

# Test Report No.50105679 001

## Appendix D: Radiated and Mains Spurious Emission Data

(File: 50105679AppendixD)

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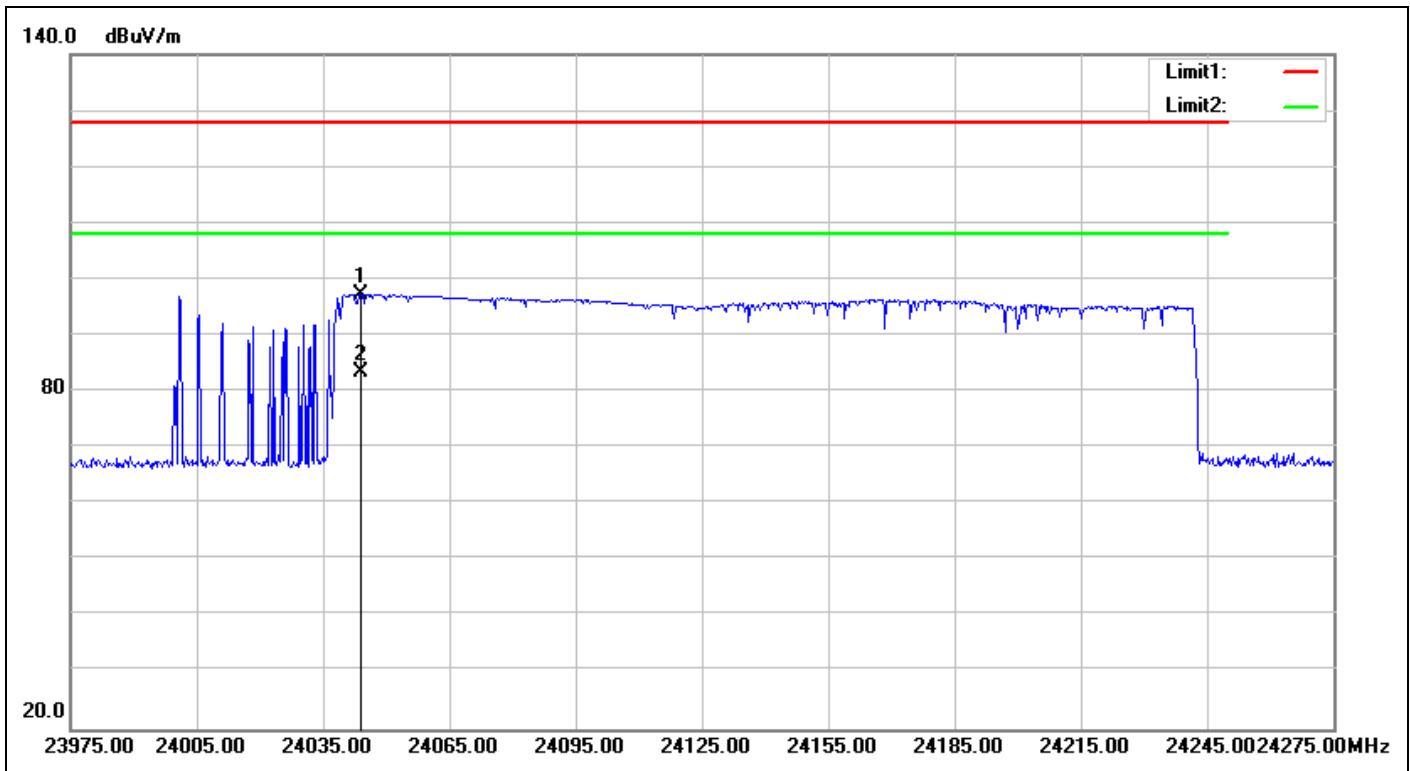
# Fundamental Field Strength



**TUV Rheinland Taiwan Ltd.**

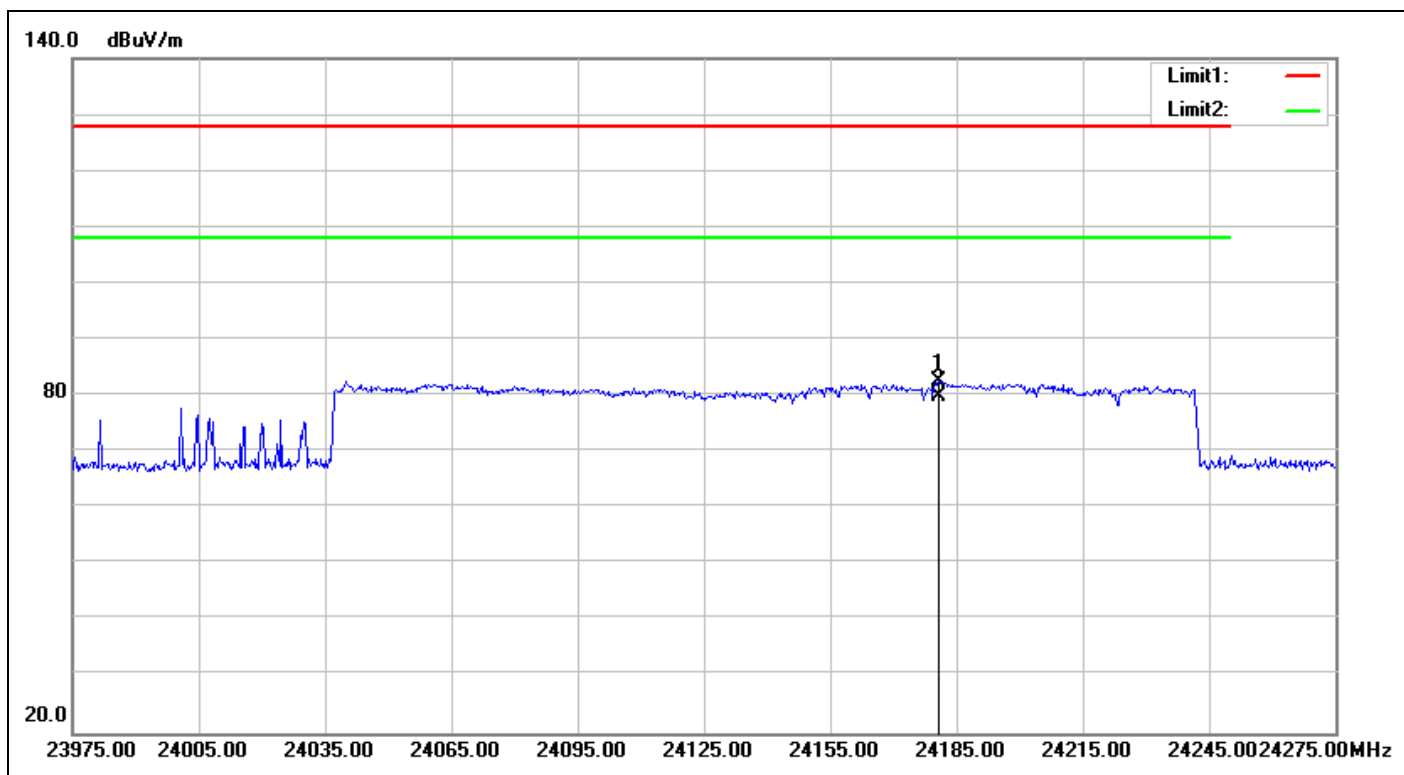
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|                       |                           |                           |                            |
|-----------------------|---------------------------|---------------------------|----------------------------|
| <b>Service No.:</b>   | <b>114069439</b>          | <b>Test Distance:</b>     | <b>3m</b>                  |
| <b>Test Standard:</b> | <b>NCC_3.10.2_TX_PEAK</b> | <b>Ant. Polarization:</b> | <b>Horizontal</b>          |
| <b>Test item:</b>     | <b>Radiation Emission</b> | <b>Test Time:</b>         | <b>2017/10/24 20:14:09</b> |
| <b>Applicant:</b>     | <b>CUBTEK. INC.</b>       | <b>Test Rating:</b>       | <b>DC 12V</b>              |
| <b>Product:</b>       | <b>24GHz BSD Radar</b>    | <b>Temp.(°C)/Hum.(%):</b> | <b>22(°C)/56%</b>          |
| <b>Model No.:</b>     | <b>VS-91A001</b>          | <b>Test Engineer:</b>     | <b>George Yang</b>         |
| <b>Test Mode:</b>     | <b>TX</b>                 |                           |                            |
| <b>Remark:</b>        |                           |                           |                            |

| No. | Frequency<br>(MHz) | Factor<br>(dB/m) | Reading<br>(dBuV) | Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Det. | Height<br>(cm) | Azimuth<br>( ° ) | Remark |
|-----|--------------------|------------------|-------------------|-------------------|-------------------|----------------|------|----------------|------------------|--------|
| 1   | 24044.000          | 31.69            | 65.67             | 97.36             | 128.00            | -30.64         | peak | 150            | 178              |        |
| 2   | 24044.000          | 31.69            | 51.64             | 83.33             | 108.00            | -24.67         | AVG  | 150            | 178              |        |

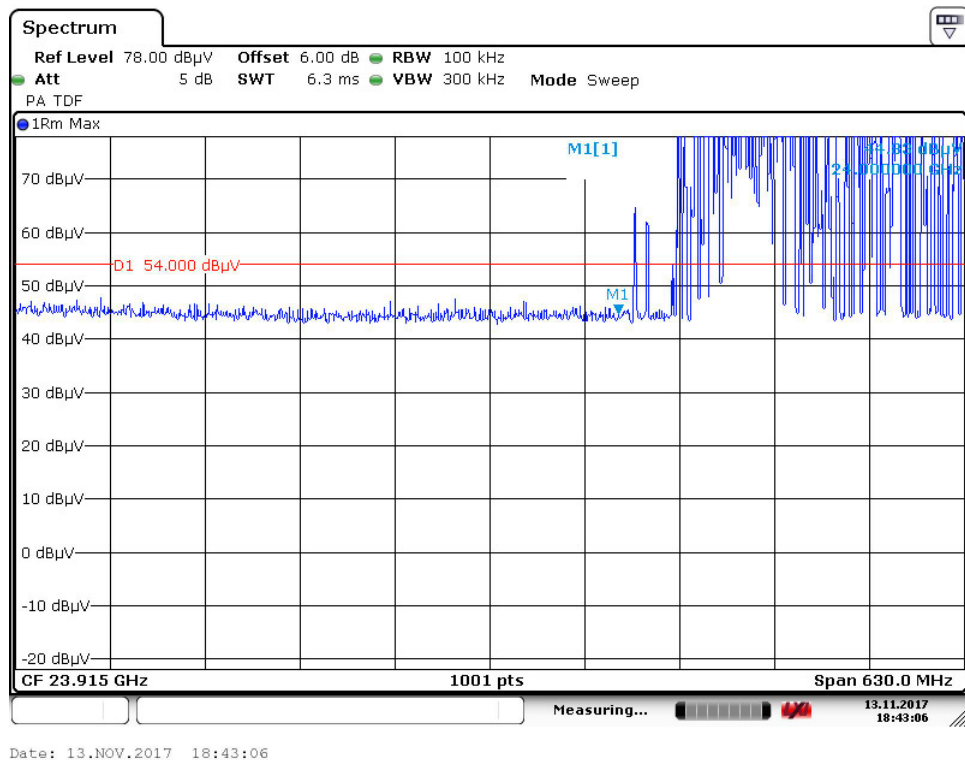
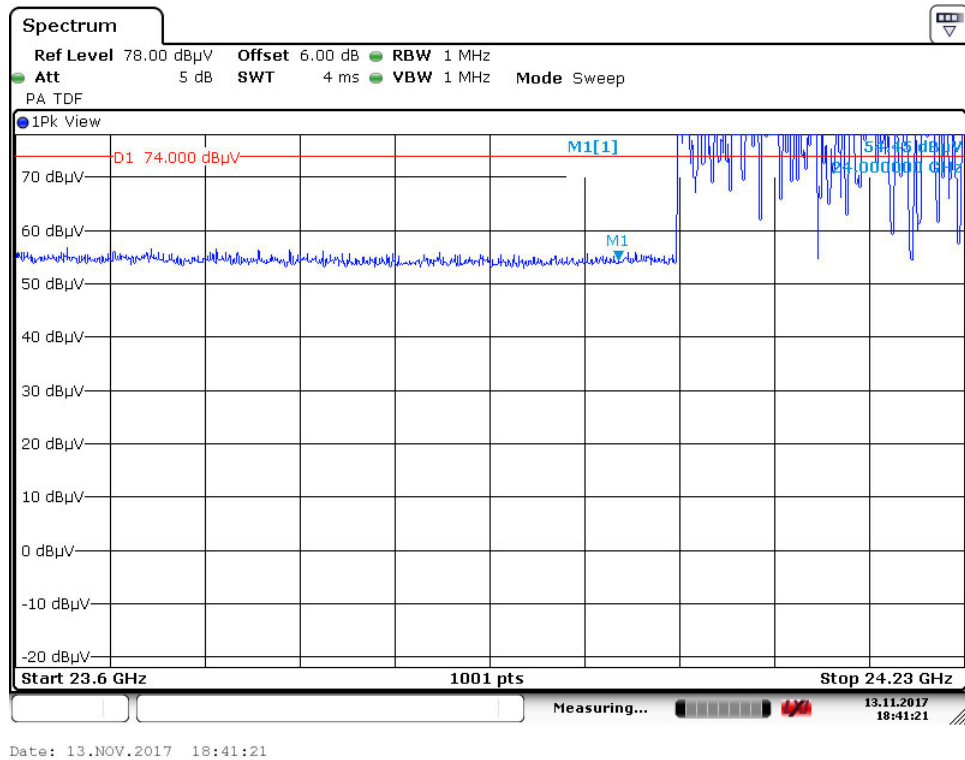


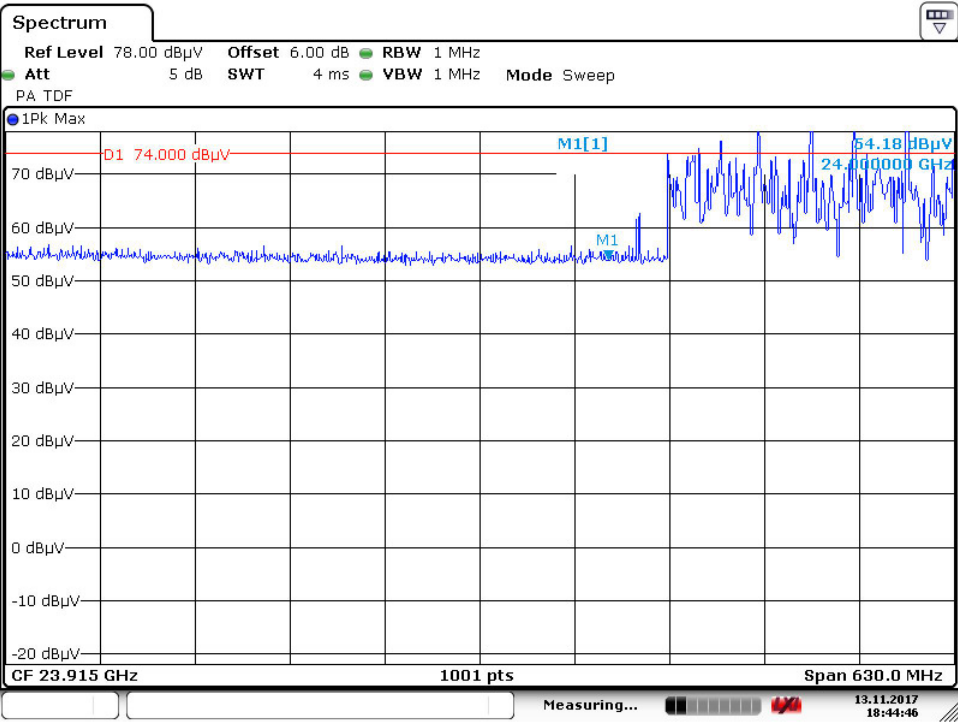
|                |                    |                    |                     |
|----------------|--------------------|--------------------|---------------------|
| Service No.:   | 114069439          | Test Distance:     | 3m                  |
| Test Standard: | NCC_3.10.2_TX_PEAK | Ant. Polarization: | Vertical            |
| Test item:     | Radiation Emission | Test Time:         | 2017/10/24 20:25:48 |
| Applicant:     | CUBTEK. INC.       | Test Rating:       | DC 12V              |
| Product:       | 24GHz BSD Radar    | Temp.(°C)/Hum.(%)  | 22(°C)/56%          |
| Model No.:     | VS-91A001          | Test Engineer:     | George Yang         |
| Test Mode:     | TX                 |                    |                     |
| Remark:        |                    |                    |                     |

| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (°) | Remark |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|-------------|--------|
| 1   | 24180.800       | 31.90         | 50.76          | 82.66          | 128.00         | -45.34      | peak | 150         | 180         |        |
| 2   | 24180.800       | 31.90         | 48.07          | 79.97          | 108.00         | -28.03      | AVG  | 150         | 180         |        |

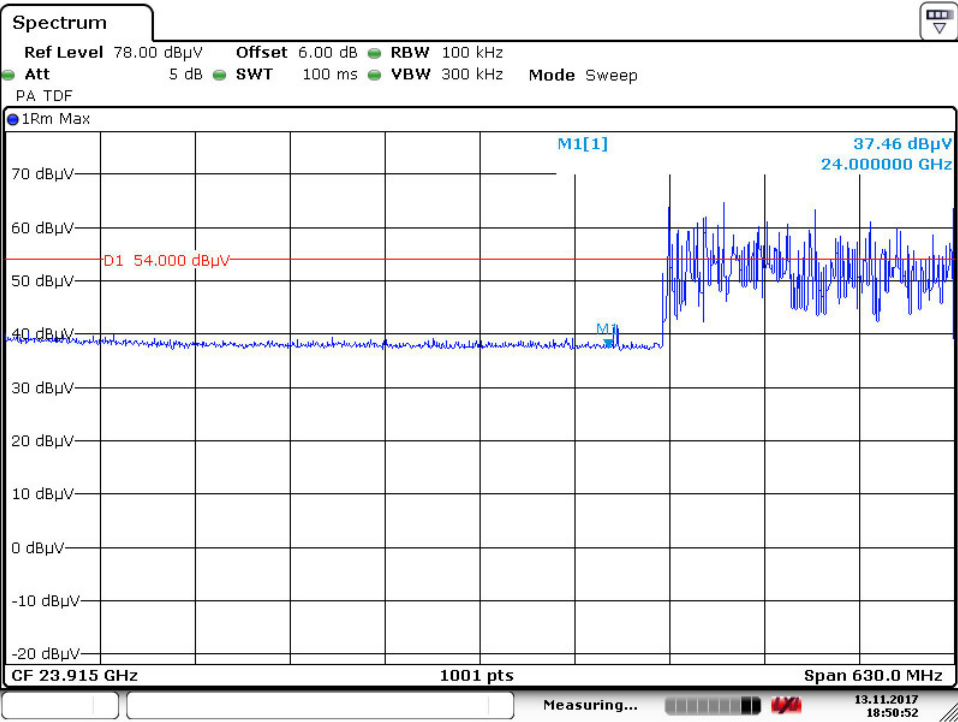
# Radiated Emissions, Bandedge

24.03-24.23G (Hor)





Date: 13.NOV.2017 18:44:46



Date: 13.NOV.2017 18:50:52

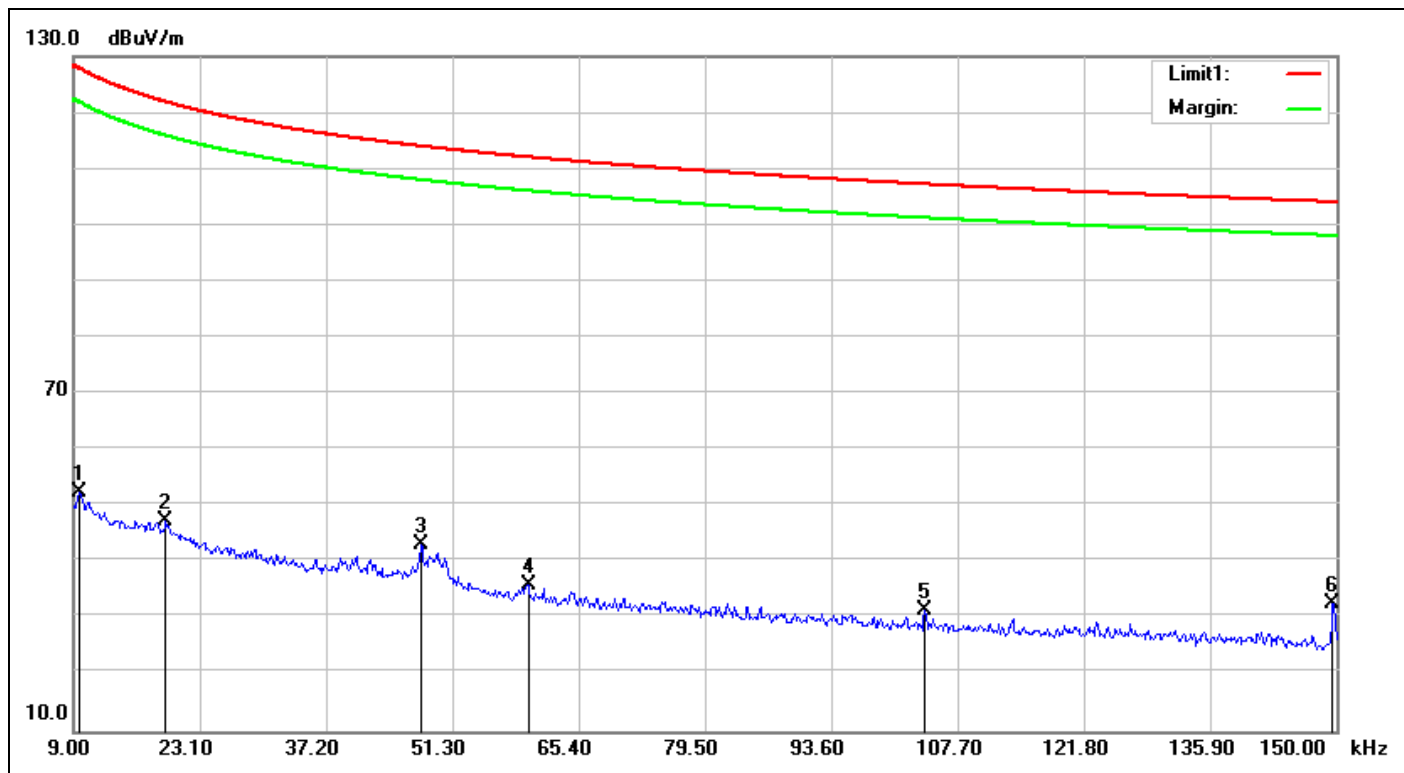
# Spurious Emissions, TX Mode, 9k-1G



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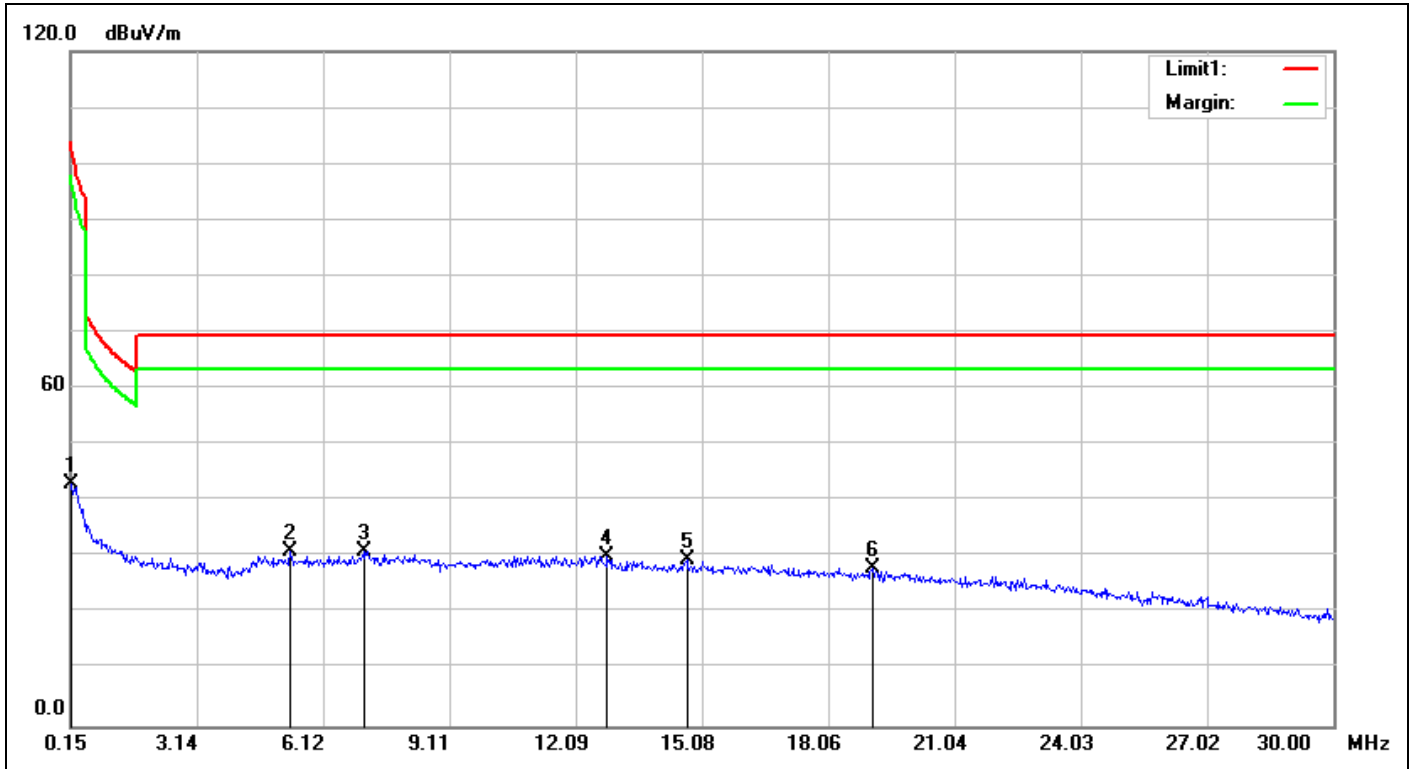
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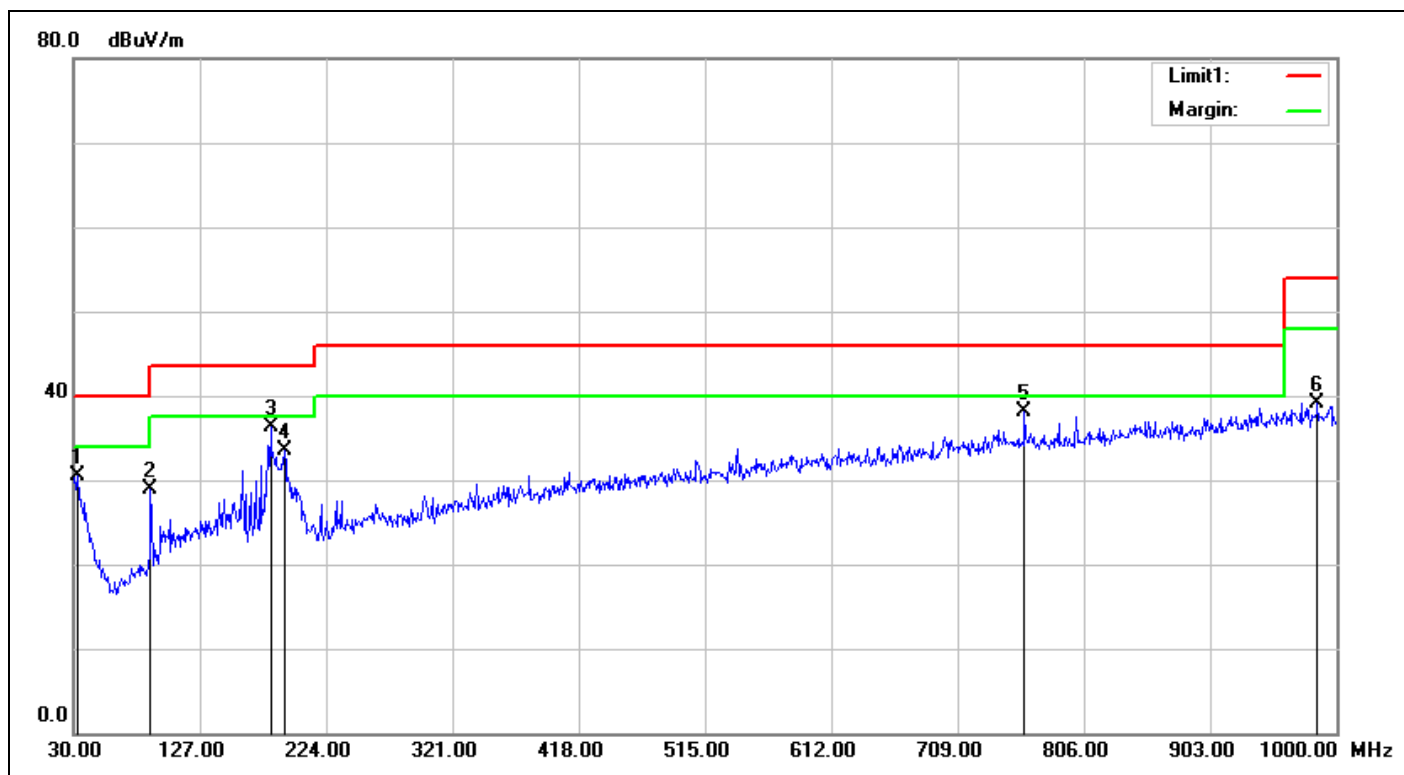
|                       |                           |                           |                            |
|-----------------------|---------------------------|---------------------------|----------------------------|
| <b>Service No.:</b>   | <b>114069439</b>          | <b>Test Distance:</b>     | <b>3m</b>                  |
| <b>Test Standard:</b> | <b>NCC2.8_9k-1G_3m</b>    | <b>Ant. Polarization:</b> |                            |
| <b>Test item:</b>     | <b>Radiation Emission</b> | <b>Test Time:</b>         | <b>2017/10/23 14:47:38</b> |
| <b>Applicant:</b>     | <b>CUBTEK. INC.</b>       | <b>Test Rating:</b>       | <b>DC 12V</b>              |
| <b>Product:</b>       | <b>24GHz BSD Radar</b>    | <b>Temp.(°C)/Hum.(%):</b> | <b>24.2(°C)/52%</b>        |
| <b>Model No.:</b>     | <b>VS-91A001</b>          | <b>Test Engineer:</b>     | <b>George Yang</b>         |
| <b>Test Mode:</b>     | <b>TX</b>                 |                           |                            |
| <b>Remark:</b>        |                           |                           |                            |

| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth ( ° ) | Remark |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|--------|
| 1   | 0.0095          | 19.73         | 32.62          | 52.35          | 128.03         | -75.68      | QP   | 100         | 59            |        |
| 2   | 0.0192          | 20.02         | 27.24          | 47.26          | 121.92         | -74.66      | QP   | 100         | 67            |        |
| 3   | 0.0477          | 19.51         | 23.52          | 43.03          | 114.02         | -70.99      | QP   | 100         | 114           |        |
| 4   | 0.0597          | 19.37         | 16.60          | 35.97          | 112.07         | -76.10      | QP   | 100         | 226           |        |
| 5   | 0.1040          | 19.13         | 12.47          | 31.60          | 107.26         | -75.66      | QP   | 100         | 56            |        |
| 6   | 0.1495          | 19.08         | 13.59          | 32.67          | 104.11         | -71.44      | QP   | 100         | 128           |        |



|                       |                           |                            |                            |
|-----------------------|---------------------------|----------------------------|----------------------------|
| <b>Service No.:</b>   | <b>114069439</b>          | <b>Test Distance:</b>      | <b>3m</b>                  |
| <b>Test Standard:</b> | <b>NCC2.8_9k-1G_3m</b>    | <b>Ant. Polarization:</b>  |                            |
| <b>Test item:</b>     | <b>Radiation Emission</b> | <b>Test Time:</b>          | <b>2017/10/23 14:51:10</b> |
| <b>Applicant:</b>     | <b>CUBTEK. INC.</b>       | <b>Test Rating:</b>        | <b>DC 12V</b>              |
| <b>Product:</b>       | <b>24GHz BSD Radar</b>    | <b>Temp.(°C)/Hum.(%)</b> : | <b>24.2(°C)/52%</b>        |
| <b>Model No.:</b>     | <b>VS-91A001</b>          | <b>Test Engineer:</b>      | <b>George Yang</b>         |
| <b>Test Mode:</b>     | <b>TX</b>                 |                            |                            |
| <b>Remark:</b>        |                           |                            |                            |

| No. | Frequency<br>(MHz) | Factor<br>(dB/m) | Reading<br>(dBuV) | Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Det. | Height<br>(cm) | Azimuth<br>( ° ) | Remark |
|-----|--------------------|------------------|-------------------|-------------------|-------------------|----------------|------|----------------|------------------|--------|
| 1   | 0.1798             | 19.06            | 24.09             | 43.15             | 102.50            | -59.35         | QP   | 100            | 29               |        |
| 2   | 5.3439             | 19.79            | 11.18             | 30.97             | 69.50             | -38.53         | QP   | 100            | 161              |        |
| 3   | 7.1050             | 19.96            | 11.06             | 31.02             | 69.50             | -38.48         | QP   | 100            | 241              |        |
| 4   | 12.8362            | 20.72            | 9.51              | 30.23             | 69.50             | -39.27         | QP   | 100            | 12               |        |
| 5   | 14.7168            | 21.05            | 8.39              | 29.44             | 69.50             | -40.06         | QP   | 100            | 167              |        |
| 6   | 19.1047            | 21.83            | 6.23              | 28.06             | 69.50             | -41.44         | QP   | 100            | 285              |        |



Service No.: 114069439

Test Standard: NCC Class B 3M Radiation

Test item: Radiation Emission

Applicant: CUBTEK. INC.

Product: 24GHz BSD Radar

Model No.: VS-91A001

Test Mode: TX

Remark:

Test Distance: 3m

Ant. Polarization: Horizontal

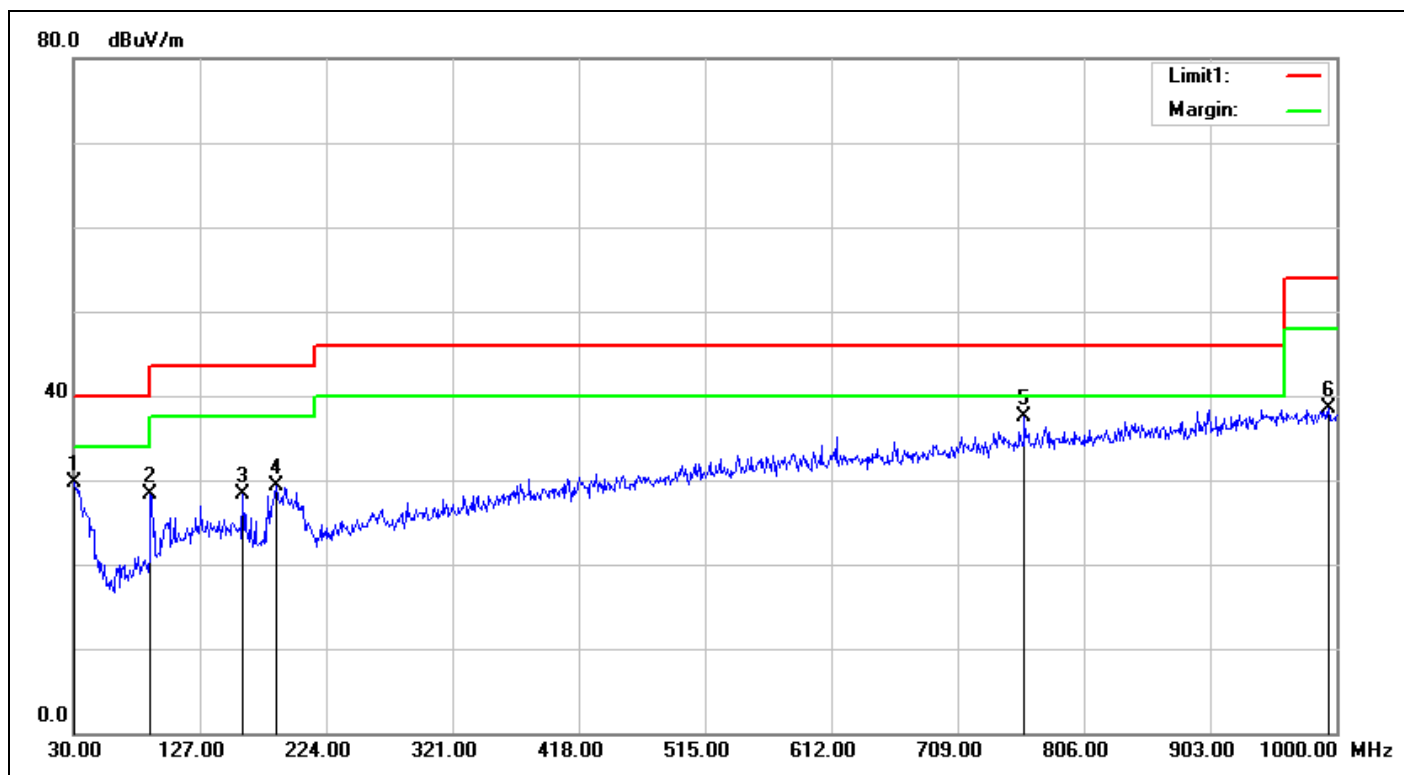
Test Time: 2017/10/23 14:18:10

Test Rating: DC 12V

Temp.(°C)/Hum.(%): 24.2(°C)/52%

Test Engineer: George Yang

| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth ( ° ) | Remark |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|--------|
| 1   | 32.9099         | -1.91         | 32.38          | 30.47          | 40.00          | -9.53       | QP   | 100         | 9             |        |
| 2   | 89.1700         | -11.05        | 39.90          | 28.85          | 43.50          | -14.65      | QP   | 100         | 118           |        |
| 3   | 181.3200        | -9.62         | 45.99          | 36.37          | 43.50          | -7.13       | QP   | 100         | 180           |        |
| 4   | 191.9900        | -9.42         | 42.86          | 33.44          | 43.50          | -10.06      | QP   | 100         | 244           |        |
| 5   | 760.4100        | 2.45          | 35.58          | 38.03          | 46.00          | -7.97       | QP   | 100         | 358           |        |
| 6   | 985.4500        | 5.66          | 33.52          | 39.18          | 54.00          | -14.82      | QP   | 100         | 30            |        |



|                       |                                 |                           |                            |
|-----------------------|---------------------------------|---------------------------|----------------------------|
| <b>Service No.:</b>   | <b>114069439</b>                | <b>Test Distance:</b>     | <b>3m</b>                  |
| <b>Test Standard:</b> | <b>NCC Class B 3M Radiation</b> | <b>Ant. Polarization:</b> | <b>Vertical</b>            |
| <b>Test item:</b>     | <b>Radiation Emission</b>       | <b>Test Time:</b>         | <b>2017/10/23 14:19:14</b> |
| <b>Applicant:</b>     | <b>CUBTEK. INC.</b>             | <b>Test Rating:</b>       | <b>DC 12V</b>              |
| <b>Product:</b>       | <b>24GHz BSD Radar</b>          | <b>Temp.(°C)/Hum.(%):</b> | <b>24.2(°C)/52%</b>        |
| <b>Model No.:</b>     | <b>VS-91A001</b>                | <b>Test Engineer:</b>     | <b>George Yang</b>         |
| <b>Test Mode:</b>     | <b>TX</b>                       |                           |                            |
| <b>Remark:</b>        |                                 |                           |                            |

| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth ( ° ) | Remark |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|--------|
| 1   | 30.9700         | -0.79         | 30.57          | 29.78          | 40.00          | -10.22      | QP   | 100         | 160           |        |
| 2   | 89.1700         | -11.05        | 39.38          | 28.33          | 43.50          | -15.17      | QP   | 100         | 294           |        |
| 3   | 159.9800        | -8.07         | 36.46          | 28.39          | 43.50          | -15.11      | QP   | 100         | 196           |        |
| 4   | 185.2000        | -9.59         | 38.84          | 29.25          | 43.50          | -14.25      | QP   | 100         | 346           |        |
| 5   | 760.4100        | 2.45          | 35.03          | 37.48          | 46.00          | -8.52       | QP   | 100         | 76            |        |
| 6   | 994.1800        | 5.70          | 32.82          | 38.52          | 54.00          | -15.48      | QP   | 100         | 212           |        |

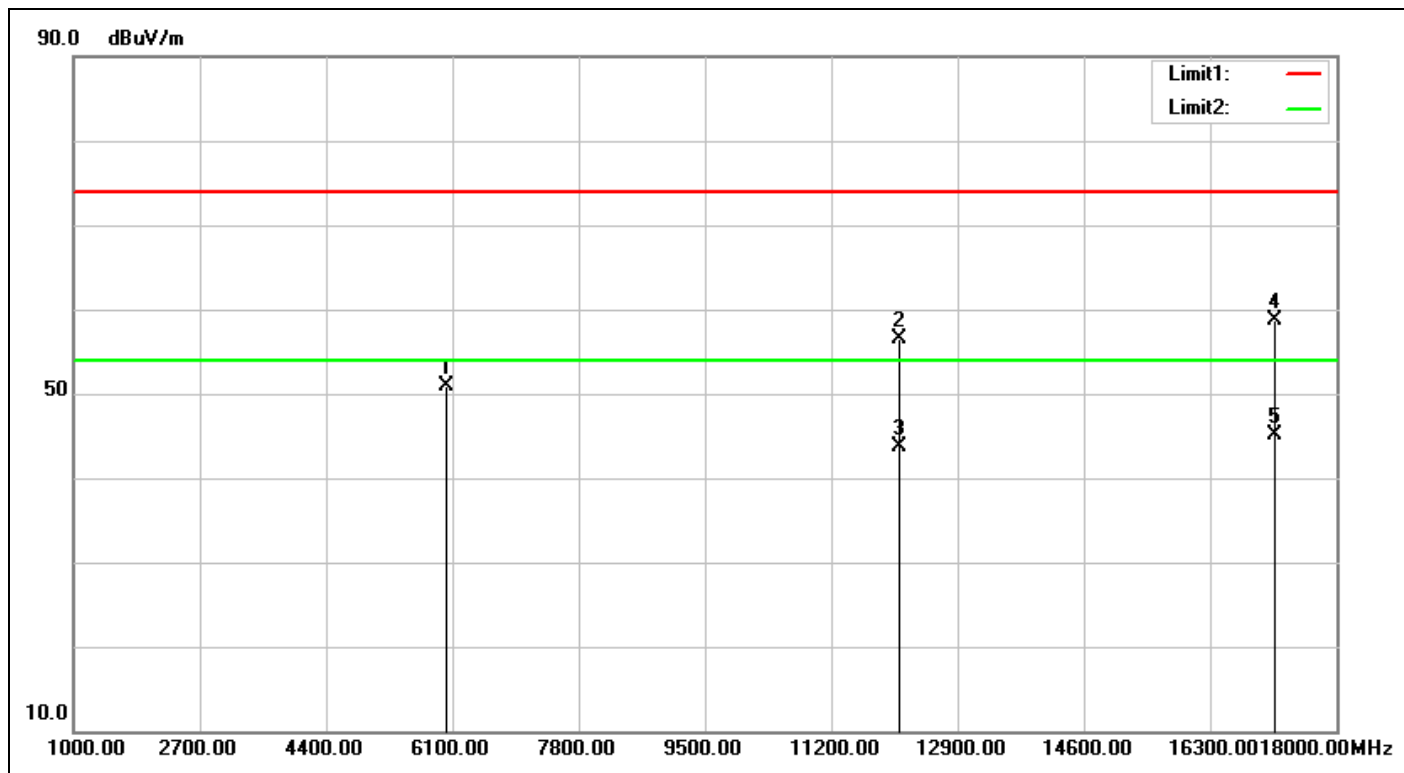
# Spurious Emissions, TX Mode, 1-18G



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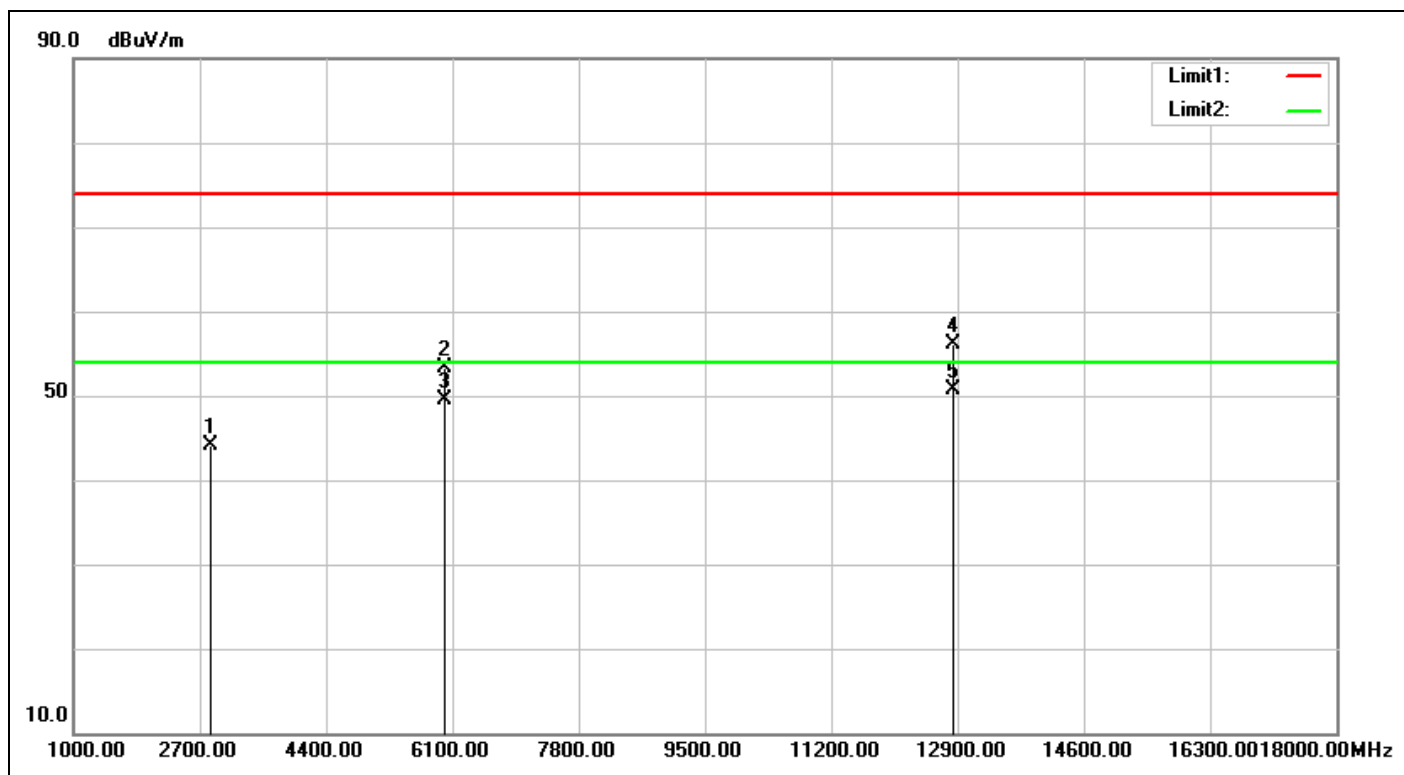
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|                       |                           |                           |                            |
|-----------------------|---------------------------|---------------------------|----------------------------|
| <b>Service No.:</b>   | <b>114069439</b>          | <b>Test Distance:</b>     | <b>3m</b>                  |
| <b>Test Standard:</b> | <b>NCC Above 1G PEAK</b>  | <b>Ant. Polarization:</b> | <b>Horizontal</b>          |
| <b>Test item:</b>     | <b>Radiation Emission</b> | <b>Test Time:</b>         | <b>2017/10/23 15:14:24</b> |
| <b>Applicant:</b>     | <b>CUBTEK. INC.</b>       | <b>Test Rating:</b>       | <b>DC 12V</b>              |
| <b>Product:</b>       | <b>24GHz BSD Radar</b>    | <b>Temp.(°C)/Hum.(%):</b> | <b>24.2(°C)/52 %</b>       |
| <b>Model No.:</b>     | <b>VS-91A001</b>          | <b>Test Engineer:</b>     | <b>George Yang</b>         |
| <b>Test Mode:</b>     | <b>TX</b>                 |                           |                            |
| <b>Remark:</b>        |                           |                           |                            |

| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth ( ° ) | Remark |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|--------|
| 1   | 6015.000        | 2.44          | 48.55          | 50.99          | 74.00          | -23.01      | peak | 100         | 321           |        |
| 2   | 12118.000       | 5.98          | 50.57          | 56.55          | 74.00          | -17.45      | peak | 100         | 269           |        |
| 3   | 12118.000       | 5.98          | 37.69          | 43.67          | 54.00          | -10.33      | AVG  | 100         | 269           |        |
| 4   | 17167.000       | 13.54         | 45.23          | 58.77          | 74.00          | -15.23      | peak | 100         | 244           |        |
| 5   | 17167.000       | 13.54         | 31.58          | 45.12          | 54.00          | -8.88       | AVG  | 100         | 244           |        |



|                       |                           |                            |                            |
|-----------------------|---------------------------|----------------------------|----------------------------|
| <b>Service No.:</b>   | <b>114069439</b>          | <b>Test Distance:</b>      | <b>3m</b>                  |
| <b>Test Standard:</b> | <b>NCC Above 1G PEAK</b>  | <b>Ant. Polarization:</b>  | <b>Vertical</b>            |
| <b>Test item:</b>     | <b>Radiation Emission</b> | <b>Test Time:</b>          | <b>2017/10/23 15:15:27</b> |
| <b>Applicant:</b>     | <b>CUBTEK. INC.</b>       | <b>Test Rating:</b>        | <b>DC 12V</b>              |
| <b>Product:</b>       | <b>24GHz BSD Radar</b>    | <b>Temp.(°C)/Hum.(%)</b> : | <b>24.2(°C)/52%</b>        |
| <b>Model No.:</b>     | <b>VS-91A001</b>          | <b>Test Engineer:</b>      | <b>George Yang</b>         |
| <b>Test Mode:</b>     | <b>TX</b>                 |                            |                            |
| <b>Remark:</b>        |                           |                            |                            |

| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth ( ° ) | Remark |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|--------|
| 1   | 2853.000        | -7.43         | 51.47          | 44.04          | 74.00          | -29.96      | peak | 100         | 221           |        |
| 2   | 6000.000        | 2.38          | 50.97          | 53.35          | 74.00          | -20.65      | peak | 100         | 227           |        |
| 3   | 6000.000        | 2.38          | 47.09          | 49.47          | 54.00          | -4.53       | AVG  | 100         | 227           |        |
| 4   | 12849.000       | 8.41          | 47.79          | 56.20          | 74.00          | -17.80      | peak | 100         | 357           |        |
| 5   | 12849.000       | 8.41          | 42.21          | 50.62          | 54.00          | -3.38       | AVG  | 100         | 357           |        |

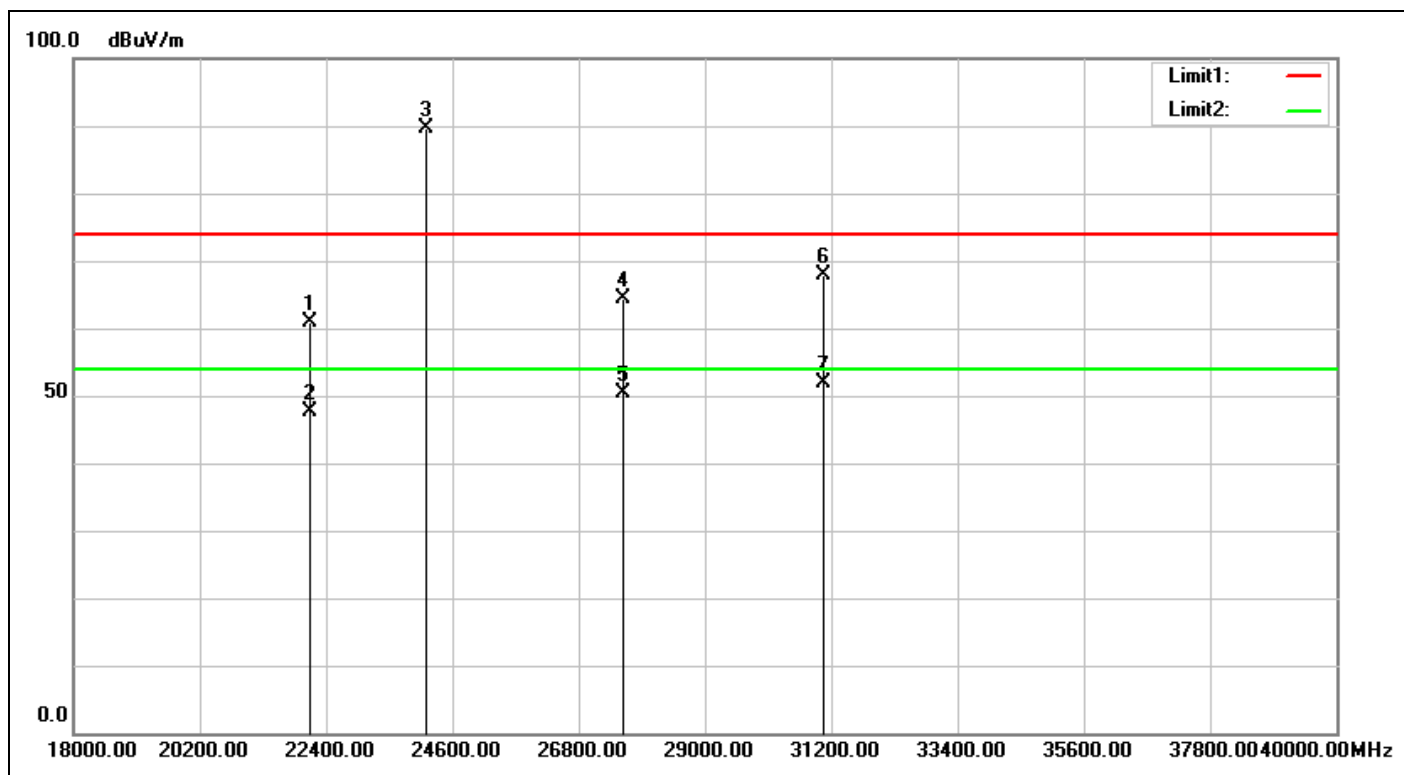
# Spurious Emissions, TX Mode, 18-40G



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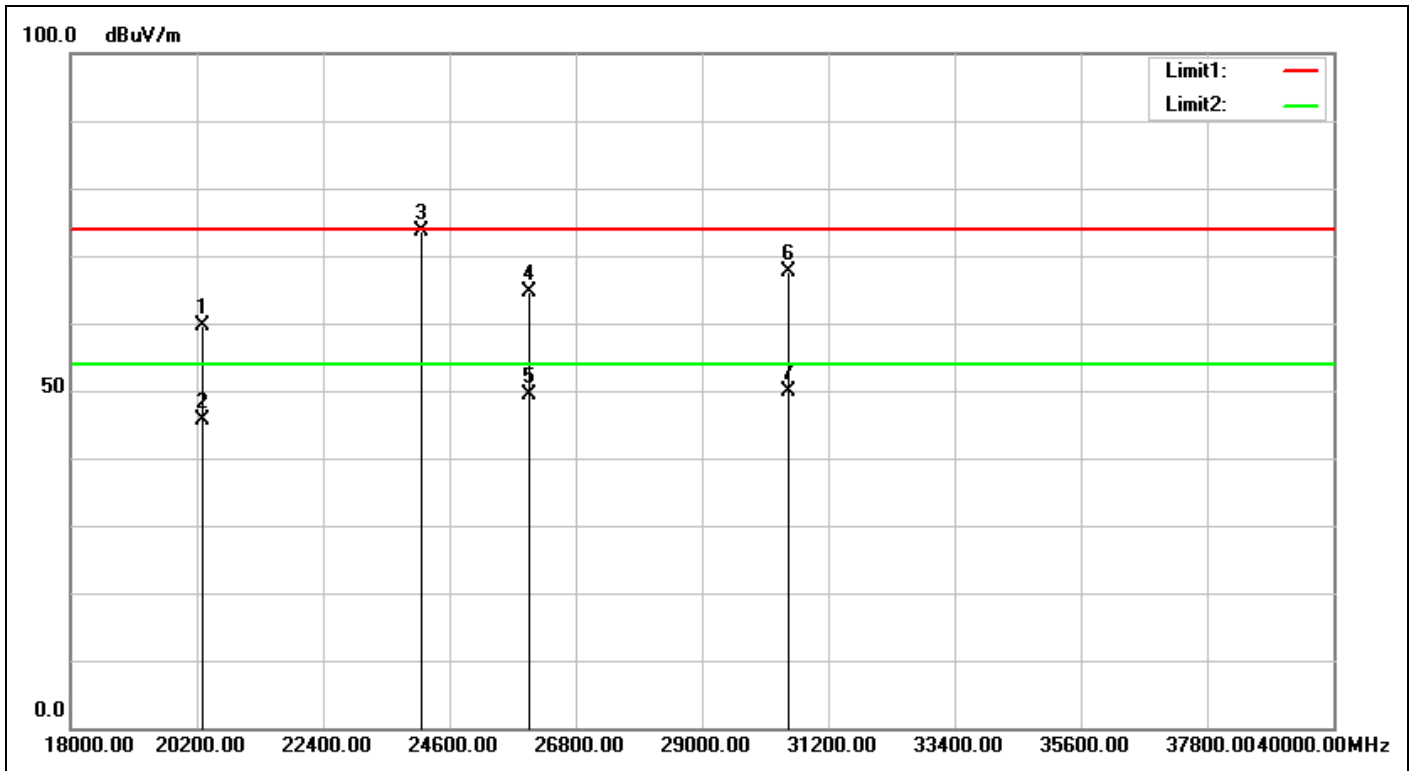
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|                |                    |                    |                     |
|----------------|--------------------|--------------------|---------------------|
| Service No.:   | 114069439          | Test Distance:     | 3m                  |
| Test Standard: | NCC Above 1G PEAK  | Ant. Polarization: | Horizontal          |
| Test item:     | Radiation Emission | Test Time:         | 2017/10/23 15:47:42 |
| Applicant:     | CUBTEK. INC.       | Test Rating:       | DC 12V              |
| Product:       | 24GHz BSD Radar    | Temp.(°C)/Hum.(%)  | 24.2(°C)/52%        |
| Model No.:     | VS-91A001          | Test Engineer:     | George Yang         |
| Test Mode:     | TX                 |                    |                     |
| Remark:        |                    |                    |                     |

| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (°) | Remark       |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|-------------|--------------|
| 1   | 22114.000       | 32.51         | 28.42          | 60.93          | 74.00          | -13.07      | peak | 100         | 255         |              |
| 2   | 22114.000       | 32.51         | 15.16          | 47.67          | 54.00          | -6.33       | AVG  | 100         | 255         |              |
| 3   | 24125.000       | 31.82         | 57.82          | 89.64          | 74.00          | 15.64       | peak | 100         | 0           | TX Band used |
| 4   | 27570.000       | 36.01         | 28.30          | 64.31          | 74.00          | -9.69       | peak | 100         | 306         |              |
| 5   | 27570.000       | 36.01         | 14.30          | 50.31          | 54.00          | -3.69       | AVG  | 100         | 306         |              |
| 6   | 31068.000       | 38.59         | 29.28          | 67.87          | 74.00          | -6.13       | peak | 100         | 360         |              |
| 7   | 31068.000       | 38.59         | 13.25          | 51.84          | 54.00          | -2.16       | AVG  | 100         | 360         |              |



|                       |                           |                            |                            |
|-----------------------|---------------------------|----------------------------|----------------------------|
| <b>Service No.:</b>   | <b>114069439</b>          | <b>Test Distance:</b>      | <b>3m</b>                  |
| <b>Test Standard:</b> | <b>NCC Above 1G PEAK</b>  | <b>Ant. Polarization:</b>  | <b>Vertical</b>            |
| <b>Test item:</b>     | <b>Radiation Emission</b> | <b>Test Time:</b>          | <b>2017/10/23 15:48:44</b> |
| <b>Applicant:</b>     | <b>CUBTEK. INC.</b>       | <b>Test Rating:</b>        | <b>DC 12V</b>              |
| <b>Product:</b>       | <b>24GHz BSD Radar</b>    | <b>Temp.(°C)/Hum.(%)</b> : | <b>24.2(°C)/52 %</b>       |
| <b>Model No.:</b>     | <b>VS-91A001</b>          | <b>Test Engineer:</b>      | <b>George Yang</b>         |
| <b>Test Mode:</b>     | <b>TX</b>                 |                            |                            |
| <b>Remark:</b>        |                           |                            |                            |

| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth ( ° ) | Remark       |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|--------------|
| 1   | 20310.000       | 30.81         | 28.89          | 59.70          | 74.00          | -14.30      | peak | 100         | 342           |              |
| 2   | 20310.000       | 30.81         | 14.73          | 45.54          | 54.00          | -8.46       | AVG  | 100         | 342           |              |
| 3   | 24125.000       | 31.82         | 41.85          | 73.67          | 74.00          | -0.33       | peak | 100         | 28            | TX Band used |
| 4   | 25986.000       | 34.74         | 29.95          | 64.69          | 74.00          | -9.31       | peak | 100         | 8             |              |
| 5   | 25986.000       | 34.74         | 14.76          | 49.50          | 54.00          | -4.50       | AVG  | 100         | 8             |              |
| 6   | 30496.000       | 37.88         | 29.83          | 67.71          | 74.00          | -6.29       | peak | 100         | 171           |              |
| 7   | 30496.000       | 37.88         | 11.93          | 49.81          | 54.00          | -4.19       | AVG  | 100         | 171           |              |

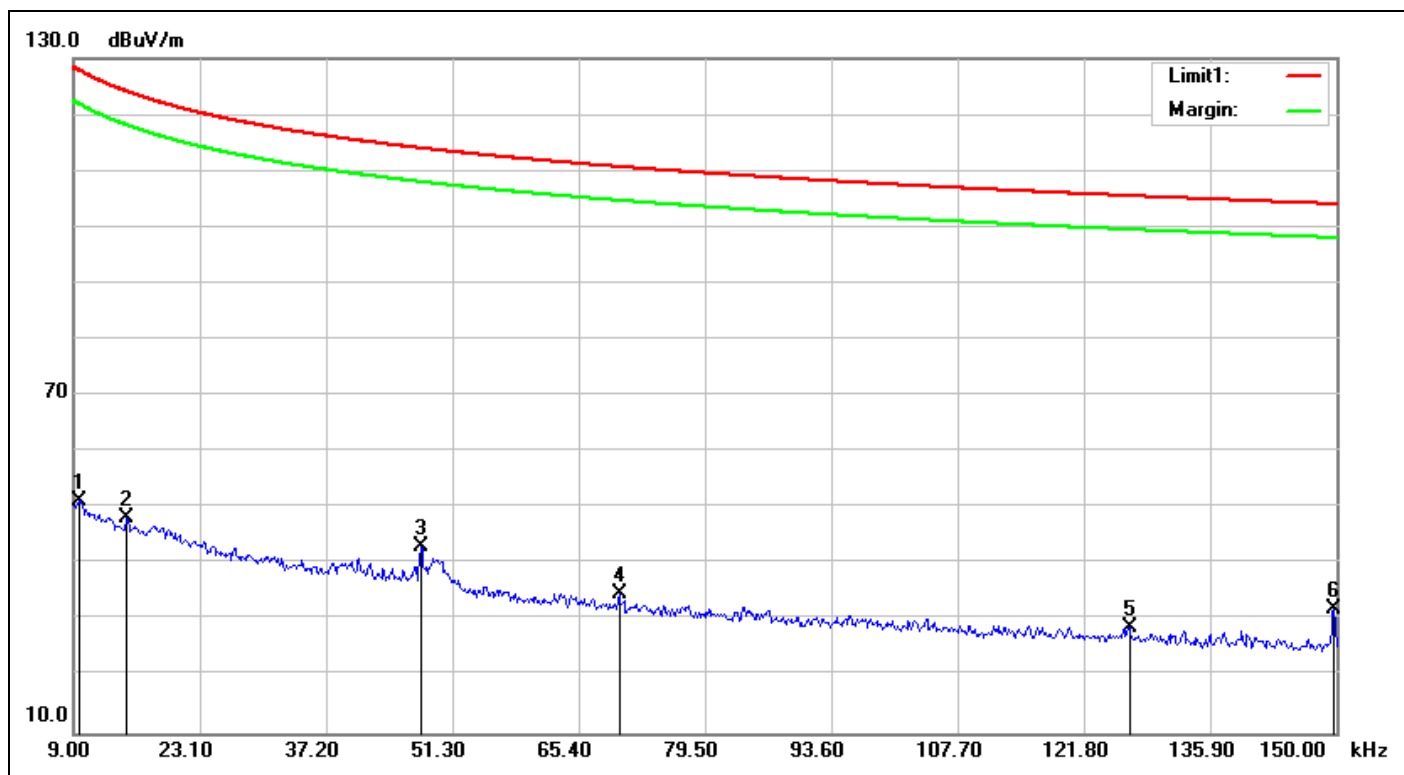
# Spurious Emissions, RX Mode, 9k-1G



**TUV Rheinland Taiwan Ltd.**

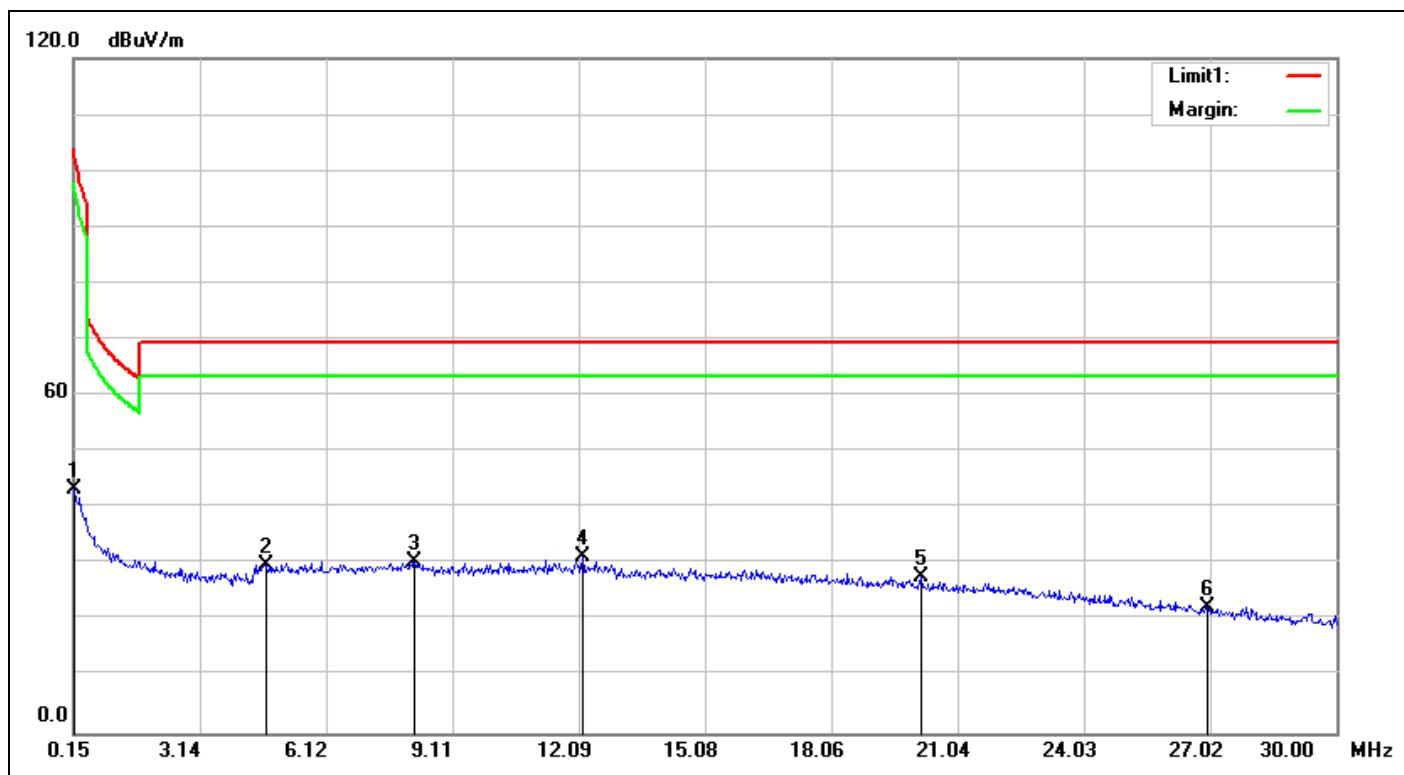
11F., No.758, Sec.4 Bade Road. Songshan Dist, Taipei City 105

Tel:+886-2172-7000 fax:+886-2528-0018



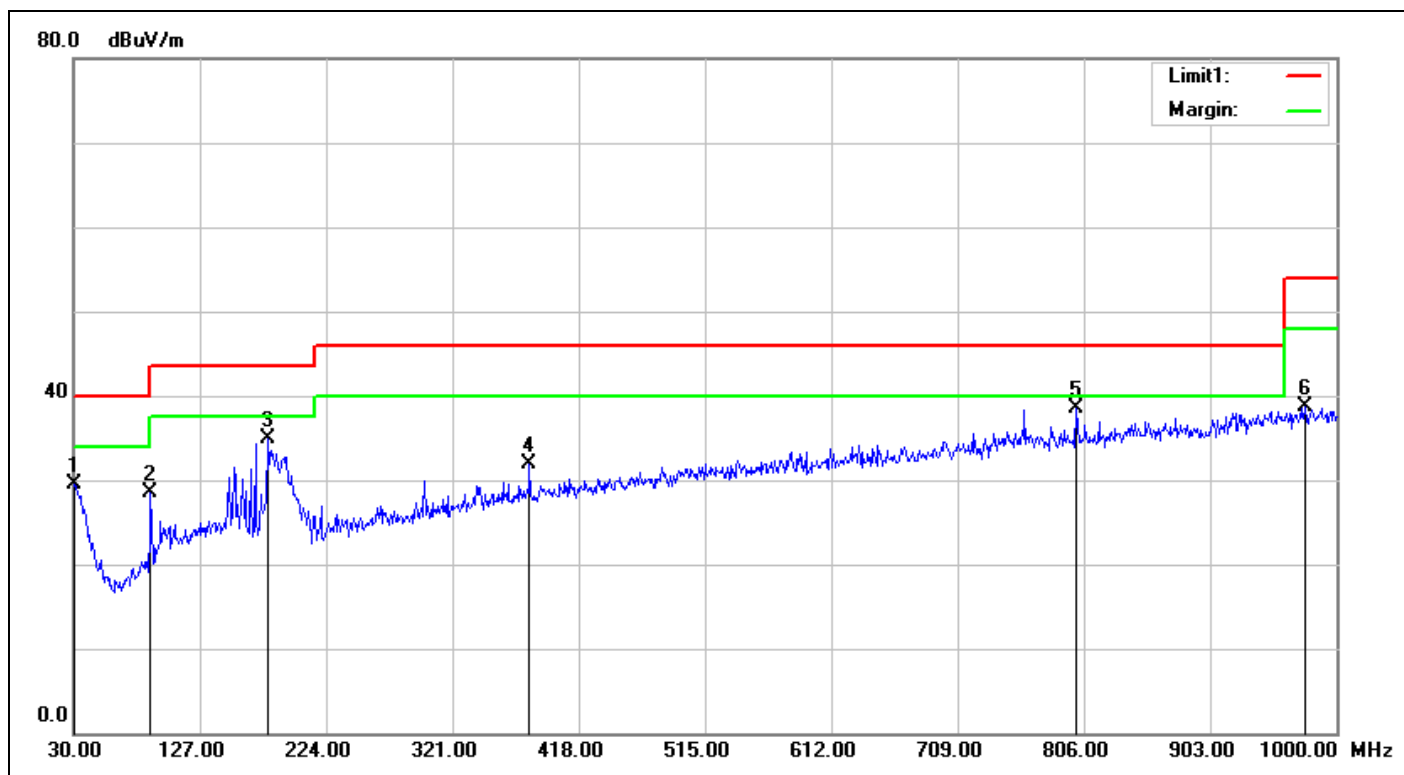
|                       |                           |                           |                            |
|-----------------------|---------------------------|---------------------------|----------------------------|
| <b>Service No.:</b>   | <b>114069439</b>          | <b>Test Distance:</b>     | <b>3m</b>                  |
| <b>Test Standard:</b> | <b>NCC2.8_9k-1G_3m</b>    | <b>Ant. Polarization:</b> |                            |
| <b>Test item:</b>     | <b>Radiation Emission</b> | <b>Test Time:</b>         | <b>2017/10/23 14:48:42</b> |
| <b>Applicant:</b>     | <b>CUBTEK INC.</b>        | <b>Test Rating:</b>       | <b>DC 12V</b>              |
| <b>Product:</b>       | <b>24GHz BSD Radar</b>    | <b>Temp.(°C)/Hum.(%):</b> | <b>24.2(°C)/52%</b>        |
| <b>Model No.:</b>     | <b>VS-91A001</b>          | <b>Test Engineer:</b>     | <b>George Yang</b>         |
| <b>Test Mode:</b>     | <b>RX</b>                 |                           |                            |
| <b>Remark:</b>        |                           |                           |                            |

| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth ( ° ) | Remark |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|--------|
| 1   | 0.0096          | 19.77         | 31.58          | 51.35          | 127.94         | -76.59      | QP   | 100         | 208           |        |
| 2   | 0.0149          | 19.98         | 28.27          | 48.25          | 124.12         | -75.87      | QP   | 100         | 341           |        |
| 3   | 0.0478          | 19.51         | 23.71          | 43.22          | 114.00         | -70.78      | QP   | 100         | 128           |        |
| 4   | 0.0699          | 19.31         | 15.31          | 34.62          | 110.71         | -76.09      | QP   | 100         | 157           |        |
| 5   | 0.1269          | 19.10         | 9.68           | 28.78          | 105.53         | -76.75      | QP   | 100         | 341           |        |
| 6   | 0.1497          | 19.08         | 12.86          | 31.94          | 104.09         | -72.15      | QP   | 100         | 303           |        |



|                       |                           |                           |                            |
|-----------------------|---------------------------|---------------------------|----------------------------|
| <b>Service No.:</b>   | <b>114069439</b>          | <b>Test Distance:</b>     | <b>3m</b>                  |
| <b>Test Standard:</b> | <b>NCC2.8_9k-1G_3m</b>    | <b>Ant. Polarization:</b> |                            |
| <b>Test item:</b>     | <b>Radiation Emission</b> | <b>Test Time:</b>         | <b>2017/10/23 14:52:14</b> |
| <b>Applicant:</b>     | <b>CUBTEK INC.</b>        | <b>Test Rating:</b>       | <b>DC 12V</b>              |
| <b>Product:</b>       | <b>24GHz BSD Radar</b>    | <b>Temp.(°C)/Hum.(%):</b> | <b>24.2(°C)/52%</b>        |
| <b>Model No.:</b>     | <b>VS-91A001</b>          | <b>Test Engineer:</b>     | <b>George Yang</b>         |
| <b>Test Mode:</b>     | <b>RX</b>                 |                           |                            |
| <b>Remark:</b>        |                           |                           |                            |

| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth ( ° ) | Remark |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|--------|
| 1   | 0.1799          | 19.06         | 24.17          | 43.23          | 102.50         | -59.27      | QP   | 100         | 318           |        |
| 2   | 4.6872          | 19.56         | 10.21          | 29.77          | 69.50          | -39.73      | QP   | 100         | 64            |        |
| 3   | 8.2095          | 20.06         | 10.53          | 30.59          | 69.50          | -38.91      | QP   | 100         | 33            |        |
| 4   | 12.1796         | 20.60         | 10.69          | 31.29          | 69.50          | -38.21      | QP   | 100         | 1             |        |
| 5   | 20.1794         | 22.00         | 5.88           | 27.88          | 69.50          | -41.62      | QP   | 100         | 360           |        |
| 6   | 26.9553         | 22.45         | -0.04          | 22.41          | 69.50          | -47.09      | QP   | 100         | 288           |        |



**Service No.:** 114069439

**Test Standard:** NCC Class B 3M Radiation

**Test item:** Radiation Emission

**Applicant:** CUBTEK INC.

**Product:** 24GHz BSD Radar

**Model No.:** VS-91A001

**Test Mode:** RX

**Remark:**

**Test Distance:** 3m

**Ant. Polarization:** Horizontal

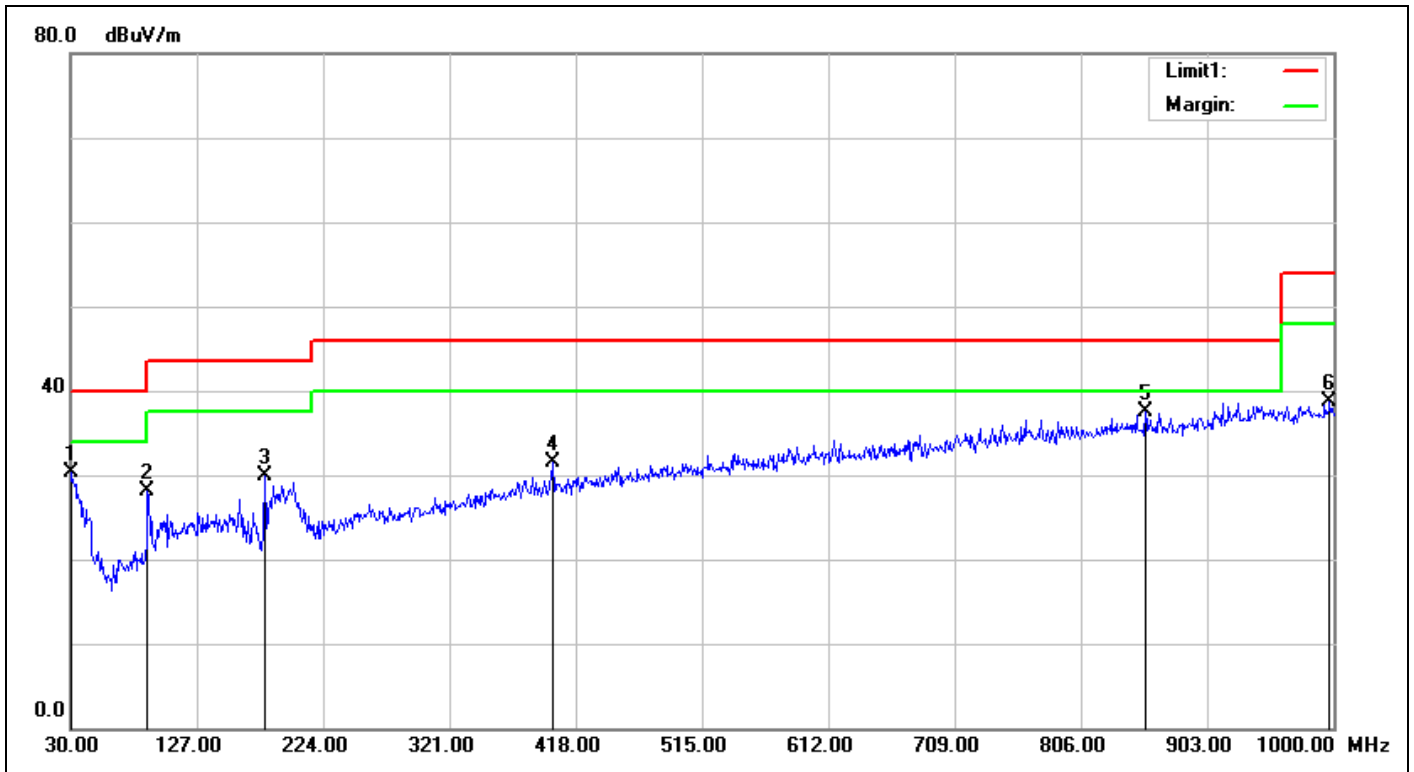
**Test Time:** 2017/10/23 14:22:18

**Test Rating:** DC 12V

**Temp.(°C)/Hum.(%):** 24.2(°C)/52%

**Test Engineer:** George Yang

| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth ( ° ) | Remark |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|--------|
| 1   | 30.9700         | -0.79         | 30.25          | 29.46          | 40.00          | -10.54      | QP   | 100         | 90            |        |
| 2   | 89.1700         | -11.05        | 39.54          | 28.49          | 43.50          | -15.01      | QP   | 100         | 250           |        |
| 3   | 179.3800        | -9.59         | 44.41          | 34.82          | 43.50          | -8.68       | QP   | 100         | 139           |        |
| 4   | 380.1700        | -2.80         | 34.68          | 31.88          | 46.00          | -14.12      | QP   | 100         | 250           |        |
| 5   | 800.1799        | 2.77          | 35.73          | 38.50          | 46.00          | -7.50       | QP   | 100         | 324           |        |
| 6   | 975.7500        | 5.62          | 32.99          | 38.61          | 54.00          | -15.39      | QP   | 100         | 153           |        |



|                       |                                 |                           |                            |
|-----------------------|---------------------------------|---------------------------|----------------------------|
| <b>Service No.:</b>   | <b>114069439</b>                | <b>Test Distance:</b>     | <b>3m</b>                  |
| <b>Test Standard:</b> | <b>NCC Class B 3M Radiation</b> | <b>Ant. Polarization:</b> | <b>Vertical</b>            |
| <b>Test item:</b>     | <b>Radiation Emission</b>       | <b>Test Time:</b>         | <b>2017/10/23 14:23:22</b> |
| <b>Applicant:</b>     | <b>CUBTEK INC.</b>              | <b>Test Rating:</b>       | <b>DC 12V</b>              |
| <b>Product:</b>       | <b>24GHz BSD Radar</b>          | <b>Temp.(°C)/Hum.(%):</b> | <b>24.2(°C)/52%</b>        |
| <b>Model No.:</b>     | <b>VS-91A001</b>                | <b>Test Engineer:</b>     | <b>George Yang</b>         |
| <b>Test Mode:</b>     | <b>RX</b>                       |                           |                            |
| <b>Remark:</b>        |                                 |                           |                            |

| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth ( ° ) | Remark |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|---------------|--------|
| 1   | 30.0000         | -0.25         | 30.57          | 30.32          | 40.00          | -9.68       | QP   | 100         | 332           |        |
| 2   | 89.1700         | -11.05        | 39.07          | 28.02          | 43.50          | -15.48      | QP   | 100         | 338           |        |
| 3   | 179.3800        | -9.59         | 39.53          | 29.94          | 43.50          | -13.56      | QP   | 100         | 346           |        |
| 4   | 400.5400        | -2.42         | 33.87          | 31.45          | 46.00          | -14.55      | QP   | 100         | 37            |        |
| 5   | 855.4700        | 3.75          | 33.74          | 37.49          | 46.00          | -8.51       | QP   | 100         | 152           |        |
| 6   | 997.0900        | 5.72          | 33.01          | 38.73          | 54.00          | -15.27      | QP   | 100         | 84            |        |

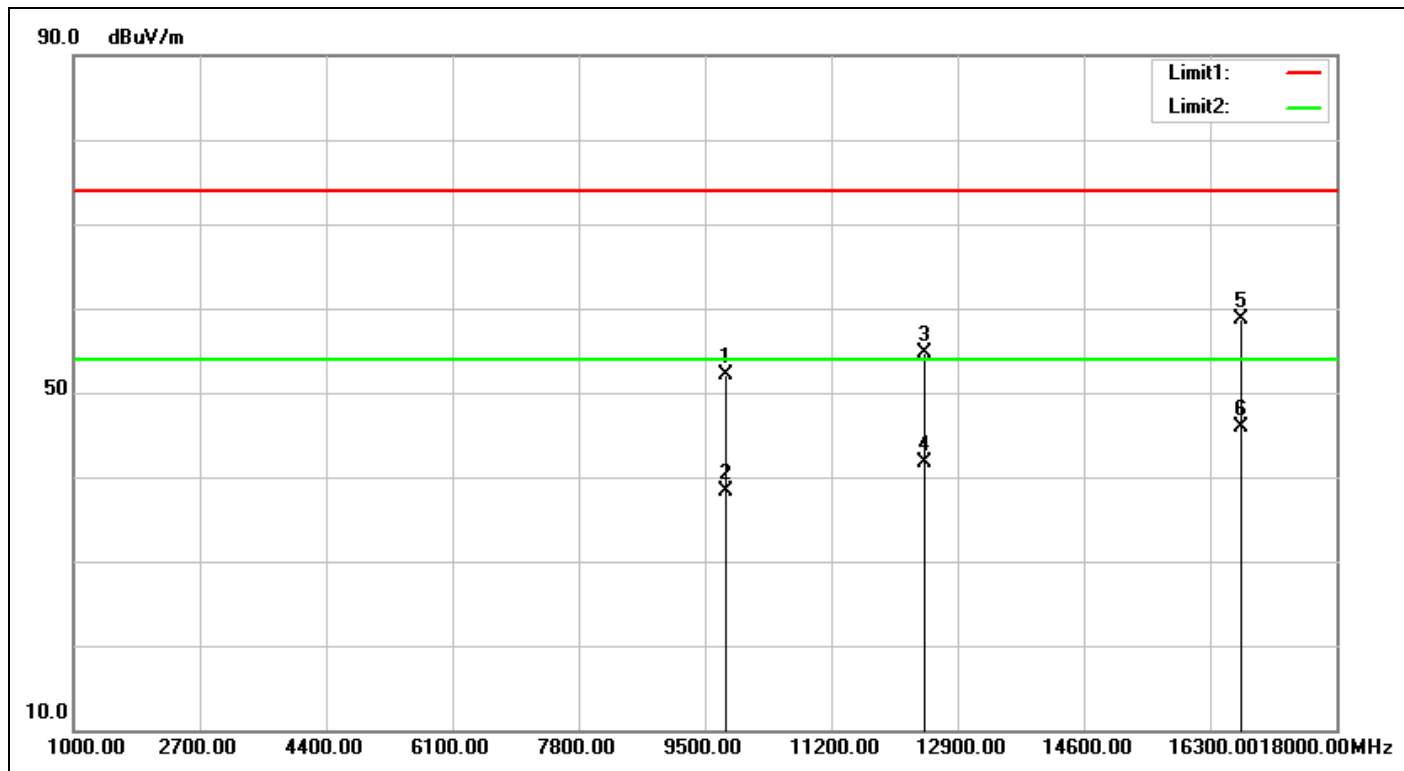
# Spurious Emissions, RX Mode, 1-18G



**TUV Rheinland Taiwan Ltd.**

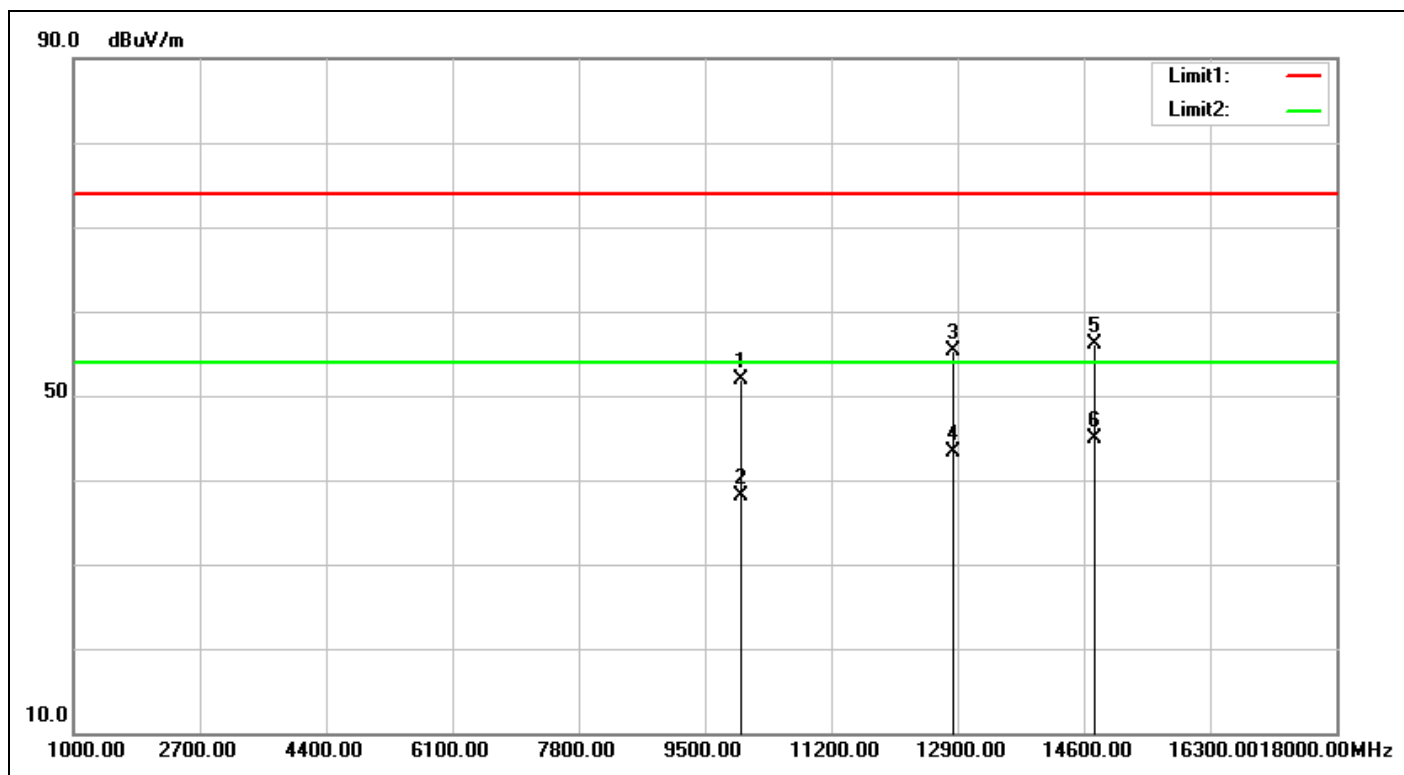
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|                       |                           |                            |                            |
|-----------------------|---------------------------|----------------------------|----------------------------|
| <b>Service No.:</b>   | <b>114069439</b>          | <b>Test Distance:</b>      | <b>3m</b>                  |
| <b>Test Standard:</b> | <b>NCC Above 1G PEAK</b>  | <b>Ant. Polarization:</b>  | <b>Horizontal</b>          |
| <b>Test item:</b>     | <b>Radiation Emission</b> | <b>Test Time:</b>          | <b>2017/10/23 15:26:41</b> |
| <b>Applicant:</b>     | <b>CUBTEK INC.</b>        | <b>Test Rating:</b>        | <b>DC 12V</b>              |
| <b>Product:</b>       | <b>24GHz BSD Radar</b>    | <b>Temp.(°C)/Hum.(%)</b> : | <b>24.2(°C)/52%</b>        |
| <b>Model No.:</b>     | <b>VS-91A001</b>          | <b>Test Engineer:</b>      | <b>George Yang</b>         |
| <b>Test Mode:</b>     | <b>RX</b>                 |                            |                            |
| <b>Remark:</b>        |                           |                            |                            |

| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (°) | Remark |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|-------------|--------|
| 1   | 9789.000        | 5.04          | 47.13          | 52.17          | 74.00          | -21.83      | peak | 100         | 359         |        |
| 2   | 9789.000        | 5.04          | 33.34          | 38.38          | 54.00          | -15.62      | AVG  | 100         | 359         |        |
| 3   | 12458.000       | 7.45          | 47.20          | 54.65          | 74.00          | -19.35      | peak | 100         | 356         |        |
| 4   | 12458.000       | 7.45          | 34.32          | 41.77          | 54.00          | -12.23      | AVG  | 100         | 356         |        |
| 5   | 16725.000       | 13.87         | 44.88          | 58.75          | 74.00          | -15.25      | peak | 100         | 163         |        |
| 6   | 16725.000       | 13.87         | 31.94          | 45.81          | 54.00          | -8.19       | AVG  | 100         | 163         |        |



**Service No.:** 114069439

**Test Distance:** 3m

**Test Standard:** NCC Above 1G PEAK

**Ant. Polarization:** Vertical

**Test item:** Radiation Emission

**Test Time:** 2017/10/23 15:27:44

**Applicant:** CUBTEK INC.

**Test Rating:** DC 12V

**Product:** 24GHz BSD Radar

**Temp.(°C)/Hum.(%)**: 24.2(°C)/52%

**Model No.:** VS-91A001

**Test Engineer:** George Yang

**Test Mode:** RX

**Remark:**

| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (°) | Remark |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|-------------|--------|
| 1   | 9993.000        | 4.69          | 47.15          | 51.84          | 74.00          | -22.16      | peak | 100         | 114         |        |
| 2   | 9993.000        | 4.69          | 33.43          | 38.12          | 54.00          | -15.88      | AVG  | 100         | 114         |        |
| 3   | 12849.000       | 8.41          | 46.97          | 55.38          | 74.00          | -18.62      | peak | 100         | 230         |        |
| 4   | 12849.000       | 8.41          | 34.87          | 43.28          | 54.00          | -10.72      | AVG  | 100         | 230         |        |
| 5   | 14753.000       | 8.96          | 47.24          | 56.20          | 74.00          | -17.80      | peak | 100         | 186         |        |
| 6   | 14753.000       | 8.96          | 35.95          | 44.91          | 54.00          | -9.09       | AVG  | 100         | 186         |        |

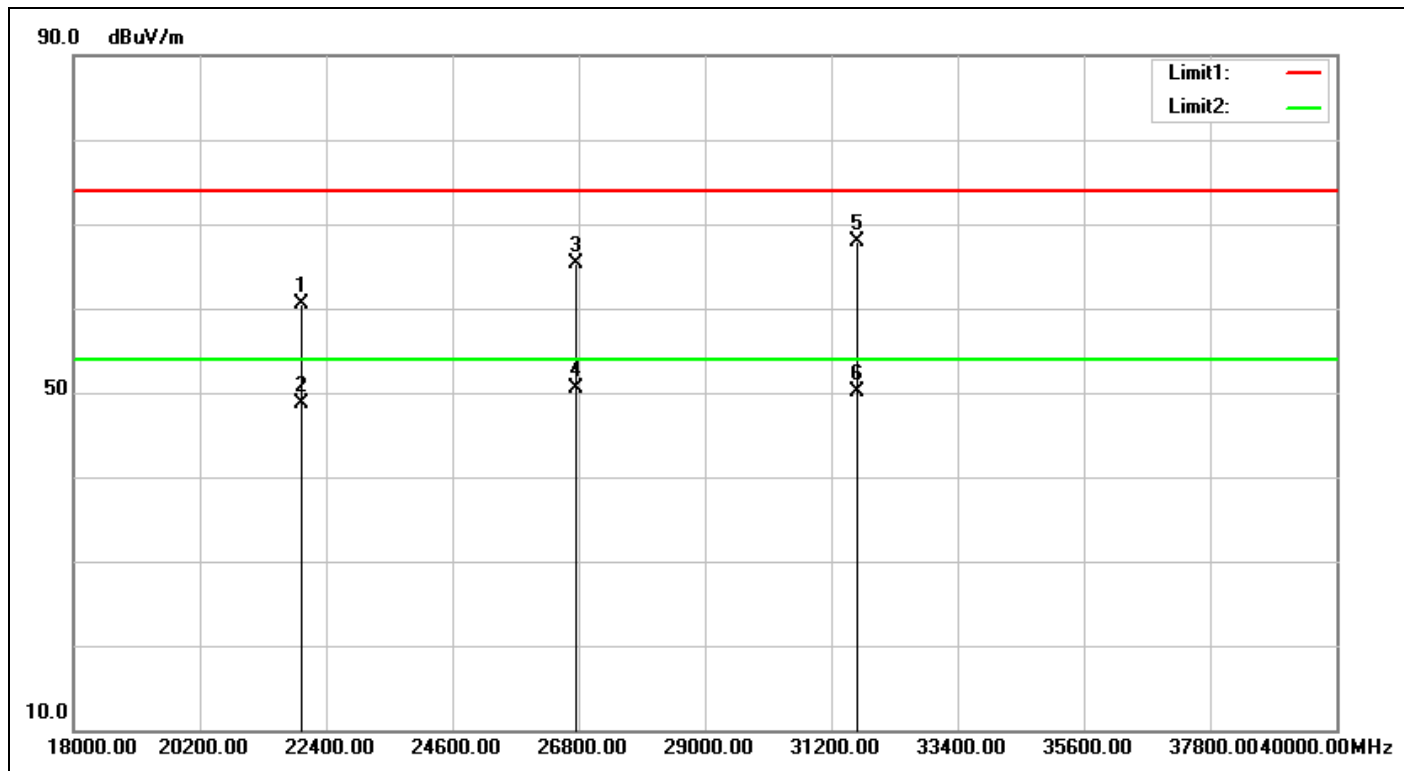
# Spurious Emissions, RX Mode, 18-40G



**TUV Rheinland Taiwan Ltd.**

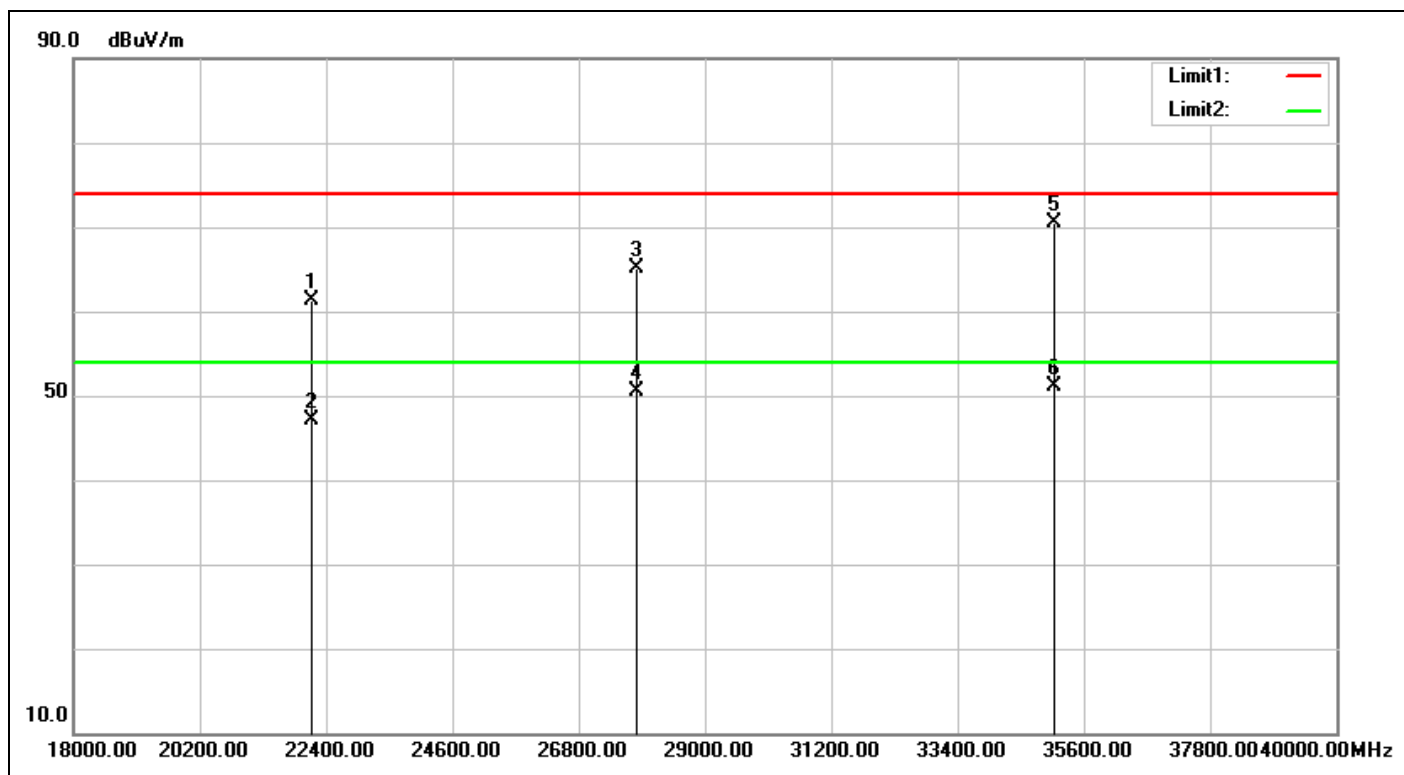
11F., No.758, Sec.4 Bade Road. Songshan Dist, Taipei City 105

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|                |                    |                    |                     |
|----------------|--------------------|--------------------|---------------------|
| Service No.:   | 114069439          | Test Distance:     | 3m                  |
| Test Standard: | NCC Above 1G PEAK  | Ant. Polarization: | Horizontal          |
| Test item:     | Radiation Emission | Test Time:         | 2017/10/23 15:37:46 |
| Applicant:     | CUBTEK INC.        | Test Rating:       | DC 12V              |
| Product:       | 24GHz BSD Radar    | Temp.(°C)/Hum.(%)  | 24.2(°C)/52%        |
| Model No.:     | VS-91A001          | Test Engineer:     | George Yang         |
| Test Mode:     | RX                 |                    |                     |
| Remark:        |                    |                    |                     |

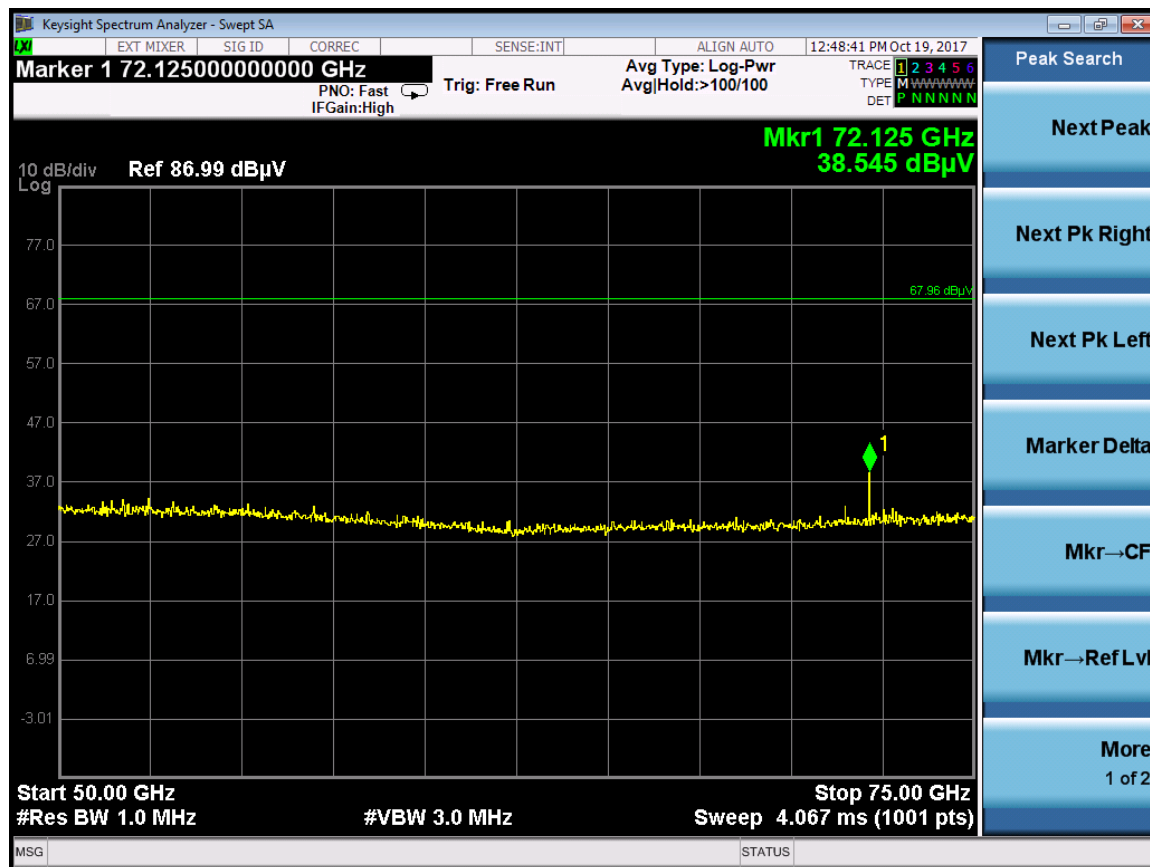
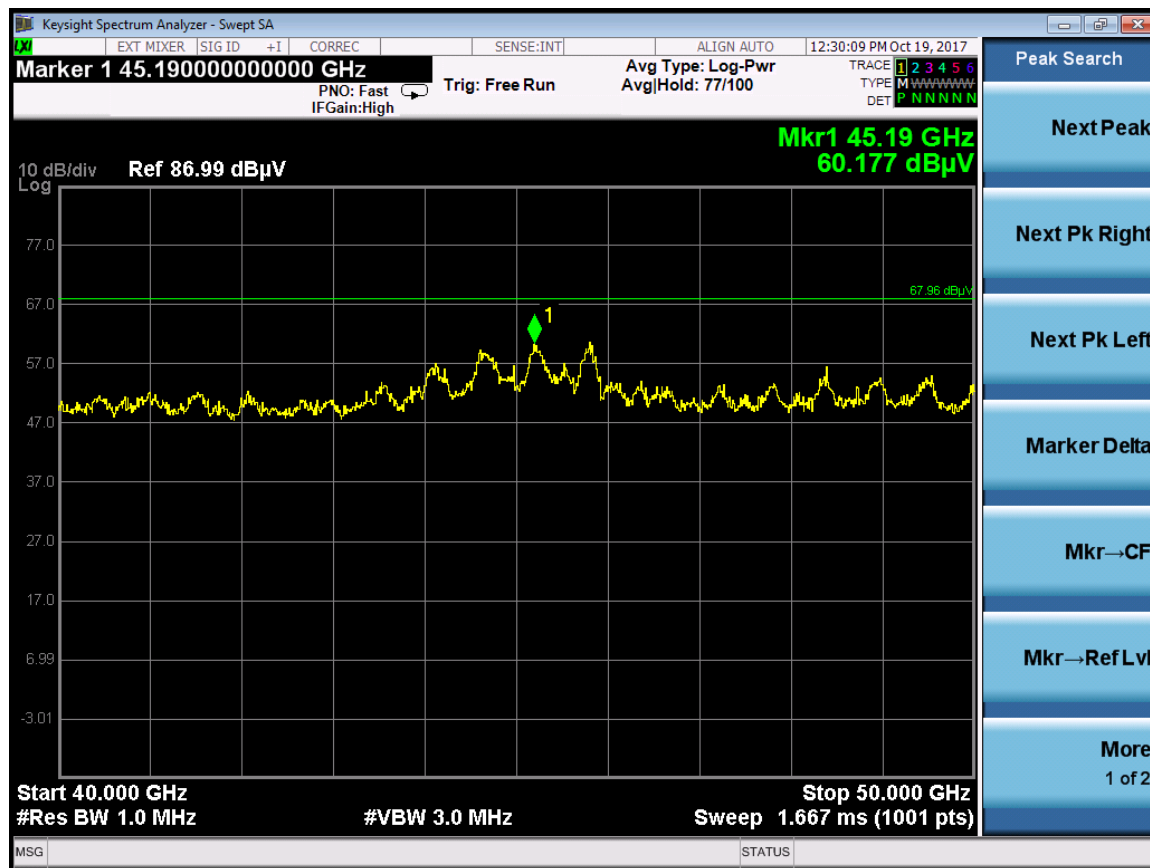
| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (°) | Remark |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|-------------|--------|
| 1   | 21982.000       | 32.56         | 28.03          | 60.59          | 74.00          | -13.41      | peak | 100         | 329         |        |
| 2   | 21982.000       | 32.56         | 16.05          | 48.61          | 54.00          | -5.39       | AVG  | 100         | 329         |        |
| 3   | 26756.000       | 35.92         | 29.45          | 65.37          | 74.00          | -8.63       | peak | 100         | 54          |        |
| 4   | 26756.000       | 35.92         | 14.53          | 50.45          | 54.00          | -3.55       | AVG  | 100         | 54          |        |
| 5   | 31640.000       | 38.21         | 29.71          | 67.92          | 74.00          | -6.08       | peak | 100         | 5           |        |
| 6   | 31640.000       | 38.21         | 11.82          | 50.03          | 54.00          | -3.97       | AVG  | 100         | 5           |        |



|                       |                           |                           |                            |
|-----------------------|---------------------------|---------------------------|----------------------------|
| <b>Service No.:</b>   | <b>114069439</b>          | <b>Test Distance:</b>     | <b>3m</b>                  |
| <b>Test Standard:</b> | <b>NCC Above 1G PEAK</b>  | <b>Ant. Polarization:</b> | <b>Vertical</b>            |
| <b>Test item:</b>     | <b>Radiation Emission</b> | <b>Test Time:</b>         | <b>2017/10/23 15:38:49</b> |
| <b>Applicant:</b>     | <b>CUBTEK INC.</b>        | <b>Test Rating:</b>       | <b>DC 12V</b>              |
| <b>Product:</b>       | <b>24GHz BSD Radar</b>    | <b>Temp.(°C)/Hum.(%):</b> | <b>24.2(°C)/52%</b>        |
| <b>Model No.:</b>     | <b>VS-91A001</b>          | <b>Test Engineer:</b>     | <b>George Yang</b>         |
| <b>Test Mode:</b>     | <b>RX</b>                 |                           |                            |
| <b>Remark:</b>        |                           |                           |                            |

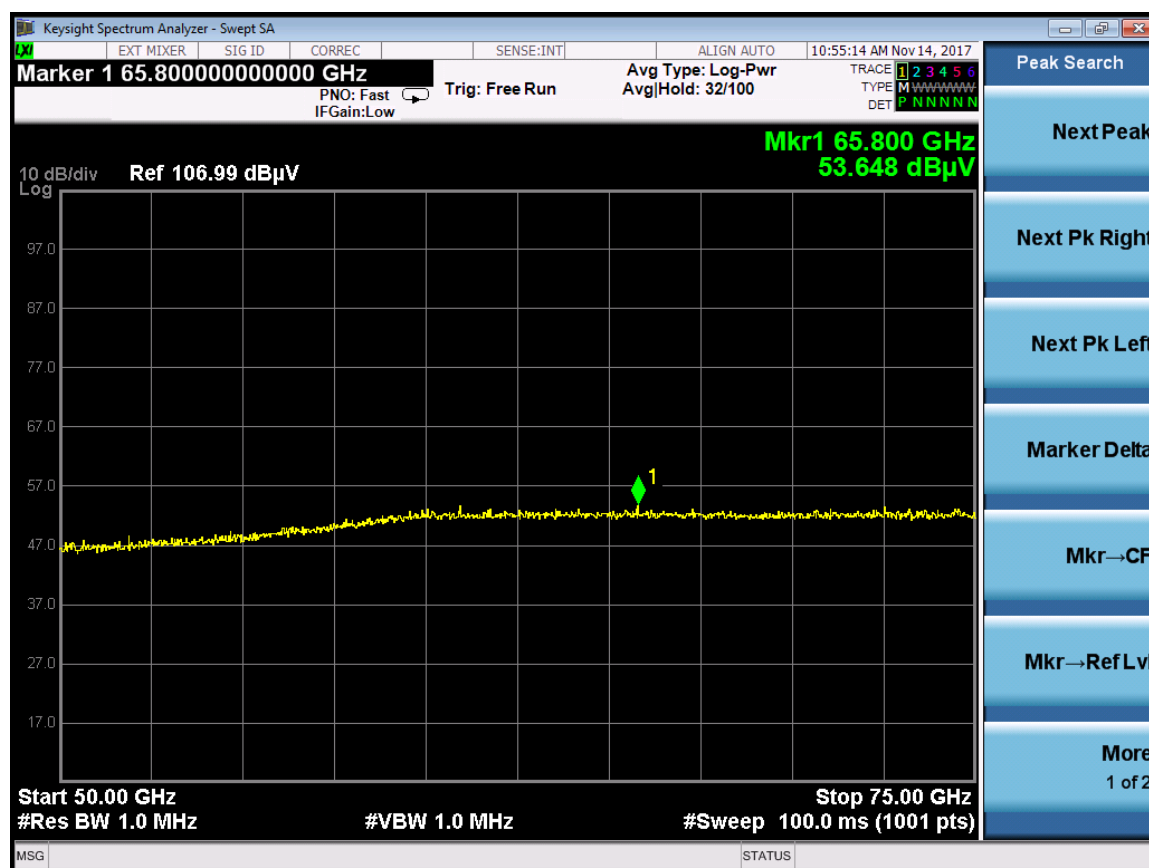
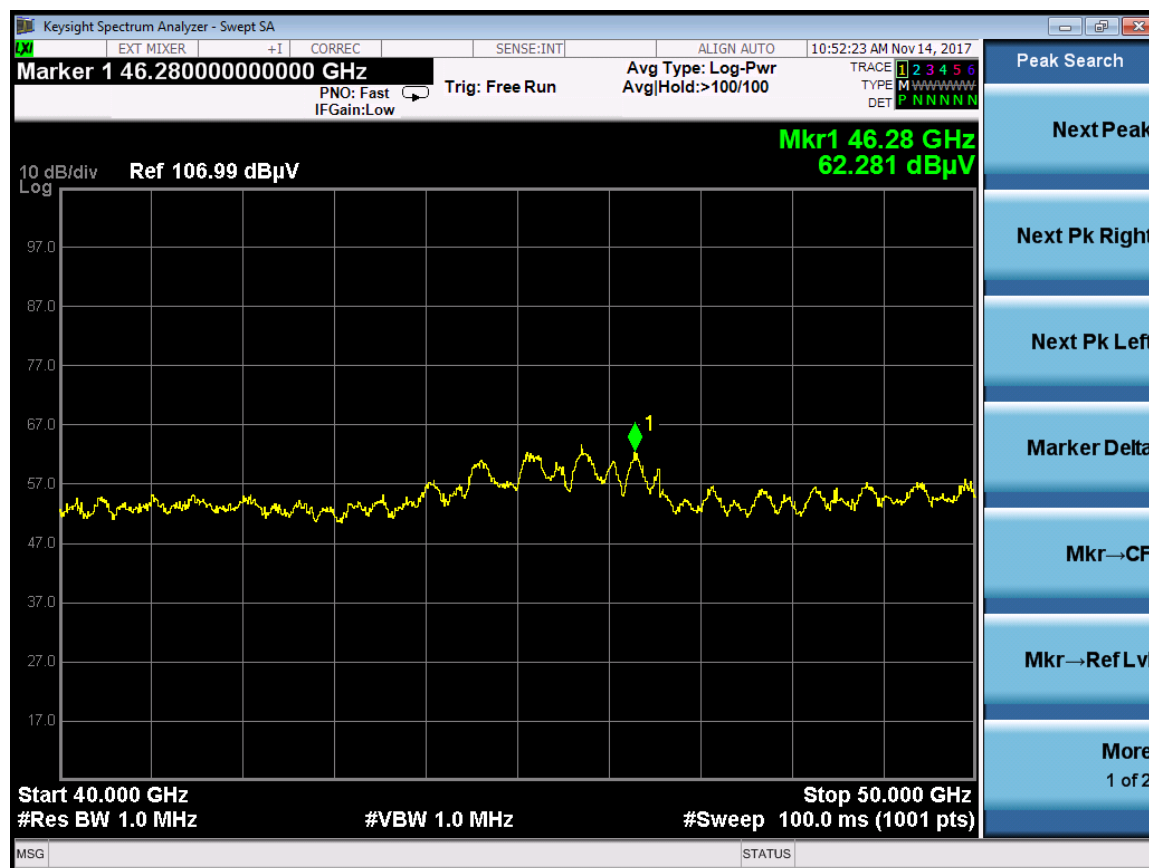
| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. | Height (cm) | Azimuth (°) | Remark |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|-------------|-------------|--------|
| 1   | 22136.000       | 32.49         | 28.91          | 61.40          | 74.00          | -12.60      | peak | 100         | 219         |        |
| 2   | 22136.000       | 32.49         | 14.54          | 47.03          | 54.00          | -6.97       | AVG  | 100         | 219         |        |
| 3   | 27812.000       | 35.89         | 29.13          | 65.02          | 74.00          | -8.98       | peak | 100         | 15          |        |
| 4   | 27812.000       | 35.89         | 14.63          | 50.52          | 54.00          | -3.48       | AVG  | 100         | 15          |        |
| 5   | 35072.000       | 39.74         | 30.83          | 70.57          | 74.00          | -3.43       | peak | 100         | 176         |        |
| 6   | 35072.000       | 39.74         | 11.43          | 51.17          | 54.00          | -2.83       | AVG  | 100         | 176         |        |

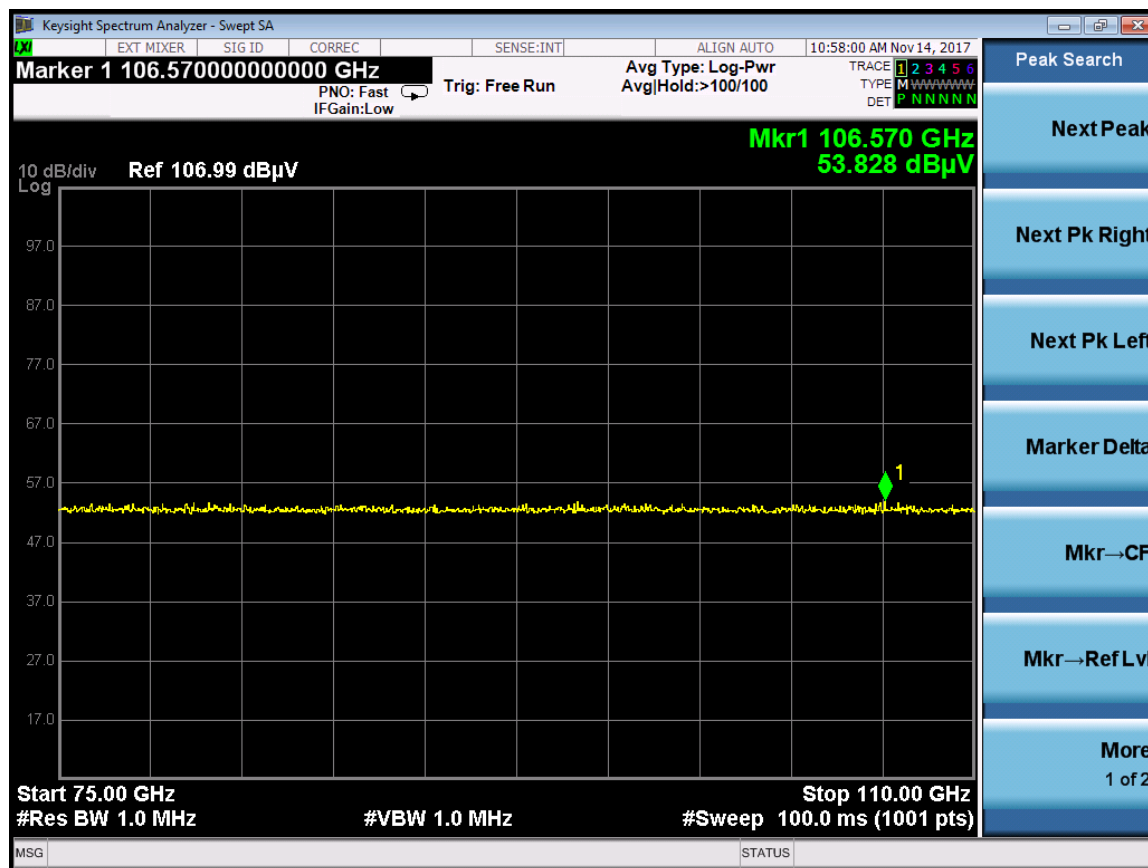
## Spurious Emissions, TX Mode, 40-110G





## Spurious Emissions, RX Mode, 40-110G





Limit: 74dBuV