

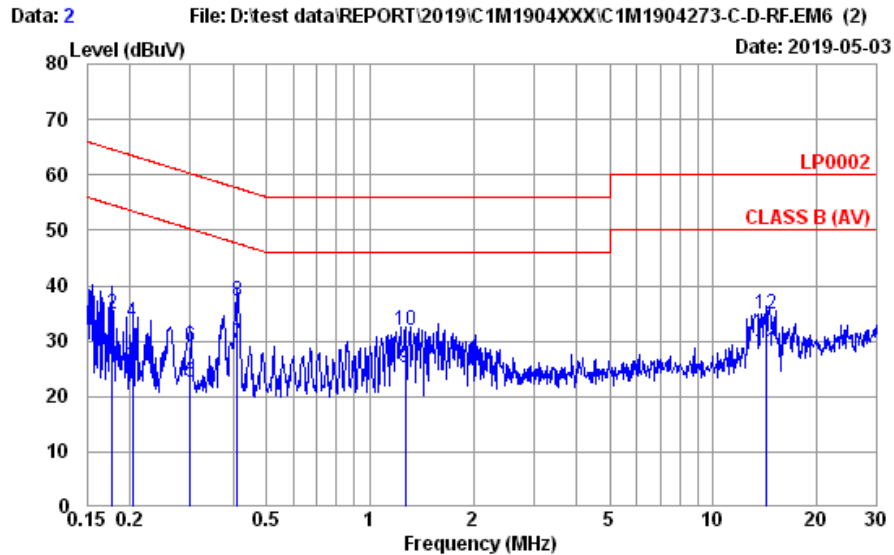
# 附錄一

## 受測裝置之測試結果

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## 1. 電源線傳導干擾之量測

|      |                     |        |          |
|------|---------------------|--------|----------|
| 測試日期 | 2019/05/03          | 環境溫/濕度 | 25°C/52% |
| 測試電壓 | DC 5V (USB 透過筆記型電腦) |        |          |

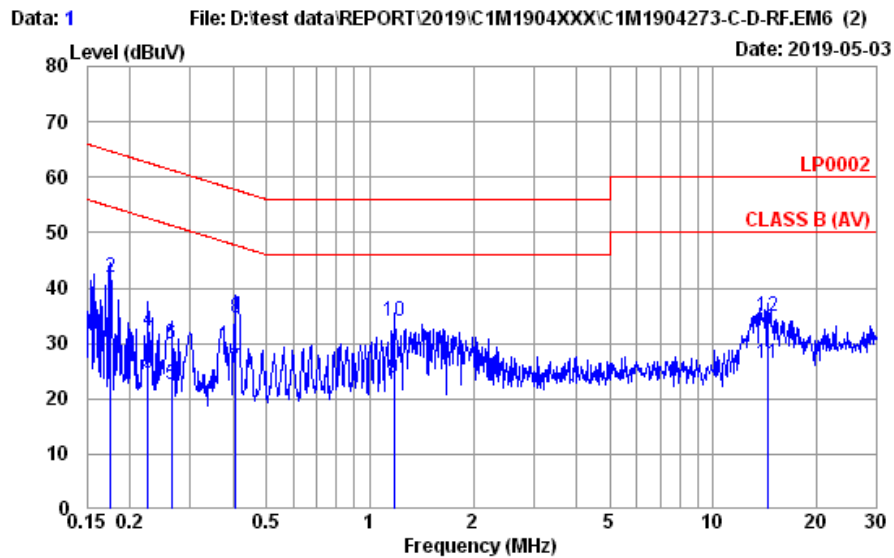


Site no. : No.8 Shielded Room Data no. : 2  
 Condition : ENV4200 100169 LISN Phase : NEUTRAL  
 Limit : LP0002  
 Env. / Ins. : 25°C / 52% ESR3(1774) Engineer : Xar Zhuo  
 EUT : TWFD-S001T  
 Power Rating : DC:5V VIA USB  
 Test Mode : Operating

|    | 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  | 0.178          | 10.65                 | 0.03                  | 9.86                  | 5.43              | 25.97                       | 54.59            | 28.62          | Average |
| 2  | 0.178          | 10.65                 | 0.03                  | 9.86                  | 14.26             | 34.80                       | 64.59            | 29.79          | QP      |
| 3  | 0.204          | 10.62                 | 0.03                  | 9.86                  | 4.95              | 25.46                       | 53.45            | 27.99          | Average |
| 4  | 0.204          | 10.62                 | 0.03                  | 9.86                  | 12.83             | 33.34                       | 63.45            | 30.11          | QP      |
| 5  | 0.300          | 10.54                 | 0.04                  | 9.86                  | 2.08              | 22.52                       | 50.24            | 27.72          | Average |
| 6  | 0.300          | 10.54                 | 0.04                  | 9.86                  | 8.63              | 29.07                       | 60.24            | 31.17          | QP      |
| 7  | 0.410          | 10.49                 | 0.04                  | 9.86                  | 9.19              | 29.58                       | 47.64            | 18.06          | Average |
| 8  | 0.410          | 10.49                 | 0.04                  | 9.86                  | 16.91             | 37.30                       | 57.64            | 20.34          | QP      |
| 9  | 1.269          | 10.48                 | 0.06                  | 9.86                  | 4.80              | 25.20                       | 46.00            | 20.80          | Average |
| 10 | 1.269          | 10.48                 | 0.06                  | 9.86                  | 11.56             | 31.96                       | 56.00            | 24.04          | QP      |
| 11 | 14.213         | 12.48                 | 0.22                  | 9.92                  | 5.40              | 28.02                       | 50.00            | 21.98          | Average |
| 12 | 14.213         | 12.48                 | 0.22                  | 9.92                  | 12.14             | 34.76                       | 60.00            | 25.24          | 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.

|      |                     |        |          |
|------|---------------------|--------|----------|
| 測試日期 | 2019/05/03          | 環境溫/濕度 | 25°C/52% |
| 測試電壓 | DC 5V (USB 透過筆記型電腦) |        |          |



Site no. : No.8 Shielded Room Data no. : 1  
Condition : ENV4200 100169 LISN Phase : LINE  
Limit : LP0002  
Env. / Ins. : 25°C / 52% ESR3(1774) Engineer : Xar Zhuo  
EUT : TWFD-S001T  
Power Rating : DC:5V VIA USB  
Test Mode : 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  | 0.176          | 10.58                 | 0.03                  | 9.86                  | 7.37              | 27.84                       | 54.68            | 26.84          | Average |
| 2  | 0.176          | 10.58                 | 0.03                  | 9.86                  | 21.46             | 41.93                       | 64.68            | 22.75          | QP      |
| 3  | 0.226          | 10.52                 | 0.03                  | 9.86                  | 4.20              | 24.61                       | 52.61            | 28.00          | Average |
| 4  | 0.226          | 10.52                 | 0.03                  | 9.86                  | 11.86             | 32.27                       | 62.61            | 30.34          | QP      |
| 5  | 0.264          | 10.50                 | 0.03                  | 9.86                  | 2.18              | 22.57                       | 51.29            | 28.72          | Average |
| 6  | 0.264          | 10.50                 | 0.03                  | 9.86                  | 9.48              | 29.87                       | 61.29            | 31.42          | QP      |
| 7  | 0.406          | 10.45                 | 0.04                  | 9.86                  | 5.08              | 25.43                       | 47.73            | 22.30          | Average |
| 8  | 0.406          | 10.45                 | 0.04                  | 9.86                  | 14.17             | 34.52                       | 57.73            | 23.21          | QP      |
| 9  | 1.178          | 10.43                 | 0.06                  | 9.86                  | 3.52              | 23.87                       | 46.00            | 22.13          | Average |
| 10 | 1.178          | 10.43                 | 0.06                  | 9.86                  | 13.72             | 34.07                       | 56.00            | 21.93          | QP      |
| 11 | 14.440         | 12.19                 | 0.23                  | 9.92                  | 4.11              | 26.45                       | 50.00            | 23.55          | Average |
| 12 | 14.440         | 12.19                 | 0.23                  | 9.92                  | 12.50             | 34.84                       | 60.00            | 25.16          | 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

對受測物裝置之其他不必要之發射(測至 40GHz)依下列測試模式分別於電波暗室內進行量測，選擇低、中、高頻率來進行量測，並將下列測試模式之測試數據隨案件所附。所得讀值資料請見章節 1.1 ~1.2：

支援 IEEE 802.11a，依測試要求評估低、中、高頻率，並檢附三頻率之最差模式於此測試報告中。

| 模式      | 動作狀態 | 基本頻率          |                 | 量測頻率範圍        |
|---------|------|---------------|-----------------|---------------|
| 802.11a | 發射   | UNII Band I   | 5240MHz(CH48)   | 1000-40000MHz |
|         |      | UNII Band II  | 5320MHz(CH64)   |               |
|         |      | UNII Band III | 5600MHz(CH120)  |               |
|         |      | UNII Band IV  | 5825MHz(CH165)* | 30-1000MHz    |
| ---     | 接收   | UNII Band III | 5825MHz(CH165)  | 1000-40000MHz |
|         |      |               |                 | 30-1000MHz    |

註: \*: 經評估後，以最差頻率進行 30-1000MHz 量測。

對受測物裝置落於技術規範第 2.7 章節的禁用頻帶之混附發射以下列測試模式依規定分別進行量測，所得量測資料請見章節 1.3。

| 模式      | 動作狀態 | 基本頻率          |                 | 量測頻率範圍       |
|---------|------|---------------|-----------------|--------------|
| 802.11a | 發射   | UNII Band I   | 5180MHz (CH36)  | 5100-5200MHz |
|         |      | UNII Band II  | 5320MHz (CH64)  | 5300-5400MHz |
|         |      | UNII Band III | 5500MHz (CH100) | 5420-5520MHz |
|         |      |               | 5700MHz (CH140) | 5660-5760MHz |

|      |                     |        |          |
|------|---------------------|--------|----------|
| 測試日期 | 2019/05/30          | 環境溫/濕度 | 21°C/48% |
| 測試電壓 | DC 5V (USB 透過筆記型電腦) |        |          |

## 2.1. 30-1000MHz 頻率範圍，其他不必要發射量測

|      |         |           |            |
|------|---------|-----------|------------|
| Mode | 802.11a | UNII Band | IV         |
|      |         | Frequency | TX 5825MHz |

### Antenna at Horizontal Polarization

| Emission Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Meter Reading (dBμV) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Detector |
|--------------------------|-----------------------|-----------------|----------------------|-------------------------|-----------------|-------------|----------|
| 101.78                   | 17.50                 | 2.31            | 4.74                 | 24.55                   | 43.50           | 18.95       | Peak     |
| 120.21                   | 18.63                 | 2.53            | 4.06                 | 25.22                   | 43.50           | 18.28       | Peak     |
| 199.75                   | 16.27                 | 3.42            | 9.13                 | 28.82                   | 43.50           | 14.68       | Peak     |
| 280.26                   | 19.37                 | 4.25            | 11.85                | 35.47                   | 46.00           | 10.53       | Peak     |
| 320.03                   | 20.30                 | 4.75            | 9.09                 | 34.14                   | 46.00           | 11.86       | Peak     |
| 359.80                   | 21.38                 | 5.34            | 10.94                | 37.66                   | 46.00           | 8.34        | Peak     |
| 440.31                   | 22.96                 | 6.25            | 8.24                 | 37.45                   | 46.00           | 8.55        | Peak     |
| 480.08                   | 23.47                 | 6.59            | 5.41                 | 35.47                   | 46.00           | 10.53       | Peak     |
| 519.85                   | 23.92                 | 6.78            | 4.31                 | 35.01                   | 46.00           | 10.99       | Peak     |
| 600.36                   | 24.76                 | 6.88            | 5.50                 | 37.14                   | 46.00           | 8.86        | Peak     |
| 679.90                   | 25.32                 | 7.27            | 4.78                 | 37.37                   | 46.00           | 8.63        | Peak     |
| 760.41                   | 26.10                 | 7.69            | 7.69                 | 41.48                   | 46.00           | 4.52        | Peak     |
| 839.95                   | 26.82                 | 8.13            | 8.37                 | 43.32                   | 46.00           | 2.68        | Peak     |

### Antenna at Vertical Polarization

| Emission Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Meter Reading (dBμV) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Detector |
|--------------------------|-----------------------|-----------------|----------------------|-------------------------|-----------------|-------------|----------|
| 101.78                   | 17.50                 | 2.31            | 3.63                 | 23.44                   | 43.50           | 20.06       | Peak     |
| 280.26                   | 19.37                 | 4.25            | 2.65                 | 26.27                   | 46.00           | 19.73       | Peak     |
| 320.03                   | 20.30                 | 4.75            | 2.64                 | 27.69                   | 46.00           | 18.31       | Peak     |
| 359.80                   | 21.38                 | 5.34            | 4.93                 | 31.65                   | 46.00           | 14.35       | Peak     |
| 760.41                   | 26.10                 | 7.69            | 2.93                 | 36.72                   | 46.00           | 9.28        | Peak     |
| 830.25                   | 26.75                 | 8.07            | 2.14                 | 36.96                   | 46.00           | 9.04        | Peak     |

|      |     |           |            |
|------|-----|-----------|------------|
| Mode | --- | Frequency | RX 5825MHz |
|------|-----|-----------|------------|

Antenna at Horizontal Polarization

| Emission<br>Frequency<br>(MHz) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Meter<br>Reading<br>(dBμV) | Emission<br>Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector |
|--------------------------------|-----------------------------|-----------------------|----------------------------|-------------------------------|--------------------|----------------|----------|
| 101.78                         | 17.50                       | 2.31                  | 4.42                       | 24.23                         | 43.50              | 19.27          | Peak     |
| 120.21                         | 18.63                       | 2.53                  | 3.88                       | 25.04                         | 43.50              | 18.46          | Peak     |
| 199.75                         | 16.27                       | 3.42                  | 8.96                       | 28.65                         | 43.50              | 14.85          | Peak     |
| 280.26                         | 19.37                       | 4.25                  | 11.90                      | 35.52                         | 46.00              | 10.48          | Peak     |
| 320.03                         | 20.30                       | 4.75                  | 8.98                       | 34.03                         | 46.00              | 11.97          | Peak     |
| 359.80                         | 21.38                       | 5.34                  | 11.31                      | 38.03                         | 46.00              | 7.97           | Peak     |
| 440.31                         | 22.96                       | 6.25                  | 8.43                       | 37.64                         | 46.00              | 8.36           | Peak     |
| 480.08                         | 23.47                       | 6.59                  | 6.90                       | 36.96                         | 46.00              | 9.04           | Peak     |
| 519.85                         | 23.92                       | 6.78                  | 4.26                       | 34.96                         | 46.00              | 11.04          | Peak     |
| 600.36                         | 24.76                       | 6.88                  | 4.40                       | 36.04                         | 46.00              | 9.96           | Peak     |
| 679.90                         | 25.32                       | 7.27                  | 5.08                       | 37.67                         | 46.00              | 8.33           | Peak     |
| 760.41                         | 26.10                       | 7.69                  | 7.35                       | 41.14                         | 46.00              | 4.86           | Peak     |
| 839.95                         | 26.82                       | 8.13                  | 7.47                       | 42.42                         | 46.00              | 3.58           | Peak     |

Antenna at Vertical Polarization

| Emission<br>Frequency<br>(MHz) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Meter<br>Reading<br>(dBμV) | Emission<br>Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector |
|--------------------------------|-----------------------------|-----------------------|----------------------------|-------------------------------|--------------------|----------------|----------|
| 101.78                         | 17.50                       | 2.31                  | 3.52                       | 23.33                         | 43.50              | 20.17          | Peak     |
| 280.26                         | 19.37                       | 4.25                  | 3.91                       | 27.53                         | 46.00              | 18.47          | Peak     |
| 359.80                         | 21.38                       | 5.34                  | 3.32                       | 30.04                         | 46.00              | 15.96          | Peak     |
| 440.31                         | 22.96                       | 6.25                  | 2.81                       | 32.02                         | 46.00              | 13.98          | Peak     |
| 536.34                         | 24.11                       | 6.80                  | 2.47                       | 33.38                         | 46.00              | 12.62          | Peak     |
| 839.95                         | 26.82                       | 8.13                  | 1.87                       | 36.82                         | 46.00              | 9.18           | Peak     |

**2.2. 1000MHz 以上頻率範圍，其他不必要發射量測**

頻率範圍量測至主波發射的 10 倍諧波，其他未列在報告上乃因訊號太小無法量測。

|      |         |           |            |
|------|---------|-----------|------------|
| Mode | 802.11a | Frequency | TX 5240MHz |
|------|---------|-----------|------------|

**Antenna at Horizontal Polarization**

| Emission<br>Frequency<br>(MHz) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Meter<br>Reading<br>(dBμV) | Emission<br>Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector |
|--------------------------------|-----------------------------|-----------------------|----------------------------|-------------------------------|--------------------|----------------|----------|
| 10480.00                       | 37.89                       | 14.84                 | -3.41                      | 49.32                         | 54.00              | 4.68           | Peak     |

**Antenna at Vertical Polarization**

| Emission<br>Frequency<br>(MHz) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Meter<br>Reading<br>(dBμV) | Emission<br>Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector |
|--------------------------------|-----------------------------|-----------------------|----------------------------|-------------------------------|--------------------|----------------|----------|
| 10480.00                       | 37.89                       | 14.84                 | -1.96                      | 50.77                         | 54.00              | 3.23           | Average  |
| 10480.00                       | 37.89                       | 14.84                 | 6.21                       | 58.94                         | 74.00              | 15.06          | Peak     |

|      |         |           |            |
|------|---------|-----------|------------|
| Mode | 802.11a | Frequency | TX 5320MHz |
|------|---------|-----------|------------|

**Antenna at Horizontal Polarization**

| Emission<br>Frequency<br>(MHz) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Meter<br>Reading<br>(dBμV) | Emission<br>Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector |
|--------------------------------|-----------------------------|-----------------------|----------------------------|-------------------------------|--------------------|----------------|----------|
| 10640.00                       | 38.00                       | 14.93                 | -3.80                      | 49.13                         | 54.00              | 4.87           | Average  |
| 10640.00                       | 38.00                       | 14.93                 | 5.02                       | 57.95                         | 74.00              | 16.05          | Peak     |

**Antenna at Vertical Polarization**

| Emission<br>Frequency<br>(MHz) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Meter<br>Reading<br>(dBμV) | Emission<br>Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector |
|--------------------------------|-----------------------------|-----------------------|----------------------------|-------------------------------|--------------------|----------------|----------|
| 10650.00                       | 38.00                       | 14.93                 | -1.83                      | 51.10                         | 54.00              | 2.90           | Average  |
| 10650.00                       | 38.00                       | 14.93                 | 7.98                       | 60.91                         | 74.00              | 13.09          | Peak     |

|      |         |           |            |
|------|---------|-----------|------------|
| Mode | 802.11a | Frequency | TX 5600MHz |
|------|---------|-----------|------------|

## Antenna at Horizontal Polarization

| Emission Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Meter Reading (dBμV) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Detector |
|--------------------------|-----------------------|-----------------|----------------------|-------------------------|-----------------|-------------|----------|
| 11200.00                 | 38.30                 | 15.21           | -7.01                | 46.50                   | 54.00           | 7.50        | Average  |
| 11200.00                 | 38.30                 | 15.21           | 1.18                 | 54.69                   | 74.00           | 19.31       | Peak     |

## Antenna at Vertical Polarization

| Emission Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Meter Reading (dBμV) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Detector |
|--------------------------|-----------------------|-----------------|----------------------|-------------------------|-----------------|-------------|----------|
| 11200.00                 | 38.30                 | 15.21           | -4.46                | 49.05                   | 54.00           | 4.95        | Average  |
| 11200.00                 | 38.30                 | 15.21           | 5.28                 | 58.79                   | 74.00           | 15.21       | Peak     |

|      |         |           |            |
|------|---------|-----------|------------|
| Mode | 802.11a | Frequency | TX 5825MHz |
|------|---------|-----------|------------|

## Antenna at Horizontal Polarization

| Emission Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Meter Reading (dBμV) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Detector |
|--------------------------|-----------------------|-----------------|----------------------|-------------------------|-----------------|-------------|----------|
| 11650.00                 | 38.43                 | 15.43           | -8.09                | 45.77                   | 54.00           | 8.23        | Average  |
| 11650.00                 | 38.43                 | 15.43           | 1.59                 | 55.45                   | 74.00           | 18.55       | Peak     |

## Antenna at Vertical Polarization

| Emission Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Meter Reading (dBμV) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Detector |
|--------------------------|-----------------------|-----------------|----------------------|-------------------------|-----------------|-------------|----------|
| 11650.00                 | 38.43                 | 15.43           | -2.59                | 51.27                   | 54.00           | 2.73        | Average  |
| 11650.00                 | 38.43                 | 15.43           | 6.59                 | 60.45                   | 74.00           | 13.55       | Peak     |
| 17470.00                 | 40.80                 | 19.13           | -10.79               | 49.14                   | 54.00           | 4.86        | Average  |
| 17470.00                 | 40.80                 | 19.13           | 2.47                 | 62.40                   | 74.00           | 11.60       | Peak     |

|      |     |           |            |
|------|-----|-----------|------------|
| Mode | --- | Frequency | RX 5825MHz |
|------|-----|-----------|------------|

Antenna at Horizontal Polarization

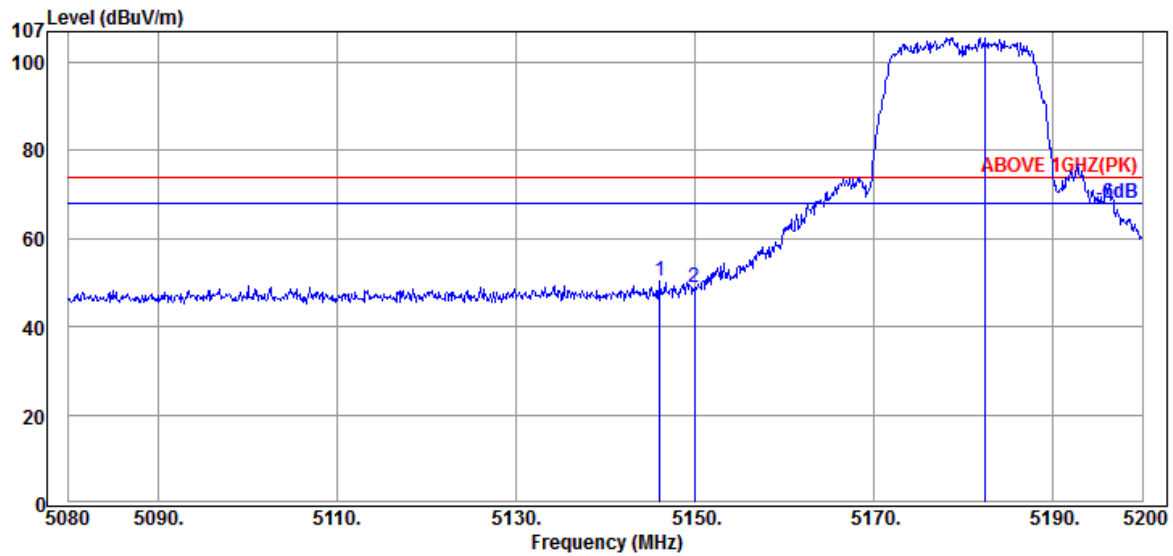
| Emission<br>Frequency<br>(MHz) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Meter<br>Reading<br>(dBμV) | Emission<br>Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector |
|--------------------------------|-----------------------------|-----------------------|----------------------------|-------------------------------|--------------------|----------------|----------|
| 11650.00                       | 38.43                       | 15.43                 | -3.74                      | 50.12                         | 54.00              | 3.88           | Peak     |

Antenna at Vertical Polarization

| Emission<br>Frequency<br>(MHz) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Meter<br>Reading<br>(dBμV) | Emission<br>Level<br>(dBμV/m) | Limits<br>(dBμV/m) | Margin<br>(dB) | Detector |
|--------------------------------|-----------------------------|-----------------------|----------------------------|-------------------------------|--------------------|----------------|----------|
| 11650.00                       | 38.43                       | 15.43                 | -4.24                      | 49.62                         | 54.00              | 4.38           | Peak     |

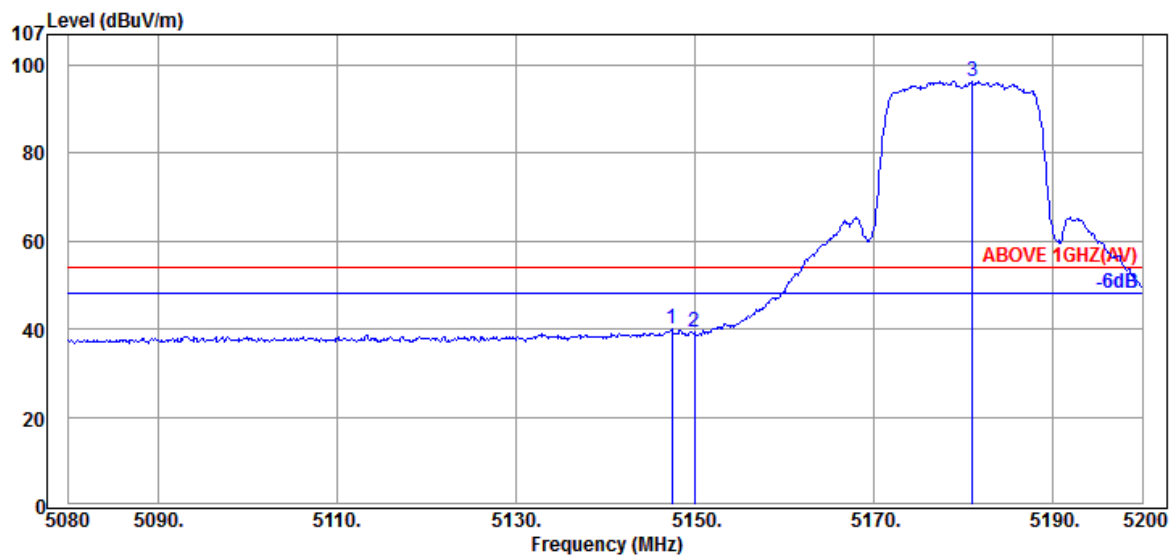
### 2.3. 禁用頻帶量測結果 (其他不必要發射)

|      |         |           |            |
|------|---------|-----------|------------|
| Mode | 802.11a | Frequency | TX 5180MHz |
|------|---------|-----------|------------|



Antenna at Horizontal Polarization

| Emission Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Meter Reading (dBμV) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Detector |
|--------------------------|-----------------------|-----------------|----------------------|-------------------------|-----------------|-------------|----------|
| 5146.12                  | 34.39                 | 10.60           | 5.28                 | 50.27                   | 74.00           | 23.73       | Peak     |
| 5149.96                  | 34.39                 | 10.61           | 3.90                 | 48.90                   | 74.00           | 25.10       | Peak     |
| @ 5182.36                | 34.41                 | 10.63           | 60.60                | 105.64                  | ---             | ---         | Peak     |

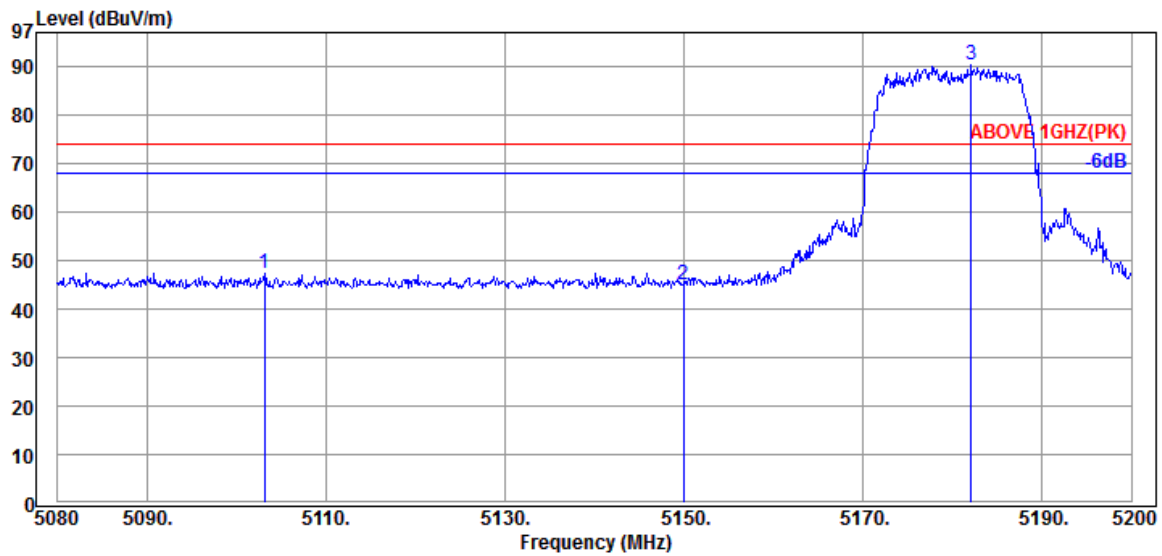


Antenna at Horizontal Polarization

| Emission Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Meter Reading (dBμV) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Detector |
|--------------------------|-----------------------|-----------------|----------------------|-------------------------|-----------------|-------------|----------|
| 5147.44                  | 34.39                 | 10.61           | -5.04                | 39.96                   | 54.00           | 14.04       | Average  |
| 5149.96                  | 34.39                 | 10.61           | -5.76                | 39.24                   | 54.00           | 14.76       | Average  |
| @ 5181.04                | 34.41                 | 10.63           | 51.24                | 96.28                   | ---             | ---         | Average  |

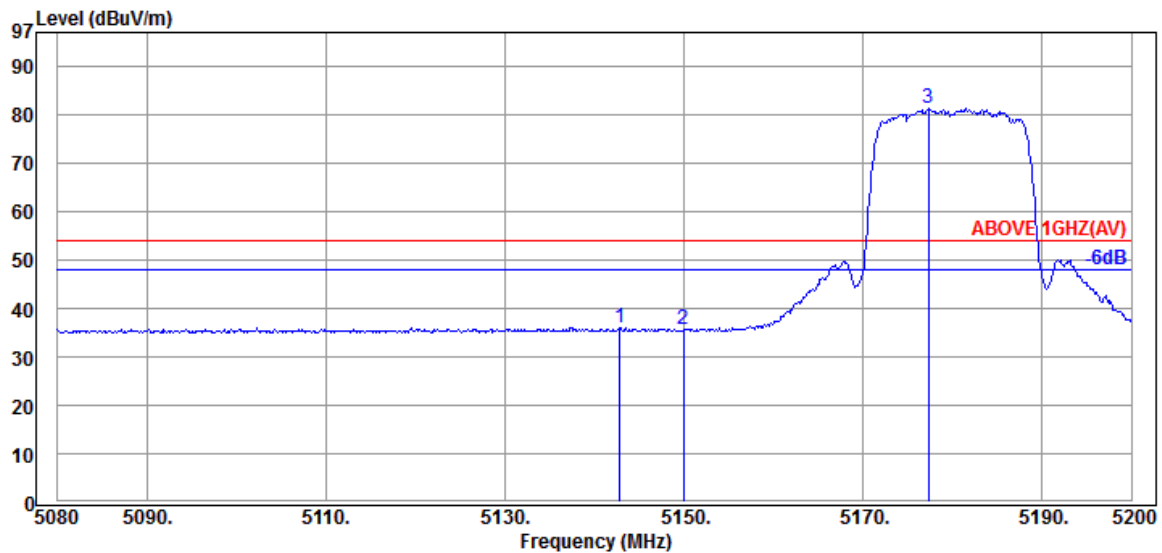
備註：“@”為主波，在此章節是不予以判定。

|      |         |           |            |
|------|---------|-----------|------------|
| Mode | 802.11a | Frequency | TX 5180MHz |
|------|---------|-----------|------------|



Antenna at Vertical Polarization

| Emission Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Meter Reading (dBμV) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Detector |
|--------------------------|-----------------------|-----------------|----------------------|-------------------------|-----------------|-------------|----------|
| 5103.16                  | 34.36                 | 10.57           | 2.52                 | 47.45                   | 74.00           | 26.55       | Peak     |
| 5149.96                  | 34.39                 | 10.61           | -0.09                | 44.91                   | 74.00           | 29.09       | Peak     |
| @ 5182.12                | 34.41                 | 10.63           | 45.27                | 90.31                   | ---             | ---         | Peak     |

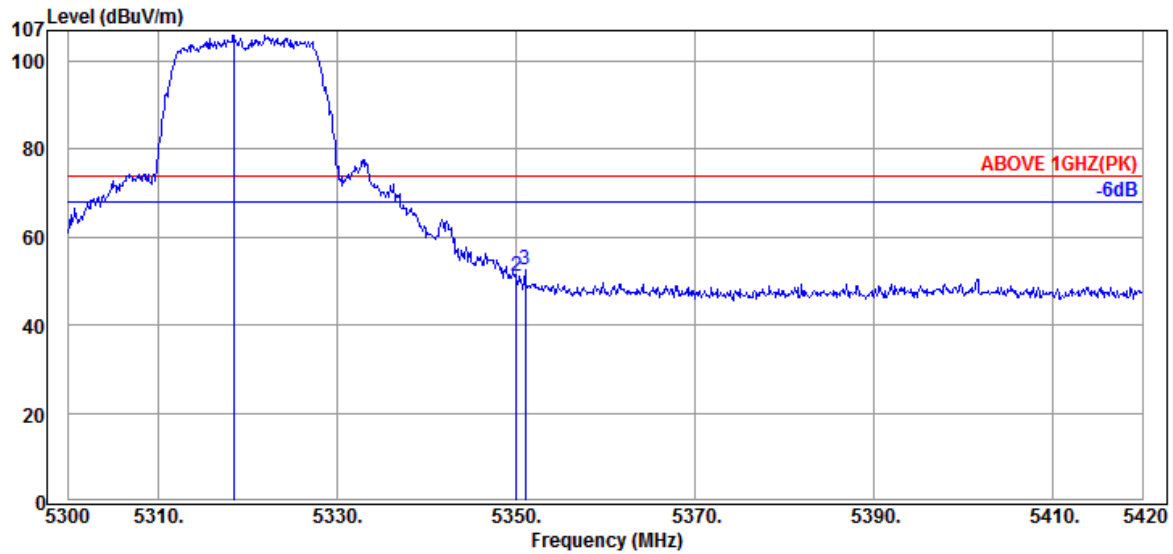


Antenna at Vertical Polarization

| Emission Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Meter Reading (dBμV) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Detector |
|--------------------------|-----------------------|-----------------|----------------------|-------------------------|-----------------|-------------|----------|
| 5142.88                  | 34.39                 | 10.60           | -8.99                | 36.00                   | 54.00           | 18.00       | Average  |
| 5149.96                  | 34.39                 | 10.61           | -9.40                | 35.60                   | 54.00           | 18.40       | Average  |
| @ 5177.32                | 34.41                 | 10.63           | 36.35                | 81.39                   | ---             | ---         | Average  |

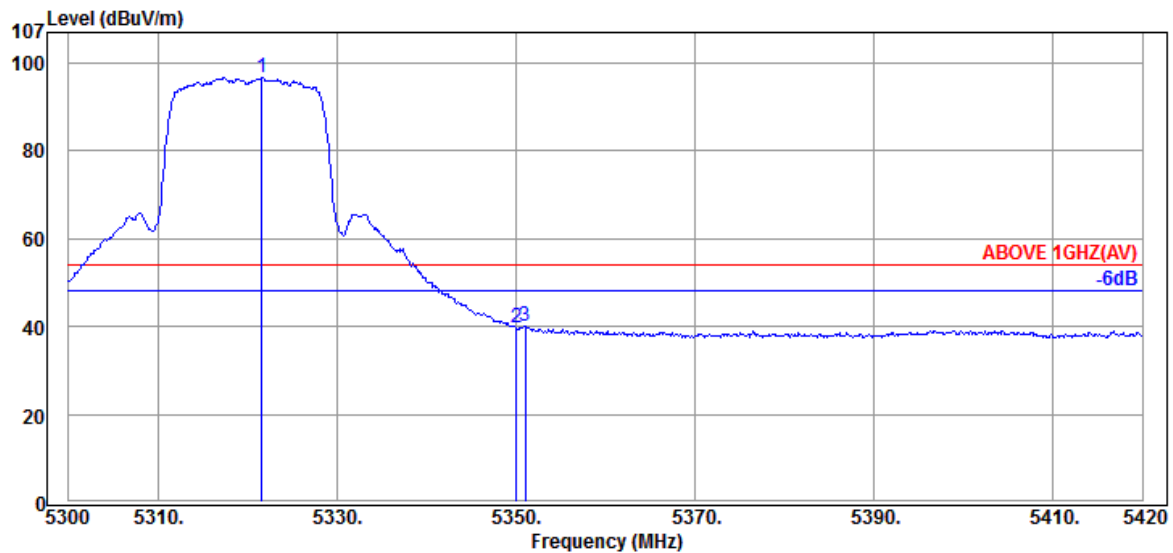
備註：“@”為主波，在此章節是不予以判定。

|      |         |           |            |
|------|---------|-----------|------------|
| Mode | 802.11a | Frequency | TX 5320MHz |
|------|---------|-----------|------------|



Antenna at Horizontal Polarization

| Emission Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Meter Reading (dBμV) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Detector |
|--------------------------|-----------------------|-----------------|----------------------|-------------------------|-----------------|-------------|----------|
| @ 5318.48                | 34.49                 | 10.74           | 60.67                | 105.90                  | ---             | ---         | Peak     |
| 5350.04                  | 34.51                 | 10.76           | 5.81                 | 51.08                   | 74.00           | 22.92       | Peak     |
| 5351.00                  | 34.51                 | 10.76           | 7.18                 | 52.45                   | 74.00           | 21.55       | Peak     |

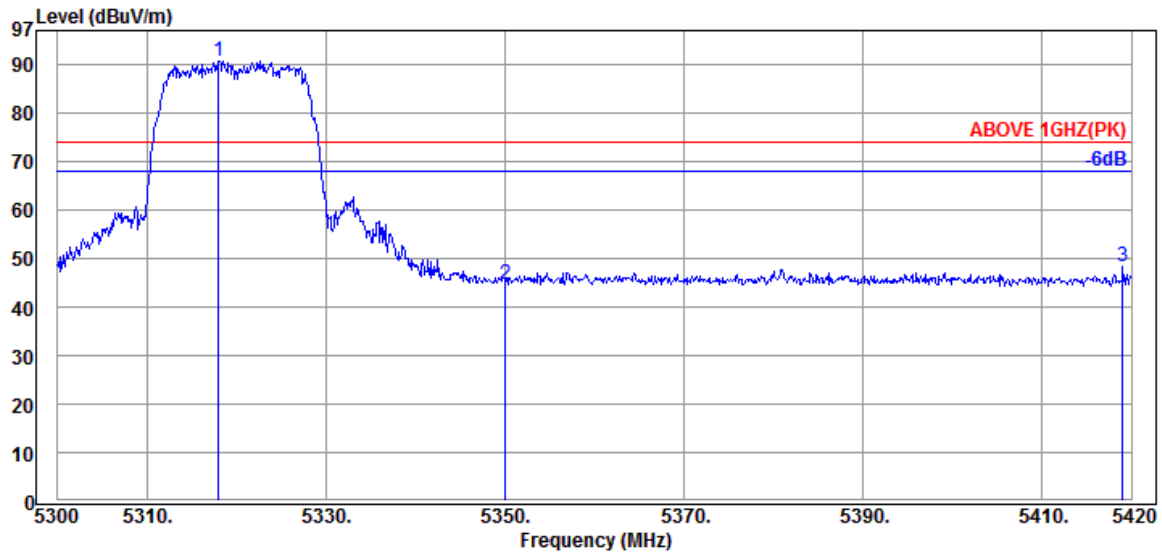


Antenna at Horizontal Polarization

| Emission Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Meter Reading (dBμV) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Detector |
|--------------------------|-----------------------|-----------------|----------------------|-------------------------|-----------------|-------------|----------|
| @ 5321.60                | 34.49                 | 10.74           | 51.41                | 96.64                   | ---             | ---         | Average  |
| 5350.04                  | 34.51                 | 10.76           | -5.73                | 39.54                   | 54.00           | 14.46       | Average  |
| 5351.00                  | 34.51                 | 10.76           | -5.29                | 39.98                   | 54.00           | 14.02       | Average  |

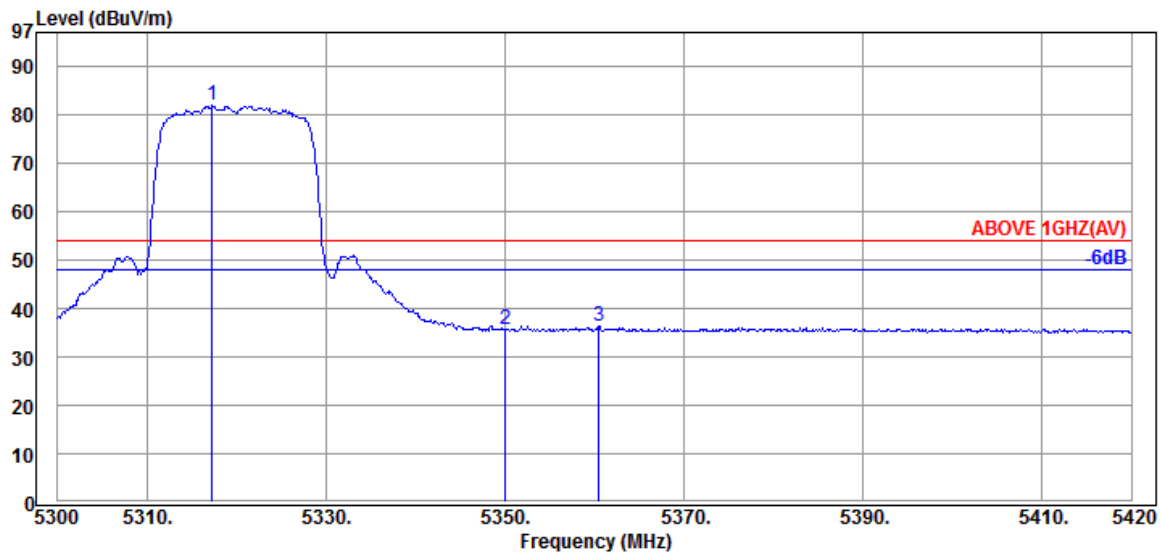
備註：“@”為主波，在此章節是不予以判定。

|      |         |           |            |
|------|---------|-----------|------------|
| Mode | 802.11a | Frequency | TX 5320MHz |
|------|---------|-----------|------------|



Antenna at Vertical Polarization

|   | Emission Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Meter Reading (dBμV) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Detector |
|---|--------------------------|-----------------------|-----------------|----------------------|-------------------------|-----------------|-------------|----------|
| @ | 5318.00                  | 34.49                 | 10.74           | 45.56                | 90.79                   | ---             | ---         | Peak     |
|   | 5350.04                  | 34.51                 | 10.76           | -0.49                | 44.78                   | 74.00           | 29.22       | Peak     |
|   | 5419.04                  | 34.55                 | 10.82           | 2.88                 | 48.25                   | 74.00           | 25.75       | Peak     |

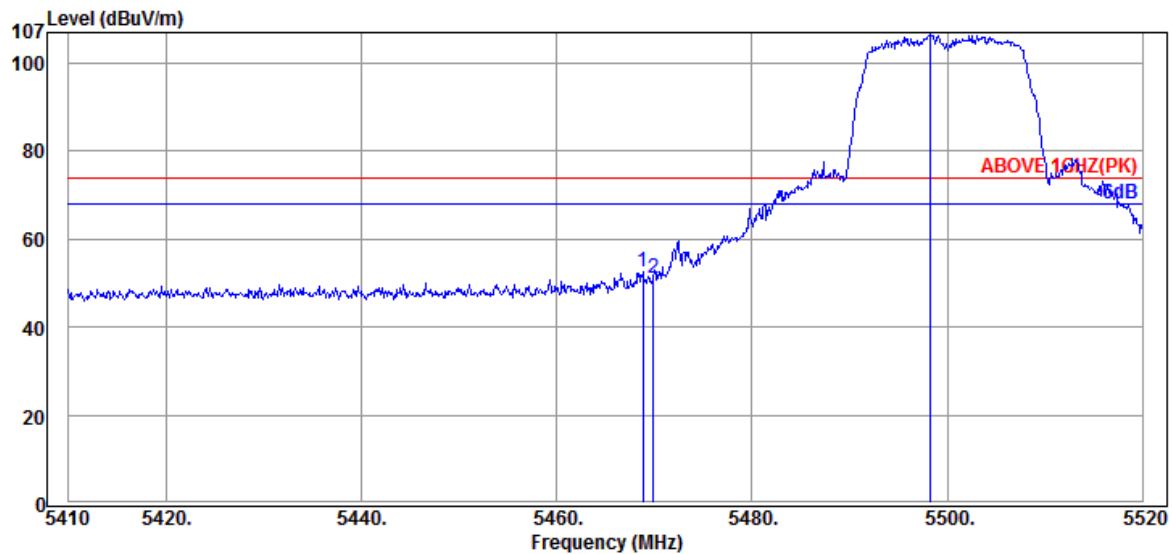


Antenna at Vertical Polarization

|   | Emission Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Meter Reading (dBμV) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Detector |
|---|--------------------------|-----------------------|-----------------|----------------------|-------------------------|-----------------|-------------|----------|
| @ | 5317.28                  | 34.49                 | 10.74           | 36.72                | 81.95                   | ---             | ---         | Average  |
|   | 5350.04                  | 34.51                 | 10.76           | -9.56                | 35.71                   | 54.00           | 18.29       | Average  |
|   | 5360.48                  | 34.52                 | 10.77           | -8.94                | 36.35                   | 54.00           | 17.65       | Average  |

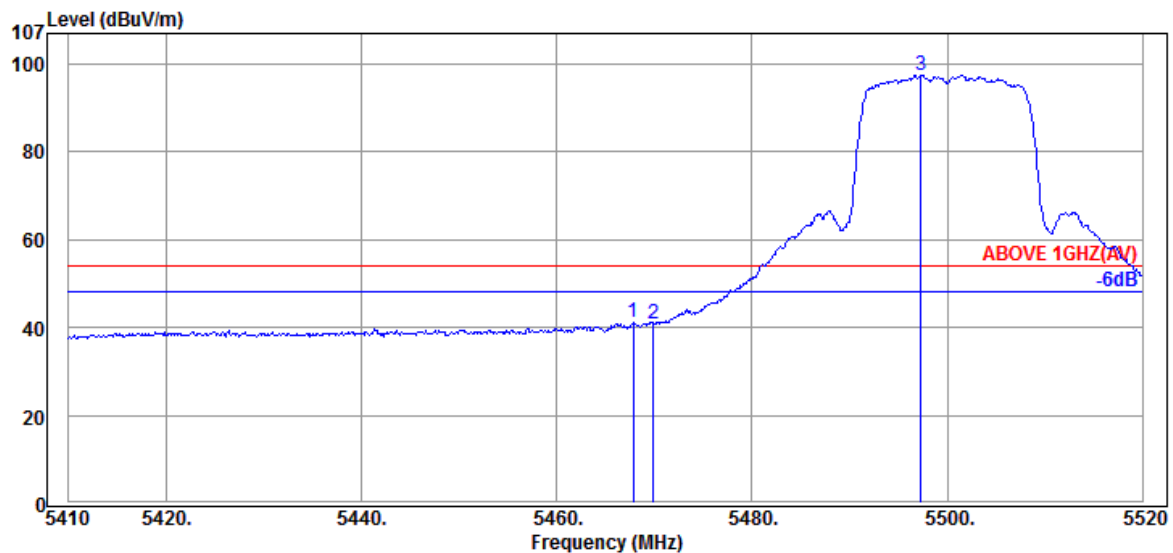
備註：“@”為主波，在此章節是不予以判定。

|      |         |           |            |
|------|---------|-----------|------------|
| Mode | 802.11a | Frequency | TX 5500MHz |
|------|---------|-----------|------------|



Antenna at Horizontal Polarization

| Emission Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Meter Reading (dBμV) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Detector |
|--------------------------|-----------------------|-----------------|----------------------|-------------------------|-----------------|-------------|----------|
| 5468.85                  | 34.58                 | 10.86           | 7.29                 | 52.73                   | 74.00           | 21.27       | Peak     |
| 5469.95                  | 34.58                 | 10.86           | 5.84                 | 51.28                   | 74.00           | 22.72       | Peak     |
| @ 5498.33                | 34.60                 | 10.88           | 61.04                | 106.52                  | ---             | ---         | Peak     |

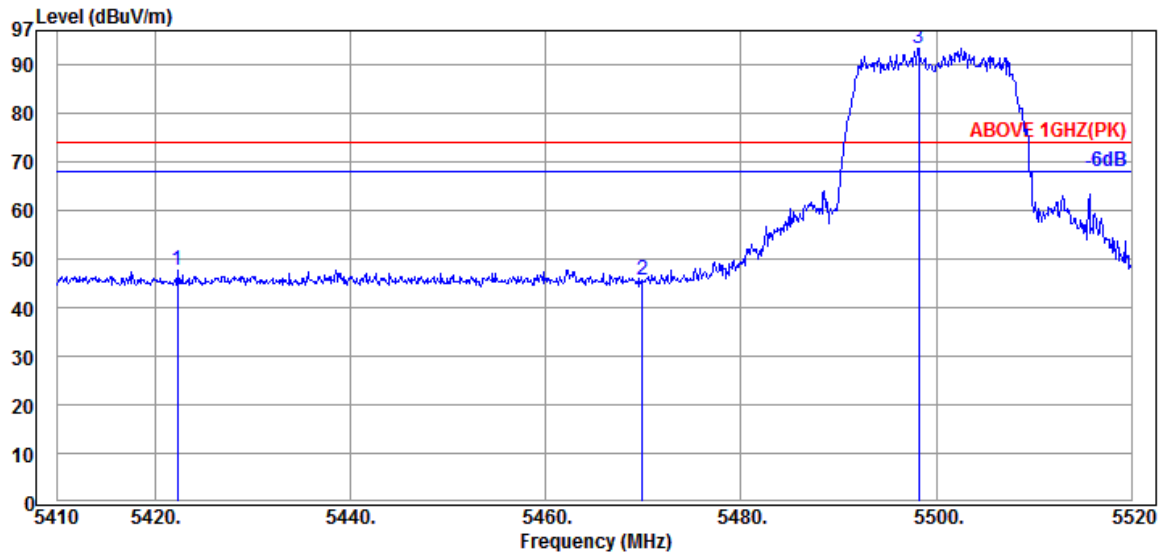


Antenna at Horizontal Polarization

| Emission Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Meter Reading (dBμV) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Detector |
|--------------------------|-----------------------|-----------------|----------------------|-------------------------|-----------------|-------------|----------|
| 5467.86                  | 34.58                 | 10.85           | -4.12                | 41.31                   | 54.00           | 12.69       | Average  |
| 5469.95                  | 34.58                 | 10.86           | -4.60                | 40.84                   | 54.00           | 13.16       | Average  |
| @ 5497.34                | 34.60                 | 10.88           | 52.07                | 97.55                   | ---             | ---         | Average  |

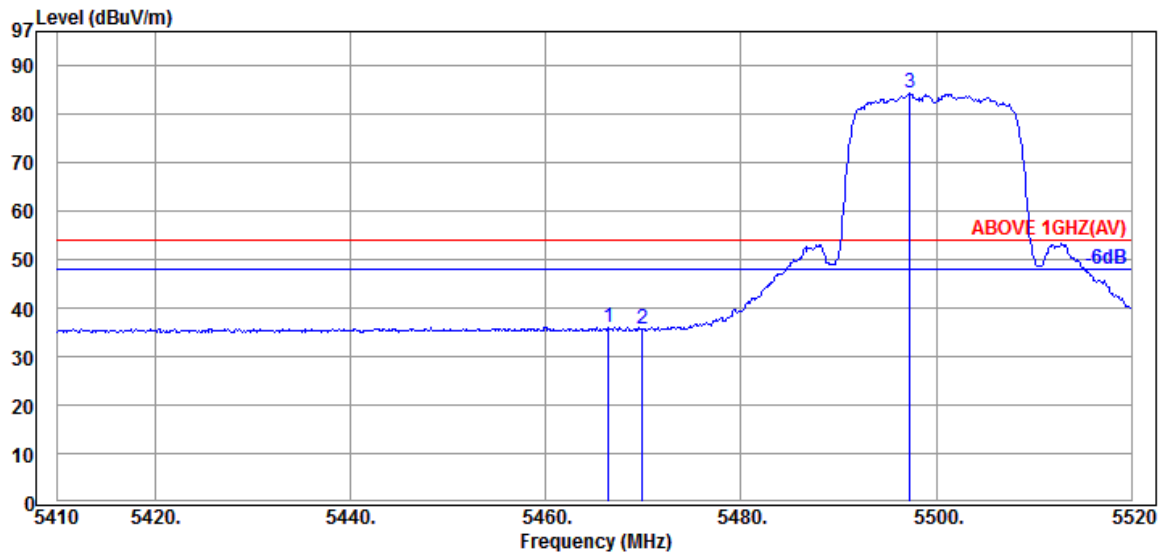
備註：“@”為主波，在此章節是不予以判定。

|      |         |           |            |
|------|---------|-----------|------------|
| Mode | 802.11a | Frequency | TX 5500MHz |
|------|---------|-----------|------------|



Antenna at Vertical Polarization

| Emission Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Meter Reading (dBμV) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Detector |
|--------------------------|-----------------------|-----------------|----------------------|-------------------------|-----------------|-------------|----------|
| 5422.32                  | 34.55                 | 10.82           | 2.38                 | 47.75                   | 74.00           | 26.25       | Peak     |
| 5469.95                  | 34.58                 | 10.86           | 0.18                 | 45.62                   | 74.00           | 28.38       | Peak     |
| @ 5498.22                | 34.60                 | 10.88           | 47.90                | 93.38                   | ---             | ---         | Peak     |

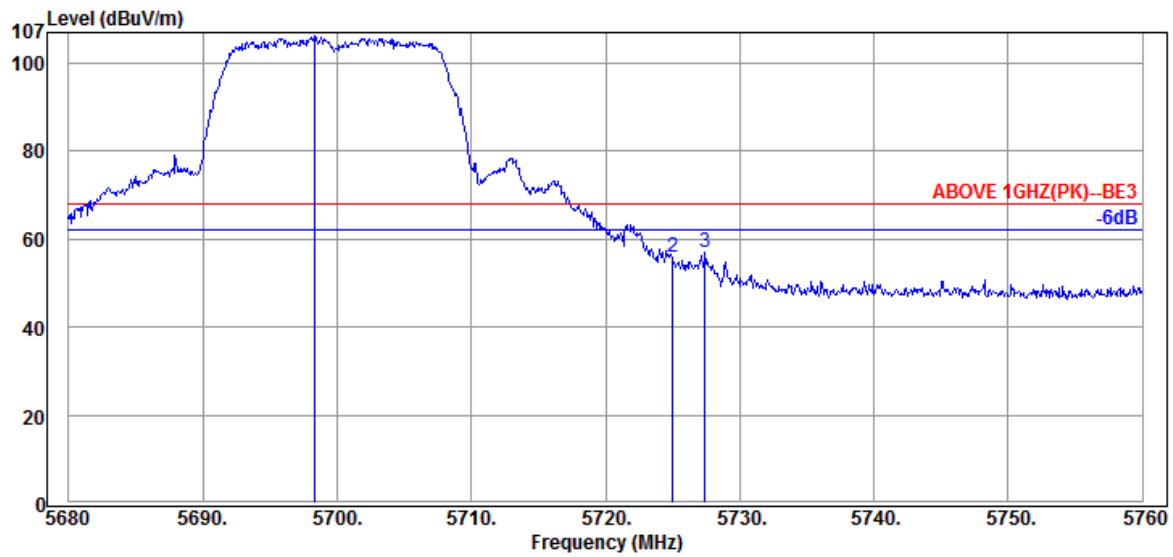


Antenna at Vertical Polarization

| Emission Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Meter Reading (dBμV) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Detector |
|--------------------------|-----------------------|-----------------|----------------------|-------------------------|-----------------|-------------|----------|
| 5466.43                  | 34.58                 | 10.85           | -9.39                | 36.04                   | 54.00           | 17.96       | Average  |
| 5469.95                  | 34.58                 | 10.86           | -9.76                | 35.68                   | 54.00           | 18.32       | Average  |
| @ 5497.34                | 34.60                 | 10.88           | 38.80                | 84.28                   | ---             | ---         | Average  |

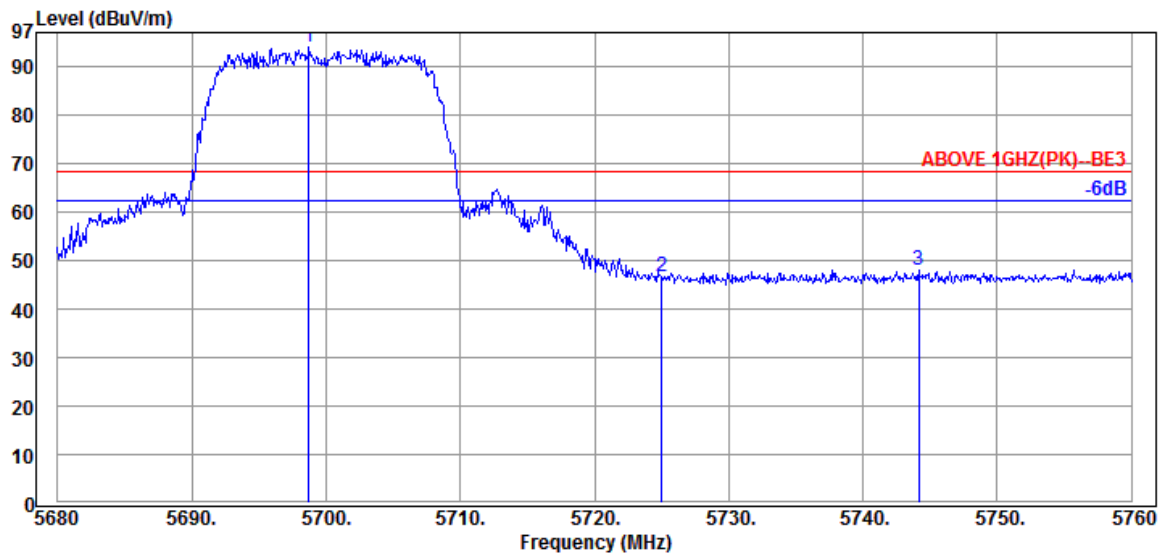
備註：“@”為主波，在此章節是不予以判定。

|      |         |           |            |
|------|---------|-----------|------------|
| Mode | 802.11a | Frequency | TX 5700MHz |
|------|---------|-----------|------------|



Antenna at Horizontal Polarization

|   | Emission Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Meter Reading (dBμV) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Detector |
|---|--------------------------|-----------------------|-----------------|----------------------|-------------------------|-----------------|-------------|----------|
| @ | 5698.32                  | 35.08                 | 10.90           | 60.15                | 106.13                  | 68.20           | ---         | Peak     |
|   | 5725.04                  | 35.16                 | 10.91           | 9.81                 | 55.88                   | 68.20           | 12.32       | Peak     |
|   | 5727.44                  | 35.16                 | 10.91           | 11.11                | 57.18                   | 68.20           | 11.02       | Peak     |



Antenna at Vertical Polarization

|   | Emission Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Meter Reading (dBμV) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Detector |
|---|--------------------------|-----------------------|-----------------|----------------------|-------------------------|-----------------|-------------|----------|
| @ | 5698.72                  | 35.08                 | 10.90           | 48.00                | 93.98                   | 68.20           | ---         | Peak     |
|   | 5725.04                  | 35.16                 | 10.91           | 0.50                 | 46.57                   | 68.20           | 21.63       | Peak     |
|   | 5744.16                  | 35.20                 | 10.91           | 1.85                 | 47.96                   | 68.20           | 20.24       | Peak     |

備註：“@”為主波，在此章節是不予以判定。

### 3. 最大輸出功率及 26dB/6dB 頻寬之量測

|            |                 |        |                     |
|------------|-----------------|--------|---------------------|
| 測試日期       | 2019/05/03 ~ 30 | 環境溫/濕度 | 21~ 23℃/53 ~ 55%    |
| 電纜損失       | 1.99dB          | 測試電壓   | DC 5V (USB 透過筆記型電腦) |
| Duty Cycle | 1.90            |        |                     |

#### 3.1. 最大輸出功率及 26dB/6dB 頻寬

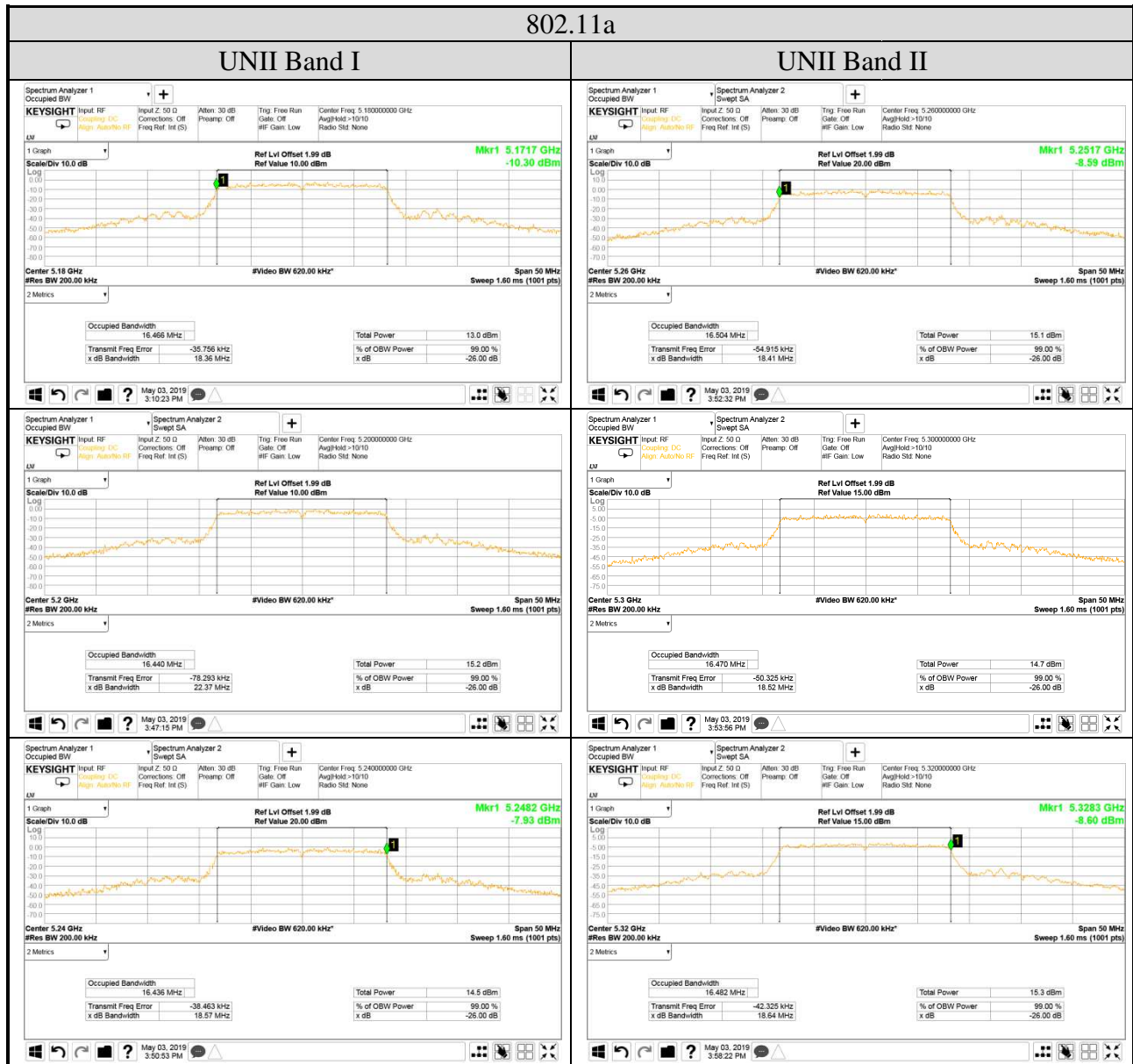
| 模式<br>802.11a | 測試頻率  | 發射頻寬(MHz) |        | Average輸出功率<br>(dBm) | 10 log (1/X) | Average輸出功率<br>(dBm)  | 限制值<br>(dBm) | 限制值<br>(11dBm+10 log B) |
|---------------|-------|-----------|--------|----------------------|--------------|-----------------------|--------------|-------------------------|
|               | (MHz) | 26dB      | 99%    |                      |              |                       |              |                         |
| UNII Band I   | 5180  | 18.36     | 16.466 | 7.51                 | 1.90         | 9.41                  | 24           | N/A                     |
|               | 5200  | 22.37     | 16.440 | 8.04                 |              | 9.94                  |              |                         |
|               | 5240  | 18.57     | 16.436 | 8.25                 |              | 10.15                 |              |                         |
| UNII Band II  | 5260  | 18.41     | 16.504 | 8.33                 |              | 10.23                 |              | 23.65                   |
|               | 5300  | 18.52     | 16.470 | 7.84                 |              | 9.74                  |              | 23.68                   |
|               | 5320  | 18.64     | 16.482 | 8.57                 |              | 10.47                 |              | 23.70                   |
| UNII Band III | 5500  | 18.40     | 16.442 | 9.33                 |              | 11.23                 |              | 23.65                   |
|               | 5600  | 18.62     | 16.431 | 9.72                 |              | 11.62                 |              | 23.70                   |
|               | 5700  | 18.45     | 16.401 | 9.41                 |              | 11.31                 |              | 23.66                   |
| 模式<br>802.11a | 測試頻率  | 發射頻寬(MHz) |        | Average輸出功率<br>(dBm) | 10 log (1/X) | Average 輸出功率<br>(dBm) | 限制值<br>(dBm) | 限制值<br>(11dBm+10 log B) |
|               | (MHz) | 6dB       | 99%    |                      |              |                       |              |                         |
| UNII Band IV  | 5745  | 16.32     | 16.371 | 9.37                 | 1.90         | 11.27                 | 30           | N/A                     |
|               | 5785  | 16.29     | 16.359 | 9.78                 |              | 11.68                 |              |                         |
|               | 5825  | 15.72     | 16.363 | 9.88                 |              | 11.78                 |              |                         |

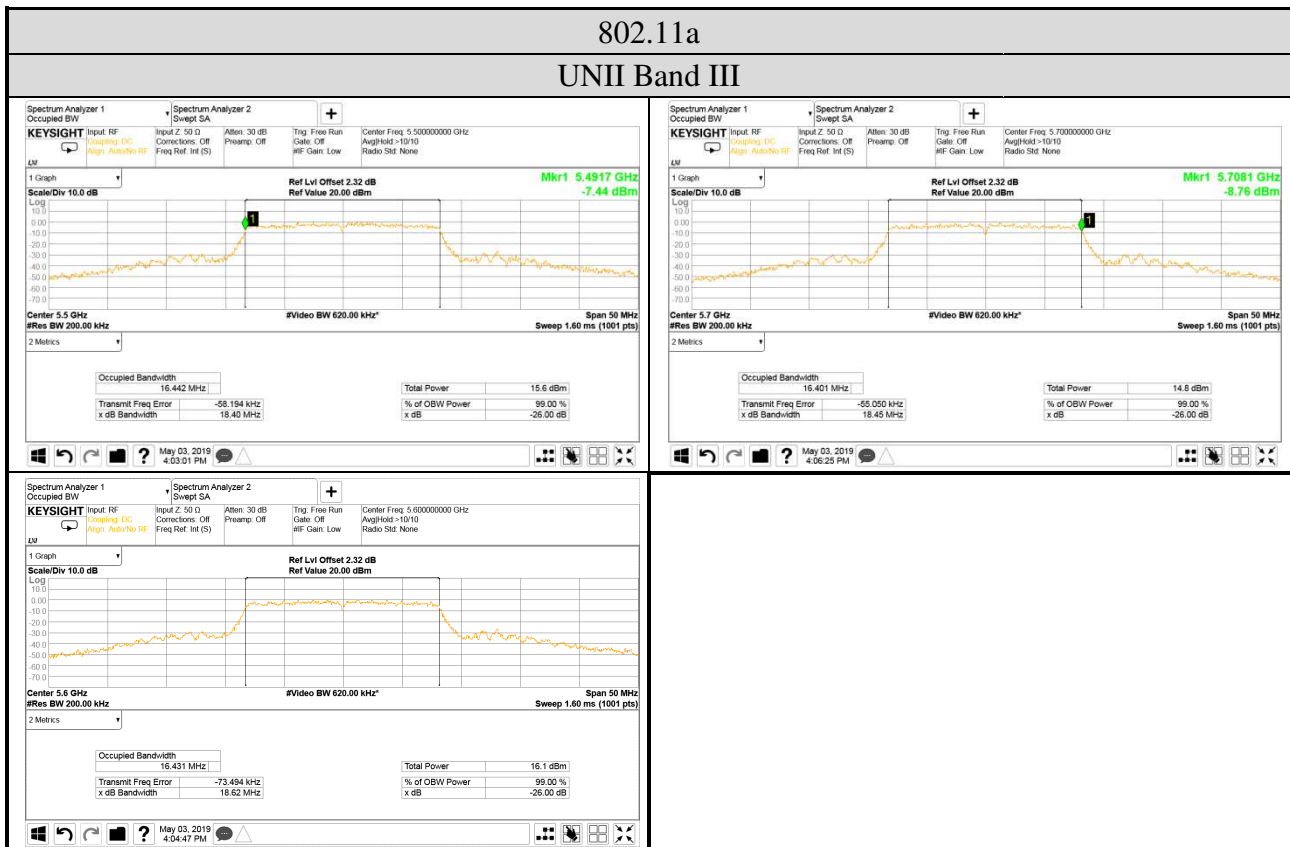
註: 當Duty cycle<98%, 最大輸出功率必需要加上duty cycle factor  $10\log(1/x)$ 。

(x=duty cycle, B=26dB發射頻寬)

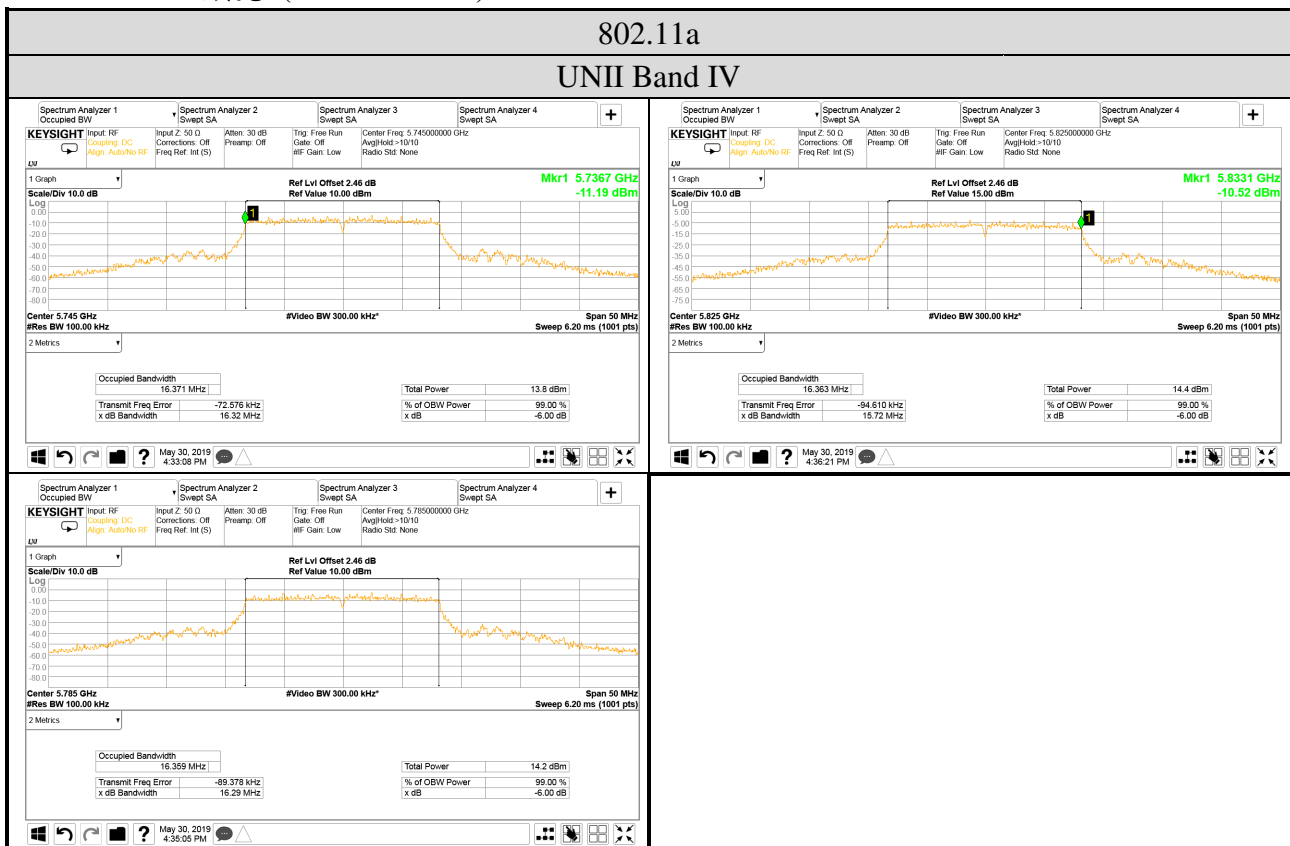
### 3.2. 最大輸出功率及 26dB/6dB 頻寬之量測圖

#### ● 26dB 頻寬 (UNII Band I~III)





● 6dB 頻寬 (UNII Band IV)



#### 4. 峰值功率頻譜密度之量測

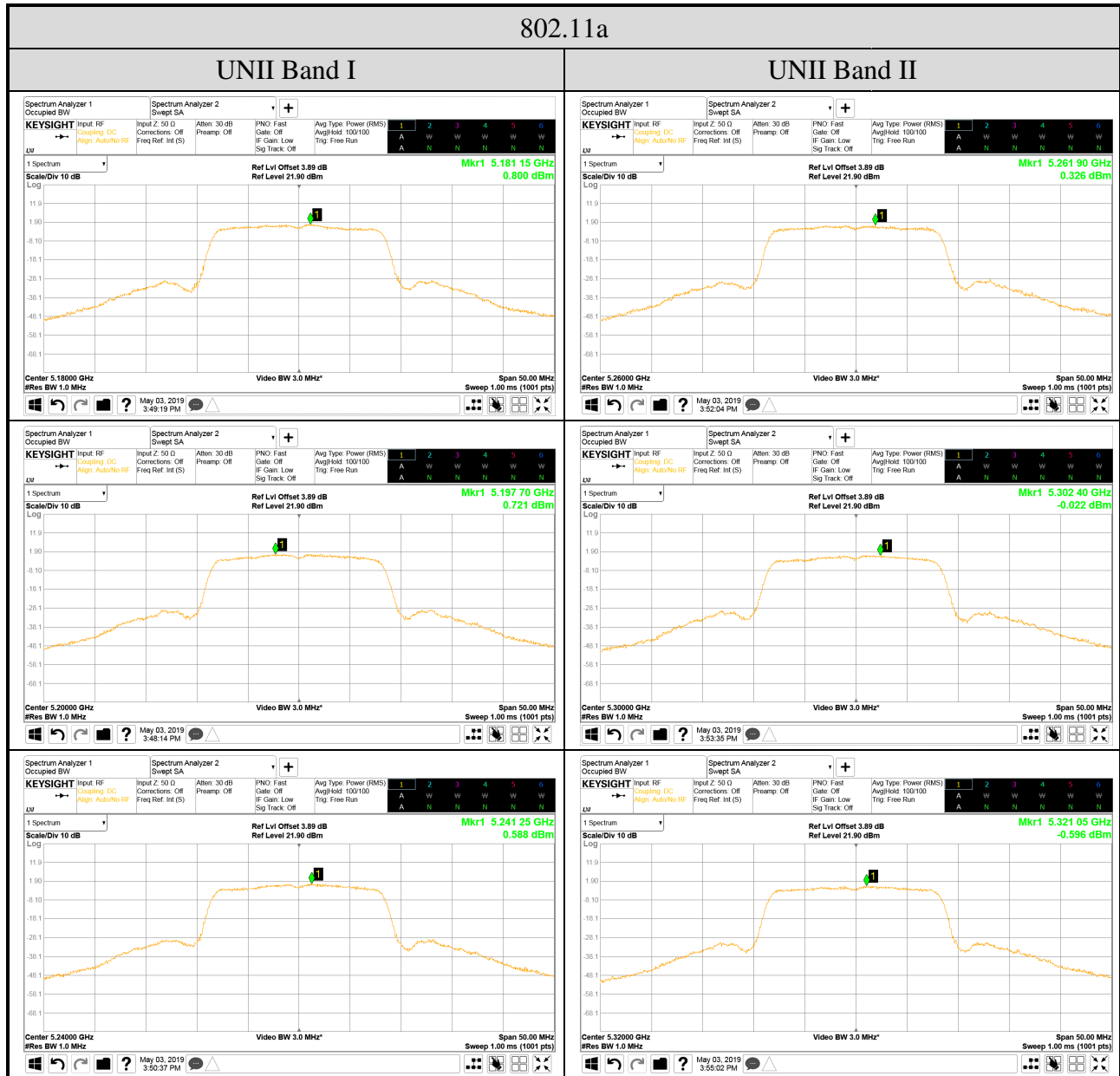
|                                                                   |            |        |                     |
|-------------------------------------------------------------------|------------|--------|---------------------|
| 測試日期                                                              | 2019/05/30 | 環境溫/濕度 | 23°C/55%            |
| 電纜損失                                                              | 1.99dB     | 測試電壓   | DC 5V (USB 透過筆記型電腦) |
| Duty Cycle Factor                                                 | 1.90       |        |                     |
| Simultaneous Factor $10 \log(n)$<br>(Note: "n" is antenna number) | 0          |        |                     |

##### 4.1. 峰值功率頻譜密度

| 模式      | UNII Band           | 測試頻率(MHz) | 峰值功率頻譜密度   |              | 限制值           |
|---------|---------------------|-----------|------------|--------------|---------------|
|         |                     |           | (dBm/1MHz) | (dBm/500kHz) |               |
| 802.11a | I                   | 5180      | 0.800      | --           | 11 dBm/MHz    |
|         |                     | 5200      | 0.721      | --           |               |
|         |                     | 5240      | 0.588      | --           |               |
|         | II                  | 5260      | 0.326      | --           |               |
|         |                     | 5300      | -0.022     | --           |               |
|         |                     | 5320      | -0.596     | --           |               |
|         | III                 | 5500      | 1.739      | --           |               |
|         |                     | 5600      | 0.683      | --           |               |
|         |                     | 5700      | -0.783     | --           |               |
|         | IV <sup>Note2</sup> | 5745      | --         | -3.032       | 30dBm/500 kHz |
|         |                     | 5785      | --         | -2.071       |               |
|         |                     | 5825      | --         | -2.035       |               |

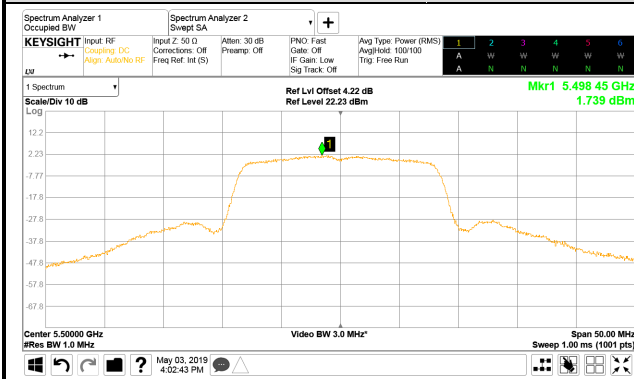
Note: BWCF 6.99dB (100kHz converted to 500kHz) has been included in the test result.

## 4.2. 峰值功率頻譜密度之量測圖

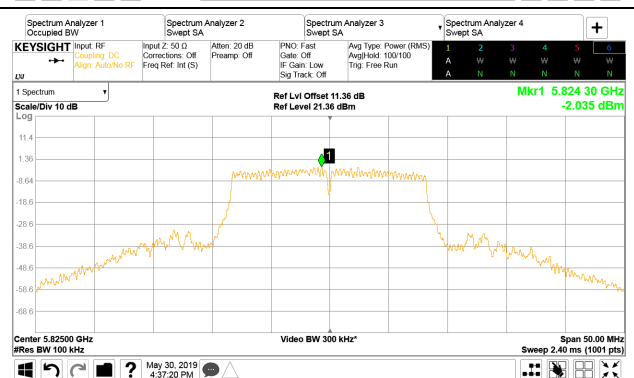
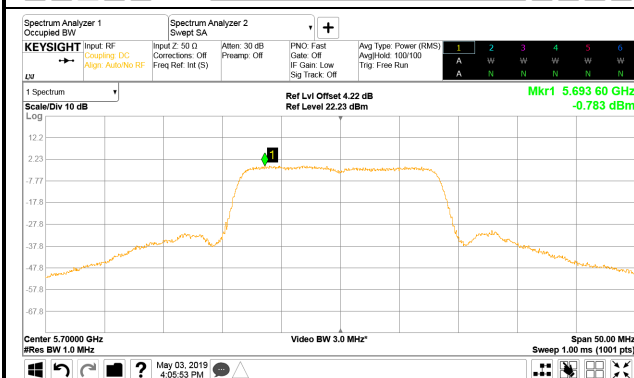
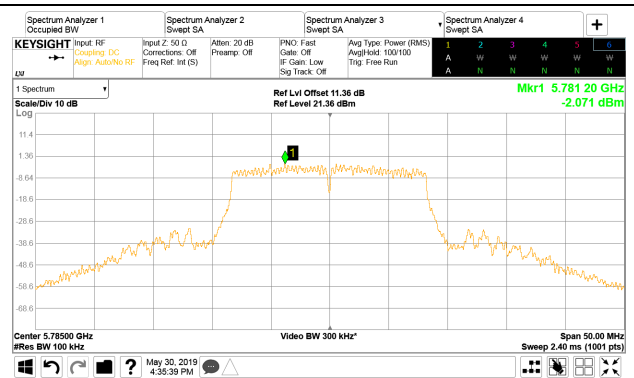
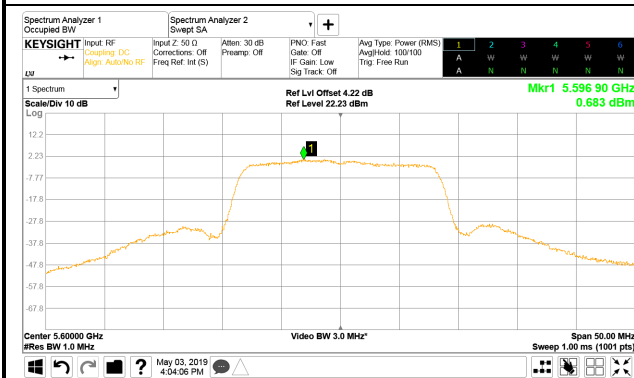
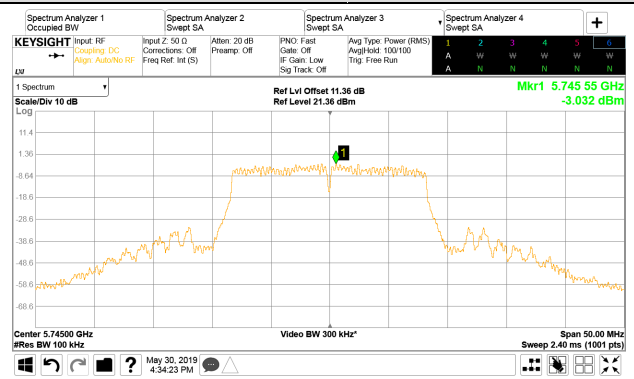


802.11a

### UNII Band III

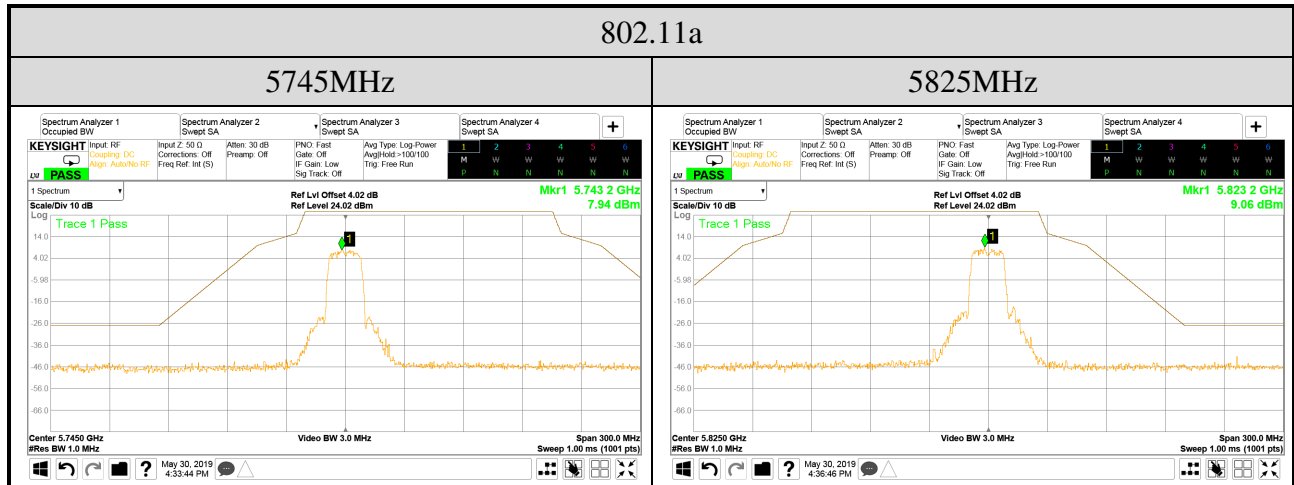


### UNII Band IV



## 5. 頻帶邊緣之 RF 傳導發射之量測

|                                                            |            |        |                     |
|------------------------------------------------------------|------------|--------|---------------------|
| 測試日期                                                       | 2019/05/30 | 環境溫/濕度 | 23°C/55%            |
| 電纜損失                                                       | 1.99dB     | 測試電壓   | DC 5V (USB 透過筆記型電腦) |
| Simultaneous Factor10 log(n) (Note: “n” is antenna number) |            |        | 0                   |



## 6. 電波暴露量之量測

|      |                     |        |          |
|------|---------------------|--------|----------|
| 測試日期 | 2019/05/30          | 環境溫/濕度 | 23°C/55% |
| 測試電壓 | DC 5V (USB 透過筆記型電腦) |        |          |

|                                                                       |       |     |               |                    |           |
|-----------------------------------------------------------------------|-------|-----|---------------|--------------------|-----------|
| 距離人體(r):                                                              | 20    | cm  |               |                    |           |
| 最大發射功率(P):                                                            | 11.78 | dBm | =             | 15.066             | mW        |
| 最大天線增益(G):                                                            | 1.56  | dBd | =             | 1.432              | Numerical |
| MPE (S) = (P*G) / (4*π*r <sup>2</sup> ) =                             |       |     | <b>0.0043</b> | mW/cm <sup>2</sup> |           |
| 註：1. 最大發射功率系指5GHz各模式/頻道中最大之發射功率。                                      |       |     |               |                    |           |
| 2. 電磁波曝露量MPE標準值1mW/cm <sup>2</sup> ，送測產品實測值為：0.0043mW/cm <sup>2</sup> |       |     |               |                    |           |