

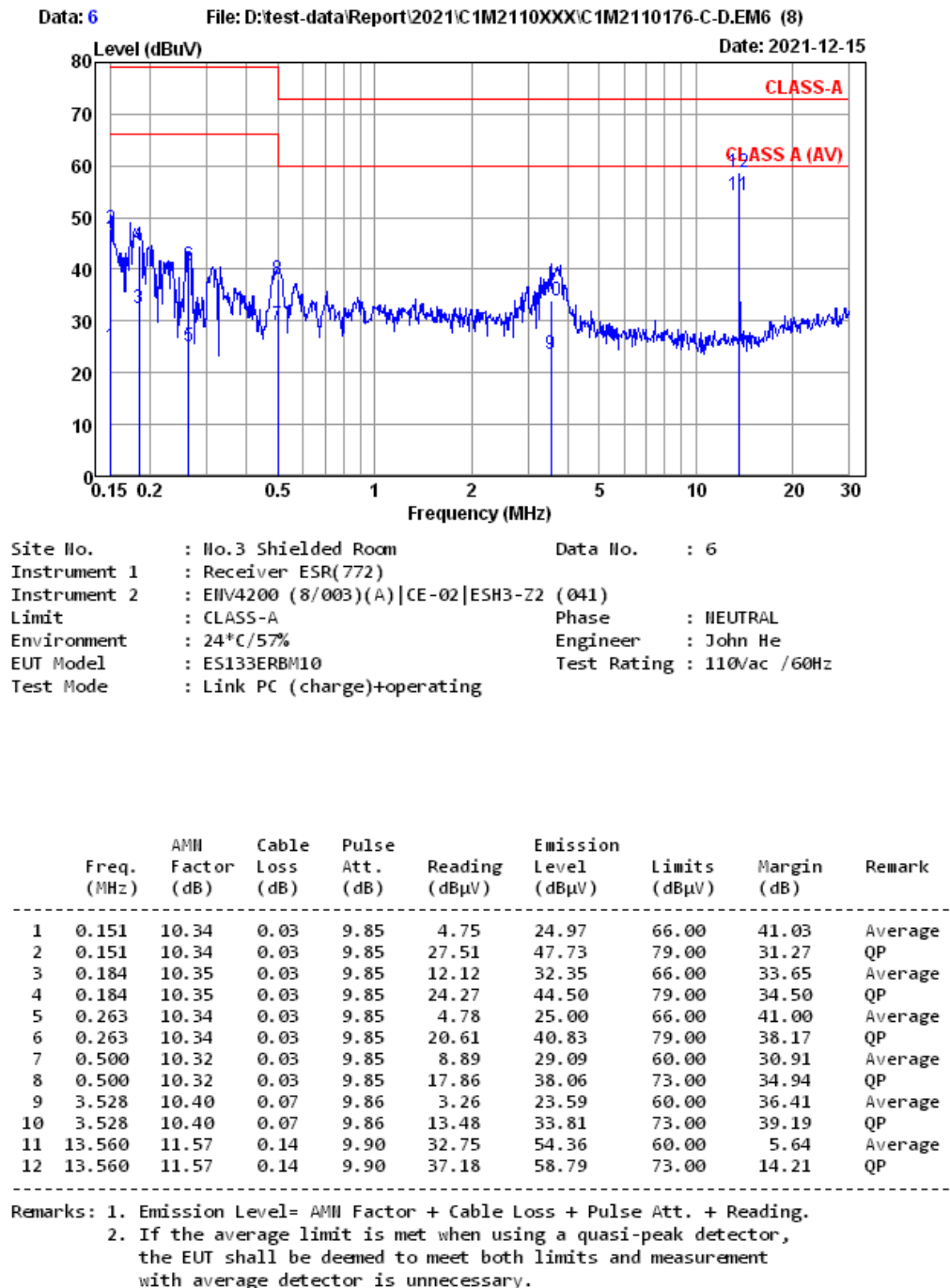
# 附錄一

## 受測裝置之測試結果

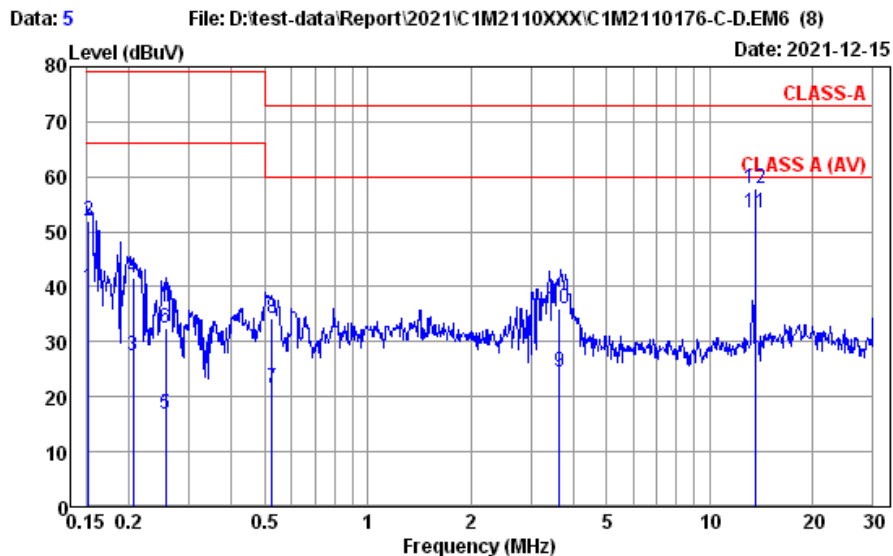
| 目錄                                             | 頁次 |
|------------------------------------------------|----|
| 1. 電源線傳導干擾之量測.....                             | 2  |
| 2. 場強輻射之量測.....                                | 4  |
| 2.1. 量測頻率範圍: 9kHz-30MHz .....                  | 4  |
| 2.2. 量測之波形圖.....                               | 5  |
| 2.3. 量測頻率範圍: 30MHz-1000MHz.....                | 6  |
| 2.4. 頻寬量測.....                                 | 10 |
| 3. 頻率容許差度之量測.....                              | 11 |
| 3.1. 溫度變化之頻率容許差度量測結果：(限度值 $\pm 0.01\%$ ) ..... | 11 |
| 3.2. 電壓變動之頻率容許差度量測結果：(限度值 $\pm 0.01\%$ ) ..... | 11 |

## 1. 電源線傳導干擾之量測

|      |                         |        |          |
|------|-------------------------|--------|----------|
| 測試日期 | 2021/12/15              | 環境溫/濕度 | 24°C/57% |
| 測試電壓 | AC 110V/60Hz (經筆記型電腦供電) | 測試人員   | John He  |



|      |                         |        |          |
|------|-------------------------|--------|----------|
| 測試日期 | 2021/12/15              | 環境溫/濕度 | 24°C/57% |
| 測試電壓 | AC 110V/60Hz (經筆記型電腦供電) | 測試人員   | John He  |



Site No. : No.3 Shielded Room Data No. : 5  
 Instrument 1 : Receiver ESR(772)  
 Instrument 2 : EHV4200 (8/003)(A) | CE-02 | ESH3-Z2 (041)  
 Limit : CLASS-A Phase : LINE  
 Environment : 24°C/57% Engineer : John He  
 EUT Model : ES133ERBM10 Test Rating : 110Vac /60Hz  
 Test Mode : Link PC (charge)+operating

|    | Freq.<br>(MHz) | AMN<br>Factor<br>(dB) | Cable<br>Loss<br>(dB) | Pulse<br>Att.<br>(dB) | Reading<br>(dBμV) | Emission<br>Level<br>(dBμV) | Limits<br>(dBμV) | Margin<br>(dB) | Remark  |
|----|----------------|-----------------------|-----------------------|-----------------------|-------------------|-----------------------------|------------------|----------------|---------|
| 1  | 0.152          | 10.25                 | 0.03                  | 9.85                  | 19.64             | 39.77                       | 66.00            | 26.23          | Average |
| 2  | 0.152          | 10.25                 | 0.03                  | 9.85                  | 31.91             | 52.04                       | 79.00            | 26.96          | QP      |
| 3  | 0.206          | 10.30                 | 0.03                  | 9.85                  | 7.27              | 27.45                       | 66.00            | 38.55          | Average |
| 4  | 0.206          | 10.30                 | 0.03                  | 9.85                  | 21.56             | 41.74                       | 79.00            | 37.26          | QP      |
| 5  | 0.256          | 10.30                 | 0.03                  | 9.85                  | -3.50             | 16.68                       | 66.00            | 49.32          | Average |
| 6  | 0.256          | 10.30                 | 0.03                  | 9.85                  | 12.33             | 32.51                       | 79.00            | 46.49          | QP      |
| 7  | 0.524          | 10.31                 | 0.03                  | 9.85                  | 1.41              | 21.60                       | 60.00            | 38.40          | Average |
| 8  | 0.524          | 10.31                 | 0.03                  | 9.85                  | 14.02             | 34.21                       | 73.00            | 38.79          | QP      |
| 9  | 3.635          | 10.38                 | 0.07                  | 9.86                  | 4.18              | 24.49                       | 60.00            | 35.51          | Average |
| 10 | 3.635          | 10.38                 | 0.07                  | 9.86                  | 15.61             | 35.92                       | 73.00            | 37.08          | QP      |
| 11 | 13.560         | 11.09                 | 0.14                  | 9.90                  | 32.19             | 53.32                       | 60.00            | 6.68           | Average |
| 12 | 13.560         | 11.09                 | 0.14                  | 9.90                  | 36.85             | 57.98                       | 73.00            | 15.02          | QP      |

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.  
 2. 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.

## 2. 場強輻射之量測

|      |                 |        |          |
|------|-----------------|--------|----------|
| 測試日期 | 2021/12/10 ~ 14 | 環境溫/濕度 | 23°C/58% |
|------|-----------------|--------|----------|

### 2.1. 量測頻率範圍: 9kHz-30MHz

|      |                  |           |           |
|------|------------------|-----------|-----------|
| Mode | 發射-NFC           | Frequency | 13.56MHz  |
| 測試電壓 | DC 3.85V (經電池供電) | 測試人員      | Sam Chang |

#### Antenna at 0° Polarization

| Emission<br>Frequency<br>(MHz) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Read<br>level<br>(dBμV) | Emission<br>Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector |
|--------------------------------|-----------------------------|-----------------------|-------------------------|-------------------------------|--------------------|----------------|----------|
| 13.56                          | 20.74                       | 0.46                  | 43.90                   | 65.10                         | 124.00             | 58.90          | QP       |

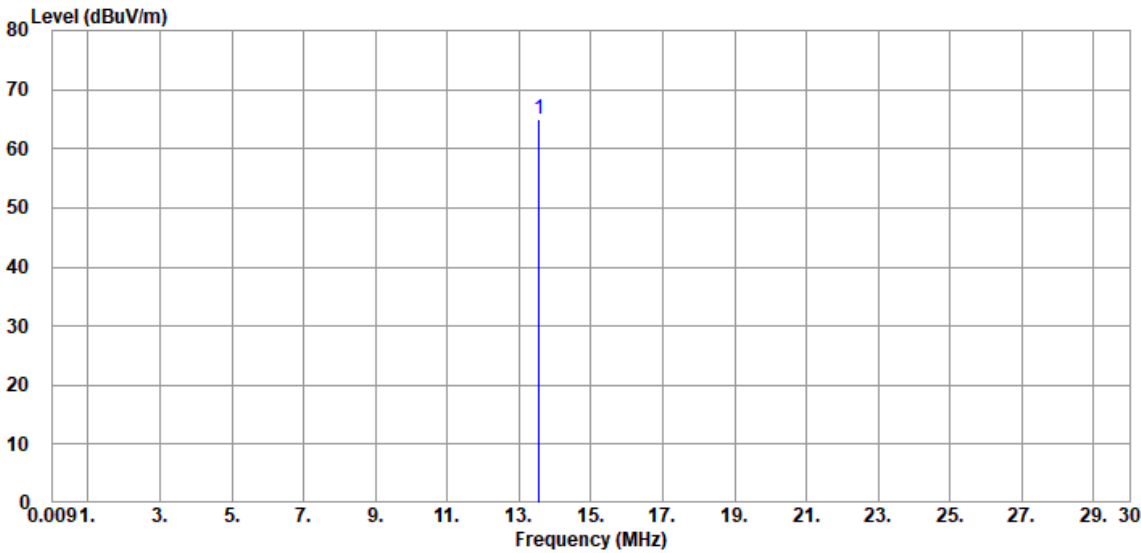
#### Antenna at 90° Polarization

| Emission<br>Frequency<br>(MHz) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Read<br>level<br>(dBμV) | Emission<br>Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector |
|--------------------------------|-----------------------------|-----------------------|-------------------------|-------------------------------|--------------------|----------------|----------|
| 13.56                          | 20.74                       | 0.46                  | 39.30                   | 60.50                         | 124.00             | 63.50          | QP       |

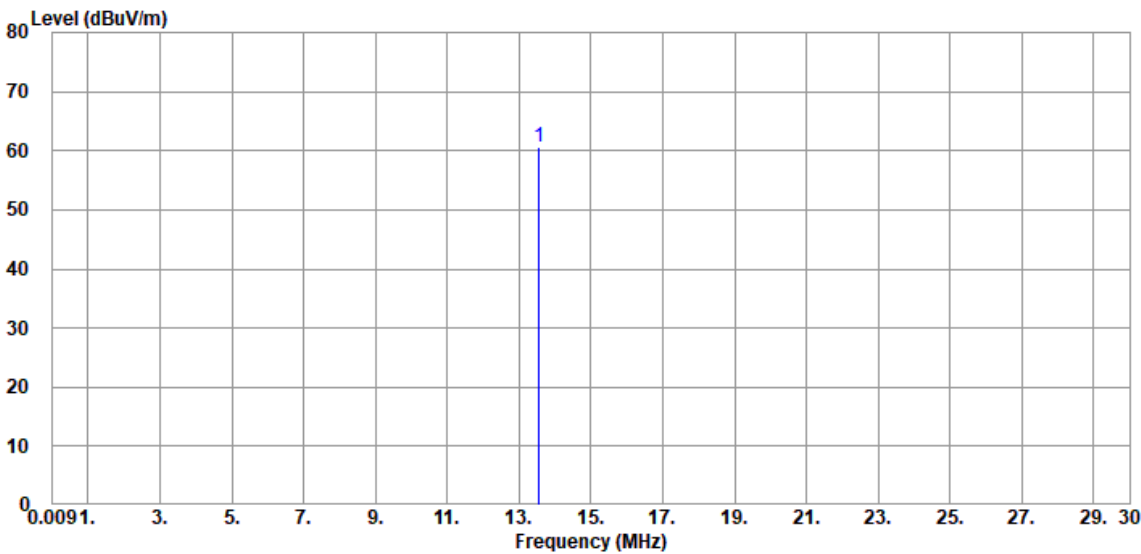
2.2. 量測之波形圖

|      |                  |           |           |
|------|------------------|-----------|-----------|
| Mode | 發射-NFC           | Frequency | 13.56MHz  |
| 測試電壓 | DC 3.85V (經電池供電) | 測試人員      | Sam Chang |

Antenna at 0° Polarization



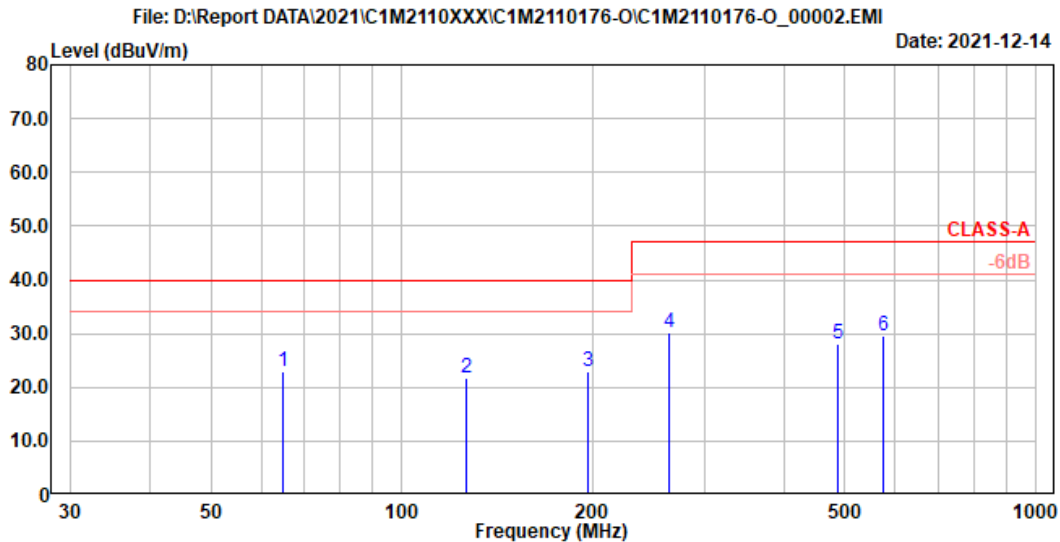
Antenna at 90° Polarization



## 2.3. 量測頻率範圍: 30MHz-1000MHz

|      |                            |      |           |
|------|----------------------------|------|-----------|
| Mode | LINK PC (Charge)+Operating |      |           |
| 測試電壓 | AC 110V/60Hz (經筆記型電腦供電)    | 測試人員 | Eason Hsu |

## Antenna at Horizontal Polarization

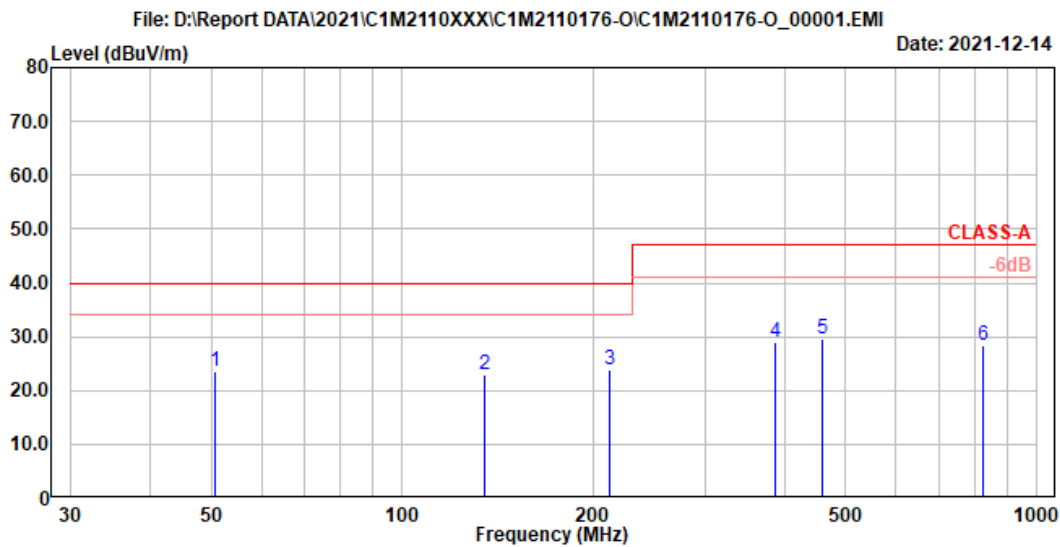


Site No. : No.6 Open Area Test Site Data No. : 2  
Instrument 1 : Receiver ESCS(337)  
Instrument 2 : CBL6112B (818) RE-07  
Distance/Limit : 10m /CLASS-A Ant. Pol. : Horizontal  
Environment : 24°C/59% Engineer : Eason Hsu  
EUT Model : ES133ERBM10 Test Rating : 110Vac/60Hz  
Test Mode : Link PC(Charge)+Operating

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 65.100         | 13.08                    | 1.12                  | 8.78              | 22.98                         | 40.00              | 17.02          | QP     |
| 2 | 126.450        | 18.37                    | 1.66                  | 1.75              | 21.78                         | 40.00              | 18.22          | QP     |
| 3 | 196.450        | 15.73                    | 2.35                  | 4.80              | 22.88                         | 40.00              | 17.12          | QP     |
| 4 | 264.510        | 19.05                    | 2.54                  | 8.60              | 30.19                         | 47.00              | 16.81          | QP     |
| 5 | 486.200        | 23.92                    | 3.52                  | 0.72              | 28.16                         | 47.00              | 18.84          | QP     |
| 6 | 576.100        | 25.20                    | 3.91                  | 0.59              | 29.70                         | 47.00              | 17.30          | QP     |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
2. The emissions not reported are 20 dB lower than the specified limit.

## Antenna at Vertical Polarization

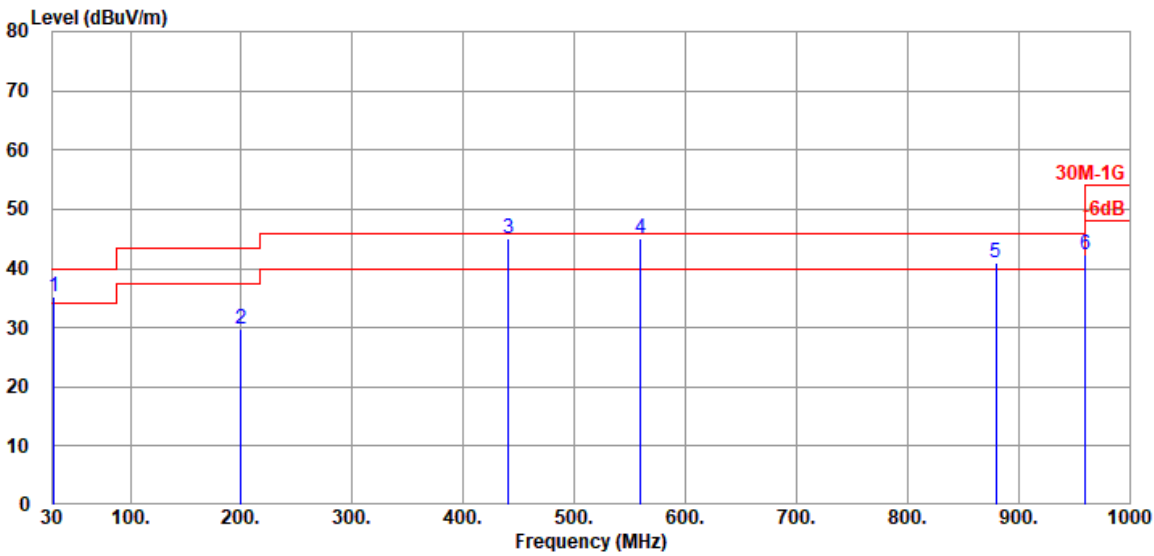


Site No. : No.6 Open Area Test Site Data No. : 1  
 Instrument 1 : Receiver ESCS(337)  
 Instrument 2 : CBL6112B (818) | RE-07  
 Distance/Limit : 10m /CLASS-A Ant. Pol. : Vertical  
 Environment : 24°C/59% Engineer : Eason Hsu  
 EUT Model : ES133ERBM10 Test Rating : 110Vac/60Hz  
 Test Mode : Link PC(Charge)+Operating

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBμV) | Emission<br>Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Remark |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 50.618         | 14.36                    | 0.98                  | 8.33              | 23.67                         | 40.00              | 16.33          | QP     |
| 2 | 134.510        | 17.90                    | 1.73                  | 3.42              | 23.05                         | 40.00              | 16.95          | QP     |
| 3 | 212.610        | 16.57                    | 2.40                  | 4.80              | 23.77                         | 40.00              | 16.23          | QP     |
| 4 | 386.651        | 21.94                    | 3.09                  | 3.85              | 28.88                         | 47.00              | 18.12          | QP     |
| 5 | 460.150        | 23.44                    | 3.42                  | 2.80              | 29.66                         | 47.00              | 17.34          | QP     |
| 6 | 824.510        | 26.71                    | 4.85                  | -3.20             | 28.36                         | 47.00              | 18.64          | QP     |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emissions not reported are 20 dB lower than the specified limit.

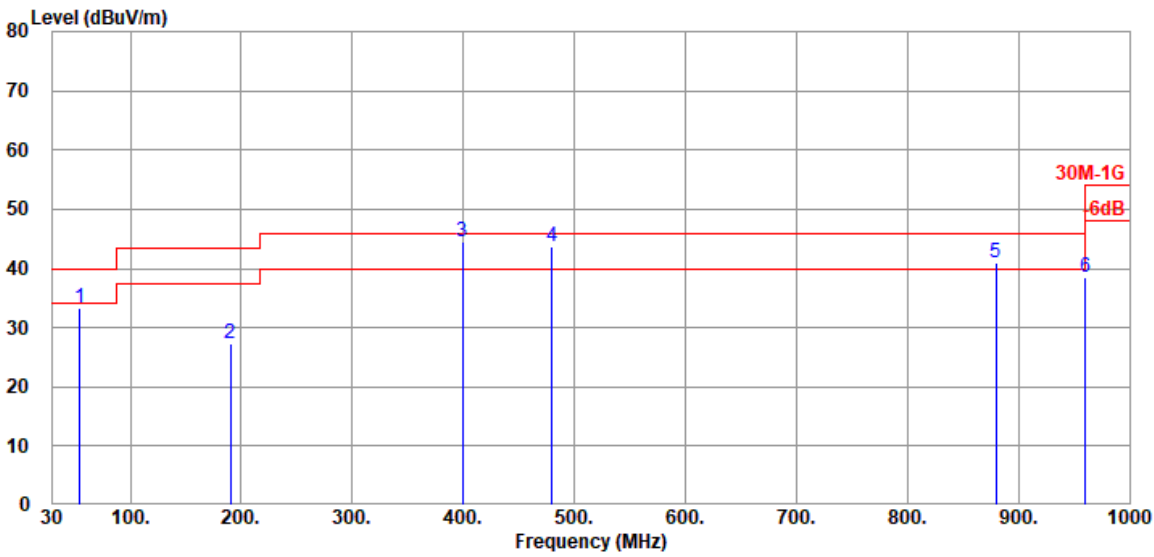
|      |                  |           |           |
|------|------------------|-----------|-----------|
| Mode | 發射-NFC           | Frequency | 13.56MHz  |
| 測試電壓 | DC 3.85V (經電池供電) | 測試人員      | Sam Chang |



Antenna at Horizontal Polarization

| Emission<br>Frequency<br>(MHz) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Preamp<br>Gain<br>(dB) | Read<br>Level<br>(dBμV) | Emission<br>Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector |
|--------------------------------|-----------------------------|-----------------------|------------------------|-------------------------|-------------------------------|--------------------|----------------|----------|
| 30.970                         | 23.26                       | 1.20                  | 26.51                  | 37.17                   | 35.12                         | 40.00              | 4.88           | Peak     |
| 199.750                        | 15.10                       | 3.37                  | 25.81                  | 37.00                   | 29.66                         | 43.50              | 13.84          | Peak     |
| 440.310                        | 22.13                       | 5.92                  | 0.00                   | 17.08                   | 45.13                         | 46.00              | 0.87           | Peak     |
| 559.620                        | 23.84                       | 6.64                  | 27.33                  | 41.93                   | 45.08                         | 46.00              | 0.92           | Peak     |
| 879.720                        | 26.23                       | 8.31                  | 27.09                  | 33.51                   | 40.96                         | 46.00              | 5.04           | Peak     |
| 960.230                        | 26.80                       | 8.76                  | 26.82                  | 33.66                   | 42.40                         | 54.00              | 11.60          | Peak     |

|      |                  |           |           |
|------|------------------|-----------|-----------|
| Mode | 發射-NFC           | Frequency | 13.56MHz  |
| 測試電壓 | DC 3.85V (經電池供電) | 測試人員      | Sam Chang |

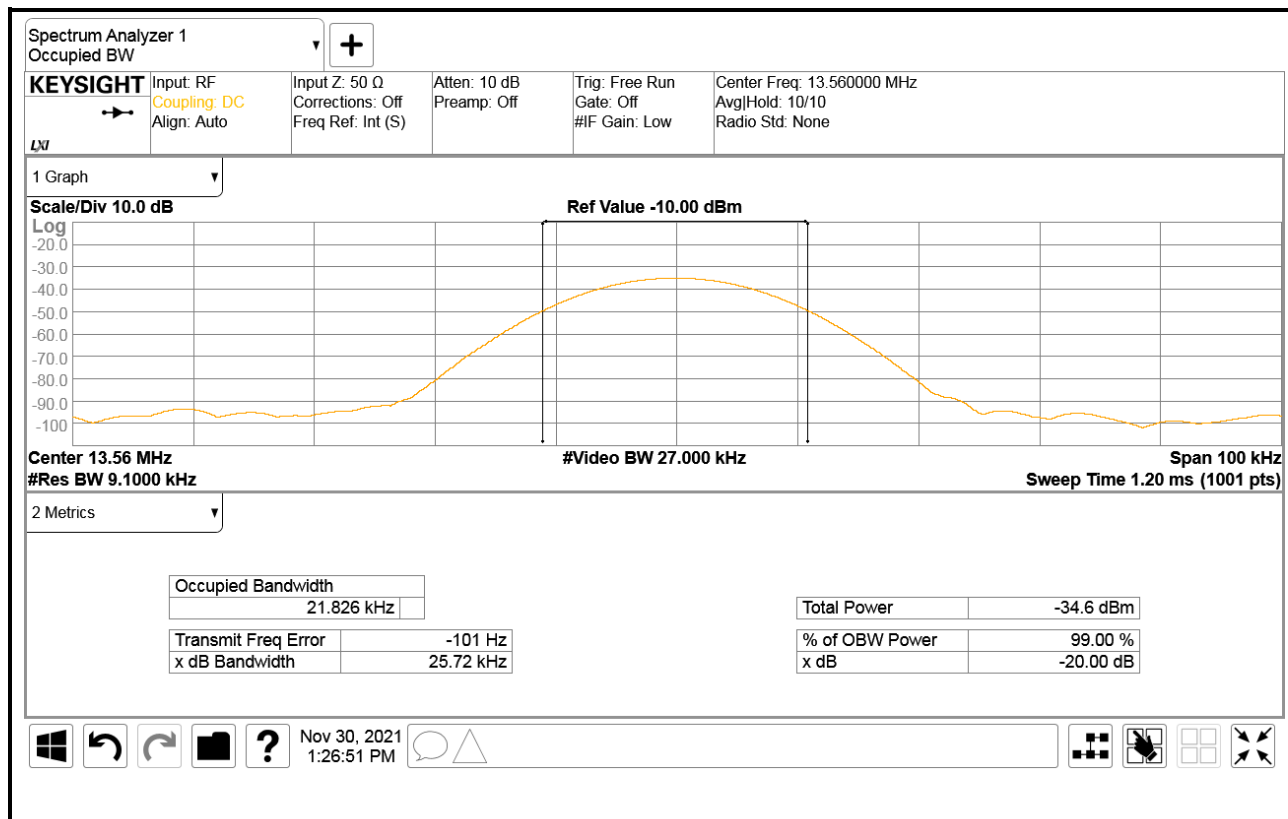


Antenna at Vertical Polarization

| Emission Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Gain (dB) | Read Level (dBμV) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Detector |
|--------------------------|-----------------------|-----------------|------------------------|-------------------|-------------------------|-----------------|-------------|----------|
| 54.250                   | 13.17                 | 1.64            | 26.46                  | 44.82             | 33.17                   | 40.00           | 6.83        | Peak     |
| 190.050                  | 15.04                 | 3.28            | 25.84                  | 34.86             | 27.34                   | 43.50           | 16.16       | Peak     |
| 399.570                  | 21.37                 | 5.53            | 26.49                  | 44.01             | 44.42                   | 46.00           | 1.58        | Peak     |
| 480.080                  | 22.81                 | 6.27            | 0.00                   | 14.58             | 43.66                   | 46.00           | 2.34        | Peak     |
| 879.720                  | 26.23                 | 8.31            | 27.09                  | 33.49             | 40.94                   | 46.00           | 5.06        | Peak     |
| 960.230                  | 26.80                 | 8.76            | 26.82                  | 29.74             | 38.48                   | 54.00           | 15.52       | Peak     |

## 2.4. 頻寬量測

|      |                  |        |           |
|------|------------------|--------|-----------|
| 測試日期 | 2021/11/30       | 環境溫/濕度 | 22°C/67%  |
| 測試電壓 | DC 3.85V (經電池供電) | 測試人員   | Sam Chang |



### 3. 頻率容許差度之量測

|      |                                               |        |           |
|------|-----------------------------------------------|--------|-----------|
| 測試日期 | 2021/11/30                                    | 環境溫/濕度 | 22°C/67%  |
| 測試電壓 | DC 3V or DC 3.85V or DC 4.4V<br>(連接 DC 電源供應器) | 測試人員   | Sam Chang |

#### 3.1. 溫度變化之頻率容許差度量測結果：(限度值±0.01%)

| 環境溫度<br>(°C) | 時間及頻率讀值之差度(偏移率%) |           |             |           |             |           |             |           |
|--------------|------------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|
|              | 時間: 0 分鐘         |           | 時間: 2 分鐘    |           | 時間: 5 分鐘    |           | 時間: 10 分鐘   |           |
|              | 頻率<br>(MHz)      | 差度<br>(%) | 頻率<br>(MHz) | 差度<br>(%) | 頻率<br>(MHz) | 差度<br>(%) | 頻率<br>(MHz) | 差度<br>(%) |
| -20°C        | 13.560032        | 0.00024   | 13.559994   | -0.00004  | 13.559983   | -0.00013  | 13.559979   | -0.000015 |
| -10°C        | 13.560012        | 0.00009   | 13.559989   | 0.00008   | 13.559989   | -0.00008  | 13.559959   | -0.00030  |
| 0°C          | 13.559982        | -0.00013  | 13.560002   | 0.00001   | 13.559981   | -0.00014  | 13.560022   | 0.00016   |
| 10°C         | 13.560014        | 0.00010   | 13.560003   | 0.00002   | 13.559997   | -0.00002  | 13.559958   | -0.00031  |
| 20°C         | 13.560042        | 0.00031   | 13.559962   | -0.00028  | 13.559966   | -0.00025  | 13.560026   | 0.00019   |
| 30°C         | 13.559974        | 0.00019   | 13.560042   | 0.00031   | 13.559991   | -0.00007  | 13.560039   | 0.00029   |
| 40°C         | 13.560032        | 0.00027   | 13.560039   | 0.00029   | 13.560013   | 0.00010   | 13.559998   | -0.00001  |
| 50°C         | 13.560037        | 0.00031   | 13.559963   | -0.00027  | 13.560042   | 0.00031   | 13.560003   | 0.00002   |

註：0 分鐘意指當產品放入恆溫恆濕箱內時，初始達到該設定環境溫度的時間。

#### 3.2. 電壓變動之頻率容許差度量測結果：(限度值±0.01%)

| 測試電壓                            | 電壓及頻率讀值之差度(偏移率%) |           |             |           |             |           |             |           |
|---------------------------------|------------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|
|                                 | 時間: 0 分鐘         |           | 時間: 2 分鐘    |           | 時間: 5 分鐘    |           | 時間: 10 分鐘   |           |
|                                 | 頻率<br>(MHz)      | 差度<br>(%) | 頻率<br>(MHz) | 差度<br>(%) | 頻率<br>(MHz) | 差度<br>(%) | 頻率<br>(MHz) | 差度<br>(%) |
| DC 3V<br>(End point<br>voltage) | 13.559992        | -0.00006  | 13.556004   | 0.00032   | 13.559951   | -0.000036 | 13.560050   | 0.00037   |
| DC 4.4 V<br>(最高電壓)              | 13.559991        | -0.00007  | 13.559966   | -0.00025  | 13.559988   | -0.00009  | 13.560016   | 0.00012   |