Oco Group Inc.

Application
For
Certification

FCC ID: 2AI25OCO2

IP-Camera

Model: OCO2
Additional Model: GTC100

Brand name: OCO

2.4GHz WiFi Transceiver

Report No.: 160701036SZN-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	Digitally signed by Kidd Yang Location: Intertek Testing Services
Harry Wu Engineer	Kidd Yang Senior Project Engineer Date: September 05, 2016

- 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

IP-Camera

Model: OCO2

FCC ID: 2AI25OCO2

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 [10-01-15] 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

EXHIBIT 1

SUMMARY OF TEST RESULTS

1.0 Summary of Test results

IP-Camera

Model: OCO2
Additional Models: GTC100

FCC ID: 2AI25OCO2

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.

EXHIBIT 2

GENERAL DESCRIPTION

2.0 General Description

2.1 Product Description

The Equipment Under Test (EUT) is a IP-Camera with WiFi function operating at 2412-2462MHz for 802.11b/g/n-HT20, 11 channels with 5MHz channel spacing. The EUT was powered by USB port (DC 5V) with AC/DC adapter(Input: 120VAC,60Hz, Output: 5VDC). For more detailed features description, please refer to the user's manual.

The Model: GTC100 are the same as the Model: OCO2 in hardware aspect (circuitry and electrical, mechanical and physical construction), the only differences are the appearance and model no. for trading purpose.

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 (2.4GHz WiFi transmitter portion). The transmitter of 5GHz WiFi with FCC ID: 2AI25OCO2 has been filed at the same time.

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

2.4 Test Facility

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

EXHIBIT 3

SYSTEM TEST CONFIGURATION

3.0 System Test Configuration

3.1 Justification

For emissions testing, the equipment under test (EUT) setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, all cables were manipulated to produce worst case emissions. The EUT was powered by USB port (DC 5V) with AC/DC adapter(Input: 120VAC,60Hz, Output: 5VDC). Only the worst case data was reported.

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 when it was powered by adapter up to 1GHz and placed in the centre of turntable above 1GHz.

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

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 Oco Group Inc. 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.
AC/DC adaptor (Provided by Applicant)	Aquil Star Precision Industrial(Shenzhen) Co., Ltd.	HNBM050150UX (Input: AC 100-240V, 50/60Hz, 0.35A Output: DC 5.0V, 2.0A)
Laptop (Provided by Intertek)	Lenovo	X1
USB Cable (Provided by Intertek)	N/A	Unshielded, Length 300cm

EXHIBIT 4

MEASUREMENT RESULTS

Applicant: Oco Group Inc.
Date of Test: August 11, 2016
Model: OCO2

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	15.8	38.0
Middle Channel: 2437	16.2	41.7
High Channel: 2462	16.1	40.7

IEEE 802.11g (Antenna Gain = 0dBi) (16QAM, 6Mbps)		
Frequency (MHz)	Output in dBm	Output in mWatt
Low Channel: 2412	15.4	34.7
Middle Channel: 2437	15.5	35.5
High Channel: 2462	16.1	40.7

IEEE 802.11n-HT20 (Antenna Gain = 0dBi) (16QAM, 6.5Mbps)		
Frequency (MHz)	Output in dBm	Output in mWatt
Low Channel: 2412	14.5	28.2
Middle Channel: 2437	14.6	28.8
High Channel: 2462	14.8	30.2

Cable loss: 0.5 dB External Attenuation: 0 dB
Cable loss, external attenuation has been included in OFFSET function
EUT max. output level = 16.2dBm
For RF Exposure, the information is saved with filename: Analysis report.pdf.

Applicant: Oco Group Inc.
Date of Test: August 11, 2016
Model: OCO2

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 v03r05. 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.

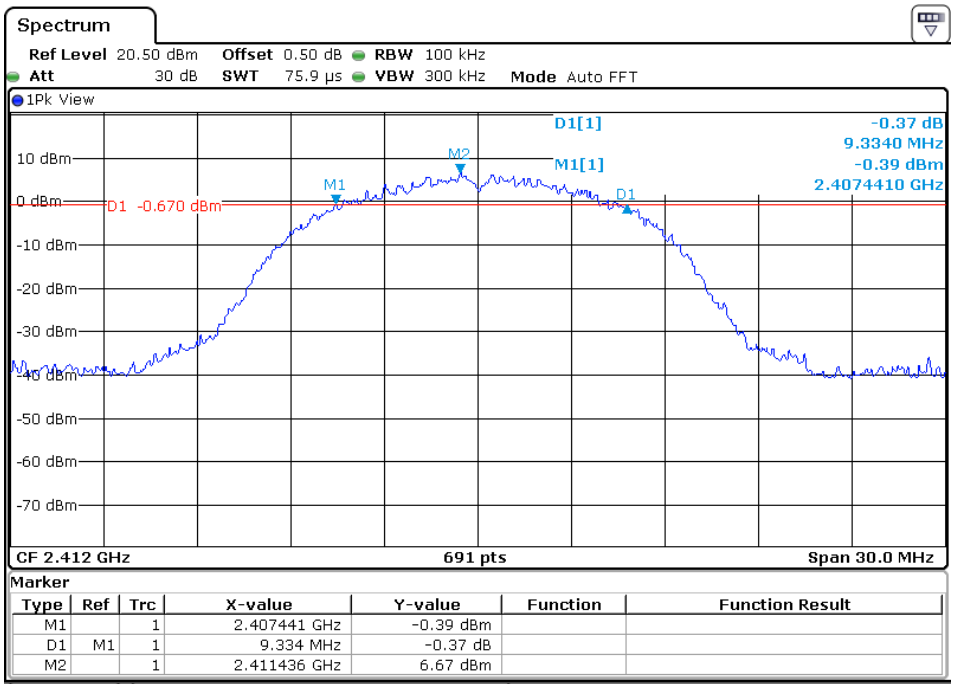
IEEE 802.11b (CCK, 1Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2412	9.334
2437	8.538
2462	8.726

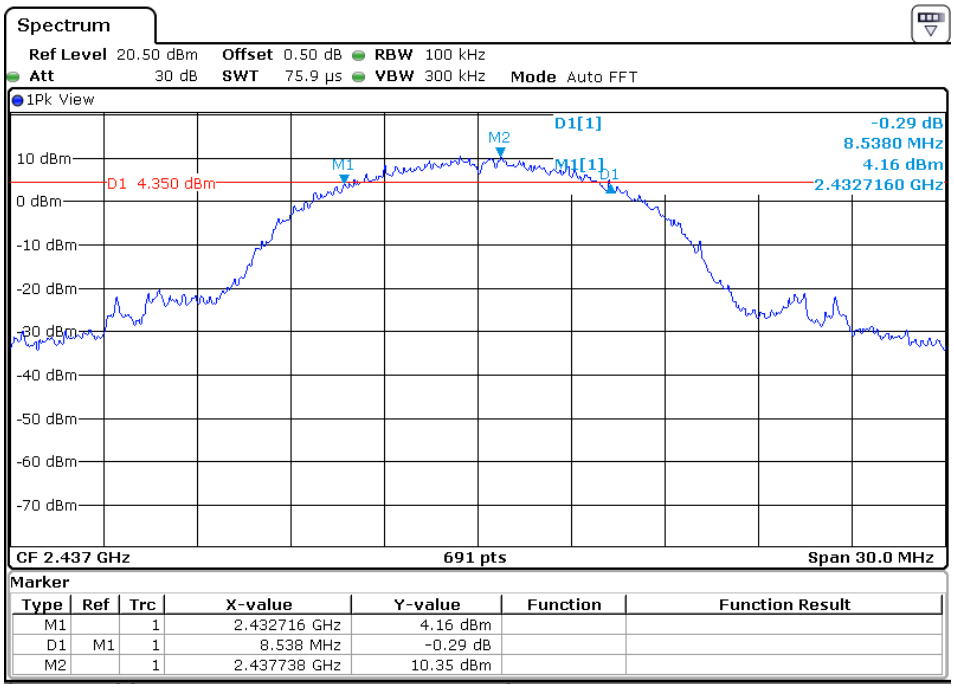
IEEE 802.11g (16QAM, 6Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2412	16.237
2437	16.020
2462	16.324

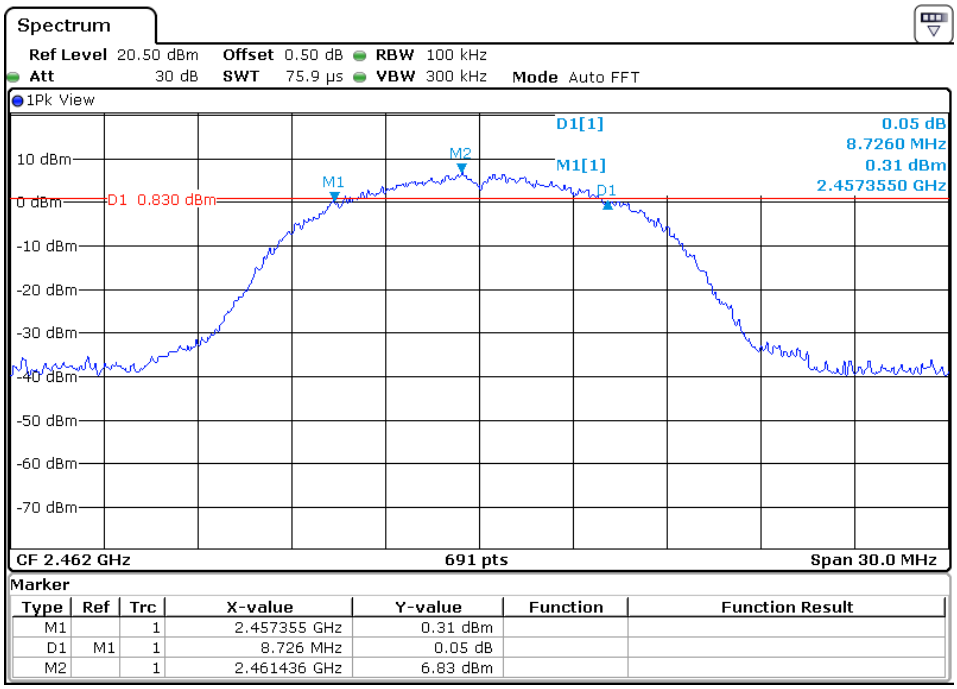
IEEE 802.11n-HT20 (16QAM, 6.5Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2412	17.323
2437	17.525
2462	17.540

The test plots are attached as below.

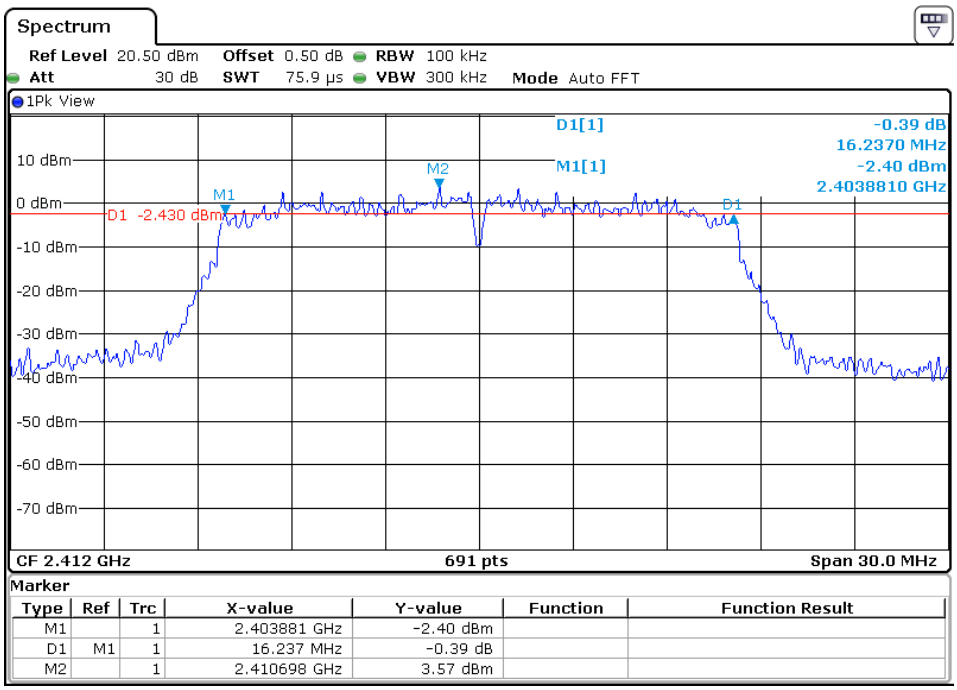
802.11b

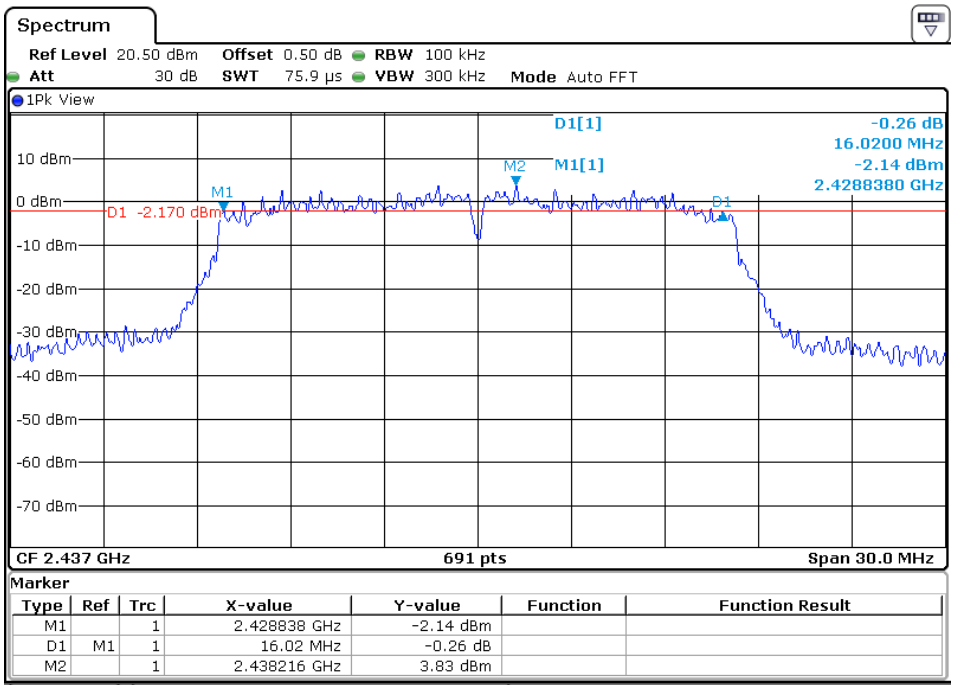

Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] -0.37 dB
9.3340 MHz
M1[1] -0.39 dBm
2.4074410 GHz
M1
M2
D1
D1 -0.670 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.412 GHz
691 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.407441 GHz -0.39 dBm
D1 M1 1 9.334 MHz -0.37 dB
M2 1 2.411436 GHz 6.67 dBm

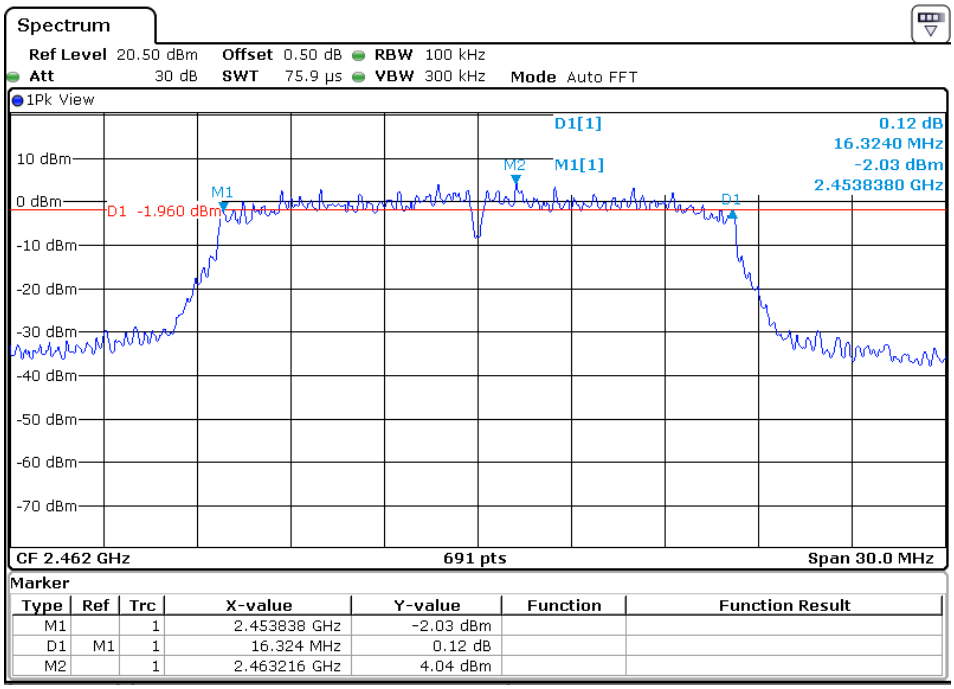

Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] -0.29 dB
8.5380 MHz
M1[1] 4.16 dBm
2.4327160 GHz
M1
M2
D1
D1 4.350 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.437 GHz
691 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.432716 GHz 4.16 dBm
D1 M1 1 8.538 MHz -0.29 dB
M2 1 2.437738 GHz 10.35 dBm


Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] 0.05 dB
8.7260 MHz
M1[1] 0.31 dBm
2.4573550 GHz
D1 0.830 dBm
M1
M2
D1
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.462 GHz
691 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.457355 GHz 0.31 dBm
D1 M1 1 8.726 MHz 0.05 dB
M2 1 2.461436 GHz 6.83 dBm

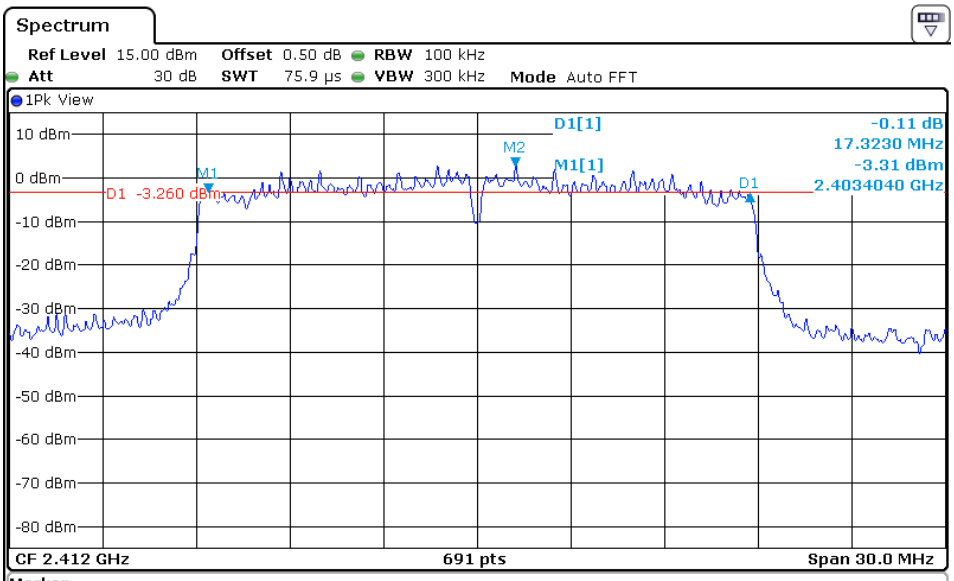
802.11g


Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] -0.39 dB
16.2370 MHz
M1[1] -2.40 dBm
2.4038810 GHz
D1 -2.430 dBm
M1
M2
D1
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.412 GHz
691 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.403881 GHz -2.40 dBm
D1 M1 1 16.237 MHz -0.39 dB
M2 1 2.410698 GHz 3.57 dBm


Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] -0.26 dB
16.0200 MHz
M1[1] -2.14 dBm
2.4288380 GHz
D1 -2.170 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.437 GHz
691 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.428838 GHz -2.14 dBm
D1 M1 1 16.02 MHz -0.26 dB
M2 1 2.438216 GHz 3.83 dBm

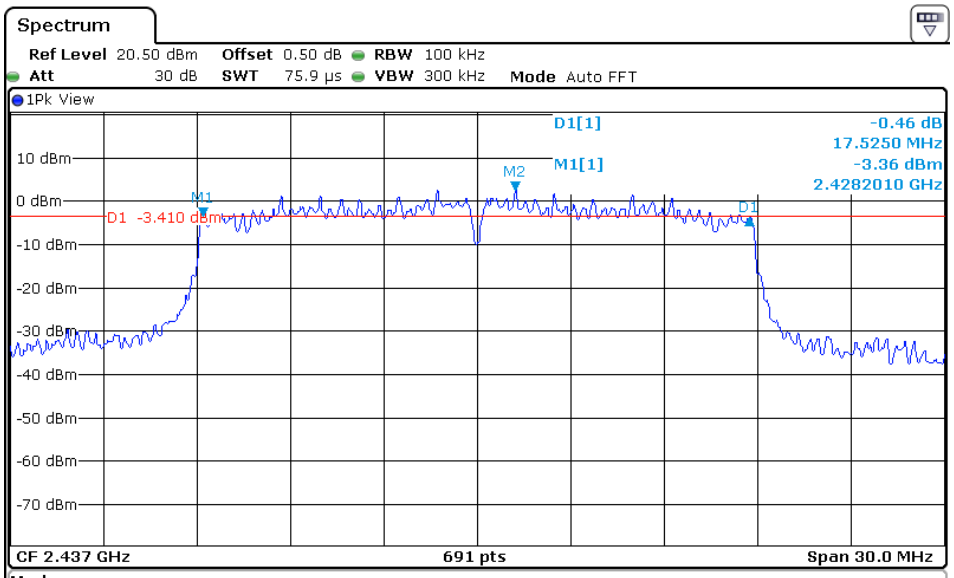

Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] 0.12 dB
16.3240 MHz
M1[1] -2.03 dBm
2.4538380 GHz
D1 -1.960 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.462 GHz
691 pts
Span 30.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.453838 GHz -2.03 dBm
D1 M1 1 16.324 MHz 0.12 dB
M2 1 2.463216 GHz 4.04 dBm

802.11n-HT20



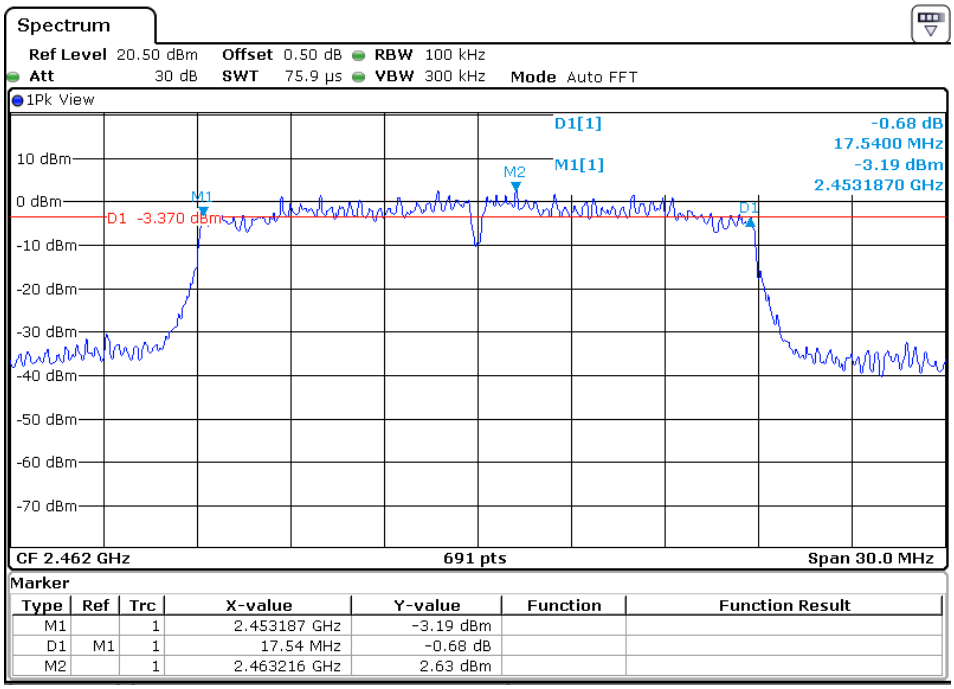
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.403404 GHz	-3.31 dBm		
D1	M1	1	17.323 MHz	-0.11 dB		
M2		1	2.413216 GHz	2.74 dBm		



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.428201 GHz	-3.36 dBm		
D1	M1	1	17.525 MHz	-0.46 dB		
M2		1	2.438216 GHz	2.59 dBm		



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.453187 GHz	-3.19 dBm		
D1	M1	1	17.54 MHz	-0.68 dB		
M2		1	2.463216 GHz	2.63 dBm		

Applicant: Oco Group Inc.
Date of Test: August 11, 2016
Model: OCO2

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

The Measurement Procedure PKPSD was set according to the FCC KDB 558074 D01 v03r05.

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.

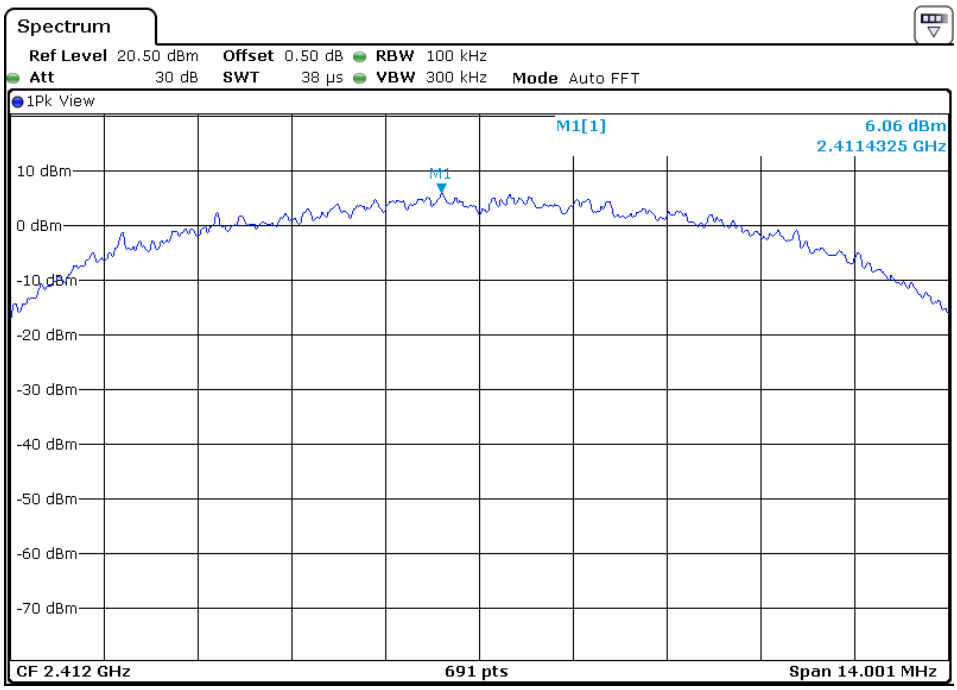
IEEE 802.11b (CCK, 1Mbps)	
Frequency (MHz)	Power Density (dBm)
2412	6.06
2437	6.19
2462	6.80

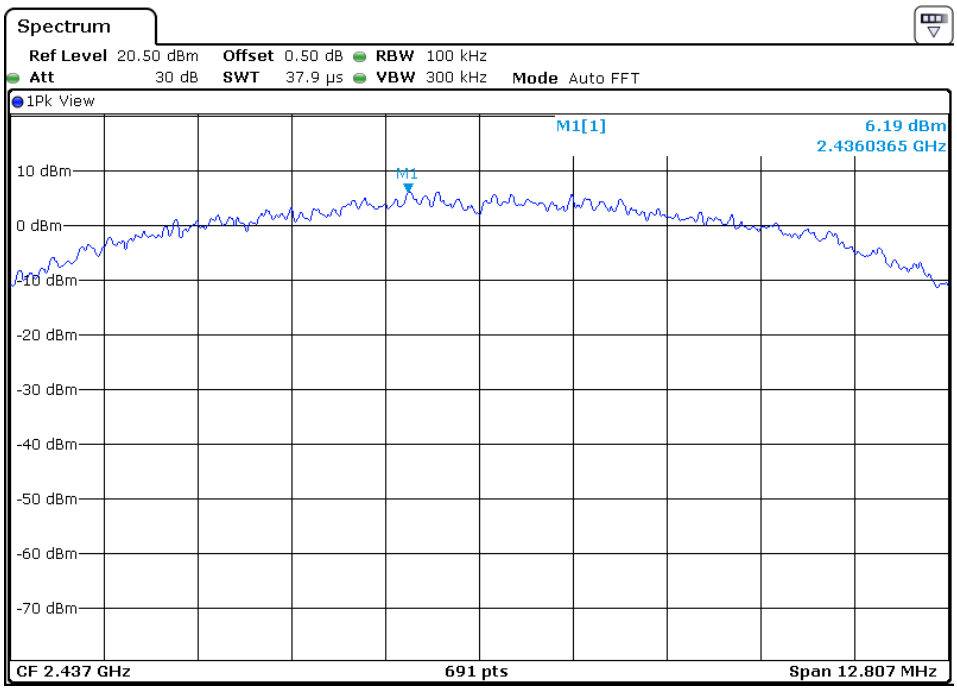
IEEE 802.11g (16QAM, 6Mbps)	
Frequency (MHz)	Power Density with RBW 100KHz (dBm)
2412	3.26
2437	3.78
2462	3.47

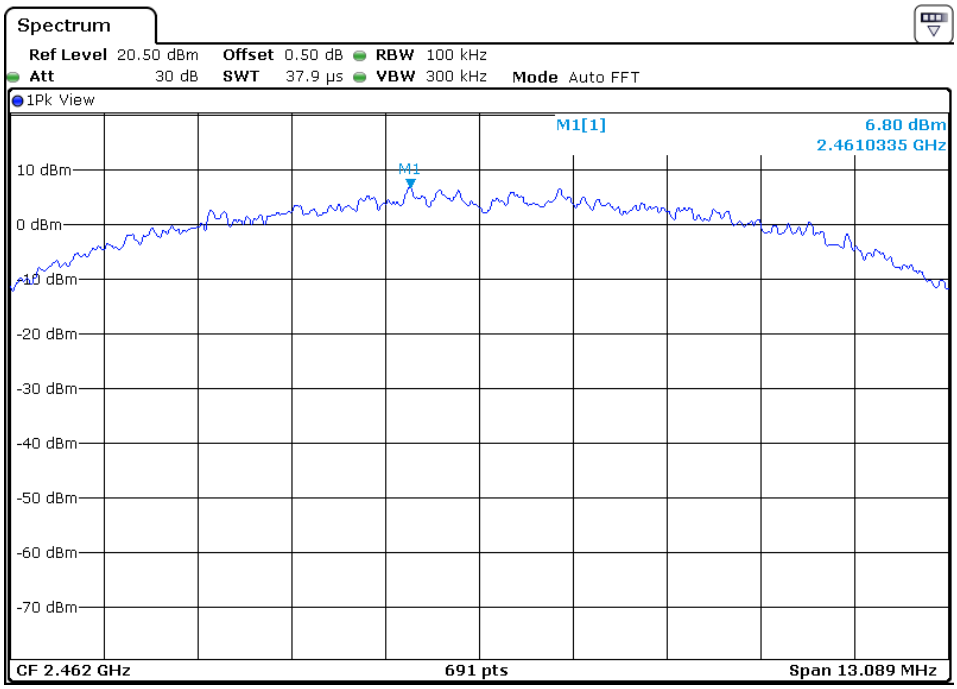
IEEE 802.11n-HT20 (16QAM, 6.5Mbps)	
Frequency (MHz)	Power Density with RBW 100KHz (dBm)
2412	2.29
2437	2.48
2462	2.62

The test plots are attached as below.

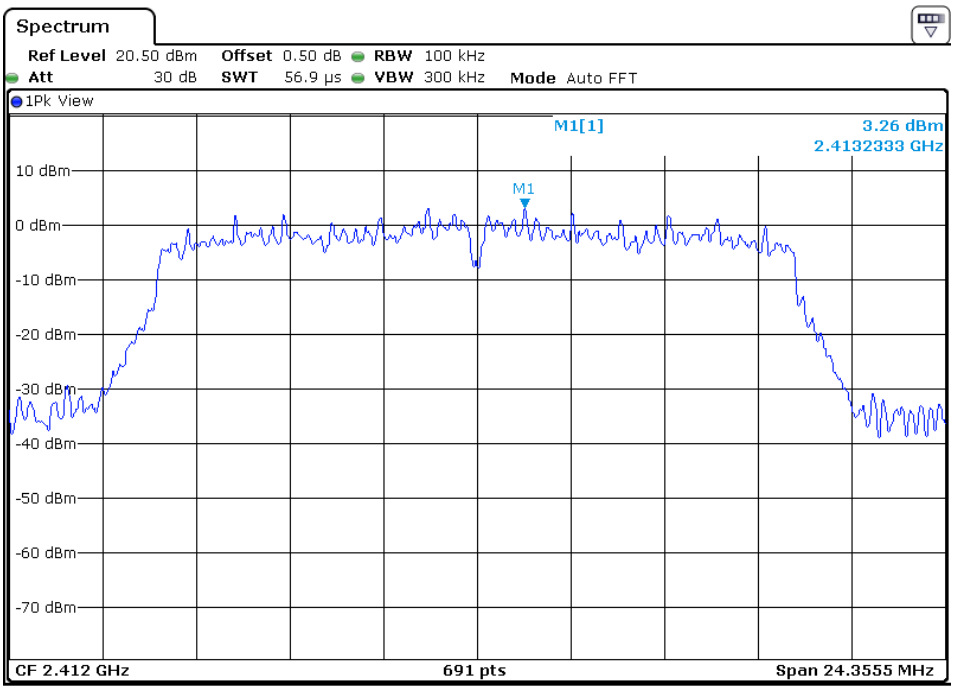
802.11b

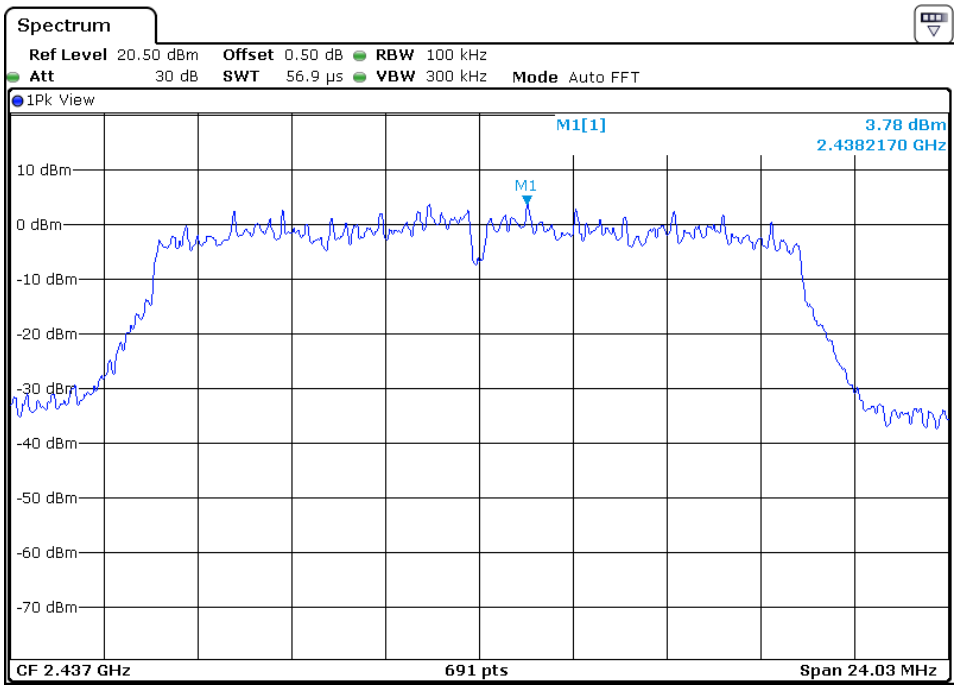

Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 38 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] 6.06 dBm
2.4114325 GHz
M1
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.412 GHz
691 pts
Span 14.001 MHz

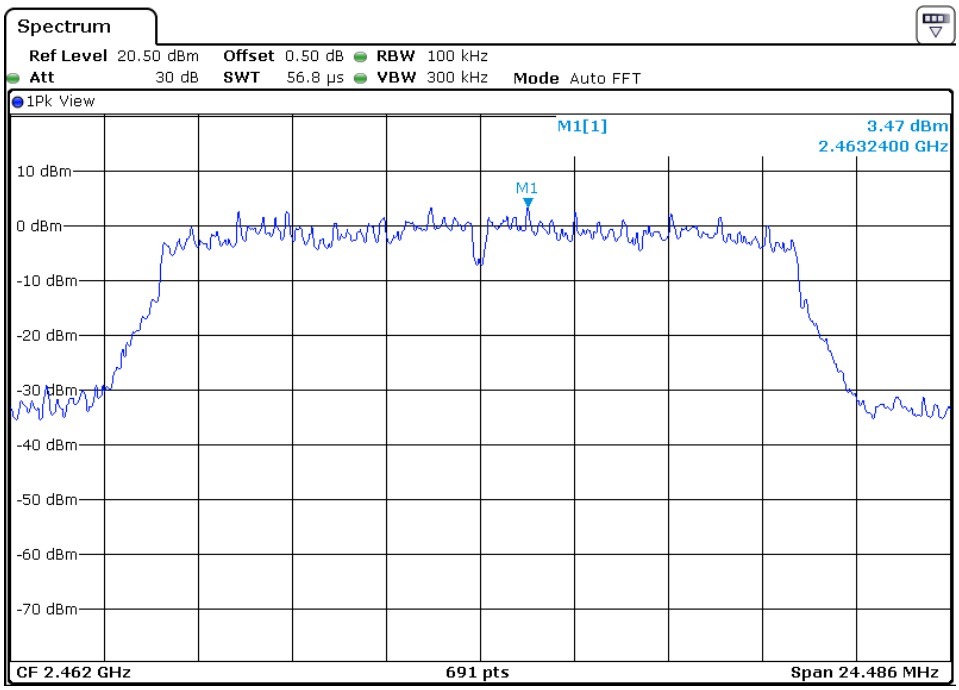

Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 37.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] 6.19 dBm
2.4360365 GHz
M1
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.437 GHz
691 pts
Span 12.807 MHz


Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 37.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] 6.80 dBm
2.4610335 GHz
M1
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.462 GHz
691 pts
Span 13.089 MHz

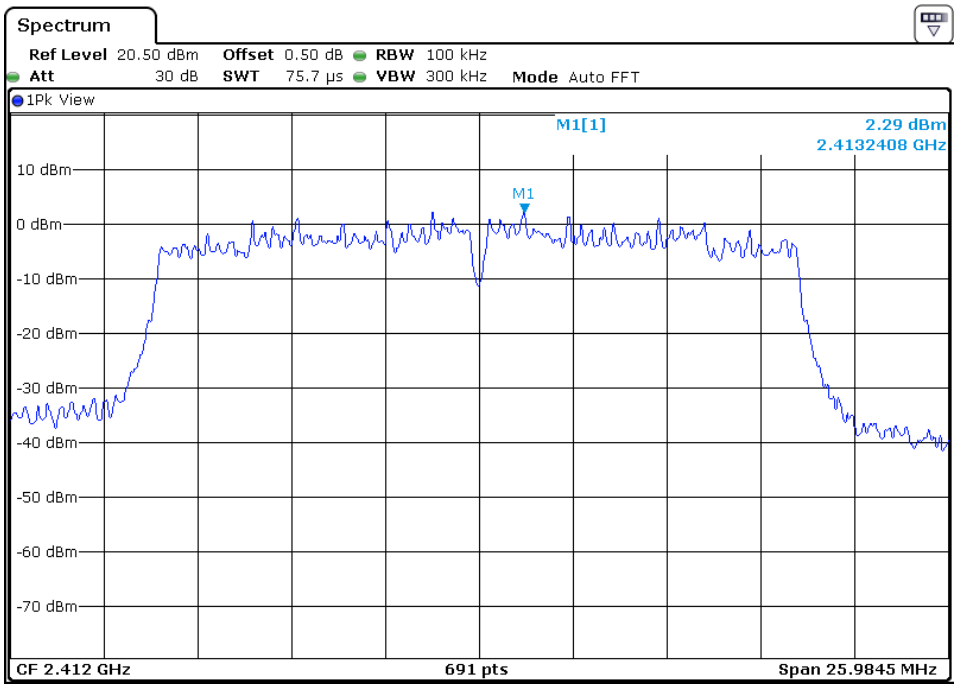
802.11g

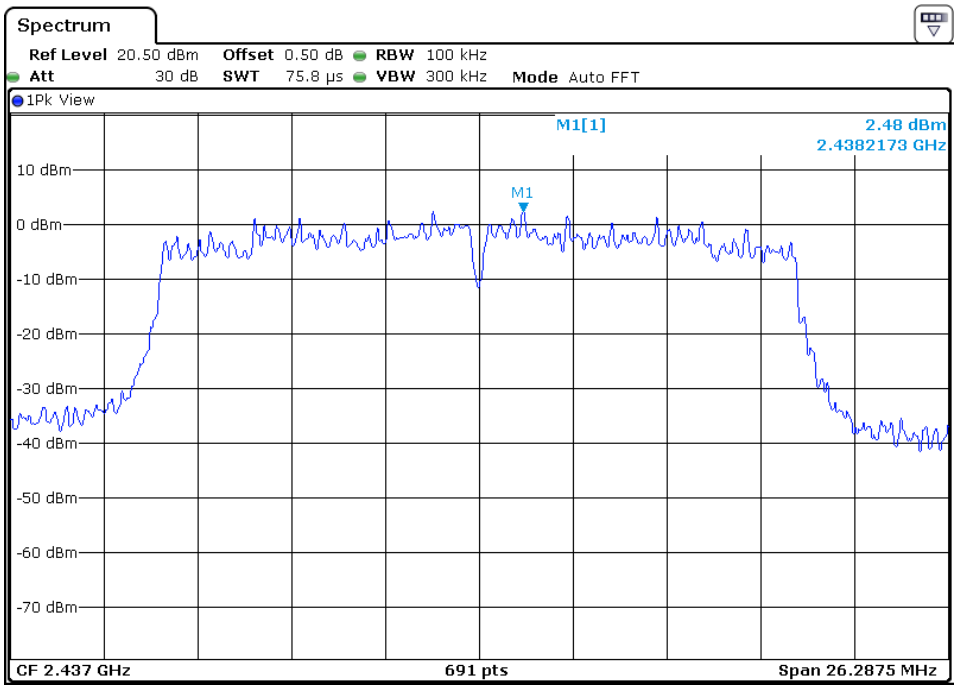

Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 56.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] 3.26 dBm
2.4132333 GHz
M1
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.412 GHz
691 pts
Span 24.3555 MHz

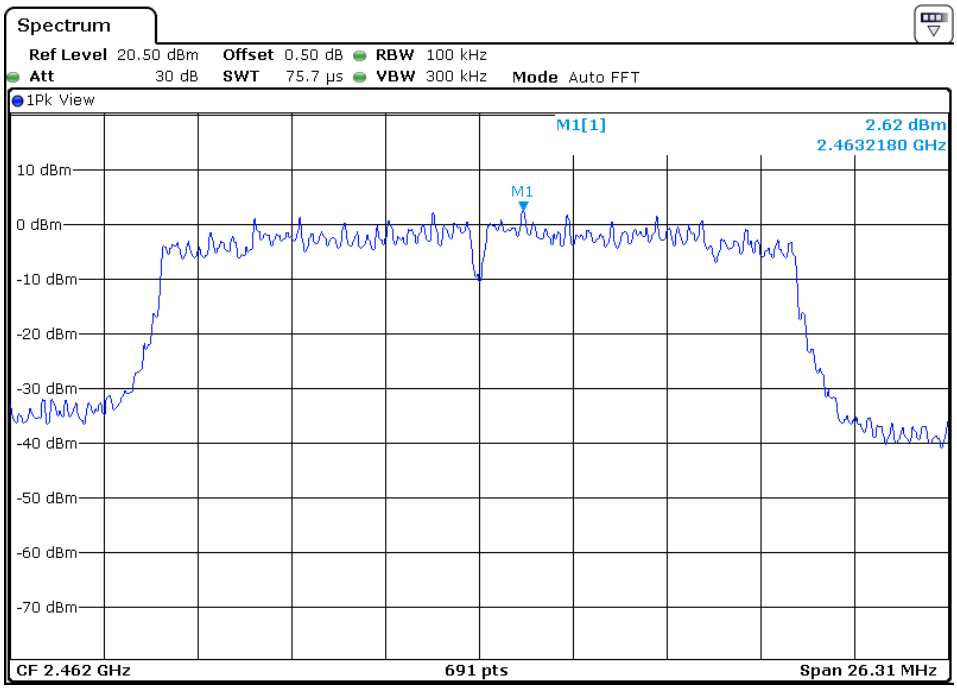

Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 56.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] 3.78 dBm
2.4382170 GHz
M1
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.437 GHz
691 pts
Span 24.03 MHz


Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 56.8 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] 3.47 dBm
2.4632400 GHz
M1
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.462 GHz
691 pts
Span 24.486 MHz

802.11n-HT20


Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 75.7 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] 2.29 dBm
2.4132408 GHz
M1
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.412 GHz
691 pts
Span 25.9845 MHz


Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 75.8 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] 2.48 dBm
2.4382173 GHz
M1
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.437 GHz
691 pts
Span 26.2875 MHz


Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 75.7 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] 2.62 dBm
2.4632180 GHz
M1
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.462 GHz
691 pts
Span 26.31 MHz

Applicant: Oco Group Inc.
Date of Test: August 11, 2016
Model: OCO2

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 v03r05.

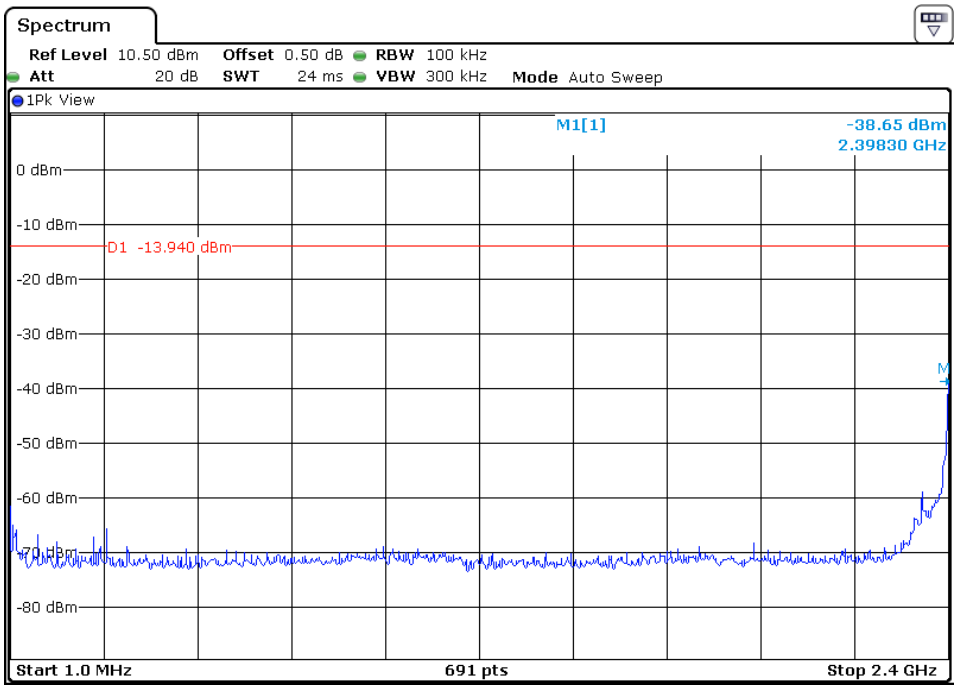
All other types of emissions from the EUT shall meet the general limits for radiated frequencies outside the passband.

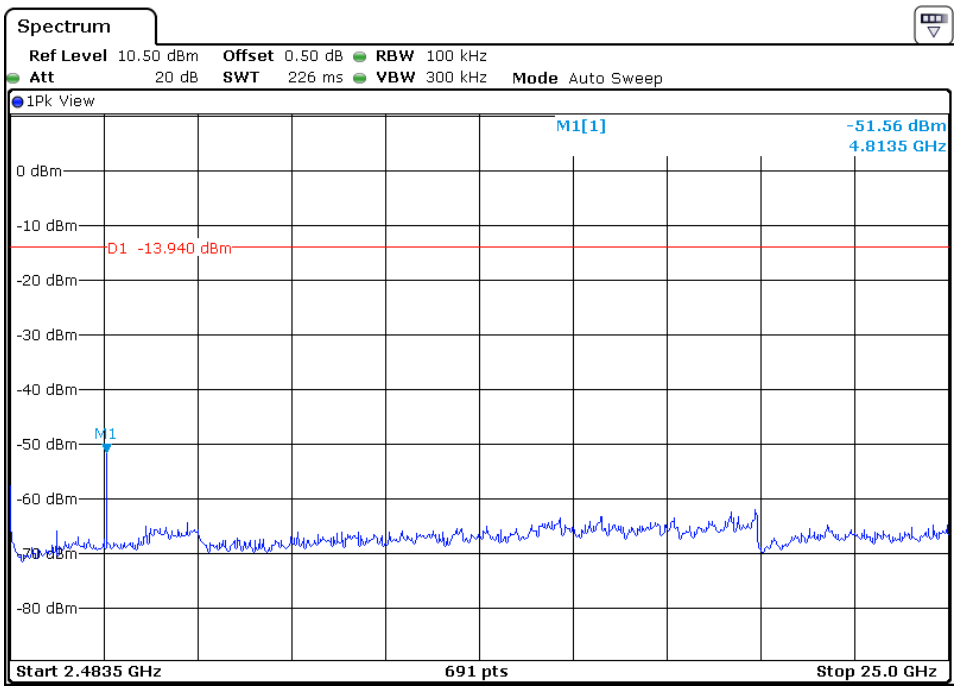
Refer to the attached test plots for out of band conducted emissions data with rate of 1Mbps for 802.11b, 6Mbps for 802.11g and 6.5Mbps for 802.11n-HT20.

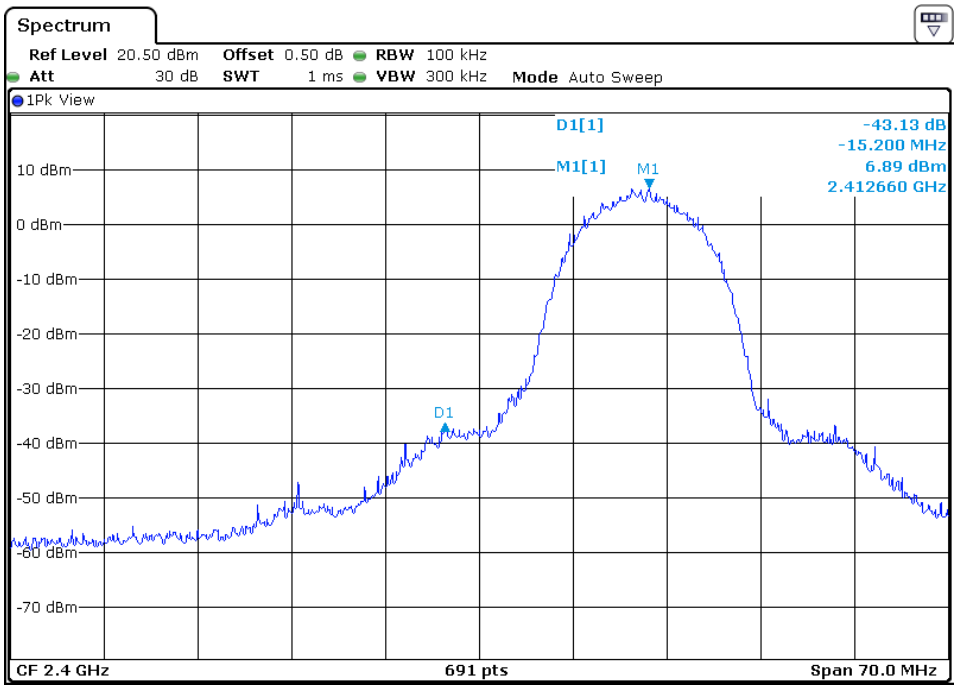
The test plots showed all spurious emission up to the tenth harmonic were measured and they were found to be at least 20 dB below the highest level of the desired power in the passband.

The test plots are attached as below.

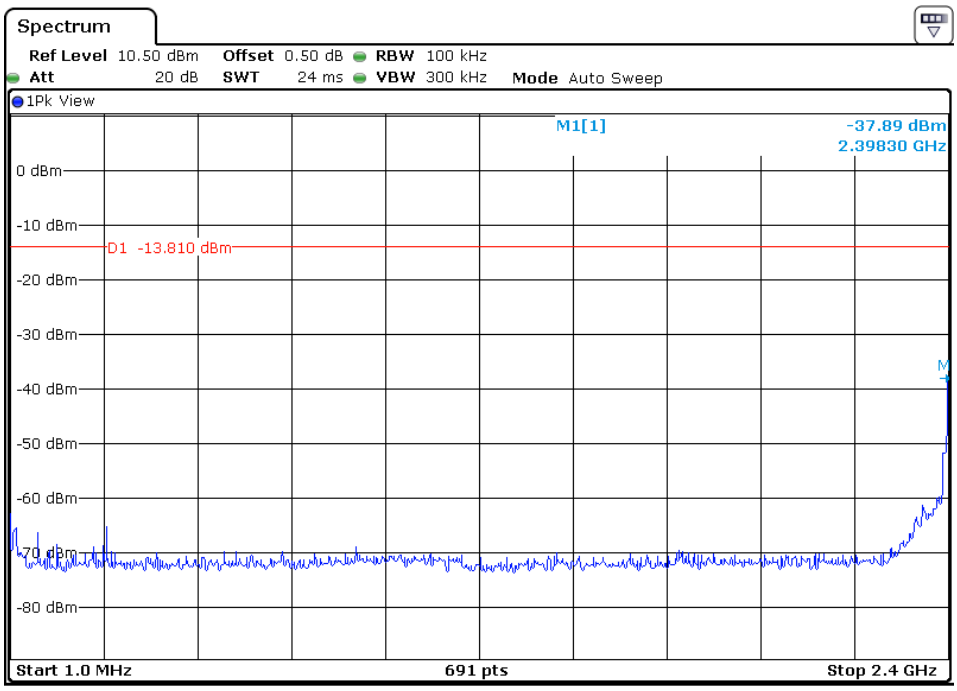
802.11b
Channel 01 (2412MHz) Reference Level: 6.06dBm

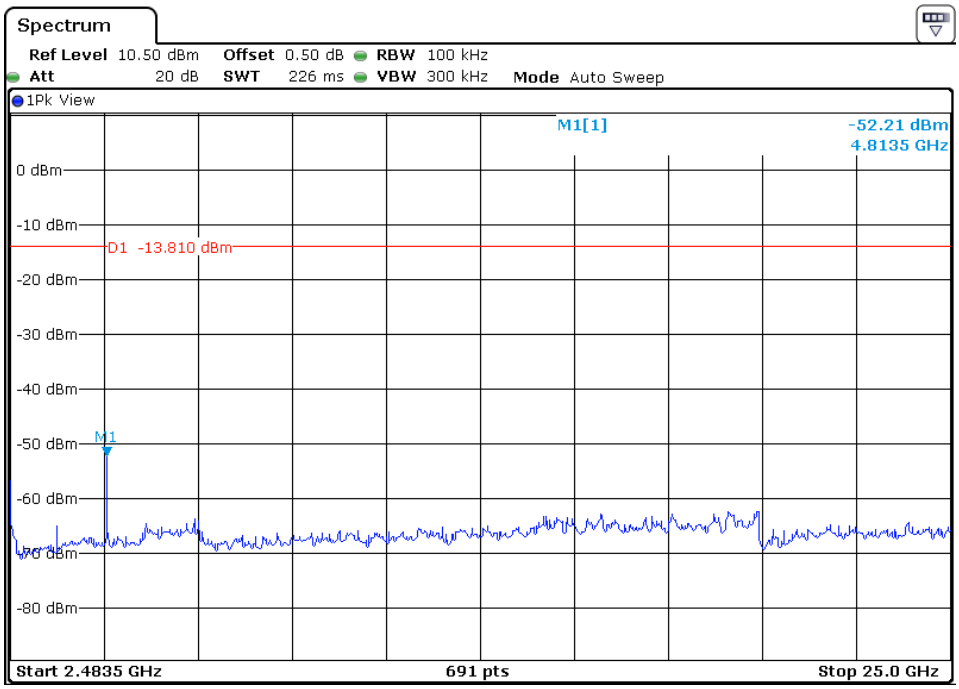




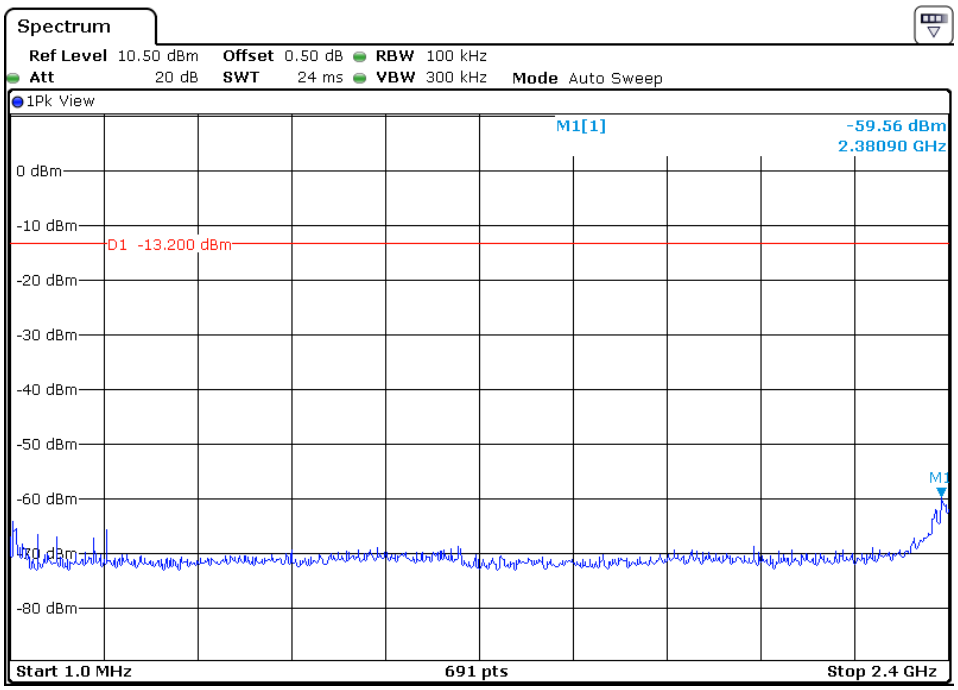


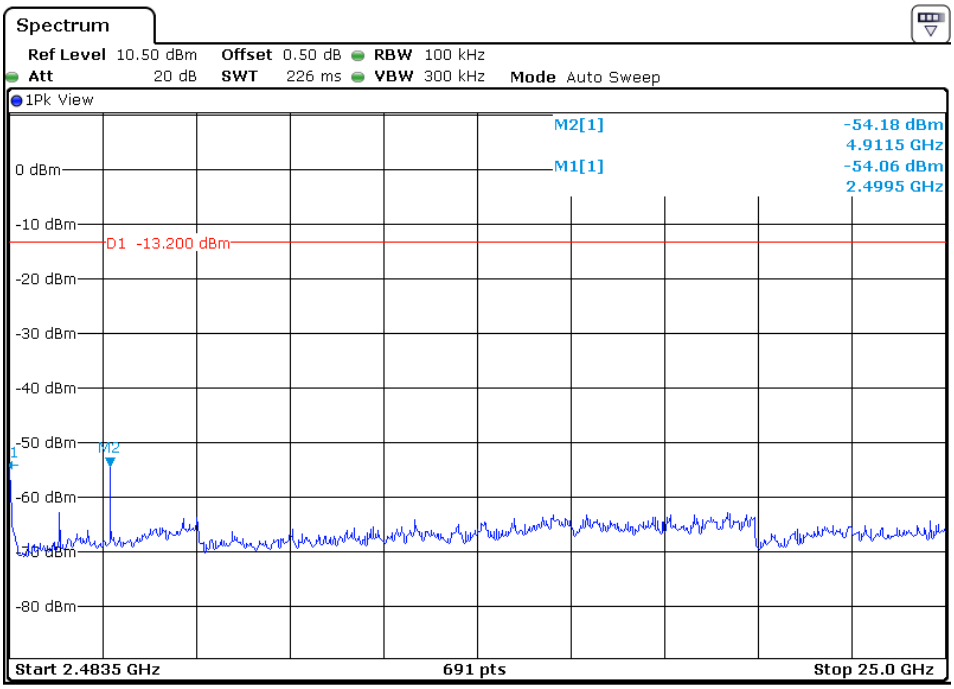
Channel 06 (2437MHz) Reference Level: 6.19dBm

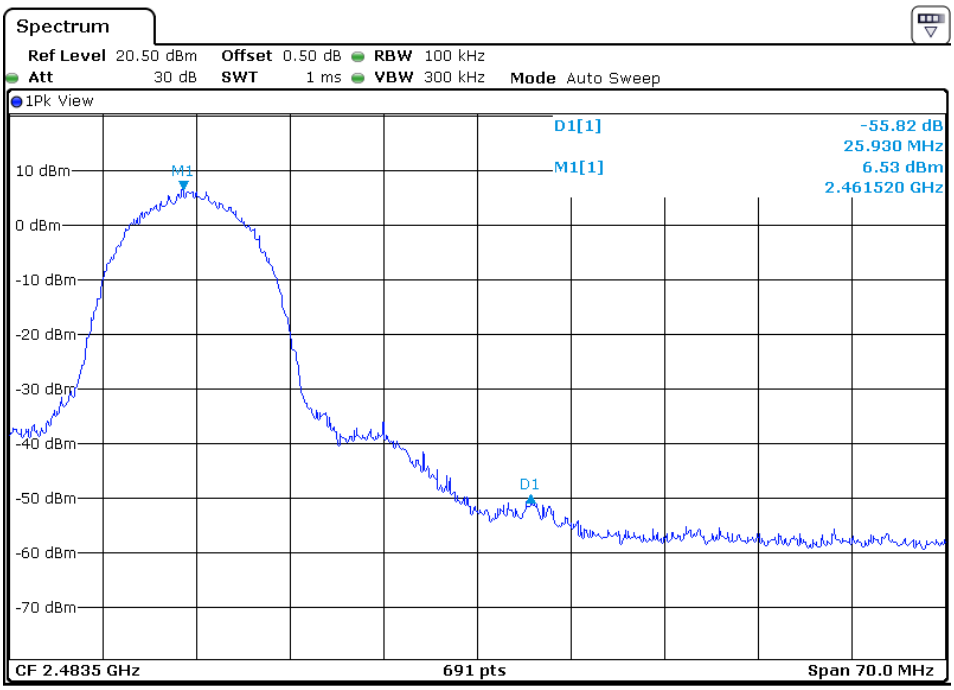




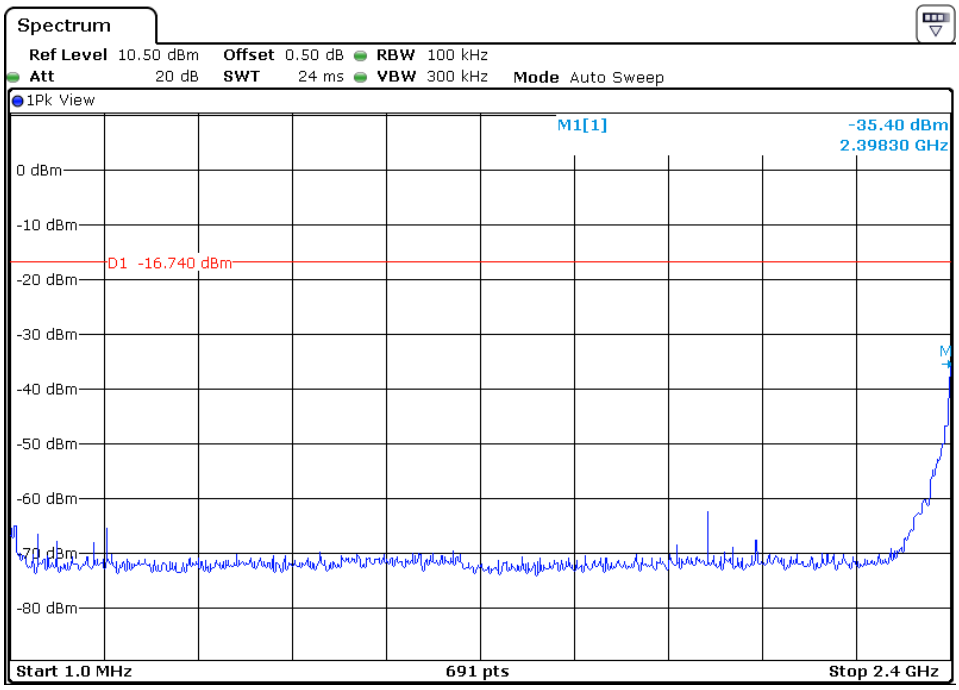
Channel 11 (2462MHz) Reference Level: 6.80dBm

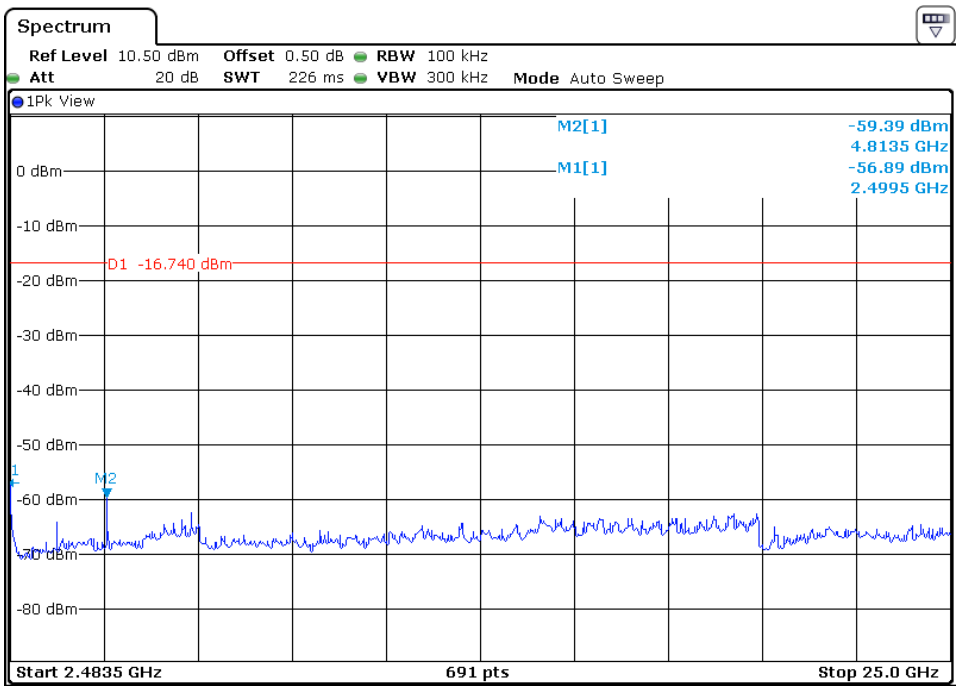


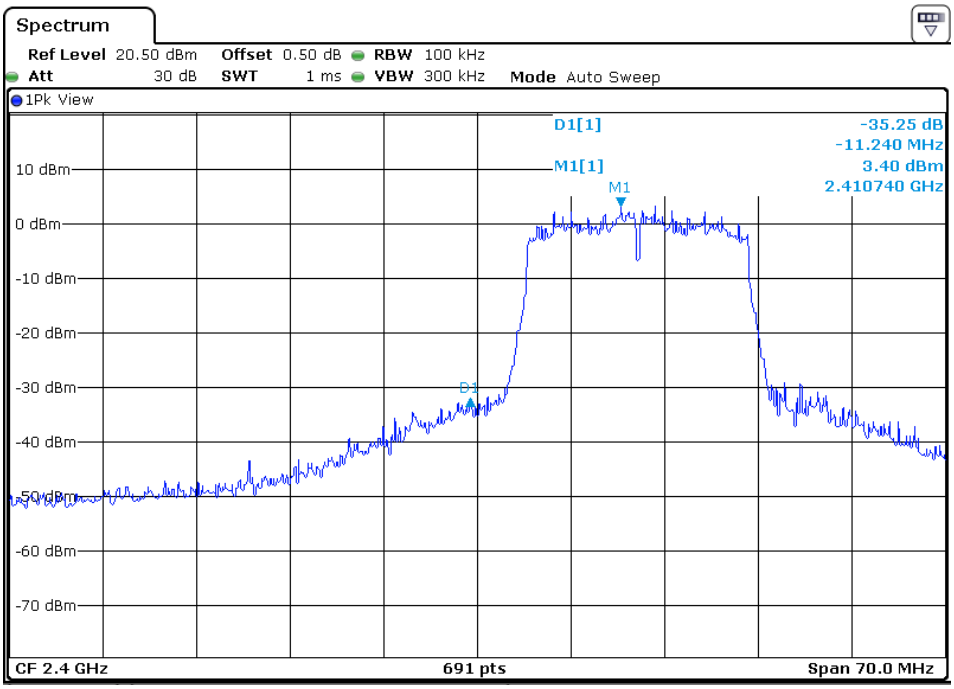

Spectrum
Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz
Att 20 dB SWT 226 ms VBW 300 kHz Mode Auto Sweep
1Pk View
M2[1] -54.18 dBm
4.9115 GHz
M1[1] -54.06 dBm
2.4995 GHz
0 dBm
-10 dBm
D1 -13.200 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
Start 2.4835 GHz
691 pts
Stop 25.0 GHz


Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 1 ms VBW 300 kHz Mode Auto Sweep
1Pk View
D1[1] -55.82 dB
25.930 MHz
M1[1] 6.53 dBm
2.461520 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.4835 GHz
691 pts
Span 70.0 MHz

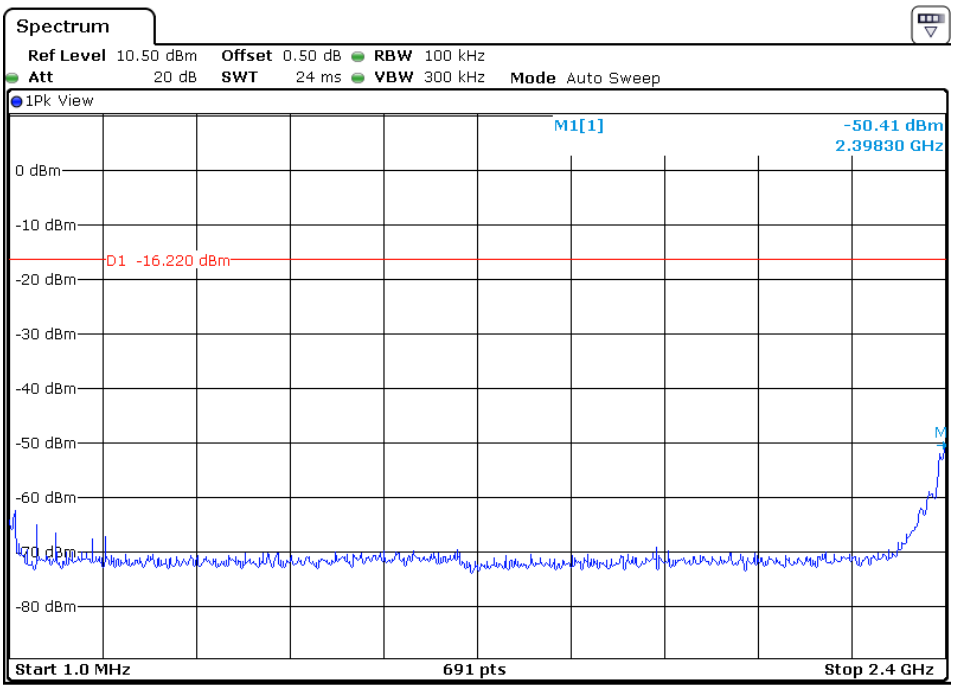
802.11g
Channel 01 (2412MHz) Reference Level: 3.26dBm

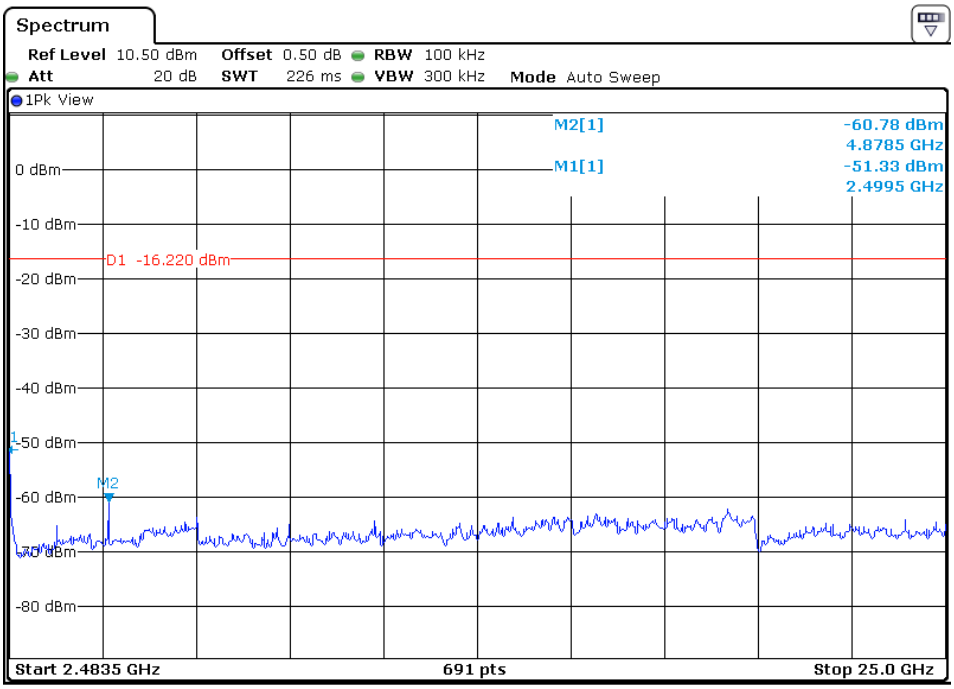




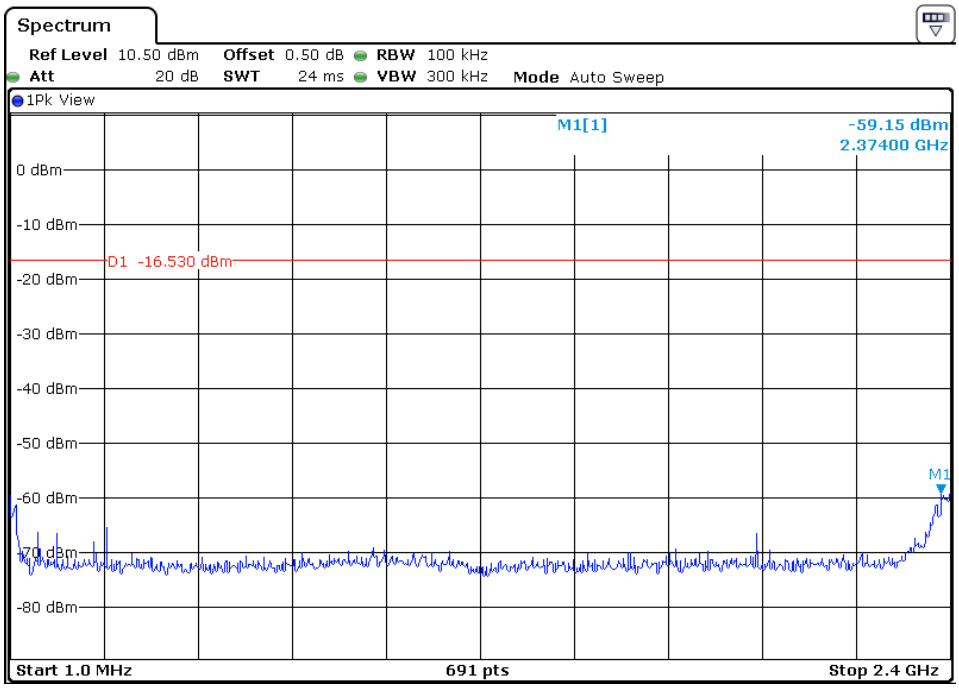


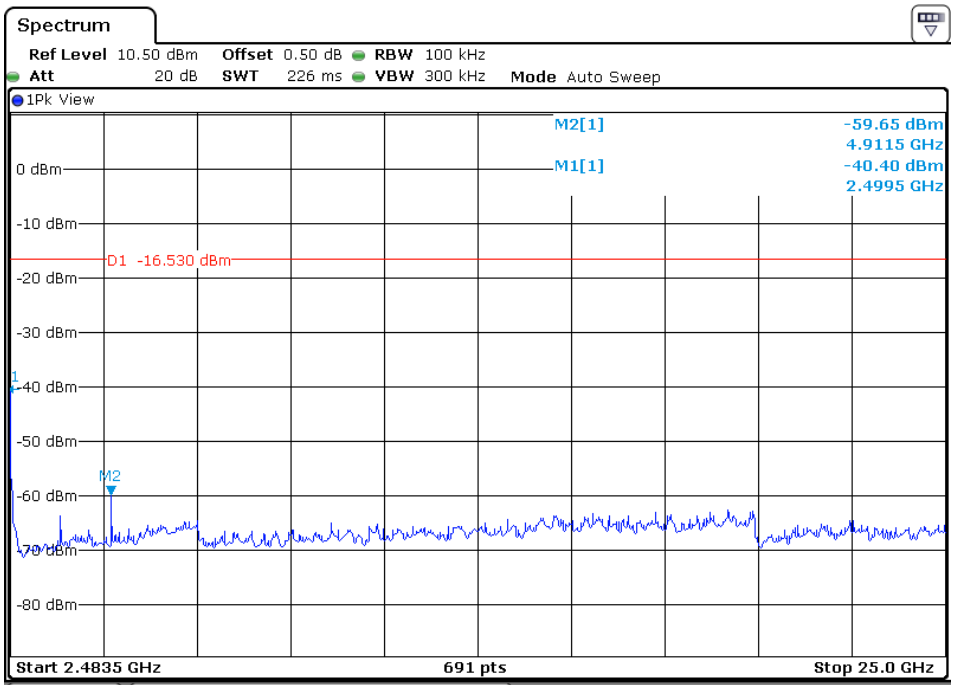
Channel 06 (2437MHz) Reference Level: 3.78dBm

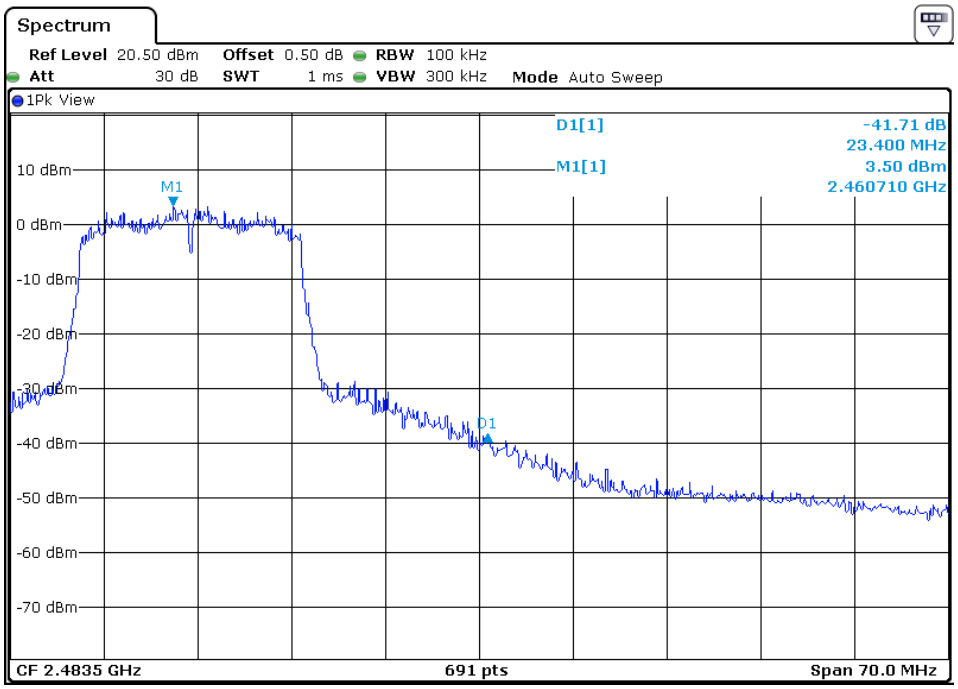




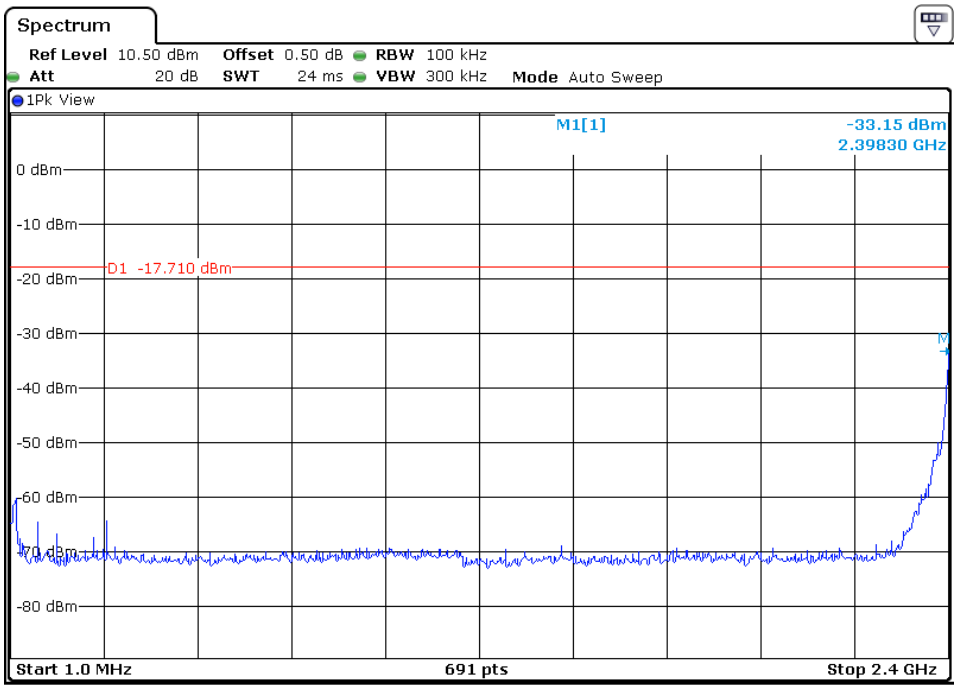
Channel 11 (2462MHz) Reference Level: 3.47dBm

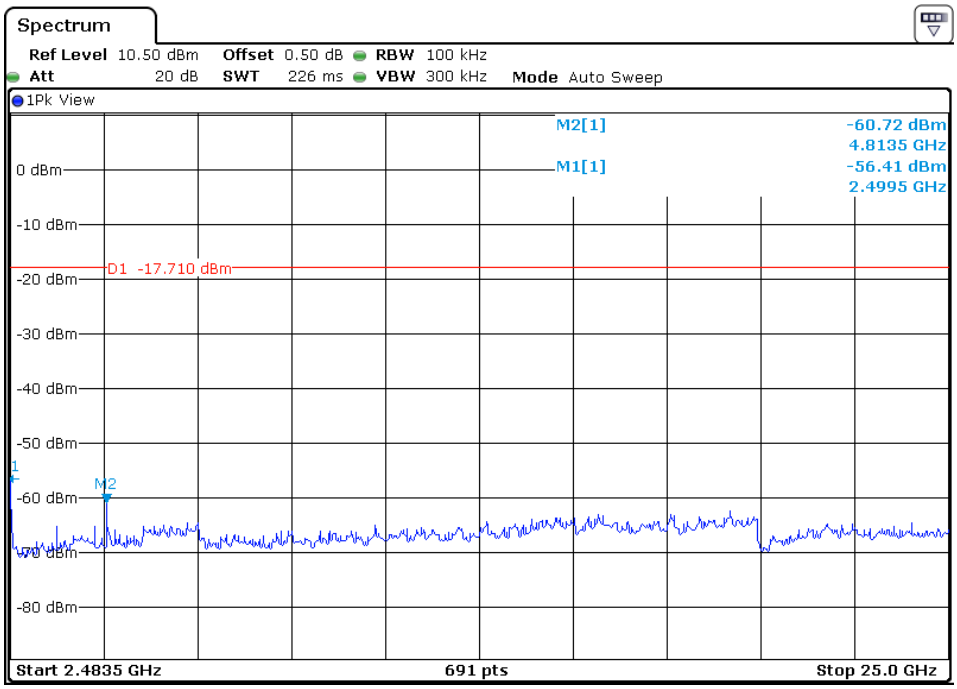


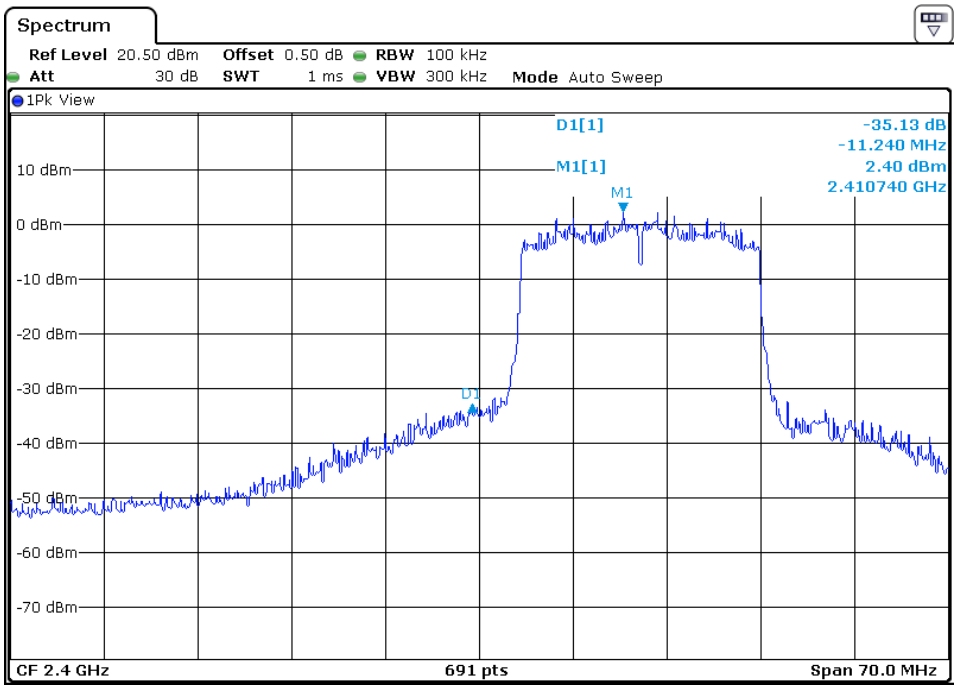

Spectrum
Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz
Att 20 dB SWT 226 ms VBW 300 kHz Mode Auto Sweep
1Pk View
M2[1] -59.65 dBm
4.9115 GHz
M1[1] -40.40 dBm
2.4995 GHz
0 dBm
-10 dBm
D1 -16.530 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
M2
-60 dBm
-70 dBm
-80 dBm
Start 2.4835 GHz
691 pts
Stop 25.0 GHz


Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 1 ms VBW 300 kHz Mode Auto Sweep
1Pk View
D1[1] -41.71 dB
23.400 MHz
M1[1] 3.50 dBm
2.460710 GHz
10 dBm
M1
0 dBm
-10 dBm
-20 dBm
-30 dBm
D1
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.4835 GHz
691 pts
Span 70.0 MHz

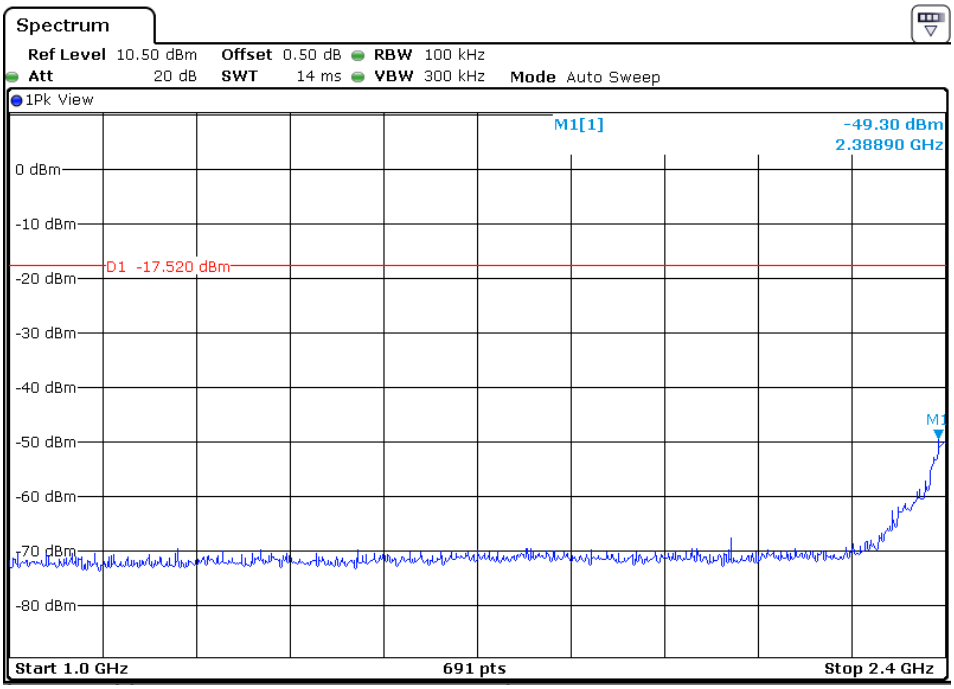
802.11n-HT20
Channel 01 (2412MHz) Reference Level: 2.29dBm

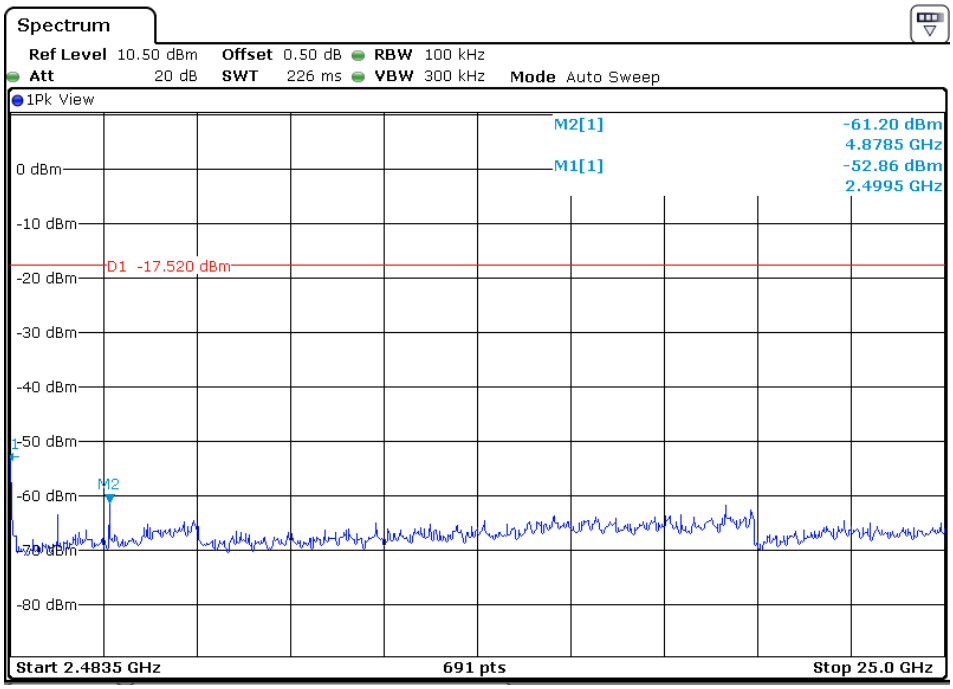




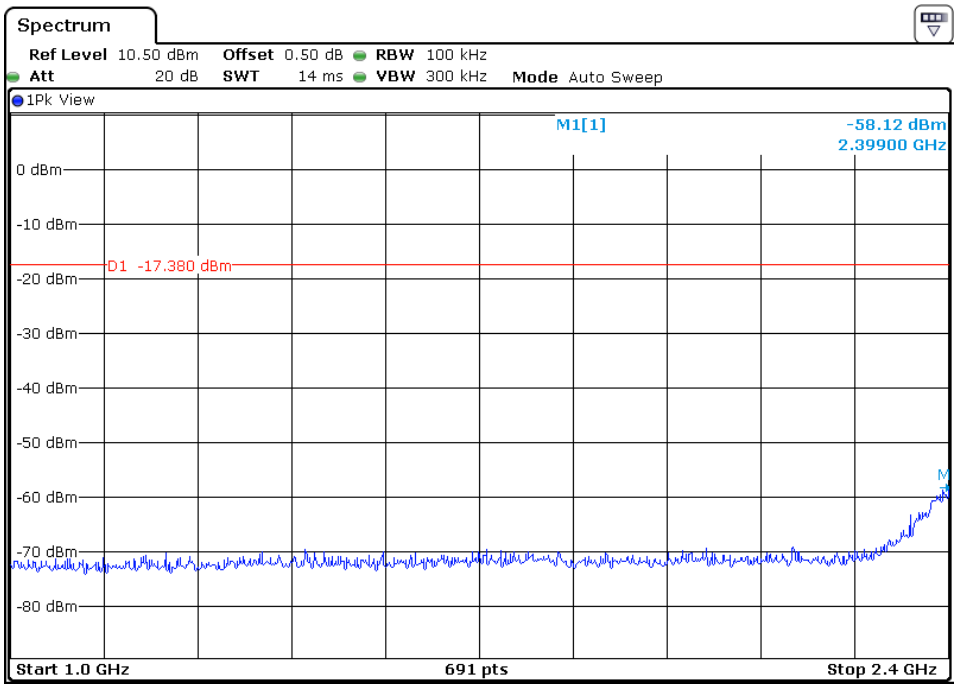


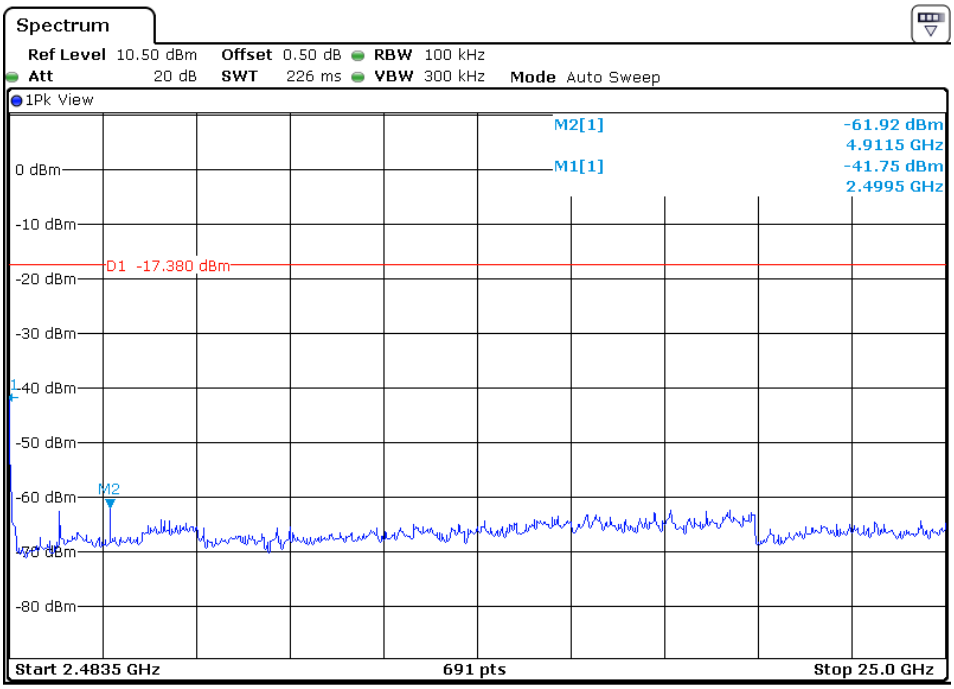
Channel 06 (2437MHz) Reference Level: 2.48dBm

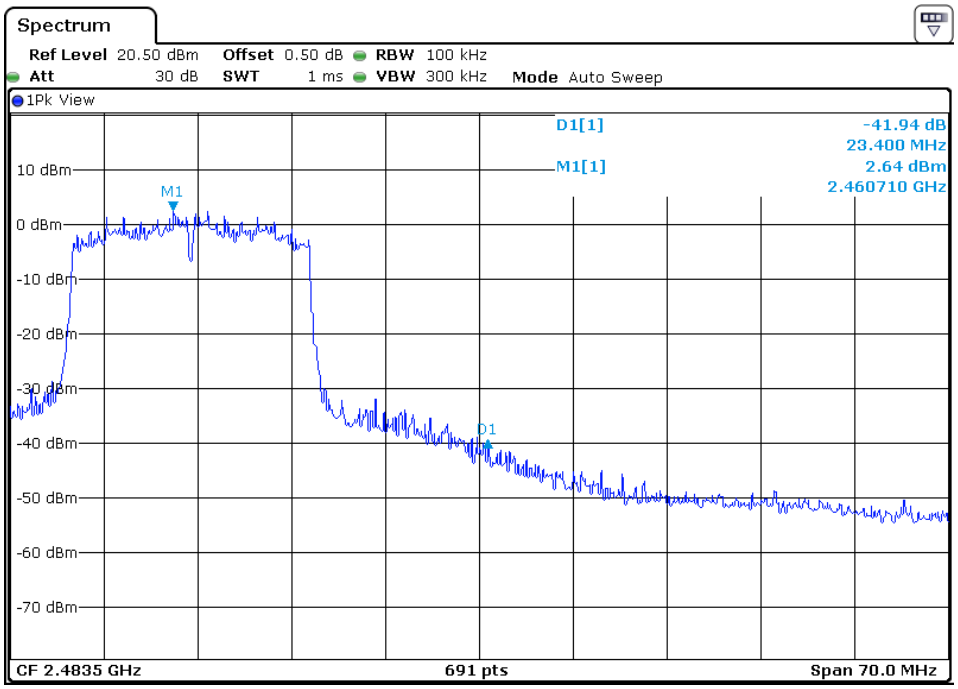




Channel 11 (2462MHz) Reference Level: 2.62dBm




Spectrum
Ref Level 10.50 dBm Offset 0.50 dB RBW 100 kHz
Att 20 dB SWT 226 ms VBW 300 kHz Mode Auto Sweep
1Pk View
M2[1] -61.92 dBm
4.9115 GHz
M1[1] -41.75 dBm
2.4995 GHz
0 dBm
-10 dBm
D1 -17.380 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
M2
-70 dBm
-80 dBm
Start 2.4835 GHz
691 pts
Stop 25.0 GHz


Spectrum
Ref Level 20.50 dBm Offset 0.50 dB RBW 100 kHz
Att 30 dB SWT 1 ms VBW 300 kHz Mode Auto Sweep
1Pk View
D1[1] -41.94 dB
23.400 MHz
M1[1] 2.64 dBm
2.460710 GHz
10 dBm
M1
0 dBm
-10 dBm
-20 dBm
-30 dBm
D1
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.4835 GHz
691 pts
Span 70.0 MHz

Applicant: Oco Group Inc.
Date of Test: August 11, 2016
Model: OCO2

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: Oco Group Inc.
Date of Test: August 11, 2016
Model: OCO2

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. Simultaneous transmitting was considered during the testing.

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

Applicant: Oco Group Inc.
Date of Test: August 11, 2016
Model: OCO2

4.7 Field Strength Calculation

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

FS = RA + AF + CF - AG + PD

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

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

FS = RA + AF + CF - AG + PD

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

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

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

Applicant: Oco Group Inc.
Date of Test: August 11, 2016
Model: OCO2

4.8 Radiated Spurious Emission

Worst Case Radiated Spurious Emission (802.11n-HT20) at 550.052MHz is passed by 1.8dB margin.

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

Applicant: Oco Group Inc.
Date of Test: August 11, 2016
Model: OCO2
Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 01)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	210.905	33.8	20.0	12.0	25.8	43.5	-17.7
Horizontal	350.100	37.9	20.0	17.4	35.3	46.0	-10.7
Horizontal	950.530	29.7	20.0	27.8	37.5	46.0	-8.5
Vertical	55.424	41.7	20.0	8.3	30.0	40.0	-10.0
Vertical	550.052	42.3	20.0	21.9	44.2	46.0	-1.8
Vertical	950.078	34.4	20.0	27.8	42.2	46.0	-3.8

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.

Applicant: Oco Group Inc.
Date of Test: August 11, 2016
Model: OCO2
Worst Case Operating Mode: 802.11b (TX-Channel 01)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4824.000	60.0	36.1	34.2	58.1	74.0	-15.9
Horizontal	*2386.380	58.5	36.7	28.4	50.2	74.0	-23.8

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	43.5	36.1	34.2	41.6	54.0	-12.4
Horizontal	*2386.380	46.8	36.7	28.4	38.5	54.0	-15.5

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: Oco Group Inc.
Date of Test: August 11, 2016
Model: OCO2
Worst Case Operating Mode: 802.11b (TX-Channel 06)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	59.8	36.1	34.6	58.3	74.0	-15.7
Horizontal	*7311.000	52.4	35.6	37.1	53.9	74.0	-20.1

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	47.9	36.1	34.6	46.4	54.0	-7.6
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: Oco Group Inc.
Date of Test: August 11, 2016
Model: OCO2
Worst Case Operating Mode: 802.11b (TX-Channel 11)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	59.3	36.1	34.6	57.8	74.0	-16.2
Horizontal	*7386.000	54.4	35.6	37.2	56.0	74.0	-18.0
Horizontal	*2487.540	60.4	36.7	28.1	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	*4924.000	48.2	36.1	34.6	46.7	54.0	-7.3
Horizontal	*7386.000	38.8	35.6	37.2	40.4	54.0	-13.6
Horizontal	*2487.540	51.1	36.7	28.1	42.5	54.0	-11.5

NOTES:

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

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

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

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

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

Applicant: Oco Group Inc.
Date of Test: August 11, 2016
Model: OCO2
Worst Case Operating Mode: 802.11g (TX-Channel 01)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4824.000	56.5	36.1	34.2	54.6	74.0	-19.4
Horizontal	*2390.000	61.0	36.7	28.8	53.1	74.0	-20.9

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	*4824.000	40.4	36.1	34.2	38.5	54.0	-15.5
Horizontal	*2390.000	49.5	36.7	28.8	41.6	54.0	-12.4

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: Oco Group Inc.
Date of Test: August 11, 2016
Model: OCO2
Worst Case Operating Mode: 802.11g (TX-Channel 06)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	56.0	36.1	34.6	54.5	74.0	-19.5
Horizontal	*7311.000	50.9	35.6	37.1	52.4	74.0	-21.6

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	40.4	36.1	34.6	38.9	54.0	-15.1
Horizontal	*7311.000	40.3	35.6	37.1	41.8	54.0	-12.2

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.

Applicant: Oco Group Inc.
Date of Test: August 11, 2016
Model: OCO2
Worst Case Operating Mode: 802.11g (TX-Channel 11)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	54.9	36.1	34.6	53.4	74.0	-20.6
Horizontal	*7386.000	49.0	35.6	37.2	50.6	74.0	-23.4
Horizontal	*2483.760	61.6	36.7	28.0	52.9	74.0	-21.1

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	39.2	36.1	34.6	37.7	54.0	-16.3
Horizontal	*7386.000	39.5	35.6	37.2	41.1	54.0	-12.9
Horizontal	*2483.760	55.7	36.7	28.0	47.0	54.0	-7.0

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: Oco Group Inc.
Date of Test: August 11, 2016
Model: OCO2
Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 01)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4824.000	57.4	36.1	34.2	55.5	74.0	-18.5
Horizontal	*2389.920	58.7	36.7	28.7	50.7	74.0	-23.3

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4824.000	50.2	36.1	34.2	48.3	54.0	-5.7
Horizontal	*2389.920	47.9	36.7	28.7	39.9	54.0	-14.1

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: Oco Group Inc.
Date of Test: August 11, 2016
Model: OCO2
Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 06)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	58.3	36.1	34.2	56.4	74.0	-17.6
Horizontal	*7311.000	51.8	35.6	37.1	53.3	74.0	-20.7

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	*4874.000	38.9	36.1	34.2	37.0	54.0	-17.0
Horizontal	*7311.000	33.3	35.6	37.1	34.8	54.0	-19.2

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.

Applicant: Oco Group Inc.
Date of Test: August 11, 2016
Model: OCO2
Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 11)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	57.5	36.1	34.6	56.0	74.0	-18.0
Horizontal	*7386.000	52.3	35.6	37.2	53.9	74.0	-20.1
Horizontal	*2484.080	61.4	36.7	28.0	52.7	74.0	-21.3

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	41.8	36.1	34.6	40.3	54.0	-13.7
Horizontal	*7386.000	37.5	35.6	37.2	39.1	54.0	-14.9
Horizontal	*2484.080	48.7	36.7	28.0	40.0	54.0	-14.0

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.

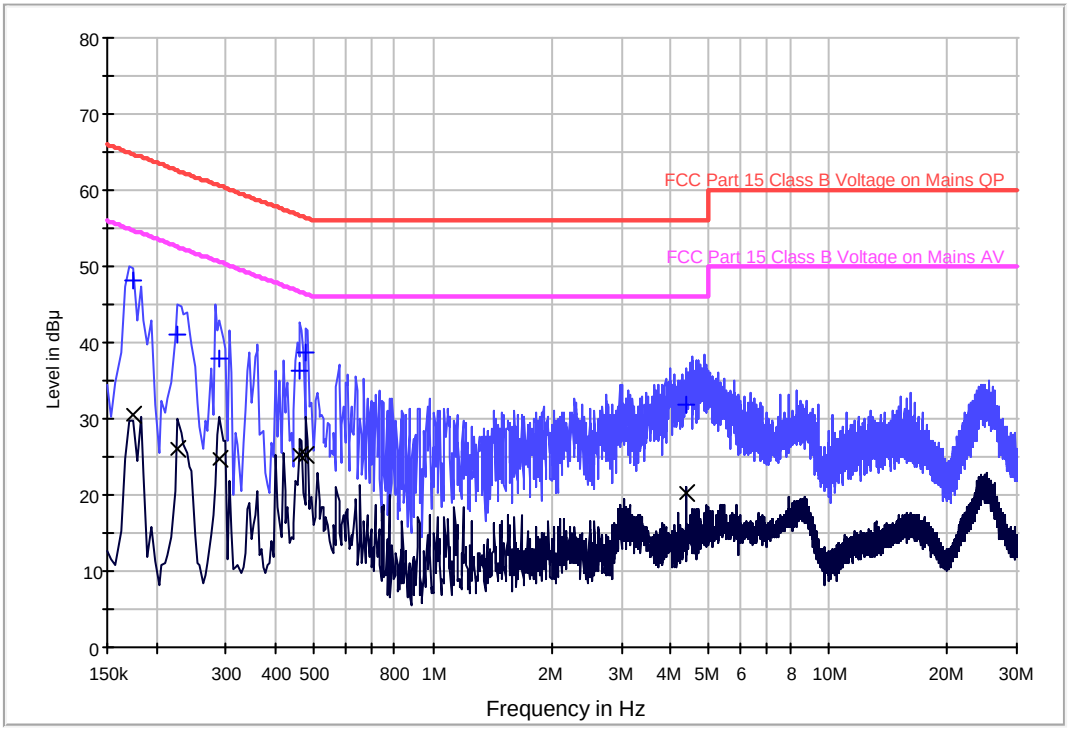
* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted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

4.9 Conducted Emission

Worst Case Conducted emission at 0.458MHz is Passed by 11.3dB margin

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

Applicant: Oco Group Inc.
Date of Test: August 11, 2016
Model: OCO2
Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 01)
Line: Live
Conducted Emission Test - FCC



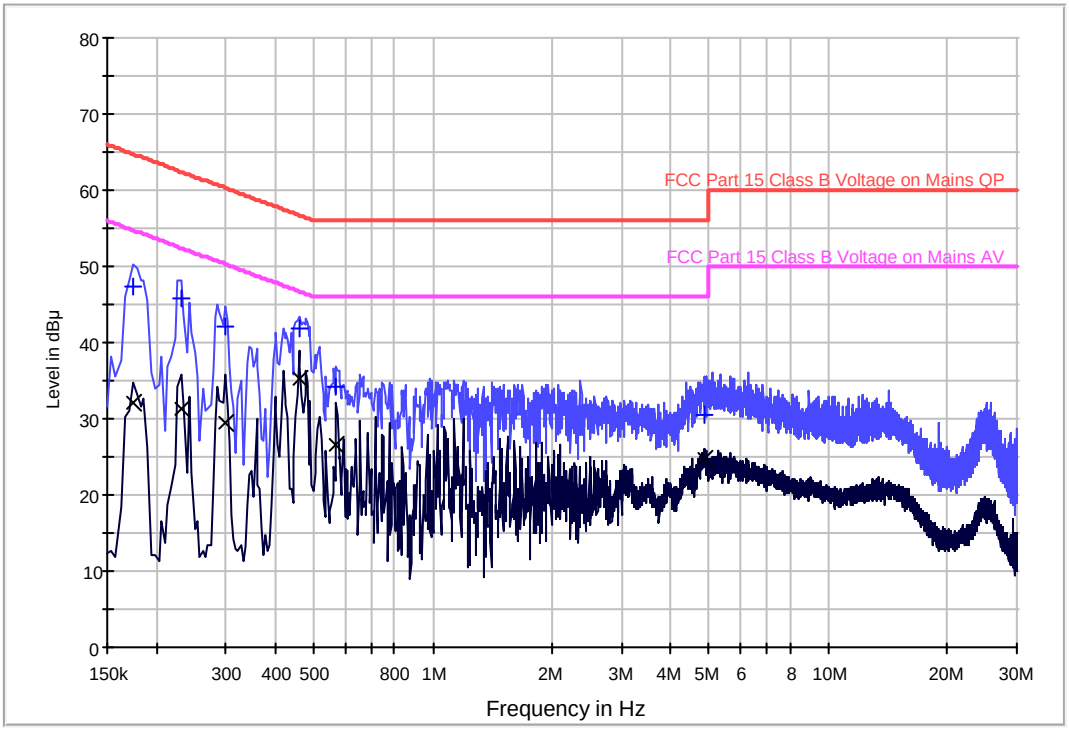
Limit and Margin QP

Frequency (MHz)	QuasiPeak (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.174000	48.1	L1	9.5	16.7	64.8
0.226000	41.2	L1	9.5	21.4	62.6
0.290000	37.9	L1	9.6	22.6	60.5
0.462000	36.4	L1	9.6	20.3	56.7
0.478000	38.6	L1	9.6	17.8	56.4
4.390000	31.7	L1	9.7	24.3	56.0

Limit and Margin AV

Frequency (MHz)	Average (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.174000	30.5	L1	9.5	24.3	54.8
0.226000	26.2	L1	9.5	26.4	52.6
0.290000	24.7	L1	9.6	25.8	50.5
0.462000	25.2	L1	9.6	21.5	46.7
0.478000	25.2	L1	9.6	21.2	46.4
4.390000	20.4	L1	9.7	25.6	46.0

Applicant: Oco Group Inc.
Date of Test: August 11, 2016
Model: OCO2
Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 01)
Line: Neutral
Conducted Emission Test - FCC



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.174000	47.4	N	9.6	17.4	64.8
0.230000	45.8	N	9.6	16.6	62.4
0.298000	42.0	N	9.6	18.3	60.3
0.458000	41.7	N	9.6	15.0	56.7
0.570000	34.2	N	9.6	21.8	56.0
4.870000	30.6	N	9.6	25.4	56.0

Limit and Margin AV

Frequency (MHz)	Average (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.174000	32.2	N	9.6	22.6	54.8
0.230000	31.4	N	9.6	21.0	52.4
0.298000	29.4	N	9.6	20.9	50.3
0.458000	35.4	N	9.6	11.3	46.7
0.570000	26.7	N	9.6	19.3	46.0
4.870000	24.7	N	9.6	21.3	46.0

Applicant: Oco Group Inc.
Date of Test: August 11, 2016
Model: OCO2

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

[x] Not required - No digital part

[ ] Test results are attached

[ ] Included in the separated report.

Applicant: Oco Group Inc.
Date of Test: August 11, 2016
Model: OCO2

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

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

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

EXHIBIT 5

EQUIPMENT PHOTOGRAPHS

5.0 Equipment Photographs

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

EXHIBIT 6

PRODUCT LABELLING

6.0 Product Labeling

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

EXHIBIT 7

TECHNICAL SPECIFICATIONS

7.0 Technical Specifications

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

EXHIBIT 8

INSTRUCTION MANUAL

8.0 Instruction Manual

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

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

EXHIBIT 9

CONFIDENTIALITY REQUEST

9.0 Confidentiality Request

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

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EXHIBIT 10

MISCELLANEOUS INFORMATION

10.0 Discussion of Pulse Desensitization

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

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

EXHIBIT 11

TEST EQUIPMENT LIST

11.0 Test Equipment List

Equipment No.	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
SZ182-02	RF Power Meter	Anritsu	ML2496A	1302005	23-May-2016	23-May-2017
SZ182-02-01	Power Sensor	Anritsu	MA2411B	1207429	23-May-2016	23-May-2017
SZ061-12	BiConiLog Antenna	ETS	3142E	00166158	15-Sep-2015	15-Sep-2016
SZ185-01	EMI Receiver	R&S	ESCI	100547	23-Jan-2016	23-Jan-2017
SZ061-09	Horn Antenna	ETS	3115	00092346	31-Oct-2015	31-Oct-2016
SZ061-07	Pyramidal Horn Antenna	ETS	3160-09	00083067	01-Sep-2015	01-Sep-2016
SZ061-06	Active Loop Antenna	Electro-Metrics	EM-6876	217	11-May-2016	11-May-2017
SZ056-06	Spectrum Analyzer	R&S	FSV40	101101	2-Jul-2016	2-Jul-2017
SZ181-04	Preamplifier	Agilent	8449B	3008A02474	23-Jan-2016	23-Jan-2017
SZ188-01	Anechoic Chamber	ETS	RFD-F/A-100	4102	16-Apr-2016	16-Apr-2018
SZ062-02	RF Cable	RADIALL	RG 213U	--	8-Jul-2016	8-Jan-2017
SZ062-05	RF Cable	RADIALL	0.04-26.5GHz	--	06-Apr-2016	06-Oct-2016
SZ062-12	RF Cable	RADIALL	0.04-26.5GHz	--	06-Apr-2016	06-Oct-2016
SZ067-04	Notch Filter	Micro-Tronics	BRM50702-02	--	23-May-2016	23-May-2017
SZ185-02	EMI Test Receiver	R&S	ESCI	100692	03-Nov-2015	03-Nov-2016
SZ187-01	Two-Line V-Network	R&S	ENV216	100072	03-Nov-2015	03-Nov-2016
SZ187-02	Two-Line V-Network	R&S	ENV216	100073	1-Jul-2016	1-Jul-2017
SZ188-03	Shielding Room	ETS	RFD-100	4100	23-Aug-2014	23-Aug-2016