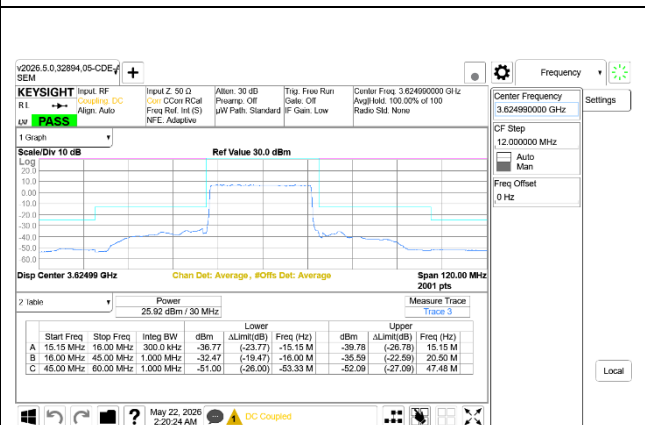
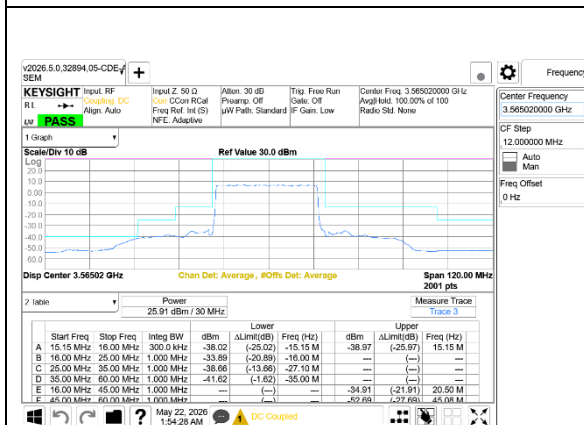
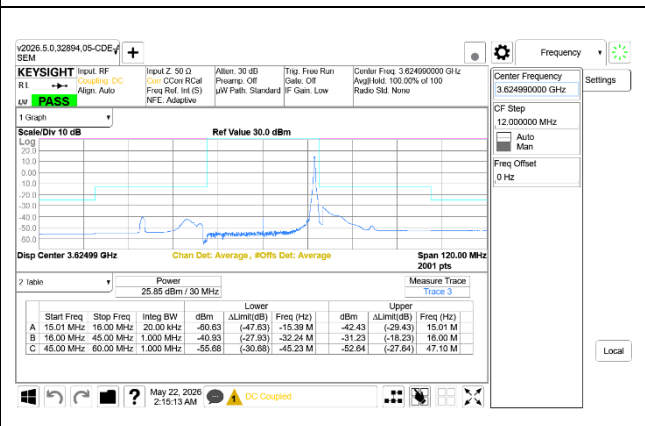
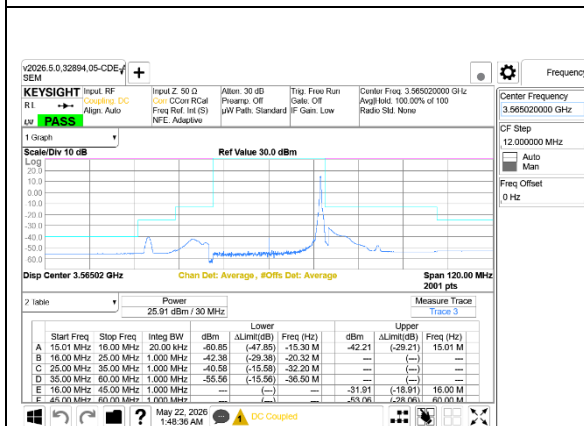
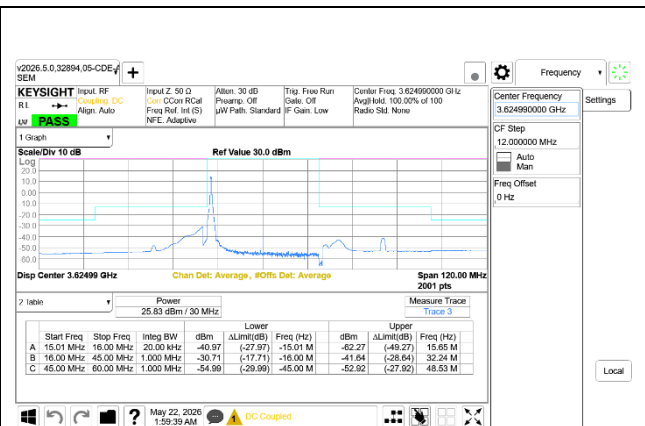
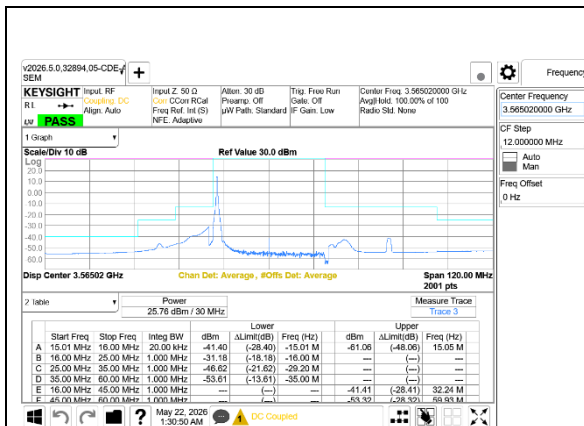
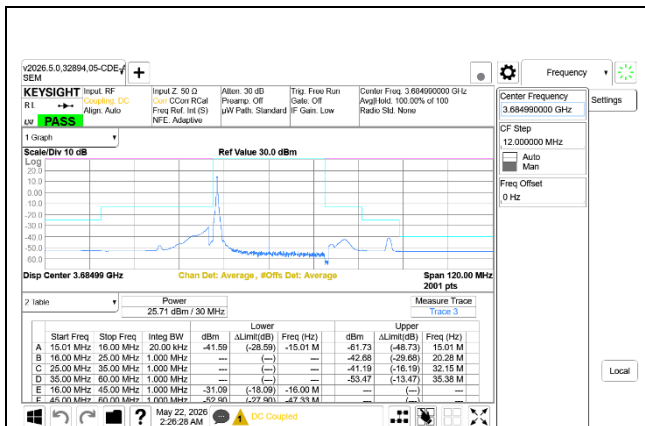
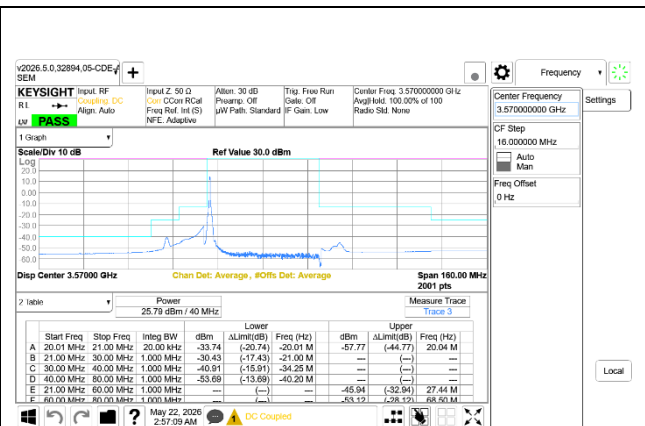


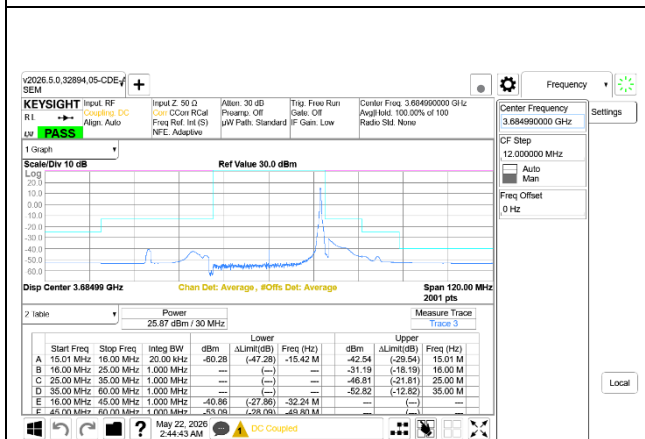




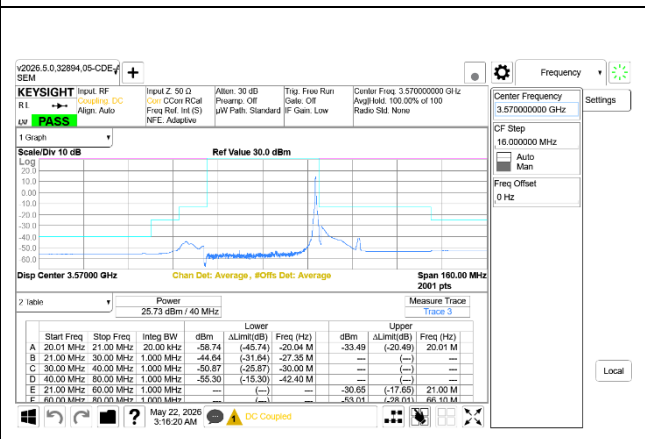
5G NR n48 30MHz BPSK High Channel RB1-0, Ant7+Ant8



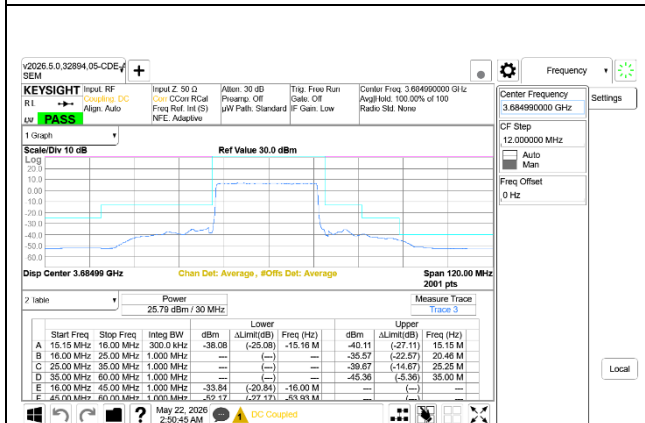
5G NR n48 40MHz BPSK Low Channel RB1-0, Ant7+Ant8



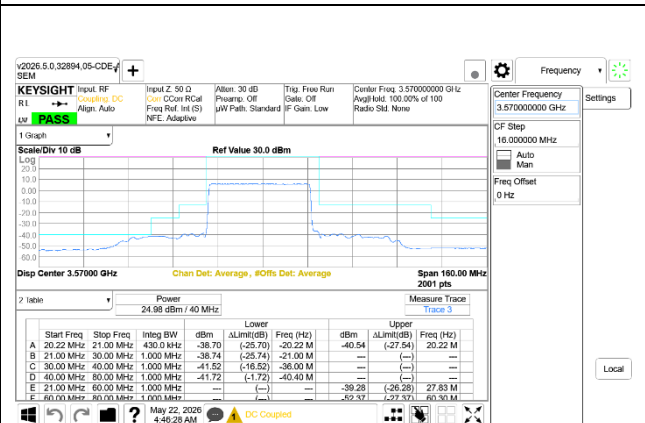
5G NR n48 30MHz BPSK High Channel RB1-77, Ant7+Ant8



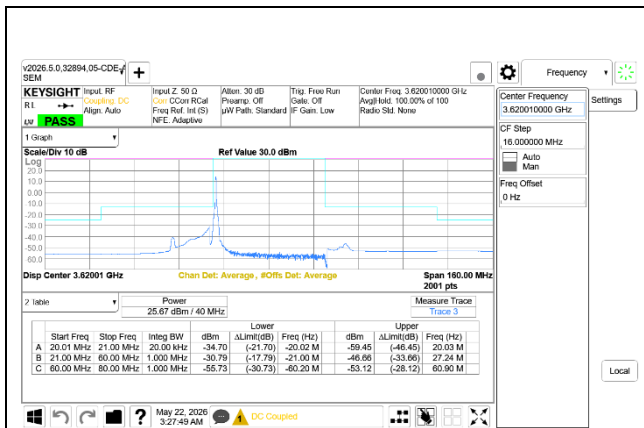
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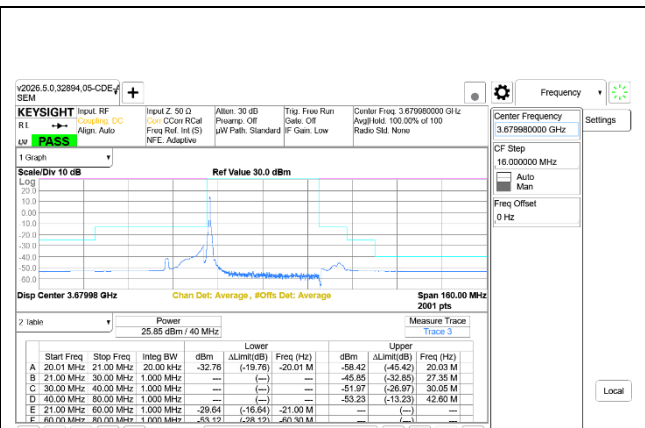
5G NR n48 30MHz BPSK High Channel RB75-0, Ant7+Ant8



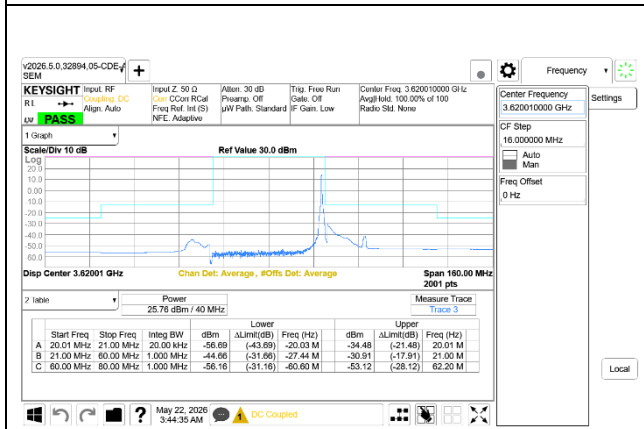
5G NR n48 40MHz BPSK Low Channel RB100-0, Ant7+Ant8



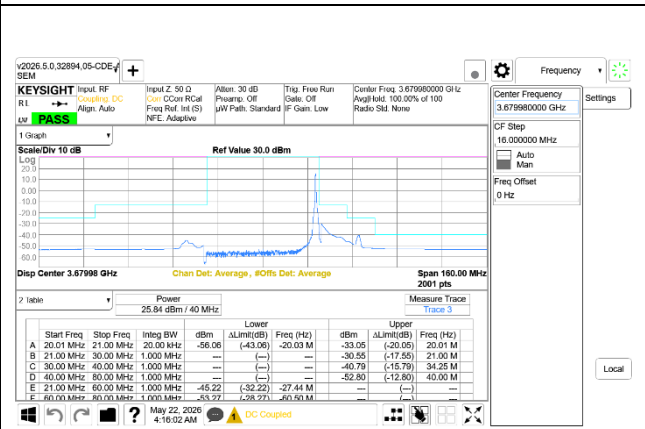
5G NR n48 40MHz BPSK Middle Channel RB1-0, Ant7+Ant8



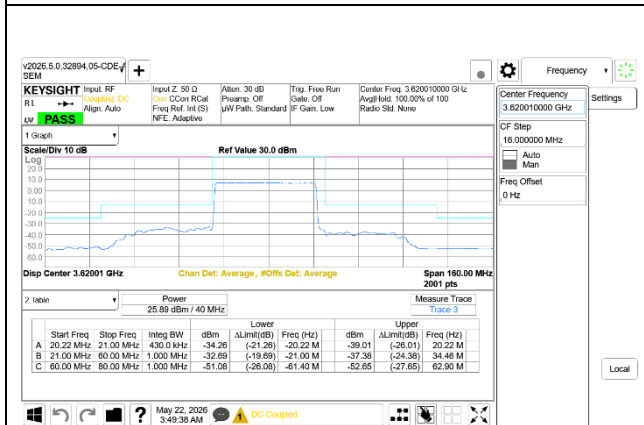
5G NR n48 40MHz BPSK High Channel RB1-0, Ant7+Ant8



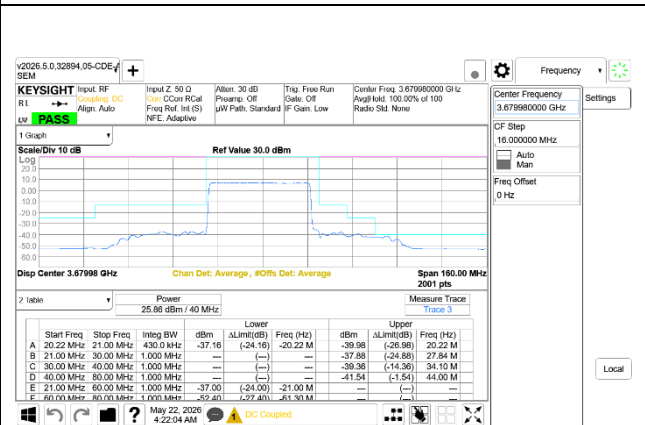
5G NR n48 40MHz BPSK Mid Channel RB1-105, Ant7+Ant8



5G NR n48 40MHz BPSK High Channel RB1-105, Ant7+Ant8

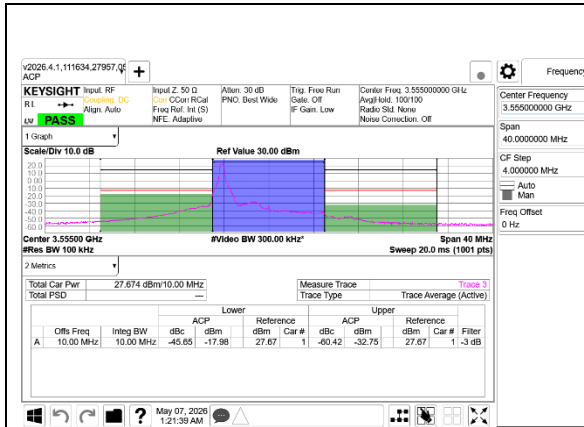


5G NR n48 40MHz BPSK Mid Channel RB100-0, Ant7+Ant8

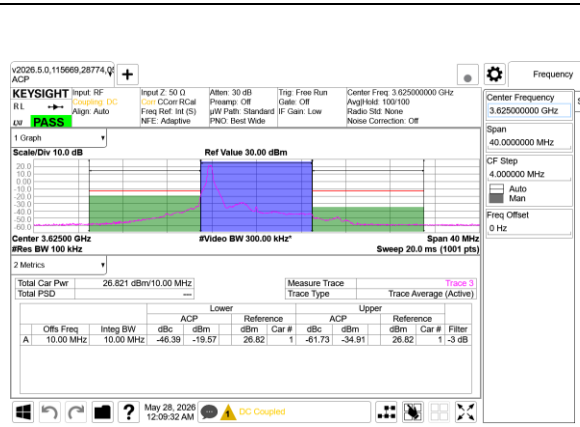


5G NR n48 40MHz BPSK High Channel RB100-0, Ant7+Ant8

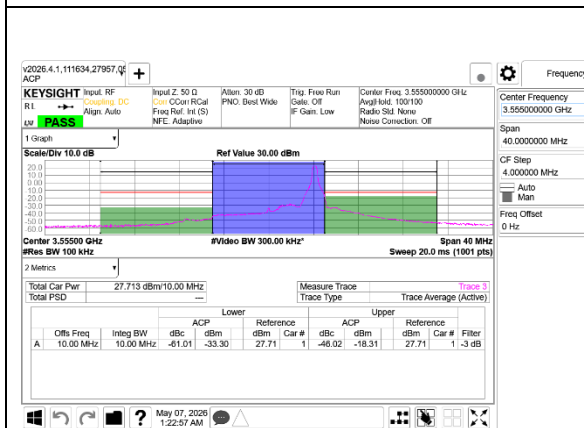
## 9.2.8. 5G NR n48 MIMO ADJACENT CHANNEL POWER



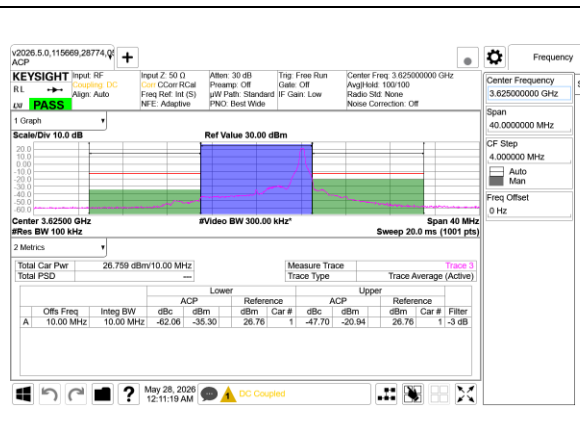
5G NR n48 10MHz BPSK Low Channel RB1-0, Ant7+Ant8



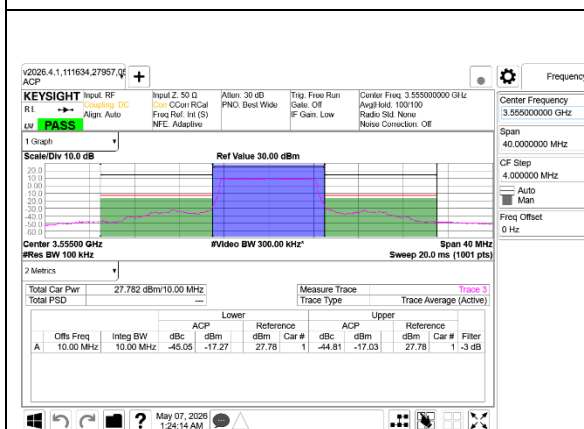
5G NR n48 10MHz BPSK Middle Channel RB1-0, Ant7+Ant8



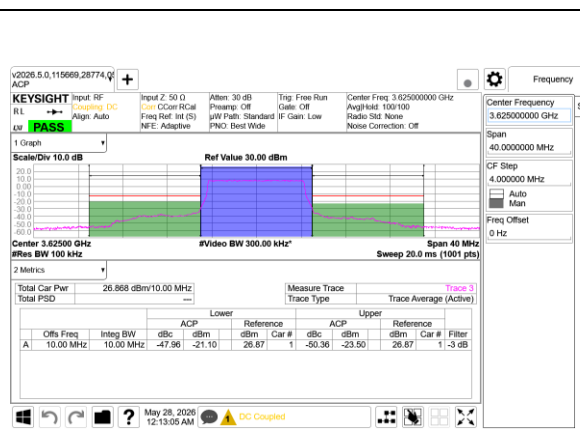
5G NR n48 10MHz BPSK Low Channel RB1-23, Ant7+Ant8



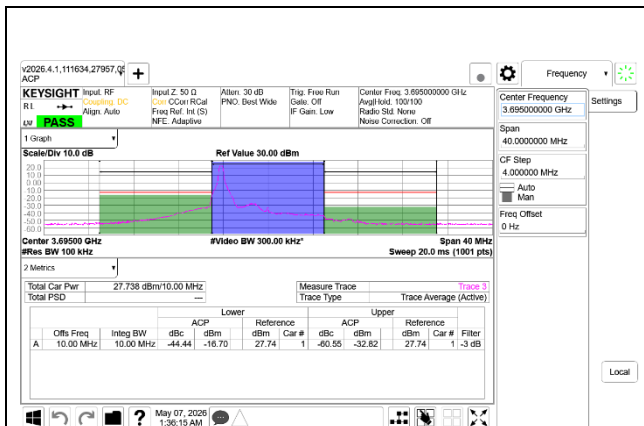
5G NR n48 10MHz BPSK Middle Channel RB1-23, Ant7+Ant8



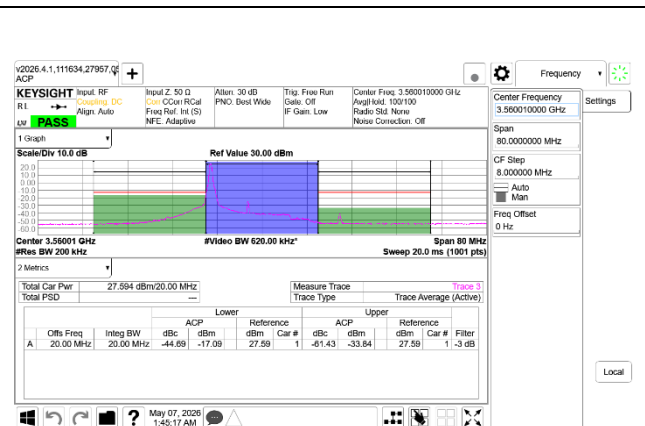
5G NR n48 10MHz BPSK Low Channel RB24-0, Ant7+Ant8



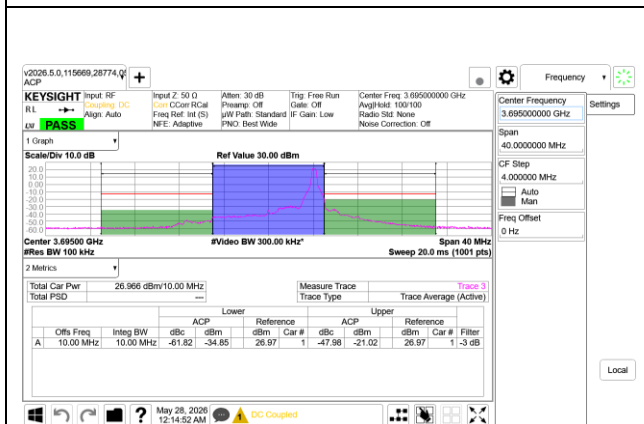
5G NR n48 10MHz BPSK Middle Channel RB24-0, Ant7+Ant8



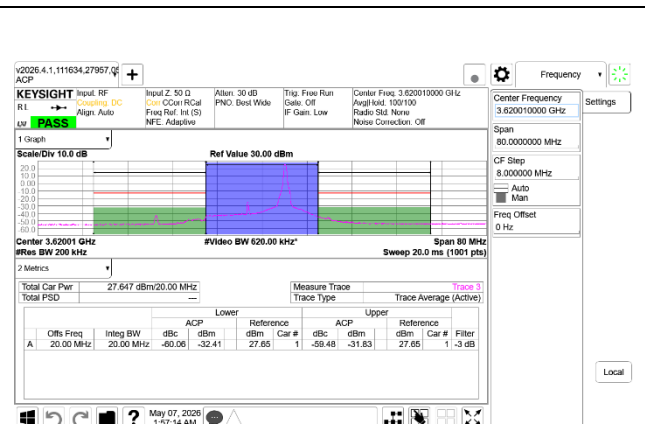
5G NR n48 10MHz BPSK High Channel RB1-0, Ant7+Ant8



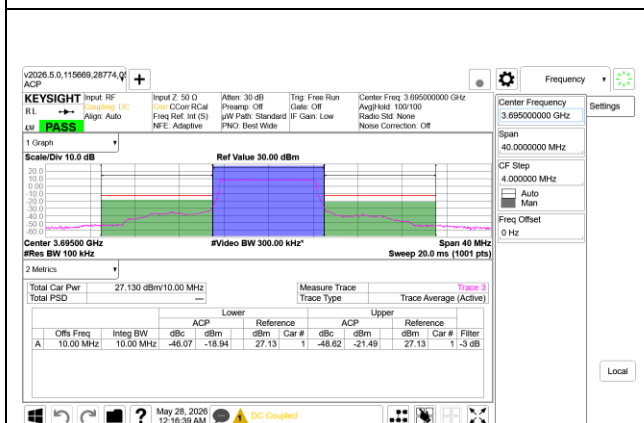
5G NR n48 15MHz BPSK Low Channel RB1-0, Ant7+Ant8



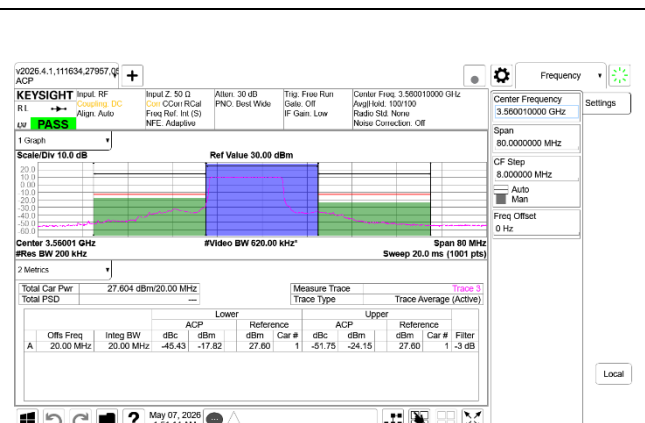
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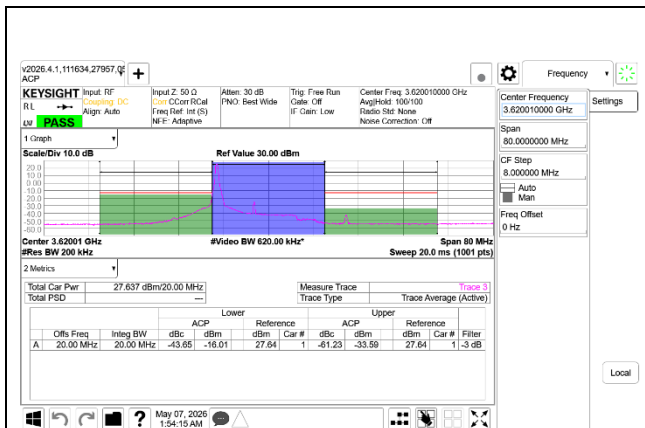
5G NR n48 15MHz BPSK Middle Channel RB1-37, Ant7+Ant8



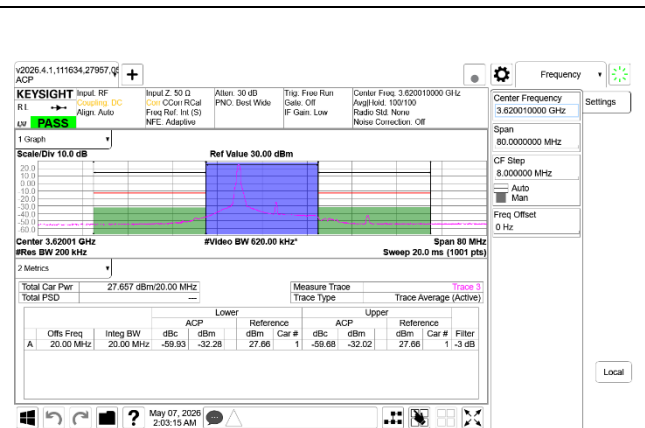
5G NR n48 10MHz BPSK High Channel RB24-0, Ant7+Ant8



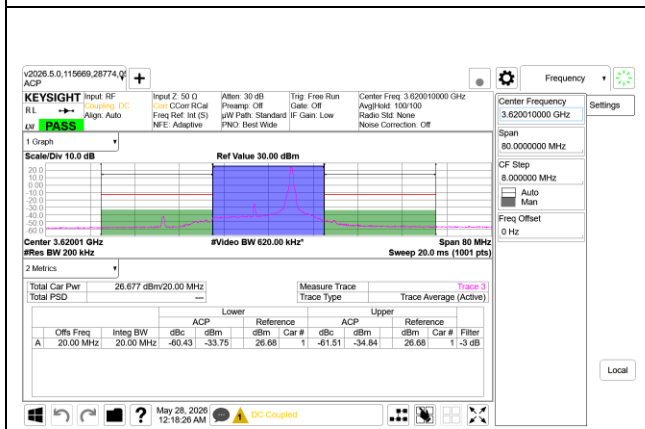
5G NR n48 15MHz BPSK Low Channel RB36-0, Ant7+Ant8



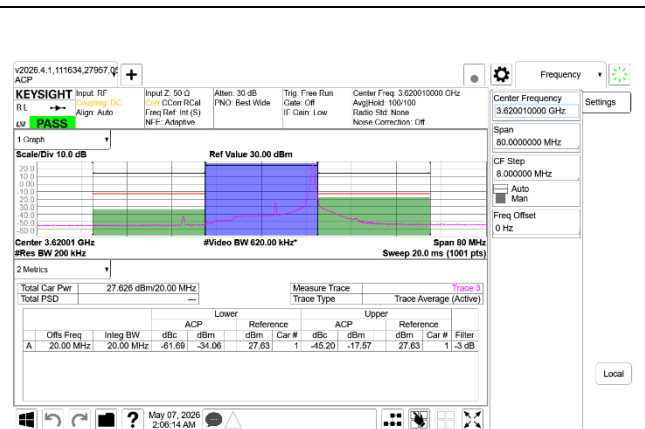
5G NR n48 15MHz BPSK Middle Channel RB1-0 (3617.5MHz), Ant7+Ant8



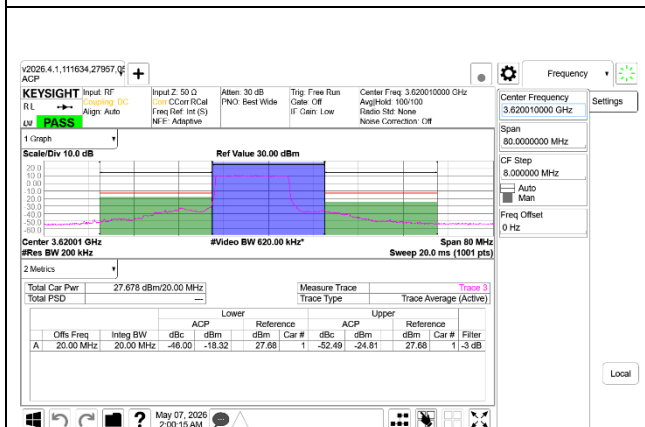
5G NR n48 15MHz BPSK Middle Channel RB1-0 (3622.5MHz), Ant7+Ant8



5G NR n48 15MHz BPSK Low Channel RB1-37 (3617.5MHz), Ant7+Ant8



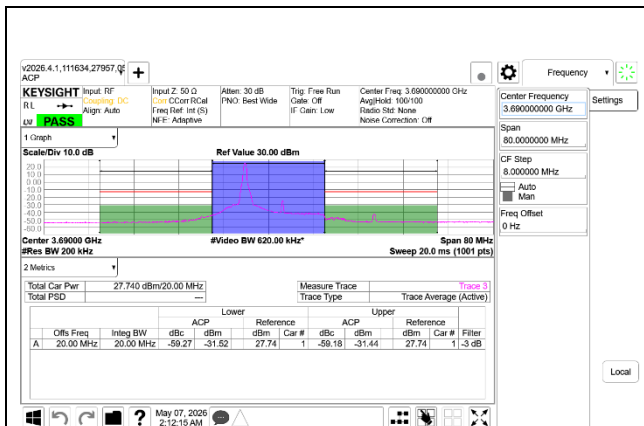
5G NR n48 15MHz BPSK Middle Channel RB1-37 (3622.5MHz), Ant7+Ant8



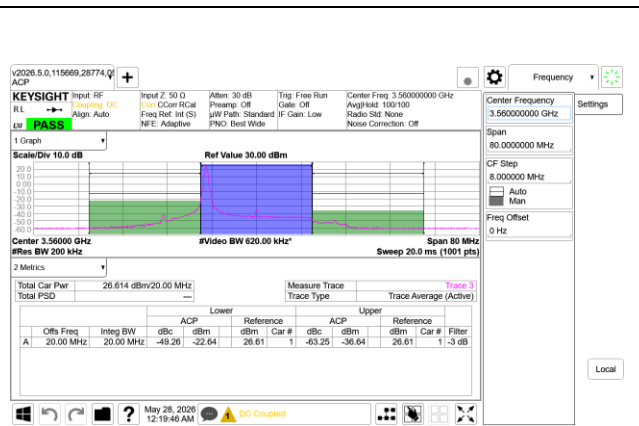
5G NR n48 15MHz BPSK Middle Channel RB36-0 (3617.5MHz), Ant7+Ant8



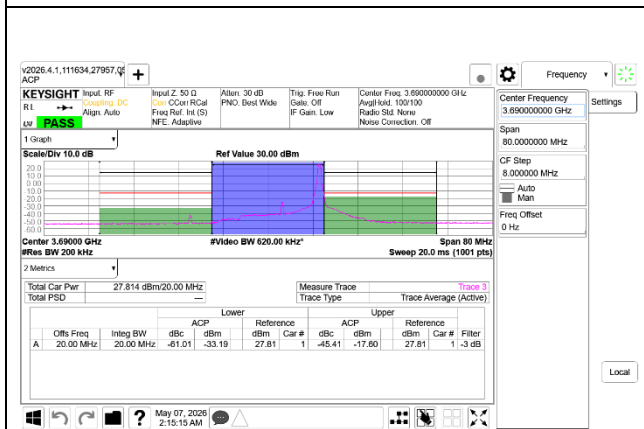
5G NR n48 15MHz BPSK Middle Channel RB36-0 (3622.5MHz), Ant7+Ant8



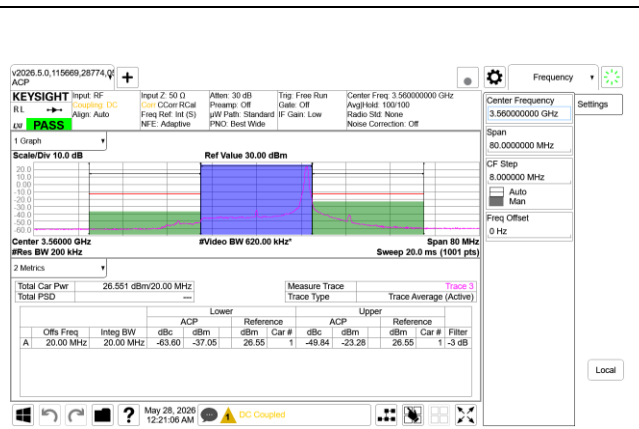
5G NR n48 15MHz BPSK High Channel RB1-0, Ant7+Ant8



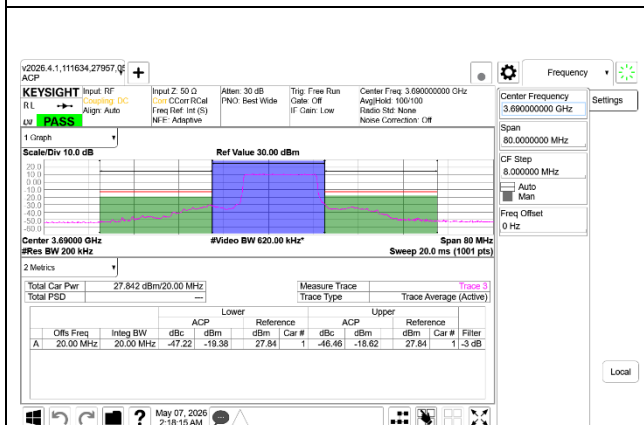
5G NR n48 20MHz BPSK Low Channel RB1-0, Ant7+Ant8



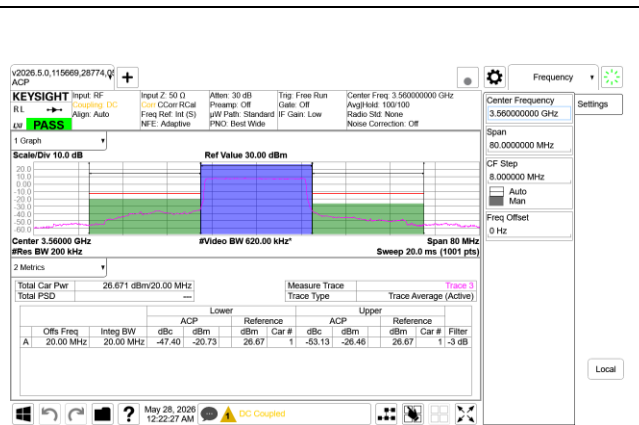
5G NR n48 15MHz BPSK High Channel RB1-37, Ant7+Ant8



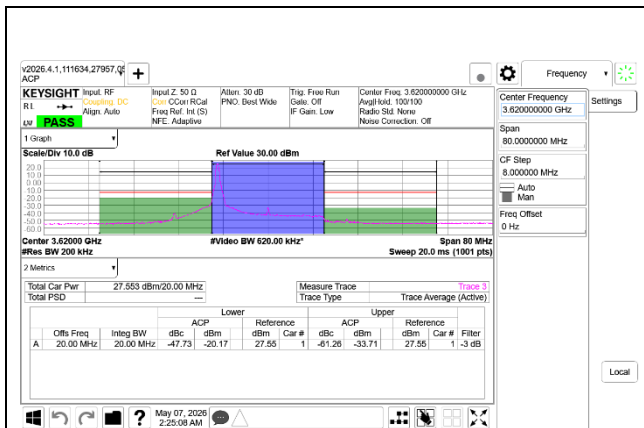
5G NR n48 20MHz BPSK Low Channel RB1-50, Ant7+Ant8



5G NR n48 15MHz BPSK High Channel RB36-0, Ant7+Ant8



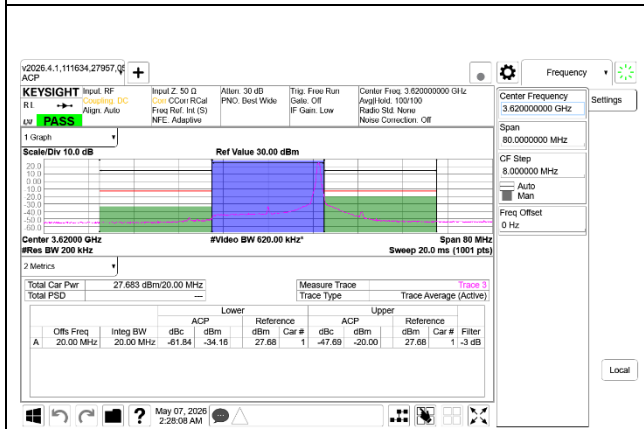
5G NR n48 20MHz BPSK Low Channel RB50-0, Ant7+Ant8



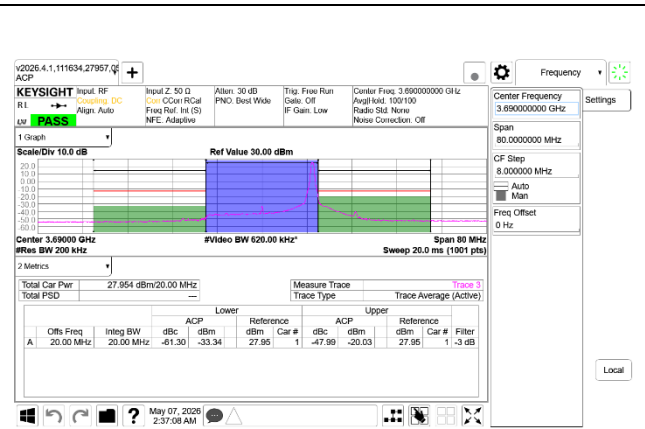
5G NR n48 20MHz BPSK Middle Channel RB1-0, Ant7+Ant8



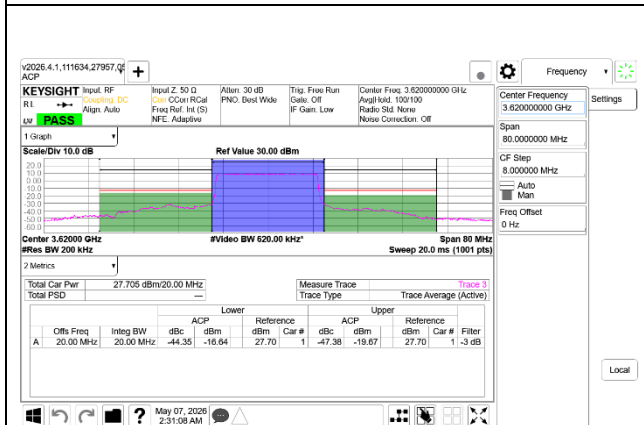
5G NR n48 20MHz BPSK High Channel RB1-0, Ant7+Ant8



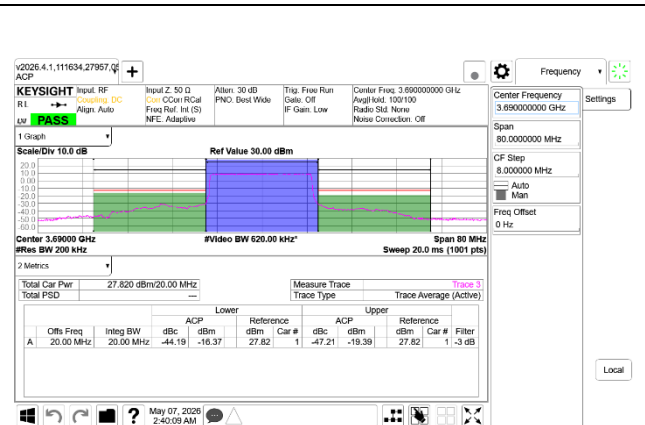
5G NR n48 20MHz BPSK Middle Channel RB1-50 Port A+B



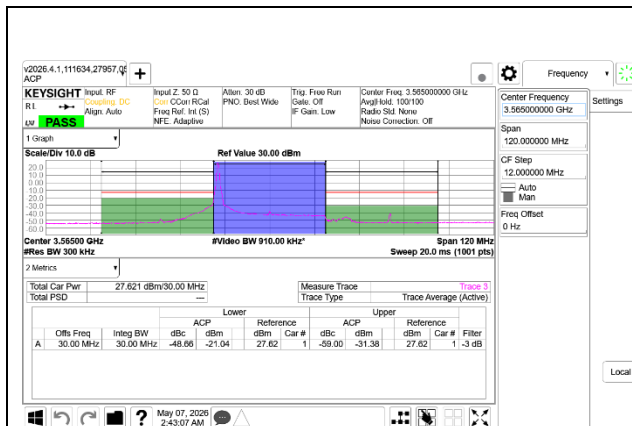
5G NR n48 20MHz BPSK High Channel RB1-50, Ant7+Ant8



5G NR n48 20MHz BPSK Middle Channel RB50-0 Port A+B



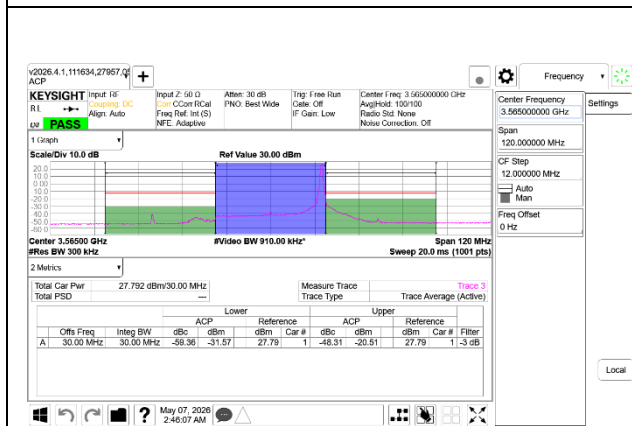
5G NR n48 20MHz BPSK High Channel RB50-0, Ant7+Ant8



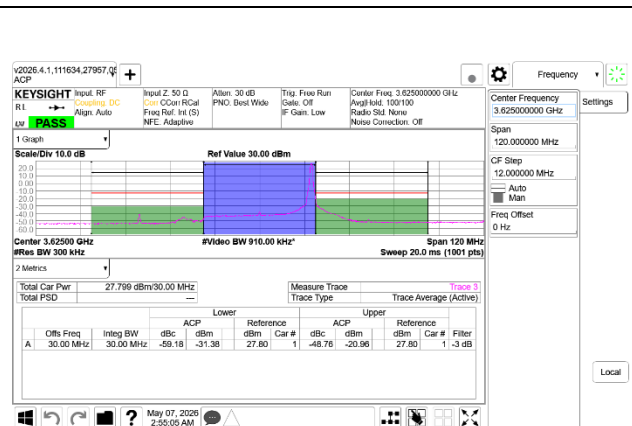
5G NR n48 30MHz BPSK Low Channel RB1-0, Ant7+Ant8



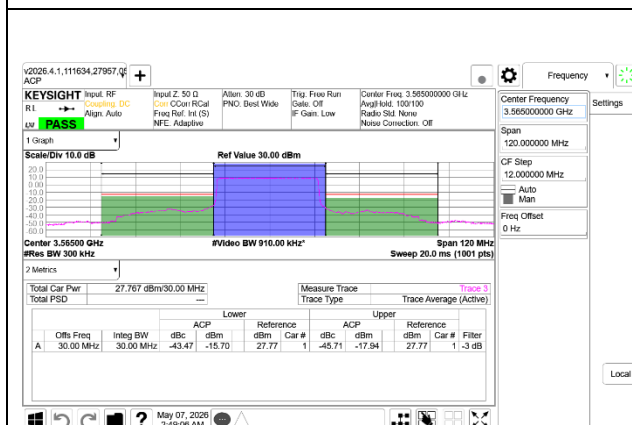
5G NR n48 30MHz BPSK Middle Channel RB1-0, Ant7+Ant8



5G NR n48 30MHz BPSK Low Channel RB1-77, Ant7+Ant8



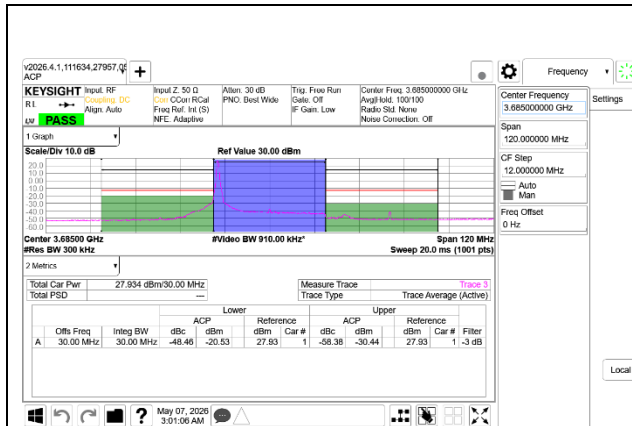
5G NR n48 30MHz BPSK Middle Channel RB1-77, Ant7+Ant8



5G NR n48 30MHz BPSK Low Channel RB75-0, Ant7+Ant8



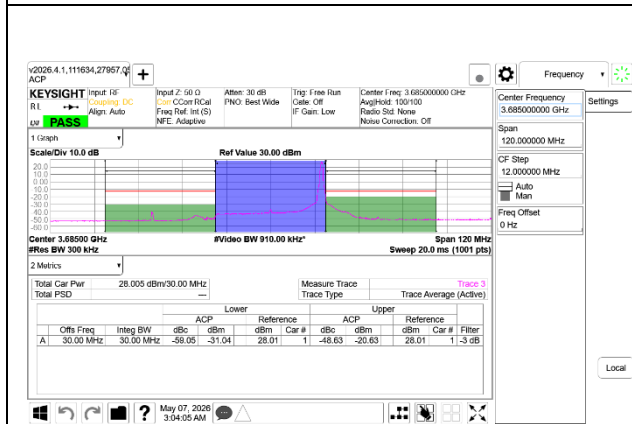
5G NR n48 30MHz BPSK Middle Channel RB75-0, Ant7+Ant8



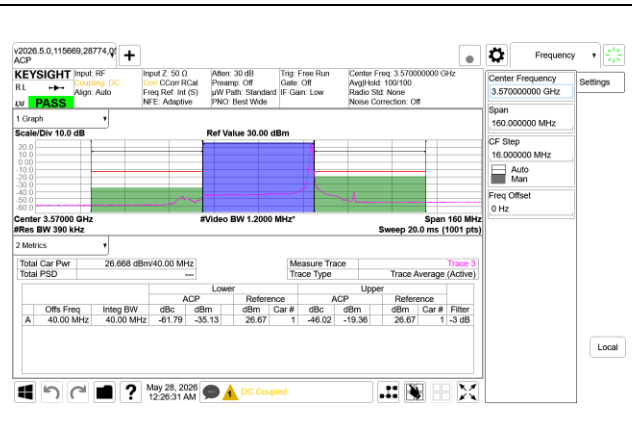
5G NR n48 30MHz BPSK High Channel RB1-0, Ant7+Ant8



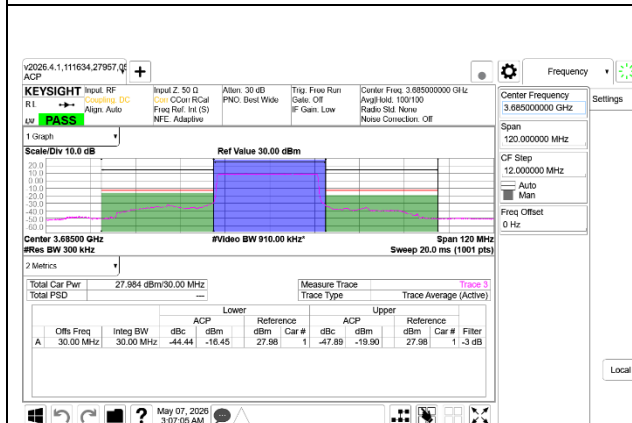
5G NR n48 40MHz BPSK Low Channel RB1-0, Ant7+Ant8



5G NR n48 30MHz BPSK High Channel RB1-77, Ant7+Ant8



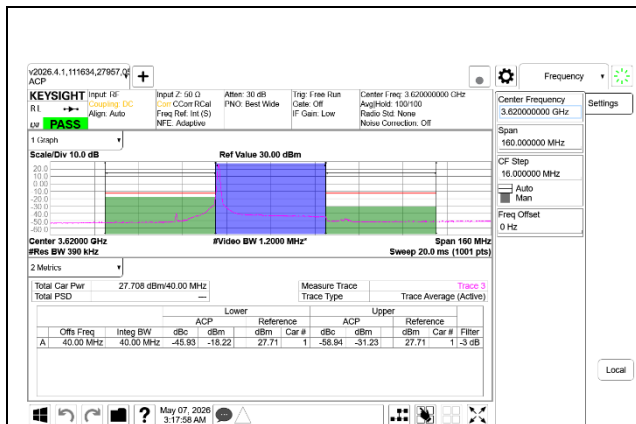
5G NR n48 40MHz BPSK Low Channel RB1-105, Ant7+Ant8



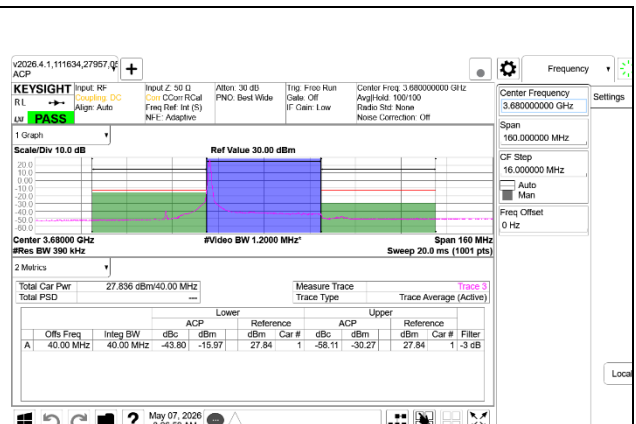
5G NR n48 30MHz BPSK High Channel RB75-0, Ant7+Ant8



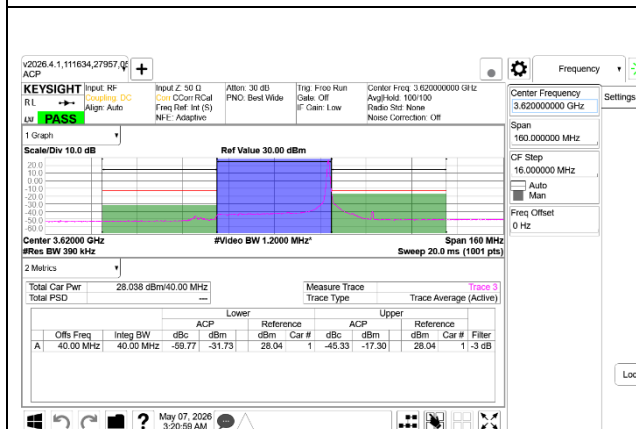
5G NR n48 40MHz BPSK Low Channel RB100-0, Ant7+Ant8



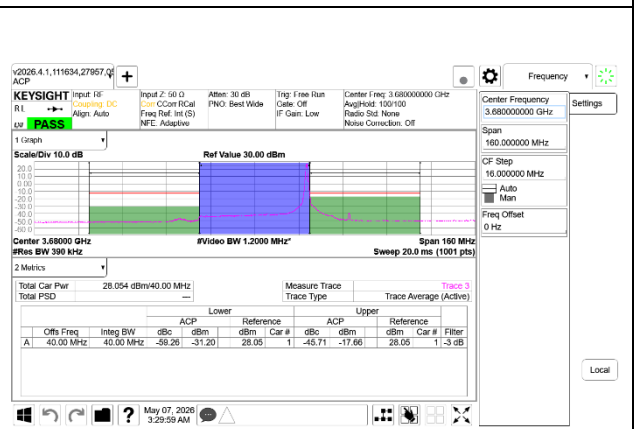
5G NR n48 40MHz BPSK Middle Channel RB1-0, Ant7+Ant8



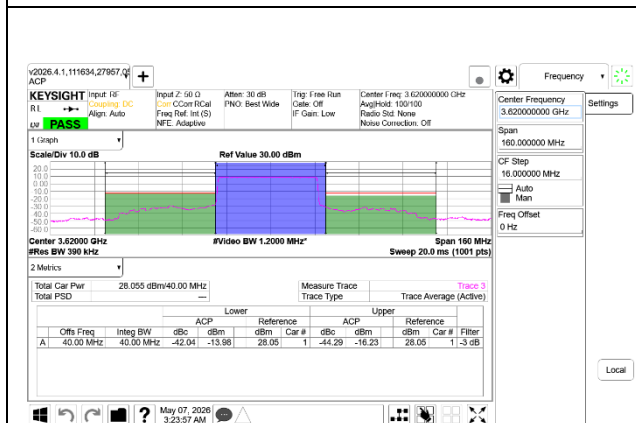
5G NR n48 40MHz BPSK High Channel RB1-0, Ant7+Ant8



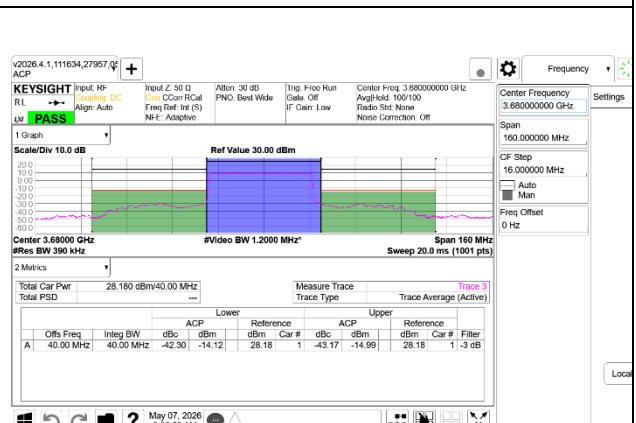
5G NR n48 40MHz BPSK Middle Channel RB1-105, Ant7+Ant8



5G NR n48 40MHz BPSK High Channel RB1-105, Ant7+Ant8



5G NR n48 40MHz BPSK Middle Channel RB100-0, Ant7+Ant8



5G NR n48 40MHz BPSK High Channel RB100-0, Ant7+Ant8

### 9.3. OUT OF BAND EMISSIONS

#### **LIMITS**

FCC: §96.41

(e) 3.5 GHz Emissions and Interference Limits—

(2) Additional protection levels. Notwithstanding paragraph (e)(1) of this section, for CBSDs and End User Devices, the conducted power of emissions below 3540 MHz or above 3710 MHz shall not exceed -25 dBm/MHz, and the conducted power of emissions below 3530 MHz or above 3720 MHz shall not exceed -40dBm/MHz.

#### **TEST PROCEDURE**

The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

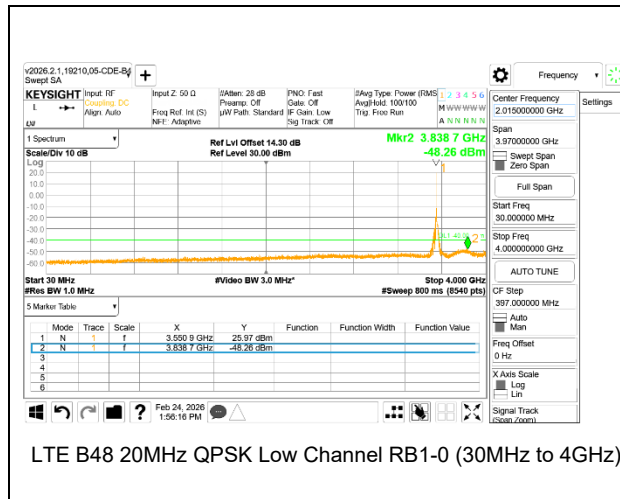
For each out of band emissions measurement:

- Set display line at -13 dBm, -25dBm and -40dBm according to the band Limit
- Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz.  
(NOTE: Worst case set RBW/VBW to 1MHz/3MHz)

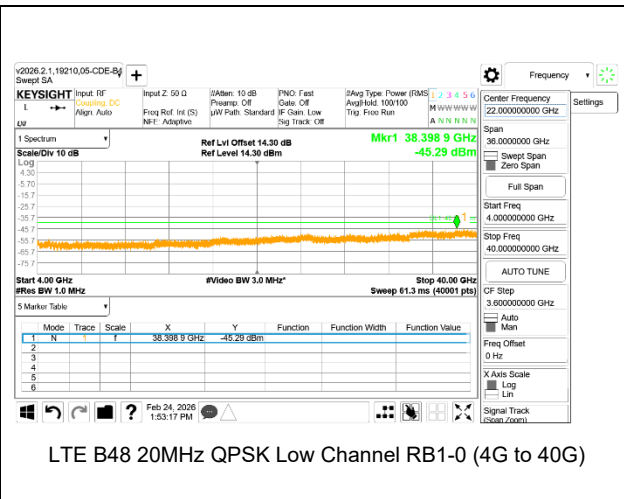
For MIMO modes are made using the measure and sum the spectra method E3)a)ii) / E)2)a) from KDB 662911 D01. The measurements for each antenna are stored in separate traces (i.e. trace 1/port A and trace 2/port B). The spectrum analyzer's math function is used to perform a linear sum of powers of the two traces and store the result in trace 3/port A+B). Trace 3/port A+B is compared to the in-band or out of band limit as applicable.

#### **RESULTS**

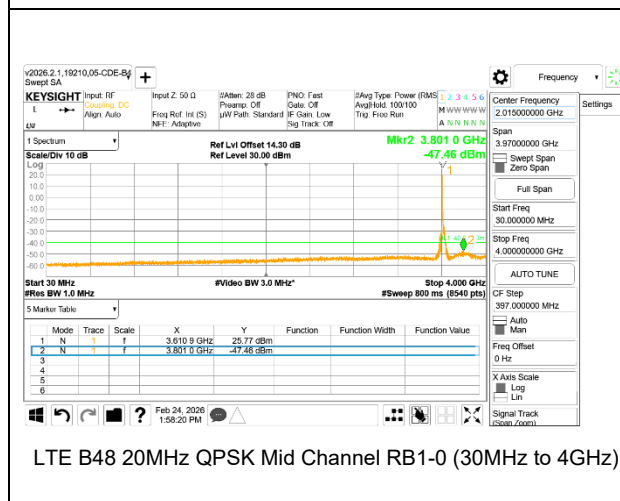
### 9.3.1. LTE BAND 48 SISO



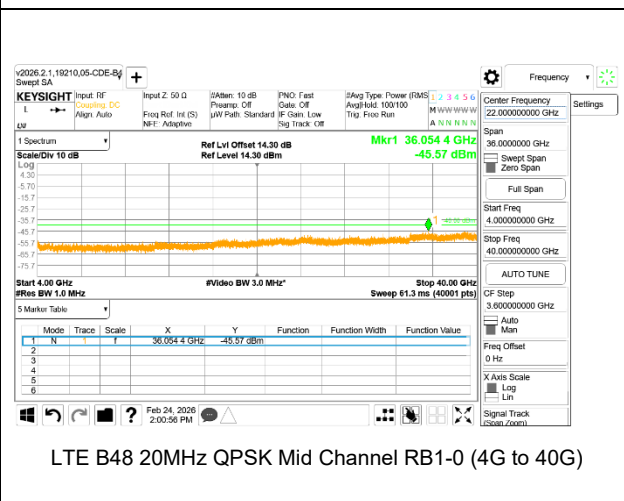
LTE B48 20MHz QPSK Low Channel RB1-0 (30MHz to 4GHz)



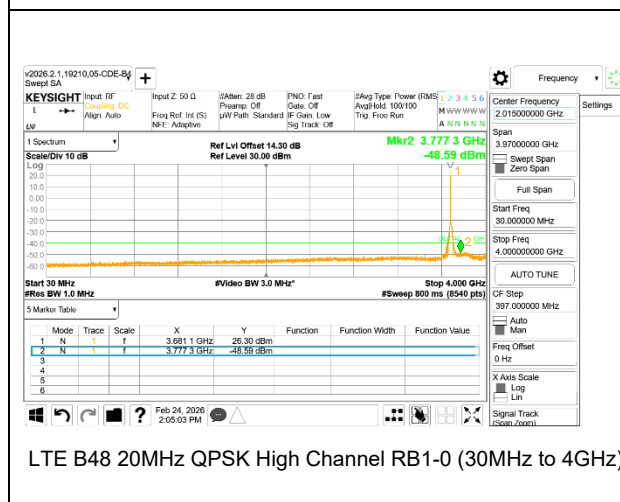
LTE B48 20MHz QPSK Low Channel RB1-0 (4G to 40G)



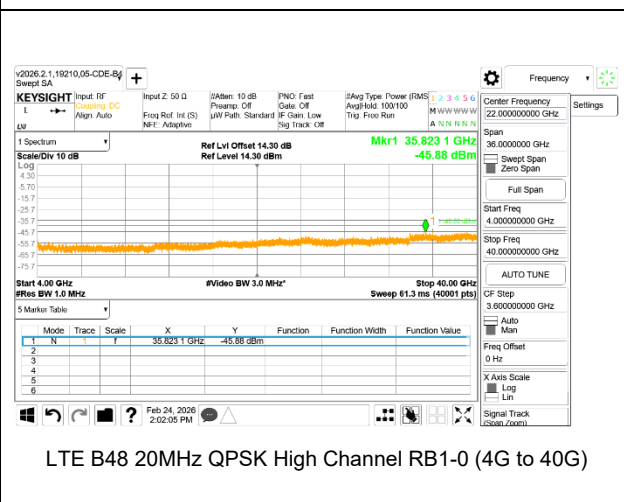
LTE B48 20MHz QPSK Mid Channel RB1-0 (30MHz to 4GHz)



LTE B48 20MHz QPSK Mid Channel RB1-0 (4G to 40G)

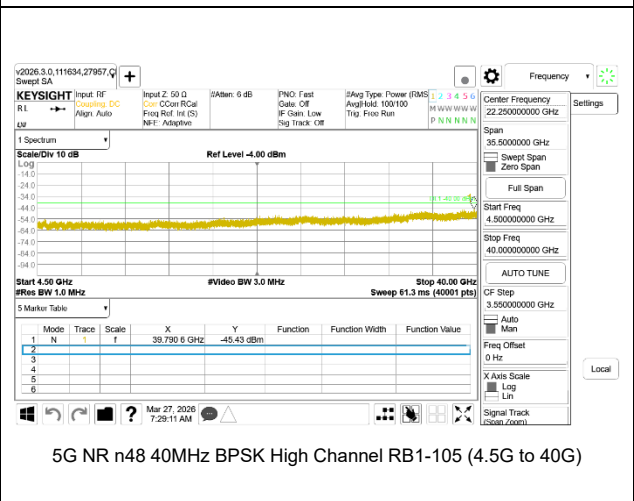
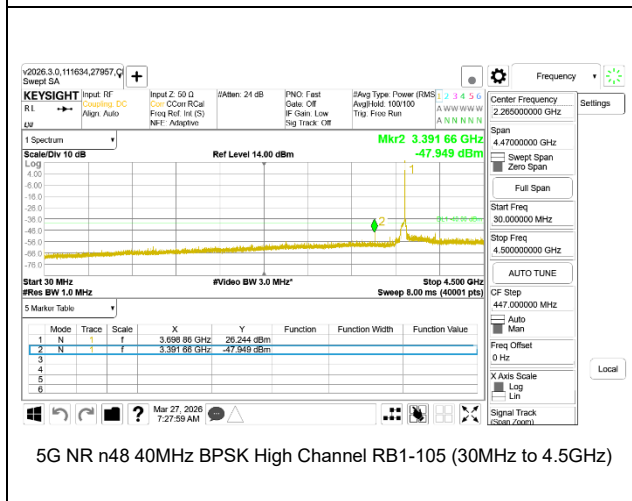
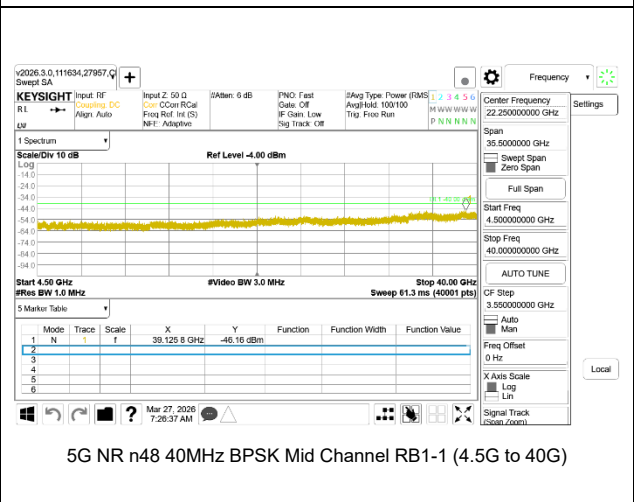
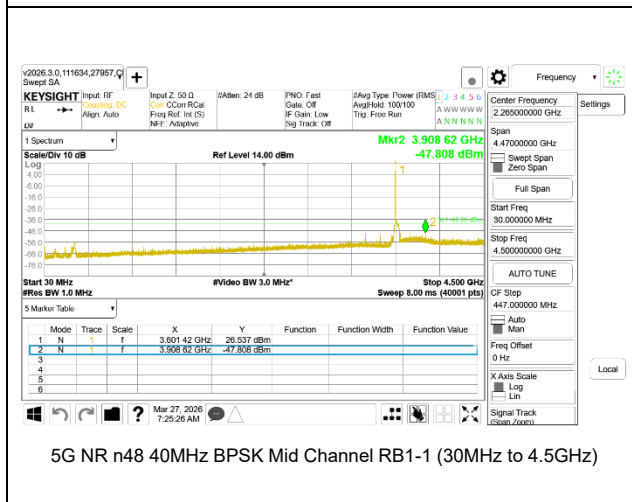
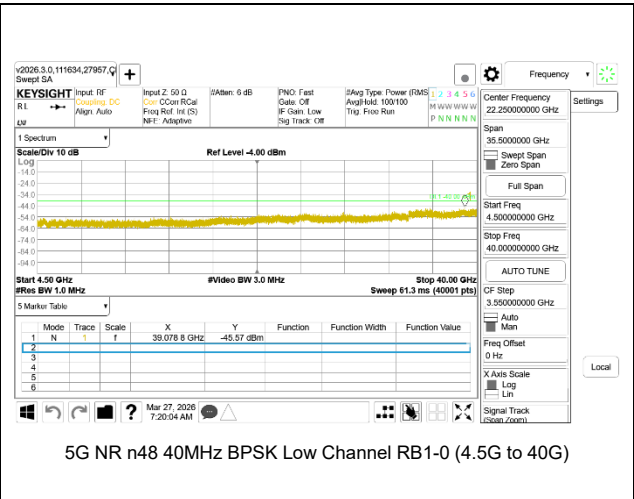
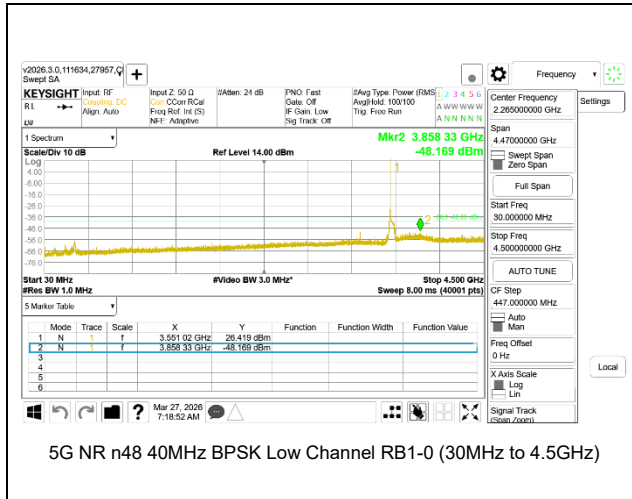


LTE B48 20MHz QPSK High Channel RB1-0 (30MHz to 4GHz)



LTE B48 20MHz QPSK High Channel RB1-0 (4G to 40G)

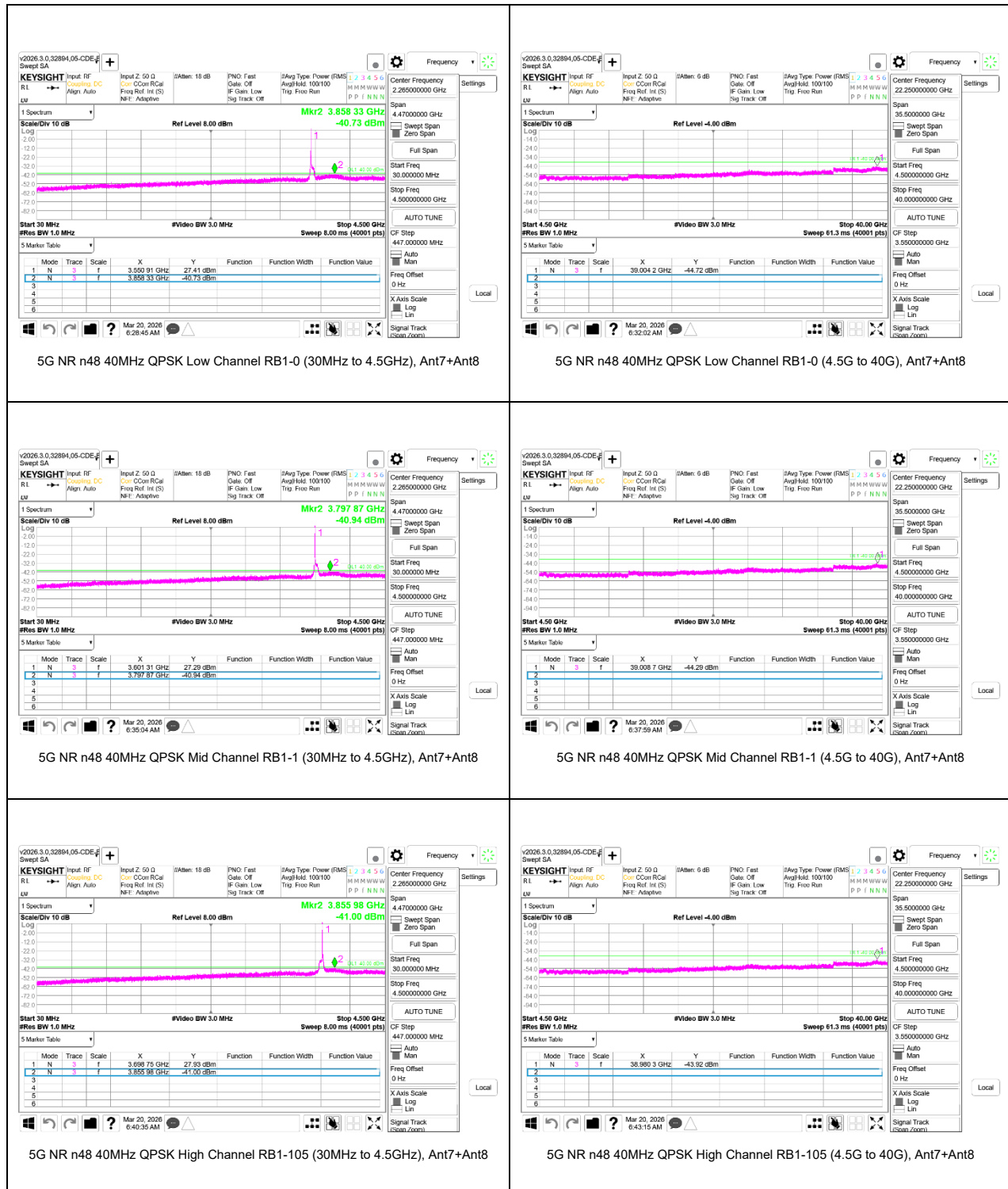
### 9.3.2. 5G NR n48 SISO



### 9.3.3. ULCA LTE BAND 48C SISO



### 9.3.4. 5G NR n48 MIMO



## 9.4. FREQUENCY STABILITY

### **TEST PROCEDURE**

Use base station simulator with Frequency Error measurement capability.

- Temp. =  $-30^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$
- Voltage = (85% - 115%)

Low voltage, 3.23VDC, Normal, 3.8VDC and High voltage, 4.37VDC.

End Voltage, 2.85VDC.

#### **Frequency Stability vs Temperature:**

The EUT is placed inside a temperature chamber. The temperature is set to  $20^{\circ}\text{C}$  and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until  $+50^{\circ}\text{C}$  is reached.

#### **Frequency Stability vs Voltage:**

The peak frequency error is recorded (worst-case).

### **RESULTS**

See the following pages.