



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:

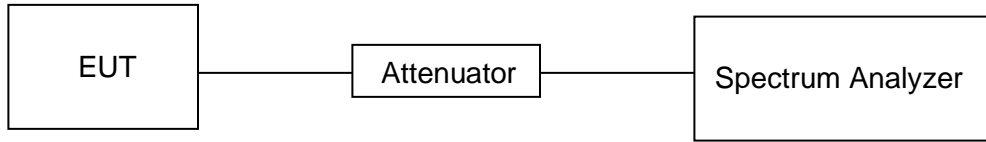
Use the peak marker function to determine the maximum PSD level.

| | |
|--------------------|---|
| 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

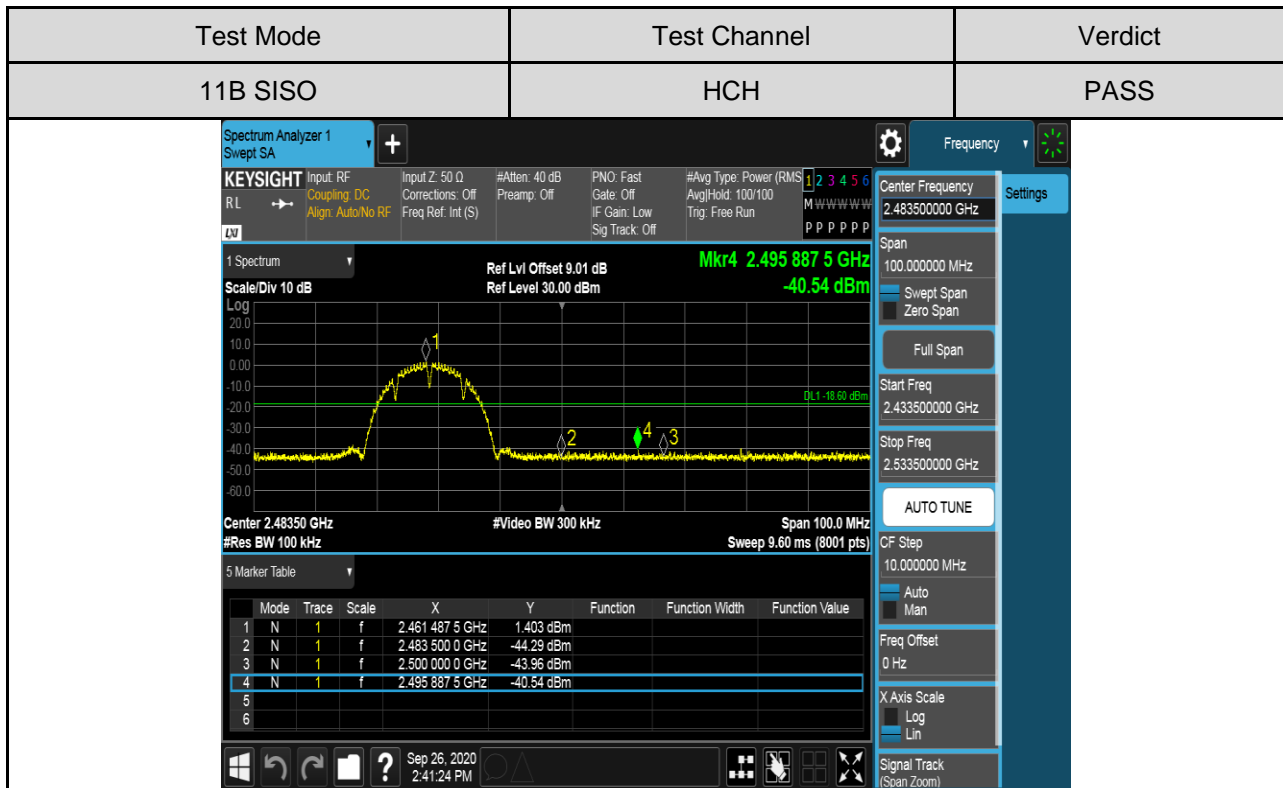
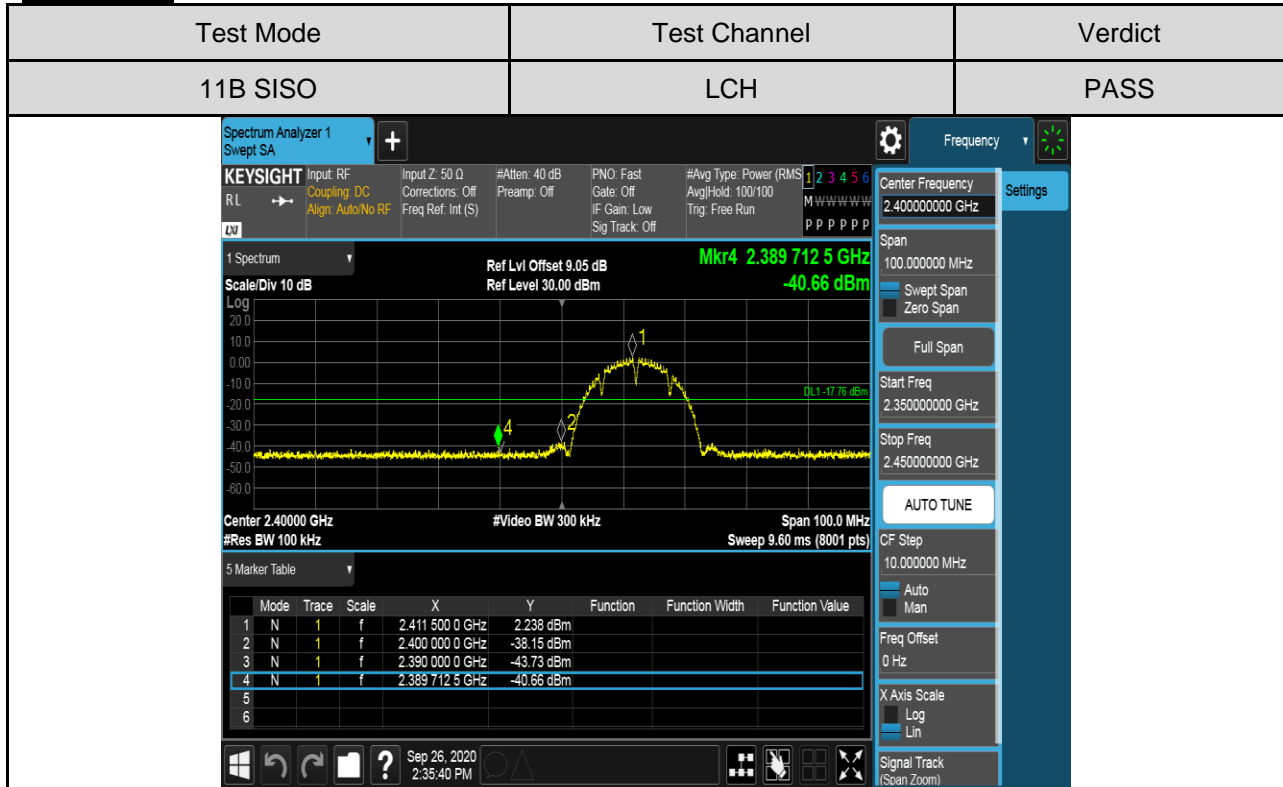
| Test Mode | Test Antenna | Test Channel | Carrier Power[dBm] | Max. Spurious Level [dBm] | Limit [dBm] | Verdict |
|-----------|--------------|--------------|--------------------|---------------------------|-------------|---------|
| 11B | Antenna 1 | LCH | 2.238 | -40.66 | -17.76 | PASS |
| | | HCH | 1.403 | -40.54 | -18.60 | PASS |
| | Antenna 2 | LCH | 1.929 | -41.22 | -18.07 | PASS |
| | | HCH | 0.868 | -40.81 | -19.13 | PASS |
| 11G | Antenna 1 | LCH | -3.177 | -40.20 | -23.18 | PASS |
| | | HCH | -4.466 | -40.16 | -24.47 | PASS |
| | Antenna 2 | LCH | -3.969 | -40.84 | -23.97 | PASS |
| | | HCH | -5.485 | -39.98 | -25.49 | PASS |
| 11N20MIMO | Antenna 1 | LCH | -2.919 | -41.17 | -22.92 | PASS |
| | | HCH | -4.141 | -41.18 | -24.14 | PASS |
| | Antenna 2 | LCH | -4.411 | -40.21 | -24.41 | PASS |
| | | HCH | -5.163 | -40.99 | -25.16 | PASS |
| 11N40MIMO | Antenna 1 | LCH | -5.431 | -41.19 | -35.43 | PASS |
| | | HCH | -5.798 | -40.98 | -35.80 | PASS |
| | Antenna 2 | LCH | -6.471 | -41.27 | -36.47 | PASS |
| | | HCH | -6.819 | -41.20 | -36.82 | PASS |

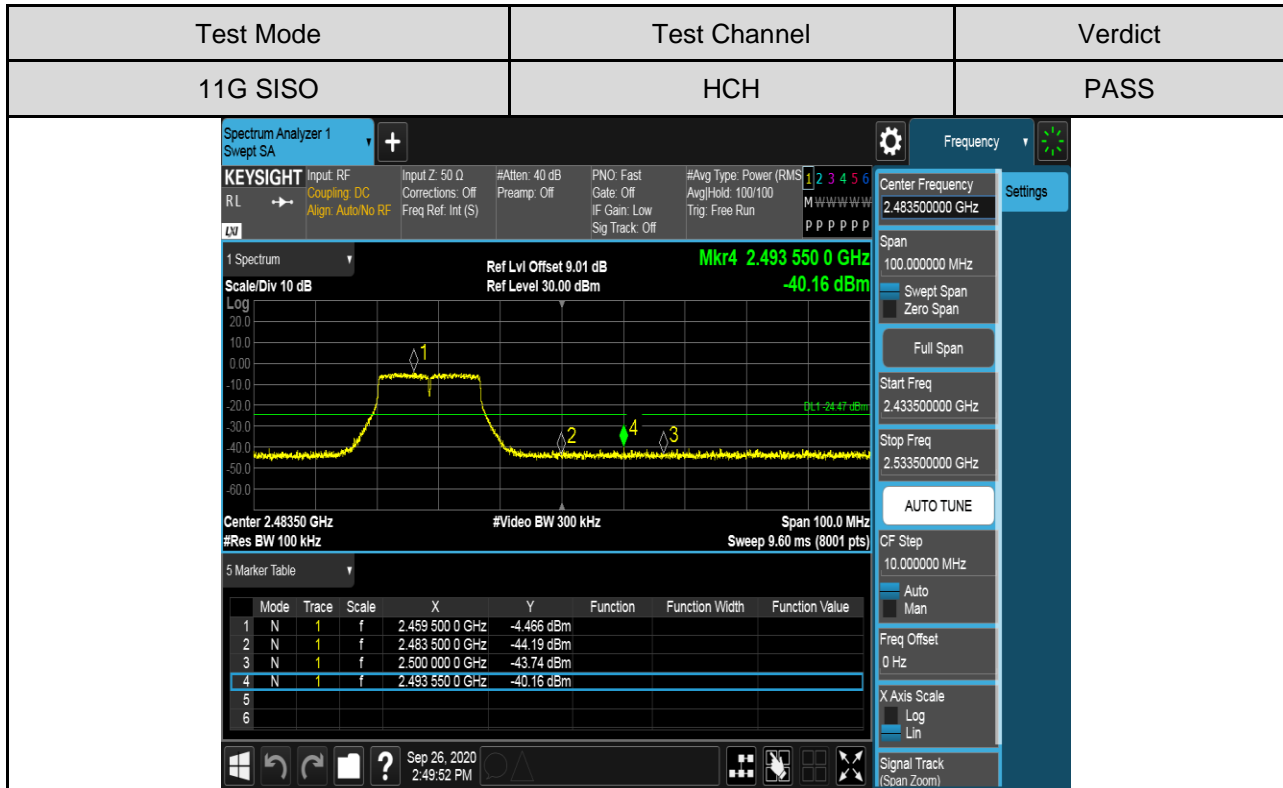
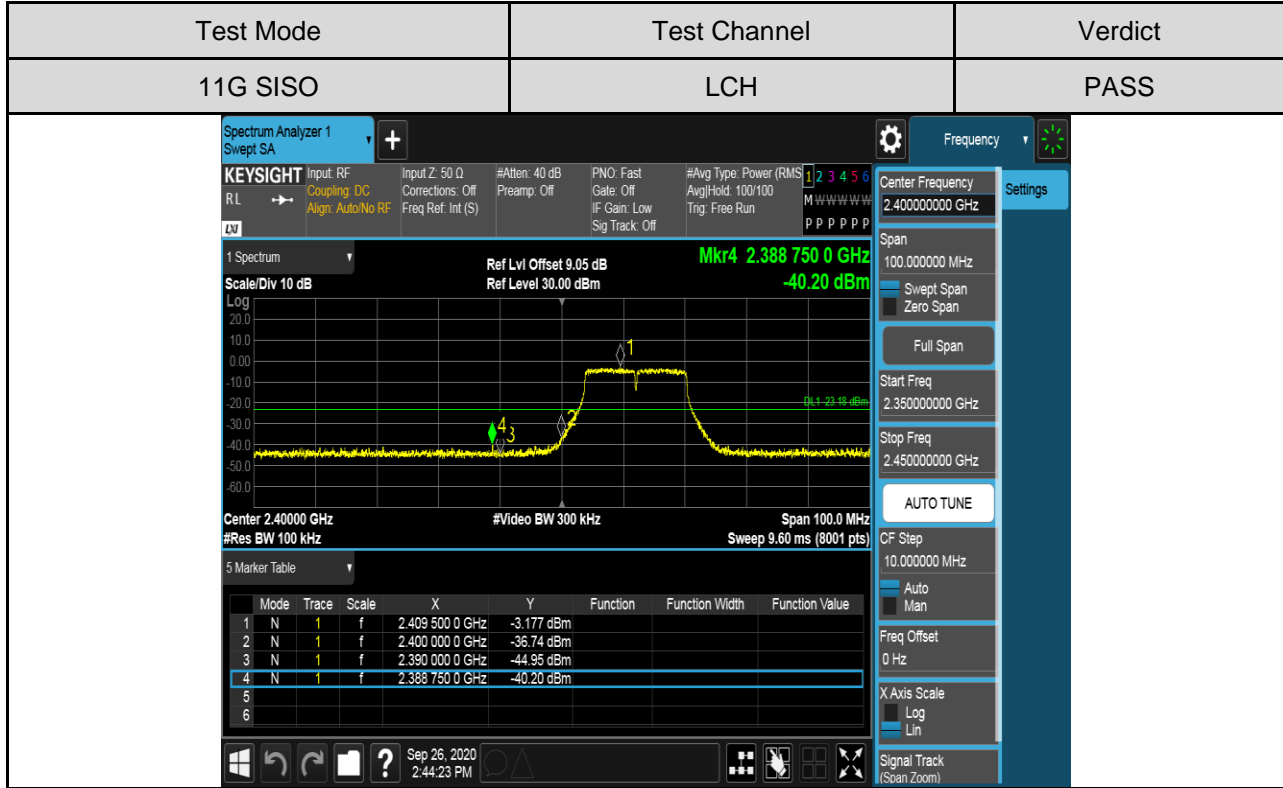
Remark:

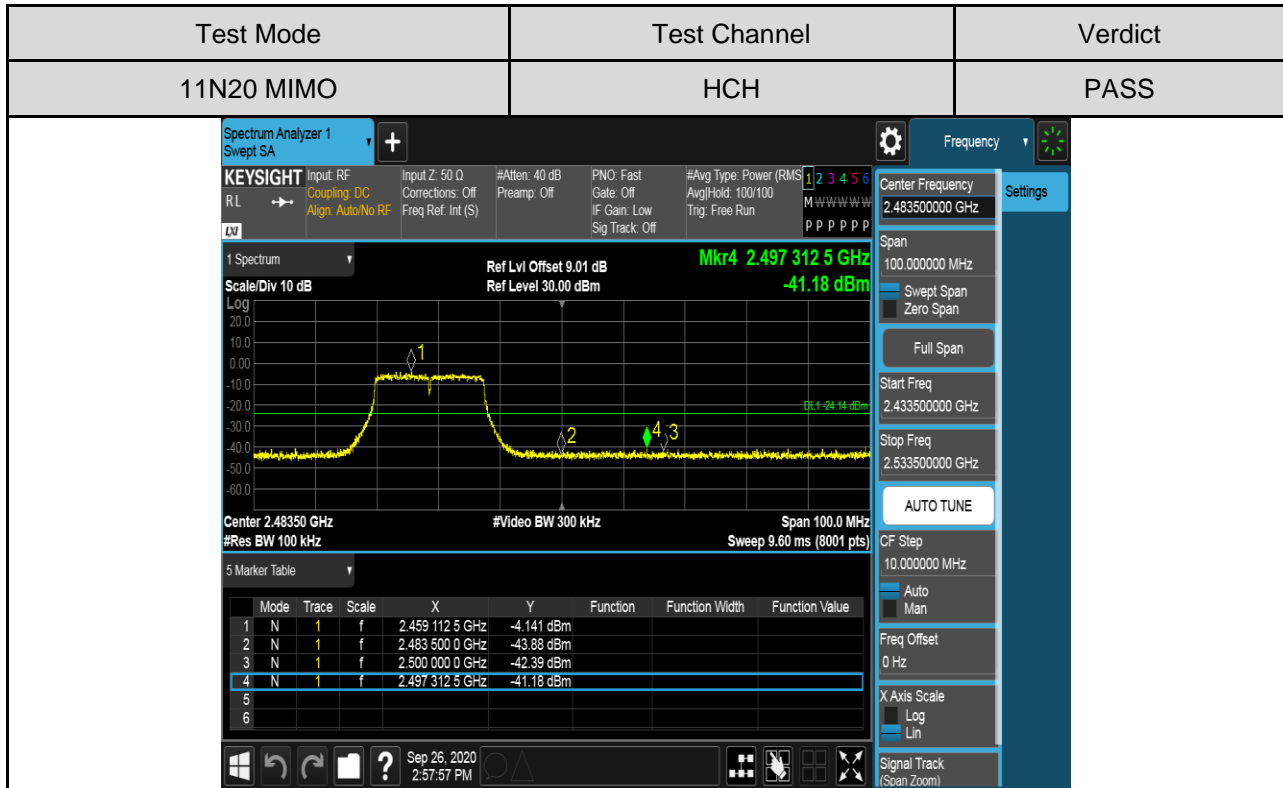
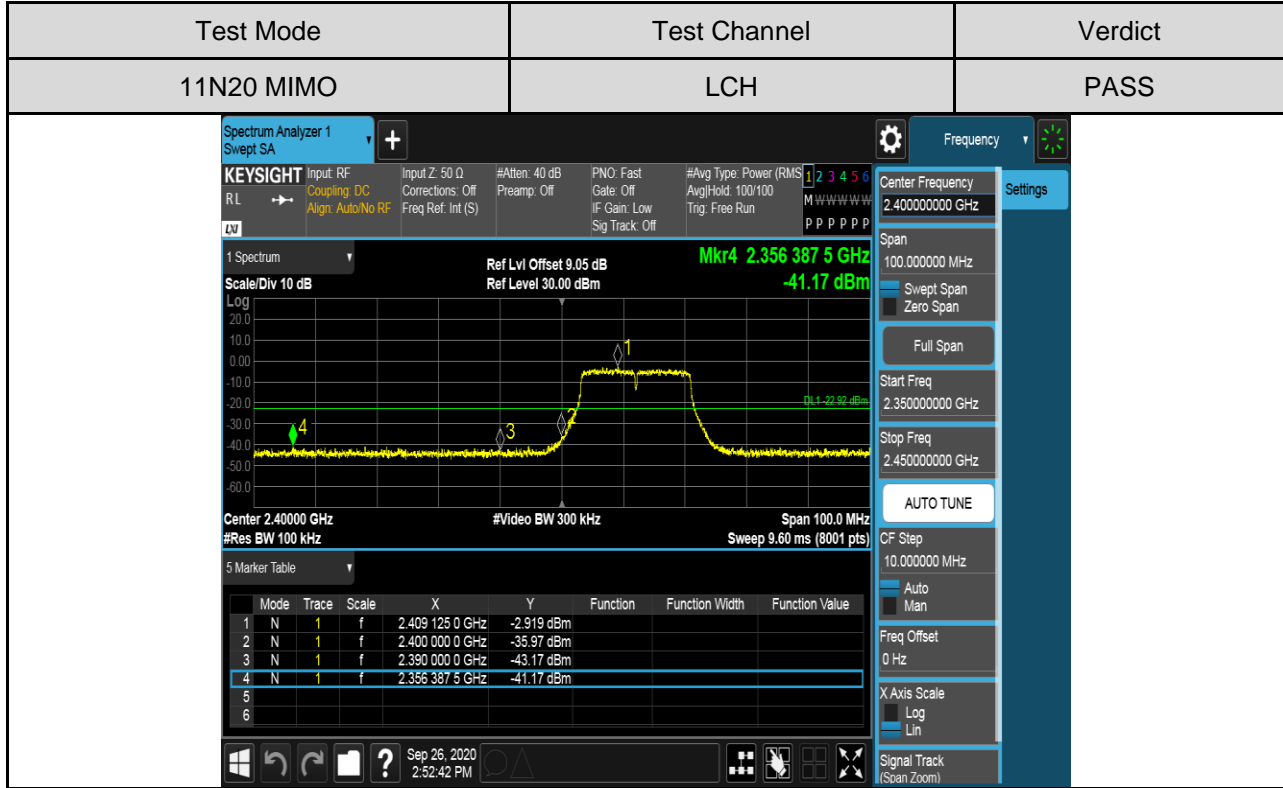
- 1) For this product, it has two antennas, antenna1 and antenna2, but only the 802.11N HT20 and 802.11N HT40 modes can support both the SISO and MIMO technical.
- 2) Through pre-testing all the test modes of 11N 20 and 11N40, including SISO and MIMO, but only the data if worse case is included in this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

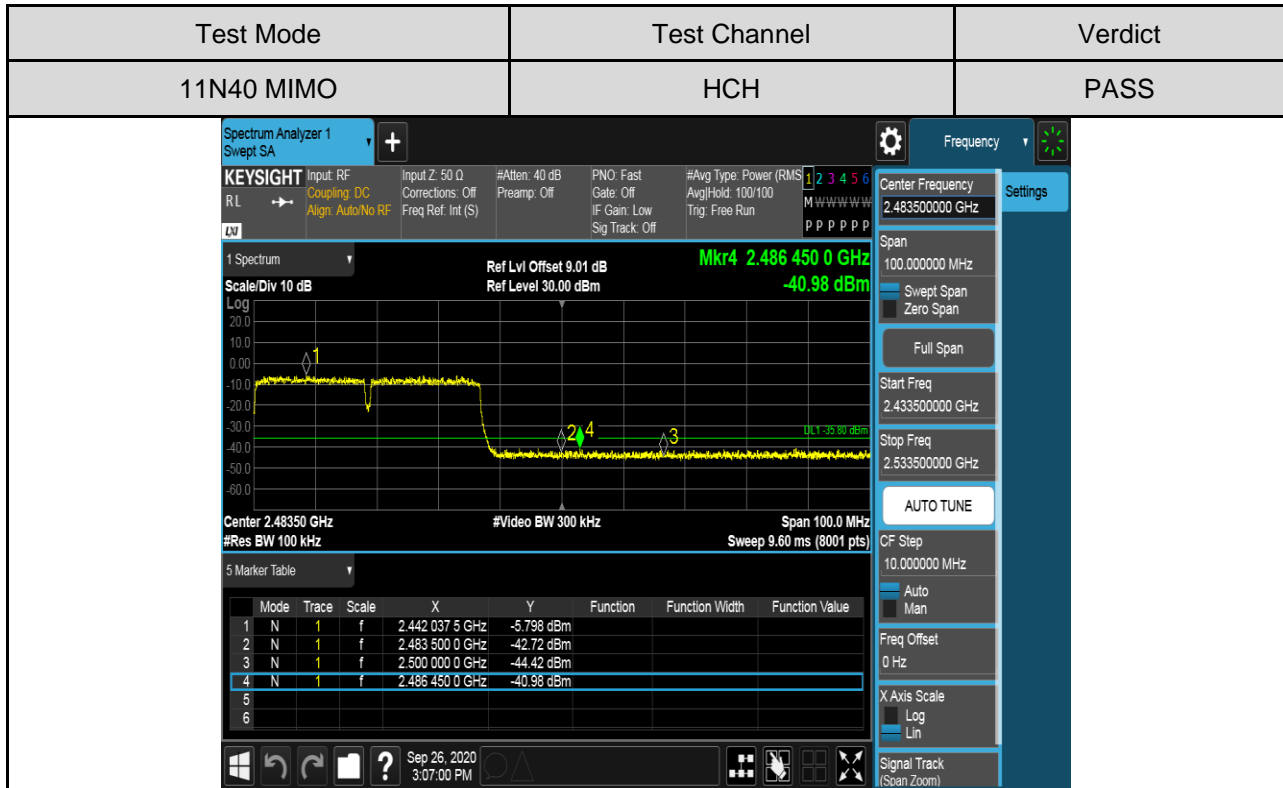
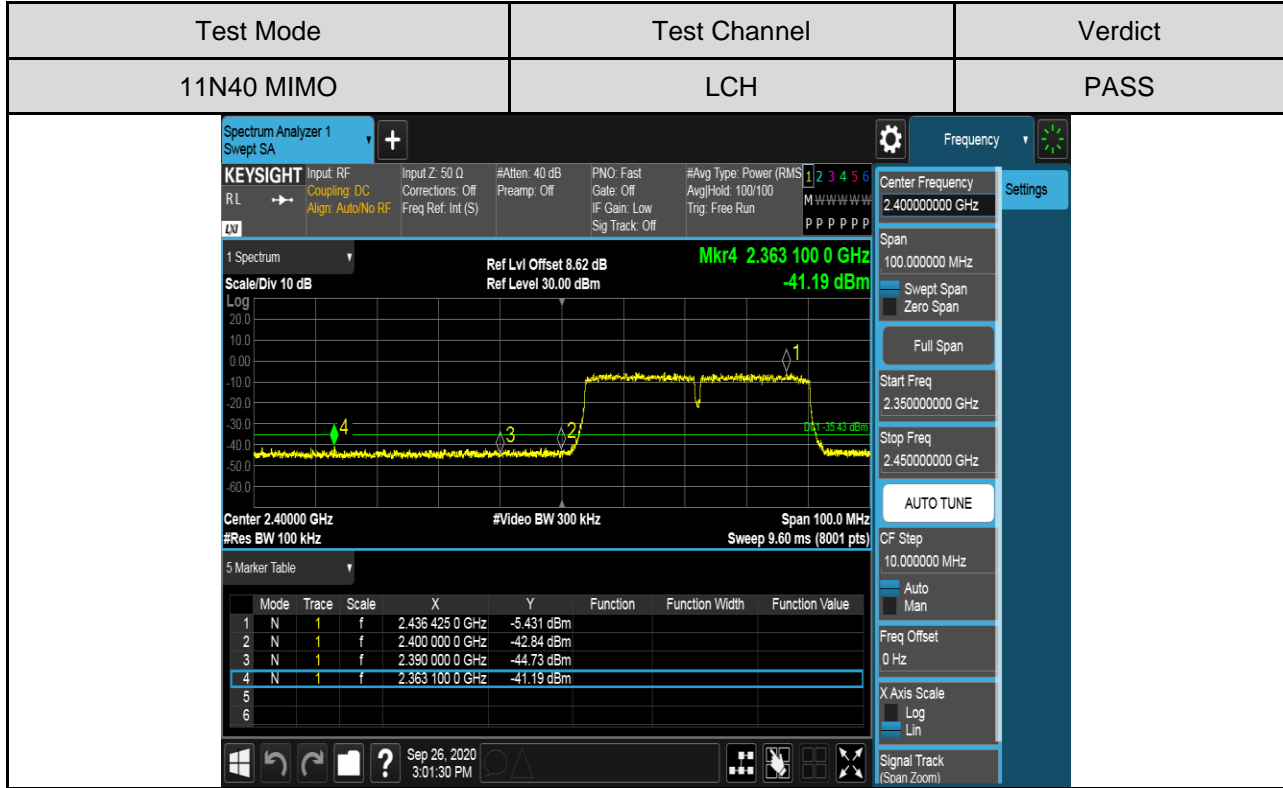


TEST GRAPHS
Antenna 1:











Antenna 2:

| | | |
|-----------|--------------|---------|
| Test Mode | Test Channel | Verdict |
| 11B SISO | LCH | PASS |

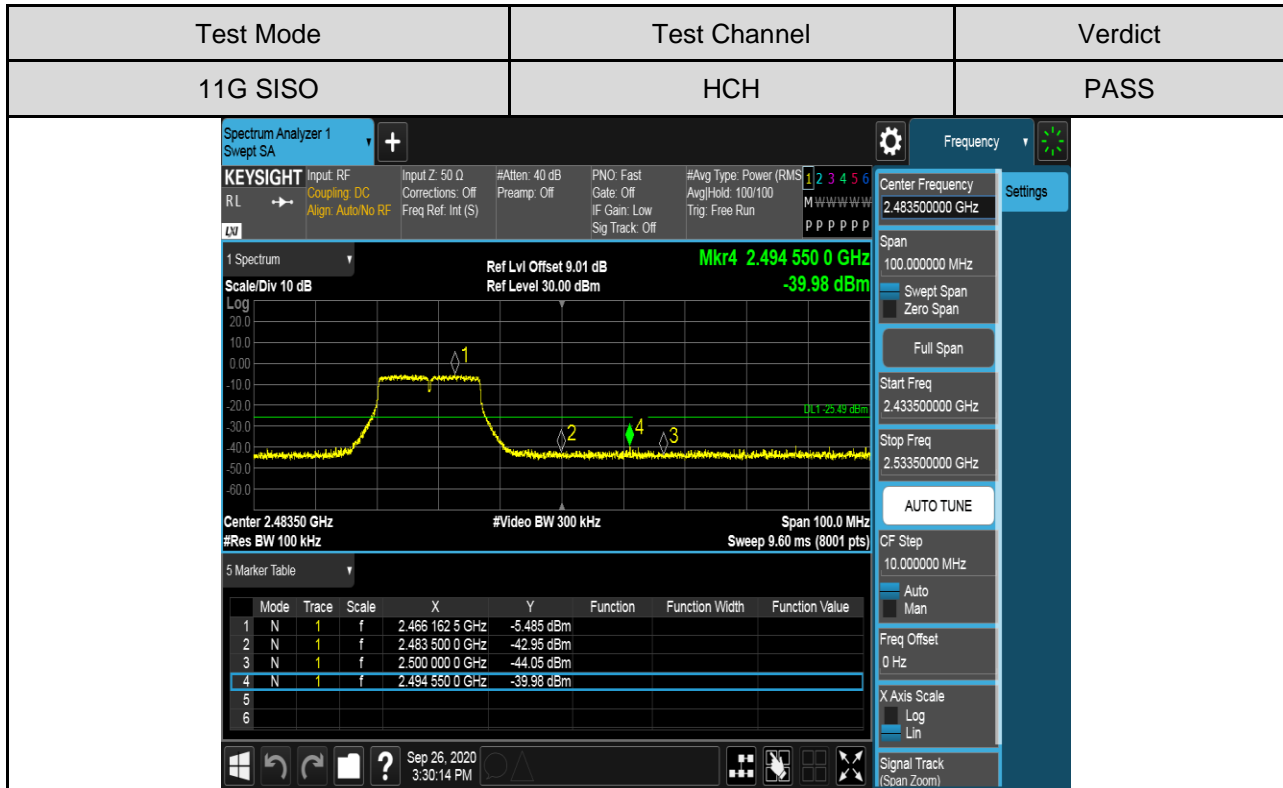
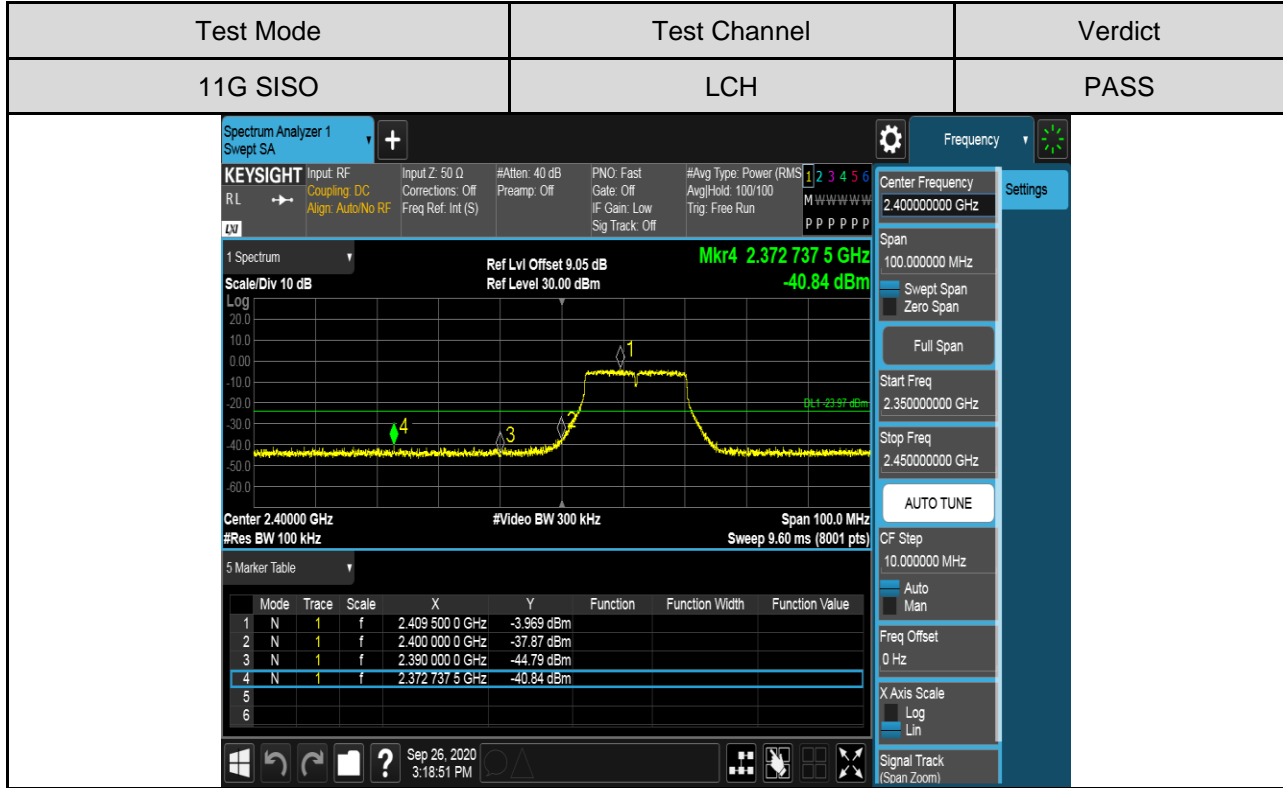
Marker Table:

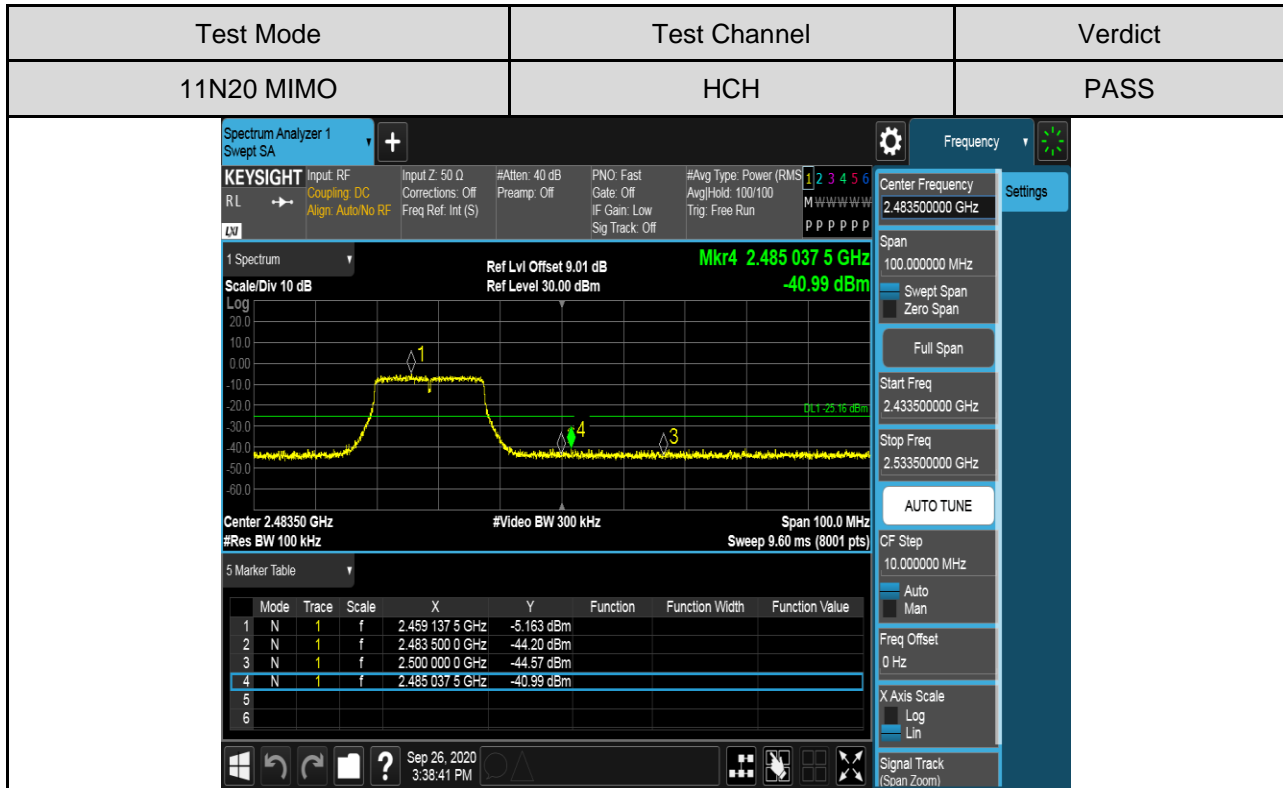
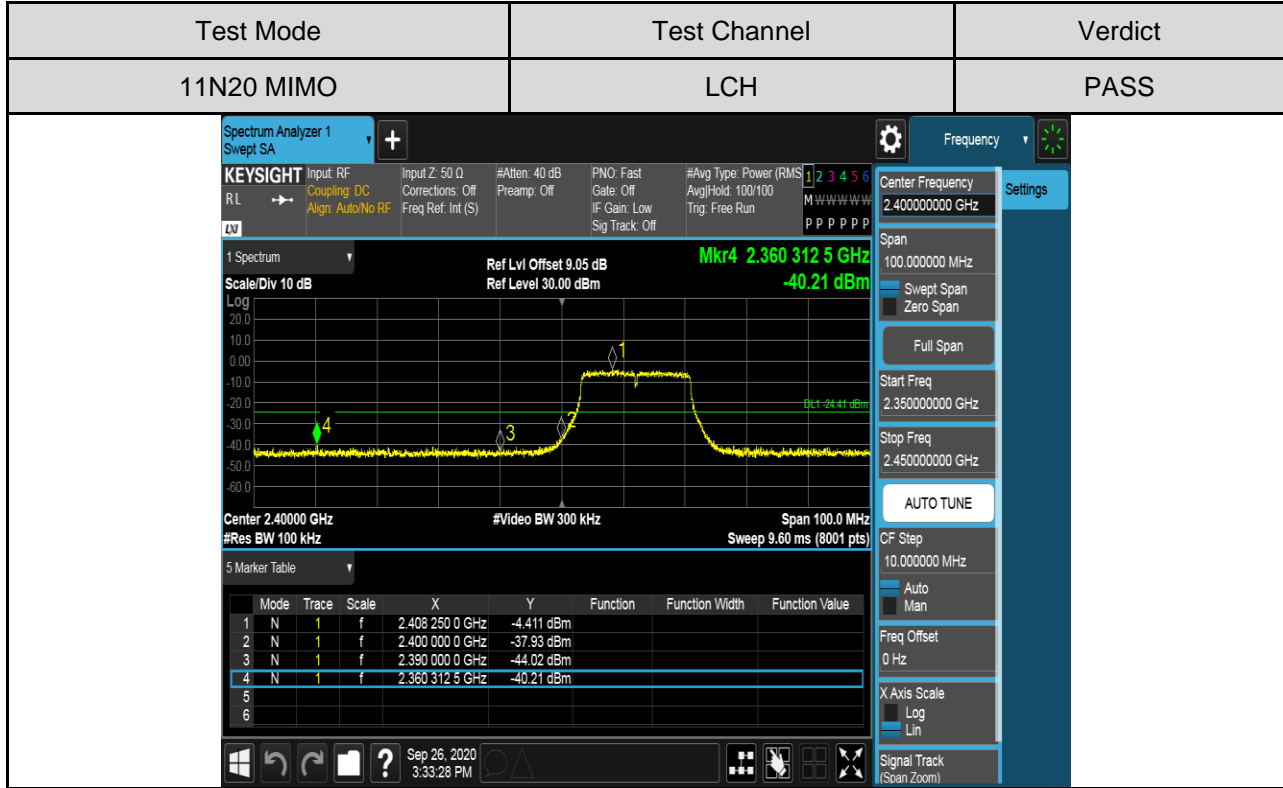
| Mode | Trace | Scale | X | Y | Function | Function Width | Function Value |
|------|-------|-------|---|-----------------|------------|----------------|----------------|
| 1 | N | 1 | f | 2.411 487 5 GHz | 1.929 dBm | | |
| 2 | N | 1 | f | 2.400 000 0 GHz | -38.90 dBm | | |
| 3 | N | 1 | f | 2.390 000 0 GHz | -44.10 dBm | | |
| 4 | N | 1 | f | 2.373 437 5 GHz | -41.22 dBm | | |

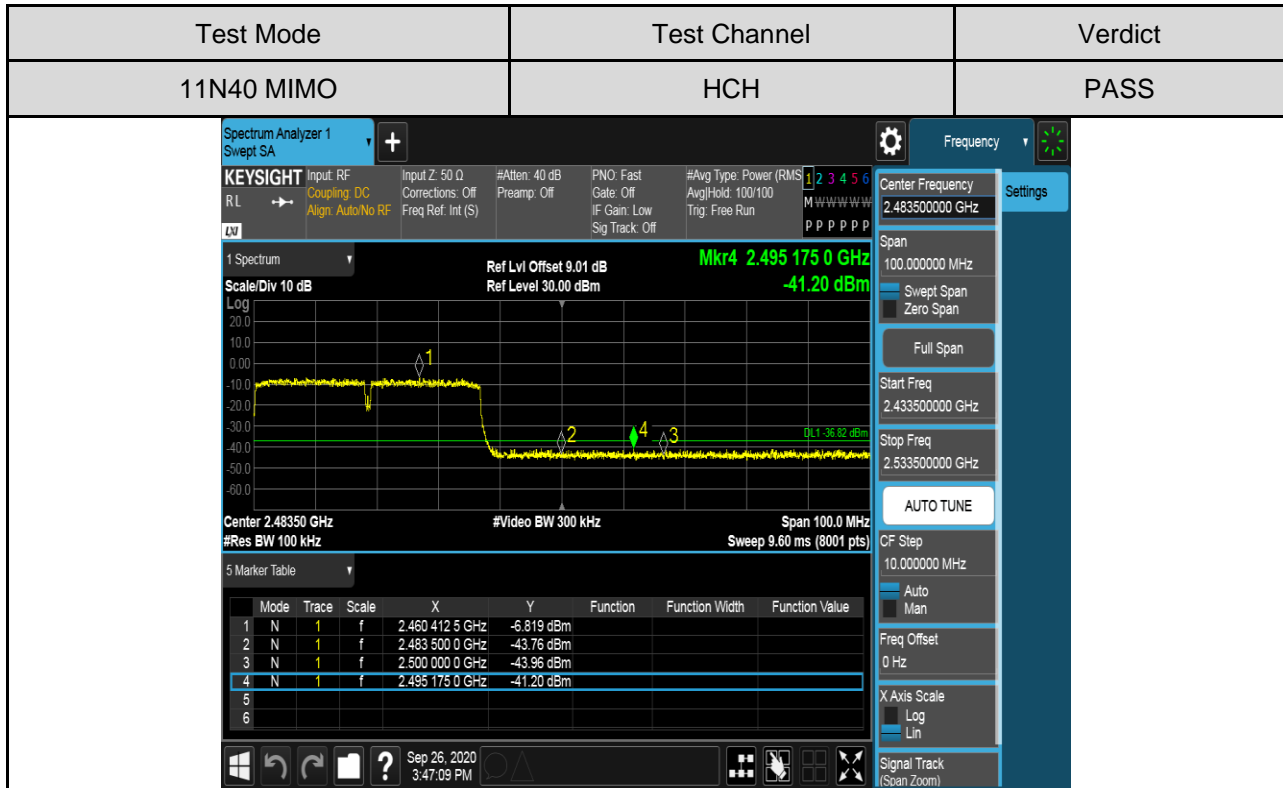
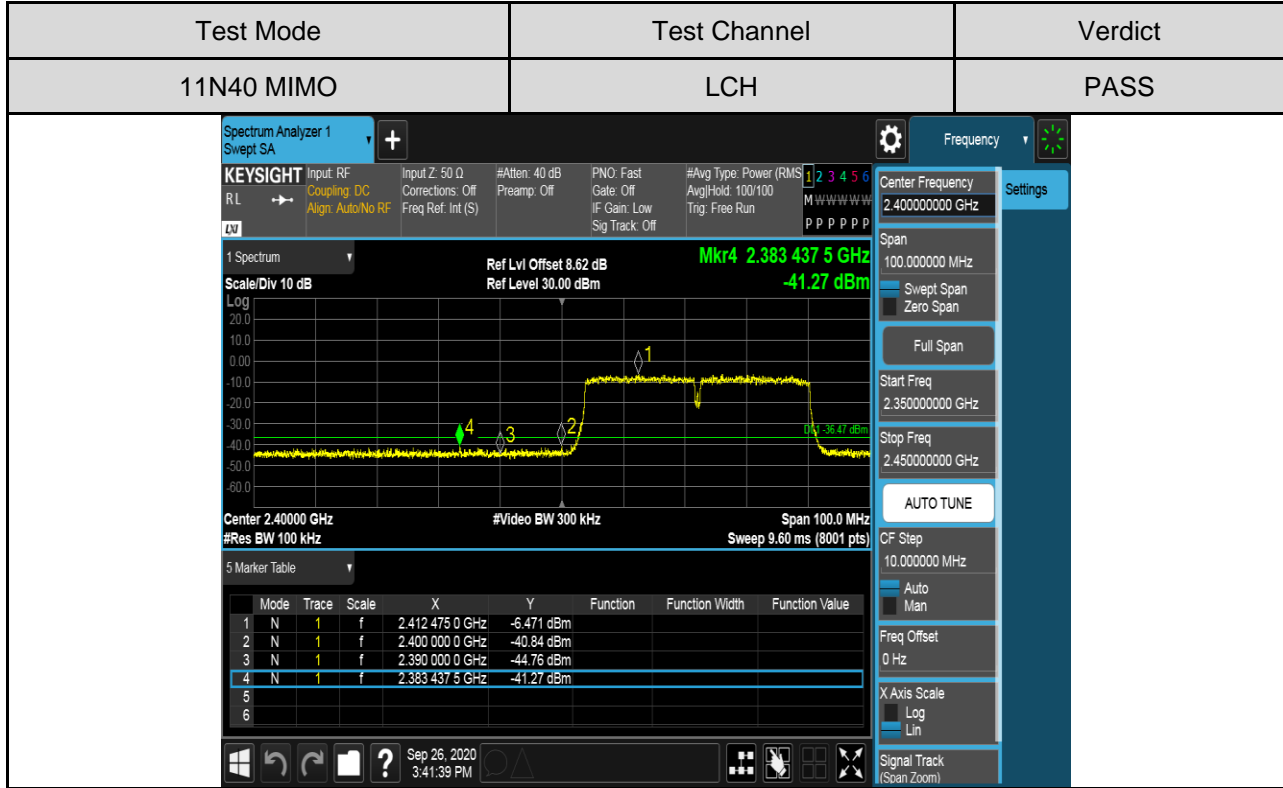
| | | |
|-----------|--------------|---------|
| Test Mode | Test Channel | Verdict |
| 11B SISO | HCH | PASS |

Marker Table:

| Mode | Trace | Scale | X | Y | Function | Function Width | Function Value |
|------|-------|-------|---|-----------------|------------|----------------|----------------|
| 1 | N | 1 | f | 2.461 487 5 GHz | 0.8675 dBm | | |
| 2 | N | 1 | f | 2.483 500 0 GHz | -43.78 dBm | | |
| 3 | N | 1 | f | 2.500 000 0 GHz | -44.29 dBm | | |
| 4 | N | 1 | f | 2.498 237 5 GHz | -40.81 dBm | | |









Part II :Conducted Emission

Test Result Table

| Test Mode | Test Antenna | Channel | Pref(dBm) | Puw(dBm) | Verdict |
|------------|--------------|---------|-----------|----------|---------|
| 11B SISO | Antenna 1 | LCH | 2.14 | <Limit | PASS |
| | | MCH | 1.64 | <Limit | PASS |
| | | HCH | 1.29 | <Limit | PASS |
| | Antenna 2 | LCH | 1.84 | <Limit | PASS |
| | | MCH | 1.10 | <Limit | PASS |
| | | HCH | 0.76 | <Limit | PASS |
| 11G SISO | Antenna 1 | LCH | -3.26 | <Limit | PASS |
| | | MCH | -4.04 | <Limit | PASS |
| | | HCH | -4.40 | <Limit | PASS |
| | Antenna 2 | LCH | -3.98 | <Limit | PASS |
| | | MCH | -4.88 | <Limit | PASS |
| | | HCH | -5.54 | <Limit | PASS |
| 11N MIMO20 | Antenna 1 | LCH | -3.03 | <Limit | PASS |
| | | MCH | -3.74 | <Limit | PASS |
| | | HCH | -4.14 | <Limit | PASS |
| | Antenna 2 | LCH | -4.14 | <Limit | PASS |
| | | MCH | -4.52 | <Limit | PASS |
| | | HCH | -5.25 | <Limit | PASS |
| 11N MIMO40 | Antenna 1 | LCH | -5.39 | <Limit | PASS |
| | | MCH | -5.83 | <Limit | PASS |
| | | HCH | -5.79 | <Limit | PASS |
| | Antenna 2 | LCH | -6.52 | <Limit | PASS |
| | | MCH | -6.87 | <Limit | PASS |
| | | HCH | -6.67 | <Limit | PASS |

Remark:

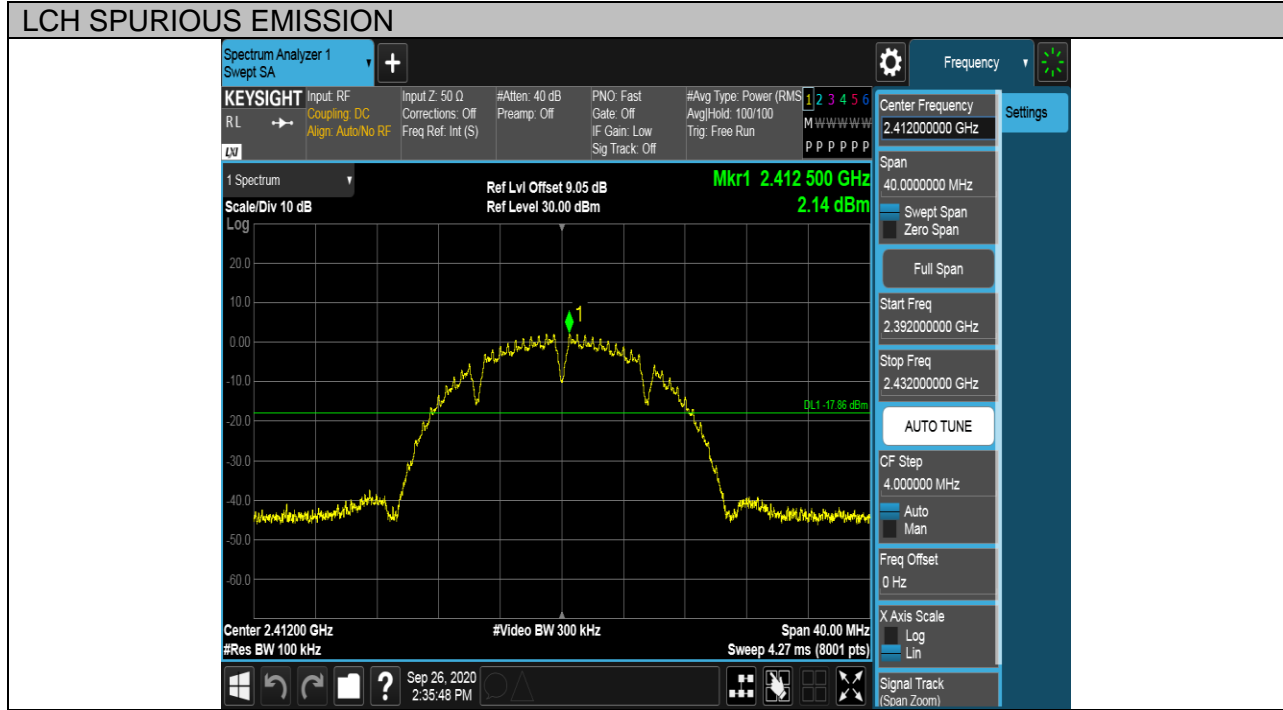
- 1) For this product, it has two antennas, antenna1 and antenna2, but only the 802.11N HT20 and 802.11N HT40 modes can support both the SISO and MIMO technical.
- 2) Through pre-testing all the test modes of 11N 20 and 11N40, including SISO and MIMO, but only the data if worse case is included in this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



Test Plots
Antenna 1:

| Test Mode | Channel | Verdict |
|-----------|---------|---------|
| 11B | LCH | PASS |

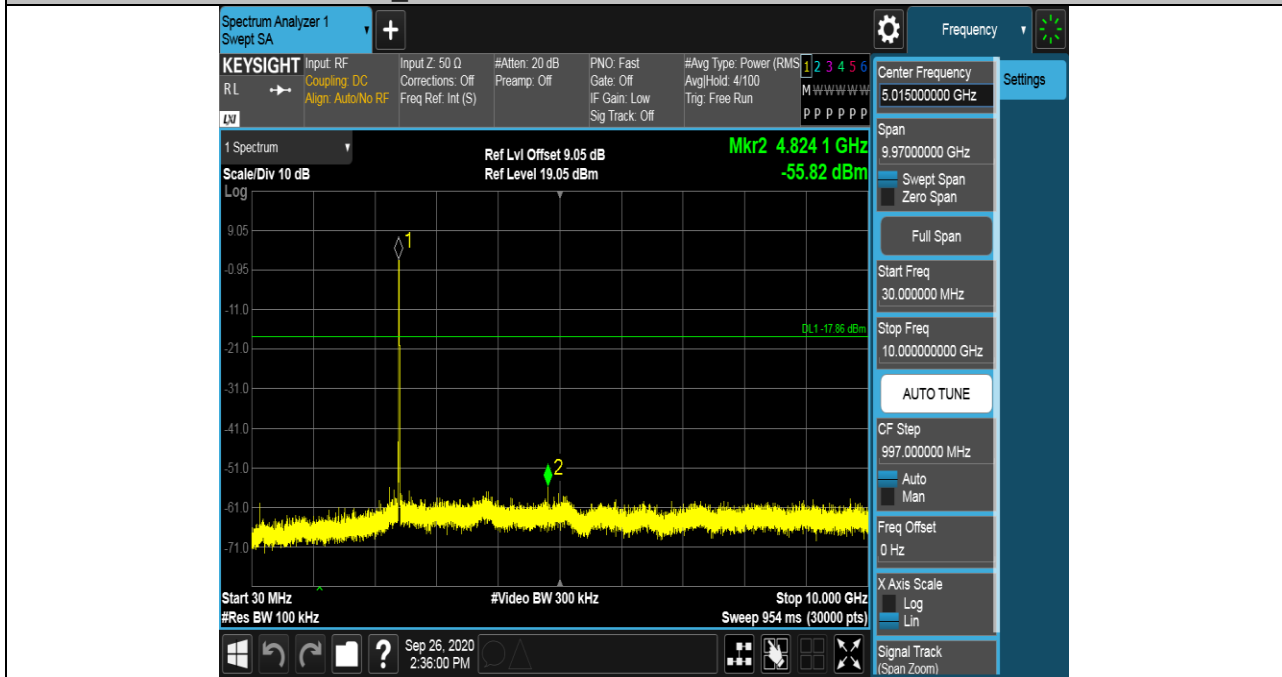
Pref test Plot



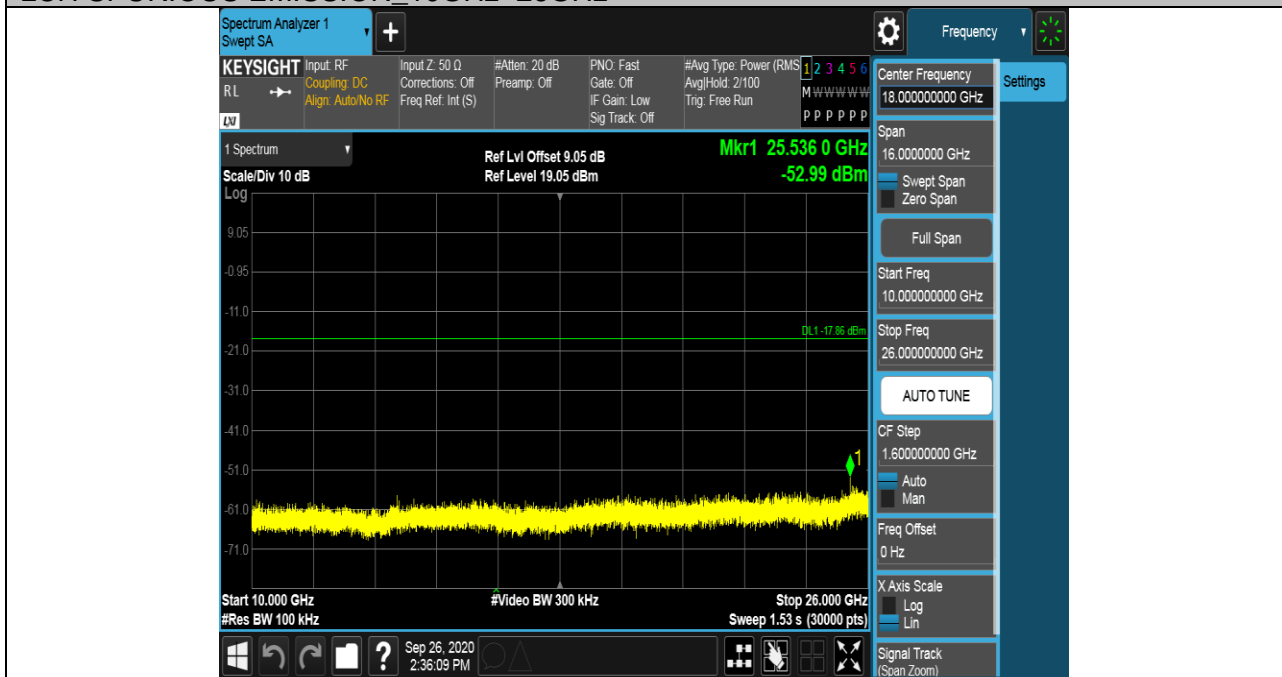


Puw test Plot

LCH SPURIOUS EMISSION_30MHz~10GHz



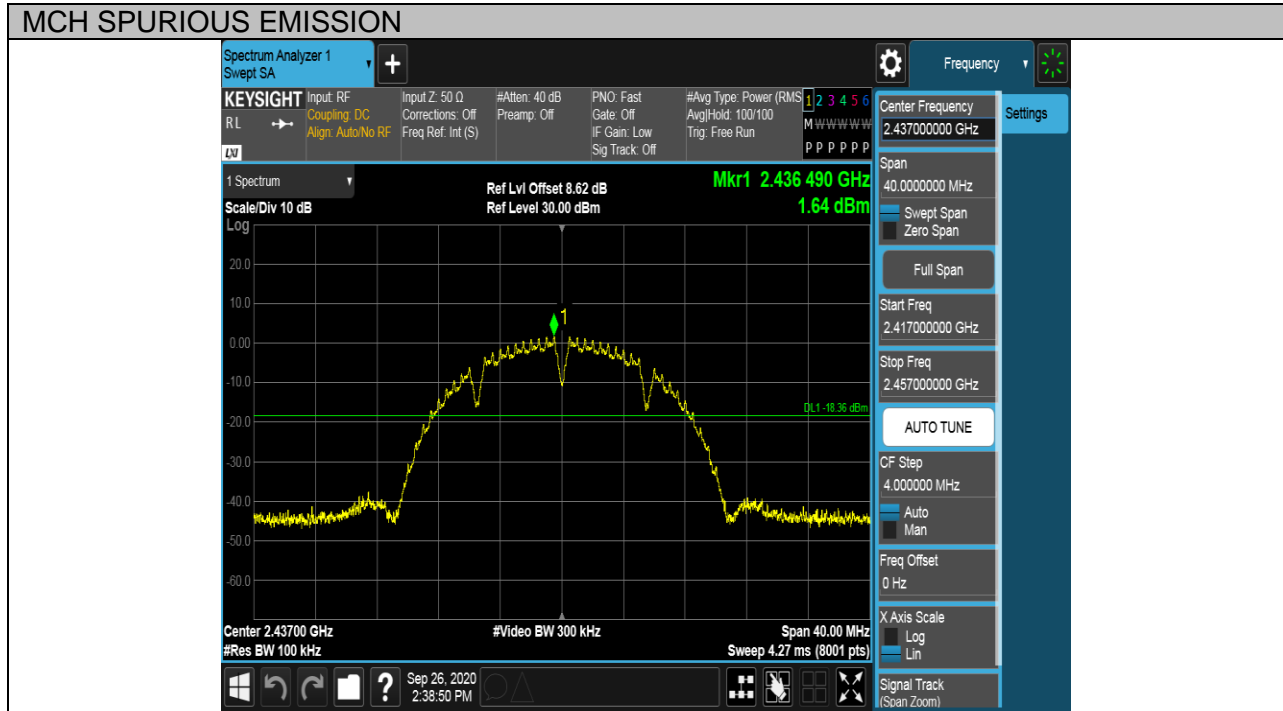
LCH SPURIOUS EMISSION_10GHz~26GHz





| Test Mode | Channel | Verdict |
|-----------|---------|---------|
| 11B | MCH | PASS |

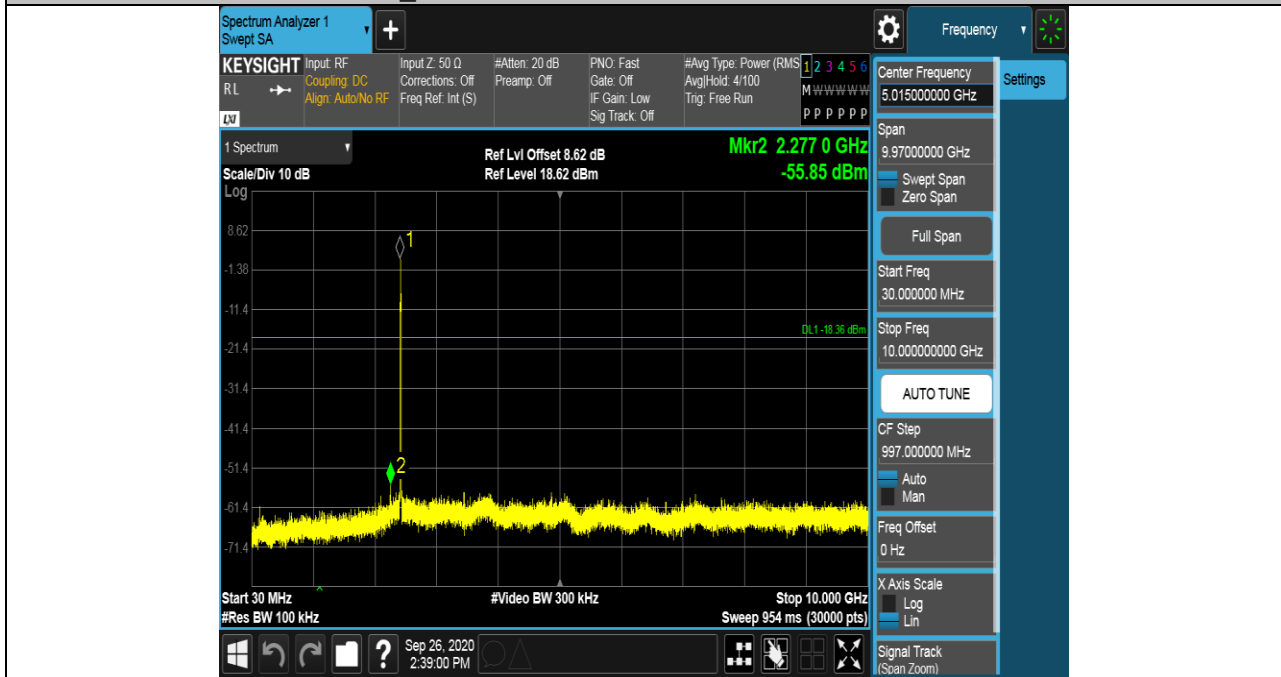
Pref test Plot



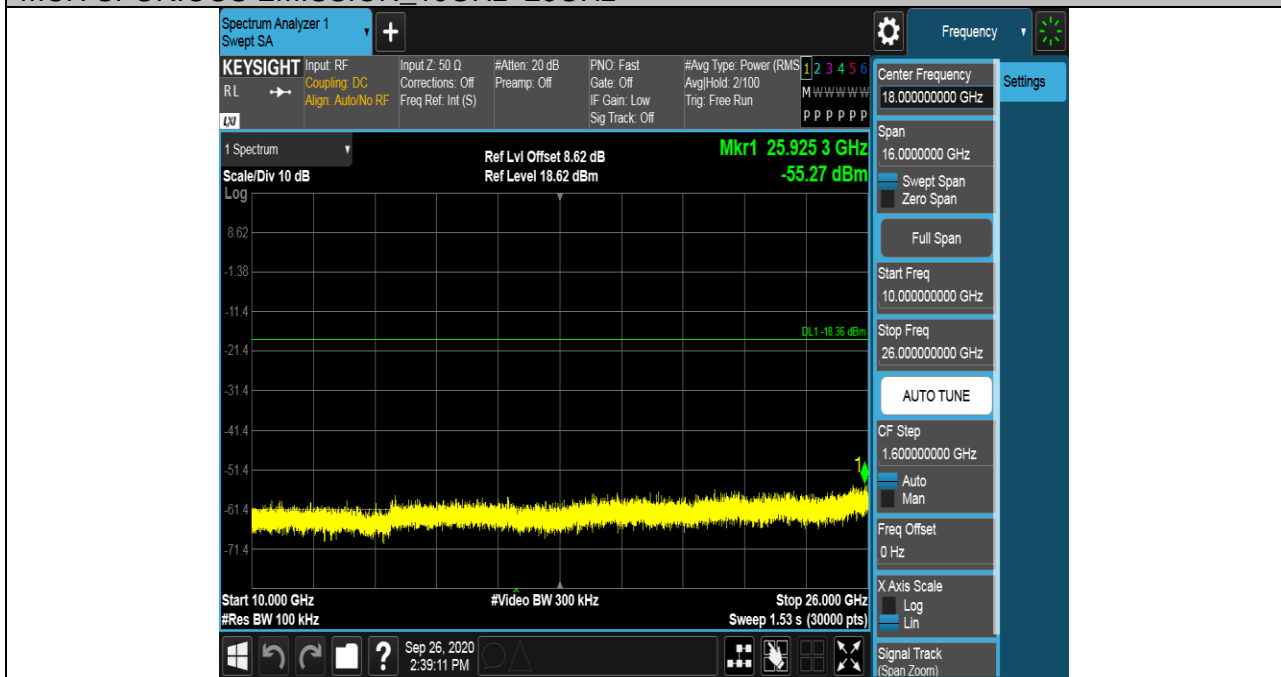


Puw test Plot

MCH SPURIOUS EMISSION_30MHz~10GHz



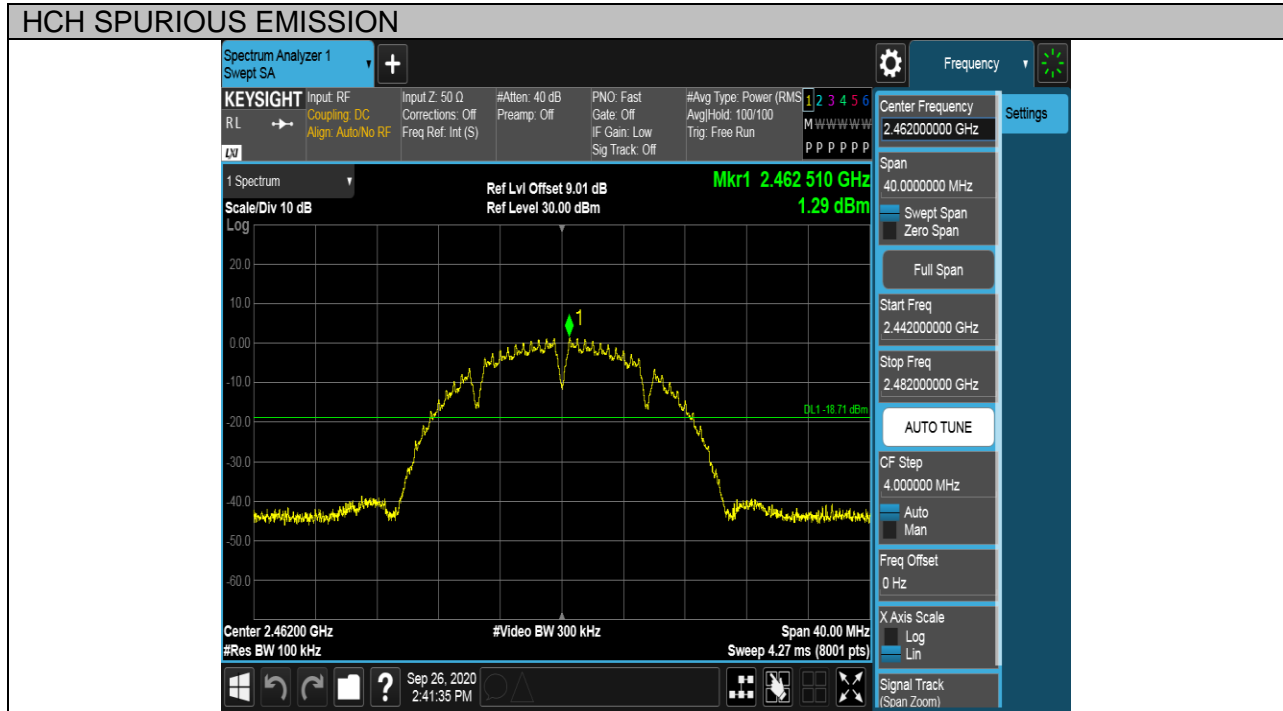
MCH SPURIOUS EMISSION_10GHz~26GHz





| Test Mode | Channel | Verdict |
|-----------|---------|---------|
| 11B | HCH | PASS |

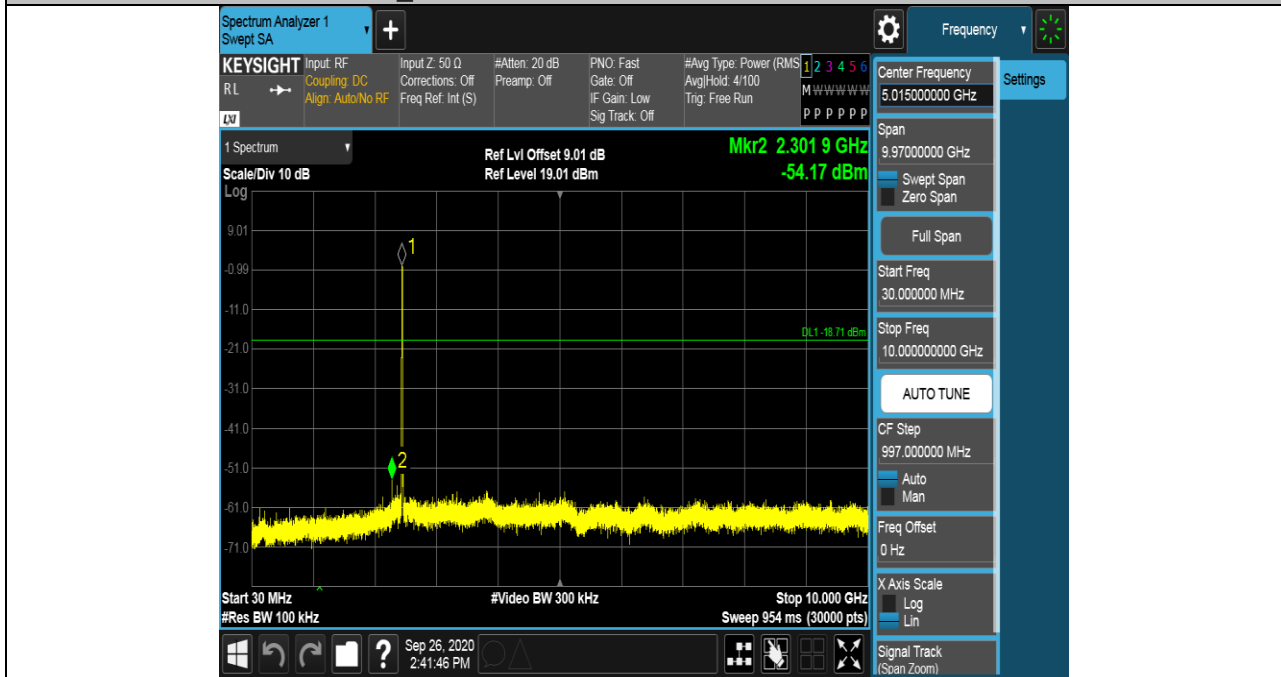
Pref test Plot



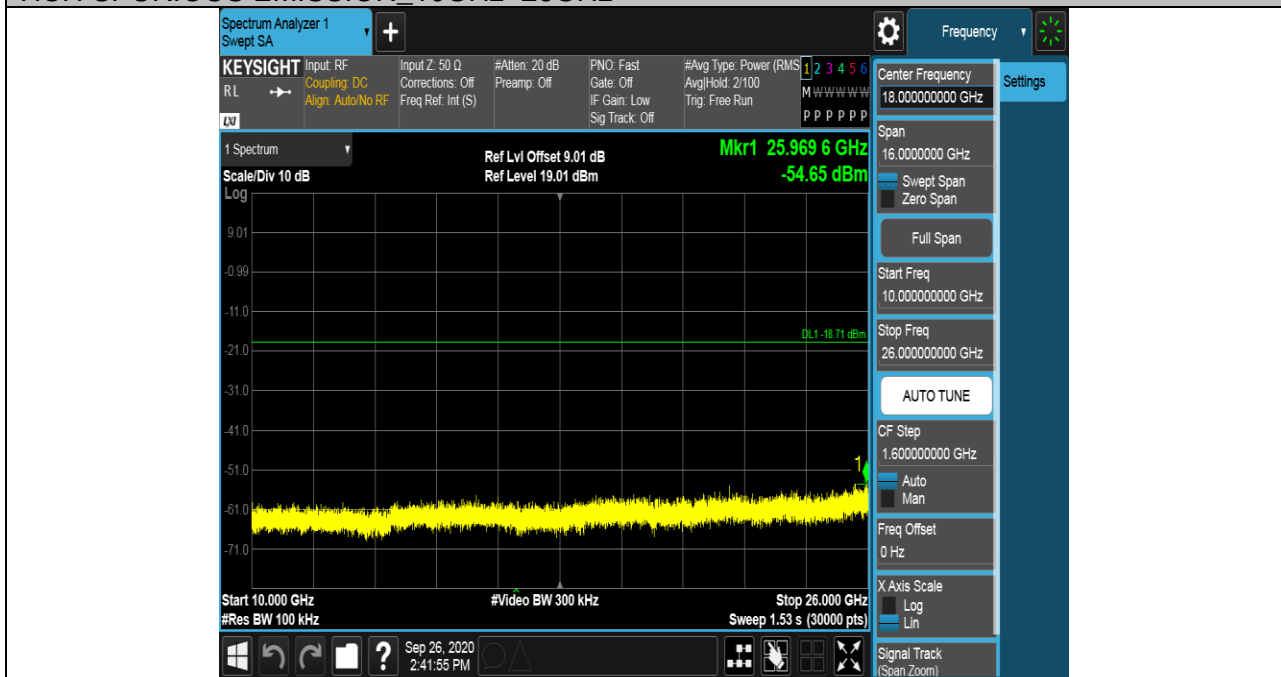


Puw test Plot

HCH SPURIOUS EMISSION_30MHz~10GHz



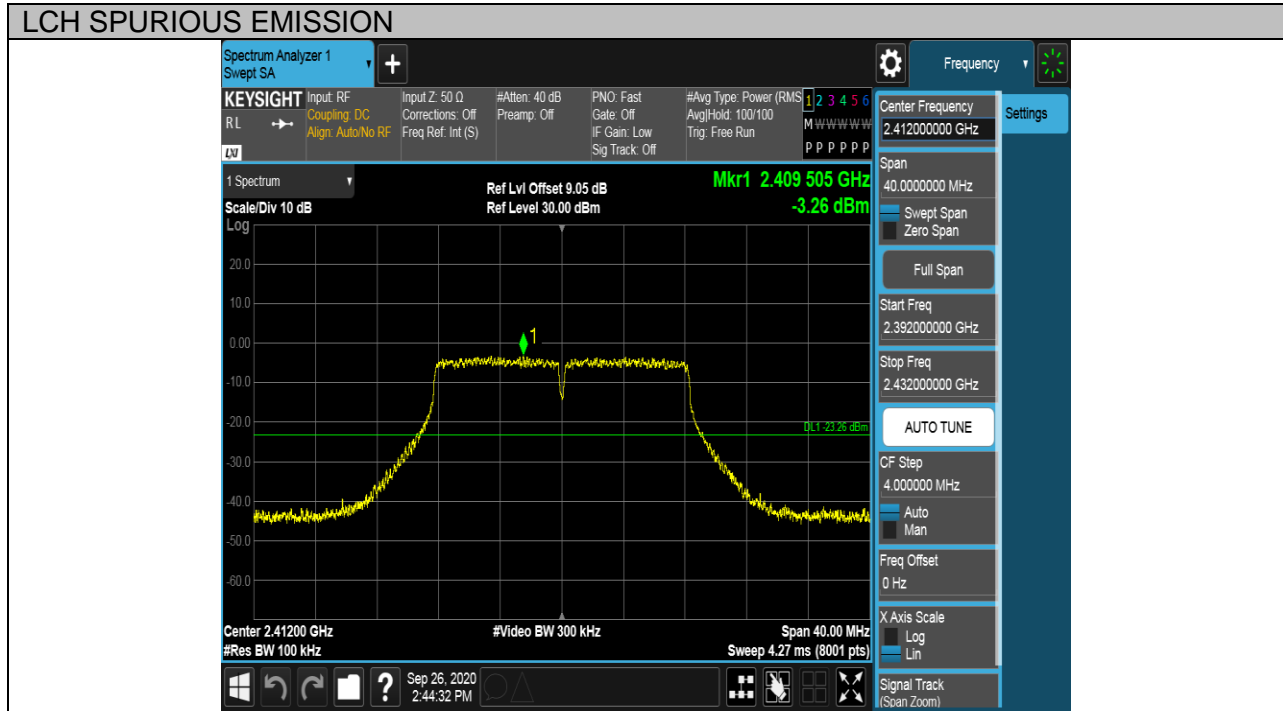
HCH SPURIOUS EMISSION_10GHz~26GHz





| Test Mode | Channel | Verdict |
|-----------|---------|---------|
| 11G | LCH | PASS |

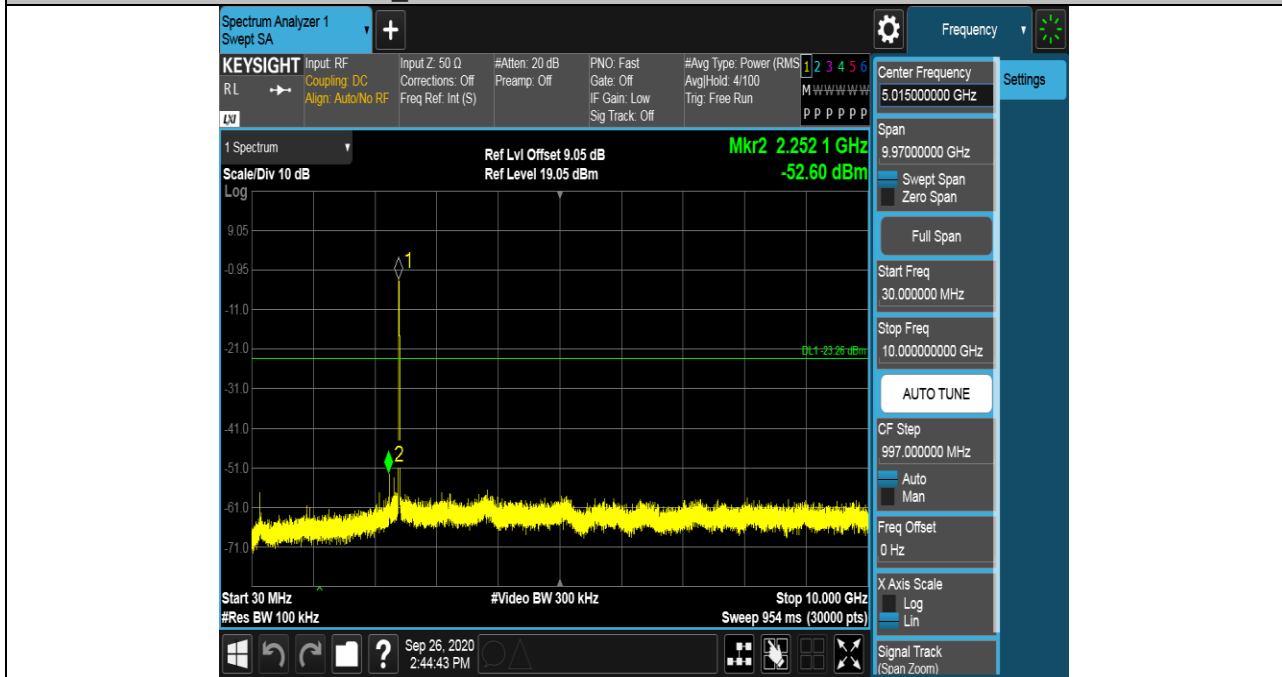
Pref test Plot



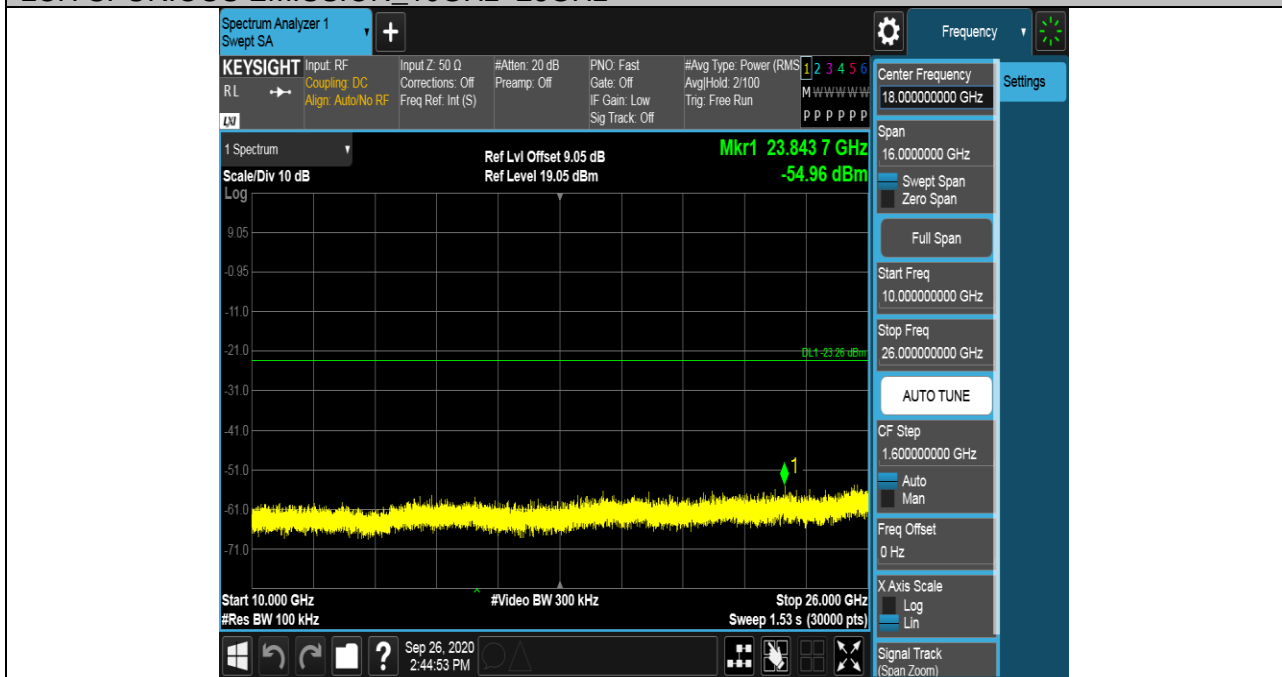


Puw test Plot

LCH SPURIOUS EMISSION_30MHz~10GHz



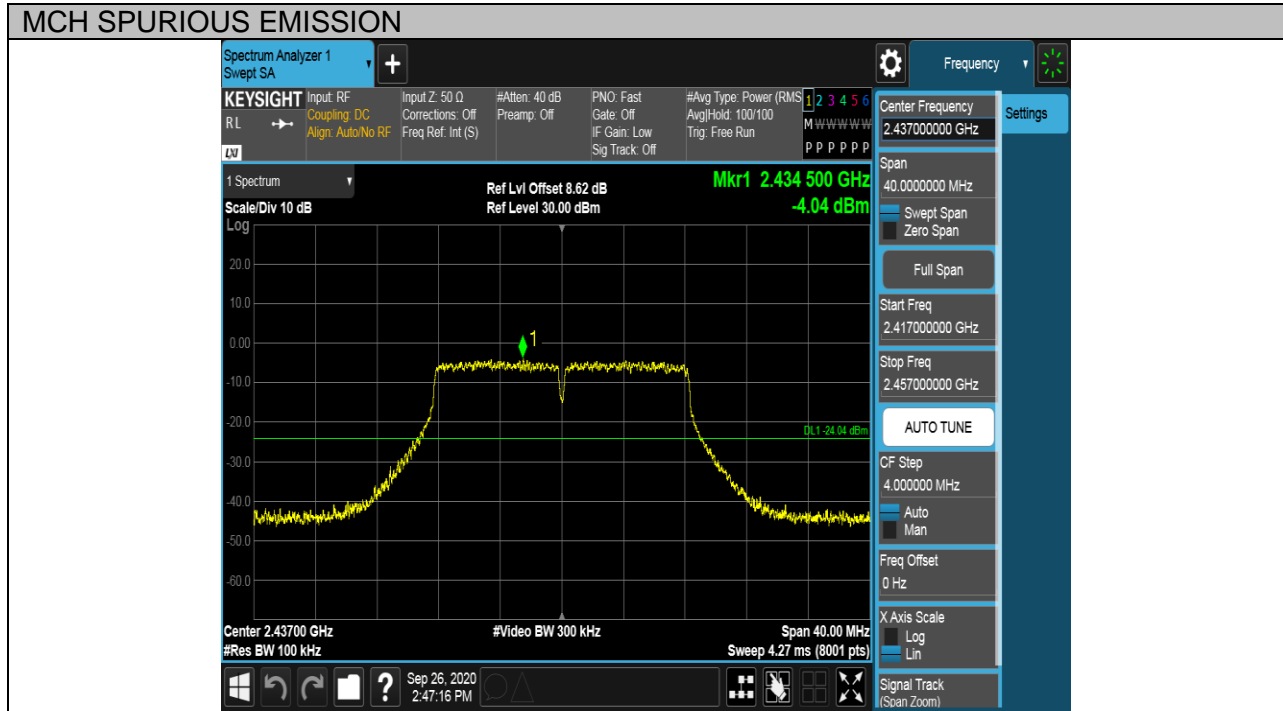
LCH SPURIOUS EMISSION_10GHz~26GHz





| Test Mode | Channel | Verdict |
|-----------|---------|---------|
| 11G | MCH | PASS |

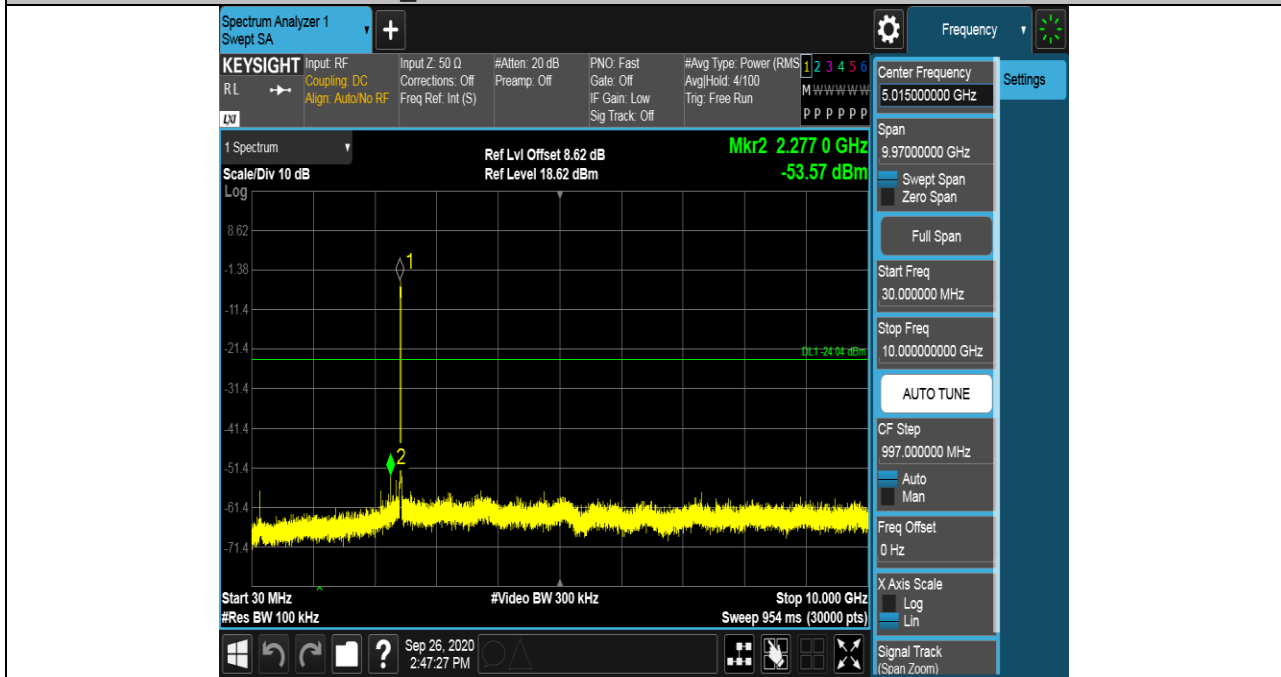
Pref test Plot



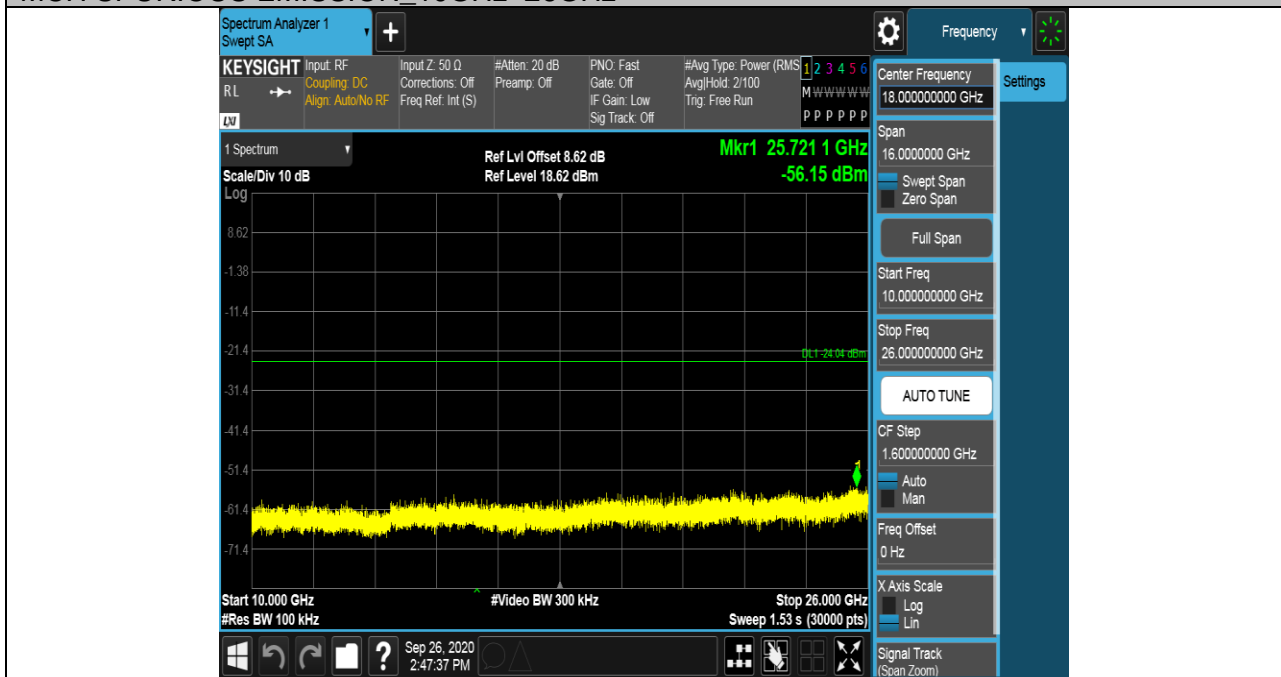


Puw test Plot

MCH SPURIOUS EMISSION_30MHz~10GHz



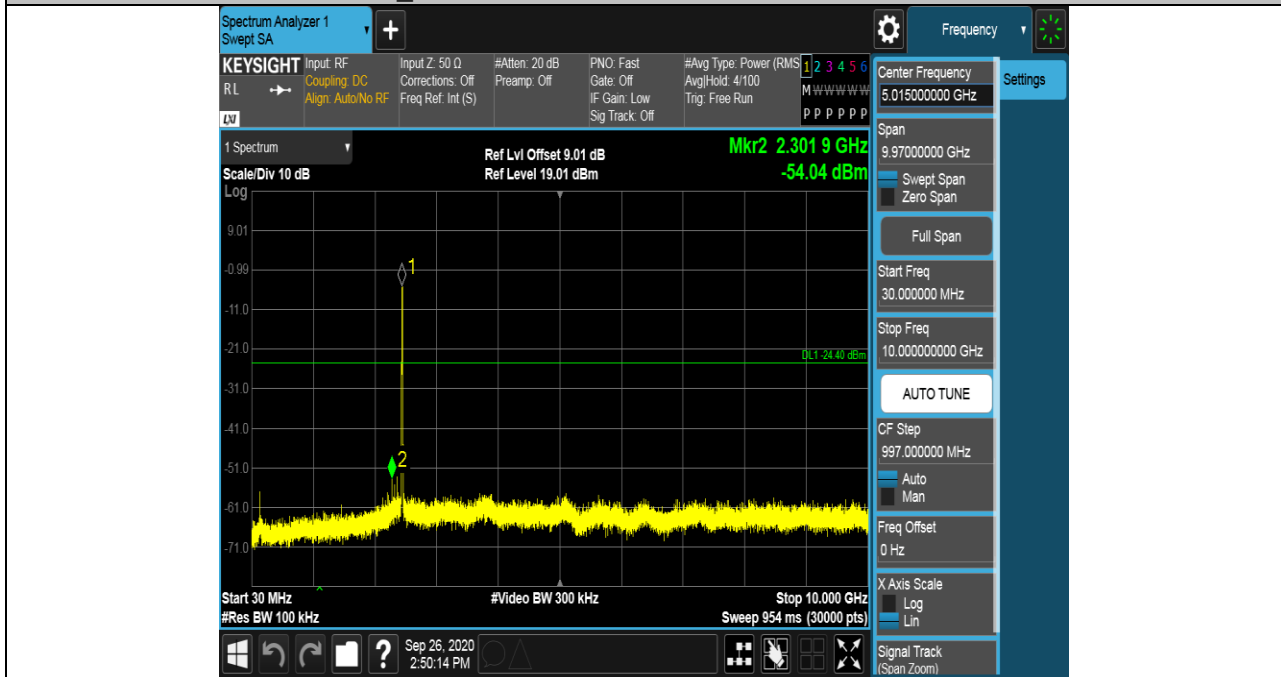
MCH SPURIOUS EMISSION_10GHz~26GHz



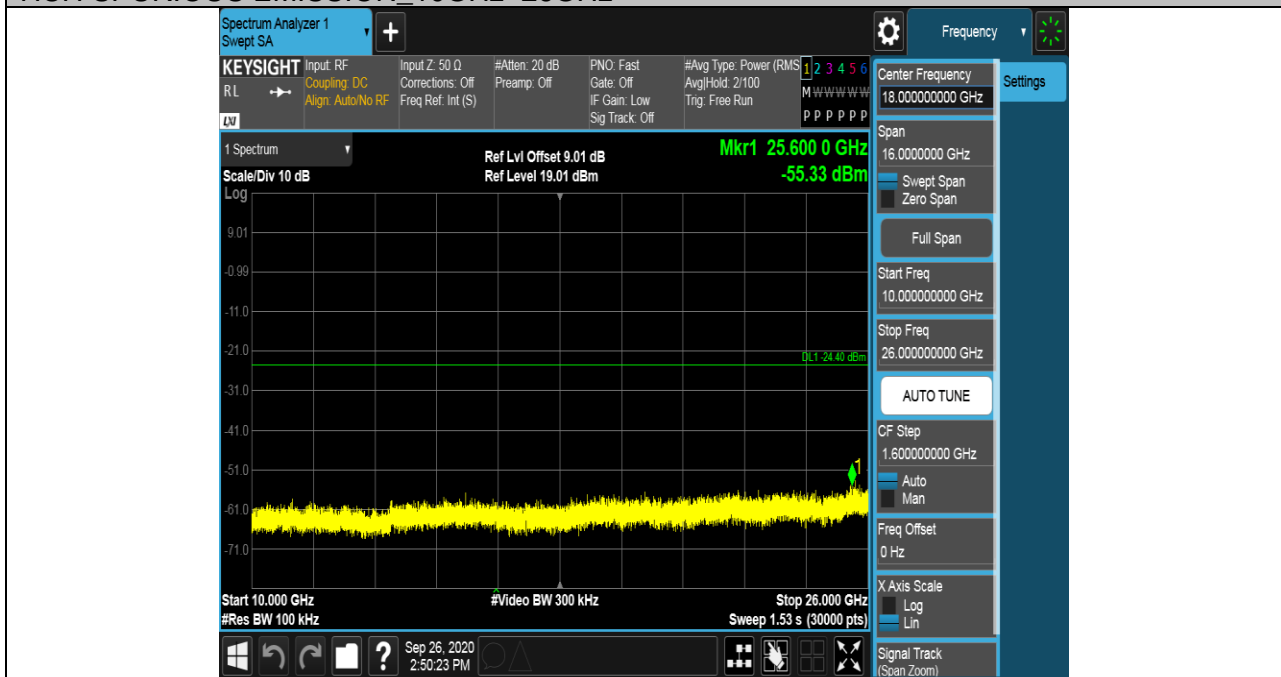


Puw test Plot

HCH SPURIOUS EMISSION_30MHz~10GHz



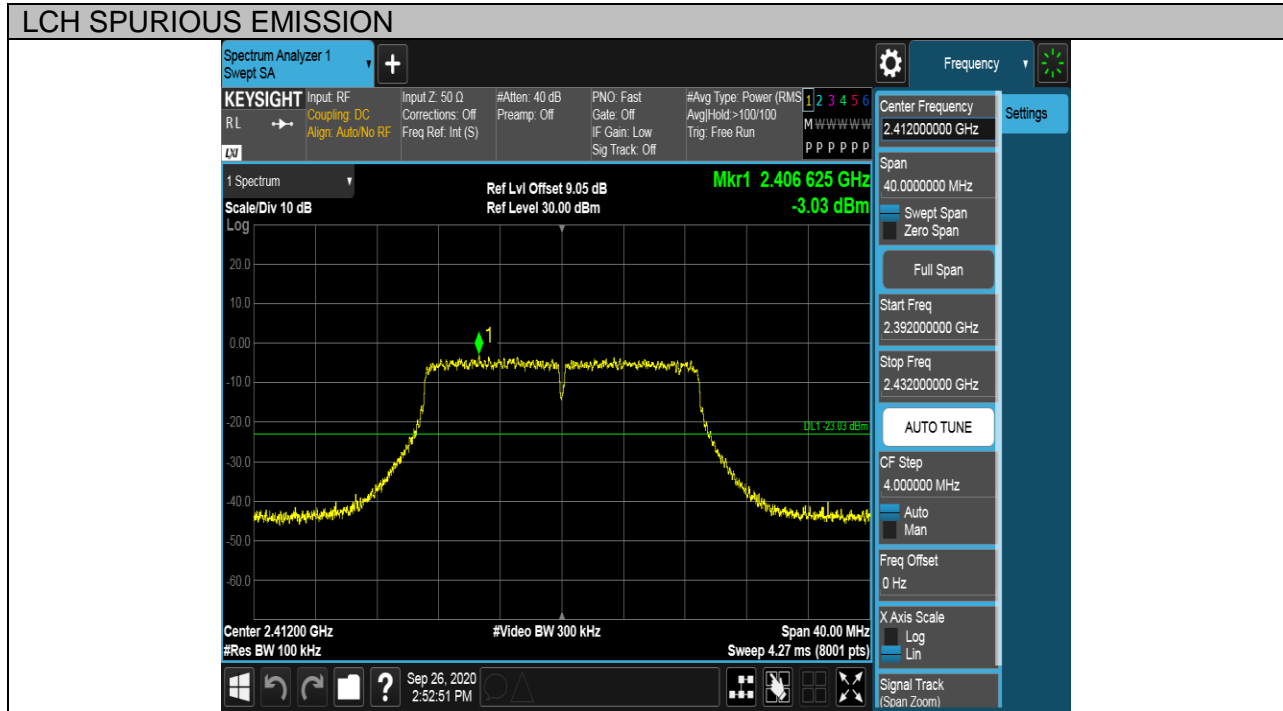
HCH SPURIOUS EMISSION_10GHz~26GHz





| Test Mode | Channel | Verdict |
|------------|---------|---------|
| 11N20 MIMO | LCH | PASS |

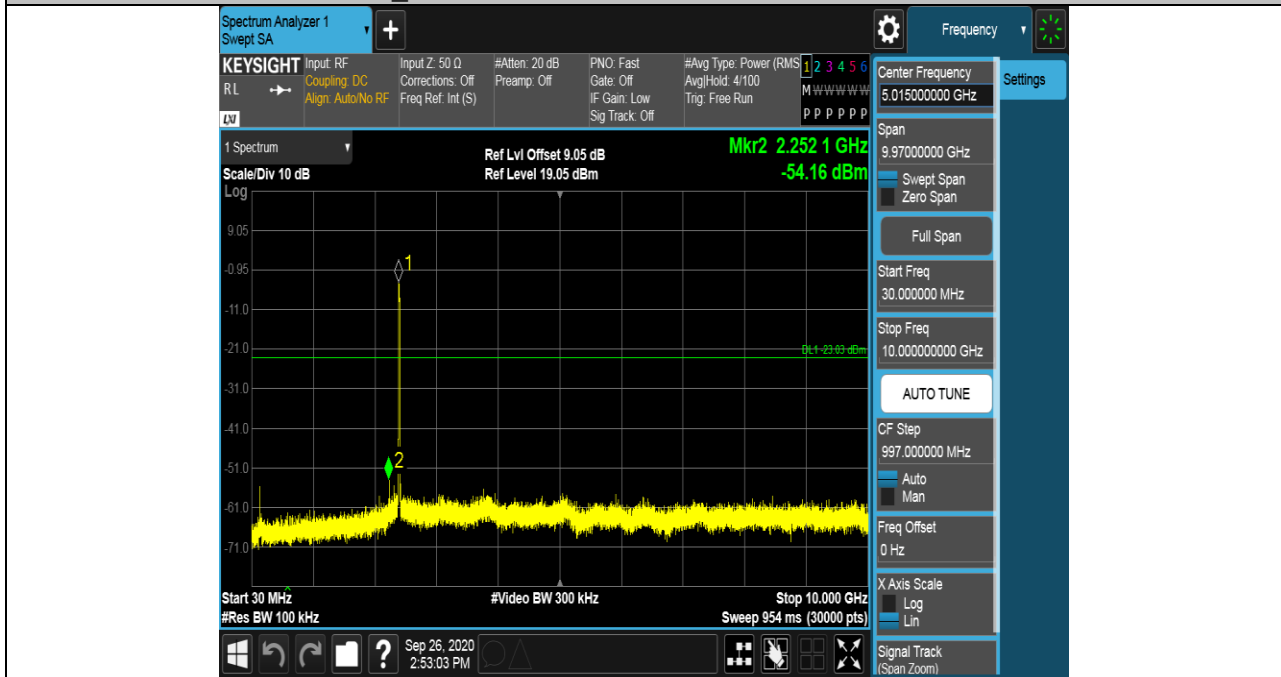
Pref test Plot





Puw test Plot

LCH SPURIOUS EMISSION_30MHz~10GHz



LCH SPURIOUS EMISSION_10GHz~26GHz

