FCC 47 CFR PART 15 SUBPART C

CERTIFICATION TEST REPORT

For

1080P HD WI-FI DETERRENCE CAMERA

MODEL NUMBER: LNWCX-C

ADDITIONAL MODEL NUMBER：LNW16XF, LNWCM23X, LNWC21X

PROJECT NUMBER: 4788580183

REPORT NUMBER: 4788580183-1

FCC ID: UCZ-LNWCX-C

IC : 8575A-LNWCXC

ISSUE DATE: Aug. 8, 2018

Prepared for

Lorex Technology Inc.

Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
--	8/8/2018	Initial Issue	

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name:	Lorex Technology Inc.
Address:	250 Royal Crest Court, Markham, ON L3R 3S1 Canada

Manufacturer Information

Company Name:	Lorex Technology Inc.
Address:	250 Royal Crest Court, Markham, ON L3R 3S1 Canada

Factory Information

Company Name:	ZHEJIANG DAHUA VISION TECHNOLOGY CO.,LTD
Address:	No.1199, Bin'an road, Binjiang District, Hangzhou, P.R. China.
Company Name:	ZHEJIANG DAHUA ZHILIAN CO.,LTD.
Address:	No.28, Dongqiao Road, Dongzhou Street, Fuyang District, Hangzhou, P.R. China.

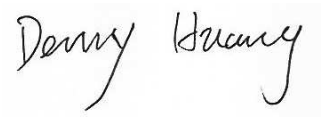
EUT Description

Product Name	1080P HD WI-FI DETERRENCE CAMERA
Model Name	LNWCX-C
Trademark	
Additional No.	LNW16XF, LNWCM23X, LNWC21X
Sample Number	1699024
Data of Receipt Sample	July 11, 2018
Date Tested	July 12, 2018~ Aug. 07, 2018

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart C	PASS
ISED RSS-GEN Issue 4	PASS
ISED RSS-247 Issue 2	PASS

Summary of Test Results			
Clause	Test Items	FCC/IC Rules	Test Results
1	6db DTS Bandwidth and 99% Bandwidth	FCC 15.247 (a) (2) RSS-247 Clause 5.2 (a)	Complied
2	Peak Conducted Power	FCC 15.247 (b) (3) RSS-247 Clause 5.4 (e)	Complied
3	Power Spectral Density	FCC 15.247 (e) RSS-247 Clause 5.2 (b)	Complied
4	Conducted Band edge And Spurious emission	FCC 15.247 (d) RSS-247 Clause 5.5	Complied
5	Radiated Band edges and Spurious emission	FCC 15.247 (d) FCC 15.209 FCC 15.205 RSS-247 Clause 5.5 RSS-GEN Clause 8.9	Complied
6	Conducted Emission Test For AC Power Port	FCC 15.207 RSS-GEN Clause 8.8	Complied
7	Antenna Requirement	FCC 15.203 RSS-GEN Clause 8.3	Complied
Remark: 1）For this product, it has two antennas, antenna1 and antenna2, the 802.11B SISO&802.11G SISO modes are use the SISO technical, the 802.11N20&802.11N40 are use the MIMO and SISO technical. 2）Pre-testing Antenna 1 and Antenna2, and pre-testing SISO and MIMO modes, only the data of the worse case is shown in this test repot.			

Tested By:



Denny Huang
Engineer Project Associate

Check By:

Shawn Wen
Laboratory Leader

Approved By:

Stephen Guo

Laboratory Manage

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC KDB 558074 D01 DTS Meas Guidance v05 414788 D01 Radiated Test Site v01, ANSI C63.10-2013, FCC CFR 47 Part 2, FCC CFR 47 Part 15, RSS-247 Issue 2, and RSS-GEN Issue4.

3. FACILITIES AND ACCREDITATION

Test Location	UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch.
Address	Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China
Accreditation Certificate	UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing. The Certificate Registration Number is 4102.01. UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The Designation Number is CN1187. UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. EMC Laboratory has been registered and fully described in a report filed with Industry Canada. The Company Number is 21320.

Note:

1. All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China

2. The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.

3. For below 30MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30MHz had been correlated to measurements performed on an OATS.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Item	Uncertainty
Uncertainty for Conduction emission test	2.90dB
Uncertainty for Radiation Emission test(include Fundamental emission) (30MHz-1GHz)	4.52dB
Uncertainty for Radiation Emission test (1GHz to 26GHz)(include Fundamental emission)	5.04dB(1-6GHz)
	5.30dB (6GHz-18Gz)
	5.23dB (18GHz-26Gz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

Product Name:	1080P HD WI-FI DETERRENCE CAMERA	
Model No.:	LNWCX-C	
Operating Frequency:	IEEE 802.11B SISO/g/n(HT20): 2412MHz to 2462MHz IEEE 802.11n(HT40): 2422MHz to 2452MHz	
Type of Modulation:	IEEE for 802.11B SISO: DSSS (CCK, DQPSK, DBPSK) IEEE for 802.11G SISO: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n (HT20 and HT40): OFDM (64QAM, 16QAM, QPSK, BPSK)	
Channel Number:	IEEE 802.11B SISO/g, IEEE 802.11n(HT20): 11 Channels IEEE 802.11n(HT40): 7 Channels	
Channels Step:	Channels with 5MHz step	
Sample Type:	Fixed production	
Test power grade:	Antenna1:38 (manufacturer declare) Antenna2:38 (manufacturer declare)	
Test software of EUT:	Secure CRT (manufacturer declare)	
Antenna Type:	PIFA PCB Antenna	
Antenna Gain:	Antenna 1:	2 dBi
	Antenna 2:	2 dBi
Power Supply	Adapter	Model:NBS10B050200VUU INPUT:100-240V~50/60Hz Max.0.3A OUTPUT:5.0V ⎓ 2.0A

Remark:
Model No.:

Number:	Name:	Number:	Name:	Number:	Name:
1	LNWCX-C	2	LNW16XF	3	LNWCM23X
4	LNWC21X				

Only the main model **LNWCX-C** is tested and only the data of this model is shown in this test report. Since the electrical circuit design, layout, components used and internal wiring were identical for the above models, with difference being of **only the Model Number and/or Trade Name.**

5.2. MAXIMUM OUTPUT POWER

Frequency Range (MHz)	Number of Transmit Chains (NTX)	IEE Std. 802.11	Frequency (MHz)	Channel Number	Max PK Conducted Power-Antenna 1 (dBm)	Max PK Conducted Power-Antenna 2 (dBm)	Max PK Conducted Power-Antenna1+2 (dBm)
2412-2462	1/2	IEEE 802.11B SISO	2412-2462	1-11[11]	22.08	20.52	/
2412-2462	1/2	IEEE 802.11G SISO	2412-2462	1-11[11]	22.26	20.87	/
2412-2462	1/2	IEEE 802.11nHT20	2412-2462	1-11[11]	22.32	20.92	24.63
2422-2452	1/2	IEEE 802.11nHT40	2422-2452	3-9[7]	21.32	19.90	23.58

5.3. CHANNEL LIST

Channel List for 802.11B SISO/g/n (20 MHz)							
Channel	Frequency (MHz)	Channel	Frequenc y(MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	5	2432	9	2452		
2	2417	6	2437	10	2457		
3	2422	7	2442	11	2462		
4	2427	8	2447				

Channel List for 802.11n (40 MHz)							
Channel	Frequency (MHz)	Channel	Frequenc y(MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
3	2422	5	2432	7	2442	9	2452
4	2427	6	2437	8	2447		

5.4. TEST CHANNEL CONFIGURATION

Test Mode	Test Channel (MHz)
IEEE 802.11B SISO	LCH :CH01 2412
	MCH: CH06 2437
	HCH: CH11 2462
IEEE 802.11G SISO	LCH :CH01 2412
	MCH: CH06 2437
	HCH: CH11 2462
IEEE 802.11n HT20	LCH :CH01 2412
	MCH: CH06 2437
	HCH: CH11 2462
IEEE 802.11n HT40	LCH :CH03 2422
	MCH: CH06 2437
	HCH: CH09 2452

5.5. THE WORSE CASE POWER SETTING PARAMETER

1) For SISO test items:

Test Antenna	Test Software Version	SecureCRT		
	Test Mode	Test Channel	Setting TX Power	Setting data rate (Mbps)
Antenna 1	IEEE 802.11B SISO	LCH	38	CCK_1Mbps
		MCH	38	CCK_1Mbps
		HCH	38	CCK_1Mbps
	IEEE 802.11G SISO	LCH	38	NO HT_6Mbps
		MCH	38	NO HT_6Mbps
		HCH	38	NO HT_6Mbps
	IEEE 802.11n HT20	LCH	38	HT20_MCS_0_20
		MCH	38	HT20_MCS_0_20
		HCH	38	HT20_MCS_0_20
	IEEE 802.11n HT40	LCH	38	HT40+MCS_0_40
		MCH	38	HT40+MCS_0_40
		HCH	38	HT40+MCS_0_40
Antenna 2	IEEE 802.11B SISO	LCH	38	CCK_1Mbps
		MCH	38	CCK_1Mbps
		HCH	38	CCK_1Mbps
	IEEE 802.11G SISO	LCH	38	NO HT_6Mbps
		MCH	38	NO HT_6Mbps
		HCH	38	NO HT_6Mbps
	IEEE 802.11n HT20	LCH	38	HT20_MCS_0_20
		MCH	38	HT20_MCS_0_20
		HCH	38	HT20_MCS_0_20
	IEEE 802.11n HT40	LCH	38	HT40+MCS_0_40
		MCH	38	HT40+MCS_0_40
		HCH	38	HT40+MCS_0_40

1) For MIMO test items:

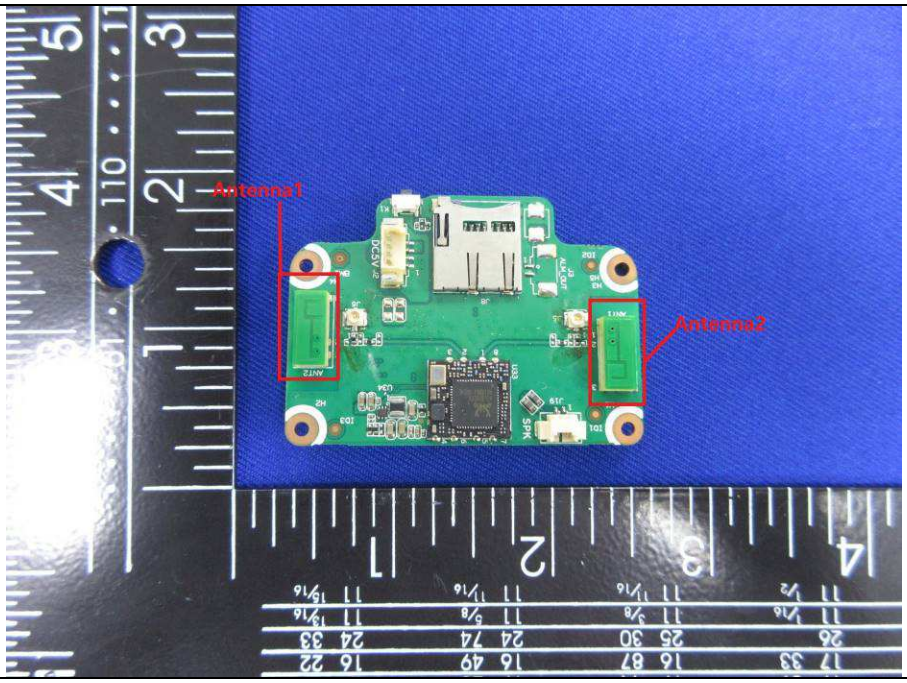
Test Antenna	Test Software Version	Secure CRT		
	Test Mode	Test Channel	Setting TX Power	Setting data rate (Mbps)
Antenna 1	IEEE 802.11n HT20	LCH	38	HT20_MCS_0_20
		MCH	38	HT20_MCS_0_20
		HCH	38	HT20_MCS_0_20
	IEEE 802.11n HT40	LCH	38	HT40+MCS_0_40
		MCH	38	HT40+MCS_0_40
		HCH	38	HT40+MCS_0_40
Antenna 2	IEEE 802.11n HT20	LCH	38	HT20_MCS_0_20
		MCH	38	HT20_MCS_0_20
		HCH	38	HT20_MCS_0_20
	IEEE 802.11n HT40	LCH	38	HT40+MCS_0_40
		MCH	38	HT40+MCS_0_40
		HCH	38	HT40+MCS_0_40

5.6. DESCRIPTION OF AVAILABLE ANTENNAS

Ant.	Frequency (MHz)	Antenna Type	Antenna Gain (dBi)
1	2400-2483.5	Trace Antenna	2
2	2400-2483.5	Trace Antenna	2

Test Mode	Transmit and Receive Mode	Description
IEEE 802.11B SISO	☒1TX, 1RX	Antenna1 or Antenna2 can be used as transmitting/receiving antenna independently.
IEEE 802.11G SISO	☒1TX, 1RX	Antenna1 or Antenna2 can be used as transmitting/receiving antenna independently.
IEEE 802.11n HT20(SISO)	☒1TX, 1RX	Antenna1 or Antenna2 can be used as transmitting/receiving antenna independently.
IEEE 802.11n HT40(SISO)	☒1TX, 1RX	Antenna1 or Antenna2 can be used as transmitting/receiving antenna independently.
IEEE 802.11n HT20(MIMO)	☒2TX, 2RX	Both antennas can be used as transmitting/receiving antenna.
IEEE 802.11n HT40(MIMO)	☒2TX, 2RX	Both antennas can be used as transmitting/receiving antenna.

Antenna



5.7. TEST ENVIRONMENT

Environment Parameter	Selected Values During Tests	
Relative Humidity	55 ~ 65%	
Atmospheric Pressure:	1005Pa	
Temperature	TN	23 ~ 28°C
Voltage :	VL	N/A
	VN	DC 5.0V
	VH	N/A

Note: VL= Lower Extreme Test Voltage
VN= Nominal Voltage
VH= Upper Extreme Test Voltage
TN= Normal Temperature

5.8. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	FCC ID
1	Laptop	ThinkPad	T410	N/A

I/O PORT

Cable No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
1	LAN	LAN	N/A	N/A	N/A

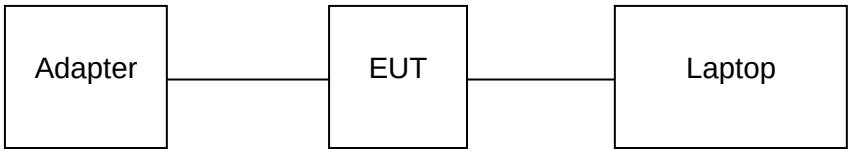
ACCESSORY

Item	Accessory	Brand Name	Model Name	Description
1	N/A	N/A	N/A	N/A

TEST SETUP

The EUT can work in an engineer mode with a software through a table PC.

SETUP DIAGRAM FOR TESTS



5.9. MEASURING INSTRUMENT AND SOFTWARE USED

Conducted Emissions(Instrument**)**						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☑	EMI Test Receiver	R&S	ESR3	101961	Dec.12, 2017	Dec.11, 2018
☑	Two-Line V-Network	R&S	ENV216	101983	Dec.12, 2017	Dec.11, 2018
☑	Artificial Mains Networks	Schwarzbeck	NSLK 8126	8126465	Dec.12, 2017	Dec.11, 2018
Software						
Used	Description		Manufacturer	Name	Version	
☑	Test Software for Conducted disturbance		UL	Antenna port	Ver. 7.2	
Radiated Emissions(Instrument**)**						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☑	MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Dec. 12, 2017	Dec. 11, 2018
☑	Hybrid Log Periodic Antenna	TDK	HLP-3003C	130960	Jan.09, 2016	Jan.09, 2019
☑	Preamplifier	HP	8447D	2944A09099	Dec. 12, 2017	Dec. 11, 2018
☑	EMI Measurement Receiver	R&S	ESR26	101377	Dec.12, 2017	Dec.11, 2018
☑	Horn Antenna	TDK	HRN-0118	130939	Jan. 09, 2016	Jan. 09, 2019
☑	High Gain Horn Antenna	Schwarzbeck	BBHA-9170	691	Jan.06, 2016	Jan.06, 2019
☑	Preamplifier	TDK	PA-02-0118	TRS-305-00066	Dec. 12, 2017	Dec. 11, 2018
☑	Preamplifier	TDK	PA-02-2	TRS-307-00003	Dec.12, 2017	Dec.11, 2018
☑	Loop antenna	Schwarzbeck	1519B	00008	Mar. 26, 2016	Mar. 26, 2019
☑	Band Reject Filter	Wainwright	WRCJV8-2350-2400-2483.5-2533.5-40SS	4	Dec.12, 2017	Dec.11, 2018
Software						
Used	Description		Manufacturer	Name	Version	
☑	Test Software for Radiated disturbance		Farad	EZ-EMC	Ver. UL-3A1	
Other instruments						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☑	Spectrum Analyzer	Keysight	N9030A	MY55410512	Dec.12, 2017	Dec.11, 2018
☑	Power Meter	Keysight	N9031A	MY55416024	Dec.12, 2017	Dec.11, 2018

☑	Power Sensor	Keysight	N9323A	MY55440013	Dec.12, 2017	Dec.11, 2018

6. ANTENNA PORT TEST RESULTS

6.1. ON TIME AND DUTY CYCLE

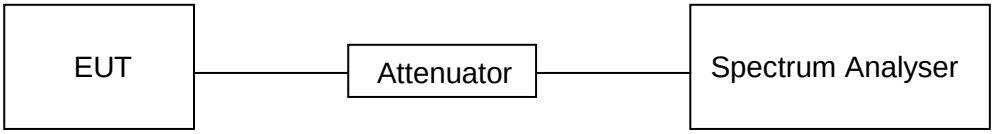
LIMITS

None; for reporting purposes only

PROCEDURE

FCC KDB 558074 Zero-Span Spectrum Analyzer Method

TEST SETUP



RESULTS

Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (db)	1/T Minimum VBW (KHz)
11B SISOSISO	100	100	1	100	0	0.01
11G SISOSISO	100	100	1	100	0	0.01
11N20MIMO	100	100	1	100	0	0.01
11N40MIMO	100	100	1	100	0	0.01

Note: 1) Duty Cycle Correction Factor=10log(1/x).
2) Where: x is Duty Cycle(Linear)
3) Where: T is On Time (transmit duration)
4) Pre-testing Antenna 1 and Antenna2, and pre-testing SISO and MIMO modes, only the data of the worse case is shown in this test repot.

ON TIME AND DUTY CYCLE MID CH

11B SISO(WORSE CASE)

11G SISO(WORSE CASE)

11N20MIMO(WORSE CASE)

11N40MIMO(WORSE CASE)

6.2. 6 dB BANDWIDTH

LIMITS

FCC Part15 (15.247) Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
FCC 15.247(a)(2) RSS-247 5.1 (a)	6dB Bandwidth	>= 500KHz	2400-2483.5
RSS-Gen Clause 6.6	99% Bandwidth	For reporting purposes only.	2400-2483.5

TEST PROCEDURE

Refer to FCC KDB 558074, connect the UUT to the spectrum analyser and use the following settings:

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	For 6 dB Bandwidth :100K For 99% Bandwidth :1% to 5% of the occupied bandwidth
VBW	For 6dB Bandwidth : ≥3 × RBW For 99% Bandwidth : approximately 3×RBW
Trace	Max hold
Sweep	Auto couple

Allow the trace to stabilize and measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB and 99% relative to the maximum level measured in the fundamental emission.

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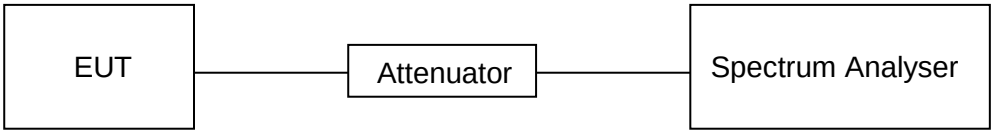
TEST SETUP



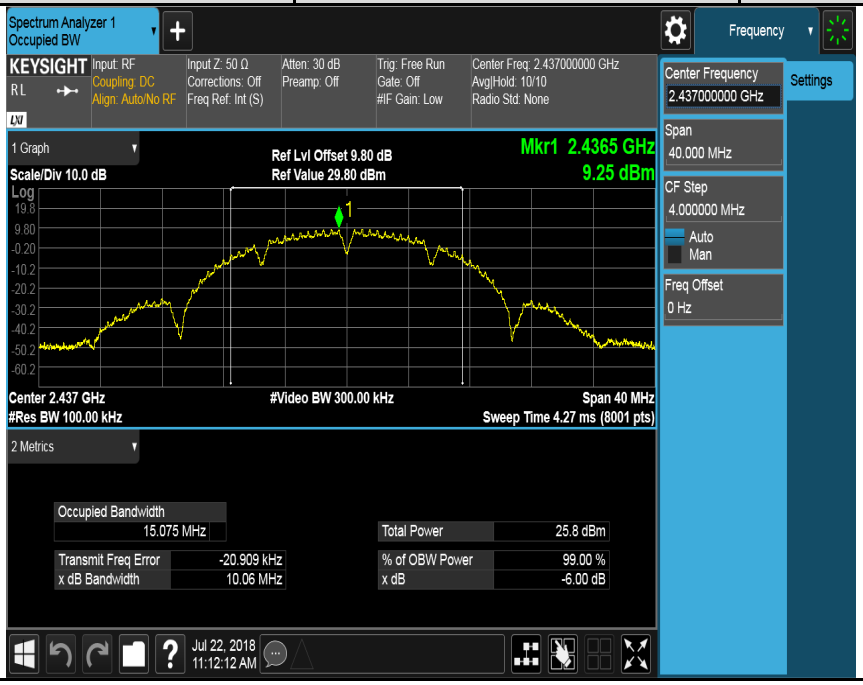
RESULTS

Test Mode	Test Antenna	Test Channel	6dB bandwidth (MHz)	99% bandwidth (MHz)	Result
11B SISO	Antenna 1	LCH	10.06	15.04	Pass
		MCH	10.06	15.08	Pass
		HCH	10.07	15.07	Pass
	Antenna 2	LCH	10.06	15.05	Pass
		MCH	10.06	15.03	Pass
		HCH	10.07	15.06	Pass
11G SISO	Antenna 1	LCH	16.58	16.50	Pass
		MCH	16.58	16.50	Pass
		HCH	16.58	16.50	Pass
	Antenna 2	LCH	16.58	16.49	Pass
		MCH	16.58	16.49	Pass
		HCH	16.58	16.50	Pass
11N20MIMO	Antenna 1	LCH	17.81	17.70	Pass
		MCH	17.82	17.70	Pass
		HCH	17.81	17.71	Pass
	Antenna 2	LCH	17.81	17.70	Pass
		MCH	17.81	17.70	Pass
		HCH	17.82	17.70	Pass
11N40MIMO	Antenna 1	LCH	36.43	36.07	Pass
		MCH	36.40	36.07	Pass
		HCH	36.42	36.08	Pass
	Antenna 2	LCH	36.42	36.08	Pass
		MCH	36.42	36.07	Pass
		HCH	36.43	36.08	Pass

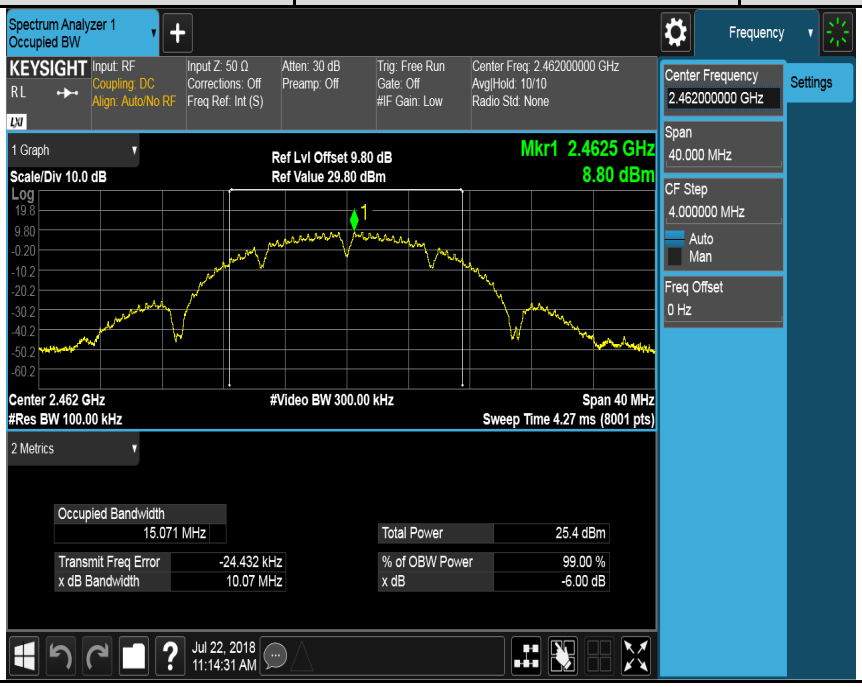
Test Graphs
Antenna1

Test Mode	Test Channel	Verdict
11B SISO	LCH	PASS

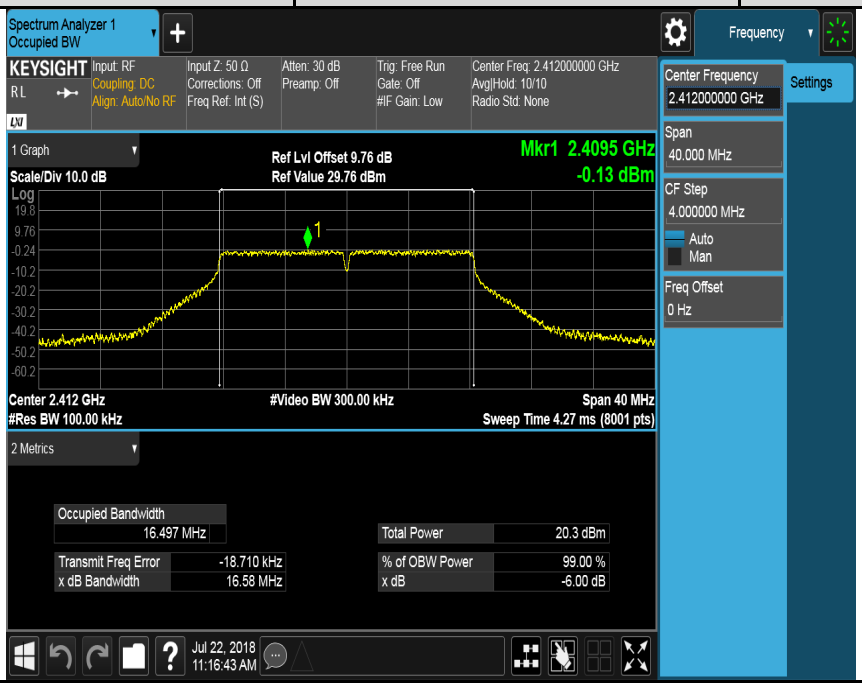
Test Mode	Test Channel	Verdict
11B SISO	MCH	PASS



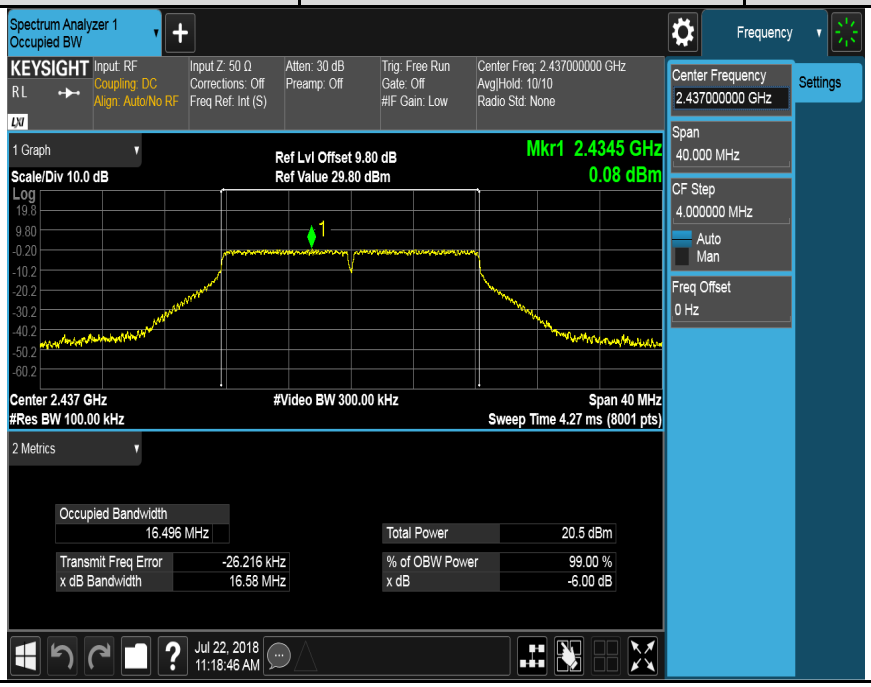
Test Mode	Test Channel	Verdict
11B SISO	HCH	PASS



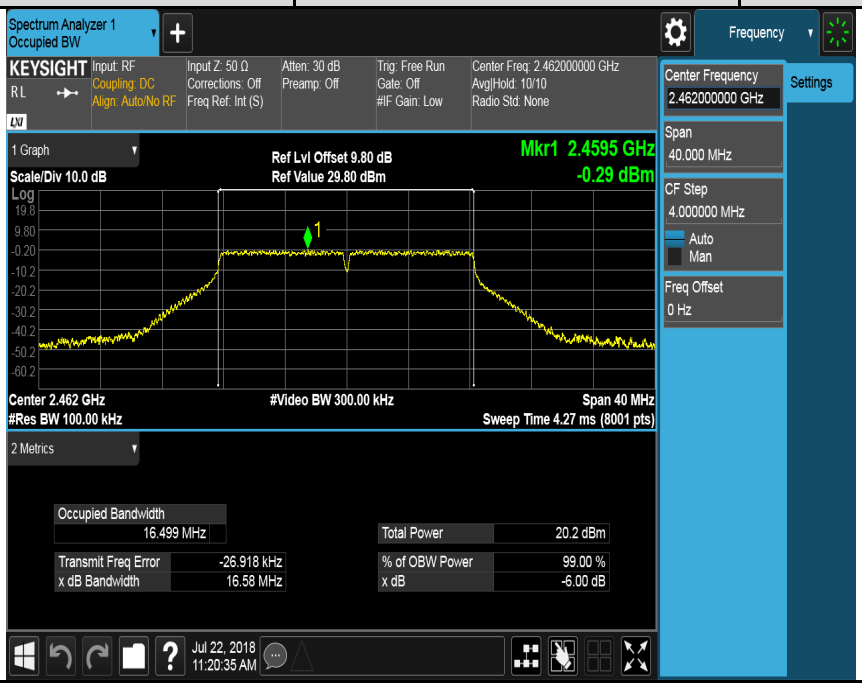
Test Mode	Test Channel	Verdict
11G SISO	LCH	PASS



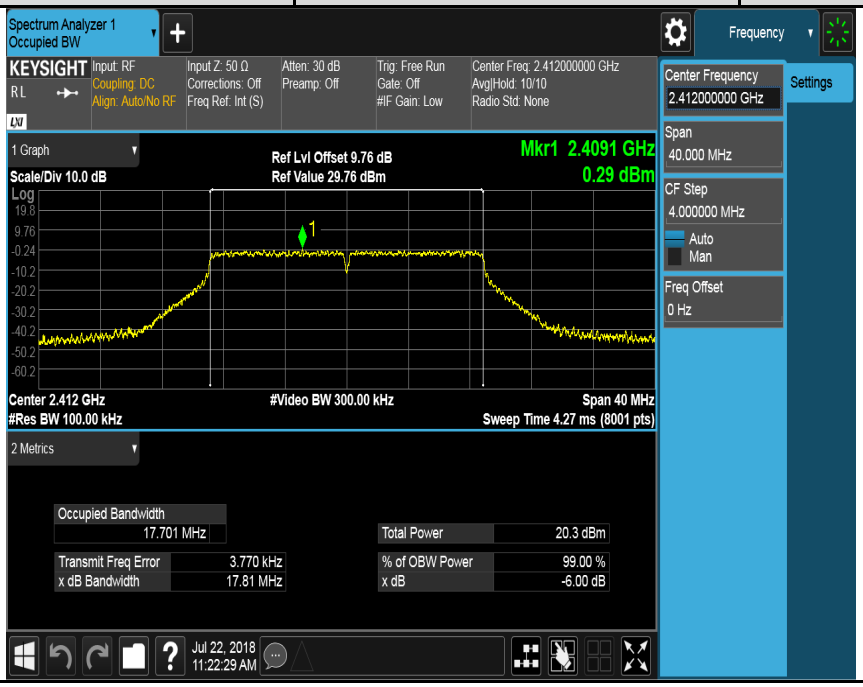
Test Mode	Test Channel	Verdict
11G SISO	MCH	PASS



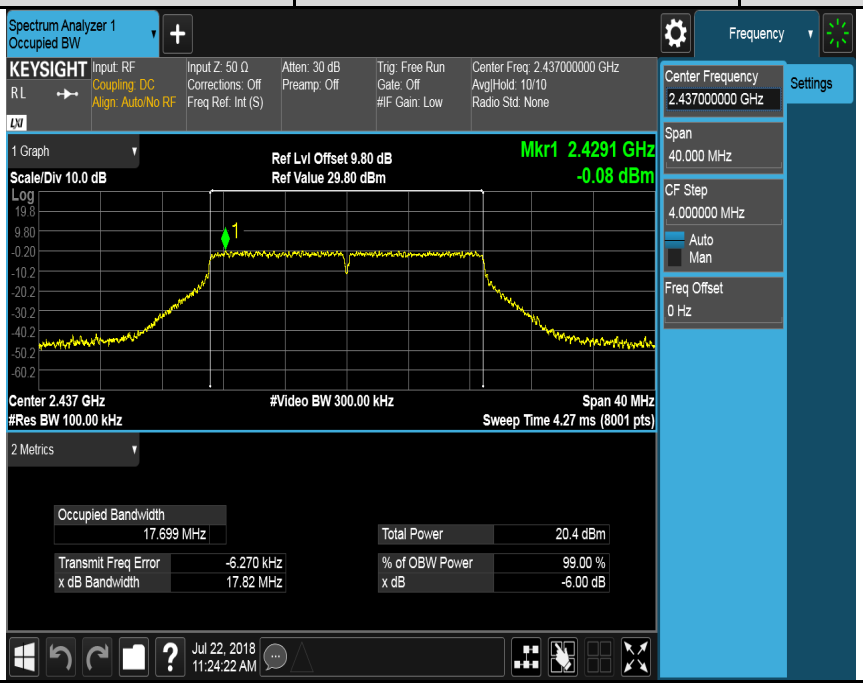
Test Mode	Test Channel	Verdict
11G SISO	HCH	PASS



Test Mode	Test Channel	Verdict
11N20MIMO	LCH	PASS

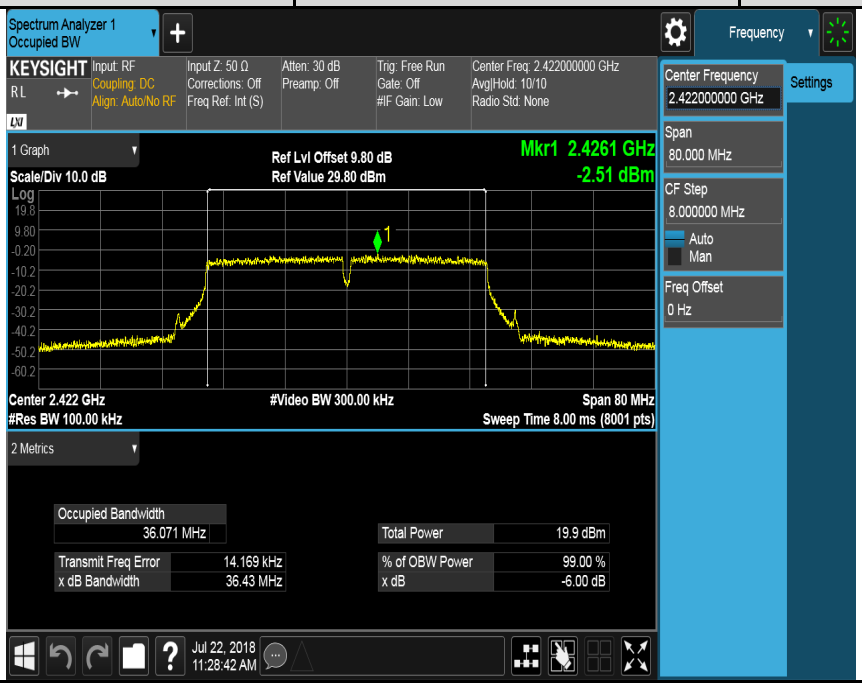


Test Mode	Test Channel	Verdict
11N20MIMO	MCH	PASS

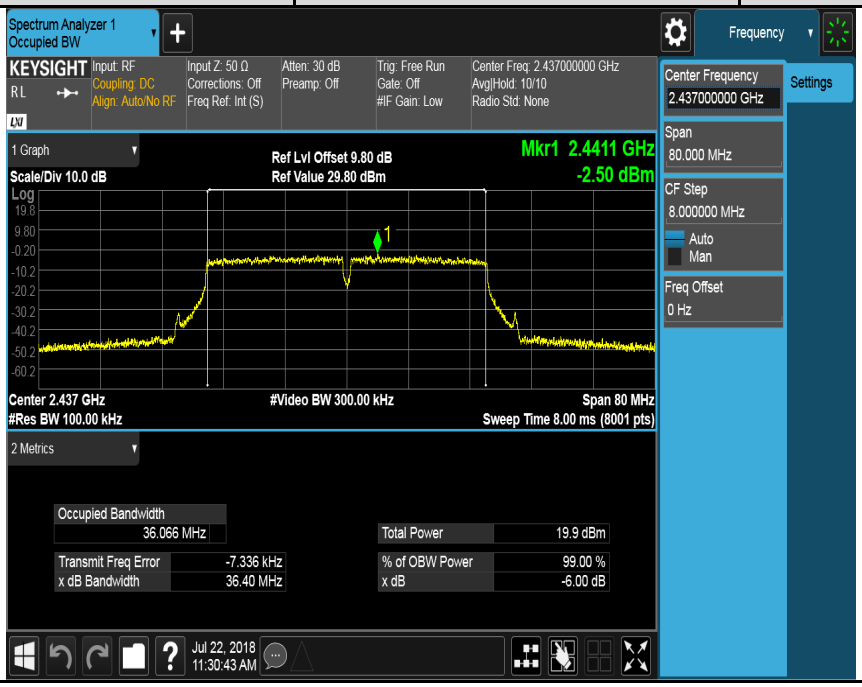


Test Mode	Test Channel	Verdict
11N20MIMO	HCH	PASS

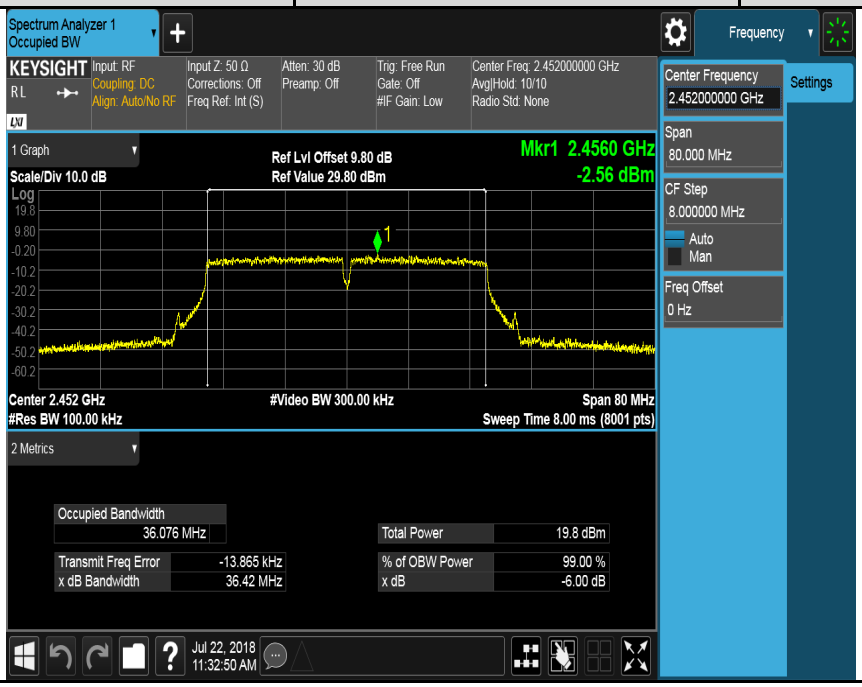
Test Mode	Test Channel	Verdict
11N40MIMO	LCH	PASS



Test Mode	Test Channel	Verdict
11N40MIMO	MCH	PASS



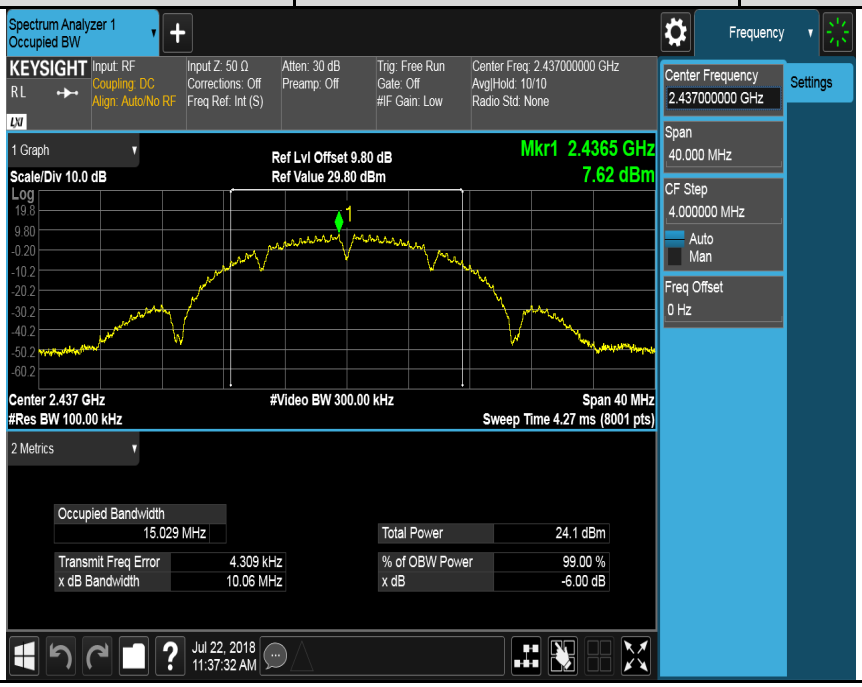
Test Mode	Test Channel	Verdict
11N40MIMO	HCH	PASS



Antenna2

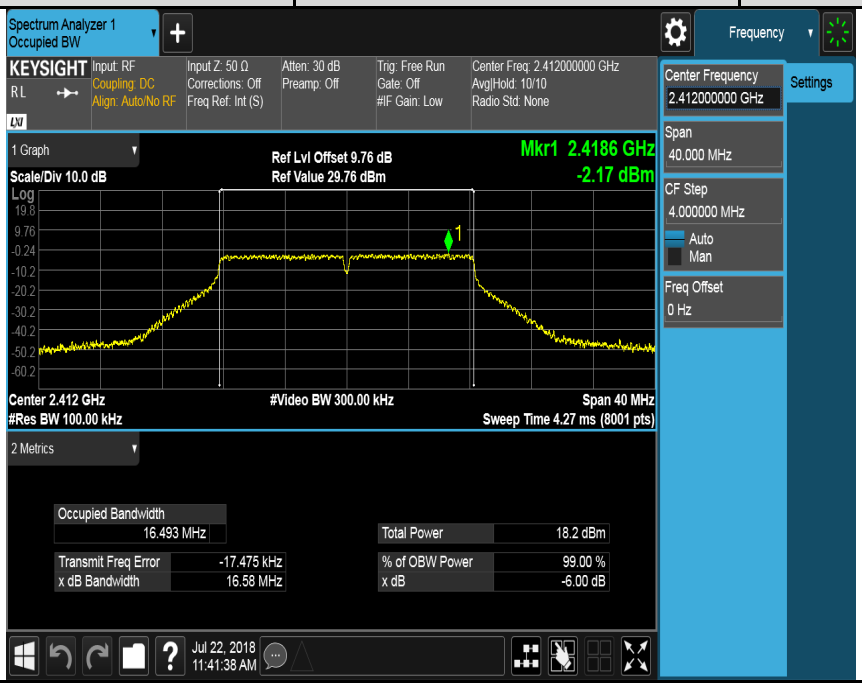
Test Mode	Test Channel	Verdict
11B SISO	LCH	PASS

Test Mode	Test Channel	Verdict
11B SISO	MCH	PASS

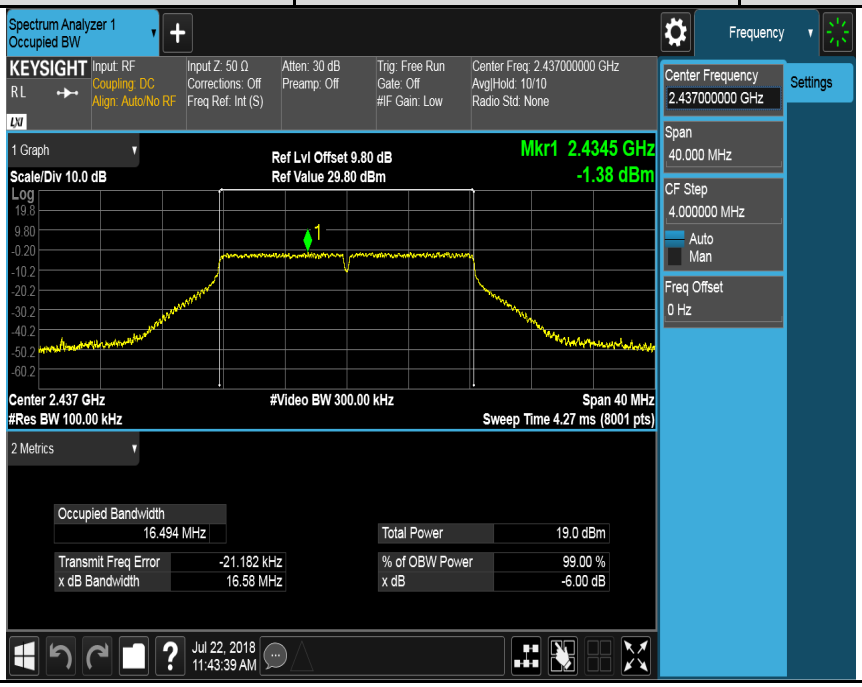


Test Mode	Test Channel	Verdict
11B SISO	HCH	PASS

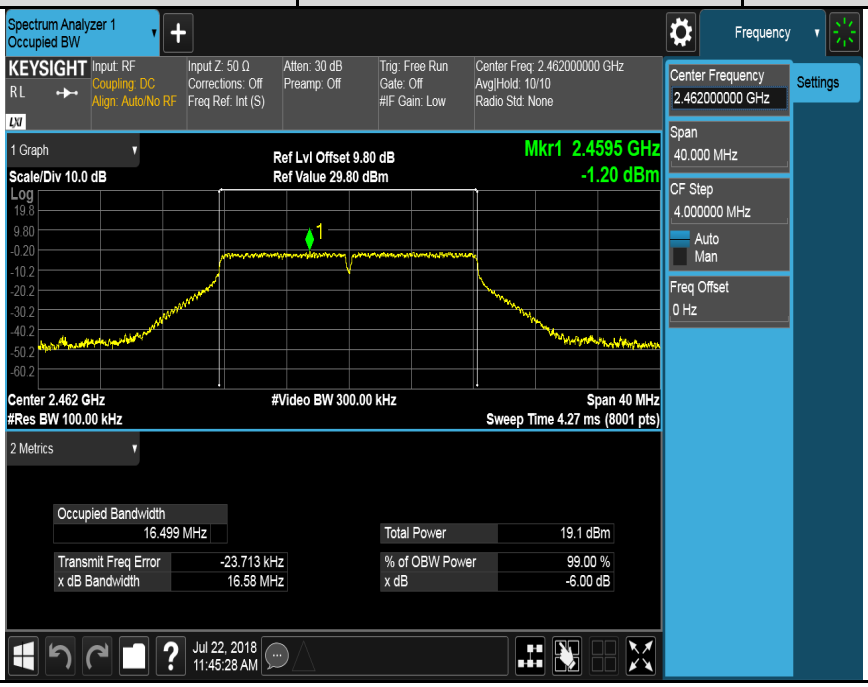
Test Mode	Test Channel	Verdict
11G SISO	LCH	PASS



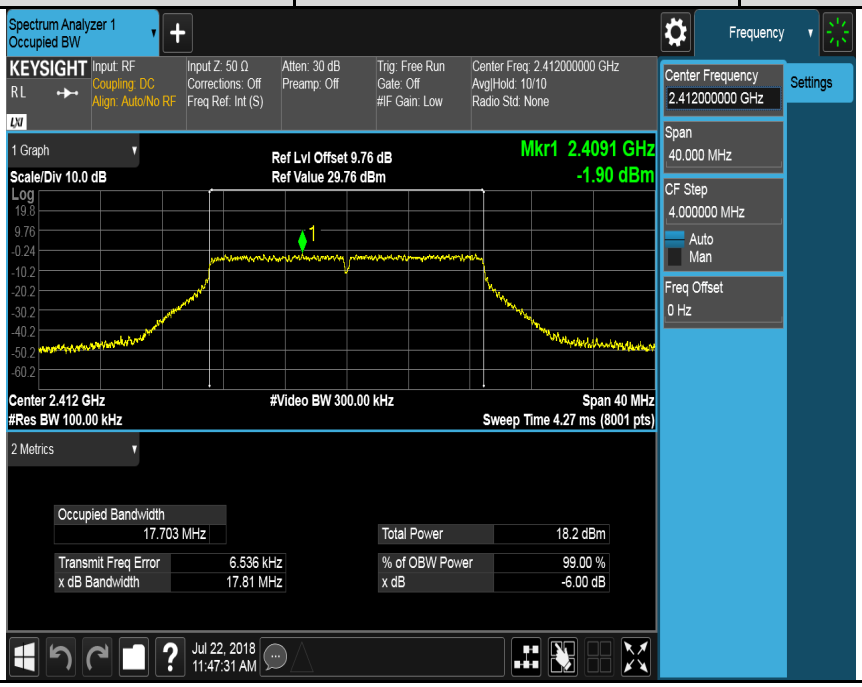
Test Mode	Test Channel	Verdict
11G SISO	MCH	PASS



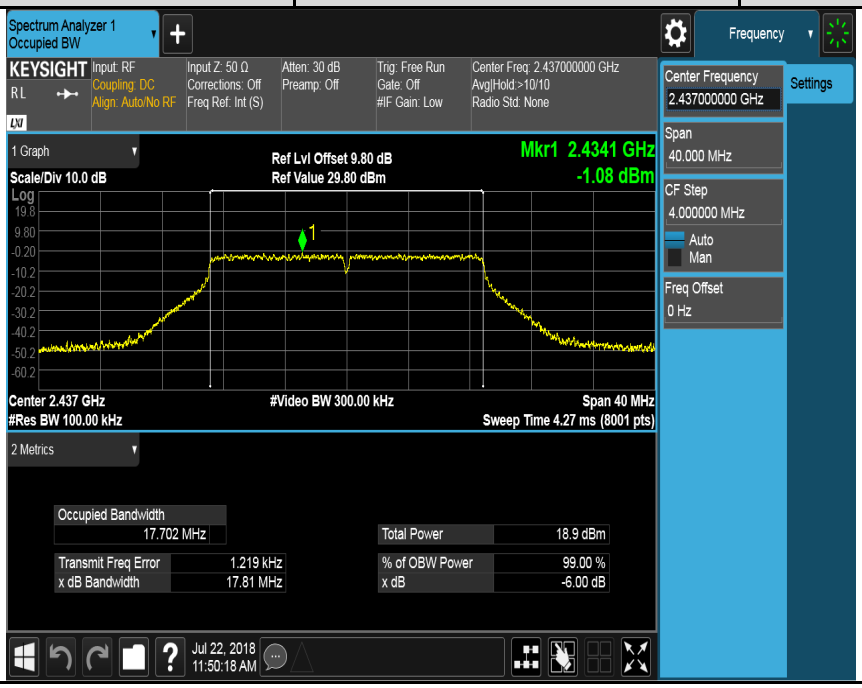
Test Mode	Test Channel	Verdict
11G SISO	HCH	PASS



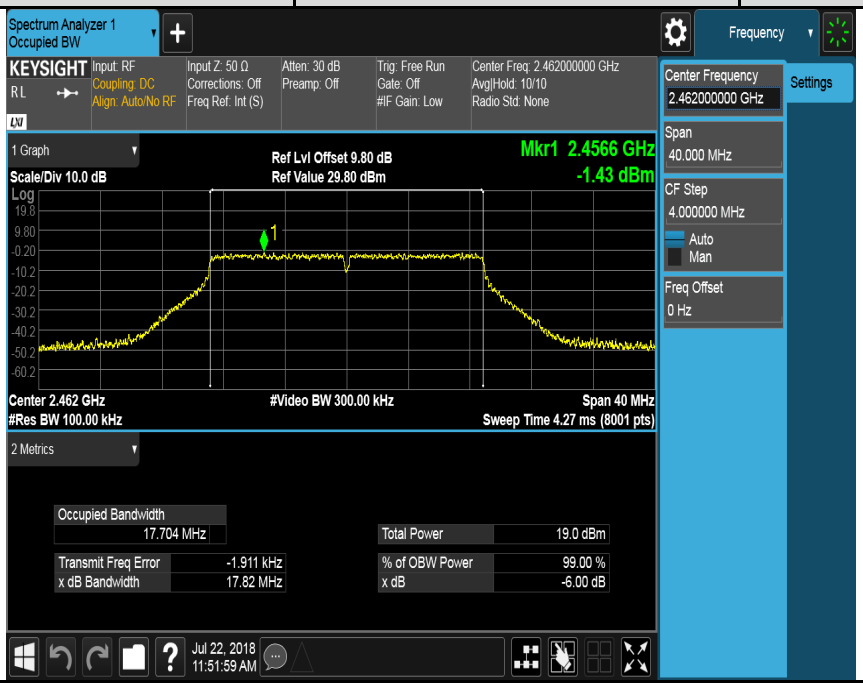
Test Mode	Test Channel	Verdict
11N20MIMO	LCH	PASS



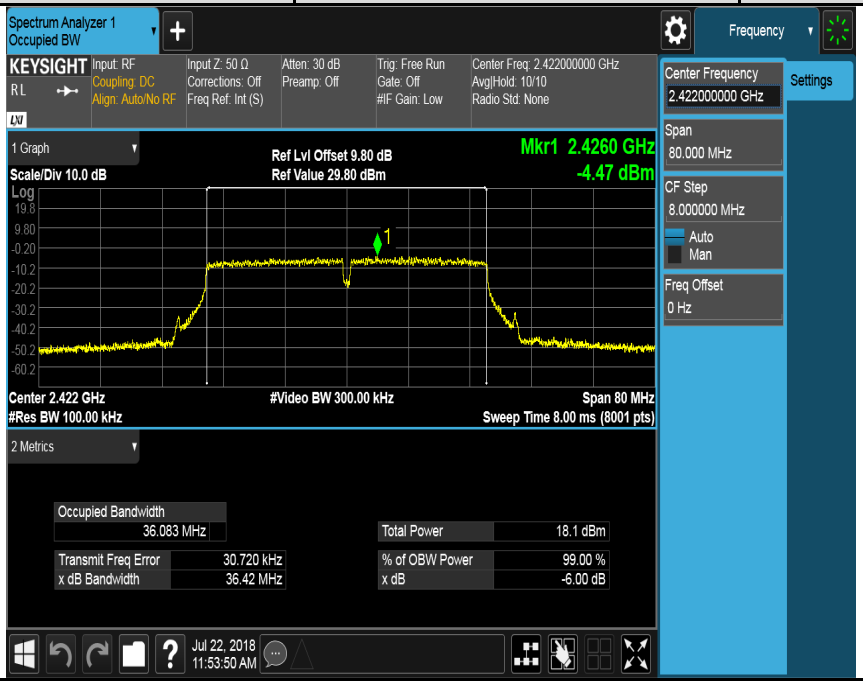
Test Mode	Test Channel	Verdict
11N20MIMO	MCH	PASS



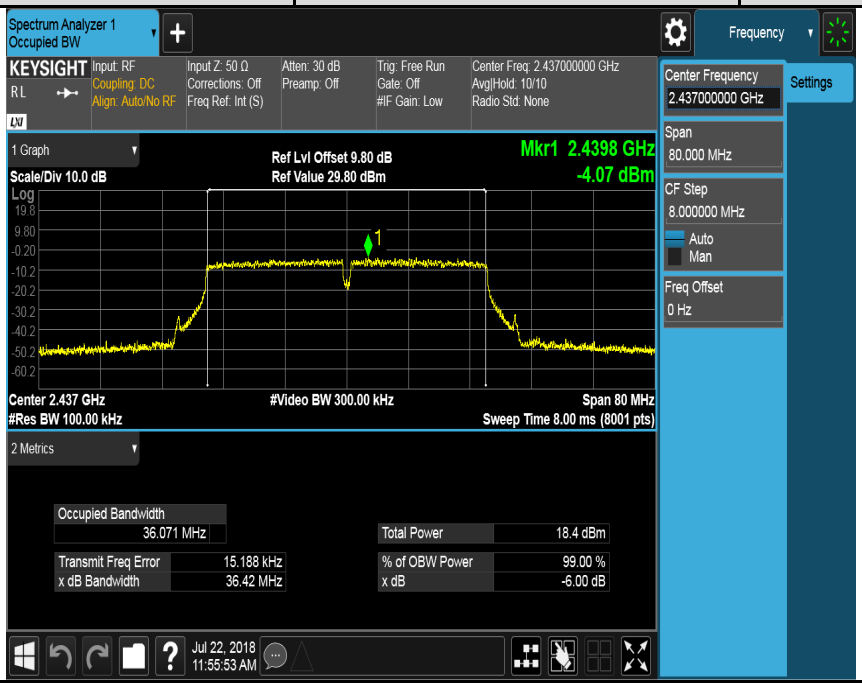
Test Mode	Test Channel	Verdict
11N20MIMO	HCH	PASS



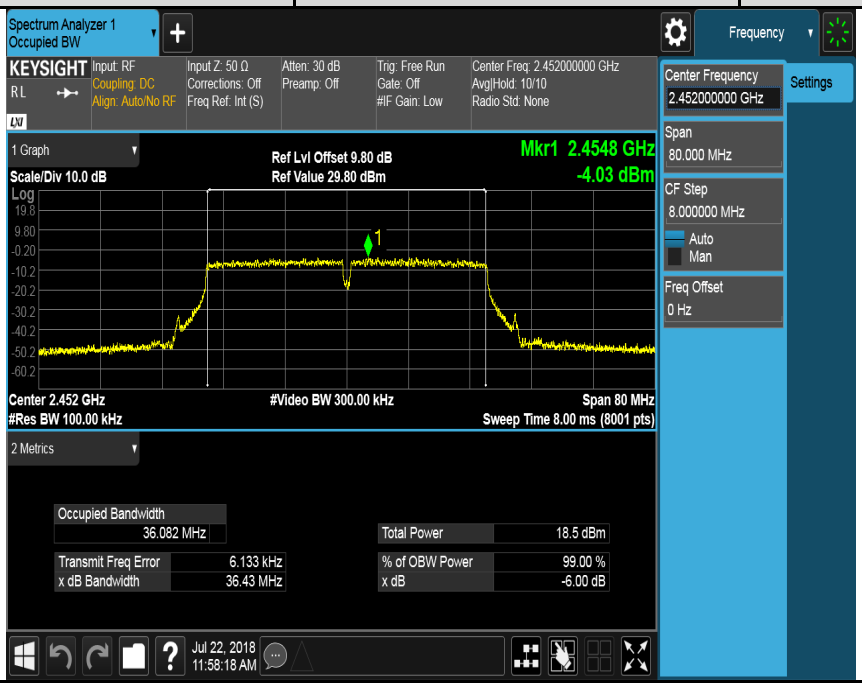
Test Mode	Test Channel	Verdict
11N40MIMO	LCH	PASS



Test Mode	Test Channel	Verdict
11N40MIMO	MCH	PASS



Test Mode	Test Channel	Verdict
11N40MIMO	HCH	PASS



6.3. PEAK CONDUCTED OUTPUT POWER

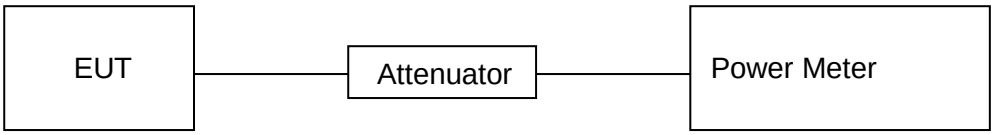
LIMITS

FCC Part15 (15.247) , Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
FCC 15.247(b)(3) RSS-247 5.4 (e)	Peak Output Power	1 watt or 30dBm	2400-2483.5

TEST PROCEDURE

Refer to FCC KDB 558074

TEST SETUP



RESULTS

1) Maximum Peak Conducted Output Power

Test Mode	Test Antenna	Test Channel	Maximum Peak Conducted Output Power(dBm)	EIRP (dBm)	Result
11B SISO	Antenna 1	LCH	22.02	24.02	Pass
		MCH	22.08	24.08	Pass
		HCH	21.67	23.67	Pass
	Antenna 2	LCH	19.80	21.80	Pass
		MCH	20.42	22.42	Pass
		HCH	20.52	22.52	Pass
11G SISO	Antenna 1	LCH	22.10	24.10	Pass
		MCH	22.26	24.26	Pass
		HCH	21.94	23.94	Pass
	Antenna 2	LCH	20.02	22.02	Pass
		MCH	20.70	22.70	Pass
		HCH	20.87	22.87	Pass
11N20MIMO	Antenna 1	LCH	22.21	24.21	Pass
		MCH	22.32	24.32	Pass
		HCH	22.01	24.01	Pass
	Antenna 2	LCH	20.13	22.13	Pass
		MCH	20.78	22.78	Pass
		HCH	20.92	22.92	Pass
	Antenna 1+2	LCH	24.30	26.30	Pass
		MCH	24.63	26.63	Pass
		HCH	24.51	26.51	Pass
11N40MIMO	Antenna 1	LCH	21.32	23.32	Pass
		MCH	21.26	23.26	Pass
		HCH	21.14	23.14	Pass
	Antenna 2	LCH	19.46	21.46	Pass
		MCH	19.74	21.74	Pass
		HCH	19.90	21.90	Pass
	Antenna 1+2	LCH	23.50	25.50	Pass
		MCH	23.58	25.58	Pass
		HCH	23.57	25.57	Pass

1）Maximum Average Conducted Output Power

Test Mode	Test Antenna	Test Channel	Maximum Average Conducted Output Power(dBm)	EIRP (dBm)	Result
11B SISO	Antenna 1	LCH	18.86	20.86	Pass
		MCH	19.00	21.00	Pass
		HCH	18.65	20.65	Pass
	Antenna 2	LCH	16.97	18.97	Pass
		MCH	17.64	19.64	Pass
		HCH	17.76	19.76	Pass
11G SISO	Antenna 1	LCH	14.17	16.17	Pass
		MCH	14.44	16.44	Pass
		HCH	14.16	16.16	Pass
	Antenna 2	LCH	12.37	14.37	Pass
		MCH	13.11	15.11	Pass
		HCH	13.30	15.30	Pass
11N20MIMO	Antenna 1	LCH	14.31	16.31	Pass
		MCH	14.50	16.50	Pass
		HCH	14.22	16.22	Pass
	Antenna 2	LCH	12.45	14.45	Pass
		MCH	13.11	15.11	Pass
		HCH	13.29	15.29	Pass
	Antenna 1+2	LCH	16.49	18.49	Pass
		MCH	16.87	18.87	Pass
		HCH	16.79	18.79	Pass
11N40MIMO	Antenna 1	LCH	13.46	15.46	Pass
		MCH	13.51	15.51	Pass
		HCH	13.39	15.39	Pass
	Antenna 2	LCH	11.72	13.72	Pass
		MCH	12.04	14.04	Pass
		HCH	12.24	14.24	Pass
	Antenna 1+2	LCH	15.69	17.69	Pass
		MCH	15.85	17.85	Pass
		HCH	15.86	17.86	Pass

6.4. POWER SPECTRAL DENSITY

LIMITS

FCC Part15 (15.247) , Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
FCC §15.247 (e) RSS-247 5.2 (b)	Power Spectral Density	8 dBm in any 3 kHz band	2400-2483.5

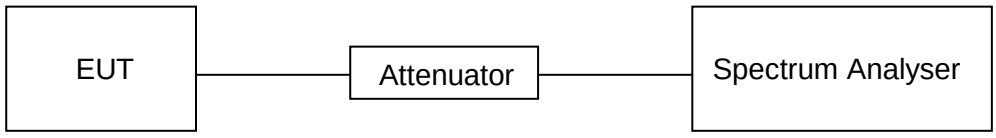
TEST PROCEDURE

Refer to FCC KDB 558074, connect the UUT to the spectrum analyser and use the following settings:

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	3 kHz ≤ RBW ≤100 kHz
VBW	≥3 × RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

Allow trace to fully stabilize and use the peak marker function to determine the maximum amplitude level within the RBW.
If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

TEST SETUP



RESULTS

Test Mode	Test Antenna	Test Channel	Maximum Peak power spectral density (dBm)	Result
11B SISO	Antenna 1	LCH	-10.93	Pass
		MCH	-10.91	Pass
		HCH	-11.32	Pass
	Antenna 2	LCH	-13.19	Pass
		MCH	-12.49	Pass
		HCH	-12.49	Pass
11G SISO	Antenna 1	LCH	-14.6	Pass
		MCH	-14.17	Pass
		HCH	-14.64	Pass
	Antenna 2	LCH	-16.51	Pass
		MCH	-15.86	Pass
		HCH	-15.87	Pass
11N20MIMO	Antenna 1	LCH	-14.09	Pass
		MCH	-13.93	Pass
		HCH	-13.55	Pass
	Antenna 2	LCH	-16.28	Pass
		MCH	-15.17	Pass
		HCH	-15.46	Pass
	Antenna 1+2	LCH	-12.04	Pass
		MCH	-11.50	Pass
		HCH	-11.39	Pass
11N40MIMO	Antenna 1	LCH	-15.68	Pass
		MCH	-15.59	Pass
		HCH	-16.03	Pass
	Antenna 2	LCH	-18.09	Pass
		MCH	-17.60	Pass
		HCH	-17.39	Pass
	Antenna 1+2	LCH	-13.71	Pass
		MCH	-13.47	Pass
		HCH	-13.65	Pass

Test Graphs:

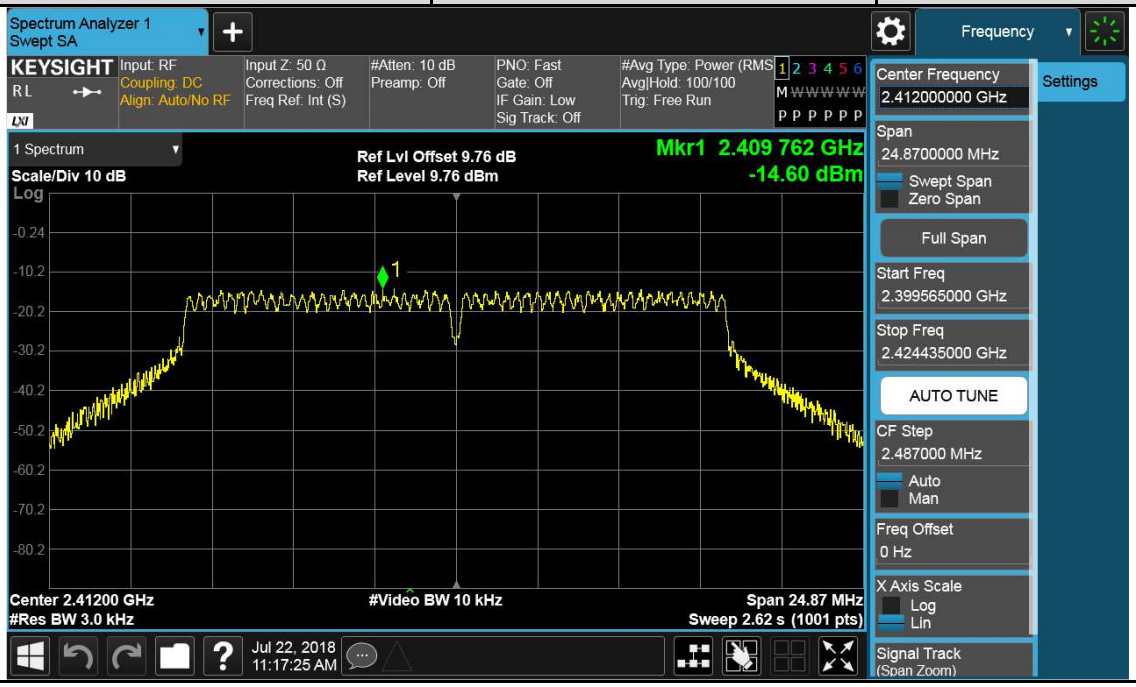
Antenna1

Test Mode	Test Channel	Verdict
11B SISO	LCH	PASS

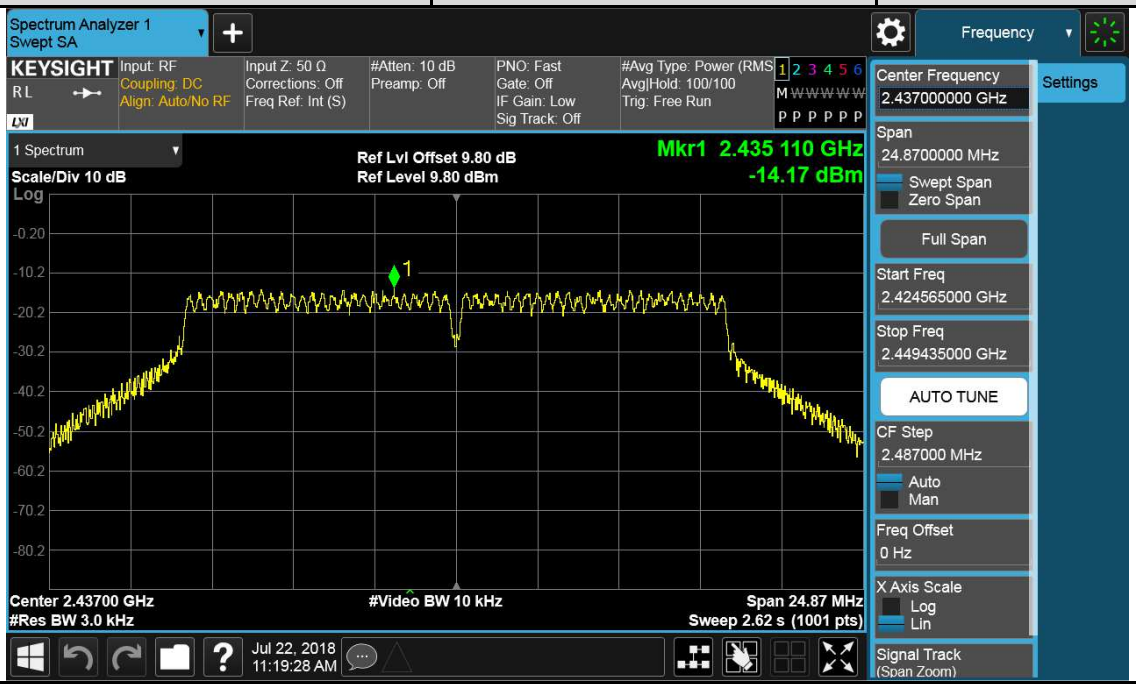
Test Mode	Test Channel	Verdict
11B SISO	MCH	PASS

Test Mode	Test Channel	Verdict
11B SISO	HCH	PASS

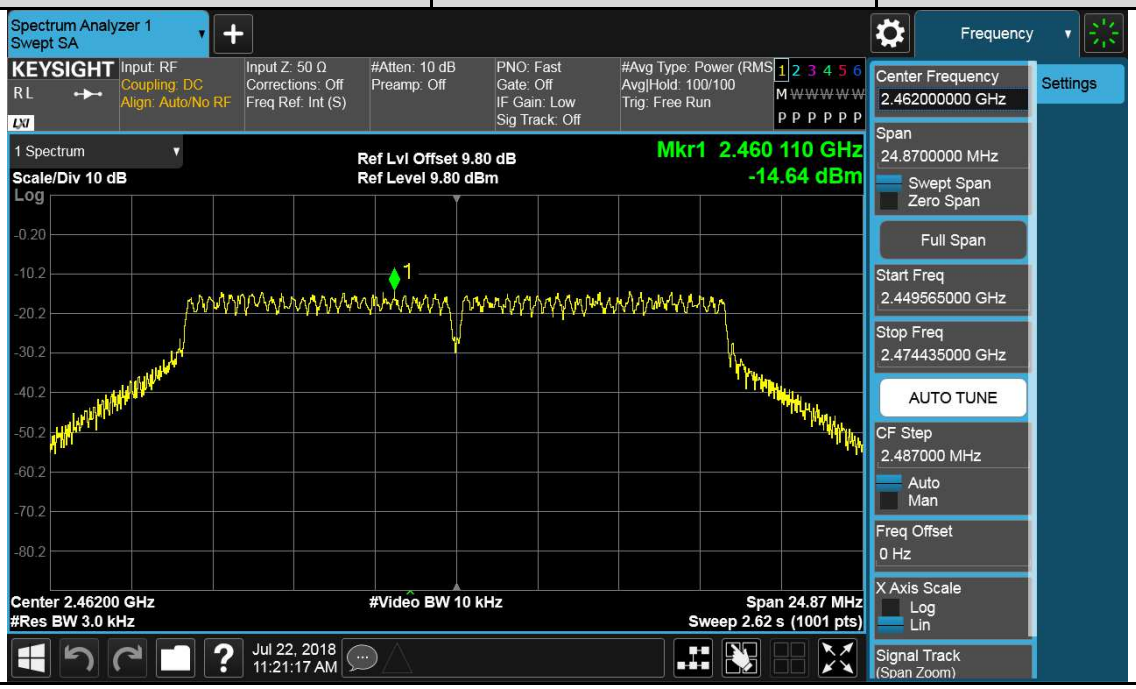
Test Mode	Test Channel	Verdict
11G SISO	LCH	PASS



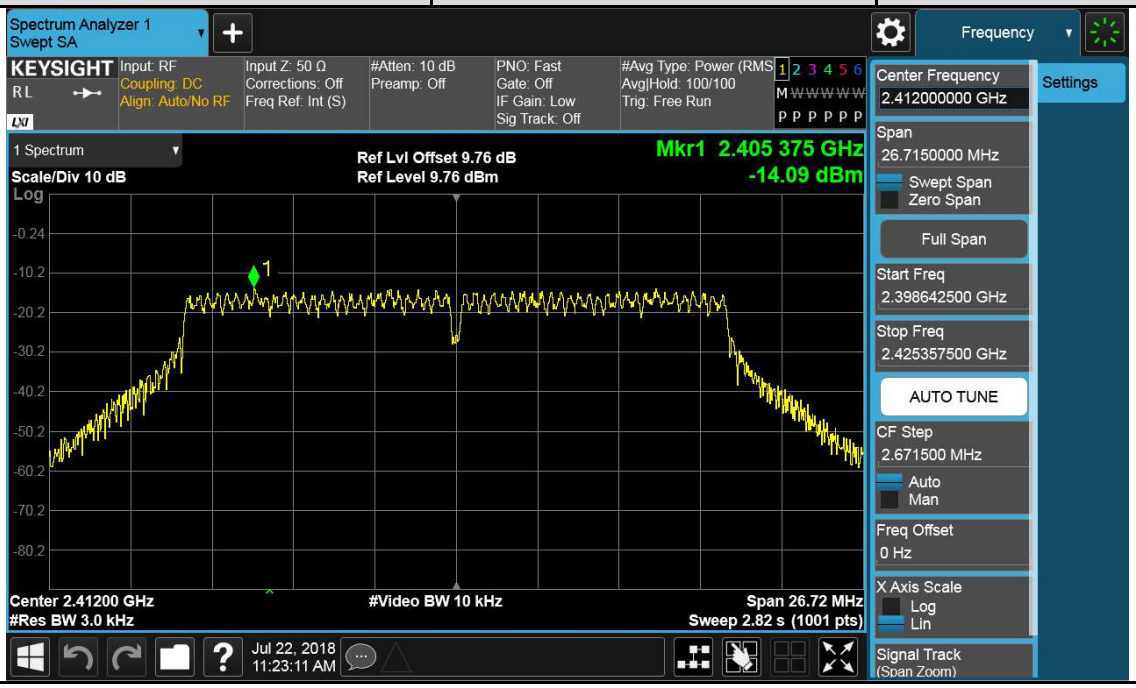
Test Mode	Test Channel	Verdict
11G SISO	MCH	PASS



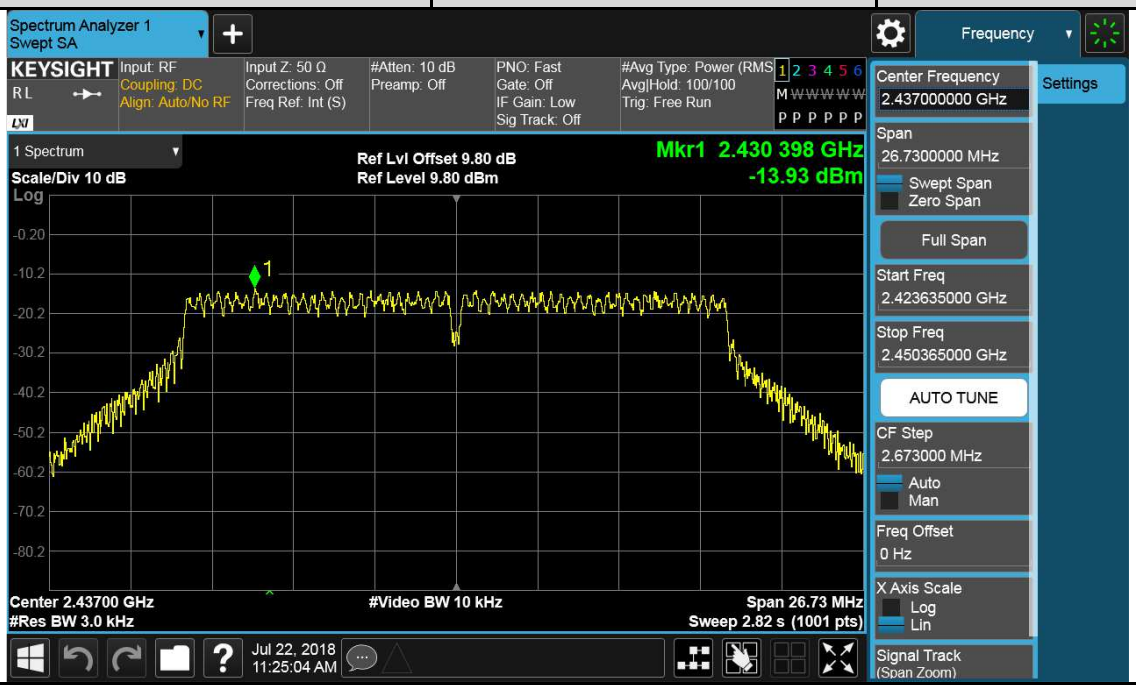
Test Mode	Test Channel	Verdict
11G SISO	HCH	PASS



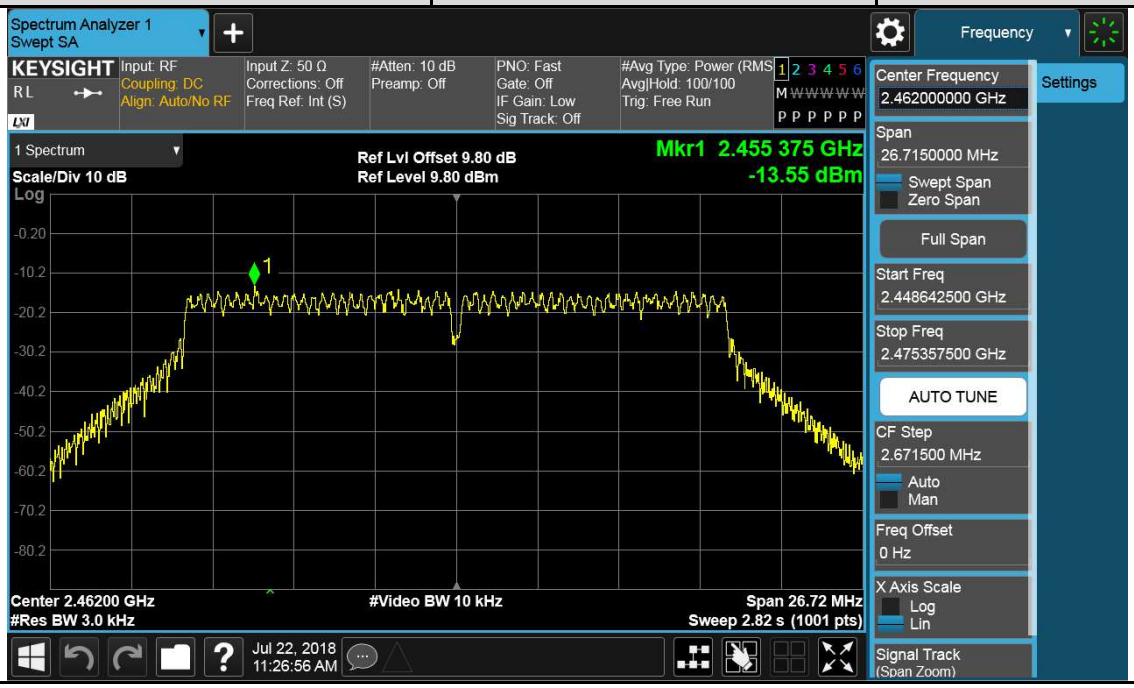
Test Mode	Test Channel	Verdict
11N20MIMO	LCH	PASS



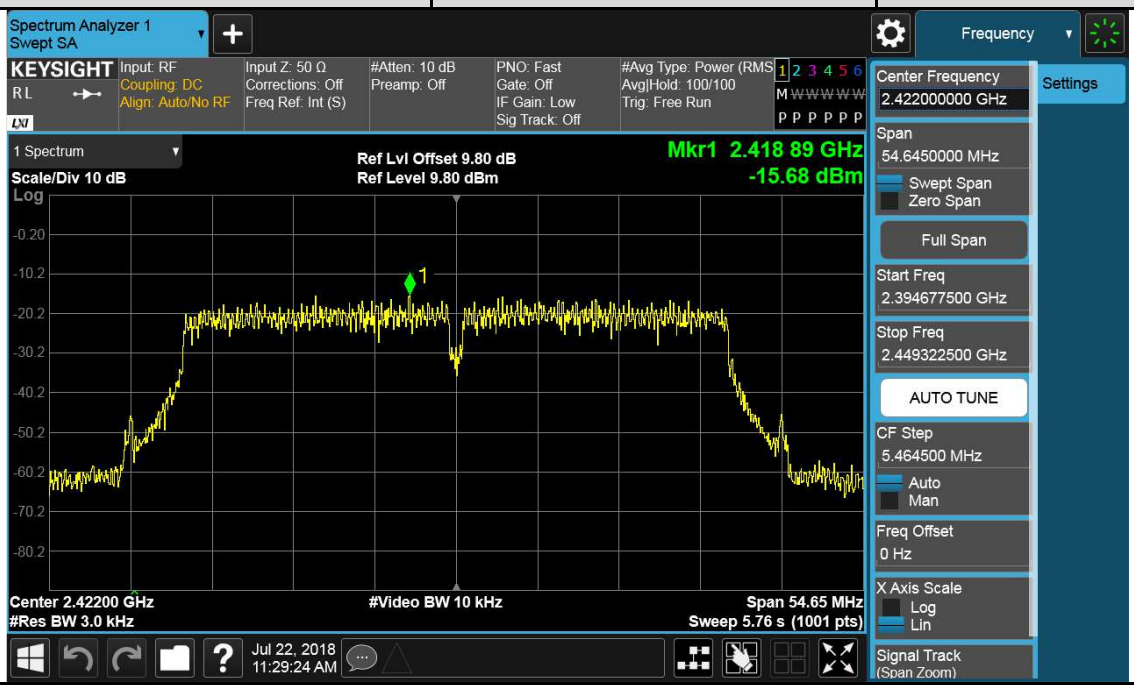
Test Mode	Test Channel	Verdict
11N20MIMO	MCH	PASS



Test Mode	Test Channel	Verdict
11N20MIMO	HCH	PASS



Test Mode	Test Channel	Verdict
11N40MIMO	LCH	PASS



Test Mode	Test Channel	Verdict
11N40MIMO	MCH	PASS

Test Mode	Test Channel	Verdict
11N40MIMO	HCH	PASS