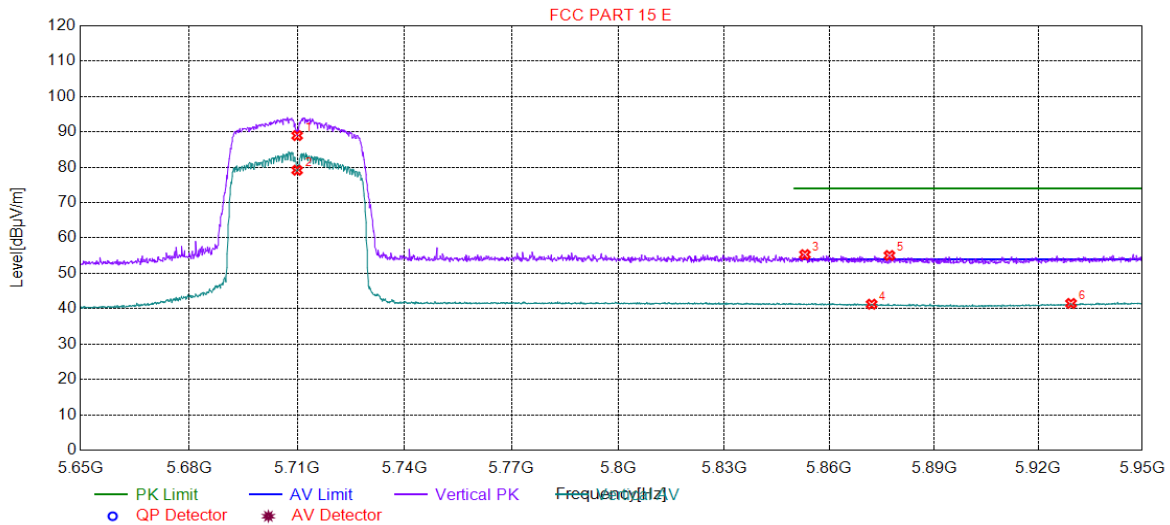


## 4.10.1.86 11AC40\_142 ANT 1\_Vertical

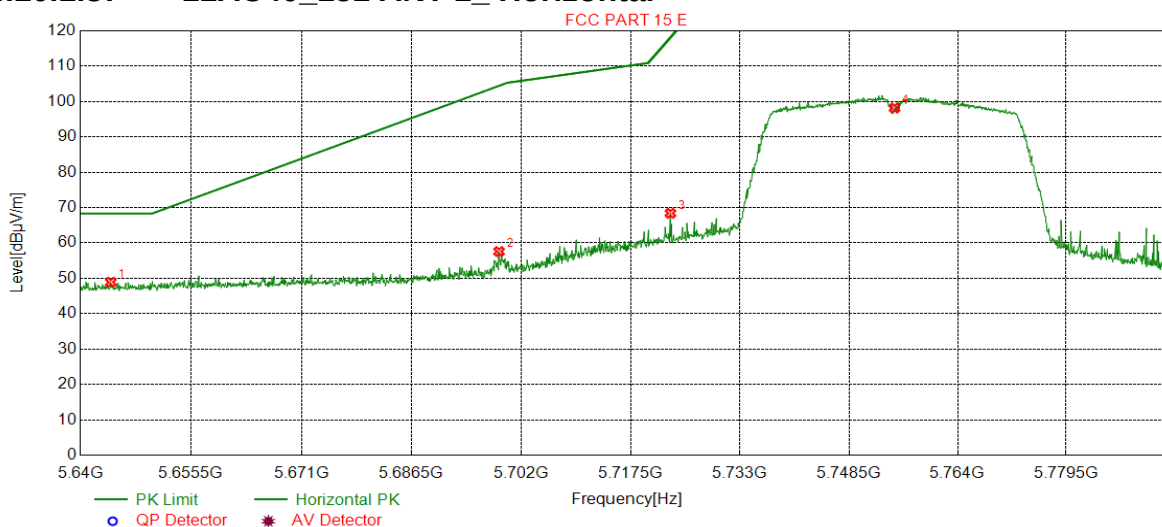


## Suspected List

| Suspected List |             |                |             |                |             |             |           |          |
|----------------|-------------|----------------|-------------|----------------|-------------|-------------|-----------|----------|
| NO.            | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1              | 5710.00     | 88.95          | 16.86       | 0.00           | -88.95      | 293         | 180       | Vertical |
| 2              | 5710.00     | 79.15          | 16.86       | 0.00           | -79.15      | 298         | 180       | Vertical |
| 3              | 5853.05     | 55.31          | 17.25       | 74.00          | 18.69       | 168         | 186       | Vertical |
| 4              | 5872.11     | 41.28          | 17.19       | 54.00          | 12.72       | 231         | 173       | Vertical |
| 5              | 5877.21     | 55.06          | 17.18       | 74.00          | 18.94       | 211         | 268       | Vertical |
| 6              | 5929.43     | 41.50          | 17.56       | 54.00          | 12.50       | 216         | 310       | Vertical |



## 4.10.1.87 11AC40\_151 ANT 1\_Horizontal

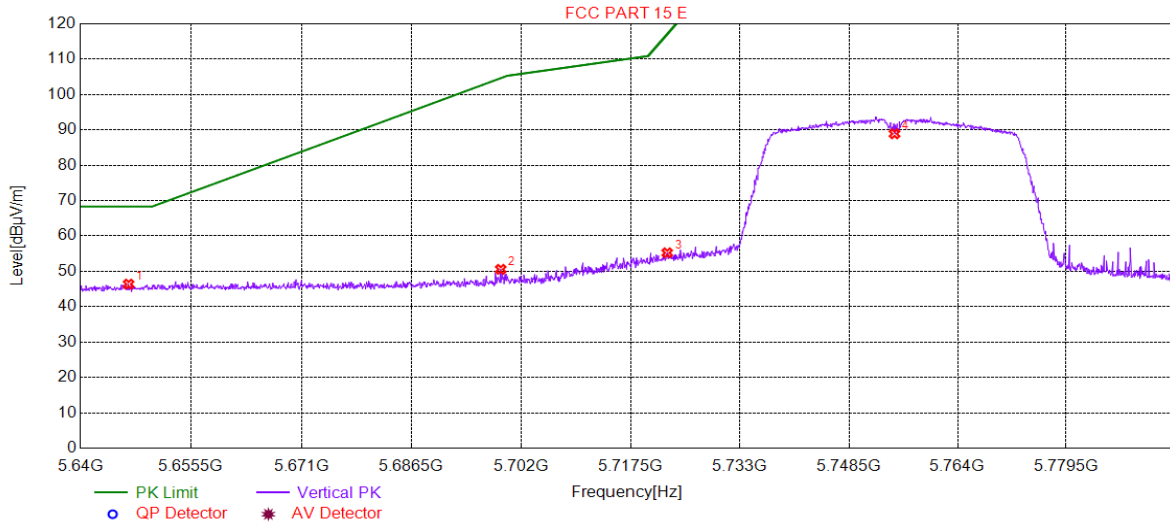


## Suspected List

| Suspected List |             |                |             |                |             |             |           |            |
|----------------|-------------|----------------|-------------|----------------|-------------|-------------|-----------|------------|
| NO.            | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity   |
| 1              | 5644.26     | 48.92          | 16.54       | 68.30          | 19.38       | 151         | 344       | Horizontal |
| 2              | 5698.85     | 57.59          | 16.79       | 104.45         | 46.86       | 156         | 14        | Horizontal |
| 3              | 5723.12     | 68.40          | 16.95       | 118.02         | 49.62       | 219         | 10        | Horizontal |
| 4              | 5755.00     | 98.16          | 17.13       | 0.00           | -98.16      | 223         | 14        | Horizontal |



## 4.10.1.88 11AC40\_151 ANT 1\_Vertical

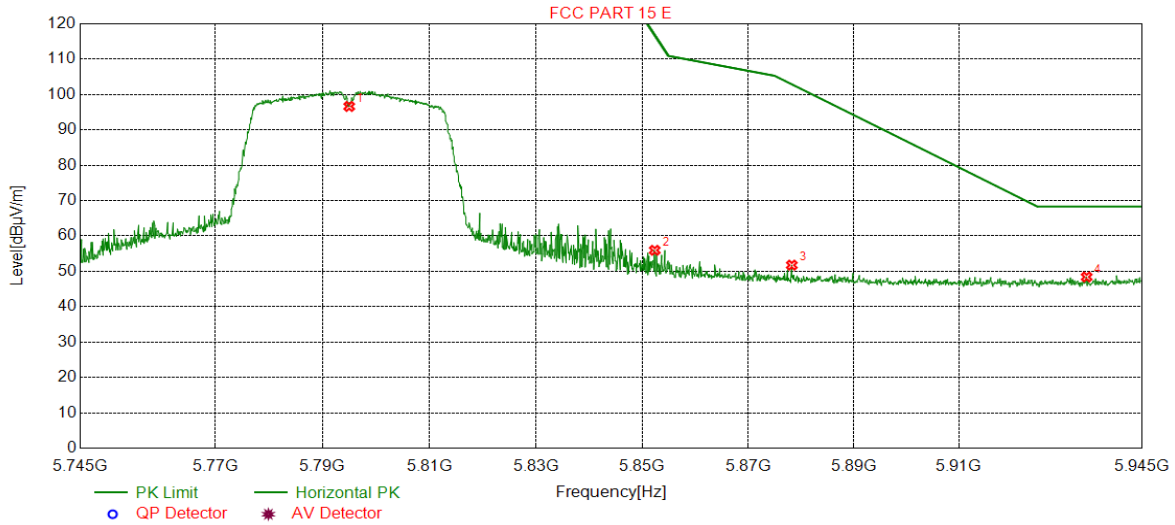


## Suspected List

| Suspected List |             |                |             |                |             |             |           |          |
|----------------|-------------|----------------|-------------|----------------|-------------|-------------|-----------|----------|
| NO.            | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1              | 5646.74     | 46.39          | 16.53       | 68.30          | 21.91       | 264         | 247       | Vertical |
| 2              | 5699.08     | 50.57          | 16.80       | 104.62         | 54.05       | 159         | 179       | Vertical |
| 3              | 5722.65     | 55.24          | 16.95       | 116.96         | 61.72       | 237         | 184       | Vertical |
| 4              | 5755.00     | 88.90          | 17.13       | 0.00           | -88.90      | 295         | 242       | Vertical |



## 4.10.1.89 11AC40\_159 ANT 1\_Horizontal

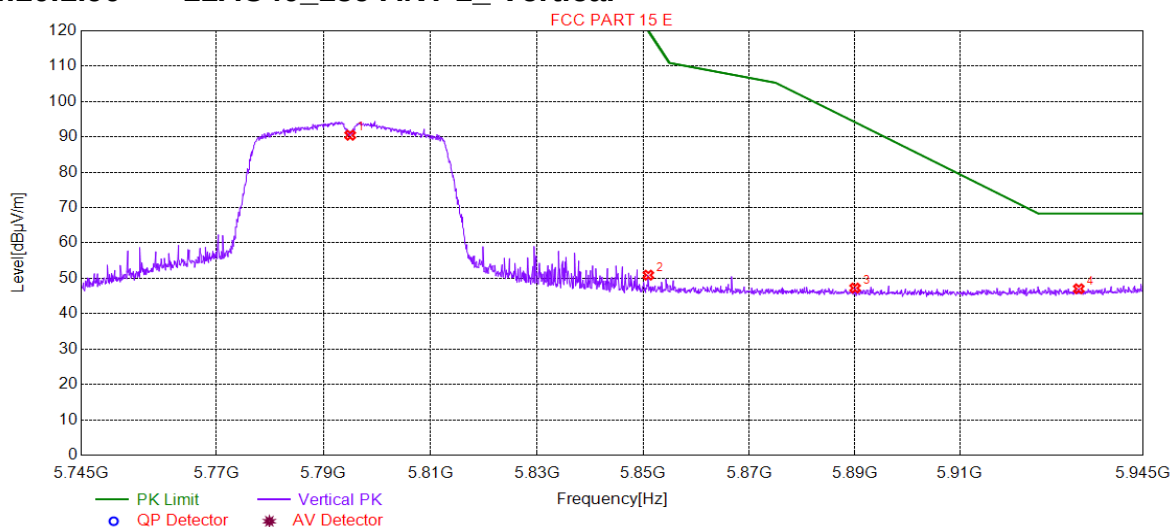


## Suspected List

| Suspected List |             |                |             |                |             |             |           |            |
|----------------|-------------|----------------|-------------|----------------|-------------|-------------|-----------|------------|
| NO.            | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity   |
| 1              | 5795.00     | 96.63          | 17.18       | 0.00           | -96.63      | 100         | 15        | Horizontal |
| 2              | 5852.35     | 55.96          | 17.25       | 116.93         | 60.97       | 193         | 6         | Horizontal |
| 3              | 5878.26     | 51.76          | 17.18       | 102.88         | 51.12       | 226         | 2         | Horizontal |
| 4              | 5934.39     | 48.42          | 17.64       | 68.30          | 19.88       | 208         | 2         | Horizontal |



## 4.10.1.90 11AC40\_159 ANT 1\_Vertical

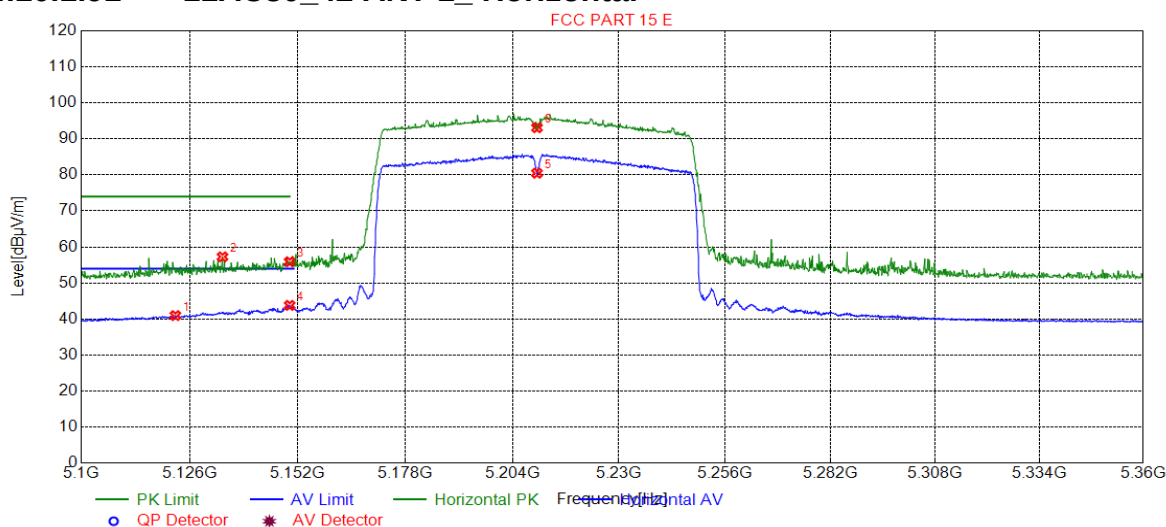


## Suspected List

| Suspected List |             |                |             |                |             |             |           |          |
|----------------|-------------|----------------|-------------|----------------|-------------|-------------|-----------|----------|
| NO.            | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1              | 5795.00     | 90.47          | 17.18       | 0.00           | -90.47      | 179         | 189       | Vertical |
| 2              | 5850.95     | 50.91          | 17.26       | 120.13         | 69.22       | 183         | 208       | Vertical |
| 3              | 5890.07     | 47.26          | 17.14       | 94.15          | 46.89       | 217         | 43        | Vertical |
| 4              | 5932.69     | 47.05          | 17.61       | 68.30          | 21.25       | 165         | 277       | Vertical |



## 4.10.1.91 11AC80\_42 ANT 1\_ Horizontal

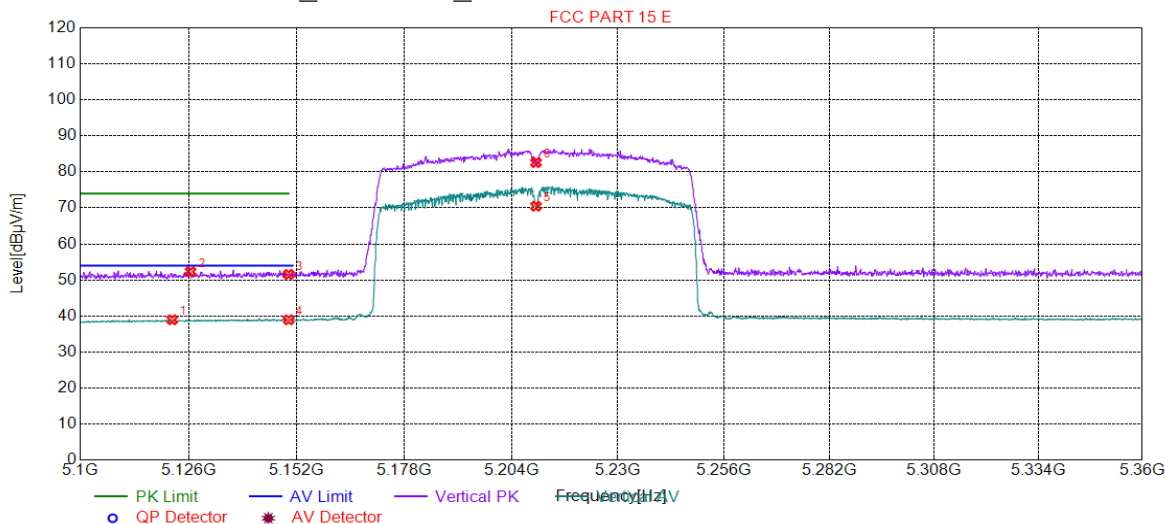


## Suspected List

| Suspected List |             |                |             |                |             |             |           |            |
|----------------|-------------|----------------|-------------|----------------|-------------|-------------|-----------|------------|
| NO.            | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity   |
| 1              | 5122.50     | 40.94          | 15.28       | 54.00          | 13.06       | 234         | 3         | Horizontal |
| 2              | 5133.81     | 57.26          | 15.38       | 74.00          | 16.74       | 223         | 30        | Horizontal |
| 3              | 5150.00     | 55.89          | 15.52       | 0.00           | -55.89      | 170         | 3         | Horizontal |
| 4              | 5150.00     | 43.78          | 15.52       | 54.00          | 10.22       | 132         | 0         | Horizontal |
| 5              | 5210.00     | 80.48          | 15.56       | 0.00           | -80.48      | 189         | 0         | Horizontal |
| 6              | 5210.00     | 93.10          | 15.56       | 0.00           | -93.10      | 177         | 344       | Horizontal |



## 4.10.1.92 11AC80\_42 ANT 1\_ Vertical

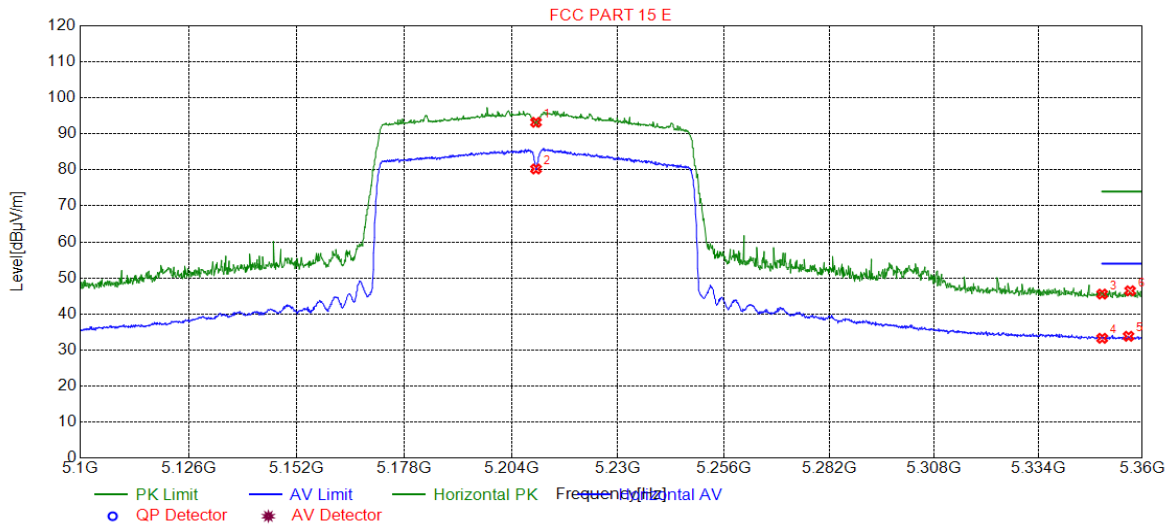


## Suspected List

| Suspected List |             |                |             |                |             |             |           |          |
|----------------|-------------|----------------|-------------|----------------|-------------|-------------|-----------|----------|
| NO.            | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1              | 5121.98     | 38.96          | 15.28       | 54.00          | 15.04       | 230         | 240       | Vertical |
| 2              | 5126.40     | 52.28          | 15.32       | 74.00          | 21.72       | 232         | 22        | Vertical |
| 3              | 5150.00     | 51.54          | 15.52       | 0.00           | -51.54      | 153         | 233       | Vertical |
| 4              | 5150.00     | 38.94          | 15.52       | 54.00          | 15.06       | 297         | 16        | Vertical |
| 5              | 5210.00     | 70.47          | 15.56       | 0.00           | -70.47      | 164         | 199       | Vertical |
| 6              | 5210.00     | 82.59          | 15.56       | 0.00           | -82.59      | 221         | 206       | Vertical |



## 4.10.1.93 11AC80\_42 ANT 1\_ Horizontal

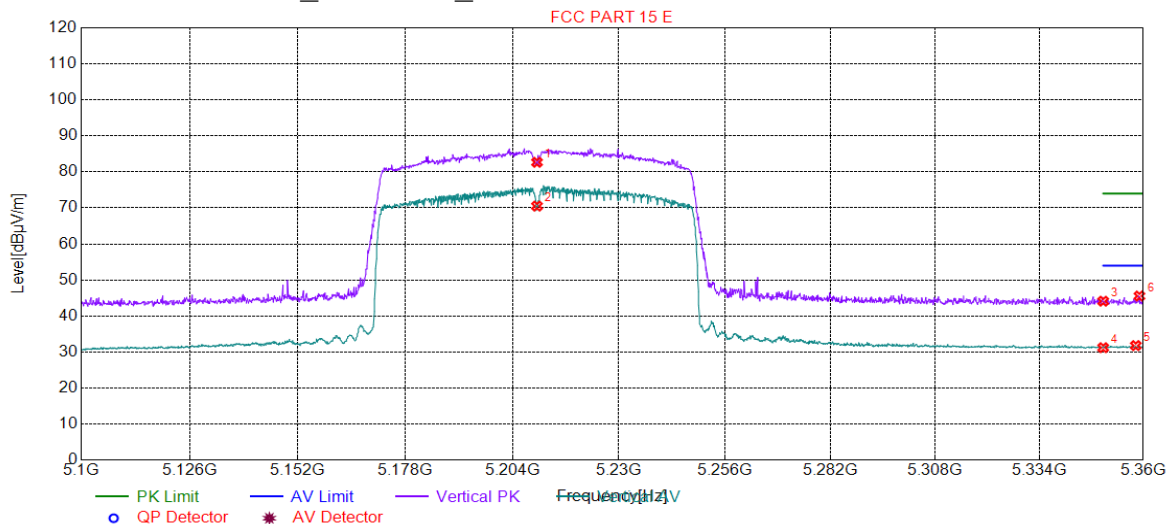


## Suspected List

| Suspected List |             |                |             |                |             |             |           |            |
|----------------|-------------|----------------|-------------|----------------|-------------|-------------|-----------|------------|
| NO.            | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity   |
| 1              | 5210.00     | 93.21          | 15.56       | 0.00           | -93.21      | 125         | 2         | Horizontal |
| 2              | 5210.00     | 80.25          | 15.56       | 0.00           | -80.25      | 209         | 0         | Horizontal |
| 3              | 5350.00     | 45.53          | 15.94       | 74.00          | 28.47       | 200         | 15        | Horizontal |
| 4              | 5350.00     | 33.25          | 15.94       | 54.00          | 20.75       | 113         | 2         | Horizontal |
| 5              | 5356.61     | 33.82          | 15.98       | 54.00          | 20.18       | 145         | 8         | Horizontal |
| 6              | 5357.00     | 46.44          | 15.98       | 74.00          | 27.56       | 178         | 345       | Horizontal |



## 4.10.1.94 11AC80\_42 ANT 1\_ Vertical

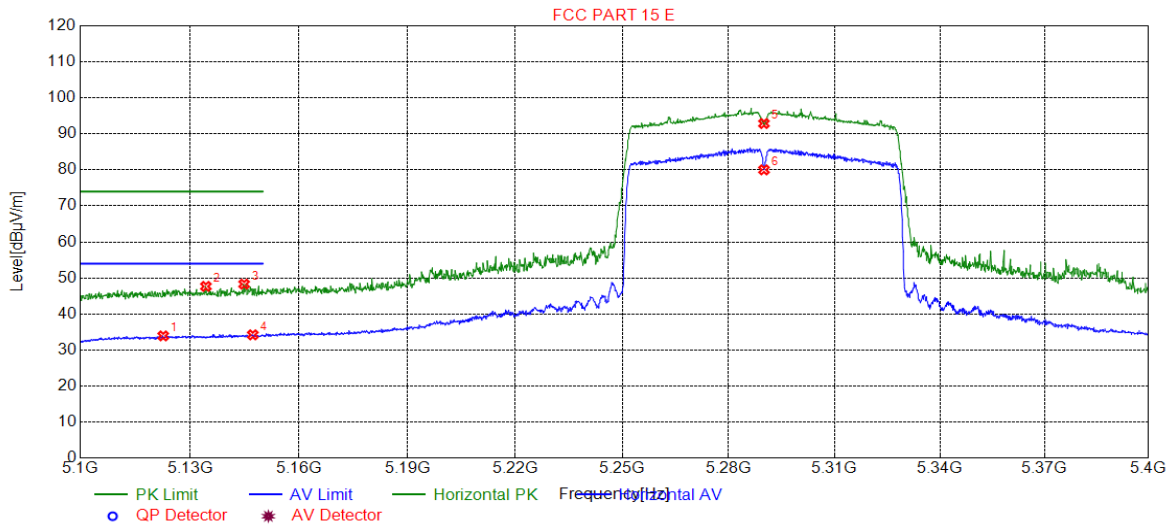


## Suspected List

| Suspected List |             |                |             |                |             |             |           |          |
|----------------|-------------|----------------|-------------|----------------|-------------|-------------|-----------|----------|
| NO.            | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1              | 5210.00     | 82.66          | 15.56       | 0.00           | -82.66      | 278         | 201       | Vertical |
| 2              | 5210.00     | 70.51          | 15.56       | 0.00           | -70.51      | 155         | 201       | Vertical |
| 3              | 5350.00     | 44.11          | 15.94       | 74.00          | 29.89       | 232         | 91        | Vertical |
| 4              | 5350.00     | 31.21          | 15.94       | 54.00          | 22.79       | 181         | 84        | Vertical |
| 5              | 5358.17     | 31.78          | 15.99       | 54.00          | 22.22       | 206         | 50        | Vertical |
| 6              | 5359.08     | 45.55          | 16.00       | 74.00          | 28.45       | 272         | 229       | Vertical |



## 4.10.1.95 11AC80\_58 ANT 1\_ Horizontal

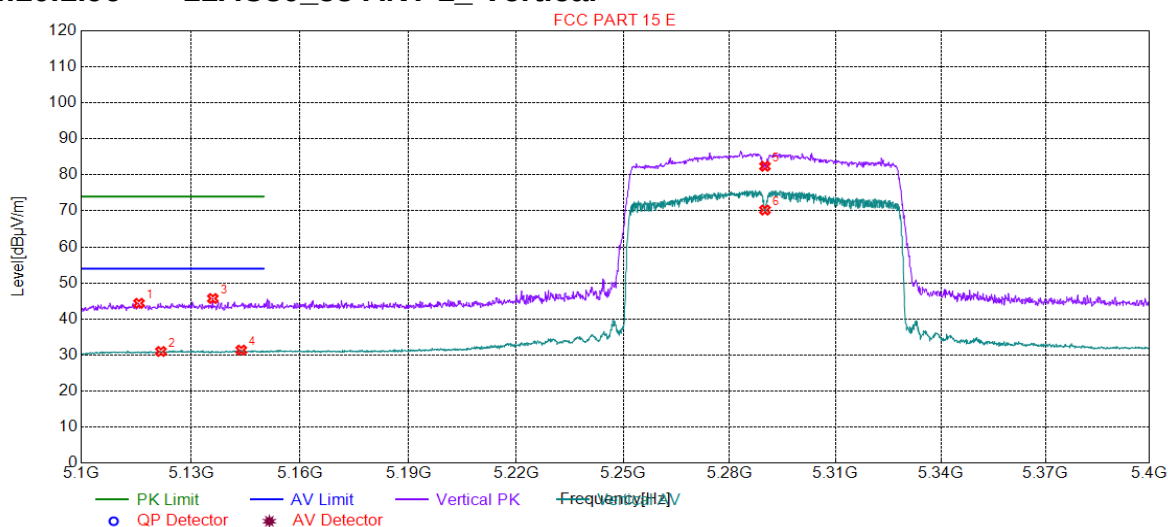


## Suspected List

| Suspected List |             |                |             |                |             |             |           |            |
|----------------|-------------|----------------|-------------|----------------|-------------|-------------|-----------|------------|
| NO.            | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity   |
| 1              | 5122.66     | 33.92          | 15.28       | 54.00          | 20.08       | 169         | 1         | Horizontal |
| 2              | 5134.36     | 47.66          | 15.39       | 74.00          | 26.34       | 207         | 4         | Horizontal |
| 3              | 5144.87     | 48.30          | 15.48       | 74.00          | 25.70       | 104         | 4         | Horizontal |
| 4              | 5147.27     | 34.21          | 15.50       | 54.00          | 19.79       | 172         | 345       | Horizontal |
| 5              | 5290.00     | 92.87          | 15.65       | 0.00           | -92.87      | 125         | 1         | Horizontal |
| 6              | 5290.00     | 80.01          | 15.65       | 0.00           | -80.01      | 187         | 345       | Horizontal |



## 4.10.1.96 11AC80\_58 ANT 1\_ Vertical

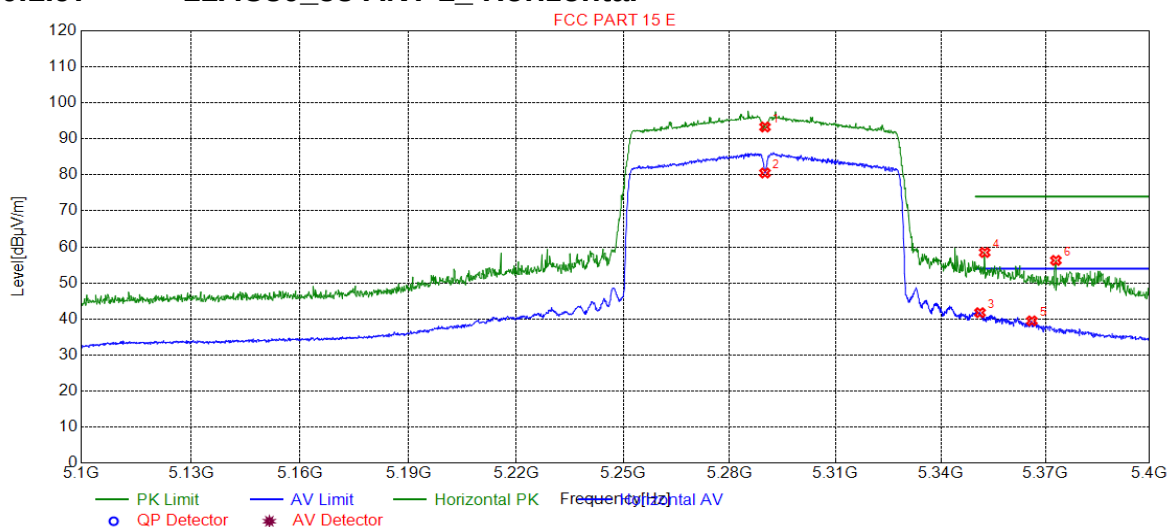


## Suspected List

| Suspected List |             |                |             |                |             |             |           |          |
|----------------|-------------|----------------|-------------|----------------|-------------|-------------|-----------|----------|
| NO.            | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1              | 5115.75     | 44.36          | 15.23       | 74.00          | 29.64       | 245         | 150       | Vertical |
| 2              | 5121.76     | 30.99          | 15.28       | 54.00          | 23.01       | 265         | 69        | Vertical |
| 3              | 5136.01     | 45.69          | 15.40       | 74.00          | 28.31       | 287         | 252       | Vertical |
| 4              | 5143.82     | 31.37          | 15.47       | 54.00          | 22.63       | 291         | 204       | Vertical |
| 5              | 5290.00     | 82.39          | 15.65       | 0.00           | -82.39      | 261         | 198       | Vertical |
| 6              | 5290.00     | 70.24          | 15.65       | 0.00           | -70.24      | 200         | 198       | Vertical |



## 4.10.1.97 11AC80\_58 ANT 1\_ Horizontal

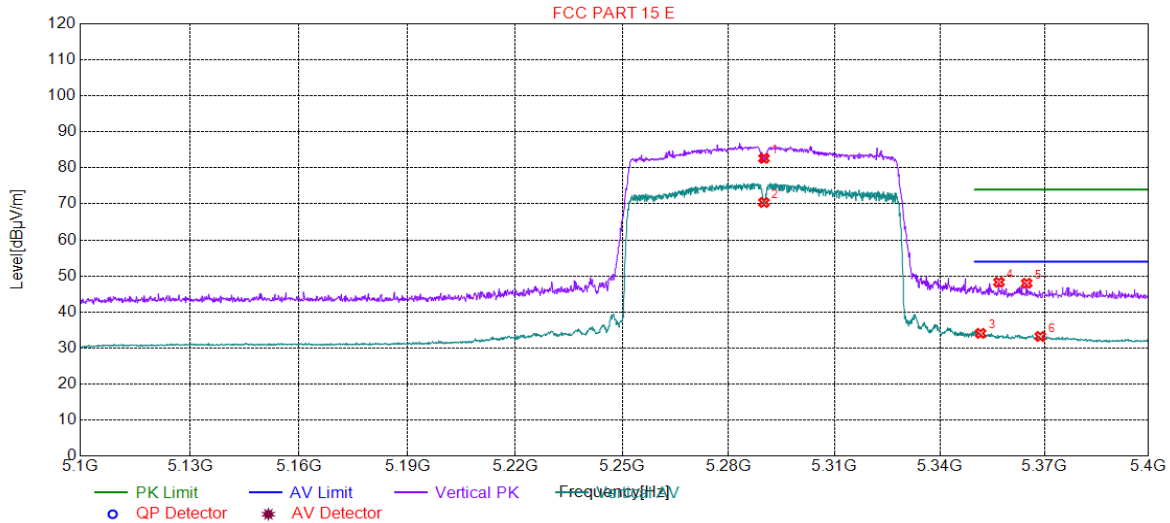


## Suspected List

| Suspected List |             |                |             |                |             |             |           |            |
|----------------|-------------|----------------|-------------|----------------|-------------|-------------|-----------|------------|
| NO.            | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity   |
| 1              | 5290.00     | 93.29          | 15.65       | 0.00           | -93.29      | 166         | 0         | Horizontal |
| 2              | 5290.00     | 80.52          | 15.65       | 0.00           | -80.52      | 140         | 0         | Horizontal |
| 3              | 5351.22     | 41.75          | 15.95       | 54.00          | 12.25       | 202         | 4         | Horizontal |
| 4              | 5352.57     | 58.46          | 15.96       | 74.00          | 15.54       | 172         | 4         | Horizontal |
| 5              | 5366.08     | 39.48          | 16.04       | 54.00          | 14.52       | 187         | 4         | Horizontal |
| 6              | 5372.98     | 56.26          | 16.08       | 74.00          | 17.74       | 181         | 221       | Horizontal |



## 4.10.1.98 11AC80\_58 ANT 1\_ Vertical

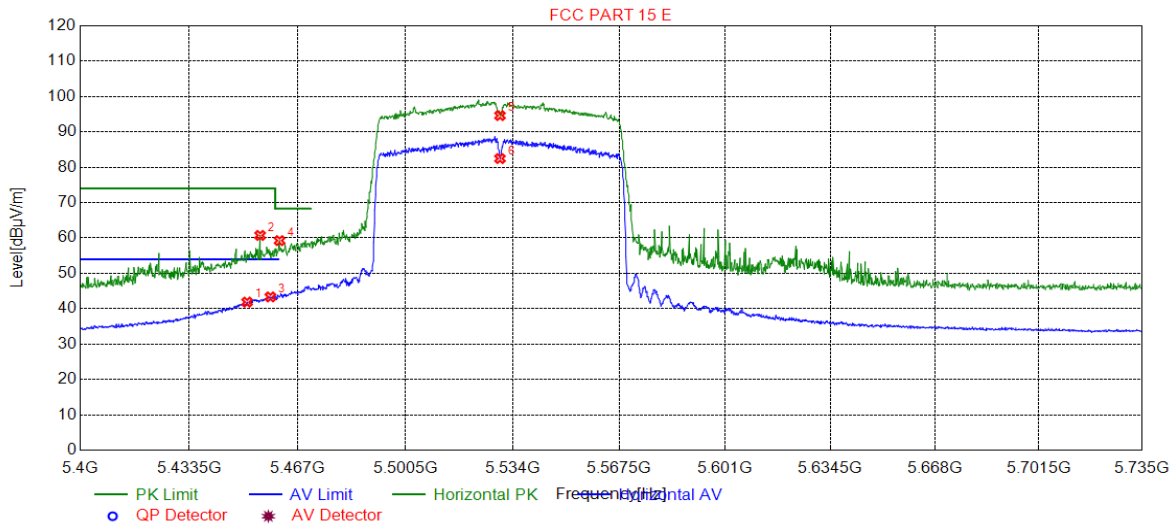


## Suspected List

| Suspected List |             |                |             |                |             |             |           |          |
|----------------|-------------|----------------|-------------|----------------|-------------|-------------|-----------|----------|
| NO.            | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1              | 5290.00     | 82.66          | 15.65       | 0.00           | -82.66      | 167         | 198       | Vertical |
| 2              | 5290.00     | 70.40          | 15.65       | 0.00           | -70.40      | 294         | 192       | Vertical |
| 3              | 5351.67     | 34.07          | 15.95       | 54.00          | 19.93       | 242         | 198       | Vertical |
| 4              | 5356.92     | 48.26          | 15.98       | 74.00          | 25.74       | 271         | 198       | Vertical |
| 5              | 5364.88     | 47.97          | 16.03       | 74.00          | 26.03       | 163         | 70        | Vertical |
| 6              | 5368.78     | 33.20          | 16.06       | 54.00          | 20.80       | 184         | 198       | Vertical |



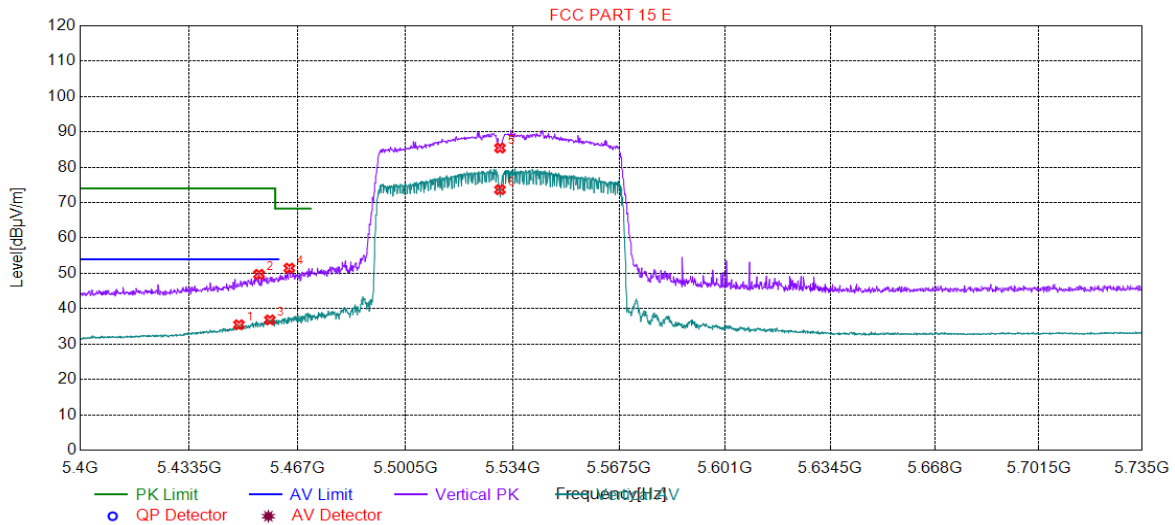
## 4.10.1.99 11AC80\_106 ANT 1\_Horizontal



## Suspected List

| Suspected List |             |                |             |                |             |             |           |            |
|----------------|-------------|----------------|-------------|----------------|-------------|-------------|-----------|------------|
| NO.            | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity   |
| 1              | 5451.28     | 41.88          | 16.25       | 54.00          | 12.12       | 145         | 16        | Horizontal |
| 2              | 5455.30     | 60.73          | 16.25       | 74.00          | 13.27       | 217         | 16        | Horizontal |
| 3              | 5458.48     | 43.34          | 16.25       | 54.00          | 10.66       | 151         | 16        | Horizontal |
| 4              | 5461.33     | 59.25          | 16.25       | 68.30          | 9.05        | 135         | 16        | Horizontal |
| 5              | 5530.00     | 94.61          | 16.35       | 0.00           | -94.61      | 223         | 23        | Horizontal |
| 6              | 5530.00     | 82.45          | 16.35       | 0.00           | -82.45      | 150         | 9         | Horizontal |

## 4.10.1.100 11AC80\_106 ANT 1\_Vertical

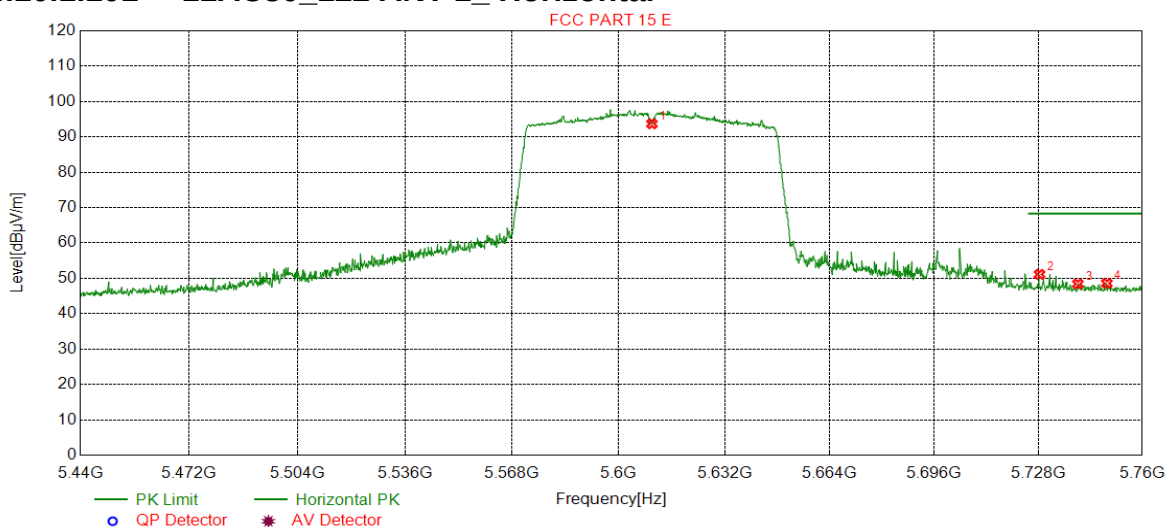


## Suspected List

| Suspected List |             |                |             |                |             |             |           |          |
|----------------|-------------|----------------|-------------|----------------|-------------|-------------|-----------|----------|
| NO.            | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1              | 5448.76     | 35.47          | 16.25       | 54.00          | 18.53       | 291         | 193       | Vertical |
| 2              | 5454.96     | 49.72          | 16.25       | 74.00          | 24.28       | 201         | 193       | Vertical |
| 3              | 5458.31     | 36.84          | 16.25       | 54.00          | 17.16       | 273         | 193       | Vertical |
| 4              | 5464.35     | 51.47          | 16.25       | 68.30          | 16.83       | 208         | 193       | Vertical |
| 5              | 5530.00     | 85.44          | 16.35       | 0.00           | -85.44      | 152         | 193       | Vertical |
| 6              | 5530.00     | 73.65          | 16.35       | 0.00           | -73.65      | 292         | 193       | Vertical |



## 4.10.1.101 11AC80\_122 ANT 1\_ Horizontal

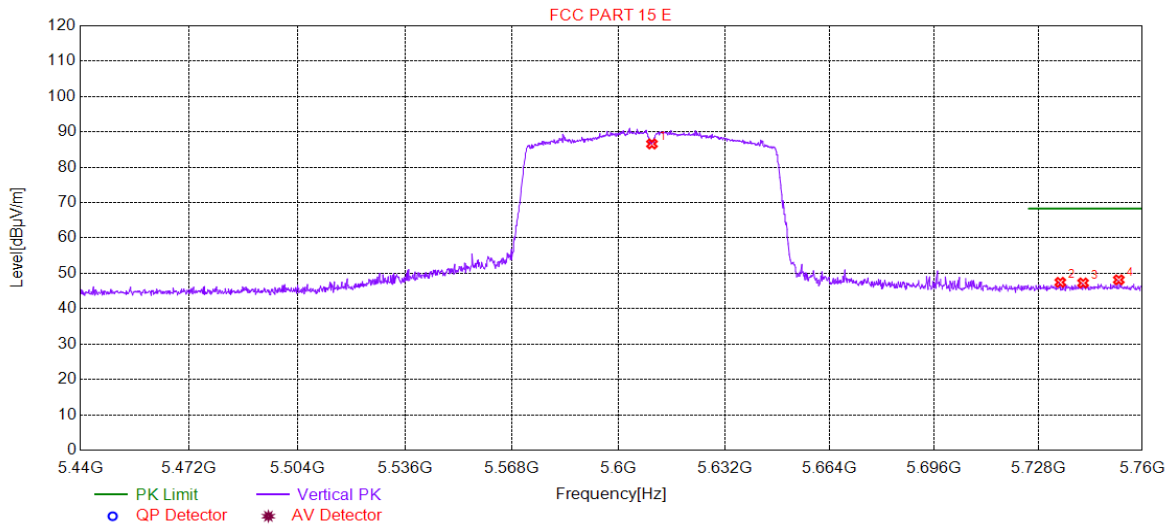


## Suspected List

| Suspected List |             |                |             |                |             |             |           |            |
|----------------|-------------|----------------|-------------|----------------|-------------|-------------|-----------|------------|
| NO.            | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity   |
| 1              | 5610.00     | 93.70          | 16.58       | 0.00           | -93.70      | 152         | 226       | Horizontal |
| 2              | 5728.30     | 51.14          | 16.98       | 68.30          | 17.16       | 146         | 33        | Horizontal |
| 3              | 5740.15     | 48.43          | 17.06       | 68.30          | 19.87       | 248         | 331       | Horizontal |
| 4              | 5749.11     | 48.59          | 17.11       | 68.30          | 19.71       | 169         | 24        | Horizontal |



## 4.10.1.102 11AC80\_122 ANT 1\_Vertical

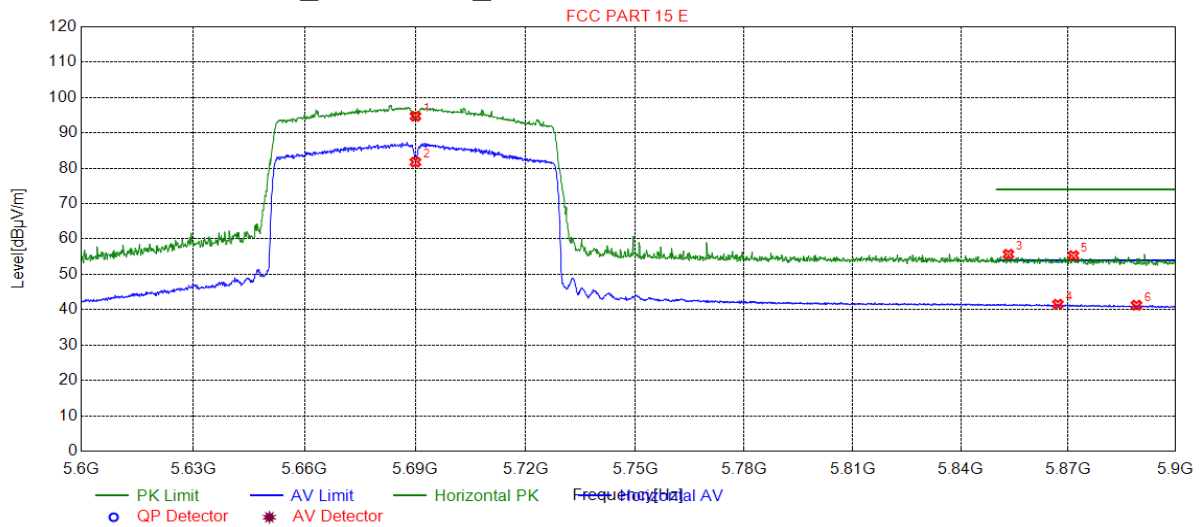


## Suspected List

| Suspected List |             |                |             |                |             |             |           |          |
|----------------|-------------|----------------|-------------|----------------|-------------|-------------|-----------|----------|
| NO.            | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1              | 5610.00     | 86.60          | 16.58       | 0.00           | -86.60      | 221         | 255       | Vertical |
| 2              | 5734.70     | 47.46          | 17.02       | 68.30          | 20.84       | 201         | 16        | Vertical |
| 3              | 5741.75     | 47.28          | 17.07       | 68.30          | 21.02       | 252         | 16        | Vertical |
| 4              | 5752.79     | 48.17          | 17.12       | 68.30          | 20.13       | 222         | 192       | Vertical |



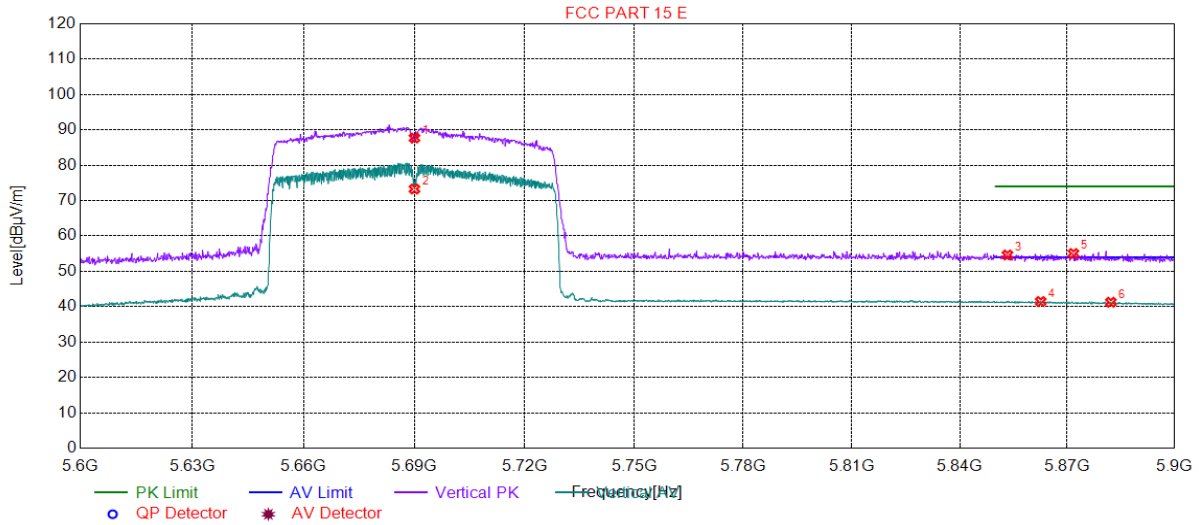
## 4.10.1.103 11AC80\_138 ANT 1\_Horizontal



## Suspected List

| Suspected List |             |                |             |                |             |             |           |            |
|----------------|-------------|----------------|-------------|----------------|-------------|-------------|-----------|------------|
| NO.            | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity   |
| 1              | 5690.00     | 94.70          | 16.75       | 0.00           | -94.70      | 187         | 9         | Horizontal |
| 2              | 5690.00     | 81.74          | 16.75       | 0.00           | -81.74      | 232         | 9         | Horizontal |
| 3              | 5853.32     | 55.68          | 17.25       | 74.00          | 18.32       | 112         | 154       | Horizontal |
| 4              | 5867.13     | 41.54          | 17.21       | 54.00          | 12.46       | 243         | 202       | Horizontal |
| 5              | 5871.48     | 55.30          | 17.20       | 74.00          | 18.70       | 201         | 126       | Horizontal |
| 6              | 5889.19     | 41.28          | 17.14       | 54.00          | 12.72       | 246         | 91        | Horizontal |

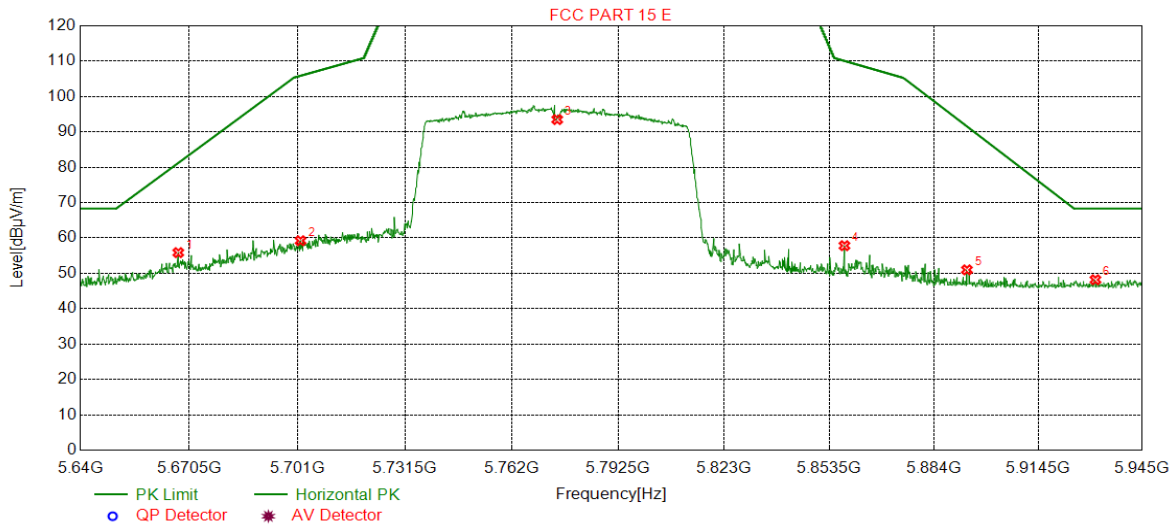
#### 4.10.1.104 11AC80\_138 ANT 1\_Vertical



#### Suspected List

| Suspected List |             |                |             |                |             |             |           |          |
|----------------|-------------|----------------|-------------|----------------|-------------|-------------|-----------|----------|
| NO.            | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1              | 5690.00     | 87.71          | 16.75       | 0.00           | -87.71      | 282         | 186       | Vertical |
| 2              | 5690.00     | 73.28          | 16.75       | 0.00           | -73.28      | 236         | 220       | Vertical |
| 3              | 5853.32     | 54.63          | 17.25       | 74.00          | 19.37       | 289         | 56        | Vertical |
| 4              | 5862.63     | 41.47          | 17.22       | 54.00          | 12.53       | 259         | 338       | Vertical |
| 5              | 5871.78     | 55.05          | 17.19       | 74.00          | 18.95       | 222         | 186       | Vertical |
| 6              | 5882.29     | 41.27          | 17.16       | 54.00          | 12.73       | 159         | 269       | Vertical |

## 4.10.1.105 11AC80\_155 ANT 1\_Horizontal

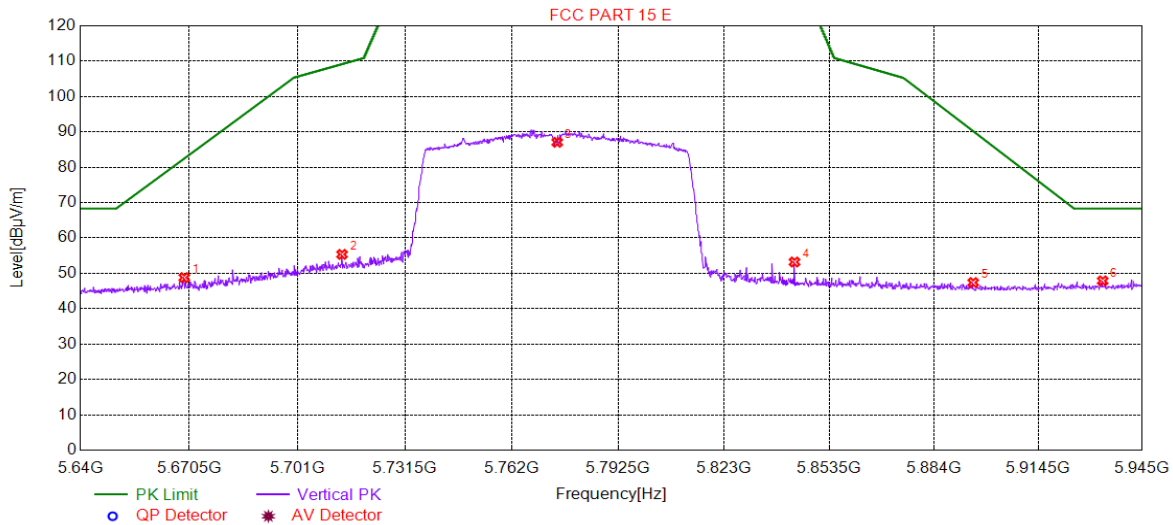


## Suspected List

| Suspected List |             |                |             |                |             |             |           |            |
|----------------|-------------|----------------|-------------|----------------|-------------|-------------|-----------|------------|
| NO.            | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity   |
| 1              | 5667.46     | 55.86          | 16.62       | 81.22          | 25.36       | 139         | 7         | Horizontal |
| 2              | 5701.94     | 59.22          | 16.81       | 105.84         | 46.62       | 133         | 34        | Horizontal |
| 3              | 5775.00     | 93.49          | 17.16       | 122.30         | 28.81       | 176         | 212       | Horizontal |
| 4              | 5857.87     | 57.82          | 17.24       | 110.09         | 52.27       | 234         | 344       | Horizontal |
| 5              | 5893.58     | 50.99          | 17.13       | 91.55          | 40.56       | 171         | 20        | Horizontal |
| 6              | 5931.26     | 48.19          | 17.59       | 68.30          | 20.11       | 107         | 344       | Horizontal |



## 4.10.1.106 11AC80\_155 ANT 1\_Vertical



## Suspected List

| Suspected List |             |                |             |                |             |             |           |          |
|----------------|-------------|----------------|-------------|----------------|-------------|-------------|-----------|----------|
| NO.            | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1              | 5669.14     | 48.80          | 16.63       | 82.47          | 33.67       | 296         | 183       | Vertical |
| 2              | 5713.69     | 55.37          | 16.89       | 109.13         | 53.76       | 255         | 211       | Vertical |
| 3              | 5775.00     | 87.06          | 17.16       | 122.30         | 35.24       | 290         | 211       | Vertical |
| 4              | 5843.38     | 53.21          | 17.25       | 122.30         | 69.09       | 283         | 106       | Vertical |
| 5              | 5895.41     | 47.40          | 17.12       | 90.19          | 42.79       | 225         | 51        | Vertical |
| 6              | 5933.40     | 47.88          | 17.62       | 68.30          | 20.42       | 299         | 207       | Vertical |

## Remark:

The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

All modes have been tested, but only the worst case data displayed in this report.

## 4.11 Frequencies Stability

### 4.11.1 Frequency Error vs. Voltage:

| Test Conditions            | Measured Frequency ( MHz ) |             |
|----------------------------|----------------------------|-------------|
|                            | 5180                       | 5825        |
| V nom(V)                   | 5180.006570                | 5825.003271 |
| V max(V)                   | 5180.014860                | 5825.005254 |
| V min(V)                   | 5180.021923                | 5825.005352 |
| Max. Deviation Frequency   | 0.021923                   | 0.005352    |
| Max. Frequency Error (ppm) | 4.232242                   | 0.918782    |

### 4.11.2 Frequency Error vs. Temperature:

| Test Conditions(°C)        | Measured Frequency ( MHz ) |             |
|----------------------------|----------------------------|-------------|
|                            | 5180                       | 5825        |
| -5                         | 5180.001976                | 5825.001644 |
| 5                          | 5180.007552                | 5825.009889 |
| 15                         | 5180.013642                | 5825.015061 |
| 25                         | 5180.022309                | 5825.015395 |
| 35                         | 5180.028049                | 5825.019354 |
| 45                         | 5180.035694                | 5825.021281 |
| 50                         | 5180.040895                | 5825.023078 |
| Max. Deviation Frequency   | 0.040895                   | 0.023078    |
| Max. Frequency Error (ppm) | 7.894741                   | 3.961895    |



## 4.12 Dynamic Frequency Selection

### 4.12.1 DFS Overview

**Table 1: Applicability of DFS Requirements Prior to Use of a Channel**

| Requirement                            | Operational Mode |                                |                             |
|----------------------------------------|------------------|--------------------------------|-----------------------------|
|                                        | Master           | Client Without Radar Detection | Client With Radar Detection |
| <i>Non-Occupancy Period</i>            | Yes              | Not required                   | Yes                         |
| <i>DFS Detection Threshold</i>         | Yes              | Not required                   | Yes                         |
| <i>Channel Availability Check Time</i> | Yes              | Not required                   | Not required                |
| <i>U-NII Detection Bandwidth</i>       | Yes              | Not required                   | Yes                         |

**Table 2: Applicability of DFS requirements during normal operation**

| Requirement                                                                                                                                                                                                                                                                                                                                                  | Operational Mode                                    |                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                              | Master Device or Client with Radar Detection        | Client Without Radar Detection                       |
| <i>DFS Detection Threshold</i>                                                                                                                                                                                                                                                                                                                               | Yes                                                 | Not required                                         |
| <i>Channel Closing Transmission Time</i>                                                                                                                                                                                                                                                                                                                     | Yes                                                 | Yes                                                  |
| <i>Channel Move Time</i>                                                                                                                                                                                                                                                                                                                                     | Yes                                                 | Yes                                                  |
| <i>U-NII Detection Bandwidth</i>                                                                                                                                                                                                                                                                                                                             | Yes                                                 | Not required                                         |
| <b>Additional requirements for devices with multiple bandwidth modes</b>                                                                                                                                                                                                                                                                                     | <b>Master Device or Client with Radar Detection</b> | <b>Client Without Radar Detection</b>                |
| <i>U-NII Detection Bandwidth and Statistical Performance Check</i>                                                                                                                                                                                                                                                                                           | All BW modes must be tested                         | Not required                                         |
| <i>Channel Move Time and Channel Closing Transmission Time</i>                                                                                                                                                                                                                                                                                               | Test using widest BW mode available                 | Test using the widest BW mode available for the link |
| <i>All other tests</i>                                                                                                                                                                                                                                                                                                                                       | Any single BW mode                                  | Not required                                         |
| <b>Note:</b> Frequencies selected for statistical performance check (Section 7.8.4) should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in each of the bonded 20 MHz channels and the channel center frequency. |                                                     |                                                      |



#### 4.12.2 DFS Detection Thresholds

**Table 3: DFS Detection Thresholds for Master Devices and Client Devices with Radar Detection**

| Maximum Transmit Power                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Value<br>(See Notes 1, 2, and 3) |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| EIRP $\geq$ 200 milliwatt                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -64 dBm                          |
| EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -62 dBm                          |
| EIRP < 200 milliwatt that do not meet the power spectral density requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -64 dBm                          |
| <p><b>Note 1:</b> This is the level at the input of the receiver assuming a 0 dBi receive antenna.</p> <p><b>Note 2:</b> Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.</p> <p><b>Note3:</b> EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.</p> |                                  |

#### 4.12.3 Response Requirements

**Table 4: DFS Response Requirement Values**

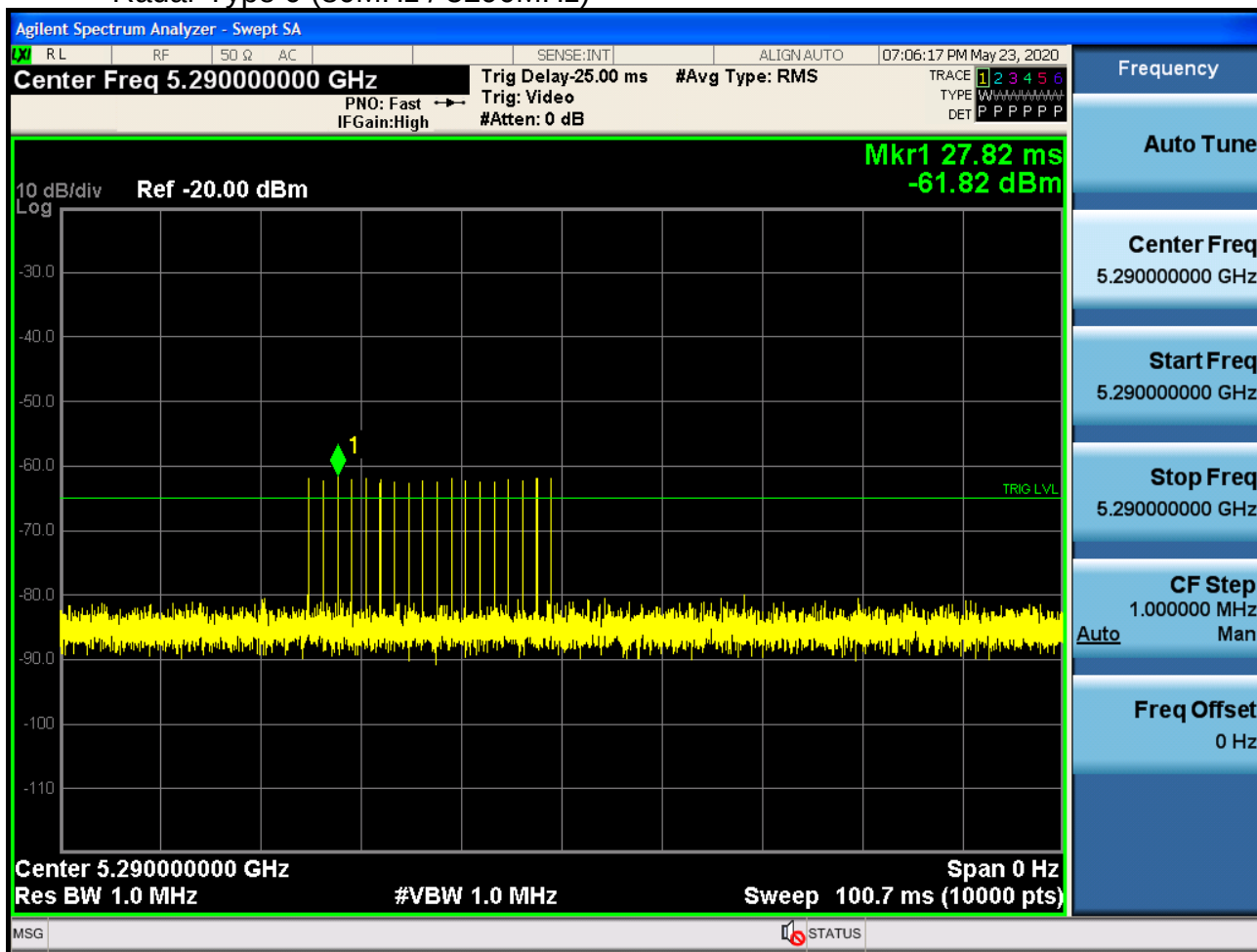
| Parameter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Value                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| <i>Non-occupancy period</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Minimum 30 minutes                                                                                        |
| <i>Channel Availability Check Time</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 60 seconds                                                                                                |
| <i>Channel Move Time</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 10 seconds<br>See Note 1.                                                                                 |
| <i>Channel Closing Transmission Time</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period.<br>See Notes 1 and 2. |
| <i>U-NII Detection Bandwidth</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Minimum 100% of the U-NII 99% transmission power bandwidth. See Note 3.                                   |
| <p><b>Note 1:</b> <i>Channel Move Time</i> and the <i>Channel Closing Transmission Time</i> should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.</p> <p><b>Note 2:</b> The <i>Channel Closing Transmission Time</i> is comprised of 200 milliseconds starting at the beginning of the <i>Channel Move Time</i> plus any additional intermittent control signals required to facilitate a <i>Channel</i> move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.</p> <p><b>Note 3:</b> During the <i>U-NII Detection Bandwidth</i> detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.</p> |                                                                                                           |



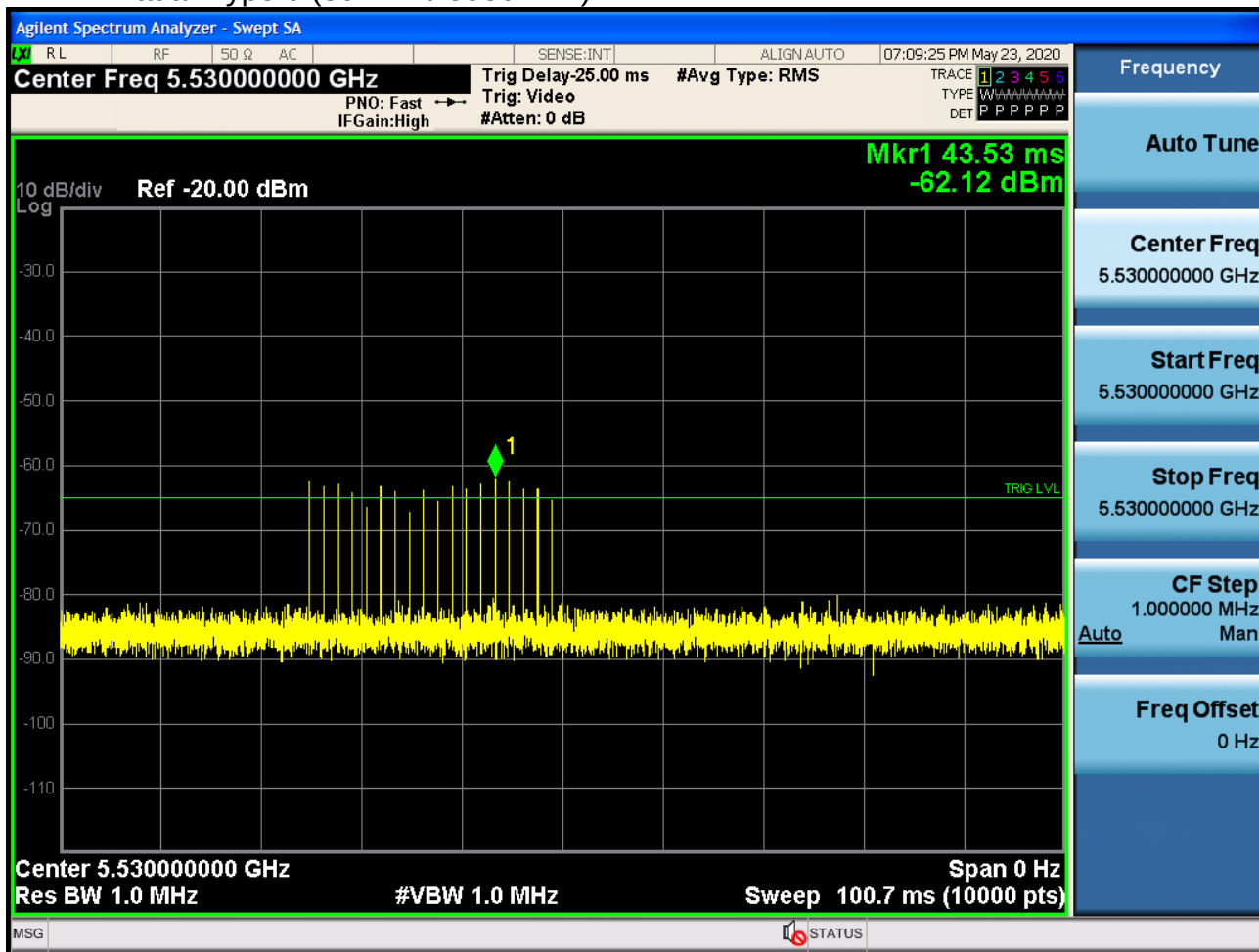
#### 4.12.4 Test plots

##### 4.12.4.1 Radar Waveform Calibration Result

Radar Type 0 (80MHz / 5290MHz)



### Radar Type 0 (80MHz / 5530MHz)

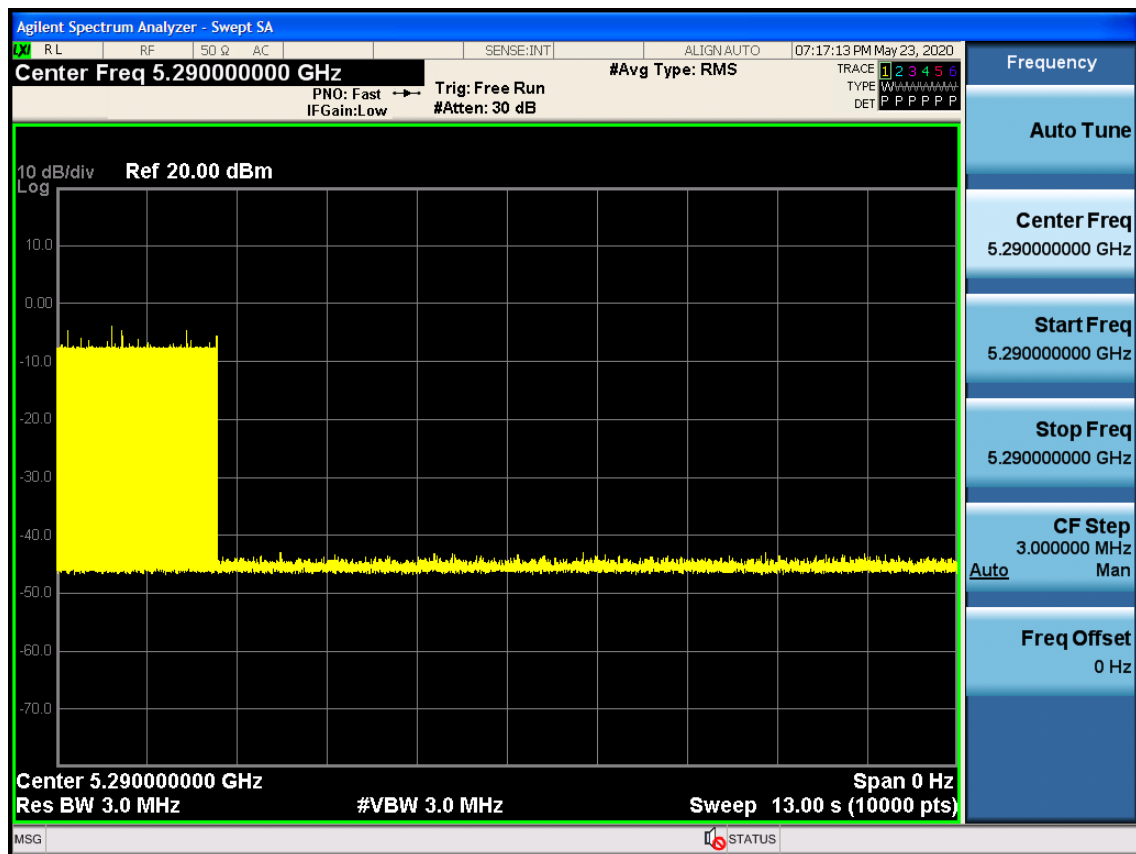


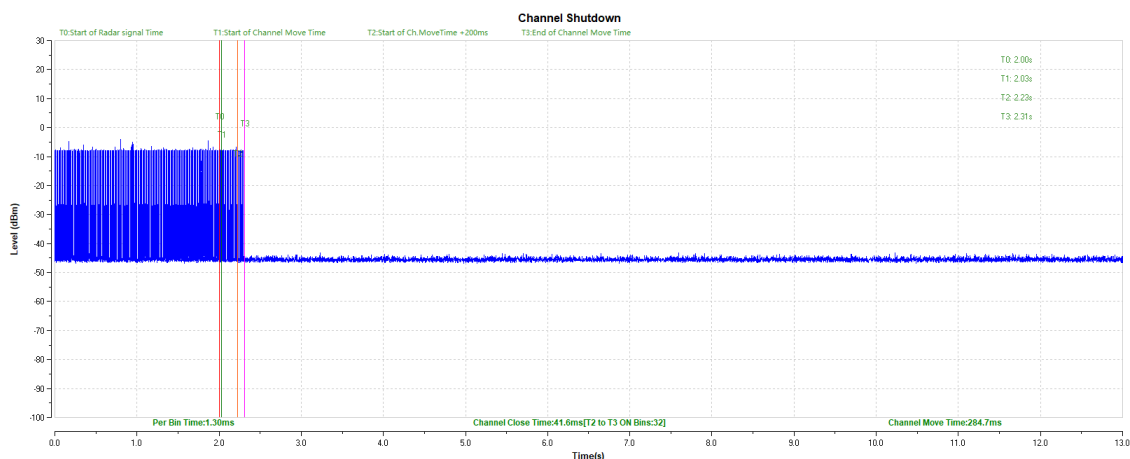
#### 4.12.5 Test Data:

| BW/Channel      | Test Item                         | Test Result | Limit | Results |
|-----------------|-----------------------------------|-------------|-------|---------|
| 80MHz / 5290MHz | Channel Move Time                 | 0s          | <10s  | Pass    |
|                 | Channel Closing Transmission Time | 41ms        | <60ms | Pass    |
| 80MHz / 5530MHz | Channel Move Time                 | 0s          | <10s  | Pass    |
|                 | Channel Closing Transmission Time | 40ms        | <60ms | Pass    |

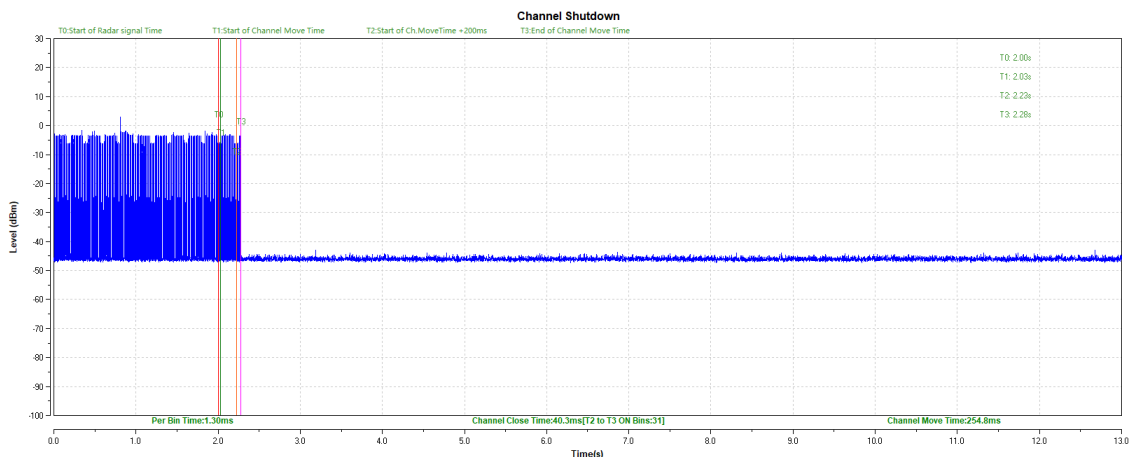
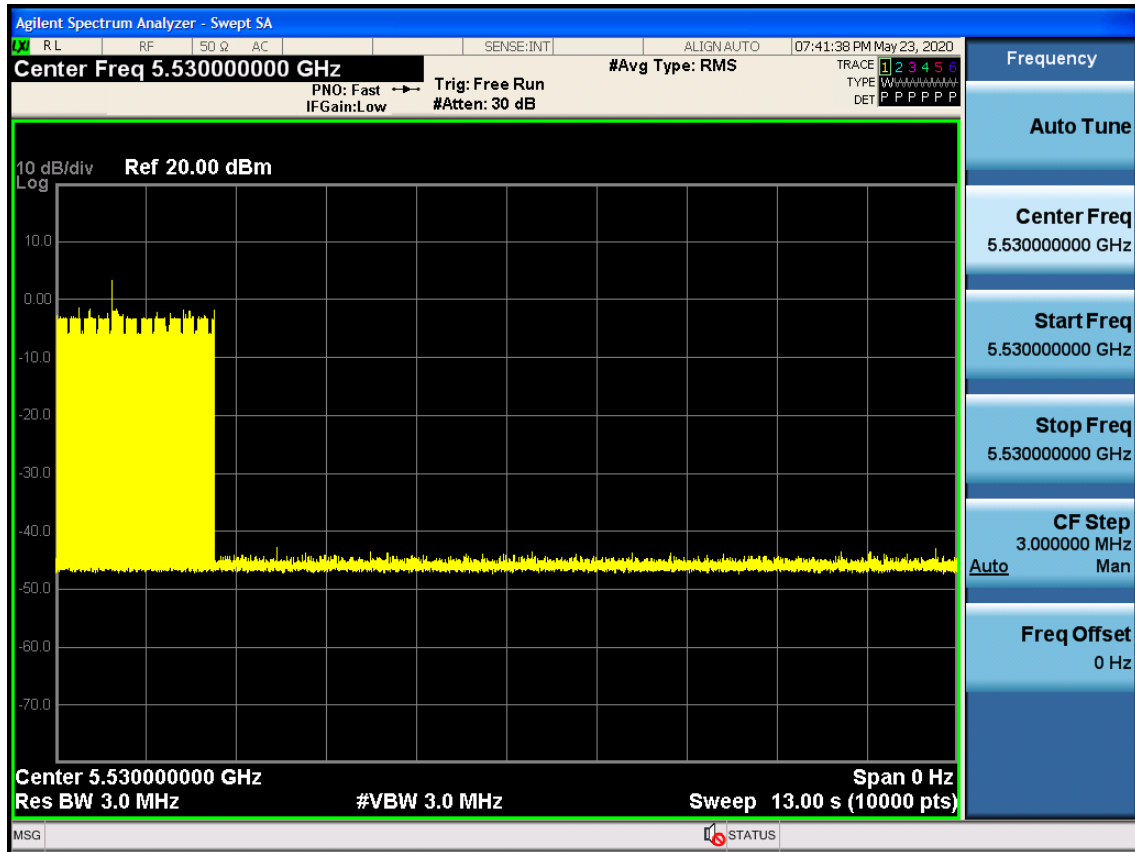
#### 4.12.5.1 Test plots

##### 4.12.5.1.1 Test Bandwidth/Channel= 80MHz / 5290MHz





#### 4.12.5.1.2 Test Bandwidth/ Channel =80MHz/5530MHz



## 5 Measurement Uncertainty (95% confidence levels, k=2)

Lab A:

| No. | Item                          | Measurement Uncertainty |
|-----|-------------------------------|-------------------------|
| 1   | Total RF power, conducted     | $\pm 0.75\text{dB}$     |
| 2   | RF power density, conducted   | $\pm 2.84\text{dB}$     |
| 3   | Spurious emissions, conducted | $\pm 0.75\text{dB}$     |
| 4   | Temperature test              | $\pm 1^\circ\text{C}$   |
| 5   | Humidity test                 | $\pm 3\%$               |
| 6   | DC and low frequency voltages | $\pm 0.5\%$             |

Lab B:

| No. | Item                            | Measurement Uncertainty              |
|-----|---------------------------------|--------------------------------------|
| 1   | Conduct emission test           | $\pm 3.0\text{dB}$ (150kHz to 30MHz) |
| 2   | Radiated Spurious emission test | $\pm 4.8\text{dB}$ (Below 1GHz)      |
|     |                                 | $\pm 4.8\text{dB}$ (1GHz to 6GHz)    |
|     |                                 | $\pm 4.5\text{dB}$ (6GHz to 18GHz)   |
|     |                                 | $\pm 5.02\text{dB}$ (Above 18GHz)    |





## 6 Equipment List

| RF conducted test   |                      |                  |                                                 |                        |                            |
|---------------------|----------------------|------------------|-------------------------------------------------|------------------------|----------------------------|
| Test Equipment      | Manufacturer         | Model No.        | Inventory No.                                   | Cal. Date (yyyy-mm-dd) | Cal. Due date (yyyy-mm-dd) |
| DC Power Supply     | ZhaoXin              | RXN-305D         | SEM011-02                                       | 2019/7/14              | 2020/7/14                  |
| Signal Analyzer     | Rohde & Schwarz      | FSV              | W025-05                                         | 2020/3/2               | 2021/3/1                   |
| Coaxial Cable       | SGS                  | N/A              | SEM031-01                                       | 2019/6/12              | 2020/6/11                  |
| Attenuator          | Weinschel Associates | WA41             | SEM021-09                                       | N/A                    | N/A                        |
| Signal Generator    | KEYSIGHT             | N5173B           | SEM006-05                                       | 2019/7/14              | 2020/7/14                  |
| Temperature Chamber | GIANT FORCE          | ICT-150-40-CP-AR | W027-03                                         | 2019/10/27             | 2020/10/27                 |
| Power Meter         | Rohde & Schwarz      | NRVS             | SEM014-02                                       | 2019/7/14              | 2020/7/14                  |
| Master Device       | Linksys pte.Ltd      | WRT32X           | FCC ID:Q87-WRT3200ACM<br>IC ID:3839A-WRT3200ACM | N/A                    | N/A                        |

| CE Test System                 |               |             |               |            |              |
|--------------------------------|---------------|-------------|---------------|------------|--------------|
| Equipment                      | Manufacturer  | Model No.   | Inventory No. | Cal Date   | Cal Due Date |
| Shielding Room                 | Brilliant-emc | N/A         | XAW03-35-01   | 2019-09-11 | 2022-09-10   |
| Test receiver                  | ROHDE&SCHWARZ | ESR         | XAW01-08-01   | 2019-09-07 | 2020-09-06   |
| Artificial network             | ROHDE&SCHWARZ | ENV216      | XAW01-04-01   | 2019-07-16 | 2020-07-15   |
| Temperature and humidity meter | MingGao       | TH101B      | XAW01-01-01   | 2019-11-28 | 2020-11-28   |
| Measurement Software           | Tonscend      | TS+ CE V2.5 | XAW02-05-02   | NCR        | NCR          |

| RSE Test System                |               |            |               |            |              |
|--------------------------------|---------------|------------|---------------|------------|--------------|
| Equipment                      | Manufacturer  | Model No.  | Inventory No. | Cal Date   | Cal Due Date |
| Semi-Anechoic Chamber          | Brilliant-emc | N/A        | XAW03-35-01   | 2019-09-11 | 2022-09-10   |
| MXA signal analyzer            | Keysight      | N9020A     | XAW01-06-01   | 2020-04-02 | 2021-04-01   |
| Spectrum Analyzer              | Keysight      | N9020B     | XAW01-11-03   | 2020-04-15 | 2021-04-14   |
| Test receiver                  | ROHDE&SCHWARZ | ESR        | XAW01-08-01   | 2019-09-07 | 2020-09-06   |
| Receiving antenna (30MHz-3GHz) | Schwarzbeck   | VULB 9163  | XAW01-09-01   | 2019-10-13 | 2021-10-12   |
| Receiving antenna              | Schwarzbeck   | BBHA 9120D | XAW01-09-02   | 2019-10-13 | 2021-10-12   |





|                                     |                |                  |             |            |            |
|-------------------------------------|----------------|------------------|-------------|------------|------------|
| (1GHz~18GHz)                        |                |                  |             |            |            |
| Receiving antenna (15GHz~40GHz)     | Schwarzbeck    | BBHA 9170        | XAW01-09-03 | 2019-10-13 | 2021-10-12 |
| Directional antenna rack controller | Max-Full       | MF-7802BS        | XAW03-03-01 | NCR        | NCR        |
| High-speed antenna rack controller  | Max-Full       | MF-7802          | XAW03-04-01 | NCR        | NCR        |
| Filter bank                         | Tonscend       | JS0806-F         | XAW03-05-01 | NCR        | NCR        |
| Filter bank                         | Tonscend       | JS0806s          | XAW03-05-02 | NCR        | NCR        |
| Amplifier                           | Tonscend       | TAP00903040      | XAW01-41-01 | 2019-11-18 | 2020-11-17 |
| Amplifier                           | Tonscend       | TAP01018048      | XAW01-41-02 | 2019-11-18 | 2020-11-17 |
| Amplifier                           | Tonscend       | TAP18040048      | XAW01-41-03 | 2019-12-03 | 2020-12-02 |
| Amplifier                           | Shanghai Steed | YX28980930       | XAW01-41-06 | 2019-11-18 | 2020-11-17 |
| Temperature and humidity meter      | MingGao        | TH101B           | XAW01-01-01 | 2019-11-18 | 2020-11-17 |
| Measurement Software                | Tonscend       | TS+ RSE V3.0.0.2 | XAW02-05-01 | NCR        | NCR        |

## 7 Photographs - EUT Test Setup Details

Refer to Appendix A - Photographs of EUT Test Setup Details for ZR/2020/50001.

The End

