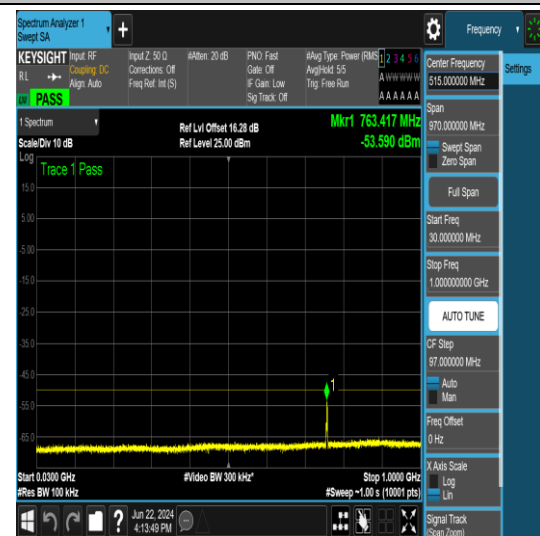
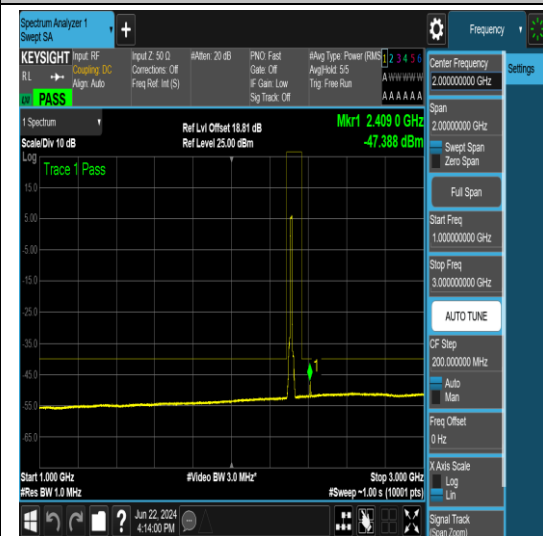


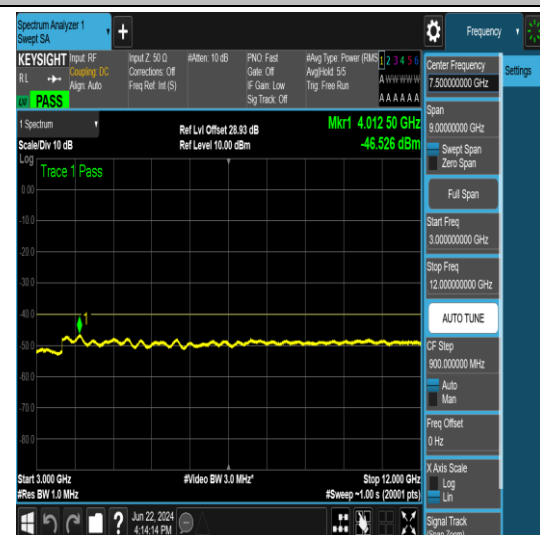
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NTNV\_DC\_14A\_n30A\_PC3\_30\_5+10\_M+M\_TID6  
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NTNV\_DC\_14A\_n30A\_PC3\_30\_5+10\_M+M\_TID6  
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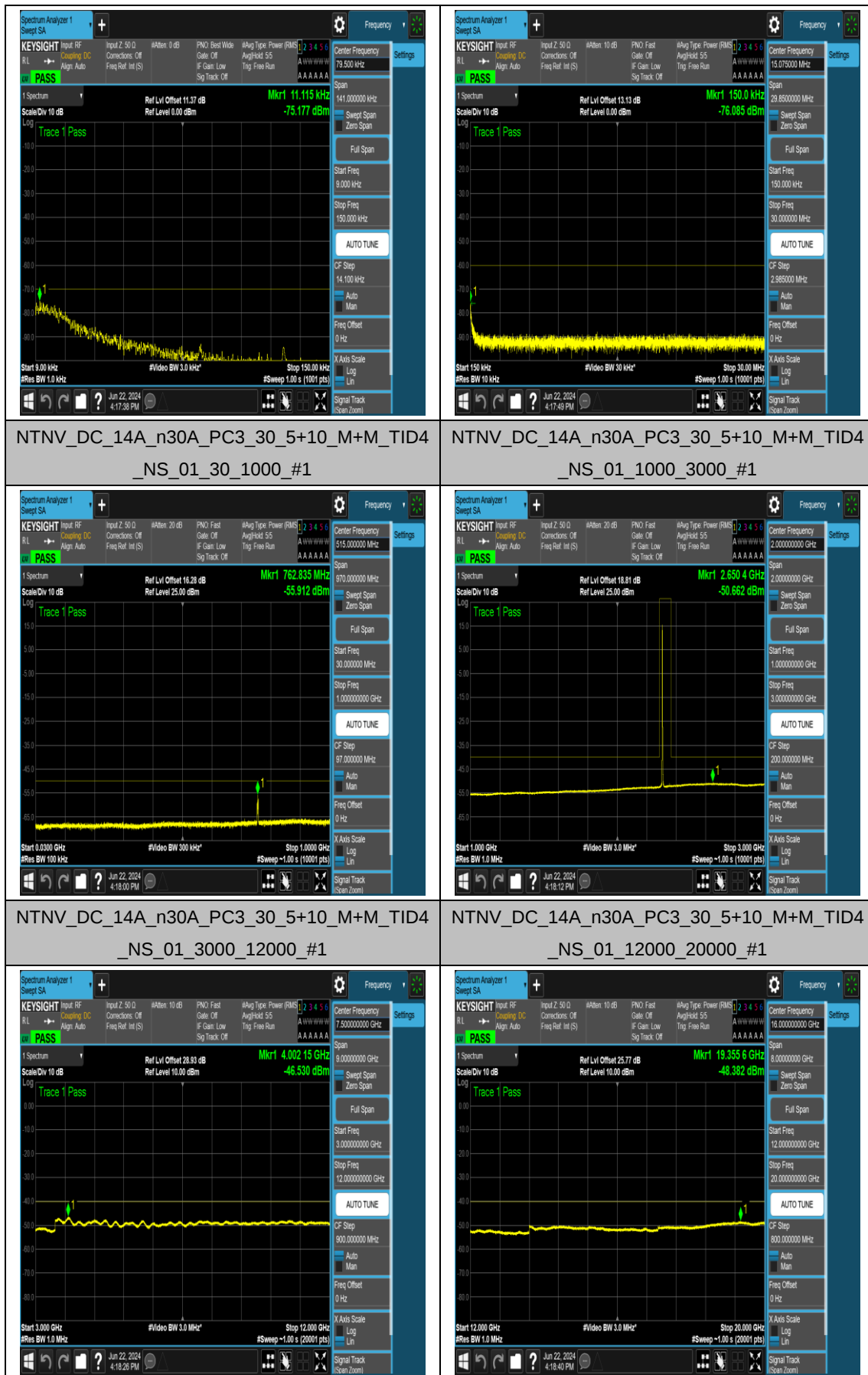


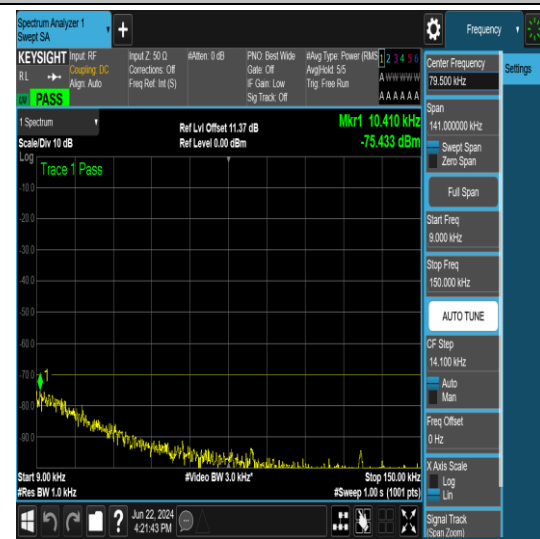
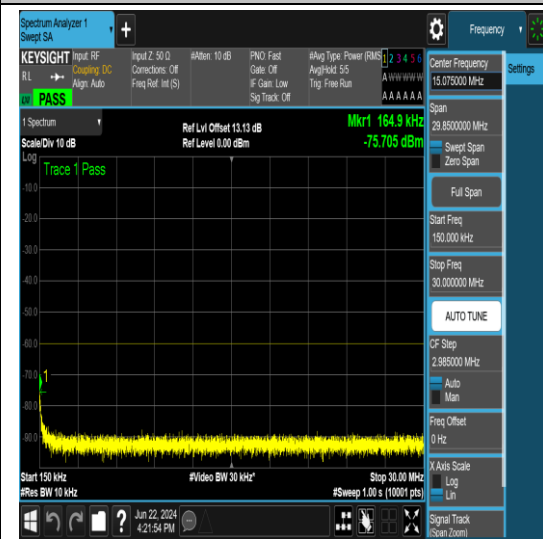
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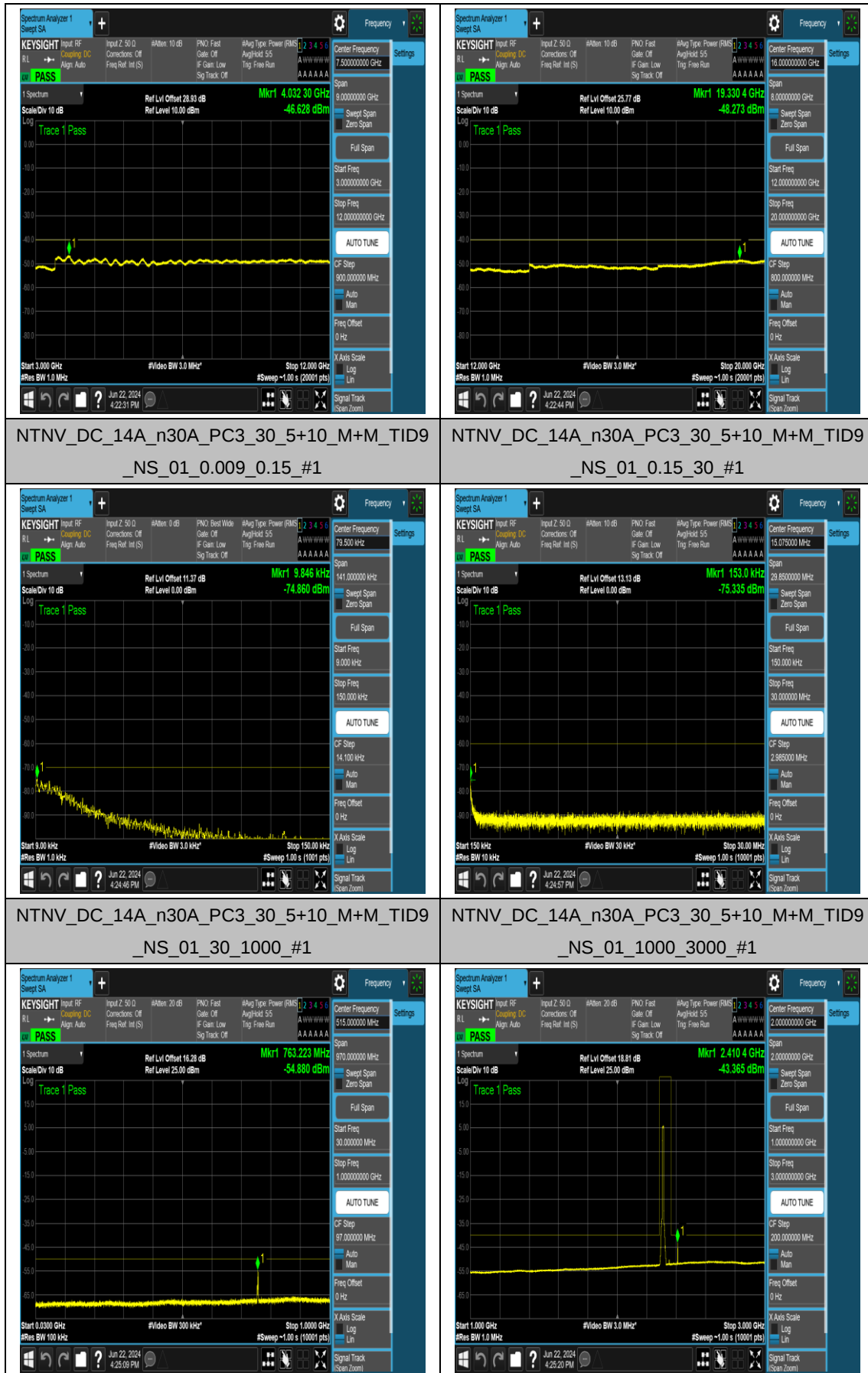


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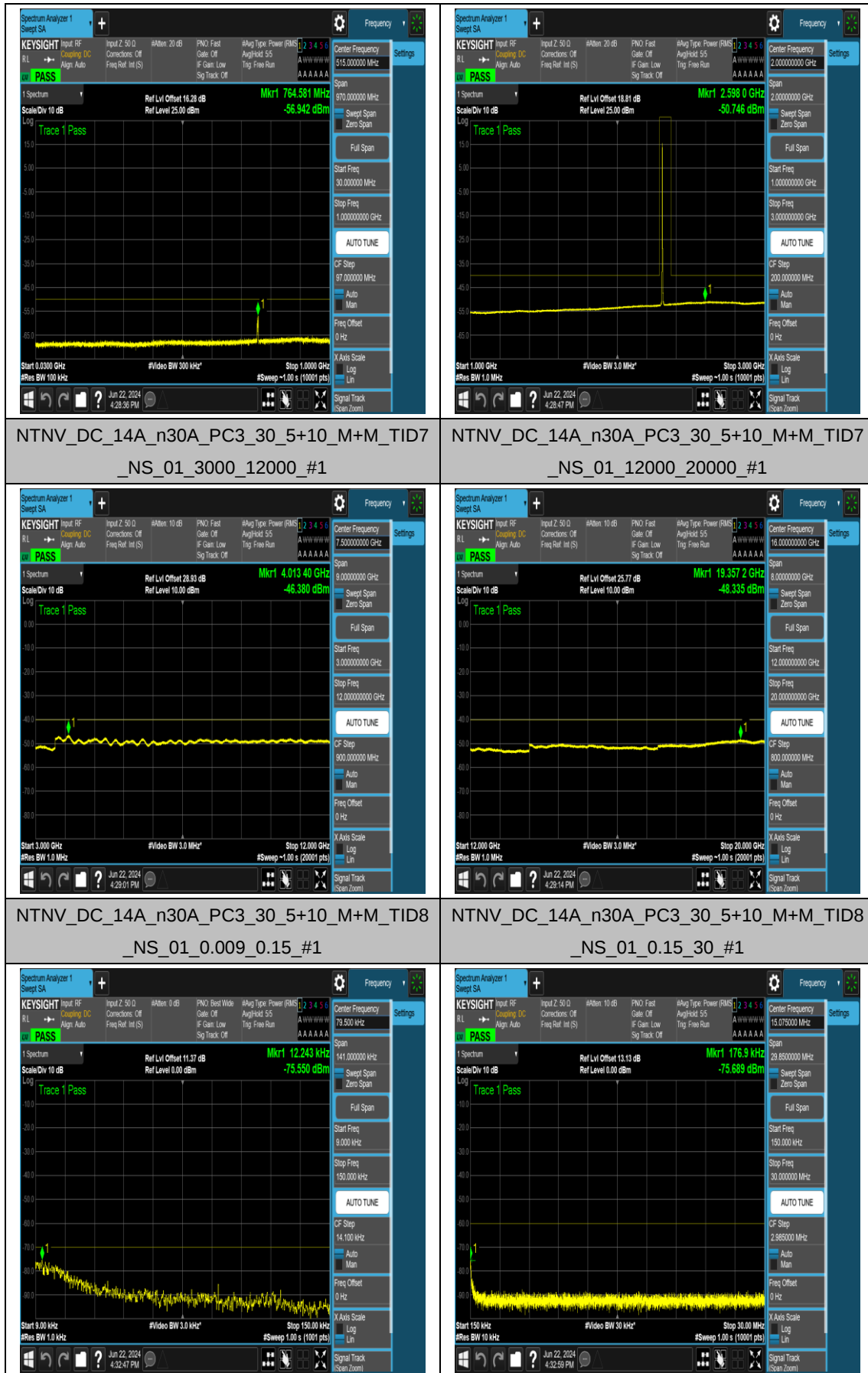
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NTNV\_DC\_14A\_n30A\_PC3\_30\_5+10\_M+M\_TID5  
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\_NS\_01\_0.15\_30\_#1NTNV\_DC\_14A\_n30A\_PC3\_30\_5+10\_M+M\_TID5  
\_NS\_01\_30\_1000\_#1NTNV\_DC\_14A\_n30A\_PC3\_30\_5+10\_M+M\_TID5  
\_NS\_01\_1000\_3000\_#1NTNV\_DC\_14A\_n30A\_PC3\_30\_5+10\_M+M\_TID5  
\_NS\_01\_3000\_12000\_#1NTNV\_DC\_14A\_n30A\_PC3\_30\_5+10\_M+M\_TID5  
\_NS\_01\_12000\_20000\_#1









## Appendix F: Frequency Stability for NSA

### Test Result

#### Frequency Error VS. Voltage

| Voltage     |     |           |            |         |            |         |             |               |                 |         |
|-------------|-----|-----------|------------|---------|------------|---------|-------------|---------------|-----------------|---------|
| Band        | SCS | Bandwidth | Modulation | Channel | RB Config  | Voltage | Temperature | Deviation(Hz) | Deviation (ppm) | Verdict |
| DC_14A_n30A | 30  | 5+5       | DFT-QPSK   | M+L     | Outer_Full | VL      | NT          | 12.000000     | 0.005200        | PASS    |
| DC_14A_n30A | 30  | 5+5       | DFT-QPSK   | M+L     | Outer_Full | VN      | NT          | 16.000000     | 0.006934        | PASS    |
| DC_14A_n30A | 30  | 5+5       | DFT-QPSK   | M+L     | Outer_Full | VH      | NT          | 10.000000     | 0.004334        | PASS    |
| DC_14A_n30A | 30  | 5+5       | DFT-16QAM  | M+L     | Outer_Full | VL      | NT          | 5.000000      | 0.002167        | PASS    |
| DC_14A_n30A | 30  | 5+5       | DFT-16QAM  | M+L     | Outer_Full | VN      | NT          | 3.000000      | 0.001300        | PASS    |
| DC_14A_n30A | 30  | 5+5       | DFT-16QAM  | M+L     | Outer_Full | VH      | NT          | 9.000000      | 0.003900        | PASS    |
| DC_14A_n30A | 30  | 5+5       | DFT-QPSK   | M+M     | Outer_Full | VL      | NT          | 5.000000      | 0.002165        | PASS    |
| DC_14A_n30A | 30  | 5+5       | DFT-QPSK   | M+M     | Outer_Full | VN      | NT          | 10.000000     | 0.004329        | PASS    |
| DC_14A_n30A | 30  | 5+5       | DFT-QPSK   | M+M     | Outer_Full | VH      | NT          | 16.000000     | 0.006926        | PASS    |
| DC_14A_n30A | 30  | 5+5       | DFT-16QAM  | M+M     | Outer_Full | VL      | NT          | 1.000000      | 0.000433        | PASS    |
| DC_14A_n30A | 30  | 5+5       | DFT-16QAM  | M+M     | Outer_Full | VN      | NT          | 2.000000      | 0.000866        | PASS    |
| DC_14A_n30A | 30  | 5+5       | DFT-16QAM  | M+M     | Outer_Full | VH      | NT          | 13.000000     | 0.005628        | PASS    |
| DC_14A_n30A | 30  | 5+5       | DFT-QPSK   | M+H     | Outer_Full | VL      | NT          | 7.000000      | 0.003027        | PASS    |
| DC_14A_n30A | 30  | 5+5       | DFT-QPSK   | M+H     | Outer_Full | VN      | NT          | 11.000000     | 0.004757        | PASS    |
| DC_14A_n30A | 30  | 5+5       | DFT-QPSK   | M+H     | Outer_Full | VH      | NT          | 2.000000      | 0.000865        | PASS    |
| DC_14A_n30A | 30  | 5+5       | DFT-16QAM  | M+H     | Outer_Full | VL      | NT          | 16.000000     | 0.006919        | PASS    |
| DC_14A_n30A | 30  | 5+5       | DFT-16QAM  | M+H     | Outer_Full | VN      | NT          | 15.000000     | 0.006486        | PASS    |

|             |    |      |           |     |            |    |    |           |          |      |
|-------------|----|------|-----------|-----|------------|----|----|-----------|----------|------|
| DC_14A_n30A | 30 | 5+5  | DFT-16QAM | M+H | Outer_Full | VH | NT | 7.000000  | 0.003027 | PASS |
| DC_14A_n30A | 30 | 5+10 | DFT-QPSK  | M+M | Outer_Full | VL | NT | 11.000000 | 0.004762 | PASS |
| DC_14A_n30A | 30 | 5+10 | DFT-QPSK  | M+M | Outer_Full | VN | NT | 16.000000 | 0.006926 | PASS |
| DC_14A_n30A | 30 | 5+10 | DFT-QPSK  | M+M | Outer_Full | VH | NT | 15.000000 | 0.006494 | PASS |
| DC_14A_n30A | 30 | 5+10 | DFT-16QAM | M+M | Outer_Full | VL | NT | 6.000000  | 0.002597 | PASS |
| DC_14A_n30A | 30 | 5+10 | DFT-16QAM | M+M | Outer_Full | VN | NT | 16.000000 | 0.006926 | PASS |
| DC_14A_n30A | 30 | 5+10 | DFT-16QAM | M+M | Outer_Full | VH | NT | 18.000000 | 0.007792 | PASS |

**Frequency Error VS. Temperature**

| Voltage     |     |           |            |         |            |         |             |               |                 |         |
|-------------|-----|-----------|------------|---------|------------|---------|-------------|---------------|-----------------|---------|
| Band        | SCS | Bandwidth | Modulation | Channel | RB Config  | Voltage | Temperature | Deviation(Hz) | Deviation (ppm) | Verdict |
| DC_14A_n30A | 30  | 5+5       | DFT-QPSK   | M+L     | Outer_Full | NV      | -30         | 6.000000      | 0.002600        | PASS    |
| DC_14A_n30A | 30  | 5+5       | DFT-QPSK   | M+L     | Outer_Full | NV      | -20         | 7.000000      | 0.003034        | PASS    |
| DC_14A_n30A | 30  | 5+5       | DFT-QPSK   | M+L     | Outer_Full | NV      | -10         | 6.000000      | 0.002600        | PASS    |
| DC_14A_n30A | 30  | 5+5       | DFT-QPSK   | M+L     | Outer_Full | NV      | 0           | 16.000000     | 0.006934        | PASS    |
| DC_14A_n30A | 30  | 5+5       | DFT-QPSK   | M+L     | Outer_Full | NV      | 10          | 1.000000      | 0.000433        | PASS    |
| DC_14A_n30A | 30  | 5+5       | DFT-QPSK   | M+L     | Outer_Full | NV      | 20          | 11.000000     | 0.004767        | PASS    |
| DC_14A_n30A | 30  | 5+5       | DFT-QPSK   | M+L     | Outer_Full | NV      | 30          | 17.000000     | 0.007367        | PASS    |
| DC_14A_n30A | 30  | 5+5       | DFT-QPSK   | M+L     | Outer_Full | NV      | 40          | 11.000000     | 0.004767        | PASS    |
| DC_14A_n30A | 30  | 5+5       | DFT-QPSK   | M+L     | Outer_Full | NV      | 50          | 18.000000     | 0.007801        | PASS    |
| DC_14A_n30A | 30  | 5+5       | DFT-16QAM  | M+L     | Outer_Full | NV      | -30         | 1.000000      | 0.000433        | PASS    |
| DC_14A_n30A | 30  | 5+5       | DFT-16QAM  | M+L     | Outer_Full | NV      | -20         | 8.000000      | 0.003467        | PASS    |
| DC_14A      | 30  | 5+5       | DFT-16QAM  | M+L     | Outer_Full | NV      | -10         | 18.000000     | 0.007801        | PASS    |

|                 |    |     |           |     |            |    |     |           |          |      |
|-----------------|----|-----|-----------|-----|------------|----|-----|-----------|----------|------|
| _n30A           |    |     |           |     |            |    |     |           |          |      |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-16QAM | M+L | Outer_Full | NV | 0   | 18.000000 | 0.007801 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-16QAM | M+L | Outer_Full | NV | 10  | 5.000000  | 0.002167 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-16QAM | M+L | Outer_Full | NV | 20  | 18.000000 | 0.007801 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-16QAM | M+L | Outer_Full | NV | 30  | 9.000000  | 0.003900 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-16QAM | M+L | Outer_Full | NV | 40  | 9.000000  | 0.003900 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-16QAM | M+L | Outer_Full | NV | 50  | 19.000000 | 0.008234 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-QPSK  | M+M | Outer_Full | NV | -30 | 2.000000  | 0.000866 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-QPSK  | M+M | Outer_Full | NV | -20 | 9.000000  | 0.003896 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-QPSK  | M+M | Outer_Full | NV | -10 | 19.000000 | 0.008225 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-QPSK  | M+M | Outer_Full | NV | 0   | 3.000000  | 0.001299 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-QPSK  | M+M | Outer_Full | NV | 10  | 12.000000 | 0.005195 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-QPSK  | M+M | Outer_Full | NV | 20  | 12.000000 | 0.005195 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-QPSK  | M+M | Outer_Full | NV | 30  | 3.000000  | 0.001299 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-QPSK  | M+M | Outer_Full | NV | 40  | 3.000000  | 0.001299 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-QPSK  | M+M | Outer_Full | NV | 50  | 13.000000 | 0.005628 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-16QAM | M+M | Outer_Full | NV | -30 | 15.000000 | 0.006494 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-16QAM | M+M | Outer_Full | NV | -20 | 10.000000 | 0.004329 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-16QAM | M+M | Outer_Full | NV | -10 | 10.000000 | 0.004329 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-16QAM | M+M | Outer_Full | NV | 0   | 1.000000  | 0.000433 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-16QAM | M+M | Outer_Full | NV | 10  | 1.000000  | 0.000433 | PASS |
| DC_14A          | 30 | 5+5 | DFT-16QAM | M+M | Outer_Full | NV | 20  | 17.000000 | 0.007359 | PASS |

|                 |    |     |           |     |            |    |     |           |          |      |
|-----------------|----|-----|-----------|-----|------------|----|-----|-----------|----------|------|
| _n30A           |    |     |           |     |            |    |     |           |          |      |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-16QAM | M+M | Outer_Full | NV | 30  | 4.000000  | 0.001732 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-16QAM | M+M | Outer_Full | NV | 40  | 11.000000 | 0.004762 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-16QAM | M+M | Outer_Full | NV | 50  | 14.000000 | 0.006061 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-QPSK  | M+H | Outer_Full | NV | -30 | 17.000000 | 0.007351 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-QPSK  | M+H | Outer_Full | NV | -20 | 15.000000 | 0.006486 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-QPSK  | M+H | Outer_Full | NV | -10 | 18.000000 | 0.007784 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-QPSK  | M+H | Outer_Full | NV | 0   | 5.000000  | 0.002162 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-QPSK  | M+H | Outer_Full | NV | 10  | 12.000000 | 0.005189 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-QPSK  | M+H | Outer_Full | NV | 20  | 3.000000  | 0.001297 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-QPSK  | M+H | Outer_Full | NV | 30  | 10.000000 | 0.004324 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-QPSK  | M+H | Outer_Full | NV | 40  | 1.000000  | 0.000432 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-QPSK  | M+H | Outer_Full | NV | 50  | 6.000000  | 0.002595 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-16QAM | M+H | Outer_Full | NV | -30 | 2.000000  | 0.000865 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-16QAM | M+H | Outer_Full | NV | -20 | 19.000000 | 0.008216 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-16QAM | M+H | Outer_Full | NV | -10 | 10.000000 | 0.004324 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-16QAM | M+H | Outer_Full | NV | 0   | 17.000000 | 0.007351 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-16QAM | M+H | Outer_Full | NV | 10  | 5.000000  | 0.002162 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-16QAM | M+H | Outer_Full | NV | 20  | 14.000000 | 0.006054 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-16QAM | M+H | Outer_Full | NV | 30  | 1.000000  | 0.000432 | PASS |
| DC_14A<br>_n30A | 30 | 5+5 | DFT-16QAM | M+H | Outer_Full | NV | 40  | 3.000000  | 0.001297 | PASS |
| DC_14A          | 30 | 5+5 | DFT-16QAM | M+H | Outer_Full | NV | 50  | 3.000000  | 0.001297 | PASS |

|             |    |      |           |     |            |    |     |           |          |      |
|-------------|----|------|-----------|-----|------------|----|-----|-----------|----------|------|
| _n30A       |    |      |           |     |            |    |     |           |          |      |
| DC_14A_n30A | 30 | 5+10 | DFT-QPSK  | M+M | Outer_Full | NV | -30 | 5.000000  | 0.002165 | PASS |
| DC_14A_n30A | 30 | 5+10 | DFT-QPSK  | M+M | Outer_Full | NV | -20 | 3.000000  | 0.001299 | PASS |
| DC_14A_n30A | 30 | 5+10 | DFT-QPSK  | M+M | Outer_Full | NV | -10 | 3.000000  | 0.001299 | PASS |
| DC_14A_n30A | 30 | 5+10 | DFT-QPSK  | M+M | Outer_Full | NV | 0   | 9.000000  | 0.003896 | PASS |
| DC_14A_n30A | 30 | 5+10 | DFT-QPSK  | M+M | Outer_Full | NV | 10  | 2.000000  | 0.000866 | PASS |
| DC_14A_n30A | 30 | 5+10 | DFT-QPSK  | M+M | Outer_Full | NV | 20  | 9.000000  | 0.003896 | PASS |
| DC_14A_n30A | 30 | 5+10 | DFT-QPSK  | M+M | Outer_Full | NV | 30  | 17.000000 | 0.007359 | PASS |
| DC_14A_n30A | 30 | 5+10 | DFT-QPSK  | M+M | Outer_Full | NV | 40  | 12.000000 | 0.005195 | PASS |
| DC_14A_n30A | 30 | 5+10 | DFT-QPSK  | M+M | Outer_Full | NV | 50  | 3.000000  | 0.001299 | PASS |
| DC_14A_n30A | 30 | 5+10 | DFT-16QAM | M+M | Outer_Full | NV | -30 | 5.000000  | 0.002165 | PASS |
| DC_14A_n30A | 30 | 5+10 | DFT-16QAM | M+M | Outer_Full | NV | -20 | 12.000000 | 0.005195 | PASS |
| DC_14A_n30A | 30 | 5+10 | DFT-16QAM | M+M | Outer_Full | NV | -10 | 17.000000 | 0.007359 | PASS |
| DC_14A_n30A | 30 | 5+10 | DFT-16QAM | M+M | Outer_Full | NV | 0   | 5.000000  | 0.002165 | PASS |
| DC_14A_n30A | 30 | 5+10 | DFT-16QAM | M+M | Outer_Full | NV | 10  | 12.000000 | 0.005195 | PASS |
| DC_14A_n30A | 30 | 5+10 | DFT-16QAM | M+M | Outer_Full | NV | 20  | 18.000000 | 0.007792 | PASS |
| DC_14A_n30A | 30 | 5+10 | DFT-16QAM | M+M | Outer_Full | NV | 30  | 11.000000 | 0.004762 | PASS |
| DC_14A_n30A | 30 | 5+10 | DFT-16QAM | M+M | Outer_Full | NV | 40  | 10.000000 | 0.004329 | PASS |
| DC_14A_n30A | 30 | 5+10 | DFT-16QAM | M+M | Outer_Full | NV | 50  | 1.000000  | 0.000433 | PASS |