



**FCC 47 CFR PART 15 SUBPART C
ISED RSS-247 ISSUE 2**

CERTIFICATION TEST REPORT

For

YI Home Camera 3

MODEL NUMBER: YYS.2518

PROJECT NUMBER: 4788573770

REPORT NUMBER: 4788573770-1

FCC ID: 2AFIB-YYS2518

IC: 20436-YYS2518

ISSUE DATE: Aug. 15, 2018

Prepared for

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Revision History

| <u>Rev.</u> | <u>Issue Date</u> | <u>Revisions</u> | <u>Revised By</u> |
|-------------|-------------------|------------------|-------------------|
| -- | 8/15/2018 | Initial Issue | |

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1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name: Shanghai Xiaoyi Technology Co., Ltd.
Address: 6F, Building E, No. 2889, Jinke Road Shanghai, China

Manufacturer Information

Company Name: Shanghai Xiaoyi Technology Co., Ltd.
Address: 6F, Building E, No. 2889, Jinke Road Shanghai, China

Factory Information

Company Name: Shanghai Xiaoyi Technology Co., Ltd.
Address: 6F, Building E, No. 2889, Jinke Road Shanghai, China

Company Name: Shanghai Xiaoyi Technology Co., Ltd.
Address: 6F, Building E, No. 2889, Jinke Road Shanghai, China

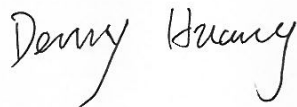
EUT Description

Product Name YI Home Camera 3
Model Name YYS.2518
Sample Number 1698877
Data of Receipt Sample July 11, 2018
Date Tested July 12, 2018~ Aug. 14, 2018

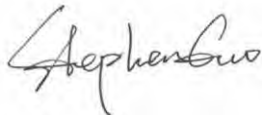
| APPLICABLE STANDARDS | |
|--------------------------|--------------|
| STANDARD | TEST RESULTS |
| CFR 47 Part 15 Subpart C | PASS |
| ISED RSS-GEN Issue 5 | PASS |
| ISED RSS-247 Issue 2 | PASS |

| Summary of Test Results | | | |
|-------------------------|---|--|--------------|
| Clause | Test Items | FCC/IC Rules | Test Results |
| 1 | 6db DTS Bandwidth and 99% Bandwidth | FCC 15.247 (a) (2) RSS-247 Clause 5.2 (a) | Complied |
| 2 | Peak Conducted Power | FCC 15.247 (b) (3) RSS-247 Clause 5.4 (e) | Complied |
| 3 | Power Spectral Density | FCC 15.247 (e) RSS-247 Clause 5.2 (b) | Complied |
| 4 | Conducted Band edge And Spurious emission | FCC 15.247 (d) RSS-247 Clause 5.5 | Complied |
| 5 | Radiated Band edges and Spurious emission | FCC 15.247 (d) FCC 15.209 FCC 15.205 RSS-247 Clause 5.5 RSS-GEN Clause 8.9 | Complied |
| 6 | Conducted Emission Test For AC Power Port | FCC 15.207 RSS-GEN Clause 8.8 | Complied |
| 7 | Antenna Requirement | FCC 15.203 RSS-GEN Clause 6.8 | Complied |

Tested By:



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 Approved By:



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 Laboratory Manage

Check By:



Shawn Wen
 Laboratory Leader

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC KDB 558074 D01 DTS Meas Guidance v05, , 414788 D01 Radiated Test Site v01, ANSI C63.10-2013, FCC CFR 47 Part 2, FCC CFR 47 Part 15, RSS-247 Issue 2, and RSS-GEN Issue5.

3. FACILITIES AND ACCREDITATION

| | |
|---------------------------|--|
| Test Location | UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. |
| Address | Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China |
| Accreditation Certificate | UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing. The Certificate Registration Number is 4102.01. UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The Designation Number is CN1187. UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. EMC Laboratory has been registered and fully described in a report filed with Industry Canada. The Company Number is 21320. |

Note:

1. All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China
2. The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch 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.
3. For below 30MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30MHz had been correlated to measurements performed on an OATS.

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 |
|---|---------------------|
| Uncertainty for Conduction emission test | 2.90dB |
| Uncertainty for Radiation Emission test(include Fundamental emission) (30MHz-1GHz) | 4.52dB |
| Uncertainty for Radiation Emission test (1GHz to 26GHz)(include Fundamental emission) | 5.04dB(1-6GHz) |
| | 5.30dB (6GHz-18Gz) |
| | 5.23dB (18GHz-26Gz) |
| 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: | YI Home Camera 3 | |
| Model No.: | YY5.2518 | |
| Operating Frequency: | IEEE 802.11B SISO/g/n(HT20): 2412MHz to 2462MHz IEEE 802.11n(HT40): 2422MHz to 2452MHz | |
| Type of Modulation: | IEEE for 802.11B SISO: DSSS (CCK, DQPSK, DBPSK) IEEE for 802.11G SISO: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n (HT20 and HT40): OFDM (64QAM, 16QAM, QPSK, BPSK) | |
| Channel Number: | IEEE 802.11B SISO/g, IEEE 802.11n(HT20): 11 Channels IEEE 802.11n(HT40): 7 Channels | |
| Channels Step: | Channels with 5MHz step | |
| Sample Type: | Fixed production | |
| Test software of EUT: | Secure CRT (manufacturer declare) | |
| Antenna Type: | Dipole Antenna | |
| Antenna Gain: | 1 dBi | |
| Power Supply | Adapter | Model:A18A-050100U-CN2 INPUT:100-240V~50/60Hz Max.0.2A OUTPUT:5.0V  1000mA |

5.2. MAXIMUM OUTPUT POWER

| Frequency Range (MHz) | Number of Transmit Chains (NTX) | IEE Std. 802.11 | Frequency (MHz) | Channel Number | Max PK Conducted Power (dBm) |
|-----------------------|---------------------------------|-------------------|-----------------|----------------|------------------------------|
| 2412-2462 | 1 | IEEE 802.11B SISO | 2412-2462 | 1-11[11] | 23.64 |
| 2412-2462 | 1 | IEEE 802.11G SISO | 2412-2462 | 1-11[11] | 22.09 |
| 2412-2462 | 1 | IEEE 802.11nHT20 | 2412-2462 | 1-11[11] | 22.76 |
| 2422-2452 | 1 | IEEE 802.11nHT40 | 2422-2452 | 3-9[7] | 21.98 |

5.3. CHANNEL LIST

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

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

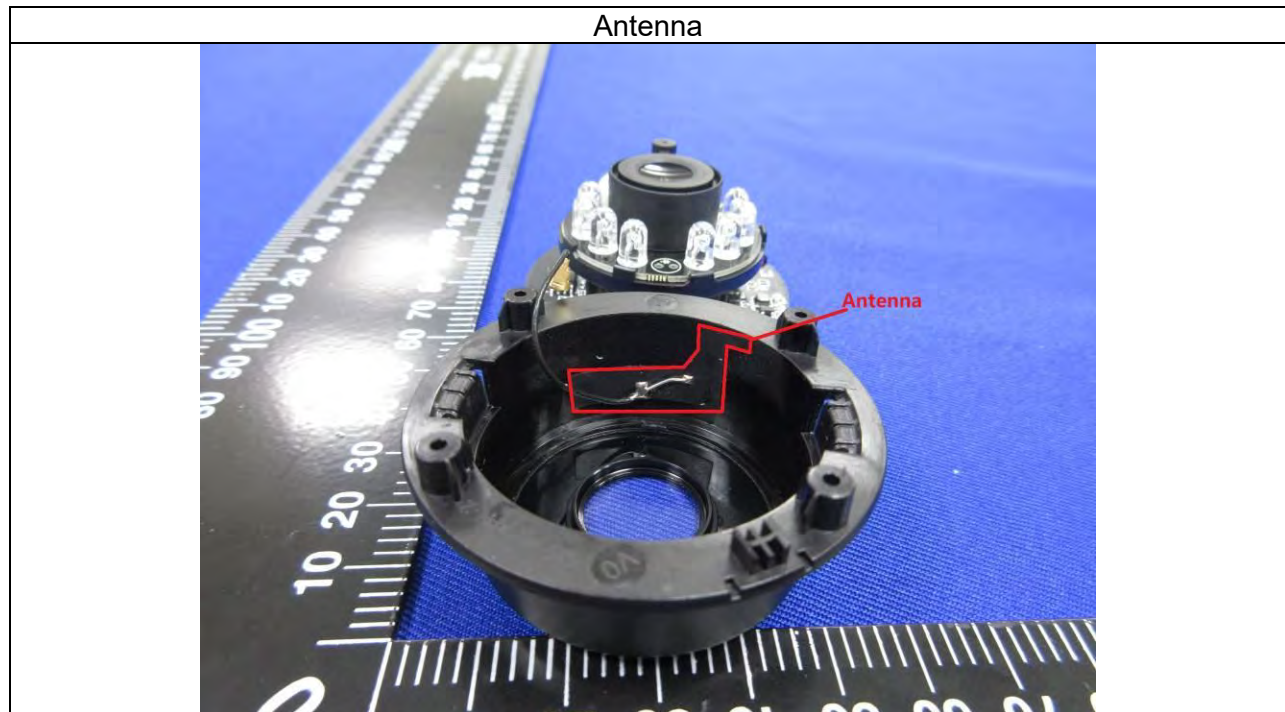
5.5. THE WORSE CASE POWER SETTING PARAMETER

| Test Antenna | Test Software Version | SecureCRT | | |
|--------------|-----------------------|--------------|------------------|--------------------------|
| | Test Mode | Test Channel | Setting TX Power | Setting data rate (Mbps) |
| Antenna 1 | IEEE 802.11B SISO | LCH | 1 | CCK_1Mbps |
| | | MCH | 1 | CCK_1Mbps |
| | | HCH | 1 | CCK_1Mbps |
| | IEEE 802.11G SISO | LCH | 2 | NO HT_6Mbps |
| | | MCH | 2 | NO HT_6Mbps |
| | | HCH | 2 | NO HT_6Mbps |
| | IEEE 802.11n HT20 | LCH | 3 | HT20_MCS_0_20 |
| | | MCH | 3 | HT20_MCS_0_20 |
| | | HCH | 3 | HT20_MCS_0_20 |
| | IEEE 802.11n HT40 | LCH | 3 | HT40+MCS_0_40 |
| | | MCH | 3 | HT40+MCS_0_40 |
| | | HCH | 3 | HT40+MCS_0_40 |

5.6. DESCRIPTION OF AVAILABLE ANTENNAS

| Ant. | Frequency (MHz) | Antenna Type | Antenna Gain (dBi) |
|------|-----------------|----------------|--------------------|
| 1 | 2400-2483.5 | Dipole Antenna | 1 |

| Test Mode | Transmit and Receive Mode | Description |
|-----------|--|---|
| WIFI | <input checked="" type="checkbox"/> 1TX, 1RX | The antennas can be used as transmitting/receiving antenna. |



5.7. TEST ENVIRONMENT

| Environment Parameter | Selected Values During Tests | |
|-----------------------|------------------------------|----------|
| Relative Humidity | 55 ~ 65% | |
| Atmospheric Pressure: | 1005Pa | |
| Temperature | TN | 23 ~ 28C |
| Voltage : | VL | N/A |
| | VN | DC 5.0V |
| | VH | N/A |

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

5.8. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

| Item | Equipment | Brand Name | Model Name | FCC ID |
|------|-----------|------------|------------|--------|
| 1 | Laptop | ThinkPad | T410 | N/A |

I/O PORT

| Cable No | Port | Connector Type | Cable Type | Cable Length(m) | Remarks |
|----------|------|----------------|------------|-----------------|---------|
| 1 | LAN | LAN | N/A | N/A | N/A |

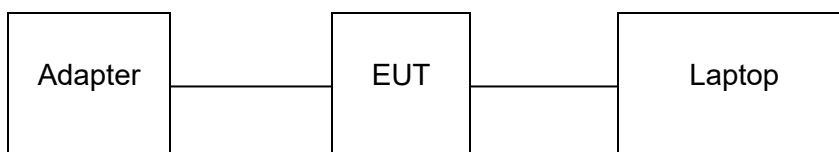
ACCESSORY

| Item | Accessory | Brand Name | Model Name | Description |
|------|-----------|------------|------------|-------------|
| 1 | N/A | N/A | N/A | N/A |

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. | Last Cal. | Next Cal. |
| <input checked="" type="checkbox"/> | EMI Test Receiver | R&S | ESR3 | 101961 | Dec.12, 2017 | Dec.11, 2018 |
| <input checked="" type="checkbox"/> | Two-Line V- Network | R&S | ENV216 | 101983 | Dec.12, 2017 | Dec.11, 2018 |
| <input checked="" type="checkbox"/> | Artificial Mains Networks | Schwarzbeck | NSLK 8126 | 8126465 | Dec.12, 2017 | Dec.11, 2018 |
| Software | | | | | | |
| Used | Description | | Manufacturer | Name | Version | |
| <input checked="" type="checkbox"/> | Test Software for Conducted disturbance | | UL | Antenna port | Ver. 7.2 | |
| Radiated Emissions(Instrument) | | | | | | |
| Used | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Next Cal. |
| <input checked="" type="checkbox"/> | MXE EMI Receiver | KESIGHT | N9038A | MY56400 036 | Dec. 12, 2017 | Dec. 11, 2018 |
| <input checked="" type="checkbox"/> | Hybrid Log Periodic Antenna | TDK | HLP-3003C | 130960 | Jan.09, 2016 | Jan.09, 2019 |
| <input checked="" type="checkbox"/> | Preamplifier | HP | 8447D | 2944A090 99 | Dec. 12, 2017 | Dec. 11, 2018 |
| <input checked="" type="checkbox"/> | EMI Measurement Receiver | R&S | ESR26 | 101377 | Dec.12, 2017 | Dec.11, 2018 |
| <input checked="" type="checkbox"/> | Horn Antenna | TDK | HRN-0118 | 130939 | Jan. 09, 2016 | Jan. 09, 2019 |
| <input checked="" type="checkbox"/> | High Gain Horn Antenna | Schwarzbeck | BBHA-9170 | 691 | Jan.06, 2016 | Jan.06, 2019 |
| <input checked="" type="checkbox"/> | Preamplifier | TDK | PA-02-0118 | TRS-305- 00066 | Dec. 12, 2017 | Dec. 11, 2018 |
| <input checked="" type="checkbox"/> | Preamplifier | TDK | PA-02-2 | TRS-307- 00003 | Dec.12, 2017 | Dec.11, 2018 |
| <input checked="" type="checkbox"/> | Loop antenna | Schwarzbeck | 1519B | 00008 | Mar. 26, 2016 | Mar. 26, 2019 |
| <input checked="" type="checkbox"/> | Band Reject Filter | Wainwright | WRCJV8- 2350-2400- 2483.5- 2533.5-40SS | 4 | Dec.12, 2017 | Dec.11, 2018 |
| Software | | | | | | |
| Used | Description | | Manufacturer | Name | Version | |
| <input checked="" type="checkbox"/> | Test Software for Radiated disturbance | | Farad | EZ-EMC | Ver. UL-3A1 | |
| Other instruments | | | | | | |
| Used | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Next Cal. |
| <input checked="" type="checkbox"/> | Spectrum Analyzer | Keysight | N9030A | MY55410 512 | Dec.12, 2017 | Dec.11, 2018 |
| <input checked="" type="checkbox"/> | Power Meter | Keysight | N9031A | MY55416 024 | Dec.12, 2017 | Dec.11, 2018 |

| | | | | | | |
|-------------------------------------|--------------|----------|--------|----------------|--------------|--------------|
| <input checked="" type="checkbox"/> | Power Sensor | Keysight | N9323A | MY55440 013 | Dec.12, 2017 | Dec.11, 2018 |
|-------------------------------------|--------------|----------|--------|----------------|--------------|--------------|

6. ANTENNA PORT TEST RESULTS

6.1. ON TIME AND DUTY CYCLE

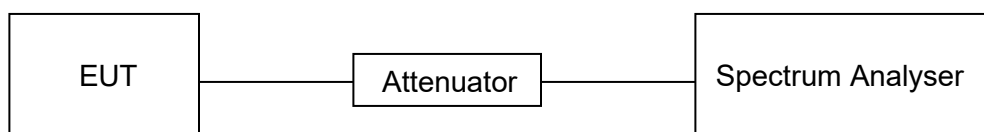
LIMITS

None; for reporting purposes only

PROCEDURE

FCC KDB 558074 Zero-Span Spectrum Analyzer Method

TEST SETUP



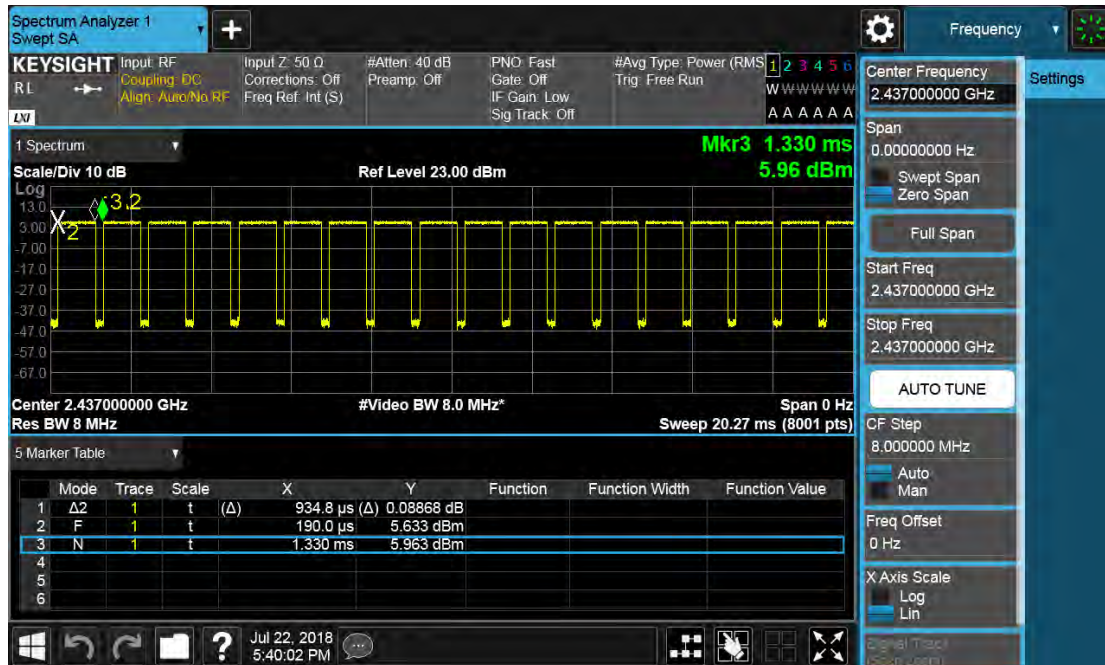
RESULTS

| Mode | On Time (msec) | Period (msec) | Duty Cycle x (Linear) | Duty Cycle | Duty Cycle Correction Factor (db) | 1/T Minimum VBW (KHz) |
|-----------|----------------|---------------|-----------------------|------------|-----------------------------------|-----------------------|
| 11B | 0.9348 | 1.14 | 1 | 0.8200 | 0.86 | 1.07 |
| 11G | 0.1697 | 0.3774 | 1 | 0.4497 | 3.47 | 5.89 |
| 11N20SISO | 0.1596 | 0.3673 | 1 | 0.4345 | 3.62 | 6.27 |
| 11N40SISO | 0.0937 | 0.3015 | 1 | 0.3108 | 5.07 | 10.67 |

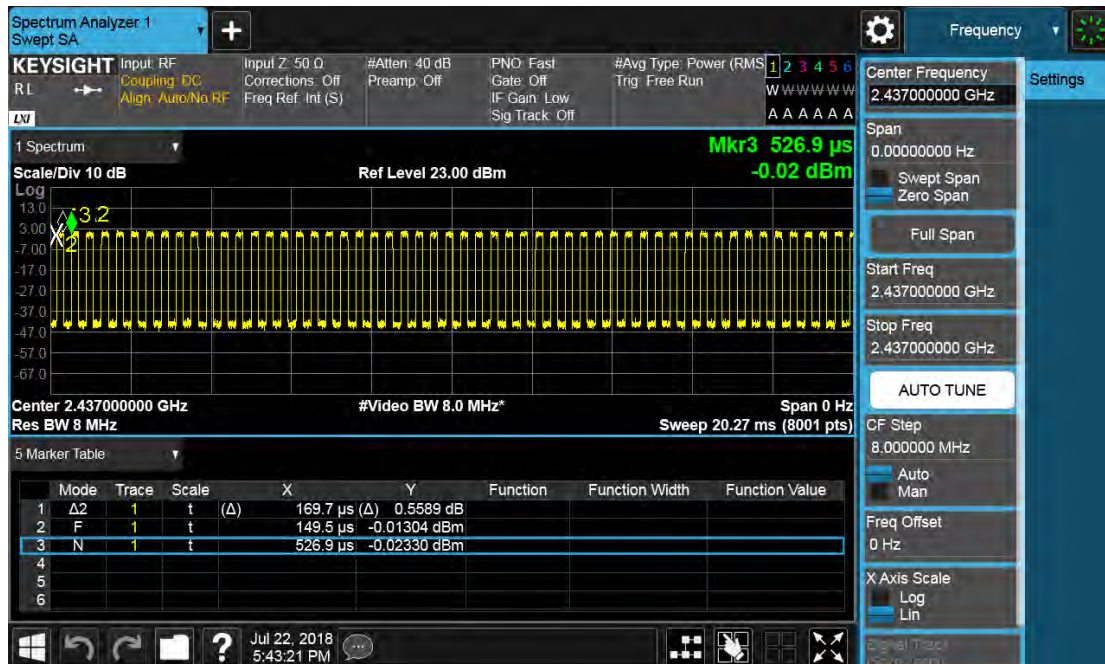
Note: 1) Duty Cycle Correction Factor= $10\log(1/x)$.
 2) Where: x is Duty Cycle(Linear)
 3) Where: T is On Time (transmit duration)

ON TIME AND DUTY CYCLE MID CH

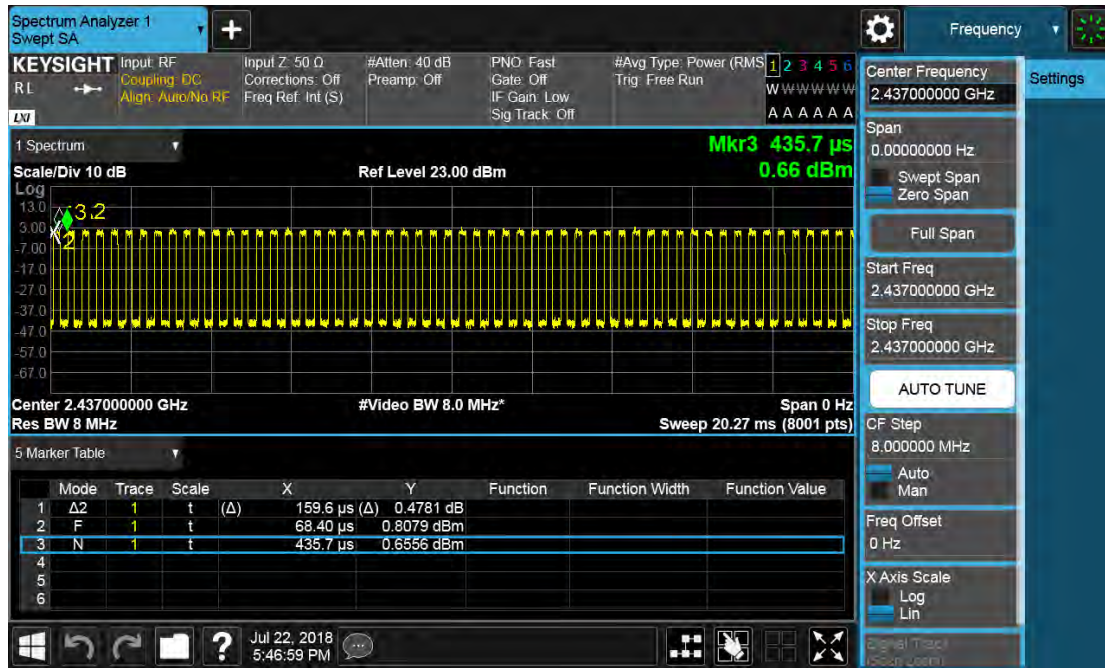
11B



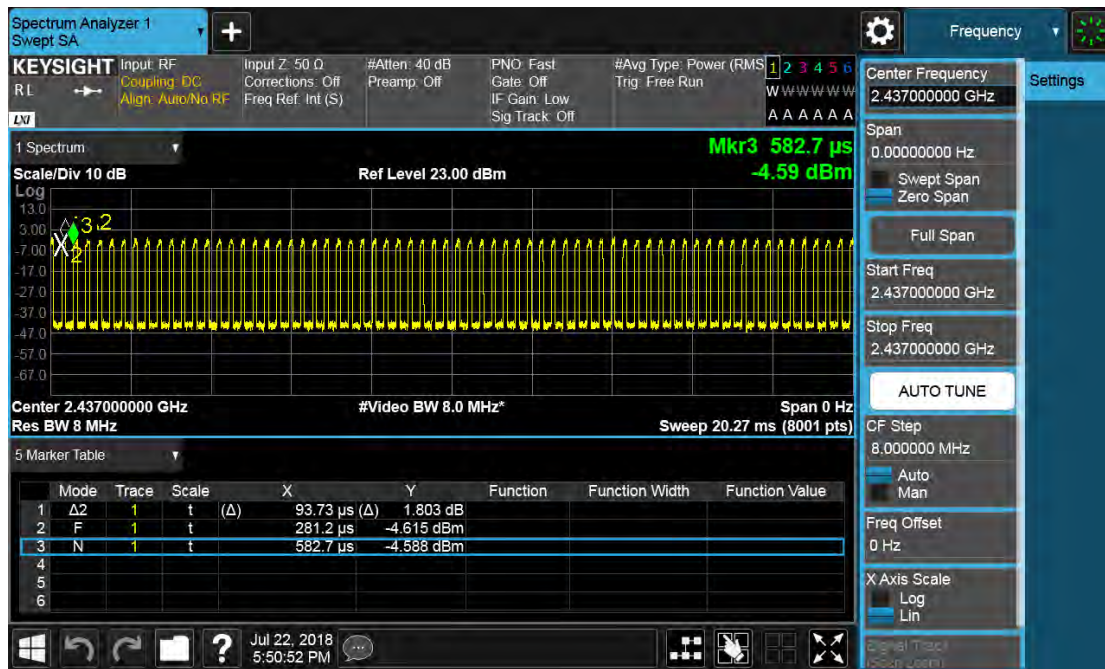
11G



11N20SISO



11N40SISO



6.2. 6 dB BANDWIDTH

LIMITS

| FCC Part15 (15.247) Subpart C | | | |
|-------------------------------------|---------------|------------------------------|-----------------------|
| Section | Test Item | Limit | Frequency Range (MHz) |
| FCC 15.247(a)(2) RSS-247 5.1 (a) | 6dB Bandwidth | $\geq 500\text{KHz}$ | 2400-2483.5 |
| RSS-Gen Clause 6.6 | 99% Bandwidth | For reporting purposes only. | 2400-2483.5 |

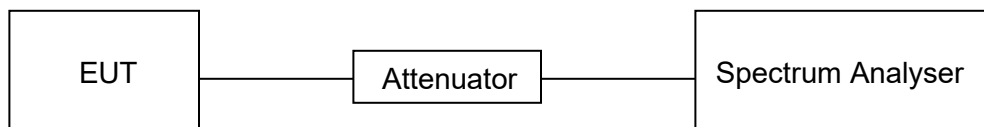
TEST PROCEDURE

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 | For 6 dB Bandwidth : 100K For 99% Bandwidth : 1% to 5% of the occupied bandwidth |
| VBW | For 6dB Bandwidth : $\geq 3 \times \text{RBW}$ For 99% Bandwidth : approximately $3 \times \text{RBW}$ |
| 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 and 99% relative to the maximum level measured in the fundamental emission.

TEST SETUP



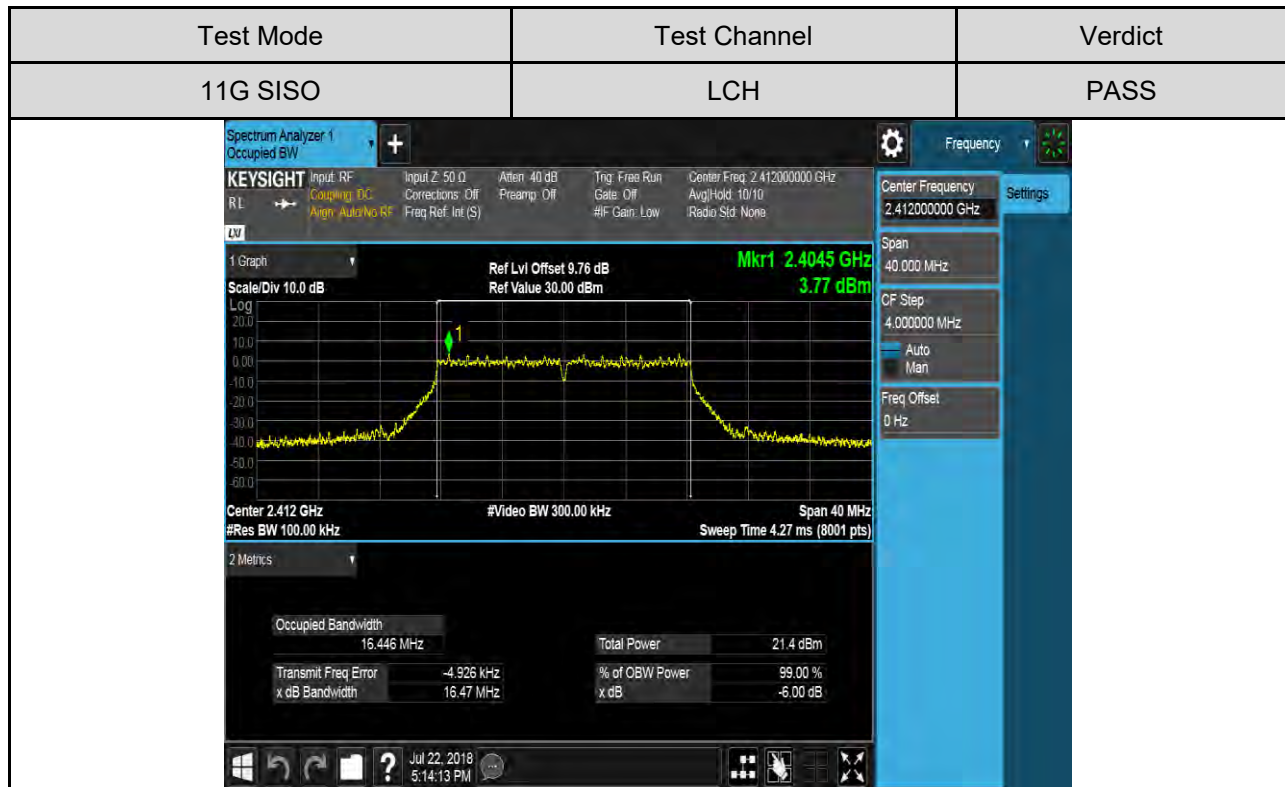
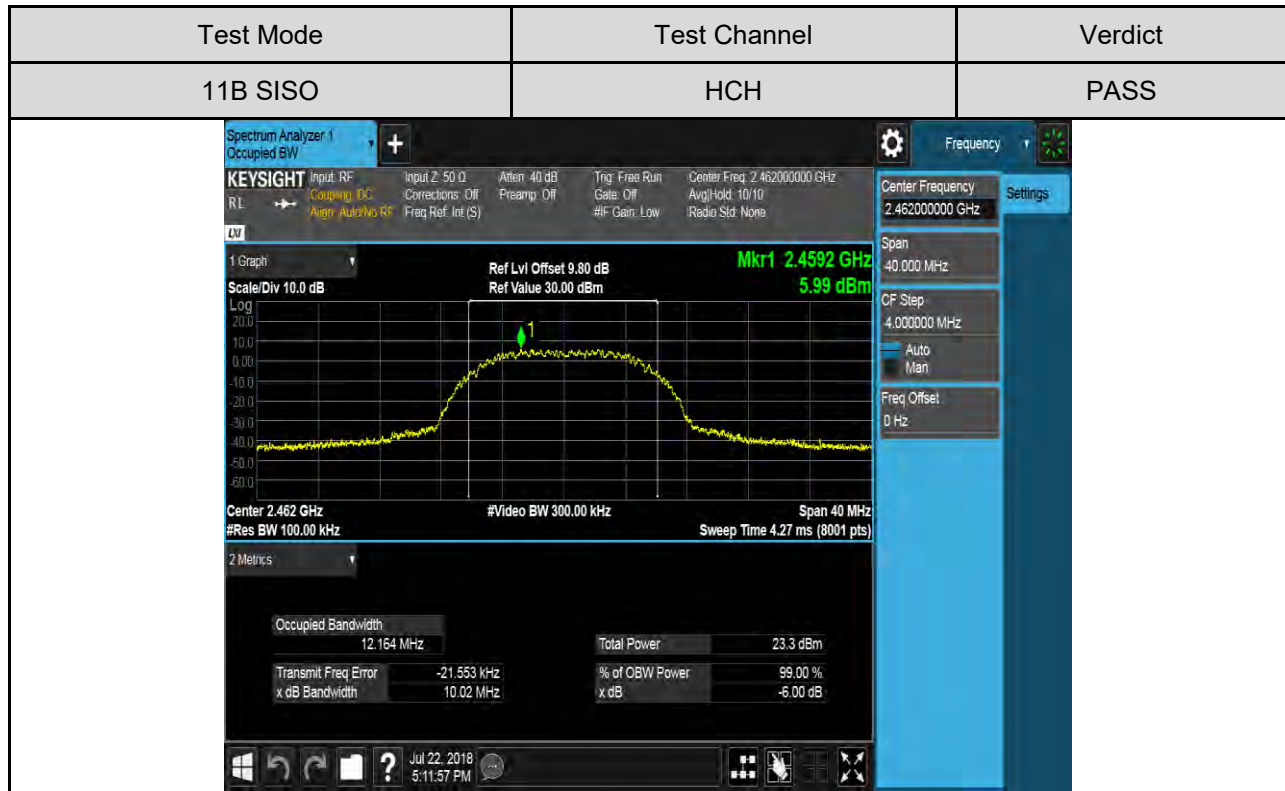
RESULTS

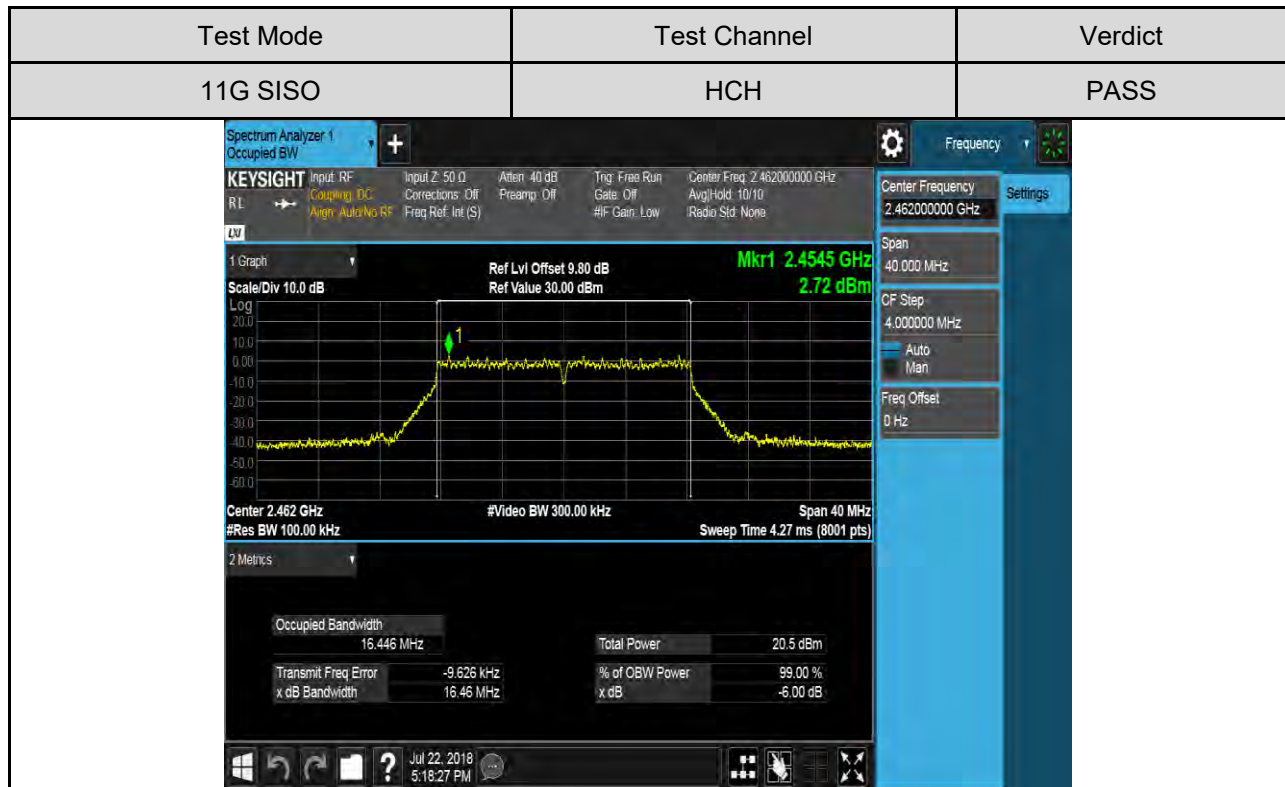
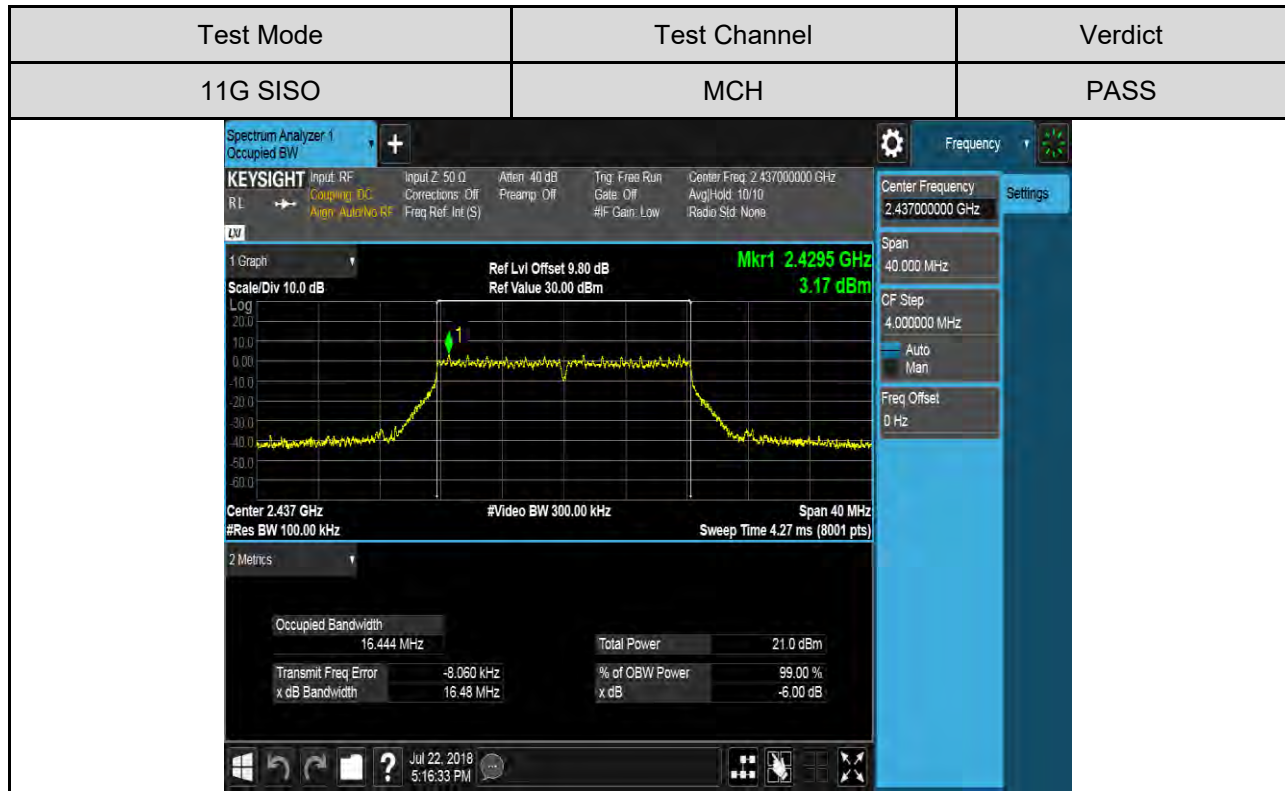
| Test Mode | Test Channel | 6dB bandwidth (MHz) | 99% bandwidth (MHz) | Result |
|------------|--------------|---------------------|---------------------|--------|
| 11B | LCH | 10.00 | 12.19 | Pass |
| | MCH | 10.00 | 12.18 | Pass |
| | HCH | 10.02 | 12.16 | Pass |
| 11G | LCH | 16.47 | 16.45 | Pass |
| | MCH | 16.48 | 16.44 | Pass |
| | HCH | 16.46 | 16.45 | Pass |
| 11N20 SISO | LCH | 17.55 | 17.58 | Pass |
| | MCH | 17.48 | 17.59 | Pass |
| | HCH | 17.62 | 17.58 | Pass |
| 11N40 SISO | LCH | 36.13 | 36.14 | Pass |
| | MCH | 36.37 | 36.19 | Pass |
| | HCH | 36.31 | 36.19 | Pass |

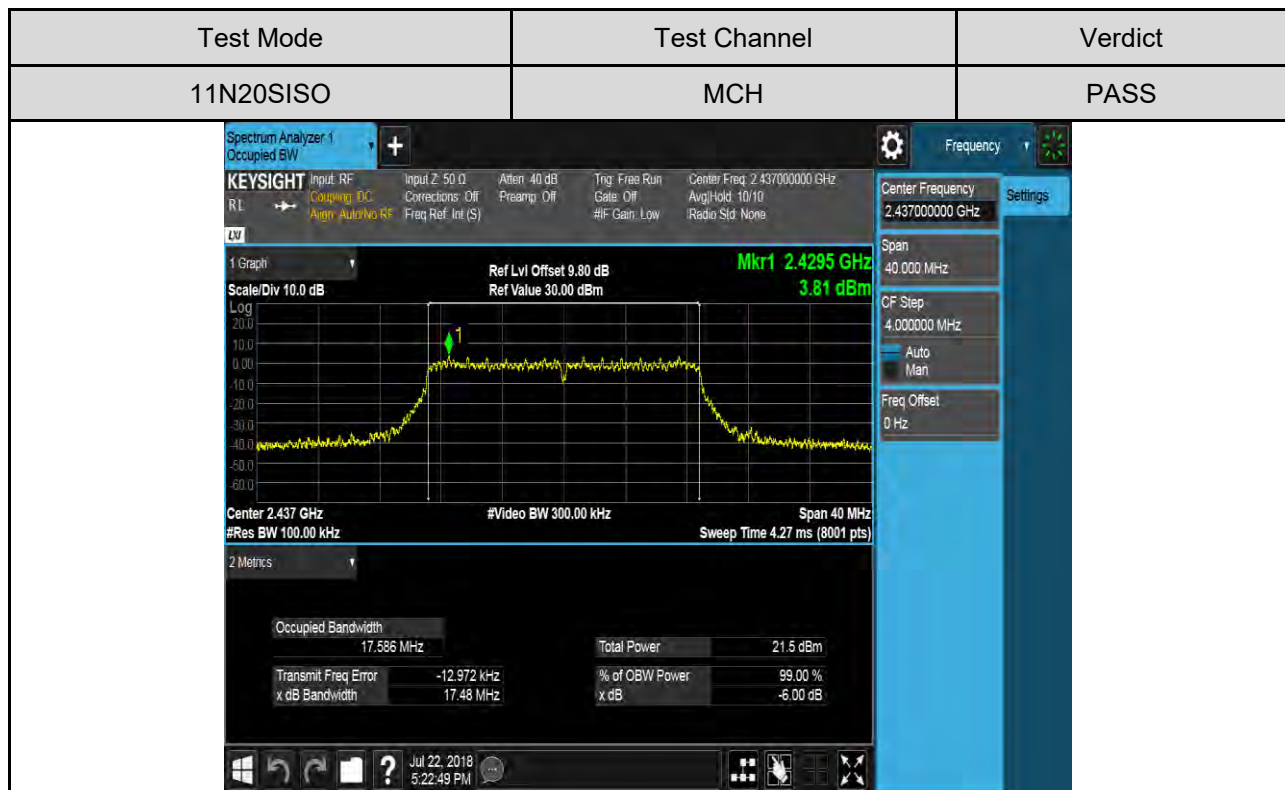
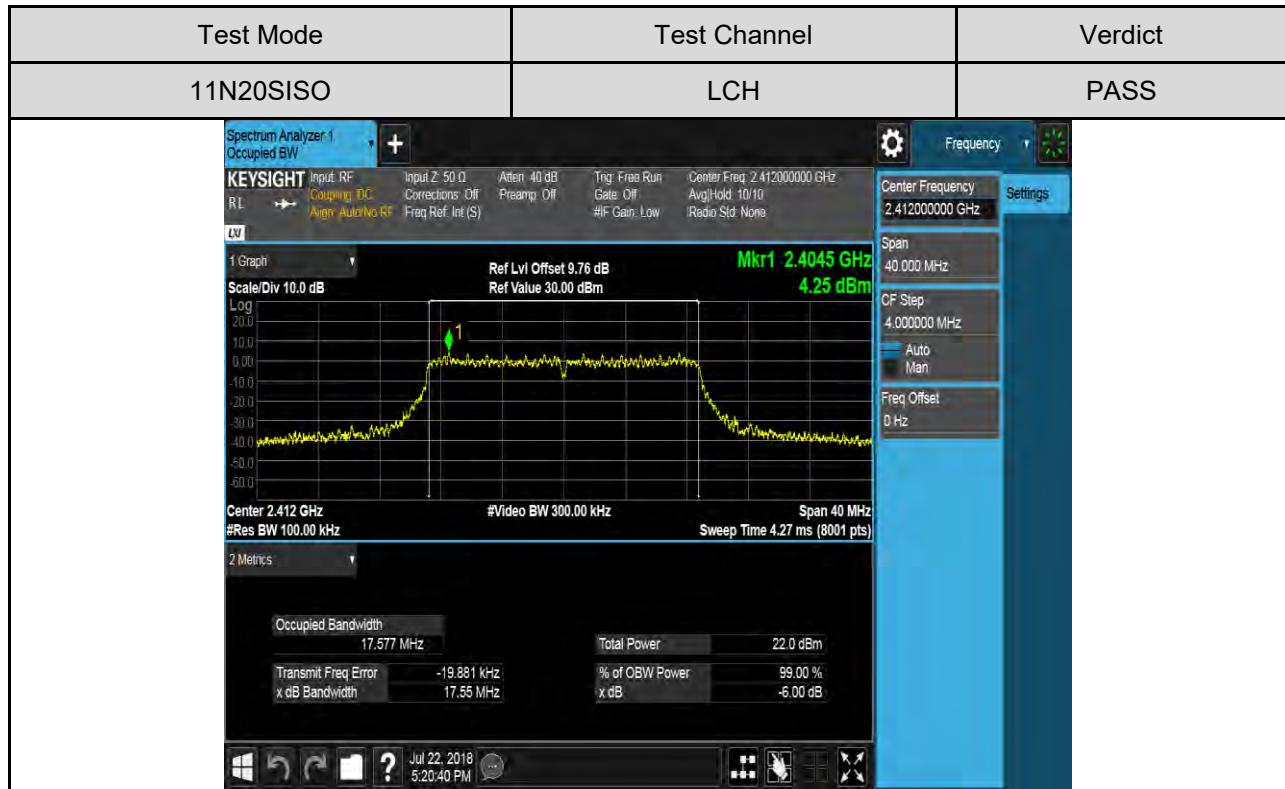
Test Graphs

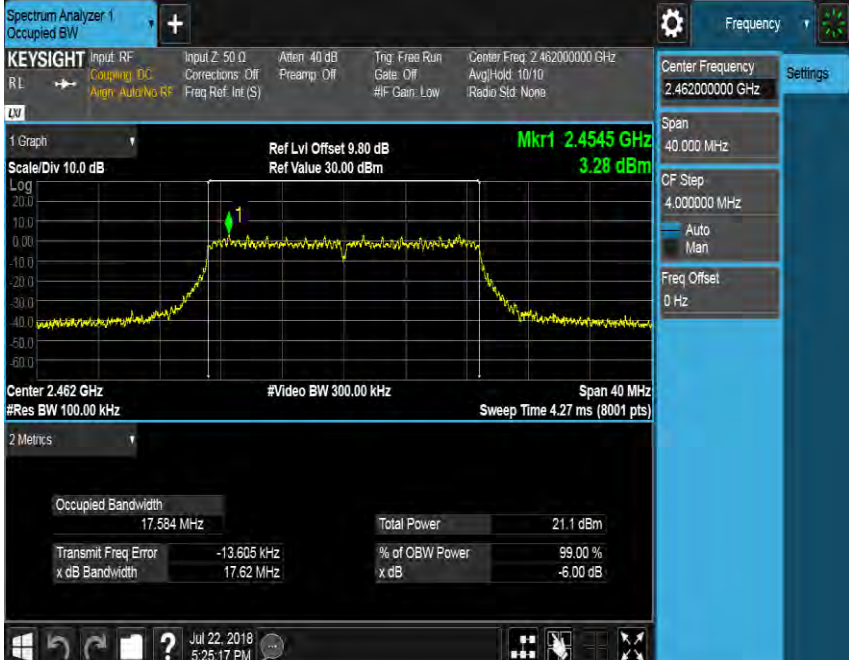
| Test Mode | Test Channel | Verdict |
|--|--------------|---------|
| 11B SISO | LCH | PASS |
| <p>The screenshot displays a Keysight Spectrum Analyzer interface. The main graph shows a signal peak at 2.4092 GHz with a power level of 7.24 dBm. The center frequency is set to 2.412000000 GHz. The span is 40.000 MHz. The resolution bandwidth is 100.00 kHz. The video bandwidth is 300.00 kHz. The sweep time is 4.27 ms (8001 pts). The occupied bandwidth is 12.187 MHz. The total power is 24.3 dBm. The transmit frequency error is -26.037 kHz. The percentage of occupied bandwidth power is 99.00%. The x dB bandwidth is 9.996 MHz. The interface also shows various settings like input, attenuator, and trigger.</p> | | |

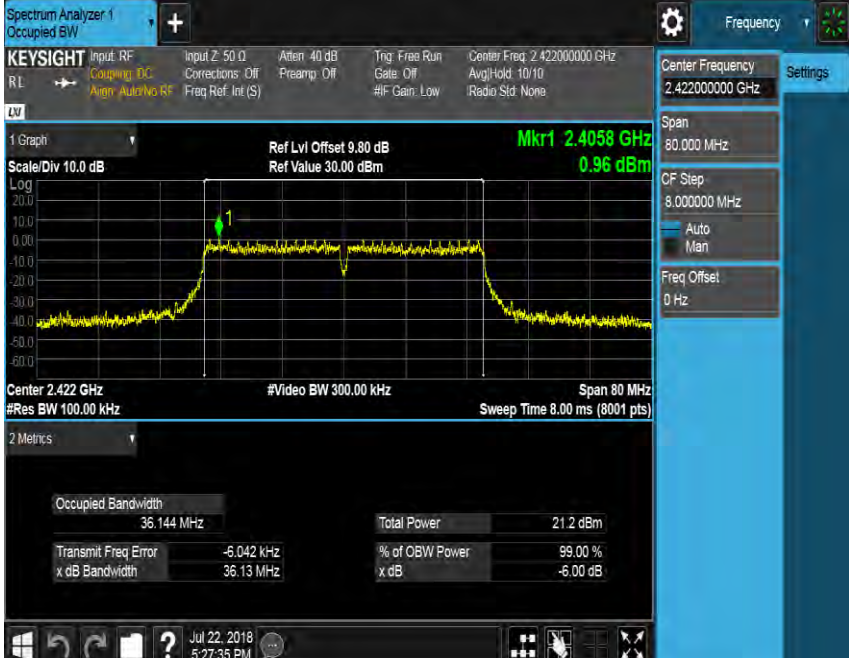
| Test Mode | Test Channel | Verdict |
|--|--------------|---------|
| 11B SISO | MCH | PASS |
| <p>The screenshot displays a Keysight Spectrum Analyzer interface. The main graph shows a signal peak at 2.4342 GHz with a power level of 6.71 dBm. The center frequency is set to 2.437000000 GHz. The span is 40.000 MHz. The resolution bandwidth is 100.00 kHz. The video bandwidth is 300.00 kHz. The sweep time is 4.27 ms (8001 pts). The occupied bandwidth is 12.183 MHz. The total power is 23.9 dBm. The transmit frequency error is -24.331 kHz. The percentage of occupied bandwidth power is 99.00%. The x dB bandwidth is 10.00 MHz. The interface also shows various settings like input, attenuator, and trigger.</p> | | |

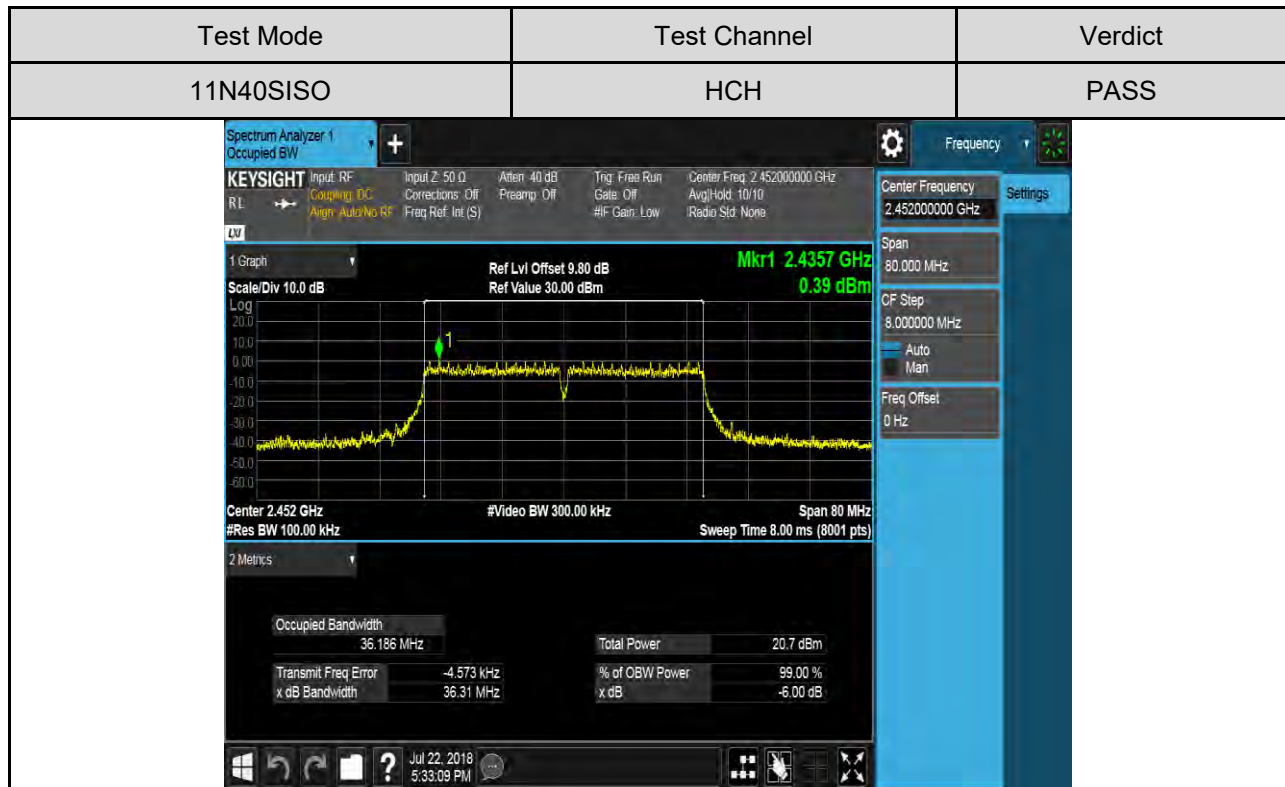
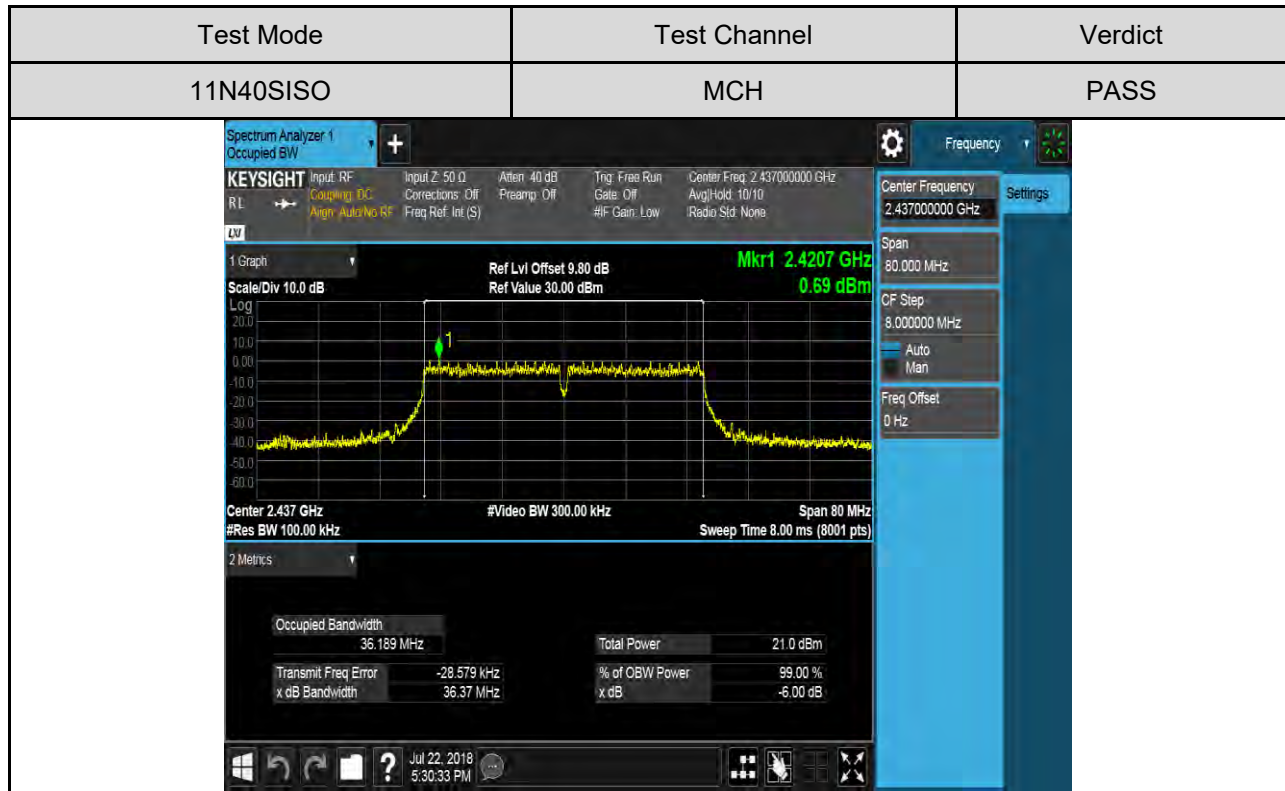






| Test Mode | Test Channel | Verdict | | | | | | | | | | | | |
|---|--------------|----------------|--------------------|------------|-------------|----------|---------------------|-------------|----------------|---------|----------------|-----------|------|----------|
| 11N20SISO | HCH | PASS | | | | | | | | | | | | |
|  <p>The screenshot displays the Keysight Spectrum Analyzer interface. The main graph shows a signal at 2.462 GHz with a power level of 3.28 dBm. The interface includes various settings such as Center Frequency (2.46200000 GHz), Span (40.000 MHz), and Res BW (100.00 kHz). A metrics table at the bottom provides additional data:</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>17.584 MHz</td> <td>Total Power</td> <td>21.1 dBm</td> </tr> <tr> <td>Transmit Freq Error</td> <td>-13.605 kHz</td> <td>% of OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>x dB Bandwidth</td> <td>17.62 MHz</td> <td>x dB</td> <td>-6.00 dB</td> </tr> </table> | | | Occupied Bandwidth | 17.584 MHz | Total Power | 21.1 dBm | Transmit Freq Error | -13.605 kHz | % of OBW Power | 99.00 % | x dB Bandwidth | 17.62 MHz | x dB | -6.00 dB |
| Occupied Bandwidth | 17.584 MHz | Total Power | 21.1 dBm | | | | | | | | | | | |
| Transmit Freq Error | -13.605 kHz | % of OBW Power | 99.00 % | | | | | | | | | | | |
| x dB Bandwidth | 17.62 MHz | x dB | -6.00 dB | | | | | | | | | | | |

| Test Mode | Test Channel | Verdict | | | | | | | | | | | | |
|--|--------------|----------------|--------------------|------------|-------------|----------|---------------------|------------|----------------|---------|----------------|-----------|------|----------|
| 11N40SISO | LCH | PASS | | | | | | | | | | | | |
|  <p>The screenshot displays the Keysight Spectrum Analyzer interface. The main graph shows a signal at 2.422 GHz with a power level of 0.96 dBm. The interface includes various settings such as Center Frequency (2.42200000 GHz), Span (80.000 MHz), and Res BW (100.00 kHz). A metrics table at the bottom provides additional data:</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>36.144 MHz</td> <td>Total Power</td> <td>21.2 dBm</td> </tr> <tr> <td>Transmit Freq Error</td> <td>-6.042 kHz</td> <td>% of OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>x dB Bandwidth</td> <td>36.13 MHz</td> <td>x dB</td> <td>-6.00 dB</td> </tr> </table> | | | Occupied Bandwidth | 36.144 MHz | Total Power | 21.2 dBm | Transmit Freq Error | -6.042 kHz | % of OBW Power | 99.00 % | x dB Bandwidth | 36.13 MHz | x dB | -6.00 dB |
| Occupied Bandwidth | 36.144 MHz | Total Power | 21.2 dBm | | | | | | | | | | | |
| Transmit Freq Error | -6.042 kHz | % of OBW Power | 99.00 % | | | | | | | | | | | |
| x dB Bandwidth | 36.13 MHz | x dB | -6.00 dB | | | | | | | | | | | |



6.3. PEAK CONDUCTED OUTPUT POWER

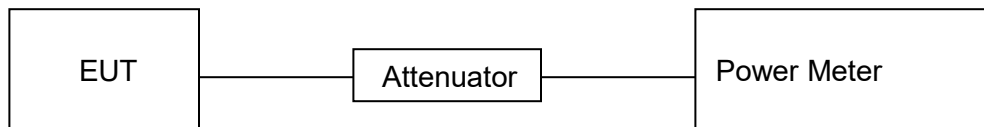
LIMITS

| FCC Part15 (15.247) , Subpart C | | | |
|-------------------------------------|-------------------|-----------------|-----------------------|
| Section | Test Item | Limit | Frequency Range (MHz) |
| FCC 15.247(b)(3) RSS-247 5.4 (e) | Peak Output Power | 1 watt or 30dBm | 2400-2483.5 |

TEST PROCEDURE

Refer to FCC KDB 558074

TEST SETUP



RESULTS

1) Maximum Peak Conducted Output Power

| Test Mode | Test Channel | Maximum Peak Conducted Output Power(dBm) | EIRP (dBm) | Result |
|-----------|--------------|--|------------|--------|
| 11B SISO | LCH | 23.64 | 24.64 | Pass |
| | MCH | 23.21 | 24.21 | Pass |
| | HCH | 22.63 | 23.63 | Pass |
| 11G SISO | LCH | 22.09 | 23.09 | Pass |
| | MCH | 21.79 | 22.79 | Pass |
| | HCH | 21.22 | 22.22 | Pass |
| 11N20SISO | LCH | 22.76 | 23.76 | Pass |
| | MCH | 22.34 | 23.34 | Pass |
| | HCH | 21.80 | 22.80 | Pass |
| 11N40SISO | LCH | 21.98 | 22.98 | Pass |
| | MCH | 21.62 | 22.62 | Pass |
| | HCH | 21.47 | 22.47 | Pass |

2) Maximum Average Conducted Output Power

| Test Mode | Test Channel | Maximum Average Conducted Output Power(dBm) | EIRP (dBm) | Result |
|-----------|--------------|---|------------|--------|
| 11B SISO | LCH | 18.53 | 19.53 | Pass |
| | MCH | 18.08 | 19.08 | Pass |
| | HCH | 17.54 | 18.54 | Pass |
| 11G SISO | LCH | 18.35 | 19.35 | Pass |
| | MCH | 17.87 | 18.87 | Pass |
| | HCH | 17.34 | 18.34 | Pass |
| 11N20SISO | LCH | 19.13 | 20.13 | Pass |
| | MCH | 18.68 | 19.68 | Pass |
| | HCH | 18.13 | 19.13 | Pass |
| 11N40SISO | LCH | 19.52 | 20.52 | Pass |
| | MCH | 19.35 | 20.35 | Pass |
| | HCH | 19.01 | 20.01 | Pass |

6.4. POWER SPECTRAL DENSITY

LIMITS

| FCC Part15 (15.247) , Subpart C | | | |
|------------------------------------|------------------------|-------------------------|-----------------------|
| Section | Test Item | Limit | Frequency Range (MHz) |
| FCC §15.247 (e) RSS-247 5.2 (b) | Power Spectral Density | 8 dBm in any 3 kHz band | 2400-2483.5 |

TEST PROCEDURE

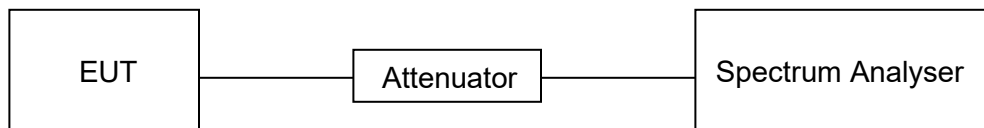
Refer to FCC KDB 558074, connect the UUT to the spectrum analyser and use the following settings:

| | |
|------------------|--|
| 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 x 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.

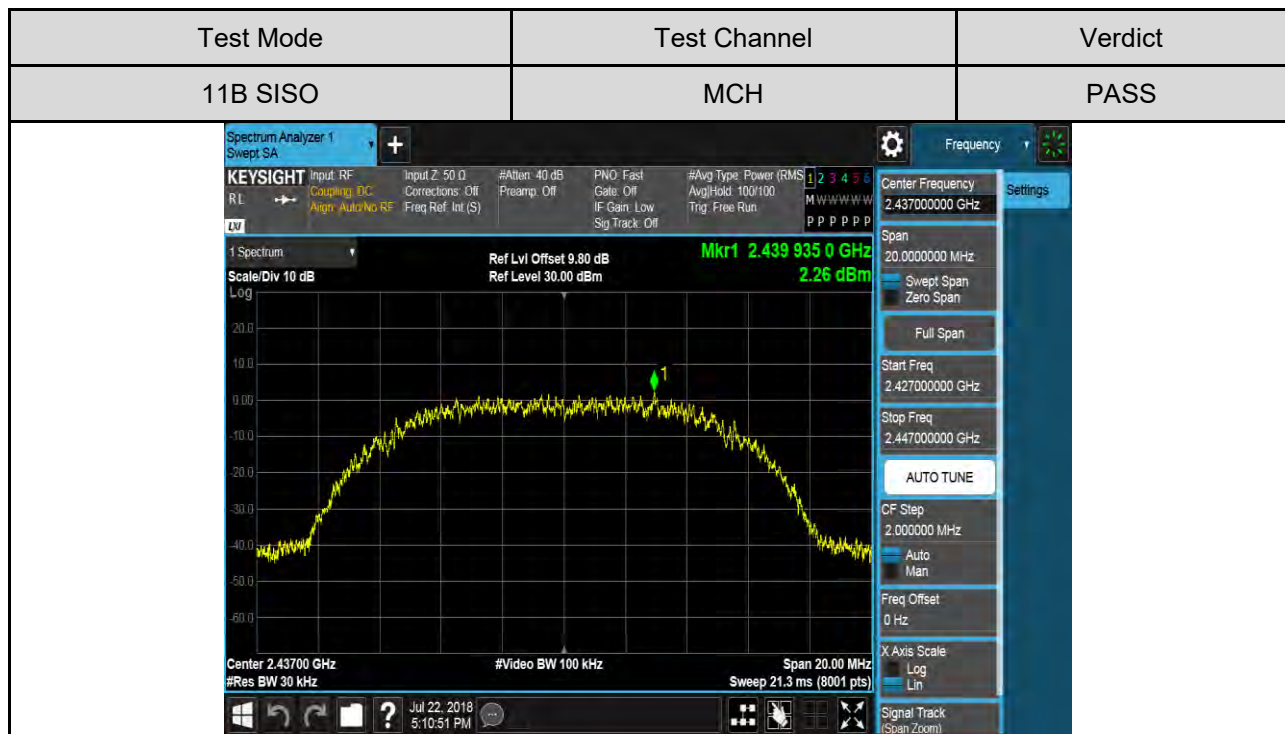
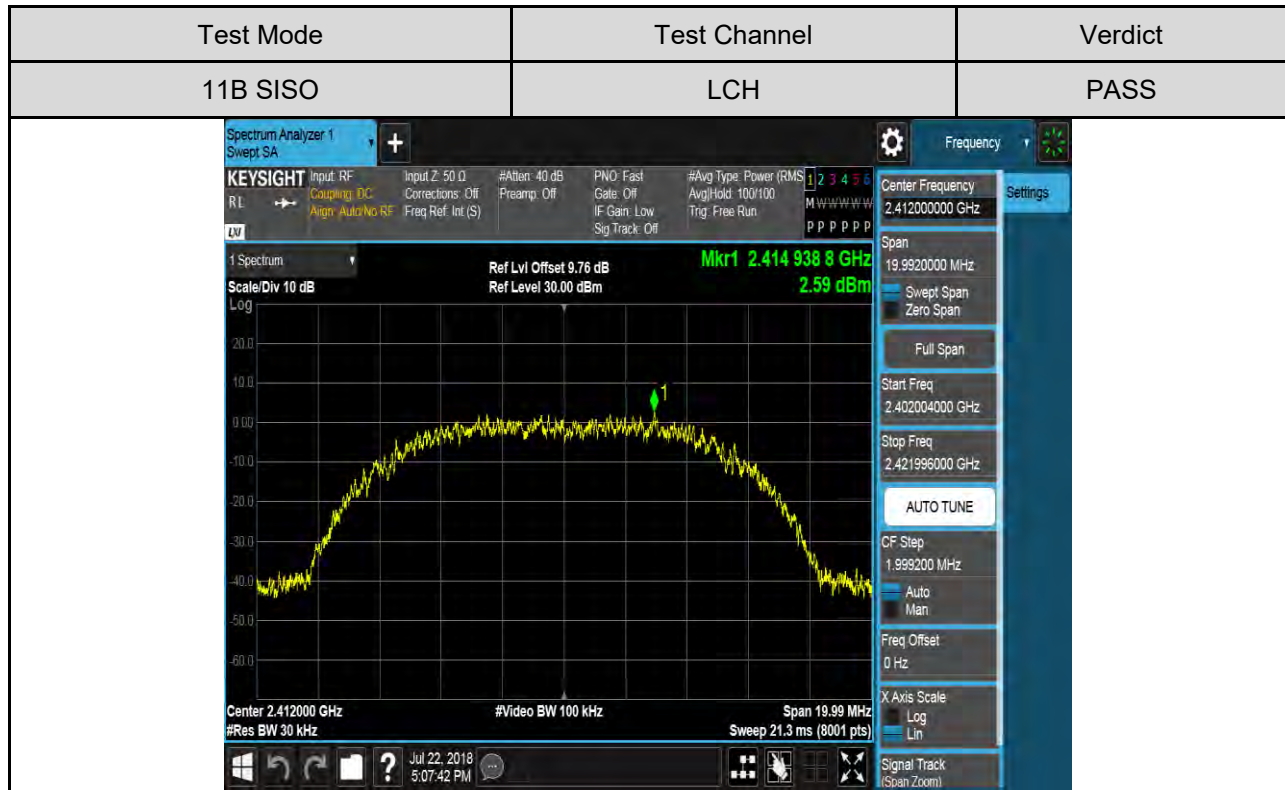
TEST SETUP

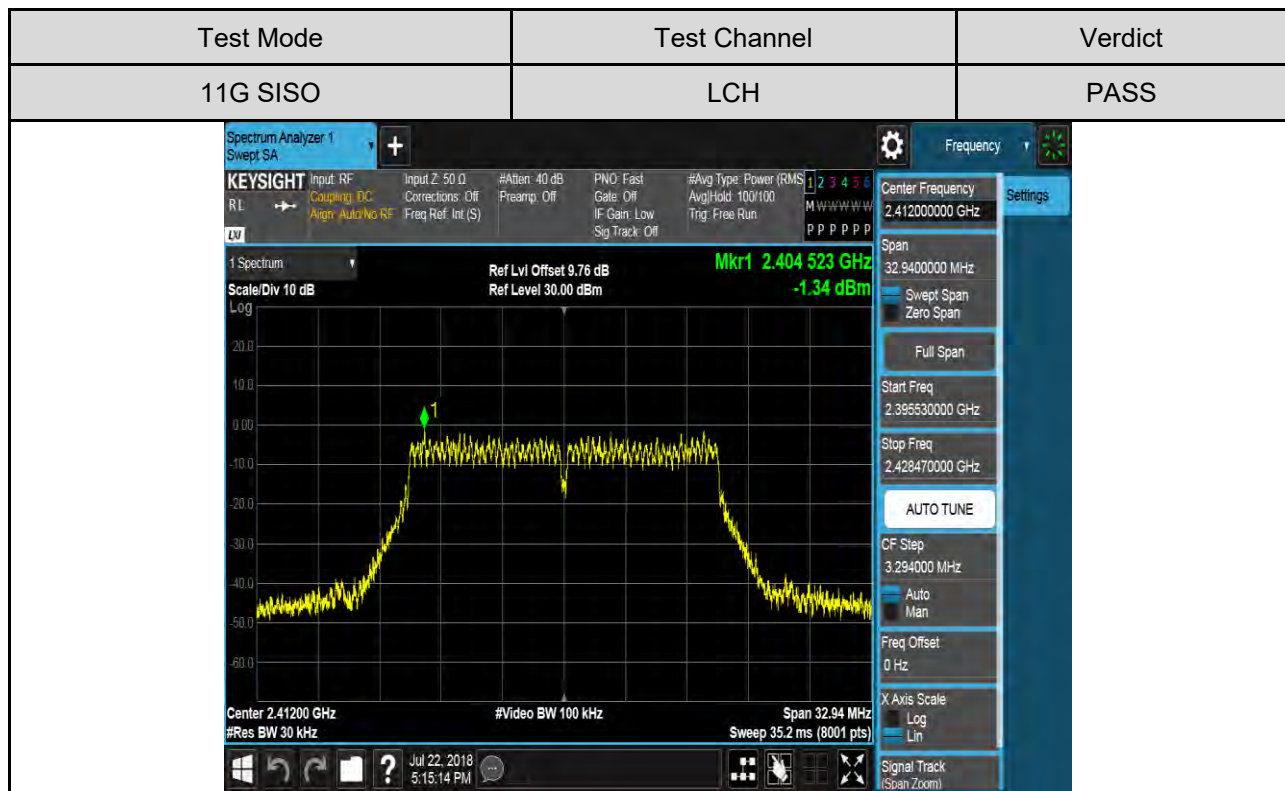
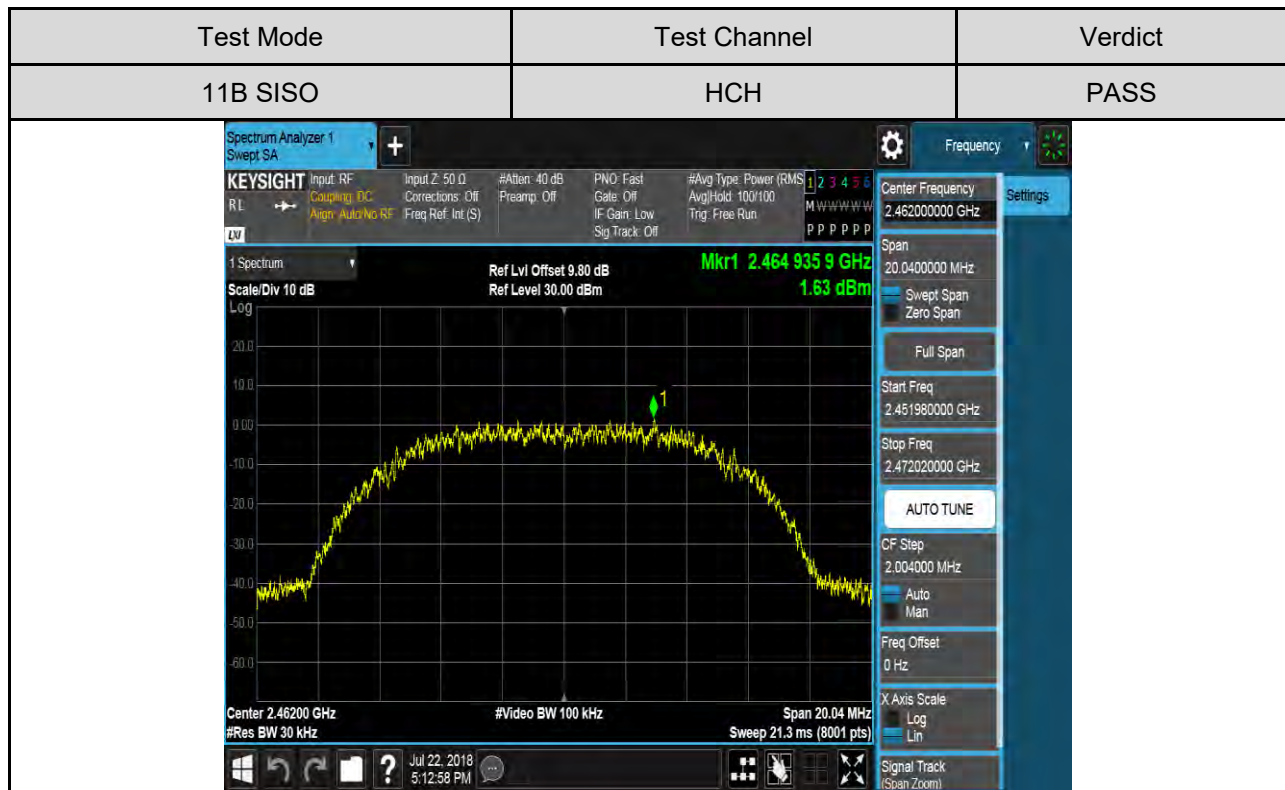


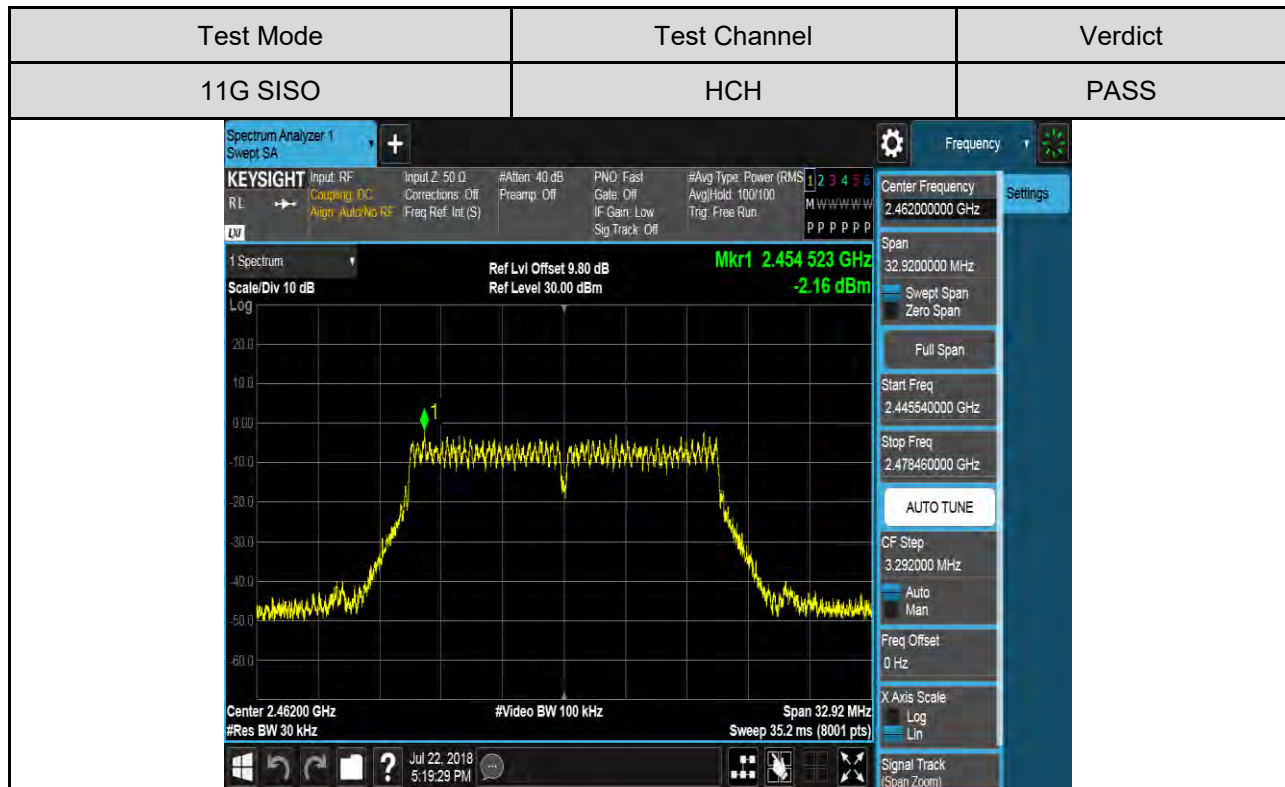
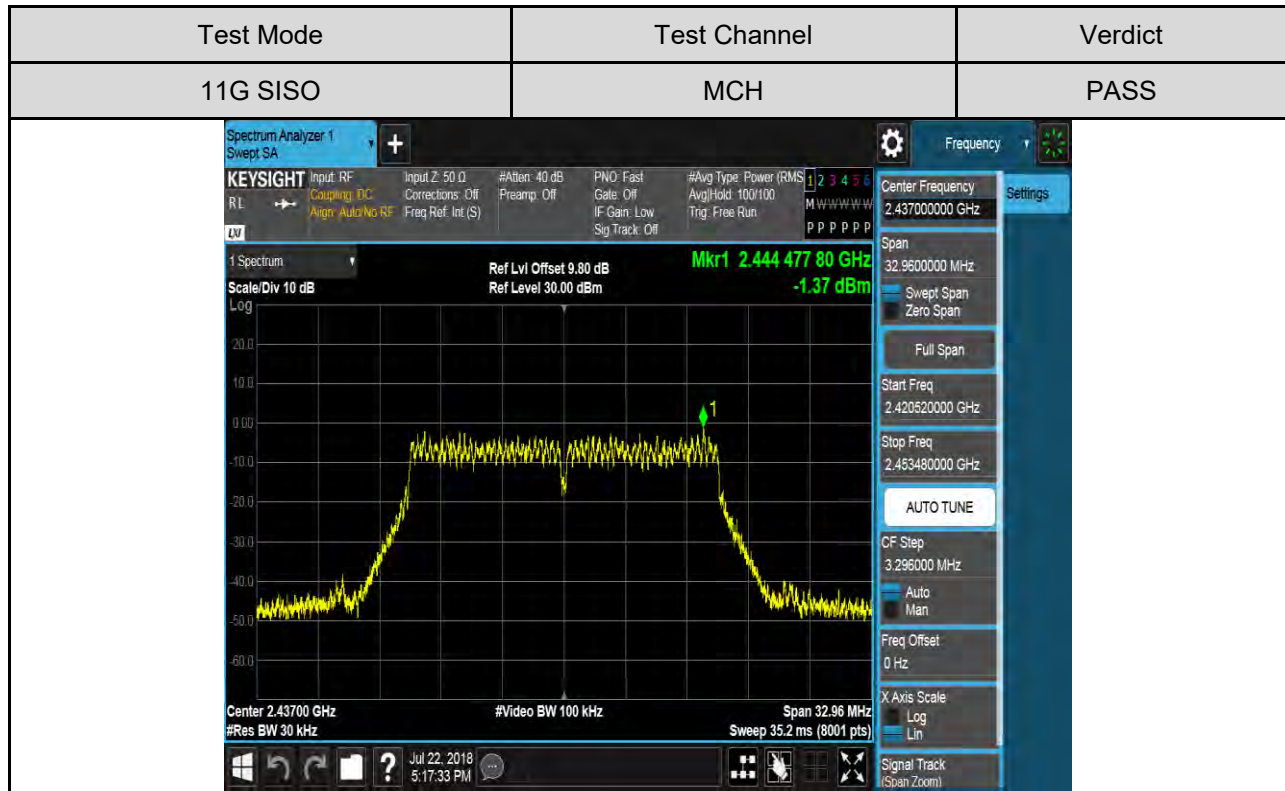
RESULTS

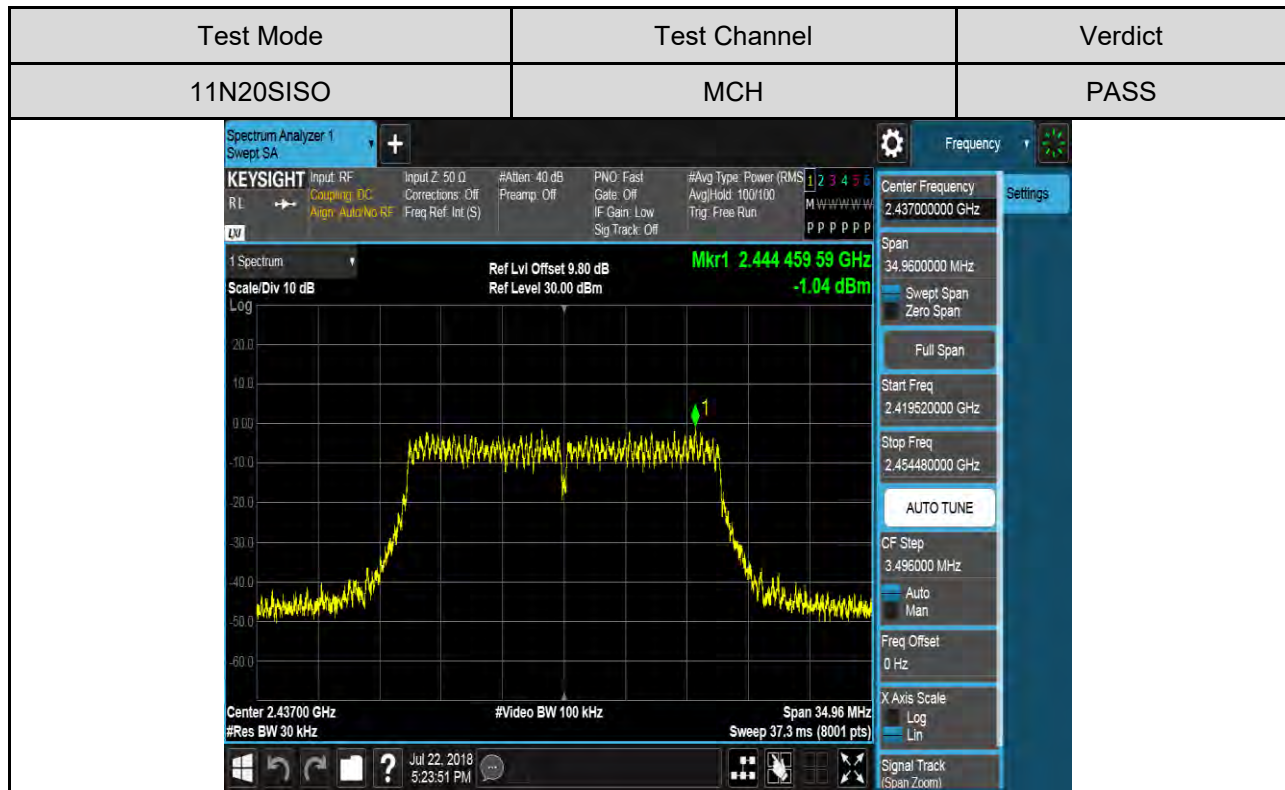
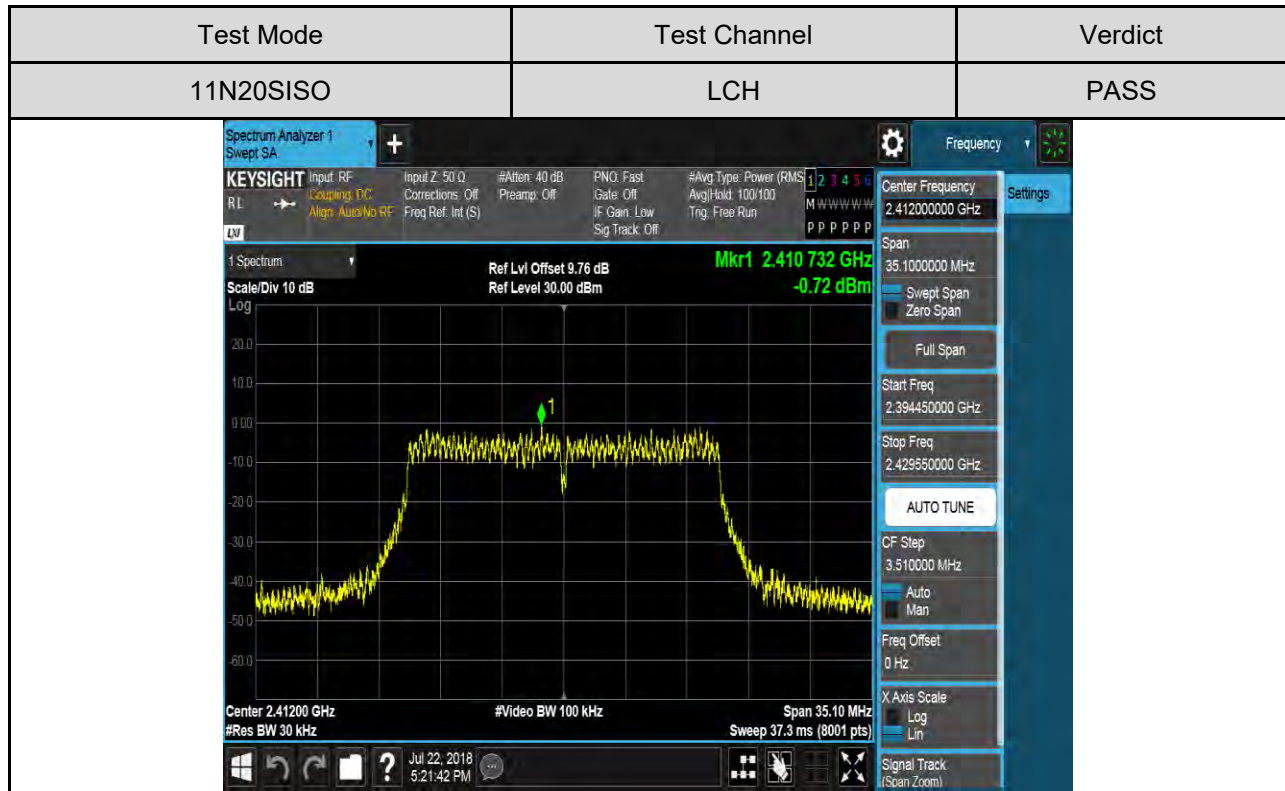
| Test Mode | Test Channel | Maximum Peak power spectral density (dBm) | Result |
|-----------|--------------|---|--------|
| 11B SISO | LCH | 2.593 | Pass |
| | MCH | 2.259 | Pass |
| | HCH | 1.627 | Pass |
| 11G SISO | LCH | -1.342 | Pass |
| | MCH | -1.375 | Pass |
| | HCH | -2.165 | Pass |
| 11N20SISO | LCH | -0.715 | Pass |
| | MCH | -1.04 | Pass |
| | HCH | -1.254 | Pass |
| 11N40SISO | LCH | -3.984 | Pass |
| | MCH | -4.313 | Pass |
| | HCH | -4.69 | Pass |

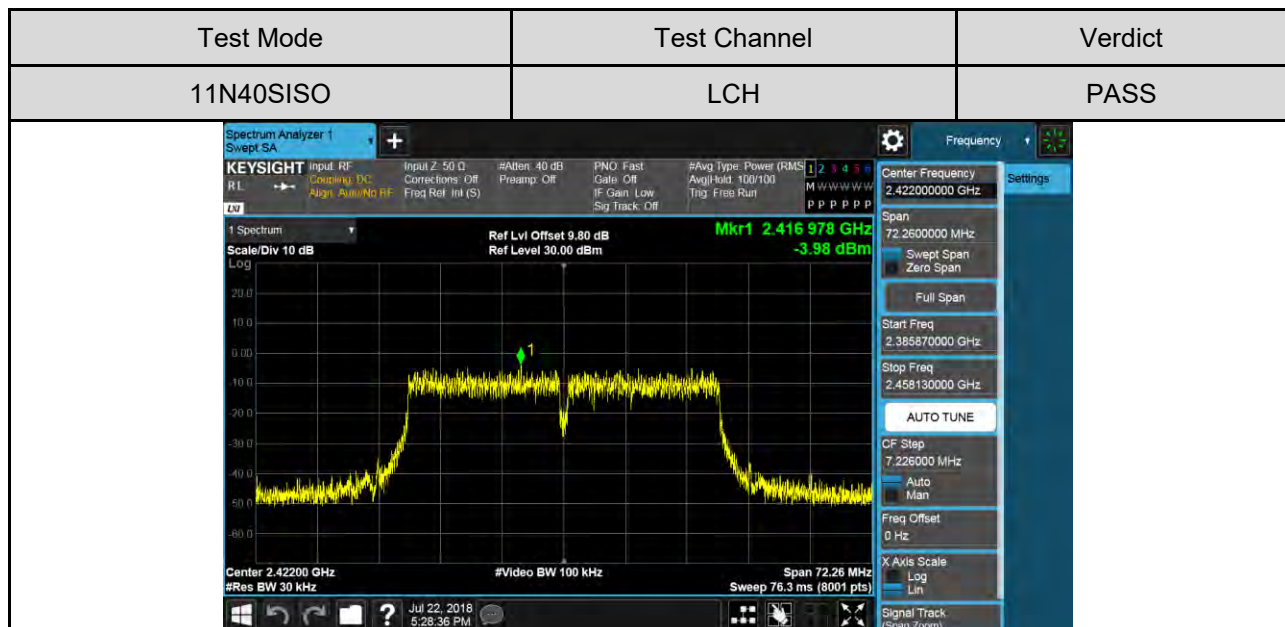
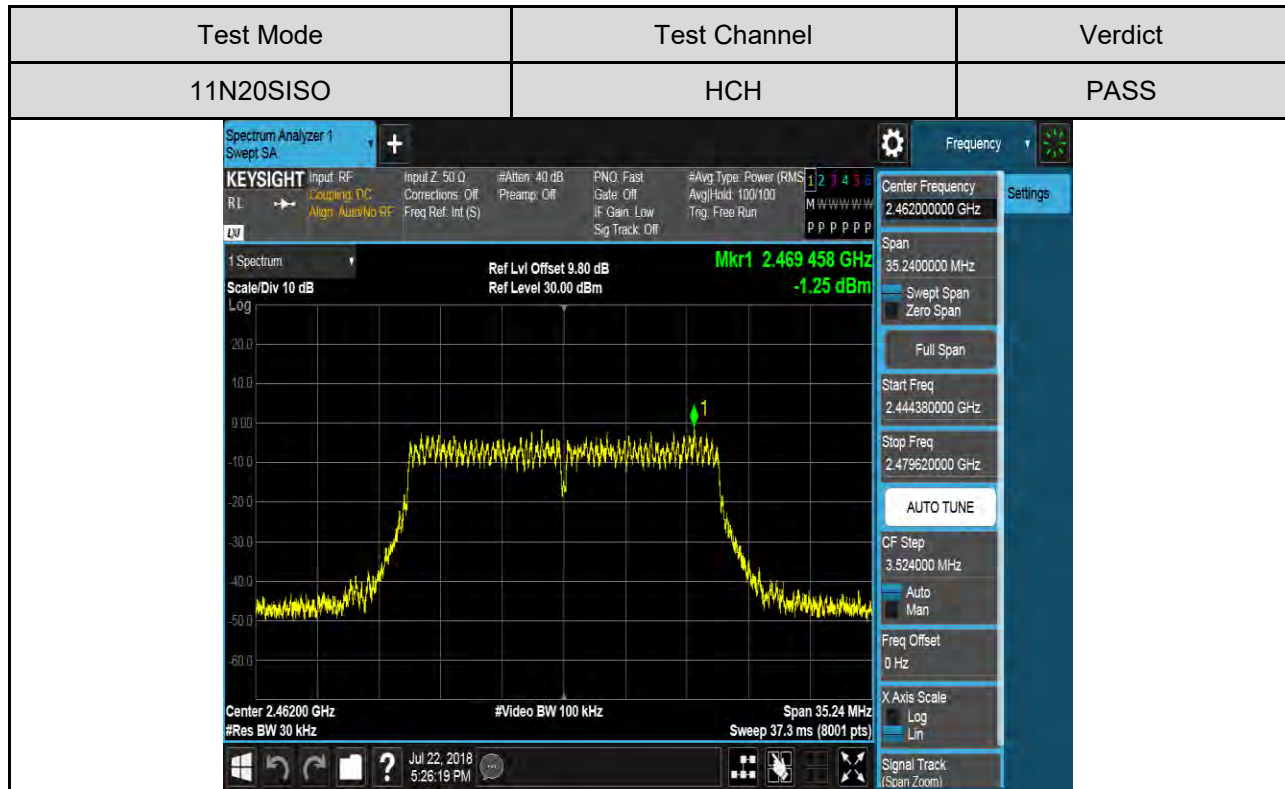
Test Graphs:



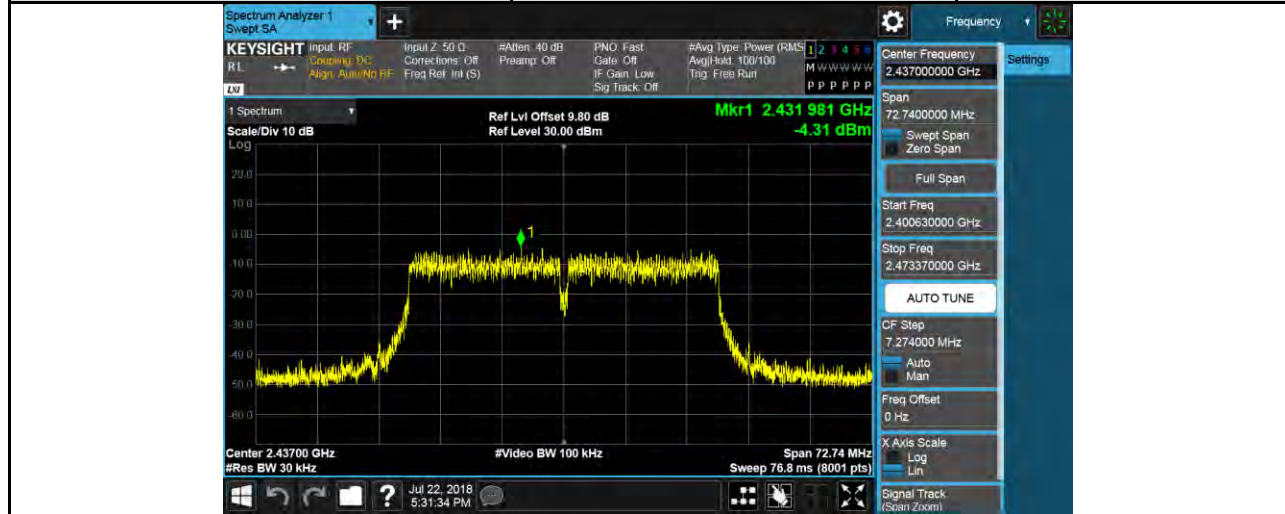




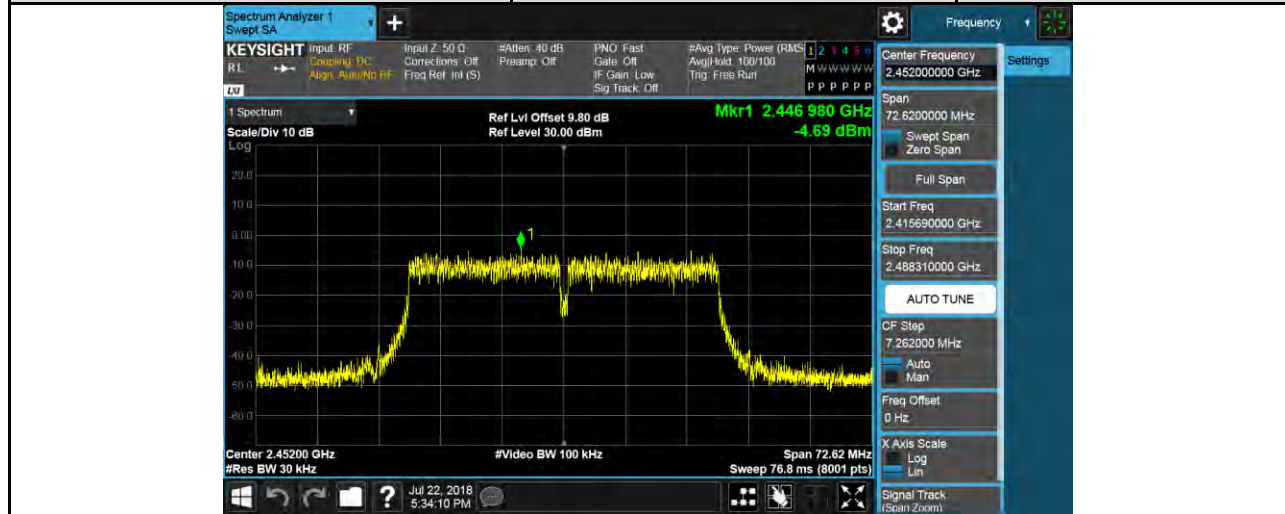




| Test Mode | Test Channel | Verdict |
|-----------|--------------|---------|
| 11N40SISO | MCH | PASS |



| Test Mode | Test Channel | Verdict |
|-----------|--------------|---------|
| 11N40SISO | HCH | PASS |



6.5. CONDUCTED BANDEGE AND SPURIOUS EMISSIONS

LIMITS

| FCC Part15 (15.247) , Subpart C | | |
|---------------------------------|---|---|
| Section | Test Item | Limit |
| FCC §15.247 (d) RSS-247 5.5 | Conducted Bandedge and Spurious Emissions | at least 20 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 | $\geq 3 \times \text{RBW}$ |
| Span | 1.5 x DTS bandwidth |
| Trace | Max hold |
| Sweep time | Auto couple. |

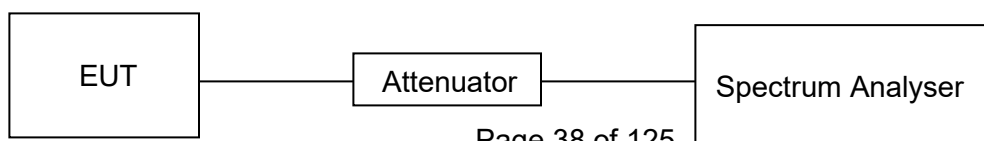
settings:

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

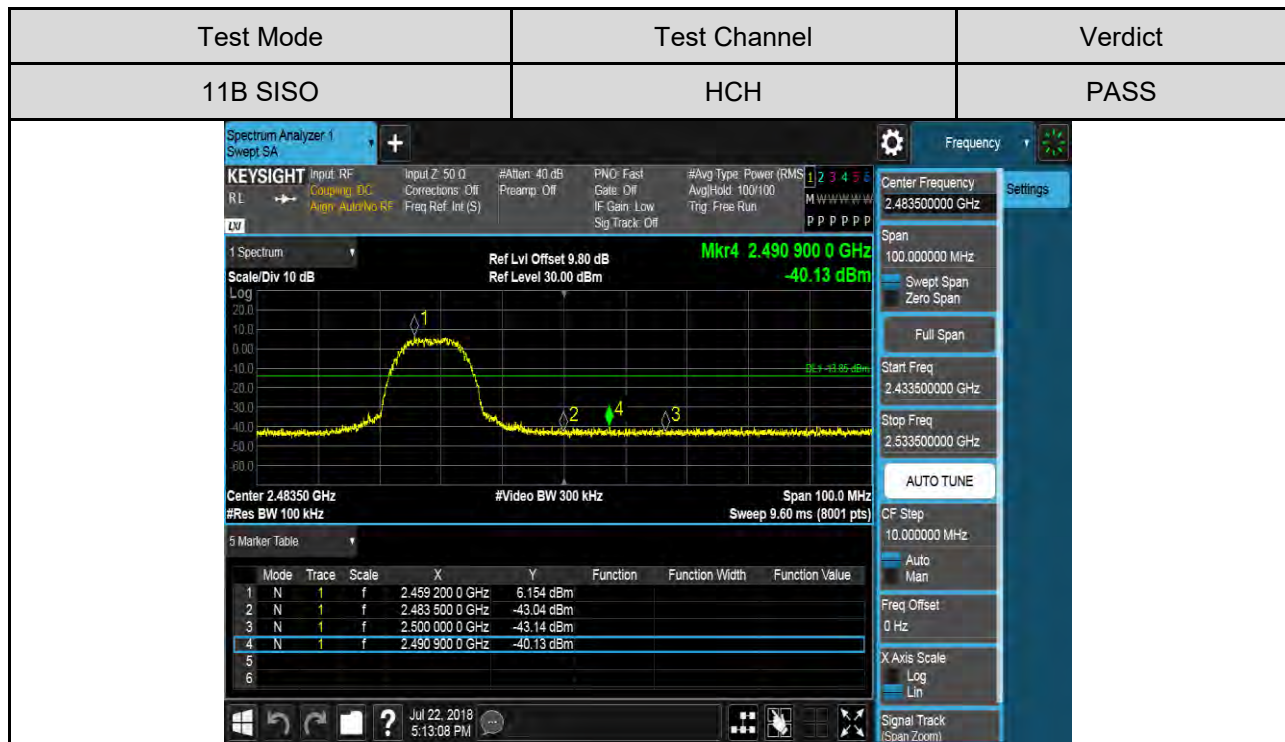
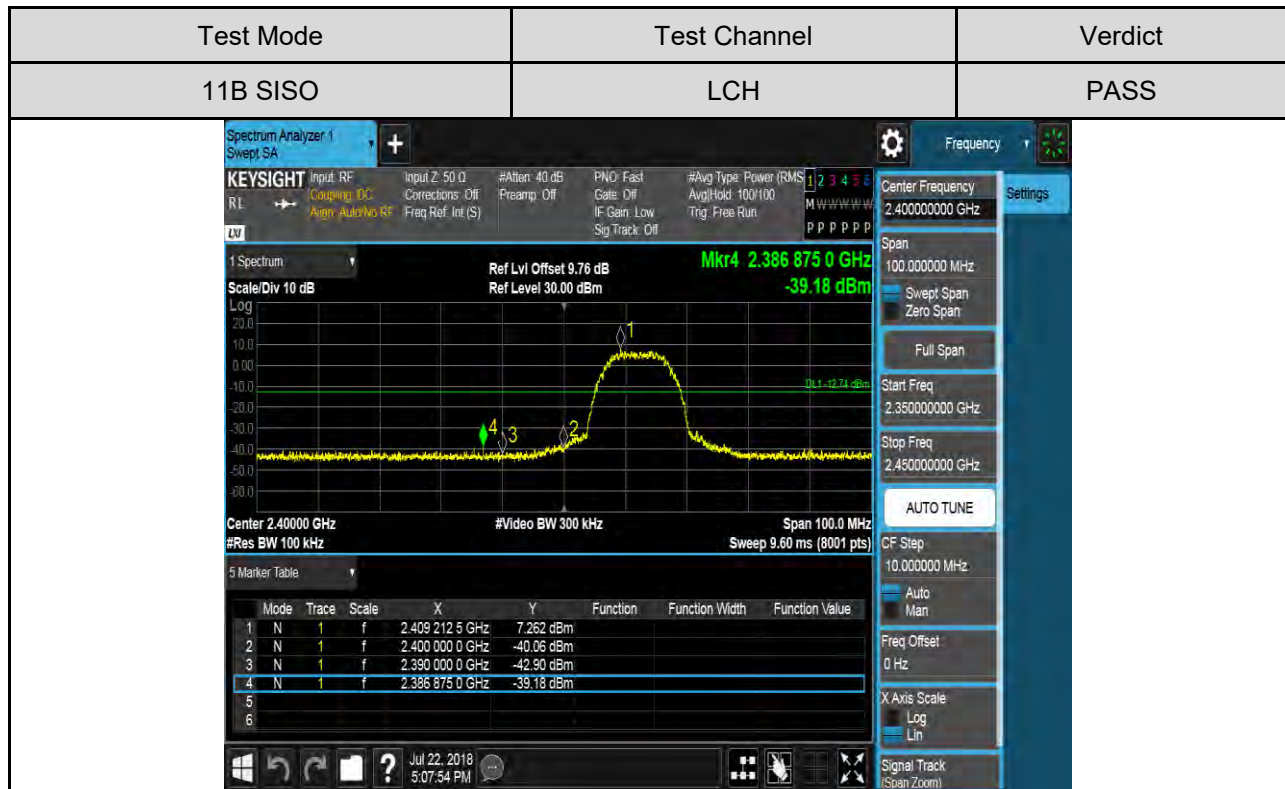


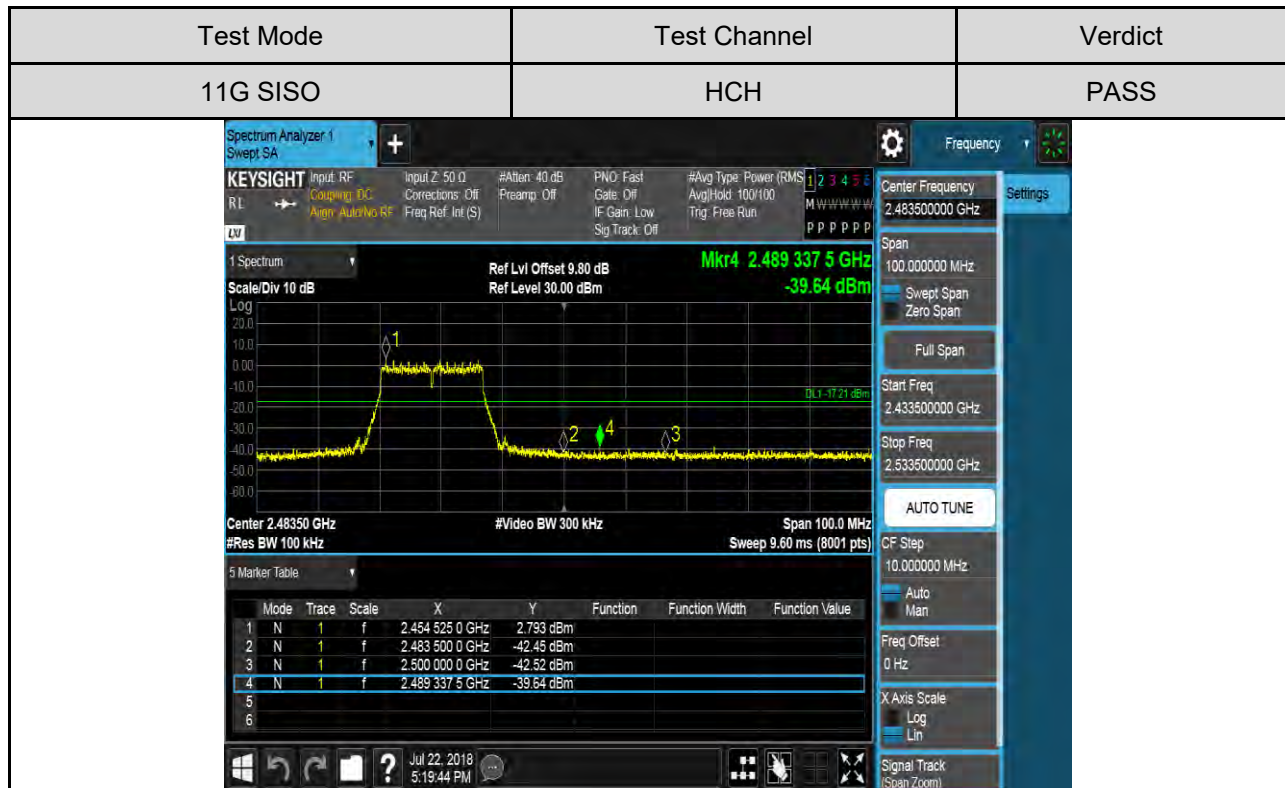
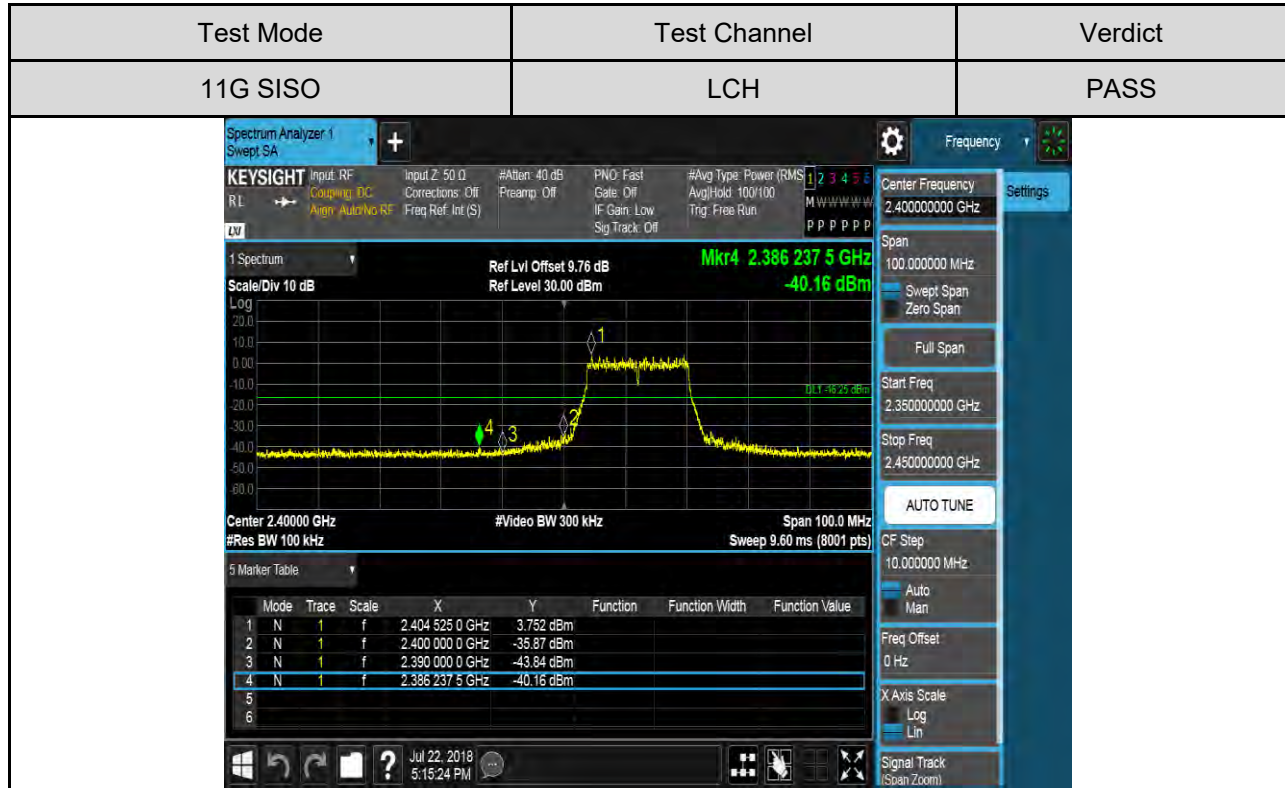
Part I :Conducted Bandedge

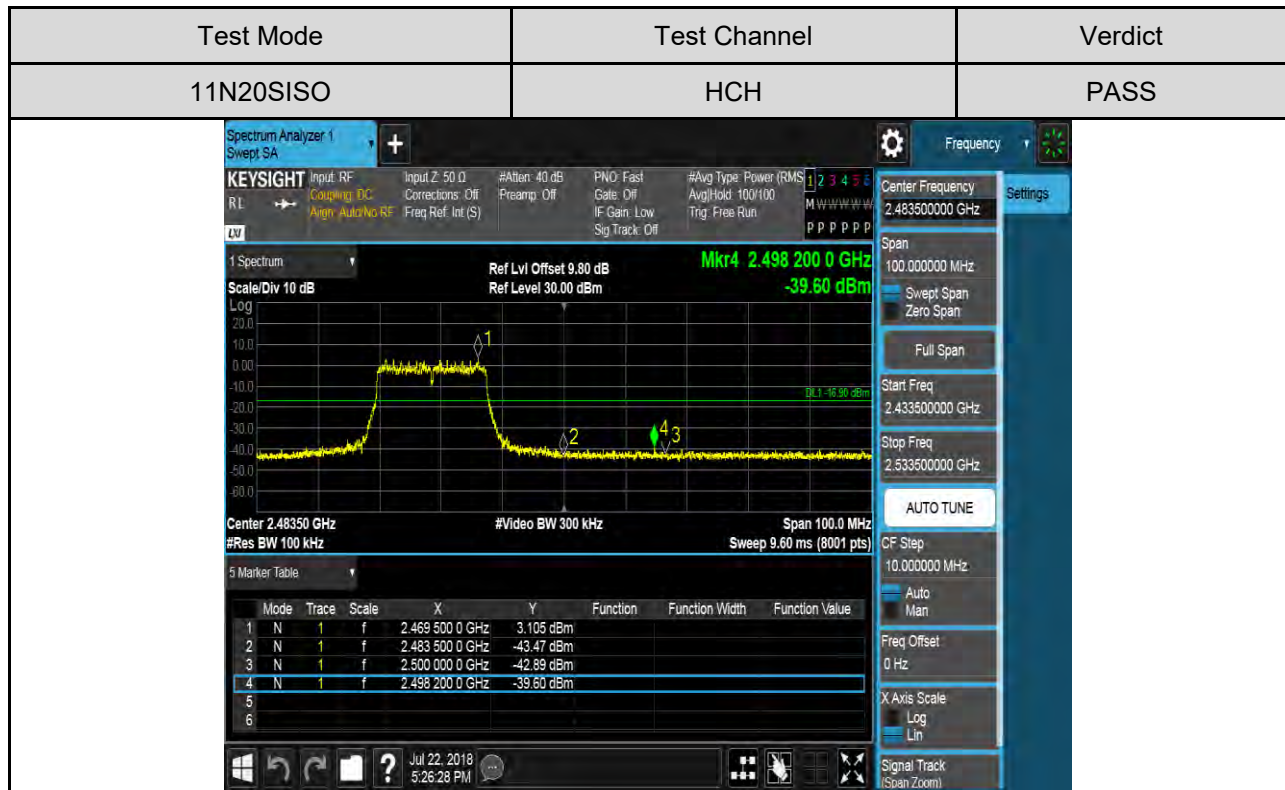
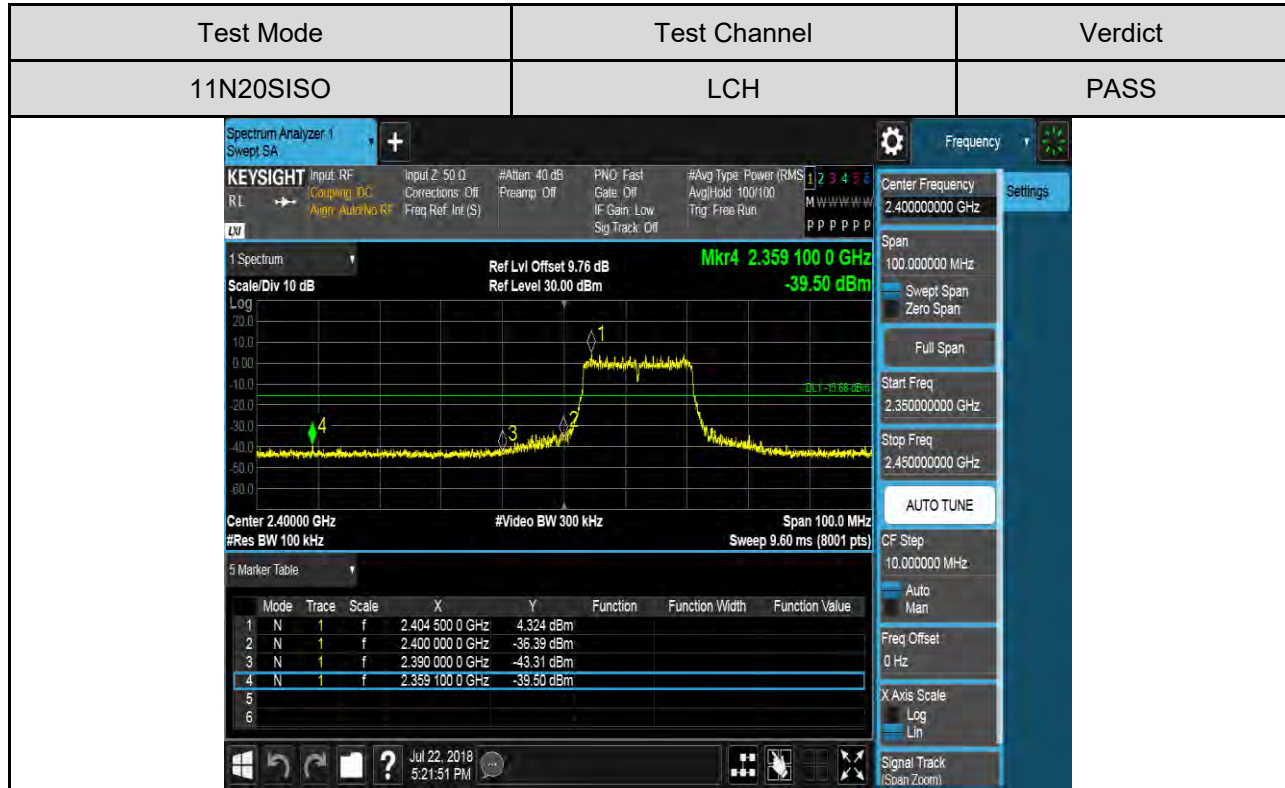
RESULTS TABLE

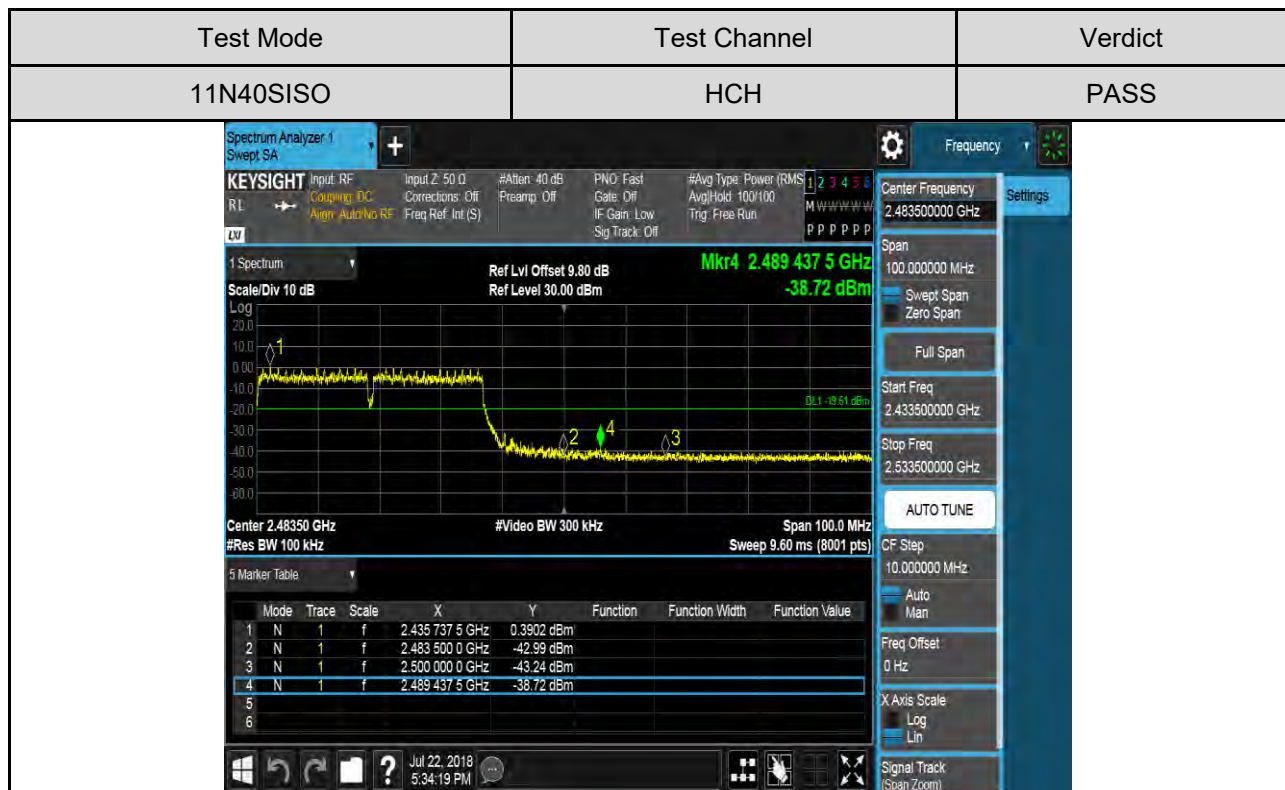
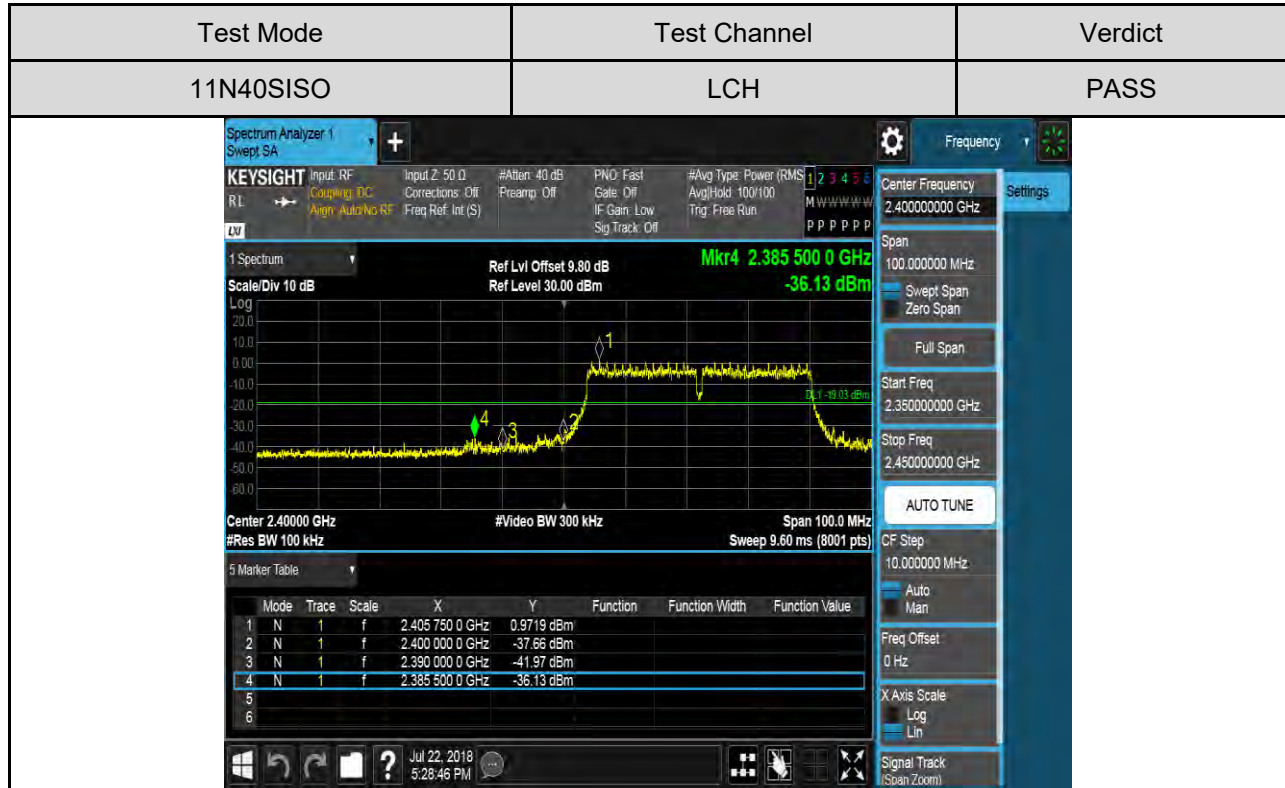
| Test Mode | Test Channel | Carrier Power[dBm] | Max. Spurious Level [dBm] | Limit [dBm] | Verdict |
|-----------|--------------|--------------------|---------------------------|-------------|---------|
| 11B SISO | 2412 | 7.262 | -39.179 | -12.74 | PASS |
| | 2462 | 6.154 | -40.126 | -13.85 | PASS |
| 11G SISO | 2412 | 3.752 | -40.158 | -16.25 | PASS |
| | 2462 | 2.793 | -39.644 | -17.21 | PASS |
| 11N20SISO | 2412 | 4.324 | -39.504 | -15.68 | PASS |
| | 2462 | 3.105 | -39.597 | -16.9 | PASS |
| 11N40SISO | 2422 | 0.972 | -36.132 | -19.03 | PASS |
| | 2452 | 0.390 | -38.717 | -19.61 | PASS |

TEST GRAPHS









Part II :Conducted Spurious Emissions

Test Result Table

| Test Mode | Channel | Pref(dBm) | Puw(dBm) | Verdict |
|-----------|---------|-----------|----------|---------|
| 11B SISO | LCH | 7.105 | <Limit | PASS |
| | MCH | 6.761 | <Limit | PASS |
| | HCH | 6.224 | <Limit | PASS |
| 11G SISO | LCH | 3.689 | <Limit | PASS |
| | MCH | 3.198 | <Limit | PASS |
| | HCH | 2.739 | <Limit | PASS |
| 11N20SISO | LCH | 4.212 | <Limit | PASS |
| | MCH | 3.649 | <Limit | PASS |
| | HCH | 3.249 | <Limit | PASS |
| 11N40SISO | LCH | 0.989 | <Limit | PASS |
| | MCH | 0.628 | <Limit | PASS |
| | HCH | 0.28 | <Limit | PASS |

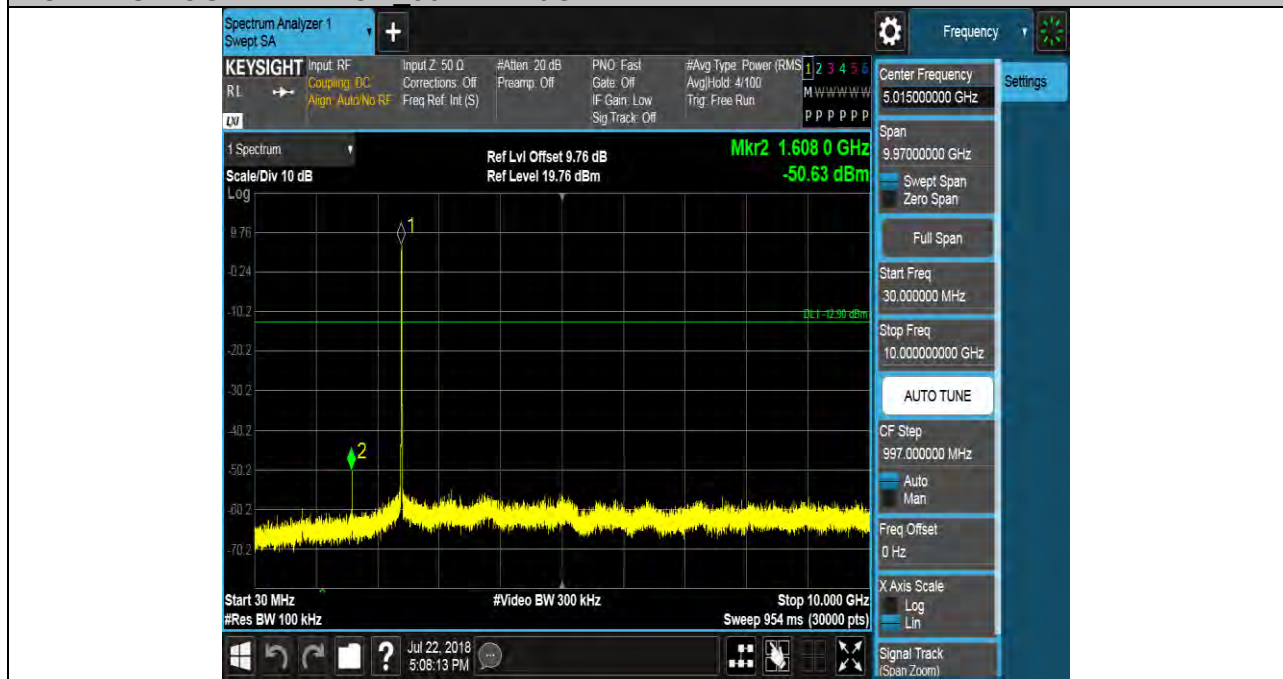
Test Plots

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

Pref test Plot



LCH SPURIOUS EMISSION 30MHz~10GHz



LCH SPURIOUS EMISSION 10GHz~26GHz

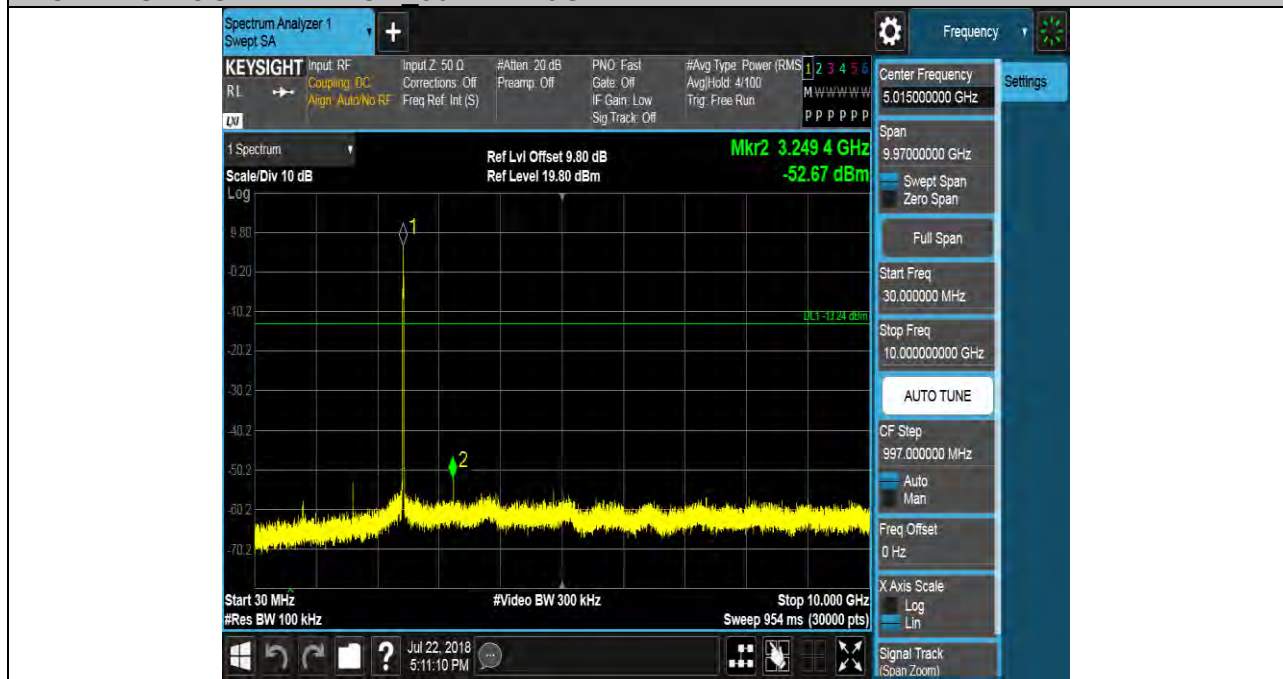


| Test Mode | Channel | Verdict |
|-----------|---------|---------|
| 11B SISO | MCH | PASS |

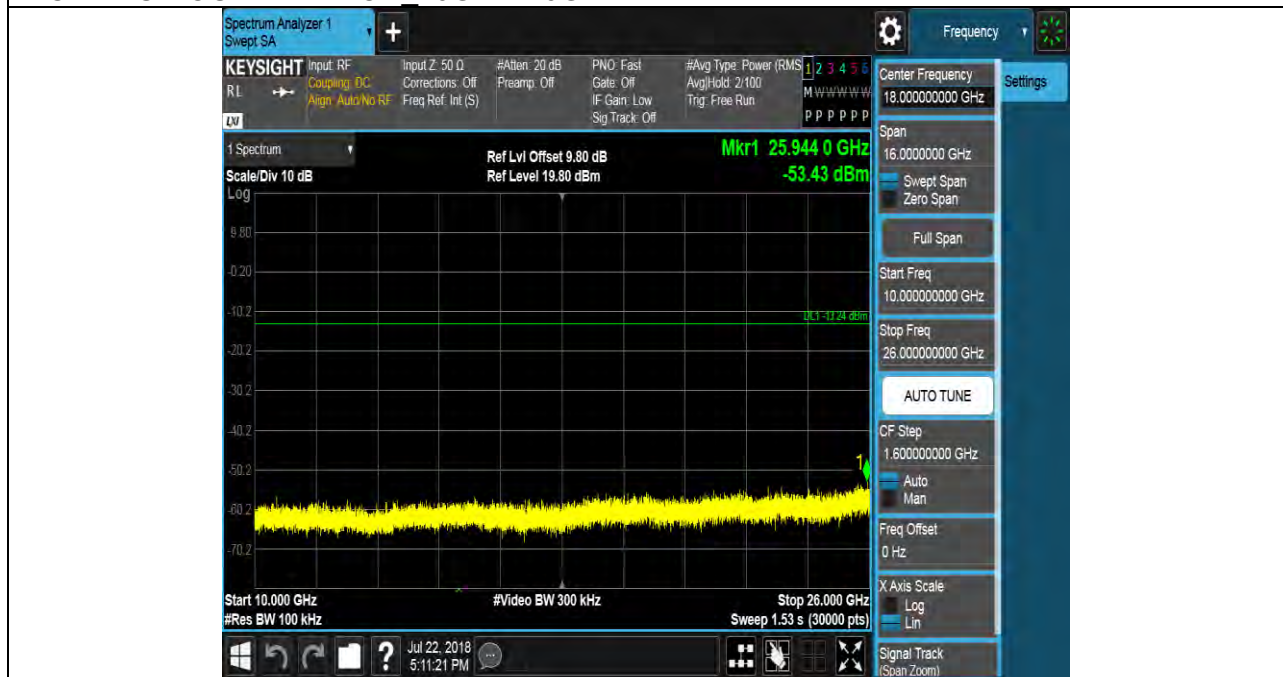
Pref test Plot



MCH SPURIOUS EMISSION 30MHz~10GHz



MCH SPURIOUS EMISSION 10GHz~26GHz

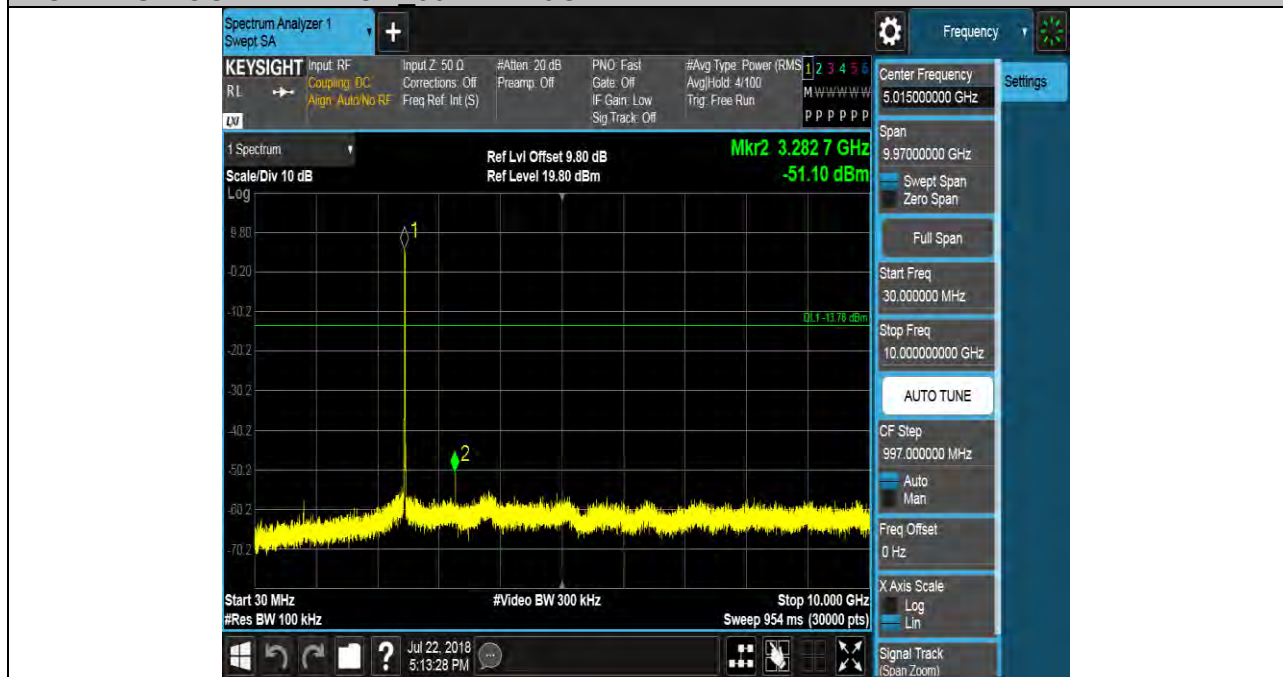


| Test Mode | Channel | Verdict |
|-----------|---------|---------|
| 11B SISO | HCH | PASS |

Pref test Plot



HCH SPURIOUS EMISSION 30MHz~10GHz



HCH SPURIOUS EMISSION 10GHz~26GHz

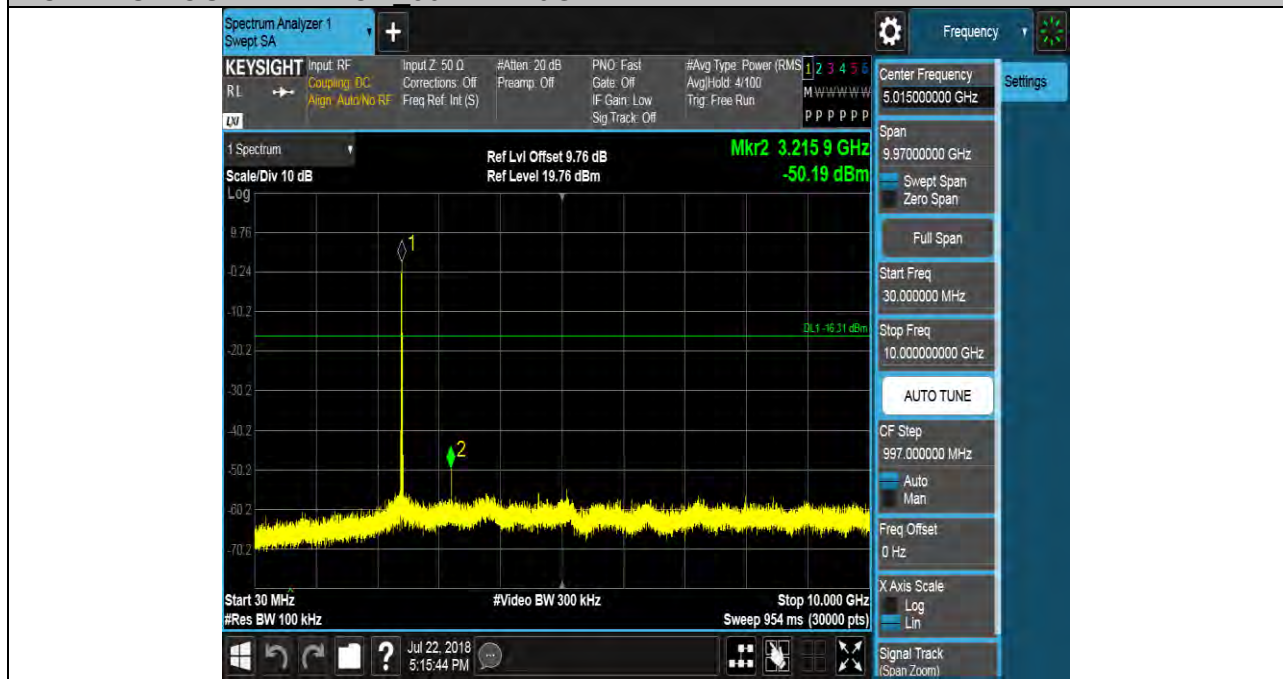


| Test Mode | Channel | Verdict |
|-----------|---------|---------|
| 11G SISO | LCH | PASS |

Pref test Plot



LCH SPURIOUS EMISSION 30MHz~10GHz



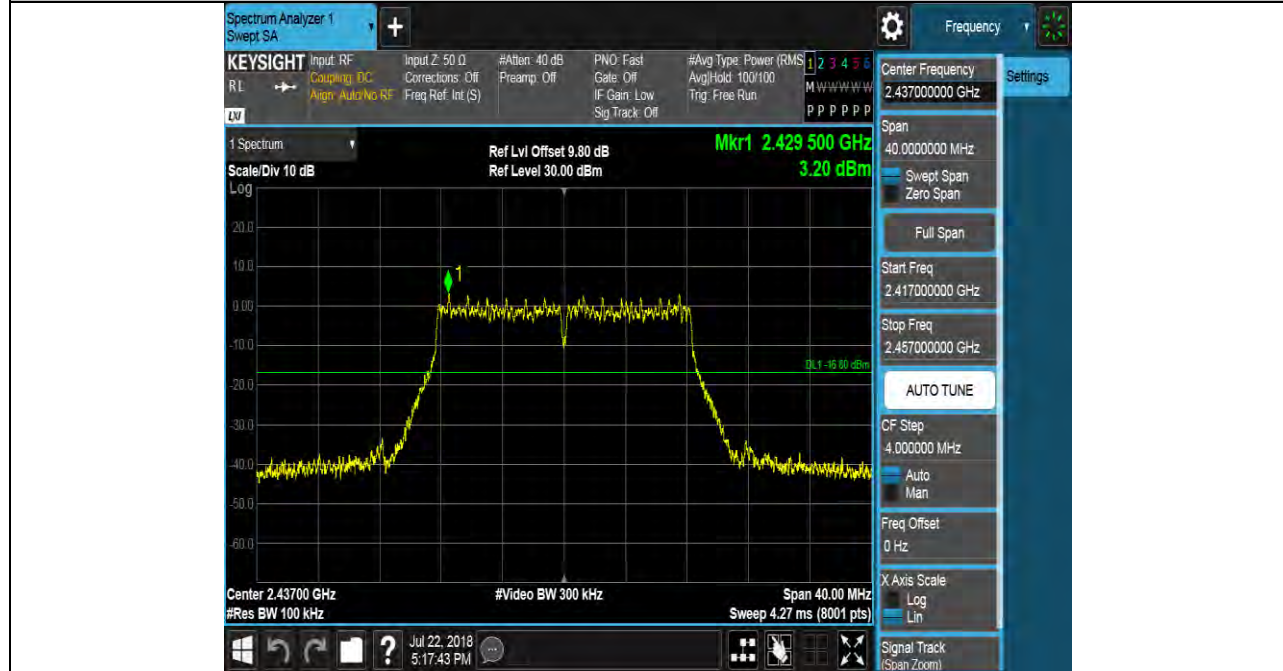
LCH SPURIOUS EMISSION 10GHz~26GHz

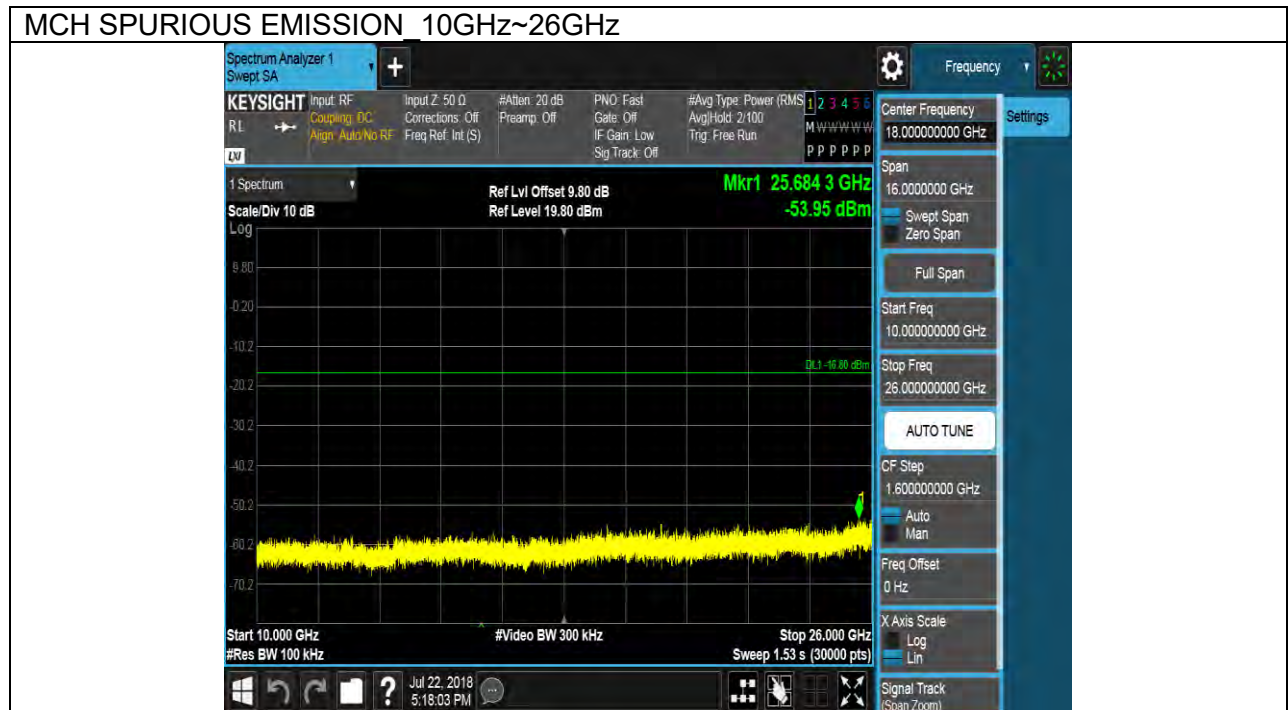
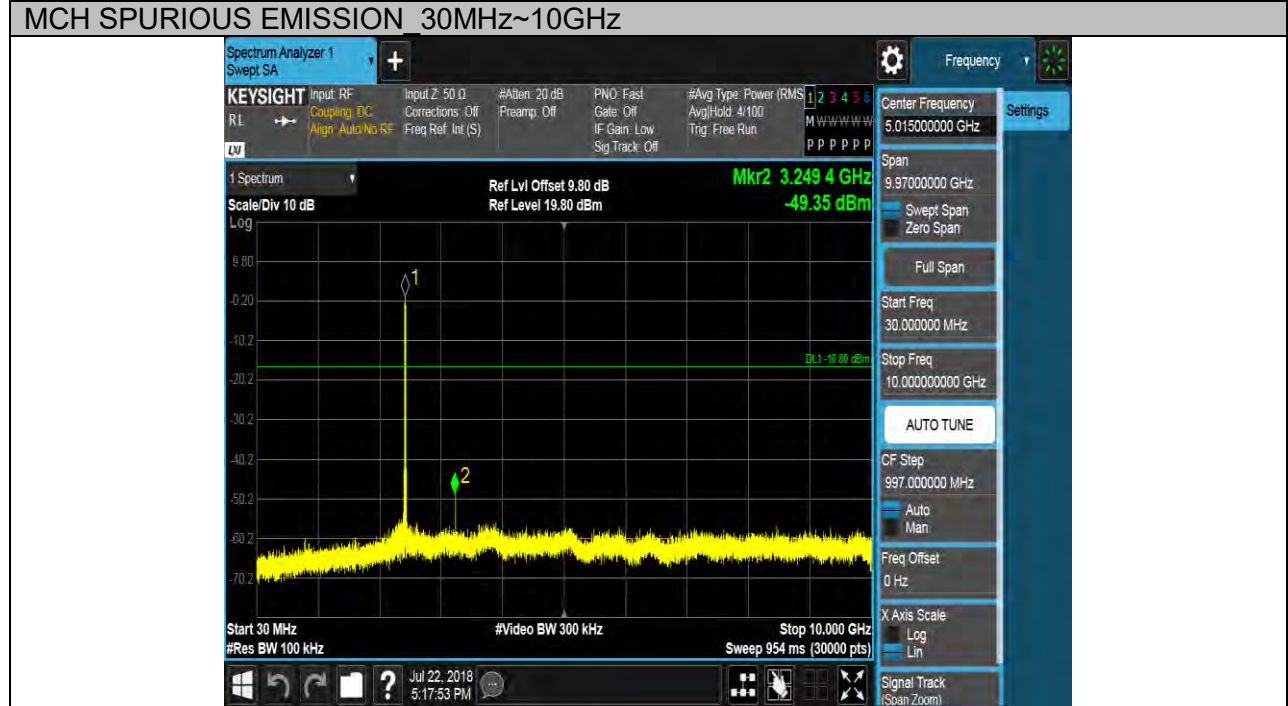


| Test Mode | Channel | Verdict |
|-----------|---------|---------|
| 11G SISO | MCH | PASS |

Pref test Plot

MCH SPURIOUS EMISSION





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

Pref test Plot



HCH SPURIOUS EMISSION 30MHz~10GHz



HCH SPURIOUS EMISSION 10GHz~26GHz

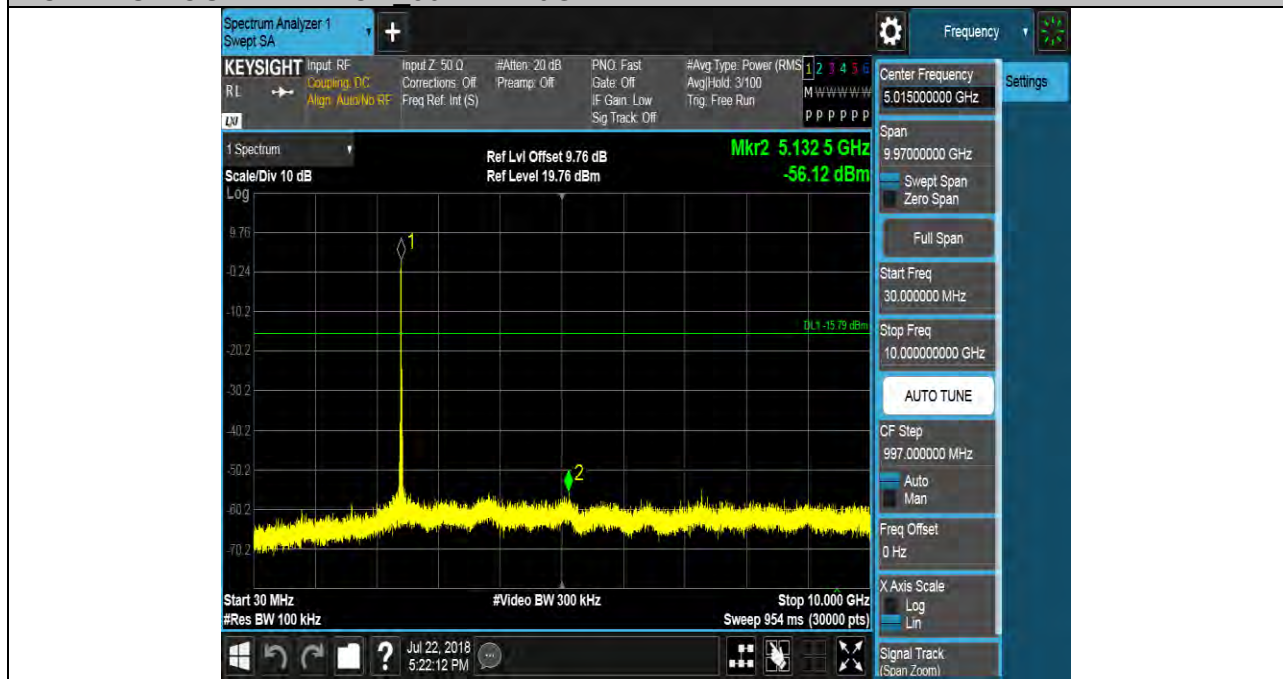


| Test Mode | Channel | Verdict |
|-----------|---------|---------|
| 11N20SISO | LCH | PASS |

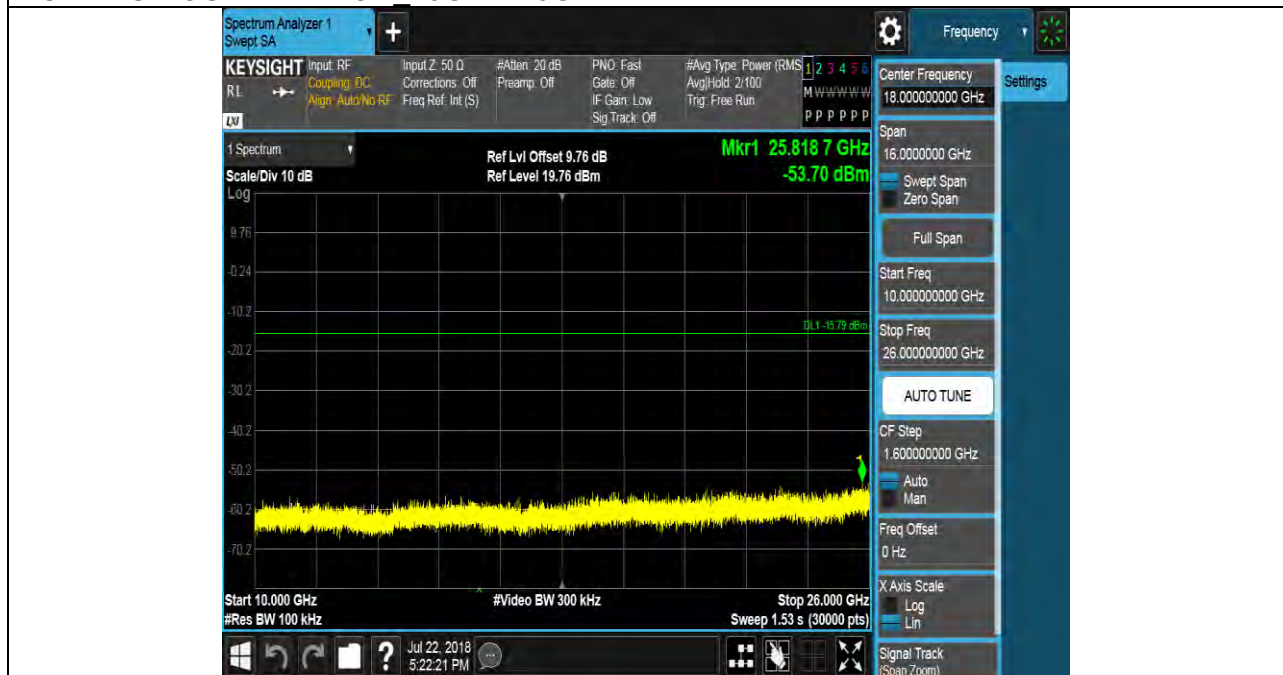
Pref test Plot



LCH SPURIOUS EMISSION 30MHz~10GHz

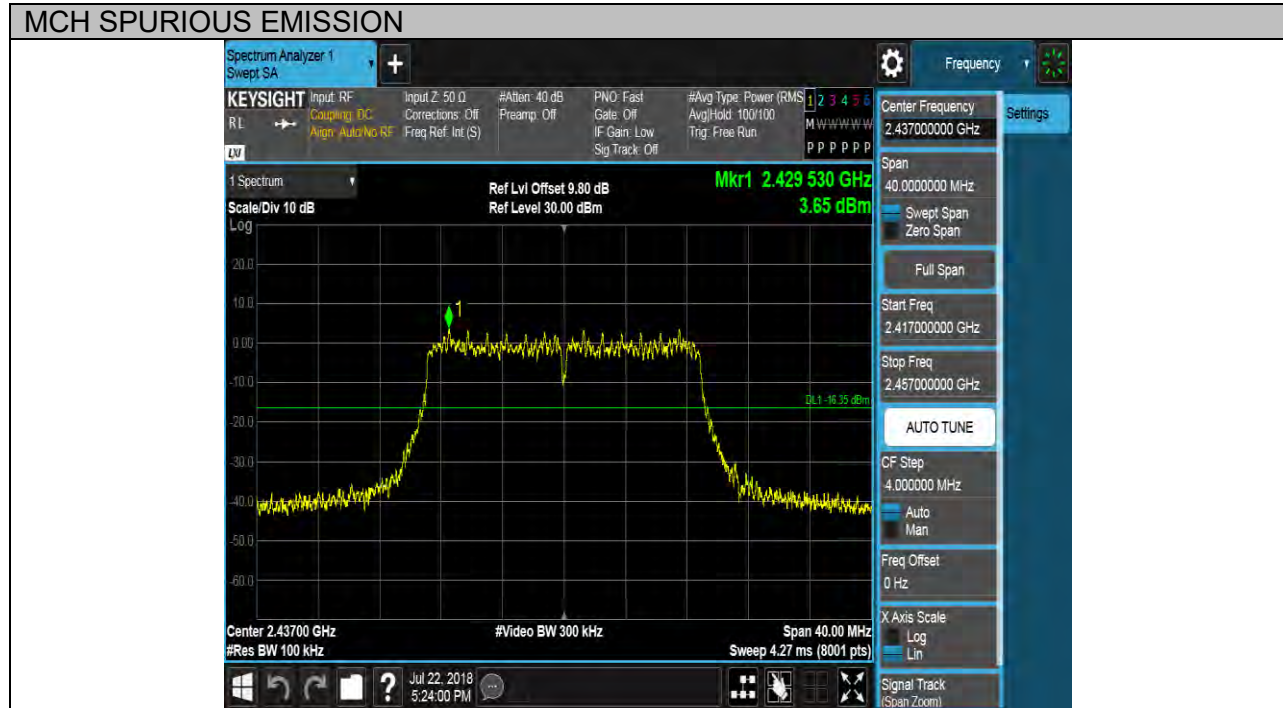


LCH SPURIOUS EMISSION 10GHz~26GHz

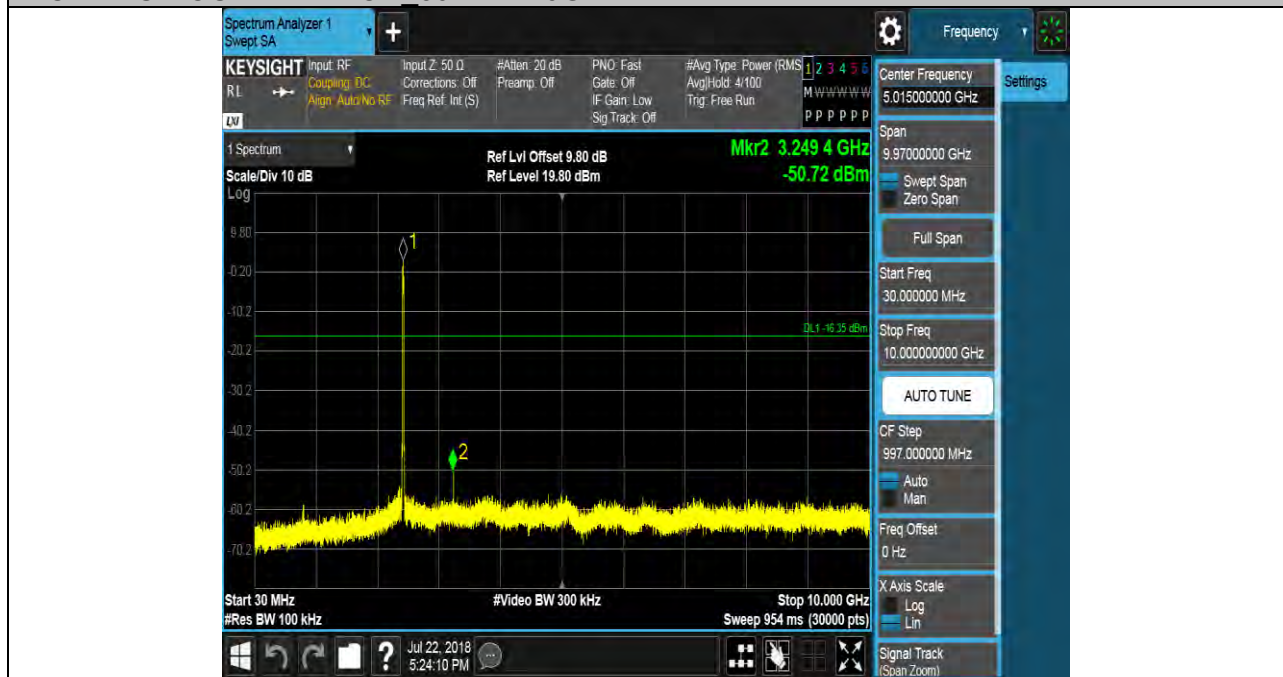


| Test Mode | Channel | Verdict |
|-----------|---------|---------|
| 11N20SISO | MCH | PASS |

Pref test Plot



MCH SPURIOUS EMISSION 30MHz~10GHz



MCH SPURIOUS EMISSION 10GHz~26GHz

