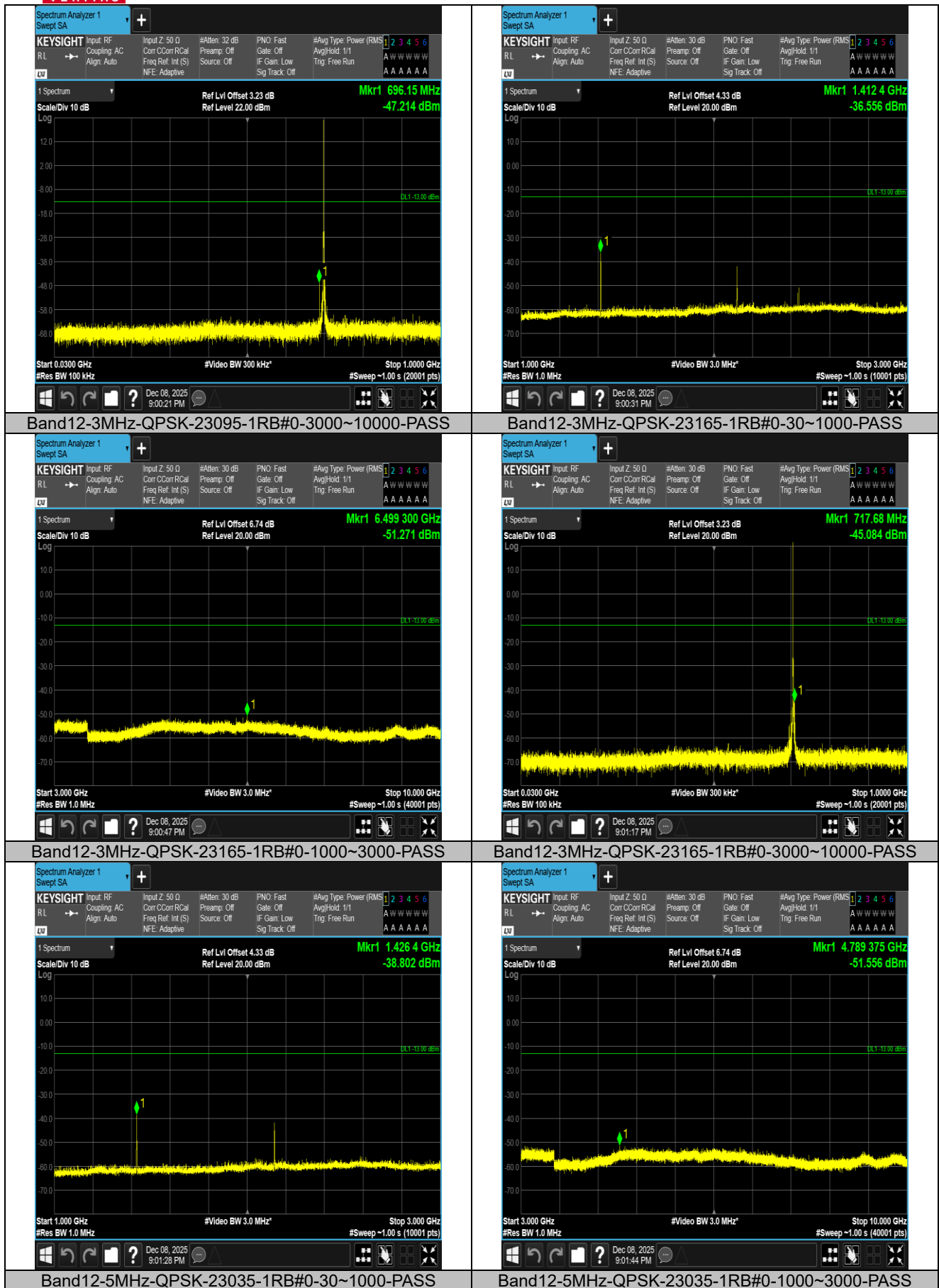




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Test Report No.: PSU-QBJ2512030110RF03



Huarui 7layers High Technology  
(Suzhou) Co., Ltd.

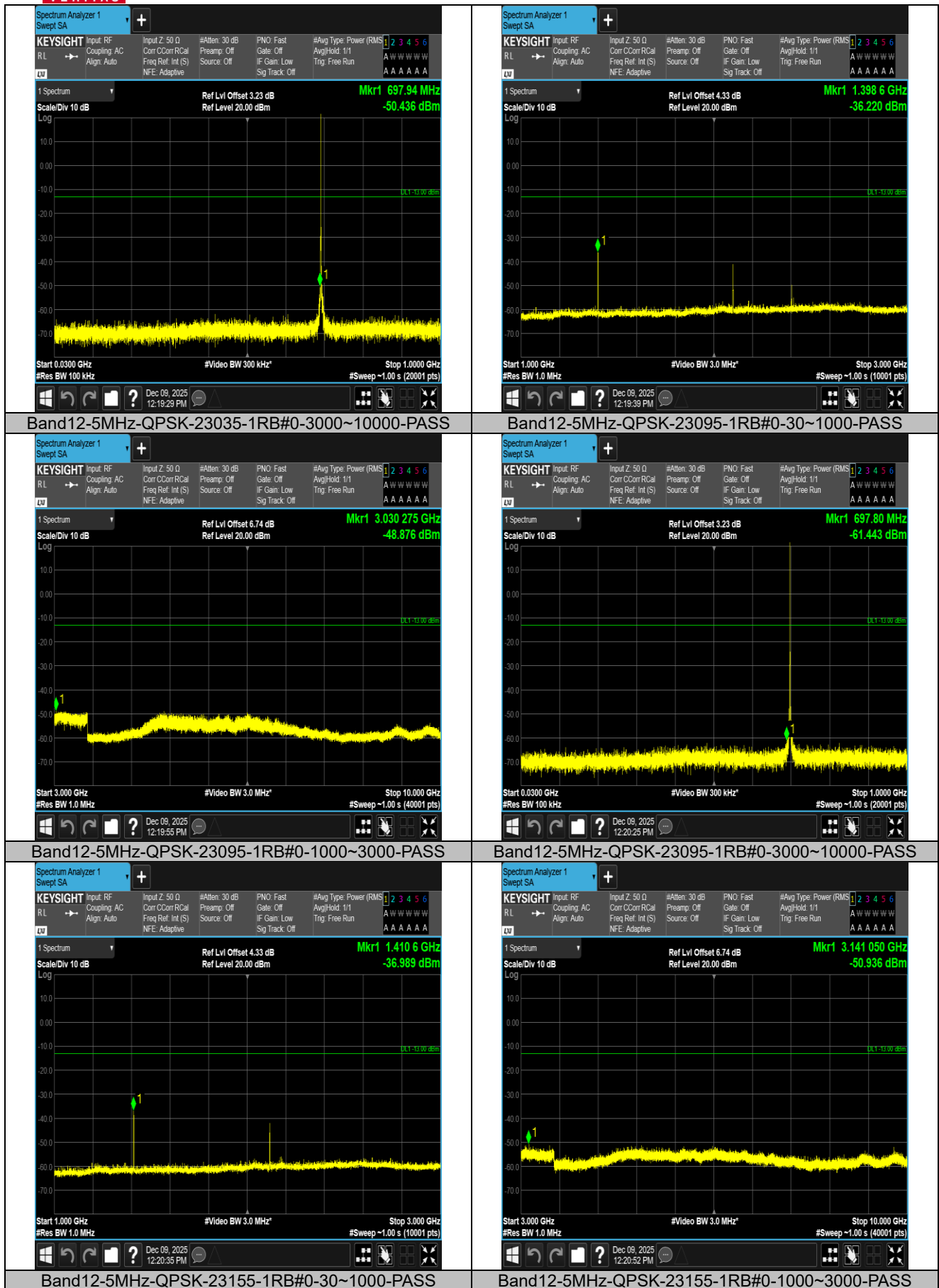
Tower N, Innovation Center, 88 Zuyi Road, High-tech  
District, Suzhou City, Anhui Province, China

Tel: +86 (0557) 368 1008



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VERITAS

Test Report No.: PSU-QBJ2512030110RF03



Huarui 7layers High Technology  
(Suzhou) Co., Ltd.

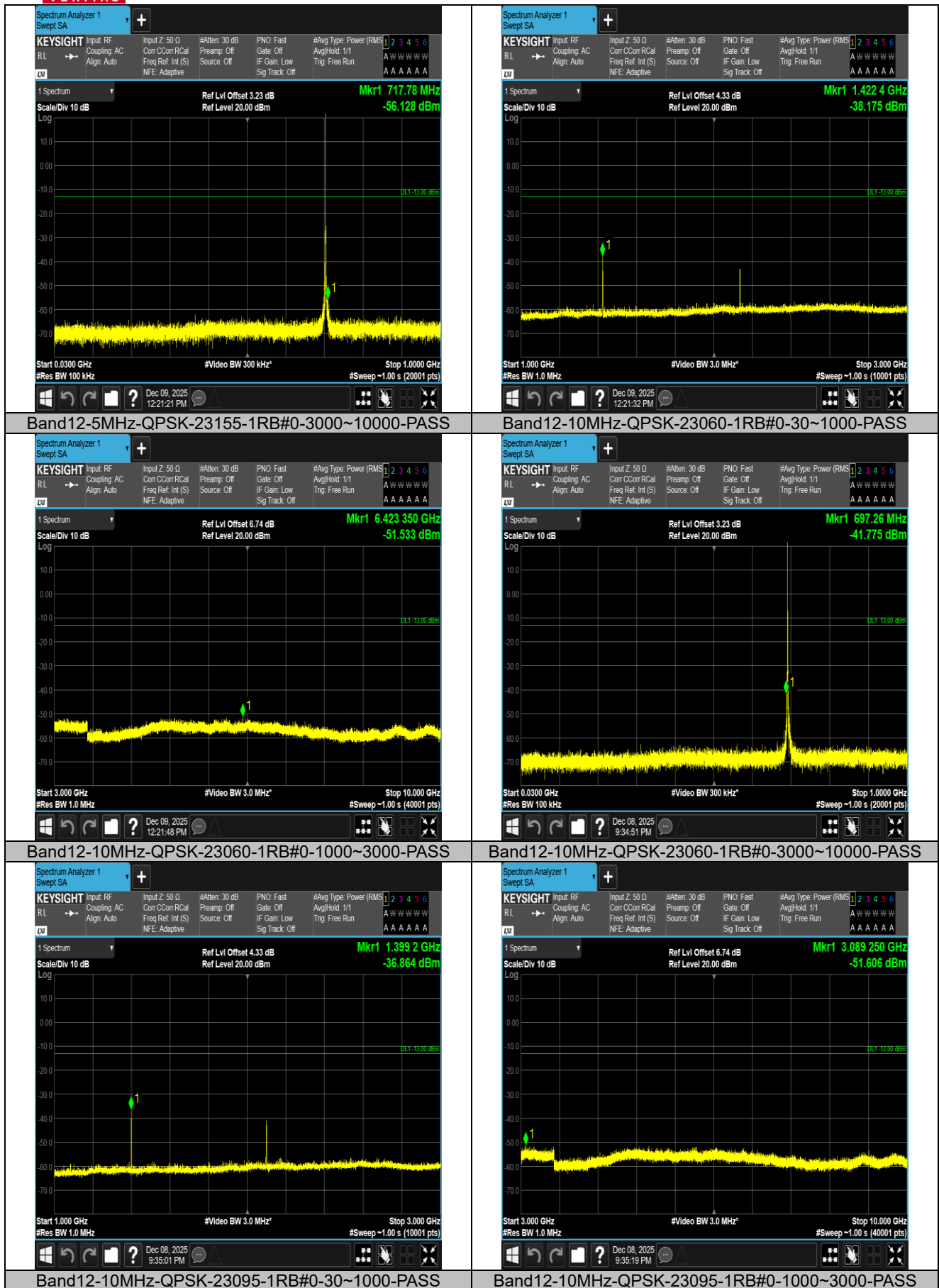
Tower N, Innovation Center, 88 Zuyi Road, High-tech  
District, Suzhou City, Anhui Province, China

Tel: +86 (0557) 368 1008



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Test Report No.: PSU-QBJ2512030110RF03



Huarui 7layers High Technology  
(Suzhou) Co., Ltd.

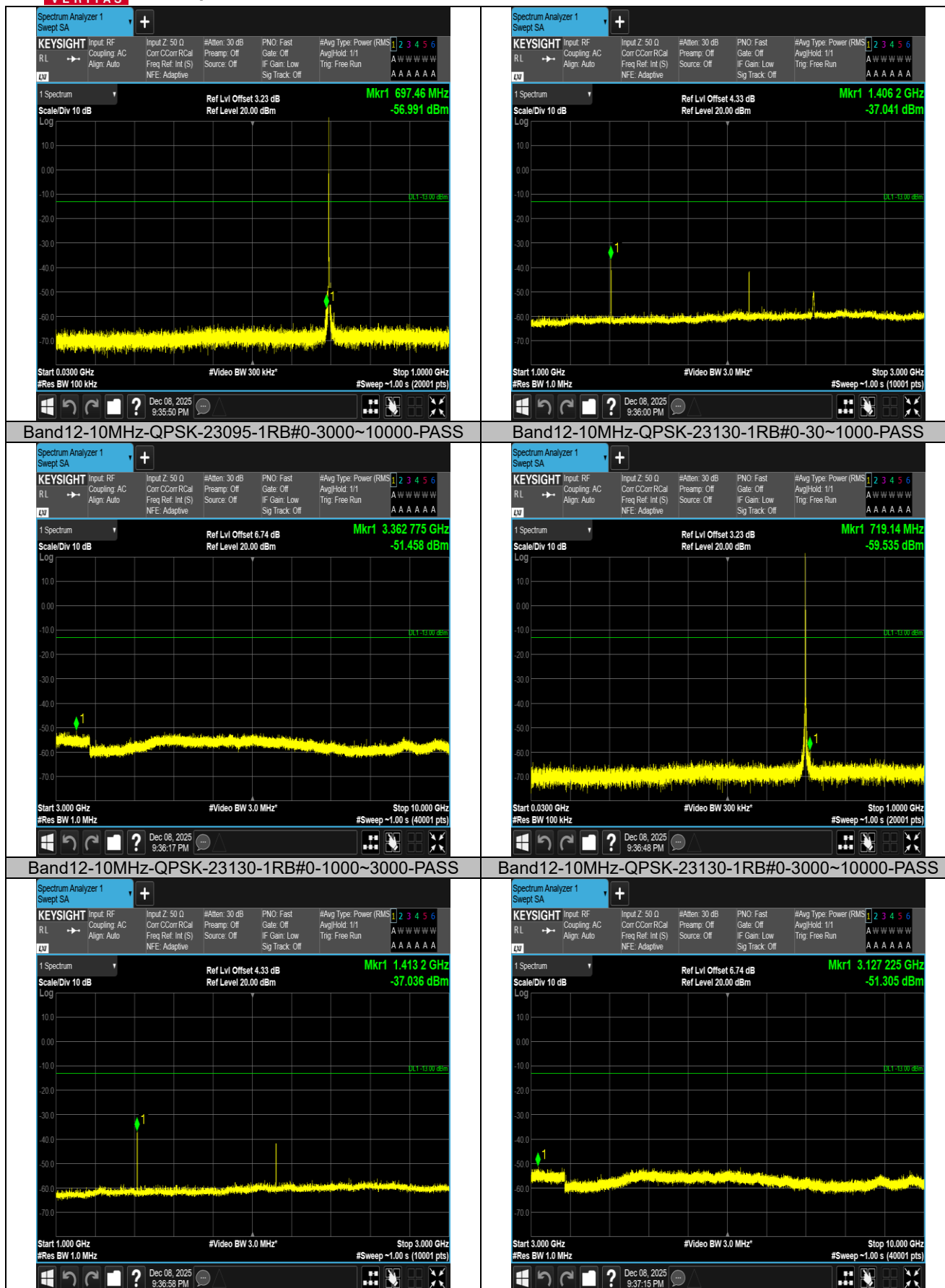
Tower N, Innovation Center, 88 Zuyi Road, High-tech  
District, Suzhou City, Anhui Province, China

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Test Report No.: PSU-QBJ2512030110RF03



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## Frequency Stability

### Test Result

| Voltage |           |            |         |              |               |                  |                |                 |             |         |
|---------|-----------|------------|---------|--------------|---------------|------------------|----------------|-----------------|-------------|---------|
| Band    | Bandwidth | Modulation | Channel | RB Configure | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| Band12  | 10MHz     | QPSK       | 23060   | 50RB#0       | VN            | NT               |                | 1.147727        | ±2.5        | PASS    |
| Band12  | 10MHz     | QPSK       | 23060   | 50RB#0       | VL            | NT               | 794.0          | 1.127841        | ±2.5        | PASS    |
| Band12  | 10MHz     | QPSK       | 23060   | 50RB#0       | VH            | NT               | 493.0          | 0.700284        | ±2.5        | PASS    |
| Band12  | 10MHz     | QPSK       | 23130   | 50RB#0       | VN            | NT               | -642.0         | -0.902954       | ±2.5        | PASS    |
| Band12  | 10MHz     | QPSK       | 23130   | 50RB#0       | VL            | NT               | -276.0         | -0.388186       | ±2.5        | PASS    |
| Band12  | 10MHz     | QPSK       | 23130   | 50RB#0       | VH            | NT               | -636.0         | -0.894515       | ±2.5        | PASS    |

| Temperature |           |            |         |              |               |                  |                |                 |             |         |
|-------------|-----------|------------|---------|--------------|---------------|------------------|----------------|-----------------|-------------|---------|
| Band        | Bandwidth | Modulation | Channel | RB Configure | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| Band12      | 10MHz     | QPSK       | 23060   | 50RB#0       | NV            | -30              | 557.00         | 0.791193        | ±2.5        | PASS    |
| Band12      | 10MHz     | QPSK       | 23060   | 50RB#0       | NV            | -20              | 799.00         | 1.134943        | ±2.5        | PASS    |
| Band12      | 10MHz     | QPSK       | 23060   | 50RB#0       | NV            | -10              | 978.00         | 1.389205        | ±2.5        | PASS    |
| Band12      | 10MHz     | QPSK       | 23060   | 50RB#0       | NV            | 0                | 725.00         | 1.029830        | ±2.5        | PASS    |
| Band12      | 10MHz     | QPSK       | 23060   | 50RB#0       | NV            | 10               | 975.00         | 1.384943        | ±2.5        | PASS    |
| Band12      | 10MHz     | QPSK       | 23060   | 50RB#0       | NV            | 20               | 245.00         | 0.348011        | ±2.5        | PASS    |
| Band12      | 10MHz     | QPSK       | 23060   | 50RB#0       | NV            | 30               | 329.00         | 0.467330        | ±2.5        | PASS    |
| Band12      | 10MHz     | QPSK       | 23060   | 50RB#0       | NV            | 40               | 906.00         | 1.286932        | ±2.5        | PASS    |
| Band12      | 10MHz     | QPSK       | 23060   | 50RB#0       | NV            | 50               | 1051.00        | 1.492898        | ±2.5        | PASS    |
| Band12      | 10MHz     | QPSK       | 23130   | 50RB#0       | NV            | -30              | -746.00        | -1.049226       | ±2.5        | PASS    |
| Band12      | 10MHz     | QPSK       | 23130   | 50RB#0       | NV            | -20              | -760.00        | -1.068917       | ±2.5        | PASS    |
| Band12      | 10MHz     | QPSK       | 23130   | 50RB#0       | NV            | -10              | -663.00        | -0.932489       | ±2.5        | PASS    |
| Band12      | 10MHz     | QPSK       | 23130   | 50RB#0       | NV            | 0                | -130.00        | -0.182841       | ±2.5        | PASS    |
| Band12      | 10MHz     | QPSK       | 23130   | 50RB#0       | NV            | 10               | -970.00        | -1.364276       | ±2.5        | PASS    |
| Band12      | 10MHz     | QPSK       | 23130   | 50RB#0       | NV            | 20               | -851.00        | -1.196906       | ±2.5        | PASS    |
| Band12      | 10MHz     | QPSK       | 23130   | 50RB#0       | NV            | 30               | -1378.00       | -1.938115       | ±2.5        | PASS    |
| Band12      | 10MHz     | QPSK       | 23130   | 50RB#0       | NV            | 40               | -158.00        | -0.222222       | ±2.5        | PASS    |
| Band12      | 10MHz     | QPSK       | 23130   | 50RB#0       | NV            | 50               | -925.00        | -1.300985       | ±2.5        | PASS    |



## LTE BAND 13

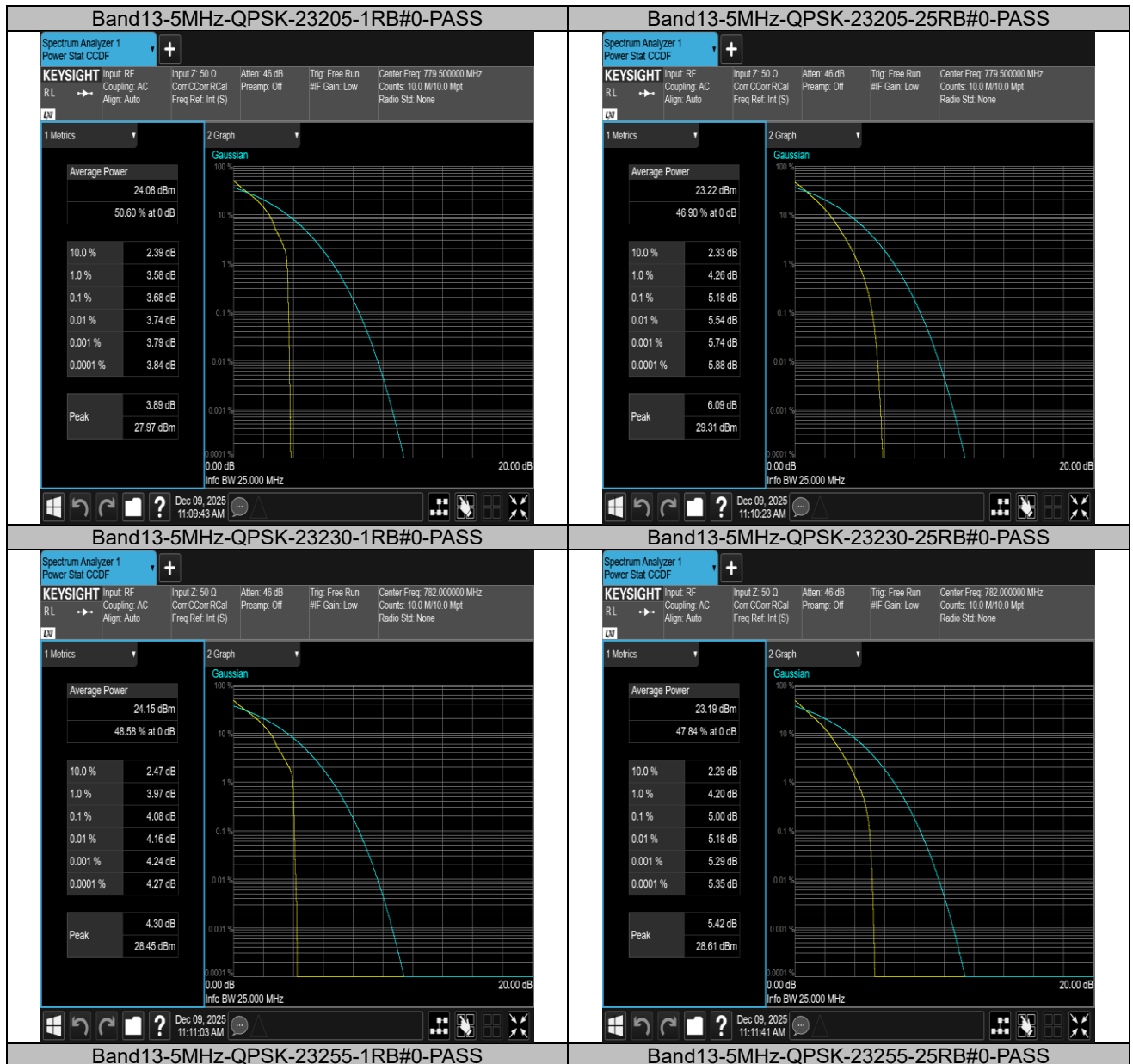
### Peak-to-Average Ratio(CCDF)

#### Test Result

| Band   | Bandwidth | Modulation | Channel | RB Configuration | Result(dB) | Limit(dB) | Verdict |
|--------|-----------|------------|---------|------------------|------------|-----------|---------|
| Band13 | 5MHz      | QPSK       | 23205   | 1RB#0            | 3.68       | 13        | PASS    |
| Band13 | 5MHz      | QPSK       | 23205   | 25RB#0           | 5.18       | 13        | PASS    |
| Band13 | 5MHz      | QPSK       | 23230   | 1RB#0            | 4.08       | 13        | PASS    |
| Band13 | 5MHz      | QPSK       | 23230   | 25RB#0           | 5.00       | 13        | PASS    |
| Band13 | 5MHz      | QPSK       | 23255   | 1RB#0            | 4.03       | 13        | PASS    |
| Band13 | 5MHz      | QPSK       | 23255   | 25RB#0           | 5.12       | 13        | PASS    |
| Band13 | 5MHz      | 64QAM      | 23205   | 1RB#0            | 5.73       | 13        | PASS    |
| Band13 | 5MHz      | 64QAM      | 23205   | 25RB#0           | 6.32       | 13        | PASS    |
| Band13 | 5MHz      | 64QAM      | 23230   | 1RB#0            | 5.95       | 13        | PASS    |
| Band13 | 5MHz      | 64QAM      | 23230   | 25RB#0           | 6.25       | 13        | PASS    |
| Band13 | 5MHz      | 64QAM      | 23255   | 1RB#0            | 5.93       | 13        | PASS    |
| Band13 | 5MHz      | 64QAM      | 23255   | 25RB#0           | 6.44       | 13        | PASS    |
| Band13 | 5MHz      | 16QAM      | 23205   | 1RB#0            | 4.67       | 13        | PASS    |
| Band13 | 5MHz      | 16QAM      | 23205   | 25RB#0           | 5.97       | 13        | PASS    |
| Band13 | 5MHz      | 16QAM      | 23230   | 1RB#0            | 5.01       | 13        | PASS    |
| Band13 | 5MHz      | 16QAM      | 23230   | 25RB#0           | 5.88       | 13        | PASS    |
| Band13 | 5MHz      | 16QAM      | 23255   | 1RB#0            | 5.01       | 13        | PASS    |
| Band13 | 5MHz      | 16QAM      | 23255   | 25RB#0           | 6.02       | 13        | PASS    |
| Band13 | 10MHz     | QPSK       | 23230   | 1RB#0            | 3.78       | 13        | PASS    |
| Band13 | 10MHz     | QPSK       | 23230   | 50RB#0           | 5.28       | 13        | PASS    |
| Band13 | 10MHz     | 64QAM      | 23230   | 1RB#0            | 5.74       | 13        | PASS    |
| Band13 | 10MHz     | 64QAM      | 23230   | 50RB#0           | 6.41       | 13        | PASS    |
| Band13 | 10MHz     | 16QAM      | 23230   | 1RB#0            | 4.74       | 13        | PASS    |
| Band13 | 10MHz     | 16QAM      | 23230   | 50RB#0           | 6.06       | 13        | PASS    |



## Test Graphs

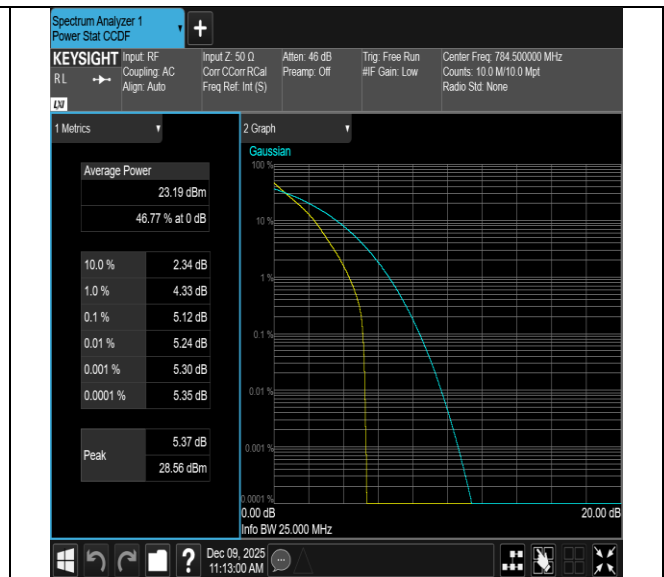




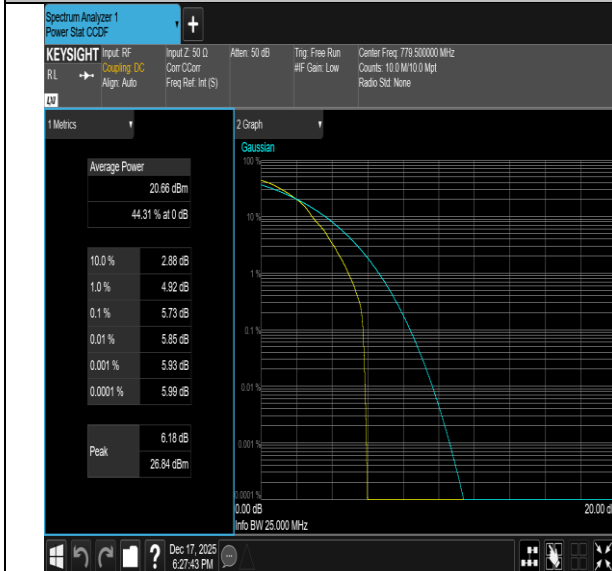
**BUREAU VERITAS** Test Report No.: PSU-QBJ2512030110RF03



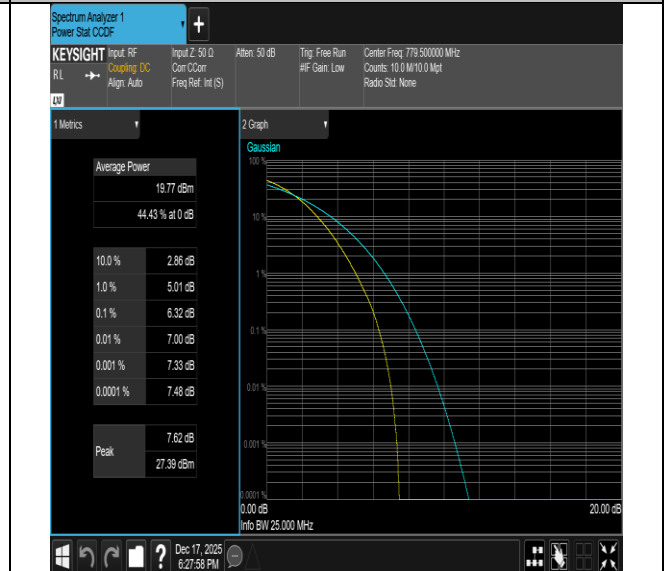
Band13-5MHz-64QAM-23205-1RB#0-PASS



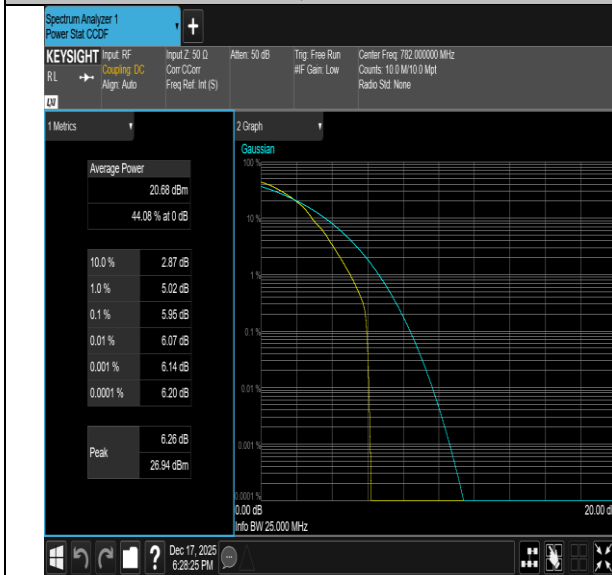
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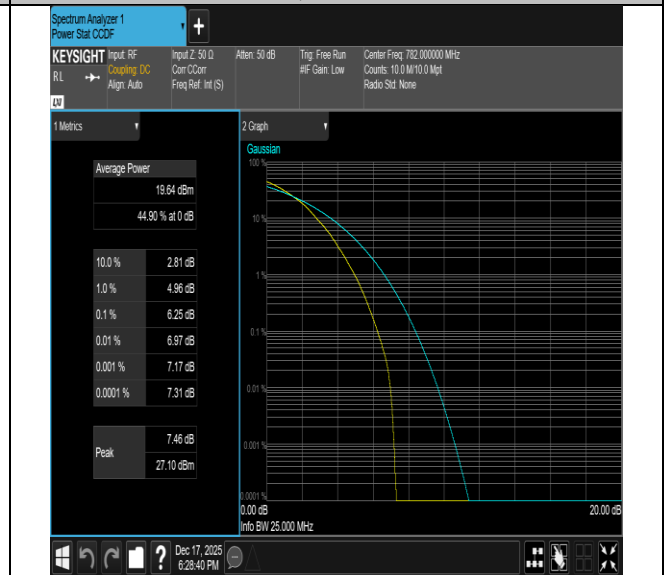
Band13-5MHz-64QAM-23230-1RB#0-PASS



Band13-5MHz-64QAM-23230-25RB#0-PASS



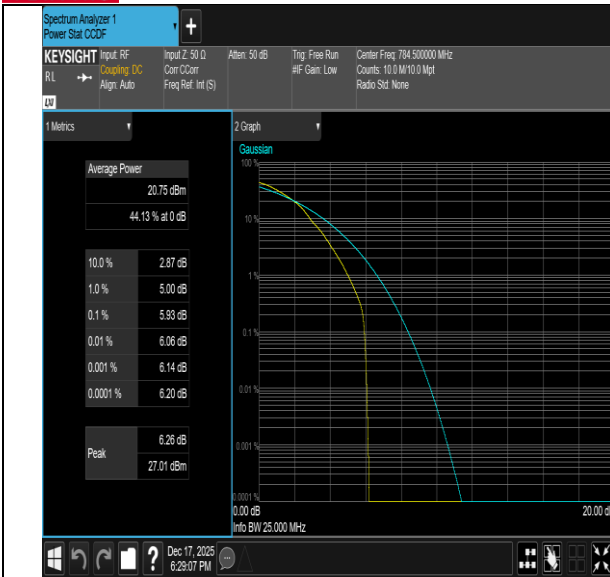
Band13-5MHz-64QAM-23255-1RB#0-PASS



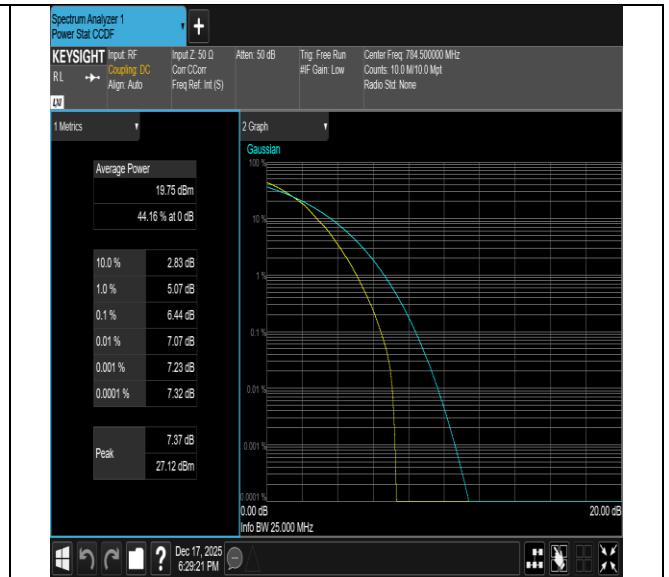
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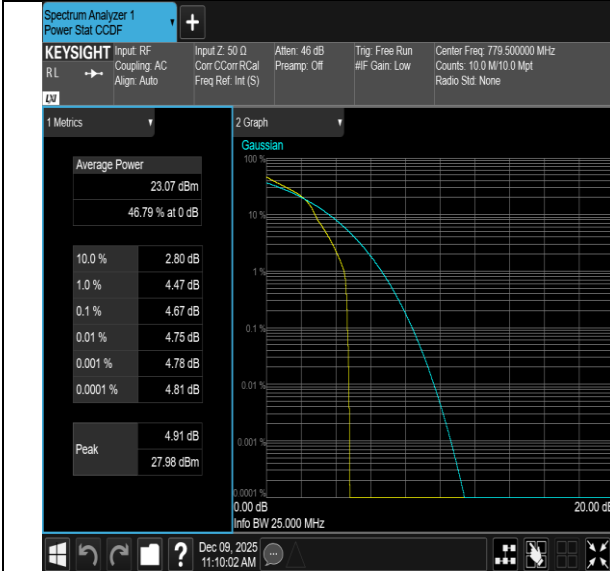
**BUREAU VERITAS** Test Report No.: PSU-QBJ2512030110RF03



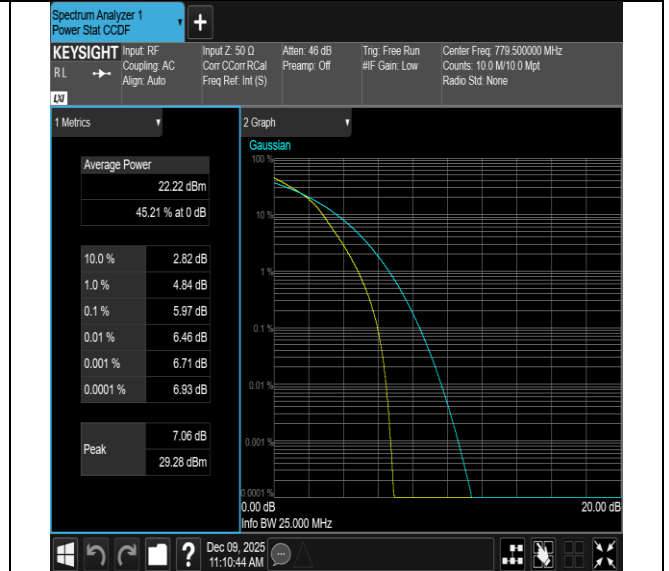
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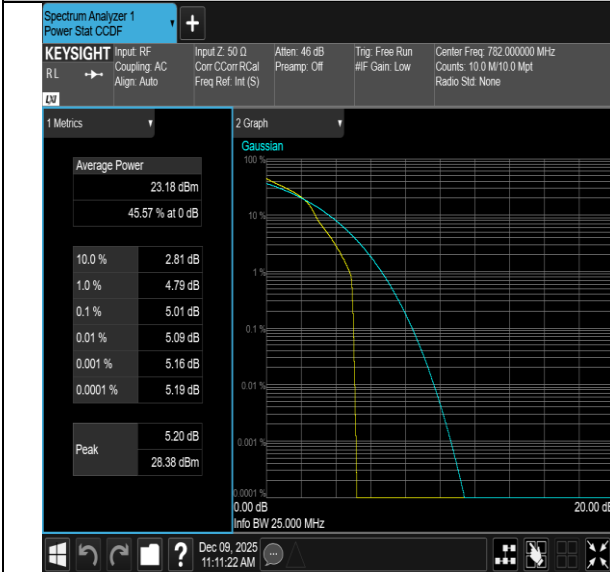
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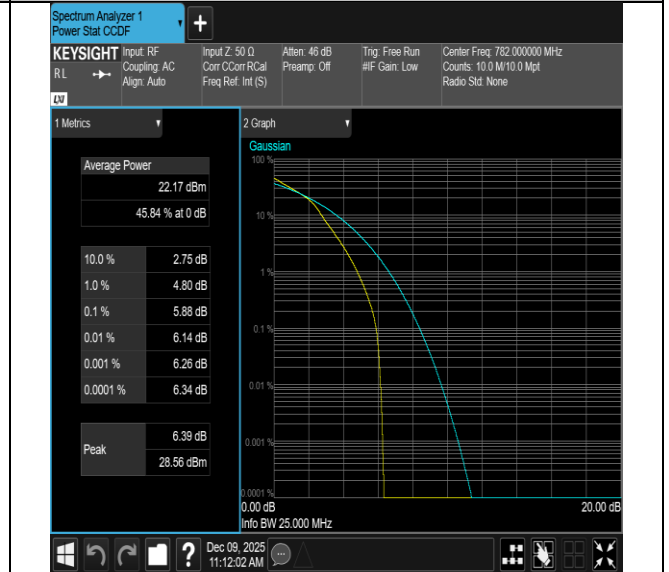
Band13-5MHz-16QAM-23230-1RB#0-PASS



Band13-5MHz-16QAM-23230-25RB#0-PASS



Band13-5MHz-16QAM-23255-1RB#0-PASS



Band13-5MHz-16QAM-23255-25RB#0-PASS



**BUREAU VERITAS** Test Report No.: PSU-QBJ2512030110RF03



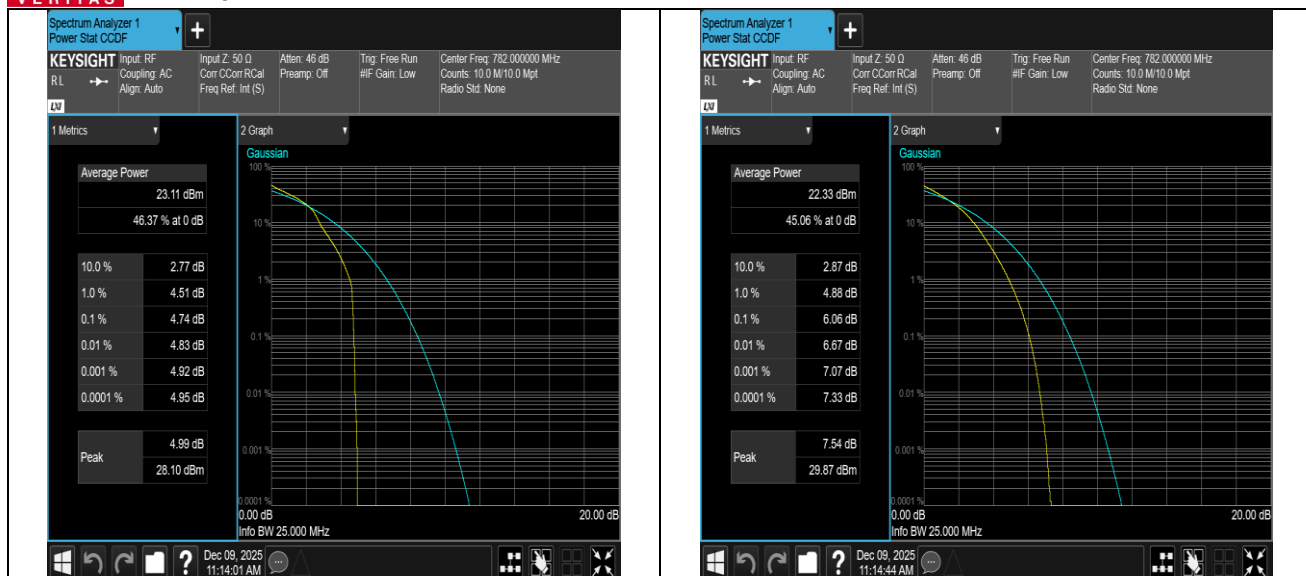
Huarui 7layers High Technology  
(Suzhou) Co., Ltd.

Tower N, Innovation Center, 88 Zuyi Road, High-tech  
District, Suzhou City, Anhui Province, China

Tel: +86 (0557) 368 1008



**BUREAU VERITAS** Test Report No.: PSU-QBJ2512030110RF03



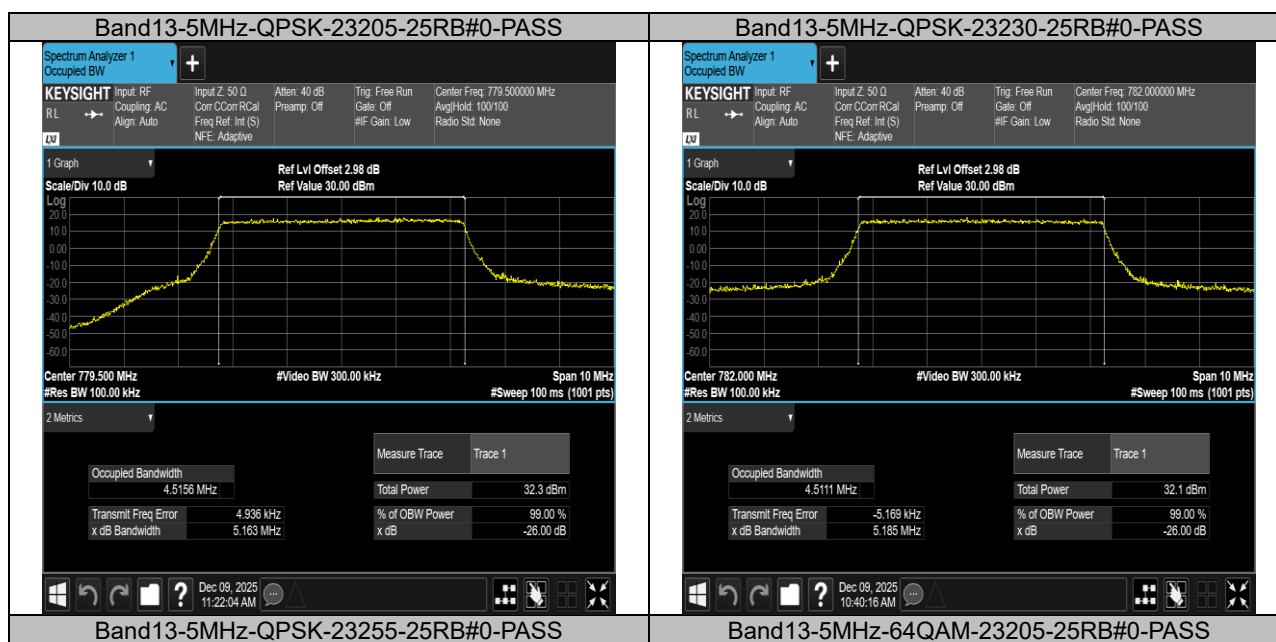


## 26dB Bandwidth and Occupied Bandwidth

### Test Result

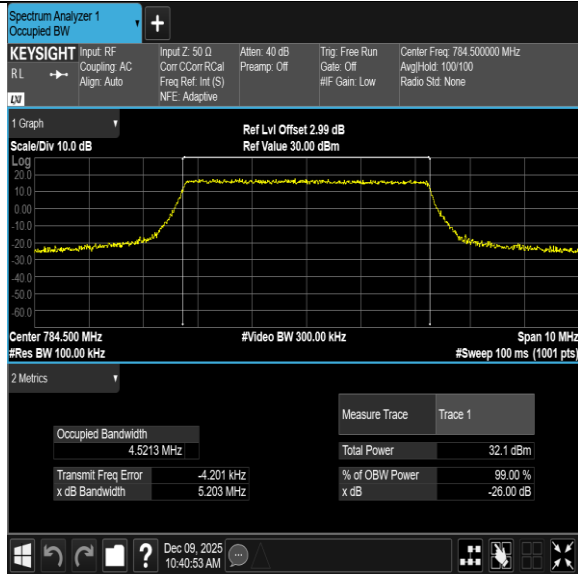
| Band   | Bandwidth | Modulation | Channel | RB Configuration | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Verdict |
|--------|-----------|------------|---------|------------------|--------------------------|----------------------|---------|
| Band13 | 5MHz      | QPSK       | 23205   | 25RB#0           | 4.5156                   | 5.163                | PASS    |
| Band13 | 5MHz      | QPSK       | 23230   | 25RB#0           | 4.5111                   | 5.185                | PASS    |
| Band13 | 5MHz      | QPSK       | 23255   | 25RB#0           | 4.5213                   | 5.203                | PASS    |
| Band13 | 5MHz      | 64QAM      | 23205   | 25RB#0           | 4.5321                   | 5.229                | PASS    |
| Band13 | 5MHz      | 64QAM      | 23230   | 25RB#0           | 4.5208                   | 5.156                | PASS    |
| Band13 | 5MHz      | 64QAM      | 23255   | 25RB#0           | 4.5171                   | 5.238                | PASS    |
| Band13 | 5MHz      | 16QAM      | 23205   | 25RB#0           | 4.5138                   | 5.149                | PASS    |
| Band13 | 5MHz      | 16QAM      | 23230   | 25RB#0           | 4.5123                   | 5.149                | PASS    |
| Band13 | 5MHz      | 16QAM      | 23255   | 25RB#0           | 4.5167                   | 5.176                | PASS    |
| Band13 | 10MHz     | QPSK       | 23230   | 50RB#0           | 8.9879                   | 9.968                | PASS    |
| Band13 | 10MHz     | 64QAM      | 23230   | 50RB#0           | 8.9716                   | 9.982                | PASS    |
| Band13 | 10MHz     | 16QAM      | 23230   | 50RB#0           | 9.0016                   | 10.11                | PASS    |

### Test Graphs

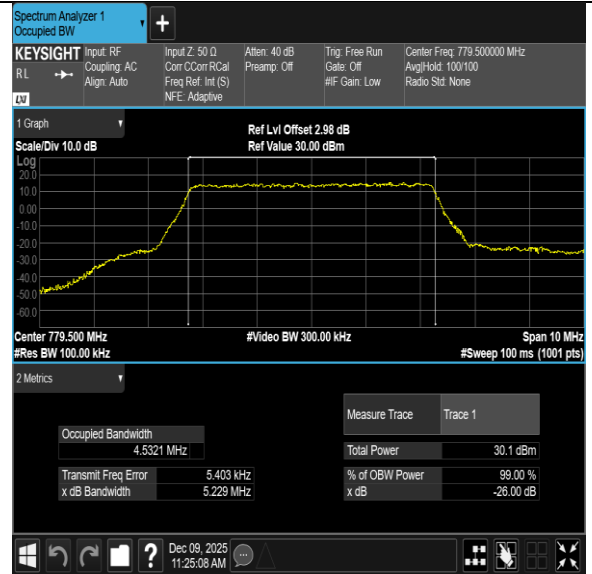




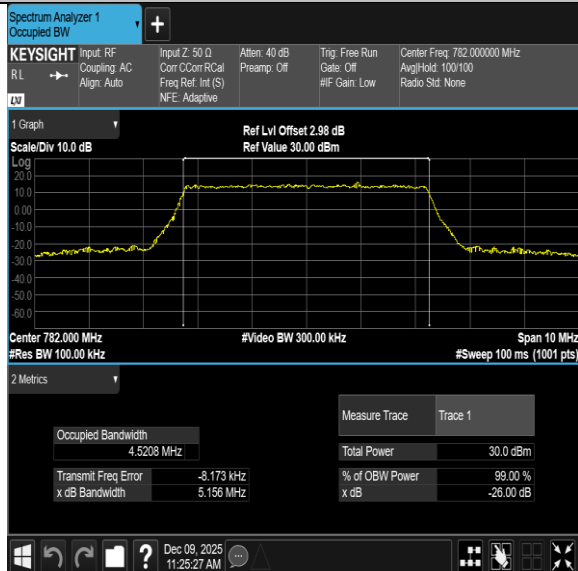
**BUREAU VERITAS** Test Report No.: PSU-QBJ2512030110RF03



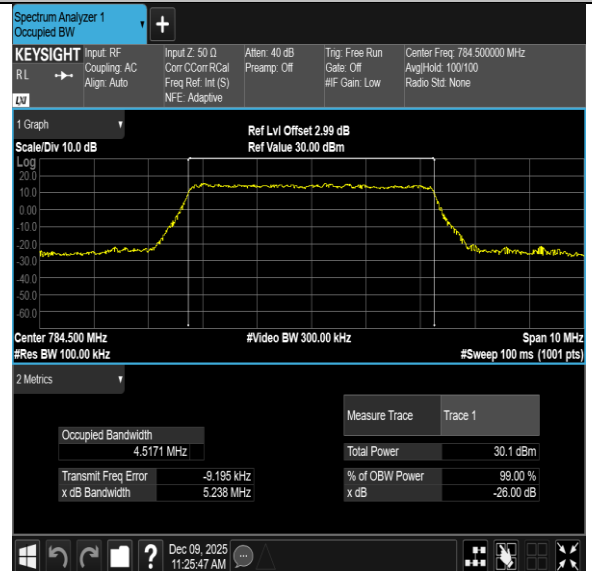
Band13-5MHz-64QAM-23230-25RB#0-PASS



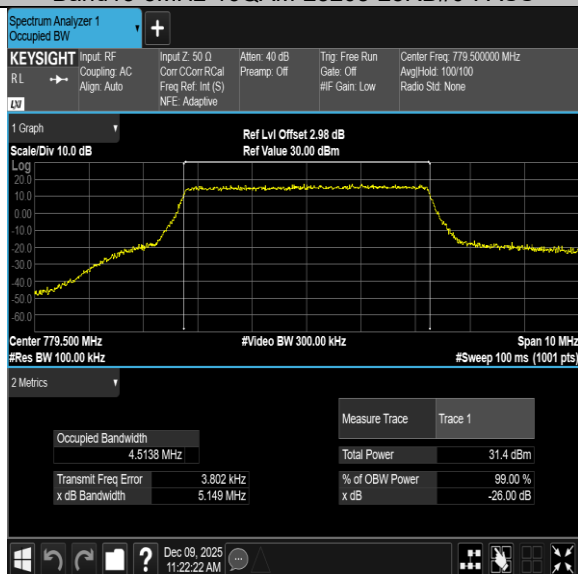
Band13-5MHz-64QAM-23255-25RB#0-PASS



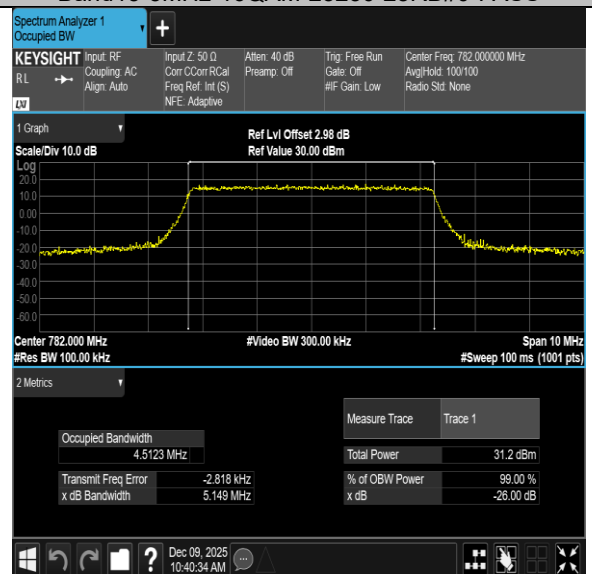
Band13-5MHz-16QAM-23205-25RB#0-PASS



Band13-5MHz-16QAM-23230-25RB#0-PASS



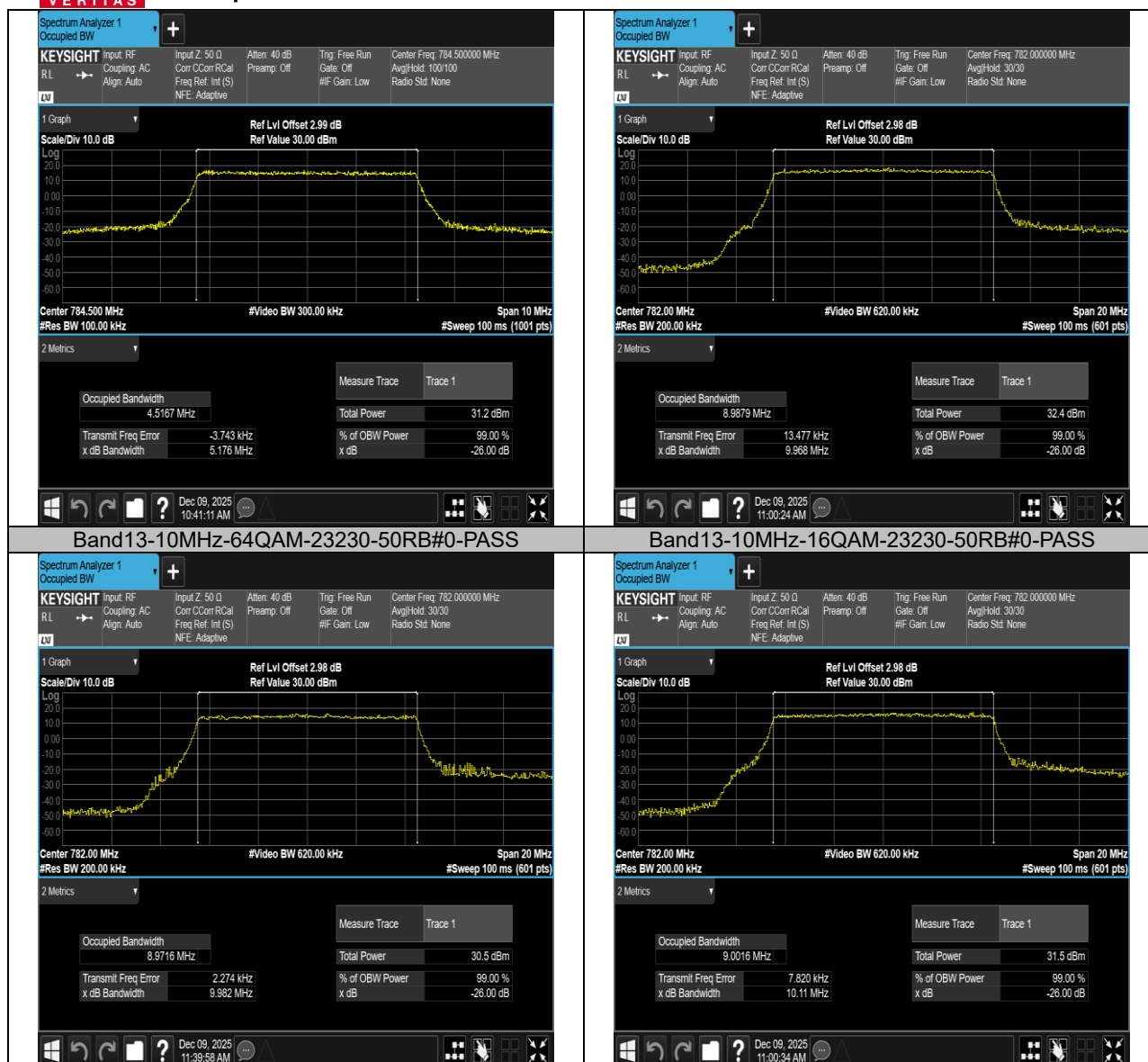
Band13-5MHz-16QAM-23255-25RB#0-PASS



Band13-10MHz-QPSK-23230-50RB#0-PASS



**BUREAU VERITAS** Test Report No.: PSU-QBJ2512030110RF03





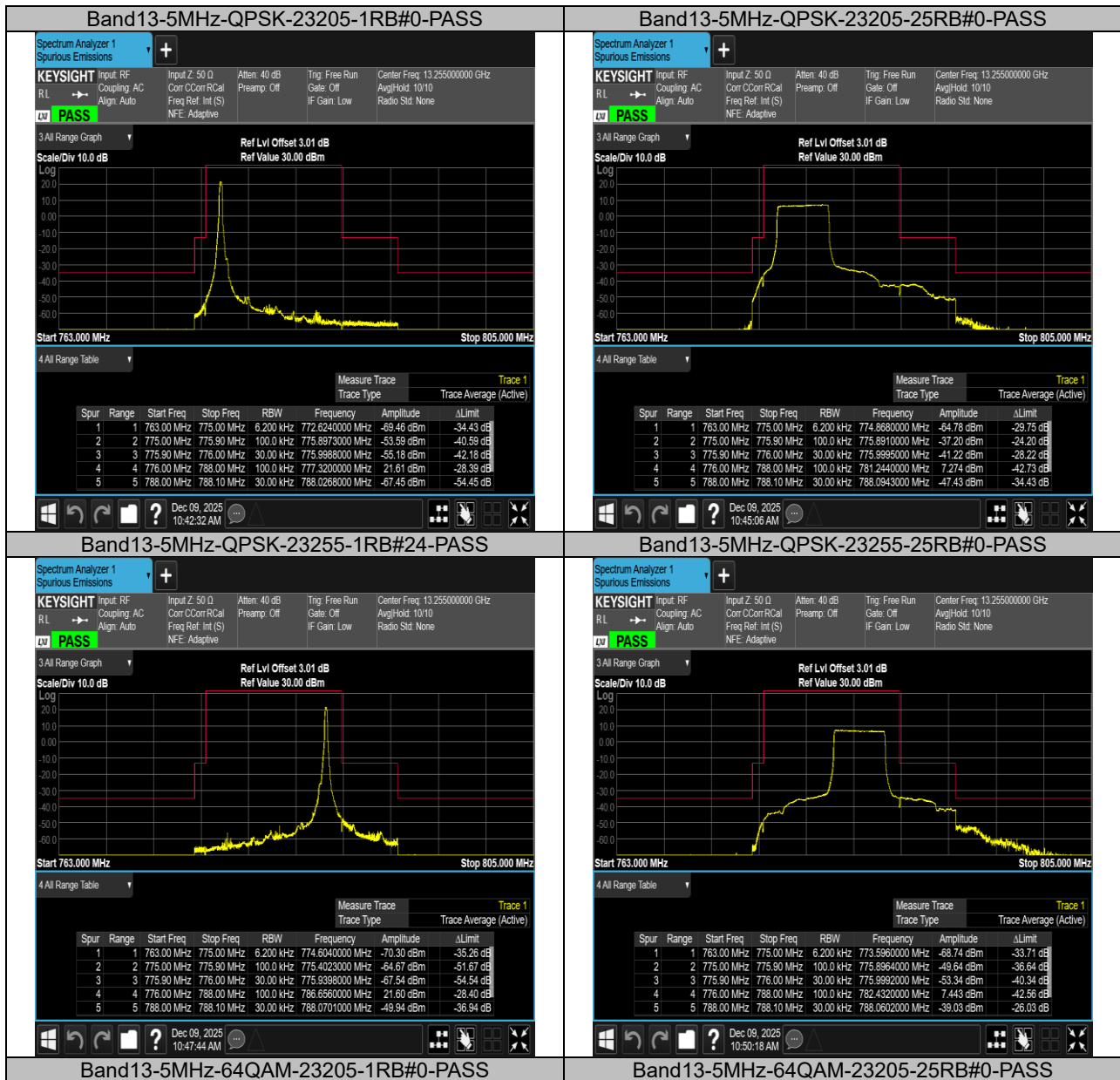
## Band Edge

### Test Result

| Band   | Bandwidth | Modulation | Channel | RB Configuration | Result(dBm) | Verdict |
|--------|-----------|------------|---------|------------------|-------------|---------|
| Band13 | 5MHz      | QPSK       | 23205   | 1RB#0            | -69.46      | PASS    |
| Band13 | 5MHz      | QPSK       | 23205   | 25RB#0           | -37.20      | PASS    |
| Band13 | 5MHz      | QPSK       | 23255   | 1RB#24           | -47.11      | PASS    |
| Band13 | 5MHz      | QPSK       | 23255   | 25RB#0           | -51.61      | PASS    |
| Band13 | 5MHz      | 64QAM      | 23205   | 1RB#0            | -68.34      | PASS    |
| Band13 | 5MHz      | 64QAM      | 23205   | 25RB#0           | -39.44      | PASS    |
| Band13 | 5MHz      | 64QAM      | 23255   | 1RB#24           | -68.91      | PASS    |
| Band13 | 5MHz      | 64QAM      | 23255   | 25RB#0           | -54.20      | PASS    |
| Band13 | 5MHz      | 16QAM      | 23205   | 1RB#0            | -69.50      | PASS    |
| Band13 | 5MHz      | 16QAM      | 23205   | 25RB#0           | -37.90      | PASS    |
| Band13 | 5MHz      | 16QAM      | 23255   | 1RB#24           | -69.91      | PASS    |
| Band13 | 5MHz      | 16QAM      | 23255   | 25RB#0           | -52.60      | PASS    |
| Band13 | 10MHz     | QPSK       | 23230   | 1RB#0            | -69.12      | PASS    |
| Band13 | 10MHz     | QPSK       | 23230   | 1RB#49           | -68.27      | PASS    |
| Band13 | 10MHz     | QPSK       | 23230   | 50RB#0           | -48.21      | PASS    |
| Band13 | 10MHz     | 64QAM      | 23230   | 1RB#0            | -68.63      | PASS    |
| Band13 | 10MHz     | 64QAM      | 23230   | 1RB#49           | -68.87      | PASS    |
| Band13 | 10MHz     | 64QAM      | 23230   | 50RB#0           | -50.15      | PASS    |
| Band13 | 10MHz     | 16QAM      | 23230   | 1RB#0            | -68.35      | PASS    |
| Band13 | 10MHz     | 16QAM      | 23230   | 1RB#49           | -68.72      | PASS    |
| Band13 | 10MHz     | 16QAM      | 23230   | 50RB#0           | -49.71      | PASS    |



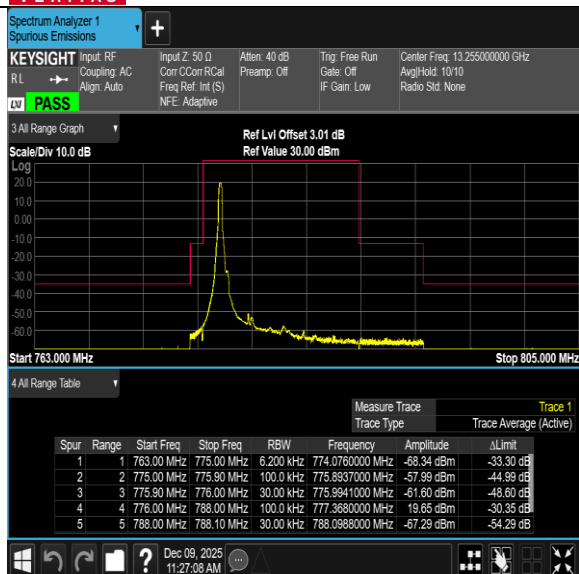
## Test Graphs



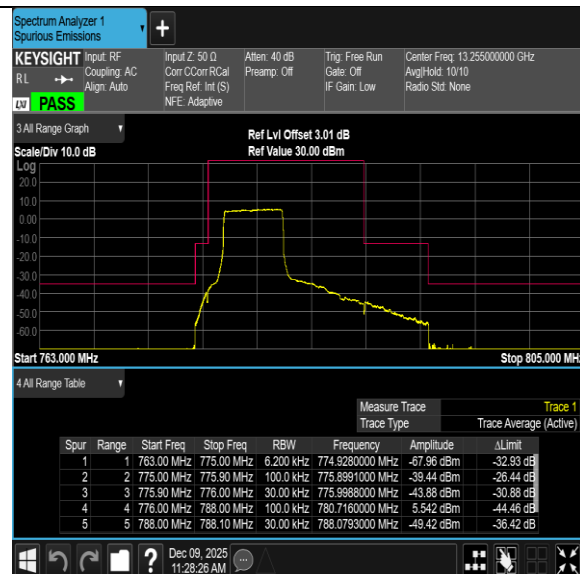


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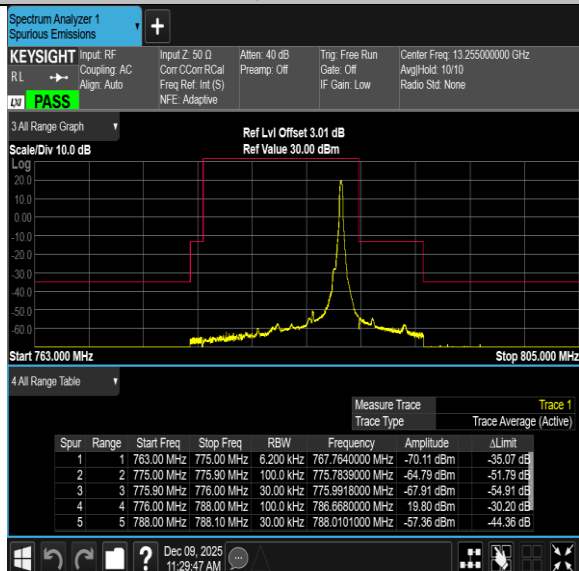
Test Report No.: PSU-QBJ2512030110RF03



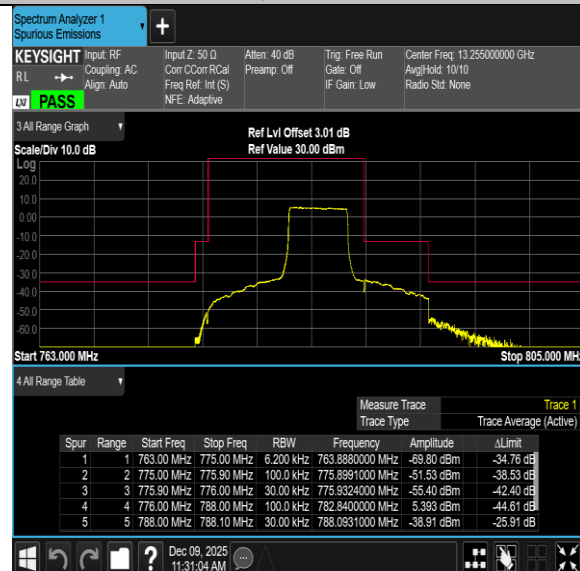
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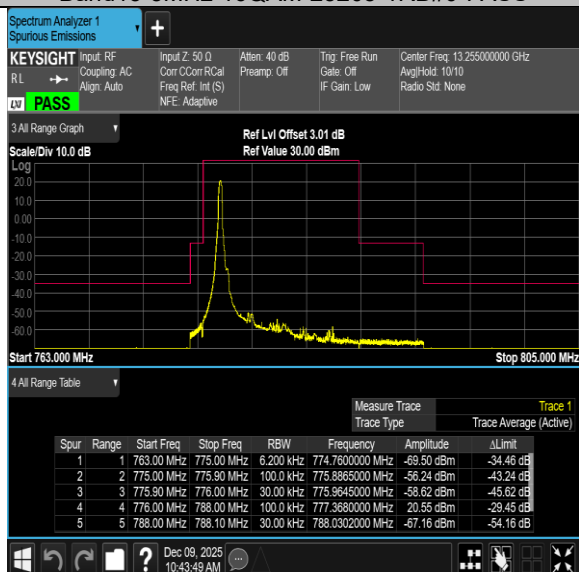
Band13-5MHz-64QAM-23255-25RB#0-PASS



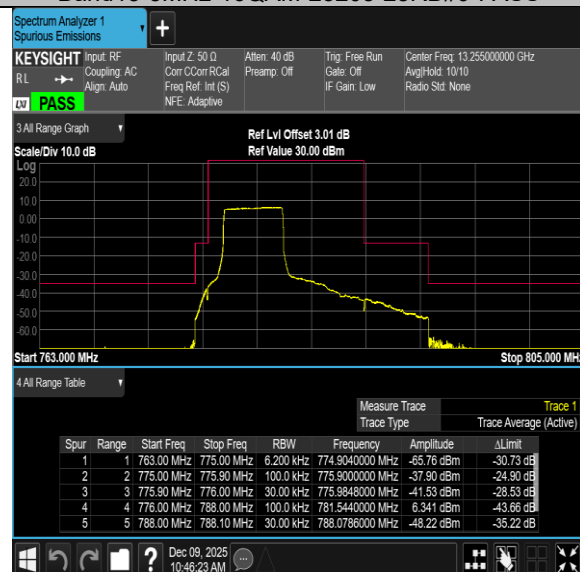
Band13-5MHz-16QAM-23205-1RB#0-PASS



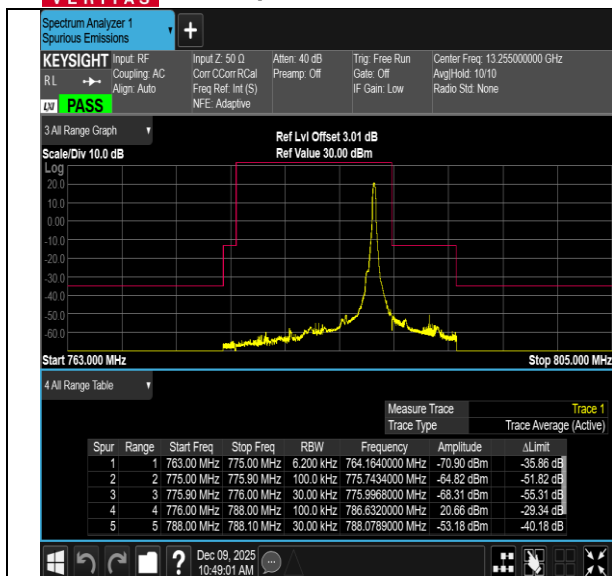
Band13-5MHz-16QAM-23205-25RB#0-PASS



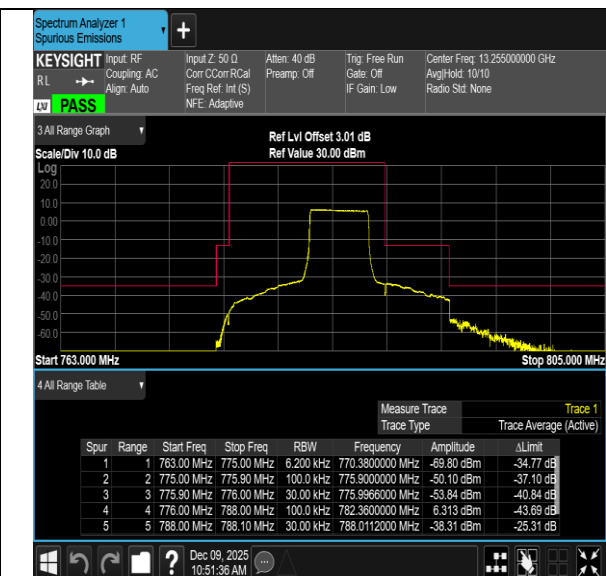
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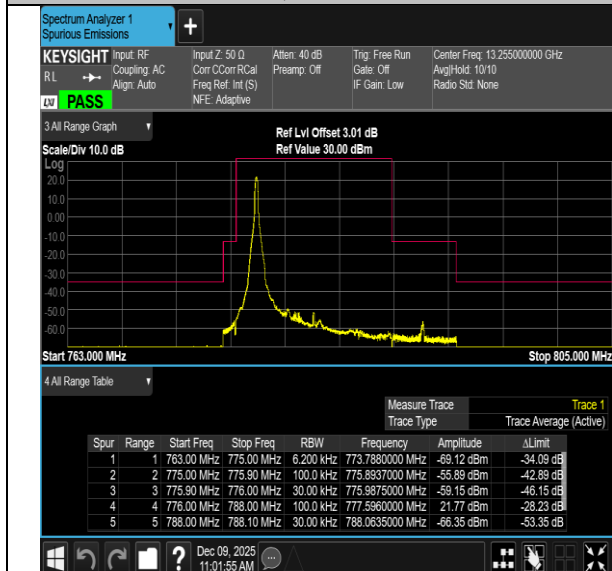
Band13-5MHz-16QAM-23255-25RB#0-PASS



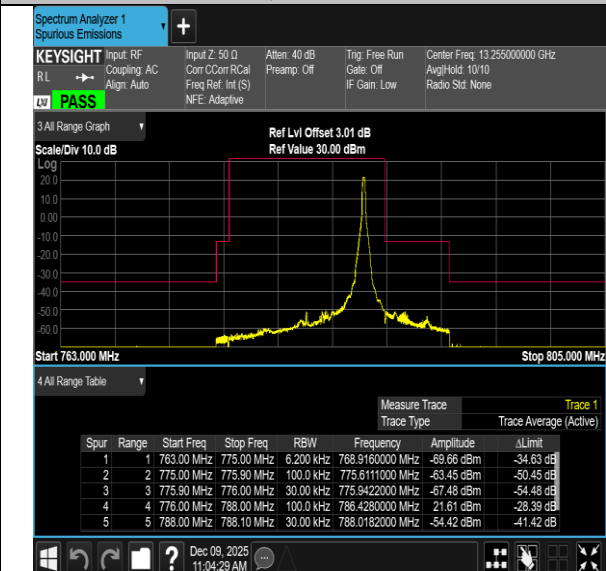
Band13-10MHz-QPSK-23230-1RB#0-PASS



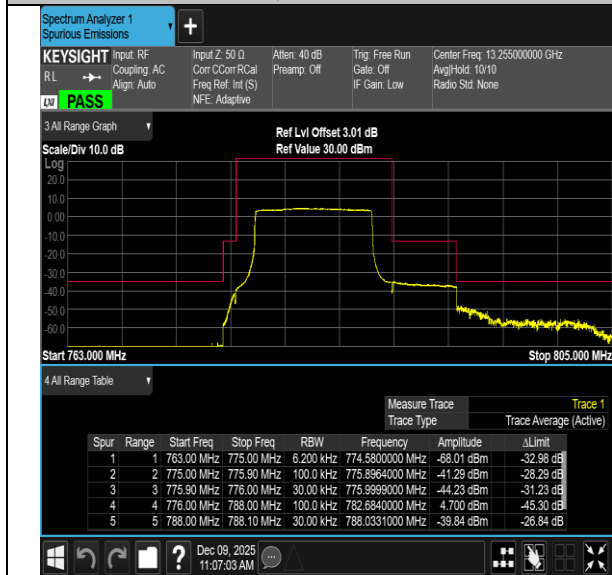
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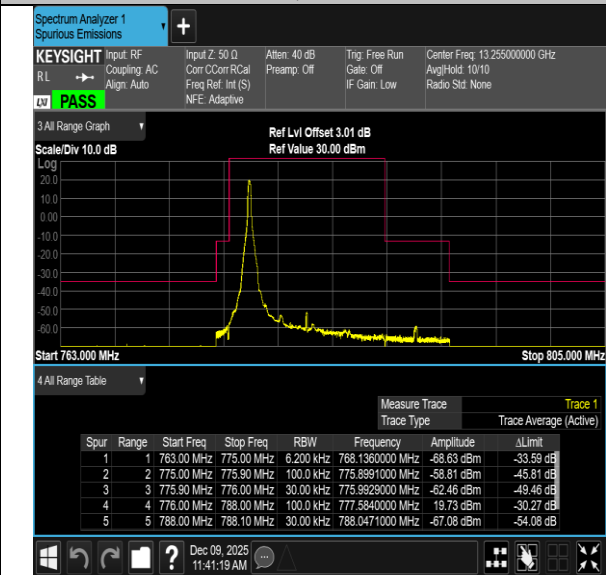
Band13-10MHz-QPSK-23230-50RB#0-PASS



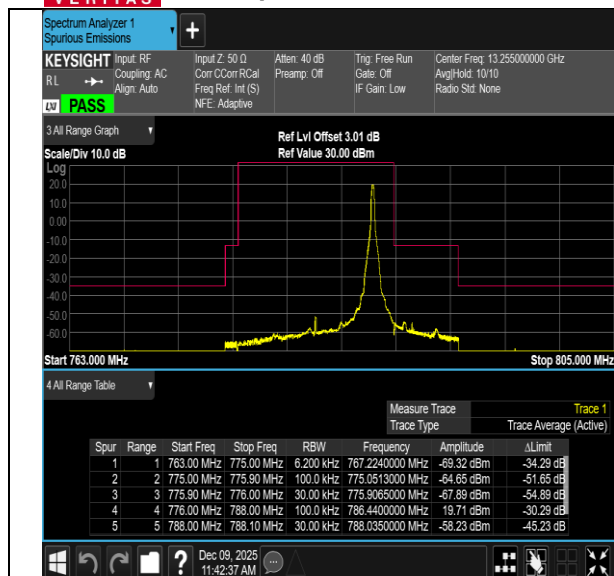
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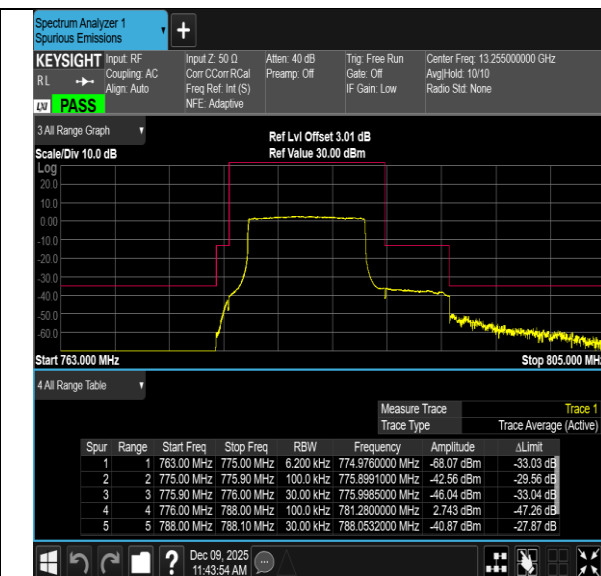
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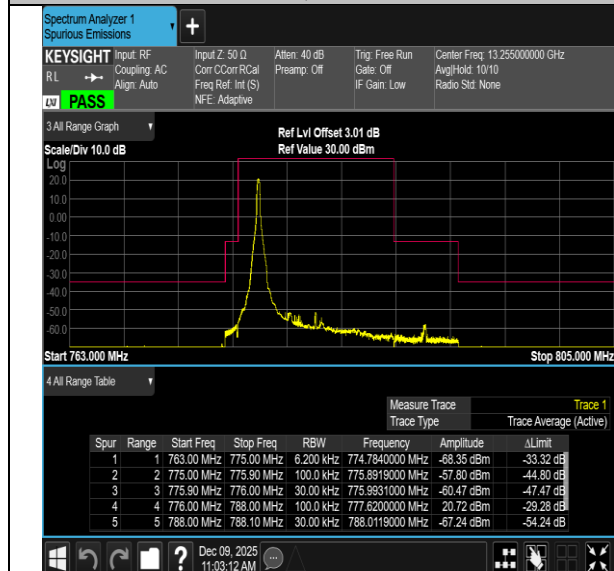
Band13-10MHz-64QAM-23230-50RB#0-PASS



Band13-10MHz-16QAM-23230-1RB#0-PASS



Band13-10MHz-16QAM-23230-1RB#49-PASS



Band13-10MHz-16QAM-23230-50RB#0-PASS

