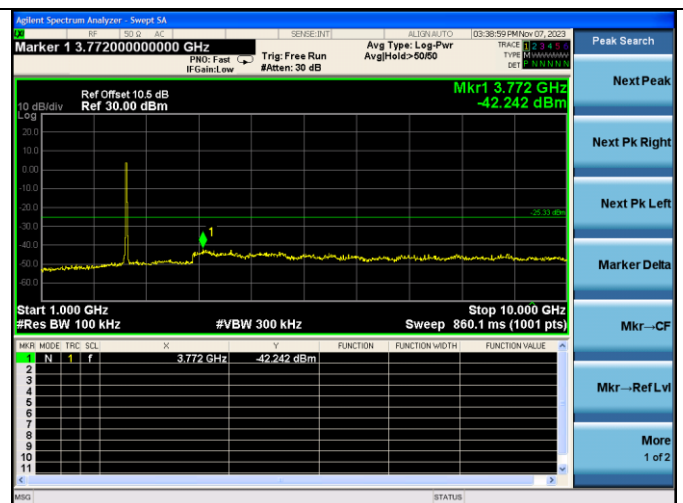
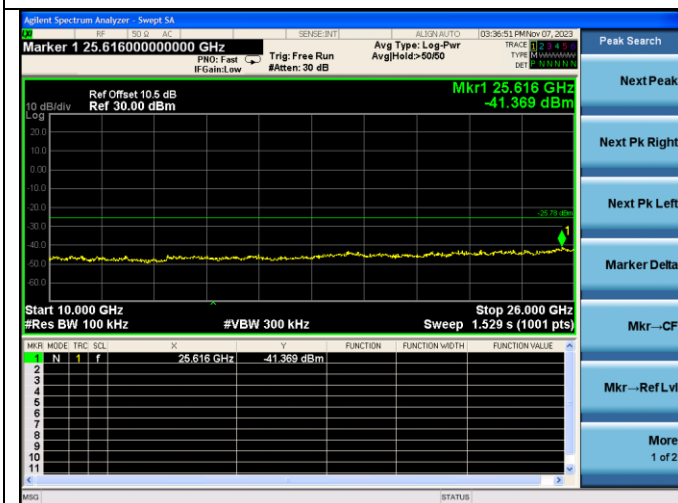
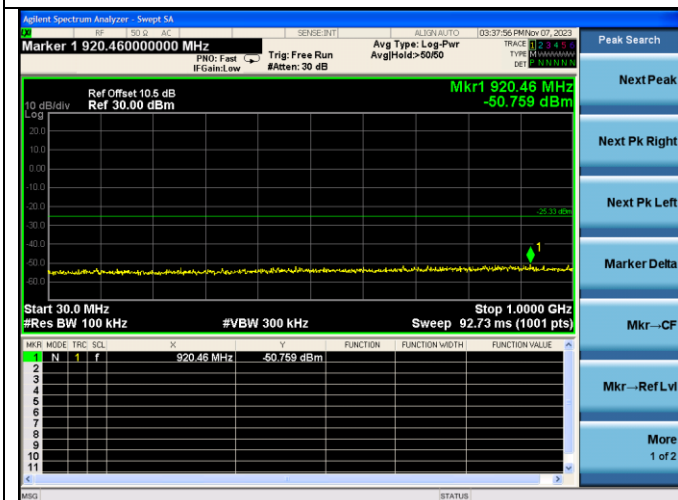
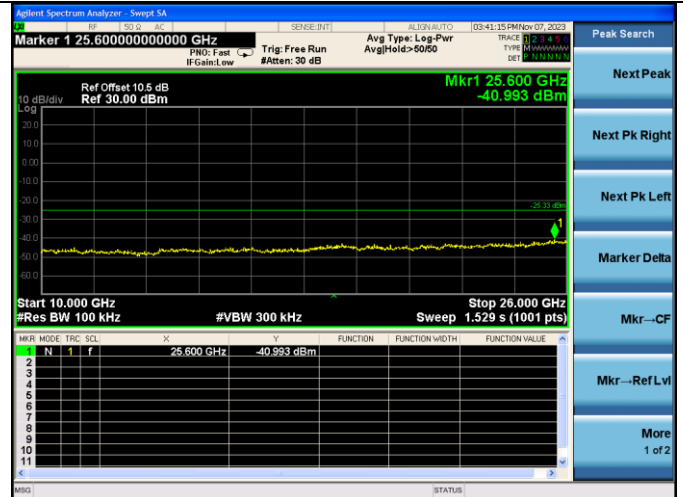
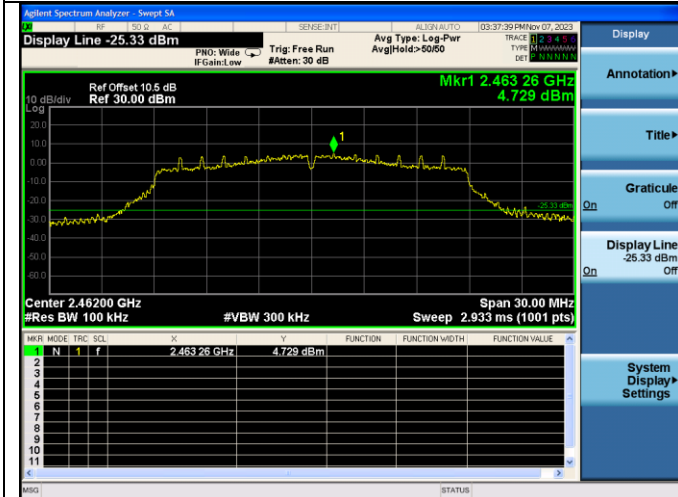




### Test CH11: 2462MHz



## 6. BAND EDGE COMPLIANCE TEST

### 6.1. Test Equipments

| Item | Equipment        | Manufacturer    | Model No.          | Serial No.  | Last Cal. | Cal. Interval |
|------|------------------|-----------------|--------------------|-------------|-----------|---------------|
| 1.   | 3mChamber(Svswr) | AUDIX           | N/A                | N/A         | Aug.09,22 | 3Year         |
| 2.   | 3mChamber(SE)    | AUDIX           | N/A                | N/A         | Sep.16,22 | 3Year         |
| 3.   | Signal Analyzer  | Rohde & Schwarz | FSV30              | 104050      | Apr.01,23 | 1 Year        |
| 4.   | Amplifier        | EMCI            | EMC0518A45SE       | 980965      | Aug.25,23 | 1 Year        |
| 5.   | RF Cable         | Shanghaichaoyu  | SFT205-NMSM-10.00M | 689241      | Aug.25,23 | 1 Year        |
| 6.   | Test Software    | AUDIX           | e3                 | 6.100913a   | N/A       | N/A           |
| 7.   | Horn Antenna     | ETC             | MCTD 1209          | DRH15F03006 | Aug.23,23 | 1 Year        |

Note: N/A means Not applicable.

### 6.2. Limit

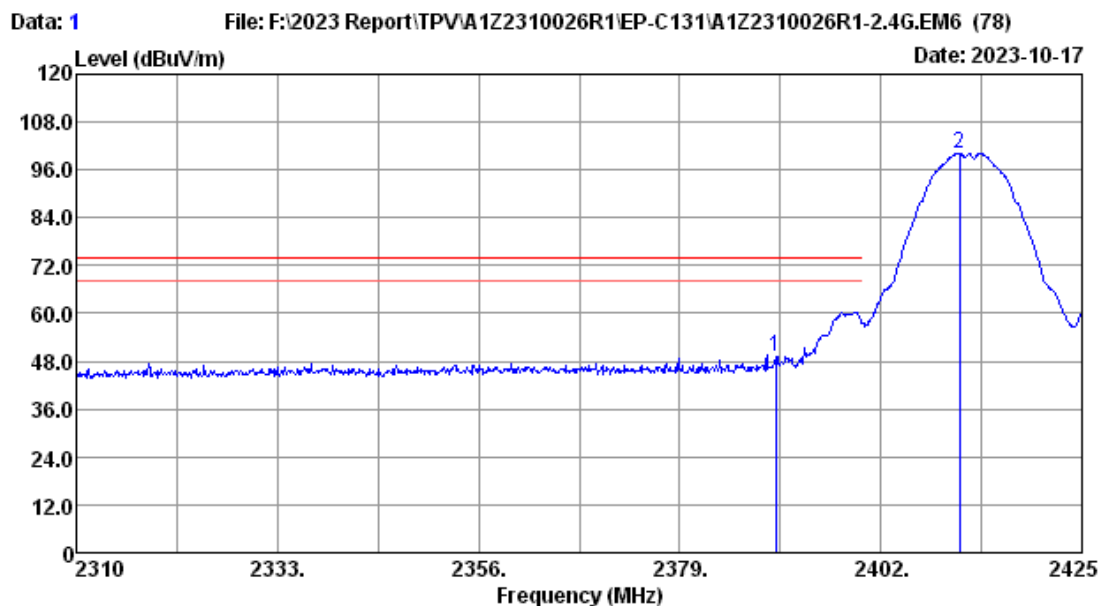
All the lower and upper band-edges emissions appearing within 2310MHz to 2390MHz and 2483.5MHz to 2500MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400MHz to 2483.5MHz shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

### 6.3. Test Procedure

1. The EUT is placed on a turntable, which is 1.5m above the ground plane and worked at highest radiated power.
2. The turntable was rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
  - (a) PEAK: RBW=1MHz; VBW=3MHz; Sweep=AUTO
  - (b) AVERAGE: RBW=1MHz; VBW=10Hz; Sweep=AUTO

### 6.4. Test Results

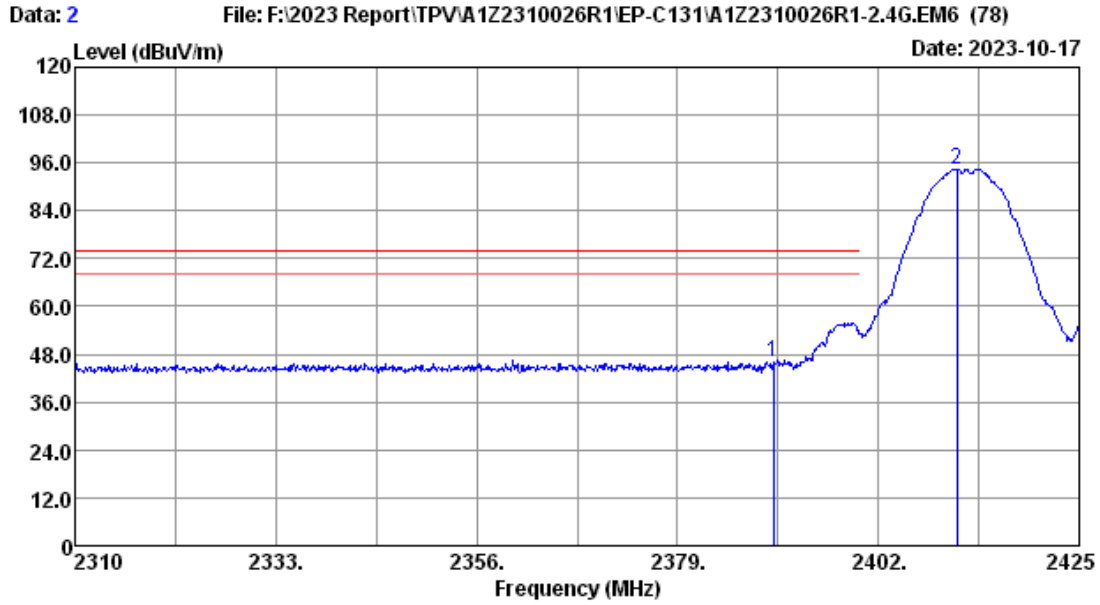
Pass (The testing data was attached in the next pages.)



Site no. : 3m Chamber Data no. : 1  
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23.2°C/52.5% Engineer : nier  
 Test Mode : 2.4G 11b 2412MHz TX  
 :  
 :

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Amp<br>factor<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1   | 2390.00        | 27.62                    | 4.85                  | 34.36                 | 50.88             | 48.99                         | 74.00              | 25.01          | Peak   |
| 2   | 2410.97        | 27.64                    | 4.87                  | 34.36                 | 101.98            | 100.13                        | -----              | -----          | Peak   |

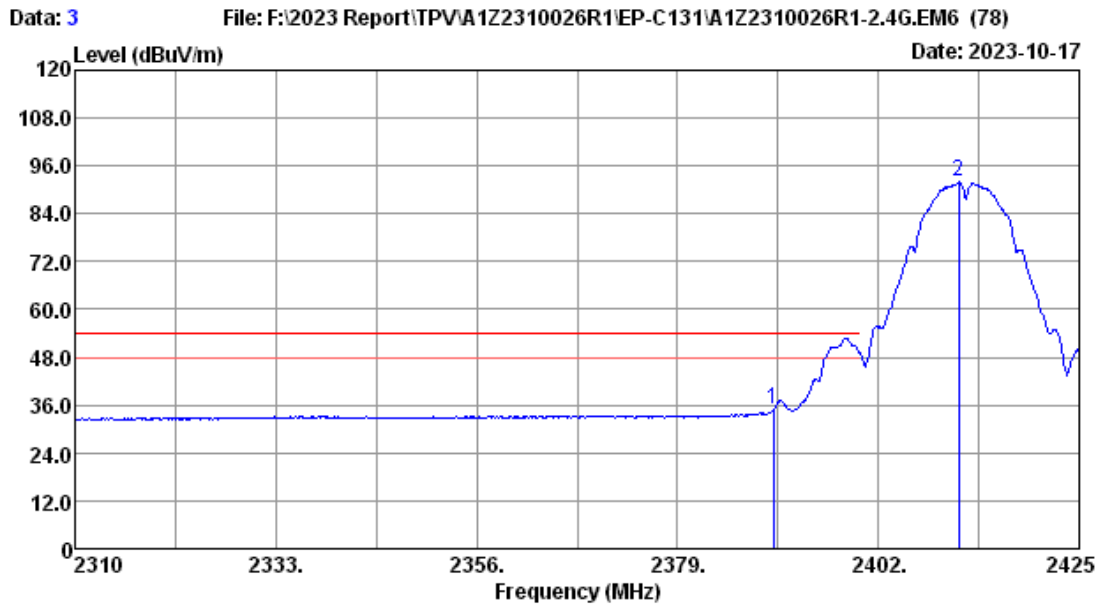
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Amp factor.  
 2. The emission levels that are 20dB below the official  
 limit are not reported.



Site no. : 3m Chamber Data no. : 2  
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23.2°C/52.5% Engineer : nier  
 Test Mode : 2.4G 11b 2412MHz TX  
 :  
 :

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Amp<br>factor<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1   | 2390.00        | 27.62                    | 4.85                  | 34.36                 | 47.76             | 45.87                         | 74.00              | 28.13          | Peak   |
| 2   | 2410.97        | 27.64                    | 4.87                  | 34.36                 | 96.36             | 94.51                         | -----              | -----          | Peak   |

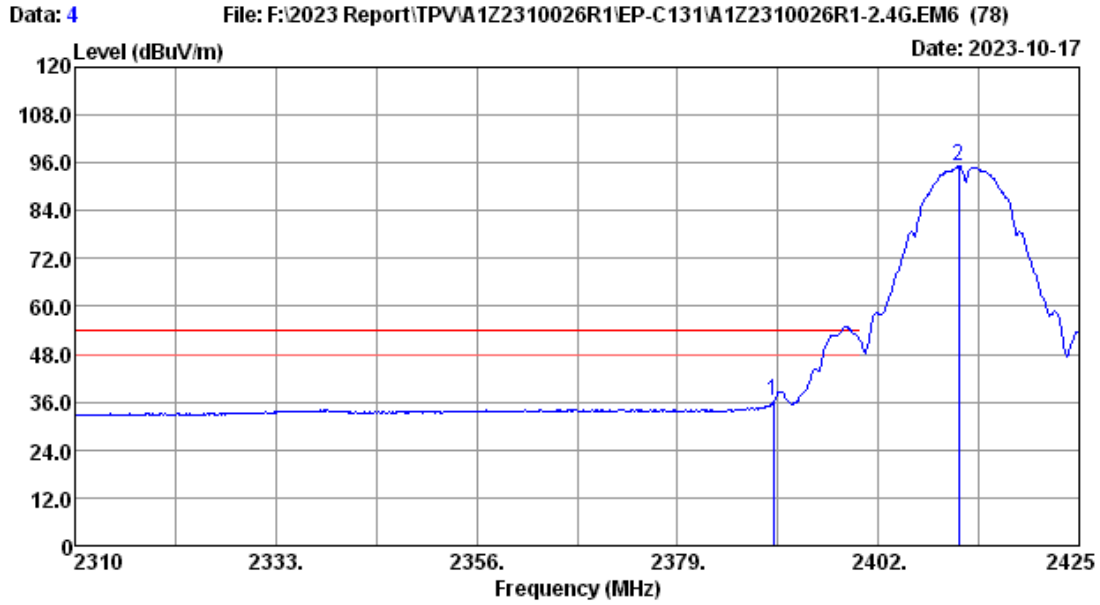
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Amp factor.  
 2. The emission levels that are 20dB below the official  
 limit are not reported.



Site no. : 3m Chamber Data no. : 3  
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23.2°C/52.5% Engineer : nier  
 Test Mode : 2.4G 11b 2412MHz TX  
 :  
 :

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Amp<br>factor<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|-----|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|---------|
| 1   | 2390.00        | 27.62                    | 4.85                  | 34.36                 | 36.76             | 34.87                         | 54.00              | 19.13          | Average |
| 2   | 2411.20        | 27.64                    | 4.87                  | 34.36                 | 93.76             | 91.91                         | -----              | -----          | Average |

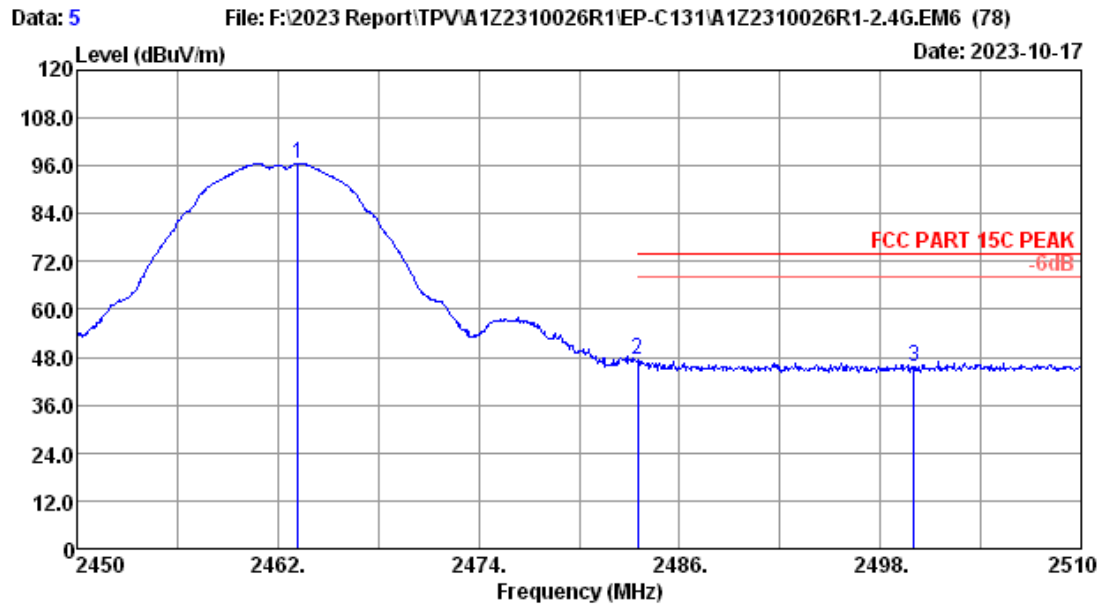
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Amp factor.  
 2. The emission levels that are 20dB below the official  
 limit are not reported.



Site no. : 3m Chamber Data no. : 4  
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : VERTICAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23.2°C/52.5% Engineer : nier  
 Test Mode : 2.4G 11b 2412MHz TX  
 :  
 :

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Amp<br>factor<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|-----|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|---------|
| 1   | 2390.00        | 27.62                    | 4.85                  | 34.36                 | 38.17             | 36.28                         | 54.00              | 17.72          | Average |
| 2   | 2411.20        | 27.64                    | 4.87                  | 34.36                 | 97.04             | 95.19                         | -----              | -----          | Average |

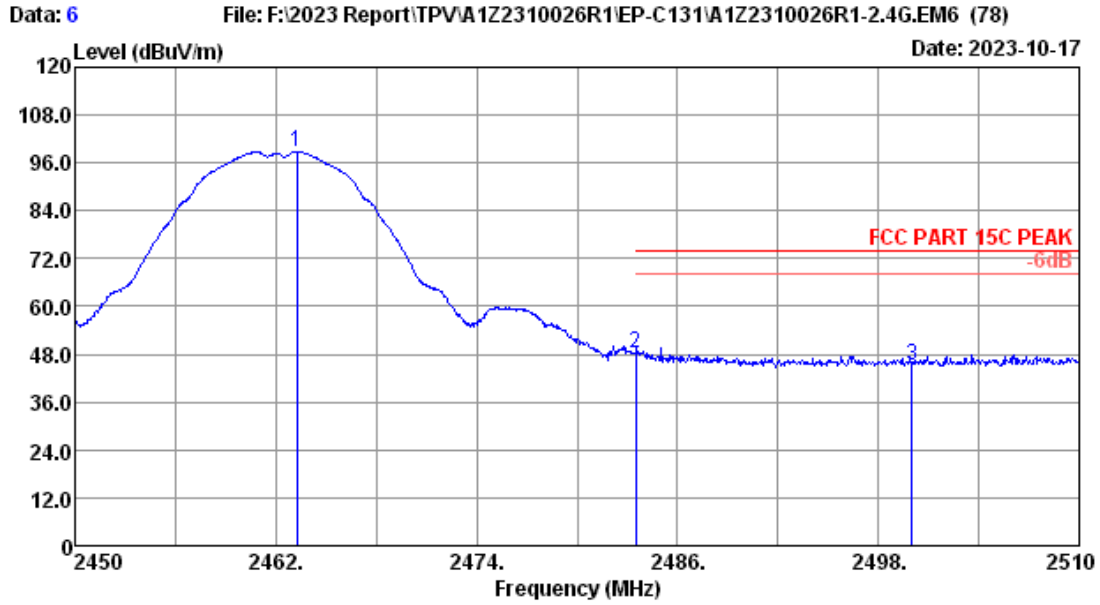
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Amp factor.  
 2. The emission levels that are 20dB below the official  
 limit are not reported.



Site no. : 3m Chamber Data no. : 5  
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23.2°C/52.5% Engineer : nier  
 Test Mode : 2.4G 11b 2462MHz TX  
 :  
 :

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Amp<br>factor<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1   | 2463.20        | 27.80                    | 4.92                  | 34.35                 | 98.20             | 96.57                         | -----              | -----          | Peak   |
| 2   | 2483.50        | 27.80                    | 4.94                  | 34.35                 | 48.86             | 47.25                         | 74.00              | 26.75          | Peak   |
| 3   | 2500.00        | 27.80                    | 4.95                  | 34.35                 | 47.00             | 45.40                         | 74.00              | 28.60          | Peak   |

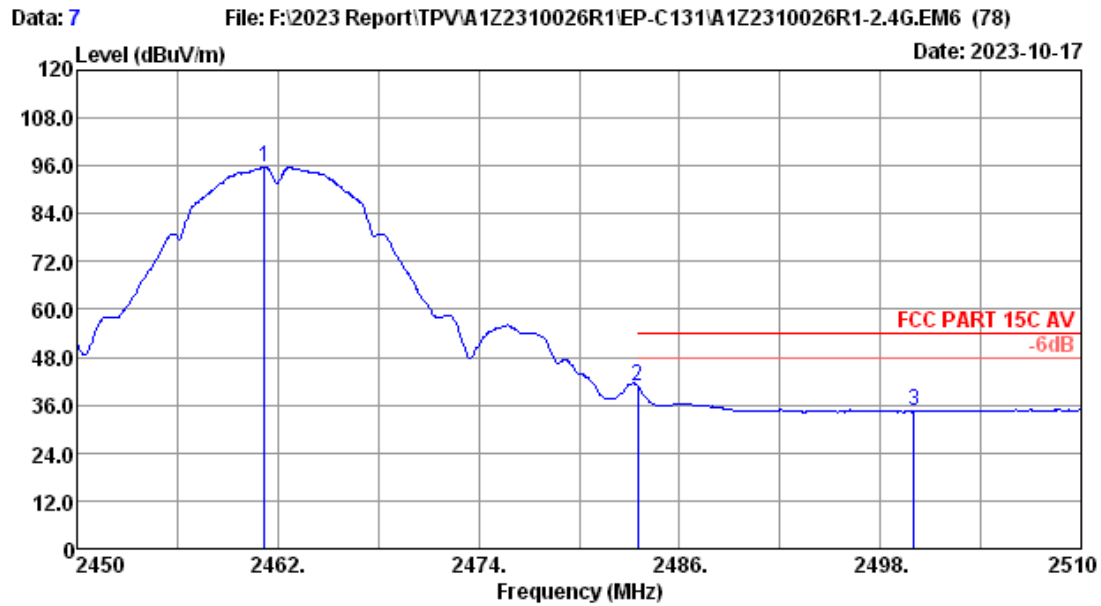
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Amp factor.  
 2. The emission levels that are 20dB below the official  
 limit are not reported.



Site no. : 3m Chamber Data no. : 6  
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23.2°C/52.5% Engineer : nier  
 Test Mode : 2.4G 11b 2462MHz TX  
 :  
 :

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Amp<br>factor<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1   | 2463.26        | 27.80                    | 4.92                  | 34.35                 | 100.38            | 98.75                         | -----              | -----          | Peak   |
| 2   | 2483.50        | 27.80                    | 4.94                  | 34.35                 | 50.01             | 48.40                         | 74.00              | 25.60          | Peak   |
| 3   | 2500.00        | 27.80                    | 4.95                  | 34.35                 | 46.92             | 45.32                         | 74.00              | 28.68          | Peak   |

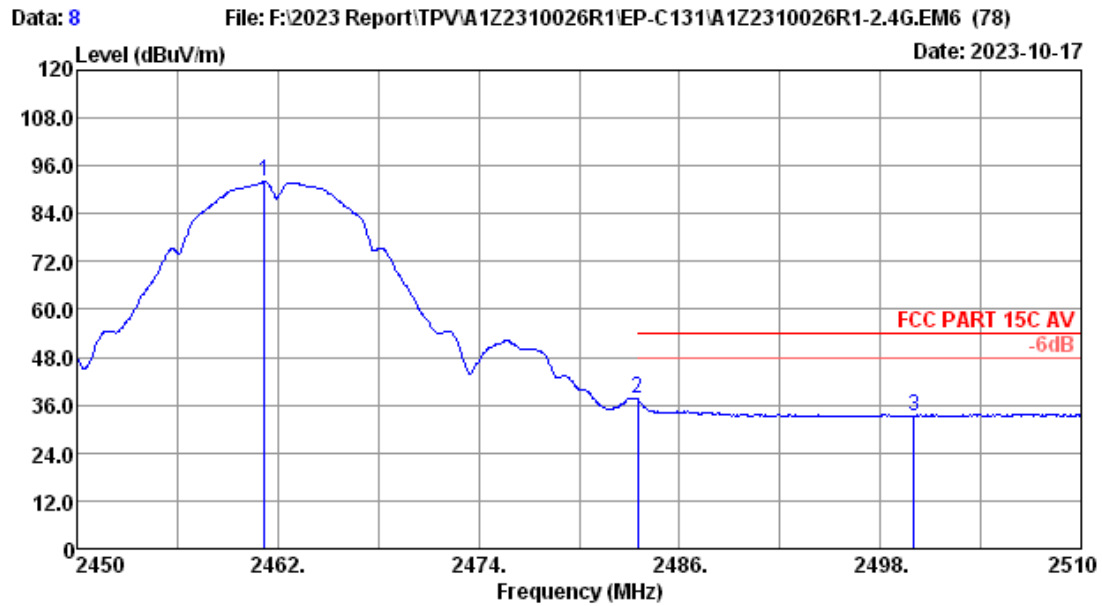
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Amp factor.  
 2. The emission levels that are 20dB below the official  
 limit are not reported.



Site no. : 3m Chamber Data no. : 7  
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : VERTICAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23.2°C/52.5% Engineer : nier  
 Test Mode : 2.4G 11b 2462MHz TX  
 :  
 :

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Amp<br>factor<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|-----|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|---------|
| 1   | 2461.22        | 27.80                    | 4.92                  | 34.35                 | 97.36             | 95.73                         | -----              | -----          | Average |
| 2   | 2483.50        | 27.80                    | 4.94                  | 34.35                 | 42.45             | 40.84                         | 54.00              | 13.16          | Average |
| 3   | 2500.00        | 27.80                    | 4.95                  | 34.35                 | 36.05             | 34.45                         | 54.00              | 19.55          | Average |

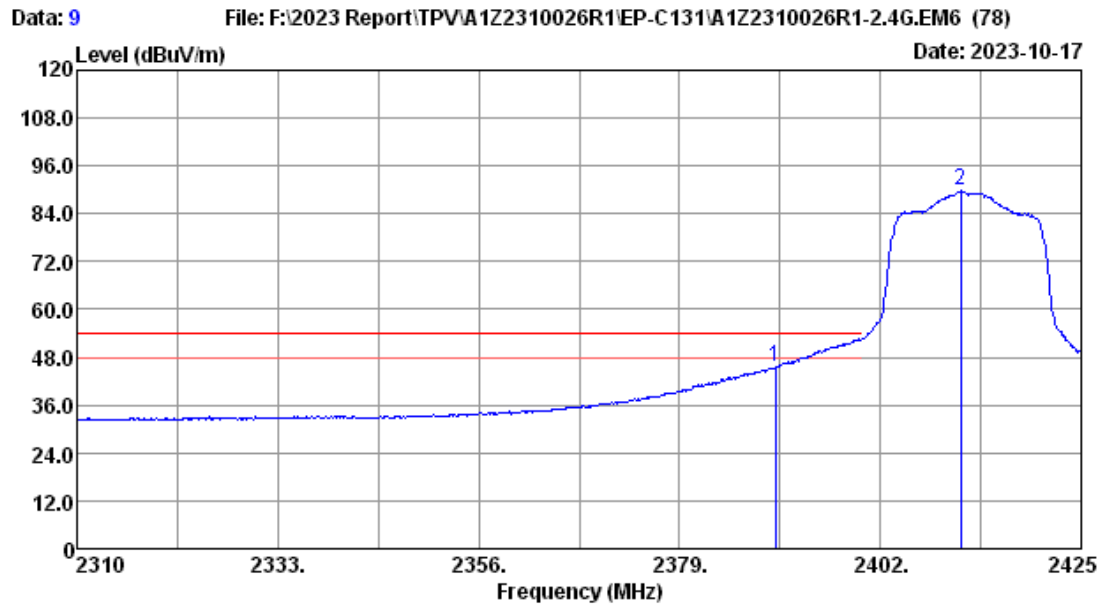
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Amp factor.  
 2. The emission levels that are 20dB below the official  
 limit are not reported.



Site no. : 3m Chamber Data no. : 8  
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23.2°C/52.5% Engineer : nier  
 Test Mode : 2.4G 11b 2462MHz TX  
 :  
 :

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Amp<br>factor<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|-----|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|---------|
| 1   | 2461.22        | 27.80                    | 4.92                  | 34.35                 | 93.65             | 92.02                         | -----              | -----          | Average |
| 2   | 2483.50        | 27.80                    | 4.94                  | 34.35                 | 39.10             | 37.49                         | 54.00              | 16.51          | Average |
| 3   | 2500.00        | 27.80                    | 4.95                  | 34.35                 | 34.91             | 33.31                         | 54.00              | 20.69          | Average |

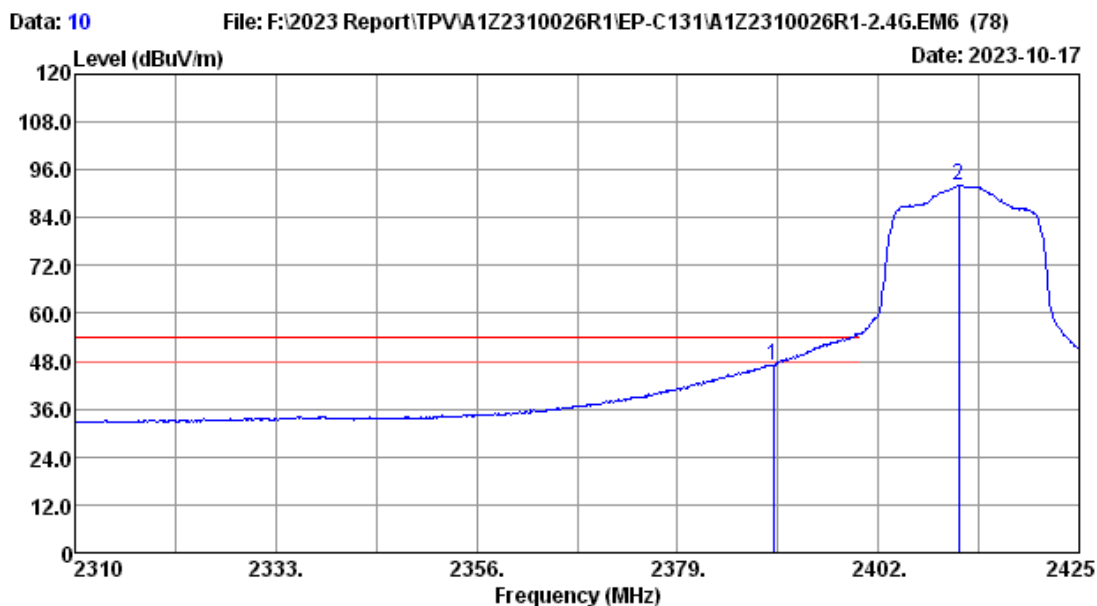
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Amp factor.  
 2. The emission levels that are 20dB below the official  
 limit are not reported.



Site no. : 3m Chamber Data no. : 9  
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23.2°C/52.5% Engineer : nier  
 Test Mode : 2.4G 11g 2412MHz TX  
 :  
 :

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Amp<br>factor<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|-----|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|---------|
| 1   | 2390.00        | 27.62                    | 4.85                  | 34.36                 | 47.39             | 45.50                         | 54.00              | 8.50           | Average |
| 2   | 2411.20        | 27.64                    | 4.87                  | 34.36                 | 91.56             | 89.71                         | -----              | -----          | Average |

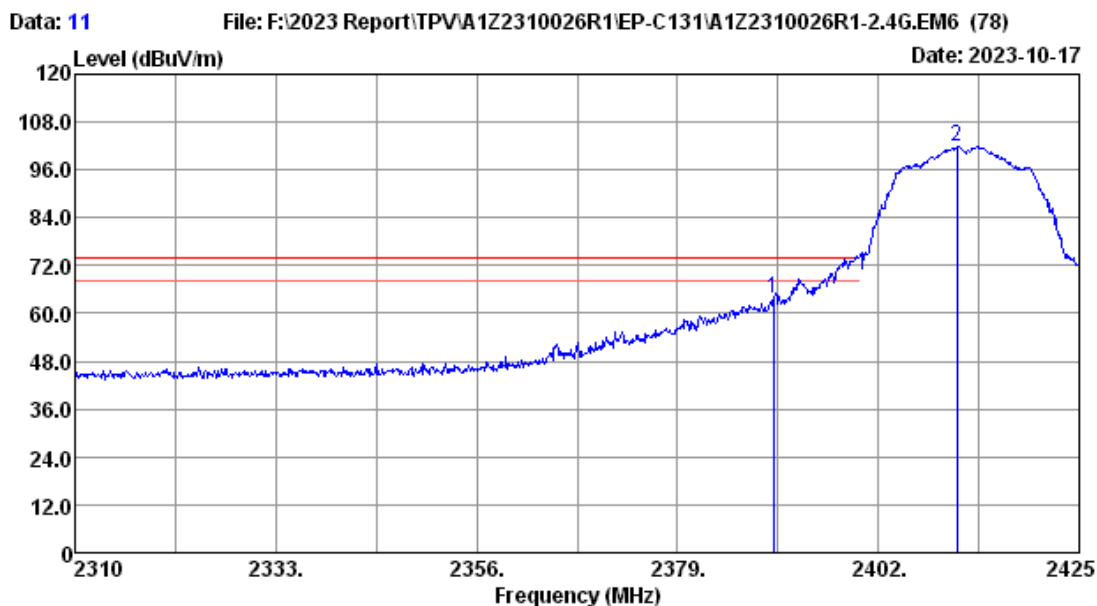
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Amp factor.  
 2. The emission levels that are 20dB below the official  
 limit are not reported.



Site no. : 3m Chamber Data no. : 10  
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : VERTICAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23.2°C/52.5% Engineer : nier  
 Test Mode : 2.4G 11g 2412MHz TX  
 :  
 :

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Amp<br>factor<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|-----|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|---------|
| 1   | 2390.00        | 27.62                    | 4.85                  | 34.36                 | 48.98             | 47.09                         | 54.00              | 6.91           | Average |
| 2   | 2411.20        | 27.64                    | 4.87                  | 34.36                 | 94.04             | 92.19                         | -----              | -----          | Average |

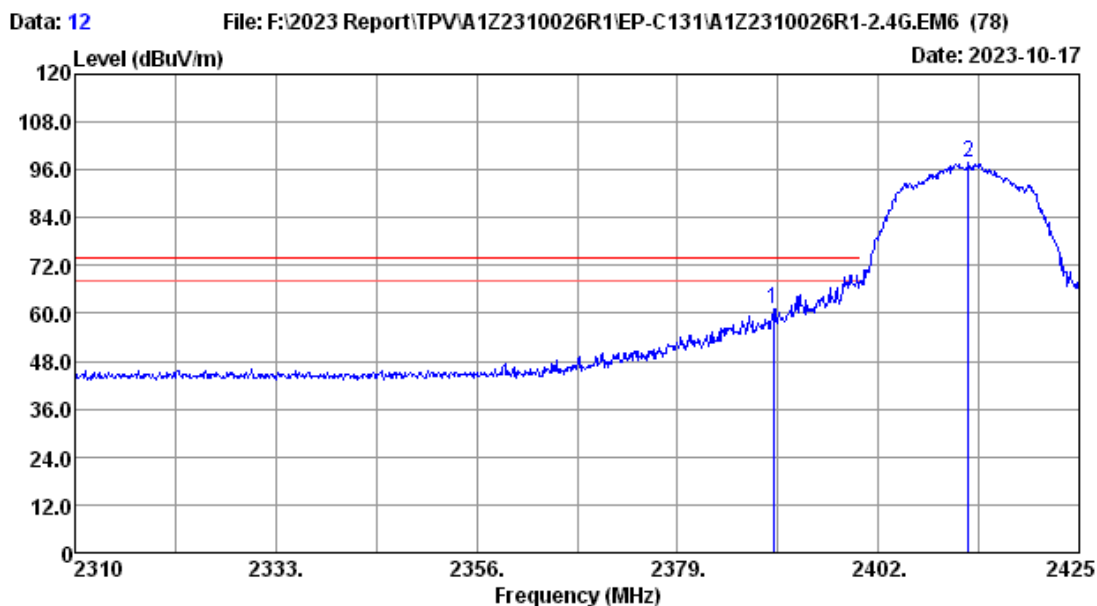
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Amp factor.  
 2. The emission levels that are 20dB below the official  
 limit are not reported.



Site no. : 3m Chamber Data no. : 11  
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23.2°C/52.5% Engineer : nier  
 Test Mode : 2.4G 11g 2412MHz TX  
 :  
 :

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Amp<br>factor<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1   | 2390.00        | 27.62                    | 4.85                  | 34.36                 | 65.63             | 63.74                         | 74.00              | 10.26          | Peak   |
| 2   | 2410.97        | 27.64                    | 4.87                  | 34.36                 | 103.76            | 101.91                        | -----              | -----          | Peak   |

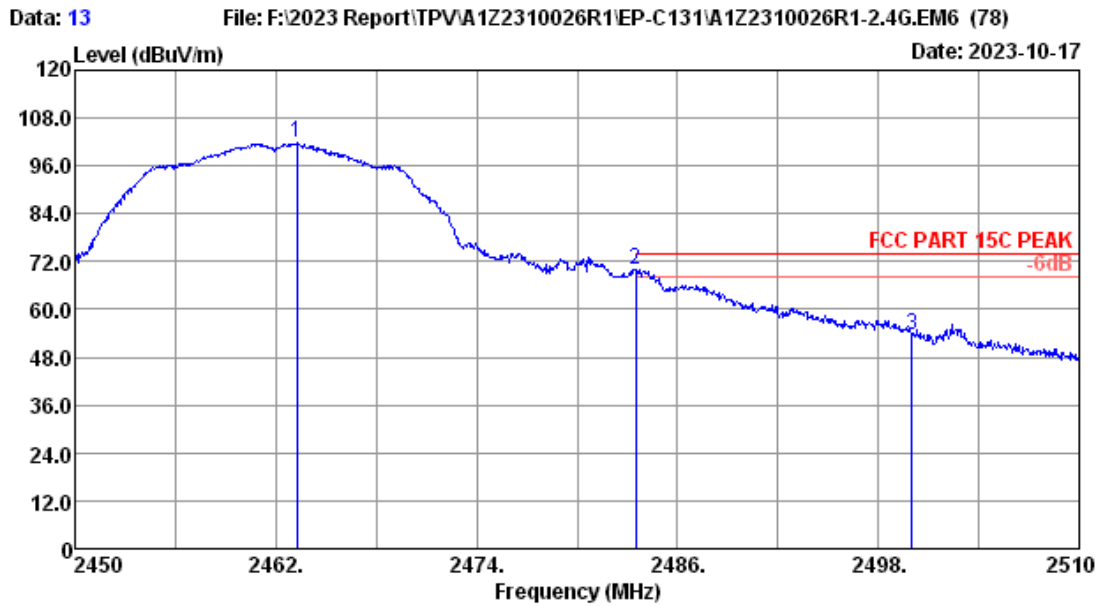
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Amp factor.  
 2. The emission levels that are 20dB below the official  
 limit are not reported.



Site no. : 3m Chamber Data no. : 12  
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23.2°C/52.5% Engineer : nier  
 Test Mode : 2.4G 11g 2412MHz TX  
 :  
 :

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Amp<br>factor<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1   | 2390.00        | 27.62                    | 4.85                  | 34.36                 | 62.82             | 60.93                         | 74.00              | 13.07          | Peak   |
| 2   | 2412.35        | 27.65                    | 4.87                  | 34.36                 | 99.77             | 97.93                         | -----              | -----          | Peak   |

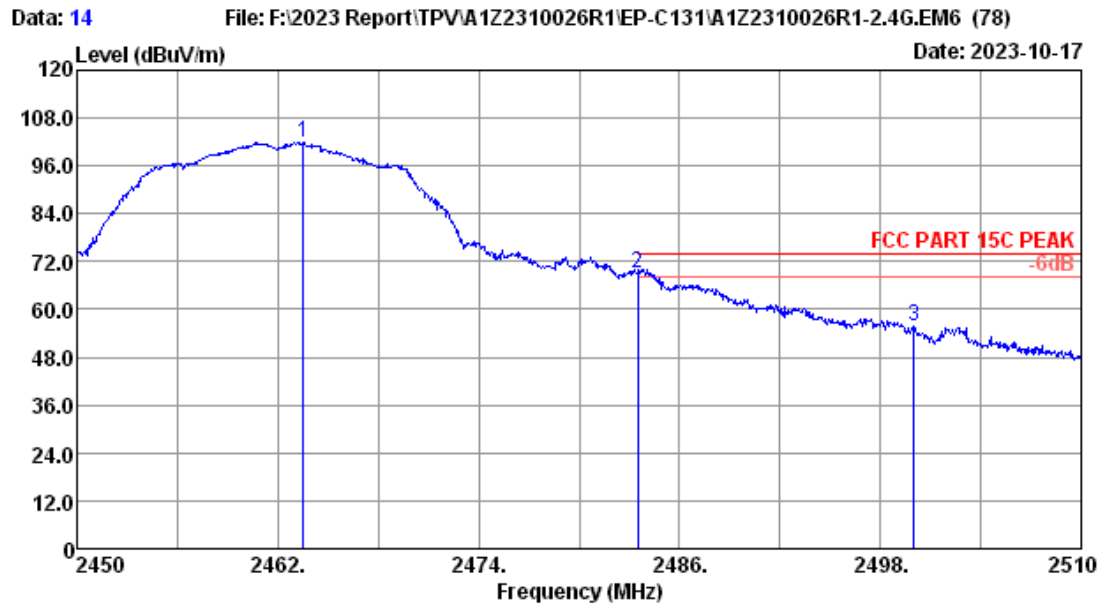
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Amp factor.  
 2. The emission levels that are 20dB below the official  
 limit are not reported.



Site no. : 3m Chamber Data no. : 13  
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23.2°C/52.5% Engineer : nier  
 Test Mode : 2.4G 11g 2462MHz TX  
 :  
 :

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Amp<br>factor<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1   | 2463.26        | 27.80                    | 4.92                  | 34.35                 | 103.34            | 101.71                        | -----              | -----          | Peak   |
| 2   | 2483.50        | 27.80                    | 4.94                  | 34.35                 | 71.41             | 69.80                         | 74.00              | 4.20           | Peak   |
| 3   | 2500.00        | 27.80                    | 4.95                  | 34.35                 | 55.32             | 53.72                         | 74.00              | 20.28          | Peak   |

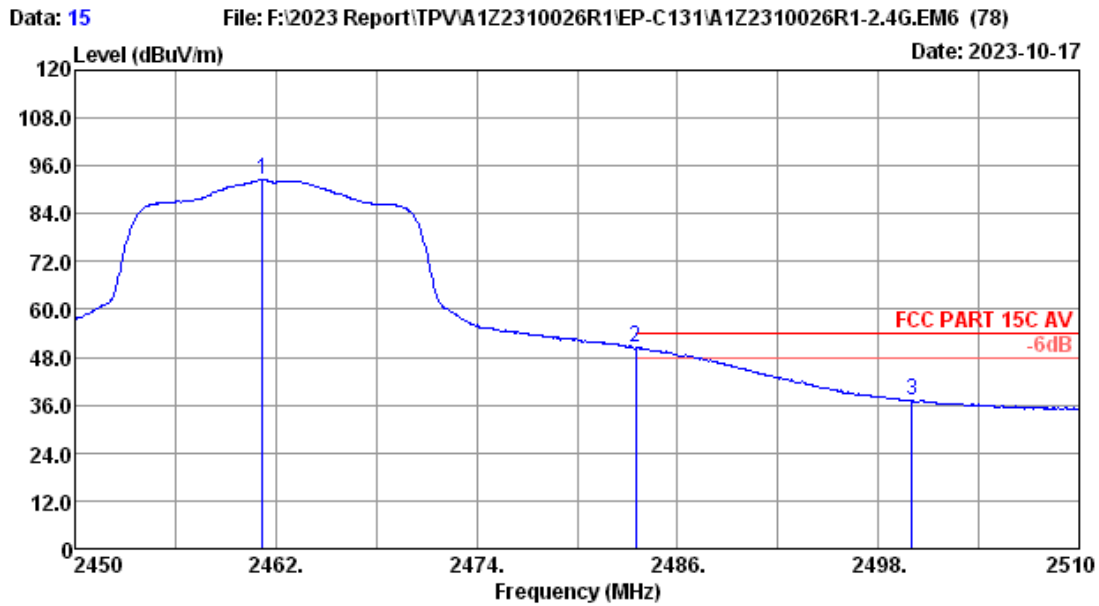
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Amp factor.  
 2. The emission levels that are 20dB below the official  
 limit are not reported.



Site no. : 3m Chamber Data no. : 14  
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23.2°C/52.5% Engineer : nier  
 Test Mode : 2.4G 11g 2462MHz TX  
 :  
 :

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Amp<br>factor<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1   | 2463.50        | 27.80                    | 4.92                  | 34.35                 | 103.51            | 101.88                        | -----              | -----          | Peak   |
| 2   | 2483.50        | 27.80                    | 4.94                  | 34.35                 | 70.55             | 68.94                         | 74.00              | 5.06           | Peak   |
| 3   | 2500.00        | 27.80                    | 4.95                  | 34.35                 | 57.26             | 55.66                         | 74.00              | 18.34          | Peak   |

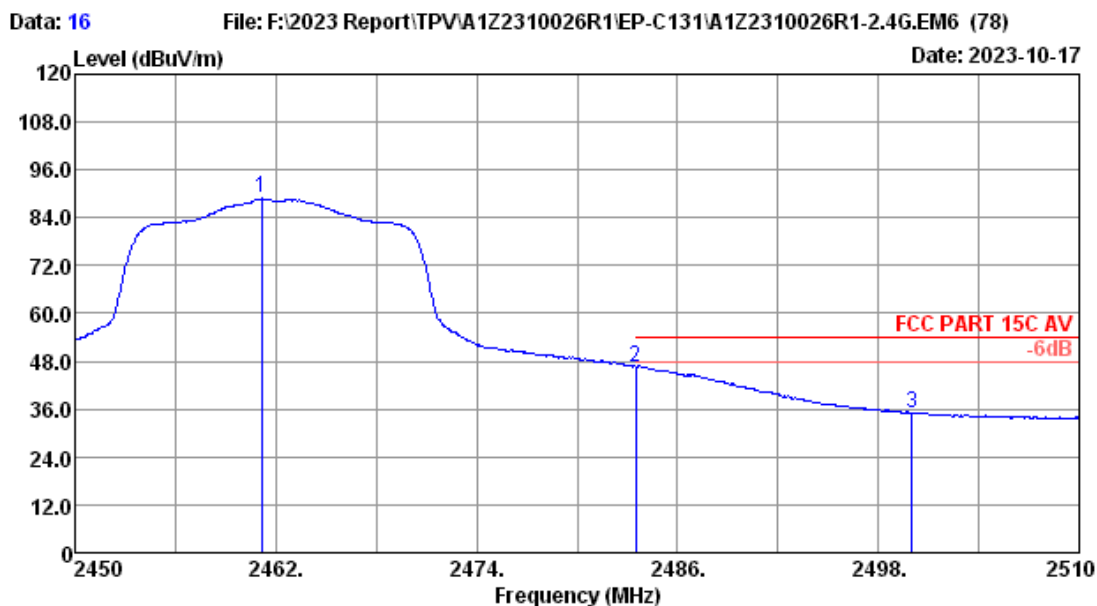
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Amp factor.  
 2. The emission levels that are 20dB below the official  
 limit are not reported.



Site no. : 3m Chamber Data no. : 15  
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : VERTICAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23.2°C/52.5% Engineer : nier  
 Test Mode : 2.4G 11g 2462MHz TX  
 :  
 :

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Amp<br>factor<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|-----|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|---------|
| 1   | 2461.22        | 27.80                    | 4.92                  | 34.35                 | 94.20             | 92.57                         | -----              | -----          | Average |
| 2   | 2483.50        | 27.80                    | 4.94                  | 34.35                 | 52.06             | 50.45                         | 54.00              | 3.55           | Average |
| 3   | 2500.00        | 27.80                    | 4.95                  | 34.35                 | 38.72             | 37.12                         | 54.00              | 16.88          | Average |

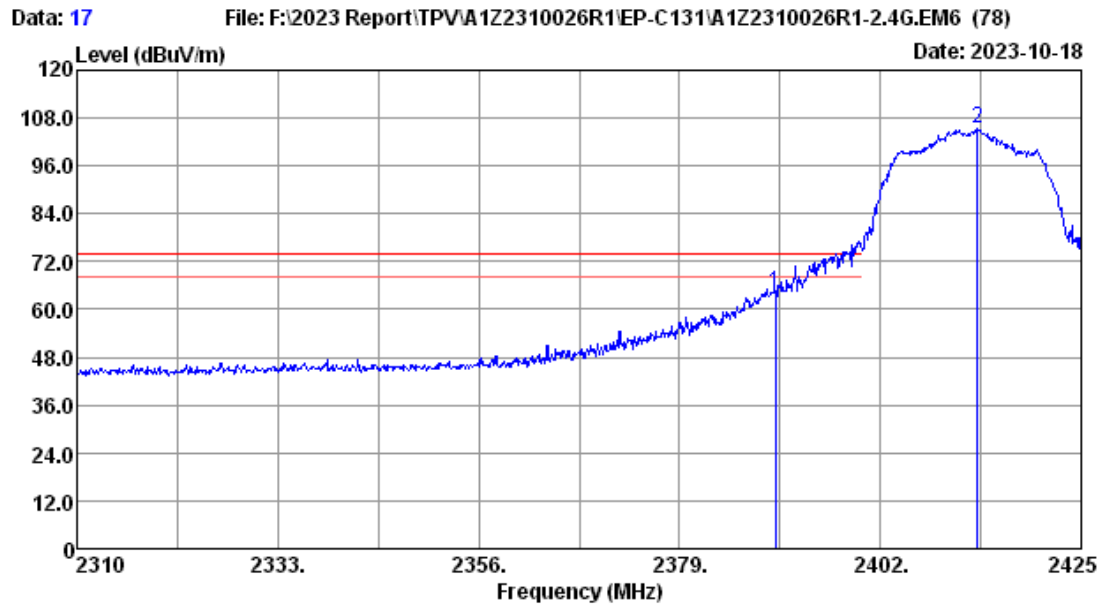
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Amp factor.  
 2. The emission levels that are 20dB below the official  
 limit are not reported.



Site no. : 3m Chamber Data no. : 16  
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23.2°C/52.5% Engineer : nier  
 Test Mode : 2.4G 11g 2462MHz TX  
 :  
 :

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Amp<br>factor<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|-----|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|---------|
| 1   | 2461.16        | 27.80                    | 4.92                  | 34.35                 | 90.51             | 88.88                         | -----              | -----          | Average |
| 2   | 2483.50        | 27.80                    | 4.94                  | 34.35                 | 48.33             | 46.72                         | 54.00              | 7.28           | Average |
| 3   | 2500.00        | 27.80                    | 4.95                  | 34.35                 | 36.54             | 34.94                         | 54.00              | 19.06          | Average |

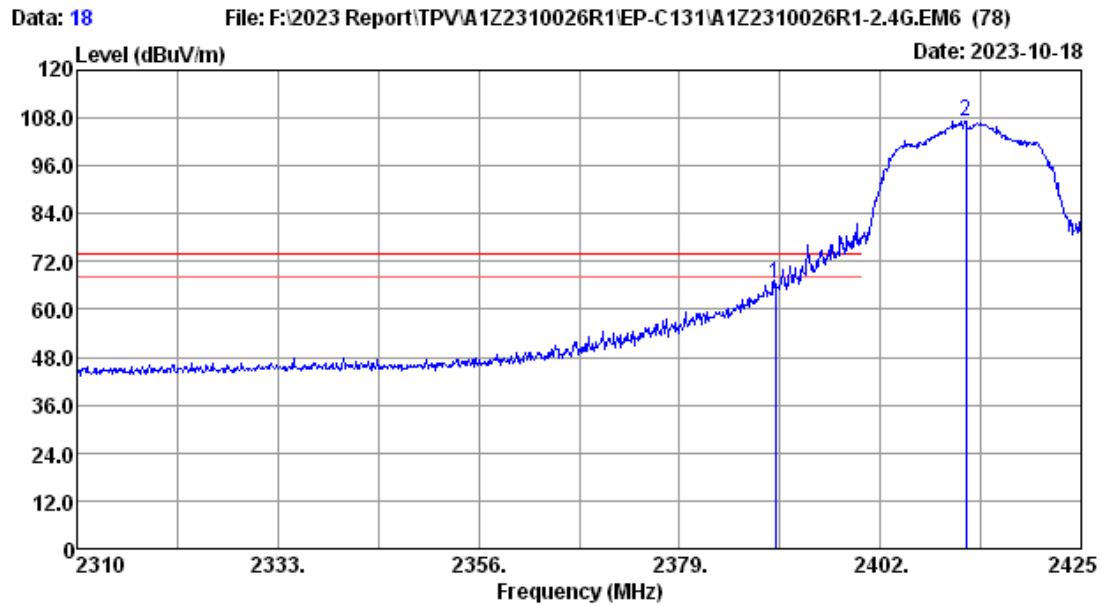
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Amp factor.  
 2. The emission levels that are 20dB below the official  
 limit are not reported.



Site no. : 3m Chamber Data no. : 17  
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23.2°C/52.5% Engineer : nier  
 Test Mode : 2.4G 11n20 2412MHz TX  
 :  
 :

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Amp<br>factor<br>(dB) | Emission          |                   | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------|--------------------|----------------|--------|
|     |                |                          |                       |                       | Reading<br>(dBuV) | Level<br>(dBuV/m) |                    |                |        |
| 1   | 2390.00        | 27.62                    | 4.85                  | 34.36                 | 66.04             | 64.15             | 74.00              | 9.85           | Peak   |
| 2   | 2413.16        | 27.65                    | 4.87                  | 34.36                 | 107.05            | 105.21            | -----              | -----          | Peak   |

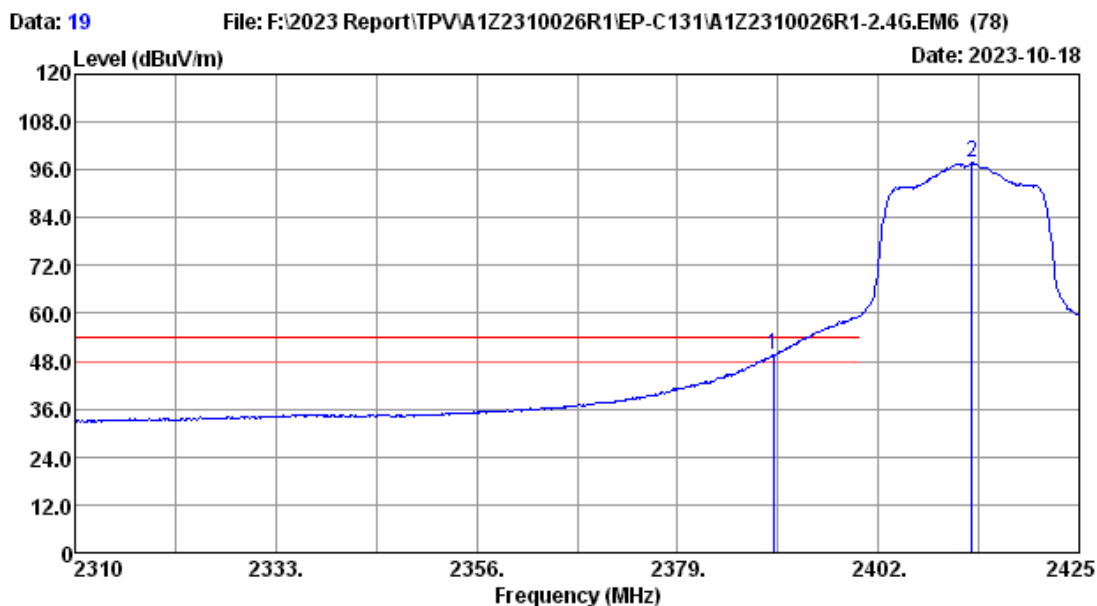
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Amp factor.  
 2. The emission levels that are 20dB below the official  
 limit are not reported.



Site no. : 3m Chamber Data no. : 18  
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23.2°C/52.5% Engineer : nier  
 Test Mode : 2.4G 11n20 2412MHz TX  
 :  
 :

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Amp<br>factor<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1   | 2390.00        | 27.62                    | 4.85                  | 34.36                 | 68.40             | 66.51                         | 74.00              | 7.49           | Peak   |
| 2   | 2411.78        | 27.65                    | 4.87                  | 34.36                 | 108.97            | 107.13                        | -----              | -----          | Peak   |

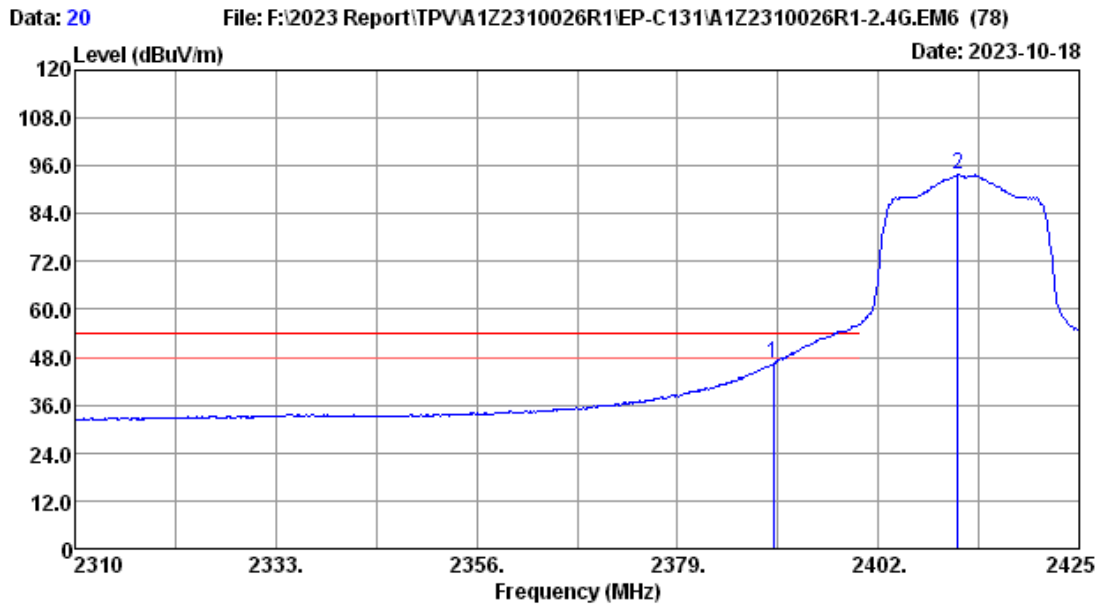
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Amp factor.  
 2. The emission levels that are 20dB below the official  
 limit are not reported.



Site no. : 3m Chamber Data no. : 19  
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : VERTICAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23.2°C/52.5% Engineer : nier  
 Test Mode : 2.4G 11n20 2412MHz TX  
 :  
 :

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Amp<br>factor<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|-----|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|---------|
| 1   | 2390.00        | 27.62                    | 4.85                  | 34.36                 | 51.56             | 49.67                         | 54.00              | 4.33           | Average |
| 2   | 2412.70        | 27.65                    | 4.87                  | 34.36                 | 99.55             | 97.71                         | -----              | -----          | Average |

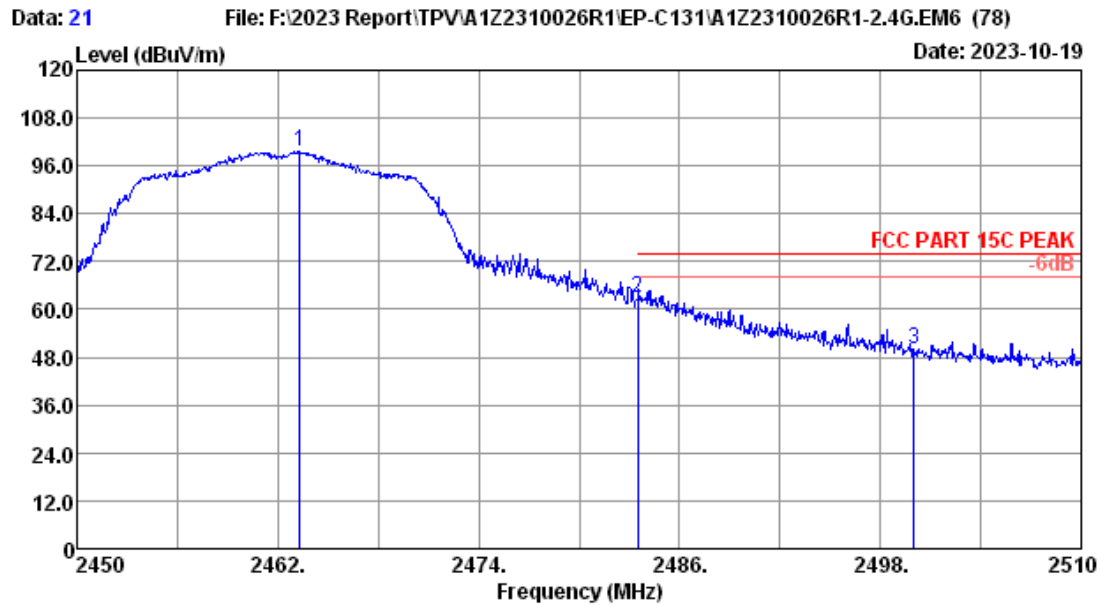
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Amp factor.  
 2. The emission levels that are 20dB below the official  
 limit are not reported.



Site no. : 3m Chamber Data no. : 20  
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23.2°C/52.5% Engineer : nier  
 Test Mode : 2.4G 11n20 2412MHz TX  
 :  
 :

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Amp<br>factor<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|-----|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|---------|
| 1   | 2390.00        | 27.62                    | 4.85                  | 34.36                 | 48.36             | 46.47                         | 54.00              | 7.53           | Average |
| 2   | 2411.09        | 27.64                    | 4.87                  | 34.36                 | 95.75             | 93.90                         | -----              | -----          | Average |

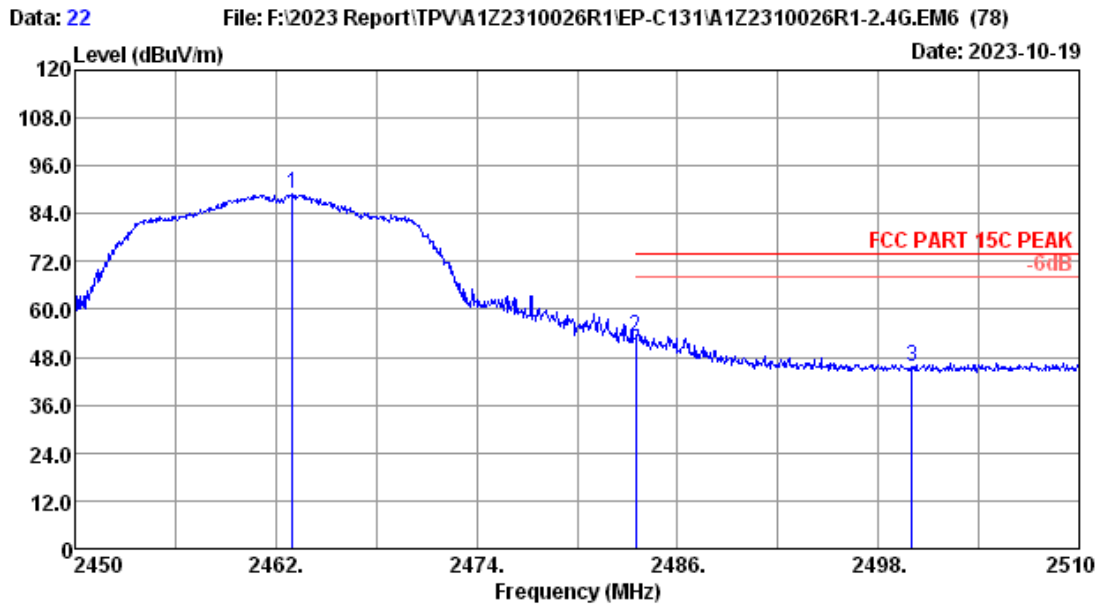
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Amp factor.  
 2. The emission levels that are 20dB below the official  
 limit are not reported.



Site no. : 3m Chamber Data no. : 21  
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23.2°C/52.5% Engineer : nier  
 Test Mode : 2.4G 11n20 2462MHz TX  
 :  
 :

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Amp<br>factor<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1   | 2463.32        | 27.80                    | 4.92                  | 34.35                 | 101.21            | 99.58                         | -----              | -----          | Peak   |
| 2   | 2483.50        | 27.80                    | 4.94                  | 34.35                 | 64.31             | 62.70                         | 74.00              | 11.30          | Peak   |
| 3   | 2500.00        | 27.80                    | 4.95                  | 34.35                 | 51.69             | 50.09                         | 74.00              | 23.91          | Peak   |

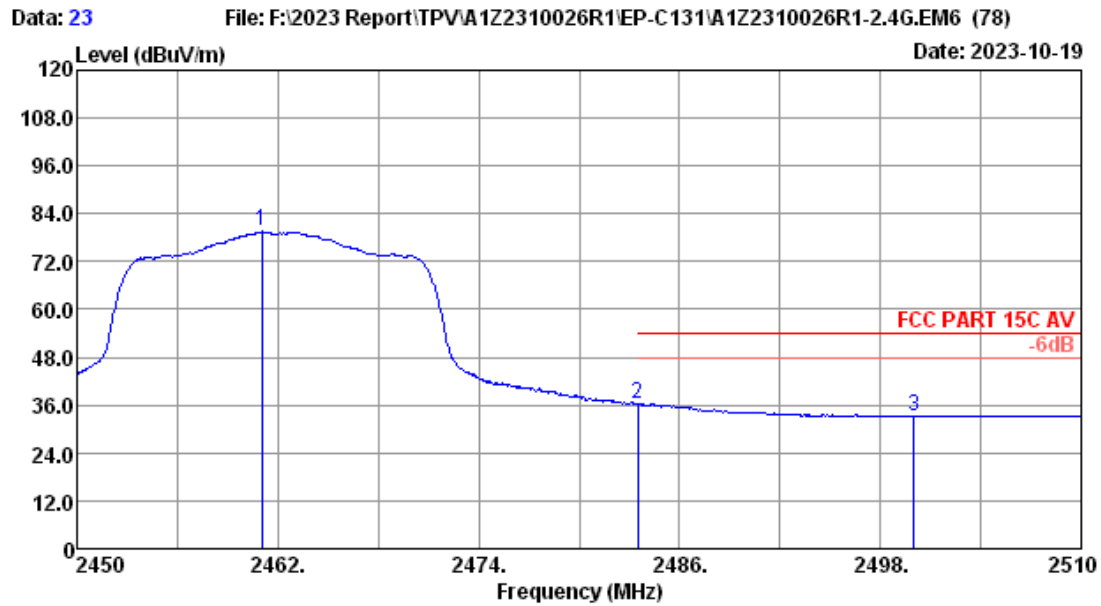
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Amp factor.  
 2. The emission levels that are 20dB below the official  
 limit are not reported.



Site no. : 3m Chamber Data no. : 22  
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23.2°C/52.5% Engineer : nier  
 Test Mode : 2.4G 11n20 2462MHz TX  
 :  
 :

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Amp<br>factor<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1   | 2463.02        | 27.80                    | 4.92                  | 34.35                 | 90.47             | 88.84                         | -----              | -----          | Peak   |
| 2   | 2483.50        | 27.80                    | 4.94                  | 34.35                 | 54.56             | 52.95                         | 74.00              | 21.05          | Peak   |
| 3   | 2500.00        | 27.80                    | 4.95                  | 34.35                 | 47.05             | 45.45                         | 74.00              | 28.55          | Peak   |

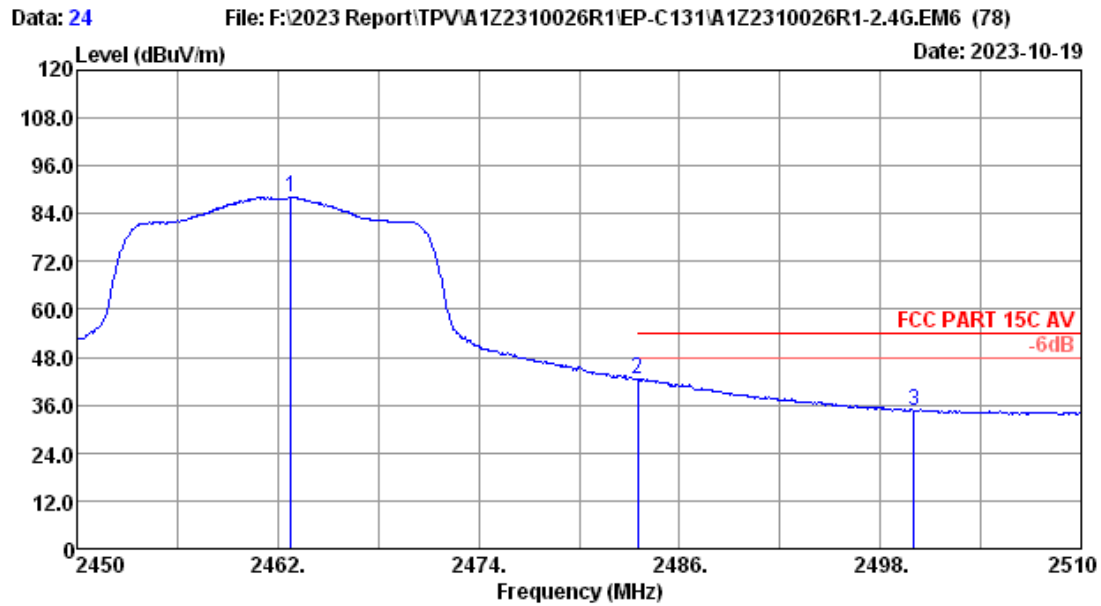
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Amp factor.  
 2. The emission levels that are 20dB below the official  
 limit are not reported.



Site no. : 3m Chamber Data no. : 23  
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23.2°C/52.5% Engineer : nier  
 Test Mode : 2.4G 11n20 2462MHz TX  
 :  
 :

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Amp<br>factor<br>(dB) | Reading<br>(dBUV) | Emission<br>Level<br>(dBUV/m) | Limits<br>(dBUV/m) | Margin<br>(dB) | Remark  |
|-----|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|---------|
| 1   | 2461.04        | 27.80                    | 4.91                  | 34.35                 | 81.20             | 79.56                         | -----              | -----          | Average |
| 2   | 2483.50        | 27.80                    | 4.94                  | 34.35                 | 37.93             | 36.32                         | 54.00              | 17.68          | Average |
| 3   | 2500.00        | 27.80                    | 4.95                  | 34.35                 | 34.76             | 33.16                         | 54.00              | 20.84          | Average |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Amp factor.  
 2. The emission levels that are 20dB below the official  
 limit are not reported.



Site no. : 3m Chamber Data no. : 24  
 Dis. / Ant. : 3m 2023 MCTD1209-3006 Ant. pol. : VERTICAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23.2°C/52.5% Engineer : nier  
 Test Mode : 2.4G 11n20 2462MHz TX  
 :  
 :

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Amp<br>factor<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark  |
|-----|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|---------|
| 1   | 2462.78        | 27.80                    | 4.92                  | 34.35                 | 89.85             | 88.22                         | -----              | -----          | Average |
| 2   | 2483.50        | 27.80                    | 4.94                  | 34.35                 | 44.07             | 42.46                         | 54.00              | 11.54          | Average |
| 3   | 2500.00        | 27.80                    | 4.95                  | 34.35                 | 36.30             | 34.70                         | 54.00              | 19.30          | Average |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading  
 -Amp factor.  
 2. The emission levels that are 20dB below the official  
 limit are not reported.

## **7. 6dB Bandwidth & 99% Bandwidth TEST**

### **7.1.Test Equipments**

| Item | Equipment           | Manufacturer | Model No.     | Serial No. | Last Cal. | Cal. Interval |
|------|---------------------|--------------|---------------|------------|-----------|---------------|
| 1.   | PXA Signal Analyzer | Agilent      | N9030A        | MY51380221 | Apr.01,23 | 1 Year        |
| 2.   | RF Cable            | HUBER+SUHNER | SUCOFLE X-106 | 505238/6   | Apr.02,23 | 1 Year        |

### **7.2.Limit**

For direct sequence systems, the minimum 6dB bandwidth shall be at least 500kHz

### **7.3.Test Procedure**

The transmitter output was connected to a spectrum analyzer, The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100kHz RBW and 300kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

## 7.4.Test Results

|                               |                         |                         |
|-------------------------------|-------------------------|-------------------------|
| EUT: Electronic paper display |                         |                         |
| M/N: EP-C131                  |                         |                         |
| Test date: 2023-10-30         | Pressure: 102.5±1.0 kpa | Humidity: 53.6±3.0%     |
| Tested by: Jason              | Test site: RF site      | Temperature:22.4±0.6 °C |

### -6 dB bandwidth:

| Test Mode        | CH   | -6dB Bandwidth (MHz) | Limit (KHz) |
|------------------|------|----------------------|-------------|
| 11b              | CH1  | 7.581                | ≥ 500       |
|                  | CH6  | 7.610                |             |
|                  | CH11 | 7.566                |             |
| 11g              | CH1  | 15.54                | ≥ 500       |
|                  | CH6  | 15.52                |             |
|                  | CH11 | 15.19                |             |
| 11n<br>HT20      | CH1  | 15.19                | ≥ 500       |
|                  | CH6  | 15.22                |             |
|                  | CH11 | 15.19                |             |
| Conclusion: Pass |      |                      |             |

### 99% Occupied bandwidth:

| Test Mode        | CH   | 99% Bandwidth (MHz) | Limit (MHz) |
|------------------|------|---------------------|-------------|
| 11b              | CH1  | 11.013              | N/A         |
|                  | CH6  | 10.982              |             |
|                  | CH11 | 11.006              |             |
| 11g              | CH1  | 16.337              | N/A         |
|                  | CH6  | 16.342              |             |
|                  | CH11 | 16.294              |             |
| 11n<br>HT20      | CH1  | 17.536              | N/A         |
|                  | CH6  | 17.546              |             |
|                  | CH11 | 17.471              |             |
| Conclusion: Pass |      |                     |             |

### -6 dB bandwidth:

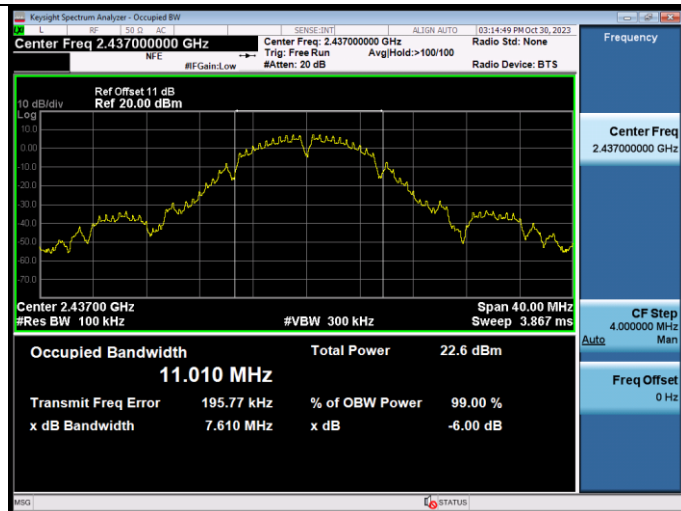
Test Mode: IEEE 802.11b  
Test CH1: 2412MHz



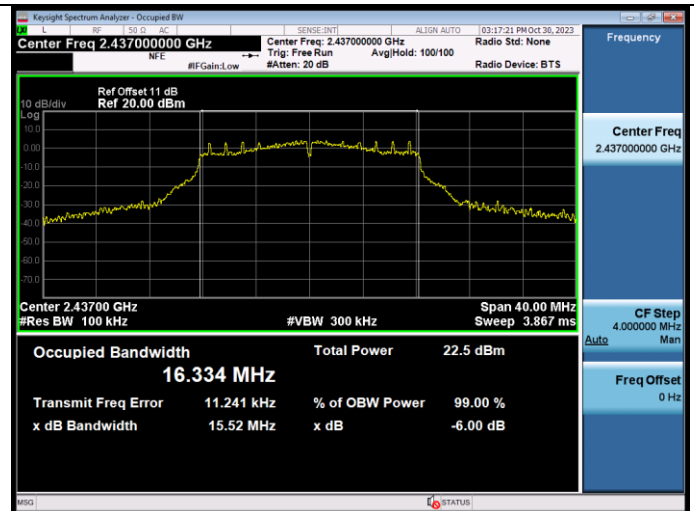
Test Mode: IEEE 802.11g  
Test CH1: 2412MHz



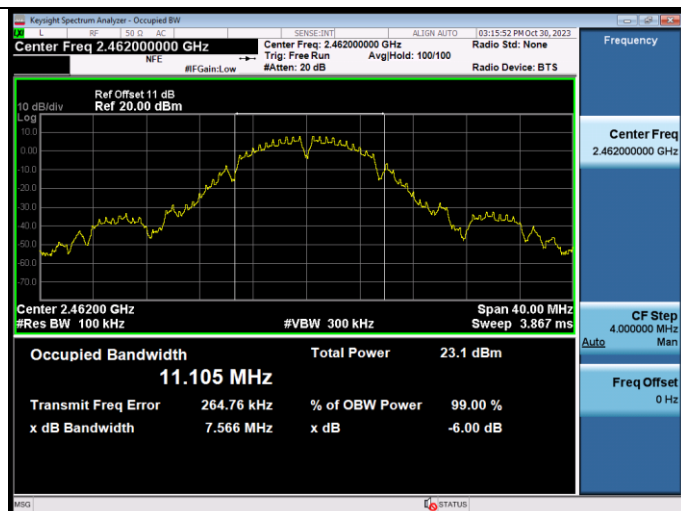
Test CH6: 2437MHz



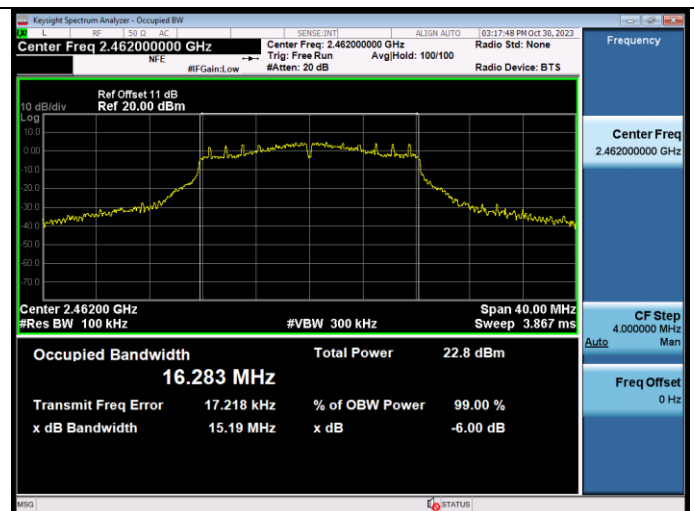
Test CH6: 2437MHz



Test CH11: 2462MHz



Test CH11: 2462MHz



Test Mode: IEEE 802.11n HT20

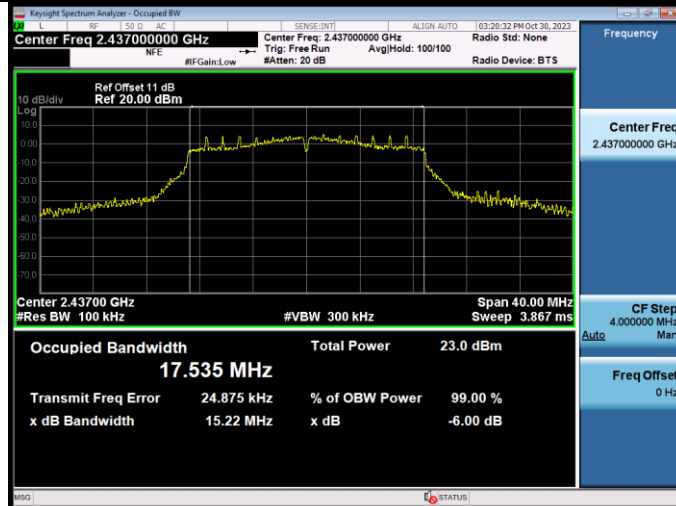
Test CH1: 2412MHz



Test CH11: 2462MHz



Test CH6: 2437MHz



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## 99% Occupied bandwidth:

Test Mode: IEEE 802.11b

Test CH1: 2412MHz

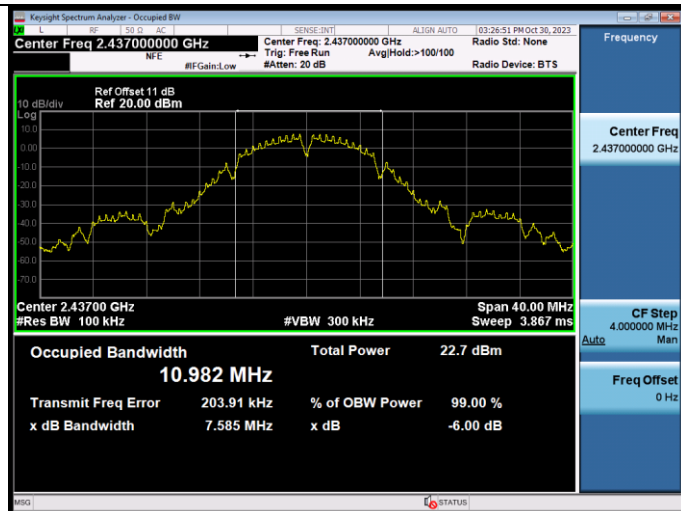


Test Mode: IEEE 802.11g

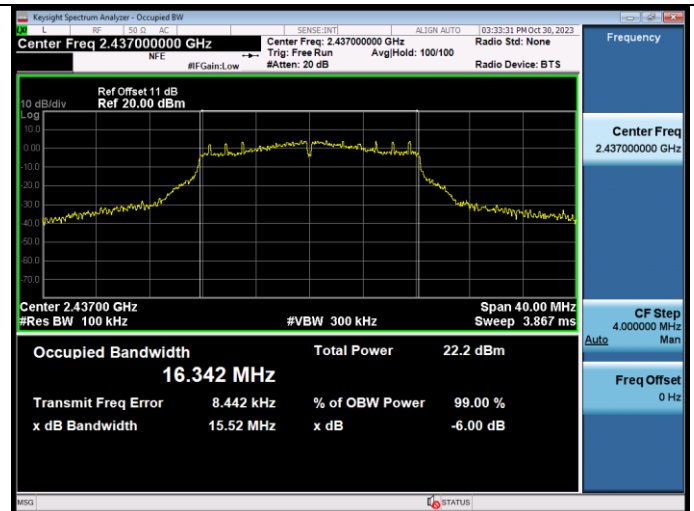
Test CH1: 2412MHz



Test CH6: 2437MHz



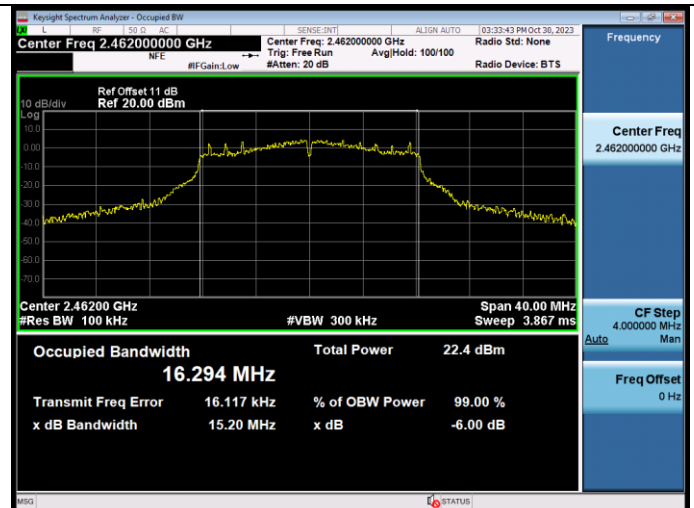
Test CH6: 2437MHz



Test CH11: 2462MHz



Test CH11: 2462MHz

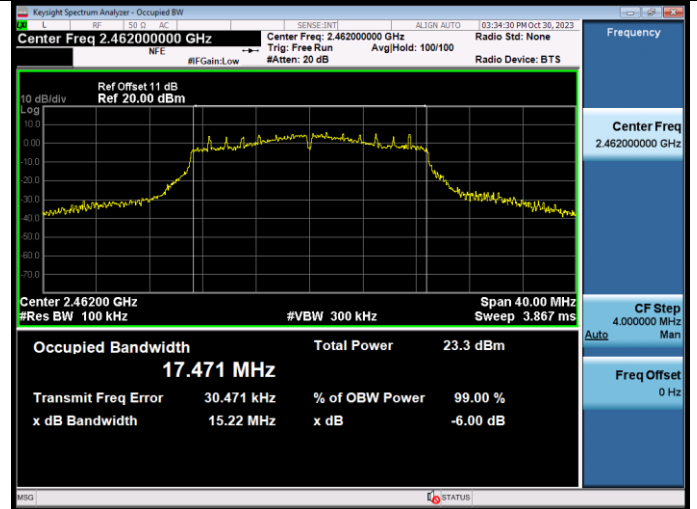


Test Mode: IEEE 802.11n HT20

Test CH1: 2412MHz



Test CH11: 2462MHz



Test CH6: 2437MHz



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## 8. OUTPUT POWER TEST

### 8.1. Test Equipments

| Item | Equipment           | Manufacturer | Model No.     | Serial No. | Last Cal. | Cal. Interval |
|------|---------------------|--------------|---------------|------------|-----------|---------------|
| 1.   | PXA Signal Analyzer | Agilent      | N9030A        | MY51380221 | Apr.01,23 | 1 Year        |
| 2.   | Power meter         | Anritsu      | ML2487A       | 6K00003262 | Jun.26,23 | 1 Year        |
| 3.   | Power sensor        | Anritsu      | MA2491A       | 0332516    | Jun.26,23 | 1 Year        |
| 4.   | RF Cable            | HUBER+SUHNER | SUCOFLE X-106 | 505238/6   | Apr.02,23 | 1 Year        |

### 8.2. Limit (FCC Part 15C 15.247 b(3))

For systems using digital modulation in the 2400—2483.5MHz, The Peak output Power shall not exceed 1W(30dBm), As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level.

### 8.3. Test Procedure

- 1, Connected the EUT's antenna port to measure device by 20dB attenuator.
- 2, Use the test method described in ANSI C63.10-2013 clause 11.9.2.2.2 Method AVGSA-1.
  - 1) Set span to at least 1.5 times the OBW.
  - 2) Set RBW = 1% to 5% of the OBW, not to exceed 1 MHz.
  - 3) Set VBW  $\geq [3 \times \text{RBW}]$ .
  - 4) Number of points in sweep  $\geq [2 \times \text{span} / \text{RBW}]$ . (This gives bin-to-bin spacing  $\leq \text{RBW} / 2$ , so that narrowband signals are not lost between frequency bins.)
  - 5) Sweep time = auto.
  - 6) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
  - 7) If transmit duty cycle  $< 98\%$ , use a sweep trigger with the level set to enable triggering only on full power pulses. The transmitter shall operate at the maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no OFF intervals) or at duty cycle  $\geq 98\%$ , and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run."
  - 8) Trace average at least 100 traces in power averaging (rms) mode.
  - 9) Compute power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function, with band limits set equal to the OBW band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

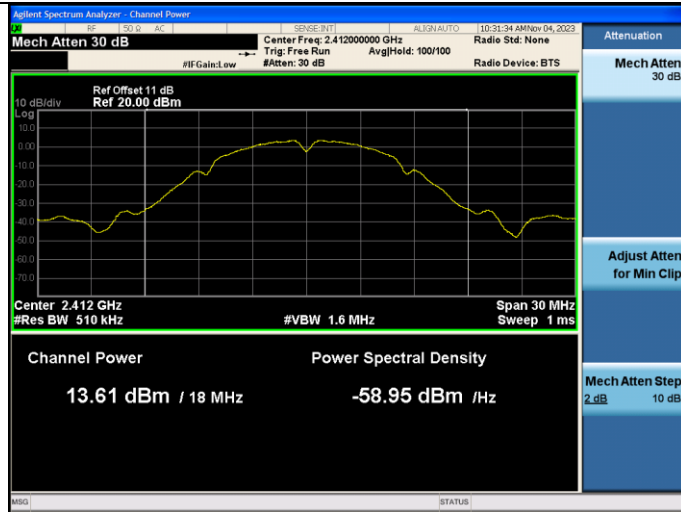
## 8.4.Test Results

|                               |                         |                         |
|-------------------------------|-------------------------|-------------------------|
| EUT: Electronic paper display |                         |                         |
| M/N: EP-C131                  |                         |                         |
| Test date: 2023-11-04         | Pressure: 103.1±1.0 kpa | Humidity: 51.5±3.0%     |
| Tested by: Jason              | Test site: RF site      | Temperature:22.5±0.6 °C |

| Test Mode        | CH   | Power Setting | Duty factor(dB) | Output Power(dBm) | Limit (dBm) |
|------------------|------|---------------|-----------------|-------------------|-------------|
| 11b              | CH1  | Default       | 0               | 13.61             | 30          |
|                  | CH6  | Default       | 0               | 14.09             |             |
|                  | CH11 | Default       | 0               | 14.51             |             |
| 11g              | CH1  | Default       | 0               | 13.51             | 30          |
|                  | CH6  | Default       | 0               | 14.34             |             |
|                  | CH11 | Default       | 0               | 14.52             |             |
| 11n<br>HT20      | CH1  | Default       | 0               | 14.00             | 30          |
|                  | CH6  | Default       | 0               | 14.62             |             |
|                  | CH11 | Default       | 0               | 15.06             |             |
| Conclusion: PASS |      |               |                 |                   |             |

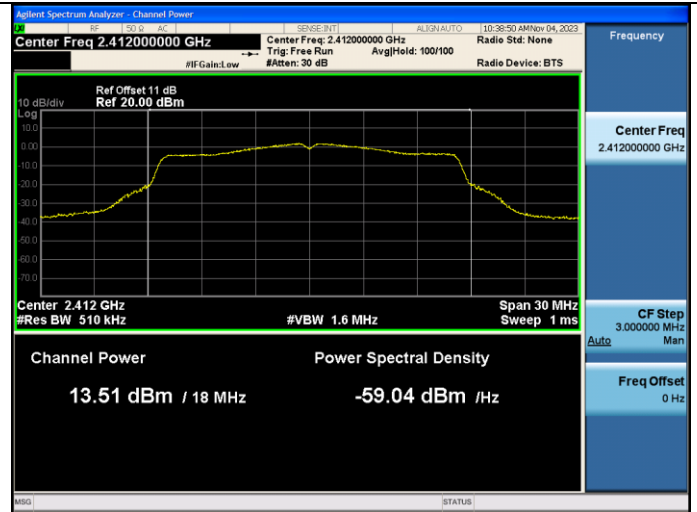
Test Mode: IEEE 802.11b

Test CH1: 2412MHz

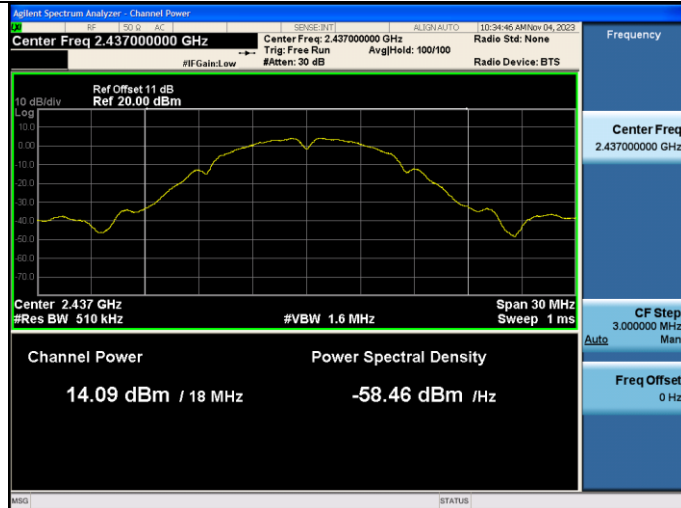


Test Mode: IEEE 802.11g

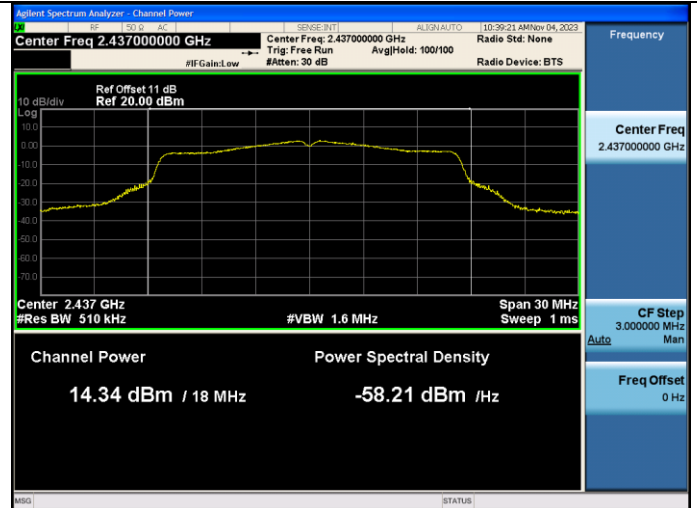
Test CH1: 2412MHz



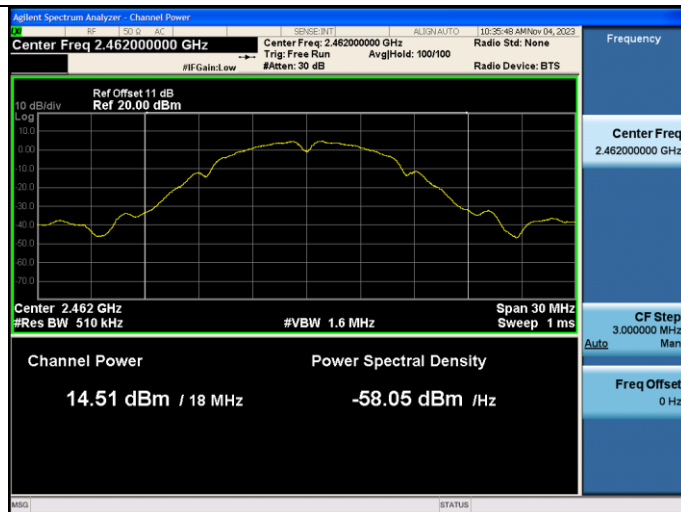
Test CH6: 2437MHz



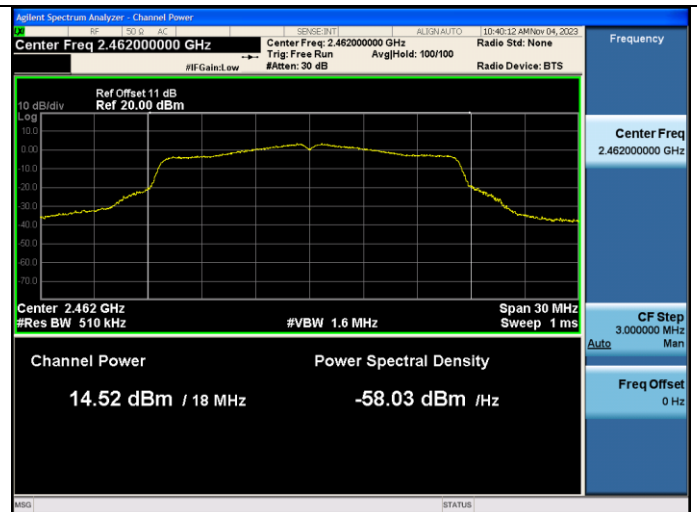
Test CH6: 2437MHz



Test CH11: 2462MHz

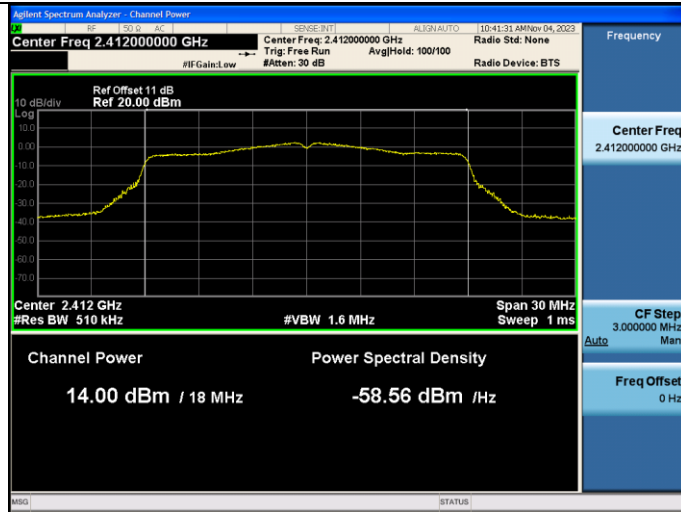


Test CH11: 2462MHz

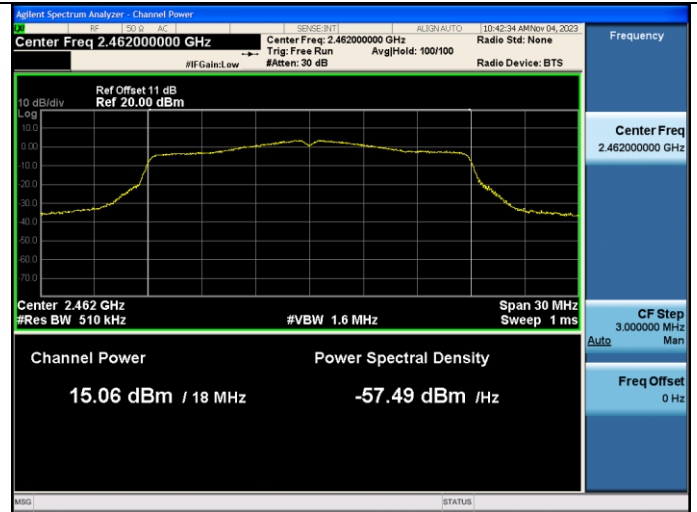


Test Mode: IEEE 802.11n HT20

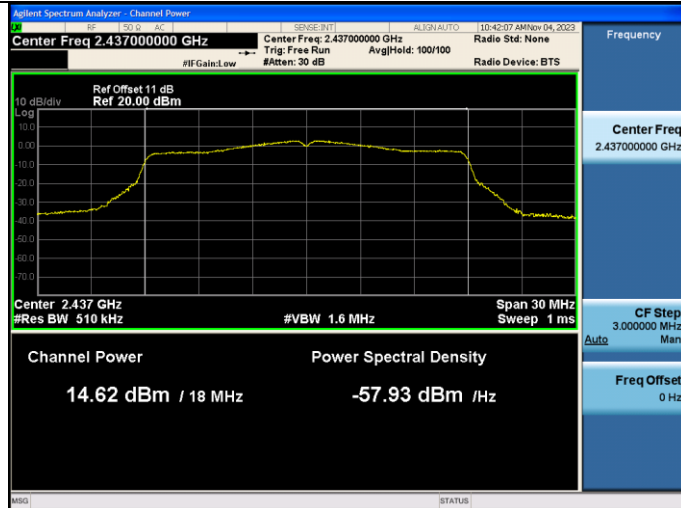
Test CH1: 2412MHz



Test CH11: 2462MHz



Test CH6: 2437MHz



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## 9. POWER SPECTRAL DENSITY TEST

### 9.1. Test Equipments

| Item | Equipment           | Manufacturer | Model No.    | Serial No. | Last Cal. | Cal. Interval |
|------|---------------------|--------------|--------------|------------|-----------|---------------|
| 1.   | PXA Signal Analyzer | Agilent      | N9030A       | MY51380221 | Apr.01,23 | 1 Year        |
| 2.   | RF Cable            | HUBER+SUHNER | SUCOFLEX-106 | 505238/6   | Apr.02,23 | 1 Year        |

### 9.2. Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

### 9.3. Test Procedure

- Set analyzer center frequency to DTS channel center frequency.
- Set the span to 1.5 DTS bandwidth.
- Set the RBW to:  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$ .
- Set the VBW  $\geq [3 \times \text{RBW}]$ .
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level within the RBW.

## 9.4.Test Results

|                               |                         |                          |
|-------------------------------|-------------------------|--------------------------|
| EUT: Electronic paper display |                         |                          |
| M/N: EP-C131                  |                         |                          |
| Test date: 2023-11-07         | Pressure: 102.5±1.0 kpa | Humidity: 53.6±3.0%      |
| Tested by: Jason              | Test site: RF site      | Temperature: 22.4±0.6 °C |

| Test Mode        | CH   | Power Spectral Density (dBm/3KHz) | Limit (dBm/3KHz) |
|------------------|------|-----------------------------------|------------------|
| 11b              | CH1  | -5.653                            | 8                |
|                  | CH6  | -6.857                            |                  |
|                  | CH11 | -6.977                            |                  |
| 11g              | CH1  | -8.023                            | 8                |
|                  | CH6  | -7.603                            |                  |
|                  | CH11 | -7.103                            |                  |
| 11n<br>HT20      | CH1  | -8.078                            | 8                |
|                  | CH6  | -7.027                            |                  |
|                  | CH11 | -6.205                            |                  |
| Conclusion: PASS |      |                                   |                  |

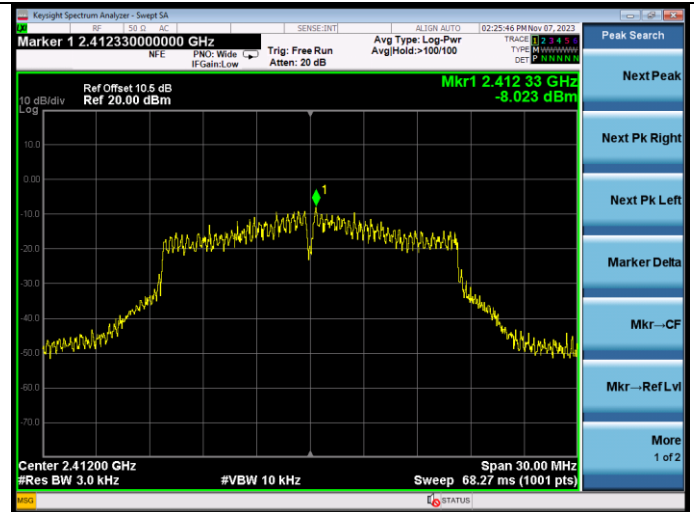
Test Mode: IEEE 802.11b

Test CH1: 2412MHz



Test Mode: IEEE 802.11g

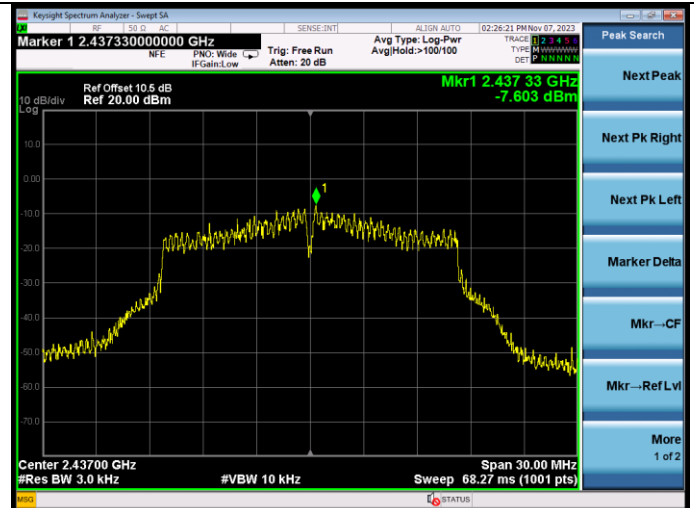
Test CH1: 2412MHz



Test CH6: 2437MHz



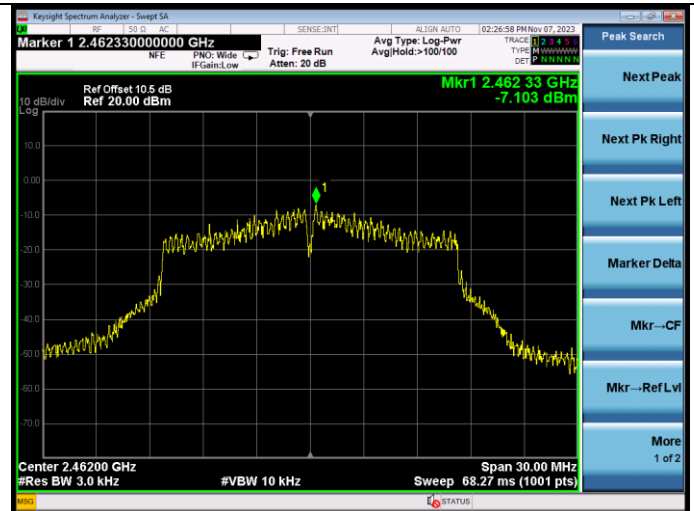
Test CH6: 2437MHz



Test CH11: 2462MHz

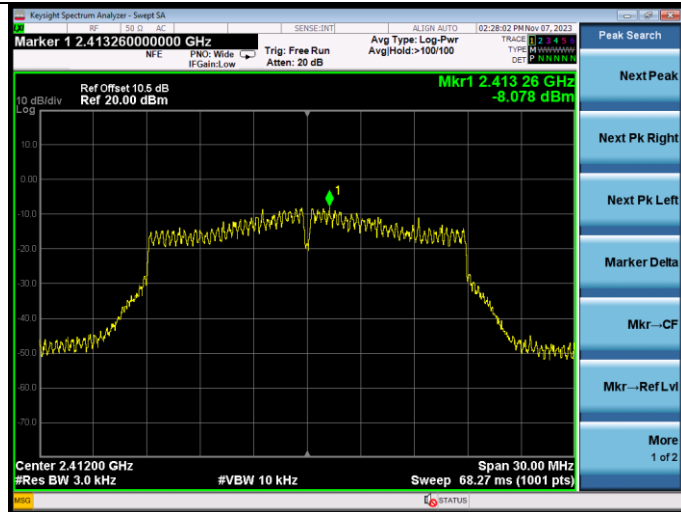


Test CH11: 2462MHz

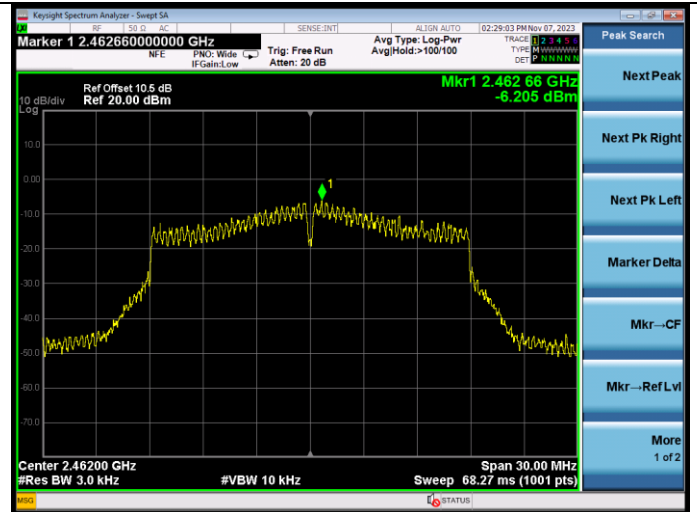


Test Mode: IEEE 802.11n HT20

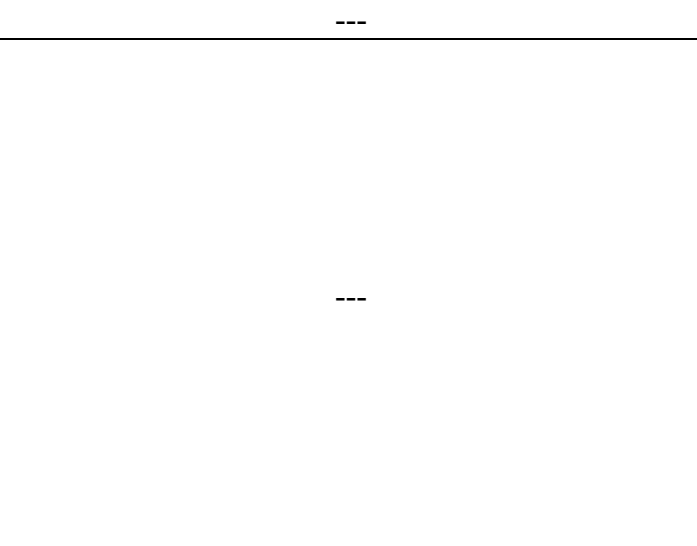
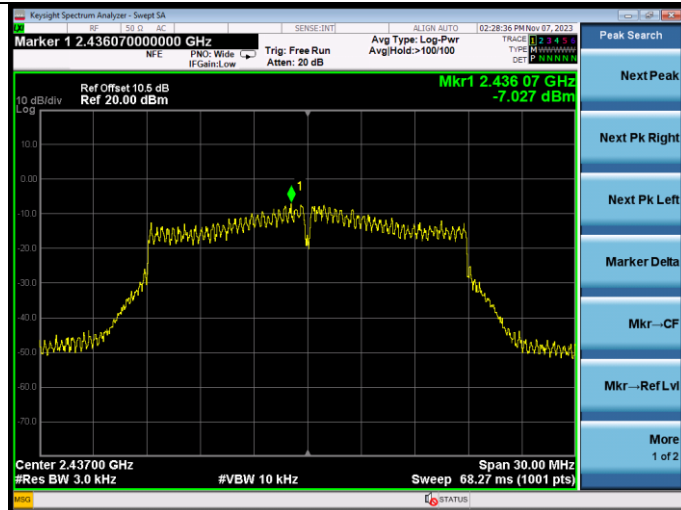
Test CH1: 2412MHz



Test CH11: 2462MHz



Test CH6: 2437MHz



## 10. ANTENNA REQUIREMENT

### 10.1. Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

### 10.2. Antenna Connected Construction

The antennas used for this product is shrapnel Antenna, that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is DTS Band: 2.51dBi.

## 11. DEVIATION TO TEST SPECIFICATIONS

[NONE]

..... THE END .....