



# TEST REPORT

**APPLICANT** : Reliance Communications LLC

**PRODUCT NAME** : Orbic Trophy 5G UW

**MODEL NAME** : R667L5U

**BRAND NAME** : Orbic

**FCC ID** : 2ABGH-R667L5U

**STANDARD(S)** : 47 CFR Part 2  
47 CFR Part 22  
47 CFR Part 24  
47 CFR Part 27  
47 CFR Part 96

**RECEIPT DATE** : 2023-11-07

**TEST DATE** : 2023-12-08 to 2024-02-26

**ISSUE DATE** : 2024-04-22



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| Change History |            |                   |
|----------------|------------|-------------------|
| Version        | Date       | Reason for change |
| 1.0            | 2024-04-22 | First edition     |



# 1. Technical Information

Note: Provide by applicant.

## 1.1. Applicant and Manufacturer Information

|                              |   |
|------------------------------|---|
| <b>Applicant:</b>            | Reliance Communications LLC   |
| <b>Applicant Address:</b>    | 555 Wireless Blvd. Hauppauge, NY 11788, USA   |
| <b>Manufacturer:</b>         | Unimaxcomm  |
| <b>Manufacturer Address:</b> | 35F,HBC HuiLong Center Building-II Minzhi Street,Longhua, Shenzhen, P.R. China 518110 |

## 1.2. Equipment Under Test (EUT) Description

|                             |  |   |
|-----------------------------|--|---|
| <b>Product Name:</b>        | Orbic Trophy 5G UW   |   |
| <b>Sample No.:</b>          | 1#   |   |
| <b>Hardware Version:</b>    | V1.0   |   |
| <b>Software Version:</b>    | R667L5U_v1.1.2_BVZ   |   |
| <b>Modulation Type:</b>     | QPSK, 16QAM, 64QAM   |   |
| <b>Carrier Aggregation:</b> | Uplink:2A_4A; 2A_5A; 2A_13A; 2A_66A; 4A_5A; 4A_13A; 5A_66A; 13A_66A; 5B; 48C; 66B; 66C |   |
| <b>Channel Bandwidth:</b>   | Band 2   | 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz   |
|                             | Band 4   | 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz   |
|                             | Band 5   | 1.4MHz, 3MHz, 5MHz, 10MHz   |
|                             | Band 13  | 5 MHz, 10MHz  |
|                             | 48C  | 5MHz+20MHz,20MHz+5MHz,10MHz+20MHz, 20MHz+10MHz,15MHz+20MHz,20MHz+15MHz,20 MHz+20MHz                                     |
|                             | 66B  | 5MHz+5MHz,5MHz+10MHz,10MHz+5MHz, 5MHz+15MHz,15MHz+5MHz,10MHz+10MHz  |
|                             | 66C  | 5MHz+20MHz,20MHz+5MHz,10MHz+15MHz, 15MHz+10MHz,10MHz+20MHz,20MHz+10MHz 15MHz+15MHz,15MHz+20MHz,20MHz+15MHz,20 MHz+20MHz |
| <b>Antenna Type:</b>        | PIFA Antenna   |   |
| <b>Antenna Gain:</b>        | Band 2   | ANT3:1.35dBi, ANT7:-2.94dBi   |
|                             | Band 4   | ANT3:0.31dBi  |



|                               |                                    |   |
|-------------------------------|------------------------------------|---|
|                               | Band 5                             | ANT1:-2.85dBi                           |
|                               | Band 13                            | ANT1:-4.05 dBi                          |
|                               | Band 48                            | ANT4:0.33 dBi, ANT10:-1.66              |
|                               | Band 66                            | ANT3:0.89dBi, ANT7:-0.95dBi             |
| <b>Accessory Information:</b> | Battery:                           |   |
|                               | Brand Name:                        | Shenbird                                |
|                               | Model No.:                         | BTE-5003                                |
|                               | Serial No.:                        | N/A                                     |
|                               | Capacity:                          | 5000mAh                                 |
|                               | Rated Voltage:                     | 3.89V                                   |
|                               | Charge Limit:                      | 4.48V                                   |
|                               | Manufacturer:                      | Shenbird New Energy (Huizhou) Co., Ltd. |
|                               | AC Adapter:                        |   |
|                               | Brand Name:                        | Orbic                                   |
|                               | Model No.:                         | OACH023US1                              |
|                               | Serial No.:                        | N/A                                     |
|                               | Rated Input:                       | 100-240V~50/60HZ, 0.5A                  |
|                               | Rated Output:                      | 5V=3A or 9V=2A or 12V=1.5A              |
|                               | Manufacturer 1:                    | WATAI ELECTRONICS PRIVATE LIMITED       |
|                               | Manufacturer 2:                    | KANGYIN ELECTRONIC TECHNOLOGY CO.,LTD   |
|                               | USB Cable:                         |   |
| Model No.:                    | HX-YLMK-06                         |   |
| Manufacturer:                 | HUIZHOU WASHIN ELECTRONICS CO.,LTD |   |

**Note1:** For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.



### 1.3. Maximum E.R.P./E.I.R.P. and Emission Designator

| Channel bandwidth | Maximum ERP/EIRP (W) |       |       |        |
|-------------------|----------------------|-------|-------|--------|
|                   | QPSK                 | 16QAM | 64QAM | 256QAM |
| CA_5B             | QPSK                 | 16QAM | 64QAM | 256QAM |
| 10+10             | 0.242                | /     | /     | /      |
| CA_48C            | QPSK                 | 16QAM | 64QAM | 256QAM |
| 20+20             | 0.175                | /     | /     | /      |
| CA_66B            | QPSK                 | 16QAM | 64QAM | 256QAM |
| 10+10             | 0.194                | /     | /     | /      |
| CA_66C            | QPSK                 | 16QAM | 64QAM | 256QAM |
| 20+20             | 0.192                | /     | /     | /      |
| CA_2A-4A          | QPSK                 | 16QAM | 64QAM | 256QAM |
| 20+20             | 0.255                | /     | /     | /      |
| CA_2A-5A          | QPSK                 | 16QAM | 64QAM | 256QAM |
| 20+10             | 0.253                | /     | /     | /      |
| CA_2A-13A         | QPSK                 | 16QAM | 64QAM | 256QAM |
| 20+10             | 0.249                | /     | /     | /      |
| CA_2A-66A         | QPSK                 | 16QAM | 64QAM | 256QAM |
| 20+20             | 0.246                | /     | /     | /      |
| CA_4A-5A          | QPSK                 | 16QAM | 64QAM | 256QAM |
| 20+10             | 0.200                | /     | /     | /      |
| CA_4A-13A         | QPSK                 | 16QAM | 64QAM | 256QAM |
| 20+10             | 0.192                | /     | /     | /      |
| CA_5A-66A         | QPSK                 | 16QAM | 64QAM | 256QAM |
| 10+20             | 0.292                | /     | /     | /      |
| CA_13A-66A        | QPSK                 | 16QAM | 64QAM | 256QAM |
| 10+20             | 0.276                | /     | /     | /      |



| Channel bandwidth | Emission Designator (99%OBW) |         |         |
|-------------------|------------------------------|---------|---------|
| LTE 5B            | QPSK                         | 16QAM   | 64QAM   |
| 3+5               | 7M50G7D                      | 7M51W7D | 7M51W7D |
| 5+3               | 7M48G7D                      | 7M52W7D | 7M53W7D |
| 5+10              | 13M9G7D                      | 13M9W7D | 13M9W7D |
| 10+5              | 14M0G7D                      | 13M9W7D | 13M9W7D |
| 10+10             | 18M8G7D                      | 18M8W7D | 18M8W7D |
| LTE 48C           | QPSK                         | 16QAM   | 64QAM   |
| 5+20              | 22M8G7D                      | 22M8W7D | 22M9W7D |
| 10+20             | 27M7G7D                      | 27M6W7D | 27M7W7D |
| 15+20             | 32M7G7D                      | 32M5W7D | 32M5W7D |
| 20+5              | 22M8G7D                      | 22M8W7D | 22M9W7D |
| 20+10             | 27M8G7D                      | 27M7W7D | 27M8W7D |
| 20+15             | 32M6G7D                      | 32M6W7D | 32M6W7D |
| 20+20             | 37M5G7D                      | 37M4W7D | 37M5W7D |
| LTE 66B           | QPSK                         | 16QAM   | 64QAM   |
| 5+5               | 9M30G7D                      | 9M27W7D | 9M28W7D |
| 5+10              | 13M9G7D                      | 13M9W7D | 13M9W7D |
| 5+15              | 18M3G7D                      | 18M3W7D | 18M2W7D |
| 10+5              | 14M0G7D                      | 13M9W7D | 13M9W7D |
| 10+10             | 18M9G7D                      | 18M9W7D | 18M9W7D |
| 15+5              | 18M3G7D                      | 18M3W7D | 18M3W7D |
| LTE 66C           | QPSK                         | 16QAM   | 64QAM   |
| 5+20              | 22M8G7D                      | 22M9W7D | 22M7W7D |
| 10+15             | 23M2G7D                      | 23M1W7D | 23M1W7D |
| 10+20             | 27M7G7D                      | 27M7W7D | 27M6W7D |
| 15+10             | 23M1G7D                      | 23M1W7D | 23M1W7D |
| 15+15             | 28M3G7D                      | 28M3W7D | 28M2W7D |
| 15+20             | 32M5G7D                      | 32M6W7D | 32M7W7D |
| 20+5              | 22M9G7D                      | 22M8W7D | 22M8W7D |
| 20+10             | 27M7G7D                      | 27M7W7D | 27M7W7D |
| 20+15             | 32M6G7D                      | 32M7W7D | 32M5W7D |
| 20+20             | 37M5G7D                      | 37M6W7D | 37M3W7D |



## 1.4. Test Standards and Results

The objective of the report is to perform testing according to Part 2, Part 22, Part 24, Part 27 and Part 96 for the EUT FCC ID Certification:

| No. | Identity       | Document Title  |
|-----|----------------|---|
| 1   | 47 CFR Part 2  | Frequency Allocations and Radio Treaty Matters; General Rules and Regulations |
| 2   | 47 CFR Part 22 | Public Mobile Services  |
| 3   | 47 CFR Part 24 | Personal Communications Services  |
| 4   | 47 CFR Part 27 | Miscellaneous Wireless Communications Services                                |
| 6   | 47 CFR Part 96 | CITIZENS BROADBAND RADIO SERVICE  |

| B2   |                           |                                |        |
|--|---------------------------|--------------------------------|--------|
| Item   | FCC Rule No.              | Requirements                   | Result |
| Effective (Isotropic) Radiated Power Output Data | §2.1046,<br>§24.232(c)    | EIRP $\leq$ 2 W                | PASS   |
| Peak-Average Ratio                               | §24.232(d)                | Limit $\leq$ 13 dB             | PASS   |
| Bandwidth  | §2.1049                   | OBW: No limit<br>EBW: No limit | PASS   |
| Band Edges Compliance                            | §2.1051,<br>§24.238(a)(b) | Refer to section 2.6           | PASS   |
| Spurious Emission at Antenna Terminals           | §2.1051,<br>§24.238(a)(b) | $\leq$ -13 dBm/1MHz            | PASS   |
| Field Strength of Spurious Radiation             | §2.1053,<br>§24.238(a)    | $\leq$ -13 dBm/1MHz            | PASS   |
| Frequency Stability                              | §2.1055,<br>§24.235       | No limit                       | N/A    |



| B4 & B66   |   |                                  |        |
|--|---|----------------------------------|--------|
| Item   | FCC Rule No.                                | Requirements                     | Result |
| Effective (Isotropic) Radiated Power Output Data | §2.1046,<br>§27.50(d)(4)                    | EIRP ≤1 W                        | PASS   |
| Peak-Average Ratio                               | §27.50(d) (5)                               | Limit≤13 dB                      | PASS   |
| Bandwidth  | §2.1049                                     | OBW: No limit.<br>EBW: No limit. | PASS   |
| Band Edges Compliance                            | §2.1051,<br>§27.53(h)(1)<br>§27.53(h)(3)(i) | Refer to section 2.6             | PASS   |
| Spurious Emission at Antenna Terminals           | §2.1051,<br>§27.53(h)(1)                    | ≤ -13 dBm/1MHz                   | PASS   |
| Field Strength of Spurious Radiation             | §2.1053,<br>§27.53(h)(1)                    | ≤ -13 dBm/1MHz.                  | PASS   |
| Frequency Stability                              | §2.1055,<br>§27.54                          | No limit                         | N/A    |

| B5   |                           |                                |        |
|--|---------------------------|--------------------------------|--------|
| Item   | FCC Rule No.              | Requirements                   | Result |
| Effective (Isotropic) Radiated Power Output Data | §2.1046,<br>§22.913(a)(5) | ERP ≤ 7W                       | PASS   |
| Peak-Average Ratio                               | N/A                       | N/A                            | N/A    |
| Bandwidth  | §2.1049                   | OBW: No limit<br>EBW: No limit | PASS   |
| Band Edges Compliance                            | §2.1051,<br>§22.917(a)(b) | Refer to section 2.6           | PASS   |
| Spurious Emission at Antenna Terminals           | §2.1051,<br>§22.917(a)    | ≤ -13 dBm/1MHz                 | PASS   |
| Field Strength of Spurious Radiation             | §2.1053,<br>§22.355       | ≤ -13 dBm/1MHz                 | PASS   |
| Frequency Stability                              | §2.1055,<br>§22.355       | ≤ ±2.5ppm                      | PASS   |





| B13  |                           |                                |        |
|--|---------------------------|--------------------------------|--------|
| Item   | FCC Rule No.              | Requirements                   | Result |
| Effective (Isotropic) Radiated Power Output Data | §2.1046,<br>§27.50(b)(10) | ERP $\leq$ 3W                  | PASS   |
| Peak-Average Ratio                               | N/A                       | N/A                            | N/A    |
| Bandwidth  | §2.1049                   | OBW: No limit<br>EBW: No limit | PASS   |
| Band Edges Compliance                            | §2.1051,<br>§27.53(c)(2)  | Refer to section 2.6           | PASS   |
| Spurious Emission at Antenna Terminals           | §2.1051,<br>§27.53(c)(2)  | $\leq$ -13 dBm/1MHz            | PASS   |
| Field Strength of Spurious Radiation             | §2.1053,<br>§27.53(c)(2)  | $\leq$ -13 dBm/1MHz            | PASS   |
| Frequency Stability                              | §2.1055,<br>§27.54        | No limit                       | N/A    |

| B48  |                       |                                |        |
|--|-----------------------|--------------------------------|--------|
| Item   | FCC Rule No.          | Requirements                   | Result |
| Effective (Isotropic) Radiated Power Output Data | §2.1046,<br>§96.41(b) | Refer to section 2.1           | PASS   |
| Peak-Average Ratio                               | N/A                   | N/A                            | N/A    |
| Bandwidth  | §2.1049               | OBW: No limit<br>EBW: No limit | PASS   |
| Band Edges Compliance                            | §2.1051,<br>§96.41(e) | Refer to section 2.6           | PASS   |
| Spurious Emission at Antenna Terminals           | §2.1051,<br>§96.41(e) | $\leq$ -40 dBm/1MHz            | PASS   |
| Field Strength of Spurious Radiation             | §2.1053,<br>§96.41(e) | $\leq$ -40 dBm/1MHz            | PASS   |
| Frequency Stability                              | §2.1055,<br>§27.54    | No limit                       | N/A    |



Test detailed items/section required by FCC rules and results are as below:

| Test Item  | Test Engineer           | Result              | Method Determination /Remark |
|--|-------------------------|---------------------|------------------------------|
| Transmitter Conducted Output Power and E.R.P./E.I.R.P. | Yu Xiaoming<br>Gan Jing | PASS                | No deviation                 |
| Occupied Bandwidth                                     | Gan Jing                | PASS                | No deviation                 |
| Peak to Average Ratio                                  | Gan Jing                | PASS                | No deviation                 |
| Conducted Spurious Emissions                           | Gan Jing                | PASS                | No deviation                 |
| Frequency stability                                    | Gan Jing                | PASS <sup>[5]</sup> | No deviation                 |
| Band Edge  | Gan Jing                | PASS                | No deviation                 |
| Radiated Spurious Emissions                            | Gao Jianrou             | PASS                | No deviation                 |

**Note 1:** The tests were performed according to the method of measurements prescribed in KDB971168 D01 v03 and ANSI/TIA-603-E-2016.

**Note 2:** The path loss during the RF test is calibrated to correct the results by the offset setting in the test equipments. The ref offset 23.5dB contains two parts that cable loss 13.5dB and Attenuator 10dB.

**Note 3:** When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% confidence intervals.

**Note 4:** Additions to, deviation, or exclusions from the method shall be judged in the "method determination" column of add, deviate or exclude from the specific method shall be explained in the "Remark" of the above table.

**Note 5:** The frequency stability of Carrier aggregation bands are referred to its corresponding single band, the test results refer to the test report(Report No.: SZ23040391W07, SZ23040391W08).

## 1.5. Environmental Conditions

During the measurement, the environmental conditions were within the listed ranges:

|                        |       |
|------------------------|-------|
| Temperature (°C):      | 15-35 |
| Relative Humidity (%): | 30-60 |



## 2. Summary Test Results And Description

### 2.1. Transmitter Conducted Output Power

#### 2.1.1. Requirement

According to FCC section 2.1046(a), for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in FCC section 2.1033(c)(8).

According to FCC section 24.232 (c) for LTE Band 2, Mobile and portable stations are limited to 2 watts E.I.R.P. and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

According to FCC section 27.50 (d)(4) for LTE Band 4/66, Fixed, mobile and portable (hand-held) stations in the 1710-1755MHz band are limited to 1wat E.I.R.P.

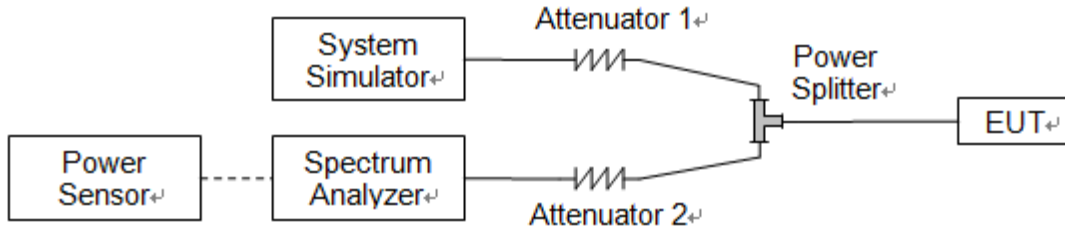
According to FCC section 22.913 (a)(2) for LTE Band 5, the E.R.P. of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

According to FCC section 27.50 (b)(10)for LTE Band 13, Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts E.R.P.

According to FCC section 96.41(b) for LTE Band 48, the maximum effective isotropic radiated power (EIRP) and maximum Power Spectral Density (PSD) of any CBSD and End User Device must comply with the limits shown in the table as below. Paragraph

| Device                       | Maximum EIRP (dBm/10 megahertz) | Maximum PSD (dBm/MHz) |
|------------------------------|---------------------------------|-----------------------|
| End User Device              | 23                              | n/a                   |
| Category A CBSD              | 30                              | 20                    |
| Category B CBSD <sup>1</sup> | 47                              | 37                    |

### 2.1.2. Test Description



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

### 2.1.3. Test Procedure

KDB 971168 D01v03 Section 5.2 and ANSI/TIA-603-E-2016.

E.I.R.P. (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi)

E.R.P. (dBm) = E.I.R.P. (dBm) - 2.15



2.1.4. Result

Conducted Output Power

| CA_5B                              |             |            |         |           |         |           |               |                     |
|------------------------------------|-------------|------------|---------|-----------|---------|-----------|---------------|---------------------|
| Combination:10MHz+10MHz(50RB+50RB) |             |            |         |           |         |           |               |                     |
| PCC Channel                        | SCC Channel | Modulation | PCC     |           | SCC     |           | Total RB Size | Measured Power(dBm) |
|                                    |             |            | RB Size | RB Offset | RB Size | RB Offset |               |                     |
| 20450                              | 20549       | QPSK       | 1       | 0         | 0       | 0         | 1             | 23.84               |
| 20476                              | 20575       | QPSK       | 1       | 0         | 0       | 0         | 1             | 23.77               |
| 20501                              | 20600       | QPSK       | 1       | 0         | 0       | 0         | 1             | 23.73               |

| CA_48C                               |             |            |         |           |         |           |               |                     |
|--------------------------------------|-------------|------------|---------|-----------|---------|-----------|---------------|---------------------|
| Combination:20MHz+20MHz(100RB+100RB) |             |            |         |           |         |           |               |                     |
| PCC Channel                          | SCC Channel | Modulation | PCC     |           | SCC     |           | Total RB Size | Measured Power(dBm) |
|                                      |             |            | RB Size | RB Offset | RB Size | RB Offset |               |                     |
| 55340                                | 55538       | QPSK       | 1       | 0         | 0       | 0         | 1             | 22.39               |
| 55891                                | 56089       | QPSK       | 1       | 0         | 0       | 0         | 1             | 22.42               |
| 56442                                | 56640       | QPSK       | 1       | 0         | 0       | 0         | 1             | 22.37               |

| CA_66B                             |             |            |         |           |         |           |               |                     |
|------------------------------------|-------------|------------|---------|-----------|---------|-----------|---------------|---------------------|
| Combination:10MHz+10MHz(50RB+50RB) |             |            |         |           |         |           |               |                     |
| PCC Channel                        | SCC Channel | Modulation | PCC     |           | SCC     |           | Total RB Size | Measured Power(dBm) |
|                                    |             |            | RB Size | RB Offset | RB Size | RB Offset |               |                     |
| 132022                             | 132121      | QPSK       | 1       | 0         | 100     | 0         | 1             | 22.88               |
| 132373                             | 132472      | QPSK       | 1       | 0         | 100     | 0         | 1             | 22.82               |
| 132523                             | 132622      | QPSK       | 1       | 0         | 100     | 0         | 1             | 22.79               |



| CA_66C                               |             |            |         |           |         |           |               |                     |
|--------------------------------------|-------------|------------|---------|-----------|---------|-----------|---------------|---------------------|
| Combination:20MHz+20MHz(100RB+100RB) |             |            |         |           |         |           |               |                     |
| PCC Channel                          | SCC Channel | Modulation | PCC     |           | SCC     |           | Total RB Size | Measured Power(dBm) |
|                                      |             |            | RB Size | RB Offset | RB Size | RB Offset |               |                     |
| 132072                               | 132270      | QPSK       | 1       | 0         | 100     | 0         | 1             | 22.81               |
| 132323                               | 132521      | QPSK       | 1       | 0         | 100     | 0         | 1             | 22.84               |
| 132374                               | 132572      | QPSK       | 1       | 0         | 100     | 0         | 1             | 22.79               |

| Configure  | CA Configuration | PCC  |          |            |               |                                |
|------------|------------------|------|----------|------------|---------------|--------------------------------|
|            |                  | Band | BW (MHz) | UL Channel | UL Fre. (MHz) | UL Mode (Modulation/RB/Offset) |
| Inter-band | CA_2A-4A         | 2    | 20       | 18700      | 1860          | QPSK/1#0                       |
|            | CA_2A-5A         | 2    | 20       | 18700      | 1860          | QPSK/1#0                       |
|            | CA_2A-13A        | 2    | 20       | 18700      | 1860          | QPSK/1#0                       |
|            | CA_2A-66A        | 2    | 20       | 18700      | 1860          | QPSK/1#0                       |
|            | CA_4A-5A         | 4    | 20       | 20050      | 1720          | QPSK/1#0                       |
|            | CA_4A-13A        | 4    | 20       | 20050      | 1720          | QPSK/1#0                       |
|            | CA_5A-66A        | 5    | 10       | 20450      | 829           | QPSK/1#0                       |
|            | CA_13A-66A       | 13   | 10       | 23230      | 782           | QPSK/1#0                       |

| SCC  |          |            |               |                     |
|------|----------|------------|---------------|---------------------|
| Band | BW (MHz) | UL Channel | UL Fre. (MHz) | Measured Power(dBm) |
| 4    | 20       | 20300      | 1745          | 22.72               |
| 5    | 10       | 20600      | 844           | 22.68               |
| 13   | 10       | 23230      | 782           | 22.61               |
| 66   | 20       | 132572     | 1770          | 22.56               |
| 5    | 10       | 20600      | 844           | 22.69               |
| 13   | 10       | 23230      | 782           | 22.53               |
| 66   | 20       | 132572     | 1770          | 23.76               |
| 66   | 20       | 132572     | 1770          | 23.52               |



**Effective Radiated Power and Effective Isotropic Radiated Power**

| LTE CA_5B                          |             |            |         |           |         |           |               |                     |                  |
|------------------------------------|-------------|------------|---------|-----------|---------|-----------|---------------|---------------------|------------------|
| Combination:10MHz+10MHz(50RB+50RB) |             |            |         |           |         |           |               |                     |                  |
| PCC Channel                        | SCC Channel | Modulation | PCC     |           | SCC     |           | Total RB Size | Measured Power(dBm) | Measured EIRP(W) |
|                                    |             |            | RB Size | RB Offset | RB Size | RB Offset |               |                     |                  |
| 20450                              | 20549       | QPSK       | 1       | 0         | 100     | 0         | 1             | 23.84               | 0.242            |
| 20476                              | 20575       | QPSK       | 1       | 0         | 100     | 0         | 1             | 23.77               | 0.238            |
| 20501                              | 20600       | QPSK       | 1       | 0         | 100     | 0         | 1             | 23.73               | 0.236            |

| LTE CA_48C                           |             |            |         |           |         |           |               |                     |                  |
|--------------------------------------|-------------|------------|---------|-----------|---------|-----------|---------------|---------------------|------------------|
| Combination:20MHz+20MHz(100RB+100RB) |             |            |         |           |         |           |               |                     |                  |
| PCC Channel                          | SCC Channel | Modulation | PCC     |           | SCC     |           | Total RB Size | Measured Power(dBm) | Measured EIRP(W) |
|                                      |             |            | RB Size | RB Offset | RB Size | RB Offset |               |                     |                  |
| 55340                                | 55538       | QPSK       | 1       | 0         | 100     | 0         | 1             | 22.39               | 0.173            |
| 55891                                | 56089       | QPSK       | 1       | 0         | 100     | 0         | 1             | 22.42               | 0.175            |
| 56442                                | 56640       | QPSK       | 1       | 0         | 100     | 0         | 1             | 22.37               | 0.173            |

| LTE CA_66B                           |             |            |         |           |         |           |               |                     |                  |
|--------------------------------------|-------------|------------|---------|-----------|---------|-----------|---------------|---------------------|------------------|
| Combination:20MHz+20MHz(100RB+100RB) |             |            |         |           |         |           |               |                     |                  |
| PCC Channel                          | SCC Channel | Modulation | PCC     |           | SCC     |           | Total RB Size | Measured Power(dBm) | Measured EIRP(W) |
|                                      |             |            | RB Size | RB Offset | RB Size | RB Offset |               |                     |                  |
| 132022                               | 132121      | QPSK       | 1       | 0         | 100     | 0         | 1             | 22.88               | 0.194            |
| 132373                               | 132472      | QPSK       | 1       | 0         | 100     | 0         | 1             | 22.82               | 0.191            |
| 132523                               | 132622      | QPSK       | 1       | 0         | 100     | 0         | 1             | 22.79               | 0.190            |

| LTE CA_66C                           |             |            |         |           |         |           |               |                     |                  |
|--------------------------------------|-------------|------------|---------|-----------|---------|-----------|---------------|---------------------|------------------|
| Combination:20MHz+20MHz(100RB+100RB) |             |            |         |           |         |           |               |                     |                  |
| PCC Channel                          | SCC Channel | Modulation | PCC     |           | SCC     |           | Total RB Size | Measured Power(dBm) | Measured EIRP(W) |
|                                      |             |            | RB Size | RB Offset | RB Size | RB Offset |               |                     |                  |
| 132072                               | 132270      | QPSK       | 1       | 0         | 100     | 0         | 1             | 22.81               | 0.191            |
| 132323                               | 132521      | QPSK       | 1       | 0         | 100     | 0         | 1             | 22.84               | 0.192            |



|        |        |      |   |   |     |   |   |       |       |
|--------|--------|------|---|---|-----|---|---|-------|-------|
| 132374 | 132572 | QPSK | 1 | 0 | 100 | 0 | 1 | 22.79 | 0.190 |
|--------|--------|------|---|---|-----|---|---|-------|-------|

| Configure  | CA Configuration | PCC  |          |            |               |                                |
|------------|------------------|------|----------|------------|---------------|--------------------------------|
|            |                  | Band | BW (MHz) | UL Channel | UL Fre. (MHz) | UL Mode (Modulation/RB/Offset) |
| Inter-band | CA_2A-4A         | 2    | 20       | 18700      | 1860          | QPSK/1#0                       |
|            | CA_2A-5A         | 2    | 20       | 18700      | 1860          | QPSK/1#0                       |
|            | CA_2A-13A        | 2    | 20       | 18700      | 1860          | QPSK/1#0                       |
|            | CA_2A-66A        | 2    | 20       | 18700      | 1860          | QPSK/1#0                       |
|            | CA_4A-5A         | 4    | 20       | 20050      | 1720          | QPSK/1#0                       |
|            | CA_4A-13A        | 4    | 20       | 20050      | 1720          | QPSK/1#0                       |
|            | CA_5A-66A        | 5    | 10       | 20450      | 829           | QPSK/1#0                       |
|            | CA_13A-66A       | 13   | 10       | 23230      | 782           | QPSK/1#0                       |

| SCC  |          |            |               |                     |         |
|------|----------|------------|---------------|---------------------|---------|
| Band | BW (MHz) | UL Channel | UL Fre. (MHz) | Measured Power(dBm) | EIRP(W) |
| 4    | 20       | 20300      | 1745          | 24.07               | 0.255   |
| 5    | 10       | 20600      | 844           | 24.03               | 0.253   |
| 13   | 10       | 23230      | 782           | 23.96               | 0.249   |
| 66   | 20       | 132572     | 1770          | 23.91               | 0.246   |
| 5    | 10       | 20600      | 844           | 23.00               | 0.200   |
| 13   | 10       | 23230      | 782           | 22.84               | 0.192   |
| 66   | 20       | 132572     | 1770          | 24.65               | 0.292   |
| 66   | 20       | 132572     | 1770          | 24.41               | 0.276   |

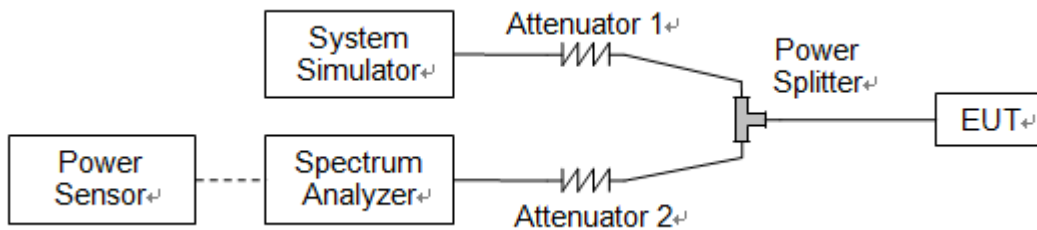


## 2.2. Occupied Bandwidth

### 2.2.1. Requirement

According to FCC section 2.1049, the occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission. Occupied bandwidth is also known as the 99% emission bandwidth.

### 2.2.2. Test Description



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

### 2.2.3. Test Procedure

KDB 971168 D01v03 Section 4.1 and ANSI/TIA-603-E-2016.

### 2.2.4. Test Result



| LTE Band | BW(MHz) | Channel Level | PCC CH | SCC CH | Modulation | 99% BW (MHz) | 26dB BW (MHz) | Verdict |
|----------|---------|---------------|--------|--------|------------|--------------|---------------|---------|
| 5B       | 3+5     | Low           | 20416  | 20455  | QPSK       | 7.50         | 7.96          | PASS    |
| 5B       | 3+5     | Low           | 20416  | 20455  | 16QAM      | 7.50         | 8.76          | PASS    |
| 5B       | 3+5     | Low           | 20416  | 20455  | 64QAM      | 7.51         | 9.42          | PASS    |
| 5B       | 5+3     | Low           | 20425  | 20464  | QPSK       | 7.48         | 8.01          | PASS    |
| 5B       | 5+3     | Low           | 20425  | 20464  | 16QAM      | 7.51         | 8.30          | PASS    |
| 5B       | 5+3     | Low           | 20425  | 20464  | 64QAM      | 7.53         | 10.46         | PASS    |
| 5B       | 5+10    | Low           | 20428  | 20500  | QPSK       | 13.91        | 14.65         | PASS    |
| 5B       | 5+10    | Low           | 20428  | 20500  | 16QAM      | 13.87        | 14.61         | PASS    |
| 5B       | 5+10    | Low           | 20428  | 20500  | 64QAM      | 13.88        | 14.60         | PASS    |
| 5B       | 10+5    | Low           | 20450  | 20522  | QPSK       | 13.94        | 14.75         | PASS    |
| 5B       | 10+5    | Low           | 20450  | 20522  | 16QAM      | 13.86        | 14.75         | PASS    |
| 5B       | 10+5    | Low           | 20450  | 20522  | 64QAM      | 13.91        | 14.81         | PASS    |
| 5B       | 10+10   | Low           | 20450  | 20549  | QPSK       | 18.78        | 19.94         | PASS    |
| 5B       | 10+10   | Low           | 20450  | 20549  | 16QAM      | 18.80        | 19.98         | PASS    |
| 5B       | 10+10   | Low           | 20450  | 20549  | 64QAM      | 18.75        | 19.93         | PASS    |
| 5B       | 3+5     | Mid           | 20501  | 20540  | QPSK       | 7.50         | 7.98          | PASS    |
| 5B       | 3+5     | Mid           | 20501  | 20540  | 16QAM      | 7.51         | 9.39          | PASS    |
| 5B       | 3+5     | Mid           | 20501  | 20540  | 64QAM      | 7.49         | 9.01          | PASS    |
| 5B       | 5+3     | Mid           | 20510  | 20549  | QPSK       | 7.46         | 8.02          | PASS    |
| 5B       | 5+3     | Mid           | 20510  | 20549  | 16QAM      | 7.52         | 10.06         | PASS    |
| 5B       | 5+3     | Mid           | 20510  | 20549  | 64QAM      | 7.52         | 10.04         | PASS    |
| 5B       | 5+10    | Mid           | 20478  | 20550  | QPSK       | 13.91        | 14.77         | PASS    |
| 5B       | 5+10    | Mid           | 20478  | 20550  | 16QAM      | 13.90        | 14.71         | PASS    |
| 5B       | 5+10    | Mid           | 20478  | 20550  | 64QAM      | 13.88        | 14.67         | PASS    |
| 5B       | 10+5    | Mid           | 20500  | 20572  | QPSK       | 13.95        | 14.81         | PASS    |
| 5B       | 10+5    | Mid           | 20500  | 20572  | 16QAM      | 13.88        | 14.76         | PASS    |
| 5B       | 10+5    | Mid           | 20500  | 20572  | 64QAM      | 13.92        | 14.80         | PASS    |
| 5B       | 10+10   | Mid           | 20476  | 20575  | QPSK       | 18.80        | 19.94         | PASS    |
| 5B       | 10+10   | Mid           | 20476  | 20575  | 16QAM      | 18.76        | 19.90         | PASS    |
| 5B       | 10+10   | Mid           | 20476  | 20575  | 64QAM      | 18.79        | 19.86         | PASS    |
| 5B       | 3+5     | High          | 20586  | 20625  | QPSK       | 7.49         | 7.92          | PASS    |
| 5B       | 3+5     | High          | 20586  | 20625  | 16QAM      | 7.51         | 8.91          | PASS    |
| 5B       | 3+5     | High          | 20586  | 20625  | 64QAM      | 7.50         | 9.24          | PASS    |
| 5B       | 5+3     | High          | 20595  | 20634  | QPSK       | 7.47         | 7.98          | PASS    |
| 5B       | 5+3     | High          | 20595  | 20634  | 16QAM      | 7.52         | 11.11         | PASS    |



|     |       |      |       |       |       |       |       |      |
|-----|-------|------|-------|-------|-------|-------|-------|------|
| 5B  | 5+3   | High | 20595 | 20634 | 64QAM | 7.53  | 12.10 | PASS |
| 5B  | 5+10  | High | 20528 | 20600 | QPSK  | 13.84 | 14.62 | PASS |
| 5B  | 5+10  | High | 20528 | 20600 | 16QAM | 13.85 | 14.63 | PASS |
| 5B  | 5+10  | High | 20528 | 20600 | 64QAM | 13.82 | 14.63 | PASS |
| 5B  | 10+5  | High | 20550 | 20622 | QPSK  | 13.88 | 14.81 | PASS |
| 5B  | 10+5  | High | 20550 | 20622 | 16QAM | 13.84 | 14.75 | PASS |
| 5B  | 10+5  | High | 20550 | 20622 | 64QAM | 13.87 | 14.77 | PASS |
| 5B  | 10+10 | High | 20501 | 20600 | QPSK  | 18.74 | 19.94 | PASS |
| 5B  | 10+10 | High | 20501 | 20600 | 16QAM | 18.77 | 19.90 | PASS |
| 5B  | 10+10 | High | 20501 | 20600 | 64QAM | 18.73 | 19.84 | PASS |
| 48C | 5+20  | Low  | 55273 | 55390 | QPSK  | 22.80 | 23.59 | PASS |
| 48C | 5+20  | Low  | 55273 | 55390 | 16QAM | 22.79 | 23.57 | PASS |
| 48C | 5+20  | Low  | 55273 | 55390 | 64QAM | 22.74 | 23.56 | PASS |
| 48C | 5+20  | Mid  | 55898 | 56015 | QPSK  | 22.76 | 23.92 | PASS |
| 48C | 5+20  | Mid  | 55898 | 56015 | 16QAM | 22.69 | 23.46 | PASS |
| 48C | 5+20  | Mid  | 55898 | 56015 | 64QAM | 22.85 | 23.57 | PASS |
| 48C | 5+20  | High | 56523 | 56640 | QPSK  | 22.60 | 23.49 | PASS |
| 48C | 5+20  | High | 56523 | 56640 | 16QAM | 22.73 | 23.63 | PASS |
| 48C | 5+20  | High | 56523 | 56640 | 64QAM | 22.83 | 23.60 | PASS |
| 48C | 10+20 | Low  | 55295 | 55439 | QPSK  | 27.68 | 29.13 | PASS |
| 48C | 10+20 | Low  | 55295 | 55439 | 16QAM | 27.59 | 28.88 | PASS |
| 48C | 10+20 | Low  | 55295 | 55439 | 64QAM | 27.64 | 29.69 | PASS |
| 48C | 10+20 | Mid  | 55896 | 56040 | QPSK  | 27.57 | 28.71 | PASS |
| 48C | 10+20 | Mid  | 55896 | 56040 | 16QAM | 27.54 | 28.84 | PASS |
| 48C | 10+20 | Mid  | 55896 | 56040 | 64QAM | 27.67 | 28.64 | PASS |
| 48C | 10+20 | High | 56496 | 56640 | QPSK  | 27.63 | 28.69 | PASS |
| 48C | 10+20 | High | 56496 | 56640 | 16QAM | 27.60 | 28.56 | PASS |
| 48C | 10+20 | High | 56496 | 56640 | 64QAM | 27.63 | 29.71 | PASS |
| 48C | 15+20 | Low  | 55318 | 55489 | QPSK  | 32.57 | 33.97 | PASS |
| 48C | 15+20 | Low  | 55318 | 55489 | 16QAM | 32.54 | 33.64 | PASS |
| 48C | 15+20 | Low  | 55318 | 55489 | 64QAM | 32.44 | 33.63 | PASS |
| 48C | 15+20 | Mid  | 55893 | 56064 | QPSK  | 32.65 | 33.86 | PASS |
| 48C | 15+20 | Mid  | 55893 | 56064 | 16QAM | 32.50 | 34.01 | PASS |
| 48C | 15+20 | Mid  | 55893 | 56064 | 64QAM | 32.47 | 33.75 | PASS |
| 48C | 15+20 | High | 56469 | 56640 | QPSK  | 32.52 | 33.83 | PASS |
| 48C | 15+20 | High | 56469 | 56640 | 16QAM | 32.52 | 33.85 | PASS |
| 48C | 15+20 | High | 56469 | 56640 | 64QAM | 32.45 | 33.68 | PASS |
| 48C | 20+5  | Low  | 55340 | 55457 | QPSK  | 22.82 | 23.82 | PASS |



|     |       |      |        |        |       |       |       |      |
|-----|-------|------|--------|--------|-------|-------|-------|------|
| 48C | 20+5  | Low  | 55340  | 55457  | 16QAM | 22.78 | 23.91 | PASS |
| 48C | 20+5  | Low  | 55340  | 55457  | 64QAM | 22.87 | 23.77 | PASS |
| 48C | 20+10 | Low  | 55340  | 55484  | QPSK  | 27.70 | 28.92 | PASS |
| 48C | 20+10 | Low  | 55340  | 55484  | 16QAM | 27.69 | 29.59 | PASS |
| 48C | 20+10 | Low  | 55340  | 55484  | 64QAM | 27.77 | 28.95 | PASS |
| 48C | 20+15 | Low  | 55340  | 55511  | QPSK  | 32.55 | 33.70 | PASS |
| 48C | 20+15 | Low  | 55340  | 55511  | 16QAM | 32.52 | 34.80 | PASS |
| 48C | 20+15 | Low  | 55340  | 55511  | 64QAM | 32.61 | 33.94 | PASS |
| 48C | 20+20 | Low  | 55340  | 55538  | QPSK  | 37.47 | 38.91 | PASS |
| 48C | 20+20 | Low  | 55340  | 55538  | 16QAM | 37.37 | 38.70 | PASS |
| 48C | 20+20 | Low  | 55340  | 55538  | 64QAM | 37.51 | 39.02 | PASS |
| 48C | 20+5  | Mid  | 55965  | 56082  | QPSK  | 22.78 | 23.64 | PASS |
| 48C | 20+5  | Mid  | 55965  | 56082  | 16QAM | 22.82 | 23.71 | PASS |
| 48C | 20+5  | Mid  | 55965  | 56082  | 64QAM | 22.75 | 23.76 | PASS |
| 48C | 20+10 | Mid  | 55941  | 56085  | QPSK  | 27.64 | 28.64 | PASS |
| 48C | 20+10 | Mid  | 55941  | 56085  | 16QAM | 27.54 | 28.88 | PASS |
| 48C | 20+10 | Mid  | 55941  | 56085  | 64QAM | 27.66 | 28.89 | PASS |
| 48C | 20+15 | Mid  | 55916  | 56087  | QPSK  | 32.56 | 34.09 | PASS |
| 48C | 20+15 | Mid  | 55916  | 56087  | 16QAM | 32.54 | 33.86 | PASS |
| 48C | 20+15 | Mid  | 55916  | 56087  | 64QAM | 32.47 | 33.77 | PASS |
| 48C | 20+20 | Mid  | 55891  | 56089  | QPSK  | 37.45 | 38.72 | PASS |
| 48C | 20+20 | Mid  | 55891  | 56089  | 16QAM | 37.38 | 38.92 | PASS |
| 48C | 20+20 | Mid  | 55891  | 56089  | 64QAM | 37.38 | 39.33 | PASS |
| 48C | 20+5  | High | 56590  | 56707  | QPSK  | 22.80 | 23.67 | PASS |
| 48C | 20+5  | High | 56590  | 56707  | 16QAM | 22.82 | 23.67 | PASS |
| 48C | 20+5  | High | 56590  | 56707  | 64QAM | 22.74 | 23.70 | PASS |
| 48C | 20+10 | High | 56541  | 56685  | QPSK  | 27.78 | 28.68 | PASS |
| 48C | 20+10 | High | 56541  | 56685  | 16QAM | 27.70 | 28.96 | PASS |
| 48C | 20+10 | High | 56541  | 56685  | 64QAM | 27.65 | 28.61 | PASS |
| 48C | 20+15 | High | 56491  | 56662  | QPSK  | 32.56 | 33.68 | PASS |
| 48C | 20+15 | High | 56491  | 56662  | 16QAM | 32.57 | 34.80 | PASS |
| 48C | 20+15 | High | 56491  | 56662  | 64QAM | 32.53 | 33.94 | PASS |
| 48C | 20+20 | High | 56442  | 56640  | QPSK  | 37.29 | 39.22 | PASS |
| 48C | 20+20 | High | 56442  | 56640  | 16QAM | 37.41 | 38.90 | PASS |
| 48C | 20+20 | High | 56442  | 56640  | 64QAM | 37.39 | 38.77 | PASS |
| 66B | 5+5   | Low  | 131997 | 132045 | QPSK  | 9.30  | 9.82  | PASS |
| 66B | 5+5   | Low  | 131997 | 132045 | 16QAM | 9.25  | 9.87  | PASS |
| 66B | 5+5   | Low  | 131997 | 132045 | 64QAM | 9.26  | 9.88  | PASS |



|     |       |      |        |        |       |       |       |      |
|-----|-------|------|--------|--------|-------|-------|-------|------|
| 66B | 5+10  | Low  | 132000 | 132072 | QPSK  | 13.92 | 14.71 | PASS |
| 66B | 5+10  | Low  | 132000 | 132072 | 16QAM | 13.90 | 14.67 | PASS |
| 66B | 5+10  | Low  | 132000 | 132072 | 64QAM | 13.90 | 14.65 | PASS |
| 66B | 5+15  | Low  | 132002 | 132095 | QPSK  | 18.29 | 19.31 | PASS |
| 66B | 5+15  | Low  | 132002 | 132095 | 16QAM | 18.24 | 19.20 | PASS |
| 66B | 5+15  | Low  | 132002 | 132095 | 64QAM | 18.22 | 19.23 | PASS |
| 66B | 5+5   | Mid  | 132398 | 132446 | QPSK  | 9.27  | 9.89  | PASS |
| 66B | 5+5   | Mid  | 132398 | 132446 | 16QAM | 9.27  | 9.86  | PASS |
| 66B | 5+5   | Mid  | 132398 | 132446 | 64QAM | 9.28  | 9.86  | PASS |
| 66B | 5+10  | Mid  | 132375 | 132447 | QPSK  | 13.93 | 14.75 | PASS |
| 66B | 5+10  | Mid  | 132375 | 132447 | 16QAM | 13.94 | 14.74 | PASS |
| 66B | 5+10  | Mid  | 132375 | 132447 | 64QAM | 13.94 | 14.63 | PASS |
| 66B | 5+15  | Mid  | 132353 | 132446 | QPSK  | 18.29 | 19.26 | PASS |
| 66B | 5+15  | Mid  | 132353 | 132446 | 16QAM | 18.30 | 19.20 | PASS |
| 66B | 5+15  | Mid  | 132353 | 132446 | 64QAM | 18.22 | 19.26 | PASS |
| 66B | 5+5   | High | 132599 | 132647 | QPSK  | 9.30  | 9.91  | PASS |
| 66B | 5+5   | High | 132599 | 132647 | 16QAM | 9.27  | 9.88  | PASS |
| 66B | 5+5   | High | 132599 | 132647 | 64QAM | 9.28  | 9.87  | PASS |
| 66B | 5+10  | High | 132550 | 132622 | QPSK  | 13.90 | 14.72 | PASS |
| 66B | 5+10  | High | 132550 | 132622 | 16QAM | 13.89 | 14.68 | PASS |
| 66B | 5+10  | High | 132550 | 132622 | 64QAM | 13.92 | 14.64 | PASS |
| 66B | 5+15  | High | 132504 | 132597 | QPSK  | 18.31 | 19.43 | PASS |
| 66B | 5+15  | High | 132504 | 132597 | 16QAM | 18.24 | 19.19 | PASS |
| 66B | 5+15  | High | 132504 | 132597 | 64QAM | 18.17 | 19.18 | PASS |
| 66B | 10+5  | Low  | 132022 | 132094 | QPSK  | 14.00 | 14.76 | PASS |
| 66B | 10+5  | Low  | 132022 | 132094 | 16QAM | 13.91 | 14.78 | PASS |
| 66B | 10+5  | Low  | 132022 | 132094 | 64QAM | 13.93 | 14.79 | PASS |
| 66B | 10+10 | Low  | 132022 | 132121 | QPSK  | 18.89 | 19.97 | PASS |
| 66B | 10+10 | Low  | 132022 | 132121 | 16QAM | 18.85 | 19.92 | PASS |
| 66B | 10+10 | Low  | 132022 | 132121 | 64QAM | 18.85 | 19.97 | PASS |
| 66B | 10+5  | Mid  | 132397 | 132469 | QPSK  | 13.94 | 14.80 | PASS |
| 66B | 10+5  | Mid  | 132397 | 132469 | 16QAM | 13.90 | 14.76 | PASS |
| 66B | 10+5  | Mid  | 132397 | 132469 | 64QAM | 13.91 | 14.84 | PASS |
| 66B | 10+10 | Mid  | 132373 | 132472 | QPSK  | 18.88 | 19.95 | PASS |
| 66B | 10+10 | Mid  | 132373 | 132472 | 16QAM | 18.85 | 19.96 | PASS |
| 66B | 10+10 | Mid  | 132373 | 132472 | 64QAM | 18.90 | 19.96 | PASS |
| 66B | 10+5  | High | 132572 | 132644 | QPSK  | 13.96 | 14.78 | PASS |
| 66B | 10+5  | High | 132572 | 132644 | 16QAM | 13.91 | 14.79 | PASS |



|     |       |      |        |        |       |        |        |      |
|-----|-------|------|--------|--------|-------|--------|--------|------|
| 66B | 10+5  | High | 132572 | 132644 | 64QAM | 13.93  | 14.82  | PASS |
| 66B | 10+10 | High | 132523 | 132622 | QPSK  | 18.81  | 19.94  | PASS |
| 66B | 10+10 | High | 132523 | 132622 | 16QAM | 18.81  | 19.95  | PASS |
| 66B | 10+10 | High | 132523 | 132622 | 64QAM | 18.86  | 20.02  | PASS |
| 66B | 15+5  | Low  | 132047 | 132140 | QPSK  | 18.28  | 19.48  | PASS |
| 66B | 15+5  | Low  | 132047 | 132140 | 16QAM | 18.30  | 19.46  | PASS |
| 66B | 15+5  | Low  | 132047 | 132140 | 64QAM | 18.27  | 19.37  | PASS |
| 66B | 15+5  | Mid  | 132398 | 132491 | QPSK  | 18.28  | 19.43  | PASS |
| 66B | 15+5  | Mid  | 132398 | 132491 | 16QAM | 18.31  | 19.44  | PASS |
| 66B | 15+5  | Mid  | 132398 | 132491 | 64QAM | 18.27  | 19.45  | PASS |
| 66B | 15+5  | High | 132549 | 132642 | QPSK  | 18.33  | 19.44  | PASS |
| 66B | 15+5  | High | 132549 | 132642 | 16QAM | 18.30  | 19.46  | PASS |
| 66B | 15+5  | High | 132549 | 132642 | 64QAM | 18.29  | 19.35  | PASS |
| 66C | 5+20  | Low  | 132005 | 132122 | QPSK  | 22.756 | 23.529 | PASS |
| 66C | 5+20  | Low  | 132005 | 132122 | 16QAM | 22.850 | 23.614 | PASS |
| 66C | 5+20  | Low  | 132005 | 132122 | 64QAM | 22.660 | 23.633 | PASS |
| 66C | 5+20  | Mid  | 132330 | 132447 | QPSK  | 22.779 | 23.615 | PASS |
| 66C | 5+20  | Mid  | 132330 | 132447 | 16QAM | 22.880 | 23.637 | PASS |
| 66C | 5+20  | Mid  | 132330 | 132447 | 64QAM | 22.700 | 23.683 | PASS |
| 66C | 5+20  | High | 132455 | 132572 | QPSK  | 22.714 | 23.587 | PASS |
| 66C | 5+20  | High | 132455 | 132572 | 16QAM | 22.813 | 23.599 | PASS |
| 66C | 5+20  | High | 132455 | 132572 | 64QAM | 22.587 | 23.602 | PASS |
| 66C | 10+15 | Low  | 132025 | 132145 | QPSK  | 23.179 | 24.163 | PASS |
| 66C | 10+15 | Low  | 132025 | 132145 | 16QAM | 23.057 | 24.012 | PASS |
| 66C | 10+15 | Low  | 132025 | 132145 | 64QAM | 23.026 | 24.101 | PASS |
| 66C | 10+20 | Low  | 132027 | 132171 | QPSK  | 27.643 | 28.780 | PASS |
| 66C | 10+20 | Low  | 132027 | 132171 | 16QAM | 27.652 | 28.749 | PASS |
| 66C | 10+20 | Low  | 132027 | 132171 | 64QAM | 27.566 | 28.794 | PASS |
| 66C | 10+15 | Mid  | 132351 | 132471 | QPSK  | 23.110 | 24.222 | PASS |
| 66C | 10+15 | Mid  | 132351 | 132471 | 16QAM | 23.129 | 24.029 | PASS |
| 66C | 10+15 | Mid  | 132351 | 132471 | 64QAM | 23.064 | 24.054 | PASS |
| 66C | 10+20 | Mid  | 132328 | 132472 | QPSK  | 27.714 | 28.738 | PASS |
| 66C | 10+20 | Mid  | 132328 | 132472 | 16QAM | 27.683 | 28.824 | PASS |
| 66C | 10+20 | Mid  | 132328 | 132472 | 64QAM | 27.592 | 28.690 | PASS |
| 66C | 10+15 | High | 132477 | 132597 | QPSK  | 23.024 | 24.193 | PASS |
| 66C | 10+15 | High | 132477 | 132597 | 16QAM | 23.022 | 23.978 | PASS |
| 66C | 10+15 | High | 132477 | 132597 | 64QAM | 22.959 | 24.087 | PASS |
| 66C | 10+20 | High | 132428 | 132572 | QPSK  | 27.606 | 28.817 | PASS |

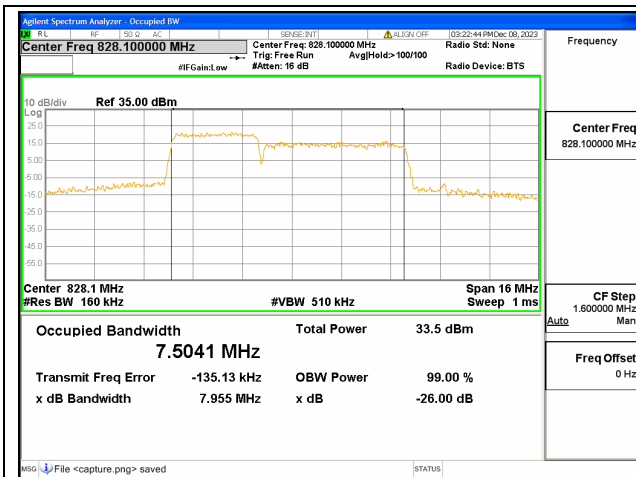


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| 66C | 10+20 | High | 132428 | 132572 | 16QAM | 27.551 | 28.818 | PASS |
| 66C | 10+20 | High | 132428 | 132572 | 64QAM | 27.518 | 28.693 | PASS |
| 66C | 15+10 | Low  | 132047 | 132167 | QPSK  | 23.116 | 24.205 | PASS |
| 66C | 15+10 | Low  | 132047 | 132167 | 16QAM | 23.075 | 24.233 | PASS |
| 66C | 15+10 | Low  | 132047 | 132167 | 64QAM | 23.061 | 24.220 | PASS |
| 66C | 15+15 | Low  | 132047 | 132197 | QPSK  | 28.202 | 29.609 | PASS |
| 66C | 15+15 | Low  | 132047 | 132197 | 16QAM | 28.309 | 29.437 | PASS |
| 66C | 15+15 | Low  | 132047 | 132197 | 64QAM | 28.201 | 29.522 | PASS |
| 66C | 15+20 | Low  | 132050 | 132221 | QPSK  | 32.488 | 33.962 | PASS |
| 66C | 15+20 | Low  | 132050 | 132221 | 16QAM | 32.565 | 33.951 | PASS |
| 66C | 15+20 | Low  | 132050 | 132221 | 64QAM | 32.507 | 33.776 | PASS |
| 66C | 15+10 | Mid  | 132373 | 132493 | QPSK  | 23.129 | 24.249 | PASS |
| 66C | 15+10 | Mid  | 132373 | 132493 | 16QAM | 23.047 | 24.263 | PASS |
| 66C | 15+10 | Mid  | 132373 | 132493 | 64QAM | 23.104 | 24.283 | PASS |
| 66C | 15+15 | Mid  | 132347 | 132497 | QPSK  | 28.334 | 29.552 | PASS |
| 66C | 15+15 | Mid  | 132347 | 132497 | 16QAM | 28.332 | 29.529 | PASS |
| 66C | 15+15 | Mid  | 132347 | 132497 | 64QAM | 28.242 | 29.631 | PASS |
| 66C | 15+20 | Mid  | 132325 | 132496 | QPSK  | 32.532 | 33.883 | PASS |
| 66C | 15+20 | Mid  | 132325 | 132496 | 16QAM | 32.617 | 33.924 | PASS |
| 66C | 15+20 | Mid  | 132325 | 132496 | 64QAM | 32.674 | 33.954 | PASS |
| 66C | 15+10 | High | 132499 | 132619 | QPSK  | 23.034 | 24.211 | PASS |
| 66C | 15+10 | High | 132499 | 132619 | 16QAM | 23.020 | 24.161 | PASS |
| 66C | 15+10 | High | 132499 | 132619 | 64QAM | 23.026 | 24.206 | PASS |
| 66C | 15+15 | High | 132447 | 132597 | QPSK  | 28.263 | 29.432 | PASS |
| 66C | 15+15 | High | 132447 | 132597 | 16QAM | 28.248 | 29.405 | PASS |
| 66C | 15+15 | High | 132447 | 132597 | 64QAM | 28.219 | 29.467 | PASS |
| 66C | 15+20 | High | 132401 | 132572 | QPSK  | 32.489 | 33.886 | PASS |
| 66C | 15+20 | High | 132401 | 132572 | 16QAM | 32.490 | 33.802 | PASS |
| 66C | 15+20 | High | 132401 | 132572 | 64QAM | 32.460 | 33.900 | PASS |
| 66C | 20+10 | Low  | 132072 | 132216 | QPSK  | 27.672 | 29.092 | PASS |
| 66C | 20+10 | Low  | 132072 | 132216 | 16QAM | 27.661 | 29.027 | PASS |
| 66C | 20+10 | Low  | 132072 | 132216 | 64QAM | 27.624 | 29.040 | PASS |
| 66C | 20+15 | Low  | 132072 | 132243 | QPSK  | 32.574 | 34.222 | PASS |
| 66C | 20+15 | Low  | 132072 | 132243 | 16QAM | 32.623 | 34.017 | PASS |
| 66C | 20+15 | Low  | 132072 | 132243 | 64QAM | 32.498 | 34.108 | PASS |
| 66C | 20+5  | Low  | 132072 | 132189 | QPSK  | 22.824 | 23.908 | PASS |
| 66C | 20+5  | Low  | 132072 | 132189 | 16QAM | 22.796 | 23.866 | PASS |
| 66C | 20+5  | Low  | 132072 | 132189 | 64QAM | 22.833 | 23.979 | PASS |

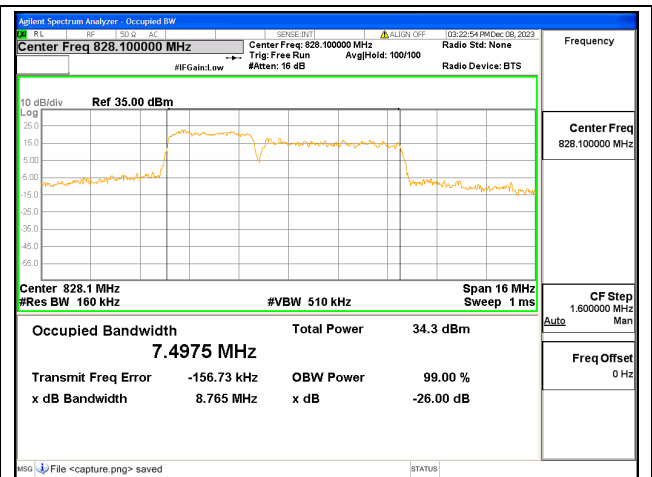


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|-----|-------|------|--------|--------|-------|--------|--------|------|
| 66C | 20+20 | Low  | 132072 | 132270 | QPSK  | 37.405 | 39.123 | PASS |
| 66C | 20+20 | Low  | 132072 | 132270 | 16QAM | 37.370 | 39.057 | PASS |
| 66C | 20+20 | Low  | 132072 | 132270 | 64QAM | 37.311 | 39.019 | PASS |
| 66C | 20+10 | Mid  | 132373 | 132517 | QPSK  | 27.714 | 29.106 | PASS |
| 66C | 20+10 | Mid  | 132373 | 132517 | 16QAM | 27.745 | 28.963 | PASS |
| 66C | 20+10 | Mid  | 132373 | 132517 | 64QAM | 27.729 | 28.947 | PASS |
| 66C | 20+15 | Mid  | 132348 | 132519 | QPSK  | 32.640 | 34.108 | PASS |
| 66C | 20+15 | Mid  | 132348 | 132519 | 16QAM | 32.678 | 34.179 | PASS |
| 66C | 20+15 | Mid  | 132348 | 132519 | 64QAM | 32.505 | 34.011 | PASS |
| 66C | 20+5  | Mid  | 132397 | 132514 | QPSK  | 22.883 | 23.994 | PASS |
| 66C | 20+5  | Mid  | 132397 | 132514 | 16QAM | 22.843 | 23.930 | PASS |
| 66C | 20+5  | Mid  | 132397 | 132514 | 64QAM | 22.800 | 23.856 | PASS |
| 66C | 20+20 | Mid  | 132323 | 132521 | QPSK  | 37.418 | 39.093 | PASS |
| 66C | 20+20 | Mid  | 132323 | 132521 | 16QAM | 37.472 | 39.016 | PASS |
| 66C | 20+20 | Mid  | 132323 | 132521 | 64QAM | 37.328 | 39.145 | PASS |
| 66C | 20+10 | High | 132473 | 132617 | QPSK  | 27.669 | 29.001 | PASS |
| 66C | 20+10 | High | 132473 | 132617 | 16QAM | 27.661 | 28.938 | PASS |
| 66C | 20+10 | High | 132473 | 132617 | 64QAM | 27.652 | 28.975 | PASS |
| 66C | 20+15 | High | 132423 | 132594 | QPSK  | 32.554 | 34.027 | PASS |
| 66C | 20+15 | High | 132423 | 132594 | 16QAM | 32.568 | 34.025 | PASS |
| 66C | 20+15 | High | 132423 | 132594 | 64QAM | 32.519 | 34.117 | PASS |
| 66C | 20+5  | High | 132522 | 132639 | QPSK  | 22.771 | 23.830 | PASS |
| 66C | 20+5  | High | 132522 | 132639 | 16QAM | 22.836 | 23.906 | PASS |
| 66C | 20+5  | High | 132522 | 132639 | 64QAM | 22.817 | 23.928 | PASS |
| 66C | 20+20 | High | 132374 | 132572 | QPSK  | 37.456 | 39.213 | PASS |
| 66C | 20+20 | High | 132374 | 132572 | 16QAM | 37.561 | 39.117 | PASS |
| 66C | 20+20 | High | 132374 | 132572 | 64QAM | 37.307 | 39.198 | PASS |

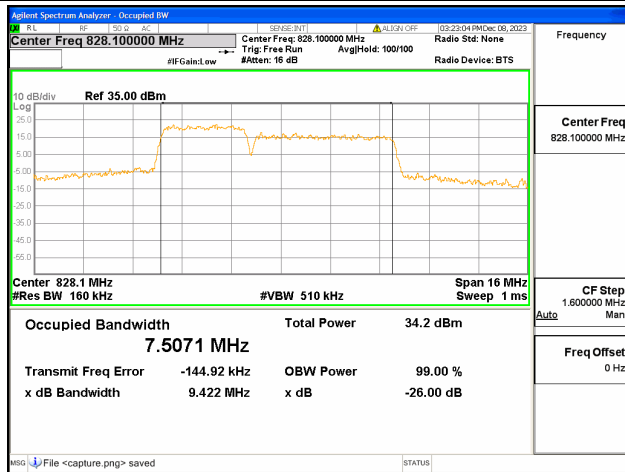




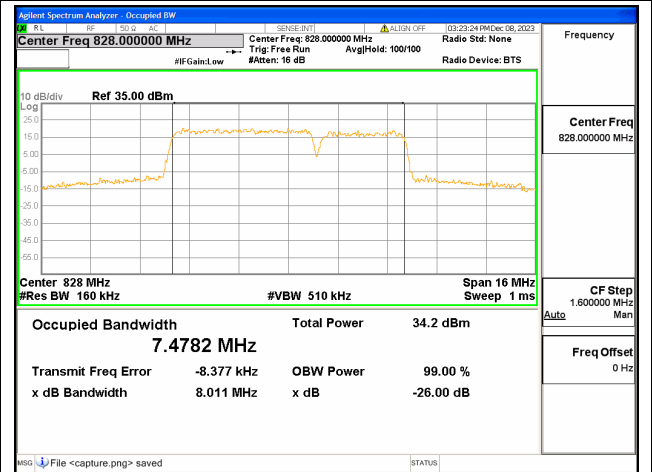
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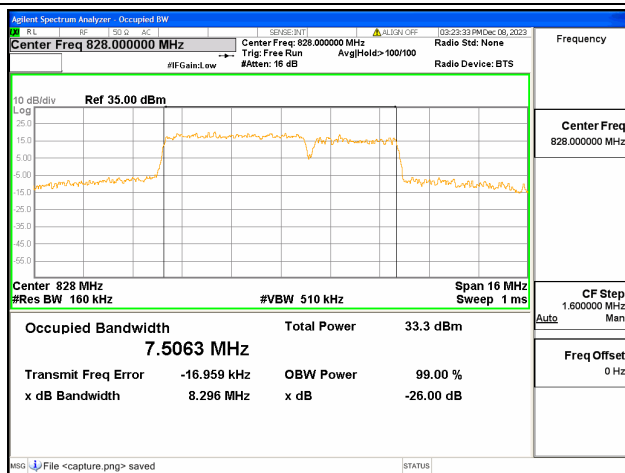
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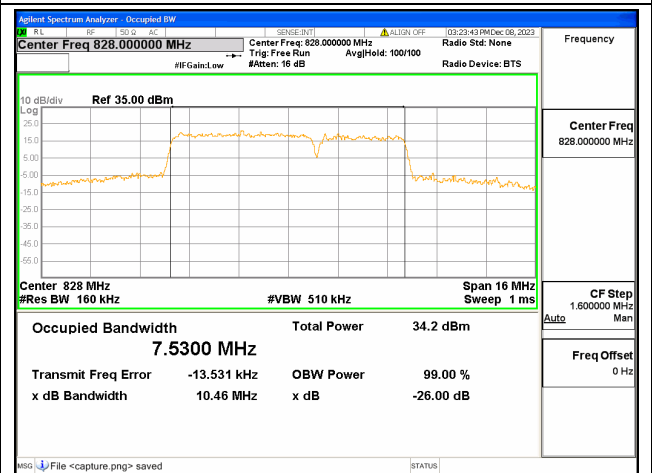
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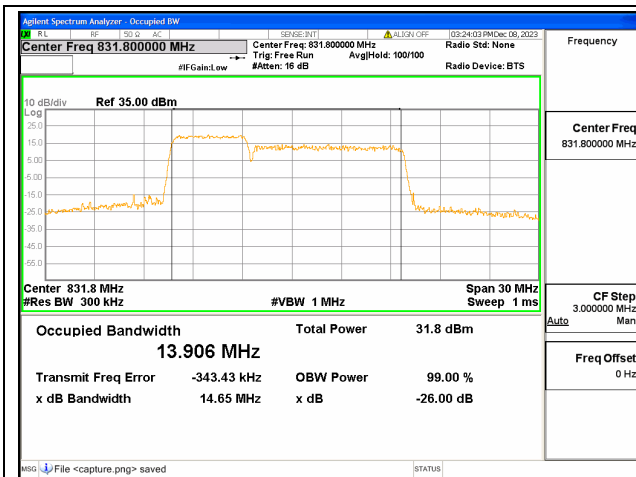
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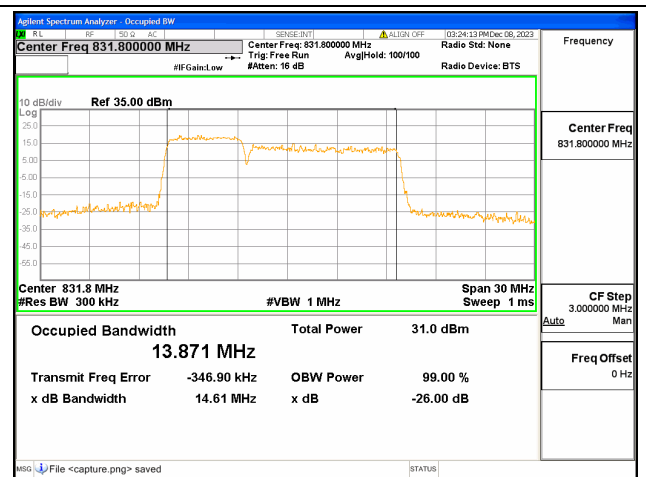
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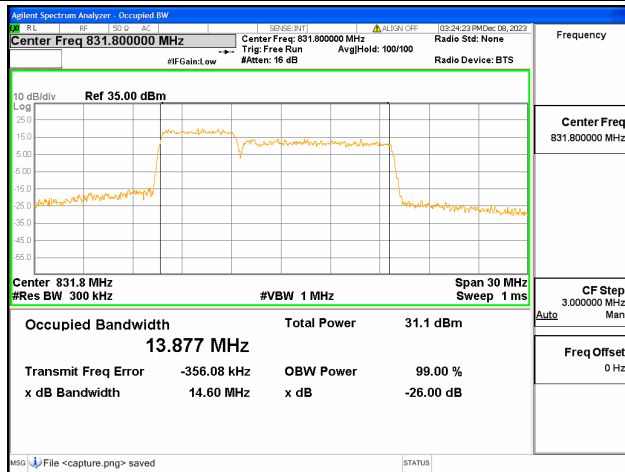
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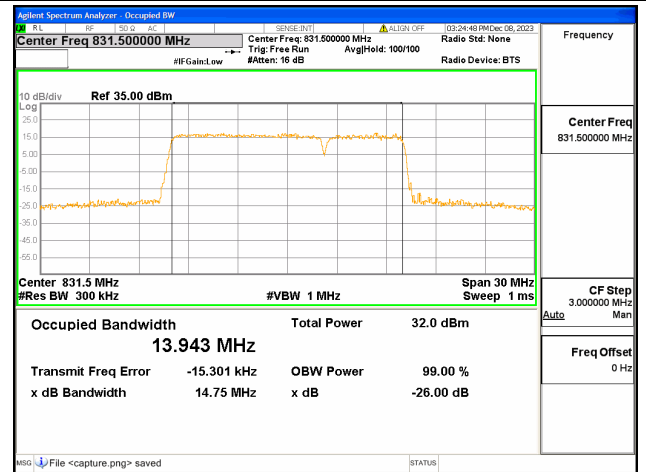
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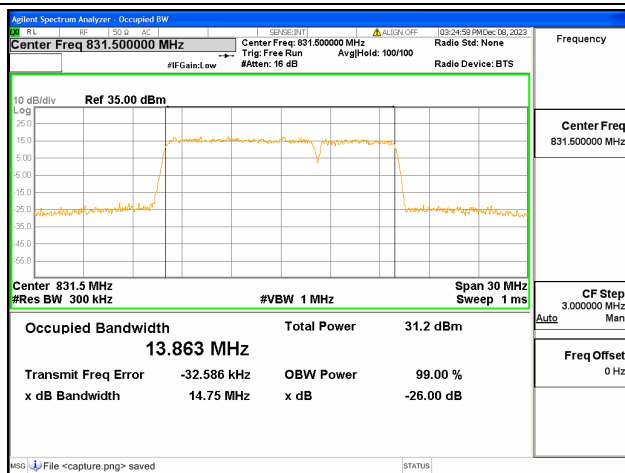
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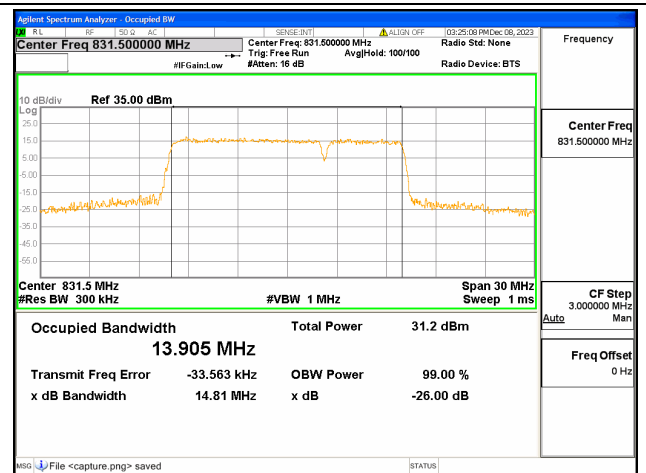
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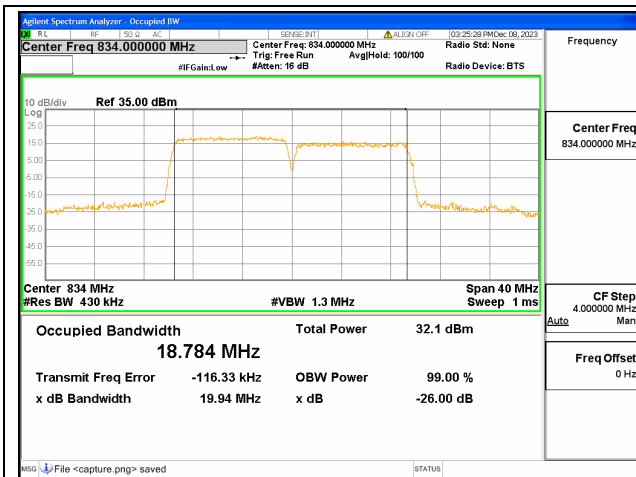
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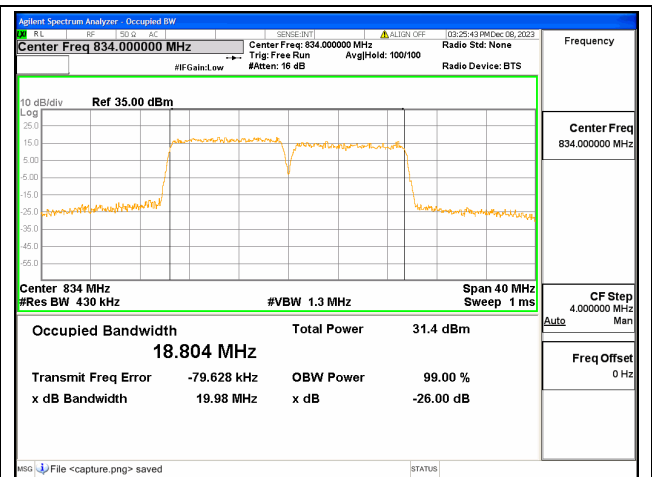
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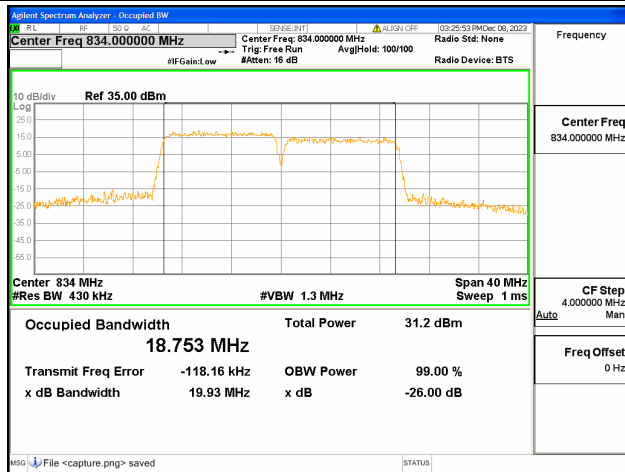
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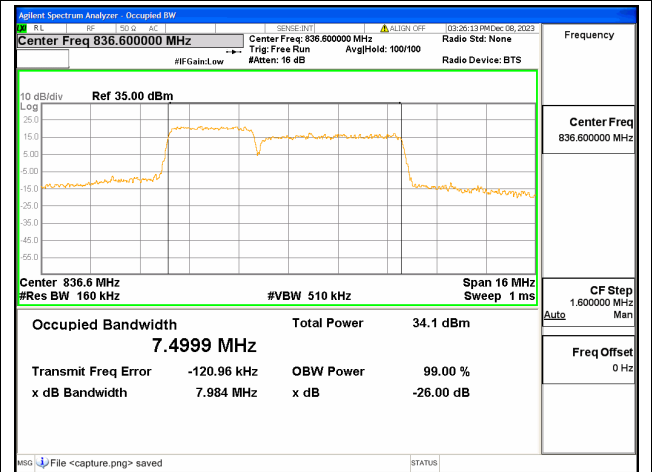
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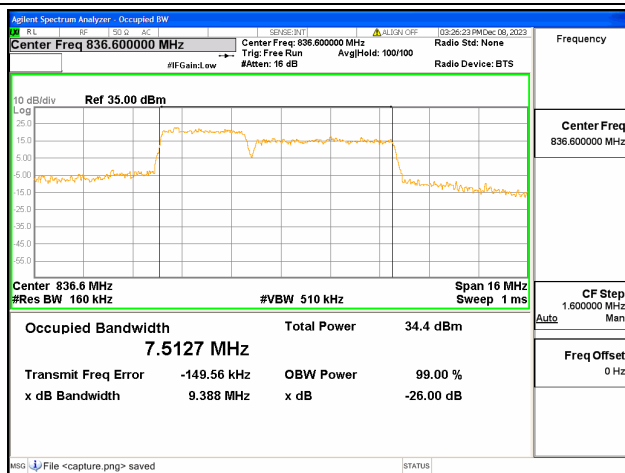
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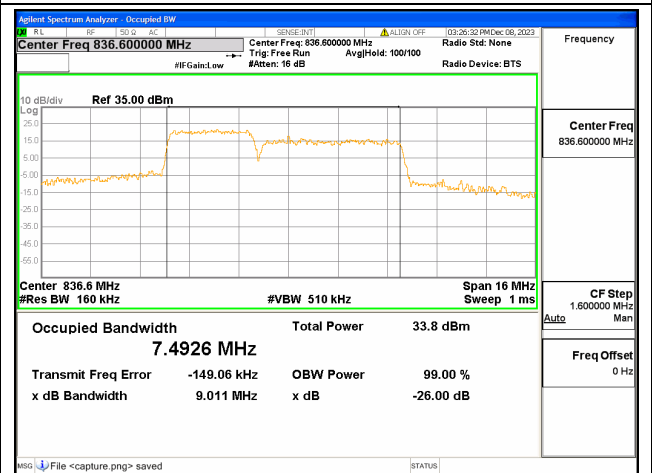
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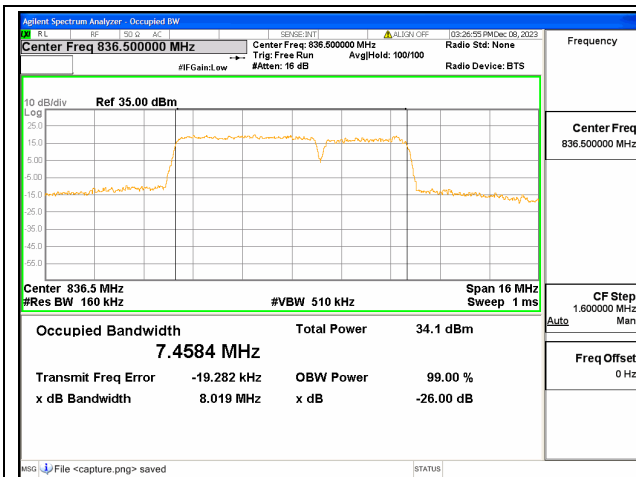
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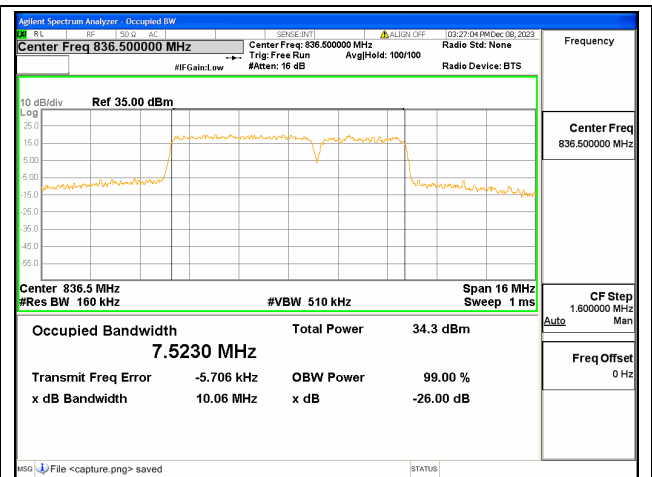
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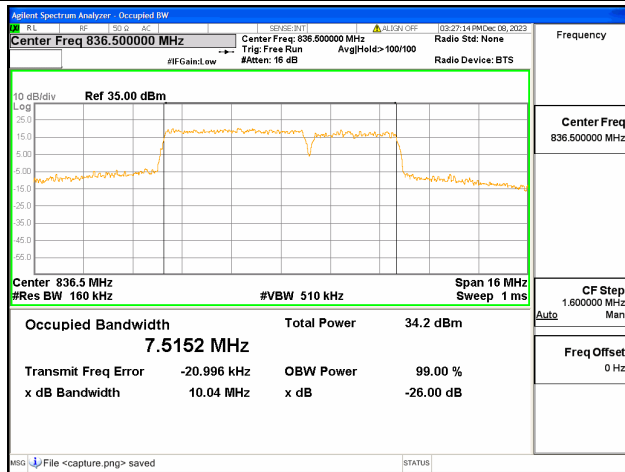
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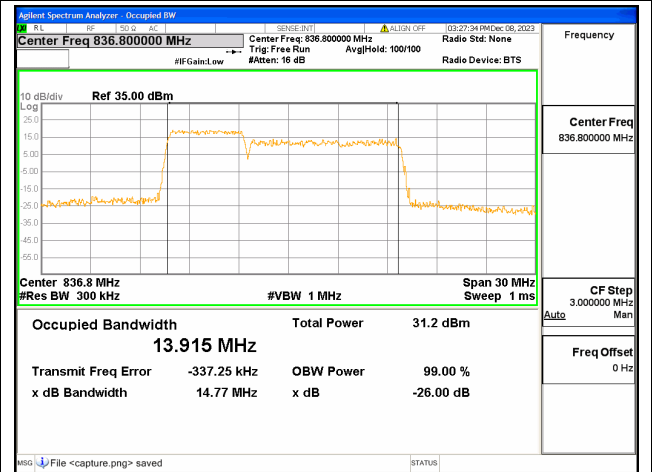
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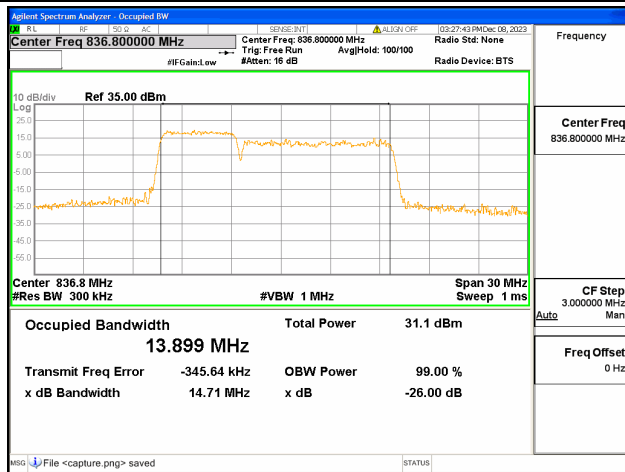
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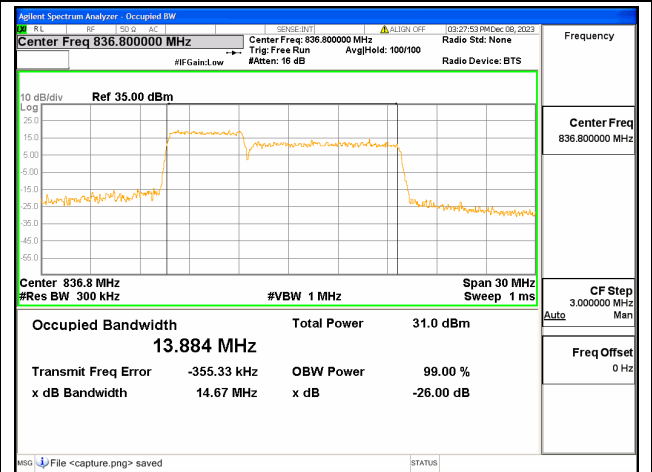
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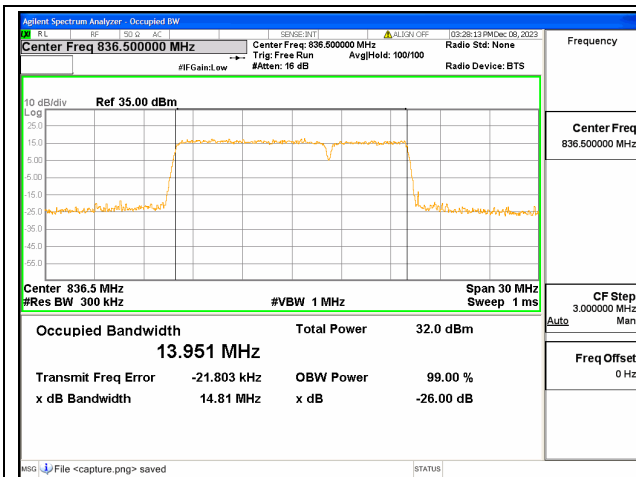
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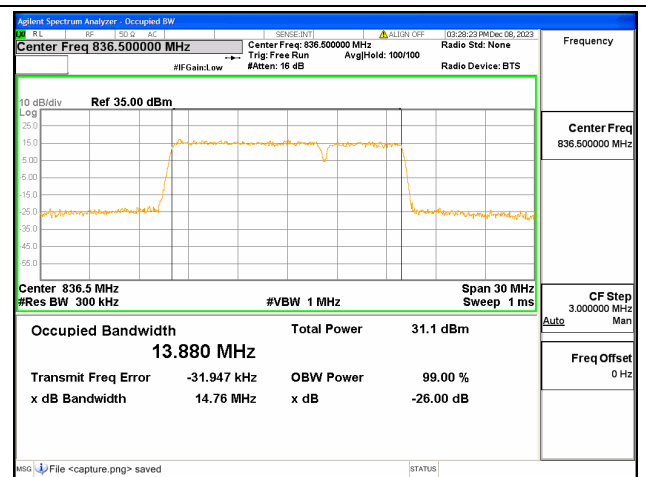
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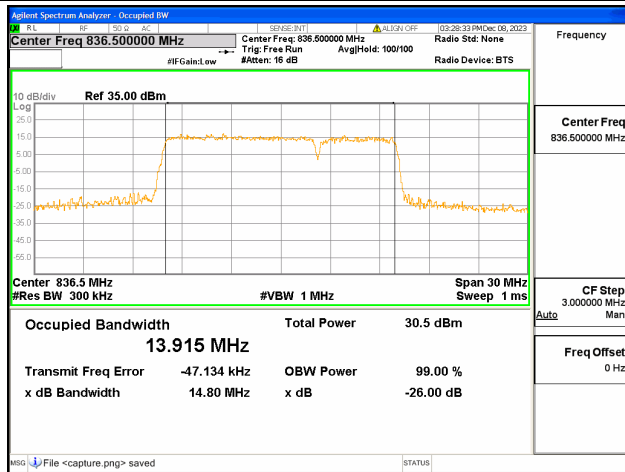
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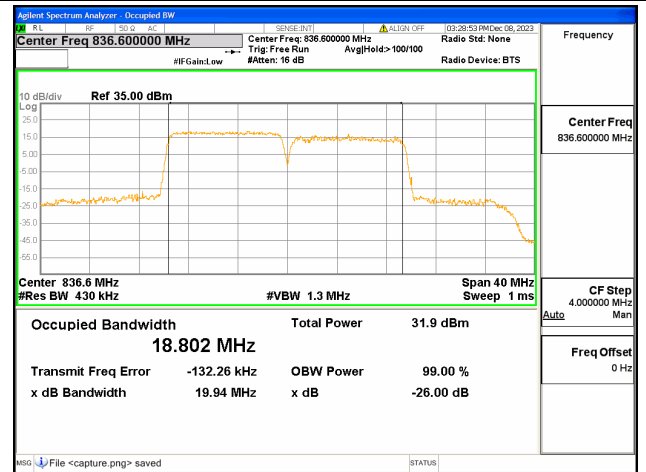
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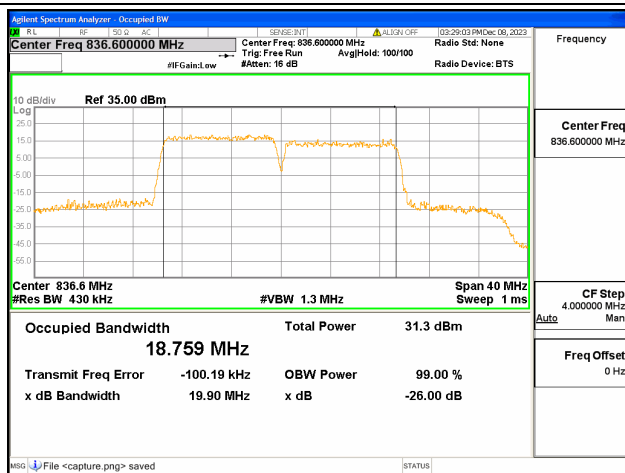
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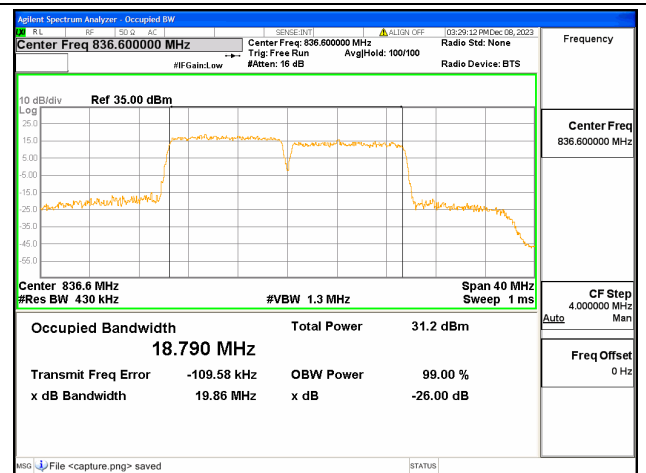
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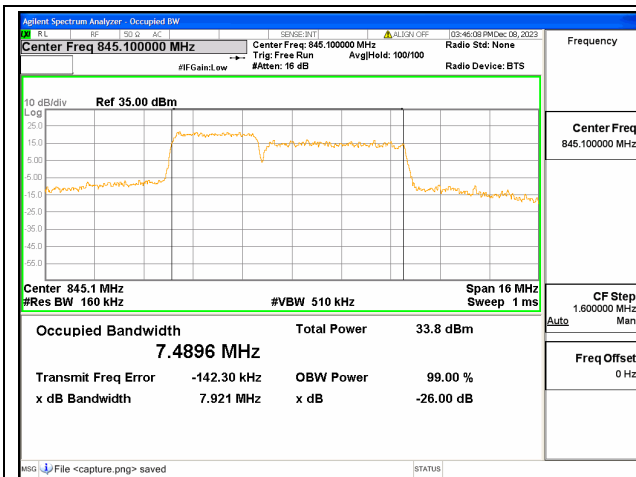
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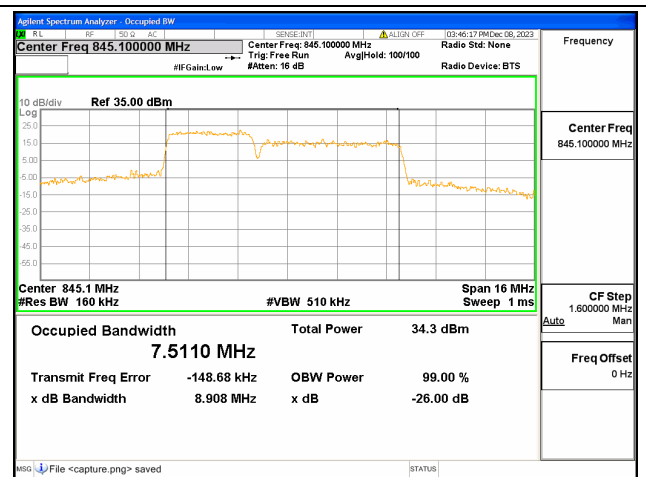
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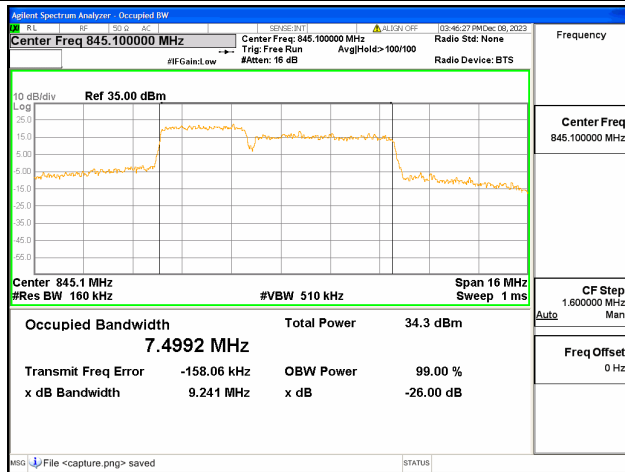
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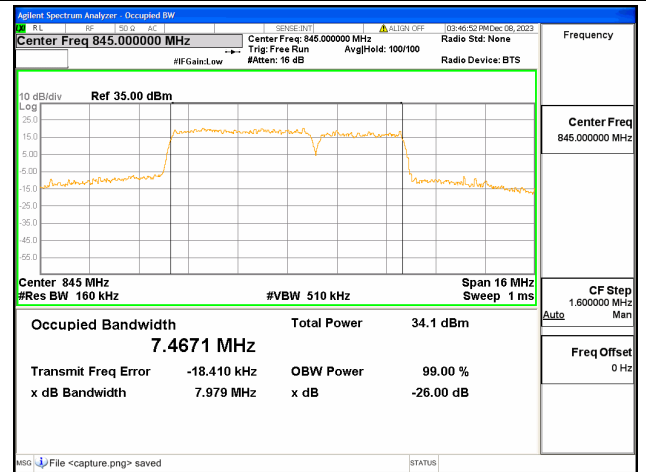
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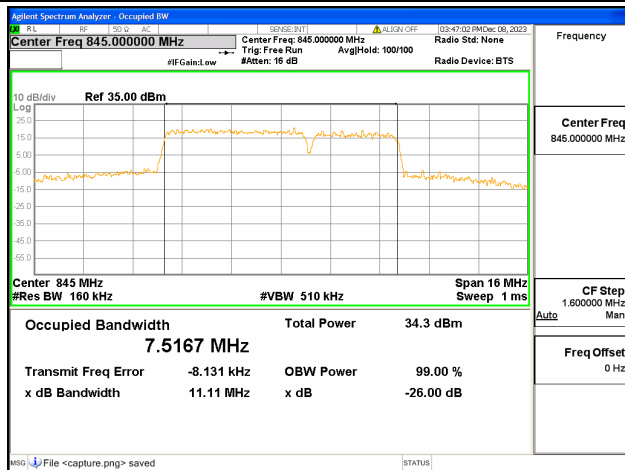
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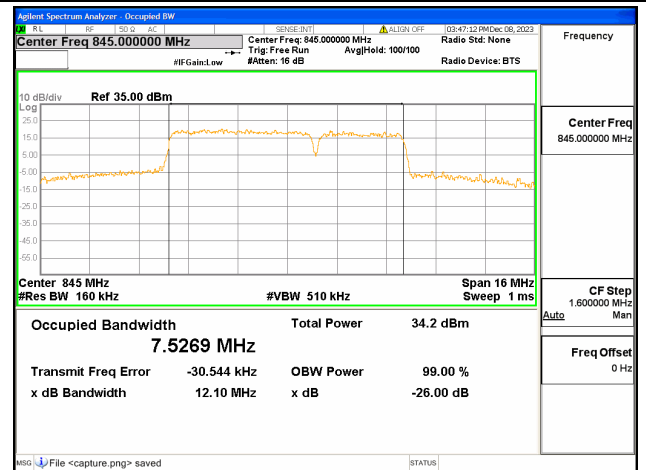
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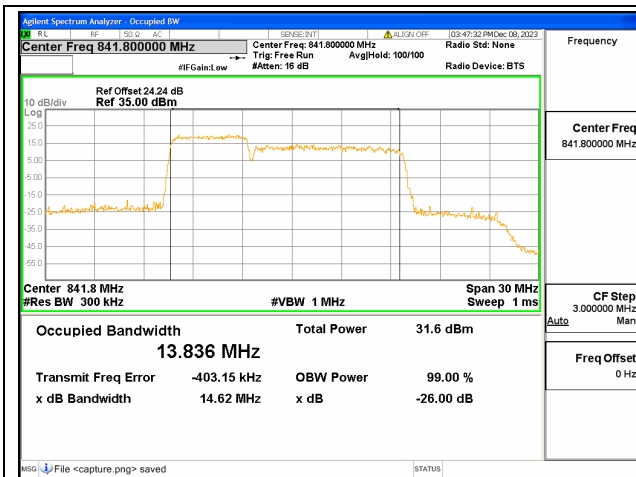
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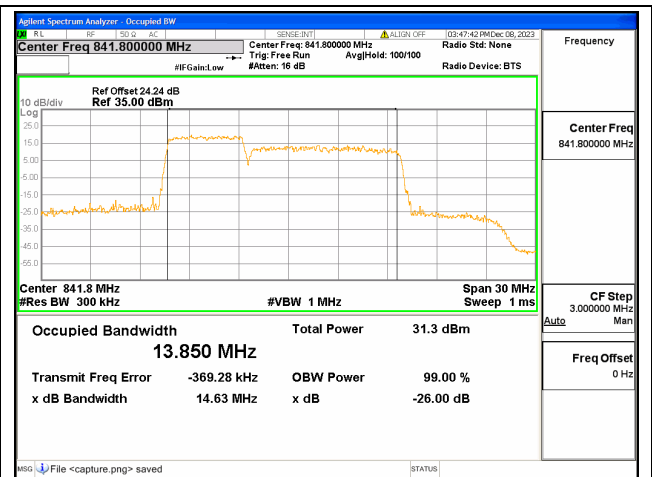
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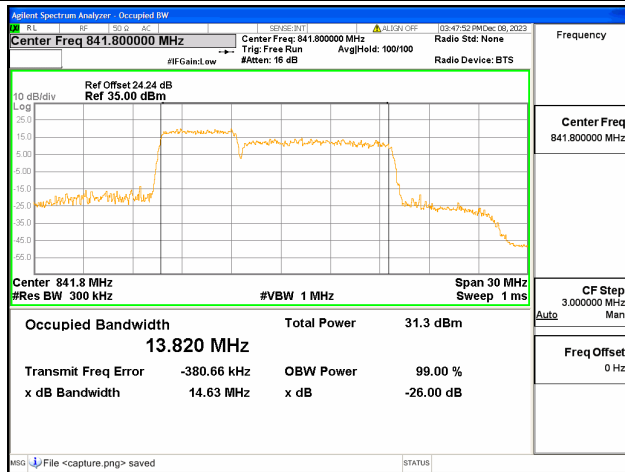
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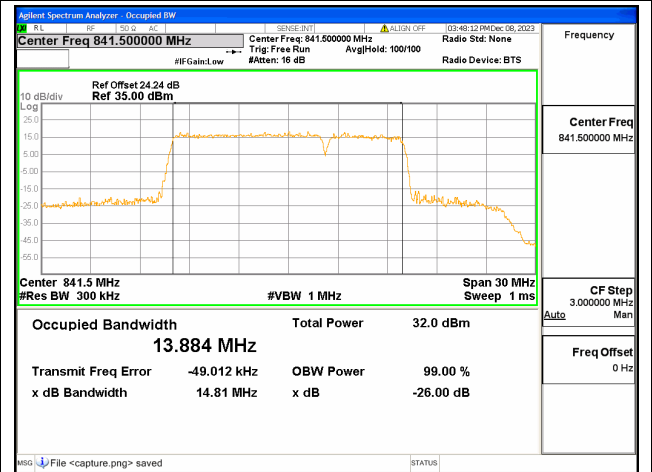
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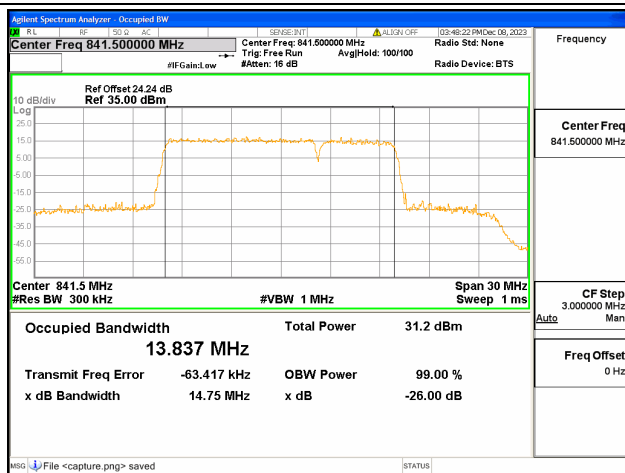
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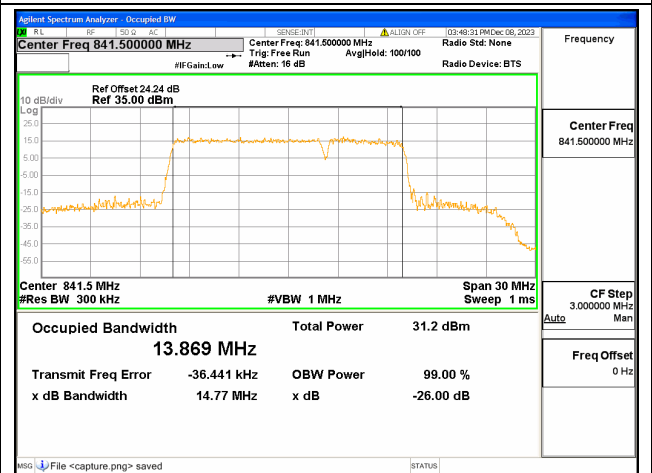
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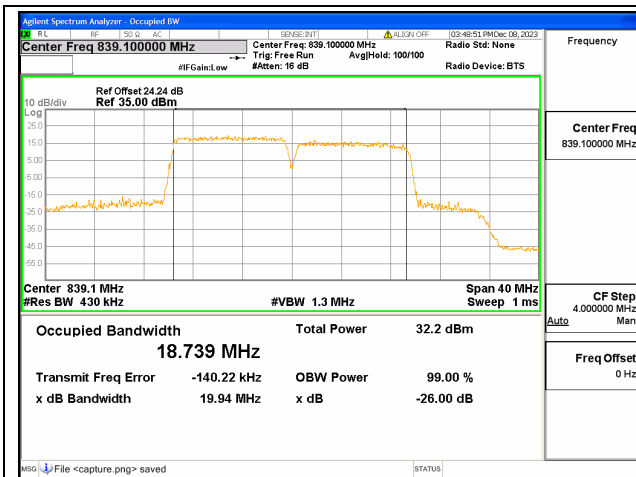
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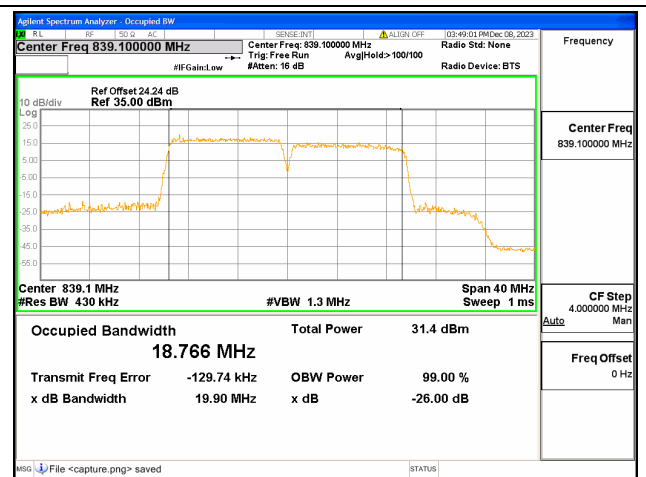
5B / 10+5MHz / 16QAM / High CH



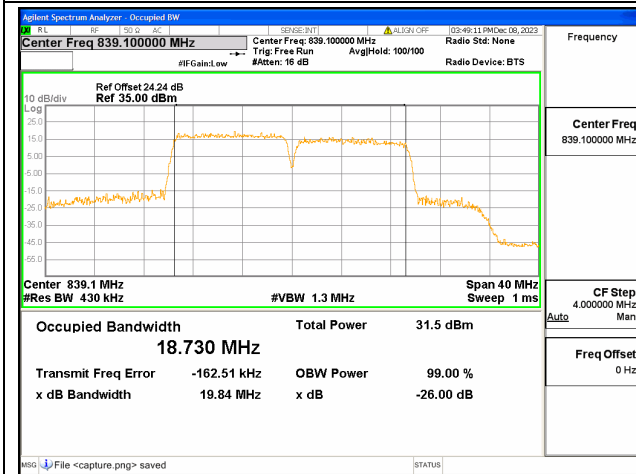
5B / 10+5MHz / 64QAM / High CH



5B / 10+10MHz / QPSK/ High CH

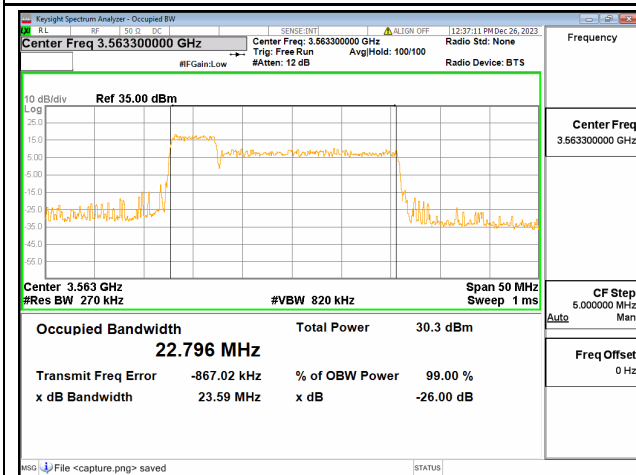


5B / 10+10MHz / 16QAM/ High CH

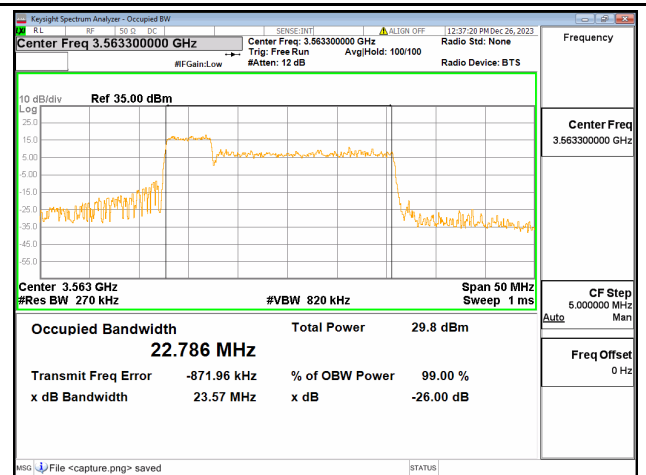


5B / 10+10MHz / 64QAM/ High CH

N/A

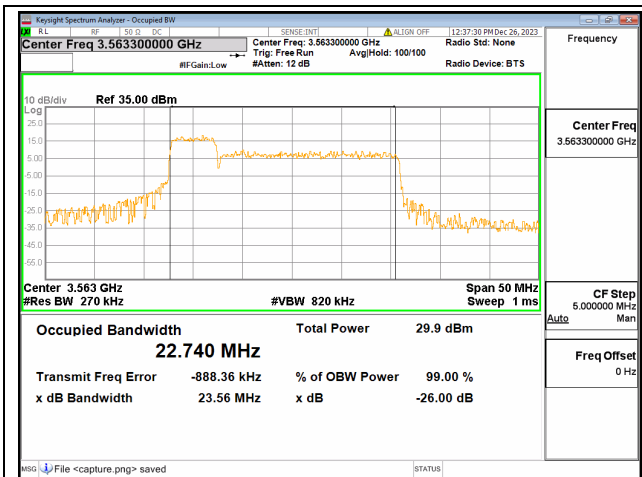


48C / 5+20MHz / QPSK/ Low CH

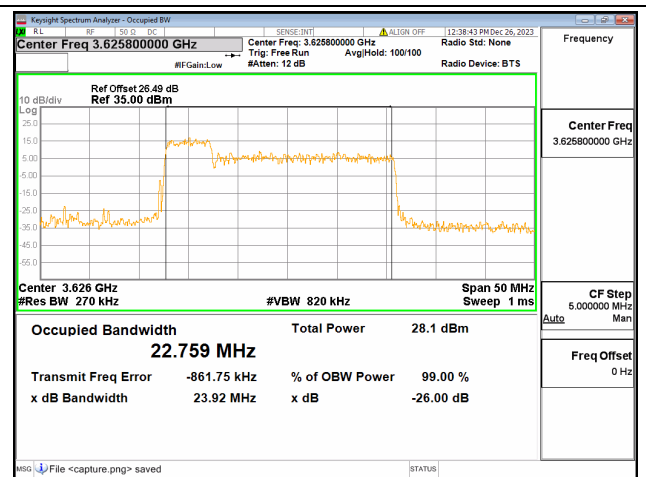


48C / 5+20MHz / 16QAM/ Low CH

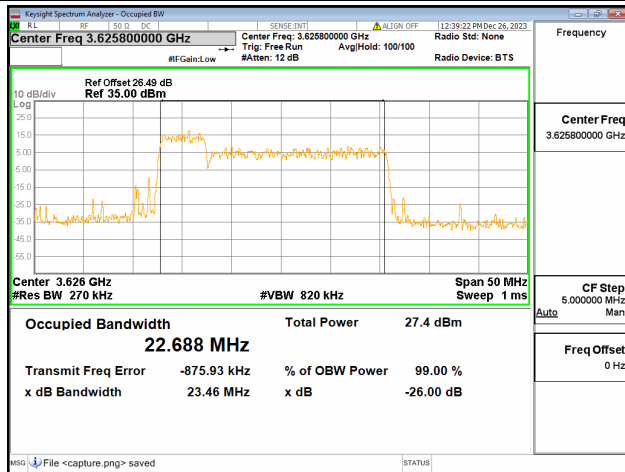




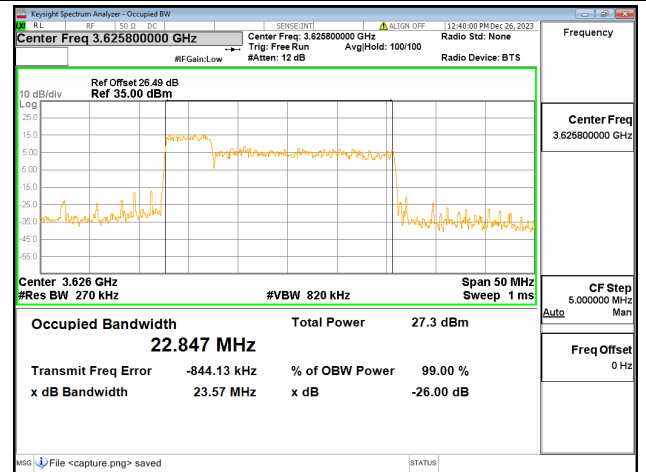
48C / 5+20MHz / 64QAM/ Low CH



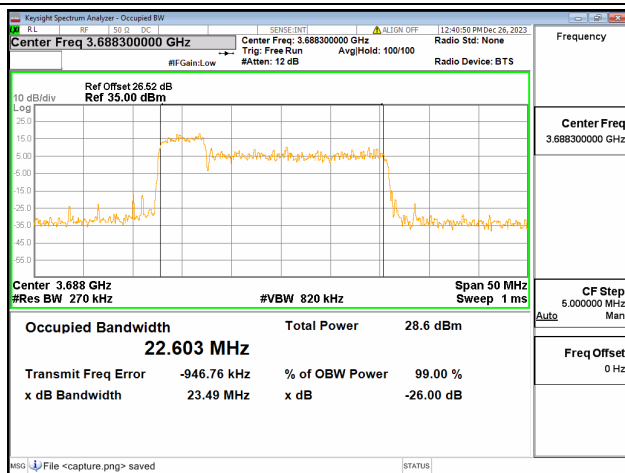
48C / 5+20MHz / QPSK/ Mid CH



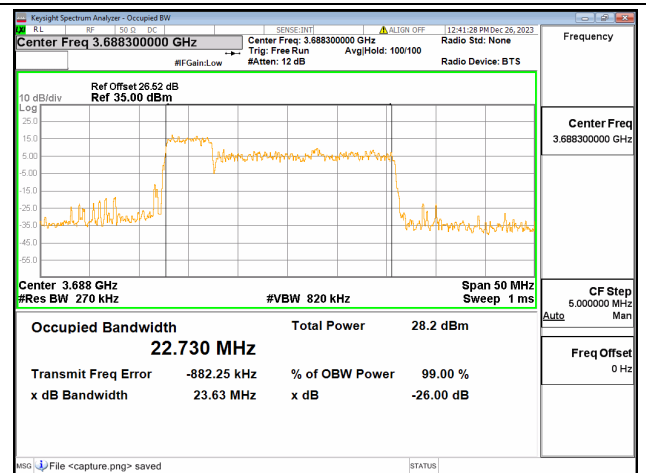
48C / 5+20MHz / 16QAM/ Mid CH



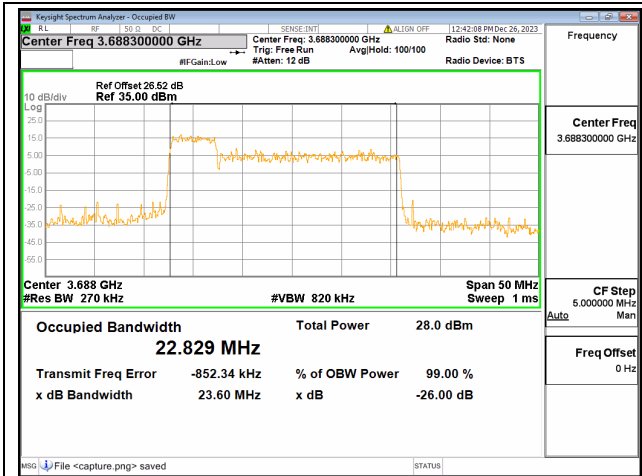
48C / 5+20MHz / 64QAM/ Mid CH



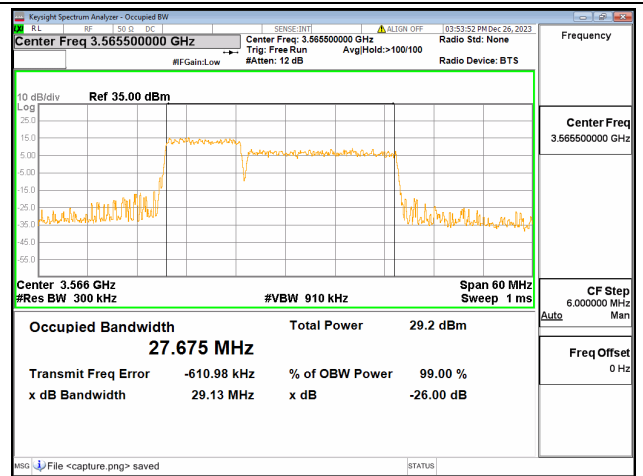
48C / 5+20MHz / QPSK/ High CH



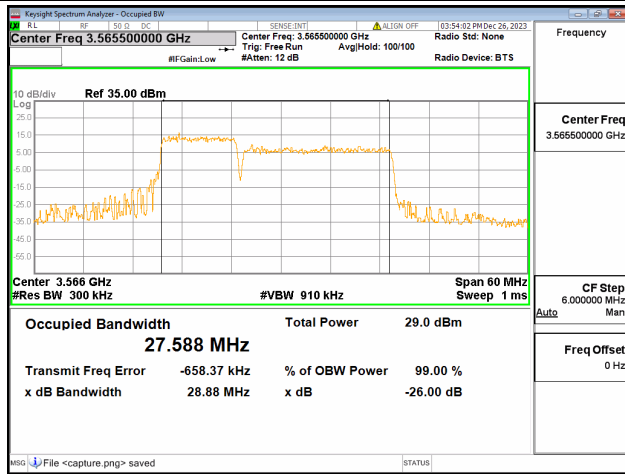
48C / 5+20MHz / 16QAM/ High CH



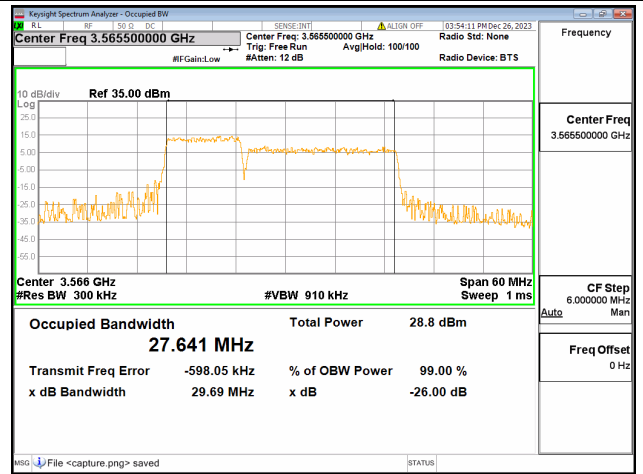
48C / 5+20MHz / 64QAM/ High CH



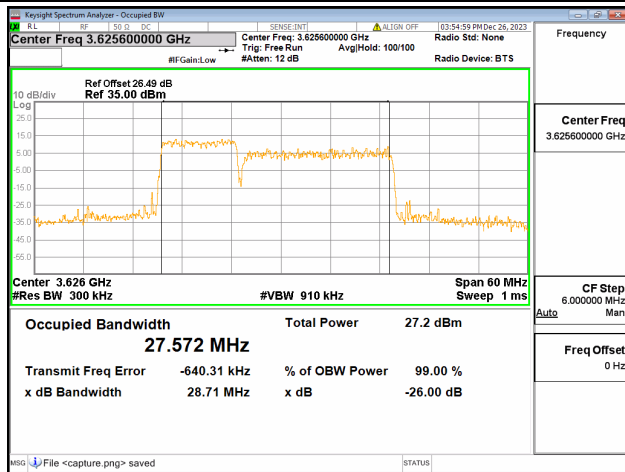
48C / 10+20MHz / QPSK/ Low CH



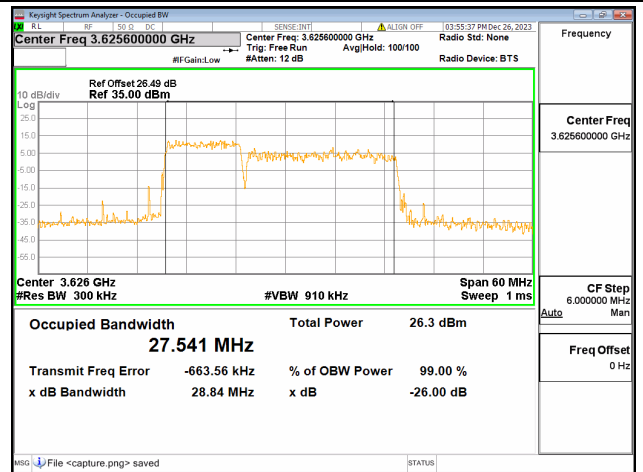
48C / 10+20MHz / 16QAM/ Low CH



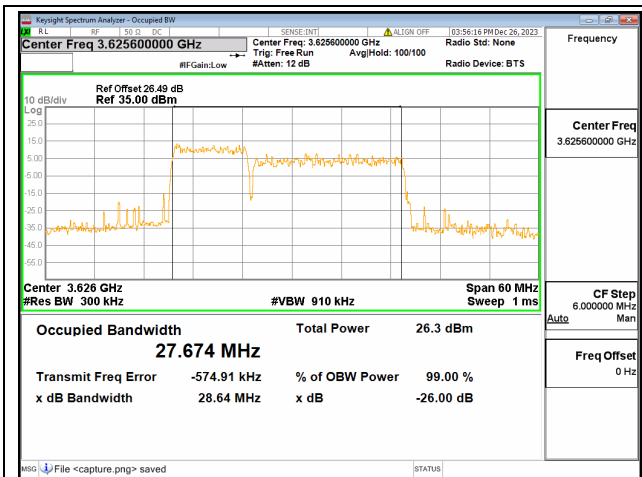
48C / 10+20MHz / 64QAM/ Low CH



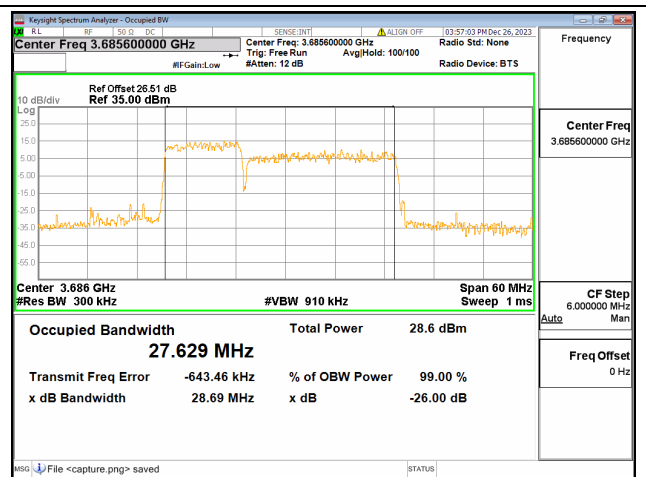
48C / 10+20MHz / QPSK/ Mid CH



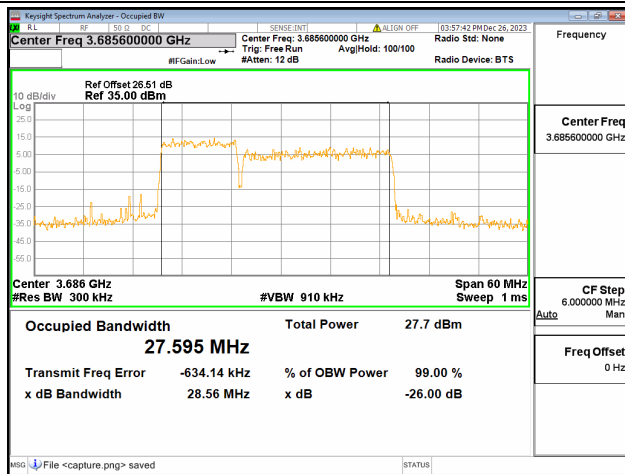
48C / 10+20MHz / 16QAM/ Mid CH



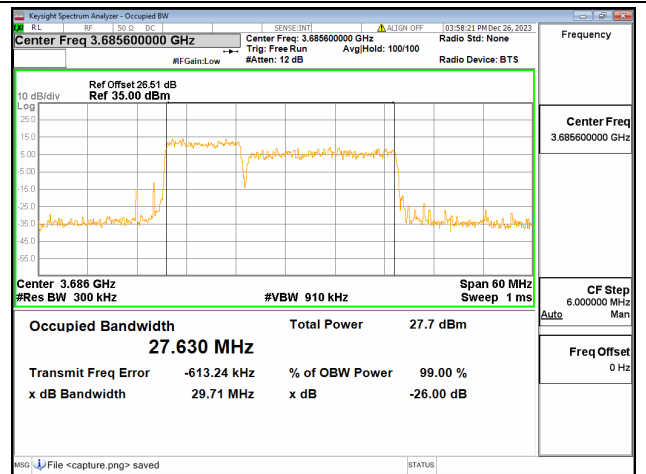
48C / 10+20MHz / 64QAM/ Mid CH



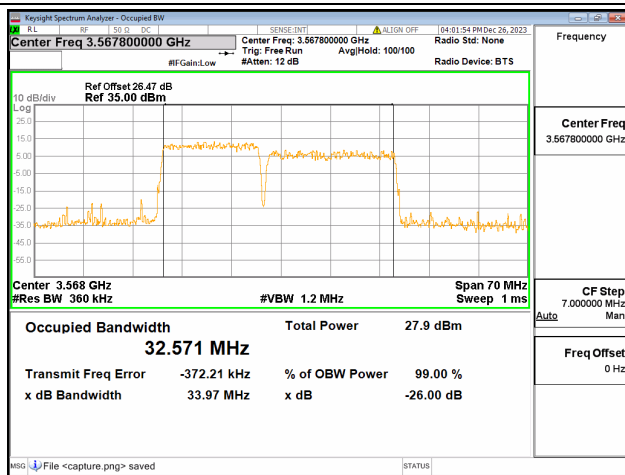
48C / 10+20MHz / QPSK/ High CH



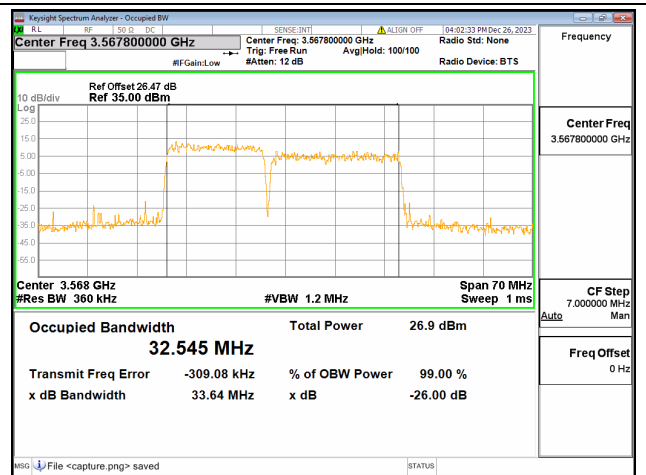
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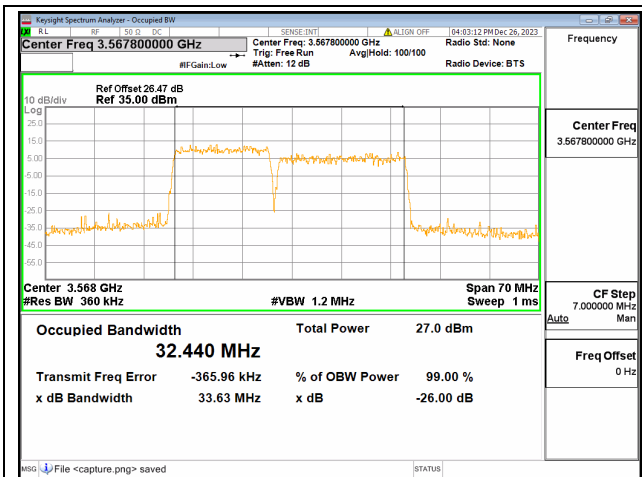
48C / 10+20MHz / 64QAM/ High CH



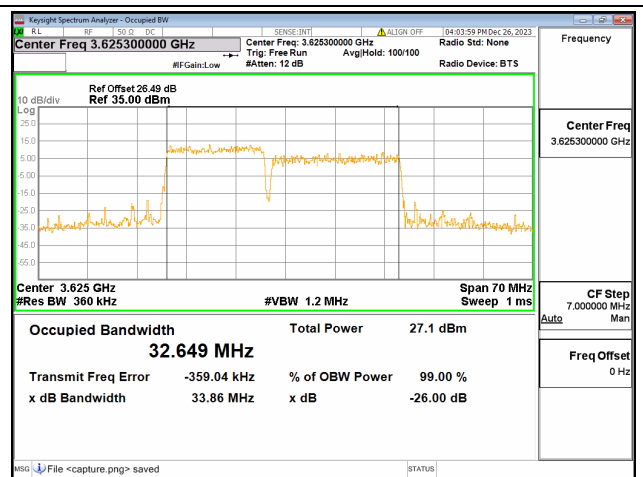
48C / 15+20MHz / QPSK/ Low CH



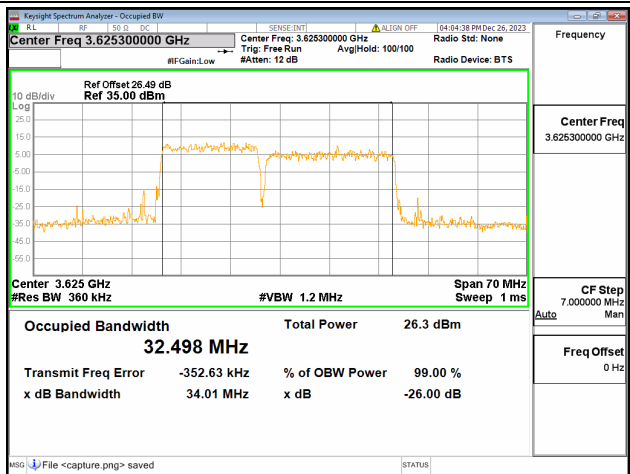
48C / 15+20MHz / 16QAM/ Low CH



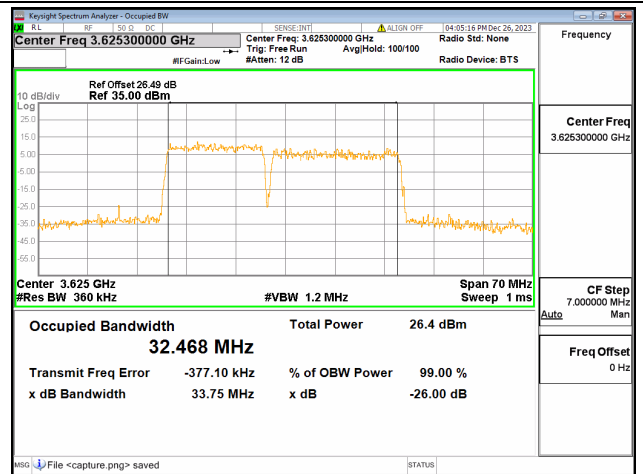
48C / 15+20MHz / 64QAM/ Low CH



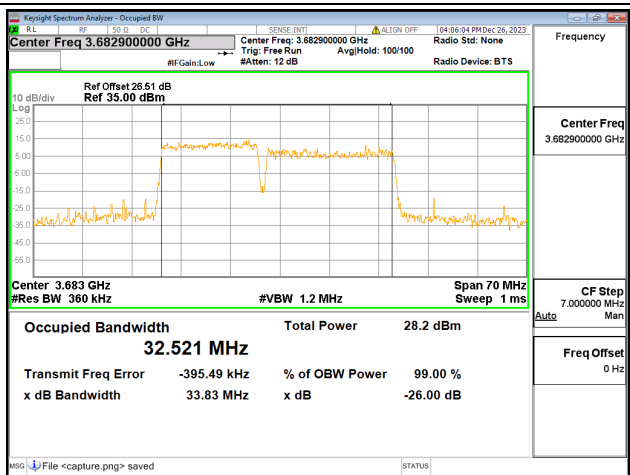
48C / 15+20MHz / QPSK/ Mid CH



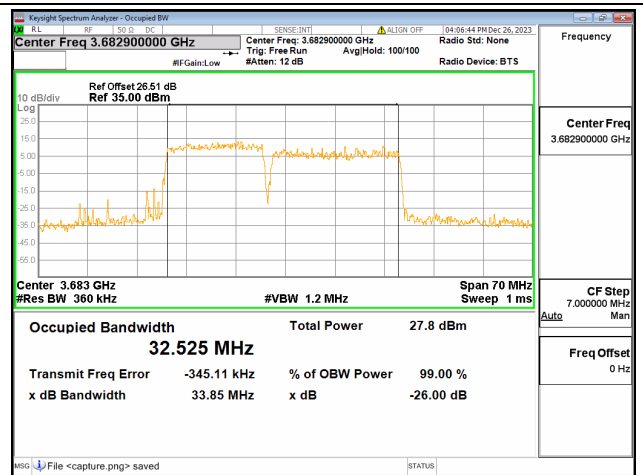
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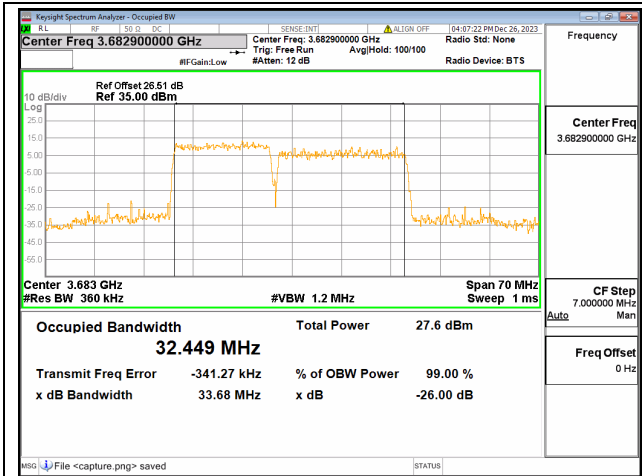
48C / 15+20MHz / 64QAM/ Mid CH



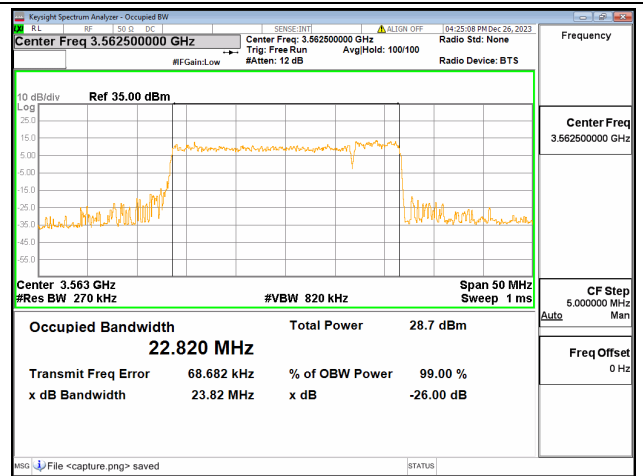
48C / 15+20MHz / QPSK/ High CH



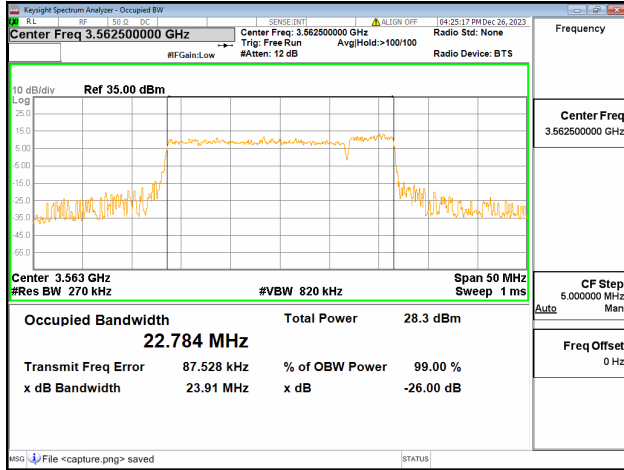
48C / 15+20MHz / 16QAM/ High CH



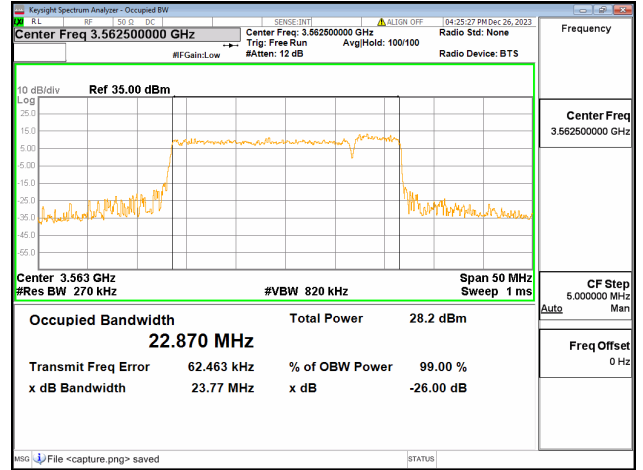
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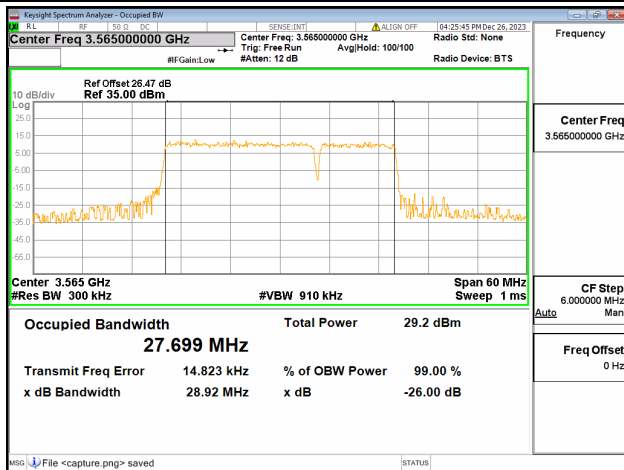
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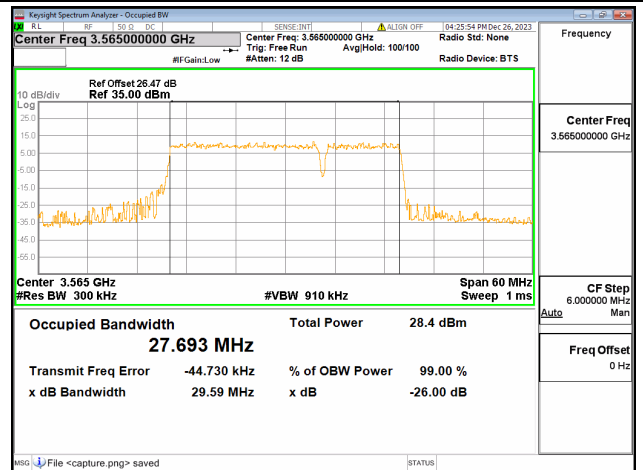
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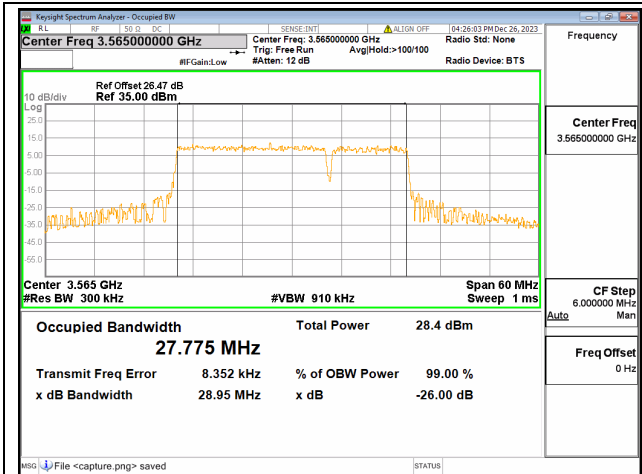
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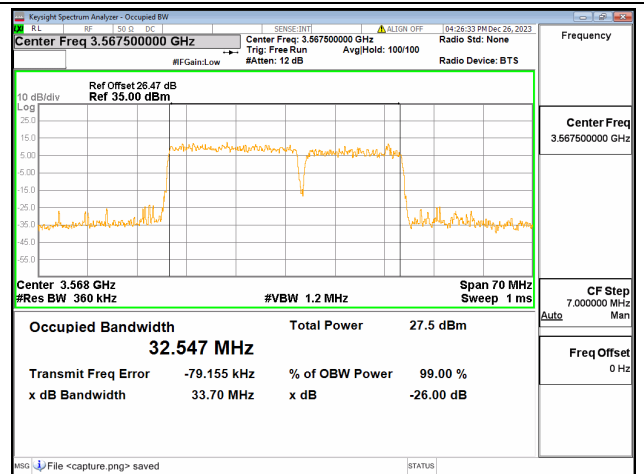
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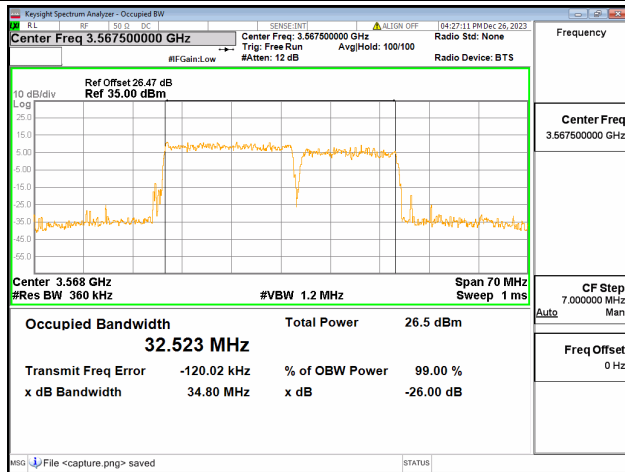
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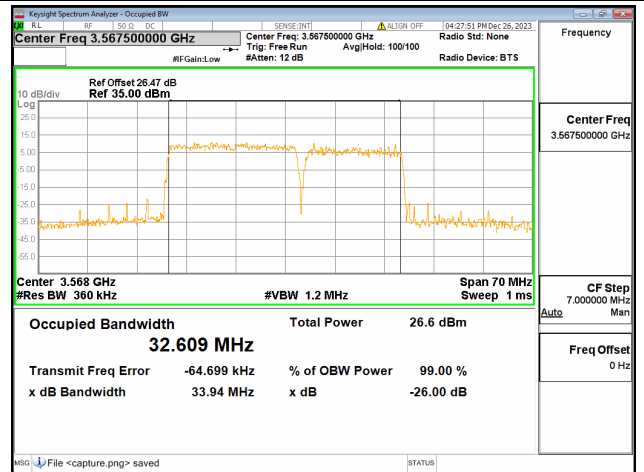
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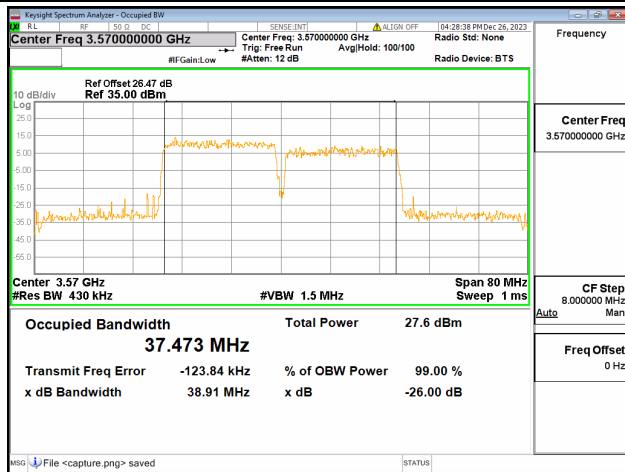
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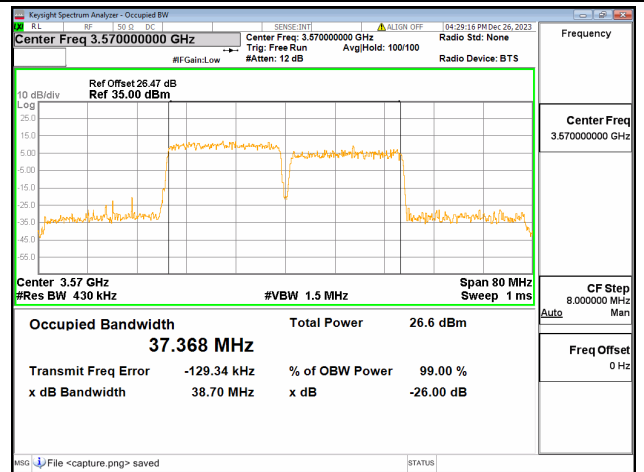
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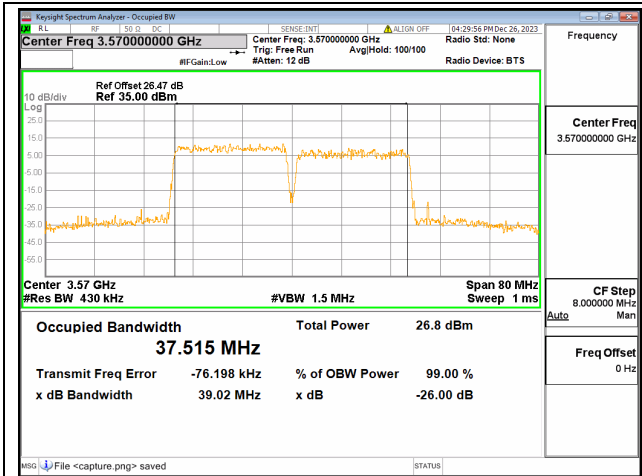
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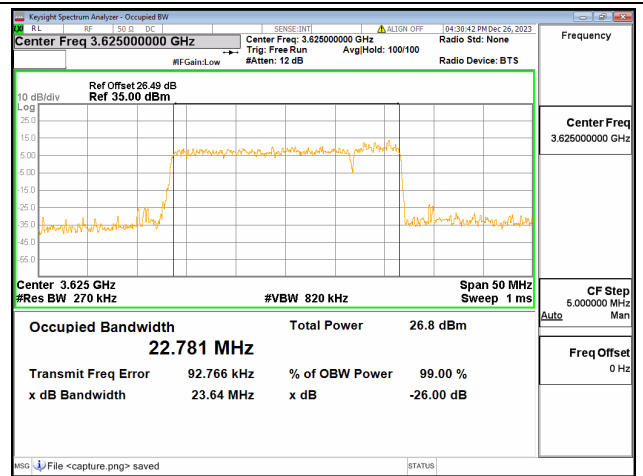
48C / 20+20MHz / QPSK/ Low CH



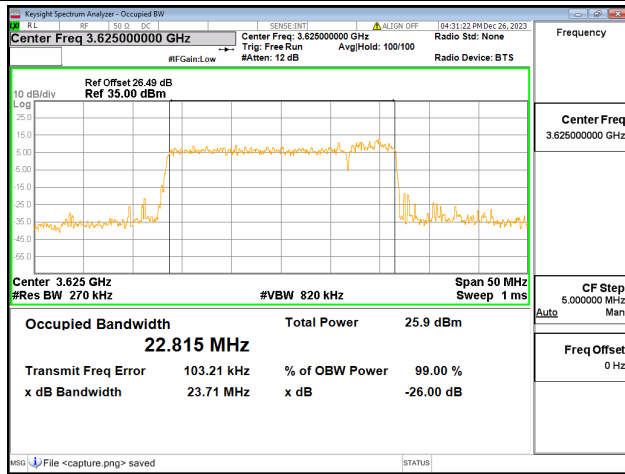
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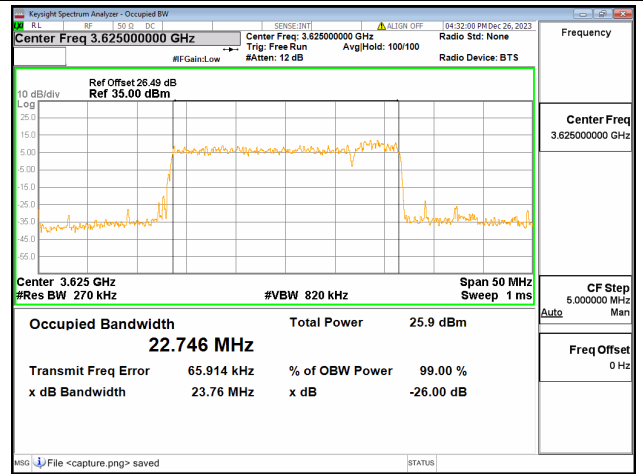
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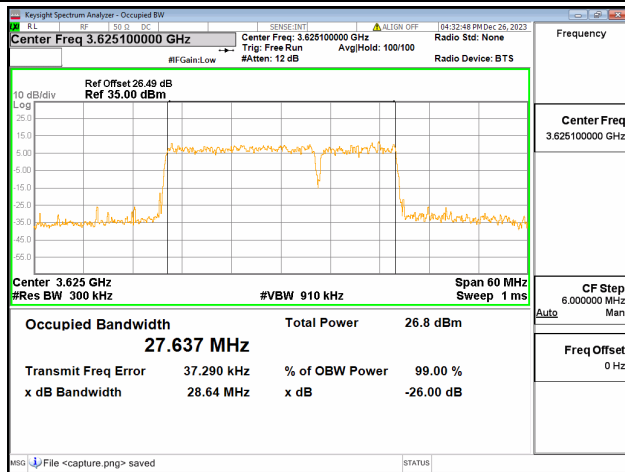
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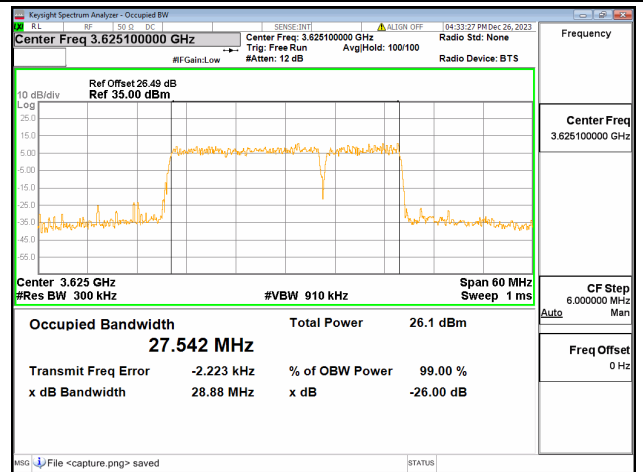
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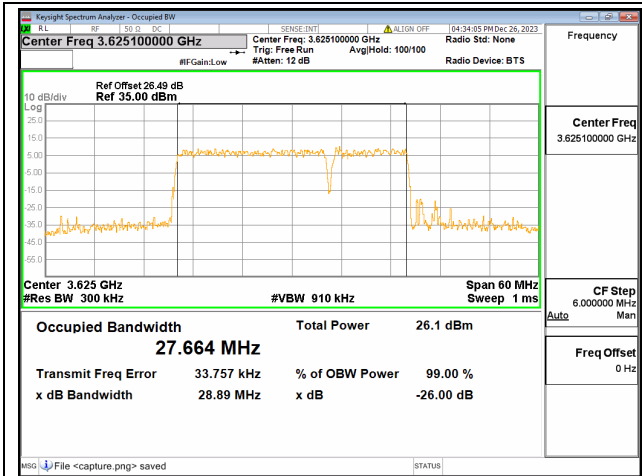
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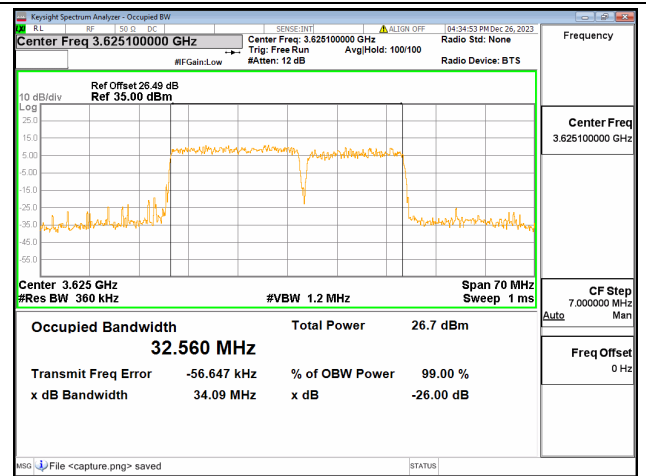
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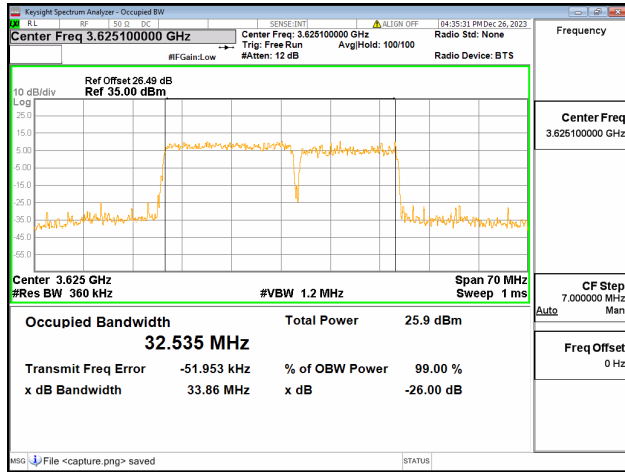
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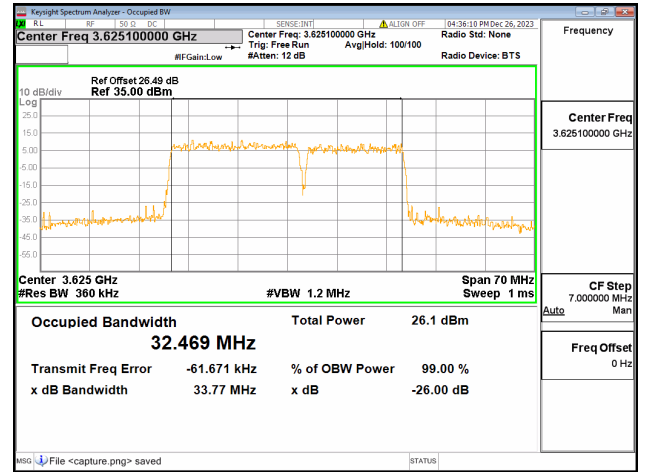
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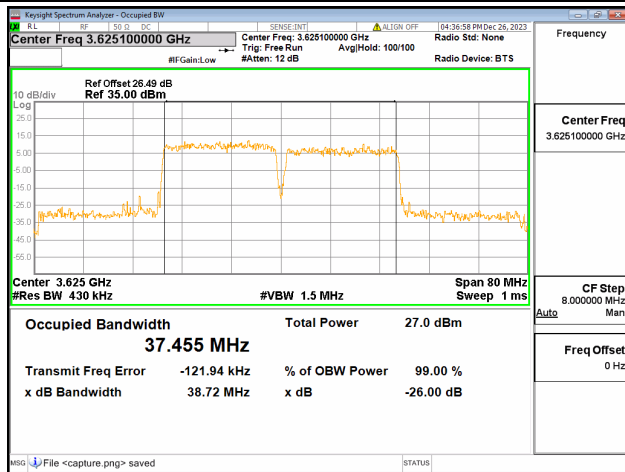
48C / 20+15MHz / QPSK/ Mid CH



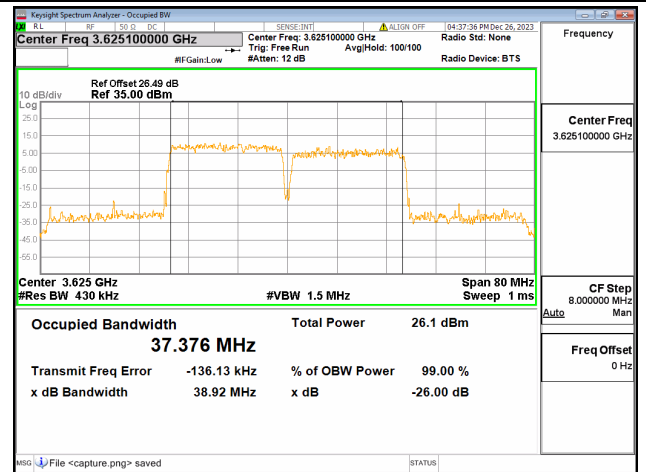
48C / 20+15MHz / 16QAM/ Mid CH



48C / 20+15MHz / 64QAM/ Mid CH

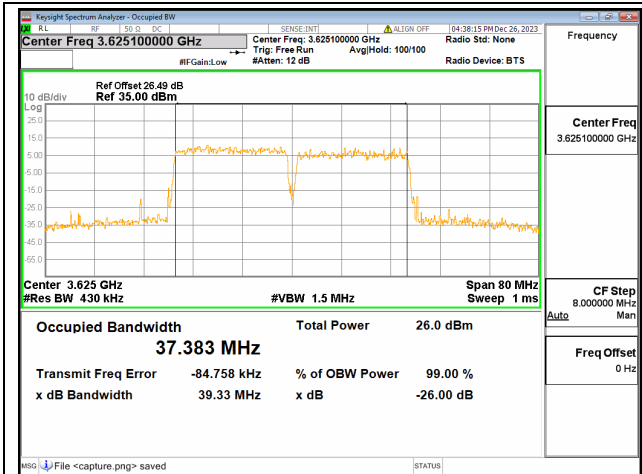


48C / 20+20MHz / QPSK/ Mid CH

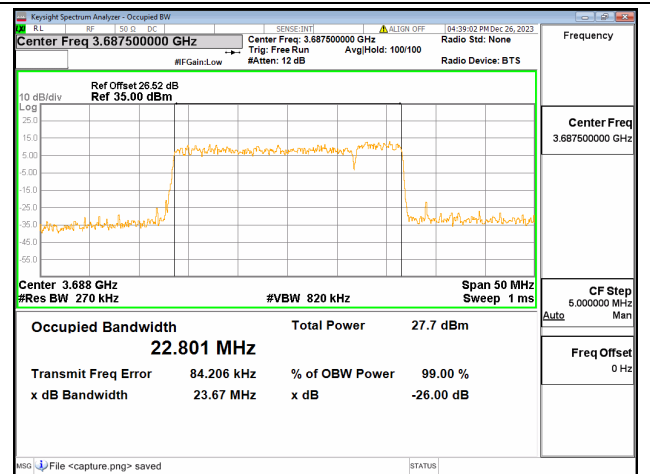


48C / 20+20MHz / 16QAM/ Mid CH

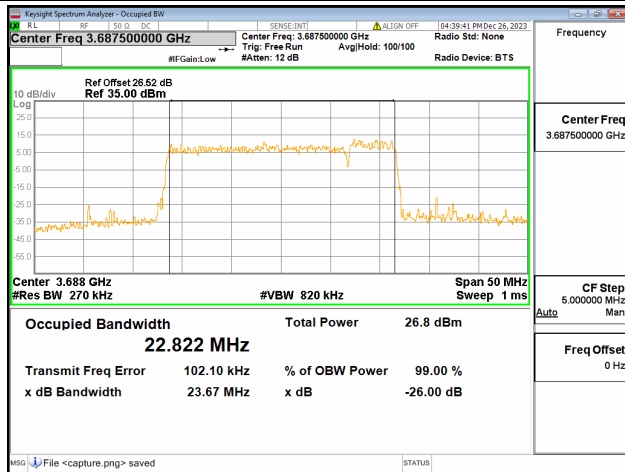




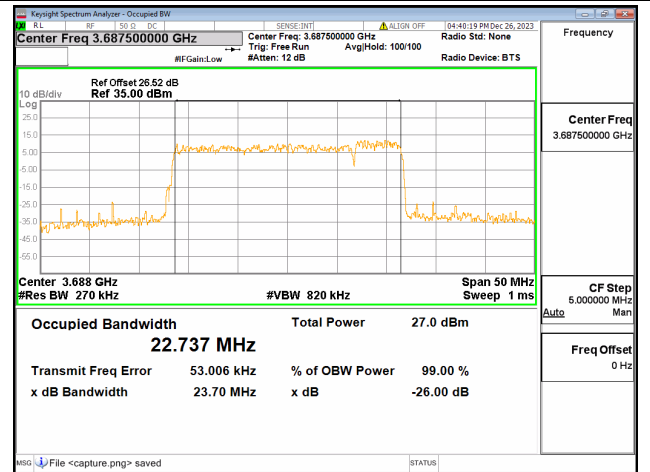
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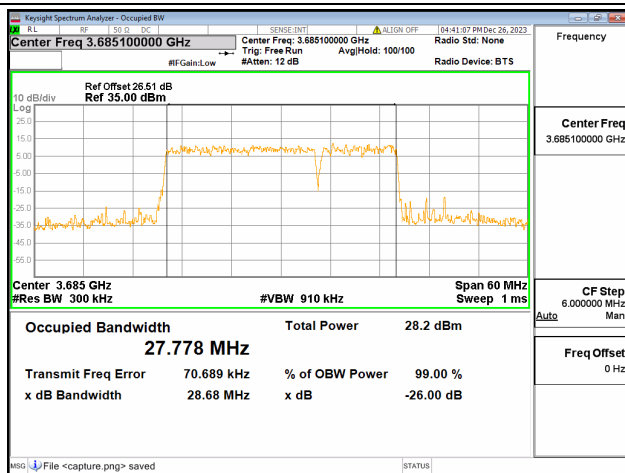
48C / 20+5MHz / QPSK/ High CH



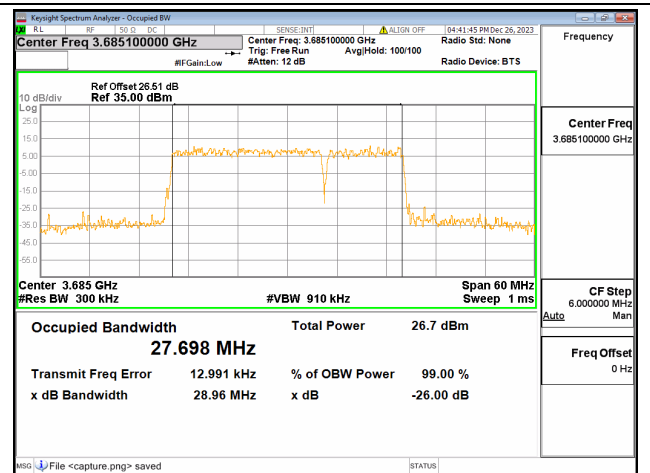
48C / 20+5MHz / 16QAM/ High CH



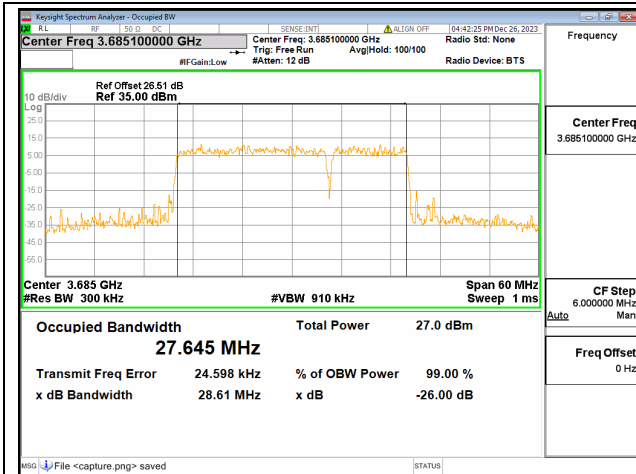
48C / 20+5MHz / 64QAM/ High CH



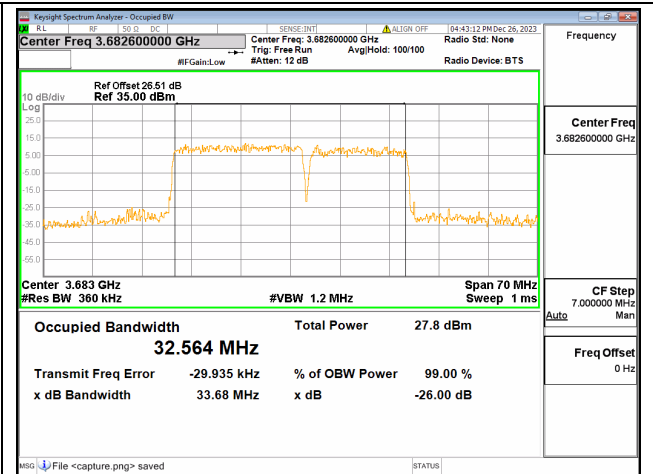
48C / 20+10MHz / QPSK/ High CH



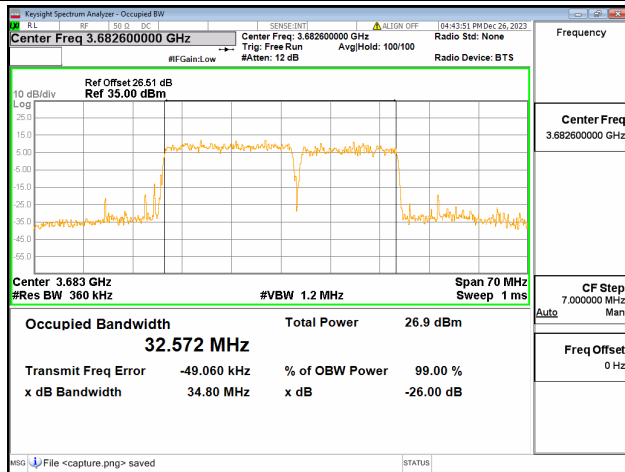
48C / 20+10MHz / 16QAM/ High CH



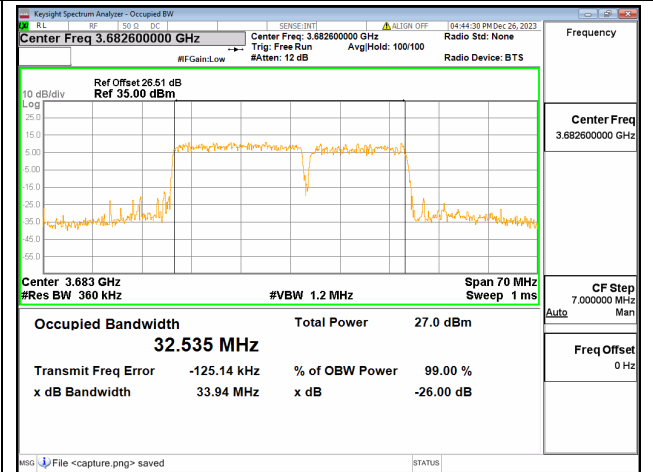
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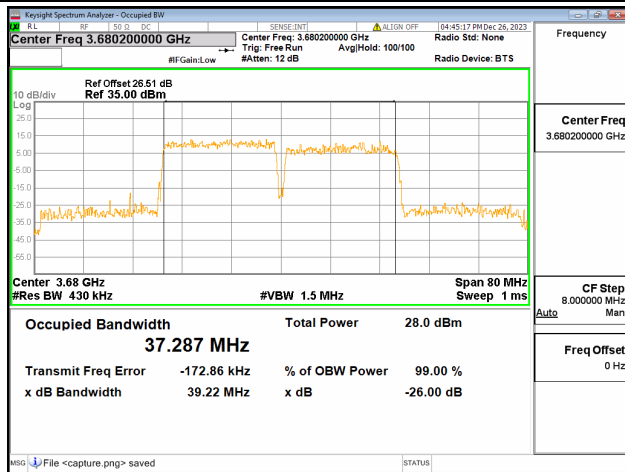
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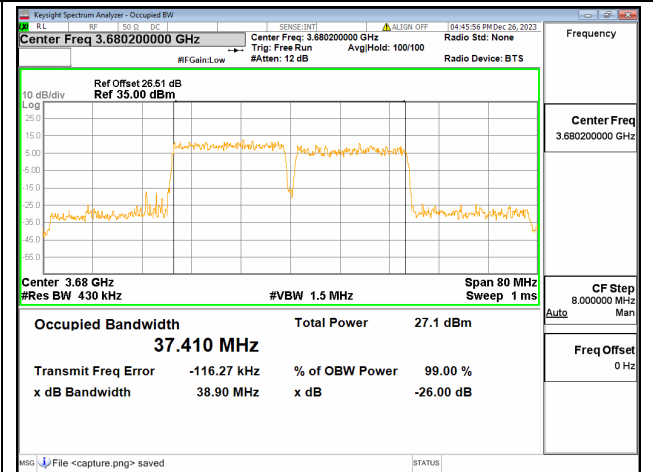
48C / 20+15MHz / 16QAM/ High CH



48C / 20+15MHz / 64QAM/ High CH

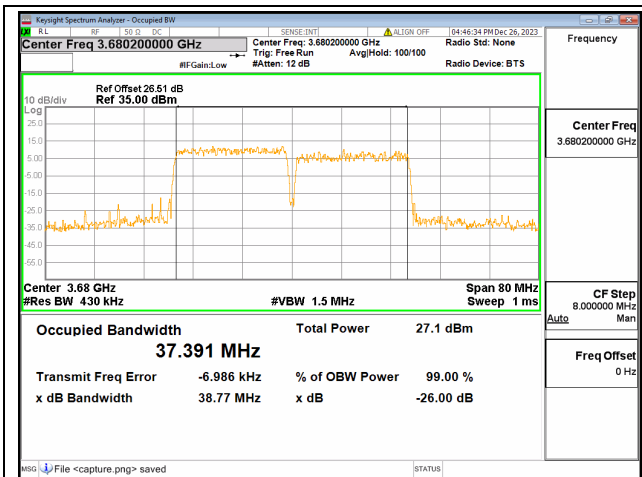


48C / 20+20MHz / QPSK/ High CH

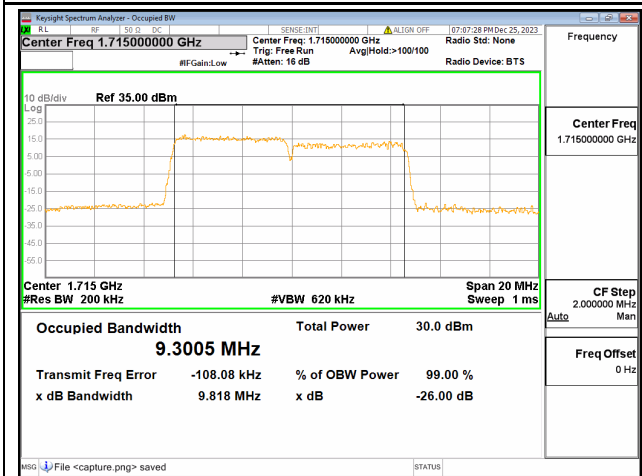
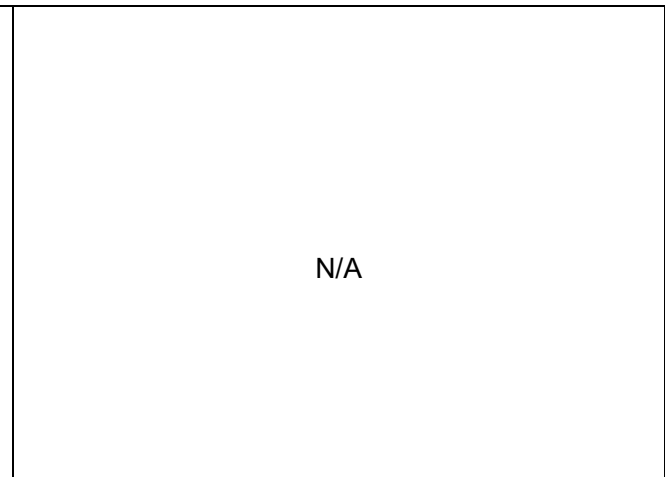


48C / 20+20MHz / 16QAM/ High CH

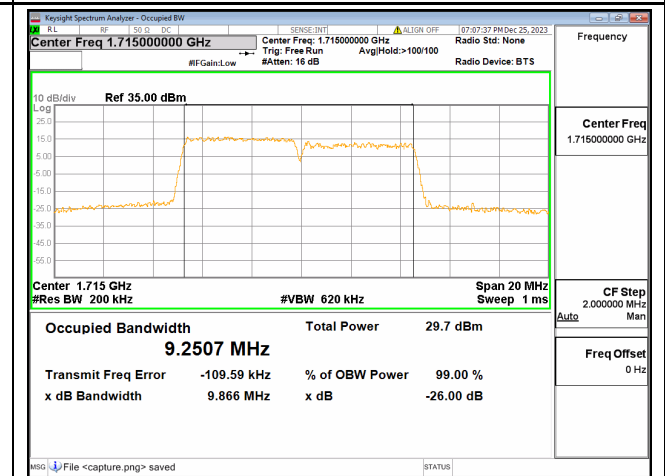




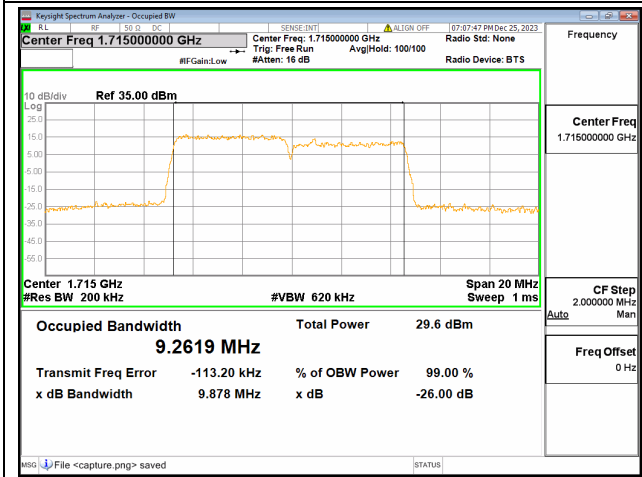
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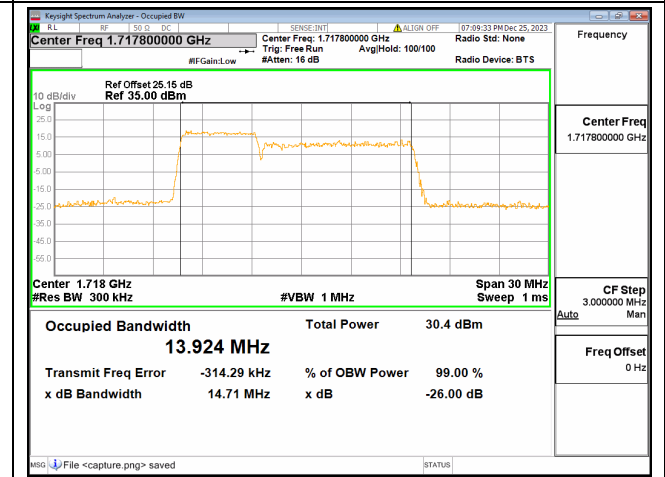
66B / 5+5MHz / QPSK/ Low CH



66B / 5+5MHz / 16QAM/ Low CH



66B / 5+5MHz / 64QAM/ Low CH



66B / 5+10MHz / QPSK/ Low CH

