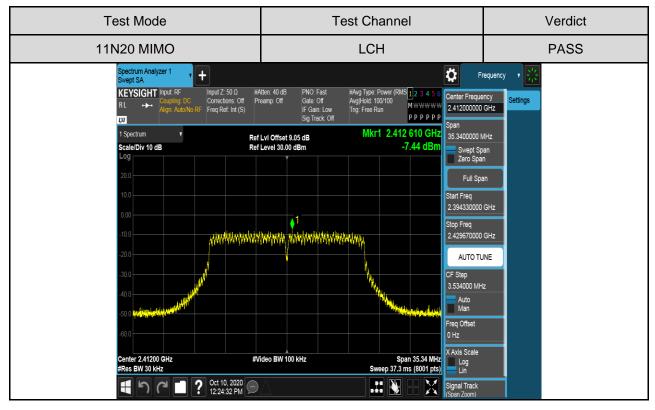
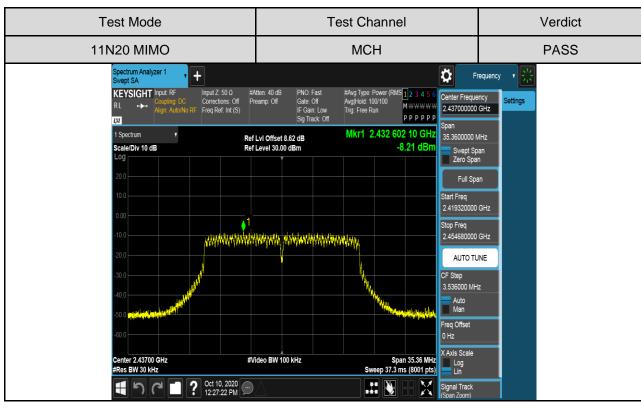
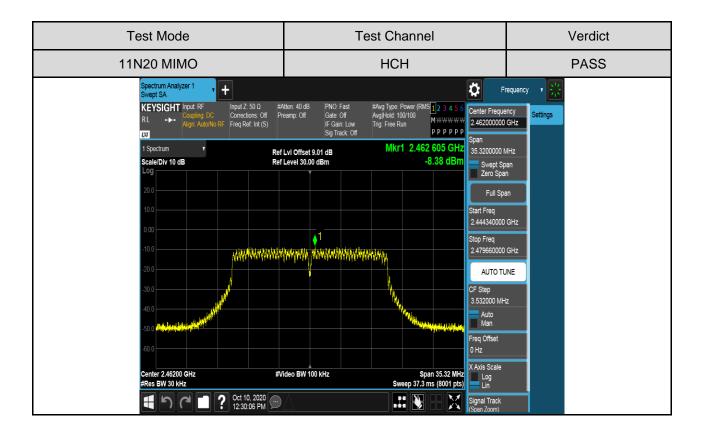


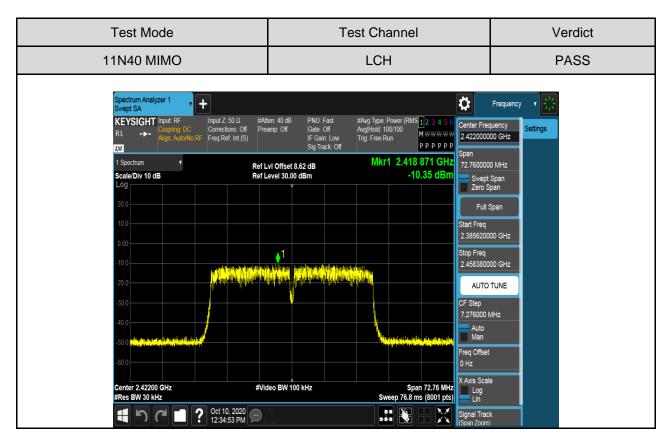
Page 49 of 195



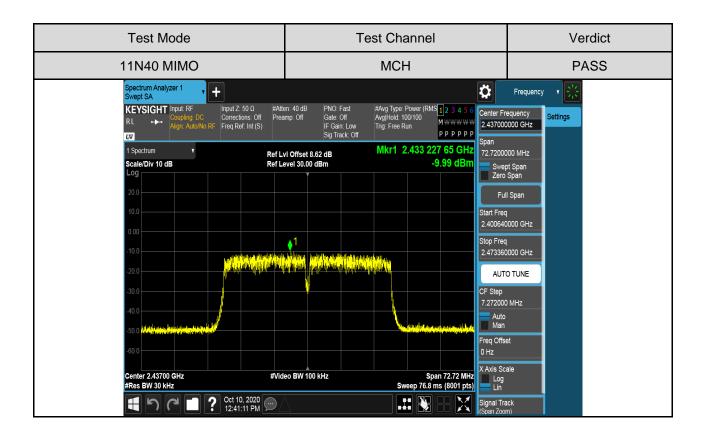


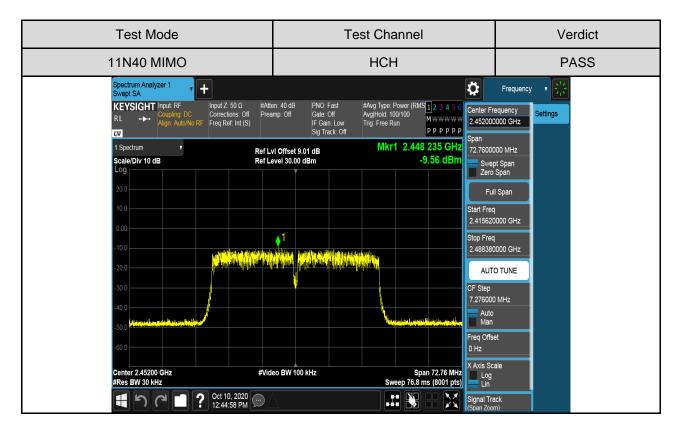














7.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

LIMITS

FCC Part15 (15.247), Subpart C			
Section	Test Item	Limit	
FCC §15.247 (d)	Conducted Bandedge and Spurious Emissions	1) For 11B, 11G and 11N HT20 modes: at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power; 2) For 11N HT40 mode: at least 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

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

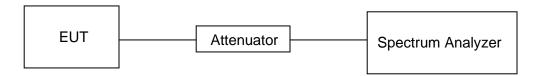
settings:

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	≥3 × RBW
measurement points	≥span/RBW
Trace	Max hold
Sweep time	Auto couple.

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

TEST SETUP





Page 54 of 195

TEST ENVIRONMENT

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

Page 55 of 195

Part I: Conducted Bandedge

RESULTS TABLE

Test Mode	Test Antenna	Test Channel	Carrier Power[dBm]	Max. Spurious Level [dBm]	Limit [dBm]	Verdict
	Antenna 1	LCH	4.885	-39.08	-15.12	PASS
11B	Antenna i	HCH	4.361	-40.29	-15.64	PASS
IID	Antenna 2	LCH	4.548	-40.71	-15.45	PASS
	Antenna 2	HCH	3.900	-40.17	-16.1	PASS
	Antenna 1	LCH	-5.292	-40.62	-25.29	PASS
11G	Antenna i	HCH	-5.644	-40.95	-25.64	PASS
110	Antenna 2	LCH	-4.771	-41.13	-24.77	PASS
	Antenna 2	HCH	-5.444	-40.65	-25.44	PASS
	Antenna 1	LCH	-5.008	-41.30	-25.01	PASS
11N20MIMO	Antenna i	HCH	-5.257	-40.89	-25.26	PASS
TINZUMINO	Antenna 2	LCH	-4.626	-40.79	-24.63	PASS
	Antenna 2	HCH	-5.309	-40.22	-25.31	PASS
	Antenna 1	LCH	-7.120	-41.30	-37.12	PASS
11N40MIMO	Antenna I	HCH	-7.318	-40.70	-37.32	PASS
I TIN4UIVIIIVIO	Antenna 2	LCH	-6.627	-41.67	-36.63	PASS
	Antenna Z	HCH	-6.914	-40.34	-36.91	PASS

Remark:

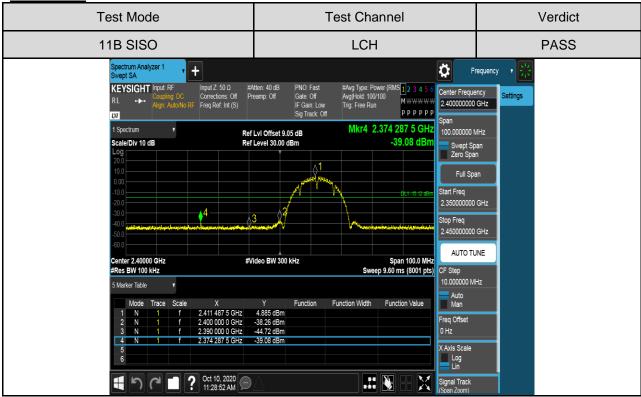
- 1) For this product, it has two antennas, antenna1 and antenna2, but only the 802.11N HT20 and 802.11N HT40 modes can support both the SISO and MIMO technical.
- 2) Through pre-testing all the test modes of 11N 20 and 11N40, including SISO and MIMO, but only the data if worse case is included in this test report.

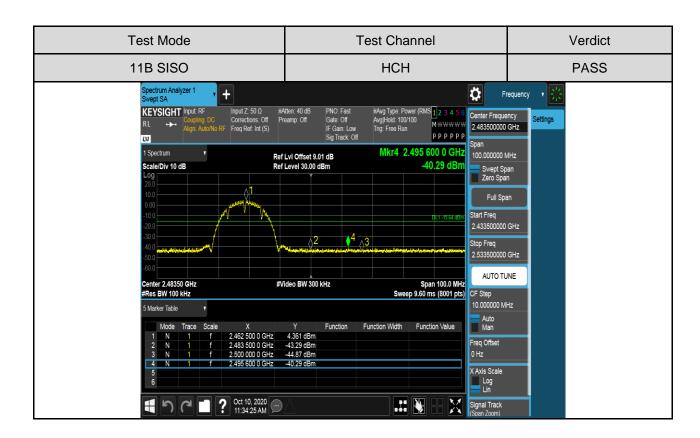


Page 56 of 195

TEST GRAPHS

Antenna 1:

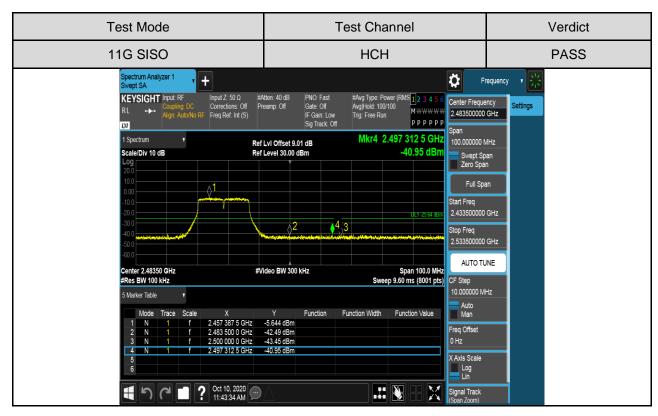






Page 57 of 195



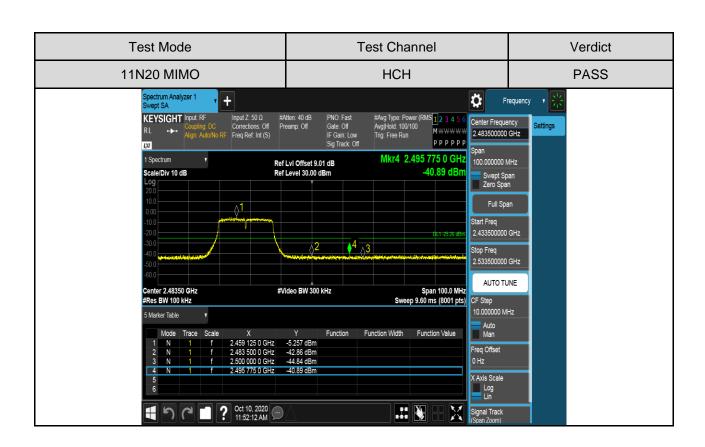




Test Channel Test Mode Verdict LCH **PASS** 11N20 MIMO pectrum Analyzer 1 wept SA Ö Frequency KEYSIGHT Input RF Center Frequency Settings M₩₩₩₩ 2.400000000 GHz PPPPPP Mkr4 2.360 200 0 GHz Ref LvI Offset 9.05 dB Ref Level 30.00 dBm 100.000000 MHz -41.30 dB Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.350000000 GHz Stop Freq 2.450000000 GHz AUTO TUNE enter 2.40000 GHz #Video BW 300 kHz Span 100.0 MH Res BW 100 kHz Sweep 9.60 ms (8001 pts) Auto Man Function Function Width Function Value -5.008 dBm -40.87 dBm Freq Offset 2.400 000 0 GHz 2.390 000 0 GHz X Axis Scale Log Lin

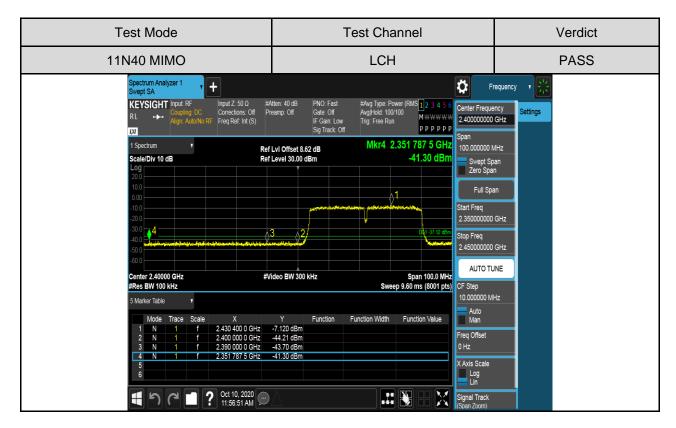
🐉

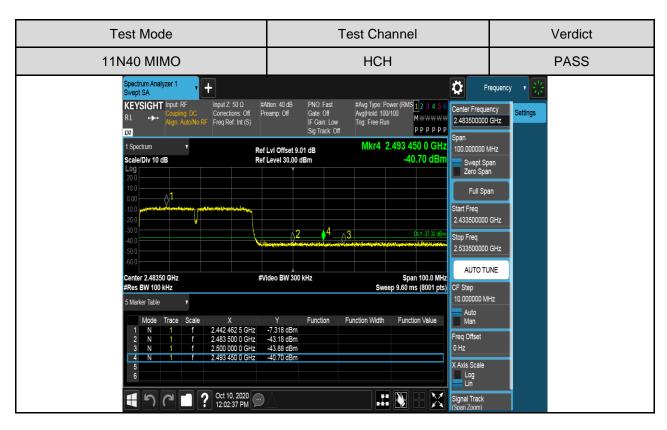
Signal Track (Span Zoom)





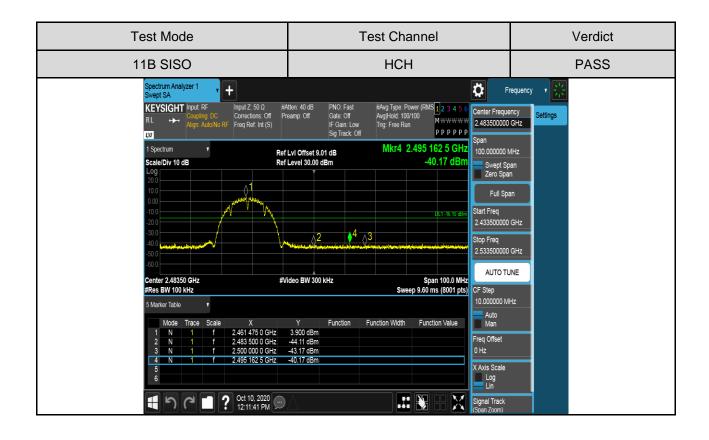
Page 59 of 195



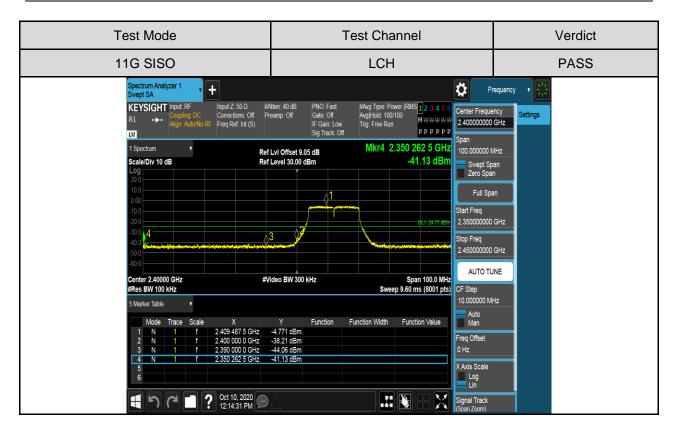


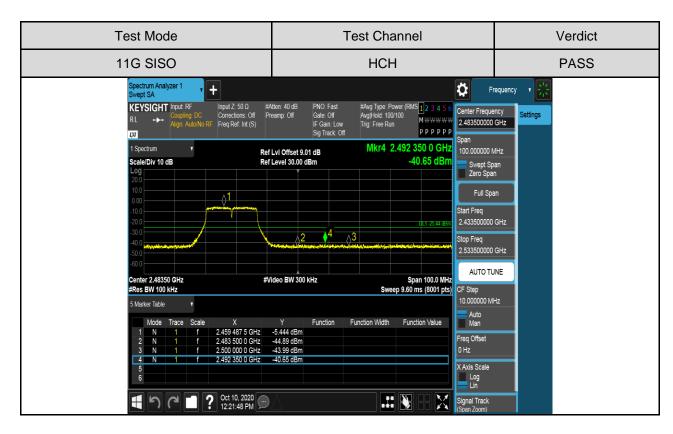
(III)

Antenna 2: Test Mode Test Channel Verdict 11B SISO LCH **PASS** pectrum Analyzer 1 wept SA Ö Frequency Input Z: 50 Ω Corrections: Off Freq Ref: Int (S) #Atten: 40 dB Preamp: Off KEYSIGHT Input RF Settings 2.400000000 GHz PPPPPP L)XI Mkr4 2.356 300 0 GHz 1 Spectrum Ref Lvl Offset 9.05 dB 100.000000 MHz -40.71 dB Scale/Div 10 dB Swept Span Zero Span 2.350000000 GHz Stop Freq 2.450000000 GHz AUTO TUNE Span 100.0 MHz #Video BW 300 kHz enter 2,40000 GHz Sweep 9.60 ms (8001 pts) 10.000000 MHz Auto Man Function Function Width Function Value 4.548 dBm -37.49 dBm -45.60 dBm req Offset 2.390 000 0 GHz X Axis Scale Log Lin ? Oct 10, 2020 (D.)
12:05:53 PM # 1

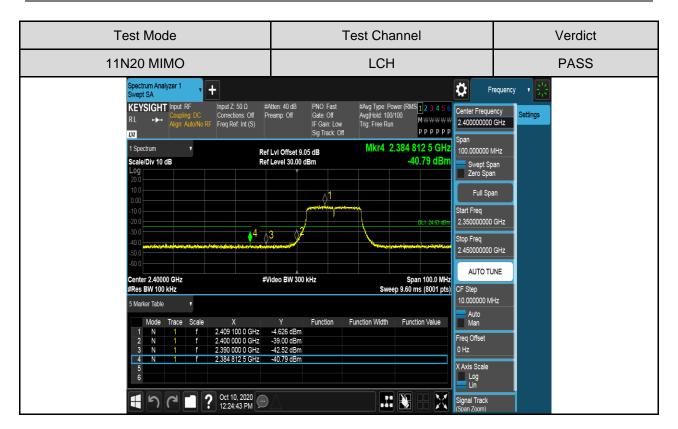


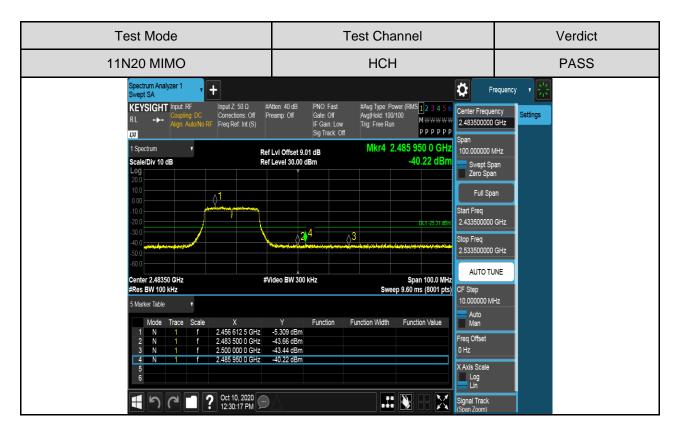






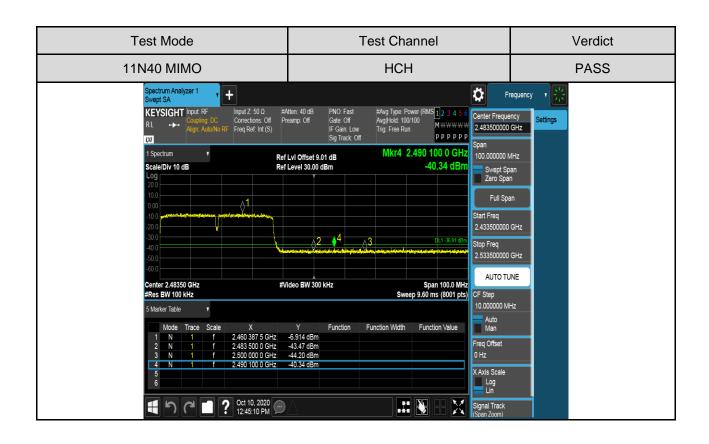








Test Channel Test Mode Verdict LCH **PASS** 11N40 MIMO pectrum Analyzer 1 wept SA Ö Frequency KEYSIGHT Input RF Center Frequency M₩₩₩₩ 2.400000000 GHz PPPPPP Mkr4 2.363 575 0 GHz Ref Lvi Offset 8.62 dB Ref Level 30.00 dBm 100.000000 MHz -41.67 dBr Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.350000000 GHz Stop Freq 2.450000000 GHz AUTO TUNE enter 2.40000 GHz #Video BW 300 kHz Span 100.0 MH Res BW 100 kHz Sweep 9.60 ms (8001 pts) Auto Man Function Function Width Function Value -6.627 dBm -43.73 dBm -45.33 dBm Freq Offset X Axis Scale Log Lin 11 S C C C 10, 2020 C 12:35:05 PM # 🐉 Signal Track (Span Zoom)



Page 64 of 195

Part II :Conducted Emission

Test Result Table

Test Mode	Test Antenna	Channel	Pref(dBm)	Puw(dBm)	Verdict
	Antenna 1	LCH	4.78	<limit< td=""><td>PASS</td></limit<>	PASS
		MCH	4.51	<limit< td=""><td>PASS</td></limit<>	PASS
11B SISO		HCH	4.35	<limit< td=""><td>PASS</td></limit<>	PASS
1.2 0.00		LCH	4.49	<limit< td=""><td>PASS</td></limit<>	PASS
	Antenna 2	MCH	4.06	<limit< td=""><td>PASS</td></limit<>	PASS
		HCH	3.84	<limit< td=""><td>PASS</td></limit<>	PASS
		LCH	-5.22	<limit< td=""><td>PASS</td></limit<>	PASS
	Antenna 1	MCH	-5.57	<limit< td=""><td>PASS</td></limit<>	PASS
11G SISO		HCH	-5.66	<limit< td=""><td>PASS</td></limit<>	PASS
110 0.00		LCH	-4.80	<limit< td=""><td>PASS</td></limit<>	PASS
	Antenna 2	MCH	-5.27	<limit< td=""><td>PASS</td></limit<>	PASS
		HCH	-5.53	<limit< td=""><td>PASS</td></limit<>	PASS
		LCH	-5.29	<limit< td=""><td>PASS</td></limit<>	PASS
		MCH	-5.24	<limit< td=""><td>PASS</td></limit<>	PASS
11N MIMO20		HCH	-5.28	<limit< td=""><td>PASS</td></limit<>	PASS
1114 14111/1020		LCH	-4.68	<limit< td=""><td>PASS</td></limit<>	PASS
	Antenna 2	MCH	-4.84	<limit< td=""><td>PASS</td></limit<>	PASS
		HCH	-5.07	<limit< td=""><td>PASS</td></limit<>	PASS
	LCH	-7.25	<limit< td=""><td>PASS</td></limit<>	PASS	
	Antenna 1	MCH	-7.40	<limit< td=""><td>PASS</td></limit<>	PASS
11N MIMO40		HCH	-7.07	<limit< td=""><td>PASS</td></limit<>	PASS
7 777 77111710-40	A	LCH	-6.52	<limit< td=""><td>PASS</td></limit<>	PASS
	Antenna 2	MCH	-6.76	<limit< td=""><td>PASS</td></limit<>	PASS
		HCH	-7.00	<limit< td=""><td>PASS</td></limit<>	PASS

Remark:

- 1) For this product, it has two antennas, antenna1 and antenna2, but only the 802.11N HT20 and 802.11N HT40 modes can support both the SISO and MIMO technical.
- 2) 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.



Page 65 of 195

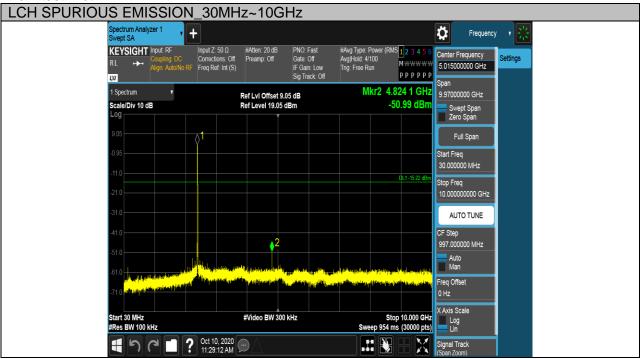
Test Plots Antenna 1:

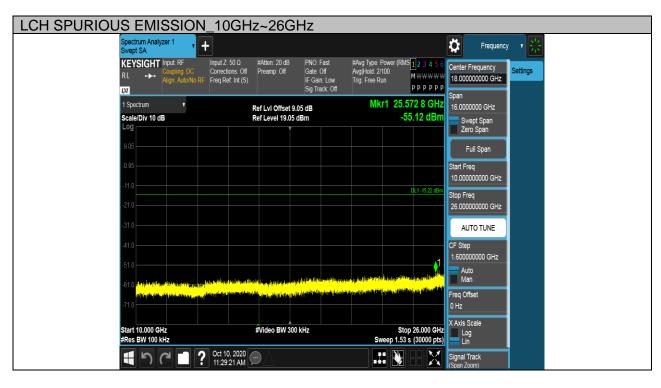
Test Mode	Channel	Verdict
11B	LCH	PASS





Page 66 of 195







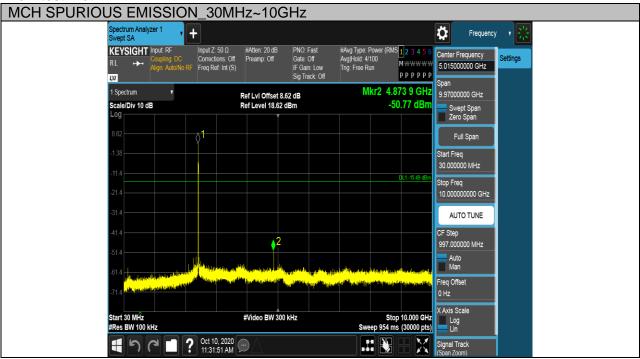
Page 67 of 195

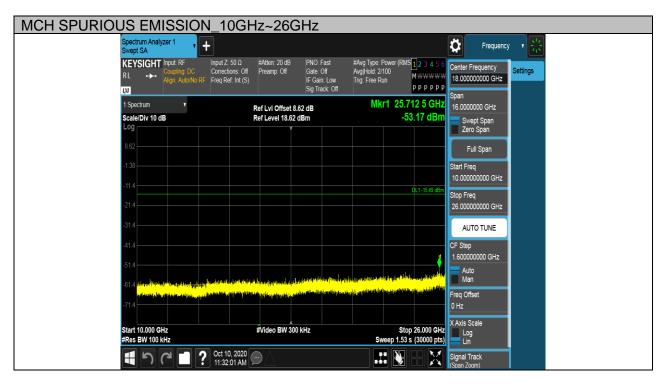
Test Mode	Channel	Verdict
11B	MCH	PASS





Page 68 of 195







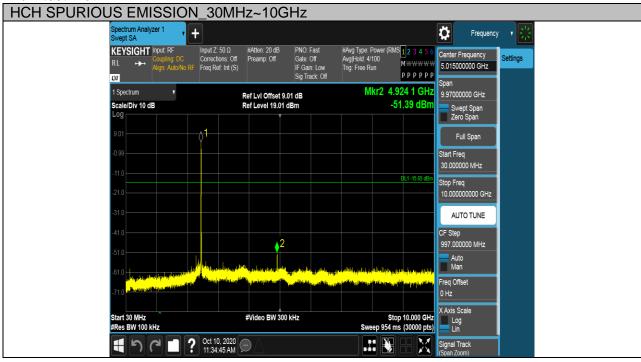
Page 69 of 195

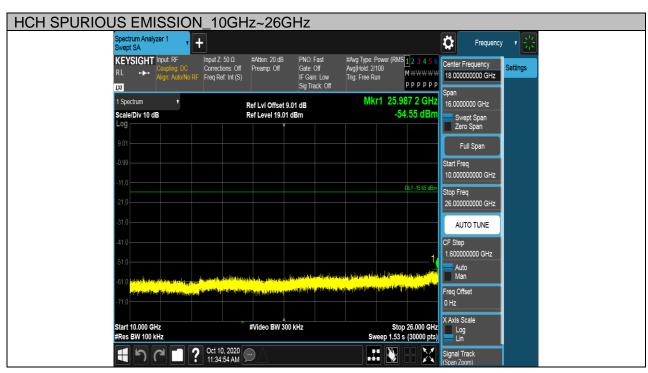
Test Mode	Channel	Verdict
11B	HCH	PASS





Page 70 of 195

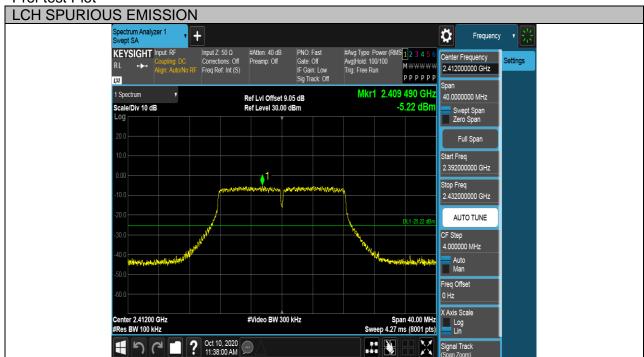






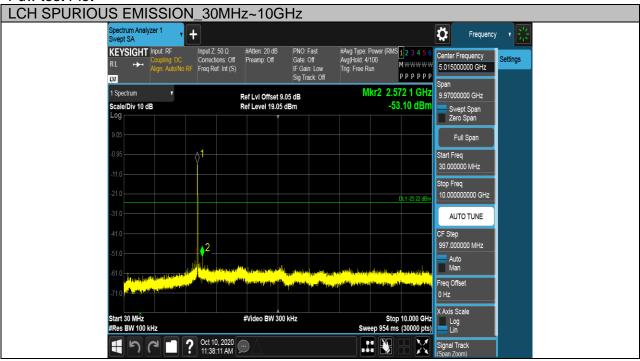
Page 71 of 195

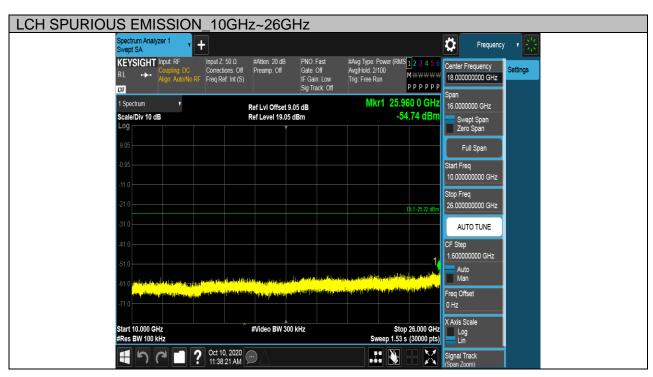
Test Mode	Channel	Verdict
11G	LCH	PASS





Page 72 of 195







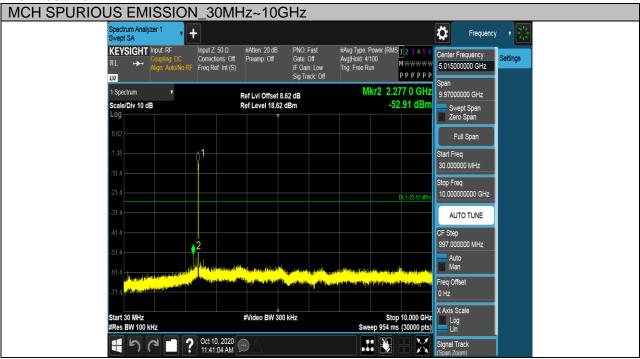
Page 73 of 195

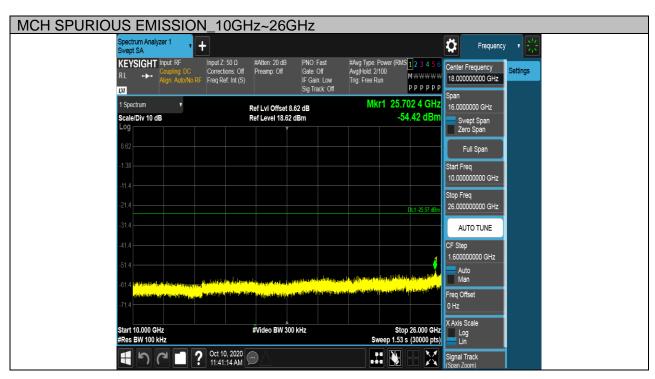
Test Mode	Channel	Verdict
11G	MCH	PASS





Page 74 of 195







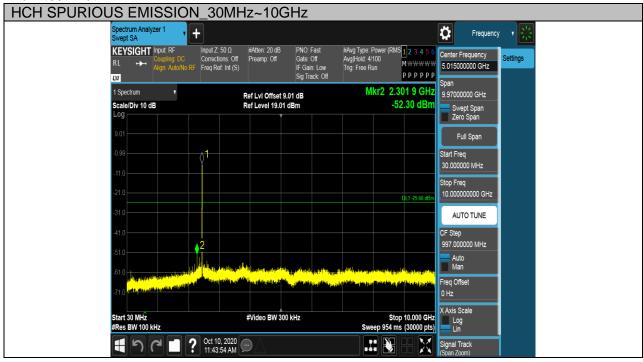
Page 75 of 195

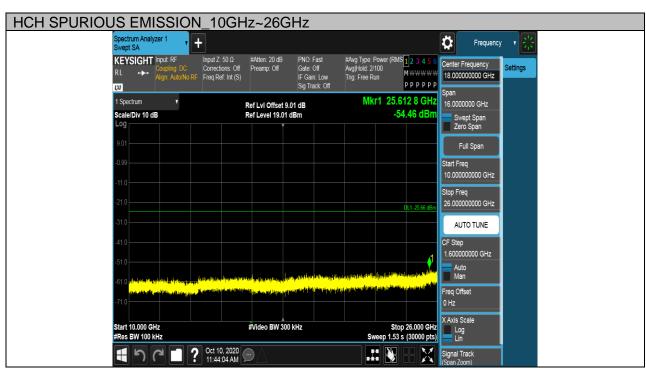
Test Mode	Channel	Verdict
11G	HCH	PASS





Page 76 of 195

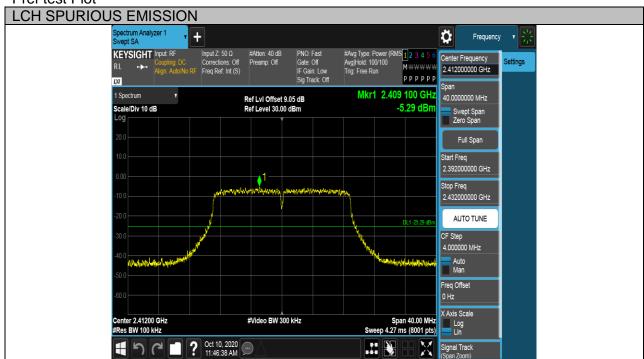






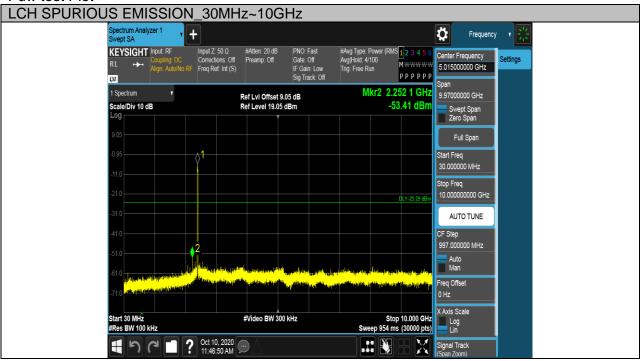
Page 77 of 195

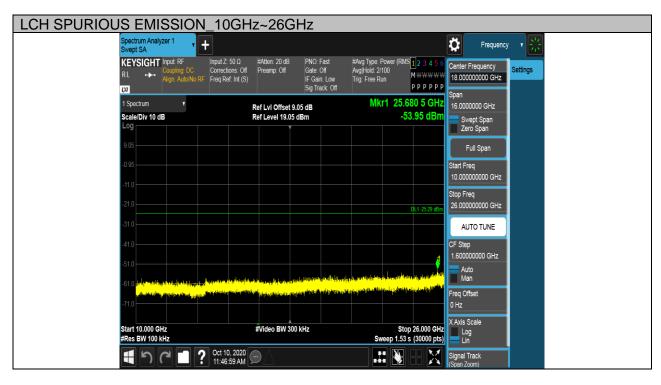
Test Mode	Channel	Verdict
11N20 MIMO	LCH	PASS





Page 78 of 195







Page 79 of 195

Test Mode	Channel	Verdict
11N20 MIMO	MCH	PASS

