



**FCC 47 CFR PART 15 SUBPART C**  
**CERTIFICATION TEST REPORT**

*For*

**Amcrest SmartHome 1080P Wi-Fi Pan/Tilt Camera**

**MODEL NUMBER: ASH21-W-V3**

**ADDITIONAL MODEL NUMBER: ASH21-B-V3**

**PROJECT NUMBER: 4790425401-2.2**

**REPORT NUMBER: 4790425401-2.2-1**

**FCC ID: ZZ2-ASH21**

**ISSUE DATE: Aug. 12, 2022**

*Prepared for*

**Amcrest Technologies LLC.**

*Prepared by*

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Form-ULID-008536-9 V2.0

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	08/12/2022	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. MEASURING INSTRUMENT CALIBRATION.....	7
4.2. MEASUREMENT UNCERTAINTY .....	7
<b>5. EQUIPMENT UNDER TEST .....</b>	<b>8</b>
5.1. DESCRIPTION OF EUT .....	8
5.2. MAXIMUM OUTPUT POWER .....	9
5.3. CHANNEL LIST .....	9
5.4. TEST CHANNEL CONFIGURATION .....	10
5.5. THE WORSE CASE POWER SETTING PARAMETER.....	10
5.6. DESCRIPTION OF AVAILABLE ANTENNAS .....	11
5.7. THE WORSE CASE CONFIGURATIONS.....	11
5.8. TEST ENVIRONMENT .....	12
5.9. DESCRIPTION OF TEST SETUP .....	13
5.10. MEASURING INSTRUMENT AND SOFTWARE USED .....	15
<b>6. MEASUREMENT METHODS .....</b>	<b>16</b>
<b>7. ANTENNA PORT TEST RESULTS.....</b>	<b>17</b>
7.1. ON TIME AND DUTY CYCLE .....	17
7.2. 6 dB BANDWIDTH.....	20
7.3. CONDUCTED OUTPUT POWER.....	28
7.4. POWER SPECTRAL DENSITY.....	30
7.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS .....	38
<b>8. RADIATED TEST RESULTS.....</b>	<b>64</b>
8.1. LIMITS AND PROCEDURE.....	64
8.2. TEST ENVIRONMENT .....	70
8.3. RESTRICTED BANDEDGE.....	70
8.4. SPURIOUS EMISSIONS .....	87
<b>9. AC POWER LINE CONDUCTED EMISSIONS .....</b>	<b>143</b>
<b>10. ANTENNA REQUIREMENTS.....</b>	<b>146</b>



## 1. ATTESTATION OF TEST RESULTS

### Applicant Information

Company Name: Amcrest Technologies LLC.  
Address: 16727 Park Row Dr, Houston, Texas, 77084, United States

### Manufacturer Information

Company Name: Amcrest Technologies LLC.  
Address: 16727 Park Row Dr, Houston, Texas, 77084, United States

### EUT Description

Product Name: Amcrest SmartHome 1080P Wi-Fi Pan/Tilt Camera  
Model Name: ASH21-W-V3  
Additional No.: ASH21-B-V3  
Model Difference: Their electrical circuit design, layout, components used and internal wiring are identical, only the color and model name is different. The model ASH21-W-V3 was selected as the representative model for compliance test.

Sample Number: 5040307  
Data of Receipt Sample: Jun. 09, 2022  
Test Date: Jun. 09, 2022 ~ Aug. 09, 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.			

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Authorized By:

*Chris Zhong*

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	<b>A2LA (Certificate No.: 4829.01)</b> <b>UL-CCIC COMPANY LIMITED has been assessed and proved to be in compliance with A2LA.</b> <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> <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>
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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)	3.3dB
Radiation Emission test (include Fundamental emission) (30MHz-1GHz)	3.3dB
Radiation Emission test (1GHz to 26GHz) (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:	Amcrest SmartHome 1080P Wi-Fi Pan/Tilt Camera
Model No.:	ASH21-W-V3
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:	N/A
Test software of EUT:	Secure CRT (manufacturer declare)
Antenna Type:	IFA Antenna
Antenna Gain:	2.84 dBi
	Note: This data is provided by customer and our lab isn't responsible for this data.





## 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]	15.33
1	IEEE 802.11G	1-11[11]	12.69
1	IEEE 802.11N HT20	1-11[11]	12.65
1	IEEE 802.11N HT40	3-9[7]	12.67

## 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	default	default	default	/		
802.11G	1	default	default	default			
802.11N HT20	1	default	default	default			
802.11N HT40	1	/			default	default	default



## 5.6. DESCRIPTION OF AVAILABLE ANTENNAS

Ant.	Frequency (MHz)	Antenna Type	Antenna Gain (dBi)
1	2400-2483.5	IFA Antenna	2.84

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. 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	AC 120V
	VH	N/A

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



## 5.9. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	Description
1	Laptop	ThinkPad	E590	N/A

### I/O PORT

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

### ACCESSORY

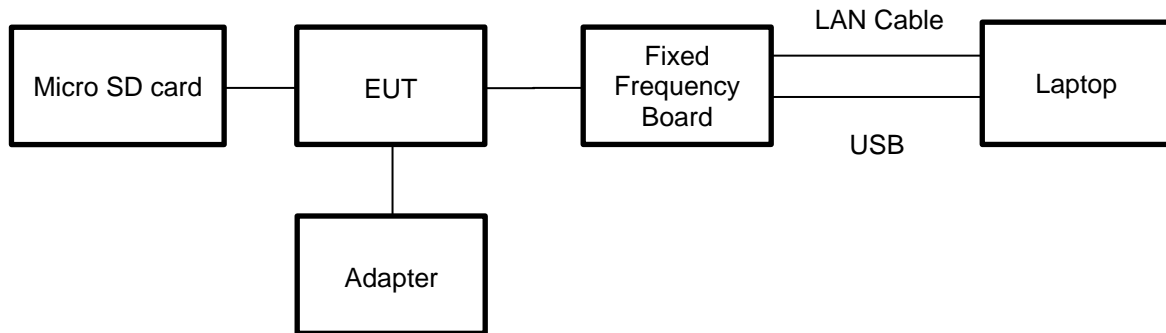
Item	Accessory	Brand Name	Model Name	Description
1	AC Adapter	MASS POWER	NBS05B050100VUU	INPUT:100-240V~, 50/60Hz, 0.2A OUTPUT:5.0V=1.0A



## TEST SETUP

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

### SETUP DIAGRAM FOR TESTS



**5.10. 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	2021-05-09	2022-04-09	2023-04-08	
<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)	ETS	3160-10	155565	2019-01-05	2021-07-15	2024-07-14	
<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	2021-05-09	2022-05-08	2023-05-07	
<input checked="" type="checkbox"/>	Highpass Filter	Wainwright	WHKX10-2700-3000-18000-40SS	2	2021-05-09	2022-05-08	2023-05-07	
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	2021-05-09	2022-04-09	2023-04-08	
<input checked="" type="checkbox"/>	Power Meter	Keysight	U2021XA	155370	2021-05-09	2022-04-09	2023-04-08	



## 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

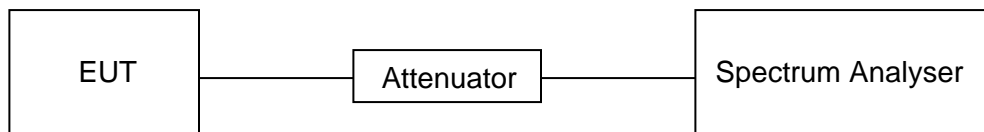
#### LIMITS

None; for reporting purposes only

#### PROCEDURE

FCC KDB 558074 Zero-Span Spectrum Analyzer Method

#### TEST SETUP



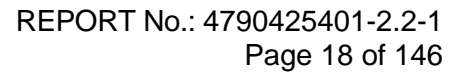
#### TEST ENVIRONMENT

Temperature	22°C	Relative Humidity	56%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V

#### 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	8.44	0.9929	0.9929	0.03	0.12	0.01
11G	1.39	1.46	0.9521	0.9521	0.21	0.72	1
802.11N HT20	5.08	5.15	0.9864	0.9864	0.06	0.20	0.01
802.11N HT40	2.46	2.53	0.9723	0.9723	0.12	0.41	0.5

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



**11B ON TIME AND DUTY CYCLE MID CH (WORSE CASE)**

**Spectrum Analyzer 1**  
Swept SA

**KEYSIGHT** Input: RF  
RL → Coupling: DC  
Align: Auto

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

#Atten: 30 dB  
Preamp: Off

PNO: Fast  
Gate: Off  
IF Gain: Low  
Sig Track: Off

#Avg Type: Power (RMS)  
Trig: Video  
Trig Delay: 200.0 μs

1 2 3 4 5 6  
WWWWWWW  
A A A A A

**Center Frequency**  
2.437000000 GHz

**Span**  
0.00000000 Hz

☐ Swept Span  
☒ Zero Span

**Full Span**

**Start Freq**  
2.437000000 GHz

**Stop Freq**  
2.437000000 GHz

**AUTO TUNE**

**CF Step**  
8.000000 MHz

☒ Auto  
☐ Man

**Freq Offset**  
0 Hz

**X Axis Scale**  
☐ Log  
☒ Lin

**Signal Track**  
(Span Zoom)

**1 Spectrum**  
Ref Lvl Offset 8.23 dB  
Ref Level 28.23 dBm

**Scale/Div 10 dB**

Log

18.2  
8.23  
-1.77  
-11.8  
-21.8  
-31.8  
-41.8  
-51.8  
-61.8

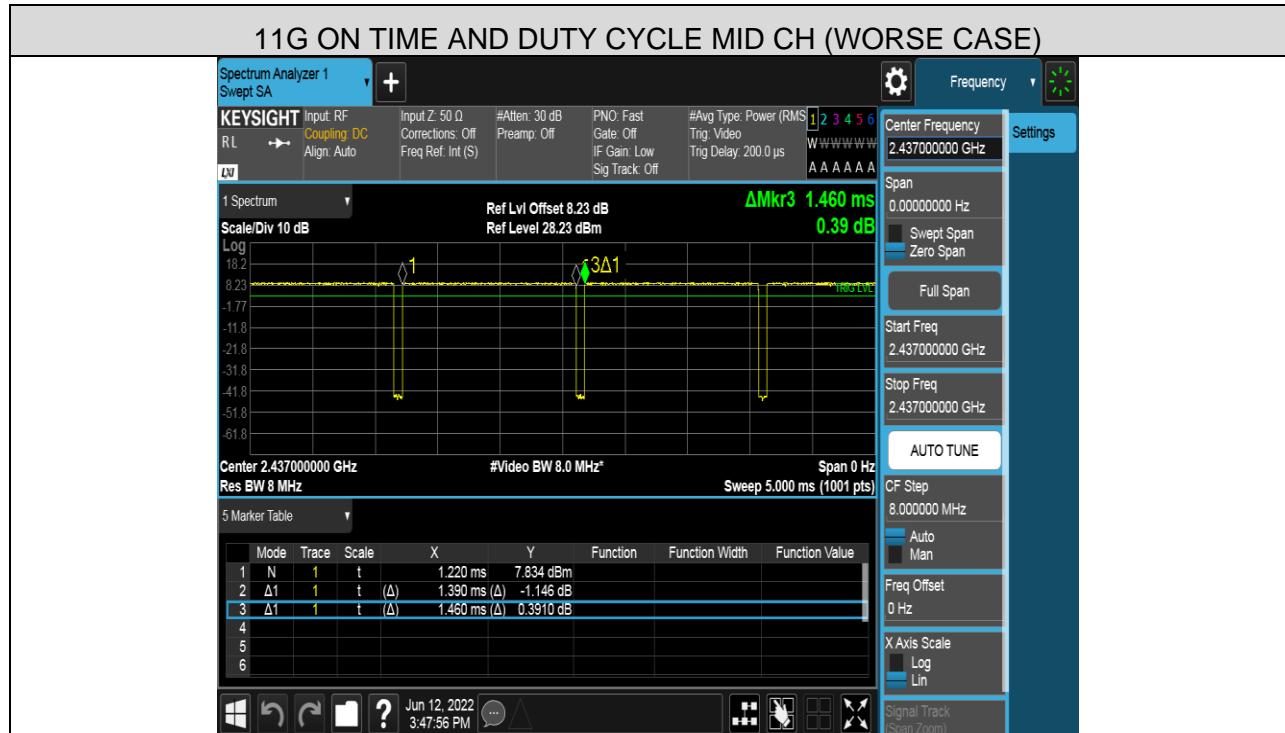
**ΔMkr3 8.440 ms**  
**-5.10 dB**

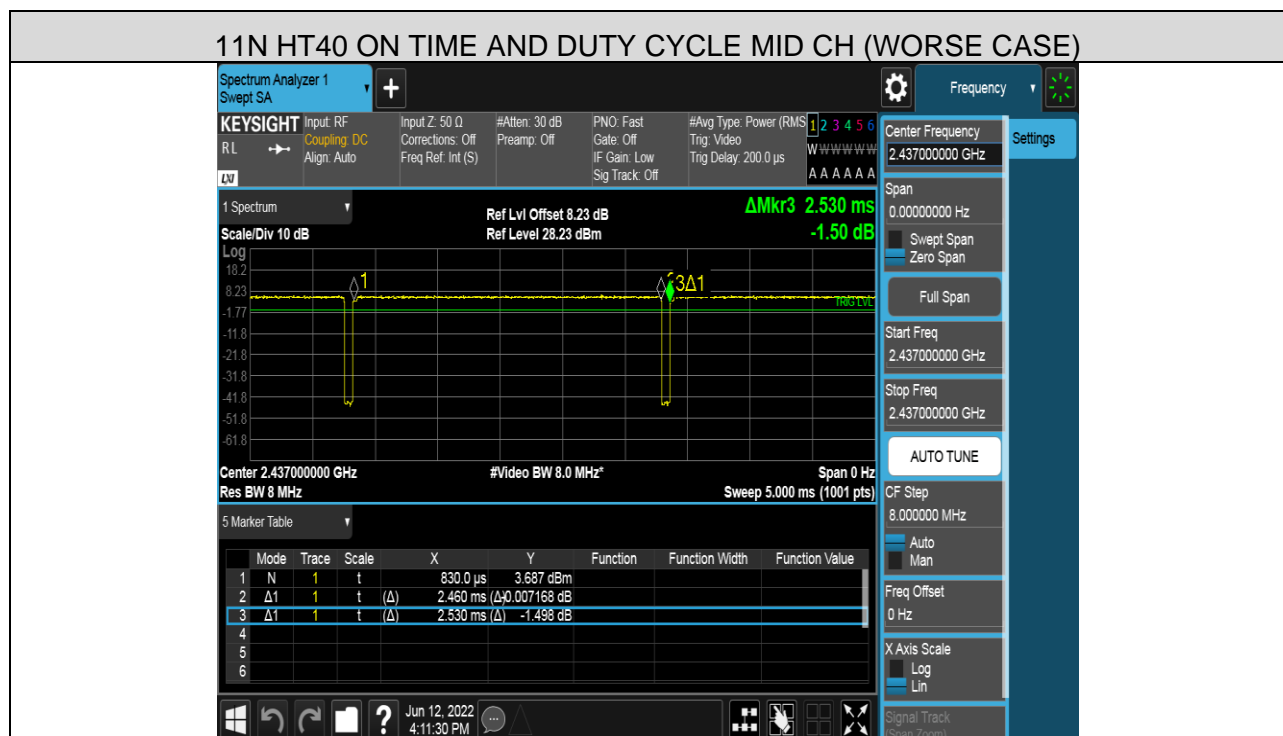
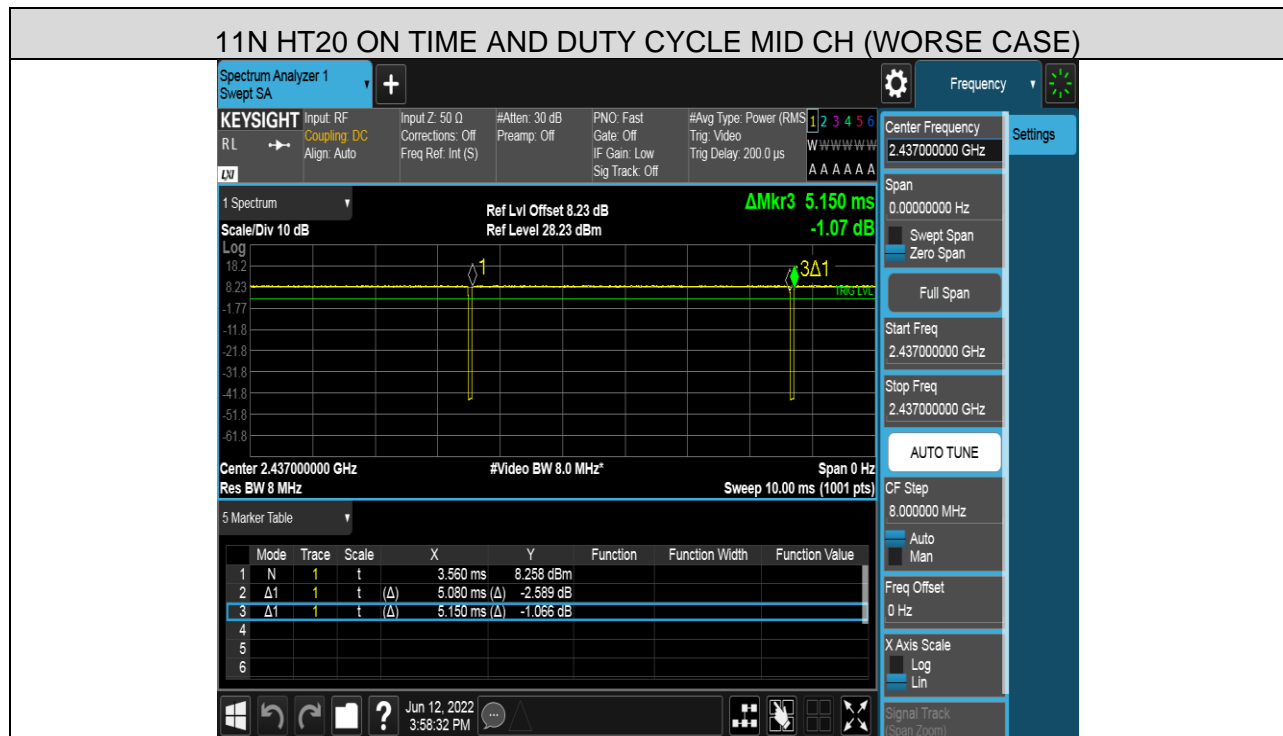
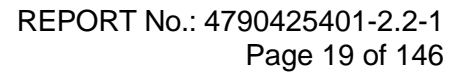
**Center 2.437000000 GHz**  
**Res BW 8 MHz**  
**#Video BW 8.0 MHz**  
**Span 0 Hz**  
**Sweep 15.00 ms (1001 pts)**

**5 Marker Table**

	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	t	3.950 ms	13.08 dBm			
2	Δ1	1	t (Δ)	8.380 ms (Δ)	-7.093 dB			
3	Δ1	1	t (Δ)	8.440 ms (Δ)	-5.100 dB			
4								
5								
6								

Jun 12, 2022 3:22:01 PM







## 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	$\geq 500\text{kHz}$	2400-2483.5

### TEST PROCEDURE

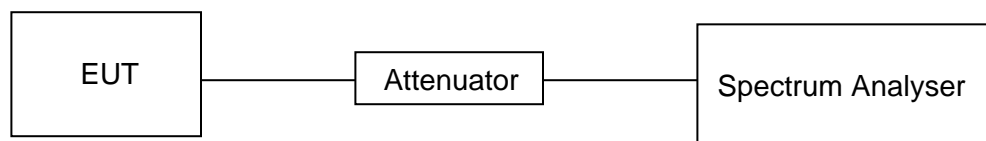
Refer to ANSI C63.10-2013 clause 11.8 for DTS bandwidth.

Connect the EUT to the spectrum analyser and use the following settings:

Center Frequency	The centre frequency of the channel under test
Frequency Span	Between 0.5 times and 1.5 times the OBW
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 relative to the maximum level measured in the fundamental emission.

### TEST SETUP



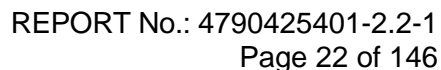


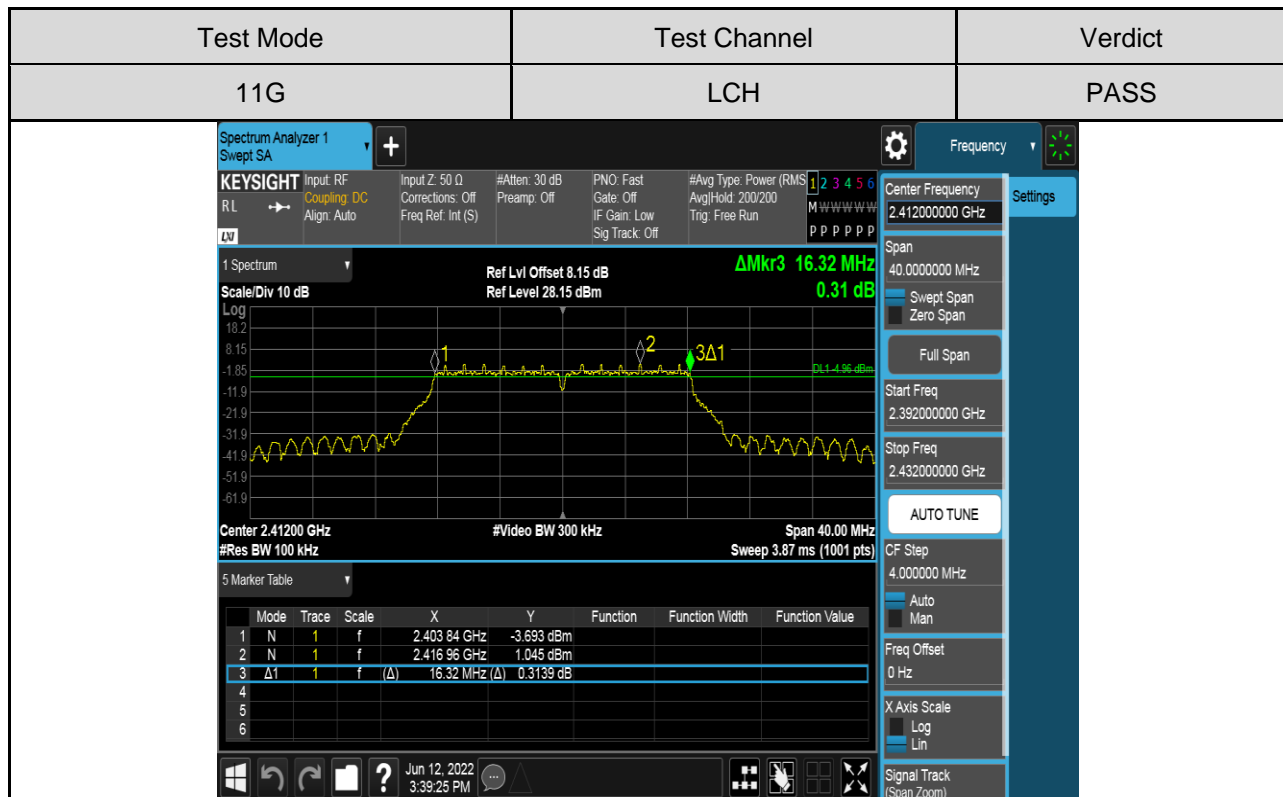
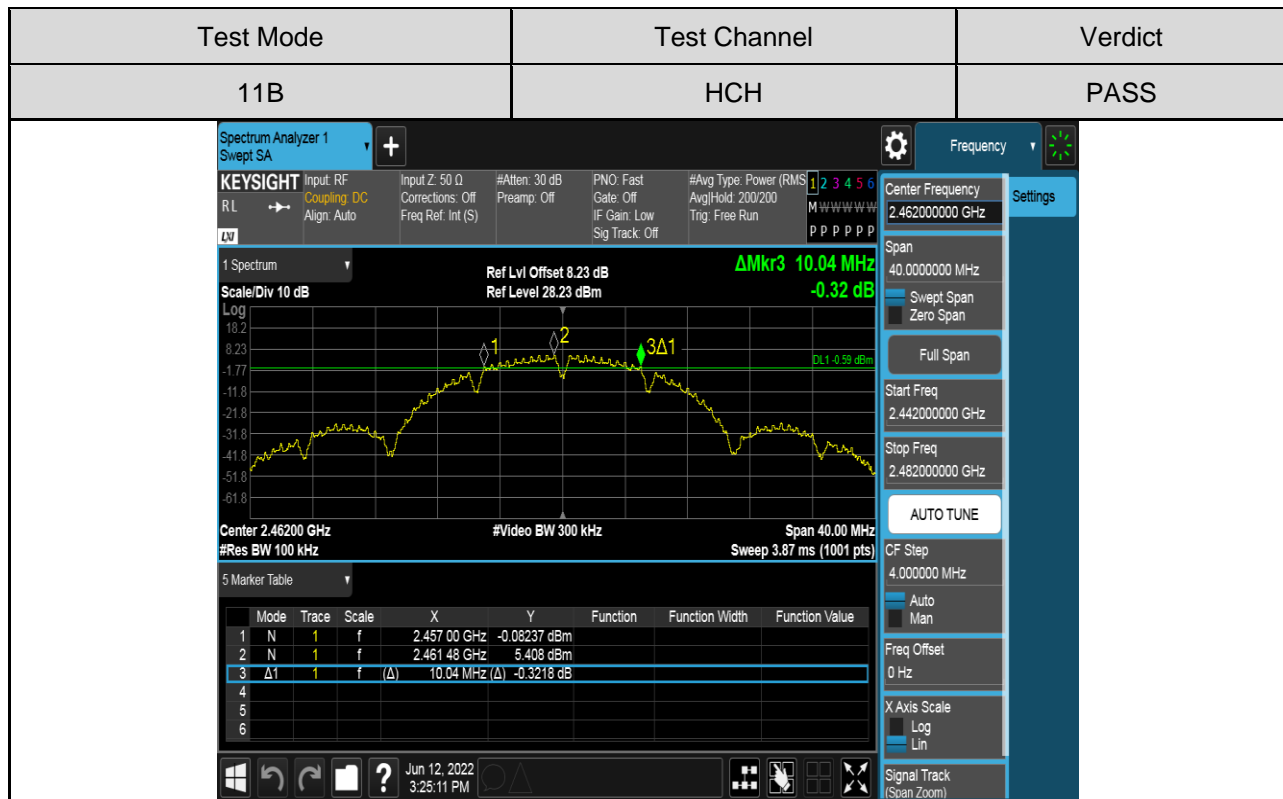
### **TEST ENVIRONMENT**

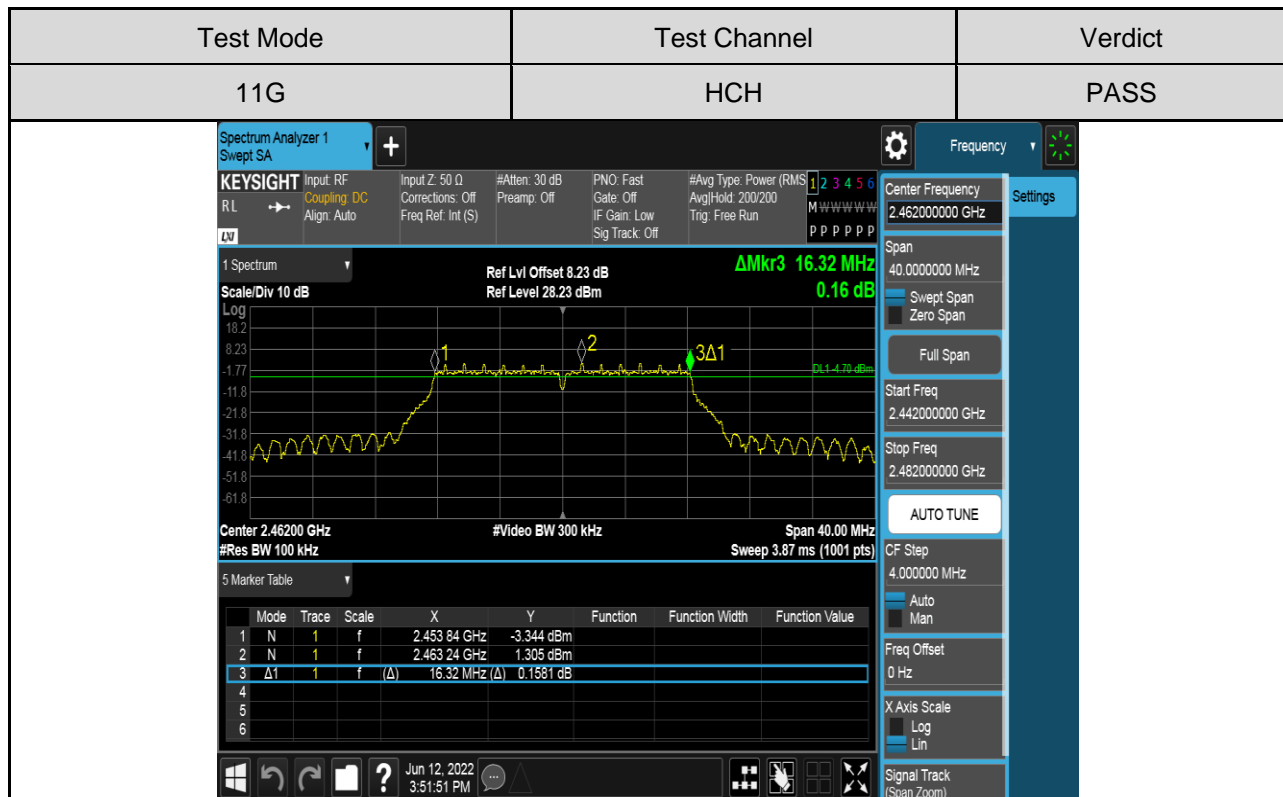
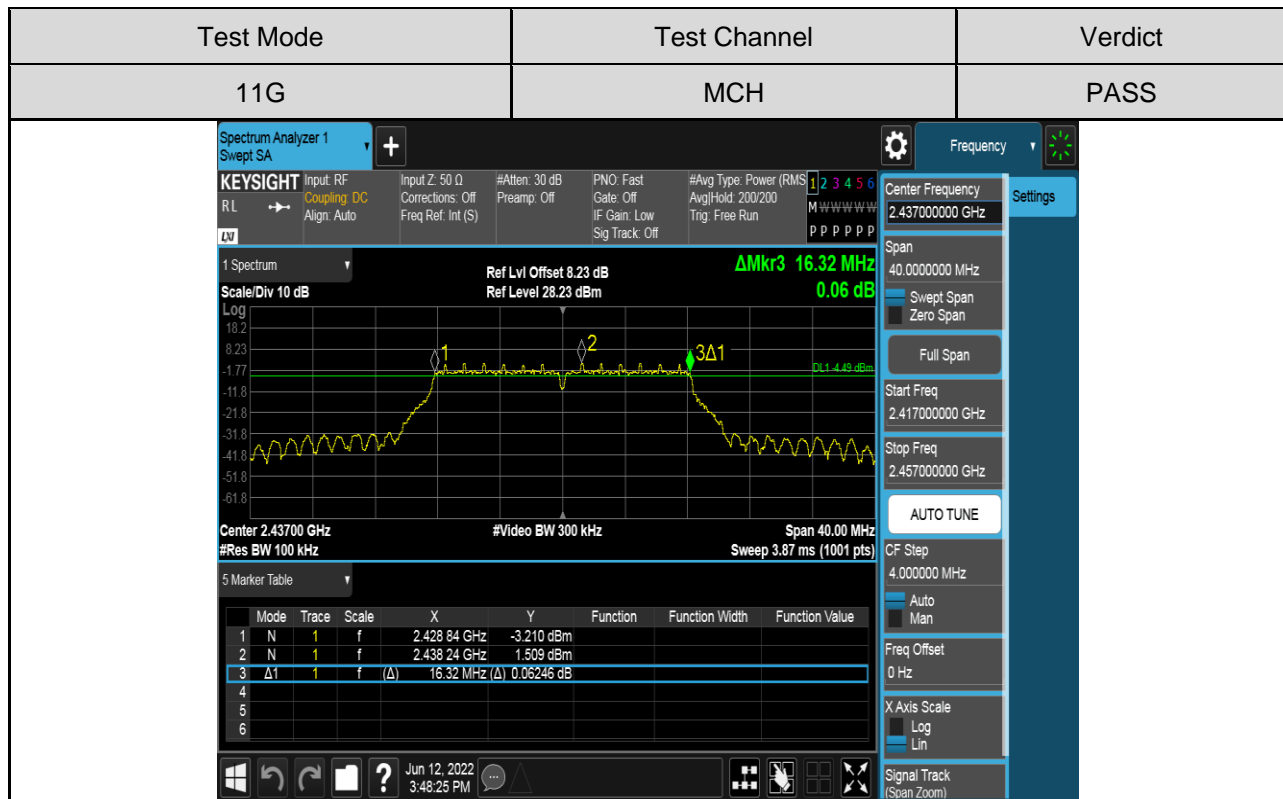
Temperature	22°C	Relative Humidity	56%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V

### **TEST RESULTS TABLE**

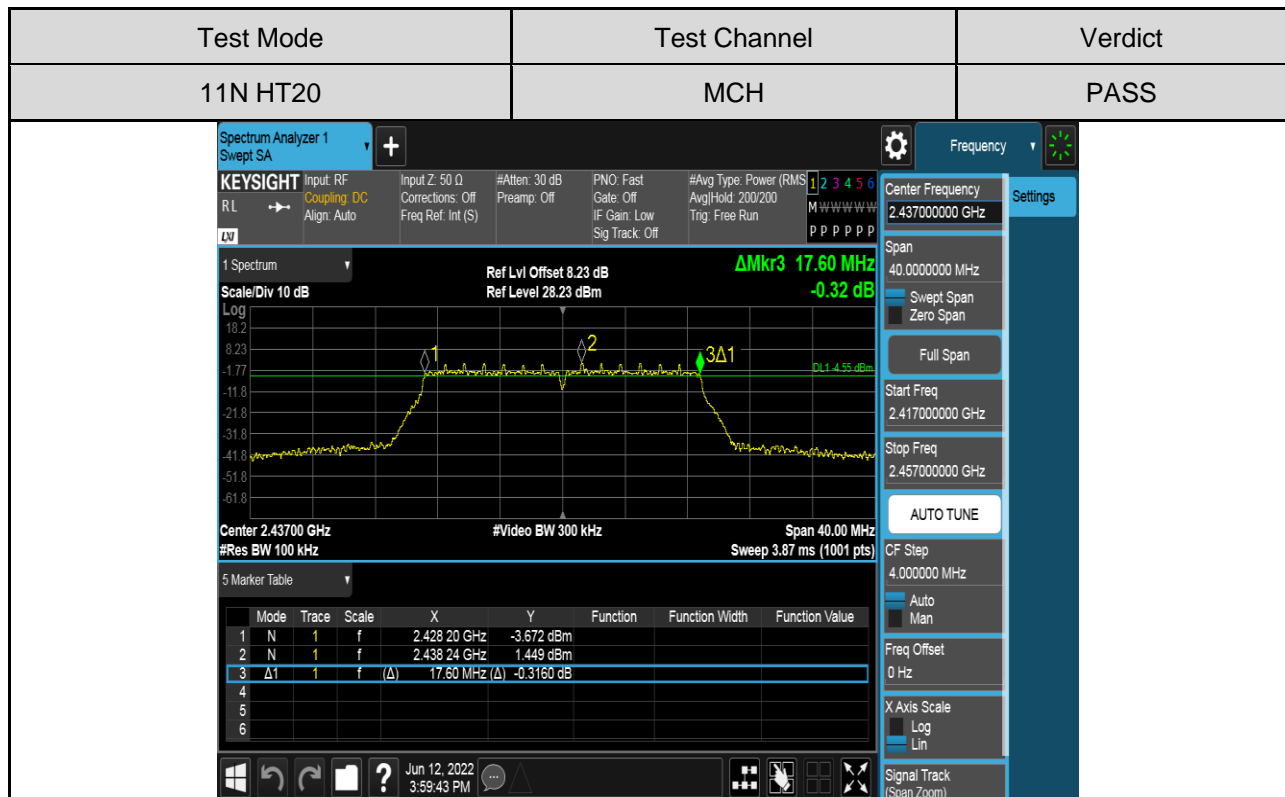
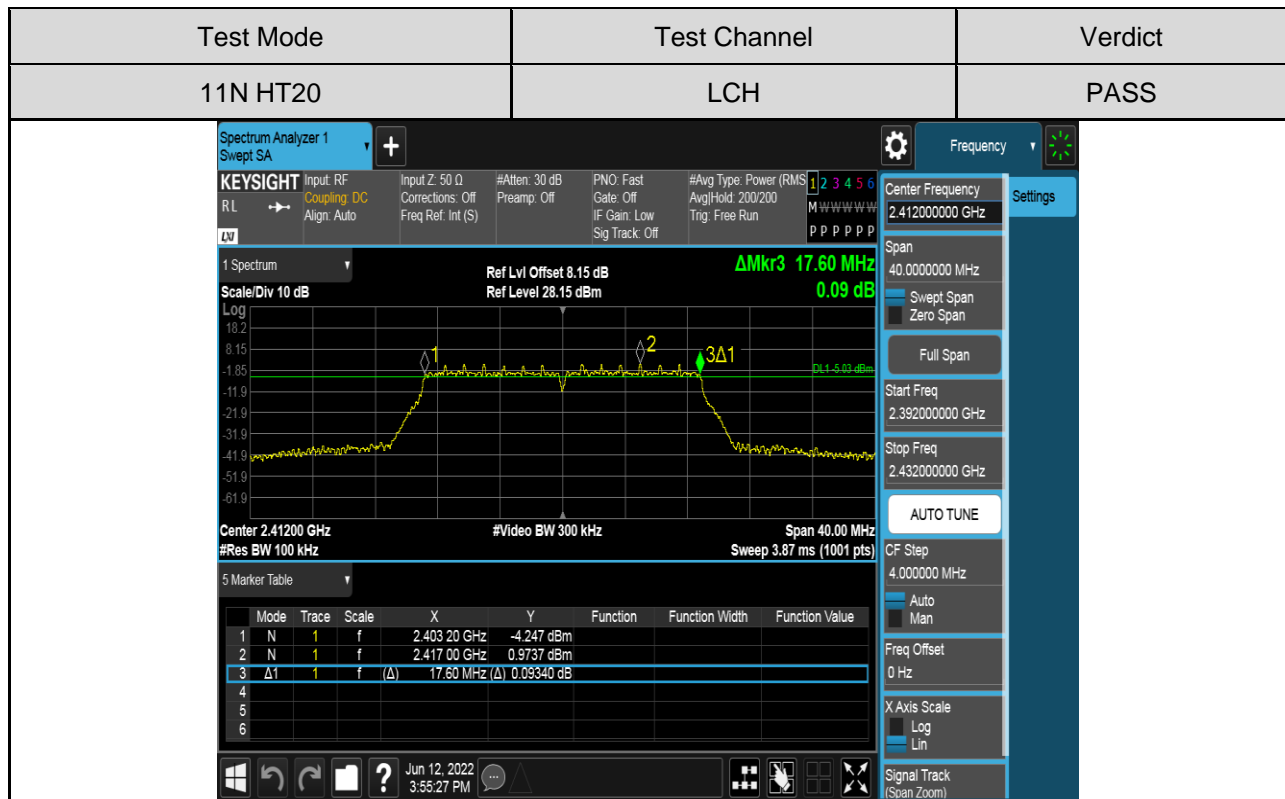
Test Mode	Test Channel	6dB bandwidth (MHz)	Result
11B	LCH	9.60	Pass
	MCH	10.00	Pass
	HCH	10.04	Pass
11G	LCH	16.32	Pass
	MCH	16.32	Pass
	HCH	16.32	Pass
11N HT20	LCH	17.60	Pass
	MCH	17.60	Pass
	HCH	17.60	Pass
11N HT40	LCH	36.32	Pass
	MCH	36.32	Pass
	HCH	36.32	Pass

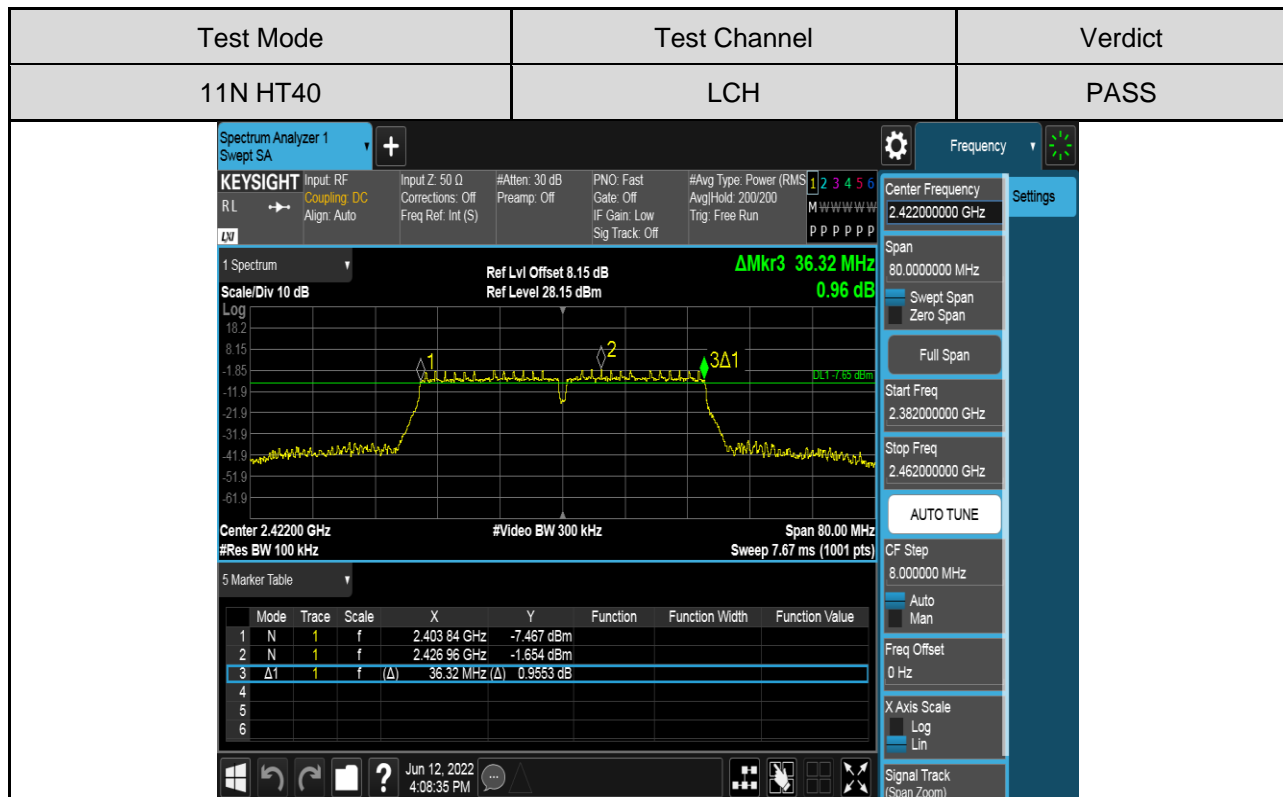
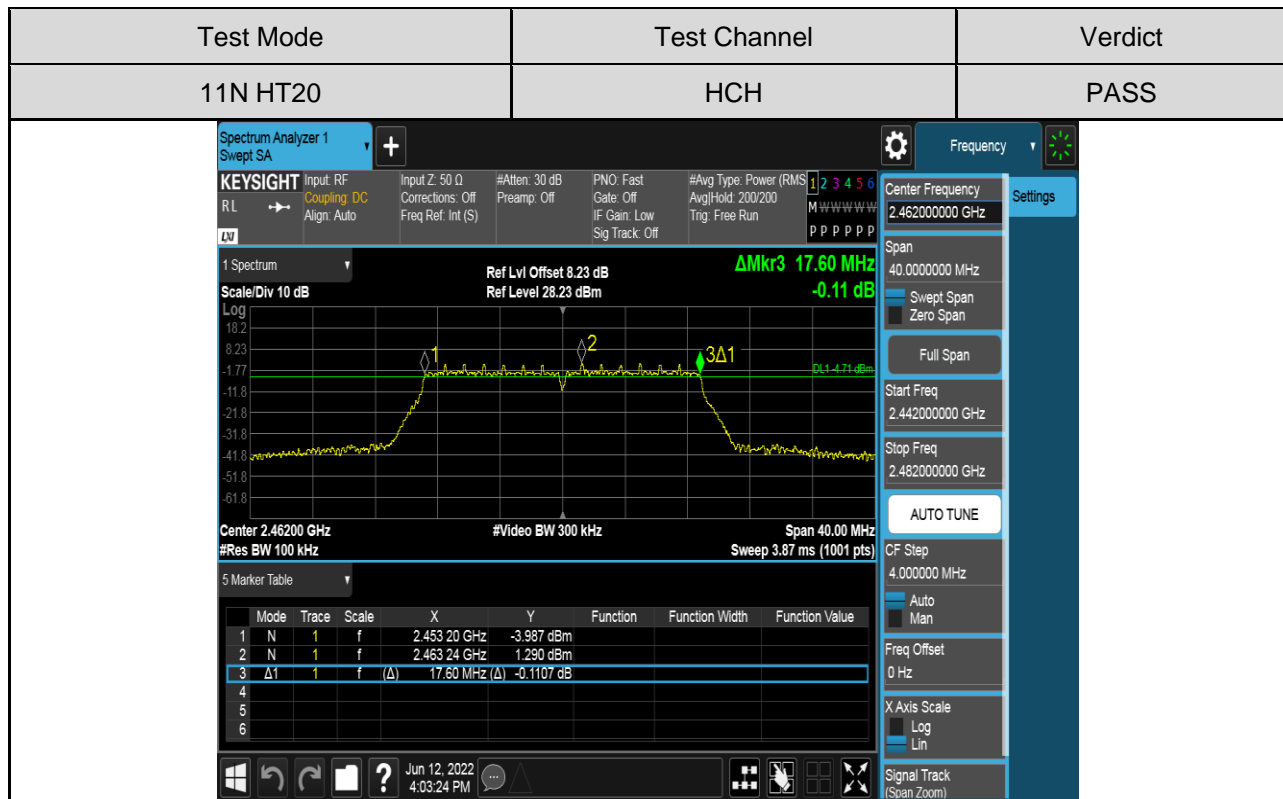


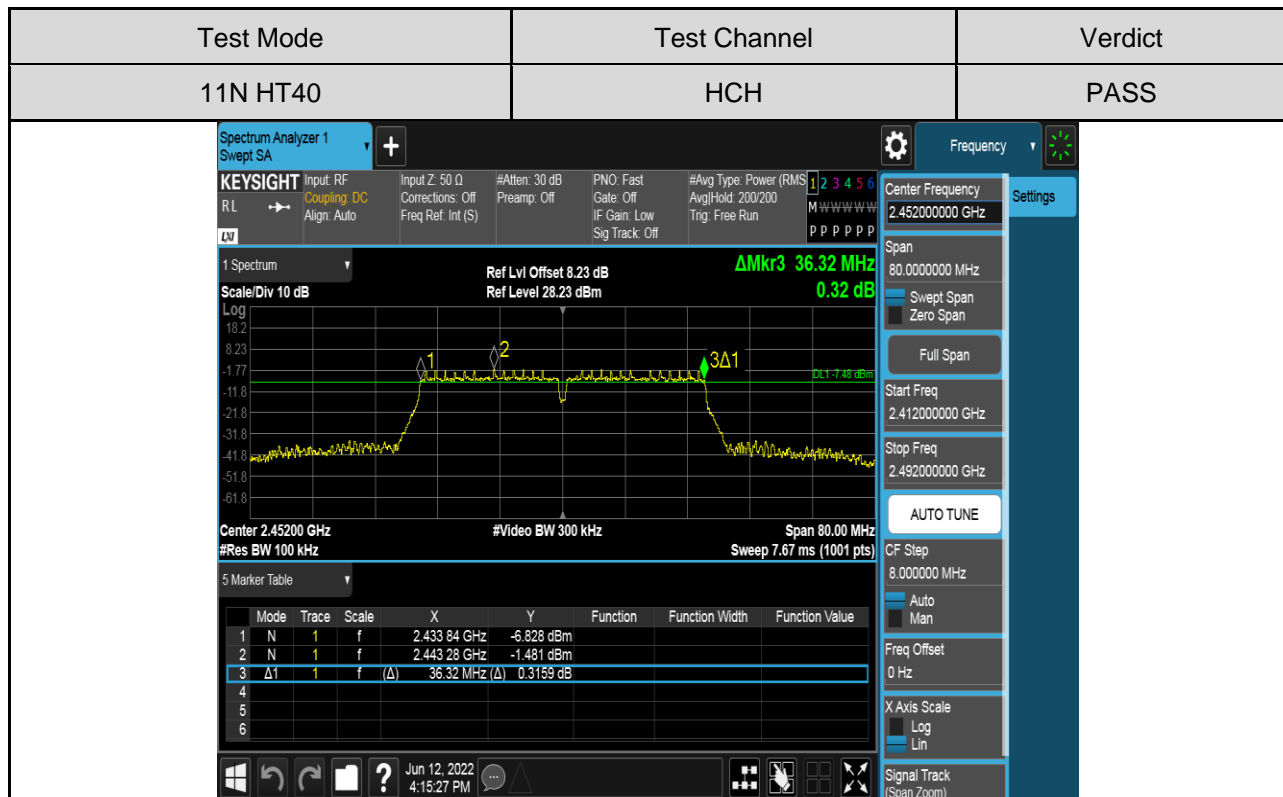
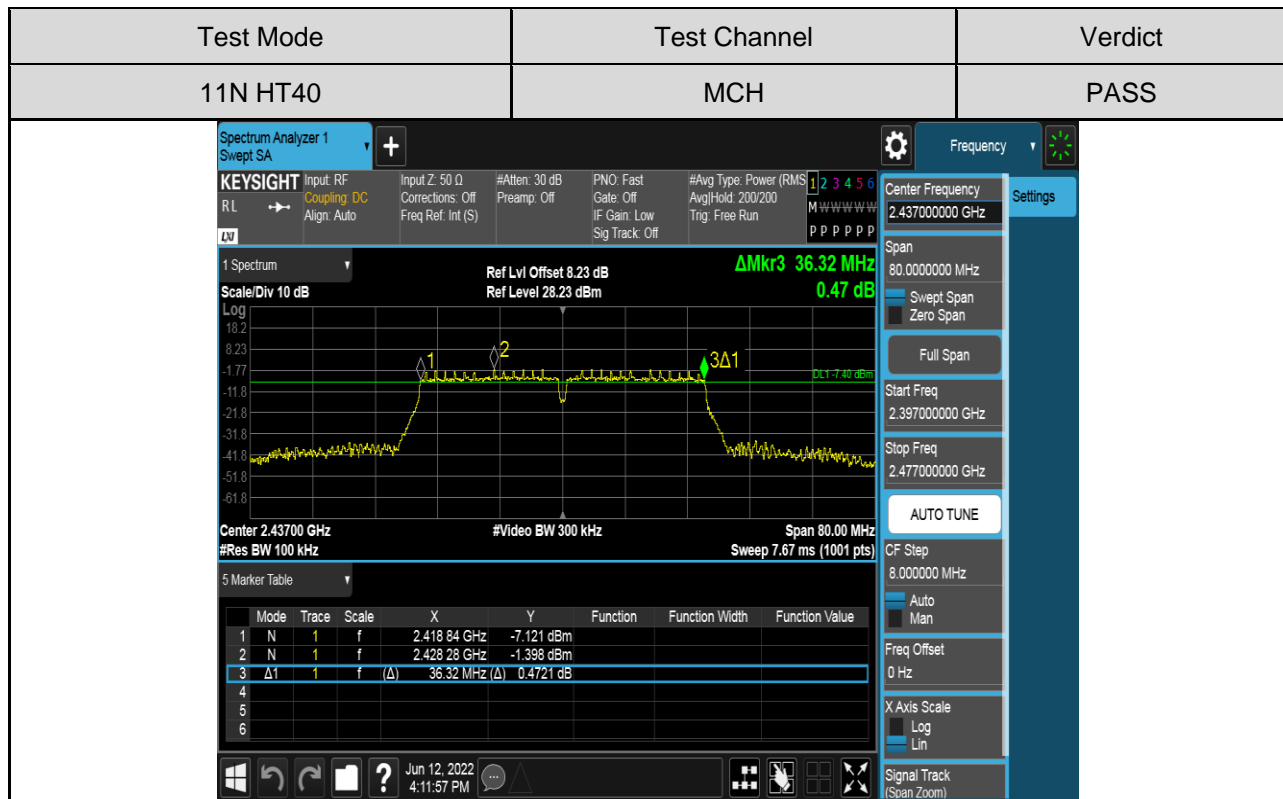














### 7.3. CONDUCTED OUTPUT POWER

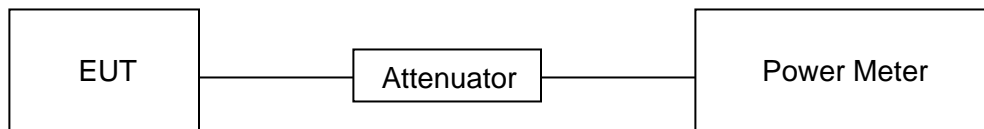
#### LIMITS

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.  
Peak Detector used for Peak result.  
AVG Detector used for AVG result.

#### TEST SETUP





### **TEST ENVIRONMENT**

Temperature	22°C	Relative Humidity	56%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V

### **TEST RESULTS TABLE**

Test Mode	Test Channel	Measurement Output Power (AV)	10log(1/x) Factor	Maximum Conducted Output Power (AV)	LIMIT
		dBm	dBm	dBm	dBm
11B	LCH	14.80	0.03	14.83	30
	MCH	15.30	0.03	15.33	30
	HCH	15.11	0.03	15.14	30
11G	LCH	12.03	0.21	12.24	30
	MCH	12.48	0.21	12.69	30
	HCH	12.31	0.21	12.52	30
11N HT20	LCH	12.14	0.06	12.20	30
	MCH	12.59	0.06	12.65	30
	HCH	12.43	0.06	12.49	30
11N HT40	LCH	12.37	0.12	12.49	30
	MCH	12.55	0.12	12.67	30
	HCH	12.51	0.12	12.63	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

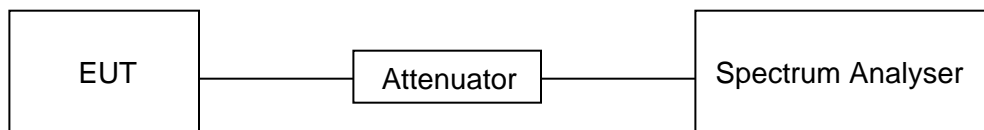
Refer to FCC KDB 558074, connect the UUT to the spectrum analyser and use the following settings:

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 SETUP



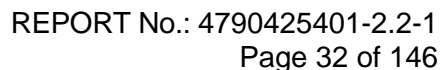


### **TEST ENVIRONMENT**

Temperature	22°C	Relative Humidity	56%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V

### **TEST RESULTS TABLE**

Test Mode	Test Channel	Maximum Peak power spectral density (dBm/30kHz)	Result
11B	LCH	0.48	Pass
	MCH	1.13	Pass
	HCH	0.27	Pass
11G	LCH	-3.49	Pass
	MCH	-3.00	Pass
	HCH	-3.87	Pass
11N HT20	LCH	-4.26	Pass
	MCH	-4.09	Pass
	HCH	-4.07	Pass
11N HT40	LCH	-6.83	Pass
	MCH	-6.54	Pass
	HCH	-7.36	Pass



Test Mode	Test Channel	Verdict
11B	LCH	PASS

**Keysight Spectrum Analyzer 1**  
**KEYSIGHT** Input: RF Coupling: DC Input Z: 50 Ω Corrections: Off #Atten: 20 dB PNO: Best Wide Gate: Off #Avg Type: Power (RMS) 1 2 3 4 5 6  
 RL → Align: Auto Freq Ref: Int (S) IF Gain: Low Trng: Free Run M W W W W W W W P P P P P P

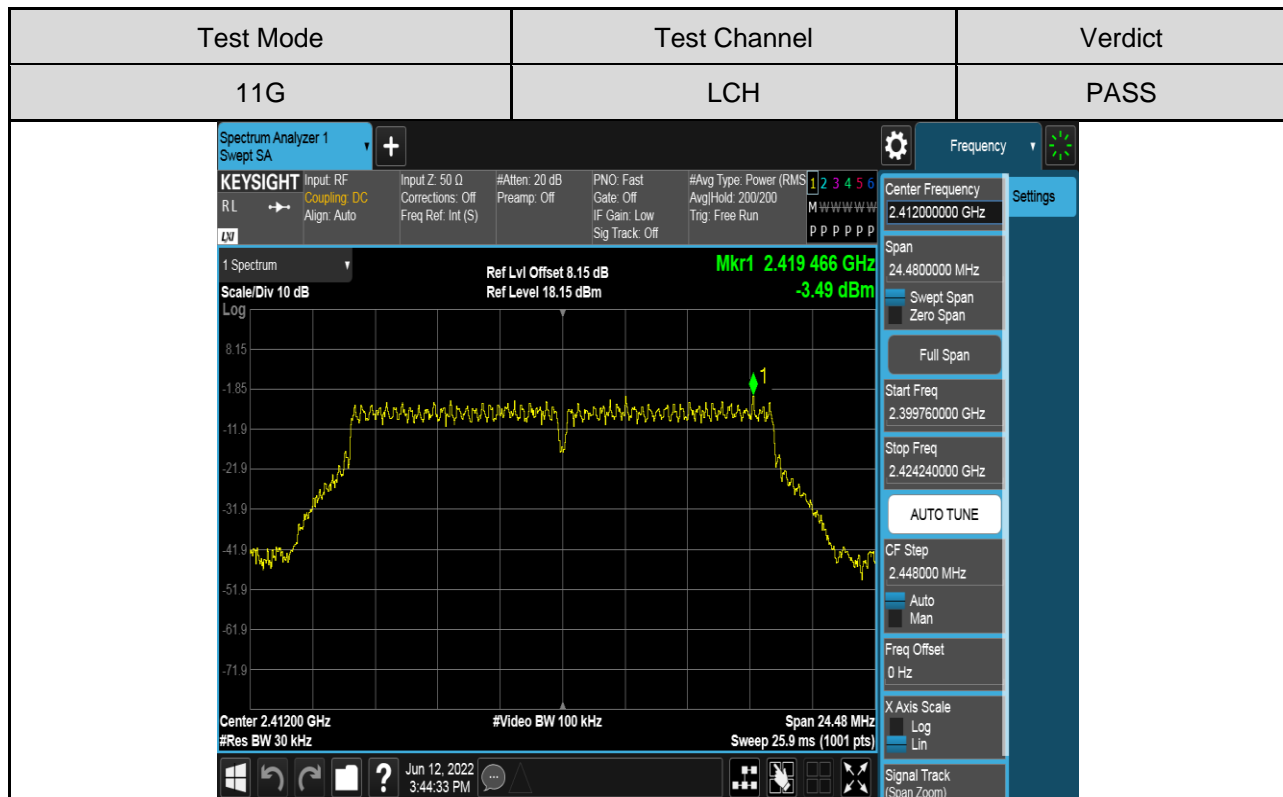
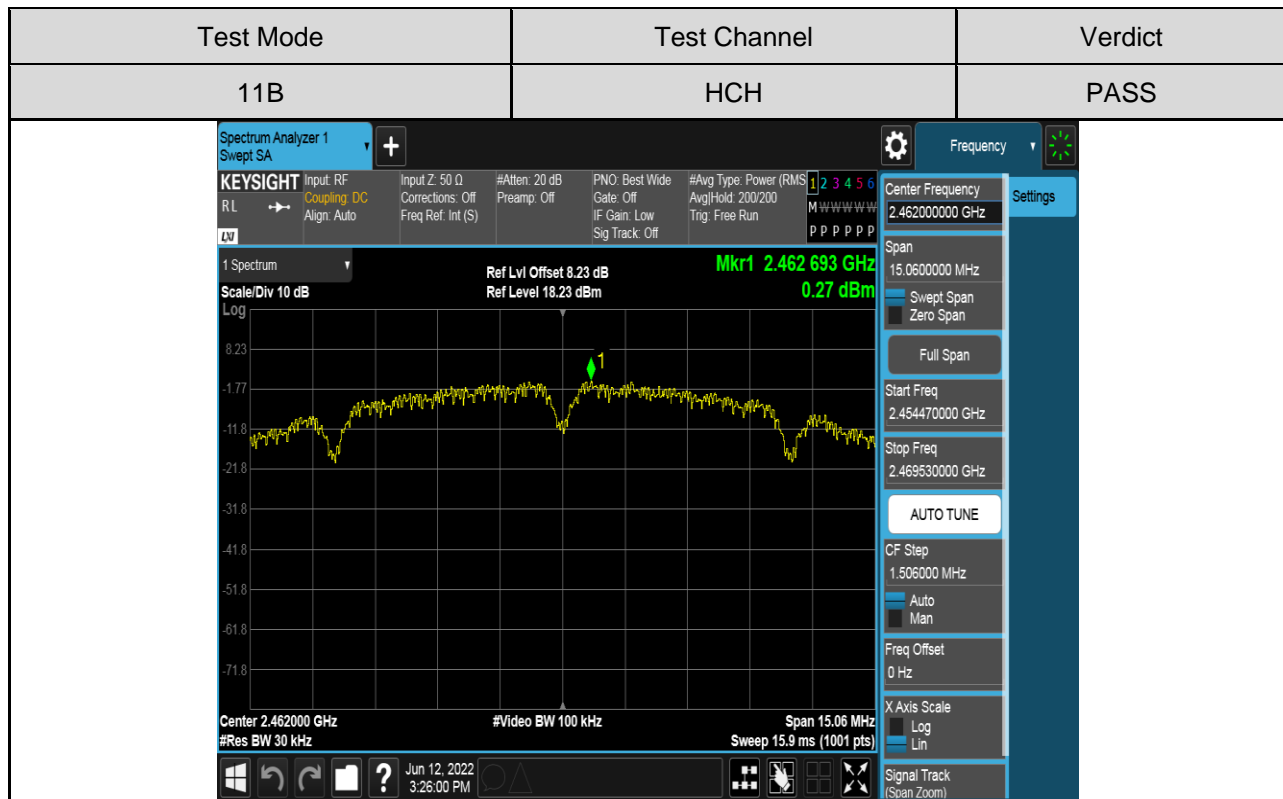
1 Spectrum Scale/Div 10 dB Log Ref Lvl Offset 8.15 dB Mkr1 2.412 662 4 GHz 0.48 dBm  
 Ref Level 18.15 dBm

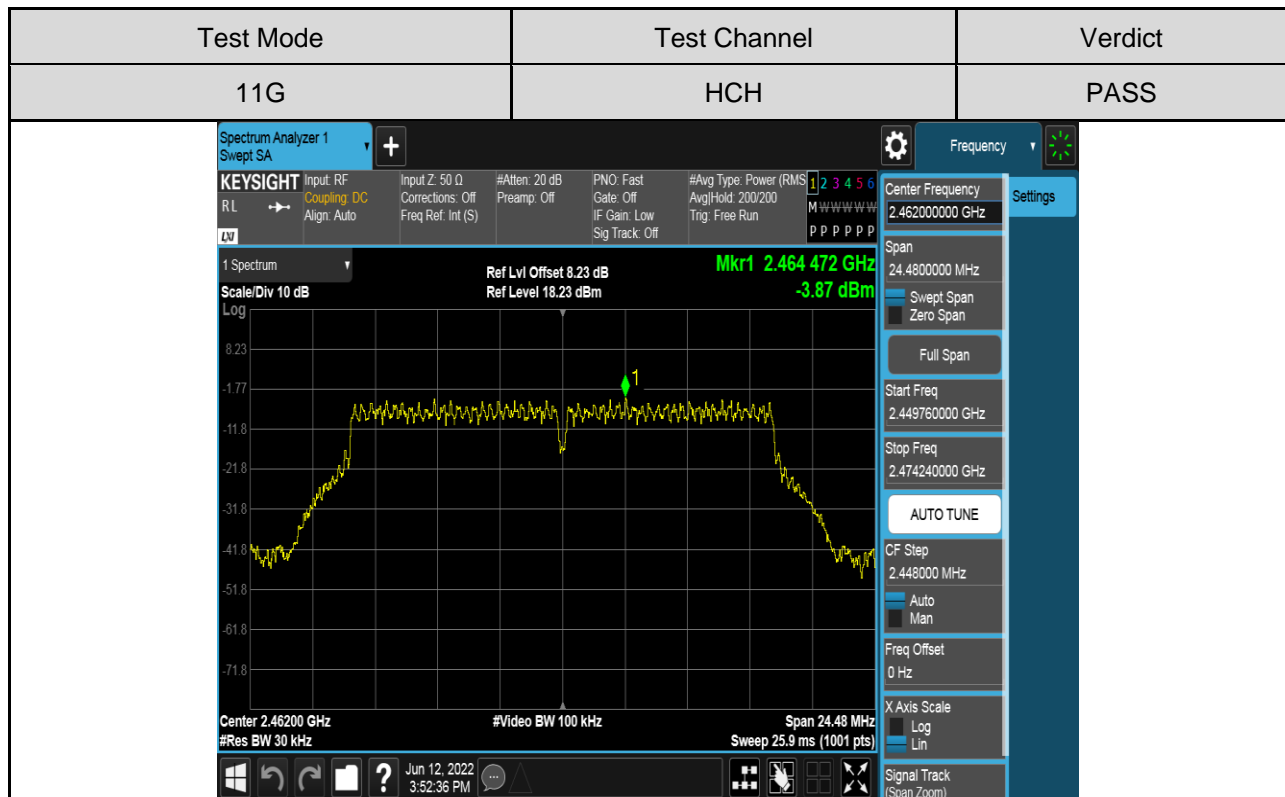
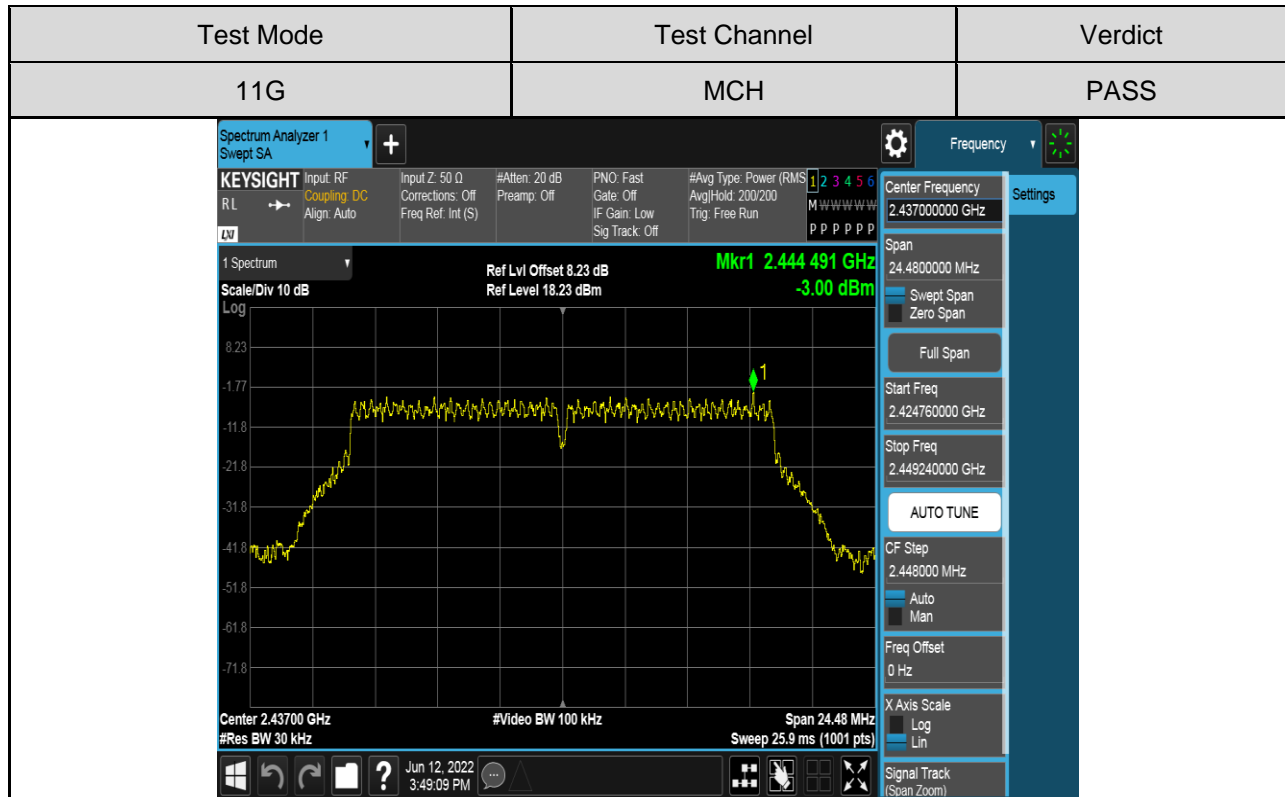
Center 2.412000 GHz #Video BW 100 kHz Span 14.40 MHz  
 #Res BW 30 kHz Sweep 15.2 ms (1001 pts)

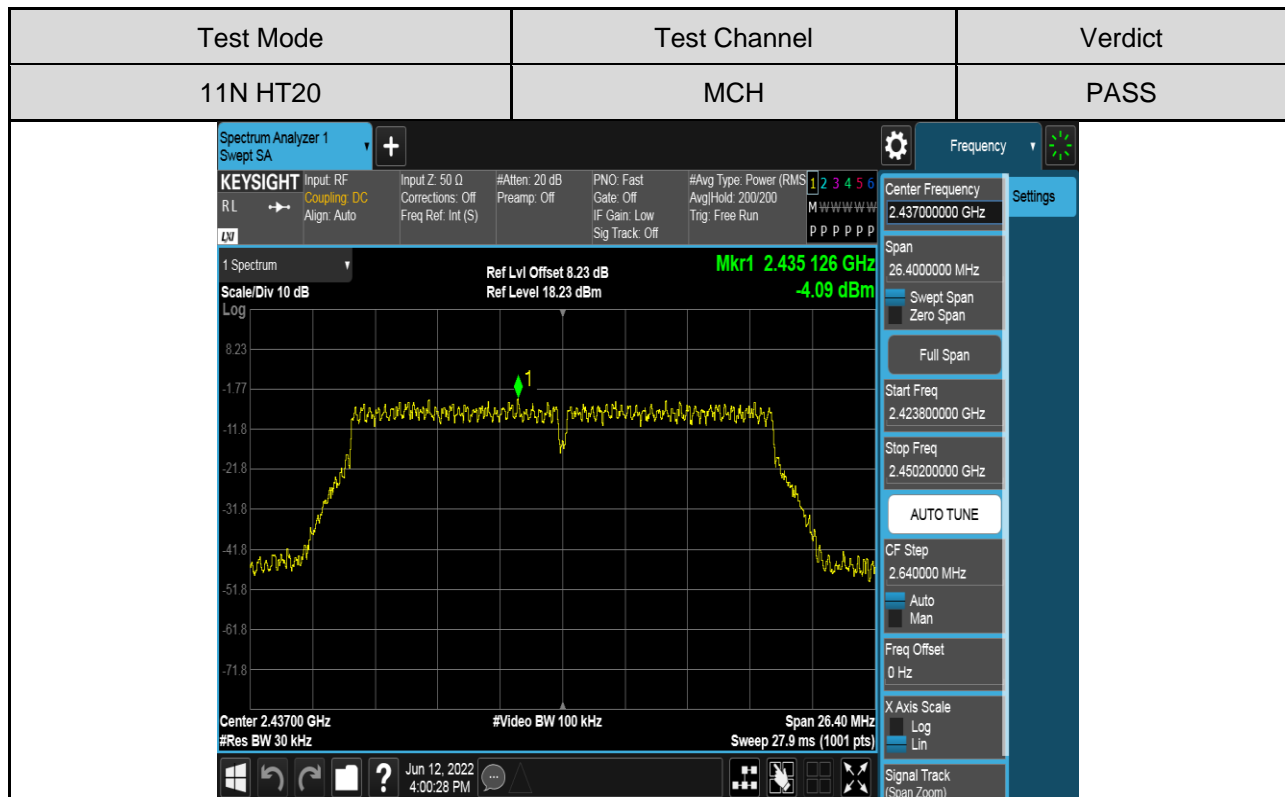
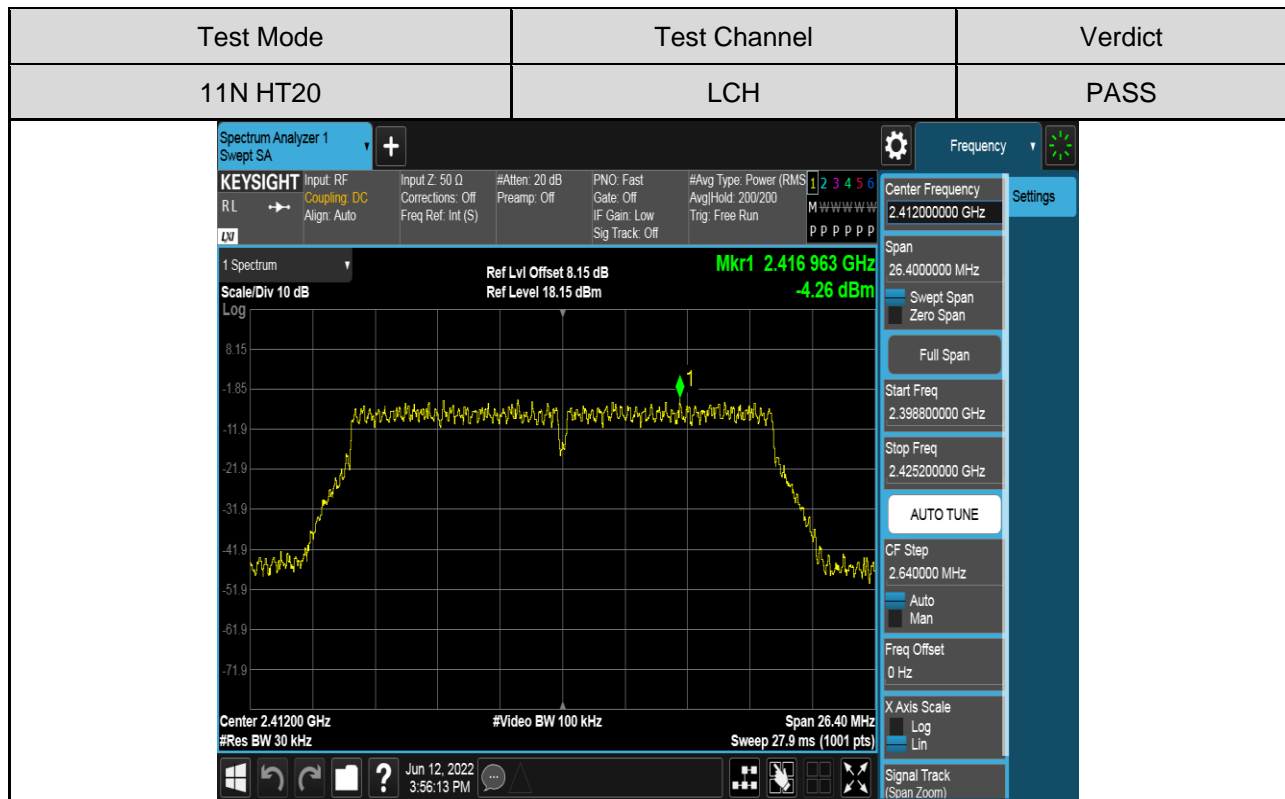
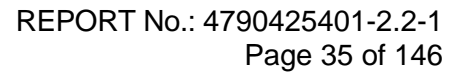
Center Frequency 2.41200000 GHz Settings  
 Span 14.400000 MHz  
 Swept Span Zero Span Full Span  
 Start Freq 2.40480000 GHz  
 Stop Freq 2.41920000 GHz  
 AUTO TUNE  
 CF Step 1.440000 MHz  
 Auto Man  
 Freq Offset 0 Hz  
 X Axis Scale Log Lin  
 Signal Track (Span Zoom)

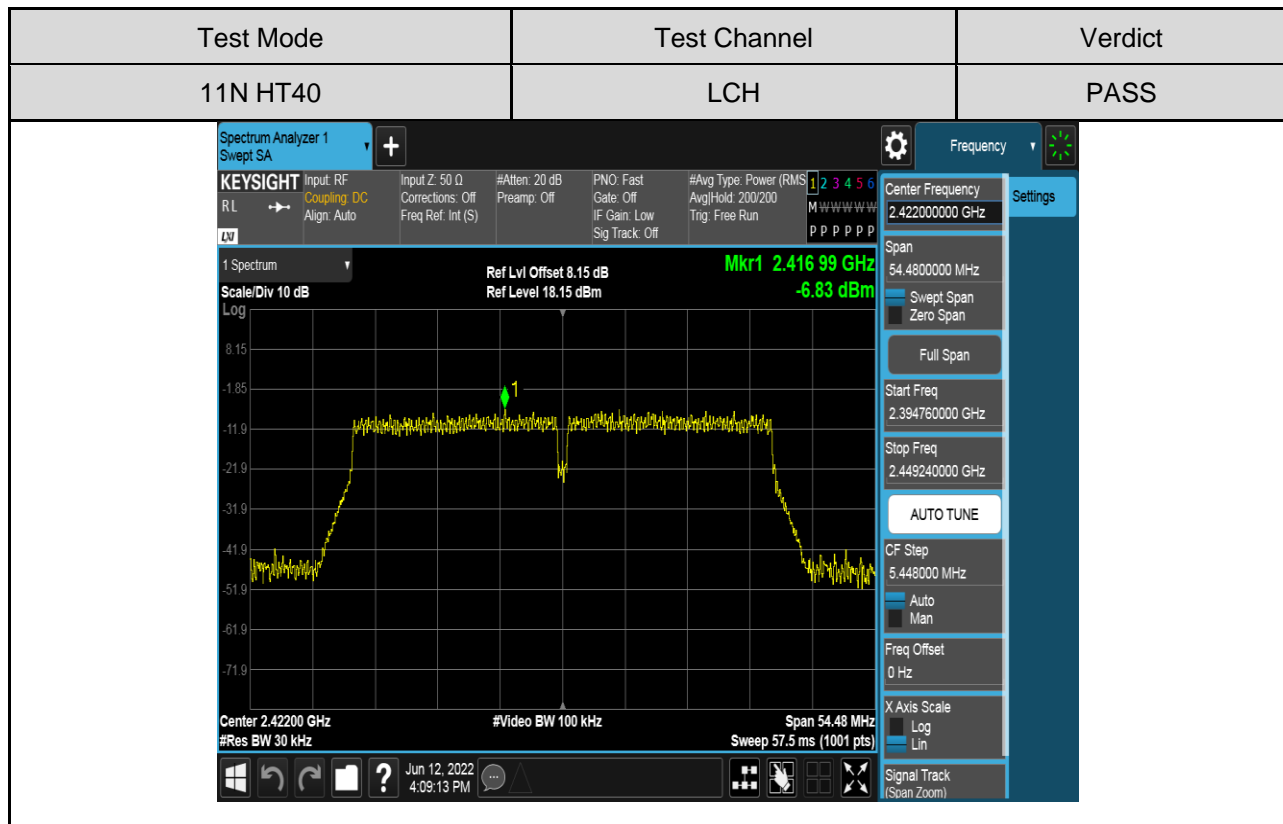
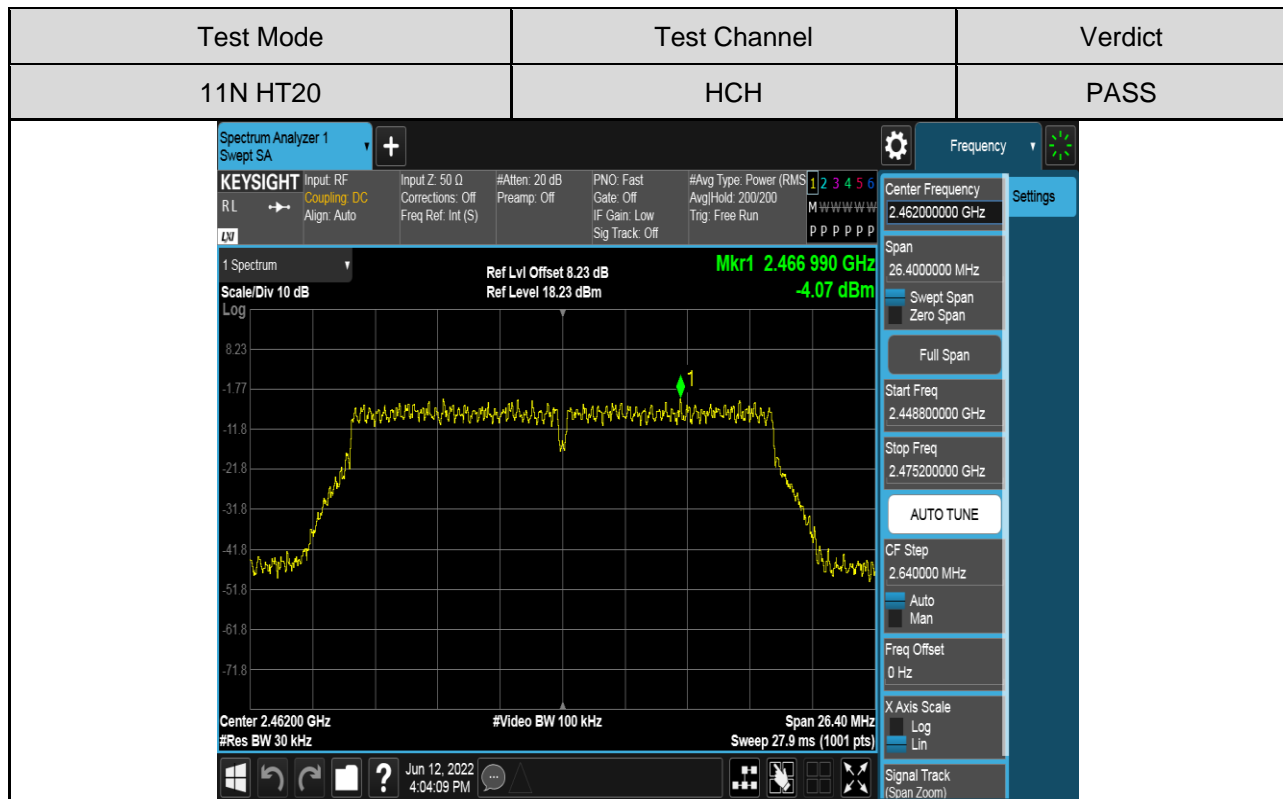
Form-ULID-008536-9 V2.0

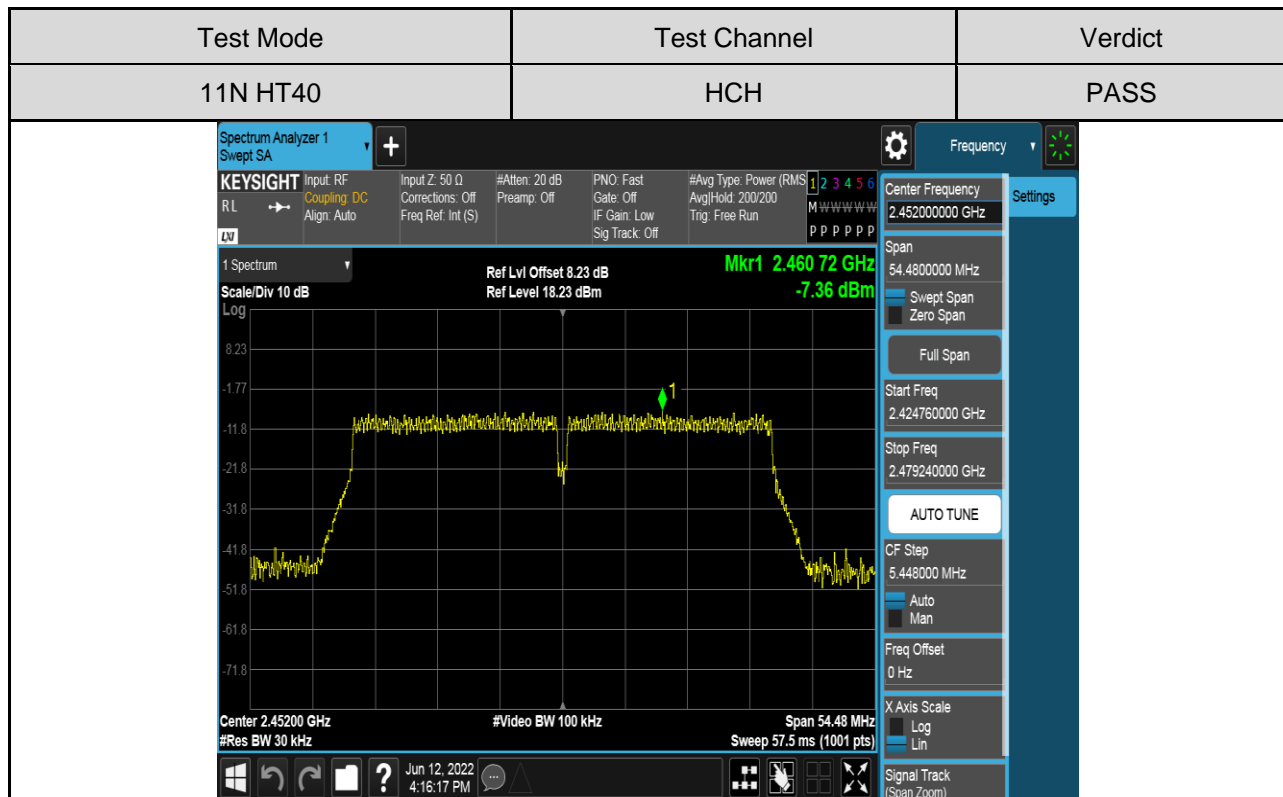
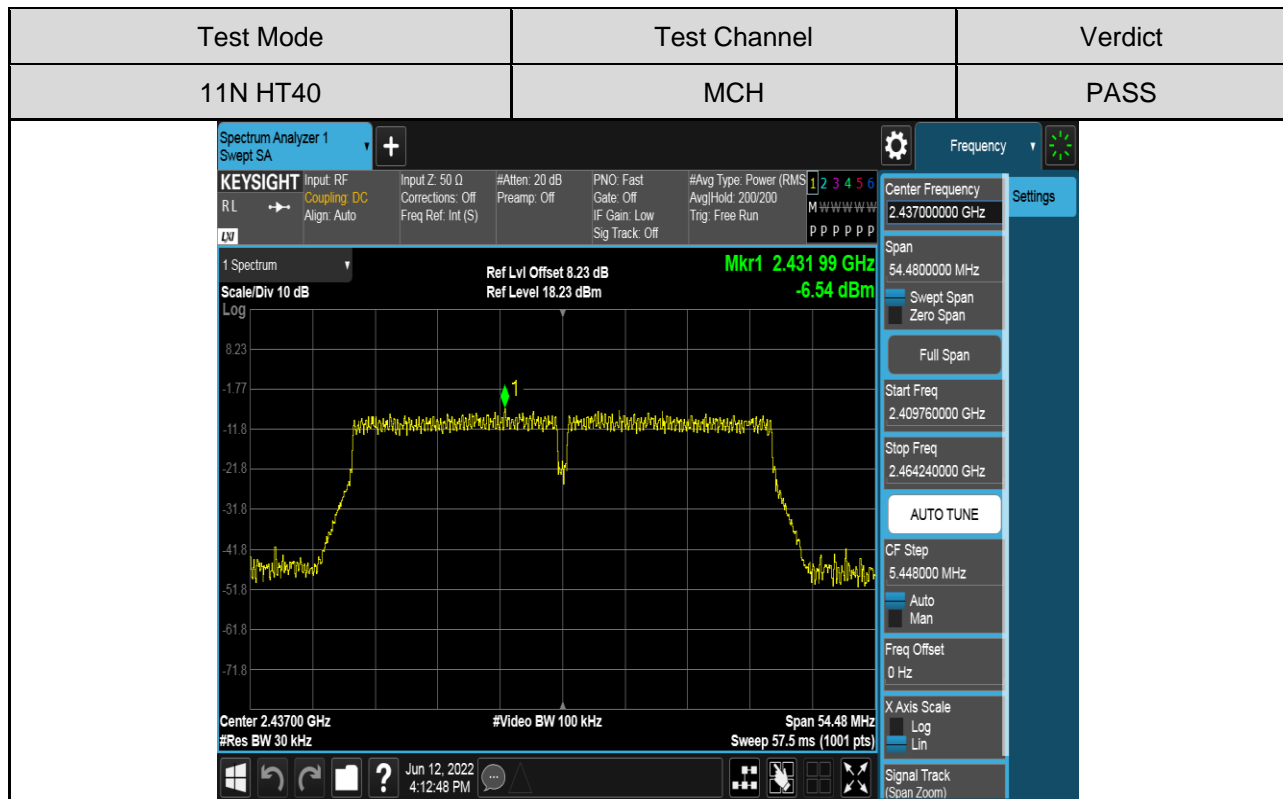














## 7.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

### 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 analyser and use the following settings:

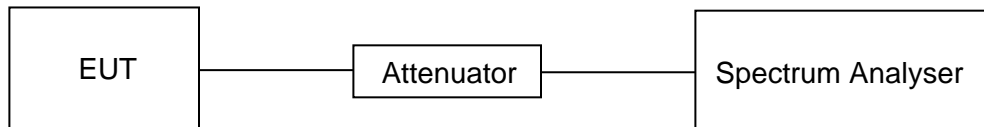
Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	100K
VBW	$\geq 3 \times \text{RBW}$
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

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	$\geq 3 \times \text{RBW}$
measurement points	$\geq \text{span}/\text{RBW}$
Trace	Max hold
Sweep time	Auto couple.

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

### TEST SETUP





**TEST ENVIRONMENT**

Temperature	22°C	Relative Humidity	56%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V

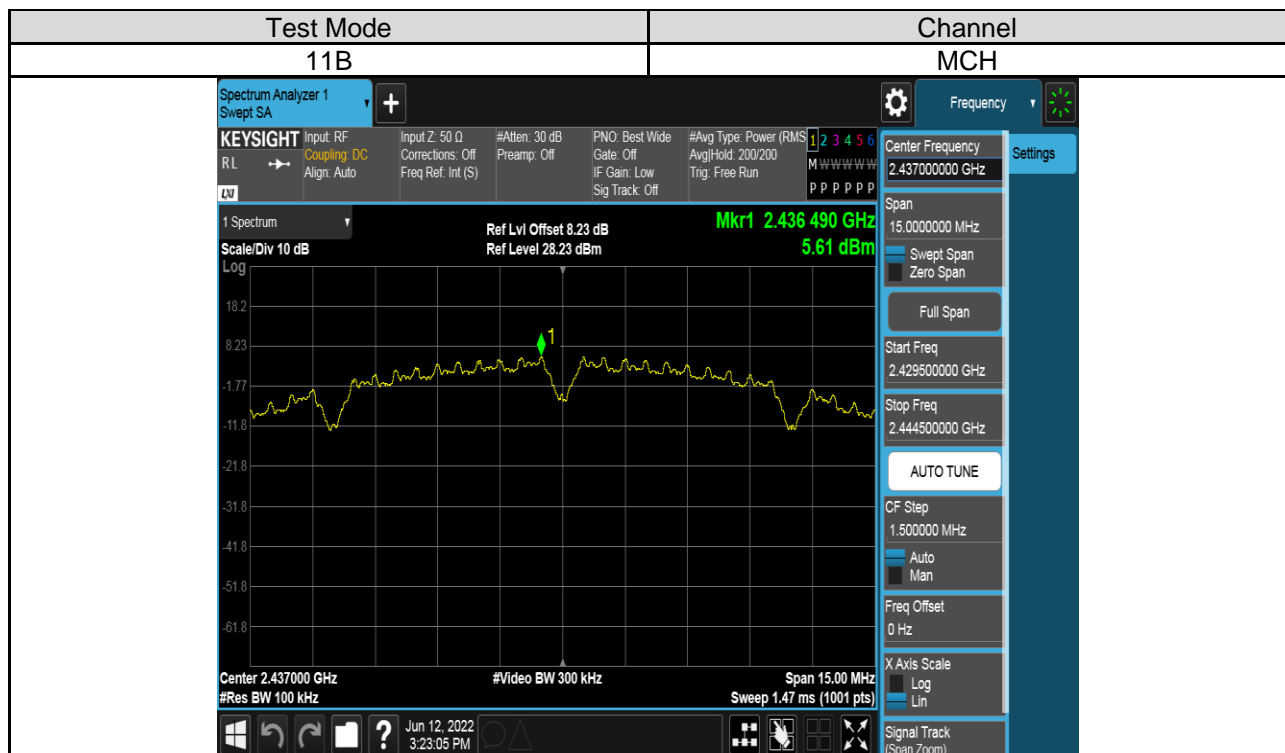
**PART 1: REFERENCE LEVEL MEASUREMENT**

**TEST RESULTS TABLE**

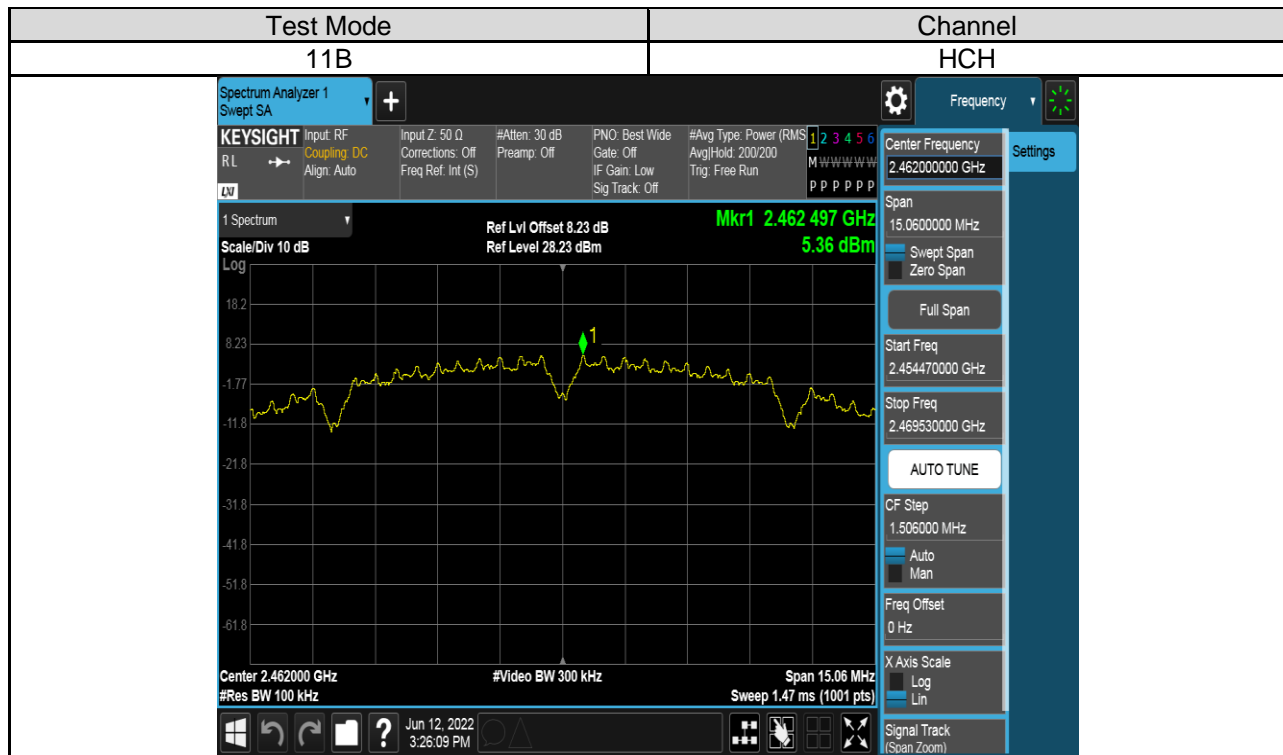
Test Mode	Test Channel	Result[dBm]
11B	LCH	5.12
	MCH	5.61
	HCH	5.36
11G	LCH	0.95
	MCH	1.48
	HCH	1.19
11N HT20	LCH	0.19
	MCH	0.98
	HCH	1.08
11N HT40	LCH	-1.64
	MCH	-1.45
	HCH	-1.50

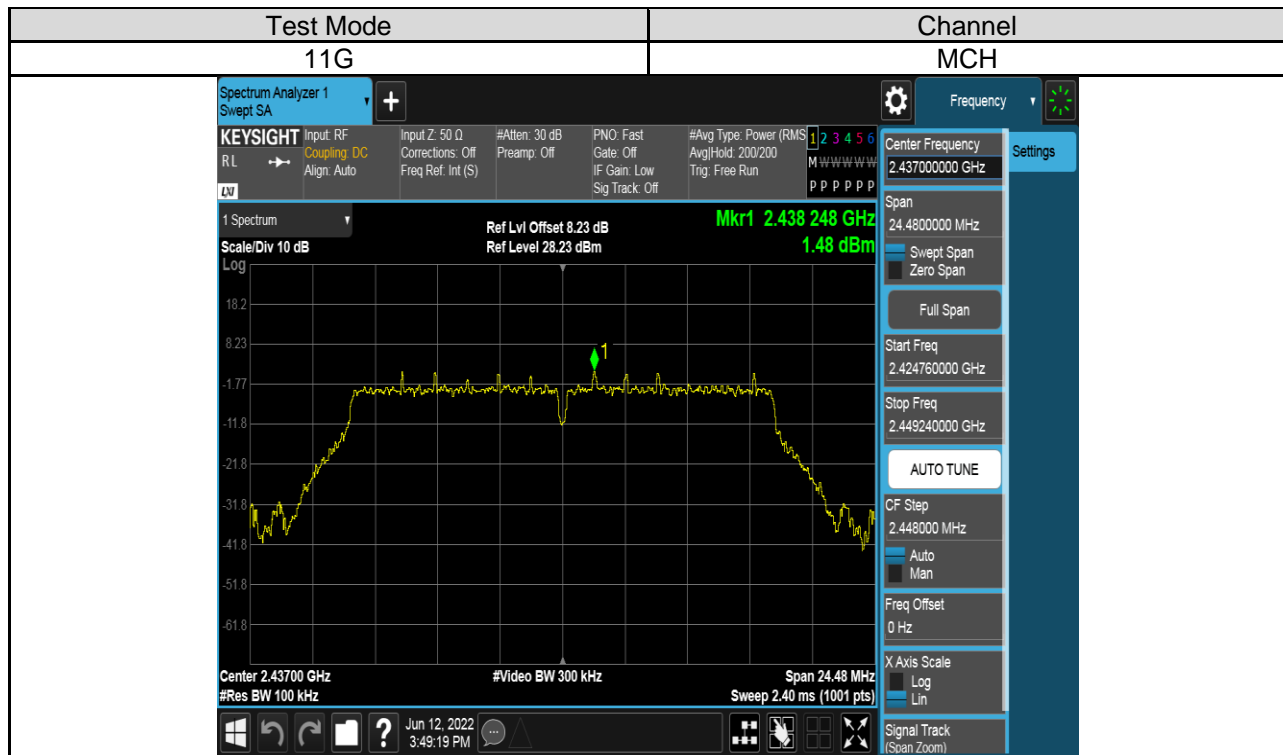


## TEST GRAPHS

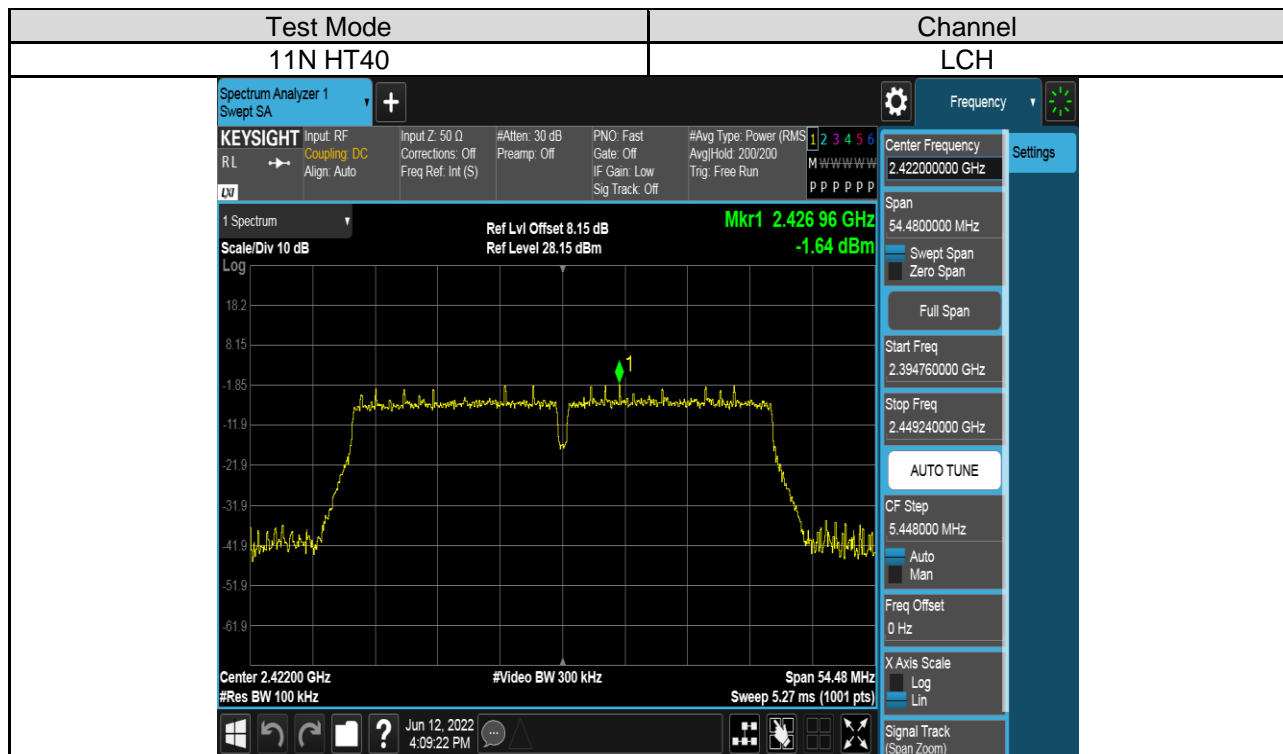
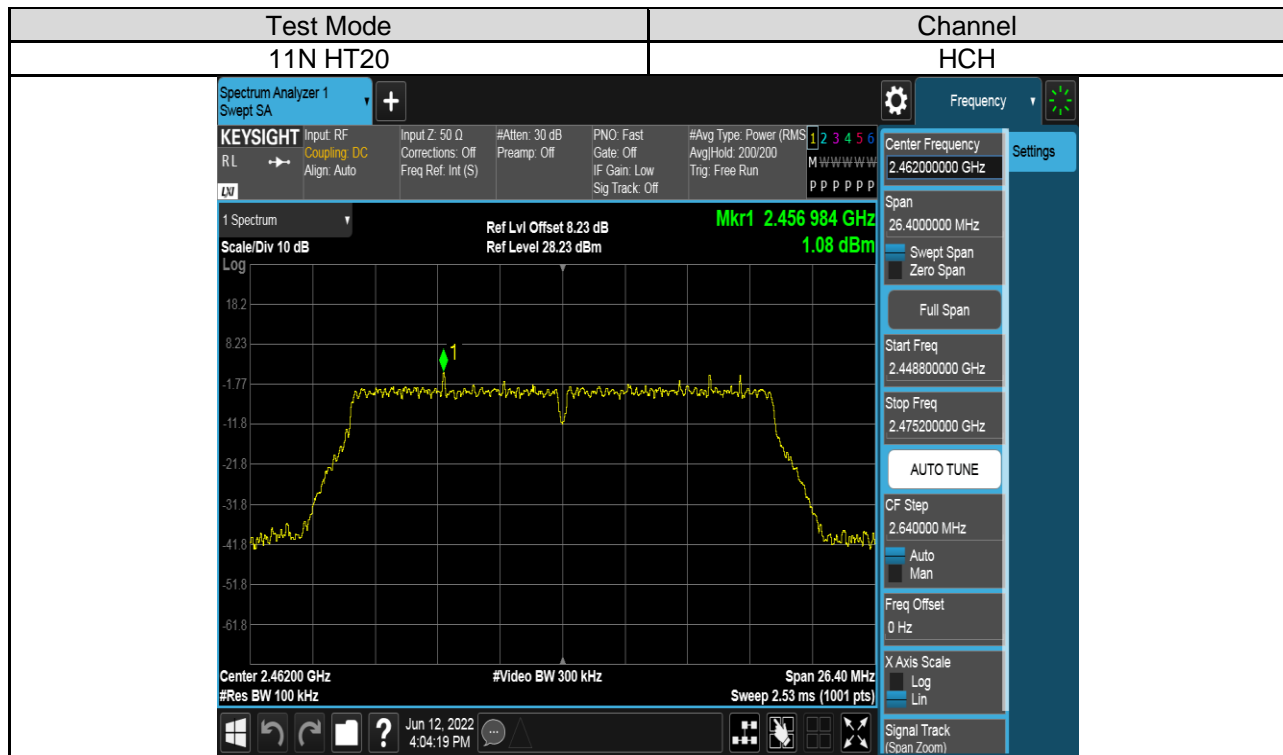


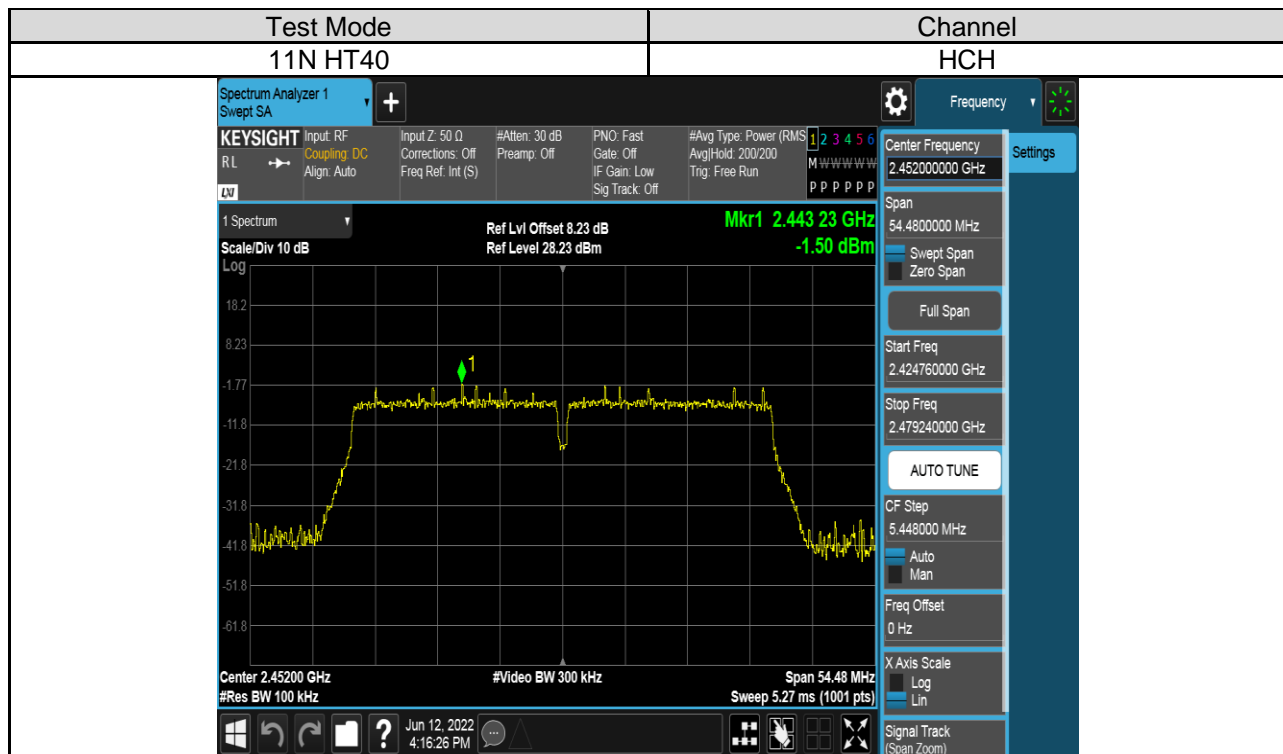
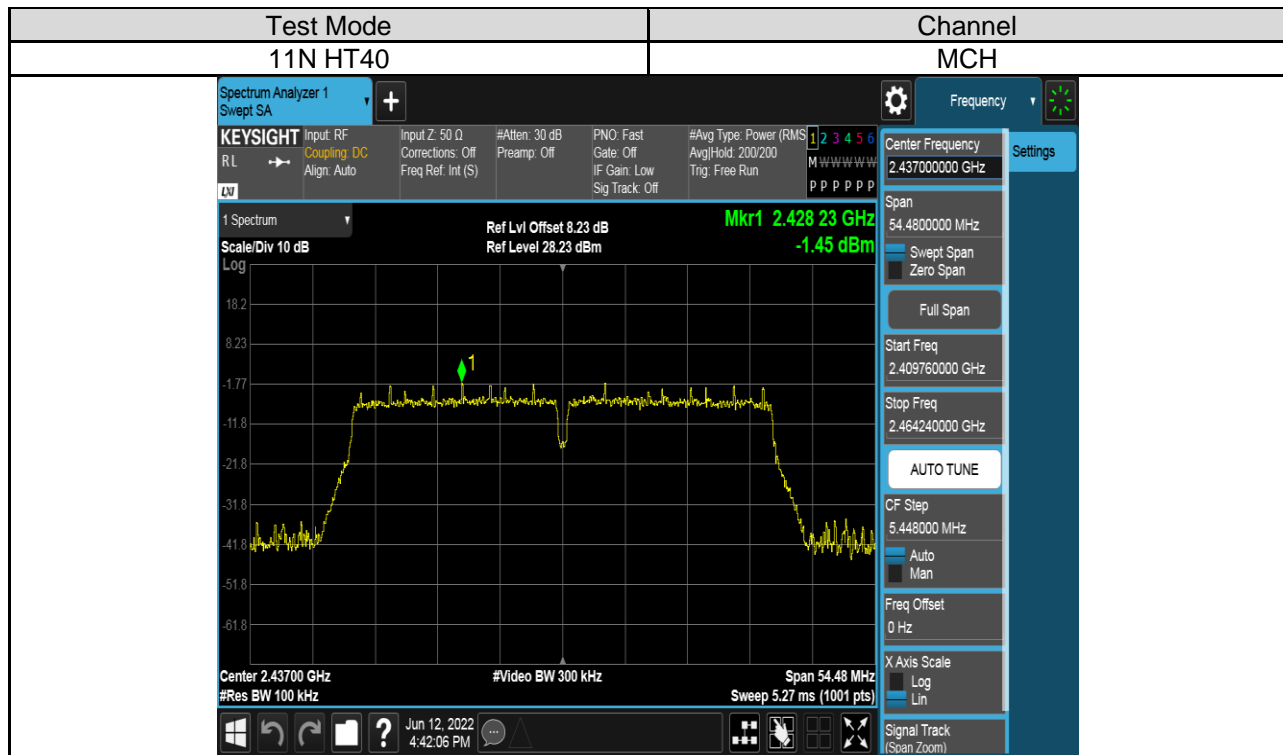














**PART 2: CONDUCTED BANDEDGE**

**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