STAR SYSTEMS INTERNATIONAL LIMITED

Application
For
Certification

FCC ID: 2AA7KPLATINO-WF2014

RFID Handheld Reader

Model: PLATINO
Brand Name: Star Systems

WiFi Transceiver

Report No.: 140924018SZN-004

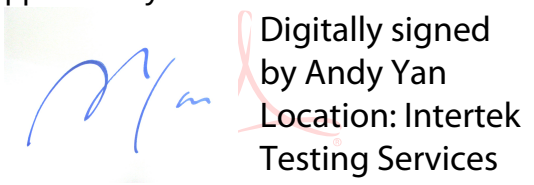
We hereby certify that the sample of the above item is considered to comply with the requirements of FCC Part 15, Subpart C for Intentional Radiator, mention 47 CFR [10-1-13]

Prepared and Checked by:

Sign on file

Lin Lin
Senior Project Engineer

Approved by:



Andy Yan
Senior Project Engineer
Date: June 23, 2015

TRF no.: FCC 15C_Tx_b

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MEASUREMENT/TECHNICAL REPORT

STAR SYSTEMS INTERNATIONAL LIMITED
MODEL: PLATINO

FCC ID: 2AA7KPLATINO-WF2014

This report concerns (check one) Original Grant ___X___ 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 ___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 [10-01-13 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

EXHIBIT 1

SUMMARY OF TEST RESULTS

1.0 Summary of Test results

STAR SYSTEMS INTERNATIONAL LIMITED
MODEL: PLATINO

FCC ID: 2AA7KPLATINO-WF2014

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 Integral Antenna 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 RFID Handheld Reader, it is able to read ID cards through 902.75-927.25MHz and transmit data through WiFi function operating in 2412-2462 MHz, 11channels with 5MHz separation, and in 2422-2452MHz, 7 channels with 5MHz separation. The EUT was powered by a 3.7 VDC Li-ion rechargeable battery which is charged by USB Power Adapter with AC 120V, 60Hz input. For more detail information pls. refer to the user 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)

Remaining portions are subject to the following procedures:
1. Receiver portion of WiFi: exempt from technical requirement of this Part.
2. RFID Function: Refer to report 140924018SZN-003
3. Transfer data function: this function has been completed in 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. 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 a 3.7 VDC fully charged Li-ion rechargeable battery which is charged by an USB Power Adapter with AC 120V, 60Hz input during the test. All data rate were 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.

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

One shielded USB cable with a ferrite core is used.

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 STAR SYSTEMS INTERNATIONAL LIMITED 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	Model No.
110cm shielded USB Cable with a ferrite core	Star Systems International Limited	N/A
USB Power Adapter	Juxing Electronic (Huizhou) Co.,Ltd.	JXAS0050500100VU, Input: AC 100-240V; 50/60Hz Output: DC 5V; 1000mA

EXHIBIT 4

MEASUREMENT RESULTS

Applicant: STAR SYSTEMS INTERNATIONAL LIMITED
Date of Test: January 12, 2015
Model: PLATINO

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 = 0.9dBi) (CCK, 1Mbps)		
Frequency (MHz)	Output in dBm	Output in mWatt
Low Channel: 2412	2.54	1.79
Middle Channel: 2437	2.39	1.73
High Channel: 2462	2.16	1.64

IEEE 802.11g (Antenna Gain = 0.9dBi) (16QAM, 6Mbps)		
Frequency (MHz)	Output in dBm	Output in mWatt
Low Channel: 2412	-3.90	0.41
Middle Channel: 2437	-3.83	0.41
High Channel: 2462	-3.71	0.43

IEEE 802.11n-HT20 (Antenna Gain = 0.9dBi) (16QAM, 6.5Mbps)		
Frequency (MHz)	Output in dBm	Output in mWatt
Low Channel: 2412	-1.43	0.72
Middle Channel: 2437	-1.38	0.73
High Channel: 2462	-1.40	0.72

IEEE 802.11n-HT40 (Antenna Gain = 0.9dBi) (64QAM, 13.5Mbps)		
Frequency (MHz)	Output in dBm	Output in mWatt
Low Channel: 2422	-2.10	0.62
Middle Channel: 2437	-2.08	0.62
High Channel: 2452	-2.00	0.63

Cable loss: 0.5 dB External Attenuation: 0 dB

Cable loss, external attenuation has been included in OFFSET function

EUT max. output level = 2.54dBm

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

Applicant: STAR SYSTEMS INTERNATIONAL LIMITED
Date of Test: January 12, 2015
Model: PLATINO

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	9.55
2437	9.55
2462	9.55

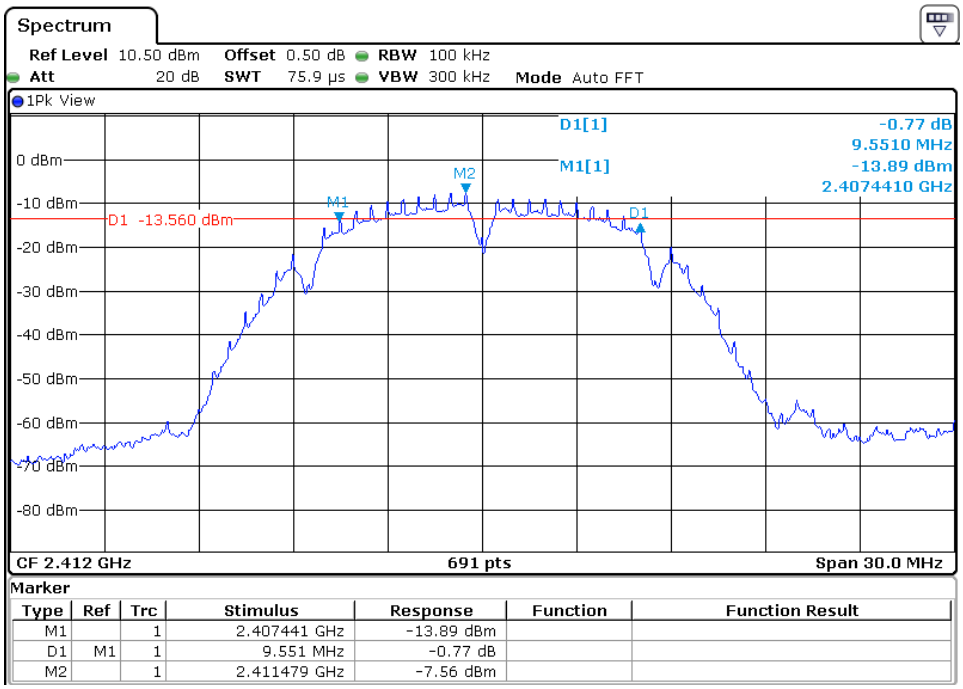
IEEE 802.11g (16QAM, 6Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2412	16.37
2437	16.32
2462	16.02

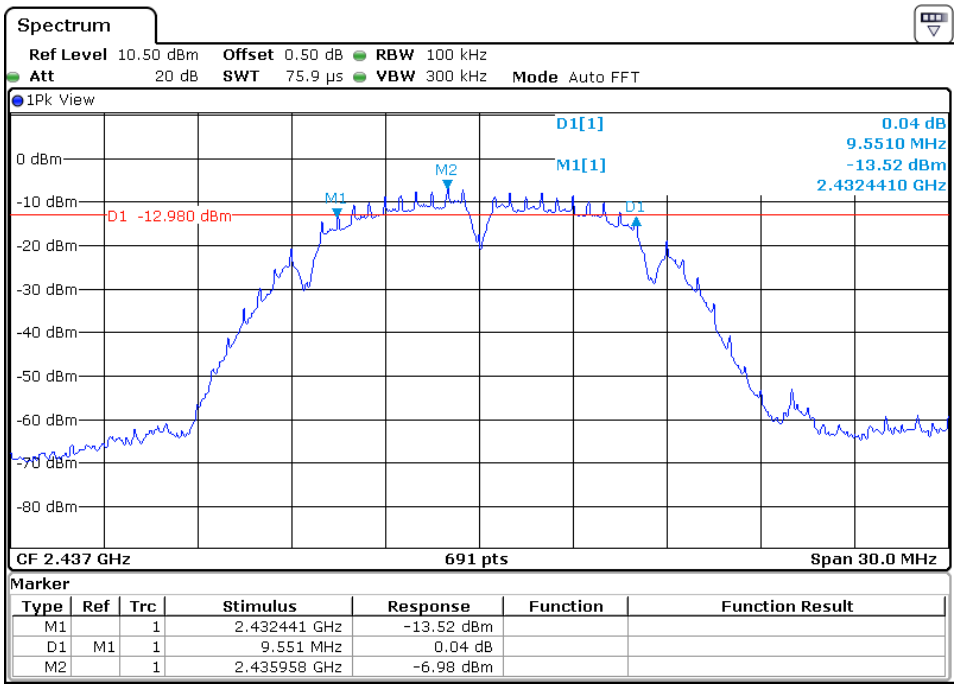
IEEE 802.11n-HT20 (16QAM, 6.5Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2412	17.45
2437	17.58
2462	17.54

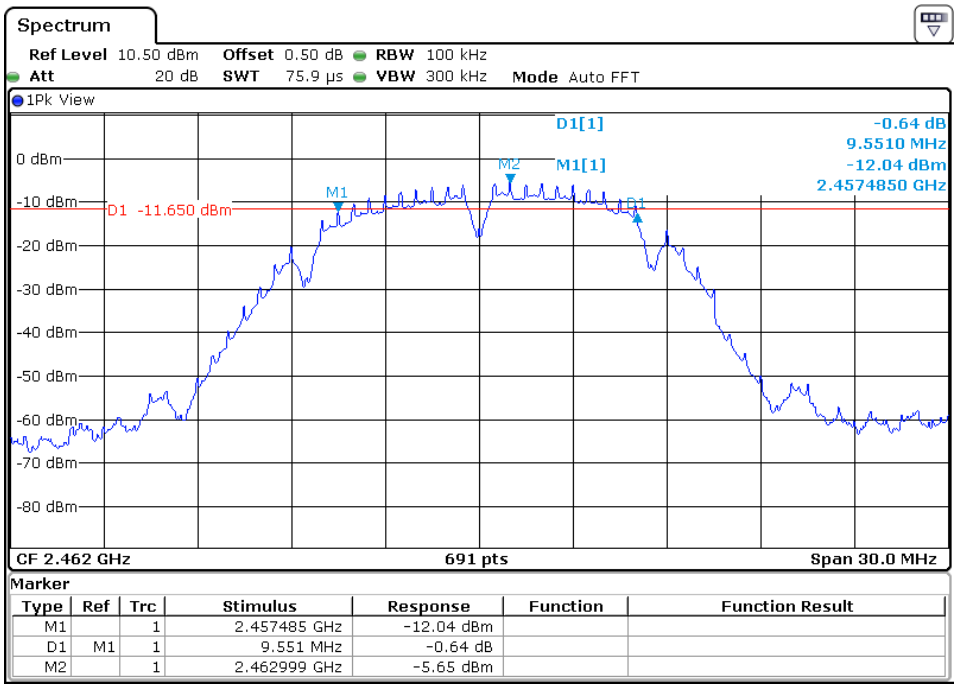
IEEE 802.11n-HT40 (64QAM, 13.5Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2422	36.32
2437	36.25
2452	36.25

The test plots are attached as below.

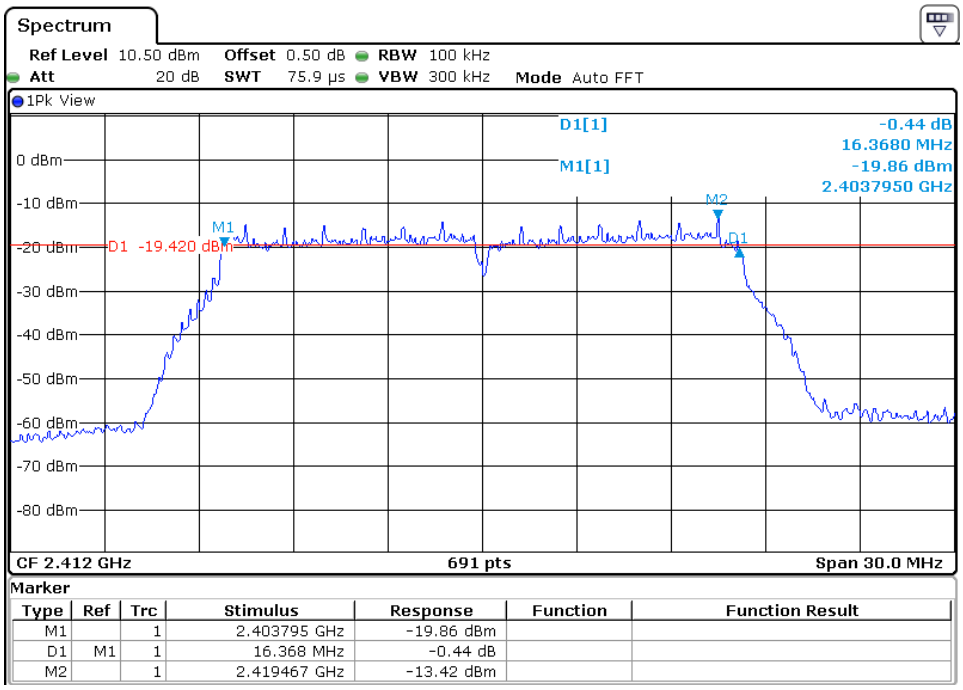
802.11b

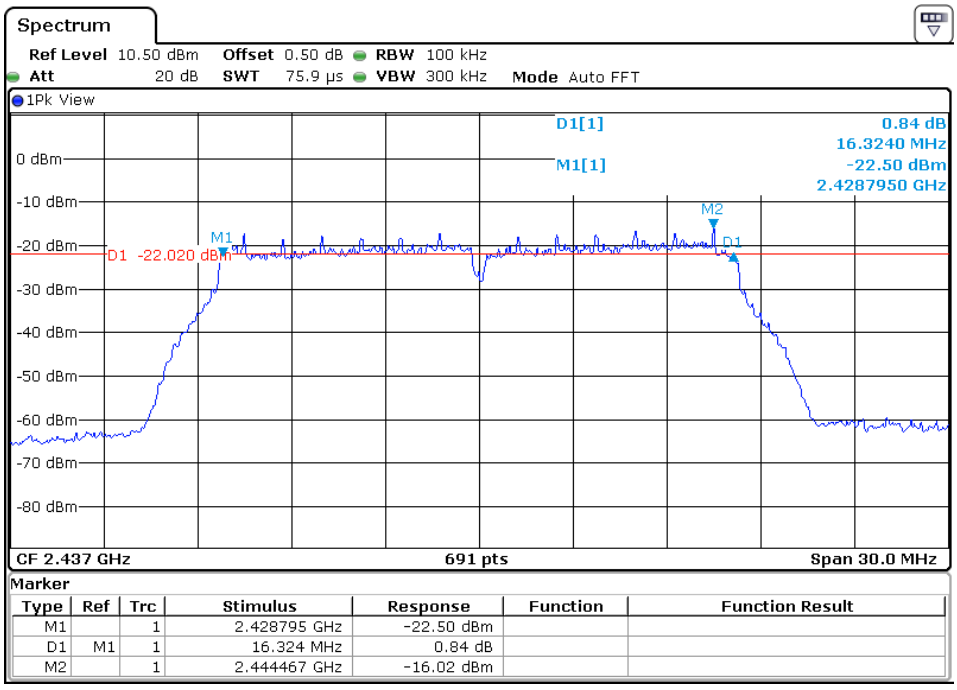

Spectrum
Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz
Att 20 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] -0.77 dB
9.5510 MHz
M1[1] -13.89 dBm
2.4074410 GHz
D1 -13.560 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
CF 2.412 GHz
691 pts
Span 30.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 2.407441 GHz -13.89 dBm
D1 M1 1 9.551 MHz -0.77 dB
M2 1 2.411479 GHz -7.56 dBm

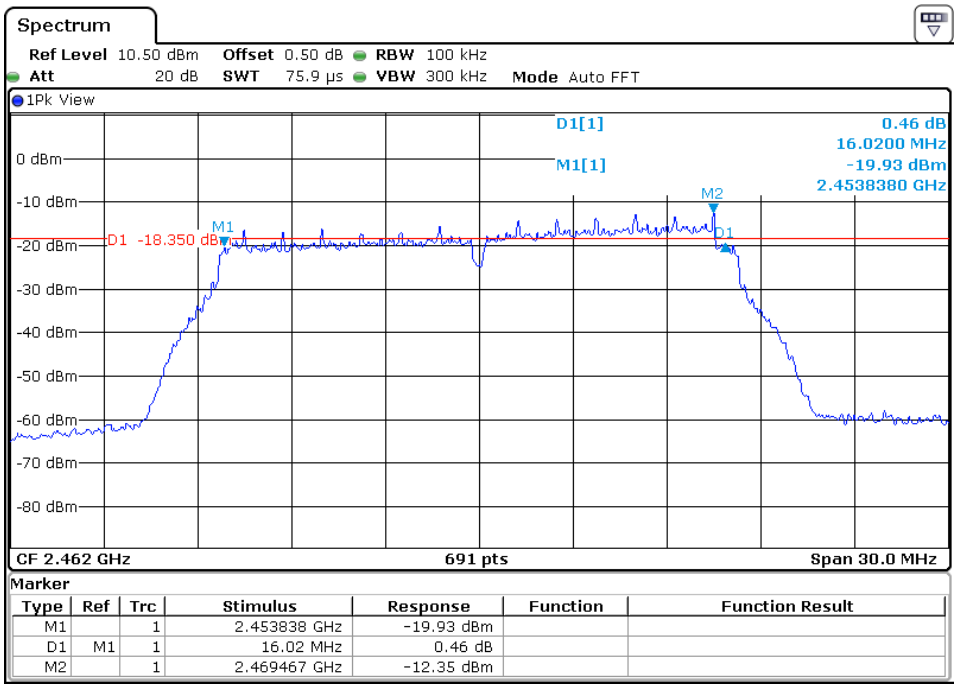

Spectrum
Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz
Att 20 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] 0.04 dB
9.5510 MHz
M1[1] -13.52 dBm
2.4324410 GHz
D1 -12.980 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
CF 2.437 GHz
691 pts
Span 30.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 2.432441 GHz -13.52 dBm
D1 M1 1 9.551 MHz 0.04 dB
M2 1 2.435958 GHz -6.98 dBm


Spectrum
Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz
Att 20 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] -0.64 dB
9.5510 MHz
M1[1] -12.04 dBm
2.4574850 GHz
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
D1 -11.650 dBm
M1
M2
D1
CF 2.462 GHz
691 pts
Span 30.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 2.457485 GHz -12.04 dBm
D1 M1 1 9.551 MHz -0.64 dB
M2 1 2.462999 GHz -5.65 dBm

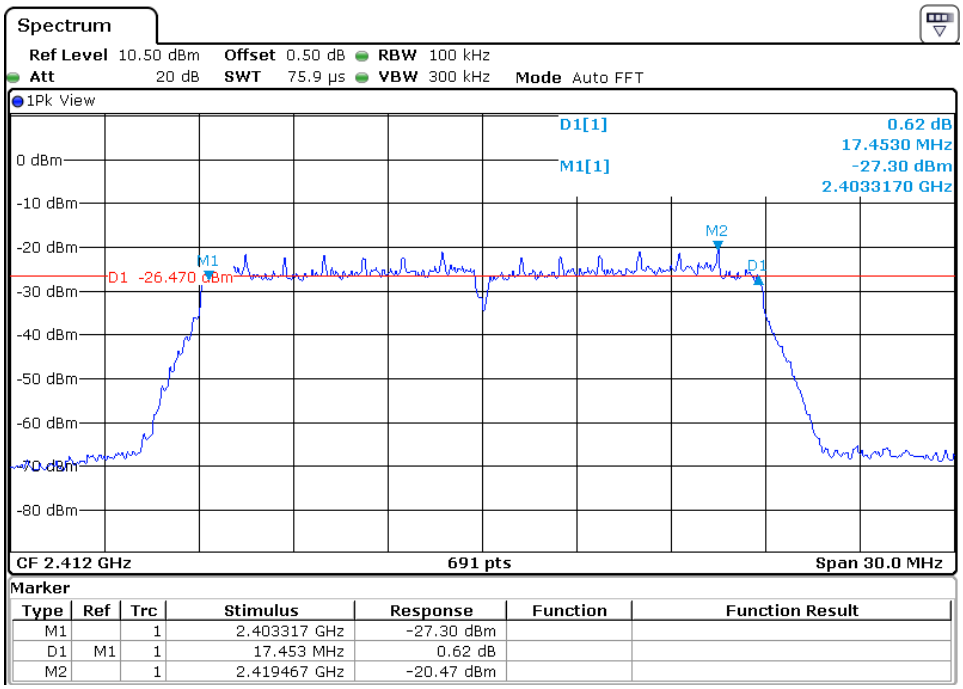
802.11g

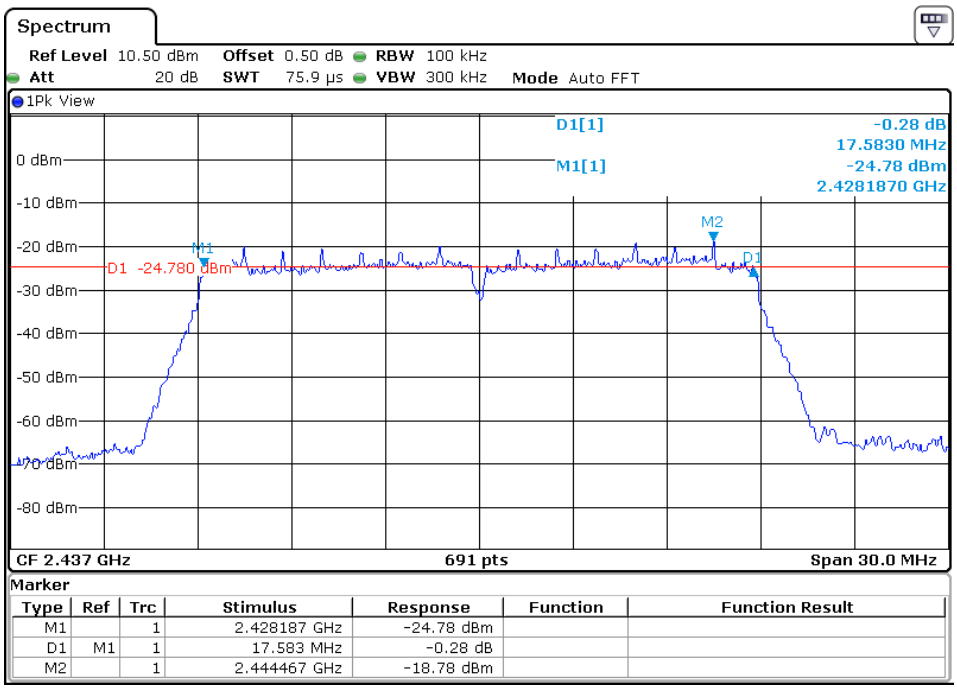

Spectrum
Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz
Att 20 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] -0.44 dB
16.3680 MHz
M1[1] -19.86 dBm
2.4037950 GHz
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
D1 -19.420 dBm
M1
M2
D1
CF 2.412 GHz
691 pts
Span 30.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 2.403795 GHz -19.86 dBm
D1 M1 1 16.368 MHz -0.44 dB
M2 1 2.419467 GHz -13.42 dBm

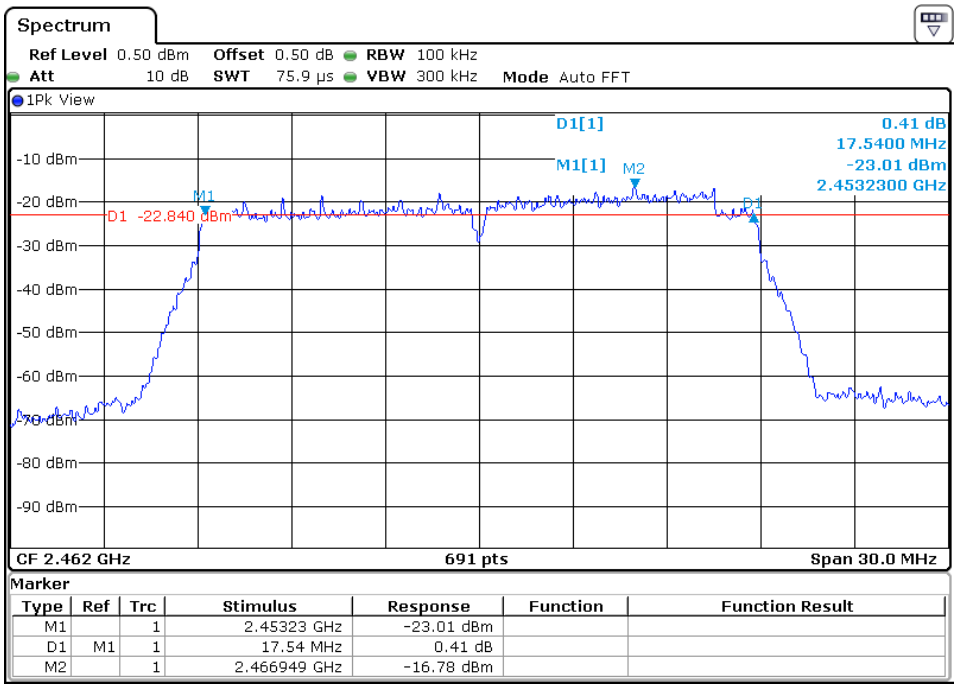

Spectrum
Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz
Att 20 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] 0.84 dB
16.3240 MHz
M1[1] -22.50 dBm
2.4287950 GHz
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
D1 -22.020 dBm
M1
M2
D1
CF 2.437 GHz
691 pts
Span 30.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 2.428795 GHz -22.50 dBm
D1 M1 1 16.324 MHz 0.84 dB
M2 1 2.444467 GHz -16.02 dBm


Spectrum
Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz
Att 20 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] 0.46 dB
16.0200 MHz
M1[1] -19.93 dBm
2.4538380 GHz
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
D1 -18.350 dB
M1
M2
D1
CF 2.462 GHz
691 pts
Span 30.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 2.453838 GHz -19.93 dBm
D1 M1 1 16.02 MHz 0.46 dB
M2 1 2.469467 GHz -12.35 dBm

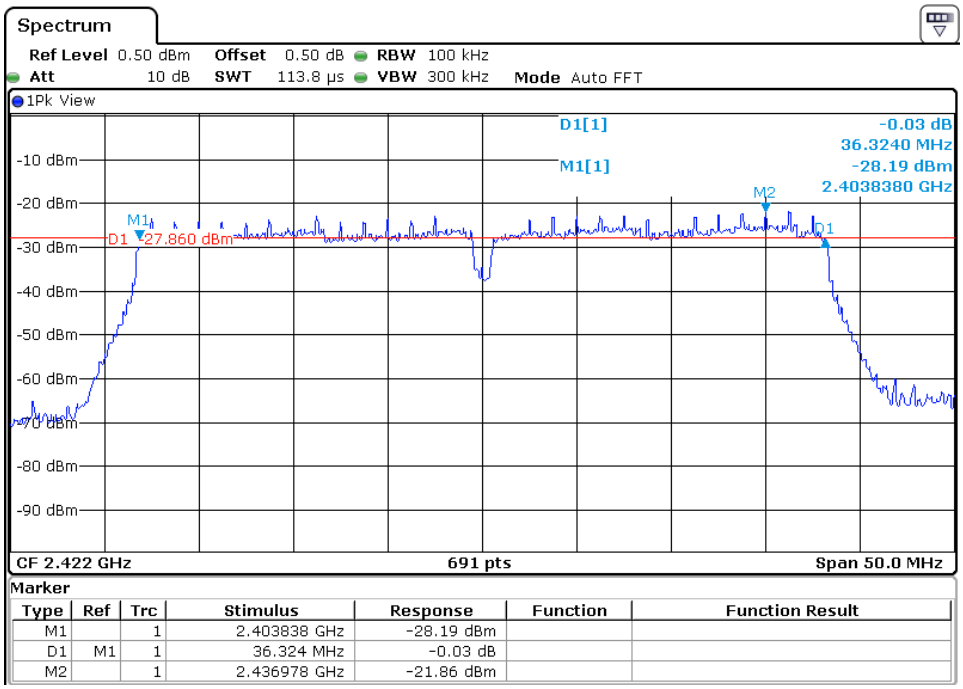
802.11 n-HT20

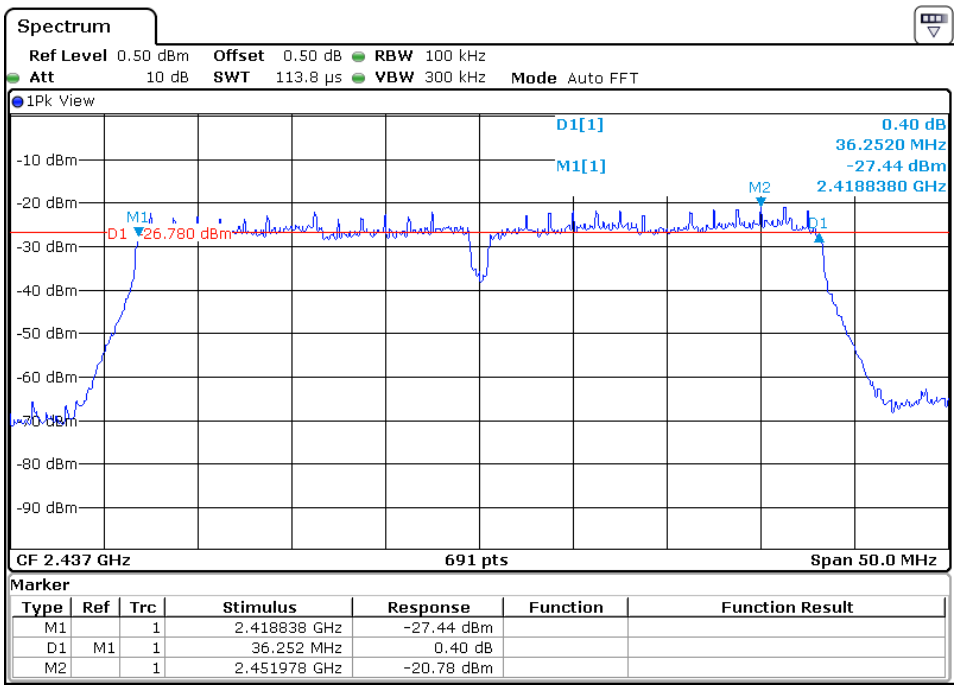

Spectrum
Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz
Att 20 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] 0.62 dB
17.4530 MHz
M1[1] -27.30 dBm
2.4033170 GHz
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
M1
D1 -26.470 dBm
M2
D1
CF 2.412 GHz
691 pts
Span 30.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 2.403317 GHz -27.30 dBm
D1 M1 1 17.453 MHz 0.62 dB
M2 1 2.419467 GHz -20.47 dBm

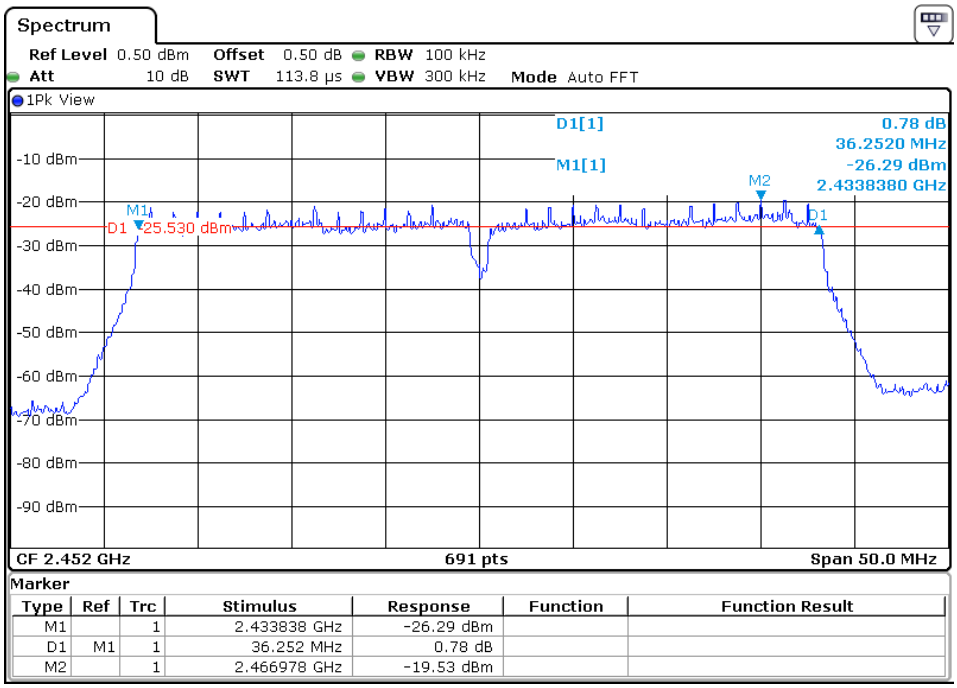

Spectrum
Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz
Att 20 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] -0.28 dB
17.5830 MHz
M1[1] -24.78 dBm
2.4281870 GHz
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
M1
D1 -24.780 dBm
M2
D1
CF 2.437 GHz
691 pts
Span 30.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 2.428187 GHz -24.78 dBm
D1 M1 1 17.583 MHz -0.28 dB
M2 1 2.444467 GHz -18.78 dBm


Spectrum
Ref Level 0.50 dBm Offset 0.50 dB RBW 100 kHz
Att 10 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] 0.41 dB
17.5400 MHz
M1[1] -23.01 dBm
2.4532300 GHz
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
-90 dBm
M1
D1 -22.840 dBm
M2
D1
CF 2.462 GHz
691 pts
Span 30.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 2.45323 GHz -23.01 dBm
D1 M1 1 17.54 MHz 0.41 dB
M2 1 2.466949 GHz -16.78 dBm

802.11 n-HT40


Spectrum
Ref Level 0.50 dBm Offset 0.50 dB RBW 100 kHz
Att 10 dB SWT 113.8 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] -0.03 dB
36.3240 MHz
M1[1] -28.19 dBm
2.4038380 GHz
M1
D1 27.860 dBm
M2
D1
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
-90 dBm
CF 2.422 GHz
691 pts
Span 50.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 2.403838 GHz -28.19 dBm
D1 M1 1 36.324 MHz -0.03 dB
M2 1 2.436978 GHz -21.86 dBm


Spectrum
Ref Level 0.50 dBm Offset 0.50 dB RBW 100 kHz
Att 10 dB SWT 113.8 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] 0.40 dB
36.2520 MHz
M1[1] -27.44 dBm
2.4188380 GHz
M1
D1 26.780 dBm
M2
D1
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
-90 dBm
CF 2.437 GHz
691 pts
Span 50.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 2.418838 GHz -27.44 dBm
D1 M1 1 36.252 MHz 0.40 dB
M2 1 2.451978 GHz -20.78 dBm


Spectrum
Ref Level 0.50 dBm Offset 0.50 dB RBW 100 kHz
Att 10 dB SWT 113.8 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] 0.78 dB
36.2520 MHz
M1[1] -26.29 dBm
2.4338380 GHz
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
-90 dBm
M1
D1 25.530 dBm
M2
D1
CF 2.452 GHz
691 pts
Span 50.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 2.433838 GHz -26.29 dBm
D1 M1 1 36.252 MHz 0.78 dB
M2 1 2.466978 GHz -19.53 dBm

Applicant: STAR SYSTEMS INTERNATIONAL LIMITED
Date of Test: January 12, 2015
Model: PLATINO

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	-7.46
2437	-6.98
2462	-5.35

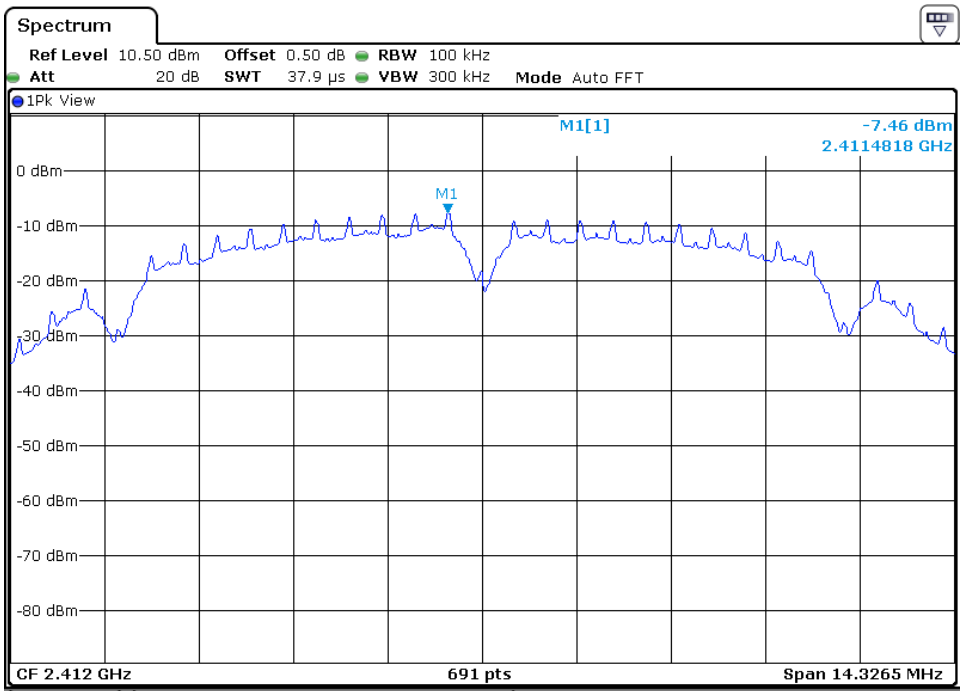
IEEE 802.11g (16QAM, 6Mbps)	
Frequency (MHz)	Power Density with RBW 100KHz
2412	-14.02
2437	-16.69
2462	-15.23

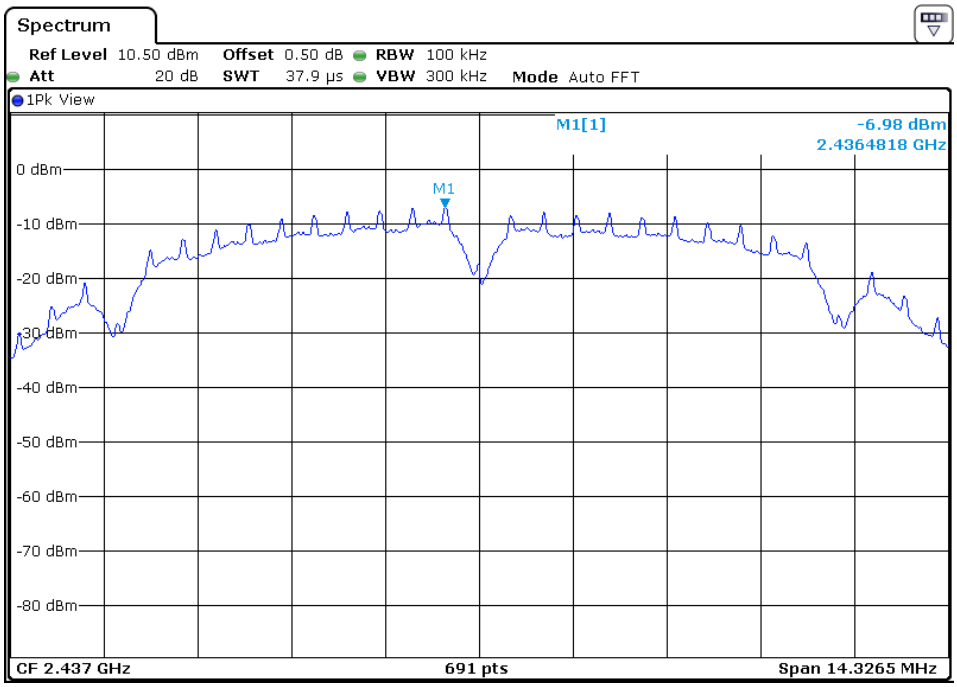
IEEE 802.11n-HT20 (16QAM, 6.5Mbps)	
Frequency (MHz)	Power Density with RBW 100KHz
2412	-20.71
2437	-18.84
2462	-18.01

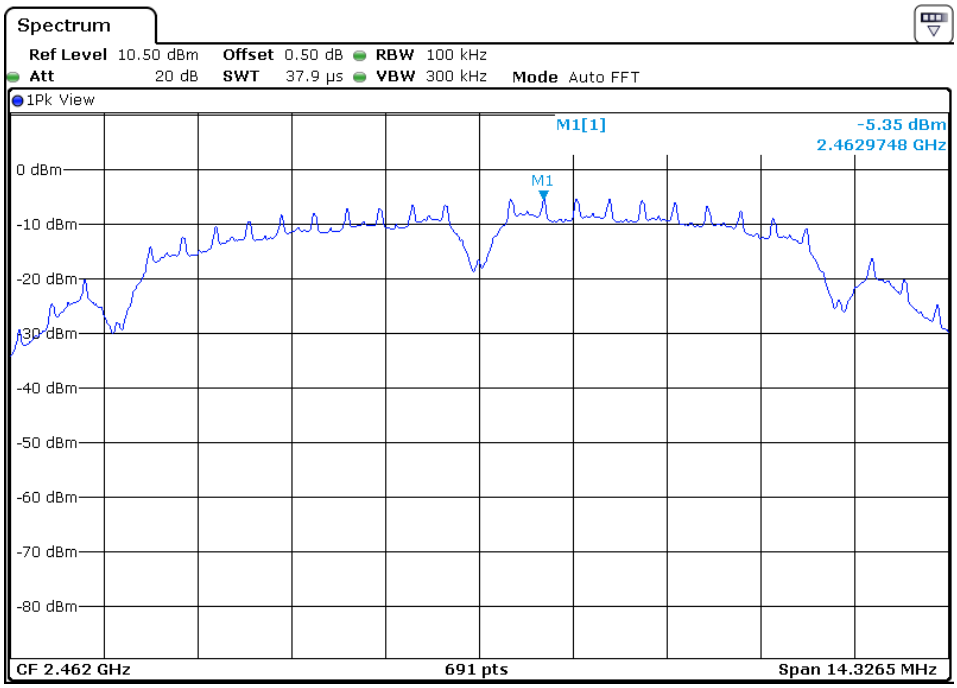
IEEE 802.11n-HT40 (64QAM, 13.5Mbps)	
Frequency (MHz)	Power Density with RBW 100KHz
2422	-21.19
2437	-20.30
2452	-16.74

The test plots are attached as below.

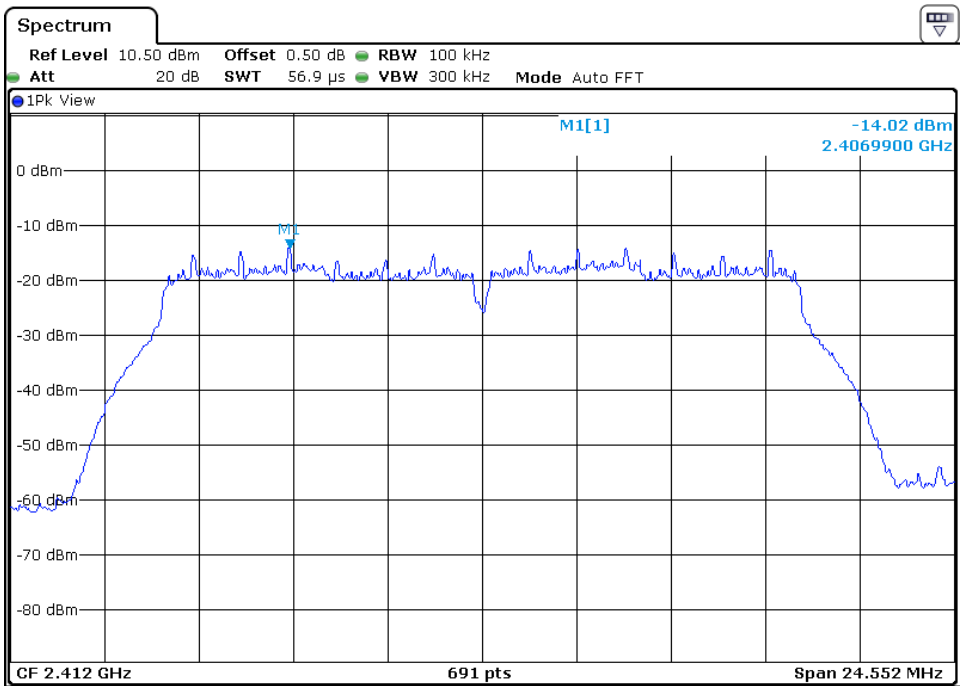
802.11b

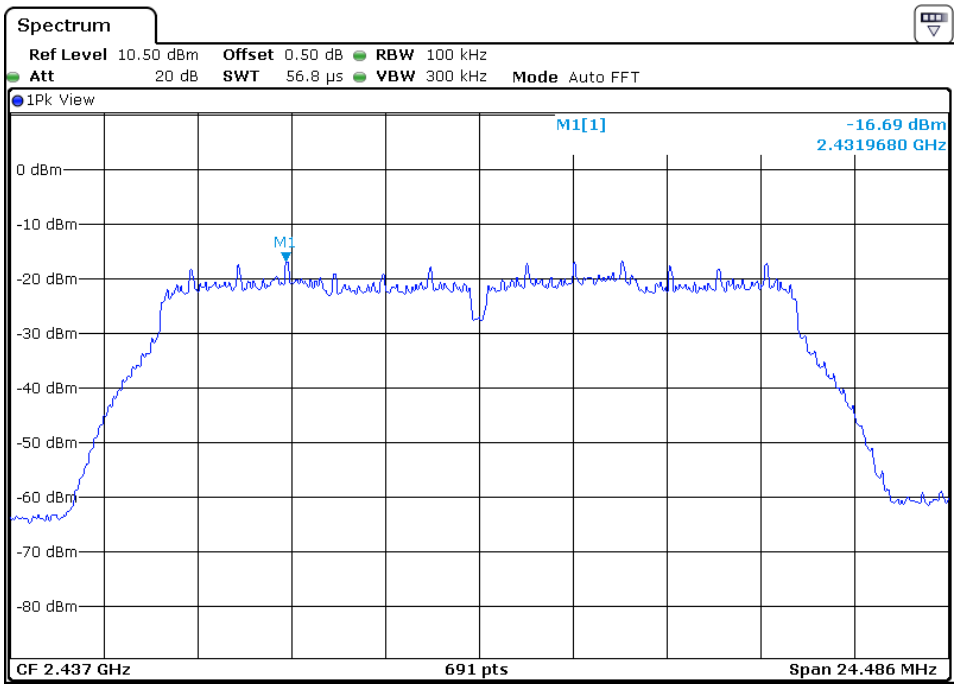

Spectrum
Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz
Att 20 dB SWT 37.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] -7.46 dBm
2.4114818 GHz
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
M1
CF 2.412 GHz
691 pts
Span 14.3265 MHz

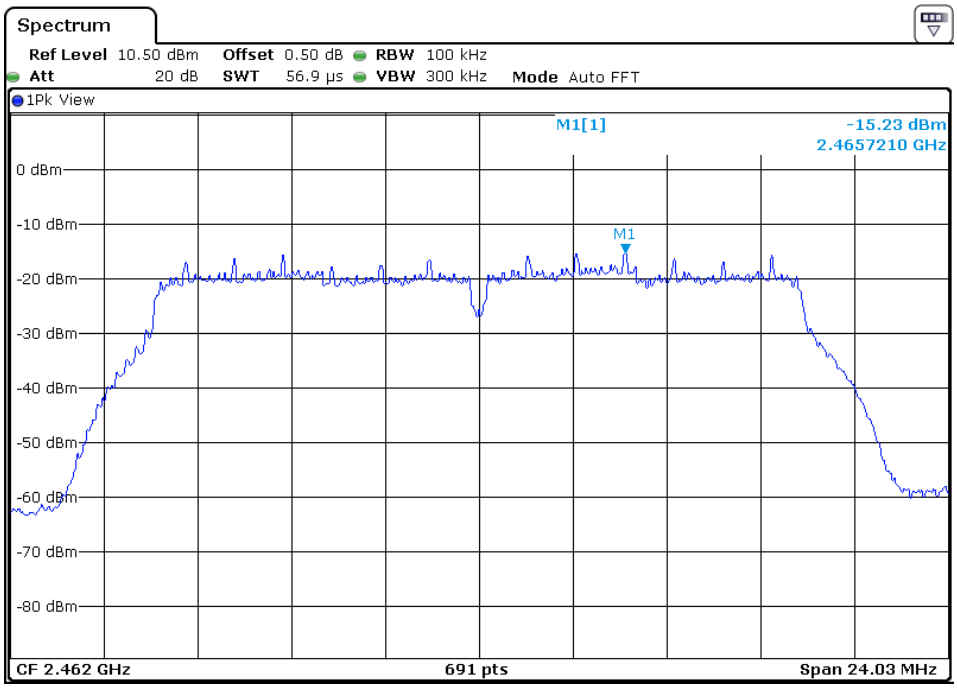

Spectrum
Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz
Att 20 dB SWT 37.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] -6.98 dBm
2.4364818 GHz
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
M1
CF 2.437 GHz
691 pts
Span 14.3265 MHz


Spectrum
Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz
Att 20 dB SWT 37.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] -5.35 dBm
2.4629748 GHz
M1
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
CF 2.462 GHz
691 pts
Span 14.3265 MHz

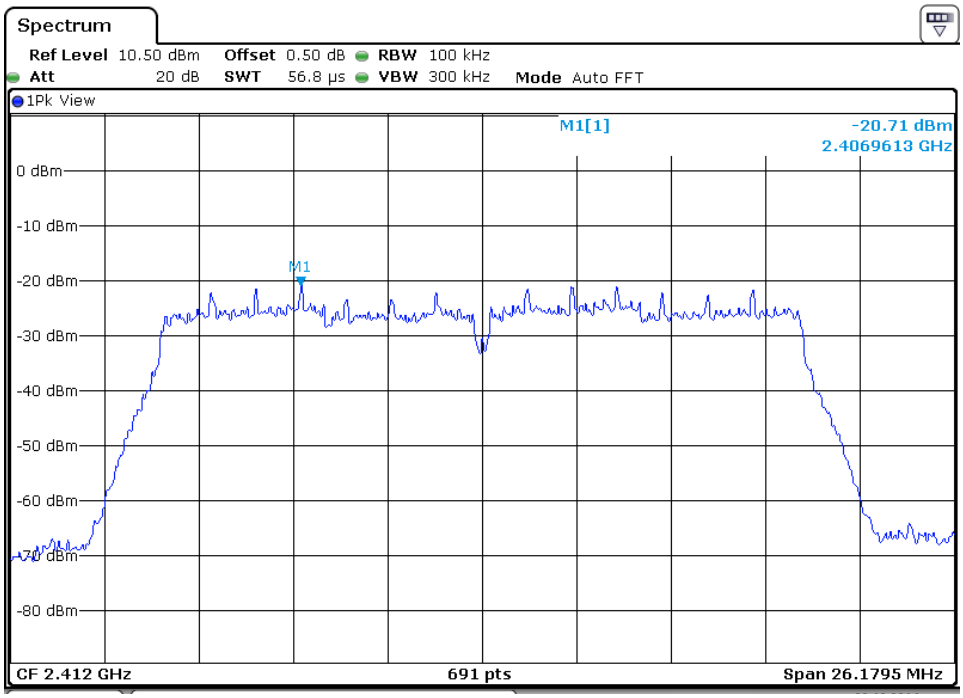
802.11g

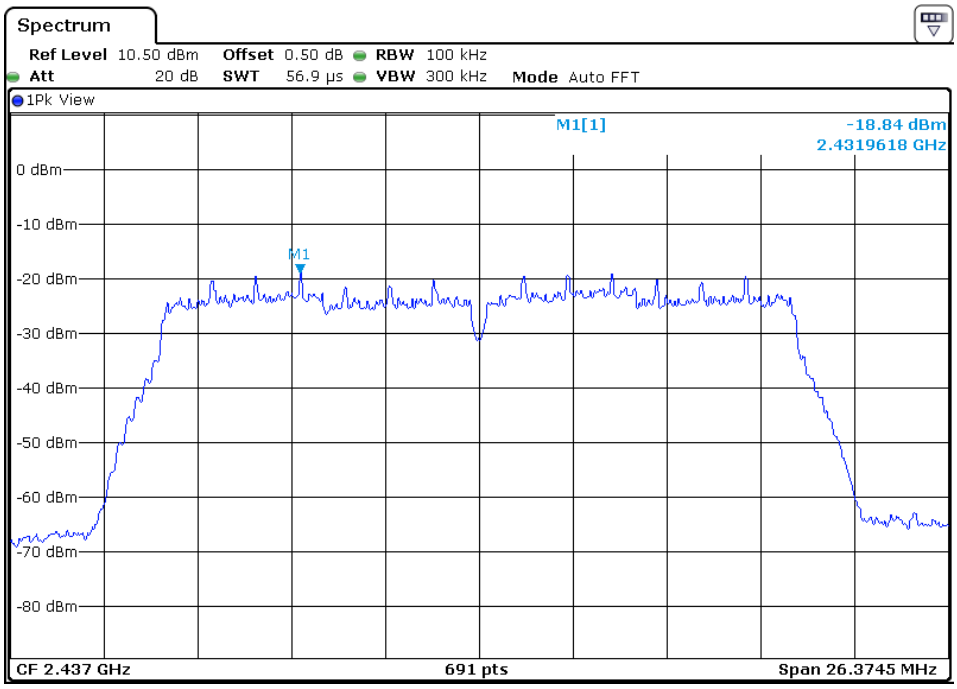

Spectrum
Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz
Att 20 dB SWT 56.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] -14.02 dBm
2.4069900 GHz
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
M1
CF 2.412 GHz
691 pts
Span 24.552 MHz

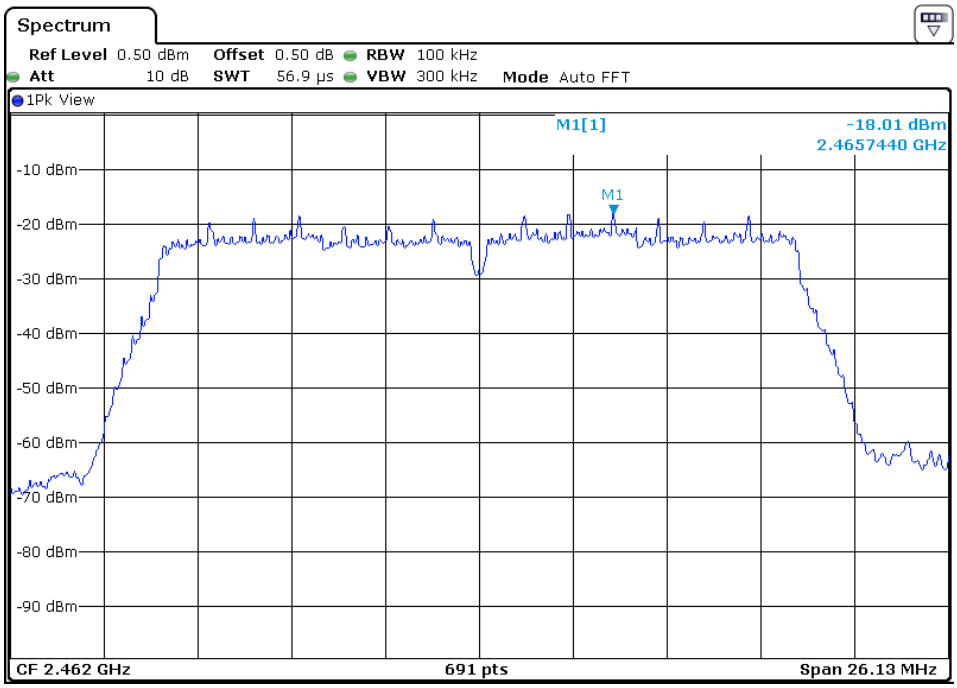

Spectrum
Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz
Att 20 dB SWT 56.8 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] -16.69 dBm
2.4319680 GHz
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
M1
CF 2.437 GHz
691 pts
Span 24.486 MHz


Spectrum
Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz
Att 20 dB SWT 56.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] -15.23 dBm
2.4657210 GHz
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
M1
CF 2.462 GHz
691 pts
Span 24.03 MHz

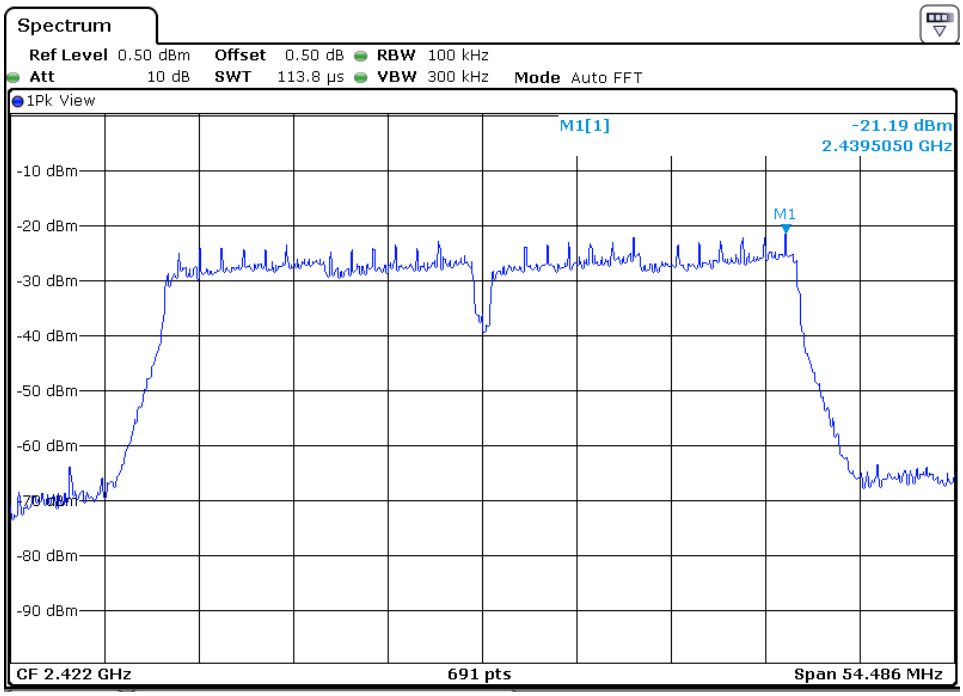
802.11 n-HT20

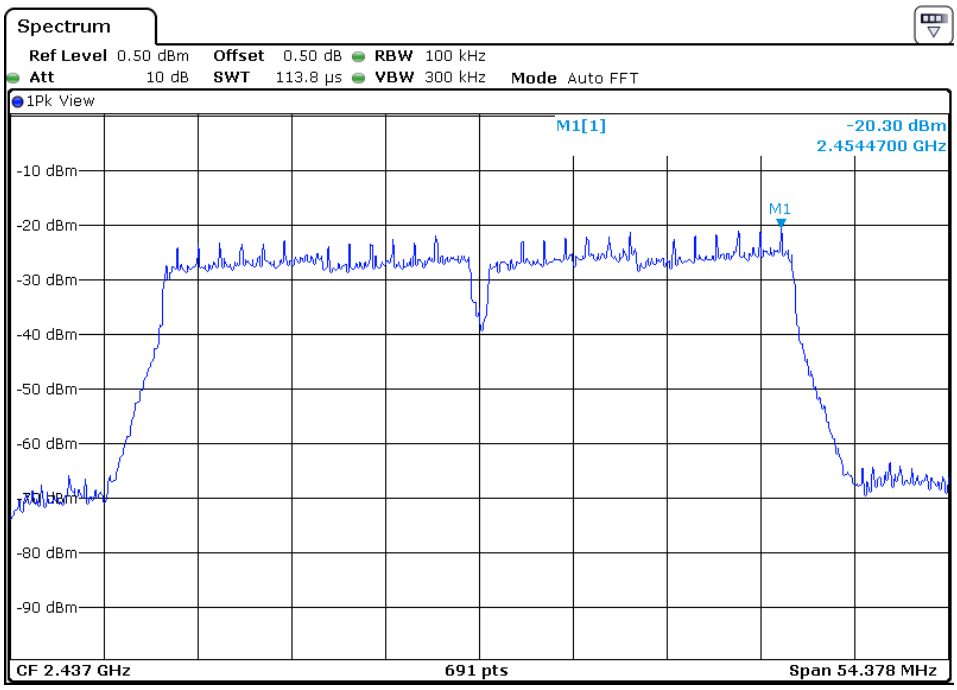

Spectrum
Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz
Att 20 dB SWT 56.8 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] -20.71 dBm
2.4069613 GHz
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
M1
CF 2.412 GHz
691 pts
Span 26.1795 MHz

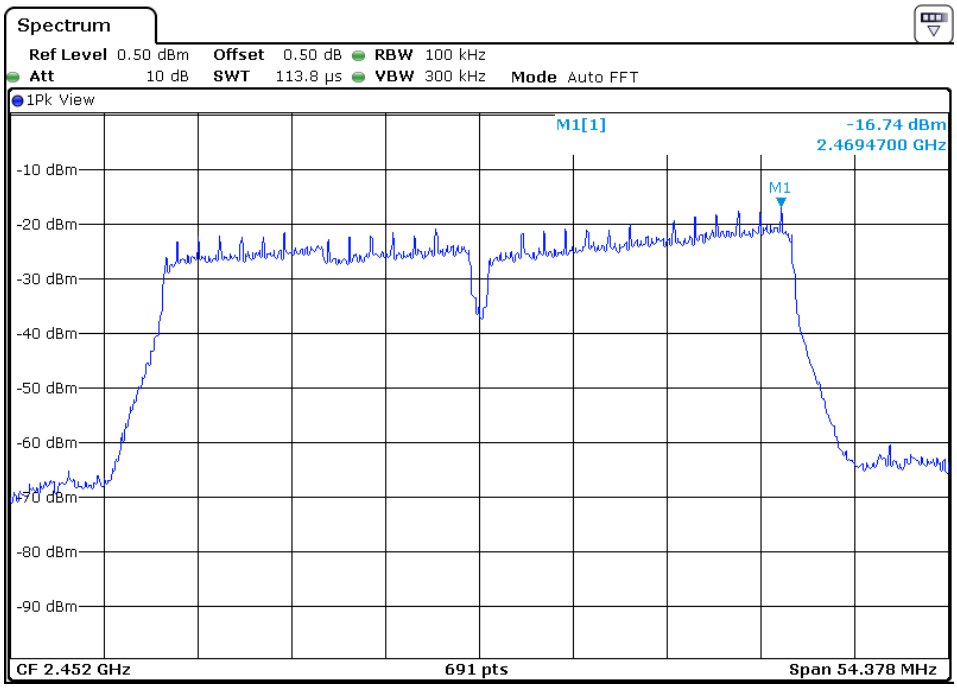

Spectrum
Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz
Att 20 dB SWT 56.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] -18.84 dBm
2.4319618 GHz
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
M1
CF 2.437 GHz
691 pts
Span 26.3745 MHz


Spectrum
Ref Level 0.50 dBm Offset 0.50 dB RBW 100 kHz
Att 10 dB SWT 56.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1]
-18.01 dBm
2.4657440 GHz
M1
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
-90 dBm
CF 2.462 GHz
691 pts
Span 26.13 MHz

802.11 n-HT40


Spectrum
Ref Level 0.50 dBm Offset 0.50 dB RBW 100 kHz
Att 10 dB SWT 113.8 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] -21.19 dBm
2.4395050 GHz
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
-90 dBm
M1
CF 2.422 GHz
691 pts
Span 54.486 MHz


Spectrum
Ref Level 0.50 dBm Offset 0.50 dB RBW 100 kHz
Att 10 dB SWT 113.8 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] -20.30 dBm
2.4544700 GHz
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
-90 dBm
M1
CF 2.437 GHz
691 pts
Span 54.378 MHz


Spectrum
Ref Level 0.50 dBm Offset 0.50 dB RBW 100 kHz
Att 10 dB SWT 113.8 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] -16.74 dBm
2.4694700 GHz
M1
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
-90 dBm
CF 2.452 GHz
691 pts
Span 54.378 MHz

4.4 Out of Band Conducted Emissions, FCC Rule 15.247(d)

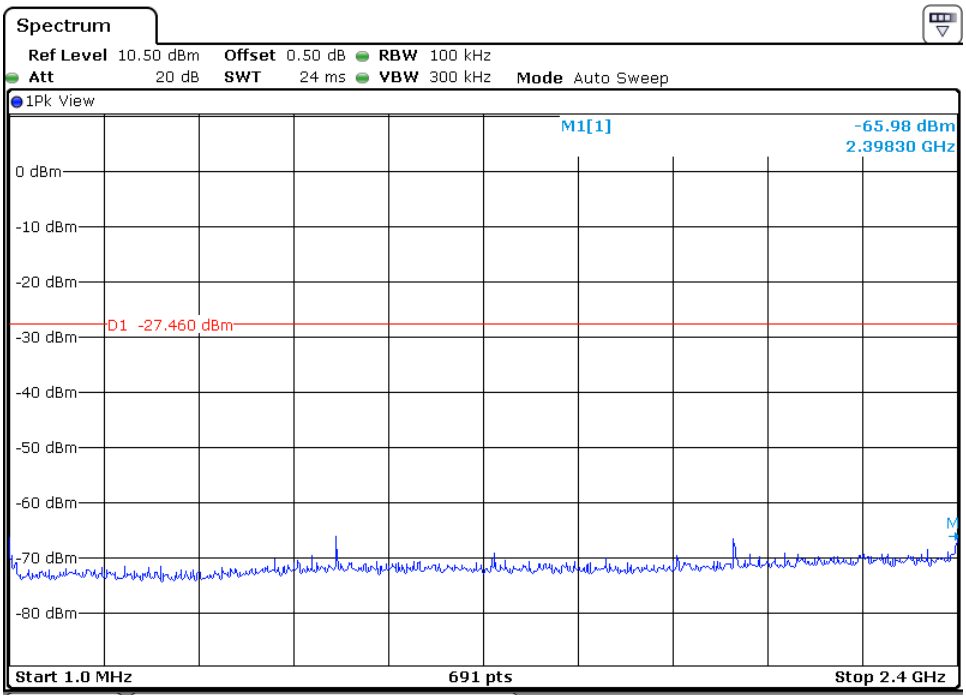
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the 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.

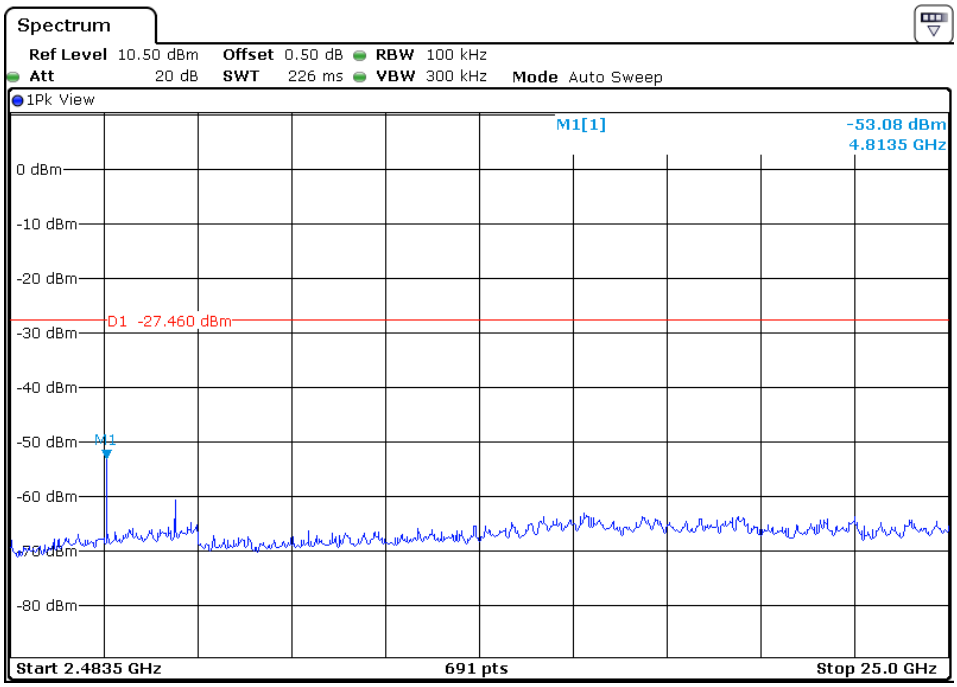
Refer to the attached test plots for out of band conducted emissions data with rate of 1Mbps for 802.11b, 6Mbps for 802.11g, 6.5Mbps for 802.11n-HT20 and 13.5Mbps for 802.11n-HT40.

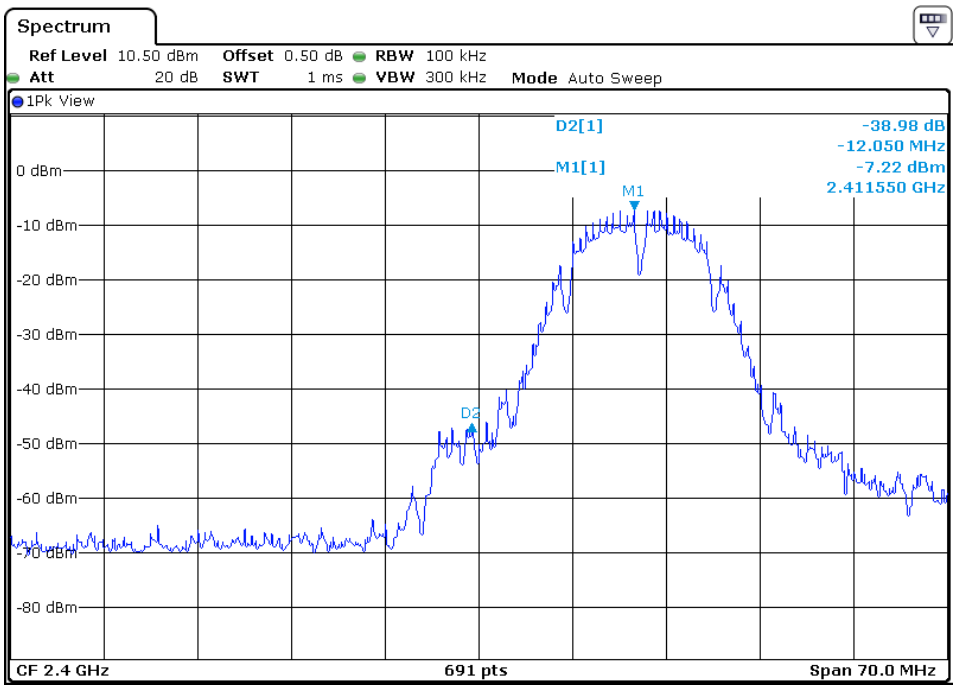
The test plots showed all spurious emission up to the tenth harmonic was measured and they were found to be at least 20 dB below the highest level of the desired power in the passband.

The test plots are attached as below.

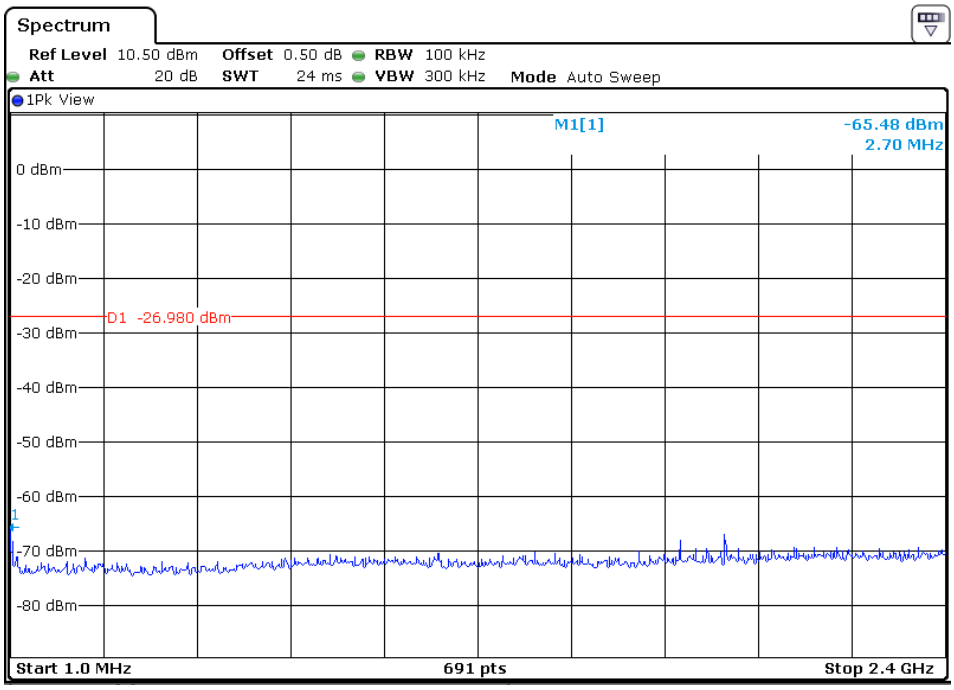
802.11b
Channel 01 (2412MHz) Reference Level: -7.46dBm

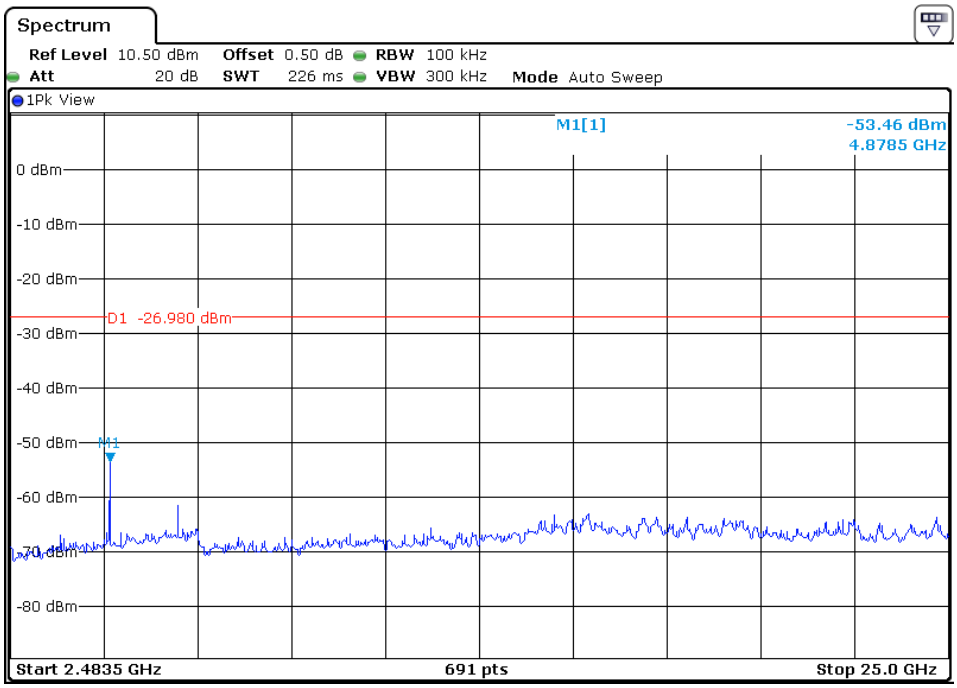




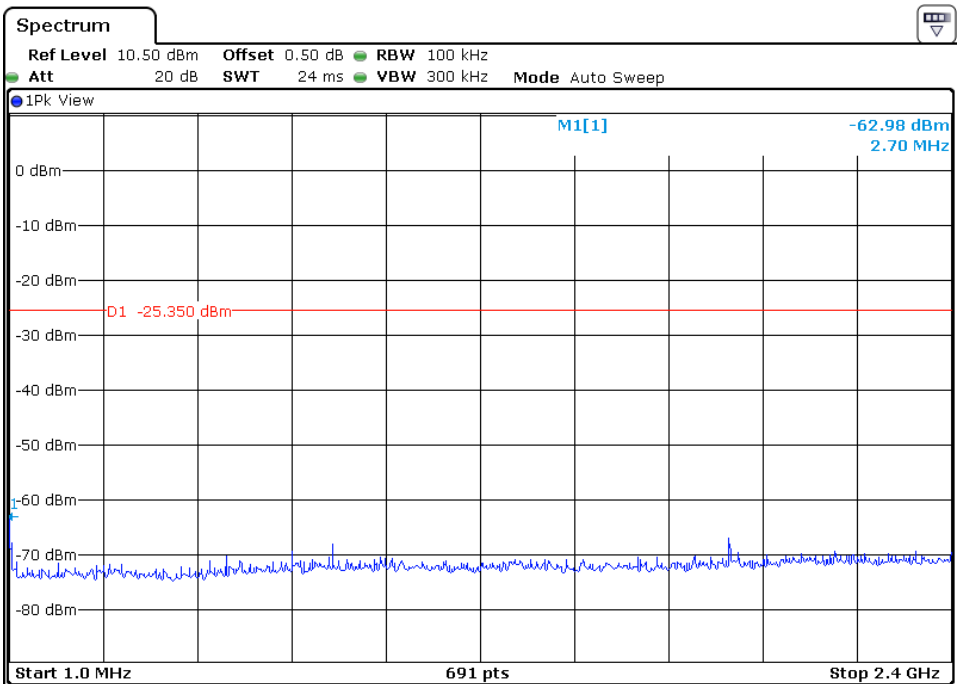

Spectrum
Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz
Att 20 dB SWT 1 ms VBW 300 kHz Mode Auto Sweep
1Pk View
D2[1] -38.98 dB
-12.050 MHz
M1[1] -7.22 dBm
2.411550 GHz
M1
D2
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
CF 2.4 GHz
691 pts
Span 70.0 MHz

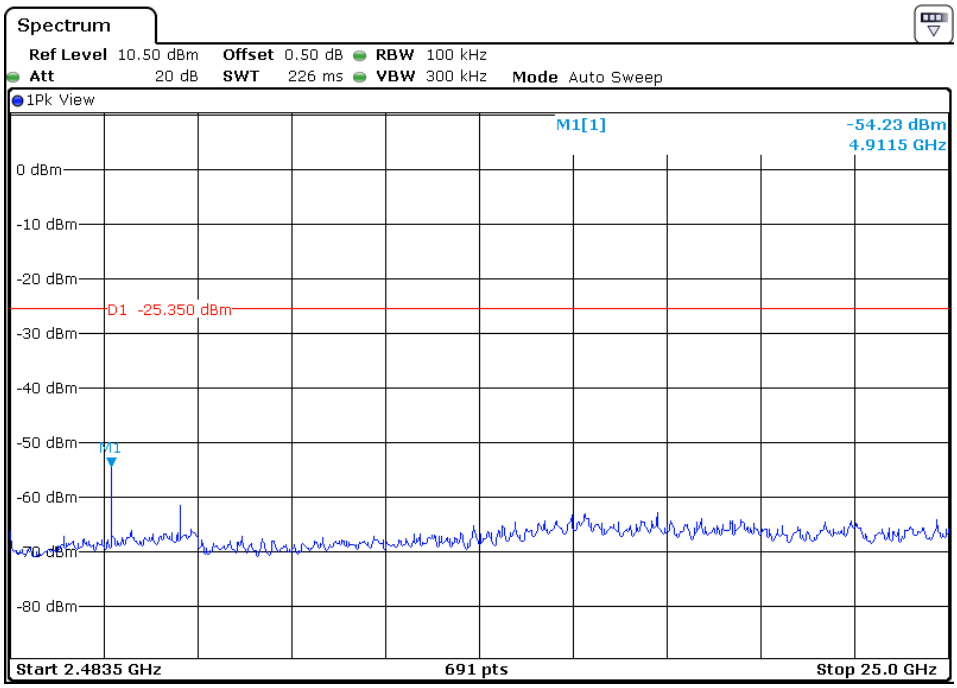
Channel 06 (2437MHz) Reference Level: -6.98dBm

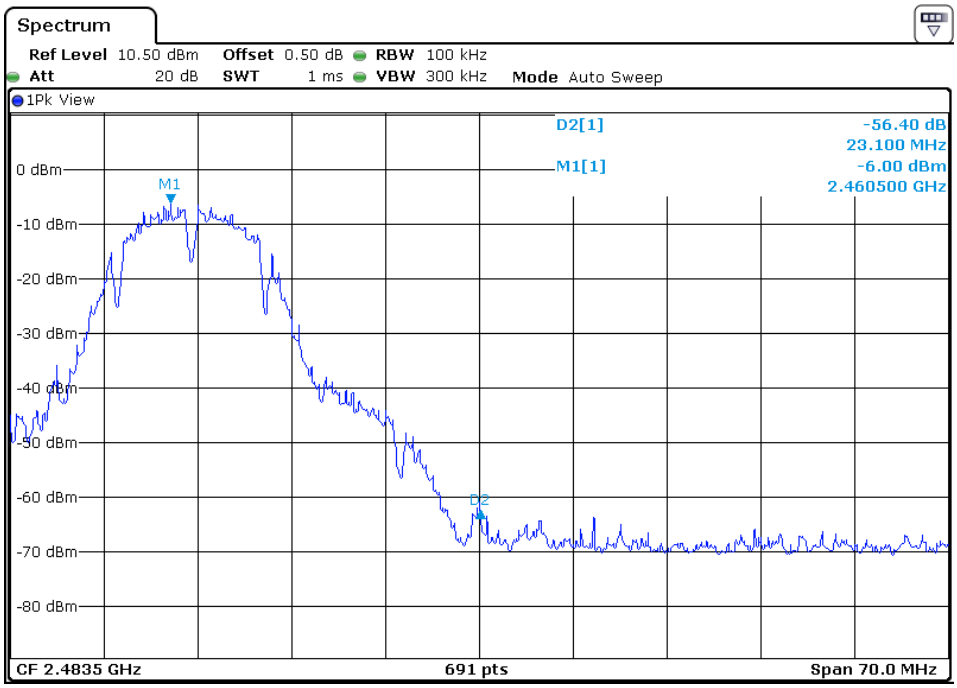




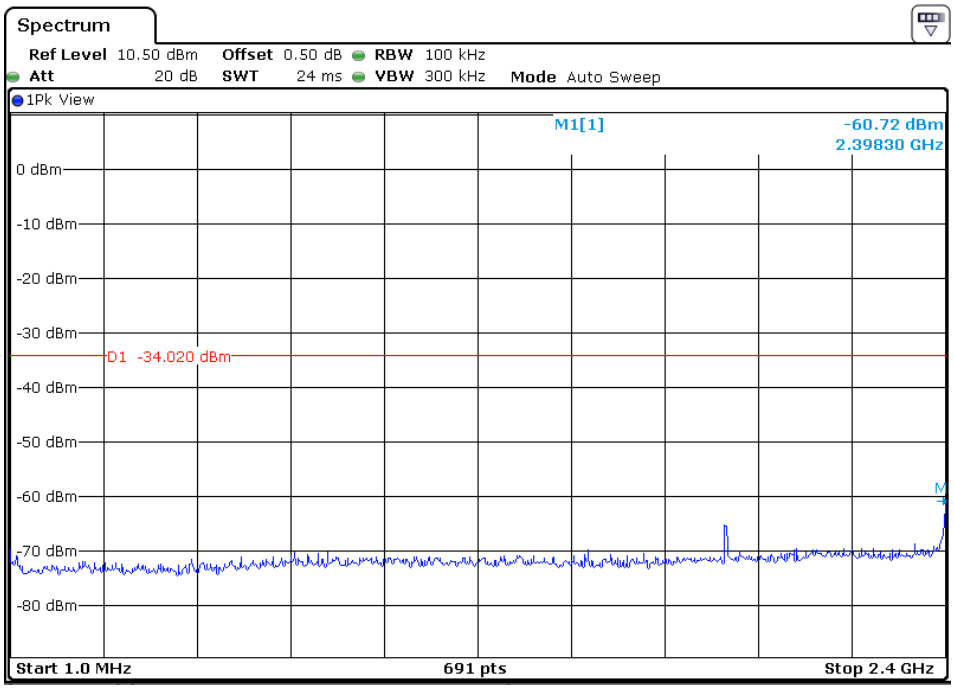
Channel 11 (2462MHz) Reference Level: -5.35dBm

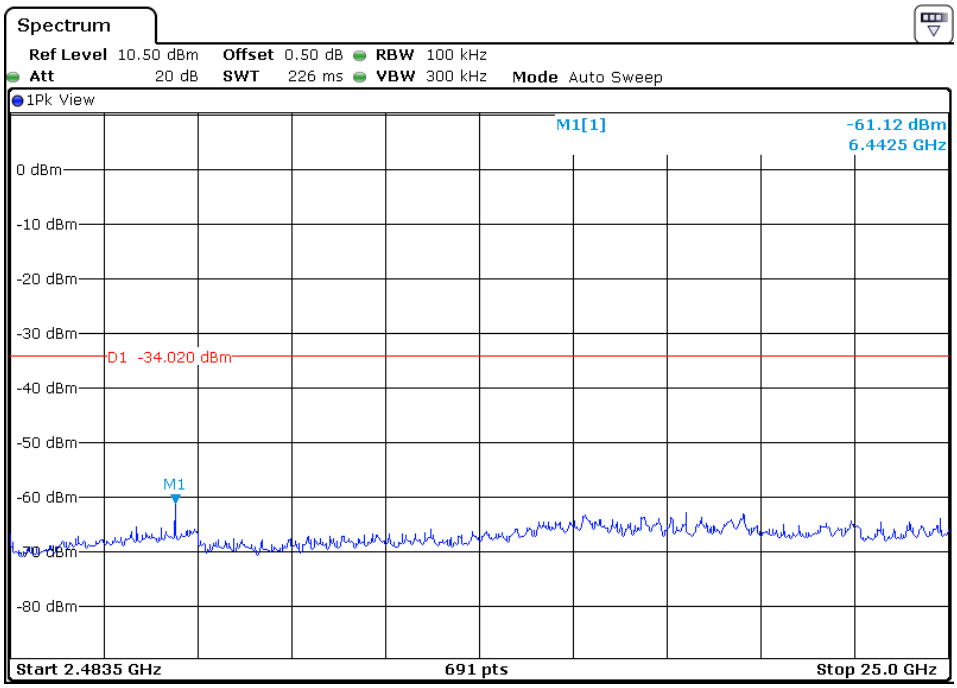


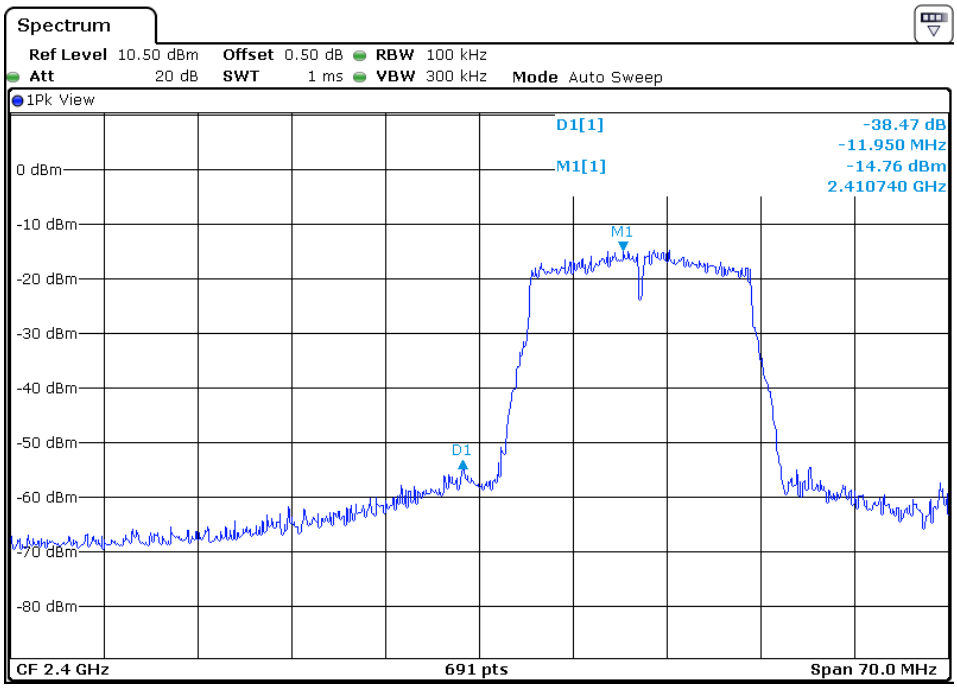



Spectrum
Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz
Att 20 dB SWT 1 ms VBW 300 kHz Mode Auto Sweep
1Pk View
D2[1] -56.40 dB
23.100 MHz
M1[1] -6.00 dBm
2.460500 GHz
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
M1
D2
CF 2.4835 GHz
691 pts
Span 70.0 MHz

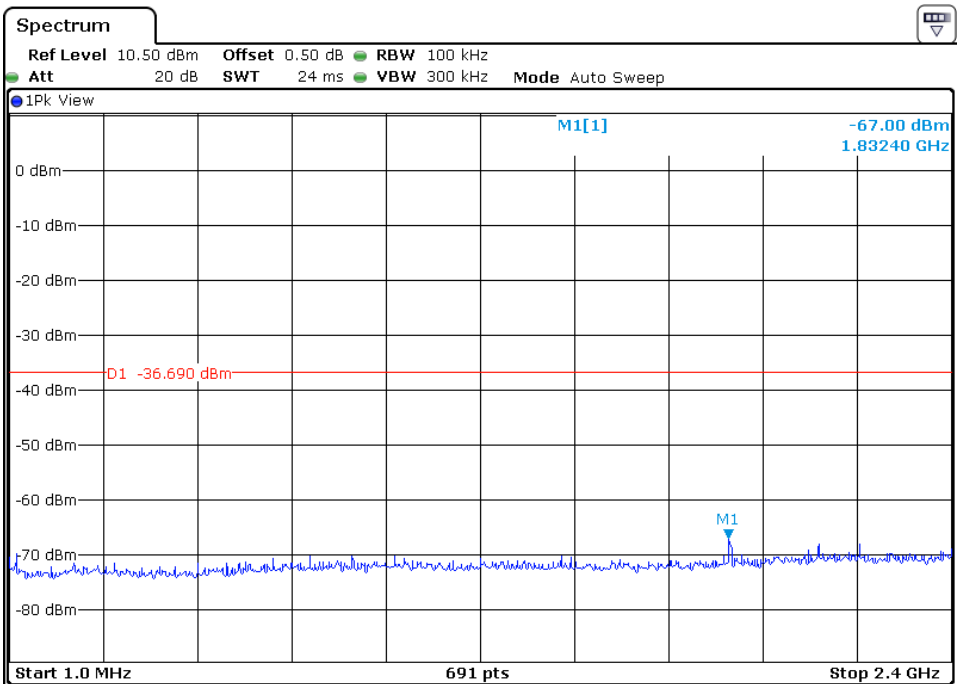
802.11g
Channel 01 (2412MHz) Reference Level: -14.02dBm

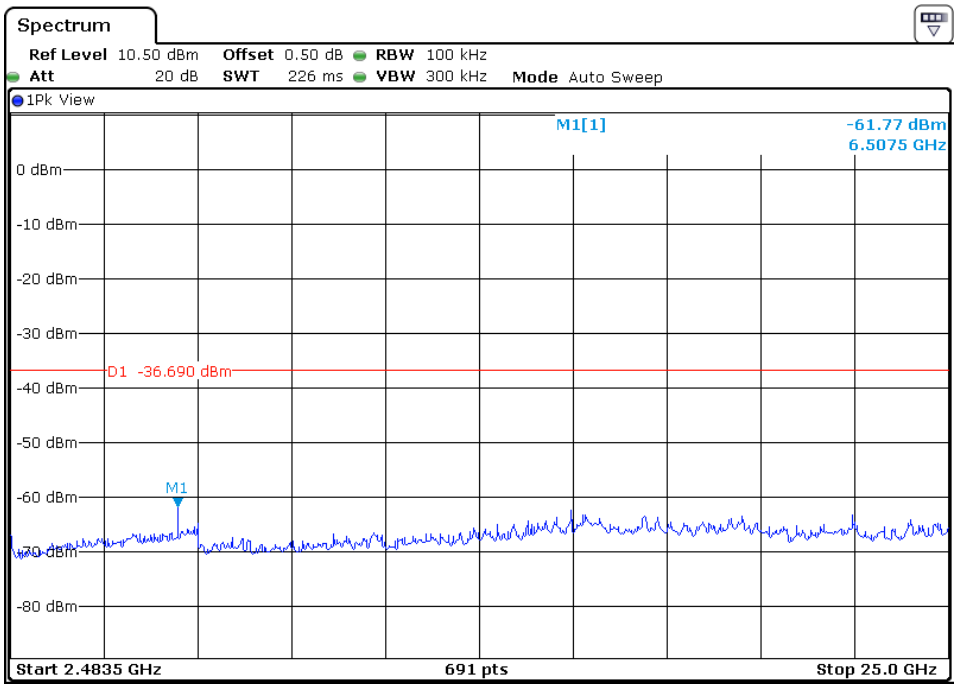




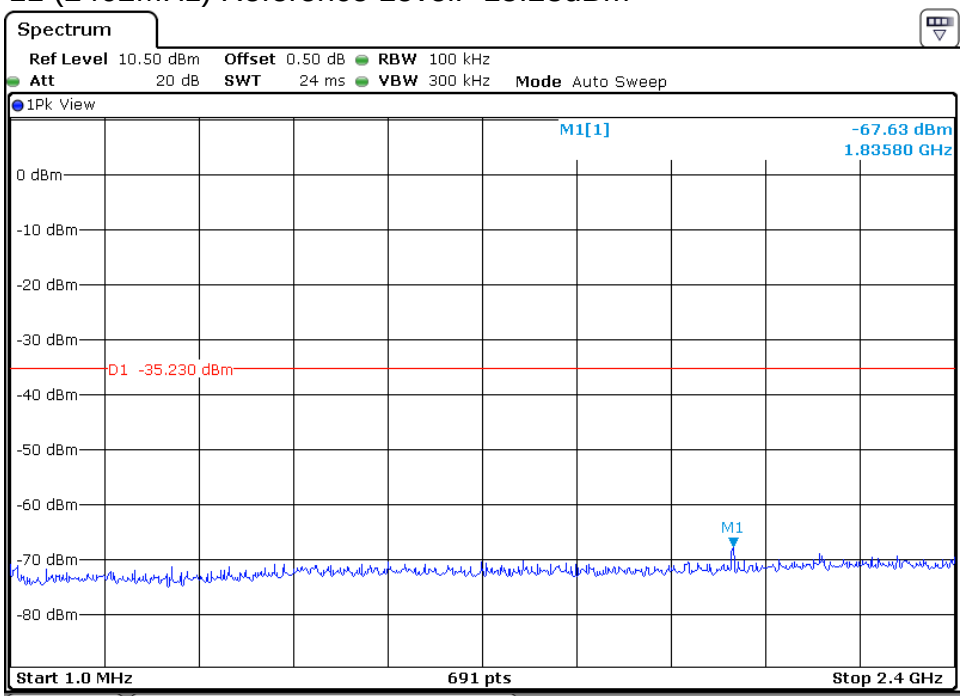

Spectrum
Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz
Att 20 dB SWT 1 ms VBW 300 kHz Mode Auto Sweep
1Pk View
D1[1] -38.47 dB
-11.950 MHz
M1[1] -14.76 dBm
2.410740 GHz
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
M1
D1
CF 2.4 GHz
691 pts
Span 70.0 MHz

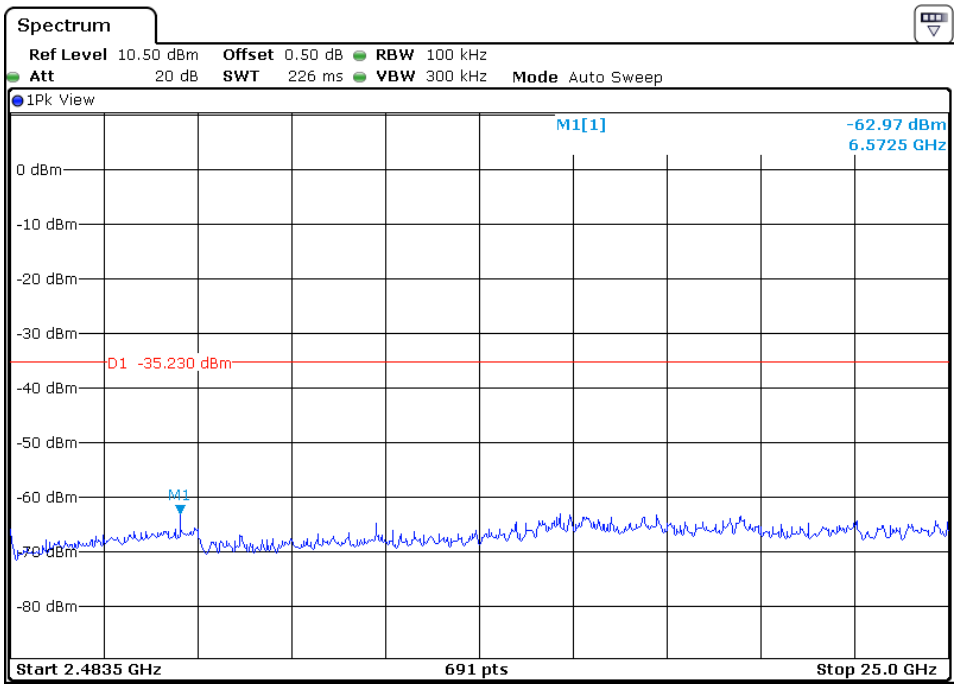
Channel 06 (2437MHz) Reference Level: -16.69dBm

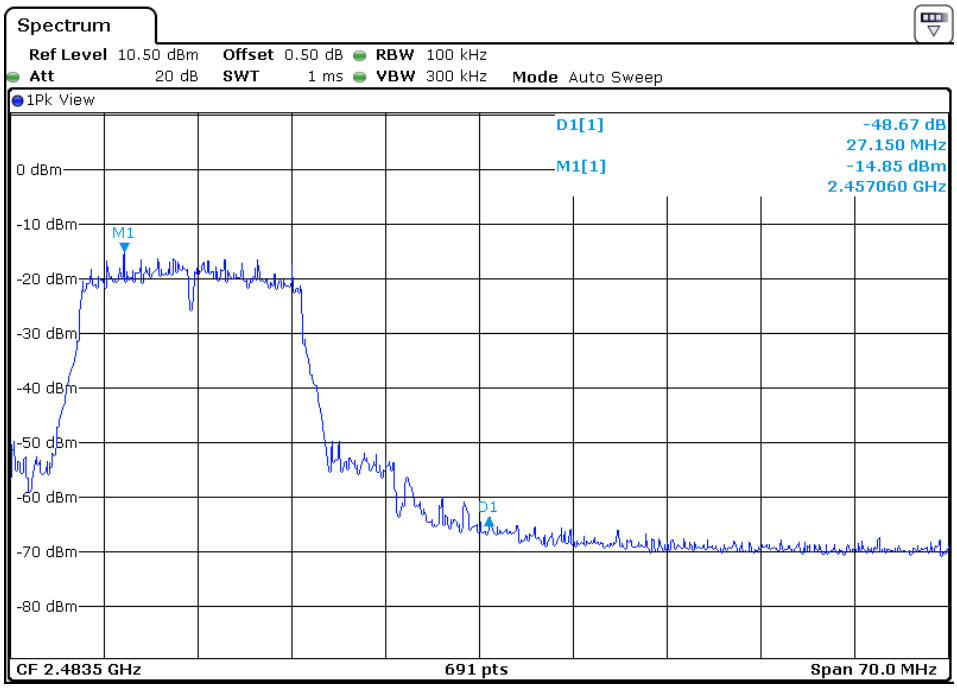




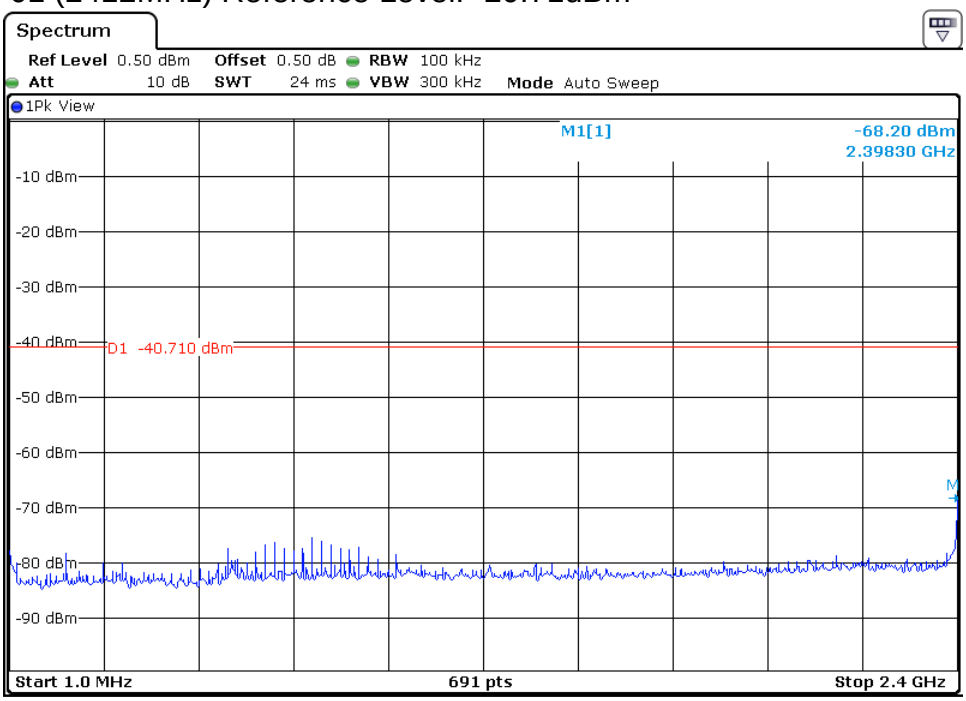
Channel 11 (2462MHz) Reference Level: -15.23dBm

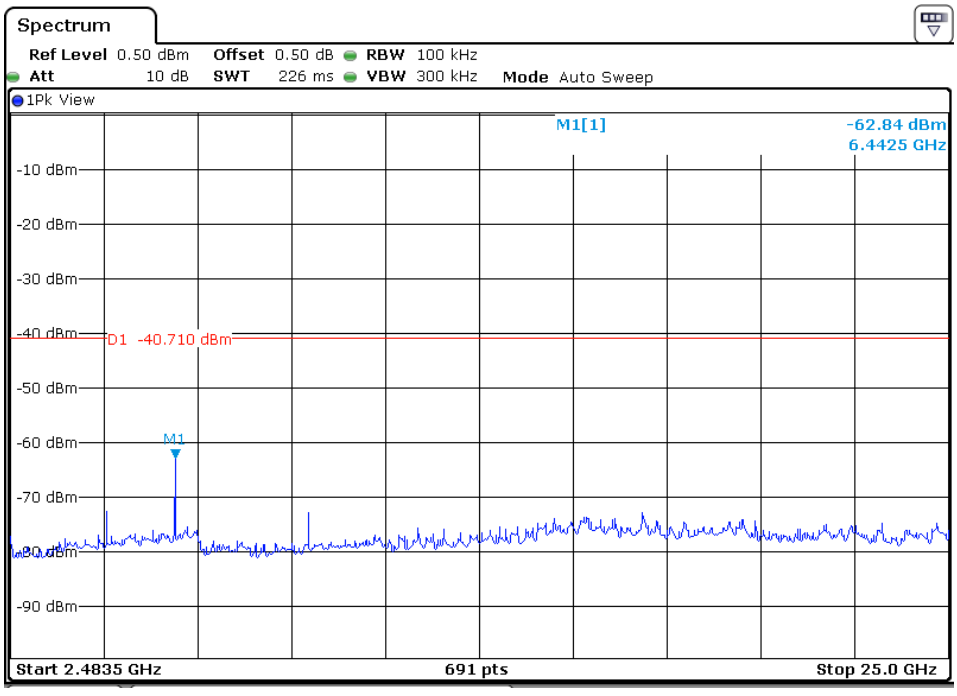


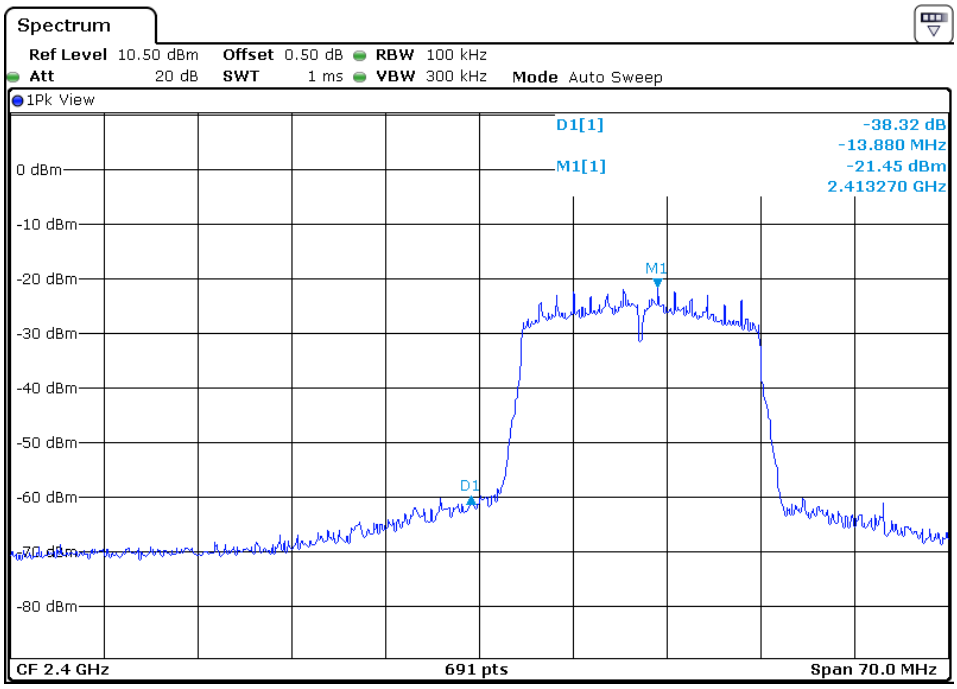



Spectrum
Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz
Att 20 dB SWT 1 ms VBW 300 kHz Mode Auto Sweep
1Pk View
D1[1] -48.67 dB
27.150 MHz
M1[1] -14.85 dBm
2.457060 GHz
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
M1
D1
CF 2.4835 GHz
691 pts
Span 70.0 MHz

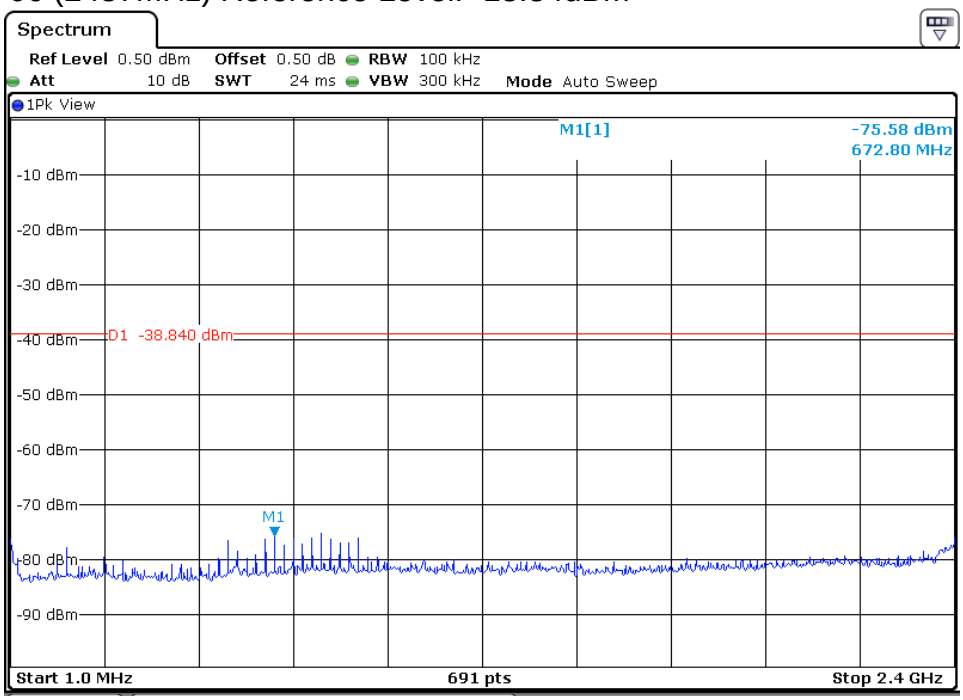
802.11 n-HT20
Channel 01 (2412MHz) Reference Level: -20.71dBm

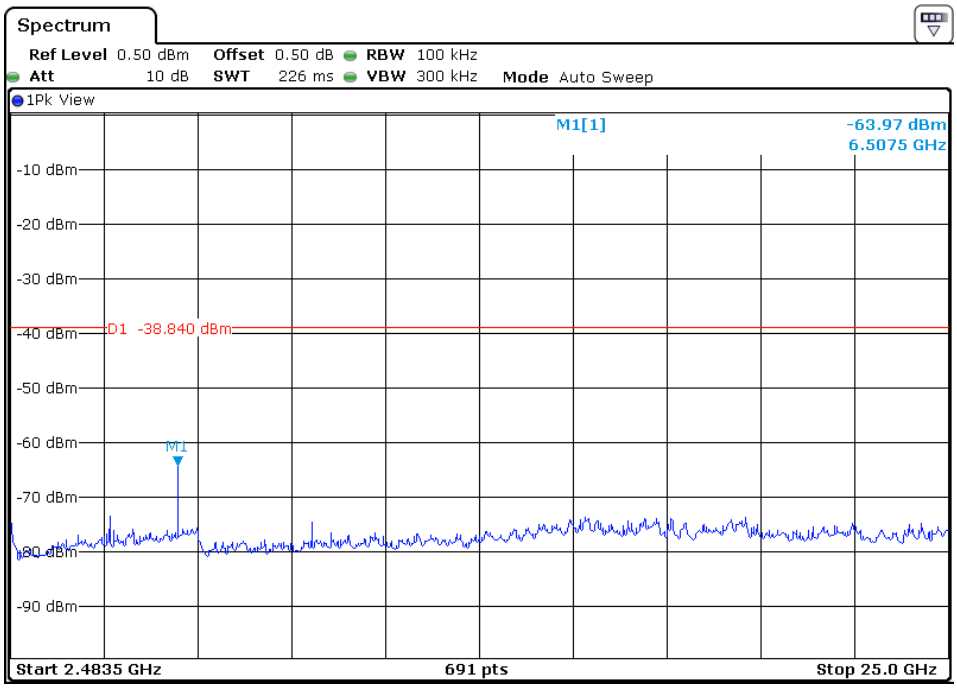




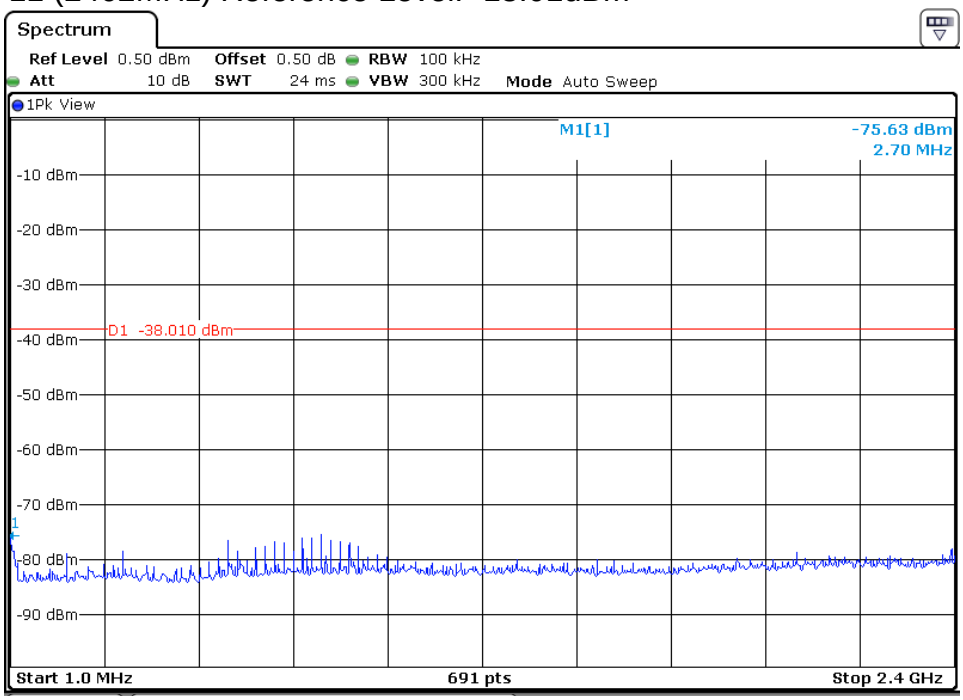

Spectrum
Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz
Att 20 dB SWT 1 ms VBW 300 kHz Mode Auto Sweep
1Pk View
D1[1] -38.32 dB
-13.880 MHz
M1[1] -21.45 dBm
2.413270 GHz
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-80 dBm
M1
D1
CF 2.4 GHz
691 pts
Span 70.0 MHz

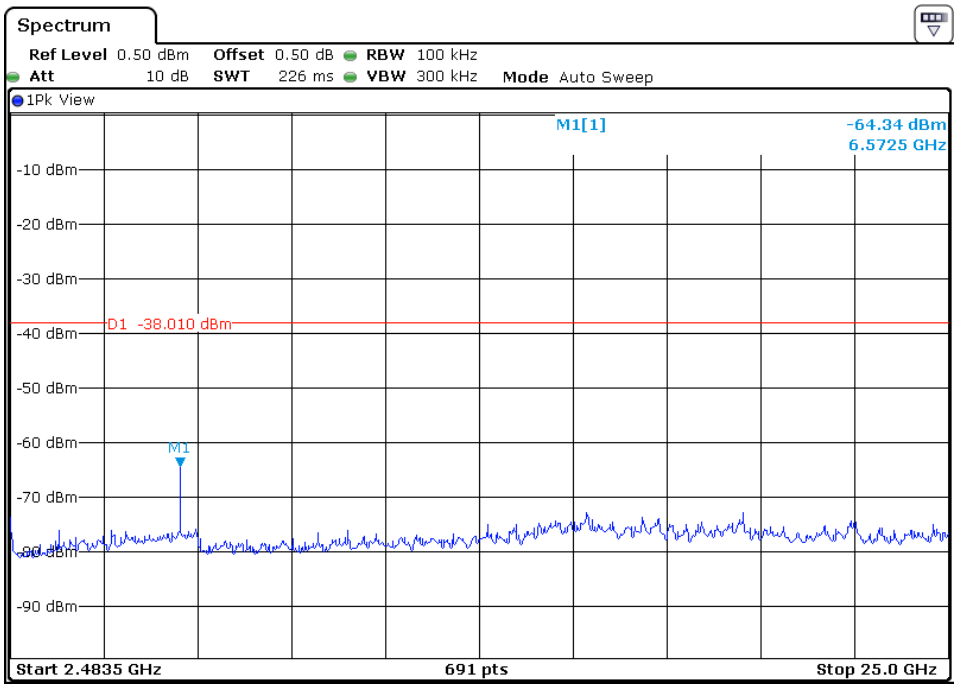
Channel 06 (2437MHz) Reference Level: -18.84dBm

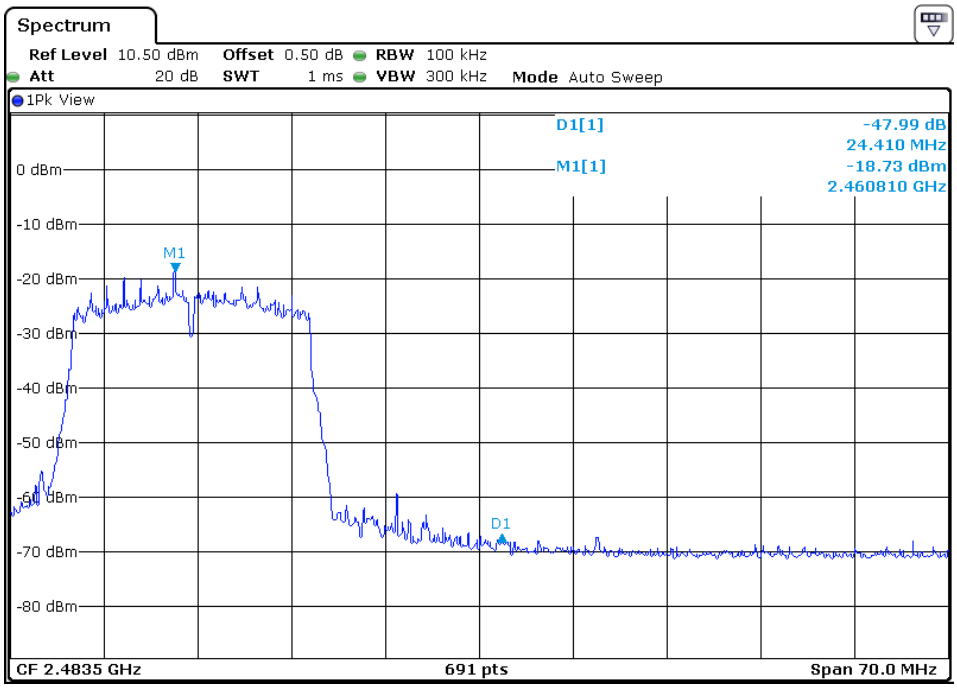




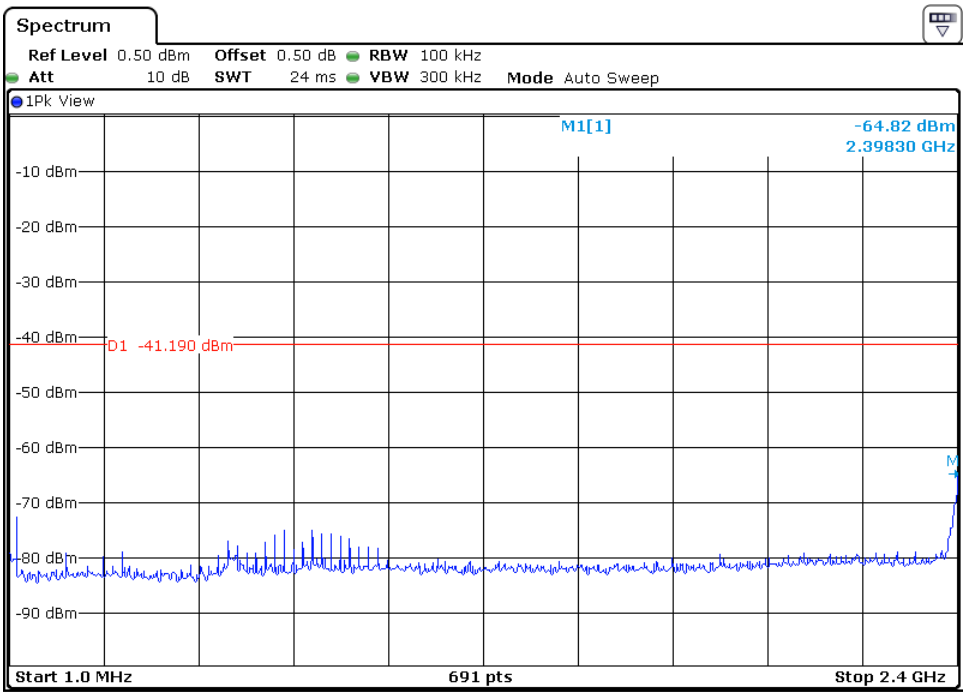
Channel 11 (2462MHz) Reference Level: -18.01dBm

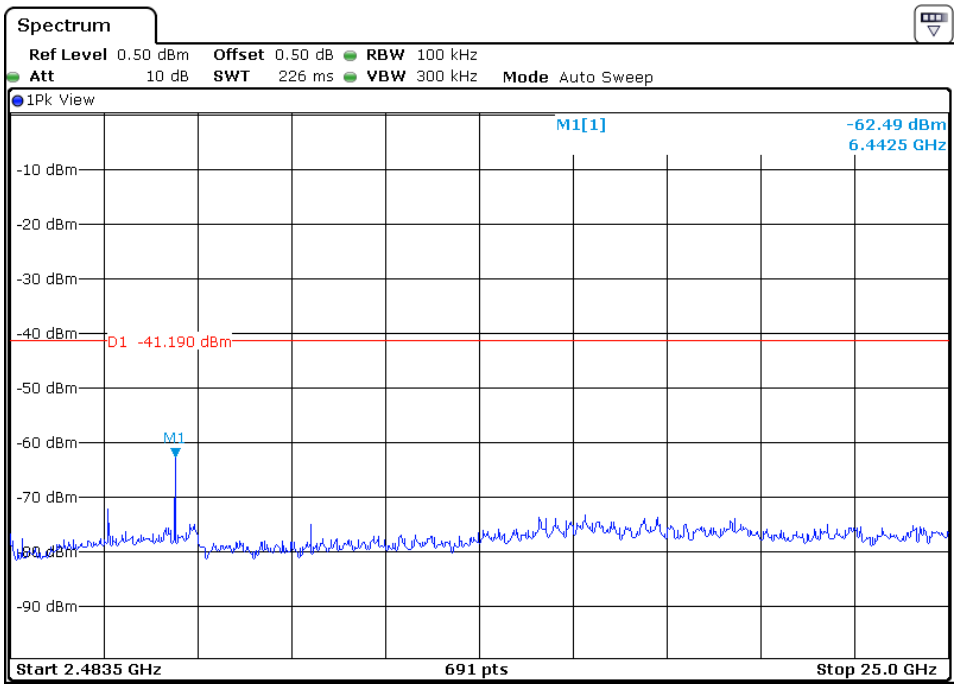


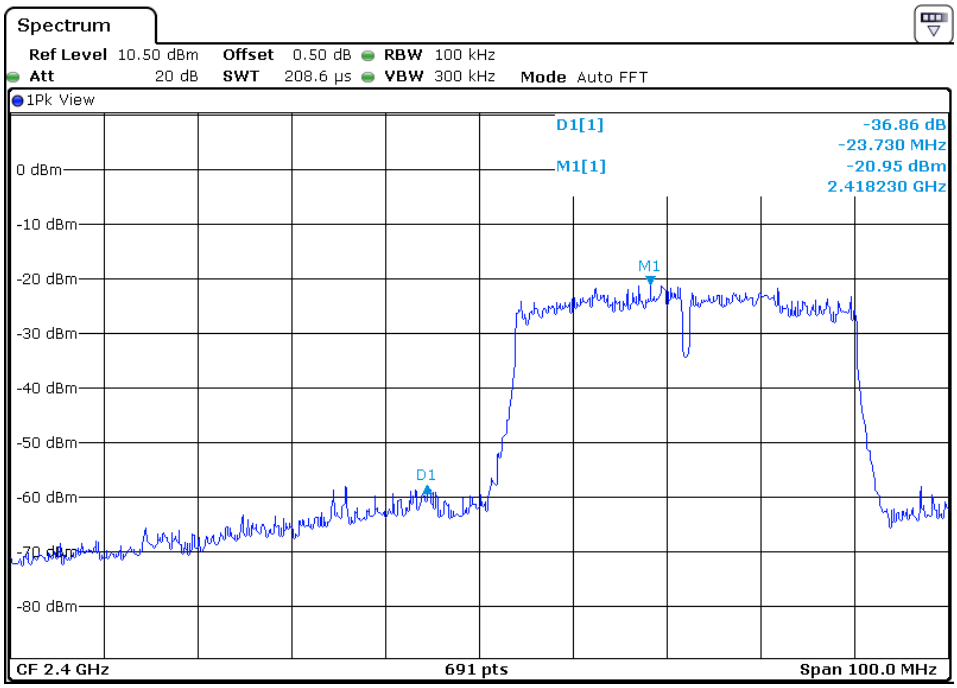



Spectrum
Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz
Att 20 dB SWT 1 ms VBW 300 kHz Mode Auto Sweep
1Pk View
D1[1] -47.99 dB
24.410 MHz
M1[1] -18.73 dBm
2.460810 GHz
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
M1
D1
CF 2.4835 GHz
691 pts
Span 70.0 MHz

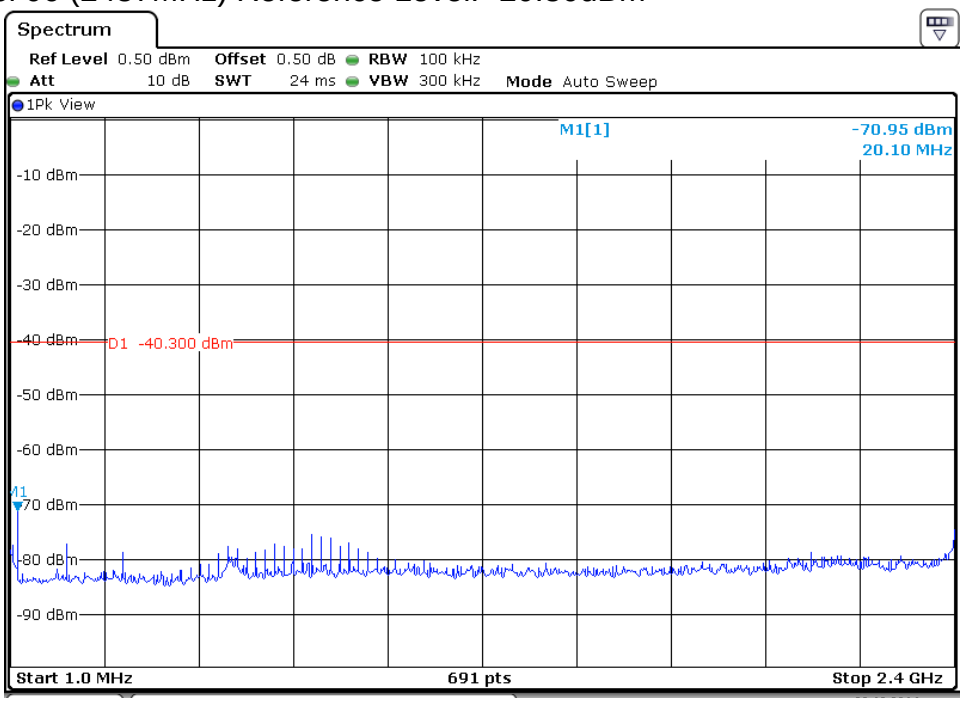
802.11 n-HT40
Channel 03 (2422MHz) Reference Level: -21.19dBm

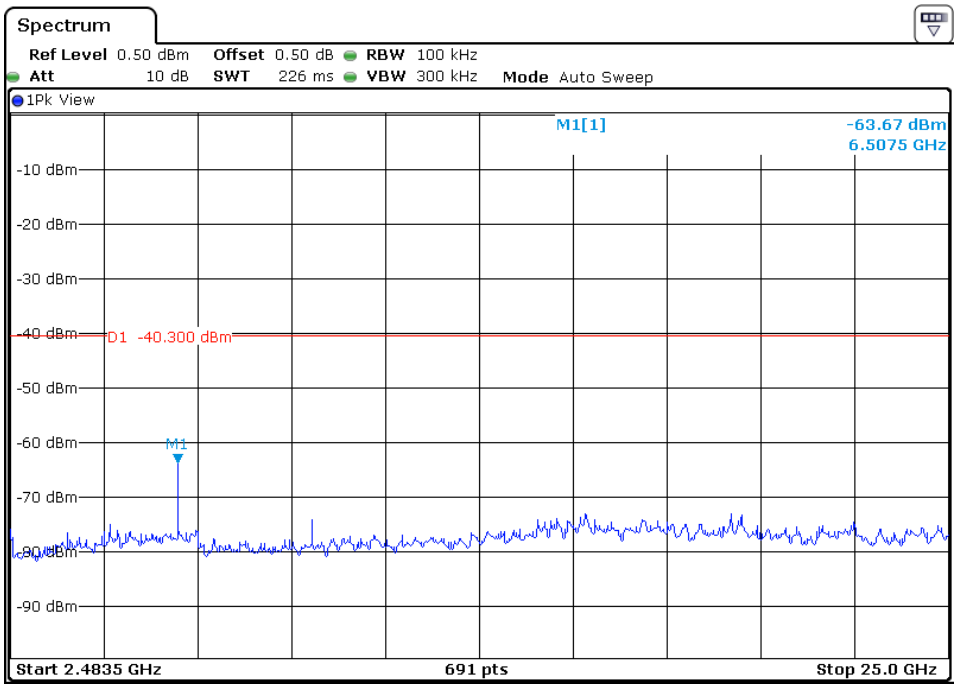




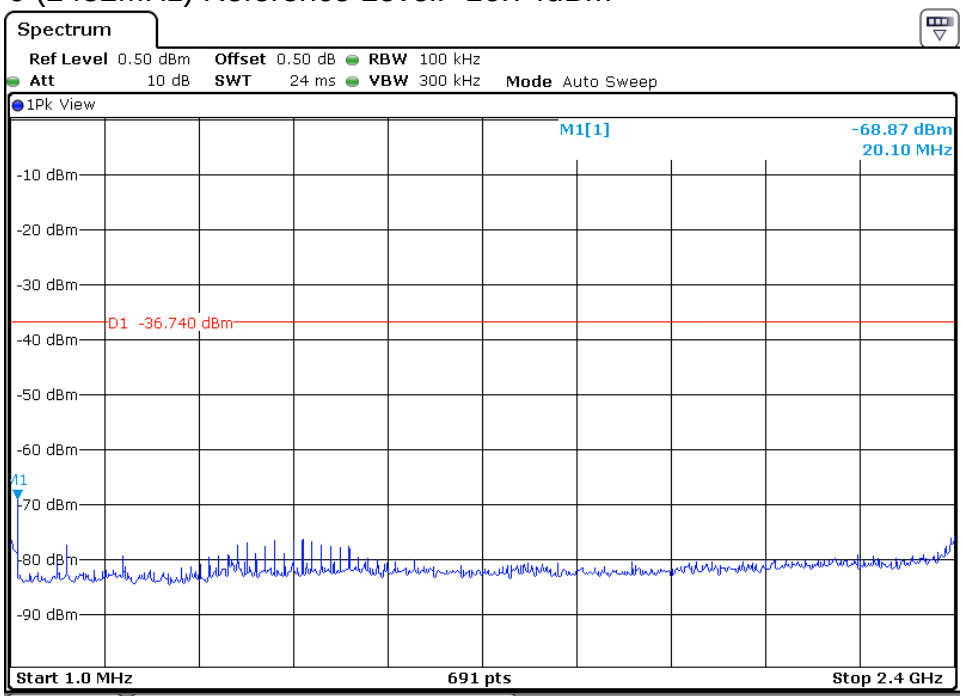

Spectrum
Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz
Att 20 dB SWT 208.6 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] -36.86 dB
-23.730 MHz
M1[1] -20.95 dBm
2.418230 GHz
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
M1
D1
CF 2.4 GHz
691 pts
Span 100.0 MHz

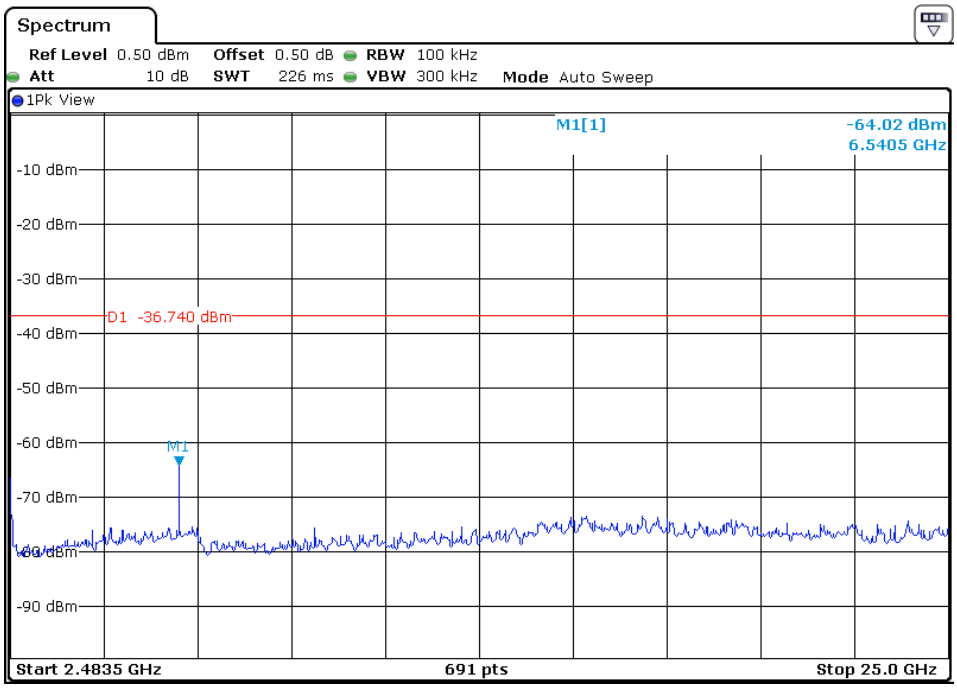
Channel 06 (2437MHz) Reference Level: -20.30dBm

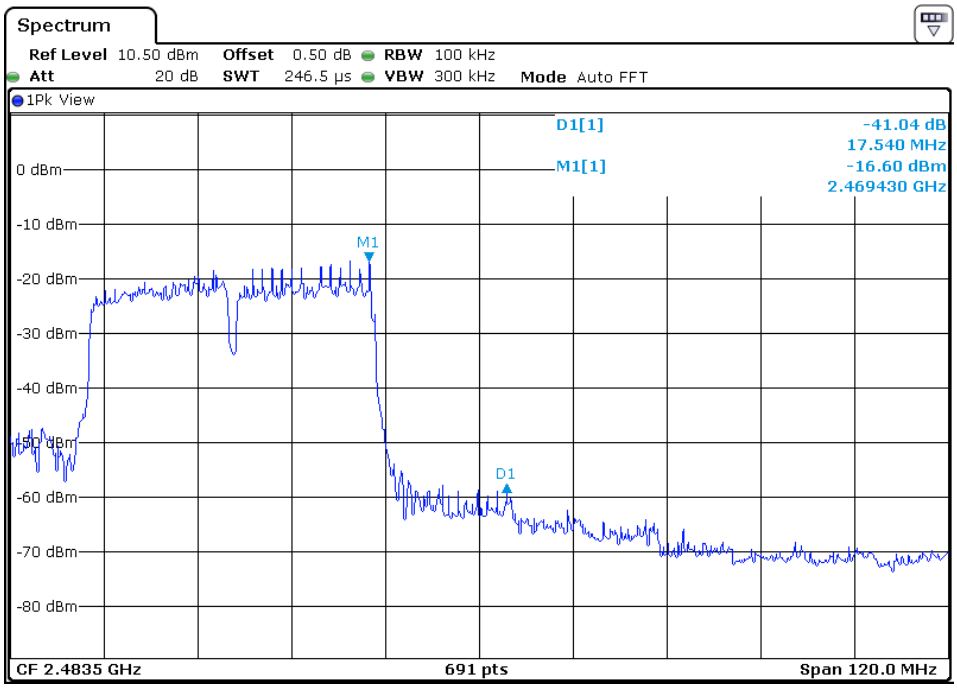




Channel 9 (2452MHz) Reference Level: -16.74dBm






Spectrum
Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz
Att 20 dB SWT 246.5 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] -41.04 dB
17.540 MHz
M1[1] -16.60 dBm
2.469430 GHz
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
M1
D1
CF 2.4835 GHz
691 pts
Span 120.0 MHz

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: STAR SYSTEMS INTERNATIONAL LIMITED
Date of Test: January 12, 2015
Model: PLATINO

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: STAR SYSTEMS INTERNATIONAL LIMITED
Date of Test: January 12, 2015
Model: PLATINO

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

4.8 Radiated Spurious Emission

Worst Case Radiated Spurious Emission (802.11b) at 2390MHz is passed by 2.0 dB margin.

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

Applicant: STAR SYSTEMS INTERNATIONAL LIMITED
Date of Test: January 12, 2015
Model: PLATINO
Worst Case Operating Mode: 802.11 n-HT20 (TX-Channel 11)

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	143.975	28.1	20.0	16.6	24.7	43.5	-18.8
Horizontal	300.145	40.6	20.0	13.7	34.3	46.0	-11.7
Horizontal	703.180	36.3	20.0	18.9	35.2	46.0	-10.8
Vertical	118.270	32.9	20.0	7.2	20.1	43.5	-23.4
Vertical	179.865	37.2	20.0	14.1	31.3	43.5	-12.2
Vertical	703.242	36.6	20.0	19.3	35.9	46.0	-10.1

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: STAR SYSTEMS INTERNATIONAL LIMITED
Date of Test: January 12, 2015
Model: PLATINO
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	54.5	36.1	34.1	52.5	74.0	-21.5
Horizontal	*2390.000	72.1	36.8	26.5	61.8	74.0	-12.2

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	49.8	36.1	34.1	47.8	54.0	-6.2
Horizontal	*2390.000	62.3	36.8	26.5	52.0	54.0	-2.0

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.

Applicant: STAR SYSTEMS INTERNATIONAL LIMITED
Date of Test: January 12, 2015
Model: PLATINO
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	60.5	36.1	34.5	58.9	74.0	-15.1
Horizontal	*7311.000	53.9	35.6	37.1	55.4	74.0	-18.6

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	51.9	36.1	34.5	50.3	54.0	-3.7
Horizontal	*7311.000	28.0	35.6	37.1	29.5	54.0	-24.5

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: STAR SYSTEMS INTERNATIONAL LIMITED
Date of Test: January 12, 2015
Model: PLATINO
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	59.2	36.1	34.7	57.8	74.0	-16.2
Horizontal	*2483.700	67.5	35.6	28.0	59.9	74.0	-14.1

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	52.0	36.1	34.7	50.6	54.0	-3.4
Horizontal	*2483.700	59.5	35.6	28.0	51.9	54.0	-2.1

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: STAR SYSTEMS INTERNATIONAL LIMITED
Date of Test: January 12, 2015
Model: PLATINO
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	58.9	36.1	34.1	56.9	74.0	-17.1
Horizontal	*2387.143	77.5	36.8	26.5	67.2	74.0	-6.8

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	37.8	36.1	34.1	35.8	54.0	-18.2
Horizontal	*2387.143	60.9	36.8	26.5	50.6	54.0	-3.4

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: STAR SYSTEMS INTERNATIONAL LIMITED
Date of Test: January 12, 2015
Model: PLATINO
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	48.3	36.1	34.5	46.7	74.0	-27.3
Horizontal	*7311.000	51.4	35.6	37.1	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	*4874.000	41.5	36.1	34.5	39.9	54.0	-14.1
Horizontal	*7311.000	37.4	35.6	37.1	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.

Applicant: STAR SYSTEMS INTERNATIONAL LIMITED
Date of Test: January 12, 2015
Model: PLATINO
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	58.8	36.1	34.7	57.4	74.0	-16.6
Horizontal	*2483.715	66.5	35.6	28.0	58.9	74.0	-15.1

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	37.5	36.1	34.7	36.1	54.0	-17.9
Horizontal	*2483.715	59.5	35.6	28.0	51.9	54.0	-2.1

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: STAR SYSTEMS INTERNATIONAL LIMITED
Date of Test: January 12, 2015
Model: PLATINO
Mode: 802.11 n-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	59.9	36.1	34.1	57.9	74.0	-16.1
Horizontal	*2388.914	71.1	36.8	26.5	60.8	74.0	-13.2

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	42.9	36.1	34.1	40.9	54.0	-13.1
Horizontal	*2388.914	61.4	36.8	26.5	51.1	54.0	-2.9

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: STAR SYSTEMS INTERNATIONAL LIMITED
Date of Test: January 12, 2015
Model: PLATINO
Mode: 802.11 n-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	61.0	36.1	34.5	59.4	74.0	-14.6
Horizontal	*7311.000	50.3	35.6	37.1	51.8	74.0	-22.2

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	45.4	36.1	34.5	43.8	54.0	-10.2
Horizontal	*7311.000	38.7	35.6	37.1	40.2	54.0	-13.8

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: STAR SYSTEMS INTERNATIONAL LIMITED
Date of Test: January 12, 2015
Model: PLATINO
Mode: 802.11 n-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	59.3	36.1	34.7	57.9	74.0	-16.1
Horizontal	*2483.610	69.9	35.6	28.0	62.3	74.0	-11.7

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	44.2	36.1	34.7	42.8	54.0	-11.2
Horizontal	*2483.610	59.1	35.6	28.0	51.5	54.0	-2.5

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: STAR SYSTEMS INTERNATIONAL LIMITED
Date of Test: January 12, 2015
Model: PLATINO
Mode: 802.11 n-HT40 (TX-Channel 03)

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	*4844.000	58.9	36.1	34.1	56.9	74.0	-17.1
Horizontal	*2389.151	69.1	36.8	26.5	58.8	74.0	-15.2

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	*4844.000	41.8	36.1	34.1	39.8	54.0	-14.2
Horizontal	*2389.151	60.6	36.8	26.5	50.3	54.0	-3.7

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.

Applicant: STAR SYSTEMS INTERNATIONAL LIMITED
Date of Test: January 12, 2015
Model: PLATINO
Mode: 802.11 n-HT40 (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	59.4	36.1	34.5	57.8	74.0	-16.2
Horizontal	*7311.000	49.6	35.6	37.1	51.1	74.0	-22.9

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	42.2	36.1	34.5	40.6	54.0	-13.4
Horizontal	*7311.000	40.7	35.6	37.1	42.2	54.0	-11.8

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: STAR SYSTEMS INTERNATIONAL LIMITED
Date of Test: January 12, 2015
Model: PLATINO
Mode: 802.11 n-HT40 (TX-Channel 9)

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	*4904.000	60.1	36.1	34.7	58.7	74.0	-15.3
Horizontal	*2483.660	67.9	35.6	28.0	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	*4904.000	44.0	36.1	34.7	42.6	54.0	-11.4
Horizontal	*2483.660	57.4	35.6	28.0	49.8	54.0	-4.2

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.

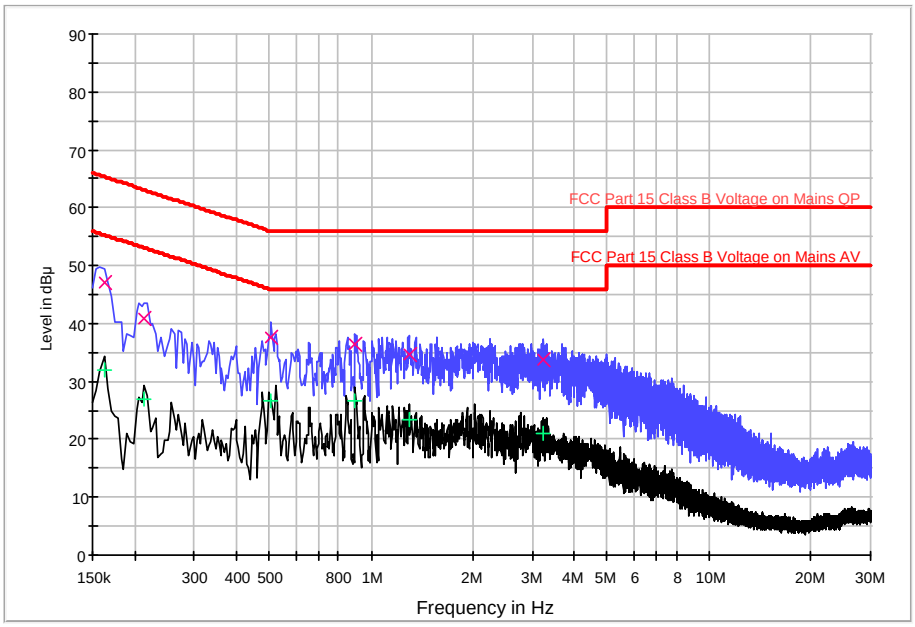
4.9 Conducted Emission

Worst Case Conducted emission at 0.906MHz is Passed by 18.2 dB margin

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

Applicant: STAR SYSTEMS INTERNATIONAL LIMITED
Date of Test: January 12, 2015
Model: PLATINO
Worst Case Operating Mode: 802.11 n-HT40

Conducted Emission Test - FCC



Result Table QP

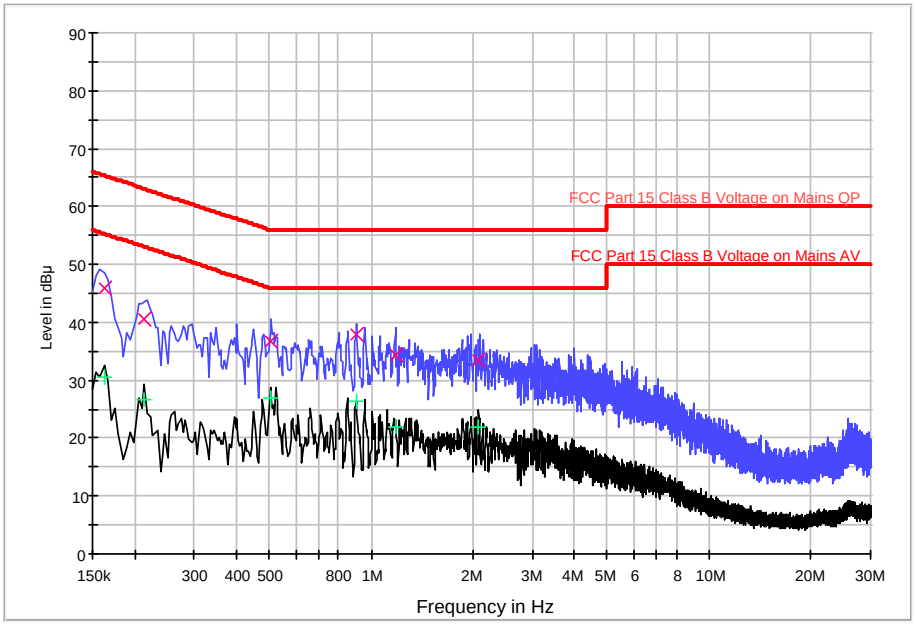
Frequency (MHz)	QuasiPeak (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.162000	47.1	L1	9.8	18.3	65.4
0.214000	40.0	L1	9.7	23.0	63.0
0.506000	37.7	L1	9.7	18.3	56.0
0.898000	36.6	L1	9.8	19.4	56.0
1.298000	35.7	L1	9.8	20.3	56.0
3.246000	33.8	L1	9.8	22.2	56.0

Result Table AV

Frequency (MHz)	Average (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.162000	32.1	L1	9.8	23.3	55.4
0.214000	27.5	L1	9.7	25.5	53.0
0.506000	26.7	L1	9.7	19.3	46.0
0.898000	26.2	L1	9.8	19.8	46.0
1.298000	23.4	L1	9.8	22.6	46.0
3.246000	20.9	L1	9.8	25.1	46.0

Applicant: STAR SYSTEMS INTERNATIONAL LIMITED
Date of Test: January 12, 2015
Model: PLATINO
Worst Case Operating Mode: 802.11n-HT40

Conducted Emission Test - FCC



Result Table QP

Frequency (MHz)	QuasiPeak (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.162000	45.8	N	10.2	19.6	65.4
0.214000	40.3	N	10.2	22.7	63.0
0.502000	35.7	N	10.2	20.3	56.0
0.906000	37.8	N	10.3	18.2	56.0
1.182000	34.3	N	10.3	21.7	56.0
2.082000	33.4	N	10.4	22.6	56.0

Result Table AV

Frequency (MHz)	Average (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.162000	30.4	N	10.2	25.0	55.4
0.214000	26.9	N	10.2	26.1	53.0
0.502000	26.9	N	10.2	19.1	46.0
0.906000	26.4	N	10.3	19.6	46.0
1.182000	22.8	N	10.3	23.2	46.0
2.082000	22.0	N	10.4	24.0	46.0

Applicant: STAR SYSTEMS INTERNATIONAL LIMITED
Date of Test: January 12, 2015
Model: PLATINO

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: STAR SYSTEMS INTERNATIONAL LIMITED
Date of Test: January 12, 2015
Model: PLATINO

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
SZ061-03	BiConiLog Antenna	ETS	3142C	00066460	28-Jun-14	28-Jun-15
SZ061-07	Pyramidal Horn Antenna	ETS	3160-09	00083067	3-Sep-14	3-Sep-15
SZ061-08	Horn Antenna	ETS	3115	00092346	19-Oct-14	19-Oct-15
SZ061-06	Active Loop Antenna	Electro-Metrics	EM-6876	217	29-Apr-14	29-Apr-15
EM031-03	Spectrum Analyzer	R&S	FSV40	101148	9-Jun-14	9-Jun-15
SZ181-04	Preamplifier	Agilent	8449B	3008A02474	10-Mar-14	10-Mar-15
SZ188-01	Anechoic Chamber	ETS	RFD-F/A-100	4102	19-Apr-14	19-Apr-15
SZ062-02	RF Cable	RADIALL	RG 213U	--	8-Jan-15	8-Jul-16
SZ062-06	RF Cable	RADIALL	0.04-26.5GHz	--	8-Jan-15	8-Jul-16
SZ062-12	RF Cable	RADIALL	0.04-26.5GHz	--	17-Oct-14	17-Apr-15
SZ067-04	Notch Filter	Micro-Tronics	BRM50702-02	--	21-May-14	21-May-15
SZ185-02	EMI Test Receiver	R&S	ESCI	100692	1-Nov-14	1-Nov-15
SZ187-01	Two-Line V-Network	R&S	ENV216	100072	1-Nov-14	1-Nov-15
SZ187-02	Two-Line V-Network	R&S	ENV216	100073	1-Nov-14	1-Nov-15
SZ188-03	Shielding Room	ETS	RFD-100	4100	23-Aug-14	23-Aug-15
SZ185-02	EMI Test Receiver	R&S	ESCI	100692	1-Nov-14	1-Nov-15