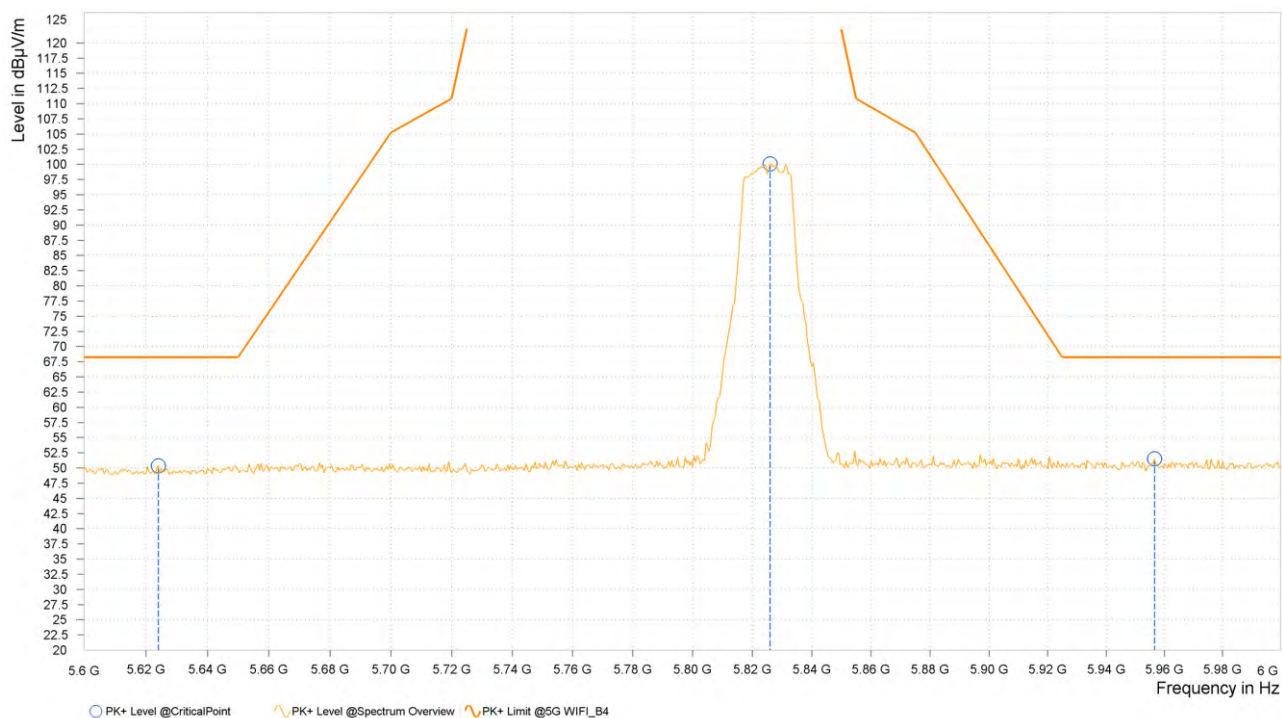




|                 |                |                      |              |
|-----------------|----------------|----------------------|--------------|
| CHANNEL         | TX Channel 165 | DETECTOR<br>FUNCTION | Peak (PK)    |
| FREQUENCY RANGE | 1GHz ~ 40GHz   |                      | Average (AV) |

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

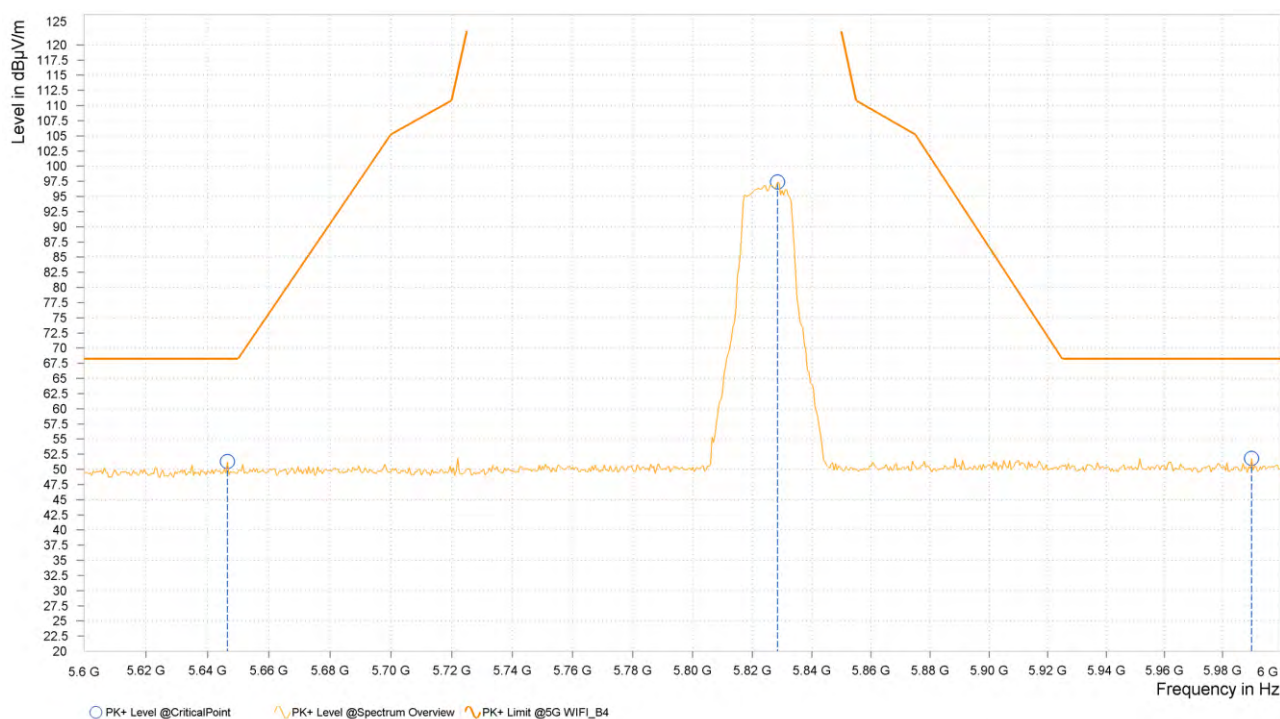
| Rg | Frequency<br>[MHz] | PK+ Level<br>[dBμV/m] | PK+ Limit<br>[dBμV/m] | PK+<br>Margin<br>[dB] | Correction<br>[dB] | Polarization | Azimuth<br>[deg] | Antenna<br>Height<br>[m] |
|----|--------------------|-----------------------|-----------------------|-----------------------|--------------------|--------------|------------------|--------------------------|
| 12 | 5,624.000          | 50.38                 | 68.20                 | 17.82                 | 13.59              | H            | 312.5            | 1.00                     |
| 12 | 5,826.000          | 100.10                |                       |                       | 14.25              | H            | 312.5            | 1.00                     |
| 12 | 5,956.500          | 51.52                 | 68.20                 | 16.68                 | 14.52              | H            | 5.7              | 1.00                     |





ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

| Rg | Frequency [MHz] | PK+ Level [dBμV/m] | PK+ Limit [dBμV/m] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|----|-----------------|--------------------|--------------------|-----------------|-----------------|--------------|---------------|--------------------|
| 12 | 5,646.500       | 51.26              | 68.20              | 16.94           | 13.72           | V            | 335.1         | 1.00               |
| 12 | 5,828.500       | 97.39              |                    |                 | 14.25           | V            | 44.7          | 1.00               |
| 12 | 5,990.000       | 51.83              | 68.20              | 16.37           | 14.63           | V            | 92.5          | 1.00               |



REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Limit value- Emission level.
- 5825MHz: Fundamental frequency.

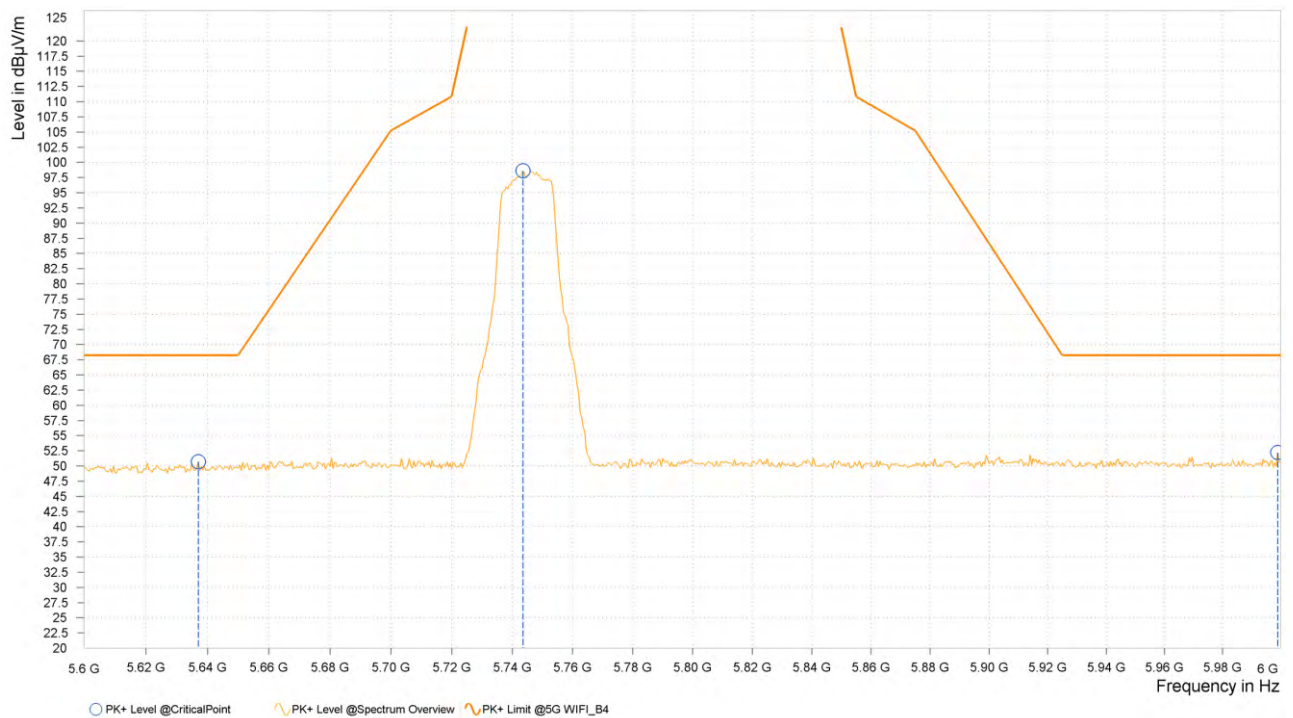


802.11n (20MHz)

|                 |                |                      |                           |
|-----------------|----------------|----------------------|---------------------------|
| CHANNEL         | TX Channel 149 | DETECTOR<br>FUNCTION | Peak (PK)<br>Average (AV) |
| FREQUENCY RANGE | 1GHz ~ 40GHz   |                      |                           |

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

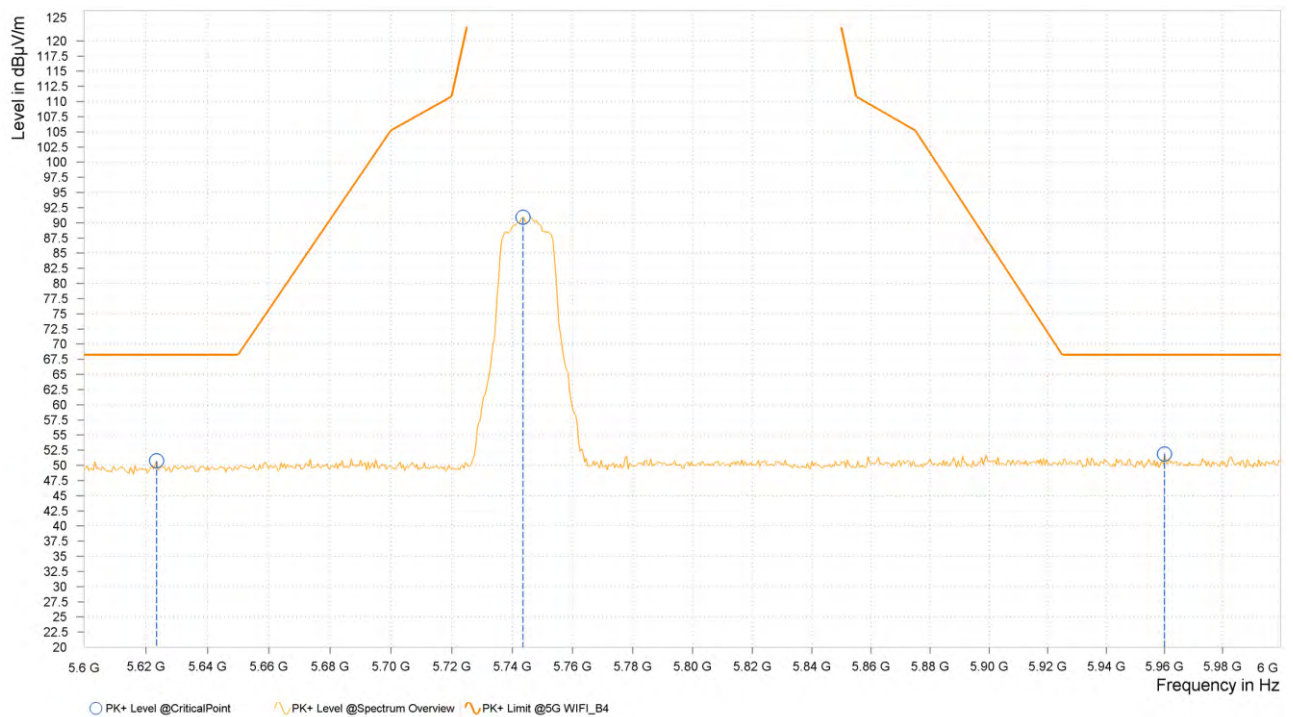
| Rg | Frequency<br>[MHz] | PK+ Level<br>[dBμV/m] | PK+ Limit<br>[dBμV/m] | PK+<br>Margin<br>[dB] | Correction<br>[dB] | Polarization | Azimuth<br>[deg] | Antenna<br>Height<br>[m] |
|----|--------------------|-----------------------|-----------------------|-----------------------|--------------------|--------------|------------------|--------------------------|
| 12 | 5,637.000          | 50.71                 | 68.20                 | 17.49                 | 13.66              | H            | 348.6            | 1.00                     |
| 12 | 5,743.500          | 98.59                 |                       |                       | 14.03              | H            | 303              | 1.00                     |
| 12 | 5,999.000          | 52.21                 | 68.20                 | 15.99                 | 14.67              | H            | 108.4            | 2.00                     |





ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

| Rg | Frequency [MHz] | PK+ Level [dBμV/m] | PK+ Limit [dBμV/m] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|----|-----------------|--------------------|--------------------|-----------------|-----------------|--------------|---------------|--------------------|
| 12 | 5,623.500       | 50.73              | 68.20              | 17.47           | 13.59           | V            | 48.3          | 1.00               |
| 12 | 5,743.500       | 90.90              |                    |                 | 14.03           | V            | 287.8         | 2.00               |
| 12 | 5,960.000       | 51.87              | 68.20              | 16.33           | 14.53           | V            | 131.2         | 2.00               |



REMARKS:

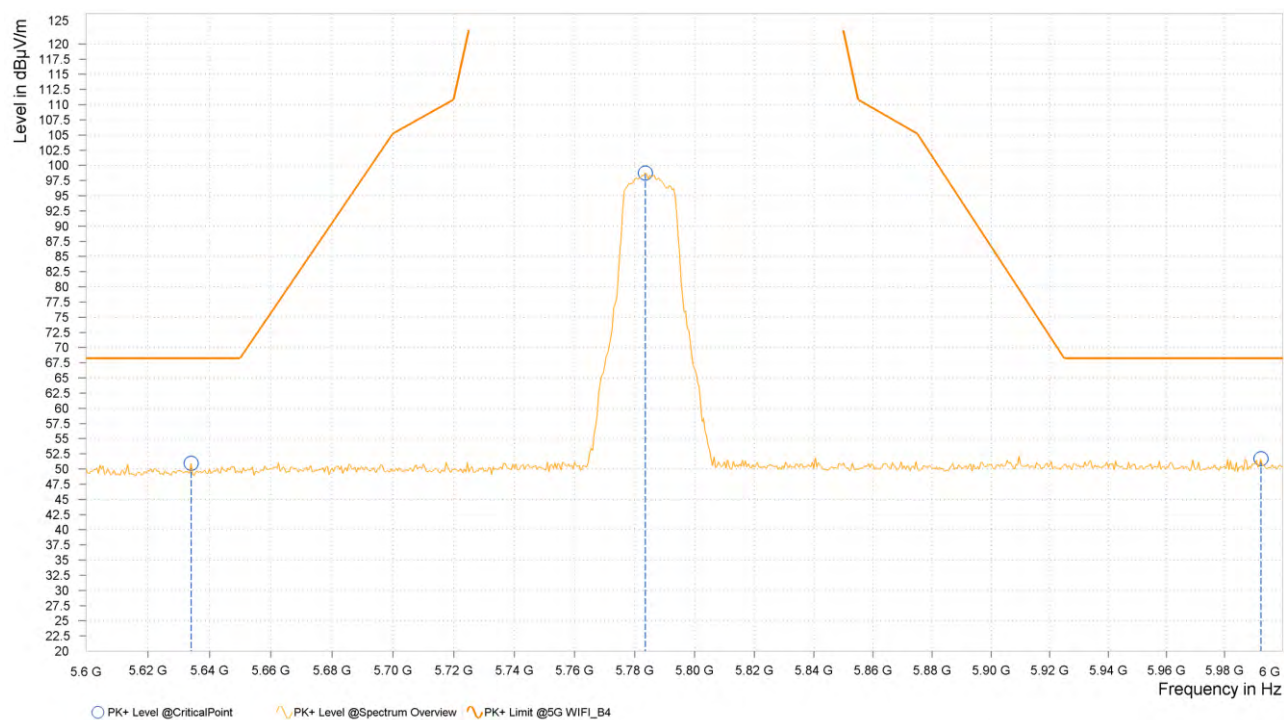
- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Limit value- Emission level.
- 5745MHz: Fundamental frequency.



|                 |                |                      |              |
|-----------------|----------------|----------------------|--------------|
| CHANNEL         | TX Channel 157 | DETECTOR<br>FUNCTION | Peak (PK)    |
| FREQUENCY RANGE | 1GHz ~ 40GHz   |                      | Average (AV) |

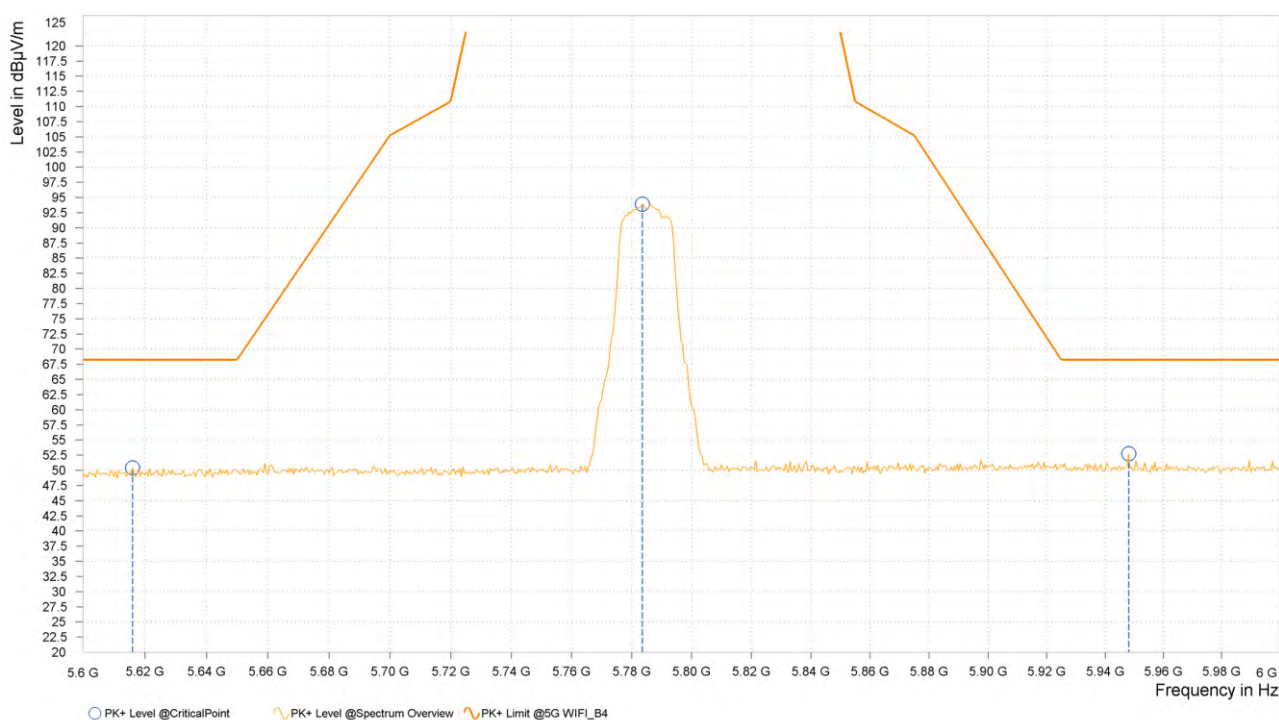
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

| Rg | Frequency<br>[MHz] | PK+ Level<br>[dBμV/m] | PK+ Limit<br>[dBμV/m] | PK+<br>Margin<br>[dB] | Correction<br>[dB] | Polarization | Azimuth<br>[deg] | Antenna<br>Height<br>[m] |
|----|--------------------|-----------------------|-----------------------|-----------------------|--------------------|--------------|------------------|--------------------------|
| 12 | 5,634.000          | 50.94                 | 68.20                 | 17.26                 | 13.65              | H            | 352.6            | 1.00                     |
| 12 | 5,783.500          | 98.76                 |                       |                       | 14.15              | H            | 311.3            | 1.00                     |
| 12 | 5,992.500          | 51.67                 | 68.20                 | 16.53                 | 14.63              | H            | 54.7             | 2.00                     |



**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

| Rg | Frequency [MHz] | PK+ Level [dBμV/m] | PK+ Limit [dBμV/m] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|----|-----------------|--------------------|--------------------|-----------------|-----------------|--------------|---------------|--------------------|
| 12 | 5,616.000       | 50.42              | 68.20              | 17.78           | 13.55           | V            | 359.1         | 1.00               |
| 12 | 5,783.500       | 93.89              |                    |                 | 14.15           | V            | 49.5          | 1.00               |
| 12 | 5,948.000       | 52.72              | 68.20              | 15.48           | 14.50           | V            | 5             | 1.00               |



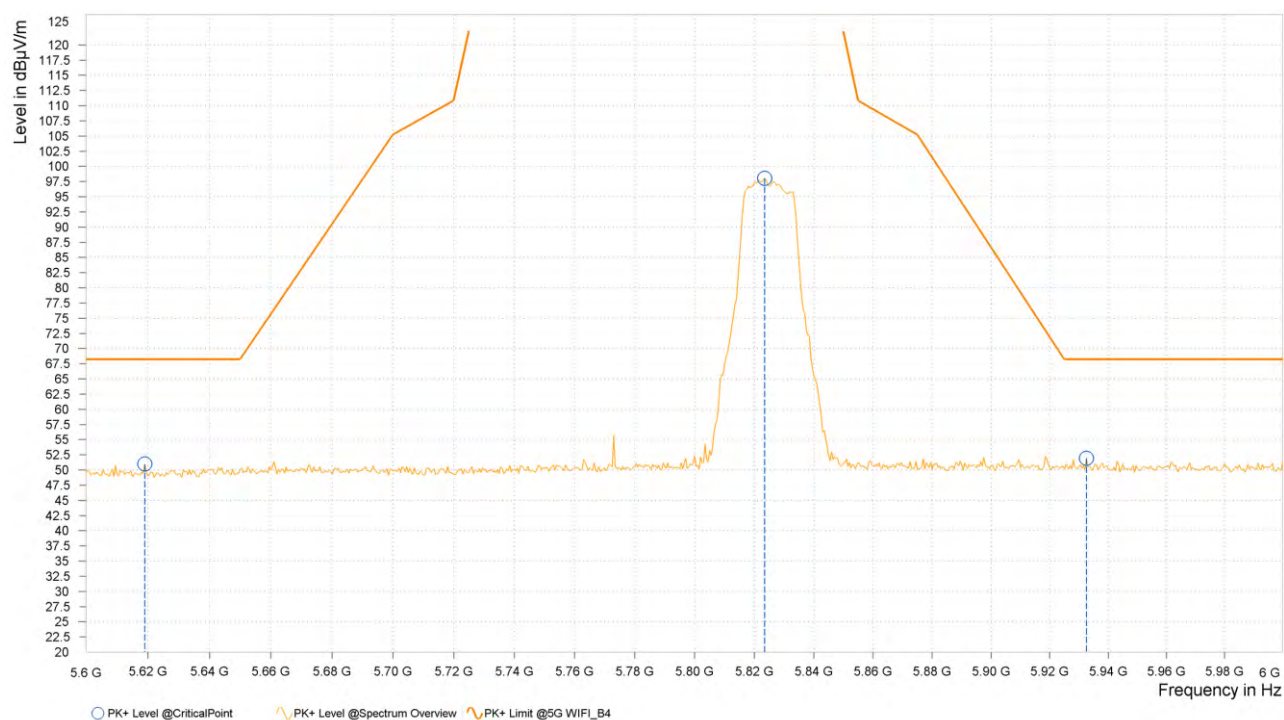
**REMARKS:**

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Limit value- Emission level.
- 5785MHz: Fundamental frequency.

|                 |                |                      |              |
|-----------------|----------------|----------------------|--------------|
| CHANNEL         | TX Channel 165 | DETECTOR<br>FUNCTION | Peak (PK)    |
| FREQUENCY RANGE | 1GHz ~ 40GHz   |                      | Average (AV) |

|                                                     |
|-----------------------------------------------------|
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M |
|-----------------------------------------------------|

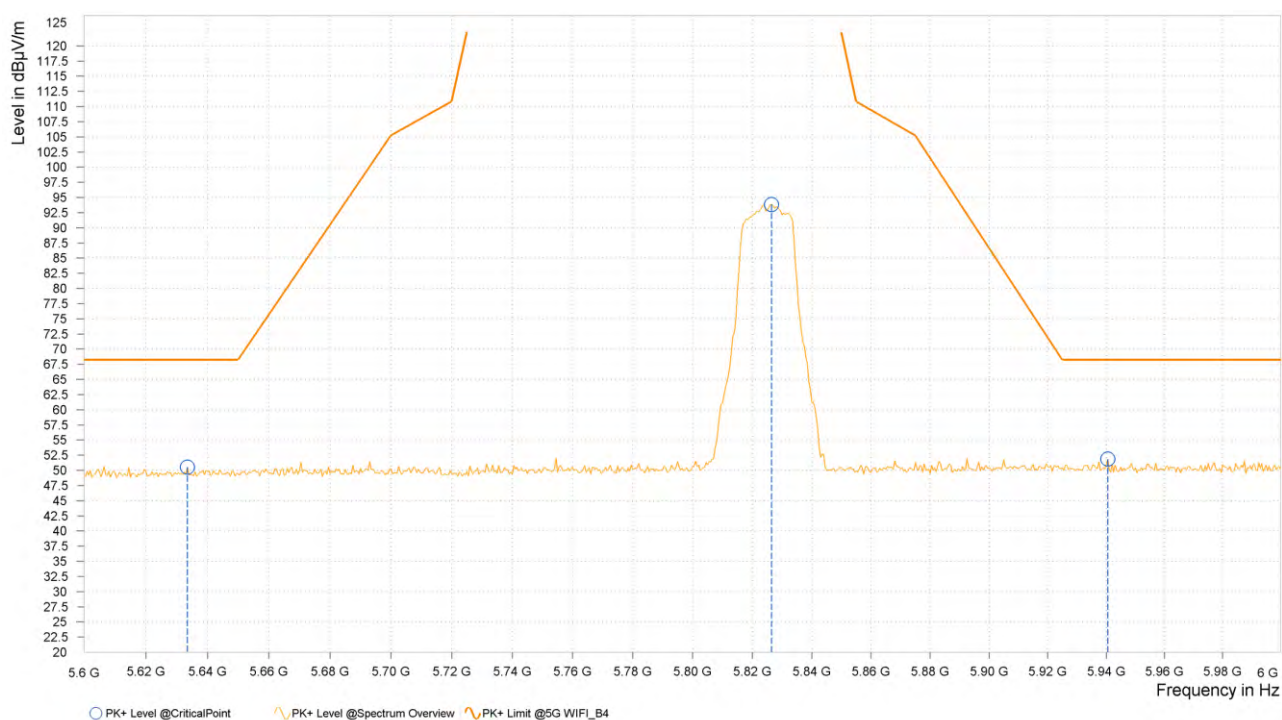
| Rg | Frequency [MHz] | PK+ Level [dBμV/m] | PK+ Limit [dBμV/m] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|----|-----------------|--------------------|--------------------|-----------------|-----------------|--------------|---------------|--------------------|
| 12 | 5,619.000       | 50.99              | 68.20              | 17.21           | 13.56           | H            | 352.2         | 1.00               |
| 12 | 5,823.500       | 98.05              |                    |                 | 14.25           | H            | 306.5         | 1.00               |
| 12 | 5,932.500       | 51.93              | 68.20              | 16.27           | 14.48           | H            | 0.9           | 2.00               |





ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

| Rg | Frequency [MHz] | PK+ Level [dBμV/m] | PK+ Limit [dBμV/m] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|----|-----------------|--------------------|--------------------|-----------------|-----------------|--------------|---------------|--------------------|
| 12 | 5,633.500       | 50.53              | 68.20              | 17.67           | 13.64           | V            | 355           | 2.00               |
| 12 | 5,826.500       | 93.86              |                    |                 | 14.25           | V            | 208.9         | 2.00               |
| 12 | 5,940.500       | 51.85              | 68.20              | 16.35           | 14.49           | V            | 259           | 2.00               |



REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Limit value- Emission level.
- 5825MHz: Fundamental frequency.

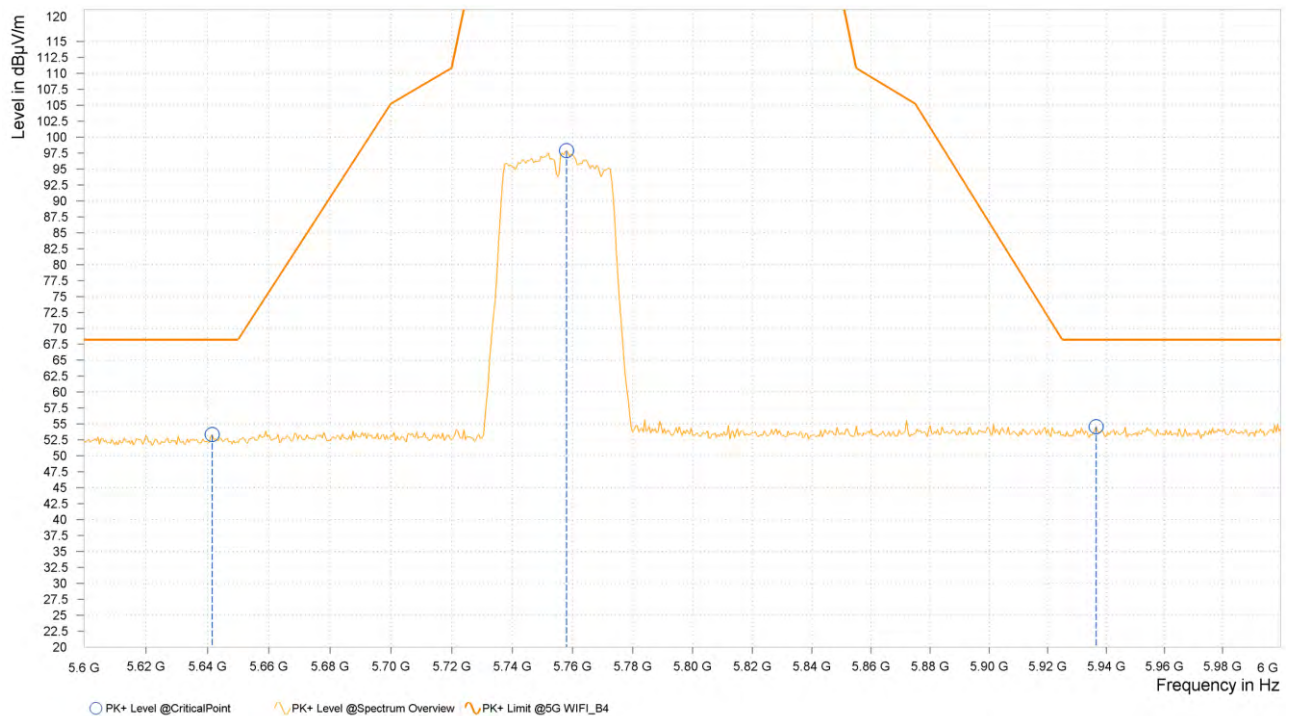


802.11n (40MHz)

|                 |                |                      |              |
|-----------------|----------------|----------------------|--------------|
| CHANNEL         | TX Channel 151 | DETECTOR<br>FUNCTION | Peak (PK)    |
| FREQUENCY RANGE | 1GHz ~ 40GHz   |                      | Average (AV) |

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

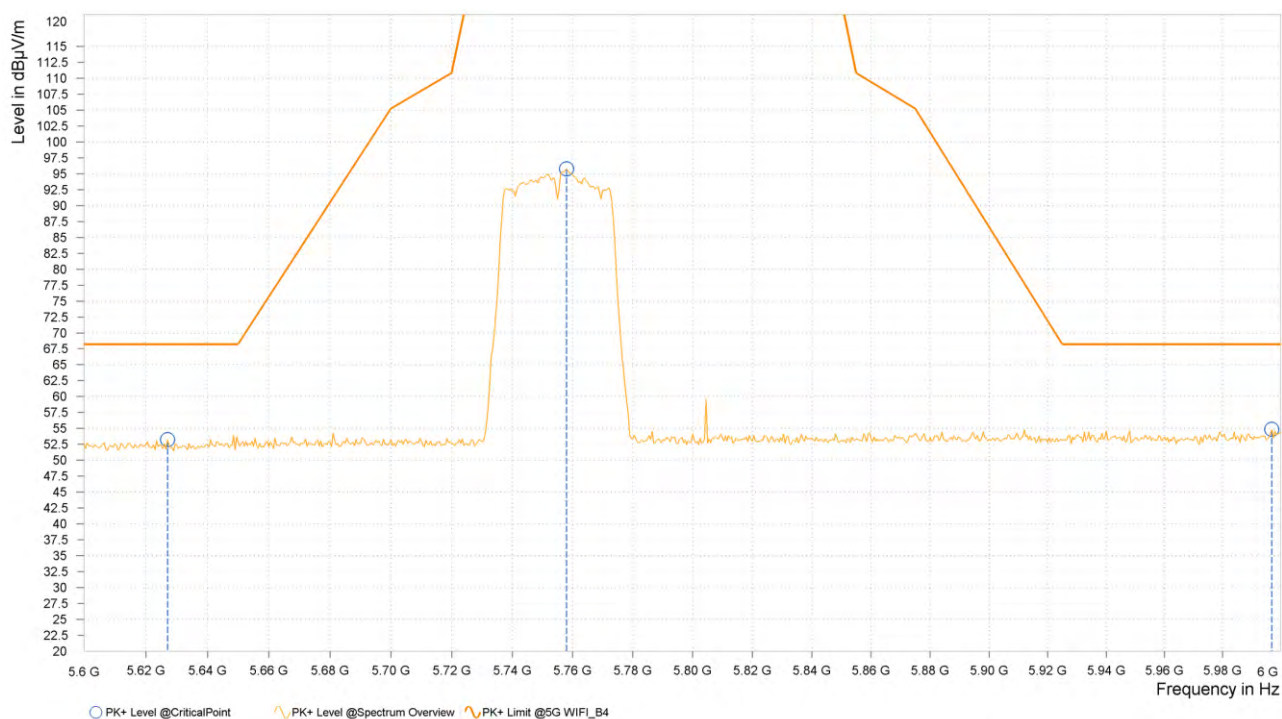
| Rg | Frequency<br>[MHz] | PK+ Level<br>[dBμV/m] | PK+ Limit<br>[dBμV/m] | PK+<br>Margin<br>[dB] | Correction<br>[dB] | Polarization | Azimuth<br>[deg] | Antenna<br>Height<br>[m] |
|----|--------------------|-----------------------|-----------------------|-----------------------|--------------------|--------------|------------------|--------------------------|
| 9  | 5,641.500          | 53.34                 | 68.20                 | 14.86                 | 13.69              | H            | 353              | 1.00                     |
| 9  | 5,758.000          | 97.88                 |                       |                       | 14.06              | H            | 311.3            | 1.00                     |
| 9  | 5,936.500          | 54.58                 | 68.20                 | 13.62                 | 14.48              | H            | 100.9            | 1.00                     |





**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

| Rg | Frequency [MHz] | PK+ Level [dBμV/m] | PK+ Limit [dBμV/m] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|----|-----------------|--------------------|--------------------|-----------------|-----------------|--------------|---------------|--------------------|
| 9  | 5,627.000       | 53.23              | 68.20              | 14.97           | 13.61           | V            | 205           | 1.00               |
| 9  | 5,758.000       | 95.75              |                    |                 | 14.06           | V            | 208.8         | 2.00               |
| 9  | 5,997.000       | 54.84              | 68.20              | 13.36           | 14.66           | V            | 359           | 1.00               |



**REMARKS:**

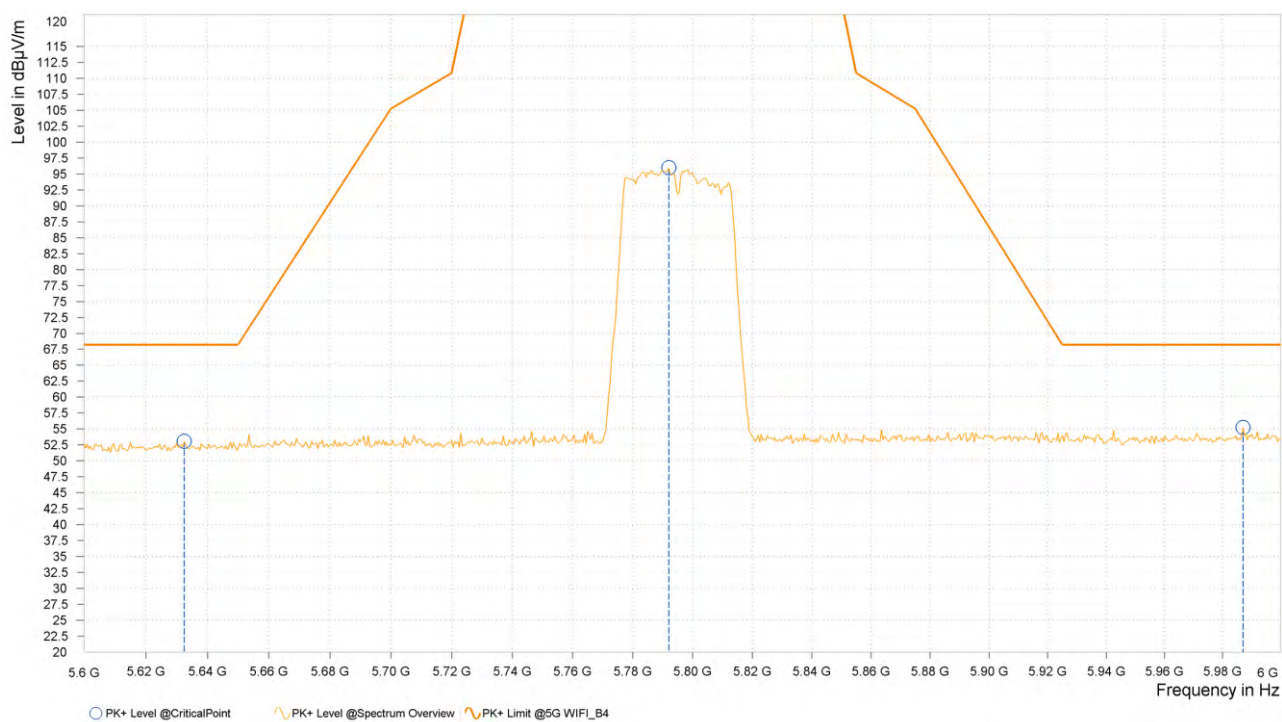
- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Limit value- Emission level.
- 5755MHz: Fundamental frequency.



|                 |                |                      |              |
|-----------------|----------------|----------------------|--------------|
| CHANNEL         | TX Channel 159 | DETECTOR<br>FUNCTION | Peak (PK)    |
| FREQUENCY RANGE | 1GHz ~ 40GHz   |                      | Average (AV) |

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

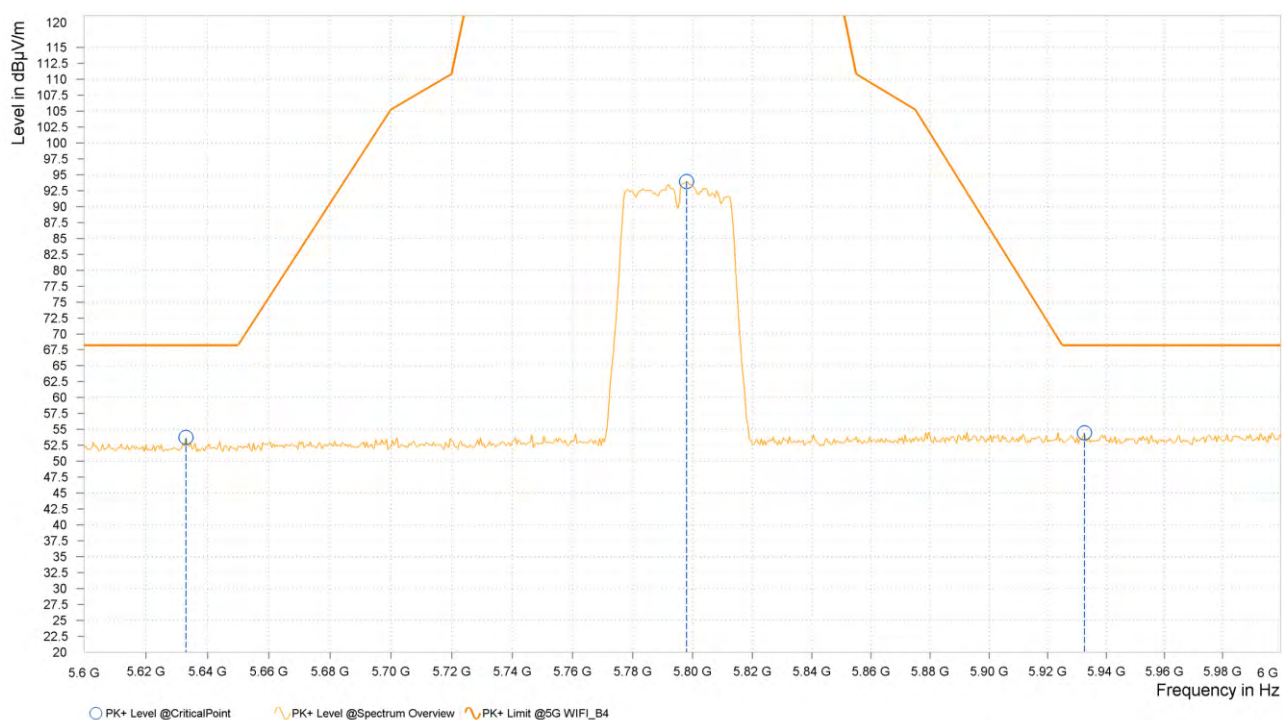
| Rg | Frequency<br>[MHz] | PK+ Level<br>[dBμV/m] | PK+ Limit<br>[dBμV/m] | PK+<br>Margin<br>[dB] | Correction<br>[dB] | Polarization | Azimuth<br>[deg] | Antenna<br>Height<br>[m] |
|----|--------------------|-----------------------|-----------------------|-----------------------|--------------------|--------------|------------------|--------------------------|
| 9  | 5,632.500          | 53.08                 | 68.20                 | 15.12                 | 13.64              | H            | 275.4            | 1.00                     |
| 9  | 5,792.000          | 95.99                 |                       |                       | 14.18              | H            | 355              | 2.00                     |
| 9  | 5,987.000          | 55.23                 | 68.20                 | 12.97                 | 14.62              | H            | 359.1            | 1.00                     |





ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

| Rg | Frequency [MHz] | PK+ Level [dBμV/m] | PK+ Limit [dBμV/m] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|----|-----------------|--------------------|--------------------|-----------------|-----------------|--------------|---------------|--------------------|
| 9  | 5,633.000       | 53.73              | 68.20              | 14.47           | 13.64           | V            | 359           | 2.00               |
| 9  | 5,798.000       | 93.95              |                    |                 | 14.20           | V            | 101           | 1.00               |
| 9  | 5,932.500       | 54.46              | 68.20              | 13.74           | 14.48           | V            | 353.4         | 1.00               |



REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Limit value- Emission level.
- 5795MHz: Fundamental frequency.

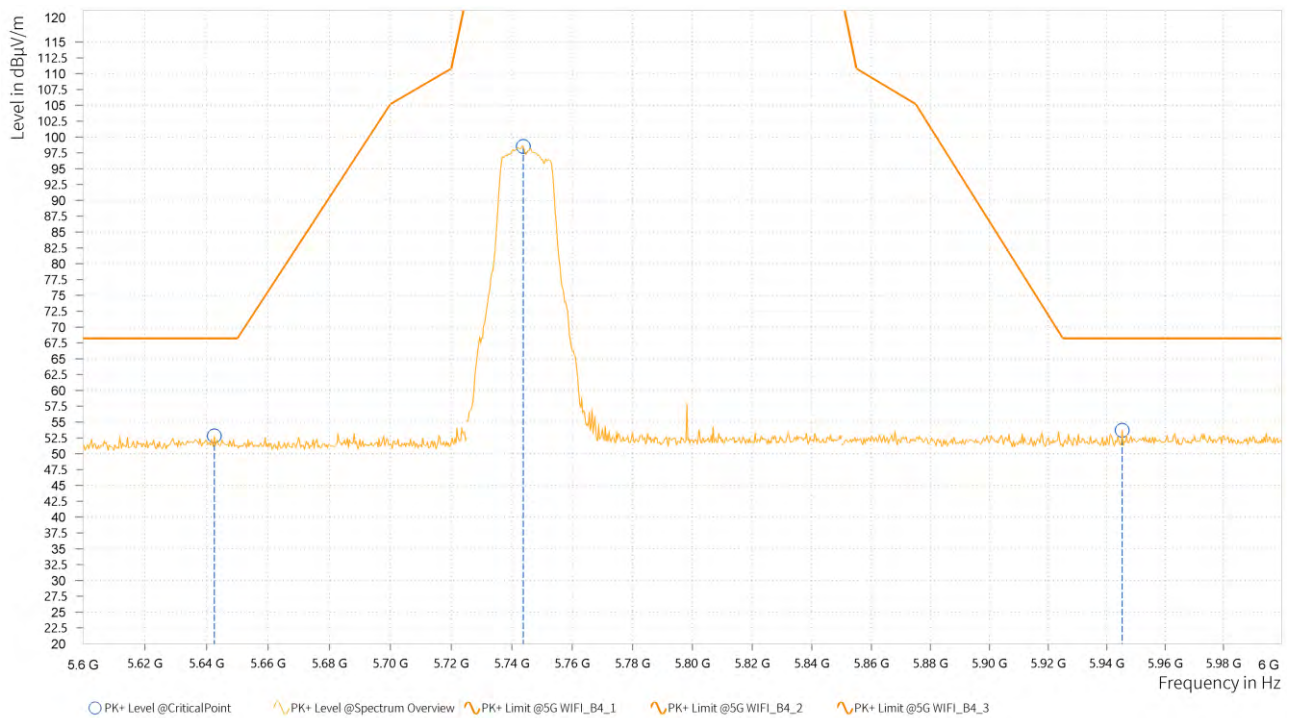


802.11ac (20MHz)

|                 |                |                      |              |
|-----------------|----------------|----------------------|--------------|
| CHANNEL         | TX Channel 149 | DETECTOR<br>FUNCTION | Peak (PK)    |
| FREQUENCY RANGE | 1GHz ~ 40GHz   |                      | Average (AV) |

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

| Rg | Frequency<br>[MHz] | PK+ Level<br>[dBμV/m] | PK+ Limit<br>[dBμV/m] | PK+<br>Margin<br>[dB] | Correction<br>[dB] | Polarization | Azimuth<br>[deg] | Antenna<br>Height<br>[m] |
|----|--------------------|-----------------------|-----------------------|-----------------------|--------------------|--------------|------------------|--------------------------|
| 11 | 5,642.500          | 52.83                 | 68.20                 | 15.37                 | 4.36               | H            | 1                | 1                        |
| 12 | 5,743.750          | 98.50                 |                       |                       | 4.58               | H            | 270.8            | 1                        |
| 13 | 5,945.250          | 53.72                 | 68.20                 | 14.48                 | 5.49               | H            | 175.3            | 1                        |





**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

| Rg | Frequency [MHz] | PK+ Level [dBμV/m] | PK+ Limit [dBμV/m] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|----|-----------------|--------------------|--------------------|-----------------|-----------------|--------------|---------------|--------------------|
| 11 | 5,610.000       | 52.71              | 68.20              | 15.49           | 4.27            | V            | 4.5           | 1                  |
| 12 | 5,738.750       | 90.18              |                    |                 | 4.54            | V            | 287.6         | 1                  |
| 13 | 5,946.000       | 53.31              | 68.20              | 14.89           | 5.49            | V            | 1             | 1                  |



**REMARKS:**

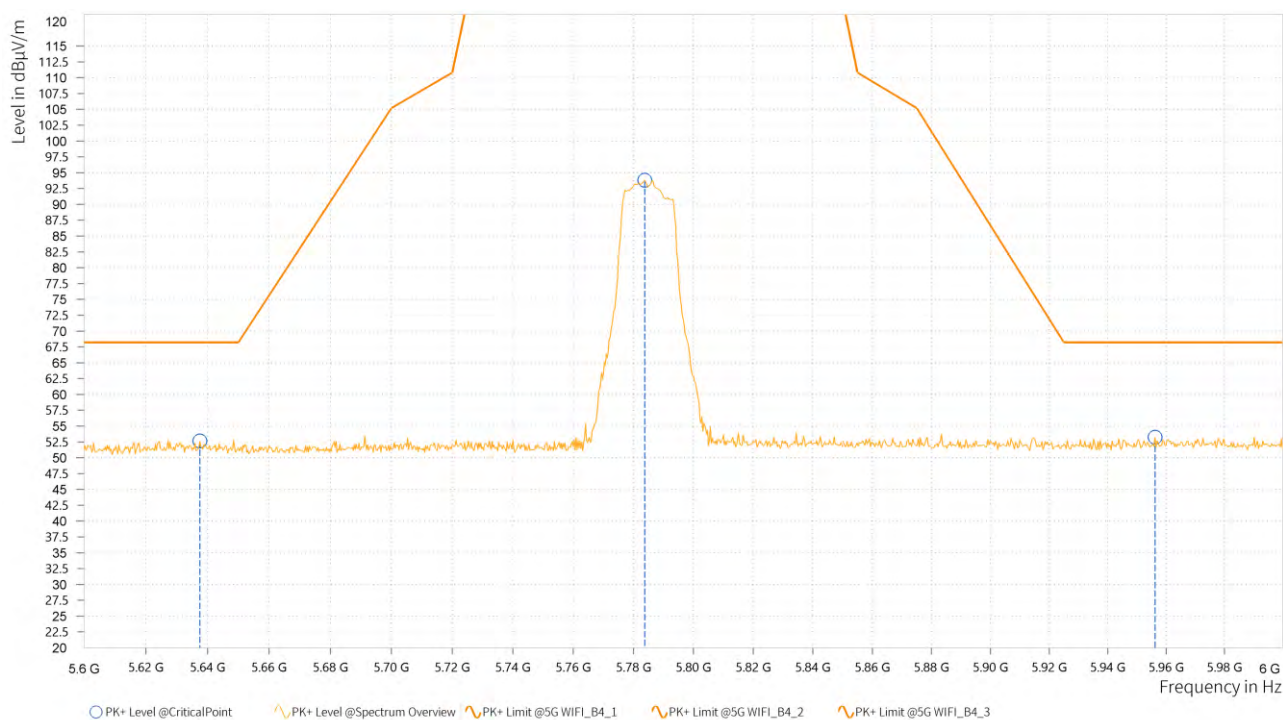
- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Limit value- Emission level.
- 5745MHz: Fundamental frequency.



|                 |                |                      |              |
|-----------------|----------------|----------------------|--------------|
| CHANNEL         | TX Channel 157 | DETECTOR<br>FUNCTION | Peak (PK)    |
| FREQUENCY RANGE | 1GHz ~ 40GHz   |                      | Average (AV) |

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

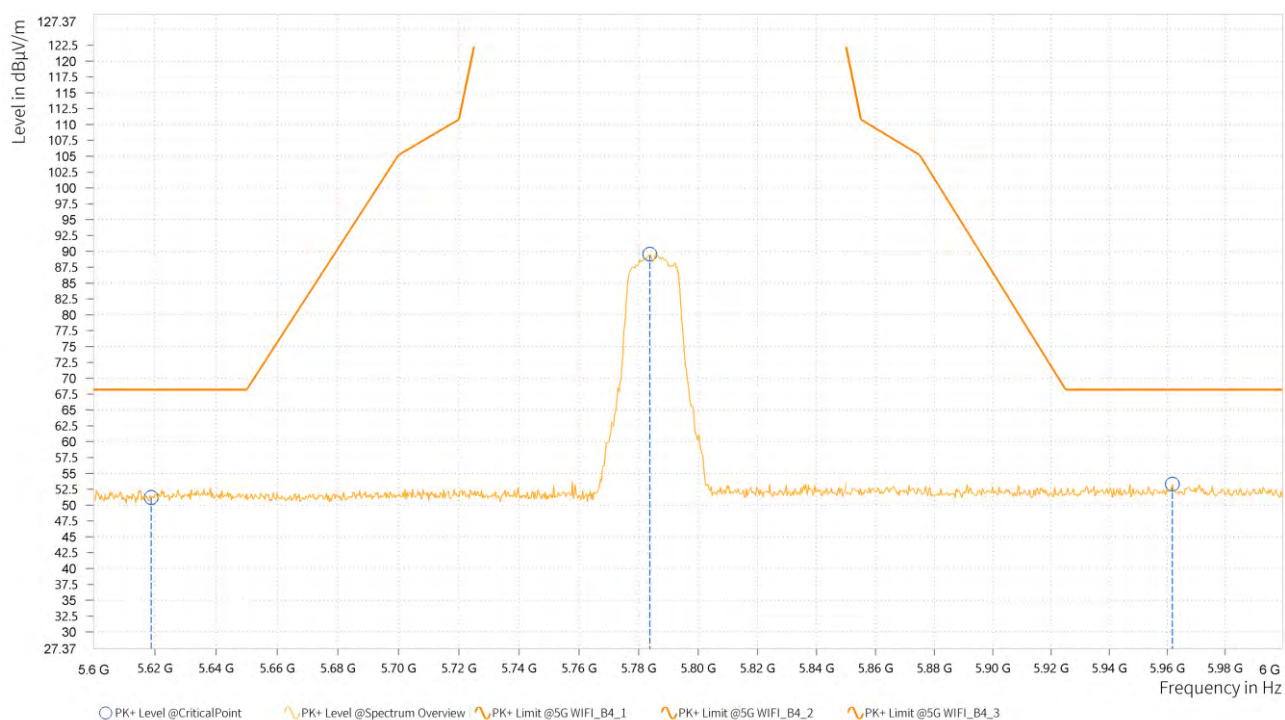
| Rg | Frequency<br>[MHz] | PK+ Level<br>[dBμV/m] | PK+ Limit<br>[dBμV/m] | PK+<br>Margin<br>[dB] | Correction<br>[dB] | Polarization | Azimuth<br>[deg] | Antenna<br>Height<br>[m] |
|----|--------------------|-----------------------|-----------------------|-----------------------|--------------------|--------------|------------------|--------------------------|
| 11 | 5,637.500          | 52.63                 | 68.20                 | 15.57                 | 4.35               | H            | 53.3             | 1                        |
| 12 | 5,783.750          | 93.83                 |                       |                       | 4.93               | H            | 359              | 1                        |
| 13 | 5,956.125          | 53.24                 | 68.20                 | 14.96                 | 5.50               | H            | 1                | 1                        |





**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

| Rg | Frequency [MHz] | PK+ Level [dBμV/m] | PK+ Limit [dBμV/m] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|----|-----------------|--------------------|--------------------|-----------------|-----------------|--------------|---------------|--------------------|
| 11 | 5,618.750       | 51.22              | 68.20              | 16.98           | 4.31            | V            | 357.8         | 1                  |
| 12 | 5,783.750       | 89.57              |                    |                 | 4.93            | V            | 1             | 1                  |
| 13 | 5,961.750       | 53.29              | 68.20              | 14.91           | 5.52            | V            | 1             | 1                  |



**REMARKS:**

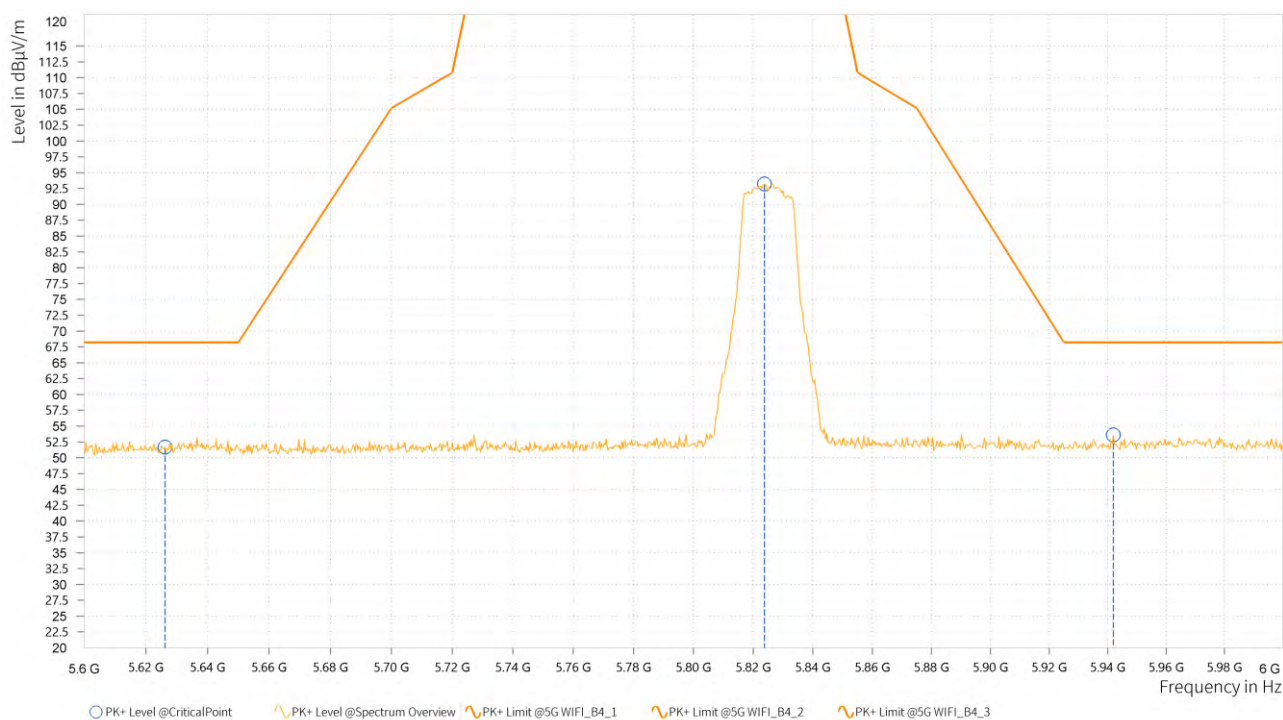
- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Limit value- Emission level.
- 5785MHz: Fundamental frequency.



|                 |                |                      |              |
|-----------------|----------------|----------------------|--------------|
| CHANNEL         | TX Channel 165 | DETECTOR<br>FUNCTION | Peak (PK)    |
| FREQUENCY RANGE | 1GHz ~ 40GHz   |                      | Average (AV) |

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

| Rg | Frequency<br>[MHz] | PK+ Level<br>[dBμV/m] | PK+ Limit<br>[dBμV/m] | PK+<br>Margin<br>[dB] | Correction<br>[dB] | Polarization | Azimuth<br>[deg] | Antenna<br>Height<br>[m] |
|----|--------------------|-----------------------|-----------------------|-----------------------|--------------------|--------------|------------------|--------------------------|
| 11 | 5,626.250          | 51.69                 | 68.20                 | 16.51                 | 4.33               | H            | 5.1              | 1                        |
| 12 | 5,823.750          | 93.23                 |                       |                       | 5.24               | H            | 282.8            | 2                        |
| 13 | 5,941.875          | 53.62                 | 68.20                 | 14.58                 | 5.49               | H            | 1                | 1                        |



**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

| Rg | Frequency [MHz] | PK+ Level [dBμV/m] | PK+ Limit [dBμV/m] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|----|-----------------|--------------------|--------------------|-----------------|-----------------|--------------|---------------|--------------------|
| 11 | 5,643.750       | 52.10              | 68.20              | 16.10           | 4.36            | V            | 6.6           | 1                  |
| 12 | 5,817.500       | 89.28              |                    |                 | 5.19            | V            | 95.3          | 2                  |
| 13 | 5,960.625       | 54.19              | 68.20              | 14.01           | 5.51            | V            | 183.7         | 1                  |



**REMARKS:**

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Limit value- Emission level.
- 5825MHz: Fundamental frequency.

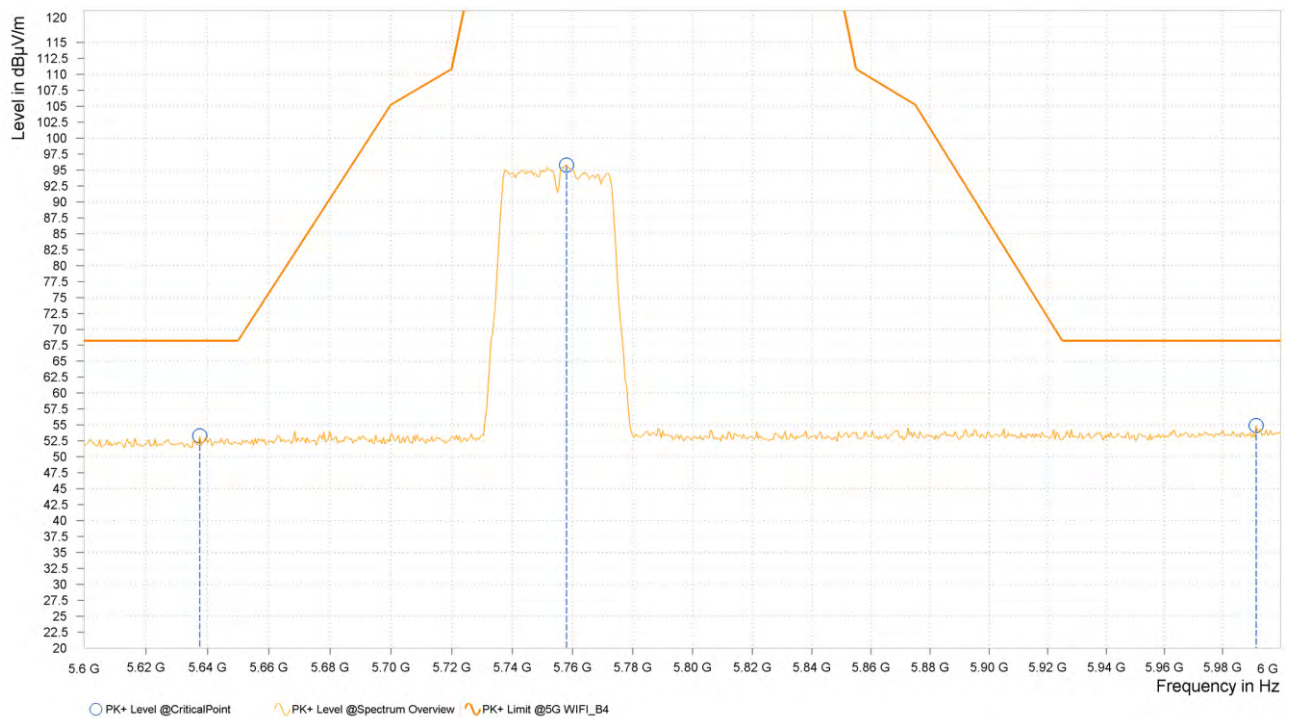


802.11ac (40MHz)

|                 |                |                      |              |
|-----------------|----------------|----------------------|--------------|
| CHANNEL         | TX Channel 151 | DETECTOR<br>FUNCTION | Peak (PK)    |
| FREQUENCY RANGE | 1GHz ~ 40GHz   |                      | Average (AV) |

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

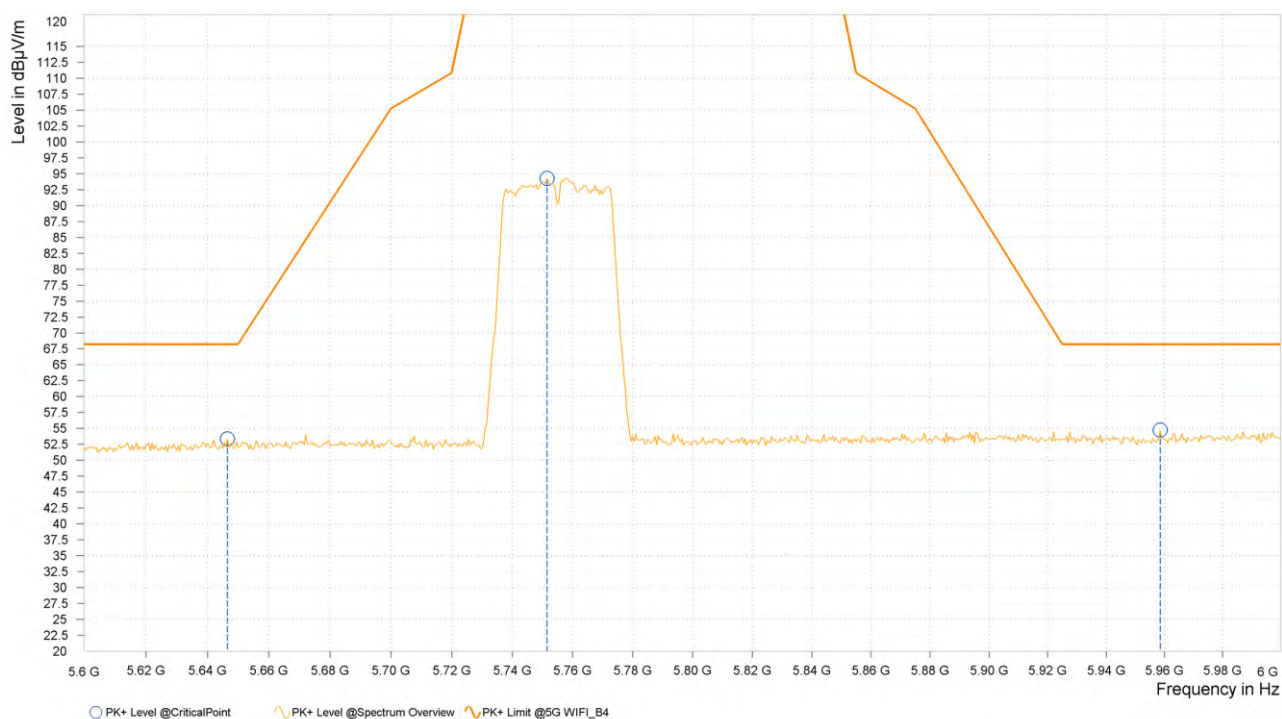
| Rg | Frequency<br>[MHz] | PK+ Level<br>[dBμV/m] | PK+ Limit<br>[dBμV/m] | PK+<br>Margin<br>[dB] | Correction<br>[dB] | Polarization | Azimuth<br>[deg] | Antenna<br>Height<br>[m] |
|----|--------------------|-----------------------|-----------------------|-----------------------|--------------------|--------------|------------------|--------------------------|
| 9  | 5,637.500          | 53.29                 | 68.20                 | 14.91                 | 13.67              | H            | 103.4            | 1.00                     |
| 9  | 5,758.000          | 95.79                 |                       |                       | 14.06              | H            | 319.7            | 1.00                     |
| 9  | 5,991.500          | 54.91                 | 68.20                 | 13.29                 | 14.63              | H            | 147.8            | 2.00                     |





**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

| Rg | Frequency [MHz] | PK+ Level [dBμV/m] | PK+ Limit [dBμV/m] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|----|-----------------|--------------------|--------------------|-----------------|-----------------|--------------|---------------|--------------------|
| 9  | 5,646.500       | 53.35              | 68.20              | 14.85           | 13.72           | V            | 41.4          | 2.00               |
| 9  | 5,751.500       | 94.25              |                    |                 | 14.04           | V            | 202.9         | 2.00               |
| 9  | 5,958.500       | 54.74              | 68.20              | 13.46           | 14.52           | V            | 226.4         | 1.00               |



**REMARKS:**

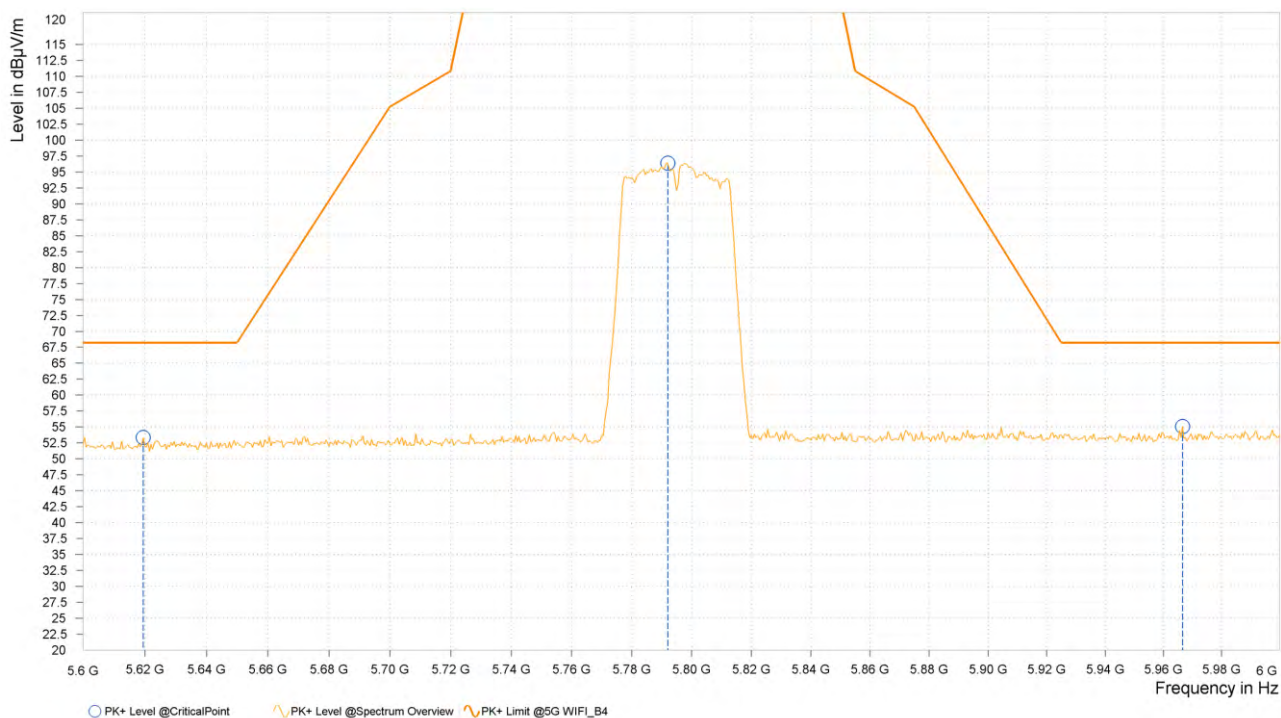
- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Limit value- Emission level.
- 5755MHz: Fundamental frequency.



|                 |                |                      |              |
|-----------------|----------------|----------------------|--------------|
| CHANNEL         | TX Channel 159 | DETECTOR<br>FUNCTION | Peak (PK)    |
| FREQUENCY RANGE | 1GHz ~ 40GHz   |                      | Average (AV) |

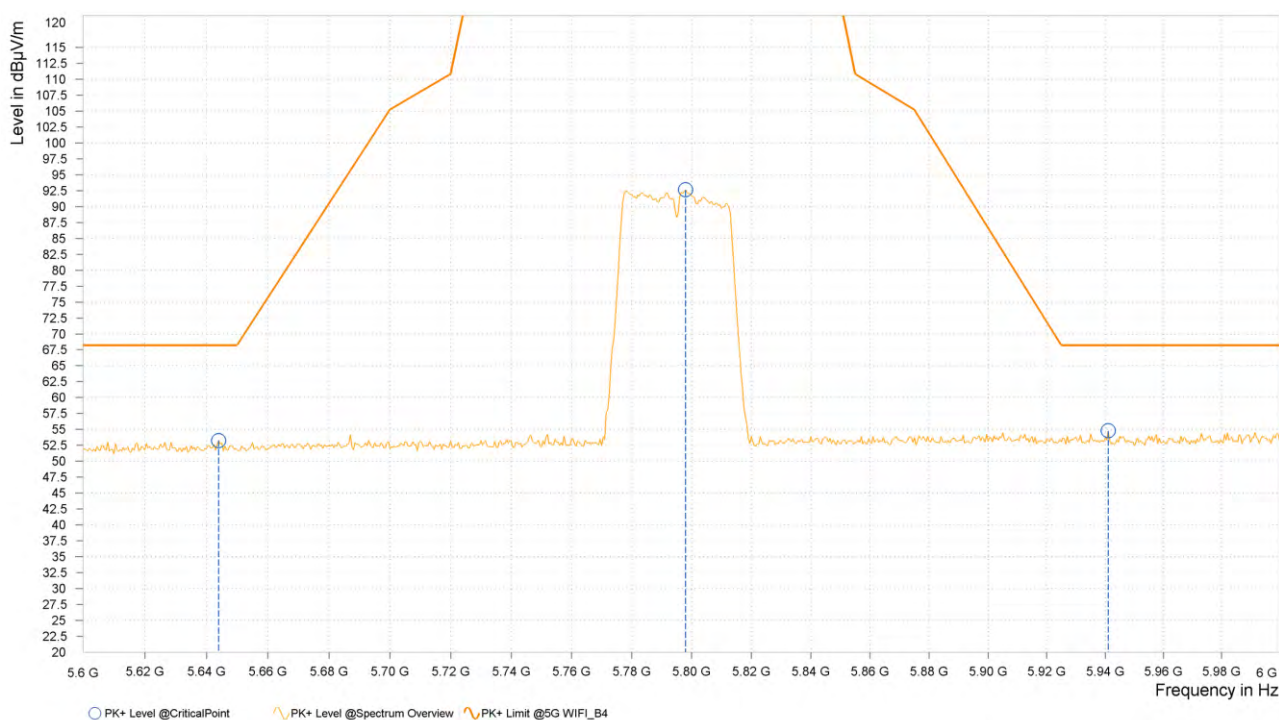
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

| Rg | Frequency<br>[MHz] | PK+ Level<br>[dBμV/m] | PK+ Limit<br>[dBμV/m] | PK+<br>Margin<br>[dB] | Correction<br>[dB] | Polarization | Azimuth<br>[deg] | Antenna<br>Height<br>[m] |
|----|--------------------|-----------------------|-----------------------|-----------------------|--------------------|--------------|------------------|--------------------------|
| 9  | 5,619.500          | 53.36                 | 68.20                 | 14.84                 | 13.56              | H            | 4.9              | 1.00                     |
| 9  | 5,792.000          | 96.36                 |                       |                       | 14.18              | H            | 355.6            | 2.00                     |
| 9  | 5,966.500          | 55.09                 | 68.20                 | 13.11                 | 14.55              | H            | 359              | 1.00                     |



**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

| Rg | Frequency [MHz] | PK+ Level [dBμV/m] | PK+ Limit [dBμV/m] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|----|-----------------|--------------------|--------------------|-----------------|-----------------|--------------|---------------|--------------------|
| 9  | 5,644.000       | 53.27              | 68.20              | 14.93           | 13.70           | V            | 1             | 1.00               |
| 9  | 5,798.000       | 92.65              |                    |                 | 14.20           | V            | 104.5         | 1.00               |
| 9  | 5,941.000       | 54.78              | 68.20              | 13.42           | 14.49           | V            | 320.8         | 1.00               |



**REMARKS:**

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Limit value- Emission level.
- 5795MHz: Fundamental frequency.

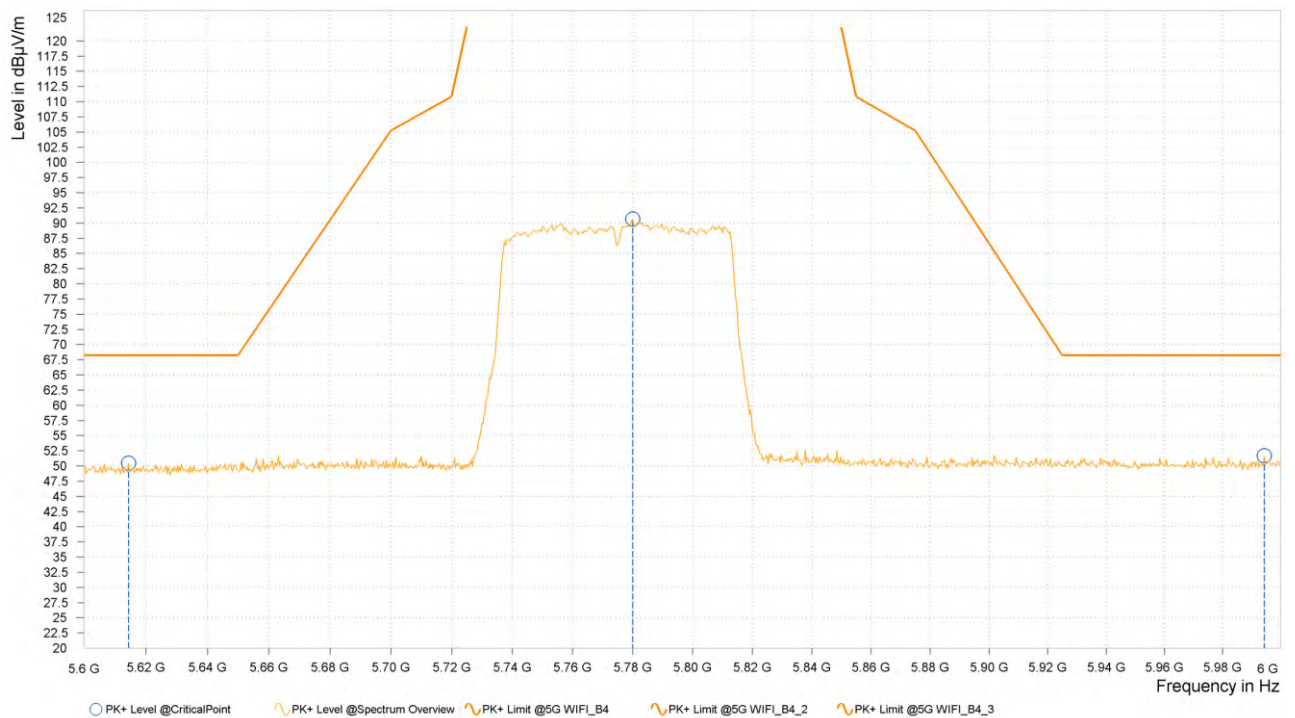


802.11ac (80MHz)

|                 |                |                      |              |
|-----------------|----------------|----------------------|--------------|
| CHANNEL         | TX Channel 155 | DETECTOR<br>FUNCTION | Peak (PK)    |
| FREQUENCY RANGE | 1GHz ~ 40GHz   |                      | Average (AV) |

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

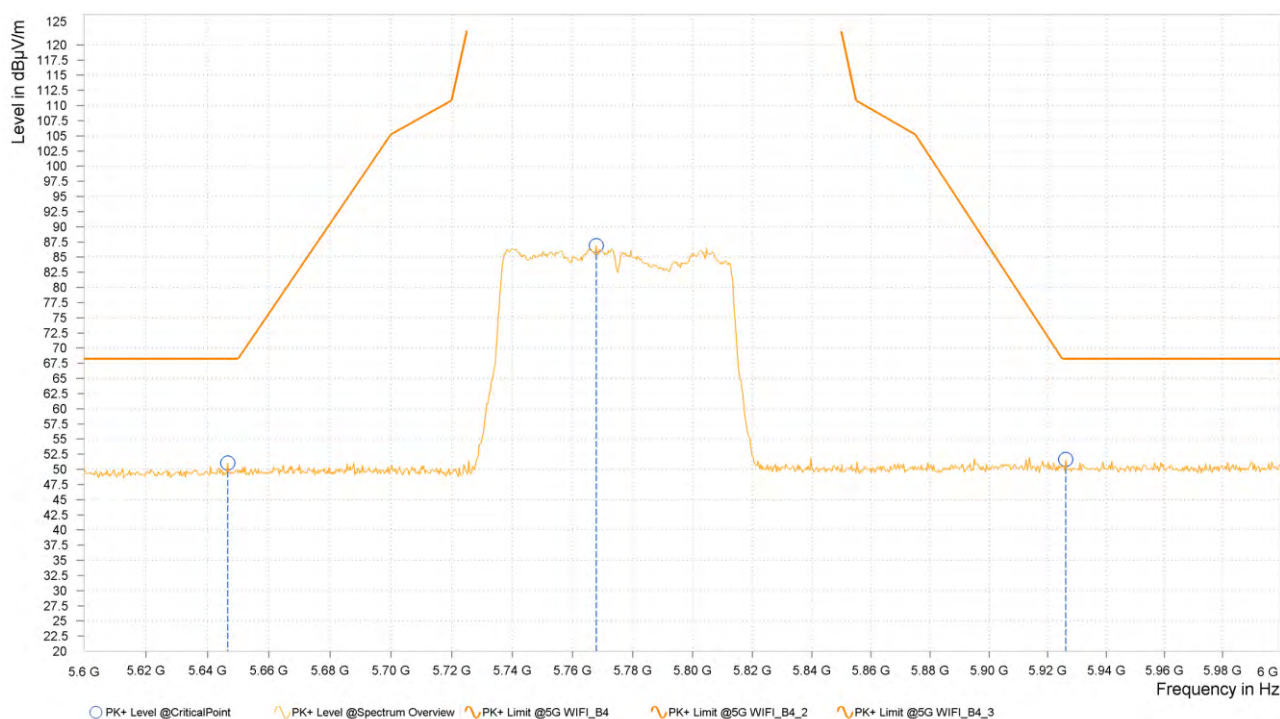
| Rg | Frequency<br>[MHz] | PK+ Level<br>[dBμV/m] | PK+ Limit<br>[dBμV/m] | PK+<br>Margin<br>[dB] | Correction<br>[dB] | Polarization | Azimuth<br>[deg] | Antenna<br>Height<br>[m] |
|----|--------------------|-----------------------|-----------------------|-----------------------|--------------------|--------------|------------------|--------------------------|
| 6  | 5,614.375          | 50.46                 | 68.20                 | 17.74                 | 13.54              | H            | 353.8            | 1.00                     |
| 7  | 5,780.000          | 90.68                 |                       |                       | 14.14              | H            | 0.9              | 2.00                     |
| 8  | 5,994.375          | 51.67                 | 68.20                 | 16.53                 | 14.64              | H            | 359              | 2.00                     |





**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

| Rg | Frequency [MHz] | PK+ Level [dBμV/m] | PK+ Limit [dBμV/m] | PK+ Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|----|-----------------|--------------------|--------------------|-----------------|-----------------|--------------|---------------|--------------------|
| 6  | 5,646.563       | 51.07              | 68.20              | 17.13           | 13.72           | V            | 216.9         | 1.00               |
| 7  | 5,767.813       | 86.92              |                    |                 | 14.09           | V            | 85.4          | 1.00               |
| 8  | 5,926.125       | 51.64              | 68.20              | 16.56           | 14.48           | V            | 0.9           | 2.00               |



**REMARKS:**

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Limit value- Emission level.
- 5775MHz: Fundamental frequency.

## RADIATED EMISSION

### BELOW 1GHz WORST-CASE DATA:

30 MHz – 1GHz data:

Band 1

802.11n (40MHz):

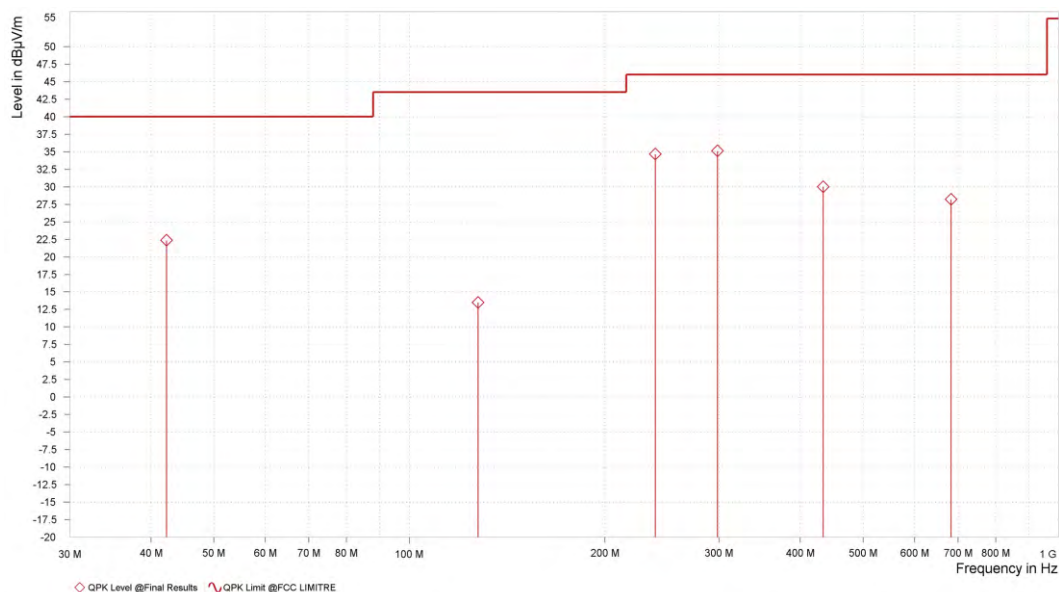
|                 |               |                   |                 |
|-----------------|---------------|-------------------|-----------------|
| CHANNEL         | TX Channel 38 | DETECTOR FUNCTION | Quasi-Peak (QP) |
| FREQUENCY RANGE | 30MHz ~ 1GHz  |                   |                 |

### ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

| Rg | Frequency [MHz] | QPK Level [dBμV/m] | QPK Limit [dBμV/m] | QPK Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] | Meas. BW [kHz] |
|----|-----------------|--------------------|--------------------|-----------------|-----------------|--------------|---------------|--------------------|----------------|
| 1  | 42.271          | 22.35              | 40.00              | 17.65           | -10.50          | H            | 75            | 2.00               | 120.000        |
| 1  | 127.631         | 13.49              | 43.50              | 30.01           | -15.19          | H            | 75            | 2.00               | 120.000        |
| 1  | 239.278         | 34.64              | 46.00              | 11.36           | -9.33           | H            | 287.4         | 1.00               | 120.000        |
| 1  | 298.302         | 35.10              | 46.00              | 10.90           | -7.18           | H            | 142.7         | 1.00               | 120.000        |
| 1  | 433.908         | 30.00              | 46.00              | 16.00           | -4.74           | H            | 359           | 2.00               | 120.000        |
| 1  | 683.101         | 28.18              | 46.00              | 17.82           | -2.29           | H            | 75            | 2.00               | 120.000        |

### REMARKS:

1. Emission level (dBuV/m) = Read level (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Limit value- Emission level.





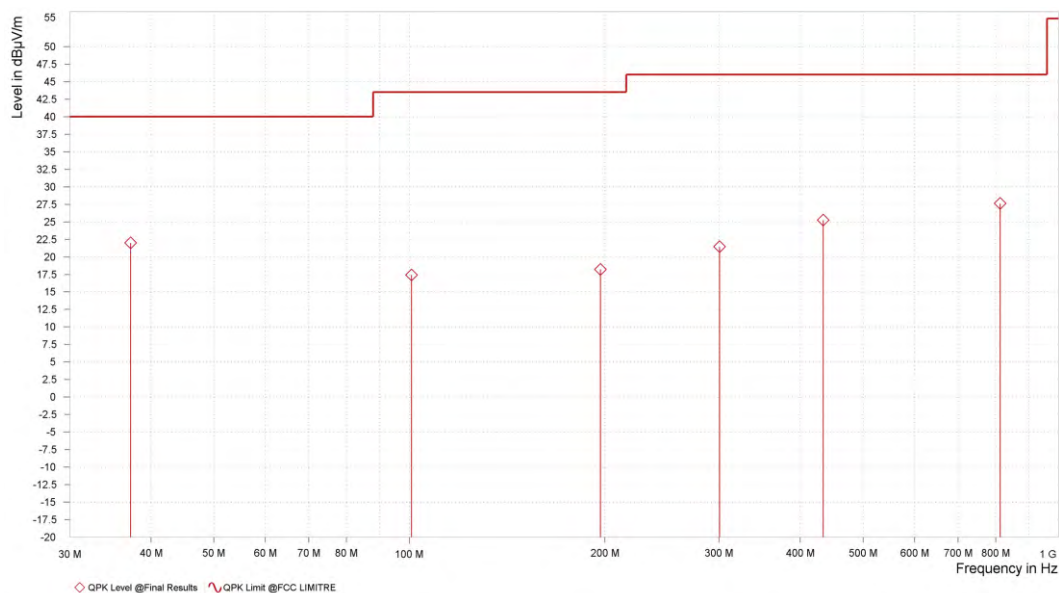
|                        |              |                          |                 |
|------------------------|--------------|--------------------------|-----------------|
| <b>CHANNEL</b>         | Channel 38   | <b>DETECTOR FUNCTION</b> | Quasi-Peak (QP) |
| <b>FREQUENCY RANGE</b> | 30MHz ~ 1GHz |                          |                 |

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

| Rg | Frequency [MHz] | QPK Level [dBμV/m] | QPK Limit [dBμV/m] | QPK Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] | Meas. BW [kHz] |
|----|-----------------|--------------------|--------------------|-----------------|-----------------|--------------|---------------|--------------------|----------------|
| 1  | 37.227          | 21.97              | 40.00              | 18.03           | -11.89          | V            | 286.2         | 1.00               | 120.000        |
| 1  | 100.810         | 17.40              | 43.50              | 26.10           | -12.26          | V            | 1             | 1.00               | 120.000        |
| 1  | 196.986         | 18.20              | 43.50              | 25.30           | -11.22          | V            | 0.9           | 2.00               | 120.000        |
| 1  | 300.485         | 21.43              | 46.00              | 24.57           | -7.15           | V            | 286.2         | 1.00               | 120.000        |
| 1  | 433.908         | 25.23              | 46.00              | 20.77           | -4.74           | V            | 1             | 1.00               | 120.000        |
| 1  | 812.596         | 27.61              | 46.00              | 18.39           | -0.24           | V            | 5             | 1.00               | 120.000        |

**REMARKS:**

1. Emission level (dBuV/m) = Read level (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Limit value- Emission level.





Test Report No.: PSU-QSU2312200110RF09

## ABOVE 1GHz WORST-CASE DATA:

**Note:** For higher frequency, the emission is too low to be detected.

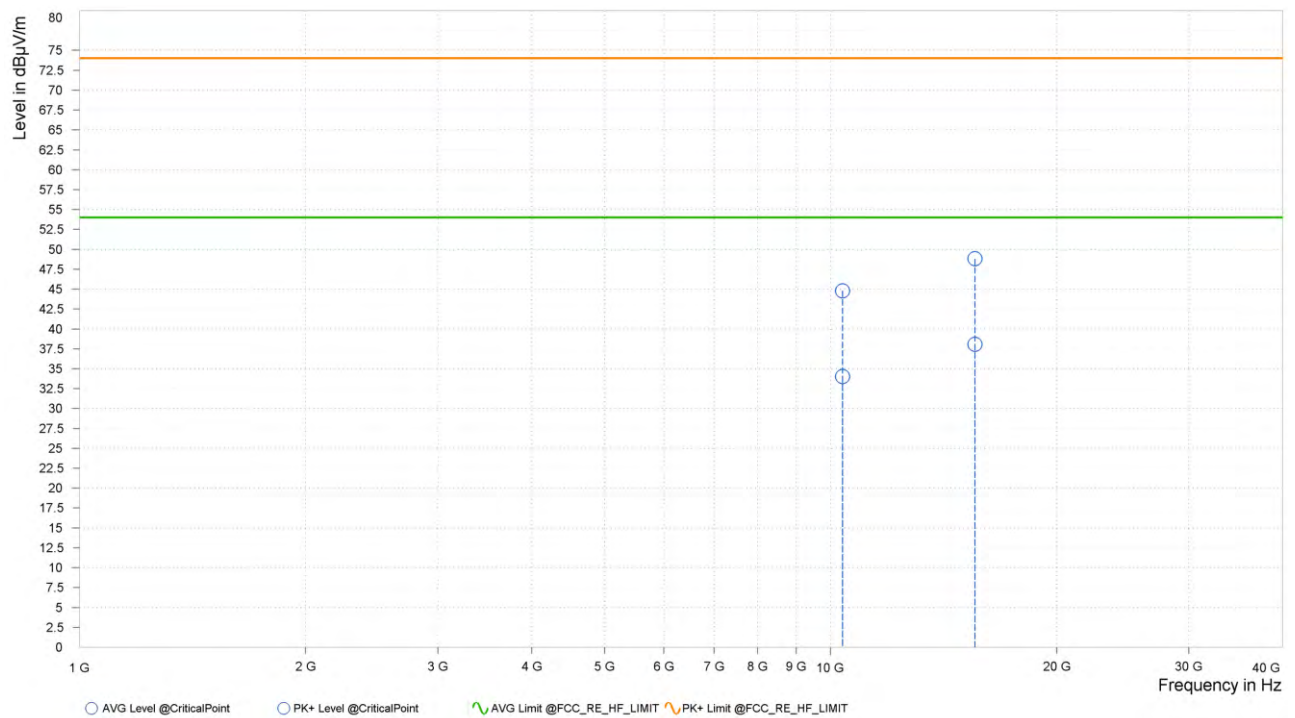
**Band 1**

**802.11n (40MHz)**

| CHANNEL         | TX Channel 38 | DETECTOR FUNCTION | Peak (PK)    |
|-----------------|---------------|-------------------|--------------|
| FREQUENCY RANGE | 1GHz ~ 40GHz  |                   | Average (AV) |

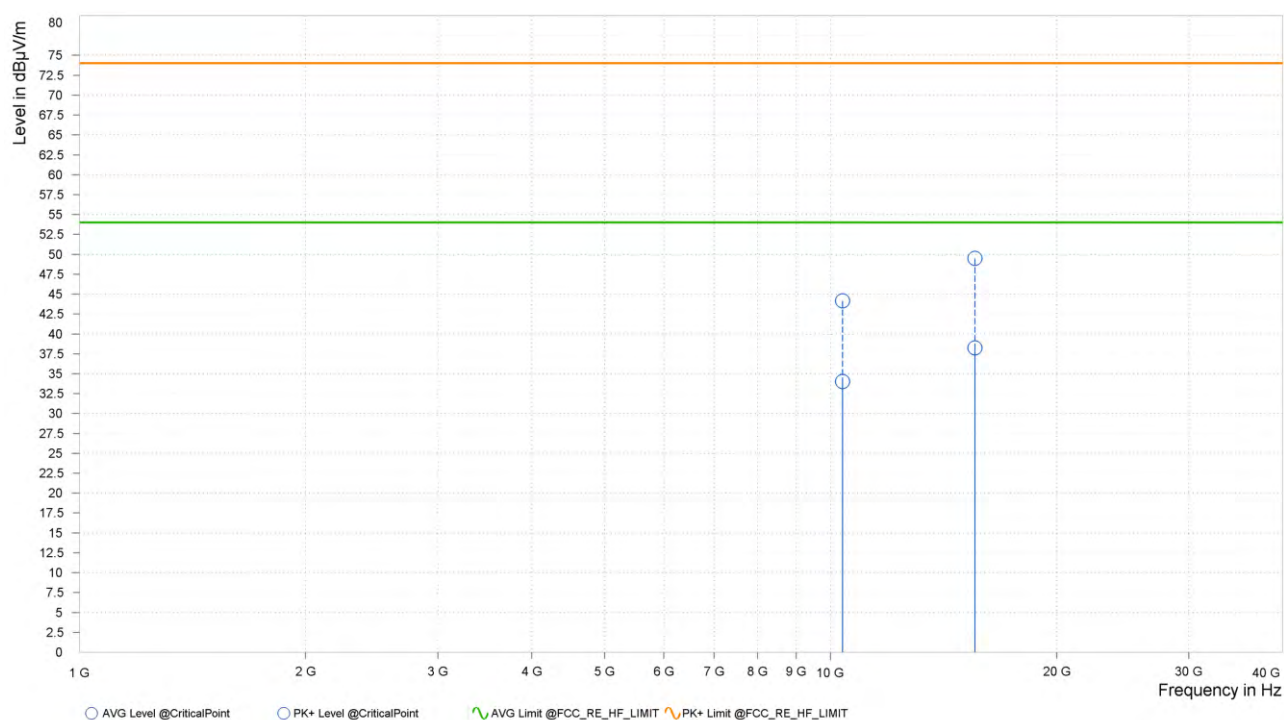
## ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

| Rg | Frequency [MHz] | PK+ Level [dBμV/m] | PK+ Limit [dBμV/m] | PK+ Margin [dB] | AVG Level [dBμV/m] | AVG Limit [dBμV/m] | AVG Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|----|-----------------|--------------------|--------------------|-----------------|--------------------|--------------------|-----------------|-----------------|--------------|---------------|--------------------|
| 2  | 10,380.000      | 44.79              | 74.00              | 29.21           | 34.04              | 54.00              | 19.96           | 6.67            | H            | 267.4         | 2.00               |
| 2  | 15,570.000      | 48.81              | 74.00              | 25.19           | 38.07              | 54.00              | 15.93           | 11.17           | H            | 267.4         | 2.00               |



**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

| Rg | Frequency [MHz] | PK+ Level [dBμV/m] | PK+ Limit [dBμV/m] | PK+ Margin [dB] | AVG Level [dBμV/m] | AVG Limit [dBμV/m] | AVG Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|----|-----------------|--------------------|--------------------|-----------------|--------------------|--------------------|-----------------|-----------------|--------------|---------------|--------------------|
| 2  | 10,380.000      | 44.14              | 74.00              | 29.86           | 34.02              | 54.00              | 19.98           | 6.67            | V            | 359           | 2.00               |
| 2  | 15,570.000      | 49.49              | 74.00              | 24.51           | 38.25              | 54.00              | 15.75           | 11.17           | V            | 5             | 2.00               |



**REMARKS:**

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Limit value- Emission level.
- 5180MHz: Fundamental frequency.



Test Report No.: PSU-QSU2312200110RF09

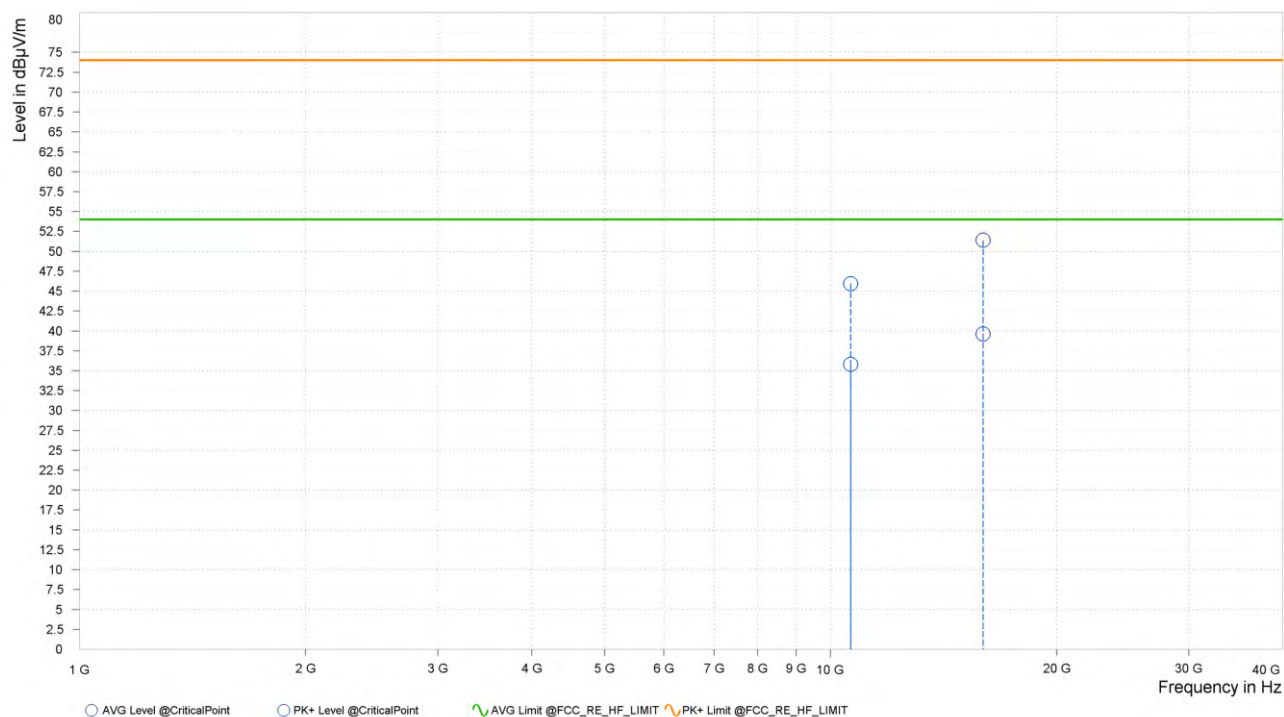
Band 2:

802.11n (20MHz)

|                 |               |                   |              |
|-----------------|---------------|-------------------|--------------|
| CHANNEL         | TX Channel 64 | DETECTOR FUNCTION | Peak (PK)    |
| FREQUENCY RANGE | 1GHz ~ 40GHz  |                   | Average (AV) |

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

| Rg | Frequency [MHz] | PK+ Level [dBμV/m] | PK+ Limit [dBμV/m] | PK+ Margin [dB] | AVG Level [dBμV/m] | AVG Limit [dBμV/m] | AVG Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|----|-----------------|--------------------|--------------------|-----------------|--------------------|--------------------|-----------------|-----------------|--------------|---------------|--------------------|
| 2  | 10,640.000      | 45.96              | 74.00              | 28.04           | 35.78              | 54.00              | 18.22           | 7.64            | H            | 128.7         | 2.00               |
| 2  | 15,960.000      | 51.40              | 74.00              | 22.60           | 39.64              | 54.00              | 14.36           | 12.59           | H            | 230           | 1.00               |



**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

| Rg | Frequency [MHz] | PK+ Level [dBμV/m] | PK+ Limit [dBμV/m] | PK+ Margin [dB] | AVG Level [dBμV/m] | AVG Limit [dBμV/m] | AVG Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|----|-----------------|--------------------|--------------------|-----------------|--------------------|--------------------|-----------------|-----------------|--------------|---------------|--------------------|
| 2  | 10,640.000      | 46.37              | 74.00              | 27.63           | 35.70              | 54.00              | 18.30           | 7.64            | V            | 359           | 2.00               |
| 2  | 15,960.000      | 50.05              | 74.00              | 23.95           | 39.76              | 54.00              | 14.24           | 12.59           | V            | 359           | 2.00               |



**REMARKS:**

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Limit value- Emission level.
- 5260MHz: Fundamental frequency.

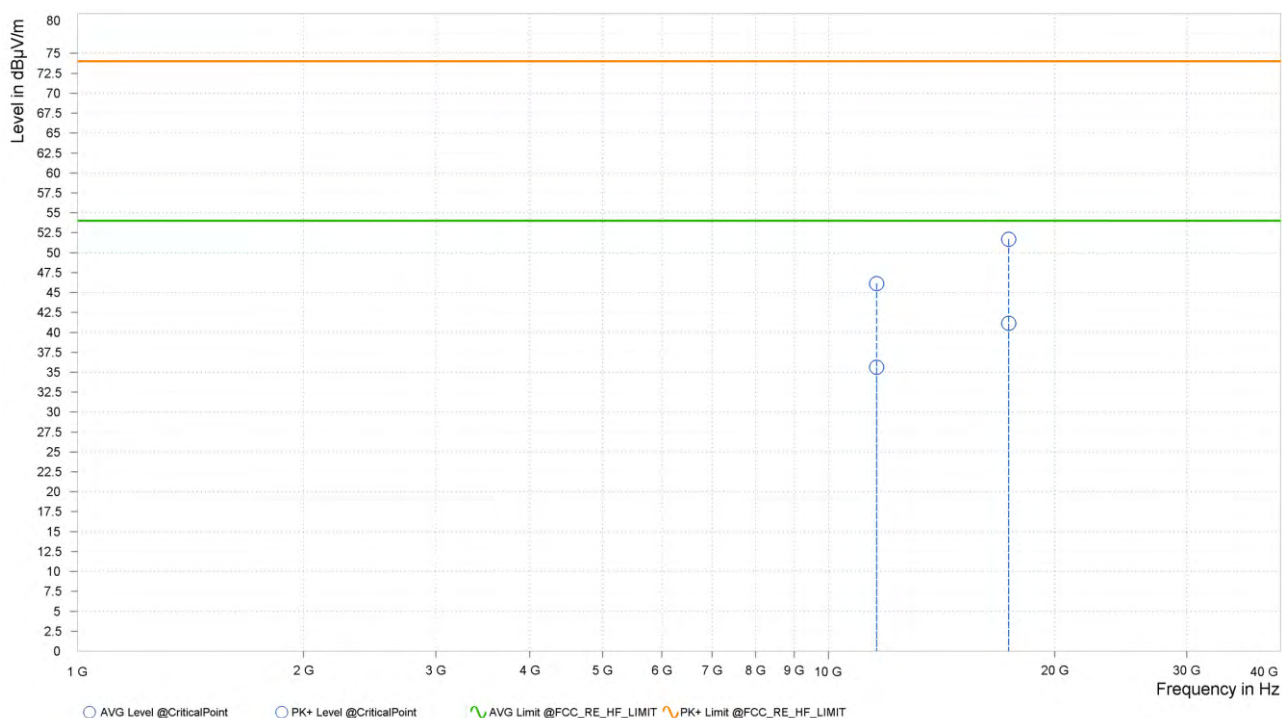
**Band 4:**

**802.11n(40MHz)**

|                        |                |                              |              |
|------------------------|----------------|------------------------------|--------------|
| <b>CHANNEL</b>         | TX Channel 159 | <b>DETECTOR<br/>FUNCTION</b> | Peak (PK)    |
| <b>FREQUENCY RANGE</b> | 1GHz ~ 40GHz   |                              | Average (AV) |

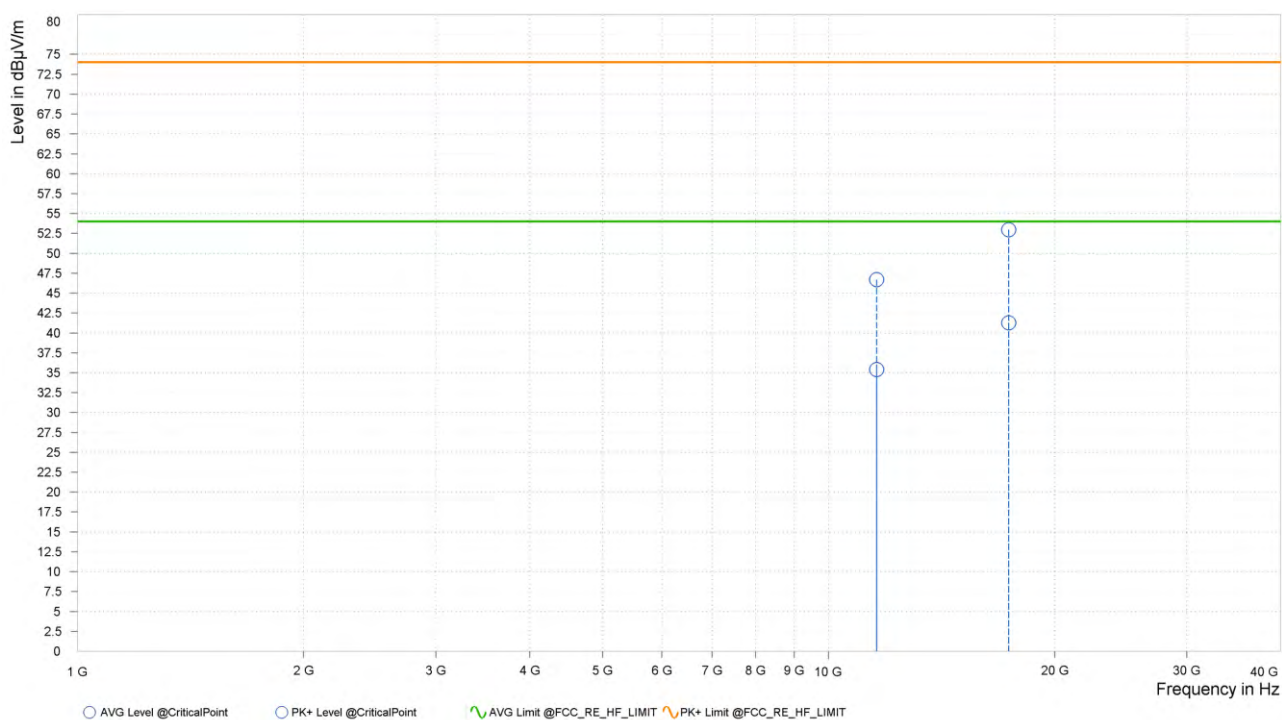
**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

| Rg | Frequency [MHz] | PK+ Level [dBμV/m] | PK+ Limit [dBμV/m] | PK+ Margin [dB] | AVG Level [dBμV/m] | AVG Limit [dBμV/m] | AVG Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|----|-----------------|--------------------|--------------------|-----------------|--------------------|--------------------|-----------------|-----------------|--------------|---------------|--------------------|
| 2  | 11,590.000      | 46.13              | 74.00              | 27.87           | 35.60              | 54.00              | 18.40           | 8.41            | H            | 0.9           | 2.00               |
| 2  | 17,385.000      | 51.69              | 74.00              | 22.31           | 41.12              | 54.00              | 12.88           | 15.43           | H            | 0.9           | 2.00               |



**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

| Rg | Frequency [MHz] | PK+ Level [dBμV/m] | PK+ Limit [dBμV/m] | PK+ Margin [dB] | AVG Level [dBμV/m] | AVG Limit [dBμV/m] | AVG Margin [dB] | Correction [dB] | Polarization | Azimuth [deg] | Antenna Height [m] |
|----|-----------------|--------------------|--------------------|-----------------|--------------------|--------------------|-----------------|-----------------|--------------|---------------|--------------------|
| 2  | 11,590.000      | 46.70              | 74.00              | 27.30           | 35.40              | 54.00              | 18.60           | 8.41            | V            | 266.3         | 2.00               |
| 2  | 17,385.000      | 52.98              | 74.00              | 21.02           | 41.28              | 54.00              | 12.72           | 15.43           | V            | 0.9           | 2.00               |



**REMARKS:**

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor  
Margin value = Limit value- Emission level.
- 5745MHz: Fundamental frequency.



### 3.2 CONDUCTED EMISSION MEASUREMENT

#### 3.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

| FREQUENCY OF EMISSION (MHz) | CONDUCTED LIMIT (dB $\mu$ V) |          |
|-----------------------------|------------------------------|----------|
|                             | Quasi-peak                   | Average  |
| 0.15 ~ 0.5                  | 66 to 56                     | 56 to 46 |
| 0.5 ~ 5                     | 56                           | 46       |
| 5 ~ 30                      | 60                           | 50       |

**NOTE:** 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

#### 3.2.2 TEST INSTRUMENTS

| Equipment             | Manufacturer  | Model No. | Serial No. | Last Cal. | Next Cal. |
|-----------------------|---------------|-----------|------------|-----------|-----------|
| EMI Test Receiver     | Rohde&Schwarz | ESR3      | 102749     | Feb.25,22 | Feb.24,24 |
| EMI Test Receiver     | Rohde&Schwarz | ESR3      | 102749     | Feb.24,24 | Feb.23,26 |
| ELEKTRA test software | Rohde&Schwarz | ELEKTRA   | NA         | N/A       | N/A       |
| LISN network          | Rohde&Schwarz | ENV216    | 102640     | Feb.17,22 | Feb.16,24 |
| LISN network          | Rohde&Schwarz | ENV216    | 102640     | Feb.16,24 | Feb.15,26 |
| CABLE                 | Rohde&Schwarz | W61.01    | N/A        | Apr.28,23 | Apr.27,24 |
| CABLE                 | Rohde&Schwarz | W601      | N/A        | Apr.28,23 | Apr.27,24 |

**NOTE:**

1. The test was performed in the CE shielded room.

2. The calibration interval of the above test instruments is 12 /24 months. And the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA, and NIM/CHINA.

### 3.2.3 TEST PROCEDURES

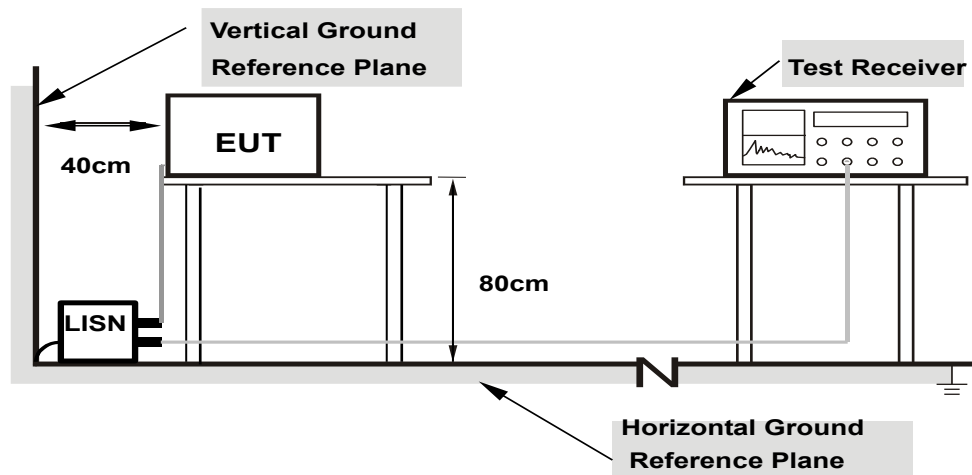
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

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

### 3.2.4 DEVIATION FROM TEST STANDARD

No deviation.

### 3.2.5 TEST SETUP



**Note:** 1.Support units were connected to second LISN.  
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

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

### 3.2.6 EUT OPERATING CONDITIONS

Same as 3.1.7.

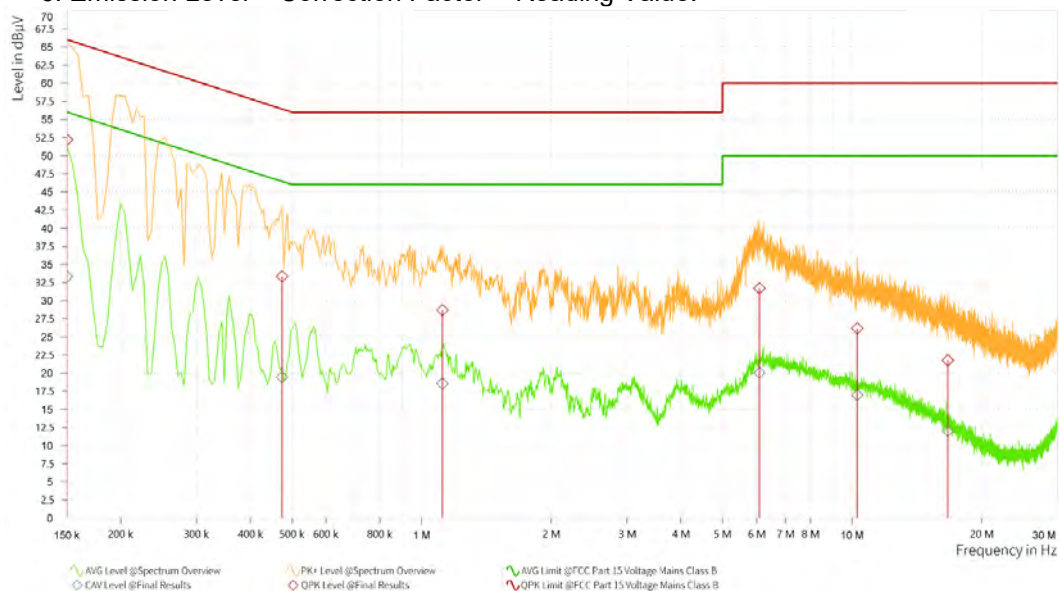
### 3.2.7 TEST RESULTS

#### CONDUCTED WORST-CASE DATA:

| Frequency Range | 150KHz ~ 30MHz | Detector Function & Resolution Bandwidth | Quasi-Peak (QP) / Average (AV), 9 kHz |
|-----------------|----------------|------------------------------------------|---------------------------------------|
| Input Power     | 120Vac, 60Hz   | Environmental Conditions                 | 26deg. C, 51%RH                       |
| Tested By       | Hanwen Xu      |                                          |                                       |

| Rg | Frequency [MHz] | QPK Level [dBμV] | QPK Limit [dBμV] | QPK Margin [dB] | CAV Level [dBμV] | CAV: AVG Limit [dBμV] | CAV Margin [dB] | Correction [dB] | Line | Meas. BW [kHz] |
|----|-----------------|------------------|------------------|-----------------|------------------|-----------------------|-----------------|-----------------|------|----------------|
| 1  | 0.150           | 52.22            | 66.00            | 13.78           | 33.35            | 56.00                 | 22.65           | 12.57           | L1   | 9.000          |
| 1  | 0.474           | 33.34            | 56.44            | 23.10           | 19.44            | 46.44                 | 27.00           | 11.75           | L1   | 9.000          |
| 1  | 1.118           | 28.70            | 56.00            | 27.30           | 18.55            | 46.00                 | 27.45           | 11.75           | L1   | 9.000          |
| 1  | 6.095           | 31.70            | 60.00            | 28.30           | 20.04            | 50.00                 | 29.96           | 11.80           | L1   | 9.000          |
| 1  | 10.280          | 26.18            | 60.00            | 33.82           | 16.96            | 50.00                 | 33.04           | 11.83           | L1   | 9.000          |
| 1  | 16.697          | 21.77            | 60.00            | 38.23           | 12.02            | 50.00                 | 37.98           | 11.85           | L1   | 9.000          |

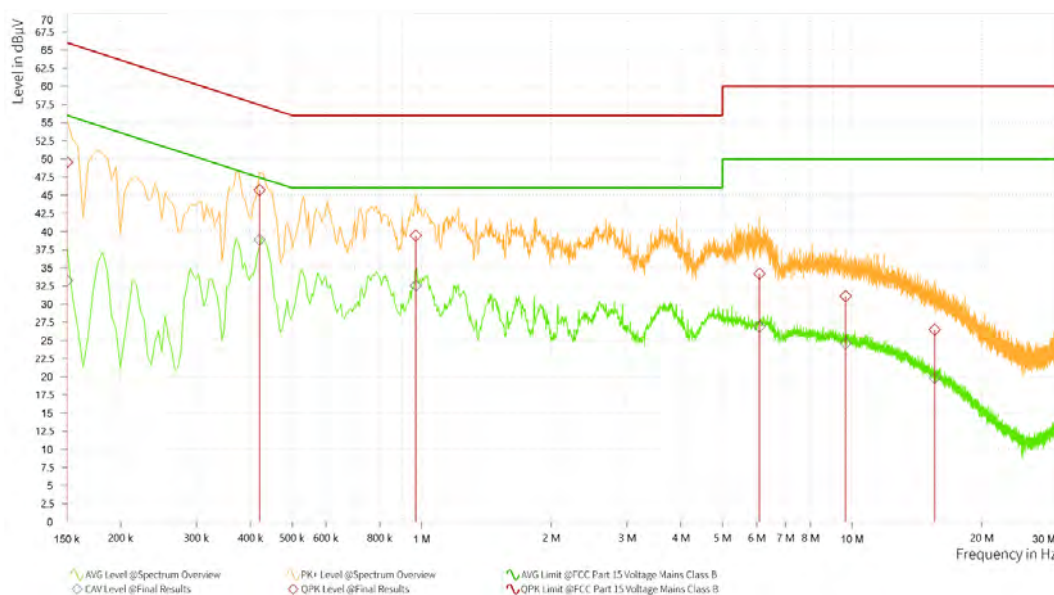
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
  2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
  3. The emission levels of other frequencies were very low against the limit.
  4. Margin value = Limit value - Emission level
  5. Correction factor = Insertion loss + Cable loss
  6. Emission Level = Correction Factor + Reading Value.



|                 |                |                                          |                                       |
|-----------------|----------------|------------------------------------------|---------------------------------------|
| Frequency Range | 150KHz ~ 30MHz | Detector Function & Resolution Bandwidth | Quasi-Peak (QP) / Average (AV), 9 kHz |
| Input Power     | 120Vac, 60Hz   | Environmental Conditions                 | 26deg. C, 51%RH                       |
| Tested By       | Hanwen Xu      |                                          |                                       |

| Rg | Frequency [MHz] | QPK Level [dBμV] | QPK Limit [dBμV] | QPK Margin [dB] | CAV Level [dBμV] | CAV: AVG Limit [dBμV] | CAV Margin [dB] | Correction [dB] | Line | Meas. BW [kHz] |
|----|-----------------|------------------|------------------|-----------------|------------------|-----------------------|-----------------|-----------------|------|----------------|
| 1  | 0.150           | 49.57            | 66.00            | 16.43           | 33.26            | 56.00                 | 22.74           | 12.13           | N    | 9.000          |
| 1  | 0.420           | 45.69            | 57.45            | 11.76           | 38.88            | 47.45                 | 8.57            | 12.81           | N    | 9.000          |
| 1  | 0.969           | 39.46            | 56.00            | 16.54           | 32.58            | 46.00                 | 13.42           | 12.74           | N    | 9.000          |
| 1  | 6.095           | 34.19            | 60.00            | 25.81           | 26.91            | 50.00                 | 23.09           | 12.77           | N    | 9.000          |
| 1  | 9.663           | 31.10            | 60.00            | 28.90           | 24.60            | 50.00                 | 25.40           | 12.79           | N    | 9.000          |
| 1  | 15.554          | 26.46            | 60.00            | 33.54           | 19.84            | 50.00                 | 30.16           | 12.83           | N    | 9.000          |

- REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.  
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.  
3. The emission levels of other frequencies were very low against the limit.  
4. Margin value = Limit value - Emission level  
5. Correction factor = Insertion loss + Cable loss  
6. Emission Level = Correction Factor + Reading Value.



### 3.3 MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

#### 3.3.1 LIMITS OF MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

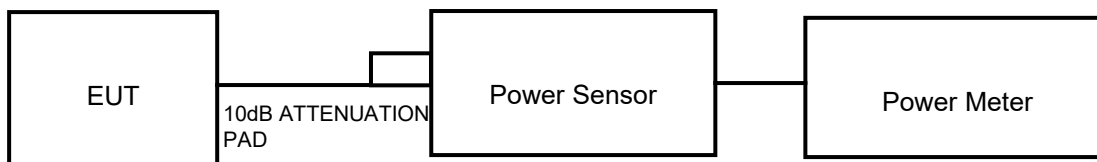
| Operation Band | EUT Category |                                   | LIMIT                                                                                                                       |
|----------------|--------------|-----------------------------------|---------------------------------------------------------------------------------------------------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

**NOTE:** Where B is the 26dB emission bandwidth in MHz

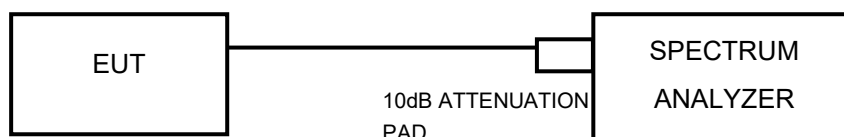
### 3.3.2 TEST SETUP

#### FOR POWER OUTPUT MEASUREMENT

#### 802.11a, 802.11n/ac (20MHz), 802.11 n/ac (40MHz), 802.11ac (80MHz) TEST CONFIGURATION



#### FOR 26dB BANDWIDTH



### 3.3.3 TEST INSTRUMENTS

| Equipment                    | Manufacturer | Model No.       | Serial No.    | Last Cal. | Next Cal. |
|------------------------------|--------------|-----------------|---------------|-----------|-----------|
| EMI Test Receiver            | R&S          | ESW 44          | 101973        | Feb.25,22 | Feb.24,24 |
| EMI Test Receiver            | R&S          | ESW 44          | 101973        | Feb.24,24 | Feb.23,26 |
| Open Switch and Control Unit | R&S          | OSP-B157W8      | 100836        | N/A       | N/A       |
| Vector Signal Generator      | R&S          | SMBV100B        | 102176        | Feb.16,22 | Feb.15,24 |
| Vector Signal Generator      | R&S          | SMBV100B        | 102176        | Feb.15,24 | Feb.14,26 |
| Signal Generator             | R&S          | SMB100A03       | 182185        | Feb.16,22 | Feb.15,24 |
| Signal Generator             | R&S          | SMB100A03       | 182185        | Feb.15,24 | Feb.14,26 |
| Wideband Radio Communication | R&S          | CMW500          | 169399        | Jun.26,22 | Jun.25,24 |
| Hygrothermograph             | DELI         | 20210528        | SZ015         | Sep.06,22 | Sep.05,24 |
| PC                           | LENOVO       | E14             | HRSW0024      | N/A       | N/A       |
| CABLE                        | R&S          | J12J103539-00-1 | SEP-03-20-069 | Apr.28,23 | Apr.27,24 |
| CABLE                        | R&S          | J12J103539-00-1 | SEP-03-20-070 | Apr.28,23 | Apr.27,24 |

**Test Report No.: PSU-QSU2312200110RF09**

|                     |        |        |                |           |           |
|---------------------|--------|--------|----------------|-----------|-----------|
| Test Software       | EMC32  | EMC32  | N/A            | N/A       | N/A       |
| Temperature Chamber | votsch | VT4002 | 58566078100050 | May.31,22 | May.30,24 |
| Power Meter         | R&S    | NRX    | 102380         | Feb.15,22 | Feb.14,24 |
| Power Meter         | R&S    | NRX    | 102380         | Feb.14,24 | Feb.13,26 |
| Power Meter probe   | R&S    | NRP6A  | 102942         | Feb.15,22 | Feb.14,24 |
| Power Meter probe   | R&S    | NRP6A  | 102942         | Feb.14,24 | Feb.13,26 |

**NOTE:**

1. The calibration interval of the above test instruments is 12 /24 months, and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
2. The test was performed in the RF Oven room.

### 3.3.4 TEST PROCEDURE

#### FOR POWER MEASUREMENT

**For 802.11a, 802.11 n/ac (20MHz), 802.11 n/ac (40MHz) , 802.11ac (80MHz)**

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

#### FOR 99 PERCENT OCCUPIED BANDWIDTH

The following procedure shall be used for measuring (99 %) power bandwidth:

1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW  $\geq 3 \cdot$  RBW
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

#### FOR 26dB BANDWIDTH

- 1) Set RBW = approximately 1% of the emission bandwidth.
- 2) Set the VBW > RBW.
- 3) Detector = Peak.
- 4) Trace mode = max hold.
- 5) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

#### FOR 6dB BANDWIDTH



1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW)  $\geq 3$  RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

### 3.3.5 DEVIATION FROM TEST STANDARD

No deviation.

### 3.3.6 EUT OPERATING CONDITIONS

The software provided by the client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

### 3.3.7 TEST RESULTS

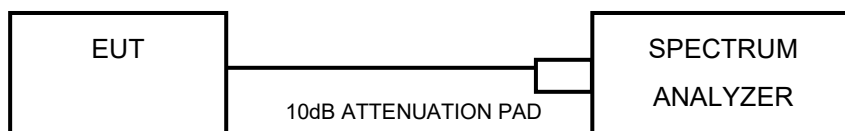
Please Refer to Appendix Of this test report.

### 3.4 MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT

#### 3.4.1 LIMITS OF MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT

| Operation Band | EUT Category |                                   | LIMIT         |
|----------------|--------------|-----------------------------------|---------------|
| U-NII-1        |              | Outdoor Access Point              | 17dBm/ MHz    |
|                |              | Fixed point-to-point Access Point |               |
|                |              | Indoor Access Point               |               |
|                | √            | Client devices                    | 11dBm/ MHz    |
| U-NII-2A       | √            |                                   | 11dBm/ MHz    |
| U-NII-2C       | √            |                                   | 11dBm/ MHz    |
| U-NII-3        | √            |                                   | 30dBm/ 500kHz |

#### 3.4.2 TEST SETUP



#### 3.4.3 TEST INSTRUMENTS

Refer to section 3.3.3 to get information about the above instrument.

### 3.4.4 TEST PROCEDURES

Using method SA-2(Band1/2/3)

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 1 MHz, Set VBW  $\geq$  3 MHz, Detector = RMS
- 3) Set Channel power measure = 1MHz
- 4) Sweep time = auto, trigger set to "free run".
- 5) Trace average at least 100 traces in power averaging mode.
- 6) Add  $10 \log(1/x)$ , where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission).
- 7) Record the max value

Using method SA-2 (Band4)

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 300 KHz, Set VBW  $\geq$  1 MHz, Detector = RMS
- 3) Set Channel power measure = 1MHz
- 4) Sweep time = auto, trigger set to "free run".
- 5) Trace average at least 100 traces in power averaging mode.
- 6) Add  $10 \log(500\text{kHz}/\text{RBW})$  to the test result.  $10 \log(500\text{kHz}/300\text{KHZ}) = 2.22\text{dBm}$
- 7) Add  $10 \log(1/x)$ , where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission).
- 8) Record the max value

### 3.4.5 DEVIATION FROM TEST STANDARD

No deviation.

### 3.4.6 EUT OPERATING CONDITIONS

Same as 3.1.7.



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### 3.4.7 TEST RESULTS

Please Refer to Appendix Of this test report.

### 3.5 AUTOMATICALLY DISCONTINUE TRANSMISSION

#### 3.5.1 LIMIT OF AUTOMATICALLY DISCONTINUE TRANSMISSION

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met.

#### 3.5.2 TEST INSTRUMENTS

Refer to section 3.3.3 to get information about the above instrument.

#### 3.5.3 TEST RESULT

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.



### **3.6 ANTENNA REQUIREMENTS**

#### **3.6.1 STANDARD APPLICABLE**

If transmitting antenna directional gain is greater than 6 dBi, both the peak transmits power, and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### **3.6.2 ANTENNA CONNECTED CONSTRUCTION**

An embedded-in antenna design is used.

#### **3.6.3 ANTENNA GAIN**

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit and PSD limit.



Test Report No.: PSU-QSU2312200110RF09

## 4 PHOTOGRAPHS OF THE TEST CONFIGURATION

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



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## 5 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No modifications were made to the EUT by the lab during the test.

## 6 APPENDIX: RLAN EMISSION BANDWIDTH

### TEST RESULT

| TestMode    | Antenna | Frequency<br>[MHz] | 26db<br>EBW<br>[MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|-------------|---------|--------------------|----------------------|----------|----------|------------|---------|
| 11A         | Ant0    | 5180               | 21.754               | 5169.424 | 5191.178 | ---        | ---     |
|             | Ant0    | 5200               | 21.754               | 5189.424 | 5211.178 | ---        | ---     |
|             | Ant0    | 5240               | 21.754               | 5229.424 | 5251.178 | ---        | ---     |
|             | Ant0    | 5260               | 21.754               | 5249.424 | 5271.178 | ---        | ---     |
|             | Ant0    | 5300               | 21.754               | 5289.424 | 5311.178 | ---        | ---     |
|             | Ant0    | 5320               | 22.055               | 5309.123 | 5331.178 | ---        | ---     |
|             | Ant0    | 5745               | 22.055               | 5733.822 | 5755.877 | ---        | ---     |
|             | Ant0    | 5785               | 22.356               | 5773.822 | 5796.178 | ---        | ---     |
| 11N20-SISO  | Ant0    | 5825               | 22.055               | 5813.822 | 5835.877 | ---        | ---     |
|             | Ant0    | 5180               | 22.155               | 5169.023 | 5191.178 | ---        | ---     |
|             | Ant0    | 5200               | 22.256               | 5188.822 | 5211.078 | ---        | ---     |
|             | Ant0    | 5240               | 22.256               | 5228.922 | 5251.178 | ---        | ---     |
|             | Ant0    | 5260               | 22.155               | 5249.023 | 5271.178 | ---        | ---     |
|             | Ant0    | 5300               | 22.055               | 5289.023 | 5311.078 | ---        | ---     |
|             | Ant0    | 5320               | 22.556               | 5308.922 | 5331.478 | ---        | ---     |
|             | Ant0    | 5745               | 22.657               | 5733.822 | 5756.479 | ---        | ---     |
| 11N40-SISO  | Ant0    | 5785               | 22.256               | 5773.822 | 5796.078 | ---        | ---     |
|             | Ant0    | 5825               | 22.256               | 5813.822 | 5836.078 | ---        | ---     |
|             | Ant0    | 5190               | 41.955               | 5169.098 | 5211.053 | ---        | ---     |
|             | Ant0    | 5230               | 41.955               | 5209.098 | 5251.053 | ---        | ---     |
|             | Ant0    | 5270               | 41.955               | 5249.098 | 5291.053 | ---        | ---     |
|             | Ant0    | 5310               | 41.955               | 5289.098 | 5331.053 | ---        | ---     |
| 11AC80-SISO | Ant0    | 5755               | 41.955               | 5733.797 | 5775.752 | ---        | ---     |
|             | Ant0    | 5795               | 41.955               | 5774.098 | 5816.053 | ---        | ---     |
|             | Ant0    | 5210               | 85.266               | 5167.618 | 5252.884 | ---        | ---     |
|             | Ant0    | 5290               | 85.768               | 5247.116 | 5332.884 | ---        | ---     |
|             | Ant0    | 5775               | 85.768               | 5731.614 | 5817.382 | ---        | ---     |

**NOTE:**

20M 26DB:

**RBW 200.000 kHz**

**VBW 1.000 MHz**

40M 26DB:

**RBW 400.000 kHz**

**VBW 1.000 MHz**

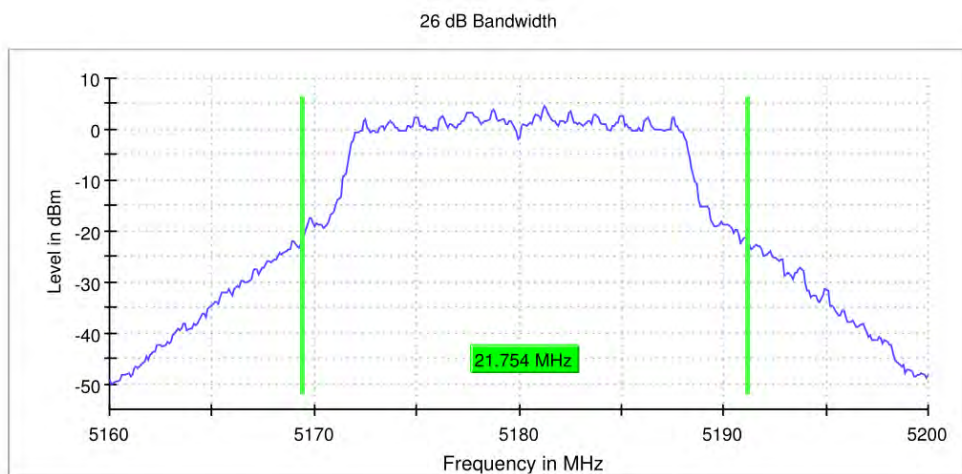
80M 26DB:

**RBW 1.000 MHz**

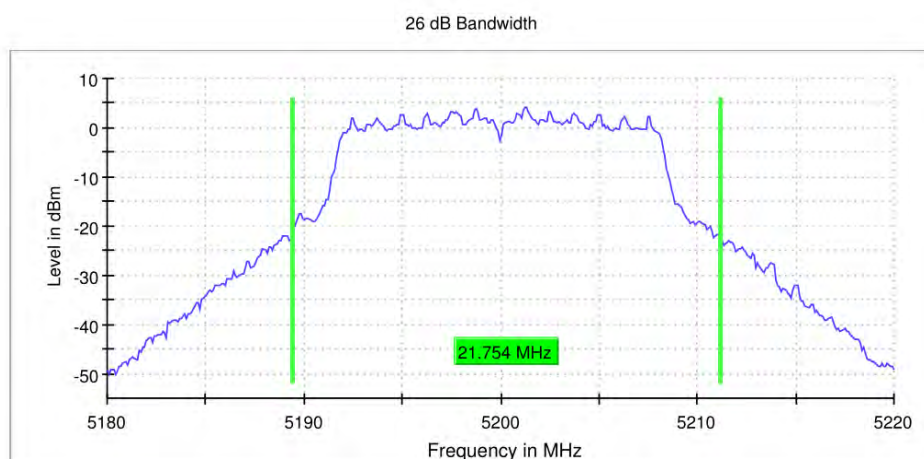
**VBW 3.000 MHz**

## TEST GRAPHS

11A\_Ant0\_5180



11A\_Ant0\_5200



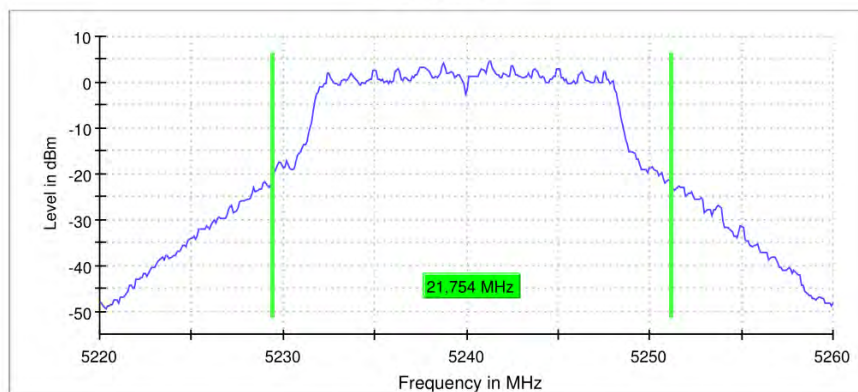
11A\_Ant0\_5240



BUREAU  
VERITAS

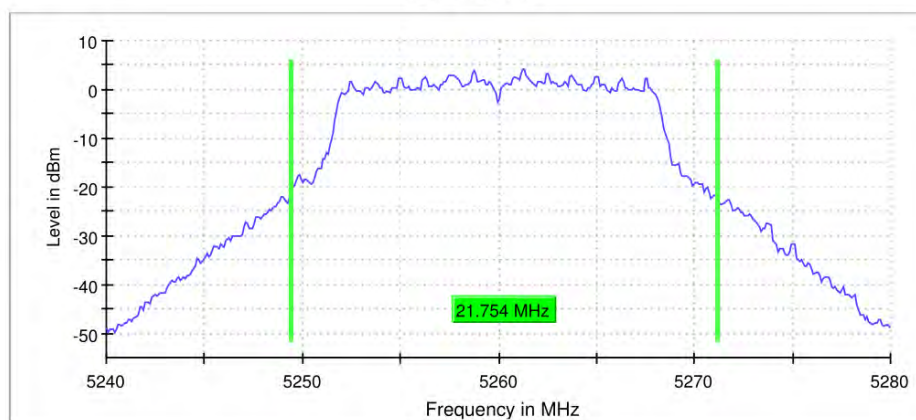
Test Report No.: PSU-QSU2312200110RF09

26 dB Bandwidth



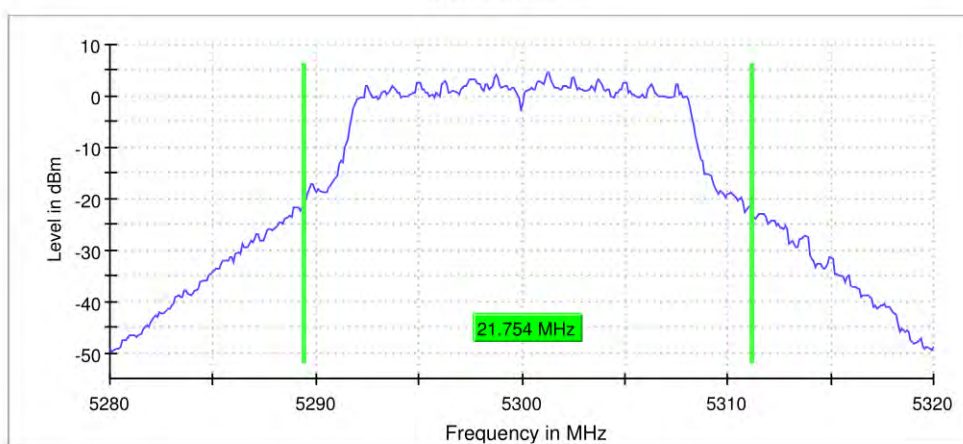
11A\_Ant0\_5260

26 dB Bandwidth



11A\_Ant0\_5300

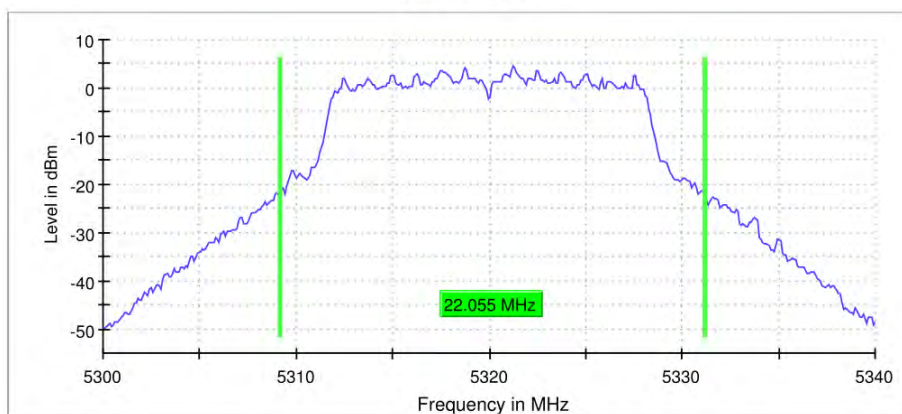
26 dB Bandwidth



11A\_Ant0\_5320

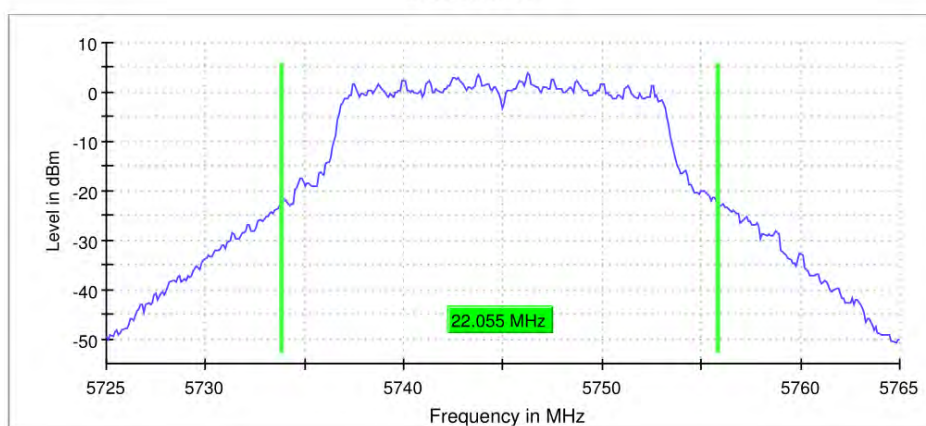


26 dB Bandwidth



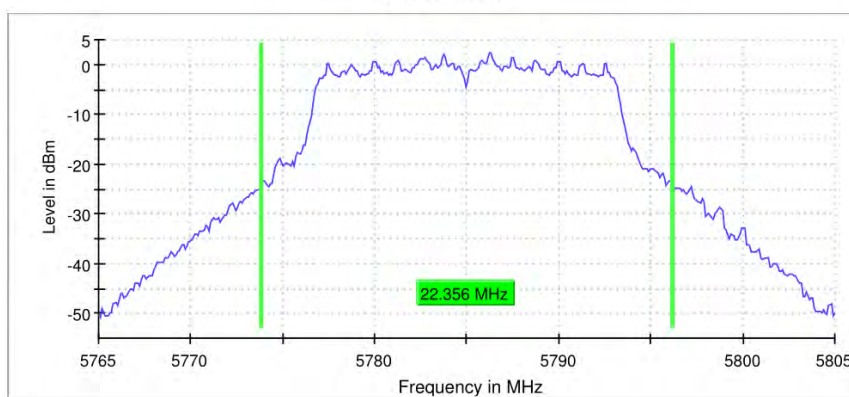
11A\_Ant0\_5745

26 dB Bandwidth



11A\_Ant0\_5785

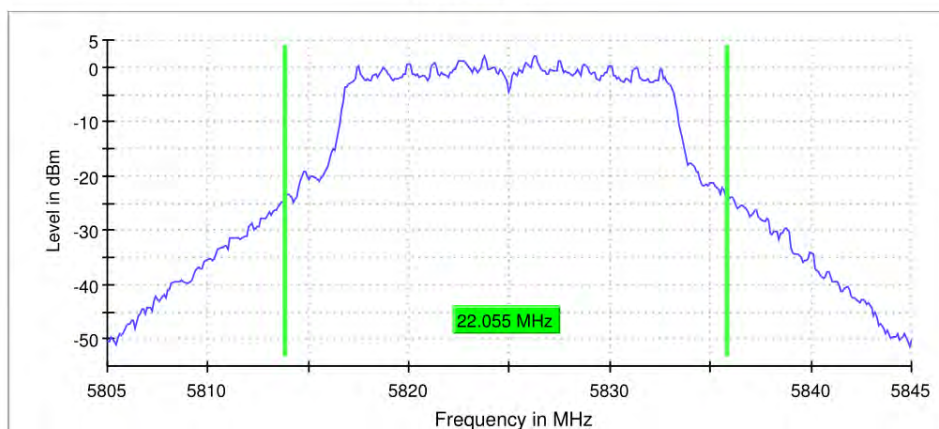
26 dB Bandwidth



11A\_Ant0\_5825

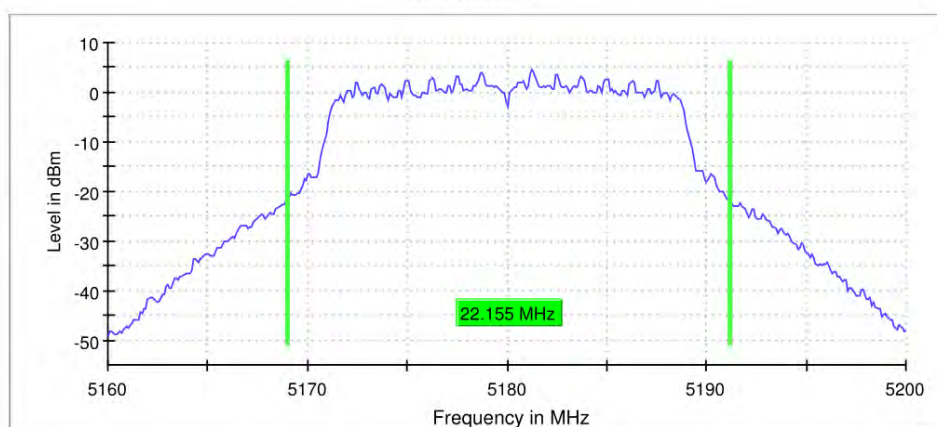


26 dB Bandwidth



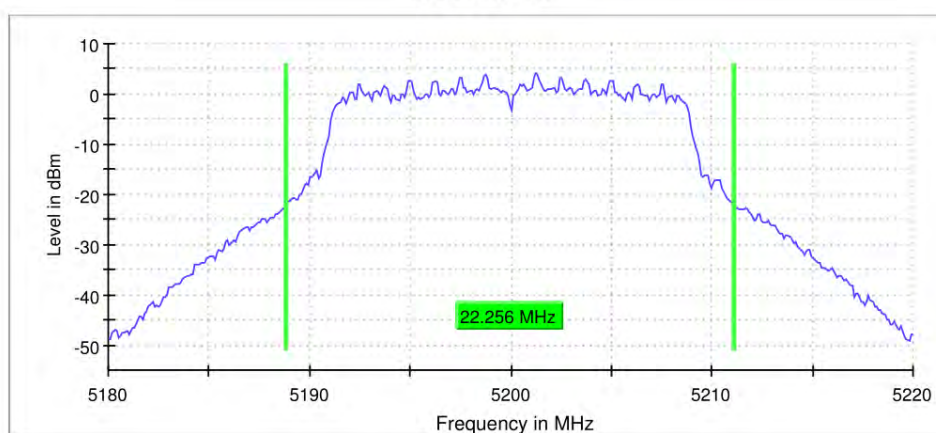
11N20\_Ant0\_5180

26 dB Bandwidth



11N20\_Ant0\_5200

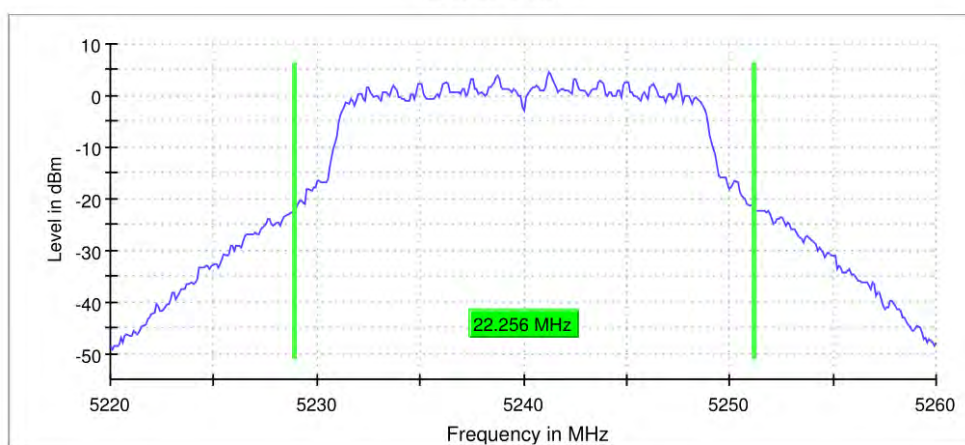
26 dB Bandwidth



11N20\_Ant0\_5240

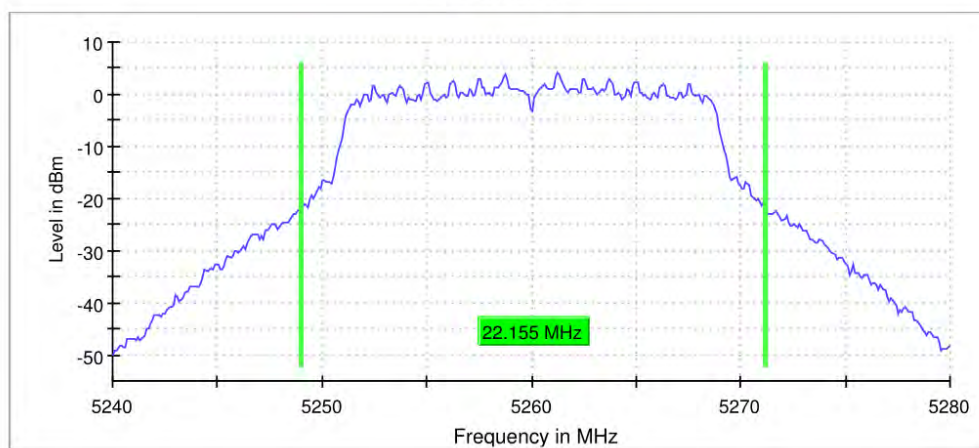


26 dB Bandwidth



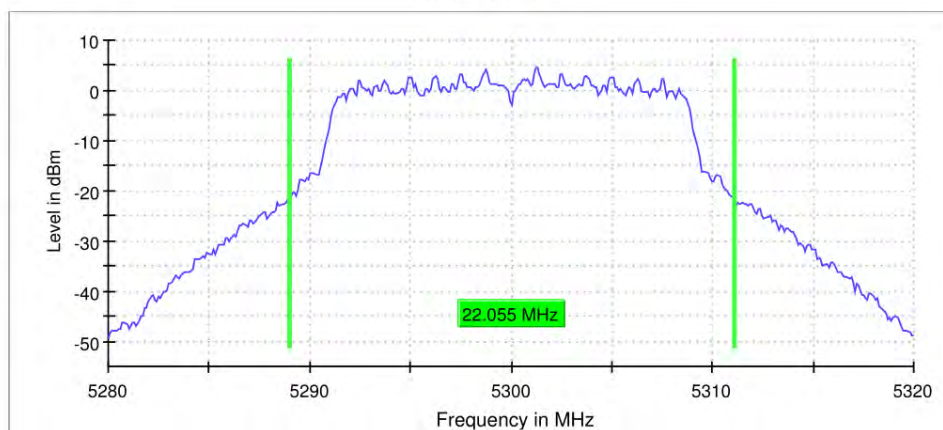
11N20\_Ant0\_5260

26 dB Bandwidth



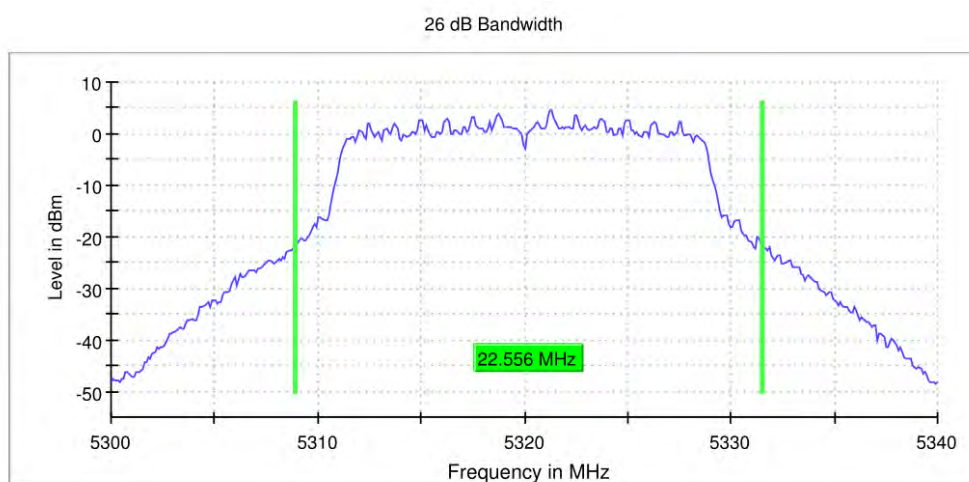
11N20\_Ant0\_5300

26 dB Bandwidth

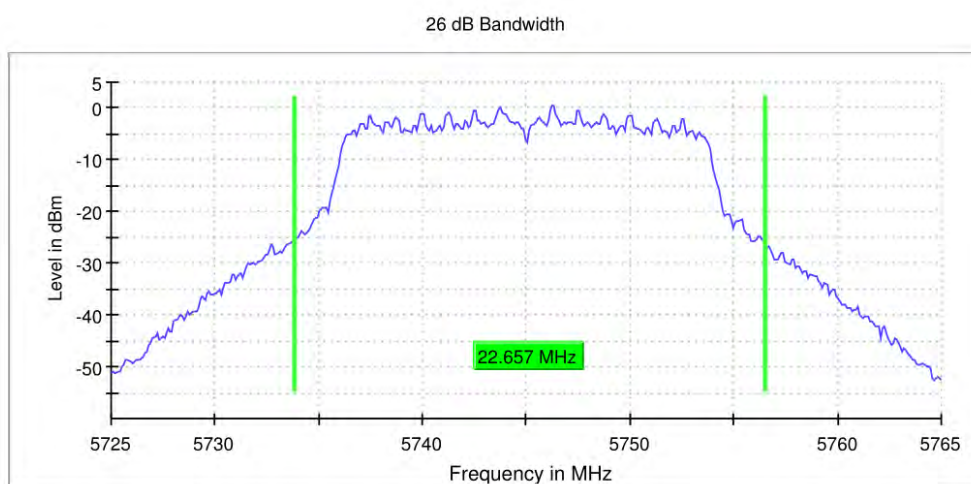




11N20\_Ant0\_5320



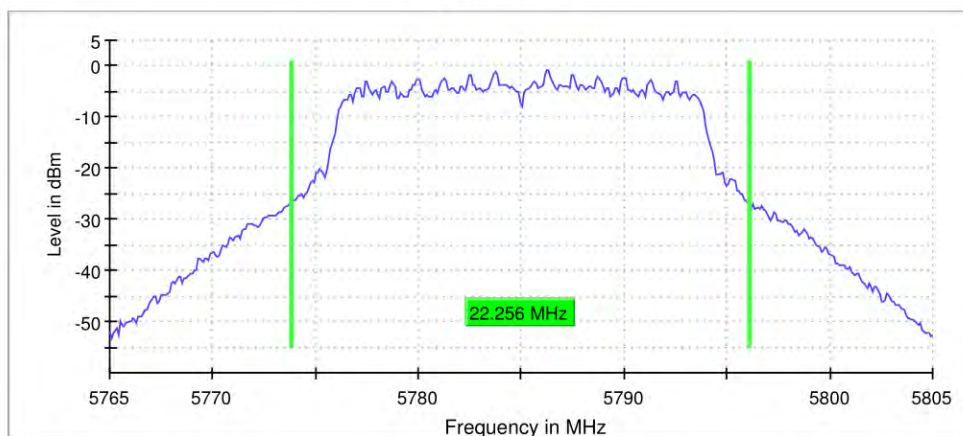
11N20\_Ant0\_5745



11N20\_Ant0\_5785

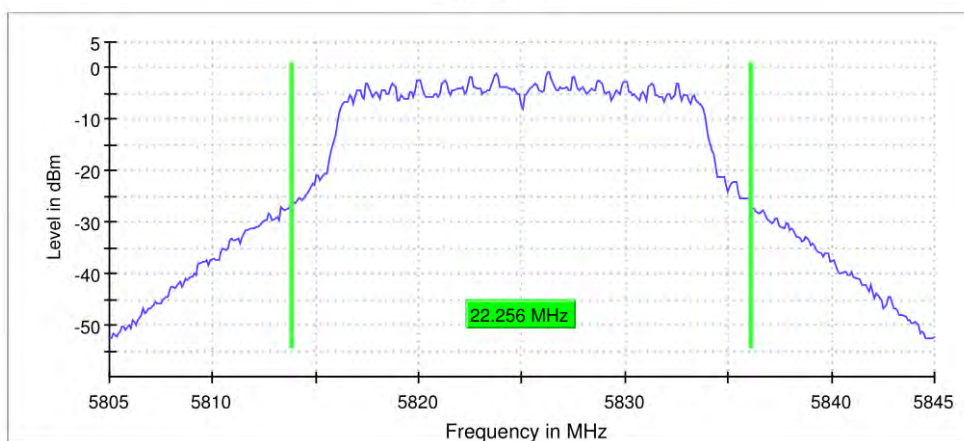


26 dB Bandwidth



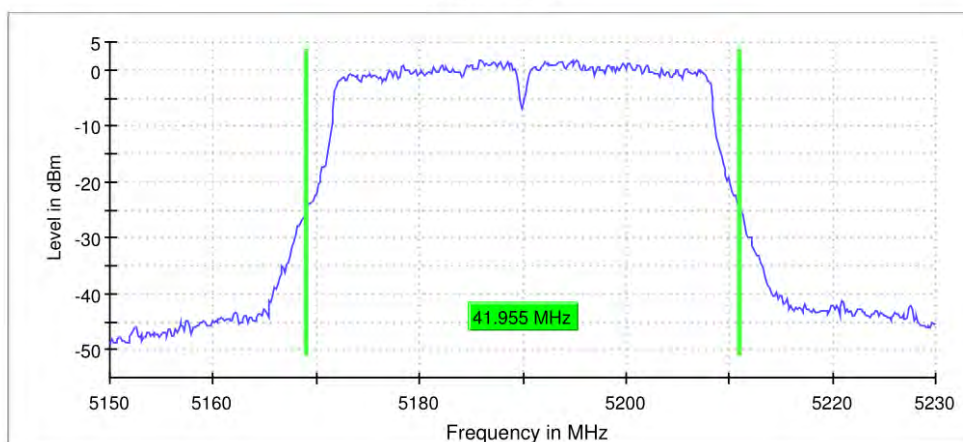
11N20\_Ant0\_5825

26 dB Bandwidth



11N40\_Ant0\_5190

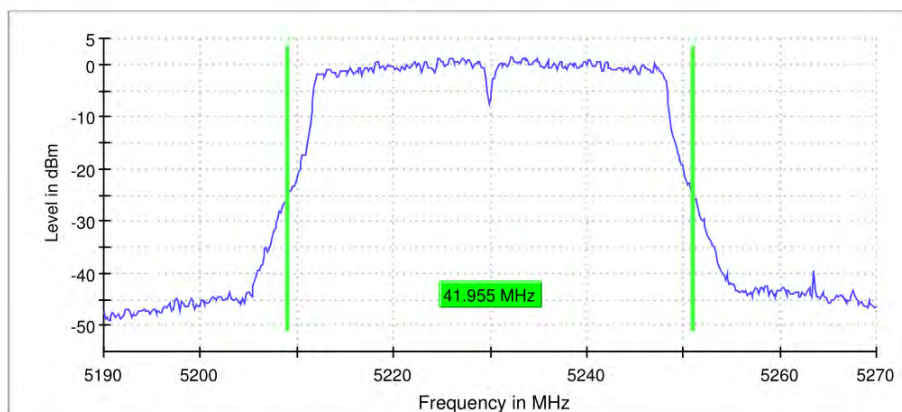
26 dB Bandwidth



11N40\_Ant0\_5230

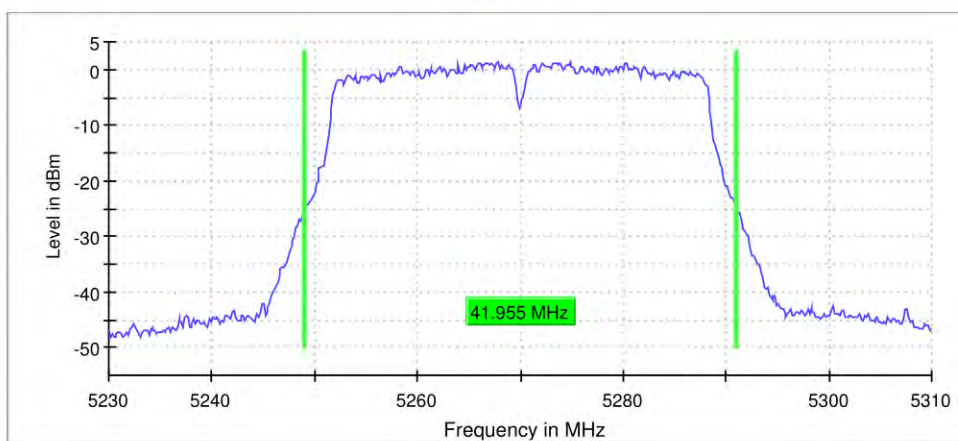


26 dB Bandwidth



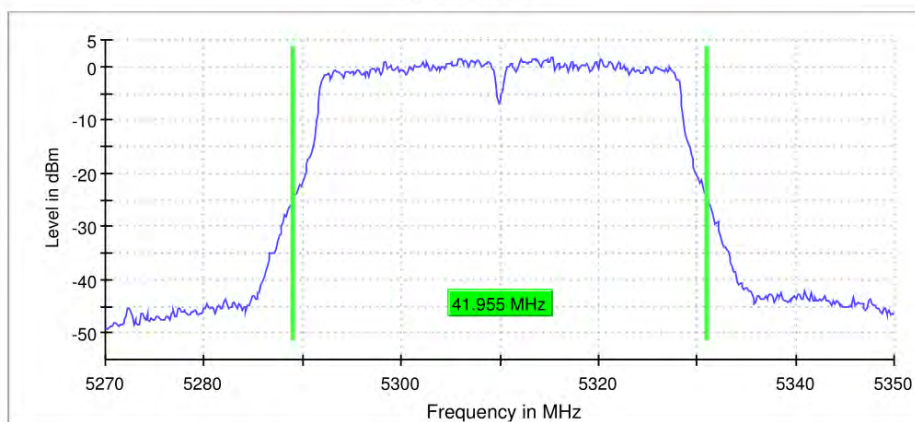
11N40\_Ant0\_5270

26 dB Bandwidth

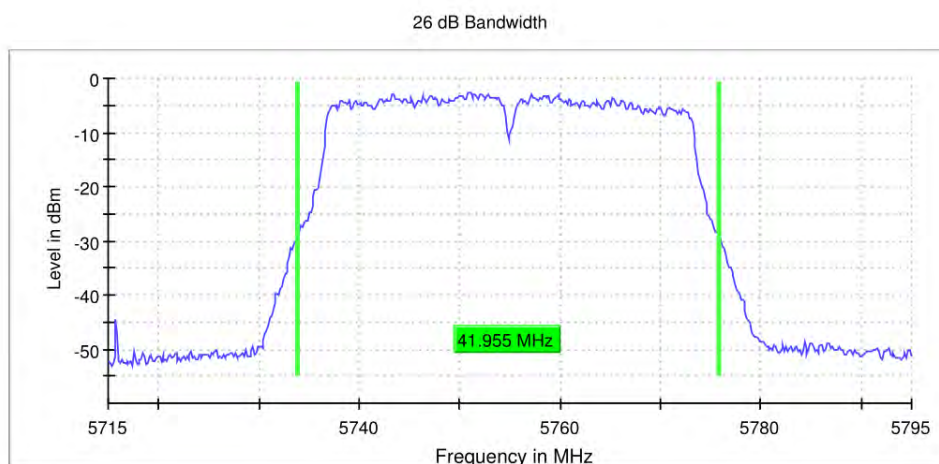


11N40\_Ant0\_5310

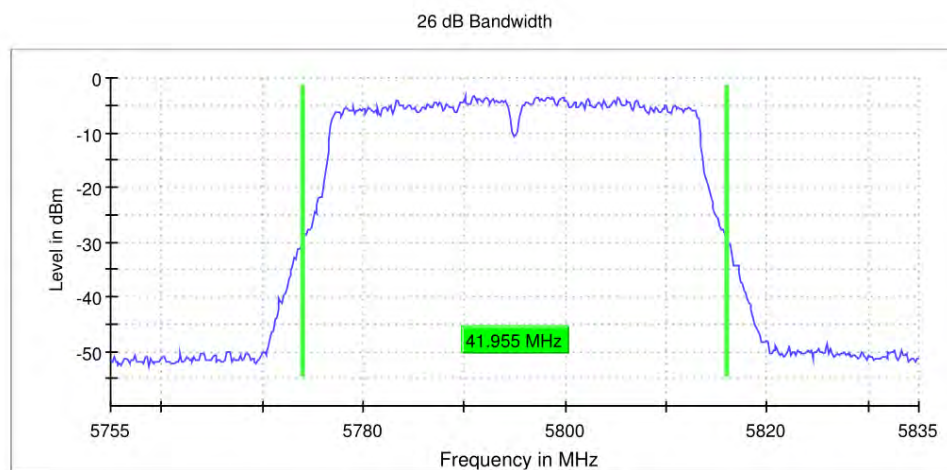
26 dB Bandwidth



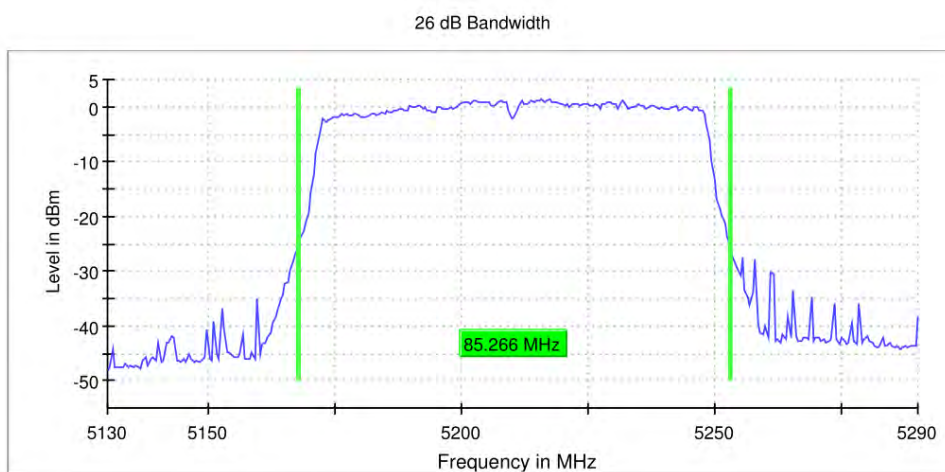
11N40\_Ant0\_5755



11N40\_Ant0\_5795

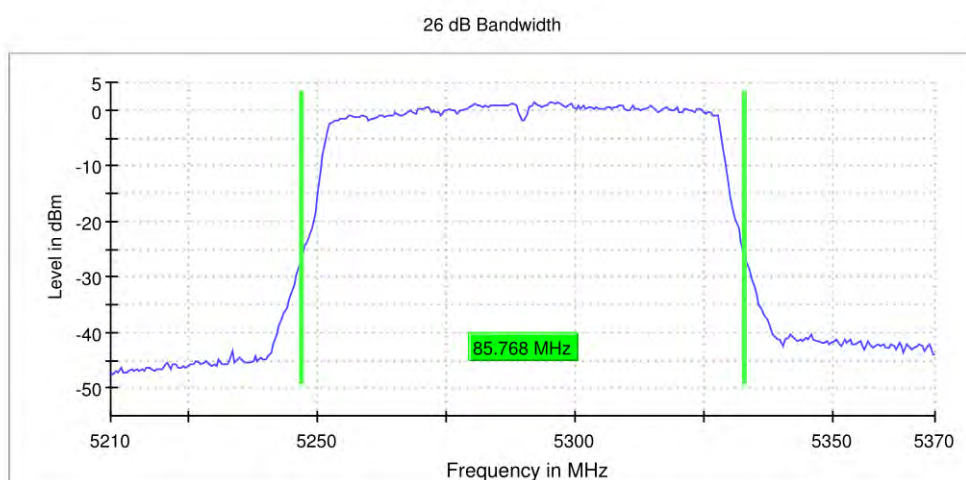


11AC80\_Ant0\_5210

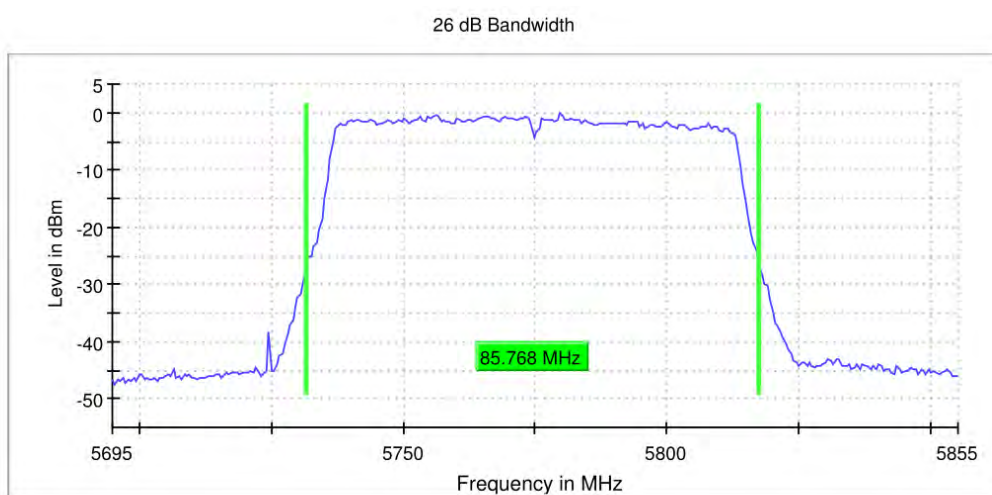




11AC80\_Ant0\_5290



11AC80\_Ant0\_5775



## OCCUPIED CHANNEL BANDWIDTH

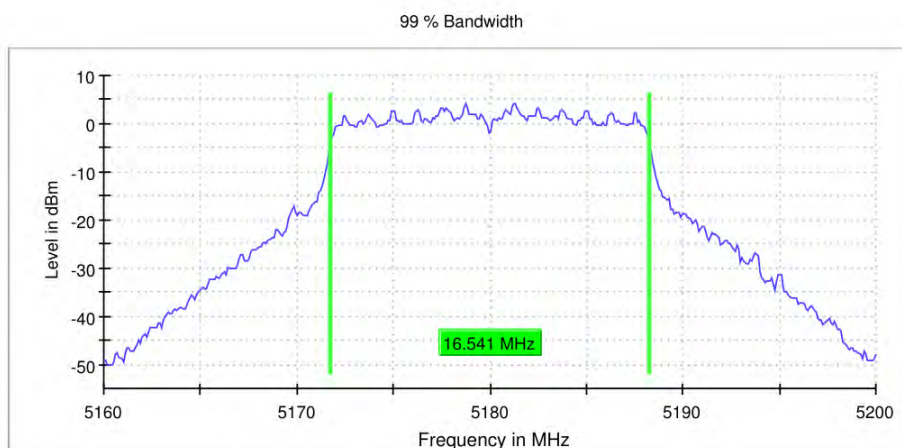
### TEST RESULT

| TestMode                                                                                                                                                                                         | Antenna | Frequency [MHz] | OCB [MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------|-----------|----------|----------|------------|---------|
| 11A                                                                                                                                                                                              | Ant0    | 5180            | 16.541    | 5171.729 | 5188.270 | ---        | ---     |
|                                                                                                                                                                                                  | Ant0    | 5200            | 16.541    | 5191.729 | 5208.270 | ---        | ---     |
|                                                                                                                                                                                                  | Ant0    | 5240            | 16.642    | 5231.729 | 5248.370 | ---        | ---     |
|                                                                                                                                                                                                  | Ant0    | 5260            | 16.541    | 5251.729 | 5268.270 | ---        | ---     |
|                                                                                                                                                                                                  | Ant0    | 5300            | 16.642    | 5291.729 | 5308.371 | ---        | ---     |
|                                                                                                                                                                                                  | Ant0    | 5320            | 16.541    | 5311.729 | 5328.270 | ---        | ---     |
|                                                                                                                                                                                                  | Ant0    | 5745            | 16.541    | 5736.729 | 5753.270 | ---        | ---     |
|                                                                                                                                                                                                  | Ant0    | 5785            | 16.541    | 5776.729 | 5793.270 | ---        | ---     |
|                                                                                                                                                                                                  | Ant0    | 5825            | 16.541    | 5816.729 | 5833.270 | ---        | ---     |
| 11N20-SISO                                                                                                                                                                                       | Ant0    | 5180            | 17.744    | 5171.128 | 5188.872 | ---        | ---     |
|                                                                                                                                                                                                  | Ant0    | 5200            | 17.845    | 5191.128 | 5208.973 | ---        | ---     |
|                                                                                                                                                                                                  | Ant0    | 5240            | 17.744    | 5231.128 | 5248.872 | ---        | ---     |
|                                                                                                                                                                                                  | Ant0    | 5260            | 17.744    | 5251.128 | 5268.872 | ---        | ---     |
|                                                                                                                                                                                                  | Ant0    | 5300            | 17.744    | 5291.128 | 5308.872 | ---        | ---     |
|                                                                                                                                                                                                  | Ant0    | 5320            | 17.744    | 5311.128 | 5328.872 | ---        | ---     |
|                                                                                                                                                                                                  | Ant0    | 5745            | 17.845    | 5736.028 | 5753.873 | ---        | ---     |
|                                                                                                                                                                                                  | Ant0    | 5785            | 17.744    | 5776.128 | 5793.872 | ---        | ---     |
|                                                                                                                                                                                                  | Ant0    | 5825            | 17.744    | 5816.128 | 5833.872 | ---        | ---     |
| 11N40-SISO                                                                                                                                                                                       | Ant0    | 5190            | 36.614    | 5171.818 | 5208.432 | ---        | ---     |
|                                                                                                                                                                                                  | Ant0    | 5230            | 36.614    | 5211.818 | 5248.432 | ---        | ---     |
|                                                                                                                                                                                                  | Ant0    | 5270            | 36.614    | 5251.818 | 5288.432 | ---        | ---     |
|                                                                                                                                                                                                  | Ant0    | 5310            | 36.614    | 5291.818 | 5328.432 | ---        | ---     |
|                                                                                                                                                                                                  | Ant0    | 5755            | 36.614    | 5736.567 | 5773.181 | ---        | ---     |
|                                                                                                                                                                                                  | Ant0    | 5795            | 36.614    | 5776.818 | 5813.432 | ---        | ---     |
| 11AC80-SISO                                                                                                                                                                                      | Ant0    | 5210            | 76.238    | 5172.132 | 5248.370 | ---        | ---     |
|                                                                                                                                                                                                  | Ant0    | 5290            | 76.238    | 5252.132 | 5328.370 | ---        | ---     |
|                                                                                                                                                                                                  | Ant0    | 5775            | 76.238    | 5736.630 | 5812.868 | ---        | ---     |
| NOTE:<br>20M 26DB:<br><b>RBW 200.000 kHz</b><br><b>VBW 1.000 MHz</b><br>40M 26DB:<br><b>RBW 500.000 kHz</b><br><b>VBW 2.000 MHz</b><br>80M 26DB:<br><b>RBW 1.000 MHz</b><br><b>VBW 3.000 MHz</b> |         |                 |           |          |          |            |         |

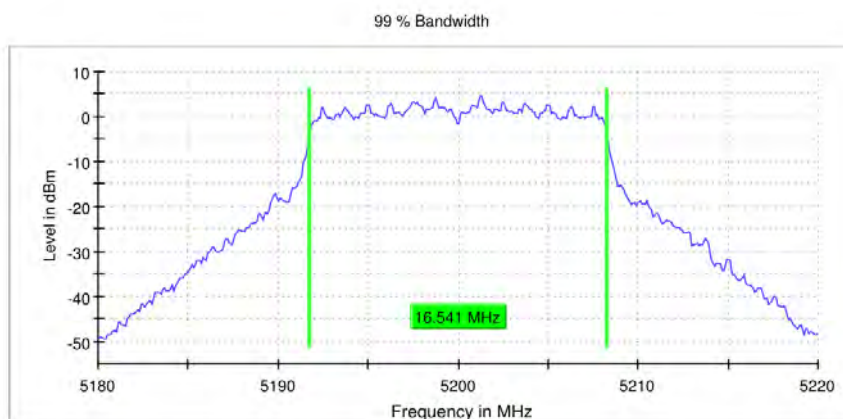
NOTE: For 802.11n HT20/ac VHT20 and 802.11n HT40 /ac VHT40 modes, the test evaluated only 802.11n HT20/HT40, referring to their high power.

## TEST GRAPHS

11A\_Ant0\_5180



11A\_Ant0\_5200

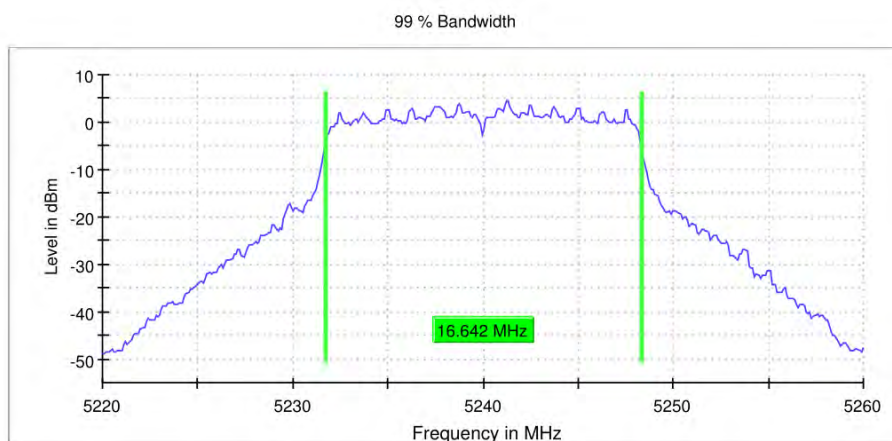


11A\_Ant0\_5240

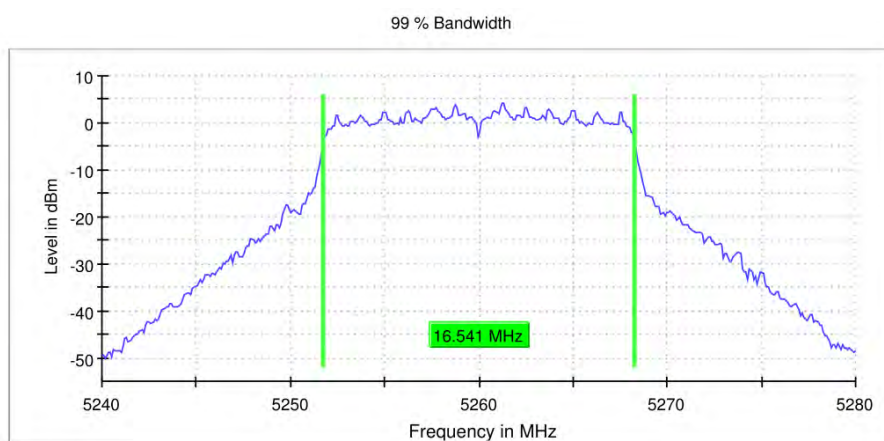


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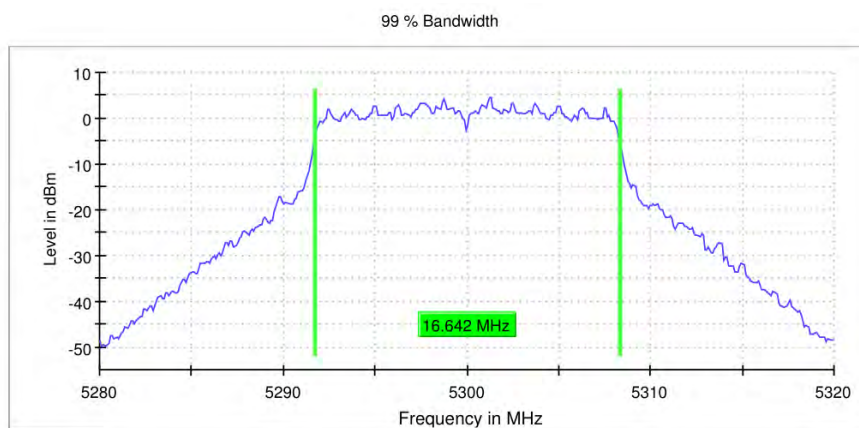
Test Report No.: PSU-QSU2312200110RF09



11A\_Ant0\_5260



11A\_Ant0\_5300



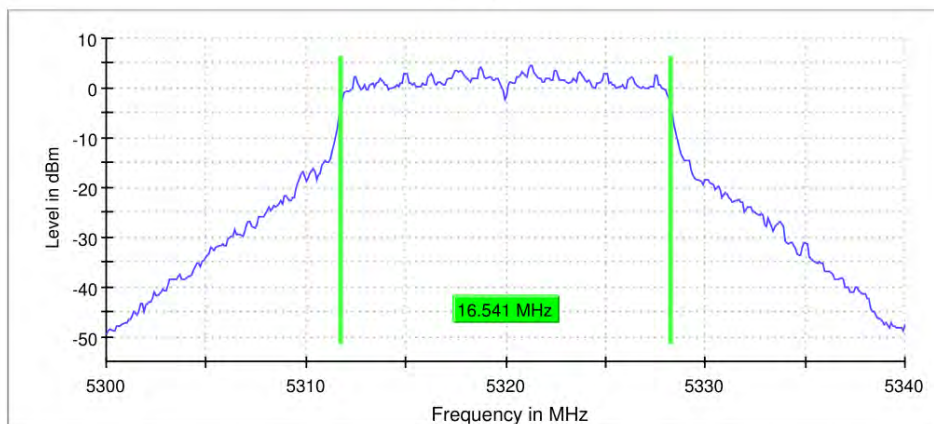
11A\_Ant0\_5320



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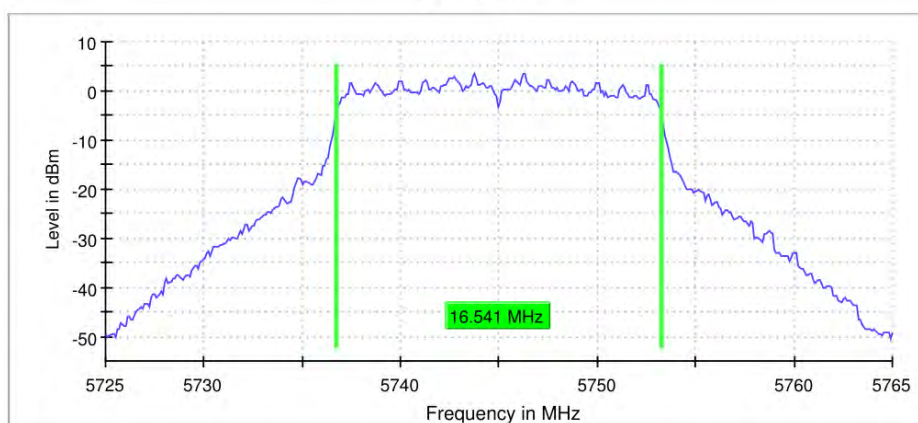
Test Report No.: PSU-QSU2312200110RF09

99 % Bandwidth



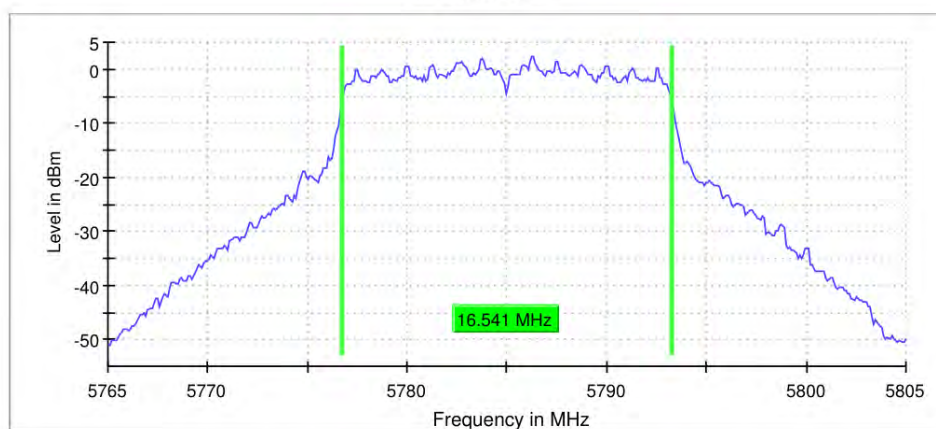
11A\_Ant0\_5745

99 % Bandwidth



11A\_Ant0\_5785

99 % Bandwidth

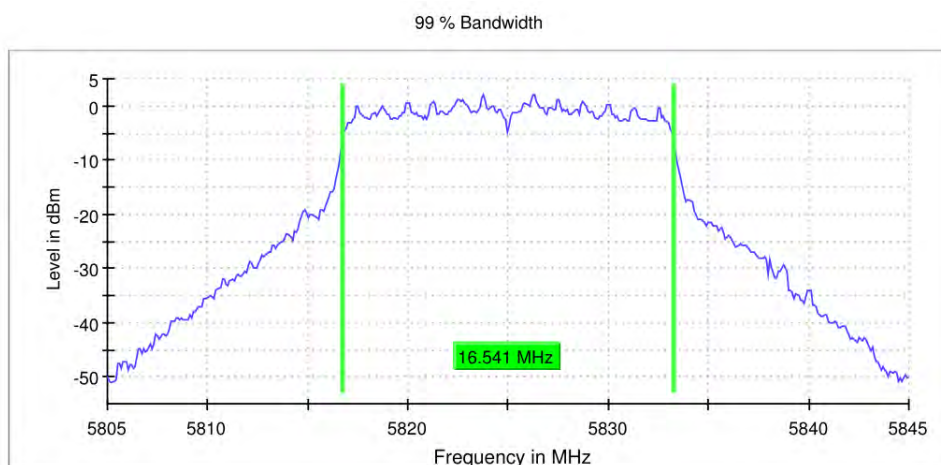


11A\_Ant0\_5825

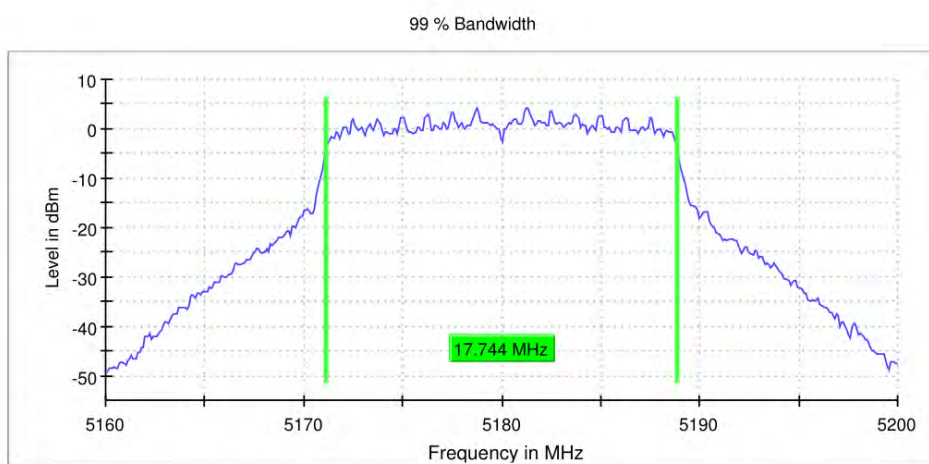


BUREAU  
VERITAS

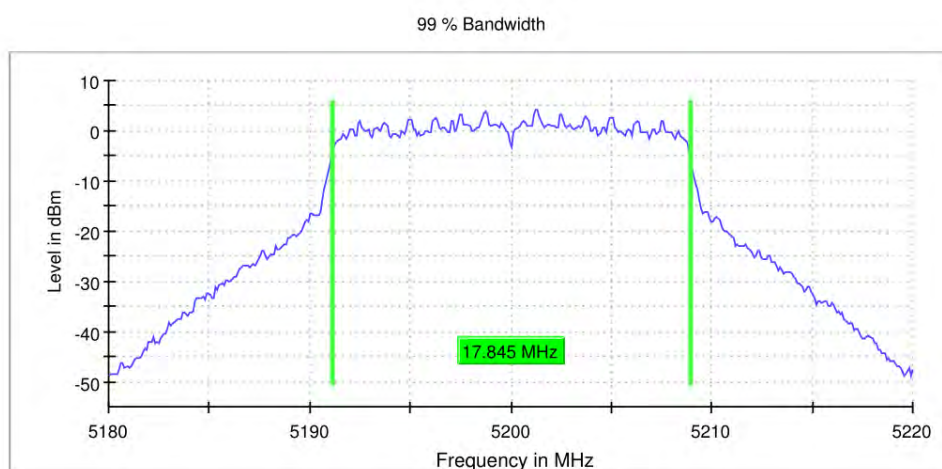
Test Report No.: PSU-QSU2312200110RF09



11N20\_Ant0\_5180



11N20\_Ant0\_5200

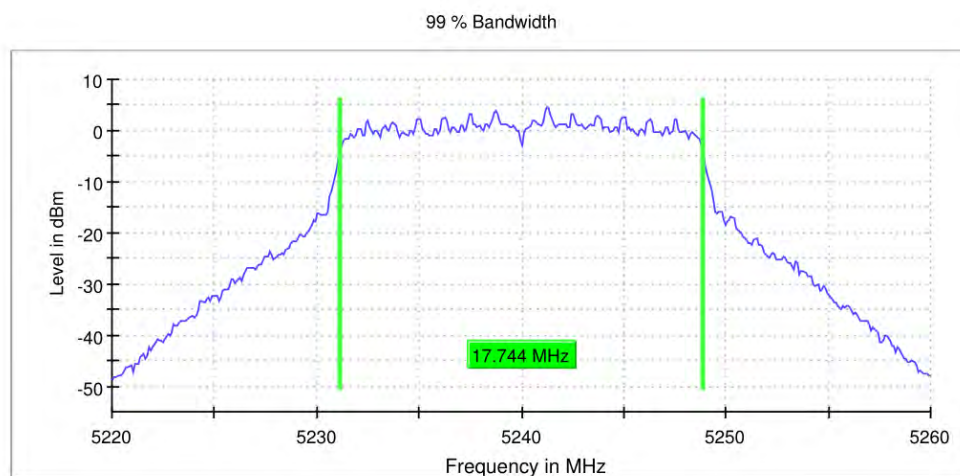


11N20\_Ant0\_5240

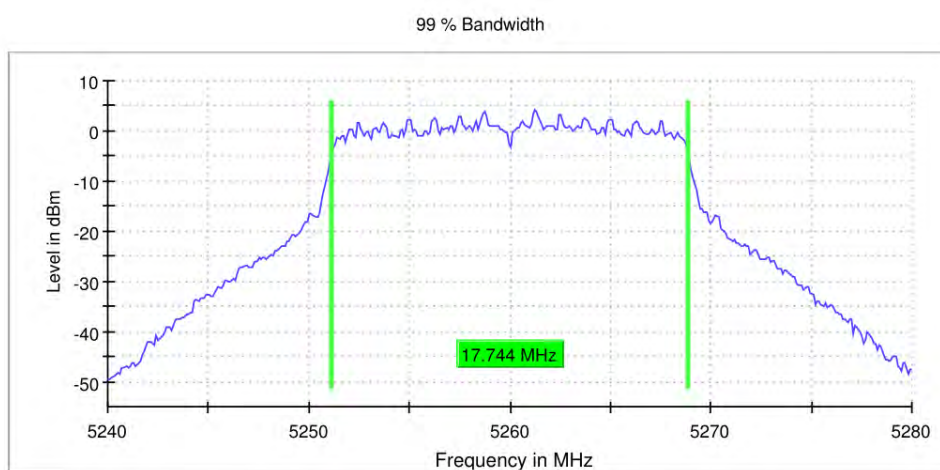


BUREAU  
VERITAS

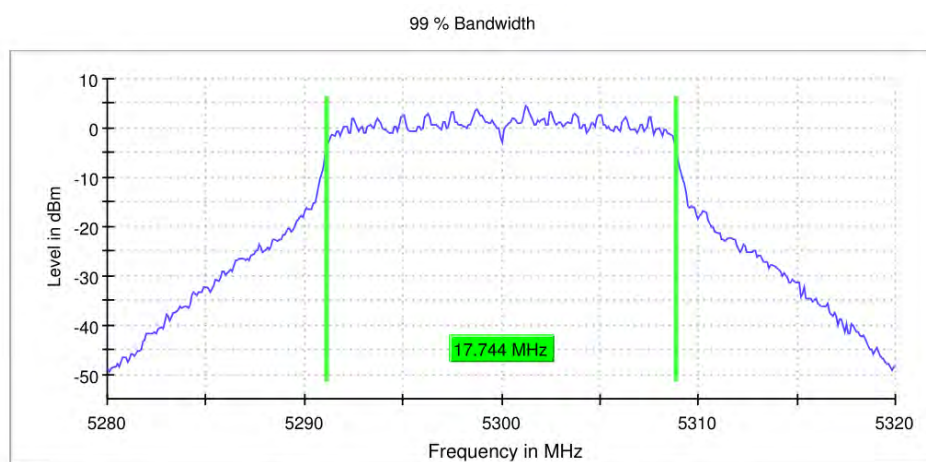
Test Report No.: PSU-QSU2312200110RF09



11N20\_Ant0\_5260



11N20\_Ant0\_5300

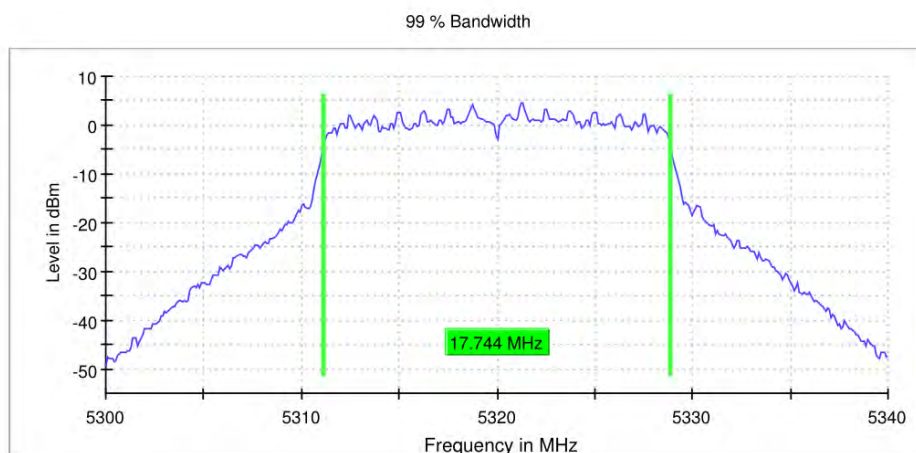


11N20\_Ant0\_5320

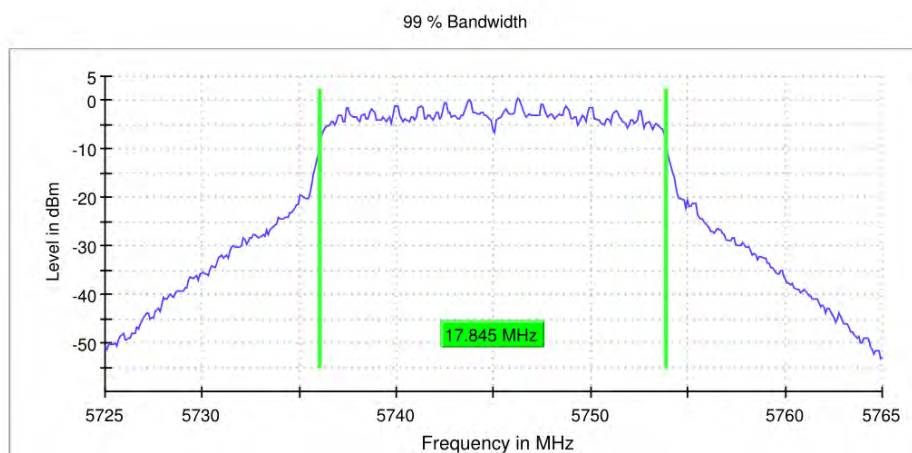


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VERITAS

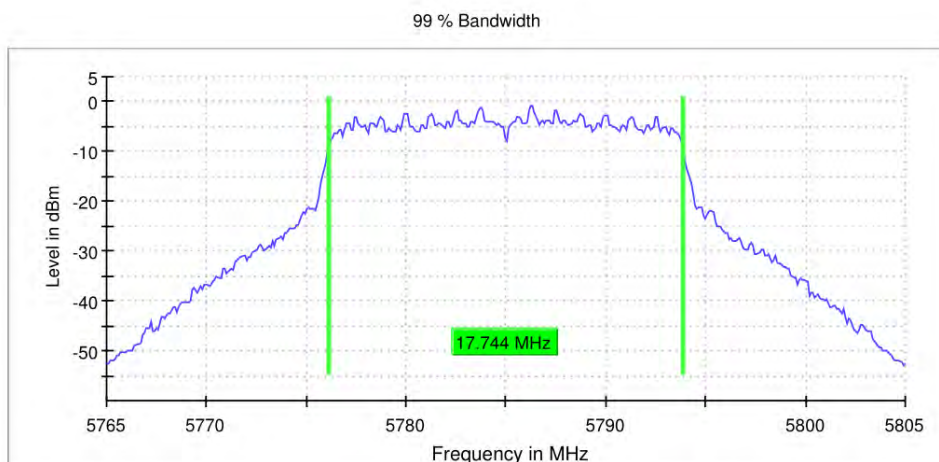
Test Report No.: PSU-QSU2312200110RF09



11N20\_Ant0\_5745



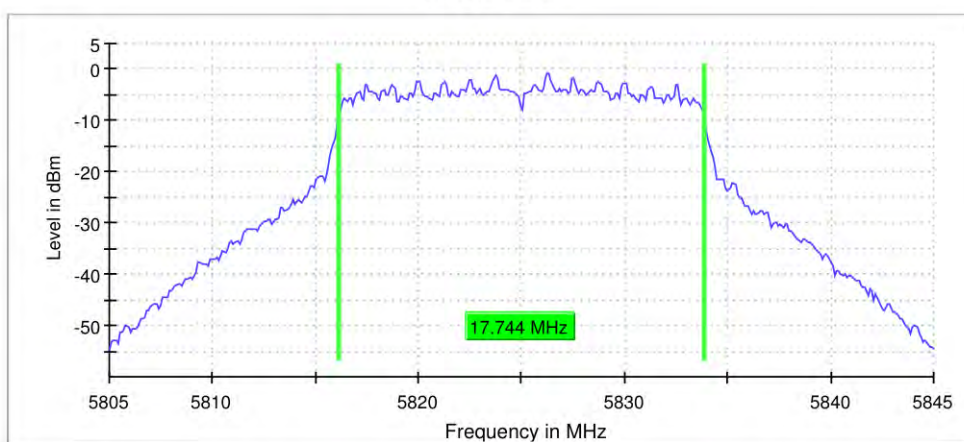
11N20\_Ant0\_5785



11N20\_Ant0\_5825

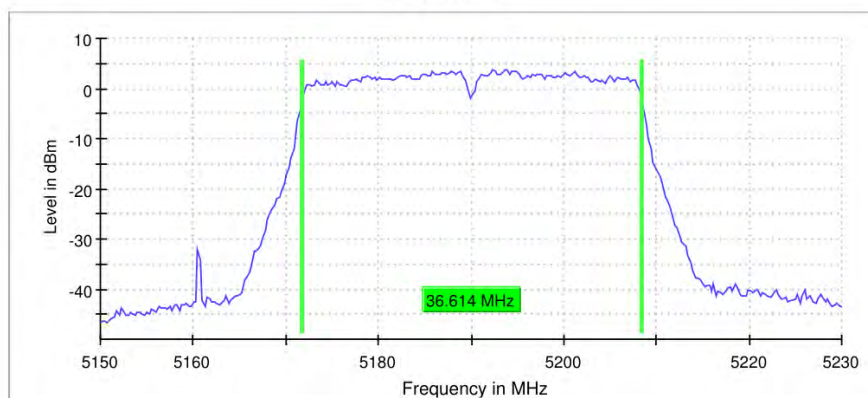


99 % Bandwidth



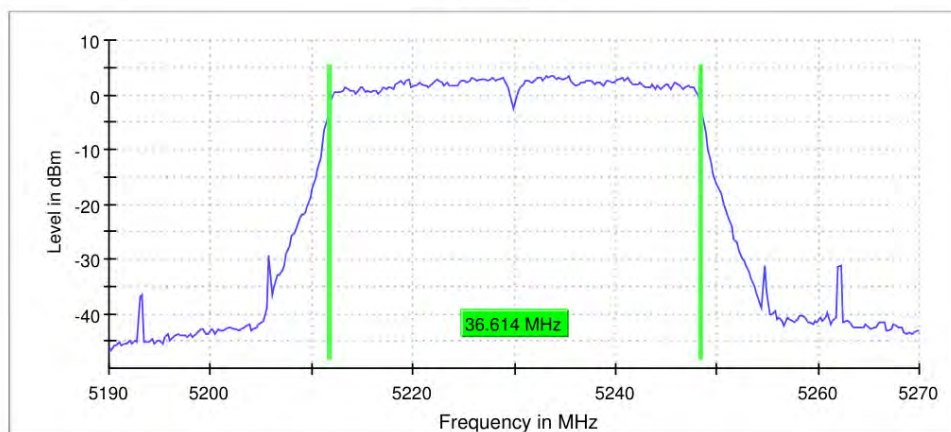
11N40\_Ant0\_5190

99 % Bandwidth



11N40\_Ant0\_5230

99 % Bandwidth

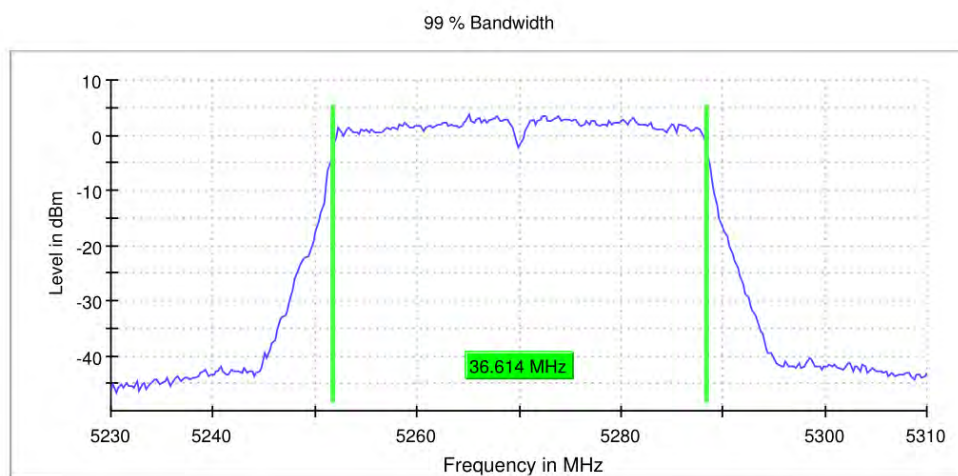


11N40\_Ant0\_5270

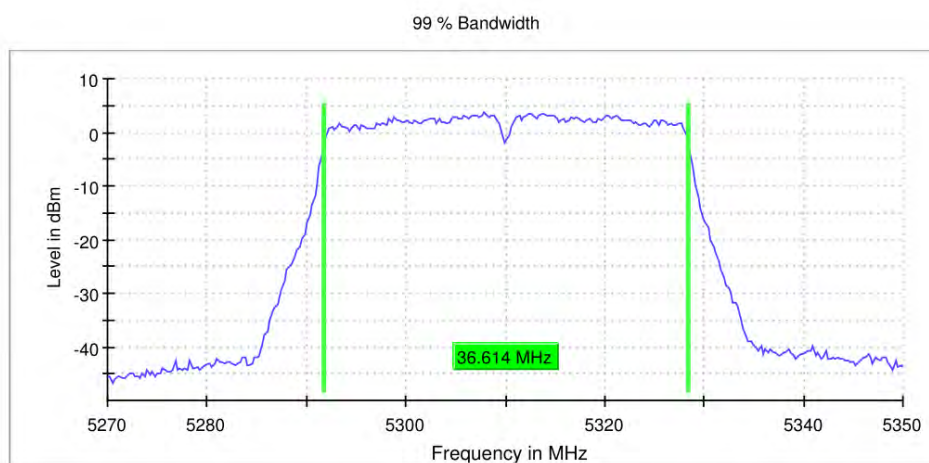


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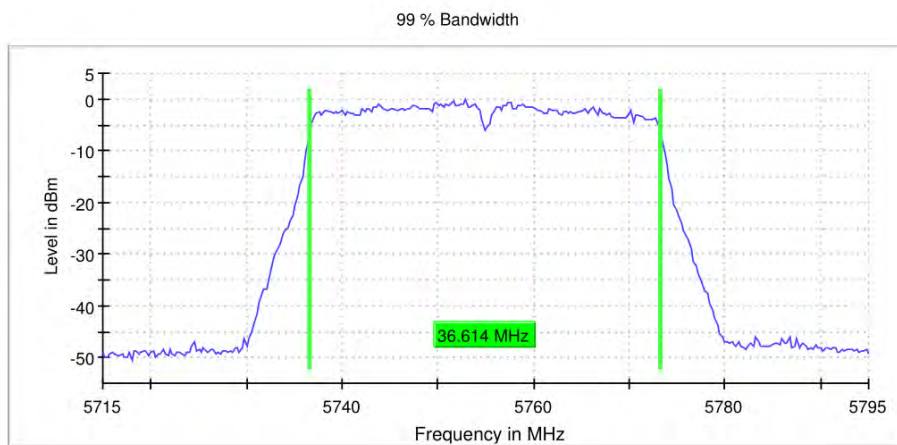
Test Report No.: PSU-QSU2312200110RF09



11N40\_Ant0\_5310



11N40\_Ant0\_5755



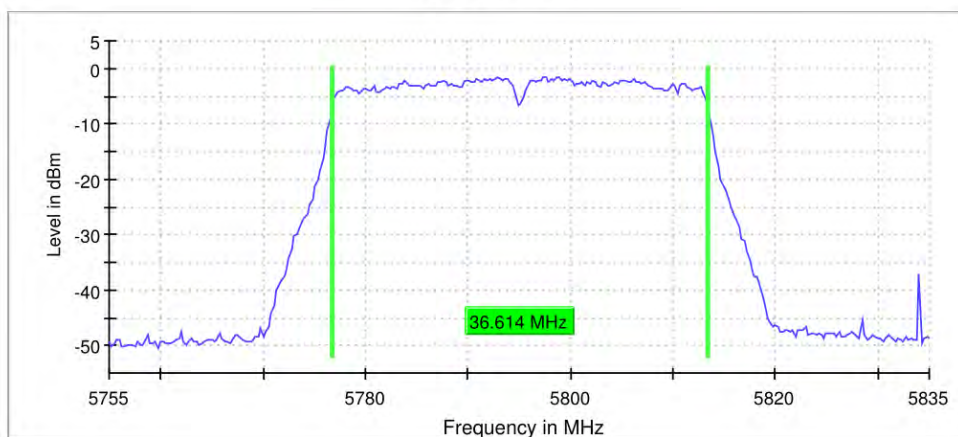
11N40\_Ant0\_5795



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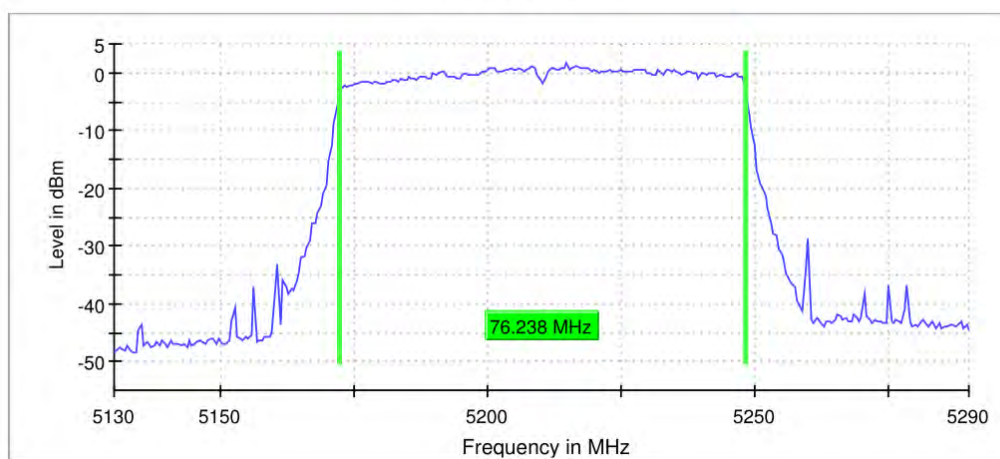
Test Report No.: PSU-QSU2312200110RF09

99 % Bandwidth



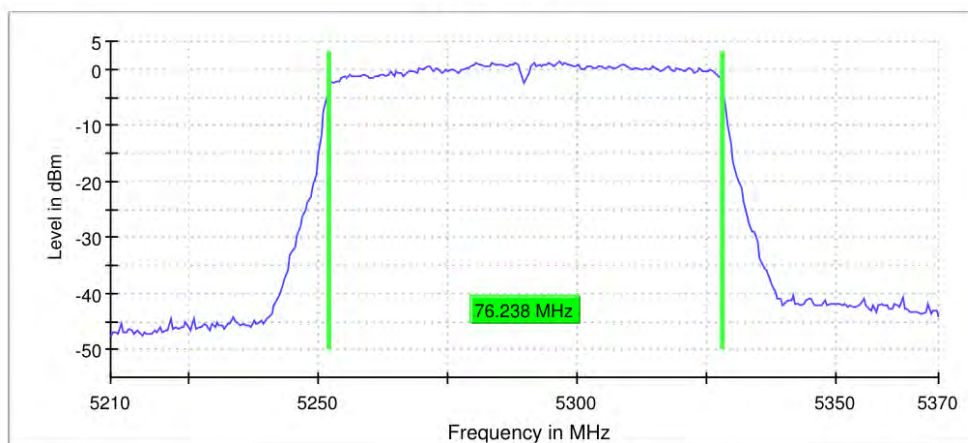
11AC80\_Ant0\_5210

99 % Bandwidth

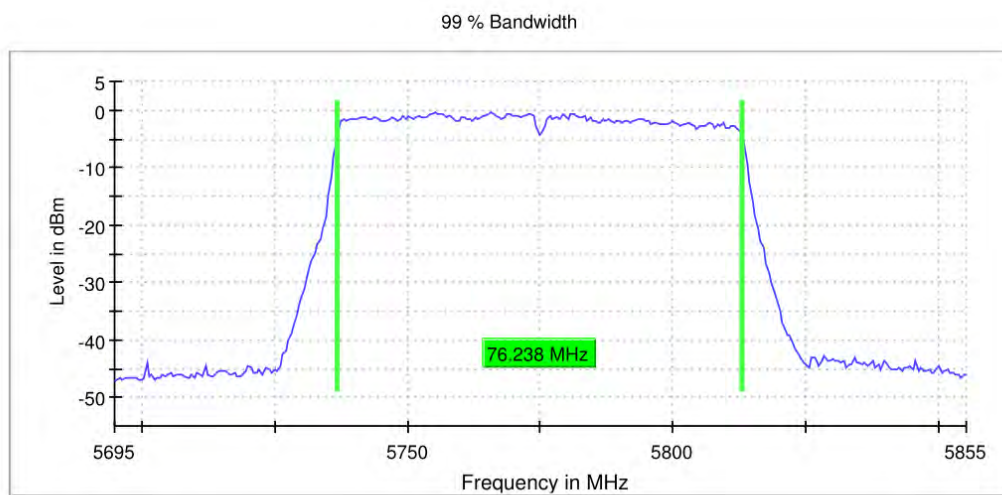


11AC80\_Ant0\_5290

99 % Bandwidth



11AC80\_Ant0\_5775



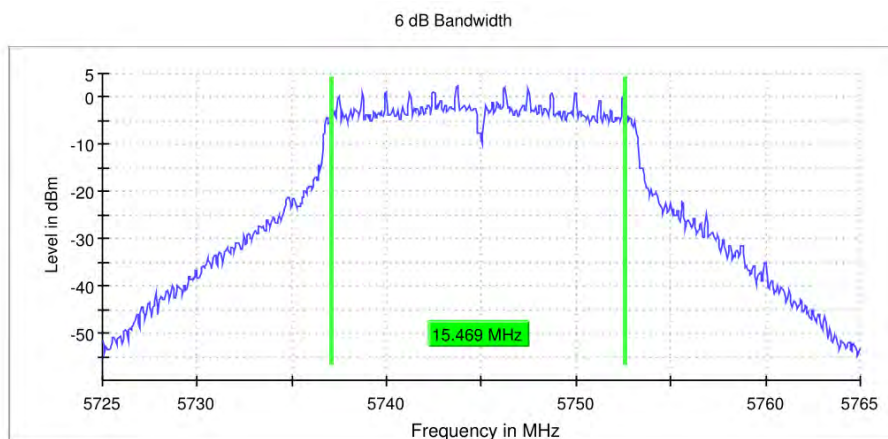
## MIN EMISSION BANDWIDTH

### TEST RESULT B4

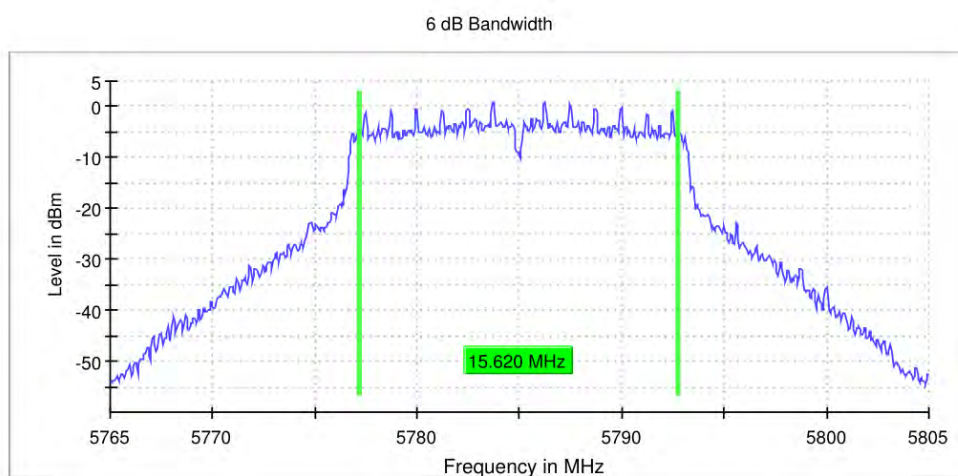
| TestMode                                                         | Antenna | Frequency<br>[MHz] | 6db EBW<br>[MHz] | FL[MHz]  | FH[MHz]  | Limit[MHz] | Verdict |
|------------------------------------------------------------------|---------|--------------------|------------------|----------|----------|------------|---------|
| 11A                                                              | Ant0    | 5745               | 15.469           | 5737.115 | 5752.584 | 0.5        | PASS    |
|                                                                  | Ant0    | 5785               | 15.620           | 5777.165 | 5792.785 | 0.5        | PASS    |
|                                                                  | Ant0    | 5825               | 15.419           | 5817.165 | 5832.584 | 0.5        | PASS    |
| 11N20-SISO                                                       | Ant0    | 5745               | 16.070           | 5736.514 | 5752.584 | 0.5        | PASS    |
|                                                                  | Ant0    | 5785               | 16.671           | 5776.514 | 5793.185 | 0.5        | PASS    |
|                                                                  | Ant0    | 5825               | 16.070           | 5816.514 | 5832.584 | 0.5        | PASS    |
| 11N40-SISO                                                       | Ant0    | 5755               | 35.822           | 5736.814 | 5772.636 | 0.5        | PASS    |
|                                                                  | Ant0    | 5795               | 35.822           | 5777.364 | 5813.186 | 0.5        | PASS    |
| 11AC80-SISO                                                      | Ant0    | 5775               | 75.424           | 5737.213 | 5812.637 | 0.5        | PASS    |
| <b>NOTE:</b><br><b>RBW 100.000 kHz</b><br><b>VBW 300.000 kHz</b> |         |                    |                  |          |          |            |         |

## TEST GRAPHS B4

11A\_Ant0\_5745



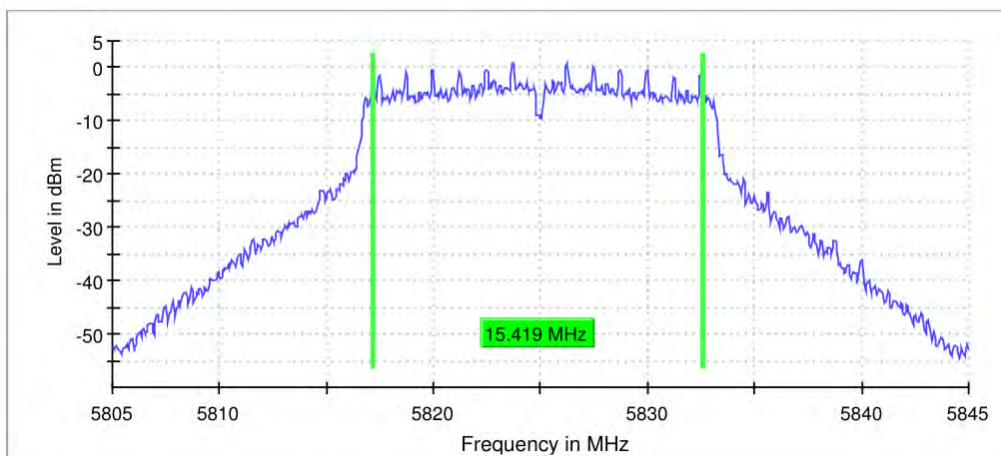
11A\_Ant0\_5785



11A\_Ant0\_5825

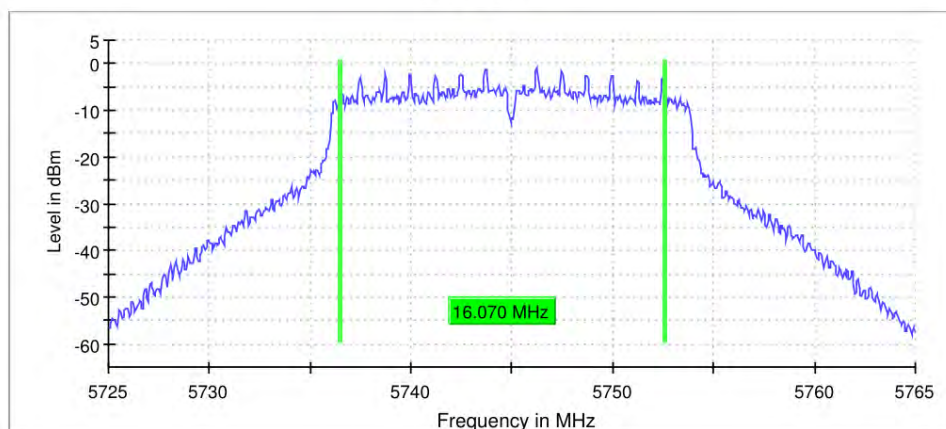


6 dB Bandwidth



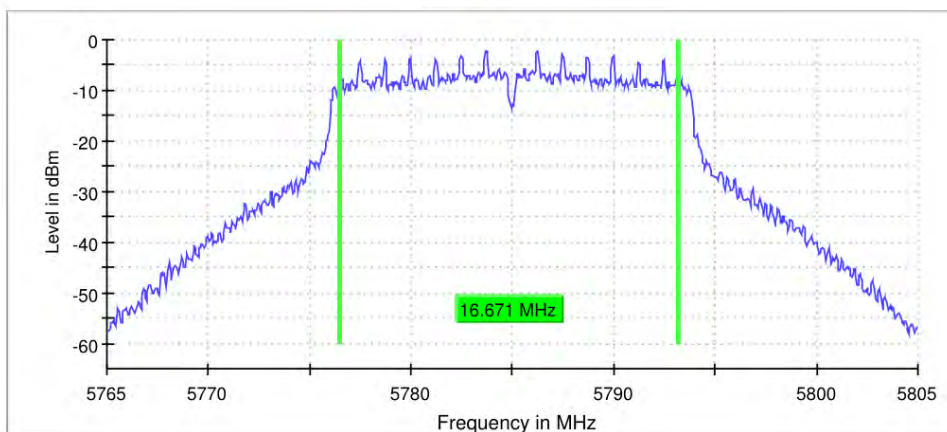
11N20-SISO\_Ant0\_5745

6 dB Bandwidth



11N20-SISO\_Ant0\_5785

6 dB Bandwidth

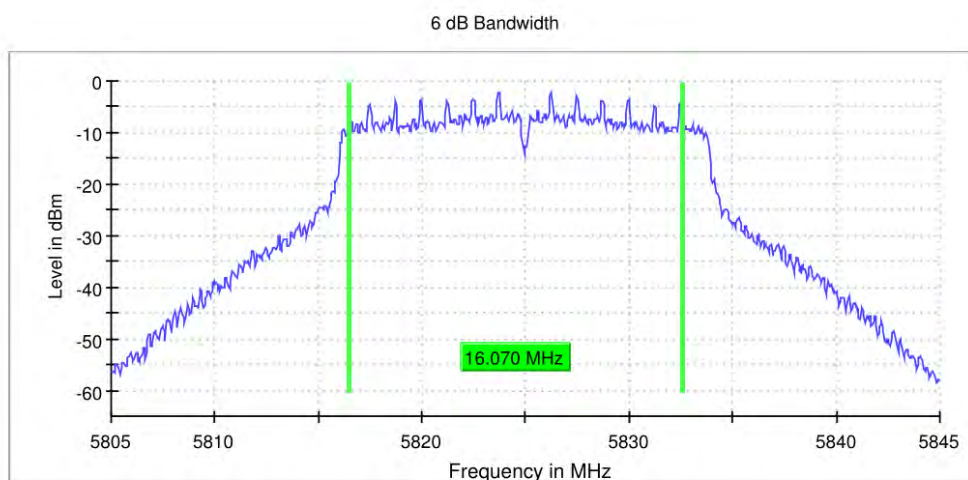


11N20-SISO\_Ant1\_5825

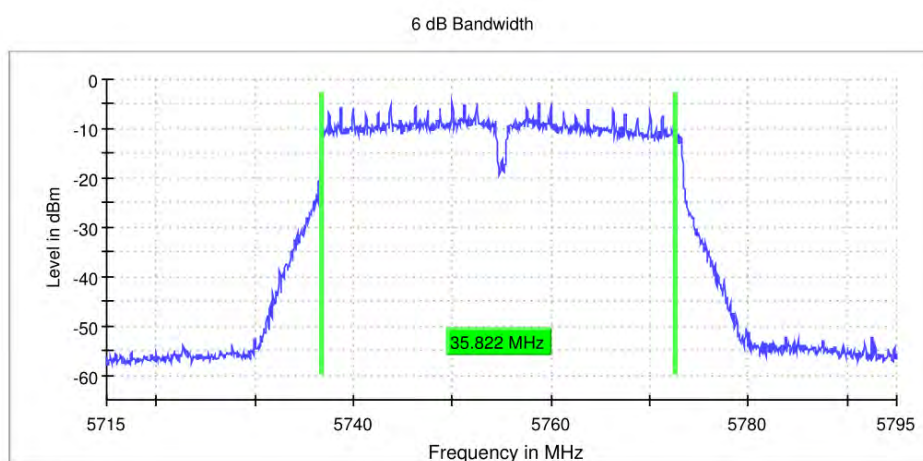


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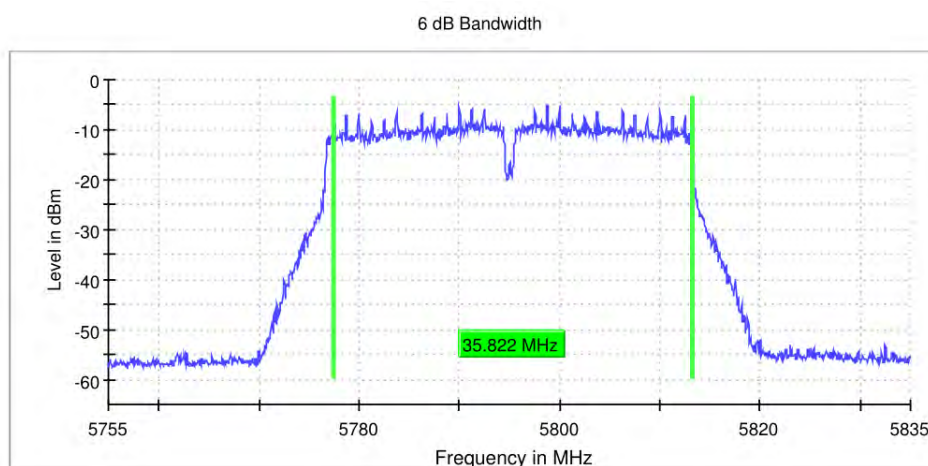
Test Report No.: PSU-QSU2312200110RF09



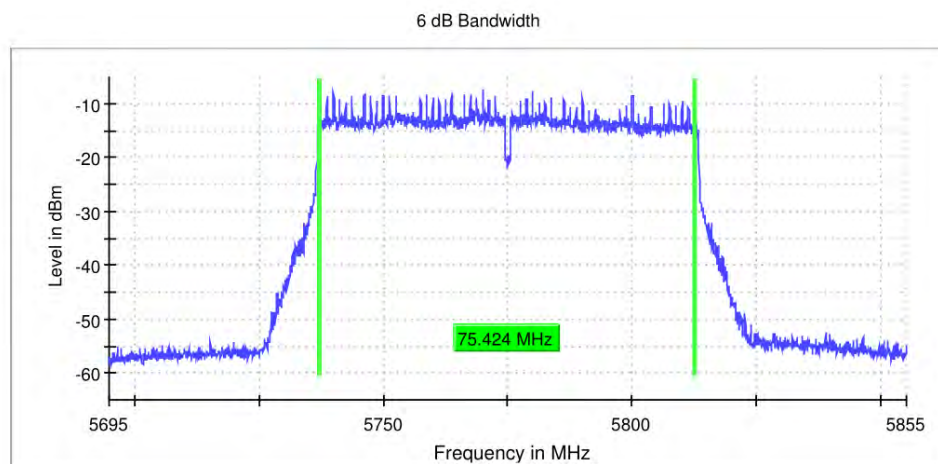
11N40-SISO\_Ant0\_5755



11N40-SISO\_Ant0\_5795



11AC80-SISO\_Ant0\_5775



## DUTY CYCLE

### TEST RESULT

| TestMode   | Antenna | Frequency[MHz] | Transmission<br>Duration [ms] | Transmission<br>Period [ms] | Duty<br>Cycle<br>[%] |
|------------|---------|----------------|-------------------------------|-----------------------------|----------------------|
| 11A        | Ant0    | 5180           | 2.065                         | 2.100                       | 98.33                |
|            | Ant0    | 5745           | 2.065                         | 2.100                       | 98.33                |
| 11N20SISO  | Ant0    | 5180           | 1.925                         | 1.960                       | 98.21                |
|            | Ant0    | 5745           | 1.925                         | 1.967                       | 97.86                |
| 11AC20SISO | Ant0    | 5815           | 1.932                         | 1.968                       | 98.17                |
|            | Ant0    | 5745           | 1.932                         | 1.975                       | 97.82                |
| 11N40SISO  | Ant0    | 5190           | 0.948                         | 0.984                       | 96.34                |
|            | Ant0    | 5755           | 0.952                         | 0.988                       | 96.36                |
| 11AC40SISO | Ant0    | 5190           | 0.950                         | 0.986                       | 96.35                |
|            | Ant0    | 5755           | 0.954                         | 0.990                       | 96.36                |
| 11AC80SISO | Ant0    | 5210           | 0.464                         | 0.500                       | 92.80                |
|            | Ant0    | 5775           | 0.464                         | 0.500                       | 92.80                |

## TEST GRAPHS

