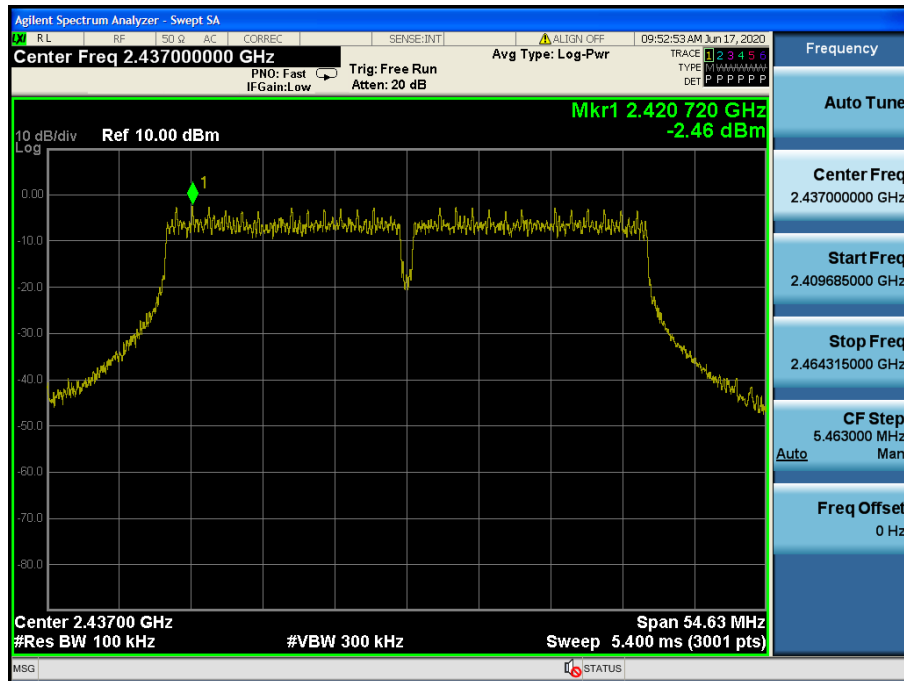
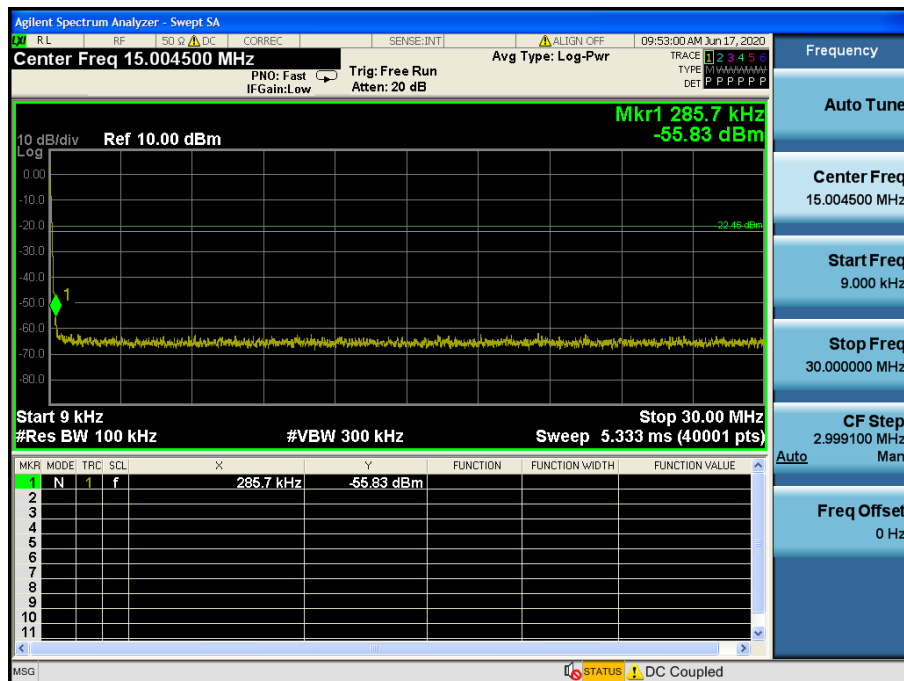


TM 4 & ANT 1 & 2 437

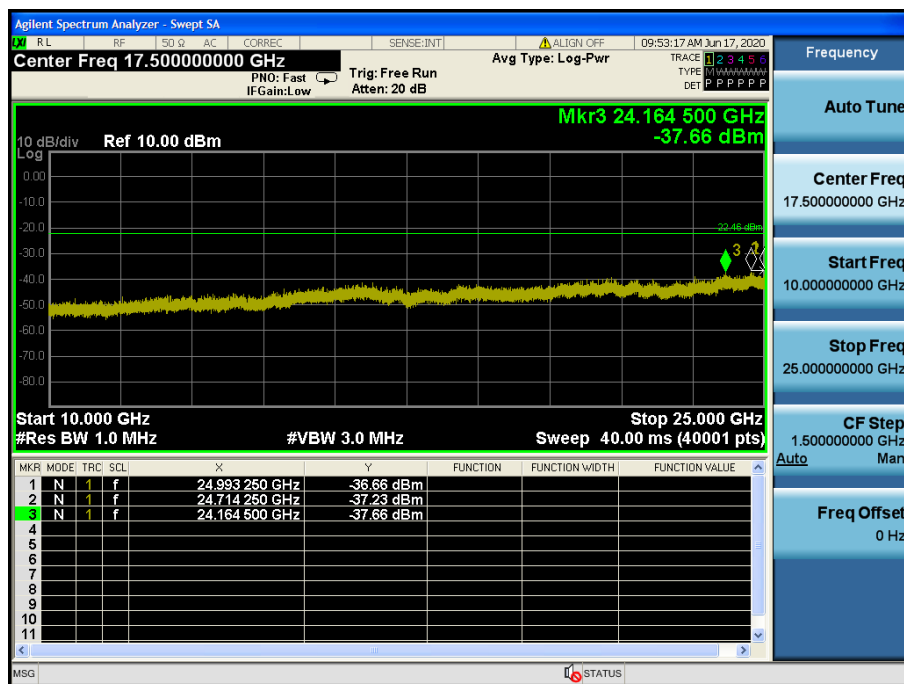
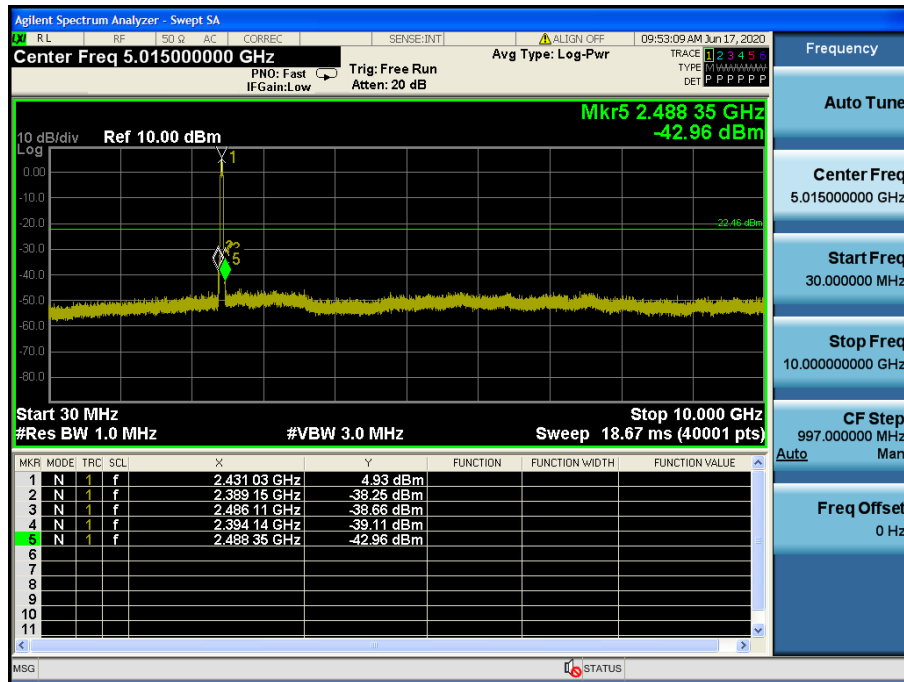
Reference



Conducted Spurious Emissions

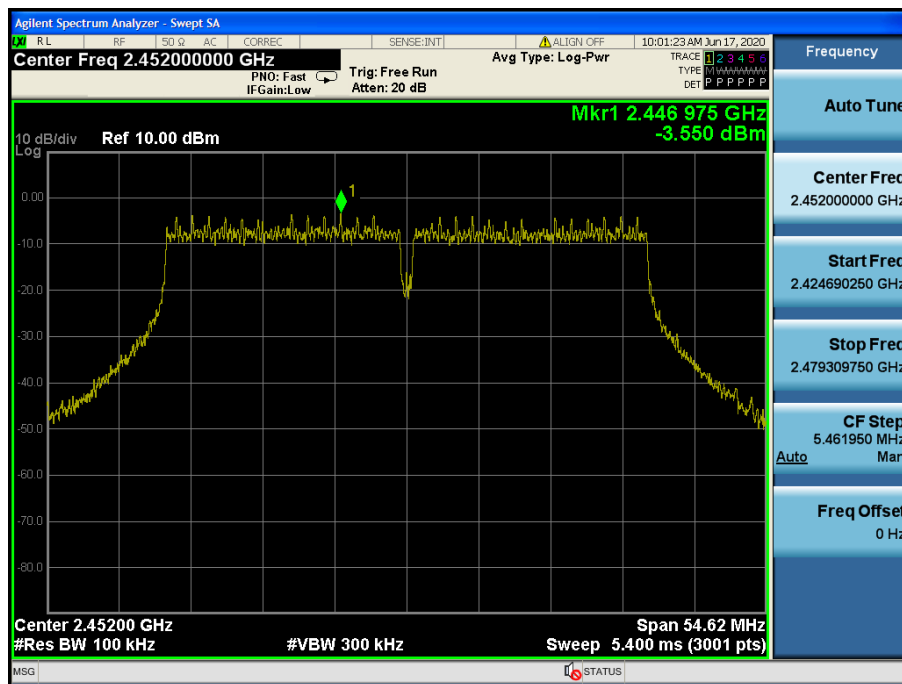


Conducted Spurious Emissions

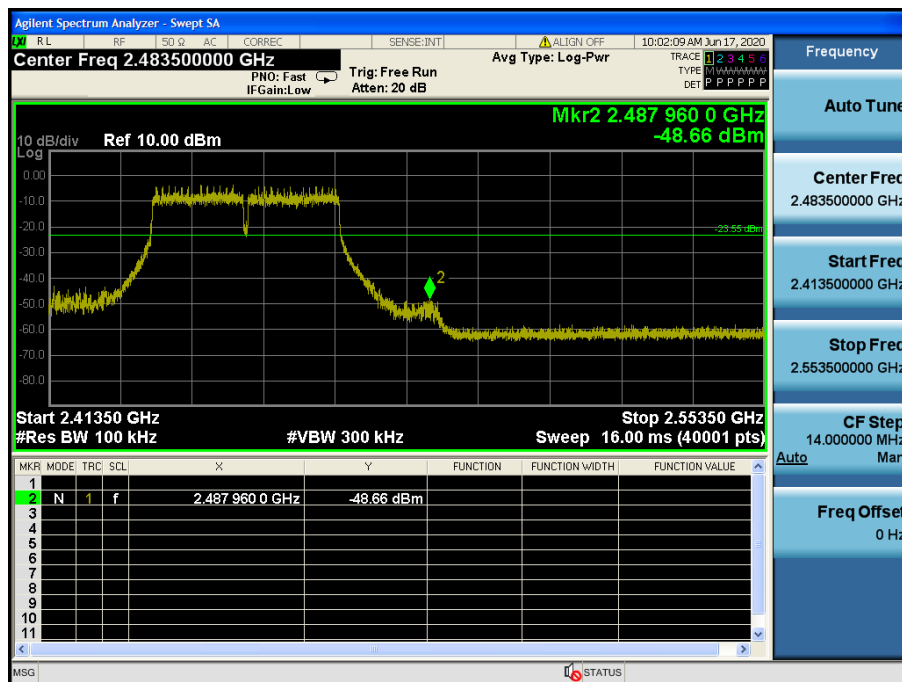


TM 4 & ANT 1 & 2 462

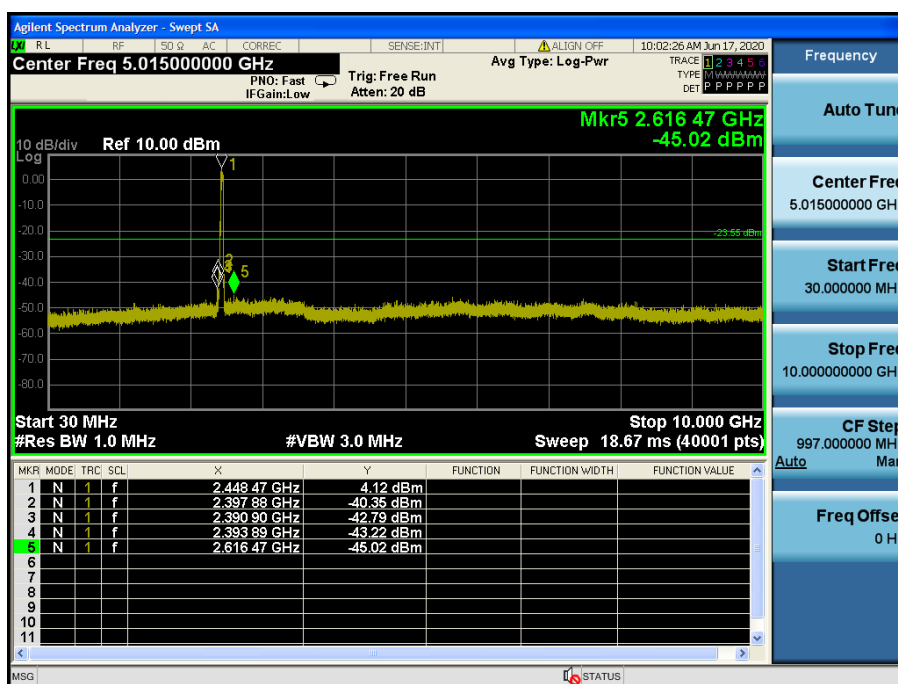
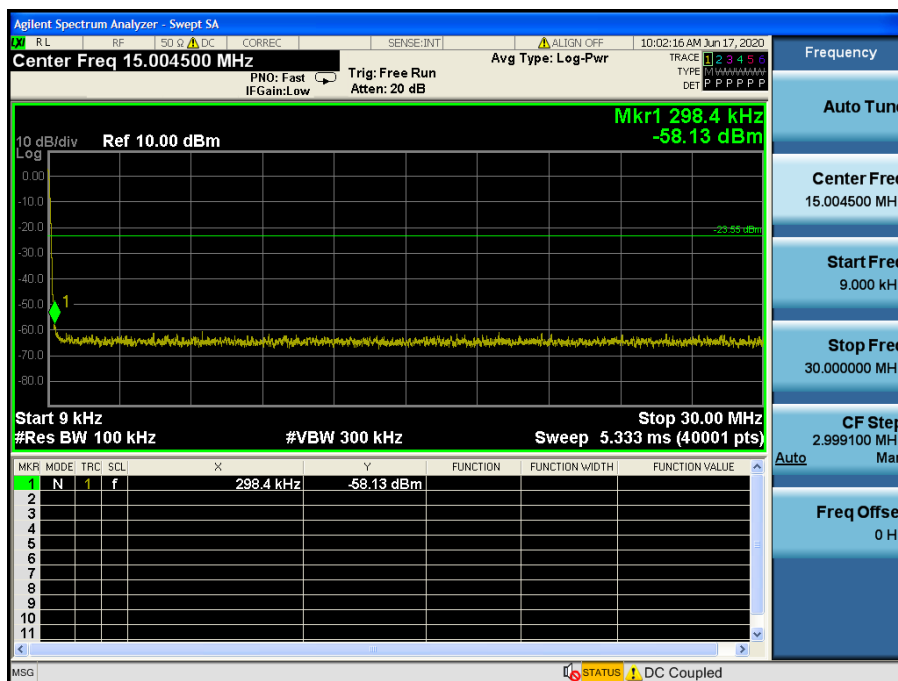
Reference



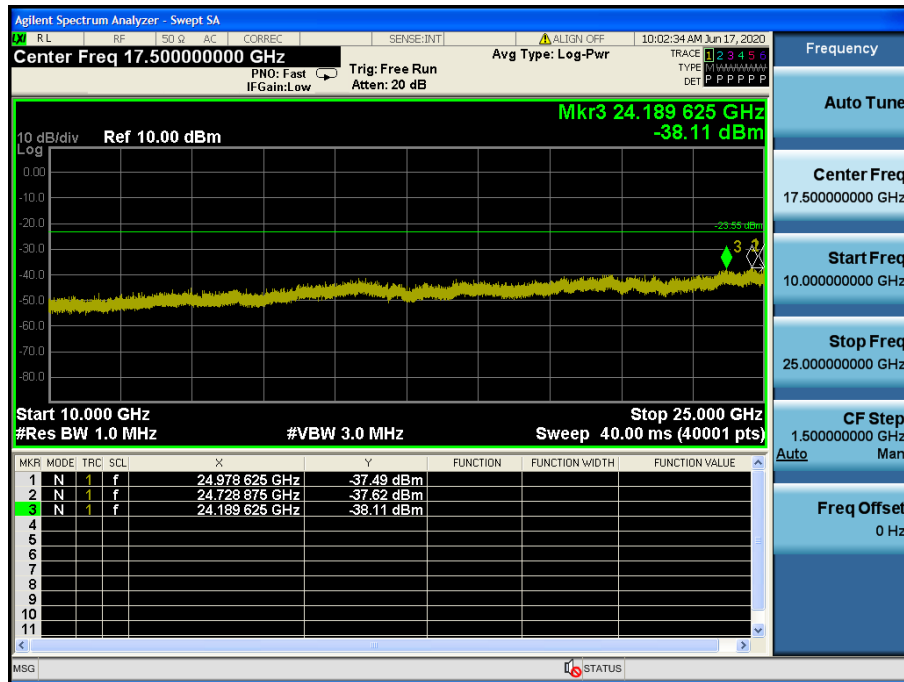
High Band-edge



Conducted Spurious Emissions

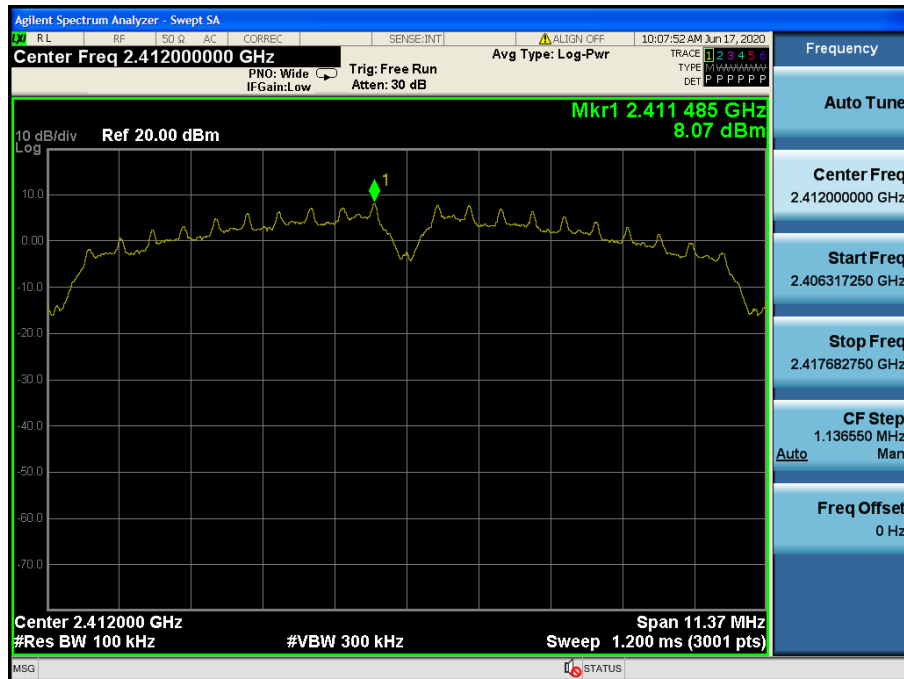


Conducted Spurious Emissions

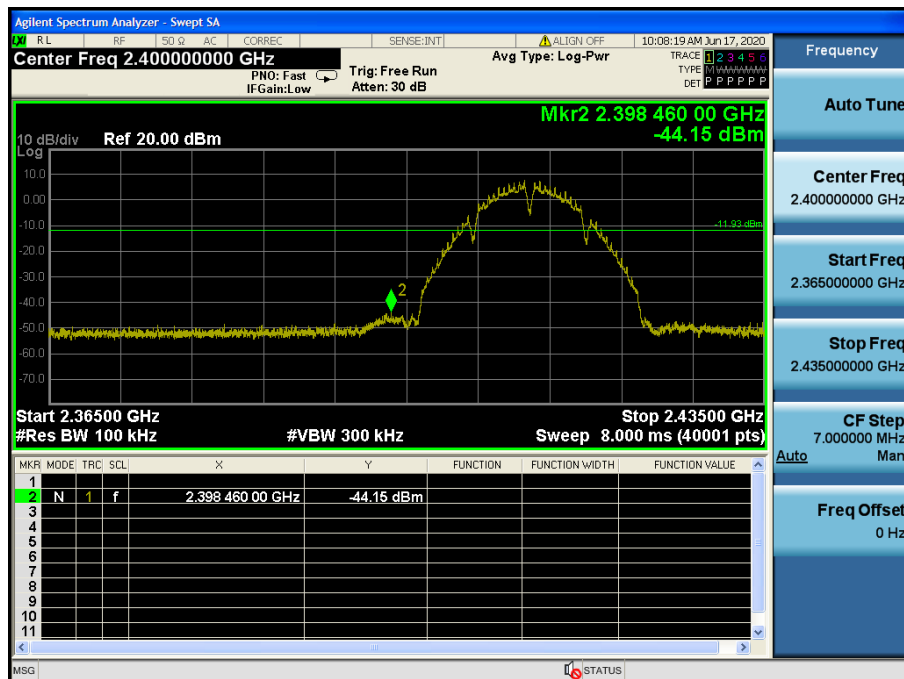


TM 1 & ANT 2 & 2 412

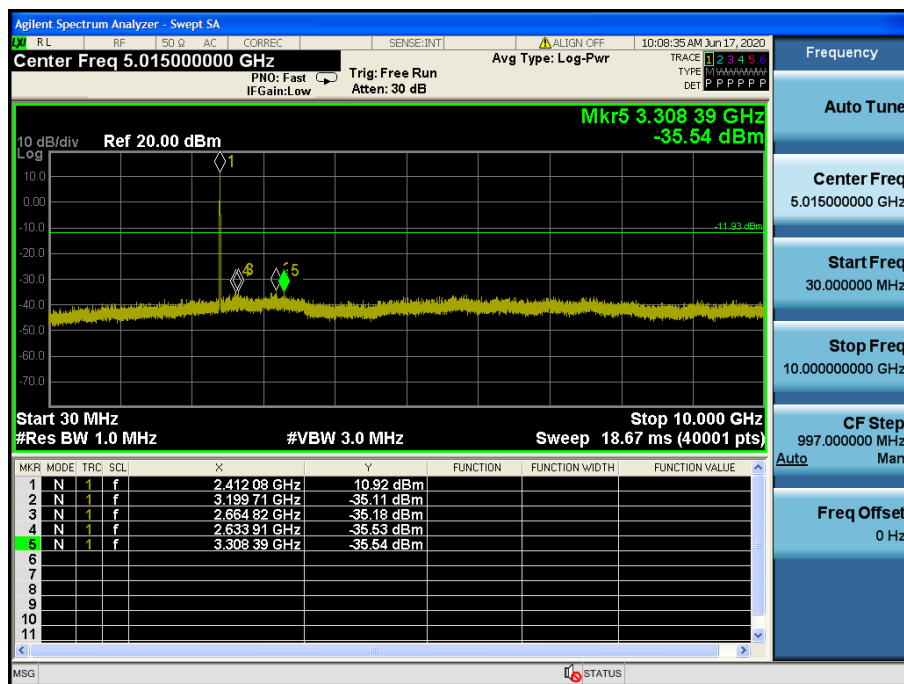
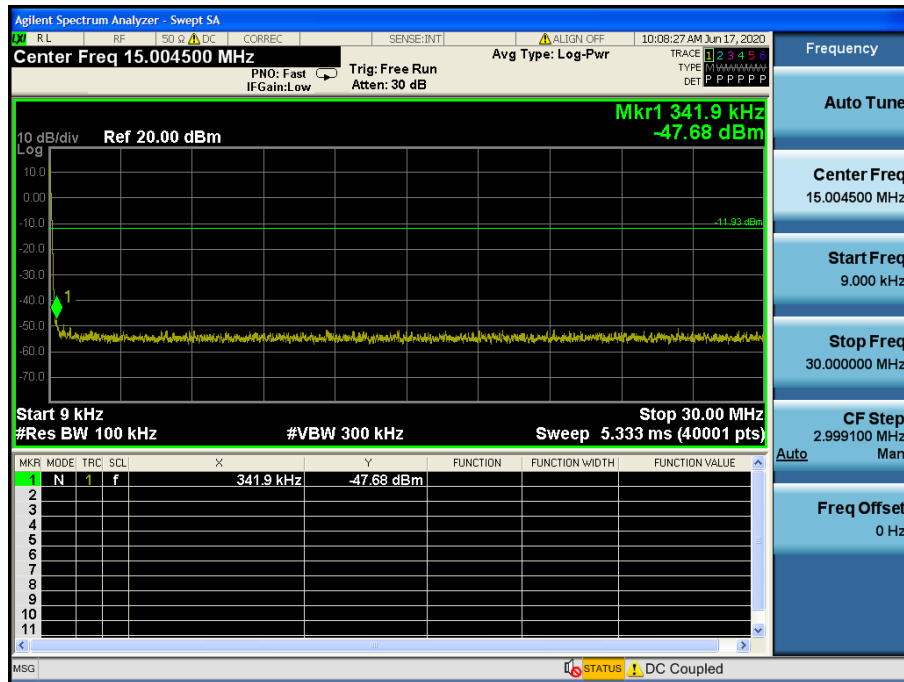
Reference



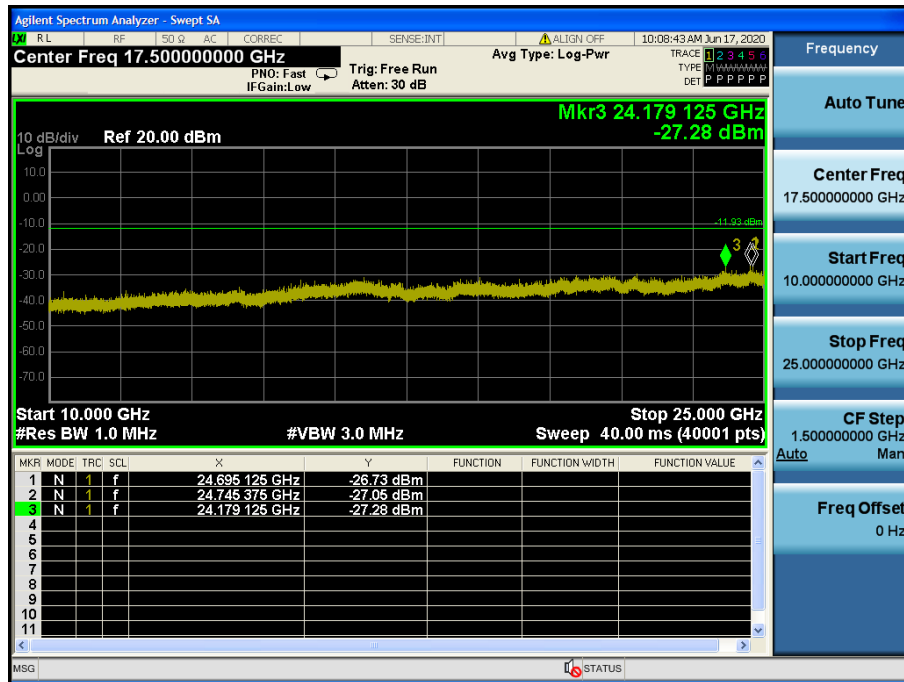
Low Band-edge



Conducted Spurious Emissions

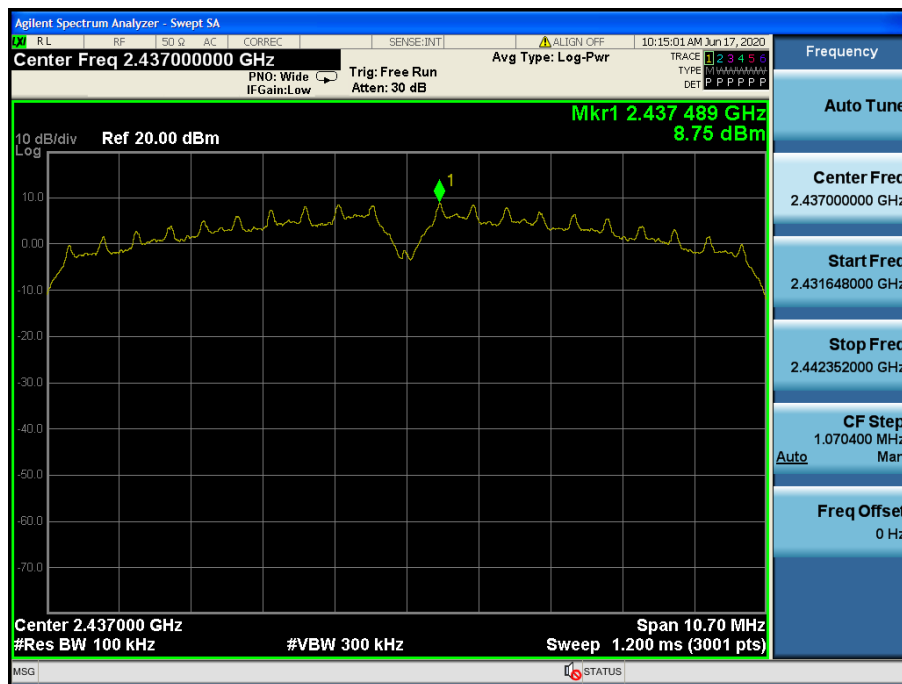


Conducted Spurious Emissions

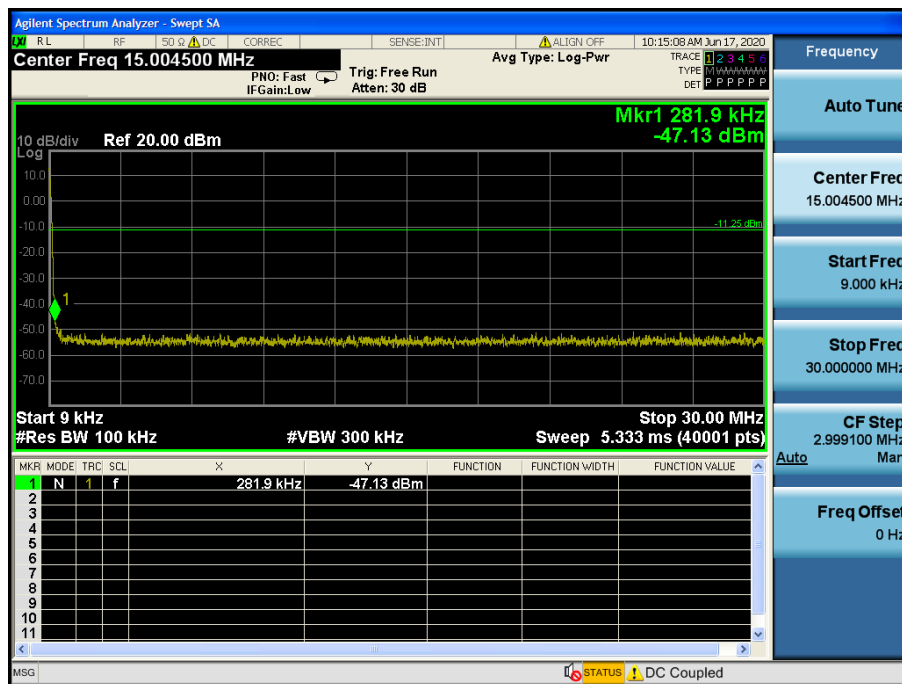


TM 1 & ANT 2 & 2 437

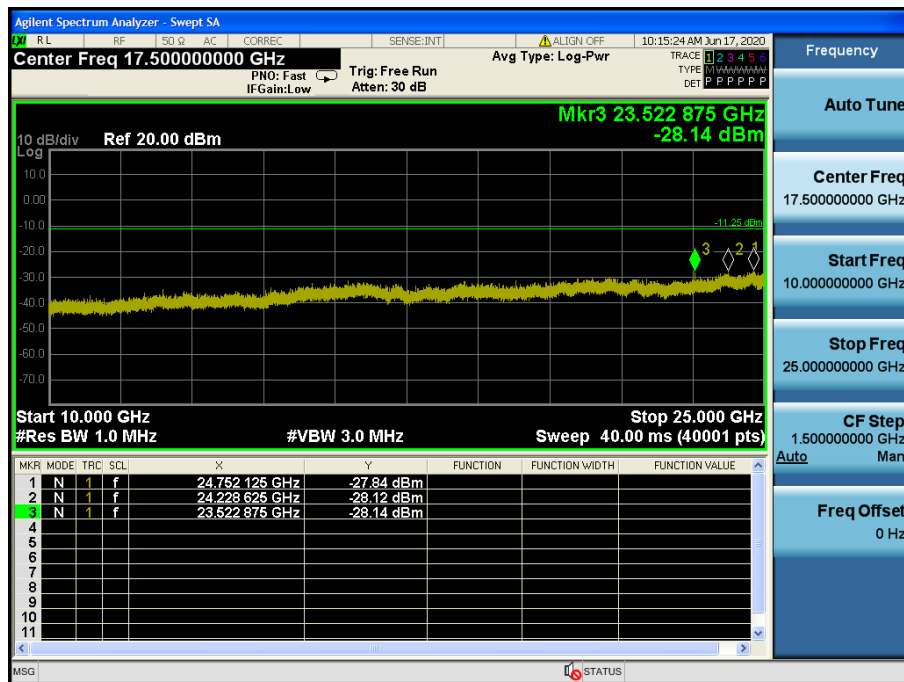
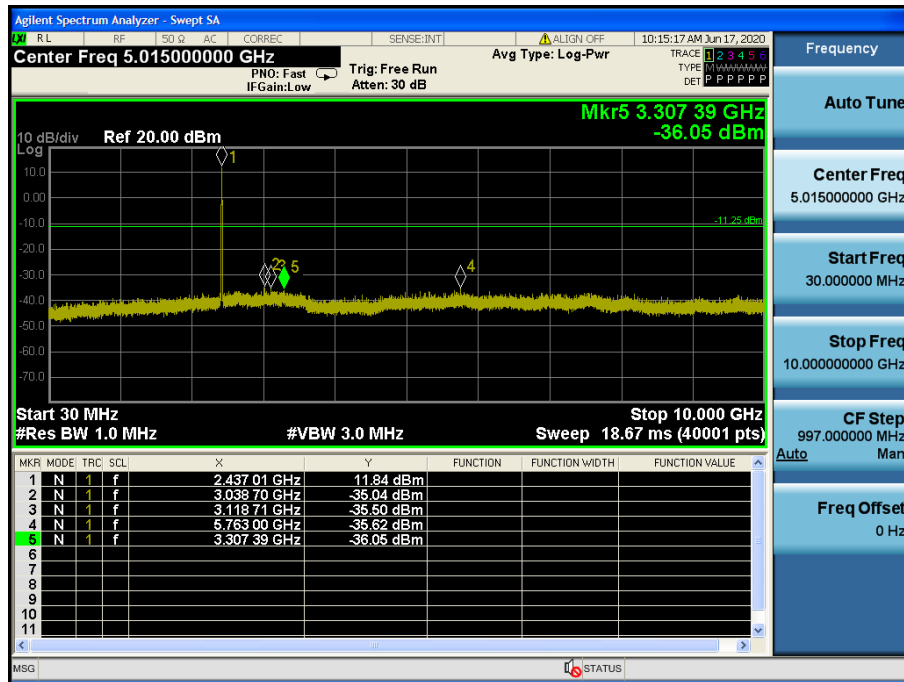
Reference



Conducted Spurious Emissions

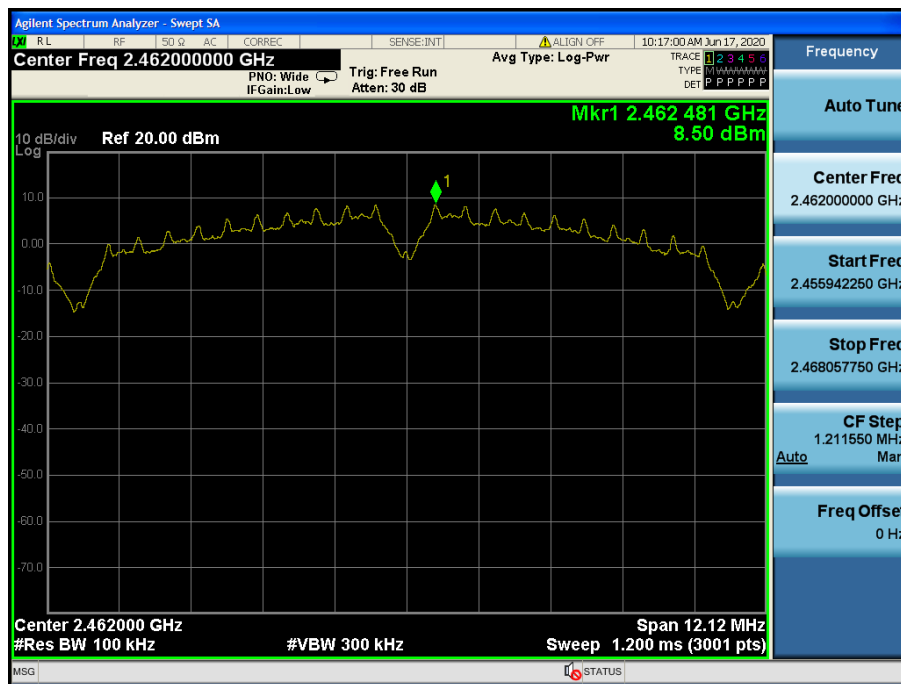


Conducted Spurious Emissions

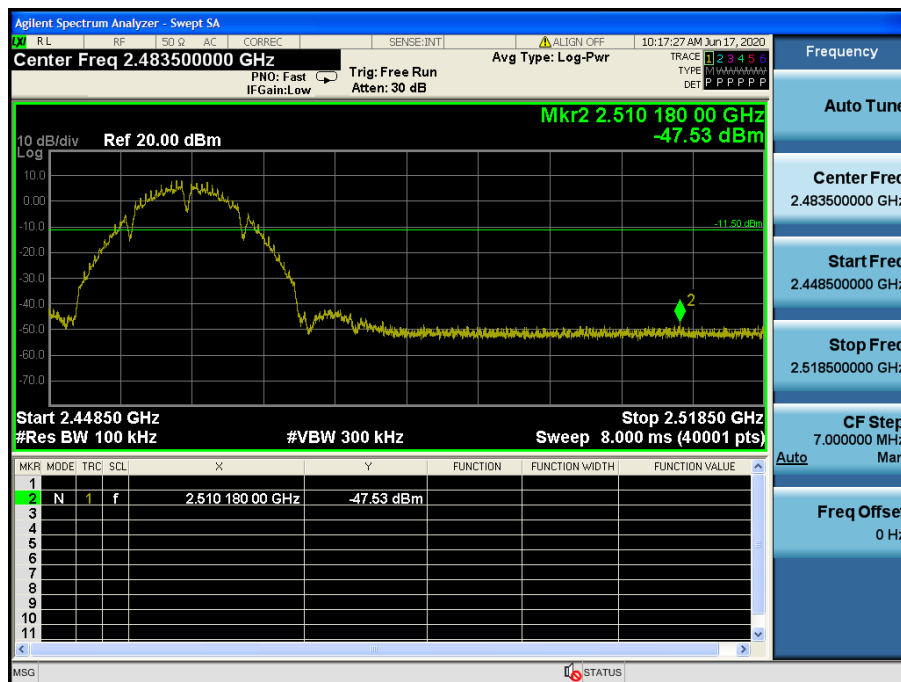


TM 1 & ANT 2 & 2 462

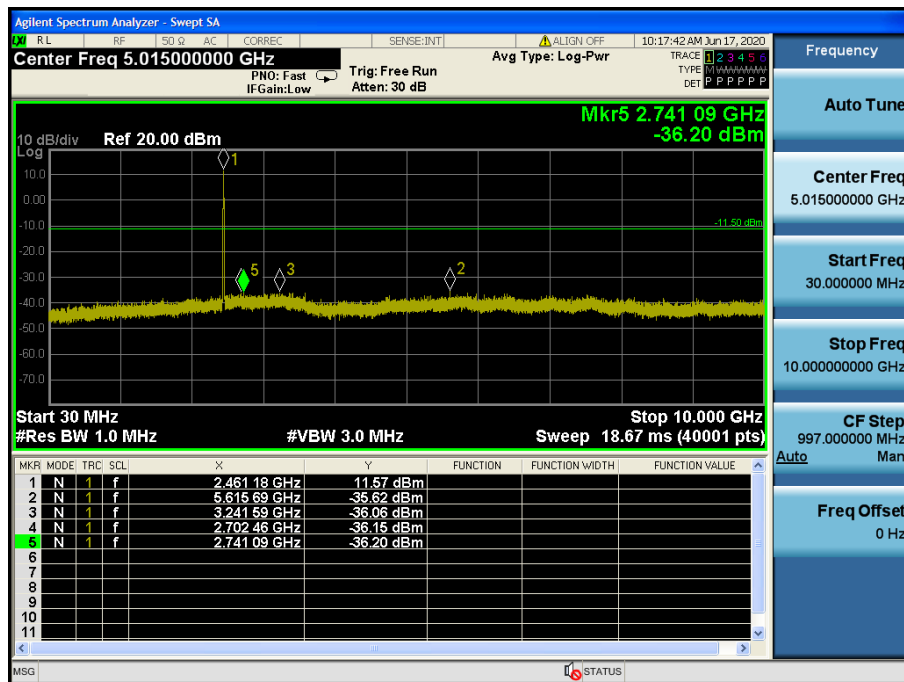
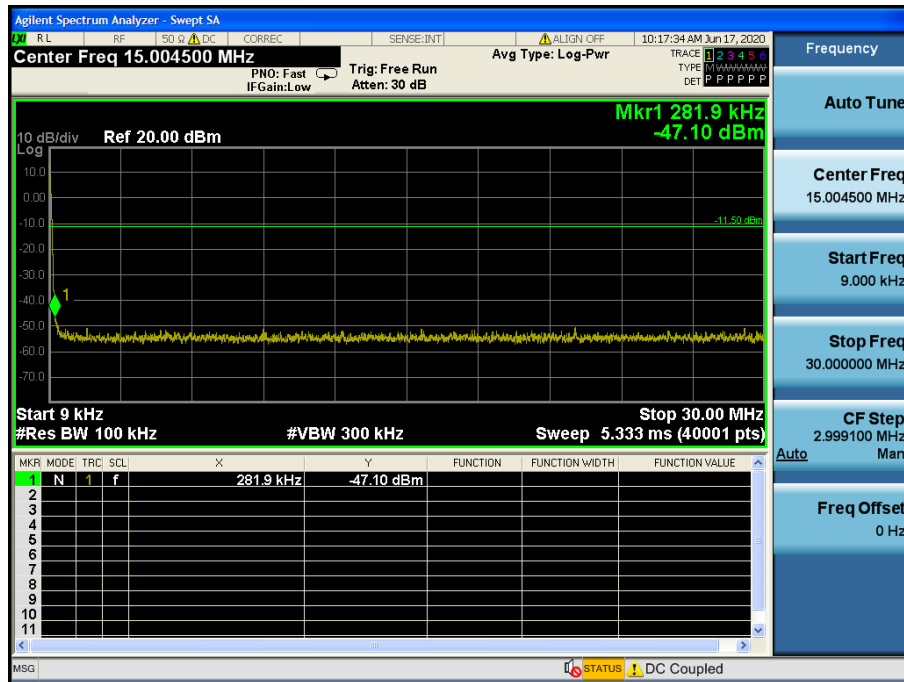
Reference



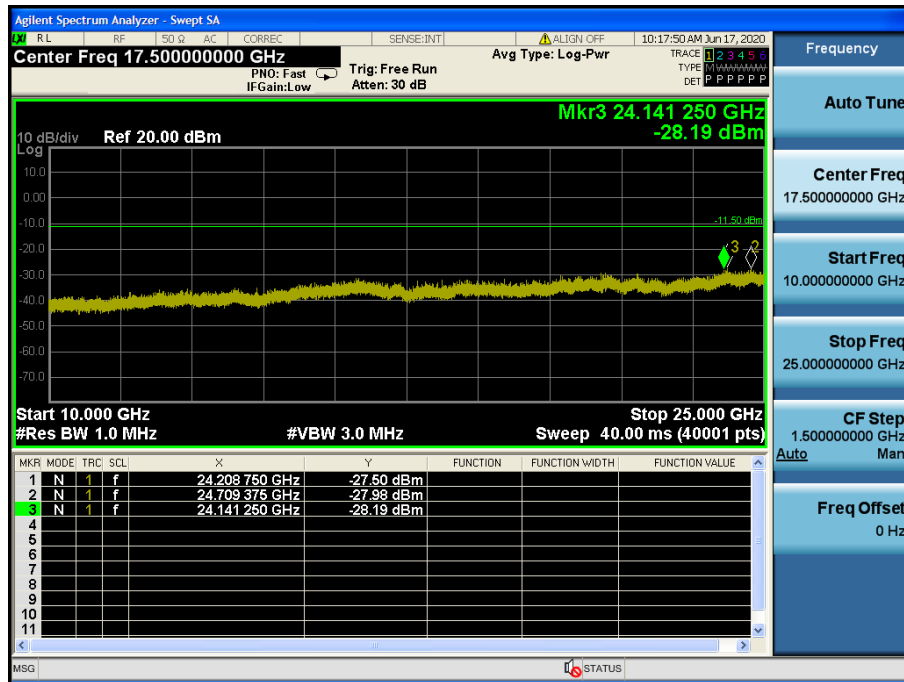
High Band-edge



Conducted Spurious Emissions

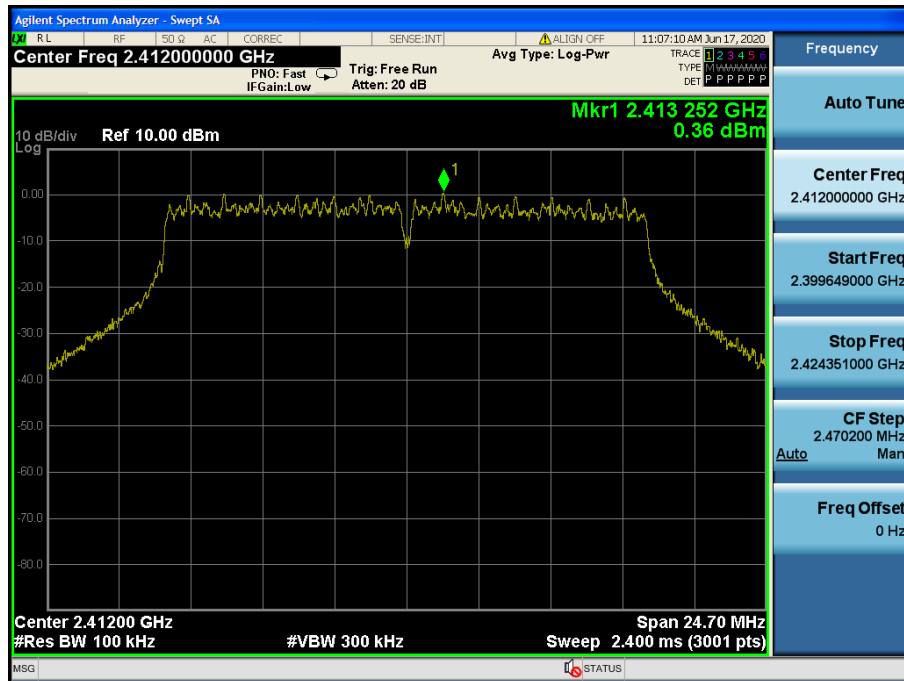


Conducted Spurious Emissions

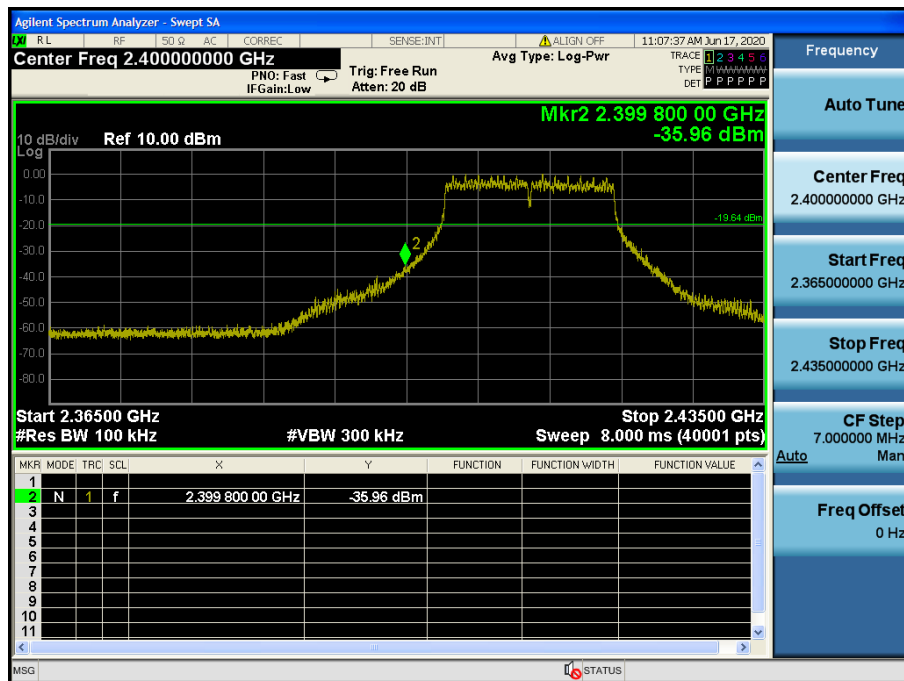


TM 2 & ANT 2 & 2 412

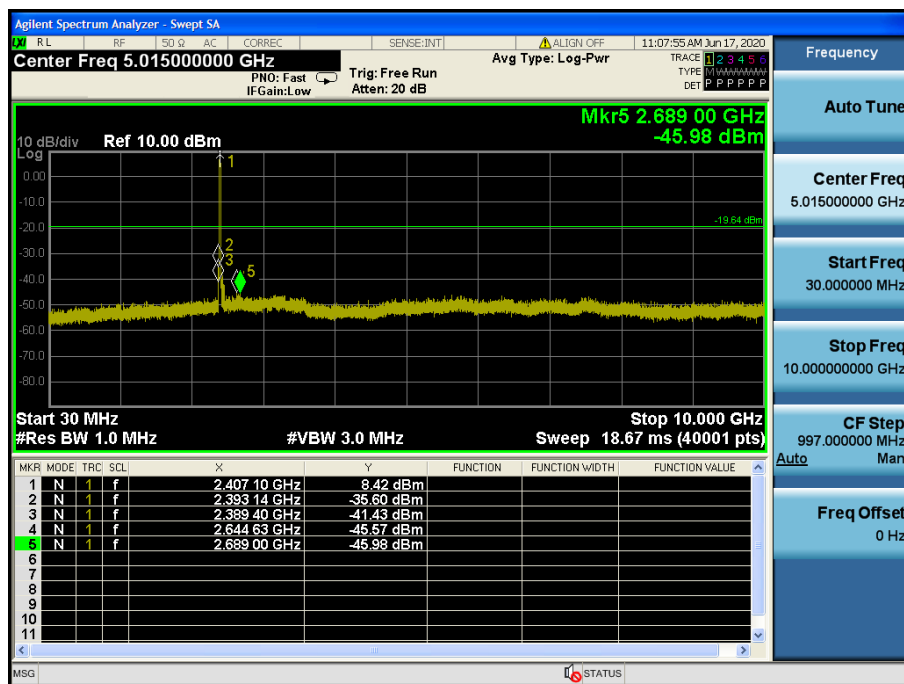
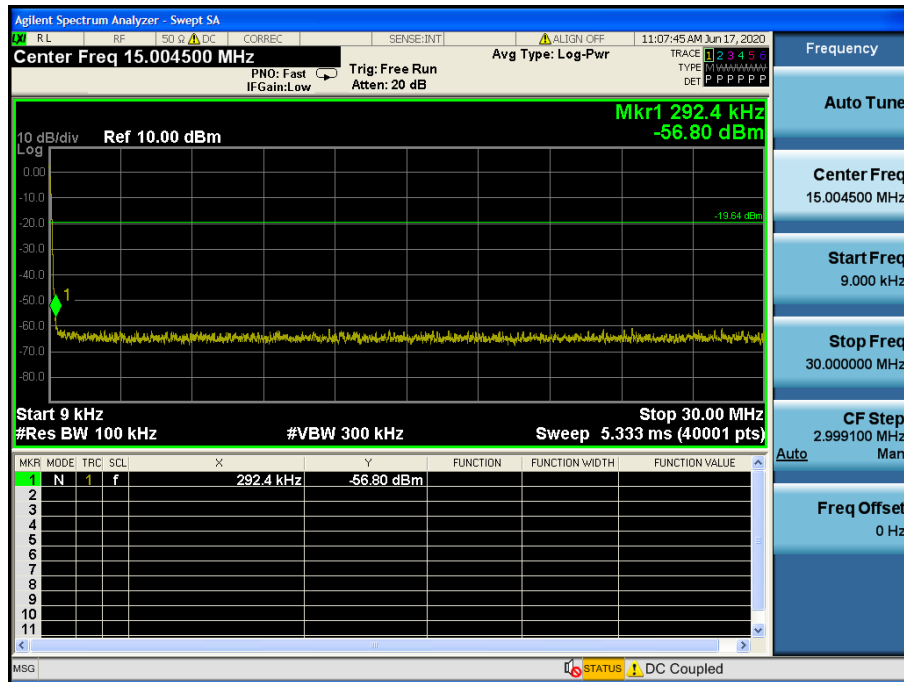
Reference



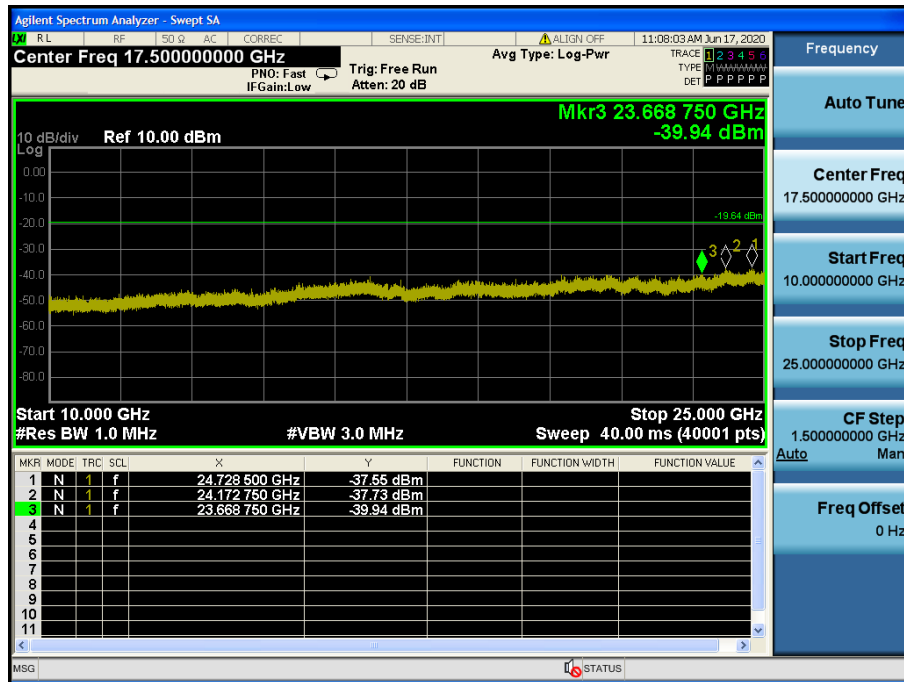
Low Band-edge



Conducted Spurious Emissions

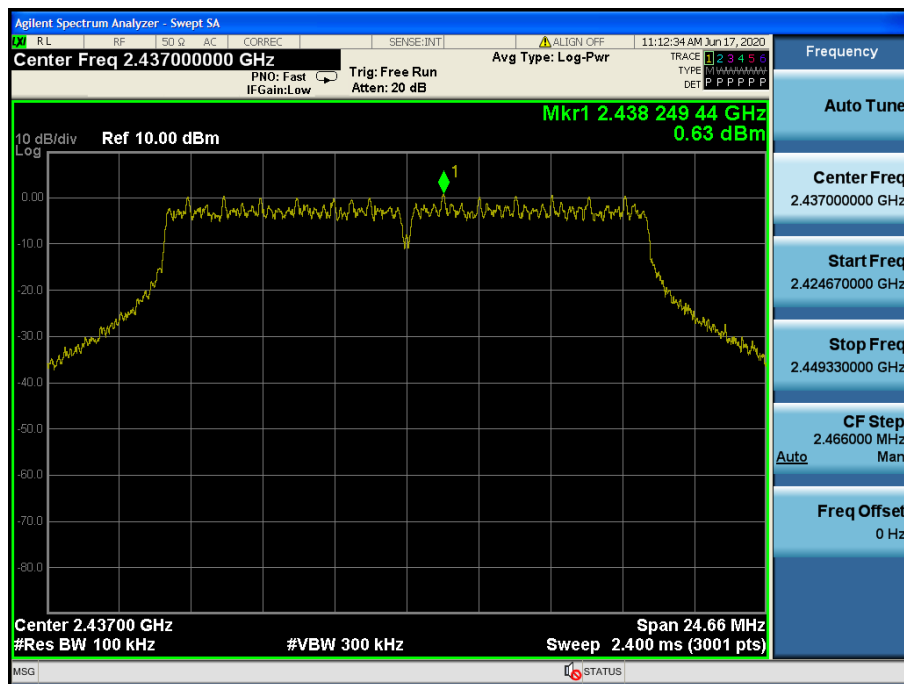


Conducted Spurious Emissions

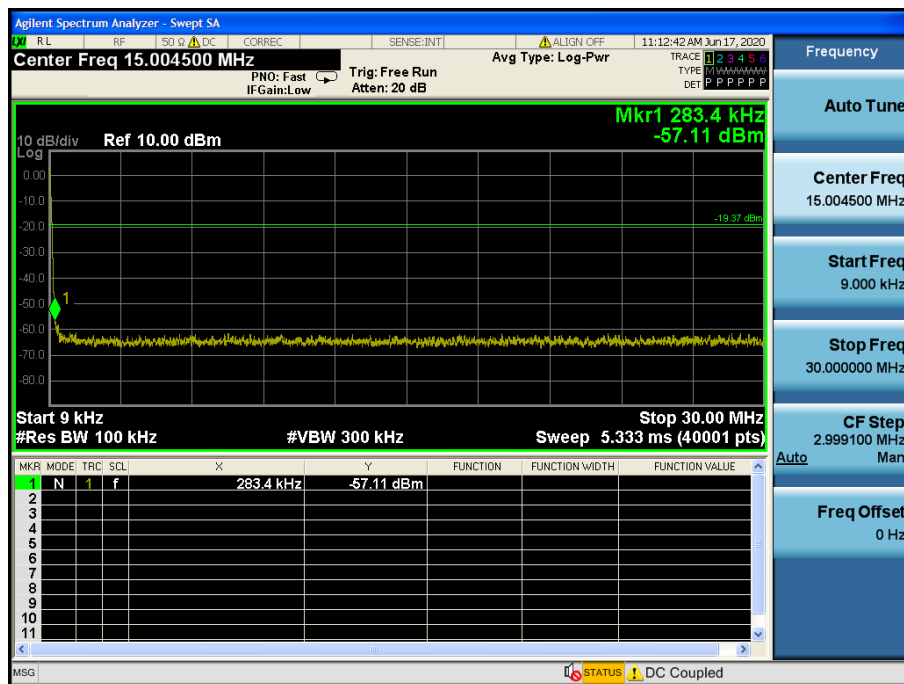


TM 2 & ANT 2 & 2 437

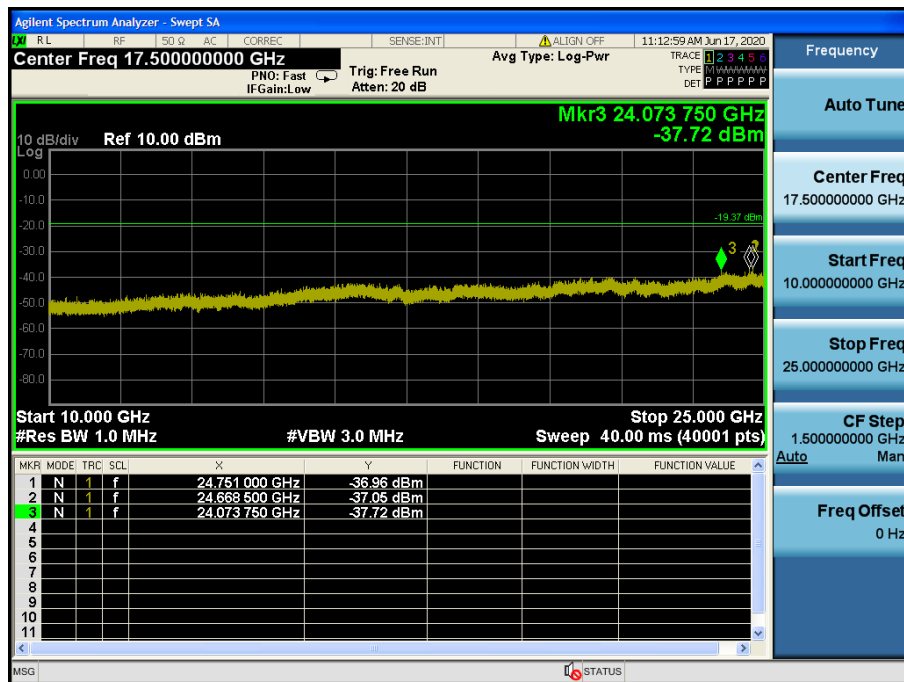
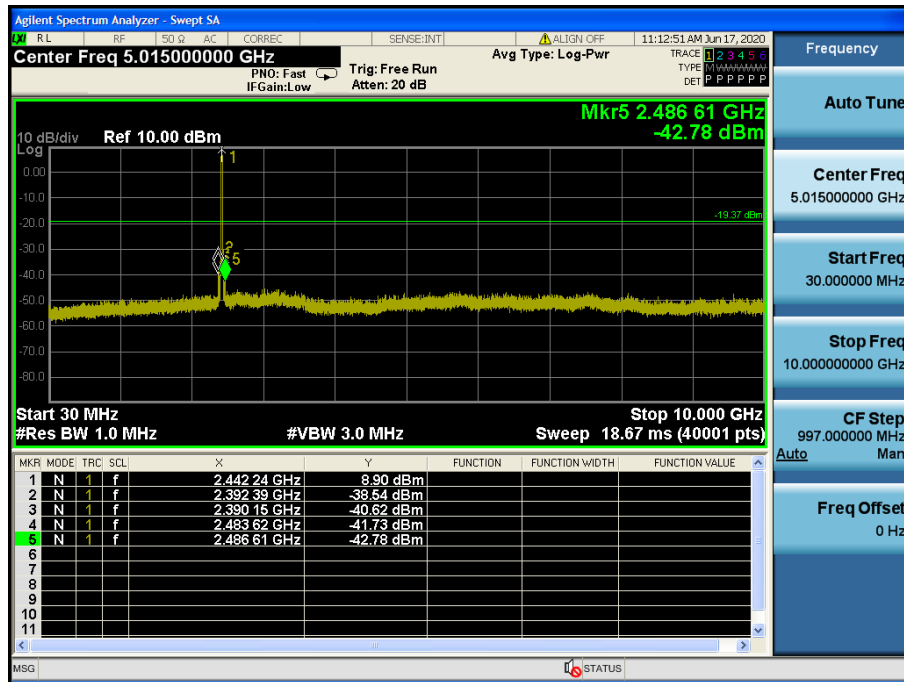
Reference



Conducted Spurious Emissions

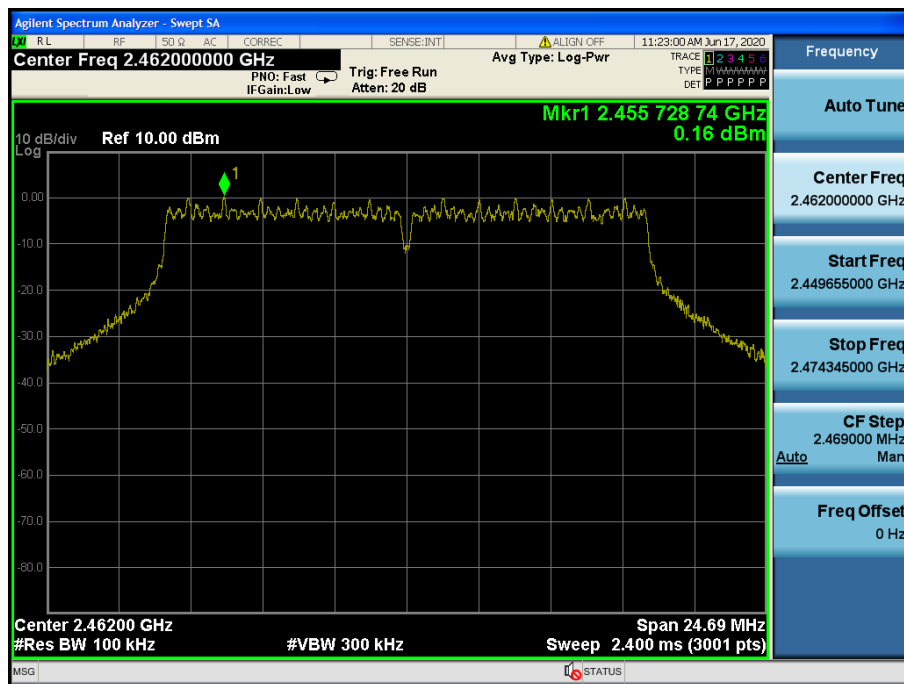


Conducted Spurious Emissions

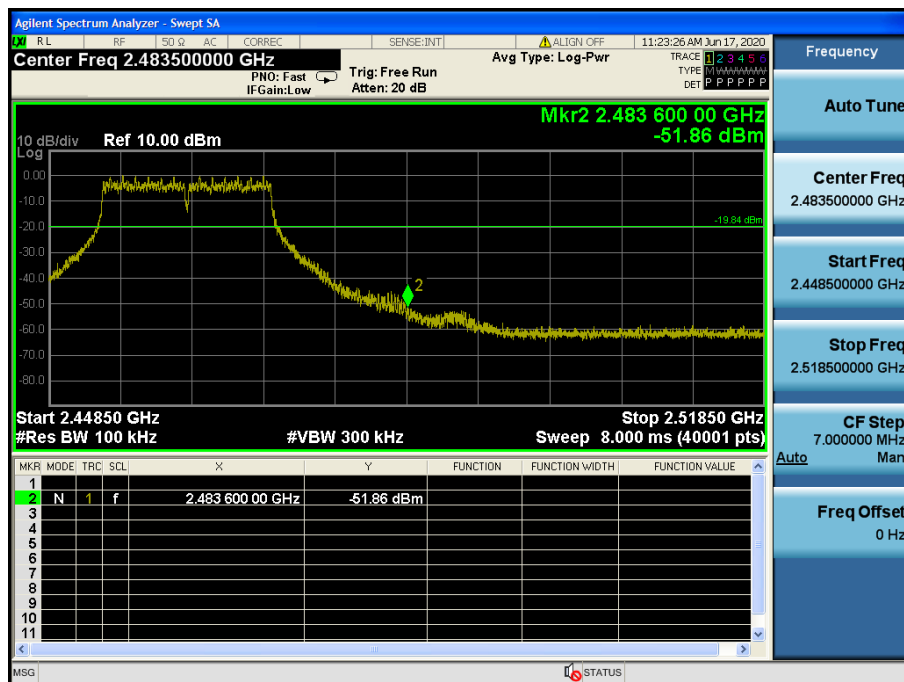


TM 2 & ANT 2 & 2 462

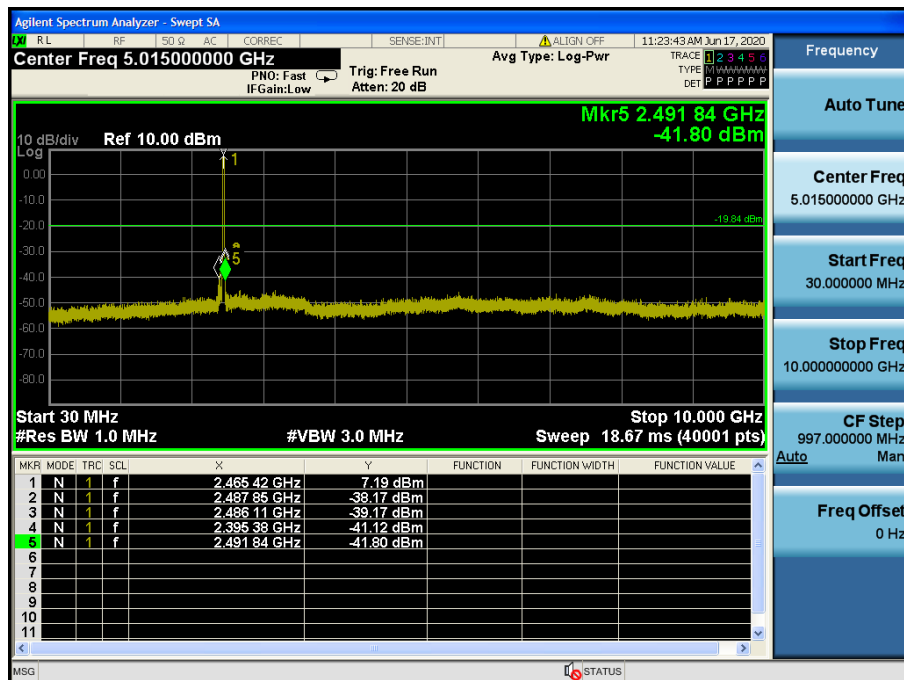
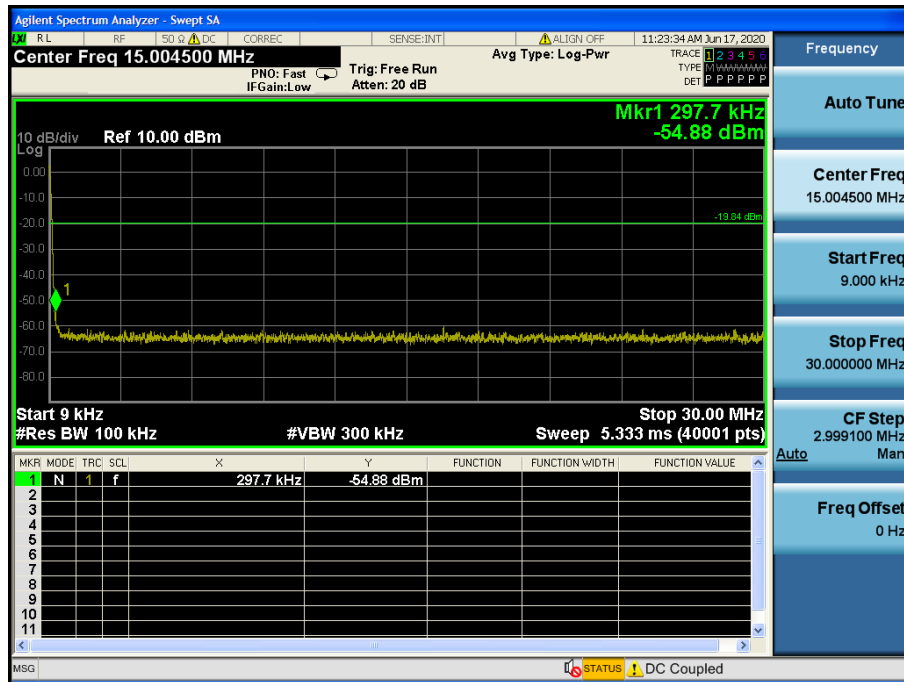
Reference



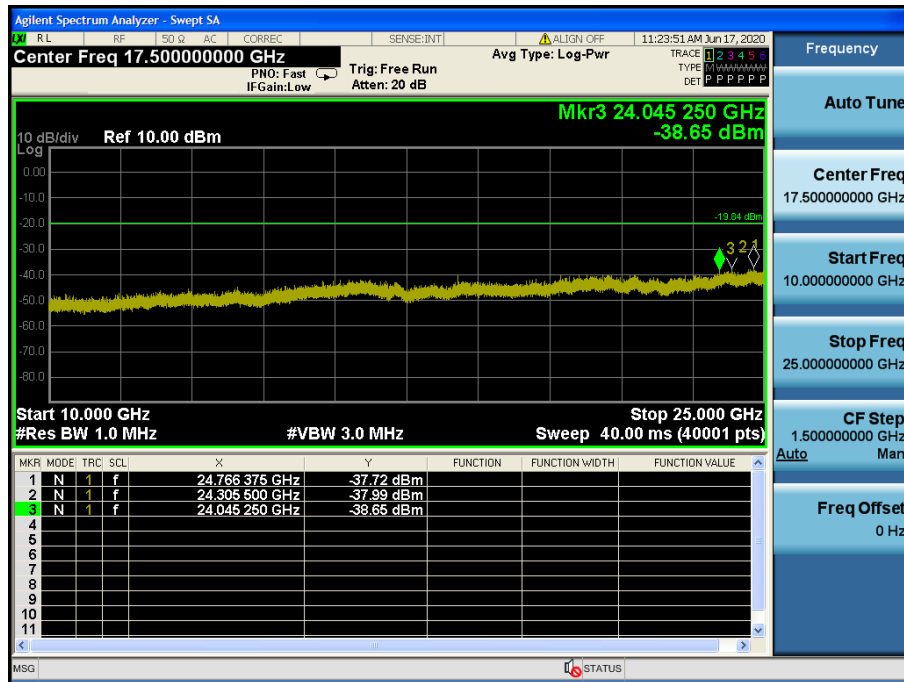
High Band-edge



Conducted Spurious Emissions

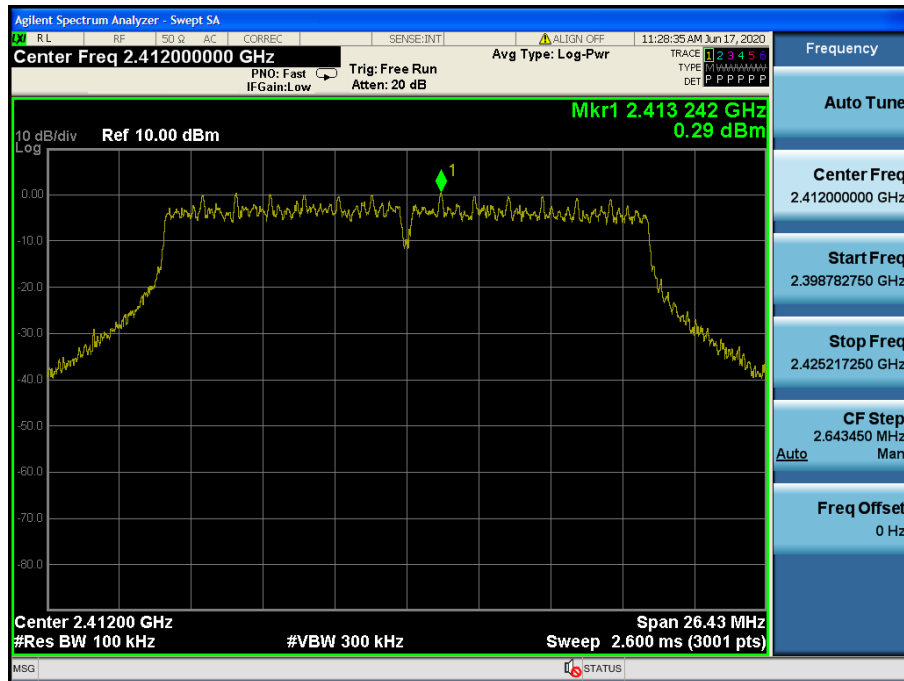


Conducted Spurious Emissions

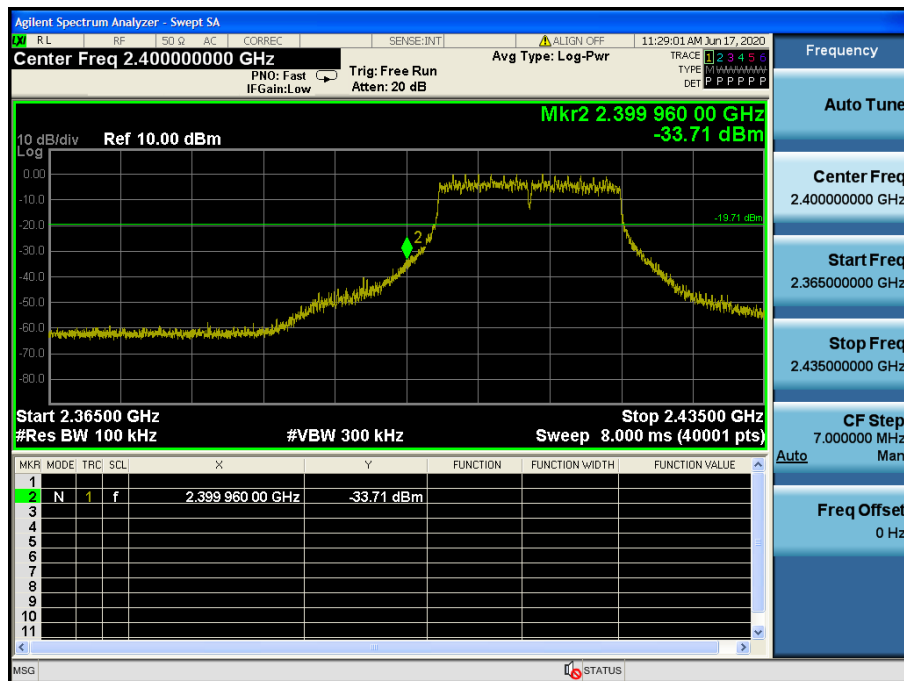


TM 3 & ANT 2 & 2 412

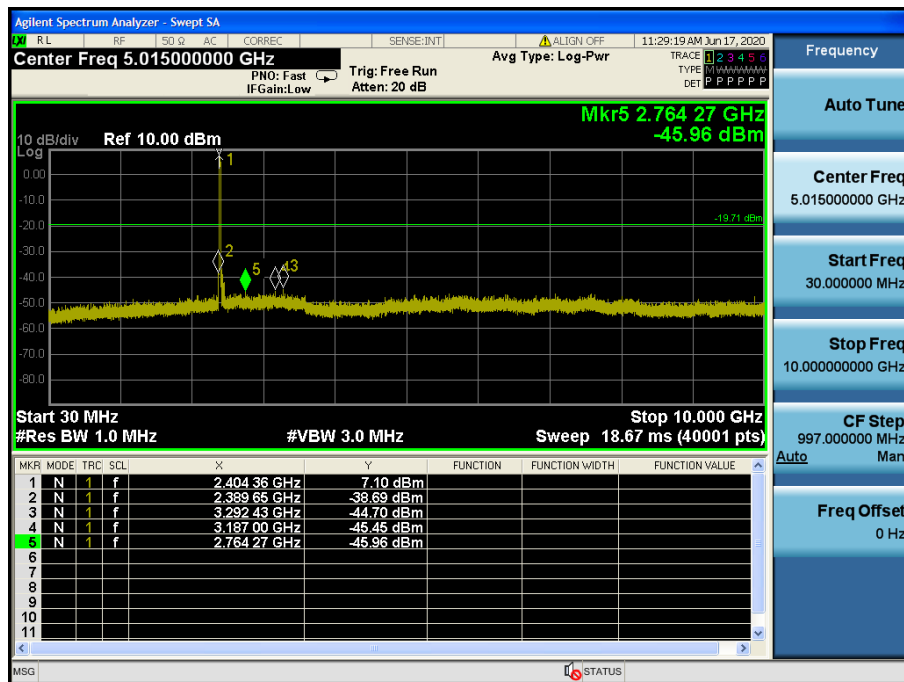
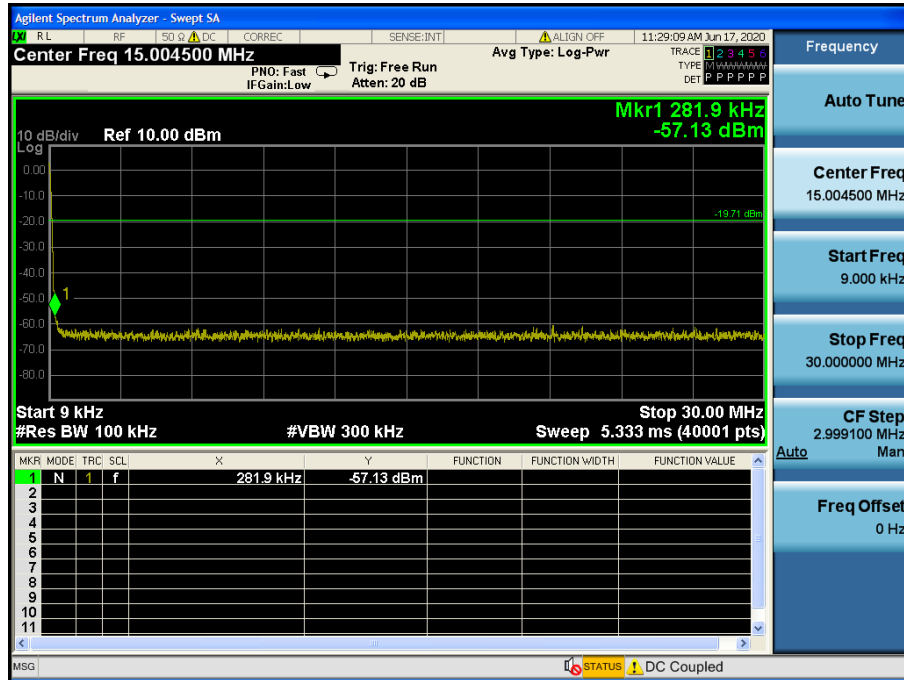
Reference



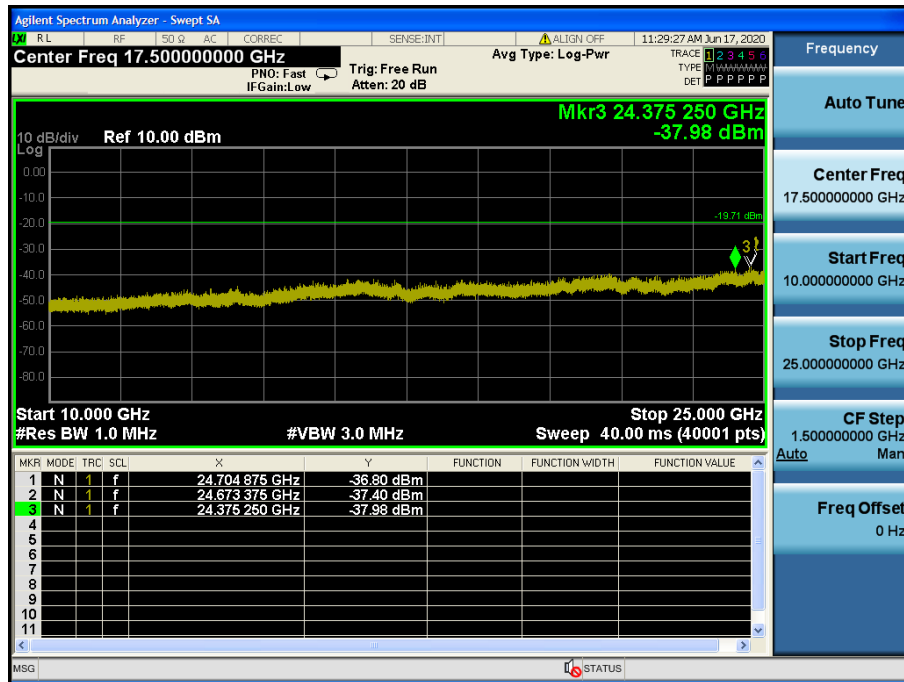
Low Band-edge



Conducted Spurious Emissions

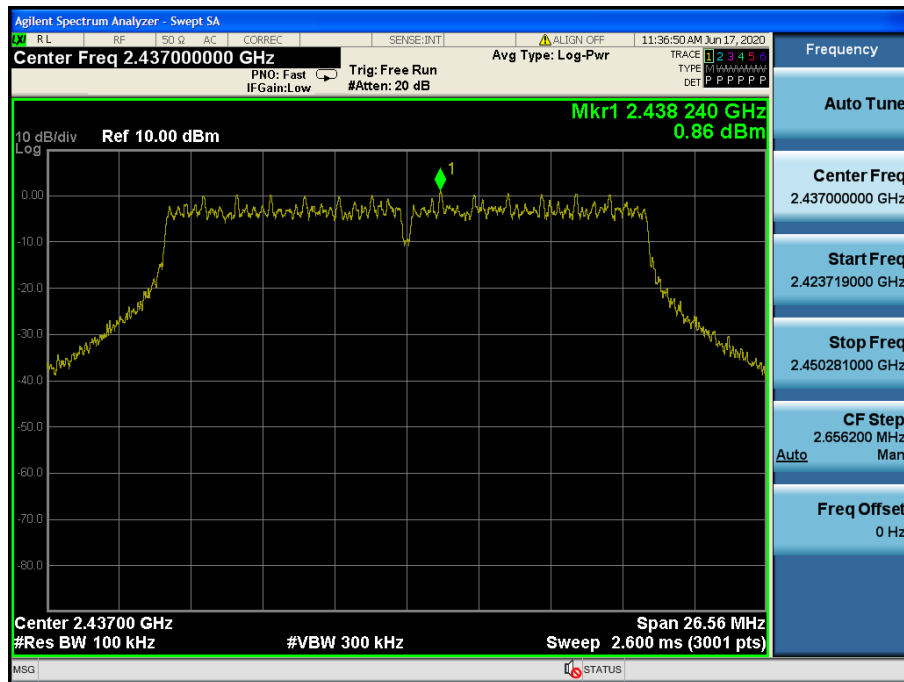


Conducted Spurious Emissions

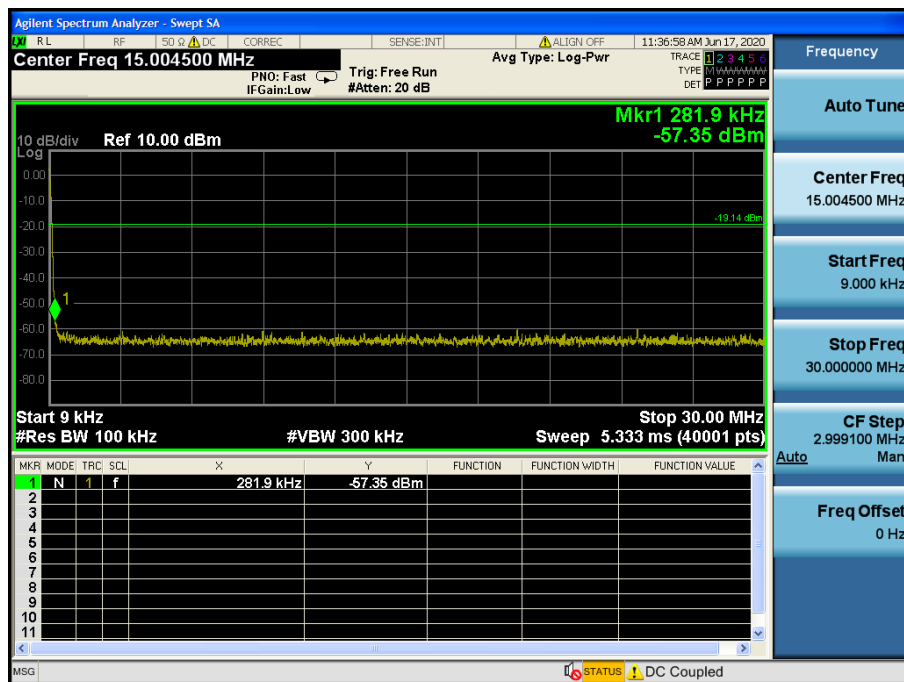


TM 3 & ANT 2 & 2 437

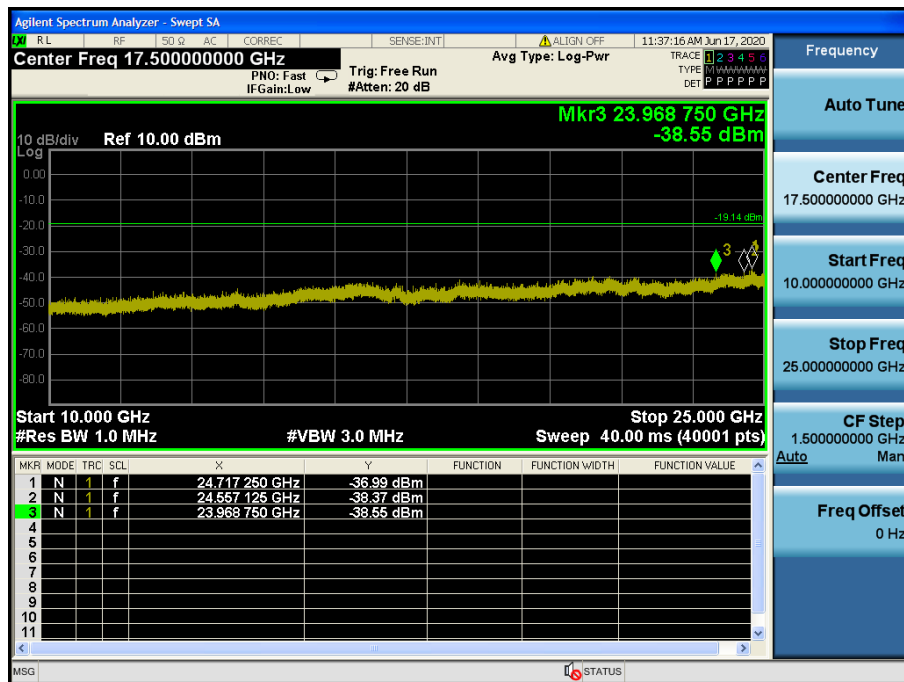
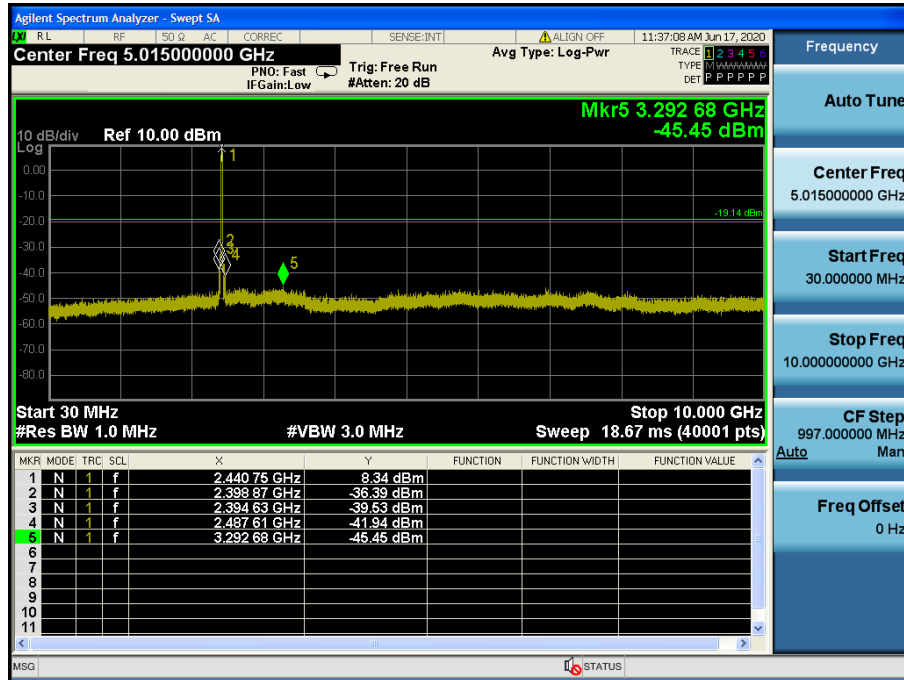
Reference



Conducted Spurious Emissions

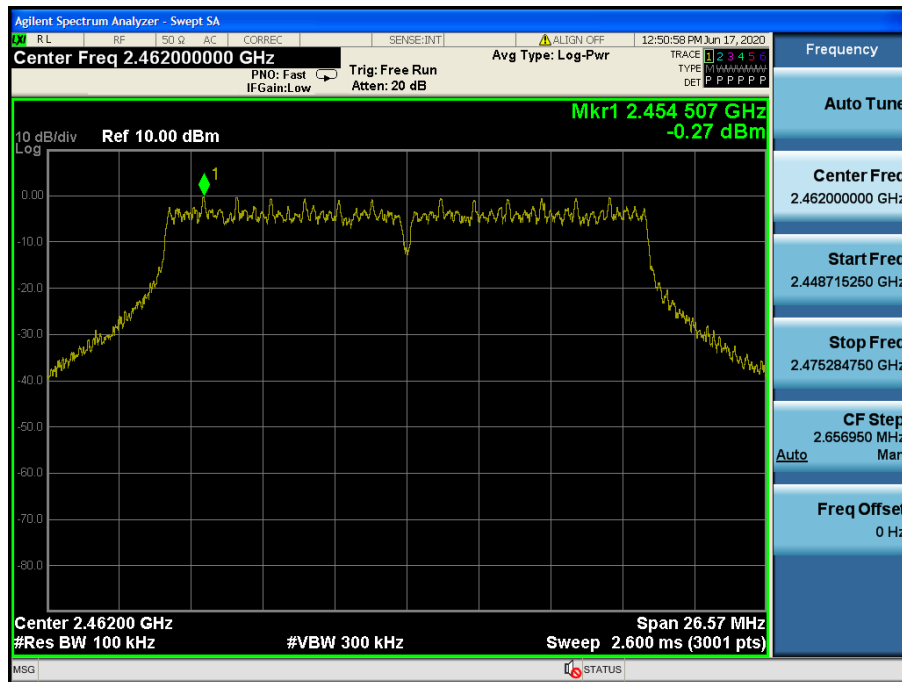


Conducted Spurious Emissions

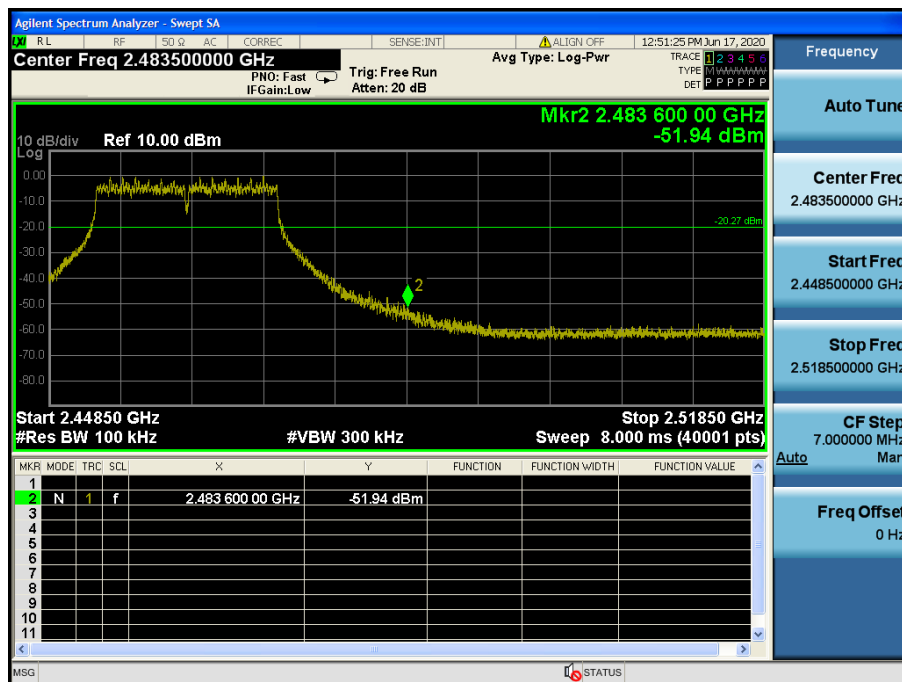


TM 3 & ANT 2 & 2 462

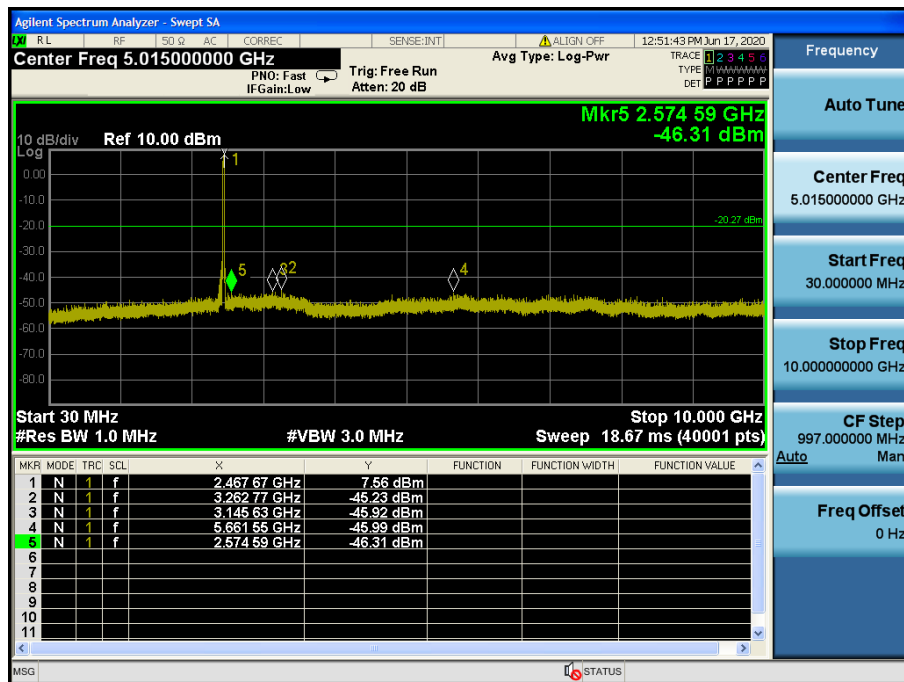
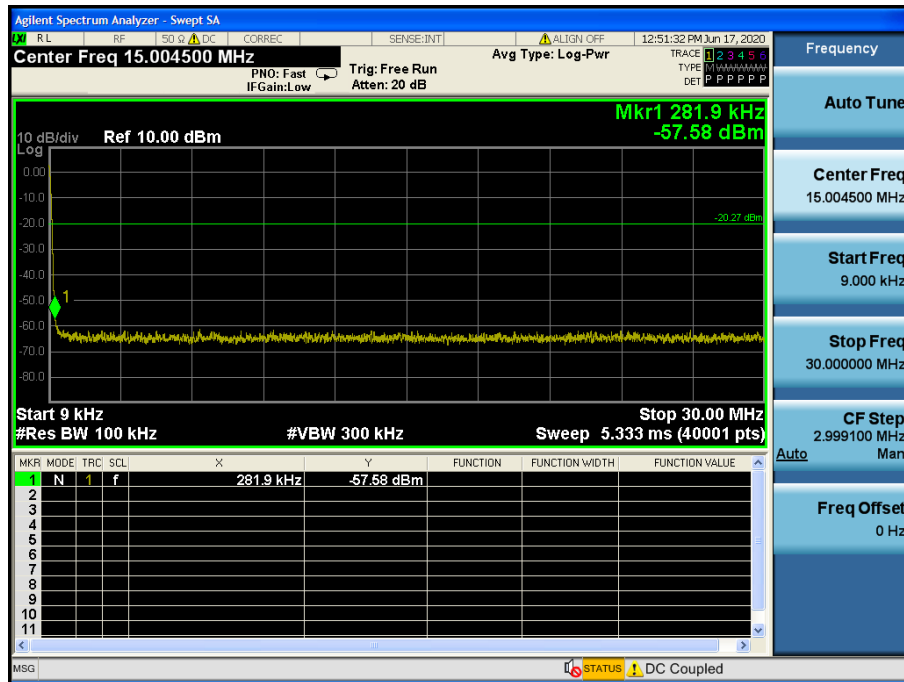
Reference



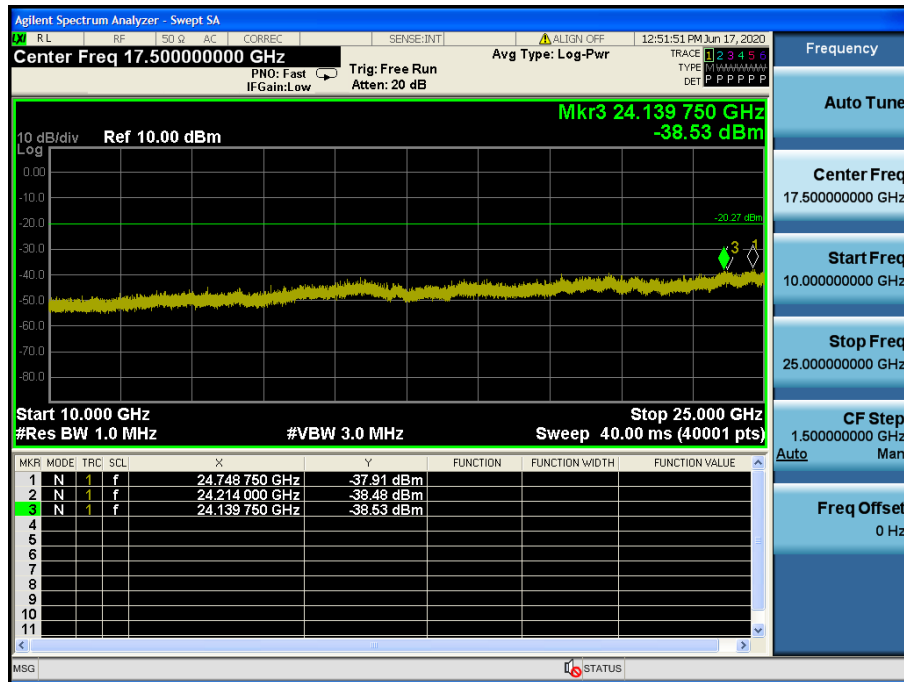
High Band-edge



Conducted Spurious Emissions

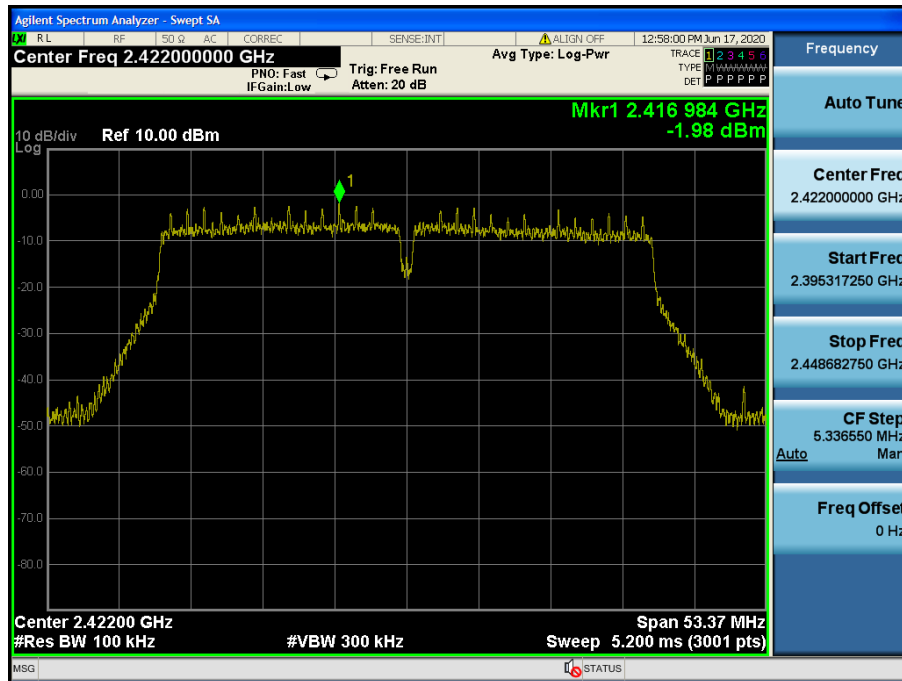


Conducted Spurious Emissions

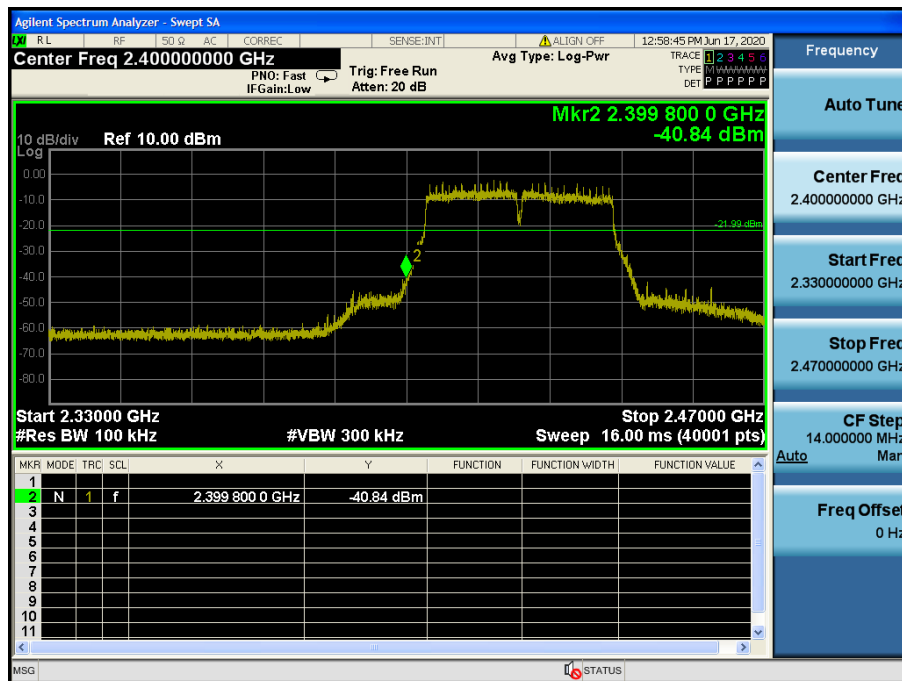


TM 4 & ANT 2 & 2 412

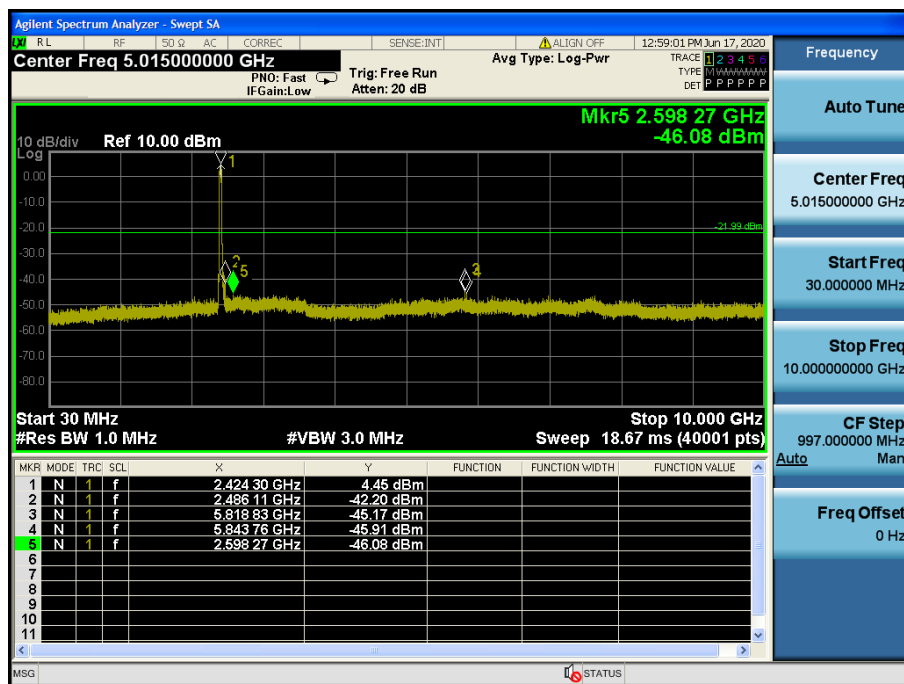
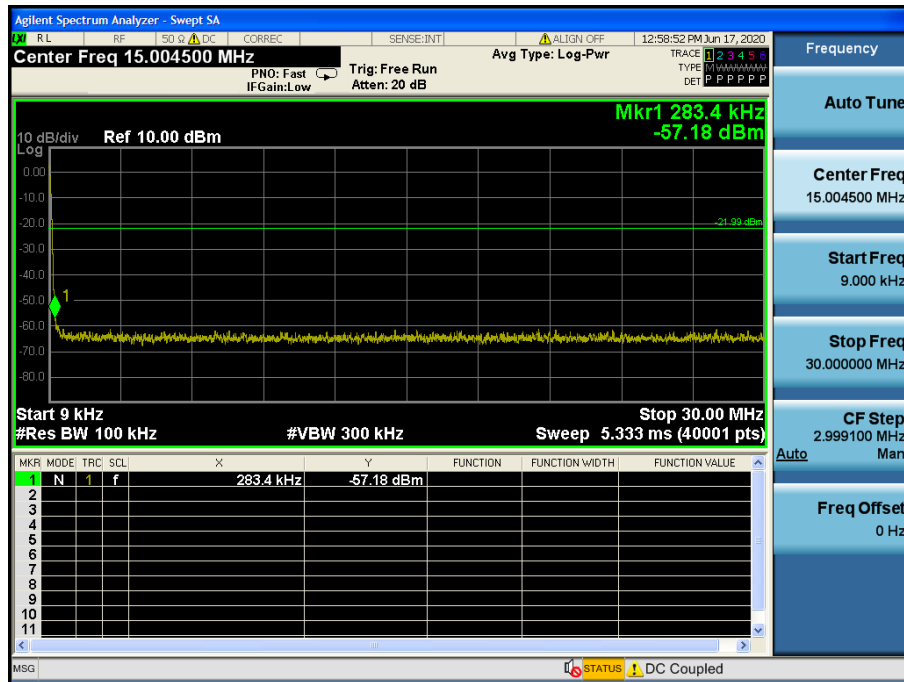
Reference



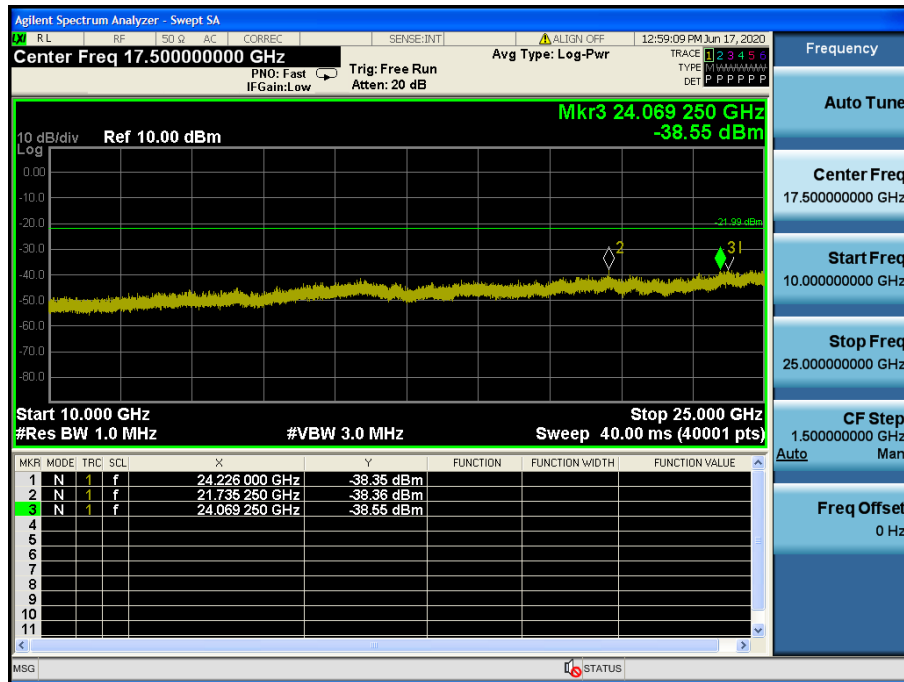
Low Band-edge



Conducted Spurious Emissions

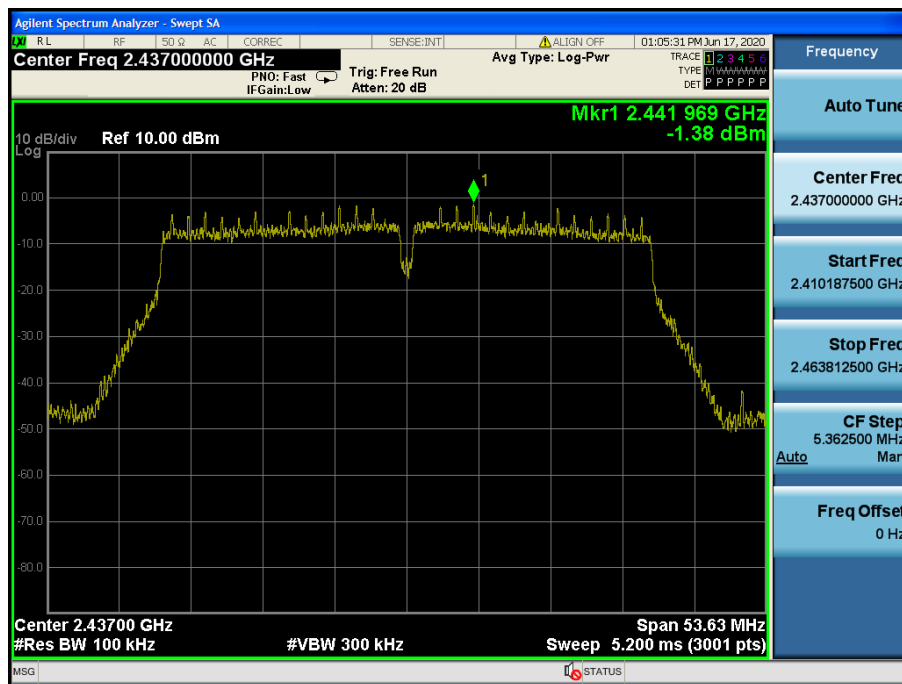


Conducted Spurious Emissions

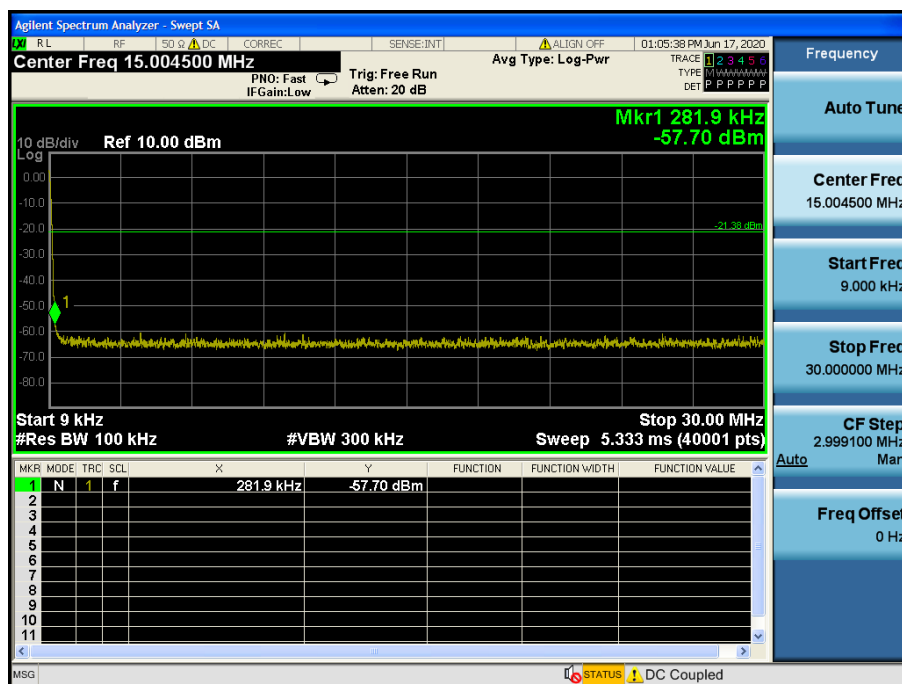


TM 4 & ANT 2 & 2 437

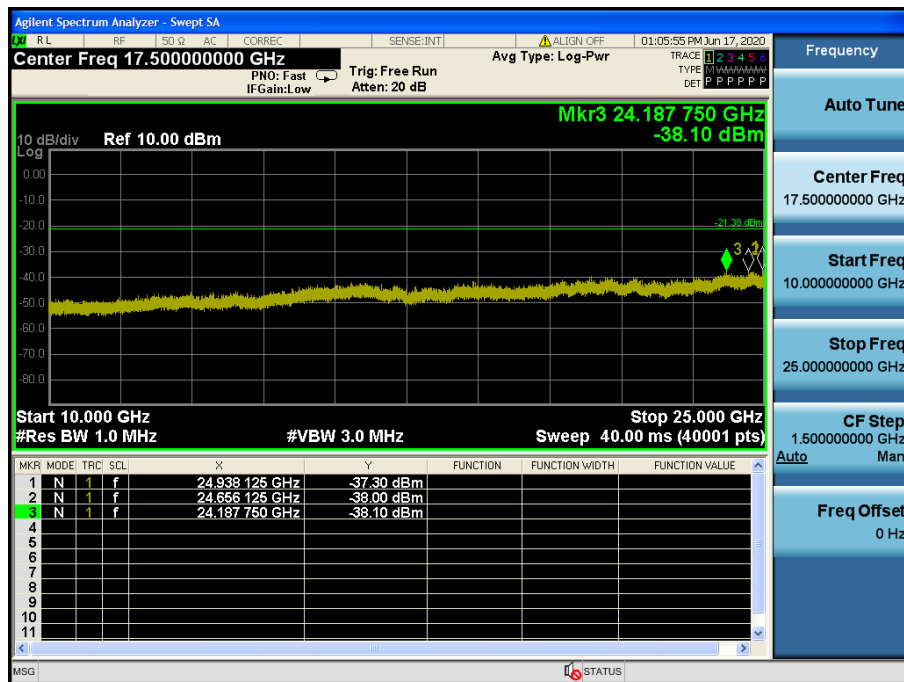
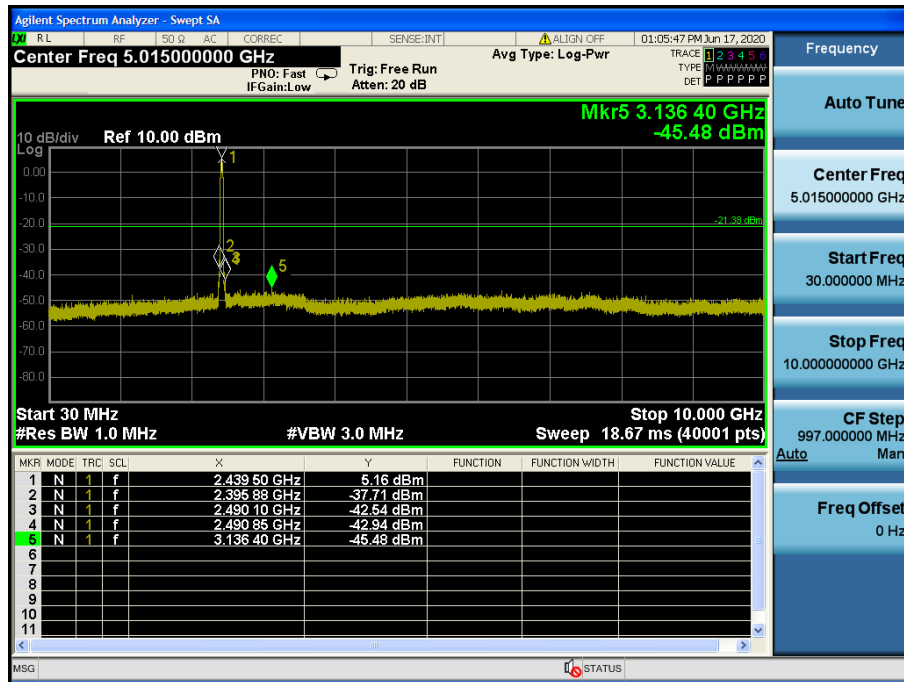
Reference



Conducted Spurious Emissions

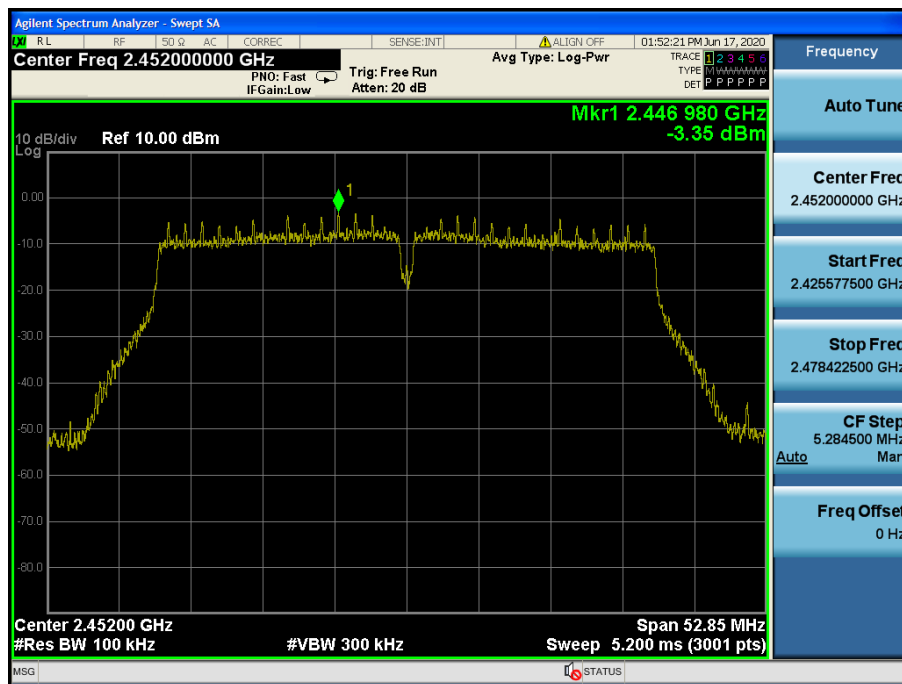


Conducted Spurious Emissions

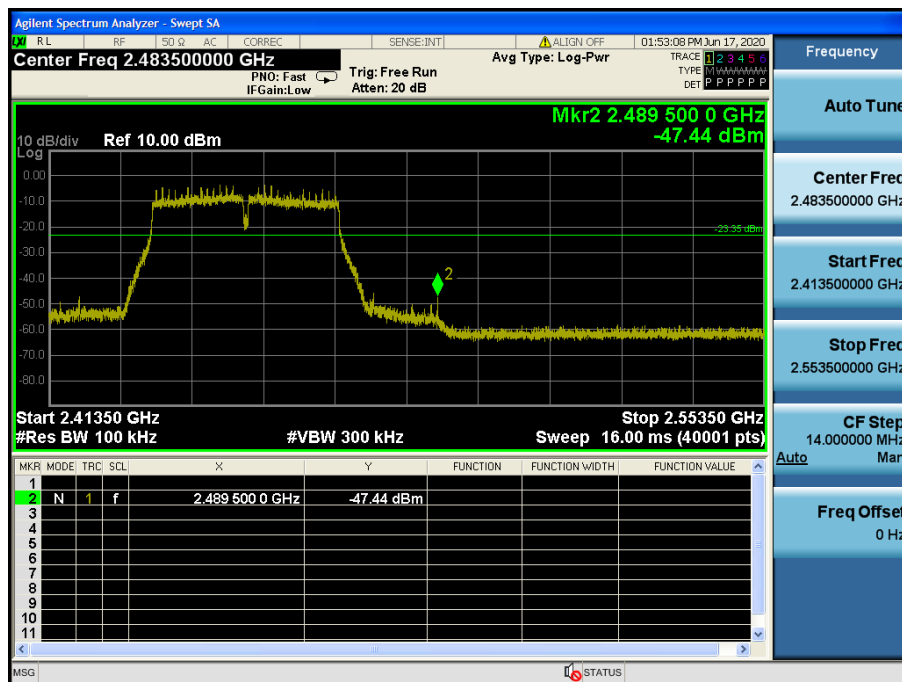


TM 4 & ANT 2 & 2 462

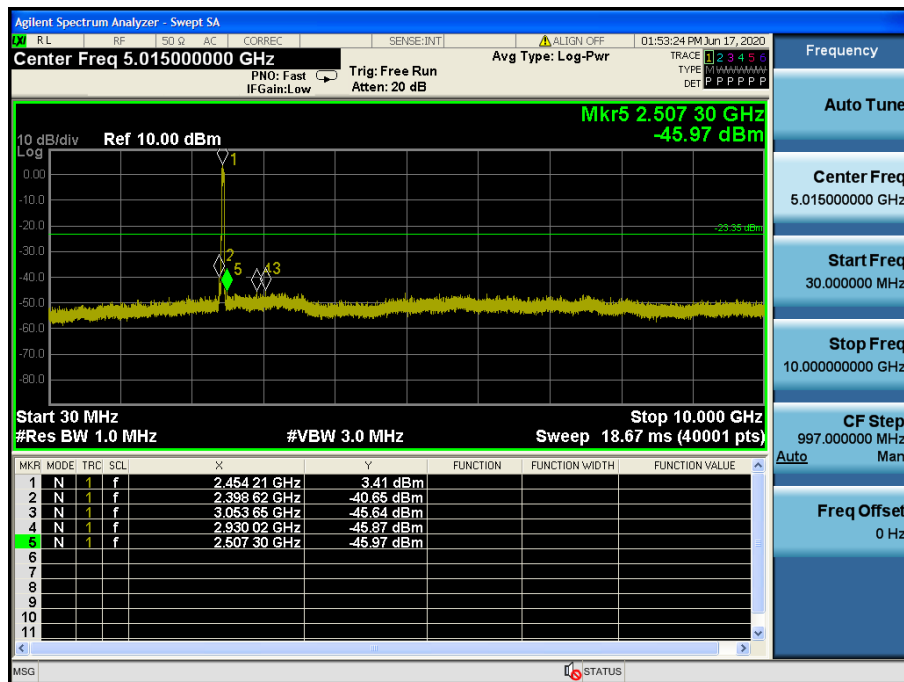
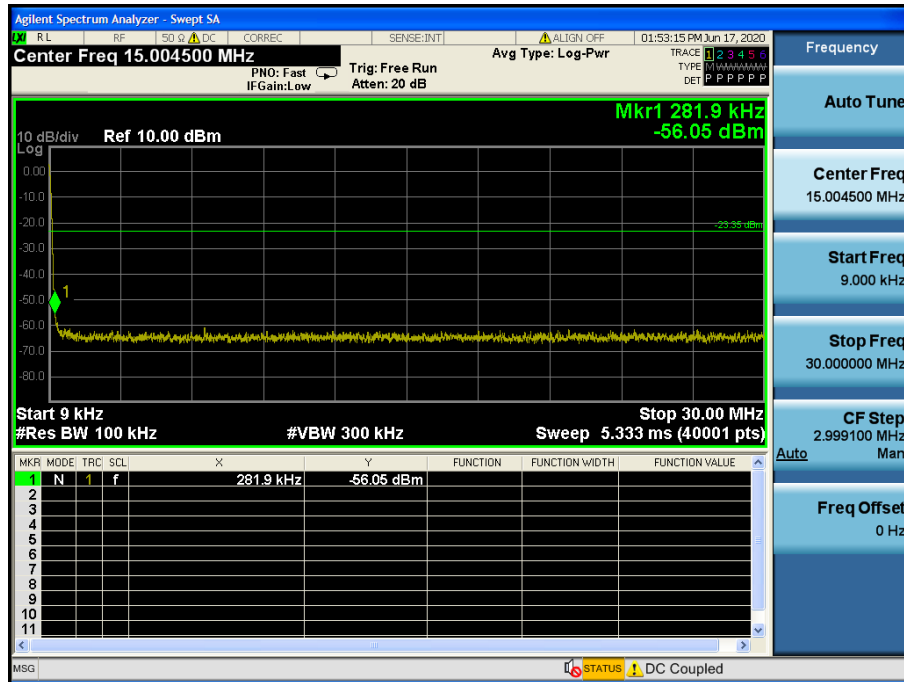
Reference



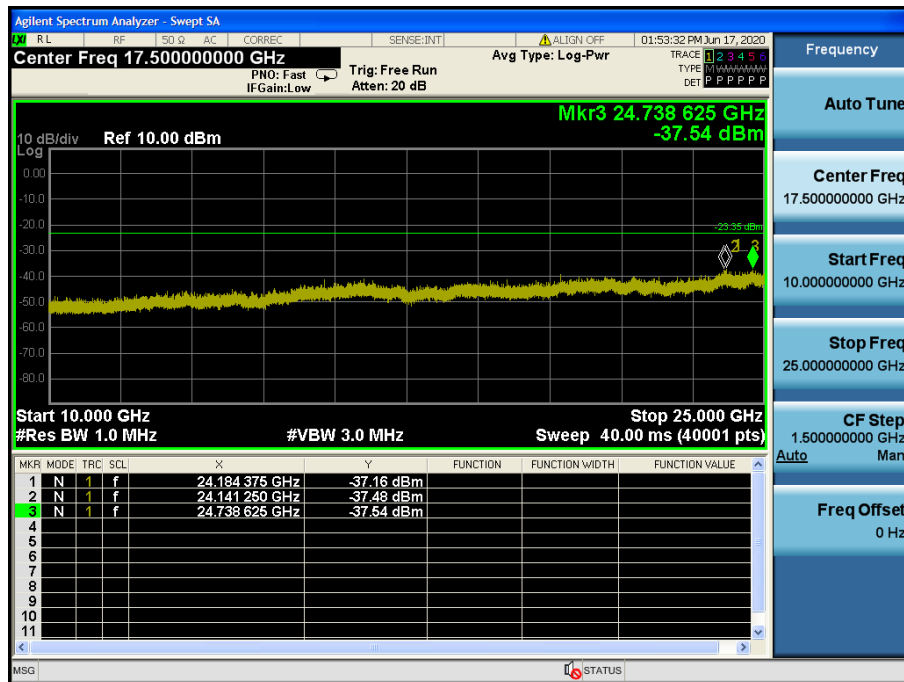
High Band-edge



Conducted Spurious Emissions



Conducted Spurious Emissions



8.5 Radiated spurious emissions

■ Test Requirements and limit, §15.247(d), §15.205, §15.209

In any 100 kHz bandwidth outside the operating frequency band, the radio frequency power that is produced by the

adiator shall be at least 20 dB below that in the 100 KHz bandwidth within the band. In case the emission fall within the restricted band specified on 15.205(a) and (b), then the 15.209(a) limit in the table below has to be followed.

▪ FCC Part 15.209(a) and (b)

| Frequency (MHz) | Limit (uV/m) | Measurement Distance (meter) |
|-----------------|---------------|------------------------------|
| 0.009 – 0.490 | 2400/F (kHz) | 300 |
| 0.490 – 1.705 | 24000/F (kHz) | 30 |
| 1.705 – 30.0 | 30 | 30 |
| 30 ~ 88 | 100 ** | 3 |
| 88 ~ 216 | 150 ** | 3 |
| 216 ~ 960 | 200 ** | 3 |
| Above 960 | 500 | 3 |

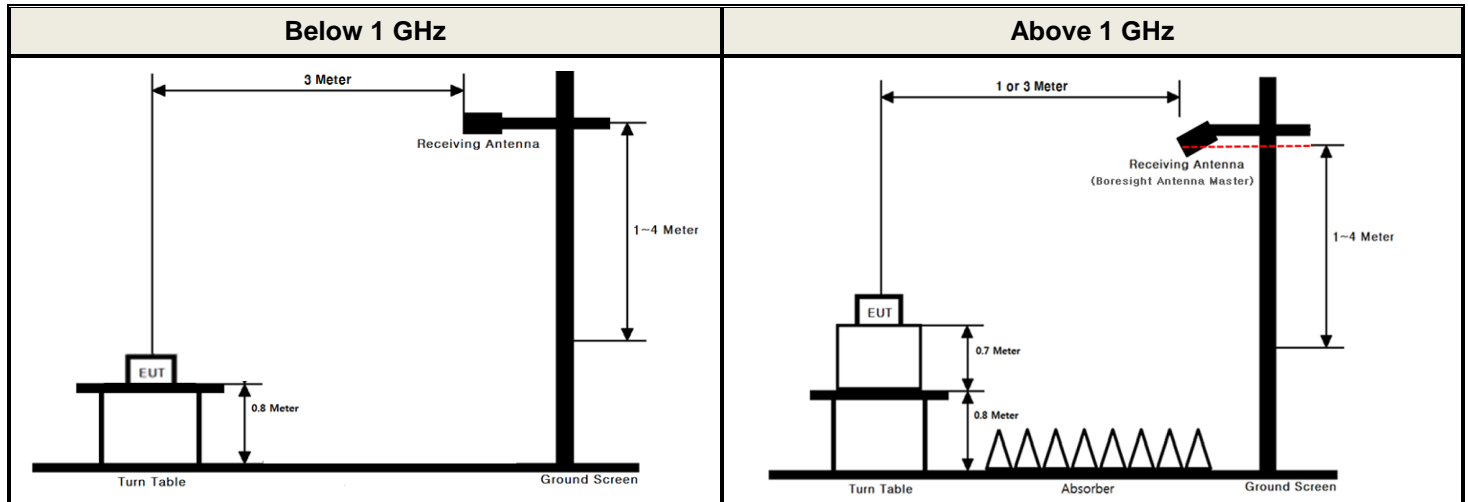
** Except as provided in 15.209(g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54 MHz - 72 MHz, 76 MHz - 88 MHz, 174 MHz - 216 MHz or 470 MHz - 806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g. 15.231 and 15.241.

▪ FCC Part 15.205 (a): Only spurious emissions are permitted in any of the frequency bands listed below:

| MHz | MHz | MHz | MHz | GHz | GHz |
|-------------------|---------------------|-------------------|-----------------|--------------|---------------|
| 0.009 ~ 0.110 | 8.41425 ~ 8.41475 | 108 ~ 121.94 | 1300 ~ 1427 | 4.5 ~ 5.15 | 14.47 ~ 14.5 |
| 0.495 ~ 0.505 | 12.29 ~ 12.293 | 123 ~ 138 | 1435 ~ 1626.5 | 5.35 ~ 5.46 | 15.35 ~ 16.2 |
| 2.1735 ~ 2.1905 | 12.51975 ~ 12.52025 | 149.9 ~ 150.05 | 1645.5 ~ 1646.5 | 7.25 ~ 7.75 | 17.7 ~ 21.4 |
| 4.125 ~ 4.128 | 12.57675 ~ 12.57725 | 156.52475 ~ | 1660 ~ 1710 | 8.025 ~ 8.5 | 22.01 ~ 23.12 |
| 4.17725 ~ 4.17775 | 13.36 ~ 13.41 | 156.52525 | 1718.8 ~ 1722.2 | 9.0 ~ 9.2 | 23.6 ~ 24.0 |
| 4.20725 ~ 4.20775 | 16.42 ~ 16.423 | 156.7 ~ 156.9 | 2200 ~ 2300 | 9.3 ~ 9.5 | 31.2 ~ 31.8 |
| 6.215 ~ 6.218 | 16.69475 ~ 16.69525 | 162.0125 ~ 167.17 | 2310 ~ 2390 | 10.6 ~ 12.7 | 36.43 ~ 36.5 |
| 6.26775 ~ 6.26825 | 16.80425 ~ 16.80475 | 167.72 ~ 173.2 | 2483.5 ~ 2500 | 13.25 ~ 13.4 | Above 38.6 |
| 6.31175 ~ 6.31225 | 25.5 ~ 25.67 | 240 ~ 285 | 2655 ~ 2900 | | |
| 8.291 ~ 8.294 | 37.5 ~ 38.25 | 322 ~ 335.4 | 3260 ~ 3267 | | |
| 8.362 ~ 8.366 | 73 ~ 74.6 | 399.90 ~ 410 | 3332 ~ 3339 | | |
| 8.37625 ~ 8.38675 | 74.8 ~ 75.2 | 608 ~ 614 | 3345.8 ~ 3358 | | |
| | | 960 ~ 1240 | 3600 ~ 4400 | | |

▪ **FCC Part 15.205(b):** The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1 000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1 000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §15.35 apply to these measurements.

Test Configuration



Test Procedure

1. The EUT is placed on a non-conductive table, emission measurements at below 1 GHz, the table height is 80 cm and above 1 GHz, the table height is 1.5 m.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 1 m or 3 m away from the receiving antenna, which is varied from 1 m to 4 m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.

■ Measurement Instrument Setting for Radiated Emission Measurements.

The radiated emission was tested according to the section 6.3, 6.4, 6.5 and 6.6 of the ANSI C63.10-2013 with following settings.

Peak Measurement

RBW = As specified in below table, VBW $\geq 3 \times$ RBW, Sweep = Auto, Detector = Peak, Trace mode = Max Hold until the trace stabilizes.

Average Measurement:

1. RBW = 1 MHz (unless otherwise specified).
2. VBW $\geq 3 \times$ RBW.
3. Detector = RMS (Number of points $\geq 2 \times$ Span / RBW)
4. Averaging type = power. (i.e., RMS)
5. Sweep time = auto.
6. Perform a trace average of at least 100 traces.
7. A correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 percent duty cycle. The correction factor is computed as follows:
 - 1) If power averaging (RMS) mode was used in step 4, then the applicable correction factor is $10 \log(1 / x)$, where x is the duty cycle.
 - 2) If linear voltage averaging mode was used in step 4, then the applicable correction factor is $20 \log(1 / x)$, where x is the duty cycle.
 - 3) If a specific emission is demonstrated to be continuous (≥ 98 percent duty cycle) rather than turning on and off with the transmit cycle, then no duty cycle correction is required for that emission.

Duty Cycle Correction factor

| Test Mode | Date rate | T _{on} (ms) | T _{on+off} (ms) | D = T _{on} / (T _{on+off}) | DCCF = 10 log(1/D) (dB) |
|-----------|-----------|----------------------|--------------------------|--|----------------------------|
| TM 1 | 1 Mbps | 12.200 | 12.300 | 0.991 9 | 0.04 |
| TM 2 | 54 Mbps | 0.244 | 0.333 | 0.733 3 | 1.35 |
| TM 3 | MCS 8 | 0.197 | 0.284 | 0.692 5 | 1.60 |
| TM 4 | MCS 7 | 0.129 | 0.222 | 0.578 8 | 2.37 |

Note1: Where, T= Transmission duration / D= Duty cycle

Note2: Please refer to the appendix I for duty cycle plots.

■ Test Results: **Comply**

Please refer to next page for data table and the appendix I for worst data plots.

Test Notes.

- The radiated emissions were investigated 9 kHz to 25 GHz. And no other spurious and harmonic emissions were found below listed frequencies.
- Sample Calculation.

$$\text{Margin} = \text{Limit} - \text{Result} \quad / \quad \text{Result} = \text{Reading} + \text{T.F} + \text{DCCF} + \text{DCF} \quad / \quad \text{T.F} = \text{AF} + \text{CL} - \text{AG}$$

Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain,
DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor
- Information of Distance Factor
For finding emissions, the test distance might be reduced from 3 m to 1 m. In this case, the distance factor(-9.54 dB) is applied to the result.
Calculation of distance factor = $20 \log(\text{applied distance} / \text{required distance}) = 20 \log(1 \text{ m} / 3 \text{ m}) = -9.54 \text{ dB}$
When distance factor is "N/A", the distance is 3 m and distance factor is not applied.

Radiated Spurious Emissions data(9 kHz ~ 25 GHz) : TM 1 Normal _ ANT 1

| Tested Frequency (MHz) | Frequency (MHz) | ANT Pol | EUT Position (Axis) | Detector Mode | Reading (dBuV) | T.F (dB/m) | DCCF (dB) | DCF (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|------------------------|-----------------|---------|---------------------|---------------|----------------|------------|-----------|----------|-----------------|----------------|-------------|
| 2 412 | 2 388.78 | V | Z | PK | 50.52 | 4.80 | N/A | N/A | 55.32 | 74.00 | 18.68 |
| | 2 388.92 | V | Z | AV | 40.91 | 4.80 | N/A | N/A | 45.71 | 54.00 | 8.29 |
| | 4 823.93 | H | Z | PK | 52.39 | 0.93 | N/A | N/A | 53.32 | 74.00 | 20.68 |
| | 4 823.97 | H | Z | AV | 45.00 | 0.93 | N/A | N/A | 45.93 | 54.00 | 8.07 |
| 2 437 | 4 873.92 | H | Z | PK | 52.24 | 1.17 | N/A | N/A | 53.41 | 74.00 | 20.59 |
| | 4 874.02 | H | Z | AV | 45.36 | 1.17 | N/A | N/A | 46.53 | 54.00 | 7.47 |
| 2 462 | 2 484.09 | V | Z | PK | 50.78 | 5.26 | N/A | N/A | 56.04 | 74.00 | 17.96 |
| | 2 484.21 | V | Z | AV | 41.07 | 5.26 | N/A | N/A | 46.33 | 54.00 | 7.67 |
| | 4 924.04 | H | Z | PK | 52.92 | 1.45 | N/A | N/A | 54.37 | 74.00 | 19.63 |
| | 4 923.98 | H | Z | AV | 44.83 | 1.45 | N/A | N/A | 46.28 | 54.00 | 7.72 |

Radiated Spurious Emissions data(9 kHz ~ 25 GHz) : TM 2 Normal

| Tested Frequency (MHz) | Frequency (MHz) | ANT Pol | EUT Position (Axis) | Detector Mode | Reading (dBuV) | T.F (dB/m) | DCCF (dB) | DCF (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|------------------------|-----------------|---------|---------------------|---------------|----------------|------------|-----------|----------|-----------------|----------------|-------------|
| 2 412 | 2 389.45 | H | Z | PK | 50.28 | 4.80 | N/A | N/A | 55.08 | 74.00 | 18.92 |
| | 2 389.28 | H | Z | AV | 40.53 | 4.80 | 1.35 | N/A | 46.68 | 54.00 | 7.32 |
| | 4 823.84 | H | Z | PK | 49.11 | 0.93 | N/A | N/A | 50.04 | 74.00 | 23.96 |
| | 4 823.58 | H | Z | AV | 38.76 | 0.93 | 1.35 | N/A | 41.04 | 54.00 | 12.96 |
| 2 437 | 4 874.04 | H | Z | PK | 49.83 | 1.17 | N/A | N/A | 51.00 | 74.00 | 23.00 |
| | 4 874.16 | H | Z | AV | 38.91 | 1.18 | 1.35 | N/A | 41.44 | 54.00 | 12.56 |
| 2 462 | 2 484.22 | H | Z | PK | 50.84 | 5.26 | N/A | N/A | 56.10 | 74.00 | 17.90 |
| | 2 484.15 | H | Z | AV | 41.31 | 5.26 | 1.35 | N/A | 47.92 | 54.00 | 6.08 |
| | 4 924.14 | H | Z | PK | 49.39 | 1.45 | N/A | N/A | 50.84 | 74.00 | 23.16 |
| | 4 924.12 | H | Z | AV | 38.89 | 1.45 | 1.35 | N/A | 41.69 | 54.00 | 12.31 |

Radiated Spurious Emissions data(9 kHz ~ 25 GHz) : TM 3 Normal

| Tested Frequency (MHz) | Frequency (MHz) | ANT Pol | EUT Position (Axis) | Detector Mode | Reading (dBuV) | T.F (dB/m) | DCCF (dB) | DCF (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|------------------------|-----------------|---------|---------------------|---------------|----------------|------------|-----------|----------|-----------------|----------------|-------------|
| 2 412 | 2 389.71 | H | Z | PK | 53.23 | 4.80 | N/A | N/A | 58.03 | 74.00 | 15.97 |
| | 2 389.86 | H | Z | AV | 42.30 | 4.80 | 1.60 | N/A | 48.70 | 54.00 | 5.30 |
| | 4 824.33 | H | Z | PK | 49.13 | 0.93 | N/A | N/A | 50.06 | 74.00 | 23.94 |
| | 4 824.18 | H | Z | AV | 38.68 | 0.93 | 1.60 | N/A | 41.21 | 54.00 | 12.79 |
| 2 437 | 4 874.23 | H | Z | PK | 49.80 | 1.18 | N/A | N/A | 50.98 | 74.00 | 23.02 |
| | 4 874.22 | H | Z | AV | 39.00 | 1.18 | 1.60 | N/A | 41.78 | 54.00 | 12.22 |
| 2 462 | 2 483.63 | H | Z | PK | 59.50 | 5.25 | N/A | N/A | 64.75 | 74.00 | 9.25 |
| | 2 483.79 | H | Z | AV | 43.76 | 5.26 | 1.60 | N/A | 50.62 | 54.00 | 3.38 |
| | 4 924.04 | H | Z | PK | 50.49 | 1.45 | N/A | N/A | 51.94 | 74.00 | 22.06 |
| | 4 924.09 | H | Z | AV | 38.90 | 1.45 | 1.60 | N/A | 41.95 | 54.00 | 12.05 |

Radiated Spurious Emissions data(9 kHz ~ 25 GHz) : TM 4 Normal

| Tested Frequency (MHz) | Frequency (MHz) | ANT Pol | EUT Position (Axis) | Detector Mode | Reading (dBuV) | T.F (dB/m) | DCCF (dB) | DCF (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|------------------------|-----------------|---------|---------------------|---------------|----------------|------------|-----------|----------|-----------------|----------------|-------------|
| 2 412 | 2 388.78 | H | Z | PK | 55.02 | 4.80 | N/A | N/A | 59.82 | 74.00 | 14.18 |
| | 2 388.62 | H | Z | AV | 43.52 | 4.80 | 2.37 | N/A | 50.69 | 54.00 | 3.31 |
| | 4 844.20 | H | Z | PK | 49.41 | 1.09 | N/A | N/A | 50.50 | 74.00 | 23.50 |
| | 4 844.48 | H | Z | AV | 38.95 | 1.09 | 2.37 | N/A | 42.41 | 54.00 | 11.59 |
| 2 437 | 4 873.61 | H | Z | PK | 50.01 | 1.17 | N/A | N/A | 51.18 | 74.00 | 22.82 |
| | 4 873.64 | H | Z | AV | 38.87 | 1.17 | 2.37 | N/A | 42.41 | 54.00 | 11.59 |
| 2 462 | 2 484.58 | H | Z | PK | 55.86 | 5.27 | N/A | N/A | 61.13 | 74.00 | 12.87 |
| | 2 484.71 | H | Z | AV | 43.44 | 5.27 | 2.37 | N/A | 51.08 | 54.00 | 2.92 |
| | 4 904.23 | H | Z | PK | 50.09 | 1.36 | N/A | N/A | 51.45 | 74.00 | 22.55 |
| | 4 904.40 | H | Z | AV | 38.89 | 1.36 | 2.37 | N/A | 42.62 | 54.00 | 11.38 |

8.6 Power-line conducted emissions

■ Test Requirements and limit, §15.207

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 uH/50 ohm line impedance stabilization network (LISN).

Compliance with the provision of this paragraph shall on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower applies at the boundary between the frequency ranges.

| Frequency Range (MHz) | Conducted Limit (dBuV) | |
|-----------------------|------------------------|------------|
| | Quasi-Peak | Average |
| 0.15 ~ 0.5 | 66 to 56 * | 56 to 46 * |
| 0.5 ~ 5 | 56 | 46 |
| 5 ~ 30 | 60 | 50 |

* Decreases with the logarithm of the frequency

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

■ Test Procedure

1. The EUT is placed on a wooden table 80 cm above the reference ground plane.
2. The EUT is connected via LISN to the test power supply.
3. The measurement results are obtained as described below:
4. Detectors – Quasi Peak and Average Detector.

■ Test Results: **Comply**(Refer to next page.)

The worst data was reported.

■ RESULT PLOTS

AC Line Conducted Emissions (Graph)

TM 2 & Highest

Results of Conducted Emission

DTNC

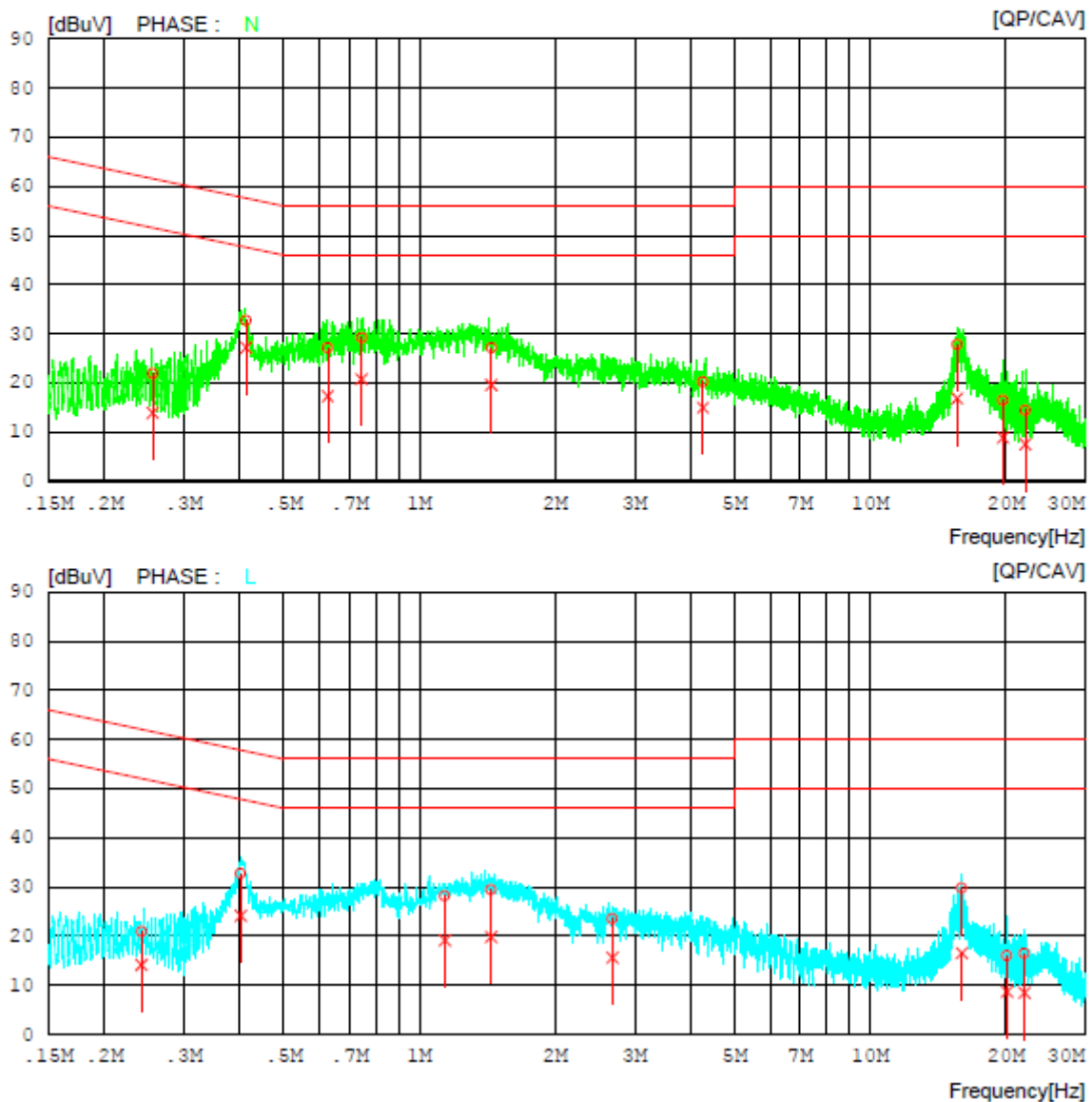
Date 2020-06-05

Order No.
Model No. PM451
Serial No.
Test Condition 2.4G WLAN

Reference No.
Power Supply 120 V, 60 Hz
Temp/Humi. 23 °C / 35 %
Operator J.H. Bang

Memo

LIMIT : FCC P15.207 QP
FCC P15.207 AV



AC Line Conducted Emissions (List)

TM 2 & Highest

Results of Conducted Emission

DTNC

Date 2020-06-05

Order No.
Model No. PM451
Serial No.
Test Condition 2.4G WLAN

Reference No.
Power Supply 120 V, 60 Hz
Temp/Humi. 23 °C / 35 %
Operator J.H. Bang

Memo

LIMIT : FCC P15.207 QP
FCC P15.207 AV

| NO | FREQ [MHz] | READING | | C. FACTOR [dB] | RESULT | | LIMIT | | MARGIN | | PHASE |
|----|---------------|--------------|---------------|-------------------|--------------|---------------|--------------|---------------|--------------|---------------|-------|
| | | QP [dBuV] | CAV [dBuV] | | QP [dBuV] | CAV [dBuV] | QP [dBuV] | CAV [dBuV] | QP [dBuV] | CAV [dBuV] | |
| 1 | 0.25565 | 12.03 | 4.00 | 9.95 | 21.98 | 13.95 | 61.57 | 51.57 | 39.59 | 37.62 | N |
| 2 | 0.41216 | 22.77 | 17.23 | 9.97 | 32.74 | 27.20 | 57.60 | 47.60 | 24.86 | 20.40 | N |
| 3 | 0.62577 | 17.21 | 7.32 | 9.97 | 27.18 | 17.29 | 56.00 | 46.00 | 28.82 | 28.71 | N |
| 4 | 0.74417 | 19.20 | 10.81 | 9.97 | 29.17 | 20.78 | 56.00 | 46.00 | 26.83 | 25.22 | N |
| 5 | 1.44295 | 17.23 | 9.57 | 9.99 | 27.22 | 19.56 | 56.00 | 46.00 | 28.78 | 26.44 | N |
| 6 | 4.25368 | 10.12 | 4.87 | 10.13 | 20.25 | 15.00 | 56.00 | 46.00 | 35.75 | 31.00 | N |
| 7 | 15.59949 | 17.37 | 6.42 | 10.45 | 27.82 | 16.87 | 60.00 | 50.00 | 32.18 | 33.13 | N |
| 8 | 19.70551 | 5.94 | -1.62 | 10.50 | 16.44 | 8.88 | 60.00 | 50.00 | 43.56 | 41.12 | N |
| 9 | 22.10058 | 3.85 | -2.97 | 10.53 | 14.38 | 7.56 | 60.00 | 50.00 | 45.62 | 42.44 | N |
| 10 | 0.24161 | 10.95 | 4.21 | 9.94 | 20.89 | 14.15 | 62.04 | 52.04 | 41.15 | 37.89 | L |
| 11 | 0.40079 | 22.79 | 14.14 | 9.95 | 32.74 | 24.09 | 57.84 | 47.84 | 25.10 | 23.75 | L |
| 12 | 1.13678 | 18.17 | 9.15 | 9.98 | 28.15 | 19.13 | 56.00 | 46.00 | 27.85 | 26.87 | L |
| 13 | 1.44215 | 19.37 | 9.81 | 10.00 | 29.37 | 19.81 | 56.00 | 46.00 | 26.63 | 26.19 | L |
| 14 | 2.68017 | 13.44 | 5.56 | 10.05 | 23.49 | 15.61 | 56.00 | 46.00 | 32.51 | 30.39 | L |
| 15 | 15.97385 | 19.28 | 6.09 | 10.44 | 29.72 | 16.53 | 60.00 | 50.00 | 30.28 | 33.47 | L |
| 16 | 20.12744 | 5.46 | -1.81 | 10.47 | 15.93 | 8.66 | 60.00 | 50.00 | 44.07 | 41.34 | L |
| 17 | 21.98730 | 5.99 | -2.11 | 10.50 | 16.49 | 8.39 | 60.00 | 50.00 | 43.51 | 41.61 | L |

8.7 Occupied Bandwidth

Test Requirements, RSS-Gen [6.7]

When an occupied bandwidth value is not specified in the applicable RSS, the transmitted signal bandwidth to be reported is to be its 99 % emission bandwidth, as calculated or measured.

■ TEST CONFIGURATION

Refer to the APPENDIX I.

■ TEST PROCEDURE

- The transmitter shall be operated at its maximum carrier power measured under normal test conditions.
- The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts.
- The resolution bandwidth (RBW) shall be in the range of 1 % to 5 % of the occupied bandwidth (OBW) and video bandwidth (VBW) shall be approximately 3x RBW.

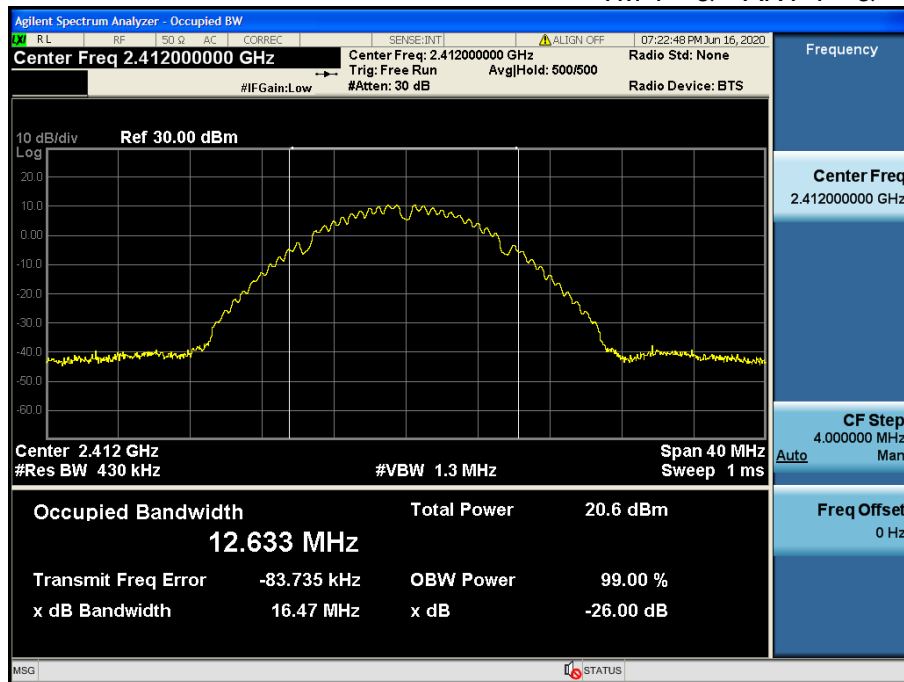
■ TEST RESULTS: **Comply**

| Test Mode | Frequency | Test Results[MHz] | |
|-----------|-----------|-------------------|-------|
| | | ANT 1 | ANT 2 |
| TM 1 | 2 412 | 12.63 | 12.52 |
| | 2 437 | 12.77 | 12.81 |
| | 2 462 | 12.93 | 12.94 |
| TM 2 | 2 412 | 16.92 | 16.95 |
| | 2 437 | 17.00 | 17.00 |
| | 2 462 | 17.04 | 17.06 |
| TM 3 | 2 412 | 18.01 | 18.02 |
| | 2 437 | 18.12 | 18.07 |
| | 2 462 | 18.15 | 18.16 |
| TM 4 | 2 422 | 36.81 | 36.41 |
| | 2 437 | 36.83 | 36.42 |
| | 2 452 | 36.78 | 36.37 |

RESULT PLOTS

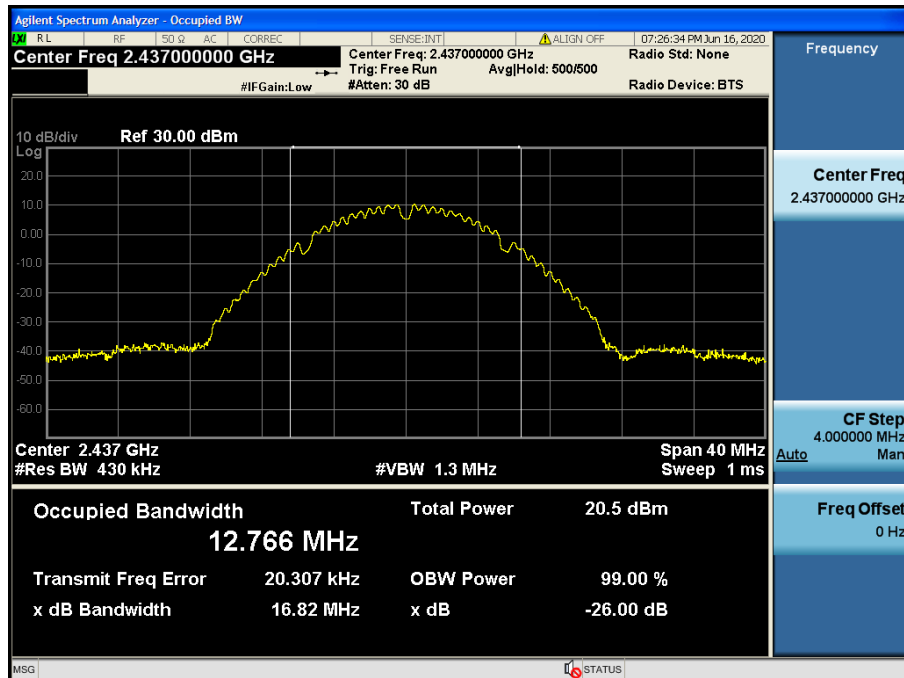
Occupied Bandwidth

TM 1 & ANT 1 & 2 412



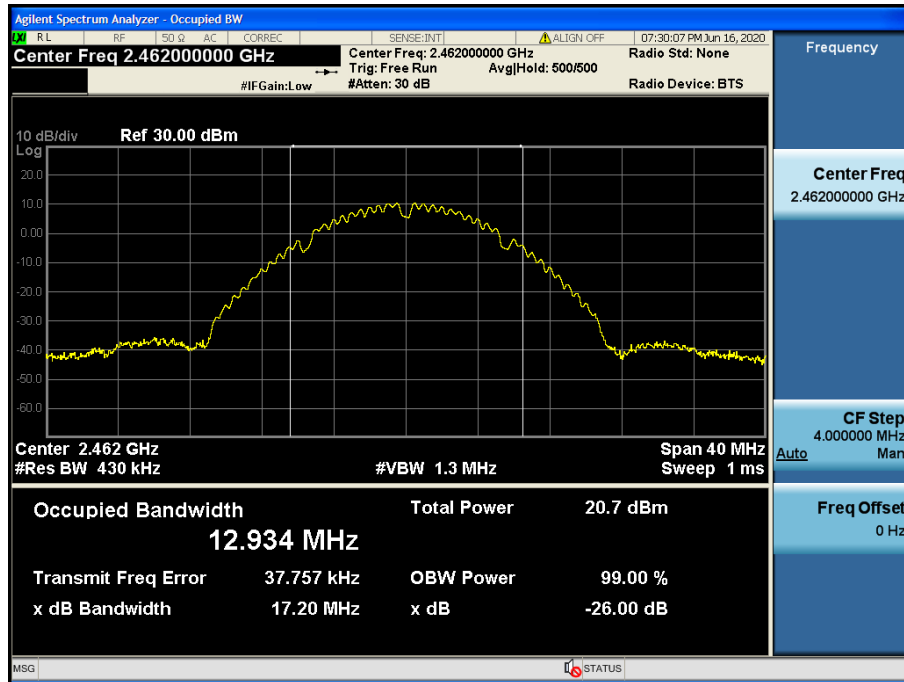
Occupied Bandwidth

TM 1 & ANT 1 & 2 437



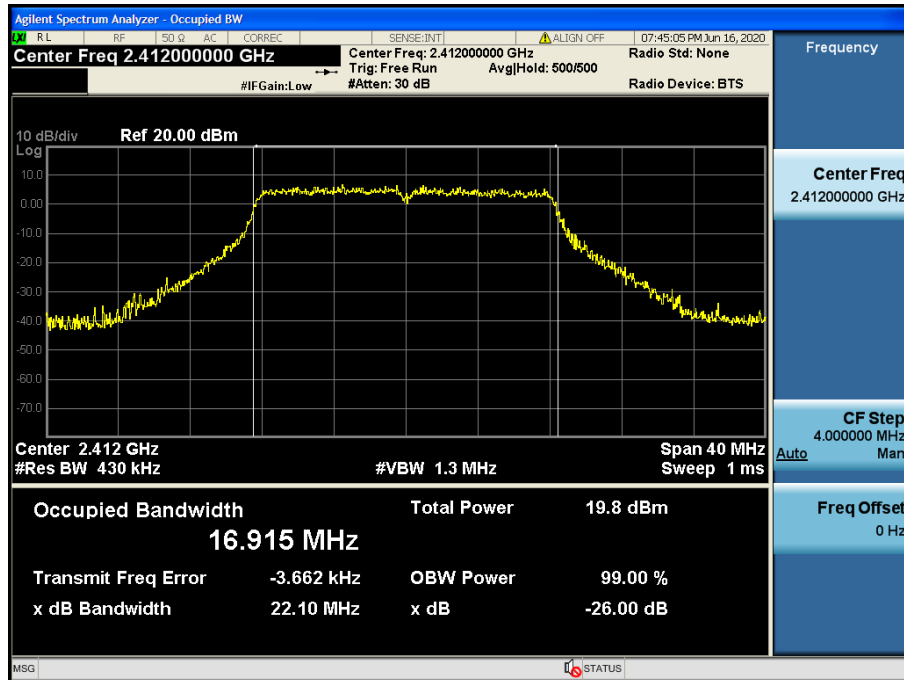
Occupied Bandwidth

TM 1 & ANT 1 & 2 462



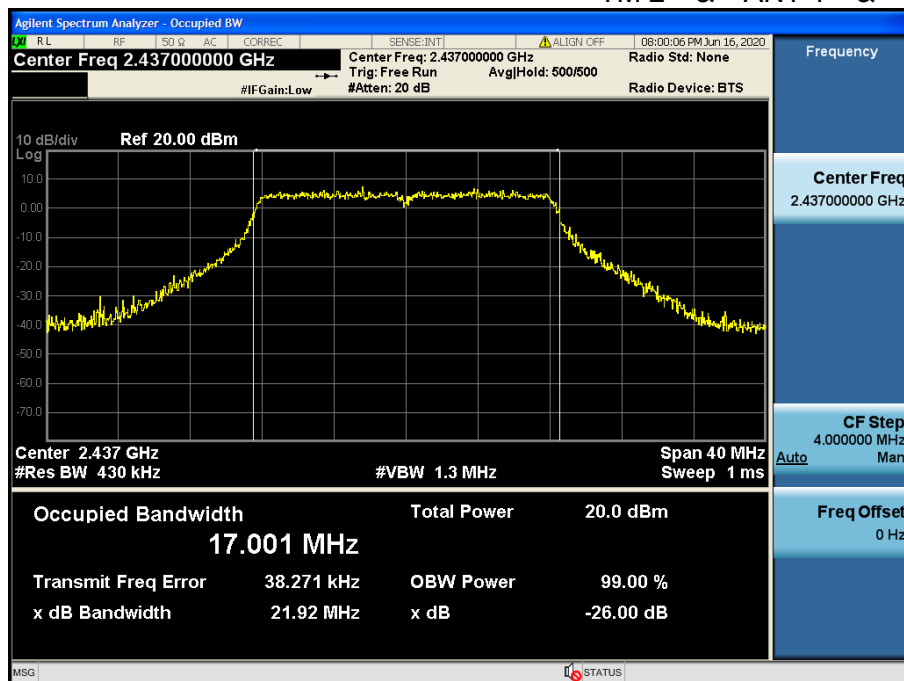
Occupied Bandwidth

TM 2 & ANT 1 & 2 412



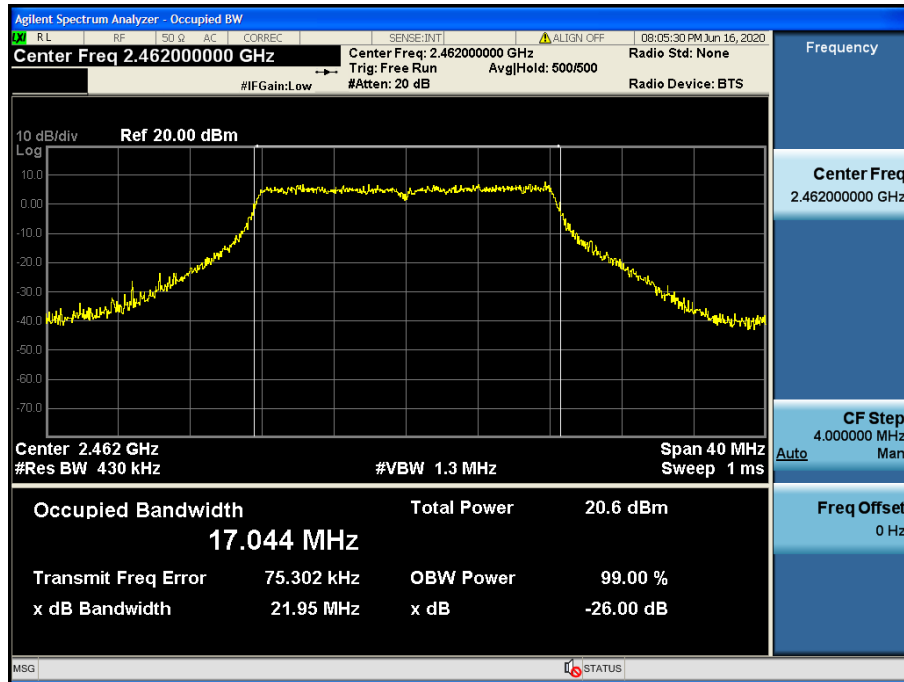
Occupied Bandwidth

TM 2 & ANT 1 & 2 437



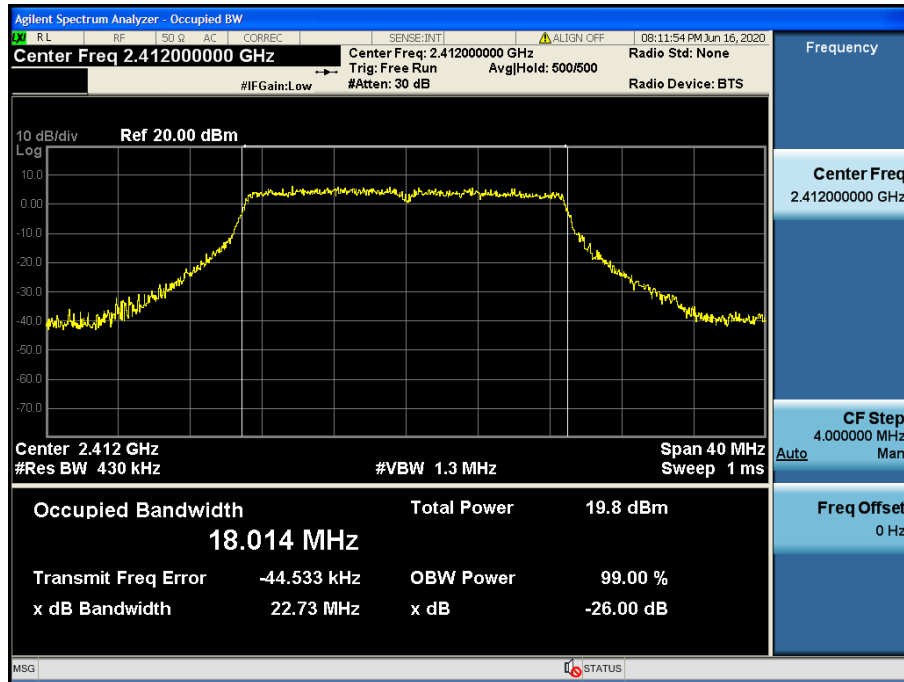
Occupied Bandwidth

TM 2 & ANT 1 & 2 462



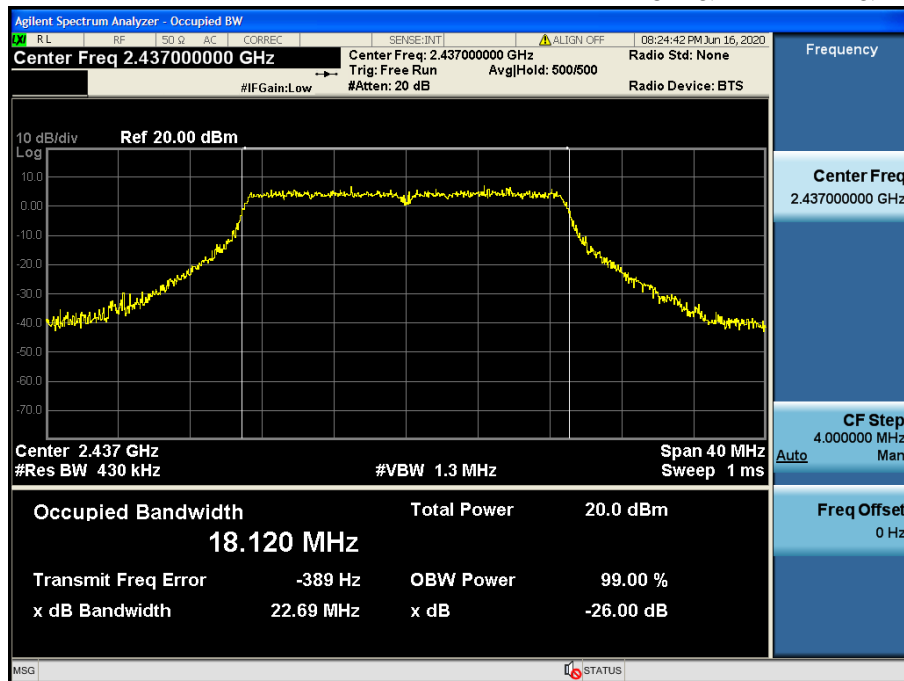
Occupied Bandwidth

TM 3 & ANT 1 & 2 412



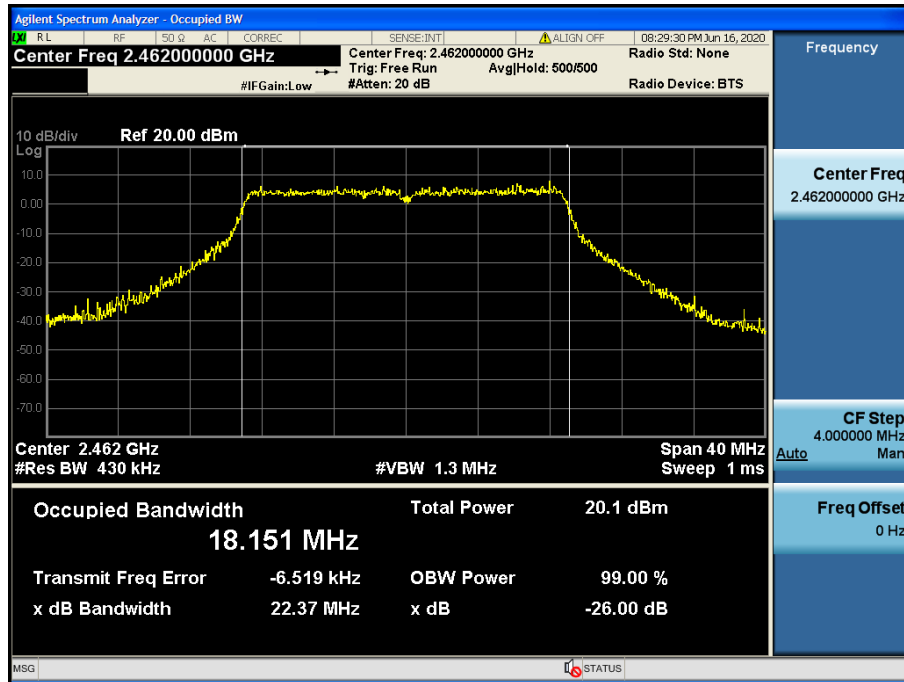
Occupied Bandwidth

TM 3 & ANT 1 & 2 437



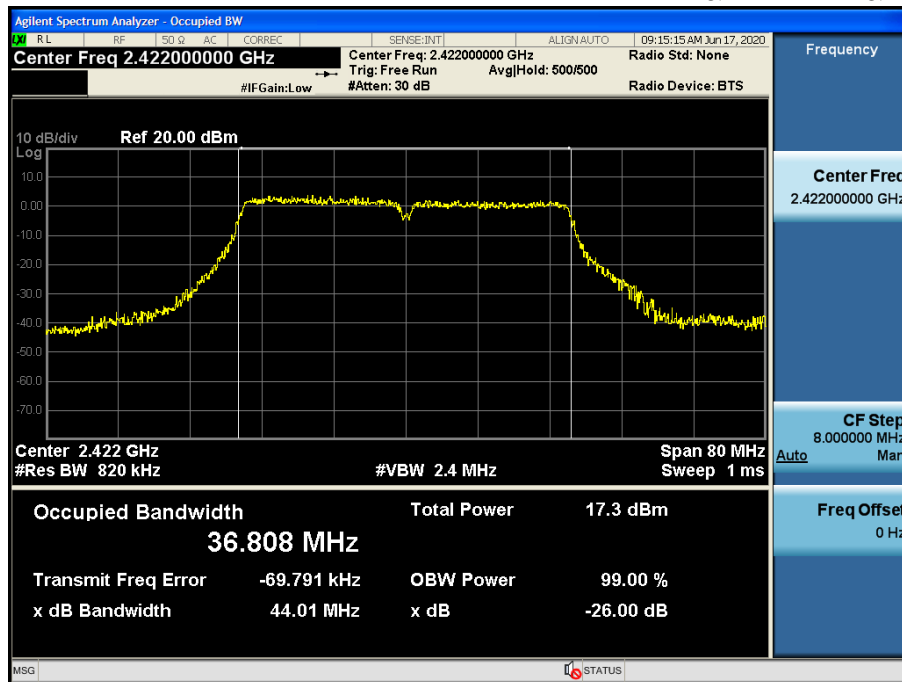
Occupied Bandwidth

TM 3 & ANT 1 & 2 462



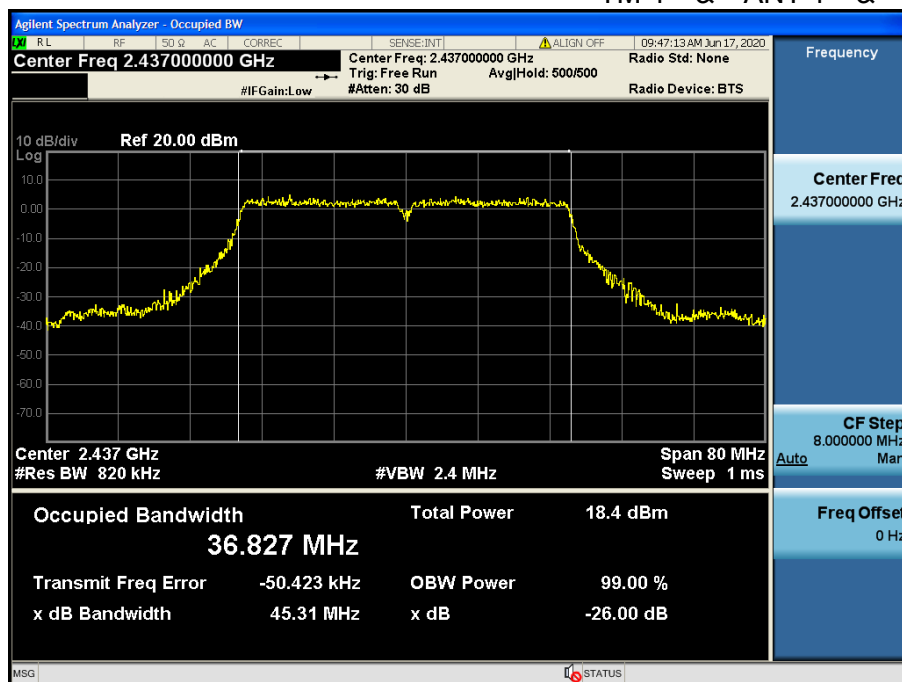
Occupied Bandwidth

TM 4 & ANT 1 & 2422



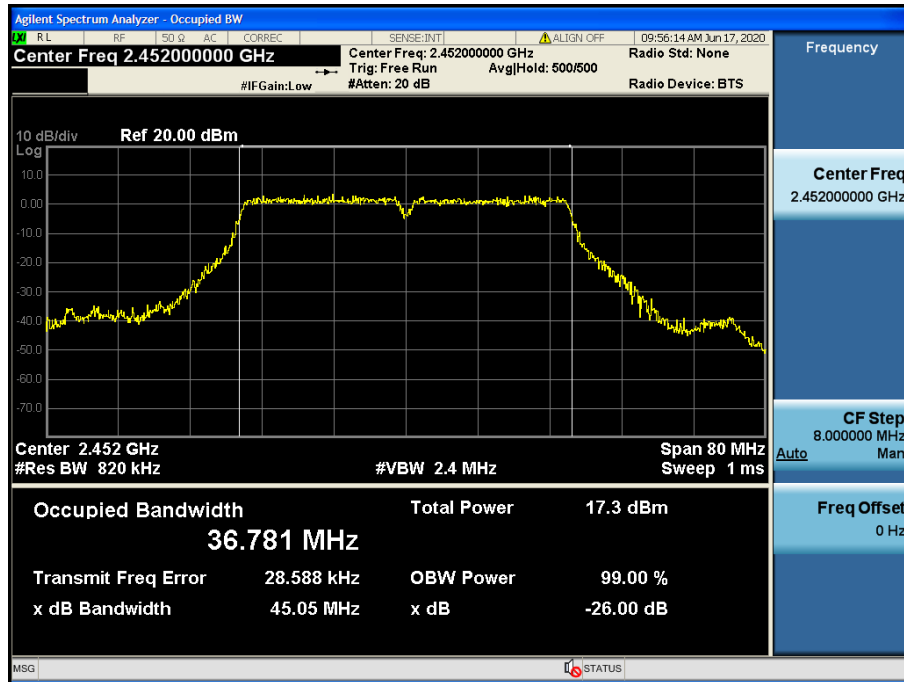
Occupied Bandwidth

TM 4 & ANT 1 & 2437



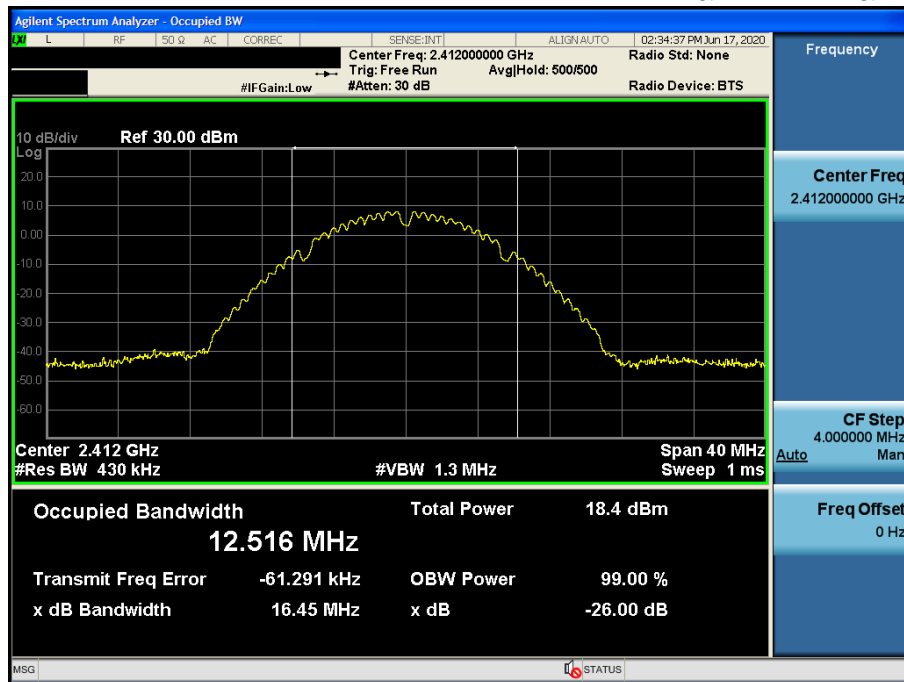
Occupied Bandwidth

TM 4 & ANT 1 & 2 452



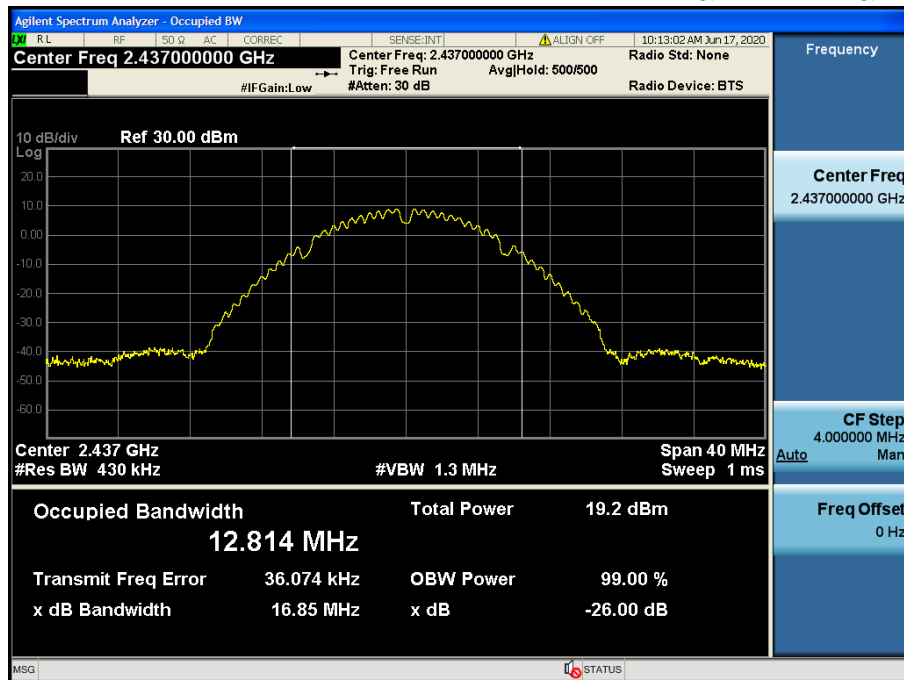
Occupied Bandwidth

TM 1 & ANT 2 & 2 412



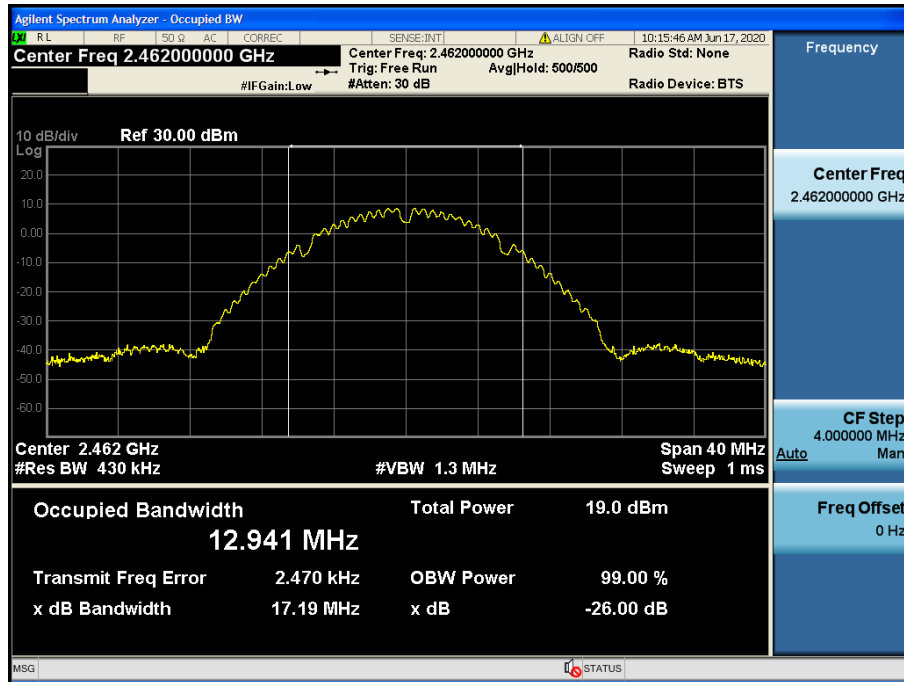
Occupied Bandwidth

TM 1 & ANT 2 & 2 437



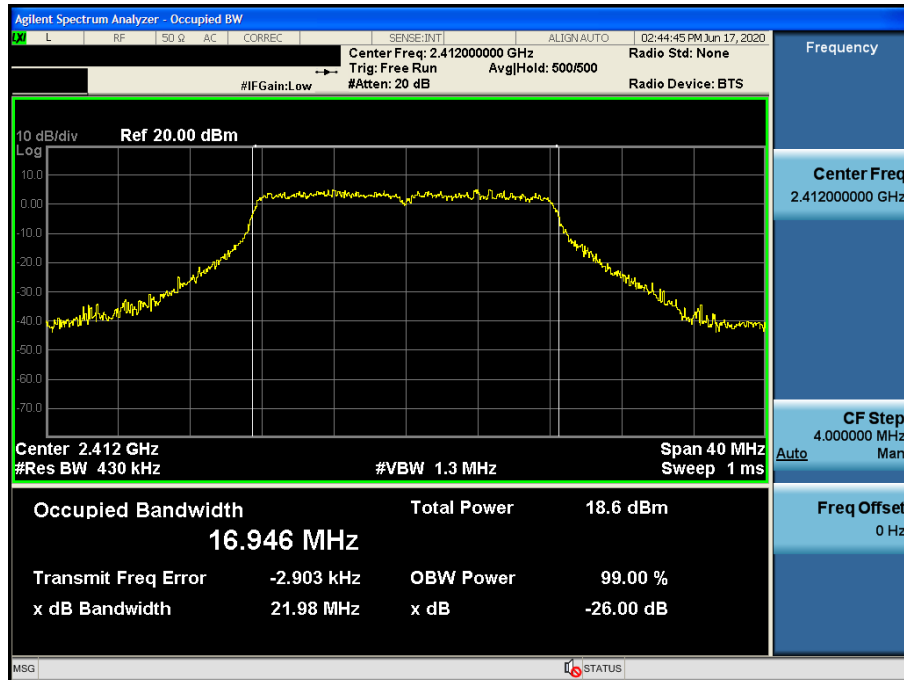
Occupied Bandwidth

TM 1 & ANT 2 & 2 462



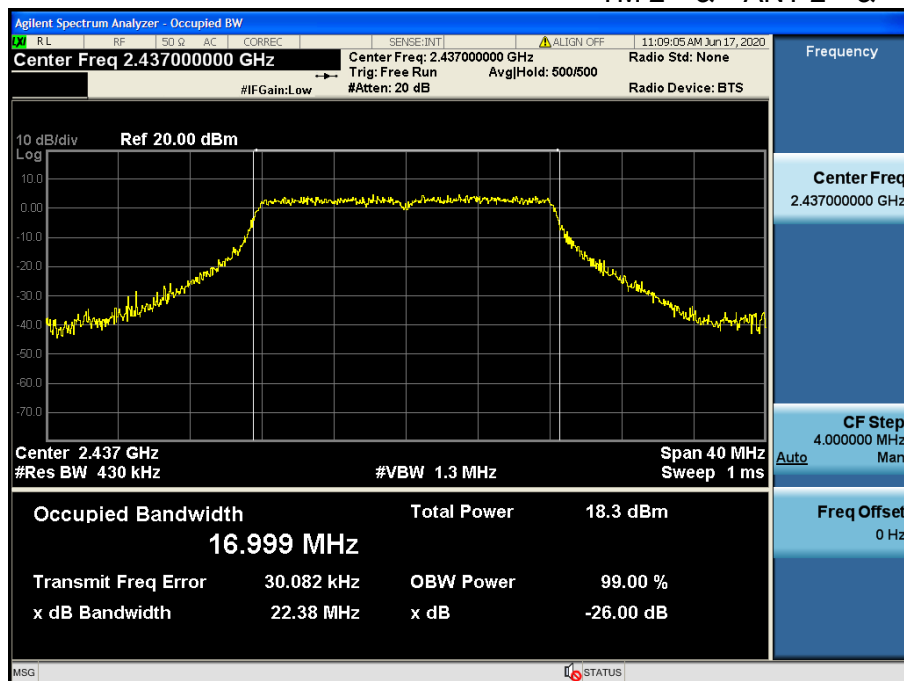
Occupied Bandwidth

TM 2 & ANT 2 & 2 412



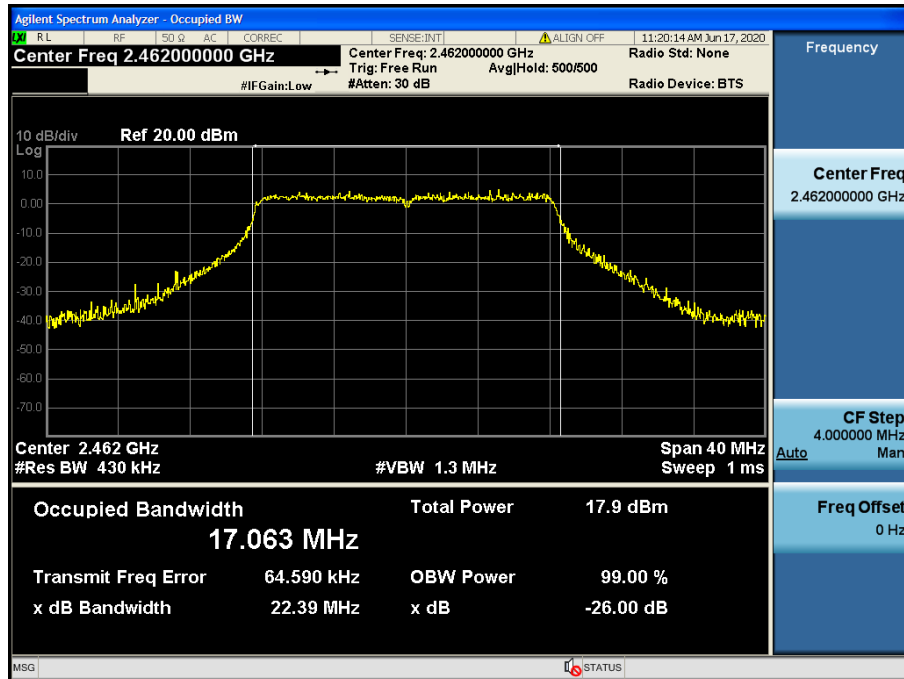
Occupied Bandwidth

TM 2 & ANT 2 & 2 437



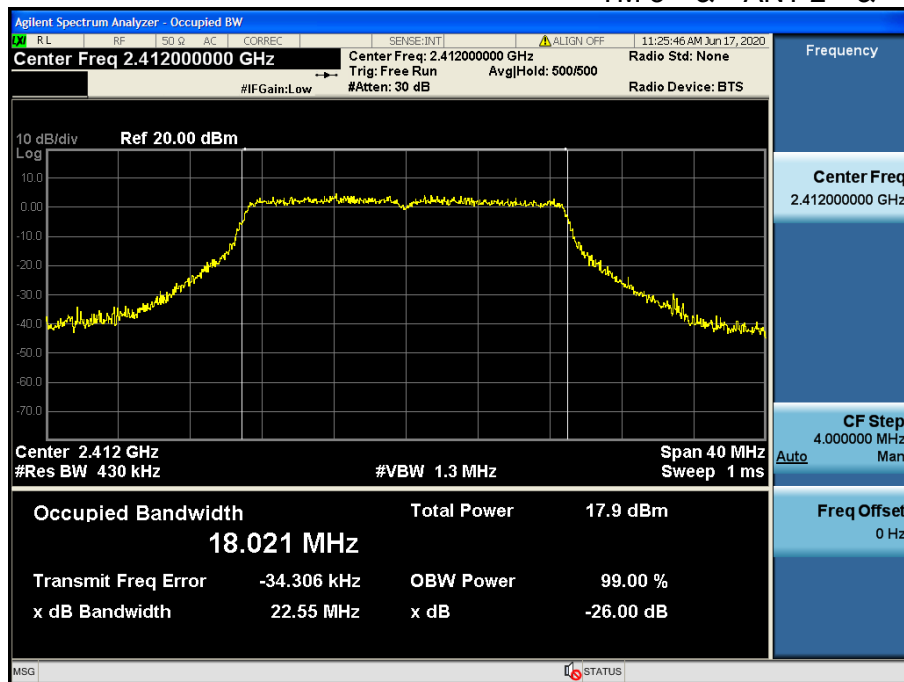
Occupied Bandwidth

TM 2 & ANT 2 & 2 462



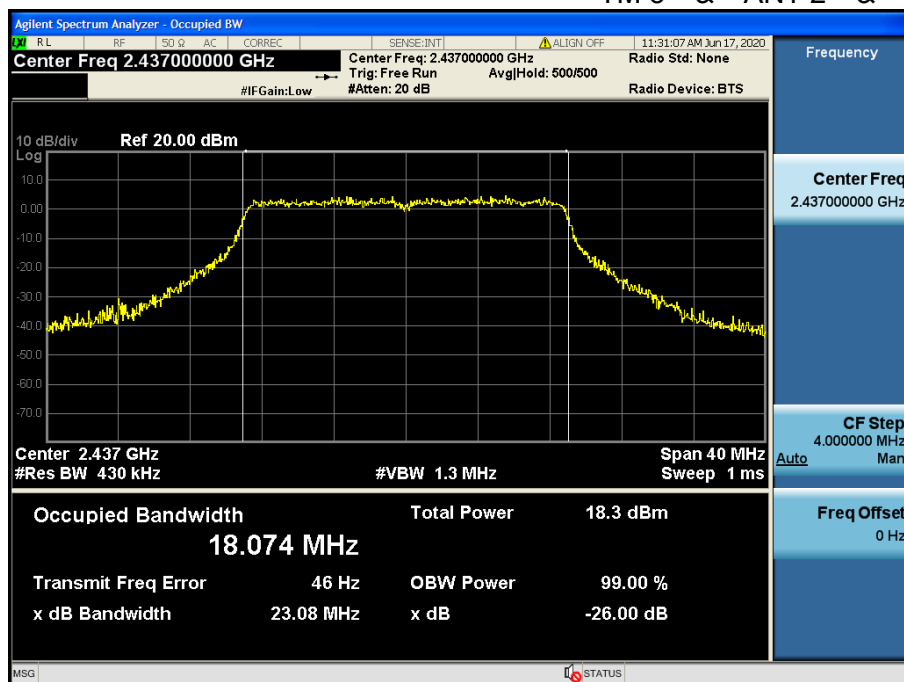
Occupied Bandwidth

TM 3 & ANT 2 & 2 412



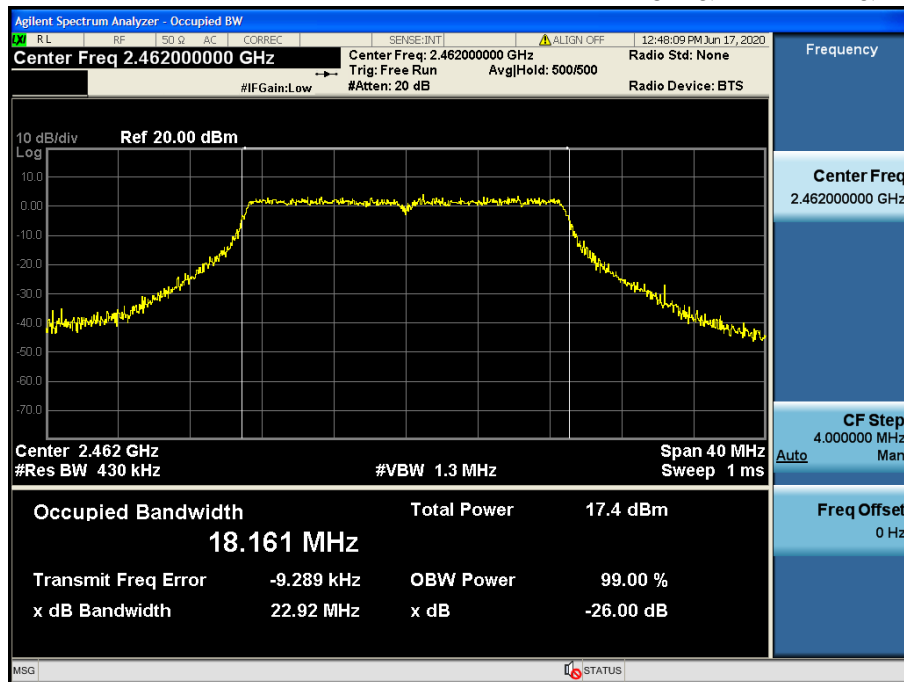
Occupied Bandwidth

TM 3 & ANT 2 & 2 437



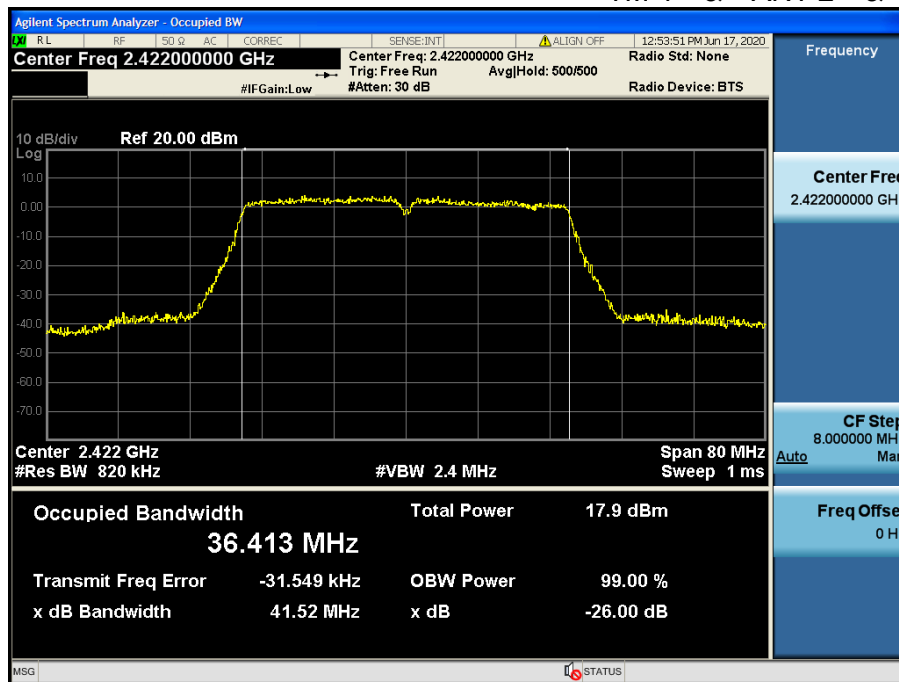
Occupied Bandwidth

TM 3 & ANT 2 & 2 462



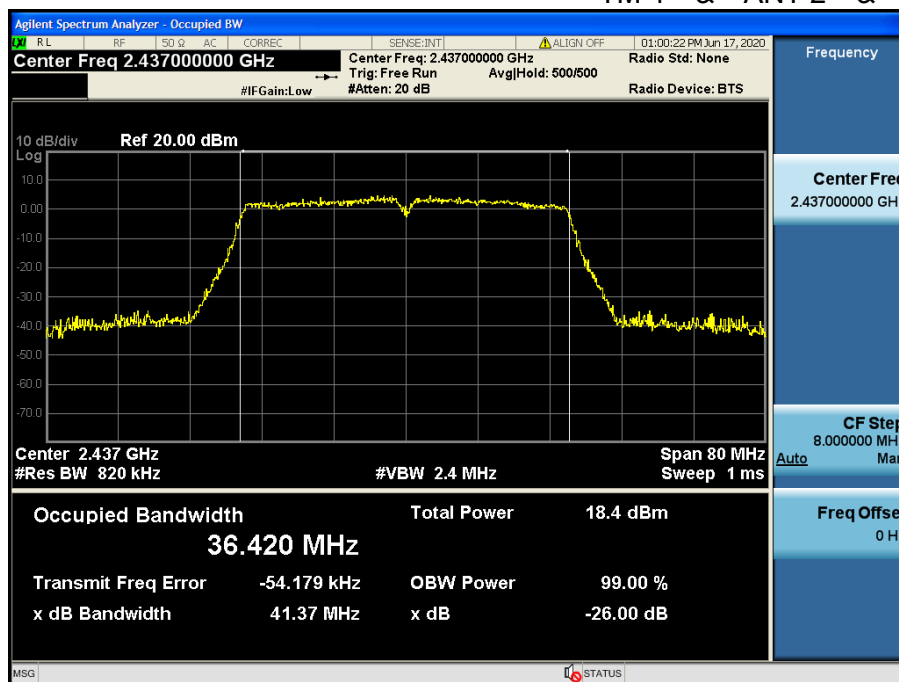
Occupied Bandwidth

TM 4 & ANT 2 & 2422



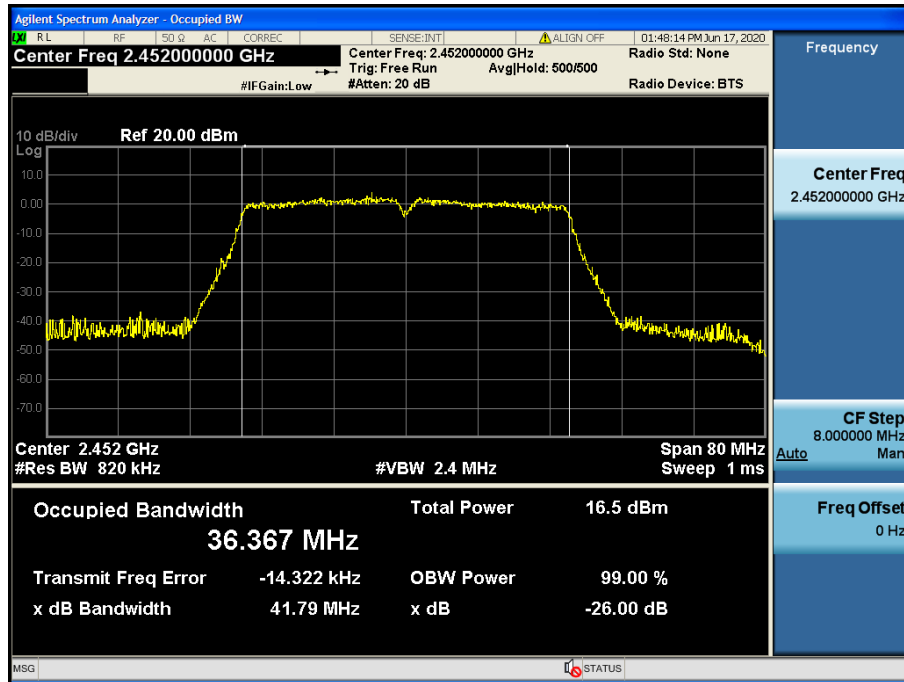
Occupied Bandwidth

TM 4 & ANT 2 & 2437



Occupied Bandwidth

TM 4 & ANT 2 & 2 452



9. LIST OF TEST EQUIPMENT

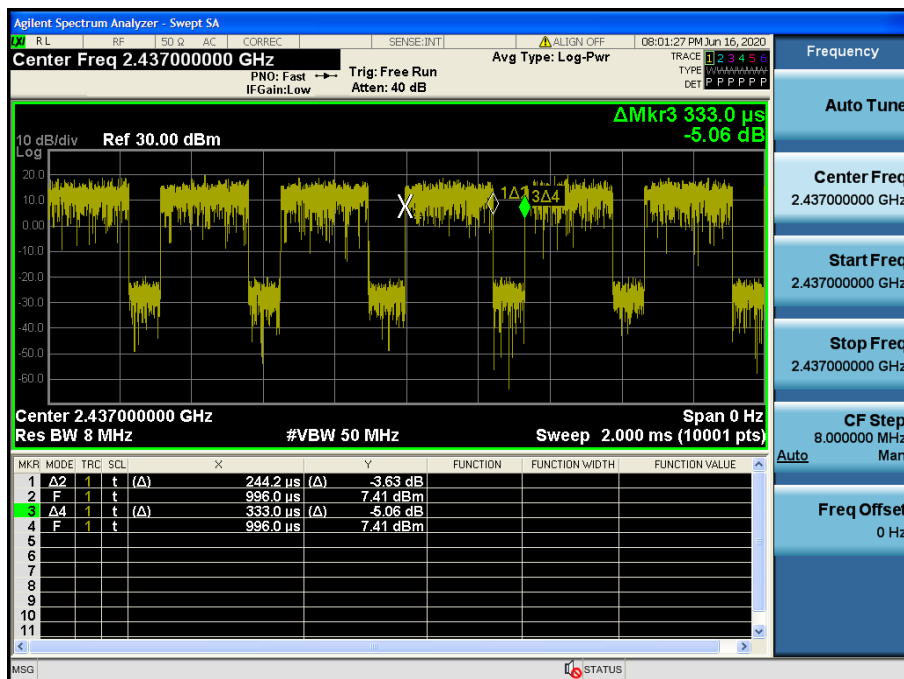
| Type | Manufacturer | Model | Cal.Date (yy/mm/dd) | Next.Cal.Date (yy/mm/dd) | S/N |
|-------------------------------------|------------------------|-------------------------------|------------------------|-----------------------------|--------------------|
| Spectrum Analyzer | Agilent Technologies | N9020A | 19/12/16 | 20/12/16 | MY50410357 |
| Spectrum Analyzer | Agilent Technologies | N9020A | 19/12/16 | 20/12/16 | MY48011700 |
| Spectrum Analyzer | Agilent Technologies | N9020A | 19/06/16 | 20/12/16 | MY48010133 |
| DC Power Supply | Agilent Technologies | 66332A | 19/06/25 | 20/06/25 | MY43000211 |
| Multimeter | FLUKE | 17B | 19/12/16 | 20/12/16 | 26030065WS |
| Signal Generator | Rohde Schwarz | SMBV100A | 19/12/16 | 20/12/16 | 255571 |
| Signal Generator | ANRITSU | MG3695C | 19/12/16 | 20/12/16 | 173501 |
| Thermohygrometer | BODYCOM | BJ5478 | 19/12/18 | 20/12/18 | 120612-1 |
| Thermohygrometer | BODYCOM | BJ5478 | 19/12/18 | 20/12/18 | 120612-2 |
| Thermohygrometer | BODYCOM | BJ5478 | 19/07/03 | 20/07/03 | N/A |
| Loop Antenna | ETS-Lindgren | 6502 | 19/09/18 | 21/09/18 | 00226186 |
| BILOG ANTENNA | Schwarzbeck | VULB 9160 | 19/04/23 | 21/04/23 | 9160-3362 |
| Horn Antenna | ETS-Lindgren | 3115 | 20/01/30 | 22/01/30 | 6419 |
| Horn Antenna | Schwarzbeck | BBHA 9120C | 19/12/04 | 21/12/04 | 9120C-561 |
| PreAmplifier | tsj | MLA-0118-B01-40 | 19/12/16 | 20/12/16 | 1852267 |
| PreAmplifier | tsj | MLA-1840-J02-45 | 19/06/27 | 20/06/27 | 16966-10728 |
| PreAmplifier | H.P | 8447D | 19/12/16 | 20/12/16 | 2944A07774 |
| High Pass Filter | Wainwright Instruments | WHKX12-935-1000-15000-40SS | 19/06/26 | 20/06/26 | 8 |
| High Pass Filter | Wainwright Instruments | WHKX10-2838-3300-18000-60SS | 19/06/26 | 20/06/26 | 1 |
| High Pass Filter | Wainwright Instruments | WHNX8.0/26.5-6SS | 19/06/27 | 20/06/27 | 3 |
| Attenuator | Hefei Shunze | SS5T2.92-10-40 | 19/06/27 | 20/06/27 | 16012202 |
| Attenuator | SRTechnology | F01-B0606-01 | 19/06/27 | 20/06/27 | 13092403 |
| Attenuator | Aeroflex/Weinschel | 20515 | 19/06/27 | 20/06/27 | Y2370 |
| Attenuator | SMAJK | SMAJK-2-3 | 19/06/27 | 20/06/27 | 2 |
| Attenuator | SMAJK | SMAJK-50-10 | 19/08/07 | 20/08/07 | 15081901 |
| Power Meter & Wide Bandwidth Sensor | Anritsu | ML2488B MA2491A | 20/01/02 | 21/01/02 | 0910025 0845333 |
| EMI Receiver | ROHDE&SCHWARZ | ESW44 | 19/07/30 | 20/07/30 | 101645 |
| PULSE LIMITER | Rohde Schwarz | ESH3-Z2 | 19/09/17 | 20/09/17 | 101333 |
| LISN | SCHWARZBECK | NSLK 8128 RC | 19/11/04 | 20/11/04 | 8128 RC-387 |
| Cable | Junkosha | MWX241 | 20/01/13 | 21/01/13 | G-04 |
| Cable | Junkosha | MWX241 | 20/01/13 | 21/01/13 | G-07 |
| Cable | DT&C | Cable | 20/01/13 | 21/01/13 | G-13 |
| Cable | DT&C | Cable | 20/01/13 | 21/01/13 | G-14 |
| Cable | HUBER+SUHNER | SUCOFLEX 104 | 20/01/13 | 21/01/13 | G-15 |
| Cable | Radiall | TESTPRO3 | 20/01/16 | 21/01/16 | M-01 |
| Cable | Junkosha | MWX315 | 20/01/16 | 21/01/16 | M-05 |
| Cable | Junkosha | MWX221 | 20/01/16 | 21/01/16 | M-06 |
| Cable | Radiall | TESTPRO3 | 20/01/16 | 21/01/16 | RF-82 |
| Test Software | tsj | Raidated Emission Measurement | NA | NA | Version 2.00.0177 |
| Test Software | tsj | Noise Terminal Measurement | NA | NA | Version 2.00.0170 |

Note 1: The measurement antennas were calibrated in accordance to the requirements of ANSI C63.5-2017

Note 2: The cable is not a regular calibration item, so it has been calibrated by DT & C itself.

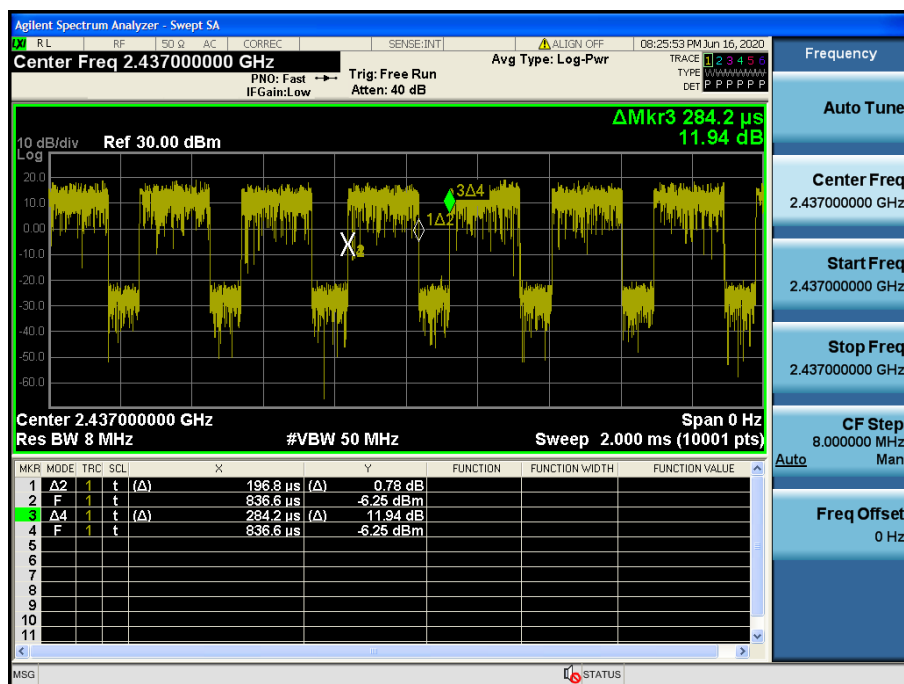
Duty Cycle

TM 2 & ANT 1 & 2 437 MHz & 54 Mbps



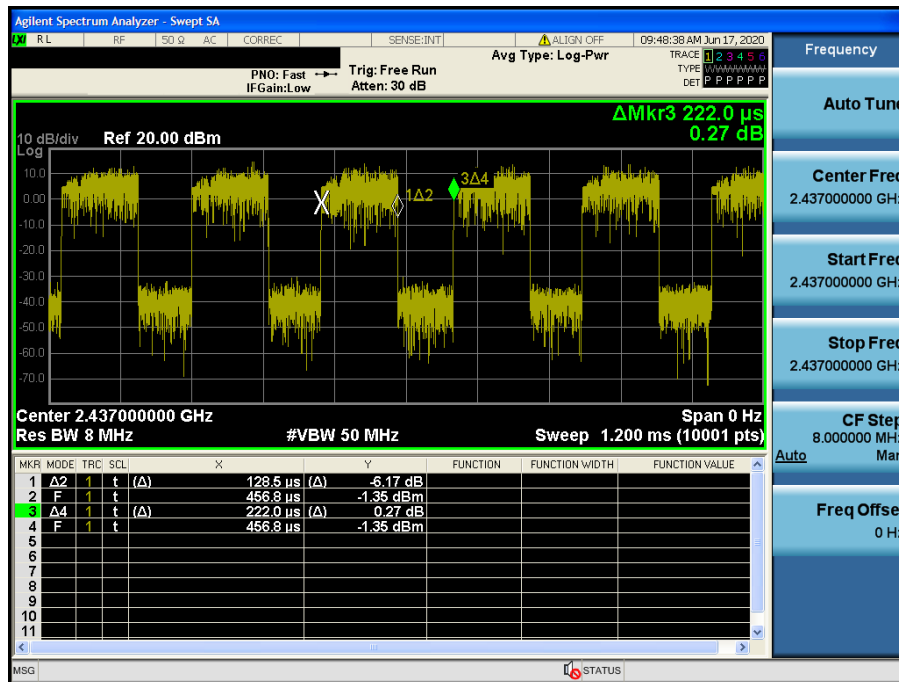
Duty Cycle

TM 3 & ANT 1 & 2 437 MHz & MCS 8



Duty Cycle

TM 4 & ANT 1 & 2 437 MHz & MCS 7

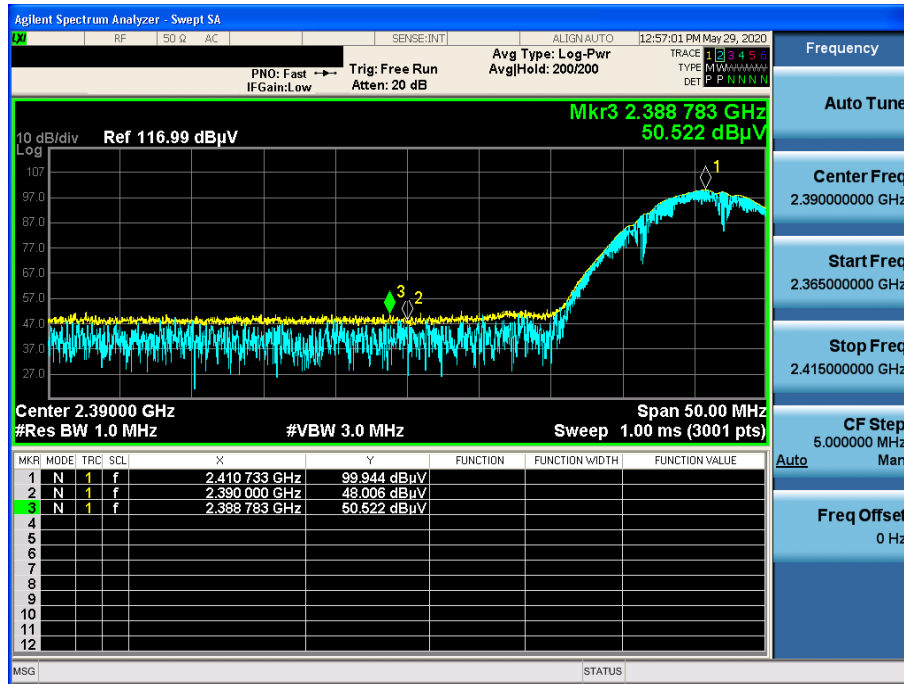


APPENDIX II

Unwanted Emissions (Radiated) Test Plot

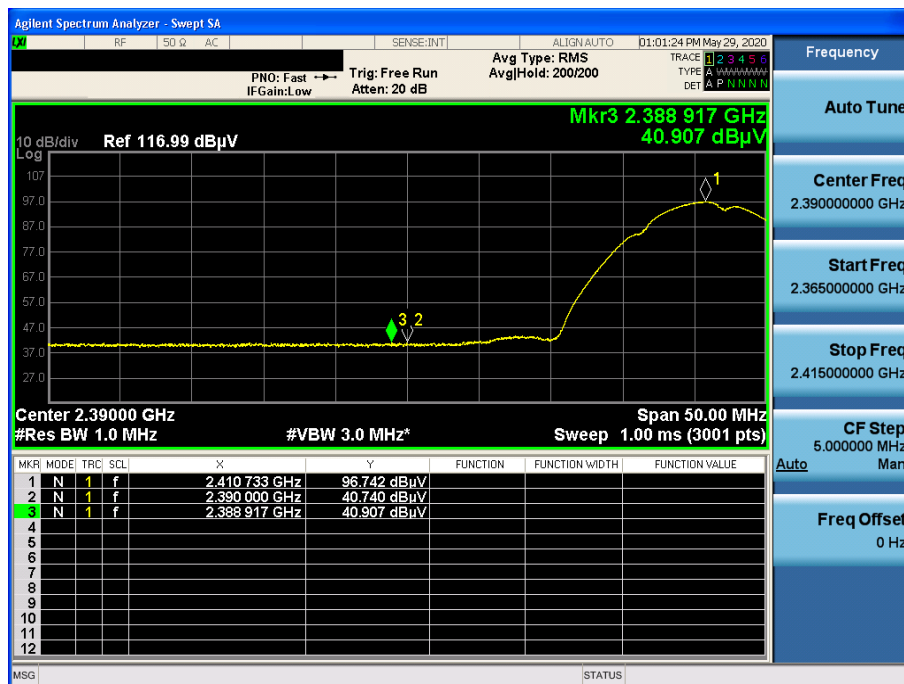
TM 1 & 2 412 & Z axis & Ver

Detector Mode : PK



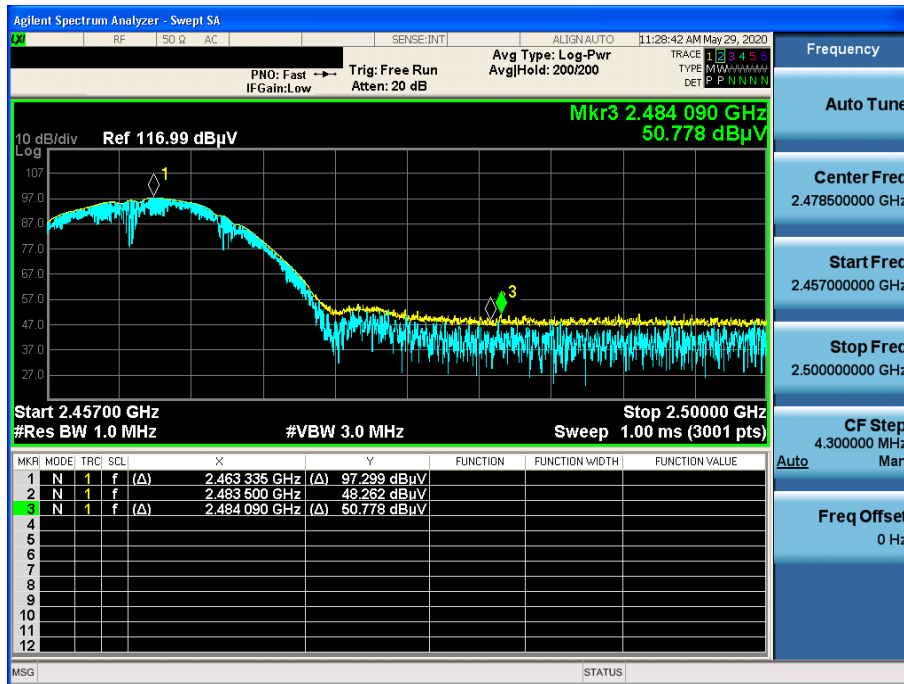
TM 1 & 2 412 & Z axis & Ver

Detector Mode : AV



TM 1 & 2 462 & Z axis & Ver

Detector Mode : PK



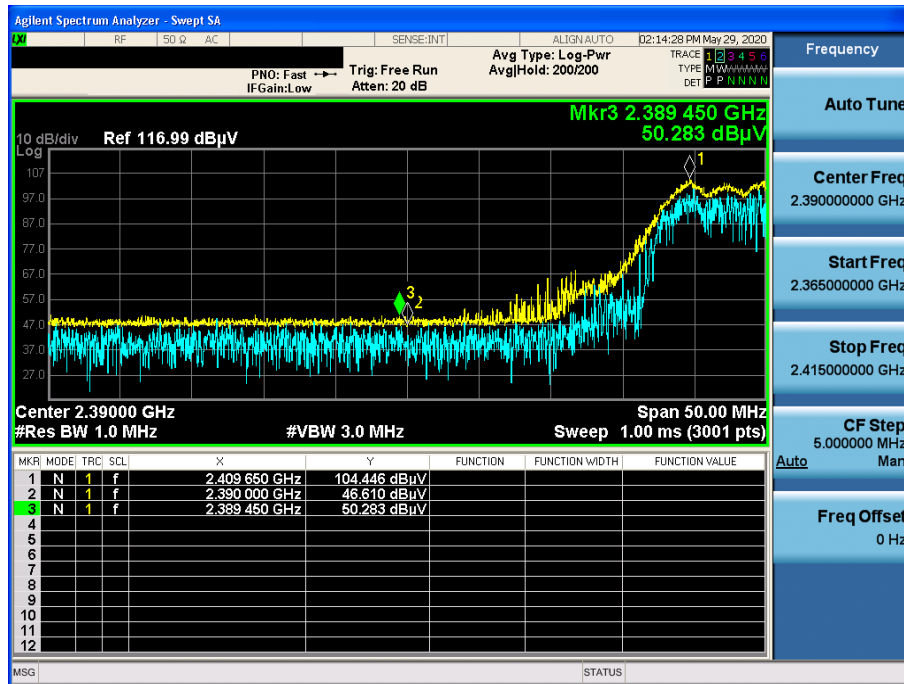
TM 1 & 2 462 & Z axis & Ver

Detector Mode : AV



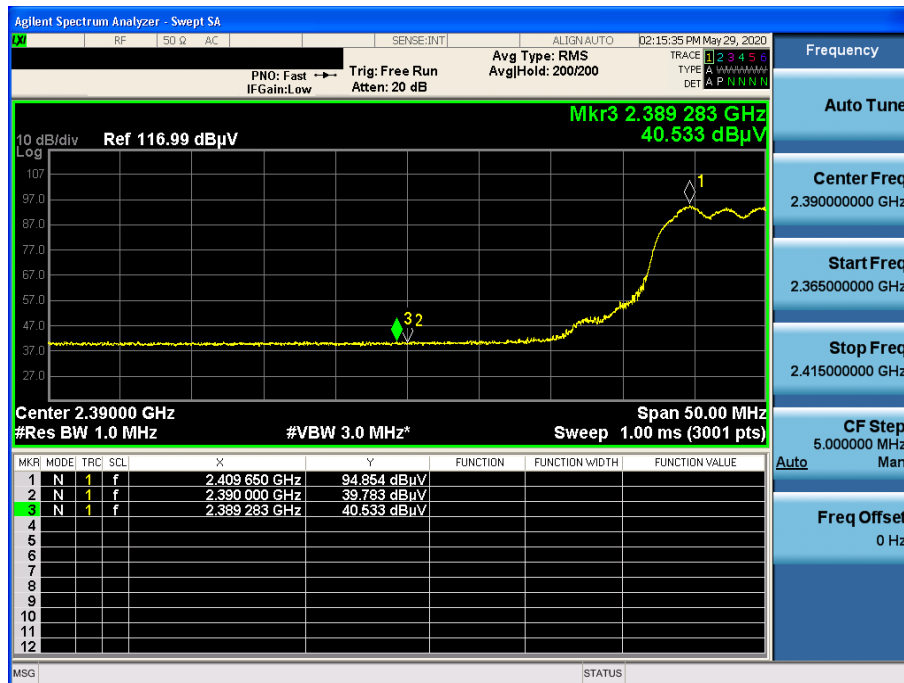
TM 2 & 2 412 & Z axis & Hor

Detector Mode : PK



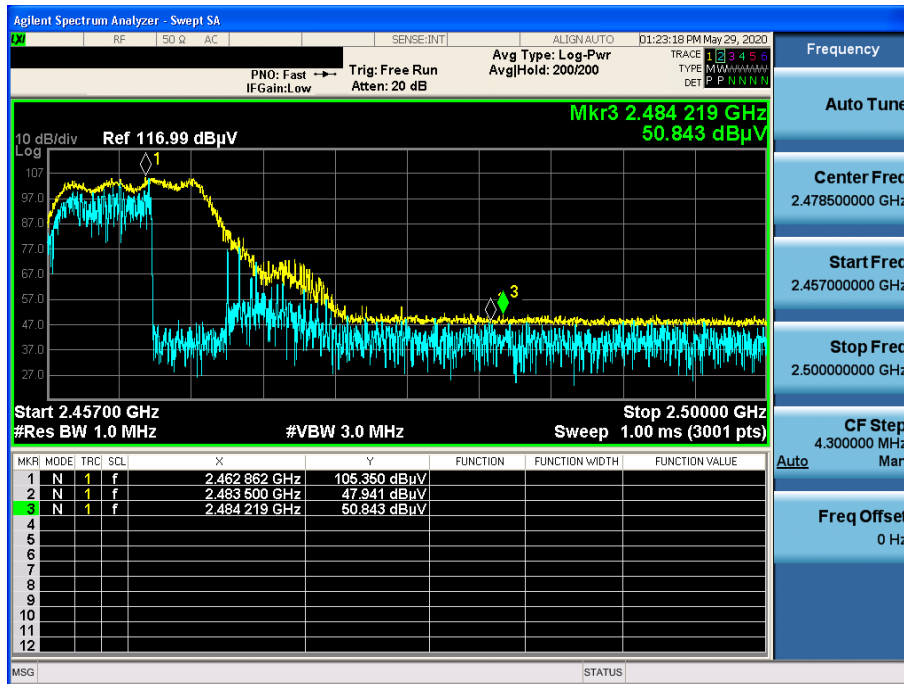
TM 2 & 2 412 & Z axis & Hor

Detector Mode : AV



TM 2 & 2 462 & Z axis & Hor

Detector Mode : PK



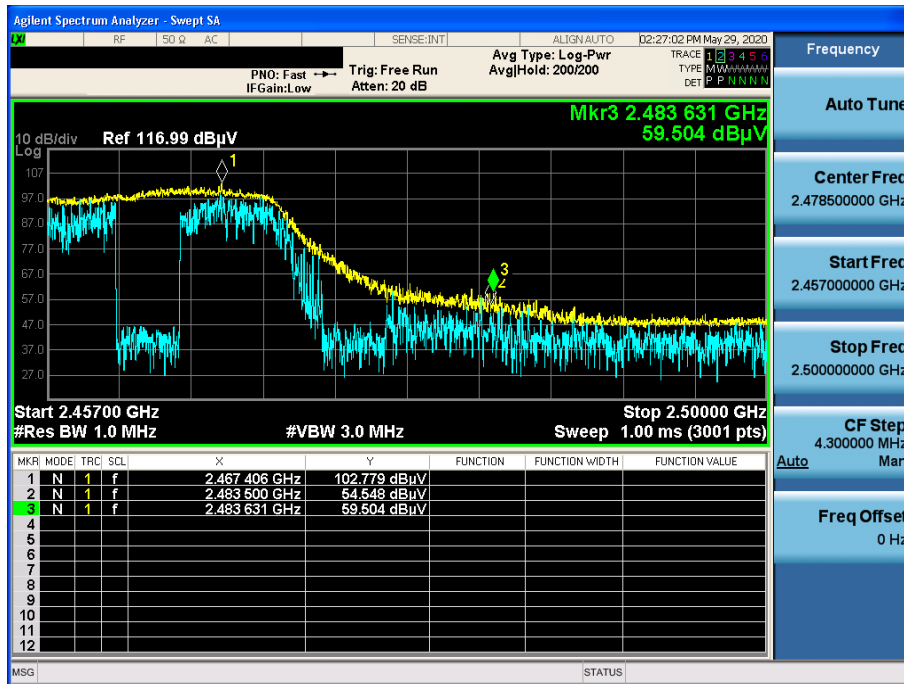
TM 2 & 2 462 & Z axis & Hor

Detector Mode : AV



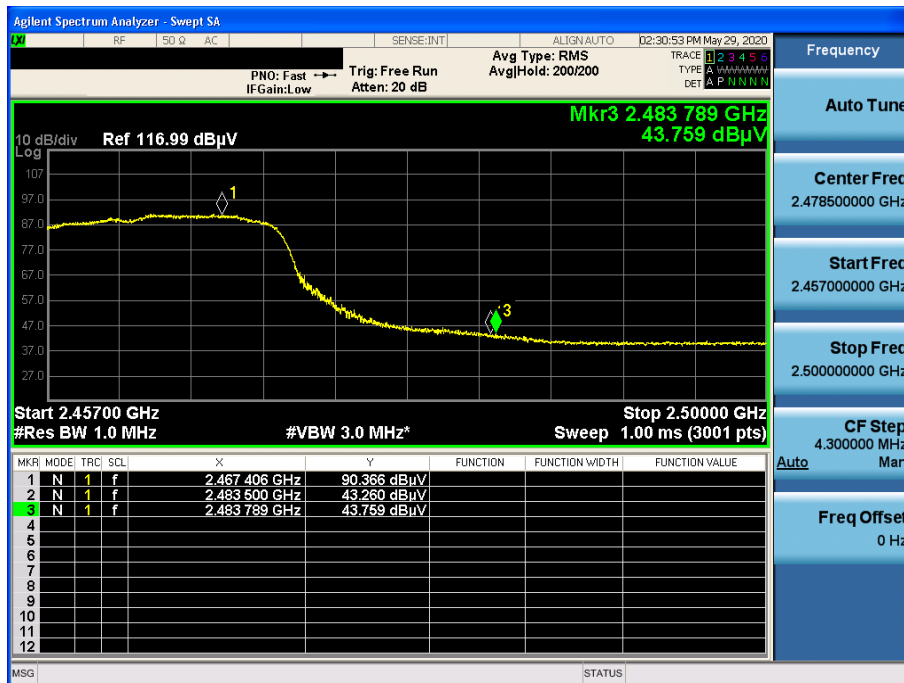
TM 3 & 2 462 & Z axis & Hor

Detector Mode : PK



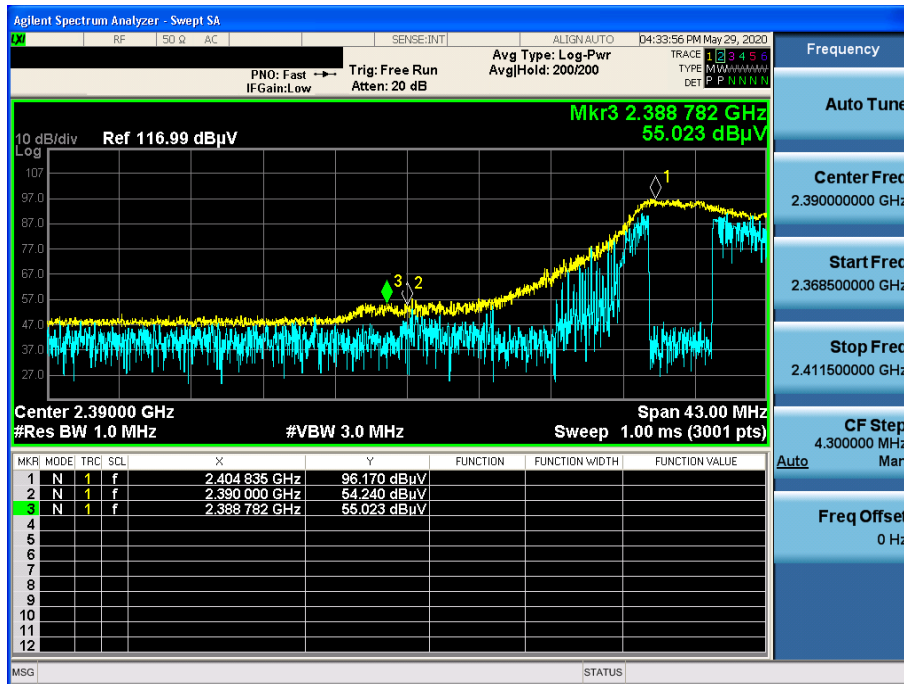
TM 3 & 2 462 & Z axis & Hor

Detector Mode : AV



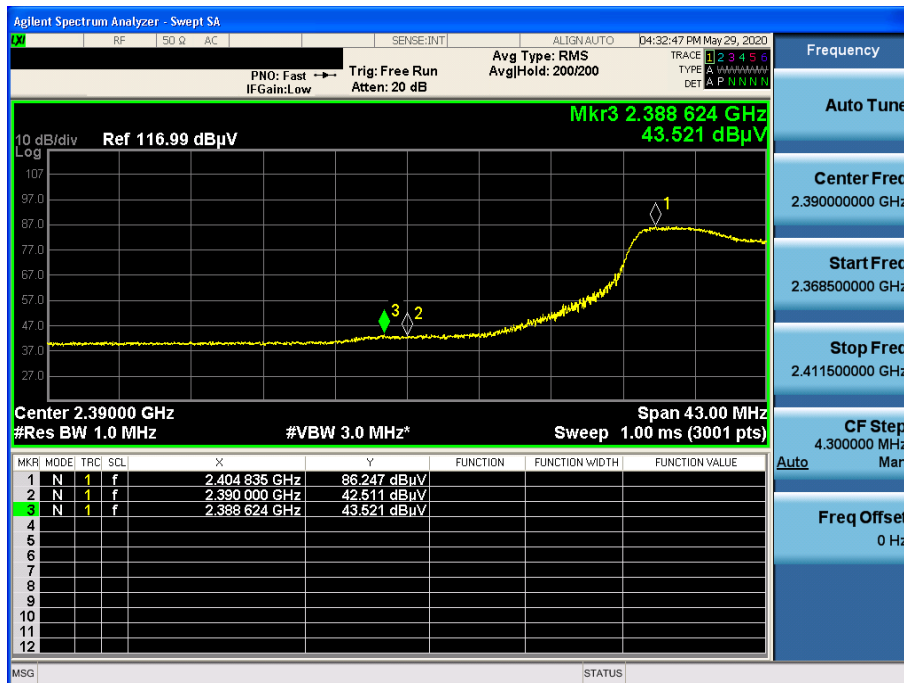
TM 4 & 2 422 & Z axis & Hor

Detector Mode : PK



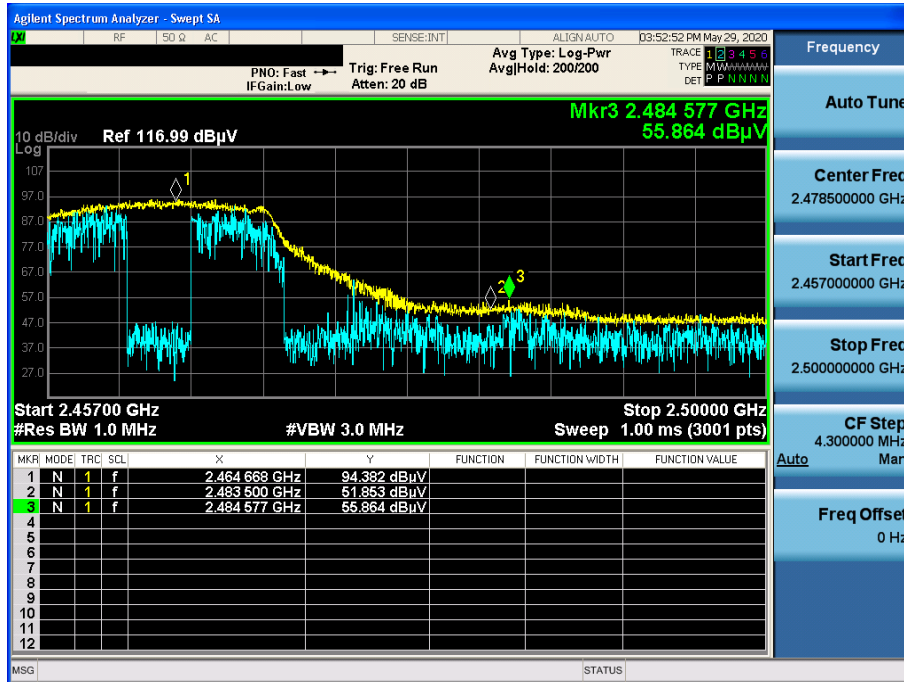
TM 4 & 2 422 & Z axis & Hor

Detector Mode : AV



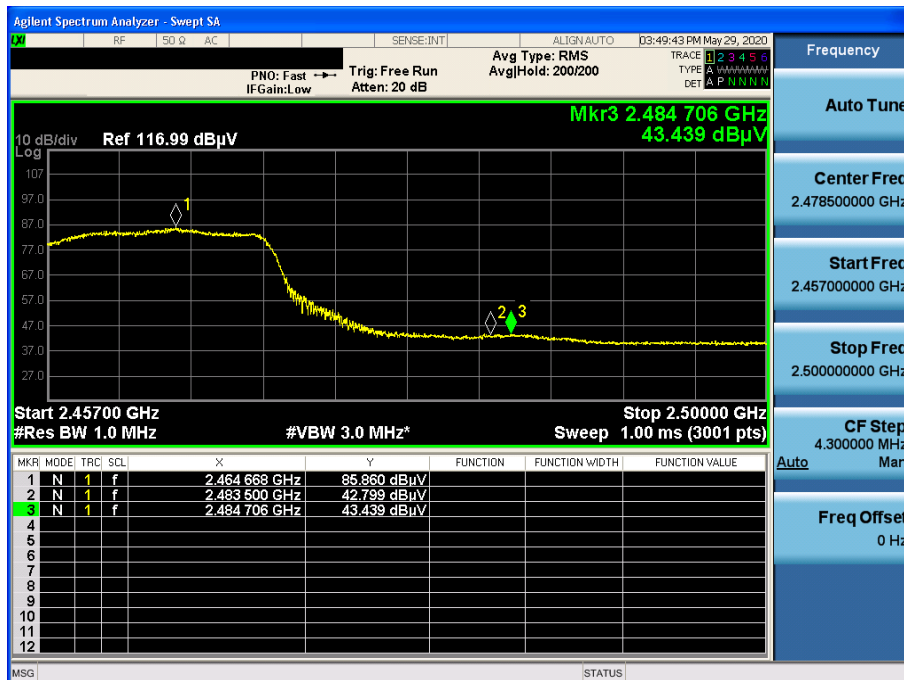
TM 4 & 2 452 & Z axis & Hor

Detector Mode : PK



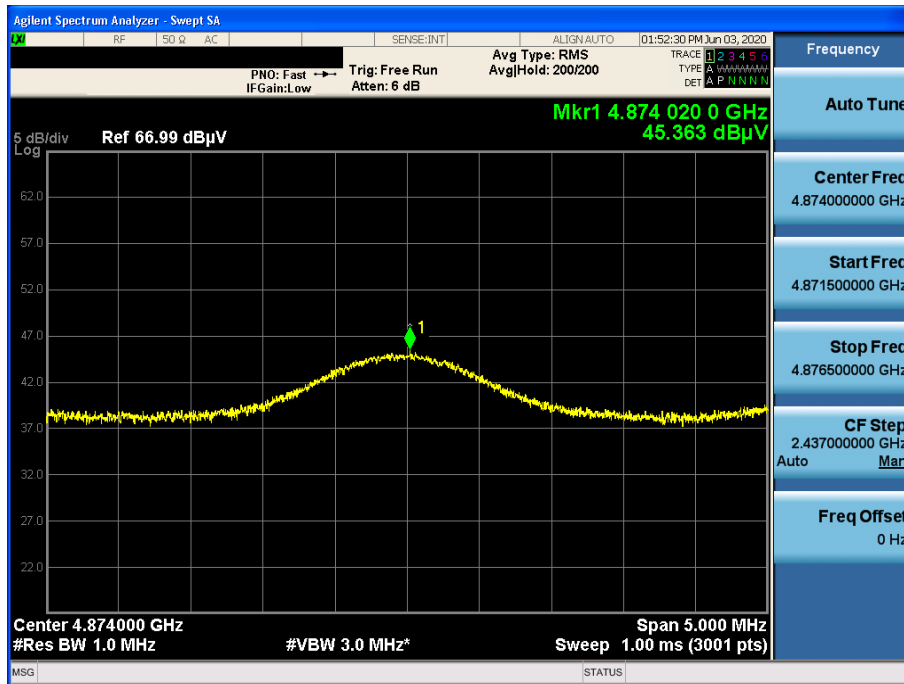
TM 4 & 2 452 & Z axis & Hor

Detector Mode : AV



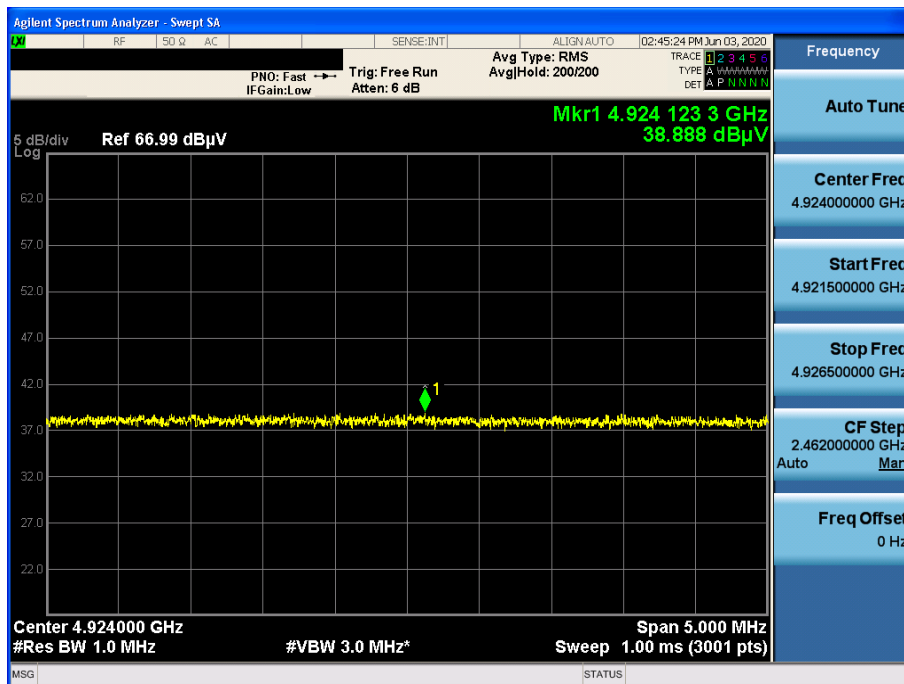
TM 1 & 2 437 & Z axis & Hor

Detector Mode : AV



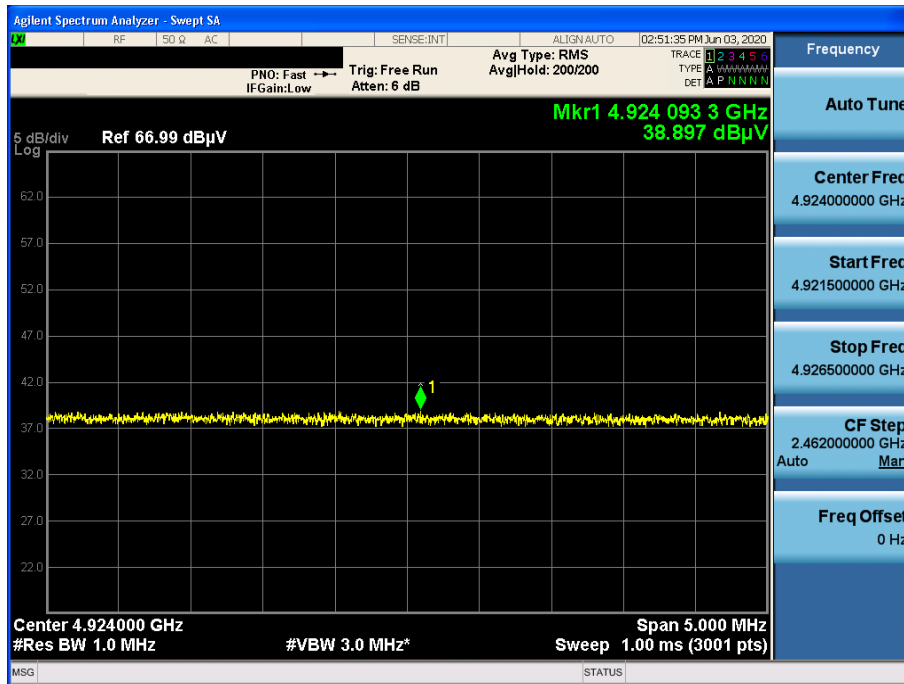
TM 2 & 2 462 & Z axis & Hor

Detector Mode : AV



TM 3 & 2 462 & Z axis & Hor

Detector Mode : AV



TM 4 & 2 452 & Z axis & Hor

Detector Mode : AV

