

# **FCC LTE Band Test Data**

**FCC ID : 2BF4O-CC4PRO**

**Company: : Shenzhen TEYES High tech Co., Ltd.**

**EUT : Car Headunit**

**Model Number : CC4PRO**

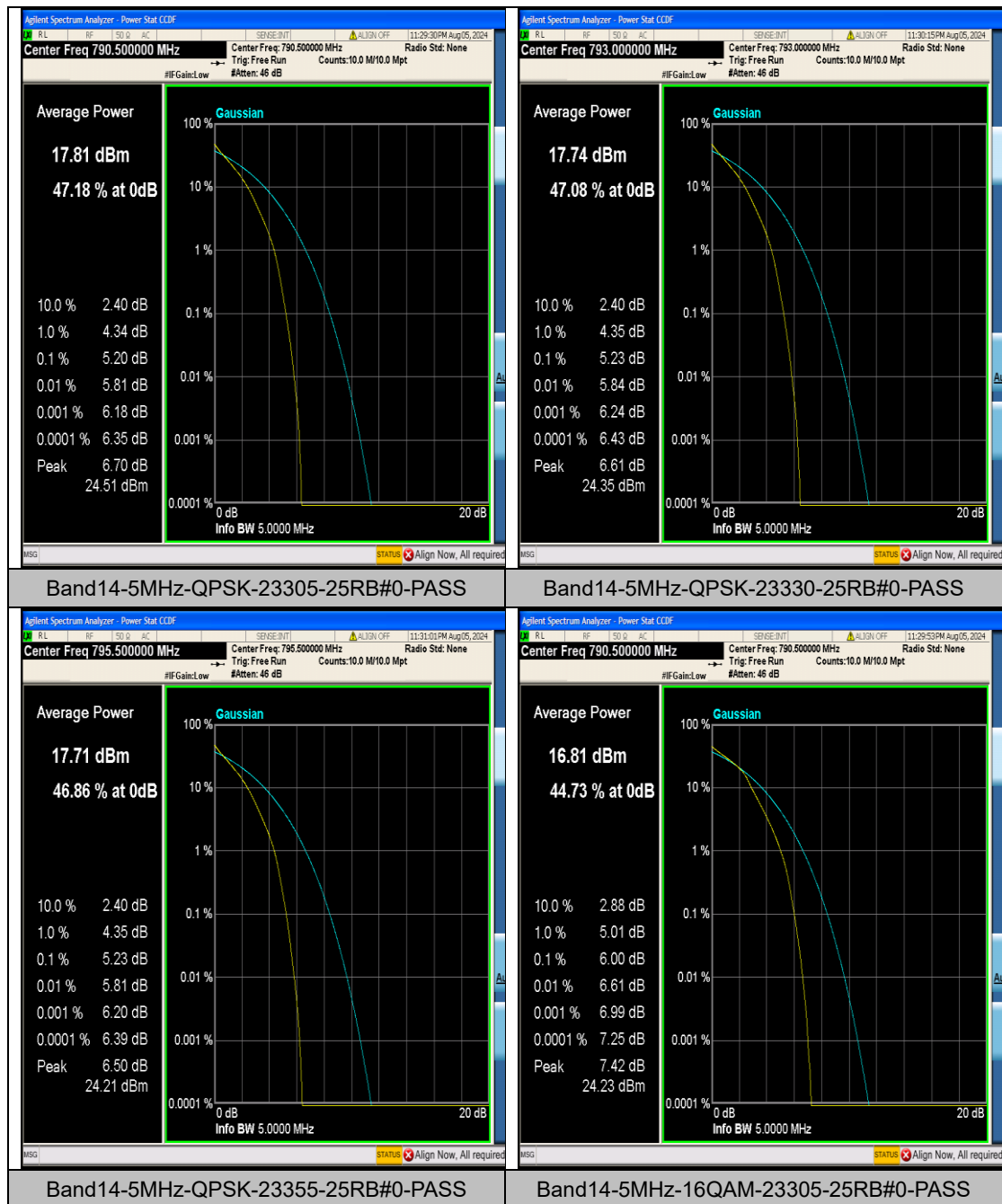
**Reviewed By : Eric Wang**

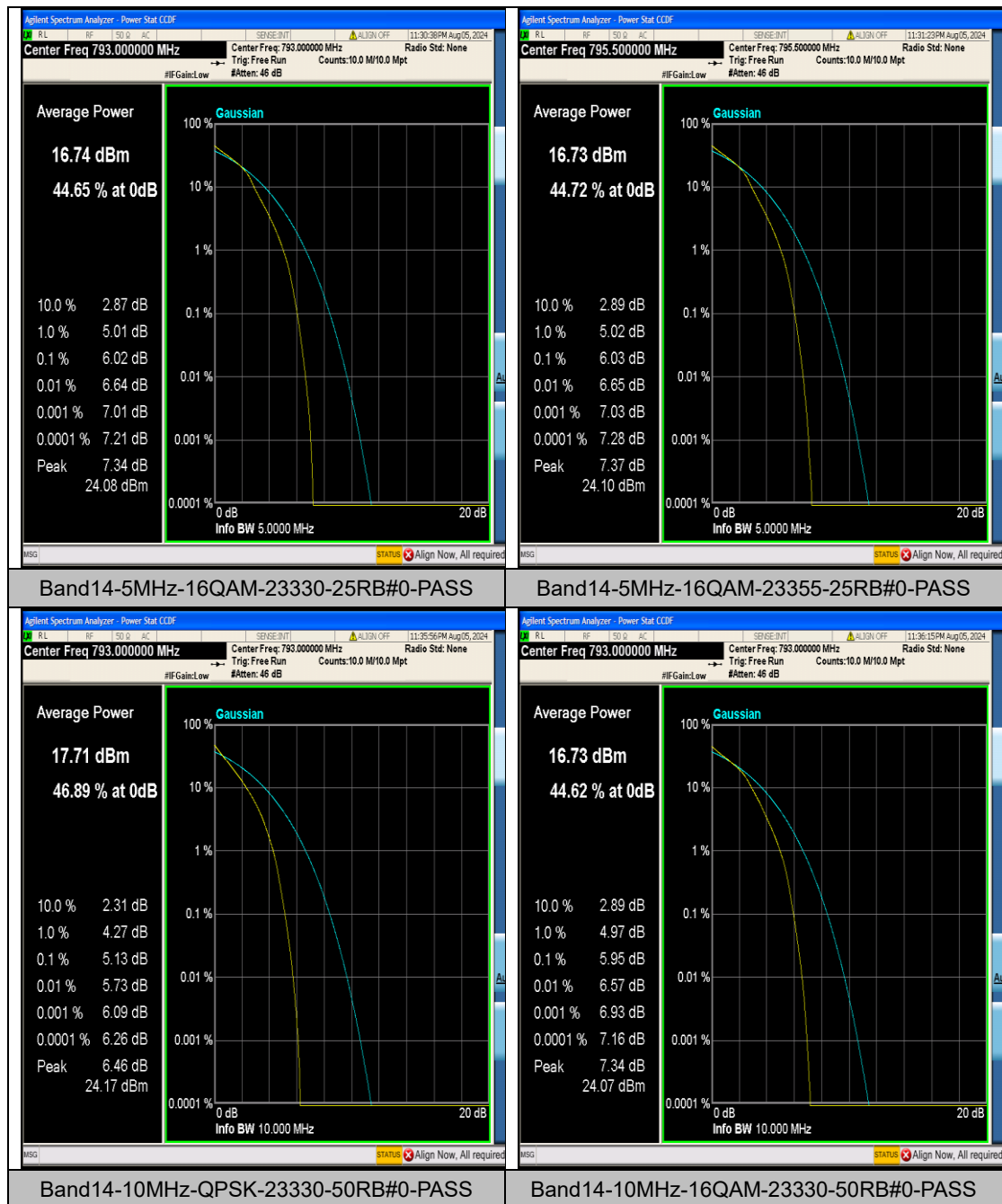
## Appendix B: Peak-to-Average Ratio(CCDF)

### Test Result

| Band   | Bandwidth | Modulation | Channel | RB Configuration | Result(dB) | Limit(dB) | Verdict |
|--------|-----------|------------|---------|------------------|------------|-----------|---------|
| Band14 | 5MHz      | QPSK       | 23305   | 25RB#0           | 5.20       | 13        | PASS    |
| Band14 | 5MHz      | QPSK       | 23330   | 25RB#0           | 5.23       | 13        | PASS    |
| Band14 | 5MHz      | QPSK       | 23355   | 25RB#0           | 5.23       | 13        | PASS    |
| Band14 | 5MHz      | 16QAM      | 23305   | 25RB#0           | 6.00       | 13        | PASS    |
| Band14 | 5MHz      | 16QAM      | 23330   | 25RB#0           | 6.02       | 13        | PASS    |
| Band14 | 5MHz      | 16QAM      | 23355   | 25RB#0           | 6.03       | 13        | PASS    |
| Band14 | 10MHz     | QPSK       | 23330   | 50RB#0           | 5.13       | 13        | PASS    |
| Band14 | 10MHz     | 16QAM      | 23330   | 50RB#0           | 5.95       | 13        | PASS    |

## Test Graphs



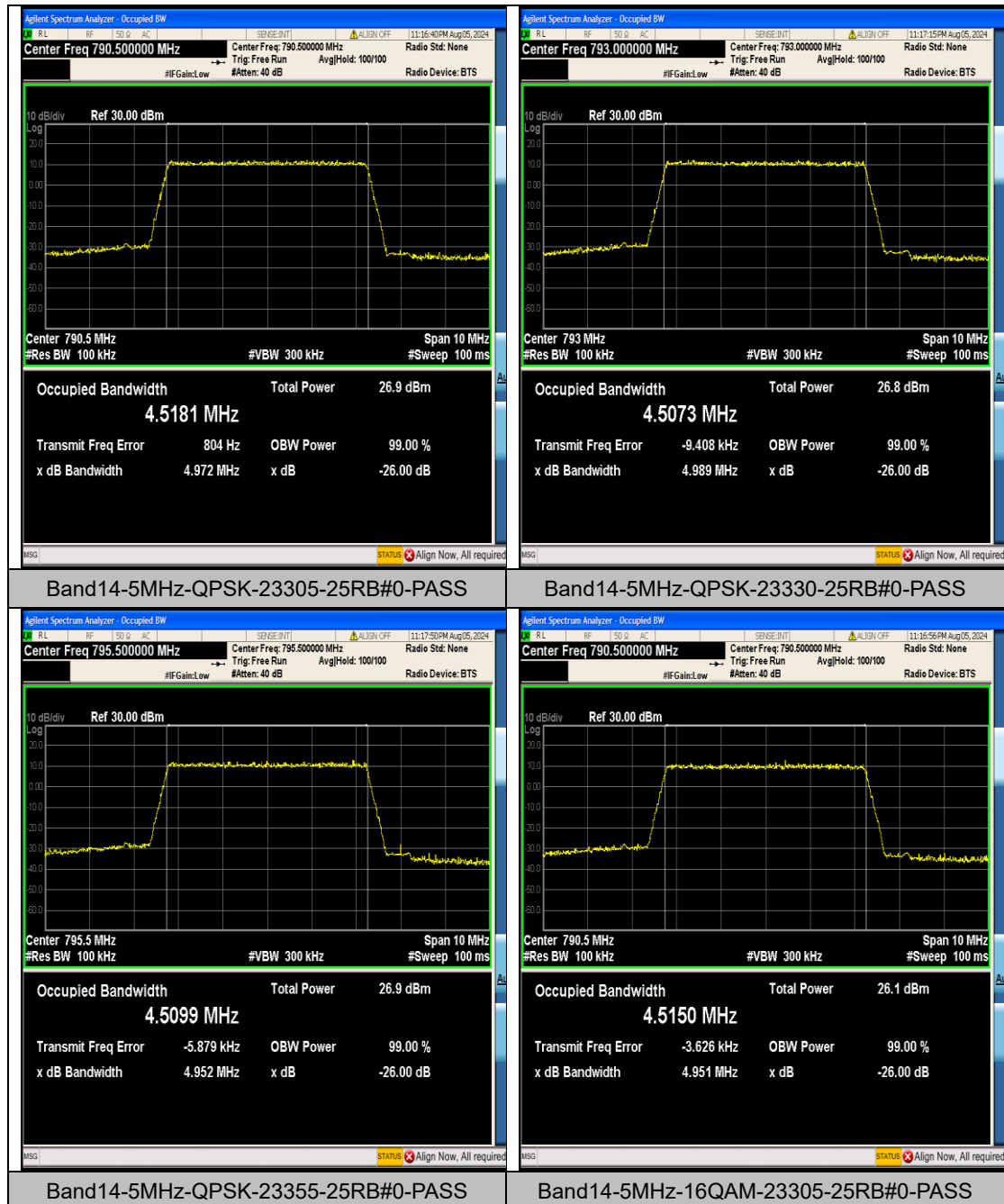


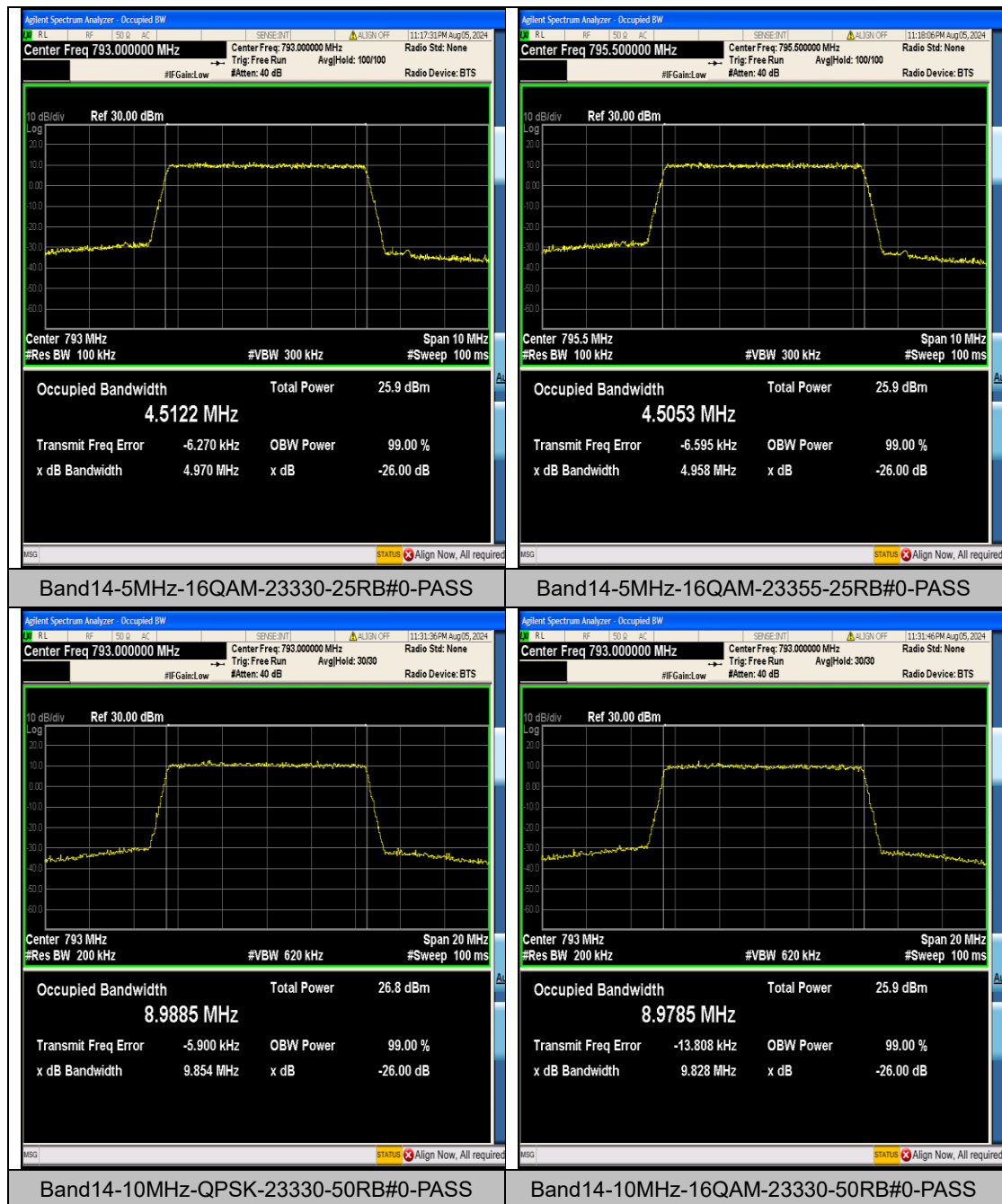
## Appendix C: 26dB Bandwidth and Occupied Bandwidth

### Test Result

| Band   | Bandwidth | Modulation | Channel | RB Configuration | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Verdict |
|--------|-----------|------------|---------|------------------|--------------------------|----------------------|---------|
| Band14 | 5MHz      | QPSK       | 23305   | 25RB#0           | 4.5181                   | 4.972                | PASS    |
| Band14 | 5MHz      | QPSK       | 23330   | 25RB#0           | 4.5073                   | 4.989                | PASS    |
| Band14 | 5MHz      | QPSK       | 23355   | 25RB#0           | 4.5099                   | 4.952                | PASS    |
| Band14 | 5MHz      | 16QAM      | 23305   | 25RB#0           | 4.5150                   | 4.951                | PASS    |
| Band14 | 5MHz      | 16QAM      | 23330   | 25RB#0           | 4.5122                   | 4.970                | PASS    |
| Band14 | 5MHz      | 16QAM      | 23355   | 25RB#0           | 4.5053                   | 4.958                | PASS    |
| Band14 | 10MHz     | QPSK       | 23330   | 50RB#0           | 8.9885                   | 9.854                | PASS    |
| Band14 | 10MHz     | 16QAM      | 23330   | 50RB#0           | 8.9785                   | 9.828                | PASS    |

## Test Graphs



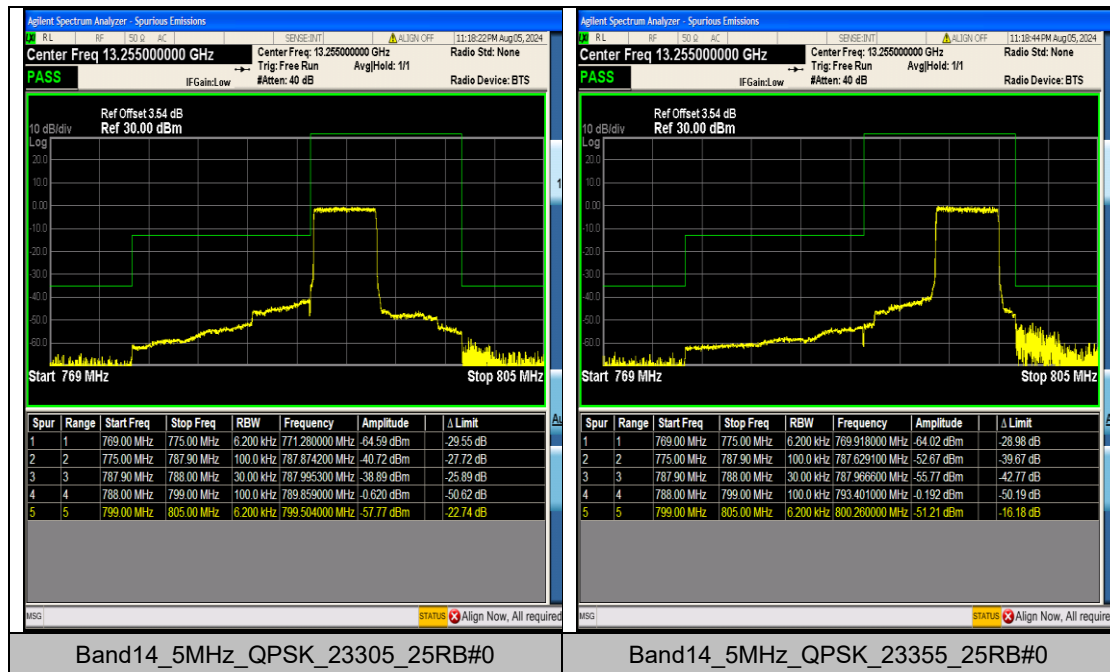


## Appendix D: Band Edge

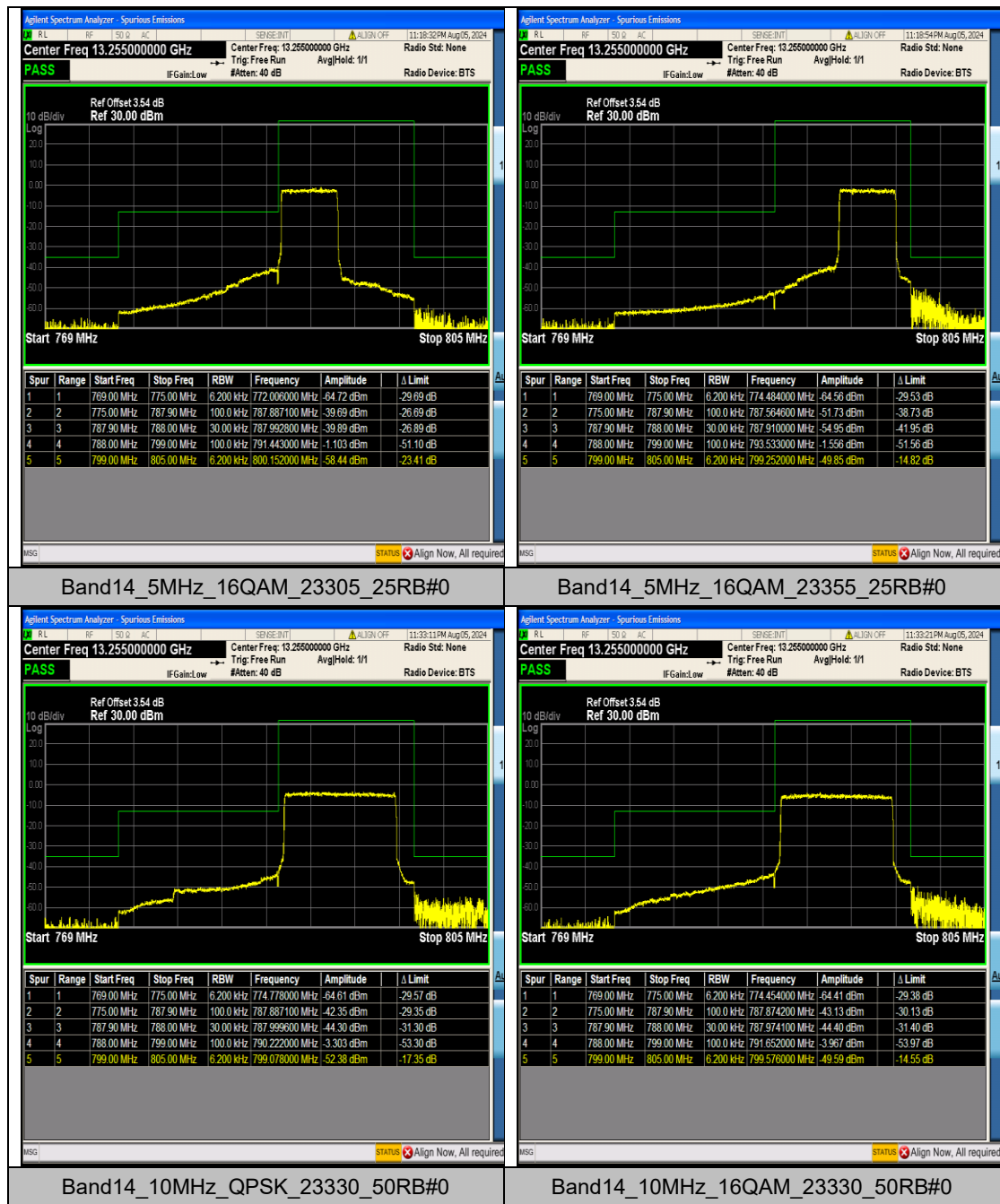
### Test Result

| Band   | Bandwidth | Modulation | Channel | RB Configuration | Result(dBm) | Verdict |
|--------|-----------|------------|---------|------------------|-------------|---------|
| Band14 | 5MHz      | QPSK       | 23305   | 25RB#0           | -57.77      | PASS    |
| Band14 | 5MHz      | QPSK       | 23355   | 25RB#0           | -51.21      | PASS    |
| Band14 | 5MHz      | 16QAM      | 23305   | 25RB#0           | -58.44      | PASS    |
| Band14 | 5MHz      | 16QAM      | 23355   | 25RB#0           | -49.85      | PASS    |
| Band14 | 10MHz     | QPSK       | 23330   | 50RB#0           | -52.38      | PASS    |
| Band14 | 10MHz     | 16QAM      | 23330   | 50RB#0           | -49.59      | PASS    |

### Test Graphs







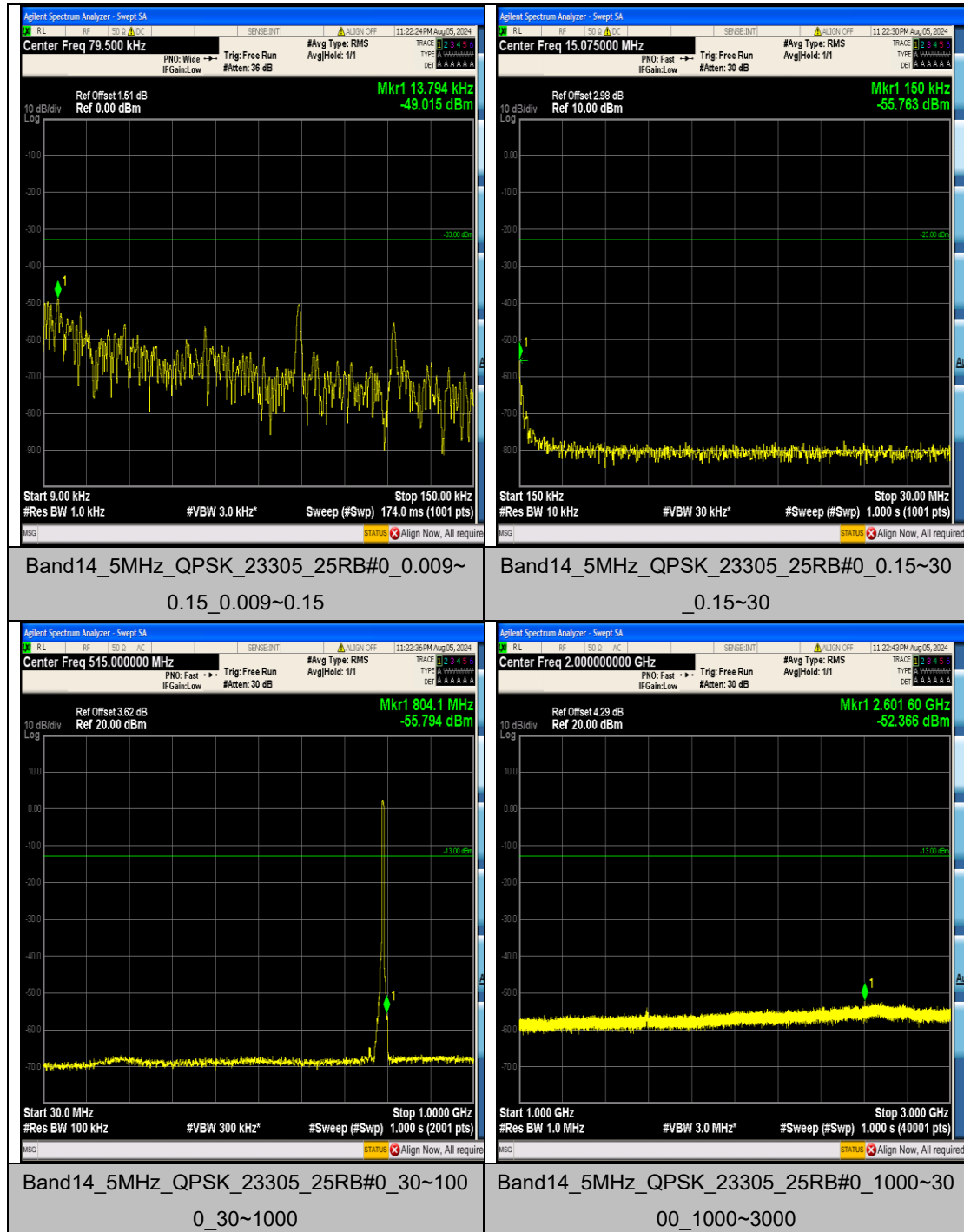
## Appendix E: Conducted Spurious Emission

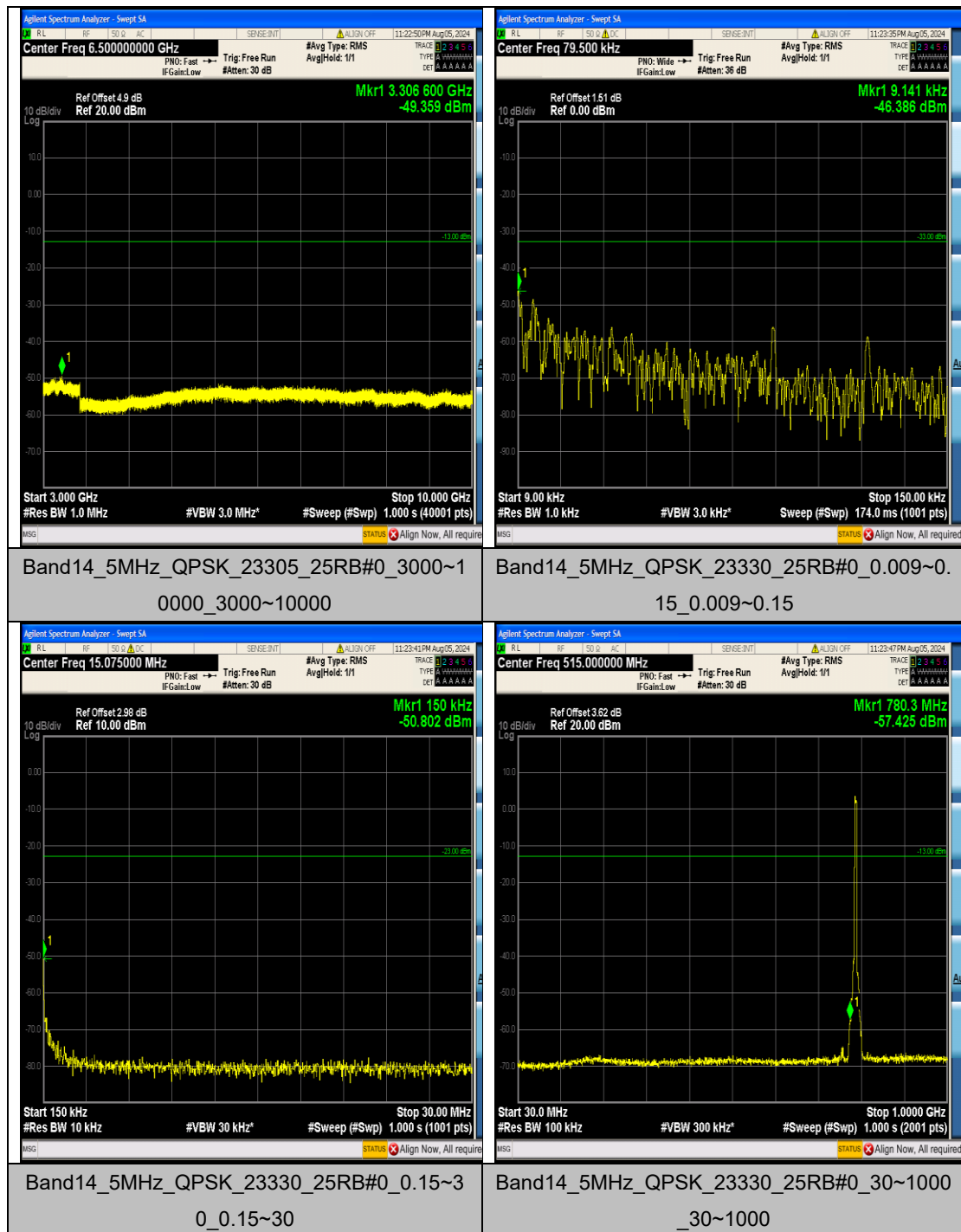
### Test Result

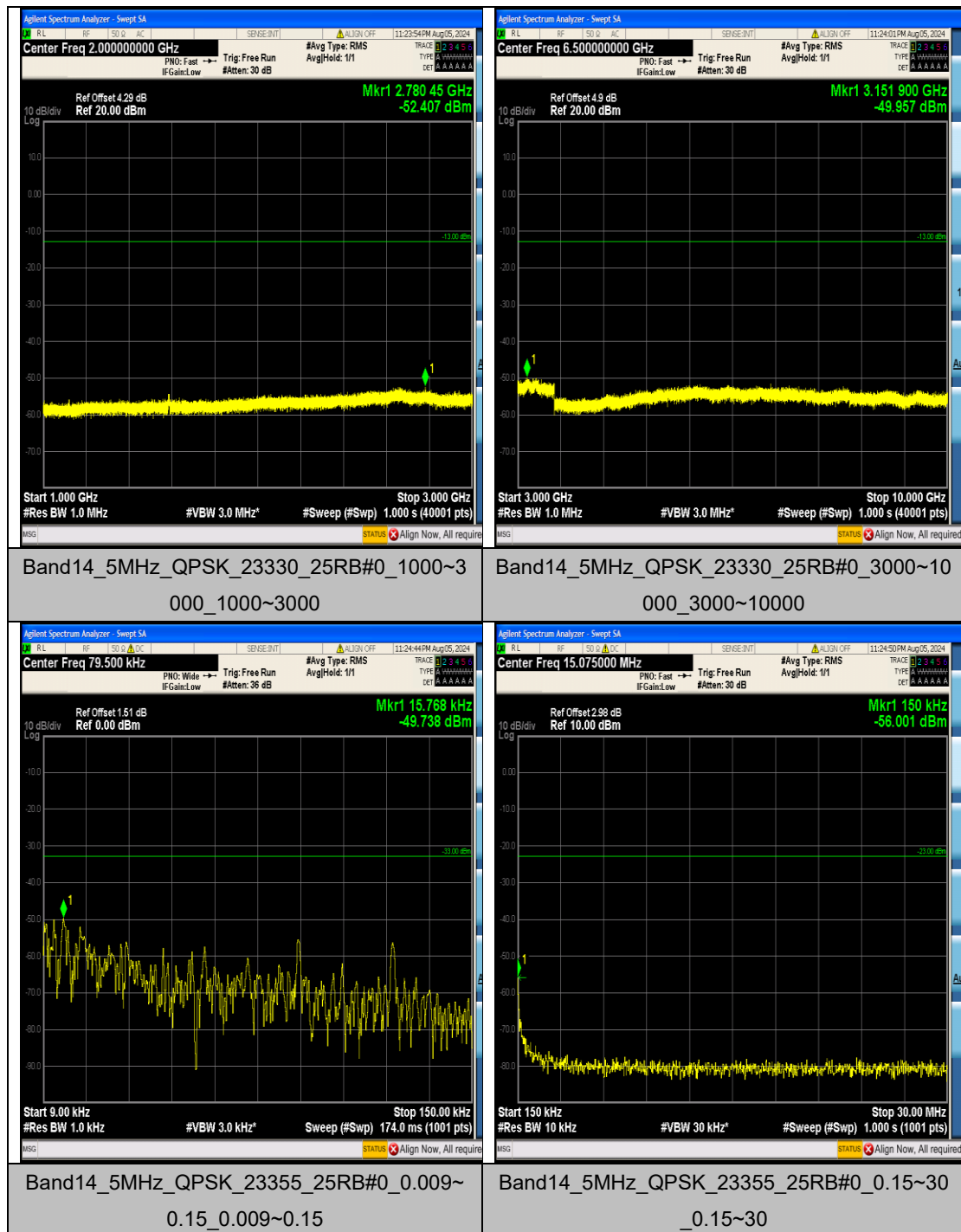
| Band   | Bandwidth | Modulation | Channel | RB Configuration | Frequency Range | Result (dBm) | Verdict |
|--------|-----------|------------|---------|------------------|-----------------|--------------|---------|
| Band14 | 5MHz      | QPSK       | 23305   | 25RB#0           | 0.009~0.15      | -49.02       | PASS    |
| Band14 | 5MHz      | QPSK       | 23305   | 25RB#0           | 0.15~30         | -55.76       | PASS    |
| Band14 | 5MHz      | QPSK       | 23305   | 25RB#0           | 30~1000         | -55.79       | PASS    |
| Band14 | 5MHz      | QPSK       | 23305   | 25RB#0           | 1000~3000       | -52.37       | PASS    |
| Band14 | 5MHz      | QPSK       | 23305   | 25RB#0           | 3000~10000      | -49.36       | PASS    |
| Band14 | 5MHz      | QPSK       | 23330   | 25RB#0           | 0.009~0.15      | -46.39       | PASS    |
| Band14 | 5MHz      | QPSK       | 23330   | 25RB#0           | 0.15~30         | -50.80       | PASS    |
| Band14 | 5MHz      | QPSK       | 23330   | 25RB#0           | 30~1000         | -57.43       | PASS    |
| Band14 | 5MHz      | QPSK       | 23330   | 25RB#0           | 1000~3000       | -52.41       | PASS    |
| Band14 | 5MHz      | QPSK       | 23330   | 25RB#0           | 3000~10000      | -49.96       | PASS    |
| Band14 | 5MHz      | QPSK       | 23355   | 25RB#0           | 0.009~0.15      | -49.74       | PASS    |
| Band14 | 5MHz      | QPSK       | 23355   | 25RB#0           | 0.15~30         | -56.00       | PASS    |
| Band14 | 5MHz      | QPSK       | 23355   | 25RB#0           | 30~1000         | -56.77       | PASS    |
| Band14 | 5MHz      | QPSK       | 23355   | 25RB#0           | 1000~3000       | -52.28       | PASS    |
| Band14 | 5MHz      | QPSK       | 23355   | 25RB#0           | 3000~10000      | -50.06       | PASS    |
| Band14 | 5MHz      | 16QAM      | 23305   | 25RB#0           | 0.009~0.15      | -48.94       | PASS    |
| Band14 | 5MHz      | 16QAM      | 23305   | 25RB#0           | 0.15~30         | -52.96       | PASS    |
| Band14 | 5MHz      | 16QAM      | 23305   | 25RB#0           | 30~1000         | -60.40       | PASS    |
| Band14 | 5MHz      | 16QAM      | 23305   | 25RB#0           | 1000~3000       | -52.13       | PASS    |
| Band14 | 5MHz      | 16QAM      | 23305   | 25RB#0           | 3000~10000      | -49.93       | PASS    |
| Band14 | 5MHz      | 16QAM      | 23330   | 25RB#0           | 0.009~0.15      | -49.26       | PASS    |
| Band14 | 5MHz      | 16QAM      | 23330   | 25RB#0           | 0.15~30         | -53.53       | PASS    |
| Band14 | 5MHz      | 16QAM      | 23330   | 25RB#0           | 30~1000         | -58.88       | PASS    |
| Band14 | 5MHz      | 16QAM      | 23330   | 25RB#0           | 1000~3000       | -52.46       | PASS    |
| Band14 | 5MHz      | 16QAM      | 23330   | 25RB#0           | 3000~10000      | -50.07       | PASS    |
| Band14 | 5MHz      | 16QAM      | 23355   | 25RB#0           | 0.009~0.15      | -48.18       | PASS    |
| Band14 | 5MHz      | 16QAM      | 23355   | 25RB#0           | 0.15~30         | -56.41       | PASS    |
| Band14 | 5MHz      | 16QAM      | 23355   | 25RB#0           | 30~1000         | -59.51       | PASS    |
| Band14 | 5MHz      | 16QAM      | 23355   | 25RB#0           | 1000~3000       | -52.69       | PASS    |
| Band14 | 5MHz      | 16QAM      | 23355   | 25RB#0           | 3000~10000      | -49.78       | PASS    |
| Band14 | 10MHz     | QPSK       | 23330   | 50RB#0           | 0.009~0.15      | -48.23       | PASS    |
| Band14 | 10MHz     | QPSK       | 23330   | 50RB#0           | 0.15~30         | -53.05       | PASS    |
| Band14 | 10MHz     | QPSK       | 23330   | 50RB#0           | 30~1000         | -66.16       | PASS    |
| Band14 | 10MHz     | QPSK       | 23330   | 50RB#0           | 1000~3000       | -52.20       | PASS    |
| Band14 | 10MHz     | QPSK       | 23330   | 50RB#0           | 3000~10000      | -49.90       | PASS    |
| Band14 | 10MHz     | 16QAM      | 23330   | 50RB#0           | 0.009~0.15      | -47.73       | PASS    |

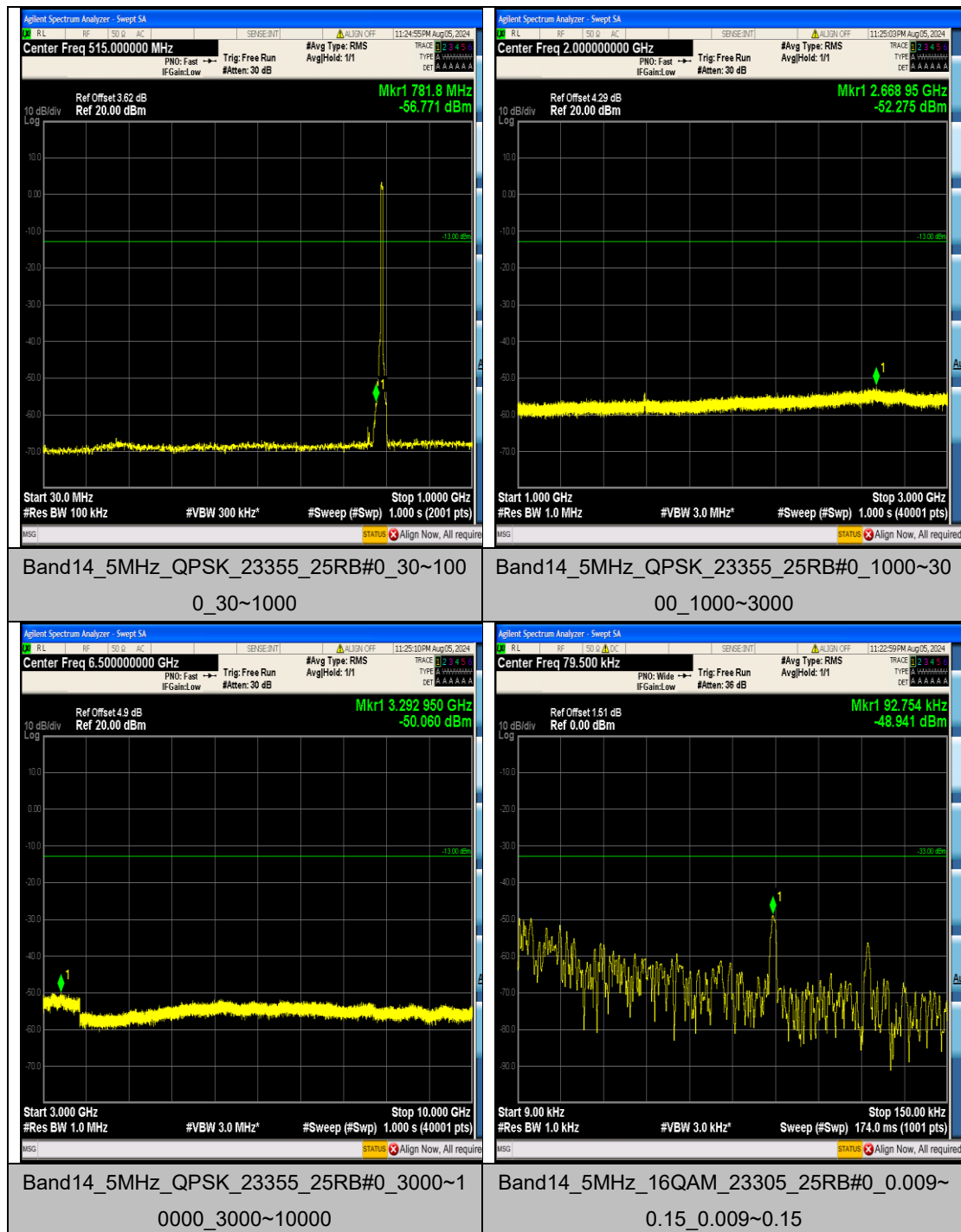
|        |       |       |       |        |            |        |      |
|--------|-------|-------|-------|--------|------------|--------|------|
| Band14 | 10MHz | 16QAM | 23330 | 50RB#0 | 0.15~30    | -54.60 | PASS |
| Band14 | 10MHz | 16QAM | 23330 | 50RB#0 | 30~1000    | -66.63 | PASS |
| Band14 | 10MHz | 16QAM | 23330 | 50RB#0 | 1000~3000  | -52.68 | PASS |
| Band14 | 10MHz | 16QAM | 23330 | 50RB#0 | 3000~10000 | -49.88 | PASS |

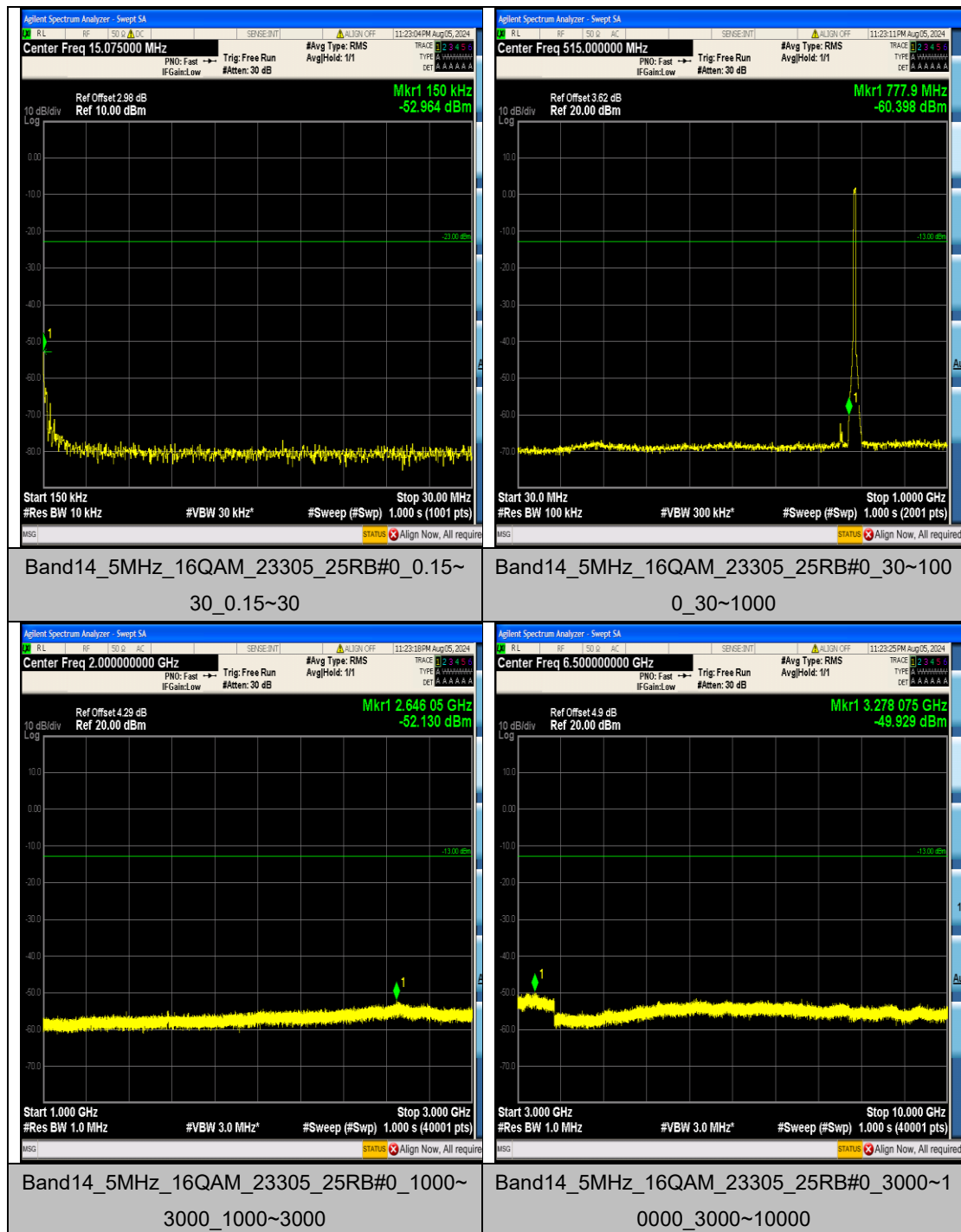
## Test Graphs

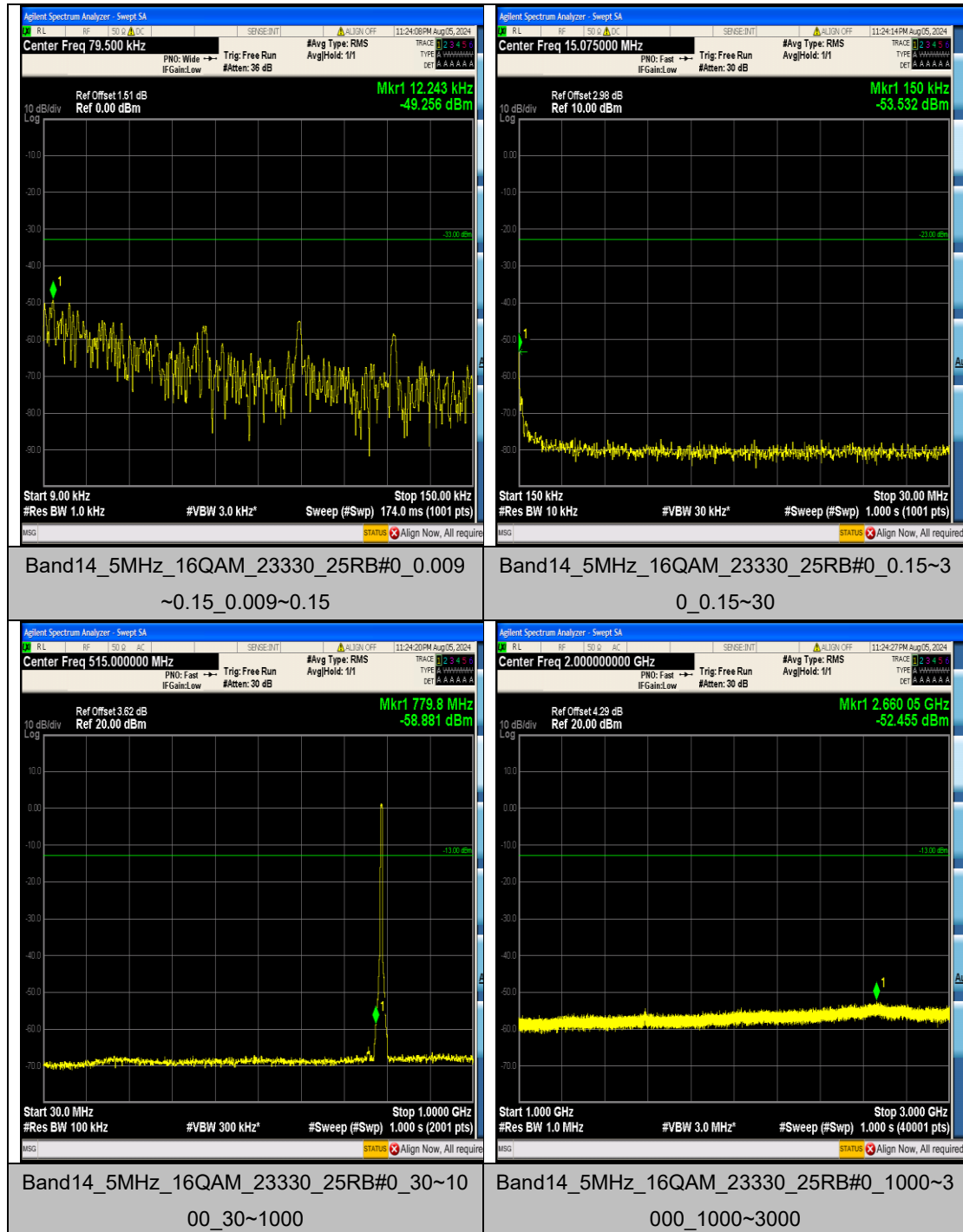




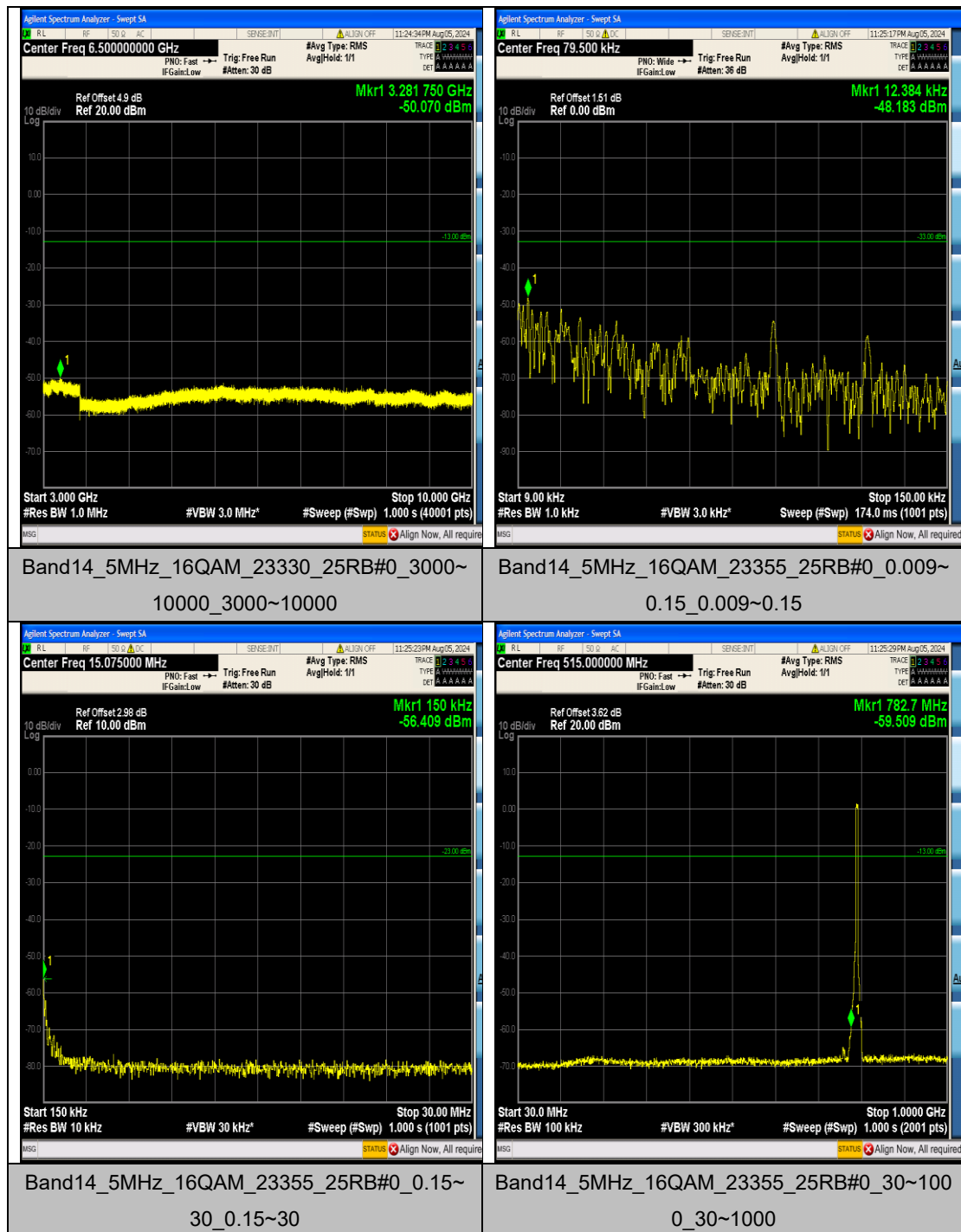


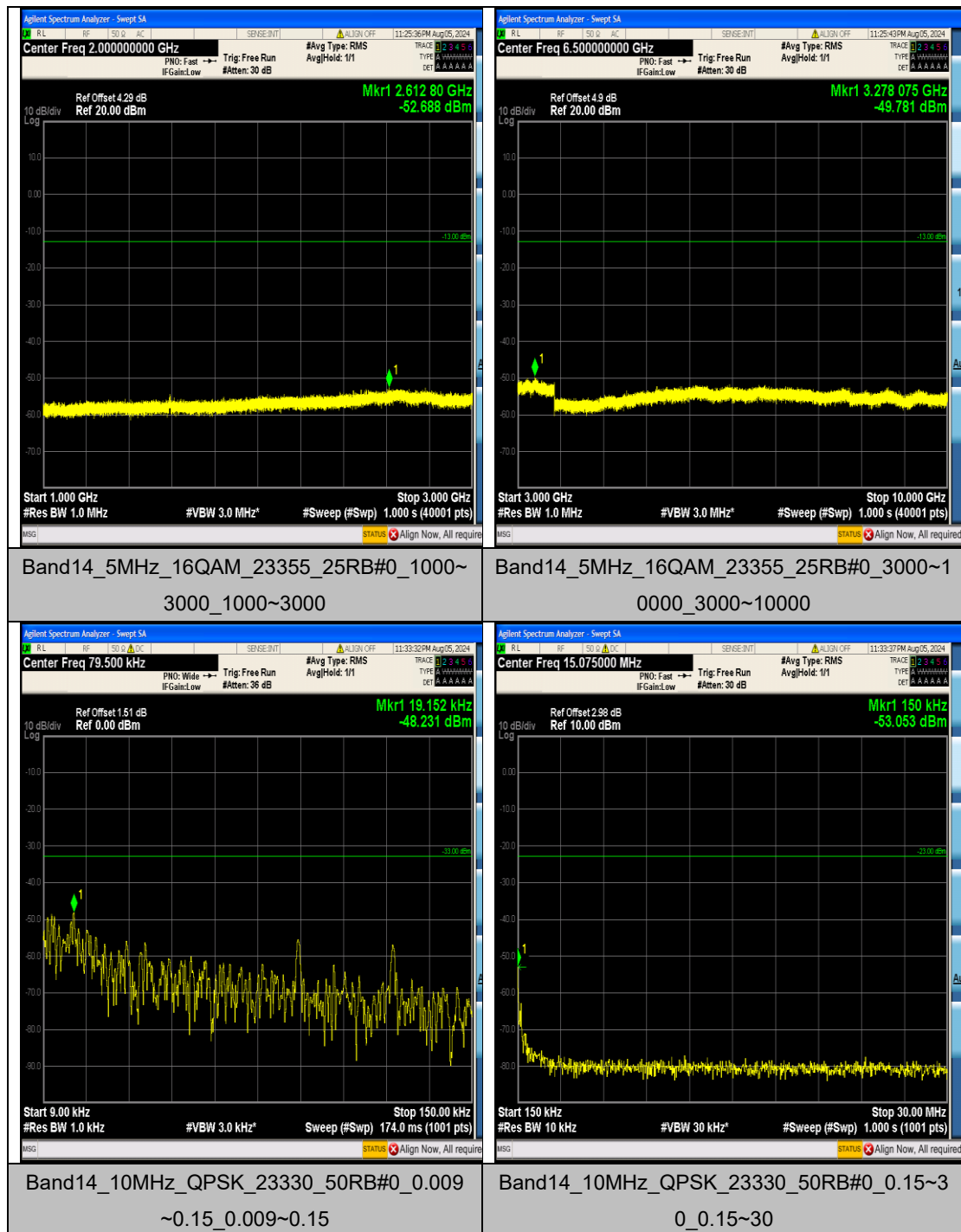


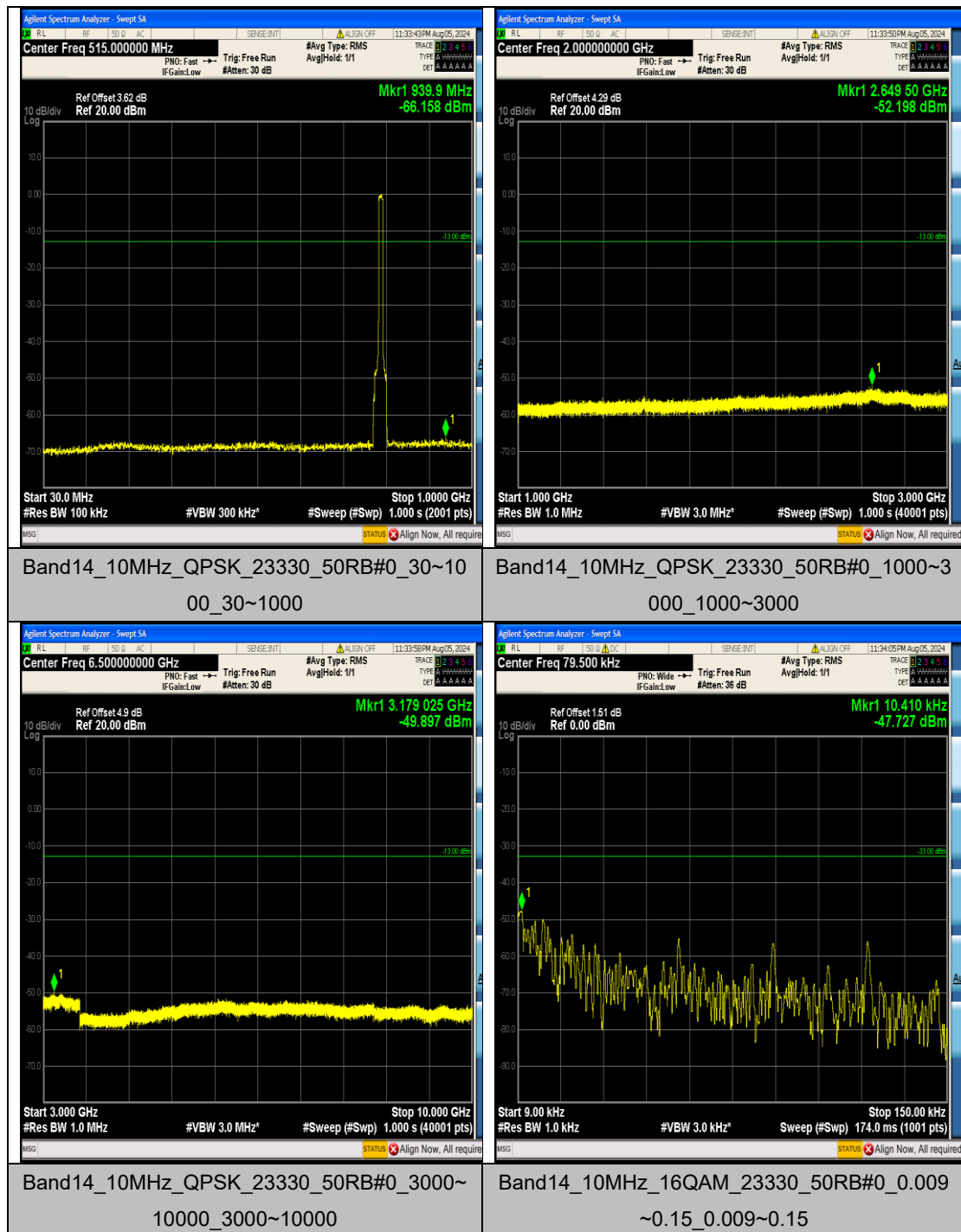


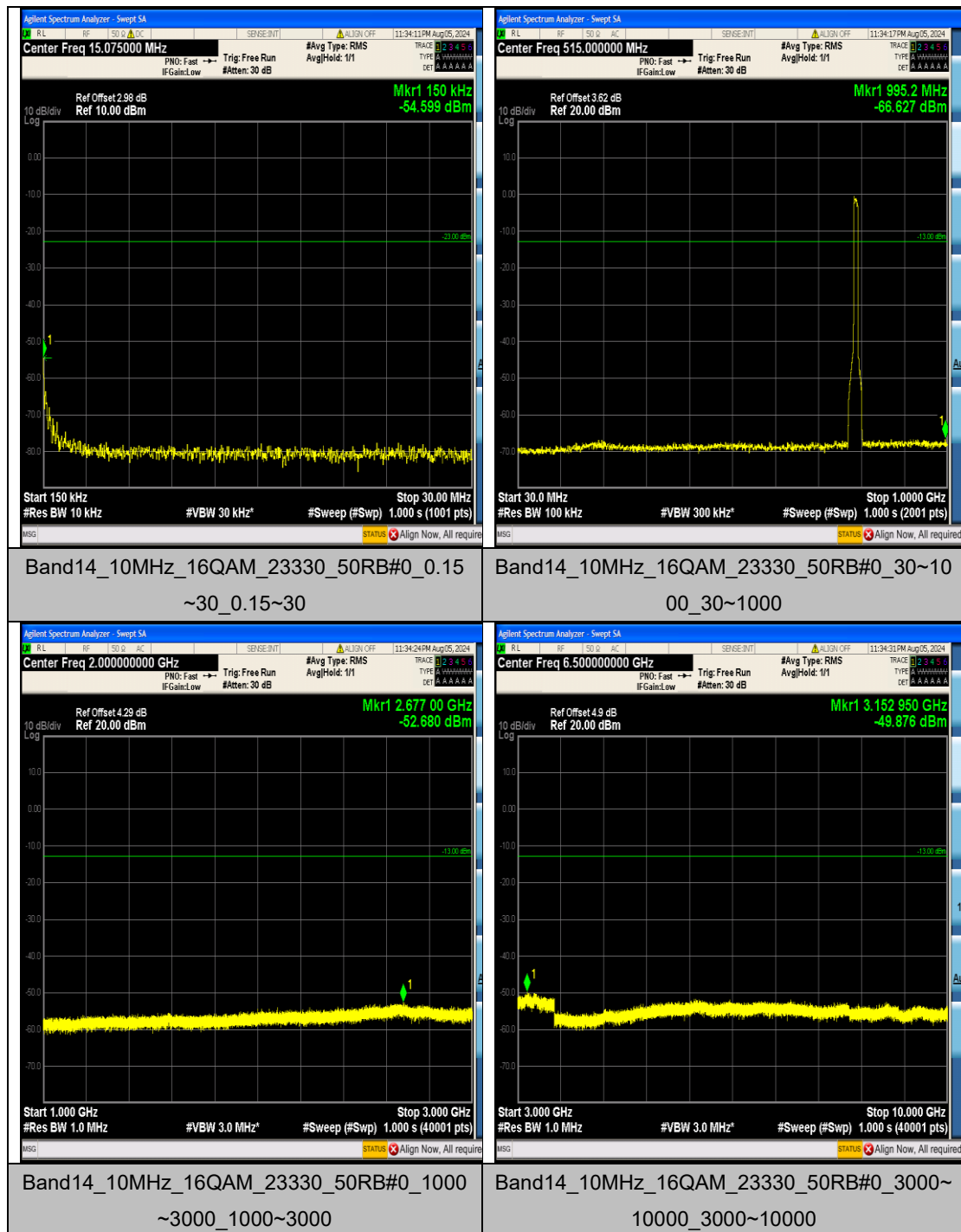












## Appendix F: Frequency Stability

### Test Result

| Voltage  |           |            |         |              |               |                  |                |                 |             |         |
|----------|-----------|------------|---------|--------------|---------------|------------------|----------------|-----------------|-------------|---------|
| Band     | Bandwidth | Modulation | Channel | RB Configure | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| BandName | Bandwidth | Modulation | Channel | RBcfg        | VolValue      | TempValue        | ValueHz        | ValuePpm        | Limit       | Verdict |

| Temperature |           |            |         |              |               |                  |                |                 |             |         |
|-------------|-----------|------------|---------|--------------|---------------|------------------|----------------|-----------------|-------------|---------|
| Band        | Bandwidth | Modulation | Channel | RB Configure | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| Band14      | 5MHz      | QPSK       | 23305   | 25RB#0       | NV            | -30              | 4.15           | 0.005250        | ±1.5        | PASS    |
| Band14      | 5MHz      | QPSK       | 23305   | 25RB#0       | NV            | -20              | 4.69           | 0.005933        | ±1.5        | PASS    |
| Band14      | 5MHz      | QPSK       | 23305   | 25RB#0       | NV            | -10              | 3.15           | 0.003985        | ±1.5        | PASS    |
| Band14      | 5MHz      | QPSK       | 23305   | 25RB#0       | NV            | 0                | 2.62           | 0.003314        | ±1.5        | PASS    |
| Band14      | 5MHz      | QPSK       | 23305   | 25RB#0       | NV            | 10               | 3.92           | 0.004959        | ±1.5        | PASS    |
| Band14      | 5MHz      | QPSK       | 23305   | 25RB#0       | NV            | 20               | 3.40           | 0.004301        | ±1.5        | PASS    |
| Band14      | 5MHz      | QPSK       | 23305   | 25RB#0       | NV            | 30               | 3.02           | 0.003820        | ±1.5        | PASS    |
| Band14      | 5MHz      | QPSK       | 23305   | 25RB#0       | NV            | 40               | 3.25           | 0.004111        | ±1.5        | PASS    |
| Band14      | 5MHz      | QPSK       | 23305   | 25RB#0       | NV            | 50               | 3.35           | 0.004238        | ±1.5        | PASS    |
| Band14      | 5MHz      | QPSK       | 23330   | 25RB#0       | NV            | -30              | -4.23          | -0.005334       | ±1.5        | PASS    |
| Band14      | 5MHz      | QPSK       | 23330   | 25RB#0       | NV            | -20              | 3.16           | 0.003985        | ±1.5        | PASS    |
| Band14      | 5MHz      | QPSK       | 23330   | 25RB#0       | NV            | -10              | 2.46           | 0.003102        | ±1.5        | PASS    |
| Band14      | 5MHz      | QPSK       | 23330   | 25RB#0       | NV            | 0                | -3.62          | -0.004565       | ±1.5        | PASS    |
| Band14      | 5MHz      | QPSK       | 23330   | 25RB#0       | NV            | 10               | 2.12           | 0.002673        | ±1.5        | PASS    |
| Band14      | 5MHz      | QPSK       | 23330   | 25RB#0       | NV            | 20               | -2.72          | -0.003430       | ±1.5        | PASS    |
| Band14      | 5MHz      | QPSK       | 23330   | 25RB#0       | NV            | 30               | -3.33          | -0.004199       | ±1.5        | PASS    |
| Band14      | 5MHz      | QPSK       | 23330   | 25RB#0       | NV            | 40               | -2.72          | -0.003430       | ±1.5        | PASS    |
| Band14      | 5MHz      | QPSK       | 23330   | 25RB#0       | NV            | 50               | -3.05          | -0.003846       | ±1.5        | PASS    |
| Band14      | 5MHz      | QPSK       | 23355   | 25RB#0       | NV            | -30              | -2.76          | -0.003470       | ±1.5        | PASS    |
| Band14      | 5MHz      | QPSK       | 23355   | 25RB#0       | NV            | -20              | -3.19          | -0.004010       | ±1.5        | PASS    |
| Band14      | 5MHz      | QPSK       | 23355   | 25RB#0       | NV            | -10              | -2.89          | -0.003633       | ±1.5        | PASS    |
| Band14      | 5MHz      | QPSK       | 23355   | 25RB#0       | NV            | 0                | -3.05          | -0.003834       | ±1.5        | PASS    |
| Band14      | 5MHz      | QPSK       | 23355   | 25RB#0       | NV            | 10               | -2.06          | -0.002590       | ±1.5        | PASS    |
| Band14      | 5MHz      | QPSK       | 23355   | 25RB#0       | NV            | 20               | -4.18          | -0.005255       | ±1.5        | PASS    |
| Band14      | 5MHz      | QPSK       | 23355   | 25RB#0       | NV            | 30               | -1.99          | -0.002502       | ±1.5        | PASS    |
| Band14      | 5MHz      | QPSK       | 23355   | 25RB#0       | NV            | 40               | 3.39           | 0.004261        | ±1.5        | PASS    |
| Band14      | 5MHz      | QPSK       | 23355   | 25RB#0       | NV            | 50               | 3.71           | 0.004664        | ±1.5        | PASS    |
| Band14      | 5MHz      | 16QAM      | 23305   | 25RB#0       | NV            | -30              | 2.75           | 0.003479        | ±1.5        | PASS    |

|        |       |       |       |        |    |     |       |           |      |      |
|--------|-------|-------|-------|--------|----|-----|-------|-----------|------|------|
| Band14 | 5MHz  | 16QAM | 23305 | 25RB#0 | NV | -20 | 5.76  | 0.007287  | ±1.5 | PASS |
| Band14 | 5MHz  | 16QAM | 23305 | 25RB#0 | NV | -10 | -2.83 | -0.003580 | ±1.5 | PASS |
| Band14 | 5MHz  | 16QAM | 23305 | 25RB#0 | NV | 0   | 4.68  | 0.005920  | ±1.5 | PASS |
| Band14 | 5MHz  | 16QAM | 23305 | 25RB#0 | NV | 10  | -2.80 | -0.003542 | ±1.5 | PASS |
| Band14 | 5MHz  | 16QAM | 23305 | 25RB#0 | NV | 20  | -3.38 | -0.004276 | ±1.5 | PASS |
| Band14 | 5MHz  | 16QAM | 23305 | 25RB#0 | NV | 30  | 2.78  | 0.003517  | ±1.5 | PASS |
| Band14 | 5MHz  | 16QAM | 23305 | 25RB#0 | NV | 40  | 3.81  | 0.004820  | ±1.5 | PASS |
| Band14 | 5MHz  | 16QAM | 23305 | 25RB#0 | NV | 50  | 4.22  | 0.005338  | ±1.5 | PASS |
| Band14 | 5MHz  | 16QAM | 23330 | 25RB#0 | NV | -30 | 2.82  | 0.003556  | ±1.5 | PASS |
| Band14 | 5MHz  | 16QAM | 23330 | 25RB#0 | NV | -20 | -2.32 | -0.002926 | ±1.5 | PASS |
| Band14 | 5MHz  | 16QAM | 23330 | 25RB#0 | NV | -10 | -2.53 | -0.003190 | ±1.5 | PASS |
| Band14 | 5MHz  | 16QAM | 23330 | 25RB#0 | NV | 0   | -2.16 | -0.002724 | ±1.5 | PASS |
| Band14 | 5MHz  | 16QAM | 23330 | 25RB#0 | NV | 10  | 2.82  | 0.003556  | ±1.5 | PASS |
| Band14 | 5MHz  | 16QAM | 23330 | 25RB#0 | NV | 20  | 3.59  | 0.004527  | ±1.5 | PASS |
| Band14 | 5MHz  | 16QAM | 23330 | 25RB#0 | NV | 30  | 2.43  | 0.003064  | ±1.5 | PASS |
| Band14 | 5MHz  | 16QAM | 23330 | 25RB#0 | NV | 40  | -1.92 | -0.002421 | ±1.5 | PASS |
| Band14 | 5MHz  | 16QAM | 23330 | 25RB#0 | NV | 50  | -2.47 | -0.003115 | ±1.5 | PASS |
| Band14 | 5MHz  | 16QAM | 23355 | 25RB#0 | NV | -30 | -4.92 | -0.006185 | ±1.5 | PASS |
| Band14 | 5MHz  | 16QAM | 23355 | 25RB#0 | NV | -20 | -3.48 | -0.004375 | ±1.5 | PASS |
| Band14 | 5MHz  | 16QAM | 23355 | 25RB#0 | NV | -10 | -4.86 | -0.006109 | ±1.5 | PASS |
| Band14 | 5MHz  | 16QAM | 23355 | 25RB#0 | NV | 0   | -4.26 | -0.005355 | ±1.5 | PASS |
| Band14 | 5MHz  | 16QAM | 23355 | 25RB#0 | NV | 10  | -2.99 | -0.003759 | ±1.5 | PASS |
| Band14 | 5MHz  | 16QAM | 23355 | 25RB#0 | NV | 20  | -4.61 | -0.005795 | ±1.5 | PASS |
| Band14 | 5MHz  | 16QAM | 23355 | 25RB#0 | NV | 30  | -3.15 | -0.003960 | ±1.5 | PASS |
| Band14 | 5MHz  | 16QAM | 23355 | 25RB#0 | NV | 40  | -3.71 | -0.004664 | ±1.5 | PASS |
| Band14 | 5MHz  | 16QAM | 23355 | 25RB#0 | NV | 50  | -3.28 | -0.004123 | ±1.5 | PASS |
| Band14 | 10MHz | QPSK  | 23330 | 50RB#0 | NV | -30 | 3.28  | 0.004136  | ±1.5 | PASS |
| Band14 | 10MHz | QPSK  | 23330 | 50RB#0 | NV | -20 | -3.78 | -0.004767 | ±1.5 | PASS |
| Band14 | 10MHz | QPSK  | 23330 | 50RB#0 | NV | -10 | -2.89 | -0.003644 | ±1.5 | PASS |
| Band14 | 10MHz | QPSK  | 23330 | 50RB#0 | NV | 0   | -4.22 | -0.005322 | ±1.5 | PASS |
| Band14 | 10MHz | QPSK  | 23330 | 50RB#0 | NV | 10  | -3.91 | -0.004931 | ±1.5 | PASS |
| Band14 | 10MHz | QPSK  | 23330 | 50RB#0 | NV | 20  | -3.00 | -0.003783 | ±1.5 | PASS |
| Band14 | 10MHz | QPSK  | 23330 | 50RB#0 | NV | 30  | -2.23 | -0.002812 | ±1.5 | PASS |
| Band14 | 10MHz | QPSK  | 23330 | 50RB#0 | NV | 40  | -3.96 | -0.004994 | ±1.5 | PASS |
| Band14 | 10MHz | QPSK  | 23330 | 50RB#0 | NV | 50  | -3.55 | -0.004477 | ±1.5 | PASS |
| Band14 | 10MHz | 16QAM | 23330 | 50RB#0 | NV | -30 | -2.93 | -0.003695 | ±1.5 | PASS |
| Band14 | 10MHz | 16QAM | 23330 | 50RB#0 | NV | -20 | -3.79 | -0.004779 | ±1.5 | PASS |
| Band14 | 10MHz | 16QAM | 23330 | 50RB#0 | NV | -10 | 2.90  | 0.003657  | ±1.5 | PASS |
| Band14 | 10MHz | 16QAM | 23330 | 50RB#0 | NV | 0   | -3.52 | -0.004439 | ±1.5 | PASS |
| Band14 | 10MHz | 16QAM | 23330 | 50RB#0 | NV | 10  | -5.26 | -0.006633 | ±1.5 | PASS |
| Band14 | 10MHz | 16QAM | 23330 | 50RB#0 | NV | 20  | -2.90 | -0.003657 | ±1.5 | PASS |

|        |       |       |       |        |    |    |       |           |      |      |
|--------|-------|-------|-------|--------|----|----|-------|-----------|------|------|
| Band14 | 10MHz | 16QAM | 23330 | 50RB#0 | NV | 30 | -3.22 | -0.004061 | ±1.5 | PASS |
| Band14 | 10MHz | 16QAM | 23330 | 50RB#0 | NV | 40 | -4.43 | -0.005586 | ±1.5 | PASS |
| Band14 | 10MHz | 16QAM | 23330 | 50RB#0 | NV | 50 | -2.93 | -0.003695 | ±1.5 | PASS |