



Test Report No.: W7L-P23060003RF02

## 5 INFORMATION ON THE TESTING LABORATORIES

We, BV 7LAYERS COMMUNICATIONS TECHNOLOGY (SHENZHEN) CO. LTD., were founded in 2015 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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The address and road map of all our labs can be found in our web site also.

## **6 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB**

No any modifications are made to the EUT by the lab during the test.



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## 7 APPENDIX

### GSM850

#### PEAK-TO-AVERAGE RATIO(CCDF)

##### Test Result

| Band     | Channel | Result(dB) | Limit(dB) | Verdict |
|----------|---------|------------|-----------|---------|
| GPRS850  | 189     | 2.66       | 13        | PASS    |
| GPRS850  | 128     | 2.69       | 13        | PASS    |
| GPRS850  | 251     | 2.64       | 13        | PASS    |
| EGPRS850 | 189     | 5.66       | 13        | PASS    |
| EGPRS850 | 128     | 5.77       | 13        | PASS    |
| EGPRS850 | 251     | 5.64       | 13        | PASS    |

## Test Graphs



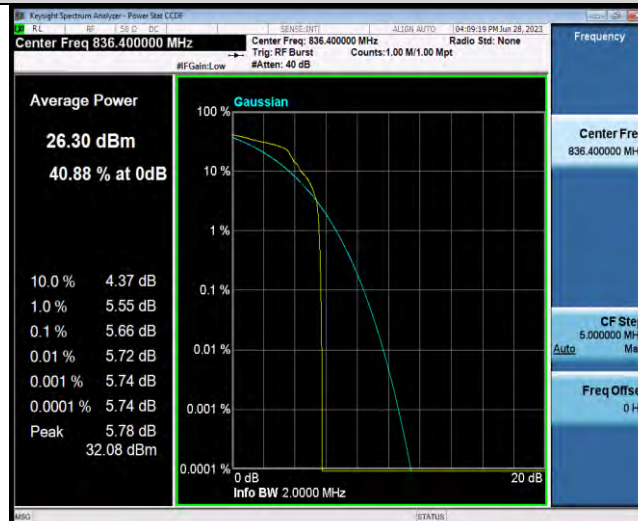


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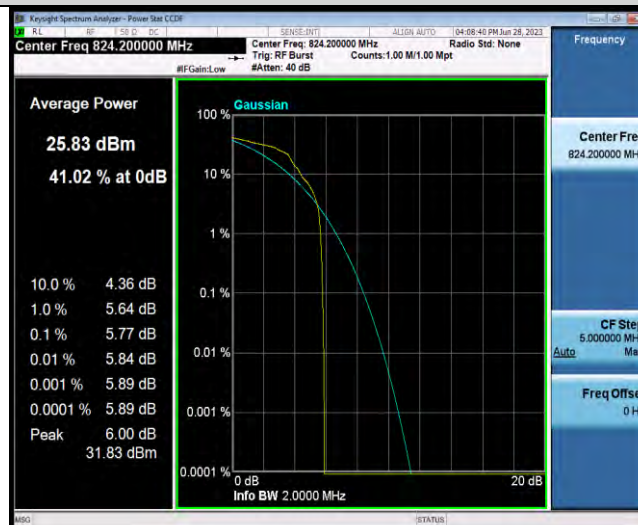
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EGPRS850-189



EGPRS850-128

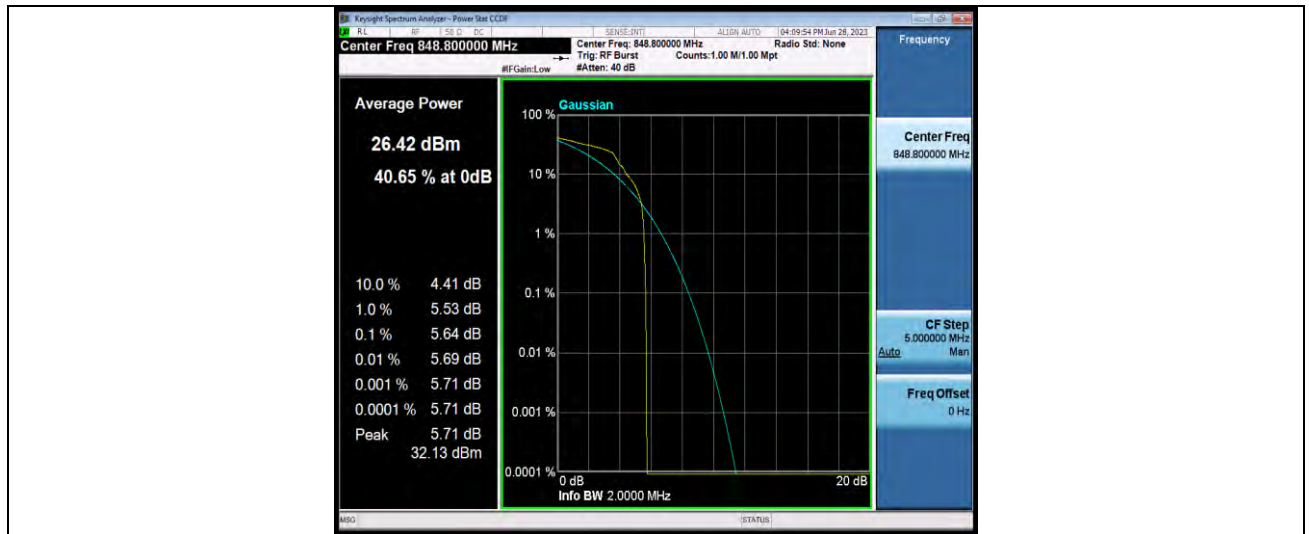


EGPRS850-251



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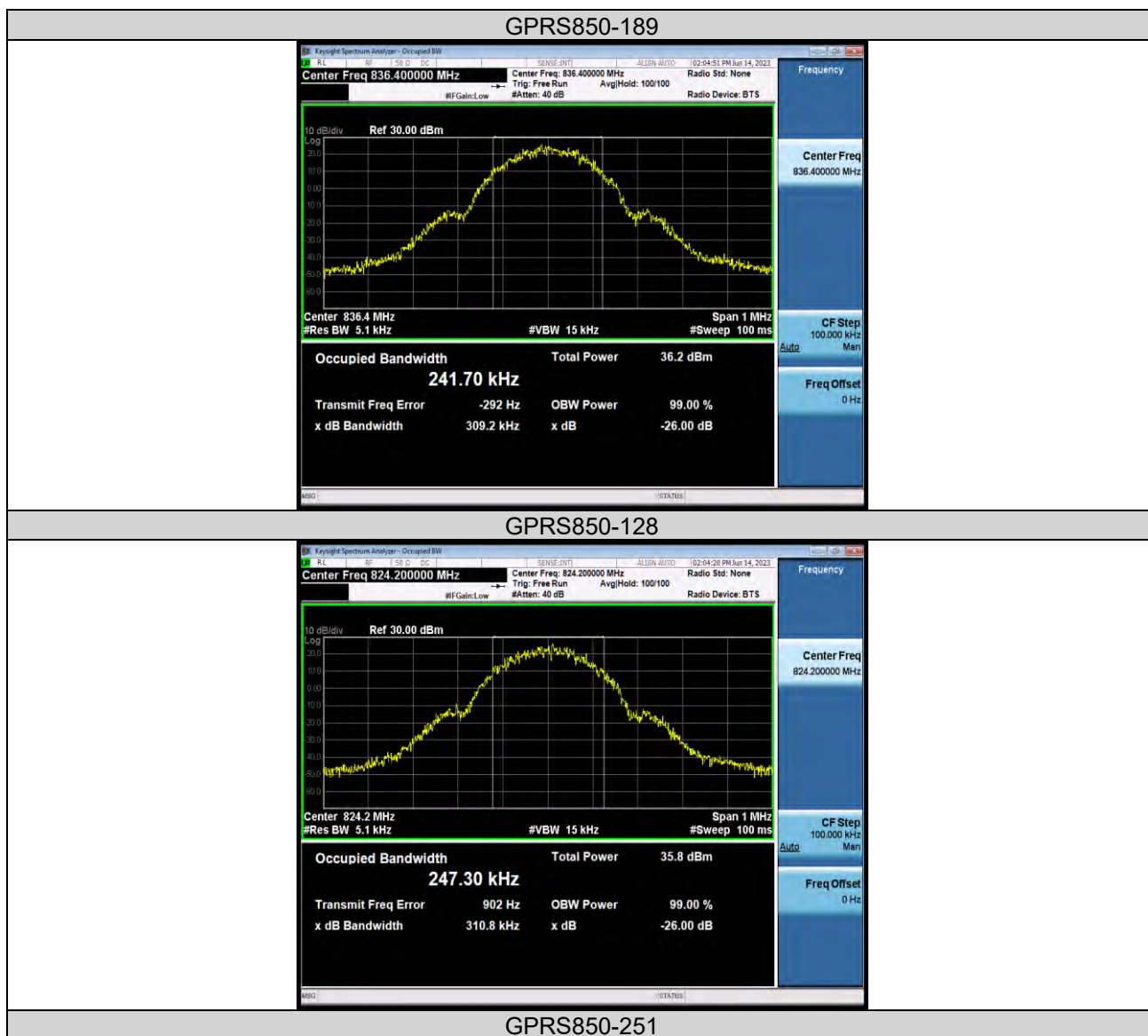
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## 26DB BANDWIDTH AND OCCUPIED BANDWIDTH

### Test Result

| Band     | Channel | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Limit (MHz) | Verdict |
|----------|---------|--------------------------|----------------------|-------------|---------|
| GPRS850  | 189     | 0.24170                  | 0.3092               | ---         | PASS    |
| GPRS850  | 128     | 0.24730                  | 0.3108               | ---         | PASS    |
| GPRS850  | 251     | 0.24483                  | 0.3117               | ---         | PASS    |
| EGPRS850 | 189     | 0.24375                  | 0.3129               | ---         | PASS    |
| EGPRS850 | 128     | 0.24367                  | 0.3079               | ---         | PASS    |
| EGPRS850 | 251     | 0.24458                  | 0.3132               | ---         | PASS    |

## Test Graphs



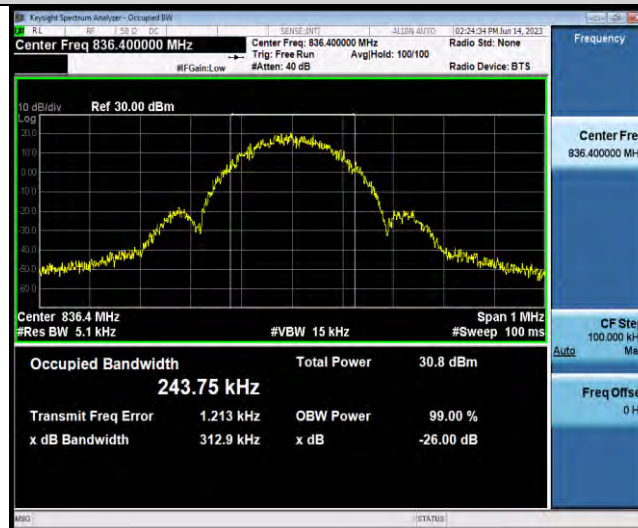


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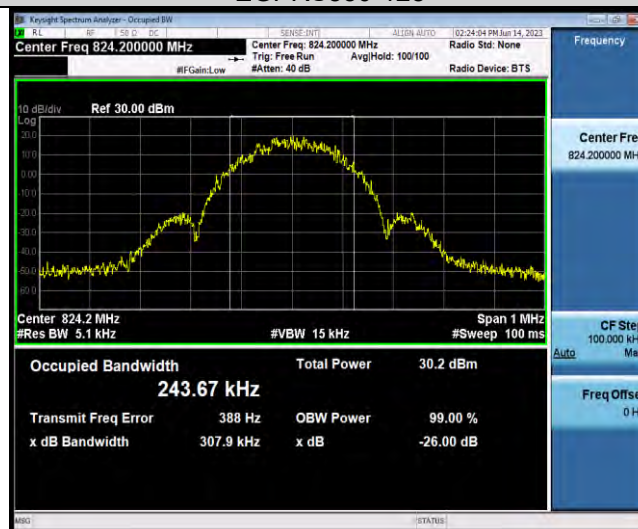
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EGPRS850-189



EGPRS850-128

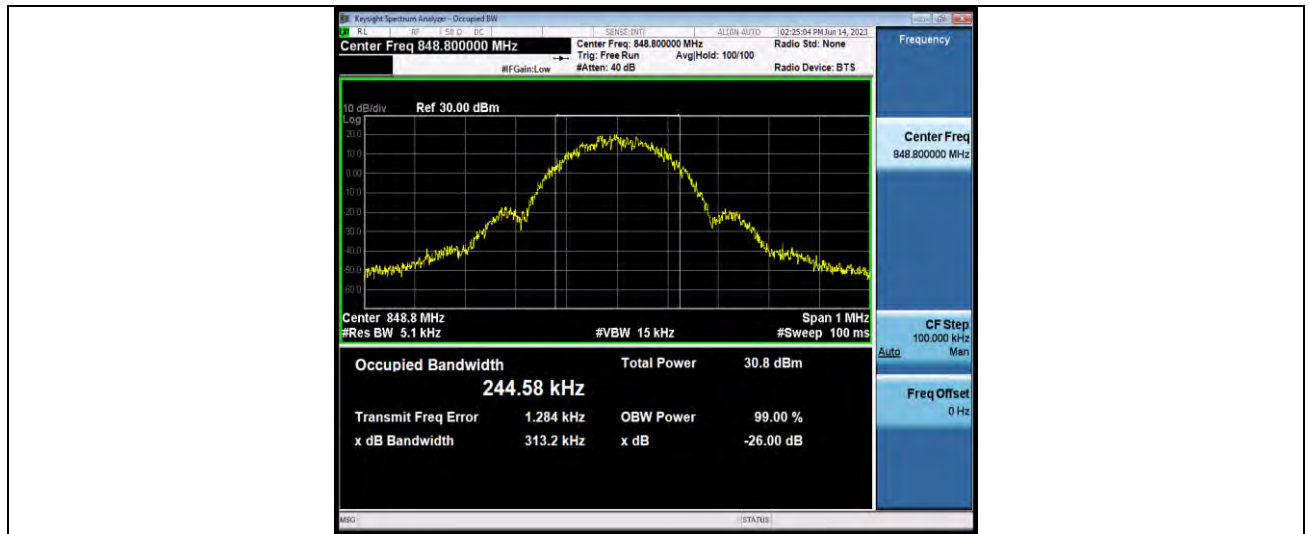


EGPRS850-251



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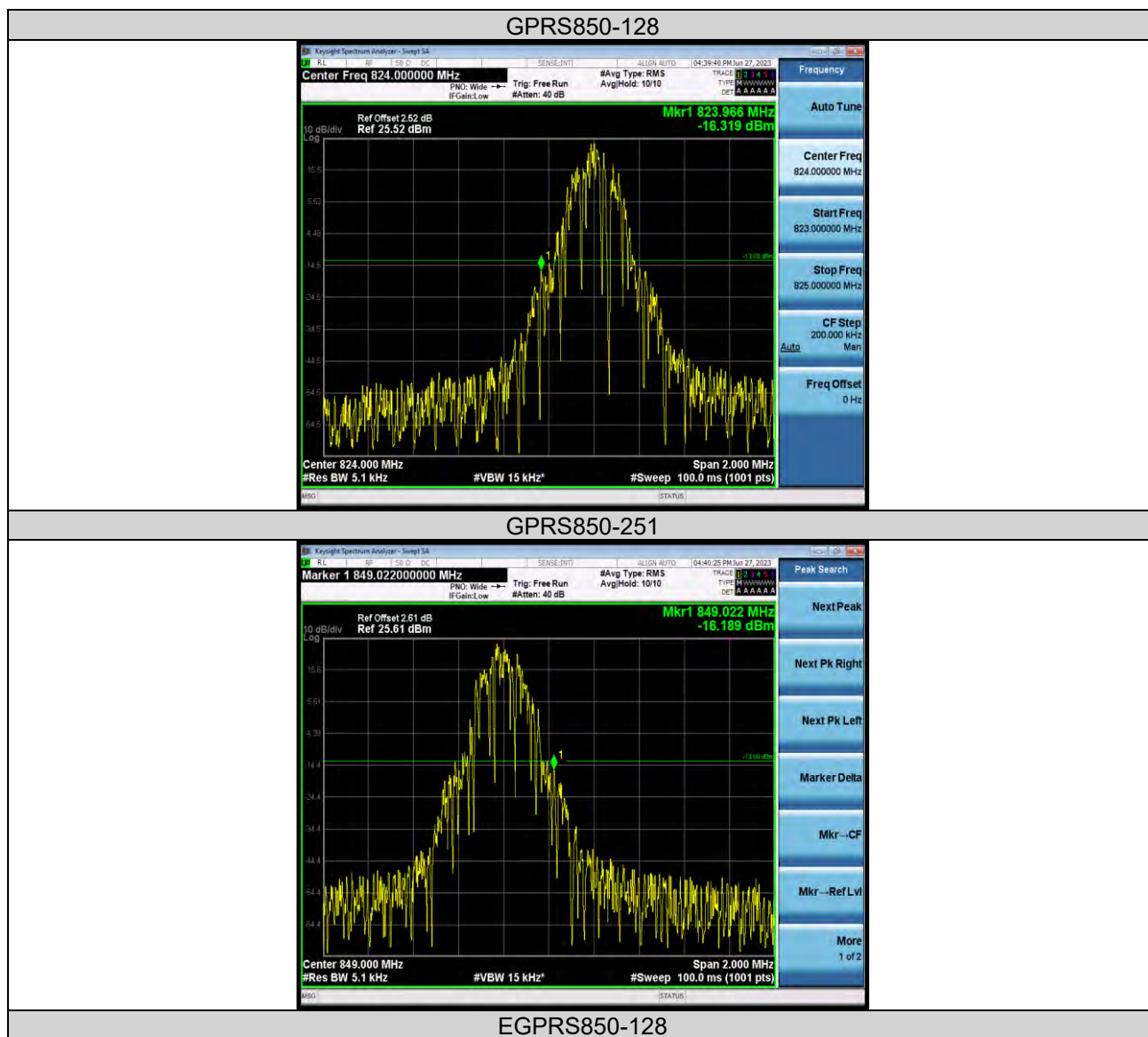


## **BAND EDGE**

### **Test Result**

| Band     | Channel | Freq (MHz) | Result (dBm) | Limit(dBm) | Verdict |
|----------|---------|------------|--------------|------------|---------|
| GPRS850  | 128     | 823.97     | -16.32       | -13        | PASS    |
| GPRS850  | 251     | 849.02     | -16.19       | -13        | PASS    |
| EGPRS850 | 128     | 823.97     | -18.96       | -13        | PASS    |
| EGPRS850 | 251     | 849.02     | -20.23       | -13        | PASS    |

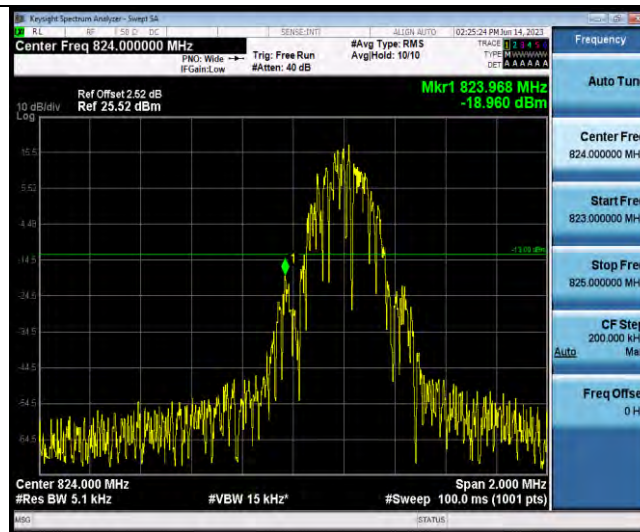
## Test Graphs



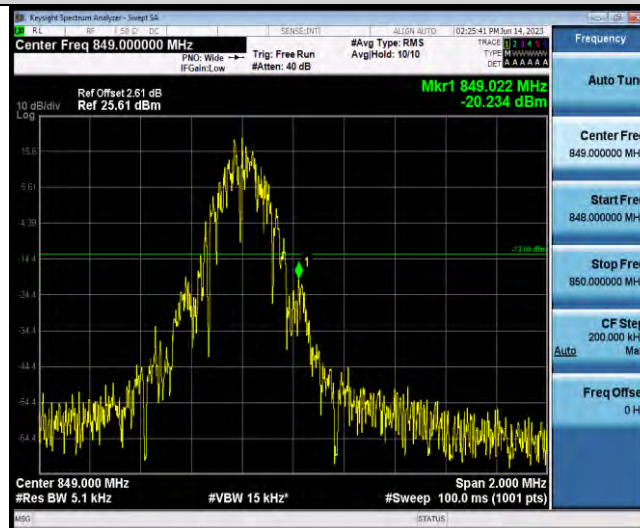


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EGPRS850-251

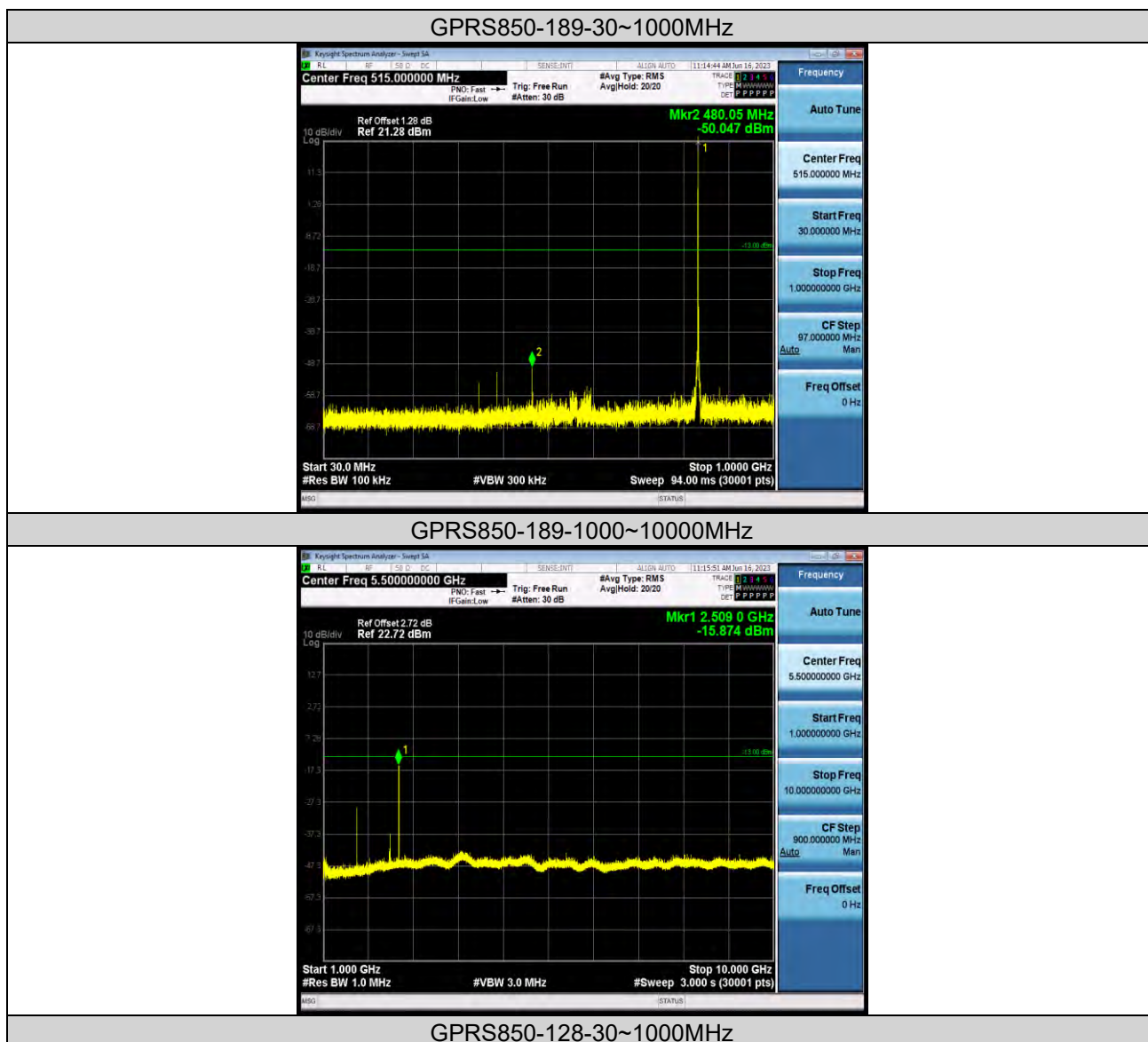


## CONDUCTED SPURIOUS EMISSION

### Test Result

| Band     | Channel | Frequency Range(MHz) | Max.Freq. (MHz) | Result (dBm) | Limit (dBm) | Verdict |
|----------|---------|----------------------|-----------------|--------------|-------------|---------|
| GPRS850  | 189     | 30~1000MHz           | 480.05          | -50.05       | -13         | PASS    |
| GPRS850  | 189     | 1000~10000MHz        | 2509            | -15.87       | -13         | PASS    |
| GPRS850  | 128     | 30~1000MHz           | 364.84          | -55.81       | -13         | PASS    |
| GPRS850  | 128     | 1000~10000MHz        | 2472.4          | -16.09       | -13         | PASS    |
| GPRS850  | 251     | 30~1000MHz           | 598.61          | -57.43       | -13         | PASS    |
| GPRS850  | 251     | 1000~10000MHz        | 2546.5          | -16.65       | -13         | PASS    |
| EGPRS850 | 189     | 30~1000MHz           | 590.01          | -56.89       | -13         | PASS    |
| EGPRS850 | 189     | 1000~10000MHz        | 2509.3          | -23.4        | -13         | PASS    |
| EGPRS850 | 128     | 30~1000MHz           | 364.88          | -57.37       | -13         | PASS    |
| EGPRS850 | 128     | 1000~10000MHz        | 2472.7          | -24.68       | -13         | PASS    |
| EGPRS850 | 251     | 30~1000MHz           | 556.77          | -50.37       | -13         | PASS    |
| EGPRS850 | 251     | 1000~10000MHz        | 2546.5          | -23.59       | -13         | PASS    |

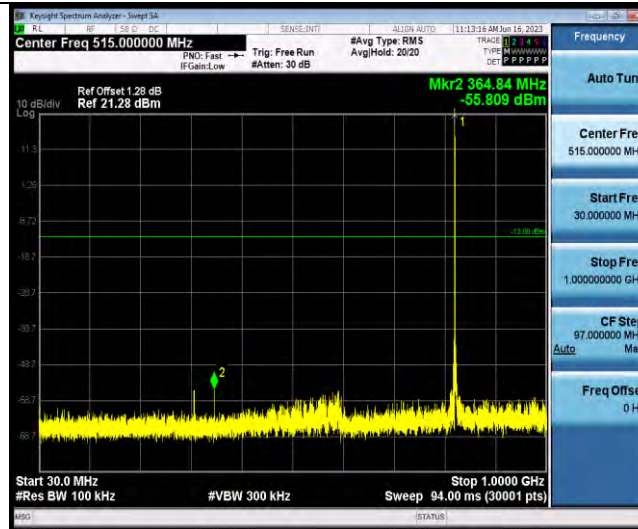
## Test Graphs



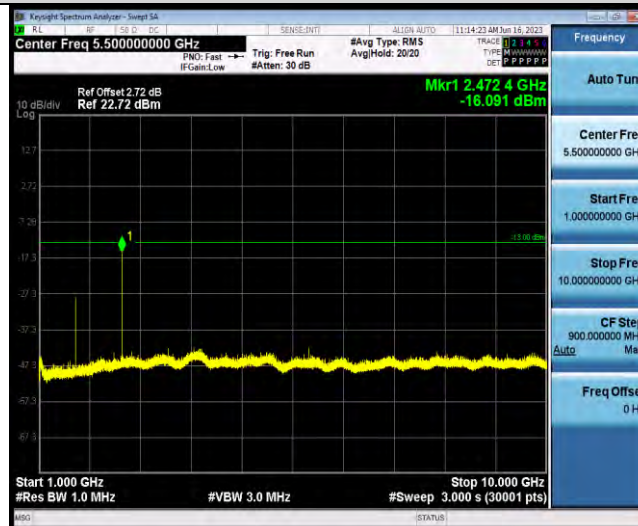


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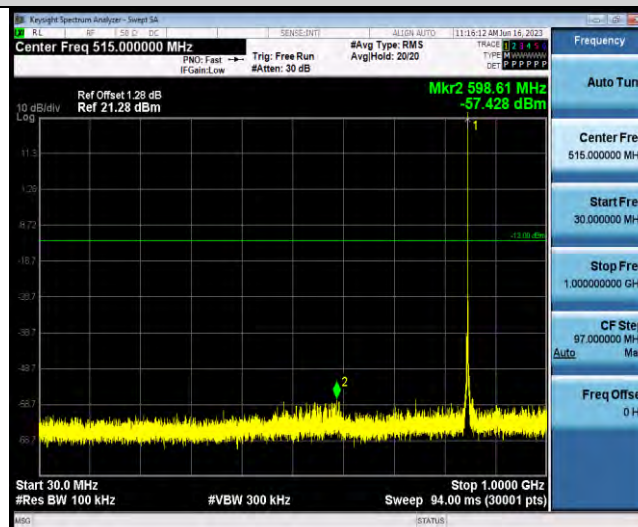
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GPRS850-128-1000~10000MHz



GPRS850-251-30~1000MHz



GPRS850-251-1000~10000MHz

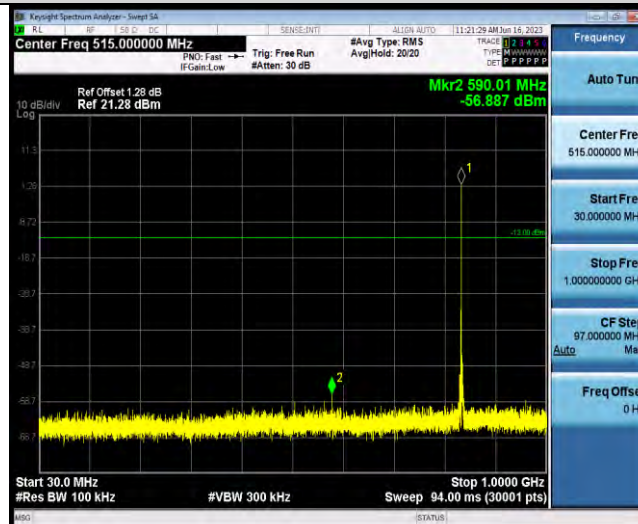


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EGPRS850-189-30~1000MHz



EGPRS850-189-1000~10000MHz

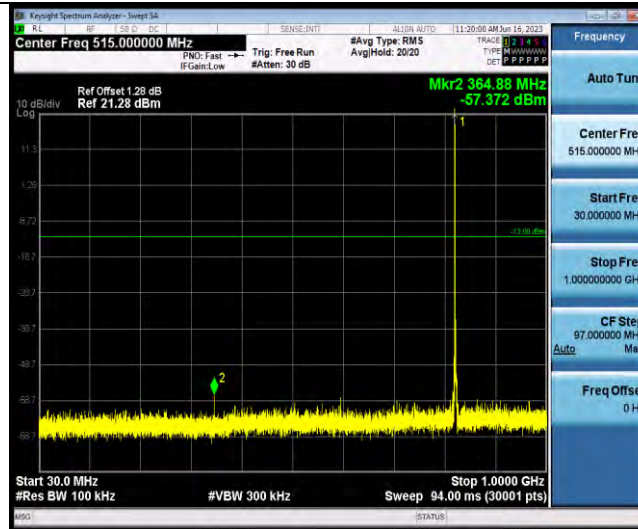


EGPRS850-128-30~1000MHz

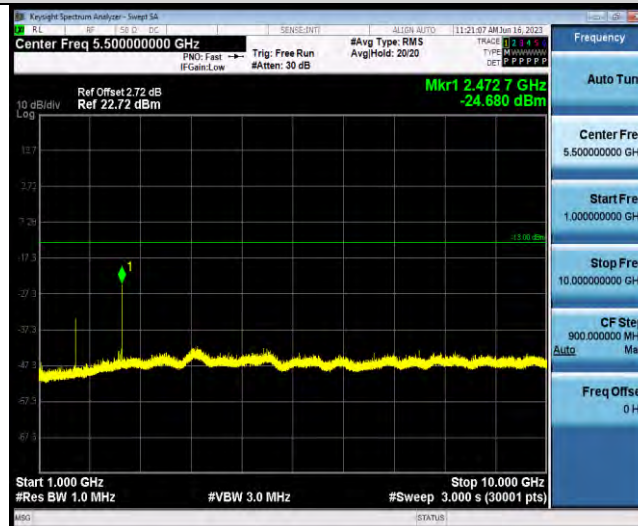


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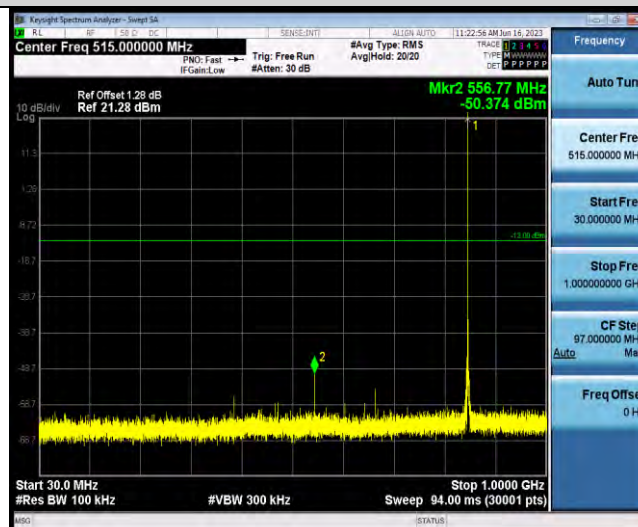
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EGPRS850-128-1000~10000MHz



EGPRS850-251-30~1000MHz



EGPRS850-251-1000~10000MHz



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## FREQUENCY STABILITY

### Test Result

| Voltage  |         |               |                  |                |                 |             |         |
|----------|---------|---------------|------------------|----------------|-----------------|-------------|---------|
| Band     | Channel | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| GPRS850  | 189     | VL            | NT               | 28.73          | 0.034350        | ±2.5        | PASS    |
| GPRS850  | 189     | VN            | NT               | 29.32          | 0.035055        | ±2.5        | PASS    |
| GPRS850  | 189     | VH            | NT               | 29.38          | 0.035127        | ±2.5        | PASS    |
| GPRS850  | 128     | VL            | NT               | 30.64          | 0.037175        | ±2.5        | PASS    |
| GPRS850  | 128     | VN            | NT               | 33.48          | 0.040621        | ±2.5        | PASS    |
| GPRS850  | 128     | VH            | NT               | 32.80          | 0.039796        | ±2.5        | PASS    |
| GPRS850  | 251     | VL            | NT               | 34.80          | 0.040999        | ±2.5        | PASS    |
| GPRS850  | 251     | VN            | NT               | 32.16          | 0.037889        | ±2.5        | PASS    |
| GPRS850  | 251     | VH            | NT               | 31.06          | 0.036593        | ±2.5        | PASS    |
| EGPRS850 | 189     | VL            | NT               | 31.16          | 0.037255        | ±2.5        | PASS    |
| EGPRS850 | 189     | VN            | NT               | 30.51          | 0.036478        | ±2.5        | PASS    |
| EGPRS850 | 189     | VH            | NT               | 32.35          | 0.038678        | ±2.5        | PASS    |
| EGPRS850 | 128     | VL            | NT               | 29.70          | 0.036035        | ±2.5        | PASS    |
| EGPRS850 | 128     | VN            | NT               | 32.00          | 0.038826        | ±2.5        | PASS    |
| EGPRS850 | 128     | VH            | NT               | 28.12          | 0.034118        | ±2.5        | PASS    |
| EGPRS850 | 251     | VL            | NT               | 32.67          | 0.038490        | ±2.5        | PASS    |
| EGPRS850 | 251     | VN            | NT               | 30.70          | 0.036169        | ±2.5        | PASS    |
| EGPRS850 | 251     | VH            | NT               | 33.48          | 0.039444        | ±2.5        | PASS    |

| Temperature |         |               |                  |                |                 |             |         |
|-------------|---------|---------------|------------------|----------------|-----------------|-------------|---------|
| Band        | Channel | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| GPRS850     | 189     | NV            | -30              | 29.99          | 0.035856        | ±2.5        | PASS    |
| GPRS850     | 189     | NV            | -20              | 29.80          | 0.035629        | ±2.5        | PASS    |
| GPRS850     | 189     | NV            | -10              | 28.99          | 0.034660        | ±2.5        | PASS    |
| GPRS850     | 189     | NV            | 0                | 31.16          | 0.037255        | ±2.5        | PASS    |
| GPRS850     | 189     | NV            | 10               | 28.25          | 0.033776        | ±2.5        | PASS    |
| GPRS850     | 189     | NV            | 20               | 28.48          | 0.034051        | ±2.5        | PASS    |
| GPRS850     | 189     | NV            | 30               | 31.87          | 0.038104        | ±2.5        | PASS    |
| GPRS850     | 189     | NV            | 40               | 29.83          | 0.035665        | ±2.5        | PASS    |
| GPRS850     | 189     | NV            | 50               | 30.32          | 0.036251        | ±2.5        | PASS    |



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|          |     |    |     |       |          |      |      |
|----------|-----|----|-----|-------|----------|------|------|
| GPRS850  | 128 | NV | -30 | 30.93 | 0.037527 | ±2.5 | PASS |
| GPRS850  | 128 | NV | -20 | 33.22 | 0.040306 | ±2.5 | PASS |
| GPRS850  | 128 | NV | -10 | 30.19 | 0.036629 | ±2.5 | PASS |
| GPRS850  | 128 | NV | 0   | 29.90 | 0.036278 | ±2.5 | PASS |
| GPRS850  | 128 | NV | 10  | 29.96 | 0.036350 | ±2.5 | PASS |
| GPRS850  | 128 | NV | 20  | 32.67 | 0.039638 | ±2.5 | PASS |
| GPRS850  | 128 | NV | 30  | 30.45 | 0.036945 | ±2.5 | PASS |
| GPRS850  | 128 | NV | 40  | 28.93 | 0.035101 | ±2.5 | PASS |
| GPRS850  | 128 | NV | 50  | 31.35 | 0.038037 | ±2.5 | PASS |
| GPRS850  | 251 | NV | -30 | 31.09 | 0.036628 | ±2.5 | PASS |
| GPRS850  | 251 | NV | -20 | 29.61 | 0.034885 | ±2.5 | PASS |
| GPRS850  | 251 | NV | -10 | 32.80 | 0.038643 | ±2.5 | PASS |
| GPRS850  | 251 | NV | 0   | 31.28 | 0.036852 | ±2.5 | PASS |
| GPRS850  | 251 | NV | 10  | 32.58 | 0.038384 | ±2.5 | PASS |
| GPRS850  | 251 | NV | 20  | 29.54 | 0.034802 | ±2.5 | PASS |
| GPRS850  | 251 | NV | 30  | 31.93 | 0.037618 | ±2.5 | PASS |
| GPRS850  | 251 | NV | 40  | 28.38 | 0.033435 | ±2.5 | PASS |
| GPRS850  | 251 | NV | 50  | 28.64 | 0.033742 | ±2.5 | PASS |
| EGPRS850 | 189 | NV | -30 | 27.18 | 0.032496 | ±2.5 | PASS |
| EGPRS850 | 189 | NV | -20 | 30.35 | 0.036286 | ±2.5 | PASS |
| EGPRS850 | 189 | NV | -10 | 32.96 | 0.039407 | ±2.5 | PASS |
| EGPRS850 | 189 | NV | 0   | 30.67 | 0.036669 | ±2.5 | PASS |
| EGPRS850 | 189 | NV | 10  | 27.18 | 0.032496 | ±2.5 | PASS |
| EGPRS850 | 189 | NV | 20  | 30.45 | 0.036406 | ±2.5 | PASS |
| EGPRS850 | 189 | NV | 30  | 26.86 | 0.032114 | ±2.5 | PASS |
| EGPRS850 | 189 | NV | 40  | 28.96 | 0.034625 | ±2.5 | PASS |
| EGPRS850 | 189 | NV | 50  | 27.89 | 0.033345 | ±2.5 | PASS |
| EGPRS850 | 128 | NV | -30 | 28.64 | 0.034749 | ±2.5 | PASS |
| EGPRS850 | 128 | NV | -20 | 30.25 | 0.036702 | ±2.5 | PASS |
| EGPRS850 | 128 | NV | -10 | 28.57 | 0.034664 | ±2.5 | PASS |
| EGPRS850 | 128 | NV | 0   | 28.64 | 0.034749 | ±2.5 | PASS |
| EGPRS850 | 128 | NV | 10  | 28.25 | 0.034276 | ±2.5 | PASS |
| EGPRS850 | 128 | NV | 20  | 29.54 | 0.035841 | ±2.5 | PASS |
| EGPRS850 | 128 | NV | 30  | 29.48 | 0.035768 | ±2.5 | PASS |
| EGPRS850 | 128 | NV | 40  | 27.60 | 0.033487 | ±2.5 | PASS |



|              |     |    |     |       |          |      |      |
|--------------|-----|----|-----|-------|----------|------|------|
| EGPRS85<br>0 | 128 | NV | 50  | 28.38 | 0.034433 | ±2.5 | PASS |
| EGPRS85<br>0 | 251 | NV | -30 | 30.15 | 0.035521 | ±2.5 | PASS |
| EGPRS85<br>0 | 251 | NV | -20 | 27.54 | 0.032446 | ±2.5 | PASS |
| EGPRS85<br>0 | 251 | NV | -10 | 27.54 | 0.032446 | ±2.5 | PASS |
| EGPRS85<br>0 | 251 | NV | 0   | 28.57 | 0.033659 | ±2.5 | PASS |
| EGPRS85<br>0 | 251 | NV | 10  | 28.51 | 0.033589 | ±2.5 | PASS |
| EGPRS85<br>0 | 251 | NV | 20  | 28.83 | 0.033966 | ±2.5 | PASS |
| EGPRS85<br>0 | 251 | NV | 30  | 29.48 | 0.034731 | ±2.5 | PASS |
| EGPRS85<br>0 | 251 | NV | 40  | 27.09 | 0.031916 | ±2.5 | PASS |
| EGPRS85<br>0 | 251 | NV | 50  | 26.47 | 0.031185 | ±2.5 | PASS |

### MAX Deviation calculation

| Frequency Stability            | Frequency(MHz) | Limit Line(MHz) | Result |
|--------------------------------|----------------|-----------------|--------|
| $f_L -  \text{MAX}(\Delta f) $ | 836.27915      | $\geq 824$      | PASS   |
| $f_H +  \text{MAX}(\Delta f) $ | 848.922415     | $\leq 849$      |        |

Note : 1.  $|\text{MAX}(\Delta f)|$  = Max Deviation

2.  $f_L$  = Occ low channel  $f_L$ (-13dBm/MHz)

3.  $f_H$  = Occ High channel  $f_H$ (-13dBm/MHz)

4.  $|\text{MAX}(\Delta f)|$  = 34.8Hz.

**WCMDA BAND5****PEAK-TO-AVERAGE RATIO****Test Result**

| Band  | Channel | Peak-to-Average Ratio(dB) | Limit(dBm) | Verdict |
|-------|---------|---------------------------|------------|---------|
| Band5 | 4132    | 2.58                      | 13         | PASS    |
| Band5 | 4182    | 3.09                      | 13         | PASS    |
| Band5 | 4233    | 2.54                      | 13         | PASS    |

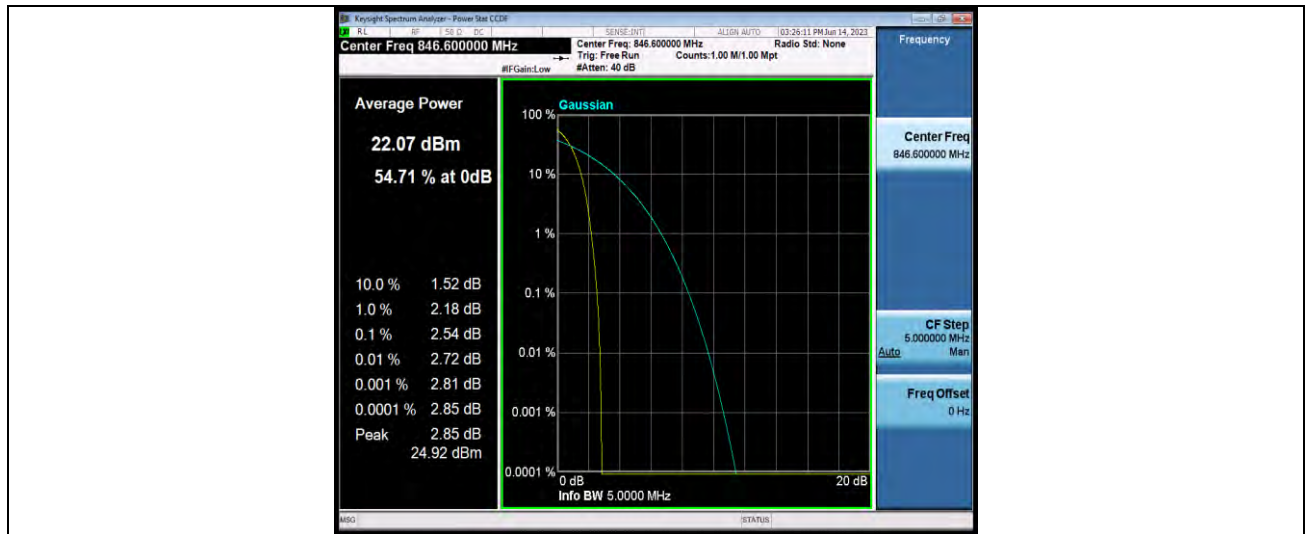
## Test Graphs





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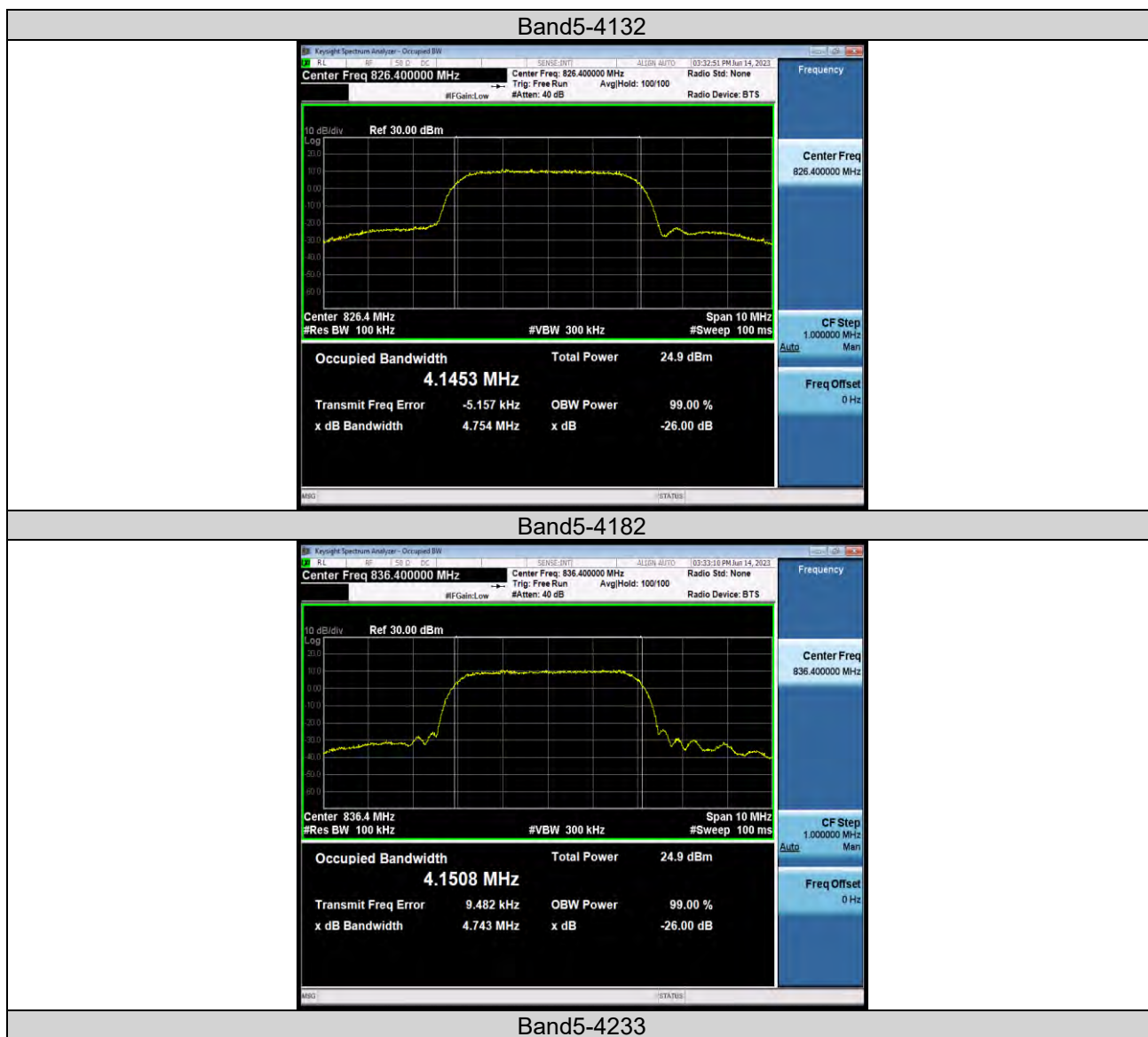
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## 26DB BANDWIDTH AND OCCUPIED BANDWIDTH

### Test Result

| Band  | Channel | Occupied Bandwidth<br>(MHz) | 26dB Bandwidth<br>(MHz) | Limit(kHz) | Verdict |
|-------|---------|-----------------------------|-------------------------|------------|---------|
| Band5 | 4132    | 4.1453                      | 4.754                   | ---        | PASS    |
| Band5 | 4182    | 4.1508                      | 4.743                   | ---        | PASS    |
| Band5 | 4233    | 4.1768                      | 4.788                   | ---        | PASS    |

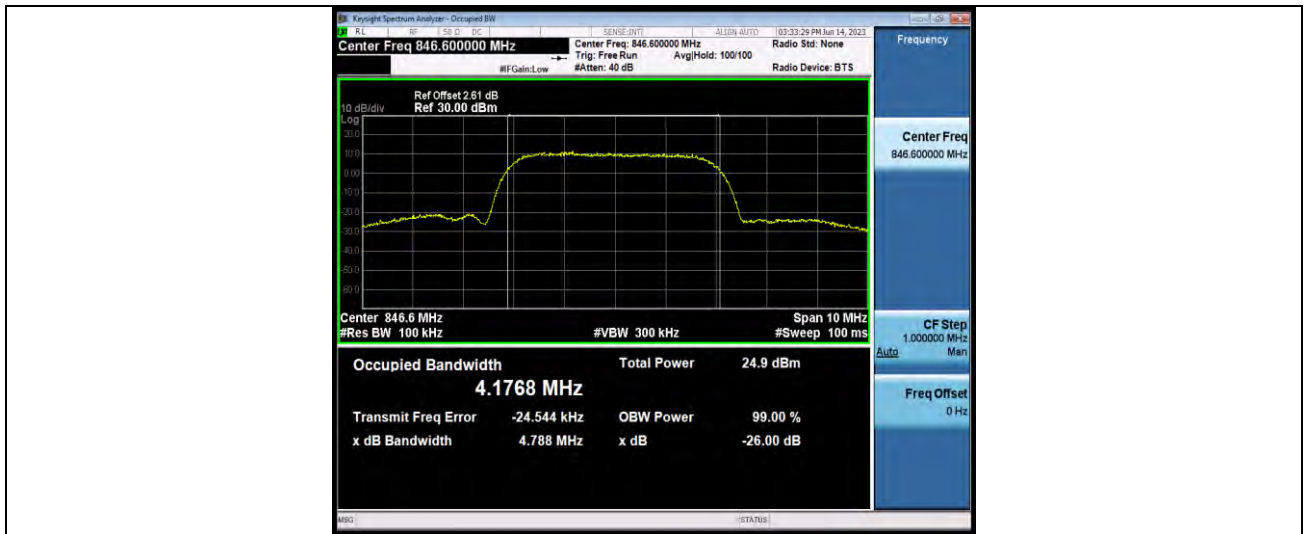
## Test Graphs





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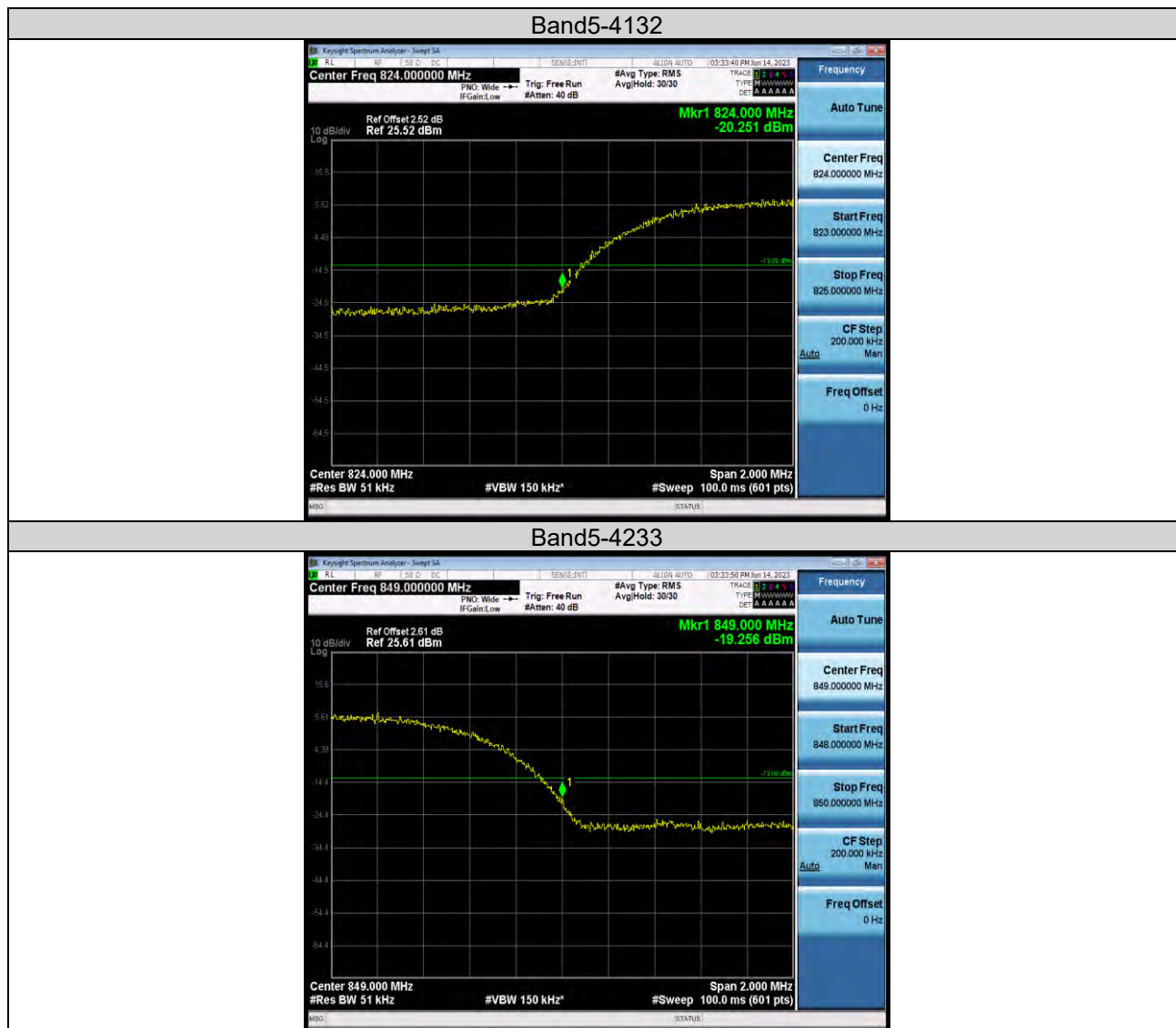
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## BAND EDGE

### Test Result

| Band  | Channel | Frequency (MHz) | Result (dBm) | Limit(dBm) | Verdict |
|-------|---------|-----------------|--------------|------------|---------|
| Band5 | 4132    | 824.00          | -20.25       | -13        | PASS    |
| Band5 | 4233    | 849.00          | -19.26       | -13        | PASS    |

## Test Graphs

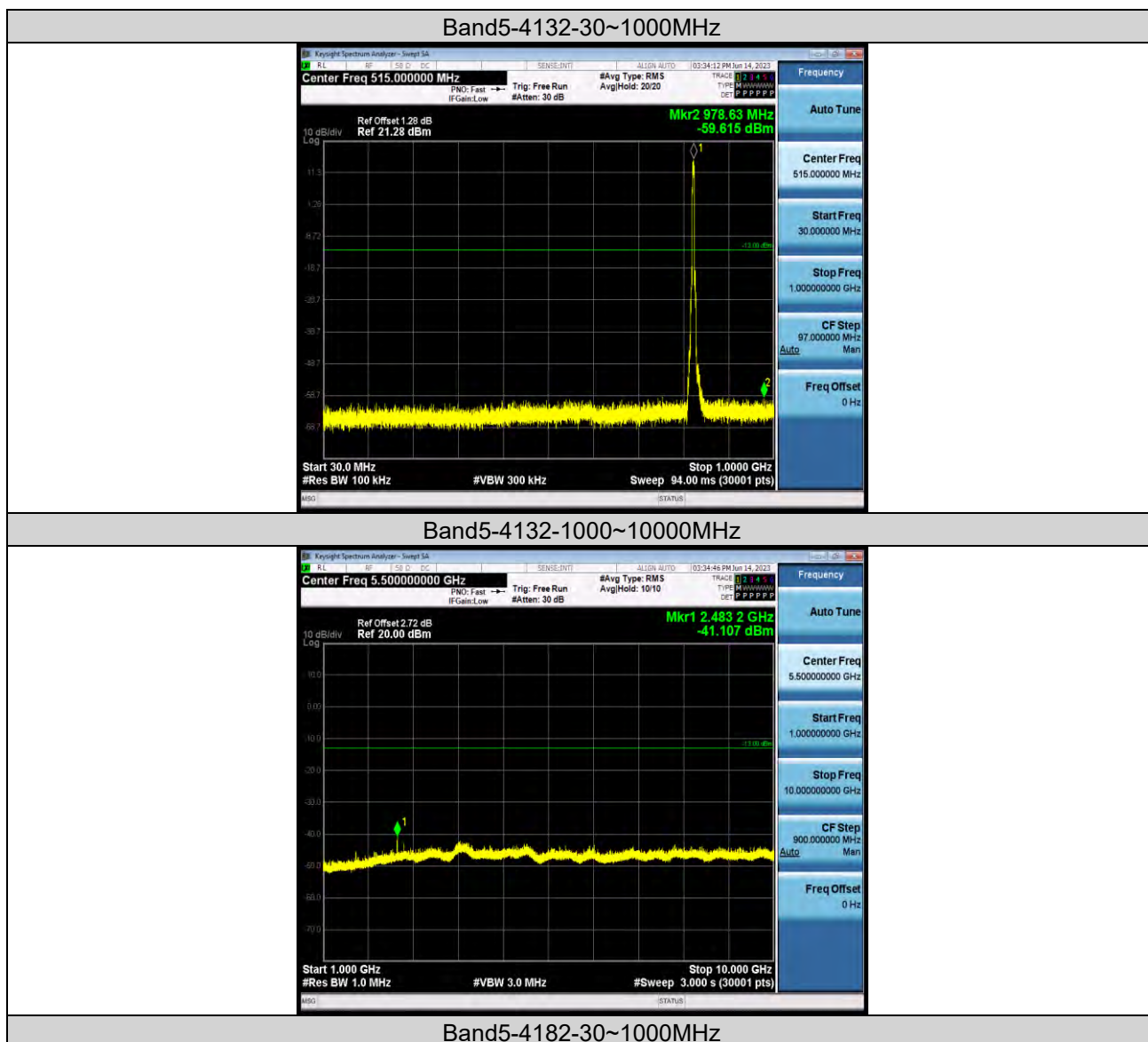


## CONDUCTED SPURIOUS EMISSION

### Test Result

| Band  | Channel | Frequency Range (Mhz) | Frequency (dBm) | Result (dBm) | Limit (dBm) | Verdict |
|-------|---------|-----------------------|-----------------|--------------|-------------|---------|
| Band5 | 4132    | 30~1000MHz            | 978.63          | -59.62       | -13         | PASS    |
| Band5 | 4132    | 1000~10000MHz         | 2483.2          | -41.11       | -13         | PASS    |
| Band5 | 4182    | 30~1000MHz            | 996.28          | -59.54       | -13         | PASS    |
| Band5 | 4182    | 1000~10000MHz         | 2511.4          | -41.67       | -13         | PASS    |
| Band5 | 4233    | 30~1000MHz            | 977.33          | -57.7        | -13         | PASS    |
| Band5 | 4233    | 1000~10000MHz         | 3800.8          | -41.32       | -13         | PASS    |

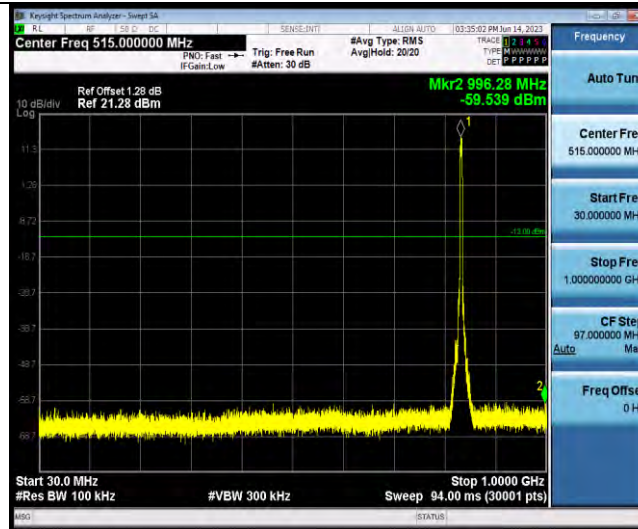
## Test Graphs





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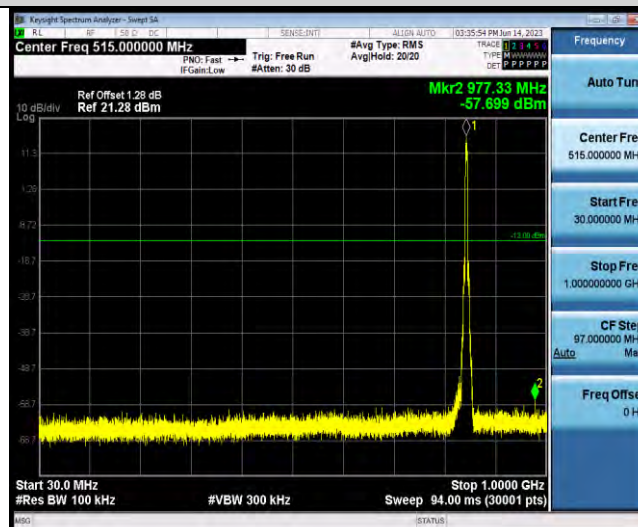
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Band5-4182-1000~10000MHz



Band5-4233-30~1000MHz

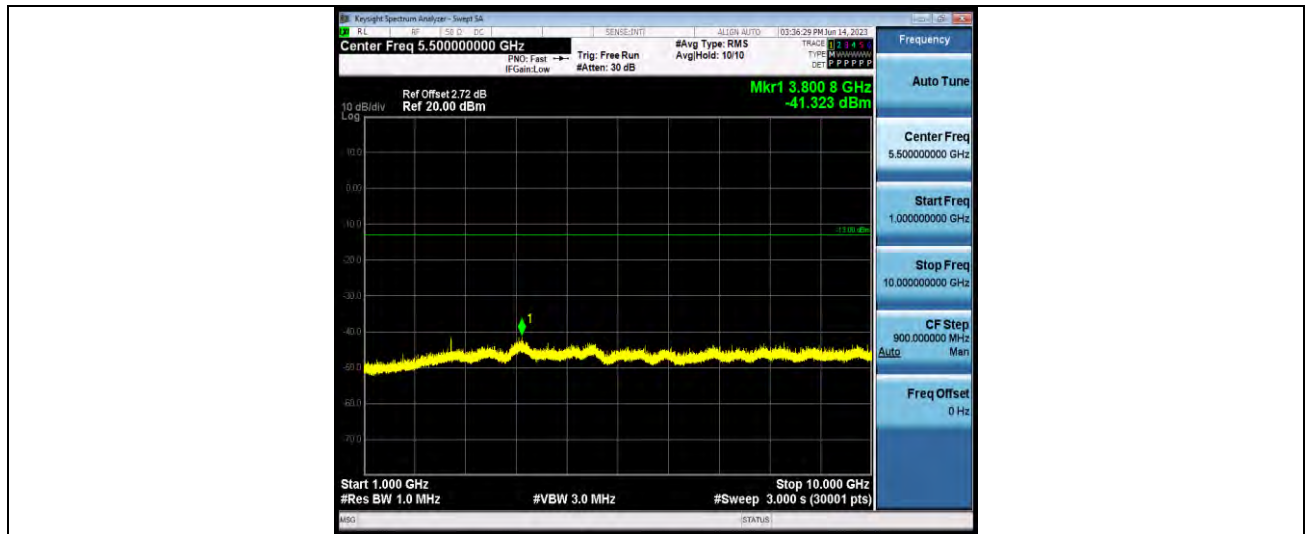


Band5-4233-1000~10000MHz



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**FREQUENCY STABILITY****Test Result**

| Voltage |         |               |                  |                |                 |             |         |
|---------|---------|---------------|------------------|----------------|-----------------|-------------|---------|
| Band    | Channel | Voltage (Vdc) | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| Band5   | 4132    | LV            | NT               | 2.02           | 0.002444        | ±2.5        | PASS    |
| Band5   | 4132    | NV            | NT               | 2.20           | 0.002662        | ±2.5        | PASS    |
| Band5   | 4132    | HV            | NT               | 1.76           | 0.002130        | ±2.5        | PASS    |
| Band5   | 4182    | LV            | NT               | -0.39          | -0.000466       | ±2.5        | PASS    |
| Band5   | 4182    | NV            | NT               | -0.41          | -0.000490       | ±2.5        | PASS    |
| Band5   | 4182    | HV            | NT               | -0.58          | -0.000693       | ±2.5        | PASS    |
| Band5   | 4233    | LV            | NT               | -2.37          | -0.002799       | ±2.5        | PASS    |
| Band5   | 4233    | NV            | NT               | -2.32          | -0.002740       | ±2.5        | PASS    |
| Band5   | 4233    | HV            | NT               | -2.00          | -0.002362       | ±2.5        | PASS    |

| Temperature |         |               |                  |                |                 |             |         |
|-------------|---------|---------------|------------------|----------------|-----------------|-------------|---------|
| Band        | Channel | Voltage (Vdc) | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| Band5       | 4132    | NV            | -30              | 2.00           | 0.002420        | ±2.5        | PASS    |
| Band5       | 4132    | NV            | -20              | 1.80           | 0.002178        | ±2.5        | PASS    |
| Band5       | 4132    | NV            | -10              | 1.65           | 0.001997        | ±2.5        | PASS    |
| Band5       | 4132    | NV            | 0                | 0.91           | 0.001101        | ±2.5        | PASS    |
| Band5       | 4132    | NV            | 10               | 1.09           | 0.001319        | ±2.5        | PASS    |
| Band5       | 4132    | NV            | 20               | 1.27           | 0.001537        | ±2.5        | PASS    |
| Band5       | 4132    | NV            | 30               | 0.97           | 0.001174        | ±2.5        | PASS    |
| Band5       | 4132    | NV            | 40               | 1.34           | 0.001621        | ±2.5        | PASS    |
| Band5       | 4132    | NV            | 50               | 1.27           | 0.001537        | ±2.5        | PASS    |
| Band5       | 4182    | NV            | -30              | -0.18          | -0.000215       | ±2.5        | PASS    |
| Band5       | 4182    | NV            | -20              | -0.35          | -0.000418       | ±2.5        | PASS    |
| Band5       | 4182    | NV            | -10              | -0.09          | -0.000108       | ±2.5        | PASS    |
| Band5       | 4182    | NV            | 0                | -0.01          | -0.000012       | ±2.5        | PASS    |
| Band5       | 4182    | NV            | 10               | 0.19           | 0.000227        | ±2.5        | PASS    |
| Band5       | 4182    | NV            | 20               | -0.36          | -0.000430       | ±2.5        | PASS    |
| Band5       | 4182    | NV            | 30               | 0.24           | 0.000287        | ±2.5        | PASS    |
| Band5       | 4182    | NV            | 40               | -0.05          | -0.000060       | ±2.5        | PASS    |
| Band5       | 4182    | NV            | 50               | 0.09           | 0.000108        | ±2.5        | PASS    |
| Band5       | 4233    | NV            | -30              | -2.33          | -0.002752       | ±2.5        | PASS    |
| Band5       | 4233    | NV            | -20              | -2.40          | -0.002835       | ±2.5        | PASS    |
| Band5       | 4233    | NV            | -10              | -1.90          | -0.002244       | ±2.5        | PASS    |
| Band5       | 4233    | NV            | 0                | -2.75          | -0.003248       | ±2.5        | PASS    |
| Band5       | 4233    | NV            | 10               | -2.22          | -0.002622       | ±2.5        | PASS    |
| Band5       | 4233    | NV            | 20               | -2.09          | -0.002469       | ±2.5        | PASS    |
| Band5       | 4233    | NV            | 30               | -2.24          | -0.002646       | ±2.5        | PASS    |
| Band5       | 4233    | NV            | 40               | -2.19          | -0.002587       | ±2.5        | PASS    |
| Band5       | 4233    | NV            | 50               | -2.56          | -0.003024       | ±2.5        | PASS    |

## MAX Deviation calculation

| Frequency Stability            | Frequency(MHz) | Limit Line(MHz) | Result |
|--------------------------------|----------------|-----------------|--------|
| $f_L -  \text{MAX}(\Delta f) $ | 824.3273       | $\geq 824$      | PASS   |
| $f_H +  \text{MAX}(\Delta f) $ | 848.6884       | $\leq 849$      |        |

Note : 1.  $|\text{MAX}(\Delta f)|$  = Max Deviation

2.  $f_L$  = Occ low channel  $f_L$ (-13dBm/MHz)

3.  $f_H$  = Occ High channel  $f_H$ (-13dBm/MHz)

4.  $|\text{MAX}(\Delta f)|$  = -2.75Hz.

## LTE BAND5

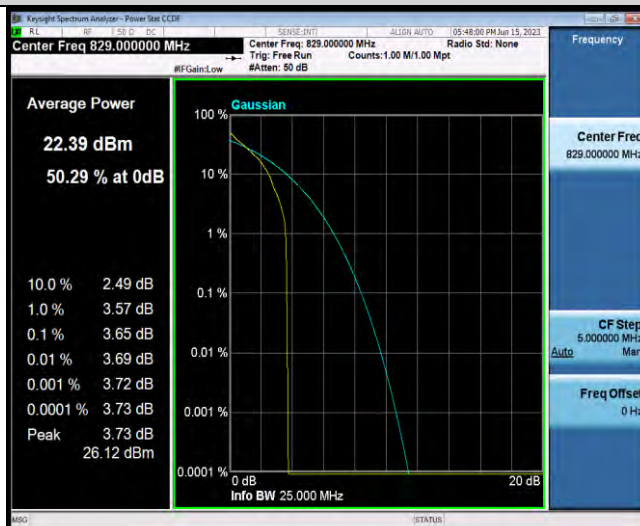
### PEAK-TO-AVERAGE RATIO(CCDF)

#### Test Result

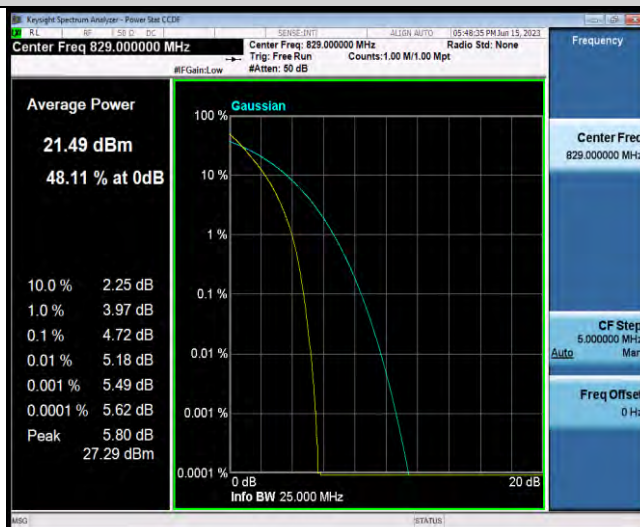
| Band  | Bandwidth | Modulation | Channel | RB Configuration | Result(dB) | Limit(dB) | Verdict |
|-------|-----------|------------|---------|------------------|------------|-----------|---------|
| Band5 | 10MHz     | QPSK       | 20450   | 1RB#0            | 3.65       | 13        | PASS    |
| Band5 | 10MHz     | QPSK       | 20450   | 50RB#0           | 4.72       | 13        | PASS    |
| Band5 | 10MHz     | QPSK       | 20525   | 1RB#0            | 4.37       | 13        | PASS    |
| Band5 | 10MHz     | QPSK       | 20525   | 50RB#0           | 5.54       | 13        | PASS    |
| Band5 | 10MHz     | QPSK       | 20600   | 1RB#0            | 4.58       | 13        | PASS    |
| Band5 | 10MHz     | QPSK       | 20600   | 50RB#0           | 4.73       | 13        | PASS    |
| Band5 | 10MHz     | 16QAM      | 20450   | 1RB#0            | 4.68       | 13        | PASS    |
| Band5 | 10MHz     | 16QAM      | 20450   | 50RB#0           | 5.46       | 13        | PASS    |
| Band5 | 10MHz     | 16QAM      | 20525   | 1RB#0            | 5.37       | 13        | PASS    |
| Band5 | 10MHz     | 16QAM      | 20525   | 50RB#0           | 6.40       | 13        | PASS    |
| Band5 | 10MHz     | 16QAM      | 20600   | 1RB#0            | 5.48       | 13        | PASS    |
| Band5 | 10MHz     | 16QAM      | 20600   | 50RB#0           | 5.55       | 13        | PASS    |

## Test Graphs

Band5-10MHz-QPSK-20450-1RB#0



Band5-10MHz-QPSK-20450-50RB#0

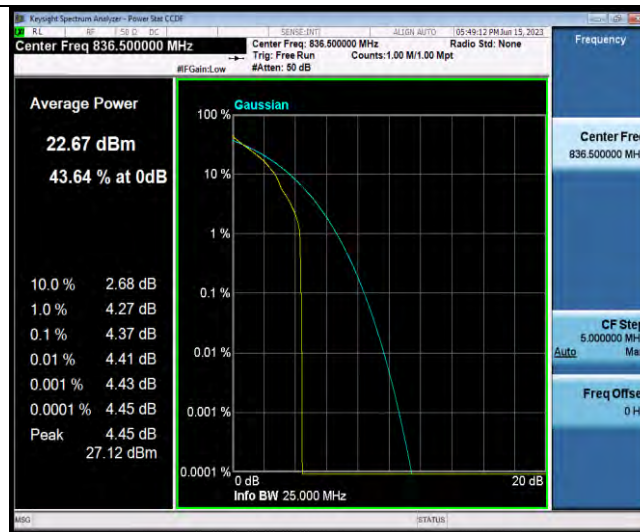


Band5-10MHz-QPSK-20525-1RB#0

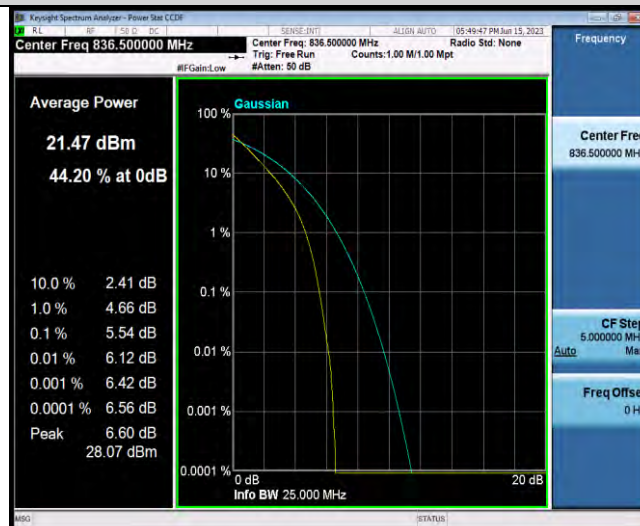


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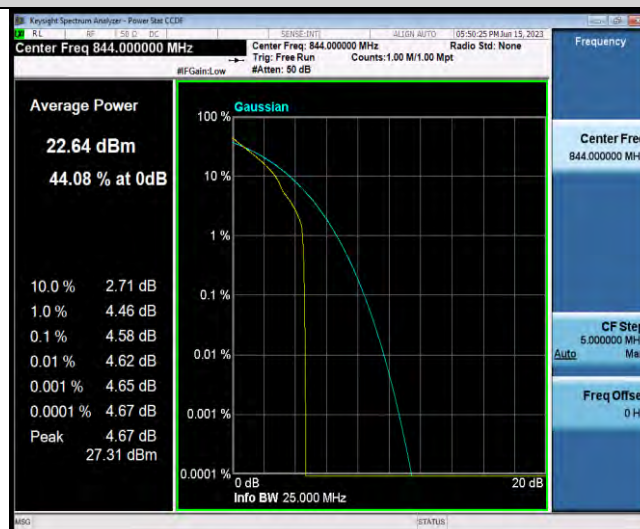
Test Report No.: W7L-P23060003RF02



Band5-10MHz-QPSK-20525-50RB#0



Band5-10MHz-QPSK-20600-1RB#0

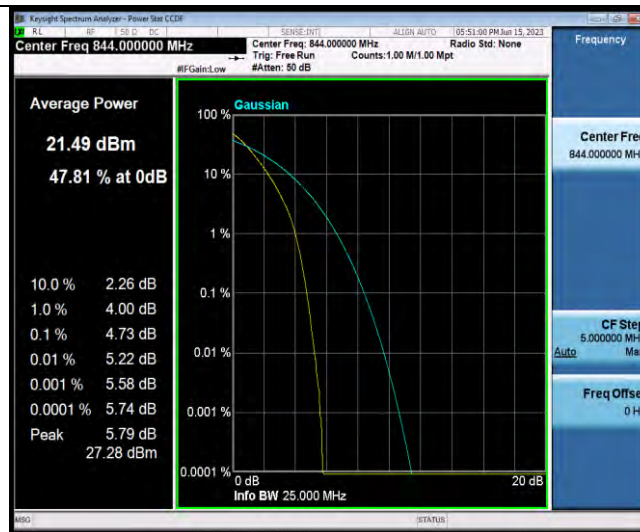


Band5-10MHz-QPSK-20600-50RB#0

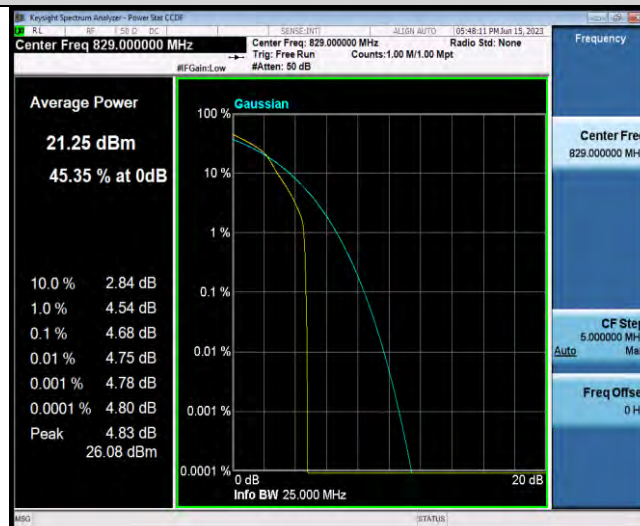


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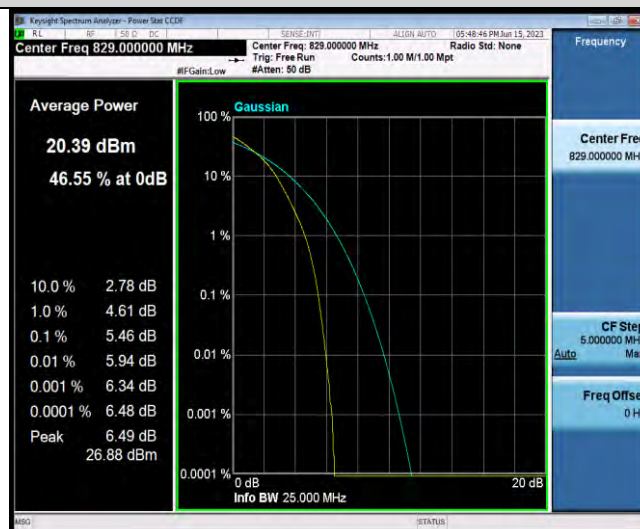
Test Report No.: W7L-P23060003RF02



Band5-10MHz-16QAM-20450-1RB#0



Band5-10MHz-16QAM-20450-50RB#0

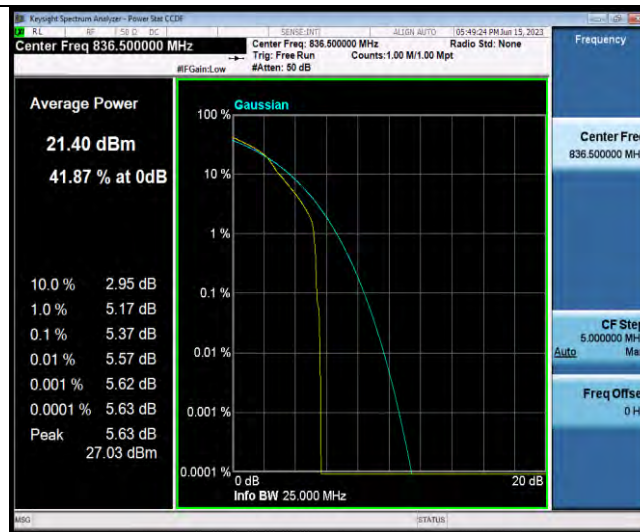


Band5-10MHz-16QAM-20525-1RB#0

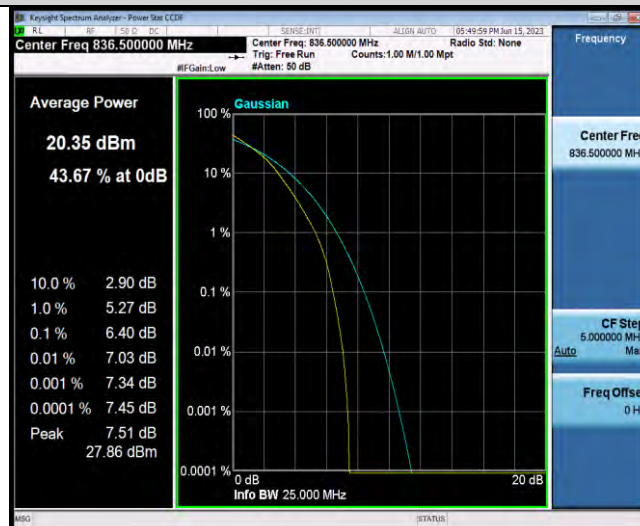


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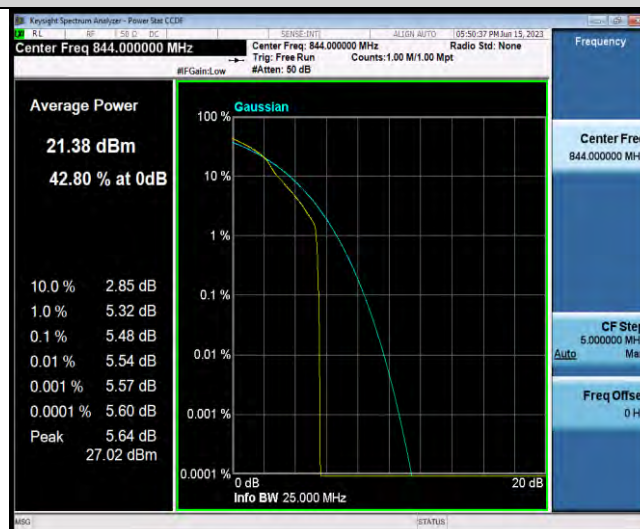
Test Report No.: W7L-P23060003RF02



Band5-10MHz-16QAM-20525-50RB#0



Band5-10MHz-16QAM-20600-1RB#0

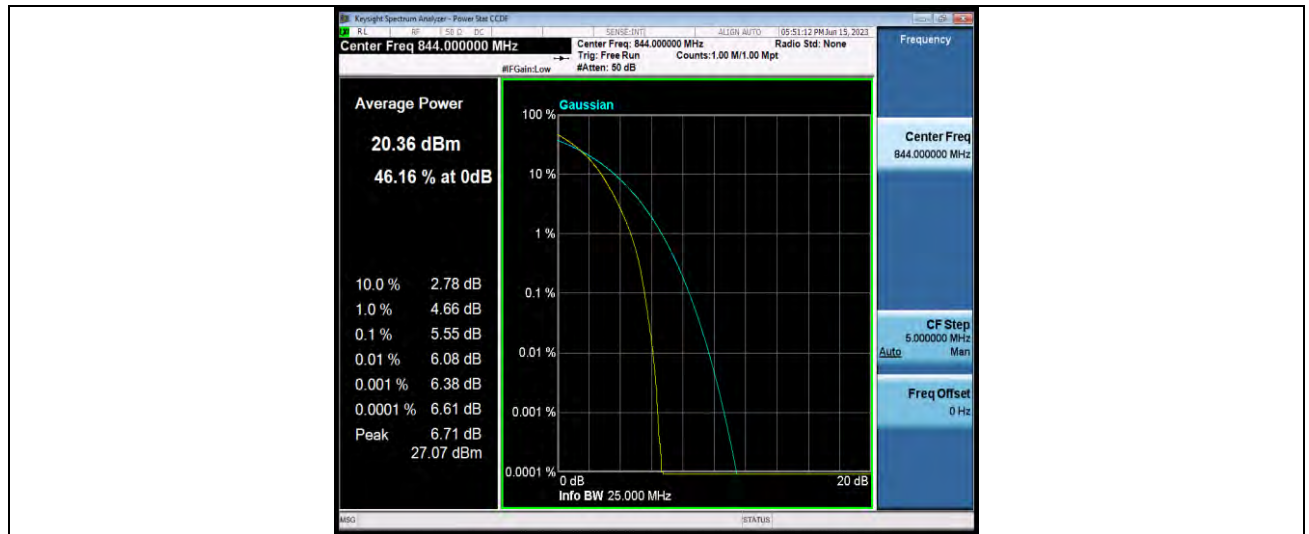


Band5-10MHz-16QAM-20600-50RB#0



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Test Report No.: W7L-P23060003RF02





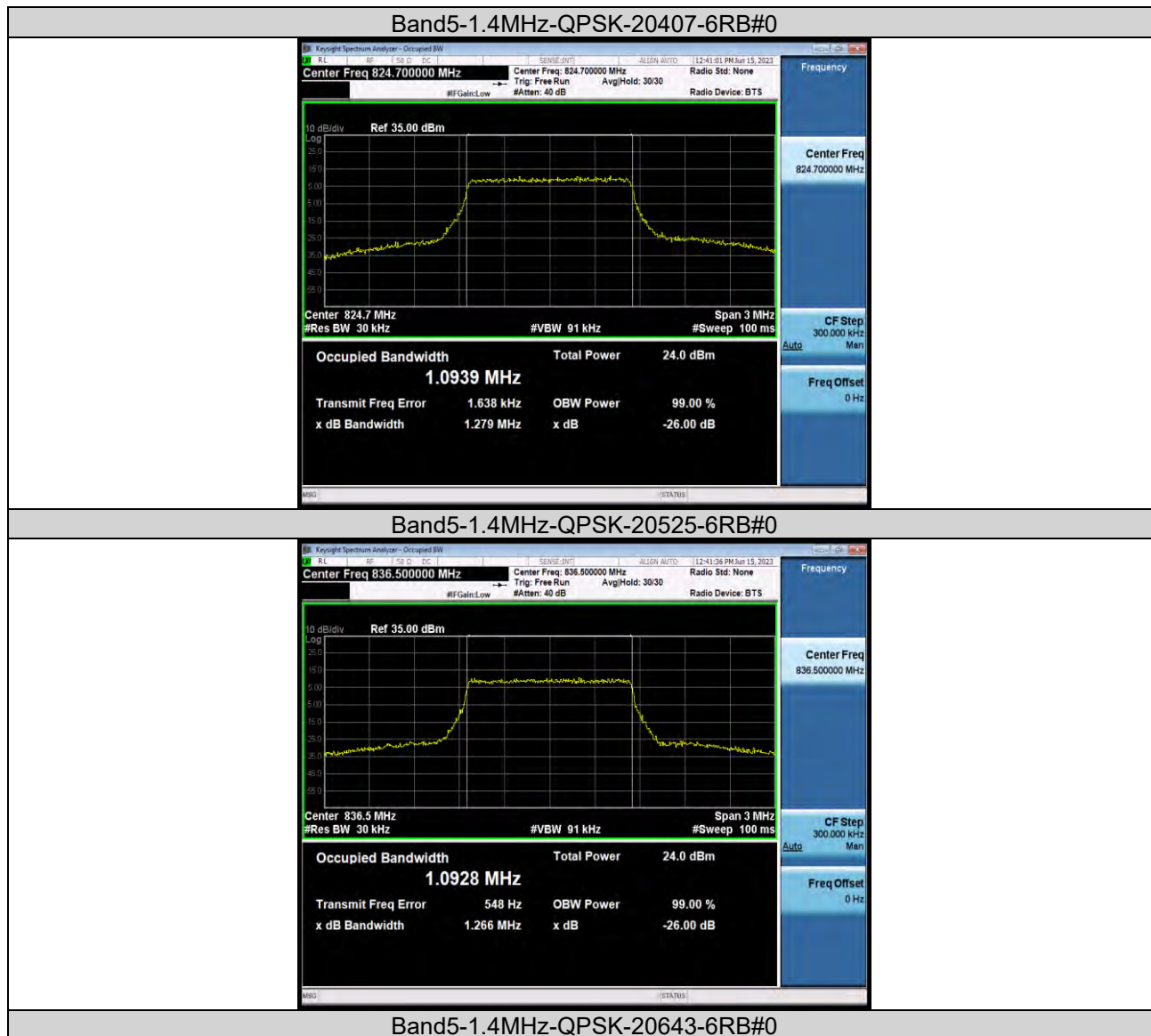
Test Report No.: W7L-P23060003RF02

## 26DB BANDWIDTH AND OCCUPIED BANDWIDTH

### Test Result

| Band  | Bandwidth | Modulation | Channel | RB Configuration | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Verdict |
|-------|-----------|------------|---------|------------------|--------------------------|----------------------|---------|
| Band5 | 1.4MHz    | QPSK       | 20407   | 6RB#0            | 1.0939                   | 1.279                | PASS    |
| Band5 | 1.4MHz    | QPSK       | 20525   | 6RB#0            | 1.0928                   | 1.266                | PASS    |
| Band5 | 1.4MHz    | QPSK       | 20643   | 6RB#0            | 1.0936                   | 1.244                | PASS    |
| Band5 | 1.4MHz    | 16QAM      | 20407   | 6RB#0            | 1.0915                   | 1.262                | PASS    |
| Band5 | 1.4MHz    | 16QAM      | 20525   | 6RB#0            | 1.0899                   | 1.263                | PASS    |
| Band5 | 1.4MHz    | 16QAM      | 20643   | 6RB#0            | 1.0914                   | 1.240                | PASS    |
| Band5 | 3MHz      | QPSK       | 20415   | 15RB#0           | 2.6961                   | 2.931                | PASS    |
| Band5 | 3MHz      | QPSK       | 20525   | 15RB#0           | 2.6991                   | 2.935                | PASS    |
| Band5 | 3MHz      | QPSK       | 20635   | 15RB#0           | 2.6989                   | 2.925                | PASS    |
| Band5 | 3MHz      | 16QAM      | 20415   | 15RB#0           | 2.6949                   | 2.922                | PASS    |
| Band5 | 3MHz      | 16QAM      | 20525   | 15RB#0           | 2.6945                   | 2.927                | PASS    |
| Band5 | 3MHz      | 16QAM      | 20635   | 15RB#0           | 2.7007                   | 2.936                | PASS    |
| Band5 | 5MHz      | QPSK       | 20425   | 25RB#0           | 4.4944                   | 4.895                | PASS    |
| Band5 | 5MHz      | QPSK       | 20525   | 25RB#0           | 4.5085                   | 4.879                | PASS    |
| Band5 | 5MHz      | QPSK       | 20625   | 25RB#0           | 4.5068                   | 4.849                | PASS    |
| Band5 | 5MHz      | 16QAM      | 20425   | 25RB#0           | 4.5020                   | 4.896                | PASS    |
| Band5 | 5MHz      | 16QAM      | 20525   | 25RB#0           | 4.5060                   | 4.877                | PASS    |
| Band5 | 5MHz      | 16QAM      | 20625   | 25RB#0           | 4.5049                   | 4.904                | PASS    |
| Band5 | 10MHz     | QPSK       | 20450   | 50RB#0           | 8.9683                   | 9.548                | PASS    |
| Band5 | 10MHz     | QPSK       | 20525   | 50RB#0           | 8.9842                   | 9.528                | PASS    |
| Band5 | 10MHz     | QPSK       | 20600   | 50RB#0           | 8.9339                   | 9.528                | PASS    |
| Band5 | 10MHz     | 16QAM      | 20450   | 50RB#0           | 8.9555                   | 9.546                | PASS    |
| Band5 | 10MHz     | 16QAM      | 20525   | 50RB#0           | 8.9833                   | 9.554                | PASS    |
| Band5 | 10MHz     | 16QAM      | 20600   | 50RB#0           | 8.9381                   | 9.510                | PASS    |

## Test Graphs



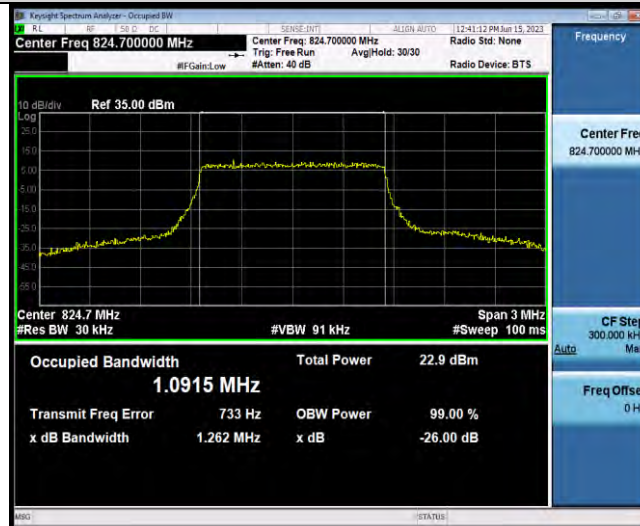


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Test Report No.: W7L-P23060003RF02



Band5-1.4MHz-16QAM-20407-6RB#0



Band5-1.4MHz-16QAM-20525-6RB#0

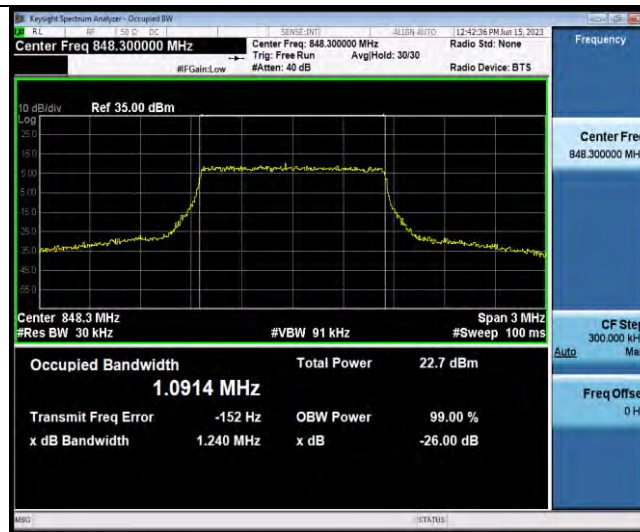


Band5-1.4MHz-16QAM-20643-6RB#0



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Test Report No.: W7L-P23060003RF02



Band5-3MHz-QPSK-20415-15RB#0



Band5-3MHz-QPSK-20525-15RB#0

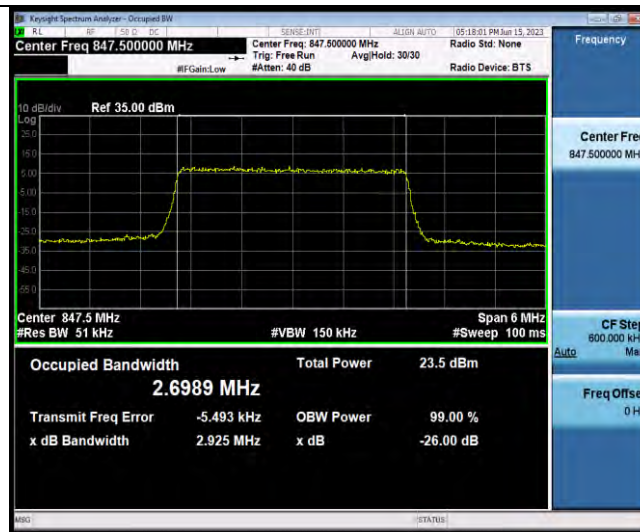


Band5-3MHz-QPSK-20635-15RB#0



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Test Report No.: W7L-P23060003RF02



Band5-3MHz-16QAM-20415-15RB#0



Band5-3MHz-16QAM-20525-15RB#0

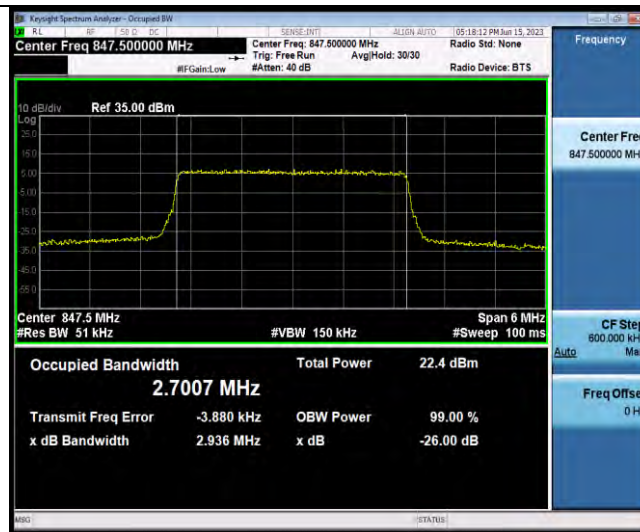


Band5-3MHz-16QAM-20635-15RB#0



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Test Report No.: W7L-P23060003RF02



Band5-5MHz-QPSK-20425-25RB#0



Band5-5MHz-QPSK-20525-25RB#0



Band5-5MHz-QPSK-20625-25RB#0



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Test Report No.: W7L-P23060003RF02



Band5-5MHz-16QAM-20425-25RB#0



Band5-5MHz-16QAM-20525-25RB#0



Band5-5MHz-16QAM-20625-25RB#0



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Test Report No.: W7L-P23060003RF02



Band5-10MHz-QPSK-20450-50RB#0



Band5-10MHz-QPSK-20525-50RB#0



Band5-10MHz-QPSK-20600-50RB#0



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Test Report No.: W7L-P23060003RF02



Band5-10MHz-16QAM-20450-50RB#0



Band5-10MHz-16QAM-20525-50RB#0



Band5-10MHz-16QAM-20600-50RB#0



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## Test Report No.: W7L-P23060003RF02

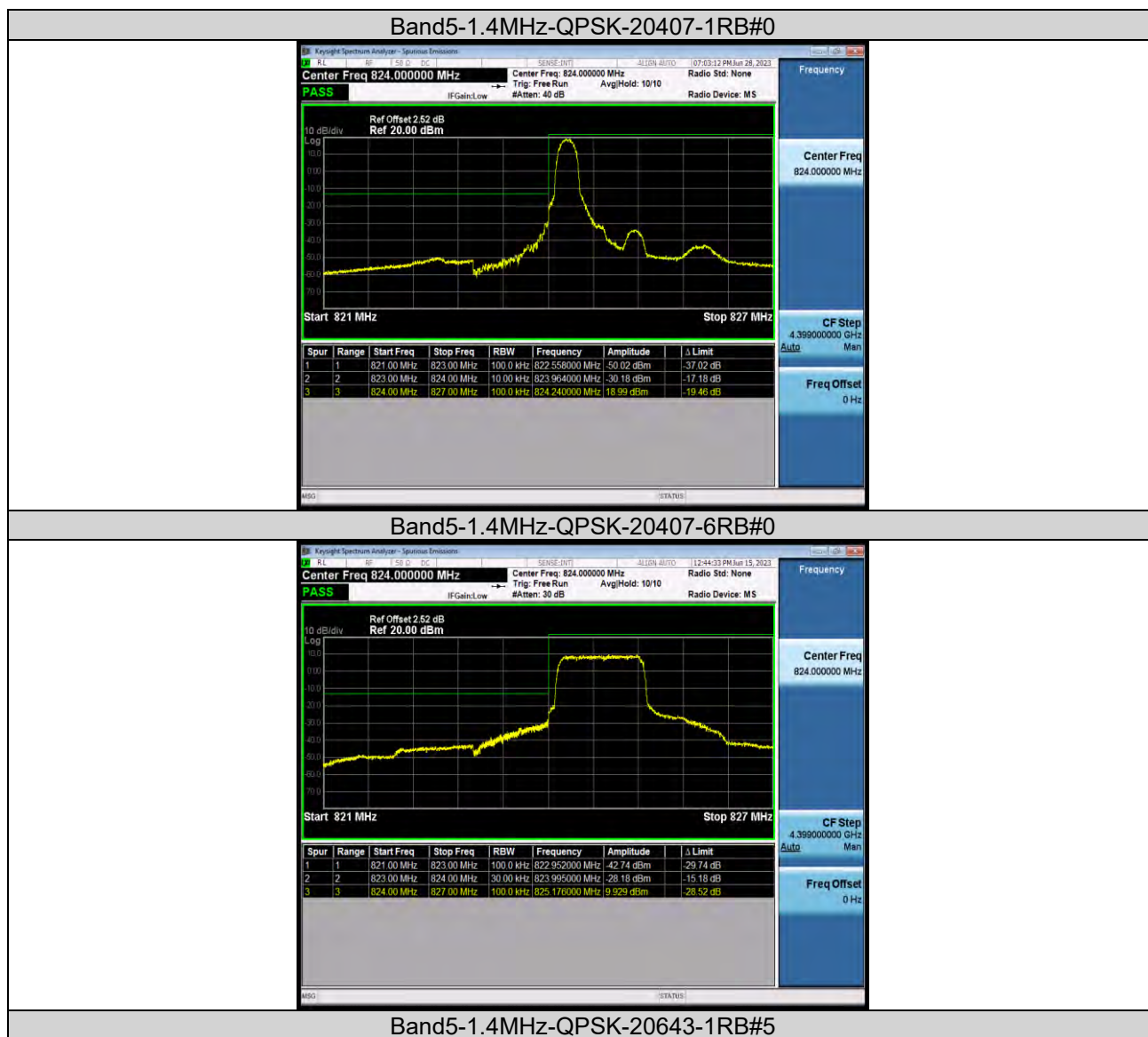


## BAND EDGE

### Test Result

| Band  | Bandwidth | Modulation | Channel | RB Configuration | Result(dBm)   | Verdict |
|-------|-----------|------------|---------|------------------|---------------|---------|
| Band5 | 1.4MHz    | QPSK       | 20407   | 1RB#0            | -50.02,-30.18 | PASS    |
| Band5 | 1.4MHz    | QPSK       | 20407   | 6RB#0            | -42.74,-28.18 | PASS    |
| Band5 | 1.4MHz    | QPSK       | 20643   | 1RB#5            | -27.49,-48.55 | PASS    |
| Band5 | 1.4MHz    | QPSK       | 20643   | 6RB#0            | -29.97,-41.11 | PASS    |
| Band5 | 1.4MHz    | 16QAM      | 20407   | 1RB#0            | -50.80,-28.52 | PASS    |
| Band5 | 1.4MHz    | 16QAM      | 20407   | 6RB#0            | -41.69,-29.79 | PASS    |
| Band5 | 1.4MHz    | 16QAM      | 20643   | 1RB#5            | -29.40,-49.67 | PASS    |
| Band5 | 1.4MHz    | 16QAM      | 20643   | 6RB#0            | -31.32,-40.81 | PASS    |
| Band5 | 3MHz      | QPSK       | 20415   | 1RB#0            | -49.08,-27.75 | PASS    |
| Band5 | 3MHz      | QPSK       | 20415   | 15RB#0           | -30.47,-22.60 | PASS    |
| Band5 | 3MHz      | QPSK       | 20635   | 1RB#14           | -24.48,-48.87 | PASS    |
| Band5 | 3MHz      | QPSK       | 20635   | 15RB#0           | -27.39,-33.95 | PASS    |
| Band5 | 3MHz      | 16QAM      | 20415   | 1RB#0            | -51.50,-31.51 | PASS    |
| Band5 | 3MHz      | 16QAM      | 20415   | 15RB#0           | -32.70,-25.62 | PASS    |
| Band5 | 3MHz      | 16QAM      | 20635   | 1RB#14           | -28.54,-50.81 | PASS    |
| Band5 | 3MHz      | 16QAM      | 20635   | 15RB#0           | -28.34,-33.91 | PASS    |
| Band5 | 5MHz      | QPSK       | 20425   | 1RB#0            | -50.36,-31.61 | PASS    |
| Band5 | 5MHz      | QPSK       | 20425   | 25RB#0           | -28.81,-24.80 | PASS    |
| Band5 | 5MHz      | QPSK       | 20625   | 1RB#24           | -26.81,-50.15 | PASS    |
| Band5 | 5MHz      | QPSK       | 20625   | 25RB#0           | -27.97,-31.54 | PASS    |
| Band5 | 5MHz      | 16QAM      | 20425   | 1RB#0            | -52.56,-32.32 | PASS    |
| Band5 | 5MHz      | 16QAM      | 20425   | 25RB#0           | -30.91,-27.22 | PASS    |
| Band5 | 5MHz      | 16QAM      | 20625   | 1RB#24           | -33.22,-52.35 | PASS    |
| Band5 | 5MHz      | 16QAM      | 20625   | 25RB#0           | -29.71,-32.58 | PASS    |
| Band5 | 10MHz     | QPSK       | 20450   | 1RB#0            | -51.62,-43.39 | PASS    |
| Band5 | 10MHz     | QPSK       | 20450   | 50RB#0           | -30.85,-23.38 | PASS    |
| Band5 | 10MHz     | QPSK       | 20600   | 1RB#49           | -44.27,-50.51 | PASS    |
| Band5 | 10MHz     | QPSK       | 20600   | 50RB#0           | -26.08,-32.47 | PASS    |
| Band5 | 10MHz     | 16QAM      | 20450   | 1RB#0            | -53.10,-44.45 | PASS    |
| Band5 | 10MHz     | 16QAM      | 20450   | 50RB#0           | -32.80,-25.55 | PASS    |
| Band5 | 10MHz     | 16QAM      | 20600   | 1RB#49           | -44.77,-52.06 | PASS    |
| Band5 | 10MHz     | 16QAM      | 20600   | 50RB#0           | -28.03,-34.25 | PASS    |

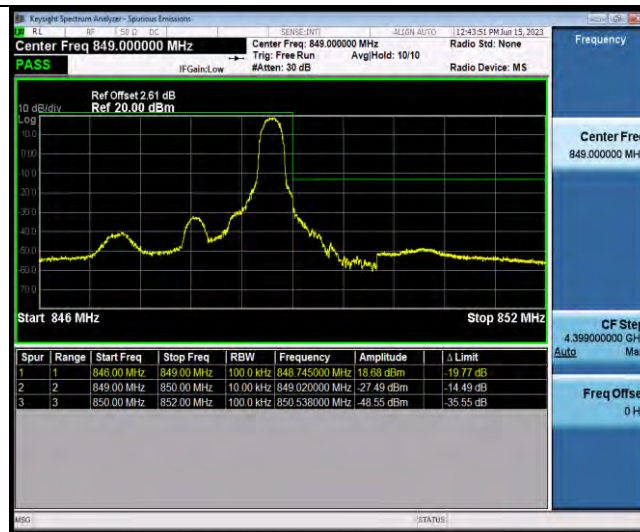
## Test Graphs



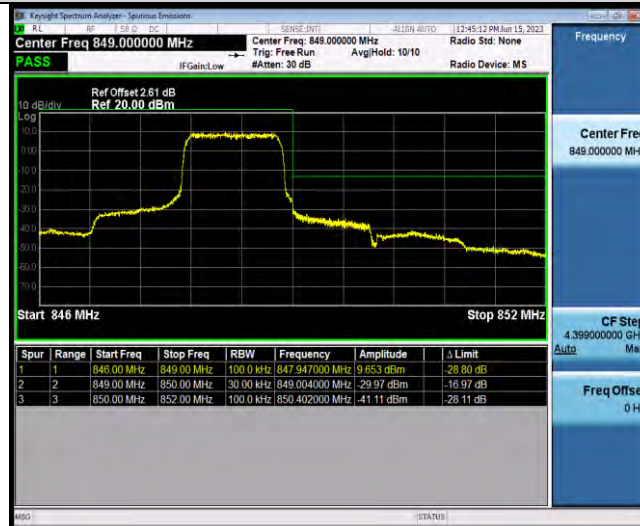


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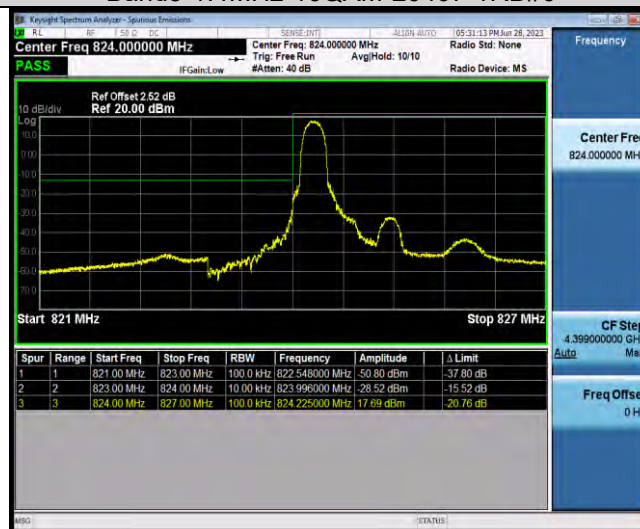
Test Report No.: W7L-P23060003RF02



Band5-1.4MHz-QPSK-20643-6RB#0



Band5-1.4MHz-16QAM-20407-1RB#0

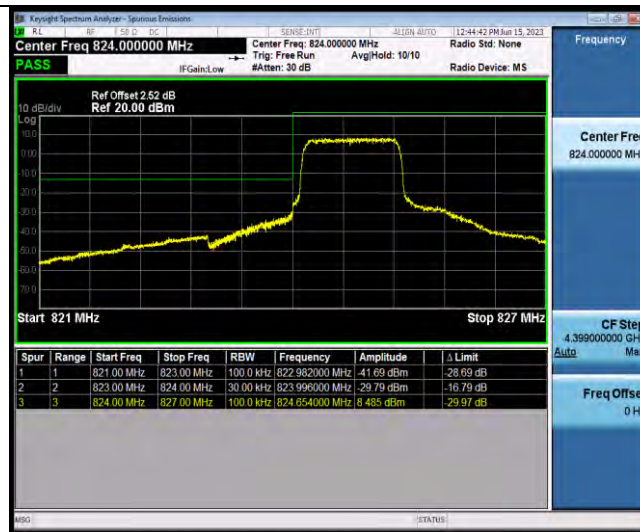


Band5-1.4MHz-16QAM-20407-6RB#0

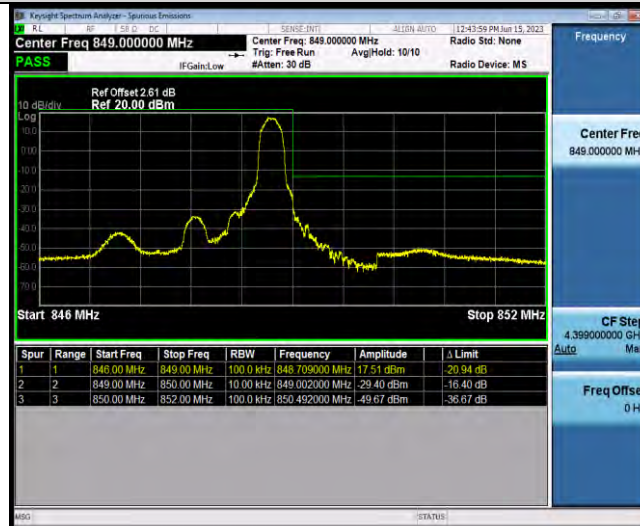


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Test Report No.: W7L-P23060003RF02



Band5-1.4MHz-16QAM-20643-1RB#5



Band5-1.4MHz-16QAM-20643-6RB#0

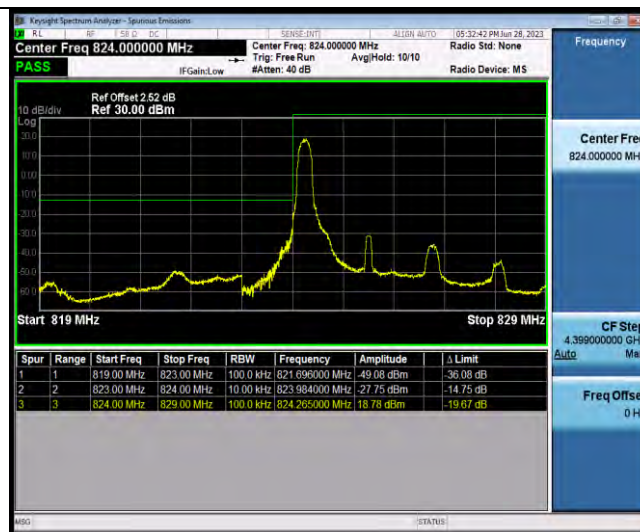


Band5-3MHz-QPSK-20415-1RB#0



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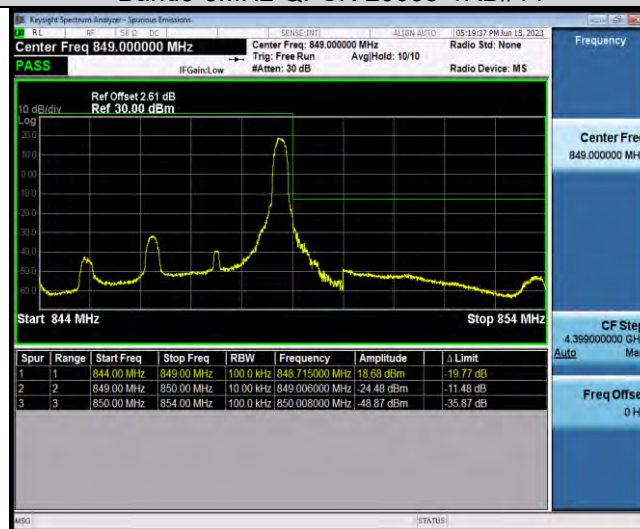
Test Report No.: W7L-P23060003RF02



Band5-3MHz-QPSK-20415-15RB#0



Band5-3MHz-QPSK-20635-1RB#14



Band5-3MHz-QPSK-20635-15RB#0

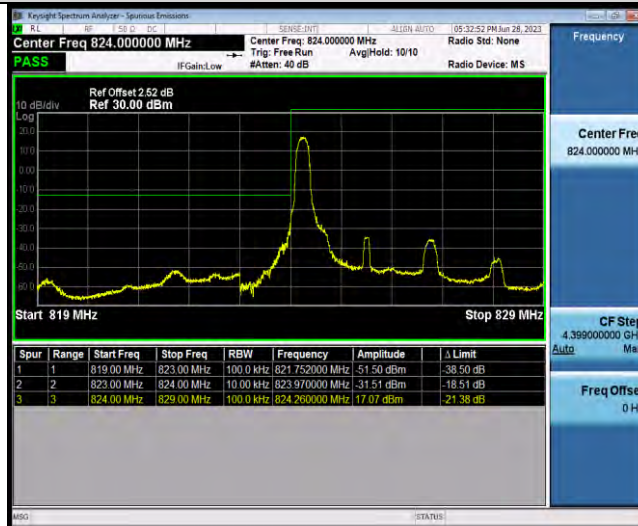


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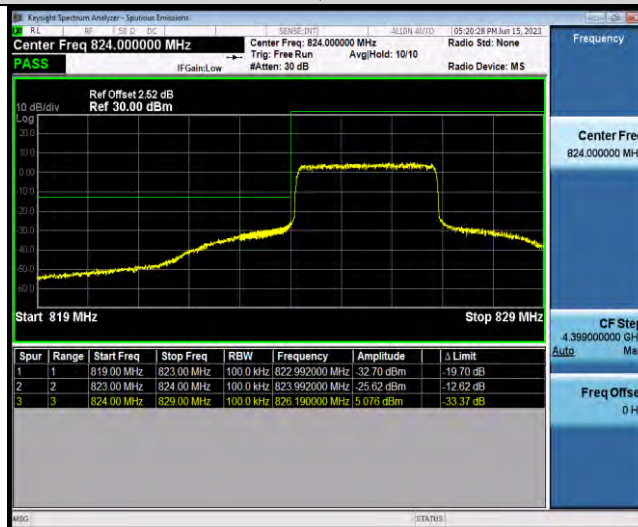
Test Report No.: W7L-P23060003RF02



Band5-3MHz-16QAM-20415-1RB#0



Band5-3MHz-16QAM-20415-15RB#0

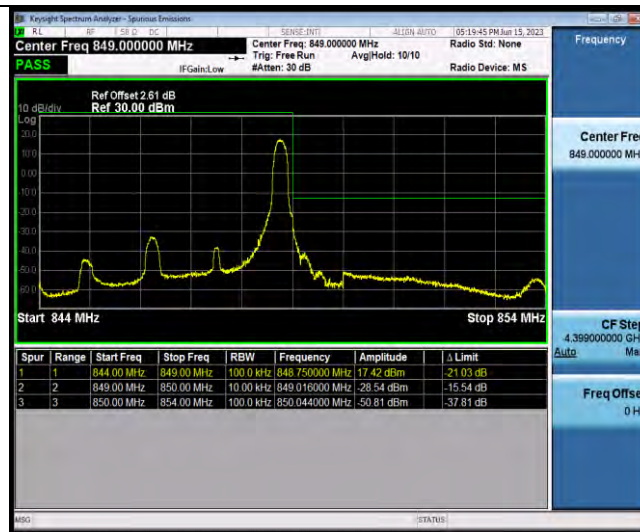


Band5-3MHz-16QAM-20635-1RB#14



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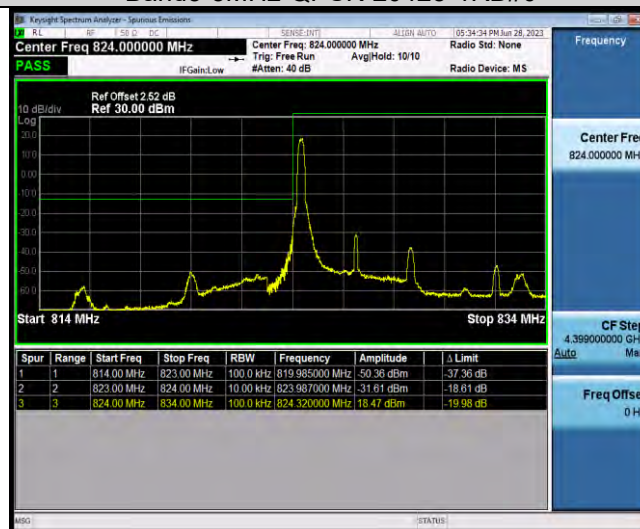
Test Report No.: W7L-P23060003RF02



Band5-3MHz-16QAM-20635-15RB#0



Band5-5MHz-QPSK-20425-1RB#0



Band5-5MHz-QPSK-20425-25RB#0

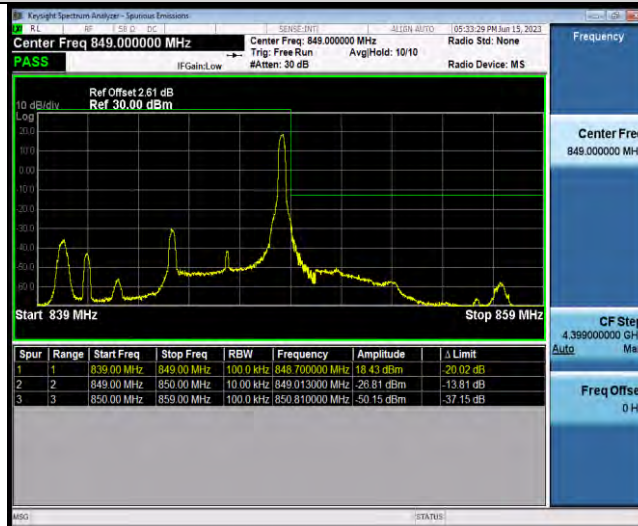


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Test Report No.: W7L-P23060003RF02



Band5-5MHz-QPSK-20625-1RB#24



Band5-5MHz-QPSK-20625-25RB#0

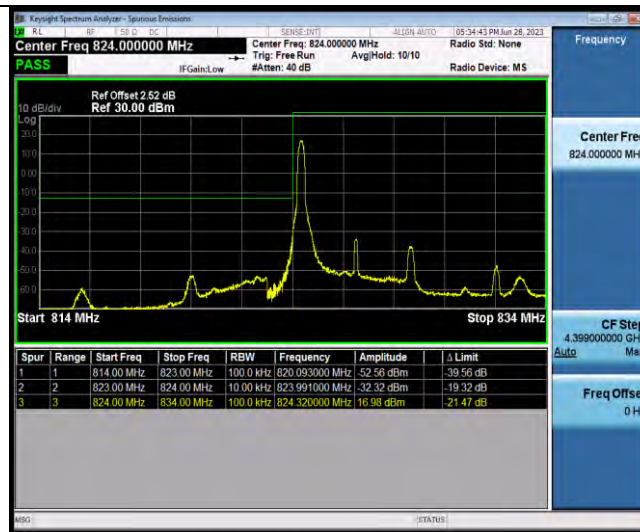


Band5-5MHz-16QAM-20425-1RB#0

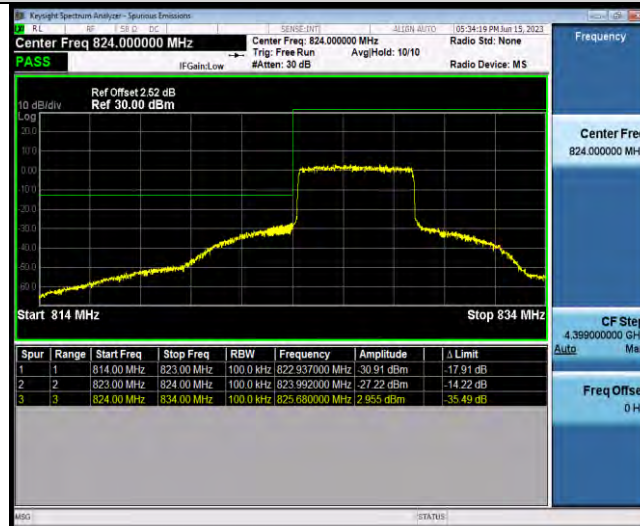


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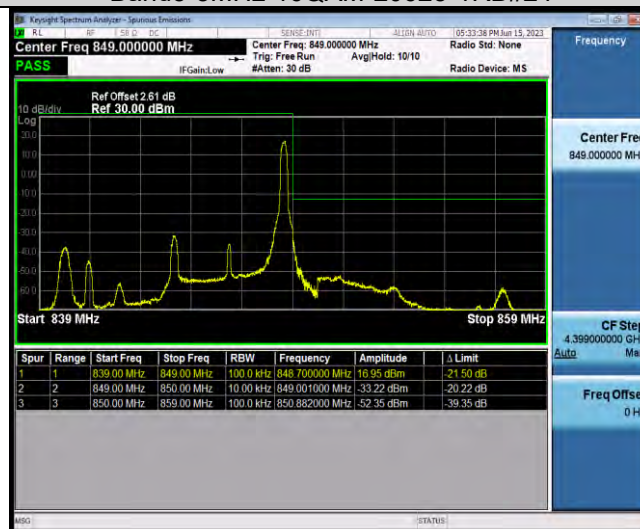
Test Report No.: W7L-P23060003RF02



Band5-5MHz-16QAM-20425-25RB#0



Band5-5MHz-16QAM-20625-1RB#24



Band5-5MHz-16QAM-20625-25RB#0

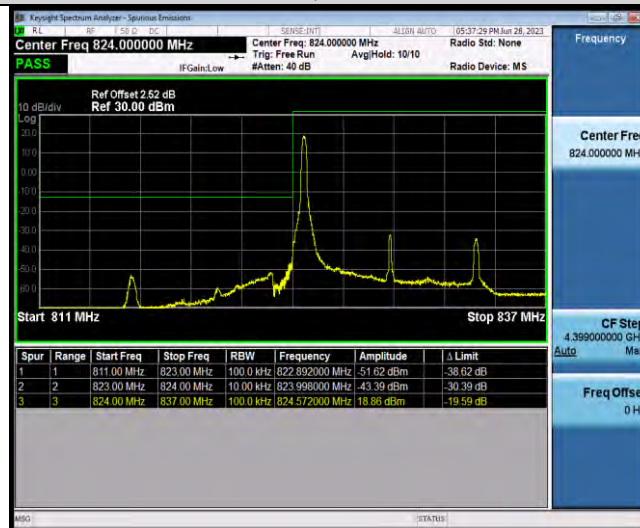


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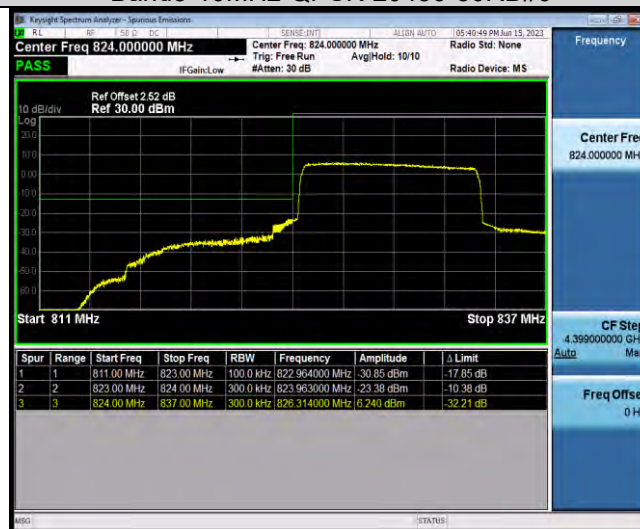
Test Report No.: W7L-P23060003RF02



Band5-10MHz-QPSK-20450-1RB#0



Band5-10MHz-QPSK-20450-50RB#0

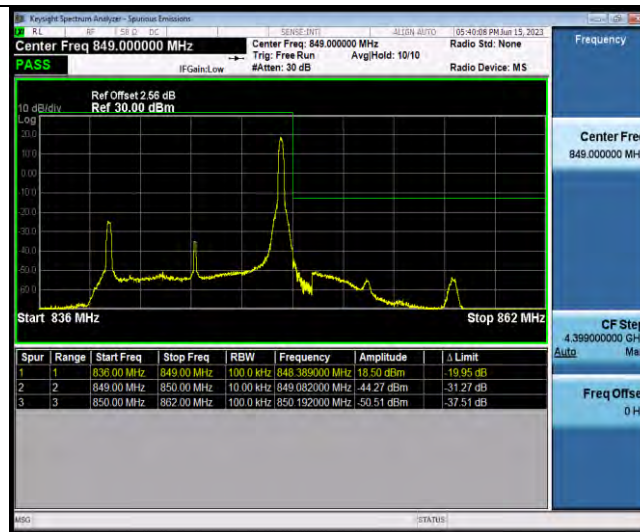


Band5-10MHz-QPSK-20600-1RB#49



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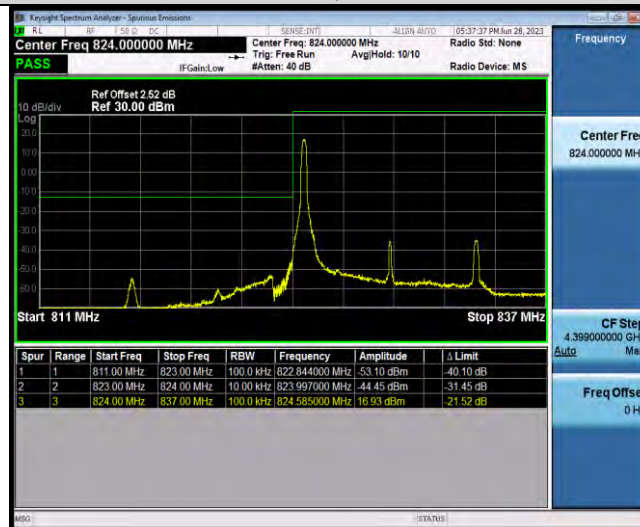
Test Report No.: W7L-P23060003RF02



Band5-10MHz-QPSK-20600-50RB#0



Band5-10MHz-16QAM-20450-1RB#0

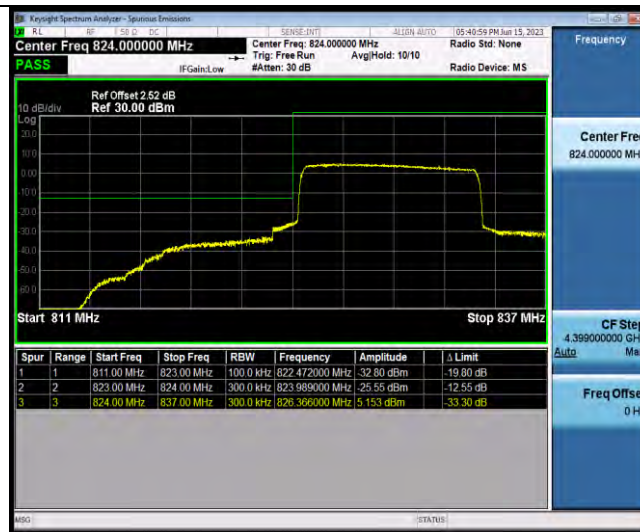


Band5-10MHz-16QAM-20450-50RB#0

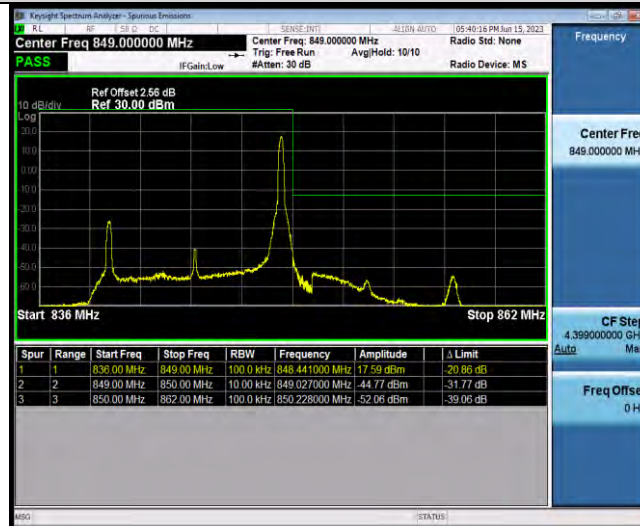


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Test Report No.: W7L-P23060003RF02



Band5-10MHz-16QAM-20600-1RB#49



Band5-10MHz-16QAM-20600-50RB#0



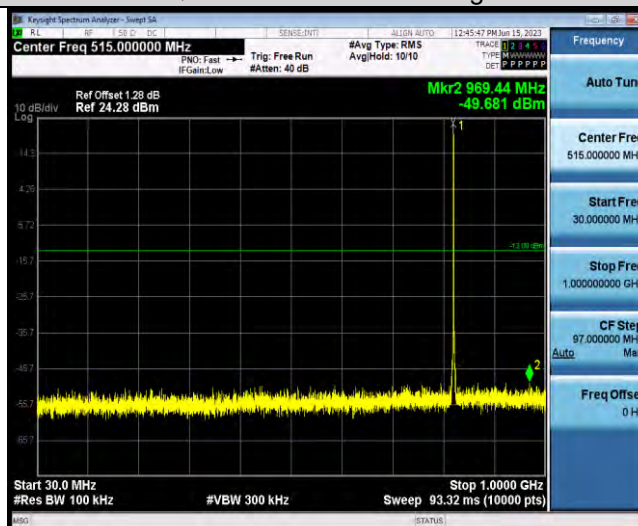
## CONDUCTED SPURIOUS EMISSION

### Test Result

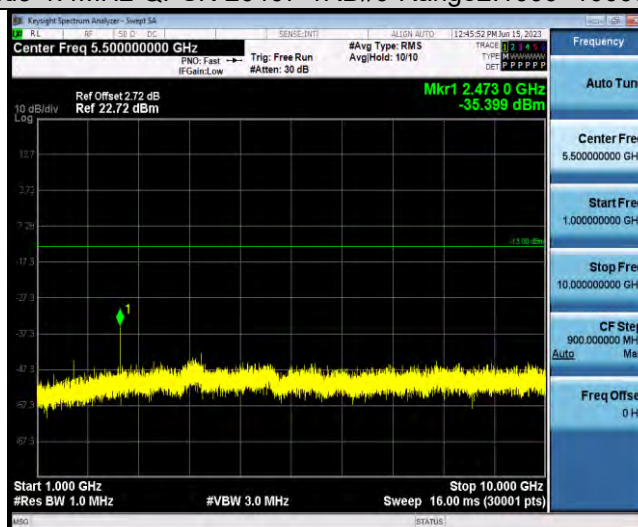
| Band  | Bandwidth | Modulation | Channel | RB Configuration | Frequency Range      | Result (dBm) | Verdict |
|-------|-----------|------------|---------|------------------|----------------------|--------------|---------|
| Band5 | 1.4MHz    | QPSK       | 20407   | 1RB#0            | Range1:30~1000MHz    | -49.68       | PASS    |
| Band5 | 1.4MHz    | QPSK       | 20407   | 1RB#0            | Range2:1000~10000MHz | -35.4        | PASS    |
| Band5 | 1.4MHz    | QPSK       | 20525   | 1RB#0            | Range1:30~1000MHz    | -50.5        | PASS    |
| Band5 | 1.4MHz    | QPSK       | 20525   | 1RB#0            | Range2:1000~10000MHz | -37.56       | PASS    |
| Band5 | 1.4MHz    | QPSK       | 20643   | 1RB#0            | Range1:30~1000MHz    | -50.11       | PASS    |
| Band5 | 1.4MHz    | QPSK       | 20643   | 1RB#0            | Range2:1000~10000MHz | -35.92       | PASS    |
| Band5 | 3MHz      | QPSK       | 20415   | 1RB#0            | Range1:30~1000MHz    | -49.96       | PASS    |
| Band5 | 3MHz      | QPSK       | 20415   | 1RB#0            | Range2:1000~10000MHz | -34.96       | PASS    |
| Band5 | 3MHz      | QPSK       | 20525   | 1RB#0            | Range1:30~1000MHz    | -49.79       | PASS    |
| Band5 | 3MHz      | QPSK       | 20525   | 1RB#0            | Range2:1000~10000MHz | -31.61       | PASS    |
| Band5 | 3MHz      | QPSK       | 20635   | 1RB#0            | Range1:30~1000MHz    | -49.45       | PASS    |
| Band5 | 3MHz      | QPSK       | 20635   | 1RB#0            | Range2:1000~10000MHz | -40          | PASS    |
| Band5 | 5MHz      | QPSK       | 20425   | 1RB#0            | Range1:30~1000MHz    | -50.04       | PASS    |
| Band5 | 5MHz      | QPSK       | 20425   | 1RB#0            | Range2:1000~10000MHz | -35.68       | PASS    |
| Band5 | 5MHz      | QPSK       | 20525   | 1RB#0            | Range1:30~1000MHz    | -48.87       | PASS    |
| Band5 | 5MHz      | QPSK       | 20525   | 1RB#0            | Range2:1000~10000MHz | -32.09       | PASS    |
| Band5 | 5MHz      | QPSK       | 20625   | 1RB#0            | Range1:30~1000MHz    | -50          | PASS    |
| Band5 | 5MHz      | QPSK       | 20625   | 1RB#0            | Range2:1000~10000MHz | -36.15       | PASS    |
| Band5 | 10MHz     | QPSK       | 20450   | 1RB#0            | Range1:30~1000MHz    | -49.88       | PASS    |
| Band5 | 10MHz     | QPSK       | 20450   | 1RB#0            | Range2:1000~10000MHz | -38.07       | PASS    |
| Band5 | 10MHz     | QPSK       | 20525   | 1RB#0            | Range1:30~1000MHz    | -49          | PASS    |
| Band5 | 10MHz     | QPSK       | 20525   | 1RB#0            | Range2:1000~10000MHz | -38.03       | PASS    |
| Band5 | 10MHz     | QPSK       | 20600   | 1RB#0            | Range1:30~1000MHz    | -50.49       | PASS    |
| Band5 | 10MHz     | QPSK       | 20600   | 1RB#0            | Range2:1000~10000MHz | -36.69       | PASS    |

## Test Graphs

Band5-1.4MHz-QPSK-20407-1RB#0-Range1:30~1000MHz



Band5-1.4MHz-QPSK-20407-1RB#0-Range2:1000~10000MHz

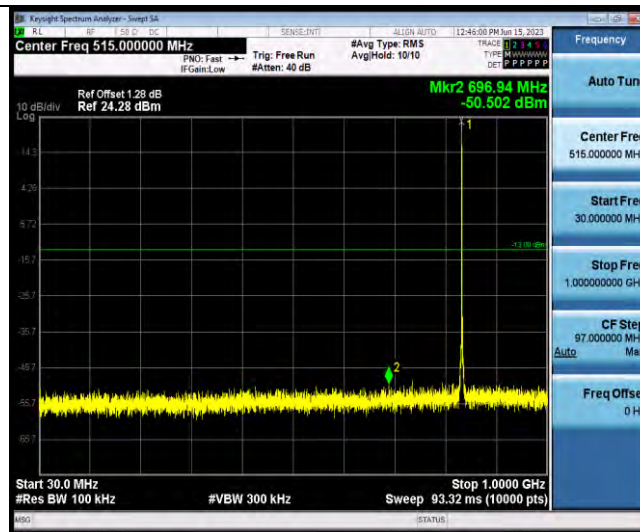


Band5-1.4MHz-QPSK-20525-1RB#0-Range1:30~1000MHz

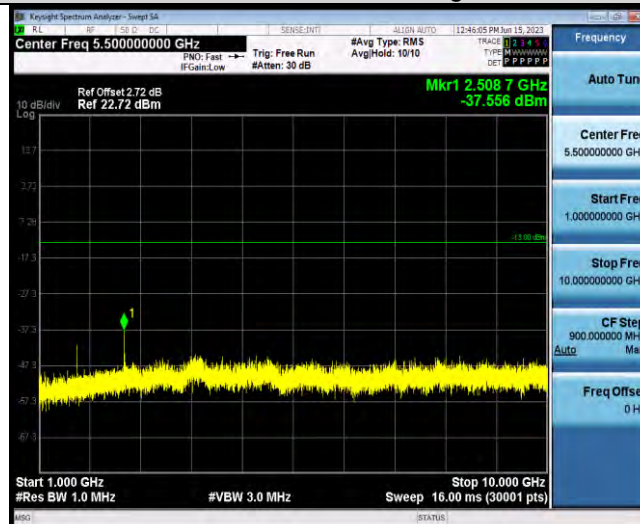


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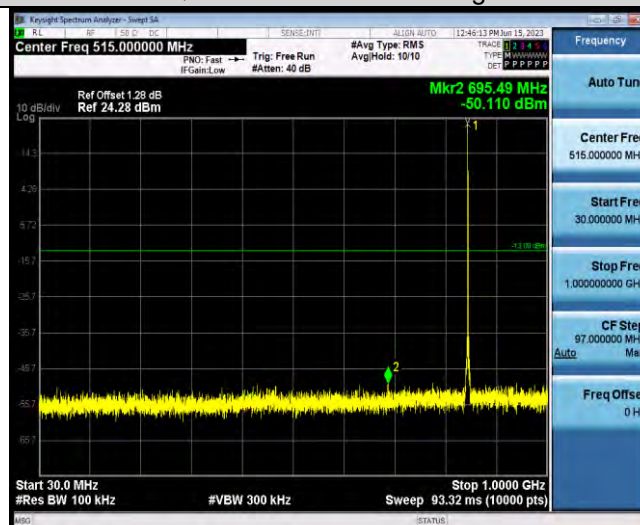
Test Report No.: W7L-P23060003RF02



Band5-1.4MHz-QPSK-20525-1RB#0-Range2:1000~10000MHz



Band5-1.4MHz-QPSK-20643-1RB#0-Range1:30~1000MHz

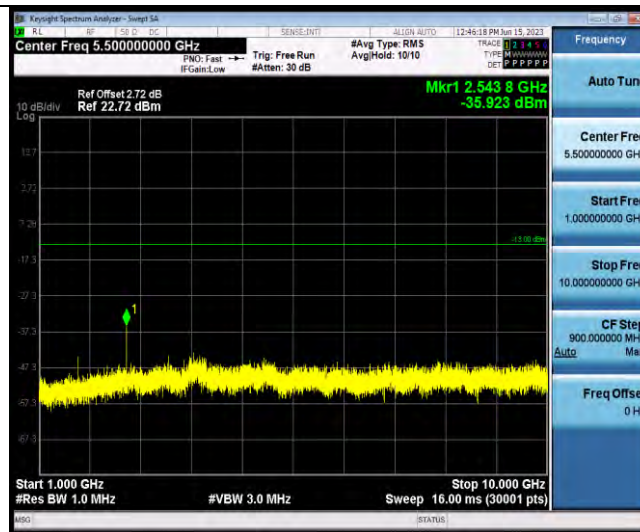


Band5-1.4MHz-QPSK-20643-1RB#0-Range2:1000~10000MHz

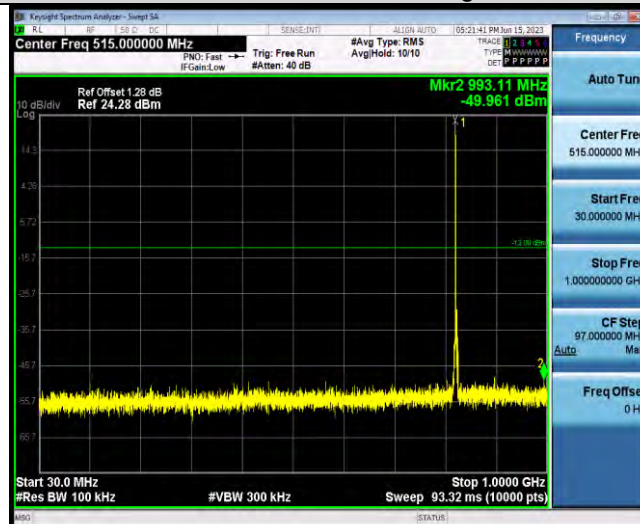


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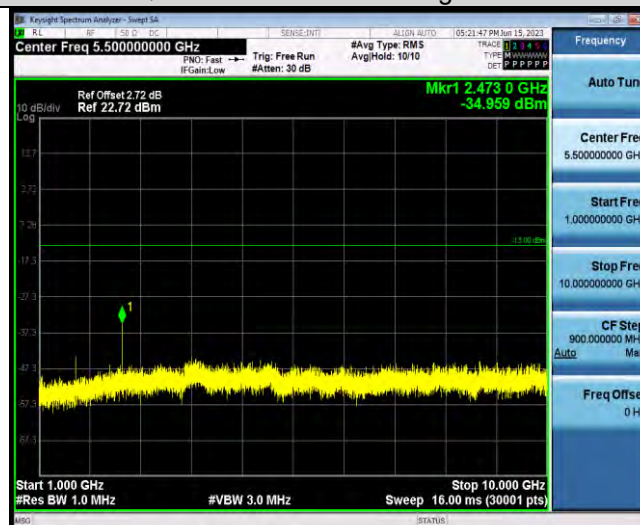
Test Report No.: W7L-P23060003RF02



Band5-3MHz-QPSK-20415-1RB#0-Range1:30~1000MHz



Band5-3MHz-QPSK-20415-1RB#0-Range2:1000~10000MHz

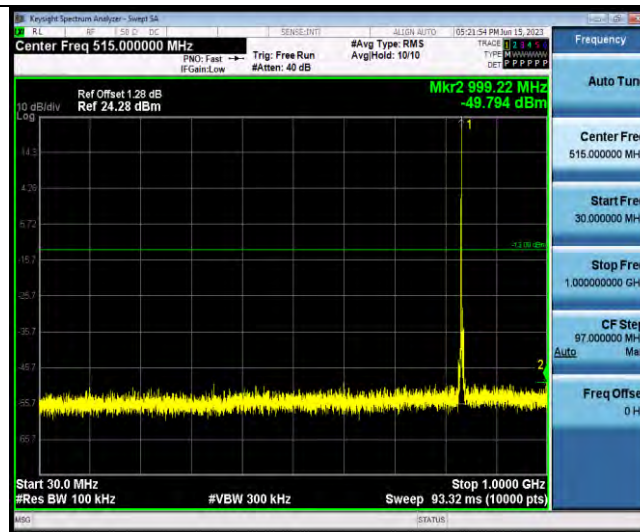


Band5-3MHz-QPSK-20525-1RB#0-Range1:30~1000MHz

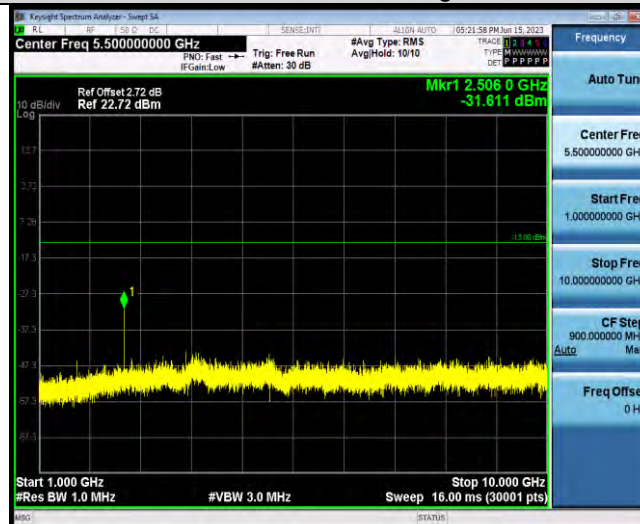


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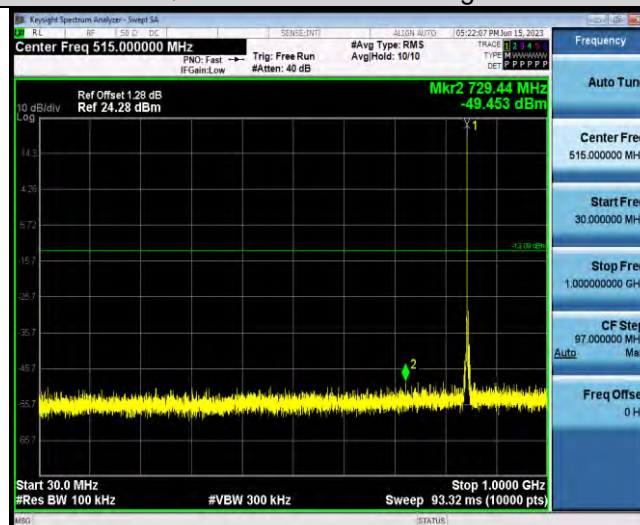
Test Report No.: W7L-P23060003RF02



Band5-3MHz-QPSK-20525-1RB#0-Range2:1000~10000MHz



Band5-3MHz-QPSK-20635-1RB#0-Range1:30~1000MHz

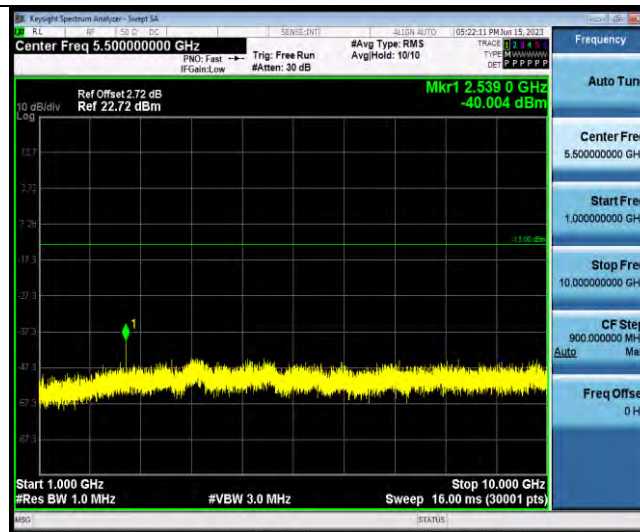


Band5-3MHz-QPSK-20635-1RB#0-Range2:1000~10000MHz

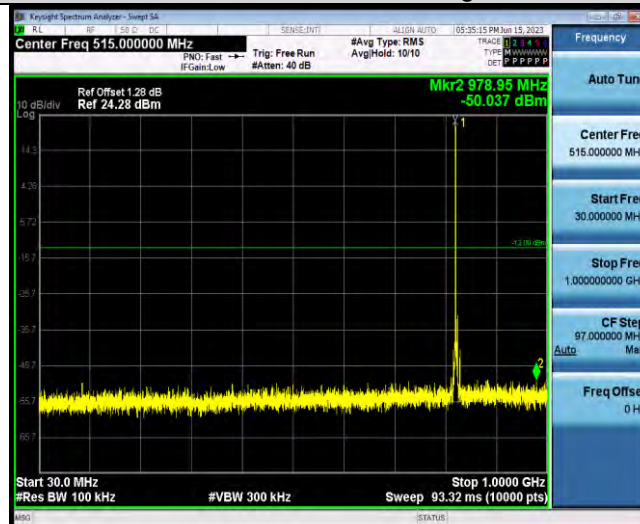


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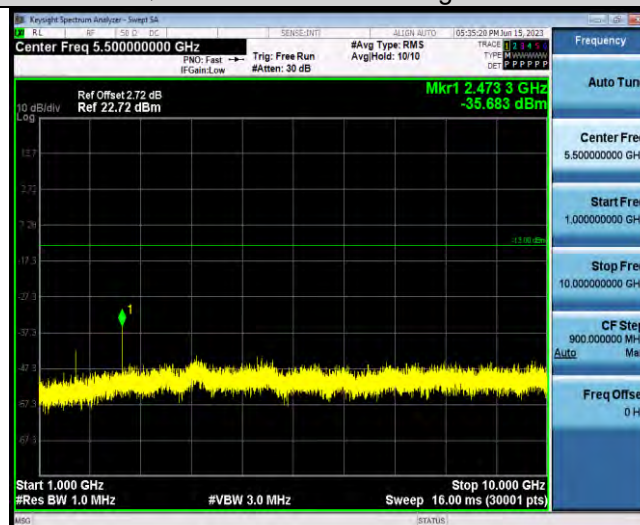
Test Report No.: W7L-P23060003RF02



Band5-5MHz-QPSK-20425-1RB#0-Range1:30~1000MHz



Band5-5MHz-QPSK-20425-1RB#0-Range2:1000~10000MHz



Band5-5MHz-QPSK-20525-1RB#0-Range1:30~1000MHz