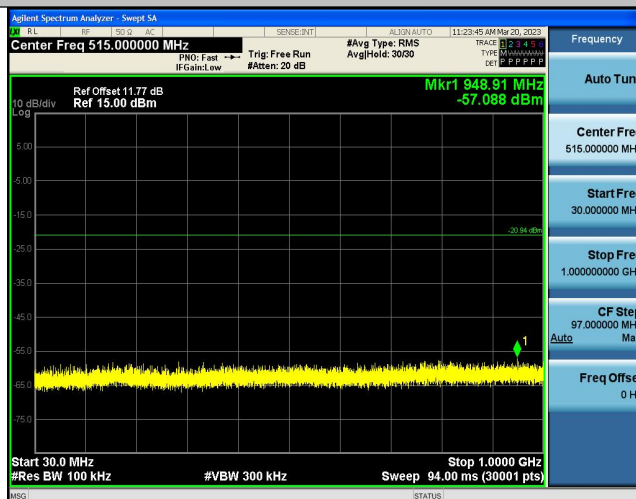




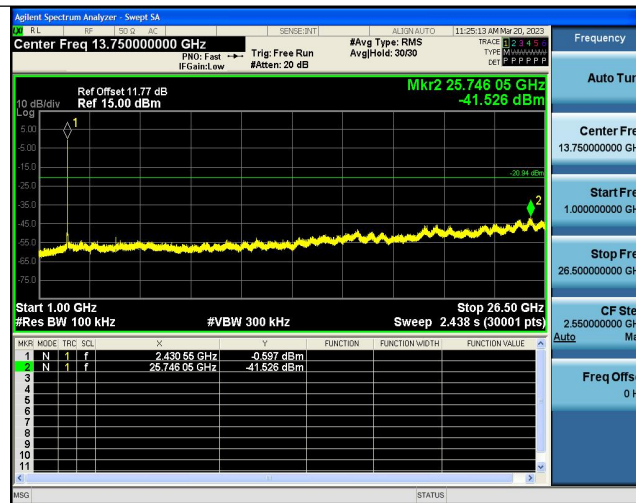
11N20SISO-Ant1-2437-30~1000~-0.94



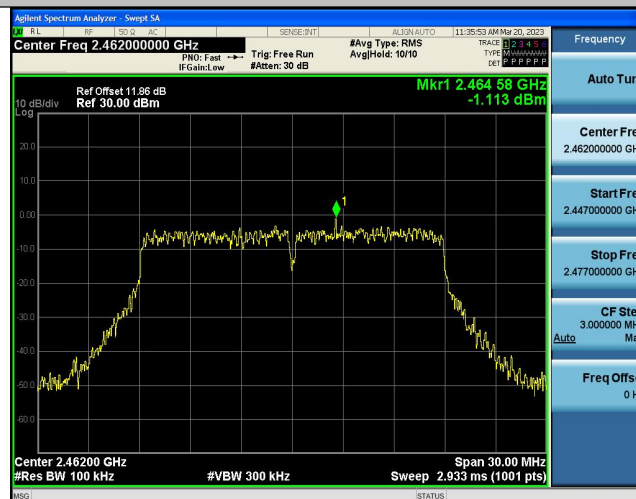
11N20SISO-Ant1-2437-1000~26500~-0.94



Report No.: PTC23020606604E-FC01



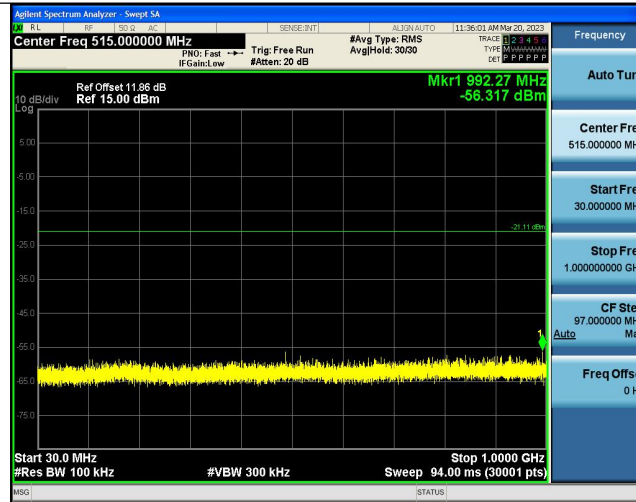
11N20SISO-Ant1-2462-0~Reference--1.11



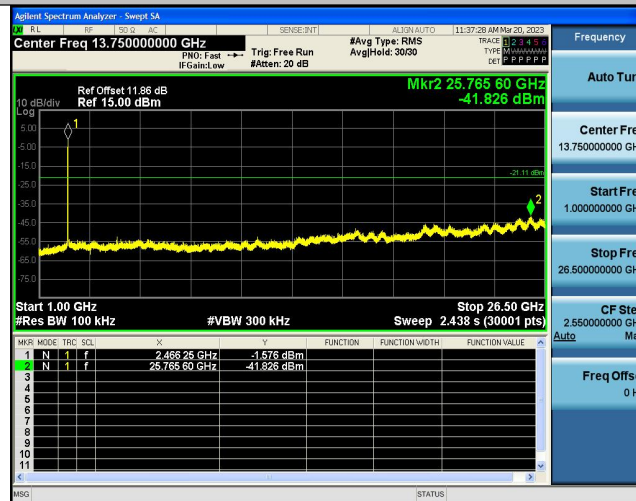
11N20SISO-Ant1-2462-30~1000--1.11



Report No.: PTC23020606604E-FC01



11N20SISO-Ant1-2462-1000~26500--1.11



Emissions in Restricted Bands

| TestMode | Antenna | ChName | Frequency[MHz] | Detector | Freq [MHz] | Result [dBm] | Limit [dBm] | Result [dBuV/m] | Limit [dBuV/m] | Verdict |
|----------|---------|--------|----------------|----------|------------|--------------|-------------|-----------------|----------------|---------|
| 11B      | Ant1    | Low    | 2412           | Peak     | 2390.000   | -39.73       | ≤-21.20     | 55.47           | ≤74            | PASS    |



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|               |      |      |      |      |          |        |         |       |     |      |
|---------------|------|------|------|------|----------|--------|---------|-------|-----|------|
| 11B           | Ant1 | Low  | 2412 | Peak | 2310.000 | -40.24 | ≤-21.20 | 54.96 | ≤74 | PASS |
| 11B           | Ant1 | Low  | 2412 | Peak | 2368.640 | -35.88 | ≤-21.20 | 59.32 | ≤74 | PASS |
| 11B           | Ant1 | Low  | 2412 | AV   | 2390.000 | -45.38 | ≤-41.20 | 49.82 | ≤54 | PASS |
| 11B           | Ant1 | Low  | 2412 | AV   | 2310.000 | -45.84 | ≤-41.20 | 49.36 | ≤54 | PASS |
| 11B           | Ant1 | Low  | 2412 | AV   | 2387.490 | -45.33 | ≤-41.20 | 49.87 | ≤54 | PASS |
| 11B           | Ant1 | High | 2462 | Peak | 2483.500 | -40.95 | ≤-21.20 | 54.25 | ≤74 | PASS |
| 11B           | Ant1 | High | 2462 | Peak | 2500.000 | -39.51 | ≤-21.20 | 55.69 | ≤74 | PASS |
| 11B           | Ant1 | High | 2462 | Peak | 2495.550 | -36.24 | ≤-21.20 | 58.96 | ≤74 | PASS |
| 11B           | Ant1 | High | 2462 | AV   | 2483.500 | -45.21 | ≤-41.20 | 49.99 | ≤54 | PASS |
| 11B           | Ant1 | High | 2462 | AV   | 2500.000 | -45.26 | ≤-41.20 | 49.94 | ≤54 | PASS |
| 11B           | Ant1 | High | 2462 | AV   | 2489.170 | -45.12 | ≤-41.20 | 50.08 | ≤54 | PASS |
| 11G           | Ant1 | Low  | 2412 | Peak | 2390.000 | -40.06 | ≤-21.20 | 55.14 | ≤74 | PASS |
| 11G           | Ant1 | Low  | 2412 | Peak | 2310.000 | -40.8  | ≤-21.20 | 54.40 | ≤74 | PASS |
| 11G           | Ant1 | Low  | 2412 | Peak | 2360.190 | -35.8  | ≤-21.20 | 59.40 | ≤74 | PASS |
| 11G           | Ant1 | Low  | 2412 | AV   | 2390.000 | -43.88 | ≤-41.20 | 51.32 | ≤54 | PASS |
| 11G           | Ant1 | Low  | 2412 | AV   | 2310.000 | -44.85 | ≤-41.20 | 50.35 | ≤54 | PASS |
| 11G           | Ant1 | Low  | 2412 | AV   | 2378.910 | -43.79 | ≤-41.20 | 51.41 | ≤54 | PASS |
| 11G           | Ant1 | High | 2462 | Peak | 2483.500 | -39.03 | ≤-21.20 | 56.17 | ≤74 | PASS |
| 11G           | Ant1 | High | 2462 | Peak | 2500.000 | -41.7  | ≤-21.20 | 53.50 | ≤74 | PASS |
| 11G           | Ant1 | High | 2462 | Peak | 2485.760 | -36.19 | ≤-21.20 | 59.01 | ≤74 | PASS |
| 11G           | Ant1 | High | 2462 | AV   | 2483.500 | -43.53 | ≤-41.20 | 51.67 | ≤54 | PASS |
| 11G           | Ant1 | High | 2462 | AV   | 2500.000 | -43.92 | ≤-41.20 | 51.28 | ≤54 | PASS |
| 11G           | Ant1 | High | 2462 | AV   | 2483.560 | -43.4  | ≤-41.20 | 51.80 | ≤54 | PASS |
| 11N20SI<br>SO | Ant1 | Low  | 2412 | Peak | 2390.000 | -39.78 | ≤-21.20 | 55.42 | ≤74 | PASS |
| 11N20SI<br>SO | Ant1 | Low  | 2412 | Peak | 2310.000 | -42    | ≤-21.20 | 53.20 | ≤74 | PASS |
| 11N20SI<br>SO | Ant1 | Low  | 2412 | Peak | 2317.160 | -35.81 | ≤-21.20 | 59.39 | ≤74 | PASS |
| 11N20SI<br>SO | Ant1 | Low  | 2412 | AV   | 2390.000 | -44.66 | ≤-41.20 | 50.54 | ≤54 | PASS |
| 11N20SI<br>SO | Ant1 | Low  | 2412 | AV   | 2310.000 | -45.2  | ≤-41.20 | 50.00 | ≤54 | PASS |
| 11N20SI<br>SO | Ant1 | Low  | 2412 | AV   | 2389.570 | -44.62 | ≤-41.20 | 50.58 | ≤54 | PASS |

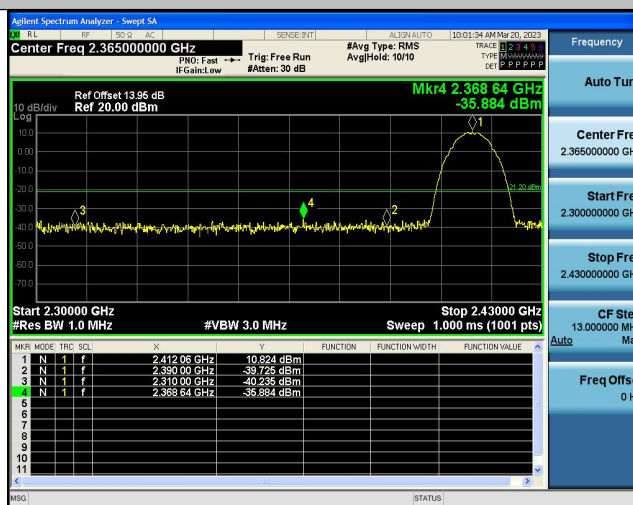


|               |      |      |      |      |          |        |         |       |     |      |
|---------------|------|------|------|------|----------|--------|---------|-------|-----|------|
| 11N20SI<br>SO | Ant1 | High | 2462 | Peak | 2483.500 | -38.66 | ≤-21.20 | 56.54 | ≤74 | PASS |
| 11N20SI<br>SO | Ant1 | High | 2462 | Peak | 2500.000 | -38.88 | ≤-21.20 | 56.32 | ≤74 | PASS |
| 11N20SI<br>SO | Ant1 | High | 2462 | Peak | 2486.750 | -34.6  | ≤-21.20 | 60.60 | ≤74 | PASS |
| 11N20SI<br>SO | Ant1 | High | 2462 | AV   | 2483.500 | -43.98 | ≤-41.20 | 51.22 | ≤54 | PASS |
| 11N20SI<br>SO | Ant1 | High | 2462 | AV   | 2500.000 | -44.73 | ≤-41.20 | 50.47 | ≤54 | PASS |
| 11N20SI<br>SO | Ant1 | High | 2462 | AV   | 2483.780 | -43.94 | ≤-41.20 | 51.26 | ≤54 | PASS |

Note:

1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

11B-Ant1-Low-2412-Peak-2390.000



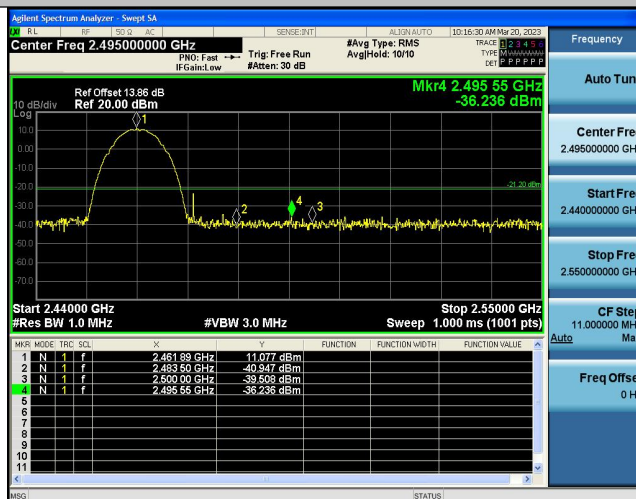
11B-Ant1-Low-2412-AV-2390.000



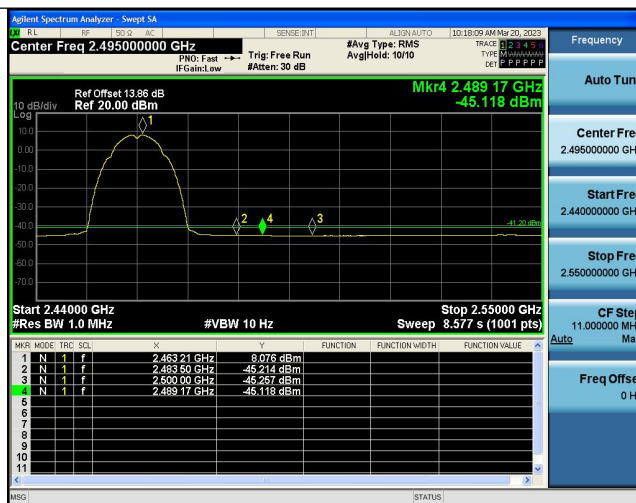
Report No.: PTC23020606604E-FC01



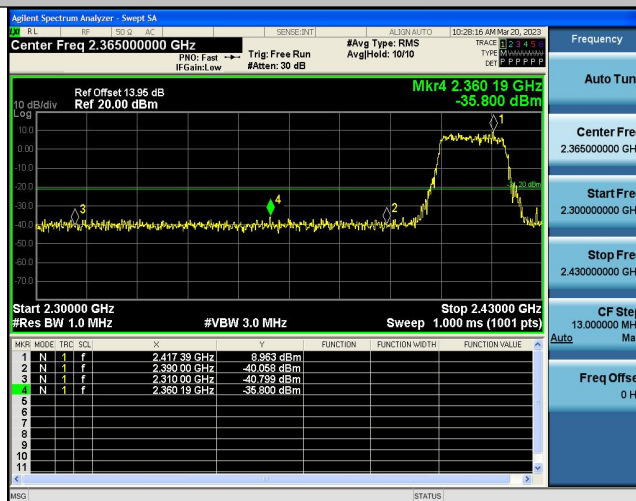
11B-Ant1-High-2462-Peak-2483.500



11B-Ant1-High-2462-AV-2483.500



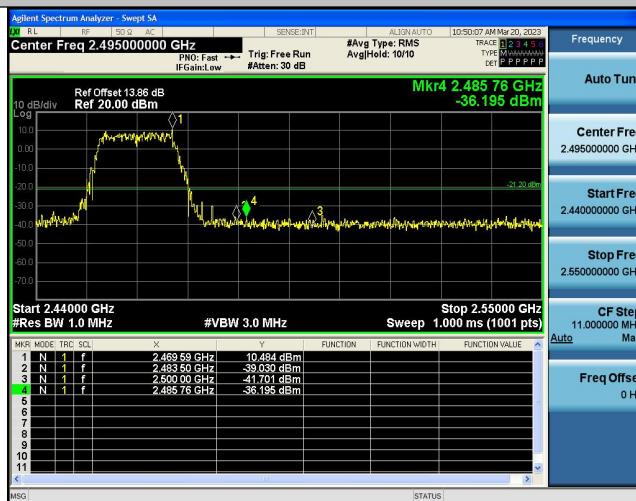
11G-Ant1-Low-2412-Peak-2390.000



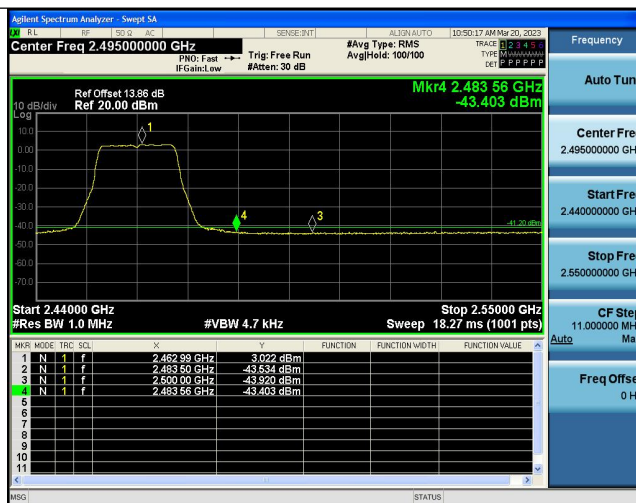
11G-Ant1-Low-2412-AV-2390.000



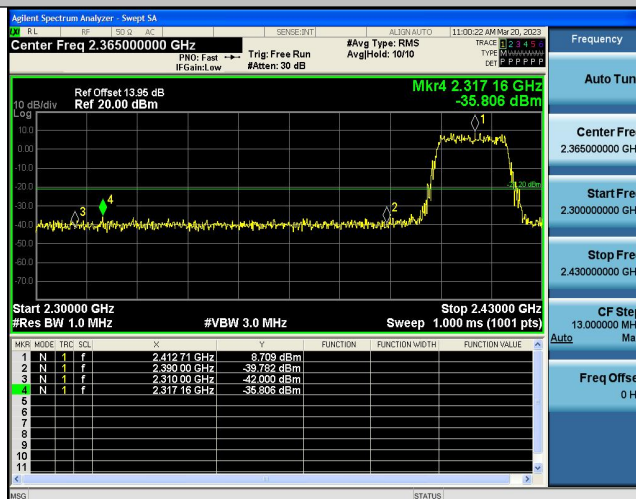
11G-Ant1-High-2462-Peak-2483.500



11G-Ant1-High-2462-AV-2483.500



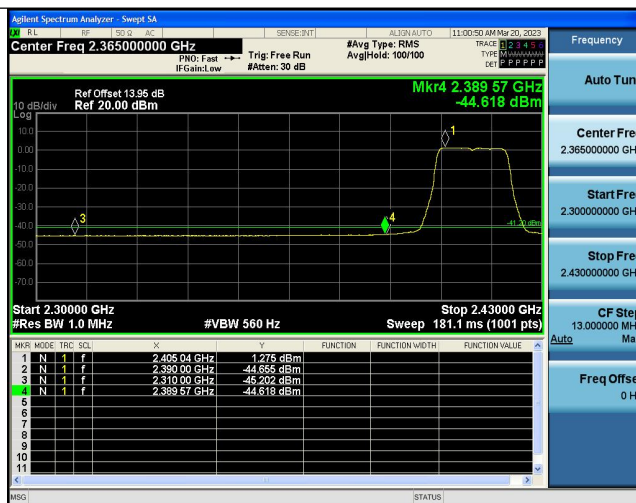
11N20SISO-Ant1-Low-2412-Peak-2390.000



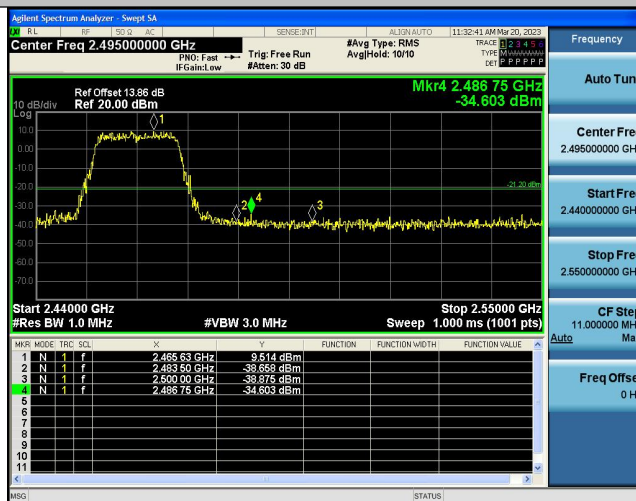
11N20SISO-Ant1-Low-2412-AV-2390.000



Report No.: PTC23020606604E-FC01



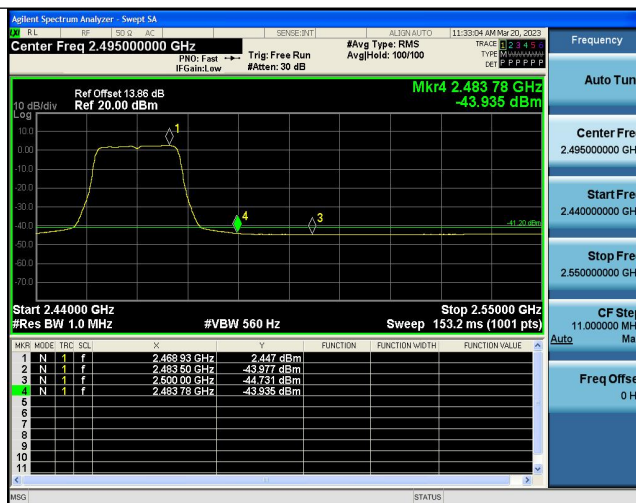
11N20SISO-Ant1-High-2462-Peak-2483.500



11N20SISO-Ant1-High-2462-AV-2483.500



Report No.: PTC23020606604E-FC01



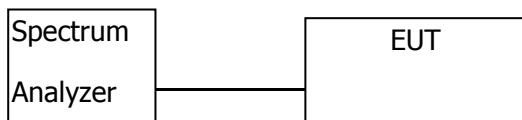


## 8 Band Edge Measurement

|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement | : Section 15.247(d) In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Test Method      | : ANSI C63.10:2013                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Test Limit       | : Regulation 15.247 (d), In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)). |

### 8.1 Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz, Sweep = auto  
Detector function = peak, Trace = max hold
3. Set up:



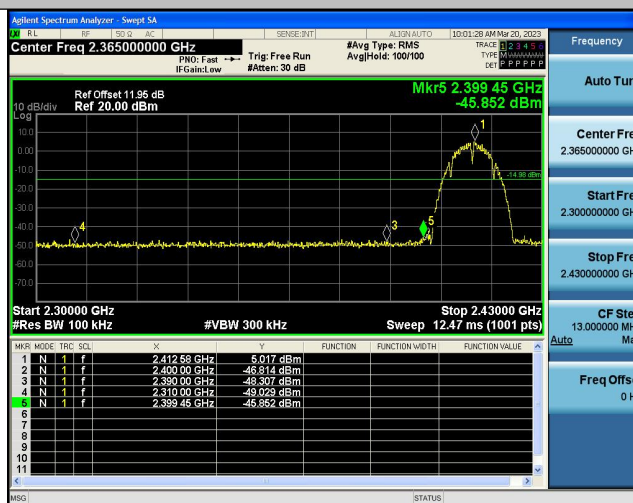


## 8.2 Test Result

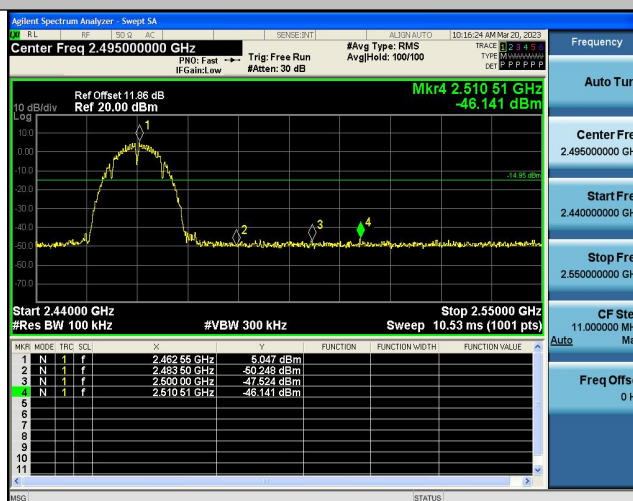
| TestMode  | Antenna | ChName | Frequency[MHz] | RefLevel[dBm] | Result[dBm] | Limit[dBm] | Verdict |
|-----------|---------|--------|----------------|---------------|-------------|------------|---------|
| 11B       | Ant1    | Low    | 2412           | 5.02          | -45.85      | ≤-14.98    | PASS    |
| 11B       | Ant1    | High   | 2462           | 5.05          | -46.14      | ≤-14.95    | PASS    |
| 11G       | Ant1    | Low    | 2412           | -0.51         | -42.62      | ≤-20.51    | PASS    |
| 11G       | Ant1    | High   | 2462           | 0.07          | -46.41      | ≤-19.93    | PASS    |
| 11N20SISO | Ant1    | Low    | 2412           | -0.75         | -39.11      | ≤-20.75    | PASS    |
| 11N20SISO | Ant1    | High   | 2462           | -0.60         | -46.02      | ≤-20.6     | PASS    |

### Test Graphs

11B-Ant1-Low-2412-5.02

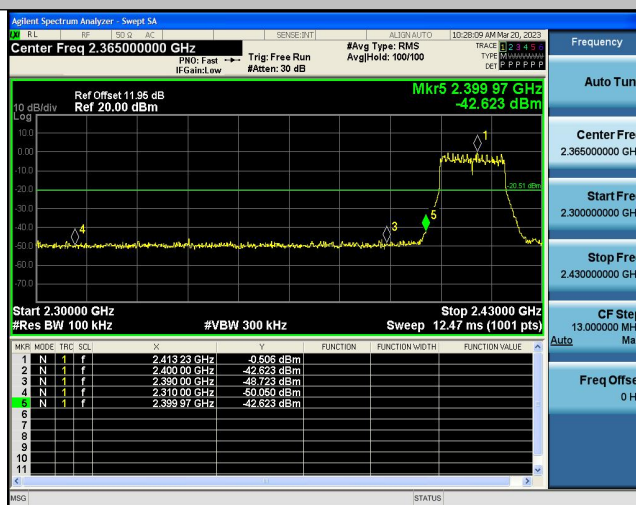


11B-Ant1-High-2462-5.05

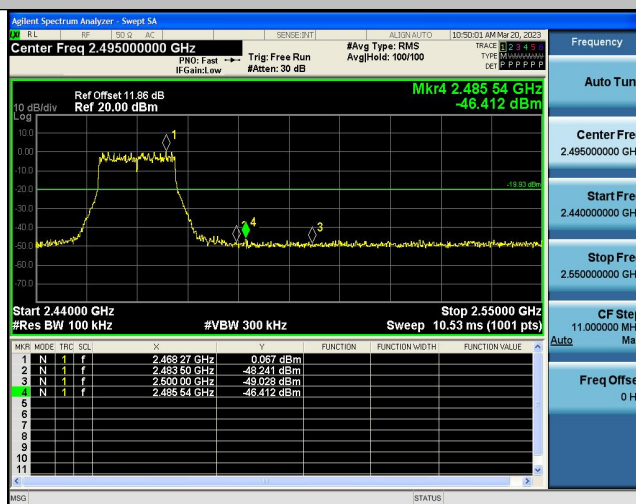




## 11G-Ant1-Low-2412--0.51



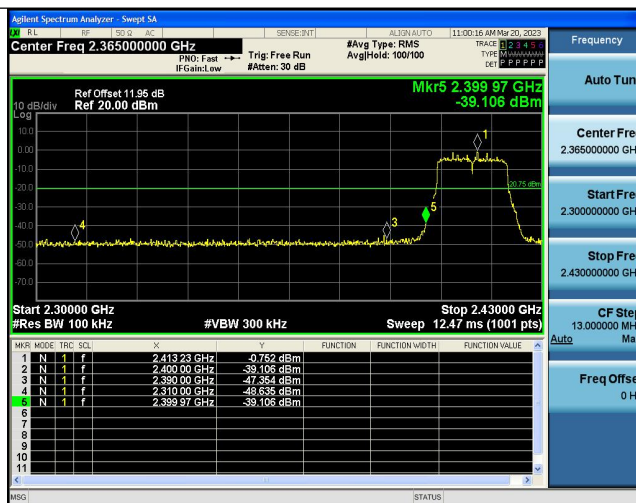
## 11G-Ant1-High-2462-0.07



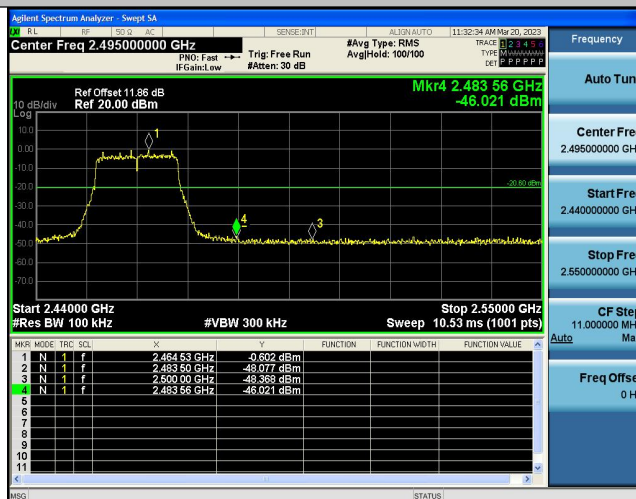
## 11N20SISO-Ant1-Low-2412--0.75



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11N20SISO-Ant1-High-2462--0.60





## 9 6dB Bandwidth Measurement

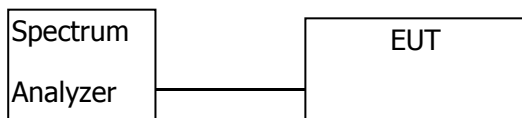
Test Requirement : FCC CFR47 Part 15 Section 15.247

Test Method : ANSI C63.10:2013

Test Limit Systems using digital modulation techniques may operate in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

### 9.1 Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz
3. Set up:



### 9.2 Test Result

| TestMode  | Antenna | Frequency[MHz] | DTS BW [MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|-----------|---------|----------------|--------------|----------|----------|------------|---------|
| 11B       | Ant1    | 2412           | 8.080        | 2407.960 | 2416.040 | 0.5        | PASS    |
| 11B       | Ant1    | 2437           | 8.560        | 2432.960 | 2441.520 | 0.5        | PASS    |
| 11B       | Ant1    | 2462           | 8.040        | 2458.000 | 2466.040 | 0.5        | PASS    |
| 11G       | Ant1    | 2412           | 16.400       | 2403.840 | 2420.240 | 0.5        | PASS    |
| 11G       | Ant1    | 2437           | 16.400       | 2428.840 | 2445.240 | 0.5        | PASS    |
| 11G       | Ant1    | 2462           | 16.480       | 2453.800 | 2470.280 | 0.5        | PASS    |
| 11N20SISO | Ant1    | 2412           | 17.560       | 2403.240 | 2420.800 | 0.5        | PASS    |
| 11N20SISO | Ant1    | 2437           | 16.680       | 2428.880 | 2445.560 | 0.5        | PASS    |
| 11N20SISO | Ant1    | 2462           | 17.320       | 2453.480 | 2470.800 | 0.5        | PASS    |

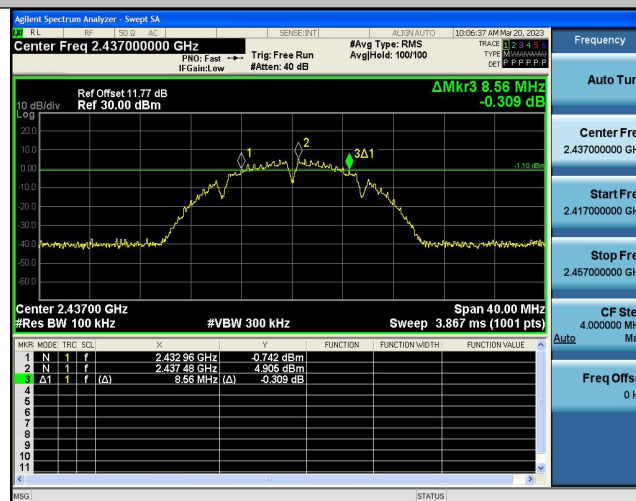


## Test Graphs

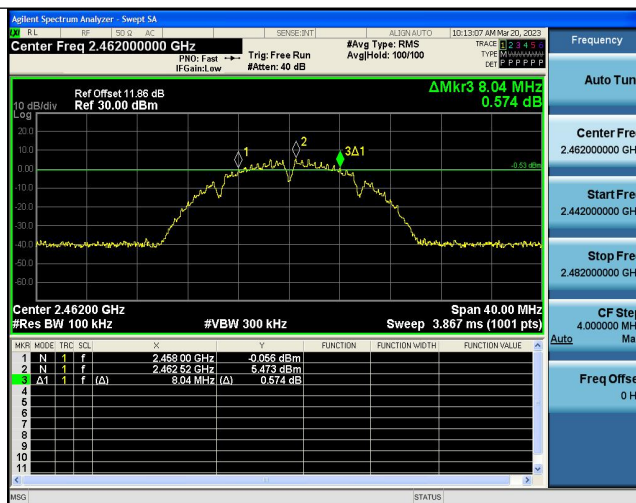
11B-Ant1-2412



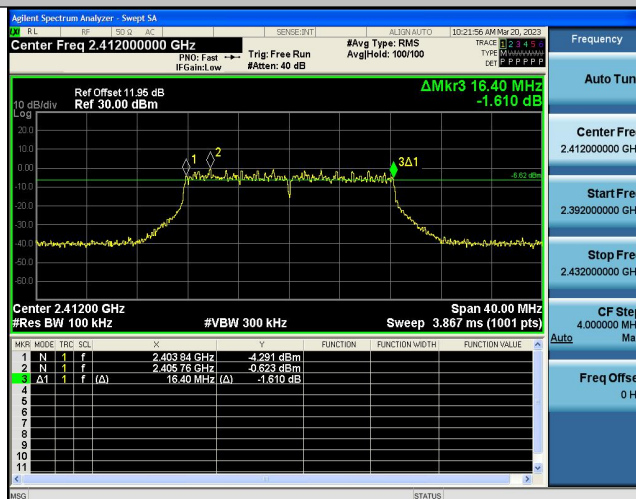
11B-Ant1-2437



11B-Ant1-2462



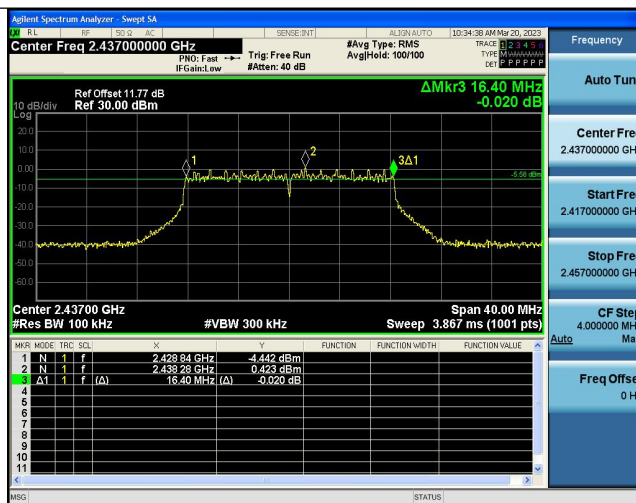
11G-Ant1-2412



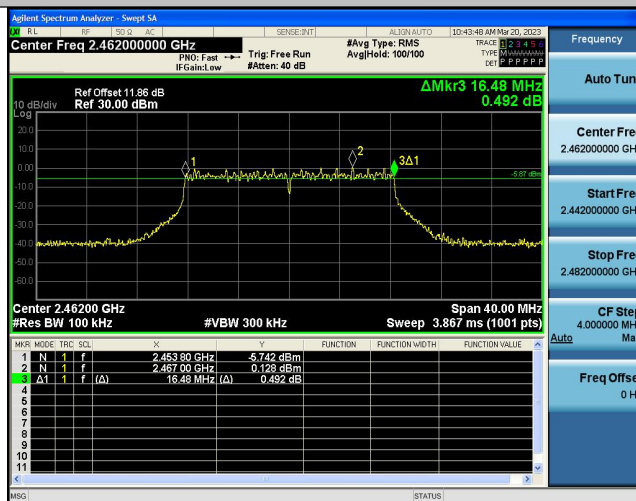
11G-Ant1-2437



Report No.: PTC23020606604E-FC01



11G-Ant1-2462



11N20SISO-Ant1-2412