

## FCC Test Report (PART 27)

**Report No.:** RFBEOO-WTW-P21020573

**FCC ID:** MAD-G2021-49-01B

**Test Model:** G2021-49-01B

**Received Date:** Mar. 31, 2021

**Test Date:** May 11 ~ Jun. 24, 2021

**Issued Date:** Jul. 05, 2021

**Applicant:** Microelectronics Technology Inc.

**Address:** No. 1, Innovation Road II, Hsinchu Science Park, Hsinchu 300, Taiwan,  
R.O.C.

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch  
Lin Kou Laboratories

**Lab Address:** No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

**Test Location (1):** No.19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City  
33383, Taiwan

### FCC Registration /

**Designation Number (1):** 788550 / TW0003

**Test Location (2):** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
Taiwan

### FCC Registration /

**Designation Number (2):** 723255 / TW2022



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### Release Control Record

| Issue No.            | Description       | Date Issued   |
|----------------------|-------------------|---------------|
| RFBEOO-WTW-P21020573 | Original release. | Jul. 05, 2021 |

## 1 Certificate of Conformity

**Product:** Dual Mid Band RU

**Brand:** MTI

**Test Model:** G2021-49-01B

**Sample Status:** Engineering sample

**Applicant:** Microelectronics Technology Inc.

**Test Date:** May 11 ~ Jun. 24, 2021

**Standards:** FCC Part 27, Subpart L  
FCC Part 2

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

**Prepared by :** Pettie Chen , **Date:** Jul. 05, 2021  
Pettie Chen / Senior Specialist

**Approved by :** Bruce Chen , **Date:** Jul. 05, 2021  
Bruce Chen / Senior Project Engineer

## 2 Summary of Test Results

| Applied Standard: FCC Part 27, Subpart L & Part 2 |  |        |   |
|---|--|--------|---|
| FCC Clause  | Test Item  | Result | Remarks   |
| 2.1046<br>27.50(d)(2)                             | Equivalent Isotropically radiated power                            | PASS   | Meet the requirement of limit.  |
| 2.1047  | Modulation characteristics   | PASS   | Meet the requirement  |
| 2.1055<br>27.54                                   | Frequency Stability<br>Stay with the authorized bands of operation | PASS   | Meet the requirement of limit.  |
| 2.1049<br>27.53                                   | Occupied Bandwidth   | PASS   | Meet the requirement of limit.  |
| 27.53(h)  | Band Edge Measurements   | PASS   | Meet the requirement of limit.  |
| 27.50(d)(5)                                       | Peak To Average Ratio  | PASS   | Meet the requirement of limit.  |
| 2.1051<br>27.53(h)                                | Conducted Spurious Emissions                                       | PASS   | Meet the requirement of limit.  |
| 2.1053<br>27.53(h)                                | Radiated Spurious Emissions  | PASS   | Meet the requirement of limit.<br>Minimum passing margin is -49.33dB at 5018.75MHz. |

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

### 2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

| Measurement                    | Frequency     | Expanded Uncertainty (k=2) ( $\pm$ ) |
|--------------------------------|---------------|--------------------------------------|
| Radiated Emissions up to 1 GHz | 9kHz ~ 30MHz  | 3.1 dB                               |
|                                | 30MHz ~ 1GHz  | 5.4 dB                               |
| Radiated Emissions above 1 GHz | 1GHz ~ 18GHz  | 5.0 dB                               |
|                                | 18GHz ~ 40GHz | 5.3 dB                               |

## 2.2 Test Site and Instruments

### For radiated spurious emissions test:

| Description & Manufacturer                 | Model No.            | Serial No.  | Cal. Date                      | Cal. Due                       |
|--|----------------------|-------------|--------------------------------|--------------------------------|
| Test Receiver<br>Keysight                  | N9038A               | MY54450088  | July 06, 2020                  | July 05, 2021                  |
| Pre-Amplifier<br>EMCI                      | EMC001340            | 980142      | May 24, 2021                   | May 23, 2022                   |
| Loop Antenna<br>Electro-Metrics            | EM-6879              | 264         | Mar. 05, 2021                  | Mar. 04, 2022                  |
| RF Cable                                   | 5D-FB                | LOOPCAB-001 | Jan. 07, 2021                  | Jan. 06, 2022                  |
| RF Cable                                   | 5D-FB                | LOOPCAB-002 | Jan. 07, 2021                  | Jan. 06, 2022                  |
| Pre-Amplifier<br>Mini-Circuits             | ZFL-1000VH2          | QA0838008   | Oct. 20, 2020                  | Oct. 19, 2021                  |
| Trilog Broadband<br>Antenna<br>SCHWARZBECK | VULB 9168            | 9168-361    | Nov. 05, 2020                  | Nov. 04, 2021                  |
| RF Cable                                   | 8D                   | 966-3-1     | Mar. 16, 2021                  | Mar. 15, 2022                  |
| RF Cable                                   | 8D                   | 966-3-2     | Mar. 16, 2021                  | Mar. 15, 2022                  |
| RF Cable                                   | 8D                   | 966-3-3     | Mar. 16, 2021                  | Mar. 15, 2022                  |
| Fixed attenuator<br>Mini-Circuits          | UNAT-5+              | PAD-3m-3-01 | Sep. 24, 2020                  | Sep. 23, 2021                  |
| Horn_Antenna<br>SCHWARZBECK                | BBHA9120-D           | 9120D-406   | Nov. 22, 2020                  | Nov. 21, 2021                  |
| Pre-Amplifier<br>EMCI                      | EMC12630SE           | 980384      | Jan. 11, 2021                  | Jan. 10, 2022                  |
| RF Cable                                   | EMC104-SM-SM-1500    | 180504      | Apr. 26, 2021                  | Apr. 25, 2022                  |
| RF Cable                                   | EMC104-SM-SM-2000    | 180601      | Jun. 09, 2020<br>Jun. 08, 2021 | Jun. 08, 2021<br>Jun. 07, 2022 |
| RF Cable                                   | EMC104-SM-SM-6000    | 210201      | May 13, 2021                   | May 12, 2022                   |
| Spectrum Analyzer<br>Keysight              | N9030A               | MY54490679  | Jul. 13, 2020                  | Jul. 12, 2021                  |
| Pre-Amplifier<br>EMCI                      | EMC184045SE          | 980387      | Jan. 11, 2021                  | Jan. 10, 2022                  |
| Horn_Antenna<br>SCHWARZBECK                | BBHA 9170            | BBHA9170519 | Nov. 22, 2020                  | Nov. 21, 2021                  |
| RF Cable                                   | EMC102-KM-KM-1200    | 160924      | Jan. 11, 2021                  | Jan. 10, 2022                  |
| RF Cable                                   | EMC-KM-KM-4000       | 200214      | Mar. 10, 2021                  | Mar. 09, 2022                  |
| Software                                   | ADT_Radiated_V8.7.08 | NA          | NA                             | NA                             |
| Antenna Tower & Turn<br>Table<br>Max-Full  | MF-7802              | MF780208406 | NA                             | NA                             |
| Boresight Antenna<br>Fixture               | FBA-01               | FBA-SIP01   | NA                             | NA                             |

#### Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Hsinchu 966 Chamber No. 3.
3. Tested Date: Jun. 16 ~ Jun. 22, 2021

**For other test:**

| Description & Manufacturer                  | Model No.                        | Serial No.   | Cal. Date     | Cal. Due      |
|---|----------------------------------|--------------|---------------|---------------|
| Spectrum Analyzer<br>Keysight               | N9030B                           | MY60070562   | Jan. 06, 2021 | Jan. 05, 2022 |
| Fixed Attenuator<br>Woken                   | 00800N1G03H-30                   | 01           | NA            | NA            |
| Temperature & Humidity<br>Chamber<br>TERCHY | MHU-225AU                        | 911033       | Nov. 24, 2020 | Nov. 23, 2021 |
| True RMS Clamp Meter<br>FLUKE               | 325                              | 31130711WS   | Jun. 06, 2020 | Jun. 05, 2021 |
|   |                                  |              | Jun. 02, 2021 | Jun. 01, 2022 |
| DC power supply<br>Chroma                   | 62024P-80-60                     | 62024PA00674 | NA            | NA            |
| Software                                    | ADT_RF Test<br>Software V6.6.5.4 | NA           | NA            | NA            |

- NOTE:**
- 1. The test was performed in Oven room 2.
  - . The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
  - . Tested Date: May 11 to Jun. 24, 2021



### 3 General Information

#### 3.1 General Description of EUT

|                       |                            |                          |                       |                       |
|-----------------------|----------------------------|--------------------------|-----------------------|-----------------------|
| Product               | Dual Mid Band RU           |                          |                       |                       |
| Brand                 | MTI                        |                          |                       |                       |
| Test Model            | G2021-49-01B               |                          |                       |                       |
| Status of EUT         | Engineering sample         |                          |                       |                       |
| Power Supply Rating   | -40.5Vdc to -58.5Vdc       |                          |                       |                       |
| Modulation Type       | QPSK, 16QAM, 64QAM, 256QAM |                          |                       |                       |
| Modulation Technology | 5G NR FDD                  |                          |                       |                       |
| Operating Frequency   | Band n66                   | Channel Bandwidth: 5MHz  | ANT0                  | 2112.5MHz ~ 2197.5MHz |
|                       |                            |                          | ANT1                  |                       |
|                       |                            |                          | ANT2                  |                       |
|                       |                            |                          | ANT3                  |                       |
|                       | Band n66                   | Channel Bandwidth: 10MHz | ANT0                  | 2115.0MHz ~ 2195.0MHz |
|                       |                            |                          | ANT1                  |                       |
|                       |                            |                          | ANT2                  |                       |
|                       |                            |                          | ANT3                  |                       |
|                       | Band n66                   | Channel Bandwidth: 15MHz | ANT0                  | 2117.5MHz ~ 2192.5MHz |
|                       |                            |                          | ANT1                  |                       |
|                       |                            |                          | ANT2                  |                       |
|                       |                            |                          | ANT3                  |                       |
|                       | Band n66                   | Channel Bandwidth: 20MHz | ANT0                  | 2120.0MHz ~ 2190.0MHz |
|                       |                            |                          | ANT1                  |                       |
|                       |                            |                          | ANT2                  |                       |
|                       |                            |                          | ANT3                  |                       |
| Band n70              | Channel Bandwidth: 5MHz    | ANT0                     | 1997.5MHz ~ 2017.5MHz |                       |
|                       |                            | ANT1                     |                       |                       |
|                       |                            | ANT2                     |                       |                       |
|                       |                            | ANT3                     |                       |                       |
| Band n70              | Channel Bandwidth: 10MHz   | ANT0                     | 2000.0MHz ~ 2015.0MHz |                       |
|                       |                            | ANT1                     |                       |                       |
|                       |                            | ANT2                     |                       |                       |
|                       |                            | ANT3                     |                       |                       |
| Band n70              | Channel Bandwidth: 15MHz   | ANT0                     | 2002.5MHz ~ 2012.5MHz |                       |
|                       |                            | ANT1                     |                       |                       |
|                       |                            | ANT2                     |                       |                       |
|                       |                            | ANT3                     |                       |                       |
| Band n70              | Channel Bandwidth: 20MHz   | ANT0                     | 2005.0MHz ~ 2010.0MHz |                       |
|                       |                            | ANT1                     |                       |                       |
|                       |                            | ANT2                     |                       |                       |
|                       |                            | ANT3                     |                       |                       |

|                          |                          |                          |                          |                      |         |         |         |
|--------------------------|--------------------------|--------------------------|--------------------------|----------------------|---------|---------|---------|
| Max. EIRP Power          | Band n66                 | ANT0                     | Channel Bandwidth: 5MHz  | 955.82 W/MHz (16QAM) |         |         |         |
|                          |                          | ANT1                     |                          |                      |         |         |         |
|                          |                          | ANT2                     |                          |                      |         |         |         |
|                          |                          | ANT3                     |                          |                      |         |         |         |
|                          |                          | ANT0                     | Channel Bandwidth: 10MHz | 769.77 W/MHz (16QAM) |         |         |         |
|                          |                          | ANT1                     |                          |                      |         |         |         |
|                          |                          | ANT2                     |                          |                      |         |         |         |
|                          |                          | ANT3                     |                          |                      |         |         |         |
|                          |                          | ANT0                     | Channel Bandwidth: 15MHz | 588.16 W/MHz (16QAM) |         |         |         |
|                          |                          | ANT1                     |                          |                      |         |         |         |
|                          |                          | ANT2                     |                          |                      |         |         |         |
|                          |                          | ANT3                     |                          |                      |         |         |         |
|                          | ANT0                     | Channel Bandwidth: 20MHz | 465.69 W/MHz (16QAM)     |                      |         |         |         |
|                          | ANT1                     |                          |                          |                      |         |         |         |
|                          | ANT2                     |                          |                          |                      |         |         |         |
|                          | ANT3                     |                          |                          |                      |         |         |         |
| Band n70                 | Channel Bandwidth: 5MHz  | ANT0                     | 1502.68 W/MHz (16QAM)    |                      |         |         |         |
|                          |                          | ANT1                     |                          |                      |         |         |         |
|                          |                          | ANT2                     |                          |                      |         |         |         |
|                          |                          | ANT3                     |                          |                      |         |         |         |
|                          | Channel Bandwidth: 10MHz | ANT0                     | 781.20 W/MHz (16QAM)     |                      |         |         |         |
|                          |                          | ANT1                     |                          |                      |         |         |         |
|                          |                          | ANT2                     |                          |                      |         |         |         |
|                          |                          | ANT3                     |                          |                      |         |         |         |
|                          | Channel Bandwidth: 15MHz | ANT0                     | 620.41 W/MHz (16QAM)     |                      |         |         |         |
|                          |                          | ANT1                     |                          |                      |         |         |         |
|                          |                          | ANT2                     |                          |                      |         |         |         |
|                          |                          | ANT3                     |                          |                      |         |         |         |
| Channel Bandwidth: 20MHz | ANT0                     | 476.24 W/MHz (16QAM)     |                          |                      |         |         |         |
|                          | ANT1                     |                          |                          |                      |         |         |         |
|                          | ANT2                     |                          |                          |                      |         |         |         |
|                          | ANT3                     |                          |                          |                      |         |         |         |
| Emission Designator      | Band n66                 | Channel Bandwidth: 5MHz  | ANT0                     | 4M48G7D              | 4M47D7W | 4M46D7W | 4M46D7W |
|                          |                          |                          | ANT1                     | 4M47G7D              | 4M47D7W | 4M46D7W | 4M46D7W |
|                          |                          |                          | ANT2                     | 4M48G7D              | 4M47D7W | 4M46D7W | 4M46D7W |
|                          |                          |                          | ANT3                     | 4M48G7D              | 4M48D7W | 4M46D7W | 4M46D7W |
|                          |                          | Channel Bandwidth: 10MHz | ANT0                     | 9M16G7D              | 9M24D7W | 9M29D7W | 9M28D7W |
|                          |                          |                          | ANT1                     | 9M16G7D              | 9M24D7W | 9M29D7W | 9M28D7W |
|                          |                          |                          | ANT2                     | 9M16G7D              | 9M24D7W | 9M29D7W | 9M28D7W |
|                          |                          |                          | ANT3                     | 9M16G7D              | 9M24D7W | 9M29D7W | 9M28D7W |
|                          |                          | Channel Bandwidth: 15MHz | ANT0                     | 14M1G7D              | 14M1D7W | 14M1D7W | 14M1D7W |
|                          |                          |                          | ANT1                     | 14M1G7D              | 14M1D7W | 14M1D7W | 14M1D7W |
|                          |                          |                          | ANT2                     | 14M1G7D              | 14M1D7W | 14M1D7W | 14M1D7W |
|                          |                          |                          | ANT3                     | 14M1G7D              | 14M1D7W | 14M1D7W | 14M1D7W |
|                          |                          | Channel Bandwidth: 20MHz | ANT0                     | 18M9G7D              | 18M9D7W | 18M9D7W | 18M9D7W |
|                          |                          |                          | ANT1                     | 18M9G7D              | 18M9D7W | 18M9D7W | 18M9D7W |
|                          |                          |                          | ANT2                     | 18M9G7D              | 18M9D7W | 18M9D7W | 18M9D7W |
|                          |                          |                          | ANT3                     | 18M9G7D              | 18M9D7W | 18M9D7W | 18M9D7W |

| Emission Designator | Band n70 | Channel Bandwidth:<br>5MHz  | ANT0  | QPSK    | 16QAM   | 64QAM   | 256QAM  |  |  |
|---------------------|----------|-----------------------------|---|---------|---------|---------|---------|--|--|
|                     |          |                             | ANT1  | 4M48G7D | 4M48D7W | 4M46D7W | 4M46D7W |  |  |
|                     |          |                             | ANT2  | 4M48G7D | 4M48D7W | 4M46D7W | 4M46D7W |  |  |
|                     |          |                             | ANT3  | 4M48G7D | 4M48D7W | 4M48D7W | 4M46D7W |  |  |
|                     |          | Channel Bandwidth:<br>10MHz | ANT0  | 9M16G7D | 9M24D7W | 9M29D7W | 9M28D7W |  |  |
|                     |          |                             | ANT1  | 9M16G7D | 9M24D7W | 9M29D7W | 9M28D7W |  |  |
|                     |          |                             | ANT2  | 9M16G7D | 9M24D7W | 9M29D7W | 9M28D7W |  |  |
|                     |          |                             | ANT3  | 9M16G7D | 9M24D7W | 9M29D7W | 9M28D7W |  |  |
|                     |          | Channel Bandwidth:<br>15MHz | ANT0  | 14M1G7D | 14M1D7W | 14M1D7W | 14M1D7W |  |  |
|                     |          |                             | ANT1  | 14M1G7D | 14M1D7W | 14M1D7W | 14M1D7W |  |  |
|                     |          |                             | ANT2  | 14M1G7D | 14M1D7W | 14M1D7W | 14M1D7W |  |  |
|                     |          |                             | ANT3  | 14M1G7D | 14M1D7W | 14M1D7W | 14M1D7W |  |  |
|                     |          | Channel Bandwidth:<br>20MHz | ANT0  | 18M9G7D | 18M9D7W | 18M9D7W | 18M9D7W |  |  |
|                     |          |                             | ANT1  | 18M9G7D | 18M9D7W | 18M9D7W | 18M9D7W |  |  |
|                     |          |                             | ANT2  | 18M9G7D | 18M9D7W | 18M9D7W | 18M9D7W |  |  |
|                     |          |                             | ANT3  | 18M9G7D | 18M9D7W | 18M9D7W | 18M9D7W |  |  |
|                     |          | Antenna Type                | Directional Cross-Polarized Sector antenna with<br>Band n66 Gain = 15 dBi<br>Band n70 Gain = 17 dBi |         |         |         |         |  |  |
|                     |          | Antenna Connector           | 4x4.3-10 Female   |         |         |         |         |  |  |
|                     |          | Accessory Device            | NA  |         |         |         |         |  |  |
|                     |          | Data Cable Supplied         | NA  |         |         |         |         |  |  |

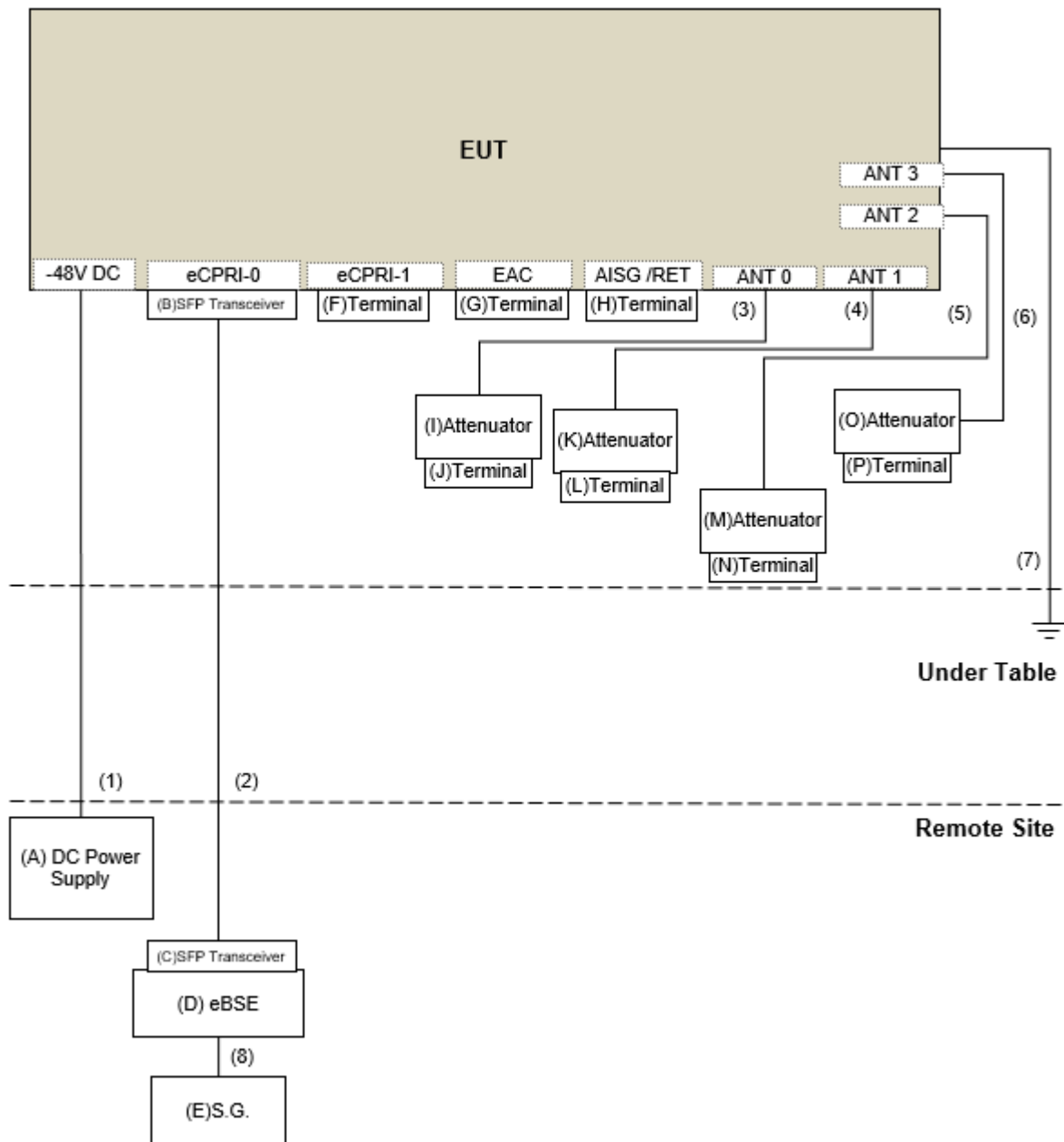
Note:

1. The EUT incorporates a MIMO function.

| Band n66          |                            |                       |     |
|-------------------|----------------------------|-----------------------|-----|
| Channel Bandwidth | Modulation                 | TX & RX configuration |     |
| 5MHz              | QPSK, 16QAM, 64QAM, 256QAM | 4TX                   | 4RX |
| 10MHz             | QPSK, 16QAM, 64QAM, 256QAM | 4TX                   | 4RX |
| 15MHz             | QPSK, 16QAM, 64QAM, 256QAM | 4TX                   | 4RX |
| 20MHz             | QPSK, 16QAM, 64QAM, 256QAM | 4TX                   | 4RX |
| Band n70          |                            |                       |     |
| Channel Bandwidth | Modulation                 | TX & RX configuration |     |
| 5MHz              | QPSK, 16QAM, 64QAM, 256QAM | 4TX                   | 4RX |
| 10MHz             | QPSK, 16QAM, 64QAM, 256QAM | 4TX                   | 4RX |
| 15MHz             | QPSK, 16QAM, 64QAM, 256QAM | 4TX                   | 4RX |
| 20MHz             | QPSK, 16QAM, 64QAM, 256QAM | 4TX                   | 4RX |

2. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.
3. The above antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.
4. Based on the maximum RF power (conducted & EIRP) listed in this report, considerations pertaining to the maximum allowed EIRP (conducted power level), signal type and antenna gain should be considered for each installation.

### 3.2 Configuration of System under Test



### 3.2.1 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| No. | Product         | Brand   | Model No. | Serial No. | FCC ID | Remark             |
|-----|-----------------|---------|-----------|------------|--------|--------------------|
| A   | DC Power Supply | NA      | NA        | NA         | NA     | Supplied by client |
| B   | SFP Transceiver | NA      | NA        | NA         | NA     | Supplied by client |
| C   | SFP Transceiver | NA      | NA        | NA         | NA     | Supplied by client |
| D   | eBSE (Note 2)   | NA      | NA        | NA         | NA     | Supplied by client |
| E   | S.G             | Agilent | E4438C    | NA         | NA     | Provided by Lab    |
| F   | Terminal        | NA      | NA        | NA         | NA     | Supplied by client |
| G   | Terminal        | NA      | NA        | NA         | NA     | Supplied by client |
| H   | Terminal        | NA      | NA        | NA         | NA     | Supplied by client |
| I   | Attenuator      | NA      | NA        | NA         | NA     | Supplied by client |
| J   | Terminal        | NA      | NA        | NA         | NA     | Supplied by client |
| K   | Attenuator      | NA      | NA        | NA         | NA     | Supplied by client |
| L   | Terminal        | NA      | NA        | NA         | NA     | Supplied by client |
| M   | Attenuator      | NA      | NA        | NA         | NA     | Supplied by client |
| N   | Terminal        | NA      | NA        | NA         | NA     | Supplied by client |
| O   | Attenuator      | NA      | NA        | NA         | NA     | Supplied by client |
| P   | Terminal        | NA      | NA        | NA         | NA     | Supplied by client |

**NOTE:**

1. All power cords of the above support units are non-shielded (1.8 m).
2. eBSE: Based Station Emulator which is to transmit/receive the waveform

| No. | Cable          | Qty. | Length (m) | Shielded (Yes/ No) | Cores (Number) | Remark             |
|-----|----------------|------|------------|--------------------|----------------|--------------------|
| 1   | DC Power Cable | 1    | 10         | Yes                | 0              | Supplied by client |
| 2   | Coaxial Cable  | 1    | 10         | Yes                | 0              | Supplied by client |
| 3   | RF Cable       | 1    | 1.5        | Yes                | 0              | Supplied by client |
| 4   | RF Cable       | 1    | 1.5        | Yes                | 0              | Supplied by client |
| 5   | RF Cable       | 1    | 1.5        | Yes                | 0              | Supplied by client |
| 6   | RF Cable       | 1    | 1.5        | Yes                | 0              | Supplied by client |
| 7   | GND Cable      | 1    | 3          | No                 | 0              | Provided by Lab    |
| 8   | RF Cable       | 1    | 3          | No                 | 0              | Supplied by client |

### 3.3 Test Mode Applicability and Tested Channel Detail

#### Band n66:

Following channel(s) was (were) selected for the final test as listed below:

| Test Item                  | Available Frequency (MHz) | Tested Channel  | Channel Bandwidth       | Modulation                    |
|----------------------------|---------------------------|---|-------------------------|-------------------------------|
| Output Power               | 2112.5 to 2197.5          | Ch 422500 (2112.5MHz),<br>Ch 431000 (2155.0MHz),<br>Ch 439500 (2197.5MHz) | 5MHz<br>Single Carrier  | QPSK, 16QAM,<br>64QAM, 256QAM |
|                            |                           | Ch 423000 (2115.0MHz),<br>Ch 431000 (2155.0MHz),<br>Ch 439000 (2195.0MHz) | 10MHz<br>Single Carrier | QPSK, 16QAM,<br>64QAM, 256QAM |
|                            |                           | Ch 423500 (2117.5MHz),<br>Ch 431000 (2155.0MHz),<br>Ch 438500 (2192.5MHz) | 15MHz<br>Single Carrier | QPSK, 16QAM,<br>64QAM, 256QAM |
|                            |                           | Ch 424000 (2120.0MHz),<br>Ch 431000 (2155.0MHz),<br>Ch 438000 (2190.0MHz) | 20MHz<br>Single Carrier | QPSK, 16QAM,<br>64QAM, 256QAM |
| Modulation Characteristics | 2112.5 to 2197.5          | Ch 431000 (2155.0MHz)   | 5MHz<br>Single Carrier  | QPSK, 16QAM,<br>64QAM, 256QAM |
|                            |                           | Ch 431000 (2155.0MHz)   | 10MHz<br>Single Carrier | QPSK, 16QAM,<br>64QAM, 256QAM |
|                            |                           | Ch 431000 (2155.0MHz)   | 15MHz<br>Single Carrier | QPSK, 16QAM,<br>64QAM, 256QAM |
|                            |                           | Ch 431000 (2155.0MHz)   | 20MHz<br>Single Carrier | QPSK, 16QAM,<br>64QAM, 256QAM |
| Frequency Stability        | 2112.5 to 2197.5          | Ch 422500 (2112.5MHz),<br>Ch 439500 (2197.5MHz)                           | 5MHz<br>Single Carrier  | QPSK                          |
|                            |                           | Ch 423000 (2115.0MHz),<br>Ch 439000 (2195.0MHz)                           | 10MHz<br>Single Carrier | QPSK                          |
|                            |                           | Ch 423500 (2117.5MHz),<br>Ch 438500 (2192.5MHz)                           | 15MHz<br>Single Carrier | QPSK                          |
|                            |                           | Ch 424000 (2120.0MHz),<br>Ch 438000 (2190.0MHz)                           | 20MHz<br>Single Carrier | QPSK                          |
| Emission Bandwidth         | 2112.5 to 2197.5          | Ch 422500 (2112.5MHz),<br>Ch 431000 (2155.0MHz),<br>Ch 439500 (2197.5MHz) | 5MHz<br>Single Carrier  | QPSK, 16QAM,<br>64QAM, 256QAM |
|                            |                           | Ch 423000 (2115.0MHz),<br>Ch 431000 (2155.0MHz),<br>Ch 439000 (2195.0MHz) | 10MHz<br>Single Carrier | QPSK, 16QAM,<br>64QAM, 256QAM |
|                            |                           | Ch 423500 (2117.5MHz),<br>Ch 431000 (2155.0MHz),<br>Ch 438500 (2192.5MHz) | 15MHz<br>Single Carrier | QPSK, 16QAM,<br>64QAM, 256QAM |
|                            |                           | Ch 424000 (2120.0MHz),<br>Ch 431000 (2155.0MHz),<br>Ch 438000 (2190.0MHz) | 20MHz<br>Single Carrier | QPSK, 16QAM,<br>64QAM, 256QAM |
| Channel Edge               | 2112.5 to 2197.5          | Ch 422500 (2112.5MHz),<br>Ch 439500 (2197.5MHz)                           | 5MHz<br>Single Carrier  | QPSK                          |
|                            |                           | Ch 423000 (2115.0MHz),<br>Ch 439000 (2195.0MHz)                           | 10MHz<br>Single Carrier | QPSK                          |
|                            |                           | Ch 423500 (2117.5MHz),<br>Ch 438500 (2192.5MHz)                           | 15MHz<br>Single Carrier | QPSK                          |
|                            |                           | Ch 424000 (2120.0MHz),<br>Ch 438000 (2190.0MHz)                           | 20MHz<br>Single Carrier | QPSK                          |

| Test Item                    | Available Frequency (MHz) | Tested Channel  | Channel Bandwidth       | Modulation                    |
|------------------------------|---------------------------|---|-------------------------|-------------------------------|
| Peak To Average Ratio        | 2112.5 to 2197.5          | Ch 422500 (2112.5MHz),<br>Ch 431000 (2155.0MHz),<br>Ch 439500 (2197.5MHz) | 5MHz<br>Single Carrier  | QPSK, 16QAM,<br>64QAM, 256QAM |
|                              |                           | Ch 423000 (2115.0MHz),<br>Ch 431000 (2155.0MHz),<br>Ch 439000 (2195.0MHz) | 10MHz<br>Single Carrier | QPSK, 16QAM,<br>64QAM, 256QAM |
|                              |                           | Ch 423500 (2117.5MHz),<br>Ch 431000 (2155.0MHz),<br>Ch 438500 (2192.5MHz) | 15MHz<br>Single Carrier | QPSK, 16QAM,<br>64QAM, 256QAM |
|                              |                           | Ch 424000 (2120.0MHz),<br>Ch 431000 (2155.0MHz),<br>Ch 438000 (2190.0MHz) | 20MHz<br>Single Carrier | QPSK, 16QAM,<br>64QAM, 256QAM |
| Conducted Emission           | 2112.5 to 2197.5          | Ch 422500 (2112.5MHz),<br>Ch 431000 (2155.0MHz),<br>Ch 439500 (2197.5MHz) | 5MHz<br>Single Carrier  | QPSK                          |
|                              |                           | Ch 423000 (2115.0MHz),<br>Ch 431000 (2155.0MHz),<br>Ch 439000 (2195.0MHz) | 10MHz<br>Single Carrier | QPSK                          |
|                              |                           | Ch 423500 (2117.5MHz),<br>Ch 431000 (2155.0MHz),<br>Ch 438500 (2192.5MHz) | 15MHz<br>Single Carrier | QPSK                          |
|                              |                           | Ch 424000 (2120.0MHz),<br>Ch 431000 (2155.0MHz),<br>Ch 438000 (2190.0MHz) | 20MHz<br>Single Carrier | QPSK                          |
| Radiated Emission Below 1GHz | 2112.5 to 2197.5          | Ch 431000 (2155.0MHz)   | 20MHz<br>Single Carrier | QPSK                          |
| Radiated Emission Above 1GHz | 2112.5 to 2197.5          | Ch 422500 (2112.5MHz),<br>Ch 431000 (2155.0MHz),<br>Ch 439500 (2197.5MHz) | 5MHz<br>Single Carrier  | QPSK                          |
|                              |                           | Ch 424000 (2120.0MHz),<br>Ch 431000 (2155.0MHz),<br>Ch 438000 (2190.0MHz) | 20MHz<br>Single Carrier | QPSK                          |

**NOTE:**

1. All supported modulation types were evaluated. The Worst case of QPSK was selected. Therefore, the Frequency Stability, Conducted Emission and Radiated Emission were performed under QPSK mode only.

**Band n70:**

Following channel(s) was (were) selected for the final test as listed below:

| Test Item                  | Available Frequency (MHz) | Tested Channel  | Channel Bandwidth       | Modulation                    |
|----------------------------|---------------------------|---|-------------------------|-------------------------------|
| Output Power               | 1997.5 to 2017.5          | Ch 399500 (1997.5MHz),<br>Ch 401500 (2007.5MHz),<br>Ch 403500 (2017.5MHz) | 5MHz<br>Single Carrier  | QPSK, 16QAM,<br>64QAM, 256QAM |
|                            |                           | Ch 400000 (2000.0MHz),<br>Ch 401500 (2007.5MHz),<br>Ch 403000 (2015.0MHz) | 10MHz<br>Single Carrier | QPSK, 16QAM,<br>64QAM, 256QAM |
|                            |                           | Ch 400500 (2002.5MHz),<br>Ch 401500 (2007.5MHz),<br>Ch 402500 (2012.5MHz) | 15MHz<br>Single Carrier | QPSK, 16QAM,<br>64QAM, 256QAM |
|                            |                           | Ch 401000 (2005.0MHz),<br>Ch 401500 (2007.5MHz),<br>Ch 402000 (2010.0MHz) | 20MHz<br>Single Carrier | QPSK, 16QAM,<br>64QAM, 256QAM |
| Modulation Characteristics | 1997.5 to 2017.5          | Ch 401500 (2007.5MHz)   | 5MHz<br>Single Carrier  | QPSK, 16QAM,<br>64QAM, 256QAM |
|                            |                           | Ch 401500 (2007.5MHz)   | 10MHz<br>Single Carrier | QPSK, 16QAM,<br>64QAM, 256QAM |
|                            |                           | Ch 401500 (2007.5MHz)   | 15MHz<br>Single Carrier | QPSK, 16QAM,<br>64QAM, 256QAM |
|                            |                           | Ch 401500 (2007.5MHz)   | 20MHz<br>Single Carrier | QPSK, 16QAM,<br>64QAM, 256QAM |
| Frequency Stability        | 1997.5 to 2017.5          | Ch 399500 (1997.5MHz),<br>Ch 403500 (2017.5MHz)                           | 5MHz<br>Single Carrier  | QPSK                          |
|                            |                           | Ch 400000 (2000.0MHz),<br>Ch 403000 (2015.0MHz)                           | 10MHz<br>Single Carrier | QPSK                          |
|                            |                           | Ch 400500 (2002.5MHz),<br>Ch 402500 (2012.5MHz)                           | 15MHz<br>Single Carrier | QPSK                          |
|                            |                           | Ch 401000 (2005.0MHz),<br>Ch 402000 (2010.0MHz)                           | 20MHz<br>Single Carrier | QPSK                          |
| Emission Bandwidth         | 1997.5 to 2017.5          | Ch 399500 (1997.5MHz),<br>Ch 401500 (2007.5MHz),<br>Ch 403500 (2017.5MHz) | 5MHz<br>Single Carrier  | QPSK, 16QAM,<br>64QAM, 256QAM |
|                            |                           | Ch 400000 (2000.0MHz),<br>Ch 401500 (2007.5MHz),<br>Ch 403000 (2015.0MHz) | 10MHz<br>Single Carrier | QPSK, 16QAM,<br>64QAM, 256QAM |
|                            |                           | Ch 400500 (2002.5MHz),<br>Ch 401500 (2007.5MHz),<br>Ch 402500 (2012.5MHz) | 15MHz<br>Single Carrier | QPSK, 16QAM,<br>64QAM, 256QAM |
|                            |                           | Ch 401000 (2005.0MHz),<br>Ch 401500 (2007.5MHz),<br>Ch 402000 (2010.0MHz) | 20MHz<br>Single Carrier | QPSK, 16QAM,<br>64QAM, 256QAM |
| Channel Edge               | 1997.5 to 2017.5          | Ch 399500 (1997.5MHz),<br>Ch 401500 (2007.5MHz),<br>Ch 403500 (2017.5MHz) | 5MHz<br>Single Carrier  | QPSK                          |
|                            |                           | Ch 400000 (2000.0MHz),<br>Ch 401500 (2007.5MHz),<br>Ch 403000 (2015.0MHz) | 10MHz<br>Single Carrier | QPSK                          |
|                            |                           | Ch 400500 (2002.5MHz),<br>Ch 401500 (2007.5MHz),<br>Ch 402500 (2012.5MHz) | 15MHz<br>Single Carrier | QPSK                          |
|                            |                           | Ch 401000 (2005.0MHz),<br>Ch 401500 (2007.5MHz),<br>Ch 402000 (2010.0MHz) | 20MHz<br>Single Carrier | QPSK                          |



| Test Item                    | Available Frequency (MHz) | Tested Frequency (MHz)  | Channel Bandwidth       | Modulation                    |
|------------------------------|---------------------------|---|-------------------------|-------------------------------|
| Peak To Average Ratio        | 1997.5 to 2017.5          | Ch 399500 (1997.5MHz),<br>Ch 401500 (2007.5MHz),<br>Ch 403500 (2017.5MHz) | 5MHz<br>Single Carrier  | QPSK, 16QAM,<br>64QAM, 256QAM |
|                              |                           | Ch 400000 (2000.0MHz),<br>Ch 401500 (2007.5MHz),<br>Ch 403000 (2015.0MHz) | 10MHz<br>Single Carrier | QPSK, 16QAM,<br>64QAM, 256QAM |
|                              |                           | Ch 400500 (2002.5MHz),<br>Ch 401500 (2007.5MHz),<br>Ch 402500 (2012.5MHz) | 15MHz<br>Single Carrier | QPSK, 16QAM,<br>64QAM, 256QAM |
|                              |                           | Ch 401000 (2005.0MHz),<br>Ch 401500 (2007.5MHz),<br>Ch 402000 (2010.0MHz) | 20MHz<br>Single Carrier | QPSK, 16QAM,<br>64QAM, 256QAM |
| Conducted Emission           | 1997.5 to 2017.5          | Ch 399500 (1997.5MHz),<br>Ch 401500 (2007.5MHz),<br>Ch 403500 (2017.5MHz) | 5MHz<br>Single Carrier  | QPSK                          |
|                              |                           | Ch 400000 (2000.0MHz),<br>Ch 401500 (2007.5MHz),<br>Ch 403000 (2015.0MHz) | 10MHz<br>Single Carrier | QPSK                          |
|                              |                           | Ch 400500 (2002.5MHz),<br>Ch 401500 (2007.5MHz),<br>Ch 402500 (2012.5MHz) | 15MHz<br>Single Carrier | QPSK                          |
|                              |                           | Ch 401000 (2005.0MHz),<br>Ch 401500 (2007.5MHz),<br>Ch 402000 (2010.0MHz) | 20MHz<br>Single Carrier | QPSK                          |
| Radiated Emission Below 1GHz | 1997.5 to 2017.5          | Ch 401000 (2005.0MHz)   | 20MHz<br>Single Carrier | QPSK                          |
| Radiated Emission Above 1GHz | 1997.5 to 2017.5          | Ch 399500 (1997.5MHz),<br>Ch 401500 (2007.5MHz),<br>Ch 403500 (2017.5MHz) | 5MHz<br>Single Carrier  | QPSK                          |
|                              |                           | Ch 401000 (2005.0MHz),<br>Ch 401500 (2007.5MHz),<br>Ch 402000 (2010.0MHz) | 20MHz<br>Single Carrier | QPSK                          |

**NOTE:**

1. All supported modulation types were evaluated. The Worst case of QPSK was selected. Therefore, the Frequency Stability, Conducted Emission and Radiated Emission were performed under QPSK mode only.

**Test Condition:**

| Test Item                  | Environmental Conditions | Input Power (System) | Tested By           |
|----------------------------|--------------------------|----------------------|---------------------|
| Output Power               | 25deg. C, 63%RH          | 120Vac, 60Hz         | Charlie Yang        |
| Modulation characteristics | 25deg. C, 63%RH          | 120Vac, 60Hz         | Charlie Yang        |
| Frequency Stability        | 25deg. C, 63%RH          | 120Vac, 60Hz         | Charlie Yang        |
| Emission Bandwidth         | 25deg. C, 63%RH          | 120Vac, 60Hz         | Charlie Yang        |
| Band Edge                  | 25deg. C, 63%RH          | 120Vac, 60Hz         | Charlie Yang        |
| Peak To Average Ratio      | 25deg. C, 63%RH          | 120Vac, 60Hz         | Charlie Yang        |
| Conducted Emission         | 25deg. C, 63%RH          | 120Vac, 60Hz         | Charlie Yang        |
| Radiated Emission          | 25deg. C, 75%RH          | 120Vac, 60Hz         | Tom Yang<br>Ryan Du |

Note: Above input power with the AC/DC PSU used during testing.

### **3.4 General Description of Applied Standards**

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards and references:

**Test Standard:**

**FCC 47 CFR Part 2**

**FCC 47 CFR Part 27, Subpart L**

**ANSI/TIA/EIA-603-E 2016**

**ANSI 63.26-2015**

All test items have been performed and recorded as per the above standards.

**References Test Guidance:**

**KDB 971168 D01 Power Meas License Digital Systems v03r01**

All test items have been performed and recorded as per the above standards and KDB test guidance.

## 4 Test Types and Results

### 4.1 Output Power Measurement

#### 4.1.1 Limits of Output Power Measurement

According to FCC 27.50(d)(2) that the power of each fixed or base station transmitting in the 1995-2000 MHz, the 2110-2155 MHz 2155-2180 MHz band, or 2180-2200 MHz band and situated in any geographic location other than that described in paragraph (d)(1) of this section is limited to:

- (i) An equivalent isotropically radiated power (EIRP) of 1640 watts when transmitting with an emission bandwidth of 1 MHz or less;
- (ii) An EIRP of 1640 watts/MHz when transmitting with an emission bandwidth greater than 1 MHz.

#### 4.1.2 Test Procedures

EIRP / ERP Measurement:

Conducted Power Measurement:

- a. A spectrum analyzer was used on the output port of the EUT and recorded output power from the spectrum analyzer.
- b. The relevant equation for determining the maximum ERP or EIRP from the measured RF output power is given in Equation as follows:

$$\text{EIRP} = \text{PMeas} + \text{GT}$$

$$\text{ERP} = \text{PMeas} + \text{GT} - 2.15$$

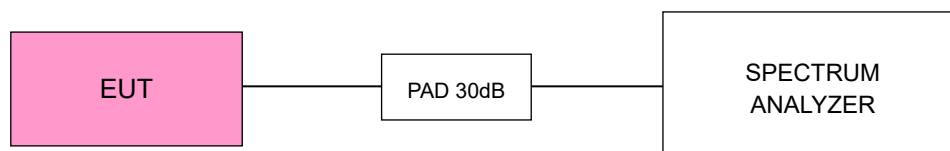
Where ERP or EIRP effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as PMeas, e.g., dBm or dBW)

PMeas : measured transmitter output power or PSD, in dBm or dBW

GT : gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP)

#### 4.1.3 Test Setup

CONDUCTED POWER MEASUREMENT:



#### 4.1.4 Test Results

### Band n66 Single Carrier

#### 5MHz

| Channel Number | Freq. (MHz) | QPSK                              |       |       |       |       |      |                |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm/MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                |              |               |            |
| 422500         | 2112.5      | 38.96                             | 38.78 | 38.48 | 38.32 | 44.66 | 15   | 59.66          | 925.29       | 1640.00       | PASS       |
| 431000         | 2155        | 38.85                             | 38.70 | 38.54 | 38.57 | 44.69 | 15   | 59.69          | 930.54       | 1640.00       | PASS       |
| 439500         | 2197.5      | 38.70                             | 38.85 | 38.57 | 38.54 | 44.69 | 15   | 59.69          | 930.54       | 1640.00       | PASS       |

#### 10MHz

| Channel Number | Freq. (MHz) | QPSK                              |       |       |       |       |      |                |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm/MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                |              |               |            |
| 423000         | 2115        | 37.31                             | 37.58 | 37.39 | 37.26 | 43.41 | 15   | 58.41          | 693.00       | 1640.00       | PASS       |
| 431000         | 2155        | 37.08                             | 37.34 | 37.14 | 37.08 | 43.18 | 15   | 58.18          | 657.95       | 1640.00       | PASS       |
| 439000         | 2195        | 37.42                             | 37.47 | 37.16 | 37.17 | 43.33 | 15   | 58.33          | 680.44       | 1640.00       | PASS       |

#### 15MHz

| Channel Number | Freq. (MHz) | QPSK                              |       |       |       |       |      |                |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm/MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                |              |               |            |
| 423500         | 2117.5      | 35.47                             | 35.54 | 35.30 | 35.35 | 41.44 | 15   | 56.44          | 440.21       | 1640.00       | PASS       |
| 431000         | 2155        | 35.35                             | 35.39 | 35.31 | 35.22 | 41.34 | 15   | 56.34          | 430.38       | 1640.00       | PASS       |
| 438500         | 2192.5      | 35.34                             | 35.57 | 35.17 | 35.24 | 41.35 | 15   | 56.35          | 431.84       | 1640.00       | PASS       |

#### 20MHz

| Channel Number | Freq. (MHz) | QPSK                              |       |       |       |       |      |                |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm/MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                |              |               |            |
| 424000         | 2120        | 34.30                             | 34.40 | 34.12 | 34.19 | 40.27 | 15   | 55.27          | 336.85       | 1640.00       | PASS       |
| 431000         | 2155        | 34.25                             | 34.28 | 34.29 | 34.11 | 40.25 | 15   | 55.25          | 335.25       | 1640.00       | PASS       |
| 438000         | 2190        | 34.29                             | 34.39 | 34.02 | 34.06 | 40.21 | 15   | 55.21          | 332.15       | 1640.00       | PASS       |

### 5MHz

| Channel Number | Freq. (MHz) | 16QAM                             |       |       |       |       |      |                |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm/MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                |              |               |            |
| 422500         | 2112.5      | 38.84                             | 38.78 | 38.74 | 38.75 | 44.80 | 15   | 59.80          | 954.99       | 1640.00       | PASS       |
| 431000         | 2155        | 38.87                             | 38.80 | 38.66 | 38.80 | 44.80 | 15   | 59.80          | 954.99       | 1640.00       | PASS       |
| 439500         | 2197.5      | 38.90                             | 38.82 | 38.61 | 38.70 | 44.78 | 15   | 59.78          | 950.50       | 1640.00       | PASS       |

### 10MHz

| Channel Number | Freq. (MHz) | 16QAM                             |       |       |       |       |      |                |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm/MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                |              |               |            |
| 423000         | 2115        | 37.86                             | 37.78 | 37.72 | 37.69 | 43.78 | 15   | 58.78          | 755.72       | 1640.00       | PASS       |
| 431000         | 2155        | 37.74                             | 37.92 | 37.88 | 37.83 | 43.86 | 15   | 58.86          | 769.77       | 1640.00       | PASS       |
| 439000         | 2195        | 37.78                             | 37.70 | 37.68 | 37.82 | 43.77 | 15   | 58.77          | 752.66       | 1640.00       | PASS       |

### 15MHz

| Channel Number | Freq. (MHz) | 16QAM                             |       |       |       |       |      |                |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm/MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                |              |               |            |
| 423500         | 2117.5      | 36.85                             | 36.88 | 36.48 | 36.47 | 42.69 | 15   | 57.69          | 588.16       | 1640.00       | PASS       |
| 431000         | 2155        | 36.69                             | 36.79 | 36.55 | 36.51 | 42.66 | 15   | 57.66          | 583.05       | 1640.00       | PASS       |
| 438500         | 2192.5      | 36.51                             | 36.83 | 36.26 | 36.51 | 42.55 | 15   | 57.55          | 569.22       | 1640.00       | PASS       |

### 20MHz

| Channel Number | Freq. (MHz) | 16QAM                             |       |       |       |       |      |                |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm/MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                |              |               |            |
| 424000         | 2120        | 35.76                             | 35.63 | 35.62 | 35.63 | 41.68 | 15   | 56.68          | 465.69       | 1640.00       | PASS       |
| 431000         | 2155        | 35.53                             | 35.70 | 35.67 | 35.55 | 41.63 | 15   | 56.63          | 460.65       | 1640.00       | PASS       |
| 438000         | 2190        | 35.62                             | 35.67 | 35.57 | 35.70 | 41.66 | 15   | 56.66          | 463.54       | 1640.00       | PASS       |

### 5MHz

| Channel Number | Freq. (MHz) | 64QAM                             |       |       |       |       |      |                |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm/MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                |              |               |            |
| 422500         | 2112.5      | 38.68                             | 38.67 | 38.70 | 38.56 | 44.67 | 15   | 59.67          | 927.56       | 1640.00       | PASS       |
| 431000         | 2155        | 38.61                             | 38.76 | 38.48 | 38.62 | 44.64 | 15   | 59.64          | 920.29       | 1640.00       | PASS       |
| 439500         | 2197.5      | 38.55                             | 38.62 | 38.59 | 38.41 | 44.56 | 15   | 59.56          | 904.45       | 1640.00       | PASS       |

### 10MHz

| Channel Number | Freq. (MHz) | 64QAM                             |       |       |       |       |      |                |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm/MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                |              |               |            |
| 423000         | 2115        | 37.52                             | 37.53 | 37.47 | 37.28 | 43.47 | 15   | 58.47          | 703.36       | 1640.00       | PASS       |
| 431000         | 2155        | 37.19                             | 37.41 | 37.40 | 37.57 | 43.42 | 15   | 58.42          | 694.26       | 1640.00       | PASS       |
| 439000         | 2195        | 37.36                             | 37.33 | 37.43 | 37.27 | 43.37 | 15   | 58.37          | 686.83       | 1640.00       | PASS       |

### 15MHz

| Channel Number | Freq. (MHz) | 64QAM                             |       |       |       |       |      |                |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm/MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                |              |               |            |
| 423500         | 2117.5      | 35.58                             | 35.53 | 35.40 | 35.39 | 41.50 | 15   | 56.50          | 446.31       | 1640.00       | PASS       |
| 431000         | 2155        | 35.35                             | 35.28 | 35.61 | 35.42 | 41.44 | 15   | 56.44          | 440.29       | 1640.00       | PASS       |
| 438500         | 2192.5      | 35.41                             | 35.40 | 35.58 | 35.55 | 41.51 | 15   | 56.51          | 447.34       | 1640.00       | PASS       |

### 20MHz

| Channel Number | Freq. (MHz) | 64QAM                             |       |       |       |       |      |                |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm/MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                |              |               |            |
| 424000         | 2120        | 34.47                             | 34.30 | 34.50 | 34.35 | 40.43 | 15   | 55.43          | 348.85       | 1640.00       | PASS       |
| 431000         | 2155        | 34.34                             | 34.46 | 34.48 | 34.38 | 40.44 | 15   | 55.44          | 349.62       | 1640.00       | PASS       |
| 438000         | 2190        | 34.53                             | 34.27 | 34.51 | 34.27 | 40.42 | 15   | 55.42          | 348.13       | 1640.00       | PASS       |

### 5MHz

| Channel Number | Freq. (MHz) | 256QAM                            |       |       |       |       |      |                |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm/MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                |              |               |            |
| 422500         | 2112.5      | 38.68                             | 38.72 | 38.69 | 38.67 | 44.71 | 15   | 59.71          | 935.54       | 1640.00       | PASS       |
| 431000         | 2155        | 38.65                             | 38.68 | 38.44 | 38.55 | 44.60 | 15   | 59.60          | 912.35       | 1640.00       | PASS       |
| 439500         | 2197.5      | 38.64                             | 38.44 | 38.38 | 38.54 | 44.52 | 15   | 59.52          | 895.72       | 1640.00       | PASS       |

### 10MHz

| Channel Number | Freq. (MHz) | 256QAM                            |       |       |       |       |      |                |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm/MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                |              |               |            |
| 423000         | 2115        | 37.42                             | 37.39 | 37.22 | 37.44 | 43.39 | 15   | 58.39          | 690.08       | 1640.00       | PASS       |
| 431000         | 2155        | 37.36                             | 37.45 | 37.39 | 37.21 | 43.37 | 15   | 58.37          | 687.70       | 1640.00       | PASS       |
| 439000         | 2195        | 37.50                             | 37.54 | 37.50 | 37.22 | 43.46 | 15   | 58.46          | 701.85       | 1640.00       | PASS       |

### 15MHz

| Channel Number | Freq. (MHz) | 256QAM                            |       |       |       |       |      |                |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm/MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                |              |               |            |
| 423500         | 2117.5      | 35.55                             | 35.57 | 35.52 | 35.45 | 41.54 | 15   | 56.54          | 451.16       | 1640.00       | PASS       |
| 431000         | 2155        | 35.27                             | 35.37 | 35.43 | 35.43 | 41.40 | 15   | 56.40          | 436.12       | 1640.00       | PASS       |
| 438500         | 2192.5      | 35.41                             | 35.55 | 35.45 | 35.28 | 41.44 | 15   | 56.44          | 440.98       | 1640.00       | PASS       |

### 20MHz

| Channel Number | Freq. (MHz) | 256QAM                            |       |       |       |       |      |                |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm/MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                |              |               |            |
| 424000         | 2120        | 34.53                             | 34.49 | 34.44 | 34.49 | 40.51 | 15   | 55.51          | 355.49       | 1640.00       | PASS       |
| 431000         | 2155        | 34.20                             | 34.42 | 34.49 | 34.53 | 40.43 | 15   | 55.43          | 349.34       | 1640.00       | PASS       |
| 438000         | 2190        | 34.23                             | 34.33 | 34.50 | 34.51 | 40.41 | 15   | 55.41          | 347.91       | 1640.00       | PASS       |

## Band n70 Single Carrier

### 5MHz

| Channel Number | Freq. (MHz) | QPSK                              |       |       |       |       |      |                 |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|-----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm /MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                 |              |               |            |
| 399500         | 1997.5      | 38.58                             | 38.55 | 38.47 | 38.30 | 44.50 | 17   | 61.50           | 1411.55      | 1640.00       | PASS       |
| 401500         | 2007.5      | 38.63                             | 38.74 | 38.52 | 38.37 | 44.59 | 17   | 61.59           | 1441.37      | 1640.00       | PASS       |
| 403500         | 2017.5      | 38.62                             | 38.62 | 38.26 | 38.34 | 44.48 | 17   | 61.48           | 1407.22      | 1640.00       | PASS       |

### 10MHz

| Channel Number | Freq. (MHz) | QPSK                              |       |       |       |       |      |                 |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|-----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm /MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                 |              |               |            |
| 400000         | 2000        | 35.56                             | 35.54 | 35.38 | 35.32 | 41.47 | 17   | 58.47           | 703.37       | 1640.00       | PASS       |
| 401500         | 2007.5      | 35.49                             | 35.61 | 35.36 | 35.21 | 41.44 | 17   | 58.44           | 698.34       | 1640.00       | PASS       |
| 403000         | 2015        | 35.55                             | 35.55 | 35.31 | 35.15 | 41.41 | 17   | 58.41           | 694.05       | 1640.00       | PASS       |

### 15MHz

| Channel Number | Freq. (MHz) | QPSK                              |       |       |       |       |      |                 |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|-----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm /MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                 |              |               |            |
| 400500         | 2002.5      | 33.76                             | 33.54 | 33.47 | 33.33 | 39.55 | 17   | 56.55           | 451.69       | 1640.00       | PASS       |
| 401500         | 2007.5      | 33.58                             | 33.74 | 33.42 | 33.42 | 39.56 | 17   | 56.56           | 453.17       | 1640.00       | PASS       |
| 402500         | 2012.5      | 33.63                             | 33.73 | 33.40 | 33.29 | 39.54 | 17   | 56.54           | 450.47       | 1640.00       | PASS       |

### 20MHz

| Channel Number | Freq. (MHz) | QPSK                              |       |       |       |       |      |                 |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|-----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm /MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                 |              |               |            |
| 401000         | 2005        | 32.32                             | 32.41 | 32.35 | 32.05 | 38.31 | 17   | 55.31           | 339.26       | 1640.00       | PASS       |
| 401500         | 2007.5      | 32.56                             | 32.59 | 32.24 | 32.26 | 38.44 | 17   | 55.44           | 349.64       | 1640.00       | PASS       |
| 402000         | 2010        | 32.53                             | 32.46 | 32.32 | 32.18 | 38.40 | 17   | 55.40           | 346.35       | 1640.00       | PASS       |



### 5MHz

| Channel Number | Freq. (MHz) | 16QAM                             |       |       |       |       |      |                 |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|-----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm /MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                 |              |               |            |
| 399500         | 1997.5      | 38.67                             | 38.76 | 38.68 | 38.64 | 44.71 | 17   | 61.71           | 1481.95      | 1640.00       | PASS       |
| 401500         | 2007.5      | 38.80                             | 38.83 | 38.66 | 38.70 | 44.77 | 17   | 61.77           | 1502.68      | 1640.00       | PASS       |
| 403500         | 2017.5      | 38.74                             | 38.81 | 38.71 | 38.61 | 44.74 | 17   | 61.74           | 1492.35      | 1640.00       | PASS       |

### 10MHz

| Channel Number | Freq. (MHz) | 16QAM                             |       |       |       |       |      |                 |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|-----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm /MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                 |              |               |            |
| 400000         | 2000        | 36.05                             | 36.01 | 35.84 | 35.72 | 41.93 | 17   | 58.93           | 781.20       | 1640.00       | PASS       |
| 401500         | 2007.5      | 35.88                             | 35.85 | 35.69 | 35.65 | 41.79 | 17   | 58.79           | 756.70       | 1640.00       | PASS       |
| 403000         | 2015        | 35.89                             | 35.89 | 35.75 | 35.83 | 41.86 | 17   | 58.86           | 769.30       | 1640.00       | PASS       |

### 15MHz

| Channel Number | Freq. (MHz) | 16QAM                             |       |       |       |       |      |                 |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|-----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm /MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                 |              |               |            |
| 400500         | 2002.5      | 34.62                             | 35.11 | 34.92 | 34.88 | 40.91 | 17   | 57.91           | 617.53       | 1640.00       | PASS       |
| 401500         | 2007.5      | 34.63                             | 34.96 | 34.93 | 34.97 | 40.90 | 17   | 57.90           | 615.94       | 1640.00       | PASS       |
| 402500         | 2012.5      | 34.74                             | 34.91 | 34.95 | 35.02 | 40.93 | 17   | 57.93           | 620.41       | 1640.00       | PASS       |

### 20MHz

| Channel Number | Freq. (MHz) | 16QAM                             |       |       |       |       |      |                 |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|-----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm /MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                 |              |               |            |
| 401000         | 2005        | 33.86                             | 33.48 | 33.64 | 33.68 | 39.69 | 17   | 56.69           | 466.41       | 1640.00       | PASS       |
| 401500         | 2007.5      | 33.82                             | 33.83 | 33.69 | 33.58 | 39.75 | 17   | 56.75           | 473.35       | 1640.00       | PASS       |
| 402000         | 2010        | 33.81                             | 33.72 | 33.76 | 33.74 | 39.78 | 17   | 56.78           | 476.24       | 1640.00       | PASS       |

### 5MHz

| Channel Number | Freq. (MHz) | 64QAM                             |       |       |       |       |      |                 |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|-----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm /MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                 |              |               |            |
| 399500         | 1997.5      | 38.47                             | 38.53 | 38.39 | 38.53 | 44.50 | 17   | 61.50           | 1412.86      | 1640.00       | PASS       |
| 401500         | 2007.5      | 38.46                             | 38.59 | 38.49 | 38.51 | 44.53 | 17   | 61.53           | 1423.43      | 1640.00       | PASS       |
| 403500         | 2017.5      | 38.30                             | 38.42 | 38.48 | 38.41 | 44.42 | 17   | 61.42           | 1387.90      | 1640.00       | PASS       |

### 10MHz

| Channel Number | Freq. (MHz) | 64QAM                             |       |       |       |       |      |                 |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|-----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm /MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                 |              |               |            |
| 400000         | 2000        | 35.50                             | 35.27 | 35.30 | 35.26 | 41.35 | 17   | 58.35           | 684.58       | 1640.00       | PASS       |
| 401500         | 2007.5      | 35.38                             | 35.43 | 35.35 | 35.31 | 41.39 | 17   | 58.39           | 689.97       | 1640.00       | PASS       |
| 403000         | 2015        | 35.41                             | 35.46 | 35.39 | 35.22 | 41.39 | 17   | 58.39           | 690.48       | 1640.00       | PASS       |

### 15MHz

| Channel Number | Freq. (MHz) | 64QAM                             |       |       |       |       |      |                 |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|-----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm /MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                 |              |               |            |
| 400500         | 2002.5      | 33.42                             | 33.38 | 33.55 | 33.34 | 39.44 | 17   | 56.44           | 440.94       | 1640.00       | PASS       |
| 401500         | 2007.5      | 33.51                             | 33.64 | 33.57 | 33.55 | 39.59 | 17   | 56.59           | 455.86       | 1640.00       | PASS       |
| 402500         | 2012.5      | 33.42                             | 33.35 | 33.45 | 33.53 | 39.46 | 17   | 56.46           | 442.44       | 1640.00       | PASS       |

### 20MHz

| Channel Number | Freq. (MHz) | 64QAM                             |       |       |       |       |      |                 |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|-----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm /MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                 |              |               |            |
| 401000         | 2005        | 32.50                             | 32.40 | 32.53 | 32.46 | 38.49 | 17   | 55.49           | 354.27       | 1640.00       | PASS       |
| 401500         | 2007.5      | 32.59                             | 32.35 | 32.47 | 32.54 | 38.51 | 17   | 55.51           | 355.55       | 1640.00       | PASS       |
| 402000         | 2010        | 32.31                             | 32.49 | 32.54 | 32.36 | 38.45 | 17   | 55.45           | 350.48       | 1640.00       | PASS       |

### 5MHz

| Channel Number | Freq. (MHz) | 256QAM                            |       |       |       |       |      |                 |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|-----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm /MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                 |              |               |            |
| 399500         | 1997.5      | 38.32                             | 38.43 | 38.43 | 38.33 | 44.40 | 17   | 61.40           | 1379.88      | 1640.00       | PASS       |
| 401500         | 2007.5      | 38.38                             | 38.48 | 38.41 | 38.27 | 44.41 | 17   | 61.41           | 1382.37      | 1640.00       | PASS       |
| 403500         | 2017.5      | 38.20                             | 38.28 | 38.32 | 38.42 | 44.33 | 17   | 61.33           | 1357.16      | 1640.00       | PASS       |

### 10MHz

| Channel Number | Freq. (MHz) | 256QAM                            |       |       |       |       |      |                 |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|-----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm /MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                 |              |               |            |
| 400000         | 2000        | 35.40                             | 35.32 | 35.32 | 35.14 | 41.32 | 17   | 58.32           | 678.68       | 1640.00       | PASS       |
| 401500         | 2007.5      | 35.27                             | 35.30 | 35.29 | 35.31 | 41.31 | 17   | 58.31           | 678.13       | 1640.00       | PASS       |
| 403000         | 2015        | 35.09                             | 35.25 | 35.31 | 35.20 | 41.23 | 17   | 58.23           | 665.86       | 1640.00       | PASS       |

### 15MHz

| Channel Number | Freq. (MHz) | 256QAM                            |       |       |       |       |      |                 |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|-----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm /MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                 |              |               |            |
| 400500         | 2002.5      | 33.42                             | 33.46 | 33.31 | 33.29 | 39.39 | 17   | 56.39           | 435.63       | 1640.00       | PASS       |
| 401500         | 2007.5      | 33.44                             | 33.48 | 33.42 | 33.40 | 39.46 | 17   | 56.46           | 442.15       | 1640.00       | PASS       |
| 402500         | 2012.5      | 33.48                             | 33.45 | 33.31 | 33.30 | 39.41 | 17   | 56.41           | 437.15       | 1640.00       | PASS       |

### 20MHz

| Channel Number | Freq. (MHz) | 256QAM                            |       |       |       |       |      |                 |              |               | PASS /FAIL |
|----------------|-------------|-----------------------------------|-------|-------|-------|-------|------|-----------------|--------------|---------------|------------|
|                |             | Conducted Average Power (dBm/MHz) |       |       |       |       | Gain | EIRP (dBm /MHz) | EIRP (W/MHz) | Limit (W/MHz) |            |
|                |             | Ant.0                             | Ant.1 | Ant.2 | Ant.3 | Total |      |                 |              |               |            |
| 401000         | 2005        | 32.27                             | 32.55 | 32.31 | 32.26 | 38.37 | 17   | 55.37           | 344.33       | 1640.00       | PASS       |
| 401500         | 2007.5      | 32.35                             | 32.50 | 32.34 | 32.25 | 38.38 | 17   | 55.38           | 345.27       | 1640.00       | PASS       |
| 402000         | 2010        | 32.13                             | 32.38 | 32.34 | 32.38 | 38.33 | 17   | 55.33           | 341.14       | 1640.00       | PASS       |

## 4.2 Modulation characteristics Measurement

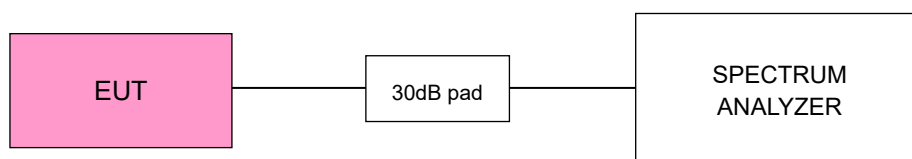
### 4.2.1 Limits of Modulation characteristics

N/A

### 4.2.2 Test Procedure

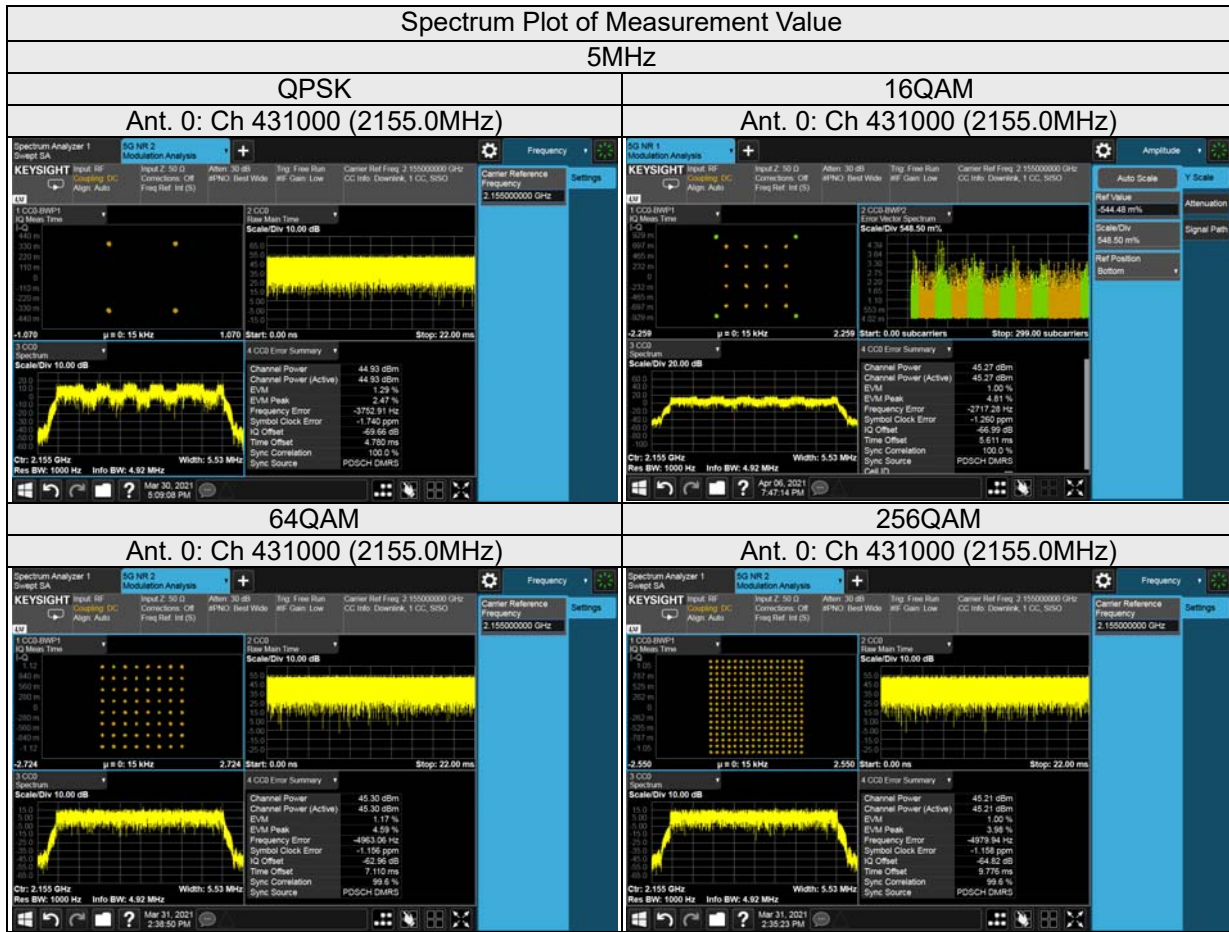
Connect the EUT to spectrum analyzer. The frequency band is set as EUT supported modulation and channels, the EUT output is matched with 50 ohm load, the waveform quality and constellation of the EUT was tested.

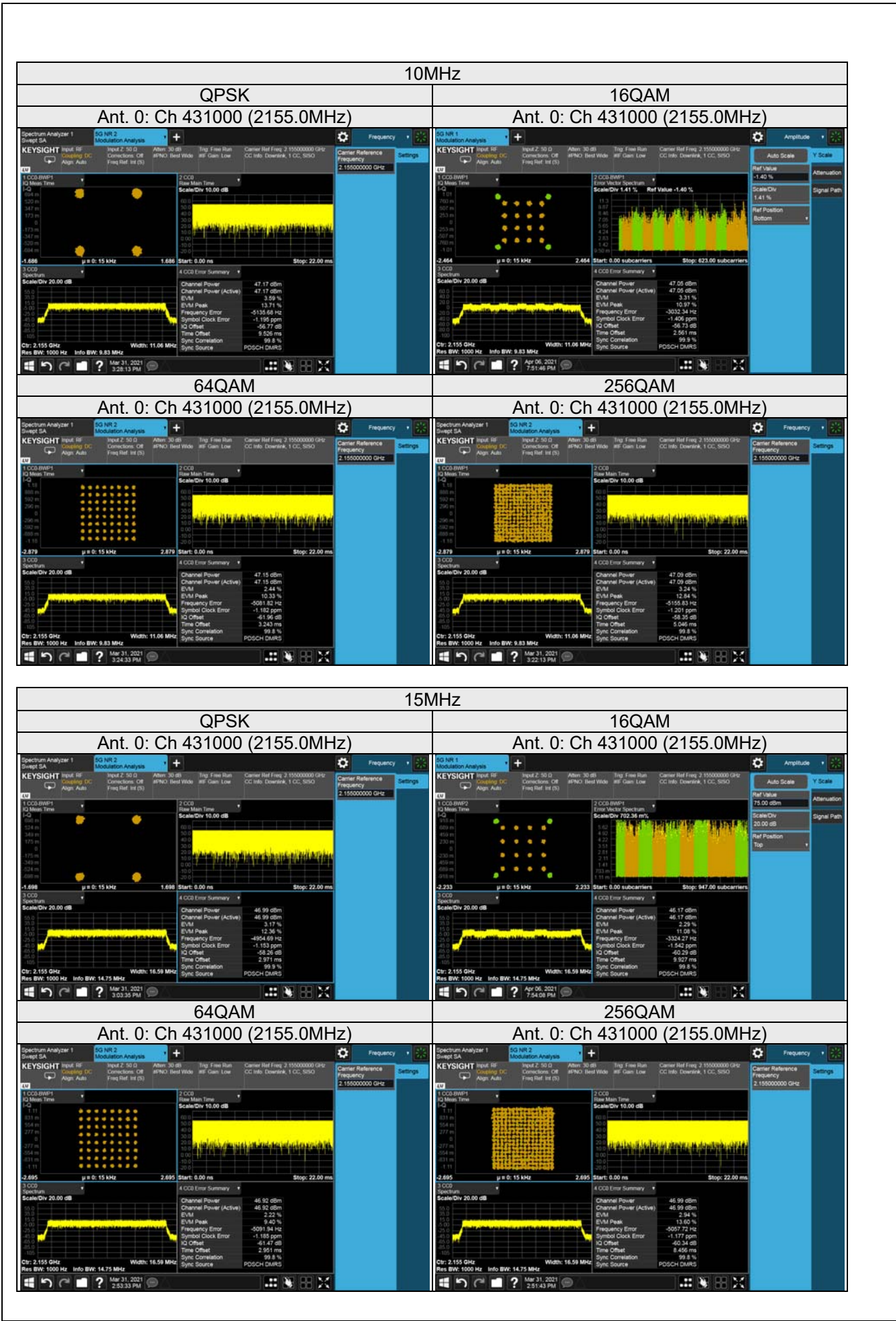
### 4.2.3 Test Setup

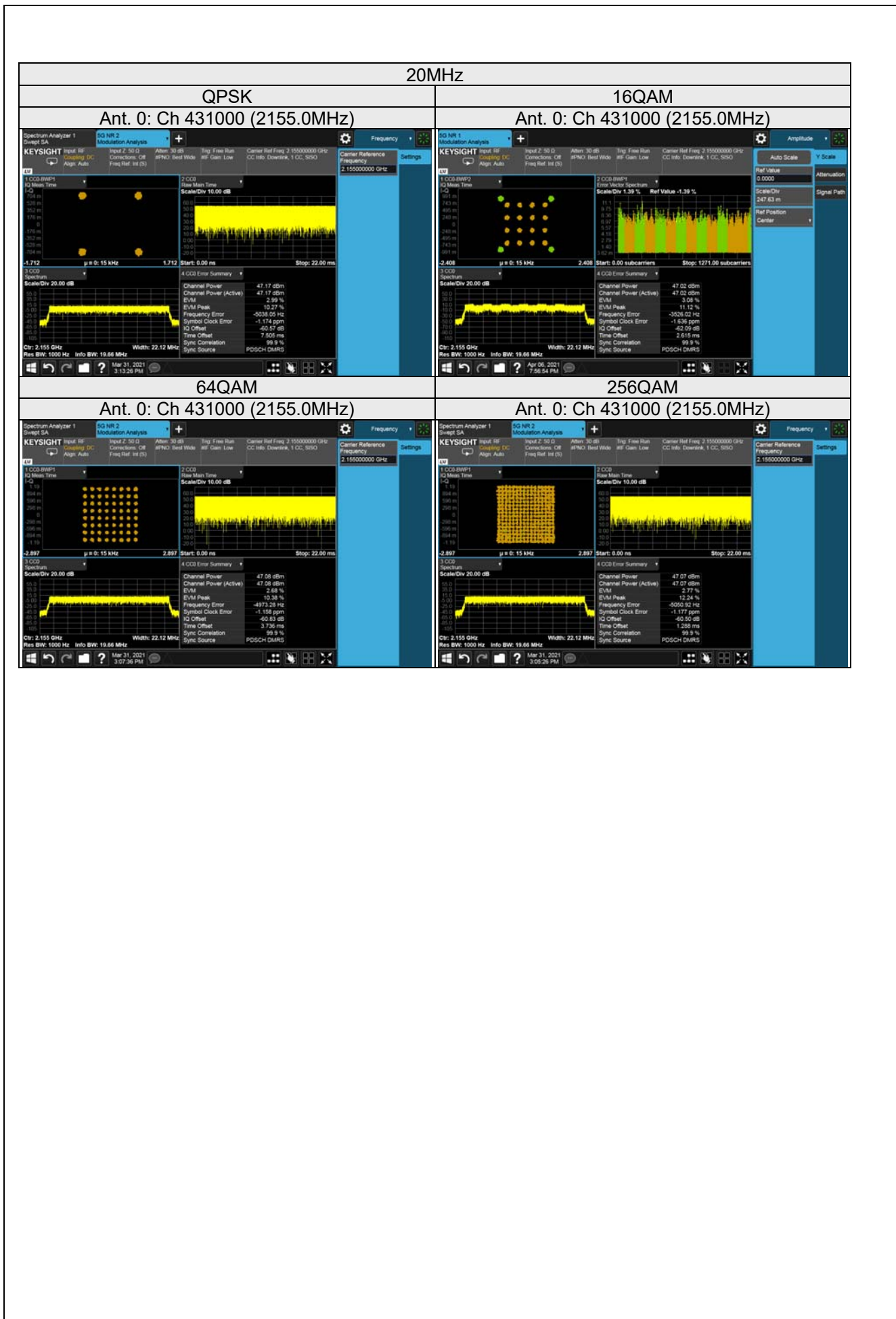


## 4.2.4 Test Results

### Band n66









Band n70

Spectrum Plot of Measurement Value

5MHz

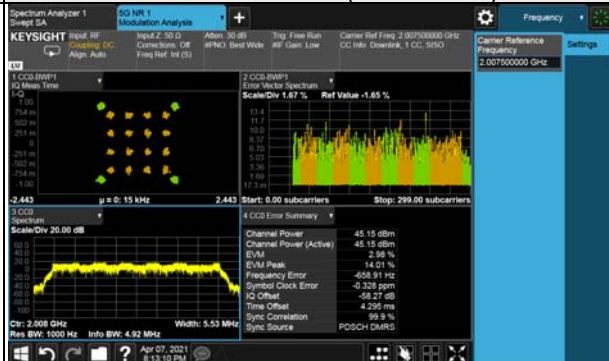
QPSK

Ant. 0: Ch 401500 (2007.5MHz)



16QAM

Ant. 0: Ch 401500 (2007.5MHz)



64QAM

Ant. 0: Ch 401500 (2007.5MHz)



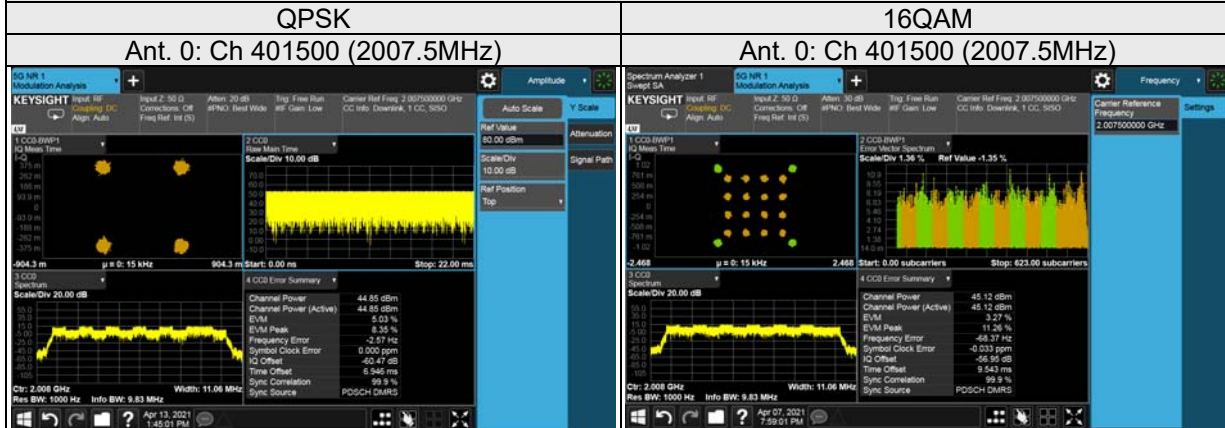
256QAM

Ant. 0: Ch 401500 (2007.5MHz)

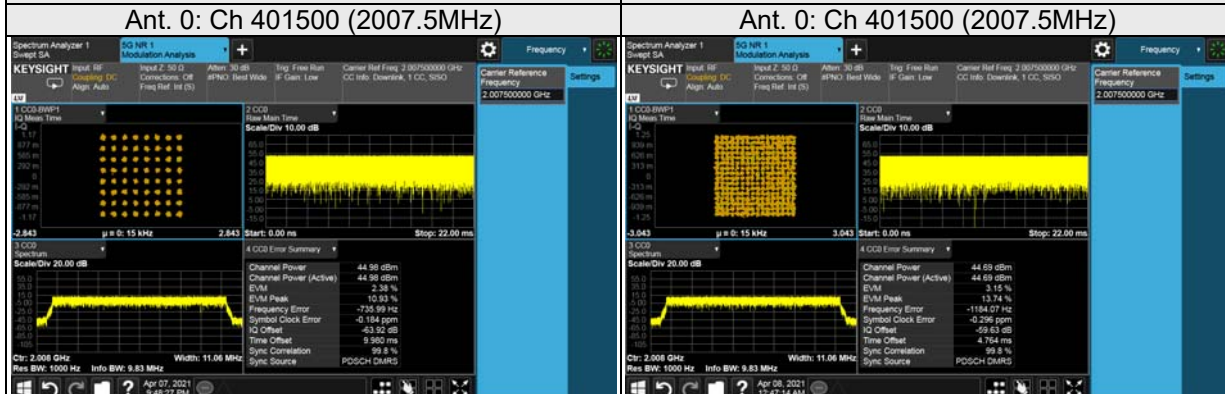




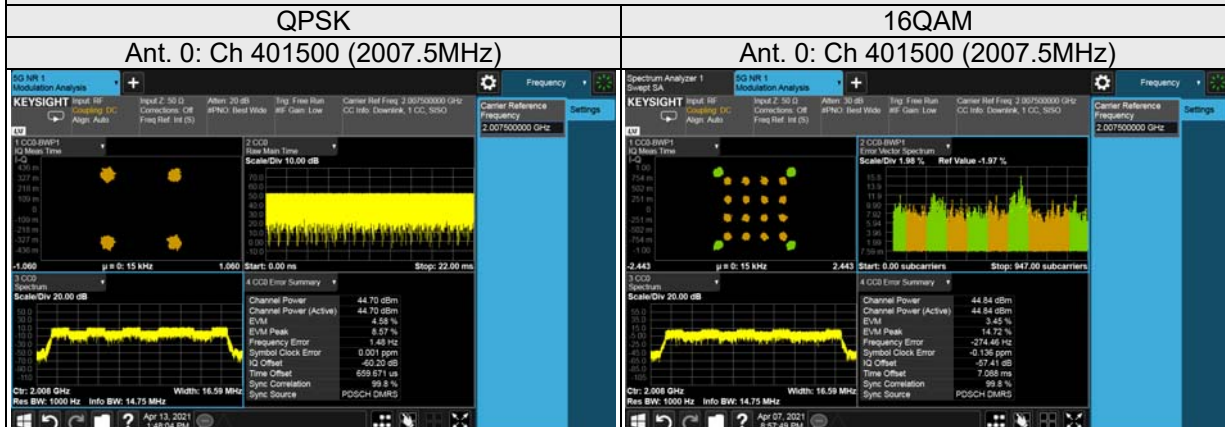
**10MHz**



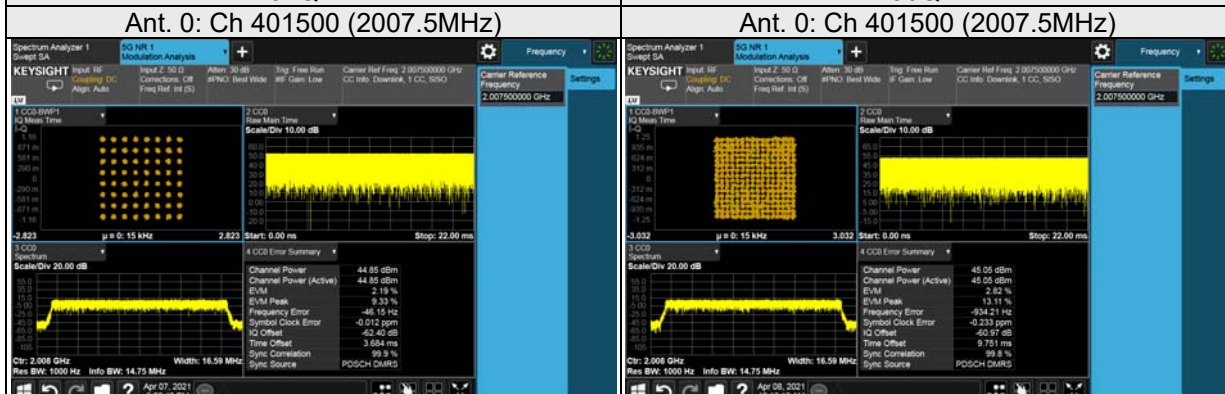
**64QAM**

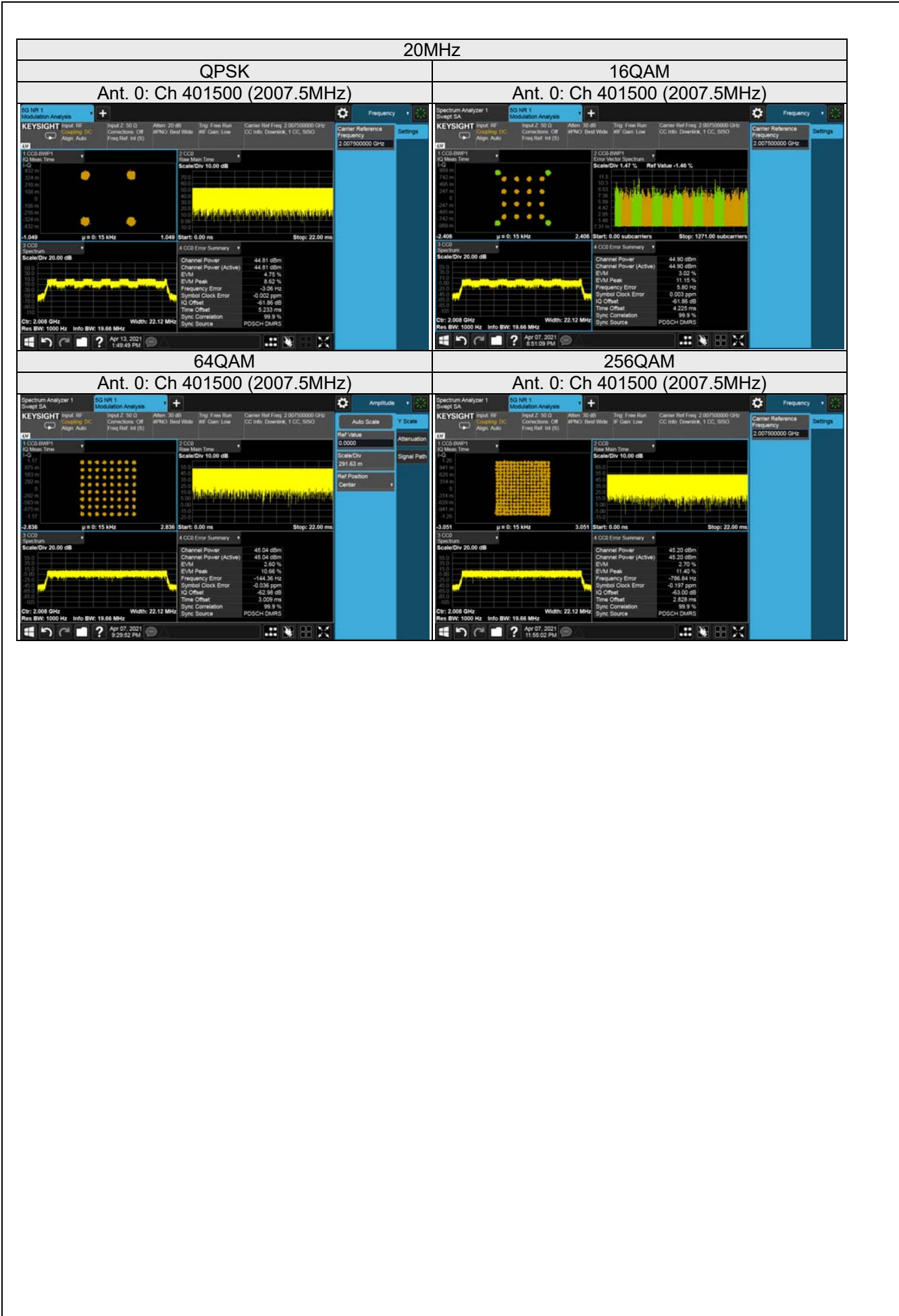


**15MHz**



**64QAM**





### 4.3 Frequency Stability Measurement

#### 4.3.1 Limits of Frequency Stability Measurement

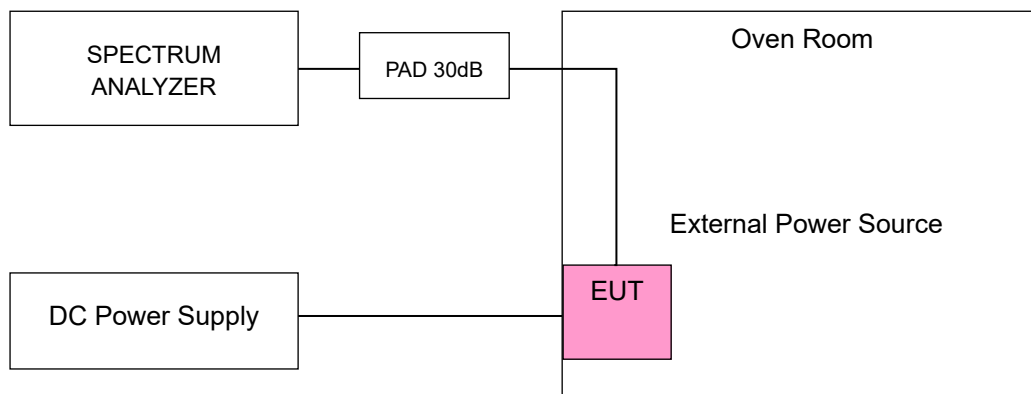
According to the FCC part 2.1055 shall be tested the frequency stability. The rule is defined that "The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block." The test extreme voltage is according to the 2.1055(d)(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment and the extreme temperature rule is comply with specification of EUT  $-40^{\circ}\text{C} \sim 55^{\circ}\text{C}$ .

#### 4.3.2 Test Procedure

- Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
- The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the  $\pm 0.5^{\circ}\text{C}$  during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

**NOTE:** The frequency error was recorded from the spectrum analyzer.

#### 4.3.3 Test Setup



4.3.4 Test Results  
**Band n66**  
**SC Mode- Ant. TX 0**

| FREQUENCY ERROR vs. VOLTAGE |                    |                          |                    |                          |                    |                          |                    |                          |               |
|-----------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Voltage<br>(Volts)          | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                             | 5MHz               |                          |                    |                          | 10MHz              |                          |                    |                          |               |
|                             | 2112.5MHz          |                          | 2197.5MHz          |                          | 2115.0MHz          |                          | 2195.0MHz          |                          |               |
|                             | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -48                         | 2112.500062        | 0.029                    | 2197.500083        | 0.038                    | 2115.000039        | 0.018                    | 2195.000034        | 0.015                    | PASS          |
| -40.5                       | 2112.500019        | 0.009                    | 2197.500070        | 0.032                    | 2115.000034        | 0.016                    | 2195.000042        | 0.019                    | PASS          |
| -58.5                       | 2112.500030        | 0.014                    | 2197.500071        | 0.032                    | 2115.000026        | 0.012                    | 2195.000035        | 0.016                    | PASS          |

| FREQUENCY ERROR vs. Temperature |                    |                          |                    |                          |                    |                          |                    |                          |               |
|---------------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Temp.<br>(°C)                   | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                                 | 5MHz               |                          |                    |                          | 10MHz              |                          |                    |                          |               |
|                                 | 2112.5MHz          |                          | 2197.5MHz          |                          | 2115.0MHz          |                          | 2195.0MHz          |                          |               |
|                                 | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -40                             | 2112.500075        | 0.036                    | 2197.500027        | 0.012                    | 2115.000031        | 0.015                    | 2195.000049        | 0.022                    | PASS          |
| -30                             | 2112.500025        | 0.012                    | 2197.500010        | 0.005                    | 2115.000039        | 0.018                    | 2195.000053        | 0.024                    | PASS          |
| -20                             | 2112.500018        | 0.009                    | 2197.500045        | 0.020                    | 2115.000032        | 0.015                    | 2195.000040        | 0.018                    | PASS          |
| -10                             | 2112.500022        | 0.010                    | 2197.500071        | 0.032                    | 2115.000051        | 0.024                    | 2195.000013        | 0.006                    | PASS          |
| 0                               | 2112.500073        | 0.035                    | 2197.500040        | 0.018                    | 2115.000016        | 0.008                    | 2195.000083        | 0.038                    | PASS          |
| 10                              | 2112.500096        | 0.045                    | 2197.500028        | 0.013                    | 2115.000096        | 0.045                    | 2195.000082        | 0.037                    | PASS          |
| 20                              | 2112.499900        | -0.047                   | 2197.499936        | -0.029                   | 2114.999928        | -0.034                   | 2194.999971        | -0.013                   | PASS          |
| 30                              | 2112.499986        | -0.007                   | 2197.499943        | -0.026                   | 2114.999980        | -0.009                   | 2194.999953        | -0.021                   | PASS          |
| 40                              | 2112.499986        | -0.007                   | 2197.499912        | -0.040                   | 2114.999968        | -0.015                   | 2194.999931        | -0.031                   | PASS          |
| 50                              | 2112.499954        | -0.022                   | 2197.499943        | -0.026                   | 2114.999905        | -0.045                   | 2194.999969        | -0.014                   | PASS          |
| 55                              | 2112.499965        | -0.017                   | 2197.499957        | -0.020                   | 2114.999955        | -0.021                   | 2194.999904        | -0.044                   | PASS          |

| FREQUENCY ERROR vs. VOLTAGE |                    |                          |                    |                          |                    |                          |                    |                          |               |
|-----------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Voltage<br>(Volts)          | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                             | 15MHz              |                          |                    |                          | 20MHz              |                          |                    |                          |               |
|                             | 2117.5MHz          |                          | 2192.5MHz          |                          | 2120.0MHz          |                          | 2190.0MHz          |                          |               |
|                             | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -48                         | 2117.500081        | 0.038                    | 2192.500026        | 0.012                    | 2120.000070        | 0.033                    | 2190.000076        | 0.035                    | PASS          |
| -40.5                       | 2117.500048        | 0.023                    | 2192.500031        | 0.014                    | 2120.000093        | 0.044                    | 2190.000040        | 0.018                    | PASS          |
| -58.5                       | 2117.500090        | 0.043                    | 2192.500081        | 0.037                    | 2120.000010        | 0.005                    | 2190.000026        | 0.012                    | PASS          |

| FREQUENCY ERROR vs. Temperature |                    |                          |                    |                          |                    |                          |                    |                          |               |
|---------------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Temp.<br>(°C)                   | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                                 | 15MHz              |                          |                    |                          | 20MHz              |                          |                    |                          |               |
|                                 | 2117.5MHz          |                          | 2192.5MHz          |                          | 2120.0MHz          |                          | 2190.0MHz          |                          |               |
|                                 | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -40                             | 2117.500022        | 0.010                    | 2192.500063        | 0.029                    | 2120.000011        | 0.005                    | 2190.000075        | 0.034                    | PASS          |
| -30                             | 2117.500028        | 0.013                    | 2192.500060        | 0.027                    | 2120.000012        | 0.006                    | 2190.000015        | 0.007                    | PASS          |
| -20                             | 2117.500015        | 0.007                    | 2192.500012        | 0.005                    | 2120.000032        | 0.015                    | 2190.000098        | 0.045                    | PASS          |
| -10                             | 2117.500030        | 0.014                    | 2192.500058        | 0.026                    | 2120.000099        | 0.047                    | 2190.000088        | 0.040                    | PASS          |
| 0                               | 2117.500042        | 0.020                    | 2192.500097        | 0.044                    | 2120.000088        | 0.042                    | 2190.000042        | 0.019                    | PASS          |
| 10                              | 2117.500044        | 0.021                    | 2192.500093        | 0.042                    | 2120.000068        | 0.032                    | 2190.000070        | 0.032                    | PASS          |
| 20                              | 2117.499921        | -0.037                   | 2192.499920        | -0.036                   | 2119.999904        | -0.045                   | 2189.999930        | -0.032                   | PASS          |
| 30                              | 2117.499923        | -0.036                   | 2192.499905        | -0.043                   | 2119.999947        | -0.025                   | 2189.999931        | -0.032                   | PASS          |
| 40                              | 2117.499951        | -0.023                   | 2192.499924        | -0.035                   | 2119.999910        | -0.042                   | 2189.999971        | -0.013                   | PASS          |
| 50                              | 2117.499923        | -0.036                   | 2192.499961        | -0.018                   | 2119.999961        | -0.018                   | 2189.999928        | -0.033                   | PASS          |
| 55                              | 2117.499949        | -0.024                   | 2192.499940        | -0.027                   | 2119.999911        | -0.042                   | 2189.999936        | -0.029                   | PASS          |

### SC Mode- Ant. TX 1

| FREQUENCY ERROR vs. VOLTAGE |                    |                          |                    |                          |                    |                          |                    |                          |               |
|-----------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Voltage<br>(Volts)          | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                             | 5MHz               |                          |                    |                          | 10MHz              |                          |                    |                          |               |
|                             | 2112.5MHz          |                          | 2197.5MHz          |                          | 2115.0MHz          |                          | 2195.0MHz          |                          |               |
|                             | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -48                         | 2112.500027        | 0.013                    | 2197.500040        | 0.018                    | 2115.000064        | 0.030                    | 2195.000030        | 0.014                    | PASS          |
| -40.5                       | 2112.500092        | 0.044                    | 2197.500021        | 0.010                    | 2115.000010        | 0.005                    | 2195.000041        | 0.019                    | PASS          |
| -58.5                       | 2112.500084        | 0.040                    | 2197.500015        | 0.007                    | 2115.000037        | 0.017                    | 2195.000043        | 0.020                    | PASS          |

| FREQUENCY ERROR vs. Temperature |                    |                          |                    |                          |                    |                          |                    |                          |               |
|---------------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Temp.<br>(°C)                   | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                                 | 5MHz               |                          |                    |                          | 10MHz              |                          |                    |                          |               |
|                                 | 2112.5MHz          |                          | 2197.5MHz          |                          | 2115.0MHz          |                          | 2195.0MHz          |                          |               |
|                                 | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -40                             | 2112.500033        | 0.016                    | 2197.500028        | 0.013                    | 2115.000084        | 0.040                    | 2195.000026        | 0.012                    | PASS          |
| -30                             | 2112.500042        | 0.020                    | 2197.500011        | 0.005                    | 2115.000096        | 0.045                    | 2195.000075        | 0.034                    | PASS          |
| -20                             | 2112.500039        | 0.018                    | 2197.500079        | 0.036                    | 2115.000070        | 0.033                    | 2195.000042        | 0.019                    | PASS          |
| -10                             | 2112.500049        | 0.023                    | 2197.500073        | 0.033                    | 2115.000062        | 0.029                    | 2195.000059        | 0.027                    | PASS          |
| 0                               | 2112.500037        | 0.018                    | 2197.500057        | 0.026                    | 2115.000046        | 0.022                    | 2195.000092        | 0.042                    | PASS          |
| 10                              | 2112.500085        | 0.040                    | 2197.500062        | 0.028                    | 2115.000046        | 0.022                    | 2195.000057        | 0.026                    | PASS          |
| 20                              | 2112.499930        | -0.033                   | 2197.499927        | -0.033                   | 2114.999948        | -0.025                   | 2194.999933        | -0.031                   | PASS          |
| 30                              | 2112.499983        | -0.008                   | 2197.499928        | -0.033                   | 2114.999941        | -0.028                   | 2194.999960        | -0.018                   | PASS          |
| 40                              | 2112.499956        | -0.021                   | 2197.499957        | -0.020                   | 2114.999979        | -0.010                   | 2194.999990        | -0.005                   | PASS          |
| 50                              | 2112.499926        | -0.035                   | 2197.499951        | -0.022                   | 2114.999908        | -0.043                   | 2194.999968        | -0.015                   | PASS          |
| 55                              | 2112.499902        | -0.046                   | 2197.499953        | -0.021                   | 2114.999913        | -0.041                   | 2194.999920        | -0.036                   | PASS          |

| FREQUENCY ERROR vs. VOLTAGE |                    |                          |                    |                          |                    |                          |                    |                          |               |
|-----------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Voltage<br>(Volts)          | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                             | 15MHz              |                          |                    |                          | 20MHz              |                          |                    |                          |               |
|                             | 2117.5MHz          |                          | 2192.5MHz          |                          | 2120.0MHz          |                          | 2190.0MHz          |                          |               |
|                             | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -48                         | 2117.500018        | 0.009                    | 2192.500086        | 0.039                    | 2120.000031        | 0.015                    | 2190.000051        | 0.023                    | PASS          |
| -40.5                       | 2117.500020        | 0.009                    | 2192.500040        | 0.018                    | 2120.000057        | 0.027                    | 2190.000052        | 0.024                    | PASS          |
| -58.5                       | 2117.500046        | 0.022                    | 2192.500075        | 0.034                    | 2120.000077        | 0.036                    | 2190.000095        | 0.043                    | PASS          |

| FREQUENCY ERROR vs. Temperature |                    |                          |                    |                          |                    |                          |                    |                          |               |
|---------------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Temp.<br>(°C)                   | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                                 | 15MHz              |                          |                    |                          | 20MHz              |                          |                    |                          |               |
|                                 | 2117.5MHz          |                          | 2192.5MHz          |                          | 2120.0MHz          |                          | 2190.0MHz          |                          |               |
|                                 | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -40                             | 2117.500022        | 0.010                    | 2192.500064        | 0.029                    | 2120.000022        | 0.010                    | 2190.000018        | 0.008                    | PASS          |
| -30                             | 2117.500059        | 0.028                    | 2192.500041        | 0.019                    | 2120.000087        | 0.041                    | 2190.000074        | 0.034                    | PASS          |
| -20                             | 2117.500095        | 0.045                    | 2192.500021        | 0.010                    | 2120.000082        | 0.039                    | 2190.000034        | 0.016                    | PASS          |
| -10                             | 2117.500042        | 0.020                    | 2192.500050        | 0.023                    | 2120.000066        | 0.031                    | 2190.000067        | 0.031                    | PASS          |
| 0                               | 2117.500053        | 0.025                    | 2192.500079        | 0.036                    | 2120.000039        | 0.018                    | 2190.000084        | 0.038                    | PASS          |
| 10                              | 2117.500033        | 0.016                    | 2192.500079        | 0.036                    | 2120.000080        | 0.038                    | 2190.000015        | 0.007                    | PASS          |
| 20                              | 2117.499913        | -0.041                   | 2192.499963        | -0.017                   | 2119.999925        | -0.035                   | 2189.999927        | -0.033                   | PASS          |
| 30                              | 2117.499988        | -0.006                   | 2192.499910        | -0.041                   | 2119.999975        | -0.012                   | 2189.999962        | -0.017                   | PASS          |
| 40                              | 2117.499968        | -0.015                   | 2192.499965        | -0.016                   | 2119.999944        | -0.026                   | 2189.999982        | -0.008                   | PASS          |
| 50                              | 2117.499943        | -0.027                   | 2192.499946        | -0.025                   | 2119.999950        | -0.024                   | 2189.999958        | -0.019                   | PASS          |
| 55                              | 2117.499911        | -0.042                   | 2192.499975        | -0.011                   | 2119.999918        | -0.039                   | 2189.999942        | -0.026                   | PASS          |

**SC Mode- Ant. TX 2**

| FREQUENCY ERROR vs. VOLTAGE |                    |                          |                    |                          |                    |                          |                    |                          |               |
|-----------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Voltage<br>(Volts)          | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                             | 5MHz               |                          |                    |                          | 10MHz              |                          |                    |                          |               |
|                             | 2112.5MHz          |                          | 2197.5MHz          |                          | 2115.0MHz          |                          | 2195.0MHz          |                          |               |
|                             | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -48                         | 2112.500062        | 0.029                    | 2197.500100        | 0.046                    | 2115.000095        | 0.045                    | 2195.000014        | 0.006                    | PASS          |
| -40.5                       | 2112.500057        | 0.027                    | 2197.500062        | 0.028                    | 2115.000048        | 0.023                    | 2195.000020        | 0.009                    | PASS          |
| -58.5                       | 2112.500083        | 0.039                    | 2197.500046        | 0.021                    | 2115.000095        | 0.045                    | 2195.000042        | 0.019                    | PASS          |

| FREQUENCY ERROR vs. Temperature |                    |                          |                    |                          |                    |                          |                    |                          |               |
|---------------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Temp.<br>(°C)                   | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                                 | 5MHz               |                          |                    |                          | 10MHz              |                          |                    |                          |               |
|                                 | 2112.5MHz          |                          | 2197.5MHz          |                          | 2115.0MHz          |                          | 2195.0MHz          |                          |               |
|                                 | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -40                             | 2112.500077        | 0.036                    | 2197.500038        | 0.017                    | 2115.000054        | 0.026                    | 2195.000016        | 0.007                    | PASS          |
| -30                             | 2112.500072        | 0.034                    | 2197.500027        | 0.012                    | 2115.000058        | 0.027                    | 2195.000069        | 0.031                    | PASS          |
| -20                             | 2112.500093        | 0.044                    | 2197.500071        | 0.032                    | 2115.000083        | 0.039                    | 2195.000059        | 0.027                    | PASS          |
| -10                             | 2112.500058        | 0.027                    | 2197.500093        | 0.042                    | 2115.000057        | 0.027                    | 2195.000021        | 0.010                    | PASS          |
| 0                               | 2112.500020        | 0.009                    | 2197.500014        | 0.006                    | 2115.000076        | 0.036                    | 2195.000095        | 0.043                    | PASS          |
| 10                              | 2112.500080        | 0.038                    | 2197.500076        | 0.035                    | 2115.000089        | 0.042                    | 2195.000022        | 0.010                    | PASS          |
| 20                              | 2112.499925        | -0.036                   | 2197.499931        | -0.031                   | 2114.999951        | -0.023                   | 2194.999901        | -0.045                   | PASS          |
| 30                              | 2112.499967        | -0.016                   | 2197.499941        | -0.027                   | 2114.999971        | -0.014                   | 2194.999958        | -0.019                   | PASS          |
| 40                              | 2112.499940        | -0.028                   | 2197.499987        | -0.006                   | 2114.999984        | -0.008                   | 2194.999973        | -0.012                   | PASS          |
| 50                              | 2112.499990        | -0.005                   | 2197.499937        | -0.029                   | 2114.999929        | -0.034                   | 2194.999985        | -0.007                   | PASS          |
| 55                              | 2112.499990        | -0.005                   | 2197.499933        | -0.030                   | 2114.999952        | -0.023                   | 2194.999945        | -0.025                   | PASS          |



| FREQUENCY ERROR vs. VOLTAGE |                    |                          |                    |                          |                    |                          |                    |                          |               |
|-----------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Voltage<br>(Volts)          | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                             | 15MHz              |                          |                    |                          | 20MHz              |                          |                    |                          |               |
|                             | 2117.5MHz          |                          | 2192.5MHz          |                          | 2120.0MHz          |                          | 2190.0MHz          |                          |               |
|                             | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -48                         | 2117.500037        | 0.017                    | 2192.500100        | 0.046                    | 2120.000027        | 0.013                    | 2190.000034        | 0.016                    | PASS          |
| -40.5                       | 2117.500054        | 0.026                    | 2192.500079        | 0.036                    | 2120.000075        | 0.035                    | 2190.000043        | 0.020                    | PASS          |
| -58.5                       | 2117.500072        | 0.034                    | 2192.500094        | 0.043                    | 2120.000099        | 0.047                    | 2190.000094        | 0.043                    | PASS          |

| FREQUENCY ERROR vs. Temperature |                    |                          |                    |                          |                    |                          |                    |                          |               |
|---------------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Temp.<br>(°C)                   | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                                 | 15MHz              |                          |                    |                          | 20MHz              |                          |                    |                          |               |
|                                 | 2117.5MHz          |                          | 2192.5MHz          |                          | 2120.0MHz          |                          | 2190.0MHz          |                          |               |
|                                 | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -40                             | 2117.500028        | 0.013                    | 2192.500096        | 0.044                    | 2120.000017        | 0.008                    | 2190.000022        | 0.010                    | PASS          |
| -30                             | 2117.500070        | 0.033                    | 2192.500044        | 0.020                    | 2120.000096        | 0.045                    | 2190.000035        | 0.016                    | PASS          |
| -20                             | 2117.500068        | 0.032                    | 2192.500032        | 0.015                    | 2120.000090        | 0.042                    | 2190.000038        | 0.017                    | PASS          |
| -10                             | 2117.500032        | 0.015                    | 2192.500016        | 0.007                    | 2120.000053        | 0.025                    | 2190.000066        | 0.030                    | PASS          |
| 0                               | 2117.500093        | 0.044                    | 2192.500059        | 0.027                    | 2120.000076        | 0.036                    | 2190.000025        | 0.011                    | PASS          |
| 10                              | 2117.500076        | 0.036                    | 2192.500079        | 0.036                    | 2120.000014        | 0.007                    | 2190.000037        | 0.017                    | PASS          |
| 20                              | 2117.499939        | -0.029                   | 2192.499919        | -0.037                   | 2119.999990        | -0.005                   | 2189.999985        | -0.007                   | PASS          |
| 30                              | 2117.499905        | -0.045                   | 2192.499963        | -0.017                   | 2119.999972        | -0.013                   | 2189.999961        | -0.018                   | PASS          |
| 40                              | 2117.499980        | -0.009                   | 2192.499960        | -0.018                   | 2119.999954        | -0.022                   | 2189.999943        | -0.026                   | PASS          |
| 50                              | 2117.499914        | -0.041                   | 2192.499931        | -0.031                   | 2119.999988        | -0.006                   | 2189.999955        | -0.021                   | PASS          |
| 55                              | 2117.499964        | -0.017                   | 2192.499922        | -0.036                   | 2119.999924        | -0.036                   | 2189.999904        | -0.044                   | PASS          |

**SC Mode- Ant. TX 3**

| FREQUENCY ERROR vs. VOLTAGE |                    |                          |                    |                          |                    |                          |                    |                          |               |
|-----------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Voltage<br>(Volts)          | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                             | 5MHz               |                          |                    |                          | 10MHz              |                          |                    |                          |               |
|                             | 2112.5MHz          |                          | 2197.5MHz          |                          | 2115.0MHz          |                          | 2195.0MHz          |                          |               |
|                             | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -48                         | 2112.500046        | 0.022                    | 2197.500035        | 0.016                    | 2115.000073        | 0.035                    | 2195.000052        | 0.024                    | PASS          |
| -40.5                       | 2112.500011        | 0.005                    | 2197.500078        | 0.035                    | 2115.000075        | 0.035                    | 2195.000039        | 0.018                    | PASS          |
| -58.5                       | 2112.500072        | 0.034                    | 2197.500098        | 0.045                    | 2115.000069        | 0.033                    | 2195.000070        | 0.032                    | PASS          |

| FREQUENCY ERROR vs. Temperature |                    |                          |                    |                          |                    |                          |                    |                          |               |
|---------------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Temp.<br>(°C)                   | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                                 | 5MHz               |                          |                    |                          | 10MHz              |                          |                    |                          |               |
|                                 | 2112.5MHz          |                          | 2197.5MHz          |                          | 2115.0MHz          |                          | 2195.0MHz          |                          |               |
|                                 | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -40                             | 2112.500027        | 0.013                    | 2197.500035        | 0.016                    | 2115.000044        | 0.021                    | 2195.000061        | 0.028                    | PASS          |
| -30                             | 2112.500068        | 0.032                    | 2197.500019        | 0.009                    | 2115.000019        | 0.009                    | 2195.000073        | 0.033                    | PASS          |
| -20                             | 2112.500100        | 0.047                    | 2197.500023        | 0.010                    | 2115.000031        | 0.015                    | 2195.000065        | 0.030                    | PASS          |
| -10                             | 2112.500068        | 0.032                    | 2197.500026        | 0.012                    | 2115.000083        | 0.039                    | 2195.000015        | 0.007                    | PASS          |
| 0                               | 2112.500099        | 0.047                    | 2197.500041        | 0.019                    | 2115.000046        | 0.022                    | 2195.000035        | 0.016                    | PASS          |
| 10                              | 2112.500093        | 0.044                    | 2197.500084        | 0.038                    | 2115.000017        | 0.008                    | 2195.000046        | 0.021                    | PASS          |
| 20                              | 2112.499910        | -0.043                   | 2197.499901        | -0.045                   | 2114.999924        | -0.036                   | 2194.999923        | -0.035                   | PASS          |
| 30                              | 2112.499941        | -0.028                   | 2197.499956        | -0.020                   | 2114.999980        | -0.009                   | 2194.999966        | -0.015                   | PASS          |
| 40                              | 2112.499989        | -0.005                   | 2197.499930        | -0.032                   | 2114.999947        | -0.025                   | 2194.999968        | -0.015                   | PASS          |
| 50                              | 2112.499966        | -0.016                   | 2197.499936        | -0.029                   | 2114.999928        | -0.034                   | 2194.999922        | -0.036                   | PASS          |
| 55                              | 2112.499953        | -0.022                   | 2197.499927        | -0.033                   | 2114.999933        | -0.032                   | 2194.999913        | -0.040                   | PASS          |

| FREQUENCY ERROR vs. VOLTAGE |                    |                          |                    |                          |                    |                          |                    |                          |               |
|-----------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Voltage<br>(Volts)          | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                             | 15MHz              |                          |                    |                          | 20MHz              |                          |                    |                          |               |
|                             | 2117.5MHz          |                          | 2192.5MHz          |                          | 2120.0MHz          |                          | 2190.0MHz          |                          |               |
|                             | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -48                         | 2117.500088        | 0.042                    | 2192.500053        | 0.024                    | 2120.000023        | 0.011                    | 2190.000080        | 0.037                    | PASS          |
| -40.5                       | 2117.500043        | 0.020                    | 2192.500032        | 0.015                    | 2120.000057        | 0.027                    | 2190.000091        | 0.042                    | PASS          |
| -58.5                       | 2117.500094        | 0.044                    | 2192.500014        | 0.006                    | 2120.000093        | 0.044                    | 2190.000046        | 0.021                    | PASS          |

| FREQUENCY ERROR vs. Temperature |                    |                          |                    |                          |                    |                          |                    |                          |               |
|---------------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Temp.<br>(°C)                   | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                                 | 15MHz              |                          |                    |                          | 20MHz              |                          |                    |                          |               |
|                                 | 2117.5MHz          |                          | 2192.5MHz          |                          | 2120.0MHz          |                          | 2190.0MHz          |                          |               |
|                                 | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -40                             | 2117.500086        | 0.041                    | 2192.500027        | 0.012                    | 2120.000094        | 0.044                    | 2190.000027        | 0.012                    | PASS          |
| -30                             | 2117.500074        | 0.035                    | 2192.500081        | 0.037                    | 2120.000084        | 0.040                    | 2190.000090        | 0.041                    | PASS          |
| -20                             | 2117.500024        | 0.011                    | 2192.500018        | 0.008                    | 2120.000061        | 0.029                    | 2190.000070        | 0.032                    | PASS          |
| -10                             | 2117.500052        | 0.025                    | 2192.500059        | 0.027                    | 2120.000066        | 0.031                    | 2190.000094        | 0.043                    | PASS          |
| 0                               | 2117.500011        | 0.005                    | 2192.500098        | 0.045                    | 2120.000062        | 0.029                    | 2190.000061        | 0.028                    | PASS          |
| 10                              | 2117.500049        | 0.023                    | 2192.500036        | 0.016                    | 2120.000079        | 0.037                    | 2190.000095        | 0.043                    | PASS          |
| 20                              | 2117.499941        | -0.028                   | 2192.499941        | -0.027                   | 2119.999908        | -0.043                   | 2189.999945        | -0.025                   | PASS          |
| 30                              | 2117.499923        | -0.036                   | 2192.499922        | -0.036                   | 2119.999959        | -0.019                   | 2189.999913        | -0.040                   | PASS          |
| 40                              | 2117.499955        | -0.021                   | 2192.499970        | -0.014                   | 2119.999929        | -0.033                   | 2189.999928        | -0.033                   | PASS          |
| 50                              | 2117.499950        | -0.024                   | 2192.499917        | -0.038                   | 2119.999906        | -0.044                   | 2189.999910        | -0.041                   | PASS          |
| 55                              | 2117.499990        | -0.005                   | 2192.499984        | -0.007                   | 2119.999977        | -0.011                   | 2189.999919        | -0.037                   | PASS          |

**Band n70**  
**SC Mode- Ant. TX 0**

| FREQUENCY ERROR vs. VOLTAGE |                    |                          |                    |                          |                    |                          |                    |                          |               |
|-----------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Voltage<br>(Volts)          | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                             | 5MHz               |                          |                    |                          | 10MHz              |                          |                    |                          |               |
|                             | 1997.5MHz          |                          | 2017.5MHz          |                          | 2000.0MHz          |                          | 2015.0MHz          |                          |               |
|                             | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -48                         | 1997.500059        | 0.030                    | 2017.500018        | 0.009                    | 2000.000091        | 0.046                    | 2015.000070        | 0.035                    | PASS          |
| -40.5                       | 1997.500055        | 0.028                    | 2017.500059        | 0.029                    | 2000.000049        | 0.025                    | 2015.000065        | 0.032                    | PASS          |
| -58.5                       | 1997.500047        | 0.024                    | 2017.500042        | 0.021                    | 2000.000062        | 0.031                    | 2015.000045        | 0.022                    | PASS          |

| FREQUENCY ERROR vs. Temperature |                    |                          |                    |                          |                    |                          |                    |                          |               |
|---------------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Temp.<br>(°C)                   | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                                 | 5MHz               |                          |                    |                          | 10MHz              |                          |                    |                          |               |
|                                 | 1997.5MHz          |                          | 2017.5MHz          |                          | 2000.0MHz          |                          | 2015.0MHz          |                          |               |
|                                 | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -40                             | 1997.500046        | 0.023                    | 2017.500023        | 0.011                    | 2000.000033        | 0.017                    | 2015.000017        | 0.008                    | PASS          |
| -30                             | 1997.500022        | 0.011                    | 2017.500017        | 0.008                    | 2000.000062        | 0.031                    | 2015.000065        | 0.032                    | PASS          |
| -20                             | 1997.500028        | 0.014                    | 2017.500069        | 0.034                    | 2000.000032        | 0.016                    | 2015.000089        | 0.044                    | PASS          |
| -10                             | 1997.500081        | 0.041                    | 2017.500060        | 0.030                    | 2000.000096        | 0.048                    | 2015.000046        | 0.023                    | PASS          |
| 0                               | 1997.500013        | 0.007                    | 2017.500093        | 0.046                    | 2000.000014        | 0.007                    | 2015.000046        | 0.023                    | PASS          |
| 10                              | 1997.500096        | 0.048                    | 2017.500036        | 0.018                    | 2000.000067        | 0.034                    | 2015.000042        | 0.021                    | PASS          |
| 20                              | 1997.499973        | -0.014                   | 2017.499933        | -0.033                   | 1999.999920        | -0.040                   | 2014.999986        | -0.007                   | PASS          |
| 30                              | 1997.499929        | -0.036                   | 2017.499930        | -0.035                   | 1999.999947        | -0.027                   | 2014.999968        | -0.016                   | PASS          |
| 40                              | 1997.499904        | -0.048                   | 2017.499938        | -0.031                   | 1999.999923        | -0.039                   | 2014.999928        | -0.036                   | PASS          |
| 50                              | 1997.499906        | -0.047                   | 2017.499914        | -0.043                   | 1999.999940        | -0.030                   | 2014.999955        | -0.022                   | PASS          |
| 55                              | 1997.499968        | -0.016                   | 2017.499955        | -0.022                   | 1999.999951        | -0.025                   | 2014.999963        | -0.018                   | PASS          |

| FREQUENCY ERROR vs. VOLTAGE |                    |                          |                    |                          |                    |                          |                    |                          |               |
|-----------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Voltage<br>(Volts)          | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                             | 15MHz              |                          |                    |                          | 20MHz              |                          |                    |                          |               |
|                             | 2002.5MHz          |                          | 2012.5MHz          |                          | 2005.0MHz          |                          | 2010.0MHz          |                          |               |
|                             | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -48                         | 2002.500047        | 0.023                    | 2012.500063        | 0.031                    | 2005.000017        | 0.008                    | 2010.000025        | 0.012                    | PASS          |
| -40.5                       | 2002.500031        | 0.015                    | 2012.500042        | 0.021                    | 2005.000093        | 0.046                    | 2010.000092        | 0.046                    | PASS          |
| -58.5                       | 2002.500079        | 0.039                    | 2012.500021        | 0.010                    | 2005.000058        | 0.029                    | 2010.000039        | 0.019                    | PASS          |

| FREQUENCY ERROR vs. Temperature |                    |                          |                    |                          |                    |                          |                    |                          |               |
|---------------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Temp.<br>(°C)                   | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                                 | 15MHz              |                          |                    |                          | 20MHz              |                          |                    |                          |               |
|                                 | 2002.5MHz          |                          | 2012.5MHz          |                          | 2005.0MHz          |                          | 2010.0MHz          |                          |               |
|                                 | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -40                             | 2002.500048        | 0.024                    | 2012.500025        | 0.012                    | 2005.000022        | 0.011                    | 2010.000066        | 0.033                    | PASS          |
| -30                             | 2002.500095        | 0.047                    | 2012.500089        | 0.044                    | 2005.000012        | 0.006                    | 2010.000069        | 0.034                    | PASS          |
| -20                             | 2002.500012        | 0.006                    | 2012.500036        | 0.018                    | 2005.000088        | 0.044                    | 2010.000028        | 0.014                    | PASS          |
| -10                             | 2002.500067        | 0.033                    | 2012.500030        | 0.015                    | 2005.000085        | 0.042                    | 2010.000042        | 0.021                    | PASS          |
| 0                               | 2002.500011        | 0.005                    | 2012.500076        | 0.038                    | 2005.000031        | 0.015                    | 2010.000050        | 0.025                    | PASS          |
| 10                              | 2002.500070        | 0.035                    | 2012.500088        | 0.044                    | 2005.000070        | 0.035                    | 2010.000021        | 0.010                    | PASS          |
| 20                              | 2002.499904        | -0.048                   | 2012.499903        | -0.048                   | 2004.999957        | -0.021                   | 2009.999976        | -0.012                   | PASS          |
| 30                              | 2002.499914        | -0.043                   | 2012.499921        | -0.039                   | 2004.999983        | -0.008                   | 2009.999910        | -0.045                   | PASS          |
| 40                              | 2002.499908        | -0.046                   | 2012.499914        | -0.043                   | 2004.999944        | -0.028                   | 2009.999916        | -0.042                   | PASS          |
| 50                              | 2002.499959        | -0.020                   | 2012.499914        | -0.043                   | 2004.999905        | -0.047                   | 2009.999908        | -0.046                   | PASS          |
| 55                              | 2002.499936        | -0.032                   | 2012.499935        | -0.032                   | 2004.999928        | -0.036                   | 2009.999944        | -0.028                   | PASS          |

**SC Mode- Ant. TX 1**

| FREQUENCY ERROR vs. VOLTAGE |                    |                          |                    |                          |                    |                          |                    |                          |               |
|-----------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Voltage<br>(Volts)          | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                             | 5MHz               |                          |                    |                          | 10MHz              |                          |                    |                          |               |
|                             | 1997.5MHz          |                          | 2017.5MHz          |                          | 2000.0MHz          |                          | 2015.0MHz          |                          |               |
|                             | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -48                         | 1997.500042        | 0.021                    | 2017.500084        | 0.042                    | 2000.000068        | 0.034                    | 2015.000016        | 0.008                    | PASS          |
| -40.5                       | 1997.500100        | 0.050                    | 2017.500019        | 0.009                    | 2000.000067        | 0.034                    | 2015.000055        | 0.027                    | PASS          |
| -58.5                       | 1997.500082        | 0.041                    | 2017.500071        | 0.035                    | 2000.000027        | 0.014                    | 2015.000038        | 0.019                    | PASS          |

| FREQUENCY ERROR vs. Temperature |                    |                          |                    |                          |                    |                          |                    |                          |               |
|---------------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Temp.<br>(°C)                   | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                                 | 5MHz               |                          |                    |                          | 10MHz              |                          |                    |                          |               |
|                                 | 1997.5MHz          |                          | 2017.5MHz          |                          | 2000.0MHz          |                          | 2015.0MHz          |                          |               |
|                                 | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -40                             | 1997.500036        | 0.018                    | 2017.500062        | 0.031                    | 2000.000025        | 0.013                    | 2015.000044        | 0.022                    | PASS          |
| -30                             | 1997.500021        | 0.011                    | 2017.500073        | 0.036                    | 2000.000018        | 0.009                    | 2015.000047        | 0.023                    | PASS          |
| -20                             | 1997.500042        | 0.021                    | 2017.500042        | 0.021                    | 2000.000076        | 0.038                    | 2015.000076        | 0.038                    | PASS          |
| -10                             | 1997.500029        | 0.015                    | 2017.500091        | 0.045                    | 2000.000045        | 0.023                    | 2015.000063        | 0.031                    | PASS          |
| 0                               | 1997.500086        | 0.043                    | 2017.500081        | 0.040                    | 2000.000055        | 0.028                    | 2015.000041        | 0.020                    | PASS          |
| 10                              | 1997.500022        | 0.011                    | 2017.500037        | 0.018                    | 2000.000051        | 0.026                    | 2015.000067        | 0.033                    | PASS          |
| 20                              | 1997.499937        | -0.032                   | 2017.499914        | -0.043                   | 1999.999949        | -0.026                   | 2014.999959        | -0.020                   | PASS          |
| 30                              | 1997.499988        | -0.006                   | 2017.499943        | -0.028                   | 1999.999969        | -0.016                   | 2014.999907        | -0.046                   | PASS          |
| 40                              | 1997.499961        | -0.020                   | 2017.499900        | -0.050                   | 1999.999950        | -0.025                   | 2014.999975        | -0.012                   | PASS          |
| 50                              | 1997.499941        | -0.030                   | 2017.499909        | -0.045                   | 1999.999932        | -0.034                   | 2014.999934        | -0.033                   | PASS          |
| 55                              | 1997.499922        | -0.039                   | 2017.499902        | -0.049                   | 1999.999987        | -0.007                   | 2014.999969        | -0.015                   | PASS          |

| FREQUENCY ERROR vs. VOLTAGE |                    |                          |                    |                          |                    |                          |                    |                          |               |
|-----------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Voltage<br>(Volts)          | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                             | 15MHz              |                          |                    |                          | 20MHz              |                          |                    |                          |               |
|                             | 2002.5MHz          |                          | 2012.5MHz          |                          | 2005.0MHz          |                          | 2010.0MHz          |                          |               |
|                             | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -48                         | 2002.500074        | 0.037                    | 2012.500086        | 0.043                    | 2005.000036        | 0.018                    | 2010.000098        | 0.049                    | PASS          |
| -40.5                       | 2002.500010        | 0.005                    | 2012.500030        | 0.015                    | 2005.000089        | 0.044                    | 2010.000079        | 0.039                    | PASS          |
| -58.5                       | 2002.500067        | 0.033                    | 2012.500090        | 0.045                    | 2005.000058        | 0.029                    | 2010.000094        | 0.047                    | PASS          |

| FREQUENCY ERROR vs. Temperature |                    |                          |                    |                          |                    |                          |                    |                          |               |
|---------------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Temp.<br>(°C)                   | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                                 | 15MHz              |                          |                    |                          | 20MHz              |                          |                    |                          |               |
|                                 | 2002.5MHz          |                          | 2012.5MHz          |                          | 2005.0MHz          |                          | 2010.0MHz          |                          |               |
|                                 | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -40                             | 2002.500028        | 0.014                    | 2012.500011        | 0.005                    | 2005.000043        | 0.021                    | 2010.000085        | 0.042                    | PASS          |
| -30                             | 2002.500016        | 0.008                    | 2012.500064        | 0.032                    | 2005.000074        | 0.037                    | 2010.000095        | 0.047                    | PASS          |
| -20                             | 2002.500048        | 0.024                    | 2012.500077        | 0.038                    | 2005.000088        | 0.044                    | 2010.000092        | 0.046                    | PASS          |
| -10                             | 2002.500032        | 0.016                    | 2012.500085        | 0.042                    | 2005.000012        | 0.006                    | 2010.000065        | 0.032                    | PASS          |
| 0                               | 2002.500062        | 0.031                    | 2012.500036        | 0.018                    | 2005.000049        | 0.024                    | 2010.000099        | 0.049                    | PASS          |
| 10                              | 2002.500092        | 0.046                    | 2012.500096        | 0.048                    | 2005.000049        | 0.024                    | 2010.000090        | 0.045                    | PASS          |
| 20                              | 2002.499971        | -0.014                   | 2012.499965        | -0.017                   | 2004.999955        | -0.022                   | 2009.999971        | -0.014                   | PASS          |
| 30                              | 2002.499969        | -0.015                   | 2012.499971        | -0.014                   | 2004.999931        | -0.034                   | 2009.999952        | -0.024                   | PASS          |
| 40                              | 2002.499946        | -0.027                   | 2012.499942        | -0.029                   | 2004.999953        | -0.023                   | 2009.999980        | -0.010                   | PASS          |
| 50                              | 2002.499962        | -0.019                   | 2012.499941        | -0.029                   | 2004.999902        | -0.049                   | 2009.999939        | -0.030                   | PASS          |
| 55                              | 2002.499957        | -0.021                   | 2012.499922        | -0.039                   | 2004.999954        | -0.023                   | 2009.999916        | -0.042                   | PASS          |

**SC Mode- Ant. TX 2**

| FREQUENCY ERROR vs. VOLTAGE |                    |                          |                    |                          |                    |                          |                    |                          |               |
|-----------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Voltage<br>(Volts)          | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                             | 5MHz               |                          |                    |                          | 10MHz              |                          |                    |                          |               |
|                             | 1997.5MHz          |                          | 2017.5MHz          |                          | 2000.0MHz          |                          | 2015.0MHz          |                          |               |
|                             | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -48                         | 1997.500084        | 0.042                    | 2017.500078        | 0.039                    | 2000.000078        | 0.039                    | 2015.000070        | 0.035                    | PASS          |
| -40.5                       | 1997.500099        | 0.050                    | 2017.500048        | 0.024                    | 2000.000030        | 0.015                    | 2015.000036        | 0.018                    | PASS          |
| -58.5                       | 1997.500023        | 0.012                    | 2017.500010        | 0.005                    | 2000.000016        | 0.008                    | 2015.000056        | 0.028                    | PASS          |

| FREQUENCY ERROR vs. Temperature |                    |                          |                    |                          |                    |                          |                    |                          |               |
|---------------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Temp.<br>(°C)                   | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                                 | 5MHz               |                          |                    |                          | 10MHz              |                          |                    |                          |               |
|                                 | 1997.5MHz          |                          | 2017.5MHz          |                          | 2000.0MHz          |                          | 2015.0MHz          |                          |               |
|                                 | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -40                             | 1997.500074        | 0.037                    | 2017.500037        | 0.018                    | 2000.000046        | 0.023                    | 2015.000023        | 0.011                    | PASS          |
| -30                             | 1997.500034        | 0.017                    | 2017.500052        | 0.026                    | 2000.000059        | 0.030                    | 2015.000018        | 0.009                    | PASS          |
| -20                             | 1997.500026        | 0.013                    | 2017.500055        | 0.027                    | 2000.000043        | 0.022                    | 2015.000100        | 0.050                    | PASS          |
| -10                             | 1997.500023        | 0.012                    | 2017.500025        | 0.012                    | 2000.000032        | 0.016                    | 2015.000046        | 0.023                    | PASS          |
| 0                               | 1997.500096        | 0.048                    | 2017.500077        | 0.038                    | 2000.000012        | 0.006                    | 2015.000018        | 0.009                    | PASS          |
| 10                              | 1997.500081        | 0.041                    | 2017.500052        | 0.026                    | 2000.000019        | 0.010                    | 2015.000051        | 0.025                    | PASS          |
| 20                              | 1997.499915        | -0.043                   | 2017.499920        | -0.040                   | 1999.999921        | -0.040                   | 2014.999927        | -0.036                   | PASS          |
| 30                              | 1997.499915        | -0.043                   | 2017.499935        | -0.032                   | 1999.999945        | -0.028                   | 2014.999926        | -0.037                   | PASS          |
| 40                              | 1997.499903        | -0.049                   | 2017.499919        | -0.040                   | 1999.999905        | -0.048                   | 2014.999903        | -0.048                   | PASS          |
| 50                              | 1997.499944        | -0.028                   | 2017.499929        | -0.035                   | 1999.999986        | -0.007                   | 2014.999905        | -0.047                   | PASS          |
| 55                              | 1997.499904        | -0.048                   | 2017.499943        | -0.028                   | 1999.999916        | -0.042                   | 2014.999943        | -0.028                   | PASS          |



| FREQUENCY ERROR vs. VOLTAGE |                    |                          |                    |                          |                    |                          |                    |                          |               |
|-----------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Voltage<br>(Volts)          | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                             | 15MHz              |                          |                    |                          | 20MHz              |                          |                    |                          |               |
|                             | 2002.5MHz          |                          | 2012.5MHz          |                          | 2005.0MHz          |                          | 2010.0MHz          |                          |               |
|                             | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -48                         | 2002.500061        | 0.030                    | 2012.500019        | 0.009                    | 2005.000020        | 0.010                    | 2010.000027        | 0.013                    | PASS          |
| -40.5                       | 2002.500051        | 0.025                    | 2012.500026        | 0.013                    | 2005.000054        | 0.027                    | 2010.000048        | 0.024                    | PASS          |
| -58.5                       | 2002.500034        | 0.017                    | 2012.500065        | 0.032                    | 2005.000038        | 0.019                    | 2010.000032        | 0.016                    | PASS          |

| FREQUENCY ERROR vs. Temperature |                    |                          |                    |                          |                    |                          |                    |                          |               |
|---------------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Temp.<br>(°C)                   | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                                 | 15MHz              |                          |                    |                          | 20MHz              |                          |                    |                          |               |
|                                 | 2002.5MHz          |                          | 2012.5MHz          |                          | 2005.0MHz          |                          | 2010.0MHz          |                          |               |
|                                 | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -40                             | 2002.500077        | 0.038                    | 2012.500028        | 0.014                    | 2005.000036        | 0.018                    | 2010.000024        | 0.012                    | PASS          |
| -30                             | 2002.500095        | 0.047                    | 2012.500023        | 0.011                    | 2005.000045        | 0.022                    | 2010.000039        | 0.019                    | PASS          |
| -20                             | 2002.500084        | 0.042                    | 2012.500035        | 0.017                    | 2005.000036        | 0.018                    | 2010.000075        | 0.037                    | PASS          |
| -10                             | 2002.500053        | 0.026                    | 2012.500094        | 0.047                    | 2005.000041        | 0.020                    | 2010.000098        | 0.049                    | PASS          |
| 0                               | 2002.500064        | 0.032                    | 2012.500020        | 0.010                    | 2005.000092        | 0.046                    | 2010.000082        | 0.041                    | PASS          |
| 10                              | 2002.500023        | 0.011                    | 2012.500062        | 0.031                    | 2005.000052        | 0.026                    | 2010.000092        | 0.046                    | PASS          |
| 20                              | 2002.499981        | -0.009                   | 2012.499937        | -0.031                   | 2004.999934        | -0.033                   | 2009.999955        | -0.022                   | PASS          |
| 30                              | 2002.499913        | -0.043                   | 2012.499977        | -0.011                   | 2004.999966        | -0.017                   | 2009.999922        | -0.039                   | PASS          |
| 40                              | 2002.499989        | -0.005                   | 2012.499978        | -0.011                   | 2004.999927        | -0.036                   | 2009.999971        | -0.014                   | PASS          |
| 50                              | 2002.499942        | -0.029                   | 2012.499912        | -0.044                   | 2004.999907        | -0.046                   | 2009.999907        | -0.046                   | PASS          |
| 55                              | 2002.499904        | -0.048                   | 2012.499913        | -0.043                   | 2004.999914        | -0.043                   | 2009.999944        | -0.028                   | PASS          |

**SC Mode- Ant. TX 3**

| FREQUENCY ERROR vs. VOLTAGE |                    |                          |                    |                          |                    |                          |                    |                          |               |
|-----------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Voltage<br>(Volts)          | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                             | 5MHz               |                          |                    |                          | 10MHz              |                          |                    |                          |               |
|                             | 1997.5MHz          |                          | 2017.5MHz          |                          | 2000.0MHz          |                          | 2015.0MHz          |                          |               |
|                             | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -48                         | 1997.500058        | 0.029                    | 2017.500060        | 0.030                    | 2000.000045        | 0.023                    | 2015.000035        | 0.017                    | PASS          |
| -40.5                       | 1997.500051        | 0.026                    | 2017.500037        | 0.018                    | 2000.000041        | 0.021                    | 2015.000063        | 0.031                    | PASS          |
| -58.5                       | 1997.500081        | 0.041                    | 2017.500053        | 0.026                    | 2000.000098        | 0.049                    | 2015.000089        | 0.044                    | PASS          |

| FREQUENCY ERROR vs. Temperature |                    |                          |                    |                          |                    |                          |                    |                          |               |
|---------------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Temp.<br>(°C)                   | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                                 | 5MHz               |                          |                    |                          | 10MHz              |                          |                    |                          |               |
|                                 | 1997.5MHz          |                          | 2017.5MHz          |                          | 2000.0MHz          |                          | 2015.0MHz          |                          |               |
|                                 | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -40                             | 1997.500027        | 0.014                    | 2017.500033        | 0.016                    | 2000.000045        | 0.023                    | 2015.000069        | 0.034                    | PASS          |
| -30                             | 1997.500079        | 0.040                    | 2017.500027        | 0.013                    | 2000.000048        | 0.024                    | 2015.000043        | 0.021                    | PASS          |
| -20                             | 1997.500023        | 0.012                    | 2017.500046        | 0.023                    | 2000.000084        | 0.042                    | 2015.000058        | 0.029                    | PASS          |
| -10                             | 1997.500051        | 0.026                    | 2017.500021        | 0.010                    | 2000.000043        | 0.022                    | 2015.000058        | 0.029                    | PASS          |
| 0                               | 1997.500084        | 0.042                    | 2017.500024        | 0.012                    | 2000.000013        | 0.007                    | 2015.000021        | 0.010                    | PASS          |
| 10                              | 1997.500011        | 0.006                    | 2017.500089        | 0.044                    | 2000.000017        | 0.009                    | 2015.000086        | 0.043                    | PASS          |
| 20                              | 1997.499952        | -0.024                   | 2017.499952        | -0.024                   | 1999.999977        | -0.012                   | 2014.999973        | -0.013                   | PASS          |
| 30                              | 1997.499941        | -0.030                   | 2017.499907        | -0.046                   | 1999.999982        | -0.009                   | 2014.999954        | -0.023                   | PASS          |
| 40                              | 1997.499964        | -0.018                   | 2017.499948        | -0.026                   | 1999.999915        | -0.043                   | 2014.999985        | -0.007                   | PASS          |
| 50                              | 1997.499959        | -0.021                   | 2017.499980        | -0.010                   | 1999.999914        | -0.043                   | 2014.999963        | -0.018                   | PASS          |
| 55                              | 1997.499956        | -0.022                   | 2017.499963        | -0.018                   | 1999.999961        | -0.020                   | 2014.999902        | -0.049                   | PASS          |

| FREQUENCY ERROR vs. VOLTAGE |                    |                          |                    |                          |                    |                          |                    |                          |               |
|-----------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Voltage<br>(Volts)          | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                             | 15MHz              |                          |                    |                          | 20MHz              |                          |                    |                          |               |
|                             | 2002.5MHz          |                          | 2012.5MHz          |                          | 2005.0MHz          |                          | 2010.0MHz          |                          |               |
|                             | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -48                         | 2002.500046        | 0.023                    | 2012.500072        | 0.036                    | 2005.000038        | 0.019                    | 2010.000013        | 0.006                    | PASS          |
| -40.5                       | 2002.500068        | 0.034                    | 2012.500041        | 0.020                    | 2005.000088        | 0.044                    | 2010.000023        | 0.011                    | PASS          |
| -58.5                       | 2002.500067        | 0.033                    | 2012.500015        | 0.007                    | 2005.000055        | 0.027                    | 2010.000060        | 0.030                    | PASS          |

| FREQUENCY ERROR vs. Temperature |                    |                          |                    |                          |                    |                          |                    |                          |               |
|---------------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|---------------|
| Temp.<br>(°C)                   | Test result (MHz)  |                          |                    |                          |                    |                          |                    |                          | PASS/<br>FAIL |
|                                 | 15MHz              |                          |                    |                          | 20MHz              |                          |                    |                          |               |
|                                 | 2002.5MHz          |                          | 2012.5MHz          |                          | 2005.0MHz          |                          | 2010.0MHz          |                          |               |
|                                 | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) | Frequency<br>(MHz) | Frequency<br>Error (ppm) |               |
| -40                             | 2002.500071        | 0.035                    | 2012.500022        | 0.011                    | 2005.000086        | 0.043                    | 2010.000036        | 0.018                    | PASS          |
| -30                             | 2002.500098        | 0.049                    | 2012.500077        | 0.038                    | 2005.000080        | 0.040                    | 2010.000067        | 0.033                    | PASS          |
| -20                             | 2002.500087        | 0.043                    | 2012.500057        | 0.028                    | 2005.000074        | 0.037                    | 2010.000062        | 0.031                    | PASS          |
| -10                             | 2002.500075        | 0.037                    | 2012.500021        | 0.010                    | 2005.000053        | 0.026                    | 2010.000089        | 0.044                    | PASS          |
| 0                               | 2002.500034        | 0.017                    | 2012.500047        | 0.023                    | 2005.000024        | 0.012                    | 2010.000043        | 0.021                    | PASS          |
| 10                              | 2002.500057        | 0.028                    | 2012.500093        | 0.046                    | 2005.000035        | 0.017                    | 2010.000046        | 0.023                    | PASS          |
| 20                              | 2002.499920        | -0.040                   | 2012.499944        | -0.028                   | 2004.999902        | -0.049                   | 2009.999977        | -0.011                   | PASS          |
| 30                              | 2002.499980        | -0.010                   | 2012.499972        | -0.014                   | 2004.999912        | -0.044                   | 2009.999900        | -0.050                   | PASS          |
| 40                              | 2002.499978        | -0.011                   | 2012.499913        | -0.043                   | 2004.999916        | -0.042                   | 2009.999938        | -0.031                   | PASS          |
| 50                              | 2002.499951        | -0.024                   | 2012.499912        | -0.044                   | 2004.999954        | -0.023                   | 2009.999963        | -0.018                   | PASS          |
| 55                              | 2002.499903        | -0.048                   | 2012.499958        | -0.021                   | 2004.999932        | -0.034                   | 2009.999906        | -0.047                   | PASS          |

## 4.4 Emission Bandwidth Measurement

### 4.4.1 Limits of Emission Bandwidth Measurement

The frequency shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

### 4.4.2 Test Procedure

#### **-26dBc Bandwidth**

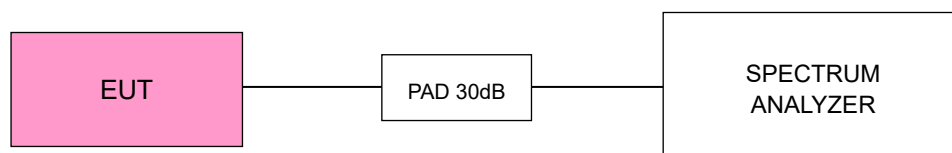
That emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26dB below the transmitter power.

#### **Occupied Bandwidth**

All measurements were done at low, middle and high operational frequency range. EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with RBW = 51kHz and VBW = 160kHz (Channel Bandwidth: 5MHz), RBW = 100kHz and VBW = 300kHz (Channel Bandwidth: 10MHz), RBW = 150kHz and VBW = 470kHz (Channel Bandwidth: 15MHz), RBW = 200kHz and VBW = 620kHz (Channel Bandwidth: 20MHz). The 26dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 26dB.

### 4.4.3 Test Setup



#### 4.4.4 Test Results (-26dBc Bandwidth)

### Band n66 Single Carrier

#### 5MHz

| Channel Number | Freq. (MHz) | -26dB Bandwidth (MHz) |       |       |        |          |       |       |        |          |       |       |        |          |       |       |        |
|----------------|-------------|-----------------------|-------|-------|--------|----------|-------|-------|--------|----------|-------|-------|--------|----------|-------|-------|--------|
|                |             | Ant. TX0              |       |       |        | Ant. TX1 |       |       |        | Ant. TX2 |       |       |        | Ant. TX3 |       |       |        |
|                |             | QPSK                  | 16QAM | 64QAM | 256QAM | QPSK     | 16QAM | 64QAM | 256QAM | QPSK     | 16QAM | 64QAM | 256QAM | QPSK     | 16QAM | 64QAM | 256QAM |
| 422500         | 2112.5      | 4.78                  | 4.79  | 4.82  | 4.81   | 4.78     | 4.79  | 4.82  | 4.81   | 4.78     | 4.79  | 4.81  | 4.81   | 4.78     | 4.78  | 4.83  | 4.81   |
| 431000         | 2155        | 4.79                  | 4.78  | 4.81  | 4.79   | 4.80     | 4.79  | 4.79  | 4.79   | 4.79     | 4.79  | 4.80  | 4.79   | 4.79     | 4.79  | 4.80  | 4.79   |
| 439500         | 2197.5      | 4.79                  | 4.78  | 4.84  | 4.80   | 4.79     | 4.78  | 4.83  | 4.80   | 4.78     | 4.78  | 4.83  | 4.80   | 4.80     | 4.77  | 4.83  | 4.80   |

#### Ant. TX 0

#### Spectrum Plot of Worst Value

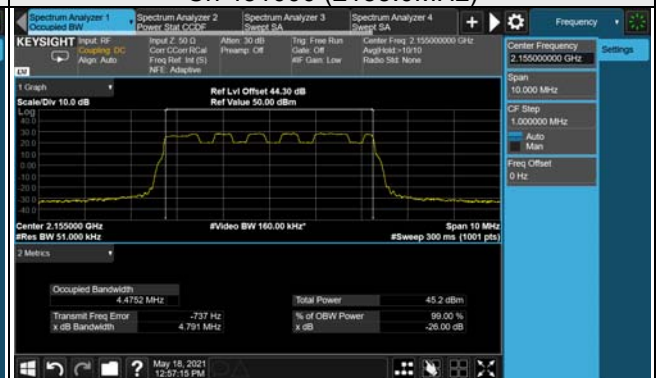
#### -26dBc Bandwidth

#### QPSK

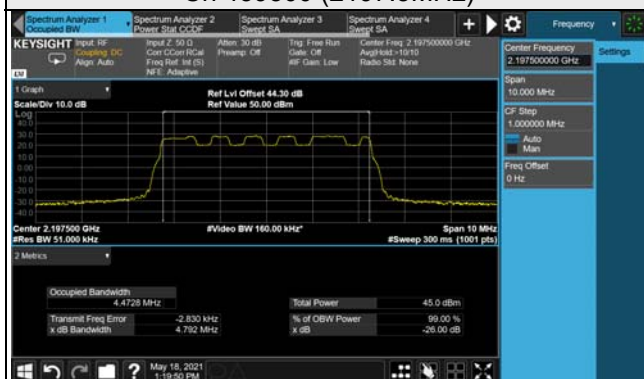
#### Ch 422500 (2112.5MHz)



#### Ch 431000 (2155.0MHz)

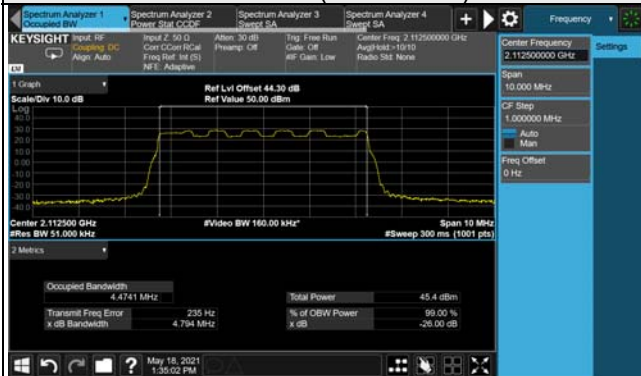


#### Ch 439500 (2197.5MHz)

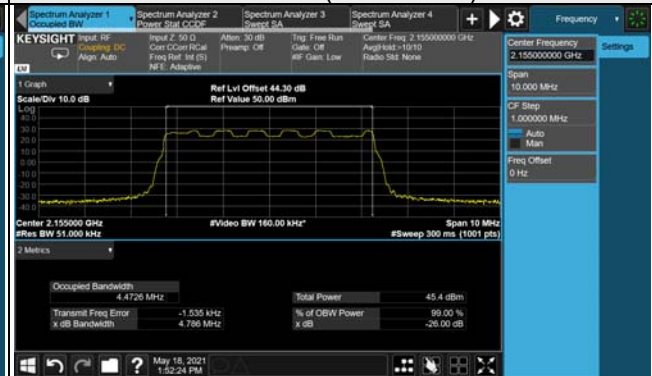


### 16QAM

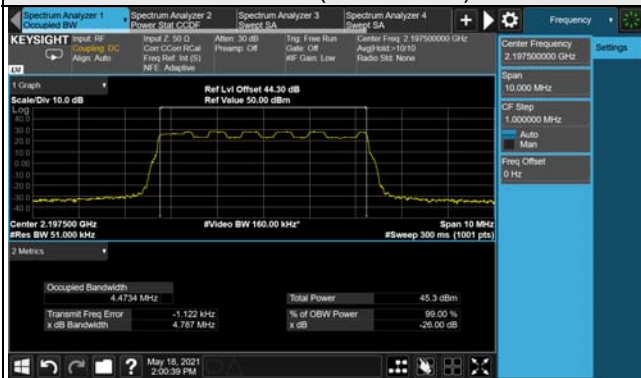
#### Ch 422500 (2112.5MHz)



#### Ch 431000 (2155.0MHz)

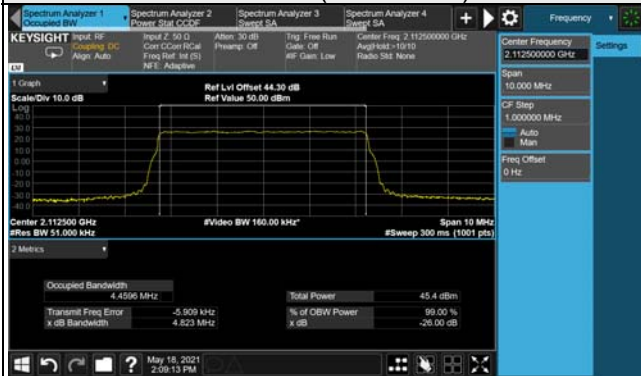


#### Ch 439500 (2197.5MHz)



### 64QAM

#### Ch 422500 (2112.5MHz)



#### Ch 431000 (2155.0MHz)

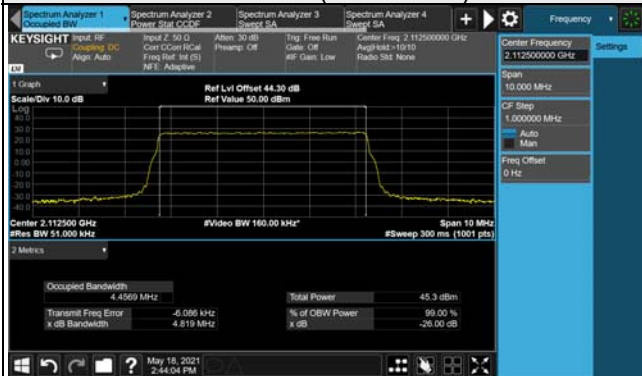


#### Ch 439500 (2197.5MHz)

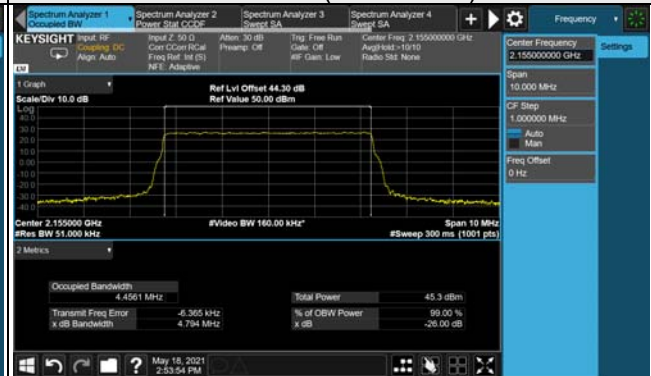


256QAM

Ch 422500 (2112.5MHz)



Ch 431000 (2155.0MHz)



Ch 439500 (2197.5MHz)



Ant. TX 1

Spectrum Plot of Worst Value

-26dBc Bandwidth

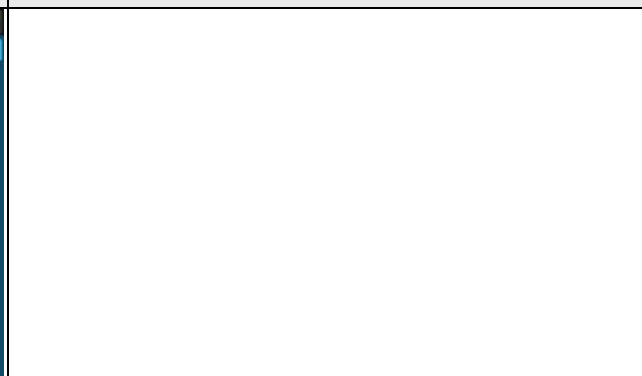
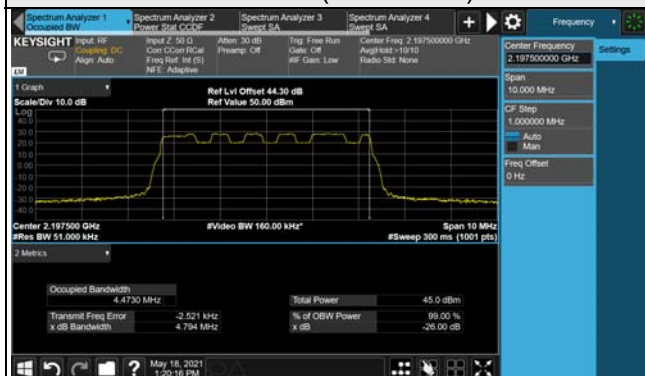
QPSK

Ch 422500 (2112.5MHz)

Ch 431000 (2155.0MHz)



Ch 439500 (2197.5MHz)



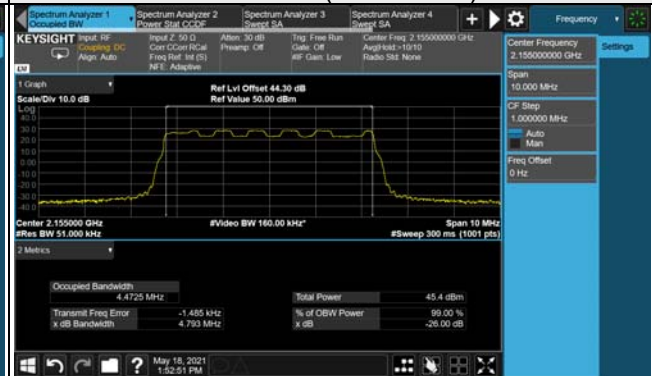


### 16QAM

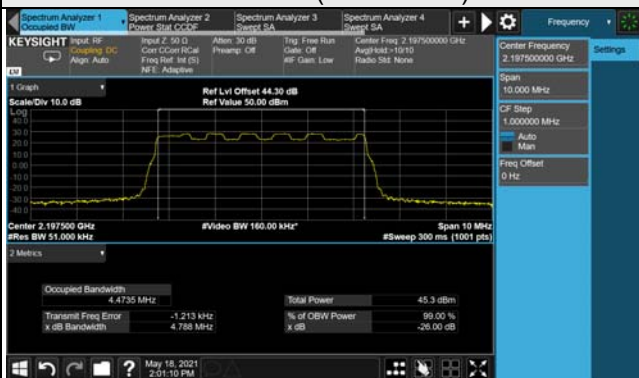
#### Ch 422500 (2112.5MHz)



#### Ch 431000 (2155.0MHz)

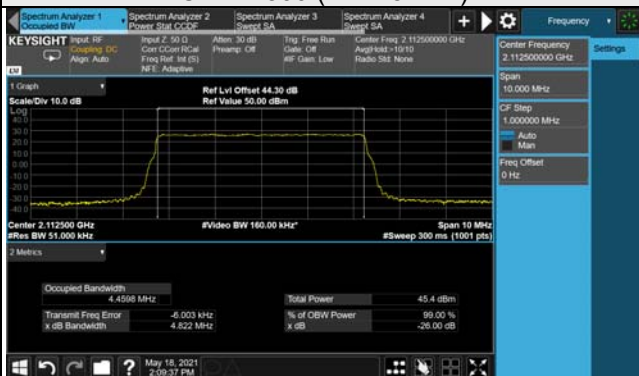


#### Ch 439500 (2197.5MHz)

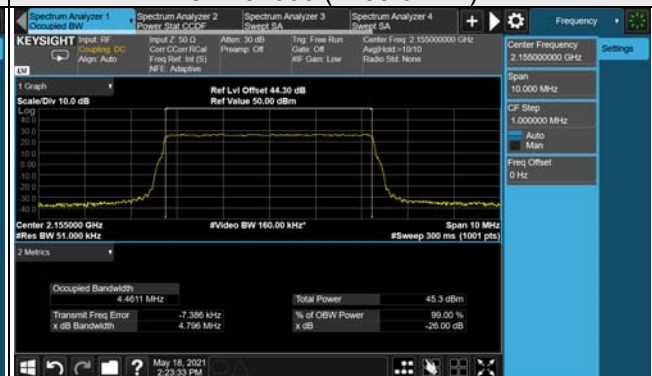


### 64QAM

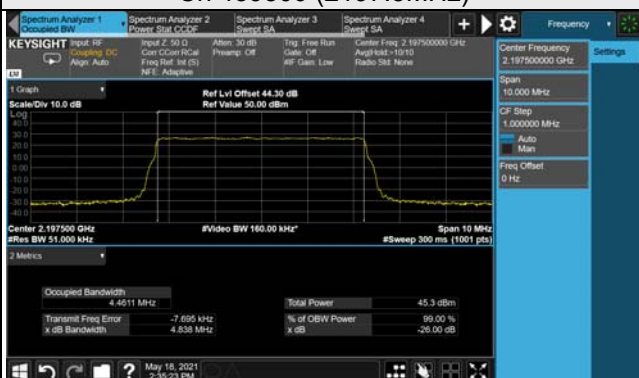
#### Ch 422500 (2112.5MHz)



#### Ch 431000 (2155.0MHz)

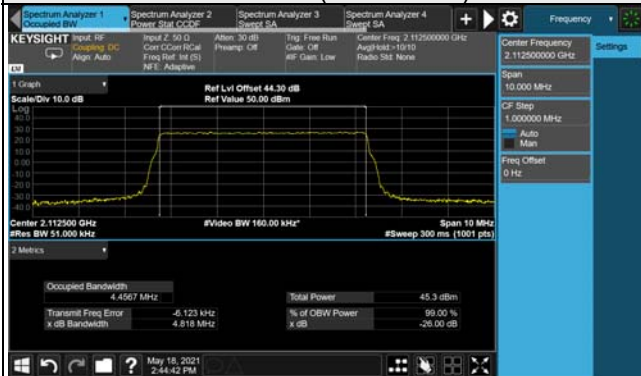


#### Ch 439500 (2197.5MHz)

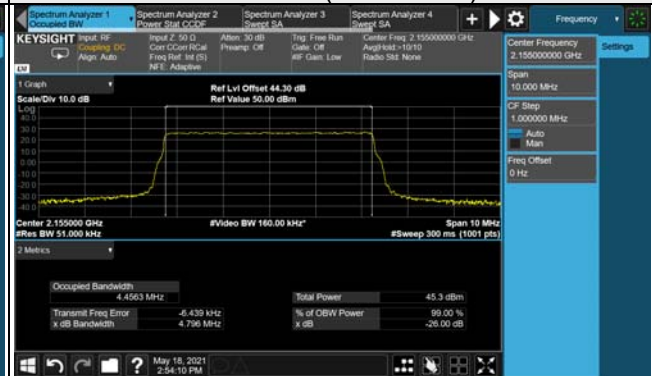


256QAM

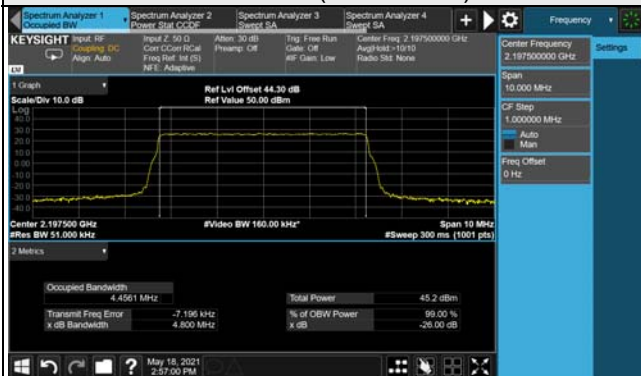
Ch 422500 (2112.5MHz)



Ch 431000 (2155.0MHz)



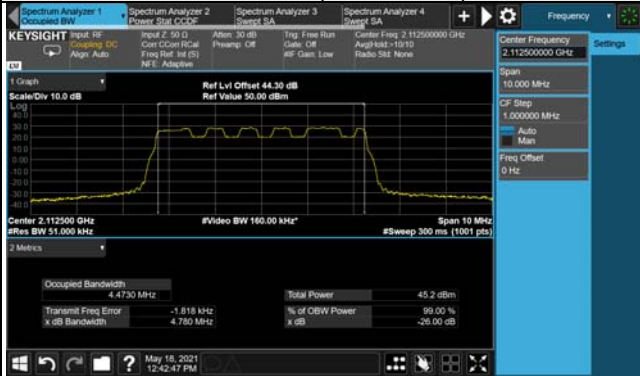
Ch 439500 (2197.5MHz)



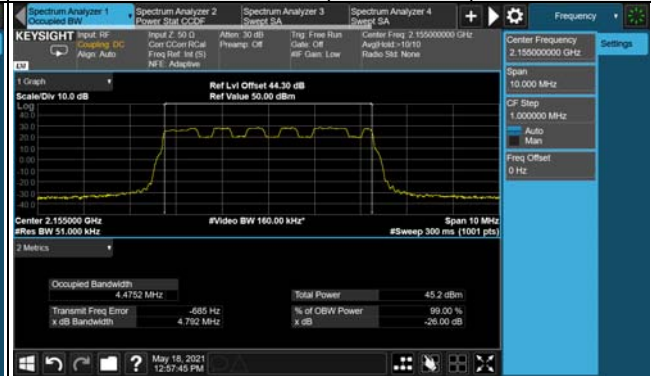
Ant. TX 2

Spectrum Plot of Worst Value  
-26dBc Bandwidth  
QPSK

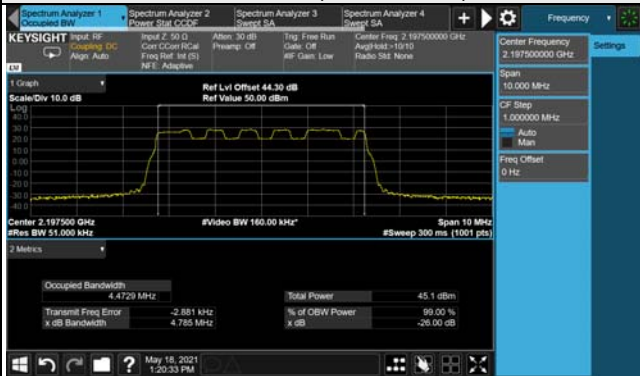
Ch 422500 (2112.5MHz)



Ch 431000 (2155.0MHz)



Ch 439500 (2197.5MHz)

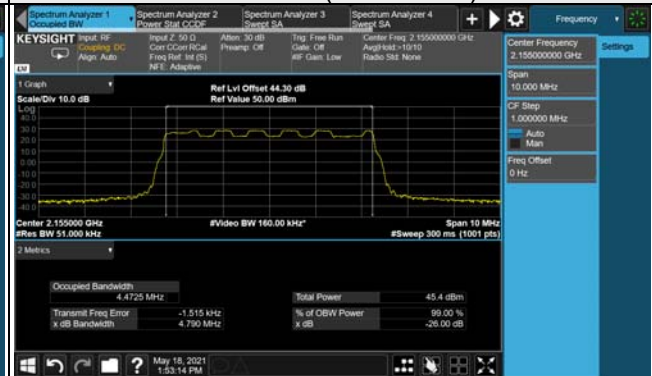


### 16QAM

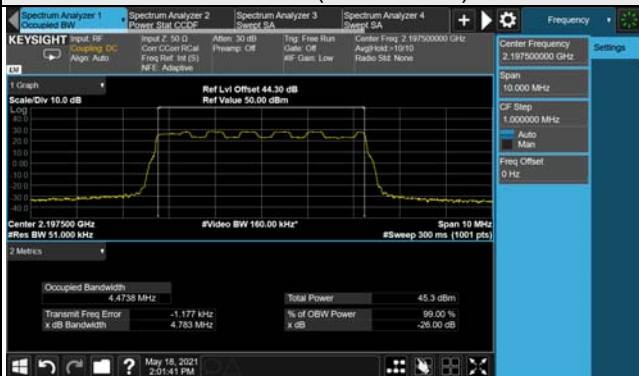
#### Ch 422500 (2112.5MHz)



#### Ch 431000 (2155.0MHz)

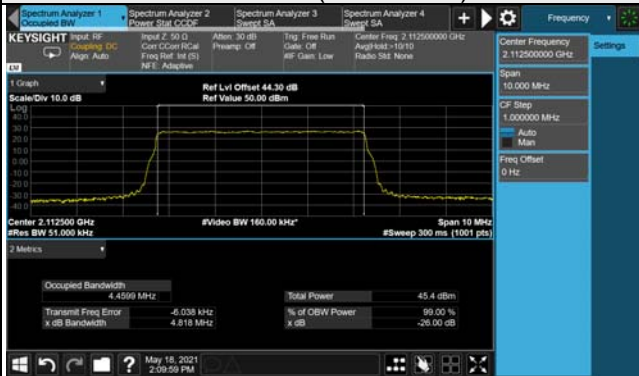


#### Ch 439500 (2197.5MHz)



### 64QAM

#### Ch 422500 (2112.5MHz)



#### Ch 431000 (2155.0MHz)

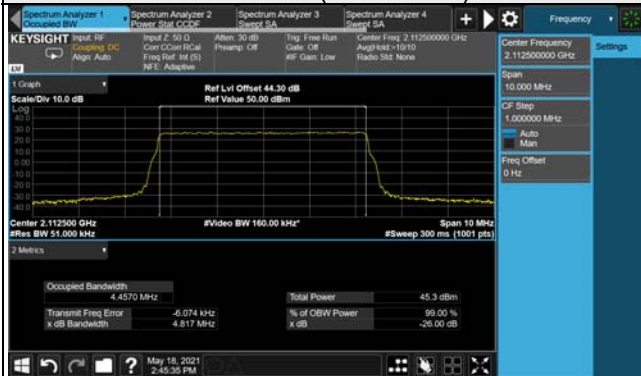


#### Ch 439500 (2197.5MHz)

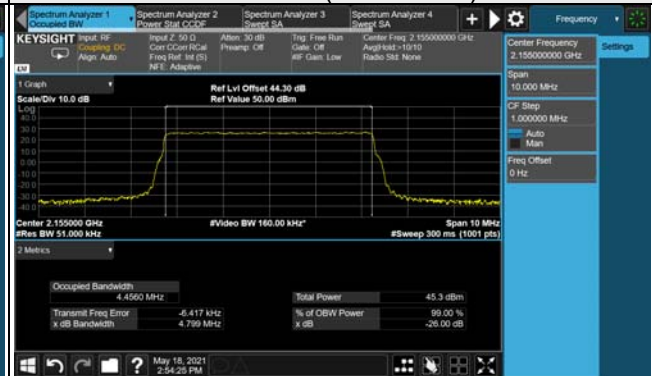


256QAM

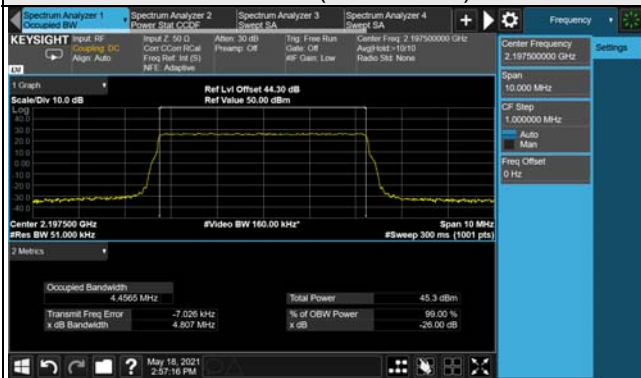
Ch 422500 (2112.5MHz)



Ch 431000 (2155.0MHz)



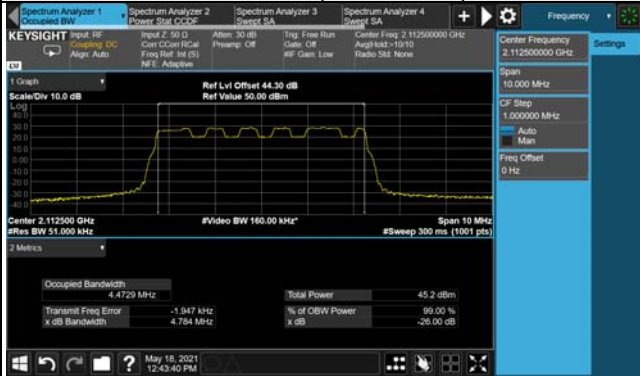
Ch 439500 (2197.5MHz)



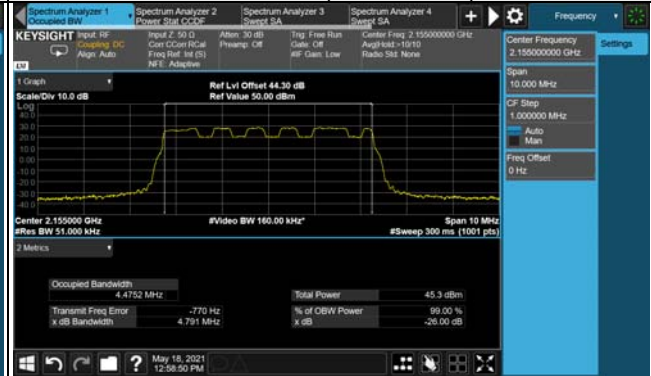
Ant. TX 3

Spectrum Plot of Worst Value  
-26dBc Bandwidth  
QPSK

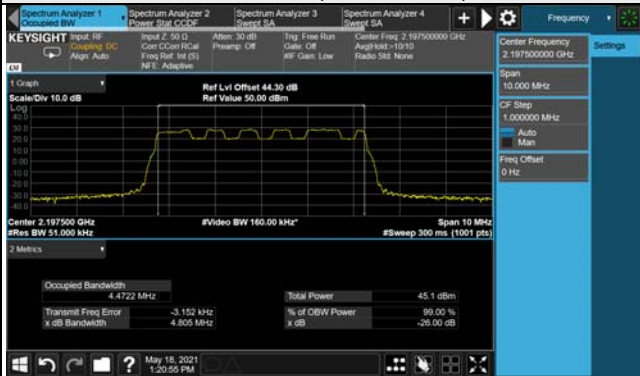
Ch 422500 (2112.5MHz)



Ch 431000 (2155.0MHz)



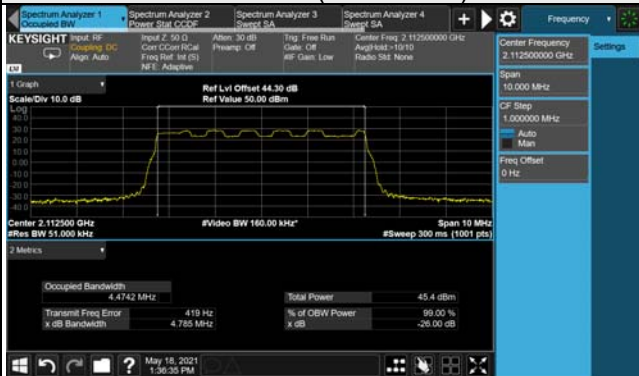
Ch 439500 (2197.5MHz)



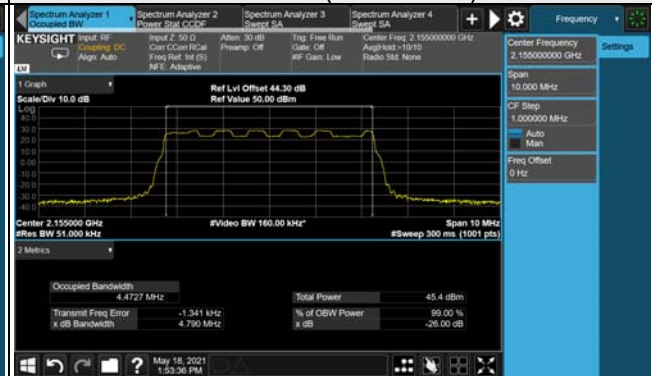


### 16QAM

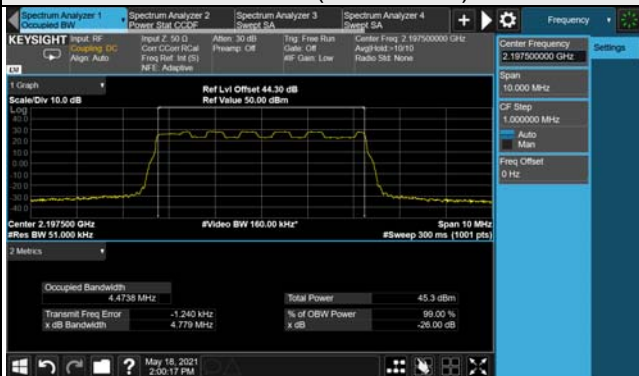
#### Ch 422500 (2112.5MHz)



#### Ch 431000 (2155.0MHz)

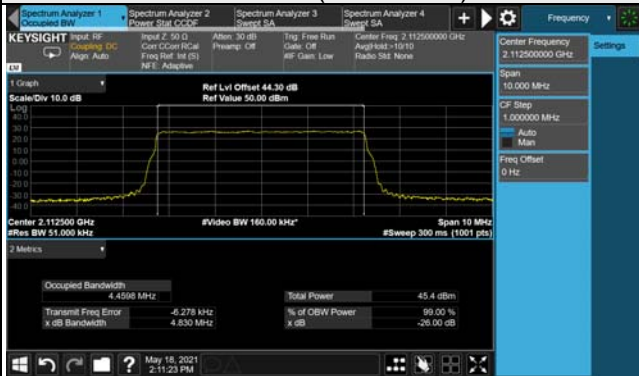


#### Ch 439500 (2197.5MHz)



### 64QAM

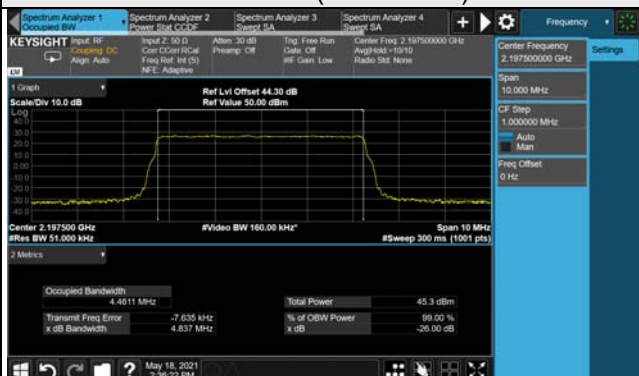
#### Ch 422500 (2112.5MHz)



#### Ch 431000 (2155.0MHz)

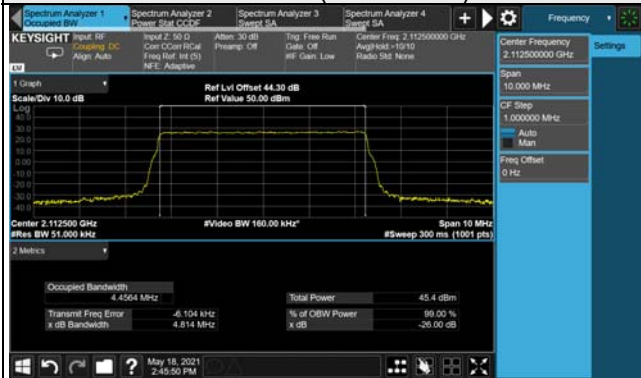


#### Ch 439500 (2197.5MHz)

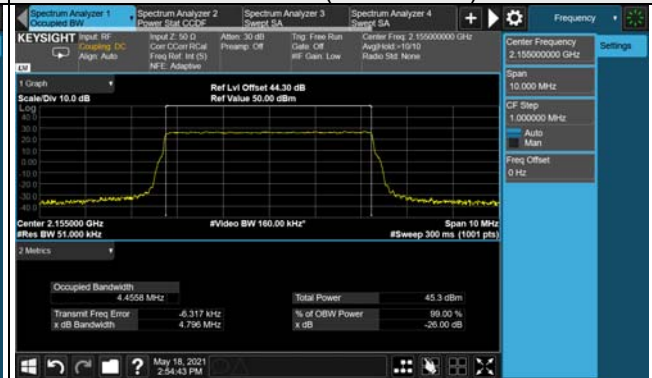


256QAM

Ch 422500 (2112.5MHz)



Ch 431000 (2155.0MHz)



Ch 439500 (2197.5MHz)





### 10MHz

| Channel Number | Freq. (MHz) | -26dB Bandwidth (MHz) |       |       |        |          |       |       |        |          |       |       |        |          |       |       |        |
|----------------|-------------|-----------------------|-------|-------|--------|----------|-------|-------|--------|----------|-------|-------|--------|----------|-------|-------|--------|
|                |             | Ant. TX0              |       |       |        | Ant. TX1 |       |       |        | Ant. TX2 |       |       |        | Ant. TX3 |       |       |        |
|                |             | QPSK                  | 16QAM | 64QAM | 256QAM | QPSK     | 16QAM | 64QAM | 256QAM | QPSK     | 16QAM | 64QAM | 256QAM | QPSK     | 16QAM | 64QAM | 256QAM |
| 423000         | 2115        | 9.60                  | 9.61  | 9.65  | 9.68   | 9.60     | 9.61  | 9.66  | 9.67   | 9.59     | 9.62  | 9.65  | 9.67   | 9.59     | 9.62  | 9.65  | 9.67   |
| 431000         | 2155        | 9.59                  | 9.61  | 9.66  | 9.67   | 9.60     | 9.61  | 9.65  | 9.68   | 9.60     | 9.61  | 9.65  | 9.67   | 9.59     | 9.61  | 9.66  | 9.67   |
| 439000         | 2195        | 9.59                  | 9.60  | 9.66  | 9.66   | 9.59     | 9.60  | 9.66  | 9.65   | 9.59     | 9.60  | 9.65  | 9.65   | 9.59     | 9.61  | 9.66  | 9.65   |

### Ant. TX 0

#### Spectrum Plot of Worst Value

-26dBc Bandwidth

QPSK

Ch 423000 (2115.0MHz)



Ch 431000 (2155.0MHz)



Ch 439000 (2195.0MHz)



### 16QAM

#### Ch 423000 (2115.0MHz)



#### Ch 431000 (2155.0MHz)



#### Ch 439000 (2195.0MHz)



### 64QAM

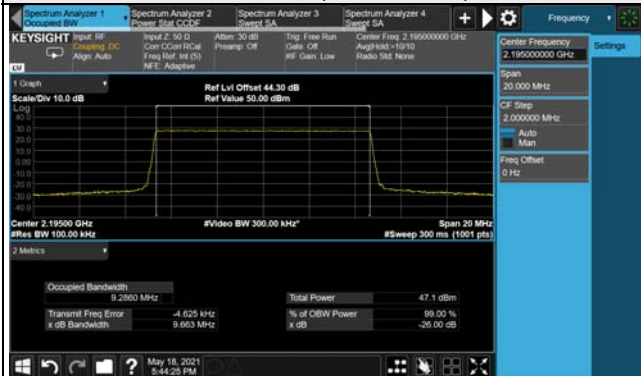
#### Ch 423000 (2115.0MHz)



#### Ch 431000 (2155.0MHz)



#### Ch 439000 (2195.0MHz)



256QAM

Ch 423000 (2115.0MHz)



Ch 431000 (2155.0MHz)



Ch 439000 (2195.0MHz)



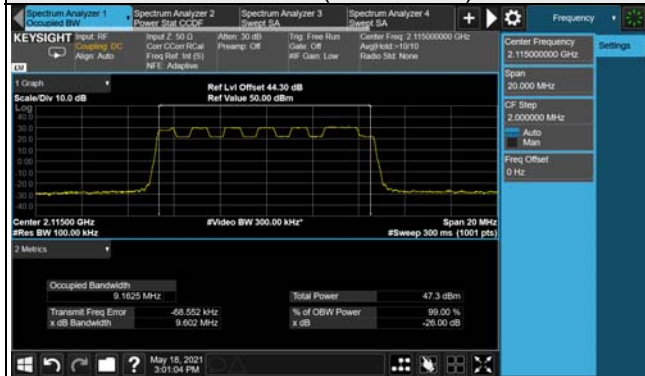
Ant. TX 1

Spectrum Plot of Worst Value

-26dBc Bandwidth

QPSK

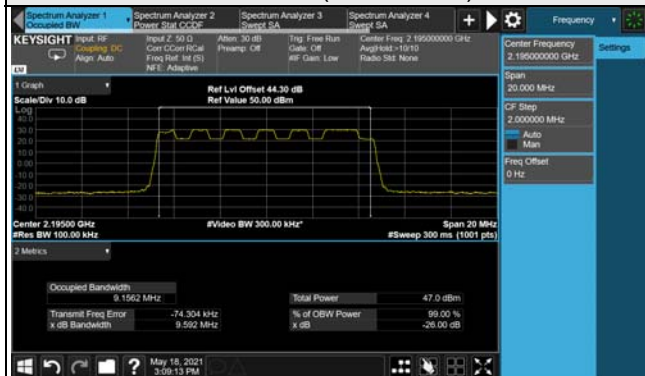
Ch 423000 (2115.0MHz)



Ch 431000 (2155.0MHz)

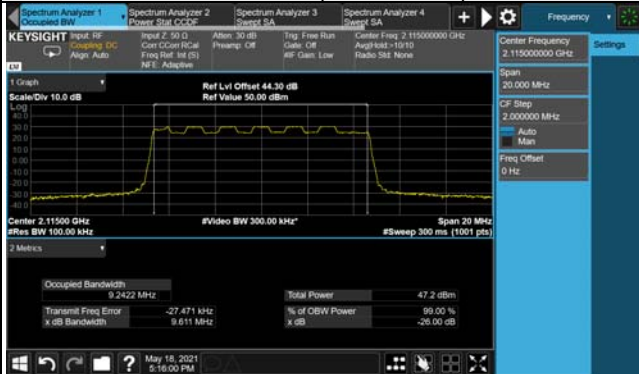


Ch 439000 (2195.0MHz)



### 16QAM

#### Ch 423000 (2115.0MHz)



#### Ch 431000 (2155.0MHz)

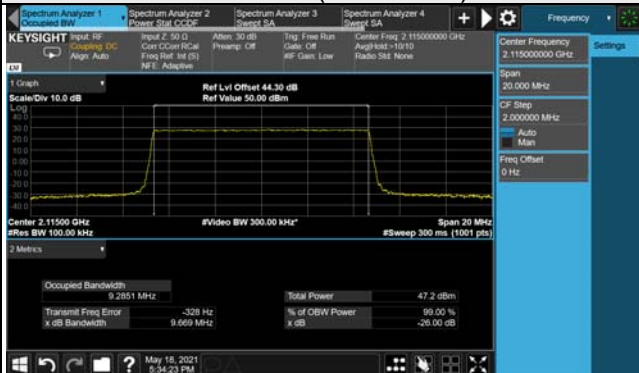


#### Ch 439000 (2195.0MHz)



### 64QAM

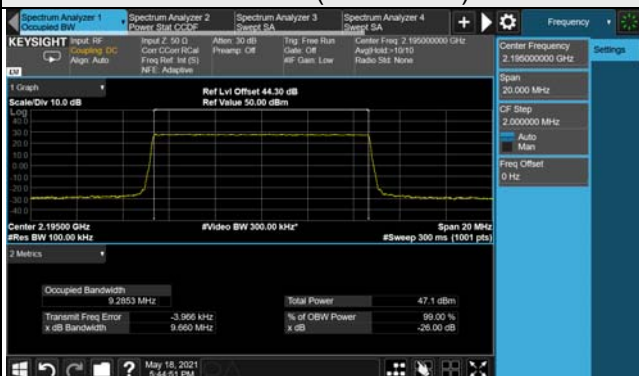
#### Ch 423000 (2115.0MHz)



#### Ch 431000 (2155.0MHz)

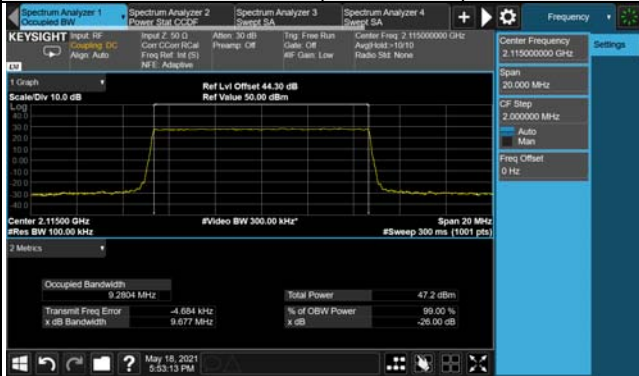


#### Ch 439000 (2195.0MHz)



256QAM

Ch 423000 (2115.0MHz)



Ch 431000 (2155.0MHz)



Ch 439000 (2195.0MHz)

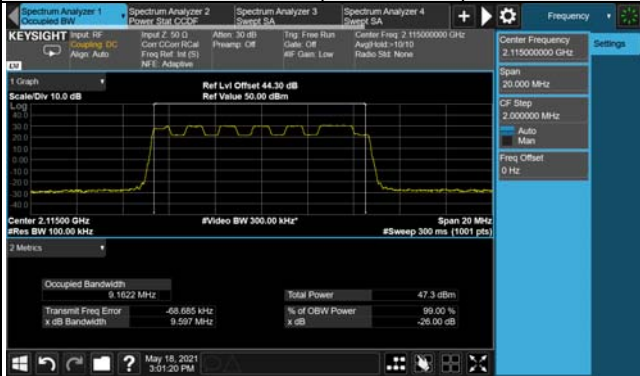




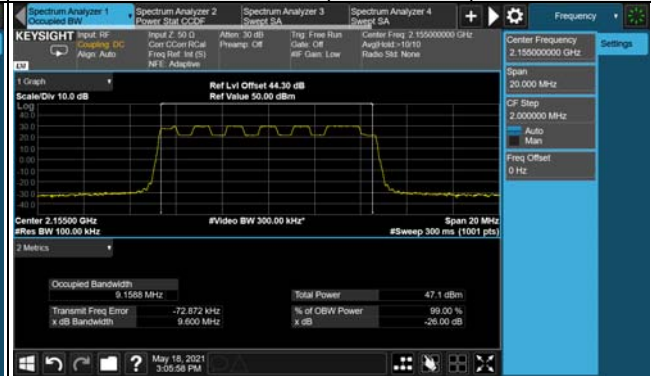
Ant. TX 2

Spectrum Plot of Worst Value  
-26dBc Bandwidth  
QPSK

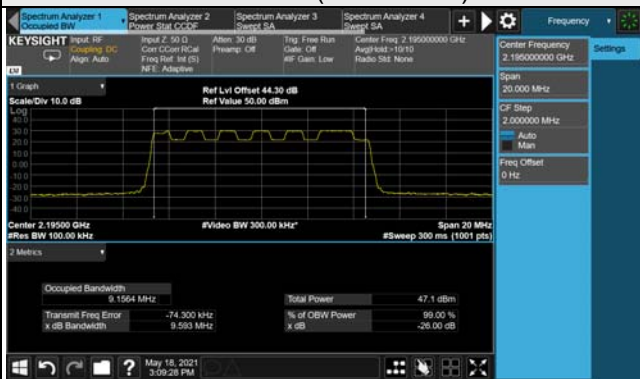
Ch 423000 (2115.0MHz)



Ch 431000 (2155.0MHz)

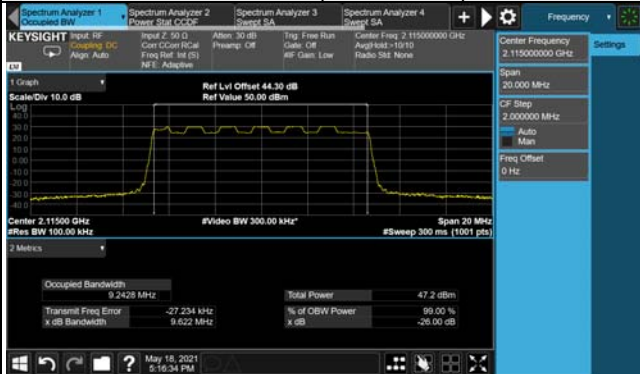


Ch 439000 (2195.0MHz)



### 16QAM

#### Ch 423000 (2115.0MHz)



#### Ch 431000 (2155.0MHz)



#### Ch 439000 (2195.0MHz)

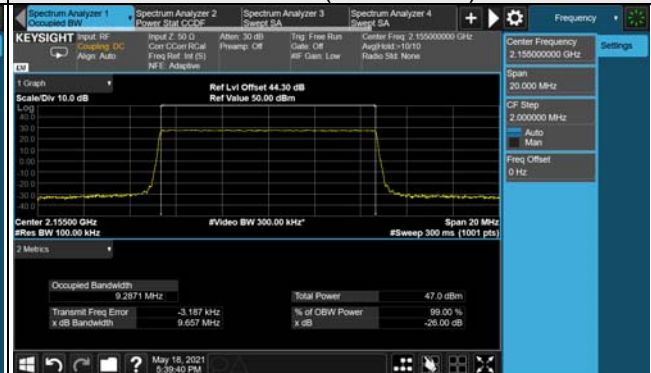


### 64QAM

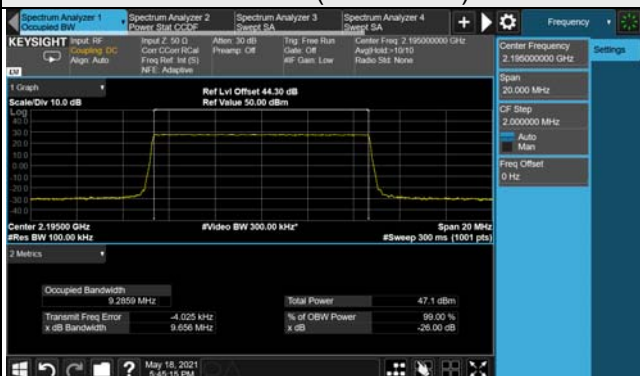
#### Ch 423000 (2115.0MHz)



#### Ch 431000 (2155.0MHz)



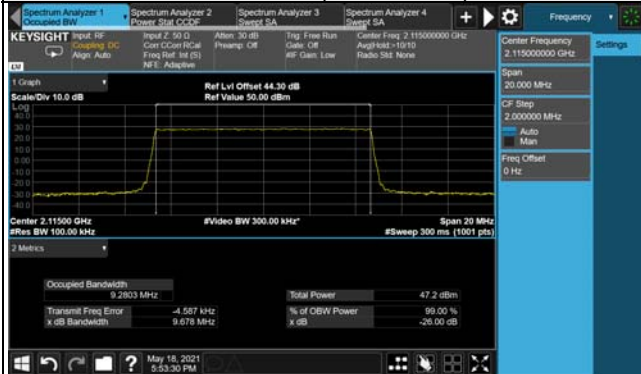
#### Ch 439000 (2195.0MHz)



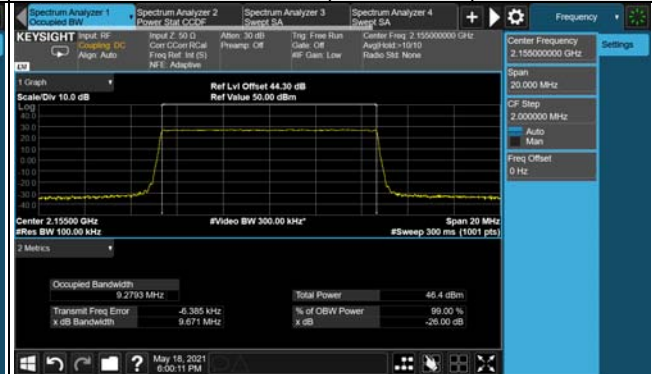


256QAM

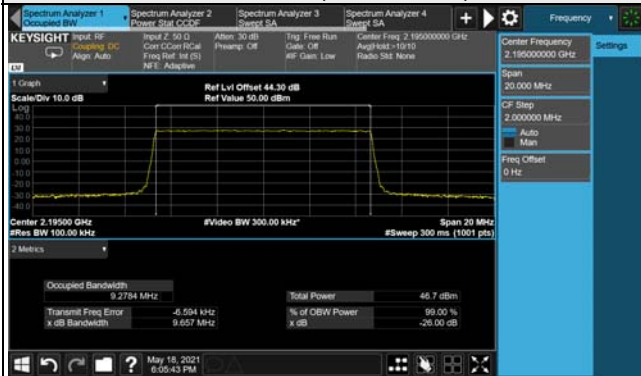
Ch 423000 (2115.0MHz)



Ch 431000 (2155.0MHz)



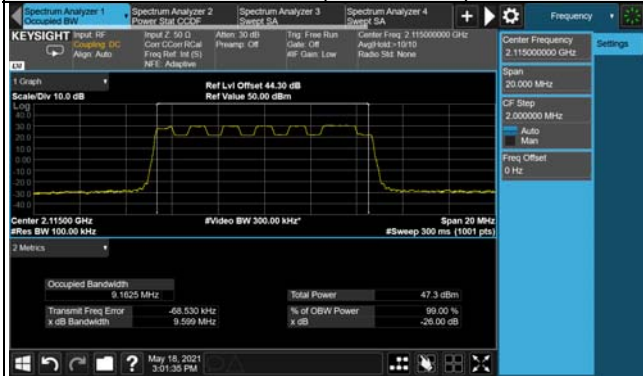
Ch 439000 (2195.0MHz)



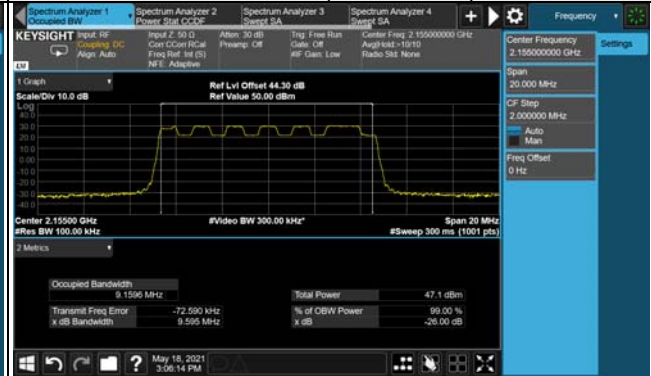
Ant. TX 3

Spectrum Plot of Worst Value  
-26dBc Bandwidth  
QPSK

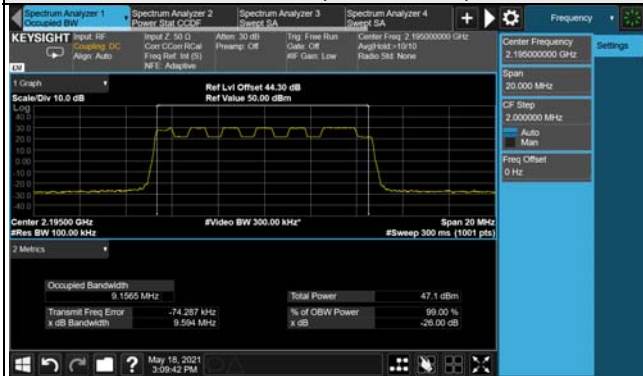
Ch 423000 (2115.0MHz)



Ch 431000 (2155.0MHz)

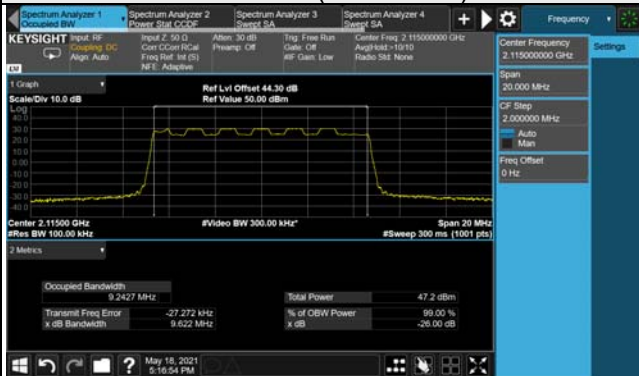


Ch 439000 (2195.0MHz)

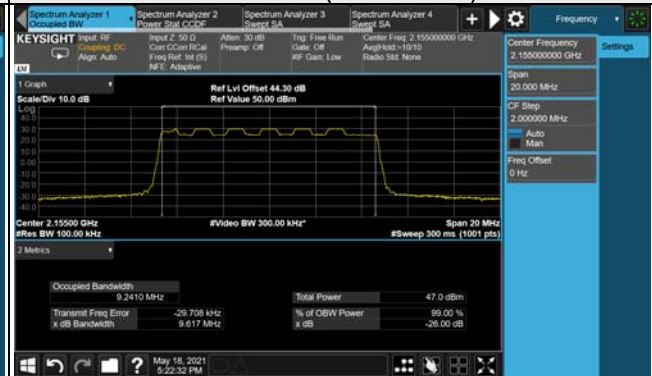


### 16QAM

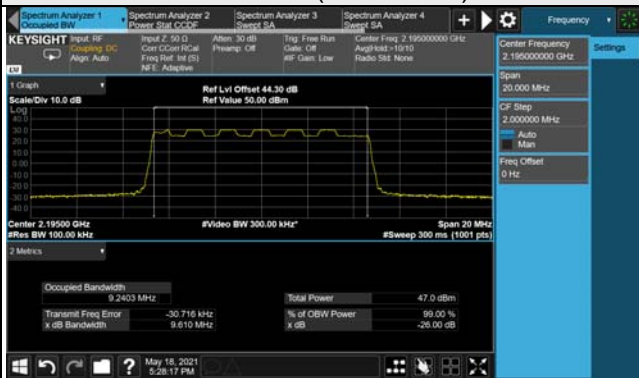
#### Ch 423000 (2115.0MHz)



#### Ch 431000 (2155.0MHz)



#### Ch 439000 (2195.0MHz)

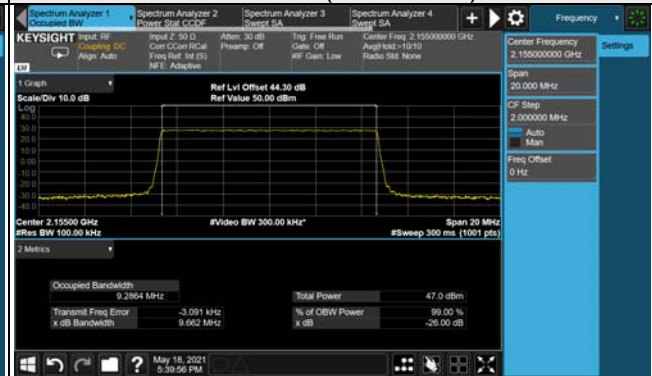


### 64QAM

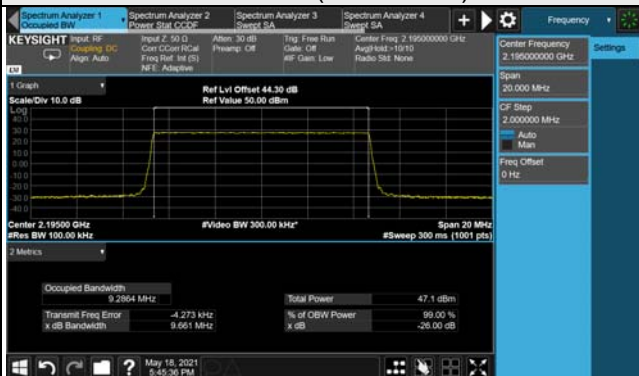
#### Ch 423000 (2115.0MHz)



#### Ch 431000 (2155.0MHz)



#### Ch 439000 (2195.0MHz)

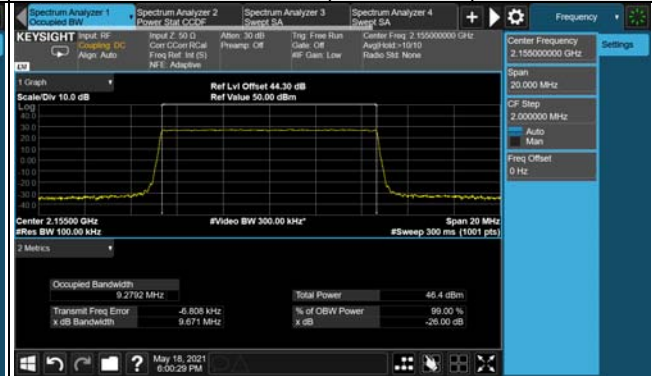


256QAM

Ch 423000 (2115.0MHz)



Ch 431000 (2155.0MHz)



Ch 439000 (2195.0MHz)



### 15MHz

| Channel Number | Freq. (MHz) | -26dB Bandwidth (MHz) |       |       |        |          |       |       |        |          |       |       |        |          |       |       |        |
|----------------|-------------|-----------------------|-------|-------|--------|----------|-------|-------|--------|----------|-------|-------|--------|----------|-------|-------|--------|
|                |             | Ant. TX0              |       |       |        | Ant. TX1 |       |       |        | Ant. TX2 |       |       |        | Ant. TX3 |       |       |        |
|                |             | QPSK                  | 16QAM | 64QAM | 256QAM | QPSK     | 16QAM | 64QAM | 256QAM | QPSK     | 16QAM | 64QAM | 256QAM | QPSK     | 16QAM | 64QAM | 256QAM |
| 423500         | 2117.5      | 14.58                 | 14.58 | 14.58 | 14.57  | 14.59    | 14.58 | 14.59 | 14.57  | 14.59    | 14.57 | 14.58 | 14.57  | 14.59    | 14.58 | 14.58 | 14.57  |
| 431000         | 2155        | 14.58                 | 14.57 | 14.57 | 14.57  | 14.58    | 14.58 | 14.58 | 14.57  | 14.58    | 14.58 | 14.57 | 14.58  | 14.58    | 14.58 | 14.57 | 14.57  |
| 438500         | 2192.5      | 14.57                 | 14.57 | 14.58 | 14.58  | 14.57    | 14.57 | 14.57 | 14.58  | 14.57    | 14.58 | 14.58 | 14.58  | 14.57    | 14.57 | 14.58 | 14.58  |

### Ant. TX 0

#### Spectrum Plot of Worst Value

#### -26dBc Bandwidth

#### QPSK

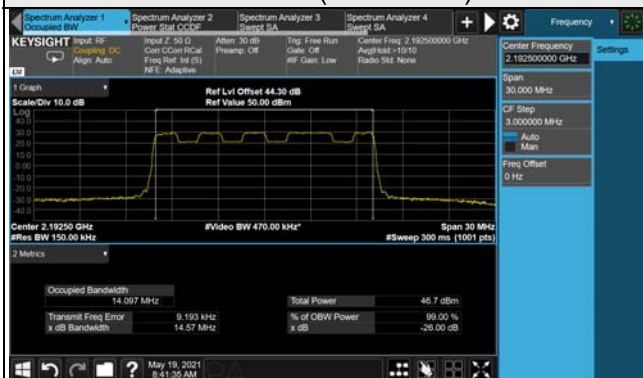
Ch 423500 (2117.5MHz)



Ch 431000 (2155.0MHz)



Ch 438500 (2192.5MHz)

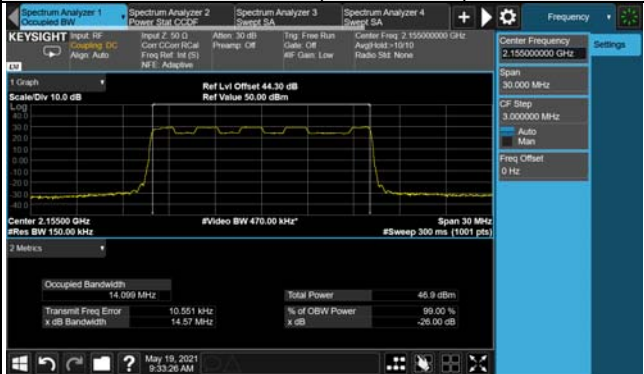


### 16QAM

#### Ch 423500 (2117.5MHz)



#### Ch 431000 (2155.0MHz)



#### Ch 438500 (2192.5MHz)



### 64QAM

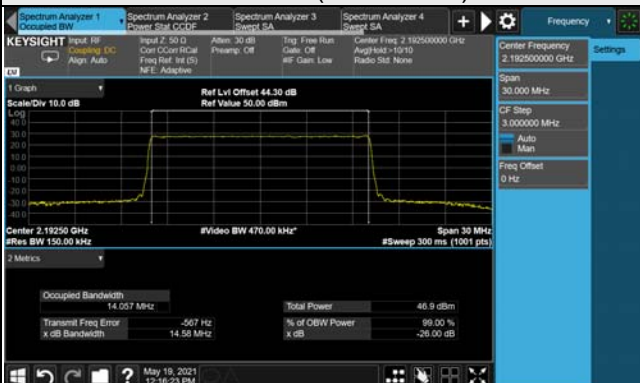
#### Ch 423500 (2117.5MHz)



#### Ch 431000 (2155.0MHz)



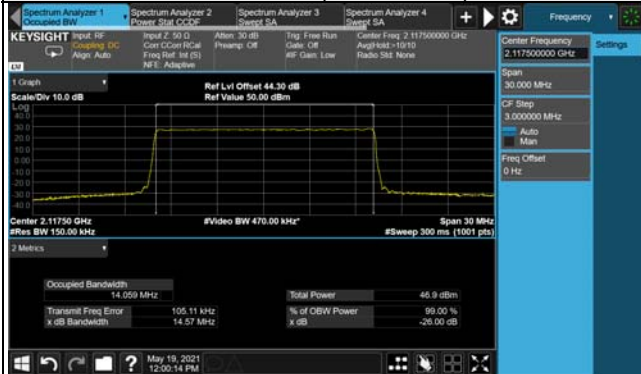
#### Ch 438500 (2192.5MHz)





256QAM

Ch 423500 (2117.5MHz)



Ch 431000 (2155.0MHz)



Ch 438500 (2192.5MHz)



Ant. TX 1

Spectrum Plot of Worst Value

-26dBc Bandwidth

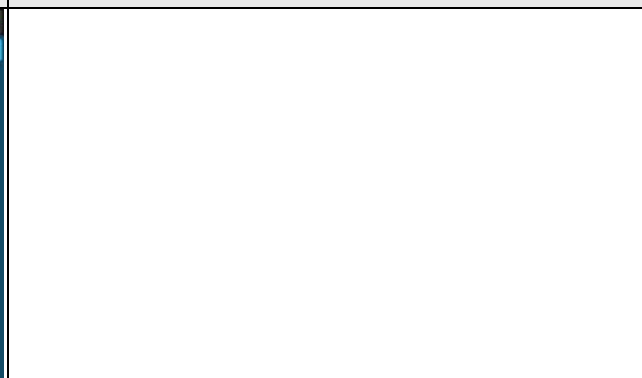
QPSK

Ch 423500 (2117.5MHz)

Ch 431000 (2155.0MHz)



Ch 438500 (2192.5MHz)





### 16QAM

#### Ch 423500 (2117.5MHz)



#### Ch 431000 (2155.0MHz)

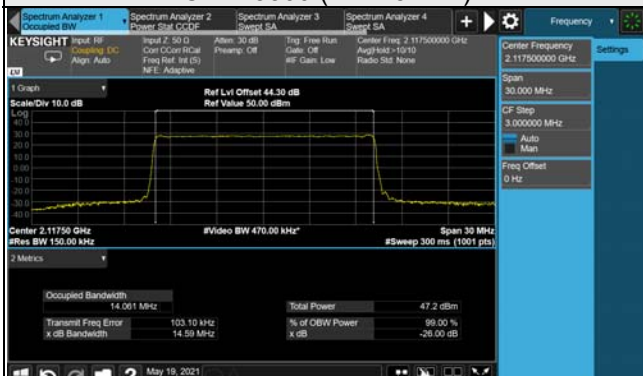


#### Ch 438500 (2192.5MHz)

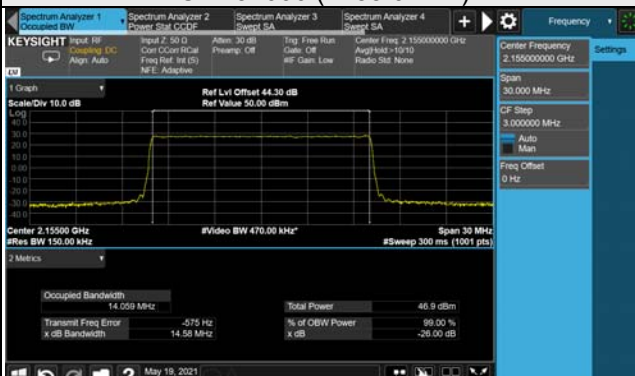


### 64QAM

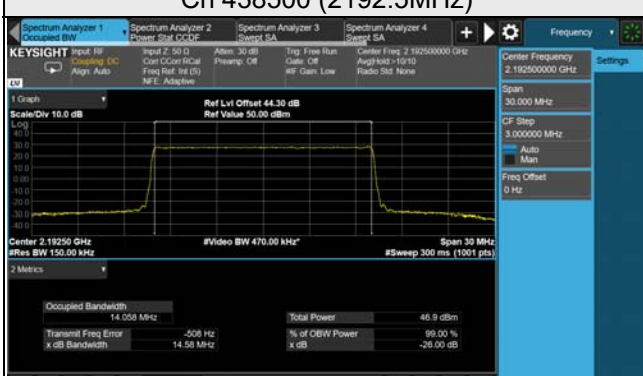
#### Ch 423500 (2117.5MHz)



#### Ch 431000 (2155.0MHz)

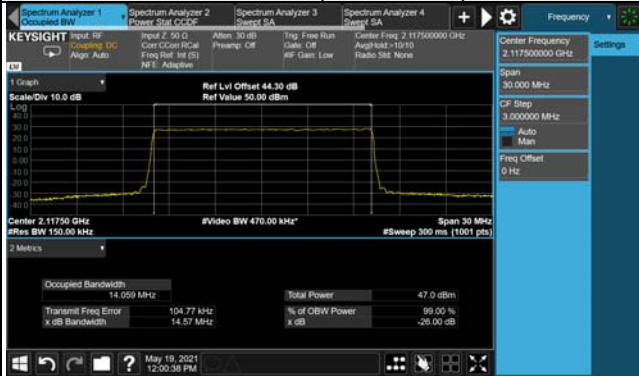


#### Ch 438500 (2192.5MHz)



256QAM

Ch 423500 (2117.5MHz)



Ch 431000 (2155.0MHz)



Ch 438500 (2192.5MHz)



Ant. TX 2

Spectrum Plot of Worst Value  
-26dBc Bandwidth  
QPSK

Ch 423500 (2117.5MHz)



Ch 431000 (2155.0MHz)



Ch 438500 (2192.5MHz)

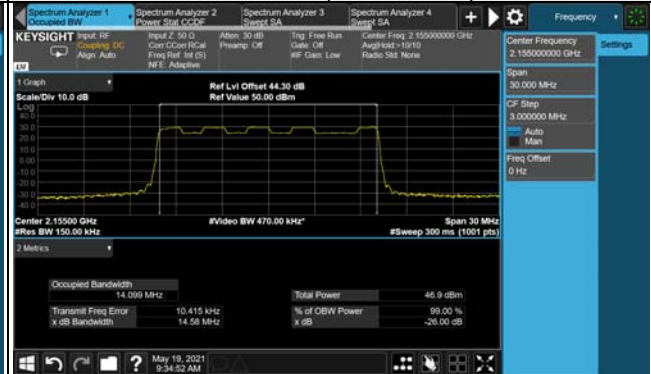


### 16QAM

#### Ch 423500 (2117.5MHz)



#### Ch 431000 (2155.0MHz)



#### Ch 438500 (2192.5MHz)



### 64QAM

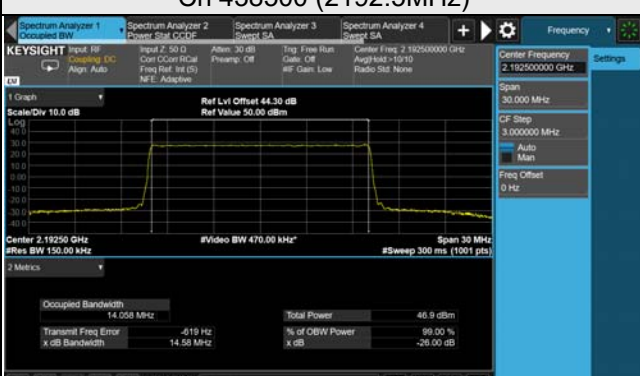
#### Ch 423500 (2117.5MHz)



#### Ch 431000 (2155.0MHz)



#### Ch 438500 (2192.5MHz)

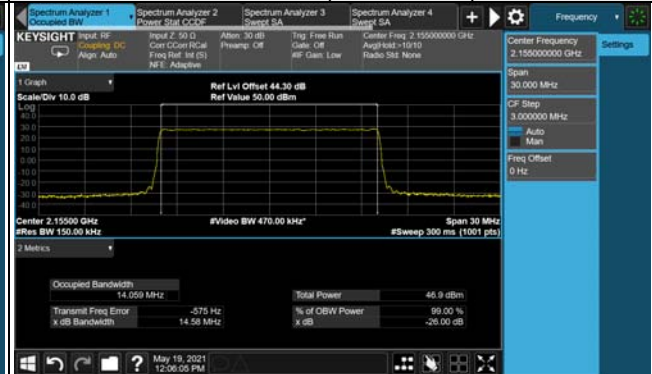


256QAM

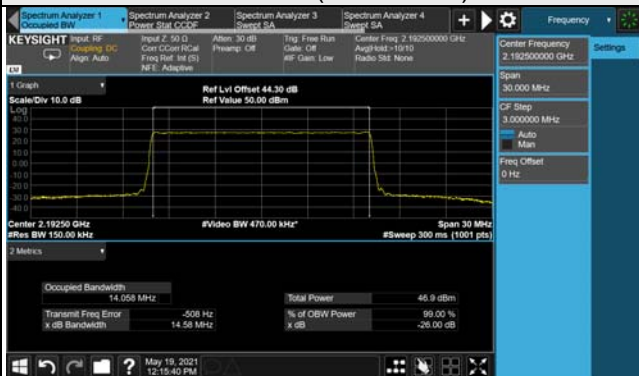
Ch 423500 (2117.5MHz)



Ch 431000 (2155.0MHz)



Ch 438500 (2192.5MHz)



Ant. TX 3

Spectrum Plot of Worst Value  
-26dBc Bandwidth  
QPSK

Ch 423500 (2117.5MHz)



Ch 431000 (2155.0MHz)



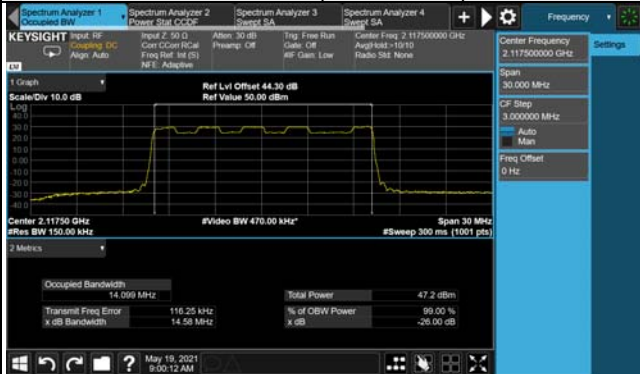
Ch 438500 (2192.5MHz)



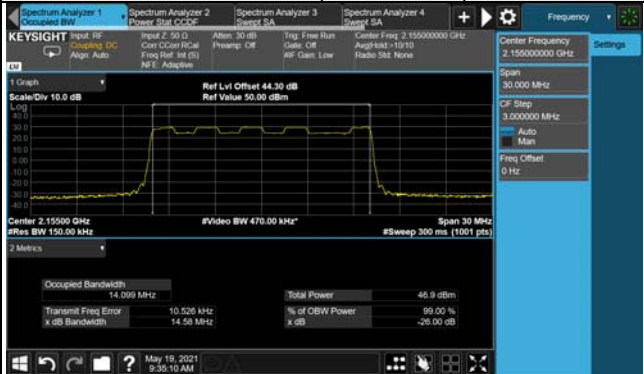


16QAM

Ch 423500 (2117.5MHz)



Ch 431000 (2155.0MHz)



Ch 438500 (2192.5MHz)



64QAM

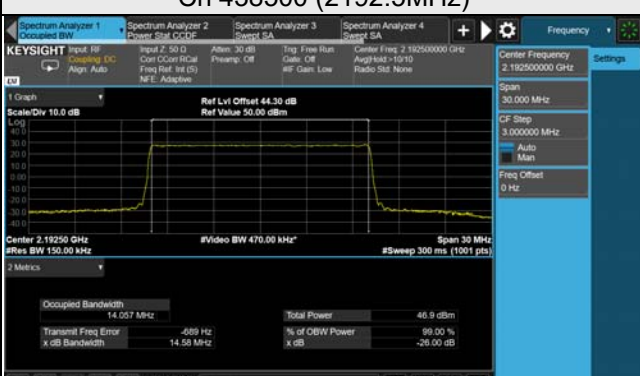
Ch 423500 (2117.5MHz)



Ch 431000 (2155.0MHz)

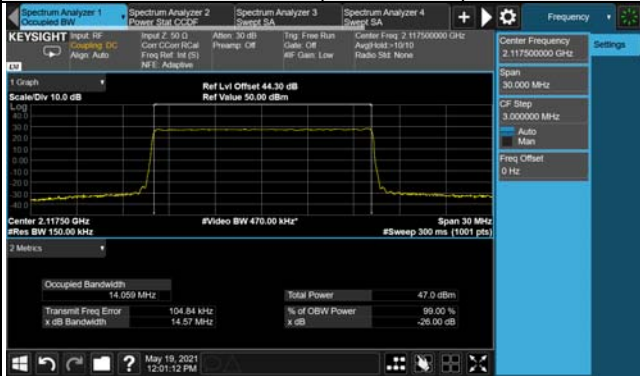


Ch 438500 (2192.5MHz)



256QAM

Ch 423500 (2117.5MHz)



Ch 431000 (2155.0MHz)



Ch 438500 (2192.5MHz)





### 20MHz

| Channel Number | Freq. (MHz) | -26dB Bandwidth (MHz) |       |       |        |          |       |       |        |          |       |       |        |          |       |       |        |
|----------------|-------------|-----------------------|-------|-------|--------|----------|-------|-------|--------|----------|-------|-------|--------|----------|-------|-------|--------|
|                |             | Ant. TX0              |       |       |        | Ant. TX1 |       |       |        | Ant. TX2 |       |       |        | Ant. TX3 |       |       |        |
|                |             | QPSK                  | 16QAM | 64QAM | 256QAM | QPSK     | 16QAM | 64QAM | 256QAM | QPSK     | 16QAM | 64QAM | 256QAM | QPSK     | 16QAM | 64QAM | 256QAM |
| 424000         | 2120        | 19.54                 | 19.55 | 19.57 | 19.56  | 19.54    | 19.56 | 19.57 | 19.56  | 19.55    | 19.56 | 19.57 | 19.56  | 19.55    | 19.55 | 19.57 | 19.57  |
| 431000         | 2155        | 19.55                 | 19.55 | 19.58 | 19.58  | 19.55    | 19.55 | 19.58 | 19.58  | 19.55    | 19.56 | 19.58 | 19.58  | 19.55    | 19.55 | 19.58 | 19.57  |
| 438000         | 2190        | 19.55                 | 19.56 | 19.57 | 19.57  | 19.55    | 19.56 | 19.58 | 19.57  | 19.55    | 19.56 | 19.57 | 19.57  | 19.55    | 19.56 | 19.58 | 19.57  |

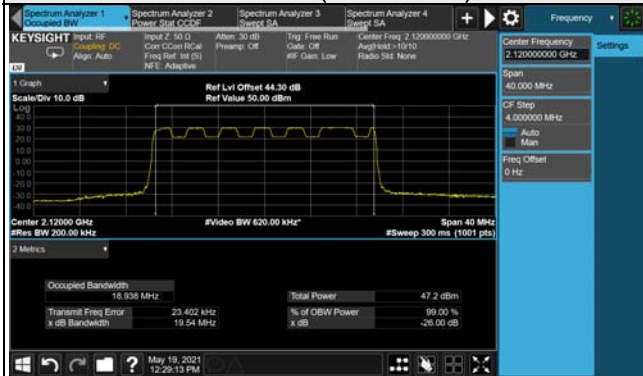
### Ant. TX 0

#### Spectrum Plot of Worst Value

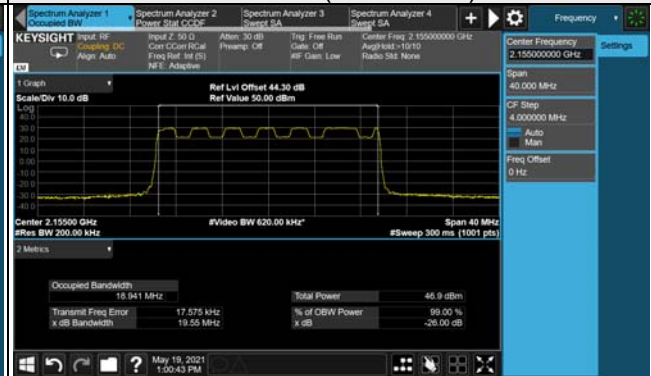
-26dBc Bandwidth

QPSK

Ch 424000 (2120.0MHz)



Ch 431000 (2155.0MHz)



Ch 438000 (2190.0MHz)

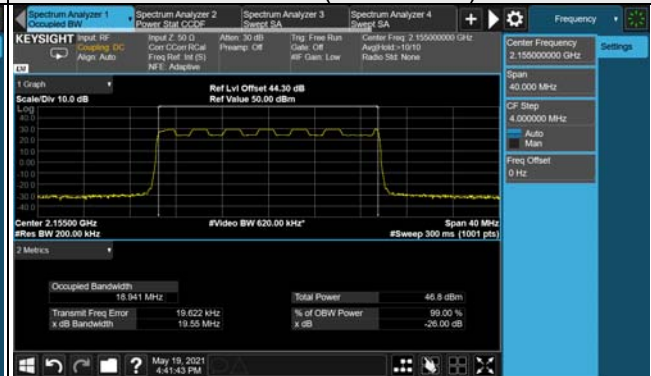


### 16QAM

#### Ch 424000 (2120.0MHz)



#### Ch 431000 (2155.0MHz)



#### Ch 438000 (2190.0MHz)



### 64QAM

#### Ch 424000 (2120.0MHz)



#### Ch 431000 (2155.0MHz)

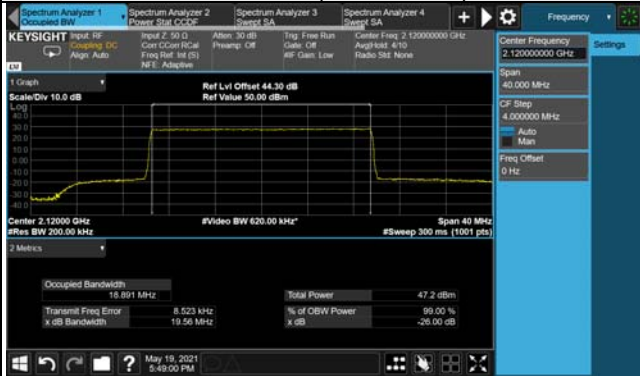


#### Ch 438000 (2190.0MHz)

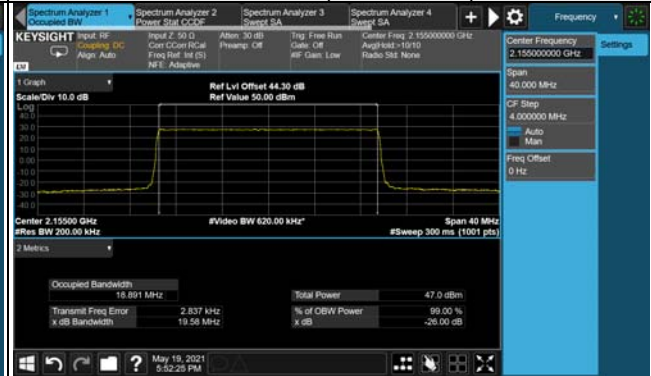


256QAM

Ch 424000 (2120.0MHz)



Ch 431000 (2155.0MHz)



Ch 438000 (2190.0MHz)



Ant. TX 1

Spectrum Plot of Worst Value

-26dBc Bandwidth

QPSK

Ch 424000 (2120.0MHz)



Ch 431000 (2155.0MHz)

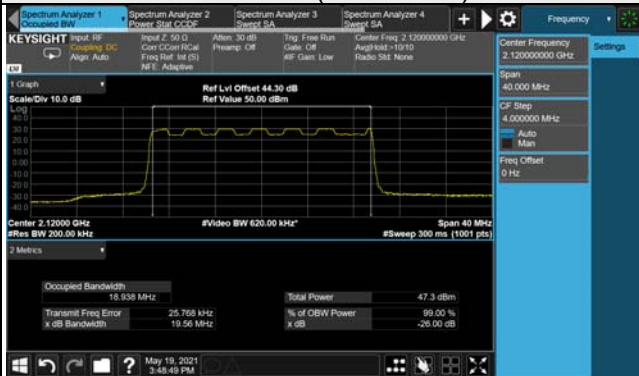


Ch 438000 (2190.0MHz)

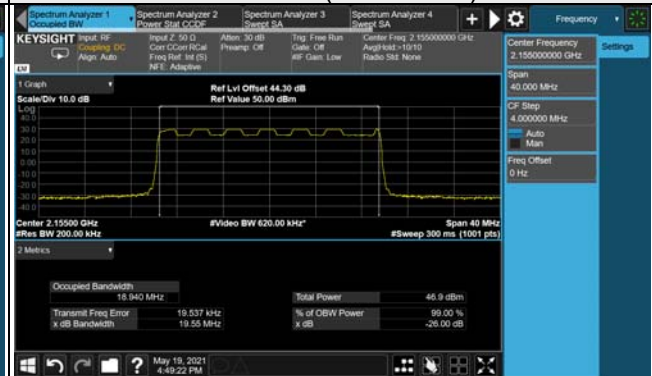


### 16QAM

#### Ch 424000 (2120.0MHz)



#### Ch 431000 (2155.0MHz)

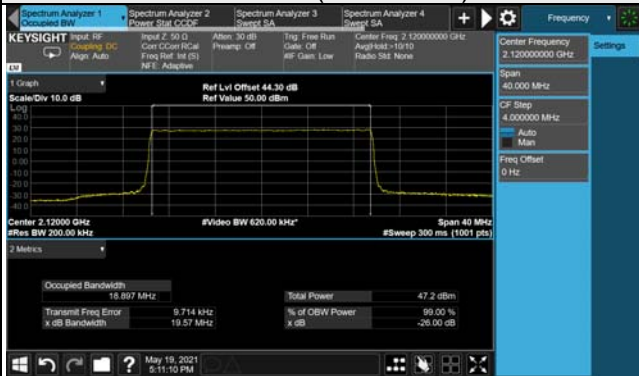


#### Ch 438000 (2190.0MHz)

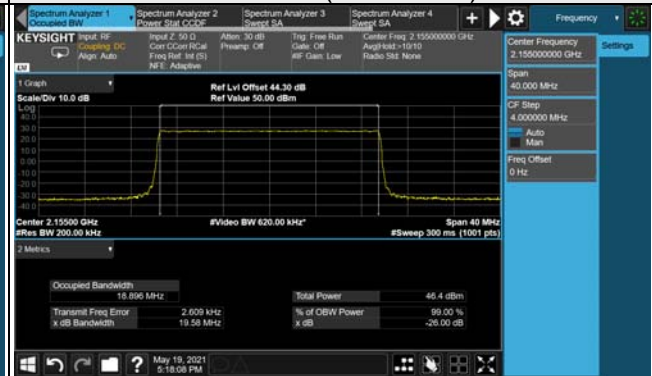


### 64QAM

#### Ch 424000 (2120.0MHz)



#### Ch 431000 (2155.0MHz)



#### Ch 438000 (2190.0MHz)

