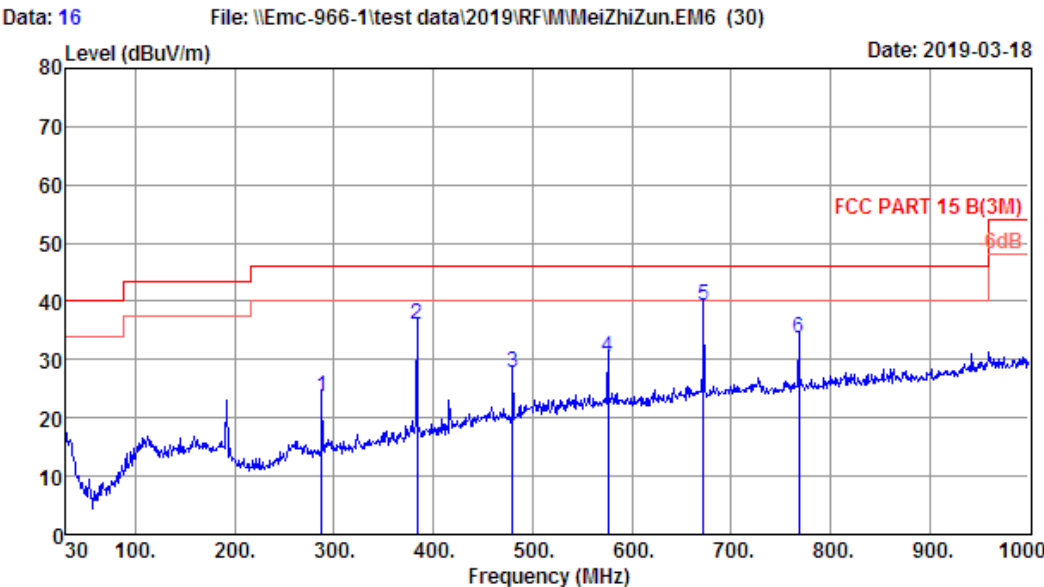




Site no. : 1# 966 Chamber      Data no. : 16  
Dis. / Ant. : 3m 37062      Ant. pol. : HORIZONTAL  
Limit : FCC PART 15 B(3M)  
Env. / Ins. : Temp:23.4';Humi:52%;Press:101.52kPa  
Engineer : Viking  
EUT : STEREO PORTABLE SPEAKER  
Power : DC 3.7V  
M/N : MMA3778  
Test Mode : TX Mode

|   | Freq.<br>(MHz) | ANT<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|-------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|--------|
| 1 | 288.02         | 13.18                   | 2.01                  | 8.50              | 23.69                         | 46.00             | 22.31          | QP     |
| 2 | 384.05         | 15.62                   | 2.35                  | 18.16             | 36.13                         | 46.00             | 9.87           | QP     |
| 3 | 480.08         | 17.80                   | 2.83                  | 7.09              | 27.72                         | 46.00             | 18.28          | QP     |
| 4 | 576.11         | 19.62                   | 3.12                  | 7.75              | 30.49                         | 46.00             | 15.51          | QP     |
| 5 | 672.14         | 21.12                   | 3.45                  | 14.73             | 39.30                         | 46.00             | 6.70           | QP     |
| 6 | 768.17         | 22.48                   | 3.81                  | 7.36              | 33.65                         | 46.00             | 12.35          | QP     |

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

## 1000-18000MHz

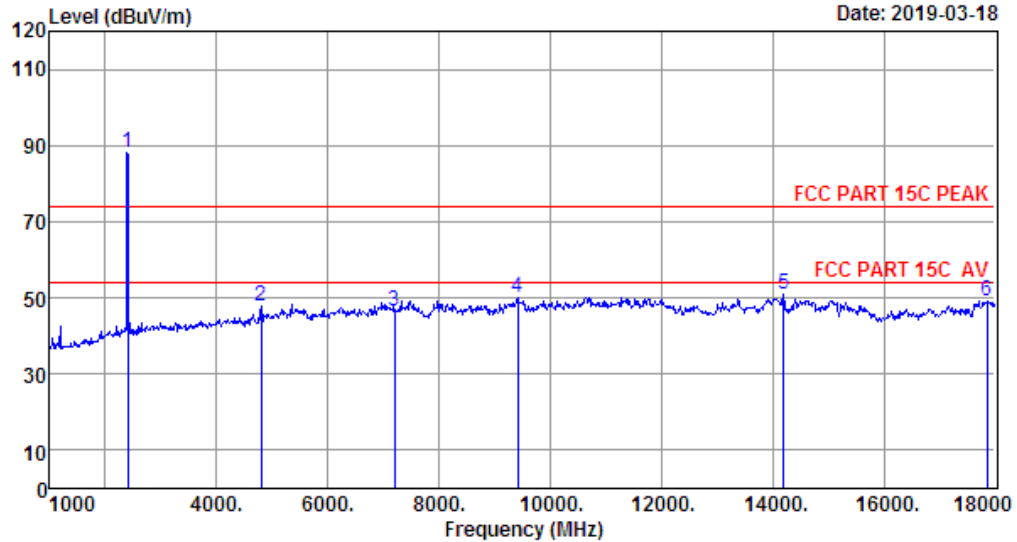
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Data: 9

File: \\Emc-966-1\test data\2019\RF\MM\MeiZhiZun.EM6 (30)

Date: 2019-03-18



Site no. : 1# 966 Chamber Data no. : 9  
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.4';Humi:52%;Press:101.52kPa  
 Engineer : Viking  
 EUT : STEREO PORTABLE SPEAKER  
 Power : DC 3.7V  
 M/N : MMA3778  
 Test Mode : n/4-DQPSK TX 2402MHz

|   | 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 | 2402.00        | 27.35                    | 3.21                  | 34.94                 | 92.68             | 88.30                         | 74.00              | -14.30         | Peak   |
| 2 | 4804.00        | 32.06                    | 4.67                  | 35.06                 | 46.04             | 47.71                         | 74.00              | 26.29          | Peak   |
| 3 | 7206.00        | 36.56                    | 5.99                  | 33.45                 | 37.18             | 46.28                         | 74.00              | 27.72          | Peak   |
| 4 | 9415.00        | 38.64                    | 7.24                  | 34.83                 | 39.18             | 50.23                         | 74.00              | 23.77          | Peak   |
| 5 | 14192.00       | 41.51                    | 10.15                 | 33.13                 | 32.19             | 50.72                         | 74.00              | 23.28          | Peak   |
| 6 | 17864.00       | 44.34                    | 12.34                 | 31.29                 | 23.89             | 49.28                         | 74.00              | 24.72          | Peak   |

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

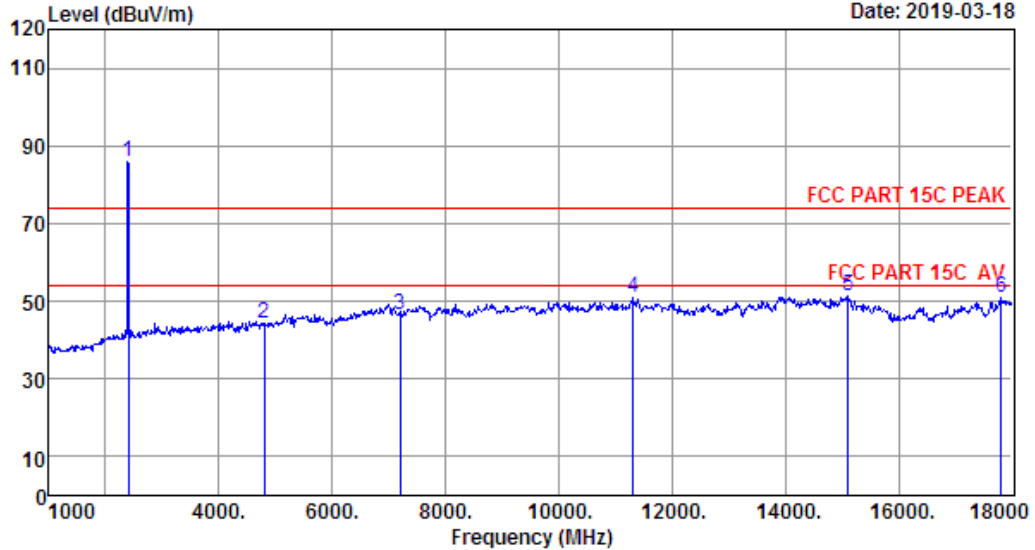
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Data: 10

File: \\Emc-966-1\\test data\\2019\\RF\\M\\MeiZhiZun.EM6 (30)

Date: 2019-03-18



Site no. : 1# 966 Chamber Data no. : 10  
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.4'; Humi:52%; Press:101.52kPa  
 Engineer : Viking  
 EUT : STEREO PORTABLE SPEAKER  
 Power : DC 3.7V  
 M/N : MMA3778  
 Test Mode : n/4-DQPSK TX 2402MHz

|   | 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 | 2402.00        | 27.35                    | 3.21                  | 34.94                 | 90.41             | 86.03                         | 74.00              | -12.03         | Peak   |
| 2 | 4804.00        | 32.06                    | 4.67                  | 35.06                 | 42.43             | 44.10                         | 74.00              | 29.90          | Peak   |
| 3 | 7206.00        | 36.56                    | 5.99                  | 33.45                 | 37.37             | 46.47                         | 74.00              | 27.53          | Peak   |
| 4 | 11319.00       | 40.03                    | 8.34                  | 32.87                 | 35.45             | 50.95                         | 74.00              | 23.05          | Peak   |
| 5 | 15110.00       | 40.13                    | 10.87                 | 33.19                 | 33.38             | 51.19                         | 74.00              | 22.81          | Peak   |
| 6 | 17813.00       | 44.21                    | 12.23                 | 31.17                 | 25.70             | 50.97                         | 74.00              | 23.03          | Peak   |

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

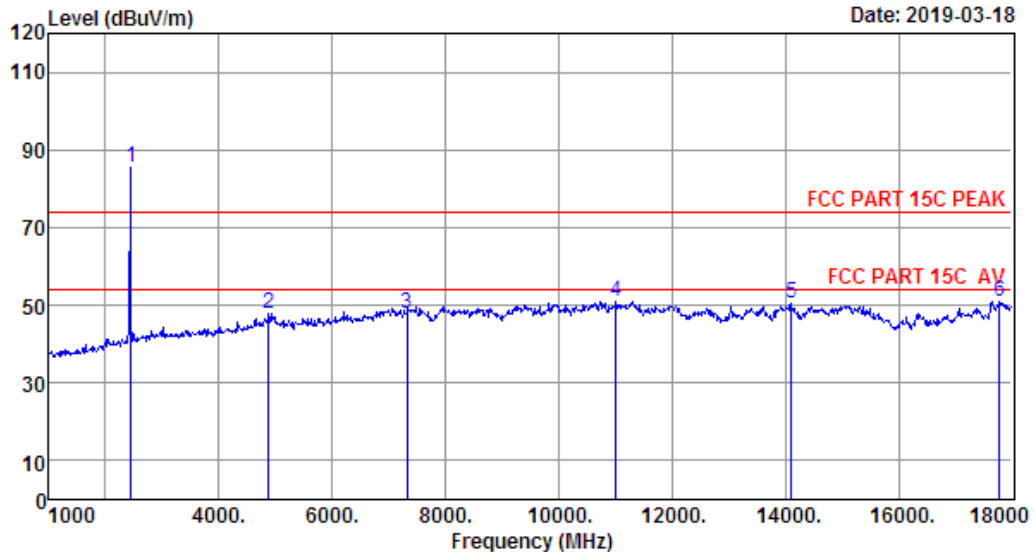
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Data: 11

File: \\Emc-966-1\\test data\\2019\\RF\\M\\MeiZhiZun.EM6 (30)

Date: 2019-03-18



Site no. : 1# 966 Chamber Data no. : 11  
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.4'; Humi:52%; Press:101.52kPa  
 Engineer : Viking  
 EUT : STEREO PORTABLE SPEAKER  
 Power : DC 3.7V  
 M/N : MMA3778  
 Test Mode : n/4-DQPSK TX 2441MHz

|   | 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 | 2441.00        | 27.48                    | 3.26                  | 35.07                 | 89.66             | 85.33                         | 74.00              | -11.33         | Peak   |
| 2 | 4882.00        | 32.18                    | 4.73                  | 35.14                 | 46.25             | 48.02                         | 74.00              | 25.98          | Peak   |
| 3 | 7323.00        | 36.82                    | 6.10                  | 33.28                 | 38.38             | 48.02                         | 74.00              | 25.98          | Peak   |
| 4 | 11013.00       | 39.91                    | 8.56                  | 33.42                 | 36.04             | 51.09                         | 74.00              | 22.91          | Peak   |
| 5 | 14107.00       | 41.60                    | 10.14                 | 33.02                 | 31.70             | 50.42                         | 74.00              | 23.58          | Peak   |
| 6 | 17779.00       | 44.12                    | 12.16                 | 31.15                 | 25.59             | 50.72                         | 74.00              | 23.28          | Peak   |

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

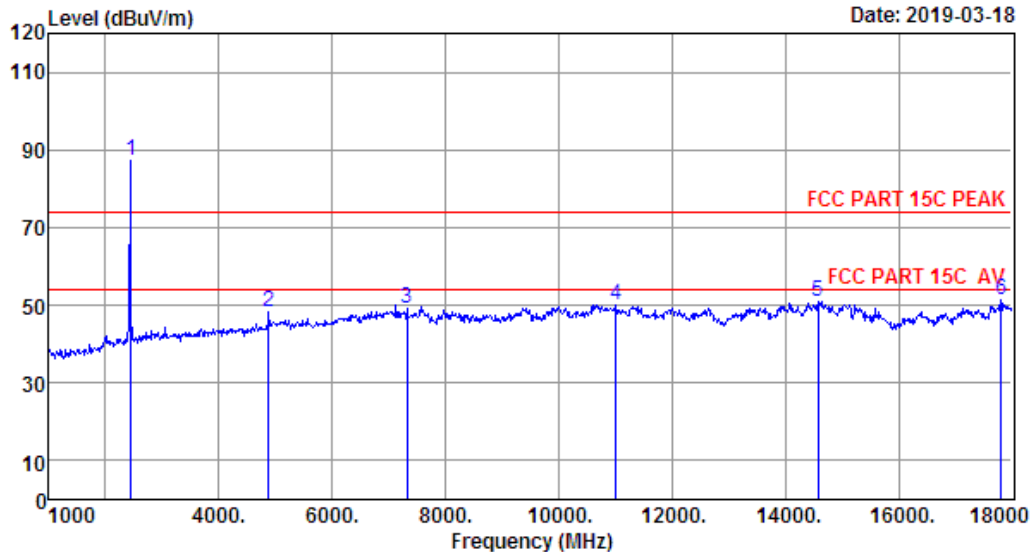
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Data: 12

File: \\Emc-966-1\test data\2019\RF\MM\MeiZhiZun.EM6 (30)

Date: 2019-03-18



Site no. : 1# 966 Chamber Data no. : 12  
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.4'; Humi:52%; Press:101.52kPa  
 Engineer : Viking  
 EUT : STEREO PORTABLE SPEAKER  
 Power : DC 3.7V  
 M/N : MMA3778  
 Test Mode : n/4-DQPSK TX 2441MHz

|   | 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 | 2441.00        | 27.48                    | 3.26                  | 35.07                 | 91.50             | 87.17                         | 74.00              | -13.17         | Peak   |
| 2 | 4882.00        | 32.18                    | 4.73                  | 35.14                 | 46.70             | 48.47                         | 74.00              | 25.53          | Peak   |
| 3 | 7323.00        | 36.82                    | 6.10                  | 33.28                 | 39.59             | 49.23                         | 74.00              | 24.77          | Peak   |
| 4 | 11013.00       | 39.91                    | 8.56                  | 33.42                 | 34.96             | 50.01                         | 74.00              | 23.99          | Peak   |
| 5 | 14583.00       | 41.05                    | 10.28                 | 33.58                 | 33.00             | 50.75                         | 74.00              | 23.25          | Peak   |
| 6 | 17813.00       | 44.21                    | 12.23                 | 31.17                 | 26.23             | 51.50                         | 74.00              | 22.50          | Peak   |

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

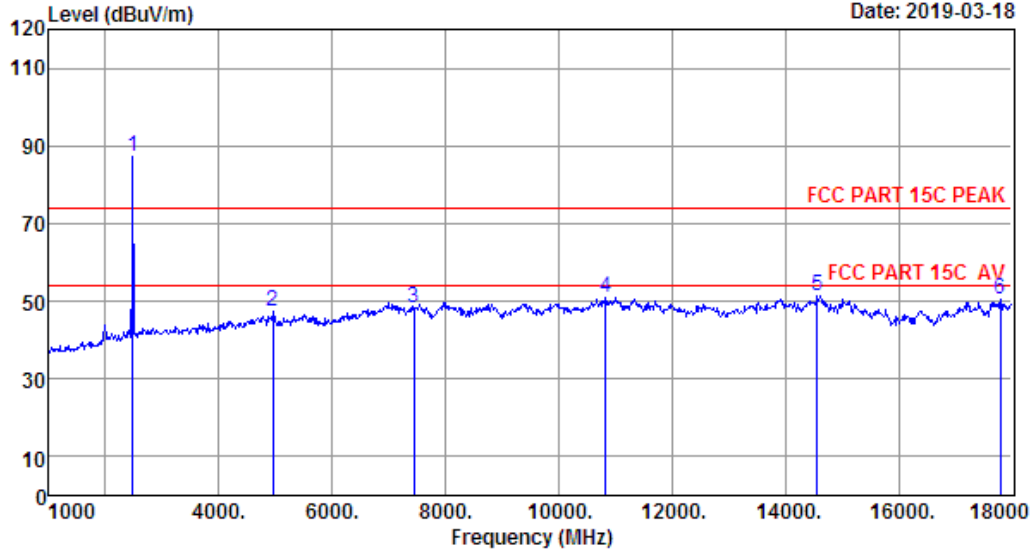
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Data: 13

File: \\Emc-966-1\\test data\\2019\\RF\\M\\MeiZhiZun.EM6 (30)

Date: 2019-03-18



Site no. : 1# 966 Chamber Data no. : 13  
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.4'; Humi:52%; Press:101.52kPa  
 Engineer : Viking  
 EUT : STEREO PORTABLE SPEAKER  
 Power : DC 3.7V  
 M/N : MMA3778  
 Test Mode : n/4-DQPSK TX 2480MHz

|   | 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 | 2480.00        | 27.56                    | 3.29                  | 35.21                 | 91.58             | 87.22                         | 74.00              | -13.22         | Peak   |
| 2 | 4960.00        | 32.34                    | 4.80                  | 35.24                 | 45.29             | 47.19                         | 74.00              | 26.81          | Peak   |
| 3 | 7440.00        | 37.09                    | 6.13                  | 33.08                 | 38.25             | 48.39                         | 74.00              | 25.61          | Peak   |
| 4 | 10826.00       | 39.69                    | 8.70                  | 33.67                 | 36.00             | 50.72                         | 74.00              | 23.28          | Peak   |
| 5 | 14566.00       | 41.08                    | 10.26                 | 33.57                 | 33.48             | 51.25                         | 74.00              | 22.75          | Peak   |
| 6 | 17796.00       | 44.16                    | 12.19                 | 31.13                 | 25.10             | 50.32                         | 74.00              | 23.68          | Peak   |

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

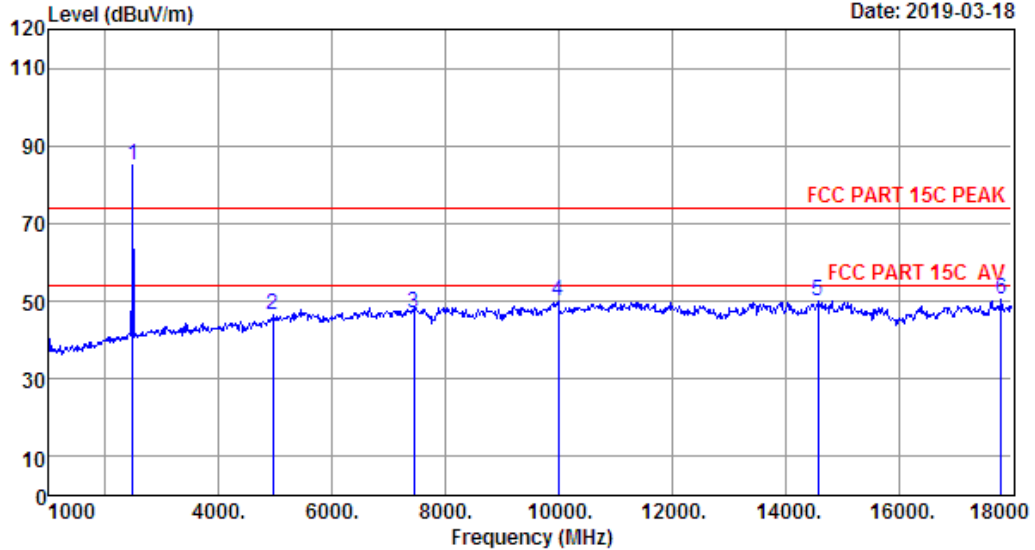
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Data: 14

File: \\Emc-966-1\\test data\\2019\\RF\\M\\MeiZhiZun.EM6 (30)

Date: 2019-03-18



Site no. : 1# 966 Chamber Data no. : 14  
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.4'; Humi:52%; Press:101.52kPa  
 Engineer : Viking  
 EUT : STEREO PORTABLE SPEAKER  
 Power : DC 3.7V  
 M/N : MMA3778  
 Test Mode : n/4-DQPSK TX 2480MHz

|   | 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 | 2480.00        | 27.56                    | 3.29                  | 35.21                 | 89.47             | 85.11                         | 74.00              | -11.11         | Peak   |
| 2 | 4960.00        | 32.34                    | 4.80                  | 35.24                 | 44.45             | 46.35                         | 74.00              | 27.65          | Peak   |
| 3 | 7440.00        | 37.09                    | 6.13                  | 33.08                 | 36.94             | 47.08                         | 74.00              | 26.92          | Peak   |
| 4 | 9993.00        | 39.10                    | 8.82                  | 34.70                 | 36.93             | 50.15                         | 74.00              | 23.85          | Peak   |
| 5 | 14583.00       | 41.05                    | 10.28                 | 33.58                 | 32.36             | 50.11                         | 74.00              | 23.89          | Peak   |
| 6 | 17813.00       | 44.21                    | 12.23                 | 31.17                 | 25.22             | 50.49                         | 74.00              | 23.51          | Peak   |

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

**18000MHz – 25000MHz**

Pass

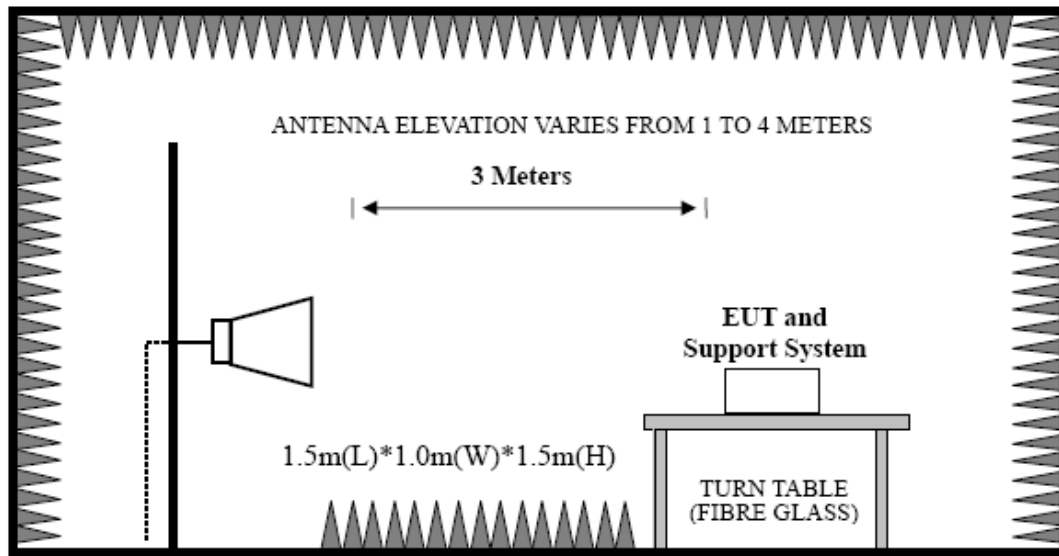
Note: The amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

## 9. BAND EDGE COMPLIANCE

### 9.1. 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.

### 9.2. Block Diagram of Test setup



### 9.3. Test Procedure

EUT was placed on a turn table, which is 1.5 m high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of emissions

Peak : RBW = 1MHz, VBW = 1MHz, Detector=PEAK detector, Sweep time = auto.

AV : RBW = 1MHz, VBW = 10Hz, Detector=PEAK detector, Sweep time = auto.

### 9.4. Test Result

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

Note: 1、 For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.

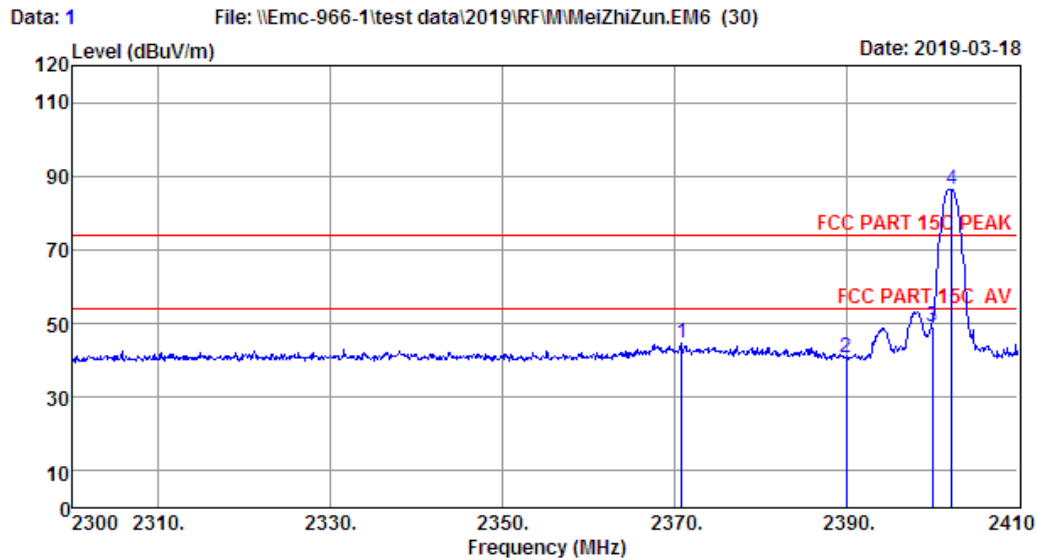
2、 The frequency 2402MHz and 2480MHz is fundamental frequency which no limit, the limit on plots is automatically generated by the software, it's not fundamental limit, we can't remove it.

3、 all modes have been tested , only worse case is reported.

## 9.5. Test Data

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Site no. : 1# 966 Chamber Data no. : 1  
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.4';Humi:52%;Press:101.52kPa  
 Engineer : Viking  
 EUT : STEREO PORTABLE SPEAKER  
 Power : DC 3.7V  
 M/N : MMA3778  
 Test Mode : n/4-DQPSK TX 2402MHz(No Hopping)

|   | 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 | 2370.84        | 27.31                    | 3.20                  | 34.80                 | 49.23             | 44.94                         | 74.00              | 29.06          | Peak   |
| 2 | 2390.00        | 27.35                    | 3.21                  | 34.87                 | 45.14             | 40.83                         | 74.00              | 33.17          | Peak   |
| 3 | 2400.00        | 27.35                    | 3.21                  | 34.94                 | 53.42             | 49.04                         | 74.00              | 24.96          | Peak   |
| 4 | 2402.30        | 27.35                    | 3.21                  | 34.94                 | 90.70             | 86.32                         | 74.00              | -12.32         | Peak   |

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

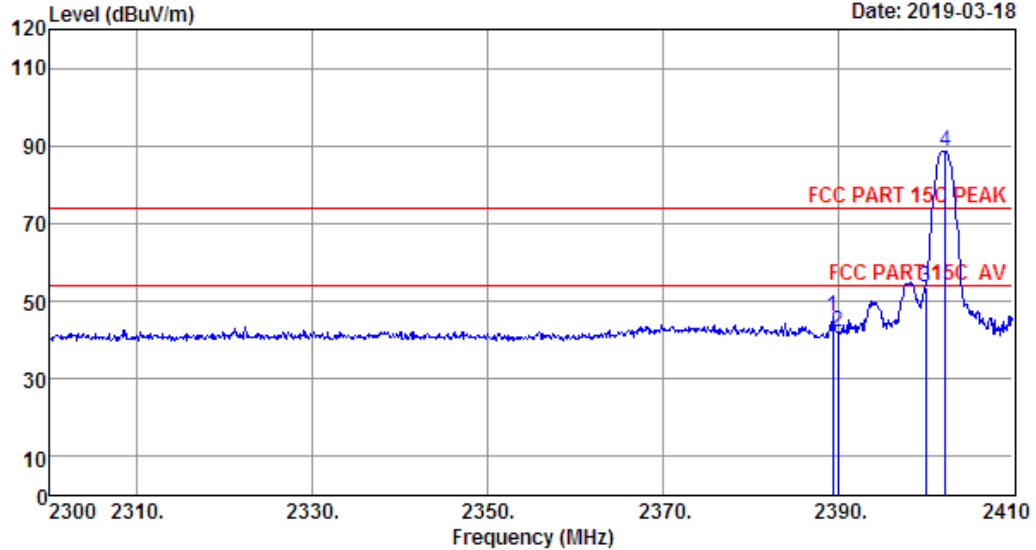
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Data: 2

File: \\Emc-966-1\\test data\\2019\\RF\\M\\MeiZhiZun.EM6 (30)

Date: 2019-03-18



Site no. : 1# 966 Chamber Data no. : 2  
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.4'; Humi:52%; Press:101.52kPa  
 Engineer : Viking  
 EUT : STEREO PORTABLE SPEAKER  
 Power : DC 3.7V  
 M/N : MMA3778  
 Test Mode : n/4-DQPSK TX 2402MHz (No Hopping)

|   | 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 | 2389.43        | 27.35                    | 3.21                  | 34.87                 | 50.36             | 46.05                         | 74.00              | 27.95          | Peak   |
| 2 | 2390.00        | 27.35                    | 3.21                  | 34.87                 | 46.59             | 42.28                         | 74.00              | 31.72          | Peak   |
| 3 | 2400.00        | 27.35                    | 3.21                  | 34.94                 | 58.01             | 53.63                         | 74.00              | 20.37          | Peak   |
| 4 | 2402.30        | 27.35                    | 3.21                  | 34.94                 | 93.14             | 88.76                         | 74.00              | -14.76         | Peak   |

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

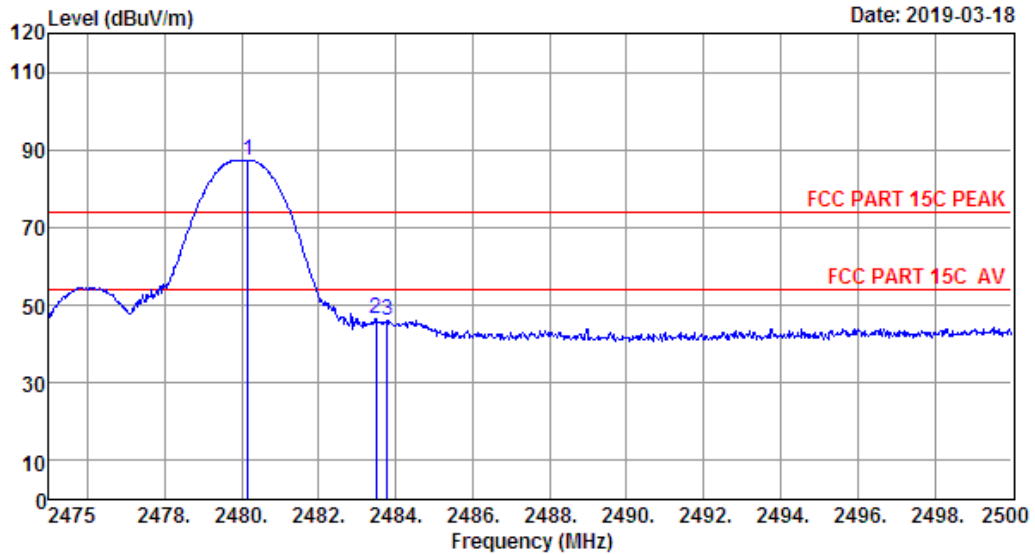
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Data: 3

File: \\Emc-966-1\test data\2019\RF\MM\MeiZhiZun.EM6 (30)

Date: 2019-03-18



Site no. : 1# 966 Chamber Data no. : 3  
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.4';Humi:52%;Press:101.52kPa  
 Engineer : Viking  
 EUT : STEREO PORTABLE SPEAKER  
 Power : DC 3.7V  
 M/N : MMA3778  
 Test Mode : π/4-DQPSK TX 2480MHz(No Hopping)

|   | 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 | 2480.18        | 27.56                    | 3.29                  | 35.21                 | 91.62             | 87.26                         | 74.00              | -13.26         | Peak   |
| 2 | 2483.50        | 27.56                    | 3.29                  | 35.21                 | 50.71             | 46.35                         | 74.00              | 27.65          | Peak   |
| 3 | 2483.78        | 27.56                    | 3.29                  | 35.21                 | 50.45             | 46.09                         | 74.00              | 27.91          | Peak   |

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

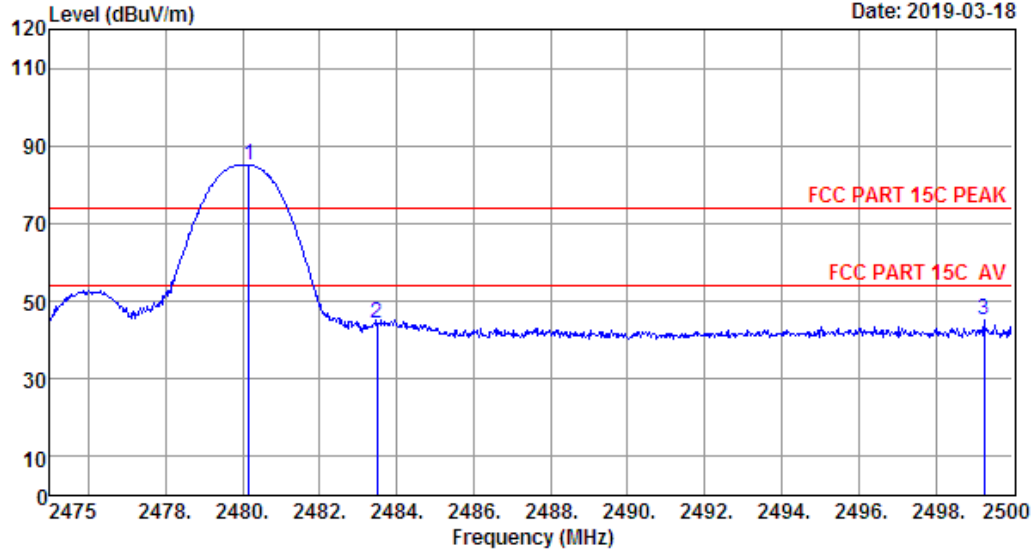
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Data: 4

File: \\Emc-966-1\\test data\\2019\\RF\\M\\MeiZhiZun.EM6 (30)

Date: 2019-03-18



Site no. : 1# 966 Chamber Data no. : 4  
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.4'; Humi:52%; Press:101.52kPa  
 Engineer : Viking  
 EUT : STEREO PORTABLE SPEAKER  
 Power : DC 3.7V  
 M/N : MMA3778  
 Test Mode : π/4-DQPSK TX 2480MHz(No Hopping)

|   | 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 | 2480.18        | 27.56                    | 3.29                  | 35.21                 | 89.34             | 84.98                         | 74.00              | -10.98         | Peak   |
| 2 | 2483.50        | 27.56                    | 3.29                  | 35.21                 | 48.64             | 44.28                         | 74.00              | 29.72          | Peak   |
| 3 | 2499.25        | 27.60                    | 3.30                  | 35.27                 | 49.63             | 45.26                         | 74.00              | 28.74          | Peak   |

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

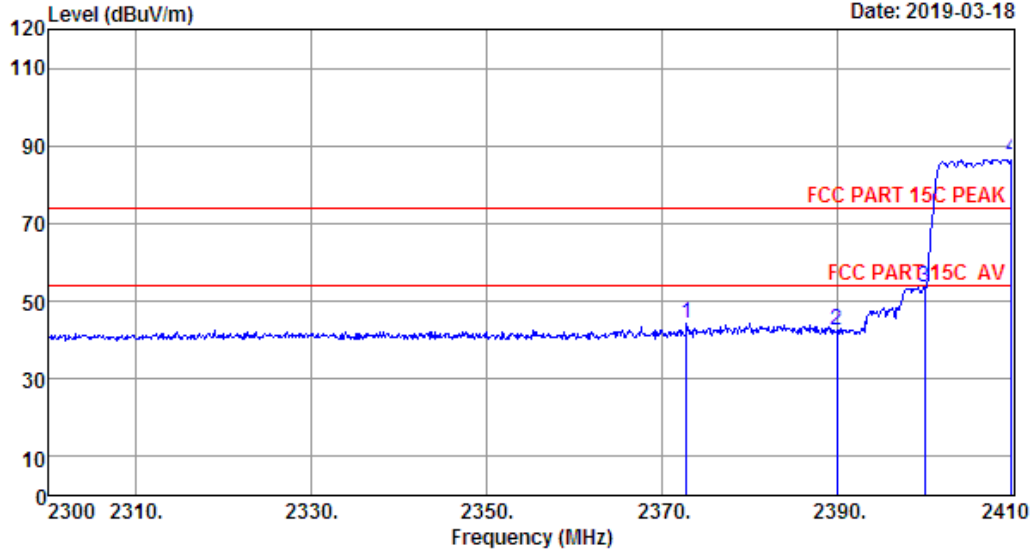
## EST Technology

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Data: 5

File: \\Emc-966-1\\test data\\2019\\RF\\M\\MeiZhiZun.EM6 (30)

Date: 2019-03-18



Site no. : 1# 966 Chamber Data no. : 5  
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.4'; Humi:52%; Press:101.52kPa  
 Engineer : Viking  
 EUT : STEREO PORTABLE SPEAKER  
 Power : DC 3.7V  
 M/N : MMA3778  
 Test Mode : n/4-DQPSK TX 2402MHz(Hopping On)

|   | 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 | 2372.82        | 27.31                    | 3.20                  | 34.80                 | 48.73             | 44.44                         | 74.00              | 29.56          | Peak   |
| 2 | 2390.00        | 27.35                    | 3.21                  | 34.87                 | 46.84             | 42.53                         | 74.00              | 31.47          | Peak   |
| 3 | 2400.00        | 27.35                    | 3.21                  | 34.94                 | 57.97             | 53.59                         | 74.00              | 20.41          | Peak   |
| 4 | 2410.00        | 27.39                    | 3.23                  | 34.94                 | 90.97             | 86.65                         | 74.00              | -12.65         | Peak   |

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

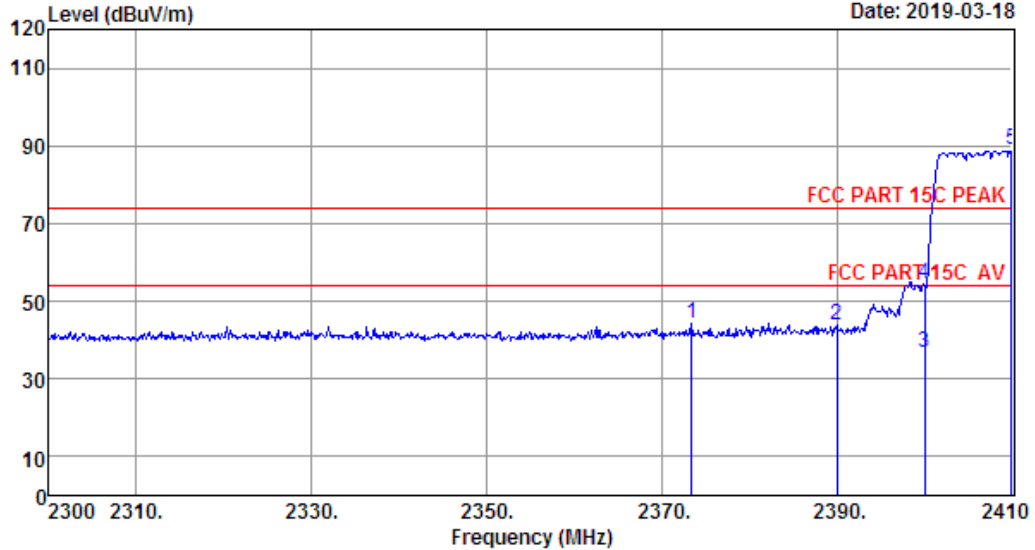
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Data: 6

File: \\Emc-966-1\\test data\\2019\\RF\\M\\MeiZhiZun.EM6 (30)

Date: 2019-03-18



Site no. : 1# 966 Chamber Data no. : 6  
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.4'; Humi:52%; Press:101.52kPa  
 Engineer : Viking  
 EUT : STEREO PORTABLE SPEAKER  
 Power : DC 3.7V  
 M/N : MMA3778  
 Test Mode : n/4-DQPSK TX 2402MHz(Hopping On)

|   | 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 | 2373.37        | 27.31                    | 3.20                  | 34.80                 | 48.61             | 44.32                         | 74.00              | 29.68          | Peak    |
| 2 | 2390.00        | 27.35                    | 3.21                  | 34.87                 | 48.25             | 43.94                         | 74.00              | 30.06          | Peak    |
| 3 | 2400.00        | 27.35                    | 3.21                  | 34.94                 | 40.97             | 36.59                         | 54.00              | 17.41          | Average |
| 4 | 2400.00        | 27.35                    | 3.21                  | 34.94                 | 58.67             | 54.29                         | 74.00              | 19.71          | Peak    |
| 5 | 2410.00        | 27.39                    | 3.23                  | 34.94                 | 93.27             | 88.95                         | 74.00              | -14.95         | Peak    |

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

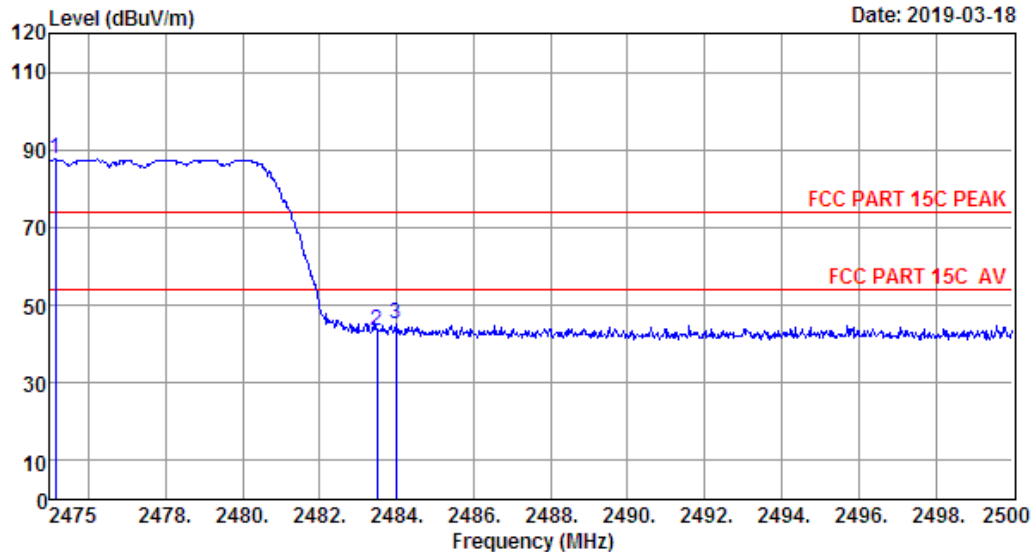
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Data: 7

File: \\Emc-966-1\\test data\\2019\\RF\\M\\MeiZhiZun.EM6 (30)

Date: 2019-03-18



Site no. : 1# 966 Chamber Data no. : 7  
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.4'; Humi:52%; Press:101.52kPa  
 Engineer : Viking  
 EUT : STEREO PORTABLE SPEAKER  
 Power : DC 3.7V  
 M/N : MMA3778  
 Test Mode : π/4-DQPSK TX 2480MHz(Hopping On)

|   | 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 | 2475.15        | 27.56                    | 3.29                  | 35.21                 | 91.89             | 87.53                         | 74.00              | -13.53         | Peak   |
| 2 | 2483.50        | 27.56                    | 3.29                  | 35.21                 | 47.79             | 43.43                         | 74.00              | 30.57          | Peak   |
| 3 | 2483.98        | 27.56                    | 3.29                  | 35.21                 | 49.30             | 44.94                         | 74.00              | 29.06          | Peak   |

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

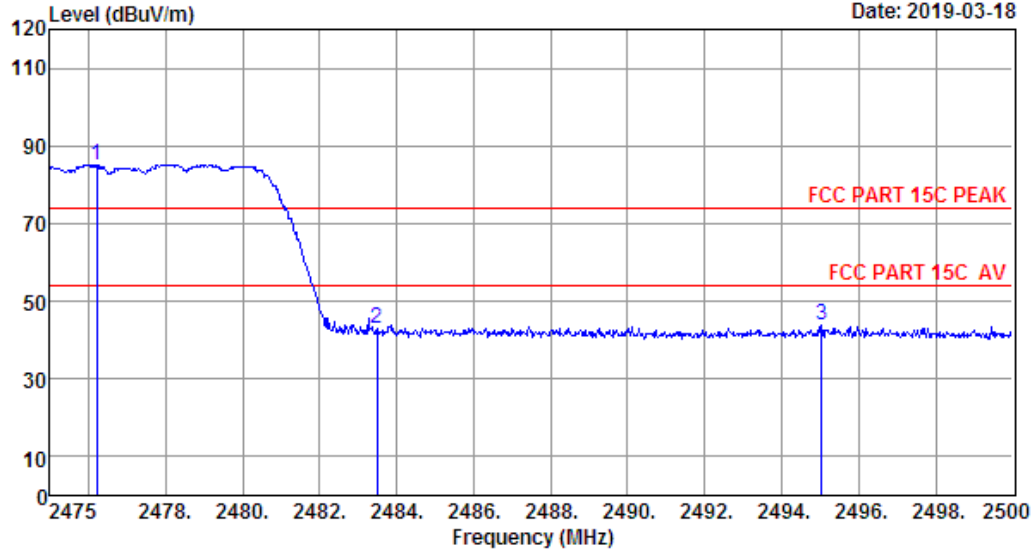
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Data: 8

File: \\Emc-966-1\test data\2019\RF\MM\MeiZhiZun.EM6 (30)

Date: 2019-03-18



Site no. : 1# 966 Chamber Data no. : 8  
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : Temp:23.4';Humi:52%;Press:101.52kPa  
 Engineer : Viking  
 EUT : STEREO PORTABLE SPEAKER  
 Power : DC 3.7V  
 M/N : MMA3778  
 Test Mode : π/4-DQPSK TX 2480MHz(Hopping On)

|   | 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 | 2476.23        | 27.56                    | 3.29                  | 35.21                 | 89.39             | 85.03                         | 74.00              | -11.03         | Peak   |
| 2 | 2483.50        | 27.56                    | 3.29                  | 35.21                 | 47.51             | 43.15                         | 74.00              | 30.85          | Peak   |
| 3 | 2495.03        | 27.60                    | 3.30                  | 35.27                 | 48.22             | 43.85                         | 74.00              | 30.15          | Peak   |

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

## 10. CONDUCTED SPURIOUS EMISSIONS AND BAND EDGES TEST

### 10.1. Limit

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

### 10.2. Test Procedure

The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz

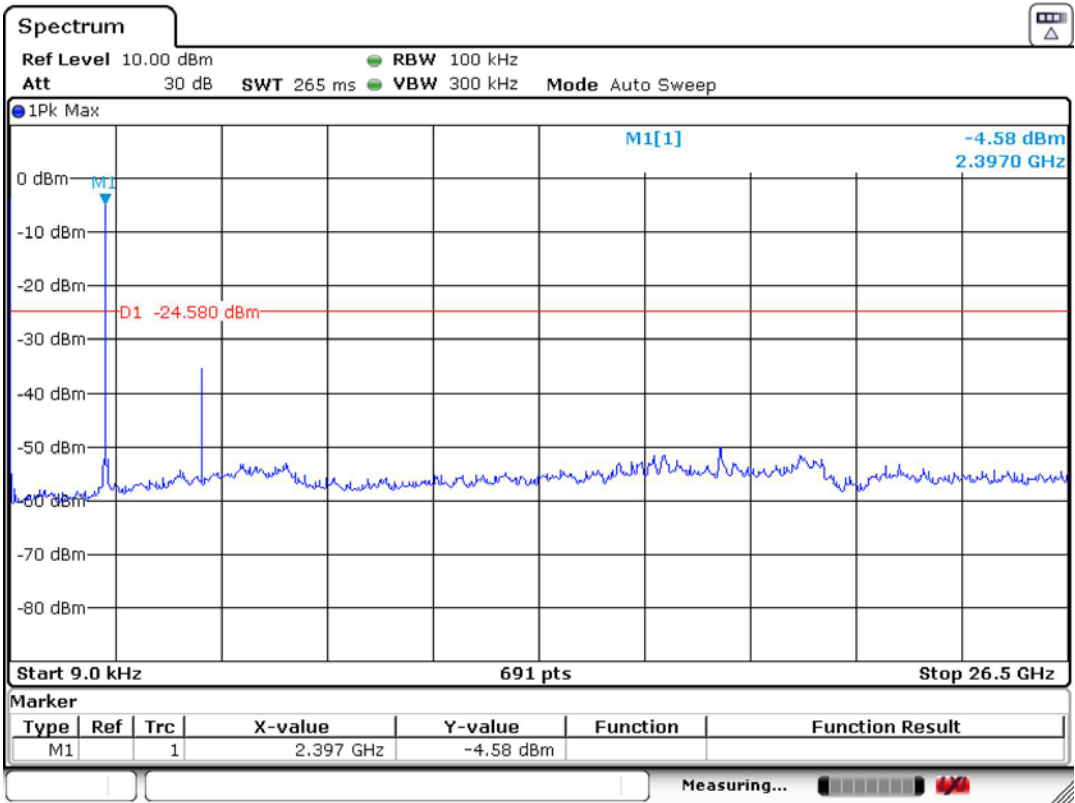
The spectrum from 9 KHz to 26.5GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

### 10.3. Test Result

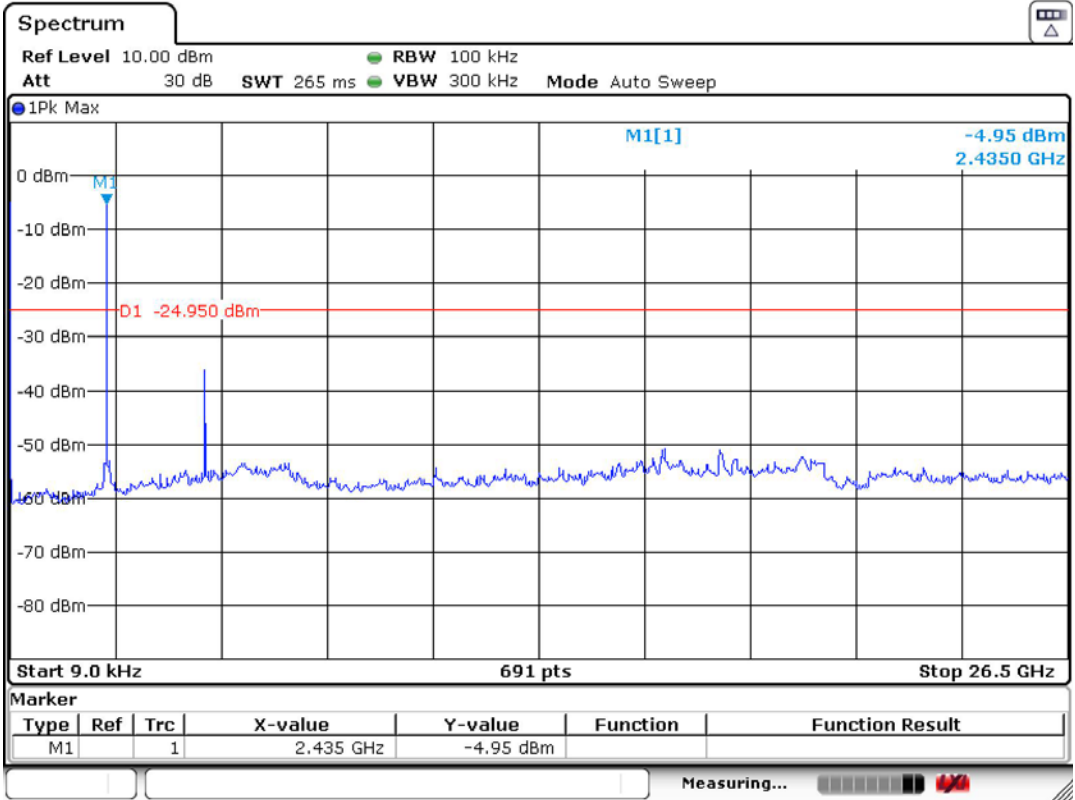
Pass (The testing data was attached in the next pages.)

Note: 1、 all modes have been tested , only worse case is reported.

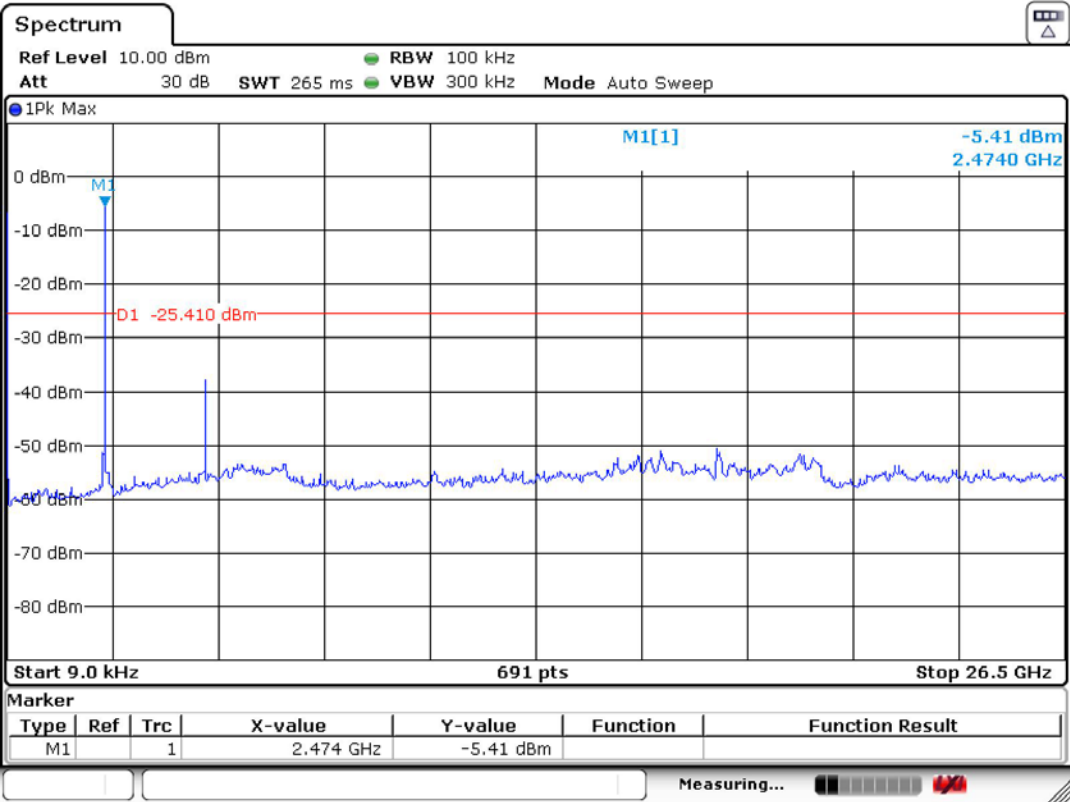
Test Data  
Conducted Spurious Emissions  
Test Mode:  $\pi$ /4-DQPSK 2402MHz



Test Mode:  $\pi$ /4-DQPSK 2441MHz

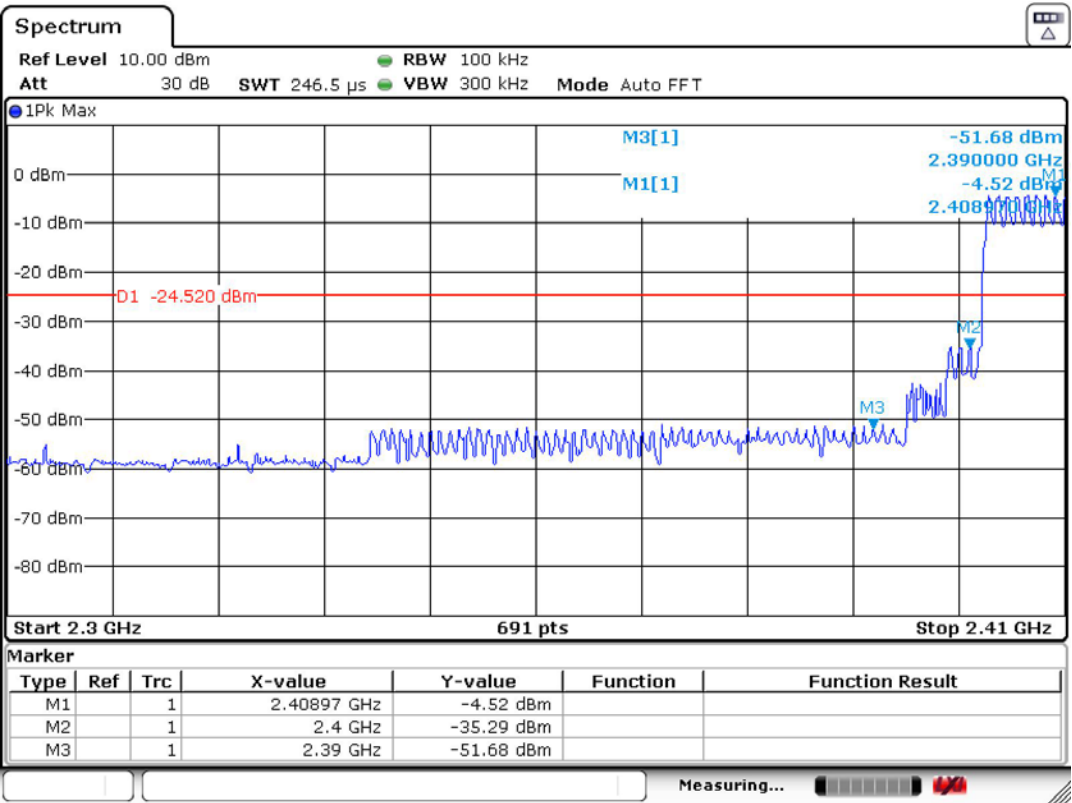
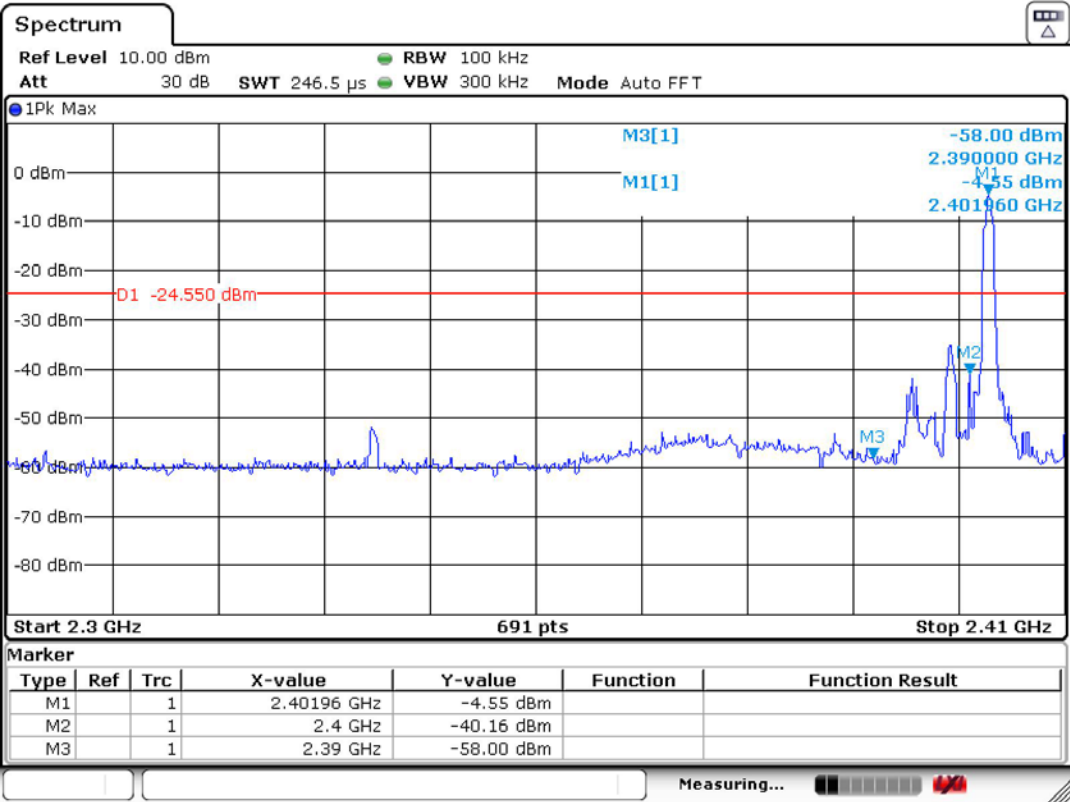


Test Mode:  $\pi$ /4-DQPSK 2480MHz

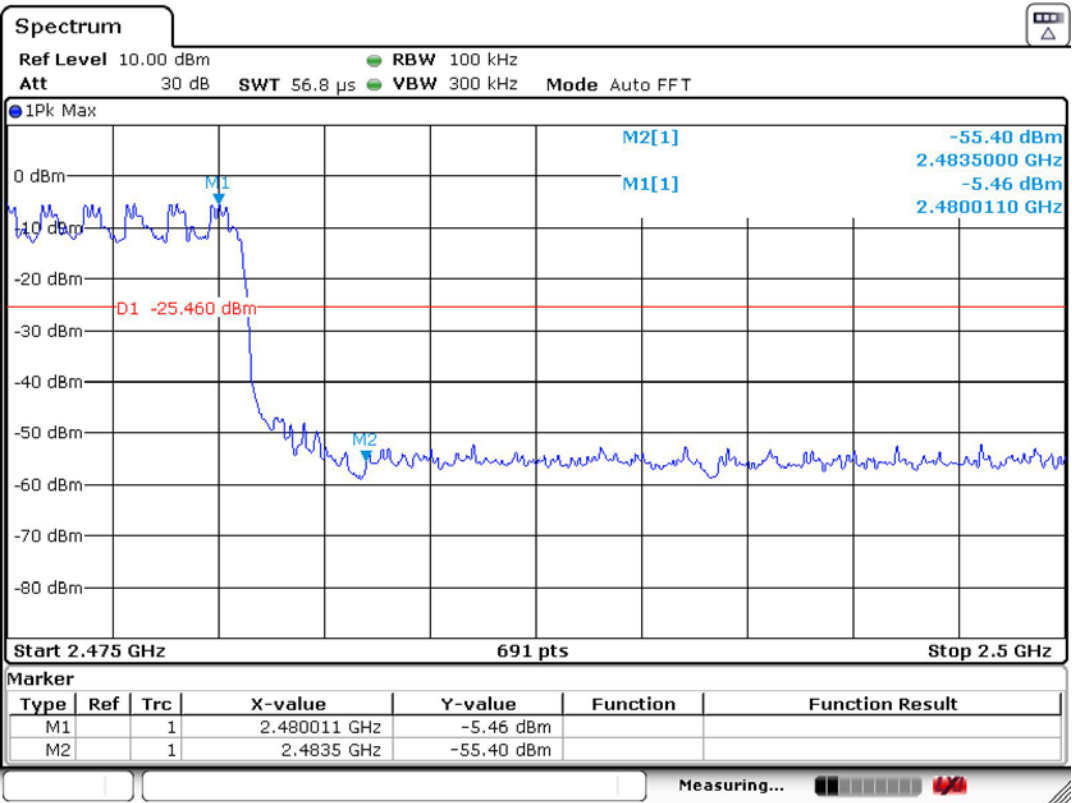
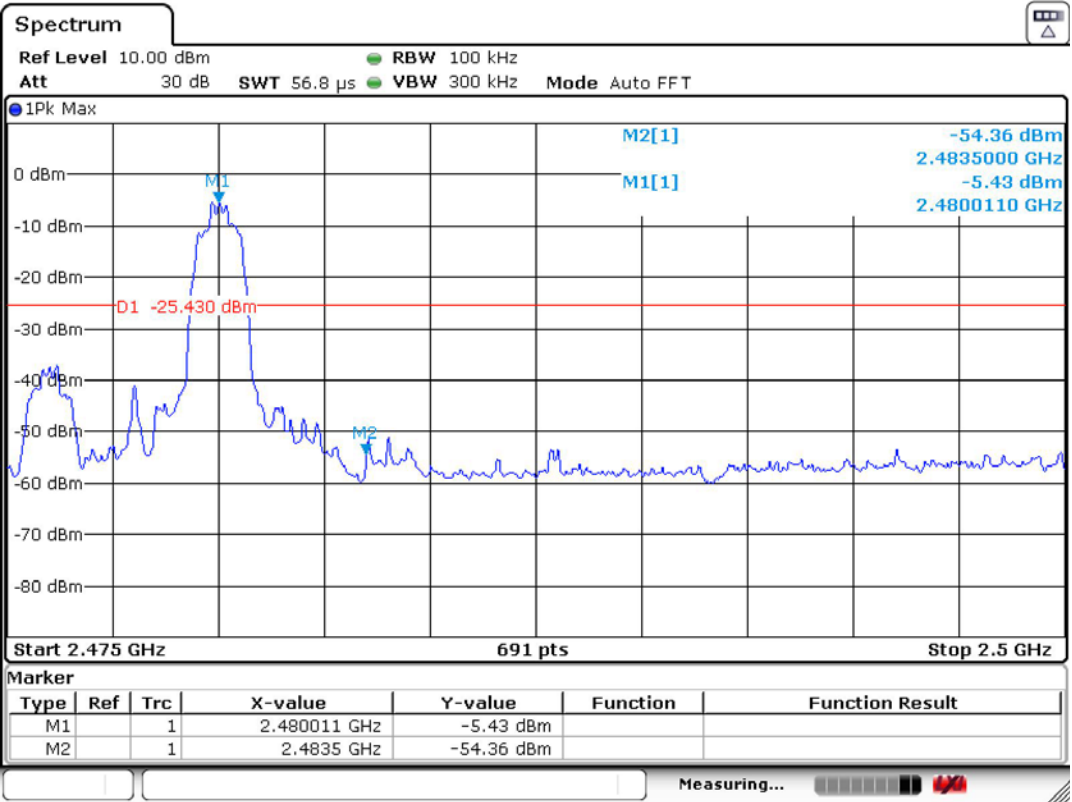


Band-edge measurements for conducted emissions

Test Mode:  $\pi$ /4-DQPSK 2402MHz



Test Mode:  $\pi$ /4-DQPSK 2480MHz



## 11. POWER LINE CONDUCTED EMISSIONS

### 11.1. Limit

| Frequency       | Maximum RF Line Voltage          |                               |
|-----------------|----------------------------------|-------------------------------|
|                 | Quasi-Peak Level<br>dB( $\mu$ V) | Average Level<br>dB( $\mu$ V) |
| 150kHz ~ 500kHz | 66 ~ 56*                         | 56 ~ 46*                      |
| 500kHz ~ 5MHz   | 56                               | 46                            |
| 5MHz ~ 30MHz    | 60                               | 50                            |

Notes: 1. \* Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

### 11.2. Test Procedure

The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT was charged from PC's USB port which connected to the power mains through a line impedance stabilization network (L.I.S.N. 1#).. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10:2013 on Conducted Emission Test.

The bandwidth of test receiver (R & S ESHS30) is set at 10kHz.

The frequency range from 150kHz to 30MHz is checked.

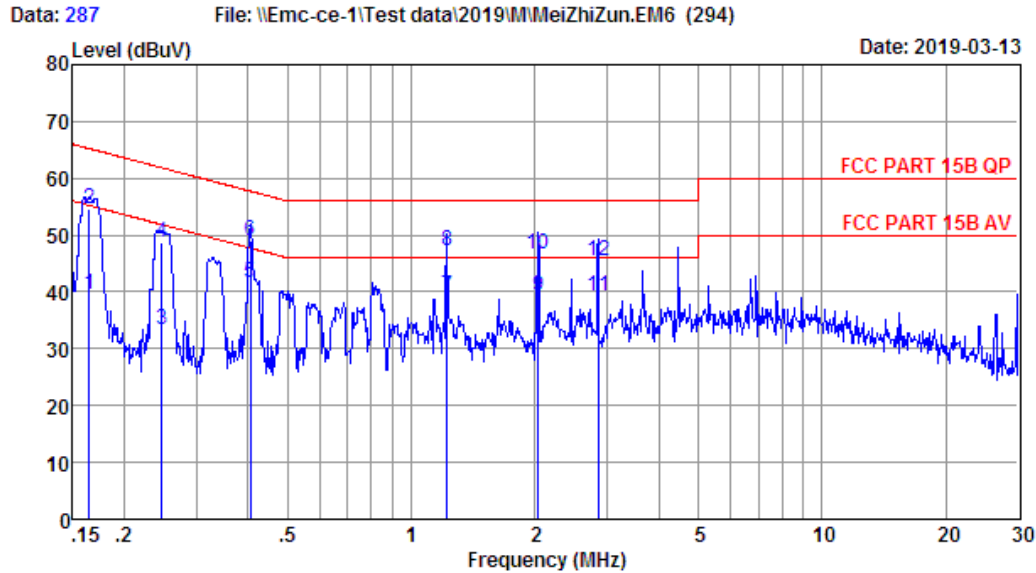
### 11.3. Test Result

**PASS.** (All emissions not reported below are too low against the prescribed limits.)

## 11.4. Test data

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Site no : 844 Shield Room Data no. : 287  
 Env. / Ins. : Temp:24.8'C Humi:53% Press:101.50kPa LINE Phase : LINE  
 Limit : FCC PART 15B QP  
 Engineer : Viking  
 EUT : STEREO PORTABLE SPEAKER  
 Power : DC 5V From Adapter Input AC 120V/60Hz  
 M/N : MMA3778  
 Test Mode : TX Mode

|    | Freq.<br>(MHz) | LISN<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV) | Limits<br>(dBuV) | Margin<br>(dB) | Remark  |
|----|----------------|------------------------|-----------------------|-------------------|-----------------------------|------------------|----------------|---------|
| 1  | 0.164          | 9.59                   | 9.69                  | 20.20             | 39.48                       | 55.25            | 15.77          | Average |
| 2  | 0.164          | 9.59                   | 9.69                  | 35.41             | 54.69                       | 65.25            | 10.56          | QP      |
| 3  | 0.247          | 9.61                   | 9.92                  | 13.90             | 33.43                       | 51.86            | 18.43          | Average |
| 4  | 0.247          | 9.61                   | 9.92                  | 29.14             | 48.67                       | 61.86            | 13.19          | QP      |
| 5  | 0.406          | 9.63                   | 9.92                  | 22.13             | 41.68                       | 47.73            | 6.05           | Average |
| 6  | 0.406          | 9.63                   | 9.92                  | 29.49             | 49.04                       | 57.73            | 8.69           | QP      |
| 7  | 1.223          | 9.64                   | 9.94                  | 19.69             | 39.27                       | 46.00            | 6.73           | Average |
| 8  | 1.223          | 9.64                   | 9.94                  | 27.56             | 47.14                       | 56.00            | 8.86           | QP      |
| 9  | 2.033          | 9.65                   | 9.96                  | 19.55             | 39.16                       | 46.00            | 6.84           | Average |
| 10 | 2.033          | 9.65                   | 9.96                  | 26.91             | 46.52                       | 56.00            | 9.48           | QP      |
| 11 | 2.854          | 9.67                   | 9.97                  | 19.49             | 39.13                       | 46.00            | 6.87           | Average |
| 12 | 2.854          | 9.67                   | 9.97                  | 25.76             | 45.40                       | 56.00            | 10.60          | QP      |

Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading.  
 2. Margin= Limit - Emission Level.  
 3. If the average limit is met when using a quasi-peak detector,  
 the EUT shall be deemed to meet both limits and measurement  
 with average detector is unnecessary.

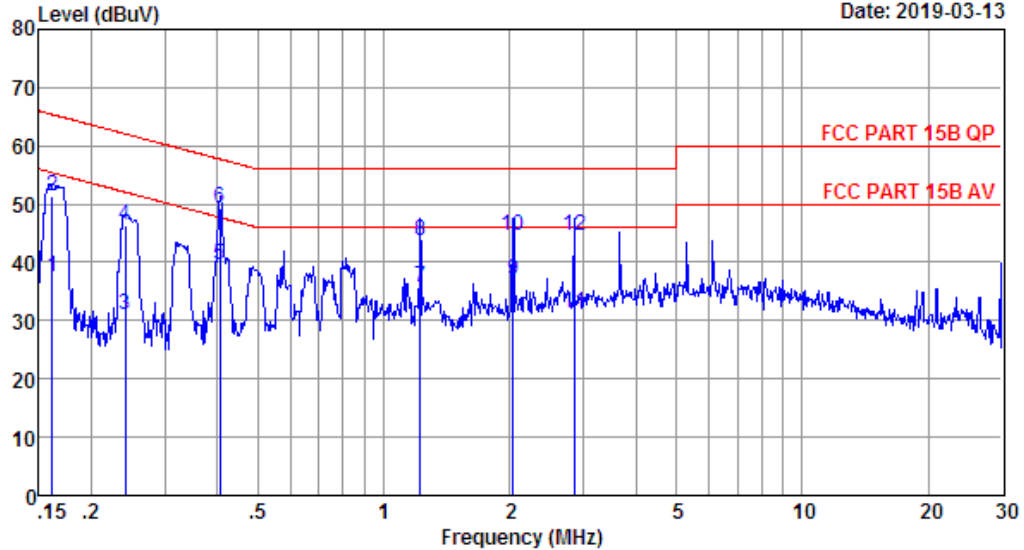
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Data: 289

File: \\Emc-ce-1\Test data\2019\MM\MeiZhiZun.EM6 (294)

Date: 2019-03-13



Site no : 844 Shield Room Data no. : 289  
 Env. / Ins. : Temp:24.8'C Humi:53% Press:101.50kPa LINE Phase : NEUTRAL  
 Limit : FCC PART 15B QP  
 Engineer : Viking  
 EUT : STEREO PORTABLE SPEAKER  
 Power : DC 5V From Adapter Input AC 120V/60Hz  
 M/N : MMA3778  
 Test Mode : TX Mode

|    | Freq.<br>(MHz) | LISN<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV) | Limits<br>(dBuV) | Margin<br>(dB) | Remark  |
|----|----------------|------------------------|-----------------------|-------------------|-----------------------------|------------------|----------------|---------|
| 1  | 0.162          | 9.50                   | 9.69                  | 18.20             | 37.39                       | 55.38            | 17.99          | Average |
| 2  | 0.162          | 9.50                   | 9.69                  | 32.12             | 51.31                       | 65.38            | 14.07          | QP      |
| 3  | 0.242          | 9.53                   | 9.92                  | 11.41             | 30.86                       | 52.04            | 21.18          | Average |
| 4  | 0.242          | 9.53                   | 9.92                  | 26.90             | 46.35                       | 62.04            | 15.69          | QP      |
| 5  | 0.406          | 9.56                   | 9.92                  | 20.13             | 39.61                       | 47.73            | 8.12           | Average |
| 6  | 0.406          | 9.56                   | 9.92                  | 29.88             | 49.36                       | 57.73            | 8.37           | QP      |
| 7  | 1.223          | 9.56                   | 9.94                  | 16.11             | 35.61                       | 46.00            | 10.39          | Average |
| 8  | 1.223          | 9.56                   | 9.94                  | 24.06             | 43.56                       | 56.00            | 12.44          | QP      |
| 9  | 2.033          | 9.55                   | 9.96                  | 17.49             | 37.00                       | 46.00            | 9.00           | Average |
| 10 | 2.033          | 9.55                   | 9.96                  | 25.15             | 44.66                       | 56.00            | 11.34          | QP      |
| 11 | 2.854          | 9.58                   | 9.97                  | 11.79             | 31.34                       | 46.00            | 14.66          | Average |
| 12 | 2.854          | 9.58                   | 9.97                  | 25.11             | 44.66                       | 56.00            | 11.34          | QP      |

Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading.  
 2. Margin= Limit - Emission Level.  
 3. If the average limit is met when using a quasi-peak detector,  
 the EUT shall be deemed to meet both limits and measurement  
 with average detector is unnecessary.

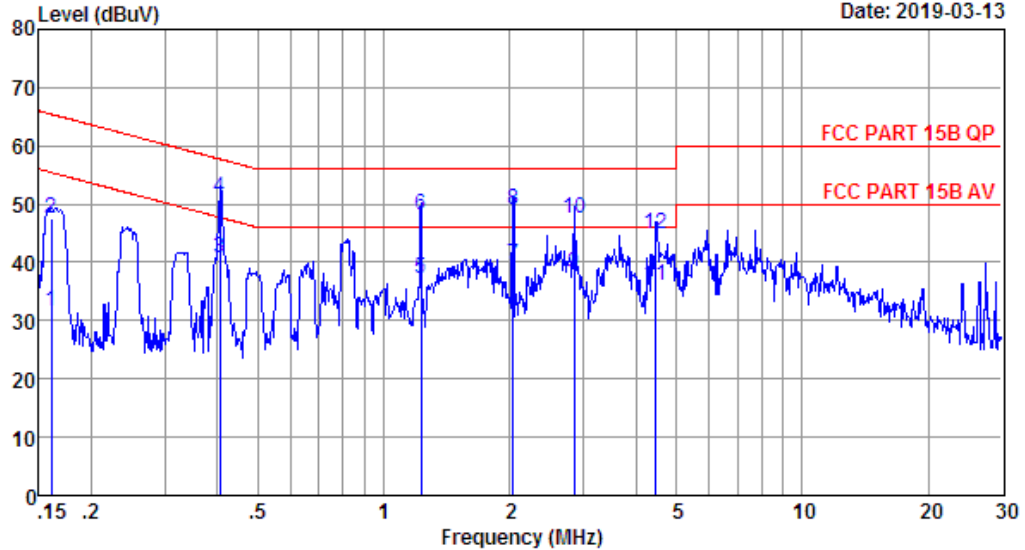
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Data: 291

File: \\Emc-ce-1\Test data\2019\MM\MeiZhiZun.EM6 (294)

Date: 2019-03-13



Site no : 844 Shield Room Data no. : 291  
Env. / Ins. : Temp:24.8'C Humi:53% Press:101.50kPa LINE Phase : LINE  
Limit : FCC PART 15B QP  
Engineer : Viking  
EUT : STEREO PORTABLE SPEAKER  
Power : DC 5V From Adapter Input AC 240V/60Hz  
M/N : MMA3778  
Test Mode : TX Mode

|    | Freq.<br>(MHz) | LISN<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV) | Limits<br>(dBuV) | Margin<br>(dB) | Remark  |
|----|----------------|------------------------|-----------------------|-------------------|-----------------------------|------------------|----------------|---------|
| 1  | 0.161          | 9.59                   | 9.69                  | 12.20             | 31.48                       | 55.43            | 23.95          | Average |
| 2  | 0.161          | 9.59                   | 9.69                  | 28.15             | 47.43                       | 65.43            | 18.00          | QP      |
| 3  | 0.406          | 9.63                   | 9.92                  | 21.13             | 40.68                       | 47.73            | 7.05           | Average |
| 4  | 0.406          | 9.63                   | 9.92                  | 31.59             | 51.14                       | 57.73            | 6.59           | QP      |
| 5  | 1.229          | 9.64                   | 9.94                  | 17.56             | 37.14                       | 46.00            | 8.86           | Average |
| 6  | 1.229          | 9.64                   | 9.94                  | 28.60             | 48.18                       | 56.00            | 7.82           | QP      |
| 7  | 2.033          | 9.65                   | 9.96                  | 20.06             | 39.67                       | 46.00            | 6.33           | Average |
| 8  | 2.033          | 9.65                   | 9.96                  | 29.51             | 49.12                       | 56.00            | 6.88           | QP      |
| 9  | 2.854          | 9.67                   | 9.97                  | 18.49             | 38.13                       | 46.00            | 7.87           | Average |
| 10 | 2.854          | 9.67                   | 9.97                  | 27.90             | 47.54                       | 56.00            | 8.46           | QP      |
| 11 | 4.478          | 9.68                   | 10.00                 | 16.36             | 36.04                       | 46.00            | 9.96           | Average |
| 12 | 4.478          | 9.68                   | 10.00                 | 25.24             | 44.92                       | 56.00            | 11.08          | QP      |

Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading.  
2. Margin= Limit - Emission Level.  
3. If the average limit is met when using a quasi-peak detector,  
the EUT shall be deemed to meet both limits and measurement  
with average detector is unnecessary.

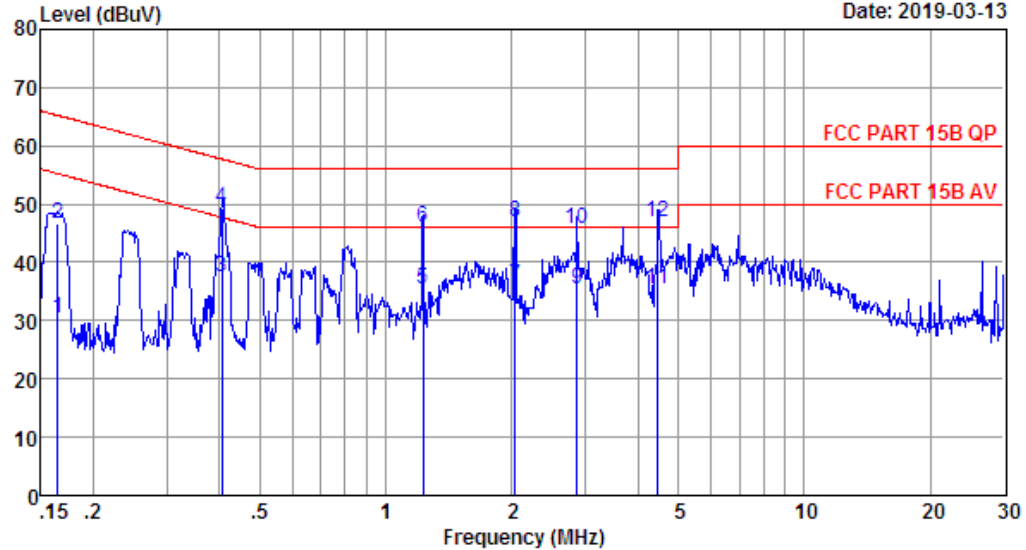
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Data: 293

File: \\Emc-ce-1\Test data\2019\MM\MeiZhiZun.EM6 (294)

Date: 2019-03-13



Site no : 844 Shield Room Data no. : 293  
 Env. / Ins. : Temp:24.8'C Humi:53% Press:101.50kPa LINE Phase : NEUTRAL  
 Limit : FCC PART 15B QP  
 Engineer : Viking  
 EUT : STEREO PORTABLE SPEAKER  
 Power : DC 5V From Adapter Input AC 240V/60Hz  
 M/N : MMA3778  
 Test Mode : TX Mode

|    | Freq.<br>(MHz) | LISN<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV) | Limits<br>(dBuV) | Margin<br>(dB) | Remark  |
|----|----------------|------------------------|-----------------------|-------------------|-----------------------------|------------------|----------------|---------|
| 1  | 0.164          | 9.50                   | 9.69                  | 11.20             | 30.39                       | 55.25            | 24.86          | Average |
| 2  | 0.164          | 9.50                   | 9.69                  | 27.58             | 46.77                       | 65.25            | 18.48          | QP      |
| 3  | 0.406          | 9.56                   | 9.92                  | 18.13             | 37.61                       | 47.73            | 10.12          | Average |
| 4  | 0.406          | 9.56                   | 9.92                  | 29.68             | 49.16                       | 57.73            | 8.57           | QP      |
| 5  | 1.229          | 9.56                   | 9.94                  | 16.04             | 35.54                       | 46.00            | 10.46          | Average |
| 6  | 1.229          | 9.56                   | 9.94                  | 26.58             | 46.08                       | 56.00            | 9.92           | QP      |
| 7  | 2.033          | 9.55                   | 9.96                  | 16.49             | 36.00                       | 46.00            | 10.00          | Average |
| 8  | 2.033          | 9.55                   | 9.96                  | 27.47             | 46.98                       | 56.00            | 9.02           | QP      |
| 9  | 2.869          | 9.58                   | 9.97                  | 15.79             | 35.34                       | 46.00            | 10.66          | Average |
| 10 | 2.869          | 9.58                   | 9.97                  | 26.15             | 45.70                       | 56.00            | 10.30          | QP      |
| 11 | 4.478          | 9.60                   | 10.00                 | 15.96             | 35.56                       | 46.00            | 10.44          | Average |
| 12 | 4.478          | 9.60                   | 10.00                 | 27.30             | 46.90                       | 56.00            | 9.10           | QP      |

Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading.  
 2. Margin= Limit - Emission Level.  
 3. If the average limit is met when using a quasi-peak detector,  
 the EUT shall be deemed to meet both limits and measurement  
 with average detector is unnecessary.

## 12.ANTENNA REQUIREMENTS

### 12.1.Limit

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.

### 12.2.Result

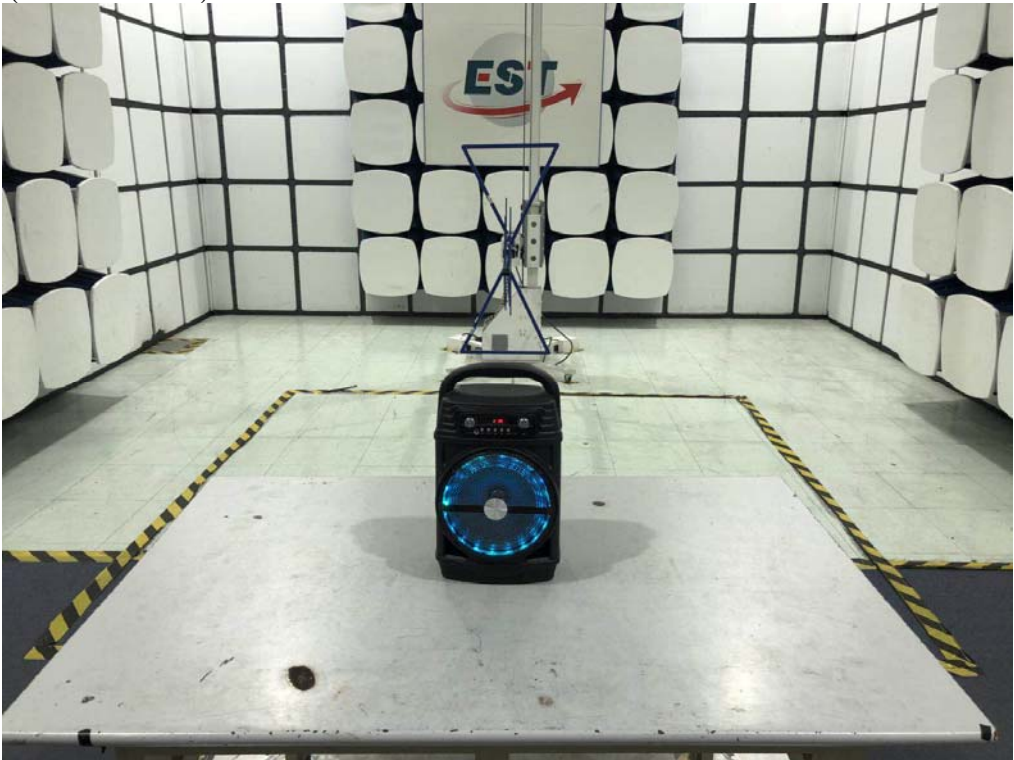
The antennas used for this product are PCB antenna and that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is only 0dBi.

13.TEST SETUP PHOTO

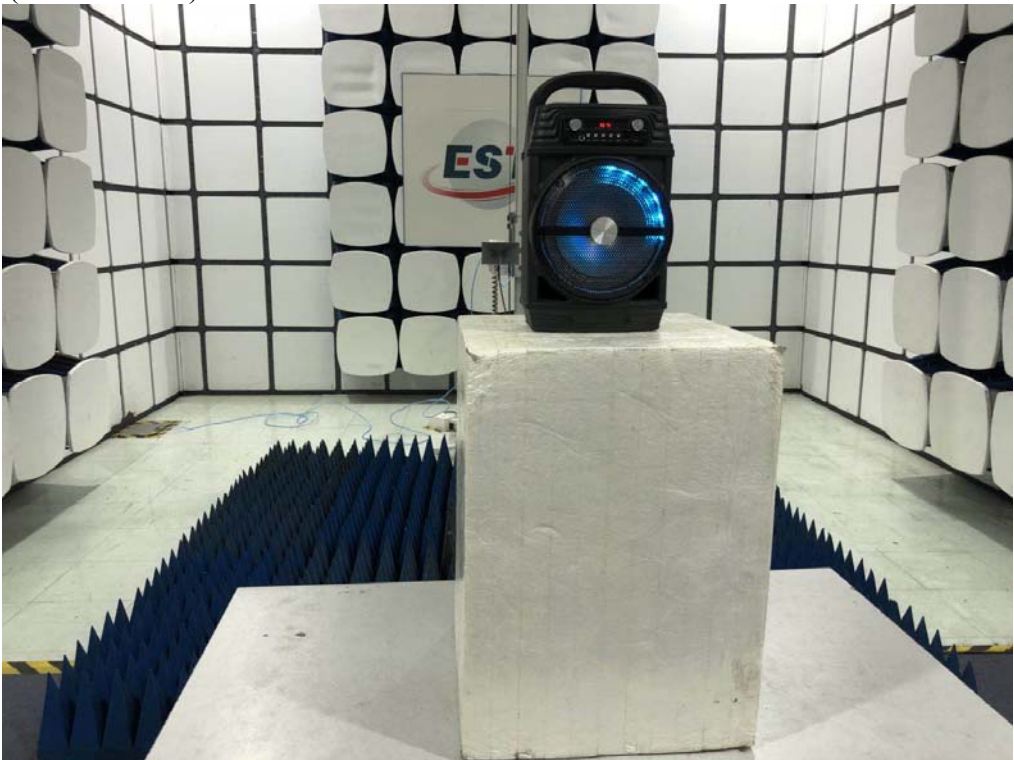
Conducted Test



Radiated Test (30-1000 MHz)



Radiated Test (Above 1GHz)



14.PHOTO EUT

External Photos  
M/N: MMA3778



External Photos  
M/N: MMA3778



External Photos  
M/N: MMA3778



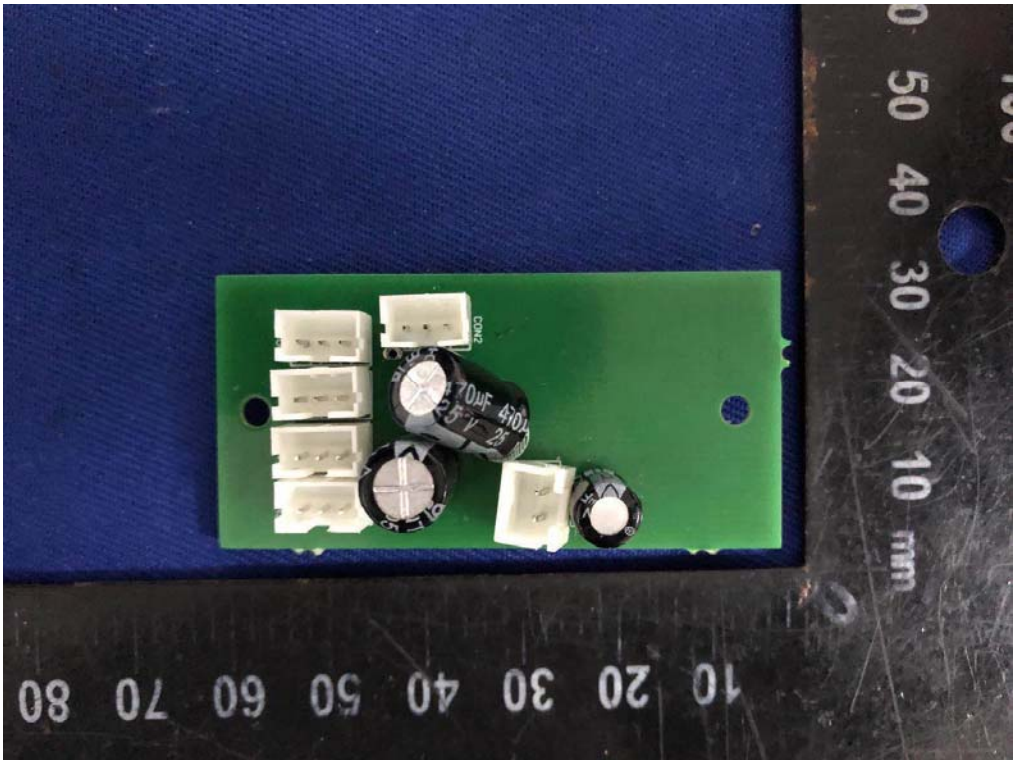
**External Photos**  
M/N: MMA3778



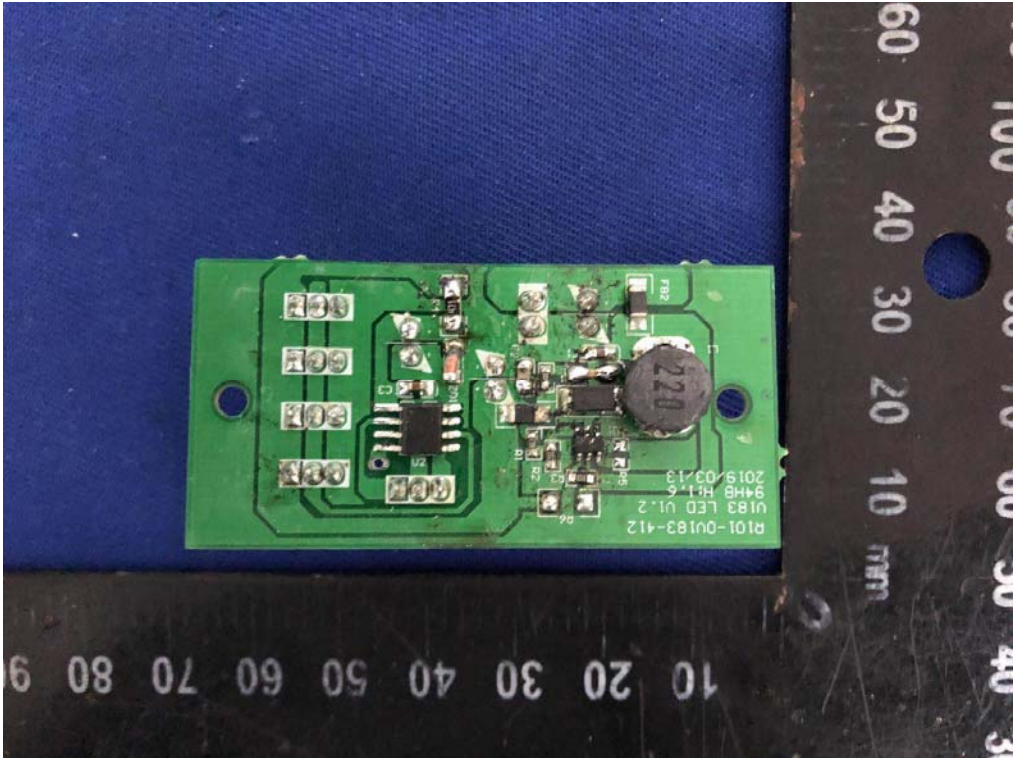
Internal Photos  
M/N: MMA3778



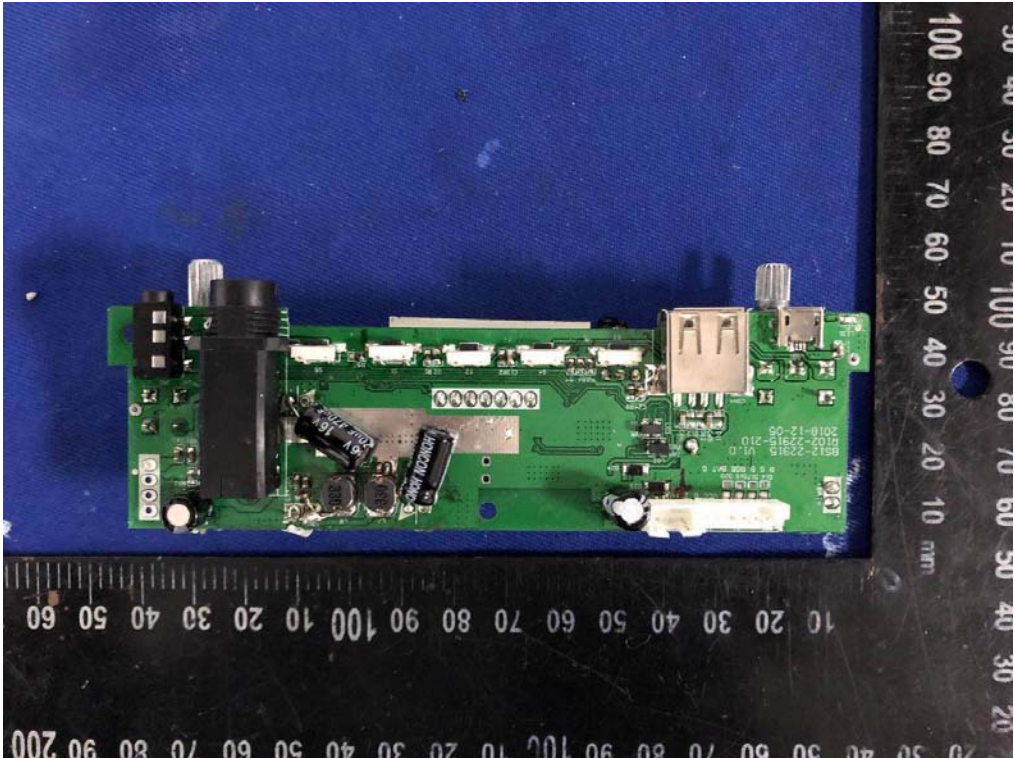
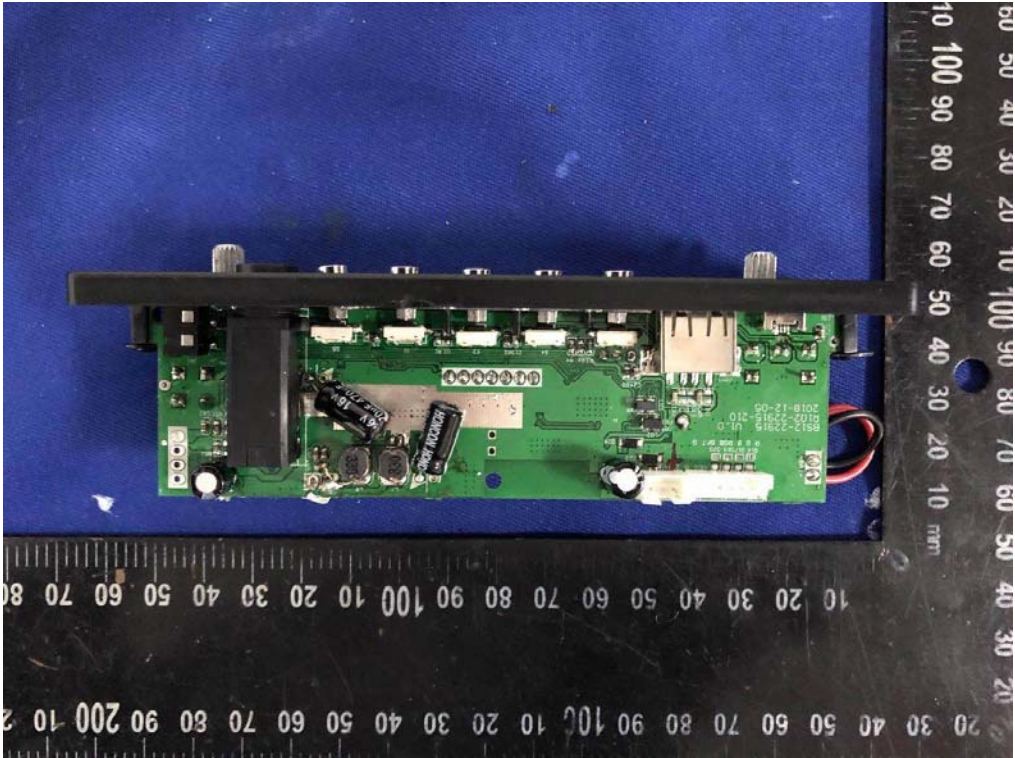
Internal Photos  
M/N: MMA3778



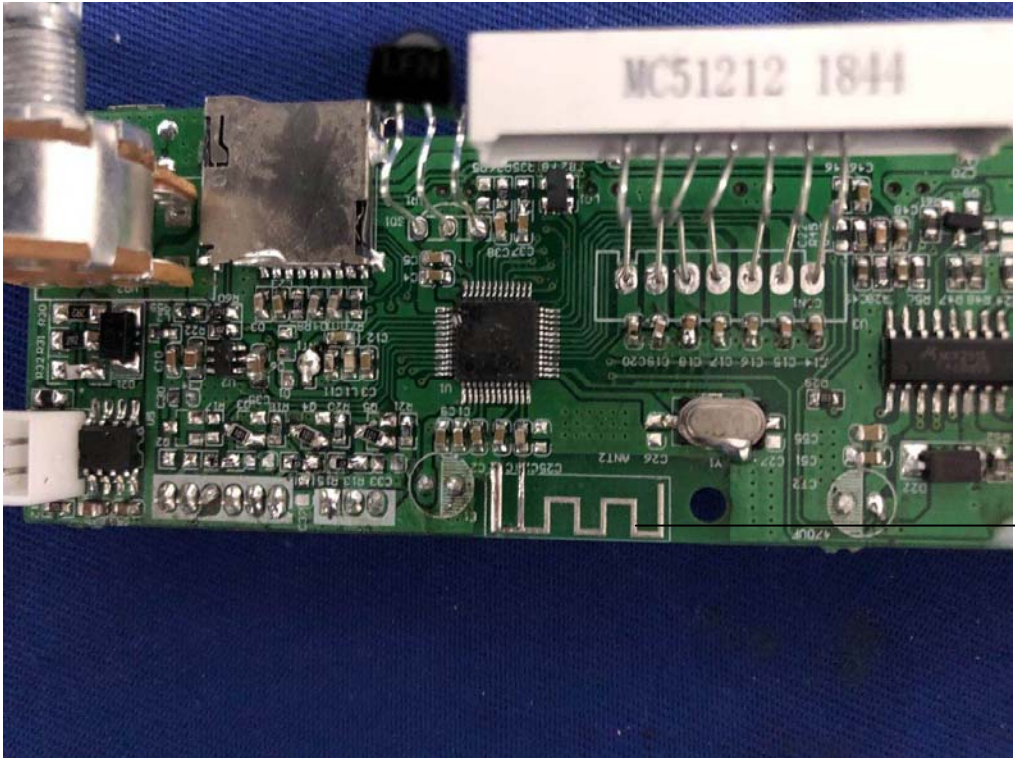
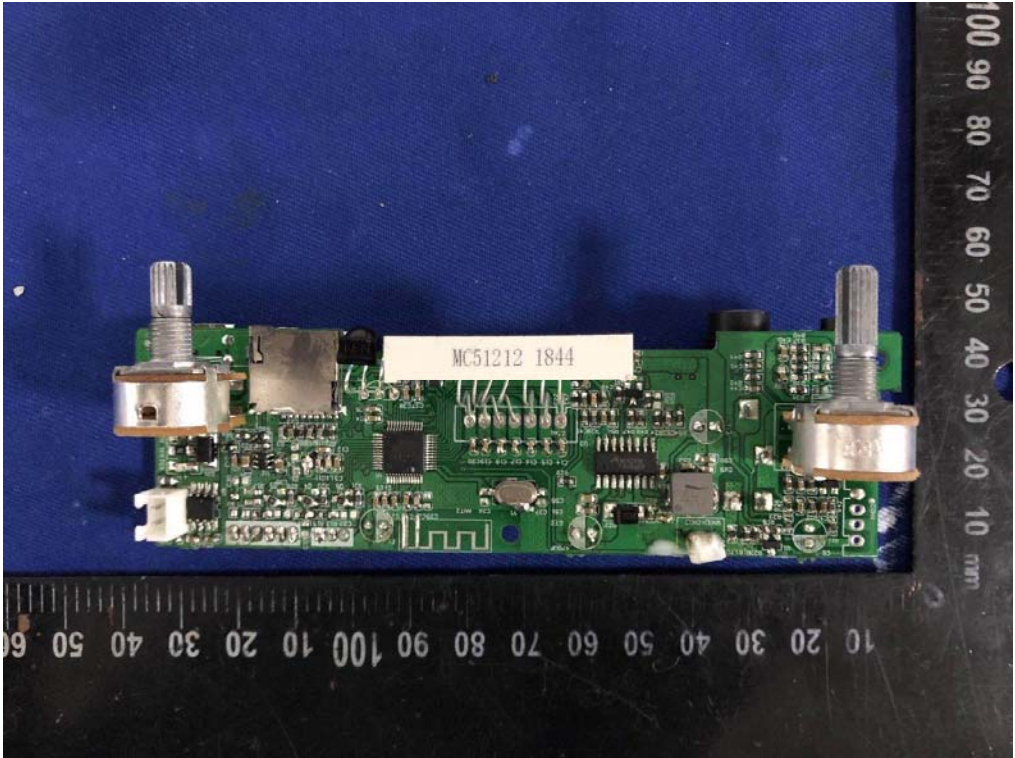
Internal Photos  
M/N: MMA3778



Internal Photos  
M/N: MMA3778



Internal Photos  
M/N: MMA3778



Bluetooth  
Antenna

Internal Photos  
M/N: MMA3778

