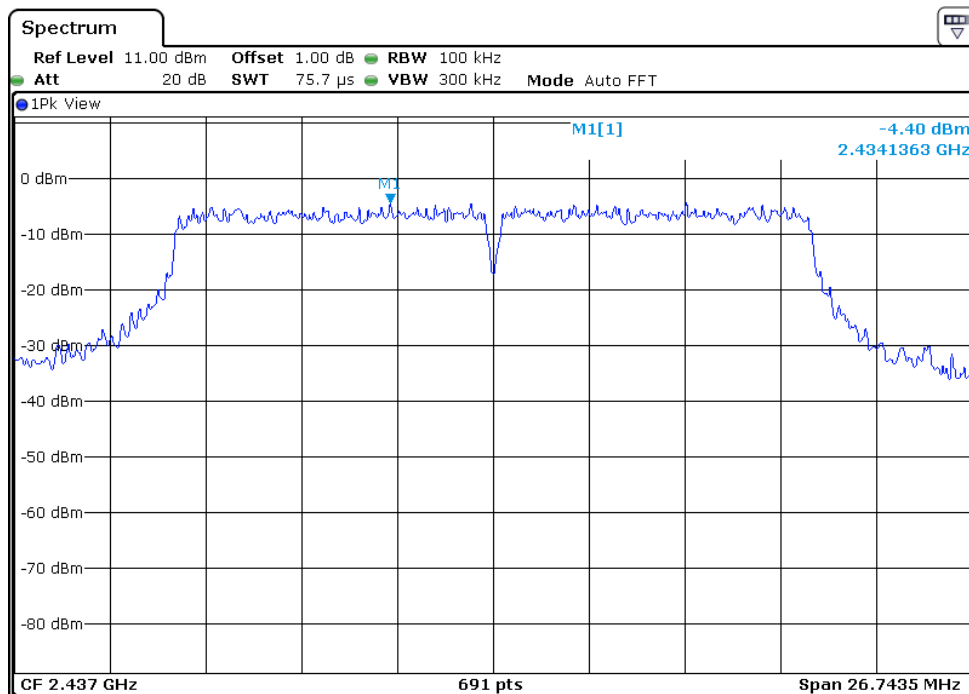
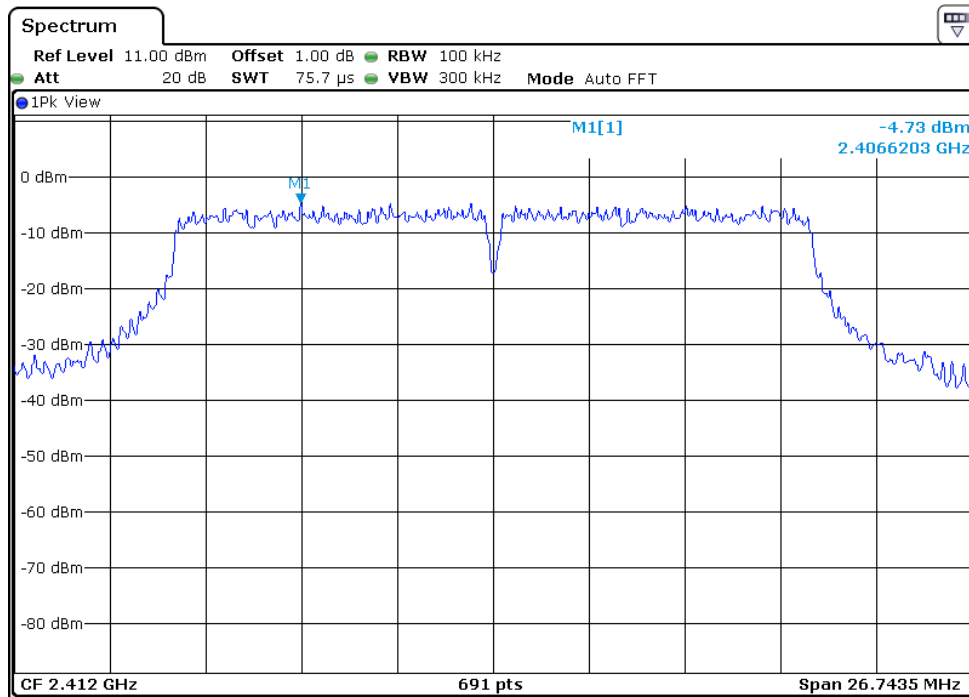
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Report No.: 170515051GZU-001

INTERTEK TESTING SERVICES



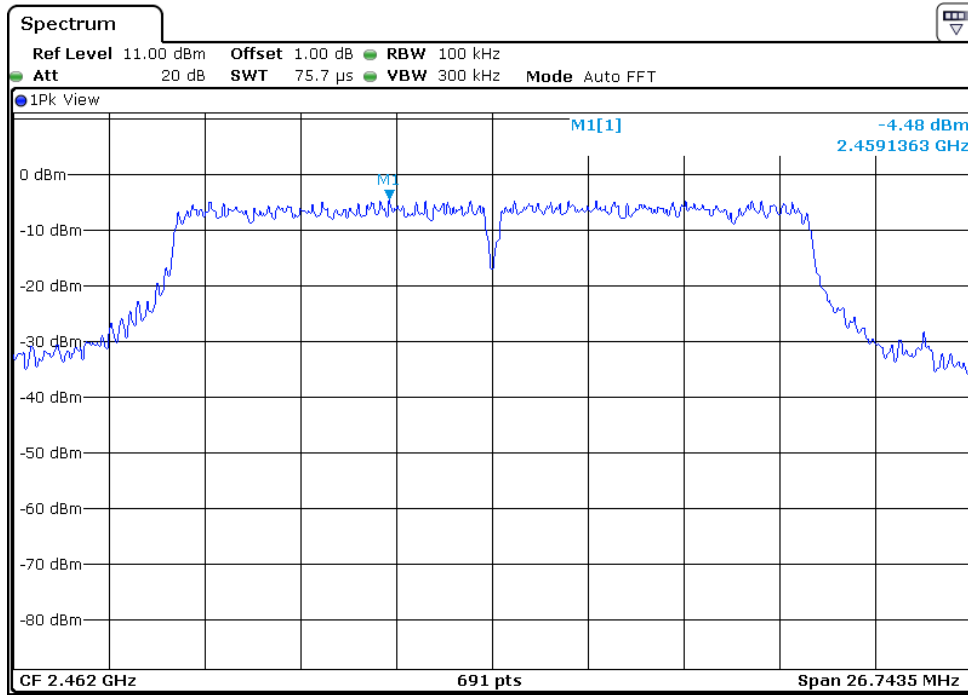
INTERTEK TESTING SERVICES

802.11n-HT20



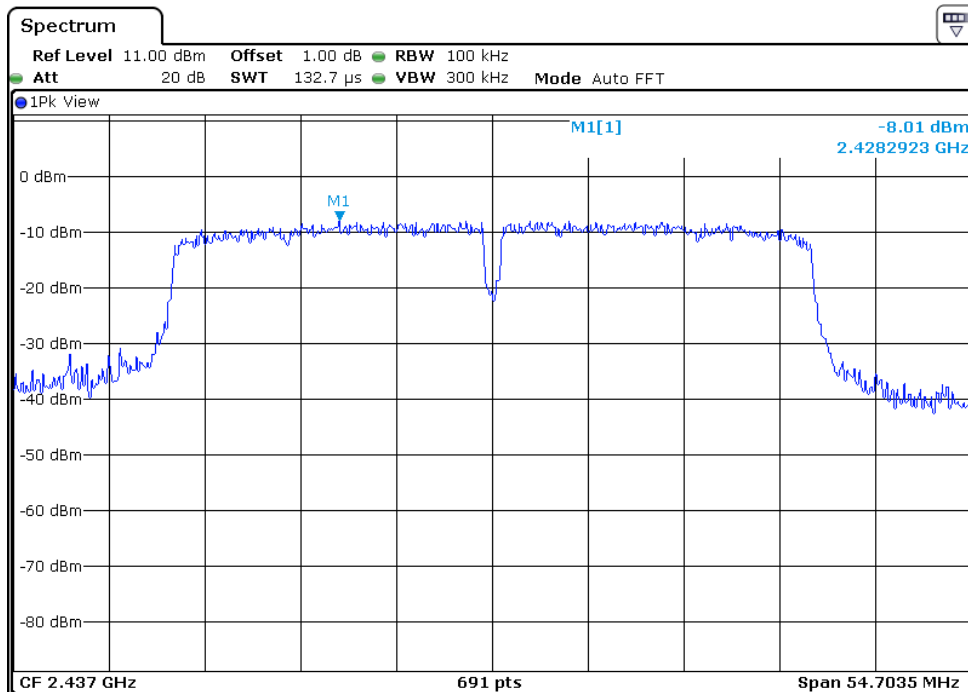
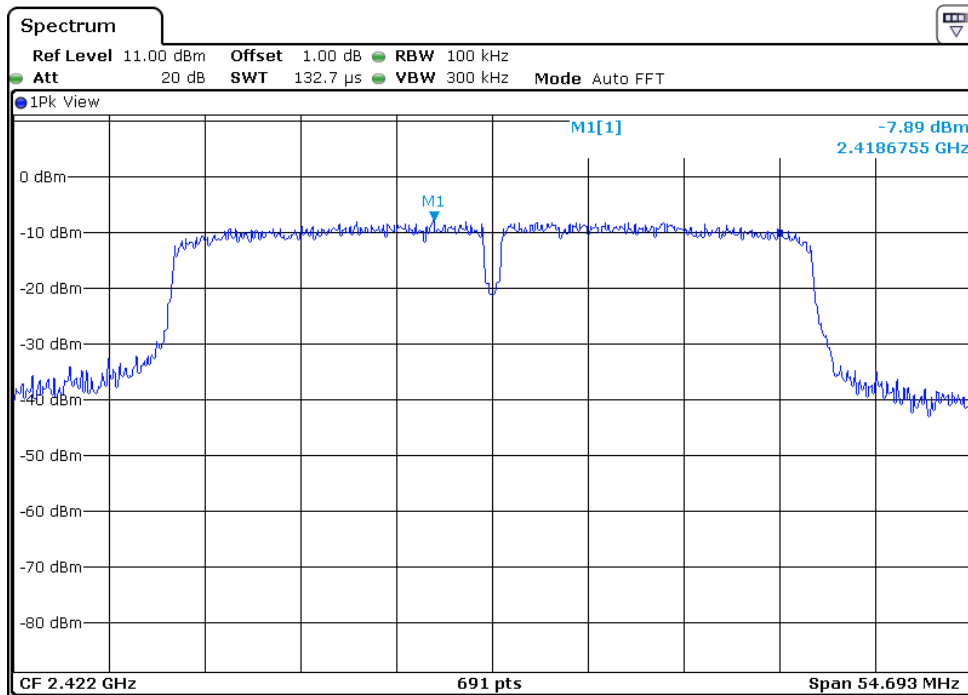
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INTERTEK TESTING SERVICES



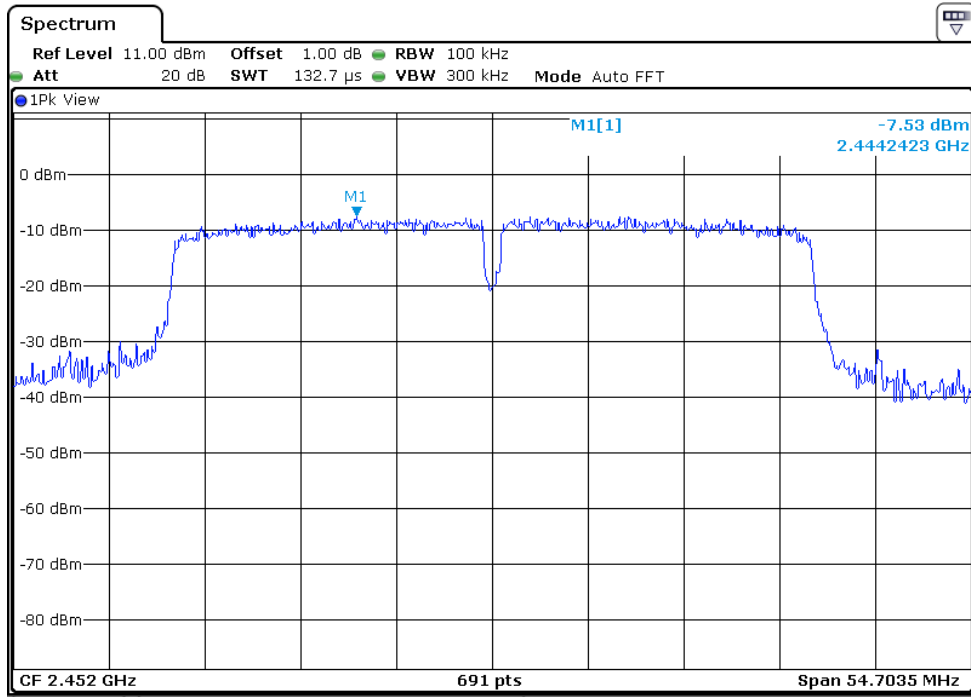
INTERTEK TESTING SERVICES

802.11n-HT40



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INTERTEK TESTING SERVICES



INTERTEK TESTING SERVICES

Applicant: 2GIG Technologies, Inc

Date of Test: April 12, 2017

Model: 2GIG-SP2-GC3

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 D01 v04.

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, 6.5Mbps for 802.11n-HT20 and 13.5Mbps for 802.11n-HT40.

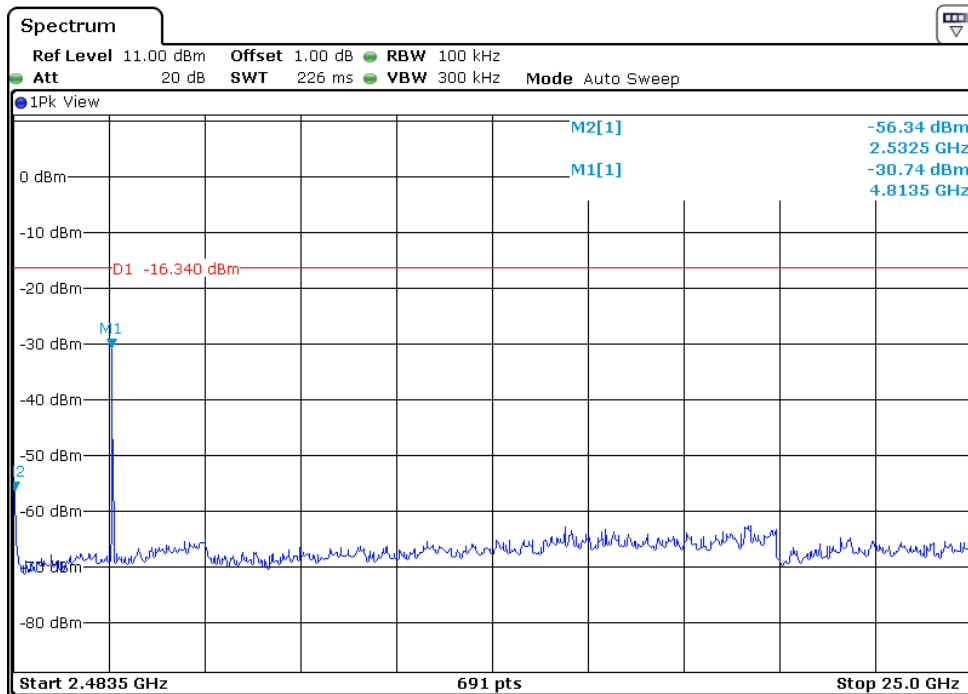
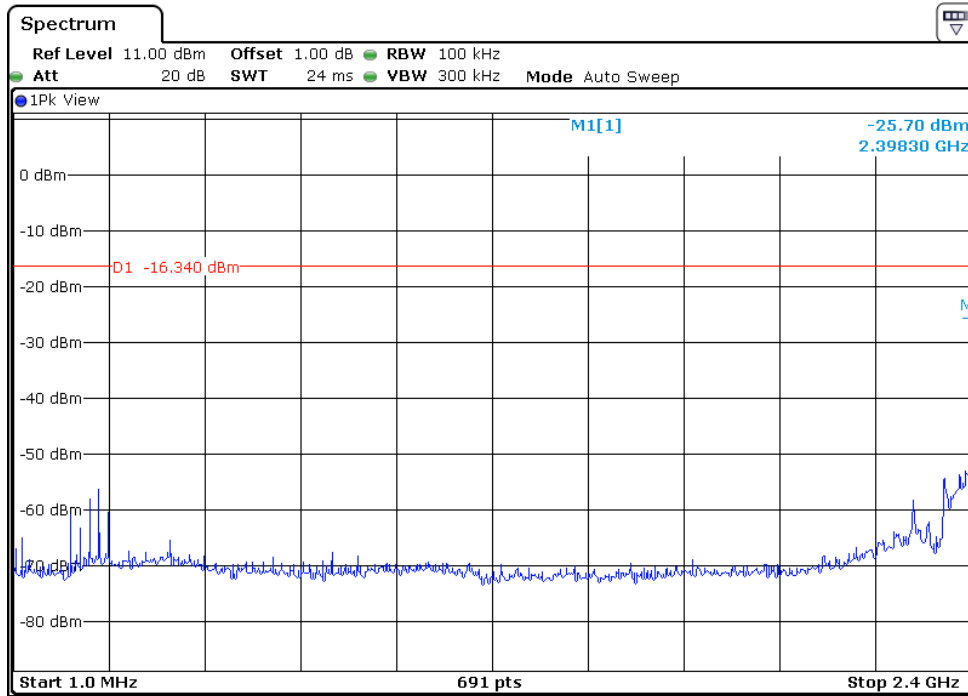
The test plots showed all spurious emission up to the tenth harmonic were measured and they were found to be at least 20 dB below the highest level of the desired power in the passband.

The test plots are attached as below.

INTERTEK TESTING SERVICES

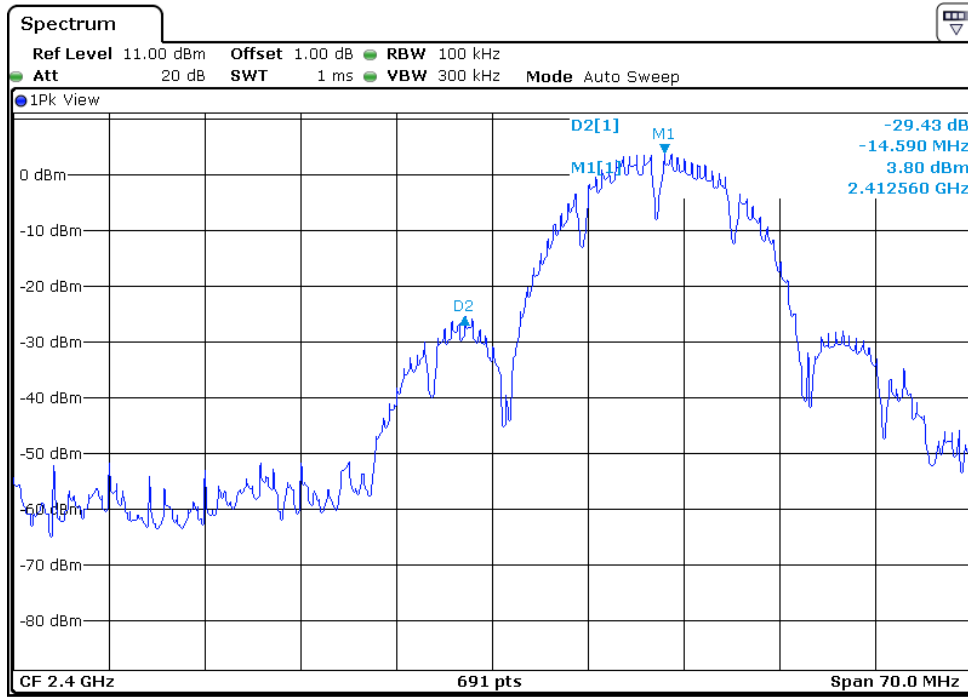
802.11b

Channel 01 (2412MHz) Reference Level: 3.66dBm



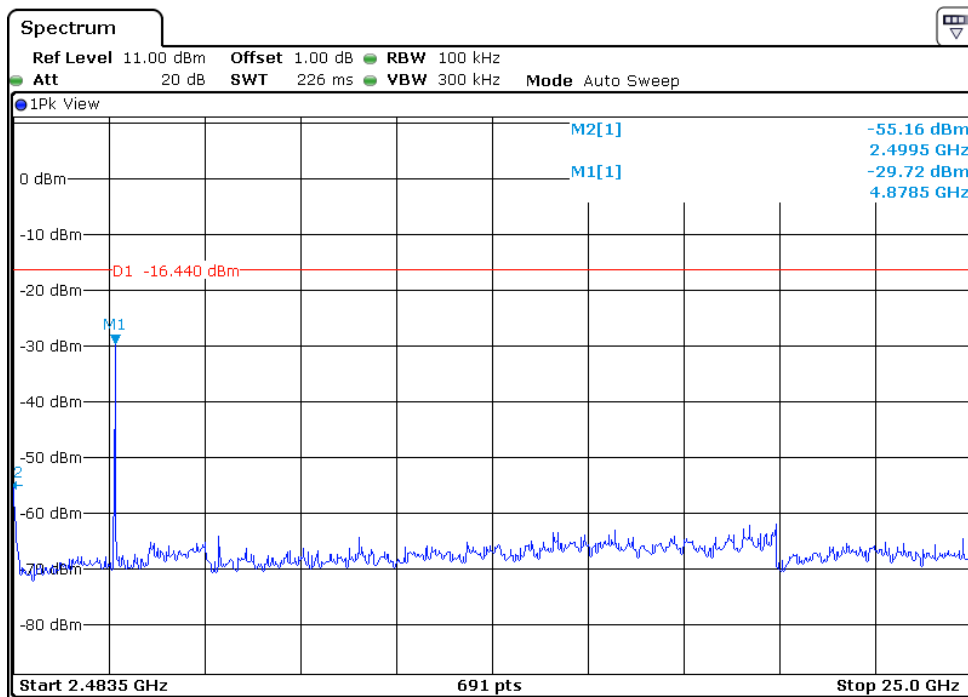
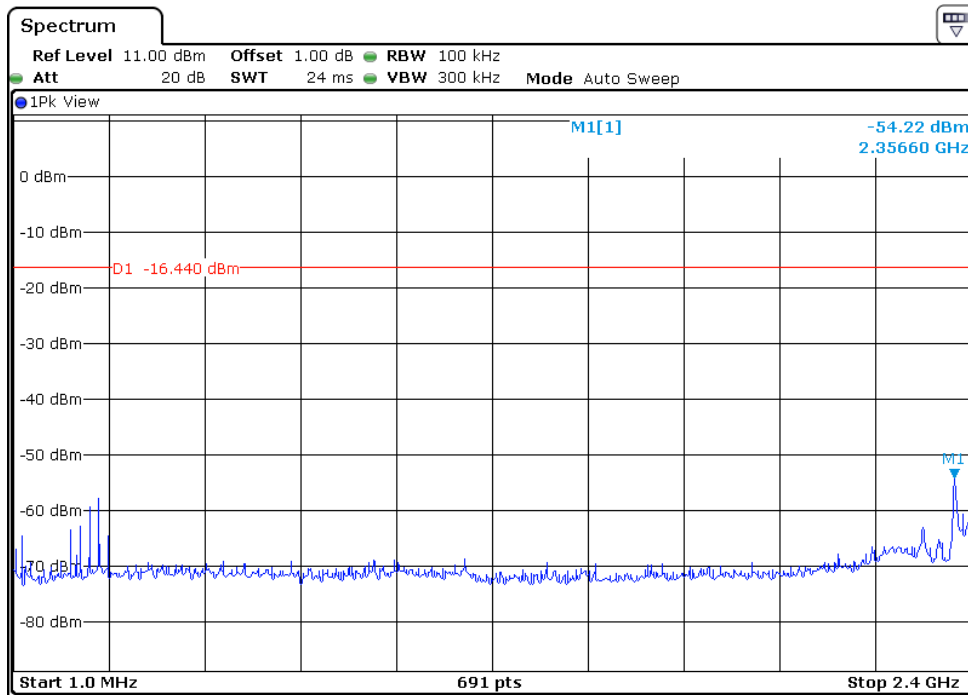
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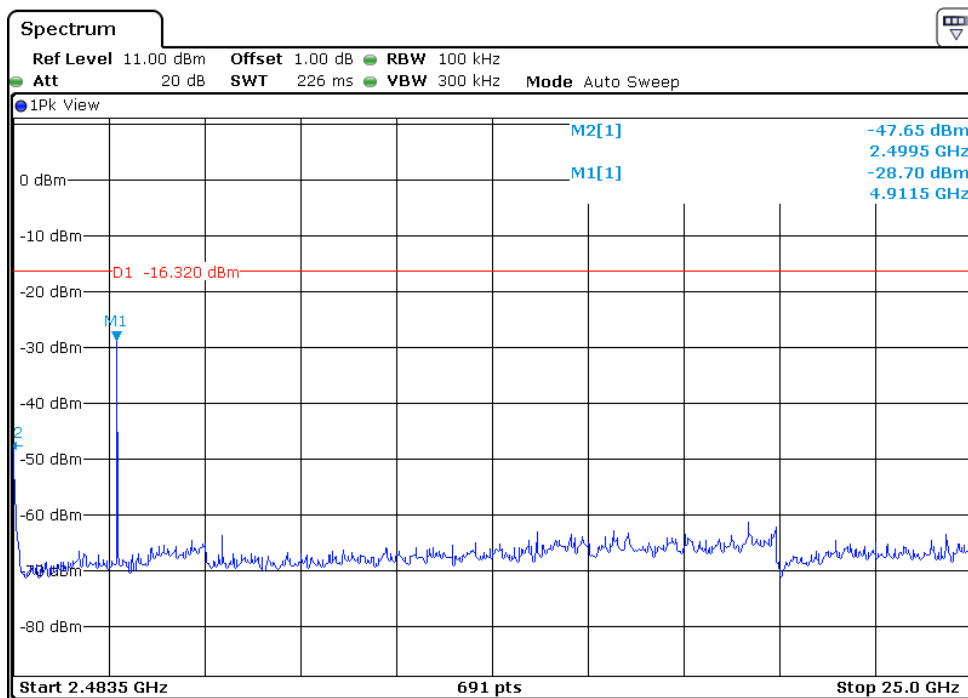
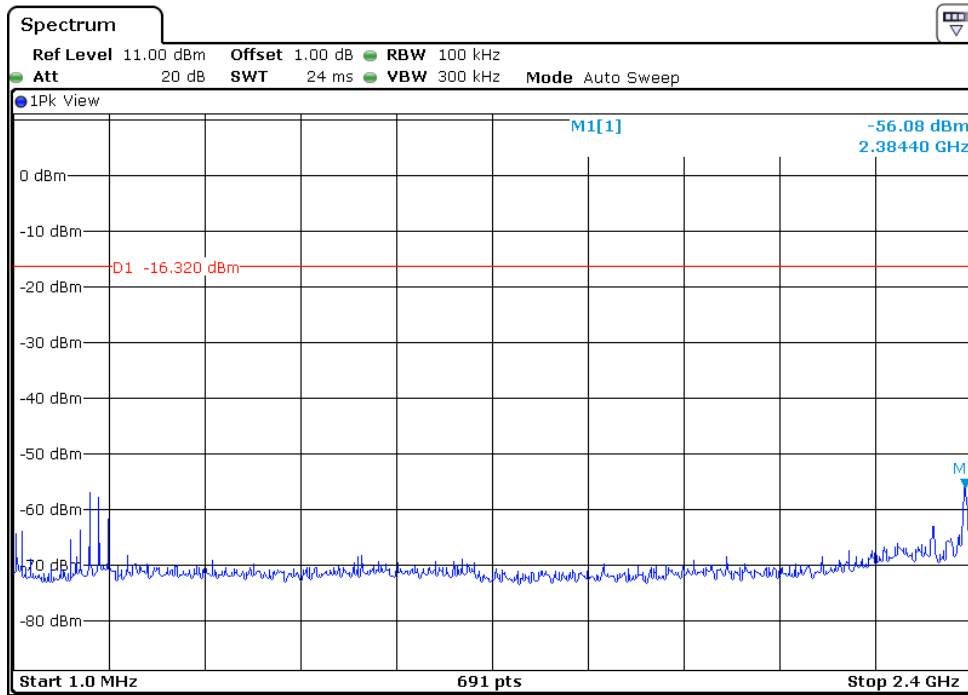
Channel 06 (2437MHz) Reference Level: 3.56dBm



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FCC ID: WDQ-SP2GC3
Report No.: 170515051GZU-001

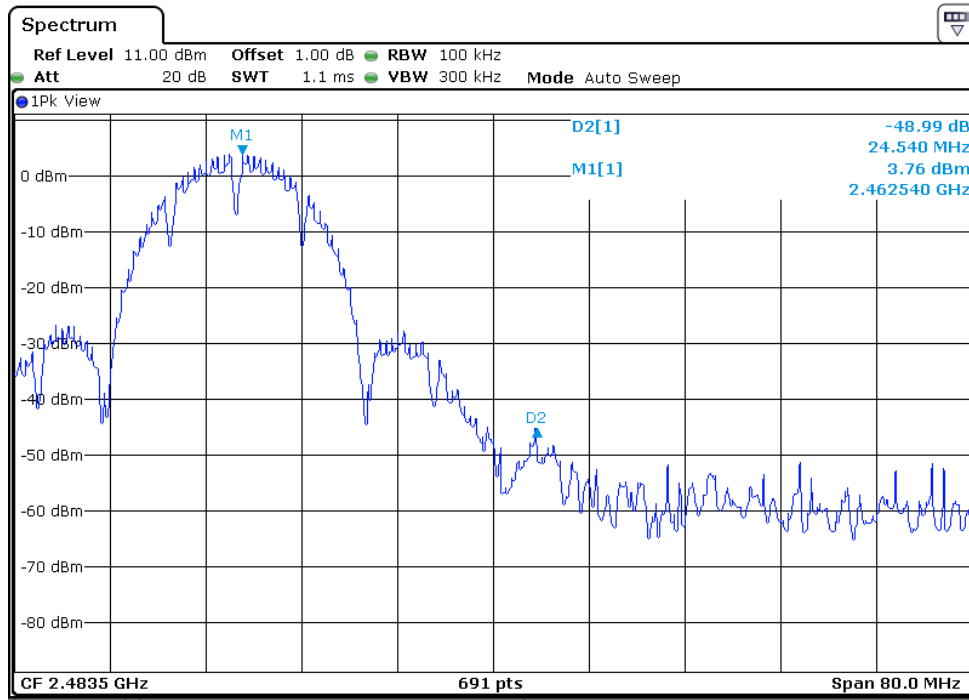
INTERTEK TESTING SERVICES

Channel 11 (2462MHz) Reference Level: 3.68dBm



TRF no.: FCC 15C_TX_c
FCC ID: WDQ-SP2GC3
Report No.: 170515051GZU-001

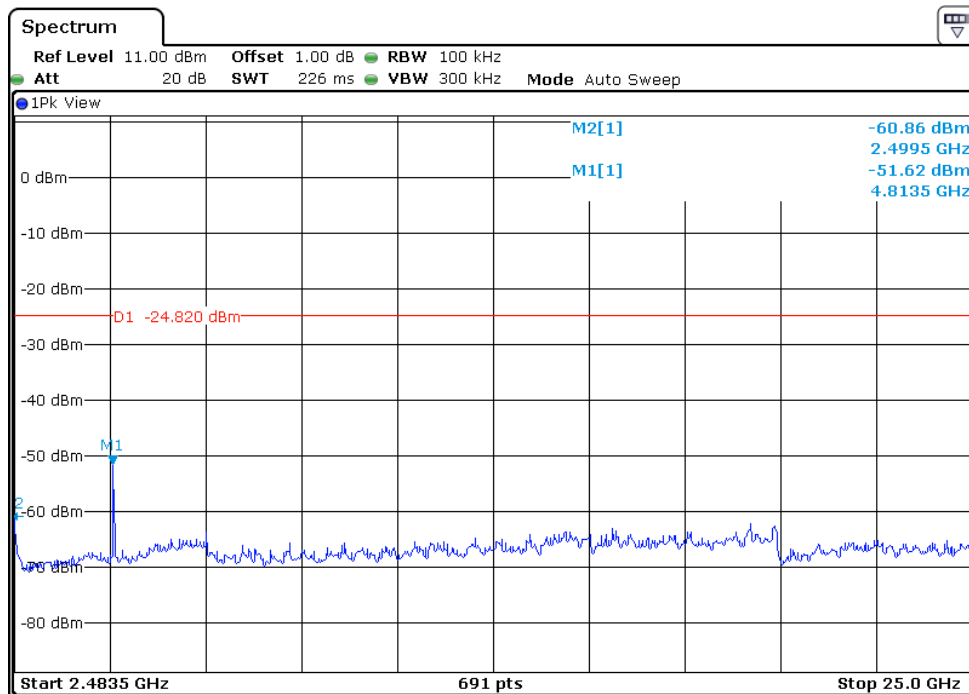
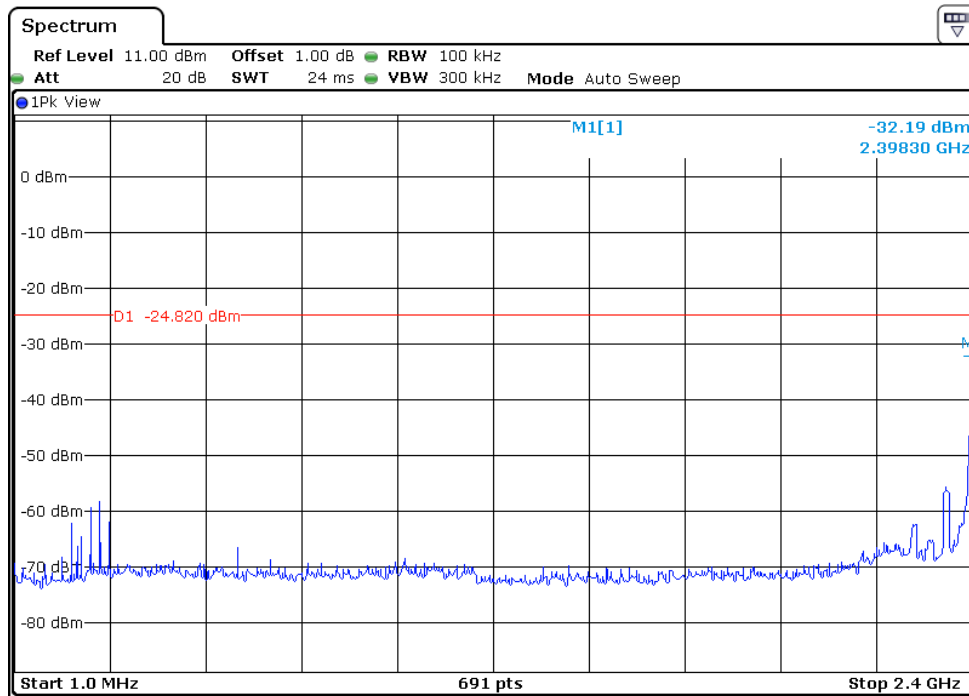
INTERTEK TESTING SERVICES



INTERTEK TESTING SERVICES

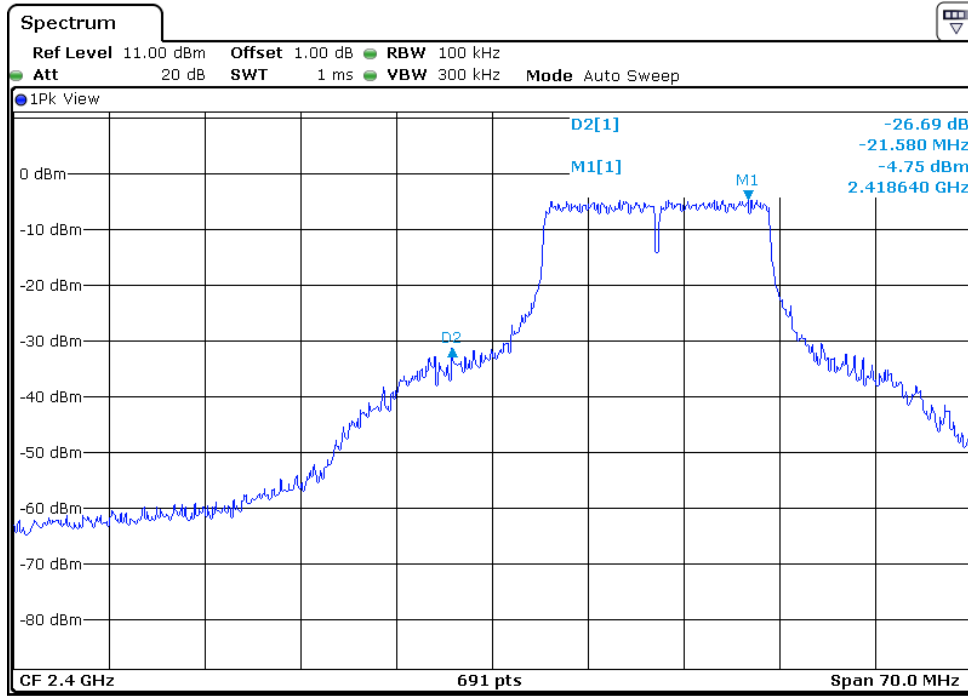
802.11g

Channel 01 (2412MHz) Reference Level: -4.82dBm



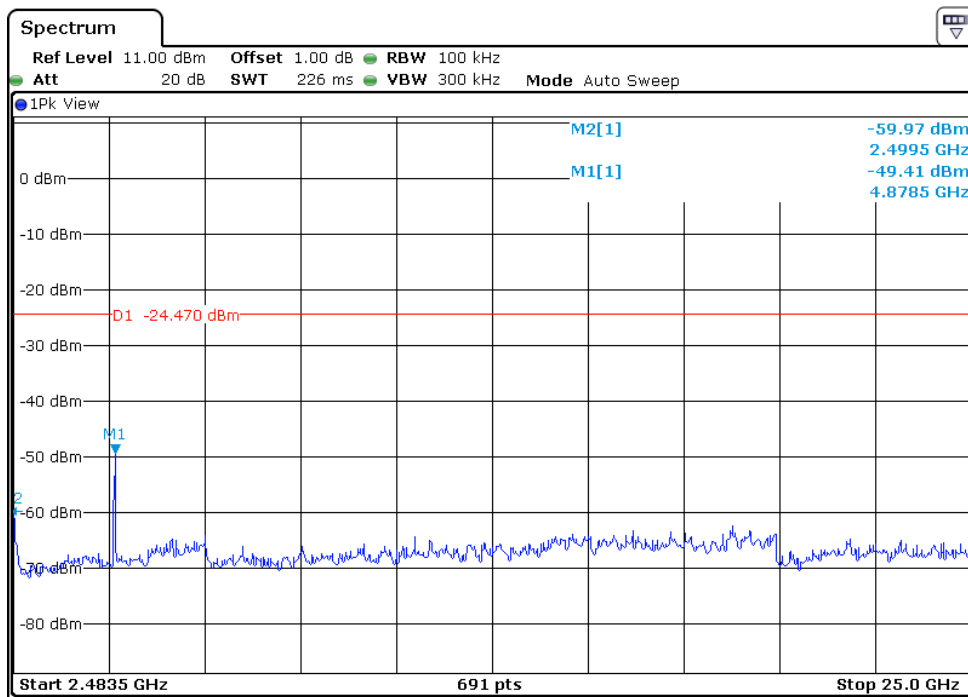
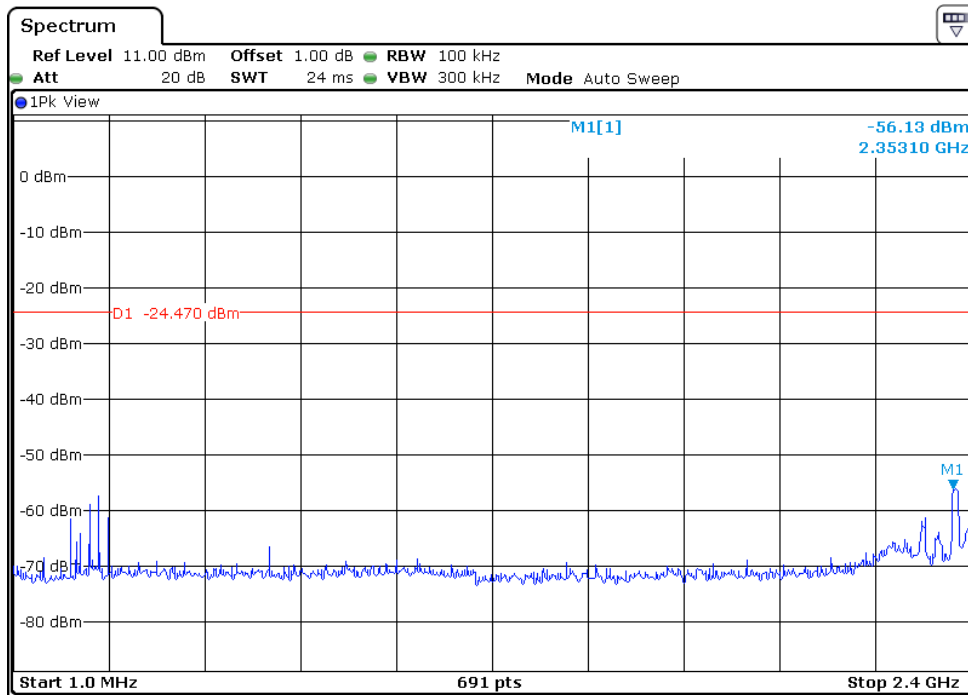
TRF no.: FCC 15C_TX_c
FCC ID: WDQ-SP2GC3
Report No.: 170515051GZU-001

INTERTEK TESTING SERVICES



INTERTEK TESTING SERVICES

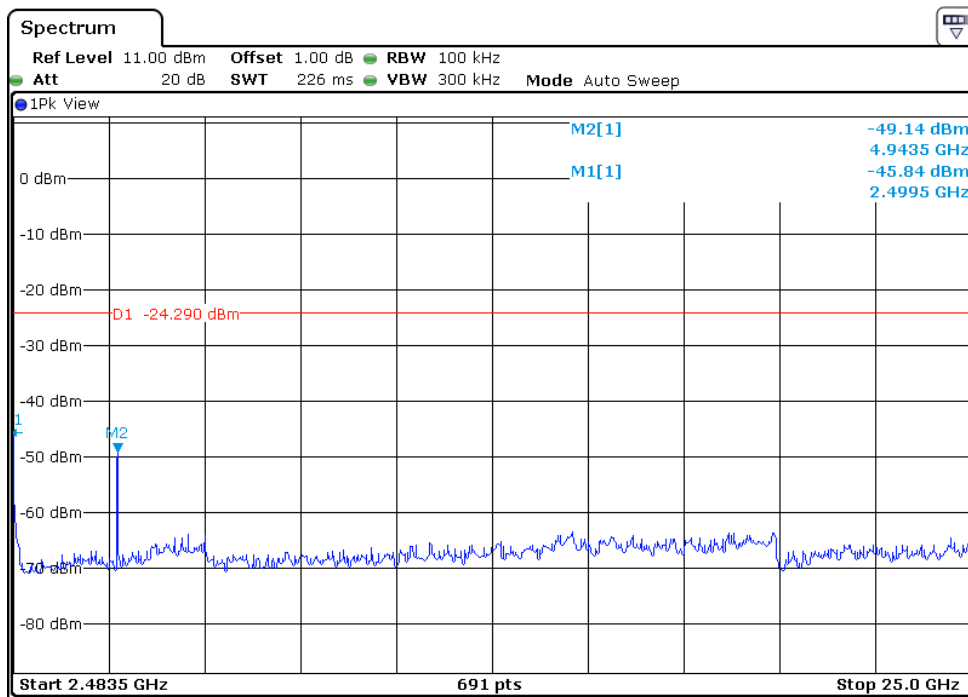
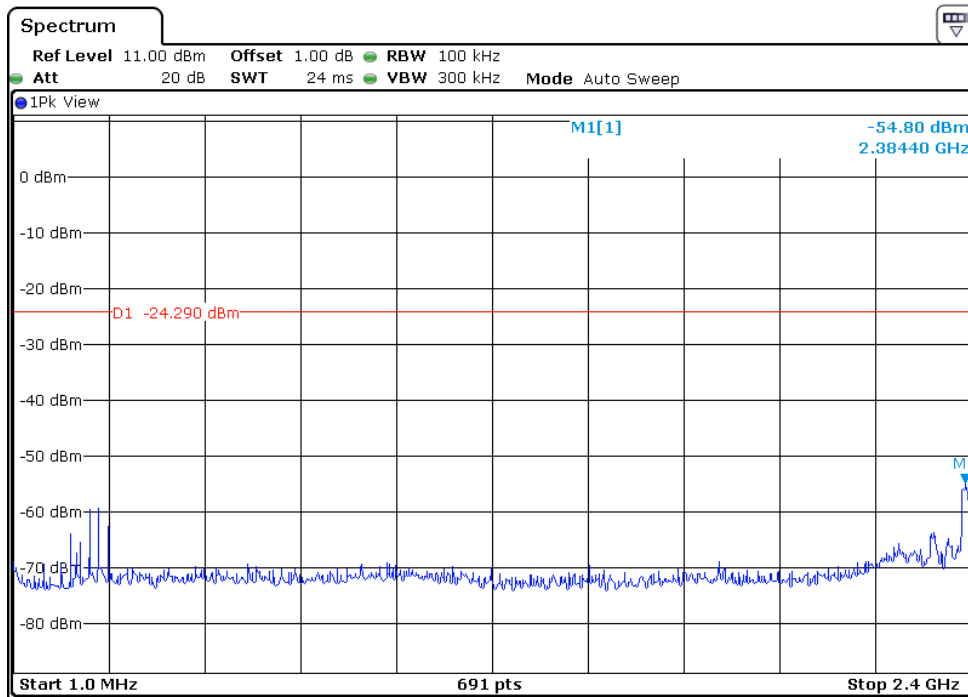
Channel 06 (2437MHz) Reference Level: -4.47dBm



TRF no.: FCC 15C_TX_c
FCC ID: WDQ-SP2GC3
Report No.: 170515051GZU-001

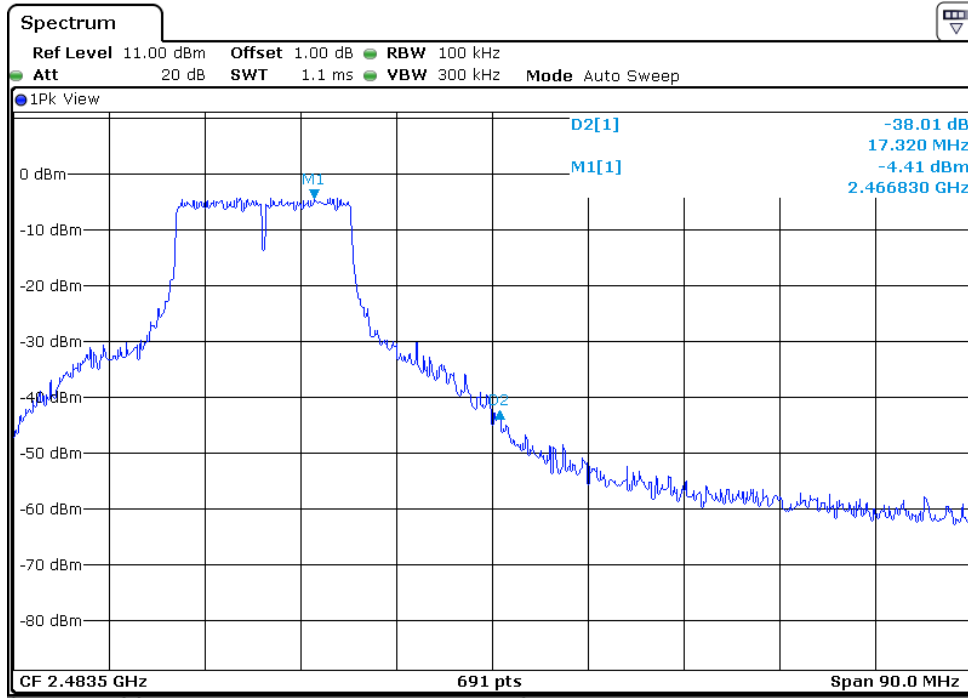
INTERTEK TESTING SERVICES

Channel 11 (2462MHz) Reference Level: -4.29dBm



TRF no.: FCC 15C_TX_c
FCC ID: WDQ-SP2GC3
Report No.: 170515051GZU-001

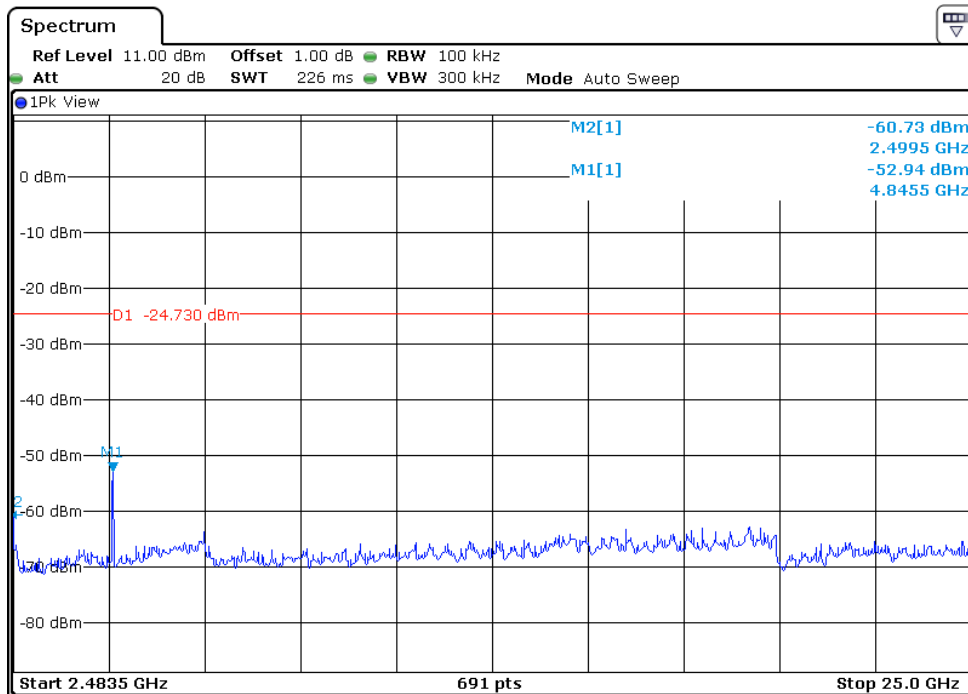
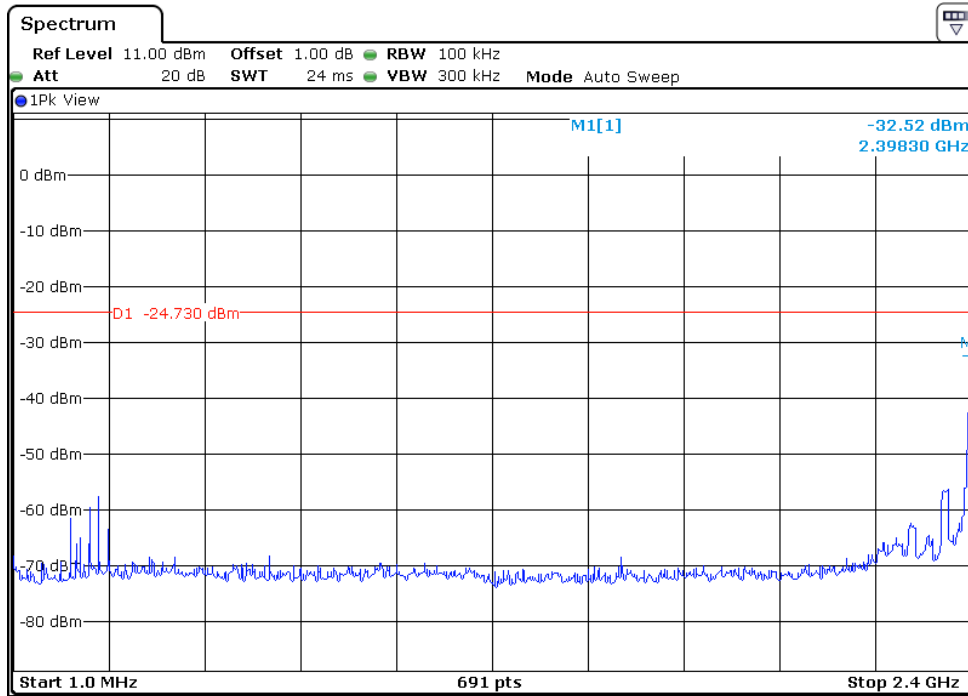
INTERTEK TESTING SERVICES



INTERTEK TESTING SERVICES

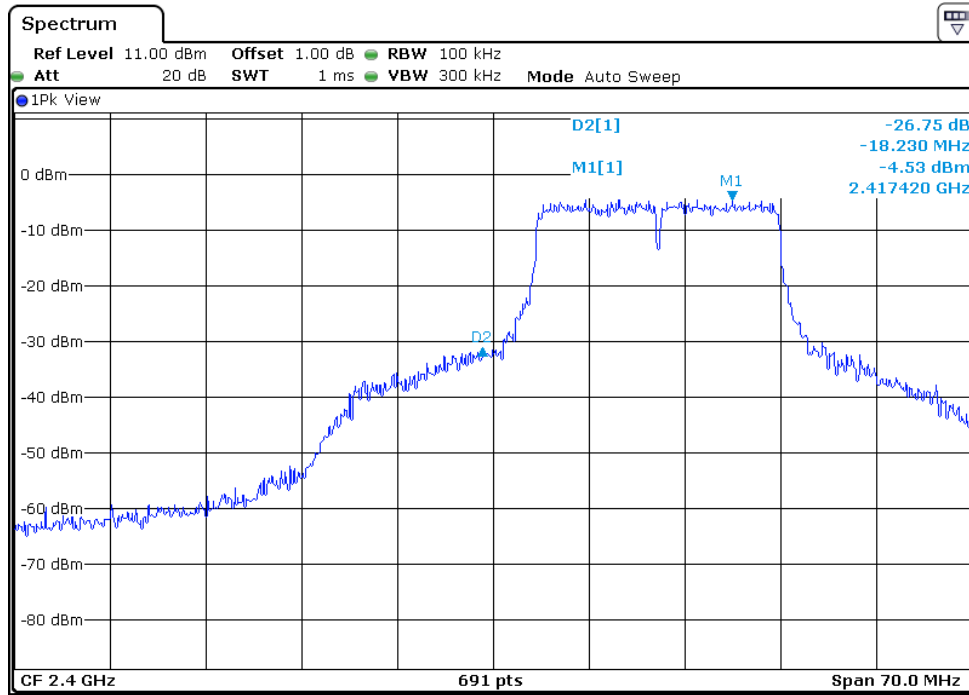
802.11n-HT20

Channel 01 (2412MHz) Reference Level: -4.73dBm



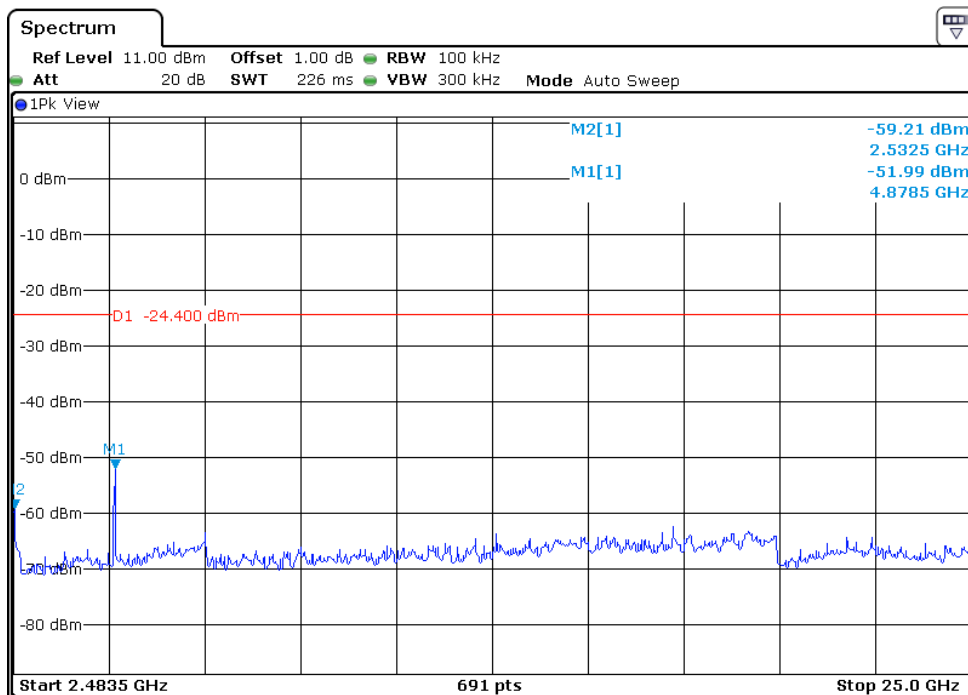
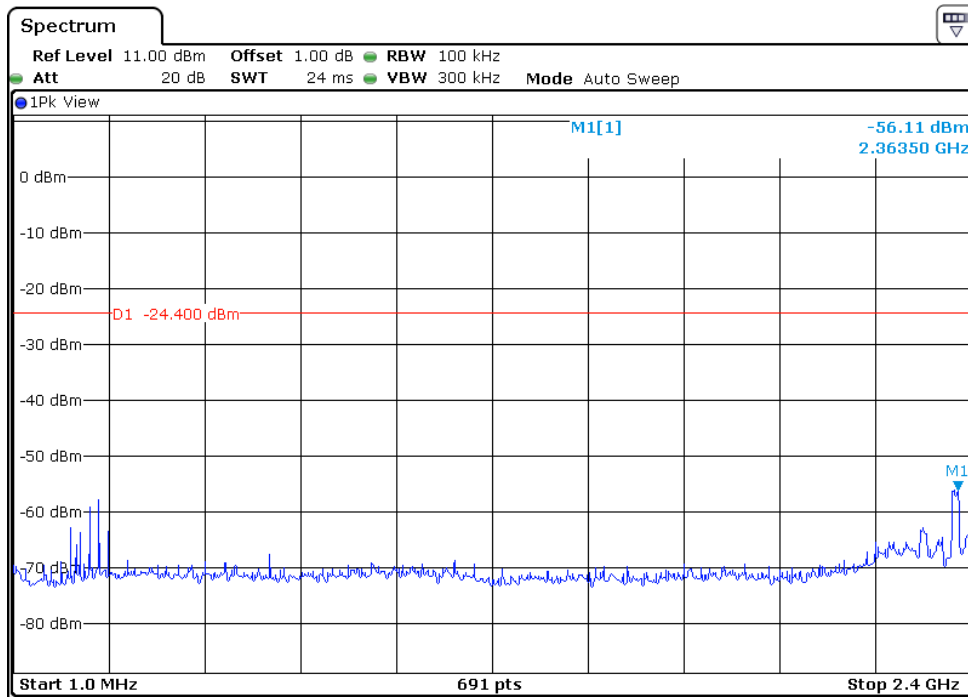
TRF no.: FCC 15C_TX_c
FCC ID: WDQ-SP2GC3
Report No.: 170515051GZU-001

INTERTEK TESTING SERVICES



INTERTEK TESTING SERVICES

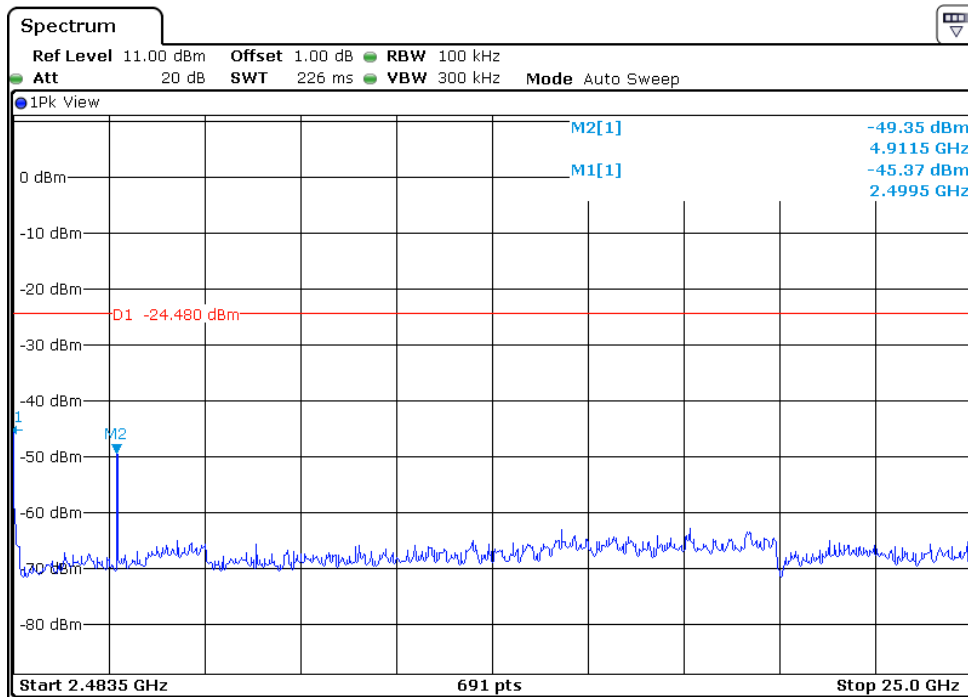
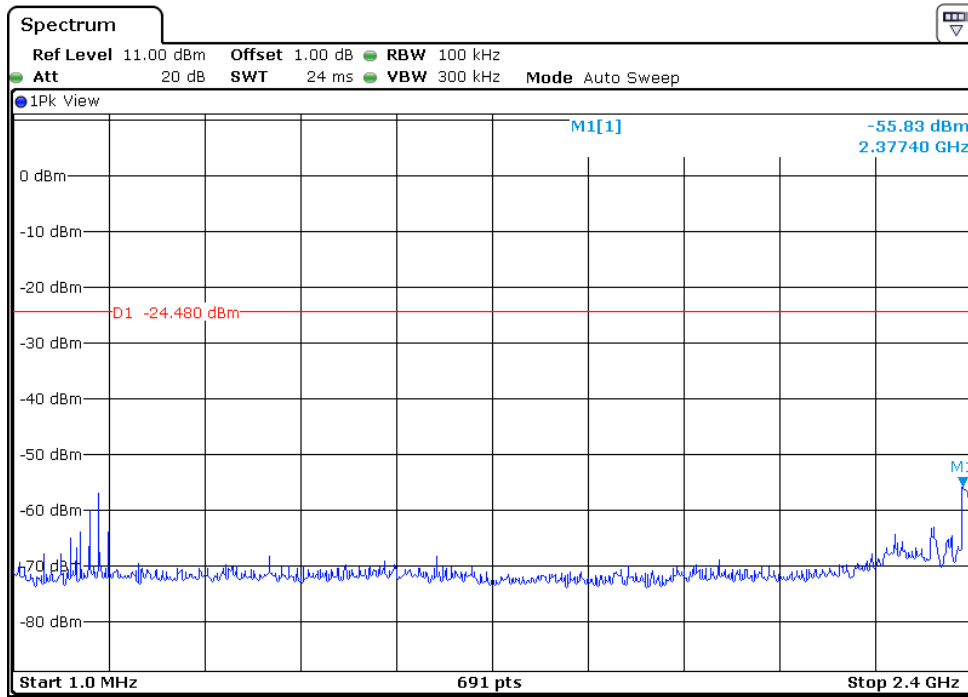
Channel 06 (2437MHz) Reference Level: -4.40dBm



TRF no.: FCC 15C_TX_c
FCC ID: WDQ-SP2GC3
Report No.: 170515051GZU-001

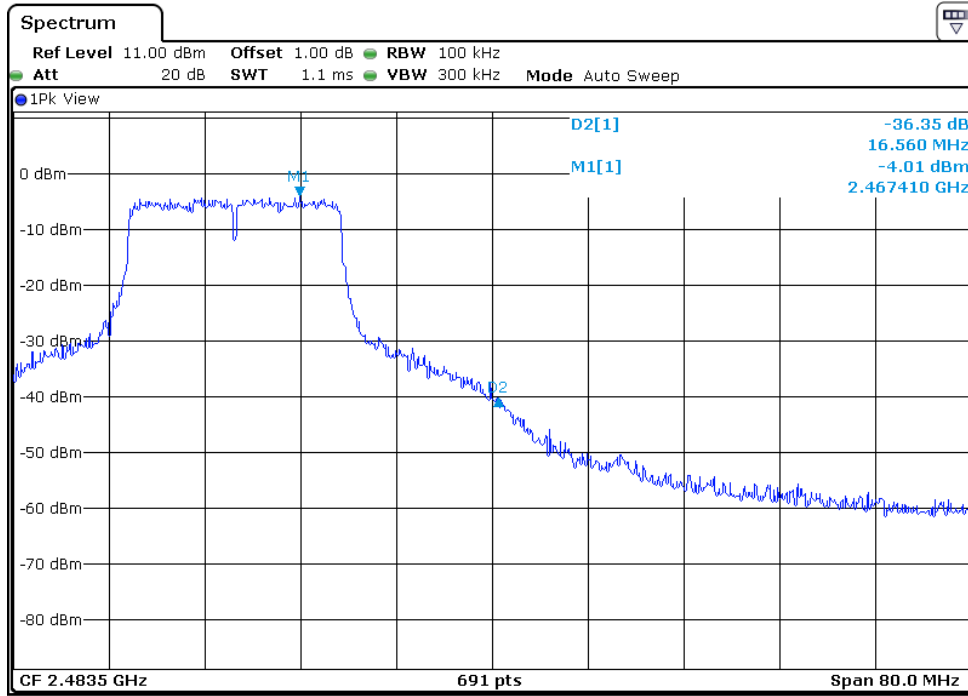
INTERTEK TESTING SERVICES

Channel 11 (2462MHz) Reference Level: -4.48dBm



TRF no.: FCC 15C_TX_c
FCC ID: WDQ-SP2GC3
Report No.: 170515051GZU-001

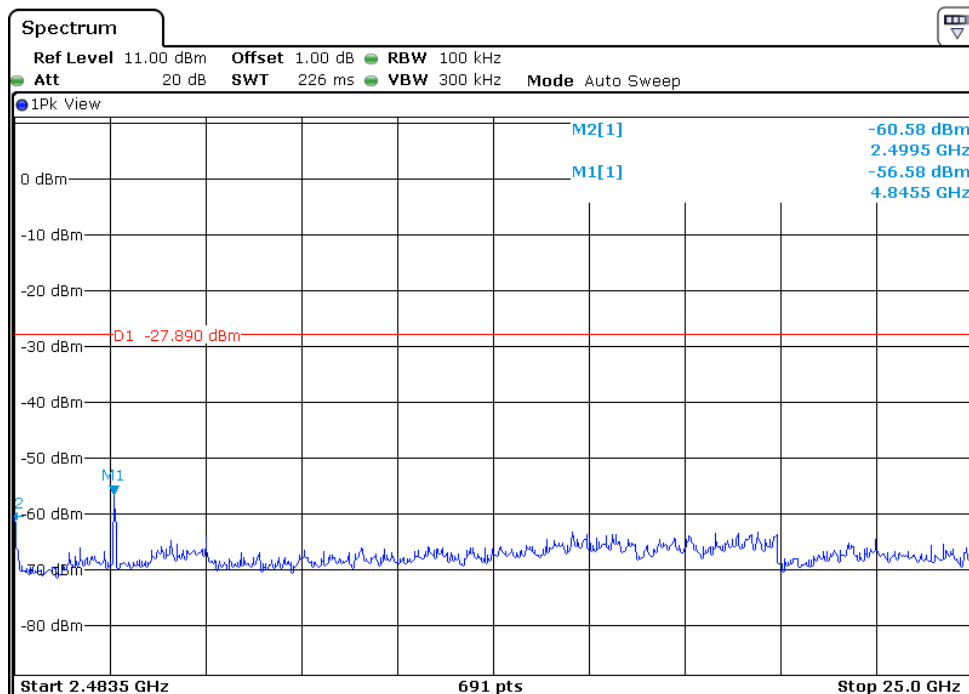
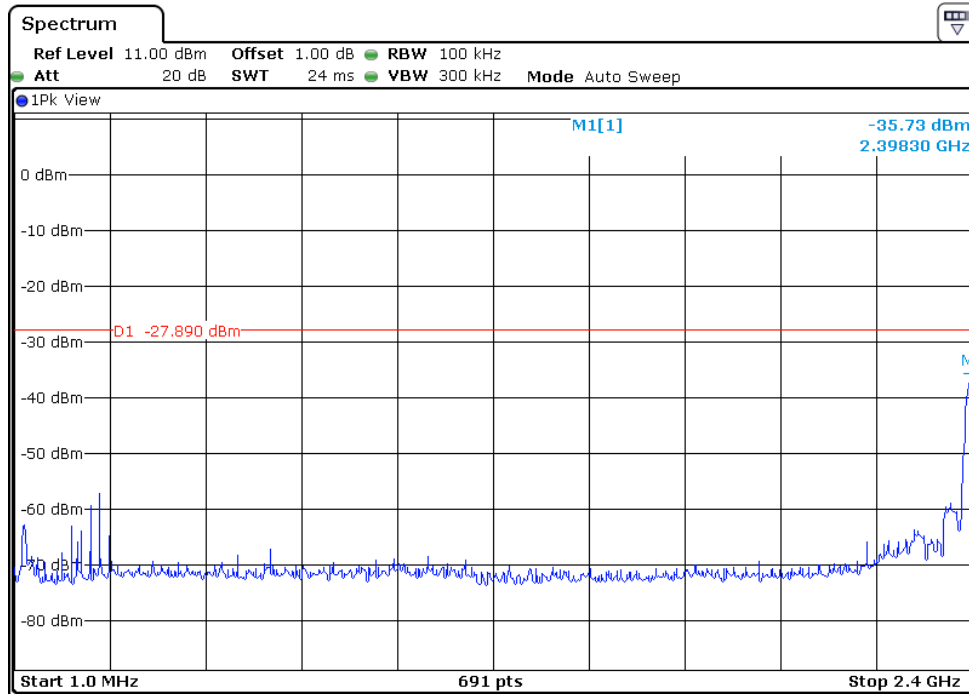
INTERTEK TESTING SERVICES



INTERTEK TESTING SERVICES

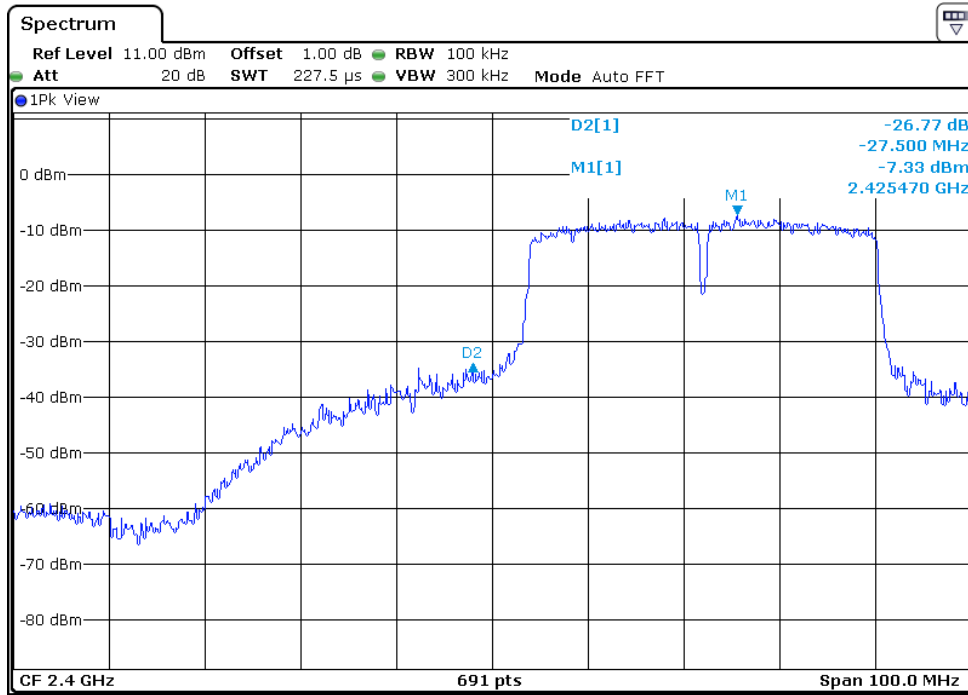
802.11n-HT40

Channel 03 (2422MHz) Reference Level: -7.89dBm



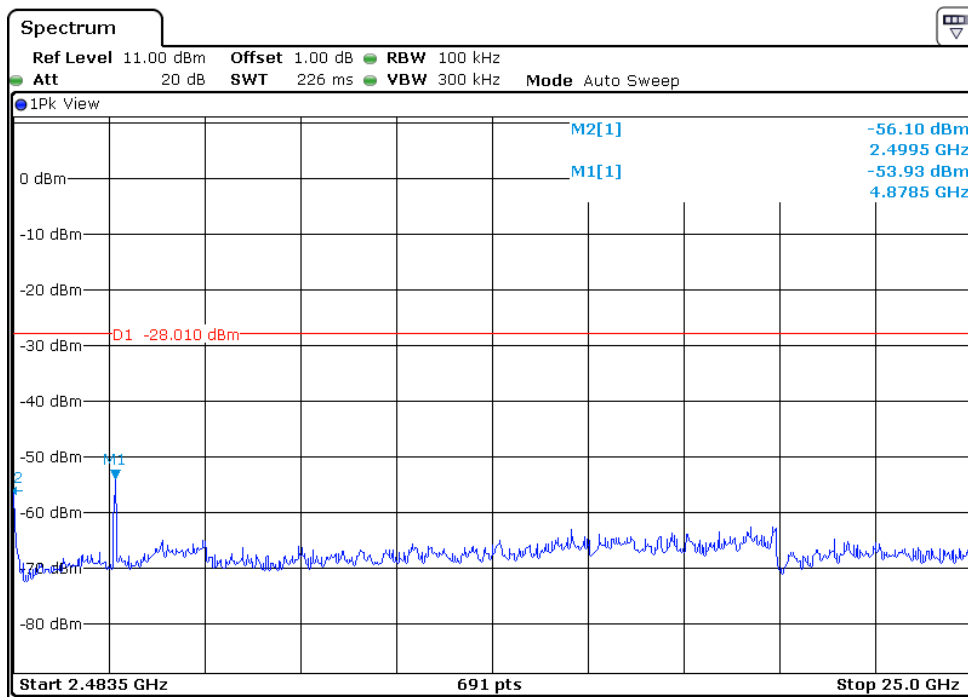
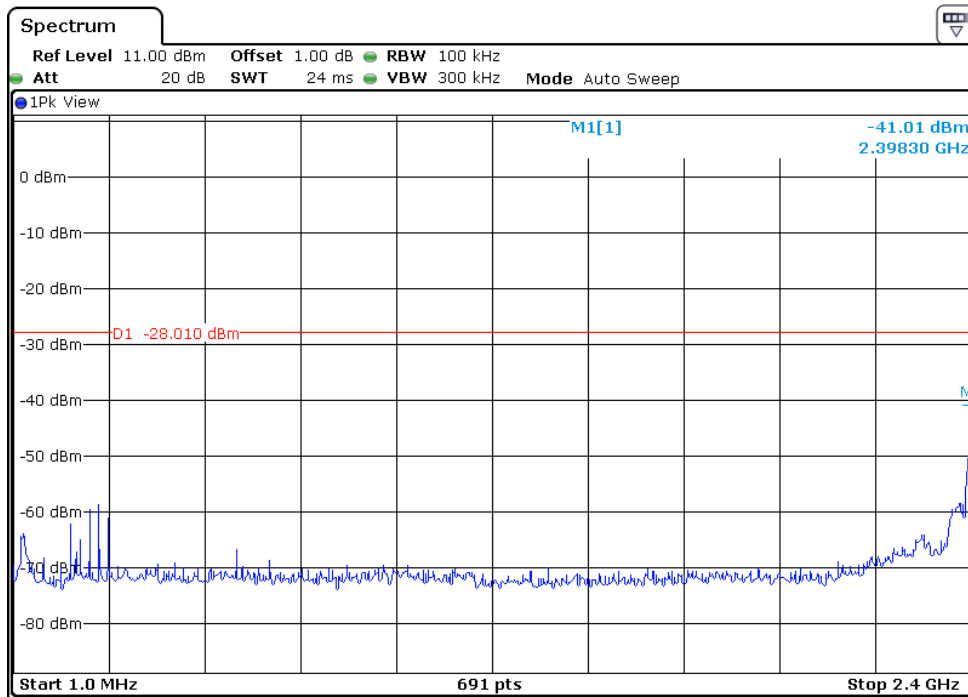
TRF no.: FCC 15C_TX_c
FCC ID: WDQ-SP2GC3
Report No.: 170515051GZU-001

INTERTEK TESTING SERVICES



INTERTEK TESTING SERVICES

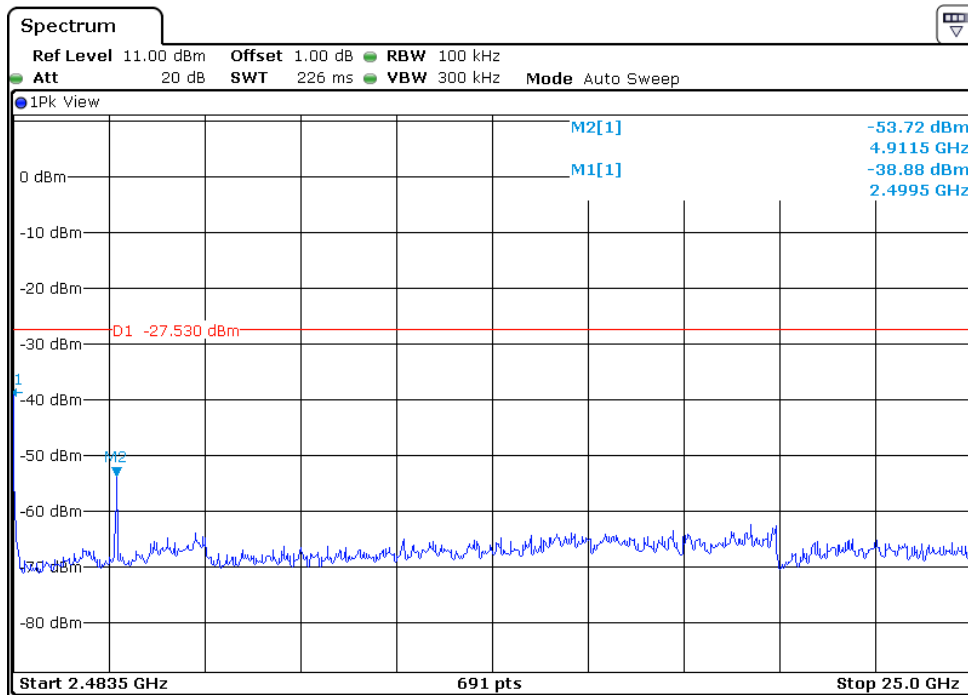
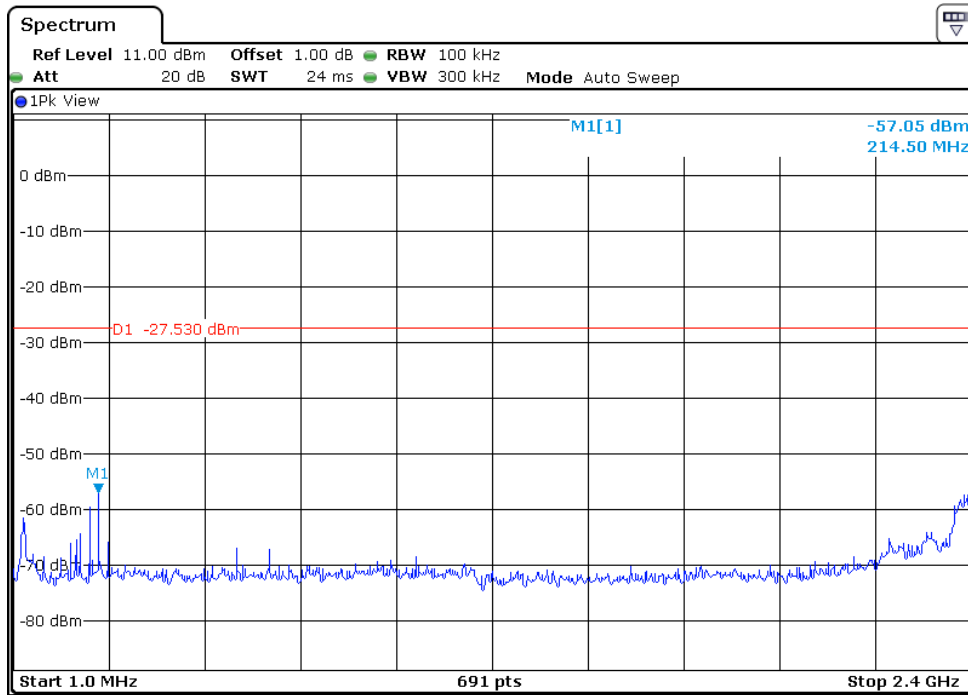
Channel 06 (2437MHz) Reference Level: -8.01dBm



TRF no.: FCC 15C_TX_c
FCC ID: WDQ-SP2GC3
Report No.: 170515051GZU-001

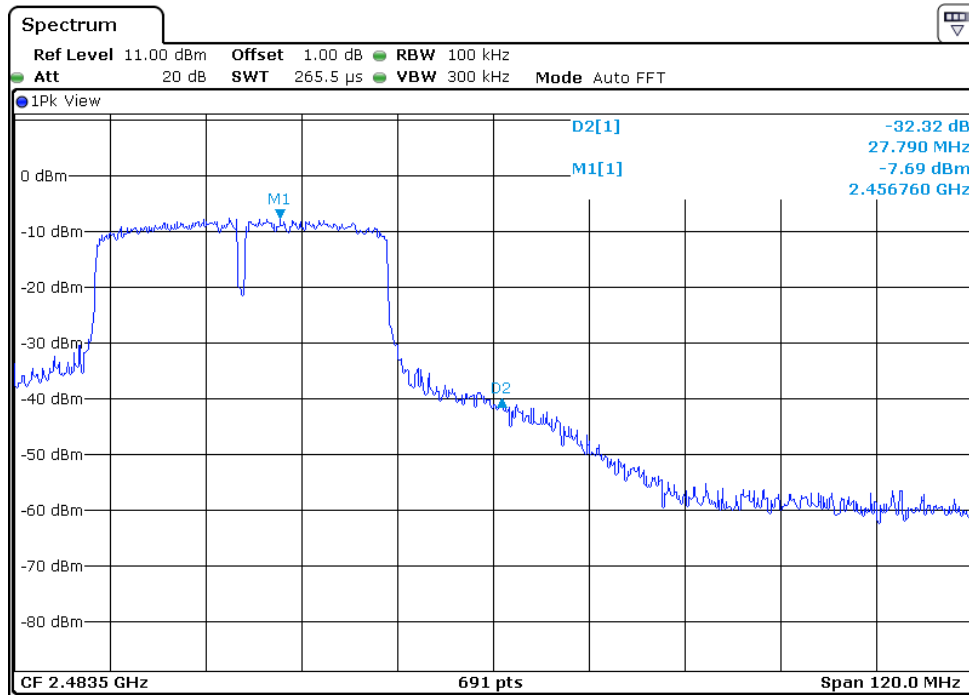
INTERTEK TESTING SERVICES

Channel 09 (2452MHz) Reference Level: -7.53dBm



TRF no.: FCC 15C_TX_c
FCC ID: WDQ-SP2GC3
Report No.: 170515051GZU-001

INTERTEK TESTING SERVICES



INTERTEK TESTING SERVICES

Applicant: 2GIG Technologies, Inc

Date of Test: April 12, 2017

Model: 2GIG-SP2-GC3

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

INTERTEK TESTING SERVICES

Applicant: 2GIG Technologies, Inc
Date of Test: April 12, 2017
Model: 2GIG-SP2-GC3

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.

INTERTEK TESTING SERVICES

Applicant: 2GIG Technologies, Inc

Date of Test: April 12, 2017

Model: 2GIG-SP2-GC3

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.

$$FS = RA + AF + CF - AG + PD + AV$$

Where

- FS = Field Strength in dB μ V/m
- RA = Receiver Amplitude (including preamplifier) in dB μ V
- CF = Cable Attenuation Factor in dB
- AF = Antenna Factor in dB
- AG = Amplifier Gain in dB
- PD = Pulse Desensitization in dB
- AV = Average Factor 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:

$$FS = RA + AF + CF - AG + PD + AV$$

Assume a receiver reading of 62.0 dB μ V 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, and the resultant average factor was -10 dB. The net field strength for comparison to the appropriate emission limit is 32 dB μ V/m. This value in dB μ V/m was converted to its corresponding level in μ V/m.

$$RA = 62.0 \text{ dB}\mu\text{V}$$

$$AF = 7.4 \text{ dB}$$

$$CF = 1.6 \text{ dB}$$

$$AG = 29.0 \text{ dB}$$

$$PD = 0 \text{ dB}$$

$$AV = -10 \text{ dB}$$

$$FS = 62 + 7.4 + 1.6 - 29 + 0 + (-10) = 32 \text{ dB}\mu\text{V/m}$$

$$\text{Level in } \mu\text{V/m} = \text{Common Antilogarithm} [(32 \text{ dB}\mu\text{V/m})/20] = 39.8 \mu\text{V/m}$$

TRF no.: FCC 15C_TX_c

FCC ID: WDQ-SP2GC3

Report No.: 170515051GZU-001

INTERTEK TESTING SERVICES

Applicant: 2GIG Technologies, Inc
Date of Test: April 12, 2017
Model: 2GIG-SP2-GC3

4.8 Radiated Spurious Emission

Worst Case Radiated Spurious Emission (802.11n-HT20) at 2389.920MHz is passed by 1.3dB margin.

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

INTERTEK TESTING SERVICES

Applicant: 2GIG Technologies, Inc

Date of Test: April 12, 2017

Model: 2GIG-SP2-GC3

Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 01)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre- Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	692.510	31.0	20.0	19.9	30.9	46.0	-15.1
Horizontal	805.030	30.9	20.0	21.3	32.2	46.0	-13.8
Horizontal	971.870	32.0	20.0	22.6	34.6	54.0	-19.4
Vertical	576.110	42.1	20.0	18.9	41.0	46.0	-5.0
Vertical	720.155	40.8	20.0	20.2	41.0	46.0	-5.0
Vertical	960.051	41.8	20.0	22.8	44.6	54.0	-9.4

NOTES: 1. Quasi-Peak detector is used for frequency below 1GHz.

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.

TRF no.: FCC 15C_TX_c

FCC ID: WDQ-SP2GC3

Report No.: 170515051GZU-001

INTERTEK TESTING SERVICES

Applicant: 2GIG Technologies, Inc
 Date of Test: April 12, 2017
 Model: 2GIG-SP2-GC3
 Worst Case Operating Mode: 802.11b (TX-Channel 01)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4824.000	63.9	41.5	33.9	56.3	74.0	-17.7
Horizontal	*2386.380	56.8	41.4	29.3	44.7	74.0	-29.3

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4824.000	50.7	41.5	33.9	43.1	54.0	-10.9
Horizontal	*2386.380	51.0	41.4	29.3	38.9	54.0	-15.1

- 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.

INTERTEK TESTING SERVICES

Applicant: 2GIG Technologies, Inc
 Date of Test: April 12, 2017
 Model: 2GIG-SP2-GC3
 Worst Case Operating Mode: 802.11b (TX-Channel 06)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4874.000	65.4	41.5	33.9	57.8	74.0	-16.2
Horizontal	*7311.000	59.6	40.3	36.1	55.4	74.0	-18.6

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4874.000	53.3	41.5	33.9	45.7	54.0	-8.3
Horizontal	*7311.000	45.5	40.3	36.1	41.3	54.0	-12.7

- 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.

INTERTEK TESTING SERVICES

Applicant: 2GIG Technologies, Inc

Date of Test: April 12, 2017

Model: 2GIG-SP2-GC3

Worst Case Operating Mode: 802.11b (TX-Channel 11)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4924.000	65.2	41.5	33.8	57.5	74.0	-16.5
Horizontal	*7386.000	60.1	40.3	36.1	55.9	74.0	-18.1
Horizontal	*2487.560	62.5	41.4	29.3	50.4	74.0	-23.6

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4924.000	54.2	41.5	33.8	46.5	54.0	-7.5
Horizontal	*7386.000	46.1	40.3	36.1	41.9	54.0	-12.1
Horizontal	*2487.560	56.5	41.4	29.3	44.4	54.0	-9.6

- 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.

TRF no.: FCC 15C_TX_c

FCC ID: WDQ-SP2GC3

Report No.: 170515051GZU-001

INTERTEK TESTING SERVICES

Applicant: 2GIG Technologies, Inc

Date of Test: April 12, 2017

Model: 2GIG-SP2-GC3

Worst Case Operating Mode: 802.11g (TX-Channel 01)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4824.000	61.2	41.5	33.8	53.5	74.0	-20.5
Horizontal	*2390.000	69.0	41.4	29.3	56.9	74.0	-17.1

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4824.000	43.9	41.5	33.8	36.2	54.0	-17.8
Horizontal	*2390.000	58.0	41.4	29.3	45.9	54.0	-8.1

- 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.

TRF no.: FCC 15C_TX_c

FCC ID: WDQ-SP2GC3

Report No.: 170515051GZU-001

INTERTEK TESTING SERVICES

Applicant: 2GIG Technologies, Inc

Date of Test: April 12, 2017

Model: 2GIG-SP2-GC3

Worst Case Operating Mode: 802.11g (TX-Channel 06)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4874.000	60.7	41.5	33.8	53.0	74.0	-21.0
Horizontal	*7311.000	59.5	40.3	36.1	55.3	74.0	-18.7

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4874.000	43.0	41.5	33.8	35.3	54.0	-18.7
Horizontal	*7311.000	44.7	40.3	36.1	40.5	54.0	-13.5

- 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.

TRF no.: FCC 15C_TX_c

FCC ID: WDQ-SP2GC3

Report No.: 170515051GZU-001

INTERTEK TESTING SERVICES

Applicant: 2GIG Technologies, Inc

Date of Test: April 12, 2017

Model: 2GIG-SP2-GC3

Worst Case Operating Mode: 802.11g (TX-Channel 11)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4924.000	59.3	41.5	33.9	51.7	74.0	-22.3
Horizontal	*7386.000	58.3	40.3	36.2	54.2	74.0	-19.8
Horizontal	*2483.760	72.5	41.4	29.3	60.4	74.0	-13.6

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4924.000	43.4	41.5	33.9	35.8	54.0	-18.2
Horizontal	*7386.000	44.4	40.3	36.2	40.3	54.0	-13.7
Horizontal	*2483.760	61.2	41.4	29.3	49.1	54.0	-4.9

- 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.

TRF no.: FCC 15C_TX_c

FCC ID: WDQ-SP2GC3

Report No.: 170515051GZU-001

INTERTEK TESTING SERVICES

Applicant: 2GIG Technologies, Inc

Date of Test: April 12, 2017

Model: 2GIG-SP2-GC3

Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 01)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4824.000	64.2	41.5	33.8	56.5	74.0	-17.5
Horizontal	*2389.920	82.9	41.4	29.3	70.8	74.0	-3.2

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4824.000	45.5	41.5	33.8	37.8	54.0	-16.2
Horizontal	*2389.920	64.8	41.4	29.3	52.7	54.0	-1.3

- 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.

TRF no.: FCC 15C_TX_c

FCC ID: WDQ-SP2GC3

Report No.: 170515051GZU-001

INTERTEK TESTING SERVICES

Applicant: 2GIG Technologies, Inc

Date of Test: April 12, 2017

Model: 2GIG-SP2-GC3

Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 06)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4874.000	63.3	41.5	33.9	55.7	74.0	-18.3
Horizontal	*7311.000	57.4	40.3	36.1	53.2	74.0	-20.8

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4874.000	44.5	41.5	33.9	36.9	54.0	-17.1
Horizontal	*7311.000	43.4	40.3	36.1	39.2	54.0	-14.8

- 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.

TRF no.: FCC 15C_TX_c

FCC ID: WDQ-SP2GC3

Report No.: 170515051GZU-001

INTERTEK TESTING SERVICES

Applicant: 2GIG Technologies, Inc

Date of Test: April 12, 2017

Model: 2GIG-SP2-GC3

Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 11)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4924.000	61.9	41.5	33.9	54.3	74.0	-19.7
Horizontal	*7386.000	56.3	40.3	36.2	52.2	74.0	-21.8
Horizontal	*2484.080	77.2	41.4	29.3	65.1	74.0	-8.9

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4924.000	43.1	41.5	33.9	35.5	54.0	-18.5
Horizontal	*7386.000	42.4	40.3	36.2	38.3	54.0	-15.7
Horizontal	*2484.080	62.1	41.4	29.3	50.0	54.0	-4.0

- 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.

TRF no.: FCC 15C_TX_c

FCC ID: WDQ-SP2GC3

Report No.: 170515051GZU-001

INTERTEK TESTING SERVICES

Applicant: 2GIG Technologies, Inc

Date of Test: April 12, 2017

Model: 2GIG-SP2-GC3

Worst Case Operating Mode: 802.11n-HT40 (TX-Channel 03)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4844.000	62.7	41.5	33.9	55.1	74.0	-18.9
Horizontal	*7266.000	60.1	40.3	36.2	56.0	74.0	-18.0
Horizontal	*2388.770	74.8	41.4	29.3	62.7	74.0	-11.3

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4844.000	40.9	41.5	33.9	33.3	54.0	-20.7
Horizontal	*7266.000	45.5	40.3	36.2	41.4	54.0	-12.6
Horizontal	*2388.770	59.7	41.4	29.3	47.6	54.0	-6.4

- 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.

TRF no.: FCC 15C_TX_c

FCC ID: WDQ-SP2GC3

Report No.: 170515051GZU-001

INTERTEK TESTING SERVICES

Applicant: 2GIG Technologies, Inc

Date of Test: April 12, 2017

Model: 2GIG-SP2-GC3

Worst Case Operating Mode: 802.11n-HT40 (TX-Channel 06)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4874.000	61.2	41.5	33.8	53.5	74.0	-20.5
Horizontal	*7311.000	59.1	40.3	36.1	54.9	74.0	-19.1

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4874.000	41.2	41.5	33.8	33.5	54.0	-20.5
Horizontal	*7311.000	45.5	40.3	36.1	41.3	54.0	-12.7

- 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.

TRF no.: FCC 15C_TX_c

FCC ID: WDQ-SP2GC3

Report No.: 170515051GZU-001

INTERTEK TESTING SERVICES

Applicant: 2GIG Technologies, Inc

Date of Test: April 12, 2017

Model: 2GIG-SP2-GC3

Worst Case Operating Mode: 802.11n-HT40 (TX-Channel 09)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Peak Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4904.000	61.7	41.5	33.9	54.1	74.0	-19.9
Horizontal	*7356.000	59.2	40.3	36.2	55.1	74.0	-18.9
Horizontal	*2488.190	73.4	41.4	29.3	61.3	74.0	-12.7

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Average Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	*4904.000	41.0	41.5	33.9	33.4	54.0	-20.6
Horizontal	*7356.000	45.8	40.3	36.2	41.7	54.0	-12.3
Horizontal	*2488.190	58.6	41.4	29.3	46.5	54.0	-7.5

- 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.

TRF no.: FCC 15C_TX_c

FCC ID: WDQ-SP2GC3

Report No.: 170515051GZU-001

INTERTEK TESTING SERVICES

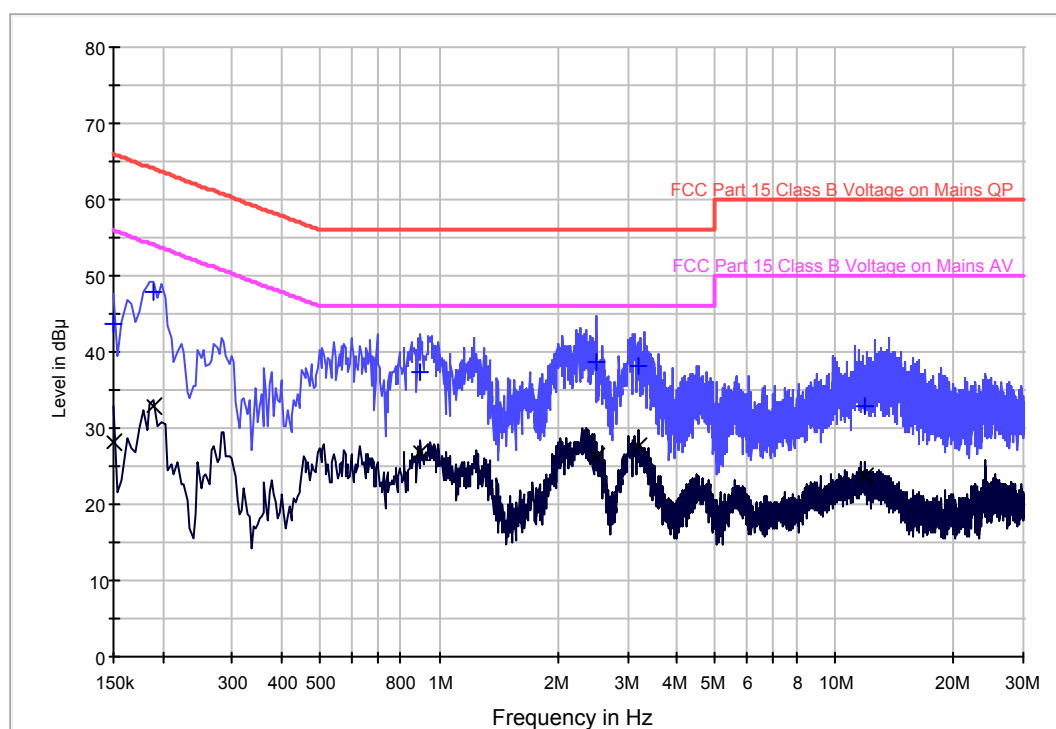
4.9 Conducted Emission

Worst Case Conducted emission at 0.190MHz is Passed by 15.2dB margin

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

INTERTEK TESTING SERVICES

Applicant: 2GIG Technologies, Inc
 Date of Test: April 12, 2017
 Model: 2GIG-SP2-GC3
 Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 01)
 Line: Live
Conducted Emission Test - FCC



Result Table QP

Frequency (MHz)	QuasiPeak (dB μ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.150	43.8	L1	9.8	22.2	66.0
0.190	47.9	L1	9.8	16.1	64.0
0.898	37.5	L1	10.0	18.5	56.0
2.506	38.6	L1	10.0	17.4	56.0
3.198	38.1	L1	10.0	17.9	56.0
11.914	32.8	L1	10.1	27.2	60.0

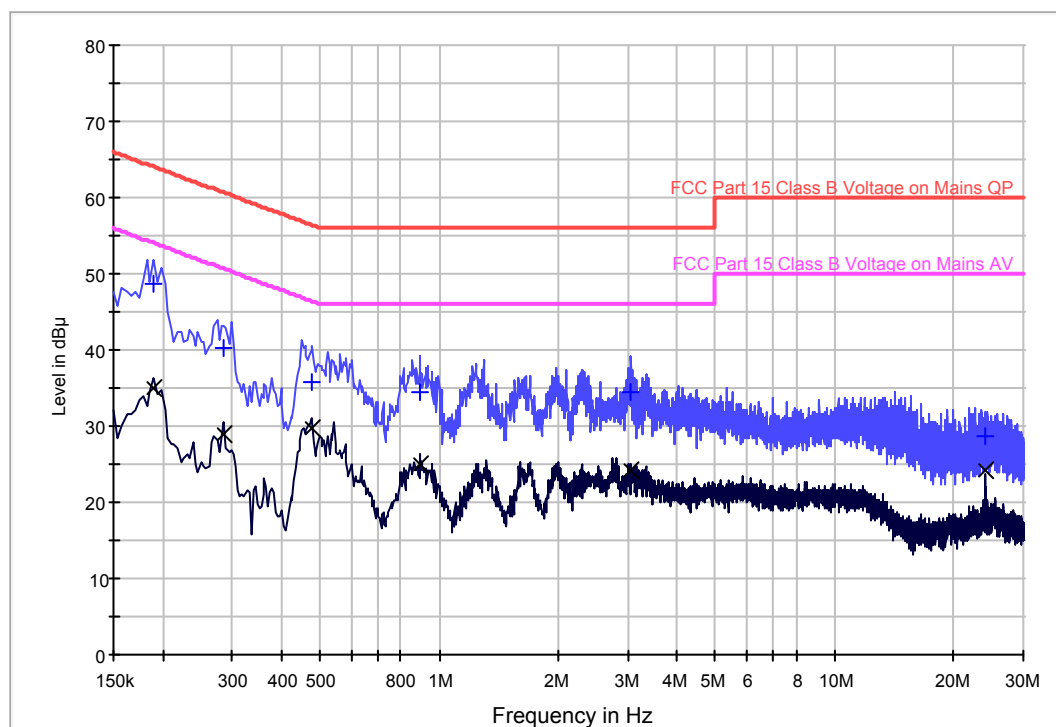
Result Table AV

Frequency (MHz)	Average (dB μ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.150	28.1	L1	9.8	27.9	56.0
0.190	33.0	L1	9.8	21.0	54.0
0.898	26.7	L1	10.0	19.3	46.0
2.506	26.3	L1	10.0	19.7	46.0
3.198	27.5	L1	10.0	18.5	46.0
11.914	23.6	L1	10.1	26.4	50.0

TRF no.: FCC 15C_TX_c
 FCC ID: WDQ-SP2GC3
 Report No.: 170515051GZU-001

INTERTEK TESTING SERVICES

Applicant: 2GIG Technologies, Inc
 Date of Test: April 12, 2017
 Model: 2GIG-SP2-GC3
 Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 01)
 Line: Neutral
Conducted Emission Test - FCC



Result Table QP

Frequency (MHz)	QuasiPeak (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.190	48.8	N	10.1	15.2	64.0
0.286	40.2	N	10.2	20.4	60.6
0.478	35.8	N	10.2	20.6	56.4
0.894	34.6	N	10.3	21.4	56.0
3.062	34.5	N	10.3	21.5	56.0
24.002	28.8	N	10.4	31.2	60.0

Result Table AV

Frequency (MHz)	Average (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.190	35.1	N	10.1	18.9	54.0
0.286	29.0	N	10.2	21.6	50.6
0.478	29.7	N	10.2	16.7	46.4
0.894	25.0	N	10.3	21.0	46.0
3.062	24.2	N	10.3	21.8	46.0
24.002	24.3	N	10.4	25.7	50.0

TRF no.: FCC 15C_TX_c
 FCC ID: WDQ-SP2GC3
 Report No.: 170515051GZU-001

INTERTEK TESTING SERVICES

Applicant: 2GIG Technologies, Inc
Date of Test: April 12, 2017
Model: 2GIG-SP2-GC3

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

Not required - No digital part

Test results are attached

Included in the separated report.

INTERTEK TESTING SERVICES

Applicant: 2GIG Technologies, Inc
Date of Test: April 12, 2017
Model: 2GIG-SP2-GC3

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 SWEPT 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.

INTERTEK TESTING SERVICES

EXHIBIT 5

EQUIPMENT PHOTOGRAPHS

INTERTEK TESTING SERVICES

5.0 Equipment Photographs

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

INTERTEK TESTING SERVICES

EXHIBIT 6

PRODUCT LABELLING

INTERTEK TESTING SERVICES

6.0 Product Labeling

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

INTERTEK TESTING SERVICES

EXHIBIT 7

TECHNICAL SPECIFICATIONS

INTERTEK TESTING SERVICES

7.0 Technical Specifications

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

INTERTEK TESTING SERVICES

EXHIBIT 8

INSTRUCTION MANUAL

INTERTEK TESTING SERVICES

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.

INTERTEK TESTING SERVICES

EXHIBIT 9

CONFIDENTIALITY REQUEST

INTERTEK TESTING SERVICES

9.0 Confidentiality Request

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

INTERTEK TESTING SERVICES

EXHIBIT 10

MISCELLANEOUS INFORMATION

INTERTEK TESTING SERVICES

10.0 Discussion of Pulse Desensitization

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

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

INTERTEK TESTING SERVICES

EXHIBIT 11

TEST EQUIPMENT LIST

INTERTEK TESTING SERVICES

11.0 Test Equipment List

RF conducted test

Equipment No.	Equipment	Model	Manufacturer	Cal. Due date (YYYY-MM-DD)	Calibration Interval
EM031-03	Signal and Spectrum Analyzer (10 Hz~40 GHz)	R&S FSV40	R&S	6/3/2017	1Y
EM086-11	Power Meter	NRP2	R&S	1/5/2018	1Y
EM086-11-01	Power Sensor	NRP-Z91	R&S	1/5/2018	1Y
EM006-06-10	Coaxial cable	/	R&S	4/11/2018	1Y

Radiated Emission

Equipment No.	Equipment	Model	Manufacturer	Cal. Due date (YYYY-MM-DD)	Calibration Interval
EM030-04	3m Semi-Anechoic Chamber	9×6×6 m ³	ETS•LINDGREEN	5/9/2017	1Y
EM031-02	EMI Test Receiver (9 kHz~7 GHz)	R&S ESR7	R&S	6/7/2017	1Y
EM031-03	Signal and Spectrum Analyzer (10 Hz~40 GHz)	R&S FSV40	R&S	6/3/2017	1Y
EM011-04	Loop antenna (9 kHz-30 MHz)	HFH2-Z2	R&S	6/6/2017	1Y
EM061-03	TRILOG Super Broadband test Antenna (30 MHz-1.5 GHz) (TX)	VULB 9161	SCHWARZBECK	6/6/2017	1Y
EM033-01	TRILOG Super Broadband test Antenna(30 MHz-3 GHz) (RX)	VULB 9163	SCHWARZBECK	9/8/2017	1Y
EM033-02	Bouble-Ridged Waveguide Horn Antenna (800 MHz-18 GHz)(RX)	R&S HF907	R&S	6/6/2017	1Y
EM033-03	High Frequency Antenna & preamplifier(18 GHz~26.5 GHz) (RX)	R&S SCU-26	R&S	4/1/2018	1Y
EM033-04	High Frequency Antenna & preamplifier (26 GHz-40 GHz)	R&S SCU-40	R&S	4/1/2018	1Y
EM031-02-01	Coaxial cable(9 kHz-1 GHz)	N/A	R&S	5/30/2017	1Y
EM033-02-02	Coaxial cable(1 GHz-18 GHz)	N/A	R&S	5/30/2017	1Y
EM033-04-02	Coaxial cable(18 GHz~40 GHz)	N/A	R&S	4/1/2018	1Y
EM022-03	2.45 GHz Filter	BRM50702	Micro-Tronics	5/9/2017	1Y

INTERTEK TESTING SERVICES

Conducted emission at the mains terminals

Equipment No.	Equipment	Model	Manufacturer	Cal. Due date (YYYY-MM-DD)	Calibration Interval
EM080-05	EMI receiver	ESCI	R&S	7/26/2017	1Y
EM006-05	LISN	ENV216	R&S	9/18/2017	1Y
EM006-06	LISN	ENV216	R&S	9/18/2017	1Y
EM006-06-01	Coaxial cable	/	R&S	4/11/2018	1Y
EM004-04	EMC shield Room	8m×3m×3m	Zhongyu	1/25/2018	1Y