



FCC 47 CFR PART 15 SUBPART C

CERTIFICATION TEST REPORT

For

CONSUMER CAMERA

MODEL NUMBER: IPC-C26EP

**ADDITIONAL MODEL NUMBER : IPC-C26EN,
IPC-C26EP-Lechange , IPC-C26EN-Lechange**

PROJECT NUMBER: 4788506997

REPORT NUMBER: 4788506997-1

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Prepared for

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Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
--	8/5/2018	Initial Issue	

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1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name: Zhejiang Dahua Vision Technology Co., Ltd.

Address: No.1199, Bin'an road, Binjiang District, Hangzhou, P.R.China.

Manufacturer Information

Company Name: Zhejiang Dahua Vision Technology Co., Ltd.

Address: No.1199, Bin'an road, Binjiang District, Hangzhou, P.R.China.

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: CONSUMER CAMERA
Model Name: IPC-C26EP
Trademark: 

Additional No. IPC-C26EN, IPC-C26EP-Lechange, IPC-C26EN-Lechange
Sample Number 1628528
Data of Receipt Sample May 30, 2018
Date Tested May 30, 2018~ July 25, 2018

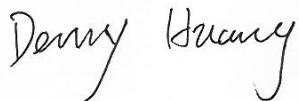
APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	PASS

Summary of Test Results			
Clause	Test Items	FCC/IC Rules	Test Results
1	6db DTS Bandwidth	FCC 15.247 (a) (2)	Complied
2	Peak Conducted Power	FCC 15.247 (b) (3)	Complied
3	Power Spectral Density	FCC 15.247 (e)	Complied
4	Conducted Band edge And Spurious emission	FCC 15.247 (d)	Complied
5	Radiated Band edges and Spurious emission	FCC 15.247 (d) FCC 15.209 FCC 15.205	Complied
6	Conducted Emission Test For AC Power Port	FCC 15.207	Complied
7	Antenna Requirement	FCC 15.203	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 modes can both support the SISO and MIMO 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 report.

Tested By:



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Stephen Guo
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Laboratory Leader

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC KDB 558074 D01 DTS Meas Guidance v04, , 414788 D01 Radiated Test Site v01, ANSI C63.10-2013, FCC CFR 47 Part 2, FCC CFR 47 Part 15.

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	<p>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.</p> <p>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.</p> <p>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.</p>

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:	CONSUMER CAMERA		
Model No.:	IPC-C26EP		
Operating Frequency:	IEEE 802.11b/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/g/n(HT20): 11 Channels IEEE 802.11n(HT40): 7 Channels		
Channels Step:	Channels with 5MHz step		
Sample Type:	Fixed production		
Test power grade:	Antenna1:34 (manufacturer declare) Antenna2:34 (manufacturer declare)		
Test software of EUT:	Secure CRT (manufacturer declare)		
Antenna Type:	Chip Antenna		
Antenna Gain:	Antenna 1:	1.28 dBi	
	Antenna 2:	1.28 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	IPC-C26EP	2	IPC-C26EN	3	IPC-C26EP-Lechange
4	IPC-C26EN-Lechange				

Only the main model **IPC-C26EP** was tested and only the data of this model is shown in this test report. Since they have the same technical construction including circuit diagram, PCB Layout, components and component layout, all electrical construction and mechanical construction, with IPC-C26EP. The difference is only the name of the models.

5.2. MAXIMUM OUTPUT POWER

Frequency Range (MHz)	Number of Transmit Chains (NTX)	IEEE 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]	17.92	17.74	/
2412-2462	1/2	IEEE 802.11G SISO	2412-2462	1-11[11]	17.33	17.44	/
2412-2462	1/2	IEEE 802.11nHT20	2412-2462	1-11[11]	17.57	17.67	20.54
2422-2452	1/2	IEEE 802.11nHT40	2422-2452	3-9[7]	17.02	16.95	19.92

5.3. CHANNEL LIST

Channel List for 802.11B SISO/g/n (20 MHz)							
Channel	Frequency (MHz)	Channel	Frequency (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	Frequency (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

5.5. THE WORSE CASE POWER SETTING PARAMETER

1) For SISO test items:

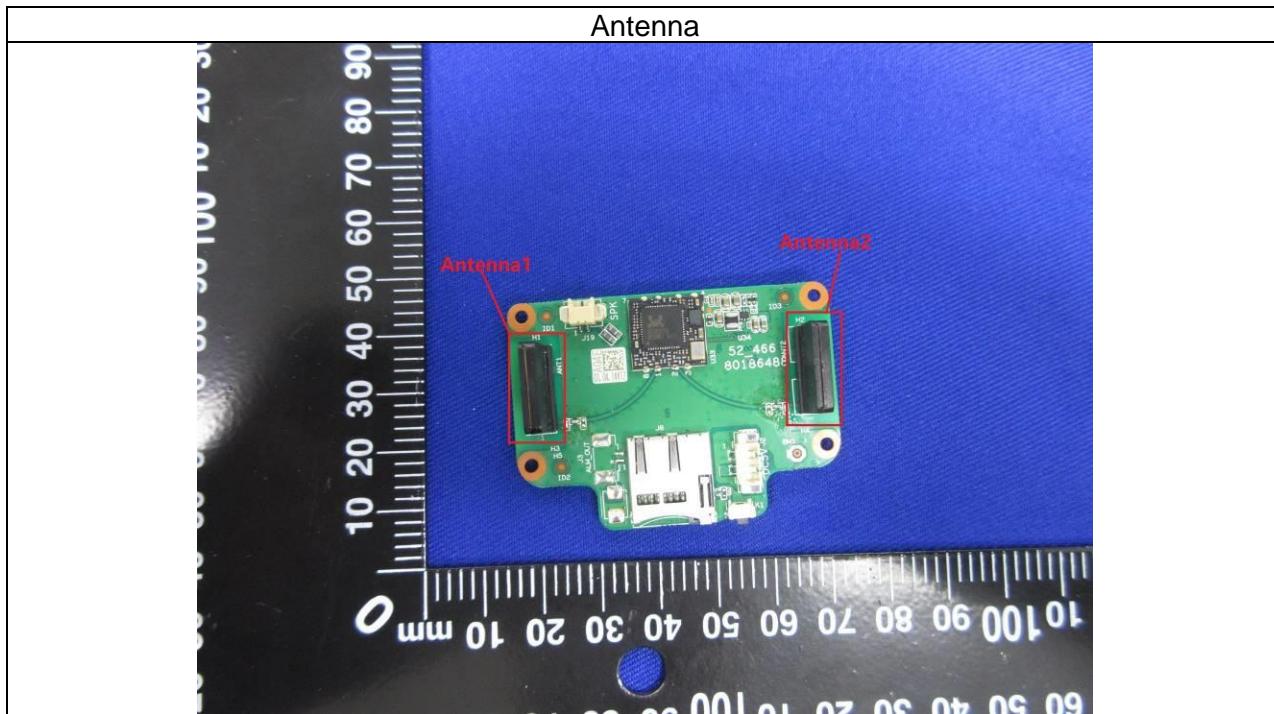
Test Antenna	Test Software Version	SecureCRT			
		Test Mode	Test Channel	Setting TX Power	Setting data rate (Mbps)
Antenna 1	IEEE 802.11B SISO	LCH	34	CCK_1Mbps	
		MCH	34	CCK_1Mbps	
		HCH	34	CCK_1Mbps	
	IEEE 802.11G SISO	LCH	34	NO HT_6Mbps	
		MCH	34	NO HT_6Mbps	
		HCH	34	NO HT_6Mbps	
	IEEE 802.11n HT20	LCH	34	HT20_MCS_0_20	
		MCH	34	HT20_MCS_0_20	
		HCH	34	HT20_MCS_0_20	
	IEEE 802.11n HT40	LCH	34	HT40+MCS_0_40	
		MCH	34	HT40+MCS_0_40	
		HCH	34	HT40+MCS_0_40	
Antenna 2	IEEE 802.11B SISO	LCH	34	CCK_1Mbps	
		MCH	34	CCK_1Mbps	
		HCH	34	CCK_1Mbps	
	IEEE 802.11G SISO	LCH	34	NO HT_6Mbps	
		MCH	34	NO HT_6Mbps	
		HCH	34	NO HT_6Mbps	
	IEEE 802.11n HT20	LCH	34	HT20_MCS_0_20	
		MCH	34	HT20_MCS_0_20	
		HCH	34	HT20_MCS_0_20	
	IEEE 802.11n HT40	LCH	34	HT40+MCS_0_40	
		MCH	34	HT40+MCS_0_40	
		HCH	34	HT40+MCS_0_40	

Test Antenna	Test Software Version	Secure CRT			
		Test Mode	Test Channel	Setting TX Power	Setting data rate (Mbps)
Antenna 1+2	IEEE 802.11n HT20	LCH	34	HT20_MCS_0_20	
		MCH	34	HT20_MCS_0_20	
		HCH	34	HT20_MCS_0_20	
	IEEE 802.11n HT40	LCH	34	HT40+MCS_0_40	
		MCH	34	HT40+MCS_0_40	
		HCH	34	HT40+MCS_0_40	

5.6. DESCRIPTION OF AVAILABLE ANTENNAS

Ant.	Frequency (MHz)	Antenna Type	Antenna Gain (dBi)
1	2400-2483.5	Chip Antenna	1.28
2	2400-2483.5	Chip Antenna	1.28

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



5.7. TEST ENVIRONMENT

Environment Parameter	Selected Values During Tests	
Relative Humidity	55 ~ 65%	
Atmospheric Pressure:	1025Pa	
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
2	Band Reject Filter	Wainwright	WRCJV8-2350-2400-2483.5-2533.5-40SS	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

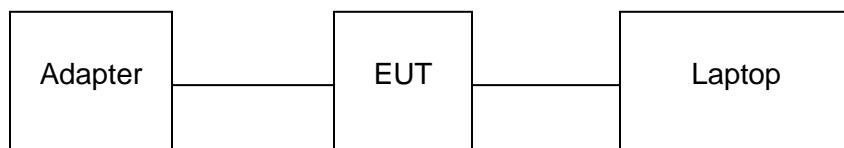
ACCESSORY

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.
<input checked="" type="checkbox"/>	EMI Test Receiver	R&S	ESR3	101961	Dec.12, 2017	Dec.11, 2018
<input checked="" type="checkbox"/>	Two-Line V-Network	R&S	ENV216	101983	Dec.12, 2017	Dec.11, 2018
<input checked="" type="checkbox"/>	Artificial Mains Networks	Schwarzbeck	NSLK 8126	8126465	Dec.12, 2017	Dec.11, 2018
Software						
Used	Description		Manufacturer	Name	Version	
<input checked="" type="checkbox"/>	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.
<input checked="" type="checkbox"/>	MXE EMI Receiver	KESIGHT	N9038A	MY56400 036	Dec. 12, 2017	Dec. 11, 2018
<input checked="" type="checkbox"/>	Hybrid Log Periodic Antenna	TDK	HLP-3003C	130960	Jan.09, 2016	Jan.09, 2019
<input checked="" type="checkbox"/>	Preamplifier	HP	8447D	2944A090 99	Dec. 12, 2017	Dec. 11, 2018
<input checked="" type="checkbox"/>	EMI Measurement Receiver	R&S	ESR26	101377	Dec.12, 2017	Dec.11, 2018
<input checked="" type="checkbox"/>	Horn Antenna	TDK	HRN-0118	130939	Jan. 09, 2016	Jan. 09, 2019
<input checked="" type="checkbox"/>	High Gain Horn Antenna	Schwarzbeck	BBHA-9170	691	Jan.06, 2016	Jan.06, 2019
<input checked="" type="checkbox"/>	Preamplifier	TDK	PA-02-0118	TRS-305-00066	Dec. 12, 2017	Dec. 11, 2018
<input checked="" type="checkbox"/>	Preamplifier	TDK	PA-02-2	TRS-307-00003	Dec.12, 2017	Dec.11, 2018
<input checked="" type="checkbox"/>	Loop antenna	Schwarzbeck	1519B	00008	Mar. 26, 2016	Mar. 26, 2019
Software						
Used	Description		Manufacturer	Name	Version	
<input checked="" type="checkbox"/>	Test Software for Radiated disturbance		Farad	EZ-EMC	Ver. UL-3A1	
Other instruments						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
<input checked="" type="checkbox"/>	Spectrum Analyzer	Keysight	N9030A	MY55410 512	Dec.12, 2017	Dec.11, 2018
<input checked="" type="checkbox"/>	Power Meter	Keysight	N9031A	MY55416 024	Dec.12, 2017	Dec.11, 2018
<input checked="" type="checkbox"/>	Power Sensor	Keysight	N9323A	MY55440 013	Dec.12, 2017	Dec.11, 2018

6. ANTENNA PORT TEST RESULTS

6.1. ON TIME AND DUTY CYCLE

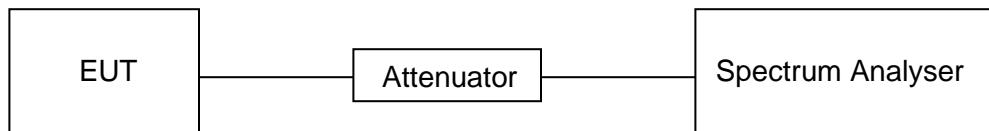
LIMITS

None; for reporting purposes only

PROCEDURE

FCC KDB 558074 Zero-Span Spectrum Analyzer Method

TEST SETUP



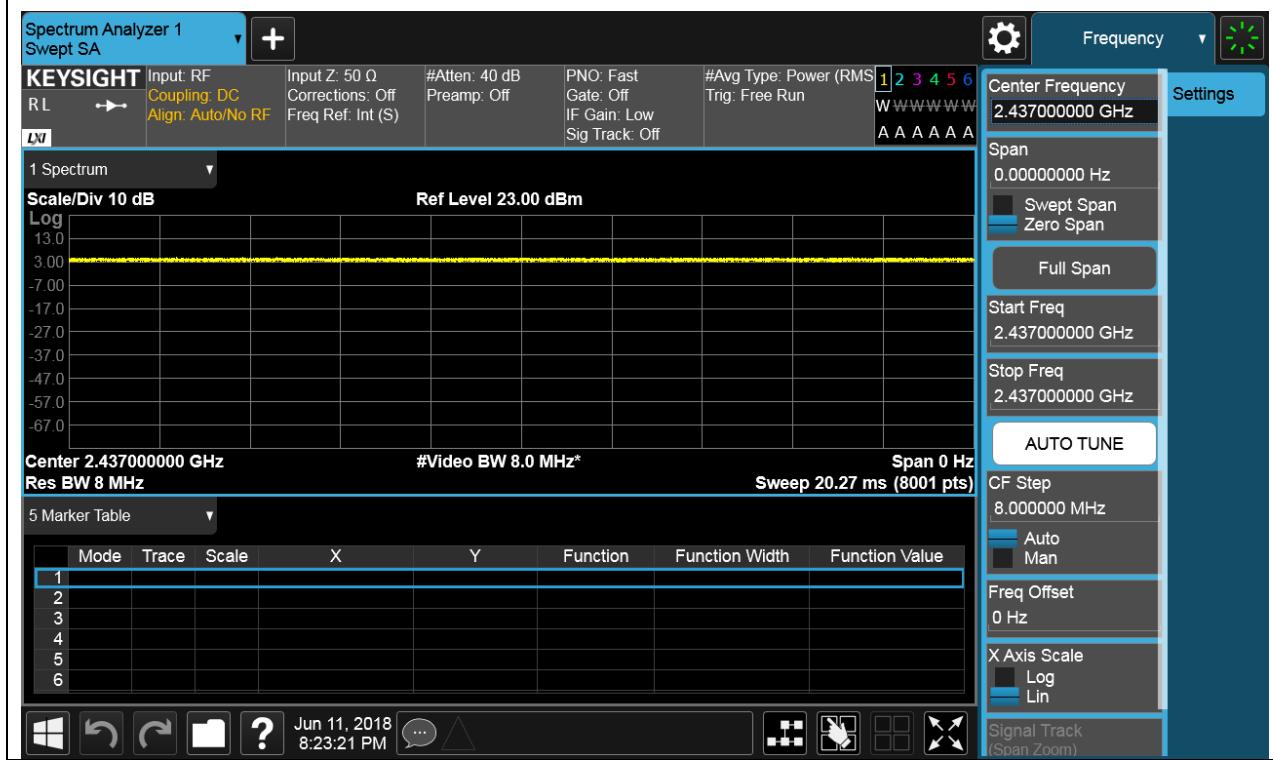
RESULTS

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

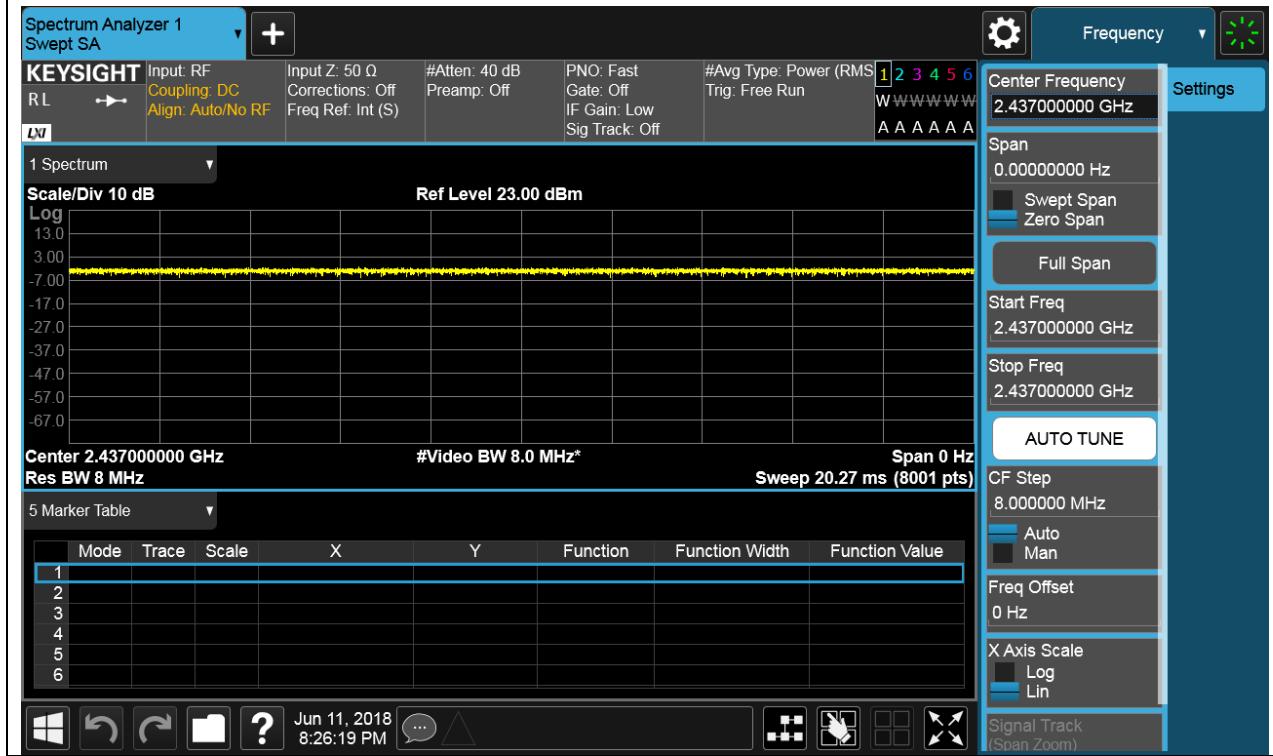
Note: 1) Duty Cycle Correction Factor= $10\log(1/x)$.
2) Where: x is Duty Cycle(Linear)
3) Where: T is On Time (transmit duration)
4) Pre-testing Antenna 1 and Antenna2, and pre-testing SISO and MIMO modes, only the data of the worse case is shown in this test report.

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)	6dB Bandwidth	$\geq 500\text{KHz}$	2400-2483.5

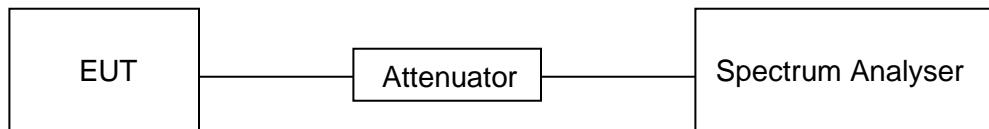
TEST PROCEDURE

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
VBW	For 6dB Bandwidth : $\geq 3 \times \text{RBW}$
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.

TEST SETUP

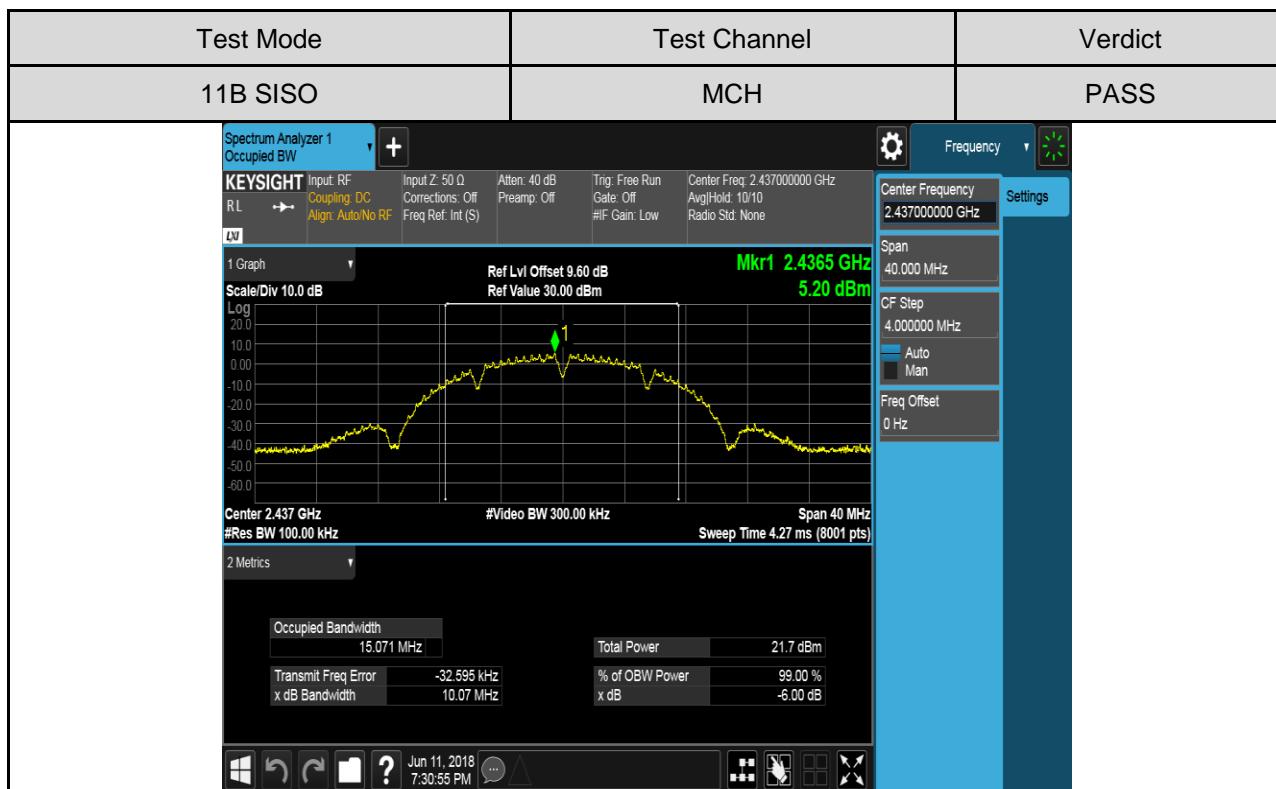
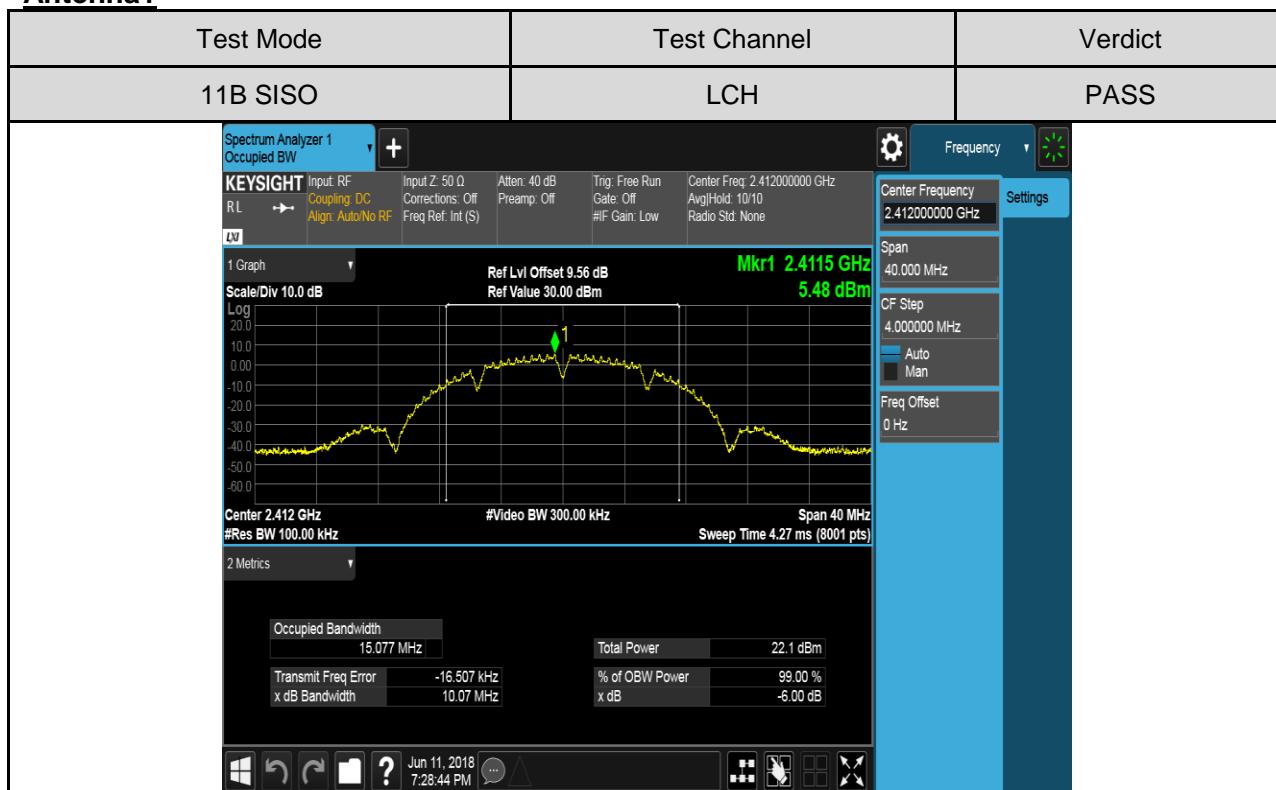


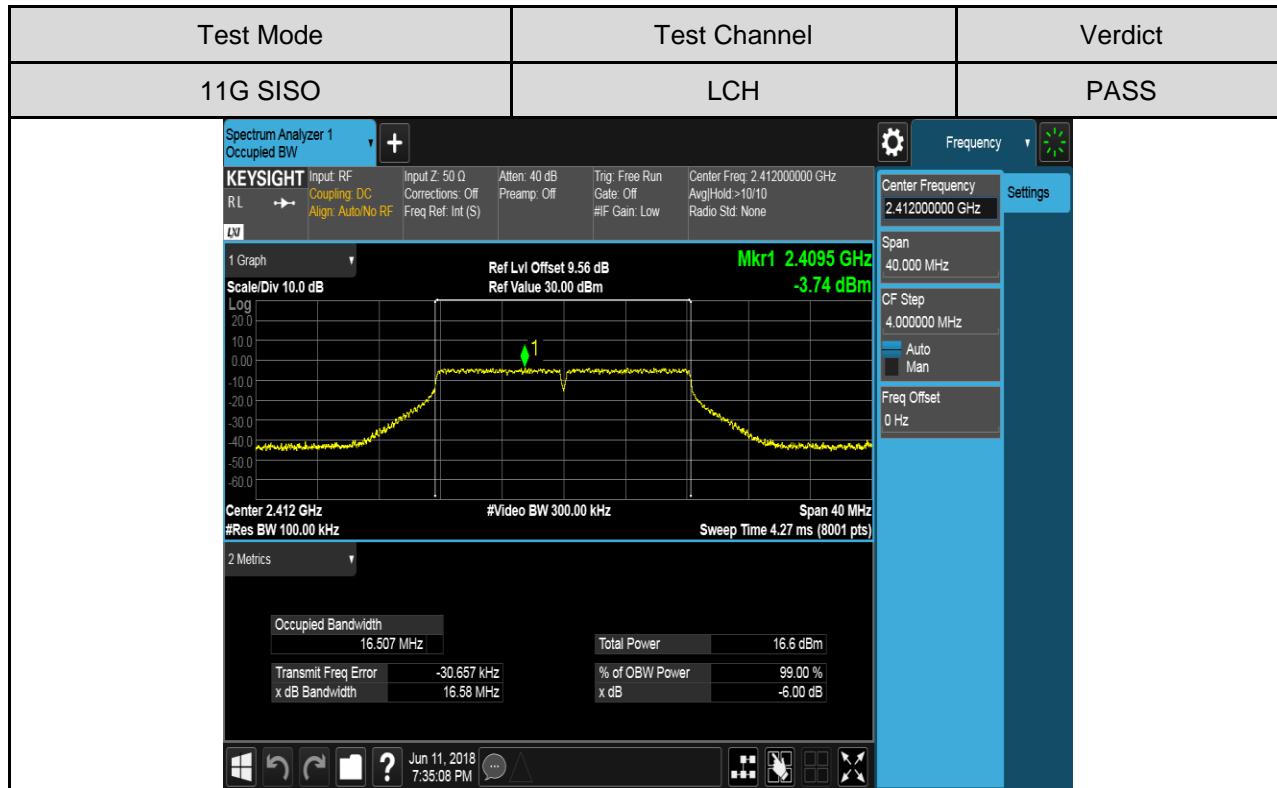
RESULTS

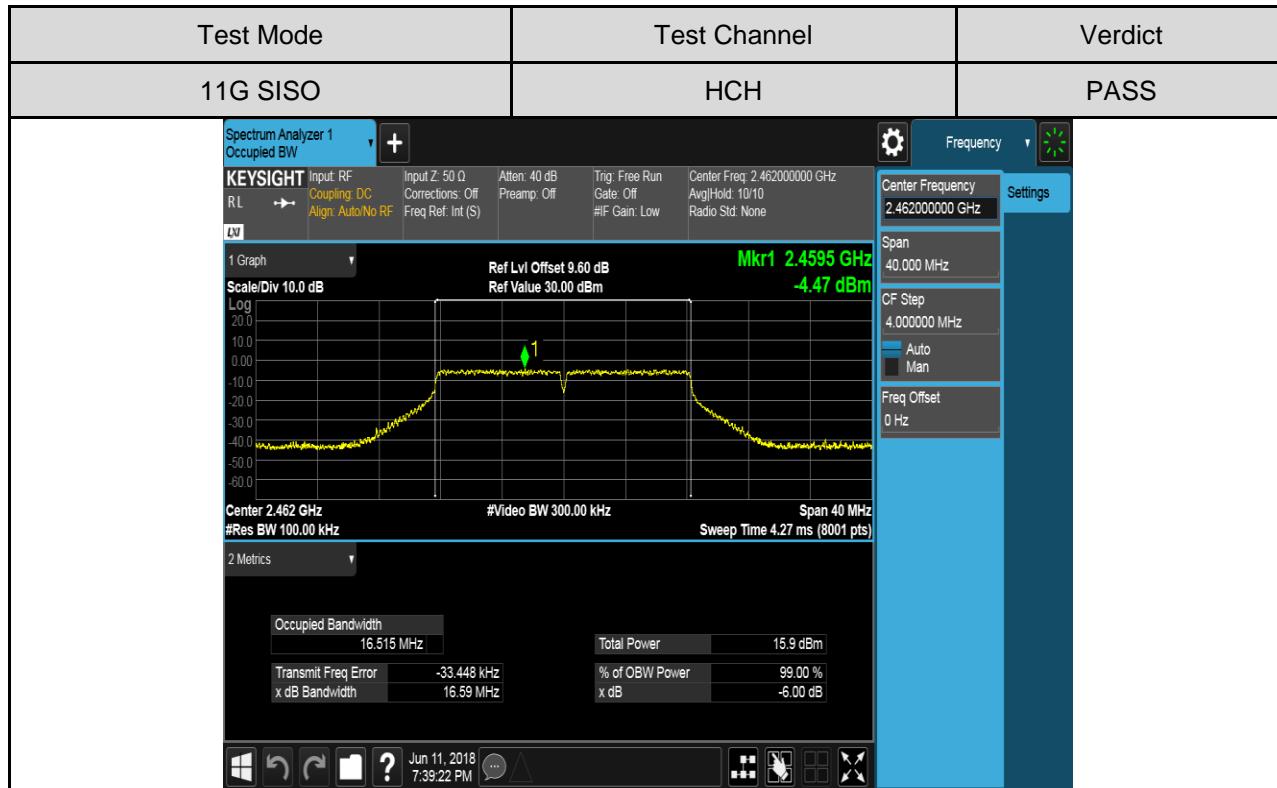
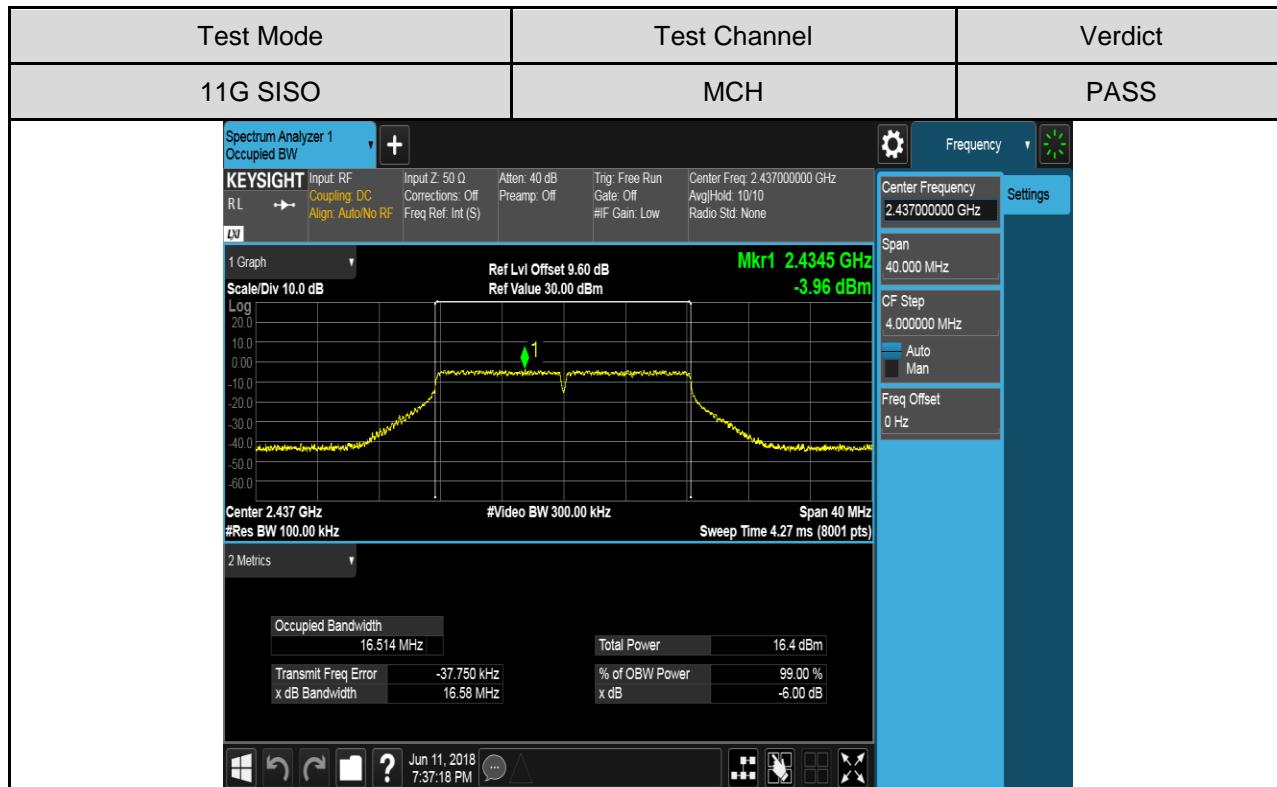
Test Mode	Test Antenna	Test Channel	6dB bandwidth (MHz)	Result
11B SISO	Antenna 1	LCH	10.07	Pass
		MCH	10.07	Pass
		HCH	10.07	Pass
	Antenna 2	LCH	10.06	Pass
		MCH	10.07	Pass
		HCH	10.06	Pass
11G SISO	Antenna 1	LCH	16.58	Pass
		MCH	16.58	Pass
		HCH	16.59	Pass
	Antenna 2	LCH	16.58	Pass
		MCH	16.58	Pass
		HCH	16.58	Pass
11N20MIMO	Antenna 1	LCH	17.82	Pass
		MCH	17.81	Pass
		HCH	17.81	Pass
	Antenna 2	LCH	17.82	Pass
		MCH	17.80	Pass
		HCH	17.81	Pass
11N40MIMO	Antenna 1	LCH	36.42	Pass
		MCH	36.45	Pass
		HCH	36.42	Pass
	Antenna 2	LCH	36.43	Pass
		MCH	36.42	Pass
		HCH	36.43	Pass

Test Graphs

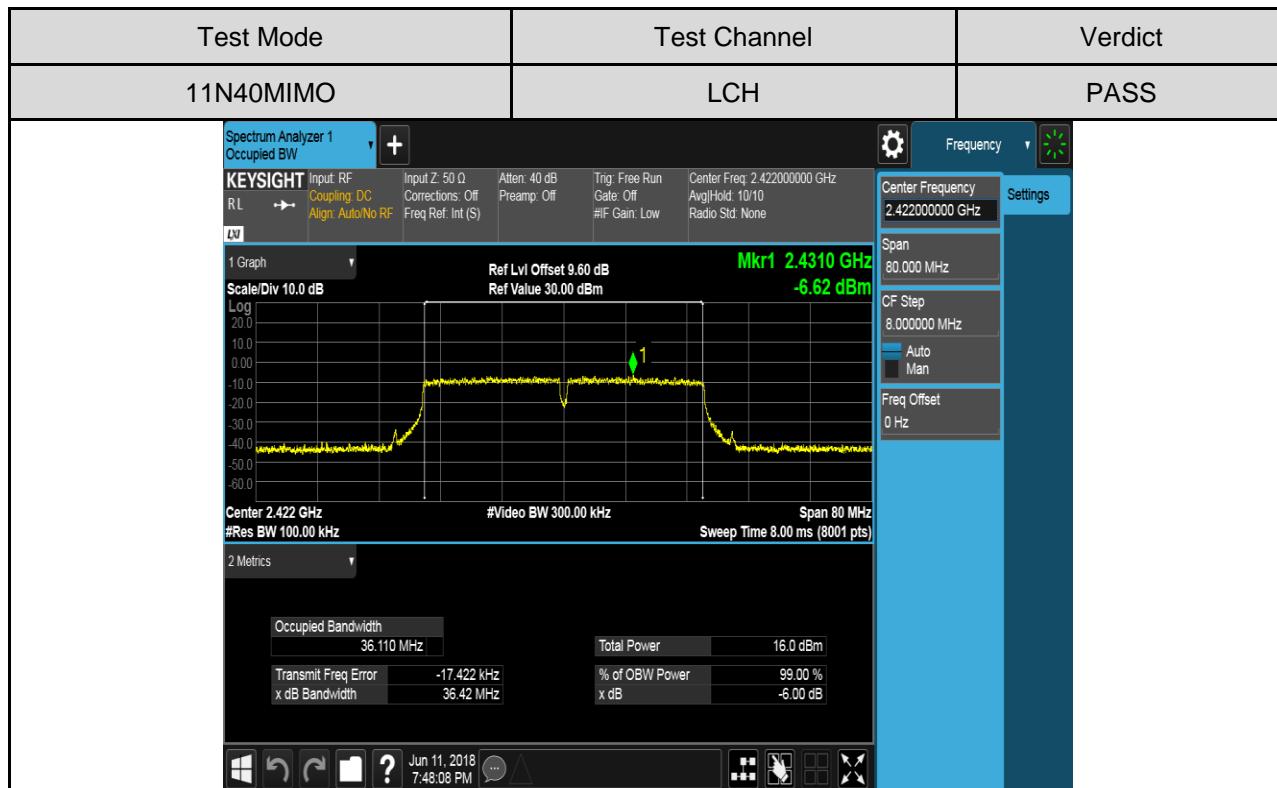
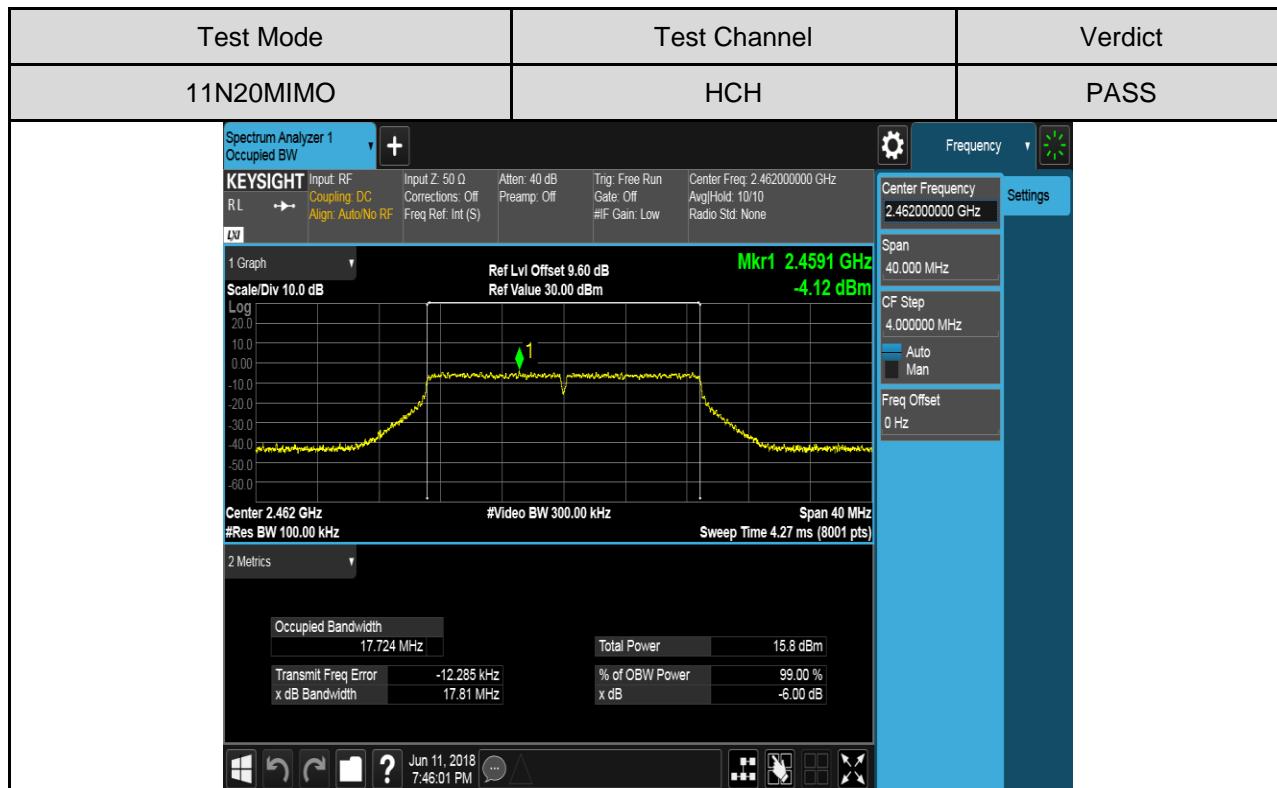
Antenna1

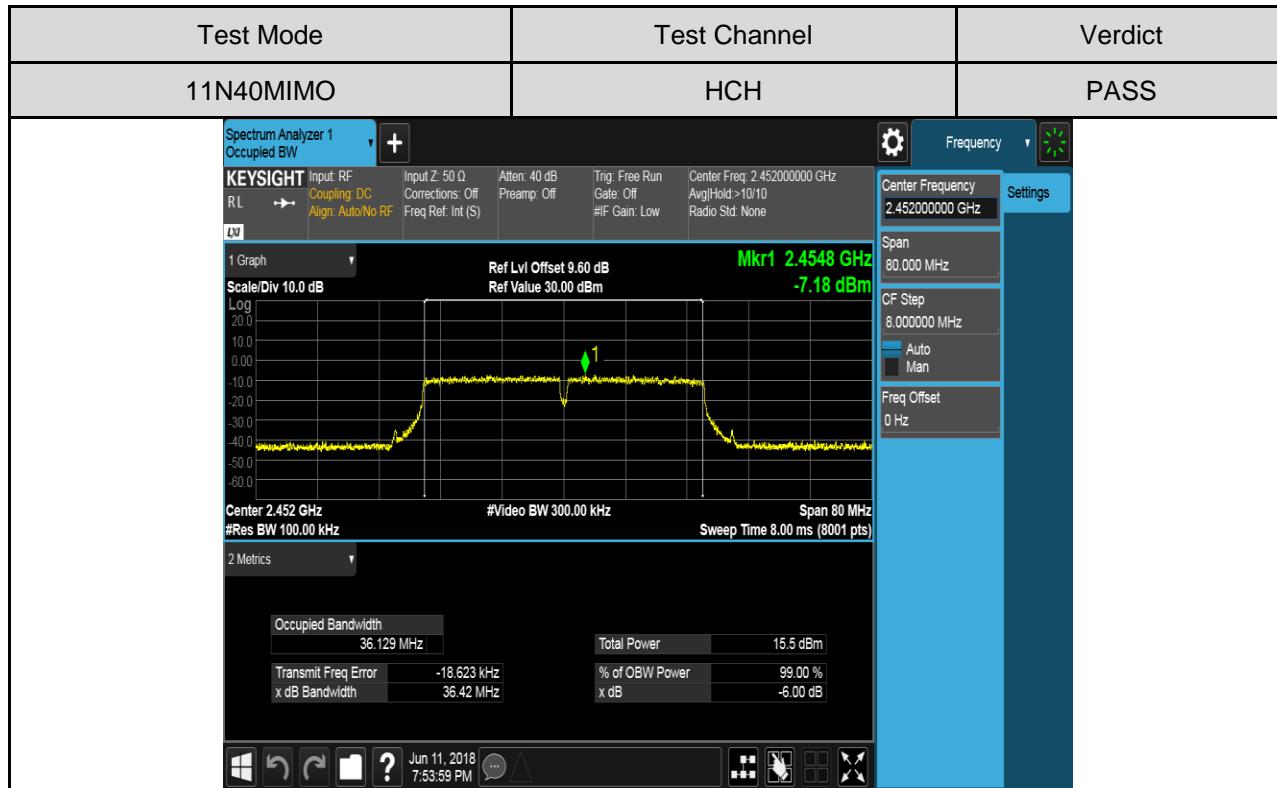
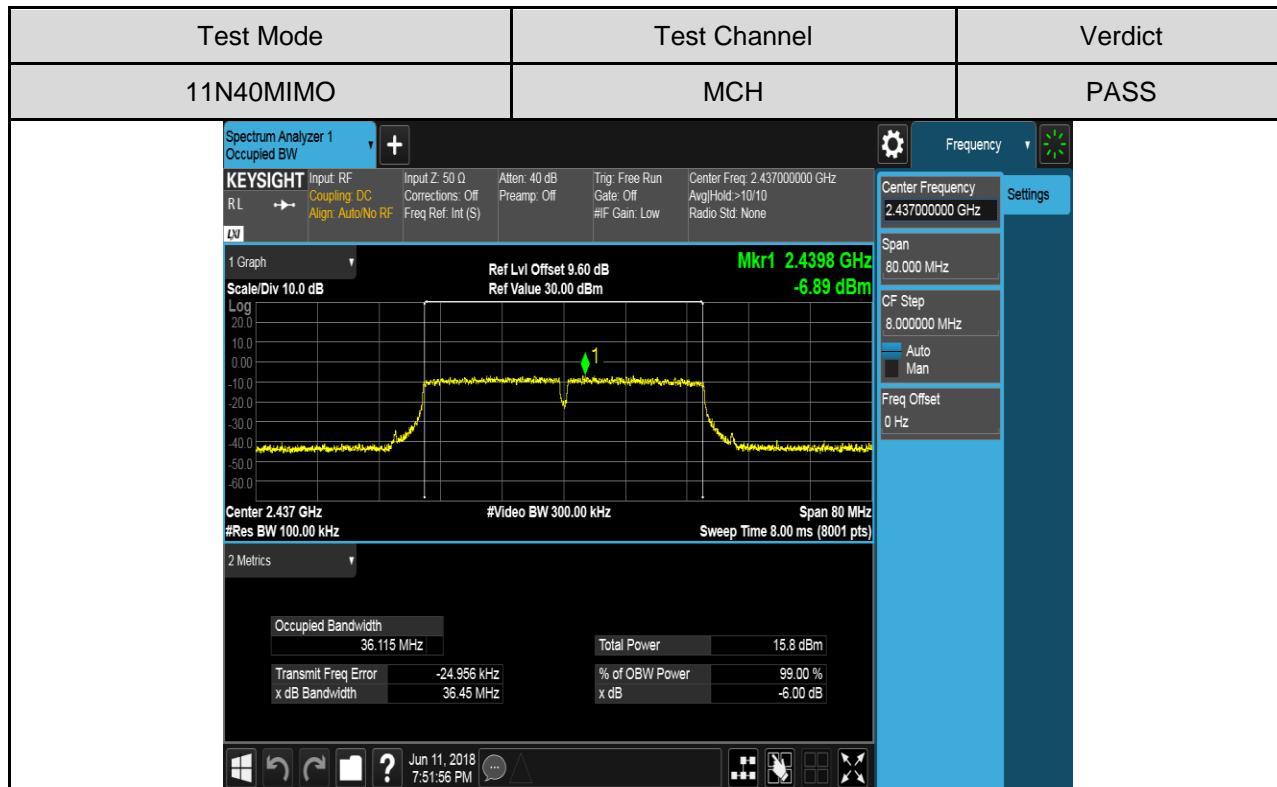




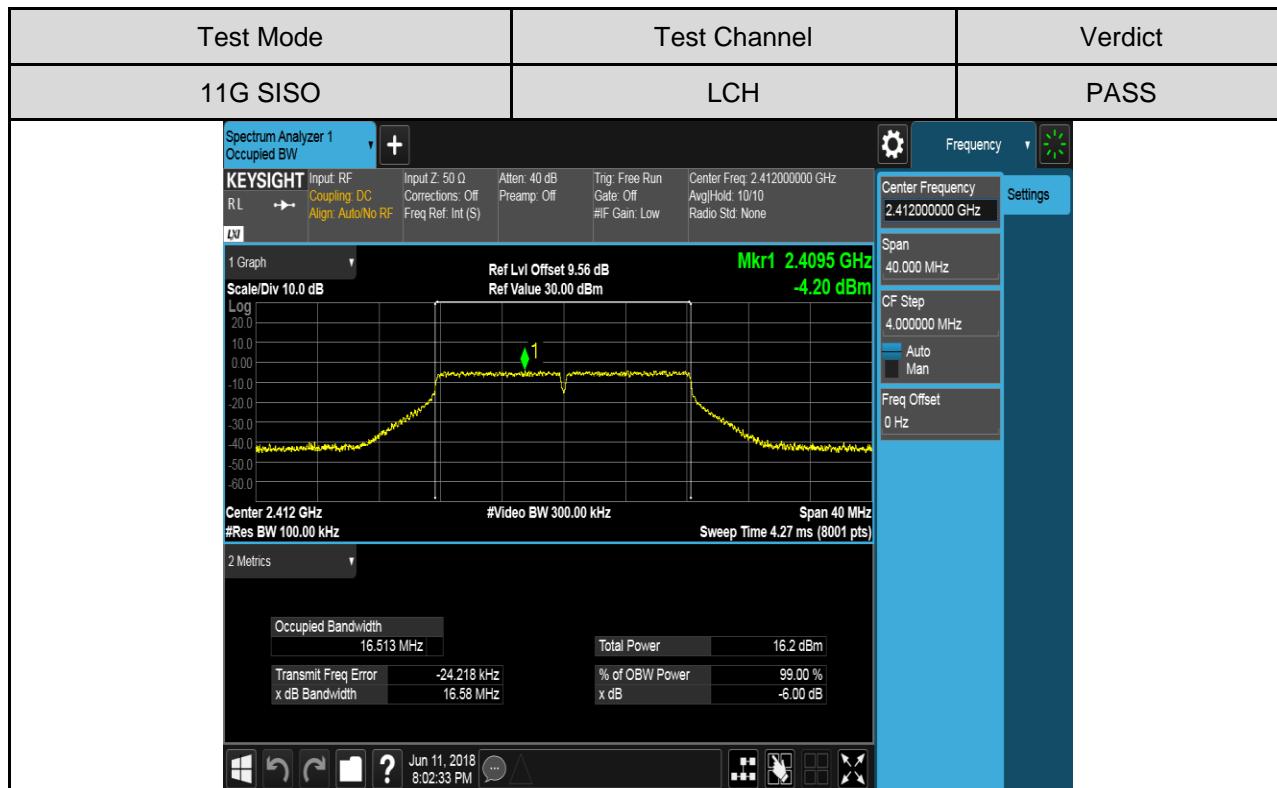


Test Mode	Test Channel	Verdict
11N20MIMO	LCH	PASS
11N20MIMO	MCH	PASS

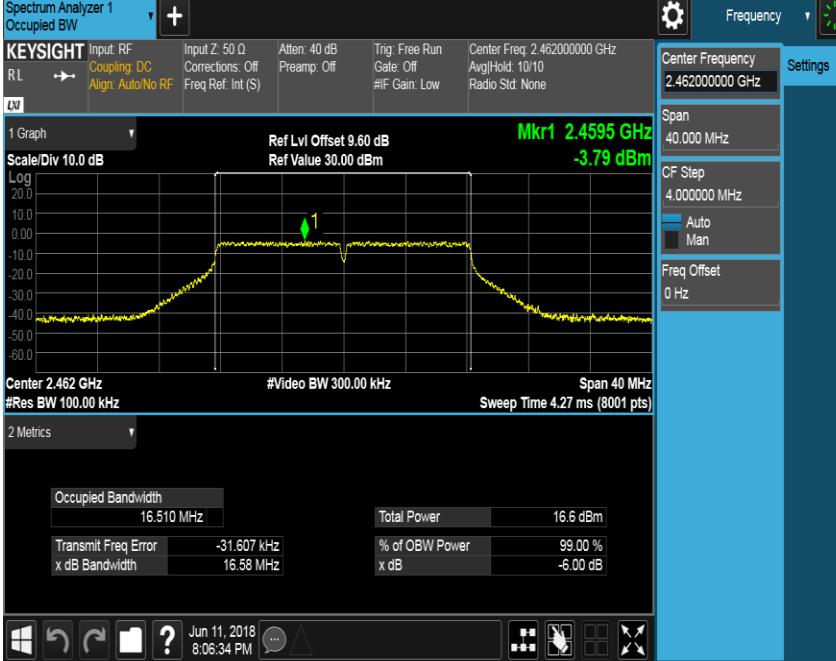




Test Mode	Test Channel	Verdict
11B SISO	LCH	PASS
		
11B SISO	MCH	PASS
		



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

Spectrum Analyzer 1
Occupied BW

KEYSIGHT Input: RF
R.L. Coupling: DC
Align: Auto/No RF

Input Z: 50 Ω
Corrections: Off
Preamp: Off
Freq Ref: Int (S)

Trig: Free Run
Gate: Off
Avg/Hold: 10/10
#IF Gain: Low
Radio Std: None

Center Freq: 2.43700000 GHz
Avg/Hold: 10/10
#IF Gain: Low
Radio Std: None

Frequency: 2.43700000 GHz

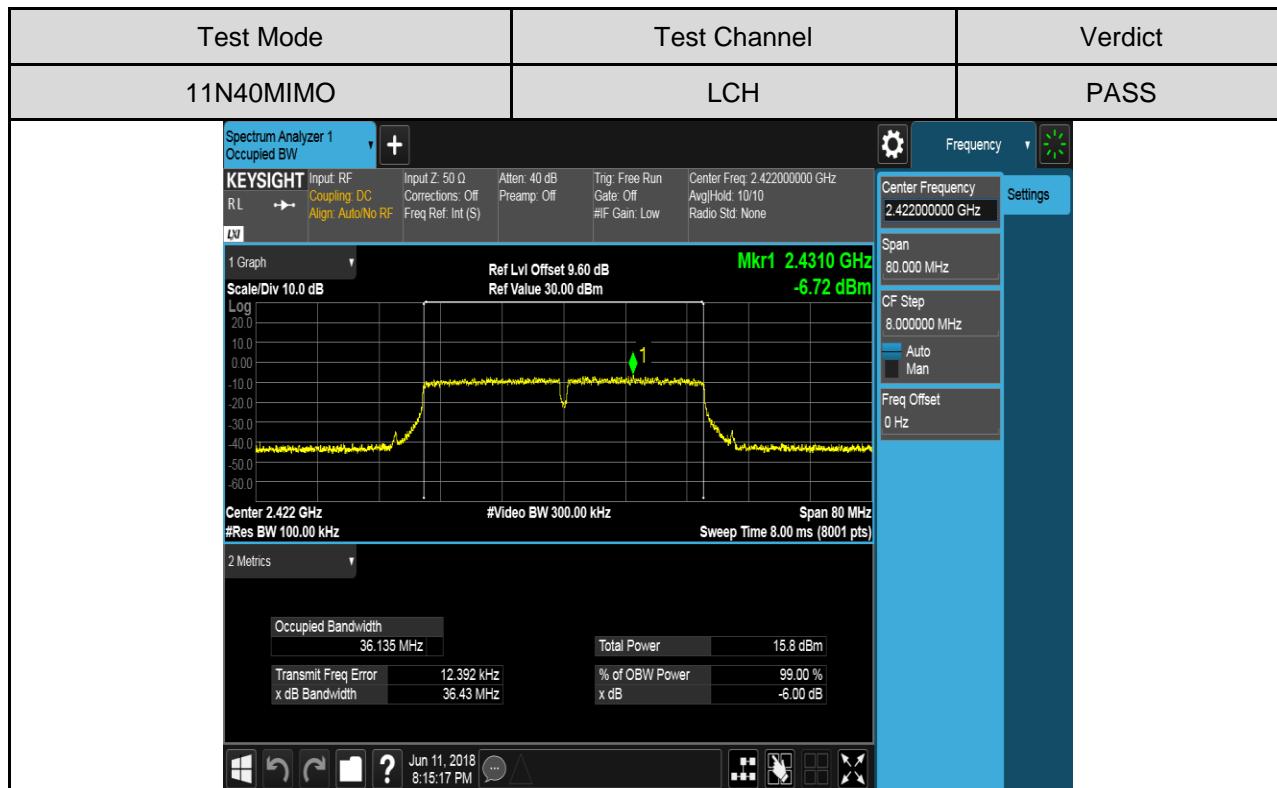
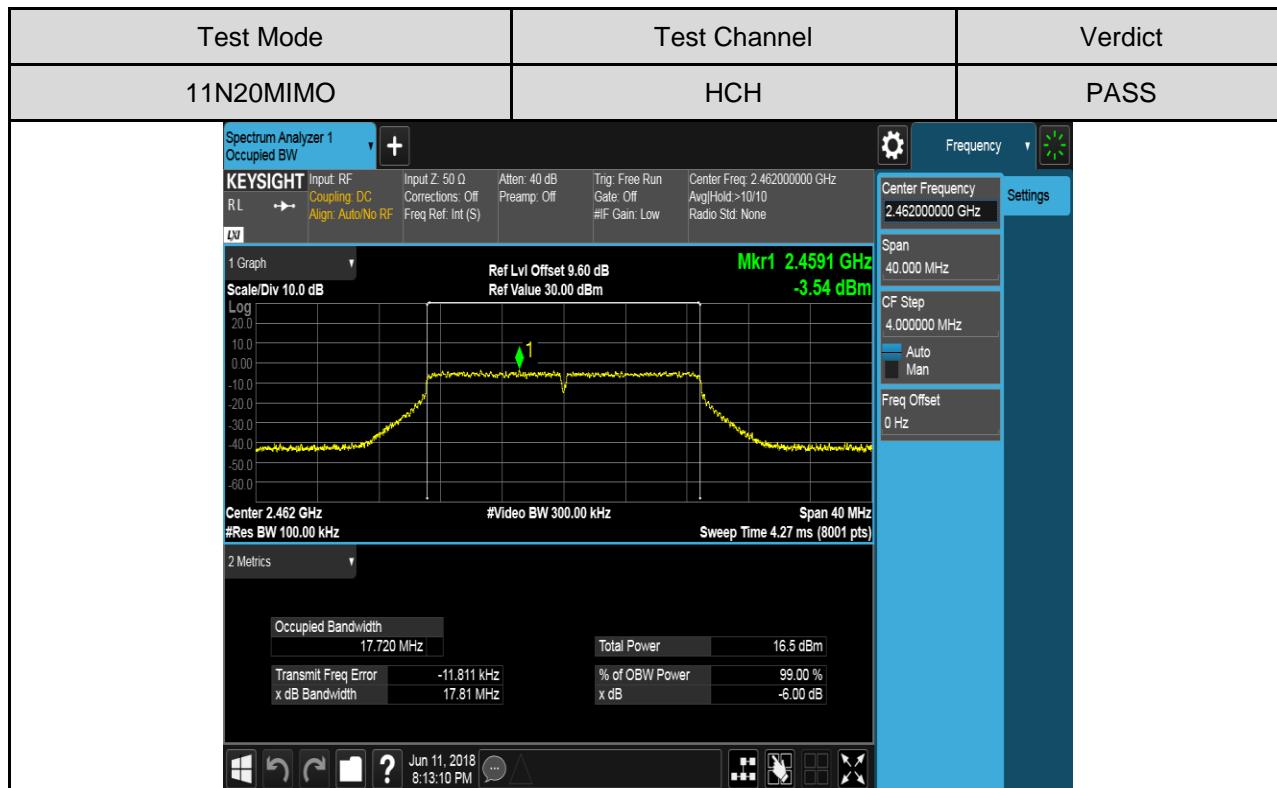
Settings: Center Frequency 2.43700000 GHz, Span 40.000 MHz, CF Step 4.00000 MHz, Auto, Freq Offset 0 Hz

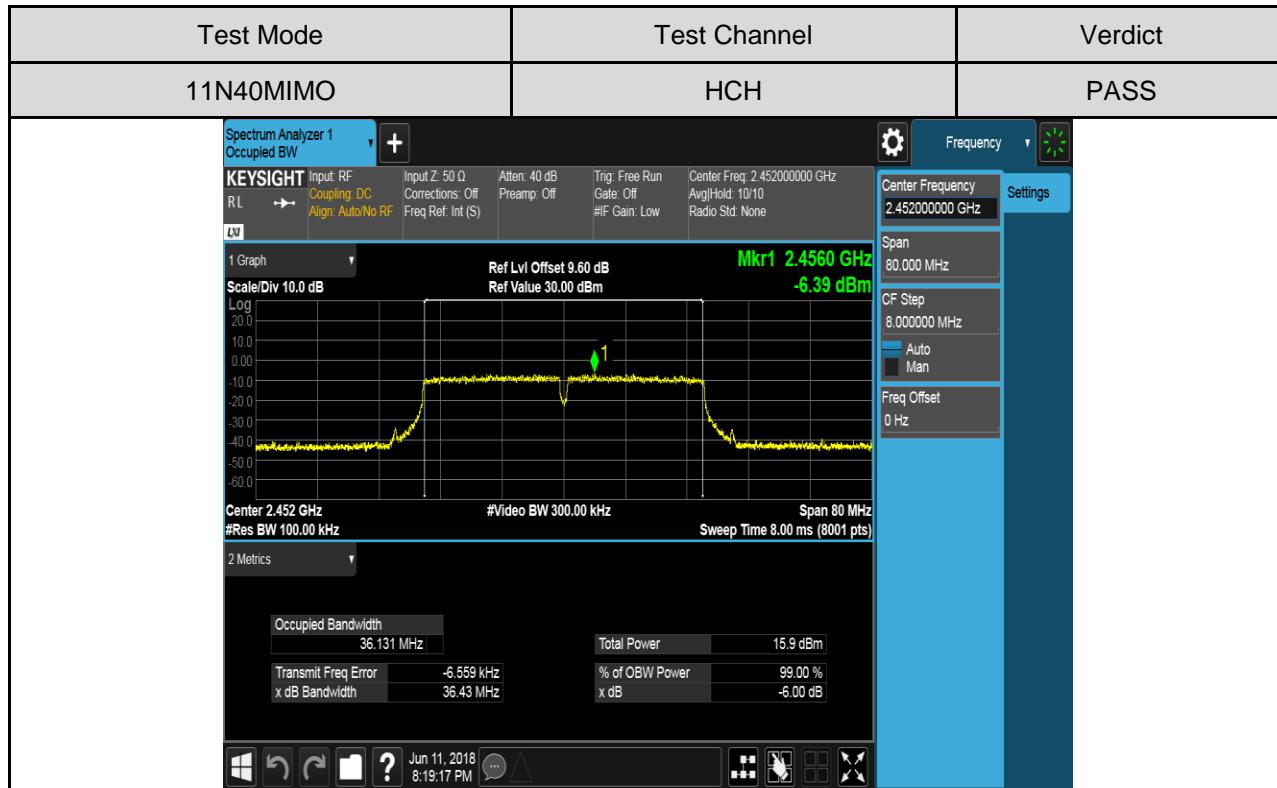
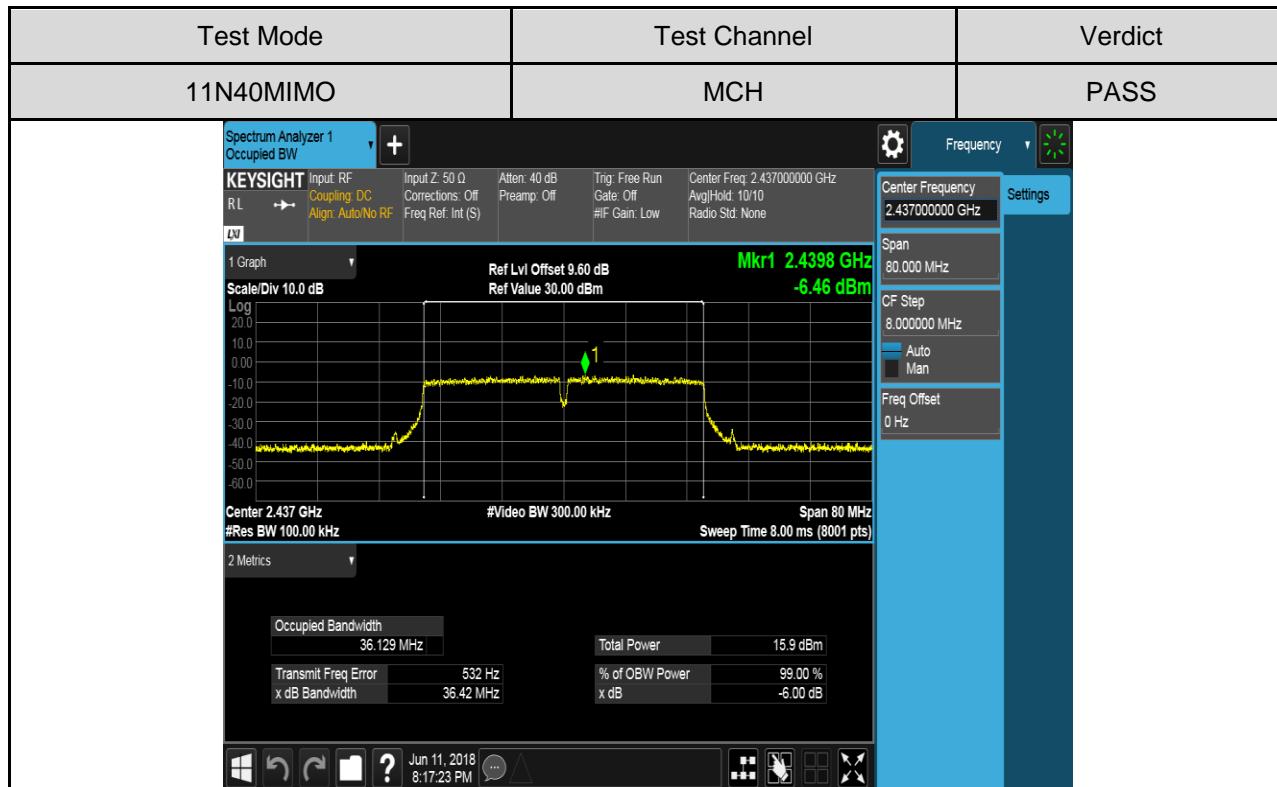
Graph: 1 Graph, Scale/Div 10.0 dB, Ref Lvl Offset 9.60 dB, Ref Value 30.00 dBm

1. Graph: 2.4341 GHz, -3.37 dBm

2. Metrics: Occupied Bandwidth 17.714 MHz, Total Power 16.6 dBm, Transmit Freq Error -5.264 kHz, % of OBW Power 99.00 %, x dB Bandwidth 17.80 MHz, x dB -6.00 dB

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6.3. PEAK CONDUCTED OUTPUT POWER

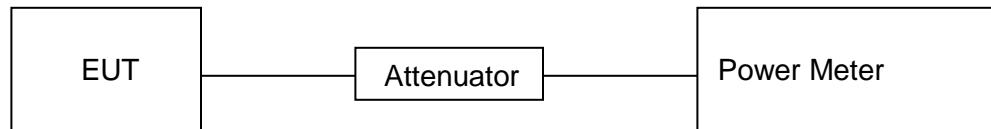
LIMITS

FCC Part15 (15.247) , Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
FCC 15.247(b)(3)	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	Antenna 1	LCH	17.92	19.20	Pass
		MCH	17.63	18.91	Pass
		HCH	17.07	18.35	Pass
	Antenna 2	LCH	17.28	18.56	Pass
		MCH	17.74	19.02	Pass
		HCH	17.52	18.80	Pass
11G	Antenna 1	LCH	17.33	18.61	Pass
		MCH	17.17	18.45	Pass
		HCH	16.66	17.94	Pass
	Antenna 2	LCH	16.94	18.22	Pass
		MCH	17.44	18.72	Pass
		HCH	17.29	18.57	Pass
11N20MIMO	Antenna 1	LCH	17.57	18.85	Pass
		MCH	17.38	18.66	Pass
		HCH	16.89	18.17	Pass
	Antenna 2	LCH	17.20	18.48	Pass
		MCH	17.67	18.95	Pass
		HCH	17.51	18.79	Pass
	Antenna 1+2	LCH	20.40	21.68	Pass
		MCH	20.54	21.82	Pass
		HCH	20.22	21.50	Pass
11N40MIMO	Antenna 1	LCH	17.02	18.30	Pass
		MCH	16.80	18.08	Pass
		HCH	16.51	17.79	Pass
	Antenna 2	LCH	16.79	18.07	Pass
		MCH	16.94	18.22	Pass
		HCH	16.95	18.23	Pass
	Antenna 1+2	LCH	19.92	21.20	Pass
		MCH	19.88	21.16	Pass
		HCH	19.75	21.03	Pass

Remark: Through pre-testing all the test modes of 11N 20 and 11N40, including SISO and MIMO, but only the data if worse case is included in this test report.

1) Maximum Average Conducted Output Power

Test Mode	Test Antenna	Test Channel	Maximum Average Conducted Output Power(dBm)	EIRP (dBm)	Result
11B	Antenna 1	LCH	15.70	16.98	Pass
		MCH	15.44	16.72	Pass
		HCH	14.87	16.15	Pass
	Antenna 2	LCH	15.03	16.31	Pass
		MCH	15.51	16.79	Pass
		HCH	15.30	16.58	Pass
11G	Antenna 1	LCH	10.85	12.13	Pass
		MCH	10.67	11.95	Pass
		HCH	10.17	11.45	Pass
	Antenna 2	LCH	10.47	11.75	Pass
		MCH	10.93	12.21	Pass
		HCH	10.77	12.05	Pass
11N20MIMO	Antenna 1	LCH	10.94	12.22	Pass
		MCH	10.75	12.03	Pass
		HCH	10.22	11.50	Pass
	Antenna 2	LCH	10.52	11.80	Pass
		MCH	10.98	12.26	Pass
		HCH	10.83	12.11	Pass
	Antenna 1+2	LCH	13.75	15.03	Pass
		MCH	13.88	15.16	Pass
		HCH	13.55	14.83	Pass
11N40MIMO	Antenna 1	LCH	9.81	11.09	Pass
		MCH	9.59	10.87	Pass
		HCH	9.32	10.60	Pass
	Antenna 2	LCH	9.59	10.87	Pass
		MCH	9.76	11.04	Pass
		HCH	9.72	11.00	Pass
	Antenna 1+2	LCH	12.71	13.99	Pass
		MCH	12.69	13.97	Pass
		HCH	12.53	13.81	Pass

Remark: Through pre-testing all the test modes of 11N 20 and 11N40, including SISO and MIMO, but only the data if worse case is included in this test report.

6.4. POWER SPECTRAL DENSITY

LIMITS

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

TEST PROCEDURE

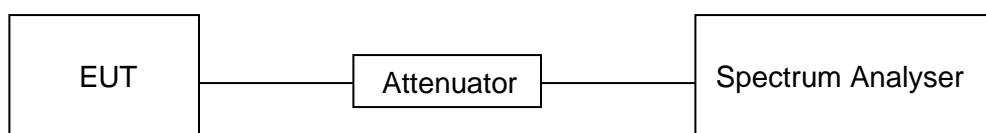
Refer to FCC KDB 558074, connect the UUT to the spectrum analyser and use the following settings:

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	$3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$
VBW	$\geq 3 \times \text{RBW}$
Span	$1.5 \times \text{DTS bandwidth}$
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



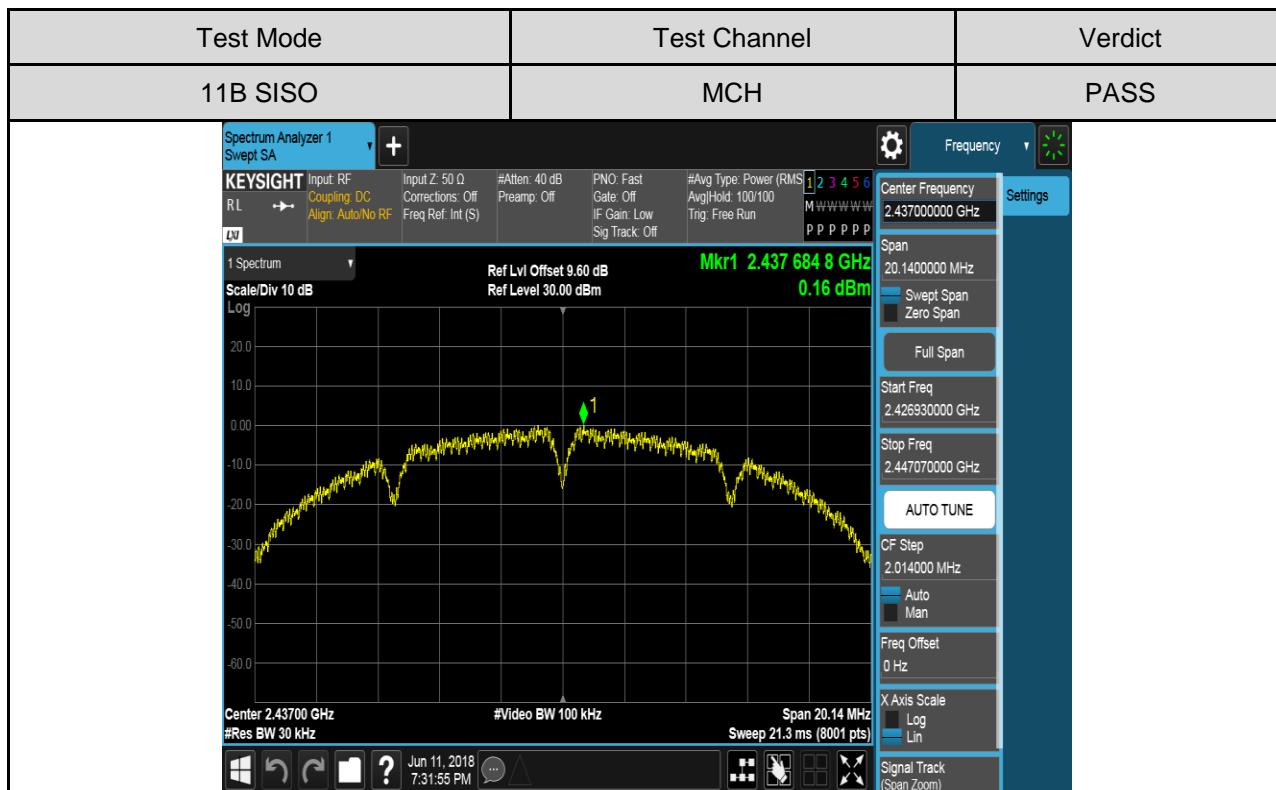
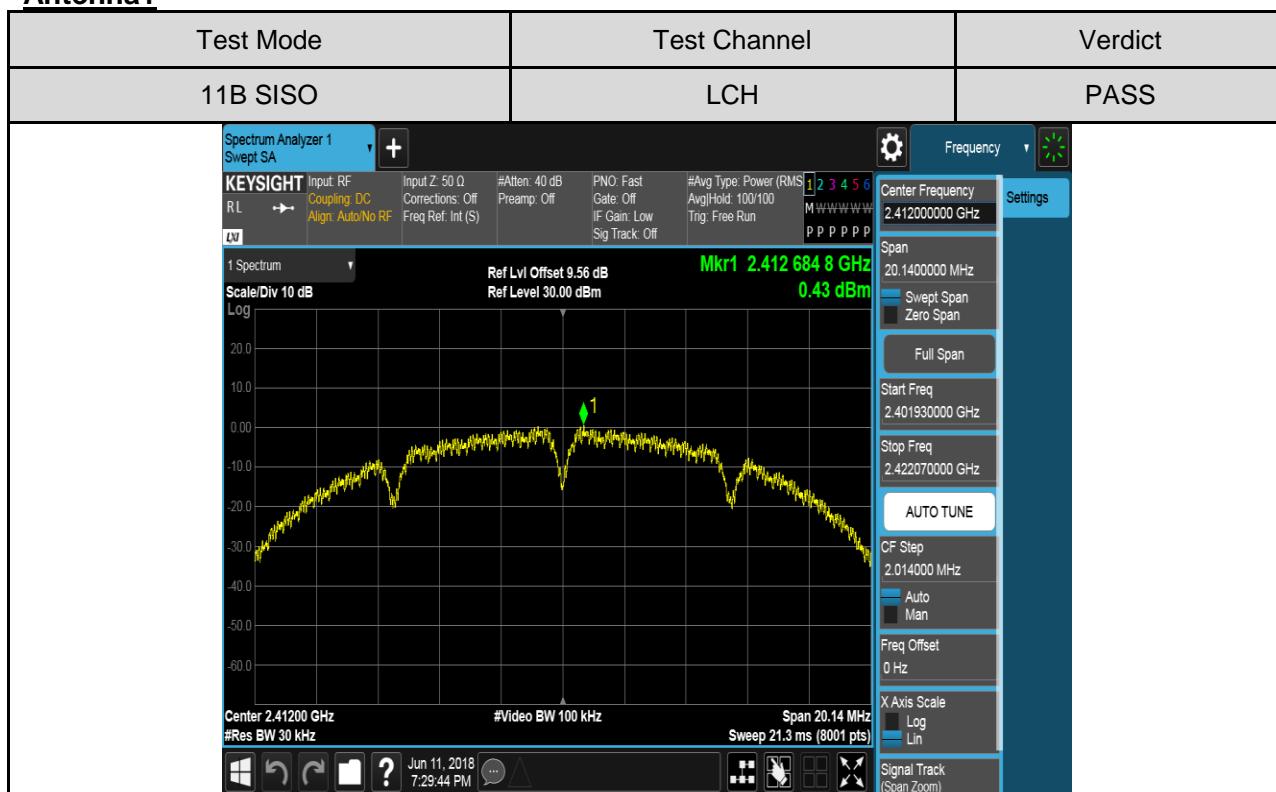
RESULTS

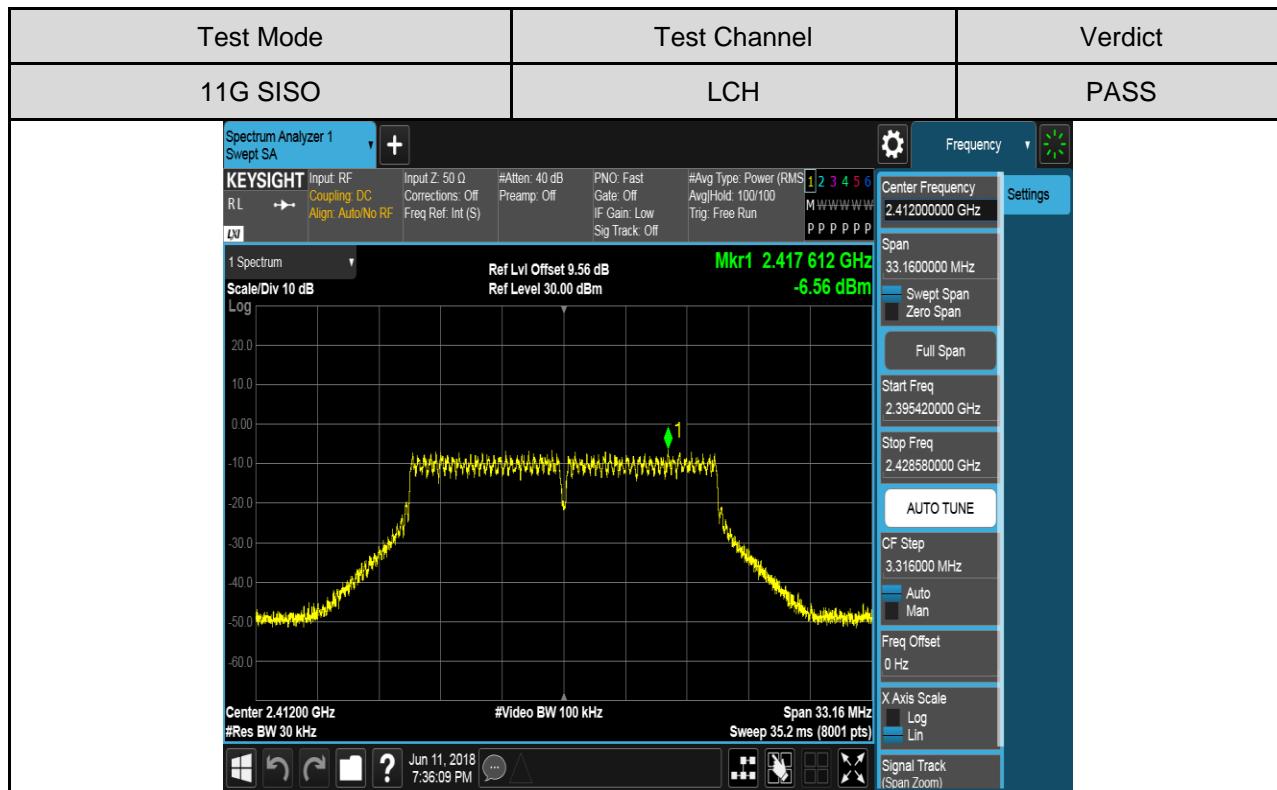
Test Mode	Test Antenna	Test Channel	Maximum Peak power spectral density (dBm)	Result
11B	Antenna 1	LCH	0.426	Pass
		MCH	0.161	Pass
		HCH	-0.406	Pass
	Antenna 2	LCH	-0.287	Pass
		MCH	0.306	Pass
		HCH	0.071	Pass
11G	Antenna 1	LCH	-6.559	Pass
		MCH	-6.742	Pass
		HCH	-7.271	Pass
	Antenna 2	LCH	-6.788	Pass
		MCH	-6.633	Pass
		HCH	-6.653	Pass
11N20MIMO	Antenna 1	LCH	-5.986	Pass
		MCH	-6.613	Pass
		HCH	-6.796	Pass
	Antenna 2	LCH	-6.302	Pass
		MCH	-6.08	Pass
		HCH	-6.07	Pass
	Antenna 1+2	LCH	-2.999	Pass
		MCH	-3.328	Pass
		HCH	-3.408	Pass
11N40MIMO	Antenna 1	LCH	-10.434	Pass
		MCH	-10.252	Pass
		HCH	-10.923	Pass
	Antenna 2	LCH	-9.657	Pass
		MCH	-9.891	Pass
		HCH	-9.548	Pass
	Antenna 1+2	LCH	-6.969	Pass
		MCH	-7.057	Pass
		HCH	-7.171	Pass

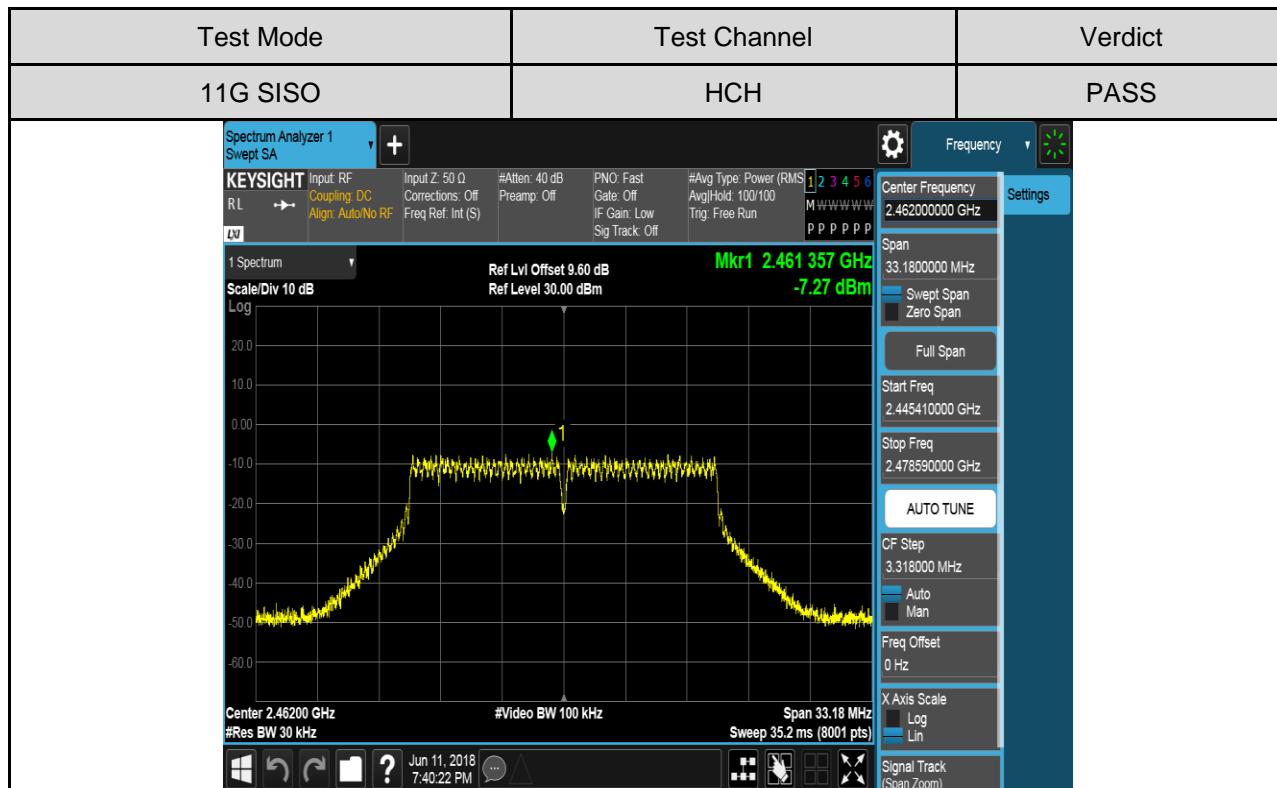
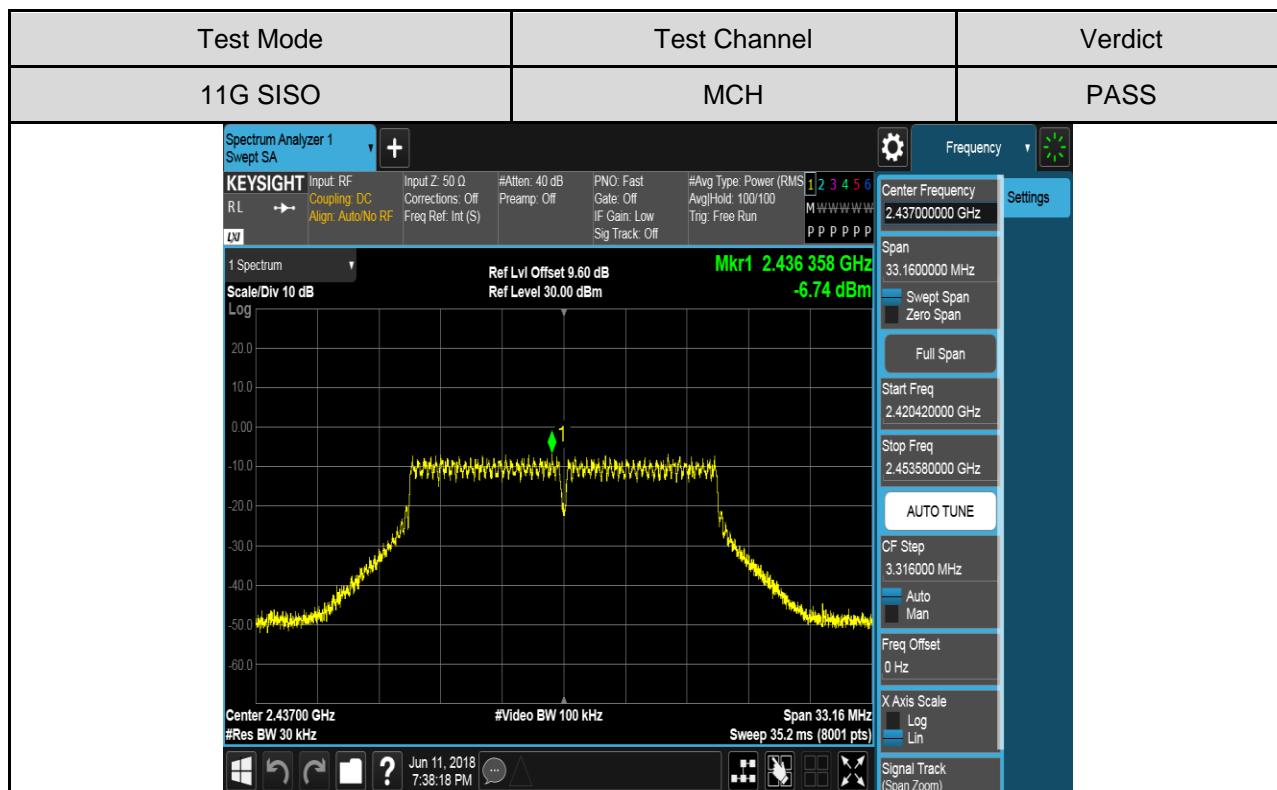
Remark: Through pre-testing all the test modes of 11N 20 and 11N40, including SISO and MIMO, but only the data if worse case is included in this test report.

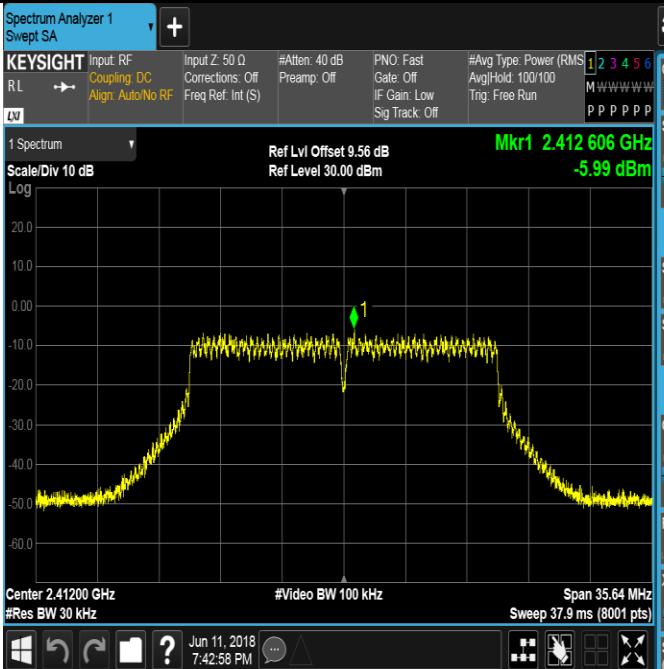
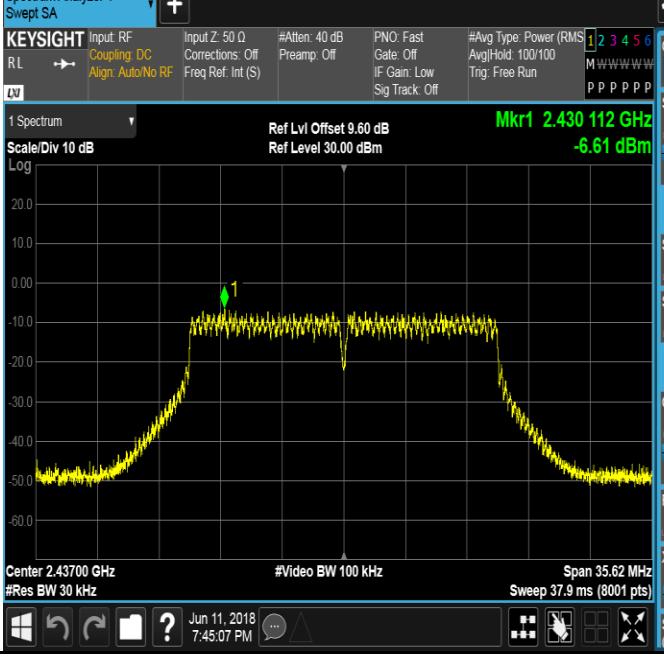
Test Graphs:

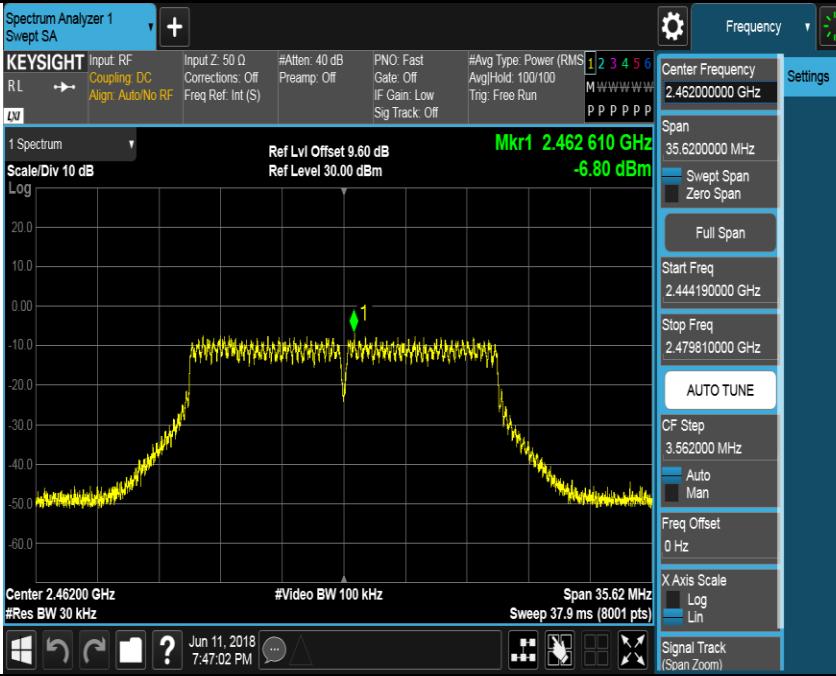
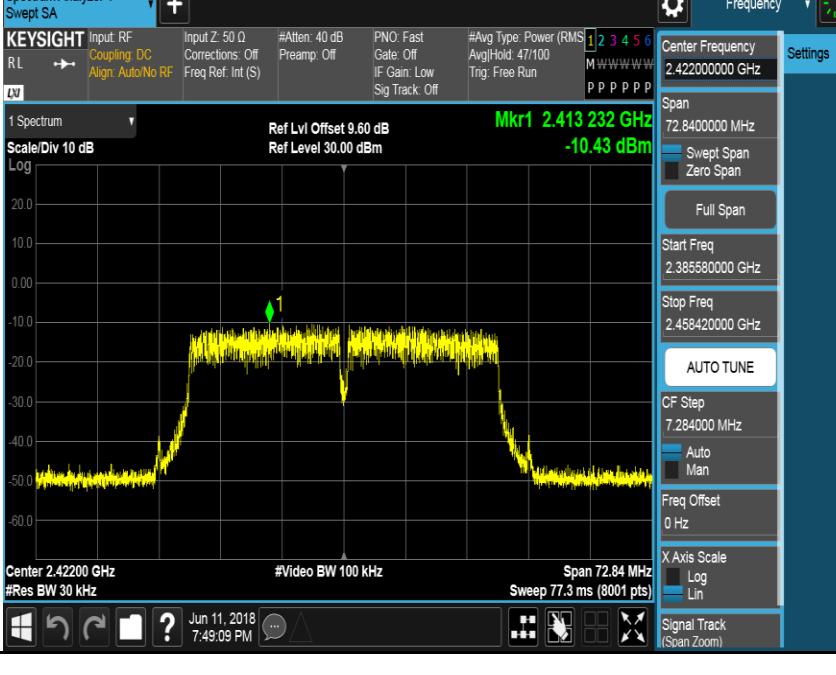
Antenna1

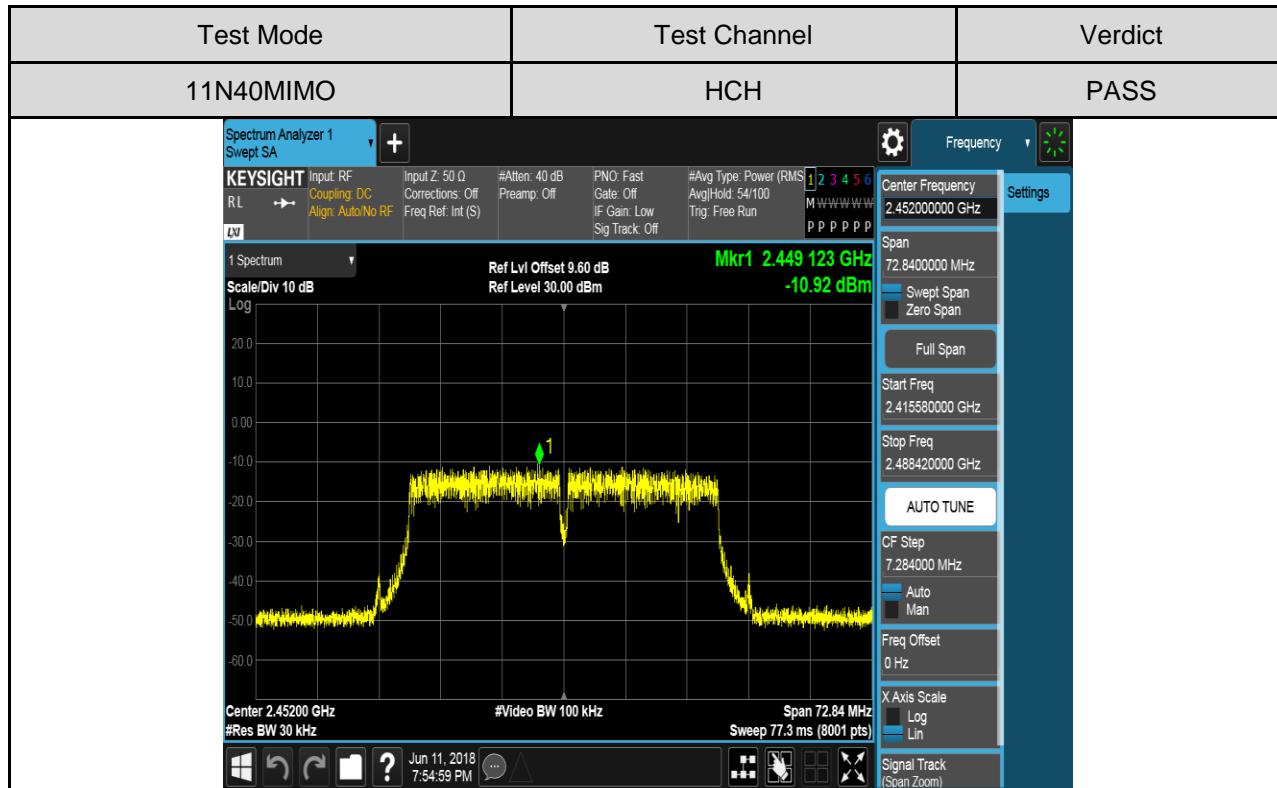
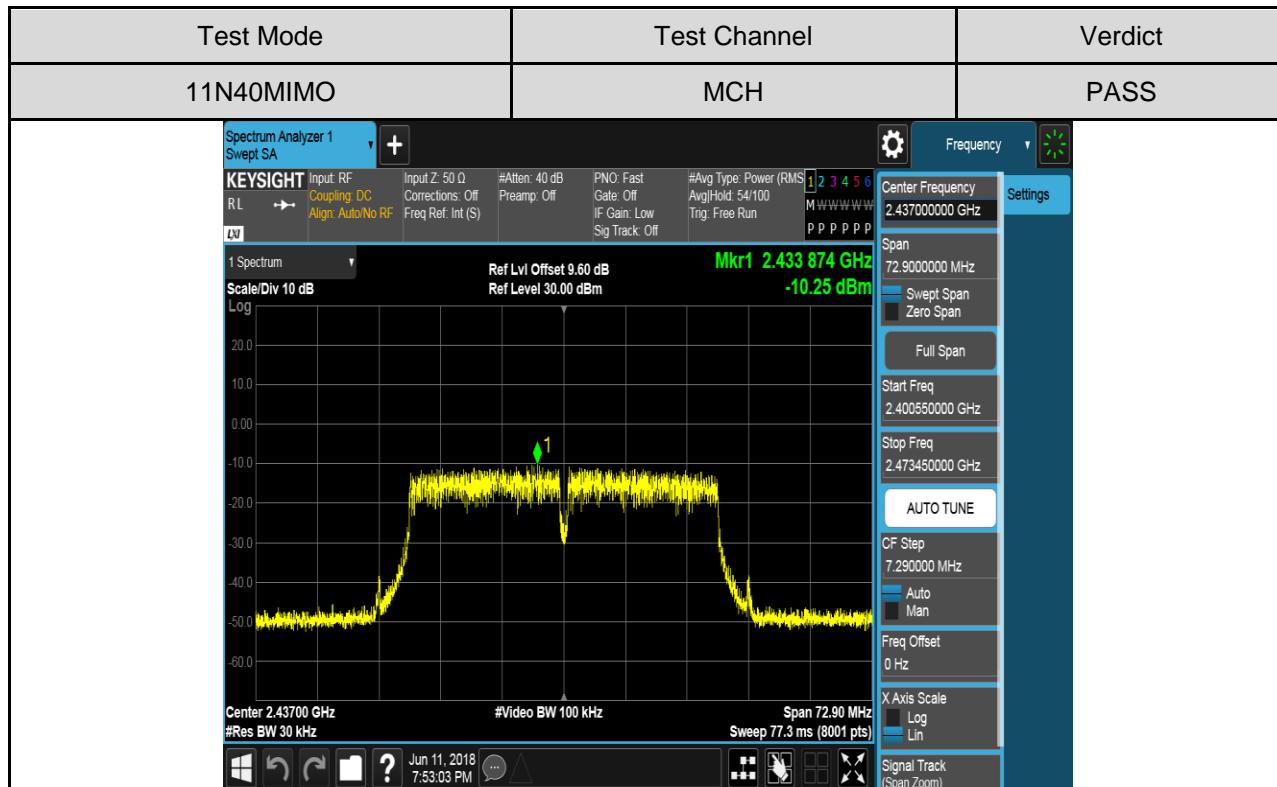






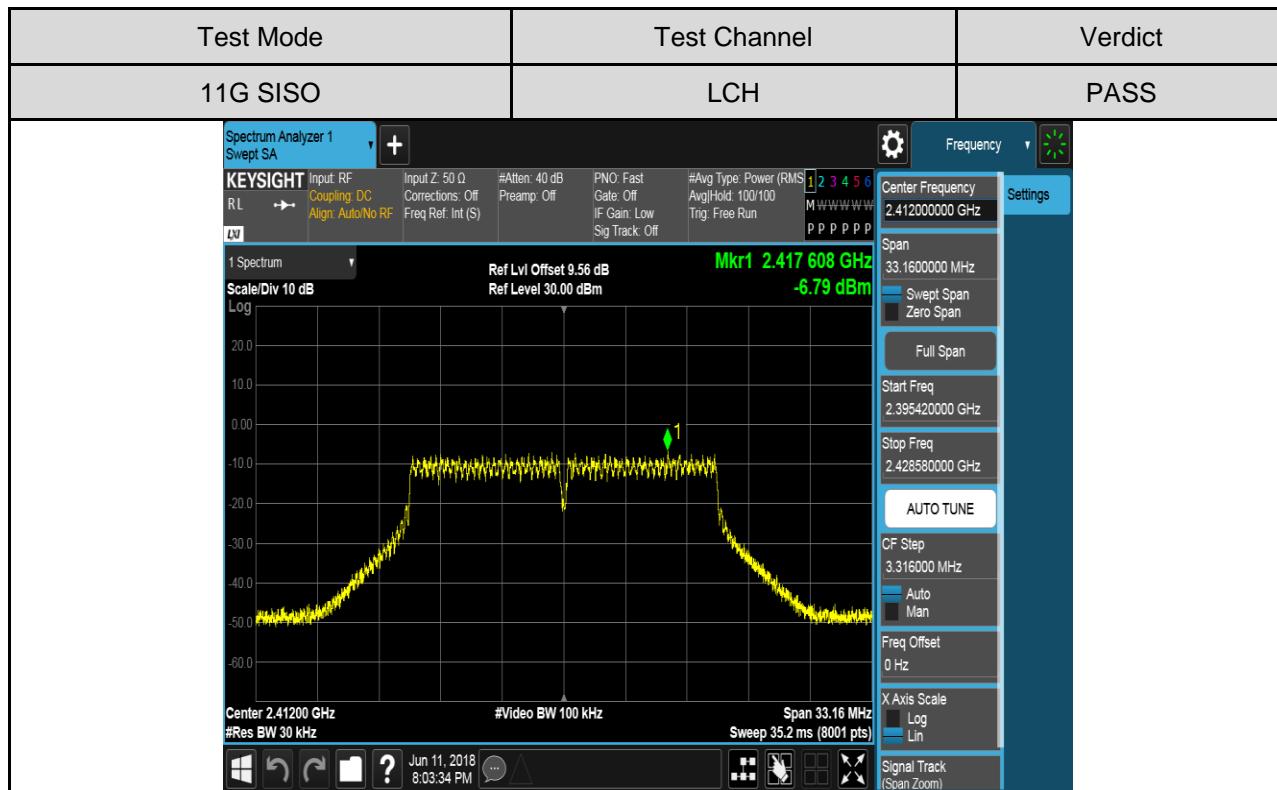
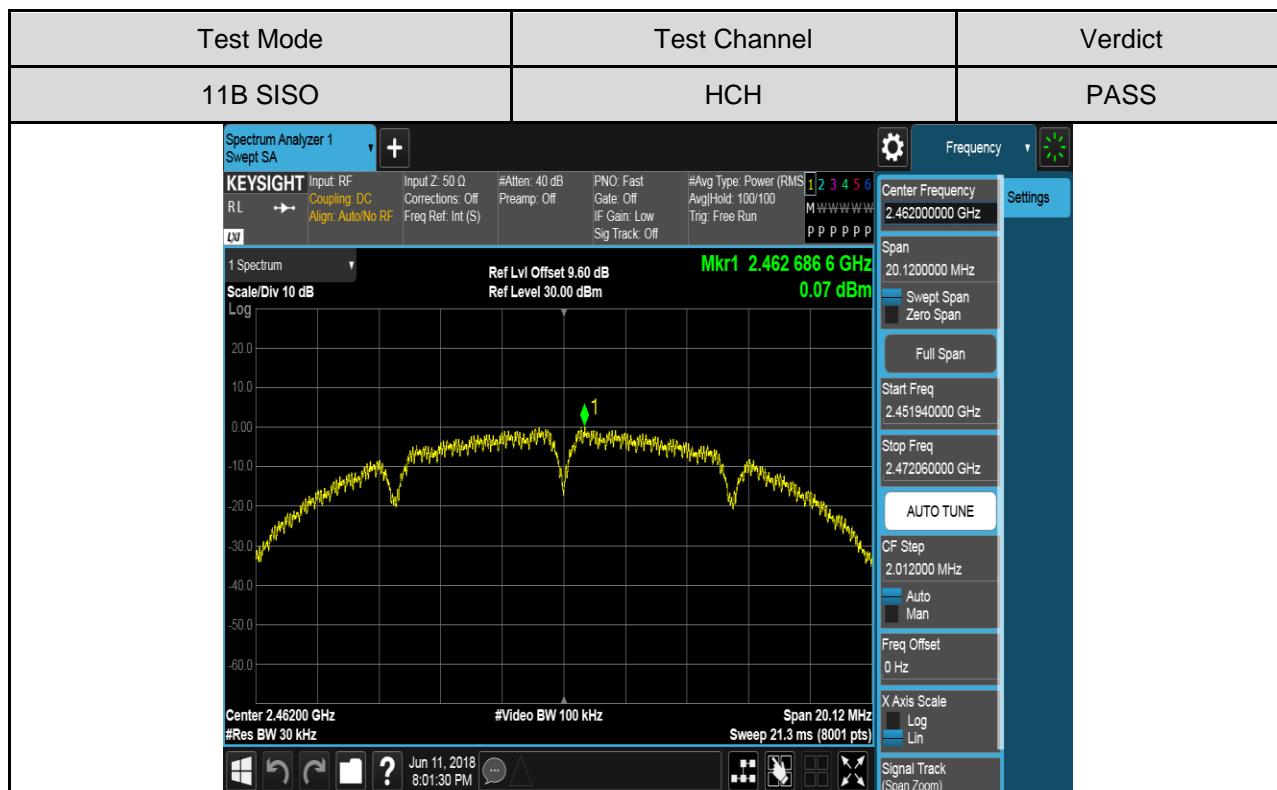
Test Mode	Test Channel	Verdict
11N20MIMO	LCH	PASS
	 <p>KEYSIGHT Input: RF R.L. → Coupling: DC Align: Auto/No RF Input Z: 50 Ω Corrections: Off Freq Ref: Int (S) #Atten: 40 dB Preamp: Off PNO: Fast Gate: Off IF Gain: Low Sig Track: Off #Avg Type: Power (RMS) Avg Hold: 100/100 Trig: Free Run Mkr1 2.412 606 GHz -5.99 dBm</p> <p>1 Spectrum Scale/Div 10 dB Ref Lvl Offset 9.56 dB Ref Level 30.00 dBm Log 20.0 10.0 0.00 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 Center 2.41200 GHz #Video BW 100 kHz Span 35.64 MHz #Res BW 30 kHz Sweep 37.9 ms (8001 pts)</p>	
11N20MIMO	MCH	PASS
	 <p>KEYSIGHT Input: RF R.L. → Coupling: DC Align: Auto/No RF Input Z: 50 Ω Corrections: Off Freq Ref: Int (S) #Atten: 40 dB Preamp: Off PNO: Fast Gate: Off IF Gain: Low Sig Track: Off #Avg Type: Power (RMS) Avg Hold: 100/100 Trig: Free Run Mkr1 2.430 112 GHz -6.61 dBm</p> <p>1 Spectrum Scale/Div 10 dB Ref Lvl Offset 9.60 dB Ref Level 30.00 dBm Log 20.0 10.0 0.00 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 Center 2.43700 GHz #Video BW 100 kHz Span 35.62 MHz #Res BW 30 kHz Sweep 37.9 ms (8001 pts)</p>	

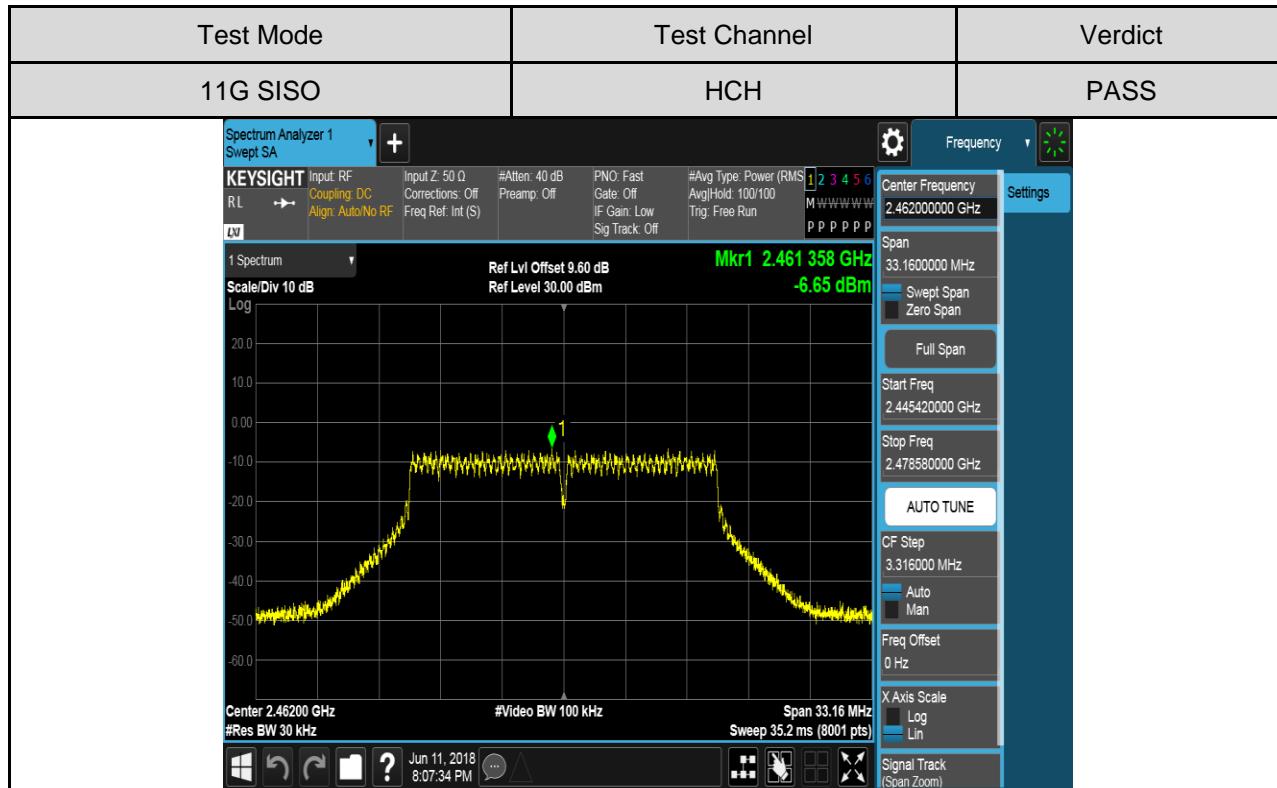
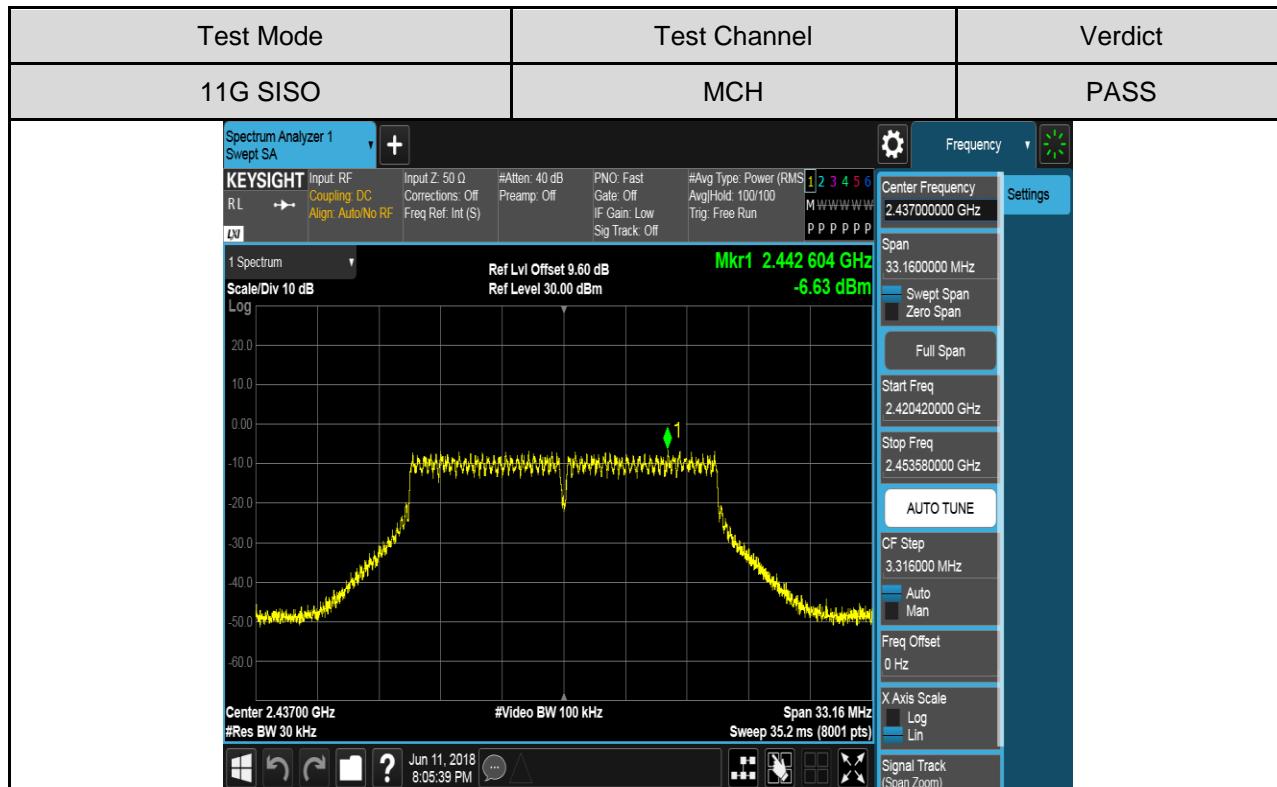
Test Mode	Test Channel	Verdict
11N20MIMO	HCH	PASS
		
11N40MIMO	LCH	PASS
		

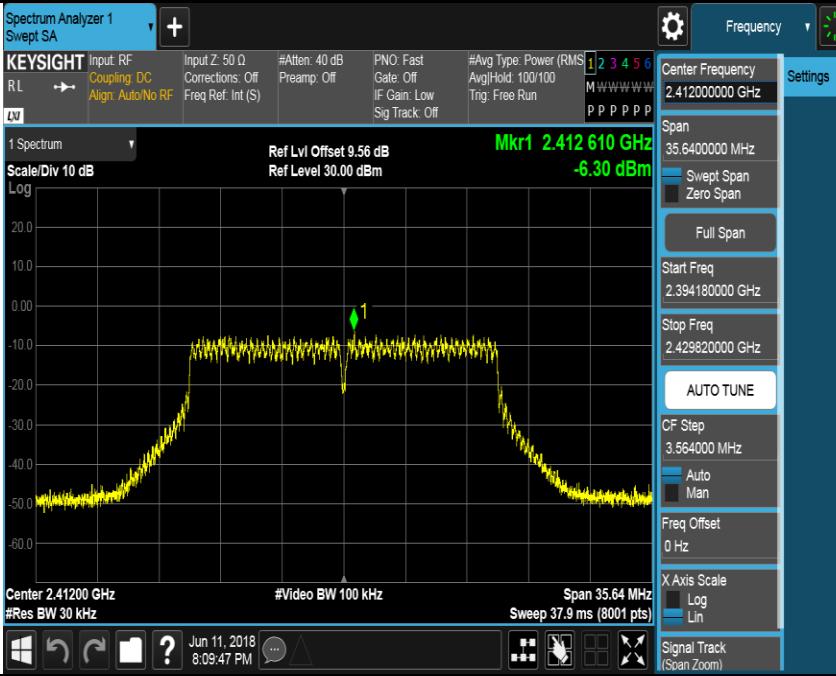


Antenna 2

Test Mode	Test Channel	Verdict
11B SISO	LCH	PASS
		
11B SISO	MCH	PASS
		





Test Mode	Test Channel	Verdict
11N20MIMO	LCH	PASS
		
11N20MIMO	MCH	PASS
	