



## FCC 47 CFR PART 15 SUBPART C

### CERTIFICATION TEST REPORT

*For*

#### IP CAMERA

MODEL NUMBER: DH-IPC-HFW1430DS-SAW

#### ADDITIONAL MODEL NUMBER:

DH-IPC-HFW1230DS-SAW, DH-IPC-HFW1430DS-SAW, IPC-HFW1230DS-SAW,  
IPC-HFW1430DS-SAW, N21BD42-W, N21BD43-W, N41BD42-W, N41BD43-W,  
DH-IPC-HFW1230DS-SAW-0280B, IPC-HFW1230DS-SAW-0280B,  
DH-IPC-HFW1230DS-SAW-0360B, IPC-HFW1230DS-SAW-0360B,  
DH-IPC-HFW1430DS-SAW-0280B, IPC-HFW1430DS-SAW-0280B,  
DH-IPC-HFW1430DS-SAW-0360B, IPC-HFW1430DS-SAW-0360B

PROJECT NUMBER: 4790320707

REPORT NUMBER: 4790320707-1

FCC ID: SVNDH-IPC-HFW1X3

ISSUE DATE: Mar. 18, 2022

*Prepared for*

**Zhejiang Dahua Vision Technology Co., Ltd.**

*Prepared by*

**UL-CCIC COMPANY LIMITED**

**No. 2, Chengwan Road, Suzhou Industrial Park, People's Republic of China**

**Tel: +86 512-6808 6400**

**Fax: +86 512-6808 4099**

**Website: [www.ul.com](http://www.ul.com)**

Form-ULID-008536-9 V1.0

The results reported herein have been performed in accordance with the laboratory's terms of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory. The results in this report apply to the test sample(s) mentioned above at the time of the testing period only and are not to be used to indicate applicability to other similar products.

Revision History

Rev.	Issue Date	Revisions	Revised By
V0	03/18/2022	Initial Issue	-

## TABLE OF CONTENTS

<b>1. ATTESTATION OF TEST RESULTS .....</b>	<b>4</b>
<b>2. TEST METHODOLOGY .....</b>	<b>6</b>
<b>3. FACILITIES AND ACCREDITATION .....</b>	<b>6</b>
<b>4. CALIBRATION AND UNCERTAINTY .....</b>	<b>7</b>
4.1. <i>MEASURING INSTRUMENT CALIBRATION .....</i>	7
4.2. <i>MEASUREMENT UNCERTAINTY.....</i>	7
<b>5. EQUIPMENT UNDER TEST .....</b>	<b>8</b>
5.1. <i>DESCRIPTION OF EUT .....</i>	8
5.2. <i>MAXIMUM OUTPUT POWER.....</i>	9
5.3. <i>CHANNEL LIST .....</i>	9
5.4. <i>TEST CHANNEL CONFIGURATION.....</i>	10
5.5. <i>THE WORSE CASE POWER SETTING PARAMETER.....</i>	10
5.6. <i>DESCRIPTION OF AVAILABLE ANTENNAS .....</i>	11
5.7. <i>THE WORSE CASE CONFIGURATIONS .....</i>	11
5.8. <i>TEST ENVIRONMENT .....</i>	12
5.9. <i>DESCRIPTION OF TEST SETUP.....</i>	12
5.10. <i>MEASURING INSTRUMENT AND SOFTWARE USED .....</i>	14
<b>6. MEASUREMENT METHODS .....</b>	<b>14</b>
<b>7. ANTENNA PORT TEST RESULTS .....</b>	<b>16</b>
7.1. <i>ON TIME AND DUTY CYCLE.....</i>	16
7.2. <i>6 dB BANDWIDTH.....</i>	19
7.3. <i>CONDUCTED OUTPUT POWER.....</i>	27
7.4. <i>POWER SPECTRAL DENSITY .....</i>	29
7.5. <i>CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS.....</i>	37
7.6. <i>RADIATED TEST RESULTS .....</i>	63
7.6.1. <i>LIMITS AND PROCEDURE .....</i>	63
7.6.2. <i>TEST ENVIRONMENT .....</i>	69
7.6.3. <i>RESTRICTED BANDEDGE .....</i>	69
7.6.4. <i>SPURIOUS EMISSIONS .....</i>	86
<b>8. AC POWER LINE CONDUCTED EMISSIONS .....</b>	<b>142</b>
<b>9. ANTENNA REQUIREMENTS.....</b>	<b>145</b>

## 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.

### EUT Description

Product Name: IP CAMERA  
Model Name: DH-IPC-HFW1430DS-SAW  
Additional No.: DH-IPC-HFW1230DS-SAW, DH-IPC-HFW1430DS-SAW, IPC-HFW1230DS-SAW, IPC-HFW1430DS-SAW, N21BD42-W, N21BD43-W, N41BD42-W, N41BD43-W, DH-IPC-HFW1230DS-SAW-0280B, IPC-HFW1230DS-SAW-0280B, DH-IPC-HFW1230DS-SAW-0360B, IPC-HFW1230DS-SAW-0360B, DH-IPC-HFW1430DS-SAW-0280B, IPC-HFW1430DS-SAW-0280B, DH-IPC-HFW1430DS-SAW-0360B, IPC-HFW1430DS-SAW-0360B  
Model Difference: These models are only different from silkscreen and logo.  
Sample Number: 4725319  
Data of Receipt Sample: Mar. 03, 2022  
Test Date: Mar. 03, 2022 ~ Mar. 17, 2022

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

Summary of Test Results			
Clause	Test Items	FCC Rules	Test Results
1	6db DTS Bandwidth	FCC 15.247 (a) (2)	PASS
2	Conducted Power	FCC 15.247 (b) (3)	PASS
3	Power Spectral Density	FCC 15.247 (e)	PASS
4	Conducted Band edge And Spurious emission	FCC 15.247 (d)	PASS
5	Radiated Band edges and Spurious emission	FCC 15.247 (d) FCC 15.209 FCC 15.205	PASS
6	Conducted Emission Test for AC Power Port	FCC 15.207	PASS
7	Antenna Requirement	FCC 15.203	PASS

Remark:

1) The measurement result for the sample received is <Pass> according to < ANSI C63.10-2013, FCC CFR 47 Part 2, FCC CFR 47 Part 15C> when <Accuracy Method> decision rule is applied.

Prepared By:



---

Kitty Li  
Engineer

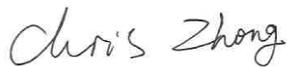
Reviewed By:



---

Leon Wu  
Senior Project Engineer

Authorized By:



---

Chris Zhong  
Laboratory Leader

## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC KDB 558074 D01 15.247 Meas Guidance v05r02, KDB 414788 D01 Radiated Test Site v01r01, ANSI C63.10-2013, FCC CFR 47 Part 2, FCC CFR 47 Part 15.

## 3. FACILITIES AND ACCREDITATION

Accreditation Certificate	<p><b>A2LA (Certificate No.: 4829.01)</b> <b>UL-CCIC COMPANY LIMITED has been assessed and proved to be in compliance with A2LA.</b></p> <p><b>FCC (FCC Designation No.: CN1247)</b> <b>UL-CCIC COMPANY LIMITED has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules.</b></p> <p><b>IC (IC Designation No.: 25056 CAB No.: CN0073)</b> <b>UL-CCIC COMPANY LIMITED has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules.</b></p>
---------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Note 1: All tests measurement facilities use to collect the measurement data are located at No. 2, Chengwan Road, Suzhou Industrial Park, Suzhou 215122, People's Republic of China

Note 2: For below 30MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. These measurements below 30MHz had been correlated to measurements performed on an OFS.

Note 3: The test anechoic chamber in UL-CCIC COMPANY LIMITED 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.

## 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
Conduction emission	3.1dB
Radiation Emission test (include Fundamental emission) (9kHz-30MHz)	3.4dB
Radiation Emission test (include Fundamental emission) (30MHz-1GHz)	3.4dB
Radiation Emission test (1GHz to 26.5GHz) (include Fundamental emission)	3.9dB (1GHz-18GHz)
	4.2dB (18GHz-26.5GHz)
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:	IP CAMERA
Model No.:	DH-IPC-HFW1430DS-SAW
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: DSSS (CCK, DQPSK, DBPSK) IEEE for 802.11G: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11N(HT20 and HT40): OFDM (64QAM, 16QAM, QPSK, BPSK)
Channels Step:	Channels with 5MHz step
Sample Type:	Fixed production
Test power grade:	/
Test software of EUT:	Secure CRT (manufacturer declare)
Antenna Type:	Rod Antenna
Antenna Gain:	4.01 dBi
Test Voltage	AC 120V

## 5.2. MAXIMUM OUTPUT POWER

Number of Transmit Chains (NTX)	IEE Std. 802.11	Channel Number	Max AVG Conducted Power (dBm)
1	IEEE 802.11B	1-11[11]	13.61
1	IEEE 802.11G	1-11[11]	10.05
1	IEEE 802.11N HT20	1-11[11]	9.94
1	IEEE 802.11N HT40	3-9[7]	7.45

## 5.3. CHANNEL LIST

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

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	LCH: CH01 2412
	MCH: CH06 2437
	HCH: CH11 2462
IEEE 802.11G	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

The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band							
Test Software		SecureCRT					
Modulation Mode	Transmit Antenna Number	Test Channel					
		NCB: 20MHz			NCB: 40MHz		
		CH 1	CH 6	CH 11	CH 3	CH 6	CH 9
802.11B	1	N/A	N/A	N/A	/		
802.11G	1	N/A	N/A	N/A			
802.11N HT20	1	N/A	N/A	N/A			
802.11N HT40	1	/		46	46	46	

## 5.6. DESCRIPTION OF AVAILABLE ANTENNAS

Ant.	Frequency (MHz)	Antenna Type	Antenna Gain (dBi)
1	2400-2483.5	Rod Antenna	4.01

Note: This data is provided by customer and our lab isn't responsible for this data.

Test Mode	Transmit and Receive Mode	Description
IEEE 802.11B	<input checked="" type="checkbox"/> 1TX, 1RX	Antenna1 can be used as transmitting/receiving antenna independently.
IEEE 802.11G	<input checked="" type="checkbox"/> 1TX, 1RX	Antenna1 can be used as transmitting/receiving antenna independently.
IEEE 802.11N HT20	<input checked="" type="checkbox"/> 1TX, 1RX	Antenna1 can be used as transmitting/receiving antenna independently.
IEEE 802.11N HT40	<input checked="" type="checkbox"/> 1TX, 1RX	Antenna1 can be used as transmitting/receiving antenna independently.

## 5.7. THE WORSE CASE CONFIGURATIONS

For WIFI module, the worst-case data rates as provided by the client were:

802.11B mode: 1 Mbps  
802.11G mode: 6 Mbps  
802.11N HT20 mode: MCS0  
802.11N HT40 mode: MCS0

## 5.8. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	Description
1	Laptop	ThinkPad	E550c	/
2	Power Adapter	MASS POWER	NBS05C12005 0VU	INPUT: 100-240V~50/60Hz, 0.15A OUTPUT: 12.0V=0.5A

### I/O PORT

Cable No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
1	USB	USB to TTL	USB to TTL	100cm Length	/
2	LAN	LAN	Lan Cable	100cm Length	/

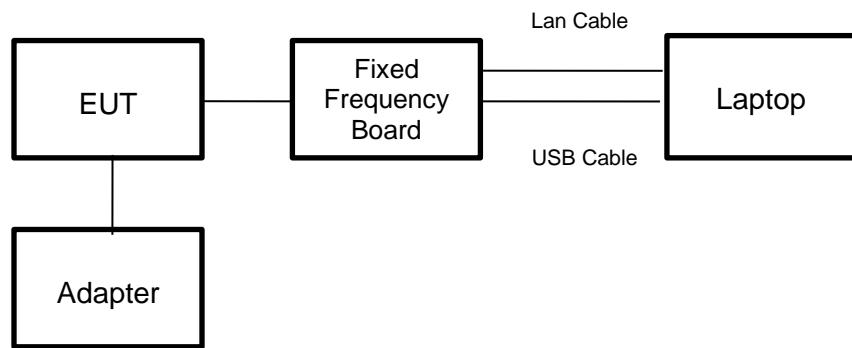
### ACCESSORY

Item	Accessory	Brand Name	Model Name	Description
1	Micro SD Card	Western Digital	WD Purple QD101	32GB

### **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.	Upper Last Cal.	Last Cal.	Next Cal.
<input checked="" type="checkbox"/>	EMI Test Receiver	R&S	ESR3	126700	2020-12-05	2021-12-04	2022-12-03
<input checked="" type="checkbox"/>	Two-Line V-Network	R&S	ENV216	126701	2020-12-05	2021-12-04	2022-12-03
<input checked="" type="checkbox"/>	Artificial Mains Networks	R&S	ENY81	126711	2020-10-13	2021-10-12	2022-10-11
Software							
Used	Description		Manufacturer	Name	Version		
<input checked="" type="checkbox"/>	Test Software for Conducted disturbance		R&S	EMC32	Ver. 9.25		
Radiated Emissions (Instrument)							
Used	Equipment	Manufacturer	Model No.	Serial No.	Upper Last Cal.	Last Cal.	Next Cal.
<input checked="" type="checkbox"/>	Spectrum Analyzer	Keysight	N9010B	155727	2020-05-10	2021-05-09	2022-05-08
<input checked="" type="checkbox"/>	EMI test receiver	R&S	ESR26	126703	2020-12-05	2021-12-04	2022-12-03
<input checked="" type="checkbox"/>	Receiver Antenna (9kHz-30MHz)	Schwarzbeck	FMZB 1513	155456	2018-06-15	2021-06-03	2024-06-02
<input checked="" type="checkbox"/>	Receiver Antenna (30MHz-1GHz)	SunAR RF Motion	JB1	177821	2019-01-19	2022-01-18	2025-01-17
<input checked="" type="checkbox"/>	Receiver Antenna (1GHz-18GHz)	R&S	HF907	126705	2019-01-27	2022-02-28	2025-02-27
<input checked="" type="checkbox"/>	Receiver Antenna (18GHz-26.5GHz)	Schwarzbeck	BBHA9170	126706	2019-01-05	2022-01-04	2025-01-03
<input checked="" type="checkbox"/>	Pre-amplification (To 18GHz)	Compliance Direction System Inc.	PAP-1G18-50	178825	2021-03-26	2022-03-01	2023-02-28
<input checked="" type="checkbox"/>	Pre-amplification (To 26.5GHz)	R&S	SCU-26D	135391	2020-12-05	2021-12-04	2022-12-03
<input checked="" type="checkbox"/>	Band Reject Filter	Wainwright	WRCJV8-2350-2400-2483.5-2533.5-40SS	1	2020-05-10	2021-05-09	2022-05-08
<input checked="" type="checkbox"/>	Highpass Filter	Wainwright	WHKX10-2700-3000-18000-40SS	2	2020-05-10	2021-05-09	2022-05-08
Software							
Used	Description		Manufacturer	Name	Version		
<input checked="" type="checkbox"/>	Test Software for Radiated disturbance		Tonscend	TS+	Ver. 2.5		
Other instruments							
Used	Equipment	Manufacturer	Model No.	Serial No.	Upper Last Cal.	Last Cal.	Next Cal.
<input checked="" type="checkbox"/>	Spectrum Analyzer	Keysight	N9010B	155368	2020-05-10	2021-05-09	2022-05-08
<input checked="" type="checkbox"/>	Power Meter	Keysight	U2021XA	155370	2020-05-10	2021-05-09	2022-05-08

## 6. MEASUREMENT METHODS

No.	Test Item	KDB Name	Section
1	6dB Bandwidth	KDB 558074 D01 15.247 Meas Guidance v05r02	8.2
2	Output Power	KDB 558074 D01 15.247 Meas Guidance v05r02	8.3.1.3/8.3.2.3
3	Power Spectral Density	KDB 558074 D01 15.247 Meas Guidance v05r02	8.4
4	Out-of-band emissions in non-restricted bands	KDB 558074 D01 15.247 Meas Guidance v05r02	8.5
5	Out-of-band emissions in restricted bands	KDB 558074 D01 15.247 Meas Guidance v05r02	8.6
6	Band-edge	KDB 558074 D01 15.247 Meas Guidance v05r02	8.7
7	Conducted Emission Test for AC Power Port	ANSI C63.10-2013	6.2

## 7. ANTENNA PORT TEST RESULTS

### 7.1. ON TIME AND DUTY CYCLE

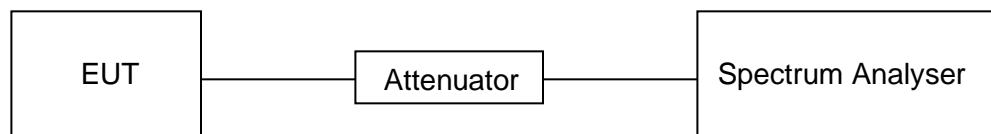
#### LIMITS

None; for reporting purposes only

#### PROCEDURE

FCC KDB 558074 Zero-Span Spectrum Analyzer Method

#### TEST SETUP



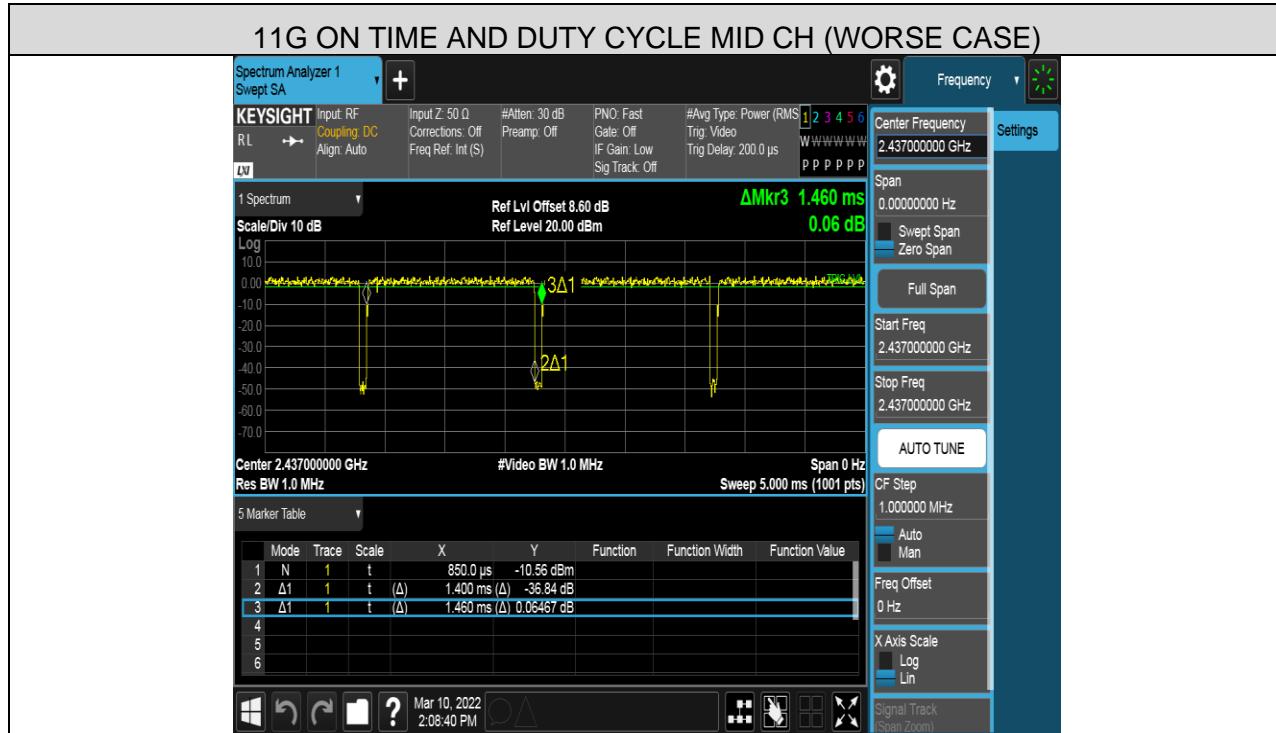
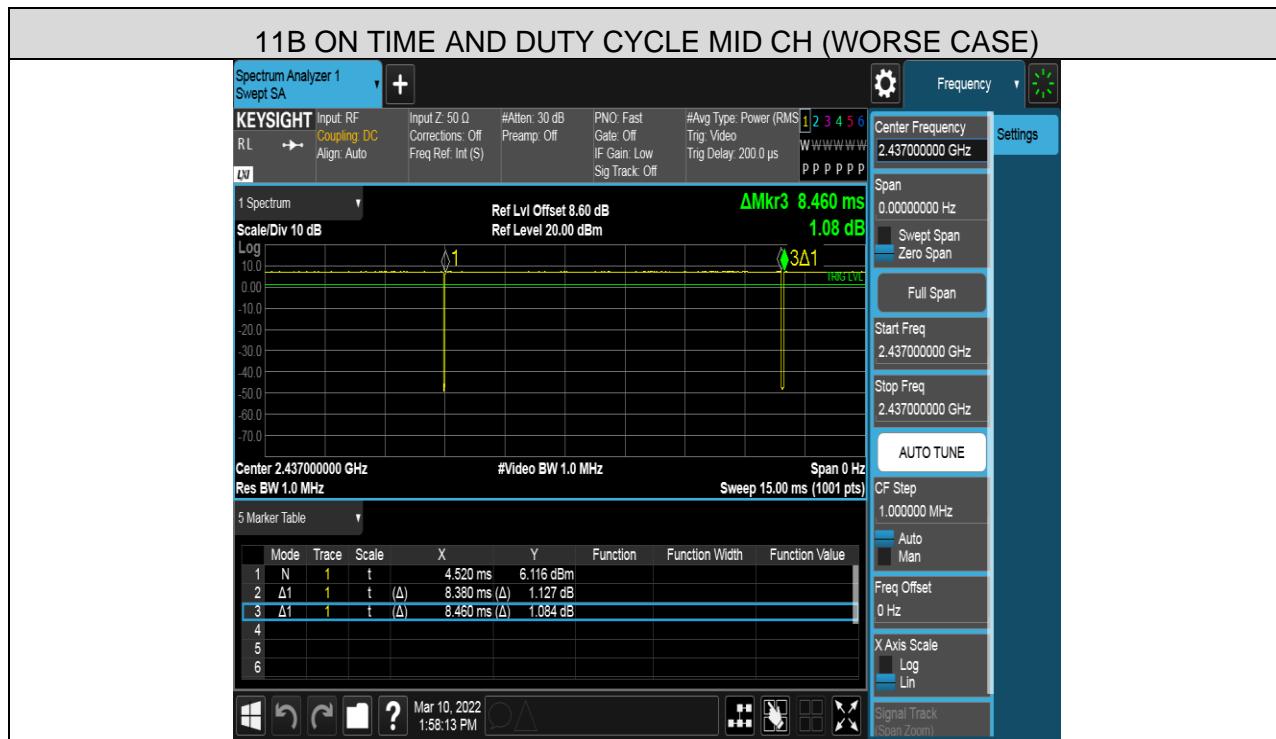
#### TEST ENVIRONMENT

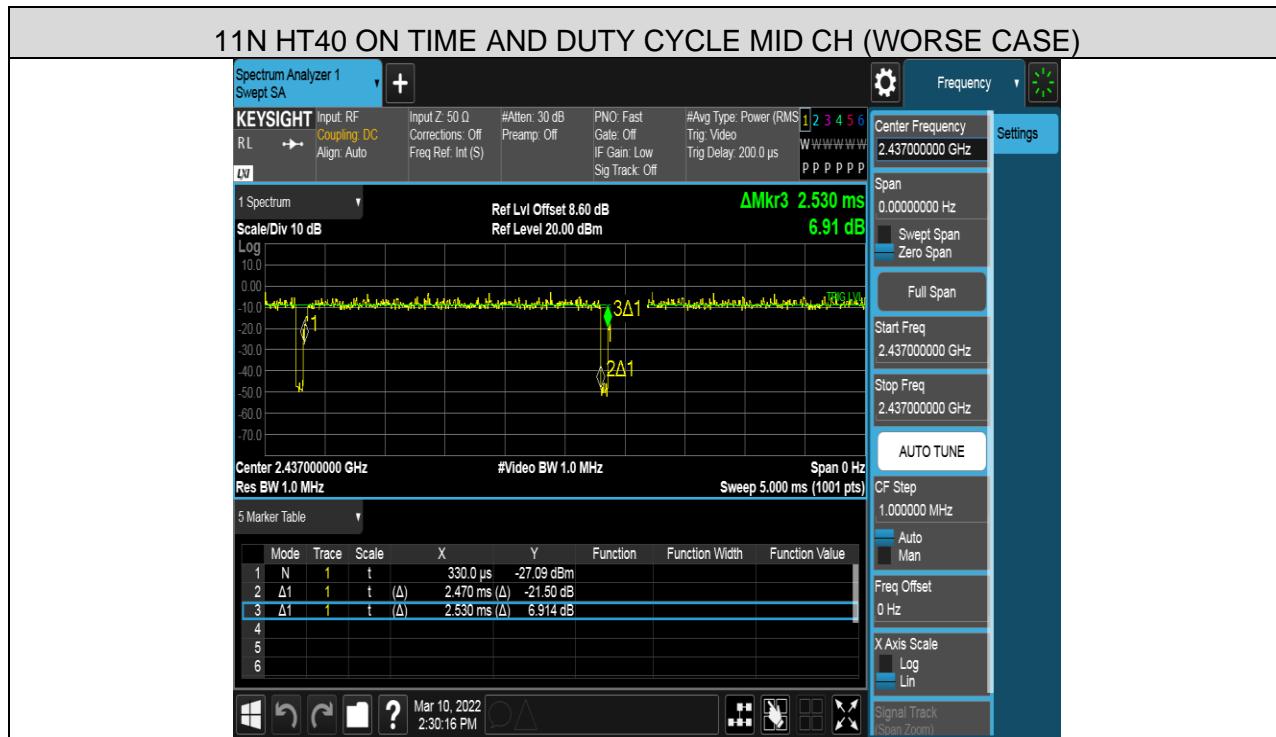
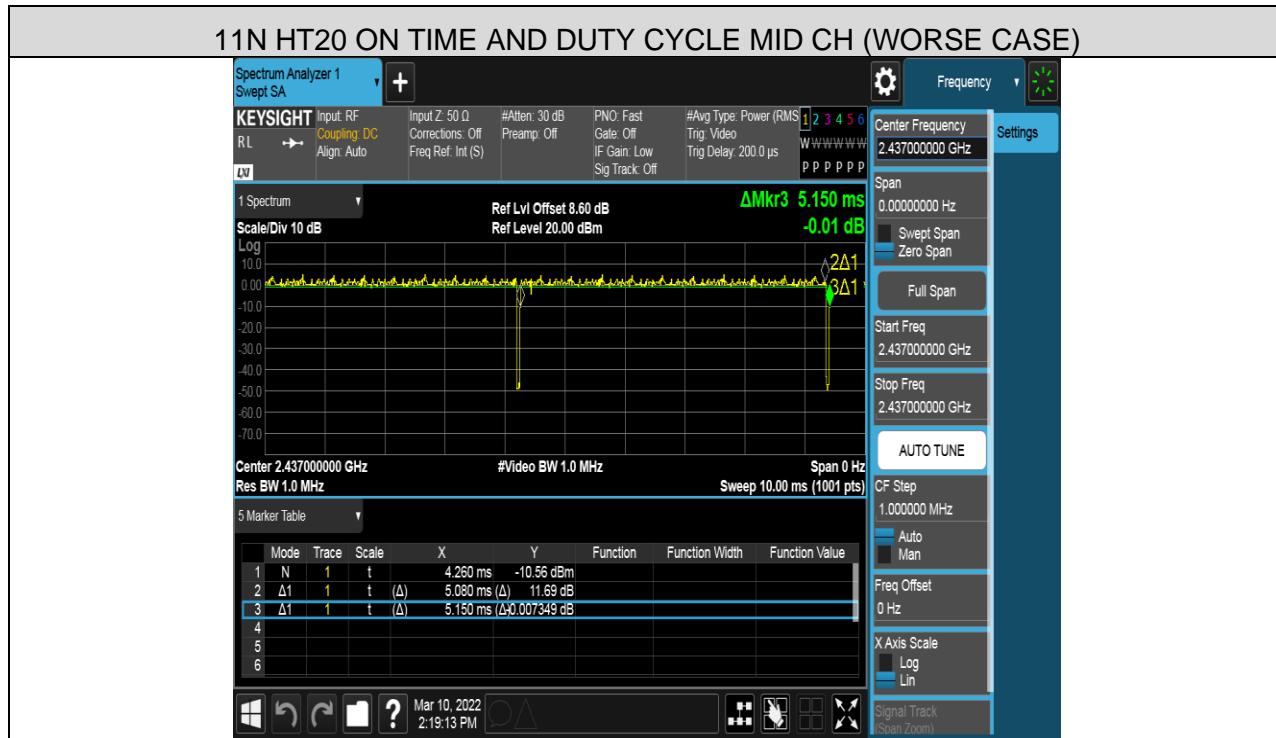
Temperature	21.4°C	Relative Humidity	55.7%
Atmosphere Pressure	101.1kPa	Test Date	2022-03-10

#### TEST RESULTS TABLE

Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (db)	1/T Minimum VBW (kHz)	Final VBW (kHz)
11B	8.38	8.46	0.9905	99.05%	0.04	0.12	0.01
11G	1.4	1.46	0.9589	95.89%	0.18	0.71	1
802.11N HT20	5.08	5.15	0.9864	98.64%	0.06	0.20	0.01
802.11N HT40	2.47	2.53	0.9763	97.63%	0.10	0.40	1

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) The duty cycle is above 98%, so the Final VBW is 10Hz.

TEST GRAPHS



## 7.2. 6 dB BANDWIDTH

### LIMITS

FCC Part15 (15.247), Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
FCC 15.247(a)(2)	6dB Bandwidth	>= 500KHz	2400-2483.5

### TEST PROCEDURE

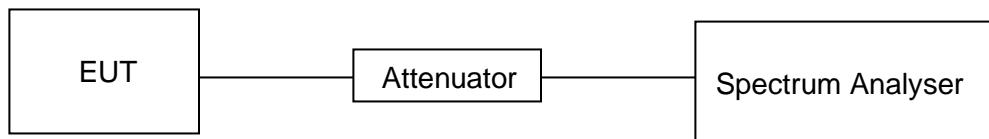
Refer to ANSI C63.10-2013 clause 11.8 for DTS bandwidth.

Connect the EUT 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: $\geq 3 \times$ 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 relative to the maximum level measured in the fundamental emission.

### TEST SETUP

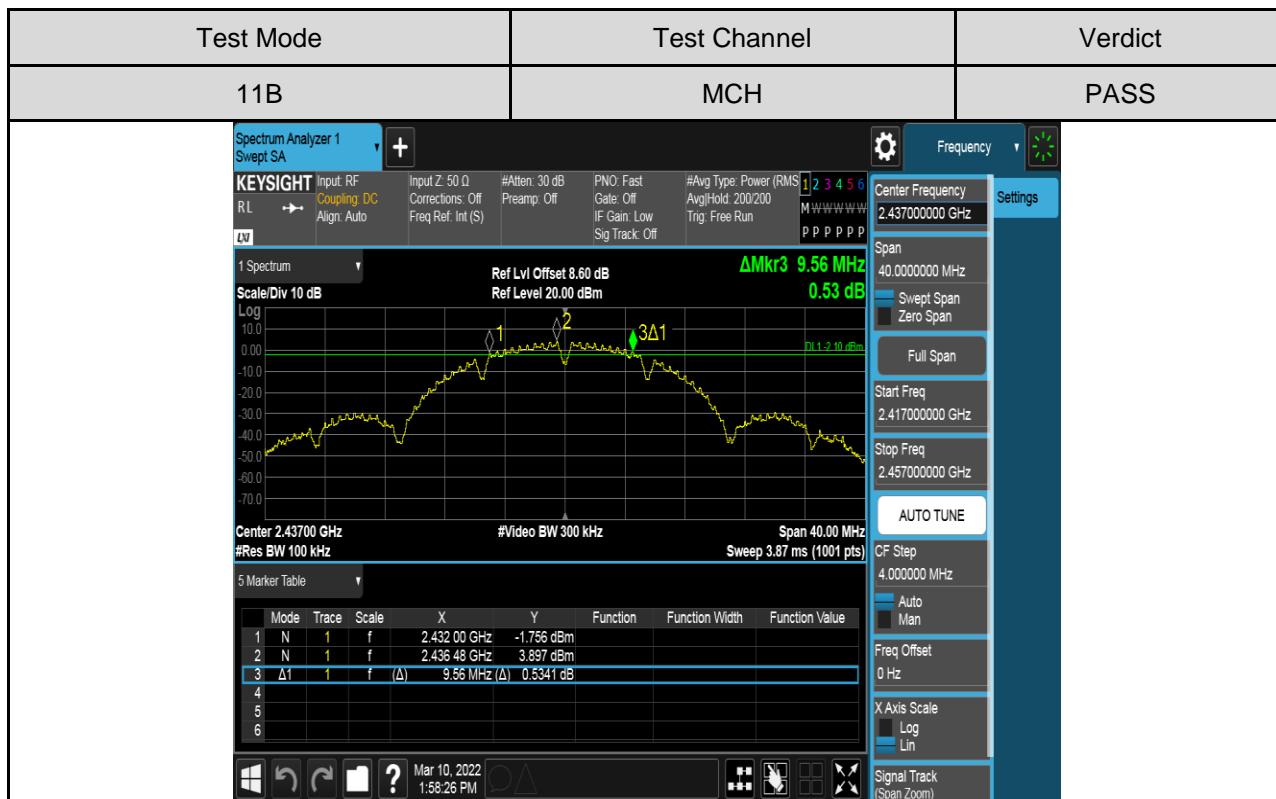
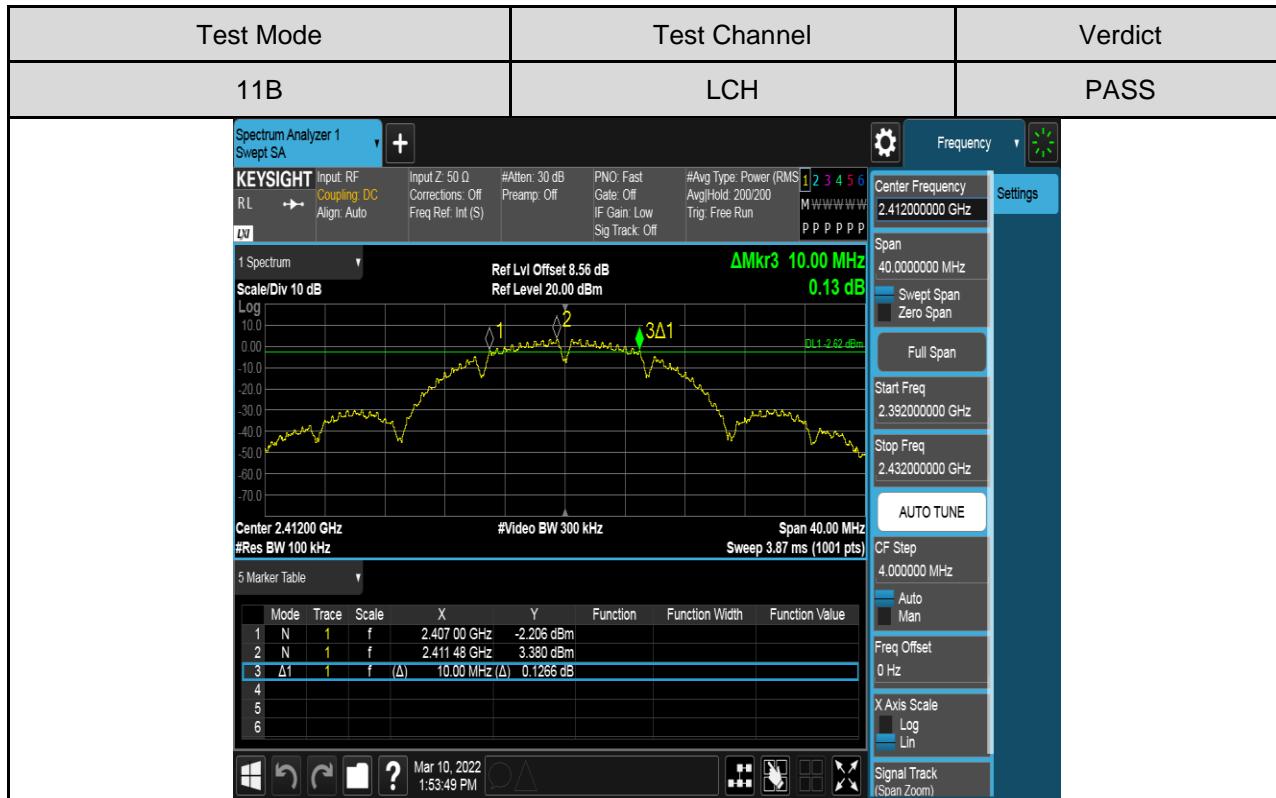


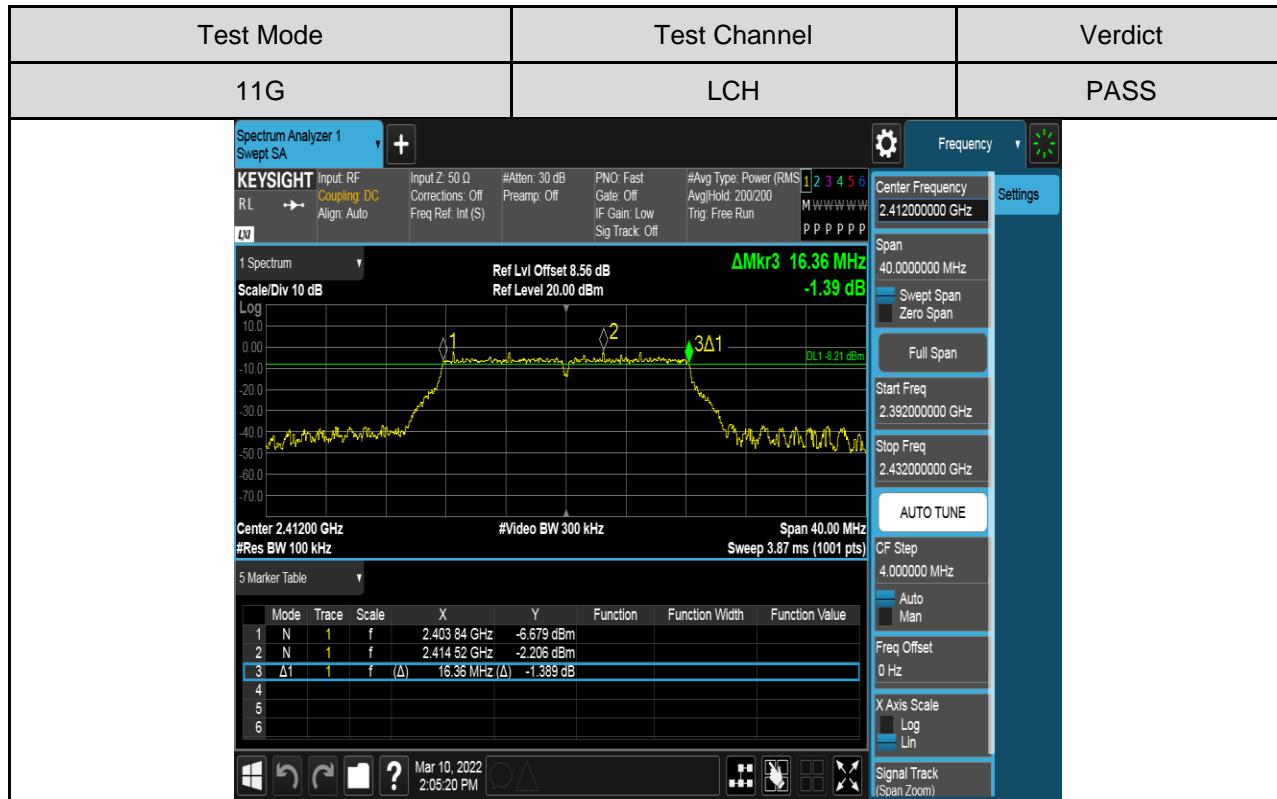
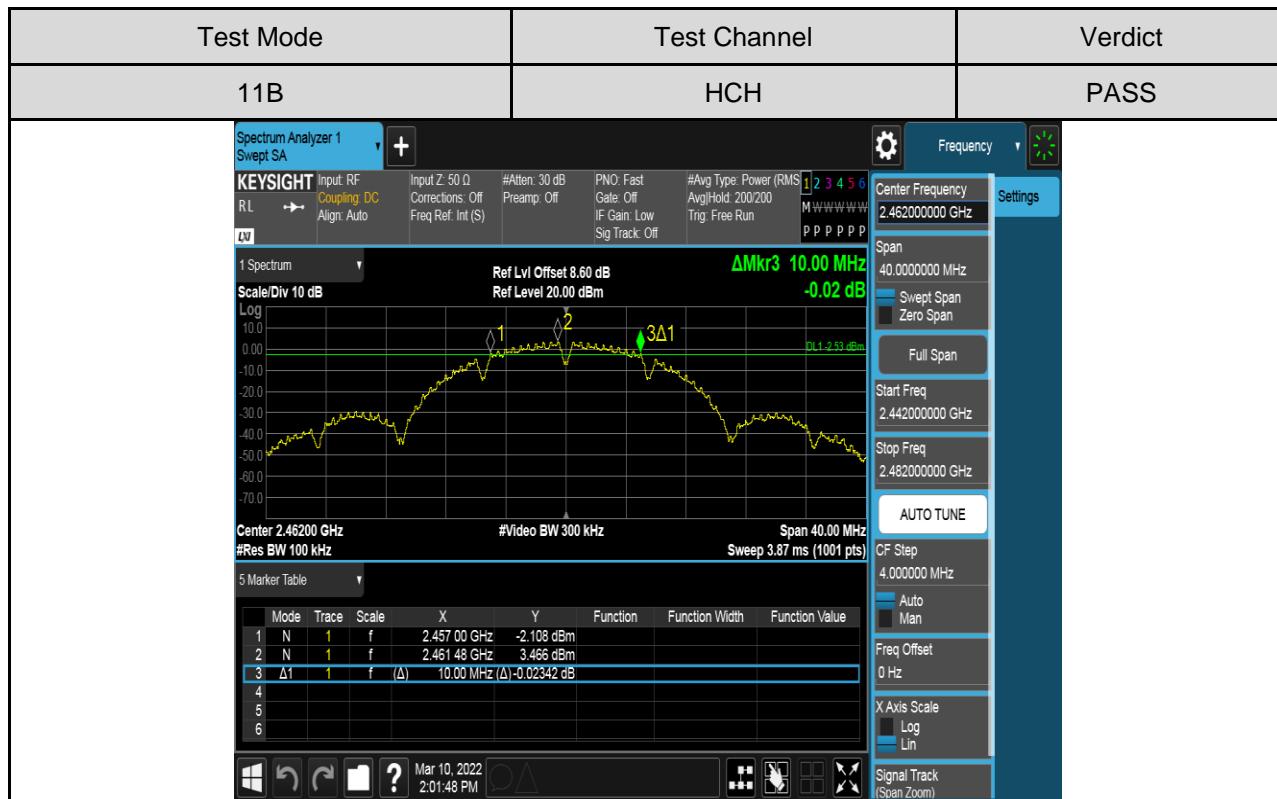
TEST ENVIRONMENT

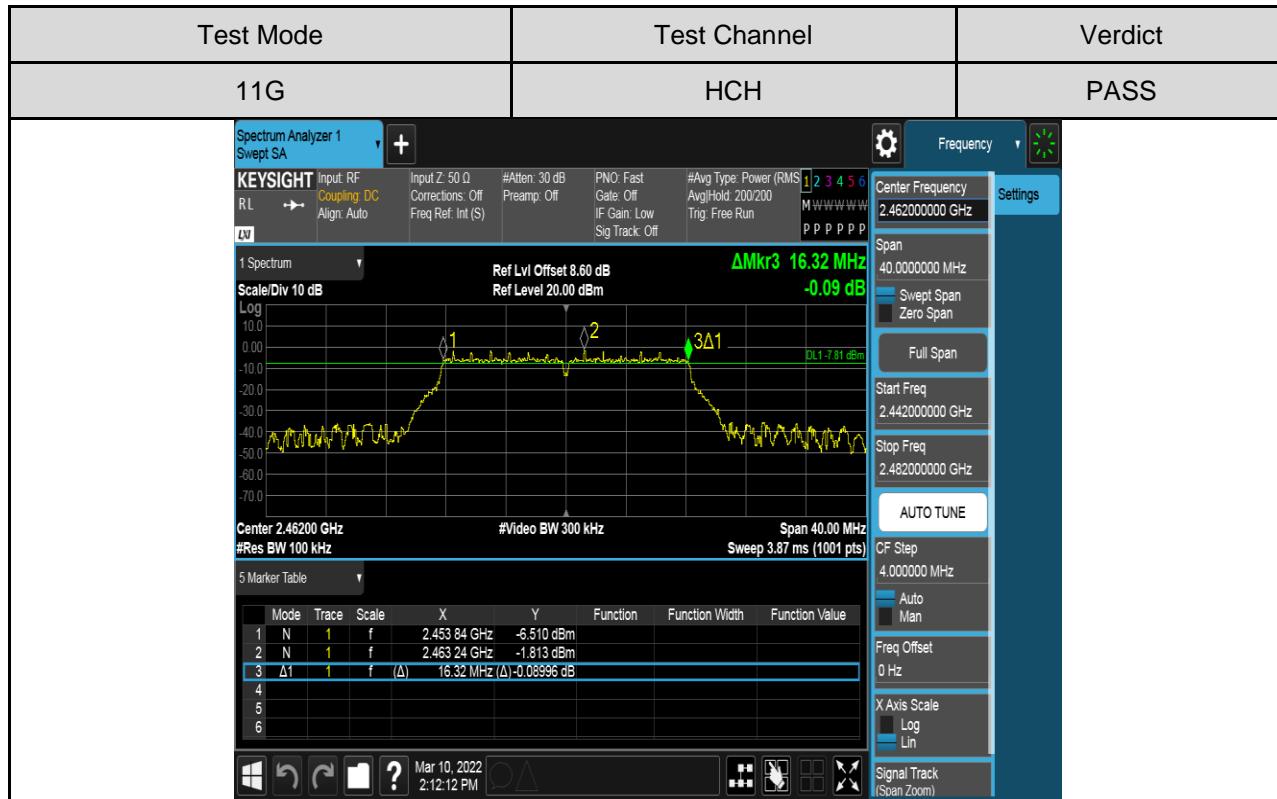
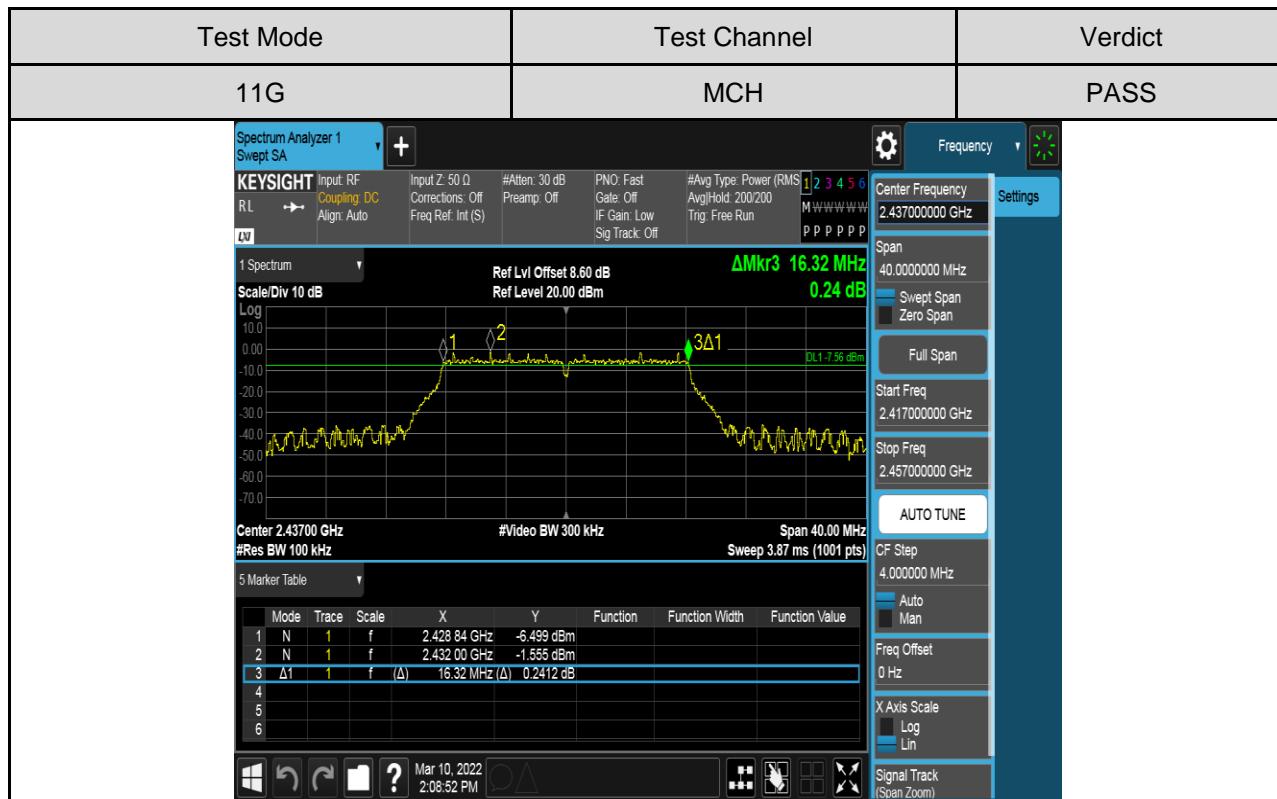
Temperature	21.4°C	Relative Humidity	55.7%
Atmosphere Pressure	101.1kPa	Test Date	2022-03-10

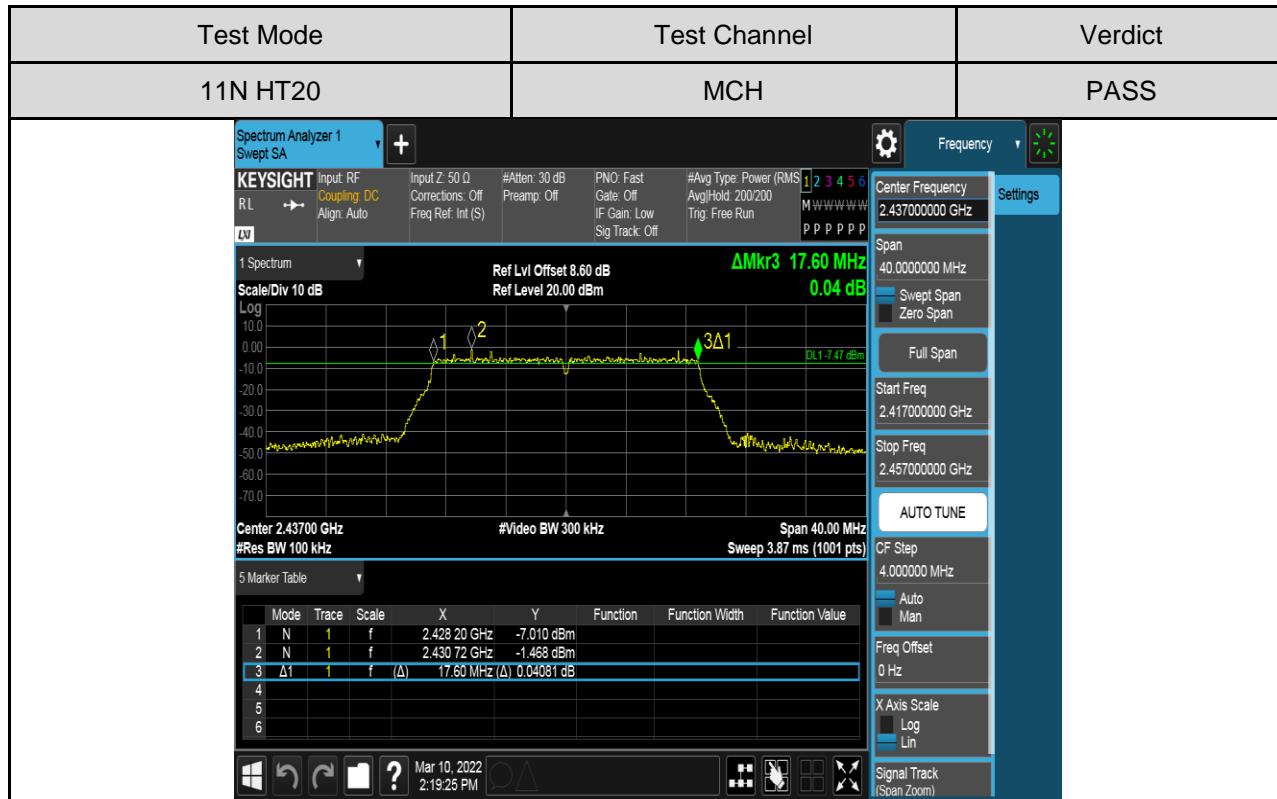
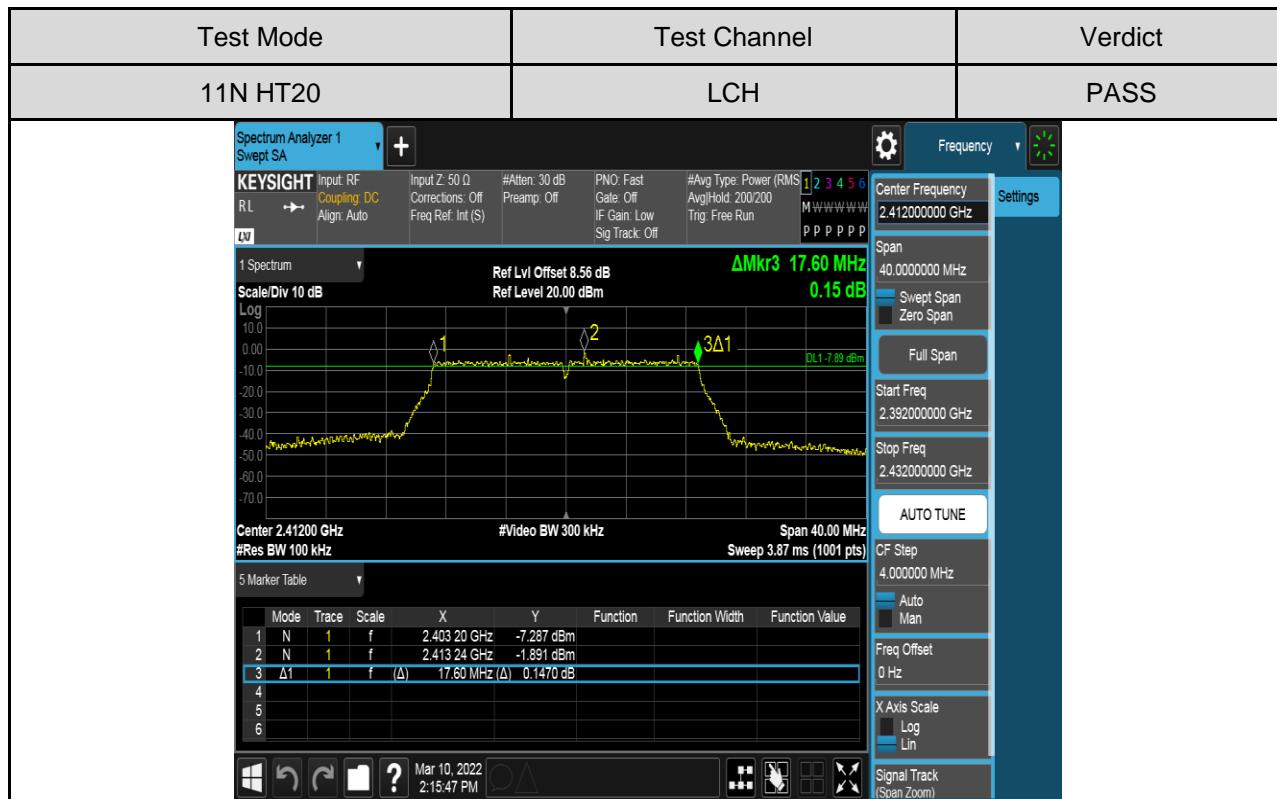
TEST RESULTS TABLE

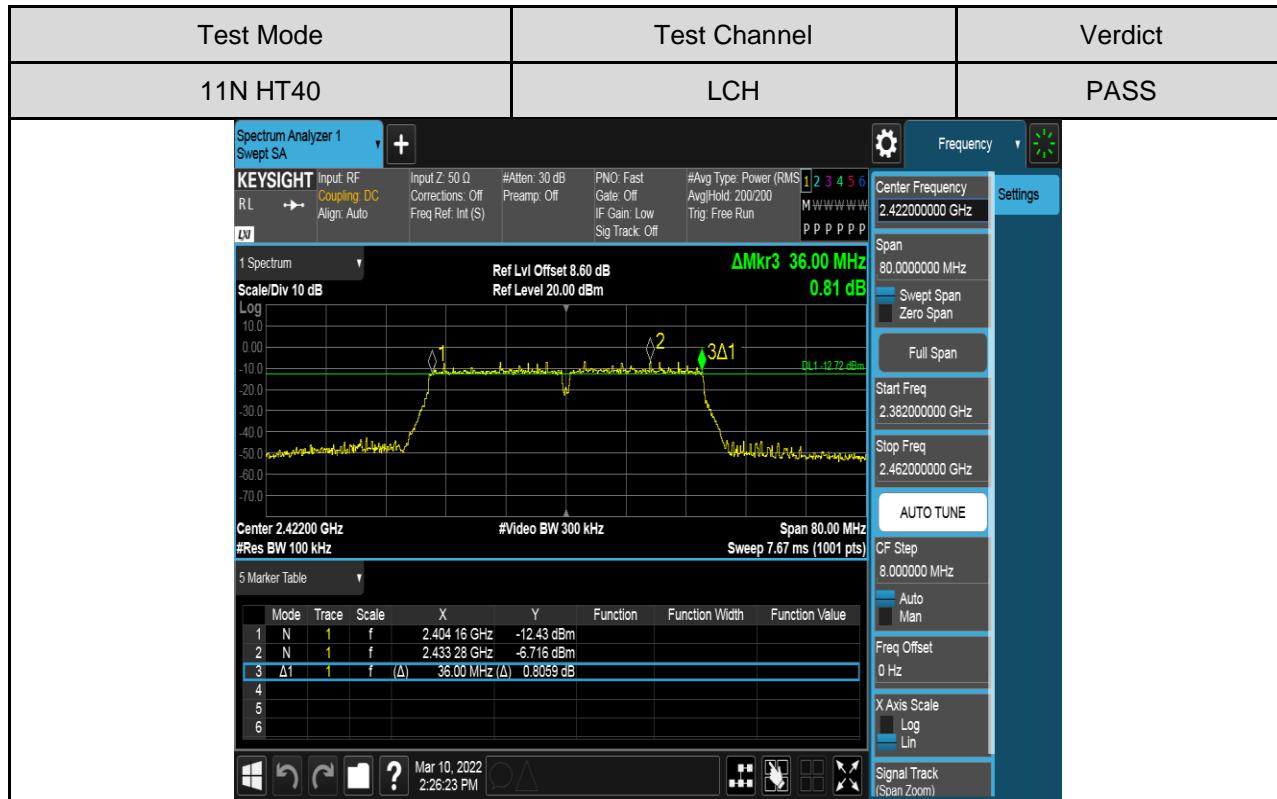
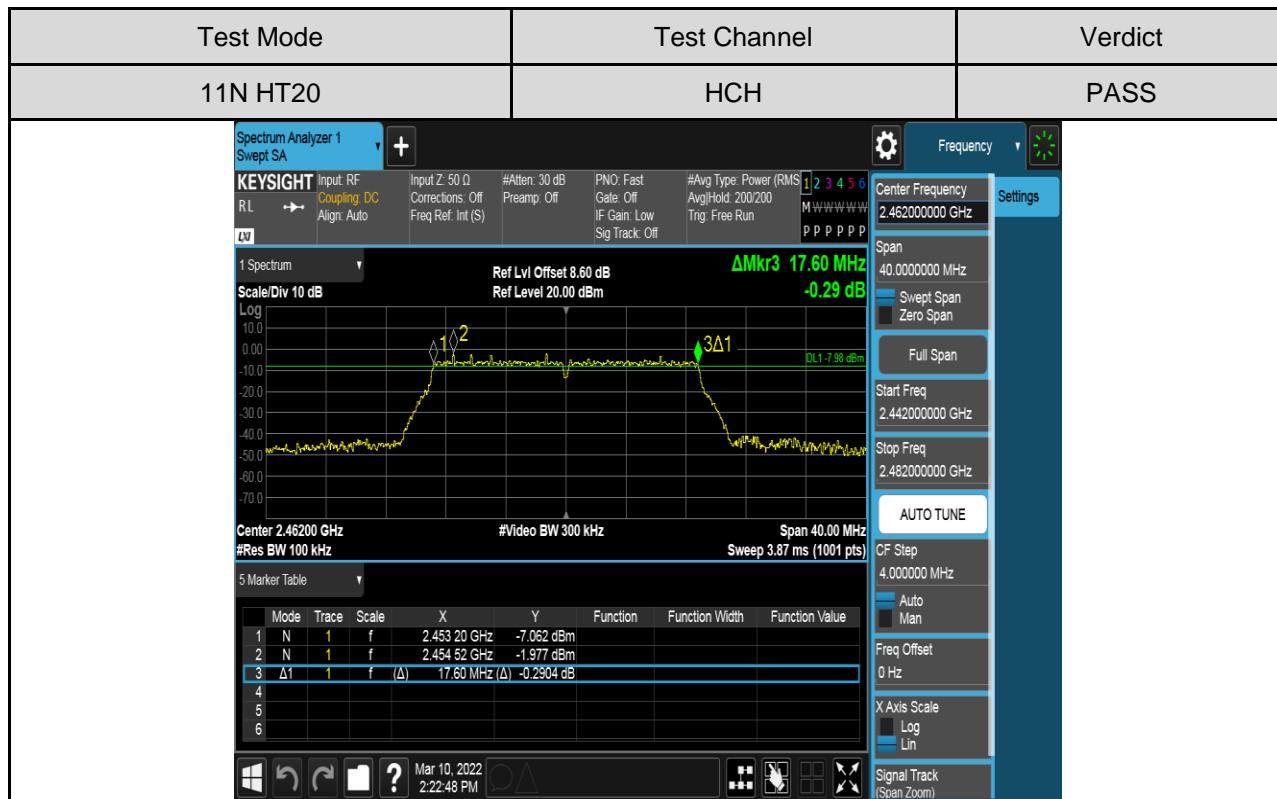
Test Mode	Test Channel	6dB bandwidth (MHz)	Result
11B	LCH	10.00	Pass
	MCH	9.56	Pass
	HCH	10.00	Pass
11G	LCH	16.36	Pass
	MCH	16.32	Pass
	HCH	16.32	Pass
11N HT20	LCH	17.60	Pass
	MCH	17.60	Pass
	HCH	17.60	Pass
11N HT40	LCH	36.00	Pass
	MCH	36.32	Pass
	HCH	36.32	Pass

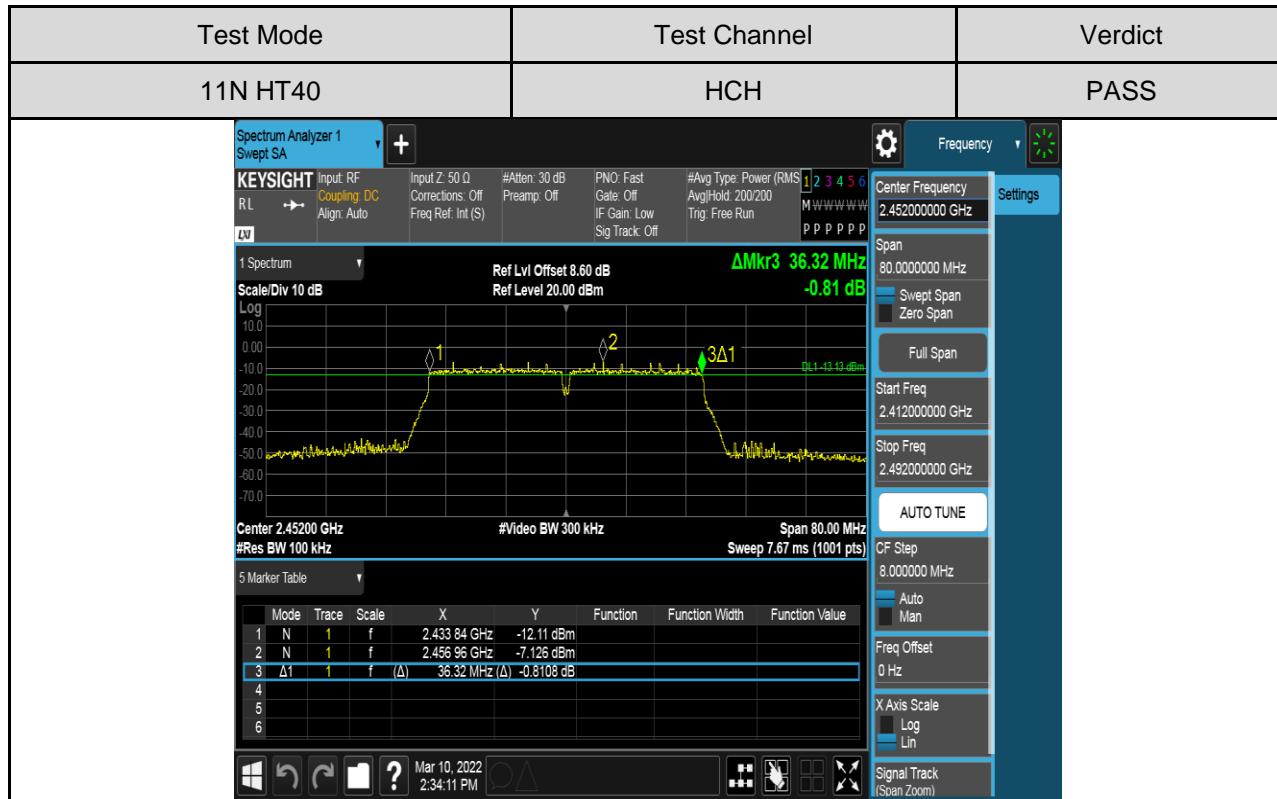
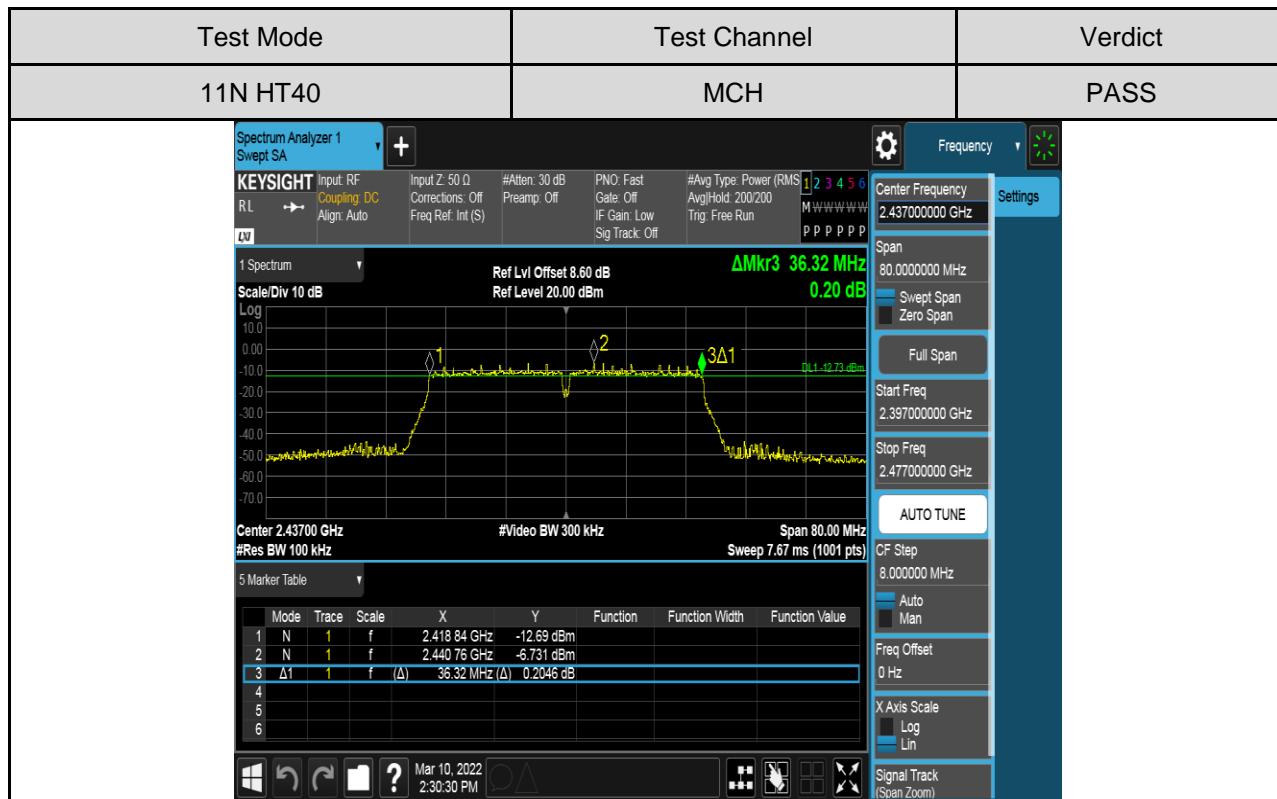
**TEST GRAPHS**
**6dB Bandwidth**












### 7.3. CONDUCTED OUTPUT POWER

#### LIMITS

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

#### TEST PROCEDURE

Place the EUT on the table and set it in the transmitting mode.

Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Power sensor.

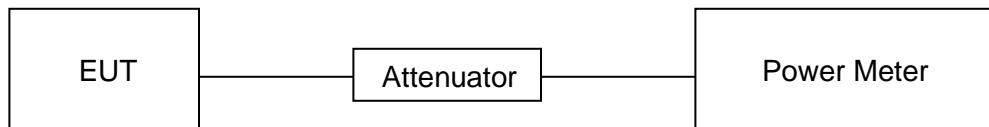
Measure the power of each channel.

AVG Detector used for AVG result.

#### TEST ENVIRONMENT

Temperature	21.4°C	Relative Humidity	55.7%
Atmosphere Pressure	101.1kPa	Test Date	2022-03-10

#### TEST SETUP



TEST RESULTS TABLE

<b>Test Mode</b>	<b>Test Channel</b>	<b>Measurement Output Power (AV)</b>	<b>10log(1/x) Factor</b>	<b>Maximum Average Conducted Output Power (dBm)</b>	<b>LIMIT</b>
		<b>dBm</b>	<b>dBm</b>	<b>dBm</b>	<b>dBm</b>
11B	LCH	13.08	0.04	13.12	30
	MCH	13.57	0.04	13.61	30
	HCH	13.17	0.04	13.21	30
11G	LCH	9.42	0.18	9.60	30
	MCH	9.87	0.18	10.05	30
	HCH	9.52	0.18	9.70	30
11N HT20	LCH	9.44	0.06	9.50	30
	MCH	9.88	0.06	9.94	30
	HCH	9.48	0.06	9.54	30
11N HT40	LCH	7.28	0.10	7.38	30
	MCH	7.35	0.10	7.45	30
	HCH	7.23	0.10	7.33	30

## 7.4. 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/3 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	$3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$
VBW	$\geq 3 \times \text{RBW}$
Span	$1.5 \times \text{DTS bandwidth}$
Trace	Max hold
Sweep time	Auto couple.

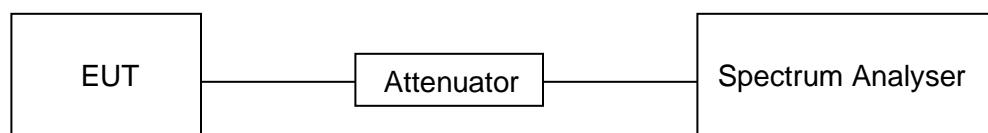
Allow trace to fully stabilize and use the peak marker function to determine the maximum amplitude level within the RBW.

If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

### TEST ENVIRONMENT

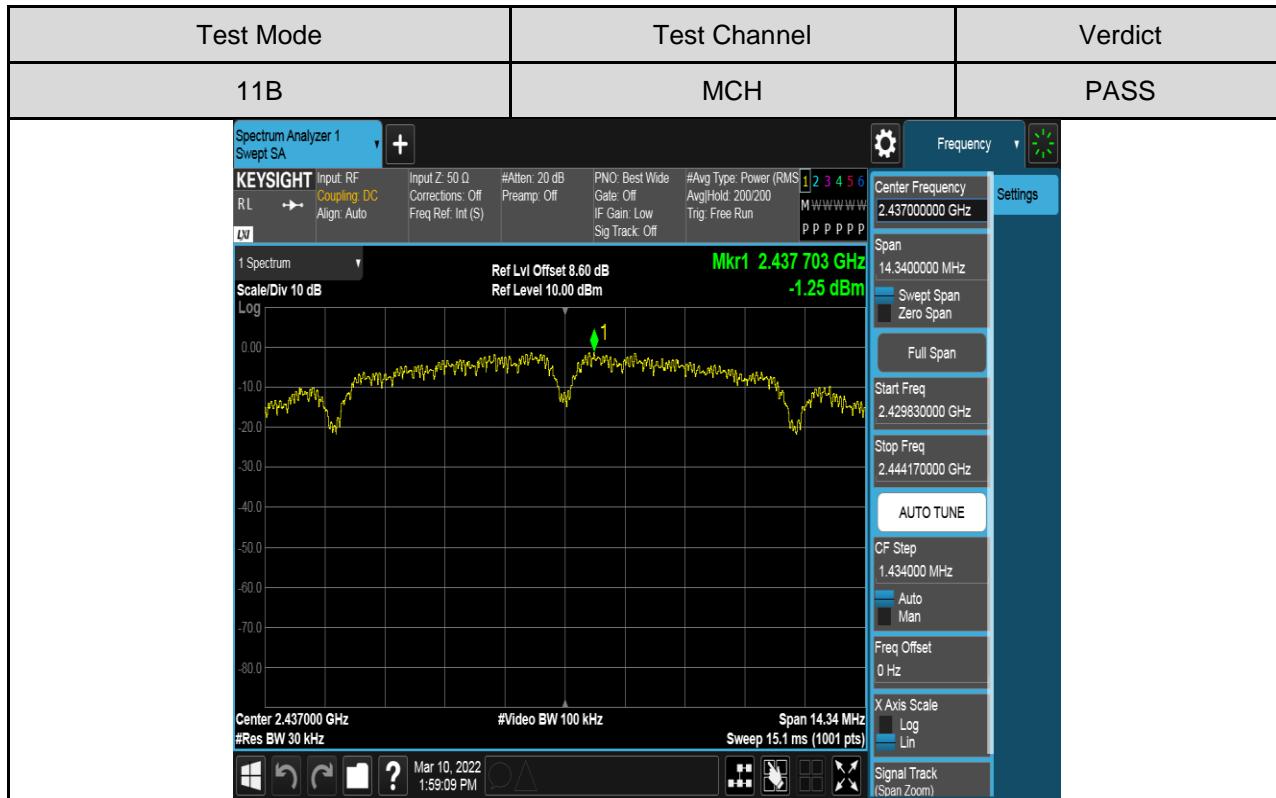
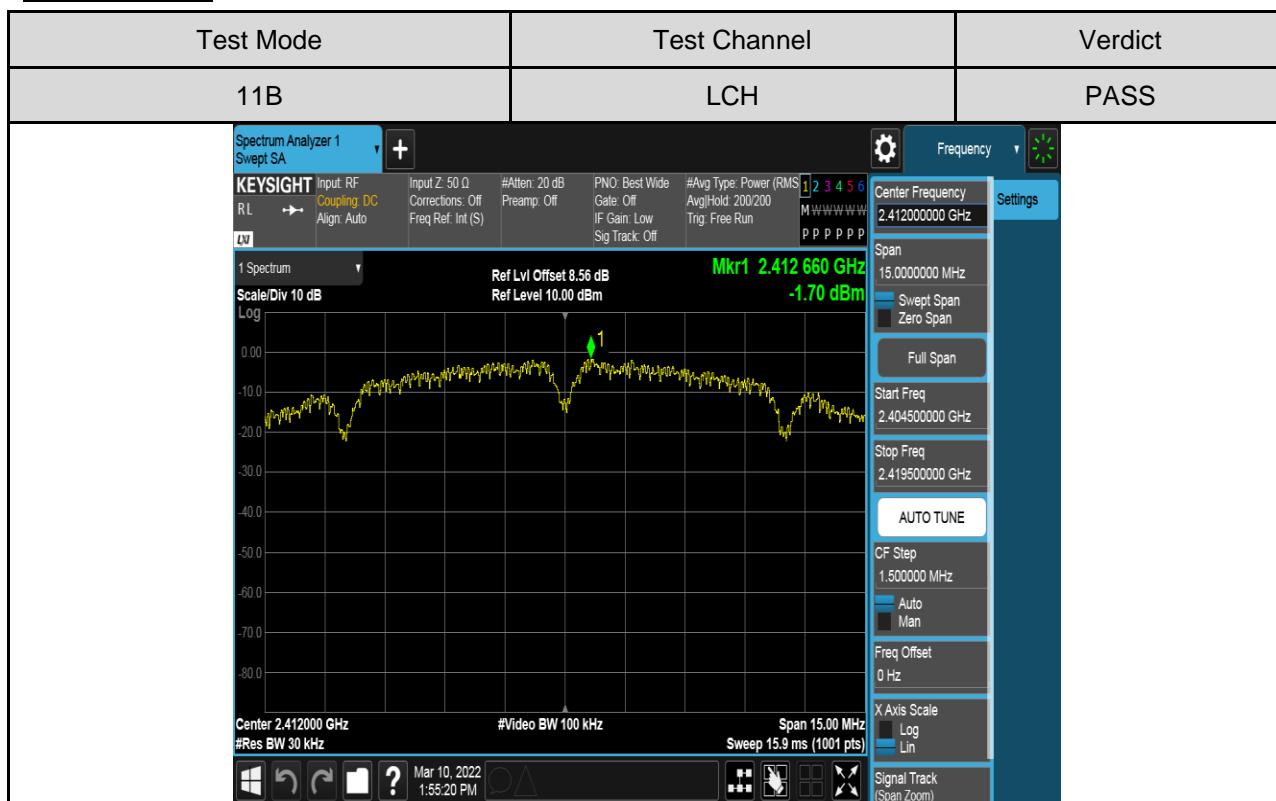
Temperature	19.8°C	Relative Humidity	55.4%
Atmosphere Pressure	103.1kPa	Test Voltage	AC 120V

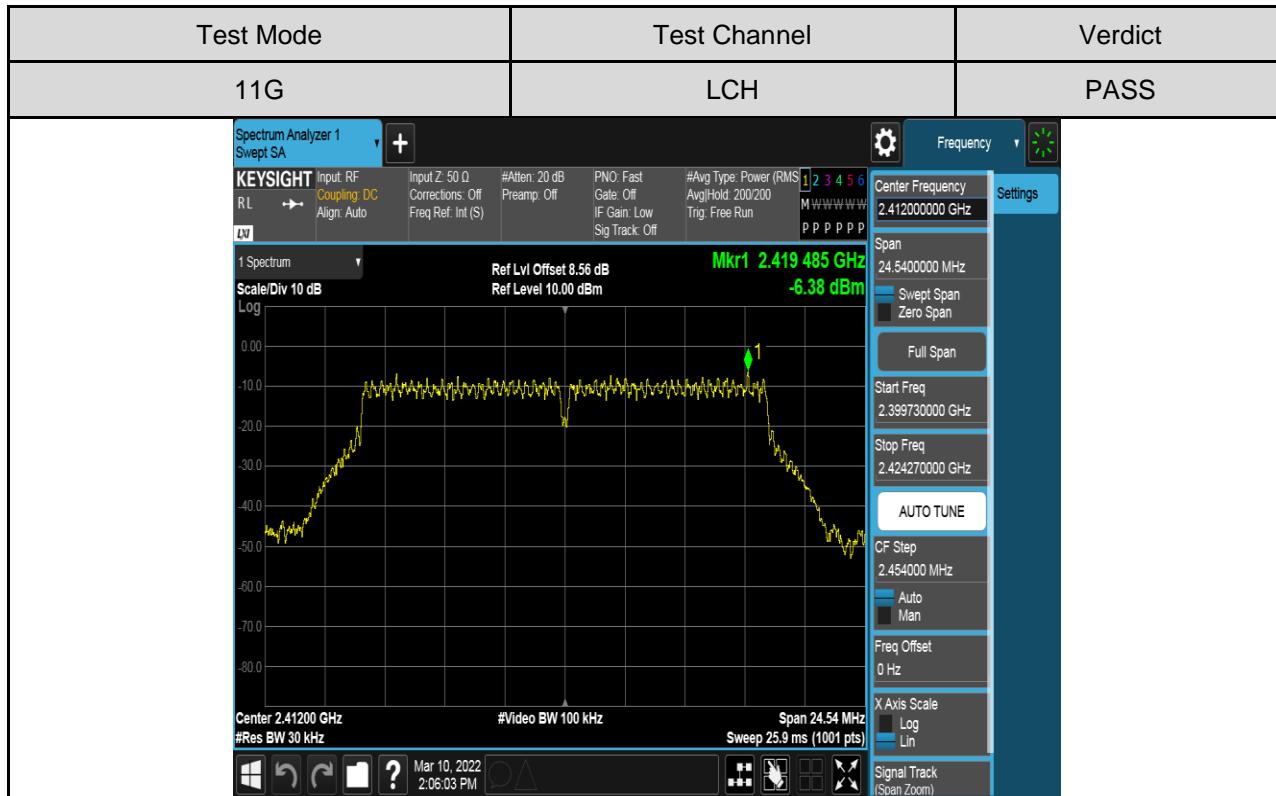
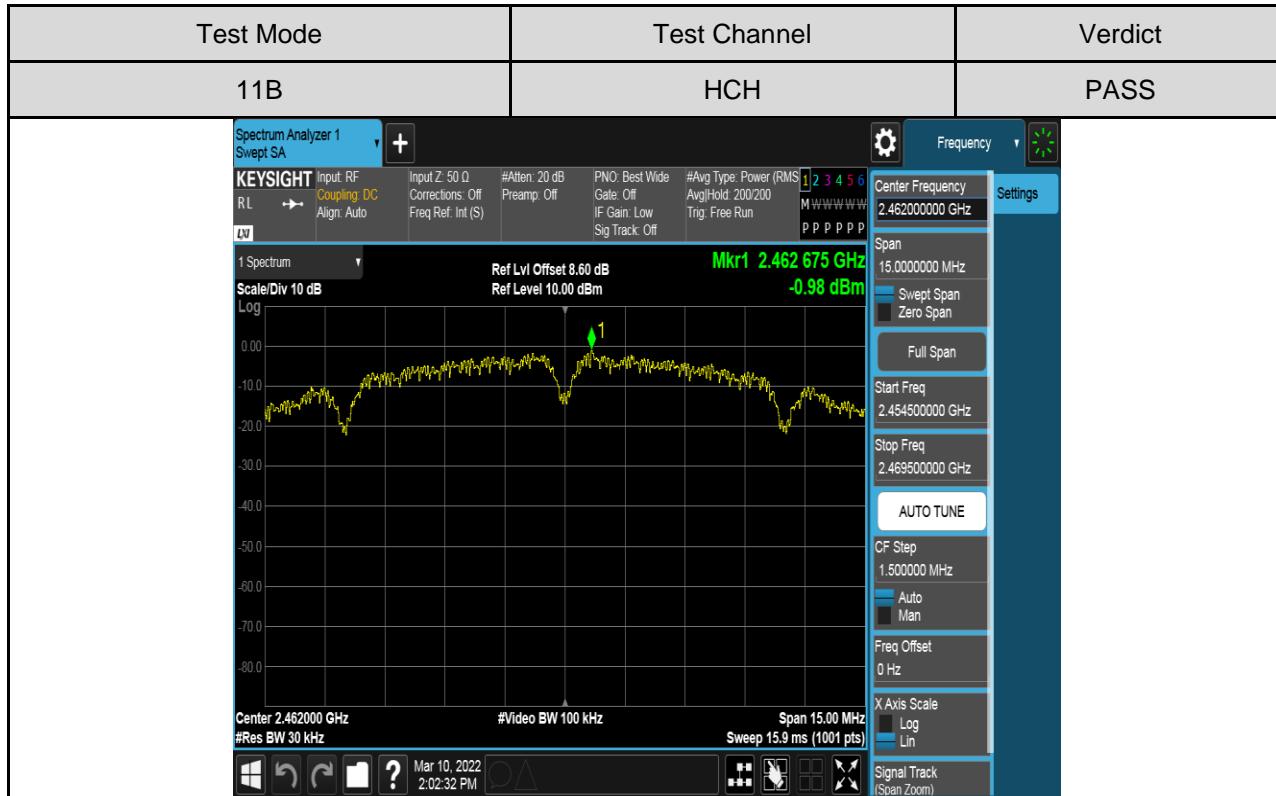
### TEST SETUP

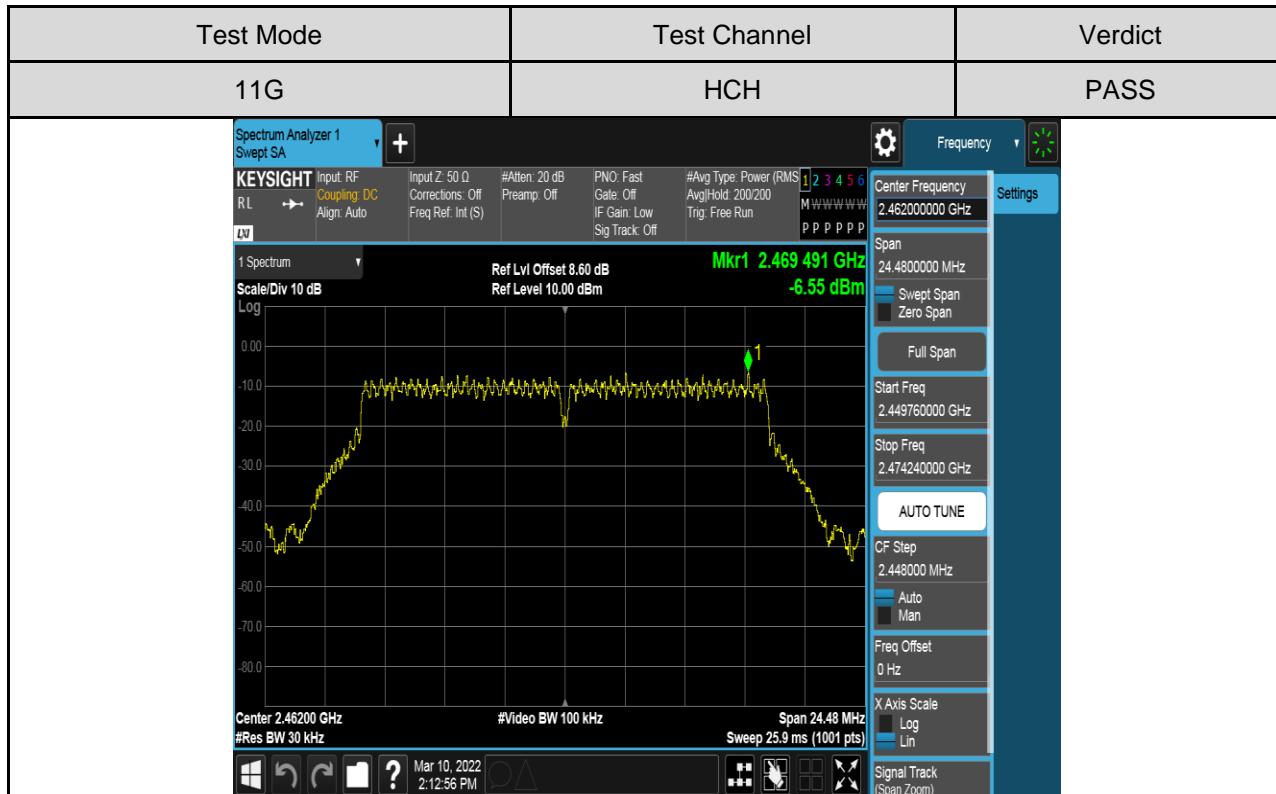
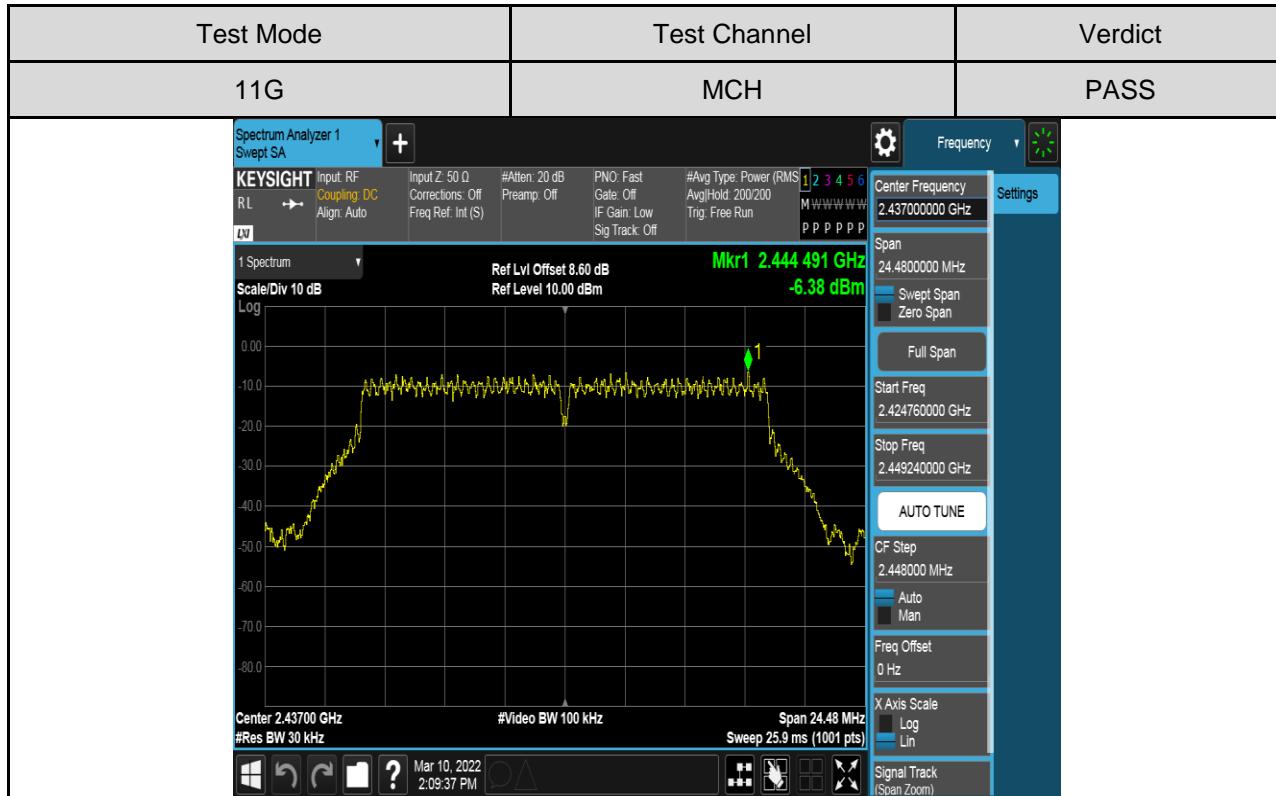


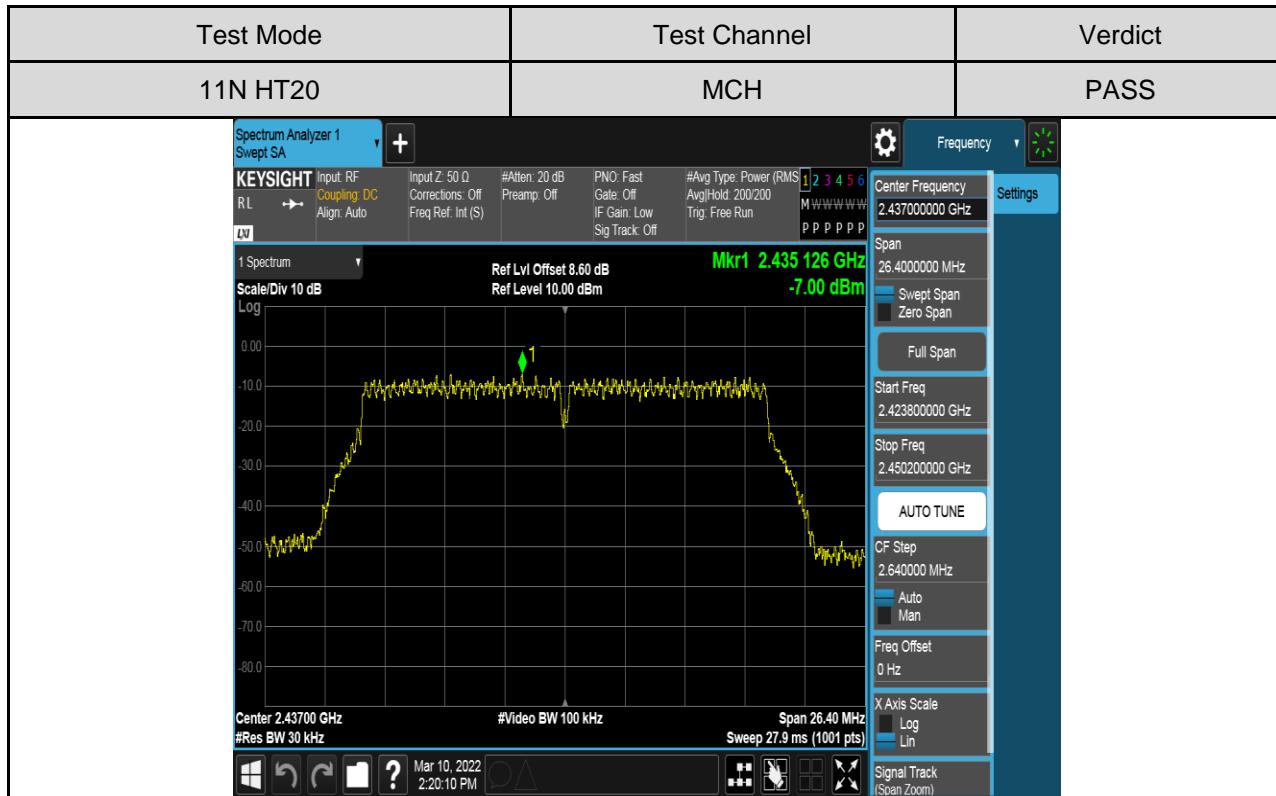
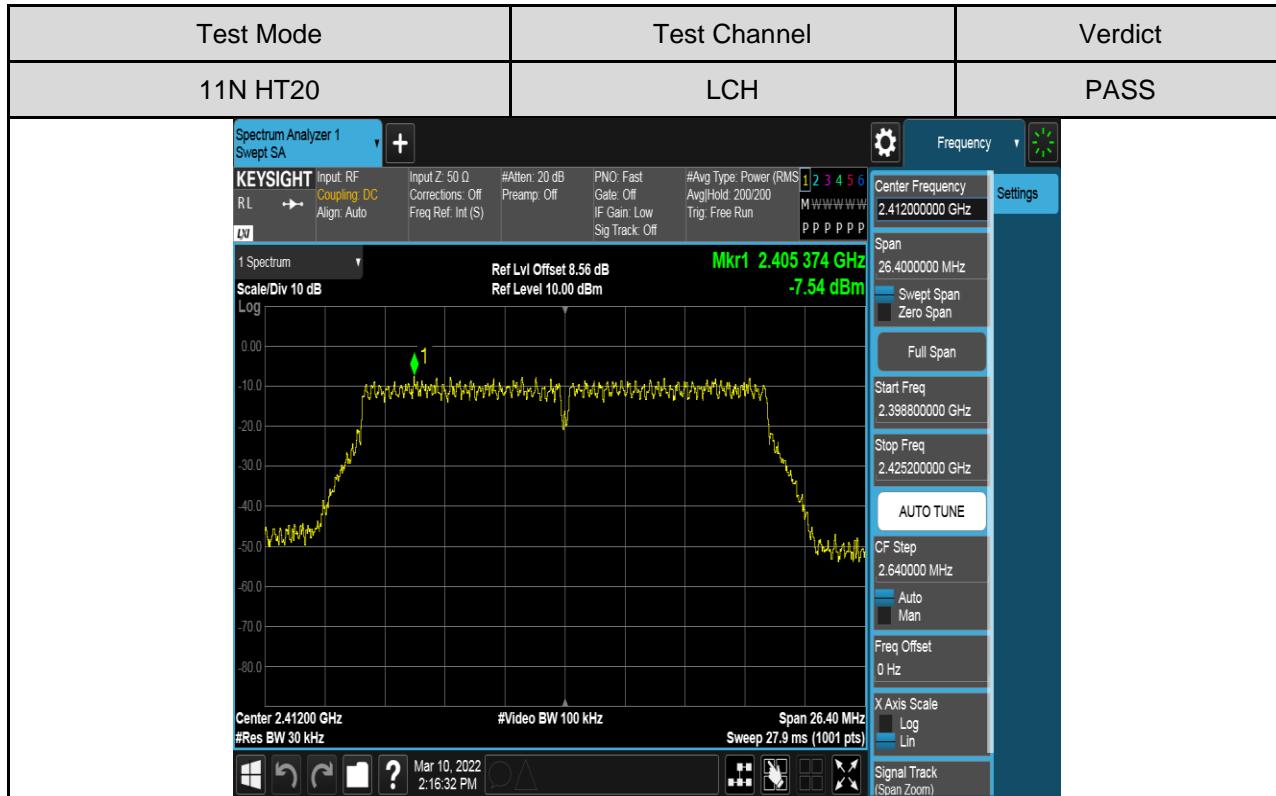
TEST RESULTS TABLE

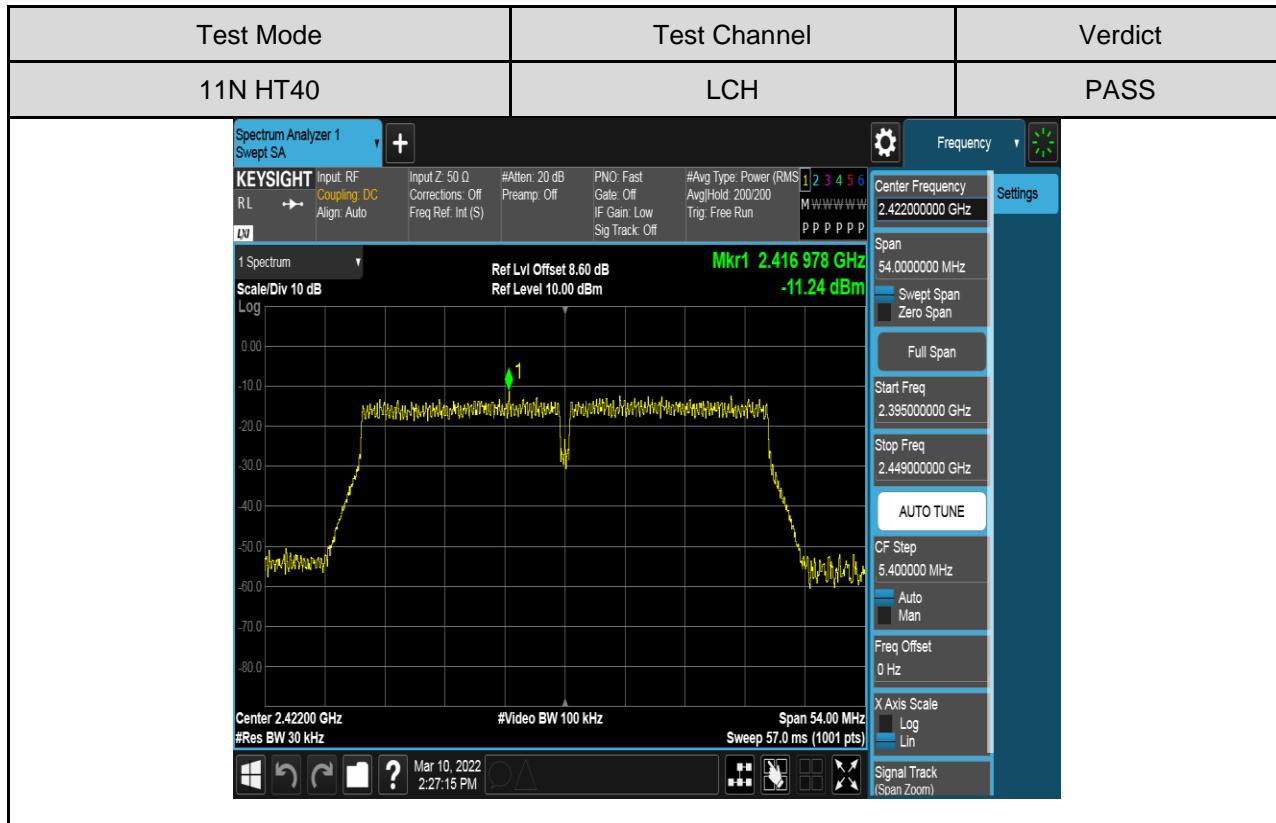
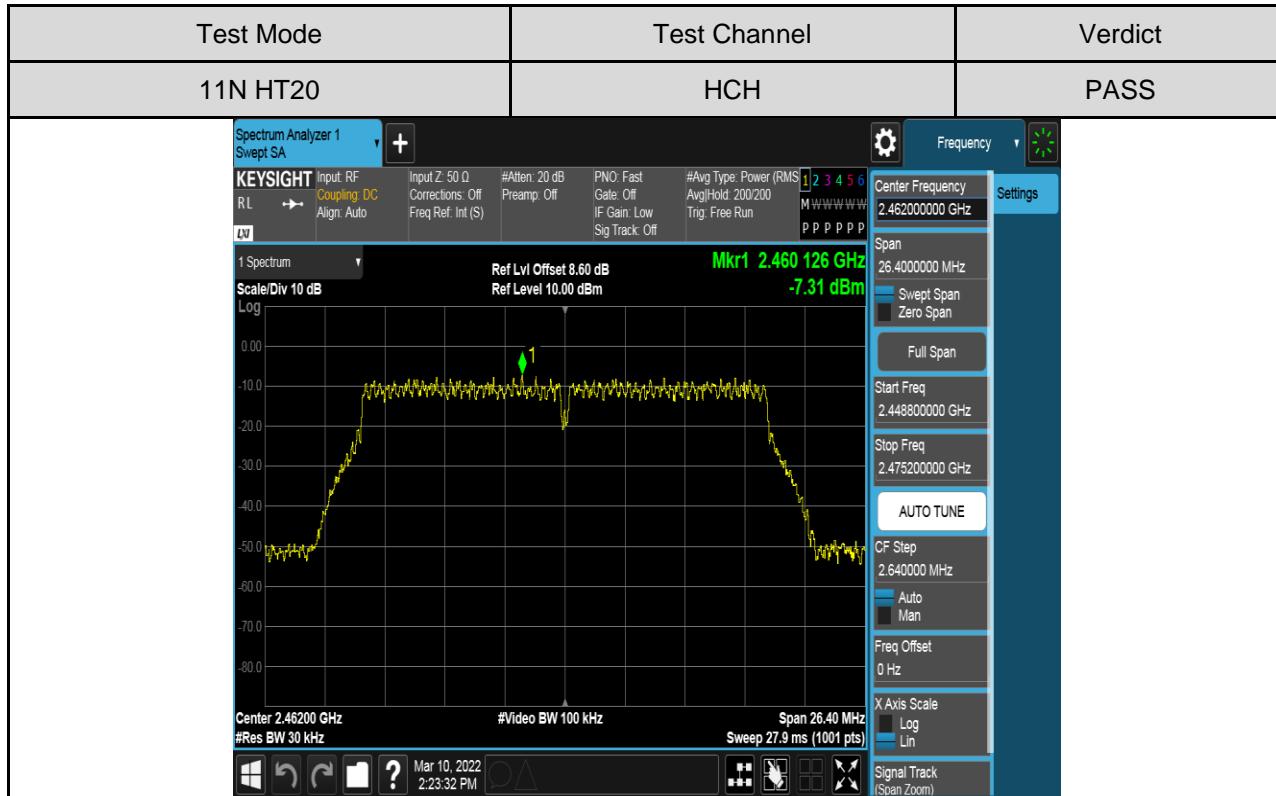
Test Mode	Test Channel	Maximum Peak power spectral density (dBm/30kHz)	Result
11B	LCH	-1.70	Pass
	MCH	-1.25	Pass
	HCH	-0.98	Pass
11G	LCH	-6.38	Pass
	MCH	-6.38	Pass
	HCH	-6.55	Pass
11N HT20	LCH	-7.54	Pass
	MCH	-7.00	Pass
	HCH	-7.31	Pass
11N HT40	LCH	-11.24	Pass
	MCH	-12.39	Pass
	HCH	-12.42	Pass

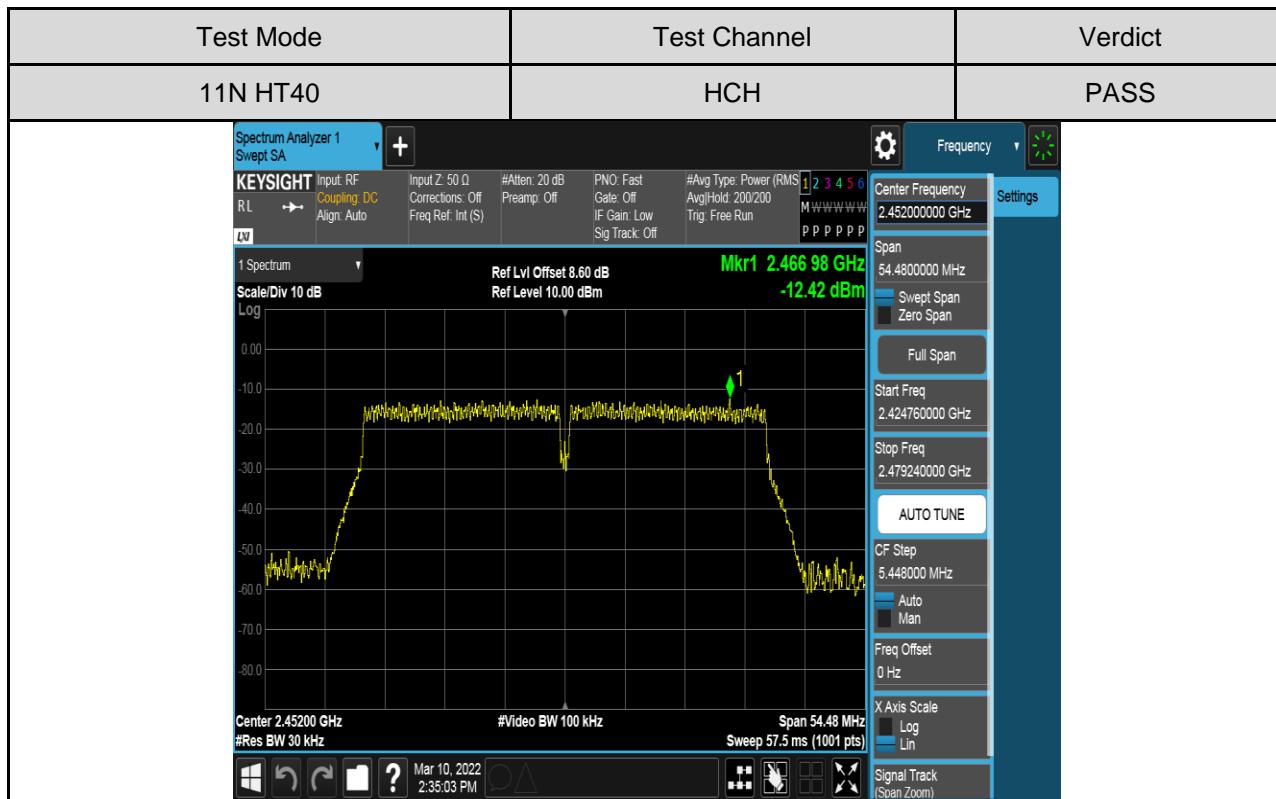
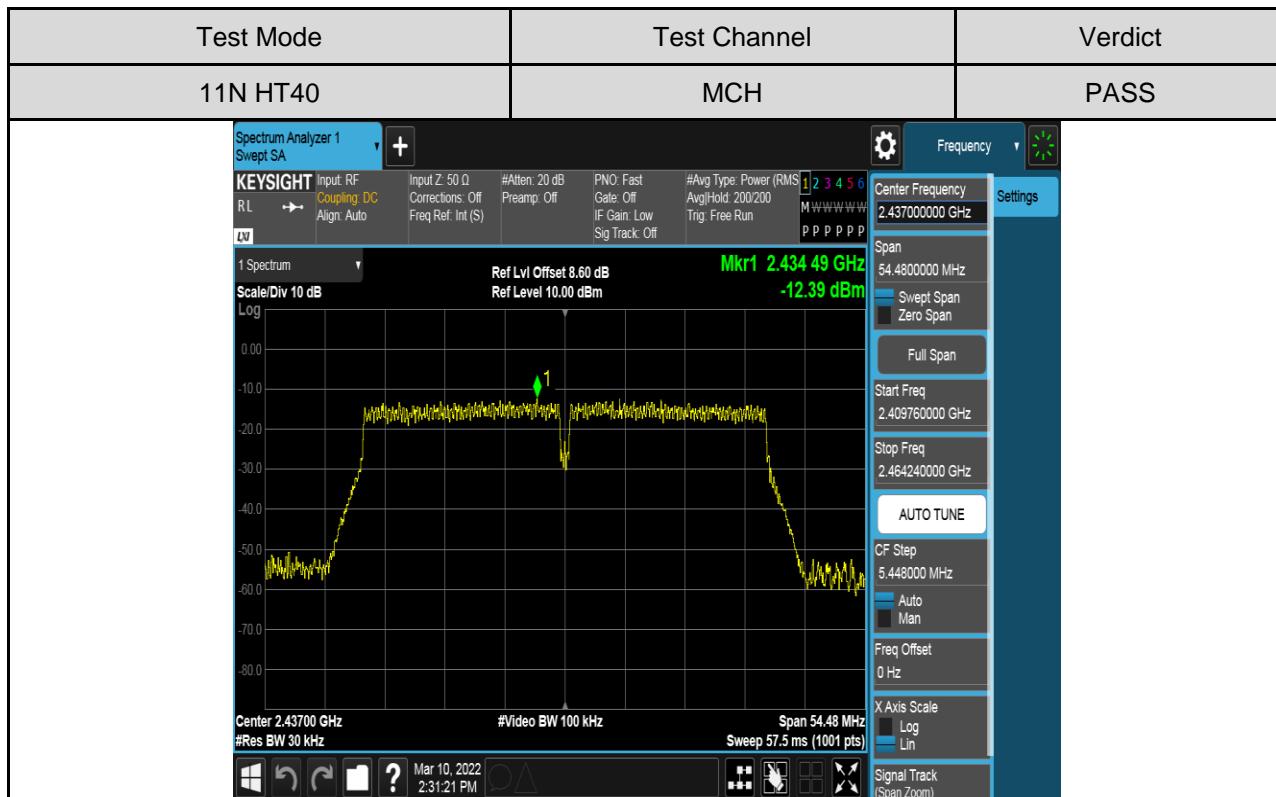
**TEST GRAPHS**












## 7.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

### LIMITS

FCC Part15 (15.247), Subpart C		
Section	Test Item	Limit
FCC §15.247 (d)	Conducted Bandedge and Spurious Emissions	30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power

### TEST PROCEDURE

Refer to FCC KDB 558074, connect the UUT to the spectrum analyzer and use the following

Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	100K
VBW	$\geq 3 \times$ RBW
Span	$1.5 \times$ DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

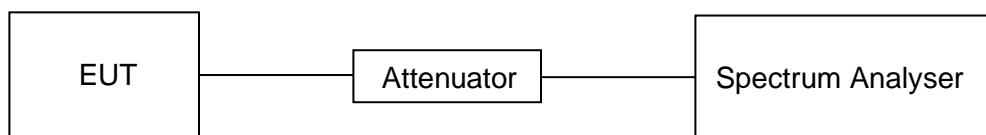
settings:

Use the peak marker function to determine the maximum PSD level.

Span	Set the center frequency and span to encompass frequency range to be measured
Detector	Peak
RBW	100K
VBW	$\geq 3 \times$ RBW
measurement points	$\geq$ span/RBW
Trace	Max hold
Sweep time	Auto couple.

Use the peak marker function to determine the maximum amplitude level.

### TEST SETUP

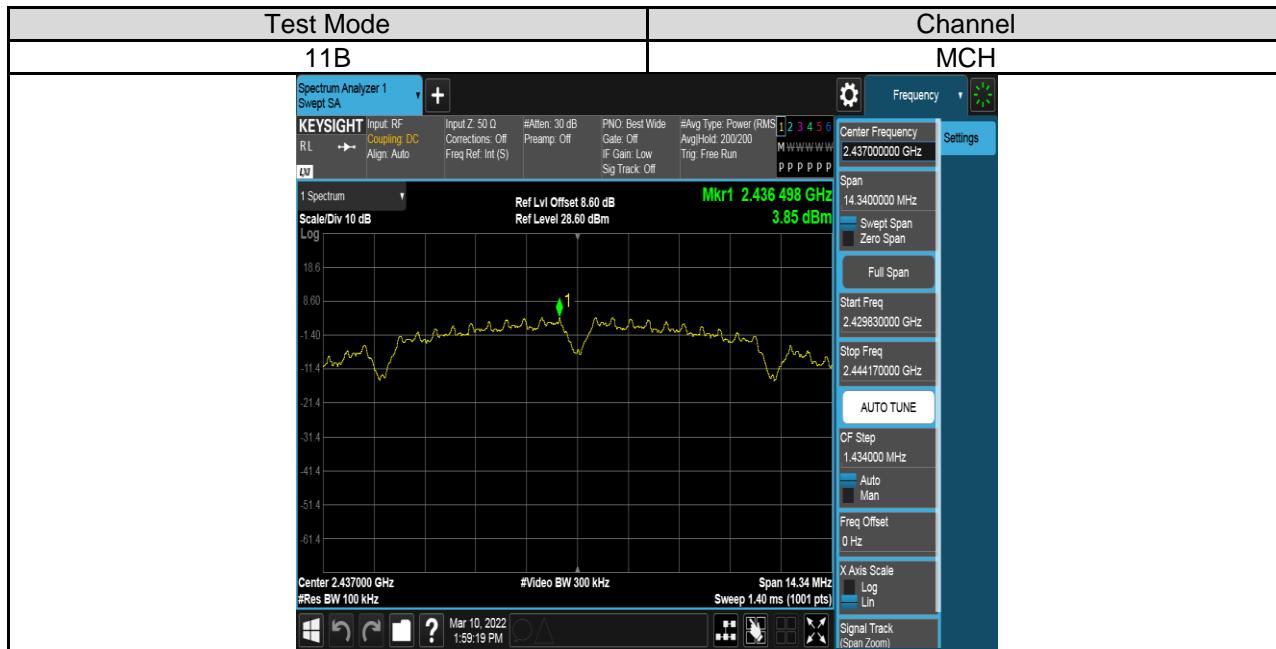
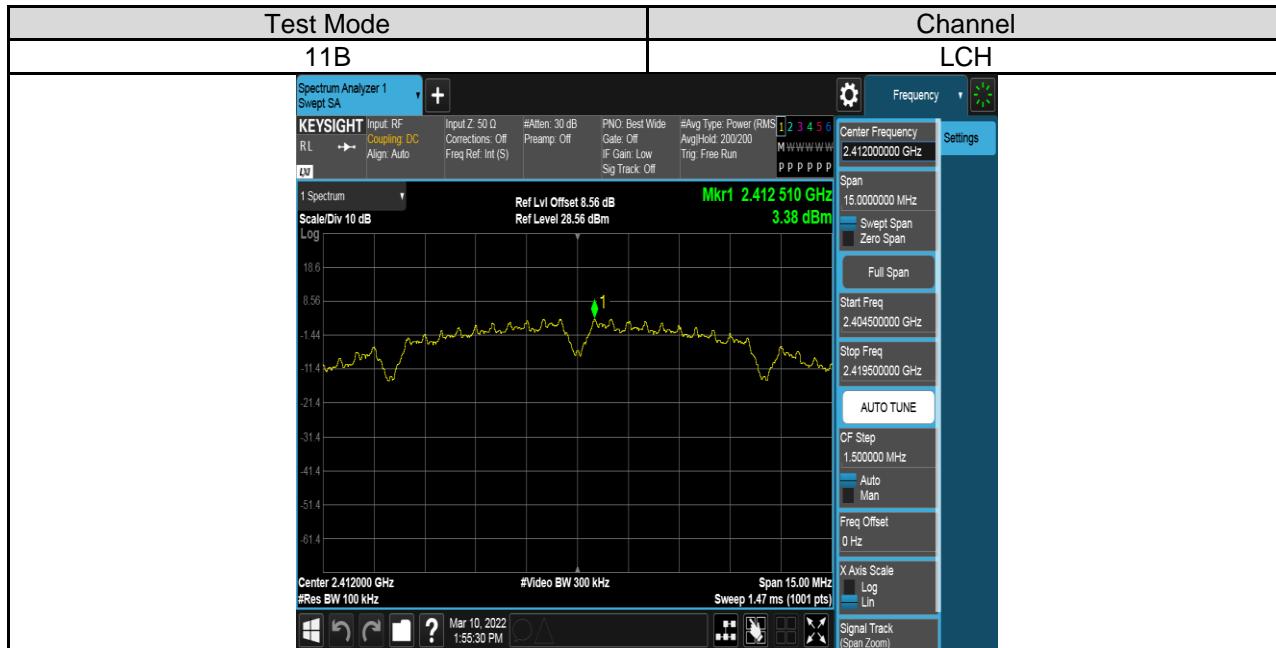


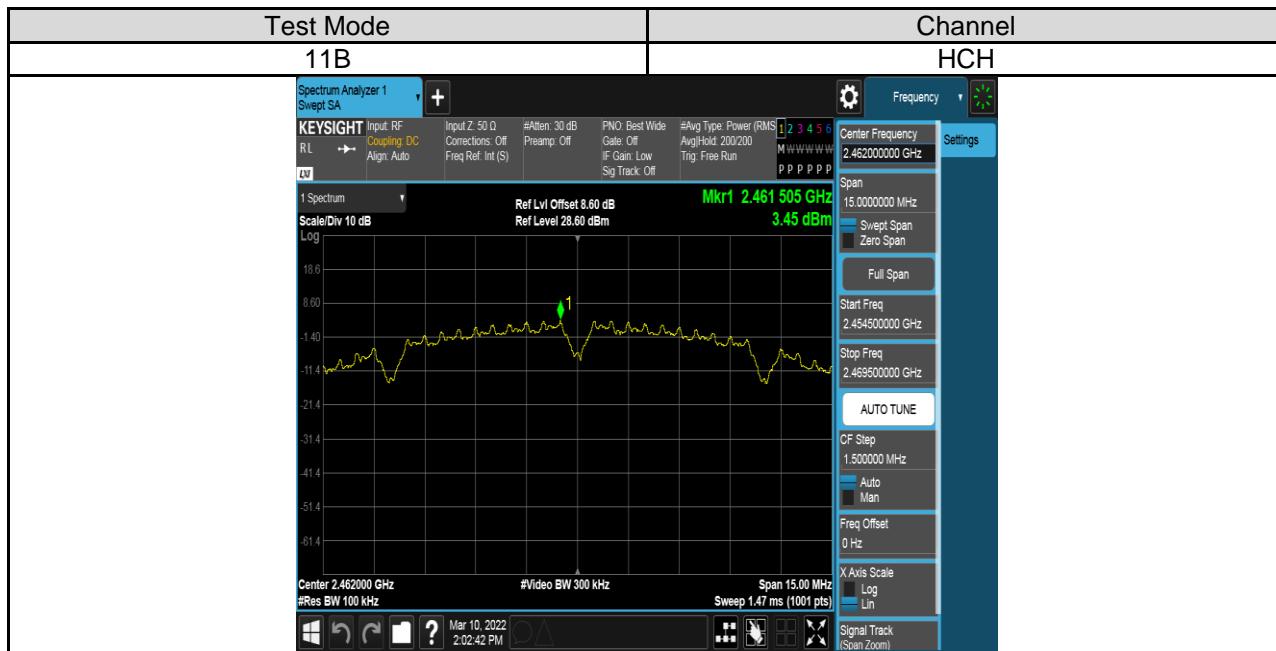
**TEST ENVIRONMENT**

Temperature	21.4°C	Relative Humidity	55.7%
Atmosphere Pressure	101.1kPa	Test Date	2022-03-10

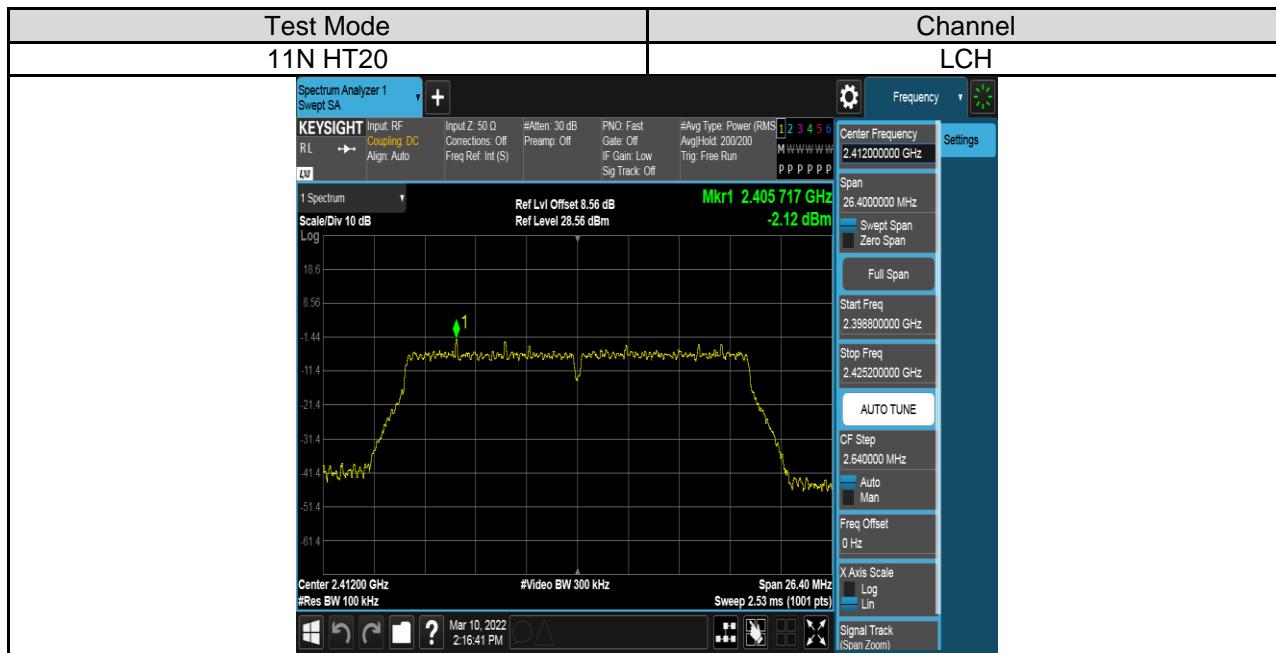
**PART 1: REFERENCE LEVEL MEASUREMENT****TEST RESULTS TABLE**

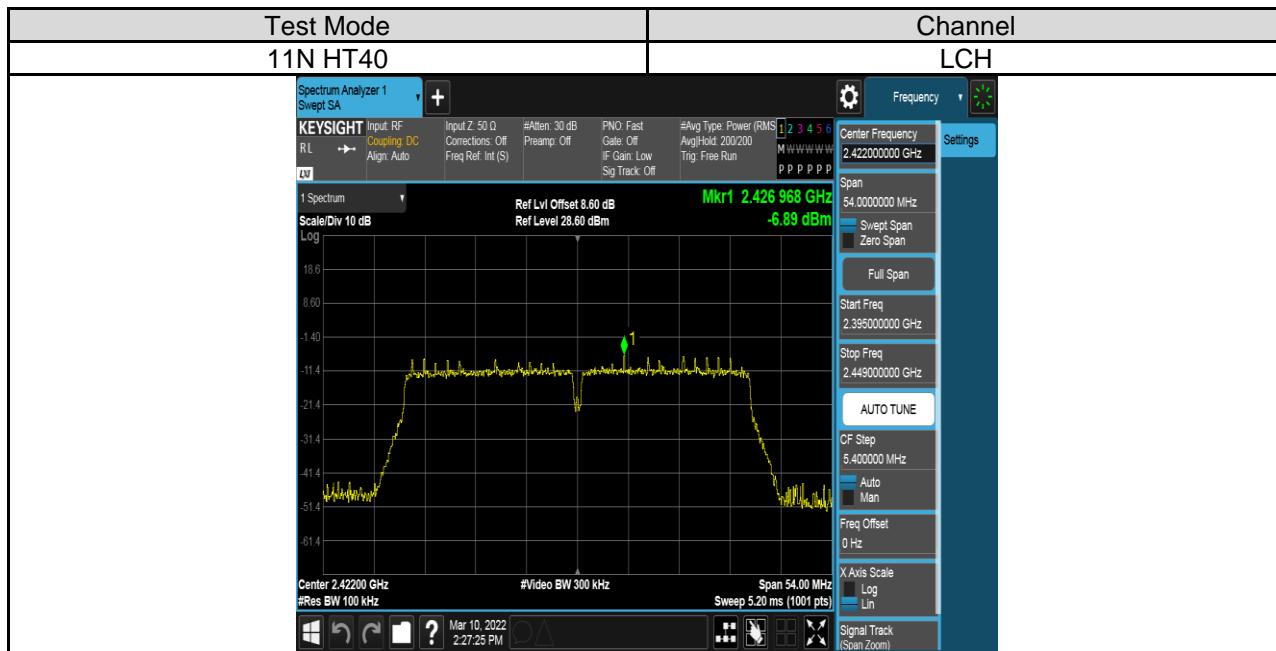
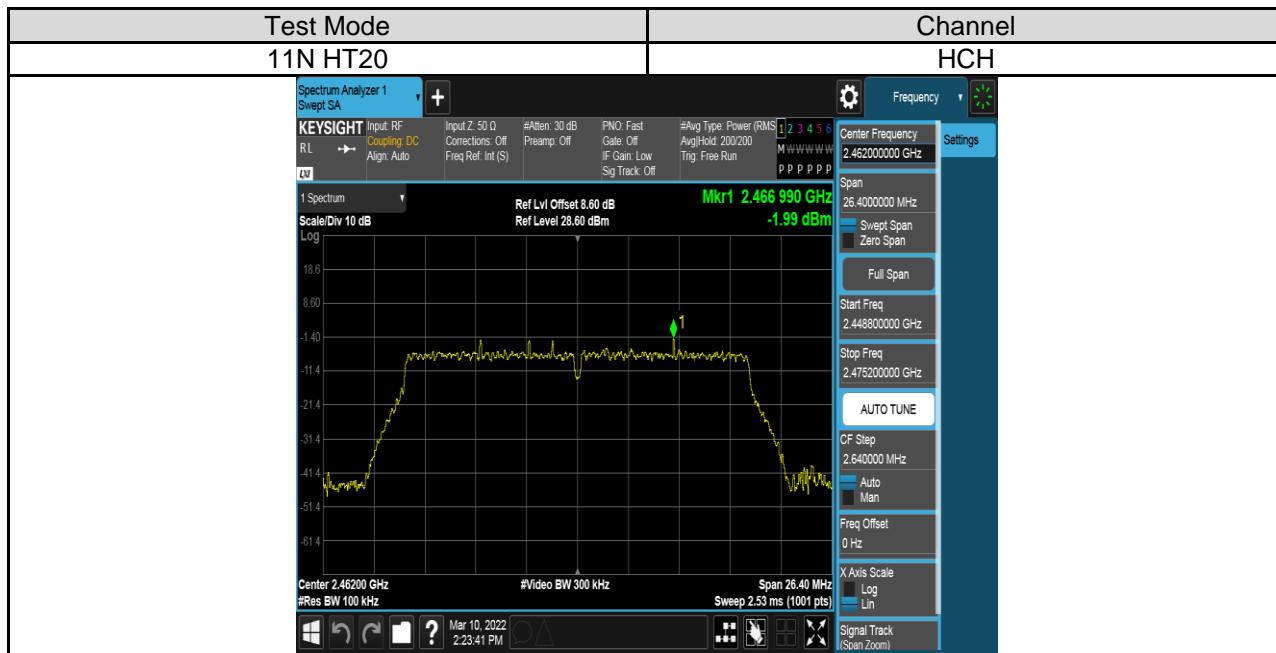
Test Mode	Test Channel	Result[dBm]
11B	LCH	3.38
	MCH	3.85
	HCH	3.45
11G	LCH	-2.04
	MCH	-1.59
	HCH	-1.93
11N HT20	LCH	-2.12
	MCH	-1.70
	HCH	-1.99
11N HT40	LCH	-6.89
	MCH	-6.68
	HCH	-6.83

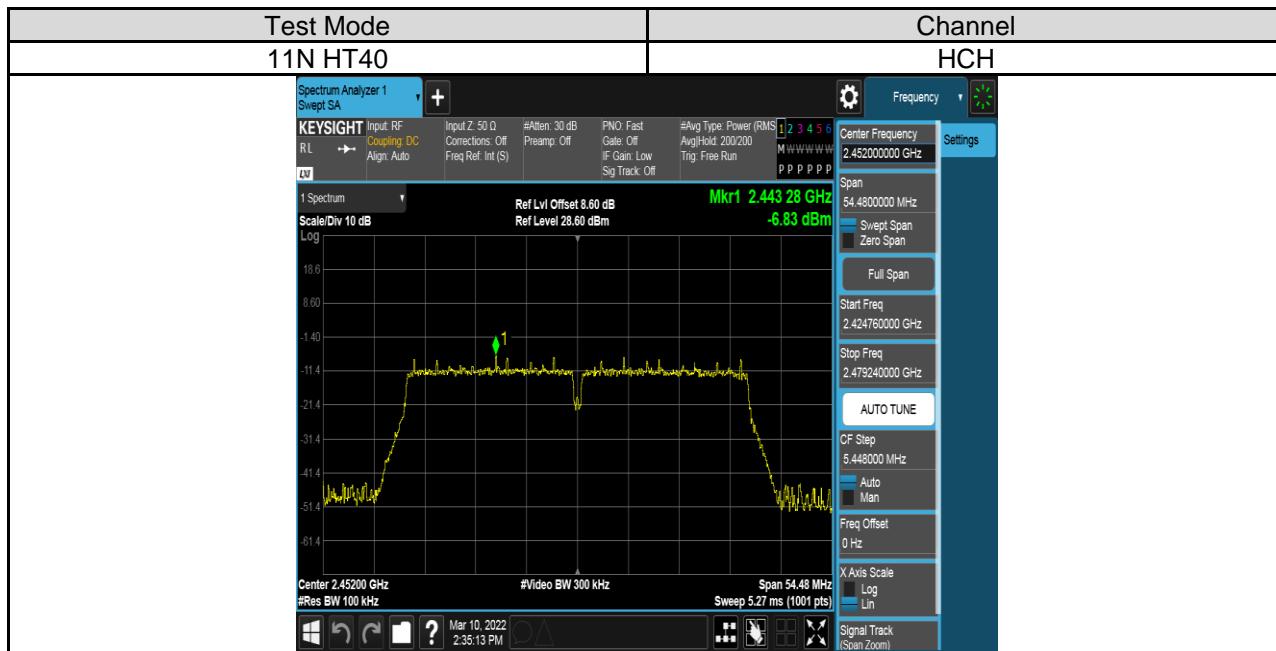
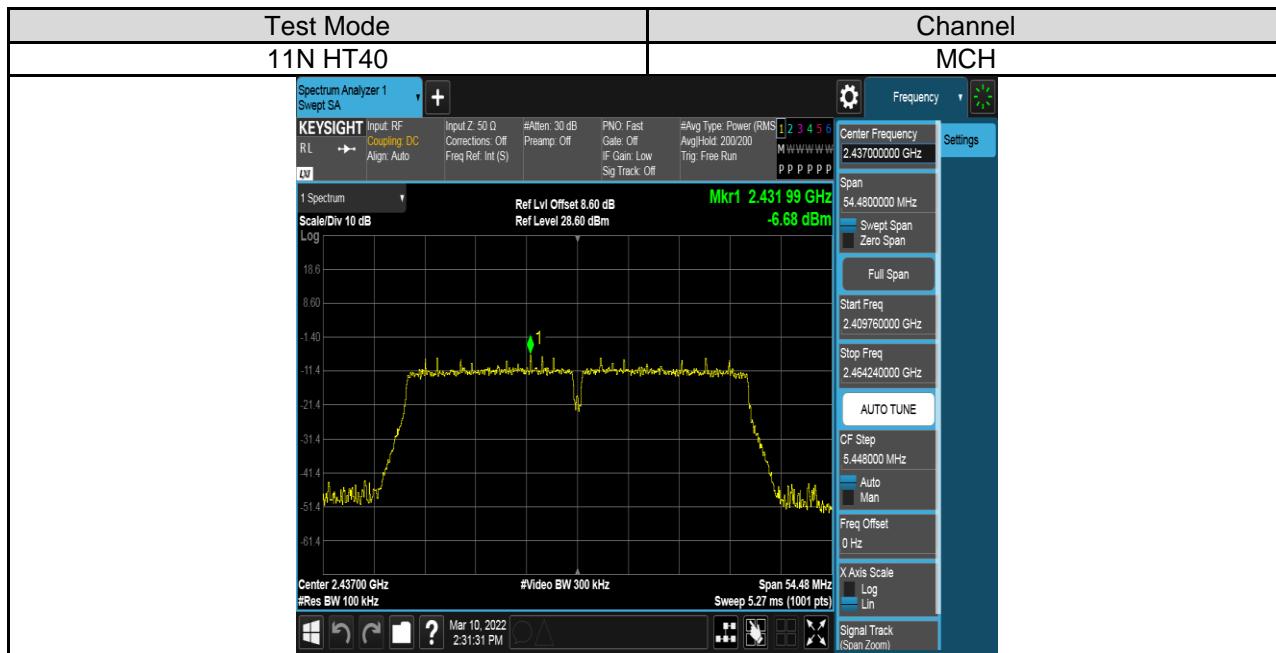
TEST GRAPHS












**PART 2: CONDUCTED BANDEDGE****TEST RESULTS TABLE**

Test Mode	Test Channel	Result	Verdict
11B	LCH	Refer to the Test Graph	PASS
	HCH	Refer to the Test Graph	PASS
11G	LCH	Refer to the Test Graph	PASS
	HCH	Refer to the Test Graph	PASS
11N HT20	LCH	Refer to the Test Graph	PASS
	HCH	Refer to the Test Graph	PASS
11N HT40	LCH	Refer to the Test Graph	PASS
	HCH	Refer to the Test Graph	PASS

**TEST GRAPHS**
