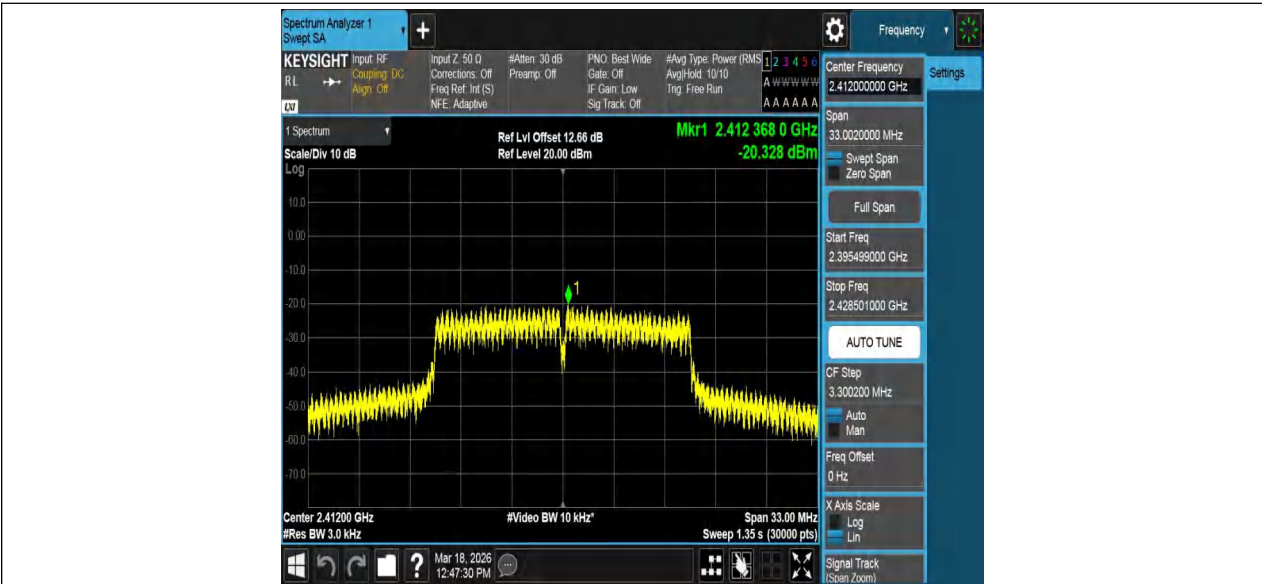
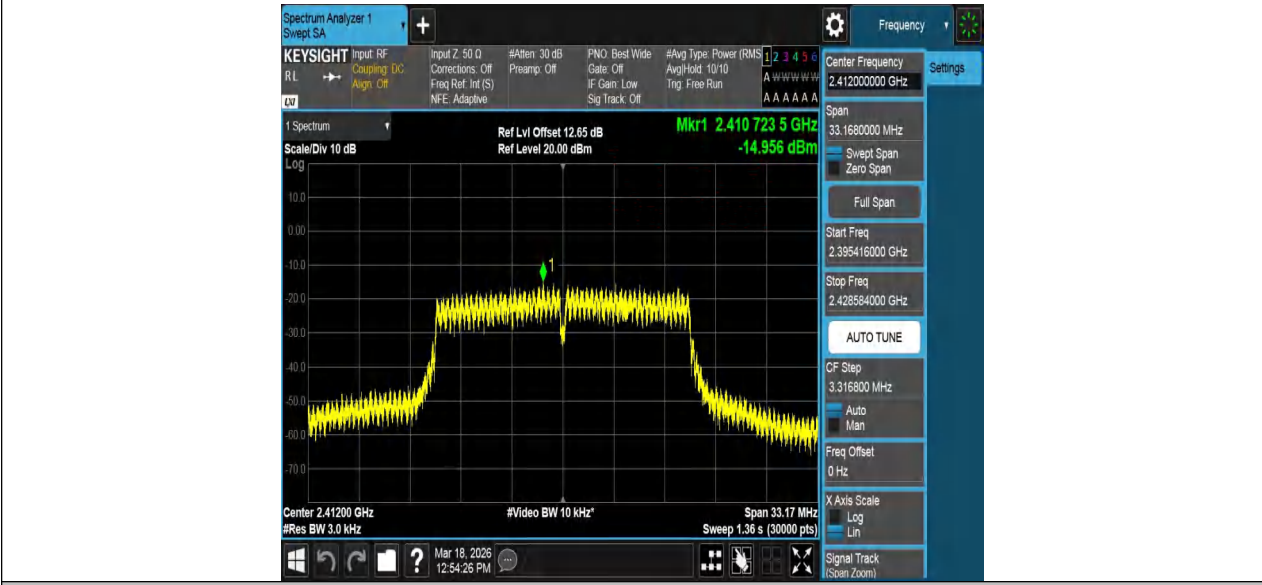


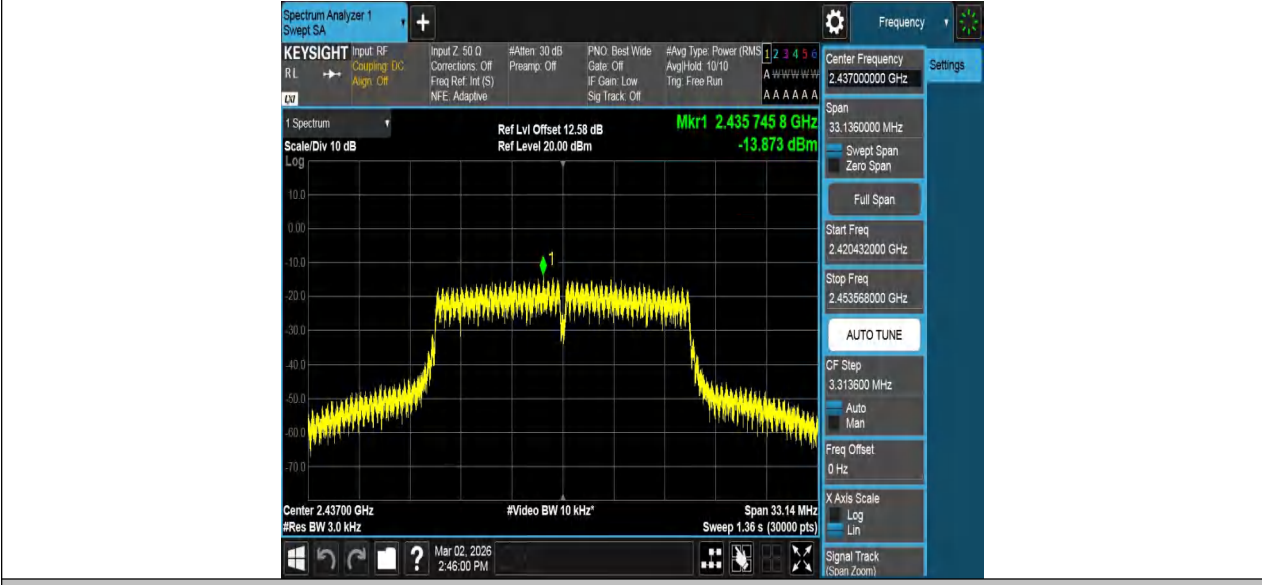




11G\_Ant2\_2412



11G\_Ant1\_2437



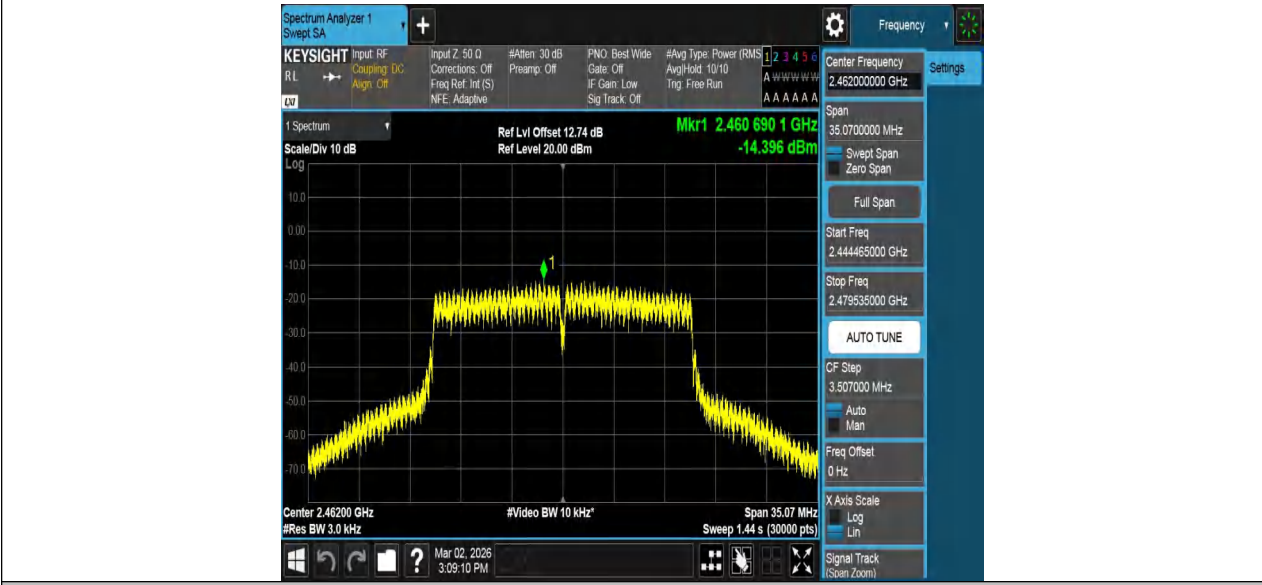
11G\_Ant2\_2437



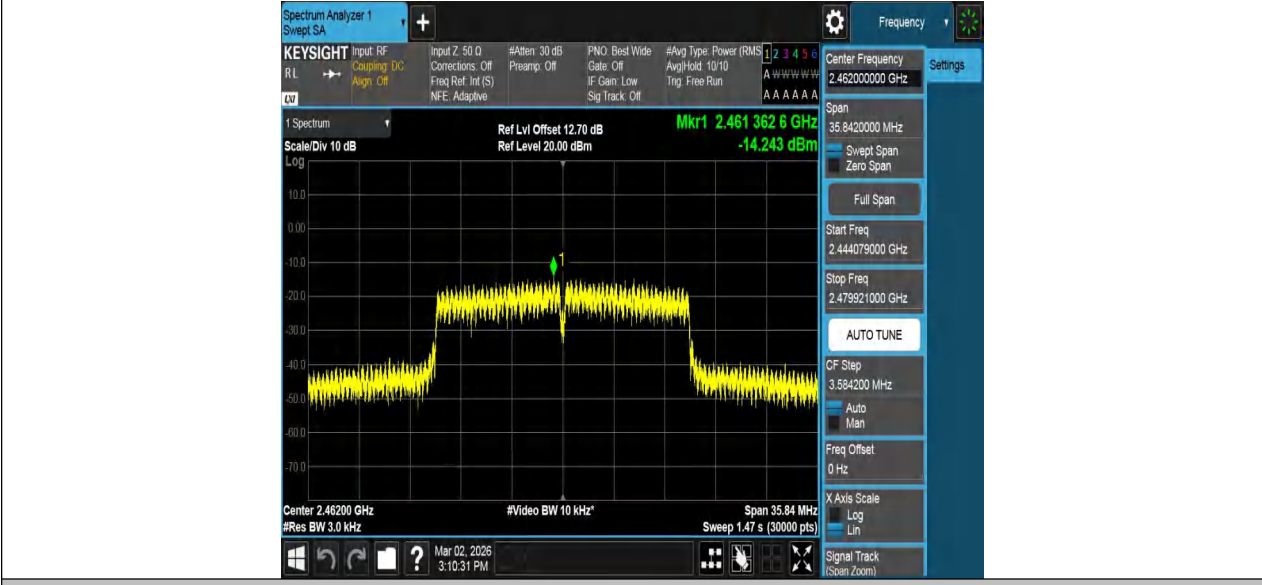




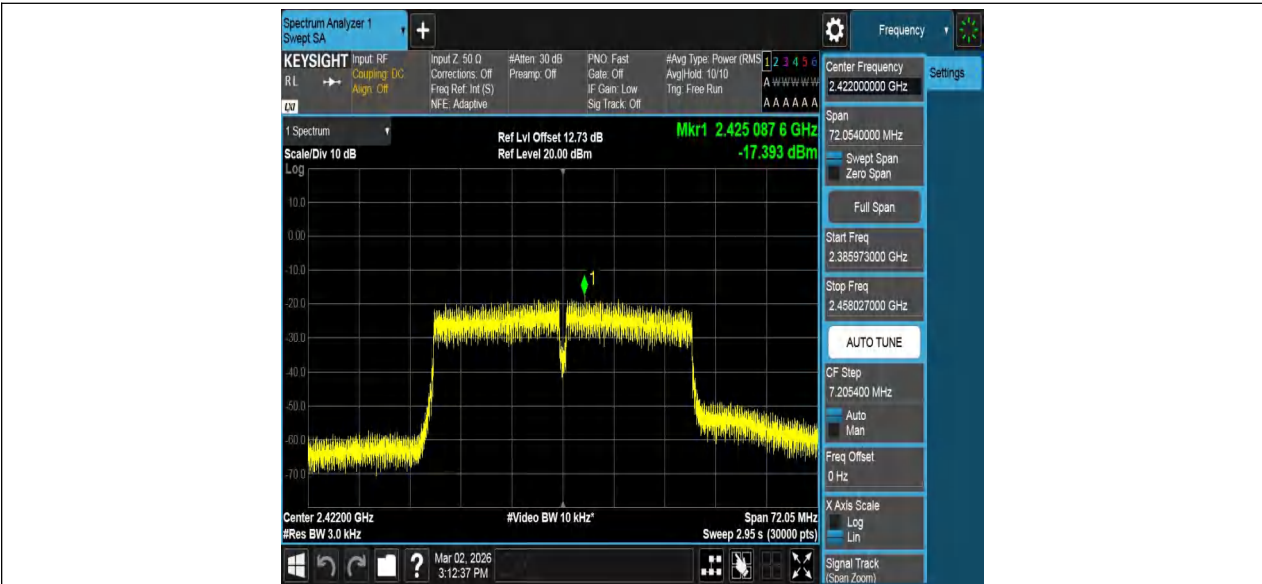
11N20MIMO\_Ant1\_2462



11N20MIMO\_Ant2\_2462



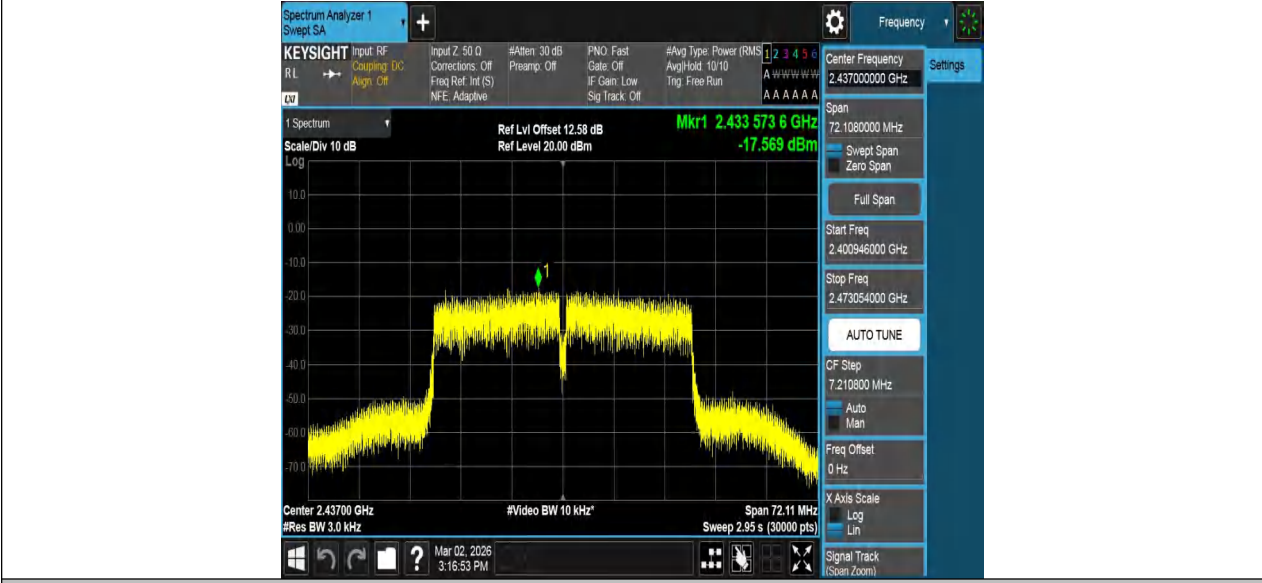
11N40MIMO\_Ant1\_2422



11N40MIMO\_Ant2\_2422



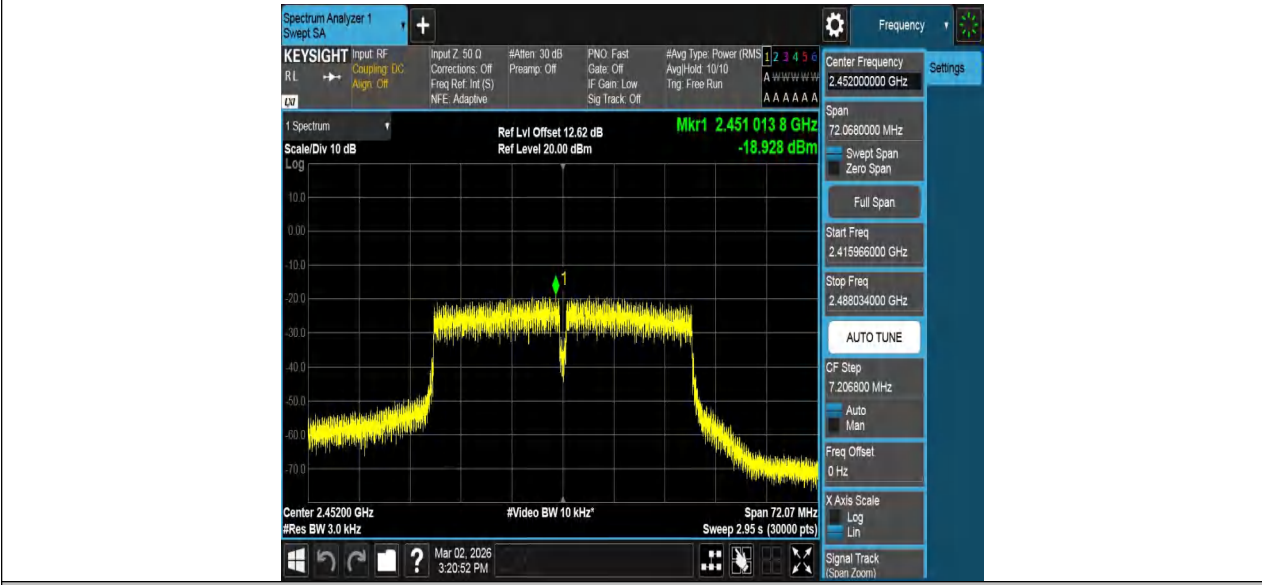
11N40MIMO\_Ant1\_2437



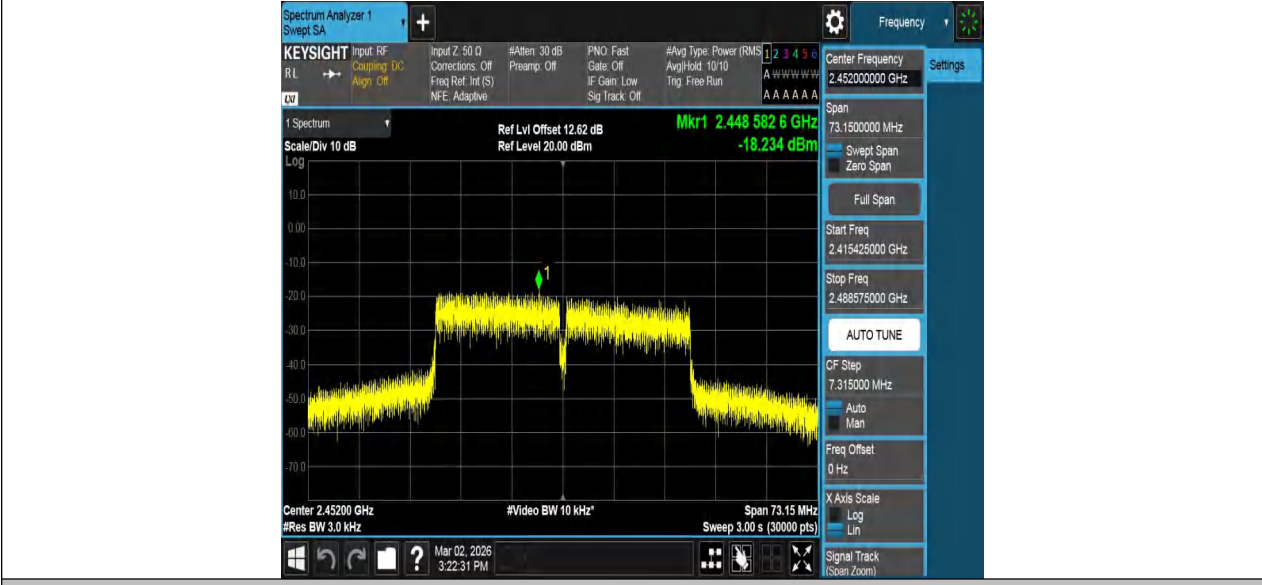
11N40MIMO\_Ant2\_2437



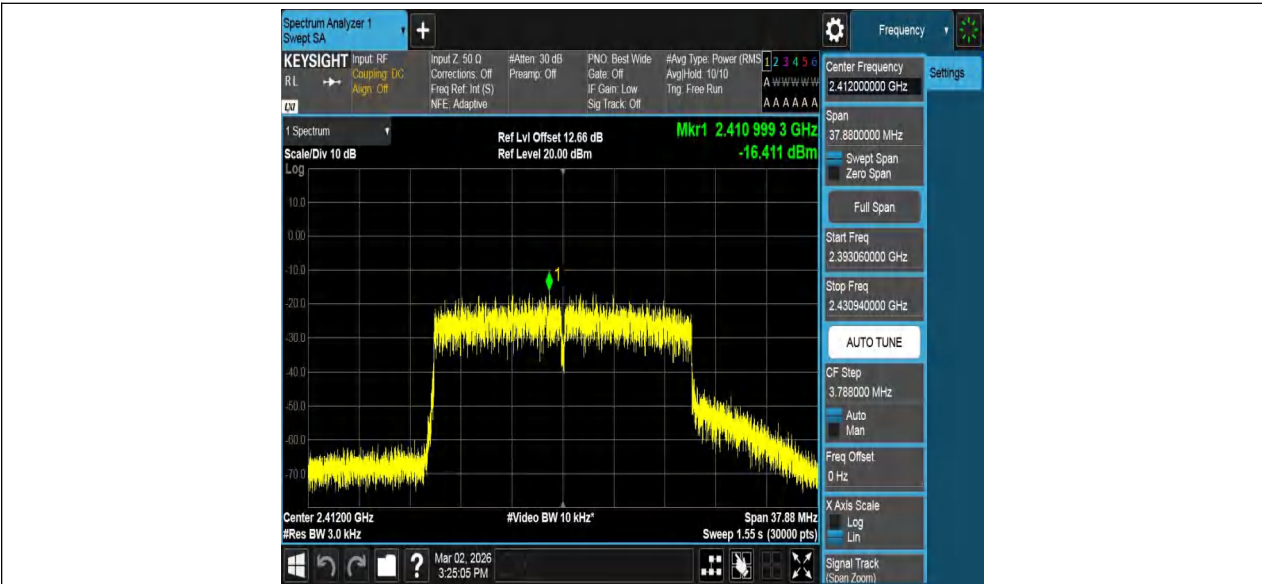
11N40MIMO\_Ant1\_2452



11N40MIMO\_Ant2\_2452



11AX20MIMO\_Ant1\_2412



11AX20MIMO\_Ant2\_2412



11AX20MIMO\_Ant1\_2437



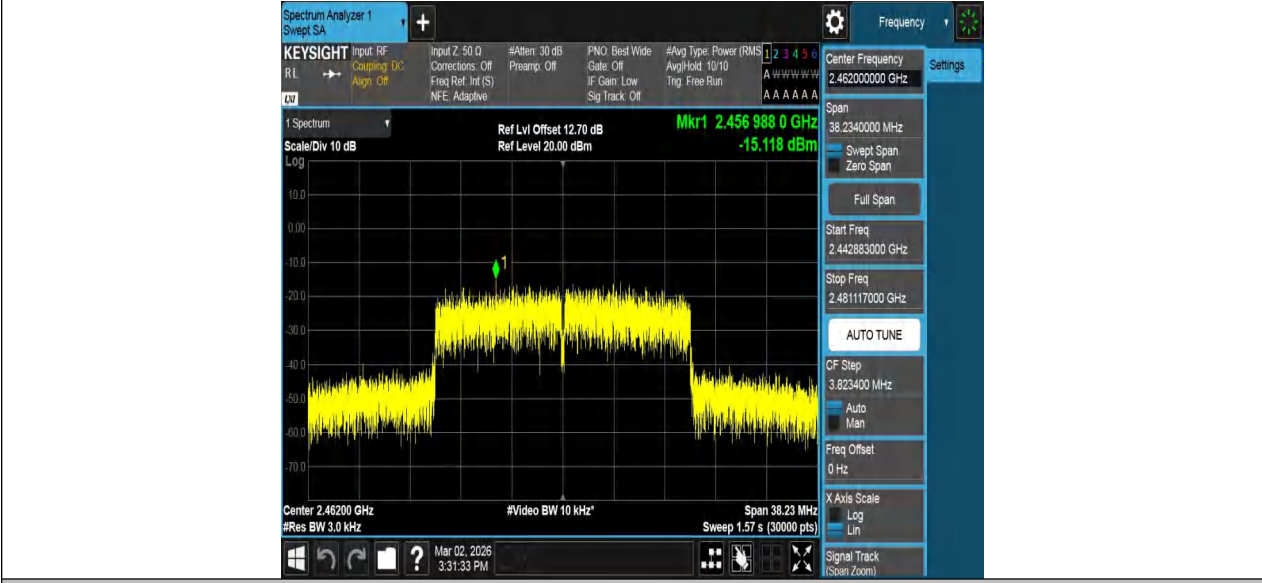
11AX20MIMO\_Ant2\_2437



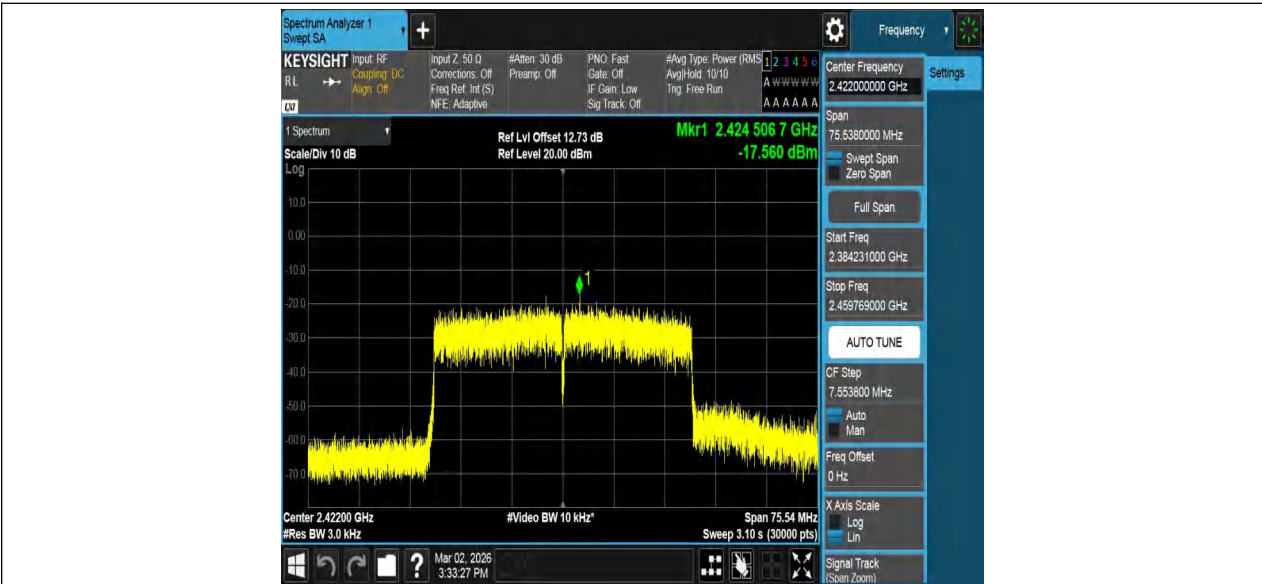
11AX20MIMO\_Ant1\_2462



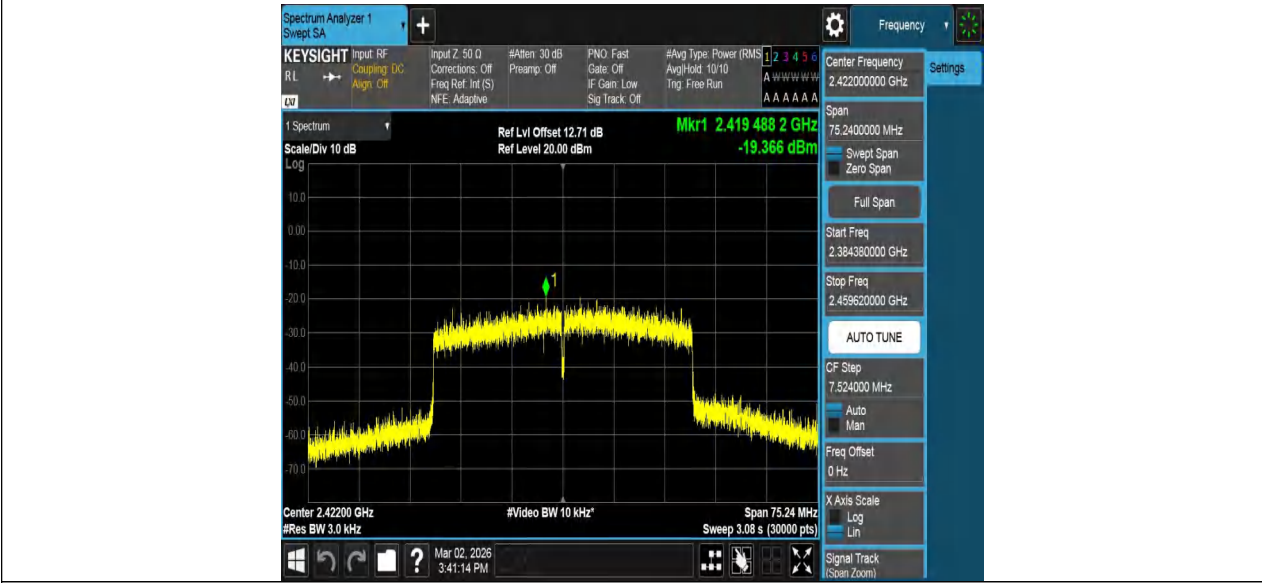
11AX20MIMO\_Ant2\_2462



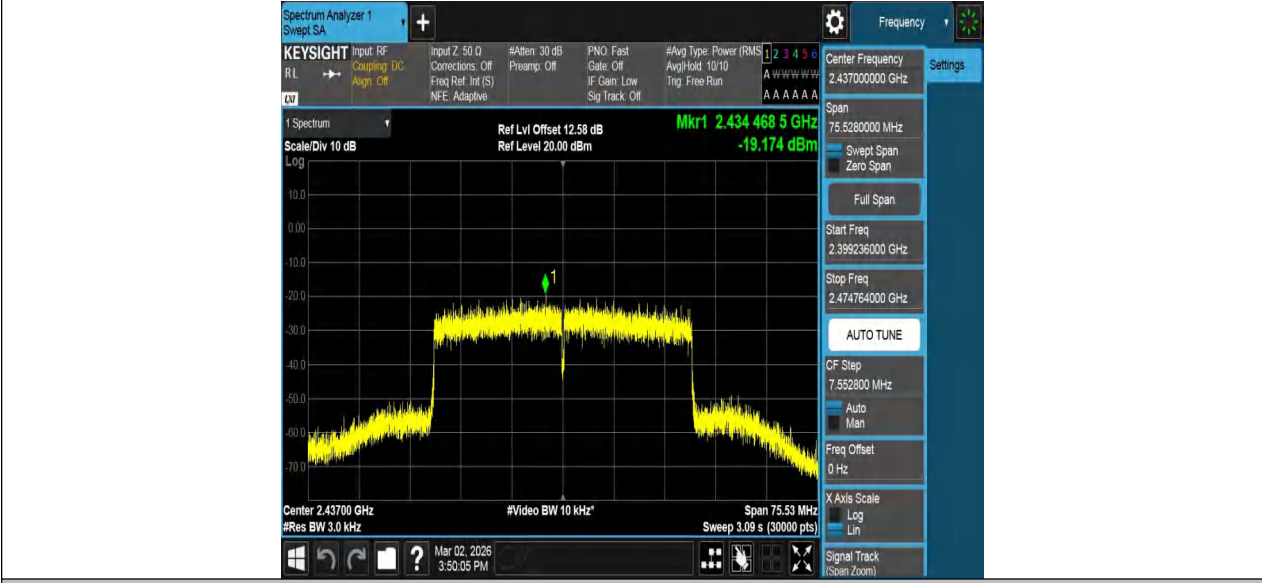
11AX40MIMO\_Ant1\_2422



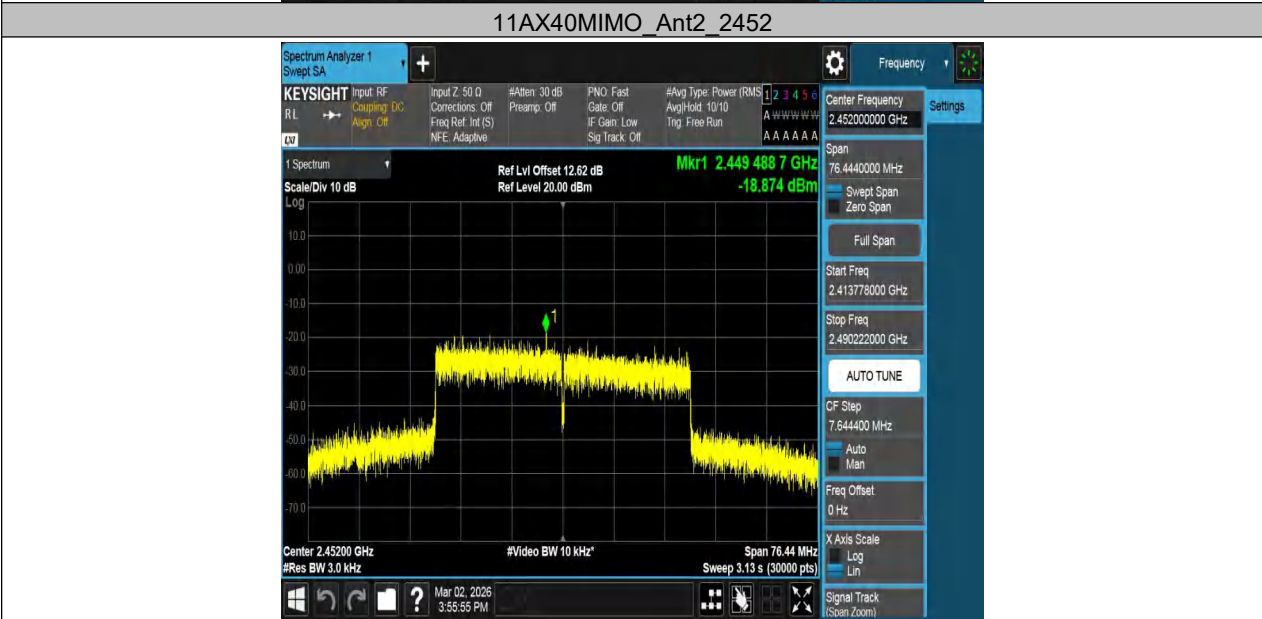
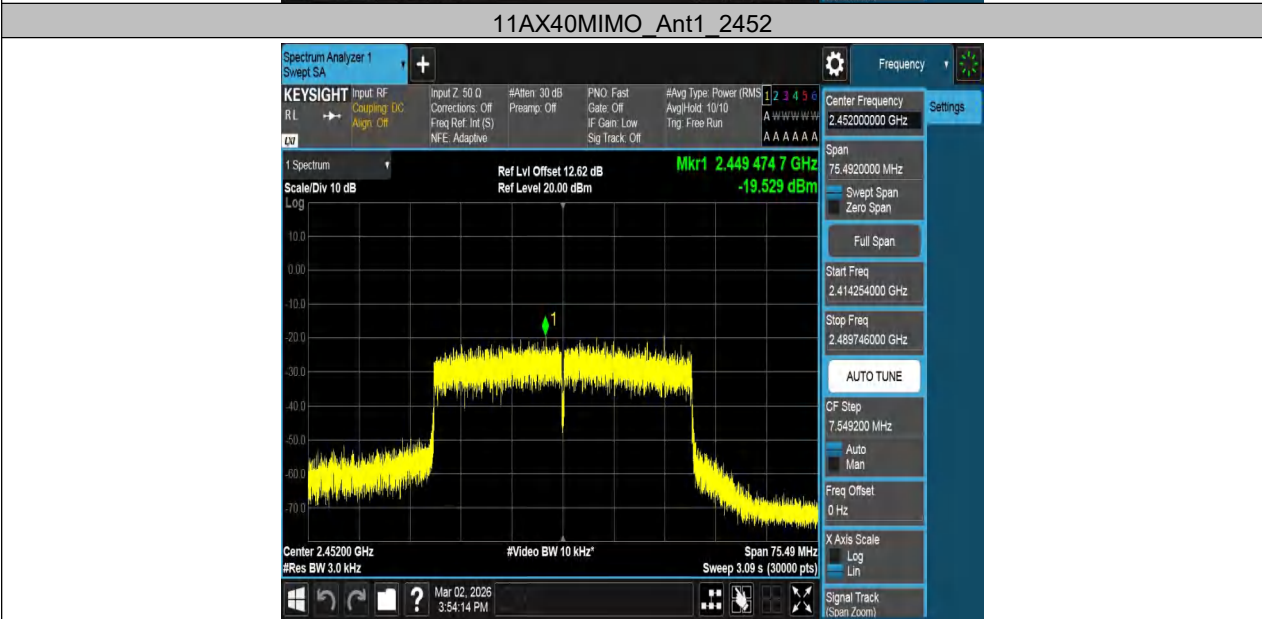
11AX40MIMO\_Ant2\_2422

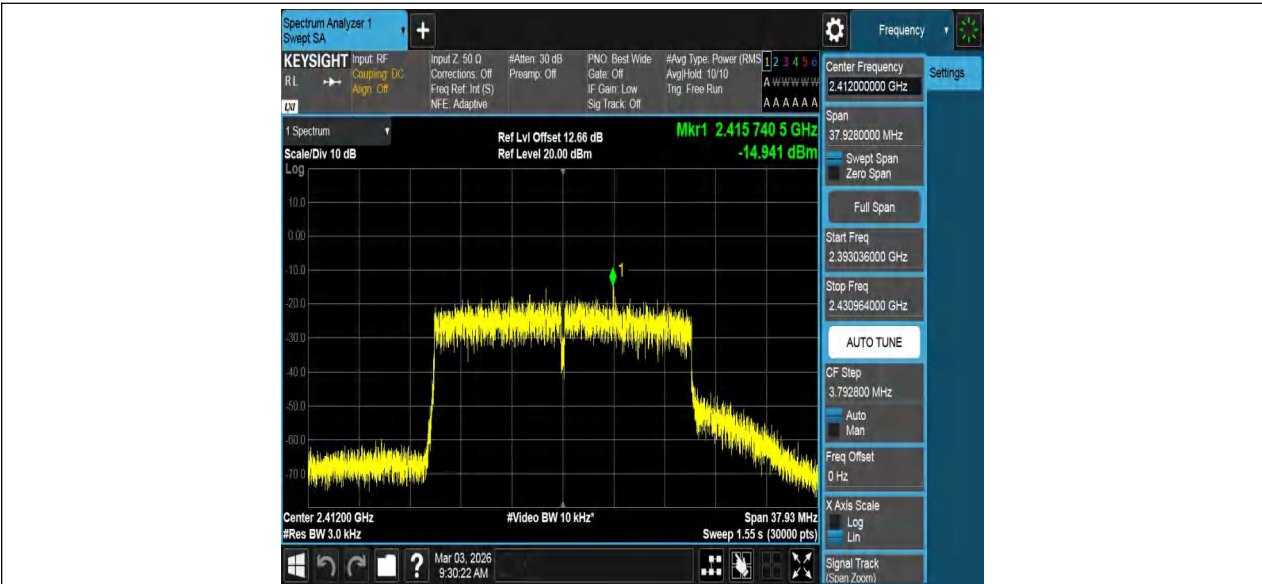


11AX40MIMO\_Ant1\_2437



11AX40MIMO\_Ant2\_2437





11BE20MIMO\_Ant2\_2412



11BE20MIMO\_Ant1\_2437

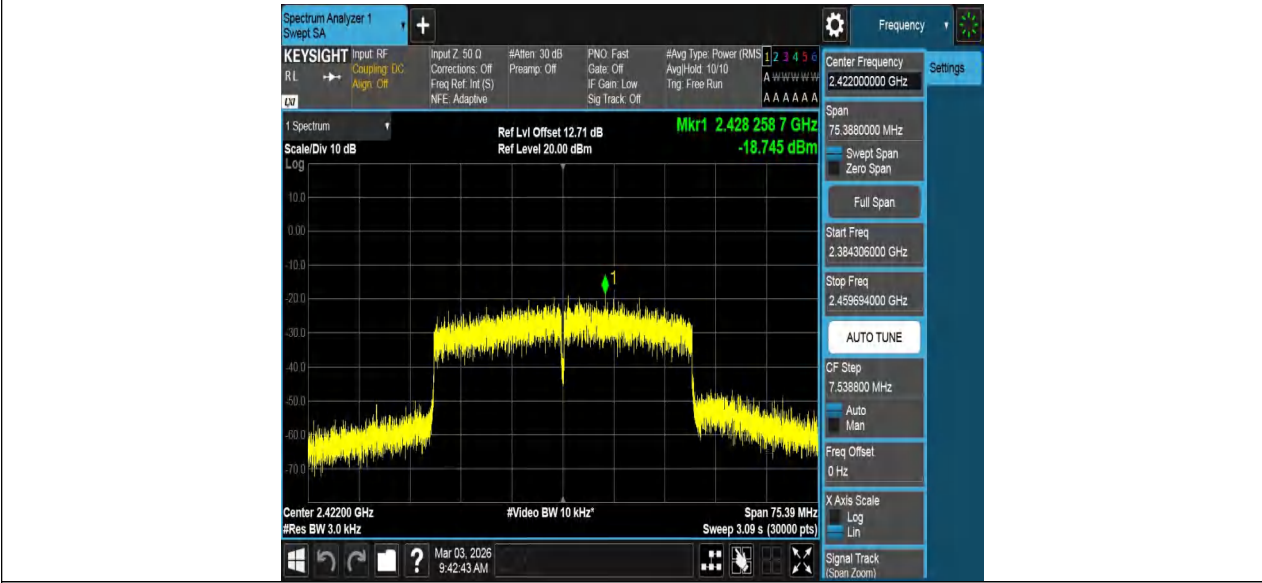


11BE20MIMO\_Ant2\_2437





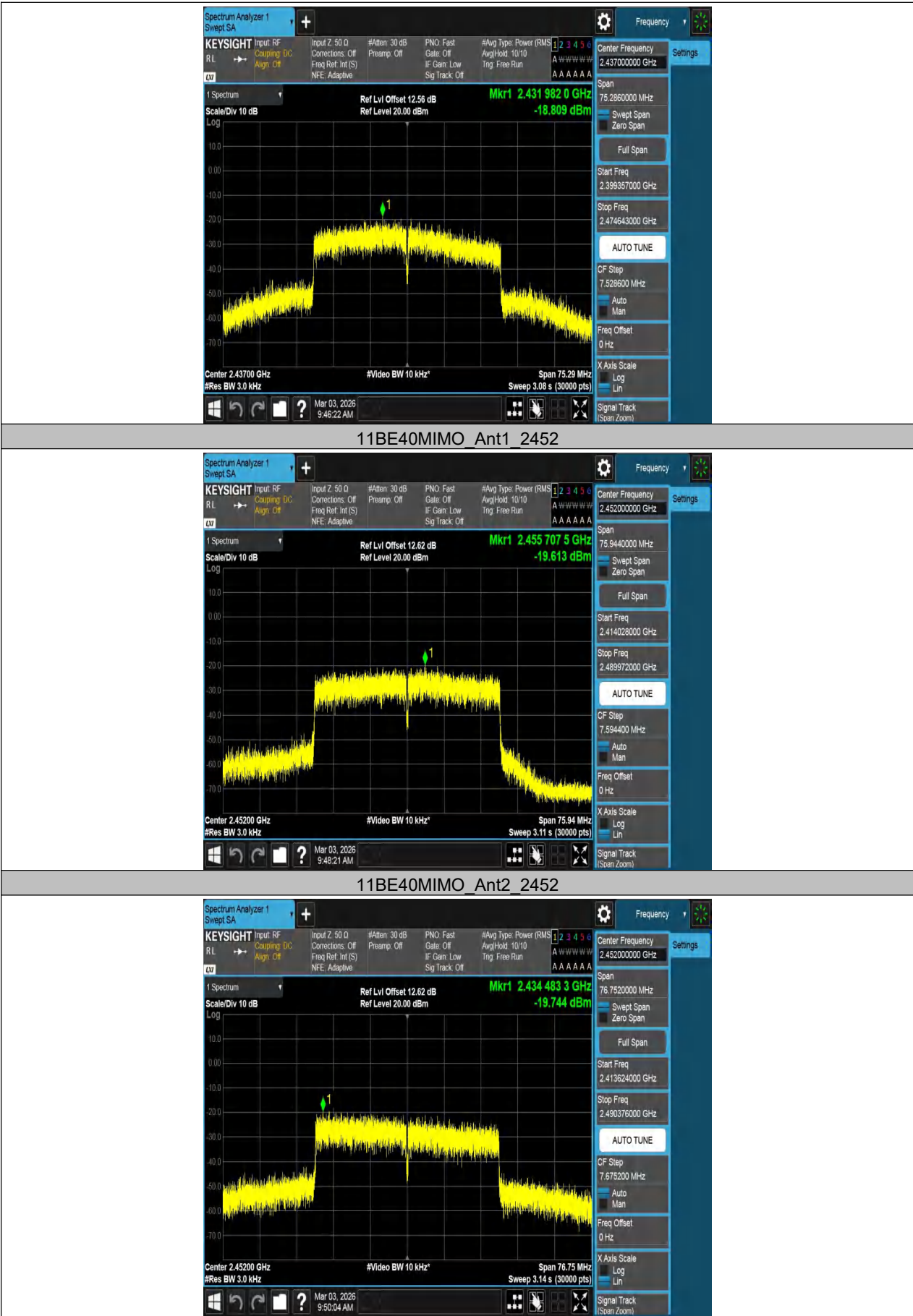
11BE40MIMO\_Ant2\_2422



11BE40MIMO\_Ant1\_2437



11BE40MIMO\_Ant2\_2437



## 12. Conducted Band edge and Spurious Emissions

### 12.1. Block diagram of test setup

Same as section 8.1

### 12.2. Limits

| CFR 47 FCC Part15 (15.247) Subpart C |                                           |                                                                                                                         |
|--------------------------------------|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Section                              | Test Item                                 | Limit                                                                                                                   |
| CFR 47 FCC §15.247 (d)               | Conducted Bandedge and Spurious Emissions | at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power |

### 12.3. Test Procedure

|                  |                                                |
|------------------|------------------------------------------------|
| Center Frequency | The centre frequency of the channel under test |
| Detector         | Peak                                           |
| RBW              | 100 kHz                                        |
| VBW              | $\geq 3 \times \text{RBW}$                     |
| Span             | 1.5 x DTS bandwidth                            |
| Trace            | Max hold                                       |
| Sweep time       | Auto couple.                                   |

Connect the UUT to the spectrum analyzer and use the following settings:

Use the peak marker function to determine the maximum PSD level.

|                    |                                                                               |
|--------------------|-------------------------------------------------------------------------------|
| Span               | Set the center frequency and span to encompass frequency range to be measured |
| Detector           | Peak                                                                          |
| RBW                | 100 kHz                                                                       |
| VBW                | $\geq 3 \times \text{RBW}$                                                    |
| measurement points | $\geq \text{span/RBW}$                                                        |
| Trace              | Max hold                                                                      |
| Sweep time         | Auto couple.                                                                  |

Use the peak marker function to determine the maximum amplitude level.

### 12.4. Test result

| Test Mode | Ant. | Ch Name | Freq. (MHz) | Ref Level (dBm) | Result (dBm) | Limit (dBm)   | Verdict |
|-----------|------|---------|-------------|-----------------|--------------|---------------|---------|
| 11B       | Ant1 | Low     | 2412        | 9.66            | -36.68       | $\leq -20.34$ | PASS    |
|           | Ant2 | Low     | 2412        | 9.16            | -38.36       | $\leq -20.84$ | PASS    |
|           | Ant1 | High    | 2462        | 9.11            | -45.93       | $\leq -20.89$ | PASS    |
|           | Ant2 | High    | 2462        | 9.10            | -46.92       | $\leq -20.9$  | PASS    |
| 11G       | Ant1 | Low     | 2412        | 0.83            | -21.72       | $\leq -19.17$ | PASS    |
|           | Ant2 | Low     | 2412        | 5.56            | -24.71       | $\leq -14.44$ | PASS    |
|           | Ant1 | High    | 2462        | 5.48            | -45.66       | $\leq -24.52$ | PASS    |
|           | Ant2 | High    | 2462        | 7.00            | -25.46       | $\leq -23$    | PASS    |
| 11N20MIMO | Ant1 | Low     | 2412        | -0.31           | -24.18       | $\leq -20.31$ | PASS    |
|           | Ant2 | Low     | 2412        | -0.78           | -41.46       | $\leq -20.78$ | PASS    |
|           | Ant1 | High    | 2462        | 5.04            | -46.7        | $\leq -14.96$ | PASS    |
|           | Ant2 | High    | 2462        | 5.05            | -25.71       | $\leq -14.95$ | PASS    |

|            |      |      |      |      |        |               |      |
|------------|------|------|------|------|--------|---------------|------|
| 11N40MIMO  | Ant1 | Low  | 2422 | 3.30 | -40.06 | $\leq -16.7$  | PASS |
|            | Ant2 | Low  | 2422 | 3.13 | -31.89 | $\leq -16.87$ | PASS |
|            | Ant1 | High | 2452 | 3.99 | -43.15 | $\leq -16.01$ | PASS |
|            | Ant2 | High | 2452 | 4.00 | -24.96 | $\leq -16$    | PASS |
| 11AX20MIMO | Ant1 | Low  | 2412 | 6.84 | -36.42 | $\leq -13.16$ | PASS |
|            | Ant2 | Low  | 2412 | 5.97 | -25.85 | $\leq -14.03$ | PASS |
|            | Ant1 | High | 2462 | 7.16 | -46.22 | $\leq -12.84$ | PASS |
|            | Ant2 | High | 2462 | 6.39 | -25.07 | $\leq -13.61$ | PASS |
| 11AX40MIMO | Ant1 | Low  | 2422 | 4.55 | -33.51 | $\leq -15.45$ | PASS |
|            | Ant2 | Low  | 2422 | 4.94 | -27.87 | $\leq -15.06$ | PASS |
|            | Ant1 | High | 2452 | 4.10 | -41.61 | $\leq -15.9$  | PASS |
|            | Ant2 | High | 2452 | 4.52 | -26.41 | $\leq -15.48$ | PASS |
| 11BE20MIMO | Ant1 | Low  | 2412 | 6.52 | -35.41 | $\leq -13.48$ | PASS |
|            | Ant2 | Low  | 2412 | 6.69 | -24.28 | $\leq -13.31$ | PASS |
|            | Ant1 | High | 2462 | 6.40 | -43.62 | $\leq -13.6$  | PASS |
|            | Ant2 | High | 2462 | 6.49 | -23.75 | $\leq -13.51$ | PASS |
| 11BE40MIMO | Ant1 | Low  | 2422 | 4.27 | -30.76 | $\leq -15.73$ | PASS |
|            | Ant2 | Low  | 2422 | 4.69 | -27.07 | $\leq -15.31$ | PASS |
|            | Ant1 | High | 2452 | 4.39 | -39.65 | $\leq -15.61$ | PASS |
|            | Ant2 | High | 2452 | 4.65 | -24.07 | $\leq -15.35$ | PASS |

Note: Offset=cable loss + Test system insertion loss

| Test Mode | Ant. | Freq. (MHz) | Freq Range (Mhz) | Ref Level (dBm) | Result (dBm) | Limit (dBm)   | Verdict |
|-----------|------|-------------|------------------|-----------------|--------------|---------------|---------|
| 11B       | Ant1 | 2412        | Reference        | 7.44            | 7.44         | ---           | PASS    |
|           |      |             | 30~1000          | 7.44            | -61.9        | $\leq -12.56$ | PASS    |
|           |      |             | 1000~26500       | 7.44            | -41.61       | $\leq -12.56$ | PASS    |
|           | Ant2 | 2412        | Reference        | 6.65            | 6.65         | ---           | PASS    |
|           |      |             | 30~1000          | 6.65            | -61.77       | $\leq -13.35$ | PASS    |
|           |      |             | 1000~26500       | 6.65            | -40.91       | $\leq -13.35$ | PASS    |
|           | Ant1 | 2437        | Reference        | 8.62            | 8.62         | ---           | PASS    |
|           |      |             | 30~1000          | 8.62            | -59.89       | $\leq -11.38$ | PASS    |
|           |      |             | 1000~26500       | 8.62            | -41.51       | $\leq -11.38$ | PASS    |
|           | Ant2 | 2437        | Reference        | 6.85            | 6.85         | ---           | PASS    |
|           |      |             | 30~1000          | 6.85            | -61.02       | $\leq -13.15$ | PASS    |
|           |      |             | 1000~26500       | 6.85            | -41.41       | $\leq -13.15$ | PASS    |
|           | Ant1 | 2462        | Reference        | 7.01            | 7.01         | ---           | PASS    |
|           |      |             | 30~1000          | 7.01            | -62.37       | $\leq -12.99$ | PASS    |
|           |      |             | 1000~26500       | 7.01            | -40.68       | $\leq -12.99$ | PASS    |
|           | Ant2 | 2462        | Reference        | 7.63            | 7.63         | ---           | PASS    |
|           |      |             | 30~1000          | 7.63            | -62.23       | $\leq -12.37$ | PASS    |
|           |      |             | 1000~26500       | 7.63            | -41.17       | $\leq -12.37$ | PASS    |
| 11G       | Ant1 | 2412        | Reference        | 5.12            | 5.12         | ---           | PASS    |
|           |      |             | 30~1000          | 5.12            | -61.73       | $\leq -14.88$ | PASS    |
|           |      |             | 1000~26500       | 5.12            | -41.45       | $\leq -14.88$ | PASS    |
|           | Ant2 | 2412        | Reference        | 2.28            | 2.28         | ---           | PASS    |
|           |      |             | 30~1000          | 2.28            | -61.3        | $\leq -17.72$ | PASS    |
|           |      |             | 1000~26500       | 2.28            | -41.35       | $\leq -17.72$ | PASS    |
|           | Ant1 | 2437        | Reference        | -0.59           | -0.59        | ---           | PASS    |
|           |      |             | 30~1000          | -0.59           | -62.12       | $\leq -20.59$ | PASS    |
|           |      |             | 1000~26500       | -0.59           | -41.26       | $\leq -20.59$ | PASS    |

|            |      |      |            |       |        |               |      |
|------------|------|------|------------|-------|--------|---------------|------|
|            | Ant2 | 2437 | Reference  | 3.69  | 3.69   | ---           | PASS |
|            |      |      | 30~1000    | 3.69  | -62.27 | $\leq -16.31$ | PASS |
|            |      |      | 1000~26500 | 3.69  | -40.51 | $\leq -16.31$ | PASS |
|            | Ant1 | 2462 | Reference  | 2.91  | 2.91   | ---           | PASS |
|            |      |      | 30~1000    | 2.91  | -61.36 | $\leq -17.09$ | PASS |
|            |      |      | 1000~26500 | 2.91  | -41.32 | $\leq -17.09$ | PASS |
|            | Ant2 | 2462 | Reference  | 4.07  | 4.07   | ---           | PASS |
|            |      |      | 30~1000    | 4.07  | -62.38 | $\leq -15.93$ | PASS |
|            |      |      | 1000~26500 | 4.07  | -41.46 | $\leq -15.93$ | PASS |
| 11N20MIMO  | Ant1 | 2412 | Reference  | -2.62 | -2.62  | ---           | PASS |
|            |      |      | 30~1000    | -2.62 | -62.6  | $\leq -22.62$ | PASS |
|            |      |      | 1000~26500 | -2.62 | -41.36 | $\leq -22.62$ | PASS |
|            | Ant2 | 2412 | Reference  | -2.52 | -2.52  | ---           | PASS |
|            |      |      | 30~1000    | -2.52 | -62.24 | $\leq -22.52$ | PASS |
|            |      |      | 1000~26500 | -2.52 | -40.98 | $\leq -22.52$ | PASS |
|            | Ant1 | 2437 | Reference  | 3.36  | 3.36   | ---           | PASS |
|            |      |      | 30~1000    | 3.36  | -61.23 | $\leq -16.64$ | PASS |
|            |      |      | 1000~26500 | 3.36  | -41.88 | $\leq -16.64$ | PASS |
|            | Ant2 | 2437 | Reference  | -0.04 | -0.04  | ---           | PASS |
|            |      |      | 30~1000    | -0.04 | -61.67 | $\leq -20.04$ | PASS |
|            |      |      | 1000~26500 | -0.04 | -41.23 | $\leq -20.04$ | PASS |
|            | Ant1 | 2462 | Reference  | 2.43  | 2.43   | ---           | PASS |
|            |      |      | 30~1000    | 2.43  | -62.43 | $\leq -17.57$ | PASS |
|            |      |      | 1000~26500 | 2.43  | -41.15 | $\leq -17.57$ | PASS |
|            | Ant2 | 2462 | Reference  | 2.33  | 2.33   | ---           | PASS |
|            |      |      | 30~1000    | 2.33  | -61.5  | $\leq -17.67$ | PASS |
|            |      |      | 1000~26500 | 2.33  | -41.26 | $\leq -17.67$ | PASS |
| 11N40MIMO  | Ant1 | 2422 | Reference  | 1.29  | 1.29   | ---           | PASS |
|            |      |      | 30~1000    | 1.29  | -61.56 | $\leq -18.71$ | PASS |
|            |      |      | 1000~26500 | 1.29  | -41.12 | $\leq -18.71$ | PASS |
|            | Ant2 | 2422 | Reference  | 0.19  | 0.19   | ---           | PASS |
|            |      |      | 30~1000    | 0.19  | -62.39 | $\leq -19.81$ | PASS |
|            |      |      | 1000~26500 | 0.19  | -41.7  | $\leq -19.81$ | PASS |
|            | Ant1 | 2437 | Reference  | 3.65  | 3.65   | ---           | PASS |
|            |      |      | 30~1000    | 3.65  | -62.66 | $\leq -16.35$ | PASS |
|            |      |      | 1000~26500 | 3.65  | -41.27 | $\leq -16.35$ | PASS |
|            | Ant2 | 2437 | Reference  | 0.85  | 0.85   | ---           | PASS |
|            |      |      | 30~1000    | 0.85  | -61.35 | $\leq -19.15$ | PASS |
|            |      |      | 1000~26500 | 0.85  | -40.44 | $\leq -19.15$ | PASS |
|            | Ant1 | 2452 | Reference  | 2.09  | 2.09   | ---           | PASS |
|            |      |      | 30~1000    | 2.09  | -61.83 | $\leq -17.91$ | PASS |
|            |      |      | 1000~26500 | 2.09  | -40.11 | $\leq -17.91$ | PASS |
|            | Ant2 | 2452 | Reference  | 3.28  | 3.28   | ---           | PASS |
|            |      |      | 30~1000    | 3.28  | -61.24 | $\leq -16.72$ | PASS |
|            |      |      | 1000~26500 | 3.28  | -40.51 | $\leq -16.72$ | PASS |
| 11AX20MIMO | Ant1 | 2412 | Reference  | 6.85  | 6.85   | ---           | PASS |
|            |      |      | 30~1000    | 6.85  | -60.79 | $\leq -13.15$ | PASS |
|            |      |      | 1000~26500 | 6.85  | -41.62 | $\leq -13.15$ | PASS |
|            | Ant2 | 2412 | Reference  | 1.90  | 1.90   | ---           | PASS |
|            |      |      | 30~1000    | 1.90  | -61.08 | $\leq -18.1$  | PASS |
|            |      |      | 1000~26500 | 1.90  | -41.29 | $\leq -18.1$  | PASS |
|            | Ant1 | 2437 | Reference  | 6.45  | 6.45   | ---           | PASS |

|            |      |      |            |      |        |               |      |
|------------|------|------|------------|------|--------|---------------|------|
|            |      |      | 30~1000    | 6.45 | -61.35 | $\leq -13.55$ | PASS |
|            |      |      | 1000~26500 | 6.45 | -41.32 | $\leq -13.55$ | PASS |
|            |      |      | Reference  | 6.40 | 6.40   | ---           | PASS |
|            |      |      | 30~1000    | 6.40 | -62.23 | $\leq -13.6$  | PASS |
|            |      |      | 1000~26500 | 6.40 | -40.66 | $\leq -13.6$  | PASS |
|            |      |      | Reference  | 4.98 | 4.98   | ---           | PASS |
|            | Ant1 | 2462 | 30~1000    | 4.98 | -61.6  | $\leq -15.02$ | PASS |
|            |      |      | 1000~26500 | 4.98 | -41.4  | $\leq -15.02$ | PASS |
|            |      |      | Reference  | 5.80 | 5.80   | ---           | PASS |
|            | Ant2 | 2462 | 30~1000    | 5.80 | -61.73 | $\leq -14.2$  | PASS |
|            |      |      | 1000~26500 | 5.80 | -41.42 | $\leq -14.2$  | PASS |
|            |      |      | Reference  | 4.57 | 4.57   | ---           | PASS |
| 11AX40MIMO | Ant1 | 2422 | 30~1000    | 4.57 | -61.45 | $\leq -15.43$ | PASS |
|            |      |      | 1000~26500 | 4.57 | -41.4  | $\leq -15.43$ | PASS |
|            |      |      | Reference  | 4.29 | 4.29   | ---           | PASS |
|            | Ant2 | 2422 | 30~1000    | 4.29 | -61.76 | $\leq -15.71$ | PASS |
|            |      |      | 1000~26500 | 4.29 | -41.09 | $\leq -15.71$ | PASS |
|            |      |      | Reference  | 4.24 | 4.24   | ---           | PASS |
|            | Ant1 | 2437 | 30~1000    | 4.24 | -62.03 | $\leq -15.76$ | PASS |
|            |      |      | 1000~26500 | 4.24 | -41.11 | $\leq -15.76$ | PASS |
|            |      |      | Reference  | 3.78 | 3.78   | ---           | PASS |
|            | Ant2 | 2437 | 30~1000    | 3.78 | -61.26 | $\leq -16.22$ | PASS |
|            |      |      | 1000~26500 | 3.78 | -41.01 | $\leq -16.22$ | PASS |
|            |      |      | Reference  | 4.19 | 4.19   | ---           | PASS |
|            | Ant1 | 2452 | 30~1000    | 4.19 | -61.6  | $\leq -15.81$ | PASS |
|            |      |      | 1000~26500 | 4.19 | -40.73 | $\leq -15.81$ | PASS |
|            |      |      | Reference  | 4.44 | 4.44   | ---           | PASS |
|            | Ant2 | 2452 | 30~1000    | 4.44 | -61.3  | $\leq -15.56$ | PASS |
|            |      |      | 1000~26500 | 4.44 | -40.72 | $\leq -15.56$ | PASS |
|            |      |      | Reference  | 6.76 | 6.76   | ---           | PASS |
| 11BE20MIMO | Ant1 | 2412 | 30~1000    | 6.76 | -62.54 | $\leq -13.24$ | PASS |
|            |      |      | 1000~26500 | 6.76 | -41.01 | $\leq -13.24$ | PASS |
|            |      |      | Reference  | 5.69 | 5.69   | ---           | PASS |
|            | Ant2 | 2412 | 30~1000    | 5.69 | -60.29 | $\leq -14.31$ | PASS |
|            |      |      | 1000~26500 | 5.69 | -41.33 | $\leq -14.31$ | PASS |
|            |      |      | Reference  | 6.51 | 6.51   | ---           | PASS |
|            | Ant1 | 2437 | 30~1000    | 6.51 | -62.63 | $\leq -13.49$ | PASS |
|            |      |      | 1000~26500 | 6.51 | -41.37 | $\leq -13.49$ | PASS |
|            |      |      | Reference  | 5.65 | 5.65   | ---           | PASS |
|            | Ant2 | 2437 | 30~1000    | 5.65 | -61.66 | $\leq -14.35$ | PASS |
|            |      |      | 1000~26500 | 5.65 | -40.03 | $\leq -14.35$ | PASS |
|            |      |      | Reference  | 6.79 | 6.79   | ---           | PASS |
|            | Ant1 | 2462 | 30~1000    | 6.79 | -61.7  | $\leq -13.21$ | PASS |
|            |      |      | 1000~26500 | 6.79 | -41.18 | $\leq -13.21$ | PASS |
|            |      |      | Reference  | 6.38 | 6.38   | ---           | PASS |
|            | Ant2 | 2462 | 30~1000    | 6.38 | -61.09 | $\leq -13.62$ | PASS |
|            |      |      | 1000~26500 | 6.38 | -41.14 | $\leq -13.62$ | PASS |
|            |      |      | Reference  | 4.35 | 4.35   | ---           | PASS |
| 11BE40MIMO | Ant1 | 2422 | 30~1000    | 4.35 | -61.3  | $\leq -15.65$ | PASS |
|            |      |      | 1000~26500 | 4.35 | -41.31 | $\leq -15.65$ | PASS |
|            |      |      | Reference  | 4.52 | 4.52   | ---           | PASS |
|            | Ant2 | 2422 | 30~1000    | 4.52 | -61.3  | $\leq -15.48$ | PASS |
|            |      |      |            |      |        |               |      |

|  |      |      |            |      |        |         |      |
|--|------|------|------------|------|--------|---------|------|
|  |      |      | 1000~26500 | 4.52 | -41.19 | ≤-15.48 | PASS |
|  | Ant1 | 2437 | Reference  | 2.98 | 2.98   | ---     | PASS |
|  |      |      | 30~1000    | 2.98 | -61.86 | ≤-17.02 | PASS |
|  |      |      | 1000~26500 | 2.98 | -41.25 | ≤-17.02 | PASS |
|  | Ant2 | 2437 | Reference  | 4.36 | 4.36   | ---     | PASS |
|  |      |      | 30~1000    | 4.36 | -61.92 | ≤-15.64 | PASS |
|  |      |      | 1000~26500 | 4.36 | -41.36 | ≤-15.64 | PASS |
|  | Ant1 | 2452 | Reference  | 3.34 | 3.34   | ---     | PASS |
|  |      |      | 30~1000    | 3.34 | -60.6  | ≤-16.66 | PASS |
|  |      |      | 1000~26500 | 3.34 | -41.35 | ≤-16.66 | PASS |
|  | Ant2 | 2452 | Reference  | 4.55 | 4.55   | ---     | PASS |
|  |      |      | 30~1000    | 4.55 | -61.14 | ≤-15.45 | PASS |
|  |      |      | 1000~26500 | 4.55 | -40.74 | ≤-15.45 | PASS |

Note: Offset=cable loss + Test system insertion loss

12.5. Original test data

Band edge:





11B\_Ant2\_High\_2462



11G\_Ant1\_Low\_2412



11G\_Ant2\_Low\_2412



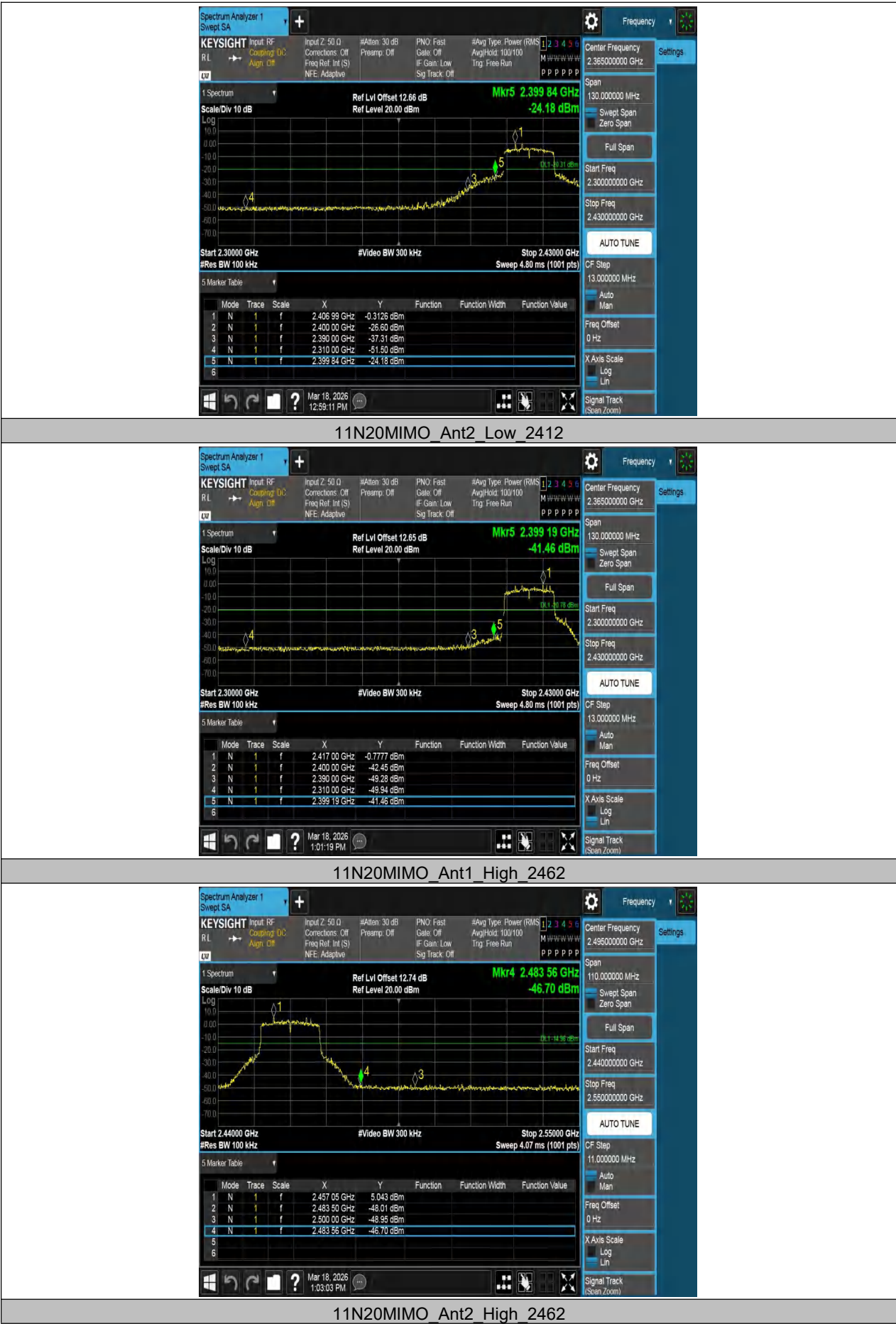
11G\_Ant1\_High\_2462



11G\_Ant2\_High\_2462



11N20MIMO\_Ant1\_Low\_2412





11N40MIMO\_Ant1\_Low\_2422



11N40MIMO\_Ant2\_Low\_2422



11N40MIMO\_Ant1\_High\_2452



11N40MIMO\_Ant2\_High\_2452



11AX20MIMO\_Ant1\_Low\_2412



11AX20MIMO\_Ant2\_Low\_2412







11BE20MIMO\_Ant1\_Low\_2412



11BE20MIMO\_Ant2\_Low\_2412



11BE20MIMO\_Ant1\_High\_2462



11BE20MIMO\_Ant2\_High\_2462



11BE40MIMO\_Ant1\_Low\_2422



11BE40MIMO\_Ant2\_Low\_2422



11BE40MIMO\_Ant1\_High\_2452



11BE40MIMO\_Ant2\_High\_2452



Spurious Emission:

11B\_Ant1\_2412\_0~Reference



11B\_Ant1\_2412\_30~1000



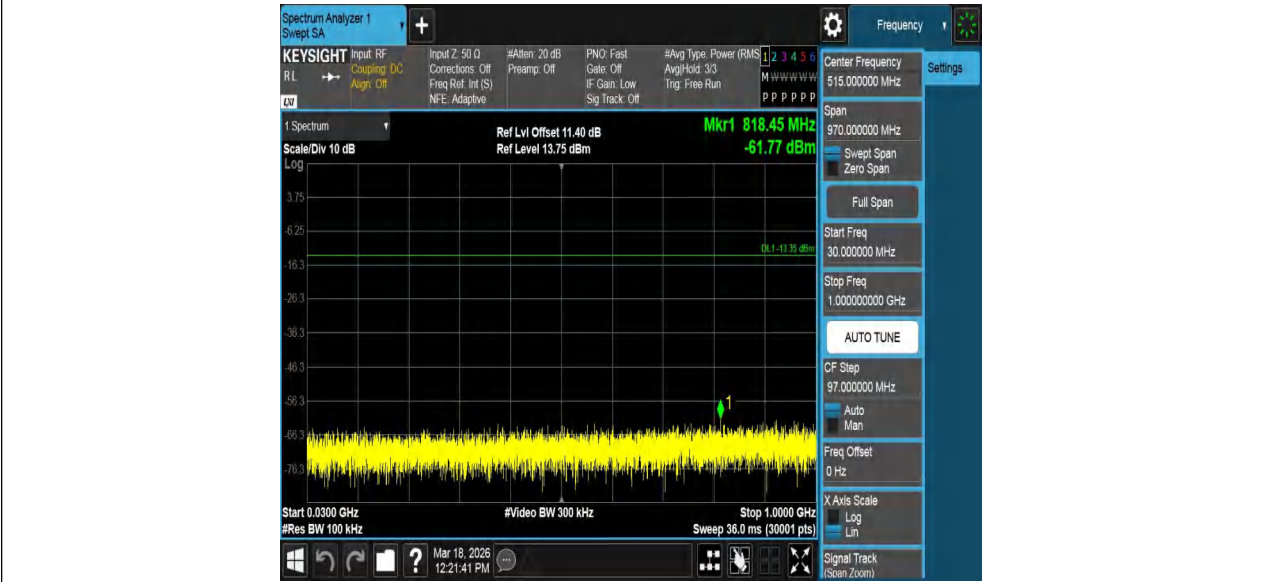
11B\_Ant1\_2412\_1000~26500



11B\_Ant2\_2412\_0~Reference



11B\_Ant2\_2412\_30~1000



11B\_Ant2\_2412\_1000~26500



11B\_Ant1\_2437\_0~Reference





11B\_Ant2\_2437\_30~1000



11B\_Ant2\_2437\_1000~26500



11B\_Ant1\_2462\_0~Reference



11B\_Ant1\_2462\_30~1000



11B\_Ant1\_2462\_1000~26500



11B\_Ant2\_2462\_0~Reference