



## 7.5. CONDUCTED BANDEGE 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 analyzer and use the following

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.

settings:

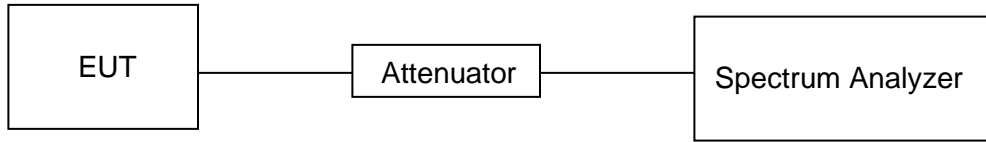
Use the peak marker function to determine the maximum PSD level.

Span	Set the center frequency and span to encompass frequency range to be measured
Detector	Peak
RBW	100K
VBW	$\geq 3 \times \text{RBW}$
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 I :Conducted Bandedge**

**RESULTS TABLE**

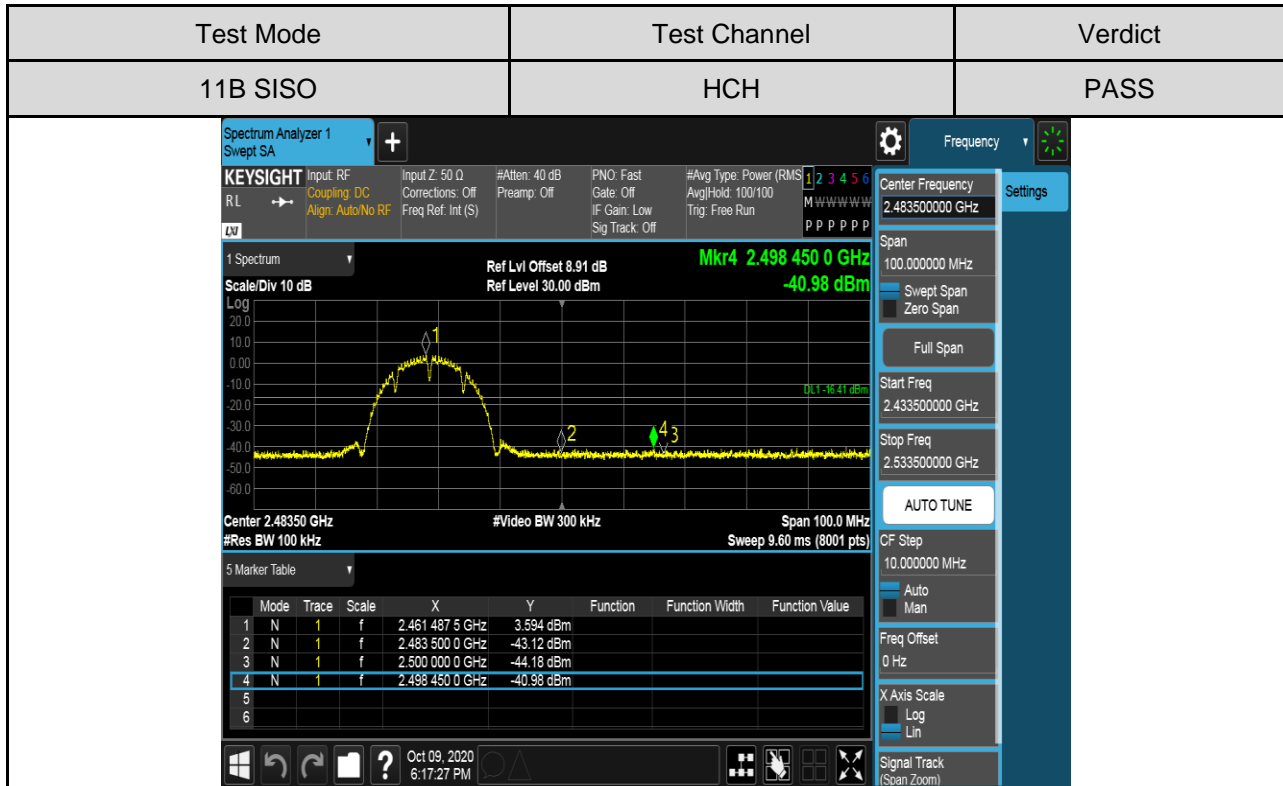
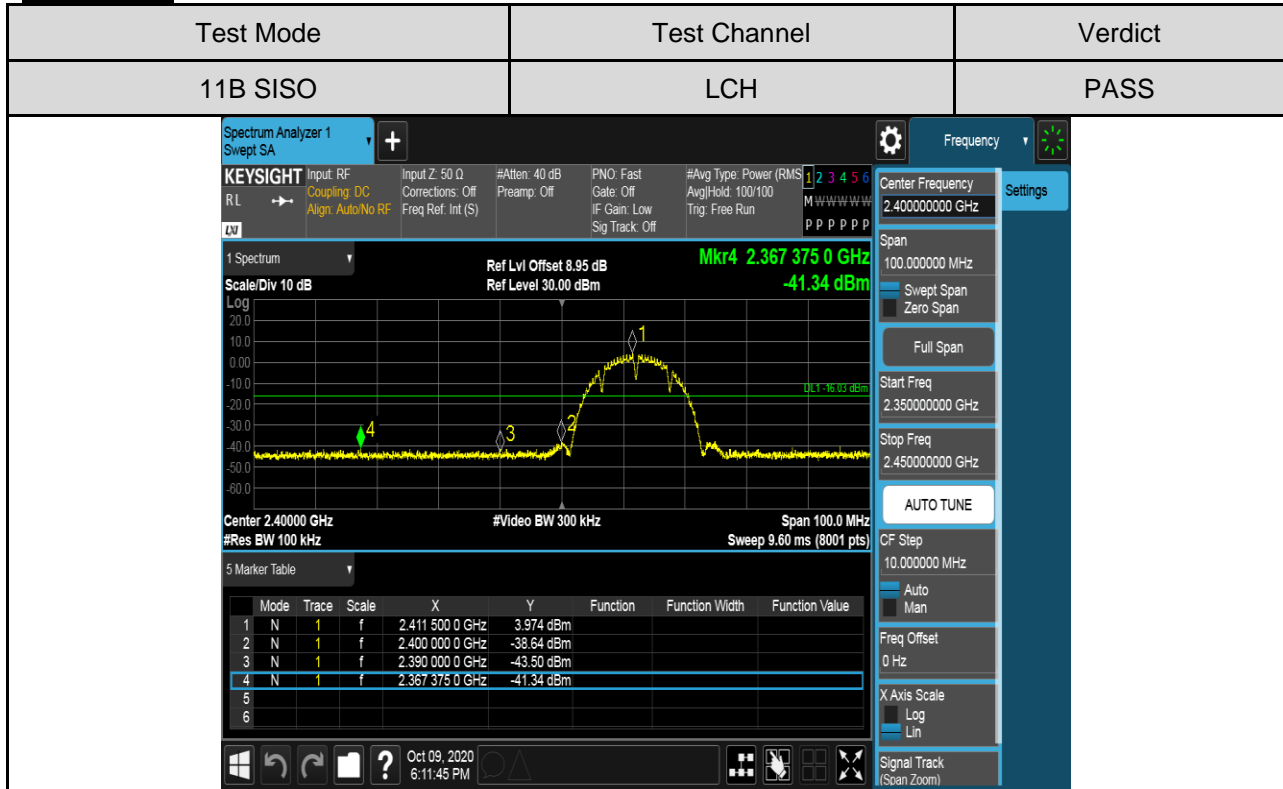
Test Mode	Test Antenna	Test Channel	Carrier Power[dBm]	Max. Spurious Level [dBm]	Limit [dBm]	Verdict
11B	Antenna 1	LCH	3.974	-41.34	-16.03	PASS
		HCH	3.594	-40.98	-16.41	PASS
	Antenna 2	LCH	3.331	-41.12	-16.67	PASS
		HCH	2.398	-40.98	-17.6	PASS
11G	Antenna 1	LCH	-5.527	-40.48	-25.53	PASS
		HCH	-5.921	-41.07	-25.92	PASS
	Antenna 2	LCH	-6.065	-40.98	-26.07	PASS
		HCH	-6.823	-40.73	-26.82	PASS
11N20MIMO	Antenna 1	LCH	-5.412	-41.48	-25.41	PASS
		HCH	-5.836	-40.90	-25.84	PASS
	Antenna 2	LCH	-6.109	-41.06	-26.11	PASS
		HCH	-6.370	-40.85	-26.37	PASS
11N40MIMO	Antenna 1	LCH	-7.179	-41.06	-37.18	PASS
		HCH	-7.309	-39.99	-37.31	PASS
	Antenna 2	LCH	-7.895	-41.71	-37.9	PASS
		HCH	-8.181	-40.37	-38.18	PASS

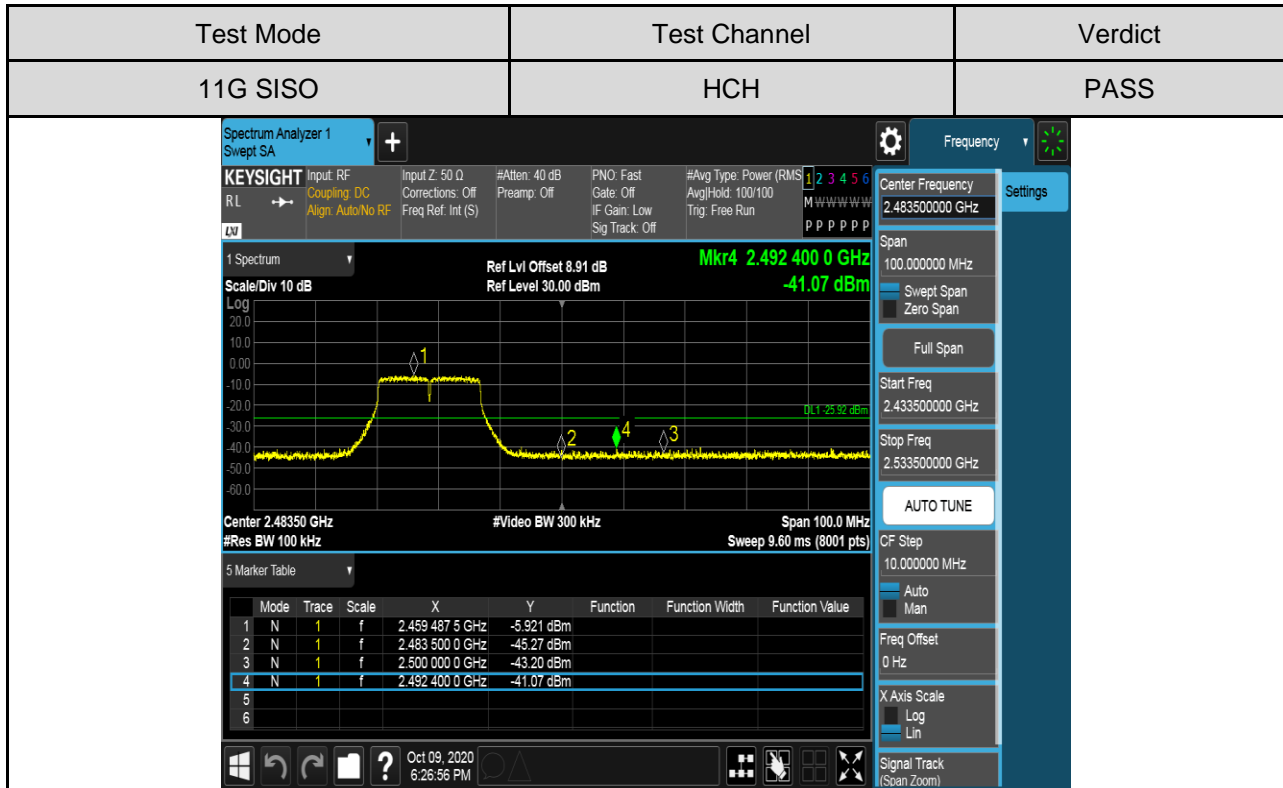
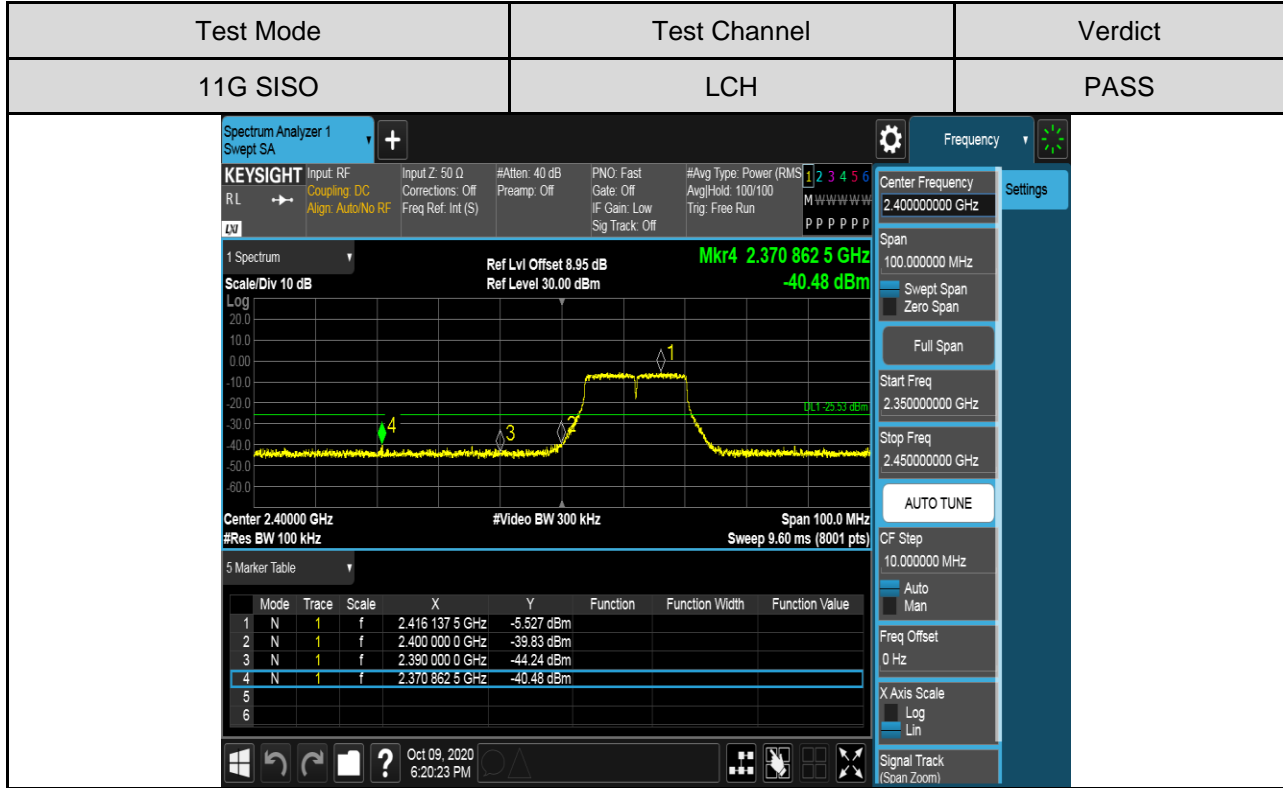
**Remark:**

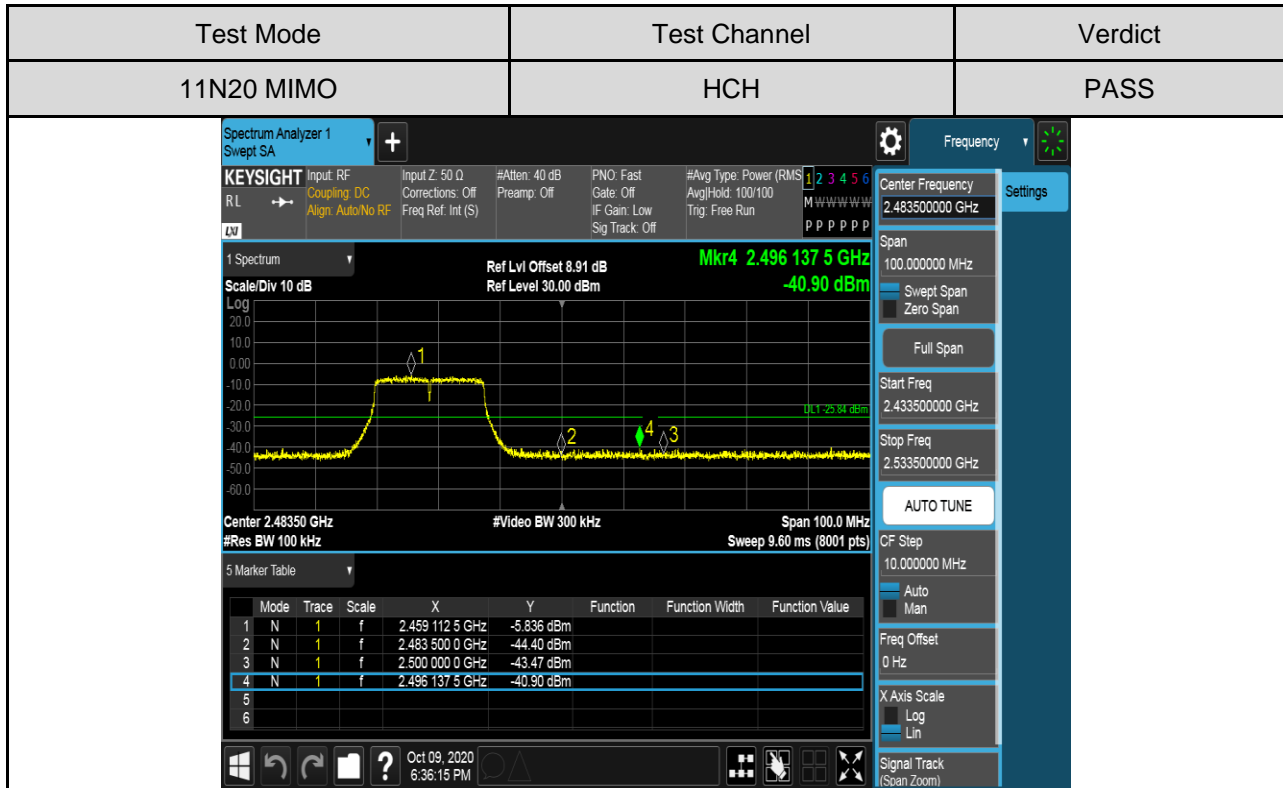
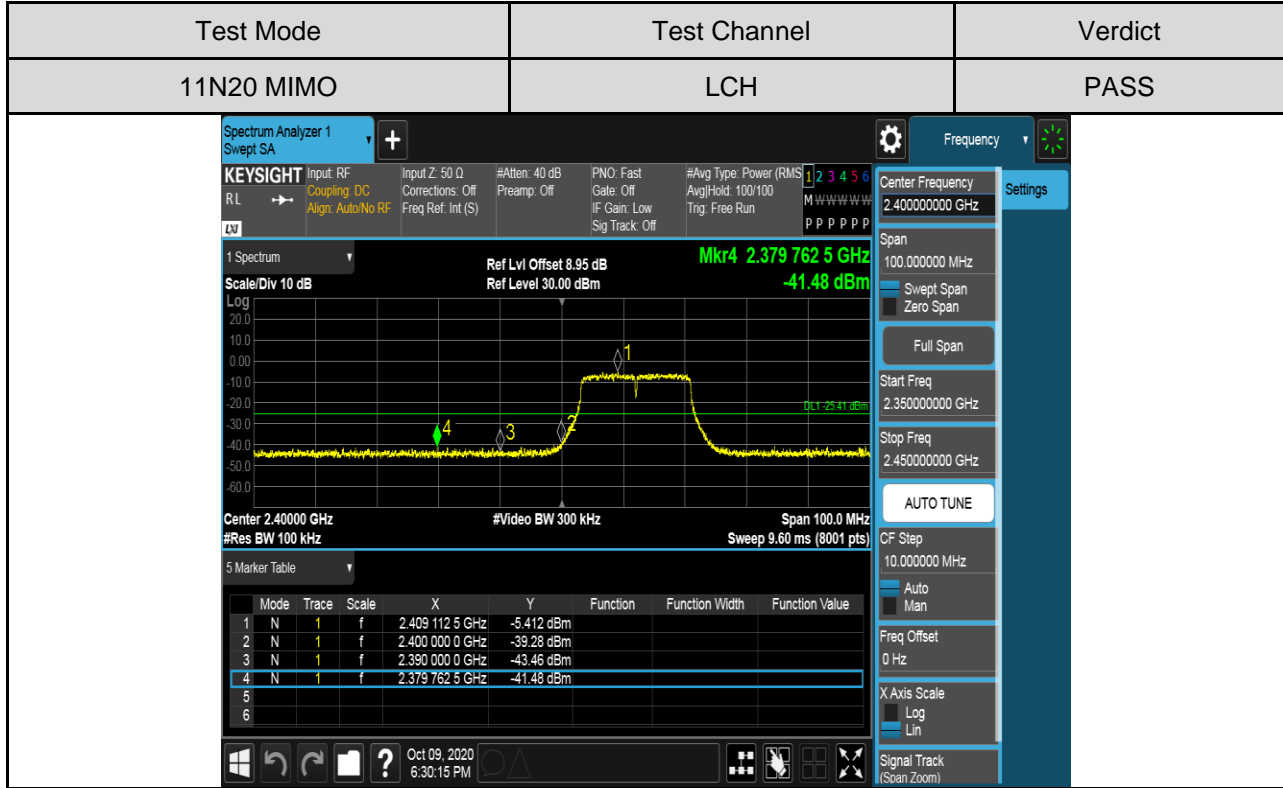
- 1) For this product, it has two antennas, antenna1 and antenna2, but only the 802.11N HT20 and 802.11N HT40 modes can support both the SISO and MIMO technical.
- 2) Through pre-testing all the test modes of 11N 20 and 11N40, including SISO and MIMO, but only the data if worse case is included in this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



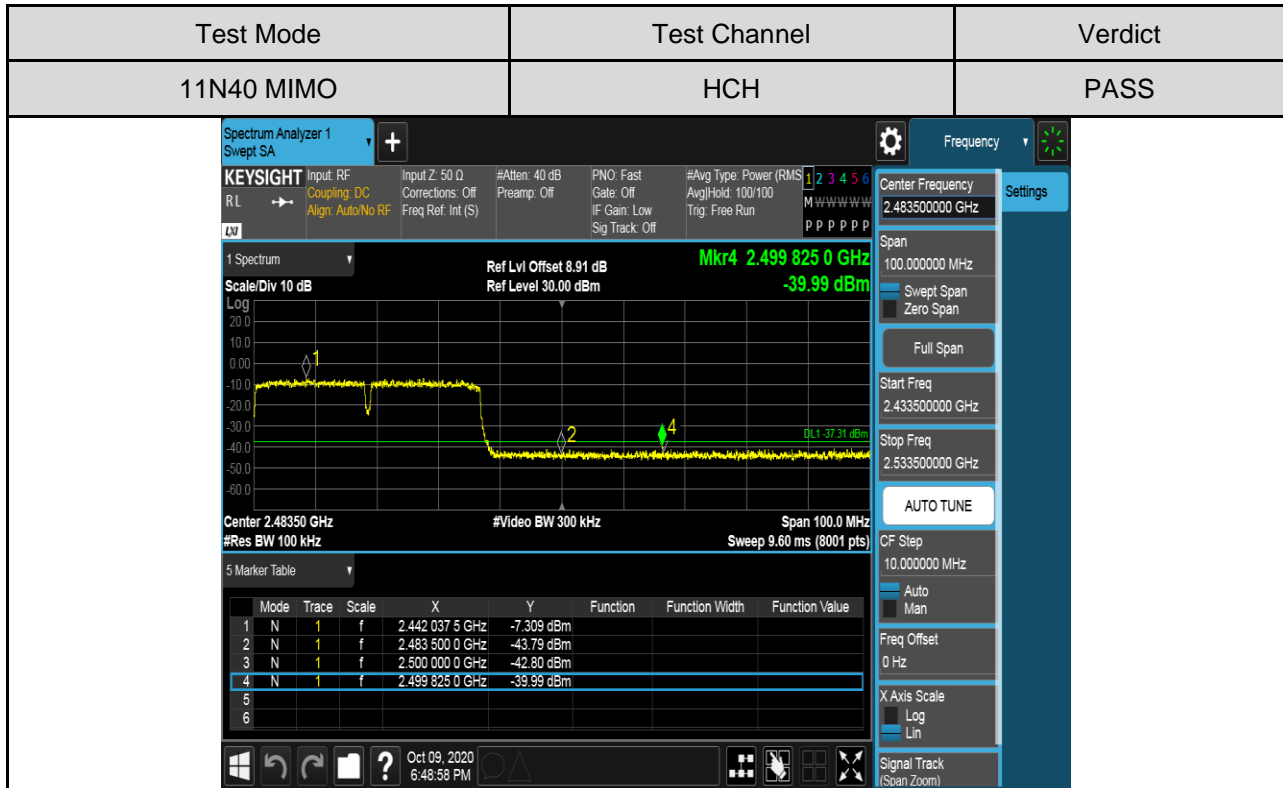
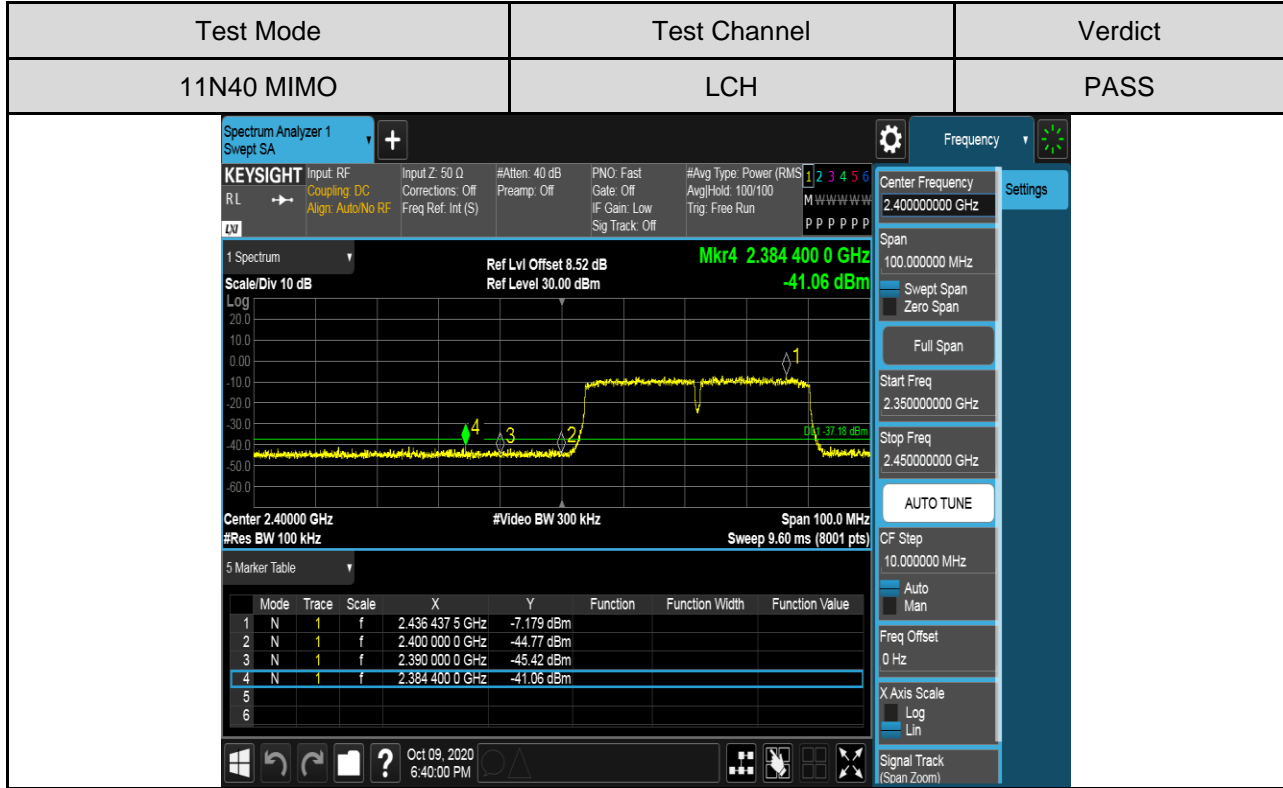
TEST GRAPHS  
Antenna 1:













**Antenna 2:**

Test Mode	Test Channel	Verdict
11B SISO	LCH	PASS

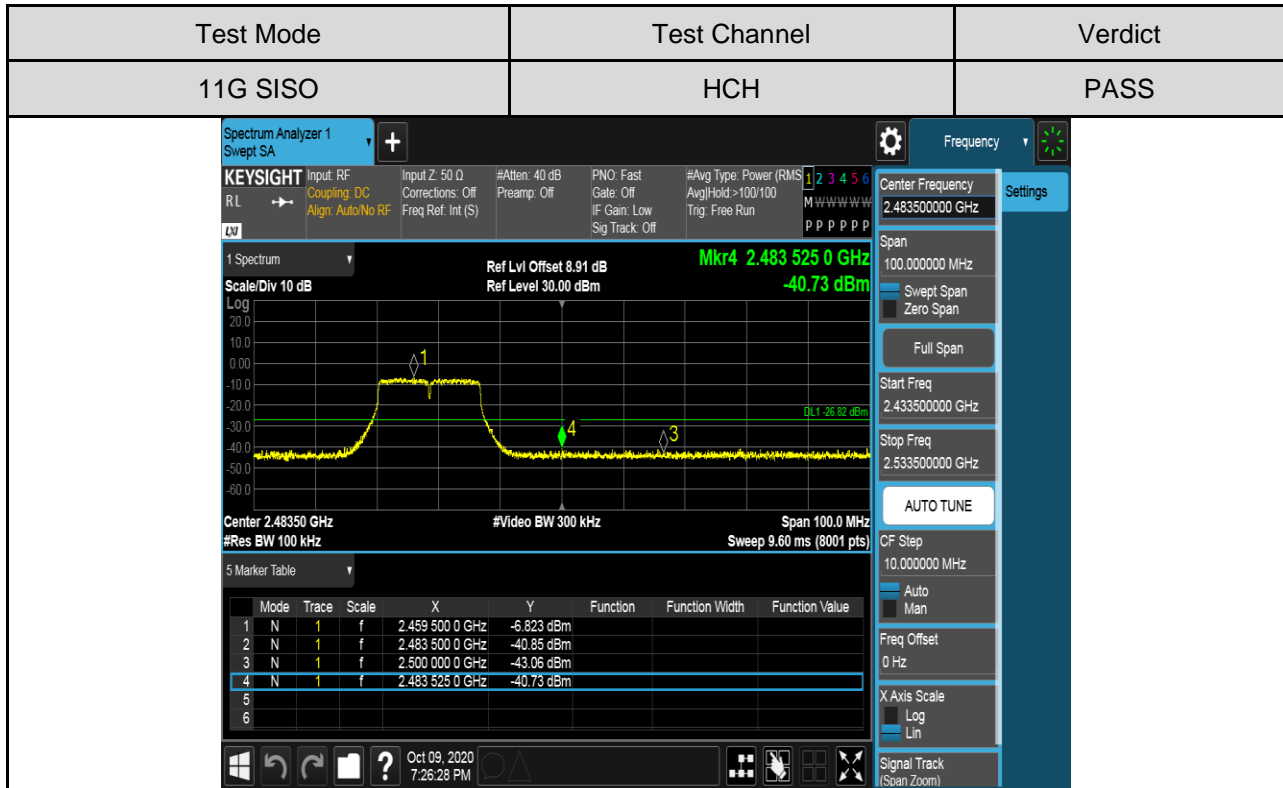
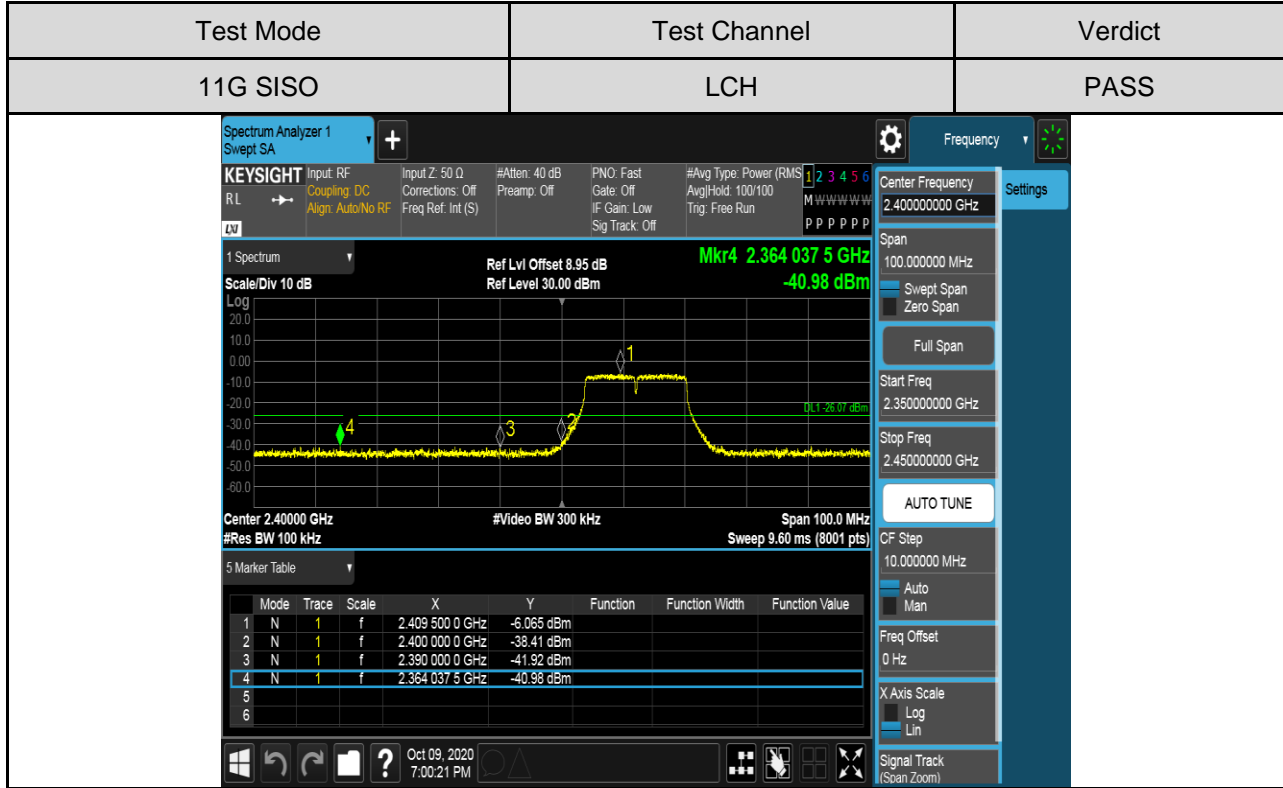
**5 Marker Table**

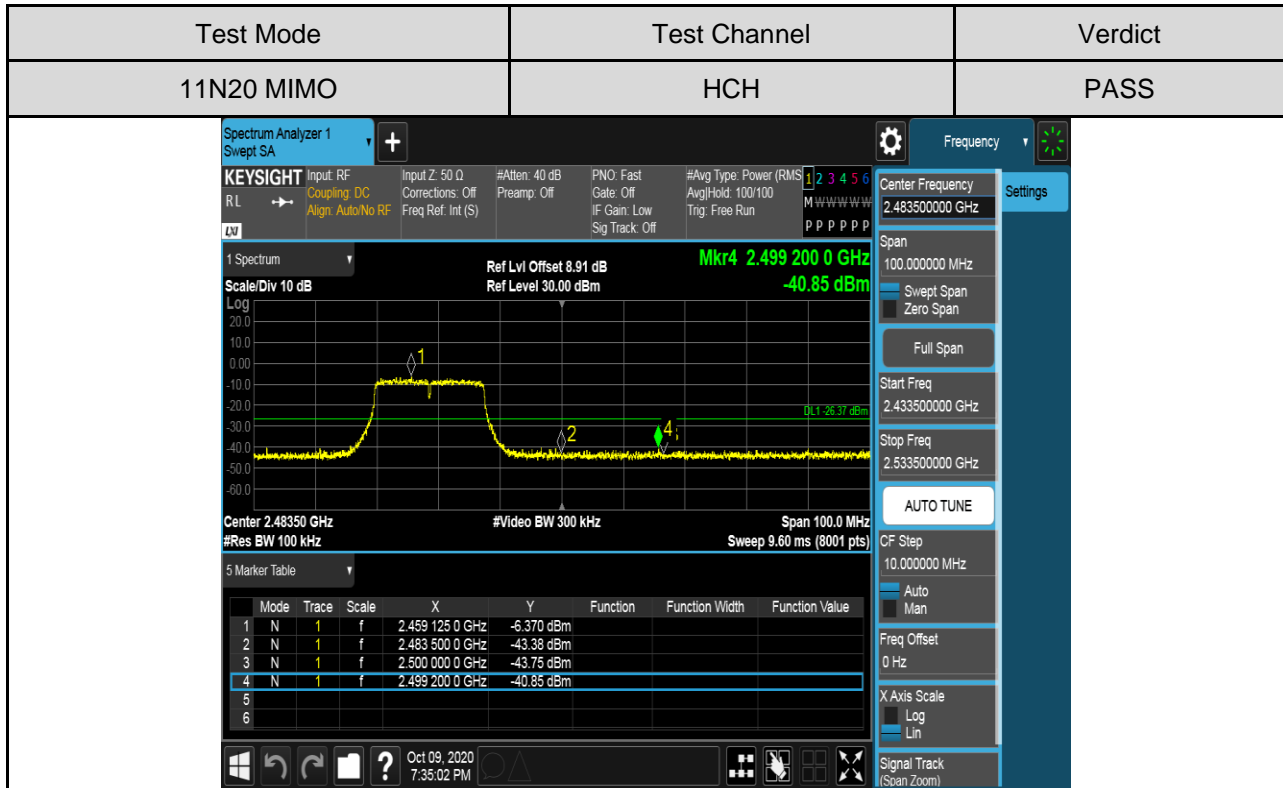
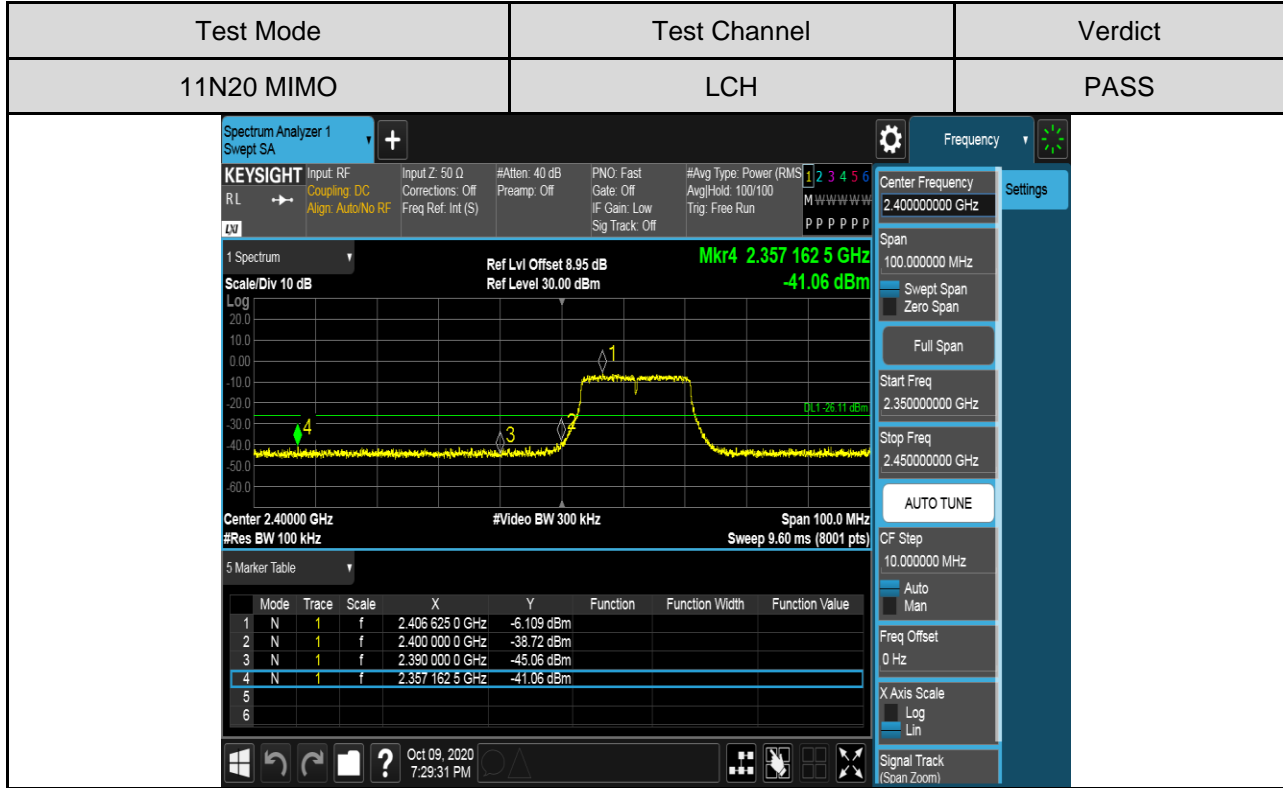
Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.411 500 0 GHz	3.331 dBm		
2	N	1	f	2.400 000 0 GHz	-38.07 dBm		
3	N	1	f	2.390 000 0 GHz	-44.57 dBm		
4	N	1	f	2.359 450 0 GHz	-41.12 dBm		
5							
6							

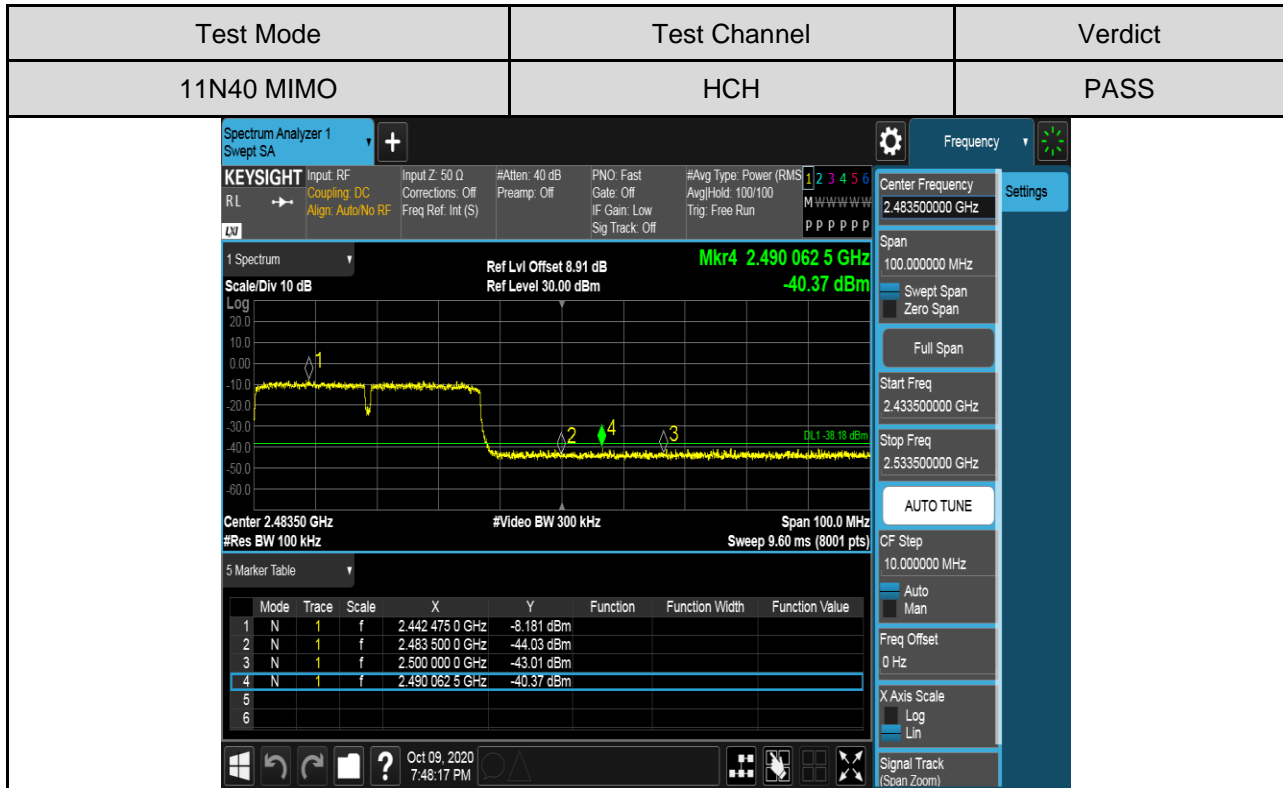
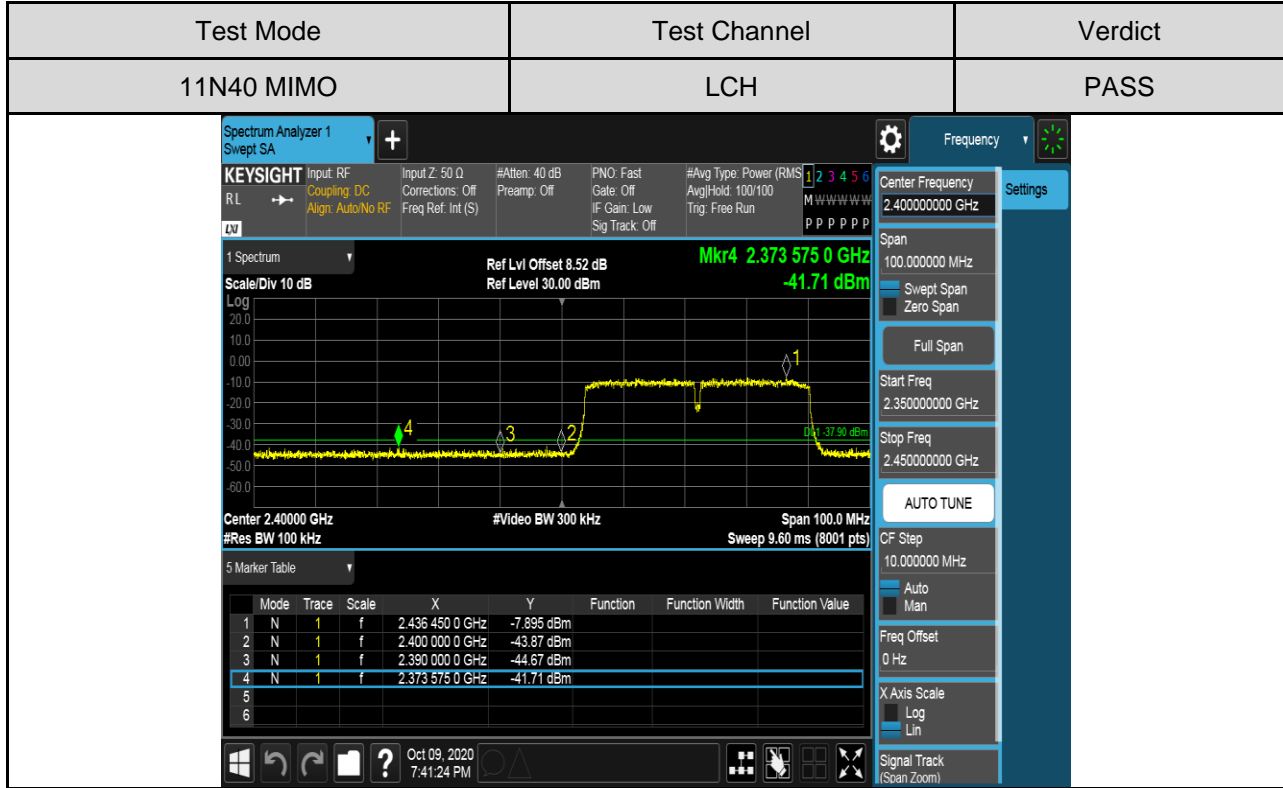
Test Mode	Test Channel	Verdict
11B SISO	HCH	PASS

**5 Marker Table**

Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.462 512 5 GHz	2.398 dBm		
2	N	1	f	2.483 500 0 GHz	-44.07 dBm		
3	N	1	f	2.500 000 0 GHz	-43.45 dBm		
4	N	1	f	2.488 800 0 GHz	-40.98 dBm		
5							
6							









**Part II :Conducted Emission**

Test Result Table

Test Mode	Test Antenna	Channel	Pref(dBm)	Puw(dBm)	Verdict
11B SISO	Antenna 1	LCH	3.89	<Limit	PASS
		MCH	3.62	<Limit	PASS
		HCH	3.50	<Limit	PASS
	Antenna 2	LCH	3.25	<Limit	PASS
		MCH	2.81	<Limit	PASS
		HCH	2.36	<Limit	PASS
11G SISO	Antenna 1	LCH	-5.49	<Limit	PASS
		MCH	-5.61	<Limit	PASS
		HCH	-5.88	<Limit	PASS
	Antenna 2	LCH	-6.04	<Limit	PASS
		MCH	-6.42	<Limit	PASS
		HCH	-6.87	<Limit	PASS
11N MIMO20	Antenna 1	LCH	-5.48	<Limit	PASS
		MCH	-5.25	<Limit	PASS
		HCH	-5.52	<Limit	PASS
	Antenna 2	LCH	-5.75	<Limit	PASS
		MCH	-6.20	<Limit	PASS
		HCH	-6.56	<Limit	PASS
11N MIMO40	Antenna 1	LCH	-6.95	<Limit	PASS
		MCH	-7.39	<Limit	PASS
		HCH	-7.29	<Limit	PASS
	Antenna 2	LCH	-8.04	<Limit	PASS
		MCH	-8.29	<Limit	PASS
		HCH	-8.09	<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.



**Test Plots**  
**Antenna 1:**

Test Mode	Channel	Verdict
11B	LCH	PASS

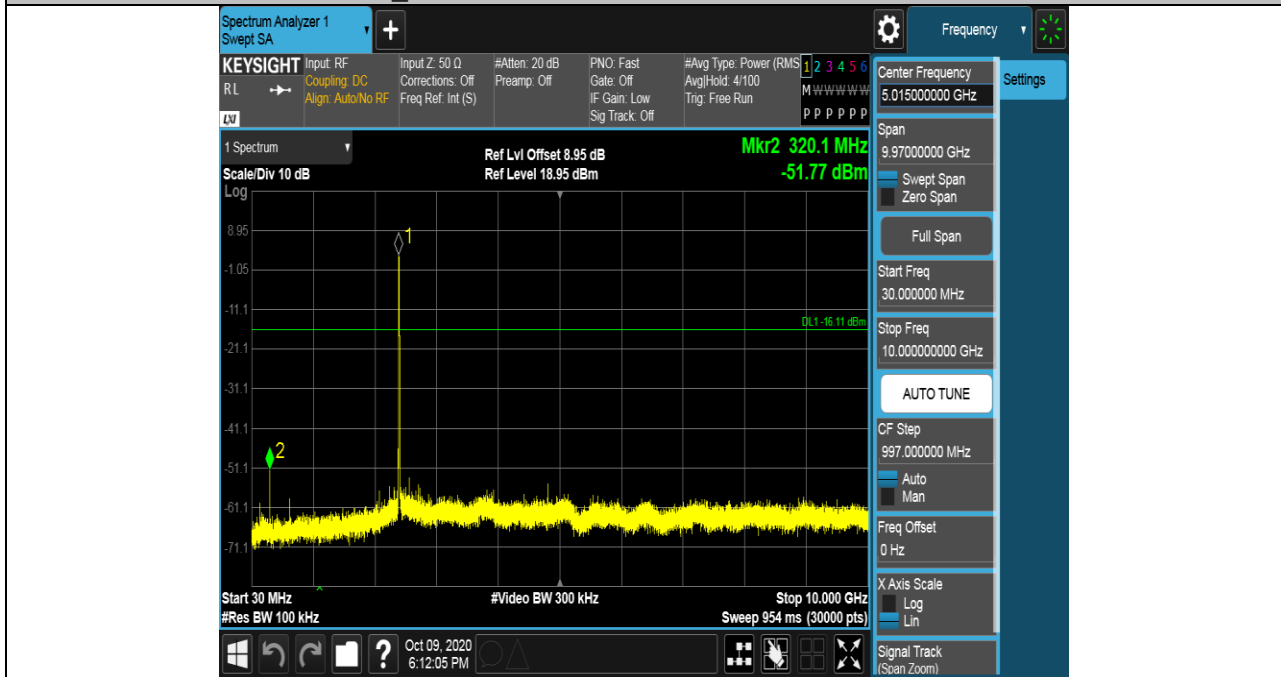
Pref test Plot



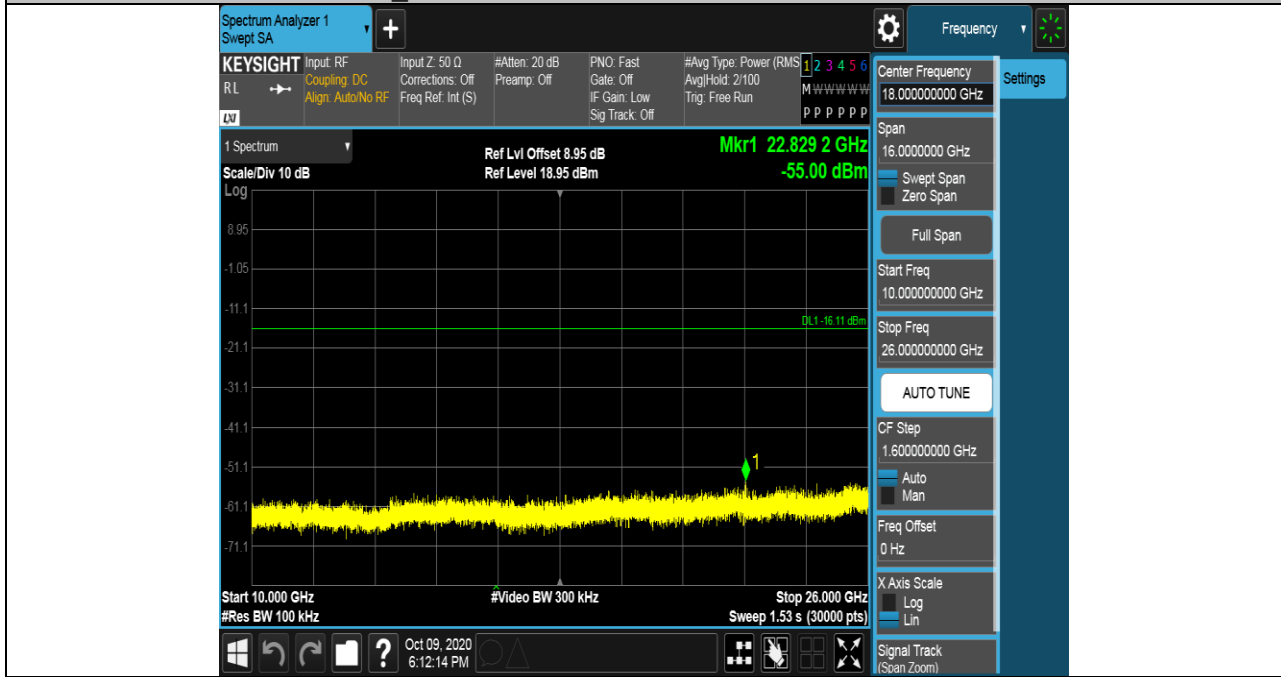


Puw test Plot

LCH SPURIOUS EMISSION\_30MHz~10GHz



LCH SPURIOUS EMISSION\_10GHz~26GHz







Test Mode	Channel	Verdict
11B	MCH	PASS

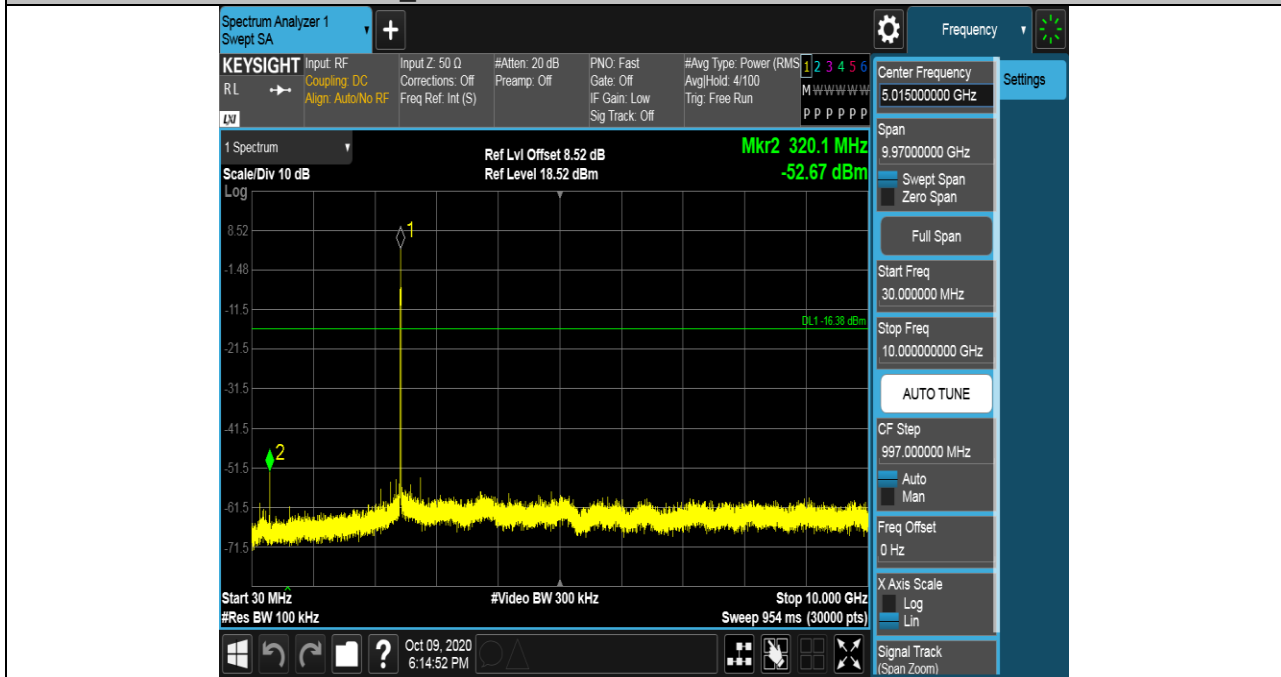
Pref test Plot



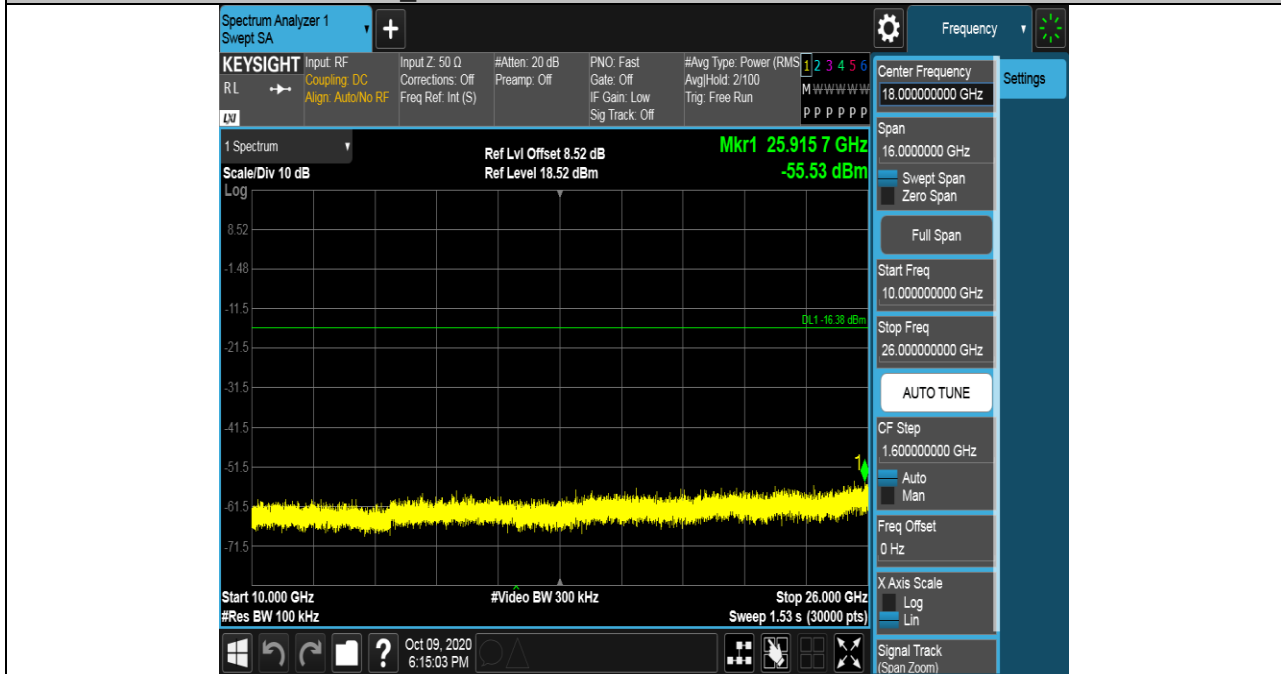


Puw test Plot

MCH SPURIOUS EMISSION\_30MHz~10GHz



MCH SPURIOUS EMISSION\_10GHz~26GHz





Test Mode	Channel	Verdict
11B	HCH	PASS

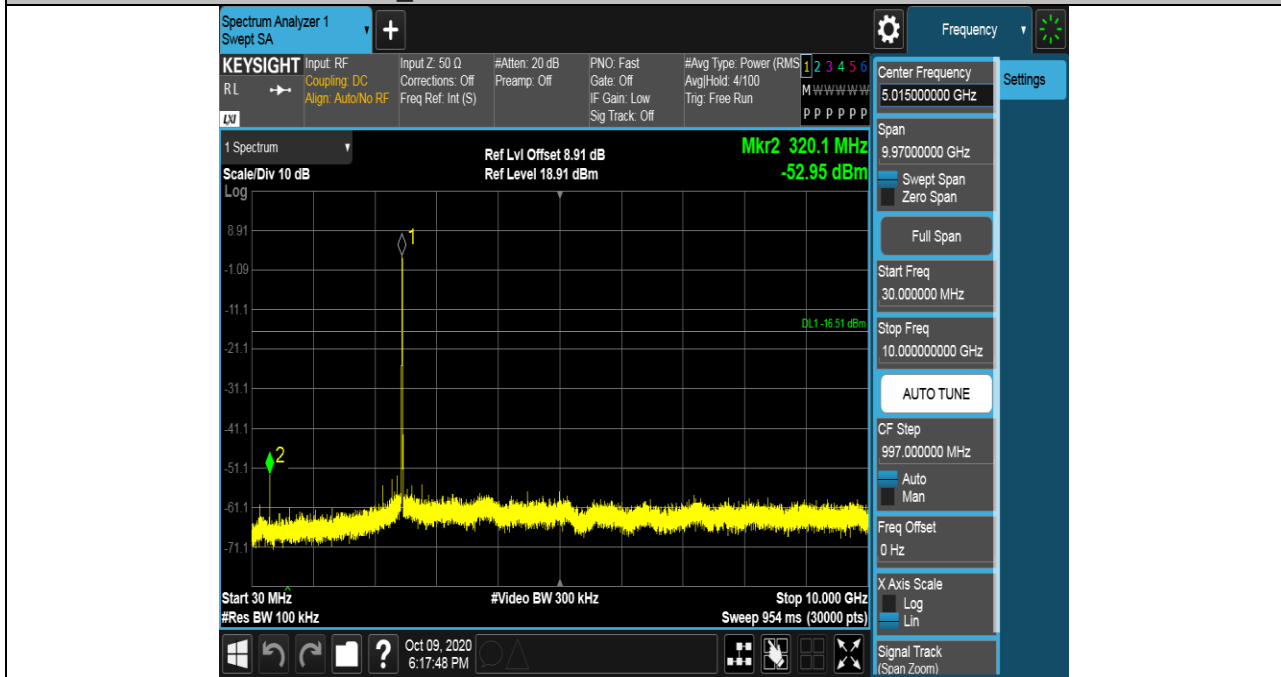
Pref test Plot



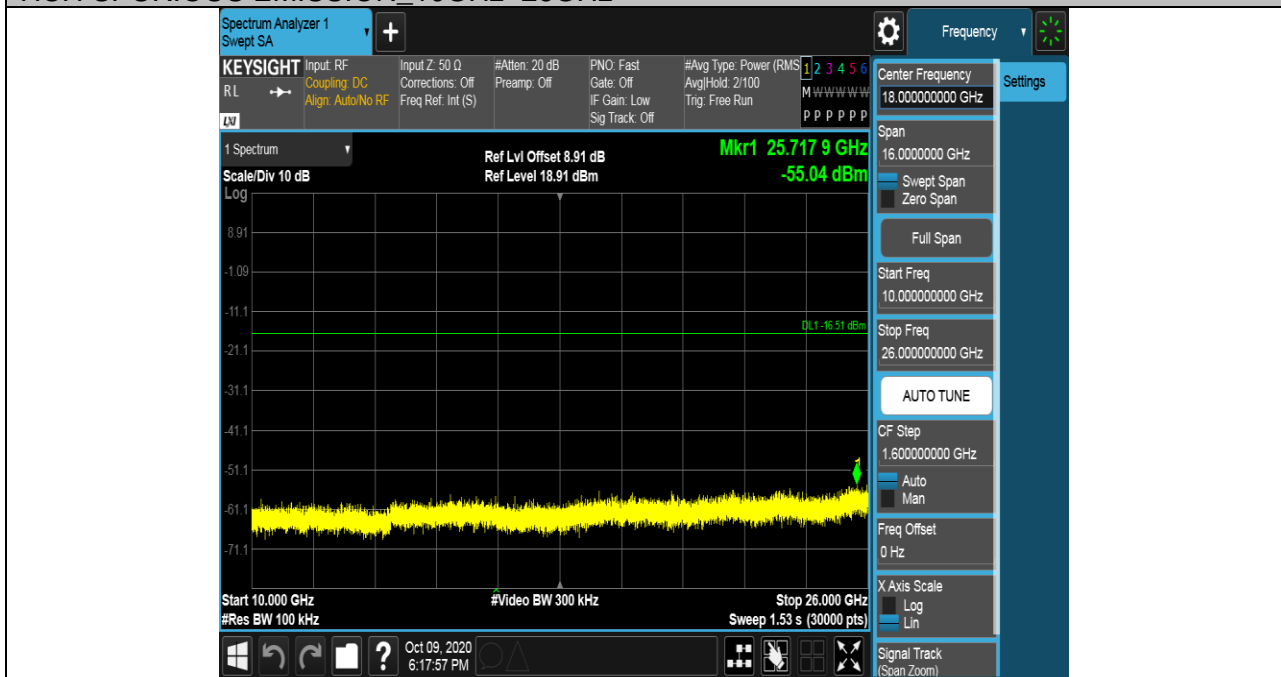


Puw test Plot

HCH SPURIOUS EMISSION\_30MHz~10GHz



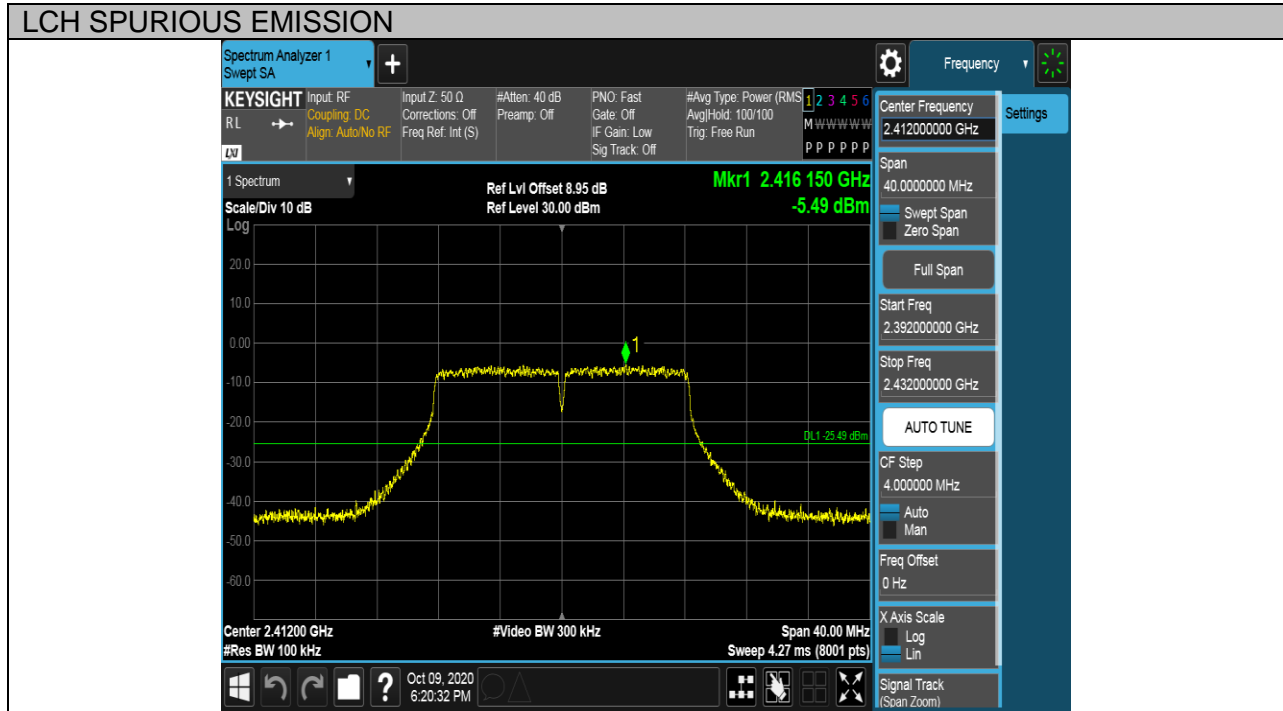
HCH SPURIOUS EMISSION\_10GHz~26GHz





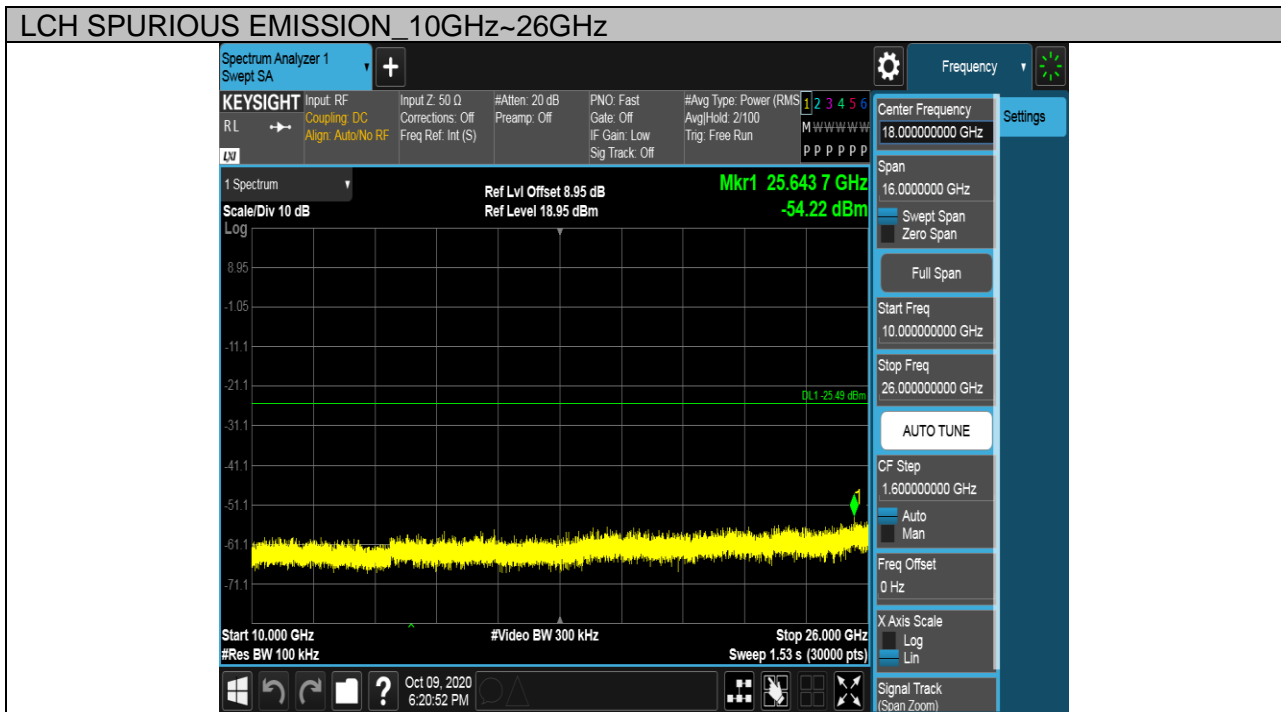
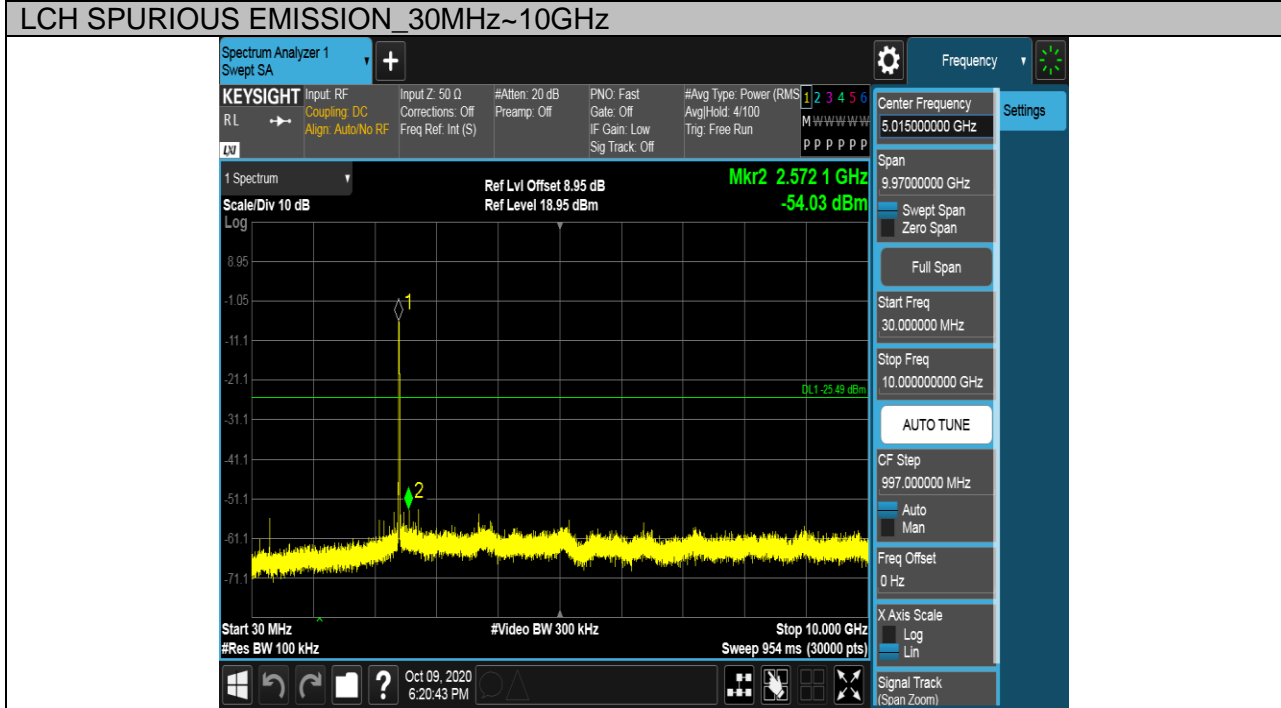
Test Mode	Channel	Verdict
11G	LCH	PASS

Pref test Plot





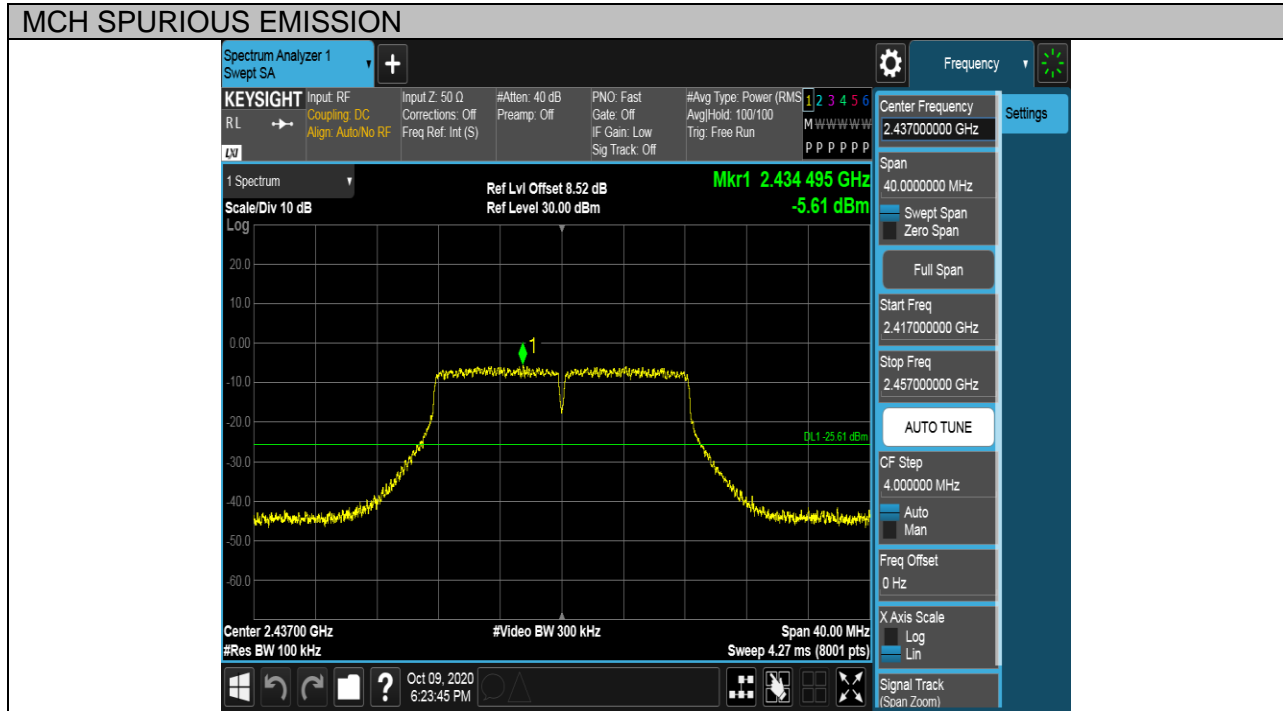
Puw test Plot





Test Mode	Channel	Verdict
11G	MCH	PASS

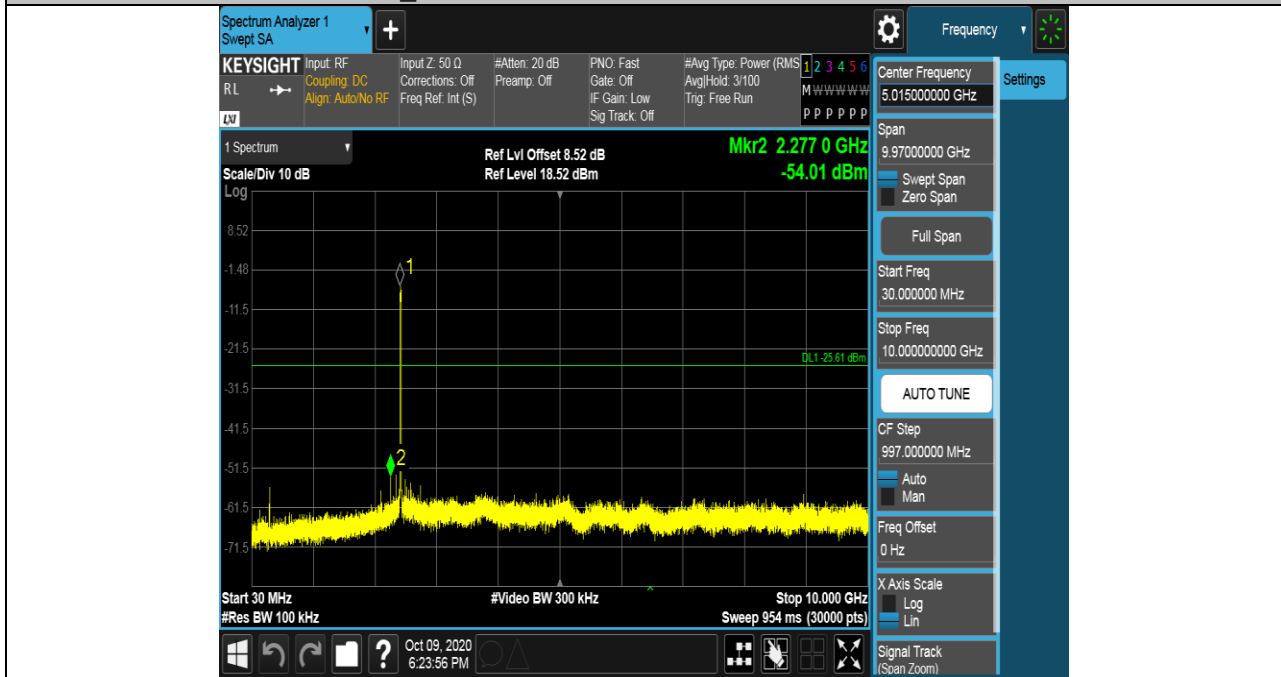
Pref test Plot



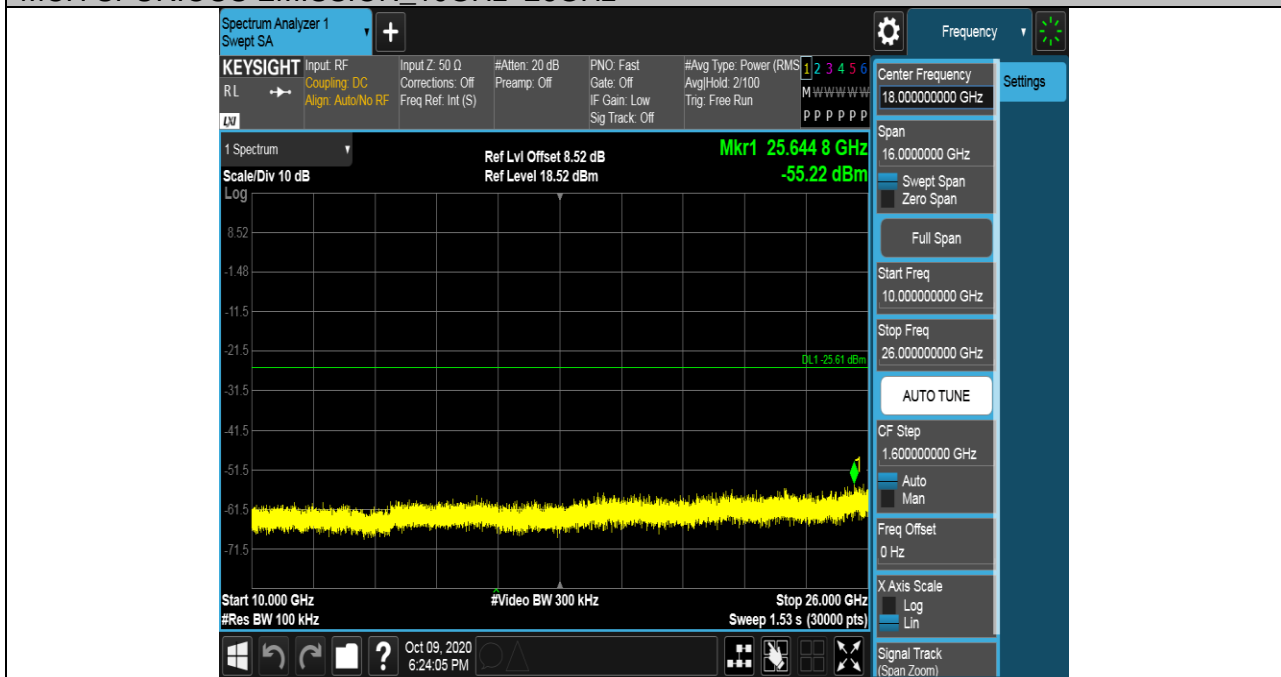


Puw test Plot

MCH SPURIOUS EMISSION\_30MHz~10GHz



MCH SPURIOUS EMISSION\_10GHz~26GHz

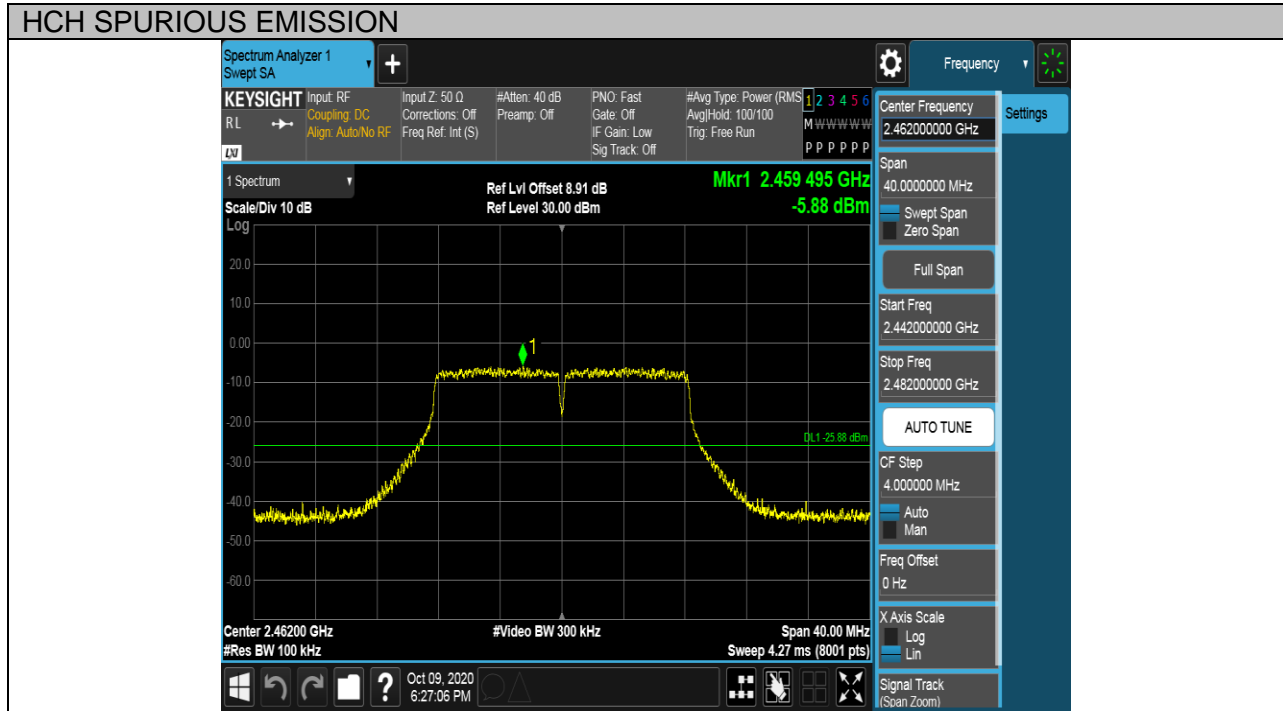






Test Mode	Channel	Verdict
11G	HCH	PASS

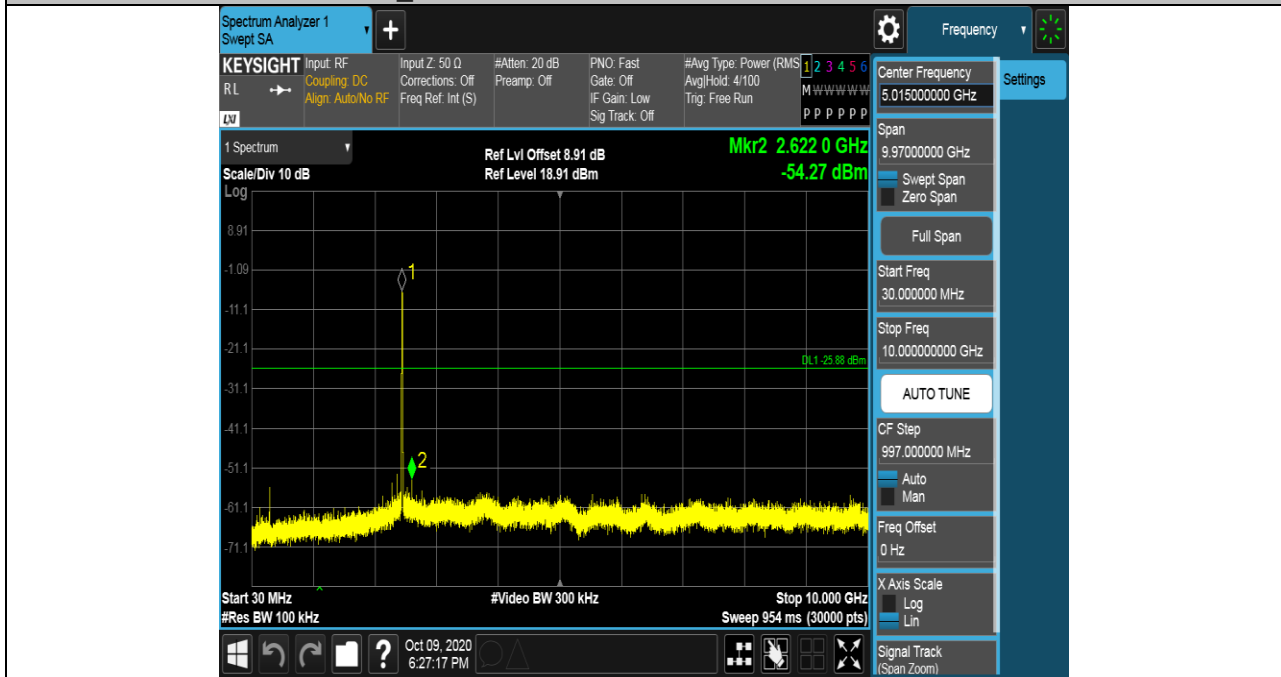
Pref test Plot



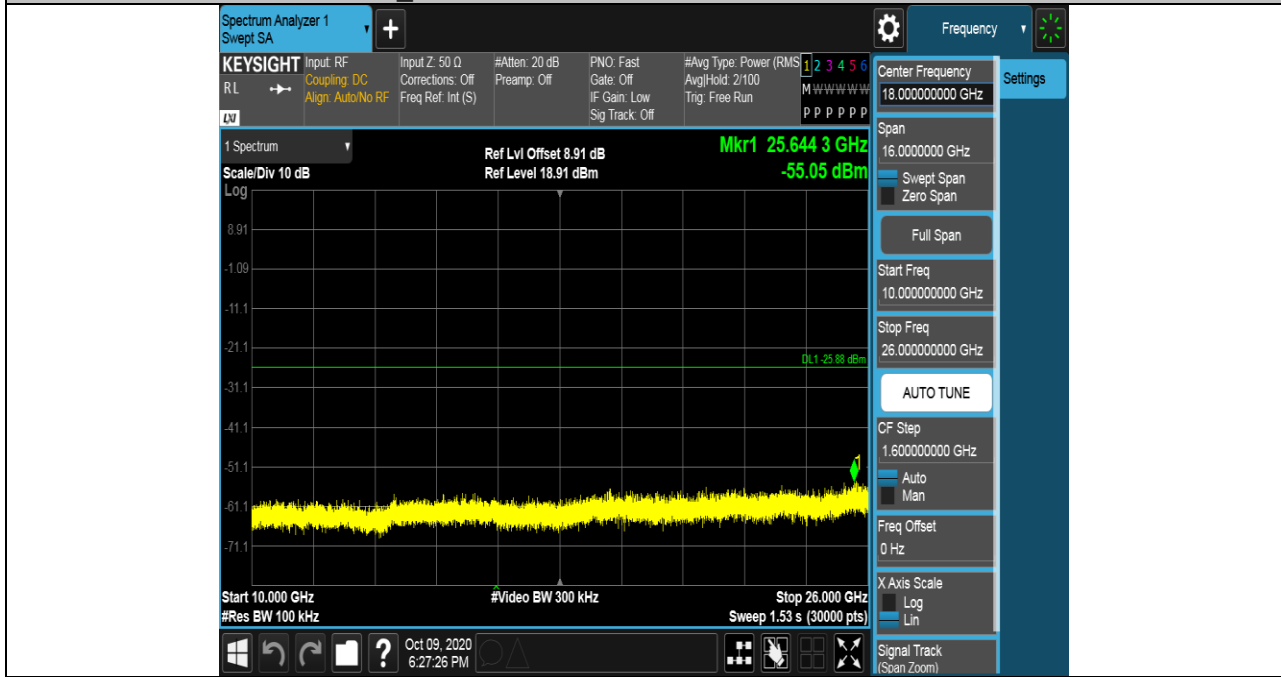


Puw test Plot

HCH SPURIOUS EMISSION\_30MHz~10GHz



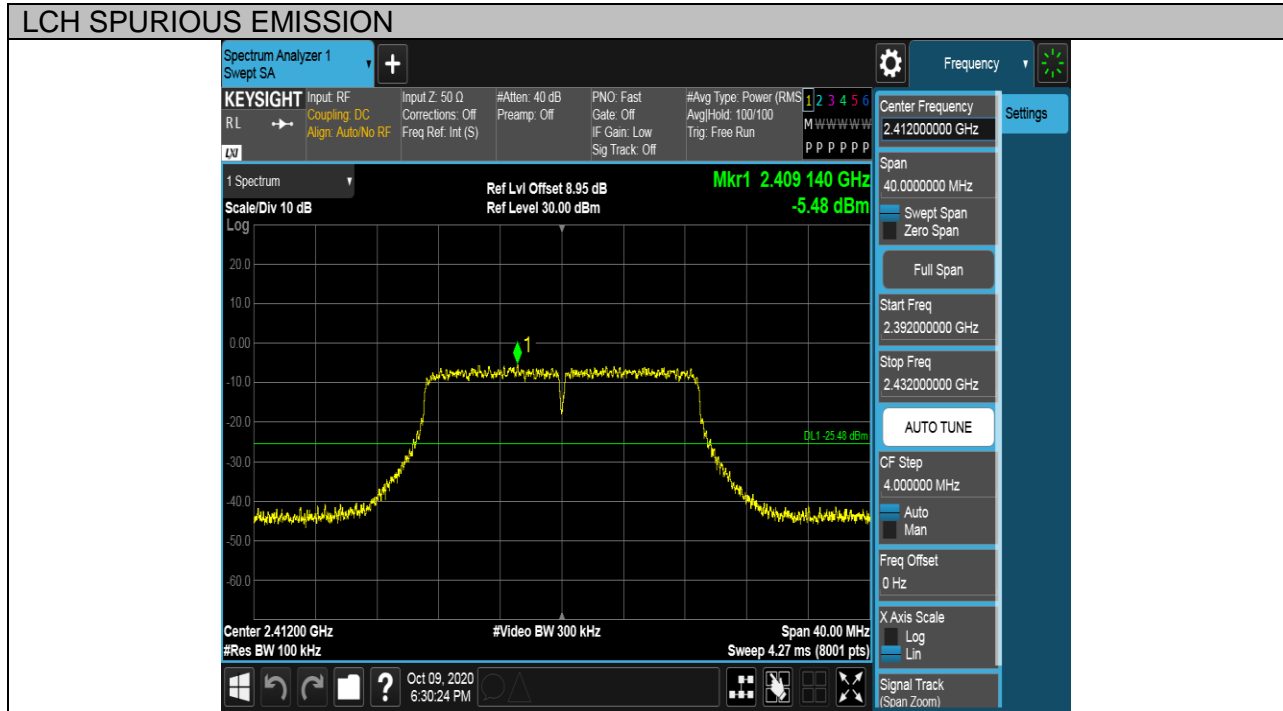
HCH SPURIOUS EMISSION\_10GHz~26GHz





Test Mode	Channel	Verdict
11N20 MIMO	LCH	PASS

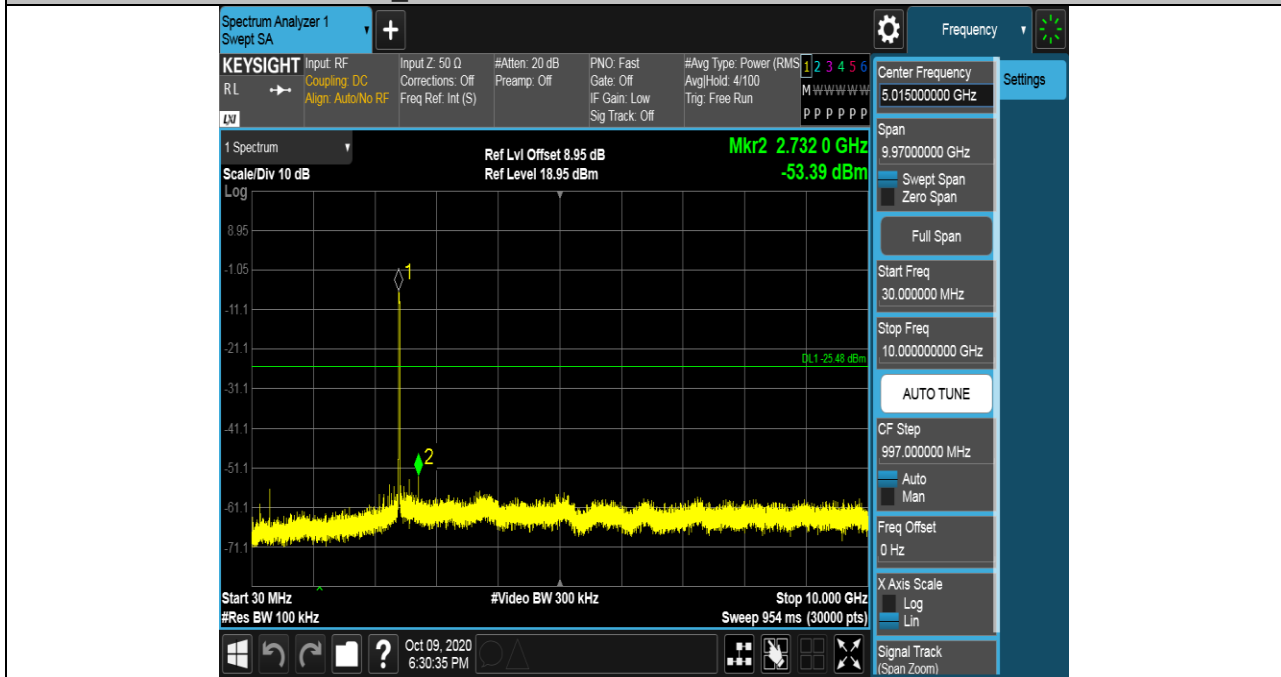
Pref test Plot



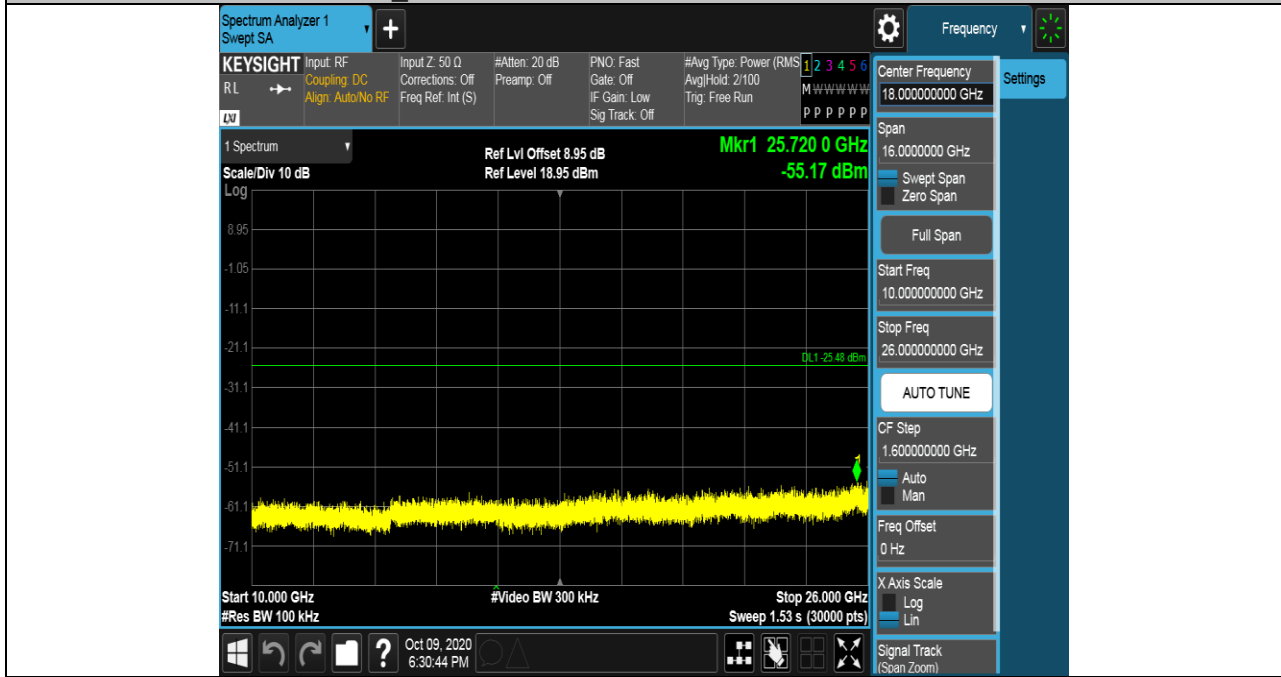


Puw test Plot

LCH SPURIOUS EMISSION\_30MHz~10GHz



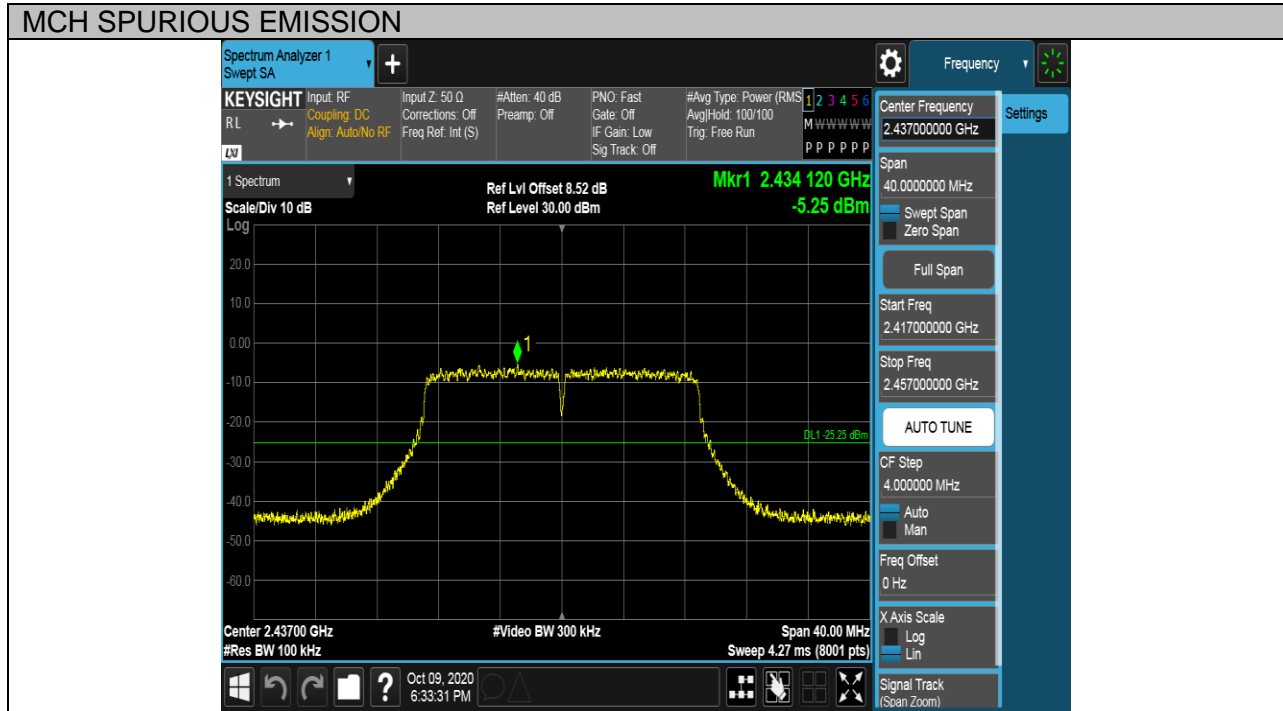
LCH SPURIOUS EMISSION\_10GHz~26GHz





Test Mode	Channel	Verdict
11N20 MIMO	MCH	PASS

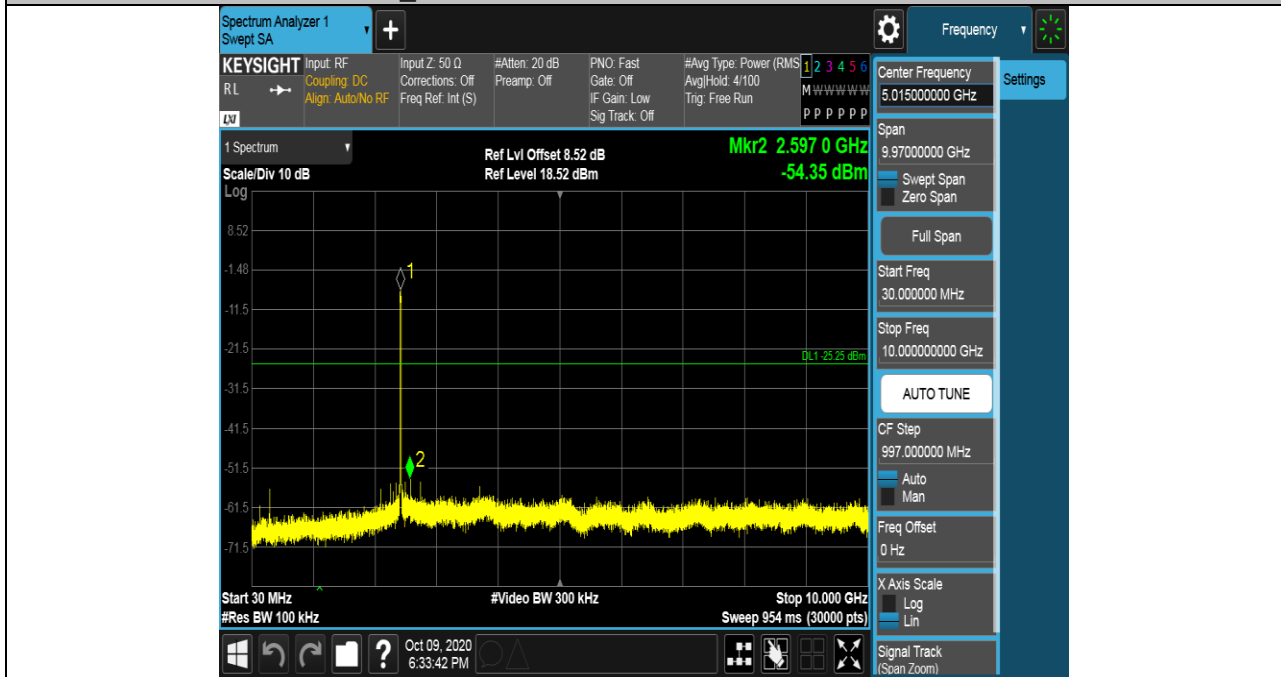
Pref test Plot



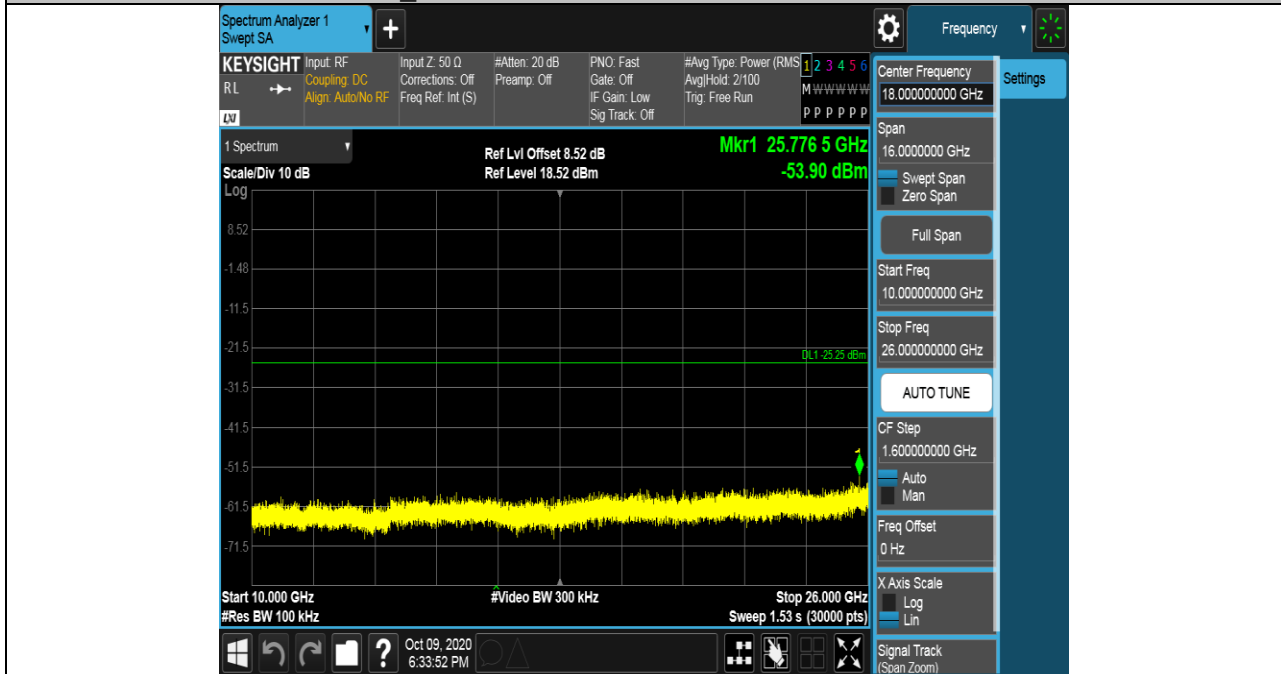


Puw test Plot

MCH SPURIOUS EMISSION\_30MHz~10GHz



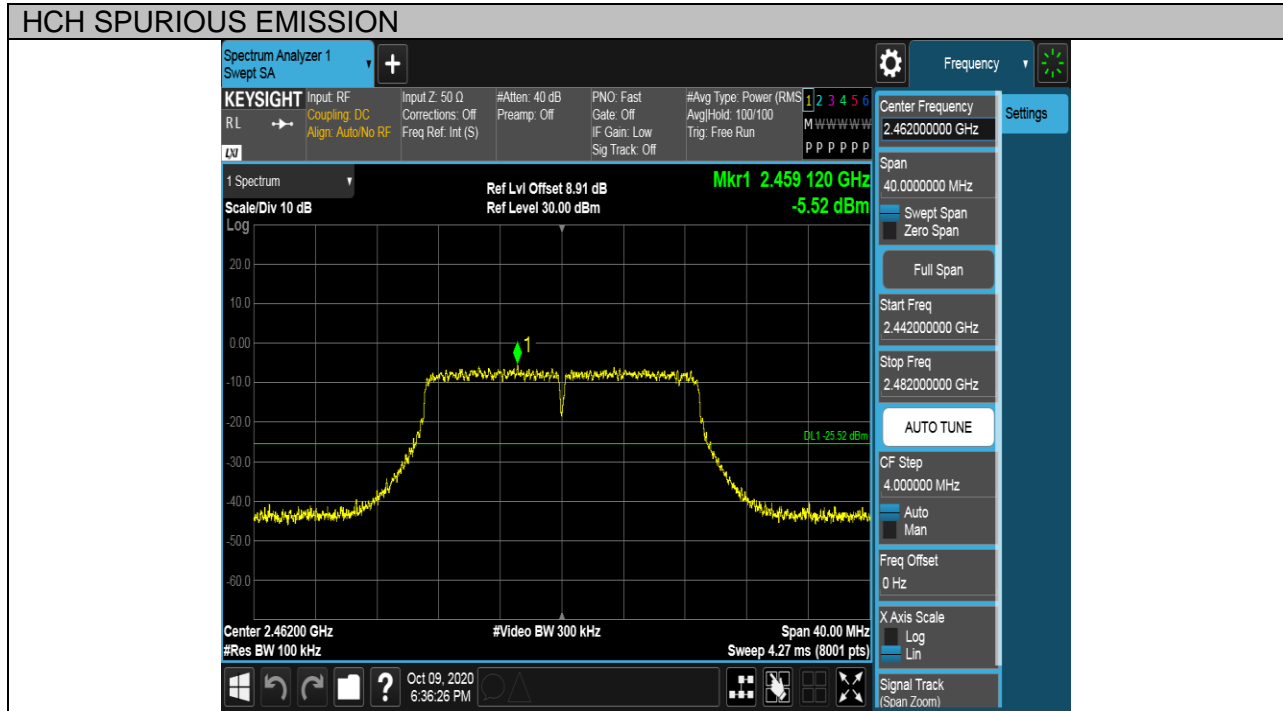
MCH SPURIOUS EMISSION\_10GHz~26GHz





Test Mode	Channel	Verdict
11N20 MIMO	HCH	PASS

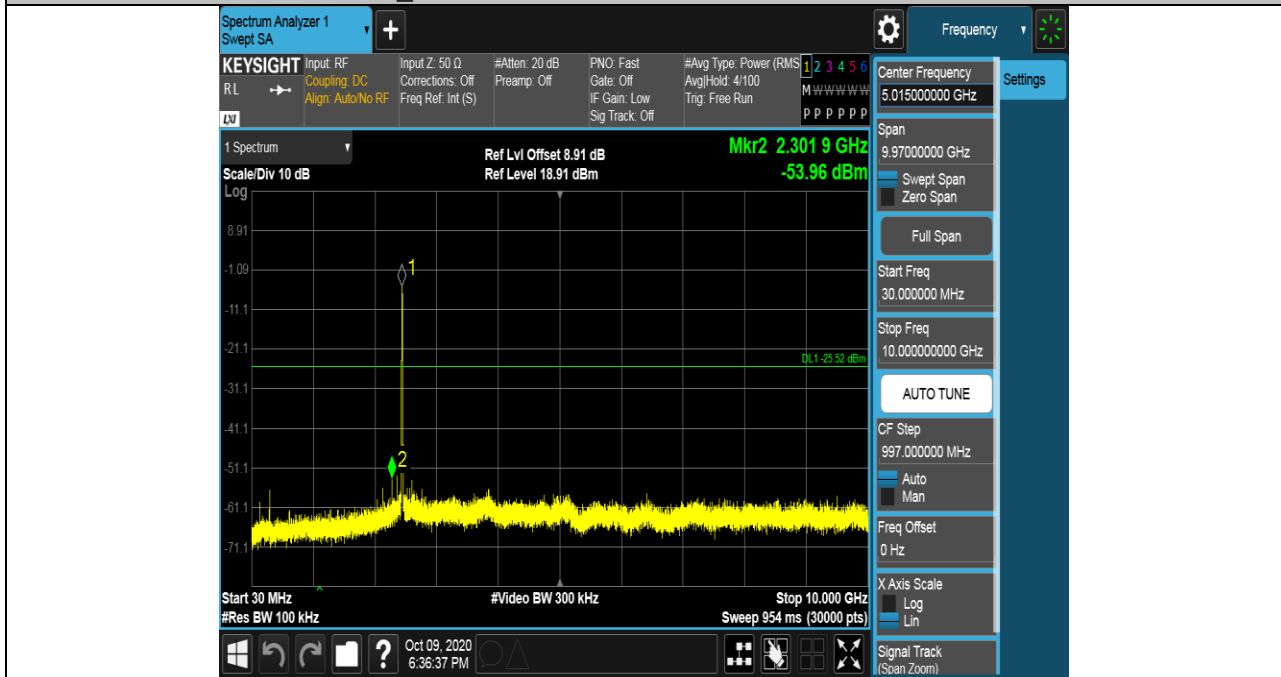
Pref test Plot



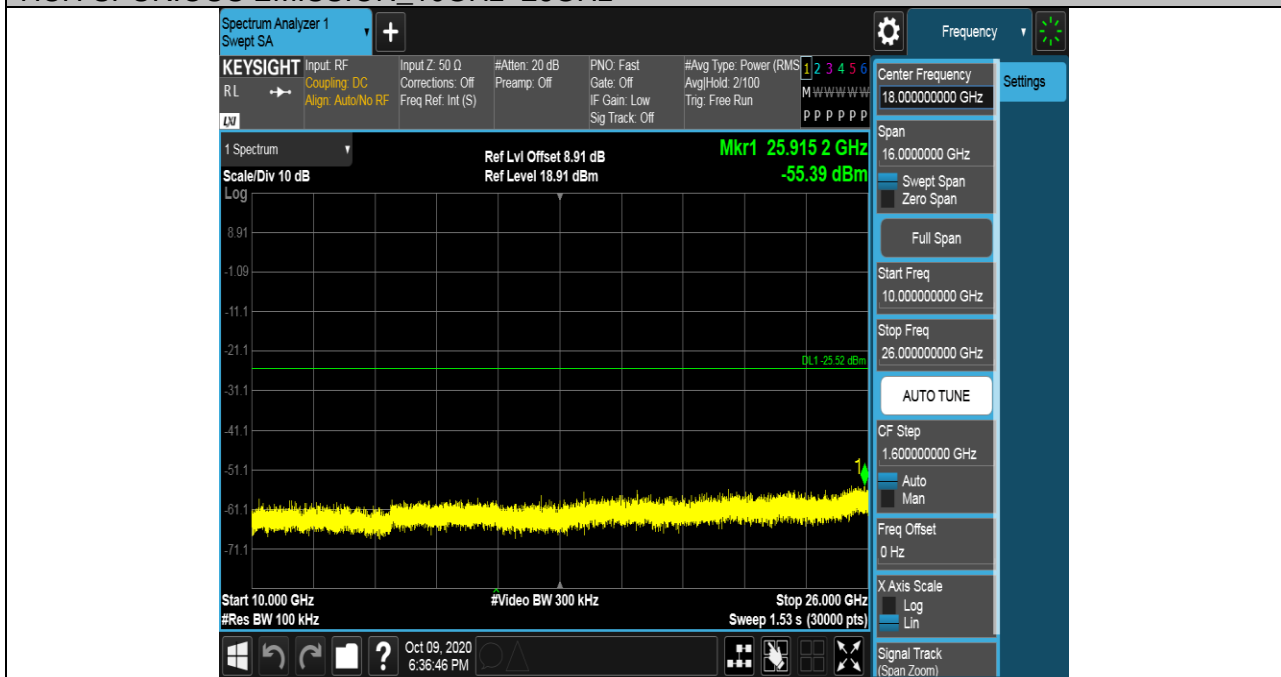


Puw test Plot

HCH SPURIOUS EMISSION\_30MHz~10GHz



HCH SPURIOUS EMISSION\_10GHz~26GHz

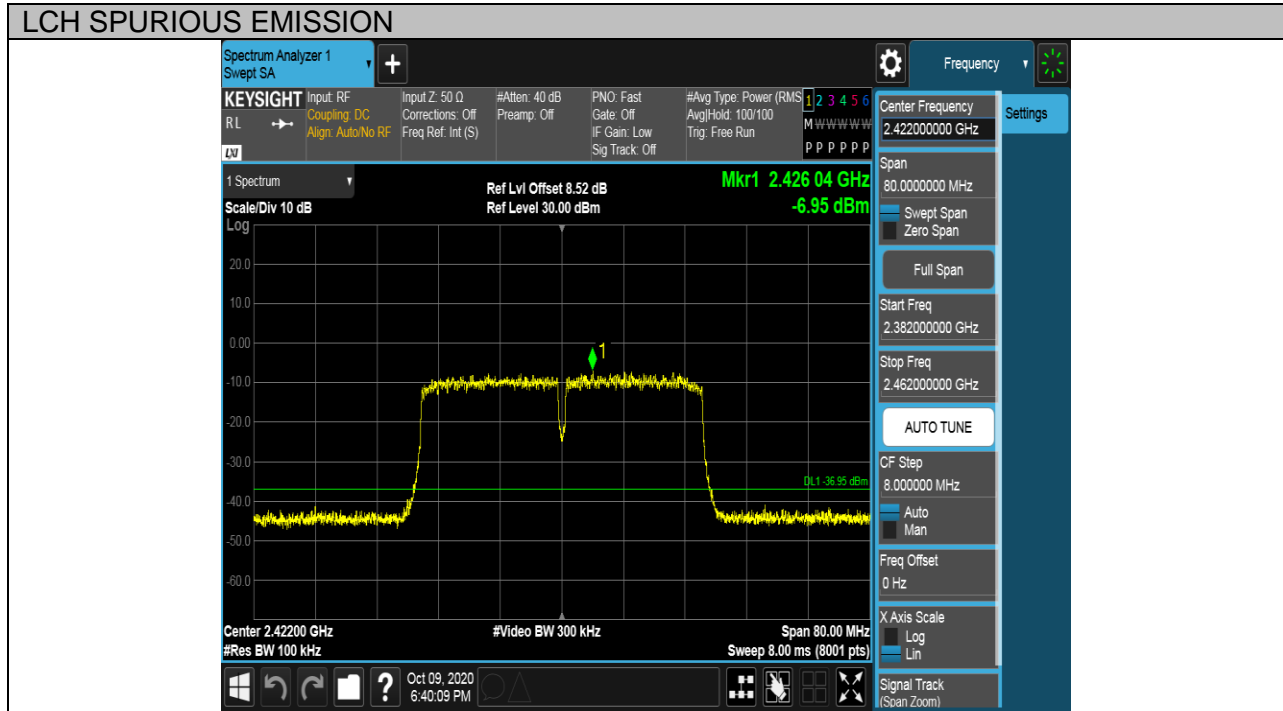






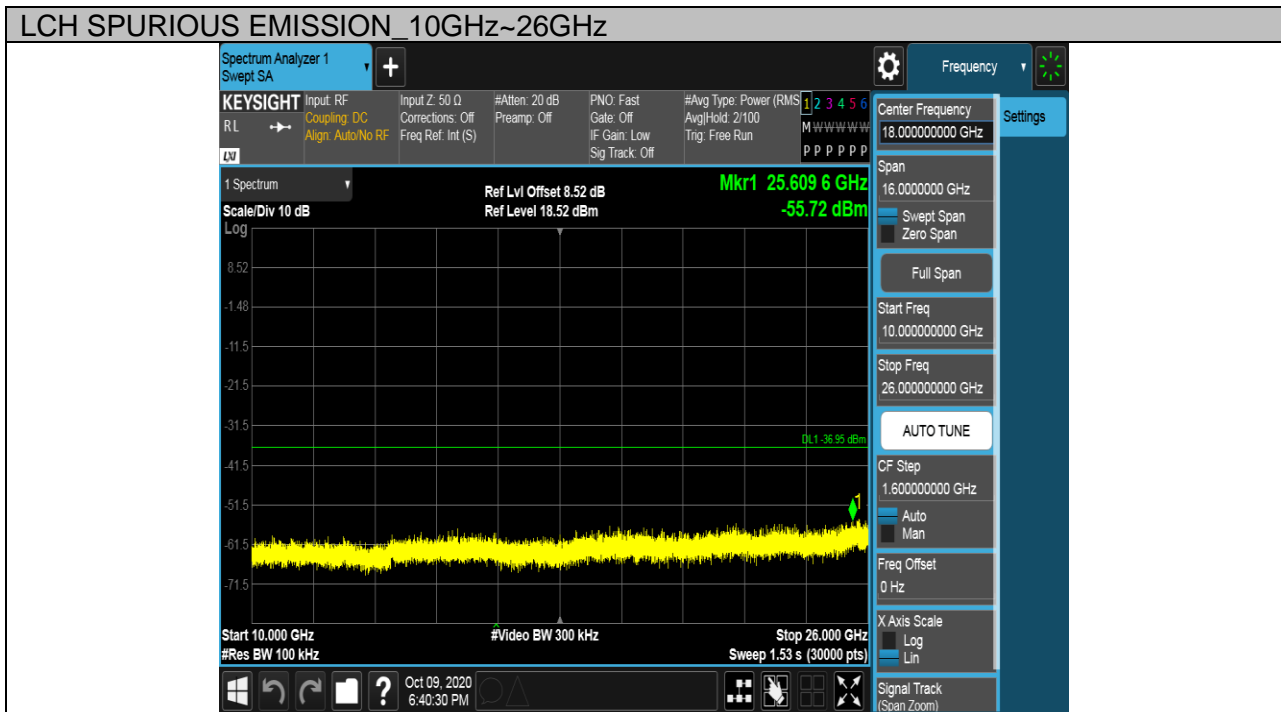
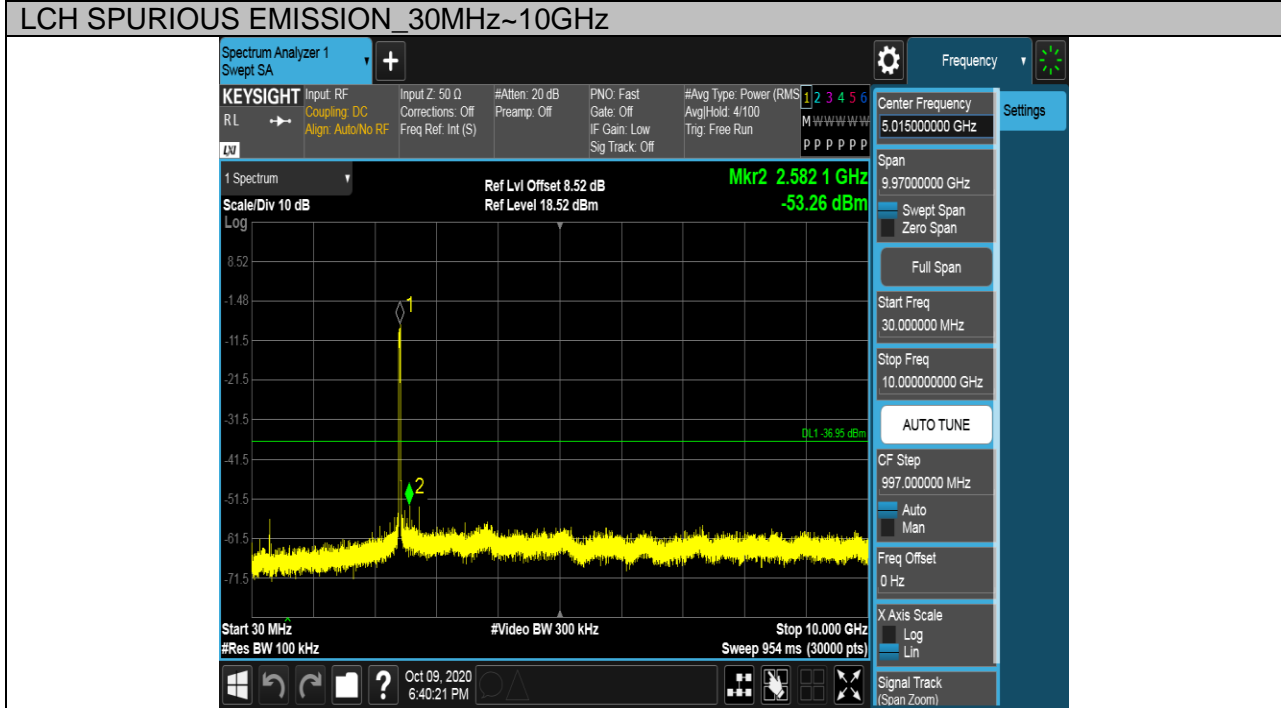
Test Mode	Channel	Verdict
11N40 MIMO	LCH	PASS

Pref test Plot





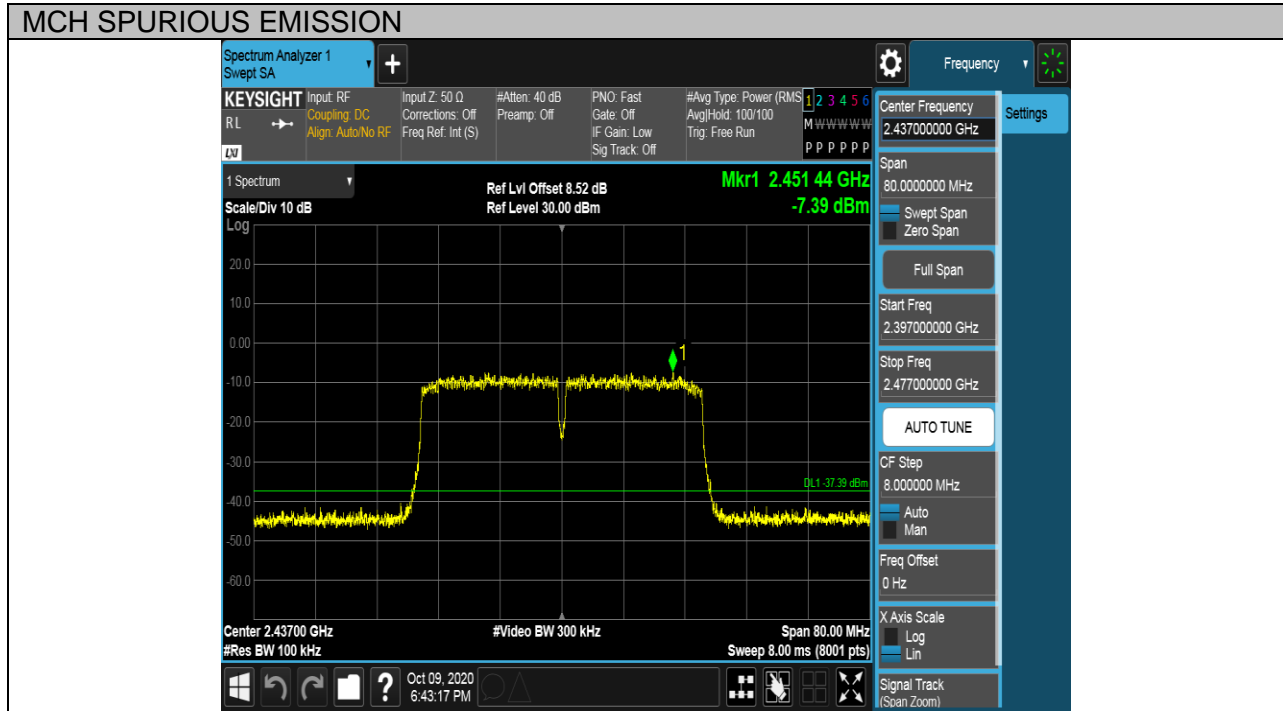
Puw test Plot





Test Mode	Channel	Verdict
11N40 MIMO	MCH	PASS

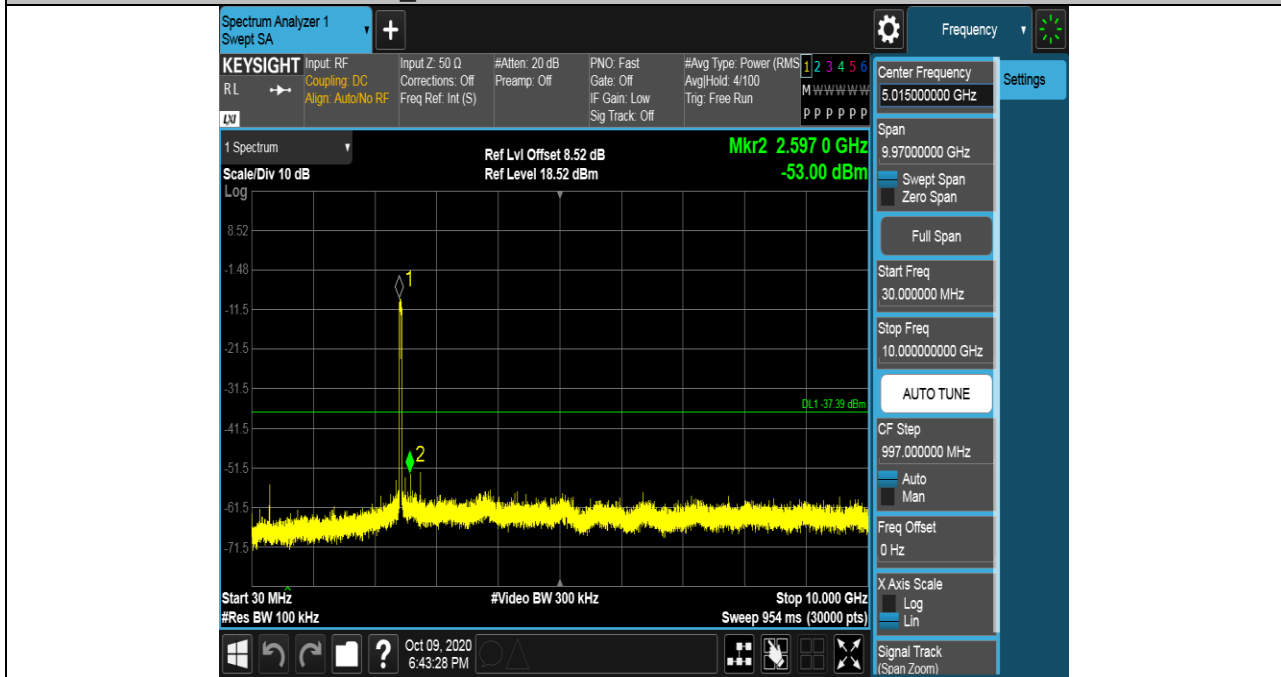
Pref test Plot



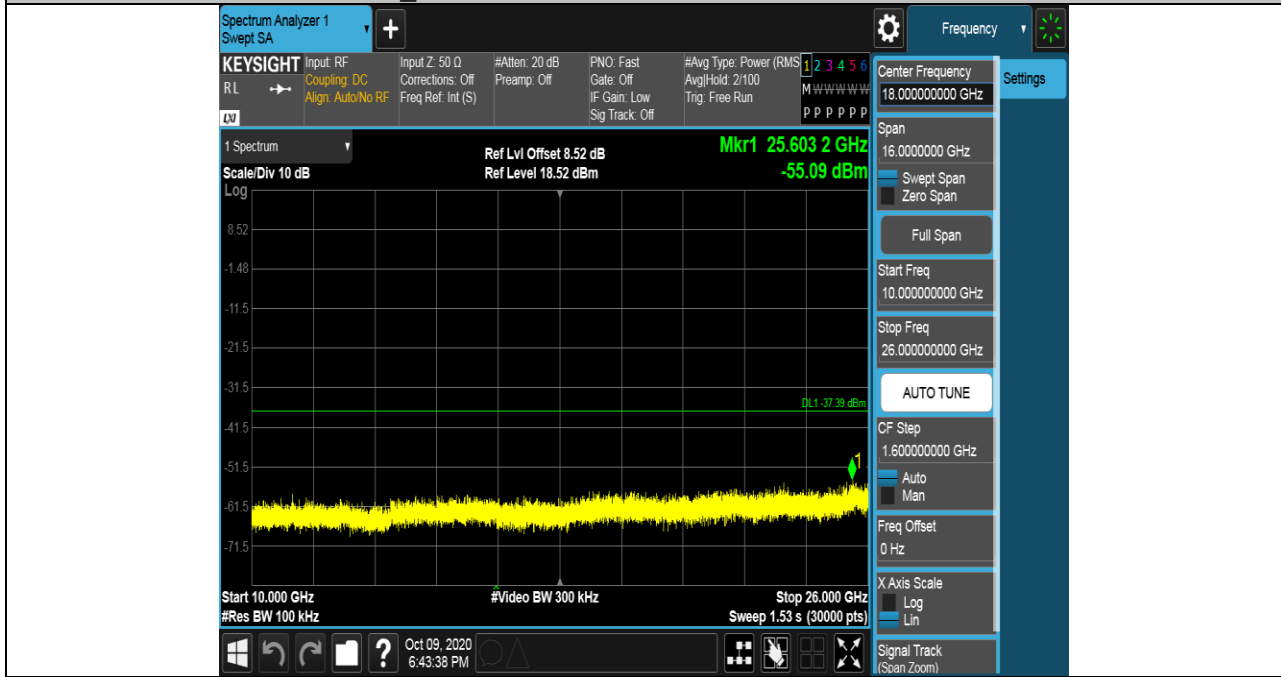


Puw test Plot

MCH SPURIOUS EMISSION\_30MHz~10GHz



MCH SPURIOUS EMISSION\_10GHz~26GHz

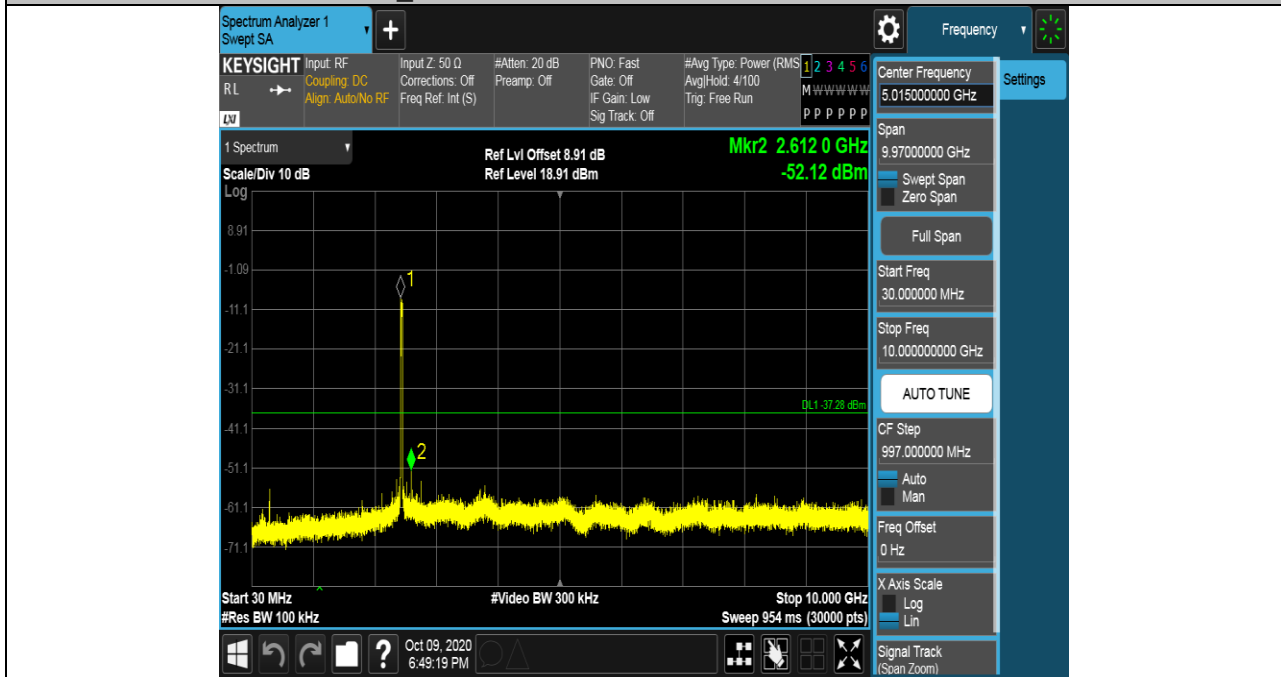




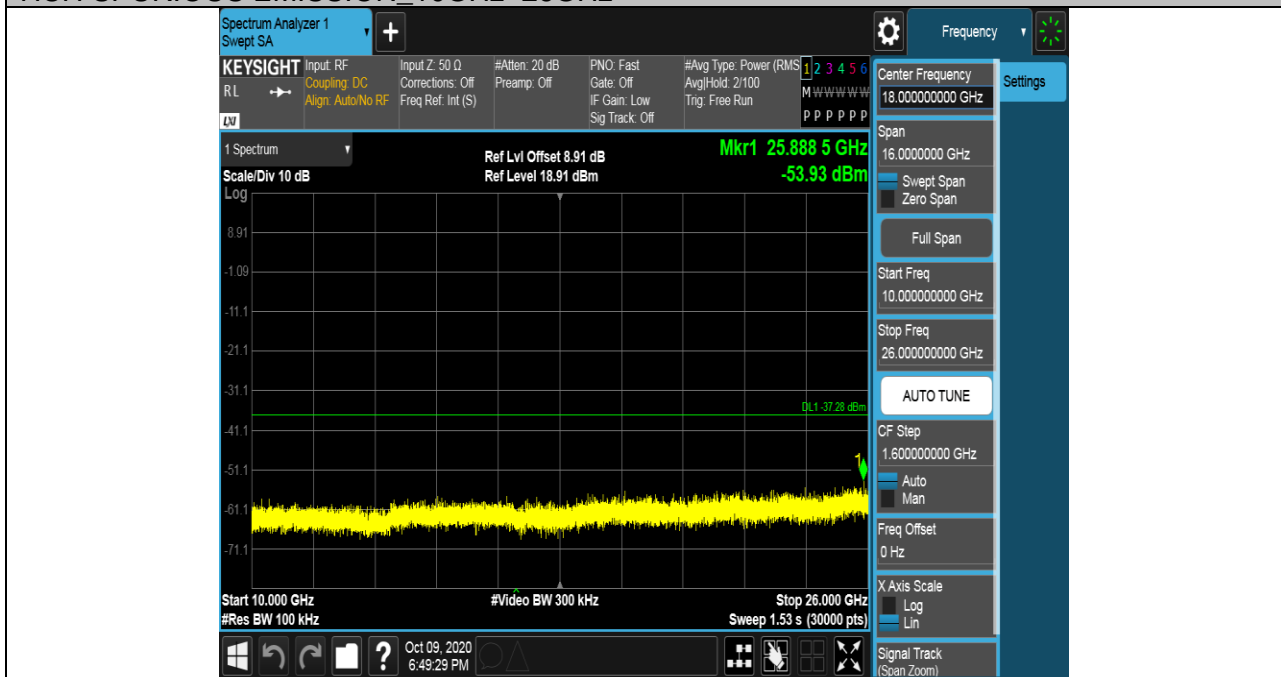


Puw test Plot

HCH SPURIOUS EMISSION\_30MHz~10GHz



HCH SPURIOUS EMISSION\_10GHz~26GHz





**Antenna 2:**

Test Mode	Channel	Verdict
11B	LCH	PASS

**Pref test Plot**

