



## Appendix Test Data for WLAN(2. 4G) (Conducted Measurement)

Product Name: Low power monitoring camera

Trade Mark: /

Test Model: HD-M729W -CAMERA

FCC ID: 2BWCS-CAMERA

### Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 23.5℃     |
| Relative Humidity: | 58%       |
| ATM Pressure:      | 100.0 kPa |
| Test Engineer:     | Allen Lai |
| Supervised by:     | Max Zhang |
| NOTE               | N/A       |

## Appendix A: DTS Bandwidth

### Test Result

| Test Mode | Antenna | Frequency<br>[MHz] | DTS BW<br>[MHz] | FL<br>[MHz] | FH<br>[MHz] | Limit<br>[MHz] | Verdict |
|-----------|---------|--------------------|-----------------|-------------|-------------|----------------|---------|
| 11B       | Ant1    | 2412               | 10.200          | 2406.920    | 2417.120    | 0.5            | PASS    |
| 11B       | Ant1    | 2437               | 10.160          | 2431.920    | 2442.080    | 0.5            | PASS    |
| 11B       | Ant1    | 2462               | 10.200          | 2456.920    | 2467.120    | 0.5            | PASS    |
| 11G       | Ant1    | 2412               | 16.120          | 2403.880    | 2420.000    | 0.5            | PASS    |
| 11G       | Ant1    | 2437               | 16.120          | 2428.880    | 2445.000    | 0.5            | PASS    |
| 11G       | Ant1    | 2462               | 16.320          | 2453.880    | 2470.200    | 0.5            | PASS    |
| 11N20SISO | Ant1    | 2412               | 17.600          | 2403.200    | 2420.800    | 0.5            | PASS    |
| 11N20SISO | Ant1    | 2437               | 17.280          | 2428.280    | 2445.560    | 0.5            | PASS    |
| 11N20SISO | Ant1    | 2462               | 17.360          | 2453.360    | 2470.720    | 0.5            | PASS    |
| 11N40SISO | Ant1    | 2422               | 36.160          | 2404.000    | 2440.160    | 0.5            | PASS    |
| 11N40SISO | Ant1    | 2437               | 35.840          | 2419.160    | 2455.000    | 0.5            | PASS    |
| 11N40SISO | Ant1    | 2452               | 36.320          | 2433.840    | 2470.160    | 0.5            | PASS    |

Note: offset(dB) = cable loss(dB) + attenuator factor(dB)





## Test Graphs





11B-Ant1-2462-PASS



11G-Ant1-2412-PASS





11G-Ant1-2437-PASS



11G-Ant1-2462-PASS





11N20SISO-Ant1-2412-PASS

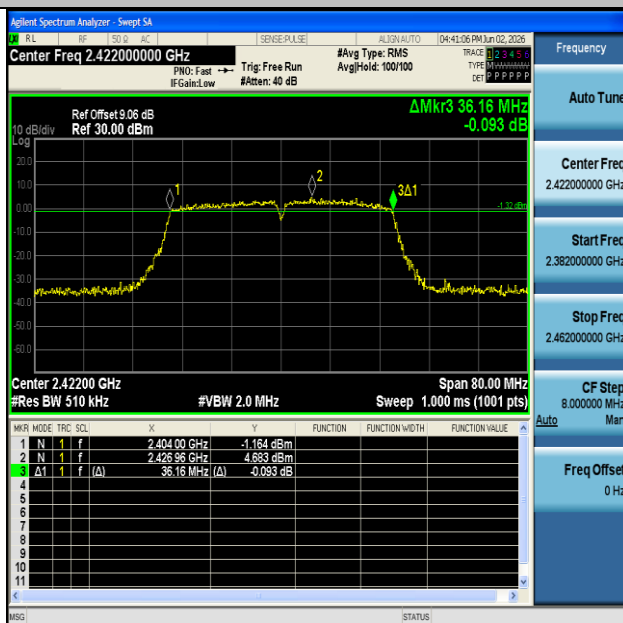


11N20SISO-Ant1-2437-PASS



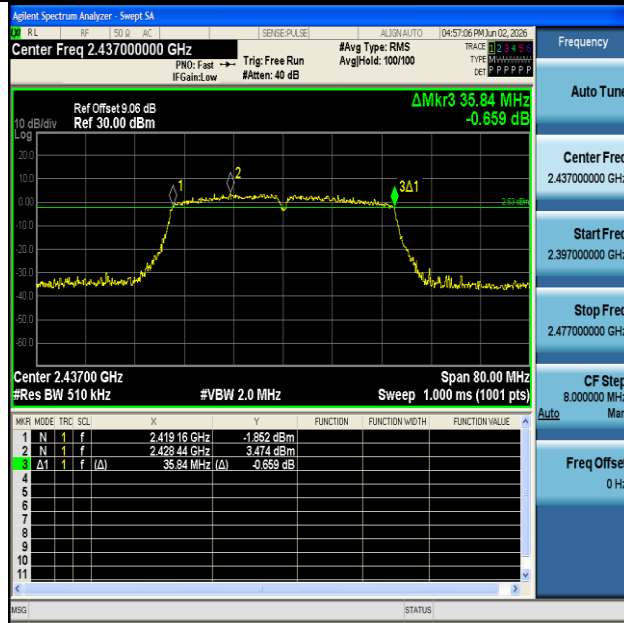


11N20SISO-Ant1-2462-PASS

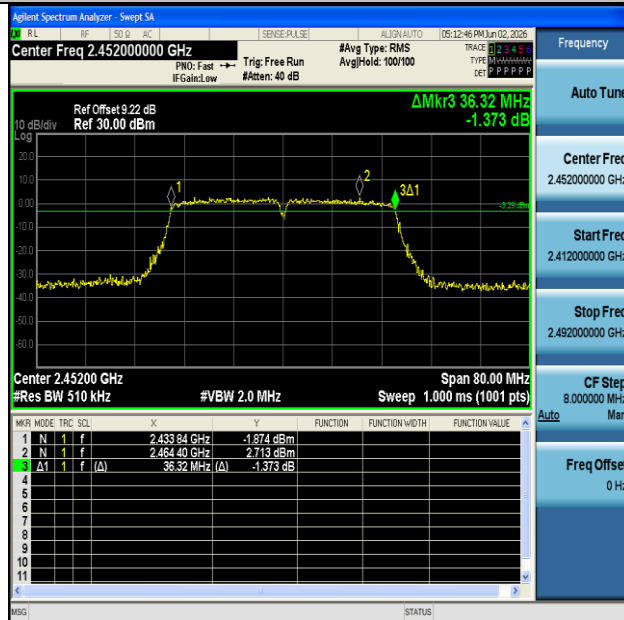


11N40SISO-Ant1-2422-PASS





11N40SISO-Ant1-2437-PASS



11N40SISO-Ant1-2452-PASS





## Appendix B: Occupied Channel Bandwidth

### Test Result

| Test Mode | Antenna | Channel Frequency [MHz] | OCB [MHz] | FL [MHz]  | FH [MHz]  | Limit [MHz] | Verdict |
|-----------|---------|-------------------------|-----------|-----------|-----------|-------------|---------|
| 11B       | Ant1    | 2412                    | 14.860    | 2404.5958 | 2419.4558 | ---         | ---     |
| 11B       | Ant1    | 2437                    | 14.669    | 2429.5877 | 2444.2567 | ---         | ---     |
| 11B       | Ant1    | 2462                    | 14.815    | 2454.6405 | 2469.4555 | ---         | ---     |
| 11G       | Ant1    | 2412                    | 16.759    | 2403.6293 | 2420.3883 | ---         | ---     |
| 11G       | Ant1    | 2437                    | 16.690    | 2428.5966 | 2445.2866 | ---         | ---     |
| 11G       | Ant1    | 2462                    | 16.865    | 2453.6100 | 2470.4750 | ---         | ---     |
| 11N20SISO | Ant1    | 2412                    | 17.848    | 2403.0955 | 2420.9435 | ---         | ---     |
| 11N20SISO | Ant1    | 2437                    | 17.785    | 2428.0755 | 2445.8605 | ---         | ---     |
| 11N20SISO | Ant1    | 2462                    | 17.884    | 2453.0853 | 2470.9693 | ---         | ---     |
| 11N40SISO | Ant1    | 2422                    | 36.251    | 2403.9296 | 2440.1806 | ---         | ---     |
| 11N40SISO | Ant1    | 2437                    | 36.070    | 2418.9501 | 2455.0201 | ---         | ---     |
| 11N40SISO | Ant1    | 2452                    | 36.297    | 2433.8678 | 2470.1648 | ---         | ---     |

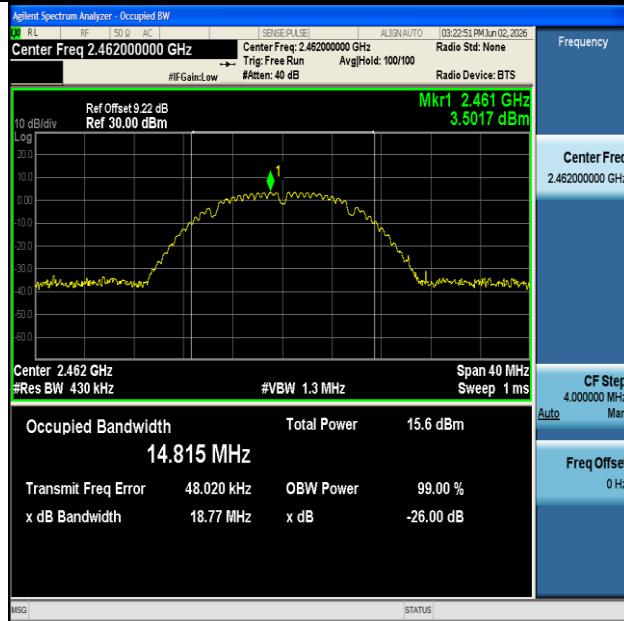
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



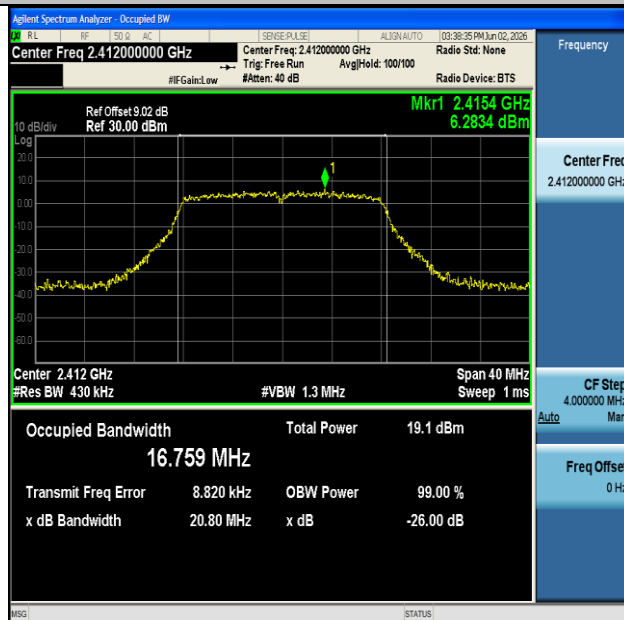


## Test Graphs



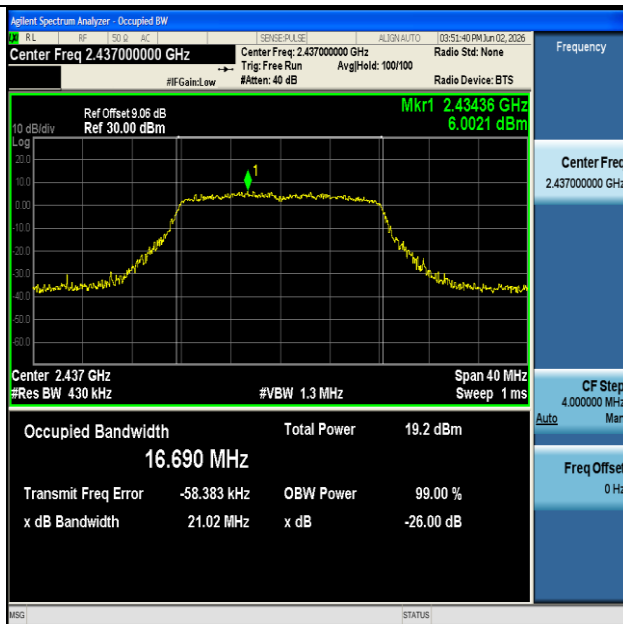


11B-Ant1-2462

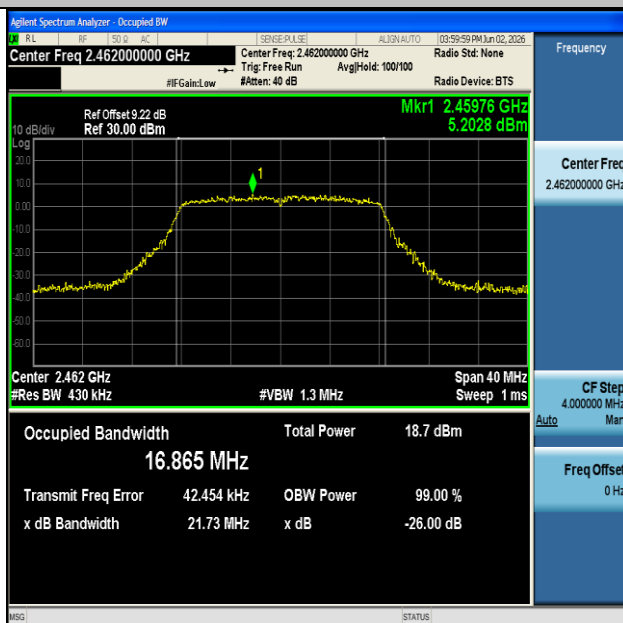


11G-Ant1-2412



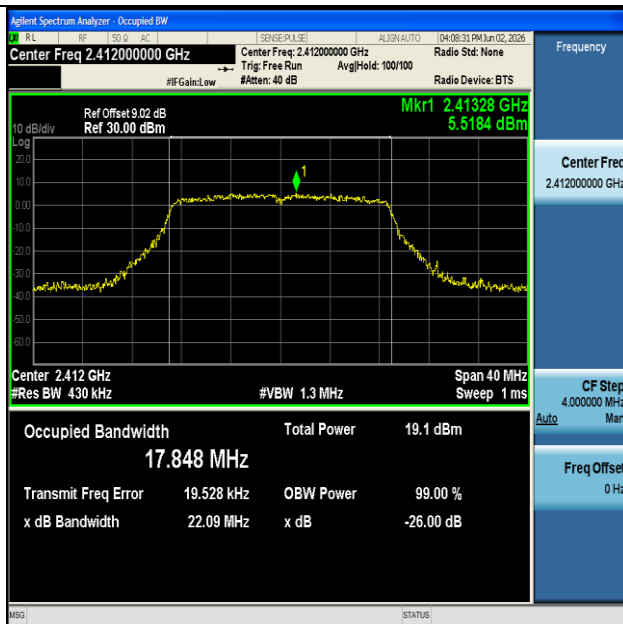


11G-Ant1-2437

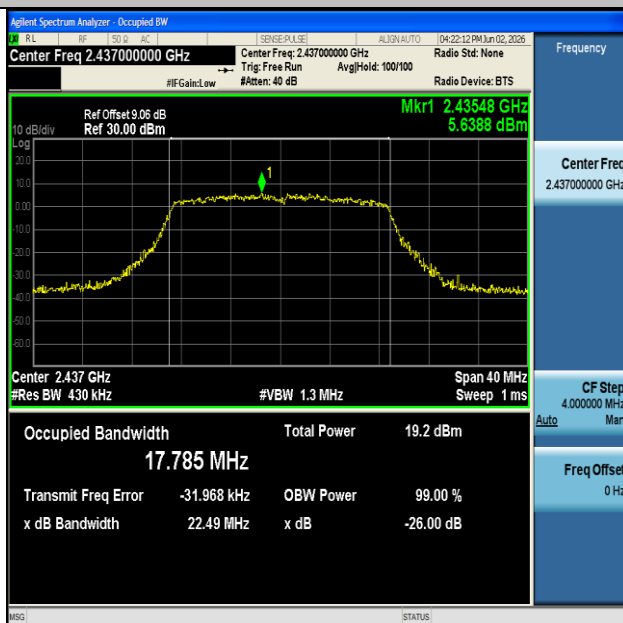


11G-Ant1-2462



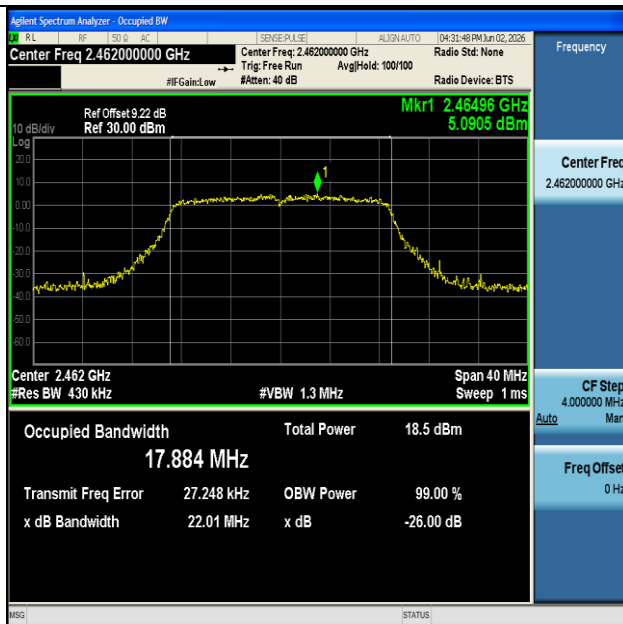


11N20SISO-Ant1-2412

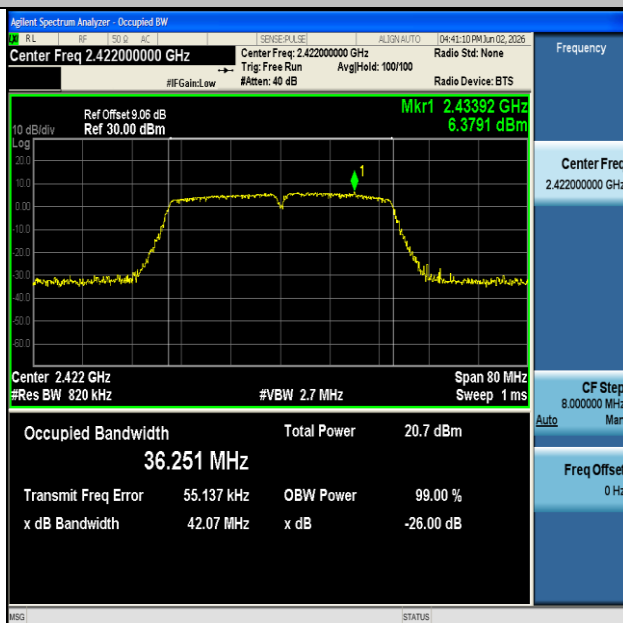


11N20SISO-Ant1-2437



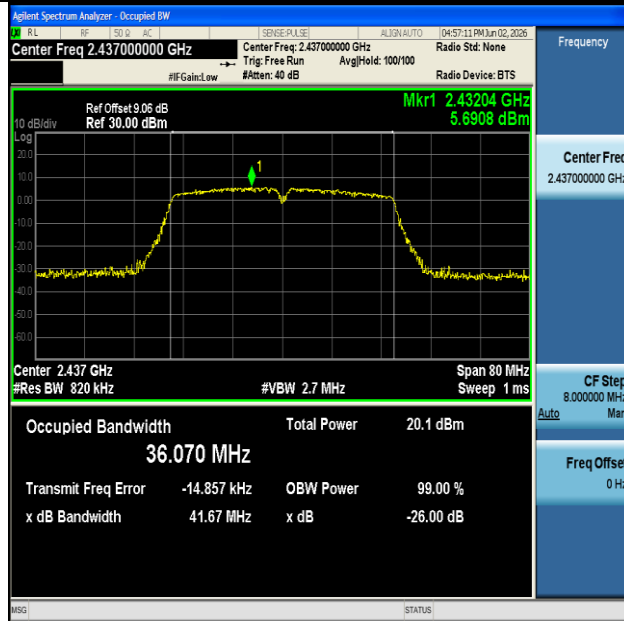


11N20SISO-Ant1-2462



11N40SISO-Ant1-2422





11N40SISO-Ant1-2437



11N40SISO-Ant1-2452





## Appendix C: Maximum Average conducted output power

### Test Result

| Test Mode | Antenna | Frequency<br>[MHz] | Conducted Power<br>[dBm] | Conducted Limit<br>[dBm] | Verdict |
|-----------|---------|--------------------|--------------------------|--------------------------|---------|
| 11B       | Ant1    | 2412               | 12.80                    | ≤30.00                   | PASS    |
| 11B       | Ant1    | 2437               | 12.87                    | ≤30.00                   | PASS    |
| 11B       | Ant1    | 2462               | 12.95                    | ≤30.00                   | PASS    |
| 11G       | Ant1    | 2412               | 13.30                    | ≤30.00                   | PASS    |
| 11G       | Ant1    | 2437               | 13.49                    | ≤30.00                   | PASS    |
| 11G       | Ant1    | 2462               | 13.00                    | ≤30.00                   | PASS    |
| 11N20SISO | Ant1    | 2412               | 13.23                    | ≤30.00                   | PASS    |
| 11N20SISO | Ant1    | 2437               | 13.34                    | ≤30.00                   | PASS    |
| 11N20SISO | Ant1    | 2462               | 12.85                    | ≤30.00                   | PASS    |
| 11N40SISO | Ant1    | 2422               | 14.13                    | ≤30.00                   | PASS    |
| 11N40SISO | Ant1    | 2437               | 13.48                    | ≤30.00                   | PASS    |
| 11N40SISO | Ant1    | 2452               | 13.46                    | ≤30.00                   | PASS    |

Note: offset(dB) = cable loss(dB) + attenuator factor(dB) + Duty Cycle Factor(dB)





## Appendix D: Maximum Average power spectral density

### Test Result

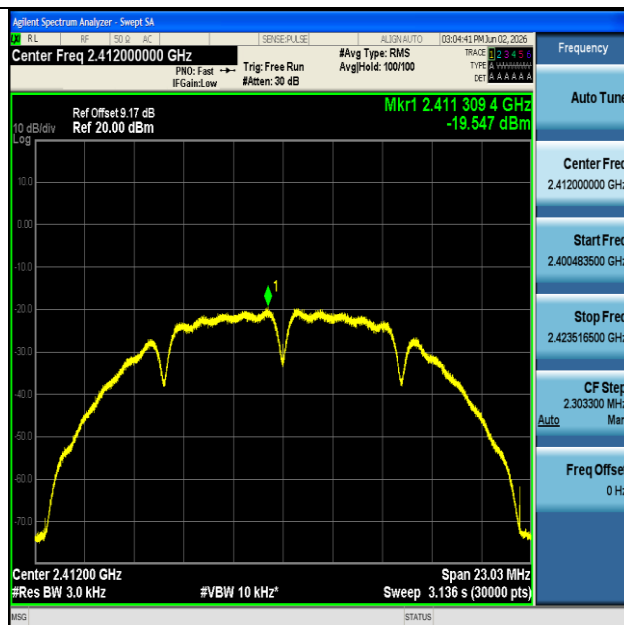
| Test Mode | Antenna | Frequency<br>[MHz] | Raw. Data<br>[dBm/3-100kHz] | Dc.<br>Factor | Result<br>[dBm/3-100kHz] | Limit<br>[dBm/3kHz] | Verdict |
|-----------|---------|--------------------|-----------------------------|---------------|--------------------------|---------------------|---------|
| 11B       | Ant1    | 2412               | -19.70                      | 0.15          | -19.55                   | ≤8.00               | PASS    |
| 11B       | Ant1    | 2437               | -19.79                      | 0.14          | -19.65                   | ≤8.00               | PASS    |
| 11B       | Ant1    | 2462               | -19.52                      | 0.39          | -19.13                   | ≤8.00               | PASS    |
| 11G       | Ant1    | 2412               | -17.94                      | 0.44          | -17.50                   | ≤8.00               | PASS    |
| 11G       | Ant1    | 2437               | -18.65                      | 0.46          | -18.19                   | ≤8.00               | PASS    |
| 11G       | Ant1    | 2462               | -18.88                      | 0.46          | -18.42                   | ≤8.00               | PASS    |
| 11N20SISO | Ant1    | 2412               | -18.73                      | 0.47          | -18.26                   | ≤8.00               | PASS    |
| 11N20SISO | Ant1    | 2437               | -18.19                      | 0.47          | -17.72                   | ≤8.00               | PASS    |
| 11N20SISO | Ant1    | 2462               | -18.94                      | 0.49          | -18.45                   | ≤8.00               | PASS    |
| 11N40SISO | Ant1    | 2422               | -19.98                      | 0.99          | -18.99                   | ≤8.00               | PASS    |
| 11N40SISO | Ant1    | 2437               | -19.53                      | 0.94          | -18.59                   | ≤8.00               | PASS    |
| 11N40SISO | Ant1    | 2452               | -20.86                      | 1.12          | -19.74                   | ≤8.00               | PASS    |

Note: offset(dB) = cable loss(dB) + attenuator factor(dB) + Duty Cycle Factor(dB)

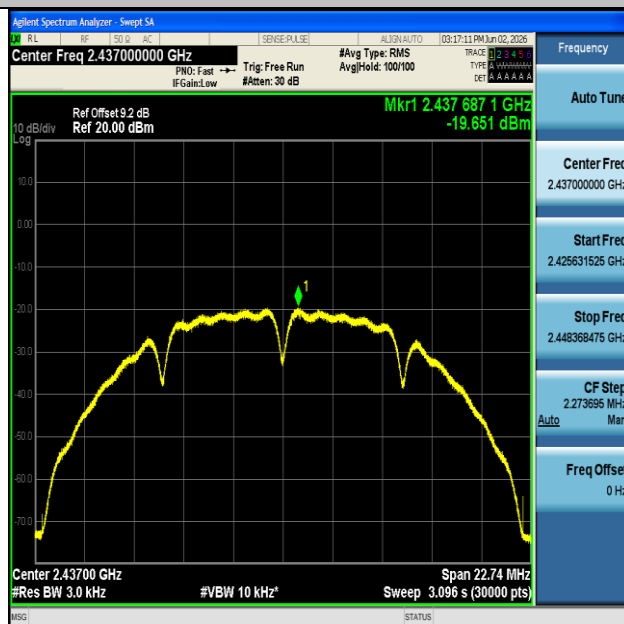




## Test Graphs

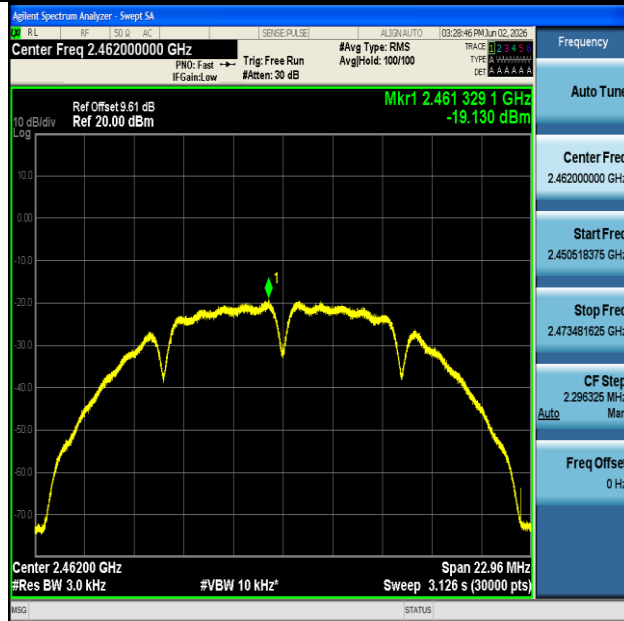


11B-Ant1-2412-PASS

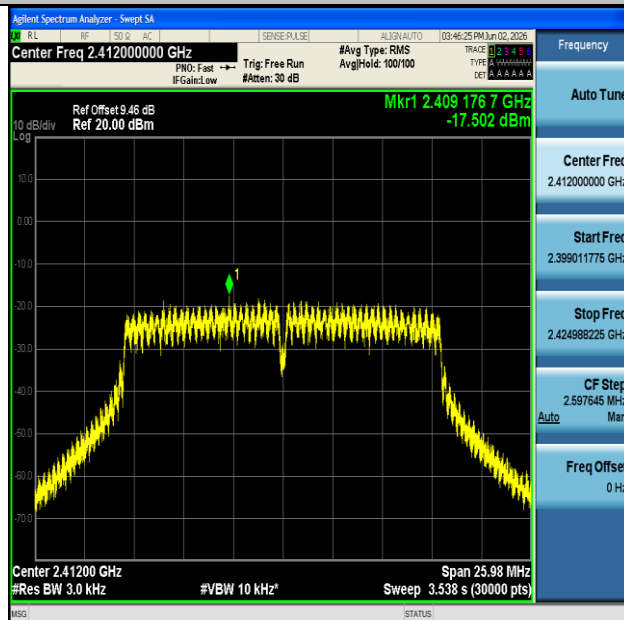


11B-Ant1-2437-PASS



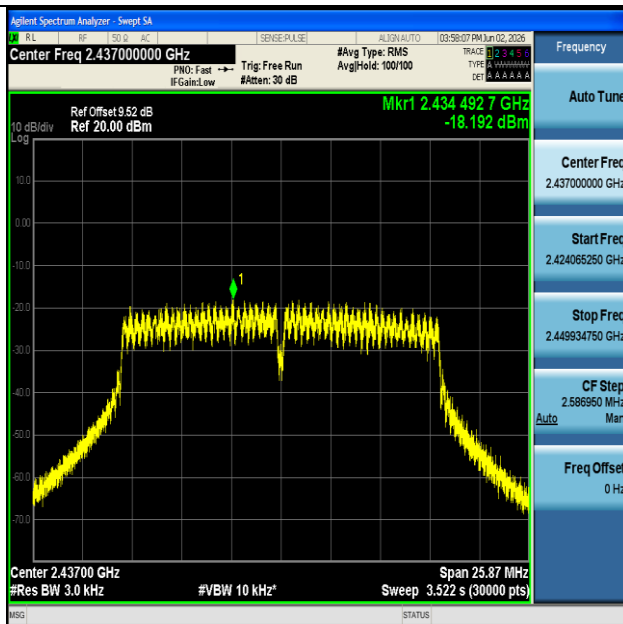


11B-Ant1-2462-PASS

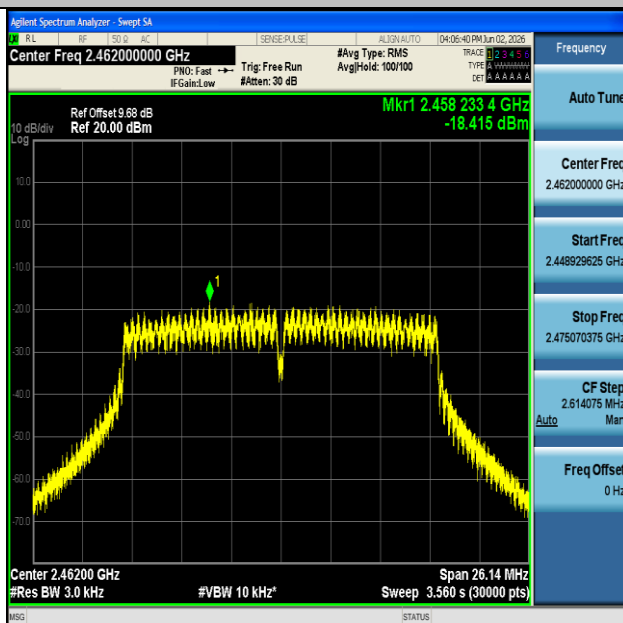


11G-Ant1-2412-PASS



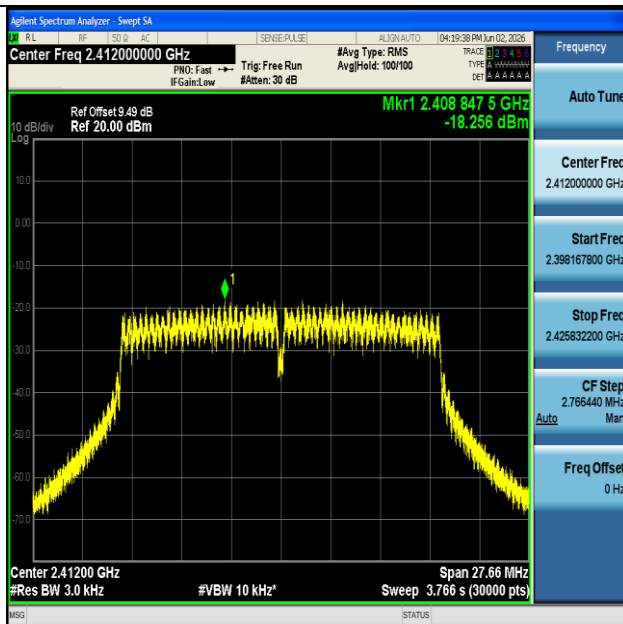


11G-Ant1-2437-PASS

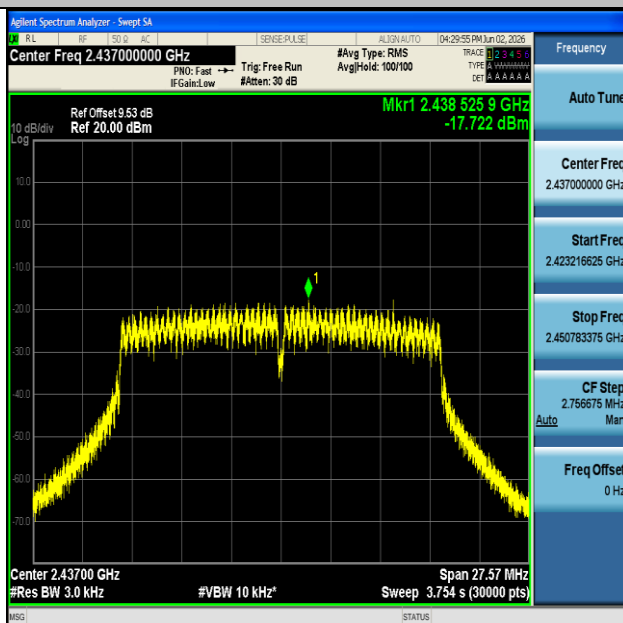


11G-Ant1-2462-PASS



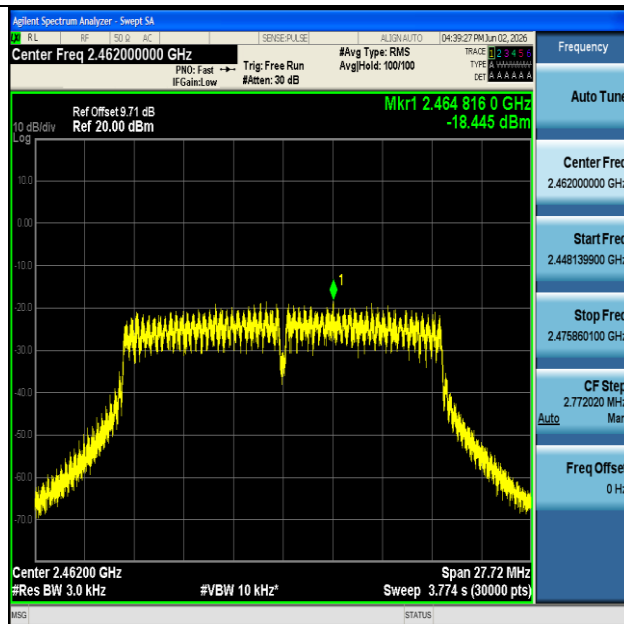


11N20SISO-Ant1-2412-PASS

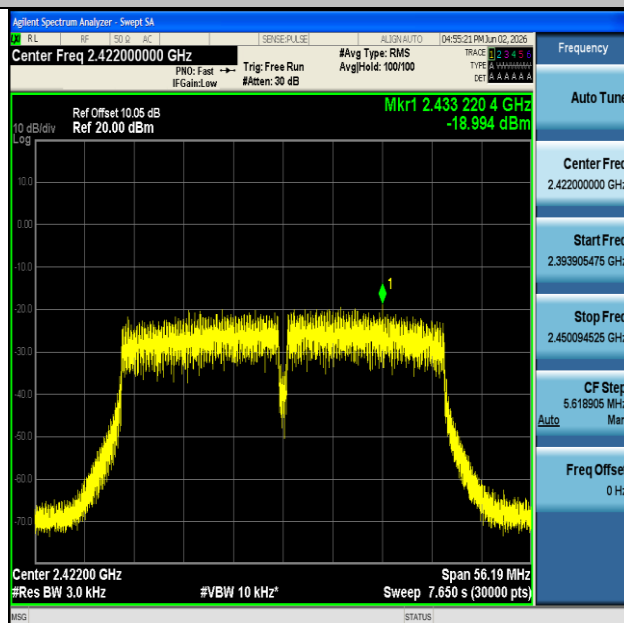


11N20SISO-Ant1-2437-PASS



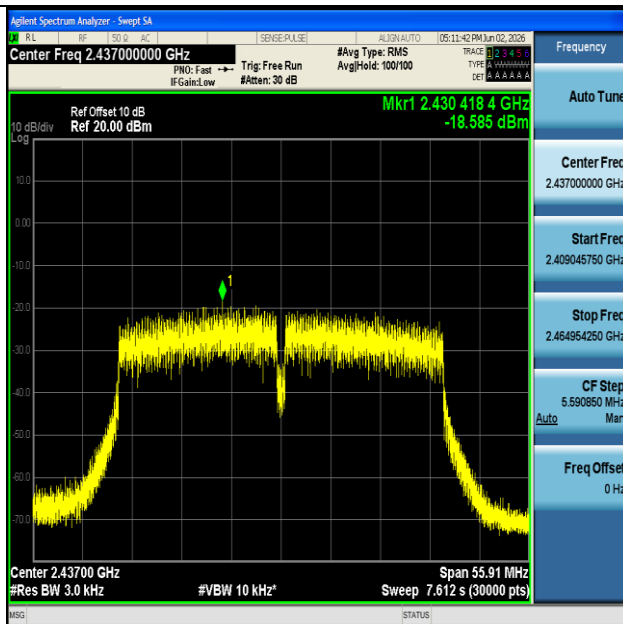


11N20SISO-Ant1-2462-PASS

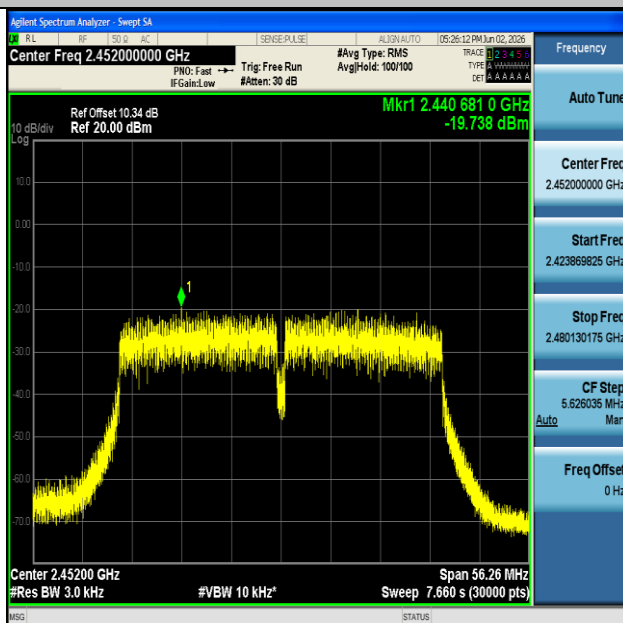


11N40SISO-Ant1-2422-PASS





11N40SISO-Ant1-2437-PASS



11N40SISO-Ant1-2452-PASS





## Appendix E: Band edge measurements

### Test Result

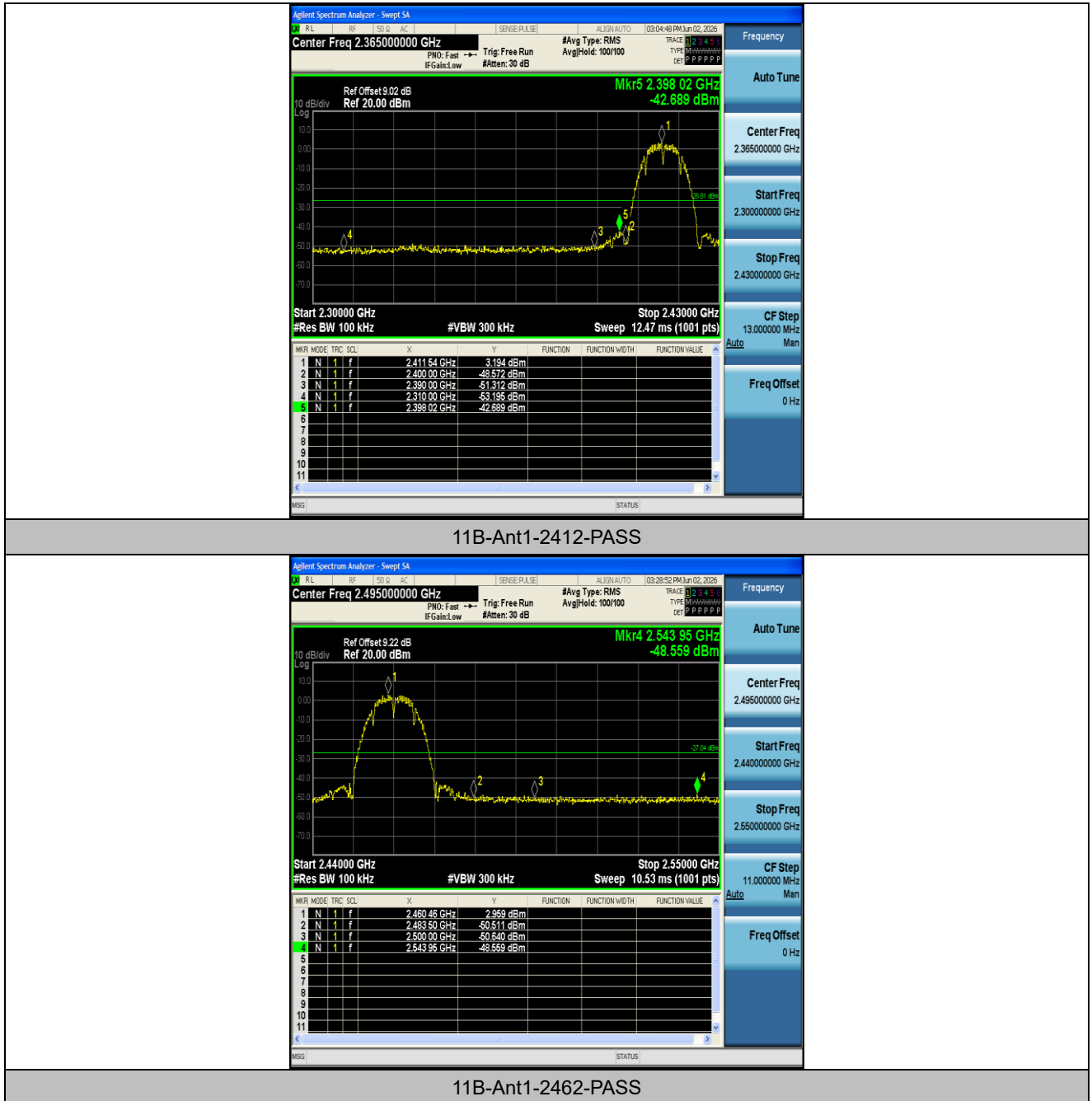
| Test Mode | Antenna | Ch. Name | Frequency.[MHz] | Ref. Level [dBm] | Result [dBm] | Limit [dBm] | Verdict |
|-----------|---------|----------|-----------------|------------------|--------------|-------------|---------|
| 11B       | Ant1    | Low      | 2412            | 3.19             | -42.69       | ≤-26.81     | PASS    |
| 11B       | Ant1    | High     | 2462            | 2.96             | -48.56       | ≤-27.04     | PASS    |
| 11G       | Ant1    | Low      | 2412            | 1.62             | -37.59       | ≤-28.38     | PASS    |
| 11G       | Ant1    | High     | 2462            | 1.88             | -48.46       | ≤-28.12     | PASS    |
| 11N20SISO | Ant1    | Low      | 2412            | 2.71             | -35.67       | ≤-27.29     | PASS    |
| 11N20SISO | Ant1    | High     | 2462            | 1.84             | -47.73       | ≤-28.16     | PASS    |
| 11N40SISO | Ant1    | Low      | 2422            | 0.04             | -39.33       | ≤-29.96     | PASS    |
| 11N40SISO | Ant1    | High     | 2452            | -0.93            | -46.97       | ≤-30.93     | PASS    |

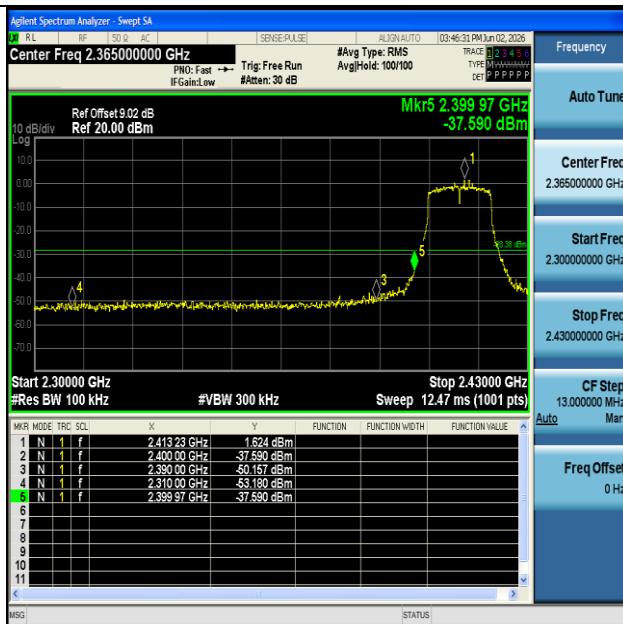
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



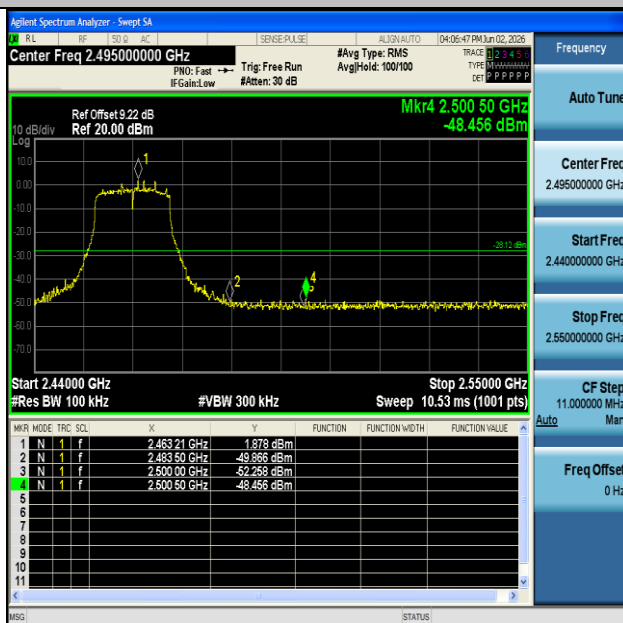


## Test Graphs



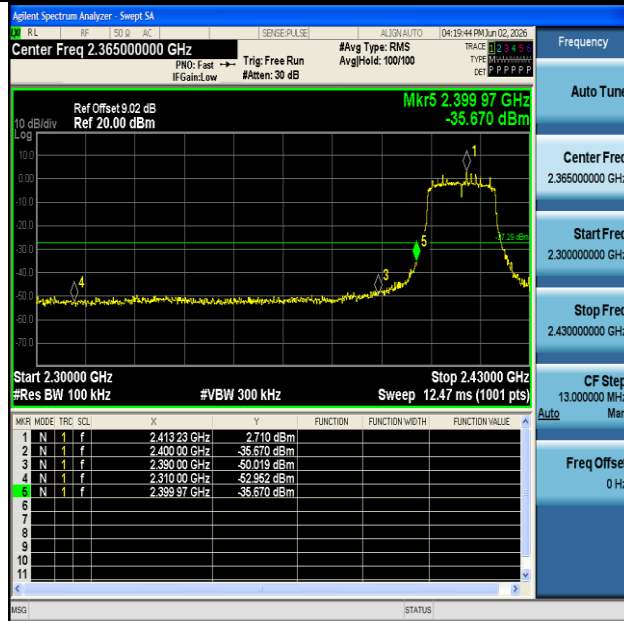


11G-Ant1-2412-PASS

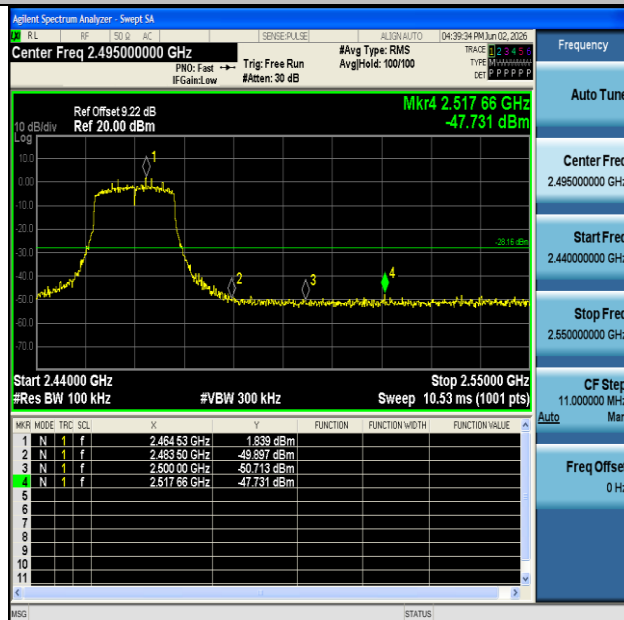


11G-Ant1-2462-PASS





11N20SISO-Ant1-2412-PASS

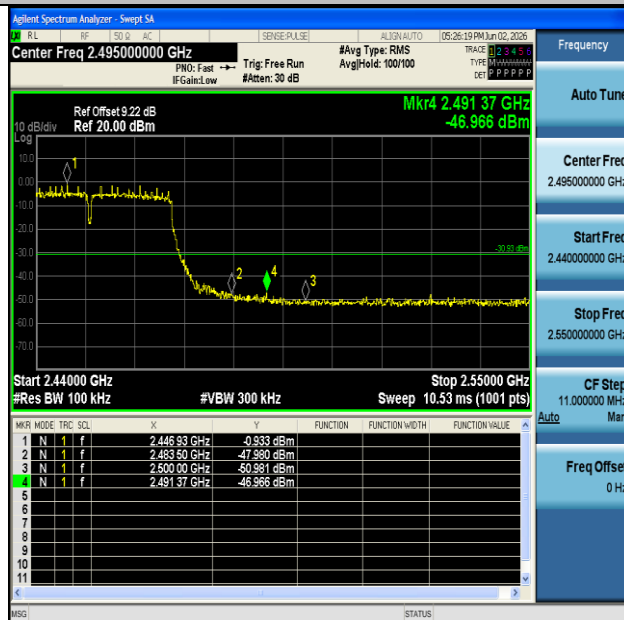


11N20SISO-Ant1-2462-PASS





11N40SISO-Ant1-2422-PASS



11N40SISO-Ant1-2452-PASS





## Appendix F: Conducted Spurious Emission

### Test Result

| Test Mode | Antenna | Frequency [MHz] | Freq. Range [Mhz] | Ref. Level [dBm] | Result [dBm] | Limit [dBm] | Verdict |
|-----------|---------|-----------------|-------------------|------------------|--------------|-------------|---------|
| 11B       | Ant1    | 2412            | 0~Reference       | 2.82             | 2.82         | ---         | PASS    |
| 11B       | Ant1    | 2412            | 30~1000           | 2.82             | -71.46       | ≤-27.18     | PASS    |
| 11B       | Ant1    | 2412            | 1000~26500        | 2.82             | -47          | ≤-27.18     | PASS    |
| 11B       | Ant1    | 2437            | 0~Reference       | 1.19             | 1.19         | ---         | PASS    |
| 11B       | Ant1    | 2437            | 30~1000           | 1.19             | -70.55       | ≤-28.81     | PASS    |
| 11B       | Ant1    | 2437            | 1000~26500        | 1.19             | -47.18       | ≤-28.81     | PASS    |
| 11B       | Ant1    | 2462            | 0~Reference       | 2.60             | 2.60         | ---         | PASS    |
| 11B       | Ant1    | 2462            | 30~1000           | 2.60             | -70.89       | ≤-27.4      | PASS    |
| 11B       | Ant1    | 2462            | 1000~26500        | 2.60             | -47.49       | ≤-27.4      | PASS    |
| 11G       | Ant1    | 2412            | 0~Reference       | 1.62             | 1.62         | ---         | PASS    |
| 11G       | Ant1    | 2412            | 30~1000           | 1.62             | -62.03       | ≤-28.38     | PASS    |
| 11G       | Ant1    | 2412            | 1000~26500        | 1.62             | -37.66       | ≤-28.38     | PASS    |
| 11G       | Ant1    | 2437            | 0~Reference       | -0.94            | -0.94        | ---         | PASS    |
| 11G       | Ant1    | 2437            | 30~1000           | -0.94            | -62.45       | ≤-30.94     | PASS    |
| 11G       | Ant1    | 2437            | 1000~26500        | -0.94            | -36.78       | ≤-30.94     | PASS    |
| 11G       | Ant1    | 2462            | 0~Reference       | -1.35            | -1.35        | ---         | PASS    |
| 11G       | Ant1    | 2462            | 30~1000           | -1.35            | -62.41       | ≤-31.35     | PASS    |
| 11G       | Ant1    | 2462            | 1000~26500        | -1.35            | -37.24       | ≤-31.35     | PASS    |
| 11N20SISO | Ant1    | 2412            | 0~Reference       | -0.07            | -0.07        | ---         | PASS    |
| 11N20SISO | Ant1    | 2412            | 30~1000           | -0.07            | -62.19       | ≤-30.07     | PASS    |
| 11N20SISO | Ant1    | 2412            | 1000~26500        | -0.07            | -37.67       | ≤-30.07     | PASS    |
| 11N20SISO | Ant1    | 2437            | 0~Reference       | 0.48             | 0.48         | ---         | PASS    |
| 11N20SISO | Ant1    | 2437            | 30~1000           | 0.48             | -62.89       | ≤-29.52     | PASS    |
| 11N20SISO | Ant1    | 2437            | 1000~26500        | 0.48             | -37.78       | ≤-29.52     | PASS    |
| 11N20SISO | Ant1    | 2462            | 0~Reference       | 1.20             | 1.20         | ---         | PASS    |
| 11N20SISO | Ant1    | 2462            | 30~1000           | 1.20             | -62.22       | ≤-28.8      | PASS    |
| 11N20SISO | Ant1    | 2462            | 1000~26500        | 1.20             | -37.88       | ≤-28.8      | PASS    |
| 11N40SISO | Ant1    | 2422            | 0~Reference       | -0.08            | -0.08        | ---         | PASS    |
| 11N40SISO | Ant1    | 2422            | 30~1000           | -0.08            | -62.45       | ≤-30.08     | PASS    |
| 11N40SISO | Ant1    | 2422            | 1000~26500        | -0.08            | -37.88       | ≤-30.08     | PASS    |
| 11N40SISO | Ant1    | 2437            | 0~Reference       | -1.27            | -1.27        | ---         | PASS    |
| 11N40SISO | Ant1    | 2437            | 30~1000           | -1.27            | -62.91       | ≤-31.27     | PASS    |
| 11N40SISO | Ant1    | 2437            | 1000~26500        | -1.27            | -37.06       | ≤-31.27     | PASS    |
| 11N40SISO | Ant1    | 2452            | 0~Reference       | -1.03            | -1.03        | ---         | PASS    |
| 11N40SISO | Ant1    | 2452            | 30~1000           | -1.03            | -61.92       | ≤-31.03     | PASS    |
| 11N40SISO | Ant1    | 2452            | 1000~26500        | -1.03            | -37.95       | ≤-31.03     | PASS    |



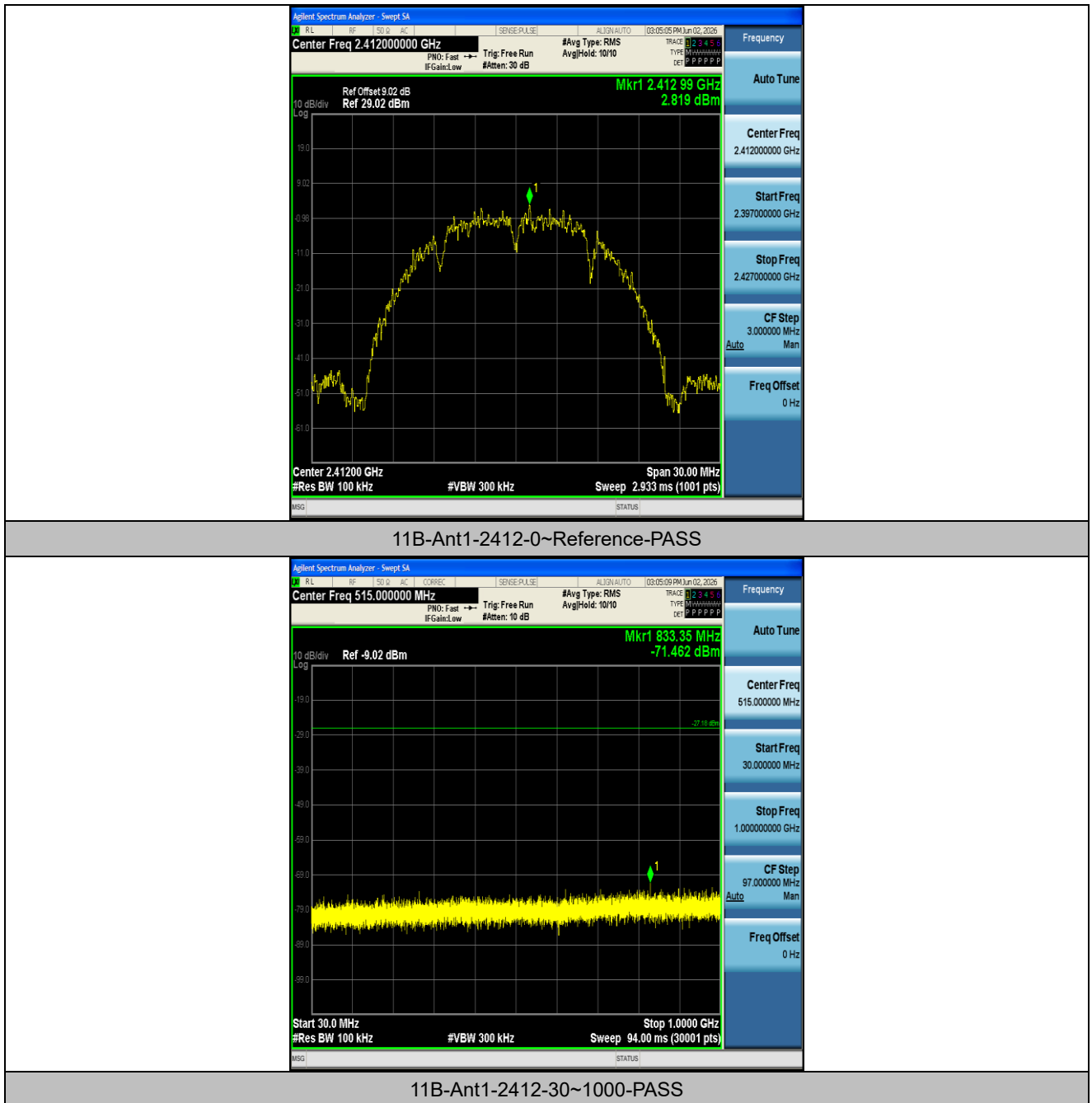


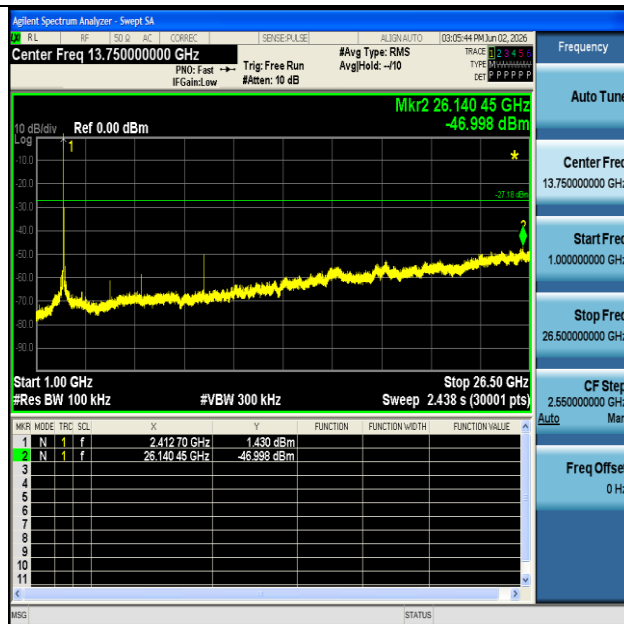
Note: offset(dB) in Reference test plots = cable loss(dB) + attenuator factor(dB); For spurious emissions plots from 30MHz to 26.5GHz, the cable loss and attenuator factors have been set in the 'Input Correction' of the Spectrum Analyzer during the test.



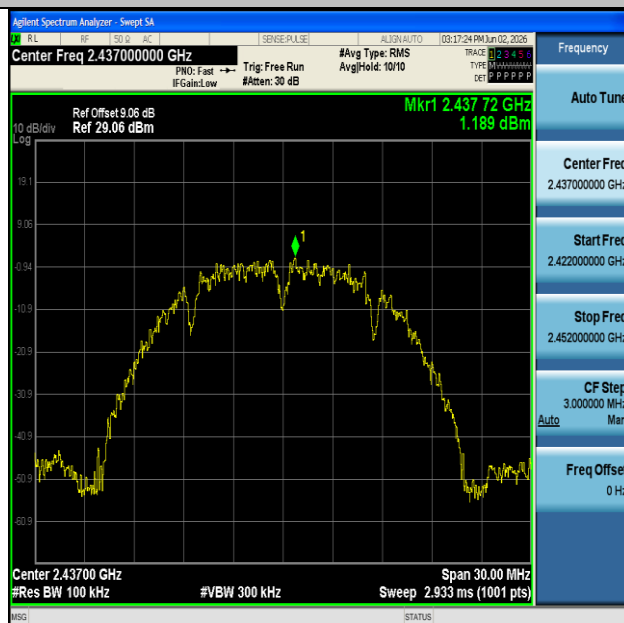


## Test Graphs





11B-Ant1-2412-1000~26500-PASS

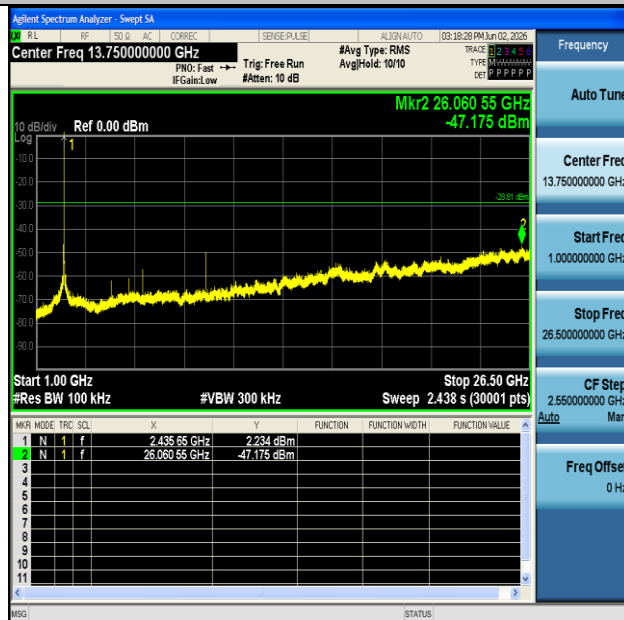


11B-Ant1-2437-0~Reference-PASS



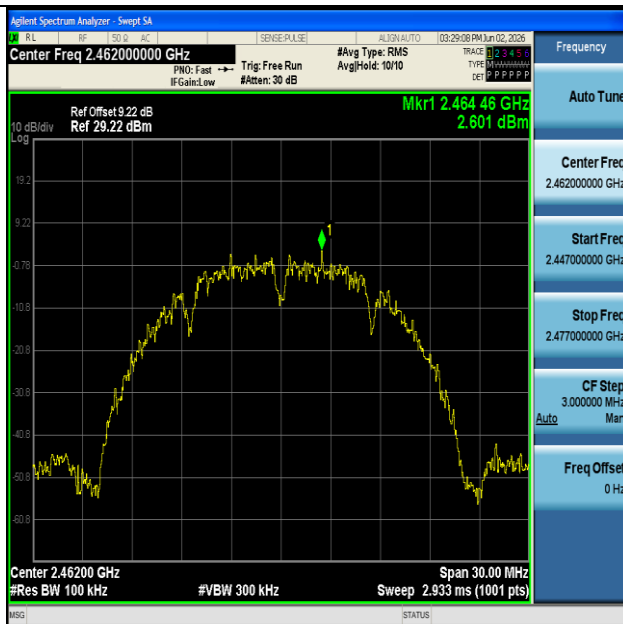


11B-Ant1-2437-30~1000-PASS

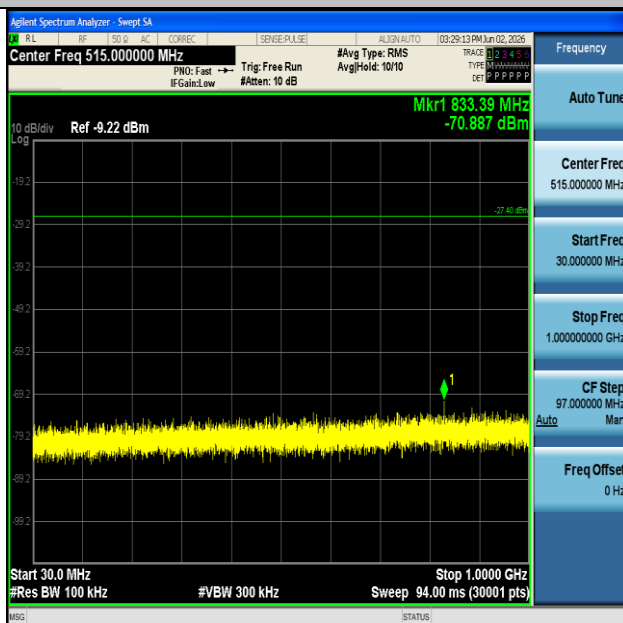


11B-Ant1-2437-1000~26500-PASS



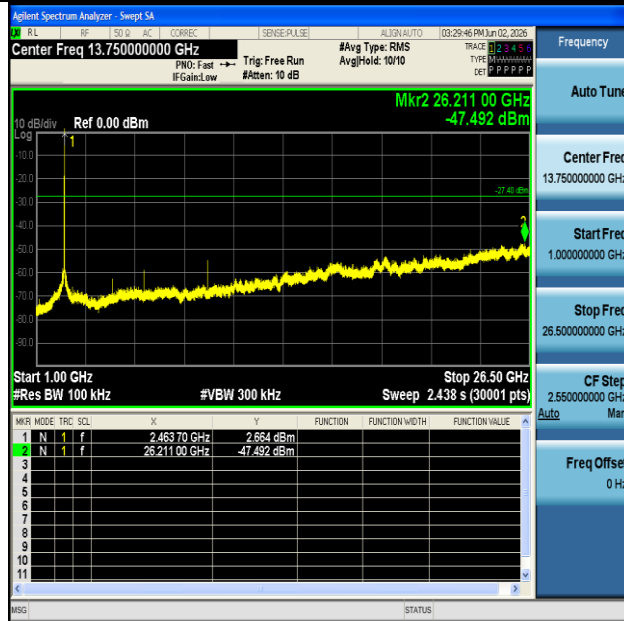


11B-Ant1-2462-0~Reference-PASS

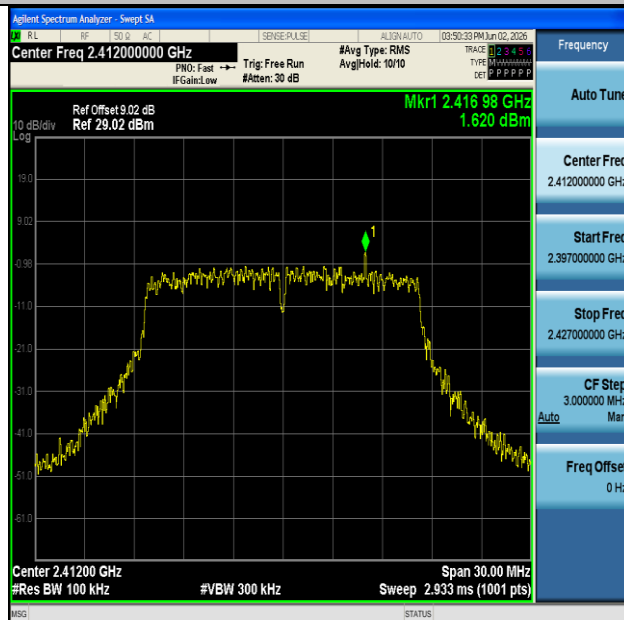


11B-Ant1-2462-30~1000-PASS



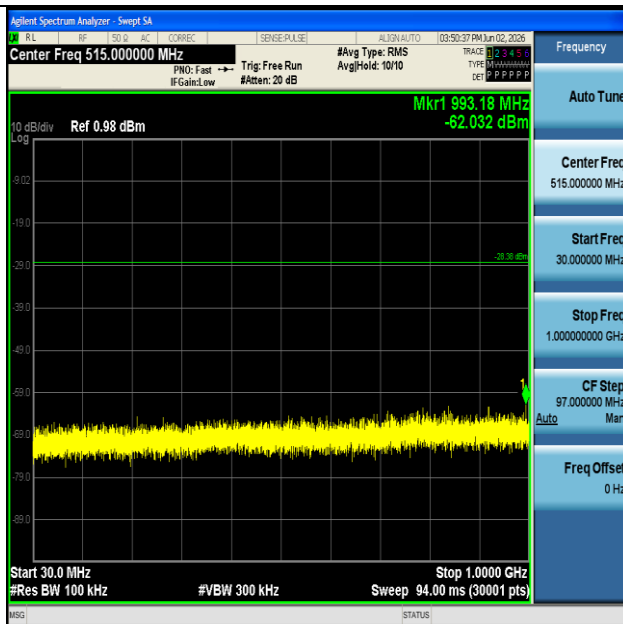


11B-Ant1-2462-1000~26500-PASS

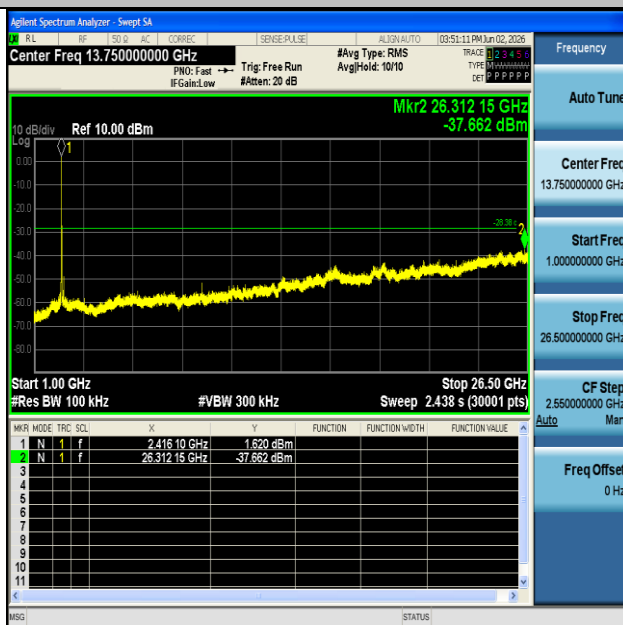


11G-Ant1-2412-0~Reference-PASS



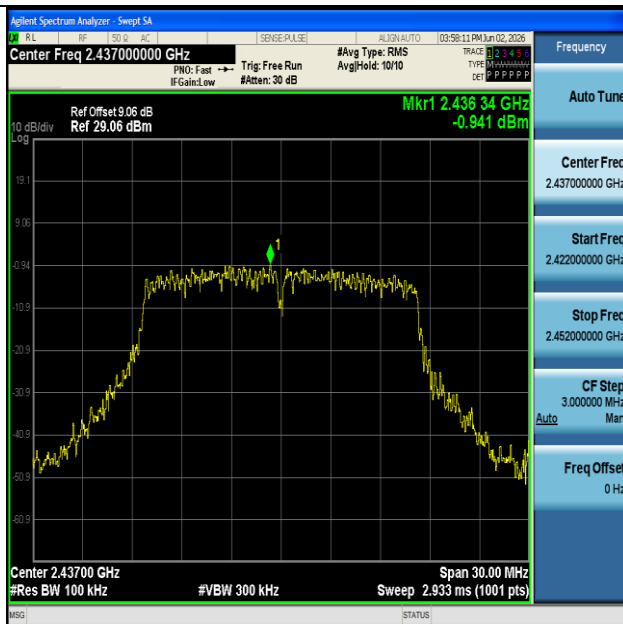


11G-Ant1-2412-30~1000-PASS

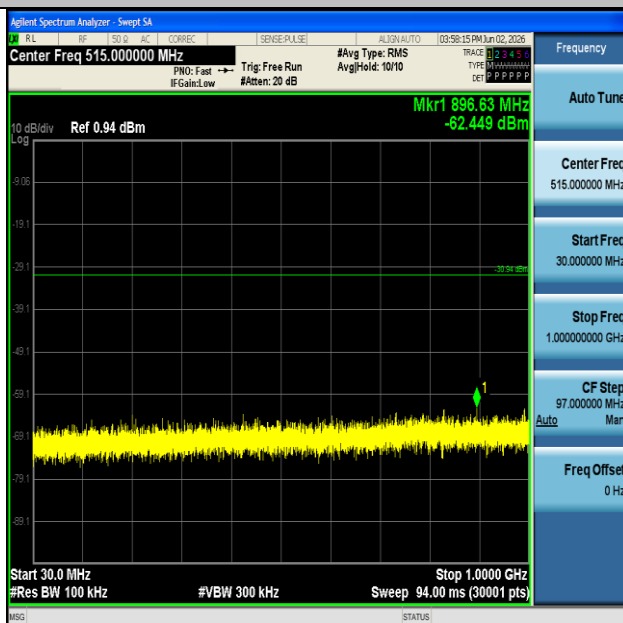


11G-Ant1-2412-1000~26500-PASS



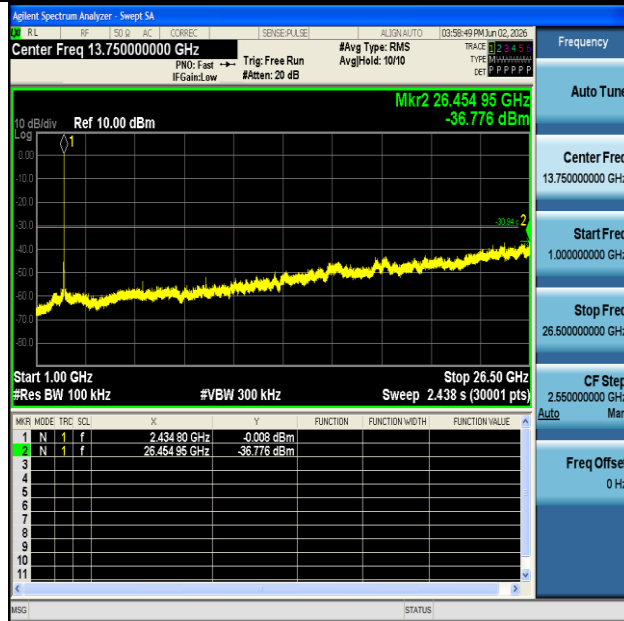


11G-Ant1-2437-0~Reference-PASS

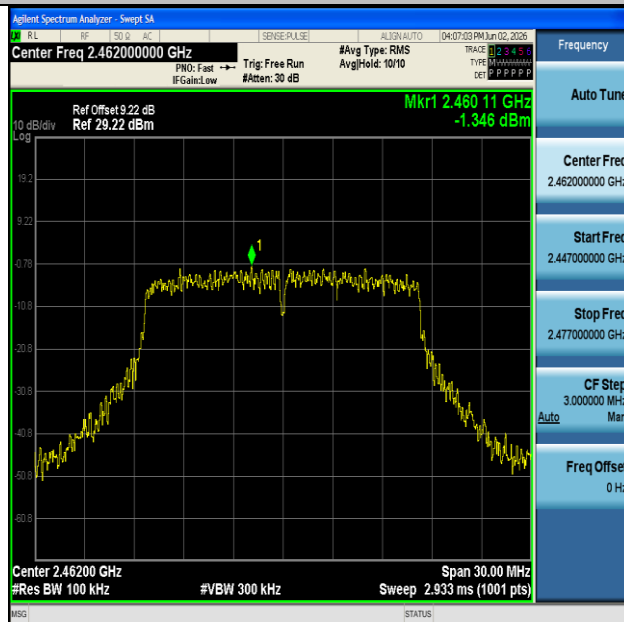


11G-Ant1-2437-30~1000-PASS



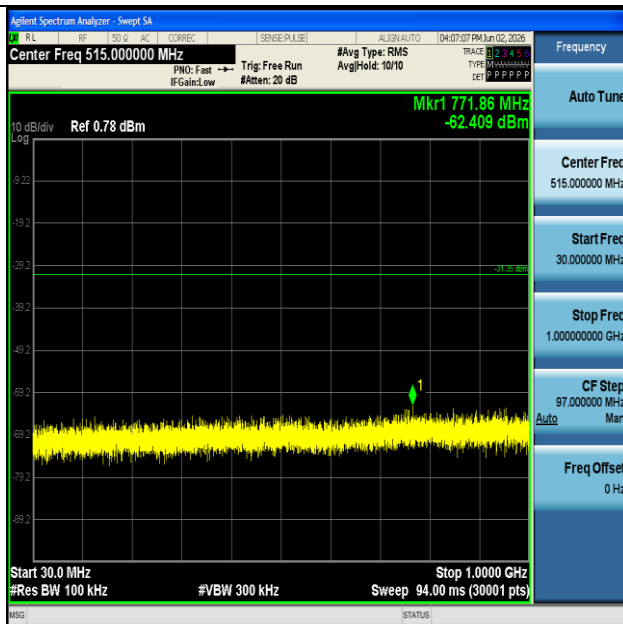


11G-Ant1-2437-1000~26500-PASS

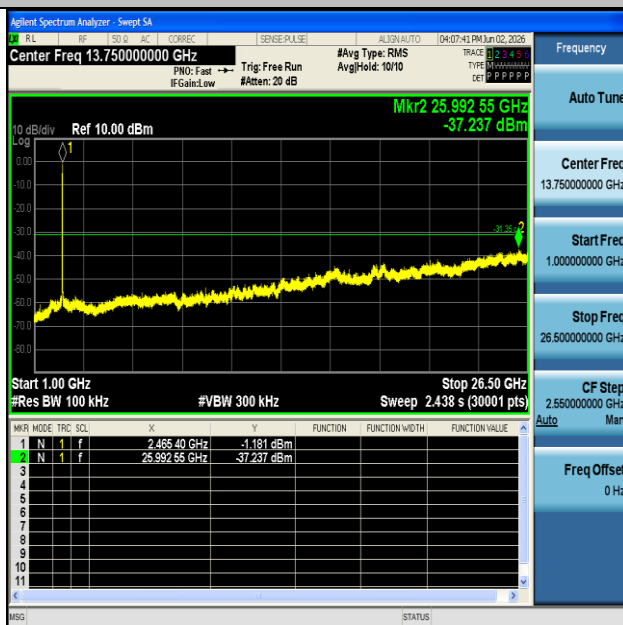


11G-Ant1-2462-0~Reference-PASS



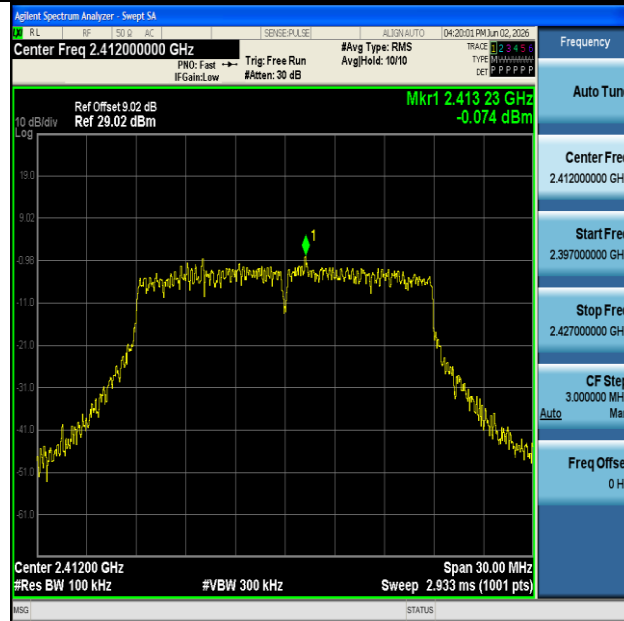


11G-Ant1-2462-30~1000-PASS

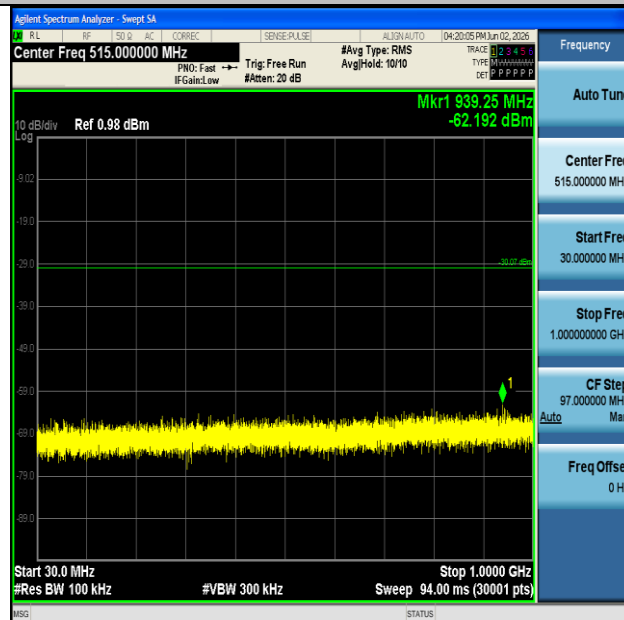


11G-Ant1-2462-1000~26500-PASS



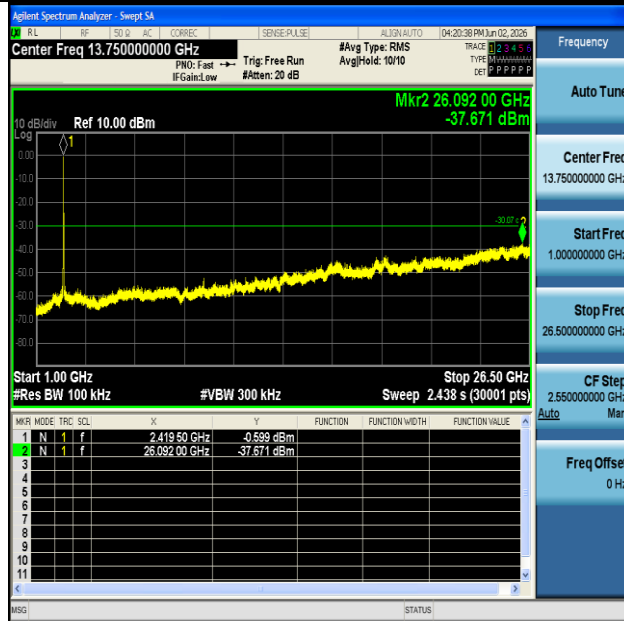


11N20SISO-Ant1-2412-0~Reference-PASS

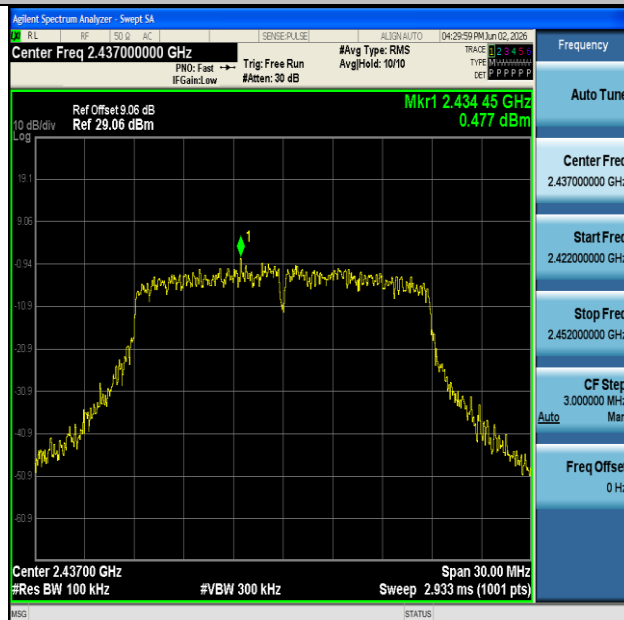


11N20SISO-Ant1-2412-30~1000-PASS



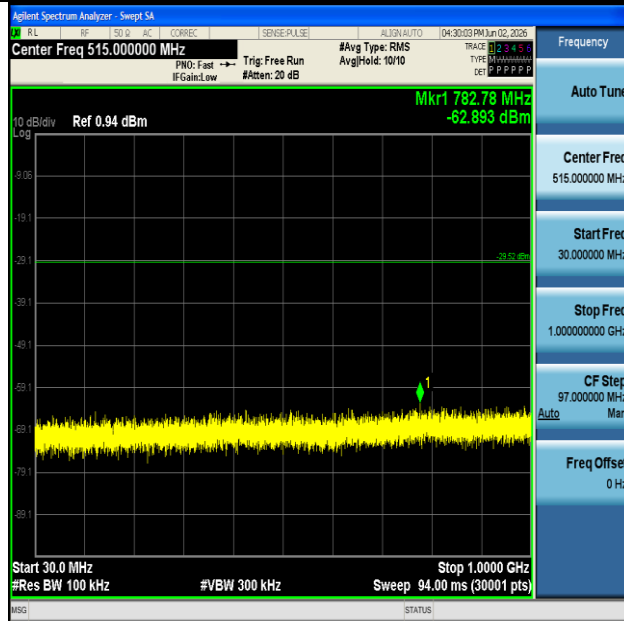


11N20SISO-Ant1-2412-1000~26500-PASS

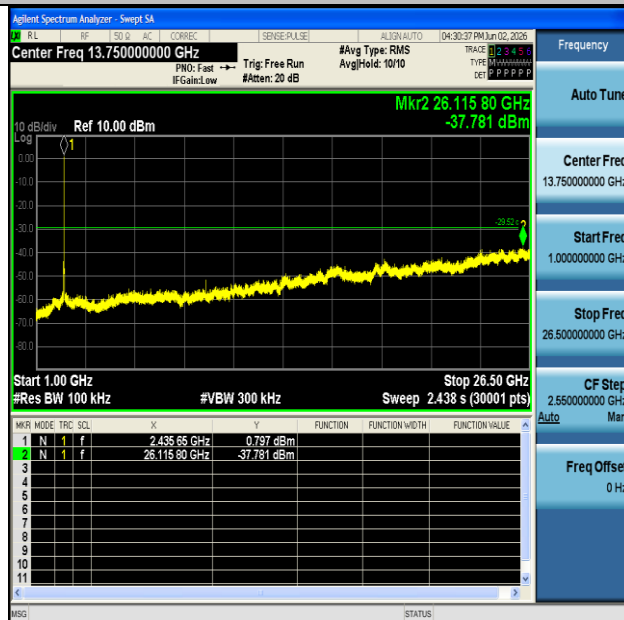


11N20SISO-Ant1-2437-0~Reference-PASS



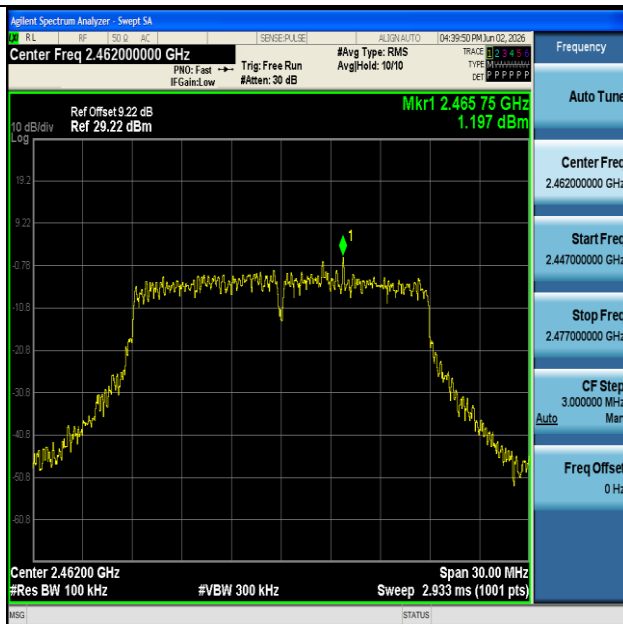


11N20SISO-Ant1-2437-30~1000-PASS

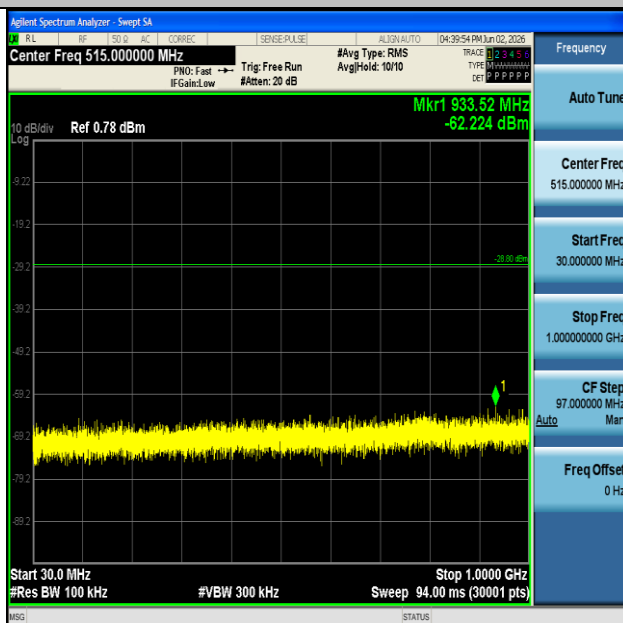


11N20SISO-Ant1-2437-1000~26500-PASS



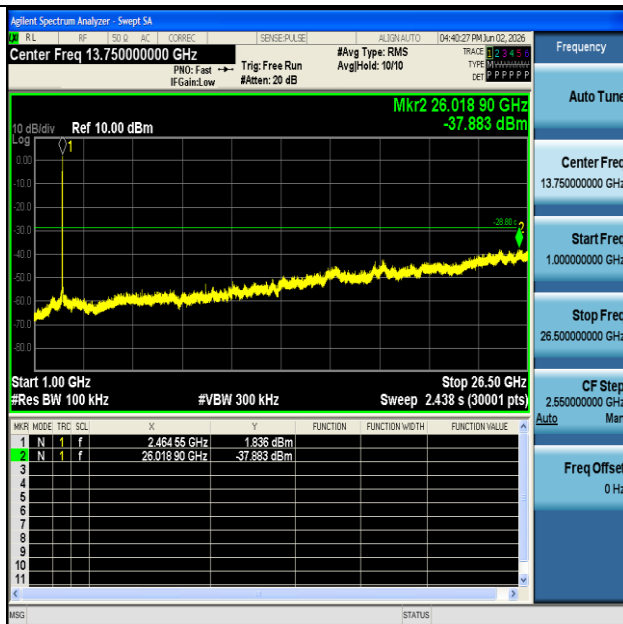


11N20SISO-Ant1-2462-0~Reference-PASS

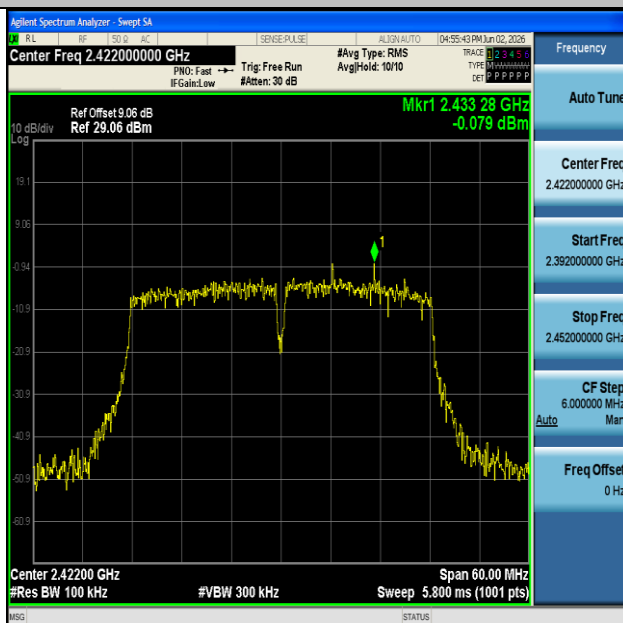


11N20SISO-Ant1-2462-30~1000-PASS



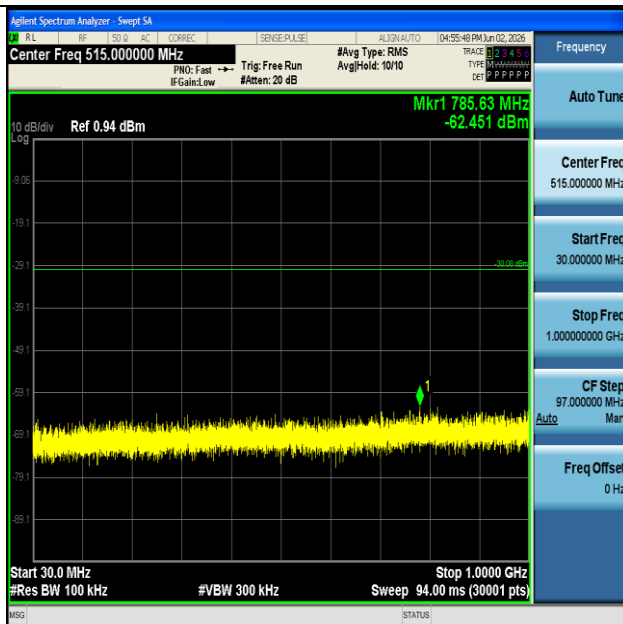


11N20SISO-Ant1-2462-1000~26500-PASS

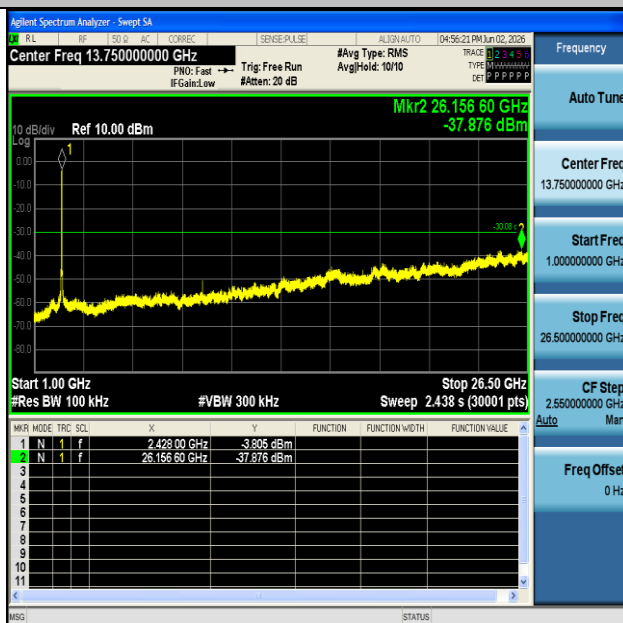


11N40SISO-Ant1-2422-0~Reference-PASS



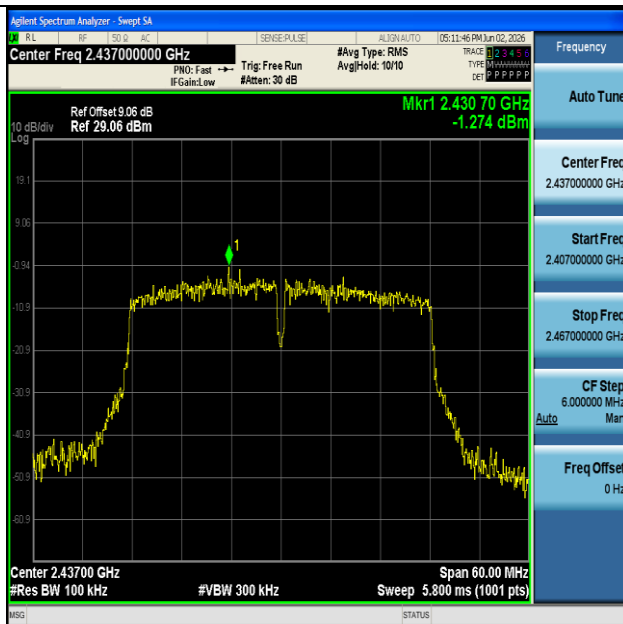


11N40SISO-Ant1-2422-30~1000-PASS

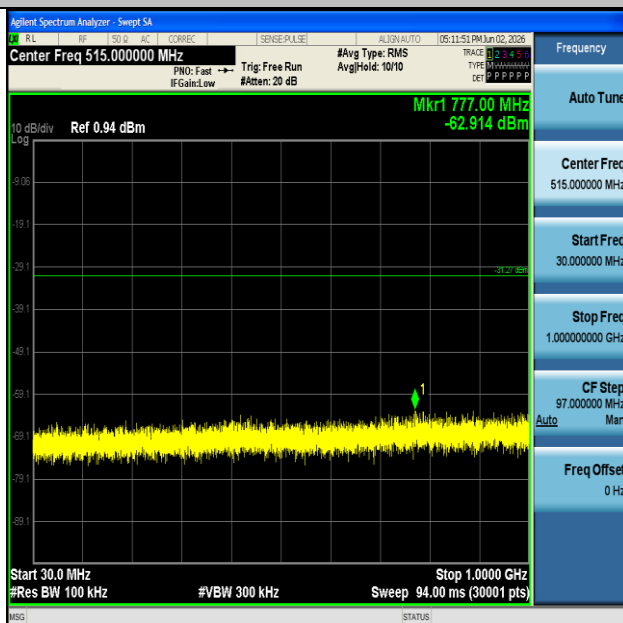


11N40SISO-Ant1-2422-1000~26500-PASS



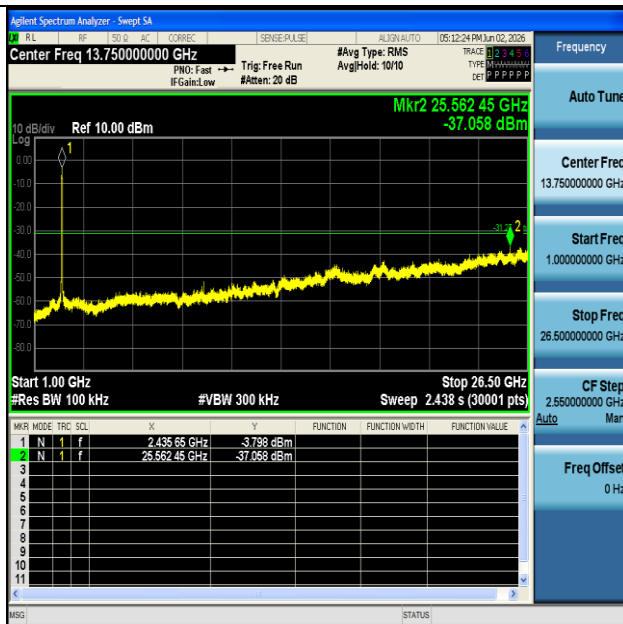


11N40SISO-Ant1-2437-0~Reference-PASS

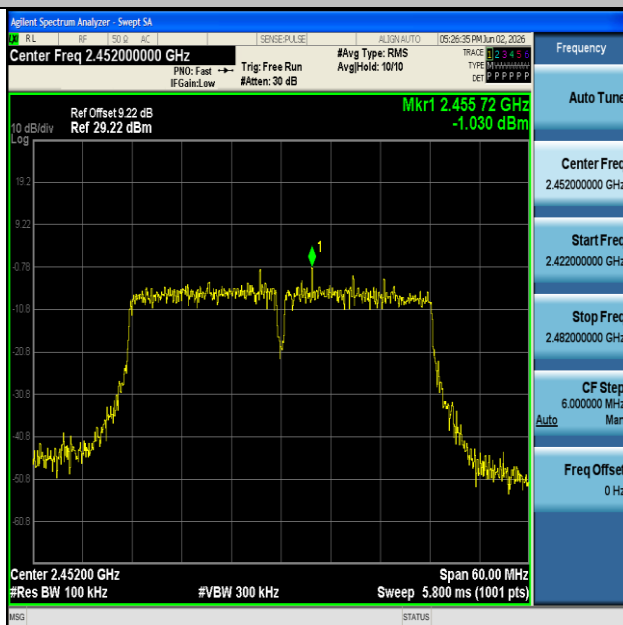


11N40SISO-Ant1-2437-30~1000-PASS





11N40SISO-Ant1-2437-1000~26500-PASS

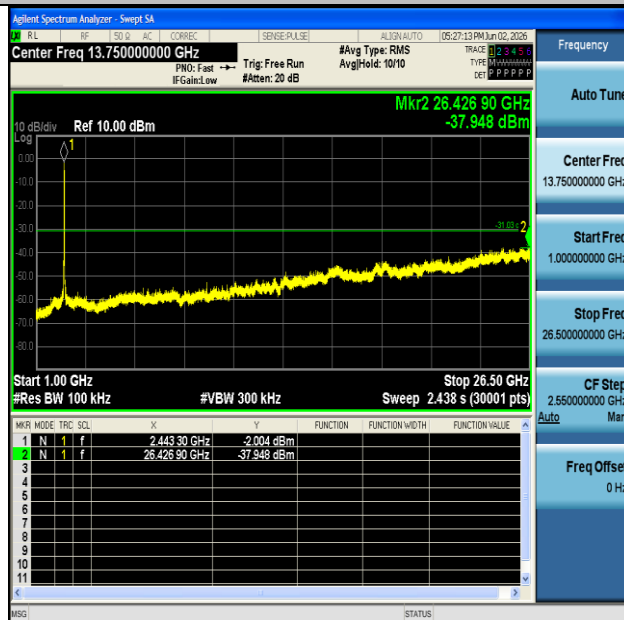


11N40SISO-Ant1-2452-0~Reference-PASS





11N40SISO-Ant1-2452-30~1000-PASS



11N40SISO-Ant1-2452-1000~26500-PASS





## Appendix G: Duty Cycle

### Test Result

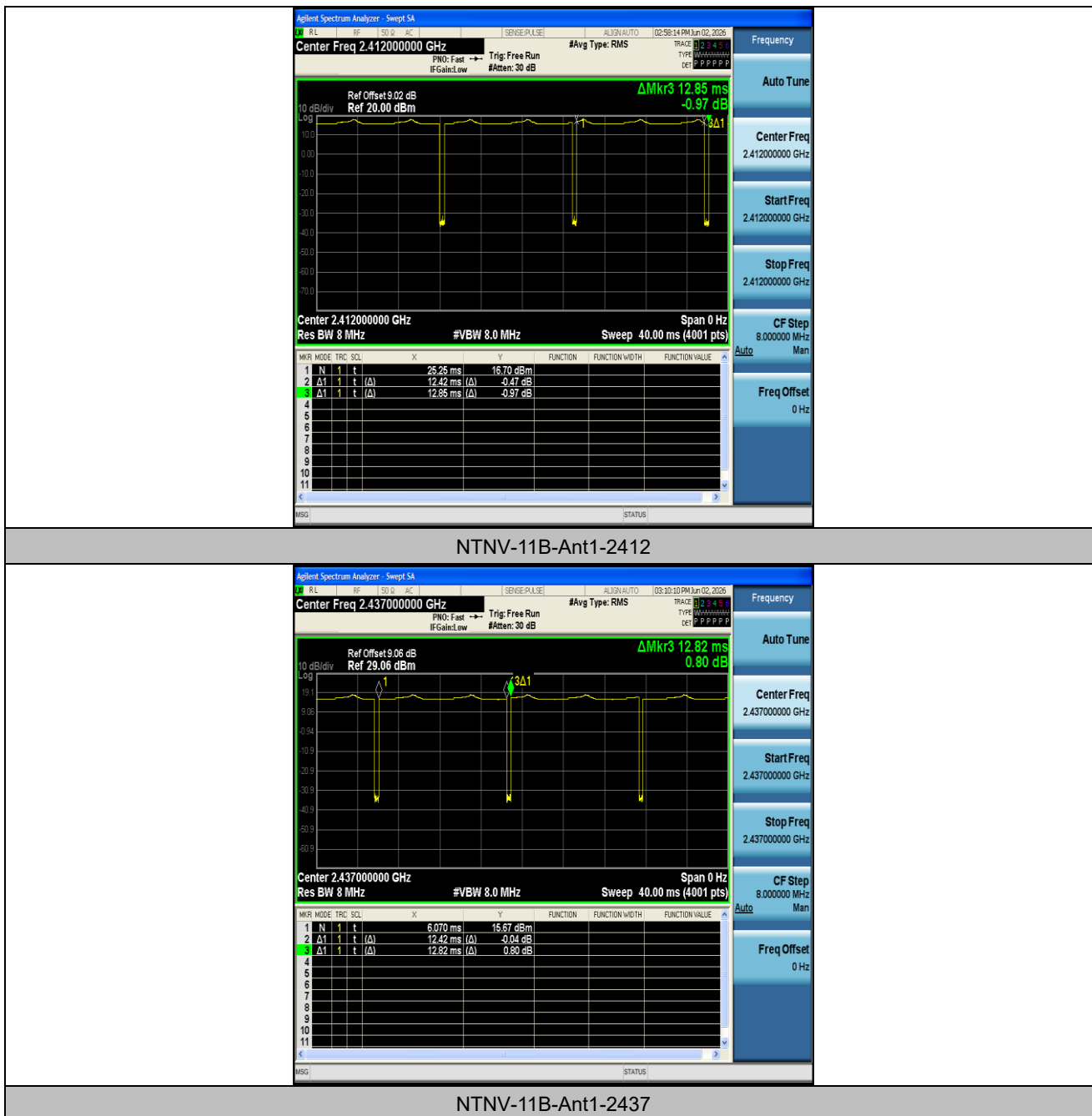
| Test Mode | Antenna | Frequency [MHz] | Transmission Duration [ms] | Transmission Period [ms] | Duty Cycle [%] | Factor |
|-----------|---------|-----------------|----------------------------|--------------------------|----------------|--------|
| 11B       | Ant1    | 2412            | 12.42                      | 12.85                    | 96.65          | 0.15   |
| 11B       | Ant1    | 2437            | 12.42                      | 12.82                    | 96.88          | 0.14   |
| 11B       | Ant1    | 2462            | 12.42                      | 13.58                    | 91.46          | 0.39   |
| 11G       | Ant1    | 2412            | 2.07                       | 2.29                     | 90.39          | 0.44   |
| 11G       | Ant1    | 2437            | 2.06                       | 2.29                     | 89.96          | 0.46   |
| 11G       | Ant1    | 2462            | 2.06                       | 2.29                     | 89.96          | 0.46   |
| 11N20SISO | Ant1    | 2412            | 1.92                       | 2.14                     | 89.72          | 0.47   |
| 11N20SISO | Ant1    | 2437            | 1.92                       | 2.14                     | 89.72          | 0.47   |
| 11N20SISO | Ant1    | 2462            | 1.92                       | 2.15                     | 89.30          | 0.49   |
| 11N40SISO | Ant1    | 2422            | 0.94                       | 1.18                     | 79.66          | 0.99   |
| 11N40SISO | Ant1    | 2437            | 0.95                       | 1.18                     | 80.51          | 0.94   |
| 11N40SISO | Ant1    | 2452            | 0.95                       | 1.23                     | 77.24          | 1.12   |

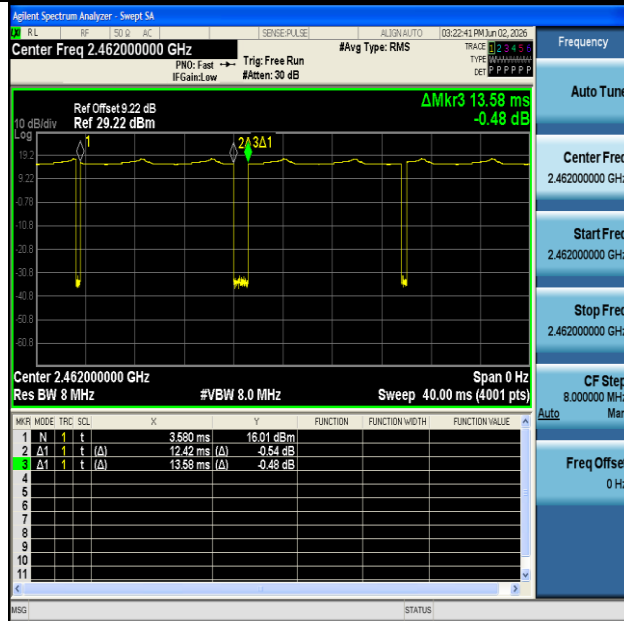
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



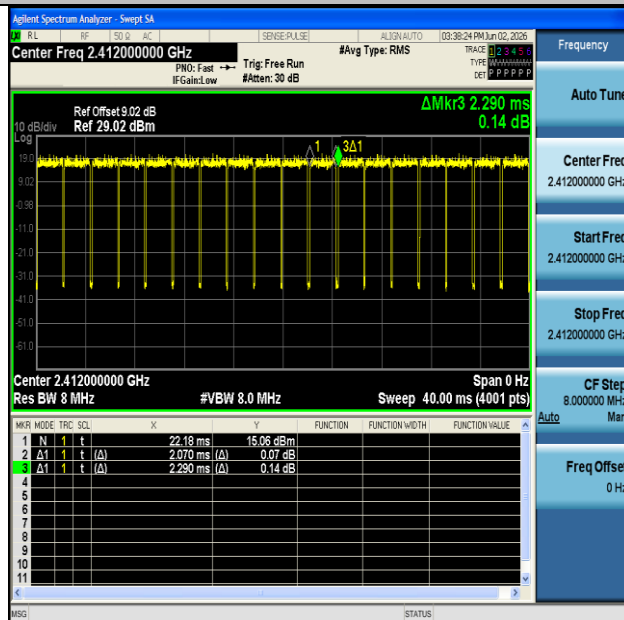


## Test Graphs



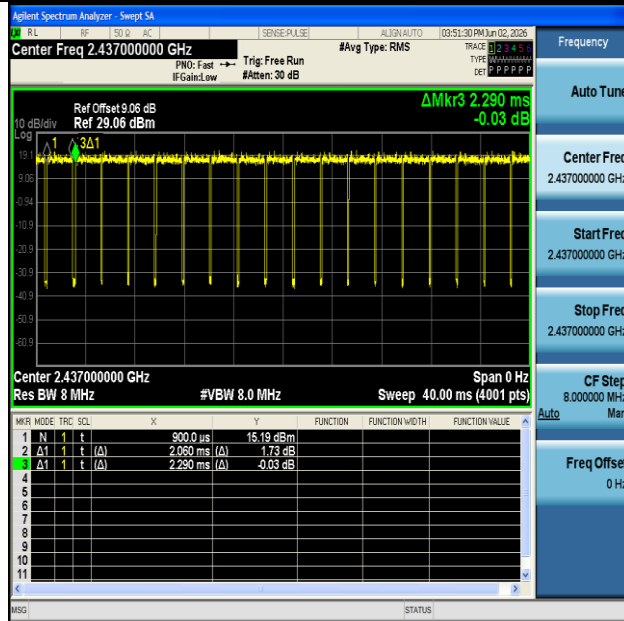


NTNV-11B-Ant1-2462

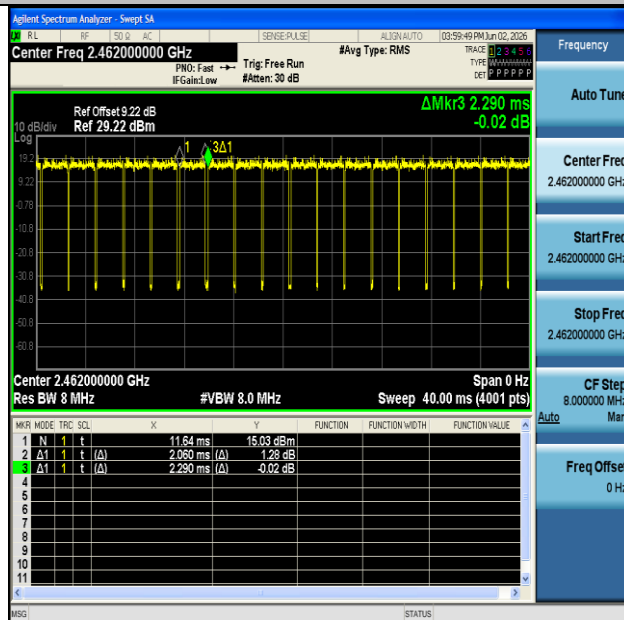


NTNV-11G-Ant1-2412



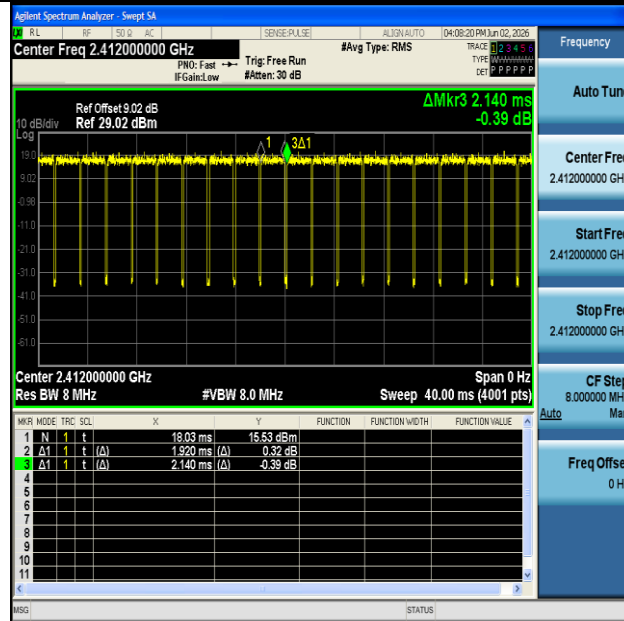


NTNV-11G-Ant1-2437

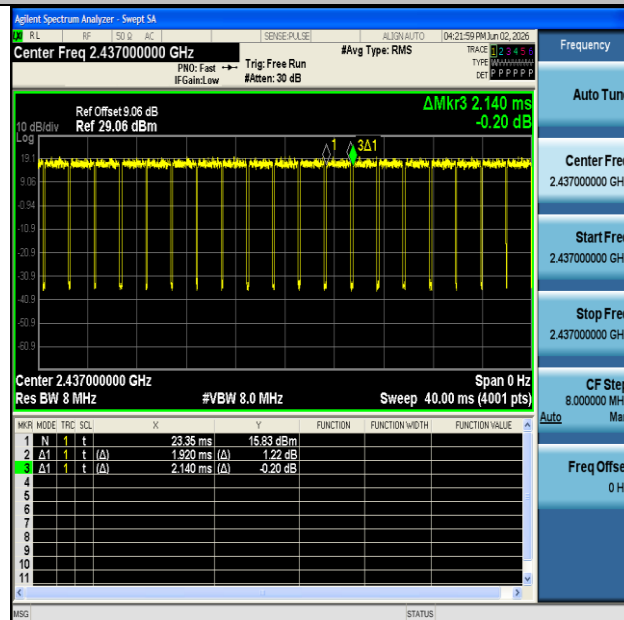


NTNV-11G-Ant1-2462





NTNV-11N20SISO-Ant1-2412



NTNV-11N20SISO-Ant1-2437

