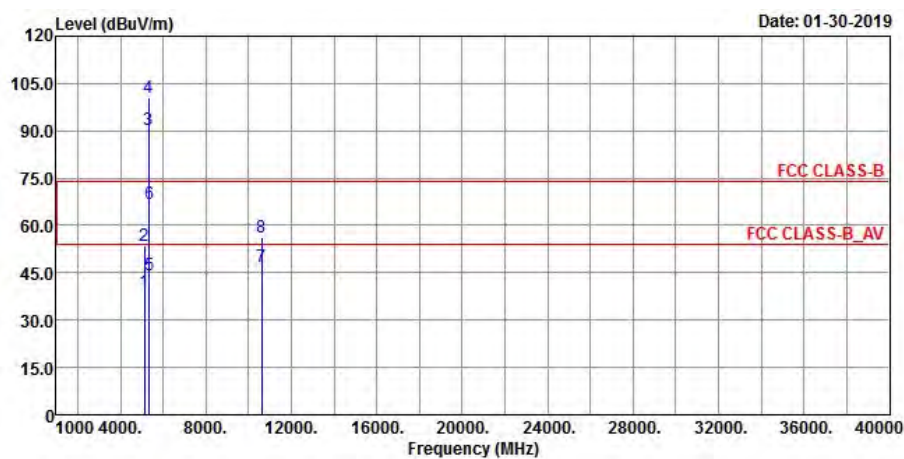
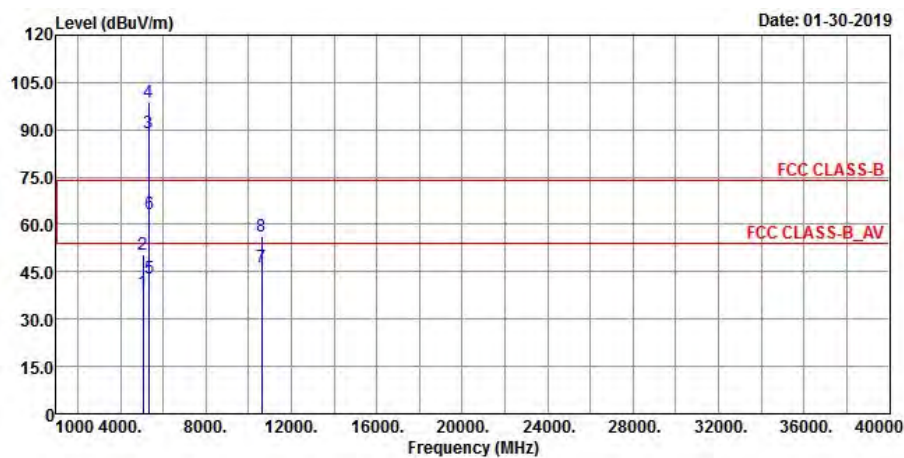


| EUT Test Condition       |                    | Measurement Detail |                           |
|--------------------------|--------------------|--------------------|---------------------------|
| Channel                  | Channel 62         | Frequency Range    | 1 GHz ~ 40 GHz            |
| Input Power              | 120 Vac, 60 Hz     | Detector Function  | Peak (PK)<br>Average (AV) |
| Environmental Conditions | 25 deg. C, 65 % RH | Tested By          | Jisyoung Wang             |

## Horizontal



## Vertical



### Antenna Polarity & Test Distance: Horizontal at 3 m

| Frequency (MHz) | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark  |
|-----------------|-------------------------|-------------------|----------------|-------------|-----------------------|-----------------|--------------------|---------------------|----------------------|---------|
| 5133.56         | 38.79                   | 38.22             | 54             | -15.21      | 31.55                 | 6.32            | 37.3               | 165                 | 346                  | Average |
| 5133.56         | 53.38                   | 52.81             | 74             | -20.62      | 31.55                 | 6.32            | 37.3               | 165                 | 346                  | Peak    |
| 5310            | 90.54                   | 89.59             |                |             | 31.68                 | 6.46            | 37.19              | 165                 | 346                  | Average |
| 5310            | 100.58                  | 99.63             |                |             | 31.68                 | 6.46            | 37.19              | 165                 | 346                  | Peak    |
| 5358.03         | 44.13                   | 43.14             | 54             | -9.87       | 31.7                  | 6.47            | 37.18              | 165                 | 346                  | Average |
| 5358.03         | 66.67                   | 65.68             | 74             | -7.33       | 31.7                  | 6.47            | 37.18              | 165                 | 346                  | Peak    |
| 10620           | 46.85                   | 49.66             | 54             | -7.15       | 39.89                 | 10.39           | 53.09              | 158                 | 220                  | Average |
| 10620           | 56.03                   | 58.84             | 74             | -17.97      | 39.89                 | 10.39           | 53.09              | 158                 | 220                  | Peak    |

### Antenna Polarity & Test Distance: Vertical at 3 m

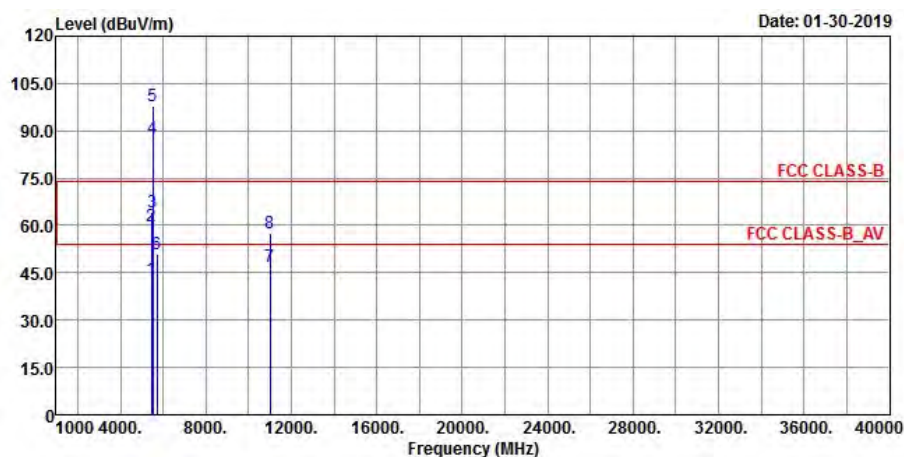
| Frequency (MHz) | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark  |
|-----------------|-------------------------|-------------------|----------------|-------------|-----------------------|-----------------|--------------------|---------------------|----------------------|---------|
| 5075.78         | 38.68                   | 38.16             | 54             | -15.32      | 31.52                 | 6.27            | 37.27              | 153                 | 0                    | Average |
| 5075.78         | 50.65                   | 50.13             | 74             | -23.35      | 31.52                 | 6.27            | 37.27              | 153                 | 0                    | Peak    |
| 5310            | 88.84                   | 87.89             |                |             | 31.68                 | 6.46            | 37.19              | 153                 | 0                    | Average |
| 5310            | 98.85                   | 97.9              |                |             | 31.68                 | 6.46            | 37.19              | 153                 | 0                    | Peak    |
| 5361.77         | 42.81                   | 41.8              | 54             | -11.19      | 31.72                 | 6.47            | 37.18              | 153                 | 0                    | Average |
| 5361.77         | 63.42                   | 62.41             | 74             | -10.58      | 31.72                 | 6.47            | 37.18              | 153                 | 0                    | Peak    |
| 10620           | 46.41                   | 49.22             | 54             | -7.59       | 39.89                 | 10.39           | 53.09              | 172                 | 161                  | Average |
| 10620           | 56.27                   | 59.08             | 74             | -17.73      | 39.89                 | 10.39           | 53.09              | 172                 | 161                  | Peak    |

#### Remarks:

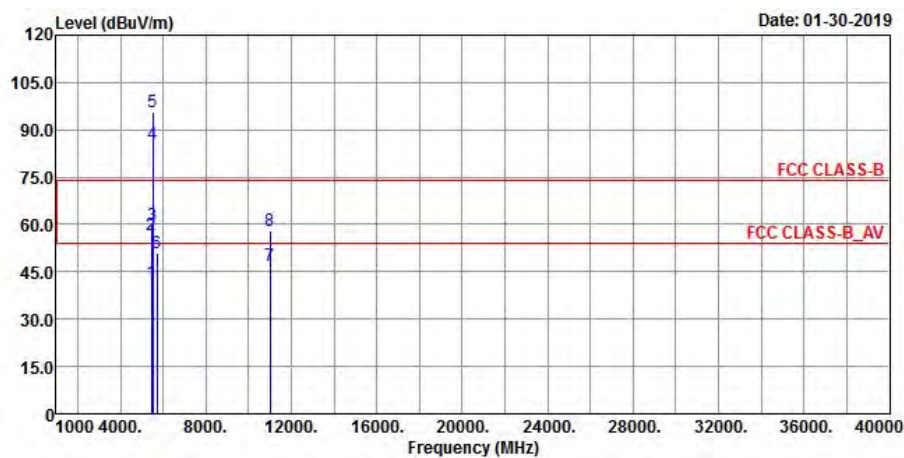
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
2. 5310 MHz: Fundamental Frequency
3. \*: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

| EUT Test Condition       |                    | Measurement Detail |                           |
|--------------------------|--------------------|--------------------|---------------------------|
| Channel                  | Channel 102        | Frequency Range    | 1 GHz ~ 40 GHz            |
| Input Power              | 120 Vac, 60 Hz     | Detector Function  | Peak (PK)<br>Average (AV) |
| Environmental Conditions | 25 deg. C, 65 % RH | Tested By          | Jisyoung Wang             |

## Horizontal



## Vertical



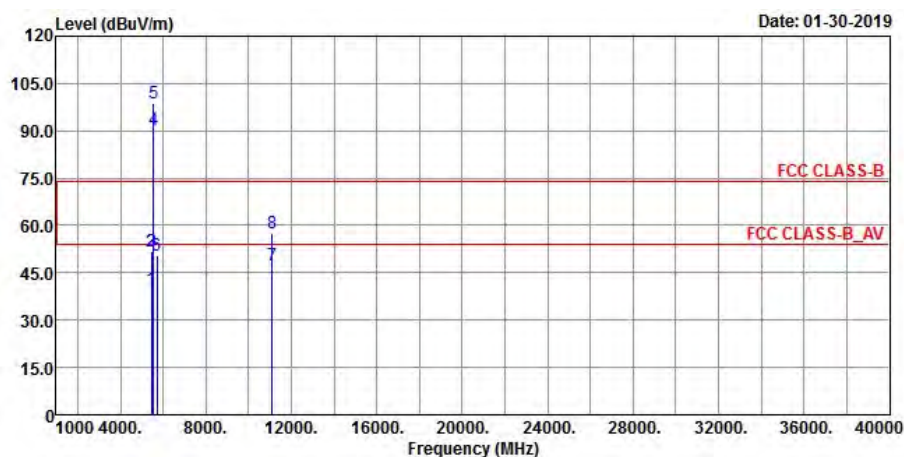
| Antenna Polarity & Test Distance: Horizontal at 3 m |                         |                   |                |             |                       |                 |                    |                     |                      |         |
|-----------------------------------------------------|-------------------------|-------------------|----------------|-------------|-----------------------|-----------------|--------------------|---------------------|----------------------|---------|
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark  |
| 5457.84                                             | 42.77                   | 41.57             | 54             | -11.23      | 31.77                 | 6.51            | 37.08              | 144                 | 342                  | Average |
| 5457.84                                             | 59.87                   | 58.67             | 74             | -14.13      | 31.77                 | 6.51            | 37.08              | 144                 | 342                  | Peak    |
| *5470                                               | 64.28                   | 63.05             | 68.2           | -3.92       | 31.79                 | 6.52            | 37.08              | 144                 | 342                  | Peak    |
| 5510                                                | 87.83                   | 86.53             |                |             | 31.81                 | 6.55            | 37.06              | 144                 | 342                  | Average |
| 5510                                                | 97.84                   | 96.54             |                |             | 31.81                 | 6.55            | 37.06              | 144                 | 342                  | Peak    |
| *5725                                               | 50.96                   | 49.45             | 68.2           | -17.24      | 32.18                 | 6.76            | 37.43              | 144                 | 342                  | Peak    |
| 11020                                               | 47.1                    | 48.93             | 54             | -6.9        | 40.71                 | 10.41           | 52.95              | 162                 | 111                  | Average |
| 11020                                               | 57.62                   | 59.45             | 74             | -16.38      | 40.71                 | 10.41           | 52.95              | 162                 | 111                  | Peak    |
| Antenna Polarity & Test Distance: Vertical at 3 m   |                         |                   |                |             |                       |                 |                    |                     |                      |         |
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark  |
| 5459.92                                             | 41.62                   | 40.42             | 54             | -12.38      | 31.77                 | 6.51            | 37.08              | 158                 | 347                  | Average |
| 5459.92                                             | 56.63                   | 55.43             | 74             | -17.37      | 31.77                 | 6.51            | 37.08              | 158                 | 347                  | Peak    |
| *5470                                               | 59.6                    | 58.37             | 68.2           | -8.6        | 31.79                 | 6.52            | 37.08              | 158                 | 347                  | Peak    |
| 5510                                                | 85.46                   | 84.16             |                |             | 31.81                 | 6.55            | 37.06              | 158                 | 347                  | Average |
| 5510                                                | 95.47                   | 94.17             |                |             | 31.81                 | 6.55            | 37.06              | 158                 | 347                  | Peak    |
| *5725                                               | 51.07                   | 49.56             | 68.2           | -17.13      | 32.18                 | 6.76            | 37.43              | 158                 | 347                  | Peak    |
| 11020                                               | 46.9                    | 48.73             | 54             | -7.1        | 40.71                 | 10.41           | 52.95              | 185                 | 206                  | Average |
| 11020                                               | 57.98                   | 59.81             | 74             | -16.02      | 40.71                 | 10.41           | 52.95              | 185                 | 206                  | Peak    |

Remarks:

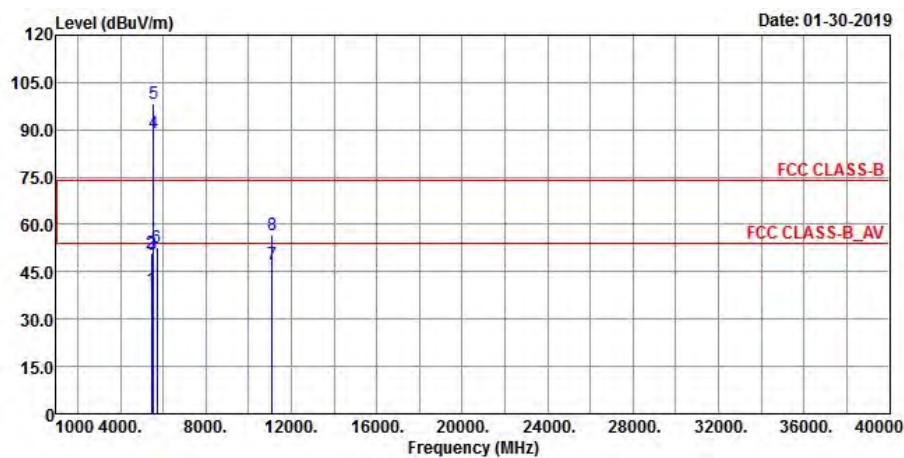
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
2. 5510 MHz: Fundamental Frequency
3. \*: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

| EUT Test Condition       |                    | Measurement Detail |                           |
|--------------------------|--------------------|--------------------|---------------------------|
| Channel                  | Channel 110        | Frequency Range    | 1 GHz ~ 40 GHz            |
| Input Power              | 120 Vac, 60 Hz     | Detector Function  | Peak (PK)<br>Average (AV) |
| Environmental Conditions | 25 deg. C, 65 % RH | Tested By          | Thomas Wei                |

### Horizontal



### Vertical



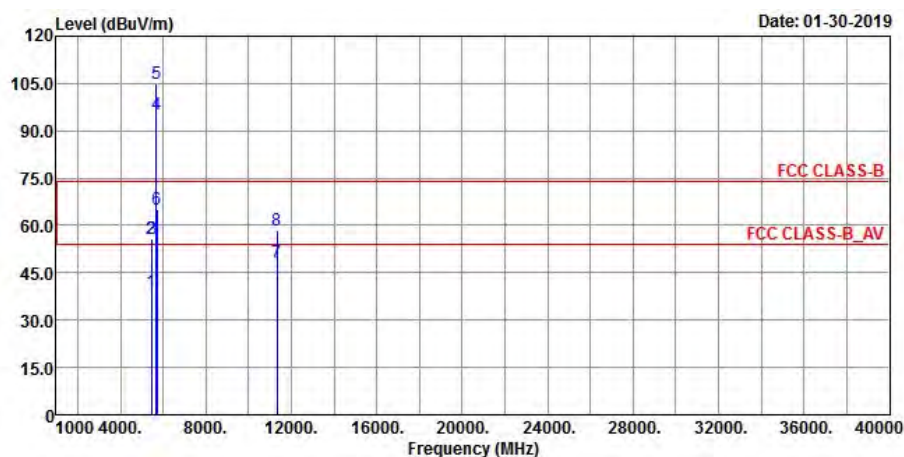
| Antenna Polarity & Test Distance: Horizontal at 3 m |                         |                   |                |             |                       |                 |                    |                     |                      |         |
|-----------------------------------------------------|-------------------------|-------------------|----------------|-------------|-----------------------|-----------------|--------------------|---------------------|----------------------|---------|
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark  |
| 5457.84                                             | 39.92                   | 38.72             | 54             | -14.08      | 31.77                 | 6.51            | 37.08              | 142                 | 342                  | Average |
| 5457.84                                             | 51.74                   | 50.54             | 74             | -22.26      | 31.77                 | 6.51            | 37.08              | 142                 | 342                  | Peak    |
| *5470                                               | 51.94                   | 50.71             | 68.2           | -16.26      | 31.79                 | 6.52            | 37.08              | 142                 | 342                  | Peak    |
| 5550                                                | 90.13                   | 88.72             |                |             | 31.89                 | 6.61            | 37.09              | 142                 | 342                  | Average |
| 5550                                                | 98.94                   | 97.53             |                |             | 31.89                 | 6.61            | 37.09              | 142                 | 342                  | Peak    |
| *5725                                               | 50.46                   | 48.95             | 68.2           | -17.74      | 32.18                 | 6.76            | 37.43              | 142                 | 342                  | Peak    |
| 11100                                               | 47.42                   | 49.03             | 54             | -6.58       | 40.63                 | 10.47           | 52.71              | 177                 | 213                  | Average |
| 11100                                               | 57.64                   | 59.25             | 74             | -16.36      | 40.63                 | 10.47           | 52.71              | 177                 | 213                  | Peak    |
| Antenna Polarity & Test Distance: Vertical at 3 m   |                         |                   |                |             |                       |                 |                    |                     |                      |         |
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark  |
| 5447.44                                             | 39.59                   | 38.45             | 54             | -14.41      | 31.77                 | 6.5             | 37.13              | 153                 | 8                    | Average |
| 5447.44                                             | 50.94                   | 49.8              | 74             | -23.06      | 31.77                 | 6.5             | 37.13              | 153                 | 8                    | Peak    |
| *5470                                               | 50.65                   | 49.42             | 68.2           | -17.55      | 31.79                 | 6.52            | 37.08              | 153                 | 8                    | Peak    |
| 5550                                                | 88.82                   | 87.41             |                |             | 31.89                 | 6.61            | 37.09              | 153                 | 8                    | Average |
| 5550                                                | 98.31                   | 96.9              |                |             | 31.89                 | 6.61            | 37.09              | 153                 | 8                    | Peak    |
| *5725                                               | 52.57                   | 51.06             | 68.2           | -15.63      | 32.18                 | 6.76            | 37.43              | 153                 | 8                    | Peak    |
| 11100                                               | 47.33                   | 48.94             | 54             | -6.67       | 40.63                 | 10.47           | 52.71              | 215                 | 306                  | Average |
| 11100                                               | 56.72                   | 58.33             | 74             | -17.28      | 40.63                 | 10.47           | 52.71              | 215                 | 306                  | Peak    |

Remarks:

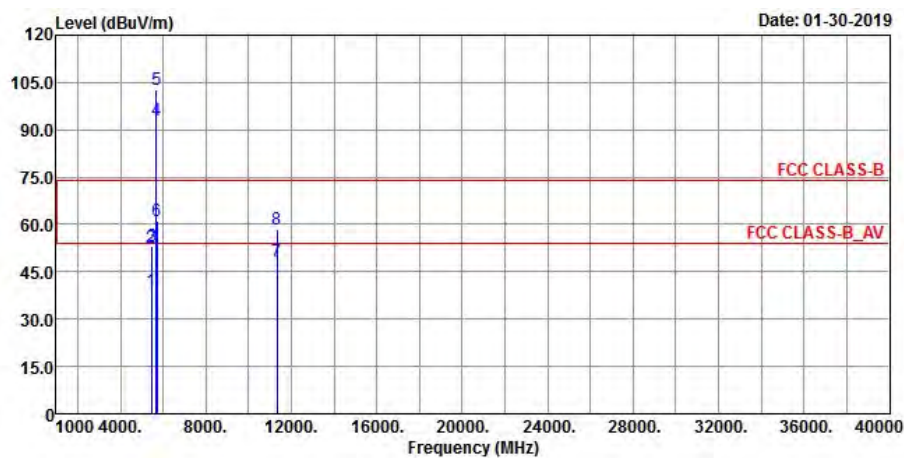
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
2. 5550 MHz: Fundamental Frequency
3. \*: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

| EUT Test Condition       |                    | Measurement Detail |                           |
|--------------------------|--------------------|--------------------|---------------------------|
| Channel                  | Channel 134        | Frequency Range    | 1 GHz ~ 40 GHz            |
| Input Power              | 120 Vac, 60 Hz     | Detector Function  | Peak (PK)<br>Average (AV) |
| Environmental Conditions | 25 deg. C, 65 % RH | Tested By          | Jisyoung Wang             |

### Horizontal



### Vertical





| Antenna Polarity & Test Distance: Horizontal at 3 m |                         |                   |                |             |                       |                 |                    |                     |                      |         |
|-----------------------------------------------------|-------------------------|-------------------|----------------|-------------|-----------------------|-----------------|--------------------|---------------------|----------------------|---------|
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark  |
| 5450.8                                              | 39.1                    | 37.9              | 54             | -14.9       | 31.77                 | 6.51            | 37.08              | 129                 | 342                  | Average |
| 5450.8                                              | 55.99                   | 54.79             | 74             | -18.01      | 31.77                 | 6.51            | 37.08              | 129                 | 342                  | Peak    |
| *5470                                               | 55.96                   | 54.73             | 68.2           | -12.24      | 31.79                 | 6.52            | 37.08              | 129                 | 342                  | Peak    |
| 5670                                                | 95.11                   | 93.64             |                |             | 32.09                 | 6.72            | 37.34              | 129                 | 342                  | Average |
| 5670                                                | 105.11                  | 103.64            |                |             | 32.09                 | 6.72            | 37.34              | 129                 | 342                  | Peak    |
| *5725                                               | 65.2                    | 63.69             | 68.2           | -3          | 32.18                 | 6.76            | 37.43              | 129                 | 342                  | Peak    |
| 11340                                               | 48.46                   | 50.26             | 54             | -5.54       | 40.4                  | 10.52           | 52.72              | 123                 | 72                   | Average |
| 11340                                               | 58.46                   | 60.26             | 74             | -15.54      | 40.4                  | 10.52           | 52.72              | 123                 | 72                   | Peak    |
| Antenna Polarity & Test Distance: Vertical at 3 m   |                         |                   |                |             |                       |                 |                    |                     |                      |         |
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark  |
| 5445.36                                             | 38.87                   | 37.74             | 54             | -15.13      | 31.76                 | 6.5             | 37.13              | 151                 | 346                  | Average |
| 5445.36                                             | 52.66                   | 51.53             | 74             | -21.34      | 31.76                 | 6.5             | 37.13              | 151                 | 346                  | Peak    |
| *5470                                               | 53.19                   | 51.96             | 68.2           | -15.01      | 31.79                 | 6.52            | 37.08              | 151                 | 346                  | Peak    |
| 5670                                                | 92.91                   | 91.44             |                |             | 32.09                 | 6.72            | 37.34              | 151                 | 346                  | Average |
| 5670                                                | 102.92                  | 101.45            |                |             | 32.09                 | 6.72            | 37.34              | 151                 | 346                  | Peak    |
| *5725                                               | 61.05                   | 59.54             | 68.2           | -7.15       | 32.18                 | 6.76            | 37.43              | 151                 | 346                  | Peak    |
| 11340                                               | 48.08                   | 49.88             | 54             | -5.92       | 40.4                  | 10.52           | 52.72              | 108                 | 337                  | Average |
| 11340                                               | 58.27                   | 60.07             | 74             | -15.73      | 40.4                  | 10.52           | 52.72              | 108                 | 337                  | Peak    |

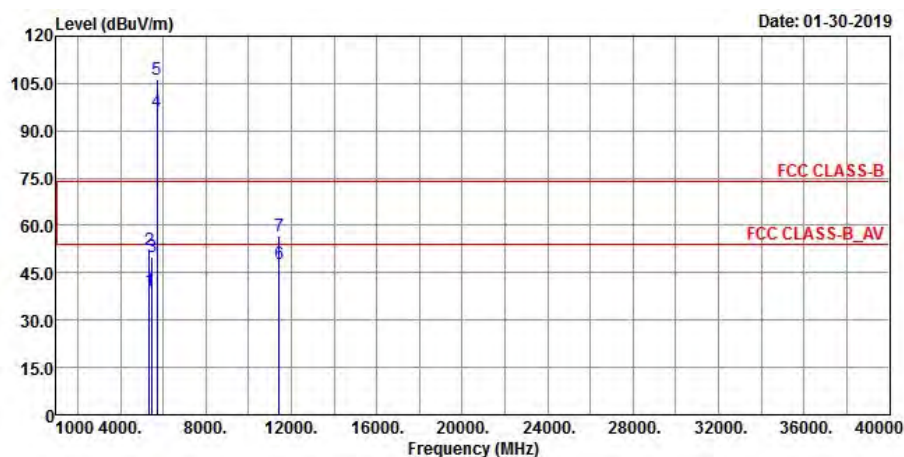
Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
2. 5670 MHz: Fundamental Frequency
3. \*: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

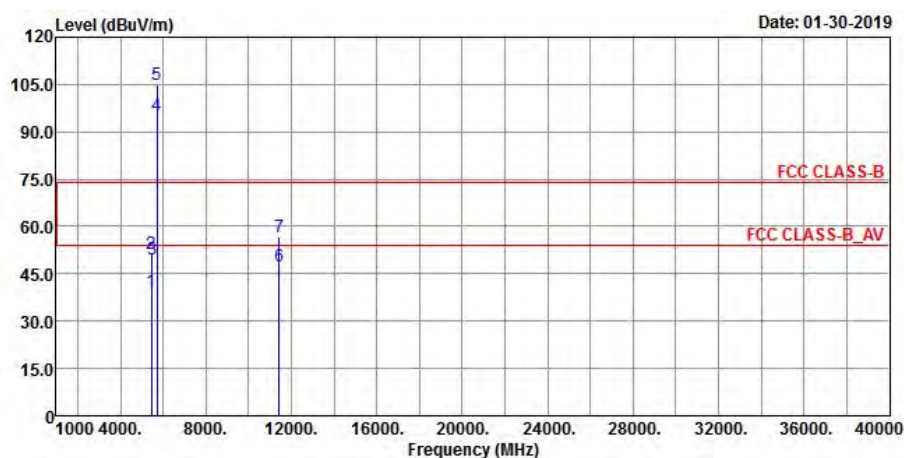


| EUT Test Condition       |                    | Measurement Detail |                           |
|--------------------------|--------------------|--------------------|---------------------------|
| Channel                  | Channel 142        | Frequency Range    | 1 GHz ~ 40 GHz            |
| Input Power              | 120 Vac, 60 Hz     | Detector Function  | Peak (PK)<br>Average (AV) |
| Environmental Conditions | 25 deg. C, 65 % RH | Tested By          | Thomas Wei                |

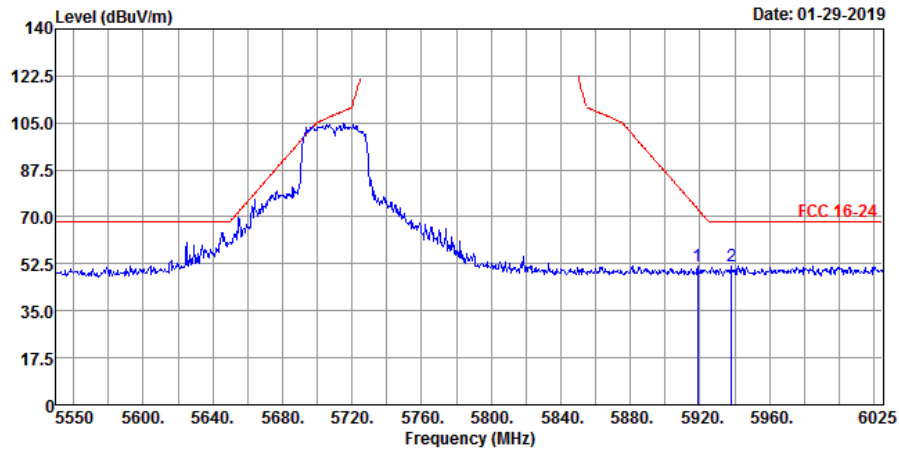
### <Spurious Emission> Horizontal



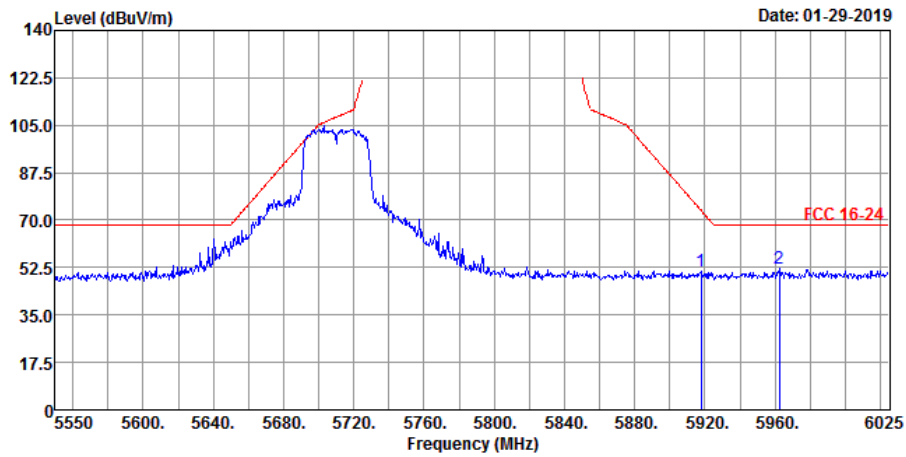
### Vertical



# <Out of Band Emission (OOBE)> Horizontal



## Vertical



### <Spurious Emission>

| Antenna Polarity & Test Distance: Horizontal at 3 m |                         |                   |                |             |                       |                 |                    |                     |                      |         |
|-----------------------------------------------------|-------------------------|-------------------|----------------|-------------|-----------------------|-----------------|--------------------|---------------------|----------------------|---------|
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark  |
| 5368.72                                             | 39.38                   | 38.37             | 54             | -14.62      | 31.72                 | 6.47            | 37.18              | 155                 | 342                  | Average |
| 5368.72                                             | 52.09                   | 51.08             | 74             | -21.91      | 31.72                 | 6.47            | 37.18              | 155                 | 342                  | Peak    |
| *5470                                               | 50.04                   | 48.81             | 68.2           | -18.16      | 31.79                 | 6.52            | 37.08              | 155                 | 342                  | Peak    |
| 5710                                                | 96.19                   | 94.73             |                |             | 32.15                 | 6.74            | 37.43              | 155                 | 342                  | Average |
| 5710                                                | 106.14                  | 104.68            |                |             | 32.15                 | 6.74            | 37.43              | 155                 | 342                  | Peak    |
| 11420                                               | 47.92                   | 49.83             | 54             | -6.08       | 40.31                 | 10.51           | 52.73              | 132                 | 63                   | Average |
| 11420                                               | 56.85                   | 58.76             | 74             | -17.15      | 40.31                 | 10.51           | 52.73              | 132                 | 63                   | Peak    |
| Antenna Polarity & Test Distance: Vertical at 3 m   |                         |                   |                |             |                       |                 |                    |                     |                      |         |
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark  |
| 5442.64                                             | 39.26                   | 38.13             | 54             | -14.74      | 31.76                 | 6.5             | 37.13              | 126                 | 17                   | Average |
| 5442.64                                             | 51.48                   | 50.35             | 74             | -22.52      | 31.76                 | 6.5             | 37.13              | 126                 | 17                   | Peak    |
| *5470                                               | 49.68                   | 48.45             | 68.2           | -18.52      | 31.79                 | 6.52            | 37.08              | 126                 | 17                   | Peak    |
| 5710                                                | 95.39                   | 93.93             |                |             | 32.15                 | 6.74            | 37.43              | 126                 | 17                   | Average |
| 5710                                                | 104.93                  | 103.47            |                |             | 32.15                 | 6.74            | 37.43              | 126                 | 17                   | Peak    |
| 11420                                               | 47.35                   | 49.26             | 54             | -6.65       | 40.31                 | 10.51           | 52.73              | 117                 | 102                  | Average |
| 11420                                               | 56.63                   | 58.54             | 74             | -17.37      | 40.31                 | 10.51           | 52.73              | 117                 | 102                  | Peak    |

### <Out of Band Emission (OOBE)>

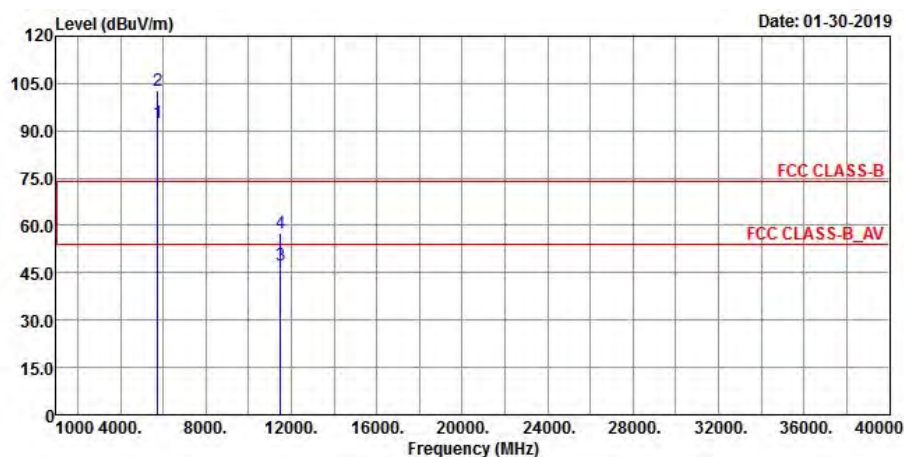
| Antenna Polarity & Test Distance: Horizontal at 3 m |                         |                   |                |             |                       |                 |                    |                     |                      |        |
|-----------------------------------------------------|-------------------------|-------------------|----------------|-------------|-----------------------|-----------------|--------------------|---------------------|----------------------|--------|
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark |
| 5918.6                                              | 51.61                   | 49.76             | 72.92          | -21.31      | 32.49                 | 6.86            | 37.5               | 155                 | 342                  | Peak   |
| 5938.075                                            | 51.71                   | 49.82             | 68.2           | -16.49      | 32.52                 | 6.87            | 37.5               | 155                 | 342                  | Peak   |
| Antenna Polarity & Test Distance: Vertical at 3 m   |                         |                   |                |             |                       |                 |                    |                     |                      |        |
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark |
| 5917.65                                             | 51.04                   | 49.19             | 73.62          | -22.58      | 32.49                 | 6.86            | 37.5               | 126                 | 17                   | Peak   |
| 5962.3                                              | 51.92                   | 49.99             | 68.2           | -16.28      | 32.57                 | 6.87            | 37.51              | 126                 | 17                   | Peak   |

Remarks:

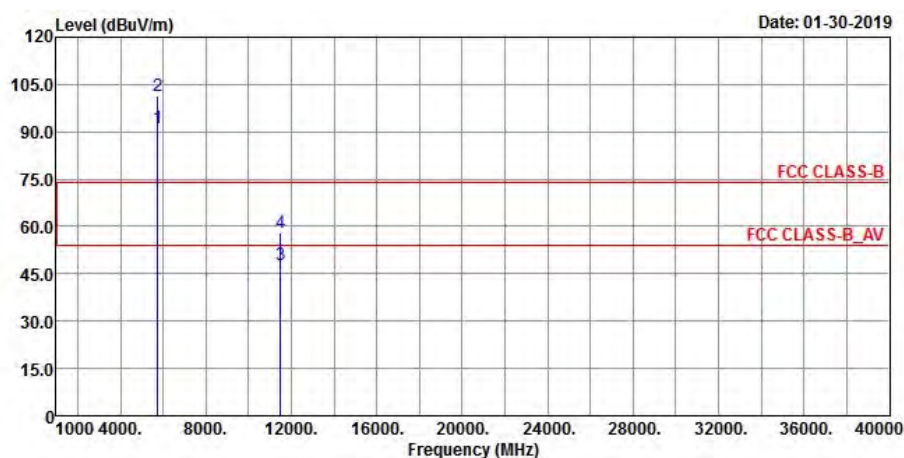
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
2. 5710 MHz: Fundamental Frequency
3. \*: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

| EUT Test Condition       |                    | Measurement Detail |                           |
|--------------------------|--------------------|--------------------|---------------------------|
| Channel                  | Channel 151        | Frequency Range    | 1 GHz ~ 40 GHz            |
| Input Power              | 120 Vac, 60 Hz     | Detector Function  | Peak (PK)<br>Average (AV) |
| Environmental Conditions | 25 deg. C, 65 % RH | Tested By          | Jisyoung Wang             |

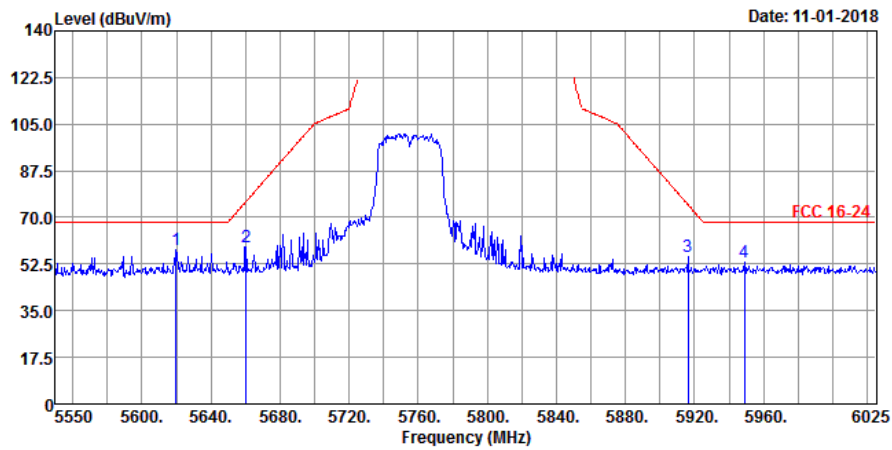
### <Spurious Emission> Horizontal



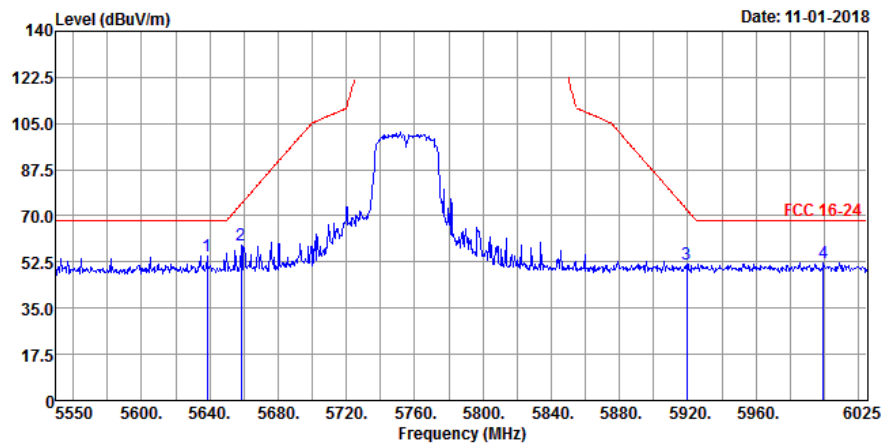
### Vertical



# <Out of Band Emission (OOBE)> Horizontal



## Vertical



### <Spurious Emission>

| Antenna Polarity & Test Distance: Horizontal at 3 m |                         |                   |                |             |                       |                 |                    |                     |                      |         |
|-----------------------------------------------------|-------------------------|-------------------|----------------|-------------|-----------------------|-----------------|--------------------|---------------------|----------------------|---------|
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark  |
| 5755                                                | 92.42                   | 90.87             |                |             | 32.23                 | 6.79            | 37.47              | 152                 | 343                  | Average |
| 5755                                                | 102.51                  | 100.96            |                |             | 32.23                 | 6.79            | 37.47              | 152                 | 343                  | Peak    |
| 11510                                               | 47.48                   | 49.37             | 54             | -6.52       | 40.23                 | 10.69           | 52.81              | 163                 | 258                  | Average |
| 11510                                               | 57.51                   | 59.4              | 74             | -16.49      | 40.23                 | 10.69           | 52.81              | 163                 | 258                  | Peak    |
| Antenna Polarity & Test Distance: Vertical at 3 m   |                         |                   |                |             |                       |                 |                    |                     |                      |         |
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark  |
| 5755                                                | 91.23                   | 89.68             |                |             | 32.23                 | 6.79            | 37.47              | 135                 | 10                   | Average |
| 5755                                                | 101.24                  | 99.69             |                |             | 32.23                 | 6.79            | 37.47              | 135                 | 10                   | Peak    |
| 11510                                               | 47.68                   | 49.57             | 54             | -6.32       | 40.23                 | 10.69           | 52.81              | 130                 | 66                   | Average |
| 11510                                               | 57.91                   | 59.8              | 74             | -16.09      | 40.23                 | 10.69           | 52.81              | 130                 | 66                   | Peak    |

### <Out of Band Emission (OOBE)>

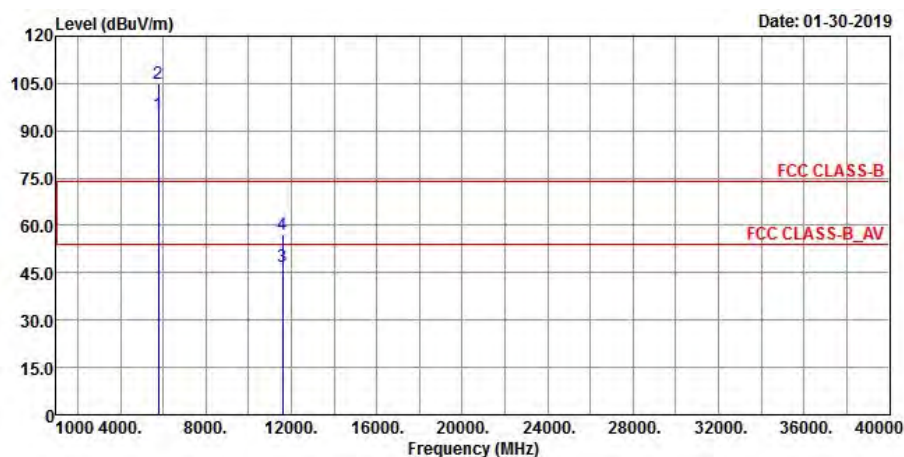
| Antenna Polarity & Test Distance: Horizontal at 3 m |                         |                   |                |             |                       |                 |                    |                     |                      |        |
|-----------------------------------------------------|-------------------------|-------------------|----------------|-------------|-----------------------|-----------------|--------------------|---------------------|----------------------|--------|
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark |
| 5619.825                                            | 57.74                   | 56.26             | 68.2           | -10.46      | 32.01                 | 6.69            | 37.22              | 152                 | 343                  | Peak   |
| 5660.2                                              | 59.12                   | 57.69             | 75.77          | -16.65      | 32.06                 | 6.71            | 37.34              | 152                 | 343                  | Peak   |
| 5916.225                                            | 55.17                   | 53.32             | 74.67          | -19.5       | 32.49                 | 6.86            | 37.5               | 152                 | 343                  | Peak   |
| 5949                                                | 53.04                   | 51.12             | 68.2           | -15.16      | 32.55                 | 6.87            | 37.5               | 152                 | 343                  | Peak   |
| Antenna Polarity & Test Distance: Vertical at 3 m   |                         |                   |                |             |                       |                 |                    |                     |                      |        |
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark |
| 5638.35                                             | 54.88                   | 53.42             | 68.2           | -13.32      | 32.04                 | 6.7             | 37.28              | 135                 | 10                   | Peak   |
| 5658.3                                              | 58.98                   | 57.55             | 74.36          | -15.38      | 32.06                 | 6.71            | 37.34              | 135                 | 10                   | Peak   |
| 5919.55                                             | 51.57                   | 49.72             | 72.22          | -20.65      | 32.49                 | 6.86            | 37.5               | 135                 | 10                   | Peak   |
| 5999.35                                             | 52.39                   | 50.38             | 68.2           | -15.81      | 32.63                 | 6.89            | 37.51              | 135                 | 10                   | Peak   |

#### Remarks:

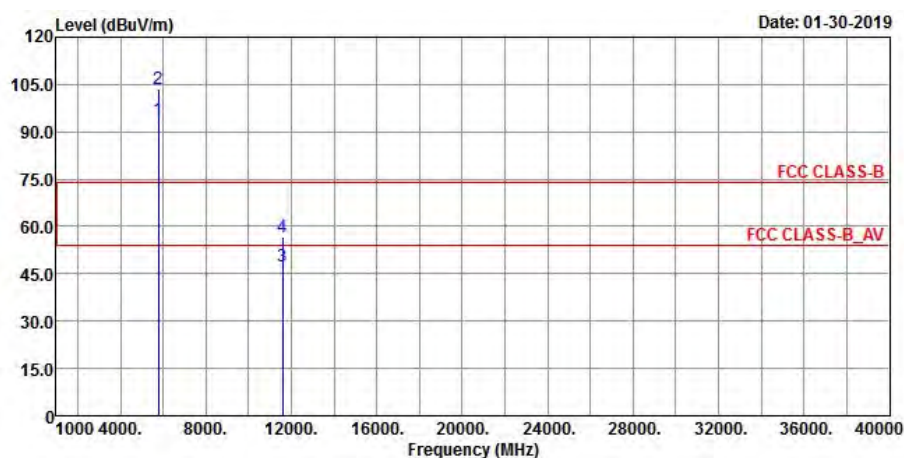
- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5755 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

| EUT Test Condition       |                    | Measurement Detail |                           |
|--------------------------|--------------------|--------------------|---------------------------|
| Channel                  | Channel 159        | Frequency Range    | 1 GHz ~ 40 GHz            |
| Input Power              | 120 Vac, 60 Hz     | Detector Function  | Peak (PK)<br>Average (AV) |
| Environmental Conditions | 25 deg. C, 65 % RH | Tested By          | Jisyoung Wang             |

### <Spurious Emission> Horizontal

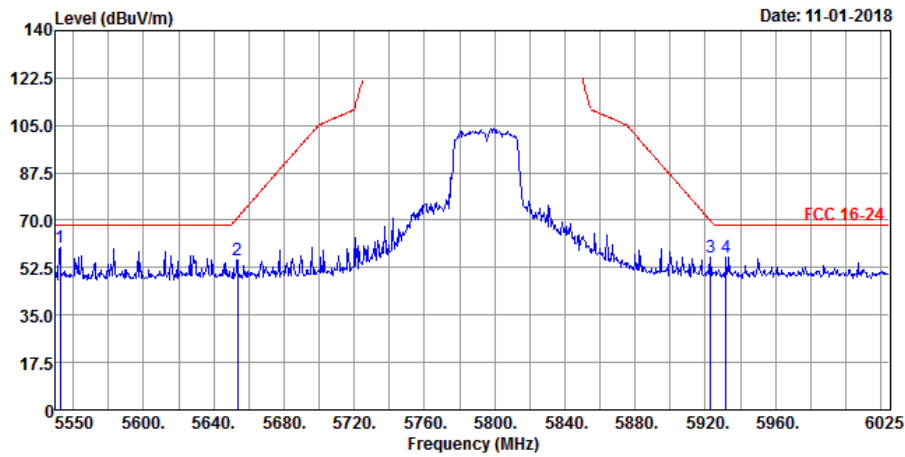


### Vertical

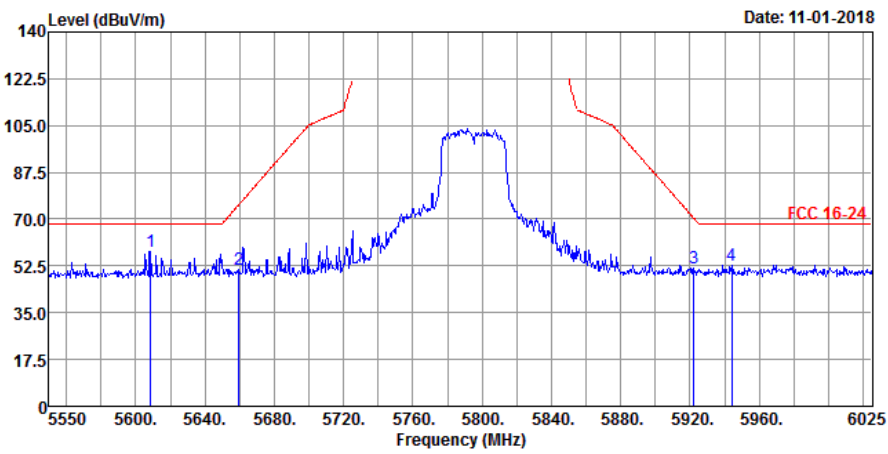




# <Out of Band Emission (OOBE)> Horizontal



## Vertical



### <Spurious Emission>

| Antenna Polarity & Test Distance: Horizontal at 3 m |                         |                   |                |             |                       |                 |                    |                     |                      |         |
|-----------------------------------------------------|-------------------------|-------------------|----------------|-------------|-----------------------|-----------------|--------------------|---------------------|----------------------|---------|
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark  |
| 5795                                                | 95.03                   | 93.45             |                |             | 32.29                 | 6.83            | 37.54              | 134                 | 338                  | Average |
| 5795                                                | 105.04                  | 103.46            |                |             | 32.29                 | 6.83            | 37.54              | 134                 | 338                  | Peak    |
| 11590                                               | 47.04                   | 49.16             | 54             | -6.96       | 40.11                 | 10.78           | 53.01              | 149                 | 251                  | Average |
| 11590                                               | 57.04                   | 59.16             | 74             | -16.96      | 40.11                 | 10.78           | 53.01              | 149                 | 251                  | Peak    |
| Antenna Polarity & Test Distance: Vertical at 3 m   |                         |                   |                |             |                       |                 |                    |                     |                      |         |
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark  |
| 5795                                                | 93.78                   | 92.2              |                |             | 32.29                 | 6.83            | 37.54              | 142                 | 12                   | Average |
| 5795                                                | 103.81                  | 102.23            |                |             | 32.29                 | 6.83            | 37.54              | 142                 | 12                   | Peak    |
| 11590                                               | 47.17                   | 49.29             | 54             | -6.83       | 40.11                 | 10.78           | 53.01              | 164                 | 109                  | Average |
| 11590                                               | 56.69                   | 58.81             | 74             | -17.31      | 40.11                 | 10.78           | 53.01              | 164                 | 109                  | Peak    |

### <Out of Band Emission (OOBE)>

| Antenna Polarity & Test Distance: Horizontal at 3 m |                         |                   |                |             |                       |                 |                    |                     |                      |        |
|-----------------------------------------------------|-------------------------|-------------------|----------------|-------------|-----------------------|-----------------|--------------------|---------------------|----------------------|--------|
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark |
| 5552.375                                            | 60.12                   | 58.74             | 68.2           | -8.08       | 31.89                 | 6.61            | 37.12              | 134                 | 338                  | Peak   |
| 5653.55                                             | 55.39                   | 53.9              | 70.84          | -15.45      | 32.06                 | 6.71            | 37.28              | 134                 | 338                  | Peak   |
| 5922.875                                            | 56.39                   | 54.51             | 69.77          | -13.38      | 32.52                 | 6.86            | 37.5               | 134                 | 338                  | Peak   |
| 5931.9                                              | 56.52                   | 54.64             | 68.2           | -11.68      | 32.52                 | 6.86            | 37.5               | 134                 | 338                  | Peak   |
| Antenna Polarity & Test Distance: Vertical at 3 m   |                         |                   |                |             |                       |                 |                    |                     |                      |        |
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark |
| 5608.425                                            | 57.95                   | 56.51             | 68.2           | -10.25      | 31.98                 | 6.68            | 37.22              | 142                 | 12                   | Peak   |
| 5659.725                                            | 51.36                   | 49.93             | 75.42          | -24.06      | 32.06                 | 6.71            | 37.34              | 142                 | 12                   | Peak   |
| 5922.4                                              | 51.81                   | 49.93             | 70.12          | -18.31      | 32.52                 | 6.86            | 37.5               | 142                 | 12                   | Peak   |
| 5944.25                                             | 52.94                   | 51.02             | 68.2           | -15.26      | 32.55                 | 6.87            | 37.5               | 142                 | 12                   | Peak   |

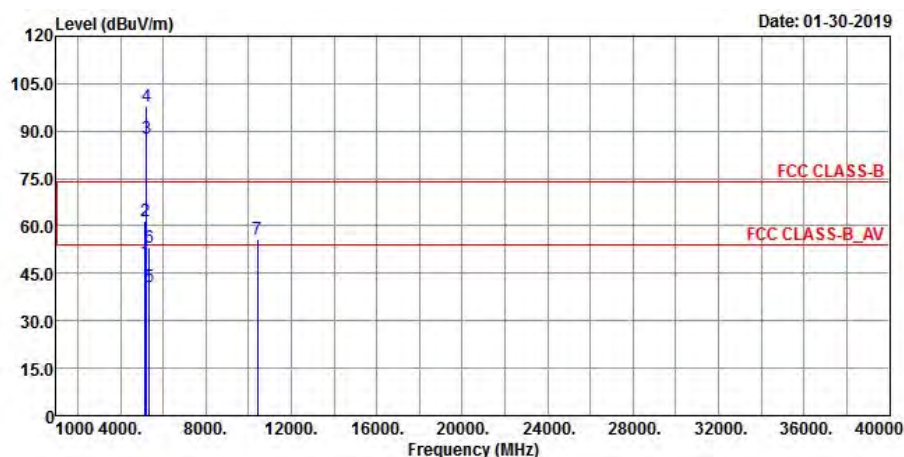
Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
2. 5795 MHz: Fundamental Frequency
3. \*: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

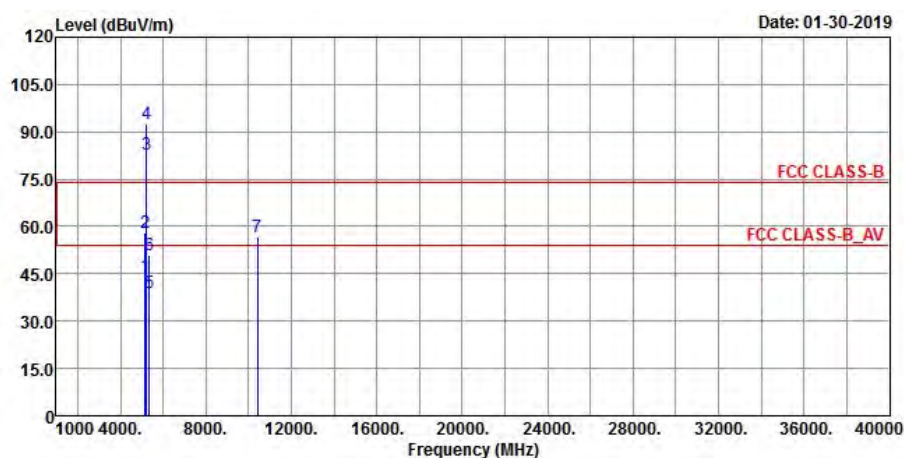
## 802.11ac (VHT80)

| EUT Test Condition       |                    | Measurement Detail |                           |
|--------------------------|--------------------|--------------------|---------------------------|
| Channel                  | Channel 42         | Frequency Range    | 1 GHz ~ 40 GHz            |
| Input Power              | 120 Vac, 60 Hz     | Detector Function  | Peak (PK)<br>Average (AV) |
| Environmental Conditions | 25 deg. C, 65 % RH | Tested By          | Jisyoung Wang             |

### Horizontal



### Vertical



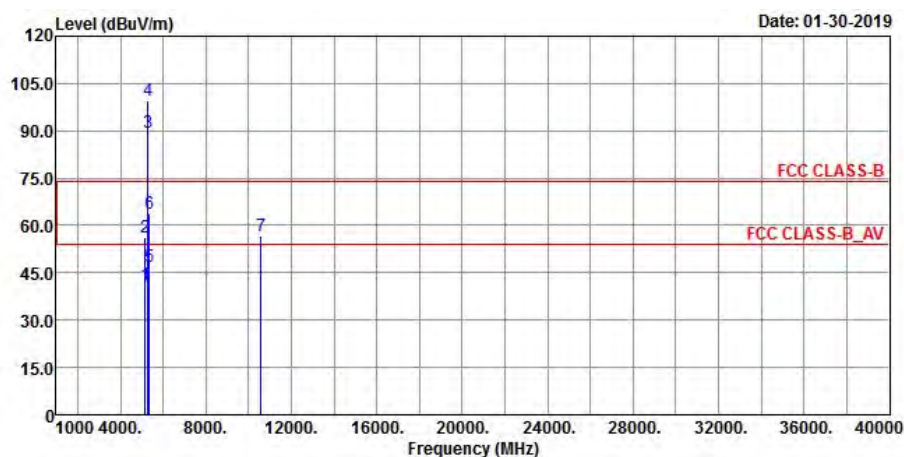
| Antenna Polarity & Test Distance: Horizontal at 3 m |                         |                   |                |             |                       |                 |                    |                     |                      |         |
|-----------------------------------------------------|-------------------------|-------------------|----------------|-------------|-----------------------|-----------------|--------------------|---------------------|----------------------|---------|
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark  |
| 5145.44                                             | 48.86                   | 48.28             | 54             | -5.14       | 31.56                 | 6.34            | 37.32              | 141                 | 331                  | Average |
| 5145.44                                             | 61.64                   | 61.06             | 74             | -12.36      | 31.56                 | 6.34            | 37.32              | 141                 | 331                  | Peak    |
| 5210                                                | 87.89                   | 87.24             |                |             | 31.61                 | 6.4             | 37.36              | 141                 | 331                  | Average |
| 5210                                                | 97.89                   | 97.24             |                |             | 31.61                 | 6.4             | 37.36              | 141                 | 331                  | Peak    |
| 5350                                                | 40.63                   | 39.64             | 54             | -13.37      | 31.7                  | 6.47            | 37.18              | 141                 | 331                  | Average |
| 5350                                                | 53.07                   | 52.08             | 74             | -20.93      | 31.7                  | 6.47            | 37.18              | 141                 | 331                  | Peak    |
| *10420                                              | 55.94                   | 58.65             | 68.2           | -12.26      | 39.53                 | 10.21           | 52.45              | 134                 | 105                  | Peak    |
| Antenna Polarity & Test Distance: Vertical at 3 m   |                         |                   |                |             |                       |                 |                    |                     |                      |         |
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark  |
| 5144.72                                             | 44.09                   | 43.52             | 54             | -9.91       | 31.56                 | 6.33            | 37.32              | 101                 | 190                  | Average |
| 5144.72                                             | 57.98                   | 57.41             | 74             | -16.02      | 31.56                 | 6.33            | 37.32              | 101                 | 190                  | Peak    |
| 5210                                                | 82.76                   | 82.11             |                |             | 31.61                 | 6.4             | 37.36              | 101                 | 190                  | Average |
| 5210                                                | 92.76                   | 92.11             |                |             | 31.61                 | 6.4             | 37.36              | 101                 | 190                  | Peak    |
| 5352.42                                             | 39.04                   | 38.05             | 54             | -14.96      | 31.7                  | 6.47            | 37.18              | 101                 | 190                  | Average |
| 5352.42                                             | 51.13                   | 50.14             | 74             | -22.87      | 31.7                  | 6.47            | 37.18              | 101                 | 190                  | Peak    |
| *10420                                              | 56.6                    | 59.31             | 68.2           | -11.6       | 39.53                 | 10.21           | 52.45              | 162                 | 103                  | Peak    |

Remarks:

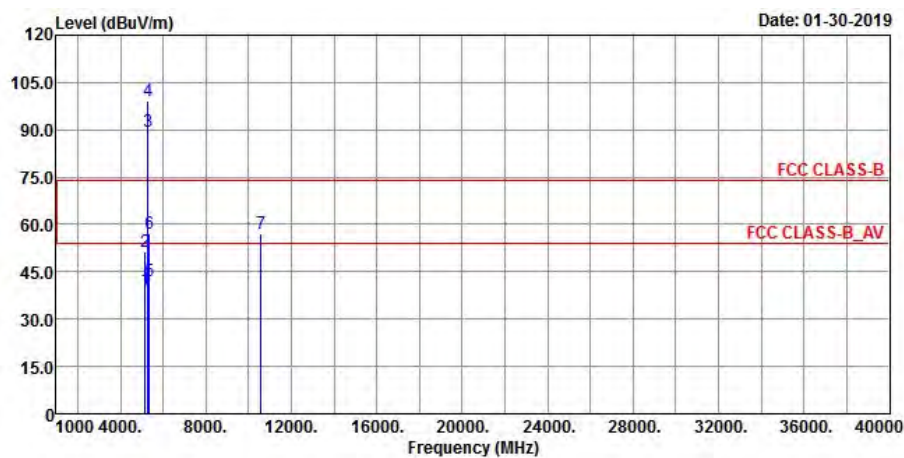
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
2. 5210 MHz: Fundamental Frequency
3. \*: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

| EUT Test Condition       |                    | Measurement Detail |                           |
|--------------------------|--------------------|--------------------|---------------------------|
| Channel                  | Channel 58         | Frequency Range    | 1 GHz ~ 40 GHz            |
| Input Power              | 120 Vac, 60 Hz     | Detector Function  | Peak (PK)<br>Average (AV) |
| Environmental Conditions | 25 deg. C, 65 % RH | Tested By          | Jisyoung Wang             |

### Horizontal



### Vertical



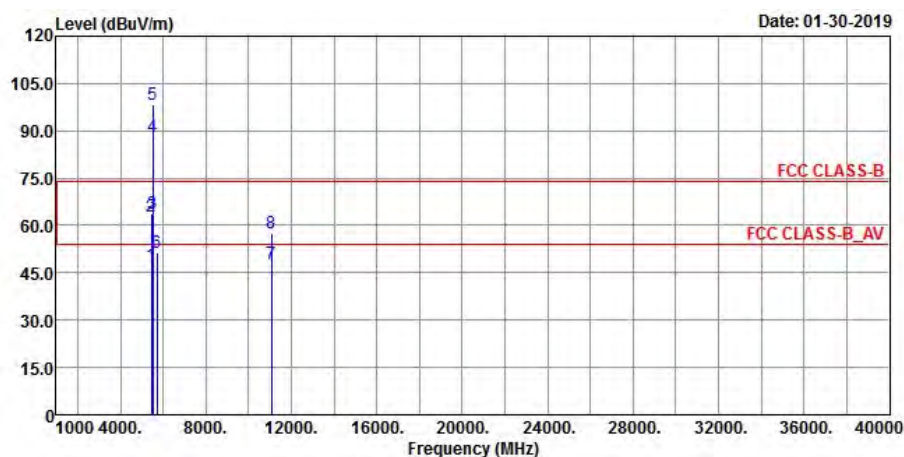
| Antenna Polarity & Test Distance: Horizontal at 3 m |                         |                   |                |             |                       |                 |                    |                     |                      |         |
|-----------------------------------------------------|-------------------------|-------------------|----------------|-------------|-----------------------|-----------------|--------------------|---------------------|----------------------|---------|
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark  |
| 5145.98                                             | 40.99                   | 40.41             | 54             | -13.01      | 31.56                 | 6.34            | 37.32              | 153                 | 331                  | Average |
| 5145.98                                             | 56.31                   | 55.73             | 74             | -17.69      | 31.56                 | 6.34            | 37.32              | 153                 | 331                  | Peak    |
| 5290                                                | 89.61                   | 88.73             |                |             | 31.66                 | 6.45            | 37.23              | 153                 | 331                  | Average |
| 5290                                                | 99.66                   | 98.78             |                |             | 31.66                 | 6.45            | 37.23              | 153                 | 331                  | Peak    |
| 5350                                                | 47.01                   | 46.02             | 54             | -6.99       | 31.7                  | 6.47            | 37.18              | 153                 | 331                  | Average |
| 5350                                                | 63.97                   | 62.98             | 74             | -10.03      | 31.7                  | 6.47            | 37.18              | 153                 | 331                  | Peak    |
| *10580                                              | 56.73                   | 59.64             | 68.2           | -11.47      | 39.81                 | 10.39           | 53.11              | 142                 | 64                   | Peak    |
| Antenna Polarity & Test Distance: Vertical at 3 m   |                         |                   |                |             |                       |                 |                    |                     |                      |         |
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark  |
| 5145.98                                             | 39.19                   | 38.61             | 54             | -14.81      | 31.56                 | 6.34            | 37.32              | 135                 | 345                  | Average |
| 5145.98                                             | 51.39                   | 50.81             | 74             | -22.61      | 31.56                 | 6.34            | 37.32              | 135                 | 345                  | Peak    |
| 5290                                                | 89.36                   | 88.48             |                |             | 31.66                 | 6.45            | 37.23              | 135                 | 345                  | Average |
| 5290                                                | 99.37                   | 98.49             |                |             | 31.66                 | 6.45            | 37.23              | 135                 | 345                  | Peak    |
| 5359.35                                             | 42.07                   | 41.08             | 54             | -11.93      | 31.7                  | 6.47            | 37.18              | 135                 | 345                  | Average |
| 5359.35                                             | 57.04                   | 56.05             | 74             | -16.96      | 31.7                  | 6.47            | 37.18              | 135                 | 345                  | Peak    |
| *10580                                              | 56.92                   | 59.83             | 68.2           | -11.28      | 39.81                 | 10.39           | 53.11              | 177                 | 319                  | Peak    |

Remarks:

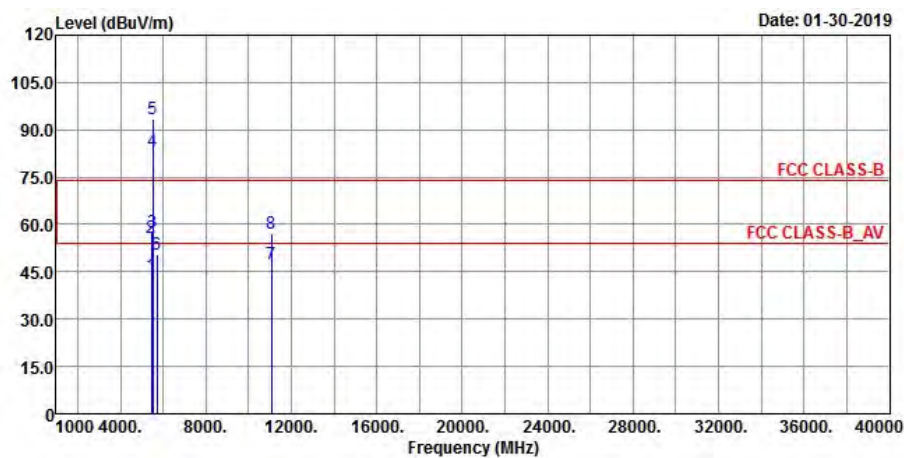
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
2. 5290 MHz: Fundamental Frequency
3. \*: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

| EUT Test Condition       |                    | Measurement Detail |                           |
|--------------------------|--------------------|--------------------|---------------------------|
| Channel                  | Channel 106        | Frequency Range    | 1 GHz ~ 40 GHz            |
| Input Power              | 120 Vac, 60 Hz     | Detector Function  | Peak (PK)<br>Average (AV) |
| Environmental Conditions | 25 deg. C, 65 % RH | Tested By          | Jisyoung Wang             |

### Horizontal



### Vertical



| Antenna Polarity & Test Distance: Horizontal at 3 m |                         |                   |                |             |                       |                 |                    |                     |                      |         |
|-----------------------------------------------------|-------------------------|-------------------|----------------|-------------|-----------------------|-----------------|--------------------|---------------------|----------------------|---------|
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark  |
| 5459.92                                             | 47.25                   | 46.05             | 54             | -6.75       | 31.77                 | 6.51            | 37.08              | 152                 | 341                  | Average |
| 5459.92                                             | 62.96                   | 61.76             | 74             | -11.04      | 31.77                 | 6.51            | 37.08              | 152                 | 341                  | Peak    |
| *5470                                               | 63.68                   | 62.45             | 68.2           | -4.52       | 31.79                 | 6.52            | 37.08              | 152                 | 341                  | Peak    |
| 5530                                                | 88.14                   | 86.81             |                |             | 31.84                 | 6.58            | 37.09              | 152                 | 341                  | Average |
| 5530                                                | 98.15                   | 96.82             |                |             | 31.84                 | 6.58            | 37.09              | 152                 | 341                  | Peak    |
| *5725                                               | 51.36                   | 49.85             | 68.2           | -16.84      | 32.18                 | 6.76            | 37.43              | 152                 | 341                  | Peak    |
| 11060                                               | 47.74                   | 49.43             | 54             | -6.26       | 40.66                 | 10.44           | 52.79              | 156                 | 200                  | Average |
| 11060                                               | 57.48                   | 59.17             | 74             | -16.52      | 40.66                 | 10.44           | 52.79              | 156                 | 200                  | Peak    |
| Antenna Polarity & Test Distance: Vertical at 3 m   |                         |                   |                |             |                       |                 |                    |                     |                      |         |
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark  |
| 5458                                                | 43.87                   | 42.67             | 54             | -10.13      | 31.77                 | 6.51            | 37.08              | 154                 | 321                  | Average |
| 5458                                                | 55.86                   | 54.66             | 74             | -18.14      | 31.77                 | 6.51            | 37.08              | 154                 | 321                  | Peak    |
| *5470                                               | 57.39                   | 56.16             | 68.2           | -10.81      | 31.79                 | 6.52            | 37.08              | 154                 | 321                  | Peak    |
| 5530                                                | 83.32                   | 81.99             |                |             | 31.84                 | 6.58            | 37.09              | 154                 | 321                  | Average |
| 5530                                                | 93.35                   | 92.02             |                |             | 31.84                 | 6.58            | 37.09              | 154                 | 321                  | Peak    |
| *5725                                               | 50.67                   | 49.16             | 68.2           | -17.53      | 32.18                 | 6.76            | 37.43              | 154                 | 321                  | Peak    |
| 11060                                               | 47.22                   | 48.91             | 54             | -6.78       | 40.66                 | 10.44           | 52.79              | 172                 | 103                  | Average |
| 11060                                               | 57.25                   | 58.94             | 74             | -16.75      | 40.66                 | 10.44           | 52.79              | 172                 | 103                  | Peak    |

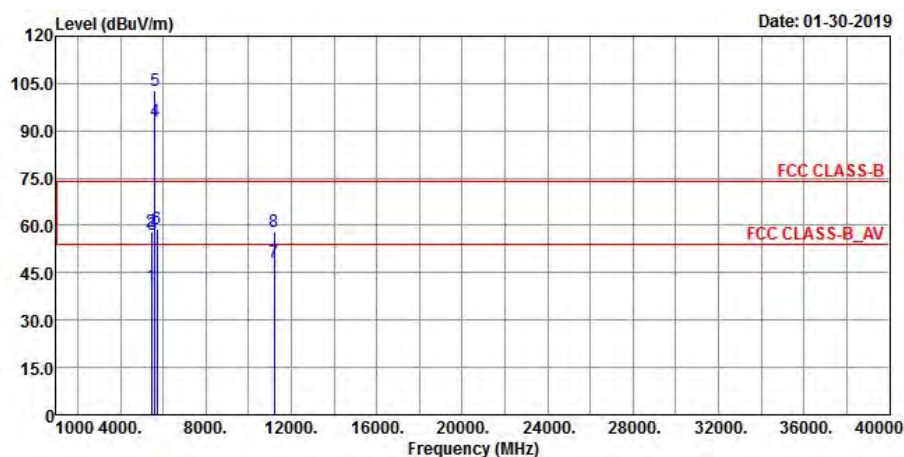
Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
2. 5530 MHz: Fundamental Frequency
3. \*: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

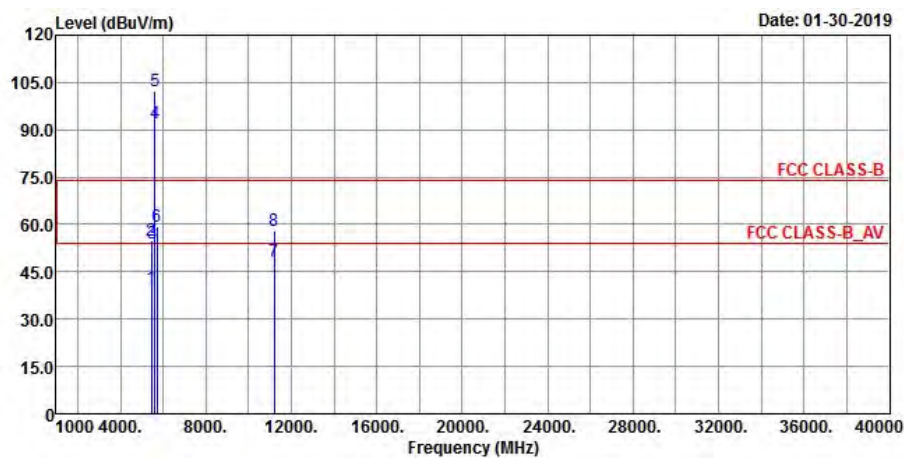


| EUT Test Condition       |                    | Measurement Detail |                           |
|--------------------------|--------------------|--------------------|---------------------------|
| Channel                  | Channel 122        | Frequency Range    | 1 GHz ~ 40 GHz            |
| Input Power              | 120 Vac, 60 Hz     | Detector Function  | Peak (PK)<br>Average (AV) |
| Environmental Conditions | 25 deg. C, 65 % RH | Tested By          | Jisyoung Wang             |

## Horizontal



## Vertical



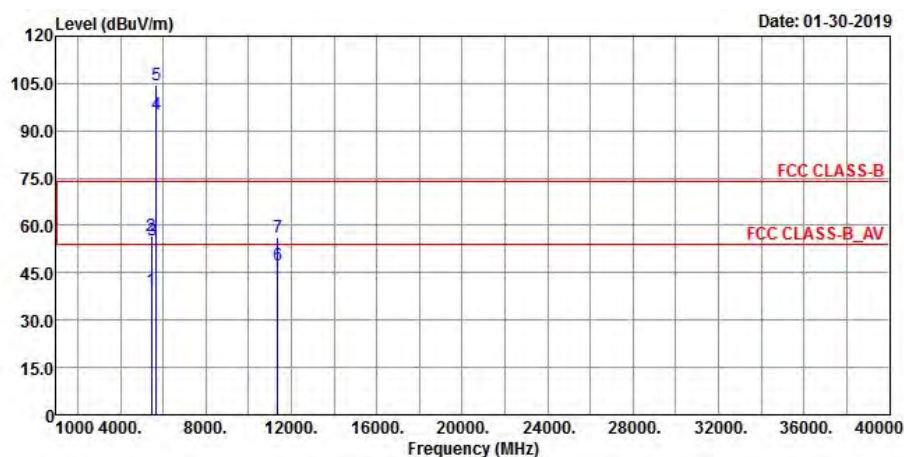
| Antenna Polarity & Test Distance: Horizontal at 3 m |                         |                   |                |             |                       |                 |                    |                     |                      |         |
|-----------------------------------------------------|-------------------------|-------------------|----------------|-------------|-----------------------|-----------------|--------------------|---------------------|----------------------|---------|
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark  |
| 5459.6                                              | 40.9                    | 39.7              | 54             | -13.1       | 31.77                 | 6.51            | 37.08              | 147                 | 342                  | Average |
| 5459.6                                              | 57.9                    | 56.7              | 74             | -16.1       | 31.77                 | 6.51            | 37.08              | 147                 | 342                  | Peak    |
| *5470                                               | 57.32                   | 56.09             | 68.2           | -10.88      | 31.79                 | 6.52            | 37.08              | 147                 | 342                  | Peak    |
| 5610                                                | 92.9                    | 91.46             |                |             | 31.98                 | 6.68            | 37.22              | 147                 | 342                  | Average |
| 5610                                                | 102.91                  | 101.47            |                |             | 31.98                 | 6.68            | 37.22              | 147                 | 342                  | Peak    |
| *5725                                               | 59.08                   | 57.57             | 68.2           | -9.12       | 32.18                 | 6.76            | 37.43              | 147                 | 342                  | Peak    |
| 11220                                               | 48.28                   | 50.03             | 54             | -5.72       | 40.51                 | 10.55           | 52.81              | 127                 | 71                   | Average |
| 11220                                               | 57.93                   | 59.68             | 74             | -16.07      | 40.51                 | 10.55           | 52.81              | 127                 | 71                   | Peak    |
| Antenna Polarity & Test Distance: Vertical at 3 m   |                         |                   |                |             |                       |                 |                    |                     |                      |         |
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark  |
| 5459.44                                             | 39.96                   | 38.76             | 54             | -14.04      | 31.77                 | 6.51            | 37.08              | 191                 | 358                  | Average |
| 5459.44                                             | 55.04                   | 53.84             | 74             | -18.96      | 31.77                 | 6.51            | 37.08              | 191                 | 358                  | Peak    |
| *5470                                               | 53.89                   | 52.66             | 68.2           | -14.31      | 31.79                 | 6.52            | 37.08              | 191                 | 358                  | Peak    |
| 5610                                                | 92.24                   | 90.8              |                |             | 31.98                 | 6.68            | 37.22              | 191                 | 358                  | Average |
| 5610                                                | 102.25                  | 100.81            |                |             | 31.98                 | 6.68            | 37.22              | 191                 | 358                  | Peak    |
| *5725                                               | 59.49                   | 57.98             | 68.2           | -8.71       | 32.18                 | 6.76            | 37.43              | 191                 | 358                  | Peak    |
| 11220                                               | 48.16                   | 49.91             | 54             | -5.84       | 40.51                 | 10.55           | 52.81              | 132                 | 329                  | Average |
| 11220                                               | 57.89                   | 59.64             | 74             | -16.11      | 40.51                 | 10.55           | 52.81              | 132                 | 329                  | Peak    |

Remarks:

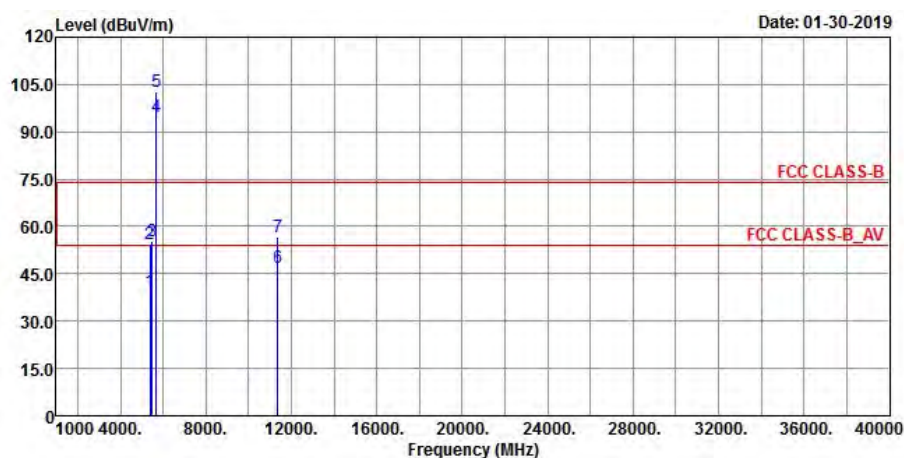
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
2. 5610 MHz: Fundamental Frequency
3. \*: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

| EUT Test Condition       |                    | Measurement Detail |                           |
|--------------------------|--------------------|--------------------|---------------------------|
| Channel                  | Channel 138        | Frequency Range    | 1 GHz ~ 40 GHz            |
| Input Power              | 120 Vac, 60 Hz     | Detector Function  | Peak (PK)<br>Average (AV) |
| Environmental Conditions | 25 deg. C, 65 % RH | Tested By          | Thomas Wei                |

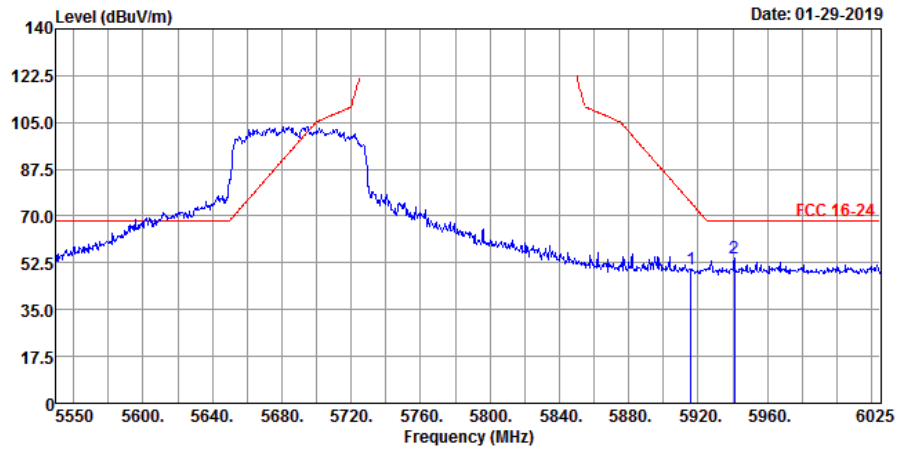
### <Spurious Emission> Horizontal



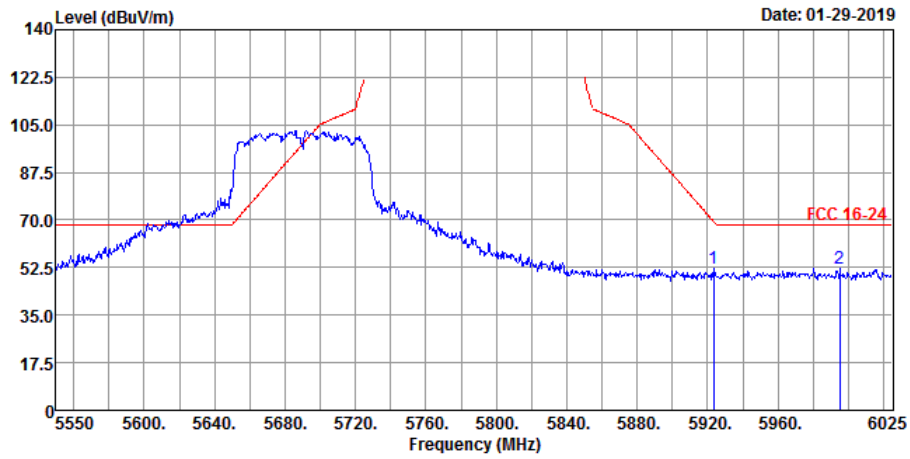
### Vertical



# <Out of Band Emission (OOBE)> Horizontal



## Vertical



### <Spurious Emission>

| Antenna Polarity & Test Distance: Horizontal at 3 m |                         |                   |                |             |                       |                 |                    |                     |                      |         |
|-----------------------------------------------------|-------------------------|-------------------|----------------|-------------|-----------------------|-----------------|--------------------|---------------------|----------------------|---------|
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark  |
| 5454.64                                             | 39.52                   | 38.32             | 54             | -14.48      | 31.77                 | 6.51            | 37.08              | 146                 | 341                  | Average |
| 5454.64                                             | 56.51                   | 55.31             | 74             | -17.49      | 31.77                 | 6.51            | 37.08              | 146                 | 341                  | Peak    |
| *5470                                               | 55.32                   | 54.09             | 68.2           | -12.88      | 31.79                 | 6.52            | 37.08              | 146                 | 341                  | Peak    |
| 5690                                                | 95.1                    | 93.66             |                |             | 32.12                 | 6.72            | 37.4               | 146                 | 341                  | Average |
| 5690                                                | 104.41                  | 102.97            |                |             | 32.12                 | 6.72            | 37.4               | 146                 | 341                  | Peak    |
| 11380                                               | 47.48                   | 49.35             | 54             | -6.52       | 40.35                 | 10.49           | 52.71              | 127                 | 223                  | Average |
| 11380                                               | 56.2                    | 58.07             | 74             | -17.8       | 40.35                 | 10.49           | 52.71              | 127                 | 223                  | Peak    |
| Antenna Polarity & Test Distance: Vertical at 3 m   |                         |                   |                |             |                       |                 |                    |                     |                      |         |
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark  |
| 5398.48                                             | 39.57                   | 38.54             | 54             | -14.43      | 31.74                 | 6.47            | 37.18              | 134                 | 12                   | Average |
| 5398.48                                             | 54.52                   | 53.49             | 74             | -19.48      | 31.74                 | 6.47            | 37.18              | 134                 | 12                   | Peak    |
| *5470                                               | 55.57                   | 54.34             | 68.2           | -12.63      | 31.79                 | 6.52            | 37.08              | 134                 | 12                   | Peak    |
| 5690                                                | 94.58                   | 93.14             |                |             | 32.12                 | 6.72            | 37.4               | 134                 | 12                   | Average |
| 5690                                                | 102.86                  | 101.42            |                |             | 32.12                 | 6.72            | 37.4               | 134                 | 12                   | Peak    |
| 11380                                               | 47.1                    | 48.97             | 54             | -6.9        | 40.35                 | 10.49           | 52.71              | 135                 | 46                   | Average |
| 11380                                               | 56.89                   | 58.76             | 74             | -17.11      | 40.35                 | 10.49           | 52.71              | 135                 | 46                   | Peak    |

### <Out of Band Emission (OOBE)>

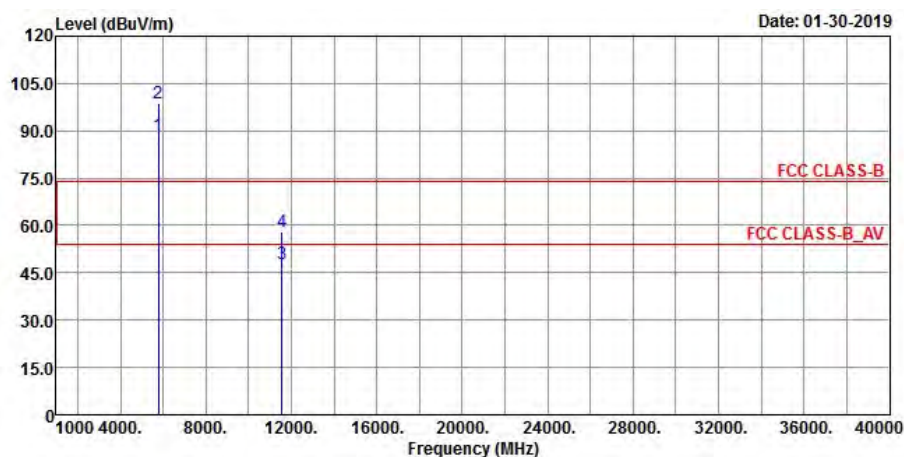
| Antenna Polarity & Test Distance: Horizontal at 3 m |                         |                   |                |             |                       |                 |                    |                     |                      |        |
|-----------------------------------------------------|-------------------------|-------------------|----------------|-------------|-----------------------|-----------------|--------------------|---------------------|----------------------|--------|
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark |
| 5915.75                                             | 50.34                   | 48.49             | 75.02          | -24.68      | 32.49                 | 6.86            | 37.5               | 146                 | 341                  | Peak   |
| 5940.925                                            | 54.05                   | 52.13             | 68.2           | -14.15      | 32.55                 | 6.87            | 37.5               | 146                 | 341                  | Peak   |
| Antenna Polarity & Test Distance: Vertical at 3 m   |                         |                   |                |             |                       |                 |                    |                     |                      |        |
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark |
| 5923.35                                             | 52                      | 50.12             | 69.42          | -17.42      | 32.52                 | 6.86            | 37.5               | 134                 | 12                   | Peak   |
| 5995.075                                            | 52.22                   | 50.21             | 68.2           | -15.98      | 32.63                 | 6.89            | 37.51              | 134                 | 12                   | Peak   |

Remarks:

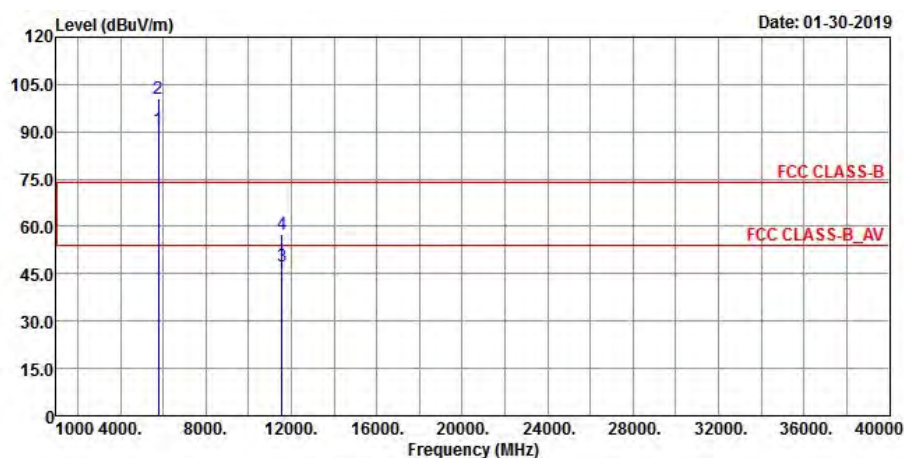
1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
2. 5690 MHz: Fundamental Frequency
3. \*: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

| EUT Test Condition       |                    | Measurement Detail |                           |
|--------------------------|--------------------|--------------------|---------------------------|
| Channel                  | Channel 155        | Frequency Range    | 1 GHz ~ 40 GHz            |
| Input Power              | 120 Vac, 60 Hz     | Detector Function  | Peak (PK)<br>Average (AV) |
| Environmental Conditions | 25 deg. C, 65 % RH | Tested By          | Jisyoung Wang             |

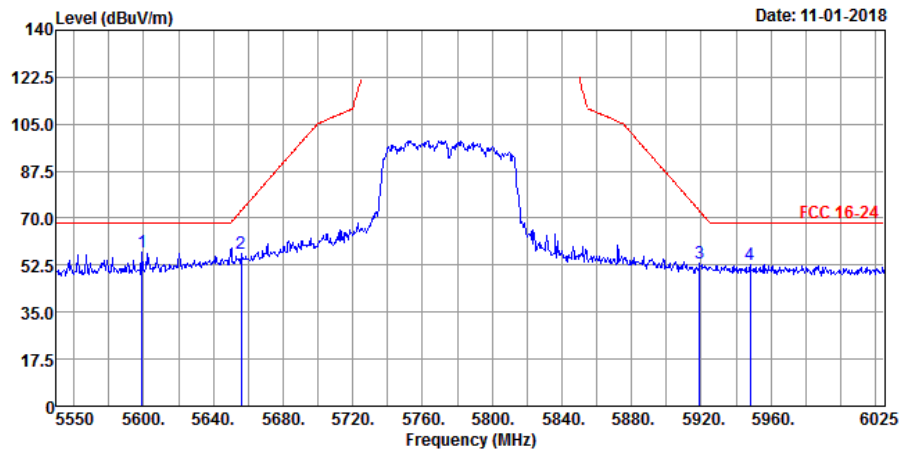
### <Spurious Emission> Horizontal



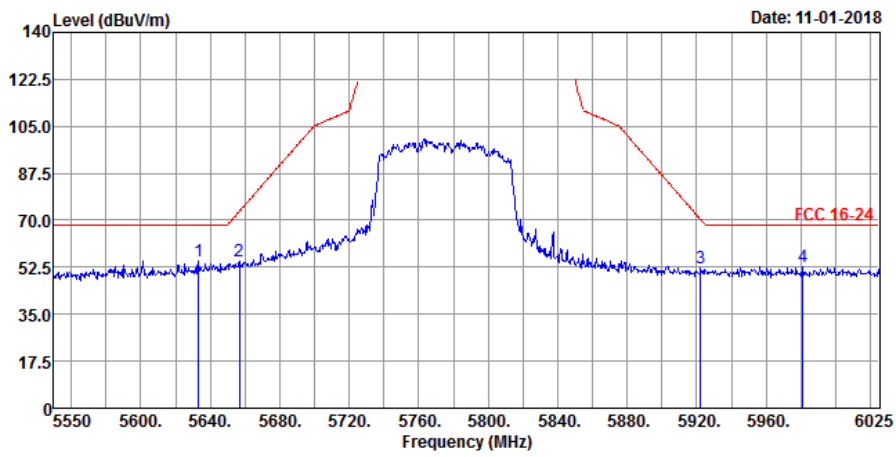
### Vertical



# <Out of Band Emission (OOBE)> Horizontal



## Vertical



### <Spurious Emission>

| Antenna Polarity & Test Distance: Horizontal at 3 m |                         |                   |                |             |                       |                 |                    |                     |                      |         |
|-----------------------------------------------------|-------------------------|-------------------|----------------|-------------|-----------------------|-----------------|--------------------|---------------------|----------------------|---------|
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark  |
| 5775                                                | 88.5                    | 86.93             |                |             | 32.26                 | 6.81            | 37.5               | 142                 | 343                  | Average |
| 5775                                                | 98.53                   | 96.96             |                |             | 32.26                 | 6.81            | 37.5               | 142                 | 343                  | Peak    |
| 11550                                               | 47.62                   | 49.66             | 54             | -6.38       | 40.16                 | 10.74           | 52.94              | 152                 | 237                  | Average |
| 11550                                               | 58.04                   | 60.08             | 74             | -15.96      | 40.16                 | 10.74           | 52.94              | 152                 | 237                  | Peak    |
| Antenna Polarity & Test Distance: Vertical at 3 m   |                         |                   |                |             |                       |                 |                    |                     |                      |         |
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark  |
| 5775                                                | 90.57                   | 89                |                |             | 32.26                 | 6.81            | 37.5               | 135                 | 13                   | Average |
| 5775                                                | 100.62                  | 99.05             |                |             | 32.26                 | 6.81            | 37.5               | 135                 | 13                   | Peak    |
| 11550                                               | 47.5                    | 49.54             | 54             | -6.5        | 40.16                 | 10.74           | 52.94              | 167                 | 115                  | Average |
| 11550                                               | 57.69                   | 59.73             | 74             | -16.31      | 40.16                 | 10.74           | 52.94              | 167                 | 115                  | Peak    |

### <Out of Band Emission (OOBE)>

| Antenna Polarity & Test Distance: Horizontal at 3 m |                         |                   |                |             |                       |                 |                    |                     |                      |        |
|-----------------------------------------------------|-------------------------|-------------------|----------------|-------------|-----------------------|-----------------|--------------------|---------------------|----------------------|--------|
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark |
| 5598.925                                            | 57.27                   | 55.77             | 68.2           | -10.93      | 31.98                 | 6.68            | 37.16              | 142                 | 343                  | Peak   |
| 5655.925                                            | 56.81                   | 55.38             | 72.6           | -15.79      | 32.06                 | 6.71            | 37.34              | 142                 | 343                  | Peak   |
| 5919.075                                            | 53.39                   | 51.54             | 72.57          | -19.18      | 32.49                 | 6.86            | 37.5               | 142                 | 343                  | Peak   |
| 5948.05                                             | 52.73                   | 50.81             | 68.2           | -15.47      | 32.55                 | 6.87            | 37.5               | 142                 | 343                  | Peak   |
| Antenna Polarity & Test Distance: Vertical at 3 m   |                         |                   |                |             |                       |                 |                    |                     |                      |        |
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark |
| 5633.125                                            | 54.81                   | 53.35             | 68.2           | -13.39      | 32.04                 | 6.7             | 37.28              | 135                 | 13                   | Peak   |
| 5656.875                                            | 54.74                   | 53.31             | 73.31          | -18.57      | 32.06                 | 6.71            | 37.34              | 135                 | 13                   | Peak   |
| 5922.4                                              | 52.22                   | 50.34             | 70.12          | -17.9       | 32.52                 | 6.86            | 37.5               | 135                 | 13                   | Peak   |
| 5981.3                                              | 52.87                   | 50.9              | 68.2           | -15.33      | 32.6                  | 6.88            | 37.51              | 135                 | 13                   | Peak   |

#### Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- 5775 MHz: Fundamental Frequency
- \*: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit



### 9 kHz ~ 30 MHz Data:

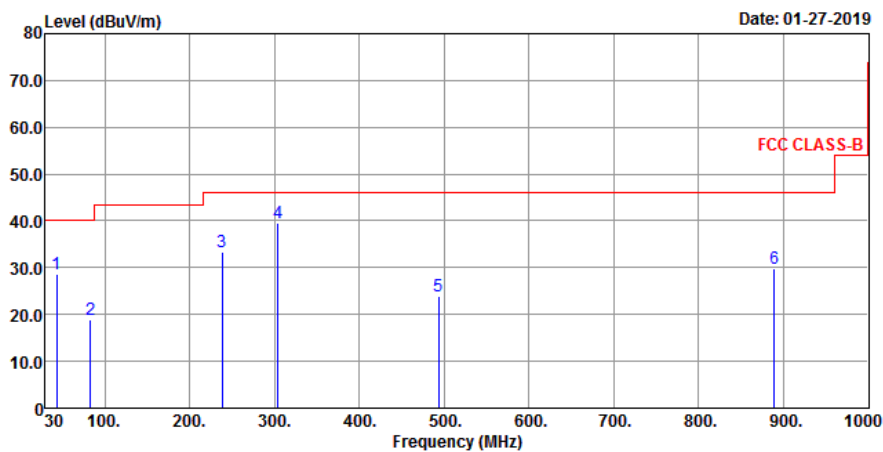
The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

### 30 MHz ~ 1 GHz Worst-Case Data:

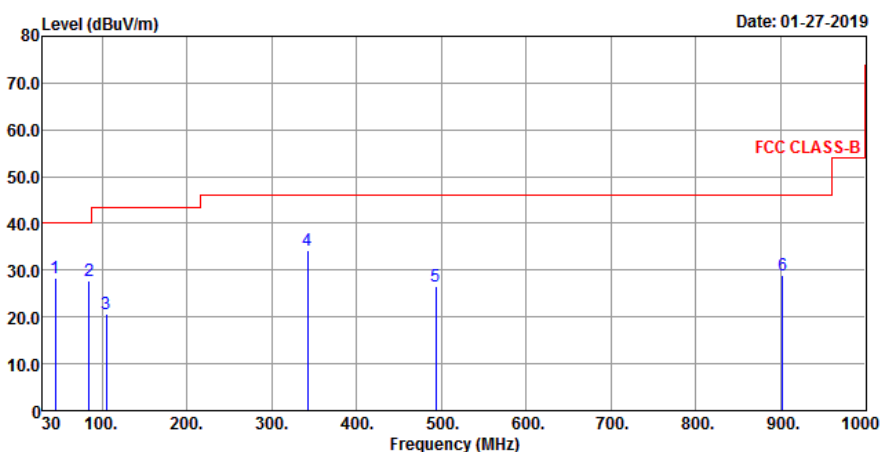
#### 802.11ac (VHT80)

| EUT Test Condition       |                    | Measurement Detail |                              |
|--------------------------|--------------------|--------------------|------------------------------|
| Channel                  | Channel 42         | Frequency Range    | 30 MHz ~ 1 GHz               |
| Input Power              | 120 Vac, 60 Hz     | Detector Function  | Peak (PK)<br>Quasi-peak (QP) |
| Environmental Conditions | 25 deg. C, 65 % RH | Tested By          | Jisyoung Wang                |

### Horizontal



### Vertical



| Antenna Polarity & Test Distance: Horizontal at 3 m |                         |                   |                |             |                       |                 |                    |                     |                      |        |
|-----------------------------------------------------|-------------------------|-------------------|----------------|-------------|-----------------------|-----------------|--------------------|---------------------|----------------------|--------|
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark |
| 43.58                                               | 28.6                    | 45.62             | 40             | -11.4       | 13.59                 | 0.5             | 31.11              | 137                 | 321                  | Peak   |
| 83.35                                               | 18.96                   | 41.75             | 40             | -21.04      | 8.18                  | 0.68            | 31.65              | 168                 | 255                  | Peak   |
| 238.55                                              | 33.36                   | 52.73             | 46             | -12.64      | 10.99                 | 1.43            | 31.79              | 200                 | 238                  | Peak   |
| 304.51                                              | 39.7                    | 56.86             | 46             | -6.3        | 13.06                 | 1.67            | 31.89              | 161                 | 142                  | Peak   |
| 493.66                                              | 24.01                   | 36.06             | 46             | -21.99      | 17.2                  | 2.47            | 31.72              | 141                 | 105                  | Peak   |
| 889.42                                              | 29.81                   | 34.44             | 46             | -16.19      | 23.37                 | 3.99            | 31.99              | 113                 | 72                   | Peak   |
| Antenna Polarity & Test Distance: Vertical at 3 m   |                         |                   |                |             |                       |                 |                    |                     |                      |        |
| Frequency (MHz)                                     | Emission Level (dBuV/m) | Read Level (dBuV) | Limit (dBuV/m) | Margin (dB) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Antenna Height (cm) | Table Angle (Degree) | Remark |
| 44.55                                               | 28.22                   | 45.25             | 40             | -11.78      | 13.6                  | 0.51            | 31.14              | 124                 | 88                   | Peak   |
| 84.32                                               | 27.86                   | 50.66             | 40             | -12.14      | 8.2                   | 0.69            | 31.69              | 172                 | 166                  | Peak   |
| 104.69                                              | 20.73                   | 42.33             | 43.5           | -22.77      | 9.53                  | 0.77            | 31.9               | 208                 | 190                  | Peak   |
| 342.34                                              | 34.28                   | 50.3              | 46             | -11.72      | 13.96                 | 1.84            | 31.82              | 256                 | 241                  | Peak   |
| 493.66                                              | 26.48                   | 38.53             | 46             | -19.52      | 17.2                  | 2.47            | 31.72              | 283                 | 304                  | Peak   |
| 902.03                                              | 28.93                   | 33.38             | 46             | -17.07      | 23.52                 | 4.05            | 32.02              | 325                 | 349                  | Peak   |

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin value = Emission level – Limit value
- The emission levels of other frequencies were very low against the limit

## 4.2 Conducted Emission Measurement

### 4.2.1 Limits of Conducted Emission Measurement

| Frequency (MHz) | Conducted Limit (dBuV) |         |
|-----------------|------------------------|---------|
|                 | Quasi-Peak             | Average |
| 0.15 - 0.5      | 66 - 56                | 56 - 46 |
| 0.50 - 5.0      | 56                     | 46      |
| 5.0 - 30.0      | 60                     | 50      |

Note: 1. The lower limit shall apply at the transition frequencies.  
 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

### 4.2.2 Test Instruments

| Description & Manufacturer                  | Model No.                | Serial No.     | Date of Calibration | Due Date of Calibration |
|---------------------------------------------|--------------------------|----------------|---------------------|-------------------------|
| Test Receiver<br>ROHDE & SCHWARZ            | ESR3                     | 102412         | Feb. 08, 2018       | Feb. 07, 2019           |
| RF signal cable (with<br>10dB PAD)<br>Woken | 5D-FB                    | Cable-cond2-01 | Sep. 05, 2018       | Sep. 04, 2019           |
| LISN/AMN<br>ROHDE & SCHWARZ<br>(EUT)        | ESH2-Z5                  | 100100         | Feb. 05, 2018       | Feb. 04, 2019           |
| LISN/AMN<br>ROHDE & SCHWARZ<br>(Peripheral) | ESH3-Z5                  | 100312         | Aug. 13, 2018       | Aug. 12, 2019           |
| Software<br>ADT                             | BV ADT_Cond_<br>V7.3.7.4 | NA             | NA                  | NA                      |

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.  
 2. The test was performed in HwaYa Shielded Room 2.  
 3. The VCCI Site Registration No. is C-2047.

#### 4.2.3 Test Procedures

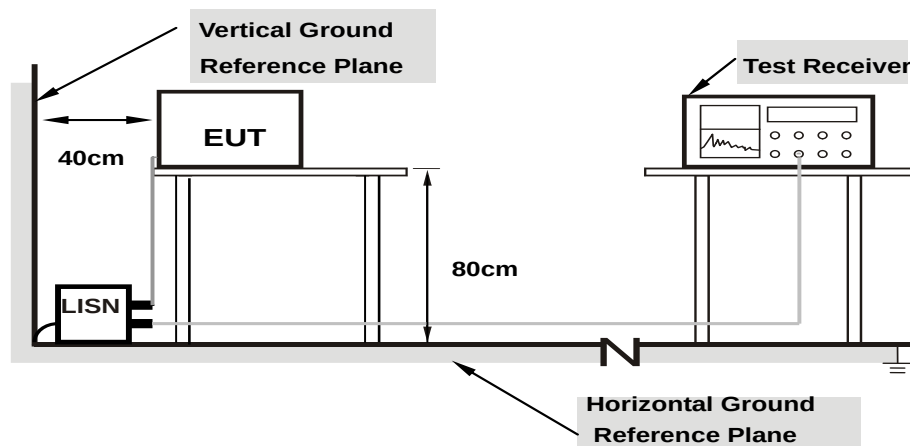
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit -20 dB) was not recorded.

**Note:** All modes of operation were investigated and the worst-case emissions are reported.

#### 4.2.4 Deviation from Test Standard

No deviation.

#### 4.2.5 Test Setup



- Note:**
- Support units were connected to second LISN.
  - Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

For the actual test configuration, please refer to the attached file (Test Setup Photo).

#### 4.2.6 EUT Operating Conditions

- Placed the EUT on a testing table.
- Use the software to control the EUT under transmission condition continuously at specific channel frequency.

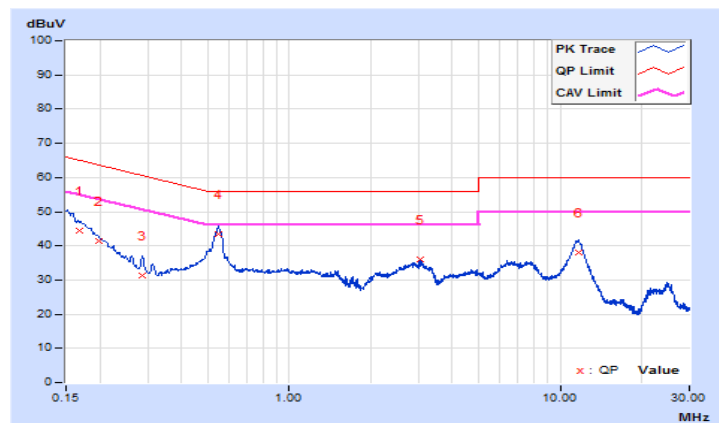
#### 4.2.7 Test Results

|                 |                |                                          |                                      |
|-----------------|----------------|------------------------------------------|--------------------------------------|
| Frequency Range | 150kHz ~ 30MHz | Detector Function & Resolution Bandwidth | Quasi-Peak (QP) / Average (AV), 9kHz |
| Input Power     | 120Vac, 60Hz   | Environmental Conditions                 | 25°C, 65%RH                          |
| Tested by       | Jisyong Wang   | Test Date                                | 2019/1/27                            |

| Phase Of Power : Line (L) |                 |                        |                      |       |                       |       |              |       |             |        |
|---------------------------|-----------------|------------------------|----------------------|-------|-----------------------|-------|--------------|-------|-------------|--------|
| No                        | Frequency (MHz) | Correction Factor (dB) | Reading Value (dBuV) |       | Emission Level (dBuV) |       | Limit (dBuV) |       | Margin (dB) |        |
|                           |                 |                        | Q.P.                 | AV.   | Q.P.                  | AV.   | Q.P.         | AV.   | Q.P.        | AV.    |
| 1                         | 0.16876         | 10.05                  | 34.50                | 17.88 | 44.55                 | 27.93 | 65.02        | 55.02 | -20.47      | -27.09 |
| 2                         | 0.19725         | 10.06                  | 31.47                | 13.55 | 41.53                 | 23.61 | 63.73        | 53.73 | -22.20      | -30.12 |
| 3                         | 0.28692         | 10.06                  | 21.11                | 6.59  | 31.17                 | 16.65 | 60.61        | 50.61 | -29.44      | -33.96 |
| 4                         | 0.54790         | 10.06                  | 33.53                | 10.14 | 43.59                 | 20.20 | 56.00        | 46.00 | -12.41      | -25.80 |
| 5                         | 3.04575         | 10.12                  | 25.83                | 9.28  | 35.95                 | 19.40 | 56.00        | 46.00 | -20.05      | -26.60 |
| 6                         | 11.64300        | 10.33                  | 27.88                | 10.56 | 38.21                 | 20.89 | 60.00        | 50.00 | -21.79      | -29.11 |

#### Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

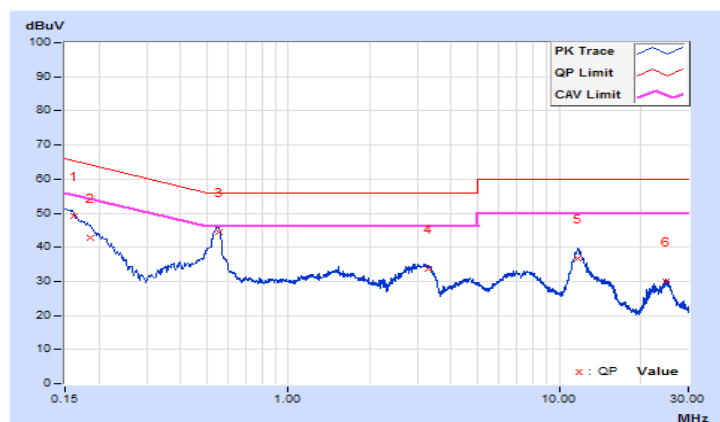


|                 |                |                                          |                                      |
|-----------------|----------------|------------------------------------------|--------------------------------------|
| Frequency Range | 150kHz ~ 30MHz | Detector Function & Resolution Bandwidth | Quasi-Peak (QP) / Average (AV), 9kHz |
| Input Power     | 120Vac, 60Hz   | Environmental Conditions                 | 25°C, 65%RH                          |
| Tested by       | Jisyong Wang   | Test Date                                | 2019/1/27                            |

| Phase Of Power : Neutral (N) |                 |                        |                      |              |                       |              |              |              |               |               |
|------------------------------|-----------------|------------------------|----------------------|--------------|-----------------------|--------------|--------------|--------------|---------------|---------------|
| No                           | Frequency (MHz) | Correction Factor (dB) | Reading Value (dBuV) |              | Emission Level (dBuV) |              | Limit (dBuV) |              | Margin (dB)   |               |
|                              |                 |                        | Q.P.                 | AV.          | Q.P.                  | AV.          | Q.P.         | AV.          | Q.P.          | AV.           |
| 1                            | 0.16125         | 10.06                  | 39.22                | 17.91        | 49.28                 | 27.97        | 65.40        | 55.40        | -16.12        | -27.43        |
| 2                            | 0.18600         | 10.07                  | 32.72                | 17.27        | 42.79                 | 27.34        | 64.21        | 54.21        | -21.42        | -26.87        |
| <b>3</b>                     | <b>0.55225</b>  | <b>10.07</b>           | <b>34.23</b>         | <b>15.93</b> | <b>44.30</b>          | <b>26.00</b> | <b>56.00</b> | <b>46.00</b> | <b>-11.70</b> | <b>-20.00</b> |
| 4                            | 3.27525         | 10.14                  | 23.55                | 10.46        | 33.69                 | 20.60        | 56.00        | 46.00        | -22.31        | -25.40        |
| 5                            | 11.74425        | 10.42                  | 26.17                | 10.01        | 36.59                 | 20.43        | 60.00        | 50.00        | -23.41        | -29.57        |
| 6                            | 24.78075        | 10.53                  | 19.57                | 6.25         | 30.10                 | 16.78        | 60.00        | 50.00        | -29.90        | -33.22        |

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



### 4.3 Transmit Power Measurement

#### 4.3.1 Limits of Transmit Power Measurement

| Operation Band | EUT Category |                                   | Limit                                                                                                                         |
|----------------|--------------|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| U-NII-1        |              | Outdoor Access Point              | 1 Watt (30 dBm)<br>(Max. e.i.r.p $\leq$ 125 mW (21 dBm) at any elevation angle above 30 degrees as measured from the horizon) |
|                |              | Fixed point-to-point Access Point | 1 Watt (30 dBm)                                                                                                               |
|                |              | Indoor Access Point               | 1 Watt (30 dBm)                                                                                                               |
|                | ✓            | Mobile and Portable client device | 250 mW (24 dBm)                                                                                                               |
| U-NII-2A       |              | ✓                                 | 250 mW (24 dBm) or 11 dBm + 10 log B*                                                                                         |
| U-NII-2C       |              | ✓                                 | 250 mW (24 dBm) or 11 dBm + 10 log B*                                                                                         |
| U-NII-3        |              | ✓                                 | 1 Watt (30 dBm)                                                                                                               |

\*B is the 26 dB emission bandwidth in megahertz

Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for  $N_{ANT} \leq 4$ ;

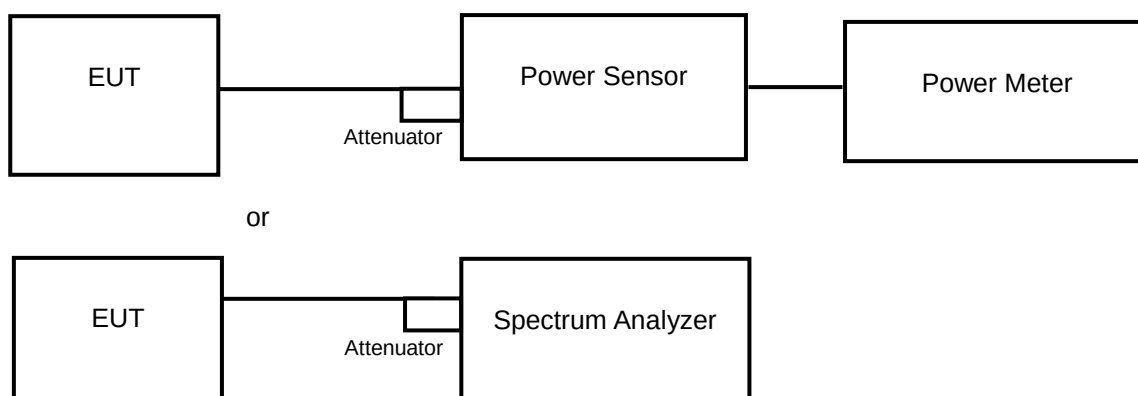
Array Gain = 0 dB (i.e., no array gain) for channel widths  $\geq 40$  MHz for any  $N_{ANT}$ ;

Array Gain = 5 log( $N_{ANT}/N_{SS}$ ) dB or 3 dB, whichever is less for 20 MHz channel widths with  $N_{ANT} \geq 5$ .

For power measurements on all other devices: Array Gain = 10 log( $N_{ANT}/N_{SS}$ ) dB.

#### 4.3.2 Test Setup

##### <Power Output Measurement>



#### 4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

#### 4.3.4 Test Procedure

##### **Average Power Measurement**

<802.11a, 802.11n (HT20), 802.11n (HT40)>

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

<802.11ac (VHT80)>

- a. Set span to encompass the entire 26 dB EBW (or, alternatively, the entire 99 % occupied bandwidth) of the signal.
- b. Set sweep trigger to "free run".
- c. Set RBW = 1 MHz.
- d. Set VBW  $\geq$  3 MHz
- e. Number of points in sweep  $\geq$  2 Span / RBW.
- f. Sweep time  $\leq$  (number of points in sweep) \* T
- g. Using emission bandwidth to determine the frequency span for integration the channel bandwidth.
- h. Detector = RMS.
- i. Trace mode = max hold.
- j. Allow max hold to run for at least 60 seconds, or longer as needed to allow the trace to stabilize.

#### 4.3.5 Deviation from Test Standard

No deviation.

#### 4.3.6 EUT Operating Conditions

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.



#### 4.3.7 Test Results

##### Power Output

The measuring conducted power (Unit: dBm) is shown as below.

##### 5180~5240 MHz

###### Ant-0

| Mode             | Channel | Frequency (MHz) | Average Power (mW) | Average Power (dBm) | EIRP Power (mW) | EIRP Power (dBm) | EIRP Limit (dBm) | Pass / Fail |
|------------------|---------|-----------------|--------------------|---------------------|-----------------|------------------|------------------|-------------|
| 802.11a          | 36      | 5180            | 27.61              | 14.41               | 27.29           | 14.36            | 23               | Pass        |
|                  | 40      | 5200            | 27.29              | 14.36               | 26.98           | 14.31            | 23               | Pass        |
|                  | 44      | 5220            | 26.36              | 14.21               | 26.06           | 14.16            | 23               | Pass        |
|                  | 48      | 5240            | 26.55              | 14.24               | 26.24           | 14.19            | 23               | Pass        |
| 802.11n (HT20)   | 36      | 5180            | 28.12              | 14.49               | 27.80           | 14.44            | 23               | Pass        |
|                  | 40      | 5200            | 27.48              | 14.39               | 27.16           | 14.34            | 23               | Pass        |
|                  | 44      | 5220            | 26.49              | 14.23               | 26.18           | 14.18            | 23               | Pass        |
|                  | 48      | 5240            | 28.12              | 14.49               | 27.80           | 14.44            | 23               | Pass        |
| 802.11n (HT40)   | 38      | 5190            | 13.90              | 11.43               | 13.74           | 11.38            | 23               | Pass        |
|                  | 46      | 5230            | 24.27              | 13.85               | 23.99           | 13.8             | 23               | Pass        |
| 802.11ac (VHT80) | 42      | 5210            | 11.17              | 10.48               | 11.04           | 10.43            | 23               | Pass        |

###### Ant-1

| Mode             | Channel | Frequency (MHz) | Average Power (mW) | Average Power (dBm) | EIRP Power (mW) | EIRP Power (dBm) | EIRP Limit (dBm) | Pass / Fail |
|------------------|---------|-----------------|--------------------|---------------------|-----------------|------------------|------------------|-------------|
| 802.11a          | 36      | 5180            | 27.16              | 14.34               | 26.85           | 14.29            | 23               | Pass        |
|                  | 40      | 5200            | 26.98              | 14.31               | 26.67           | 14.26            | 23               | Pass        |
|                  | 44      | 5220            | 26.24              | 14.19               | 25.94           | 14.14            | 23               | Pass        |
|                  | 48      | 5240            | 26.30              | 14.20               | 26.00           | 14.15            | 23               | Pass        |
| 802.11n (HT20)   | 36      | 5180            | 27.16              | 14.34               | 26.85           | 14.29            | 23               | Pass        |
|                  | 40      | 5200            | 26.85              | 14.29               | 26.55           | 14.24            | 23               | Pass        |
|                  | 44      | 5220            | 25.82              | 14.12               | 25.53           | 14.07            | 23               | Pass        |
|                  | 48      | 5240            | 27.35              | 14.37               | 27.04           | 14.32            | 23               | Pass        |
| 802.11n (HT40)   | 38      | 5190            | 13.84              | 11.41               | 13.68           | 11.36            | 23               | Pass        |
|                  | 46      | 5230            | 24.04              | 13.81               | 23.77           | 13.76            | 23               | Pass        |
| 802.11ac (VHT80) | 42      | 5210            | 11.04              | 10.43               | 10.91           | 10.38            | 23               | Pass        |

**Ant-0 + Ant-1**

| Mode                    | Channel | Frequency (MHz) | Average Power (mW) | Average Power (dBm) | EIRP Power (mW) | EIRP Power (dBm) | EIRP Limit (dBm) | Pass / Fail |
|-------------------------|---------|-----------------|--------------------|---------------------|-----------------|------------------|------------------|-------------|
| <b>802.11a</b>          | 36      | 5180            | 52.35              | 17.19               | 51.76           | 17.14            | 23               | Pass        |
|                         | 40      | 5200            | 54.07              | 17.33               | 53.46           | 17.28            | 23               | Pass        |
|                         | 44      | 5220            | 51.53              | 17.12               | 50.93           | 17.07            | 23               | Pass        |
|                         | 48      | 5240            | 53.15              | 17.26               | 52.60           | 17.21            | 23               | Pass        |
| <b>802.11n (HT20)</b>   | 36      | 5180            | 53.04              | 17.25               | 52.48           | 17.20            | 23               | Pass        |
|                         | 40      | 5200            | 53.16              | 17.26               | 52.60           | 17.21            | 23               | Pass        |
|                         | 44      | 5220            | 51.78              | 17.14               | 51.17           | 17.09            | 23               | Pass        |
|                         | 48      | 5240            | 54.22              | 17.34               | 53.58           | 17.29            | 23               | Pass        |
| <b>802.11n (HT40)</b>   | 38      | 5190            | 27.99              | 14.47               | 27.67           | 14.42            | 23               | Pass        |
|                         | 46      | 5230            | 46.69              | 16.69               | 46.13           | 16.64            | 23               | Pass        |
| <b>802.11ac (VHT80)</b> | 42      | 5210            | 20.76              | 13.17               | 20.51           | 13.12            | 23               | Pass        |

5260~5320 MHz, 5500~5700 MHz

Conducted Power

Ant-0

| Mode             | Channel | Frequency (MHz) | Average Power (mW) | Average Power (dBm) | Power Limit (dBm) | Pass / Fail |
|------------------|---------|-----------------|--------------------|---------------------|-------------------|-------------|
| 802.11a          | 52      | 5260            | 26.49              | 14.23               | 24                | Pass        |
|                  | 56      | 5280            | 26.24              | 14.19               | 24                | Pass        |
|                  | 60      | 5300            | 26.36              | 14.21               | 24                | Pass        |
|                  | 64      | 5320            | 25.82              | 14.12               | 24                | Pass        |
|                  | 100     | 5500            | 10.50              | 10.21               | 24                | Pass        |
|                  | 116     | 5580            | 19.10              | 12.81               | 24                | Pass        |
|                  | 120     | 5600            | 25.82              | 14.12               | 24                | Pass        |
|                  | 124     | 5620            | 26.06              | 14.16               | 24                | Pass        |
|                  | 132     | 5660            | 25.76              | 14.11               | 24                | Pass        |
|                  | 140     | 5700            | 16.41              | 12.15               | 24                | Pass        |
| 802.11n(HT20)    | 144     | 5720            | 26.49              | 14.23               | 24                | Pass        |
|                  | 52      | 5260            | 27.73              | 14.43               | 24                | Pass        |
|                  | 56      | 5280            | 26.55              | 14.24               | 24                | Pass        |
|                  | 60      | 5300            | 27.10              | 14.33               | 24                | Pass        |
|                  | 64      | 5320            | 26.85              | 14.29               | 24                | Pass        |
|                  | 100     | 5500            | 8.04               | 9.05                | 24                | Pass        |
|                  | 116     | 5580            | 15.42              | 11.88               | 24                | Pass        |
|                  | 120     | 5600            | 27.61              | 14.41               | 24                | Pass        |
|                  | 124     | 5620            | 26.61              | 14.25               | 24                | Pass        |
|                  | 132     | 5660            | 26.24              | 14.19               | 24                | Pass        |
| 802.11n(HT40)    | 140     | 5700            | 13.00              | 11.14               | 24                | Pass        |
|                  | 144     | 5720            | 27.10              | 14.33               | 24                | Pass        |
|                  | 54      | 5270            | 24.66              | 13.92               | 24                | Pass        |
|                  | 62      | 5310            | 13.24              | 11.22               | 24                | Pass        |
|                  | 102     | 5510            | 5.43               | 7.35                | 24                | Pass        |
|                  | 110     | 5550            | 9.75               | 9.89                | 24                | Pass        |
|                  | 126     | 5630            | 26.49              | 14.23               | 24                | Pass        |
| 802.11ac (VHT80) | 134     | 5670            | 26.00              | 14.15               | 24                | Pass        |
|                  | 142     | 5670            | 27.23              | 14.35               | 24                | Pass        |
|                  | 58      | 5290            | 13.77              | 11.39               | 24                | Pass        |
|                  | 106     | 5530            | 8.71               | 9.4                 | 24                | Pass        |
|                  | 138     | 5690            | 26.61              | 14.25               | 24                | Pass        |

**Ant-1**

| Mode             | Channel | Frequency (MHz) | Average Power (mW) | Average Power (dBm) | Power Limit (dBm) | Pass / Fail |
|------------------|---------|-----------------|--------------------|---------------------|-------------------|-------------|
| 802.11a          | 52      | 5260            | 26.12              | 14.17               | 24                | Pass        |
|                  | 56      | 5280            | 25.76              | 14.11               | 24                | Pass        |
|                  | 60      | 5300            | 26.12              | 14.17               | 24                | Pass        |
|                  | 64      | 5320            | 25.76              | 14.11               | 24                | Pass        |
|                  | 100     | 5500            | 10.45              | 10.19               | 24                | Pass        |
|                  | 116     | 5580            | 18.75              | 12.73               | 24                | Pass        |
|                  | 120     | 5600            | 25.70              | 14.10               | 24                | Pass        |
|                  | 124     | 5620            | 25.76              | 14.11               | 24                | Pass        |
|                  | 132     | 5660            | 25.64              | 14.09               | 24                | Pass        |
|                  | 140     | 5700            | 16.29              | 12.12               | 24                | Pass        |
|                  | 144     | 5720            | 26.36              | 14.21               | 24                | Pass        |
| 802.11n(HT20)    | 52      | 5260            | 27.23              | 14.35               | 24                | Pass        |
|                  | 56      | 5280            | 26.98              | 14.31               | 24                | Pass        |
|                  | 60      | 5300            | 26.18              | 14.18               | 24                | Pass        |
|                  | 64      | 5320            | 25.64              | 14.09               | 24                | Pass        |
|                  | 100     | 5500            | 7.98               | 9.02                | 24                | Pass        |
|                  | 116     | 5580            | 14.62              | 11.65               | 24                | Pass        |
|                  | 120     | 5600            | 25.76              | 14.11               | 24                | Pass        |
|                  | 124     | 5620            | 25.64              | 14.09               | 24                | Pass        |
|                  | 132     | 5660            | 25.94              | 14.14               | 24                | Pass        |
|                  | 140     | 5700            | 12.68              | 11.03               | 24                | Pass        |
|                  | 144     | 5720            | 26.61              | 14.25               | 24                | Pass        |
| 802.11n(HT40)    | 54      | 5270            | 24.43              | 13.88               | 24                | Pass        |
|                  | 62      | 5310            | 13.21              | 11.21               | 24                | Pass        |
|                  | 102     | 5510            | 5.38               | 7.31                | 24                | Pass        |
|                  | 110     | 5550            | 9.57               | 9.81                | 24                | Pass        |
|                  | 126     | 5630            | 26.18              | 14.18               | 24                | Pass        |
|                  | 134     | 5670            | 26.12              | 14.17               | 24                | Pass        |
|                  | 142     | 5670            | 25.76              | 14.11               | 24                | Pass        |
| 802.11ac (VHT80) | 58      | 5290            | 13.15              | 11.19               | 24                | Pass        |
|                  | 106     | 5530            | 8.17               | 9.12                | 24                | Pass        |
|                  | 138     | 5690            | 26.36              | 14.21               | 24                | Pass        |

**Ant-0 + Ant-1**

| Mode             | Channel | Frequency (MHz) | Average Power (mW) | Average Power (dBm) | Power Limit (dBm) | Pass / Fail |
|------------------|---------|-----------------|--------------------|---------------------|-------------------|-------------|
| 802.11a          | 52      | 5260            | 51.01              | 17.08               | 24                | Pass        |
|                  | 56      | 5280            | 51.85              | 17.15               | 24                | Pass        |
|                  | 60      | 5300            | 52.18              | 17.18               | 24                | Pass        |
|                  | 64      | 5320            | 54.60              | 17.37               | 24                | Pass        |
|                  | 100     | 5500            | 21.64              | 13.35               | 24                | Pass        |
|                  | 116     | 5580            | 38.13              | 15.81               | 24                | Pass        |
|                  | 120     | 5600            | 53.39              | 17.27               | 24                | Pass        |
|                  | 124     | 5620            | 51.71              | 17.14               | 24                | Pass        |
|                  | 132     | 5660            | 52.47              | 17.20               | 24                | Pass        |
|                  | 140     | 5700            | 34.78              | 15.41               | 24                | Pass        |
|                  | 144     | 5720            | 51.28              | 17.10               | 24                | Pass        |
| 802.11n(HT20)    | 52      | 5260            | 53.81              | 17.31               | 24                | Pass        |
|                  | 56      | 5280            | 52.34              | 17.19               | 24                | Pass        |
|                  | 60      | 5300            | 53.51              | 17.28               | 24                | Pass        |
|                  | 64      | 5320            | 52.43              | 17.20               | 24                | Pass        |
|                  | 100     | 5500            | 16.57              | 12.19               | 24                | Pass        |
|                  | 116     | 5580            | 31.27              | 14.95               | 24                | Pass        |
|                  | 120     | 5600            | 52.57              | 17.21               | 24                | Pass        |
|                  | 124     | 5620            | 51.60              | 17.13               | 24                | Pass        |
|                  | 132     | 5660            | 52.08              | 17.17               | 24                | Pass        |
|                  | 140     | 5700            | 29.48              | 14.70               | 24                | Pass        |
|                  | 144     | 5720            | 51.90              | 17.15               | 24                | Pass        |
| 802.11n(HT40)    | 54      | 5270            | 47.74              | 16.79               | 24                | Pass        |
|                  | 62      | 5310            | 26.25              | 14.19               | 24                | Pass        |
|                  | 102     | 5510            | 10.79              | 10.33               | 24                | Pass        |
|                  | 110     | 5550            | 18.56              | 12.69               | 24                | Pass        |
|                  | 126     | 5630            | 52.34              | 17.19               | 24                | Pass        |
|                  | 134     | 5670            | 51.26              | 17.10               | 24                | Pass        |
|                  | 142     | 5670            | 50.41              | 17.03               | 24                | Pass        |
| 802.11ac (VHT80) | 58      | 5290            | 27.24              | 14.35               | 24                | Pass        |
|                  | 106     | 5530            | 16.59              | 12.20               | 24                | Pass        |
|                  | 138     | 5690            | 53.23              | 17.26               | 24                | Pass        |

## EIRP Power

Ant-0

| Mode             | Channel | Frequency (MHz) | EIRP Power (mW) | EIRP Power (dBm) | EIRP Limit (dBm) | Pass / Fail |
|------------------|---------|-----------------|-----------------|------------------|------------------|-------------|
| 802.11a          | 52      | 5260            | 26.18           | 14.18            | 30               | Pass        |
|                  | 56      | 5280            | 25.94           | 14.14            | 30               | Pass        |
|                  | 60      | 5300            | 26.06           | 14.16            | 30               | Pass        |
|                  | 64      | 5320            | 25.53           | 14.07            | 30               | Pass        |
|                  | 100     | 5500            | 8.87            | 9.48             | 30               | Pass        |
|                  | 116     | 5580            | 16.14           | 12.08            | 30               | Pass        |
|                  | 120     | 5600            | 21.83           | 13.39            | 30               | Pass        |
|                  | 124     | 5620            | 22.03           | 13.43            | 30               | Pass        |
|                  | 132     | 5660            | 21.78           | 13.38            | 30               | Pass        |
|                  | 140     | 5700            | 13.87           | 11.42            | 30               | Pass        |
|                  | 144     | 5720            | 22.39           | 13.50            | 30               | Pass        |
| 802.11n(HT20)    | 52      | 5260            | 27.42           | 14.38            | 30               | Pass        |
|                  | 56      | 5280            | 26.24           | 14.19            | 30               | Pass        |
|                  | 60      | 5300            | 26.79           | 14.28            | 30               | Pass        |
|                  | 64      | 5320            | 26.55           | 14.24            | 30               | Pass        |
|                  | 100     | 5500            | 6.79            | 8.32             | 30               | Pass        |
|                  | 116     | 5580            | 13.03           | 11.15            | 30               | Pass        |
|                  | 120     | 5600            | 23.33           | 13.68            | 30               | Pass        |
|                  | 124     | 5620            | 22.49           | 13.52            | 30               | Pass        |
|                  | 132     | 5660            | 22.18           | 13.46            | 30               | Pass        |
|                  | 140     | 5700            | 10.99           | 10.41            | 30               | Pass        |
|                  | 144     | 5720            | 22.91           | 13.60            | 30               | Pass        |
| 802.11n(HT40)    | 54      | 5270            | 24.38           | 13.87            | 30               | Pass        |
|                  | 62      | 5310            | 13.09           | 11.17            | 30               | Pass        |
|                  | 102     | 5510            | 4.59            | 6.62             | 30               | Pass        |
|                  | 110     | 5550            | 8.24            | 9.16             | 30               | Pass        |
|                  | 126     | 5630            | 22.39           | 13.50            | 30               | Pass        |
|                  | 134     | 5670            | 21.98           | 13.42            | 30               | Pass        |
|                  | 142     | 5670            | 23.01           | 13.62            | 30               | Pass        |
| 802.11ac (VHT80) | 58      | 5290            | 13.61           | 11.34            | 30               | Pass        |
|                  | 106     | 5530            | 7.36            | 8.67             | 30               | Pass        |
|                  | 138     | 5690            | 22.49           | 13.52            | 30               | Pass        |

**Note:** WLAN 5.15~5.35 GHz Gain: -0.05 dBi / WLAN 5.47~5.725 GHz Gain: -0.73 dBi

**Ant-1**

| Mode             | Channel | Frequency (MHz) | EIRP Power (mW) | EIRP Power (dBm) | EIRP Limit (dBm) | Pass / Fail |
|------------------|---------|-----------------|-----------------|------------------|------------------|-------------|
| 802.11a          | 52      | 5260            | 25.82           | 14.12            | 30               | Pass        |
|                  | 56      | 5280            | 25.47           | 14.06            | 30               | Pass        |
|                  | 60      | 5300            | 25.82           | 14.12            | 30               | Pass        |
|                  | 64      | 5320            | 25.47           | 14.06            | 30               | Pass        |
|                  | 100     | 5500            | 8.83            | 9.46             | 30               | Pass        |
|                  | 116     | 5580            | 15.85           | 12               | 30               | Pass        |
|                  | 120     | 5600            | 21.73           | 13.37            | 30               | Pass        |
|                  | 124     | 5620            | 21.78           | 13.38            | 30               | Pass        |
|                  | 132     | 5660            | 21.68           | 13.36            | 30               | Pass        |
|                  | 140     | 5700            | 13.77           | 11.39            | 30               | Pass        |
|                  | 144     | 5720            | 22.28           | 13.48            | 30               | Pass        |
| 802.11n(HT20)    | 52      | 5260            | 26.92           | 14.30            | 30               | Pass        |
|                  | 56      | 5280            | 26.67           | 14.26            | 30               | Pass        |
|                  | 60      | 5300            | 25.88           | 14.13            | 30               | Pass        |
|                  | 64      | 5320            | 25.35           | 14.04            | 30               | Pass        |
|                  | 100     | 5500            | 6.75            | 8.29             | 30               | Pass        |
|                  | 116     | 5580            | 12.36           | 10.92            | 30               | Pass        |
|                  | 120     | 5600            | 21.78           | 13.38            | 30               | Pass        |
|                  | 124     | 5620            | 21.68           | 13.36            | 30               | Pass        |
|                  | 132     | 5660            | 21.93           | 13.41            | 30               | Pass        |
|                  | 140     | 5700            | 10.72           | 10.3             | 30               | Pass        |
|                  | 144     | 5720            | 22.49           | 13.52            | 30               | Pass        |
| 802.11n(HT40)    | 54      | 5270            | 24.15           | 13.83            | 30               | Pass        |
|                  | 62      | 5310            | 13.06           | 11.16            | 30               | Pass        |
|                  | 102     | 5510            | 4.55            | 6.58             | 30               | Pass        |
|                  | 110     | 5550            | 8.09            | 9.08             | 30               | Pass        |
|                  | 126     | 5630            | 22.13           | 13.45            | 30               | Pass        |
|                  | 134     | 5670            | 22.08           | 13.44            | 30               | Pass        |
|                  | 142     | 5670            | 21.78           | 13.38            | 30               | Pass        |
| 802.11ac (VHT80) | 58      | 5290            | 13.00           | 11.14            | 30               | Pass        |
|                  | 106     | 5530            | 6.90            | 8.39             | 30               | Pass        |
|                  | 138     | 5690            | 22.28           | 13.48            | 30               | Pass        |

**Note:** WLAN 5.15~5.35 GHz Gain: -0.05 dBi / WLAN 5.47~5.725 GHz Gain: -0.73 dBi

**Ant-0 + Ant-1**

| Mode             | Channel | Frequency (MHz) | EIRP Power (mW) | EIRP Power (dBm) | EIRP Limit (dBm) | Pass / Fail |
|------------------|---------|-----------------|-----------------|------------------|------------------|-------------|
| 802.11a          | 52      | 5260            | 50.47           | 17.03            | 30               | Pass        |
|                  | 56      | 5280            | 51.29           | 17.10            | 30               | Pass        |
|                  | 60      | 5300            | 51.64           | 17.13            | 30               | Pass        |
|                  | 64      | 5320            | 53.95           | 17.32            | 30               | Pass        |
|                  | 100     | 5500            | 18.28           | 12.62            | 30               | Pass        |
|                  | 116     | 5580            | 32.21           | 15.08            | 30               | Pass        |
|                  | 120     | 5600            | 45.08           | 16.54            | 30               | Pass        |
|                  | 124     | 5620            | 43.75           | 16.41            | 30               | Pass        |
|                  | 132     | 5660            | 44.36           | 16.47            | 30               | Pass        |
|                  | 140     | 5700            | 29.38           | 14.68            | 30               | Pass        |
|                  | 144     | 5720            | 43.35           | 16.37            | 30               | Pass        |
| 802.11n(HT20)    | 52      | 5260            | 53.21           | 17.26            | 30               | Pass        |
|                  | 56      | 5280            | 51.76           | 17.14            | 30               | Pass        |
|                  | 60      | 5300            | 52.84           | 17.23            | 30               | Pass        |
|                  | 64      | 5320            | 51.88           | 17.15            | 30               | Pass        |
|                  | 100     | 5500            | 14.00           | 11.46            | 30               | Pass        |
|                  | 116     | 5580            | 26.42           | 14.22            | 30               | Pass        |
|                  | 120     | 5600            | 44.46           | 16.48            | 30               | Pass        |
|                  | 124     | 5620            | 43.65           | 16.4             | 30               | Pass        |
|                  | 132     | 5660            | 44.06           | 16.44            | 30               | Pass        |
|                  | 140     | 5700            | 24.95           | 13.97            | 30               | Pass        |
|                  | 144     | 5720            | 43.85           | 16.42            | 30               | Pass        |
| 802.11n(HT40)    | 54      | 5270            | 47.21           | 16.74            | 30               | Pass        |
|                  | 62      | 5310            | 25.94           | 14.14            | 30               | Pass        |
|                  | 102     | 5510            | 9.12            | 9.60             | 30               | Pass        |
|                  | 110     | 5550            | 15.70           | 11.96            | 30               | Pass        |
|                  | 126     | 5630            | 44.26           | 16.46            | 30               | Pass        |
|                  | 134     | 5670            | 43.35           | 16.37            | 30               | Pass        |
|                  | 142     | 5670            | 42.66           | 16.3             | 30               | Pass        |
| 802.11ac (VHT80) | 58      | 5290            | 26.92           | 14.30            | 30               | Pass        |
|                  | 106     | 5530            | 14.03           | 11.47            | 30               | Pass        |
|                  | 138     | 5690            | 44.98           | 16.53            | 30               | Pass        |

**Note:** WLAN 5.15~5.35 GHz Gain: -0.05 dBi / WLAN 5.47~5.725 GHz Gain: -0.73 dBi



# 5745~5825 MHz

## Ant-0

| Mode             | Channel | Frequency (MHz) | Average Power (mW) | Average Power (dBm) | Power Limit (dBm) | Pass / Fail |
|------------------|---------|-----------------|--------------------|---------------------|-------------------|-------------|
| 802.11a          | 149     | 5745            | 26.49              | 14.23               | 30                | Pass        |
|                  | 153     | 5765            | 26.36              | 14.21               | 30                | Pass        |
|                  | 157     | 5785            | 26.42              | 14.22               | 30                | Pass        |
|                  | 161     | 5805            | 27.42              | 14.38               | 30                | Pass        |
|                  | 165     | 5825            | 26.92              | 14.30               | 30                | Pass        |
| 802.11n (HT20)   | 149     | 5745            | 26.85              | 14.29               | 30                | Pass        |
|                  | 153     | 5765            | 27.04              | 14.32               | 30                | Pass        |
|                  | 157     | 5785            | 27.67              | 14.42               | 30                | Pass        |
|                  | 161     | 5805            | 27.23              | 14.35               | 30                | Pass        |
|                  | 165     | 5825            | 27.48              | 14.39               | 30                | Pass        |
| 802.11n (HT40)   | 151     | 5755            | 13.96              | 11.45               | 30                | Pass        |
|                  | 159     | 5795            | 27.16              | 14.34               | 30                | Pass        |
| 802.11ac (VHT80) | 155     | 5775            | 9.82               | 9.92                | 30                | Pass        |

## Ant-1

| Mode             | Channel | Frequency (MHz) | Average Power (mW) | Average Power (dBm) | Power Limit (dBm) | Pass / Fail |
|------------------|---------|-----------------|--------------------|---------------------|-------------------|-------------|
| 802.11a          | 149     | 5745            | 25.29              | 14.03               | 30                | Pass        |
|                  | 153     | 5765            | 25.41              | 14.05               | 30                | Pass        |
|                  | 157     | 5785            | 26.00              | 14.15               | 30                | Pass        |
|                  | 161     | 5805            | 26.49              | 14.23               | 30                | Pass        |
|                  | 165     | 5825            | 26.42              | 14.22               | 30                | Pass        |
| 802.11n (HT20)   | 149     | 5745            | 25.82              | 14.12               | 30                | Pass        |
|                  | 153     | 5765            | 26.18              | 14.18               | 30                | Pass        |
|                  | 157     | 5785            | 26.00              | 14.15               | 30                | Pass        |
|                  | 161     | 5805            | 25.76              | 14.11               | 30                | Pass        |
|                  | 165     | 5825            | 25.82              | 14.12               | 30                | Pass        |
| 802.11n (HT40)   | 151     | 5755            | 13.34              | 11.25               | 30                | Pass        |
|                  | 159     | 5795            | 26.98              | 14.31               | 30                | Pass        |
| 802.11ac (VHT80) | 155     | 5775            | 9.57               | 9.81                | 30                | Pass        |

**Ant-0 + Ant-1**

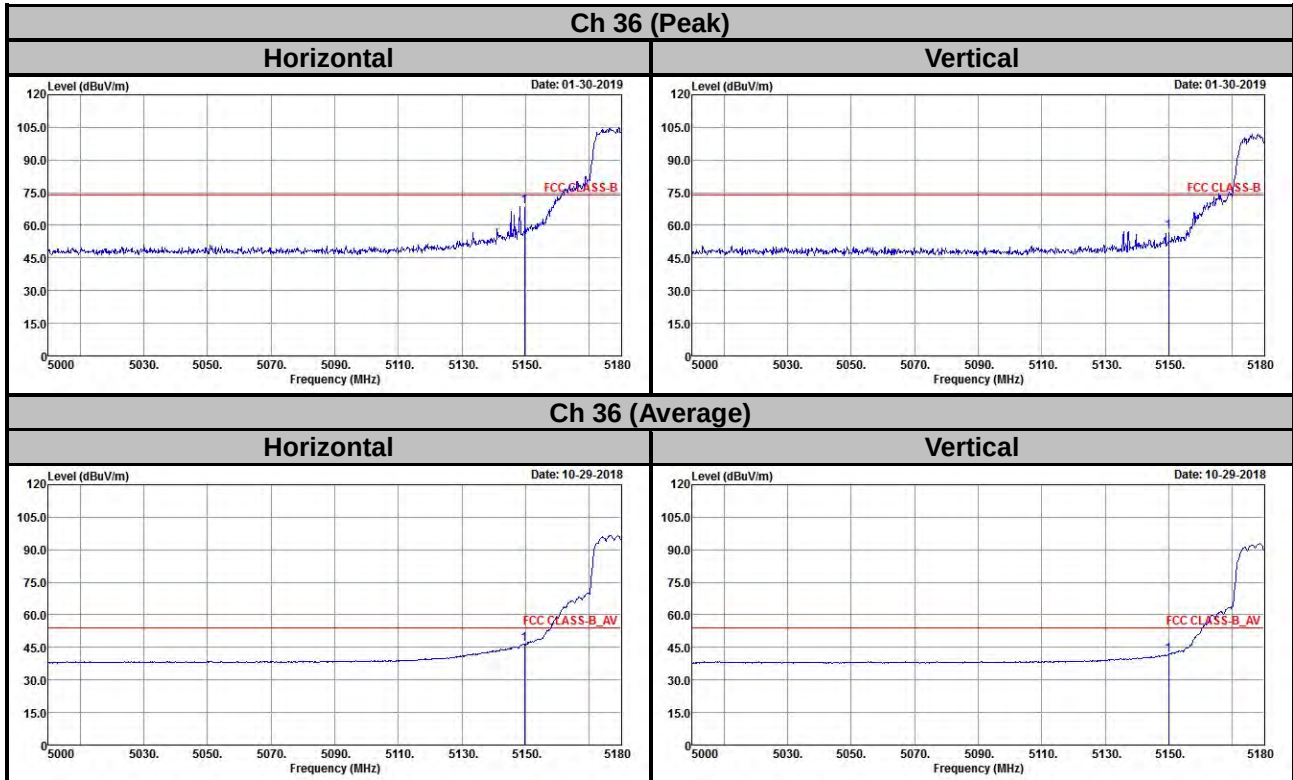
| Mode                    | Channel | Frequency (MHz) | Average Power (mW) | Average Power (dBm) | Power Limit (dBm) | Pass / Fail |
|-------------------------|---------|-----------------|--------------------|---------------------|-------------------|-------------|
| <b>802.11a</b>          | 149     | 5745            | 52.85              | 17.23               | 30                | Pass        |
|                         | 153     | 5765            | 51.60              | 17.13               | 30                | Pass        |
|                         | 157     | 5785            | 53.18              | 17.26               | 30                | Pass        |
|                         | 161     | 5805            | 54.12              | 17.33               | 30                | Pass        |
|                         | 165     | 5825            | 53.20              | 17.26               | 30                | Pass        |
| <b>802.11n (HT20)</b>   | 149     | 5745            | 54.21              | 17.34               | 30                | Pass        |
|                         | 153     | 5765            | 54.65              | 17.38               | 30                | Pass        |
|                         | 157     | 5785            | 55.04              | 17.41               | 30                | Pass        |
|                         | 161     | 5805            | 55.49              | 17.44               | 30                | Pass        |
|                         | 165     | 5825            | 54.33              | 17.35               | 30                | Pass        |
| <b>802.11n (HT40)</b>   | 151     | 5755            | 26.67              | 14.26               | 30                | Pass        |
|                         | 159     | 5795            | 51.08              | 17.08               | 30                | Pass        |
| <b>802.11ac (VHT80)</b> | 155     | 5775            | 18.82              | 12.75               | 30                | Pass        |

## 5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

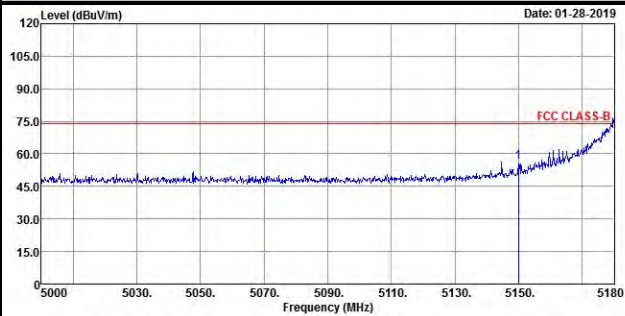
## Annex A- Radiated Bandedge Plots

### 802.11a

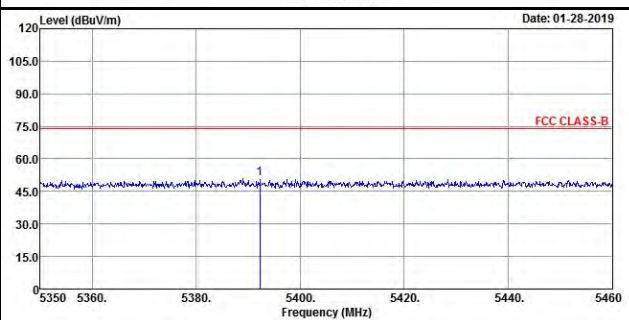
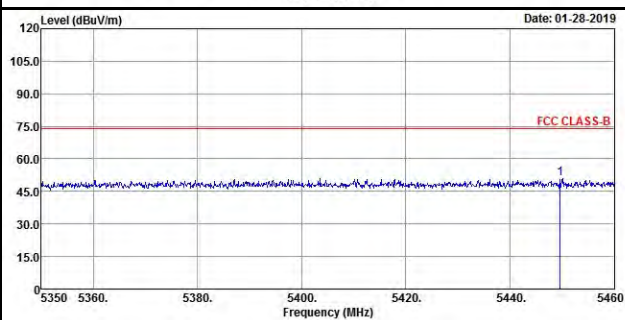
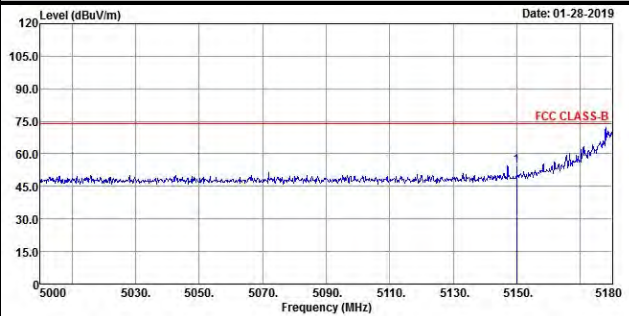


### Ch 40 (Peak)

#### Horizontal

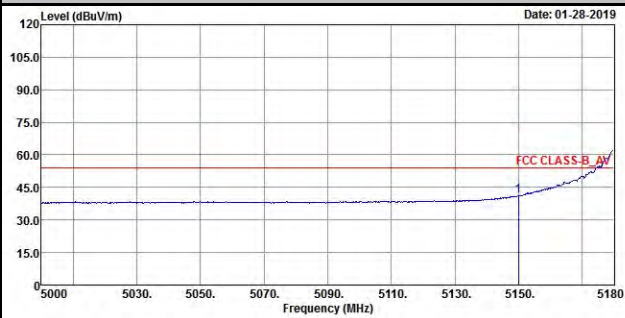


#### Vertical

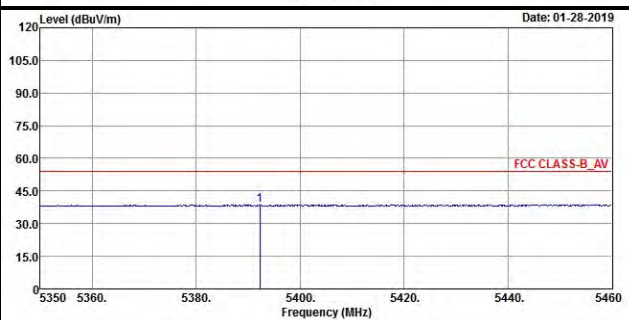
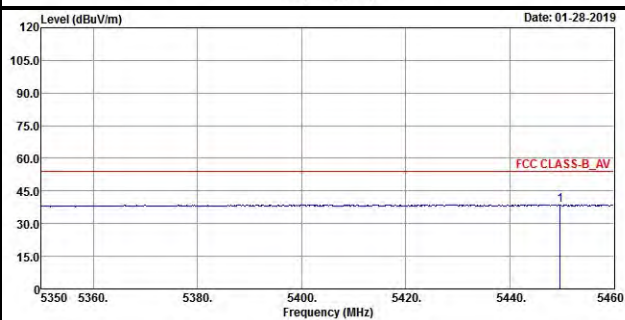
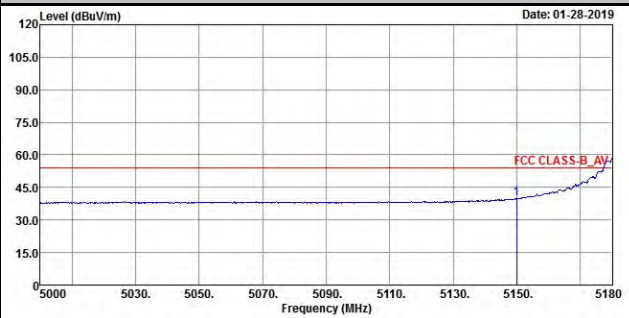


### Ch 40 (Average)

#### Horizontal

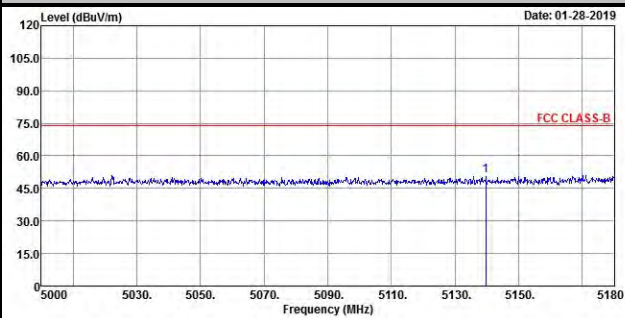


#### Vertical

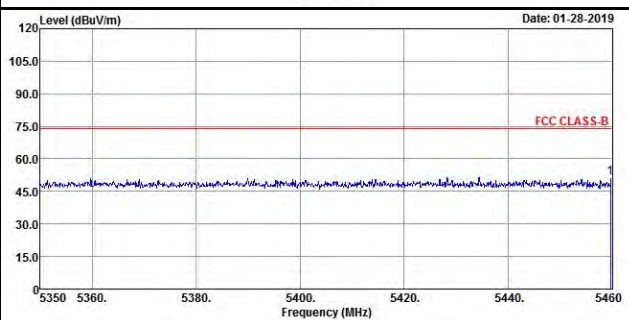
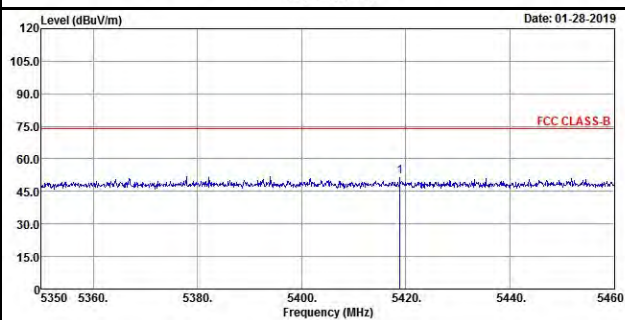
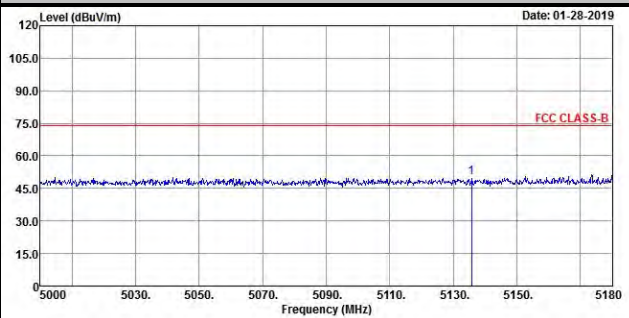


### Ch 48 (Peak)

#### Horizontal

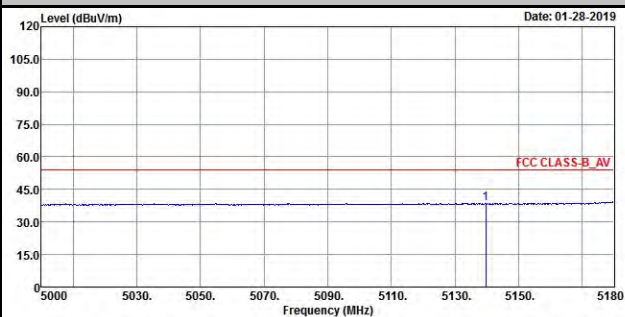


#### Vertical

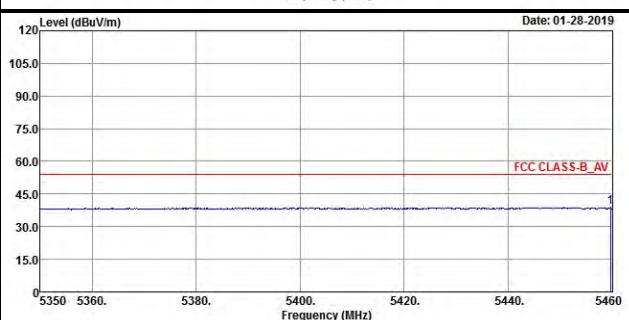
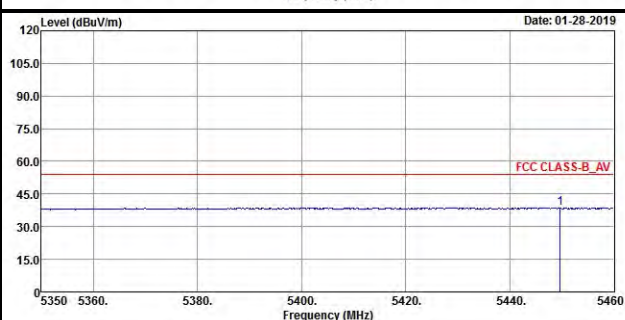
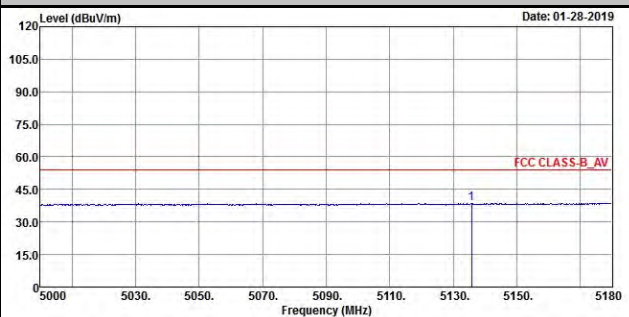


### Ch 48 (Average)

#### Horizontal



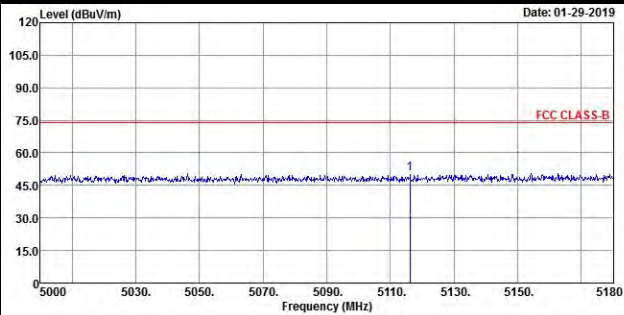
#### Vertical



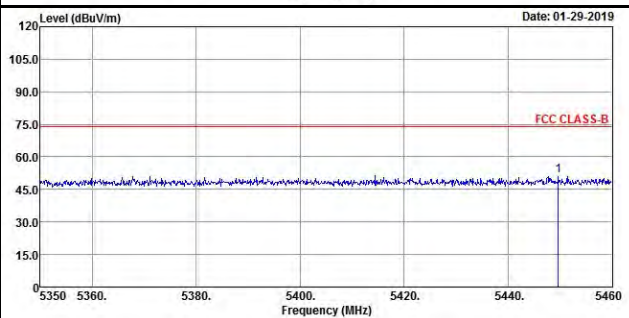
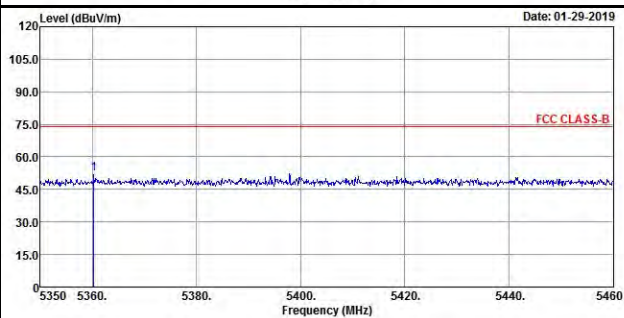
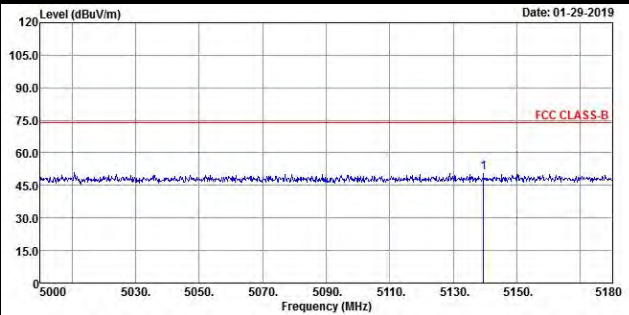


### Ch 52 (Peak)

#### Horizontal

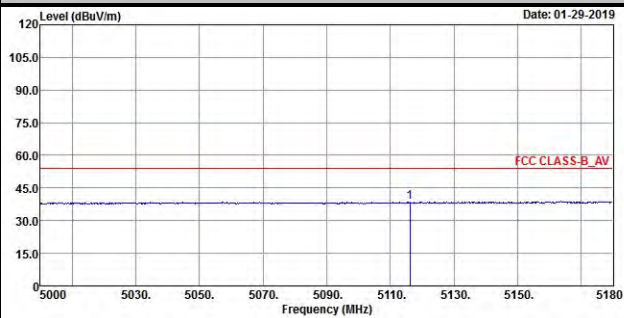


#### Vertical

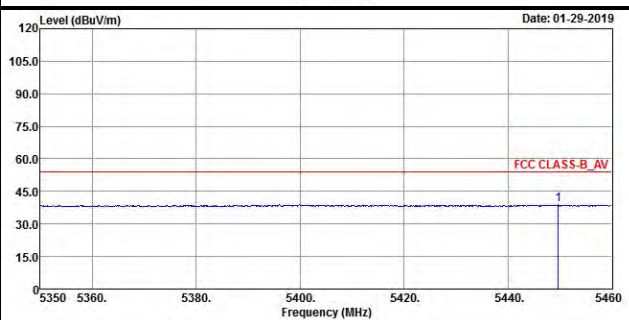
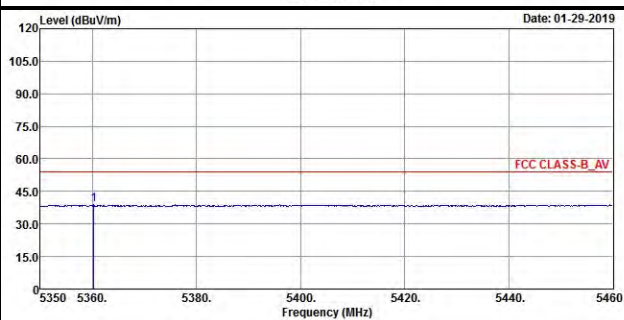
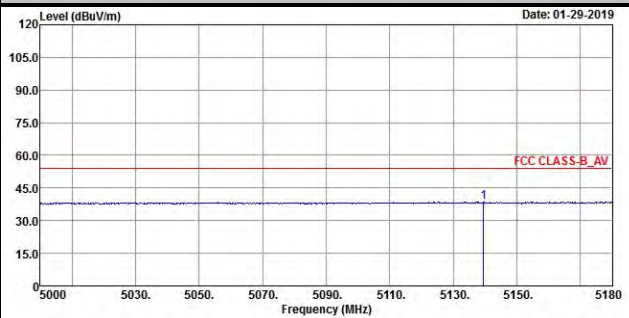


### Ch 52 (Average)

#### Horizontal

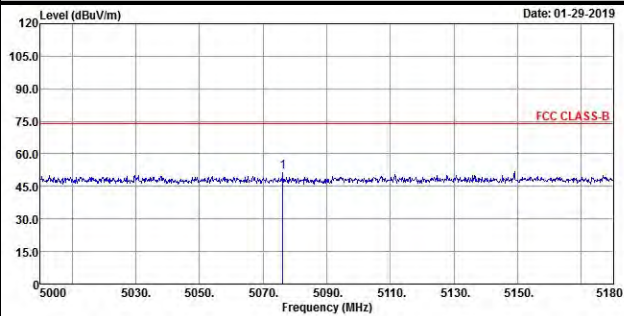


#### Vertical

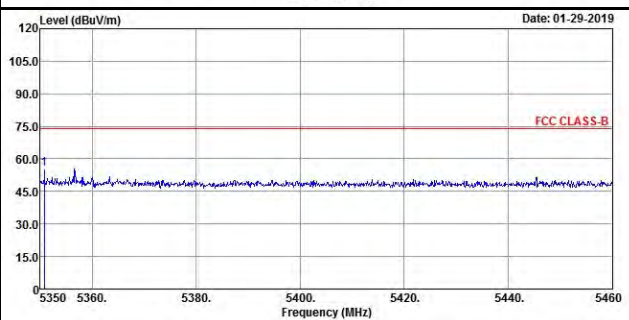
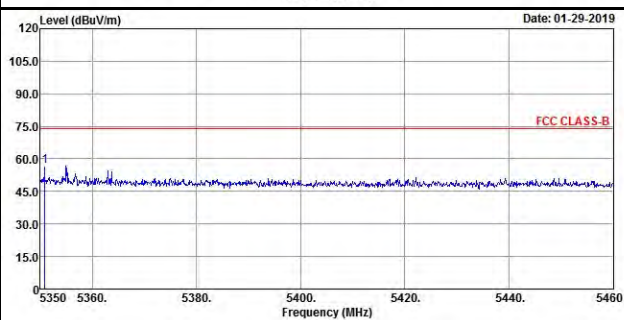
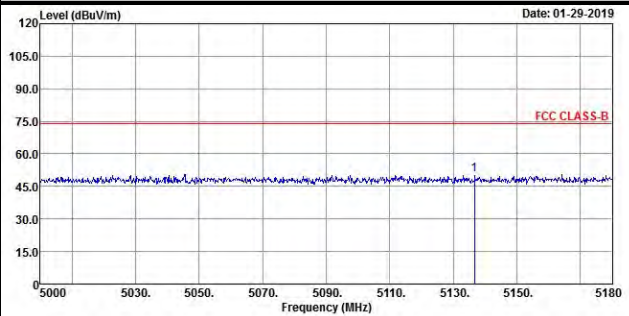


### Ch 60 (Peak)

#### Horizontal

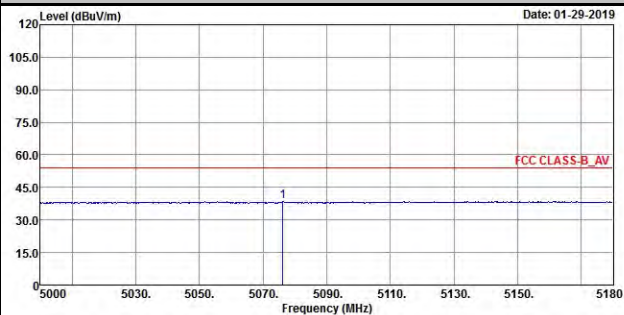


#### Vertical

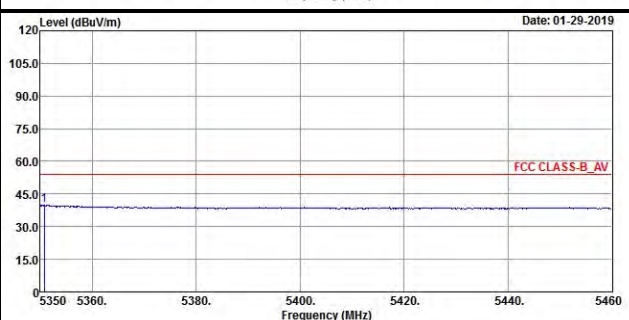
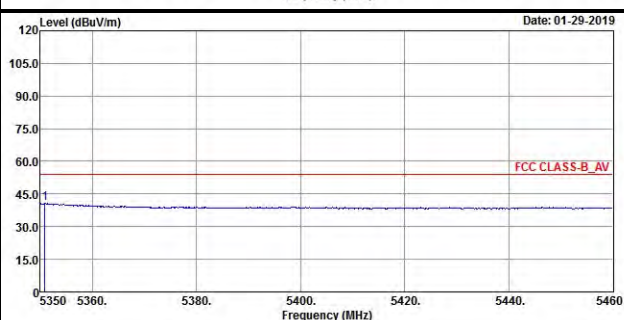
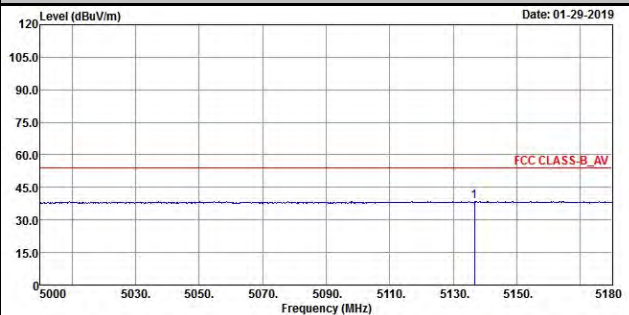


### Ch 60 (Average)

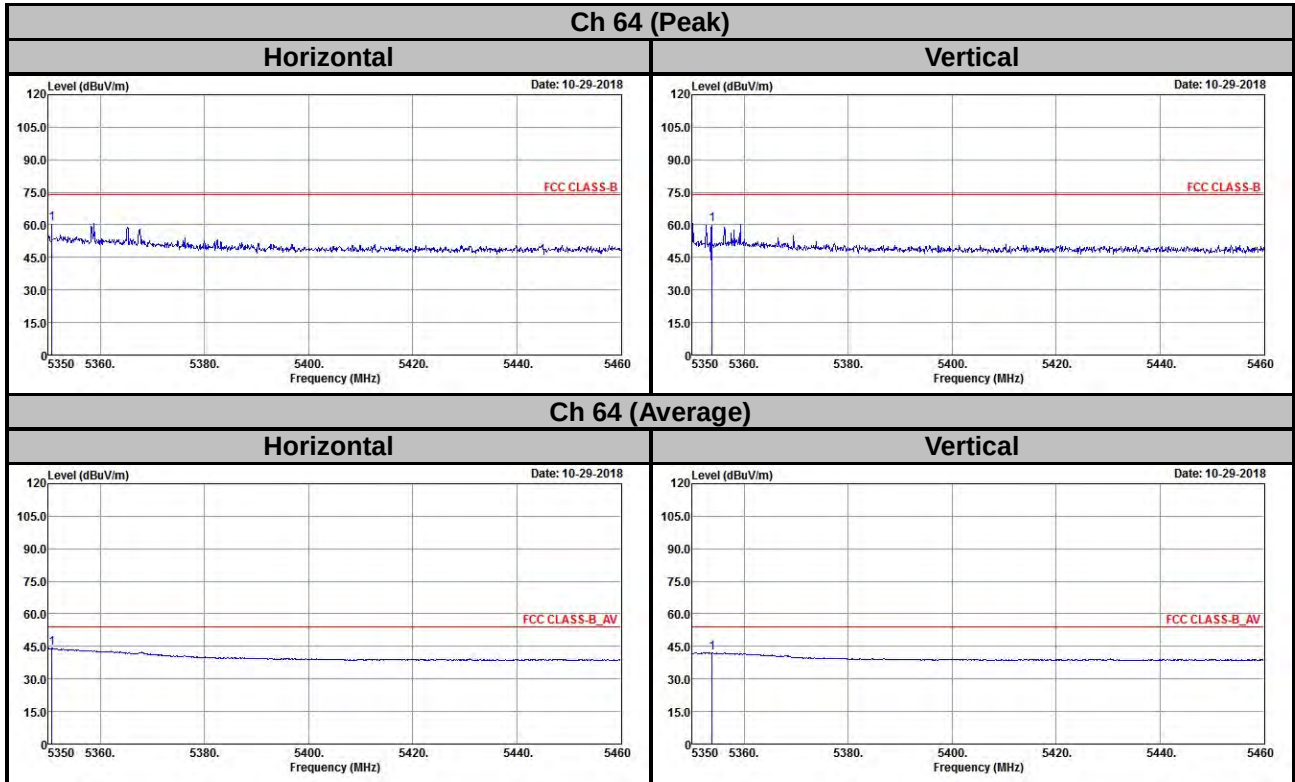
#### Horizontal



#### Vertical

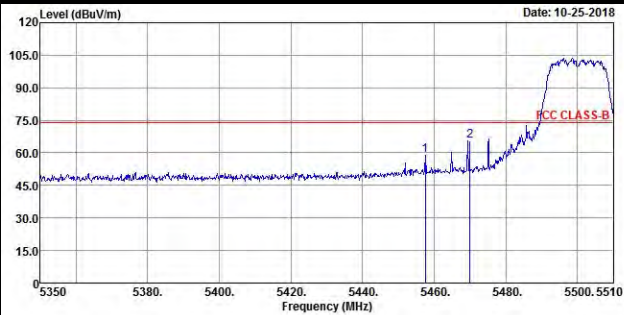




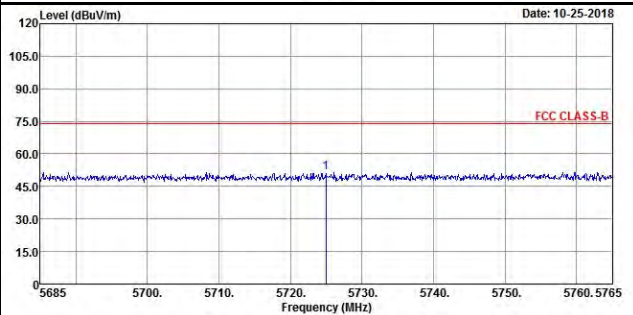
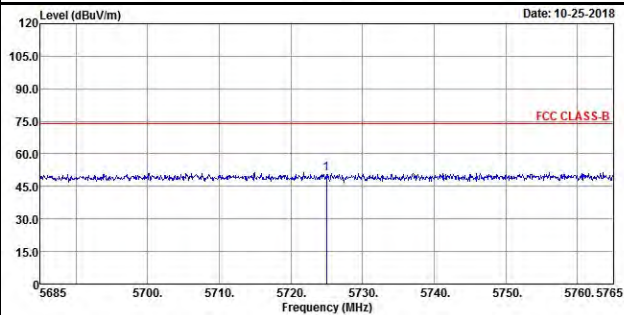
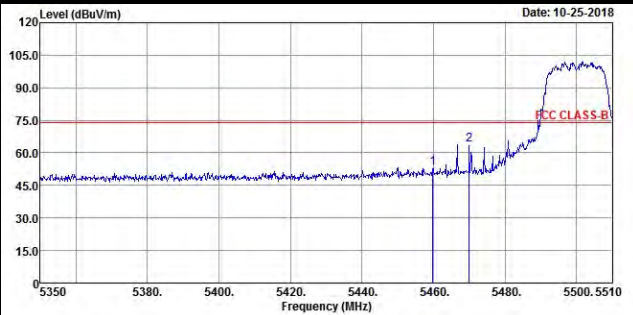


### Ch 100 (Peak)

#### Horizontal

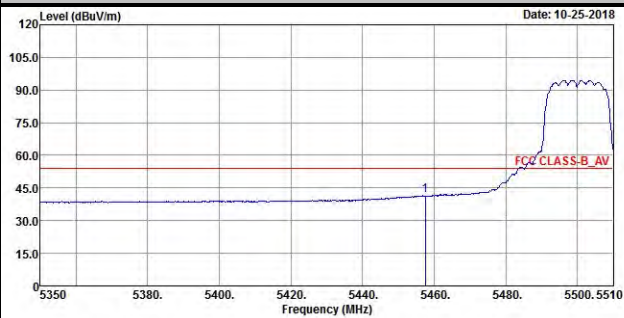


#### Vertical

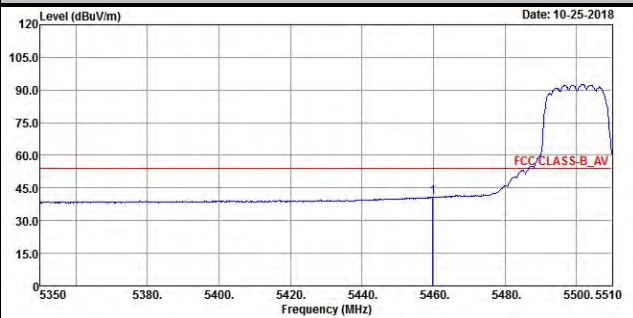


### Ch 100 (Average)

#### Horizontal

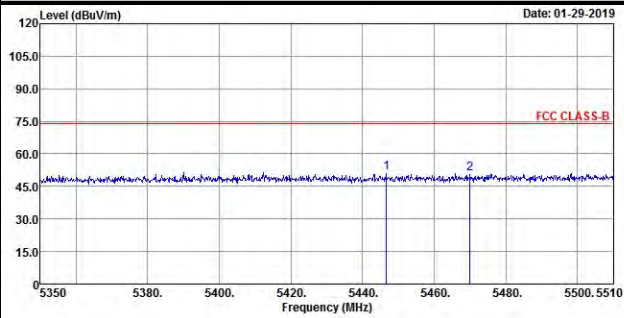


#### Vertical

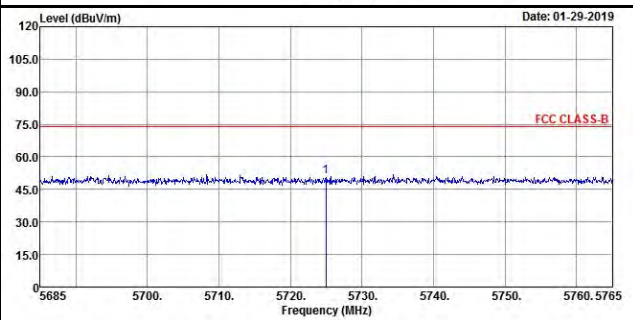
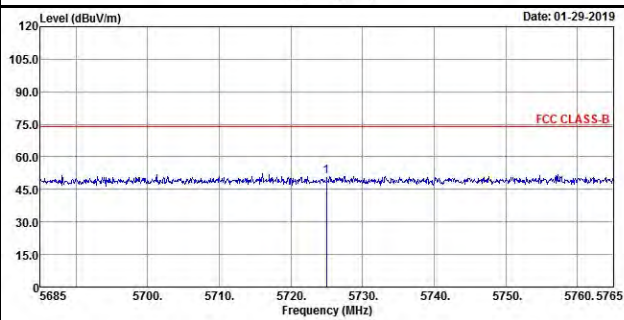
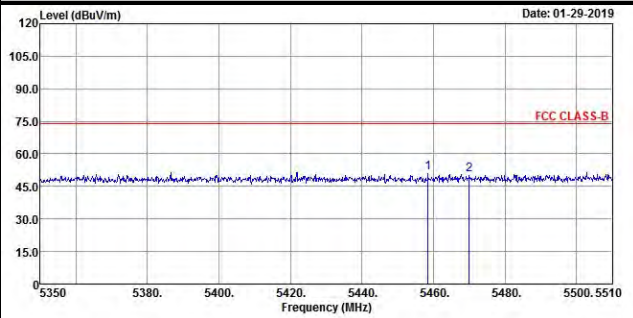


### Ch 116 (Peak)

#### Horizontal

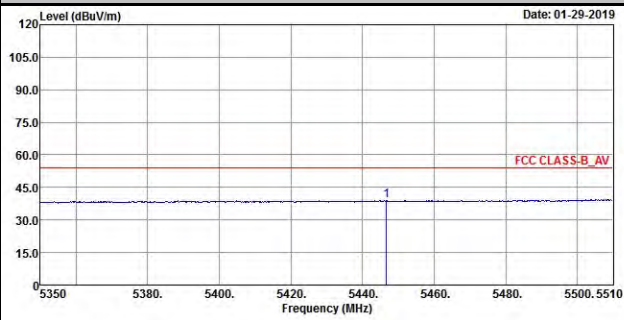


#### Vertical

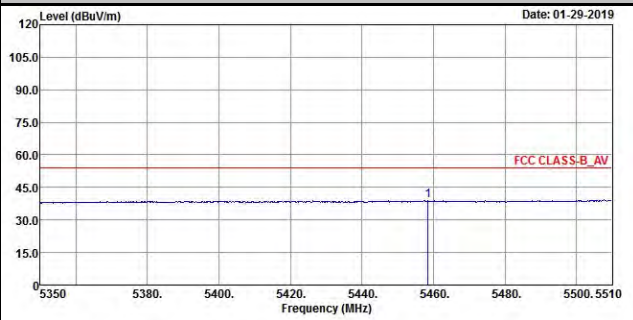


### Ch 116 (Average)

#### Horizontal

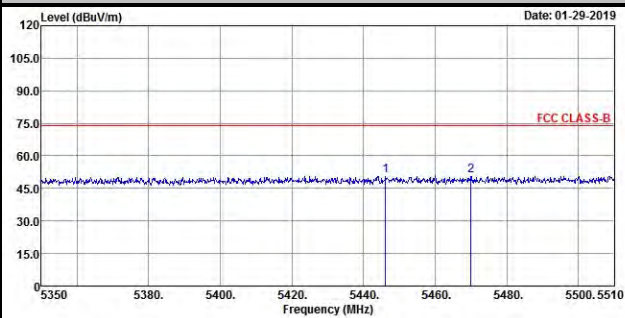


#### Vertical

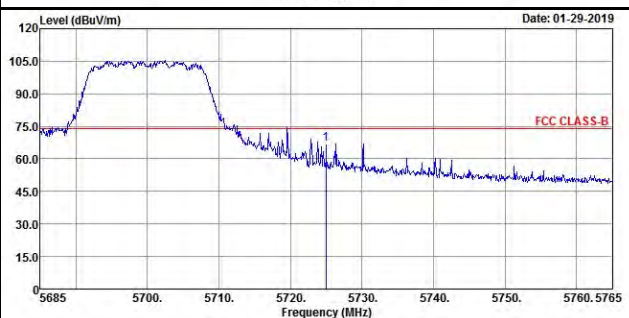
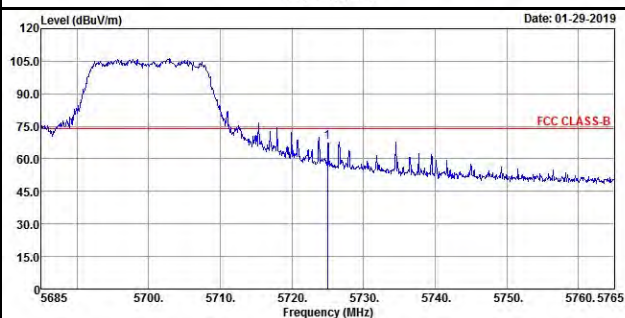
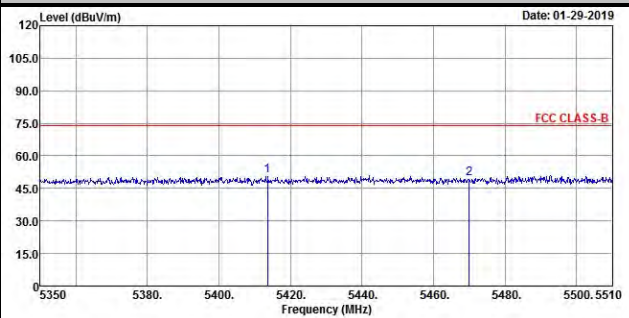


### Ch 140 (Peak)

#### Horizontal

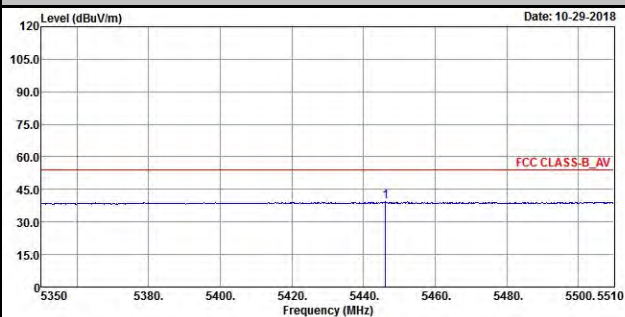


#### Vertical

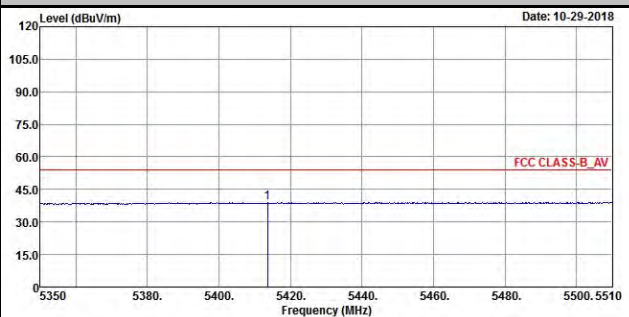


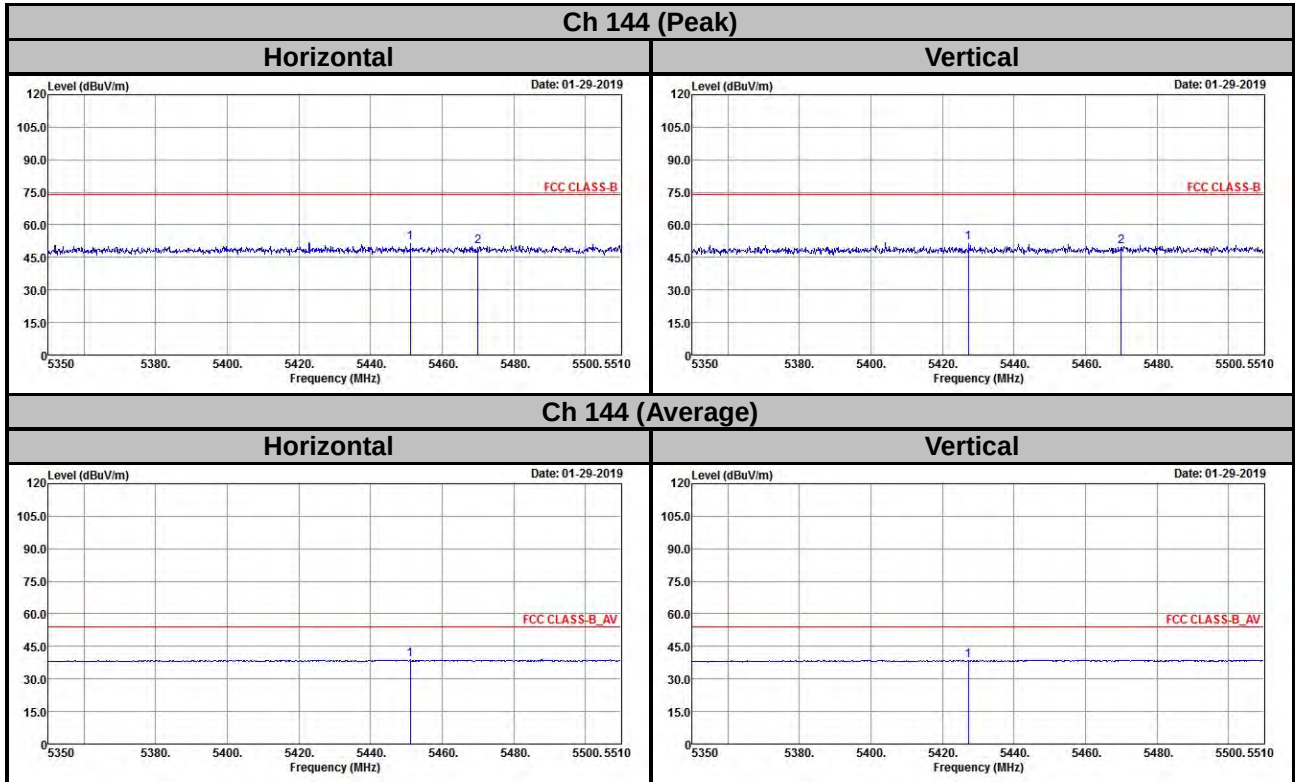
### Ch 140 (Average)

#### Horizontal



#### Vertical

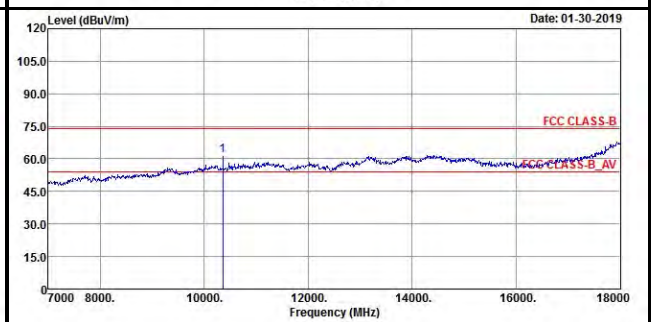
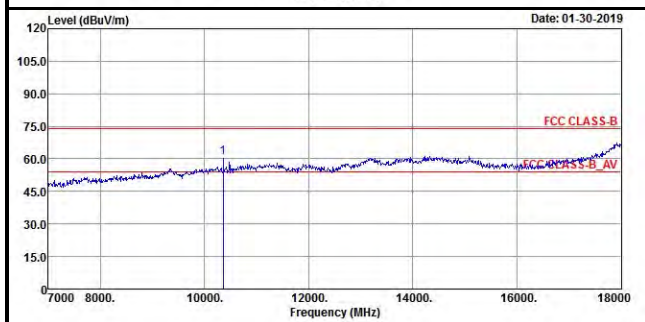
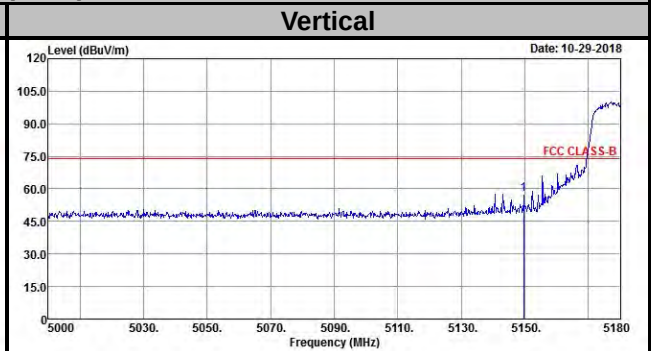
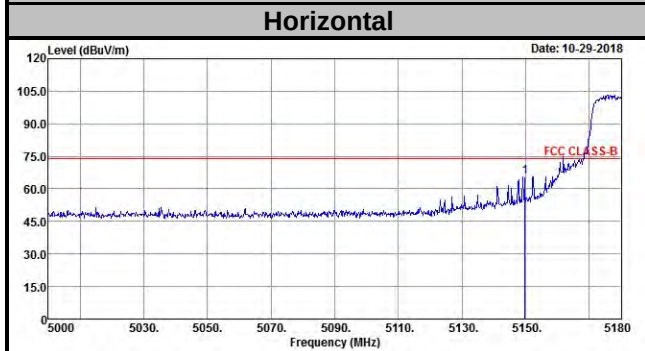




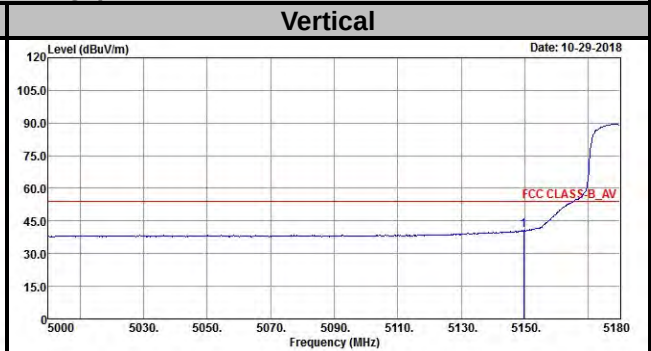
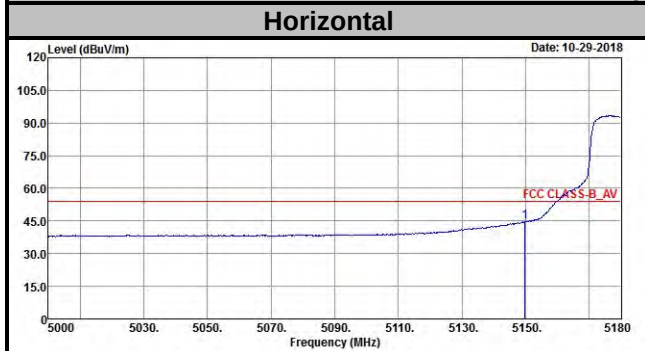


# 802.11n (HT20)

## Ch 36 (Peak)

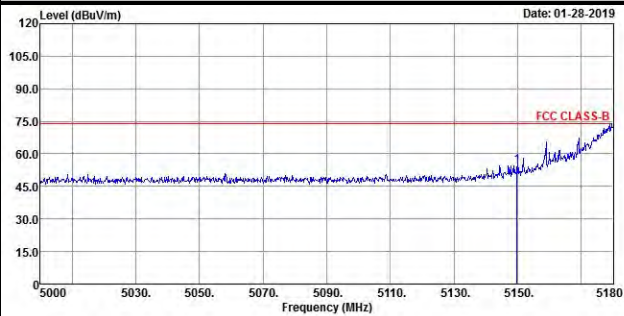


## Ch 36 (Average)

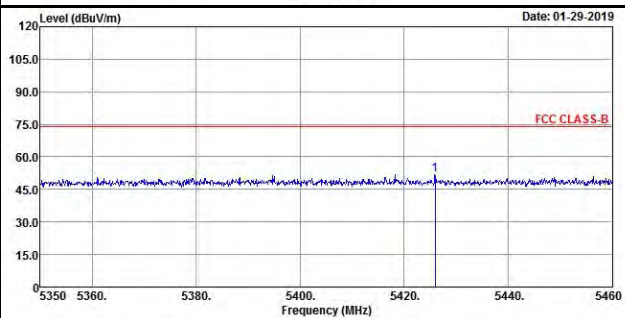
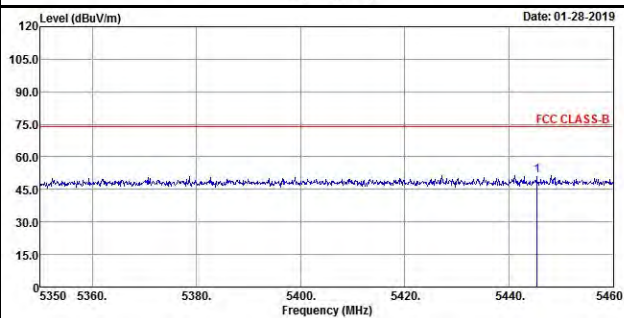
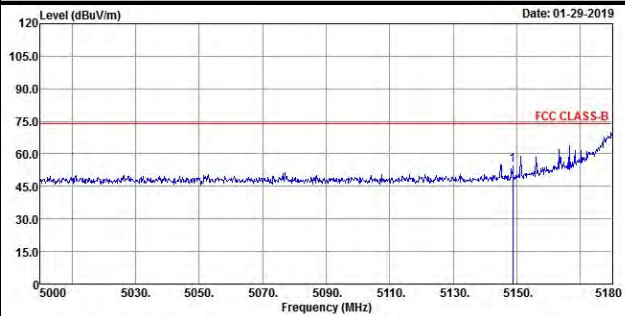


### Ch 40 (Peak)

#### Horizontal

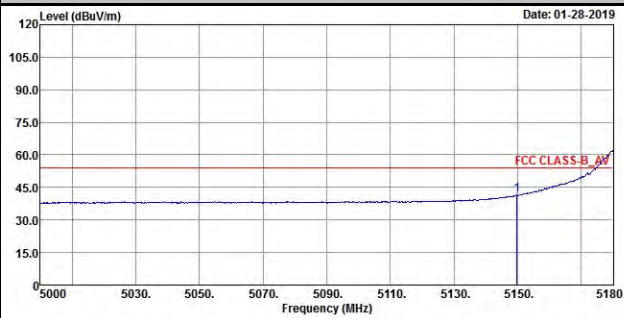


#### Vertical

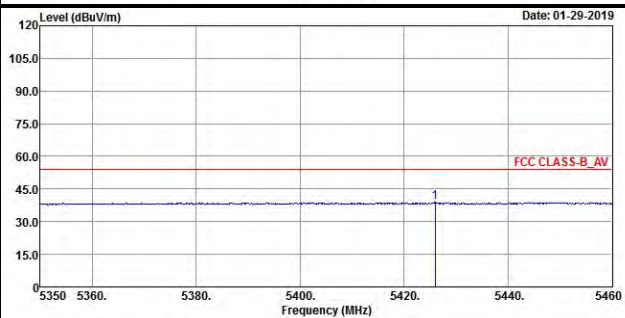
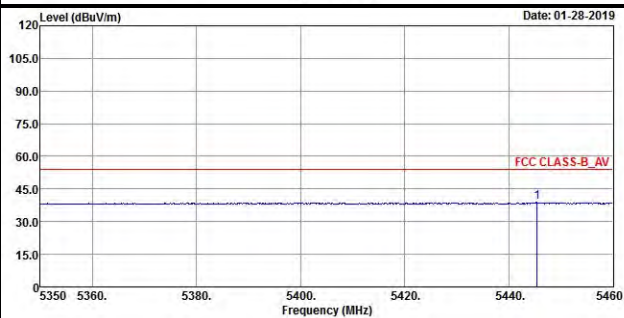
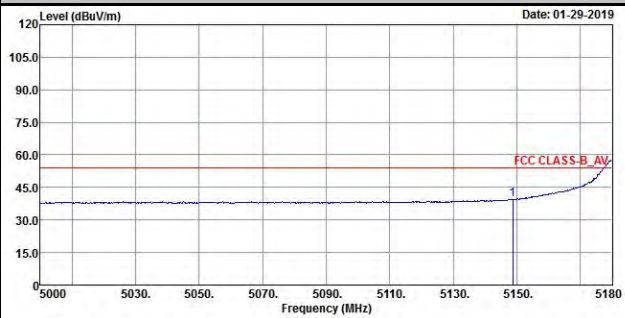


### Ch 48 (Average)

#### Horizontal

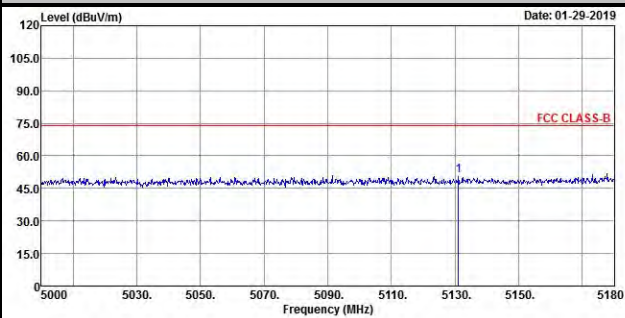


#### Vertical

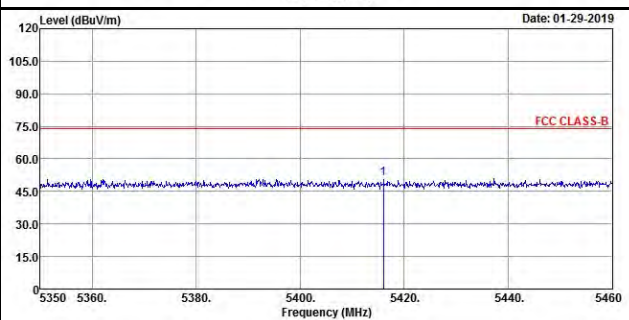
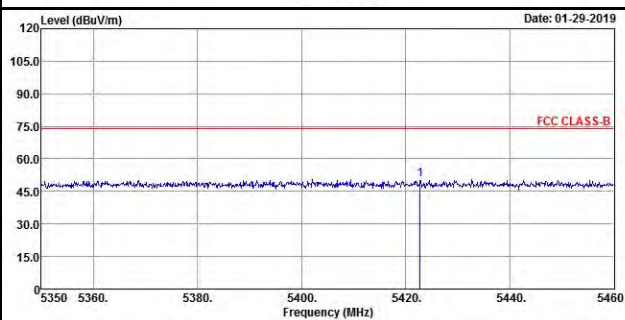
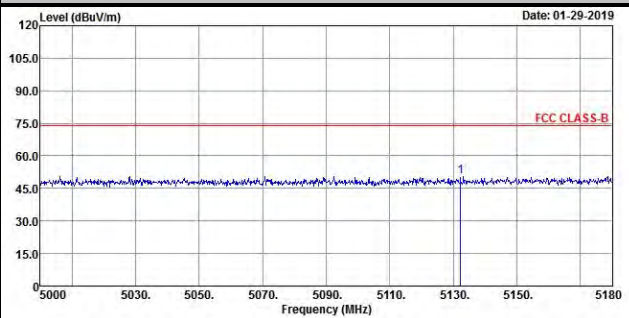


### Ch 48 (Peak)

#### Horizontal

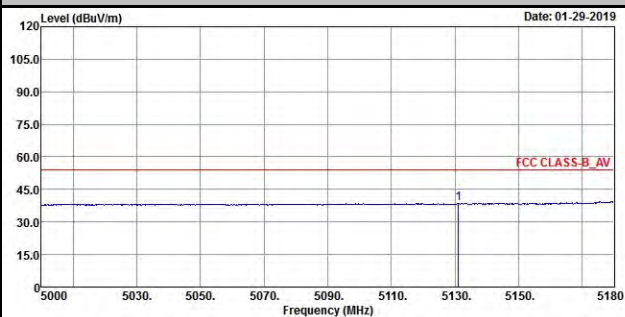


#### Vertical

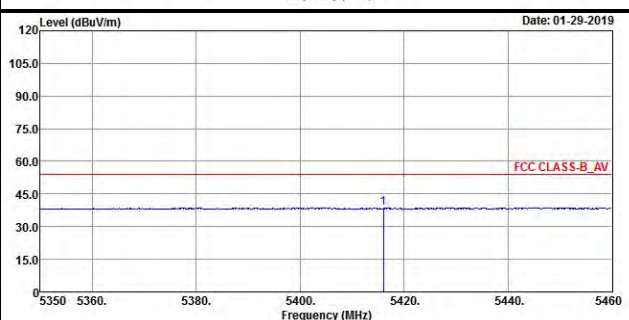
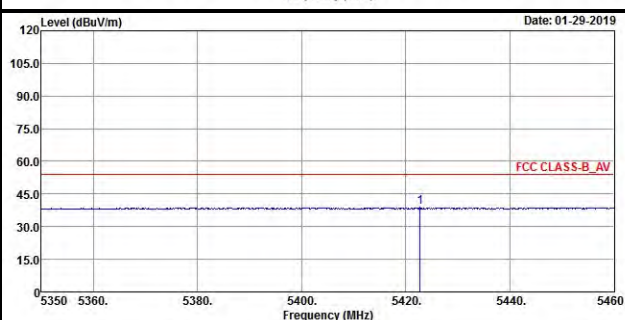
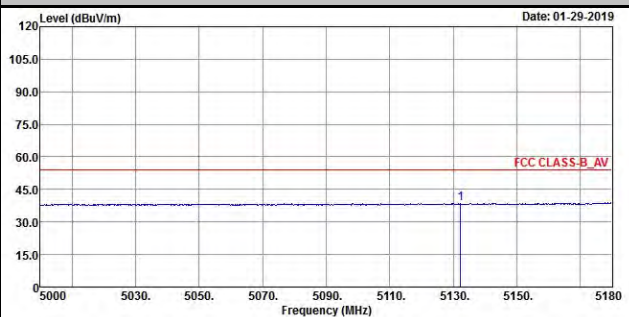


### Ch 48 (Average)

#### Horizontal



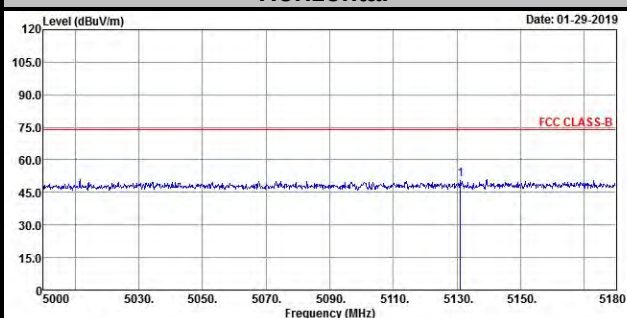
#### Vertical



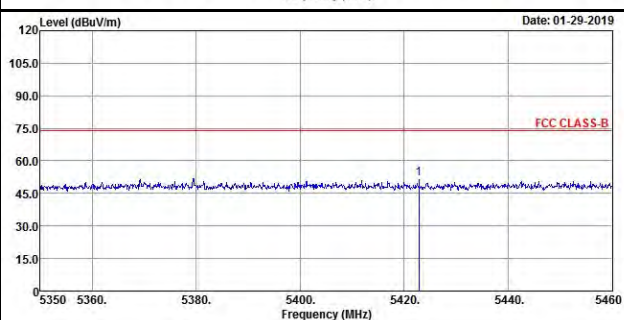
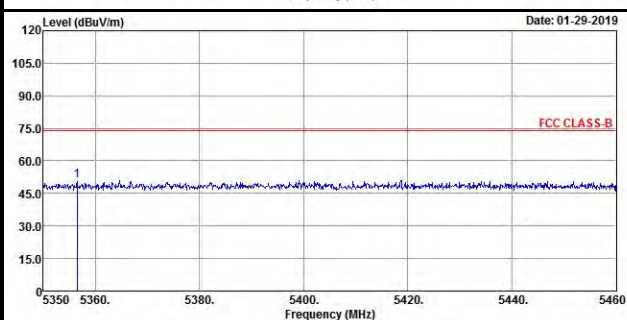
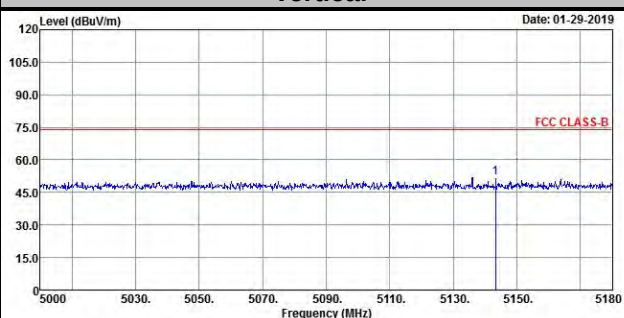


### Ch 52 (Peak)

#### Horizontal

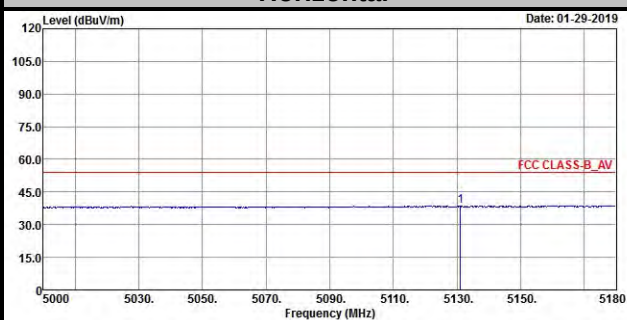


#### Vertical

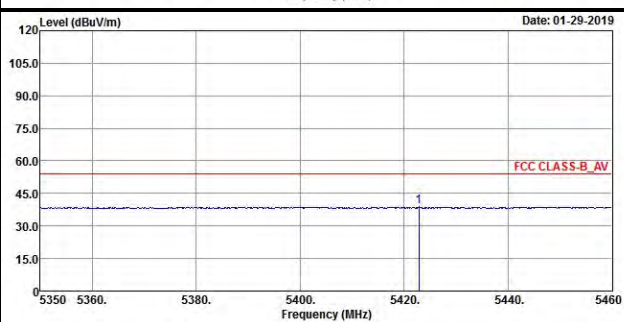
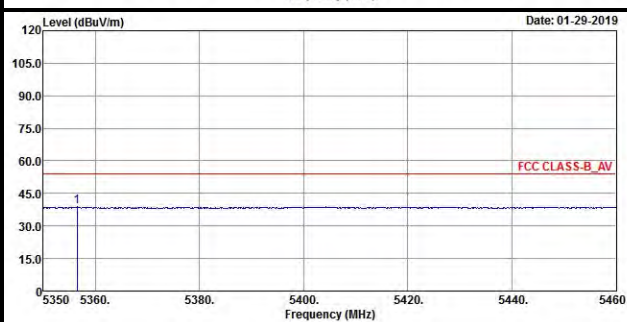
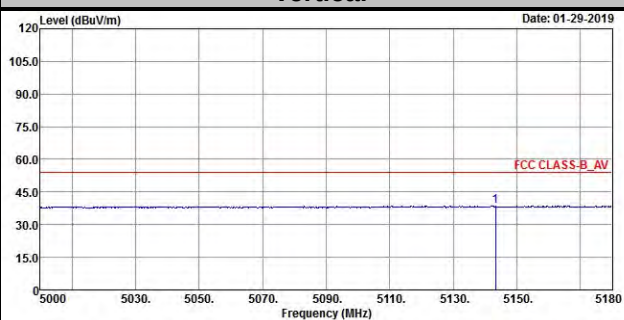


### Ch 52 (Average)

#### Horizontal

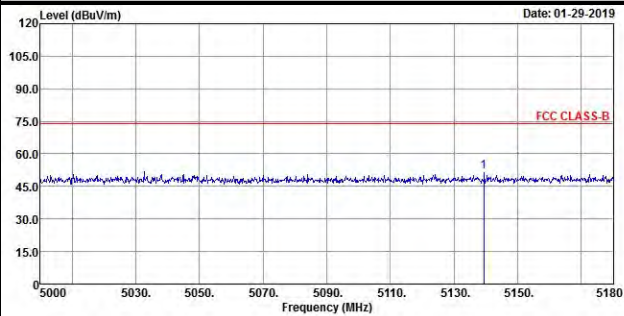


#### Vertical

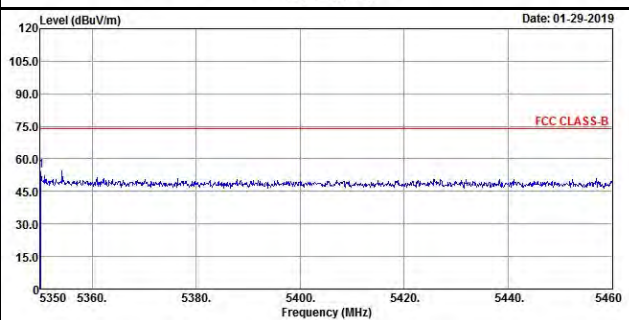
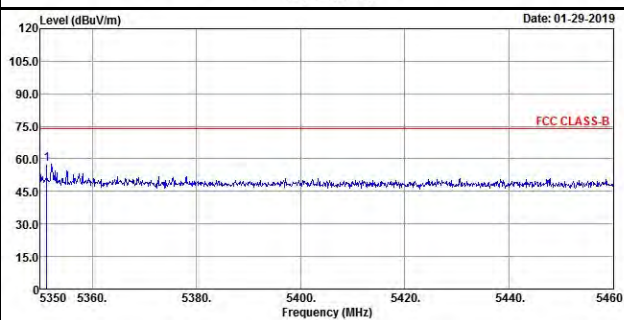
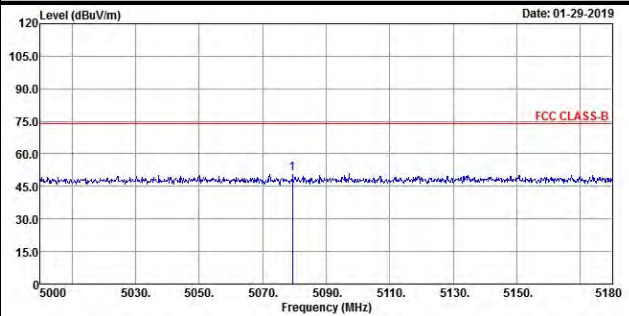


### Ch 60 (Peak)

#### Horizontal

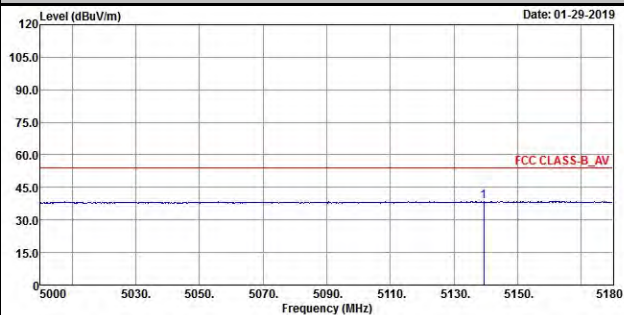


#### Vertical

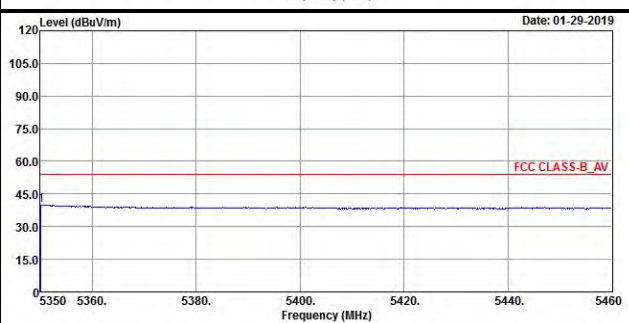
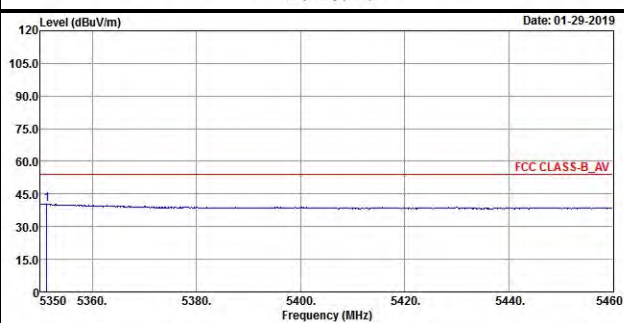
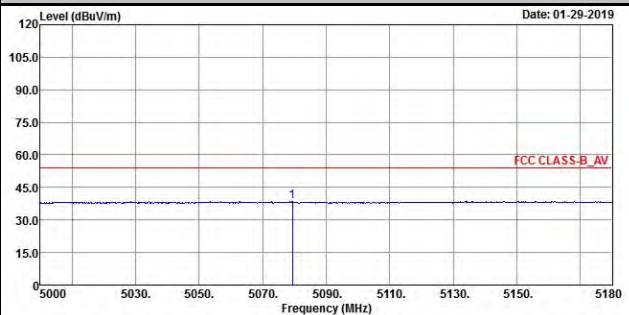


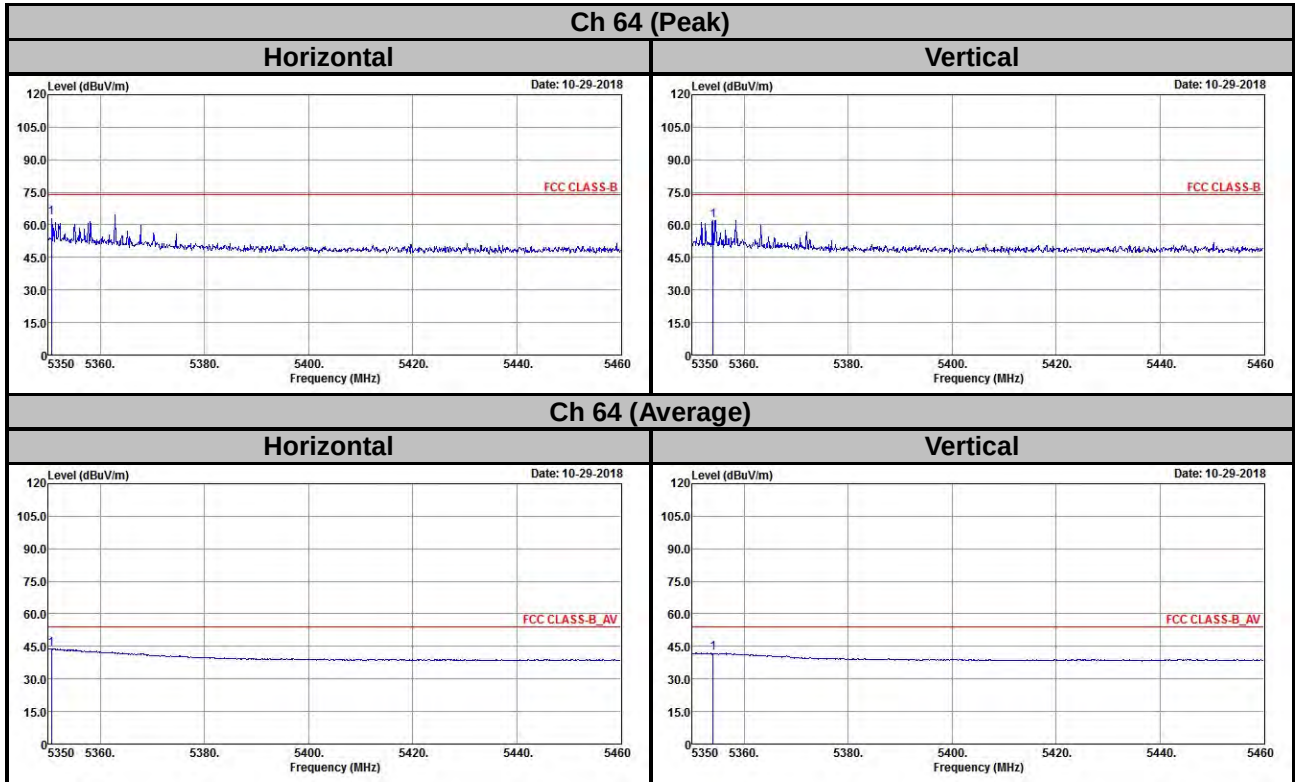
### Ch 60 (Average)

#### Horizontal



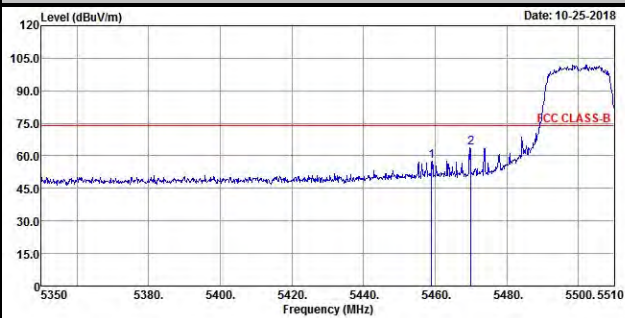
#### Vertical



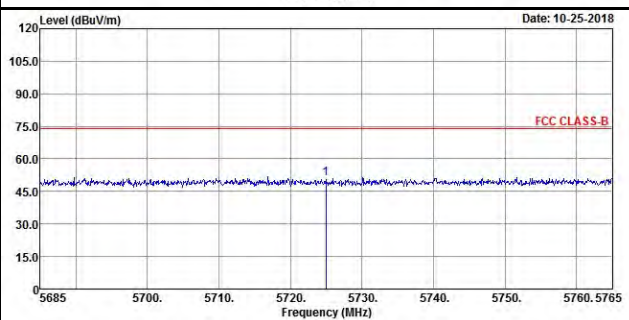
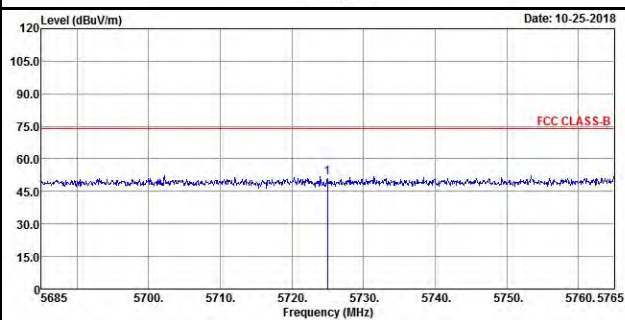
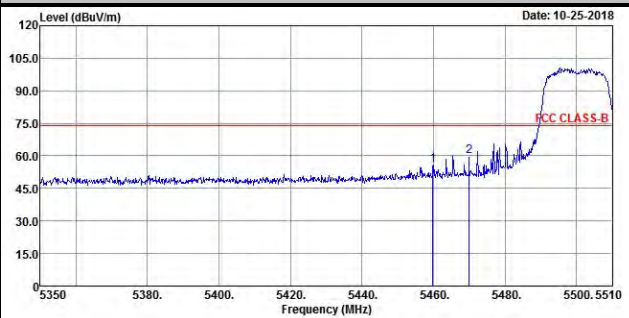


### Ch 100 (Peak)

#### Horizontal

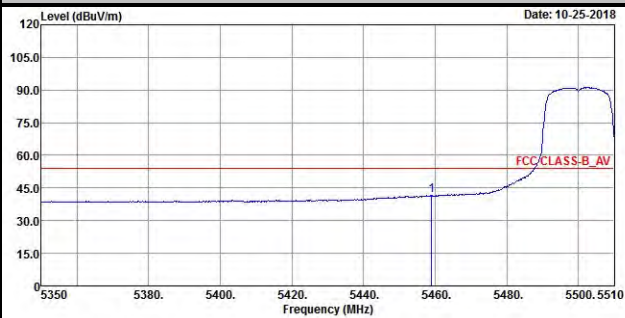


#### Vertical

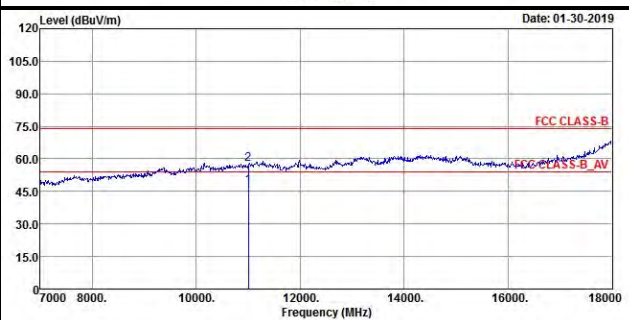
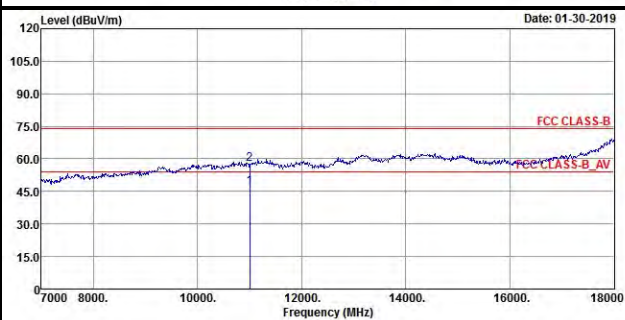
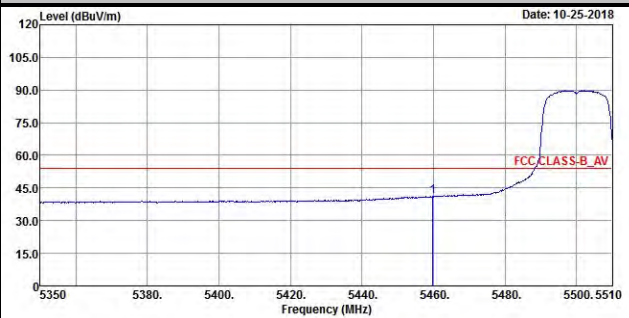


### Ch 100 (Average)

#### Horizontal



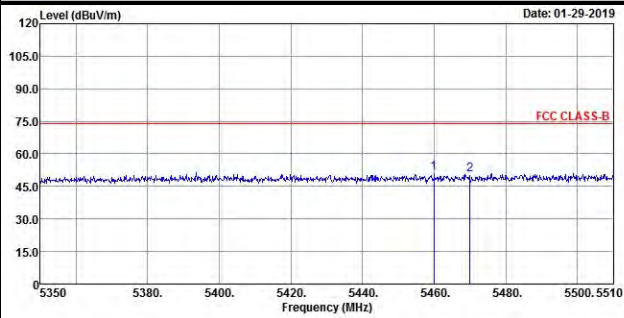
#### Vertical



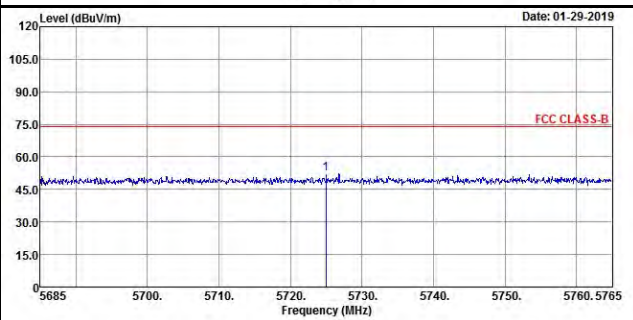
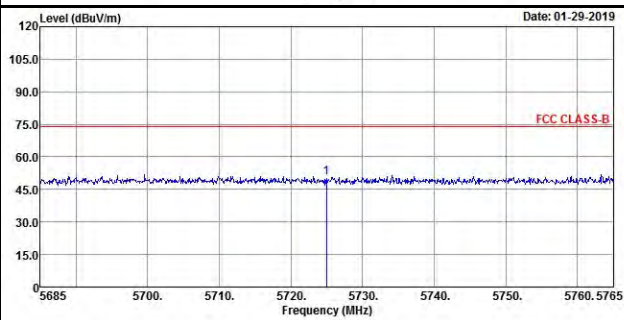
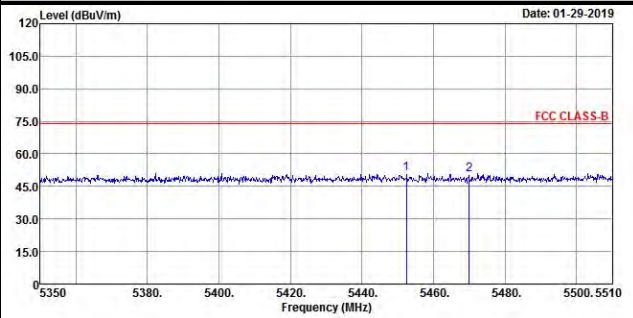


### Ch 116 (Peak)

#### Horizontal

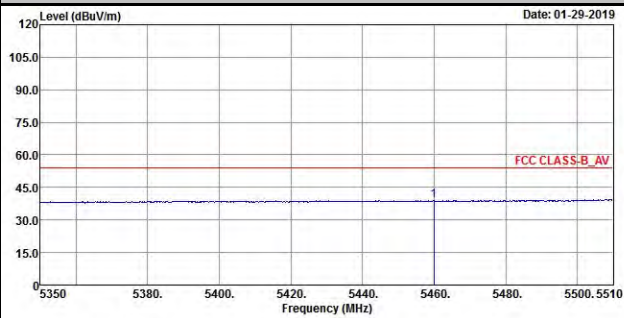


#### Vertical

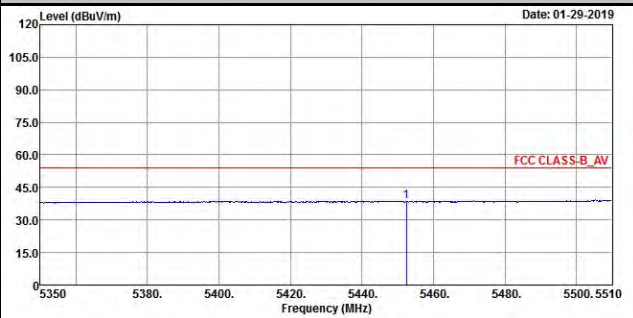


### Ch 116 (Average)

#### Horizontal

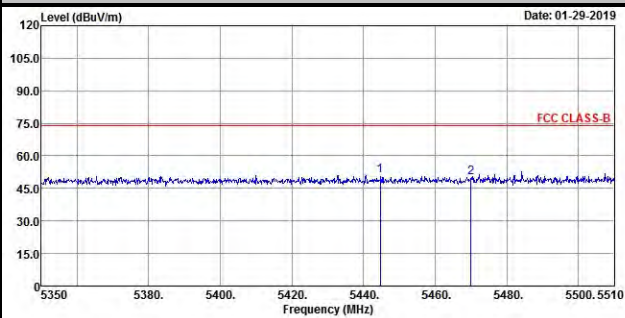


#### Vertical

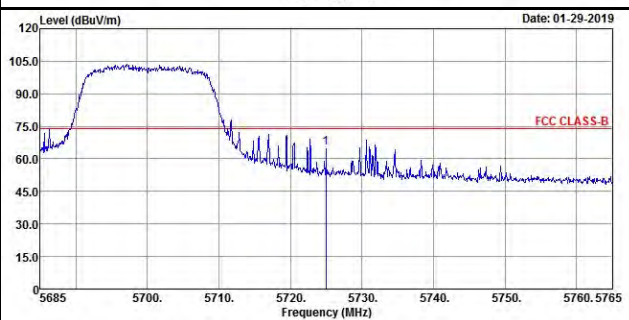
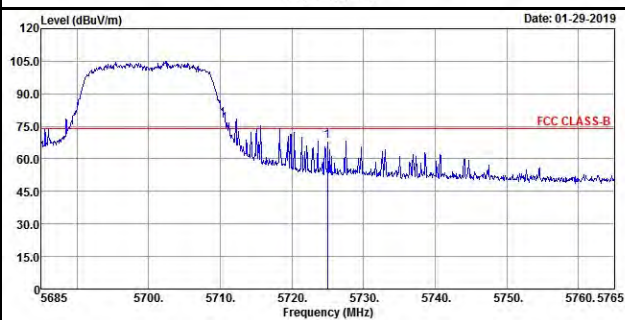
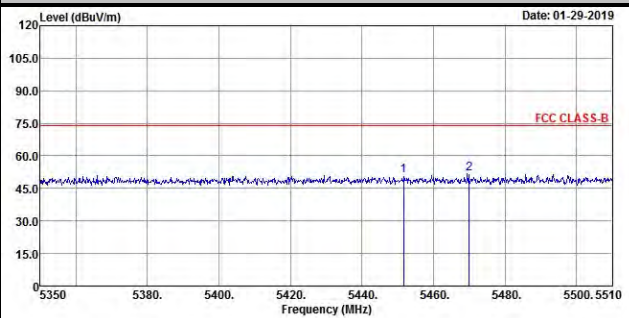


### Ch 140 (Peak)

#### Horizontal

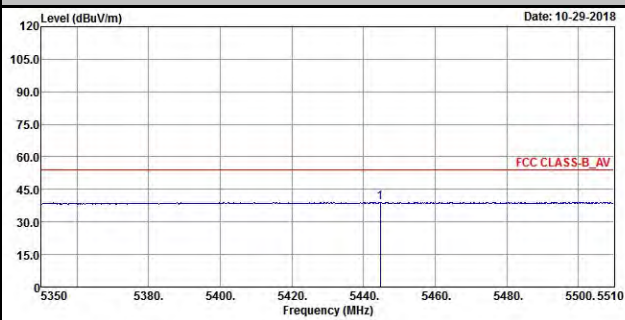


#### Vertical

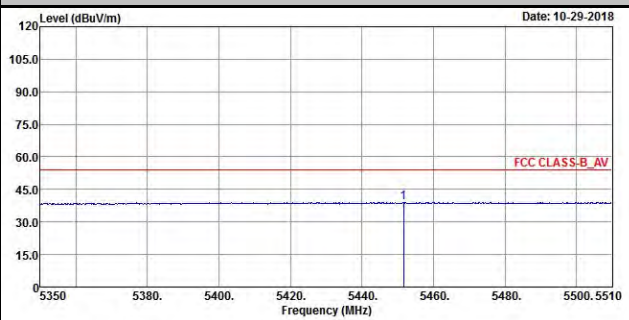


### Ch 140 (Average)

#### Horizontal

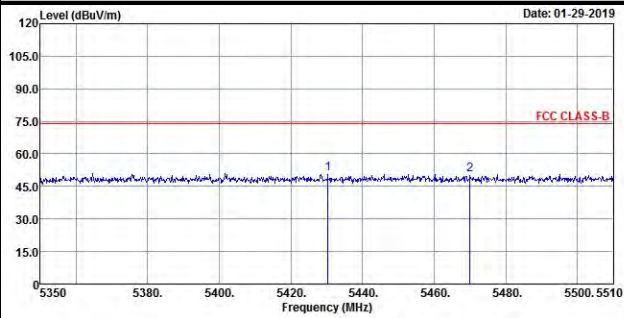


#### Vertical

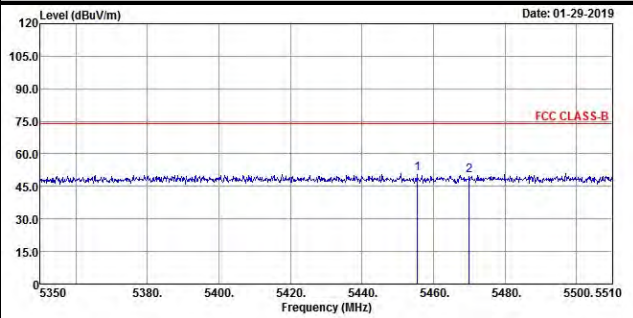


### Ch 144 (Peak)

#### Horizontal

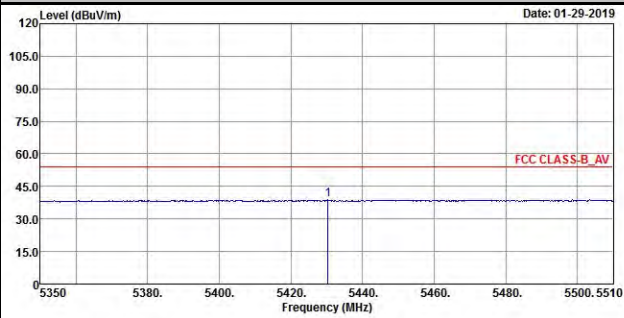


#### Vertical

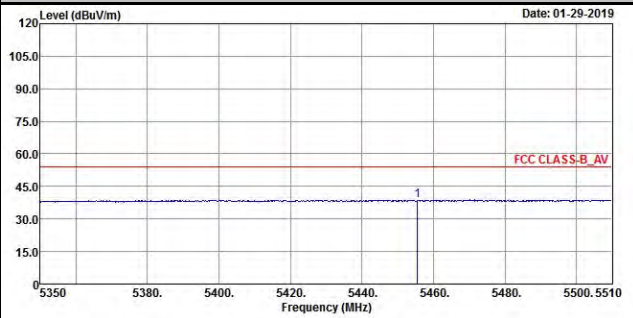


### Ch 144 (Average)

#### Horizontal



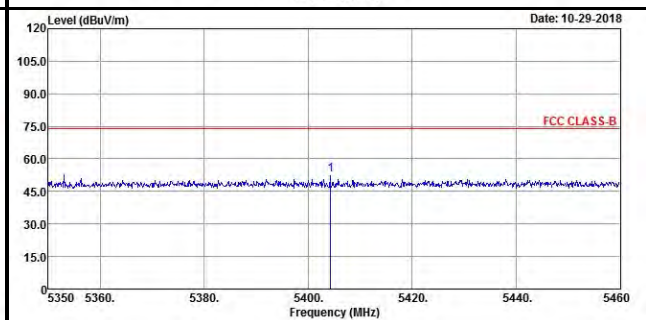
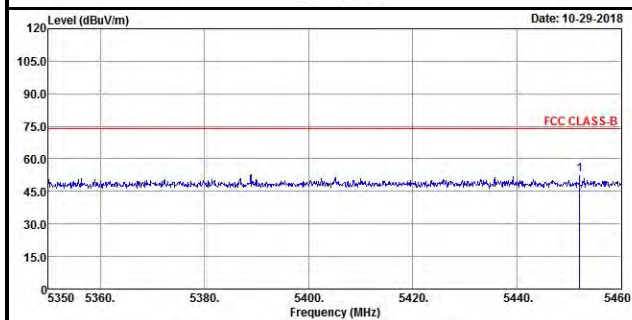
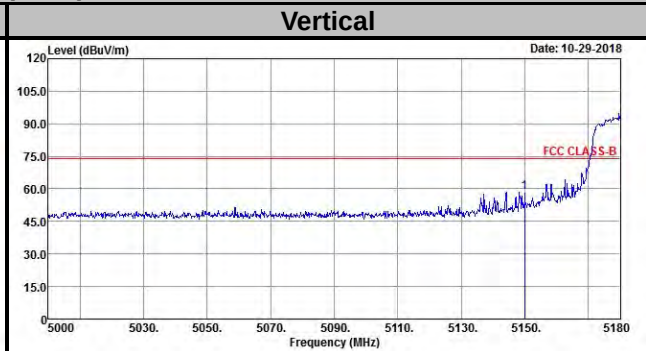
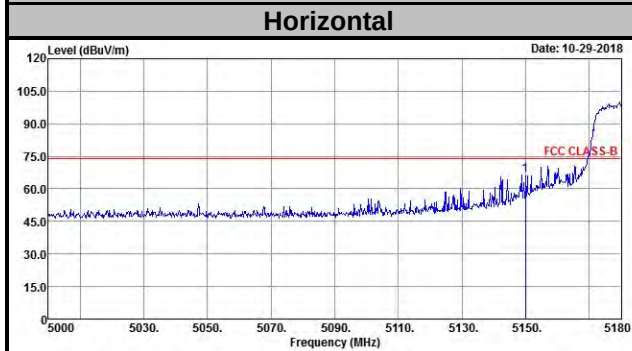
#### Vertical



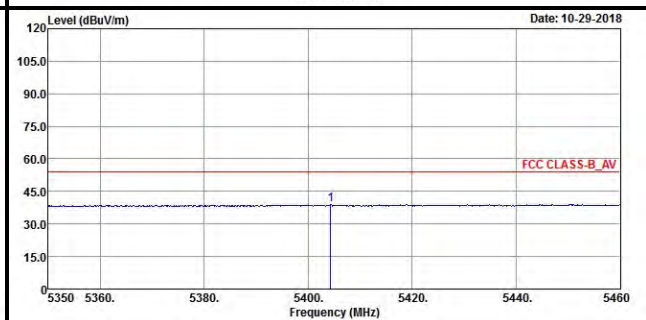
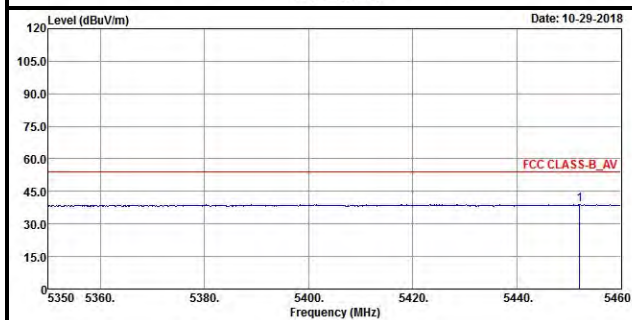
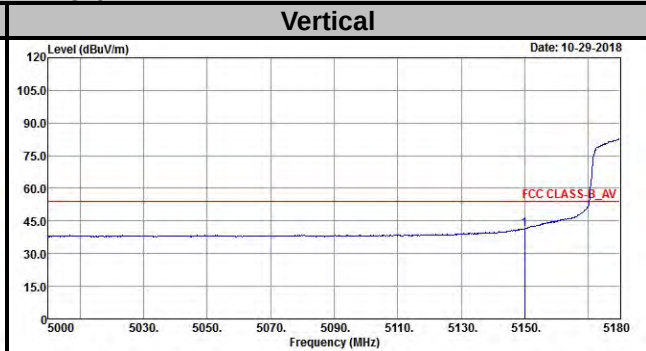
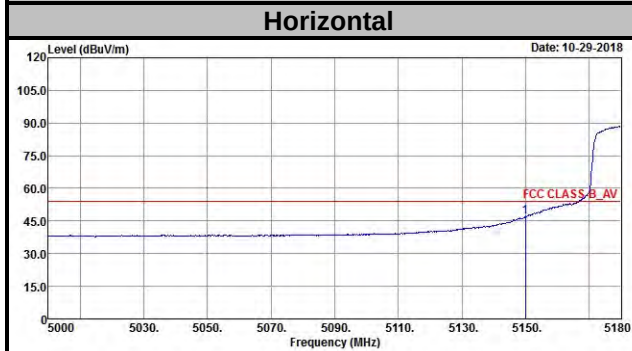


## 802.11n (HT40)

### Ch 38 (Peak)

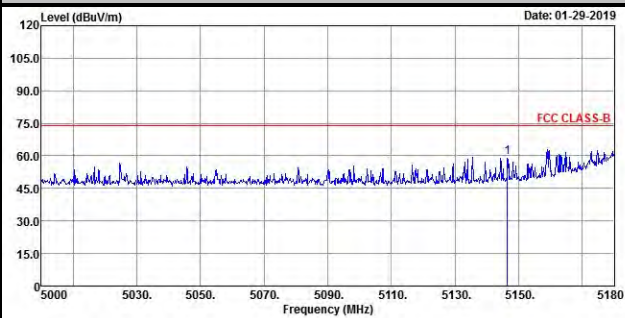


### Ch 38 (Average)

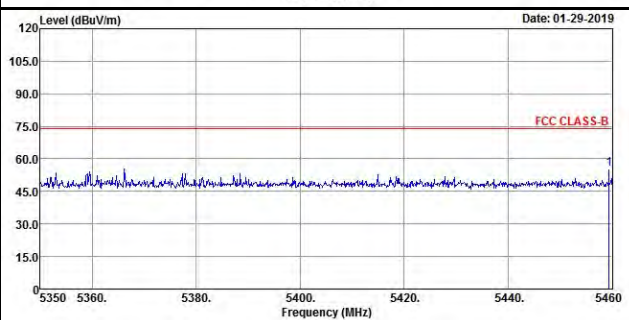
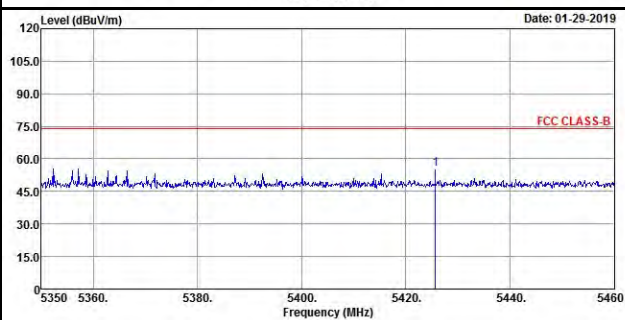
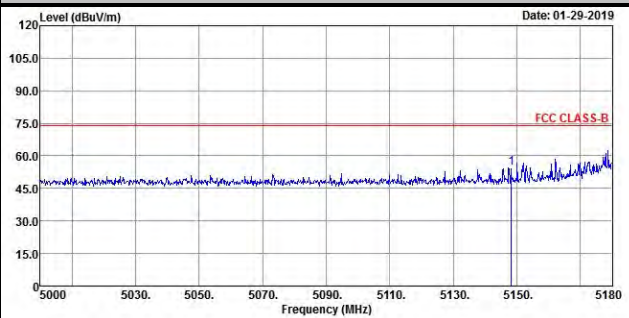


### Ch 46 (Peak)

#### Horizontal

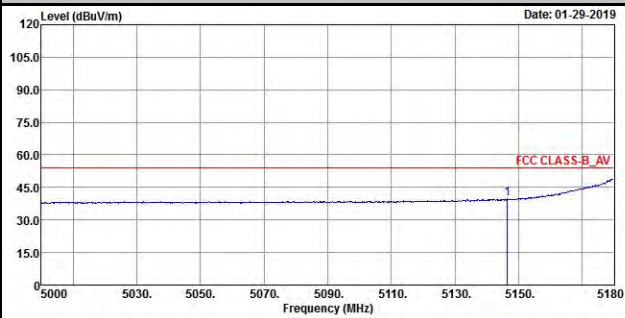


#### Vertical

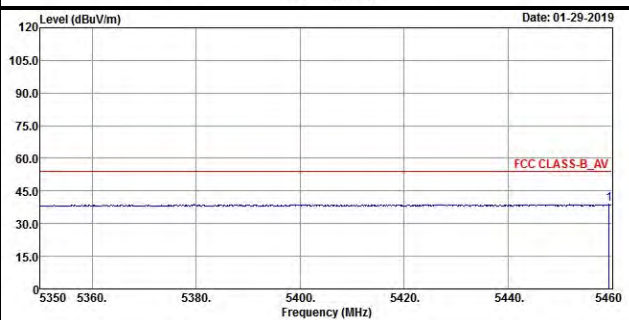
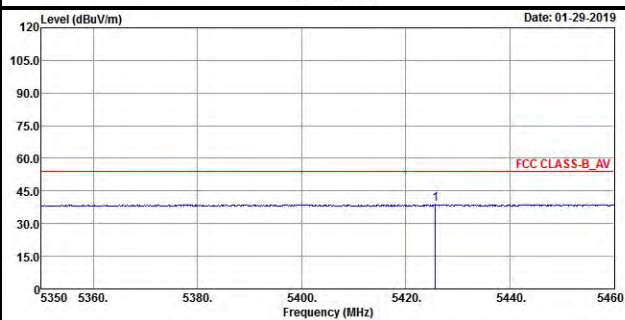
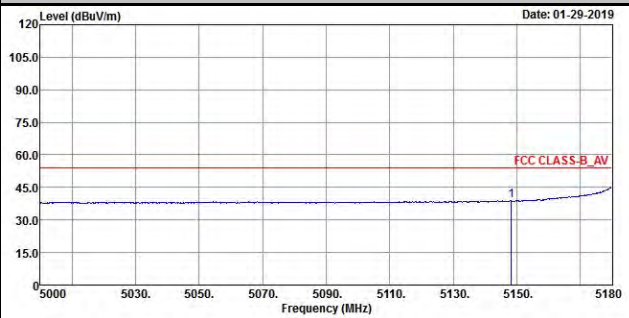


### Ch 46 (Average)

#### Horizontal

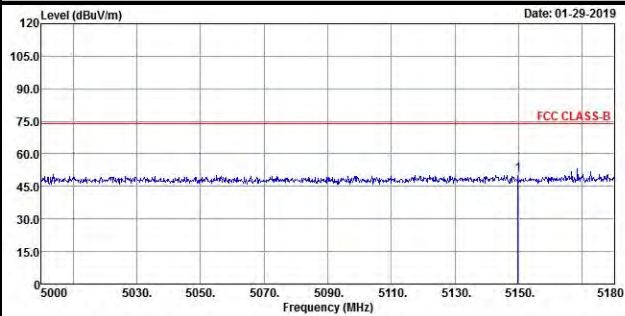


#### Vertical

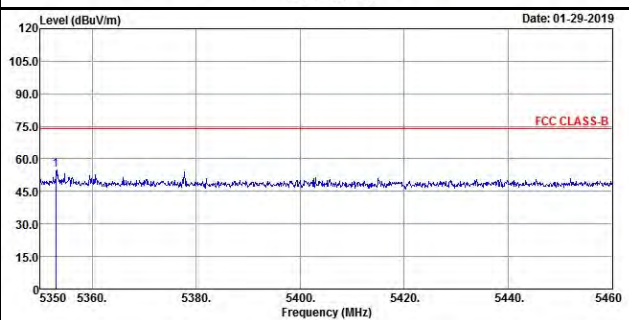
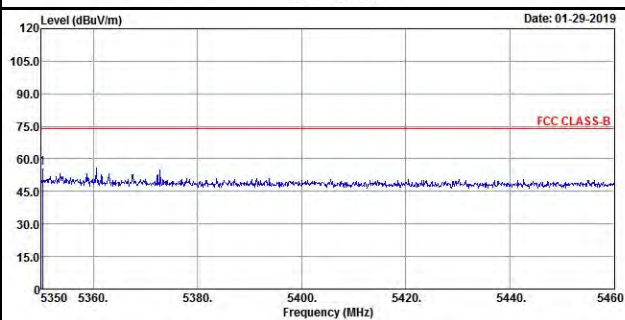
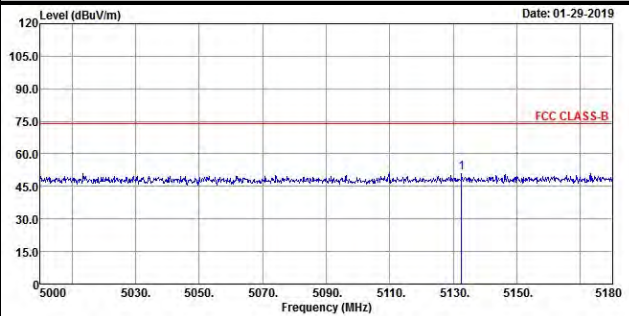


### Ch 54 (Peak)

#### Horizontal

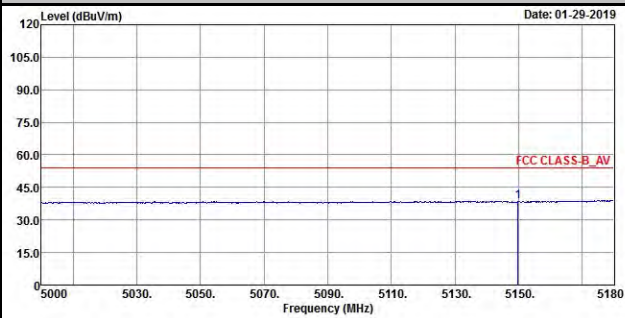


#### Vertical

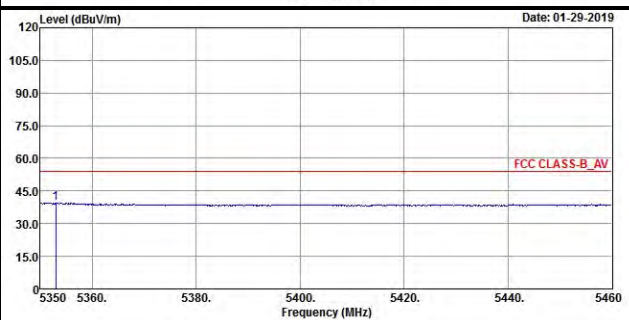
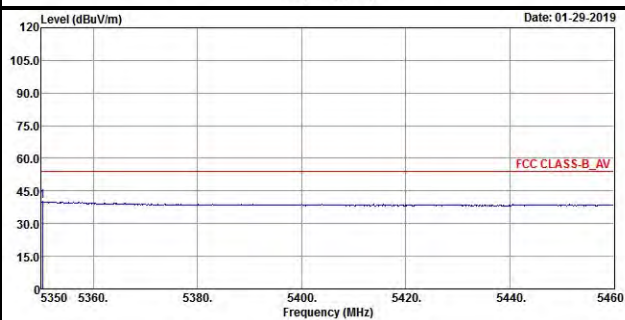
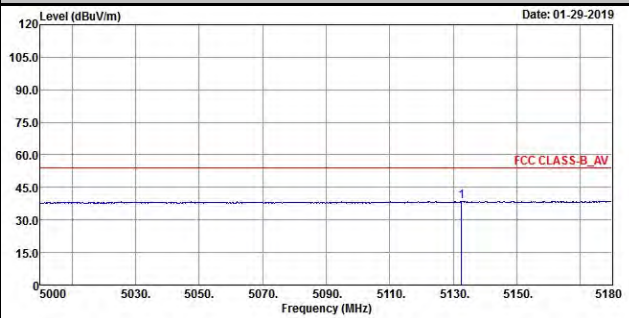


### Ch 54 (Average)

#### Horizontal



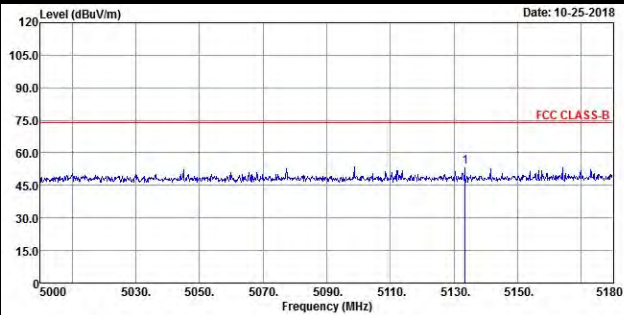
#### Vertical



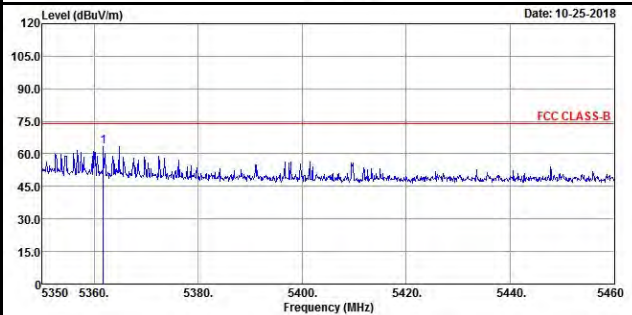
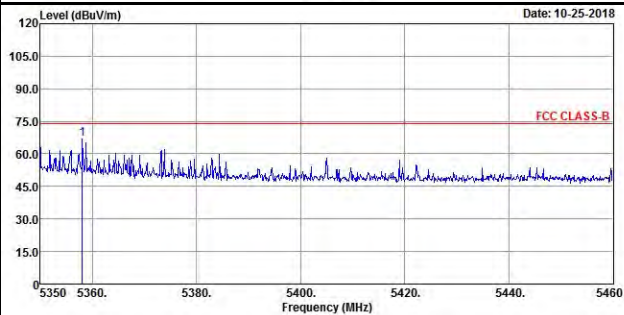
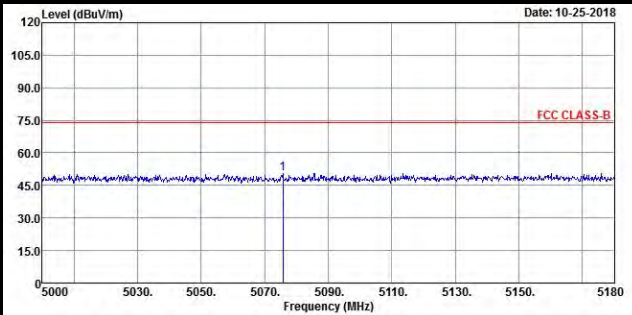


### Ch 62 (Peak)

#### Horizontal

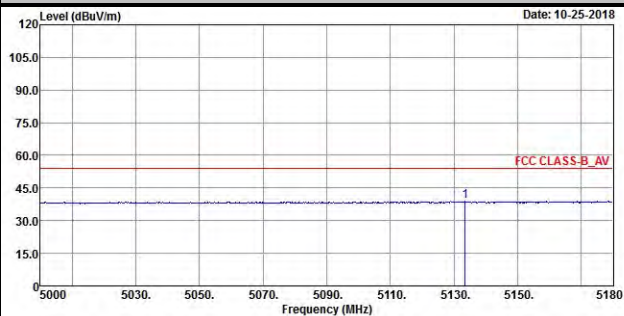


#### Vertical

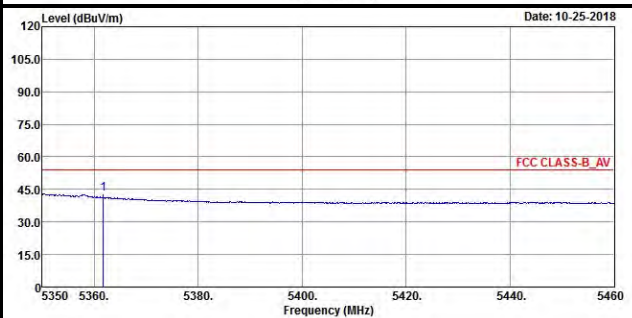
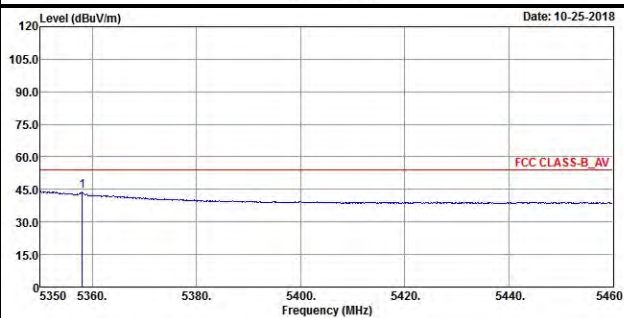
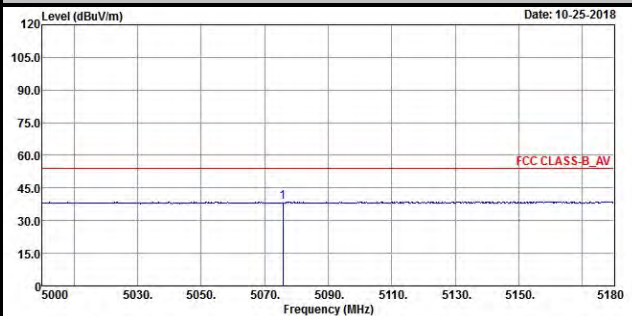


### Ch 62 (Average)

#### Horizontal

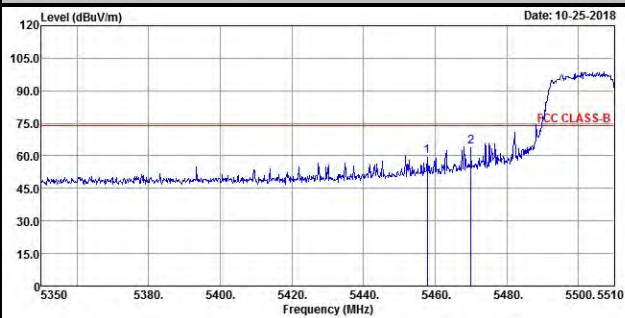


#### Vertical

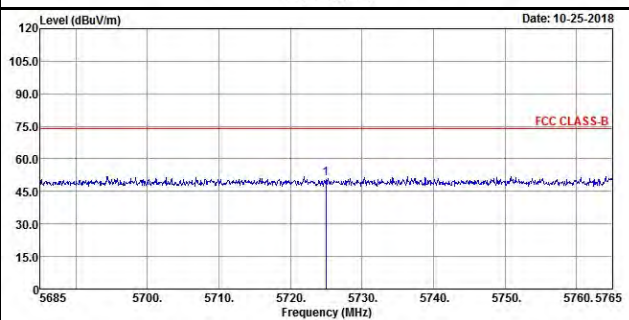
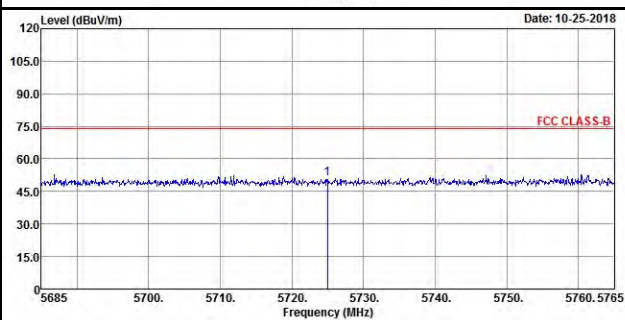
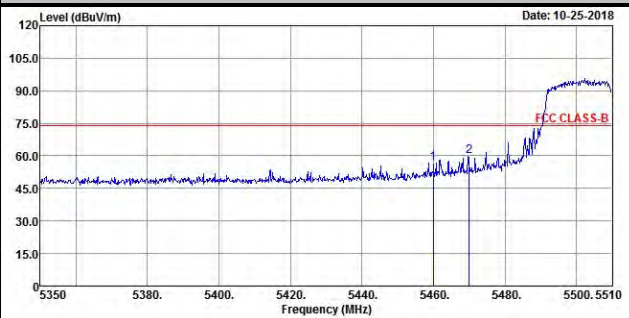


### Ch 102 (Peak)

#### Horizontal

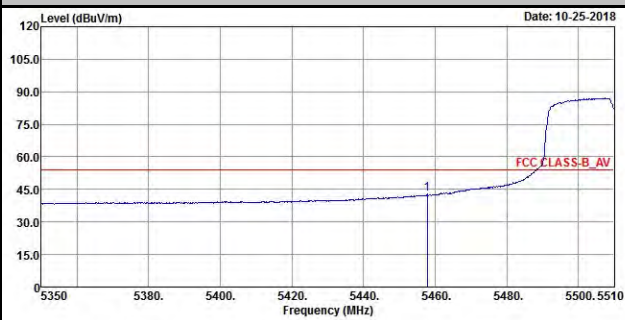


#### Vertical

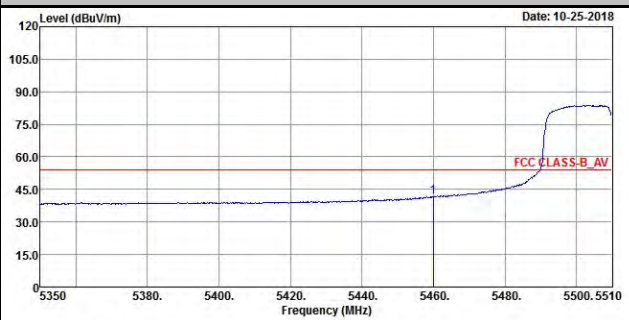


### Ch 102 (Average)

#### Horizontal

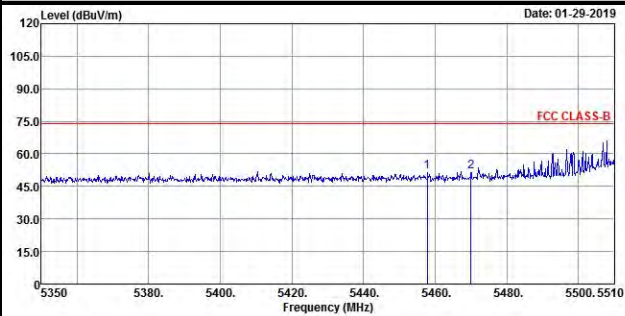


#### Vertical

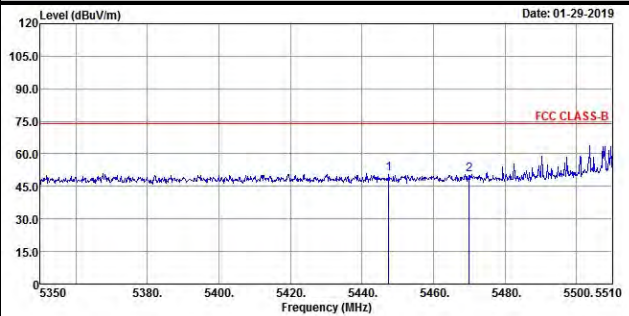


### Ch 110 (Peak)

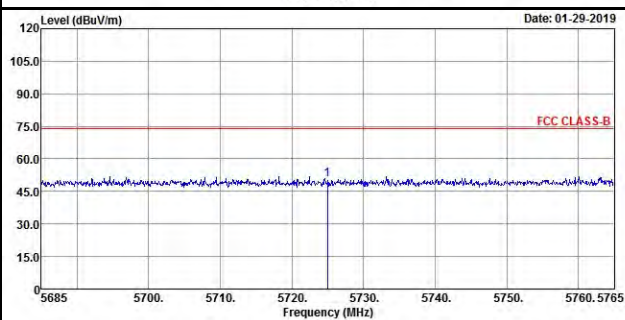
#### Horizontal



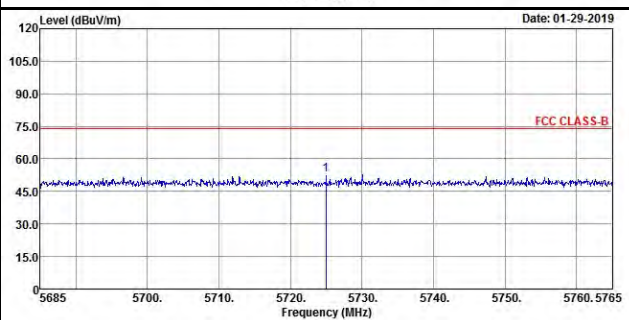
#### Vertical



#### Horizontal

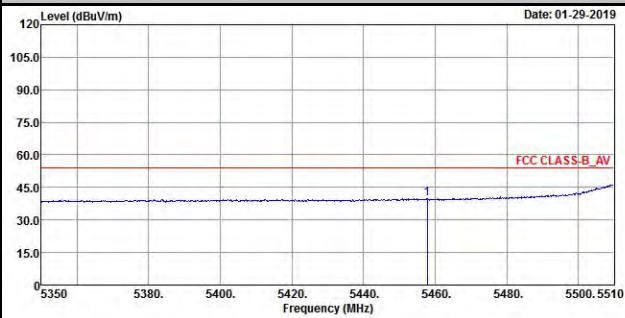


#### Vertical

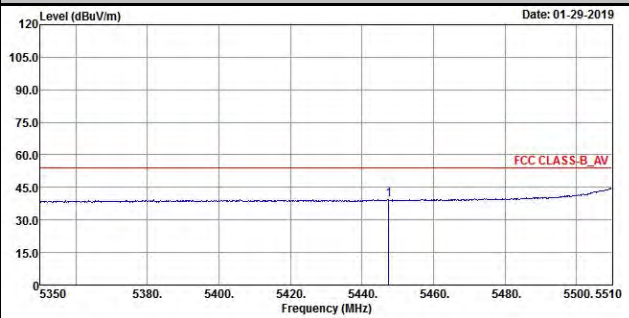


### Ch 110 (Average)

#### Horizontal

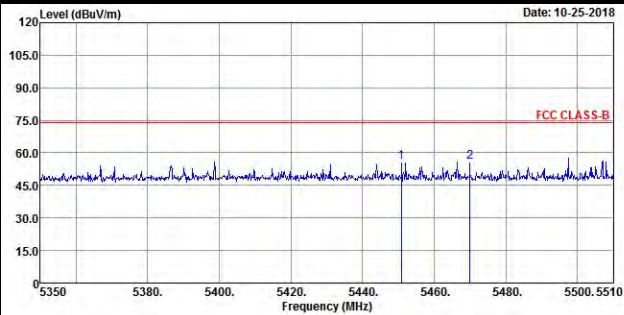


#### Vertical

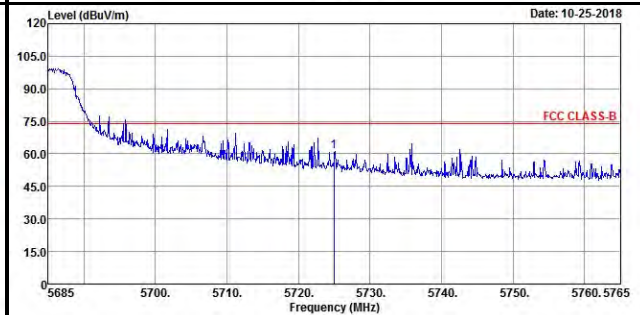
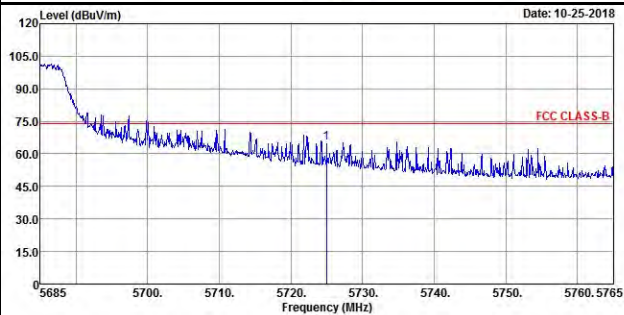
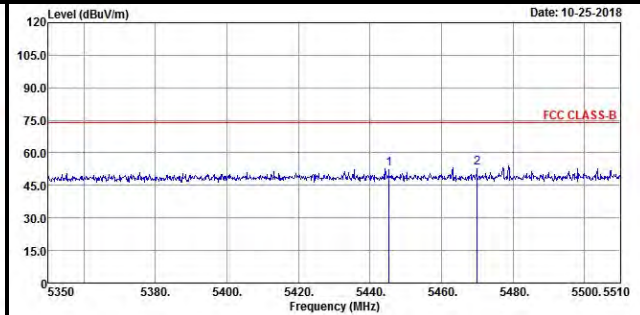


### Ch 134 (Peak)

#### Horizontal

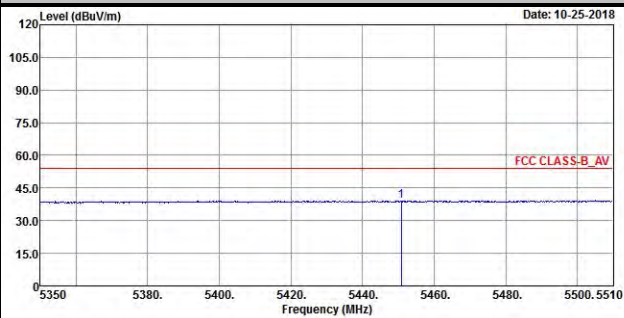


#### Vertical

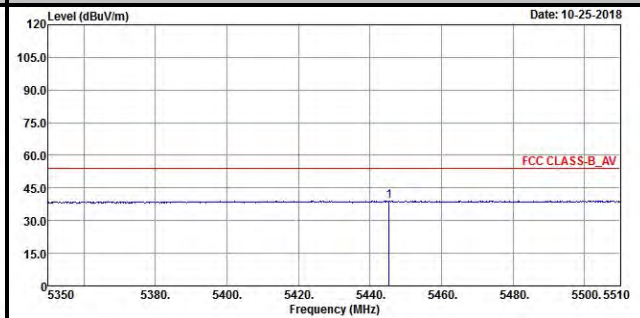


### Ch 134 (Average)

#### Horizontal



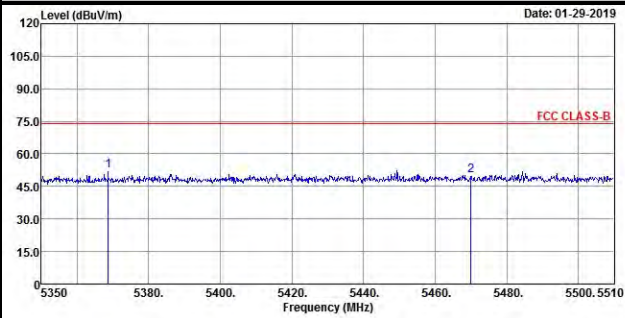
#### Vertical



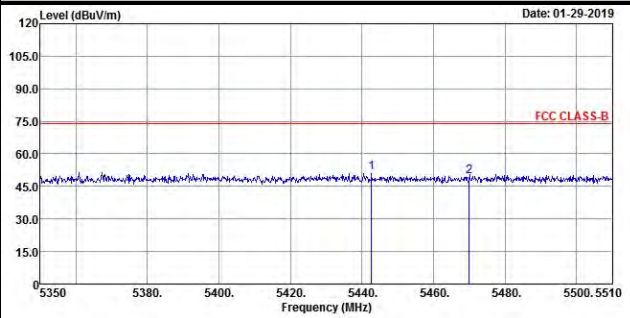


### Ch 142 (Peak)

#### Horizontal

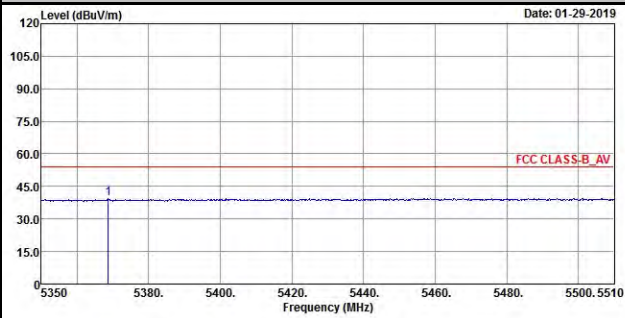


#### Vertical

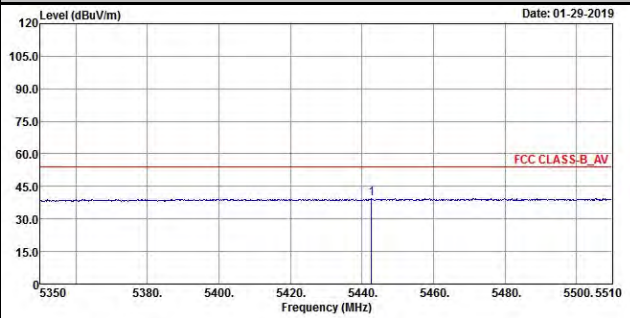


### Ch 142 (Average)

#### Horizontal



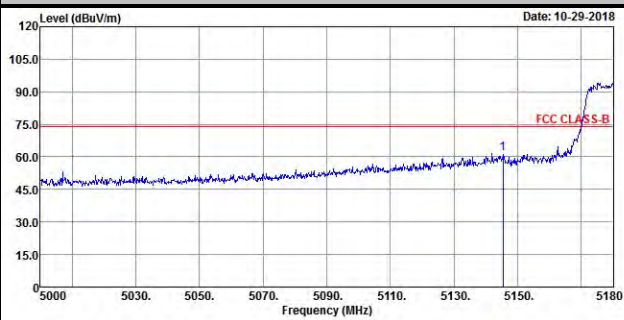
#### Vertical



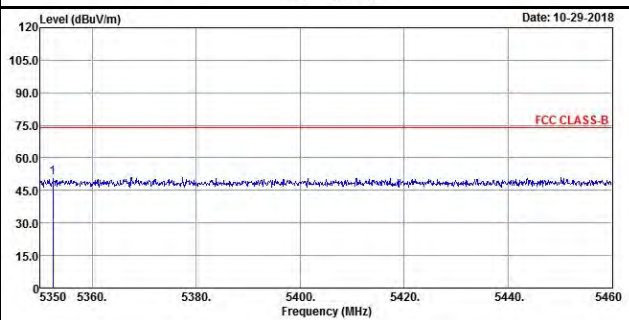
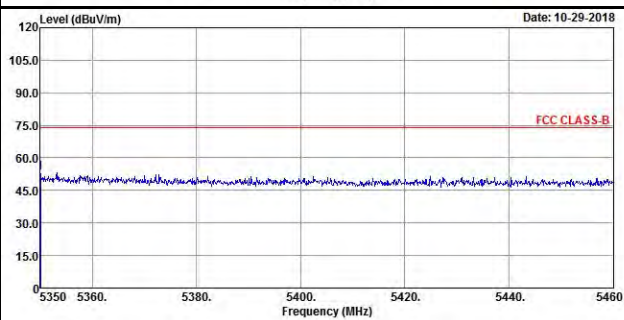
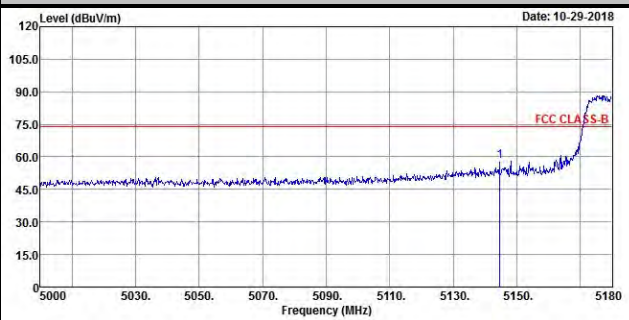
# 802.11ac (VHT80)

## Ch 42 (Peak)

### Horizontal

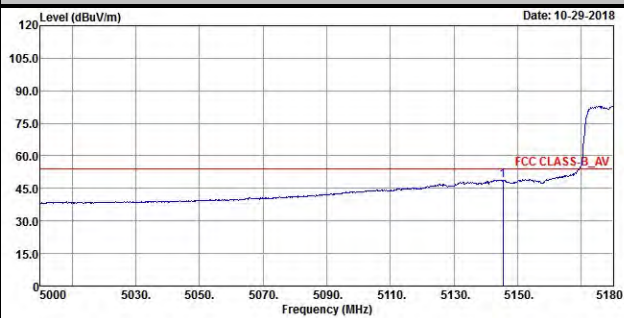


### Vertical

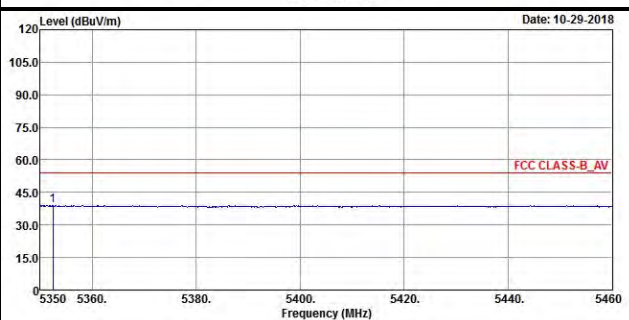
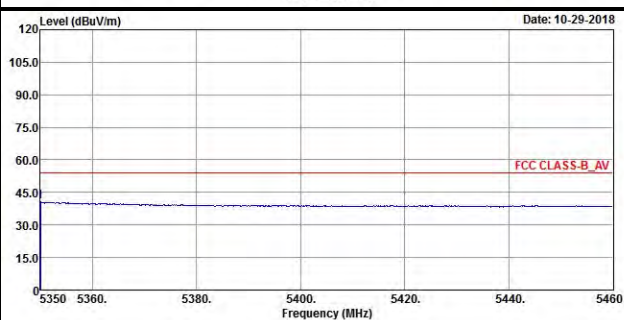
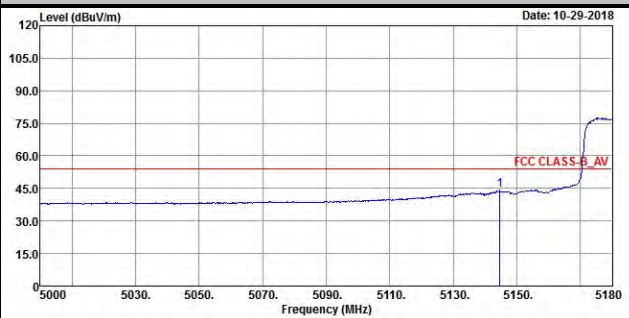


## Ch 42 (Average)

### Horizontal

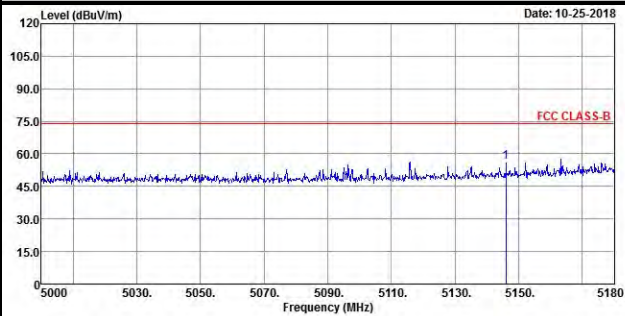


### Vertical

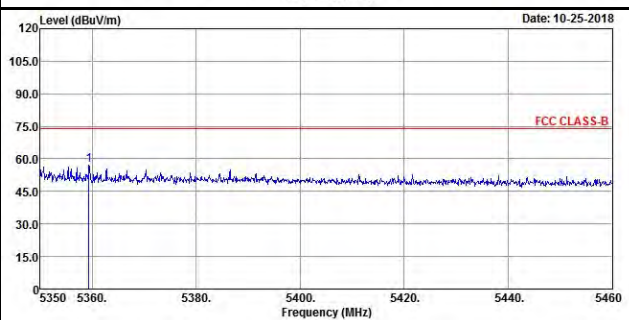
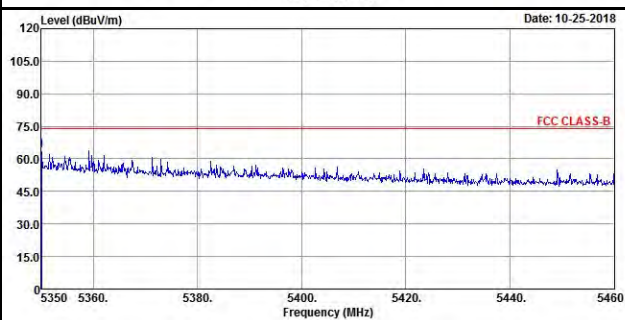
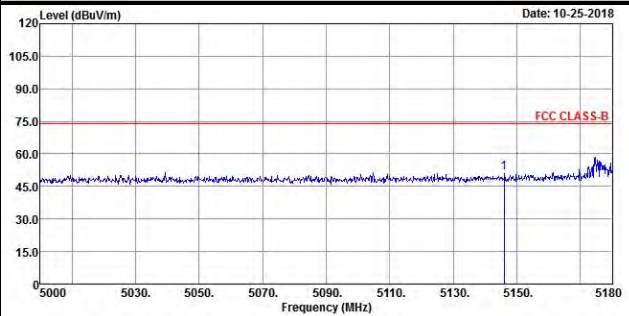


### Ch 58 (Peak)

#### Horizontal

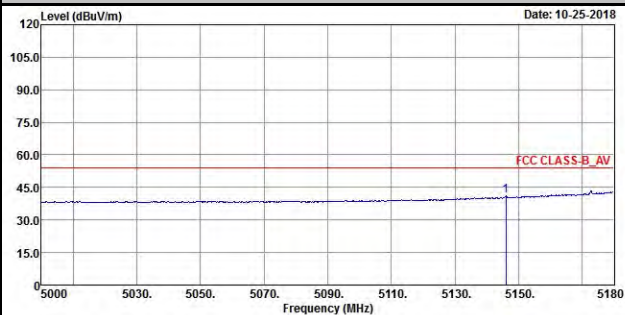


#### Vertical

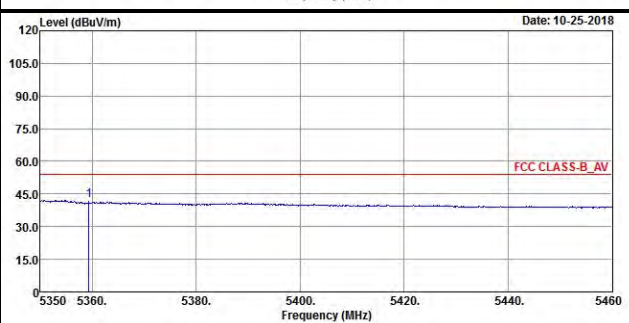
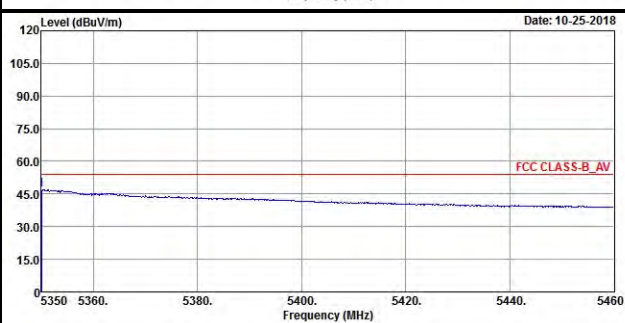
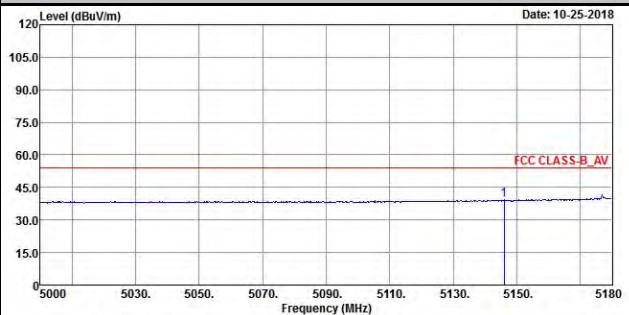


### Ch 58 (Average)

#### Horizontal

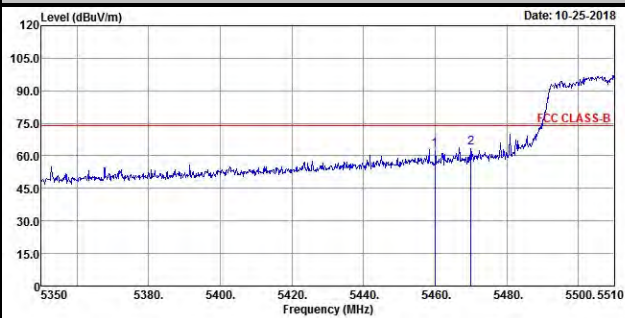


#### Vertical

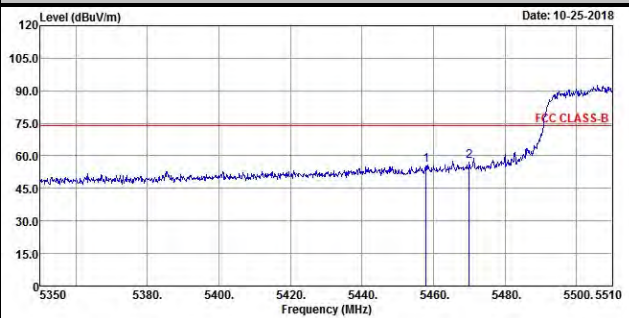


### Ch 106 (Peak)

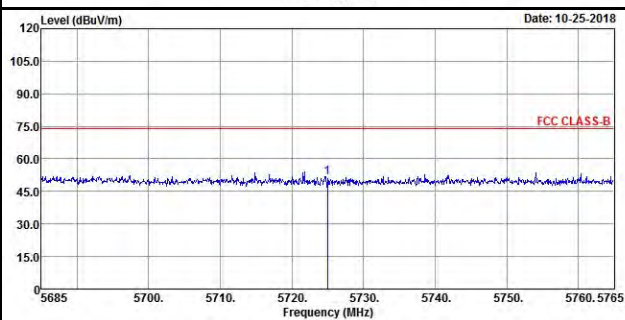
#### Horizontal



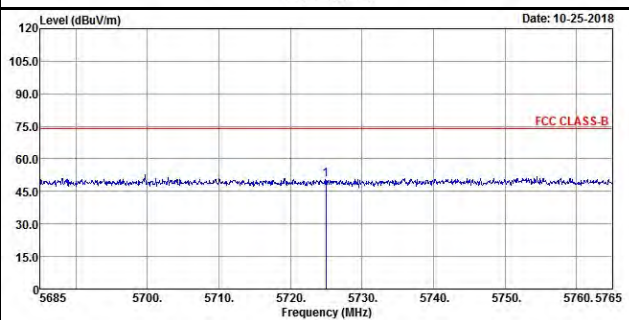
#### Vertical



#### Horizontal

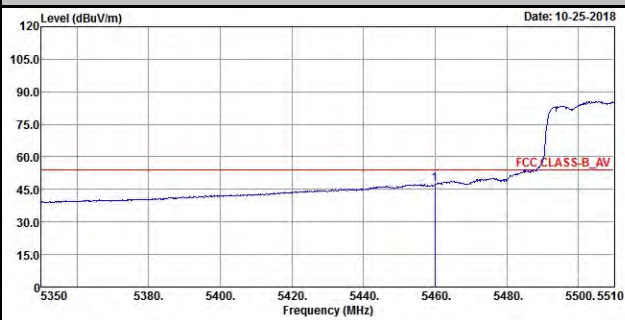


#### Vertical

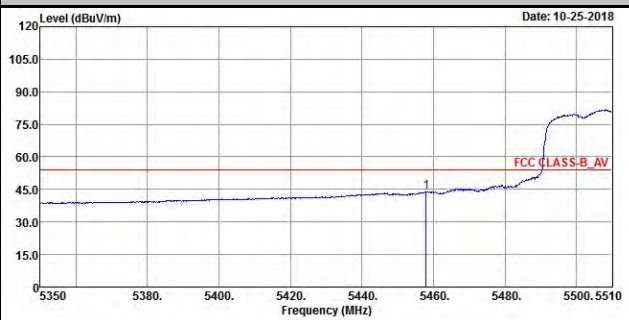


### Ch 106 (Average)

#### Horizontal



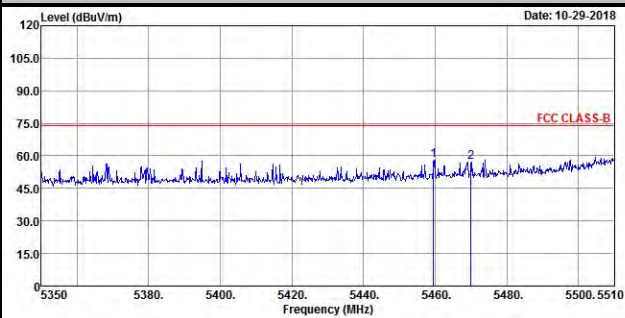
#### Vertical



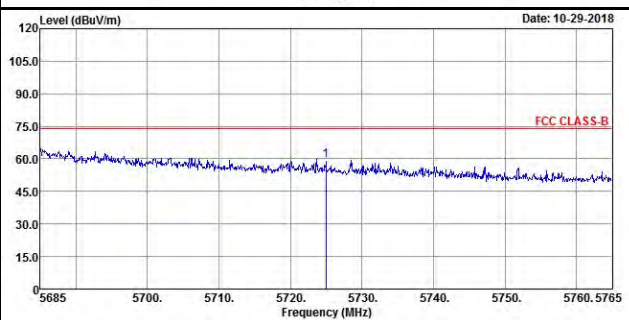
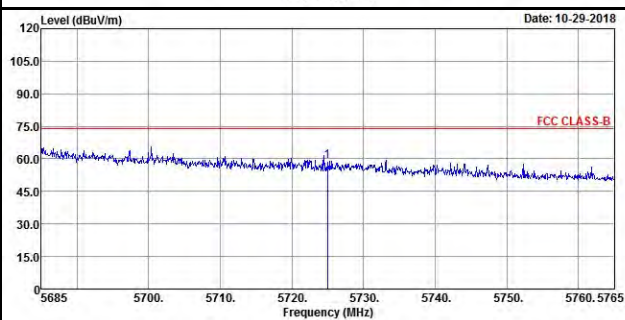
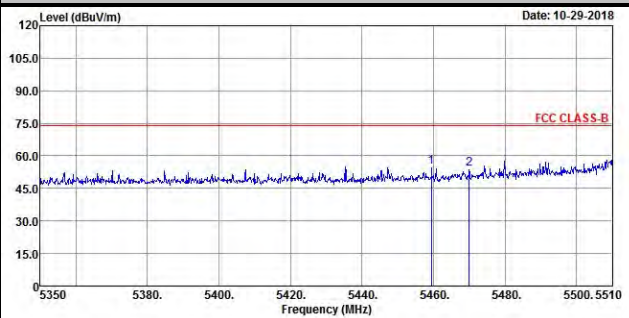


### Ch 122 (Peak)

#### Horizontal

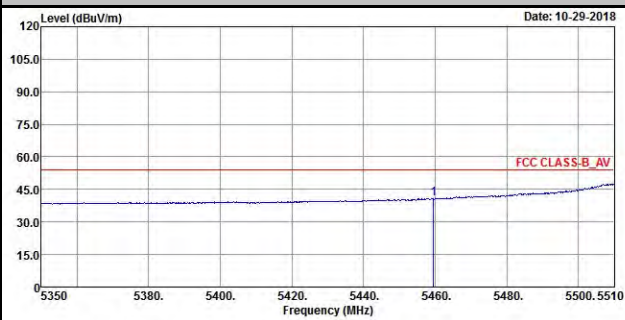


#### Vertical

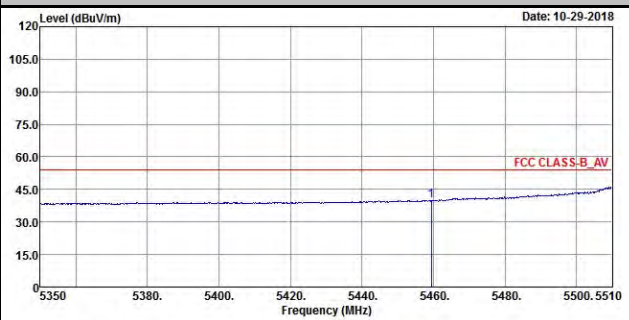


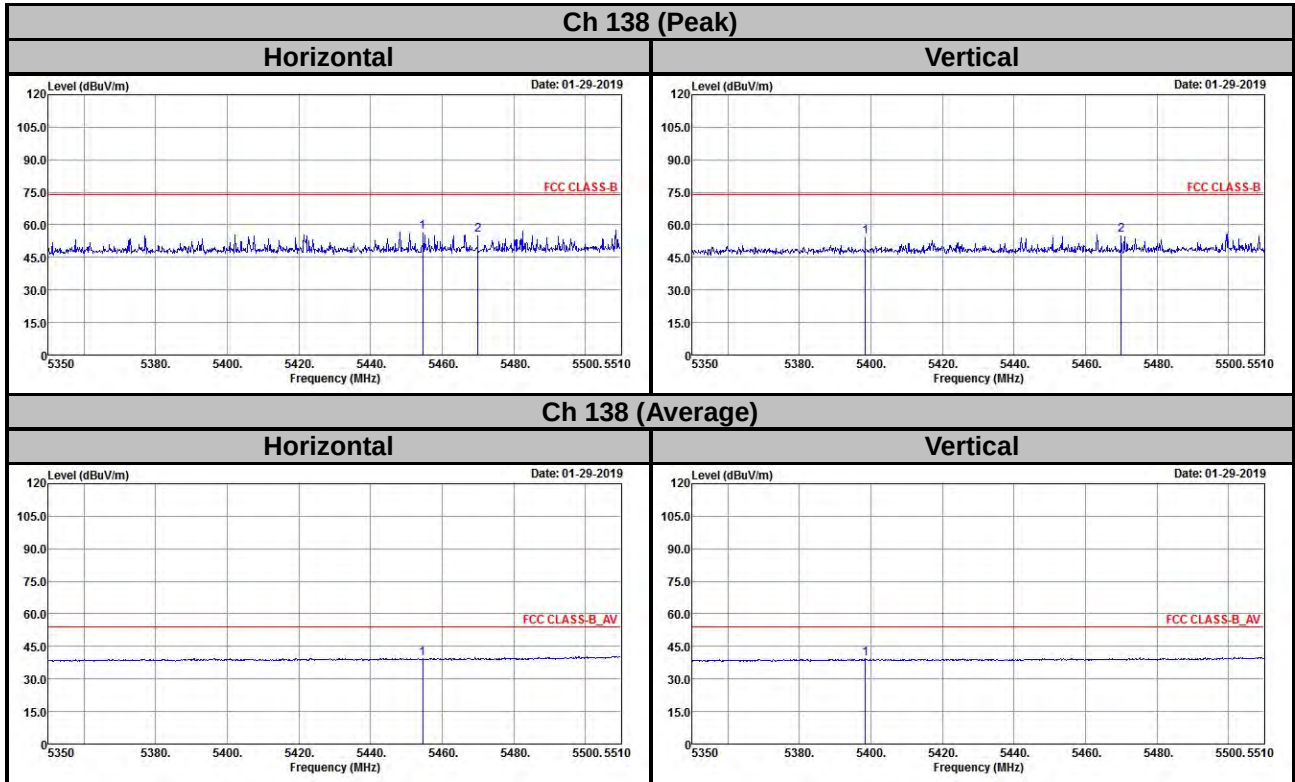
### Ch 122 (Average)

#### Horizontal



#### Vertical







## Appendix – Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

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**Web Site:** [www.bureauveritas-adt.com](http://www.bureauveritas-adt.com)

The address and road map of all our labs can be found in our web site also.

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