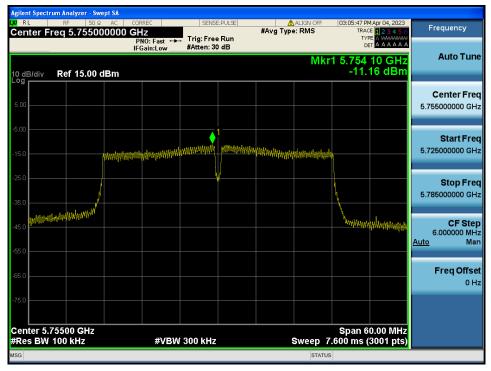
Test Mode: TM 3 & ANT 1 & Ch.151



### **Maximum Power Spectral Density**



Test Mode: TM 4 & ANT 1 & Ch.42



### **Maximum Power Spectral Density**



Test Mode: TM 4 & ANT 1 & Ch.106



# **Maximum Power Spectral Density**



|  | F 50Ω AC     |  | SENSE:PUL                        |                                | ALIGN OFF         | 03:15:59 PM Apr 04, 202                     |                                   |
|--|--------------|--|----------------------------------|--------------------------------|-------------------|---|-----------------------------------|
| enter Freq   | 5.77500000   | DU GHZ<br>PNO: Fast +<br>IFGain:Low  | ➡ Trig: Free Ru<br>#Atten: 30 dB |                                | pe: RMS           | TRACE 12345<br>TYPE A WWWW<br>DET A A A A A | A                                 |
| 0 dB/div Re  | ef 15.00 dBm |  |                                  |                                | Mkı               | 1 5.772 50 GH<br>-15.89 dBr                 | z Auto Tune<br>n                  |
| 5.00   |              |  |                                  |                                |                   |   | Center Fre<br>5.775000000 GH      |
| 15.0   | Halihandaki  | Halisbyingerbrief  | nykypennekjästenny pette         | udine in the analytic internal | novenkeitendelede | shekthaladanin (a                           | Start Fre<br>5.725000000 GH       |
| 25.0   |              | ante a france a construction of the second sec |                                  |                                |                   |   | Stop Fre<br>5.825000000 GH        |
| 45.0<br>55.0 <b>////////////////////////////////////</b> | /            |  |                                  |                                |                   | hand a bridge                               | CF Ste<br>10.000000 M⊢<br>Auto Ma |
| 65.0   |              |  |                                  |                                |                   |   | Freq Offse<br>0 ⊦                 |
| <sup>75.0</sup>  | 00 GHz       |  | W 300 kHz                        |                                |                   | Span 100.0 MH<br>2.40 ms (3001 pts          | IZ                                |

Test Mode: TM 1 & ANT 2 & Ch.36



# **Maximum Power Spectral Density**





Test Mode: TM 1 & ANT 2 & Ch.52



# **Maximum Power Spectral Density**





Test Mode: TM 1 & ANT 2 & Ch.100



### **Maximum Power Spectral Density**





Test Mode: TM 1 & ANT 2 & Ch.149



### **Maximum Power Spectral Density**







Test Mode: TM 2 & ANT 2 & Ch.36



### **Maximum Power Spectral Density**





Test Mode: TM 2 & ANT 2 & Ch.52



# **Maximum Power Spectral Density**







Test Mode: TM 2 & ANT 2 & Ch.100

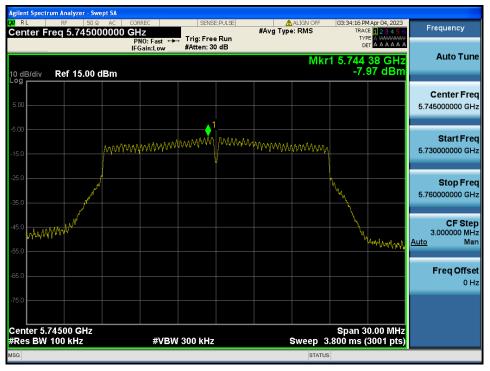


#### **Maximum Power Spectral Density**

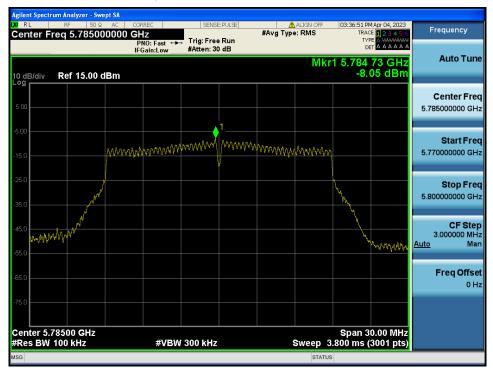




Test Mode: TM 2 & ANT 2 & Ch.149



### **Maximum Power Spectral Density**



| RL RF                          | 50 Ω i         |        |                            | SENSE                      | EPULSE             |          | ALIGN OFF  |         | 1 Apr 04, 2023                           | Frequency                               |
|--------------------------------|----------------|--------|----------------------------|----------------------------|--------------------|----------|------------|---------|--|---|
| enter Freq 5.                  | 825000         | PN     | Z<br>IO: Fast ↔<br>ain:Low | . Trig: Free<br>#Atten: 30 |                    | #Avg Typ | e: RMS     | TY      | E 123456<br>E A WWWWW<br>T A A A A A A A |   |
|                                | 5.00 dB        | m      |                            |                            |                    |          | Mkr        |         | 66 GHz<br>98 dBm                         | Auto Tur                                |
|                                |                |        |                            |                            |                    |          |            |         |  | Center Fre<br>5.825000000 GH            |
| 5.0                            | N              | vinana | www.ww                     | www                        | 1<br>/\f\Wyyy<br>/ | MMMM     | 1. Mariana |         |  | <b>Start Fre</b><br>5.810000000 GH      |
| 5.0                            | - And a start  |        |                            |                            |                    |          |            | how you |  | <b>Stop Fre</b><br>5.840000000 GH       |
| 5.0<br>MMMMMMMM                | / <sup>4</sup> |        |                            |                            |                    |          |            |         | www.                                     | CF Ste<br>3.000000 Mi<br><u>Auto</u> Mi |
| 5.0                            |                |        |                            |                            |                    |          |            |         |  | Freq Offs<br>0 I                        |
| enter 5.82500<br>Res BW 100 kH |                |        | #\/R\/                     | 300 kHz                    |                    |          | Sweep 3.   | Span 3  | 0.00 MHz<br>3001 pts)                    |   |

Test Mode: TM 3 & ANT 2 & Ch.38



### **Maximum Power Spectral Density**



Test Mode: TM 3 & ANT 2 & Ch.54



# **Maximum Power Spectral Density**



Test Mode: TM 3 & ANT 2 & Ch.102



# **Maximum Power Spectral Density**





Test Mode: TM 3 & ANT 2 & Ch.151



# **Maximum Power Spectral Density**



Test Mode: TM 4 & ANT 2 & Ch.42



# **Maximum Power Spectral Density**



Test Mode: TM 4 & ANT 2 & Ch.106



### **Maximum Power Spectral Density**



|                           | RF 50 Ω          | AC CC                       | RREC                        | SENS                        | E:PULSE            |                           | ALIGN OFF        |  | M Apr 04, 2023                                   | Frequency                                |
|---------------------------|------------------|-----------------------------|-----------------------------|-----------------------------|--------------------|---------------------------|------------------|--|--|--|
| enter Fred                | 5.77500          | F                           | Z<br>NO: Fast ↔<br>Gain:Low | _ Trig: Free<br>#Atten: 30  |                    | #Avg Typ                  | e: RMS           | T١   | CE 1 2 3 4 5 6<br>/PE A WWWWW<br>DET A A A A A A |  |
| 0 dB/div R                | ef 15.00 d       | dBm                         |                             |                             |                    |                           | Mkı              | 1 5.780<br>-15.  | 00 GHz<br>.62 dBm                                | Auto Tun                                 |
| 5.00                      |                  |                             |                             |                             |                    |                           |                  |  |  | Center Fre<br>5.775000000 GH             |
| 5.00                      | Ana handaati     | Kalahabahatana              | ine perfective to the t     | an the first and the second | 1<br>perindhiskohd | hereling the state of the |                  | in the state of the |  | Start Fre<br>5.725000000 G⊦              |
| 95.0                      | 1 . Full KLowler | alleder on a led of each of |                             |                             |                    |                           | alda olan oo 1 . |  |  | <b>Stop Fre</b><br>5.825000000 GH        |
| 5.0                       |                  |                             |                             |                             |                    |                           |                  |  | hinder the second second                         | CF Ste<br>10.000000 Mł<br><u>Auto</u> Ma |
| i5.0                      |                  |                             |                             |                             |                    |                           |                  |  |  | Freq Offs<br>0 F                         |
| enter 5.775<br>Res BW 100 |                  |                             | #VBV                        | V 300 kHz                   |                    |                           | Sweep_1          | Span ′<br>2.40 ms  | 100.0 MHz<br>(3001 pts)                          |  |
| G G                       |                  |                             | <i>"</i> • E •              |                             |                    |                           | STATU            |  | (eres bro)                                       |  |

# 5.5 Unwanted Emissions

#### Test Requirements

#### - Part 15.407(b) & RSS-Gen[6.2]

Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- (1) For transmitters operating in the 5.15 GHz 5.25 GHz band: all emissions outside of the 5.15 GHz 5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.
- (2) For transmitters operating in the 5.25 GHz 5.35 GHz band: all emissions outside of the 5.15 GHz 5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.
- (3) For transmitters operating in the 5.47 GHz 5.725 GHz band: all emissions outside of the 5.47 GHz 5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz.
- (4) For transmitters operating in the 5.725 GHz 5.85 GHz band: (i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge. The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.
- (5) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in Section 15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in Section 15.207.

| Frequency (MHz) | FCC Limit (uV/m) | IC Limit (µA/m)   | Measurement Distance (m) |
|-----------------|------------------|-------------------|--------------------------|
| 0.009 - 0.490   | 2 400 / F (kHz)  | 6.37/F (F in kHz) | 300                      |
| 0.490 - 1.705   | 24 000 / F (kHz) | 63.7/F (F in kHz) | 30                       |
| 1.705 – 30.0    | 30               | 0.08              | 30                       |

#### - Part 15.209 & RSS-247[8.9]: General requirements

| Frequency (MHz) | FCC Limit (uV/m) | IC Limit (uV/m) | Measurement Distance (m) |
|-----------------|------------------|-----------------|--------------------------|
| 30 ~ 88         | 100 **           | 100             | 3                        |
| 88 ~ 216        | 150 **           | 150             | 3                        |
| 216 ~ 960       | 200 **           | 200             | 3                        |
| Above 960       | 500              | 500             | 3                        |

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



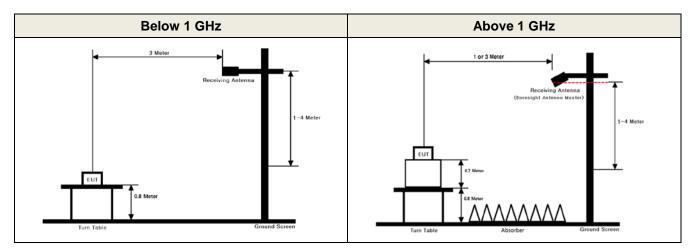
#### - Part 15.205(a): Restricted band of operation

| MHz                 | MHz                   | MHz                     | MHz               | GHz          | GHz           |
|---------------------|-----------------------|-------------------------|-------------------|--------------|---------------|
| 0.009 ~ 0.110       | 8.414 25 ~ 8.414 75   | 108 ~ 121.94            | 1 300 ~ 1 427     | 4.5 ~ 5.15   | 14.47 ~ 14.5  |
| 0.495 ~ 0.505       | 12.29 ~ 12.293        | 123 ~ 138               | 1 435 ~ 1 626.5   | 5.35 ~ 5.46  | 15.35 ~ 16.2  |
| 2.173 5 ~ 2.190 5   | 12.519 75 ~ 12.520 25 | 149.9 ~ 150.05          | 1 645.5 ~ 1 646.5 | 7.25 ~ 7.75  | 17.7 ~ 21.4   |
| 4.125 ~ 4.128       | 12.576 75 ~ 12.577 25 | 156.524 75 ~ 156.525 25 | 1 660 ~ 1 710     | 8.025 ~ 8.5  | 22.01 ~ 23.12 |
| 4.177 25 ~ 4.177 75 | 13.36 ~ 13.41         | 156.7 ~ 156.9           | 1 718.8 ~ 1 722.2 | 9.0 ~ 9.2    | 23.6 ~ 24.0   |
| 4.207 25 ~ 4.207 75 | 16.42 ~ 16.423        | 162.012 5 ~ 167.17      | 2 200 ~ 2 300     | 9.3 ~ 9.5    | 31.2 ~ 31.8   |
| 6.215 ~ 6.218       | 16.694 75 ~ 16.695 25 | 167.72 ~ 173.2          | 2 310 ~ 2 390     | 10.6 ~ 12.7  | 36.43 ~ 36.5  |
| 6.267 75 ~ 6.268 25 | 16.804 25 ~ 16.804 75 | 240 ~ 285               | 2 483.5 ~ 2 500   | 13.25 ~ 13.4 | Above 38.6    |
| 6.311 75 ~ 6.312 25 | 25.5 ~ 25.67          | 322 ~ 335.4             | 2 655 ~ 2 900     |              |               |
| 8.291 ~ 8.294       | 37.5 ~ 38.25          | 399.90 ~ 410            | 3 260 ~ 3 267     |              |               |
| 8.362 ~ 8.366       | 73 ~ 74.6             | 608 ~ 614               | 3 332 ~ 3 339     |              |               |
| 8.376 25 ~ 8.386 75 | 74.8 ~ 75.2           | 960 ~ 1 240             | 3 345.8 ~ 3 358   |              |               |
|                     |                       |                         | 3 600 ~ 4 400     |              |               |

#### - RSS-Gen[8.10]: Restricted frequency bands

| MHz                 | MHz                   | MHz                | MHz               | MHz             | GHz           |
|---------------------|-----------------------|--------------------|-------------------|-----------------|---------------|
| 0.090 ~ 0.110       | 8.362 ~ 8.366         | 73 ~ 74.6          | 608 ~ 614         | 3 345.8 ~ 3 358 | 9.0 ~ 9.2     |
| 0.495 ~ 0.505       | 8.376 25 ~ 8.386 75   | 74.8 ~ 75.2        | 960 ~ 1 427       | 3 500 ~ 4 400   | 9.3 ~ 9.5     |
| 2.173 5 ~ 2.190 5   | 8.414 25 ~ 8.414 75   | 108 ~ 138          | 1 435 ~ 1 626.5   | 4 500 ~ 5 150   | 10.6 ~ 12.7   |
| 3.020 ~ 3.026       | 12.29 ~ 12.293        | 149.9 ~ 150.05     | 1 645.5 ~ 1 646.5 | 5 350 ~ 5 460   | 13.25 ~ 13.4  |
| 4.125 ~ 4.128       | 12.519 75 ~ 12.520 25 | 156.524 75 ~       | 1 660 ~ 1 710     | 7 250 ~ 7 750   | 14.47 ~ 14.5  |
| 4.177 25 ~ 4.177 75 | 12.576 75 ~ 12.577 25 | 156.525 25         | 1 718.8 ~ 1 722.2 | 8 025 ~ 8 500   | 15.35 ~ 16.2  |
| 4.207 25 ~ 4.207 75 | 13.36 ~ 13.41         | 156.7 ~ 156.9      | 2 200 ~ 2 300     |                 | 17.7 ~ 21.4   |
| 5.677 ~ 5.683       | 16.42 ~ 16.423        | 162.01 25 ~ 167.17 | 2 310 ~ 2 390     |                 | 22.01 ~ 23.12 |
| 6.215 ~ 6.218       | 16.694 75 ~ 16.695 25 | 167.72 ~ 173.2     | 2 483.5 ~ 2 500   |                 | 23.6 ~ 24.0   |
| 6.267 75 ~ 6.268 25 | 16.804 25 ~ 16.804 75 | 240 ~ 285          | 2 655 ~ 2 900     |                 | 31.2 ~ 31.8   |
| 6.311 75 ~ 6.312 25 | 25.5 ~ 25.67          | 322 ~ 335.4        | 3 260 ~ 3 267     |                 | 36.43 ~ 36.5  |
| 8.291 ~ 8.294       | 37.5 ~ 38.25          | 399.90 ~ 410       | 3 332 ~ 3 339     |                 | Above 38.6    |

# Test Configuration



#### Test Procedure

- 1. The EUT is placed on a non-conductive table. For emission measurements at or below 1 GHz, the table height is 80 cm. For emission measurements above 1 GHz, the table height is 1.5 m.
- 2. The turn table 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.

Radiated spurious emission measured using following Measurement Procedure of KDB789033 D02v02r01

#### ► General Requirements for Unwanted Emissions Measurements

The following requirements apply to all unwanted emissions measurements, both in and outside of the restricted bands:

- EUT Duty Cycle
  - (1) The EUT shall be configured or modified to transmit continuously except as stated in (ii), below. The intent is to test at 100 percent duty cycle; however a small reduction in duty cycle (to no lower than 98 percent) is permitted if required by the EUT for amplitude control purposes. Manufacturers are expected to provide software to the test lab to permit such continuous operation.
  - (2) If continuous transmission (or at least 98 percent duty cycle) cannot be achieved due to hardware limitations of the EUT (e.g., overheating), the following additions to the measurement and reporting procedures are required:
    - The EUT shall be configured to operate at the maximum achievable duty cycle.
    - Measure the duty cycle, x, of the transmitter output signal.
    - Adjustments to measurement procedures (e.g., increasing test time and number of traces averaged) shall be performed as described in the procedures below.
    - The test report shall include the following additional information:
      - The reason for the duty cycle limitation.
      - The duty cycle achieved for testing and the associated transmit duration and interval between transmissions.
      - The sweep time and the amount of time used for trace stabilization during max-hold measurements for peak emission measurements.
- (3) Reduction of the measured emission amplitude levels to account for operational duty factor is not permitted. Compliance is based on emission levels occurring during transmission not on an average across on and off times of the transmitter.



#### ► Measurements below 1 000 MHz

DDt&C

- a) Follow the requirements in section II.G.3, "General Requirements for Unwanted Emissions Measurements".
- b) Compliance shall be demonstrated using **CISPR quasi-peak detection**; however, **peak detection** is permitted as an alternative to quasi-peak detection.

#### ► Measurements Above 1 000 MHz (Peak)

- a) Follow the requirements in section II.G.3, "General Requirements for Unwanted Emissions Measurements".
- b) Peak emission levels are measured by setting the analyzer as follows:
  - (i) **RBW = 1 MHz.**
  - (ii) **VBW** ≥ 3 MHz.
  - (iii) **Detector = Peak.**
  - (iv) Sweep time = Auto.
  - (v) Trace mode = Max hold.
  - (vi) Allow sweeps to continue until the trace stabilizes. Note that if the transmission is not continuous, the time required for the trace to stabilize will increase by a factor of approximately 1/x, where x is the duty cycle. For example, at 50 percent duty cycle, the measurement time will increase by a factor of two relative to measurement time for continuous transmission.

#### Measurements Above 1000 MHz (Method AD)

- (i) **RBW = 1 MHz.**
- (ii) **VBW** ≥ 3 MHz.
- (iii) Detector = RMS, if span / (# of points in sweep) ≤ RBW / 2. Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If the condition is not satisfied, the detector mode shall be set to peak.
- (iv) Averaging type = power (i.e., RMS)
  - As an alternative, the detector and averaging type may be set for linear voltage averaging. Some analyzers require linear display mode in order to use linear voltage averaging. Log or dB averaging shall not be used.
- (v) Sweep time = Auto.
- (vi) Perform a trace average of at least 100 traces if the transmission is continuous. If the transmission is not continuous, the number of traces shall be increased by a factor of 1/x, where x is the duty cycle. For example, with 50 percent duty cycle, at least 200 traces shall be averaged.
- (vii) If tests are performed with the EUT transmitting at a duty cycle less than 98 percent, 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:
  - If power averaging (RMS) mode was used in step (iv) above, the correction factor is 10 log(1/x), where x is the duty cycle. For example, if the transmit duty cycle was 50 percent, then 3 dB must be added to the measured emission levels.
  - If linear voltage averaging mode was used in step (iv) above, the correction factor is 20 log (1/x), where x is the duty cycle. For example, if the transmit duty cycle was 50 percent, then 6 dB must be added to the measured emission levels.
  - If a specific emission is demonstrated to be continuous (100 percent duty cycle) rather than turning on and off with the transmit cycle, no duty cycle correction is required for that emission.

| Test Mode | Date rate | T <sub>on</sub> (ms) | T <sub>on+off</sub> (ms) | $x = T_{on} / (T_{on+off})$ | DCCF = 10 log(1/x) (dB) |
|-----------|-----------|----------------------|--------------------------|-----------------------------|-------------------------|
| TM 1      | 6 Mbps    | 1.426                | 1.527                    | 0.933 9                     | 0.30                    |
| TM 2      | MCS 0     | 1.336                | 1.435                    | 0.931 0                     | 0.31                    |
| TM 3      | MCS 0     | 0.663                | 0.763                    | 0.868 9                     | 0.61                    |
| TM 4      | MCS 0     | 0.332                | 0.431                    | 0.769 0                     | 1.14                    |

#### **Duty Cycle Correction factor**

Note1: Where, T = Transmission duration / x = Duty cycle Note2: Please refer to the appendix II for duty cycle plots.



#### Test Results

#### Test Notes

1. The radiated emissions were investigated 9 kHz to 40 GHz. And no other spurious and harmonic emissions were found below listed frequencies. 2. Information of Distance Correction Factor

For finding emissions, measurements may be performed at a distance closer than that specified in the regulations.

In this case, the distance factor is applied to the result.

- Calculation of distance correction factor

At frequencies below 30 MHz = 40 log( tested distance / specified distance )

At frequencies at or above 30 MHz = 20 log( tested distance / specified distance ) When distance factor is "N/A", the measurements were performed at the specified distance and distance factor is not applied.

3. Sample Calculation.

Margin = Limit - Result / Result = Reading + TF+ DCCF + DCF / TF = AF + CL + HL + AL - AG

Where, TF = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain, HL = High pass filter Loss, AL = Attenuator Loss, DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor

4. The limit is converted to field strength.

E(dBuV/m) = EIRP(dBm) + 95.2 dB = -27 dBm + 95.2 = 68.2 dBuV/m

Unwanted Emissions data(9 kHz ~ 40 GHz) : TM1

| Band        | Tested<br>Frequency<br>(MHz) | Freq.<br>(MHz) | ANT<br>Pol | EUT<br>Position<br>(Axis) | Detector<br>Mode | Reading<br>(dBuV) | TF<br>(dB/m) | DCCF<br>(dB) | DCF<br>(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) |
|-------------|------------------------------|----------------|------------|---------------------------|------------------|-------------------|--------------|--------------|-------------|--------------------|-------------------|----------------|
|             |                              | 5 149.78       | Н          | Х                         | PK               | 63.00             | 3.39         | N/A          | N/A         | 66.39              | 74.00             | 7.61           |
|             | 5 180                        | 5 149.31       | Н          | Х                         | AV               | 44.89             | 3.39         | 0.30         | N/A         | 48.58              | 54.00             | 5.42           |
| U-NII 1     |                              | 10 361.15      | V          | Z                         | PK               | 42.40             | 10.14        | N/A          | N/A         | 52.54              | 68.20             | 15.66          |
|             | 5 200                        | 10 400.01      | V          | Z                         | PK               | 42.69             | 10.48        | N/A          | N/A         | 53.17              | 68.20             | 15.03          |
|             | 5 240                        | 10 479.48      | V          | Z                         | PK               | 43.28             | 11.25        | N/A          | N/A         | 54.53              | 68.20             | 13.67          |
|             | 5 260                        | 10 519.72      | V          | Z                         | PK               | 44.70             | 11.42        | N/A          | N/A         | 56.12              | 68.20             | 12.08          |
|             |                              | 10 598.58      | V          | Z                         | PK               | 43.71             | 11.37        | N/A          | N/A         | 55.08              | 68.20             | 13.12          |
|             | 5 300                        | 10 601.10      | V          | Z                         | PK               | 43.79             | 11.37        | N/A          | N/A         | 55.16              | 74.00             | 18.84          |
| U-NII       |                              | 10 600.84      | V          | Z                         | AV               | 33.72             | 11.37        | 0.30         | N/A         | 45.39              | 54.00             | 8.61           |
| 2A          |                              | 5 350.90       | Н          | Х                         | PK               | 62.58             | 3.82         | N/A          | N/A         | 66.40              | 74.00             | 7.60           |
|             | 5 320                        | 5 351.44       | н          | Х                         | AV               | 43.92             | 3.82         | 0.30         | N/A         | 48.04              | 54.00             | 5.96           |
|             | 5 520                        | 10 640.00      | V          | Z                         | PK               | 43.26             | 11.43        | N/A          | N/A         | 54.69              | 74.00             | 19.31          |
|             |                              | 10 640.15      | V          | Z                         | AV               | 33.11             | 11.43        | 0.30         | N/A         | 44.84              | 54.00             | 9.16           |
|             |                              | 5 459.37       | Н          | Х                         | PK               | 56.29             | 3.76         | N/A          | N/A         | 60.05              | 74.00             | 13.95          |
|             |                              | 5 458.88       | Н          | Х                         | AV               | 42.16             | 3.76         | 0.30         | N/A         | 46.22              | 54.00             | 7.78           |
|             | 5 500                        | 5 468.66       | н          | Х                         | PK               | 61.87             | 3.73         | N/A          | N/A         | 65.60              | 68.20             | 2.60           |
|             |                              | 11 000.23      | V          | Z                         | PK               | 45.05             | 11.44        | N/A          | N/A         | 56.49              | 74.00             | 17.51          |
| U-NII<br>2C |                              | 11 000.58      | V          | Z                         | AV               | 34.58             | 11.44        | 0.30         | N/A         | 46.32              | 54.00             | 7.68           |
| 20          | 5 580                        | 11 158.35      | V          | Z                         | PK               | 45.07             | 10.84        | N/A          | N/A         | 55.91              | 74.00             | 18.09          |
|             | 5 560                        | 11 158.90      | V          | Z                         | AV               | 34.47             | 10.84        | 0.30         | N/A         | 45.61              | 54.00             | 8.39           |
|             | 5 720                        | 11 440.07      | V          | Z                         | PK               | 43.89             | 9.70         | N/A          | N/A         | 53.59              | 74.00             | 20.41          |
|             | 5720                         | 11 440.46      | V          | Z                         | AV               | 33.63             | 9.70         | 0.30         | N/A         | 43.63              | 54.00             | 10.37          |
|             |                              | 5 638.48       | н          | Х                         | PK               | 50.88             | 4.08         | N/A          | N/A         | 54.96              | 68.20             | 13.24          |
|             | 5 745                        | 5 719.95       | Н          | Х                         | PK               | 68.58             | 4.20         | N/A          | N/A         | 72.78              | 110.79            | 38.01          |
|             | 5745                         | 11 492.30      | V          | Х                         | PK               | 44.06             | 9.56         | N/A          | N/A         | 53.62              | 74.00             | 20.38          |
|             |                              | 11 492.14      | V          | Z                         | AV               | 33.64             | 9.56         | 0.30         | N/A         | 43.50              | 54.00             | 10.50          |
| U-NII 3     | 5 785                        | 11 572.23      | V          | Z                         | PK               | 43.79             | 9.48         | N/A          | N/A         | 53.27              | 74.00             | 20.73          |
| 0-111 3     | 5765                         | 11 571.63      | V          | Z                         | AV               | 33.38             | 9.48         | 0.30         | N/A         | 43.16              | 54.00             | 10.84          |
|             |                              | 5 856.68       | Н          | Х                         | PK               | 65.48             | 3.84         | N/A          | N/A         | 69.32              | 110.33            | 41.01          |
|             | 5 825                        | 5 932.25       | Н          | Х                         | PK               | 50.83             | 4.70         | N/A          | N/A         | 55.53              | 68.20             | 12.67          |
|             | 5 625                        | 11 648.34      | V          | Z                         | PK               | 44.83             | 9.53         | N/A          | N/A         | 54.36              | 74.00             | 19.64          |
|             |                              | 11 647.91      | V          | Z                         | AV               | 34.32             | 9.53         | 0.30         | N/A         | 44.15              | 54.00             | 9.85           |

| Band        | Frequency<br>(MHz) | Freq.<br>(MHz) | ANT<br>Pol | Position<br>(Axis) | Detector<br>Mode | Reading<br>(dBuV) | TF<br>(dB/m) | DCCF<br>(dB) | DCF<br>(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) |
|-------------|--------------------|----------------|------------|--------------------|------------------|-------------------|--------------|--------------|-------------|--------------------|-------------------|----------------|
|             |                    | 5 149.76       | Н          | Х                  | PK               | 63.01             | 3.39         | N/A          | N/A         | 66.40              | 74.00             | 7.60           |
|             | 5 180              | 5 149.61       | Н          | Х                  | AV               | 45.60             | 3.39         | 0.31         | N/A         | 49.30              | 54.00             | 4.70           |
| U-NII 1     |                    | 10 360.65      | V          | Z                  | PK               | 41.71             | 10.14        | N/A          | N/A         | 51.85              | 68.20             | 16.35          |
|             | 5 200              | 10 399.08      | V          | Z                  | PK               | 42.82             | 10.47        | N/A          | N/A         | 53.29              | 68.20             | 14.91          |
|             | 5 240              | 10 481.93      | V          | Z                  | PK               | 43.24             | 11.28        | N/A          | N/A         | 54.52              | 68.20             | 13.68          |
|             | 5 260              | 10 520.39      | V          | Z                  | PK               | 43.66             | 11.42        | N/A          | N/A         | 55.08              | 68.20             | 13.12          |
|             |                    | 10 598.46      | V          | Z                  | PK               | 43.32             | 11.37        | N/A          | N/A         | 54.69              | 68.20             | 13.51          |
|             | 5 300              | 10 601.91      | V          | Z                  | PK               | 44.26             | 11.37        | N/A          | N/A         | 55.63              | 74.00             | 18.37          |
| U-NII       |                    | 10 601.49      | V          | Z                  | AV               | 33.78             | 11.37        | 0.31         | N/A         | 45.46              | 54.00             | 8.54           |
| 2A          |                    | 5 350.57       | Н          | Х                  | PK               | 61.83             | 3.82         | N/A          | N/A         | 65.65              | 74.00             | 8.35           |
|             | 5 220              | 5 351.27       | Н          | Х                  | AV               | 44.94             | 3.82         | 0.31         | N/A         | 49.07              | 54.00             | 4.93           |
|             | 5 320              | 10 642.10      | V          | Z                  | PK               | 43.91             | 11.43        | N/A          | N/A         | 55.34              | 74.00             | 18.66          |
|             |                    | 10 641.63      | V          | Z                  | AV               | 33.23             | 11.43        | 0.31         | N/A         | 44.97              | 54.00             | 9.03           |
|             |                    | 5 458.16       | Н          | Х                  | PK               | 55.93             | 3.76         | N/A          | N/A         | 59.69              | 74.00             | 14.31          |
|             |                    | 5 457.92       | Н          | Х                  | AV               | 42.47             | 3.76         | 0.31         | N/A         | 46.54              | 54.00             | 7.46           |
|             | 5 500              | 5 468.91       | V          | Z                  | PK               | 60.15             | 3.73         | N/A          | N/A         | 63.88              | 68.20             | 4.32           |
|             |                    | 11 001.88      | V          | Z                  | PK               | 46.06             | 11.43        | N/A          | N/A         | 57.49              | 74.00             | 16.51          |
| U-NII<br>2C |                    | 11 001.78      | V          | Z                  | AV               | 34.41             | 11.43        | 0.31         | N/A         | 46.15              | 54.00             | 7.85           |
| 20          | E E 00             | 11 158.81      | V          | Z                  | PK               | 44.48             | 10.84        | N/A          | N/A         | 55.32              | 74.00             | 18.68          |
|             | 5 580              | 11 159.35      | V          | Z                  | AV               | 34.42             | 10.84        | 0.31         | N/A         | 45.57              | 54.00             | 8.43           |
|             | 5 700              | 11 440.03      | V          | Z                  | PK               | 44.29             | 9.70         | N/A          | N/A         | 53.99              | 74.00             | 20.01          |
|             | 5 720              | 11 439.03      | V          | Z                  | AV               | 33.90             | 9.71         | 0.31         | N/A         | 43.92              | 54.00             | 10.08          |
|             |                    | 5 637.50       | Н          | Х                  | PK               | 51.45             | 4.08         | N/A          | N/A         | 55.53              | 68.20             | 12.67          |
|             | E 74E              | 5 718.58       | Н          | Х                  | PK               | 65.23             | 4.20         | N/A          | N/A         | 69.43              | 110.40            | 40.97          |
|             | 5 745              | 11 489.67      | V          | Z                  | PK               | 44.82             | 9.56         | N/A          | N/A         | 54.38              | 74.00             | 19.62          |
|             |                    | 11 489.23      | V          | Z                  | AV               | 33.64             | 9.57         | 0.31         | N/A         | 43.52              | 54.00             | 10.48          |
|             | E 70E              | 11 571.86      | V          | Z                  | PK               | 43.87             | 9.48         | N/A          | N/A         | 53.35              | 74.00             | 20.65          |
| U-NII 3     | 5 785              | 11 571.69      | V          | Z                  | AV               | 33.43             | 9.48         | 0.31         | N/A         | 43.22              | 54.00             | 10.78          |
|             |                    | 5 858.74       | Н          | Х                  | PK               | 65.61             | 3.84         | N/A          | N/A         | 69.45              | 109.75            | 40.30          |
|             | E 90E              | 5 928.32       | Н          | Х                  | PK               | 51.47             | 4.67         | N/A          | N/A         | 56.14              | 68.20             | 12.06          |
|             | 5 825              | 11 651.98      | V          | Z                  | PK               | 45.15             | 9.53         | N/A          | N/A         | 54.68              | 74.00             | 19.32          |
|             |                    | 11 651.45      | V          | Z                  | AV               | 34.12             | 9.53         | 0.31         | N/A         | 43.96              | 54.00             | 10.04          |

| 10. | 10664A-PM560   |   |
|-----|----------------|---|
| IC. | 10004A-LINI200 | , |

| Unwanted Emissions data(9 kHz ~ 40 GHz) : <i>TM</i> 3 |                              |                |            |                           |                  |                   |              |              |             |                    |                   |                |
|---|------------------------------|----------------|------------|---------------------------|------------------|-------------------|--------------|--------------|-------------|--------------------|-------------------|----------------|
| Band  | Tested<br>Frequency<br>(MHz) | Freq.<br>(MHz) | ANT<br>Pol | EUT<br>Position<br>(Axis) | Detector<br>Mode | Reading<br>(dBuV) | TF<br>(dB/m) | DCCF<br>(dB) | DCF<br>(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) |
| U-NII 1   | 5 190                        | 5 149.86       | Н          | Х                         | PK               | 59.20             | 3.39         | N/A          | N/A         | 62.59              | 74.00             | 11.41          |
|   |                              | 5 149.73       | Н          | Х                         | AV               | 46.16             | 3.39         | 0.61         | N/A         | 50.16              | 54.00             | 3.84           |
|   |                              | 10 377.84      | V          | Z                         | PK               | 42.62             | 10.29        | N/A          | N/A         | 52.91              | 68.20             | 15.29          |
|   | 5 230                        | 10 461.70      | V          | Z                         | PK               | 43.37             | 11.10        | N/A          | N/A         | 54.47              | 68.20             | 13.73          |
| U-NII<br>2A   | 5 270                        | 10 539.71      | V          | Z                         | PK               | 44.31             | 11.41        | N/A          | N/A         | 55.72              | 68.20             | 12.48          |
|   | 5 310                        | 5 350.50       | Н          | Х                         | PK               | 59.22             | 3.82         | N/A          | N/A         | 63.04              | 74.00             | 10.96          |
|   |                              | 5 350.56       | Н          | Х                         | AV               | 45.23             | 3.82         | 0.61         | N/A         | 49.66              | 54.00             | 4.34           |
|   |                              | 10 619.51      | V          | Z                         | PK               | 43.49             | 11.40        | N/A          | N/A         | 54.89              | 74.00             | 19.11          |
|   |                              | 10 619.79      | V          | Z                         | AV               | 32.64             | 11.40        | 0.61         | N/A         | 44.65              | 54.00             | 9.35           |
|   | 5 510                        | 5 459.26       | Н          | Х                         | PK               | 51.62             | 3.76         | N/A          | N/A         | 55.38              | 74.00             | 18.62          |
| U-NII<br>2C   |                              | 5 467.56       | Н          | Х                         | PK               | 56.58             | 3.74         | N/A          | N/A         | 60.32              | 68.20             | 7.88           |
|   |                              | 5 459.64       | V          | Z                         | AV               | 41.91             | 3.76         | 0.61         | N/A         | 46.28              | 54.00             | 7.72           |
|   |                              | 11 021.41      | V          | Z                         | PK               | 45.42             | 11.35        | N/A          | N/A         | 56.77              | 74.00             | 17.23          |
|   |                              | 11 021.53      | V          | Z                         | AV               | 34.47             | 11.35        | 0.61         | N/A         | 46.43              | 54.00             | 7.57           |
|   | 5 550                        | 11 099.73      | V          | Z                         | PK               | 43.37             | 11.10        | N/A          | N/A         | 54.47              | 74.00             | 19.53          |
|   |                              | 11 099.03      | V          | Z                         | AV               | 33.55             | 11.10        | 0.61         | N/A         | 45.26              | 54.00             | 8.74           |
|   | 5 710                        | 11 421.70      | V          | Z                         | PK               | 43.73             | 9.78         | N/A          | N/A         | 53.51              | 74.00             | 20.49          |
|   |                              | 11 421.73      | V          | Z                         | AV               | 33.60             | 9.78         | 0.61         | N/A         | 43.99              | 54.00             | 10.01          |
| U-NII 3   | 5 755                        | 5 644.65       | Н          | Х                         | PK               | 51.67             | 4.09         | N/A          | N/A         | 55.76              | 68.20             | 12.44          |
|   |                              | 5 709.75       | Н          | Х                         | PK               | 68.27             | 4.21         | N/A          | N/A         | 72.48              | 107.93            | 35.45          |
|   |                              | 11 507.65      | V          | Z                         | PK               | 44.42             | 9.53         | N/A          | N/A         | 53.95              | 74.00             | 20.05          |
|   |                              | 11 508.14      | V          | Z                         | AV               | 33.35             | 9.53         | 0.61         | N/A         | 43.49              | 54.00             | 10.51          |
|   | 5 795                        | 5 880.04       | Н          | Х                         | PK               | 56.50             | 4.25         | N/A          | N/A         | 60.75              | 101.47            | 40.72          |
|   |                              | 5 928.08       | Н          | Х                         | PK               | 50.48             | 4.67         | N/A          | N/A         | 55.15              | 68.20             | 13.05          |
|   |                              | 11 591.43      | V          | Z                         | PK               | 43.42             | 9.50         | N/A          | N/A         | 52.92              | 74.00             | 21.08          |
|   |                              | 11 592.24      | V          | Z                         | AV               | 33.30             | 9.50         | 0.61         | N/A         | 43.41              | 54.00             | 10.59          |

#### IC: 10664A-PM560

| Band        | Tested<br>Frequency<br>(MHz) | Freq.<br>(MHz) | ANT<br>Pol | EUT<br>Position<br>(Axis) | Detector<br>Mode | Reading<br>(dBuV) | TF<br>(dB/m) | DCCF<br>(dB) | DCF<br>(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) |
|-------------|------------------------------|----------------|------------|---------------------------|------------------|-------------------|--------------|--------------|-------------|--------------------|-------------------|----------------|
| U-NII 1     | 5 210                        | 5 149.71       | Н          | Х                         | PK               | 59.13             | 3.39         | N/A          | N/A         | 62.52              | 74.00             | 11.48          |
|             |                              | 5 149.38       | Н          | Х                         | AV               | 45.53             | 3.39         | 1.14         | N/A         | 50.06              | 54.00             | 3.94           |
|             |                              | 10 421.61      | V          | Z                         | PK               | 42.28             | 10.70        | N/A          | N/A         | 52.98              | 68.20             | 15.22          |
| U-NII<br>2A | 5 290                        | 5 351.60       | Н          | Х                         | PK               | 55.73             | 3.82         | N/A          | N/A         | 59.55              | 74.00             | 14.45          |
|             |                              | 5 352.09       | Н          | Х                         | AV               | 44.42             | 3.82         | 1.14         | N/A         | 49.38              | 54.00             | 4.62           |
|             |                              | 10 581.71      | V          | Z                         | PK               | 42.58             | 11.38        | N/A          | N/A         | 53.96              | 68.20             | 14.24          |
| U-NII<br>2C | 5 530                        | 5 459.23       | Н          | Х                         | PK               | 56.54             | 3.76         | N/A          | N/A         | 60.30              | 74.00             | 13.70          |
|             |                              | 5 469.85       | Н          | Х                         | PK               | 60.94             | 3.73         | N/A          | N/A         | 64.67              | 68.20             | 3.53           |
|             |                              | 5 459.46       | Н          | Х                         | AV               | 44.81             | 3.76         | 1.14         | N/A         | 49.71              | 54.00             | 4.29           |
|             |                              | 11 058.97      | V          | Z                         | PK               | 44.31             | 11.20        | N/A          | N/A         | 55.51              | 74.00             | 18.49          |
|             |                              | 11 058.51      | V          | Z                         | AV               | 34.11             | 11.20        | 1.14         | N/A         | 46.45              | 54.00             | 7.55           |
|             | 5 690                        | 11 380.94      | V          | Z                         | PK               | 43.82             | 9.93         | N/A          | N/A         | 53.75              | 74.00             | 20.25          |
|             |                              | 11 380.14      | V          | Z                         | AV               | 33.44             | 9.93         | 1.14         | N/A         | 44.51              | 54.00             | 9.49           |
| U-NII 3     | 5 775                        | 5 645.48       | Н          | Х                         | PK               | 54.85             | 4.10         | N/A          | N/A         | 58.95              | 68.20             | 9.25           |
|             |                              | 5 678.50       | Н          | Х                         | PK               | 59.40             | 4.14         | N/A          | N/A         | 63.54              | 89.29             | 25.75          |
|             |                              | 5 883.52       | Н          | Х                         | PK               | 56.10             | 4.29         | N/A          | N/A         | 60.39              | 98.90             | 38.51          |
|             |                              | 5 928.52       | Н          | Х                         | PK               | 55.66             | 4.67         | N/A          | N/A         | 60.33              | 68.20             | 7.87           |
|             |                              | 11 552.43      | V          | Z                         | PK               | 43.51             | 9.47         | N/A          | N/A         | 52.98              | 74.00             | 21.02          |
|             |                              | 11 552.15      | V          | Z                         | AV               | 33.28             | 9.47         | 1.14         | N/A         | 43.89              | 54.00             | 10.11          |

#### Unwanted Emissions data(9 kHz ~ 40 GHz) : TM4

## 5.6 AC Power-Line Conducted Emissions

### Test Requirements, §15.207 & RSS-Gen[8.8]

An intentional radiator that 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.

|                       | Conducted Limit (dBuV) |            |  |  |  |  |  |
|-----------------------|------------------------|------------|--|--|--|--|--|
| Frequency Range (MHz) | Quasi-Peak             | Average    |  |  |  |  |  |
| 0.15 ~ 0.5            | 66 to 56 *             | 56 to 46 * |  |  |  |  |  |
| 0.5 ~ 5.0             | 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 Configuration

See test photographs for the actual connections between EUT and support equipment.

## Test Procedure

Conducted emissions from the EUT were measured according to the ANSI C63.10-2013.

1. The test procedure is performed in a 6.5 m  $\times$  3.5 m  $\times$  3.5 m (L  $\times$  W  $\times$  H) shielded room. The EUT along with its peripherals were placed on a 1.0 m (W)  $\times$  1.5 m (L) and 0.8 m in height wooden table and the EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane.

2. The EUT was connected to power mains through a line impedance stabilization network (LISN) which provides 50 ohm coupling impedance for measuring instrument and the chassis ground was bounded to the horizontal ground plane of shielded room.

3. All peripherals were connected to the second LISN and the chassis ground also bounded to the horizontal ground plane of shielded room.

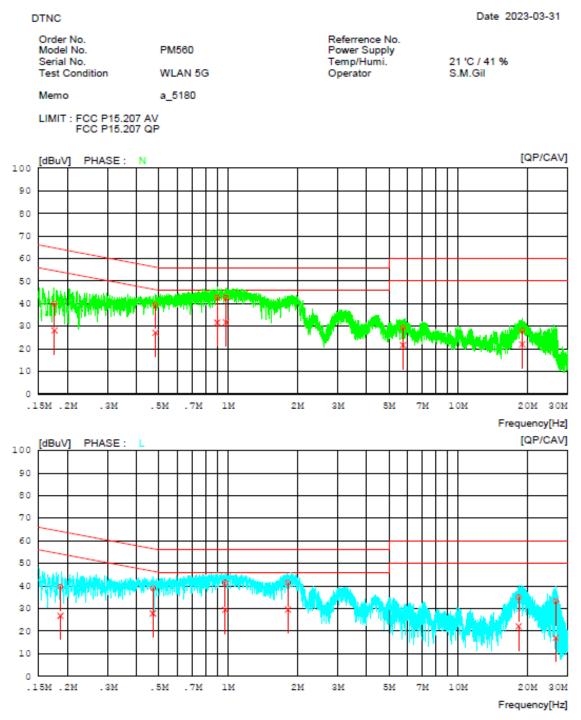
4. The excess power cable between the EUT and the LISN was bundled. The power cables of peripherals were unbundled. All connecting cables of EUT and peripherals were moved to find the maximum emission.

## Test Results: Comply

Refer to the next page. The worst case data was reported.

## AC Power-Line Conducted Emissions (Graph)

## Test Mode: U-NII 1 & TM 1 & 5 180 MHz





DTNC

## AC Power-Line Conducted Emissions (Data List)

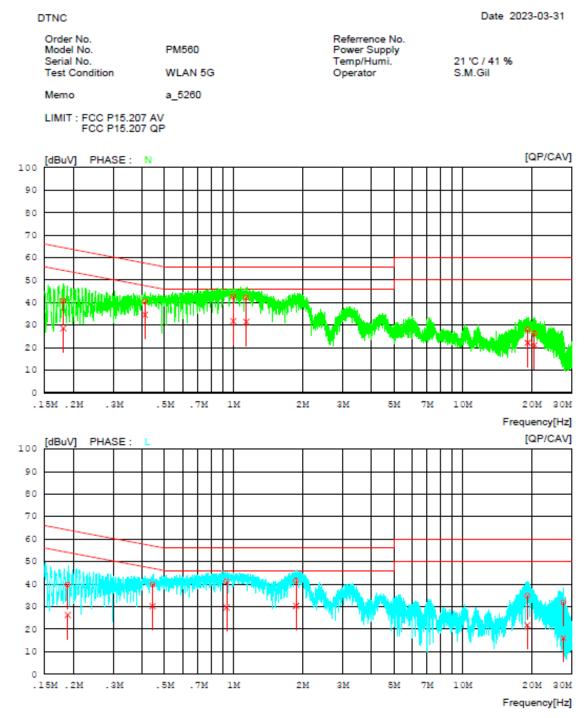
## Test Mode: U-NII 1 & TM 1 & 5 180 MHz <u>Results of Conducted Emission</u>

Date 2023-03-31

| Order No.<br>Model No.<br>Serial No.<br>Test Conditio  | PM560<br>n WLAN 5G                          | Referrence No.<br>Power Supply<br>Temp/Humi.<br>Operator   | 21 'C / 41 %<br>S.M.Gil  |  |
|--|---|--|--|--|
| Memo   | a_5180                                      |  |  |  |
| LIMIT : FCC  <br>FCC  <br>NO FRE<br>[MHz   | P15.207 QP<br>Q READING C.FACTOR<br>QP CAV  | RESULT LIMIT<br>QP CAV QP CAV<br>[dBuV][dBuV] [dBuV][dBuV] | MARGIN PHASE<br>QP CAV<br>] [dBuV] [dBuV]  |  |
| 2 0.483<br>3 0.896<br>4 0.976<br>5 5.766<br>6 19.026<br>7 0.186<br>8 0.476<br>9 0.972<br>10 1.822<br>11 18.356 | 200 31.5519.44 9.98<br>200 31.3419.57 10.04 | $\begin{array}{cccccccccccccccccccccccccccccccccccc$       | 24.6326.42 N<br>16.7619.12 N<br>13.2814.31 N<br>13.2814.25 N<br>30.5428.39 N<br>31.9627.93 N<br>24.5927.36 L<br>17.4818.74 L<br>14.4716.58 L<br>14.6216.39 L<br>25.0327.93 L<br>26.7732.92 L |  |

## AC Power-Line Conducted Emissions (Graph)

Test Mode: U-NII 2A & TM 1 & 5 260 MHz



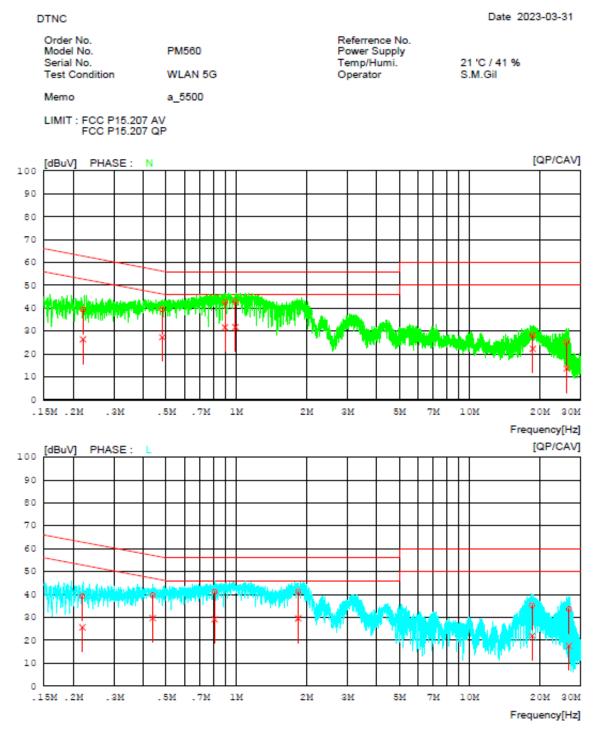
## AC Power-Line Conducted Emissions (Data List)

## Test Mode: U-NII 2A & TM 1 & 5 260 MHz Results of Conducted Emission

| DTNC   |  |  |  |  |   |   | Date  | 2023-03-31                      |   |
|--|--|--|--|--|---|---|---|---------------------------------|---|
| Order No.<br>Model No.<br>Serial No.<br>Test Condition |  | PM560<br>WLAN S  | 5G   | F  | Referrence<br>Power Sup<br>Femp/Hun<br>Operator   | oply  | 21 'C / 41 <sup>o</sup><br>S.M.Gil  | %                               |   |
| Memo   | 0  | a_5260   |  |  |   |   |   |                                 |   |
| LIMIT  | FCC P15.<br>FCC P15.   |  |  |  |   |   |   |                                 |   |
| NO   | FREQ   | READING  | C.FACTOR   | RESULT   | T, T  | TIM   | MARGIN  | PHASE                           |   |
| 110  | 11.0%  |  | 0.1110101  |  |   | CI 7 1 7  | 0.0   |                                 |   |
| 140  | [MHz]  | QP CAV<br>[dBuV] [dBuV]  |  | QP CAV<br>[dBuV] [dBuV   | QP  | CAV<br>[dBuV]   | QP CAV<br>7] [dBuV][dBuV  | 7]                              |   |
| 1  | [MHz]  | QP CAV<br>[dBuV][dBuV]<br>30.9018.65   | ] [dB]<br>9.99   | QP CAV<br>[dBuV][dBuV<br>40.8928.64  | QP<br>7] [dBuV<br>64.45   | 7][dBuV<br>54.45  | 7] [d̃BuV][dBuV<br>23.5625.81   | N                               | _ |
| 1<br>2   | [MHz]<br>0.18077<br>0.41101  | QP CAV<br>[dBuV][dBuV]<br>30.9018.65<br>30.5624.63   | ] [dB]<br>9.99<br>9.99   | QP CAV<br>[dBuV][dBuV<br>40.8928.64<br>40.5534.62  | QP<br>[dBuV<br>64.45<br>57.63   | 7][dBuV<br>54.45<br>47.63   | 7] [dĒuV][dBuV<br>23.5625.81<br>17.0813.01  | N<br>N                          |   |
| 1<br>2<br>3  | [MHz]<br>0.18077<br>0.41101<br>0.99900   | QP CAV<br>[dBuV][dBuV]<br>30.9018.65<br>30.5624.63<br>32.7821.71   | ] [dB]<br>9.99<br>9.99<br>10.01                                  | QP CAV<br>[dBuV][dBuV]<br>40.8928.64<br>40.5534.62<br>42.7931.72   | QP<br>[dBuV<br>64.45<br>57.63<br>56.00  | 7][dBuV<br>54.45<br>47.63<br>46.00  | 7] [dBuV] [dBuV]<br>23.5625.81<br>17.0813.01<br>13.2114.28  | N<br>N<br>N                     | _ |
| 1<br>2   | [MHz]<br>0.18077<br>0.41101<br>0.99900<br>1.13700  | QP CAV<br>[dBuV][dBuV]<br>30.9018.65<br>30.5624.63   | ] [dB]<br>9.99<br>9.99   | QP CAV<br>[dBuV][dBuV<br>40.8928.64<br>40.5534.62  | QP<br>[dBuV<br>64.45<br>57.63   | 7][dBuV<br>54.45<br>47.63   | 7] [dĒuV][dBuV<br>23.5625.81<br>17.0813.01  | N<br>N                          | _ |
| 1<br>2<br>3<br>4                                       | [MHz]<br>0.18077<br>0.41101<br>0.99900<br>1.13700<br>19.24520  | QP CAV<br>[dBuV][dBuV]<br>30.9018.65<br>30.5624.63<br>32.7821.71<br>32.3221.50   | ] [dB]<br>9.99<br>9.99<br>10.01<br>10.01                         | QP CAV<br>[dBuV][dBuV]<br>40.8928.64<br>40.5534.62<br>42.7931.72<br>42.3331.51   | QP<br>[dBuV<br>64.45<br>57.63<br>56.00<br>56.00   | 7][dBuV<br>54.45<br>47.63<br>46.00<br>46.00   | 7] [dBuV] [dBuV]<br>23.5625.81<br>17.0813.01<br>13.2114.28<br>13.6714.49  | N<br>N<br>N<br>N                | _ |
| 1<br>2<br>3<br>4<br>5<br>6<br>7                        | [MHz]<br>0.18077<br>0.41101<br>0.99900<br>1.13700<br>19.24520<br>20.54920<br>0.18931                       | QP CAV<br>[dBuV][dBuV]<br>30.9018.65<br>30.5624.63<br>32.7821.71<br>32.3221.50<br>17.4911.62<br>15.6910.52<br>29.8816.39                             | 9.99<br>9.99<br>10.01<br>10.01<br>10.56<br>10.55<br>9.89         | QP CAV<br>[dBuV][dBuV]<br>40.8928.64<br>40.5534.62<br>42.7931.72<br>42.3331.51<br>28.0522.18<br>26.2421.07<br>39.7726.28                             | QP<br>[dBuV<br>64.45<br>57.63<br>56.00<br>56.00<br>60.00<br>60.00<br>64.07                    | 7] [dBuV<br>54.45<br>47.63<br>46.00<br>46.00<br>50.00<br>50.00<br>50.00<br>54.07          | [dBuV] [dBuV]<br>23.5625.81<br>17.0813.01<br>13.2114.28<br>13.6714.49<br>31.9527.82<br>33.7628.93<br>24.3027.79                               | N<br>N<br>N<br>N<br>L           | _ |
| 1<br>2<br>3<br>4<br>5<br>6<br>7<br>8                   | [MHz]<br>0.18077<br>0.41101<br>0.99900<br>1.13700<br>19.24520<br>20.54920<br>0.18931<br>0.44367            | QP CAV<br>[dBuV][dBuV]<br>30.9018.65<br>30.5624.63<br>32.7821.71<br>32.3221.50<br>17.4911.62<br>15.6910.52<br>29.8816.39<br>29.9220.33               | 9.99<br>9.99<br>10.01<br>10.01<br>10.56<br>10.55<br>9.89<br>9.90 | QP CAV<br>[dBuV][dBuV]<br>40.8928.64<br>40.5534.62<br>42.7931.72<br>42.3331.51<br>28.0522.18<br>26.2421.07<br>39.7726.28<br>39.8230.23               | QP<br>[dBuV<br>64.45<br>57.63<br>56.00<br>56.00<br>60.00<br>60.00<br>64.07<br>56.99           | 7] [dBuV<br>54.45<br>47.63<br>46.00<br>46.00<br>50.00<br>50.00<br>54.07<br>46.99          | 7] [dBuV] [dBuV]<br>23.5625.81<br>17.0813.01<br>13.2114.28<br>13.6714.49<br>31.9527.82<br>33.7628.93<br>24.3027.79<br>17.1716.76              | N<br>N<br>N<br>N<br>L<br>L      | _ |
| 1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9              | [MHz]<br>0.18077<br>0.41101<br>0.99900<br>1.13700<br>19.24520<br>20.54920<br>0.18931<br>0.44367<br>0.93272 | QP CAV<br>[dBuV][dBuV]<br>30.9018.65<br>30.5624.63<br>32.7821.71<br>32.3221.50<br>17.4911.62<br>15.6910.52<br>29.8816.39<br>29.9220.33<br>31.3419.79 | 9.99<br>9.99<br>10.01<br>10.56<br>10.55<br>9.89<br>9.90<br>9.94  | QP CAV<br>[dBuV][dBuV]<br>40.8928.64<br>40.5534.62<br>42.7931.72<br>42.3331.51<br>28.0522.18<br>26.2421.07<br>39.7726.28<br>39.8230.23<br>41.2829.73 | QP<br>[dBuV]<br>64.45<br>57.63<br>56.00<br>56.00<br>60.00<br>60.00<br>64.07<br>56.99<br>56.00 | 7] [dBuV<br>54.45<br>47.63<br>46.00<br>46.00<br>50.00<br>50.00<br>54.07<br>46.99<br>46.00 | 7] [dBuV][dBuV]<br>23.5625.81<br>17.0813.01<br>13.2114.28<br>13.6714.49<br>31.9527.82<br>33.7628.93<br>24.3027.79<br>17.1716.76<br>14.7216.27 | N<br>N<br>N<br>N<br>L<br>L<br>L | _ |
| 1<br>2<br>3<br>4<br>5<br>6<br>7<br>8                   | [MHz]<br>0.18077<br>0.41101<br>0.99900<br>1.13700<br>19.24520<br>20.54920<br>0.18931<br>0.44367<br>0.93272 | QP CAV<br>[dBuV][dBuV]<br>30.9018.65<br>30.5624.63<br>32.7821.71<br>32.3221.50<br>17.4911.62<br>15.6910.52<br>29.8816.39<br>29.9220.33               | 9.99<br>9.99<br>10.01<br>10.01<br>10.56<br>10.55<br>9.89<br>9.90 | QP CAV<br>[dBuV][dBuV]<br>40.8928.64<br>40.5534.62<br>42.7931.72<br>42.3331.51<br>28.0522.18<br>26.2421.07<br>39.7726.28<br>39.8230.23               | QP<br>[dBuV<br>64.45<br>57.63<br>56.00<br>56.00<br>60.00<br>60.00<br>64.07<br>56.99           | 7] [dBuV<br>54.45<br>47.63<br>46.00<br>46.00<br>50.00<br>50.00<br>54.07<br>46.99          | 7] [dBuV] [dBuV]<br>23.5625.81<br>17.0813.01<br>13.2114.28<br>13.6714.49<br>31.9527.82<br>33.7628.93<br>24.3027.79<br>17.1716.76              | N<br>N<br>N<br>N<br>L<br>L      | _ |

## AC Power-Line Conducted Emissions (Graph)

Test Mode: U-NII 2C & TM 1 & 5 500 MHz



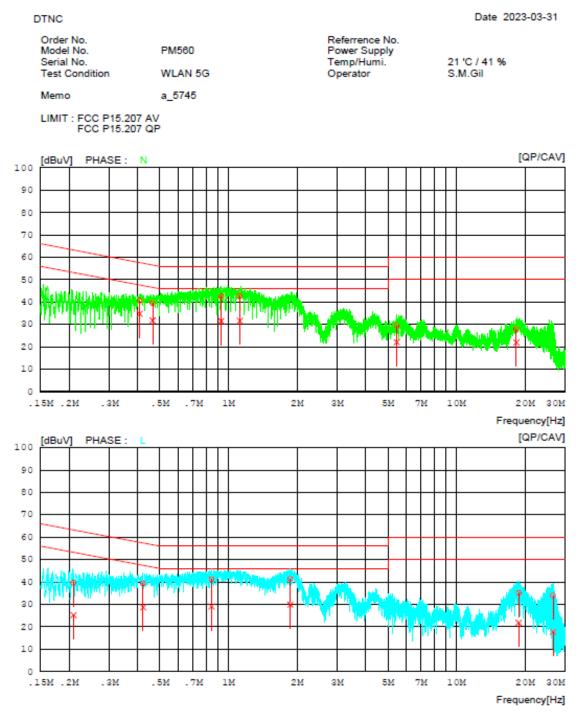
## AC Power-Line Conducted Emissions (Data List)

## Test Mode: U-NII 2C & TM 1 & 5 500 MHz

| DTNC   |                  | Date 2023-03-31   |
|--|------------------|---|
| Order No.<br>Model No.<br>Serial No.<br>Test Condition | PM560<br>WLAN 5G | Referrence No.<br>Power Supply<br>Temp/Humi. 21 'C / 41 %<br>Operator S.M.Gil |
| Memo   | a_5500           |   |
| LIMIT : FCC P15<br>FCC P15<br>NO FREQ<br>[MHz]         |                  | QP CAV QP CAV QP CAV  |
|  |                  | [dBuV] [dBuV] [dBuV] [dBuV] [dBuV]  |

## AC Power-Line Conducted Emissions (Graph)

Test Mode: U-NII 3 & TM 1 & 5 745 MHz





DTNC

## AC Power-Line Conducted Emissions (Data List)

## Test Mode: U-NII 3 & TM 1 & 5 745 MHz Results of Conducted Emission

Date 2023-03-31

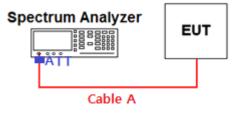
| Mode<br>Serial          | Order No.<br>Model No.<br>Serial No.<br>Test Condition   |  | 5G  | F  |                                  |  |   | 21 'C / 41 %<br>S.M.Gil  |   |  |
|-------------------------|--|--|---|--|----------------------------------|--|---|--|---|--|
| Memo                    | Memo   |  | a_5745  |  |                                  |  |   |  |   |  |
| LIMIT                   | FCC P15<br>FCC P15   |  |   |  |                                  |  |   |  |   |  |
| ИО                      | FREQ<br>[MHz]  | READING<br>QP CAV<br>[dBuV][dBuV   | C.FACTOR<br>] [dB]  | RESULT<br>QP CAV<br>[dBuV][dBuV  | QP                               | MIT<br>CAV<br>][dBuV   | QP  |  | phase                                     |  |
| 7<br>8<br>9<br>10<br>11 | $\begin{array}{c} 0.46497\\ 0.92907\\ 1.12140\\ 5.47460\\ 18.30520\\ 0.20921\\ 0.42205\\ 0.84346\\ 1.86760\\ 18.76080 \end{array}$ | $\begin{array}{c} 30.6524.79\\ 29.5221.76\\ 32.5621.48\\ 32.6421.65\\ 19.211.90\\ 17.3811.41\\ 29.6615.33\\ 29.4818.79\\ 31.3119.14\\ 1.3319.82\\ 24.7411.44\\ 23.51 7.30\\ \end{array}$ | 9.99<br>10.00<br>10.01<br>10.21<br>10.55<br>9.88<br>9.89<br>9.90<br>10.04<br>10.36<br>10.35 | $\begin{array}{c} 40.6434.78\\ 39.5231.76\\ 42.5731.49\\ 42.6531.66\\ 29.4222.11\\ 27.9321.96\\ 39.5425.21\\ 39.3728.68\\ 41.2129.04\\ 41.3729.86\\ 35.1021.80\\ 33.8617.65 \end{array}$ | 56.60<br>56.00<br>56.00<br>60.00 | $\begin{array}{c} 47.68\\ 46.00\\ 46.00\\ 50.00\\ 50.00\\ 53.24\\ 47.41\\ 46.00\\ 46.00\\ 50.00\\ 50.00\\ 50.00\\ \end{array}$ | $\begin{array}{c} 17.041\\ 17.081\\ 13.431\\ 13.351\\ 30.582\\ 23.702\\ 18.041\\ 14.631\\ 24.902\\ 26.143\end{array}$ | .4.84<br>.4.51<br>.4.34<br>.7.89<br>.8.04<br>.8.03<br>.8.73<br>.6.96<br>.6.14<br>.8.20 | N<br>N<br>N<br>N<br>L<br>L<br>L<br>L<br>L |  |



## **APPENDIX I**

**Conducted Test set up Diagram** 

Conducted Measurement





## APPENDIX II

## **Duty Cycle Information**

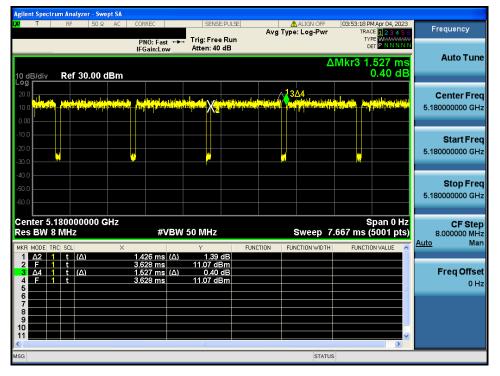
## Test Procedure

Duty Cycle [X = On Time / ( On + Off time )] is measured using Measurement Procedure of KDB789033 D02v02r01

- 1. Set the center frequency of the spectrum analyzer to the center frequency of the transmission.
- 2. Set RBW  $\geq$  EBW if possible; otherwise, set RBW to the largest available value.
- 3. Set VBW  $\geq$  RBW. Set detector = peak.
- 4. Note : The zero-span measurement method shall not be used unless both RBW and VBW are > 50 / T, where T is defined in section II.B.1.a), and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if T ≤ 16.7 microseconds.)
  - T: The minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
    - (*T* = On time of the above table since the EUT operates with above fixed Duty Cycle and it is the minimum On time)

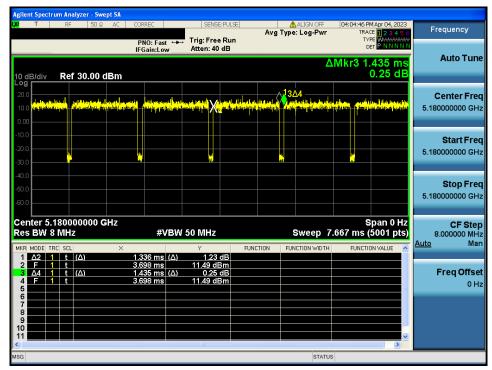
## **Duty Cycle**

Test Mode: TM1 & Ch.36



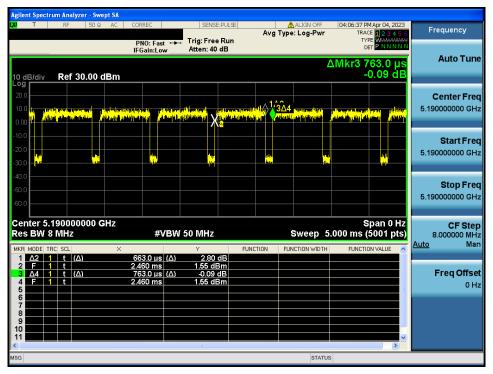
## **Duty Cycle**

Test Mode: TM 2 & Ch.36



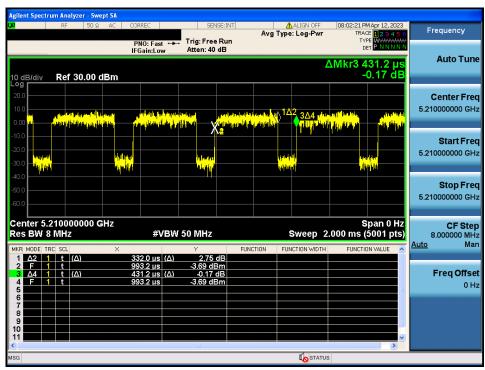
## **Duty Cycle**

Test Mode: TM 3 & Ch.38



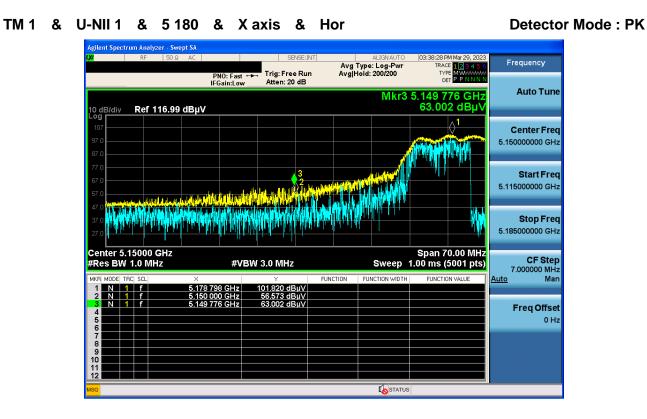
## **Duty Cycle**

Test Mode: TM 4 & Ch.42



## **APPENDIX III**

## Unwanted Emissions (Radiated) Test Plot:



## TM 1 & U-NII 1 & 5 180 & X axis & Hor

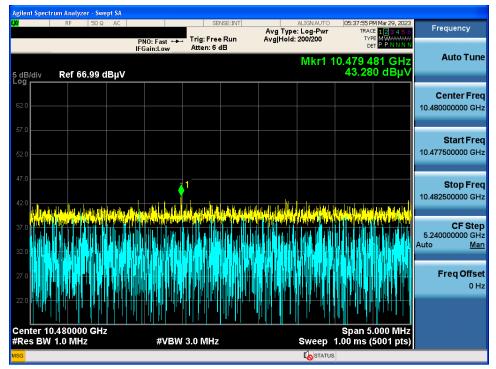
Detector Mode : AV



**Detector Mode : PK** 

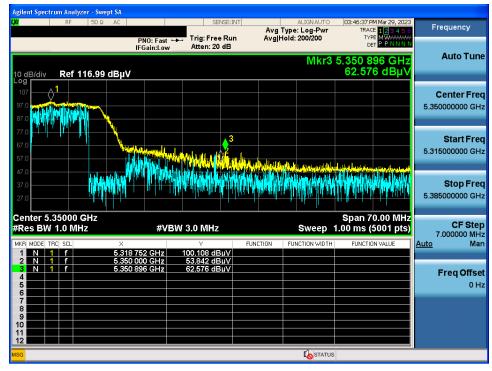


## TM 1 & U-NII 1 & 5 240 & Z axis & Ver





## TM 1 & U-NII 2A & 5320 & Xaxis & Hor



## TM 1 & U-NII 2A & 5 320 & X axis & Hor Detector Mode : AV





## TM 1 & U-NII 2A & 5300 & Zaxis & Ver

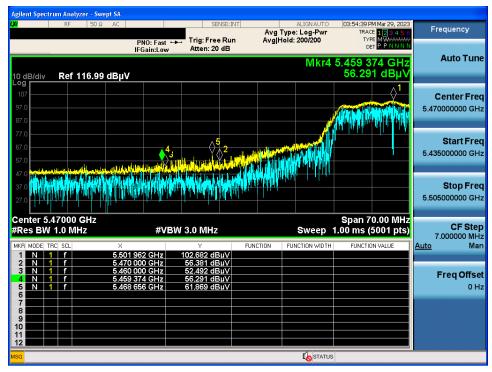
| 1            | RF 5                     | 50 Ω AC |                           | SEN                                       | ISE:INT          |                       | ALIGN AUTO      |                                 | M Mar 29, 2023        | Frequency       |
|--------------|--------------------------|---------|---------------------------|---|------------------|-----------------------|-----------------|---------------------------------|-----------------------|-----------------|
|              |                          |         |                           | Trig: Free                                | Run              | Avg Type<br>Avg Hold: |                 | TRAC<br>TYL                     | E 1 2 3 4 5 6         | Frequency       |
|              |                          |         | PNO: Fast 🔸<br>IFGain:Low | Atten: 6 d                                |                  |                       |                 | DI                              | A P N N N N           |                 |
|              |                          |         |                           |   |                  |                       | Mkr1 1          | 0.600 8                         | 37 GHz                | Auto Tun        |
| dB/div       | Ref 66.9                 | l9 dBµV |                           |   |                  |                       |                 | 33.72                           | 4 dBµV                |                 |
| °g           |                          |         |                           |   |                  |                       |                 |                                 |                       |                 |
| 62.0         |                          |         |                           |   |                  |                       |                 |                                 |                       | Center Fre      |
| 02.0         |                          |         |                           |   |                  |                       |                 |                                 |                       | 10.600000000 GH |
| 57.0         |                          |         |                           |   |                  |                       |                 |                                 |                       |                 |
|              |                          |         |                           |   |                  |                       |                 |                                 |                       | Start Fre       |
| 52.0         |                          |         |                           |   |                  |                       |                 |                                 |                       | 10.597500000 GH |
|              |                          |         |                           |   |                  |                       |                 |                                 |                       |                 |
| 47.0         |                          |         |                           |   |                  |                       |                 |                                 |                       | Stop Fre        |
|              |                          |         |                           |   |                  |                       |                 |                                 |                       | 10.602500000 GH |
| 42.0         |                          |         |                           |   |                  |                       |                 |                                 |                       |                 |
|              |                          |         |                           |   |                  |                       |                 |                                 |                       | CF Ste          |
| 37.0         |                          |         |                           |   |                  | Â1                    |                 |                                 |                       | 5.300000000 GH  |
| an o Manufad | والمتحد والملين والمالية |         | erster anderstanderstand  | and the state of the second states of the | dela companya da | Walnut and white      | A MARINA MARINA | *****                           | And the second        | Auto <u>Ma</u>  |
| 32.0         |                          |         |                           |   |                  |                       |                 |                                 |                       |                 |
| 27.0         |                          |         |                           |   |                  |                       |                 |                                 |                       | Freq Offse      |
|              |                          |         |                           |   |                  |                       |                 |                                 |                       | он              |
| 22.0         |                          |         |                           |   |                  |                       |                 |                                 |                       |                 |
|              |                          |         |                           |   |                  |                       |                 |                                 |                       |                 |
| Contor 1     | ).600000 <b>(</b>        |         |                           |   |                  |                       |                 | Snon 5                          | 000 MH-               |                 |
|              | 1.0 MHz                  | sΠZ     | #VBM                      | / 3.0 MHz*                                |                  |                       | Sweep           | <del>sp</del> an 5<br>1.00 ms.( | .000 MHz<br>5001 pts) |                 |
| sg           |                          |         |                           |   |                  |                       | STATUS          |                                 | 1.07                  |                 |

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## **Detector Mode : AV**



## TM 1 & U-NII 2C & 5 500 & X axis & Hor



## TM 1 & U-NII 2C & 5 500 & X axis & Hor Detector Mode : AV





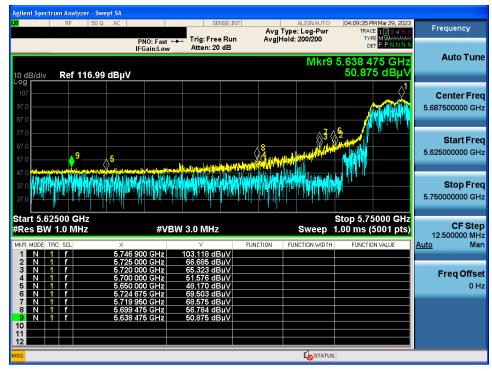
## Detector Mode : AV

## TM 1 & U-NII 2C & 5 550 & Z axis & Ver

|              | nt Spectr          | um Analyze          |              |                              |  |                          |                          |           |                      |                          |                       |  |
|--------------|--------------------|---------------------|--------------|------------------------------|--|--------------------------|--------------------------|-----------|----------------------|--------------------------|-----------------------|--|
| L)XI         |                    | RF                  | 50 Ω         | AC                           |  | SE                       | NSE:INT                  | Avg Type  | ALIGNAUTO            | TRA                      | M Mar 31, 2023        | Frequency  |
|              |                    |                     |              |                              | PNO: Fast ↔<br>IFGain:Low  | Trig: Free<br>Atten: 6 d |                          | Avg Hold: |                      | TY<br>D                  |                       | Auto Tune  |
| 5 dE         |                    | Ref 66              | i.99 d       | ΒμV                          |  |                          |                          |           | Mkr1 1               | 1.000 5<br>34.57         | ö75 GHz<br>′6 dBμV    | Auto Tune  |
| Log<br>62.0  |                    |                     |              |                              |  |                          |                          |           |                      |                          |                       | Center Freq<br>11.000000000 GHz                      |
| 57.0<br>52.0 |                    |                     |              |                              |  |                          |                          |           |                      |                          |                       | <b>Start Freq</b><br>10.997500000 GHz                |
| 47.0<br>42.0 |                    |                     |              |                              |  |                          |                          |           |                      |                          |                       | <b>Stop Freq</b><br>11.002500000 GHz                 |
| 37.0<br>32.0 | . In all the House | her til och prinsen | entrand by d | and an address of the second | , and the state of | il y ny hadaona kita di  | tersterly wijnige of the |           | afartista distantist | uttettystationetyteensje | 4.19.19.19.19.19.19   | <b>CF Step</b><br>5.500000000 GHz<br>Auto <u>Man</u> |
| 27.0         |                    |                     |              |                              |  |                          |                          |           |                      |                          |                       | <b>Freq Offset</b><br>0 Hz                           |
| 22.0         |                    |                     |              |                              |  |                          |                          |           |                      |                          |                       |  |
|              |                    | .000000<br>1.0 MHz  |              |                              | #VBW   | 3.0 MHz                  | ĸ                        |           | Sweep                | Span 5<br>1.00 ms (      | .000 MHz<br>5001 pts) |  |
| MSG          |                    |                     |              |                              |  |                          |                          |           | <b>I</b> STATUS      |                          |                       |  |



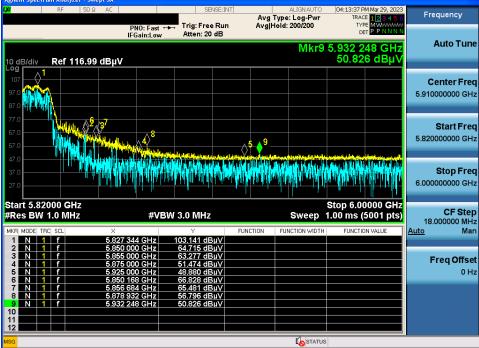
## TM 1 & U-NII 3 & 5745 & X axis & Hor



## TM 1 & U-NII 3 & 5825 & Xaxis & Hor

## **Detector Mode : PK**

# Agilent Spectrum Analyzer - Swept SA





## TM 1 & U-NII 3 & 5825 & Zaxis & Ver

| Agilent Spectrum Analyzer - Swept SA                            |                                |   |  |  |  |
|---|--------------------------------|---|--|--|--|
| XI RF 50Ω AC  | PNO: Fast ↔→                   | SENSE:INT   | ALIGN AUTO<br>Avg Type: RMS<br>Avg Hold: 200/200 | 10:07:23 AM Mar 31, 2023<br>TRACE 1 2 3 4 5 6<br>TYPE A WWWWW<br>DET A P N N N N | Frequency  |
| 5 dB/div Ref 66.99 dBµV   | IFGain:Low                     | Atten: 6 dB   | Mkr1   | 11.647 909 GHz<br>34.323 dBµV  | Auto Tune  |
| 62.0  |                                |   |  |  | Center Freq<br>11.65000000 GHz                       |
| 57.0  |                                |   |  |  | Start Freq<br>11.647500000 GHz                       |
| 42.0  |                                |   |  |  | <b>Stop Freq</b><br>11.652500000 GHz                 |
| 37.0<br>32.0 <mark>4////////////////////////////////////</mark> | internet and the second second | endersteinen gestendigen eine sterreiten eine sterreiten eine sterreiten eine sterreiten eine sterreiten eine s | here of the stand and the left gap of the out    | ungu ber afta di setter fatte bisanse da se si da se                             | <b>CF Step</b><br>5.825000000 GHz<br>Auto <u>Man</u> |
| 27.0  |                                |   |  |  | Freq Offset<br>0 Hz                                  |
| Center 11.650000 GHz<br>#Res BW 1.0 MHz                         | #VBW                           | 3.0 MHz*  | Sweep  | Span 5.000 MHz<br>1.00 ms (5001 pts)   |  |
| ISG   |                                |   | <b>K</b> STATU                                   | ,  |  |

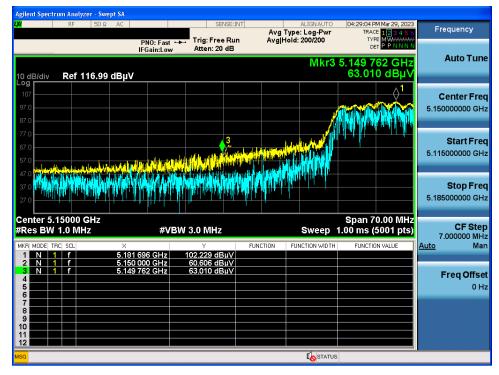
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## **Detector Mode : AV**

**Detector Mode : PK** 



## TM 2 & U-NII 1 & 5180 & X axis & Hor



## TM 2 & U-NII 1 & 5 180 & X axis & Hor

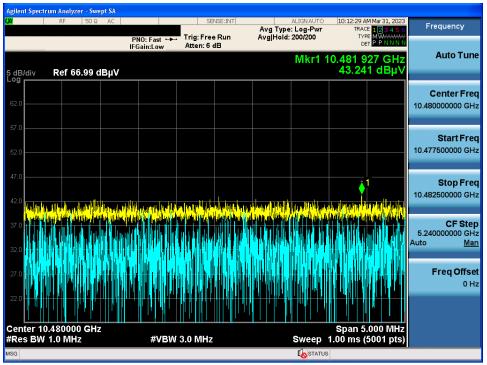
## **Detector Mode : AV**



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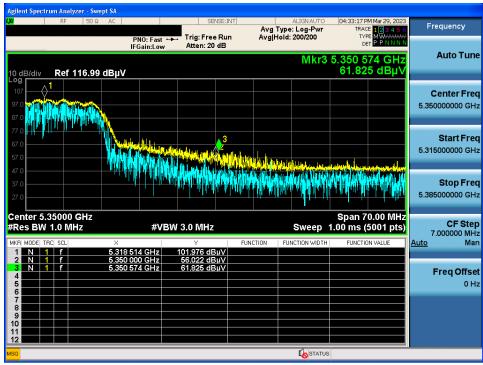
## TM 2 & U-NII 1 & 5 240 & Z axis & Ver



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## TM 2 & U-NII 2A & 5 320 & X axis & Hor



## TM 2 & U-NII 2A & 5 320 & X axis & Hor Detector Mode : AV





## Detector Mode : AV

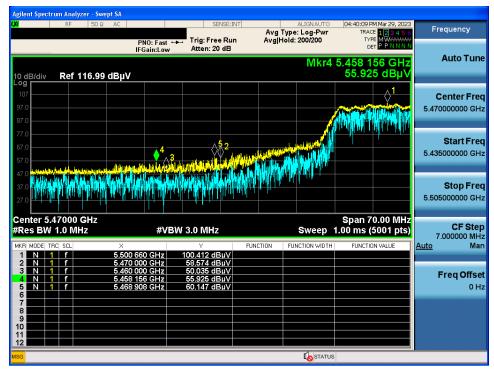
## TM 2 & U-NII 2A & 5 300 & Z axis & Ver

|              | RF                  | 50Ω A | AC        |                      | SE                     | VSE:INT           |                                       | ALIGN AUTO                        |                   | M Mar 29, 2023                          | Frequency               |
|--------------|---------------------|-------|-----------|----------------------|------------------------|-------------------|---------------------------------------|-----------------------------------|-------------------|---|-------------------------|
|              |                     |       |           | NO: Fast 🔸           | . Trig: Free           |                   | Avg Type<br>Avg Hold:                 |                                   | TRAC<br>TYI       | E 1 2 3 4 5 6<br>A MAMMA<br>A P N N N N | requeries               |
|              |                     |       | IF        | Gain:Low             | Atten: 6               | 18                |                                       |                                   |                   |   | Auto Tun                |
| dB/div       | Ref 66.             | 99 dB | μV        |                      |                        |                   |                                       | IVIKET 1                          | 33.77             | 88 GHz<br>'9 dBµV                       |                         |
| °g           |                     |       |           |                      |                        |                   |                                       |                                   |                   |   | Center Fre              |
| 2.0          |                     |       |           |                      |                        |                   |                                       |                                   |                   |   | 10.600000000 GH         |
|              |                     |       |           |                      |                        |                   |                                       |                                   |                   |   |                         |
| 7.0          |                     |       |           |                      |                        |                   |                                       |                                   |                   |   | Start Fre               |
| 52.0         |                     |       |           |                      |                        |                   |                                       |                                   |                   |   | 10.597500000 GH         |
|              |                     |       |           |                      |                        |                   |                                       |                                   |                   |   |                         |
| 17.0         |                     |       |           |                      |                        |                   |                                       |                                   |                   |   | Stop Fre                |
| 12.0         |                     |       |           |                      |                        |                   |                                       |                                   |                   |   | 10.602500000 GH         |
|              |                     |       |           |                      |                        |                   |                                       |                                   |                   |   |                         |
| 17.0         |                     |       |           |                      |                        |                   |                                       |                                   | 1                 |   | CF Ste<br>5.30000000 GH |
| 12.0 <b></b> | فتحمله فالعام       |       | an should | und interest interes | diament and the second | والمناور والمراجع | loon in the state of the state of the | and the state of the state of the | mining all second | WANNA MARKA                             | Auto <u>Ma</u>          |
| 12.0         |                     |       |           |                      |                        |                   |                                       |                                   |                   |   |                         |
| 27.0         |                     |       |           |                      |                        |                   |                                       |                                   |                   |   | Freq Offse              |
|              |                     |       |           |                      |                        |                   |                                       |                                   |                   |   | 0 H                     |
| 22.0         |                     |       |           |                      |                        |                   |                                       |                                   |                   |   |                         |
|              |                     |       |           |                      |                        |                   |                                       |                                   |                   |   |                         |
|              | 0.600000<br>1.0 MHz | GHz   |           | #VBW                 | 3.0 MHz                |                   |                                       | Sweep                             | 5 Span<br>1.00 ms | .000 MHz<br>5001 pts)                   |                         |
| G            |                     |       |           |                      |                        |                   |                                       | STATUS                            |                   |   |                         |

**Detector Mode : PK** 



## TM 2 & U-NII 2C & 5 500 & X axis & Hor



### TM 2 & U-NII 2C & 5 500 & X axis & Hor

## **Detector Mode : AV**



#### Pages: 165 / 184



## Detector Mode : AV

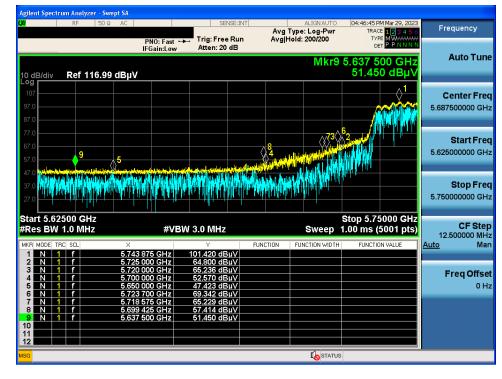
## TM 2 & U-NII 2C & 5 500 & Z axis & Ver

|                      | um Analyzer - S |                     |                   |                    |                     |                                |                     |                       |  |                                   |
|----------------------|-----------------|---------------------|-------------------|--------------------|---------------------|--------------------------------|---------------------|-----------------------|--|-----------------------------------|
| <u>x/</u>            | RF 50           | Ω AC                | PNO: Fast 🔸       |                    |                     | Avg Type<br>Avg Hold:          |                     | TRA                   | M Mar 31, 2023<br>E <b>1 2 3 4 5 6</b><br>PE A WWWWW<br>ET A P N N N N | Frequency                         |
| 5 dB/div             | Dof 66 00       |                     | IFGain:Low        | Atten: 6 d         |                     |                                |                     | 11.001 7              | 77 GHz<br>6 dBμV   | Auto Tune                         |
|                      | Ref 66.99       | σασμν               |                   |                    |                     |                                |                     |                       |  | Center Freq                       |
| 57.0                 |                 |                     |                   |                    |                     |                                |                     |                       |  | Start Free                        |
| 52.0<br>47.0         |                 |                     |                   |                    |                     |                                |                     |                       |  | 10.997500000 GH2<br>Stop Fred     |
| 42.0                 |                 |                     |                   |                    |                     |                                |                     | <u> </u>              |  | 11.002500000 GH                   |
| 32.0 <b>311/14/1</b> | www.phaneuru    | yrathyterðaldstyfer | innspectionen der | a sayafan shifalif | te del través de la | , the bank of the made and the | Yogiyiliyiyorufayyi | Y AN WHILE HAVE A MAN | aler half for the state of the   | 5.500000000 GH<br>Auto <u>Mar</u> |
| 27.0                 |                 |                     |                   |                    |                     |                                |                     |                       |  | Freq Offse<br>0 Ha                |
| Center 11<br>Res BW  | .000000 G       | Hz                  | #\/B\A/           | 3.0 MHz            | ×                   |                                | Sweep               | Span 5                | .000 MHz<br>(5001 pts)   |                                   |
| ISG                  | 1.0 10112       |                     |                   | 0.0 111112         |                     |                                | STATU               |                       | ooon pis)  |                                   |



## TM 2 & U-NII 3 & 5745 & X axis & Hor

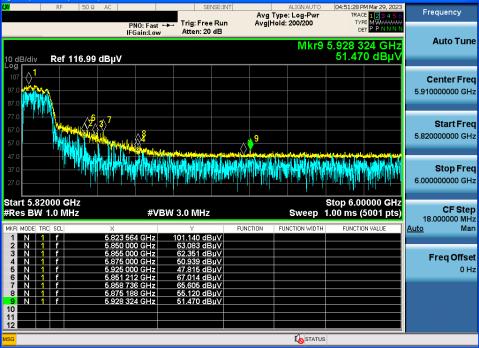
**Detector Mode : PK** 



### TM 2 & U-NII 3 & 5825 & X axis & Hor

## **Detector Mode : PK**

## Spectrum Analyzer - Swept SA





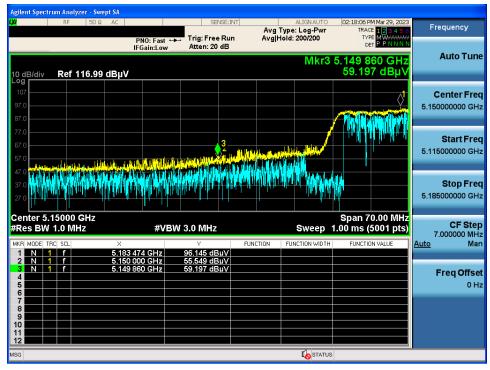
## TM 2 & U-NII 3 & 5825 & Zaxis & Ver

| Agilent Spectr   | um Analyzer - Swe               |               |   | 0.51                 |                    |                       |                           | 10:00:57.0                      | MM                    |                                      |
|------------------|---------------------------------|---------------|---|----------------------|--------------------|-----------------------|---------------------------|---------------------------------|-----------------------|--------------------------------------|
| , <mark>X</mark> | RF 50 Ω                         | AC            |   |                      |                    | Avg Type<br>Avg Hold: |                           | TRAC                            | M Mar 31, 2023        | Frequency                            |
|                  |                                 |               | PNO: Fast 🔸<br>IFGain:Low                   | Atten: 6 d           |                    | Highloid.             |                           |                                 |                       | Auto Tune                            |
| 5 dB/div<br>Log  | Ref 66.99 d                     | Βμ∨           |   |                      |                    |                       | Mkr1 1                    | 1.651 4<br>34.12                | 50 GHz<br>0 dBµV      | Auto Tune                            |
|                  |                                 |               |   |                      |                    |                       |                           |                                 |                       | Center Freq                          |
| 62.0             |                                 |               |   |                      |                    |                       |                           |                                 |                       | 11.650000000 GHz                     |
| 57.0             |                                 |               |   |                      |                    |                       |                           |                                 |                       | Start Freq                           |
| 52.0             |                                 |               |   |                      |                    |                       |                           |                                 |                       | 11.647500000 GHz                     |
| 47.0             |                                 |               |   |                      |                    |                       |                           |                                 |                       |                                      |
| 47.0             |                                 |               |   |                      |                    |                       |                           |                                 |                       | <b>Stop Freq</b><br>11.652500000 GHz |
| 42.0             |                                 |               |   |                      |                    |                       |                           |                                 |                       |                                      |
| 37.0             |                                 |               |   |                      |                    |                       |                           | 1                               |                       | CF Step<br>5.825000000 GHz           |
| 32.0             | ngola faloson aqtifotologici sa | i shuhingi na | halan an a | nen kontra (hilonan) | hind the states of | the states            | ann hall little nit which | polleripterialistics            | en internetien auf    | Auto <u>Man</u>                      |
|                  |                                 |               |   |                      |                    |                       |                           |                                 |                       | Freq Offset                          |
| 27.0             |                                 |               |   |                      |                    |                       |                           |                                 |                       | 0 Hz                                 |
| 22.0             |                                 |               |   |                      |                    |                       |                           |                                 |                       |                                      |
| Contor 11        | .650000 GHz                     |               |   |                      |                    |                       |                           | Snon 5                          | 000 MH-               |                                      |
| #Res BW          |                                 |               | #VBW  | 3.0 MHz*             |                    |                       | Sweep                     | <del>sp</del> an 5<br>1.00 ms ( | .000 MHz<br>5001 pts) |                                      |
| ISG              |                                 |               |   |                      |                    |                       |                           |                                 |                       |                                      |

## Detector Mode : AV



## TM 3 & U-NII 1 & 5190 & X axis & Hor



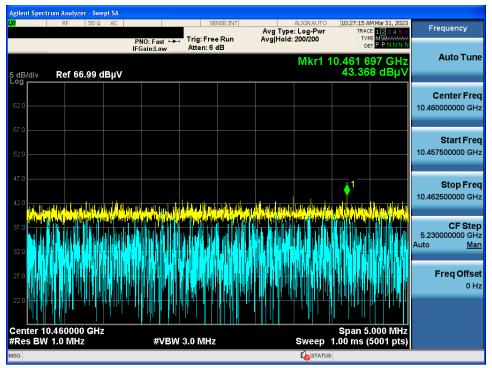
### TM 3 & U-NII 1 & 5190 & X axis & Hor

### **Detector Mode : AV**



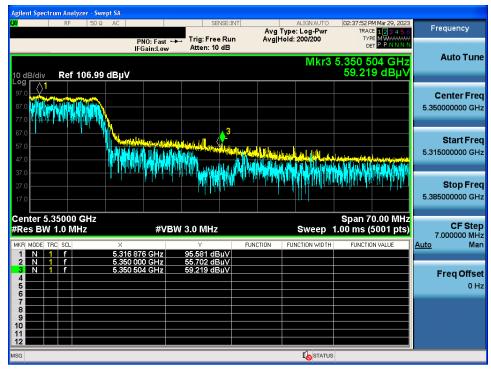


## TM 3 & U-NII 1 & 5 2 30 & Z axis & Ver





## TM 3 & U-NII 2A & 5310 & X axis & Hor



## TM 3 & U-NII 2A & 5 310 & X axis & Hor Detector Mode : AV





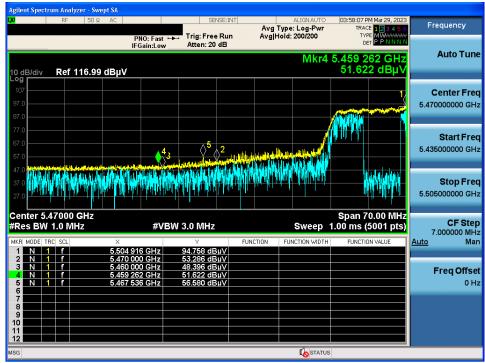
## TM 3 & U-NII 2A & 5 310 & Z axis & Ver

| Agilent Spectr    |           |        |                              |                |              |           |           |                         |  |  |
|-------------------|-----------|--------|------------------------------|----------------|--------------|-----------|-----------|-------------------------|--|--|
|                   | RF        | 50Ω AC |                              |                | NSE:INT      | Avg Type  |           | TRAC                    | M Mar 31, 2023<br>E <mark>1 2 3 4 5 6</mark> | Frequency  |
|                   |           |        | PNO: Fast +++<br>IFGain:Low  | Atten: 6       |              | Avg Hold: | 200/200   | DE                      | EAWWWWW<br>TAPNNNN                           |  |
| 5 dB/div          | Ref 66.9  | 9 dBµV |                              |                |              |           | Mkr1      | 10.619 7<br>32.64       | 89 GHz<br>0 dBµV                             | Auto Tune  |
| 62.0              |           |        |                              |                |              |           |           |                         |  | Center Freq<br>10.620000000 GHz                      |
| 57.0              |           |        |                              |                |              |           |           |                         |  | Start Freq<br>10.617500000 GHz                       |
| 47.0              |           |        |                              |                |              |           |           |                         |  | <b>Stop Freq</b><br>10.622500000 GHz                 |
| 37.0              |           |        |                              | ∲ <sup>1</sup> | 1 les autors |           |           | nde de mai ballessa com | di sta sere da s                             | <b>CF Step</b><br>5.310000000 GHz<br>Auto <u>Man</u> |
| 27.0              |           |        | ayaantar for falle yir iyota |                |              |           |           |                         |  | Freq Offset<br>0 Hz                                  |
| 22.0<br>Center 10 | .620000 ( | GH7    |                              |                |              |           |           | Span 5                  | .000 MHz                                     |  |
| #Res BW           |           |        | #VBW                         | 3.0 MHz        | r.           |           | Sweep     | 1.00 ms (               | 5001 pts)                                    |  |
| MSG               |           |        |                              |                |              |           | To STATU: | s                       |  |  |

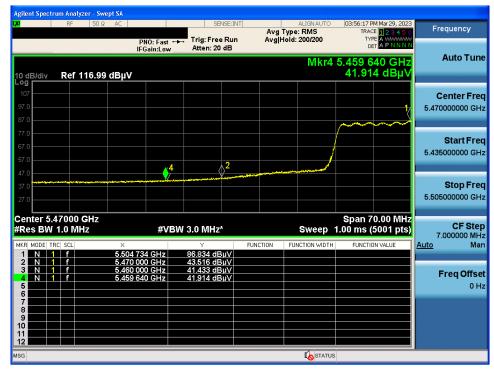
## Detector Mode : AV



## TM 3 & U-NII 2C & 5510 & X axis & Hor



#### TM 3 & U-NII 2C & 5510 & Zaxis & Ver **Detector Mode : AV**





## Detector Mode : AV

## TM 3 & U-NII 2C & 5510 & Z axis & Ver

|        | RF                                       | 50 Ω          | AC                             |                             | SEI   | VSE:INT       |                                 | ALIGN AUTO           | 10:29:37 A        | M Mar 31, 2023                             |  |
|--------|--|---------------|--------------------------------|-----------------------------|---|---------------|---------------------------------|----------------------|-------------------|--|--|
|        |  |               |                                | PNO: Fast ++-<br>IFGain:Low | Trig: Free<br>Atten: 6 d  |               | Avg Type<br>Avg Hold            |                      | TYI               | CE 123456<br>PE A WWWWWW<br>ET A P N N N N | Frequency  |
| dB/div | Ref 66                                   | 6.99 dl       | ЗμV                            |                             |   |               |                                 | Mkr1 1               |                   | i27 GHz<br>i5 dBµV                         | Auto Tur   |
| 2.0    |  |               |                                |                             |   |               |                                 |                      |                   |  | Center Fre<br>11.02000000 GH                       |
| 2.0    |  |               |                                |                             |   |               |                                 |                      |                   |  | <b>Start Fre</b><br>11.017500000 GF                |
| 2.0    |  |               |                                |                             |   |               |                                 |                      |                   |  | <b>Stop Fre</b><br>11.022500000 Gi                 |
| 2.0    | n an | enter parlate | <b>N<sup>ER (</sup>Philip)</b> | nyay ang si karan           | and the state of the | uttern to the | te ada ara gi eta di data da di | natalin an Indonesia | î<br>Ierrepîlênde | enMarrison/Inch                            | <b>CF Ste</b><br>5.510000000 GI<br>Auto <u>M</u> i |
| .0     |  |               |                                |                             |   |               |                                 |                      |                   |  | Freq Offs<br>01                                    |
|        | 1.02000(<br>1.0 MH;                      |               |                                | #VB)A                       | 3.0 MHz   |               |                                 | Sween_               | Span 5            | .000 MHz<br>5001 pts)                      |  |
|        |  |               |                                |                             | ore mi12  |               |                                 | STATUS               |                   | aavi pioj                                  |  |

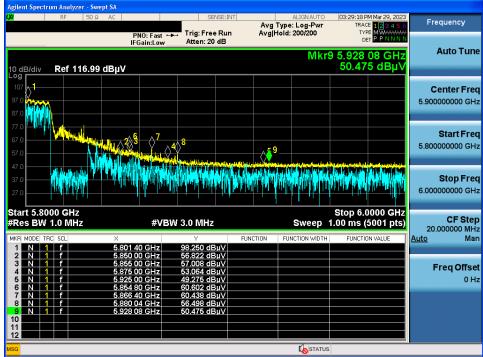
**Detector Mode : PK** 



## TM 3 & U-NII 3 & 5755 & X axis & Hor

er - Swept SA Avg Type: Log-Pwr Avg|Hold: 200/200 Frequency Trig: Free Run Atten: 20 dB TYF мW PNO: Fast IFGain:Low DET Auto Tune Mkr9 5.644 650 GHz 10 dB/div Log 51.671 dBµV Ref 116.99 dBµV **Center Freq** 5.687500000 GHz Start Fred 5.625000000 GHz 9 1.4.0 Stop Freq 5.75000000 GHz Start 5.62500 GHz #Res BW 1.0 MHz Stop 5.75000 GHz 1.00 ms (5001 pts) CF Step 12.500000 MHz o Man #VBW 3.0 MHz Sweep FUNCTION FUNCTION WIDTH FUNCTION VALUE Auto 4.772 dBµV .800 dl .914 dl **Freq Offset** 0 Hz 69.497 dBμV 68.273 dBμV 61.418 dBμV 51.671 dBμV 7 325 GHz 4 650 GHz **I**STATUS

### TM 3 & U-NII 3 & 5795 & X axis & Hor





## TM 3 & U-NII 3 & 5755 & Zaxis & Ver

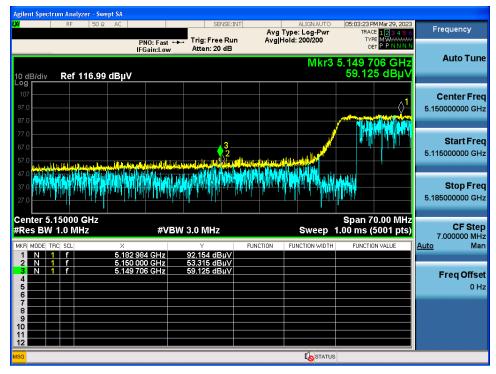
| Agilent Spectrum Analyzer - Swept SA  |   |                               |                           |                                     |   |  |
|---|---|-------------------------------|---------------------------|-------------------------------------|---|--|
| XI RF 50 Ω AC   | PNO: Fast 🔸                             | SENSE:IN                      | Avg Ty                    | ALIGN AUTO<br>pe: RMS<br>d: 200/200 | 10:36:10 AM Mar 31, 2023<br>TRACE 1 2 3 4 5 6<br>TYPE A WWWWW | Frequency                                    |
| 5 dB/div Ref 66.99 dBµV   | IFGain:Low                              | Atten: 6 dB                   | -                         | Mkr1                                | <sup>Det</sup> APNNN<br>11.508 135 GHz<br>33.345 dBµV         | Auto Tune                                    |
| 62.0  |   |                               |                           |                                     |   | Center Freq<br>11.510000000 GHz              |
| 57.0  |   |                               |                           |                                     |   | <b>Start Freq</b><br>11.507500000 GHz        |
| 47.0  |   |                               |                           |                                     |   | <b>Stop Freq</b><br>11.512500000 GHz         |
| 37.0<br>32.0 <b>Hollowick on Allowick of Allowick on Allowi</b> | erte fan ten stêr it open finken fei in | Mittel Processing and and and | hallowen de station af fa | elenterin ele terbenet              | ti ettipatettipenenettikkytettiintekettiinteketti             | CF Step<br>5.75500000 GHz<br>Auto <u>Mar</u> |
| 27.0  |   |                               |                           |                                     |   | Freq Offset<br>0 Hz                          |
| Center 11.510000 GHz<br>#Res BW 1.0 MHz   | #VBW                                    | 3.0 MHz*                      |                           | Sweep                               | Span 5.000 MHz<br>1.00 ms (5001 pts)                          |  |
| MSG   |   |                               |                           |                                     |   |  |

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## **Detector Mode : AV**

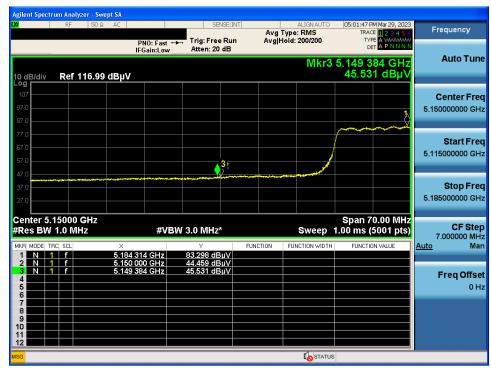


## TM 4 & U-NII 1 & 5 210 & X axis & Hor



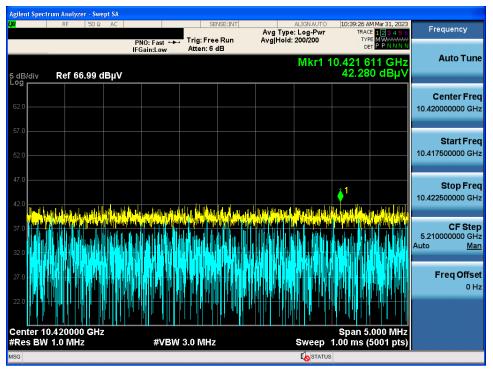
## TM 4 & U-NII 1 & 5 210 & X axis & Hor

## **Detector Mode : AV**





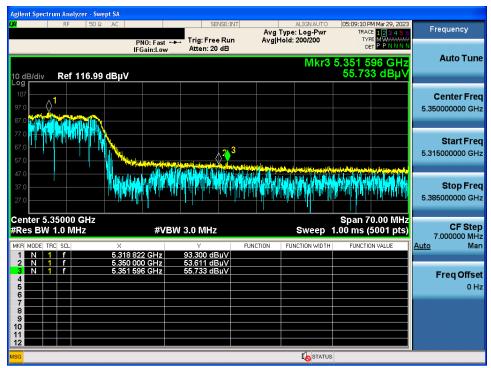
## TM 4 & U-NII 1 & 5 210 & Z axis & Ver



**Detector Mode : PK** 

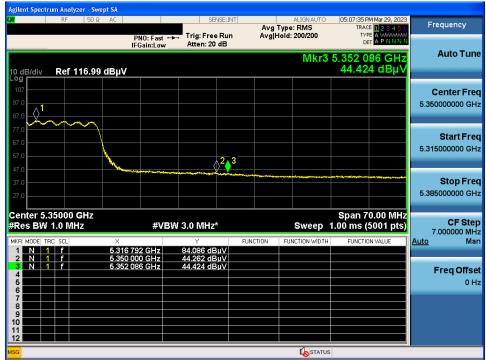


#### TM 4 & U-NII 2A & 5 290 & X axis & Hor



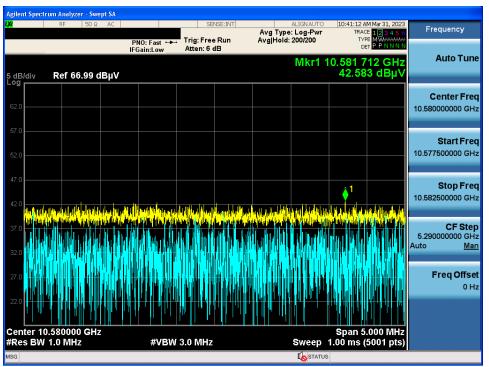
### TM 4 & U-NII 2A & 5 290 & X axis & Hor

## **Detector Mode : AV**

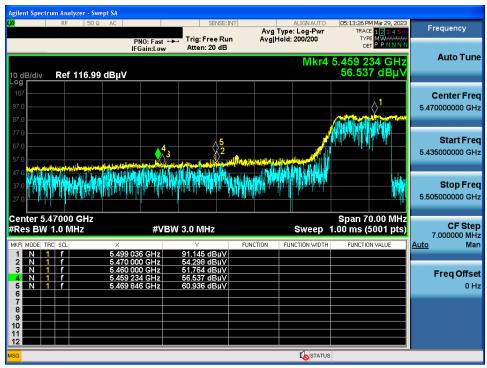




## TM 4 & U-NII 2A & 5 290 & Z axis & Ver



## TM 4 & U-NII 2C & 5 530 & X axis & Hor



## TM 4 & U-NII 2C & 5 530 & X axis & Hor Detector Mode : AV





## TM 4 & U-NII 2C & 5 530 & Z axis & Ver

| 7                | RF             | 50 Ω       | AC          |                           | SE                        | NSE:INT          |                       | ALIGN AUTO                     | 10:41:44 AM Mar 31, 2023  |  |
|------------------|----------------|------------|-------------|---------------------------|---------------------------|------------------|-----------------------|--------------------------------|---|--|
|                  |                |            |             | PNO: Fast ↔<br>IFGain:Low | Trig: Fre<br>Atten: 6     |                  | Avg Type<br>Avg Hold: |                                | TRACE 12345<br>TYPE A WWWW<br>DET A P N N N T   |  |
| dB/div           | Ref 6          | 6.99 d     | ΒμV         |                           |                           |                  |                       | Mkr1 1                         | 1.058 513 GHz<br>34.107 dBµ∖  | Auto Tune                                  |
| 62.0             |                |            |             |                           |                           |                  |                       |                                |   | Center Free<br>11.060000000 GH             |
| 52.0             |                |            |             |                           |                           |                  |                       |                                |   | <b>Start Fre</b><br>11.057500000 GH        |
| 47.0<br>42.0     |                |            |             |                           |                           |                  |                       |                                |   | Stop Fre<br>11.062500000 G⊦                |
| 37.0<br>32.0 114 | ×41¶sida¥4stud | en al ange | 1<br>Mudden | anter anti-               | al a faith an an the long | ud aleques-trans |                       | lader (1.) / arrithment ar hij | 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - | CF Ste<br>5.530000000 G⊦<br>Auto <u>Ma</u> |
| 27.0             |                |            |             |                           |                           |                  |                       |                                |   | Freq Offso<br>0 ⊦                          |
| 22.0             | 1.06000        | 0 GHz      |             |                           |                           |                  |                       |                                | Span 5.000 MHz  |  |
| Res BW           | 1.0 MH         | z          |             | #VB                       | N 3.0 MHz                 | *                |                       | Sweep 1                        | 1.00 ms (5001 pts   |  |

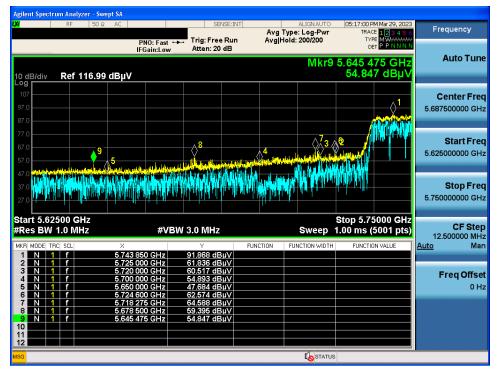
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### **Detector Mode : AV**

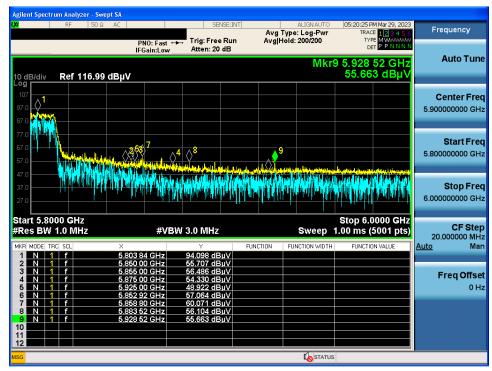
**Detector Mode : PK** 



## TM 4 & U-NII 3 & 5775 & X axis & Hor



### TM 4 & U-NII 3 & 5775 & X axis & Hor





## TM 4 & U-NII 3 & 5775 & Zaxis & Ver

|   |                                 | Avg Ty   | pe: RMS                                    | TRACE 1 2 3   | Frequency  |  |  |
|---|---------------------------------|--|--|---|--|--|--|
| PNO: Fast 🔸<br>IFGain:Low   | Atten: 6 dB                     | Avg Hol  | d: 193/200                                 | DET A P N I   | NN N   |  |  |
|   |                                 |  | Mkr1 1                                     | 11.552 145 G<br>33.280 dB   | Hz Auto Tune<br>UV   |  |  |
|   |                                 |  |  |   | Center Freq  |  |  |
|   |                                 |  |  |   | 11.550000000 GHz   |  |  |
|   |                                 |  |  |   |  |  |  |
|   |                                 |  |  |   | Start Freq   |  |  |
|   |                                 |  |  |   | 11.547500000 GHz   |  |  |
|   |                                 |  |  |   |  |  |  |
|   |                                 |  |  |   | Stop Freq<br>11.552500000 GHz  |  |  |
|   |                                 |  |  |   |  |  |  |
|   |                                 |  |  | <u> </u>  | CF Step<br>5.775000000 GHz   |  |  |
|   | en stadeste skiele skrevelielek | والمتعالم والمراجع والمتعاولة والمتعاد             |  | a a de la   | Auto <u>Man</u>  |  |  |
|   |                                 |  | a de las las destandes                     |   |  |  |  |
|   |                                 |  |  |   | Freq Offset  |  |  |
|   |                                 |  |  |   | 0112   |  |  |
|   |                                 |  |  |   |  |  |  |
| enter 11.550000 GHz Span 5.000 MHz<br>Res BW 1.0 MHz #VBW 3.0 MHz* Sweep 1.00 ms (5001 pts) |                                 |  |  |   |  |  |  |
| #VBW  | 3.0 WHZ*                        |  |  |   | 0(5)   |  |  |
|   | IFGain:Low                      | PN0: Fast Trig: Free Run<br>IFGain:Low Atten: 6 dB | PNO: Fast AvglHol   IFGain:Low Atten: 6 dB | PN0: Fast   Avg Type: RMS<br>AvglHold: 193/200     IFGain:Low   Mkr1 1     I   IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII | PN0: Fast   Trig: Free Run   Avg Type: RMS   Trace   12.8     IFGain:Low   Trig: Free Run   Avg Type: RMS   Trace   12.8     Mkr1 11.552 145 G   33.280 dB     Image: State of the stat |  |  |

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## **Detector Mode : AV**