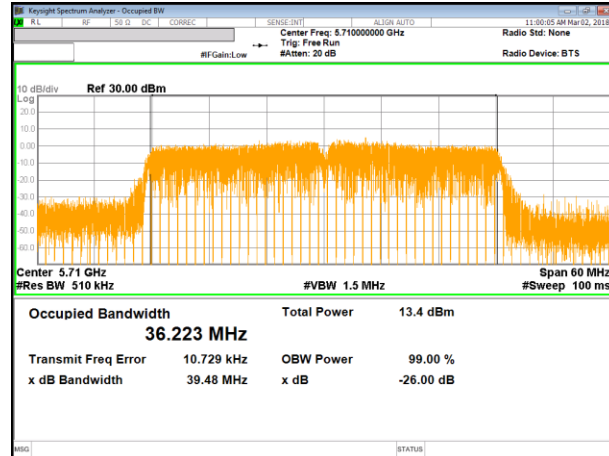
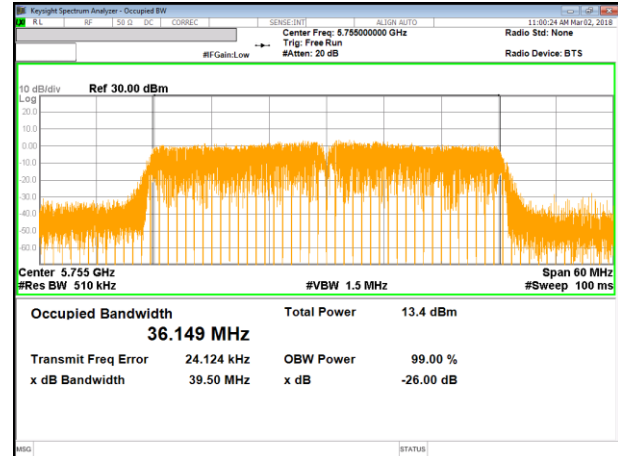


## UNII 5.8 GHz IEEE 802.11n HT40 mode

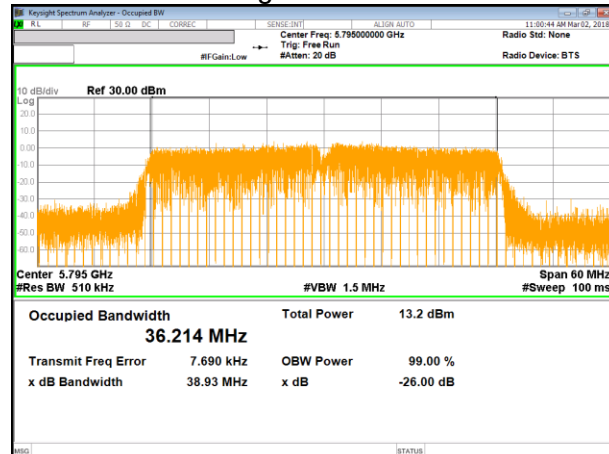
### 11n HT40 Mode Straddle Channel



### 11n HT40 Mode Low Channel



### 11n HT40 Mode High Channel



## 10. ANTENNA PORT TEST RESULTS

### 10.1. 6 dB BANDWIDTH

#### LIMITS

FCC §15.407 (e)

The minimum 6 dB bandwidth shall be at least 500 kHz.

#### TEST PROCEDURE

Reference to 789033 D02 General UNII Test Procedures New Rules v02r01: The transmitter output is connected to a spectrum analyzer with the RBW set to 100kHz, the VBW  $\geq 3 \times$  RBW, peak detector and max hold.

#### NOTE

- Calculation for 6dB Bandwidth of UNII-3 Straddle Channel

ex) Fundamental frequency : 5720MHz

- 6dB BW : 16.350MHz
- Starting Frequency of UNII-3 band : 5725MHz
- 6dB Bandwidth of UNII-3 band Portion  
 $= (5720 + (16.350 / 2) - 5725) = 3.175 \text{ MHz}$

#### RESULTS

### 10.1.1. 802.11a MODE IN THE 5.8 GHz BAND

| Channel  | Frequency [MHz] | 6 dB Bandwidth [MHz] | Minimum Limit [MHz] |
|----------|-----------------|----------------------|---------------------|
| Straddle | 5720            | 3.180                | 0.5                 |
| Low      | 5745            | 16.330               | 0.5                 |
| Mid      | 5785            | 16.330               | 0.5                 |
| High     | 5825            | 16.330               | 0.5                 |
| Worst    |                 | 3.180                |                     |

### 10.1.2. 802.11n HT20 MODE IN THE 5.8 GHz BAND

| Channel  | Frequency [MHz] | 6 dB Bandwidth [MHz] | Minimum Limit [MHz] |
|----------|-----------------|----------------------|---------------------|
| Straddle | 5720            | 3.775                | 0.5                 |
| Low      | 5745            | 17.550               | 0.5                 |
| Mid      | 5785            | 17.530               | 0.5                 |
| High     | 5825            | 17.600               | 0.5                 |
| Worst    |                 | 3.775                |                     |

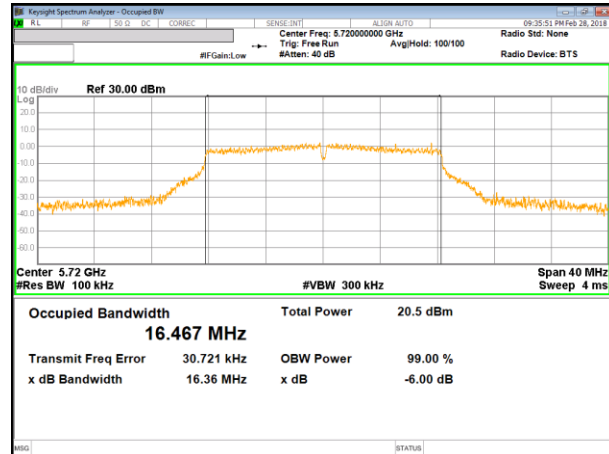
### 10.1.3. 802.11n HT40 MODE IN THE 5.8 GHz BAND

| Channel  | Frequency [MHz] | 6 dB Bandwidth [MHz] | Minimum Limit [MHz] |
|----------|-----------------|----------------------|---------------------|
| Straddle | 5710            | 2.860                | 0.5                 |
| Low      | 5755            | 35.300               | 0.5                 |
| High     | 5795            | 36.050               | 0.5                 |
| Worst    |                 | 2.860                |                     |

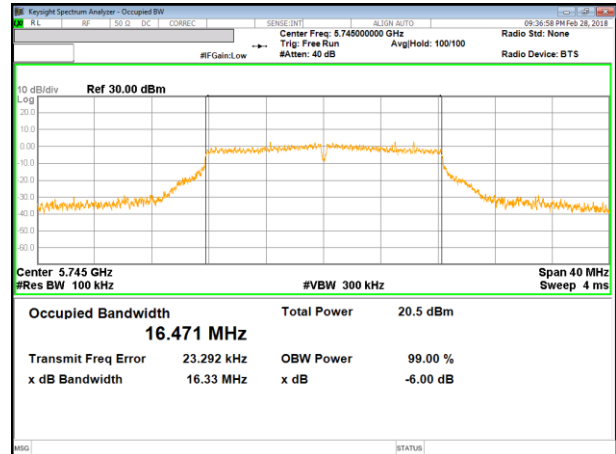
## 10.1.4. 6 dB BANDWIDTH PLOTS

### UNII 5.8 GHz IEEE 802.11a mode

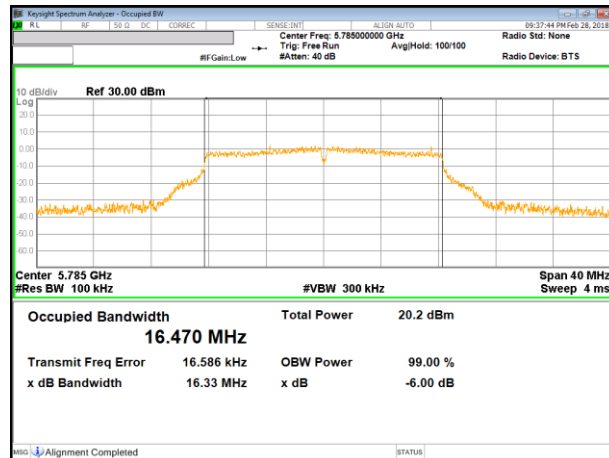
#### 11a Mode Straddle Channel



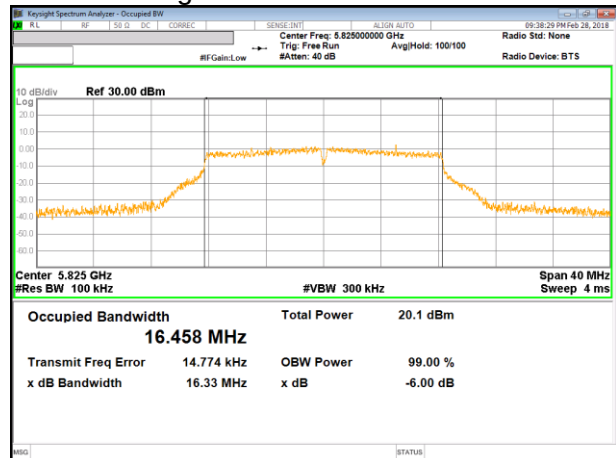
#### 11a Mode Low Channel



#### 11a Mode Middle Channel

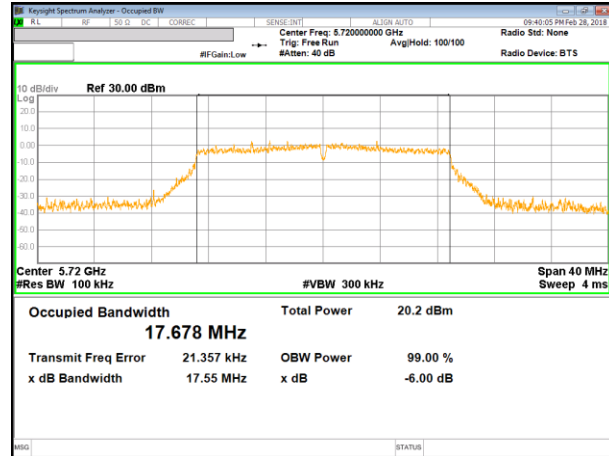


#### 11a Mode High Channel

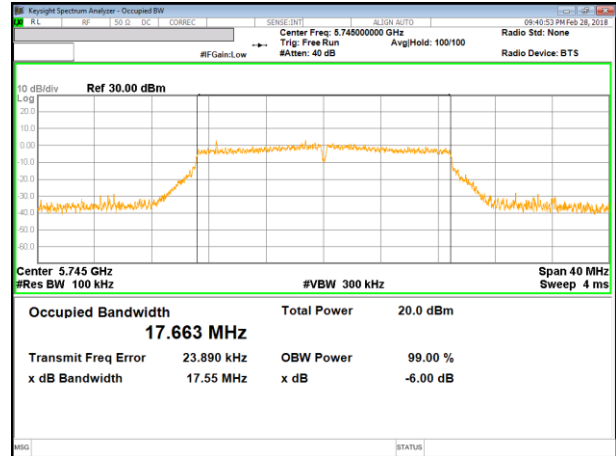


## UNII 5.8 GHz IEEE 802.11n HT20 mode

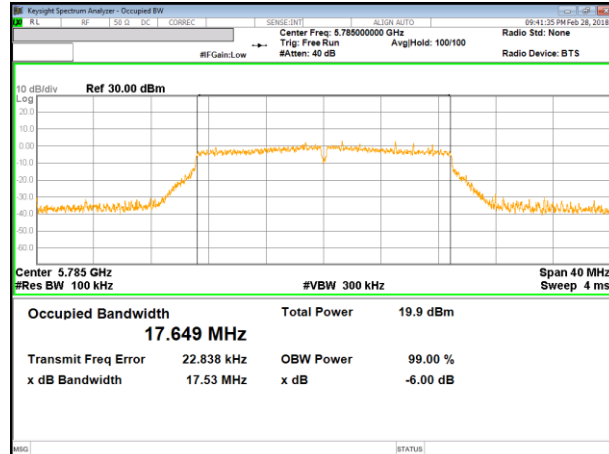
### 11n HT20 Mode Straddle Channel



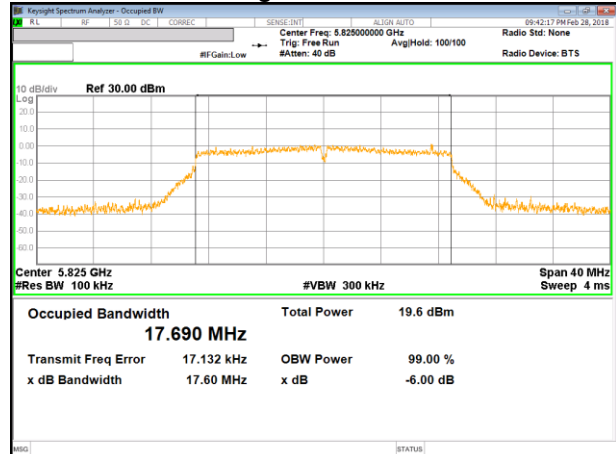
### 11n HT20 Mode Low Channel



### 11n HT20 Mode Middle Channel

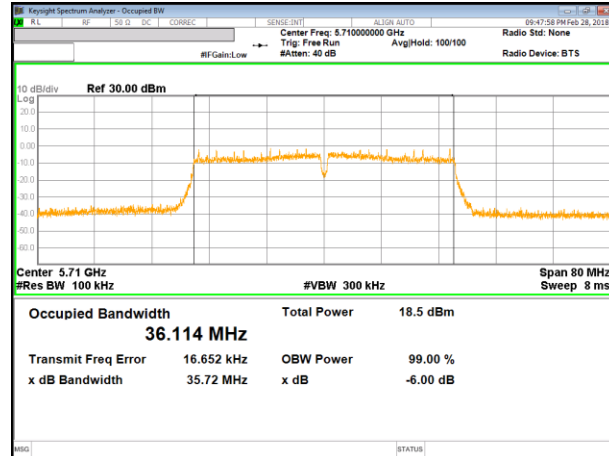


### 11n HT20 Mode High Channel

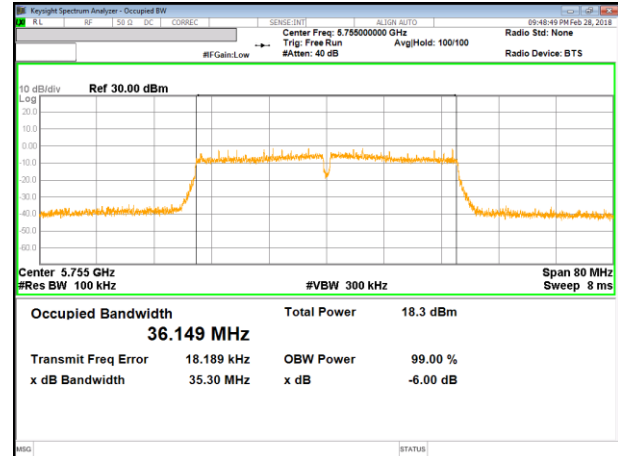


## UNII 5.8 GHz IEEE 802.11n HT40 mode

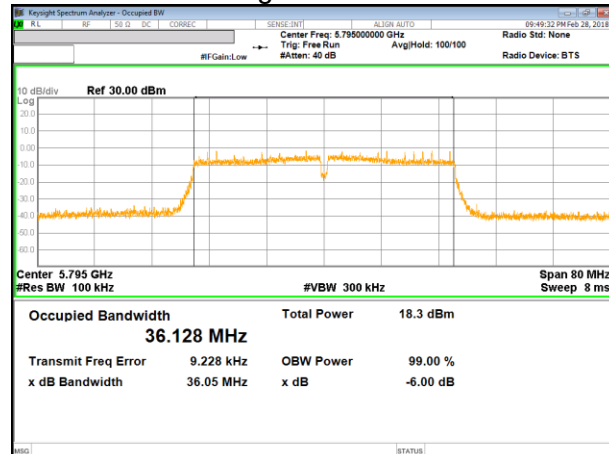
### 11n HT40 Mode Straddle Channel



### 11n HT40 Mode Low Channel



### 11n HT40 Mode High Channel



## 10.2. OUTPUT POWER AND PPSD

### LIMITS

FCC §15.407 (a) (1) (2) (3)

For the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.

### TEST PROCEDURE

The Duty Cycle is less than 98% and consistent therefore KDB 789033 Method SA-2 is used for power and PPSD. RBW set to 1MHz (500kHz for the band 5.725-5.85 GHz, the VBW  $\geq 3 \times$  RBW, RMS detector and trace averaging). Band power function used for power and peak marker value of the spectrum is used for PSD. Add duty cycle correction factor.

### DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

5 GHz

| Frequency Band<br>[MHz] | Antenna Gain<br>[dBi] |
|-------------------------|-----------------------|
| 5150 - 5250             | -1.17                 |
| 5250 - 5350             | -1.74                 |
| 5470 - 5725             | -1.74                 |
| 5725 - 5850             | -2.12                 |

## RESULTS

### 10.2.1. 802.11a MODE IN THE 5.2 GHz BAND

#### Bandwidth and Antenna Gain

| Channel | Frequency<br>[MHz] | Min<br>26 dB<br>BW<br>[MHz] | Directional<br>Gain<br>for Power<br>[dBi] | Directional<br>Gain<br>for PPSD<br>[dBi] |
|---------|--------------------|-----------------------------|-------------------------------------------|------------------------------------------|
| Low     | 5180               | 21.07                       | -1.17                                     | -1.17                                    |
| Mid     | 5200               | 20.98                       | -1.17                                     | -1.17                                    |
| High    | 5240               | 21.35                       | -1.17                                     | -1.17                                    |

#### Limits

| Channel | Frequency<br>[MHz] | FCC<br>Power<br>Limit<br>[dBm] | Power<br>Limit<br>[dBm] | FCC<br>PPSD<br>Limit<br>[dBm] |
|---------|--------------------|--------------------------------|-------------------------|-------------------------------|
| Low     | 5180               | 24.00                          | 24.00                   | 11.00                         |
| Mid     | 5200               | 24.00                          | 24.00                   | 11.00                         |
| High    | 5240               | 24.00                          | 24.00                   | 11.00                         |

|                    |      |                                                 |
|--------------------|------|-------------------------------------------------|
| Duty Cycle CF [dB] | 0.14 | Included in Calculations of Corr'd Power & PPSD |
|--------------------|------|-------------------------------------------------|

#### Output Power Results

| Channel | Frequency<br>[MHz] | Meas<br>Power<br>[dBm] | Total<br>Corr'd<br>Power<br>[dBm] | Power<br>Limit<br>[dBm] | Power<br>Margin<br>[dB] |
|---------|--------------------|------------------------|-----------------------------------|-------------------------|-------------------------|
| Low     | 5180               | 15.81                  | 15.95                             | 24.00                   | -8.05                   |
| Mid     | 5200               | 15.87                  | 16.01                             | 24.00                   | -7.99                   |
| High    | 5240               | 15.74                  | 15.88                             | 24.00                   | -8.12                   |

#### PPSD Results

| Channel | Frequency<br>[MHz] | Meas<br>PPSD<br>[dBm] | Total<br>Corr'd<br>PPSD<br>[dBm] | PPSD<br>Limit<br>[dBm] | PPSD<br>Margin<br>[dB] |
|---------|--------------------|-----------------------|----------------------------------|------------------------|------------------------|
| Low     | 5180               | 5.95                  | 6.09                             | 11.00                  | -4.91                  |
| Mid     | 5200               | 6.52                  | 6.66                             | 11.00                  | -4.34                  |
| High    | 5240               | 6.42                  | 6.56                             | 11.00                  | -4.44                  |

## 10.2.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

### Bandwidth and Antenna Gain

| Channel | Frequency<br>[MHz] | Min<br>26 dB<br>BW<br>[MHz] | Directional<br>Gain<br>for Power<br>[dBi] | Directional<br>Gain<br>for PPSD<br>[dBi] |
|---------|--------------------|-----------------------------|-------------------------------------------|------------------------------------------|
| Low     | 5180               | 21.43                       | -1.17                                     | -1.17                                    |
| Mid     | 5200               | 21.31                       | -1.17                                     | -1.17                                    |
| High    | 5240               | 21.19                       | -1.17                                     | -1.17                                    |

### Limits

| Channel | Frequency<br>[MHz] | FCC<br>Power<br>Limit<br>[dBm] | Power<br>Limit<br>[dBm] | FCC<br>PPSD<br>Limit<br>[dBm] |
|---------|--------------------|--------------------------------|-------------------------|-------------------------------|
| Low     | 5180               | 24.00                          | 24.00                   | 11.00                         |
| Mid     | 5200               | 24.00                          | 24.00                   | 11.00                         |
| High    | 5240               | 24.00                          | 24.00                   | 11.00                         |

|                    |      |                                                 |
|--------------------|------|-------------------------------------------------|
| Duty Cycle CF [dB] | 0.15 | Included in Calculations of Corr'd Power & PPSD |
|--------------------|------|-------------------------------------------------|

### Output Power Results

| Channel | Frequency<br>[MHz] | Meas<br>Power<br>[dBm] | Total<br>Corr'd<br>Power<br>[dBm] | Power<br>Limit<br>[dBm] | Power<br>Margin<br>[dB] |
|---------|--------------------|------------------------|-----------------------------------|-------------------------|-------------------------|
| Low     | 5180               | 15.38                  | 15.53                             | 24.00                   | -8.47                   |
| Mid     | 5200               | 15.34                  | 15.49                             | 24.00                   | -8.51                   |
| High    | 5240               | 15.42                  | 15.57                             | 24.00                   | -8.43                   |

### PPSD Results

| Channel | Frequency<br>[MHz] | Meas<br>PPSD<br>[dBm] | Total<br>Corr'd<br>PPSD<br>[dBm] | PPSD<br>Limit<br>[dBm] | PPSD<br>Margin<br>[dB] |
|---------|--------------------|-----------------------|----------------------------------|------------------------|------------------------|
| Low     | 5180               | 5.62                  | 5.77                             | 11.00                  | -5.23                  |
| Mid     | 5200               | 5.41                  | 5.56                             | 11.00                  | -5.44                  |
| High    | 5240               | 5.68                  | 5.83                             | 11.00                  | -5.17                  |

### 10.2.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

#### Bandwidth and Antenna Gain

| Channel | Frequency<br>[MHz] | Min<br>26 dB<br>BW<br>[MHz] | Directional<br>Gain<br>for Power<br>[dBi] | Directional<br>Gain<br>for PPSD<br>[dBi] |
|---------|--------------------|-----------------------------|-------------------------------------------|------------------------------------------|
| Low     | 5190               | 39.41                       | -1.17                                     | -1.17                                    |
| High    | 5230               | 39.45                       | -1.17                                     | -1.17                                    |

#### Limits

| Channel | Frequency<br>[MHz] | FCC<br>Power<br>Limit<br>[dBm] | Power<br>Limit<br>[dBm] | FCC<br>PPSD<br>Limit<br>[dBm] |
|---------|--------------------|--------------------------------|-------------------------|-------------------------------|
| Low     | 5190               | 24.00                          | 24.00                   | 11.00                         |
| High    | 5230               | 24.00                          | 24.00                   | 11.00                         |

|                    |      |                                                 |
|--------------------|------|-------------------------------------------------|
| Duty Cycle CF [dB] | 0.30 | Included in Calculations of Corr'd Power & PPSD |
|--------------------|------|-------------------------------------------------|

#### Output Power Results

| Channel | Frequency<br>[MHz] | Meas<br>Power<br>[dBm] | Total<br>Corr'd<br>Power<br>[dBm] | Power<br>Limit<br>[dBm] | Power<br>Margin<br>[dB] |
|---------|--------------------|------------------------|-----------------------------------|-------------------------|-------------------------|
| Low     | 5190               | 13.91                  | 14.21                             | 24.00                   | -9.79                   |
| High    | 5230               | 13.91                  | 14.21                             | 24.00                   | -9.79                   |

#### PPSD Results

| Channel | Frequency<br>[MHz] | Meas<br>PPSD<br>[dBm] | Total<br>Corr'd<br>PPSD<br>[dBm] | PPSD<br>Limit<br>[dBm] | PPSD<br>Margin<br>[dB] |
|---------|--------------------|-----------------------|----------------------------------|------------------------|------------------------|
| Low     | 5190               | 1.41                  | 1.70                             | 11.00                  | -9.30                  |
| High    | 5230               | 1.25                  | 1.54                             | 11.00                  | -9.46                  |

## 10.2.4. 802.11a MODE IN THE 5.3 GHz BAND

### Bandwidth and Antenna Gain

| Channel | Frequency<br>[MHz] | Min<br>26 dB<br>BW<br>[MHz] | Directional<br>Gain<br>for Power<br>[dBi] | Directional<br>Gain<br>for PPSD<br>[dBi] |
|---------|--------------------|-----------------------------|-------------------------------------------|------------------------------------------|
| Low     | 5260               | 21.06                       | -1.74                                     | -1.74                                    |
| Mid     | 5300               | 21.04                       | -1.74                                     | -1.74                                    |
| High    | 5320               | 20.87                       | -1.74                                     | -1.74                                    |

### Limits

| Channel | Frequency<br>[MHz] | FCC<br>Power<br>Limit<br>[dBm] | Power<br>Limit<br>[dBm] | FCC<br>PPSD<br>Limit<br>[dBm] |
|---------|--------------------|--------------------------------|-------------------------|-------------------------------|
| Low     | 5260               | 24.00                          | 24.00                   | 11.00                         |
| Mid     | 5300               | 24.00                          | 24.00                   | 11.00                         |
| High    | 5320               | 24.00                          | 24.00                   | 11.00                         |

|                    |      |                                                 |
|--------------------|------|-------------------------------------------------|
| Duty Cycle CF [dB] | 0.14 | Included in Calculations of Corr'd Power & PPSP |
|--------------------|------|-------------------------------------------------|

### Output Power Results

| Channel | Frequency<br>[MHz] | Meas<br>Power<br>[dBm] | Total<br>Corr'd<br>Power<br>[dBm] | Power<br>Limit<br>[dBm] | Power<br>Margin<br>[dB] |
|---------|--------------------|------------------------|-----------------------------------|-------------------------|-------------------------|
| Low     | 5260               | 15.71                  | 15.85                             | 24.00                   | -8.15                   |
| Mid     | 5300               | 15.46                  | 15.60                             | 24.00                   | -8.40                   |
| High    | 5320               | 15.55                  | 15.69                             | 24.00                   | -8.31                   |

### PPSD Results

| Channel | Frequency<br>[MHz] | Meas<br>PPSD<br>[dBm] | Total<br>Corr'd<br>PPSD<br>[dBm] | PPSD<br>Limit<br>[dBm] | PPSD<br>Margin<br>[dB] |
|---------|--------------------|-----------------------|----------------------------------|------------------------|------------------------|
| Low     | 5260               | 6.40                  | 6.54                             | 11.00                  | -4.46                  |
| Mid     | 5300               | 6.14                  | 6.28                             | 11.00                  | -4.72                  |
| High    | 5320               | 6.15                  | 6.29                             | 11.00                  | -4.71                  |

## 10.2.5. 802.11n HT20 MODE IN THE 5.3 GHz BAND

### Bandwidth and Antenna Gain

| Channel | Frequency<br>[MHz] | Min<br>26 dB<br>BW<br>[MHz] | Directional<br>Gain<br>for Power<br>[dBi] | Directional<br>Gain<br>for PPSD<br>[dBi] |
|---------|--------------------|-----------------------------|-------------------------------------------|------------------------------------------|
| Low     | 5260               | 22.56                       | -1.74                                     | -1.74                                    |
| Mid     | 5300               | 21.86                       | -1.74                                     | -1.74                                    |
| High    | 5320               | 21.86                       | -1.74                                     | -1.74                                    |

### Limits

| Channel | Frequency<br>[MHz] | FCC<br>Power<br>Limit<br>[dBm] | Power<br>Limit<br>[dBm] | FCC<br>PPSD<br>Limit<br>[dBm] |
|---------|--------------------|--------------------------------|-------------------------|-------------------------------|
| Low     | 5260               | 24.00                          | 24.00                   | 11.00                         |
| Mid     | 5300               | 24.00                          | 24.00                   | 11.00                         |
| High    | 5320               | 24.00                          | 24.00                   | 11.00                         |

|                    |      |                                                 |
|--------------------|------|-------------------------------------------------|
| Duty Cycle CF [dB] | 0.15 | Included in Calculations of Corr'd Power & PPSP |
|--------------------|------|-------------------------------------------------|

### Output Power Results

| Channel | Frequency<br>[MHz] | Meas<br>Power<br>[dBm] | Total<br>Corr'd<br>Power<br>[dBm] | Power<br>Limit<br>[dBm] | Power<br>Margin<br>[dB] |
|---------|--------------------|------------------------|-----------------------------------|-------------------------|-------------------------|
| Low     | 5260               | 16.25                  | 16.40                             | 24.00                   | -7.60                   |
| Mid     | 5300               | 16.22                  | 16.37                             | 24.00                   | -7.63                   |
| High    | 5320               | 16.13                  | 16.28                             | 24.00                   | -7.72                   |

### PPSD Results

| Channel | Frequency<br>[MHz] | Meas<br>PPSD<br>[dBm] | Total<br>Corr'd<br>PPSD<br>[dBm] | PPSD<br>Limit<br>[dBm] | PPSD<br>Margin<br>[dB] |
|---------|--------------------|-----------------------|----------------------------------|------------------------|------------------------|
| Low     | 5260               | 6.76                  | 6.91                             | 11.00                  | -4.09                  |
| Mid     | 5300               | 6.34                  | 6.49                             | 11.00                  | -4.51                  |
| High    | 5320               | 6.23                  | 6.38                             | 11.00                  | -4.62                  |

## 10.2.6. 802.11n HT40 MODE IN THE 5.3 GHz BAND

### Bandwidth and Antenna Gain

| Channel | Frequency<br>[MHz] | Min<br>26 dB<br>BW<br>[MHz] | Directional<br>Gain<br>for Power<br>[dBi] | Directional<br>Gain<br>for PPSD<br>[dBi] |
|---------|--------------------|-----------------------------|-------------------------------------------|------------------------------------------|
| Low     | 5270               | 39.66                       | -1.74                                     | -1.74                                    |
| High    | 5310               | 39.81                       | -1.74                                     | -1.74                                    |

### Limits

| Channel | Frequency<br>[MHz] | FCC<br>Power<br>Limit<br>[dBm] | Power<br>Limit<br>[dBm] | FCC<br>PPSD<br>Limit<br>[dBm] |
|---------|--------------------|--------------------------------|-------------------------|-------------------------------|
| Low     | 5270               | 24.00                          | 24.00                   | 11.00                         |
| High    | 5310               | 24.00                          | 24.00                   | 11.00                         |

|                    |      |                                                 |
|--------------------|------|-------------------------------------------------|
| Duty Cycle CF [dB] | 0.30 | Included in Calculations of Corr'd Power & PPSD |
|--------------------|------|-------------------------------------------------|

### Output Power Results

| Channel | Frequency<br>[MHz] | Meas<br>Power<br>[dBm] | Total<br>Corr'd<br>Power<br>[dBm] | Power<br>Limit<br>[dBm] | Power<br>Margin<br>[dB] |
|---------|--------------------|------------------------|-----------------------------------|-------------------------|-------------------------|
| Low     | 5270               | 13.88                  | 14.18                             | 24.00                   | -9.82                   |
| High    | 5310               | 14.01                  | 14.31                             | 24.00                   | -9.69                   |

### PPSD Results

| Channel | Frequency<br>[MHz] | Meas<br>PPSD<br>[dBm] | Total<br>Corr'd<br>PPSD<br>[dBm] | PPSD<br>Limit<br>[dBm] | PPSD<br>Margin<br>[dB] |
|---------|--------------------|-----------------------|----------------------------------|------------------------|------------------------|
| Low     | 5270               | 1.26                  | 1.55                             | 11.00                  | -9.45                  |
| High    | 5310               | 1.27                  | 1.56                             | 11.00                  | -9.44                  |

## 10.2.7. 802.11a MODE IN THE 5.5 GHz BAND

### Bandwidth and Antenna Gain

| Channel | Frequency<br>[MHz] | Min<br>26 dB<br>BW<br>[MHz] | Directional<br>Gain<br>for Power<br>[dBi] | Directional<br>Gain<br>for PPSP<br>[dBi] |
|---------|--------------------|-----------------------------|-------------------------------------------|------------------------------------------|
| Low     | 5500               | 21.22                       | -1.74                                     | -1.74                                    |
| Mid     | 5580               | 20.99                       | -1.74                                     | -1.74                                    |
| High    | 5700               | 21.05                       | -1.74                                     | -1.74                                    |

### Limits

| Channel | Frequency<br>[MHz] | FCC<br>Power<br>Limit<br>[dBm] | Power<br>Limit<br>[dBm] | FCC<br>PPSP<br>Limit<br>[dBm] |
|---------|--------------------|--------------------------------|-------------------------|-------------------------------|
| Low     | 5500               | 24.00                          | 24.00                   | 11.00                         |
| Mid     | 5580               | 24.00                          | 24.00                   | 11.00                         |
| High    | 5700               | 24.00                          | 24.00                   | 11.00                         |

|                    |      |                                                 |
|--------------------|------|-------------------------------------------------|
| Duty Cycle CF [dB] | 0.14 | Included in Calculations of Corr'd Power & PPSP |
|--------------------|------|-------------------------------------------------|

### Output Power Results

| Channel | Frequency<br>[MHz] | Meas<br>Power<br>[dBm] | Total<br>Corr'd<br>Power<br>[dBm] | Power<br>Limit<br>[dBm] | Power<br>Margin<br>[dB] |
|---------|--------------------|------------------------|-----------------------------------|-------------------------|-------------------------|
| Low     | 5500               | 16.16                  | 16.29                             | 24.00                   | -7.71                   |
| Mid     | 5580               | 16.00                  | 16.14                             | 24.00                   | -7.86                   |
| High    | 5700               | 15.94                  | 16.08                             | 24.00                   | -7.92                   |

### PPSP Results

| Channel | Frequency<br>[MHz] | Meas<br>PPSP<br>[dBm] | Total<br>Corr'd<br>PPSP<br>[dBm] | PPSP<br>Limit<br>[dBm] | PPSP<br>Margin<br>[dB] |
|---------|--------------------|-----------------------|----------------------------------|------------------------|------------------------|
| Low     | 5500               | 7.11                  | 7.25                             | 11.00                  | -3.75                  |
| Mid     | 5580               | 6.46                  | 6.60                             | 11.00                  | -4.40                  |
| High    | 5700               | 6.54                  | 6.68                             | 11.00                  | -4.32                  |

## 10.2.8. 802.11n HT20 MODE IN THE 5.5 GHz BAND

### Bandwidth and Antenna Gain

| Channel | Frequency<br>[MHz] | Min<br>26 dB<br>BW<br>[MHz] | Directional<br>Gain<br>for Power<br>[dBi] | Directional<br>Gain<br>for PPSP<br>[dBi] |
|---------|--------------------|-----------------------------|-------------------------------------------|------------------------------------------|
| Low     | 5500               | 21.08                       | -1.74                                     | -1.74                                    |
| Mid     | 5580               | 21.36                       | -1.74                                     | -1.74                                    |
| High    | 5700               | 21.23                       | -1.74                                     | -1.74                                    |

### Limits

| Channel | Frequency<br>[MHz] | FCC<br>Power<br>Limit<br>[dBm] | Power<br>Limit<br>[dBm] | FCC<br>PPSP<br>Limit<br>[dBm] |
|---------|--------------------|--------------------------------|-------------------------|-------------------------------|
| Low     | 5500               | 24.00                          | 24.00                   | 11.00                         |
| Mid     | 5580               | 24.00                          | 24.00                   | 11.00                         |
| High    | 5700               | 24.00                          | 24.00                   | 11.00                         |

|                    |      |                                                 |
|--------------------|------|-------------------------------------------------|
| Duty Cycle CF [dB] | 0.15 | Included in Calculations of Corr'd Power & PPSP |
|--------------------|------|-------------------------------------------------|

### Output Power Results

| Channel | Frequency<br>[MHz] | Meas<br>Power<br>[dBm] | Total<br>Corr'd<br>Power<br>[dBm] | Power<br>Limit<br>[dBm] | Power<br>Margin<br>[dB] |
|---------|--------------------|------------------------|-----------------------------------|-------------------------|-------------------------|
| Low     | 5500               | 15.85                  | 16.00                             | 24.00                   | -8.00                   |
| Mid     | 5580               | 15.20                  | 15.35                             | 24.00                   | -8.65                   |
| High    | 5700               | 15.58                  | 15.73                             | 24.00                   | -8.27                   |

### PPSP Results

| Channel | Frequency<br>[MHz] | Meas<br>PPSP<br>[dBm] | Total<br>Corr'd<br>PPSP<br>[dBm] | PPSP<br>Limit<br>[dBm] | PPSP<br>Margin<br>[dB] |
|---------|--------------------|-----------------------|----------------------------------|------------------------|------------------------|
| Low     | 5500               | 6.18                  | 6.33                             | 11.00                  | -4.67                  |
| Mid     | 5580               | 5.55                  | 5.70                             | 11.00                  | -5.30                  |
| High    | 5700               | 5.85                  | 6.00                             | 11.00                  | -5.00                  |

### 10.2.9. 802.11n HT40 MODE IN THE 5.5 GHz BAND

#### Bandwidth and Antenna Gain

| Channel | Frequency<br>[MHz] | Min<br>26 dB<br>BW<br>[MHz] | Directional<br>Gain<br>for Power<br>[dBi] | Directional<br>Gain<br>for PPSD<br>[dBi] |
|---------|--------------------|-----------------------------|-------------------------------------------|------------------------------------------|
| Low     | 5510               | 39.56                       | -1.74                                     | -1.74                                    |
| Mid     | 5590               | 39.65                       | -2.12                                     | -2.12                                    |
| High    | 5670               | 39.82                       | -1.74                                     | -1.74                                    |

#### Limits

| Channel | Frequency<br>[MHz] | FCC<br>Power<br>Limit<br>[dBm] | Power<br>Limit<br>[dBm] | FCC<br>PPSD<br>Limit<br>[dBm] |
|---------|--------------------|--------------------------------|-------------------------|-------------------------------|
| Low     | 5510               | 24.00                          | 24.00                   | 11.00                         |
| Mid     | 5590               | 24.00                          | 24.00                   | 11.00                         |
| High    | 5670               | 24.00                          | 24.00                   | 11.00                         |

|                    |      |                                                 |
|--------------------|------|-------------------------------------------------|
| Duty Cycle CF [dB] | 0.30 | Included in Calculations of Corr'd Power & PPSD |
|--------------------|------|-------------------------------------------------|

#### Output Power Results

| Channel | Frequency<br>[MHz] | Meas<br>Power<br>[dBm] | Total<br>Corr'd<br>Power<br>[dBm] | Power<br>Limit<br>[dBm] | Power<br>Margin<br>[dB] |
|---------|--------------------|------------------------|-----------------------------------|-------------------------|-------------------------|
| Low     | 5510               | 13.44                  | 13.74                             | 24.00                   | -10.26                  |
| Mid     | 5590               | 13.47                  | 13.76                             | 24.00                   | -10.24                  |
| High    | 5670               | 13.23                  | 13.53                             | 24.00                   | -10.47                  |

#### PPSD Results

| Channel | Frequency<br>[MHz] | Meas<br>PPSD<br>[dBm] | Total<br>Corr'd<br>PPSD<br>[dBm] | PPSD<br>Limit<br>[dBm] | PPSD<br>Margin<br>[dB] |
|---------|--------------------|-----------------------|----------------------------------|------------------------|------------------------|
| Low     | 5510               | 0.67                  | 0.96                             | 11.00                  | -10.04                 |
| Mid     | 5590               | 0.58                  | 0.87                             | 11.00                  | -10.13                 |
| High    | 5670               | 1.01                  | 1.31                             | 11.00                  | -9.69                  |

## 10.2.10. 802.11a MODE IN THE 5.8 GHz BAND

### Bandwidth and Antenna Gain

| Channel | Frequency<br>[MHz] | Min<br>26 dB<br>BW<br>[MHz] | Directional<br>Gain<br>for Power<br>[dBi] | Directional<br>Gain<br>for PPSD<br>[dBi] |
|---------|--------------------|-----------------------------|-------------------------------------------|------------------------------------------|
| Low     | 5745               | 21.28                       | -2.12                                     | -2.12                                    |
| Mid     | 5785               | 21.03                       | -2.12                                     | -2.12                                    |
| High    | 5825               | 21.16                       | -2.12                                     | -2.12                                    |

### Limits

| Channel | Frequency<br>[MHz] | FCC<br>Power<br>Limit<br>[dBm] | Power<br>Limit<br>[dBm] | FCC<br>PPSD<br>Limit<br>[dBm/500kHz] |
|---------|--------------------|--------------------------------|-------------------------|--------------------------------------|
| Low     | 5745               | 30.00                          | 30.00                   | 30.00                                |
| Mid     | 5785               | 30.00                          | 30.00                   | 30.00                                |
| High    | 5825               | 30.00                          | 30.00                   | 30.00                                |

|                    |      |                                                 |
|--------------------|------|-------------------------------------------------|
| Duty Cycle CF [dB] | 0.14 | Included in Calculations of Corr'd Power & PPSD |
|--------------------|------|-------------------------------------------------|

### Output Power Results

| Channel | Frequency<br>[MHz] | Meas<br>Power<br>[dBm] | Total<br>Corr'd<br>Power<br>[dBm] | Power<br>Limit<br>[dBm] | Power<br>Margin<br>[dB] |
|---------|--------------------|------------------------|-----------------------------------|-------------------------|-------------------------|
| Low     | 5745               | 16.03                  | 16.17                             | 30.00                   | -13.83                  |
| Mid     | 5785               | 16.05                  | 16.19                             | 30.00                   | -13.81                  |
| High    | 5825               | 15.87                  | 16.01                             | 30.00                   | -13.99                  |

### PPSD Results

| Channel | Frequency<br>[MHz] | Meas<br>PPSD<br>[dBm/500kHz] | Total<br>Corr'd<br>PPSD<br>[dBm/500kHz] | PPSD<br>Limit<br>[dBm/500kHz] | PPSD<br>Margin<br>[dB] |
|---------|--------------------|------------------------------|-----------------------------------------|-------------------------------|------------------------|
| Low     | 5745               | 3.95                         | 4.09                                    | 30.00                         | -25.91                 |
| Mid     | 5785               | 3.76                         | 3.90                                    | 30.00                         | -26.10                 |
| High    | 5825               | 3.52                         | 3.66                                    | 30.00                         | -26.34                 |

### 10.2.11. 802.11n HT20 MODE IN THE 5.8 GHz BAND

#### Bandwidth and Antenna Gain

| Channel | Frequency<br>[MHz] | Min<br>26 dB<br>BW<br>[MHz] | Directional<br>Gain<br>for Power<br>[dBi] | Directional<br>Gain<br>for PPSD<br>[dBi] |
|---------|--------------------|-----------------------------|-------------------------------------------|------------------------------------------|
| Low     | 5745               | 21.07                       | -2.12                                     | -2.12                                    |
| Mid     | 5785               | 21.30                       | -2.12                                     | -2.12                                    |
| High    | 5825               | 21.24                       | -2.12                                     | -2.12                                    |

#### Limits

| Channel | Frequency<br>[MHz] | FCC<br>Power<br>Limit<br>[dBm] | Power<br>Limit<br>[dBm] | FCC<br>PPSD<br>Limit<br>[dBm/500kHz] |
|---------|--------------------|--------------------------------|-------------------------|--------------------------------------|
| Low     | 5745               | 30.00                          | 30.00                   | 30.00                                |
| Mid     | 5785               | 30.00                          | 30.00                   | 30.00                                |
| High    | 5825               | 30.00                          | 30.00                   | 30.00                                |

|                    |      |                                                 |
|--------------------|------|-------------------------------------------------|
| Duty Cycle CF [dB] | 0.15 | Included in Calculations of Corr'd Power & PPSD |
|--------------------|------|-------------------------------------------------|

#### Output Power Results

| Channel | Frequency<br>[MHz] | Meas<br>Power<br>[dBm] | Total<br>Corr'd<br>Power<br>[dBm] | Power<br>Limit<br>[dBm] | Power<br>Margin<br>[dB] |
|---------|--------------------|------------------------|-----------------------------------|-------------------------|-------------------------|
| Low     | 5745               | 15.54                  | 15.69                             | 30.00                   | -14.31                  |
| Mid     | 5785               | 15.61                  | 15.76                             | 30.00                   | -14.24                  |
| High    | 5825               | 15.53                  | 15.68                             | 30.00                   | -14.32                  |

#### PPSD Results

| Channel | Frequency<br>[MHz] | Meas<br>PPSD<br>[dBm/500kHz] | Total<br>Corr'd<br>PPSD<br>[dBm/500kHz] | PPSD<br>Limit<br>[dBm/500kHz] | PPSD<br>Margin<br>[dB] |
|---------|--------------------|------------------------------|-----------------------------------------|-------------------------------|------------------------|
| Low     | 5745               | 3.25                         | 3.40                                    | 30.00                         | -26.60                 |
| Mid     | 5785               | 3.04                         | 3.19                                    | 30.00                         | -26.81                 |
| High    | 5825               | 2.79                         | 2.94                                    | 30.00                         | -27.06                 |

## 10.2.12. 802.11n HT40 MODE IN THE 5.8 GHz BAND

### Bandwidth and Antenna Gain

| Channel | Frequency<br>[MHz] | Min<br>26 dB<br>BW<br>[MHz] | Directional<br>Gain<br>for Power<br>[dBi] | Directional<br>Gain<br>for PPSP<br>[dBi] |
|---------|--------------------|-----------------------------|-------------------------------------------|------------------------------------------|
| Low     | 5755               | 39.58                       | -2.12                                     | -2.12                                    |
| High    | 5795               | 39.80                       | -2.12                                     | -2.12                                    |

### Limits

| Channel | Frequency<br>[MHz] | FCC<br>Power<br>Limit<br>[dBm] | Power<br>Limit<br>[dBm] | FCC<br>PPSP<br>Limit<br>[dBm/500kHz] |
|---------|--------------------|--------------------------------|-------------------------|--------------------------------------|
| Low     | 5755               | 30.00                          | 30.00                   | 30.00                                |
| High    | 5795               | 30.00                          | 30.00                   | 30.00                                |

|                    |      |                                                 |
|--------------------|------|-------------------------------------------------|
| Duty Cycle CF [dB] | 0.30 | Included in Calculations of Corr'd Power & PPSP |
|--------------------|------|-------------------------------------------------|

### Output Power Results

| Channel | Frequency<br>[MHz] | Meas<br>Power<br>[dBm] | Total<br>Corr'd<br>Power<br>[dBm] | Power<br>Limit<br>[dBm] | Power<br>Margin<br>[dB] |
|---------|--------------------|------------------------|-----------------------------------|-------------------------|-------------------------|
| Low     | 5755               | 13.43                  | 13.72                             | 30.00                   | -16.28                  |
| High    | 5795               | 13.33                  | 13.63                             | 30.00                   | -16.37                  |

### PPSP Results

| Channel | Frequency<br>[MHz] | Meas<br>PPSP<br>[dBm/500kHz] | Total<br>Corr'd<br>PPSP<br>[dBm/500kHz] | PPSP<br>Limit<br>[dBm/500kHz] | PPSP<br>Margin<br>[dB] |
|---------|--------------------|------------------------------|-----------------------------------------|-------------------------------|------------------------|
| Low     | 5755               | -1.16                        | -0.87                                   | 30.00                         | -30.87                 |
| High    | 5795               | -1.36                        | -1.06                                   | 30.00                         | -31.06                 |

### 10.2.13. 802.11a MODE AT STRADDLE CHANNEL

#### Bandwidth and Antenna Gain

| Portion | Frequency<br>[MHz] | Min<br>26 dB<br>BW<br>[MHz] | Directional<br>Gain<br>for Power<br>[dBi] | Directional<br>Gain<br>for PPSD<br>[dBi] |
|---------|--------------------|-----------------------------|-------------------------------------------|------------------------------------------|
| UNII-2C | 5720               | 15.58                       | -1.74                                     | -1.74                                    |
| UNII-3  | 5720               | 5.58                        | -1.74                                     | -1.74                                    |
| Whole   | 5720               | 21.16                       | -1.74                                     | -1.74                                    |

#### Limits

| Portion | Frequency<br>[MHz] | FCC<br>Power<br>Limit<br>[dBm] | Power<br>Limit<br>[dBm] | FCC<br>PPSD<br>Limit<br>[dBm] or<br>[dBm/kHz] |
|---------|--------------------|--------------------------------|-------------------------|-----------------------------------------------|
| UNII-2C | 5720               | 22.93                          | 22.93                   | 11.00                                         |
| UNII-3  | 5720               | 30.00                          | 30.00                   | 30.00                                         |
| Whole   | 5720               | 24.00                          | 24.00                   | 11.00                                         |

|                    |      |                                                 |
|--------------------|------|-------------------------------------------------|
| Duty Cycle CF [dB] | 0.14 | Included in Calculations of Corr'd Power & PPSD |
|--------------------|------|-------------------------------------------------|

#### Output Power Results

| Portion | Frequency<br>[MHz] | Meas<br>Power<br>[dBm] | Total<br>Corr'd<br>Power<br>[dBm] | Power<br>Limit<br>[dBm] | Power<br>Margin<br>[dB] |
|---------|--------------------|------------------------|-----------------------------------|-------------------------|-------------------------|
| UNII-2C | 5720               | 15.12                  | 15.26                             | 22.93                   | -7.67                   |
| UNII-3  | 5720               | 7.89                   | 8.03                              | 30.00                   | -21.97                  |
| Whole   | 5720               | 15.87                  | 16.01                             | 24.00                   | -7.99                   |

#### PPSD Results

| Channel | Frequency<br>[MHz] | Meas<br>PPSD<br>[dBm] or<br>[dBm/kHz] | Total<br>Corr'd<br>PPSD<br>[dBm] or<br>[dBm/kHz] | PPSD<br>Limit<br>[dBm] or<br>[dBm/kHz] | PPSD<br>Margin<br>[dB] |
|---------|--------------------|---------------------------------------|--------------------------------------------------|----------------------------------------|------------------------|
| UNII-2C | 5720               | 6.69                                  | 6.83                                             | 11.00                                  | -4.17                  |
| UNII-3  | 5720               | 1.14                                  | 1.28                                             | 30.00                                  | -28.72                 |

## 10.2.14. 802.11n HT20 MODE AT STRADDLE CHANNEL

### Bandwidth and Antenna Gain

| Portion | Frequency<br>[MHz] | Min<br>26 dB<br>BW<br>[MHz] | Directional<br>Gain<br>for Power<br>[dBi] | Directional<br>Gain<br>for PPSP<br>[dBi] |
|---------|--------------------|-----------------------------|-------------------------------------------|------------------------------------------|
| UNII-2C | 5720               | 15.70                       | -1.74                                     | -1.74                                    |
| UNII-3  | 5720               | 5.70                        | -1.74                                     | -1.74                                    |
| Whole   | 5720               | 21.40                       | -1.74                                     | -1.74                                    |

### Limits

| Portion | Frequency<br>[MHz] | FCC<br>Power<br>Limit<br>[dBm] | Power<br>Limit<br>[dBm] | FCC<br>PPSP<br>Limit<br>[dBm] or<br>[dBm/kHz] |
|---------|--------------------|--------------------------------|-------------------------|-----------------------------------------------|
| UNII-2C | 5720               | 22.96                          | 22.96                   | 11.00                                         |
| UNII-3  | 5720               | 30.00                          | 30.00                   | 11.00                                         |
| Whole   | 5720               | 24.00                          | 24.00                   | 11.00                                         |

|                    |      |                                                 |
|--------------------|------|-------------------------------------------------|
| Duty Cycle CF [dB] | 0.15 | Included in Calculations of Corr'd Power & PPSP |
|--------------------|------|-------------------------------------------------|

### Output Power Results

| Portion | Frequency<br>[MHz] | Meas<br>Power<br>[dBm] | Total<br>Corr'd<br>Power<br>[dBm] | Power<br>Limit<br>[dBm] | Power<br>Margin<br>[dB] |
|---------|--------------------|------------------------|-----------------------------------|-------------------------|-------------------------|
| UNII-2C | 5720               | 14.74                  | 14.89                             | 22.96                   | -8.07                   |
| UNII-3  | 5720               | 7.98                   | 8.13                              | 30.00                   | -21.87                  |
| Whole   | 5720               | 15.59                  | 15.74                             | 24.00                   | -8.26                   |

### PPSP Results

| Channel | Frequency<br>[MHz] | Meas<br>PPSP<br>[dBm] or<br>[dBm/kHz] | Total<br>Corr'd<br>PPSP<br>[dBm] or<br>[dBm/kHz] | PPSP<br>Limit<br>[dBm] or<br>[dBm/kHz] | PPSP<br>Margin<br>[dB] |
|---------|--------------------|---------------------------------------|--------------------------------------------------|----------------------------------------|------------------------|
| UNII-2C | 5720               | 5.69                                  | 5.84                                             | 11.00                                  | -5.16                  |
| UNII-3  | 5720               | 0.60                                  | 0.75                                             | 30.00                                  | -29.25                 |

### 10.2.15. 802.11n HT40 MODE AT STRADDLE CHANNEL

#### Bandwidth and Antenna Gain

| Portion | Frequency<br>[MHz] | Min<br>26 dB<br>BW<br>[MHz] | Directional<br>Gain<br>for Power<br>[dBi] | Directional<br>Gain<br>for PPSD<br>[dBi] |
|---------|--------------------|-----------------------------|-------------------------------------------|------------------------------------------|
| UNII-2C | 5710               | 34.68                       | -1.74                                     | -1.74                                    |
| UNII-3  | 5710               | 4.68                        | -1.74                                     | -1.74                                    |
| Whole   | 5710               | 39.36                       | -1.74                                     | -1.74                                    |

#### Limits

| Portion | Frequency<br>[MHz] | FCC<br>Power<br>Limit<br>[dBm] | Power<br>Limit<br>[dBm] | FCC<br>PPSD<br>Limit<br>[dBm] or<br>[dBm/kHz] |
|---------|--------------------|--------------------------------|-------------------------|-----------------------------------------------|
| UNII-2C | 5710               | 24.00                          | 24.00                   | 11.00                                         |
| UNII-3  | 5710               | 30.00                          | 30.00                   | 11.00                                         |
| Whole   | 5710               | 24.00                          | 24.00                   | 11.00                                         |

|                    |      |                                                 |
|--------------------|------|-------------------------------------------------|
| Duty Cycle CF [dB] | 0.30 | Included in Calculations of Corr'd Power & PPSP |
|--------------------|------|-------------------------------------------------|

#### Output Power Results

| Portion | Frequency<br>[MHz] | Meas<br>Power<br>[dBm] | Total<br>Corr'd<br>Power<br>[dBm] | Power<br>Limit<br>[dBm] | Power<br>Margin<br>[dB] |
|---------|--------------------|------------------------|-----------------------------------|-------------------------|-------------------------|
| UNII-2C | 5710               | 12.97                  | 13.26                             | 24.00                   | -10.74                  |
| UNII-3  | 5710               | 1.85                   | 2.15                              | 30.00                   | -27.85                  |
| Whole   | 5710               | 13.29                  | 13.59                             | 24.00                   | -10.41                  |

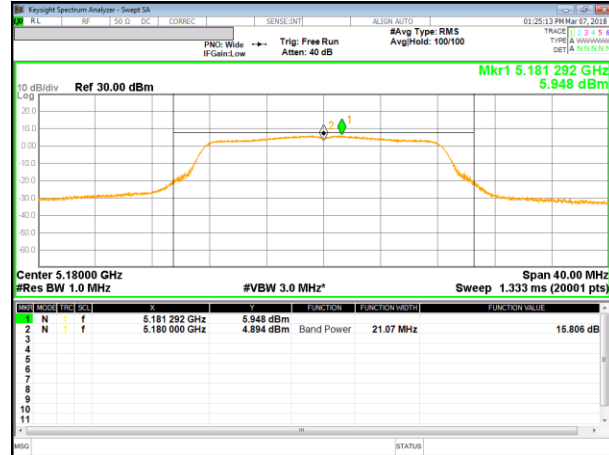
#### PPSD Results

| Channel | Frequency<br>[MHz] | Meas<br>PPSD<br>[dBm] or<br>[dBm/kHz] | Total<br>Corr'd<br>PPSD<br>[dBm] or<br>[dBm/kHz] | PPSD<br>Limit<br>[dBm] or<br>[dBm/kHz] | PPSD<br>Margin<br>[dB] |
|---------|--------------------|---------------------------------------|--------------------------------------------------|----------------------------------------|------------------------|
| UNII-2C | 5710               | 0.88                                  | 1.17                                             | 11.00                                  | -9.83                  |
| UNII-3  | 5710               | -4.51                                 | -4.22                                            | 30.00                                  | -34.22                 |

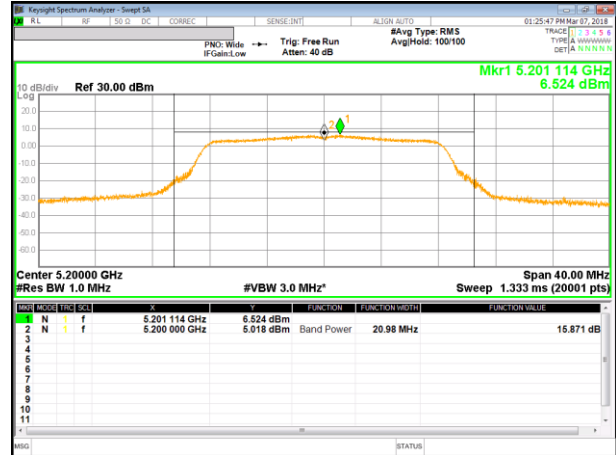
## 10.2.16. OUTPUT POWER AND PPSD PLOTS

### UNII 5.2 GHz IEEE 802.11a mode

#### 11a Mode Low Channel



#### 11a Mode Middle Channel

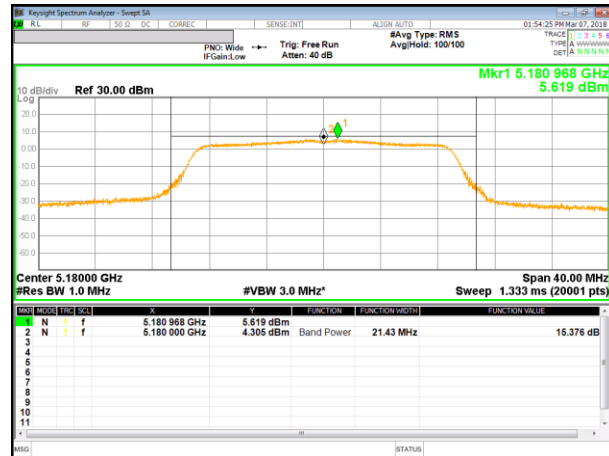


#### 11a Mode High Channel

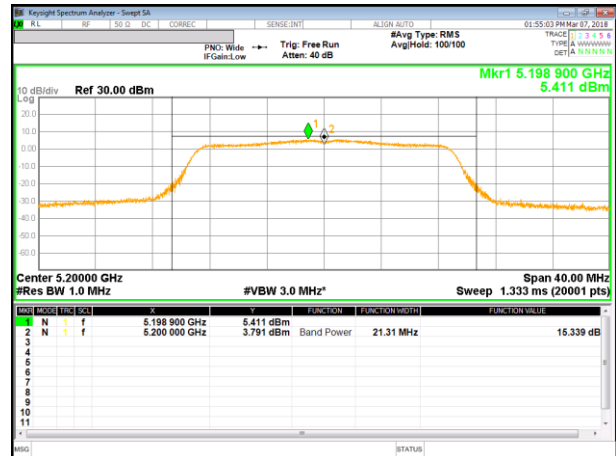


## UNII 5.2 GHz IEEE 802.11n HT20 mode

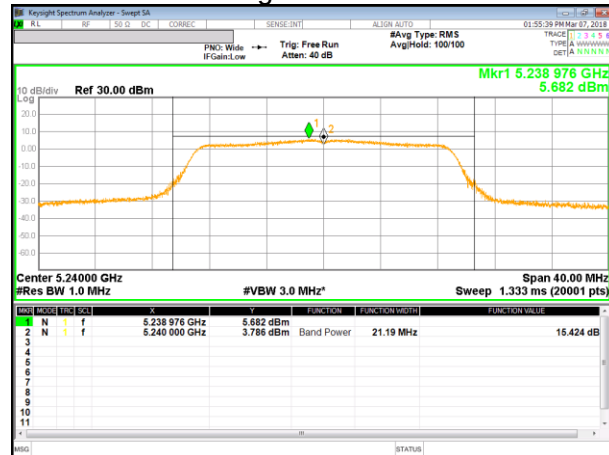
### 11n HT20 Mode Low Channel



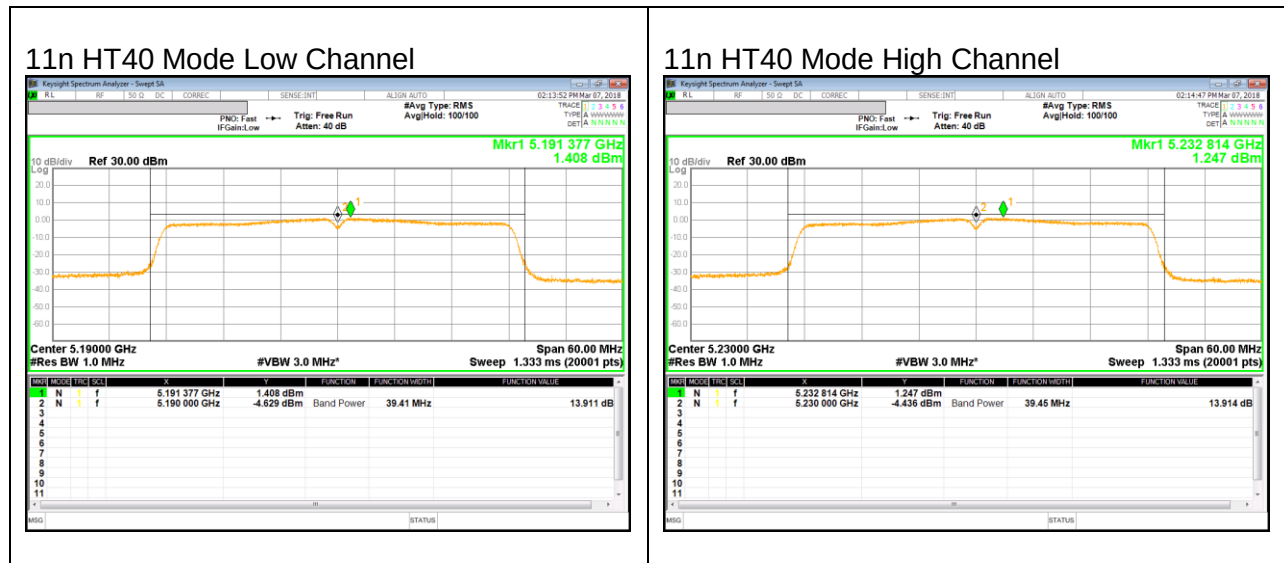
### 11n HT20 Mode Middle Channel



### 11n HT20 Mode High Channel

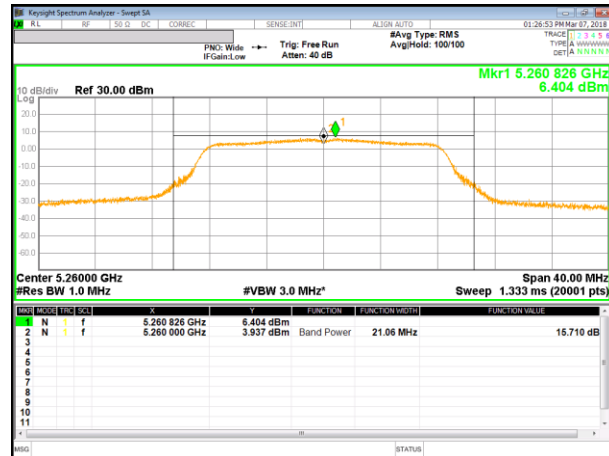


## UNII 5.2 GHz IEEE 802.11n HT40 mode

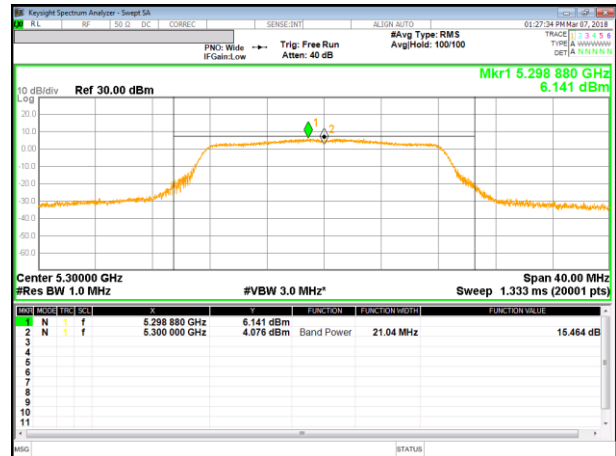


## UNII 5.3 GHz IEEE 802.11a mode

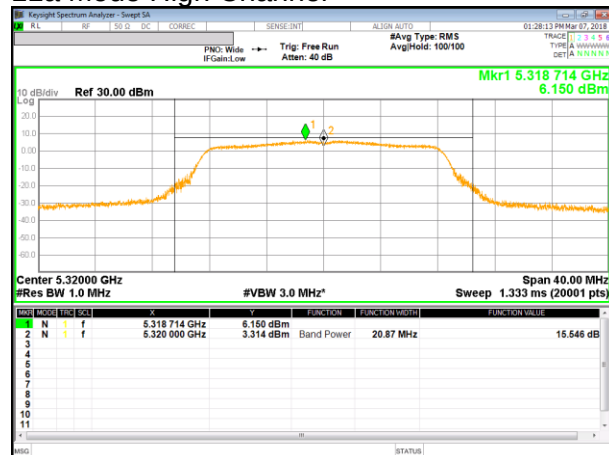
### 11a Mode Low Channel



### 11a Mode Middle Channel

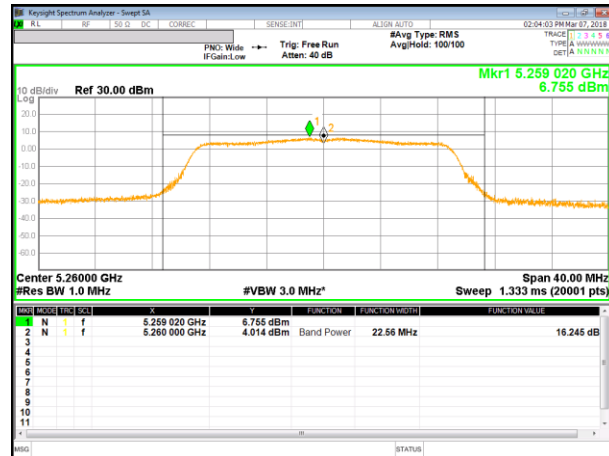


### 11a Mode High Channel

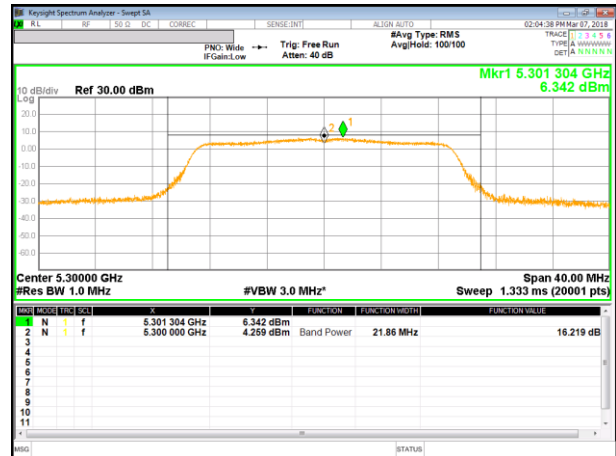


## UNII 5.3 GHz IEEE 802.11n HT20 mode

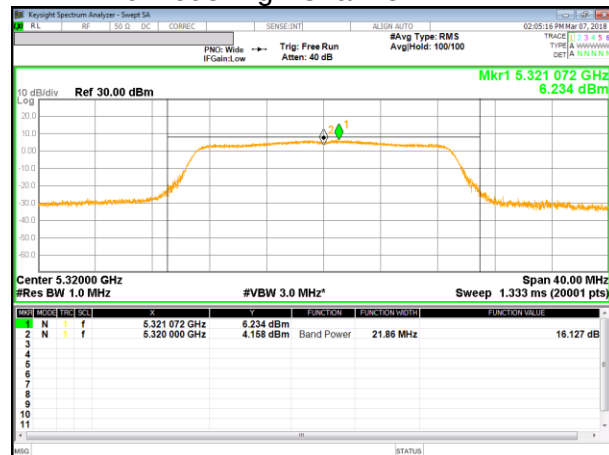
### 11n HT20 Mode Low Channel



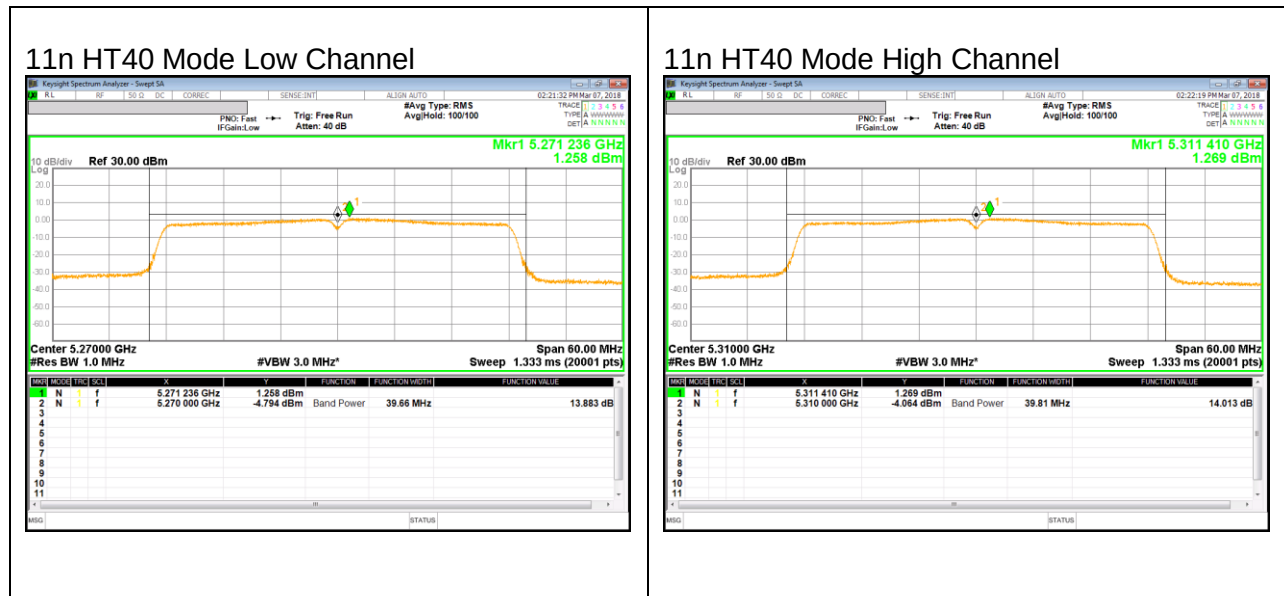
### 11n HT20 Mode Middle Channel



### 11n HT20 Mode High Channel

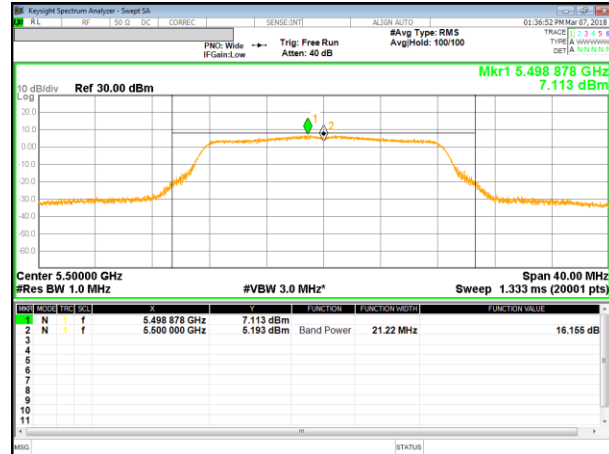


## UNII 5.3 GHz IEEE 802.11n HT40 mode

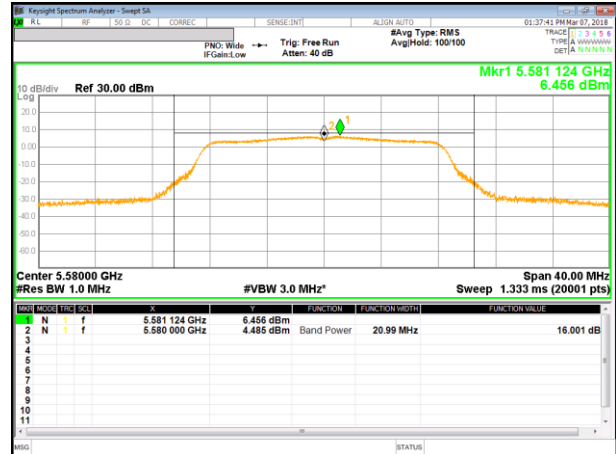


## UNII 5.5 GHz IEEE 802.11a mode

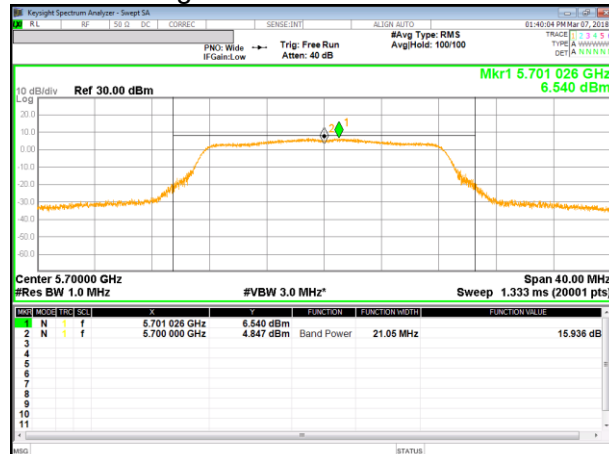
### 11a Mode Low Channel



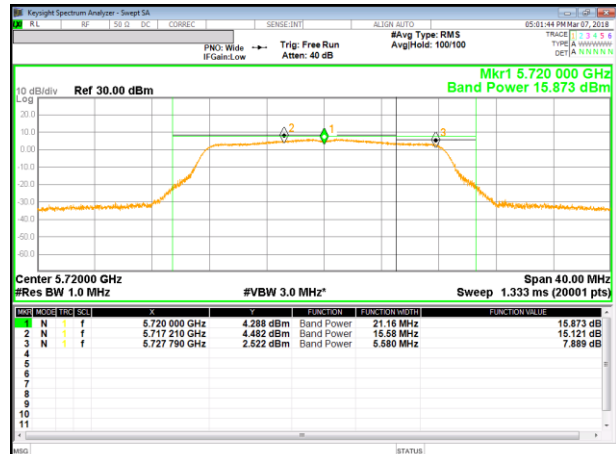
### 11a Mode Middle Channel



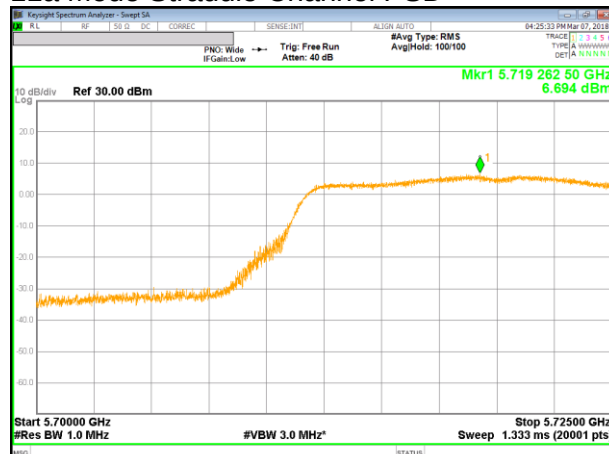
### 11a Mode High Channel



### 11a Mode Straddle Channel Power

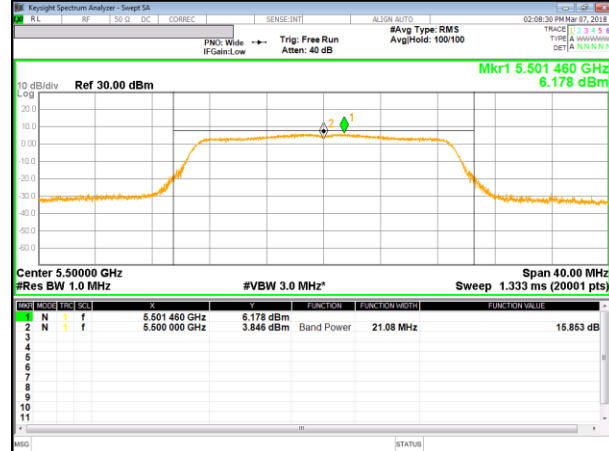


### 11a Mode Straddle Channel PSD

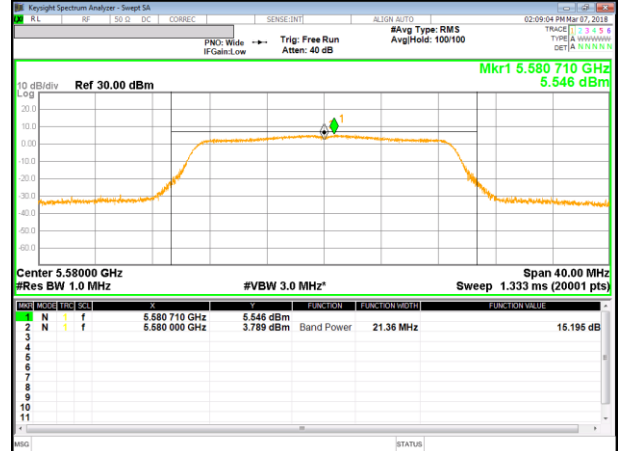


## UNII 5.5 GHz IEEE 802.11n HT20 mode

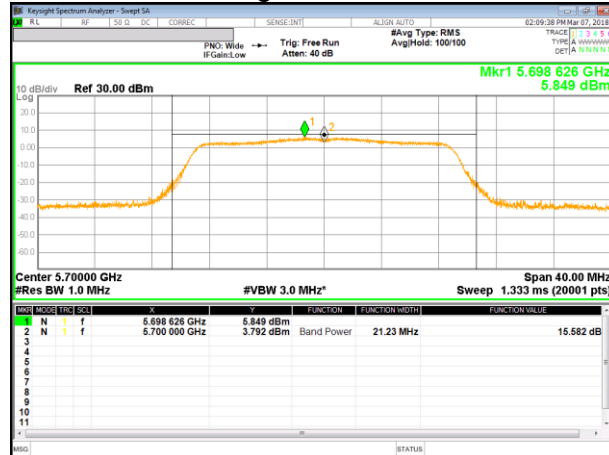
### 11n HT20 Mode Low Channel



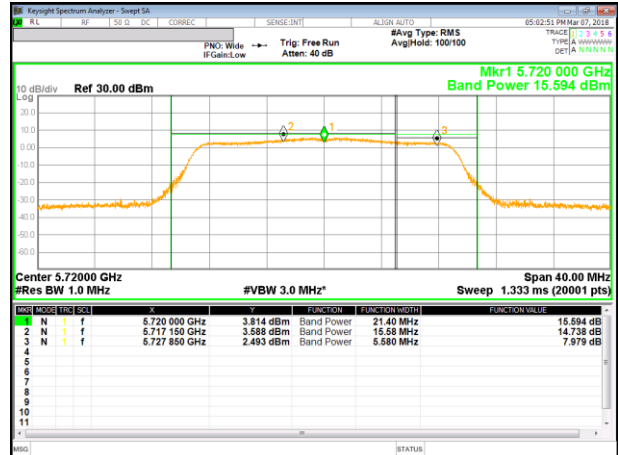
### 11n HT20 Mode Middle Channel



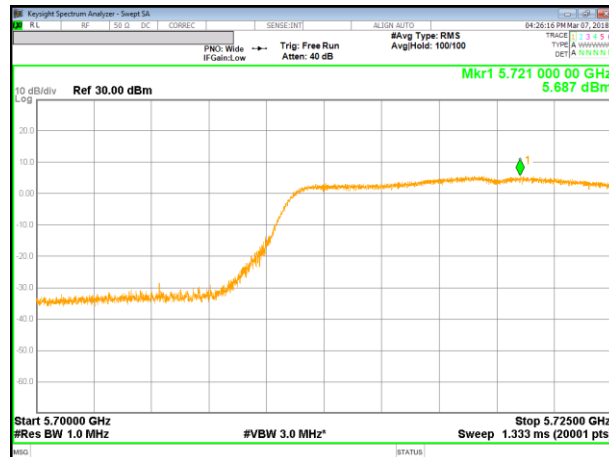
### 11n HT20 Mode High Channel



### 11n HT20 Mode Straddle Channel Power

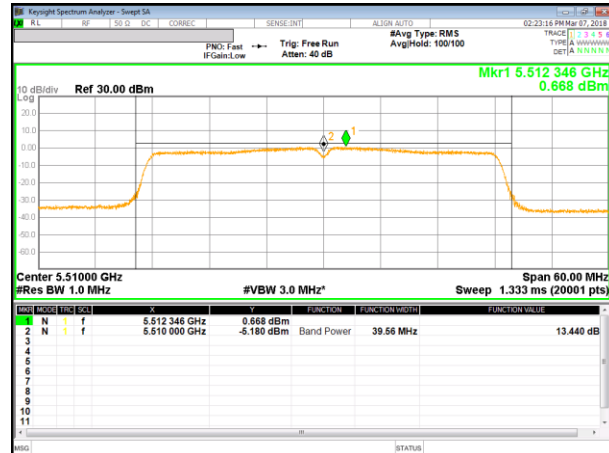


### 11n HT20 Mode Straddle Channel PSD

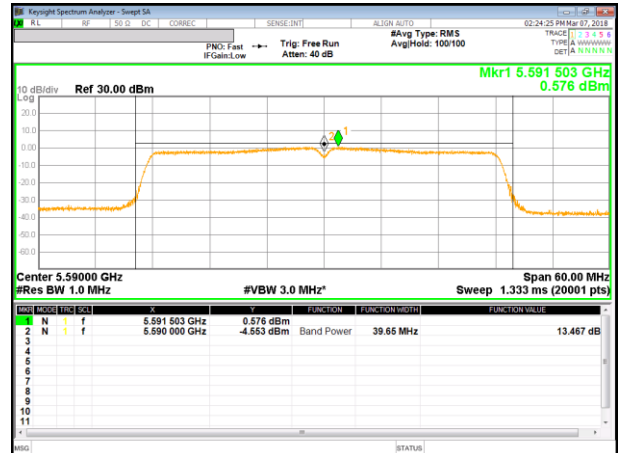


## UNII 5.5 GHz IEEE 802.11n HT40 mode

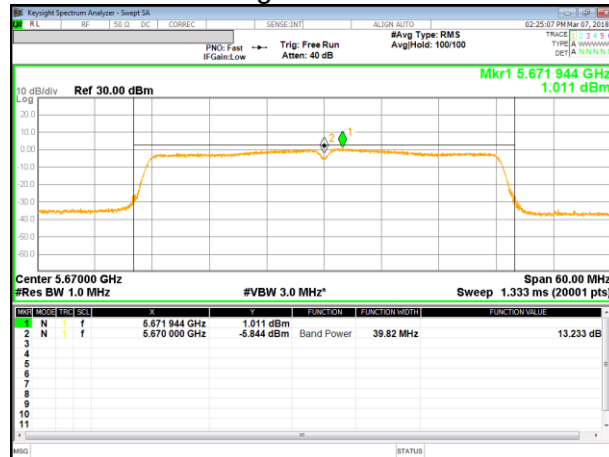
### 11n HT40 Mode Low Channel



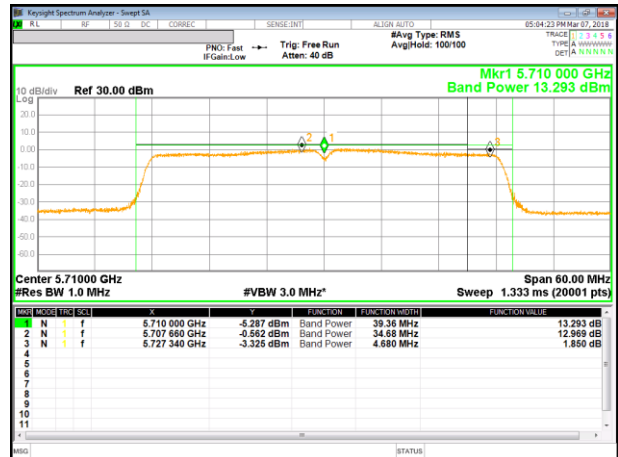
### 11n HT40 Mode Middle Channel



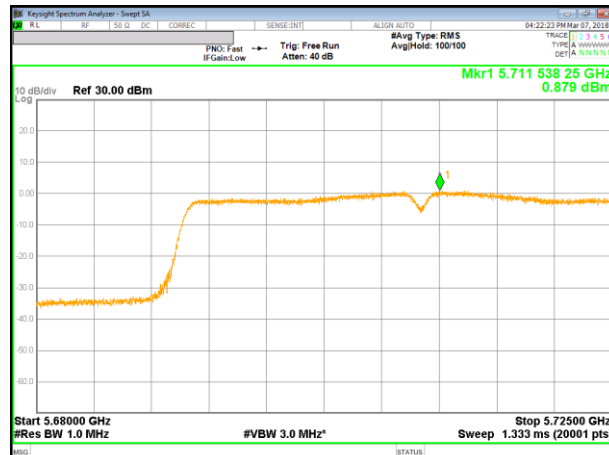
### 11n HT40 Mode High Channel



### 11n HT40 Mode Straddle Channel Power

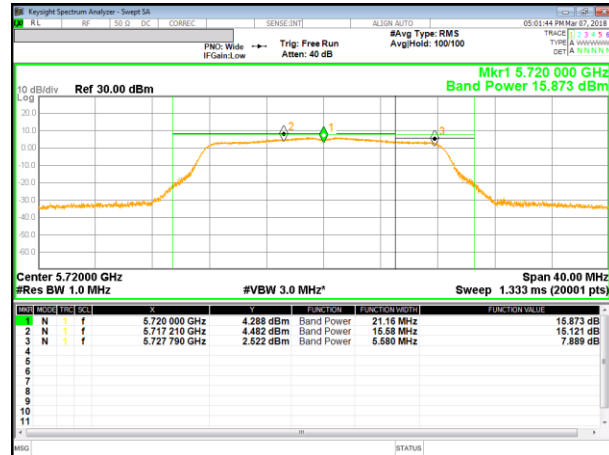


### 11n HT40 Mode Straddle Channel PSD

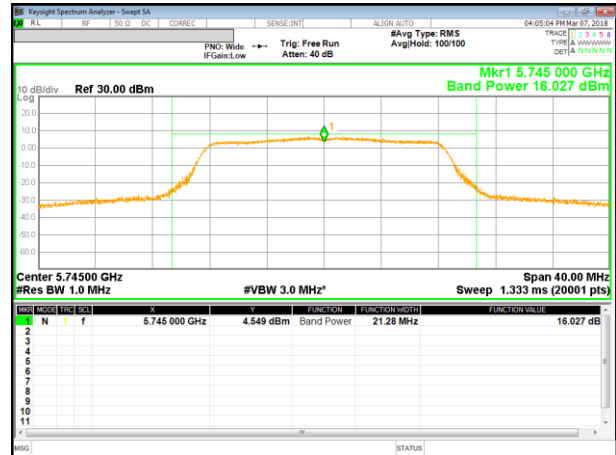


## UNII 5.8 GHz IEEE 802.11a mode for POWER

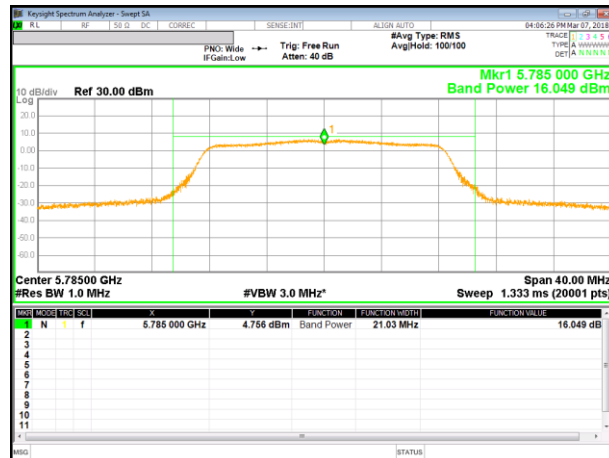
### 11a Mode Straddle Channel



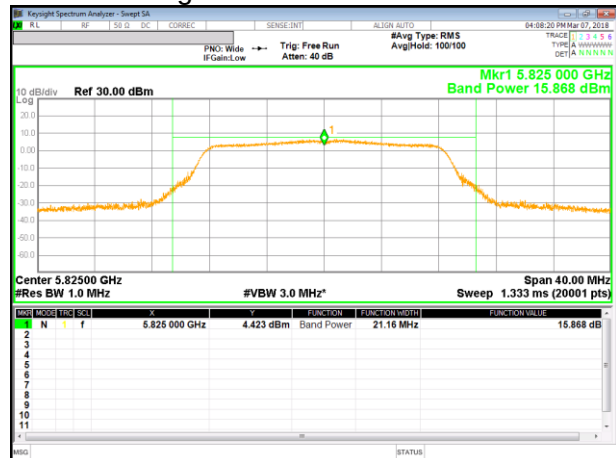
### 11a Mode Low Channel



### 11a Mode Middle Channel

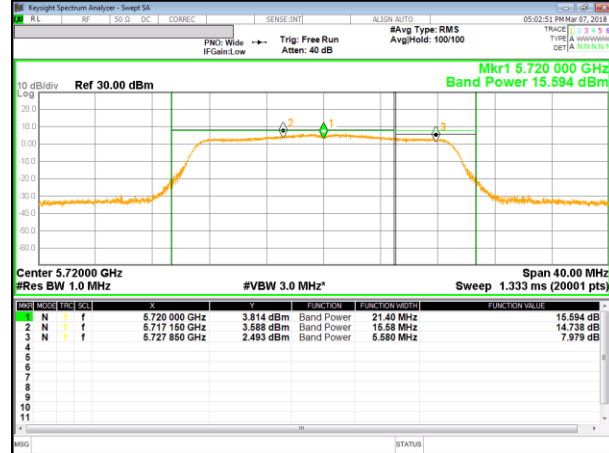


### 11a Mode High Channel

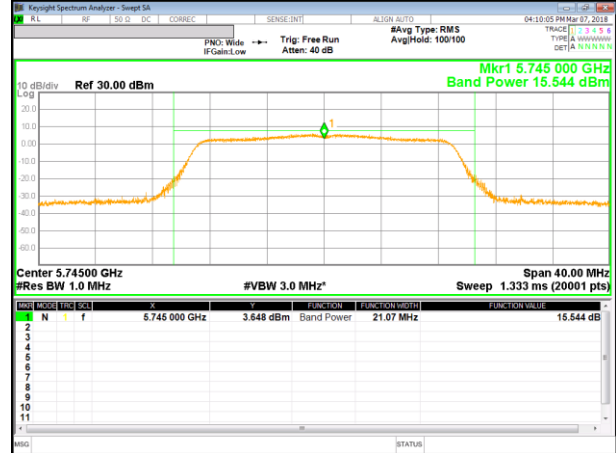


## UNII 5.8 GHz IEEE 802.11n HT20 mode for POWER

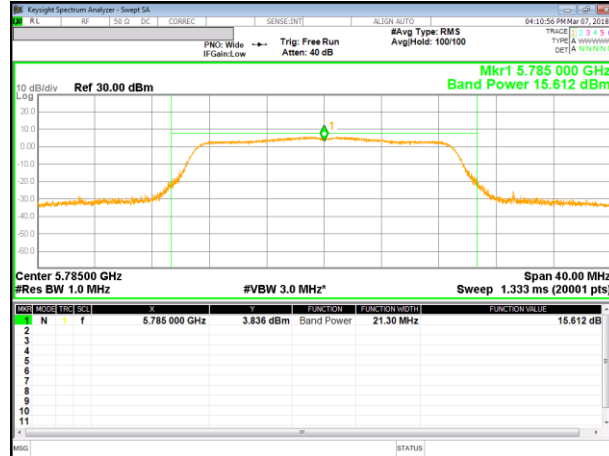
### 11n HT20 Mode Straddle Channel



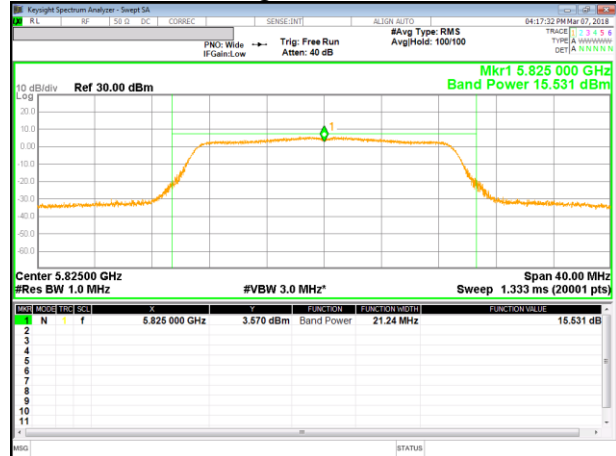
### 11n HT20 Mode Low Channel



### 11n HT20 Mode Middle Channel

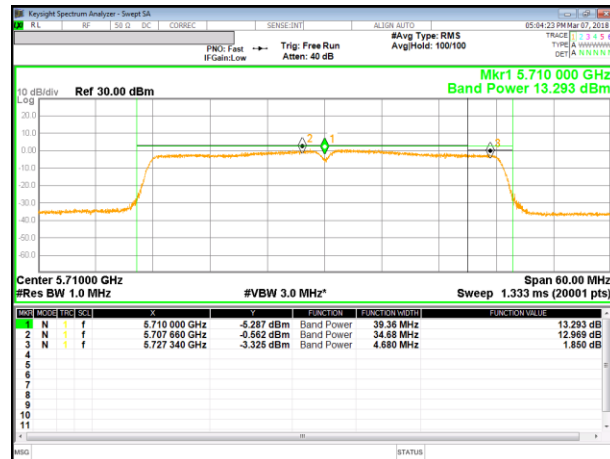


### 11n HT20 Mode High Channel

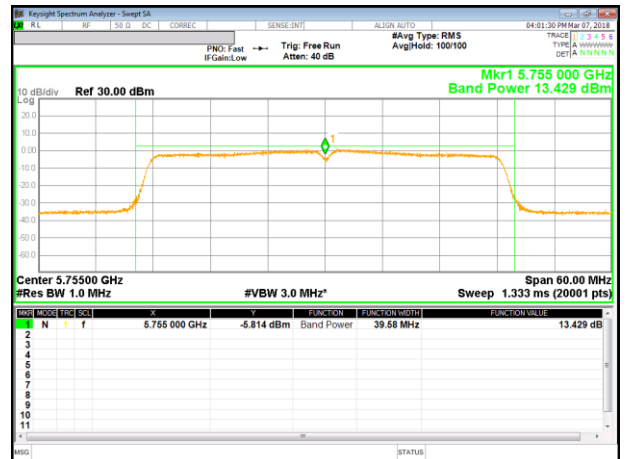


## UNII 5.8 GHz IEEE 802.11n HT40 mode for POWER

### 11n HT40 Mode Straddle Channel



### 11n HT40 Mode Low Channel

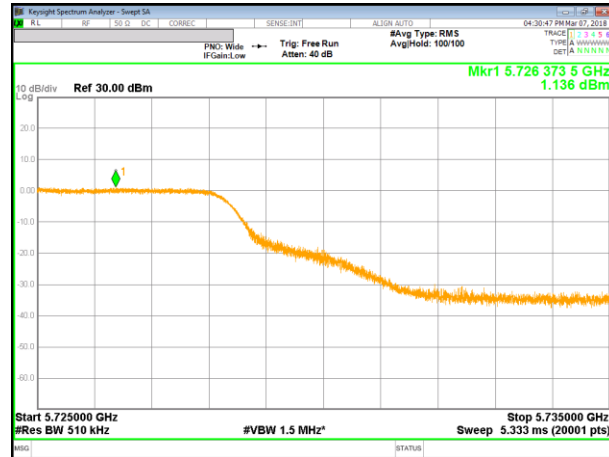


### 11n HT40 Mode High Channel

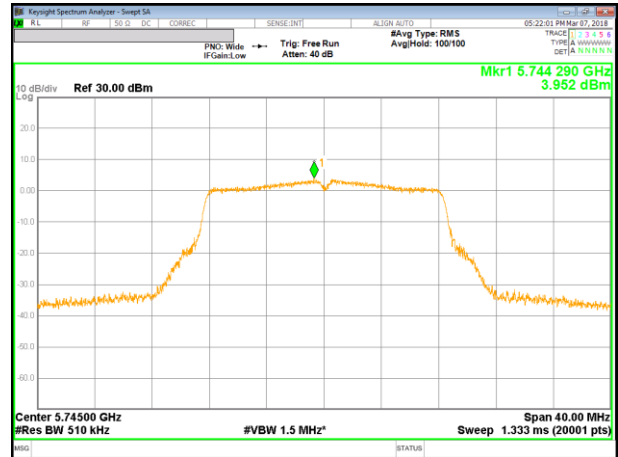


## UNII 5.8 GHz IEEE 802.11a mode for PSD

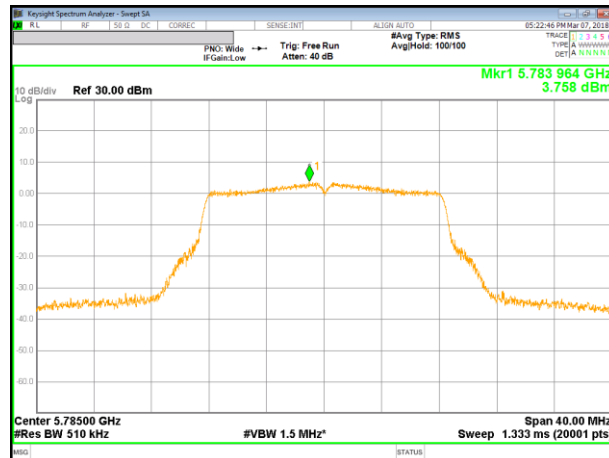
### 11a Mode Straddle Channel



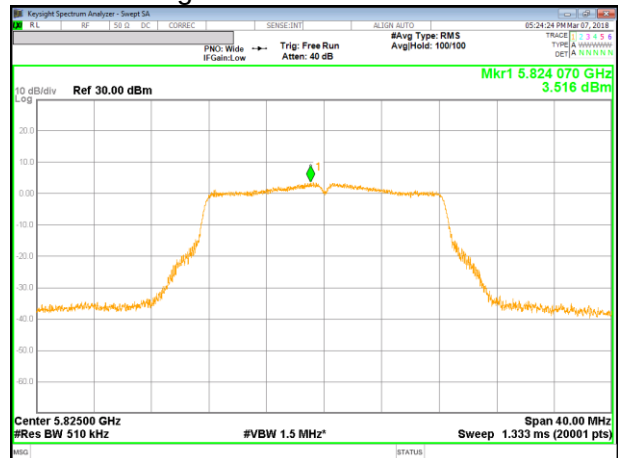
### 11a Mode Low Channel



### 11a Mode Middle Channel

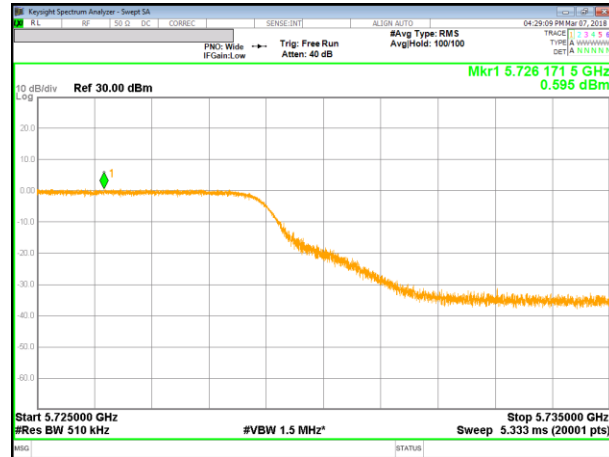


### 11a Mode High Channel

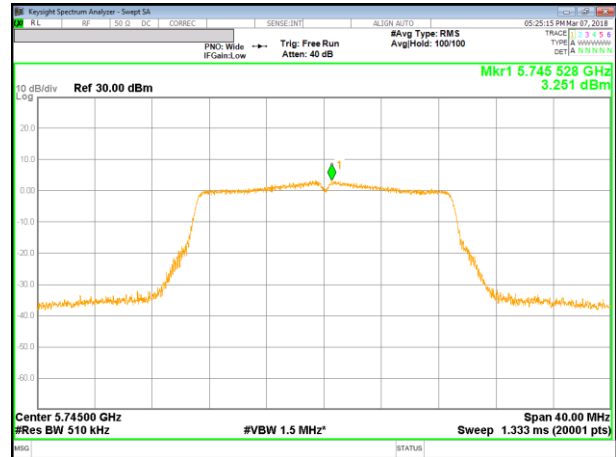


# **UNII 5.8 GHz IEEE 802.11n HT20 mode for PSD**

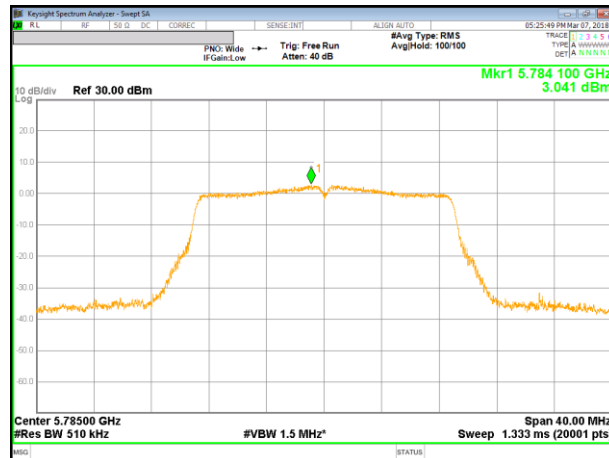
## **11n HT20 Mode Straddle Channel**



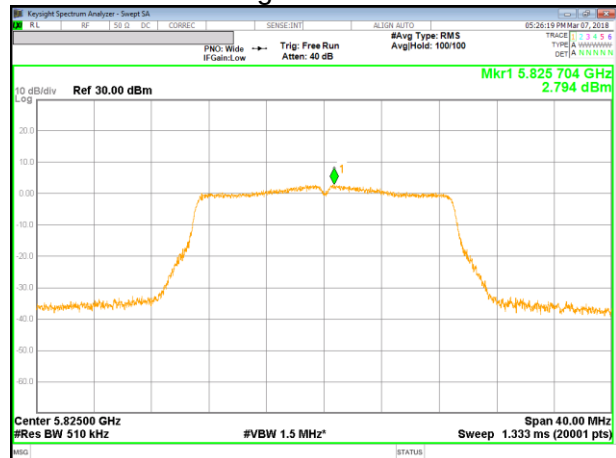
## **11n HT20 Mode Low Channel**



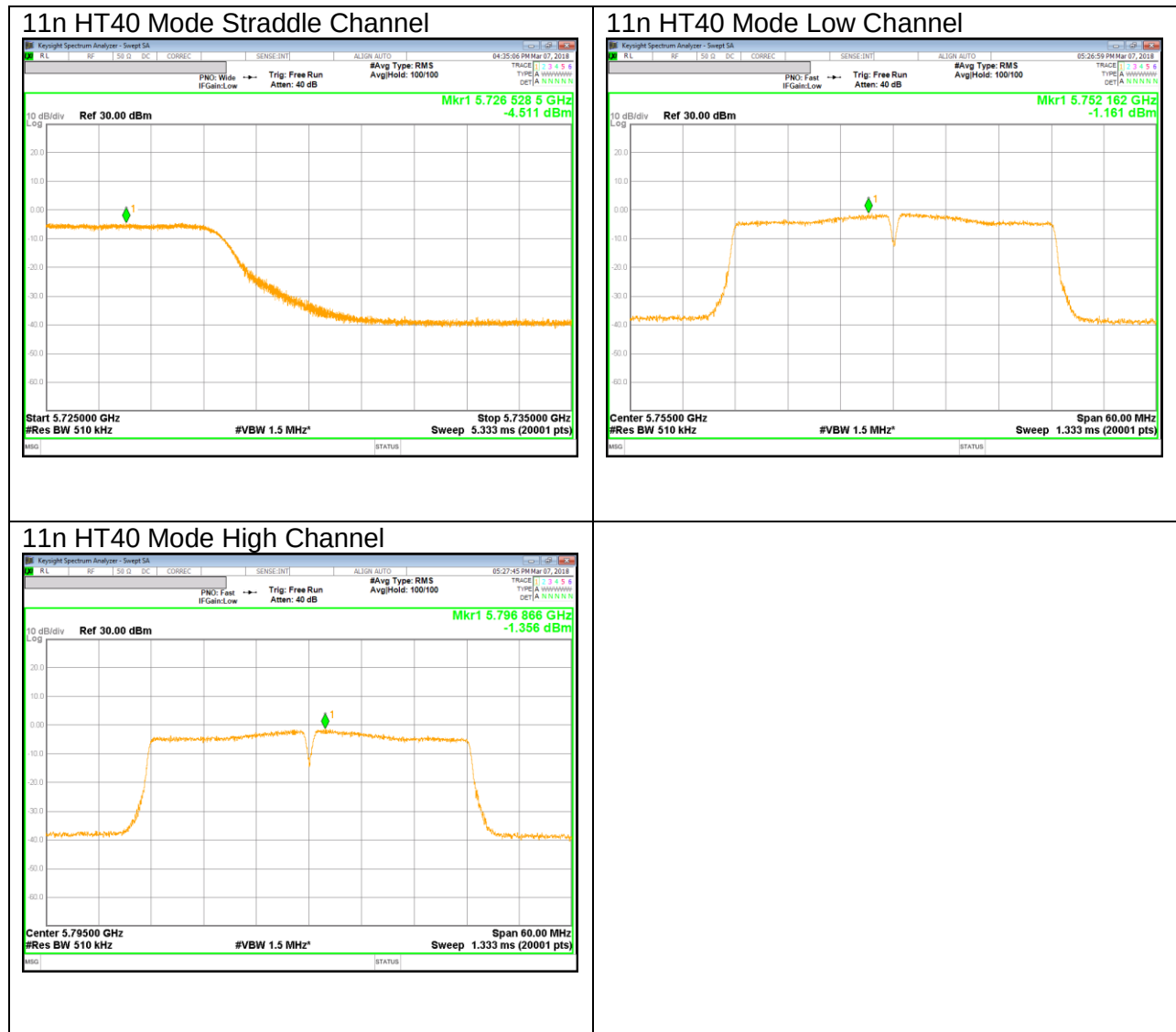
## **11n HT20 Mode Middle Channel**



## **11n HT20 Mode High Channel**



## UNII 5.8 GHz IEEE 802.11n HT40 mode for PSD



## 11. TRANSMITTER ABOVE 1 GHz

### LIMITS

FCC §15.205 and §15.209

| Limits for radiated disturbance of an intentional radiator |                 |                          |
|------------------------------------------------------------|-----------------|--------------------------|
| Frequency range (MHz)                                      | Limits (µV/m)   | Measurement Distance (m) |
| 0.009 – 0.490                                              | 2400 / F (kHz)  | 300                      |
| 0.490 – 1.705                                              | 24000 / F (kHz) | 30                       |
| 1.705 – 30.0                                               | 30              | 30                       |
| 30 – 88                                                    | 100**           | 3                        |
| 88 - 216                                                   | 150**           | 3                        |
| 216 – 960                                                  | 200**           | 3                        |
| Above 960                                                  | 500             | 3                        |

\*\* Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g. §§ 15.231 and 15.241.

FCC §15.407 (b)

(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- (1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (4) For transmitters operating in the 5.725-5.85 GHz band:
  - (i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
- (5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.
- (6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth

in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

(7) The provisions of §15.205 apply to intentional radiators operating under this section.

(8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

**Note**

- Limit translation to field strength level (FCC §15.407)

$$E[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] + 95.2 = -27\text{dBm} + 95.2 = 68.2\text{dBuV/m}$$

$$E[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] + 95.2 = -17\text{dBm} + 95.2 = 78.2\text{dBuV/m}$$

**TEST PROCEDURE**

The EUT is placed on a non-conducting table 80 cm above the ground plane for below 1GHz and 150 cm for above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

Reference to KDB 789033 D02 v02r01 UNII part G) 6) c) Method AD:

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and add duty cycle factor to the reading offset for average measurements.

Pre-scans to detect harmonic and spurious emissions, the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 KHz for peak measurements.

The spectrum from 1 GHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

(From 30MHz to 1GHz, test was performed with the EUT set to transmit at the channel with highest output power)

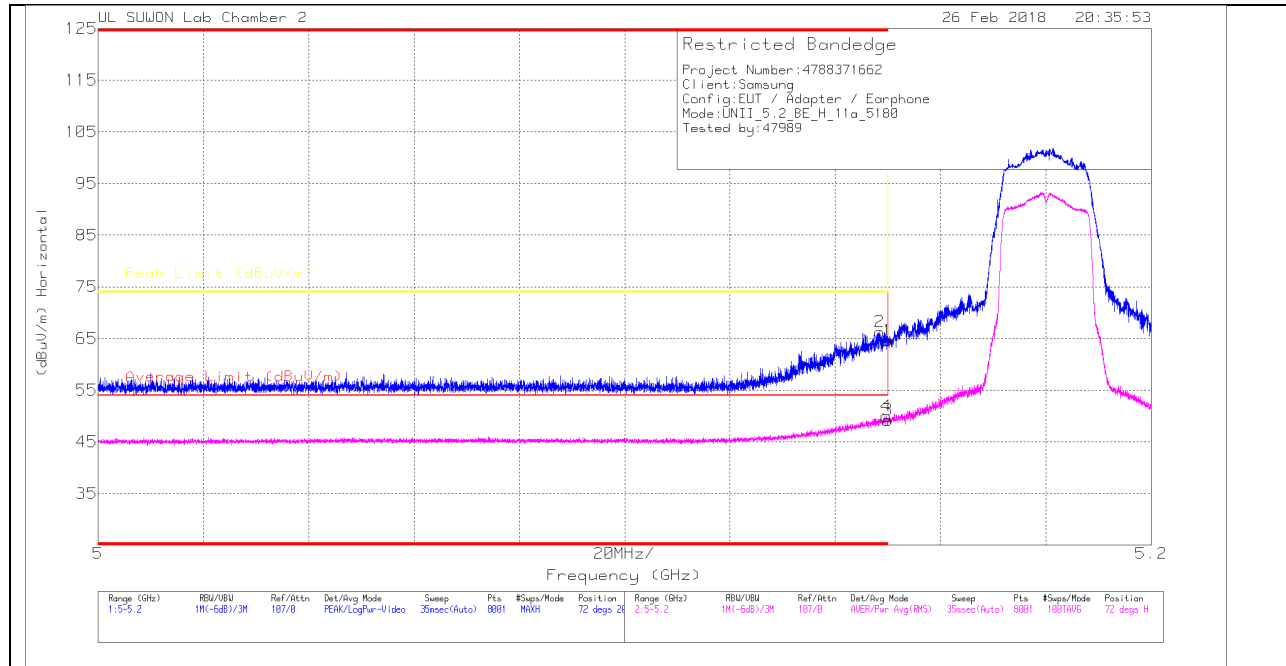
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

## 11.1. 5.2 GHz

### 11.1.1. TX Above 1GHz 802.11a MODE IN THE 5.2GHz BAND

#### RESTRICTED BANDEDGE (LOW CHANNEL)

##### HORIZONTAL PEAK AND AVERAGE PLOT



##### HORIZONTAL DATA

###### Trace Markers

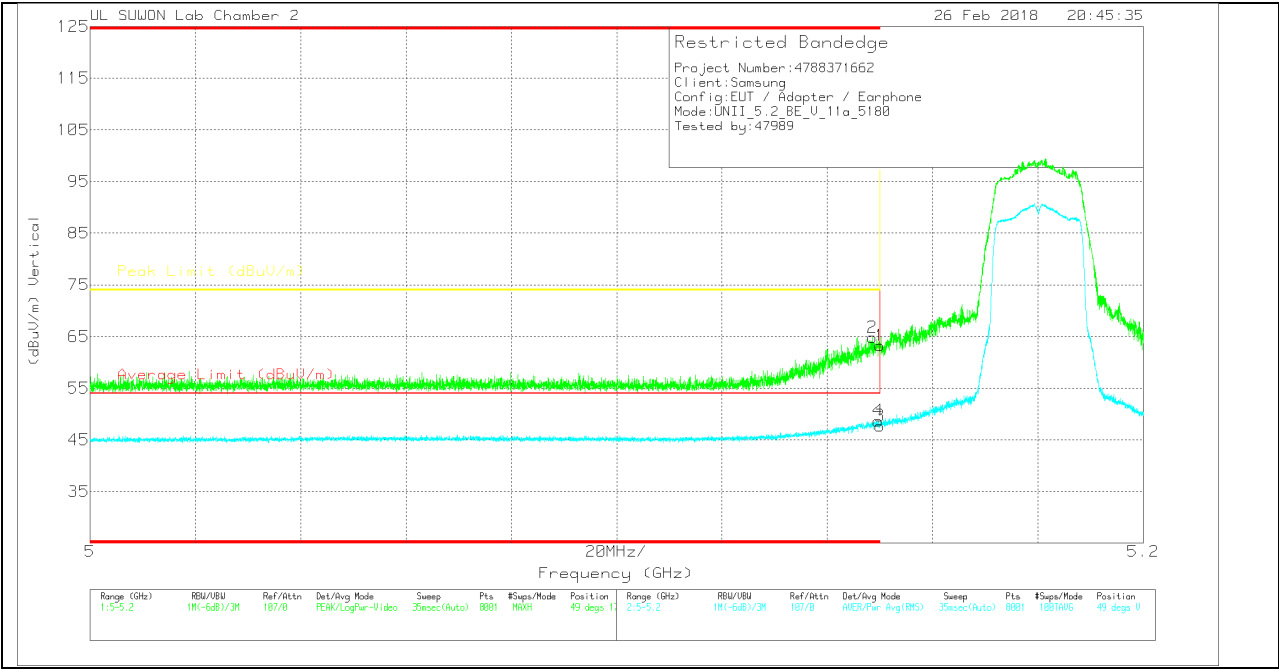
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 170531_311700168724 | 10dB(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Altitude (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------------|----------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|-----------------|-------------|----------|
| 1      | 5.15            | 45.89                | Pk  | 34                  | -15.3    | 0            | 64.59                      | -                      | -           | 74                  | -9.41          | 72              | 207         | H        |
| 2      | * 5.148         | 47.56                | Pk  | 34                  | -15.3    | 0            | 66.26                      | -                      | -           | 74                  | -7.74          | 72              | 207         | H        |
| 3      | 5.15            | 30.38                | RMS | 34                  | -15.3    | .14          | 49.22                      | 54                     | -4.78       | -                   | -              | 72              | 207         | H        |
| 4      | * 5.15          | 31.11                | RMS | 34                  | -15.3    | .14          | 49.95                      | 54                     | -4.05       | -                   | -              | 72              | 207         | H        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

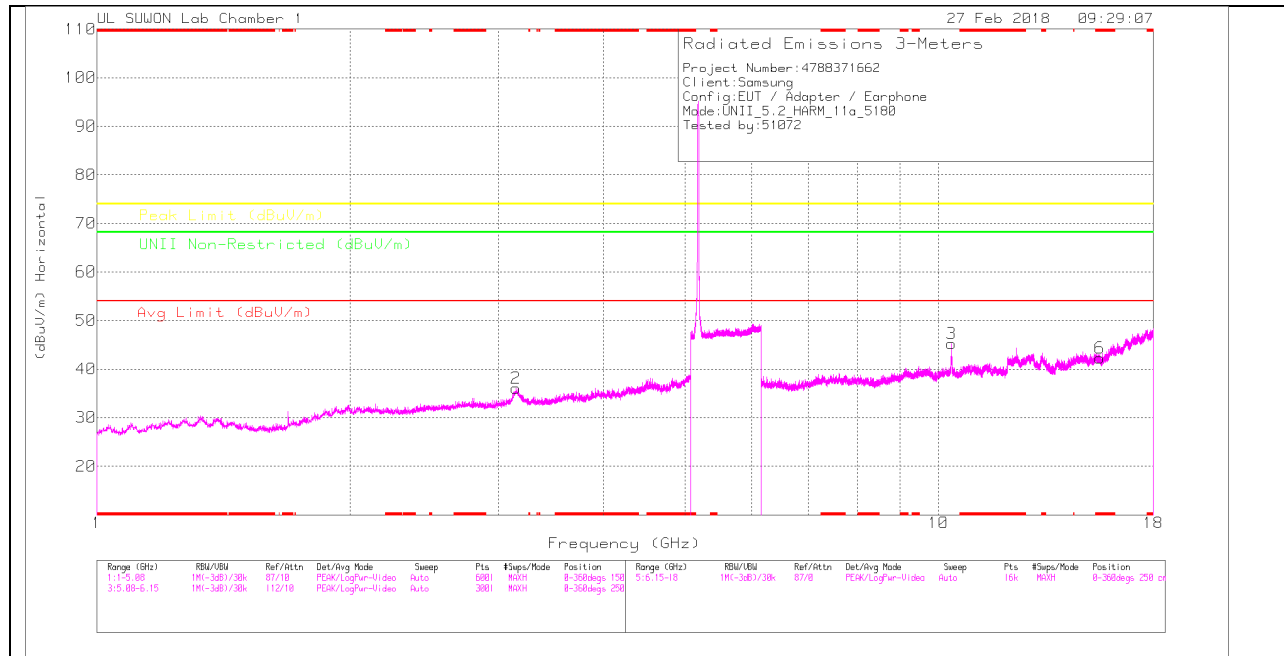
Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 170531_3117(00168724) | 10dB(dB) | OC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|-----------------------|----------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1      | 5.15            | 44.55                | Pk  | 34                    | -15.3    | 0            | 63.25                      | -                      | -           | 74                  | -10.75         | 49             | 171         | V        |
| 2      | * 5.149         | 46.13                | Pk  | 34                    | -15.3    | 0            | 64.83                      | -                      | -           | 74                  | -9.17          | 49             | 171         | V        |
| 3      | 5.15            | 28.89                | RMS | 34                    | -15.3    | .14          | 47.73                      | 54                     | -6.27       | -                   | -              | 49             | 171         | V        |
| 4      | * 5.15          | 29.87                | RMS | 34                    | -15.3    | .14          | 48.71                      | 54                     | -5.29       | -                   | -              | 49             | 171         | V        |

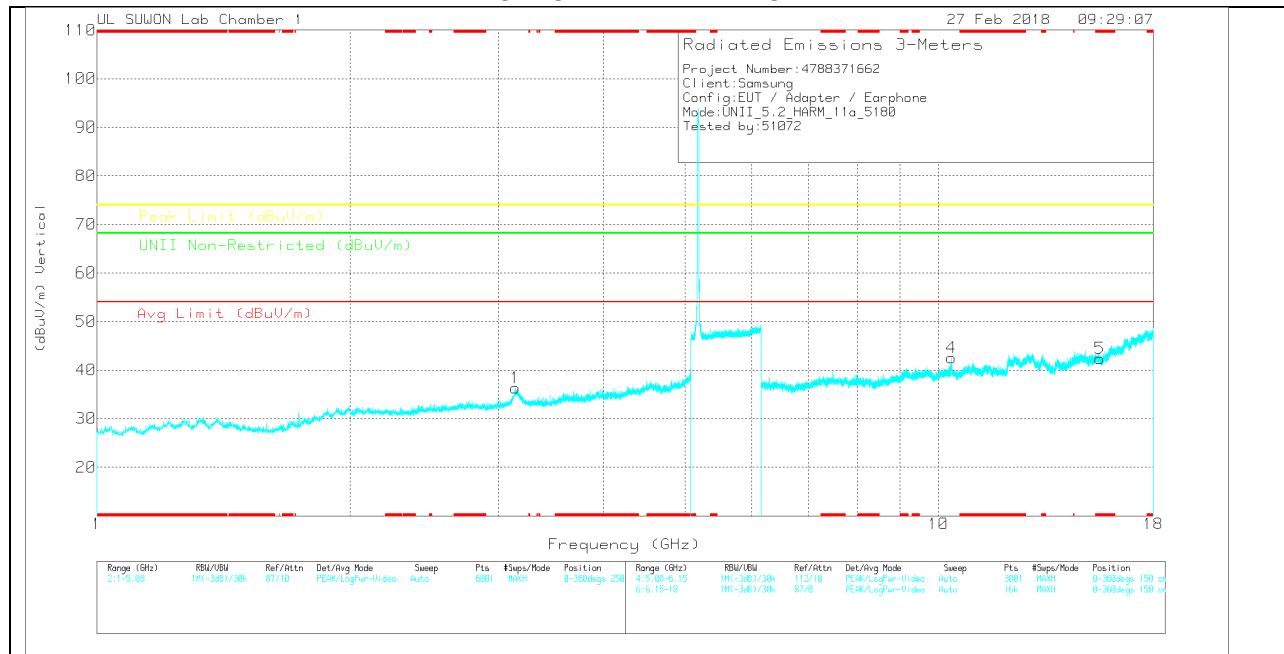
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
Pk - Peak detector  
RMS - RMS detection

## HARMONICS AND SPURIOUS EMISSIONS

### LOW CHANNEL HORIZONTAL



### LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

## LOW CHANNEL DATA

### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 20170531_3117_001 68717 | 5GHz_LP(dB)_170809 | DC Corr (dB) | Corrected Reading (dBuV/m) | Ag Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | UHF Non-Restricted (dBuV/m) | Margin (dB) | Altitude (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|-------------------------|--------------------|--------------|----------------------------|-------------------|-------------|---------------------|-------------|-----------------------------|-------------|-----------------|-------------|----------|
| 2      | 3.148           | 34.74                | PK  |                         | 34.8               | -33.5        | 0                          | 36.04             | -           | -                   | -           | 68.2                        | -32.16      | 0-360           | 150         | H        |
| 1      | 3.143           | 35.15                | PK  |                         | 34.6               | -33.4        | 0                          | 36.35             | -           | -                   | -           | 68.2                        | -31.85      | 0-360           | 150         | V        |
| 3      | 10.359          | 30.19                | PK  |                         | 37.5               | -22.5        | 0                          | 45.19             | -           | -                   | -           | 68.2                        | -23.01      | 0-360           | 150         | H        |
| 6      | * 15.54         | 23.72                | PK  |                         | 39.8               | -21.2        | 0                          | 42.32             | -           | -                   | 74          | -31.68                      | -           | 0-360           | 150         | H        |
| 4      | 10.363          | 27.55                | PK  |                         | 37.5               | -22.5        | 0                          | 42.55             | -           | -                   | -           | 68.2                        | -25.65      | 0-360           | 250         | V        |
| 5      | * 15.541        | 23.81                | PK  |                         | 39.8               | -21.2        | 0                          | 42.41             | -           | -                   | 74          | -31.59                      | -           | 0-360           | 250         | V        |

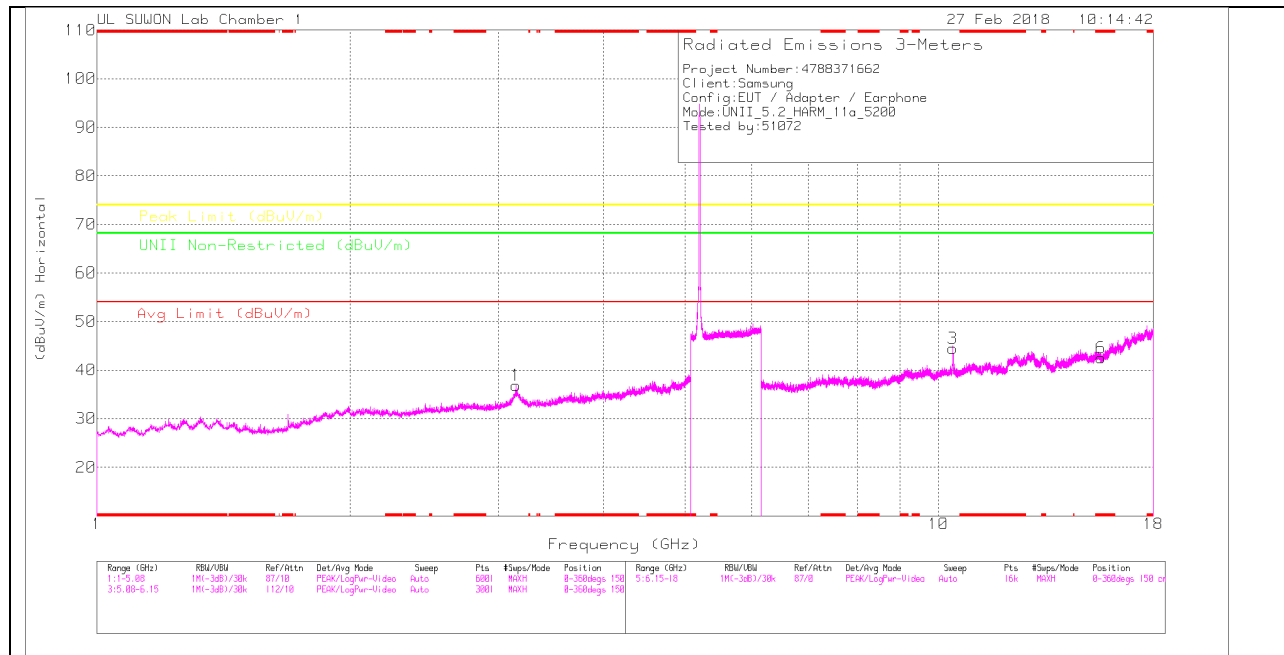
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
PK – Peak Detector

### Radiated Emissions

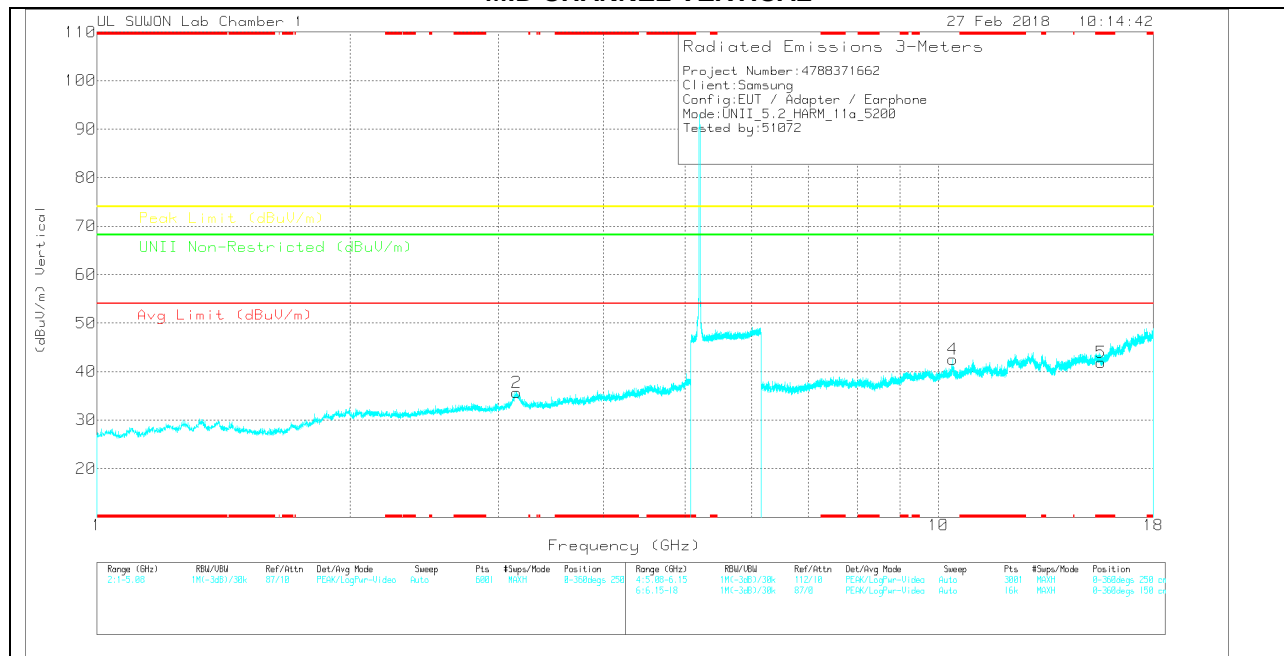
| Frequency (GHz) | Meter Reading (dBuV) | Det  | 20170531_3117_001007 17 | 6GHz_NP(dB)_170809 | DC Corr (dB) | Corrected Reading (dBuV/m) | Ag Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | UHF Non-Restricted (dBuV/m) | Margin (dB) | Altitude (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|------|-------------------------|--------------------|--------------|----------------------------|-------------------|-------------|---------------------|-------------|-----------------------------|-------------|-----------------|-------------|----------|
| 10.359          | 41.38                | PK-U |                         | 37.5               | -22.5        | 0                          | 56.38             | -           | -                   | -           | 68.2                        | -11.82      | 255             | 381         | H        |
| 10.36           | 40.37                | PK-U |                         | 37.5               | -22.5        | 0                          | 55.37             | -           | -                   | -           | 68.2                        | -12.83      | 260             | 104         | V        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
PK-U - U-NII: Maximum Peak

### MID CHANNEL HORIZONTAL



### MID CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

## MID CHANNEL DATA

### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 20170511_1117_001 68217 | 5GHz_HP(dB)_170809 | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | UNI Non-Restricted (dBuV/m) | Margin (dB) | Altitude (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|-------------------------|--------------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|-----------------------------|-------------|-----------------|-------------|----------|
| 1      | 3.15            | 35.38                | PK  | 34.9                    | -33.5              | 0            | 36.78                      | -                  | -           | -                   | -           | 68.2                        | -31.42      | 0-360           | 150         | H        |
| 2      | 3.152           | 34.29                | PK  | 34.9                    | -33.5              | 0            | 35.69                      | -                  | -           | -                   | -           | 68.2                        | -32.51      | 0-360           | 150         | V        |
| 3      | 10.402          | 28.98                | PK  | 37.5                    | -22                | 0            | 44.48                      | -                  | -           | -                   | -           | 68.2                        | -23.72      | 0-360           | 251         | H        |
| 6      | * 15.602        | 24.49                | PK  | 39.8                    | -21.8              | 0            | 42.49                      | -                  | -           | 74                  | -31.51      | -                           | -           | 0-360           | 251         | H        |
| 4      | 10.401          | 27                   | PK  | 37.5                    | -22                | 0            | 42.5                       | -                  | -           | -                   | -           | 68.2                        | -25.7       | 0-360           | 150         | V        |
| 5      | * 15.602        | 23.9                 | PK  | 39.8                    | -21.8              | 0            | 41.9                       | -                  | -           | 74                  | -32.1       | -                           | -           | 0-360           | 251         | V        |

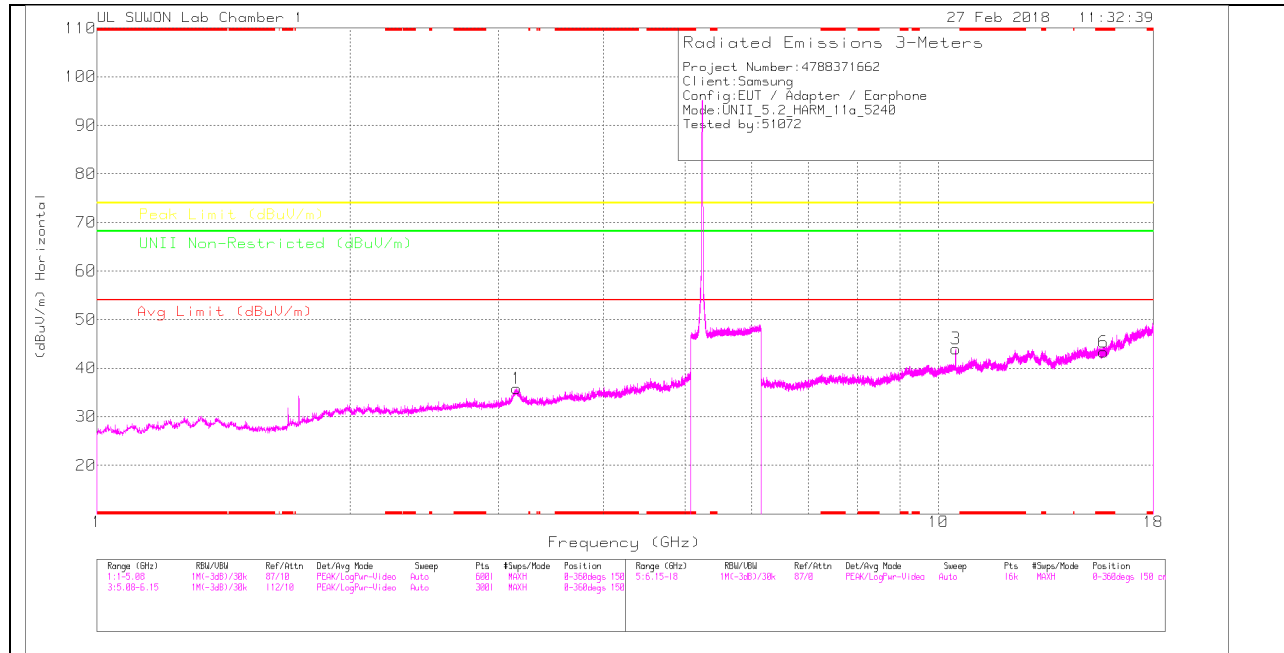
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
PK – Peak Detector

### Radiated Emissions

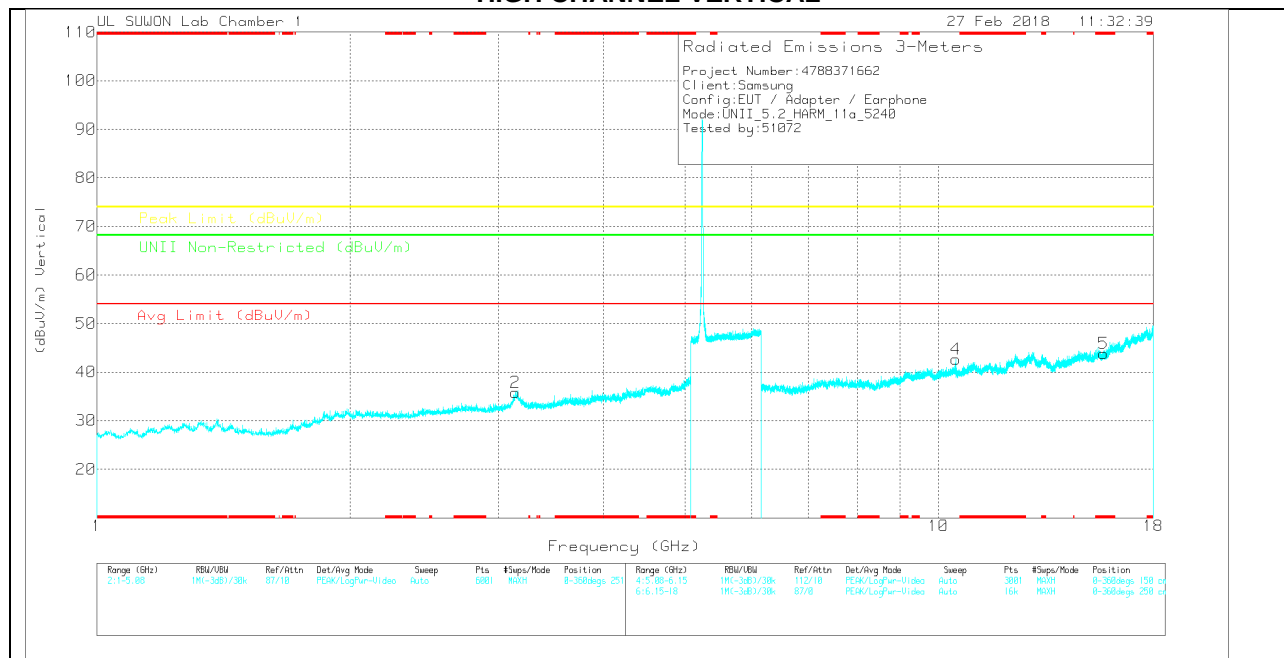
| Frequency (GHz) | Meter Reading (dBuV) | Det  | 20170511_1117_001687 17 | 5GHz_HP(dB)_170809 | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | UNI Non-Restricted (dBuV/m) | Margin (dB) | Altitude (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|------|-------------------------|--------------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|-----------------------------|-------------|-----------------|-------------|----------|
| 10.399          | 42.85                | PK-U | 37.5                    | -22.1              | 0            | 58.25                      | -                  | -           | -                   | -           | 68.2                        | -9.95       | 256             | 380         | H        |
| 10.397          | 36.16                | PK-U | 37.5                    | -22.1              | 0            | 51.56                      | -                  | -           | -                   | -           | 68.2                        | -16.64      | 258             | 103         | V        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
PK-U - U-NII: Maximum Peak

### HIGH CHANNEL HORIZONTAL



### HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

## HIGH CHANNEL DATA

### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 20170531_3117_001 68717 | 5GHz_LP(dB)_170809 | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | UNII Non-Restricted (dBuV/m) | Margin (dB) | Altitude (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|-------------------------|--------------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|------------------------------|-------------|-----------------|-------------|----------|
| 1      | 3.152           | 34.4                 | PK  | 34.9                    | -33.5              | 0            | 35.8                       | -                  | -           | -                   | -           | 68.2                         | -32.4       | 0-360           | 150         | H        |
| 2      | 3.141           | 34.7                 | PK  | 34.5                    | -33.4              | 0            | 35.8                       | -                  | -           | -                   | -           | 68.2                         | -32.4       | 0-360           | 251         | V        |
| 3      | 10.481          | 28.81                | PK  | 37.5                    | -22.3              | 0            | 44.01                      | -                  | -           | -                   | -           | 68.2                         | -24.19      | 0-360           | 250         | H        |
| 6      | * 15.722        | 24.93                | PK  | 39.9                    | -21.5              | 0            | 43.33                      | -                  | -           | 74                  | -30.67      | -                            | -           | 0-360           | 250         | H        |
| 4      | 10.483          | 27.55                | PK  | 37.5                    | -22.4              | 0            | 42.65                      | -                  | -           | -                   | -           | 68.2                         | -25.55      | 0-360           | 250         | V        |
| 5      | * 15.721        | 25.37                | PK  | 39.9                    | -21.5              | 0            | 43.77                      | -                  | -           | 74                  | -30.23      | -                            | -           | 0-360           | 150         | V        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
PK – Peak Detector

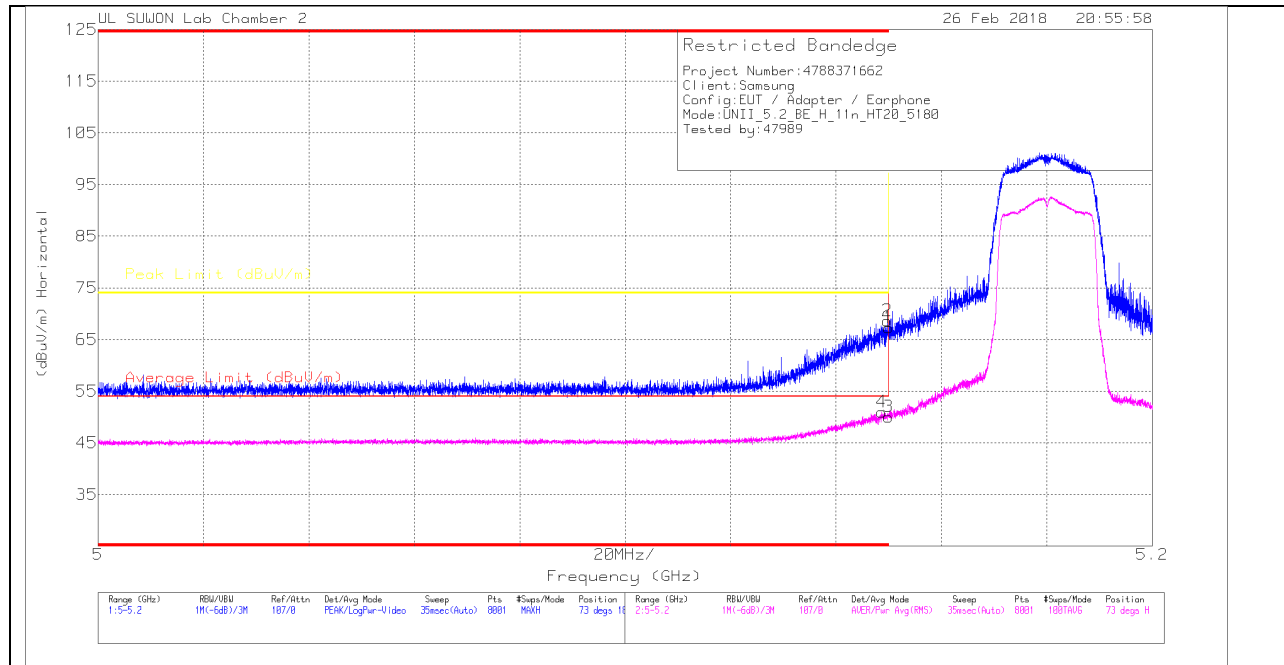
### Radiated Emissions

| Frequency (GHz) | Meter Reading (dBuV) | Det  | 20170531_3117_001687 17 | 5GHz_PP(dB)_170809 | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | UNII Non-Restricted (dBuV/m) | Margin (dB) | Altitude (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|------|-------------------------|--------------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|------------------------------|-------------|-----------------|-------------|----------|
| 10.482          | 42.92                | PK-U | 37.5                    | -22.3              | 0            | 58.12                      | -                  | -           | -                   | -           | 68.2                         | -10.08      | 251             | 100         | H        |
| 10.479          | 39.29                | PK-U | 37.5                    | -22.3              | 0            | 54.49                      | -                  | -           | -                   | -           | 68.2                         | -13.71      | 254             | 103         | V        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
PK-U - U-NII: Maximum Peak

## 11.1.2. TX Above 1GHz 802.11n HT20 MODE IN THE 5.2GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

### HORIZONTAL PEAK AND AVERAGE PLOT



### HORIZONTAL DATA

#### Trace Markers

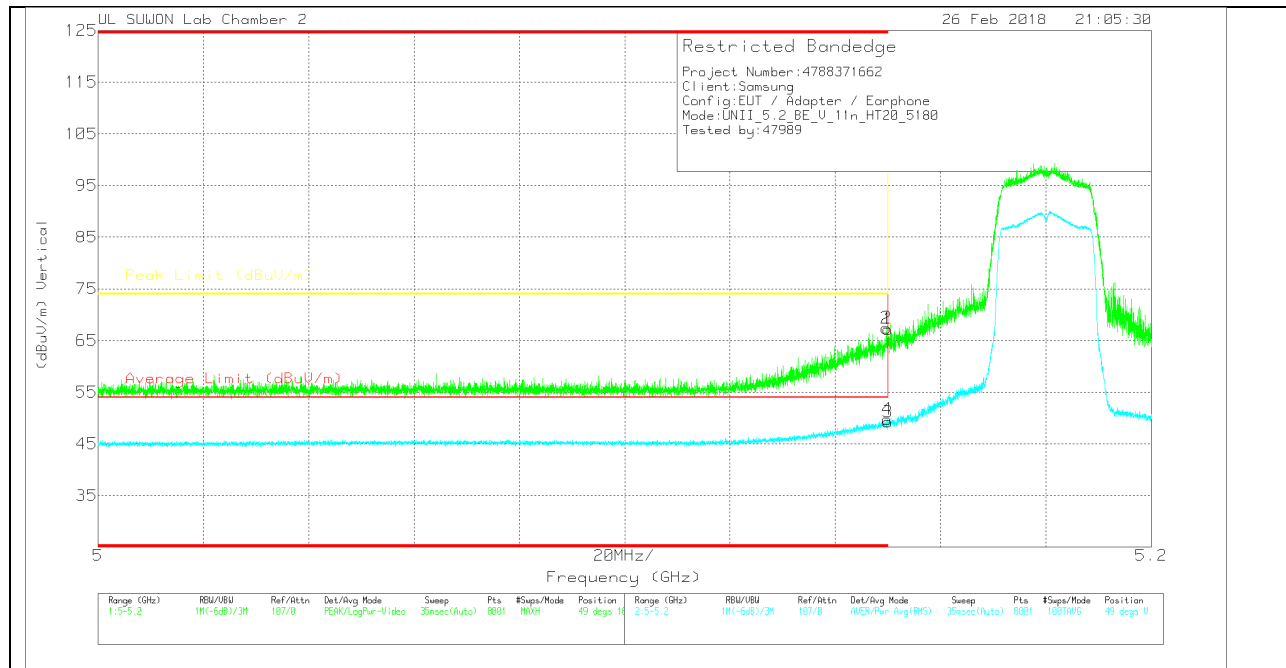
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 170531_3117(00168724) | 10dB(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Altitude (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|-----------------------|----------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|-----------------|-------------|----------|
| 1      | 5.15            | 48.63                | Pk  | 34                    | -15.3    | 0            | 67.33                      | -                      | -           | 74                  | -6.67          | 73              | 184         | H        |
| 2      | * 5.15          | 49.94                | Pk  | 34                    | -15.3    | 0            | 68.64                      | -                      | -           | 74                  | -5.36          | 73              | 184         | H        |
| 3      | 5.15            | 31.21                | RMS | 34                    | -15.3    | .15          | 50.06                      | 54                     | -3.94       | -                   | -              | 73              | 184         | H        |
| 4      | * 5.149         | 32.15                | RMS | 34                    | -15.3    | .15          | 51                         | 54                     | -3          | -                   | -              | 73              | 184         | H        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

## VERTICAL PEAK AND AVERAGE PLOT



## VERTICAL DATA

### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 170531_311700168724 | 10dB(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Pk Margin (dB) | Altitude (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------------|----------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|-----------------|-------------|----------|
| 1      | 5.15            | 48.52                | Pk  | 34                  | -15.3    | 0            | 67.22                      | -                      | -           | 74                  | -6.78          | 49              | 165         | V        |
| 2      | * 5.15          | 48.72                | Pk  | 34                  | -15.3    | 0            | 67.42                      | -                      | -           | 74                  | -6.58          | 49              | 165         | V        |
| 3      | 5.15            | 30.42                | RMS | 34                  | -15.3    | .15          | 49.27                      | 54                     | -4.73       | -                   | -              | 49              | 165         | V        |
| 4      | * 5.15          | 30.93                | RMS | 34                  | -15.3    | .15          | 49.78                      | 54                     | -4.22       | -                   | -              | 49              | 165         | V        |

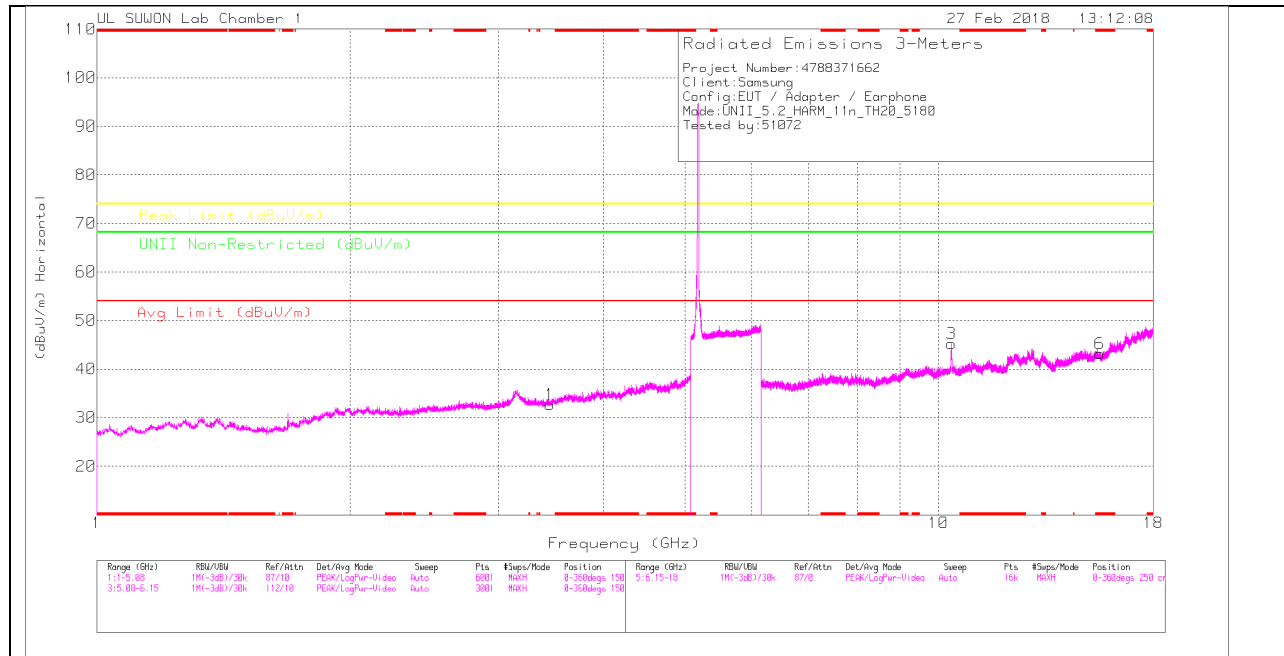
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

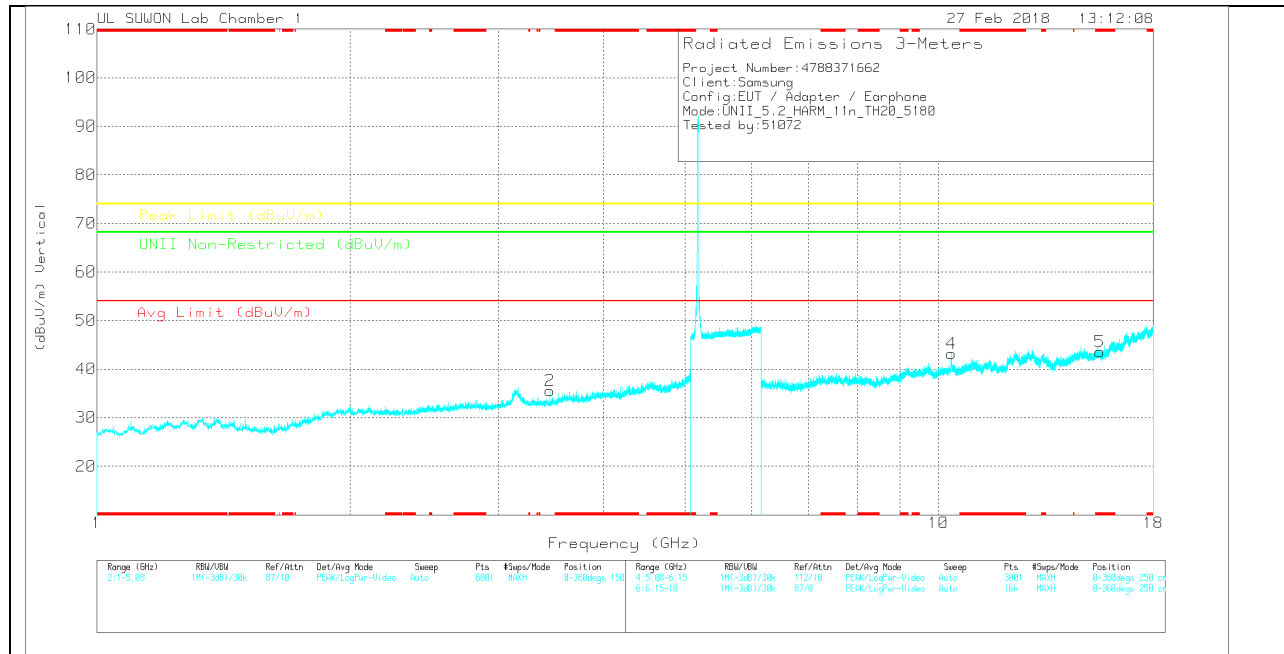
RMS - RMS detection

## HARMONICS AND SPURIOUS EMISSIONS

### LOW CHANNEL HORIZONTAL



### LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

## LOW CHANNEL DATA

### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 20170531_3117_001 68737 | SGHz_LF(dB)_170809 | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | UNI Non-Restricted (dBuV/m) | Margin (dB) | Altitude (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|-------------------------|--------------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|-----------------------------|-------------|-----------------|-------------|----------|
| 1      | 3.453           | 33.28                | PK  | 32.5                    | -33.1              | 0            | 32.68                      | -                  | -           | -                   | -           | 68.2                        | -35.52      | 0-360           | 250         | H        |
| 2      | 3.453           | 36.11                | PK  | 32.5                    | -33.1              | 0            | 35.51                      | -                  | -           | -                   | -           | 68.2                        | -32.69      | 0-360           | 250         | V        |
| 3      | 10.361          | 30.28                | PK  | 37.5                    | -22.5              | 0            | 45.28                      | -                  | -           | -                   | -           | 68.2                        | -22.92      | 0-360           | 250         | H        |
| 6      | * 15.541        | 24.61                | PK  | 39.8                    | -21.2              | 0            | 43.21                      | -                  | -           | 74                  | -30.79      | -                           | -           | 0-360           | 150         | H        |
| 4      | 10.36           | 28.16                | PK  | 37.5                    | -22.5              | 0            | 43.16                      | -                  | -           | -                   | -           | 68.2                        | -25.04      | 0-360           | 150         | V        |
| 5      | * 15.541        | 24.93                | PK  | 39.8                    | -21.2              | 0            | 43.53                      | -                  | -           | 74                  | -30.47      | -                           | -           | 0-360           | 150         | V        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK – Peak Detector

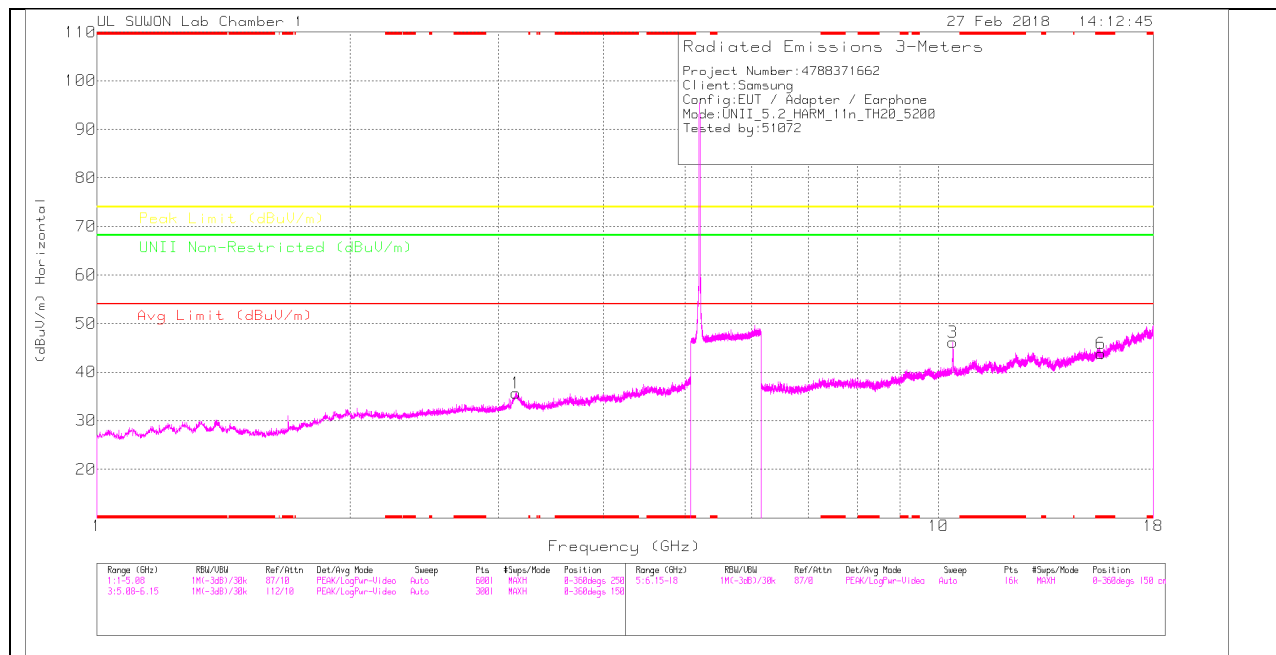
### Radiated Emissions

| Frequency (GHz) | Meter Reading (dBuV) | Det  | 20170531_3117_001687 17 | SGHz_LF(dB)_170809 | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | UNI Non-Restricted (dBuV/m) | Margin (dB) | Altitude (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|------|-------------------------|--------------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|-----------------------------|-------------|-----------------|-------------|----------|
| 3.455           | 43.87                | PK-U | 32.5                    | -33.1              | 0            | 43.27                      | -                  | -           | -                   | -           | 68.2                        | -24.93      | 193             | 344         | H        |
| 3.453           | 44.83                | PK-U | 32.5                    | -33.1              | 0            | 44.23                      | -                  | -           | -                   | -           | 68.2                        | -23.97      | 57              | 372         | V        |
| 10.361          | 41.11                | PK-U | 37.5                    | -22.5              | 0            | 56.11                      | -                  | -           | -                   | -           | 68.2                        | -12.09      | 250             | 381         | H        |
| 10.362          | 42.87                | PK-U | 37.5                    | -22.5              | 0            | 57.87                      | -                  | -           | -                   | -           | 68.2                        | -10.33      | 253             | 382         | H        |

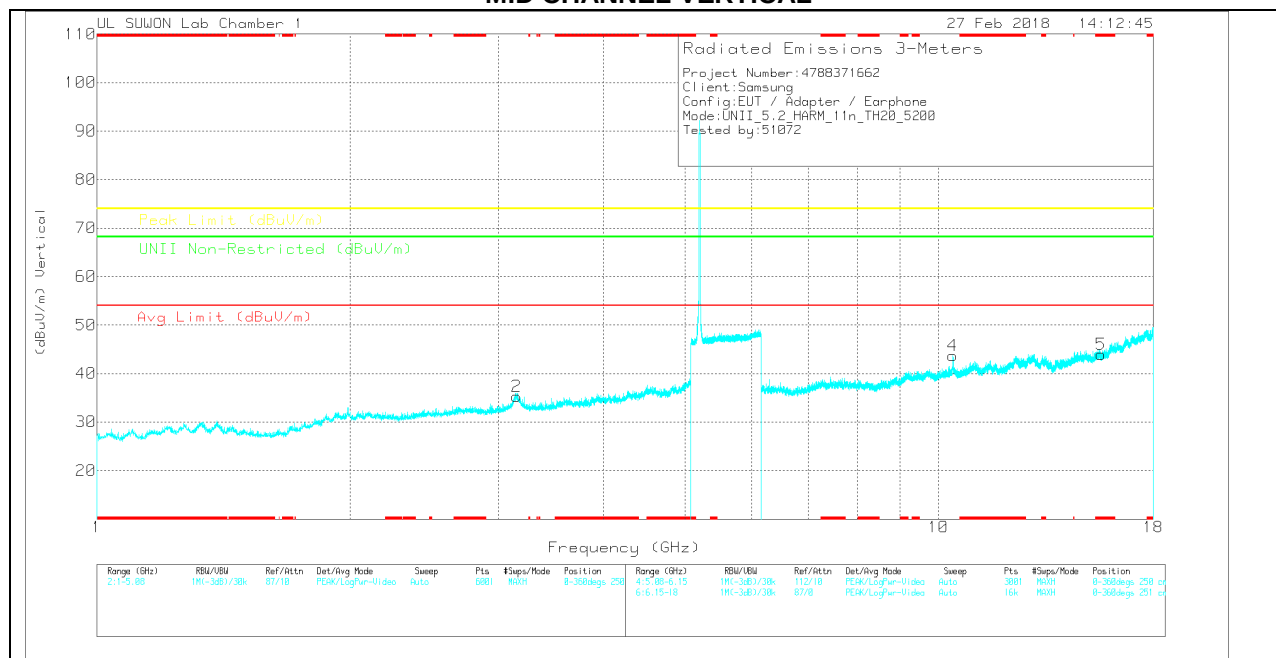
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK-U - U-NII: Maximum Peak

## MID CHANNEL HORIZONTAL



## MID CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

## MID CHANNEL DATA

### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 20170531_3117_001 68717 | SGHz_LF(dB)_170809 | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | UNII Non-Restricted (dBuV/m) | Margin (dB) | Altitude (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|-------------------------|--------------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|------------------------------|-------------|-----------------|-------------|----------|
| 1      | 3.149           | 34.36                | PK  | 34.8                    | -33.5              | 0            | 35.66                      | -                  | -           | -                   | -           | 68.2                         | -32.54      | 0-360           | 150         | H        |
| 2      | 3.152           | 34.03                | PK  | 34.8                    | -33.5              | 0            | 35.33                      | -                  | -           | -                   | -           | 68.2                         | -32.87      | 0-360           | 150         | V        |
| 3      | 10.396          | 30.83                | PK  | 37.5                    | -22.2              | 0            | 46.13                      | -                  | -           | -                   | -           | 68.2                         | -22.07      | 0-360           | 250         | H        |
| 6      | * 15.598        | 25.74                | PK  | 39.8                    | -21.7              | 0            | 43.84                      | -                  | -           | 74                  | -30.16      | -                            | -           | 0-360           | 250         | H        |
| 4      | 10.399          | 28.26                | PK  | 37.5                    | -22.1              | 0            | 43.66                      | -                  | -           | -                   | -           | 68.2                         | -24.54      | 0-360           | 150         | V        |
| 5      | * 15.599        | 25.93                | PK  | 39.8                    | -21.8              | 0            | 43.93                      | -                  | -           | 74                  | -30.07      | -                            | -           | 0-360           | 150         | V        |

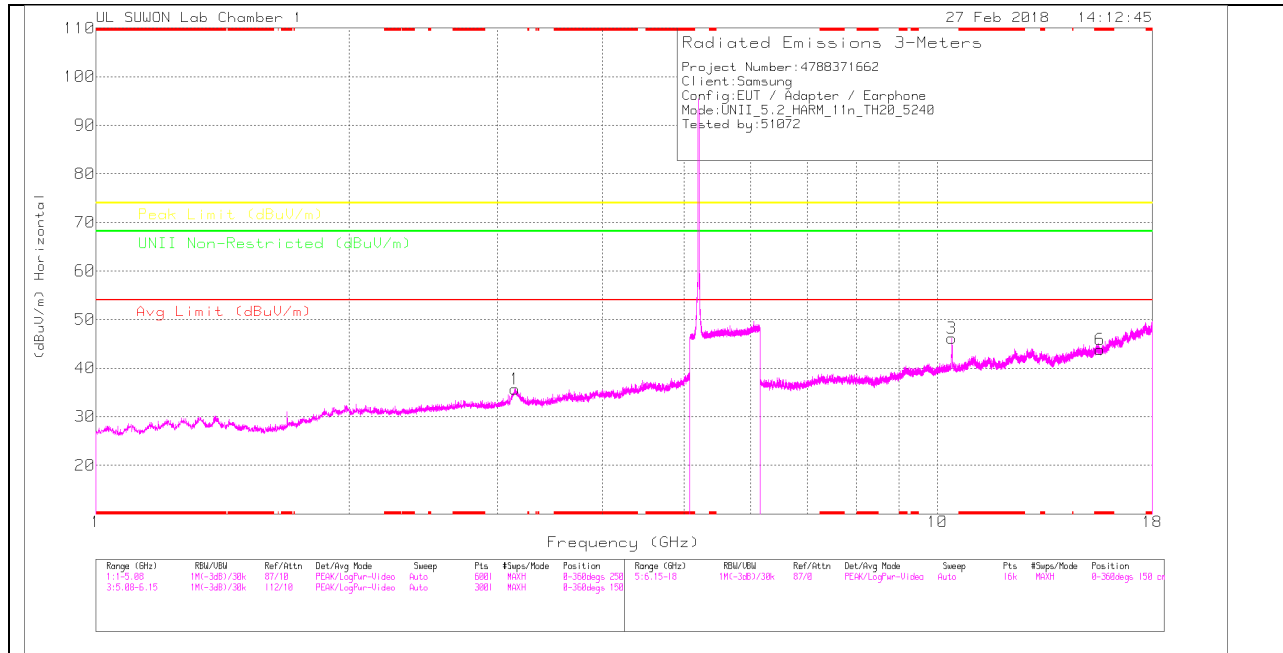
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
PK – Peak Detector

### Radiated Emissions

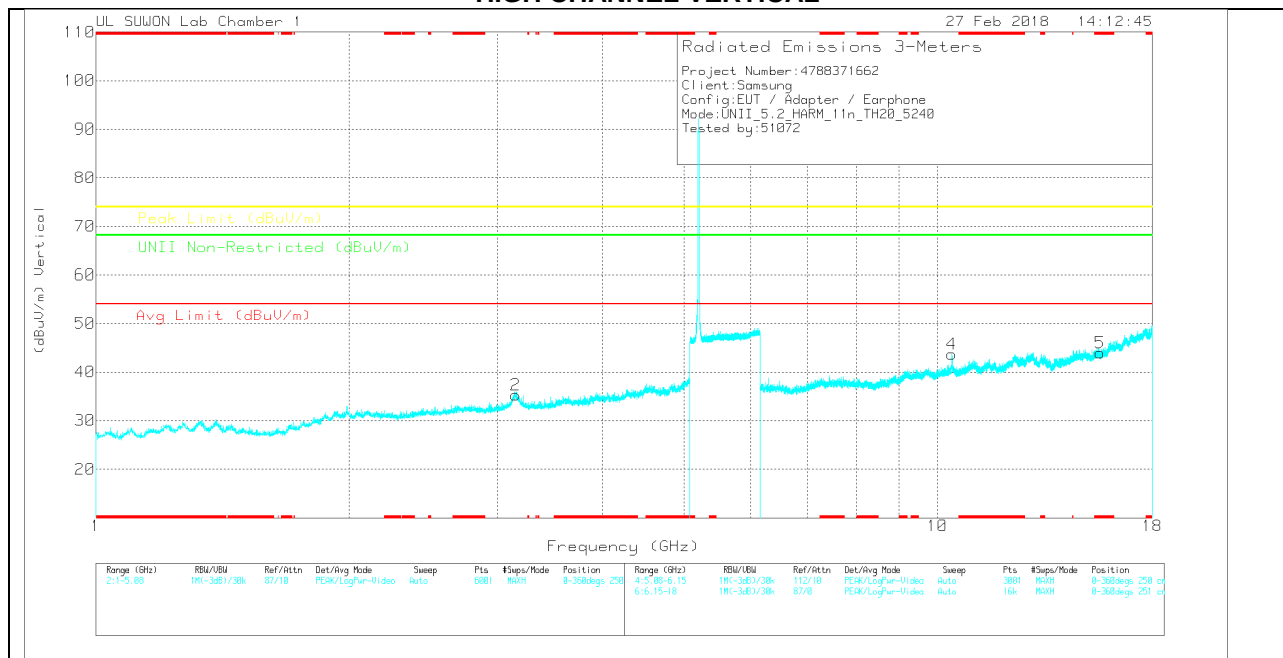
| Frequency (GHz) | Meter Reading (dBuV) | Det  | 20170531_3117_001087 17 | SGHz_HF(dB)_170809 | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | UNII Non-Restricted (dBuV/m) | Margin (dB) | Altitude (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|------|-------------------------|--------------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|------------------------------|-------------|-----------------|-------------|----------|
| 10.402          | 39.87                | PK-U | 37.5                    | -22.1              | 0            | 55.27                      | -                  | -           | -                   | -           | 68.2                         | -12.93      | 255             | 113         | H        |
| 10.361          | 41.11                | PK-U | 37.5                    | -22.5              | 0            | 56.11                      | -                  | -           | -                   | -           | 68.2                         | -12.09      | 250             | 381         | H        |
| 10.401          | 40                   | PK-U | 37.5                    | -22                | 0            | 55.5                       | -                  | -           | -                   | -           | 68.2                         | -12.7       | 254             | 114         | V        |
| 10.362          | 42.87                | PK-U | 37.5                    | -22.5              | 0            | 57.87                      | -                  | -           | -                   | -           | 68.2                         | -10.33      | 253             | 382         | H        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
PK-U - U-NII: Maximum Peak

### HIGH CHANNEL HORIZONTAL



### HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

## HIGH CHANNEL DATA

### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 20170531_3117_001 68737 | 5GHz_LP(dB)_170809 | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | UNI Non-Restricted (dBuV/m) | Margin (dB) | Altitude (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|-------------------------|--------------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|-----------------------------|-------------|-----------------|-------------|----------|
| 1      | 3.149           | 34.36                | Avg | 34.8                    | -33.5              | 0            | 35.66                      | -                  | -           | -                   | -           | 68.2                        | -32.54      | 0-360           | 150         | H        |
| 2      | 3.152           | 34.03                | Avg | 34.8                    | -33.5              | 0            | 35.33                      | -                  | -           | -                   | -           | 68.2                        | -32.87      | 0-360           | 150         | V        |
| 3      | 10.396          | 30.83                | Avg | 37.5                    | -22.2              | 0            | 46.13                      | -                  | -           | -                   | -           | 68.2                        | -22.07      | 0-360           | 250         | H        |
| 6      | * 15.598        | 25.74                | Avg | 39.8                    | -21.7              | 0            | 43.84                      | -                  | -           | 74                  | -30.16      | -                           | -           | 0-360           | 250         | H        |
| 4      | 10.399          | 28.26                | Avg | 37.5                    | -22.1              | 0            | 43.66                      | -                  | -           | -                   | -           | 68.2                        | -24.54      | 0-360           | 150         | V        |
| 5      | * 15.599        | 25.93                | Avg | 39.8                    | -21.8              | 0            | 43.93                      | -                  | -           | 74                  | -30.07      | -                           | -           | 0-360           | 150         | V        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
PK – Peak Detector

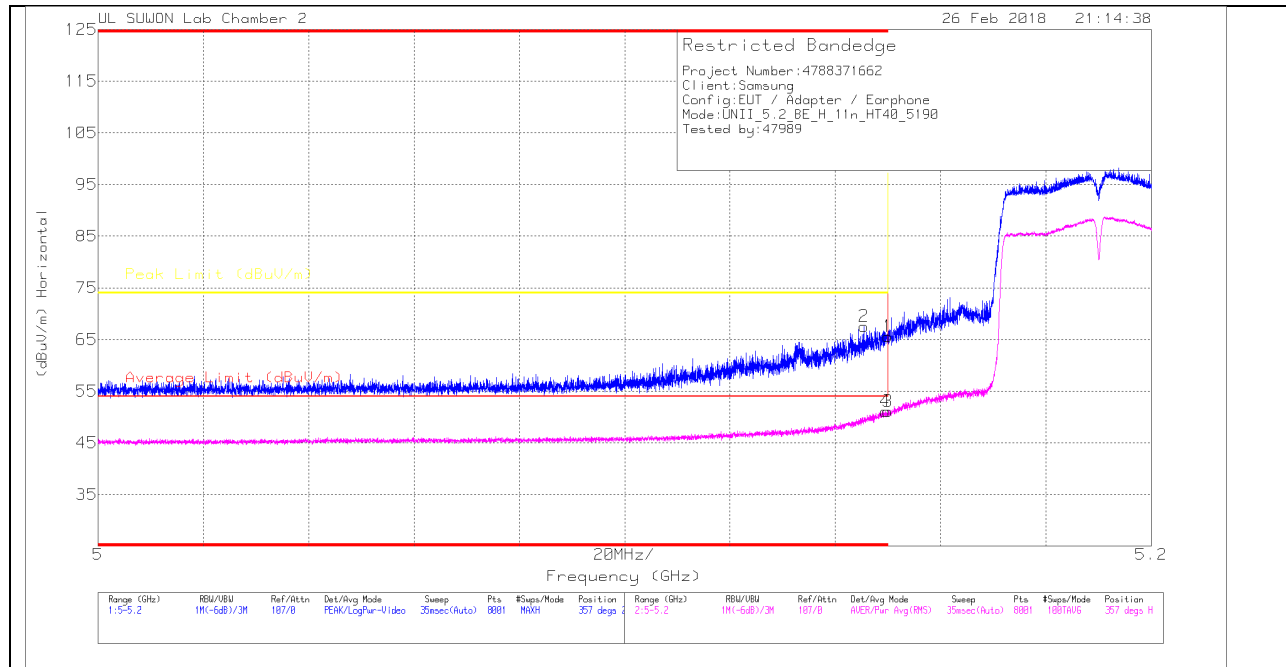
### Radiated Emissions

| Frequency (GHz) | Meter Reading (dBuV) | Det  | 20170531_3117_001687 17 | 6GHz_LP(dB)_170809 | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | UNI Non-Restricted (dBuV/m) | Margin (dB) | Altitude (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|------|-------------------------|--------------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|-----------------------------|-------------|-----------------|-------------|----------|
| 10.402          | 39.87                | PK-U | 37.5                    | -22.1              | 0            | 55.27                      | -                  | -           | -                   | -           | 68.2                        | -12.93      | 255             | 113         | H        |
| 10.361          | 41.11                | PK-U | 37.5                    | -22.5              | 0            | 56.11                      | -                  | -           | -                   | -           | 68.2                        | -12.09      | 250             | 381         | H        |
| 10.401          | 40                   | PK-U | 37.5                    | -22                | 0            | 55.5                       | -                  | -           | -                   | -           | 68.2                        | -12.7       | 254             | 114         | V        |
| 10.362          | 42.87                | PK-U | 37.5                    | -22.5              | 0            | 57.87                      | -                  | -           | -                   | -           | 68.2                        | -10.33      | 253             | 382         | H        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
PK-U - U-NII: Maximum Peak

### 11.1.3. TX Above 1GHz 802.11n HT40 MODE IN THE 5.2GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

#### HORIZONTAL PEAK AND AVERAGE PLOT



#### HORIZONTAL DATA

##### Trace Markers

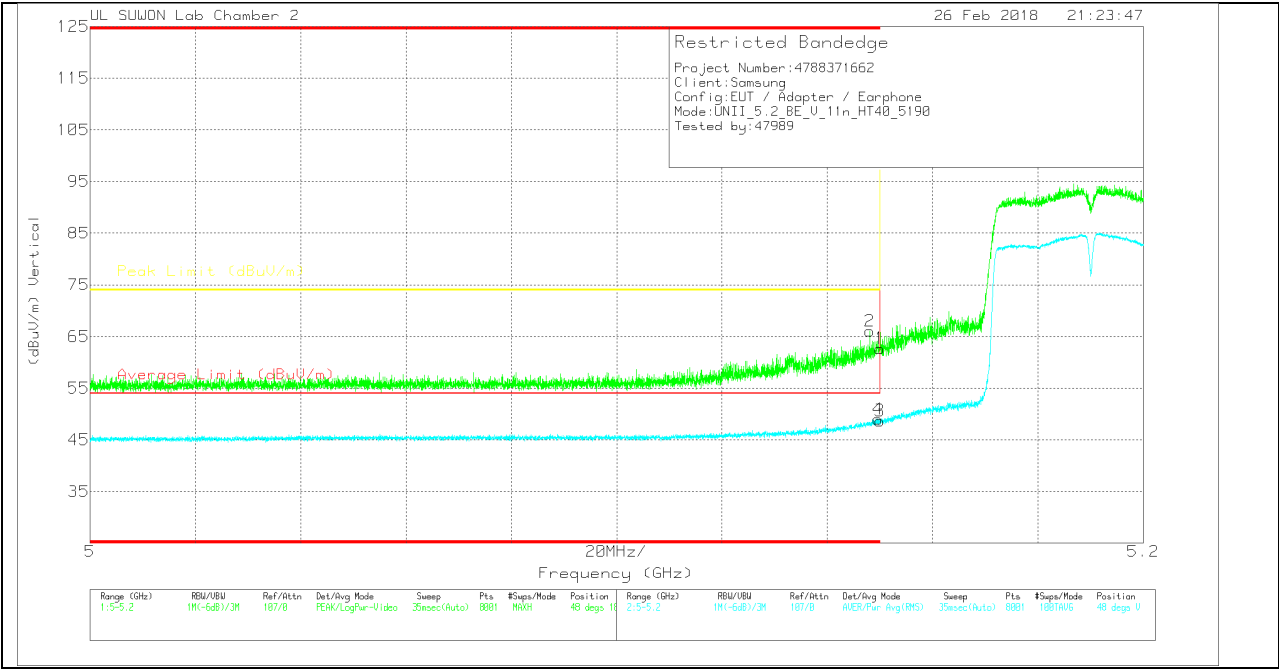
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 1705311_3117(00168724) | 10dB(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Altitude (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------------|----------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|-----------------|-------------|----------|
| 1      | 5.15            | 46.92                | Pk  | 34                     | -15.3    | 0            | 65.62                      | -                      | -           | 74                  | -8.38          | 357             | 287         | H        |
| 2      | * 5.145         | 48.86                | Pk  | 34                     | -15.3    | 0            | 67.56                      | -                      | -           | 74                  | -6.44          | 357             | 287         | H        |
| 3      | 5.15            | 32.11                | RMS | 34                     | -15.3    | .3           | 51.11                      | 54                     | -2.89       | -                   | -              | 357             | 287         | H        |
| 4      | * 5.149         | 32.12                | RMS | 34                     | -15.3    | .3           | 51.12                      | 54                     | -2.88       | -                   | -              | 357             | 287         | H        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

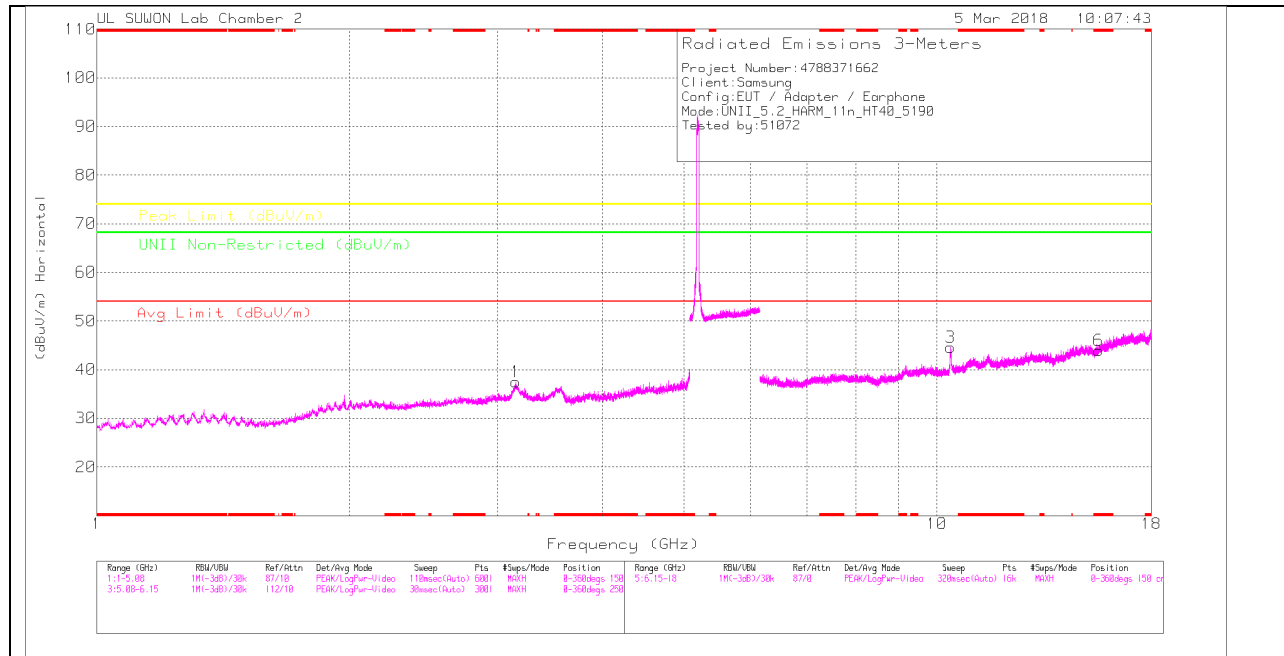
Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 170531_311700168724 | 10dB(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Pk Margin (dB) | Altitude (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------------|----------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|-----------------|-------------|----------|
| 1      | 5.15            | 43.99                | Pk  | 34                  | -15.3    | 0            | 62.69                      | -                      | -           | 74                  | -11.31         | 48              | 184         | V        |
| 2      | * 5.148         | 47.34                | Pk  | 34                  | -15.3    | 0            | 66.04                      | -                      | -           | 74                  | -7.96          | 48              | 184         | V        |
| 3      | 5.15            | 29.69                | RMS | 34                  | -15.3    | .3           | 48.69                      | 54                     | -5.31       | -                   | -              | 48              | 184         | V        |
| 4      | * 5.15          | 30.03                | RMS | 34                  | -15.3    | .3           | 49.03                      | 54                     | -4.97       | -                   | -              | 48              | 184         | V        |

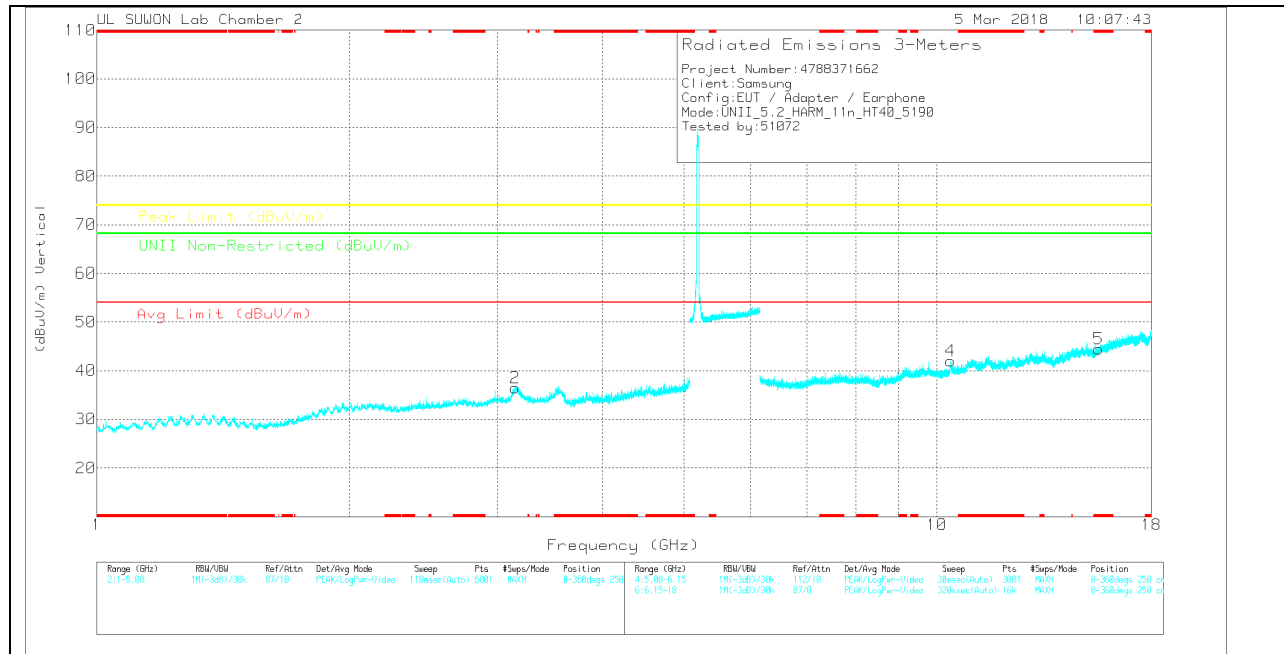
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
Pk - Peak detector  
RMS - RMS detection

## HARMONICS AND SPURIOUS EMISSIONS

### LOW CHANNEL HORIZONTAL



### LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

## LOW CHANNEL DATA

### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 170531_3117003887 24) | 5GHz_1P(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Unli Non-Restricted (dBuV/m) | Margin (dB) | Altitude (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|-----------------------|-------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|------------------------------|-------------|-----------------|-------------|----------|
| 1      | 3.154           | 28.7                 | PK  | 34.8                  | -26         | 0            | 37.5                       | -                  | -           | -                   | -           | 68.2                         | -30.7       | 0-360           | 150         | H        |
| 2      | 3.148           | 27.84                | PK  | 34.8                  | -26.2       | 0            | 36.44                      | -                  | -           | -                   | -           | 68.2                         | -31.76      | 0-360           | 250         | V        |
| 3      | 10.381          | 23.58                | PK  | 37.5                  | -16.5       | 0            | 44.58                      | -                  | -           | -                   | -           | 68.2                         | -23.62      | 0-360           | 250         | H        |
| 6      | * 15.571        | 18.76                | PK  | 39.8                  | -14.6       | 0            | 43.96                      | -                  | -           | 74                  | -30.04      | -                            | -           | 0-360           | 250         | H        |
| 4      | 10.381          | 21.04                | PK  | 37.5                  | -16.5       | 0            | 42.04                      | -                  | -           | -                   | -           | 68.2                         | -26.16      | 0-360           | 150         | V        |
| 5      | * 15.571        | 19.28                | PK  | 39.8                  | -14.6       | 0            | 44.48                      | -                  | -           | 74                  | -29.52      | -                            | -           | 0-360           | 250         | V        |

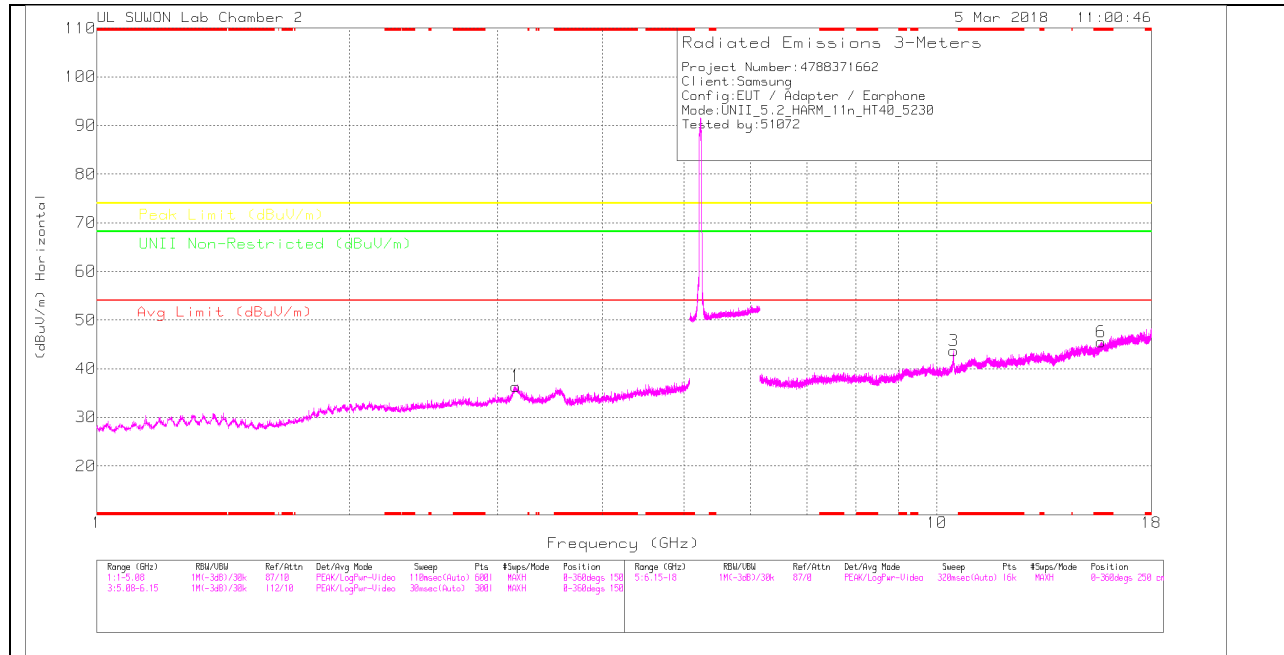
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
Avg - Video bandwidth < Resolution bandwidth

### Radiated Emissions

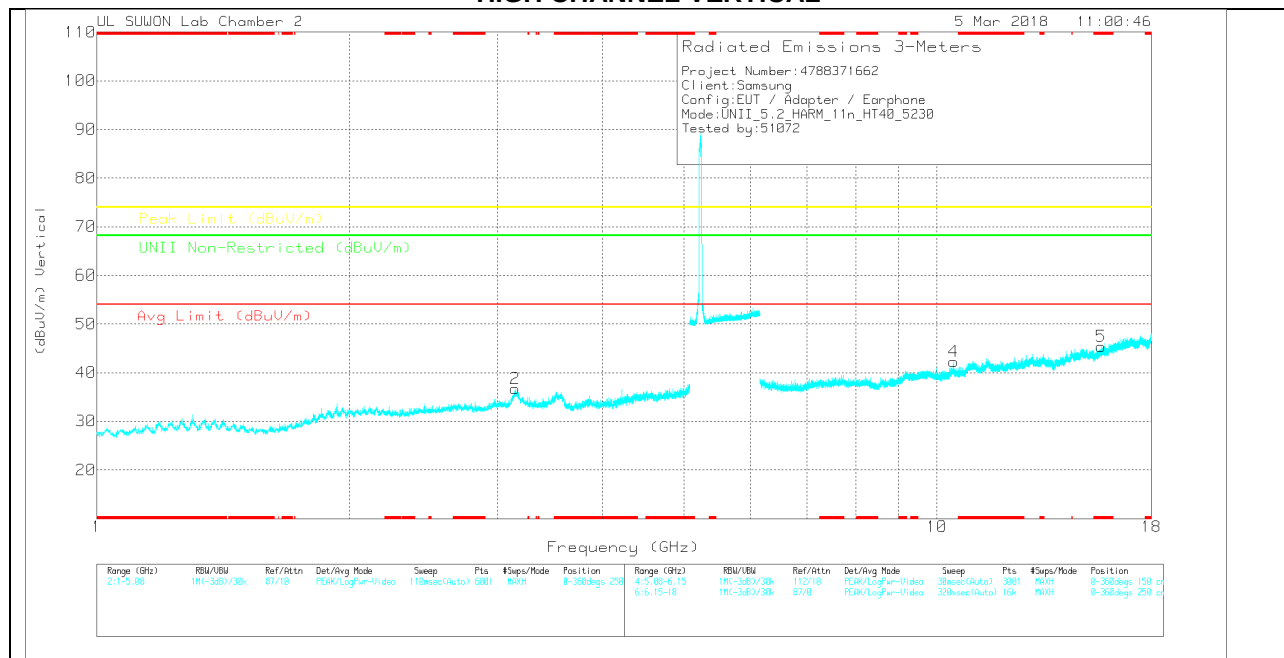
| Frequency (GHz) | Meter Reading (dBuV) | Det  | 170531_31170038724) | 5GHz_1P(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Unli Non-Restricted (dBuV/m) | Margin (dB) | Altitude (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|------|---------------------|-------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|------------------------------|-------------|-----------------|-------------|----------|
| 10.38           | 34.07                | PK-U | 37.5                | -16.5       | 0            | 55.07                      | -                  | -           | -                   | -           | 68.2                         | -13.13      | 79              | 100         | H        |
| 10.38           | 31.46                | PK-U | 37.5                | -16.5       | 0            | 52.46                      | -                  | -           | -                   | -           | 68.2                         | -15.74      | 72              | 169         | V        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
PK-U - U-NII: Maximum Peak

### HIGH CHANNEL HORIZONTAL



### HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

## HIGH CHANNEL DATA

### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 170531_3117001887 24 | SGHz_HF(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | U/Ni Non-Restricted (dBuV/m) | Margin (dB) | Altitude (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------------|-------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|------------------------------|-------------|-----------------|-------------|----------|
| 1      | 3.154           | 27.58                | PK  | 34.8                 | -26         | 0            | 36.38                      | -                  | -           | -                   | -           | 68.2                         | -31.82      | 0-360           | 250         | H        |
| 2      | 3.147           | 28.1                 | PK  | 34.8                 | -26.2       | 0            | 36.7                       | -                  | -           | -                   | -           | 68.2                         | -31.5       | 0-360           | 150         | V        |
| 3      | 10.463          | 22.51                | PK  | 37.5                 | -16.3       | 0            | 43.71                      | -                  | -           | -                   | -           | 68.2                         | -24.49      | 0-360           | 250         | H        |
| 6      | * 15.69         | 20.36                | PK  | 39.9                 | -14.7       | 0            | 45.56                      | -                  | -           | 74                  | -28.44      | -                            | -           | 0-360           | 150         | H        |
| 4      | 10.47           | 21.13                | PK  | 37.5                 | -16.4       | 0            | 42.23                      | -                  | -           | -                   | -           | 68.2                         | -25.97      | 0-360           | 150         | V        |
| 5      | * 15.69         | 20.14                | PK  | 39.9                 | -14.7       | 0            | 45.34                      | -                  | -           | 74                  | -28.66      | -                            | -           | 0-360           | 150         | V        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Avg - Video bandwidth < Resolution bandwidth

### Radiated Emissions

| Frequency (GHz) | Meter Reading (dBuV) | Det  | 170531_311700188724 | SGHz_HF(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | U/Ni Non-Restricted (dBuV/m) | Margin (dB) | Altitude (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|------|---------------------|-------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|------------------------------|-------------|-----------------|-------------|----------|
| 10.46           | 33.29                | PK-U | 37.5                | -16.3       | 0            | 54.49                      | -                  | -           | -                   | -           | 68.2                         | -13.71      | 70              | 231         | H        |
| 10.464          | 31.51                | PK-U | 37.5                | -16.3       | 0            | 52.71                      | -                  | -           | -                   | -           | 68.2                         | -15.49      | 72              | 163         | V        |

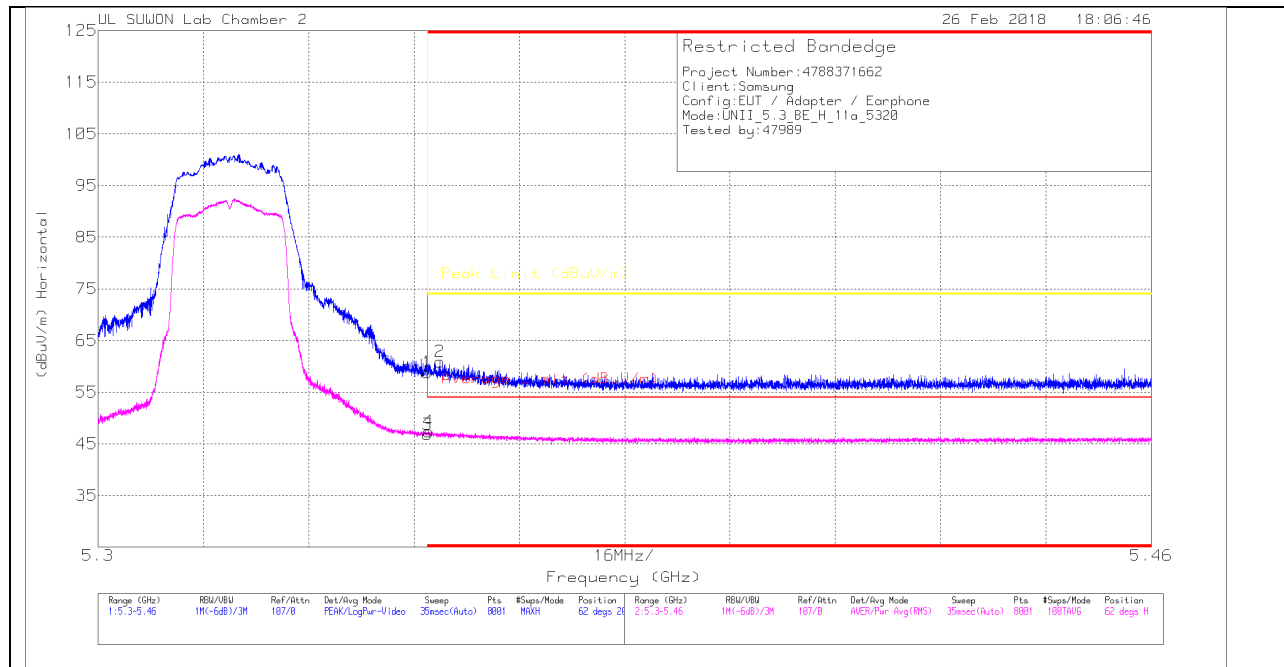
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK-U - U-NII: Maximum Peak

## 11.2. 5.3 GHz

### 11.2.1. TX ABOVE 1 GHz 802.11a MODE IN THE 5.3 GHz BAND AUTHORIZED BANDEDGE (HIGH CHANNEL)

#### HORIZONTAL PEAK AND AVERAGE PLOT



#### HORIZONTAL DATA

##### Trace Markers

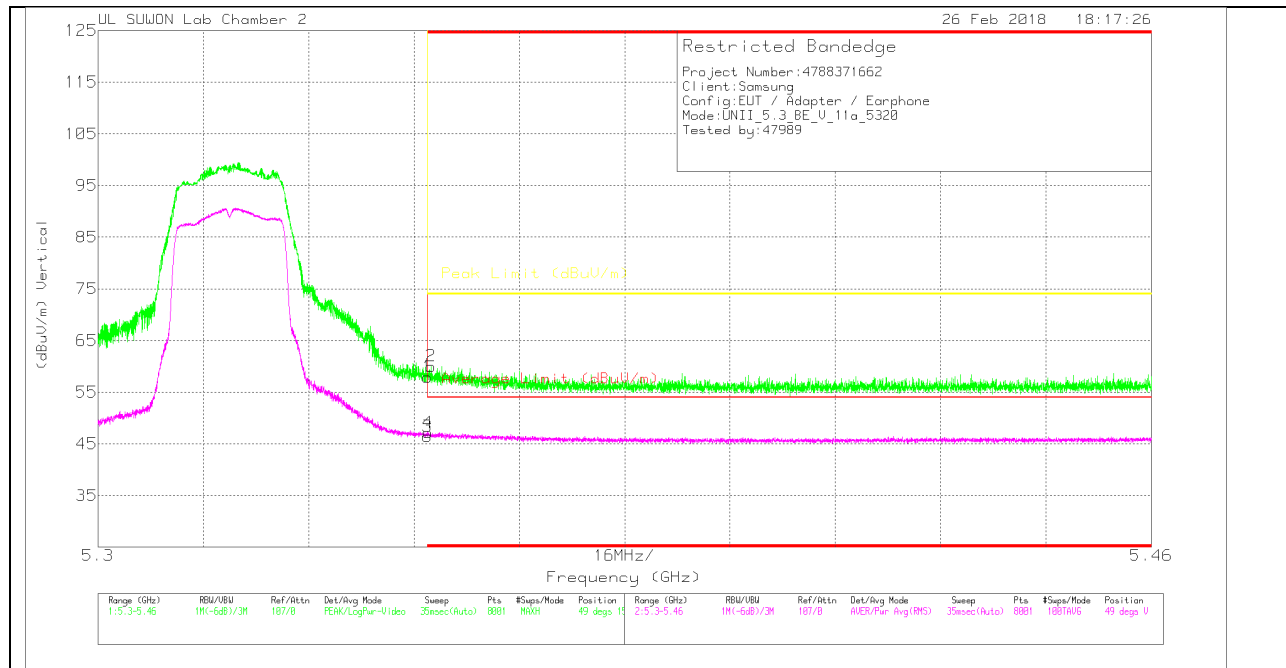
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 170531_3117(00168724) | 10dB(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Altitude (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|-----------------------|----------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|-----------------|-------------|----------|
| 1      | * 5.35          | 39.84                | Pk  | 34.2                  | -15.2    | 0            | 58.84                      | -                      | -           | 74                  | -15.16         | 62              | 200         | H        |
| 2      | * 5.352         | 41.91                | Pk  | 34.2                  | -15.2    | 0            | 60.91                      | -                      | -           | 74                  | -13.09         | 62              | 200         | H        |
| 3      | * 5.35          | 27.67                | RMS | 34.2                  | -15.2    | .14          | 46.81                      | 54                     | -7.19       | -                   | -              | 62              | 200         | H        |
| 4      | * 5.35          | 28.26                | RMS | 34.2                  | -15.2    | .14          | 47.4                       | 54                     | -6.6        | -                   | -              | 62              | 200         | H        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

## VERTICAL PEAK AND AVERAGE PLOT



## VERTICAL DATA

### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 170531_3117(00168724) | 10dB(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Altitude (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|-----------------------|----------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|-----------------|-------------|----------|
| 1      | * 5.35          | 38.96                | Pk  |                       | 34.2     | -15.2        | 0                          | 57.96                  | -           | 74                  | -16.04         | 49              | 154         | V        |
| 2      | * 5.351         | 41.04                | Pk  |                       | 34.2     | -15.2        | 0                          | 60.04                  | -           | 74                  | -13.96         | 49              | 154         | V        |
| 3      | * 5.35          | 27.32                | RMS |                       | 34.2     | -15.2        | .14                        | 46.46                  | 54          | -7.54               | -              | 49              | 154         | V        |
| 4      | * 5.35          | 28.03                | RMS |                       | 34.2     | -15.2        | .14                        | 47.17                  | 54          | -6.83               | -              | 49              | 154         | V        |

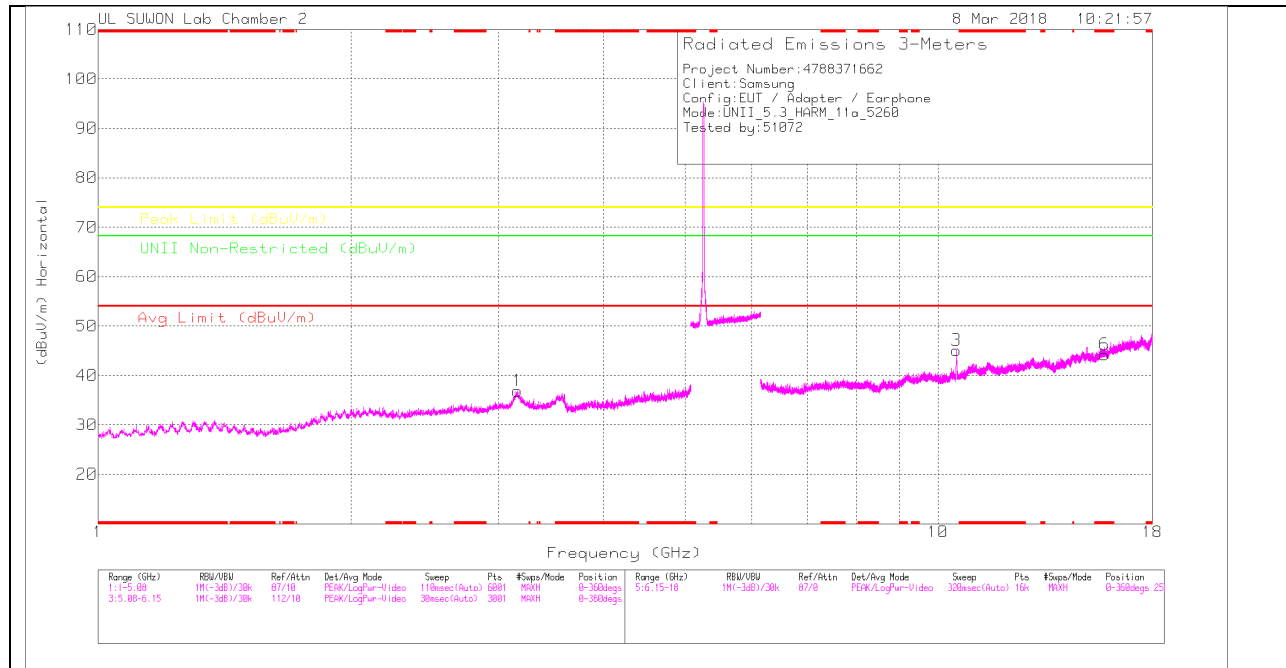
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

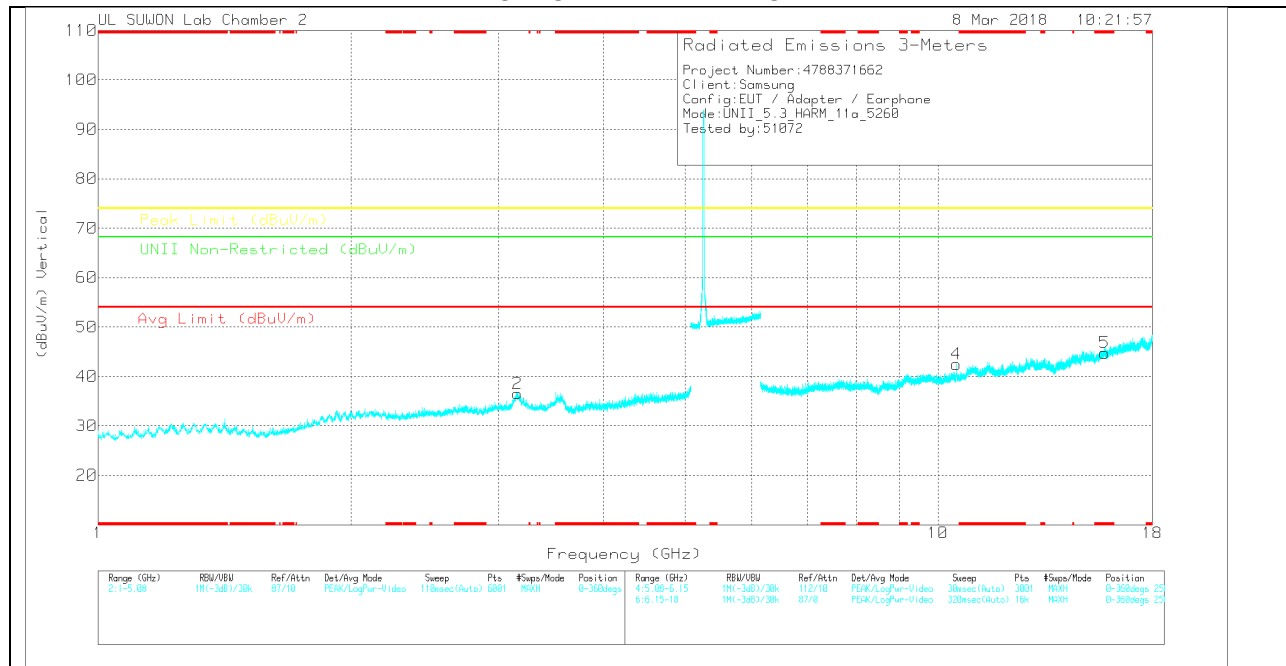
RMS - RMS detection

## HARMONICS AND SPURIOUS EMISSIONS

### LOW CHANNEL HORIZONTAL



### LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

## LOW CHANNEL DATA

### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 170531_3117001687 24] | 5GHz_1P(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | U/N: Non-Restricted (dBuV/m) | Margin (dB) | Asimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|-----------------------|-------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|------------------------------|-------------|----------------|-------------|----------|
| 1      | 3.159           | 28.28                | PK  | 34.6                  | -26         | 0            | 36.88                      | -                  | -           | -                   | -           | 68.2                         | -31.32      | 0-360          | 250         | H        |
| 2      | 3.156           | 27.83                | PK  | 34.7                  | -26         | 0            | 36.53                      | -                  | -           | -                   | -           | 68.2                         | -31.67      | 0-360          | 250         | V        |
| 3      | 10.522          | 24.19                | PK  | 37.5                  | -16.6       | 0            | 45.09                      | -                  | -           | -                   | -           | 68.2                         | -23.11      | 0-360          | 250         | H        |
| 6      | * 15.78         | 18.93                | PK  | 40.1                  | -14.8       | 0            | 44.23                      | -                  | -           | 74                  | -29.77      | -                            | -           | 0-360          | 250         | H        |
| 4      | 10.522          | 21.58                | PK  | 37.5                  | -16.6       | 0            | 42.48                      | -                  | -           | -                   | -           | 68.2                         | -25.72      | 0-360          | 150         | V        |
| 5      | * 15.781        | 19.47                | PK  | 40.1                  | -14.8       | 0            | 44.77                      | -                  | -           | 74                  | -29.23      | -                            | -           | 0-360          | 150         | V        |

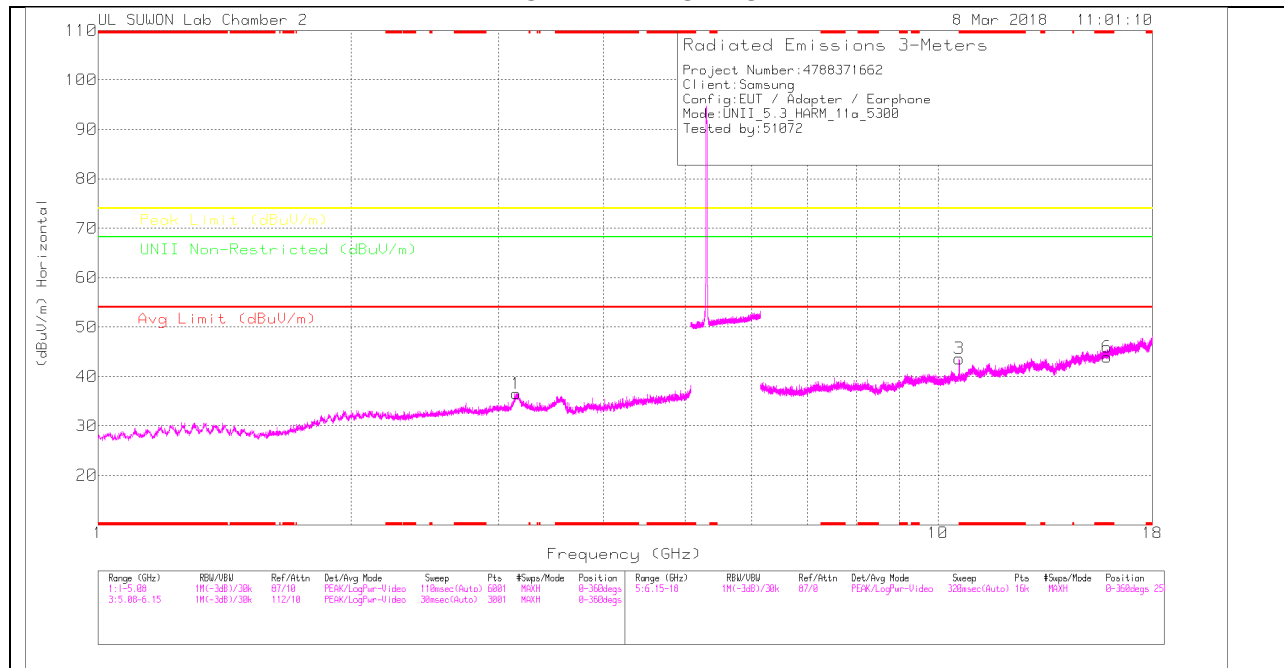
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
PK – Peak Detector

### Radiated Emissions

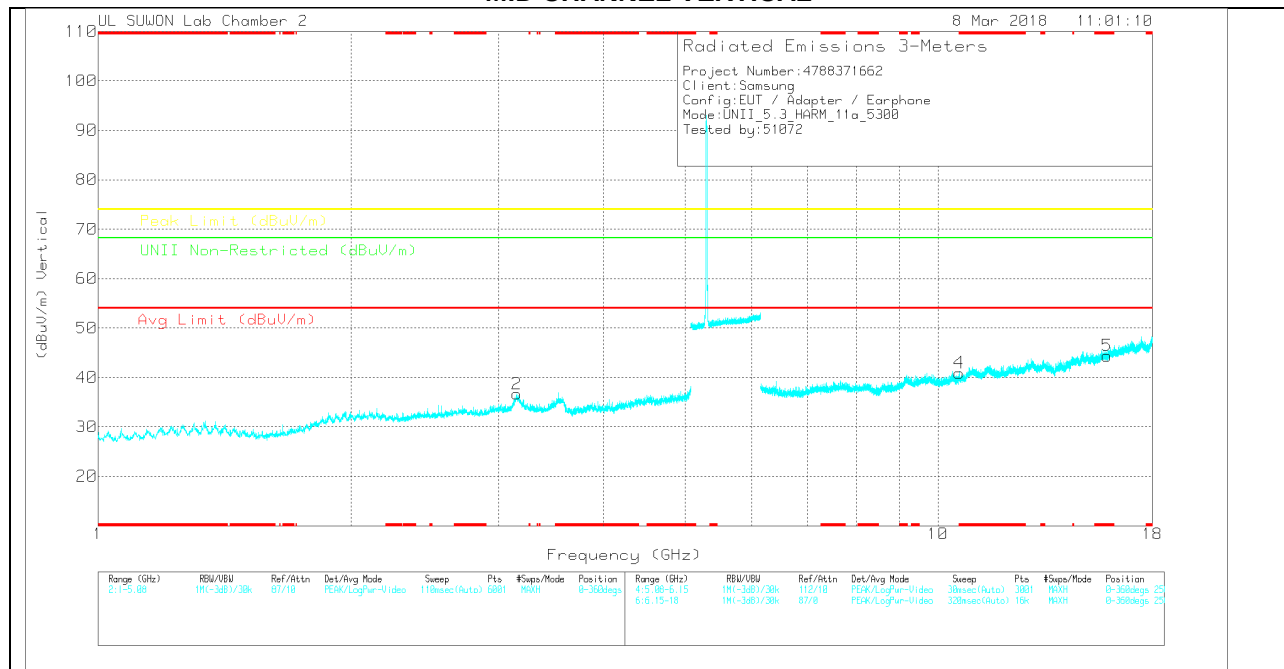
| Frequency (GHz) | Meter Reading (dBuV) | Det  | 170531_311700168724] | 6GHz_HP(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | U/N: Non-Restricted (dBuV/m) | Margin (dB) | Asimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|------|----------------------|-------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|------------------------------|-------------|----------------|-------------|----------|
| 10.52           | 37.42                | PK-U | 37.5                 | -16.6       | 0            | 58.32                      | -                  | -           | -                   | -           | 68.2                         | -9.88       | 32             | 207         | H        |
| 10.518          | 33.83                | PK-U | 37.5                 | -16.6       | 0            | 54.73                      | -                  | -           | -                   | -           | 68.2                         | -13.47      | 72             | 145         | V        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
PK-U - U-NII: Maximum Peak

### MID CHANNEL HORIZONTAL



### MID CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

## MID CHANNEL DATA

### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 170531_3117(001887 24) | 5GHz_HP(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | UNII Non-Restricted (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------------|-------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|------------------------------|-------------|----------------|-------------|----------|
| 1      | 3.147           | 27.94                | Avg | 34.8                   | -26.2       | 0            | 36.54                      | -                  | -           | -                   | -           | 68.2                         | -31.66      | 0-360          | 150         | H        |
| 2      | 3.152           | 27.88                | Avg | 34.9                   | -26.1       | 0            | 36.68                      | -                  | -           | -                   | -           | 68.2                         | -31.52      | 0-360          | 250         | V        |
| 3      | 10.599          | 22.61                | Avg | 37.6                   | -16.6       | 0            | 43.61                      | -                  | -           | -                   | -           | 68.2                         | -24.59      | 0-360          | 250         | H        |
| 6      | * 15.9          | 18.32                | Avg | 40.3                   | -14.7       | 0            | 43.92                      | -                  | -           | 74                  | -30.08      | -                            | -           | 0-360          | 250         | H        |
| 4      | * 10.601        | 19.91                | Avg | 37.6                   | -16.6       | 0            | 40.91                      | -                  | -           | 74                  | -33.09      | -                            | -           | 0-360          | 150         | V        |
| 5      | * 15.9          | 18.78                | Avg | 40.3                   | -14.7       | 0            | 44.38                      | -                  | -           | 74                  | -29.62      | -                            | -           | 0-360          | 250         | V        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK – Peak Detector

### Radiated Emissions

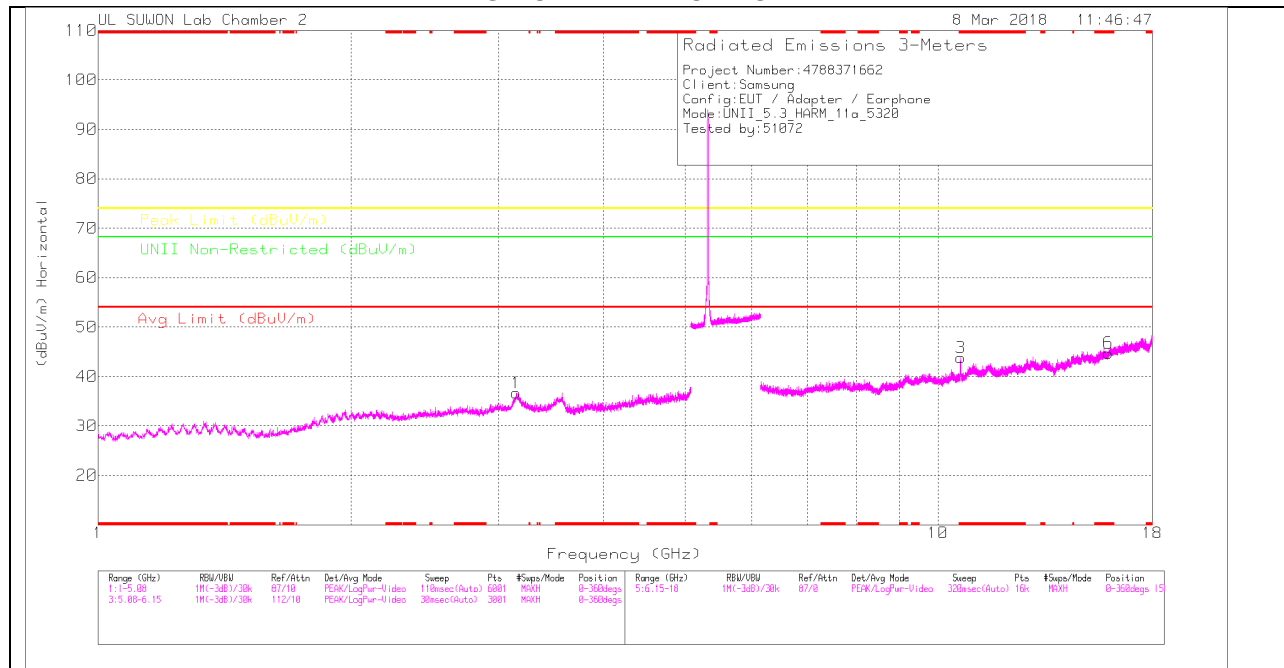
| Frequency (GHz) | Meter Reading (dBuV) | Det  | 170531_3117(00188724) | 5GHz_HP(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | UNII Non-Restricted (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|------|-----------------------|-------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|------------------------------|-------------|----------------|-------------|----------|
| * 10.6          | 34.67                | PK-U | 37.6                  | -16.6       | 0            | 55.67                      | -                  | -           | 74                  | -18.33      | -                            | -           | 333            | 321         | H        |
| * 10.602        | 21.66                | ADR  | 37.6                  | -16.6       | .14          | 42.8                       | 54                 | -11.2       | -                   | -           | -                            | -           | 333            | 321         | H        |
| * 10.601        | 32.51                | PK-U | 37.6                  | -16.6       | 0            | 53.51                      | -                  | -           | 74                  | -20.49      | -                            | -           | 74             | 155         | V        |
| * 10.601        | 19.41                | ADR  | 37.6                  | -16.6       | .14          | 40.55                      | 54                 | -13.45      | -                   | -           | -                            | -           | 74             | 155         | V        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

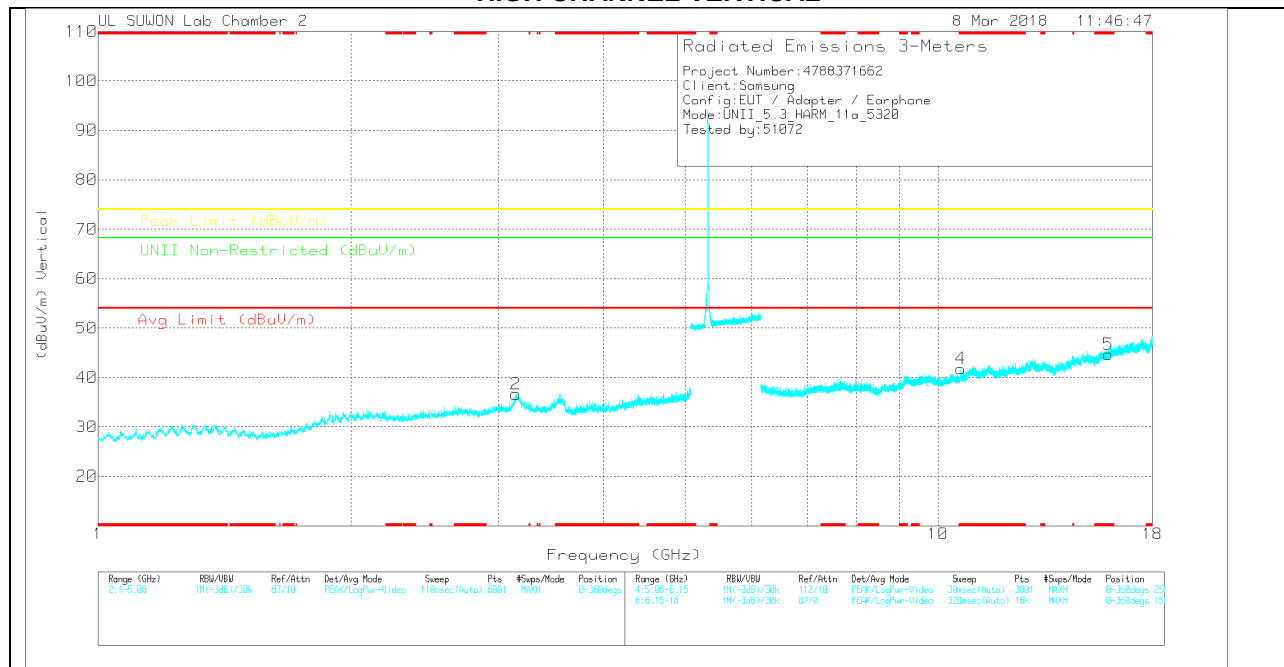
PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

### HIGH CHANNEL HORIZONTAL



### HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

## HIGH CHANNEL DATA

### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 170531_3117001687 24) | 5GHz_1P(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Unii Non-Restricted (dBuV/m) | Margin (dB) | Asimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|-----------------------|-------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|------------------------------|-------------|----------------|-------------|----------|
| 1      | 3.149           | 28.05                | PK  | 34.8                  | -26.2       | 0            | 36.65                      | -                  | -           | -                   | -           | 68.2                         | -31.55      | 0-360          | 250         | H        |
| 2      | 3.145           | 28.12                | PK  | 34.7                  | -26.2       | 0            | 36.62                      | -                  | -           | -                   | -           | 68.2                         | -31.58      | 0-360          | 150         | V        |
| 3      | * 10.645        | 22.68                | PK  | 37.7                  | -16.6       | 0            | 43.78                      | -                  | -           | 74                  | -30.22      | -                            | -           | 0-360          | 250         | H        |
| 6      | * 15.96         | 18.74                | PK  | 40.4                  | -14.4       | 0            | 44.74                      | -                  | -           | 74                  | -29.26      | -                            | -           | 0-360          | 250         | H        |
| 4      | * 10.645        | 20.69                | PK  | 37.7                  | -16.6       | 0            | 41.79                      | -                  | -           | 74                  | -32.21      | -                            | -           | 0-360          | 250         | V        |
| 5      | * 15.96         | 18.66                | PK  | 40.4                  | -14.4       | 0            | 44.66                      | -                  | -           | 74                  | -29.34      | -                            | -           | 0-360          | 250         | V        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
PK – Peak Detector

### Radiated Emissions

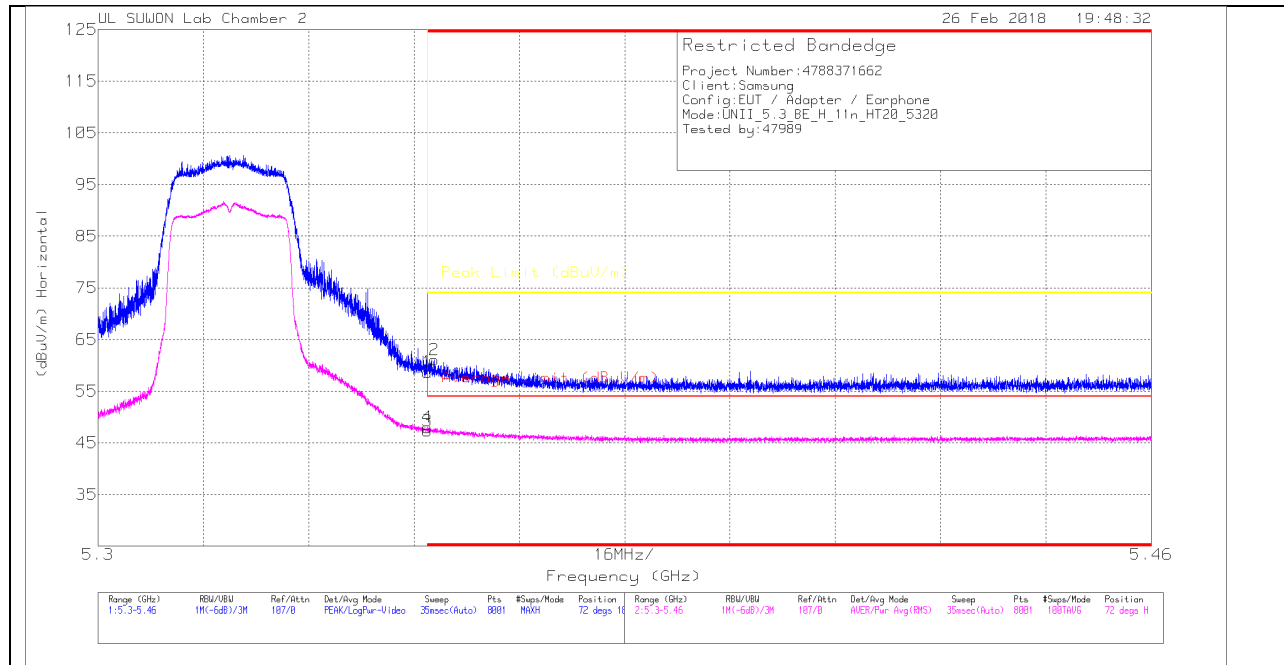
| Frequency (GHz) | Meter Reading (dBuV) | Det  | 170531_311700168724) | 6GHz_1P(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Unii Non-Restricted (dBuV/m) | Margin (dB) | Asimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|------|----------------------|-------------|--------------|----------------------------|--------------------|-------------|---------------------|-------------|------------------------------|-------------|----------------|-------------|----------|
| * 10.637        | 37.43                | PK-U | 37.7                 | -16.6       | 0            | 58.53                      | -                  | -           | 74                  | -15.47      | -                            | -           | 340            | 235         | H        |
| * 10.641        | 22.19                | ADR  | 37.7                 | -16.6       | .14          | 43.43                      | 54                 | -10.57      | -                   | -           | -                            | -           | 340            | 235         | H        |
| * 10.638        | 32.77                | PK-U | 37.7                 | -16.6       | 0            | 53.87                      | -                  | -           | 74                  | -20.13      | -                            | -           | 73             | 166         | V        |
| * 10.643        | 19.05                | ADR  | 37.7                 | -16.6       | .14          | 40.29                      | 54                 | -13.71      | -                   | -           | -                            | -           | 73             | 166         | V        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
PK-U - U-NII: Maximum Peak  
ADR - U-NII AD primary method, RMS average

## 11.2.2. TX ABOVE 1GHz 802.11n HT20 MODE IN THE 5.3GHz BAND

### AUTHORIZED BANDEDGE (HIGH CHANNEL)

#### HORIZONTAL PEAK AND AVERAGE PLOT



#### HORIZONTAL DATA

#### Trace Markers

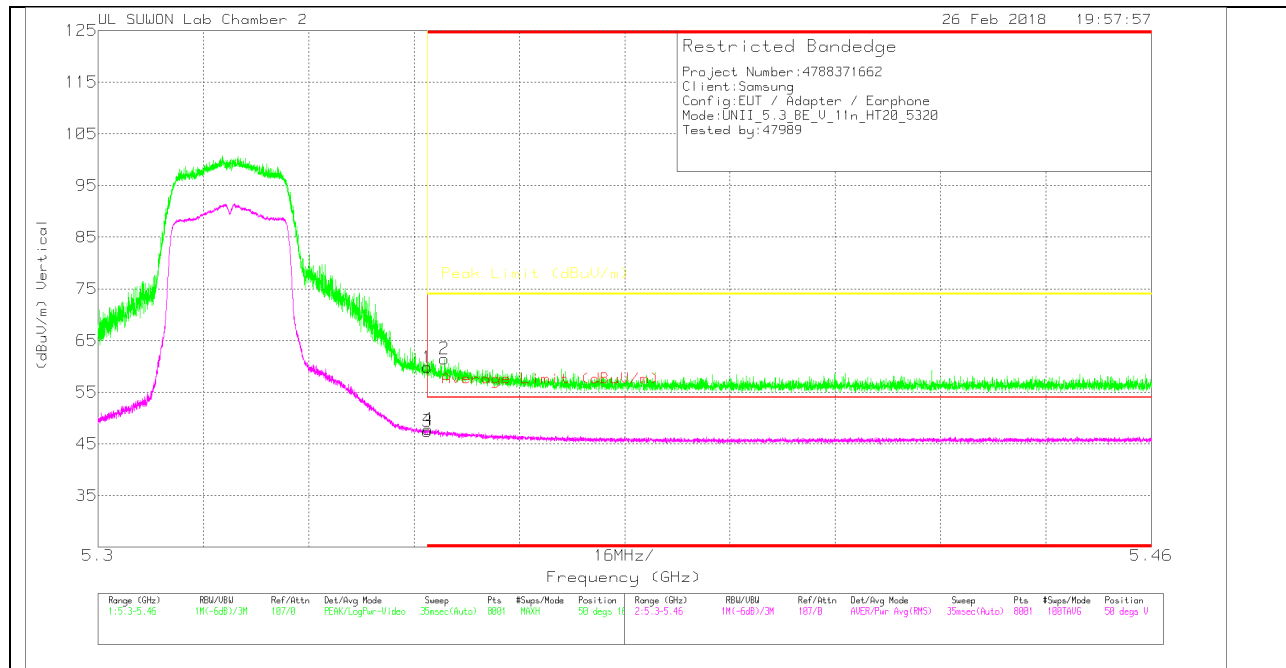
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 170531_3117(00168724) | 10dB(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Altitude (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|-----------------------|----------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|-----------------|-------------|----------|
| 1      | * 5.35          | 39.67                | Pk  | 34.2                  | -15.2    | 0            | 58.67                      | -                      | -           | 74                  | -15.33         | 72              | 181         | H        |
| 2      | * 5.351         | 42.05                | Pk  | 34.2                  | -15.2    | 0            | 61.05                      | -                      | -           | 74                  | -12.95         | 72              | 181         | H        |
| 3      | * 5.35          | 28.17                | RMS | 34.2                  | -15.2    | .15          | 47.32                      | 54                     | -6.68       | -                   | -              | 72              | 181         | H        |
| 4      | * 5.35          | 28.86                | RMS | 34.2                  | -15.2    | .15          | 48.01                      | 54                     | -5.99       | -                   | -              | 72              | 181         | H        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

## VERTICAL PEAK AND AVERAGE PLOT



## VERTICAL DATA

### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 170531_311700168724 | 10dB(dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Altitude (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------------|----------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|-----------------|-------------|----------|
| 1      | * 5.35          | 40.85                | Pk  |                     | 34.2     | -15.2        | 59.85                      | -                      | -           | 74                  | -14.15         | 50              | 168         | V        |
| 2      | * 5.353         | 42.47                | Pk  |                     | 34.2     | -15.2        | 61.47                      | -                      | -           | 74                  | -12.53         | 50              | 168         | V        |
| 3      | * 5.35          | 28.31                | RMS |                     | 34.2     | -15.2        | 47.46                      | 54                     | -6.54       | -                   | -              | 50              | 168         | V        |
| 4      | * 5.35          | 28.67                | RMS |                     | 34.2     | -15.2        | 47.82                      | 54                     | -6.18       | -                   | -              | 50              | 168         | V        |

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection