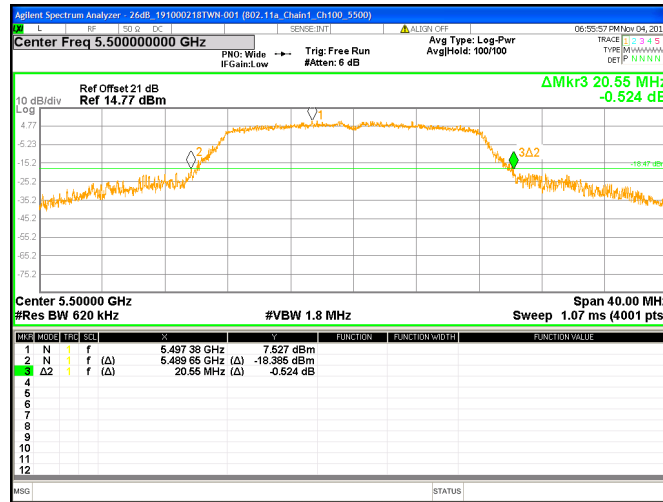
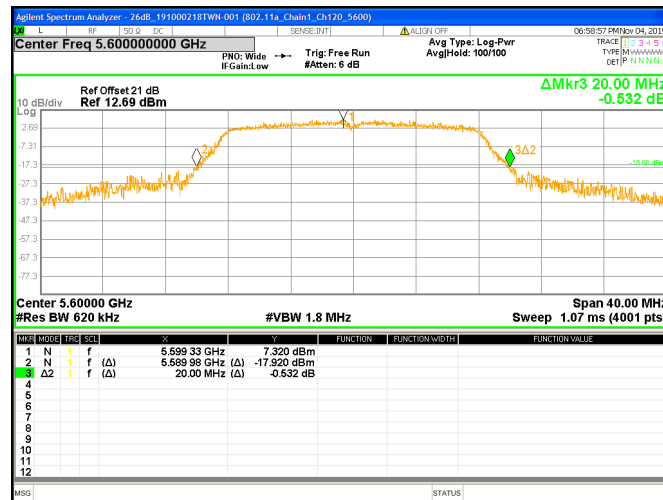


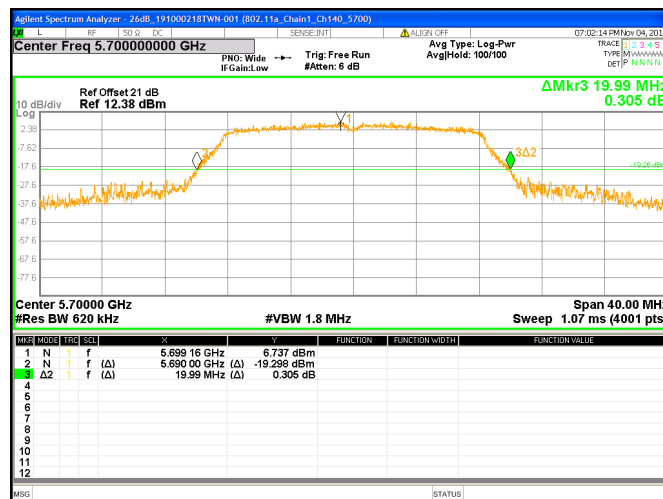
## Chain1 : Emission Bandwidth-26dB @ 802.11a Mode Ch100



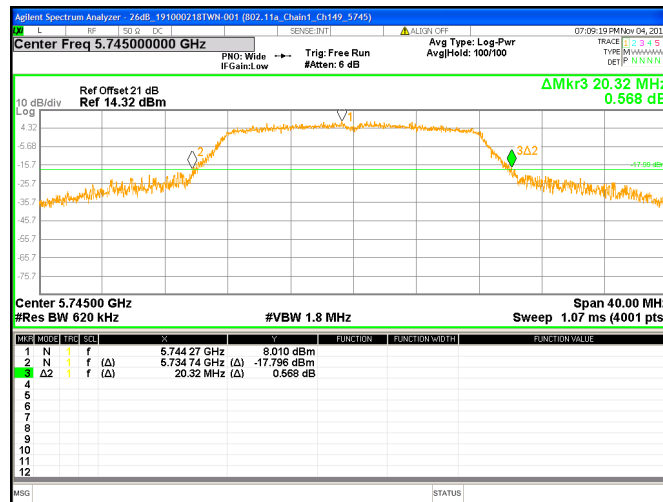
## Chain1 : Emission Bandwidth-26dB @ 802.11a Mode Ch120



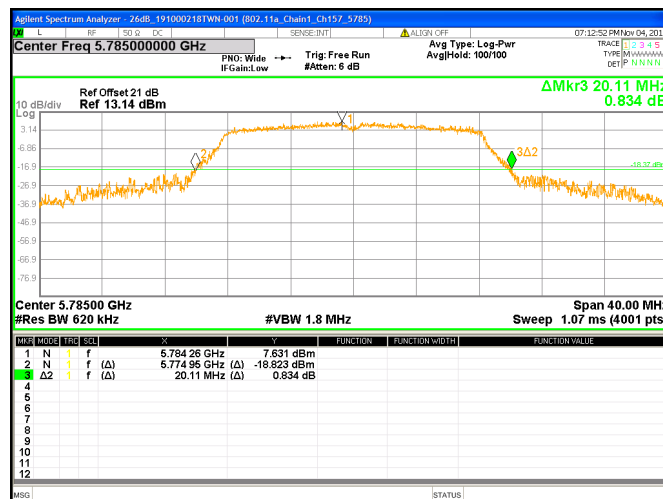
## Chain1 : Emission Bandwidth-26dB @ 802.11a Mode Ch140



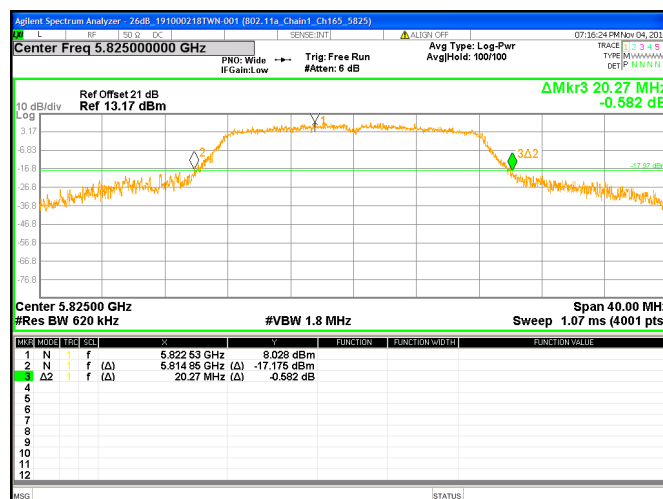
## Chain1 : Emission Bandwidth-26dB @ 802.11a Mode Ch149



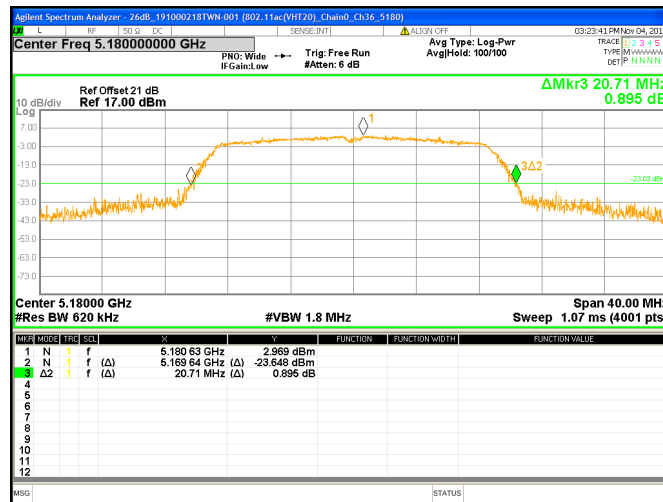
## Chain1 : Emission Bandwidth-26dB @ 802.11a Mode Ch157



## Chain1 : Emission Bandwidth-26dB @ 802.11a Mode Ch165



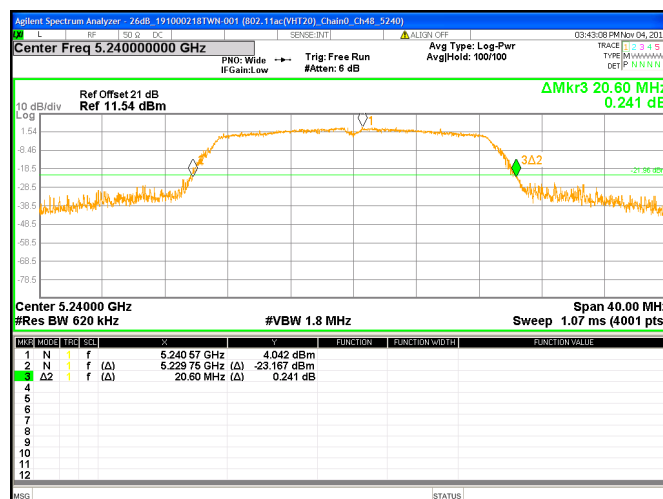
## Chain0 : Emission Bandwidth-26dB @ 802.11ac(VHT20) Mode Ch36



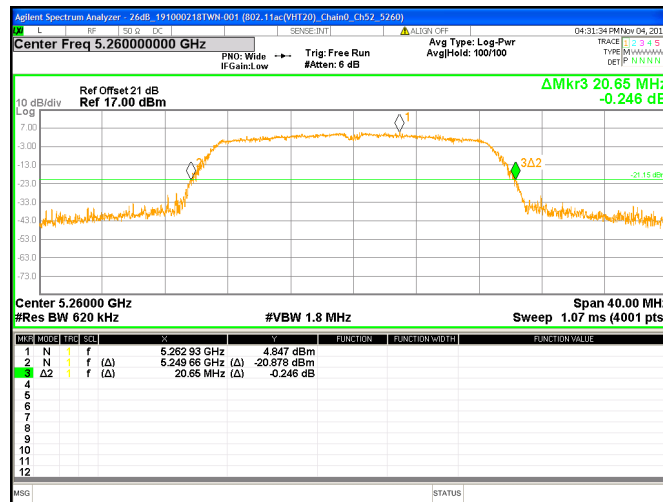
## Chain0 : Emission Bandwidth-26dB @ 802.11ac(VHT20) Mode Ch44



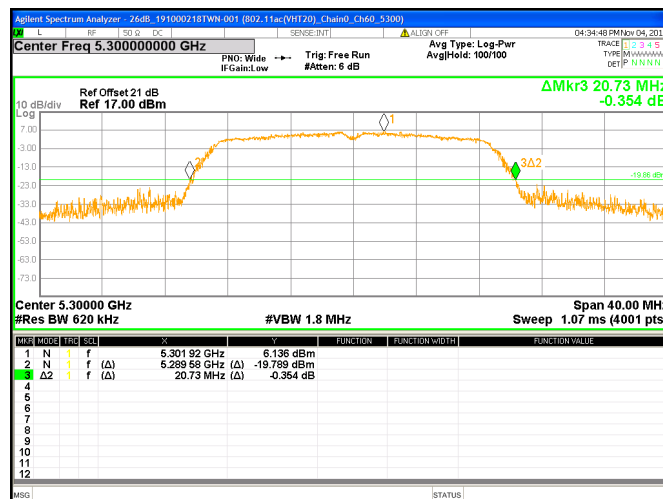
## Chain0 : Emission Bandwidth-26dB @ 802.11ac(VHT20) Mode Ch48



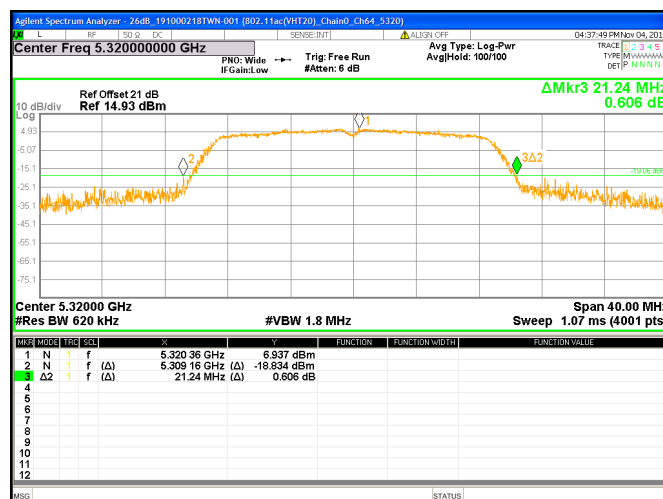
## Chain0 : Emission Bandwidth-26dB @ 802.11ac(VHT20) Mode Ch52



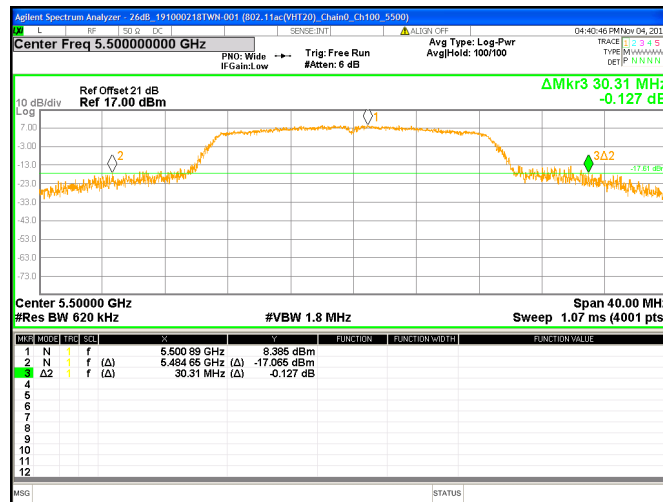
## Chain0 : Emission Bandwidth-26dB @ 802.11ac(VHT20) Mode Ch60



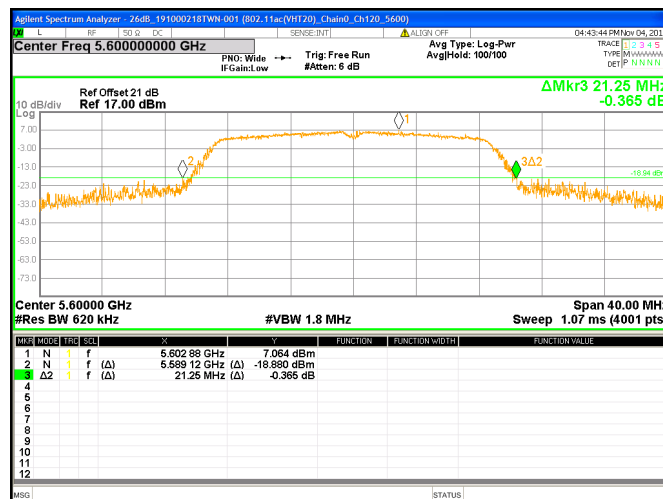
## Chain0 : Emission Bandwidth-26dB @ 802.11ac(VHT20) Mode Ch64



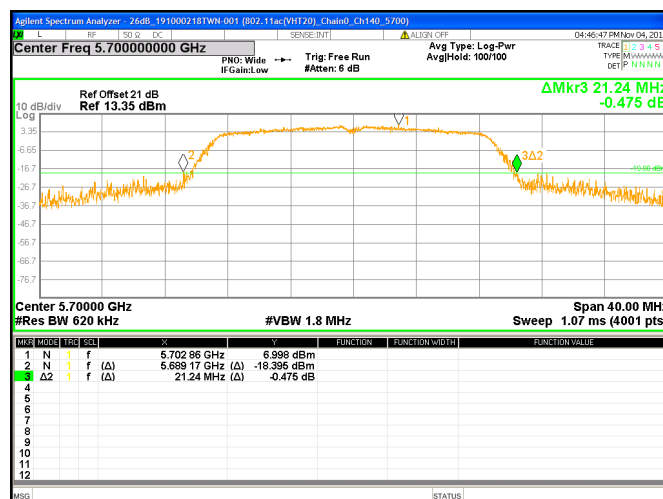
## Chain0 : Emission Bandwidth-26dB @ 802.11ac(VHT20) Mode Ch100



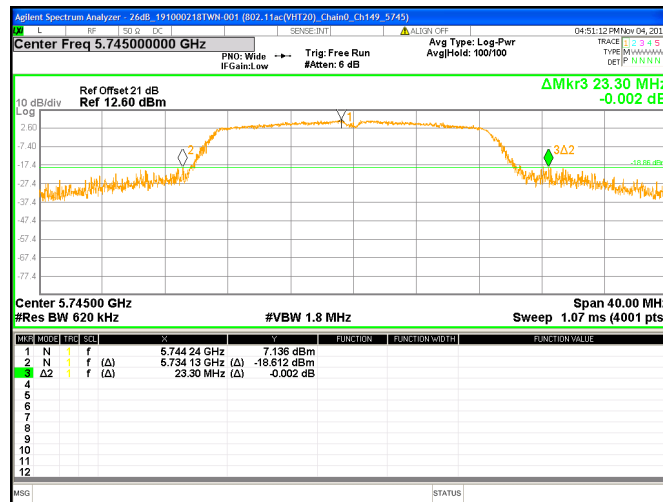
## Chain0 : Emission Bandwidth-26dB @ 802.11ac(VHT20) Mode Ch120



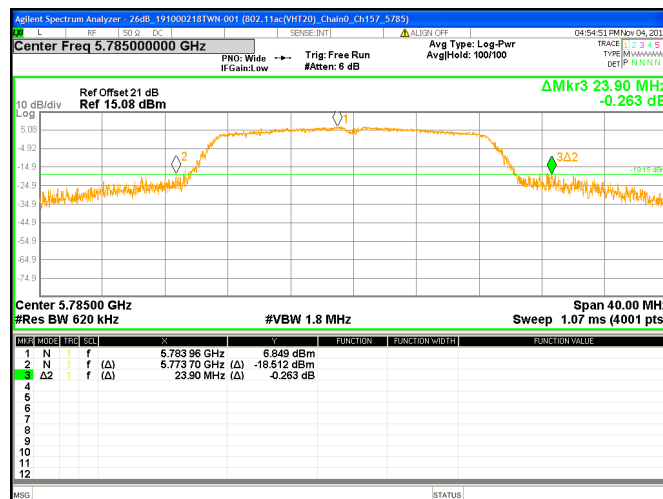
## Chain0 : Emission Bandwidth-26dB @ 802.11ac(VHT20) Mode Ch140



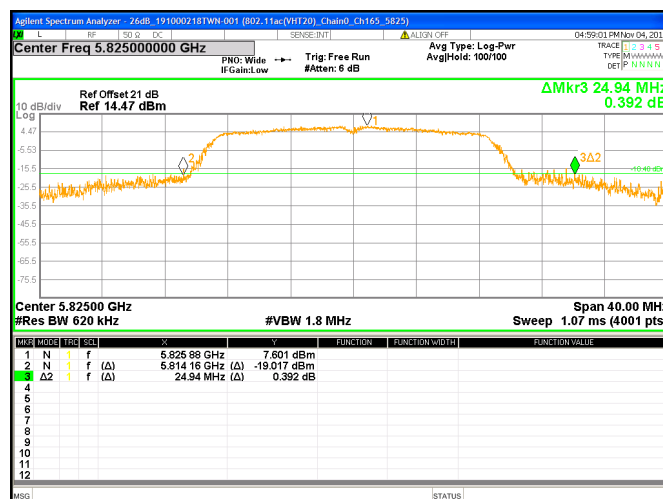
## Chain0 : Emission Bandwidth-26dB @ 802.11ac(VHT20) Mode Ch149



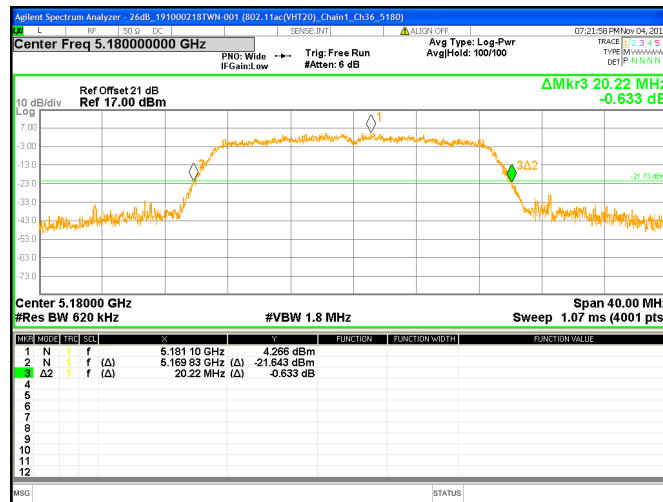
## Chain0 : Emission Bandwidth-26dB @ 802.11ac(VHT20) Mode Ch157



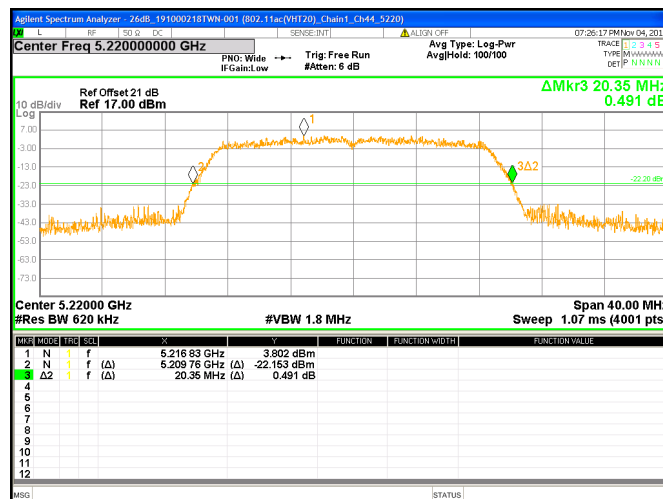
## Chain0 : Emission Bandwidth-26dB @ 802.11ac(VHT20) Mode Ch165



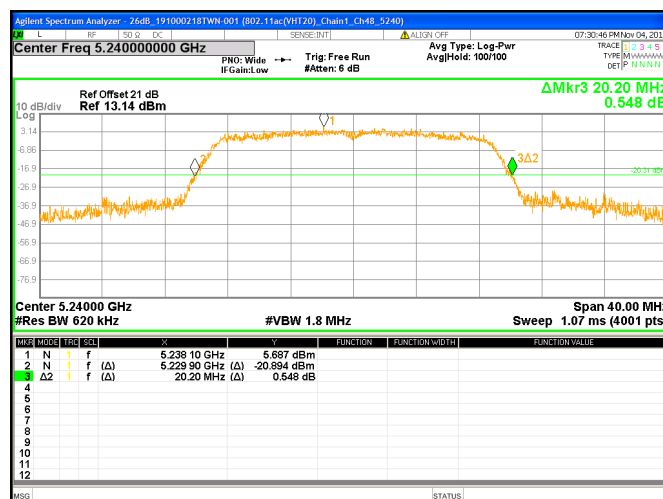
## Chain1 : Emission Bandwidth-26dB @ 802.11ac(VHT20) Mode Ch36



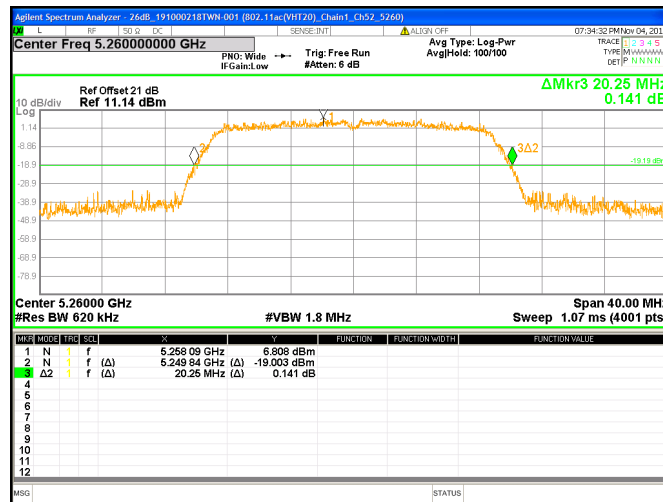
## Chain1 : Emission Bandwidth-26dB @ 802.11ac(VHT20) Mode Ch44



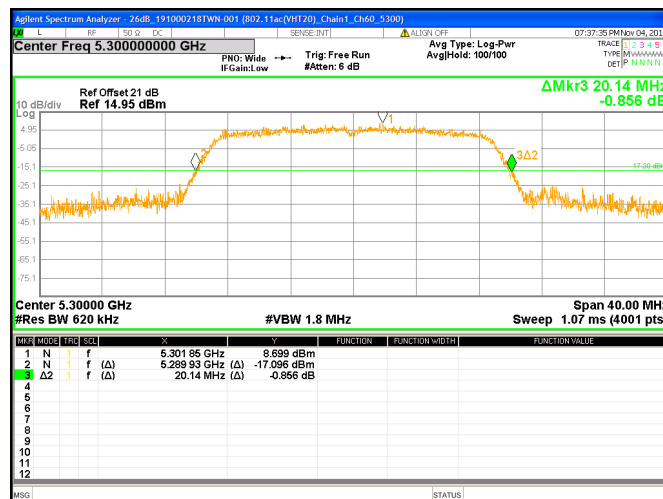
## Chain1 : Emission Bandwidth-26dB @ 802.11ac(VHT20) Mode Ch48



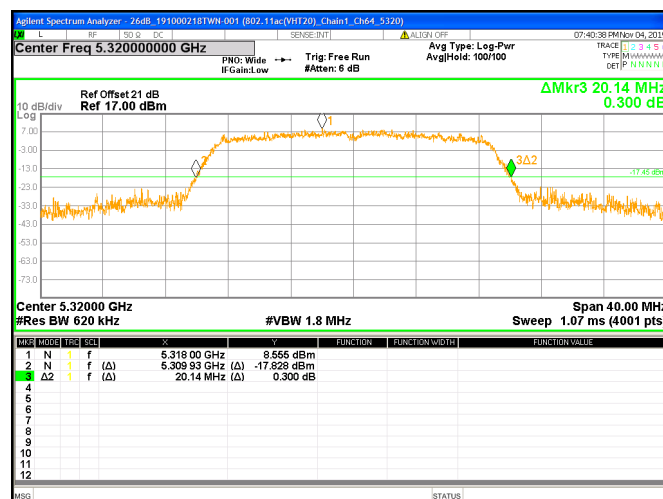
**Chain1 : Emission Bandwidth-26dB @ 802.11ac(VHT20) Mode Ch52**



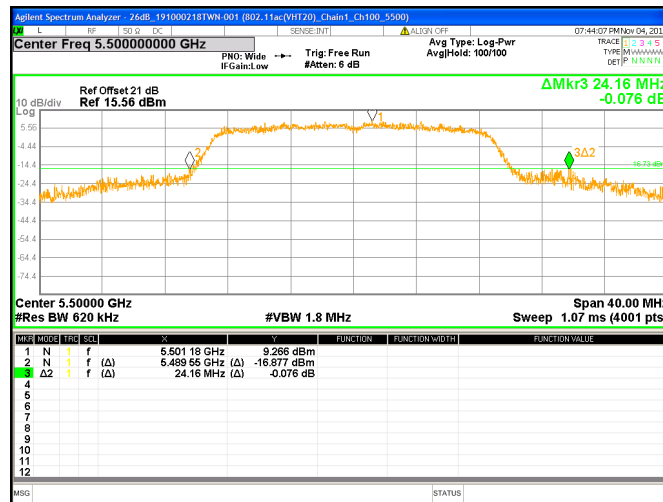
**Chain1 : Emission Bandwidth-26dB @ 802.11ac(VHT20) Mode Ch60**



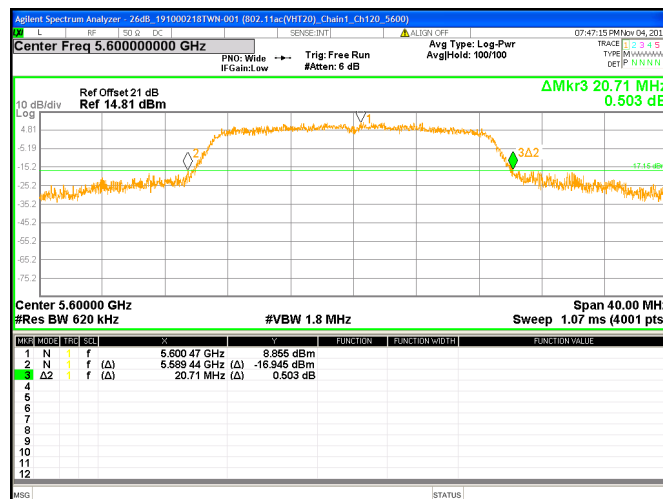
**Chain1 : Emission Bandwidth-26dB @ 802.11ac(VHT20) Mode Ch64**



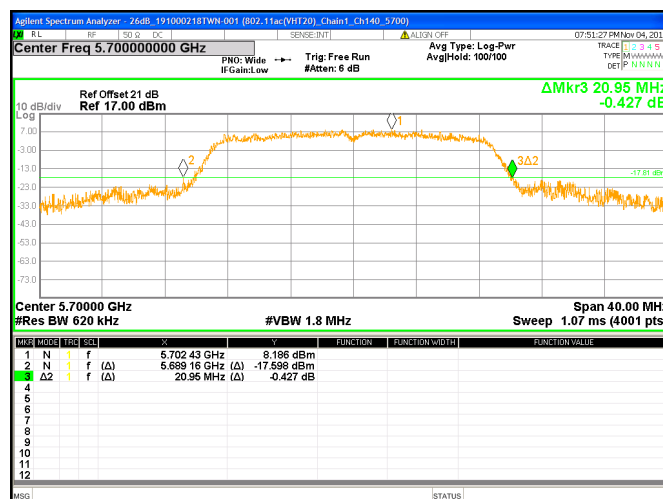
## Chain1 : Emission Bandwidth-26dB @ 802.11ac(VHT20) Mode Ch100



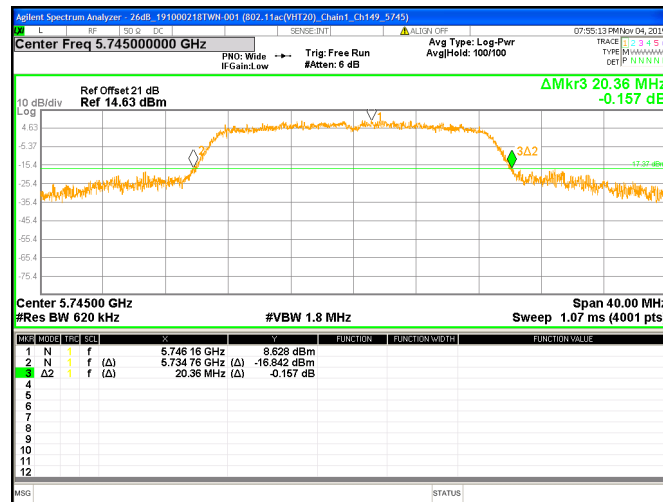
## Chain1 : Emission Bandwidth-26dB @ 802.11ac(VHT20) Mode Ch120



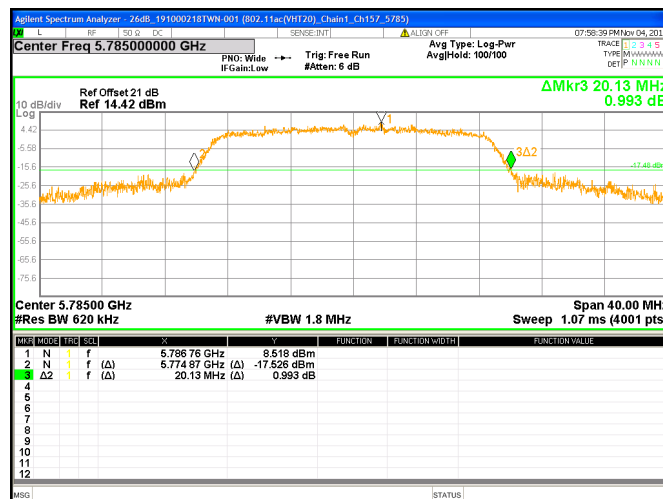
## Chain1 : Emission Bandwidth-26dB @ 802.11ac(VHT20) Mode Ch140



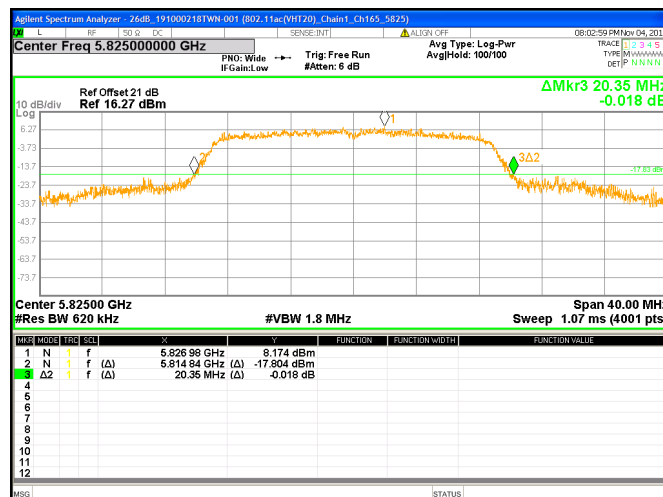
## Chain1 : Emission Bandwidth-26dB @ 802.11ac(VHT20) Mode Ch149



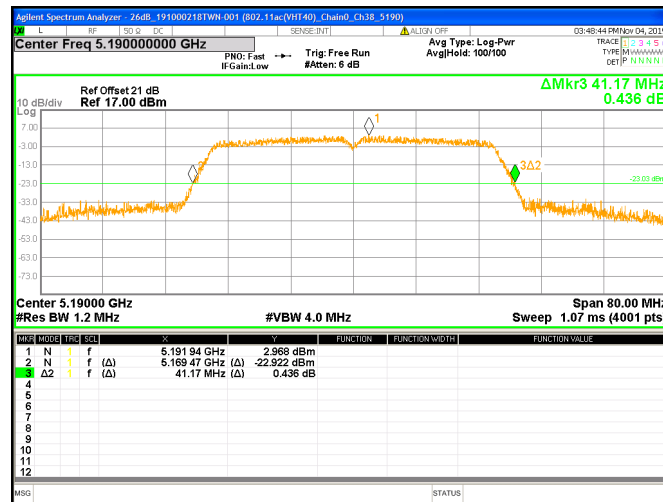
## Chain1 : Emission Bandwidth-26dB @ 802.11ac(VHT20) Mode Ch157



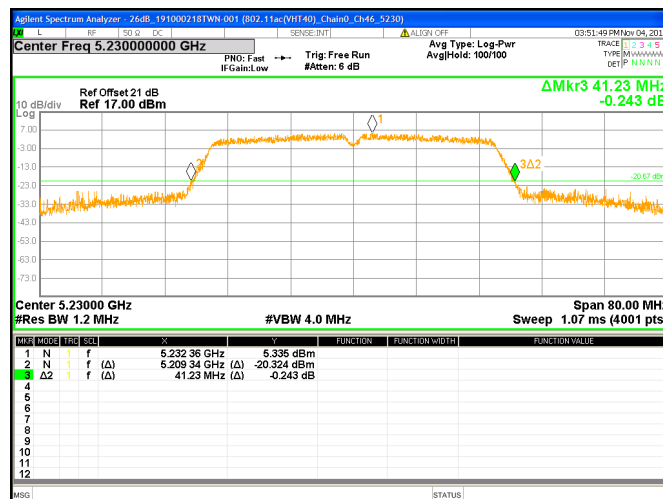
## Chain1 : Emission Bandwidth-26dB @ 802.11ac(VHT20) Mode Ch165



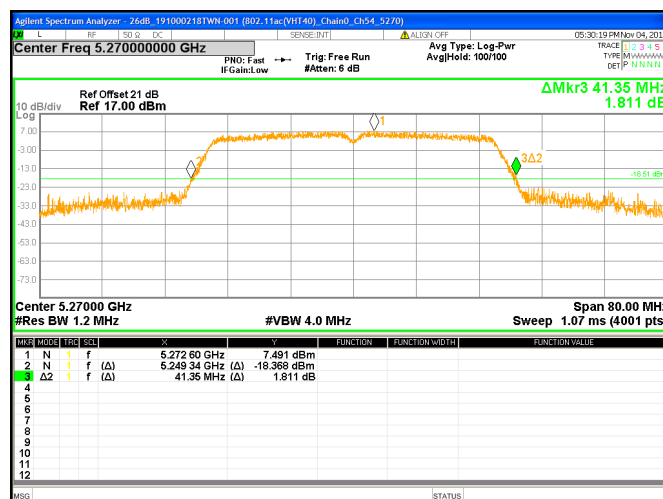
## Chain0 : Emission Bandwidth-26dB @ 802.11ac(VHT40) Mode Ch38



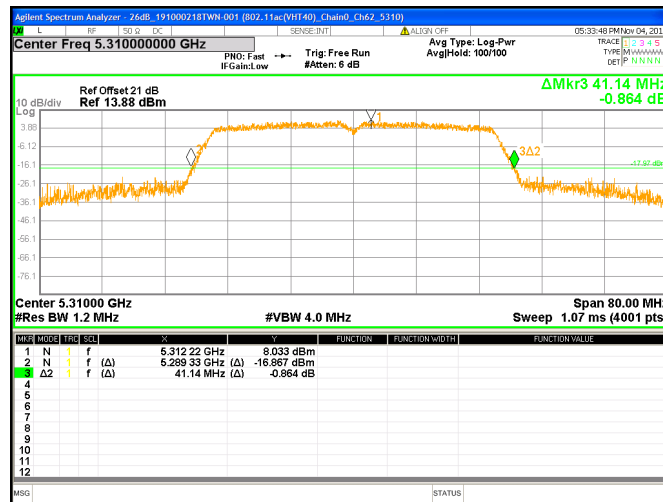
## Chain0 : Emission Bandwidth-26dB @ 802.11ac(VHT40) Mode Ch46



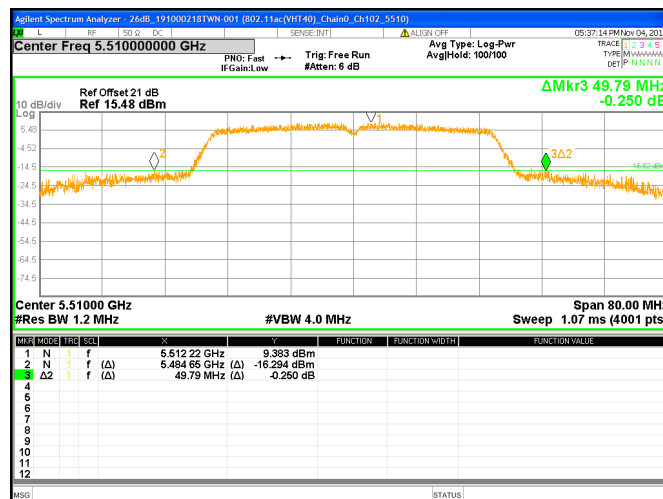
## Chain0 : Emission Bandwidth-26dB @ 802.11ac(VHT40) Mode Ch54



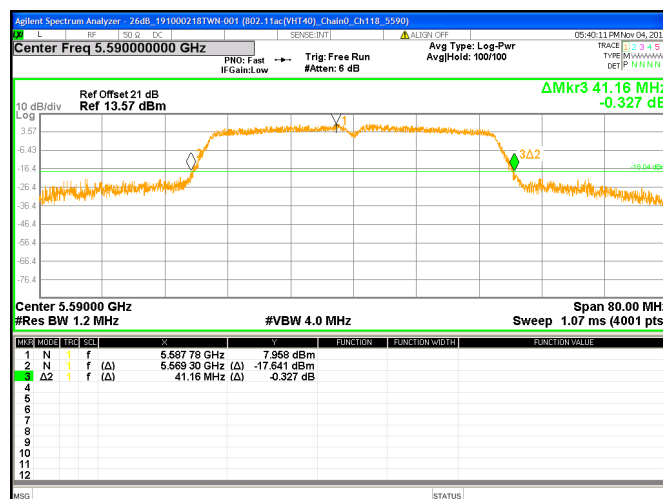
## Chain0 : Emission Bandwidth-26dB @ 802.11ac(VHT40) Mode Ch62



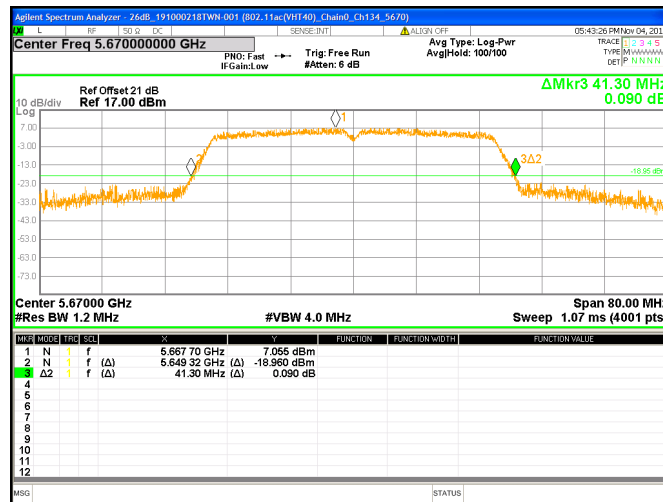
## Chain0 : Emission Bandwidth-26dB @ 802.11ac(VHT40) Mode Ch102



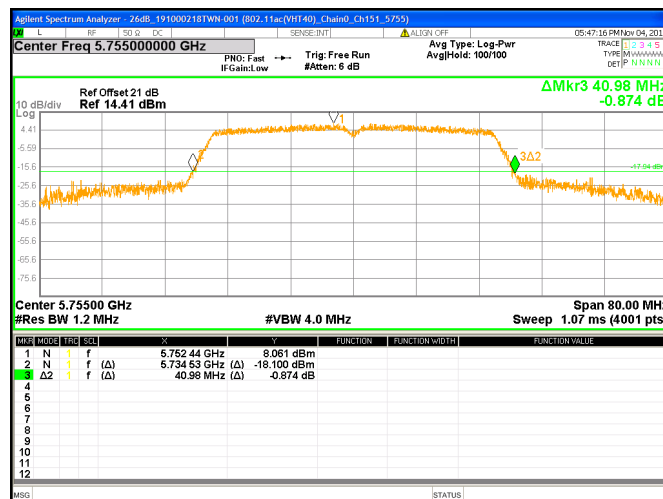
## Chain0 : Emission Bandwidth-26dB @ 802.11ac(VHT40) Mode Ch118



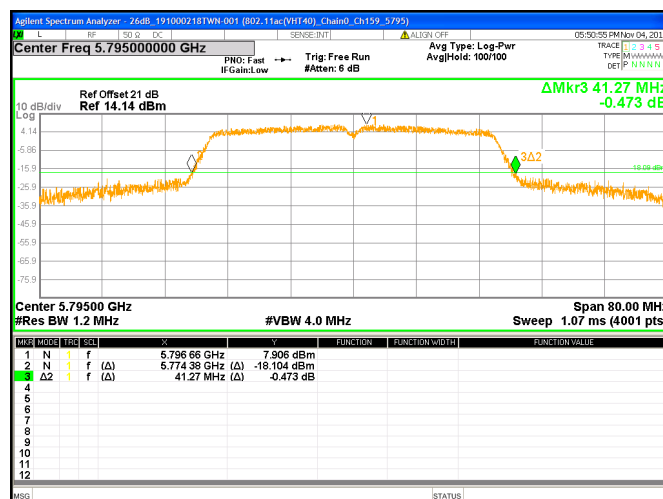
## Chain0 : Emission Bandwidth-26dB @ 802.11ac(VHT40) Mode Ch134



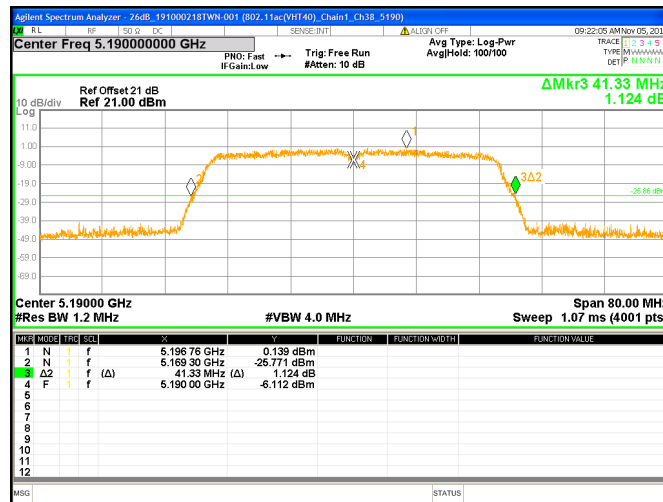
## Chain0 : Emission Bandwidth-26dB @ 802.11ac(VHT40) Mode Ch151



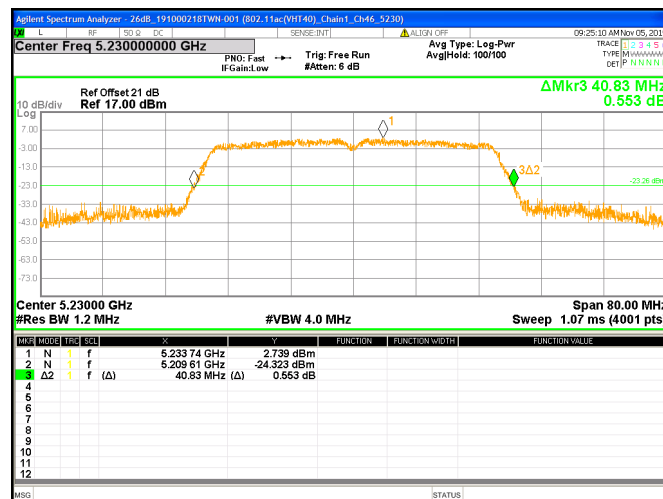
## Chain0 : Emission Bandwidth-26dB @ 802.11ac(VHT40) Mode Ch159



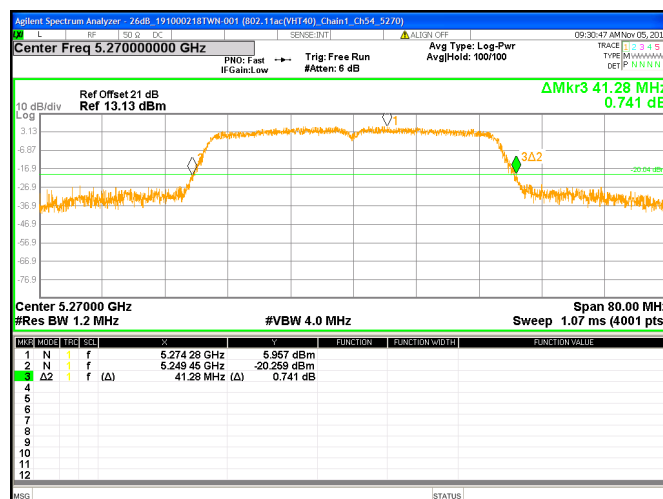
## Chain1 : Emission Bandwidth-26dB @ 802.11ac(VHT40) Mode Ch38



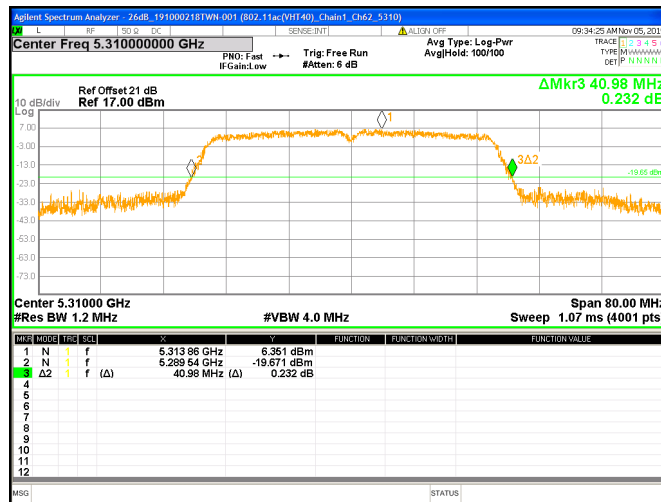
## Chain1 : Emission Bandwidth-26dB @ 802.11ac(VHT40) Mode Ch46



## Chain1 : Emission Bandwidth-26dB @ 802.11ac(VHT40) Mode Ch54



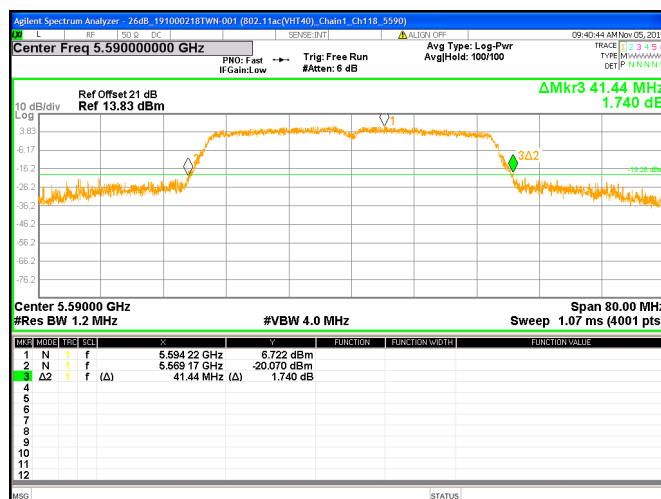
## Chain1 : Emission Bandwidth-26dB @ 802.11ac(VHT40) Mode Ch62



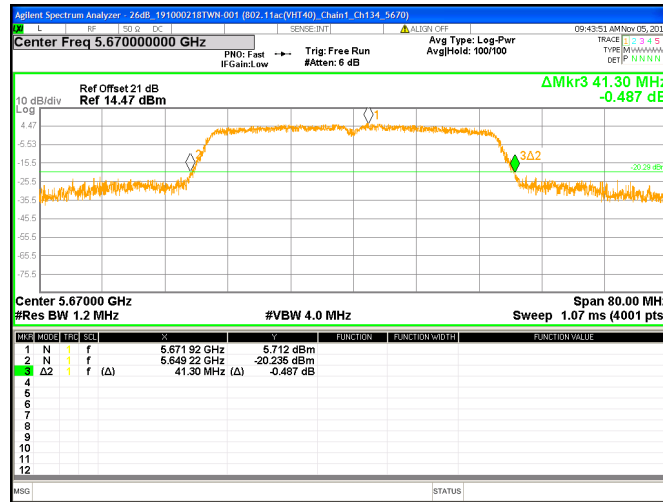
## Chain1 : Emission Bandwidth-26dB @ 802.11ac(VHT40) Mode Ch102



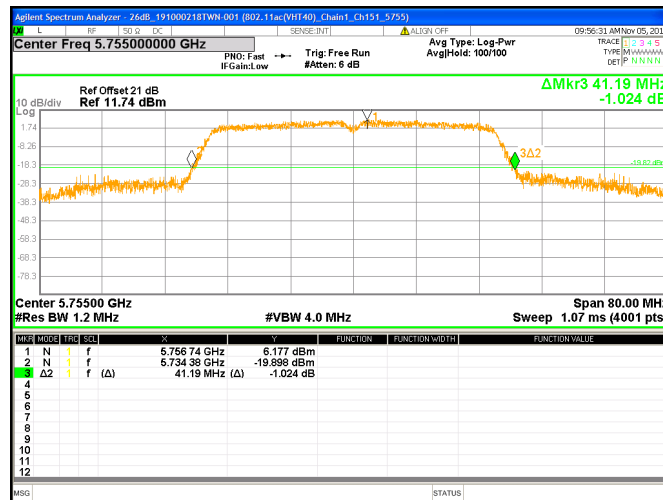
## Chain1 : Emission Bandwidth-26dB @ 802.11ac(VHT40) Mode Ch118



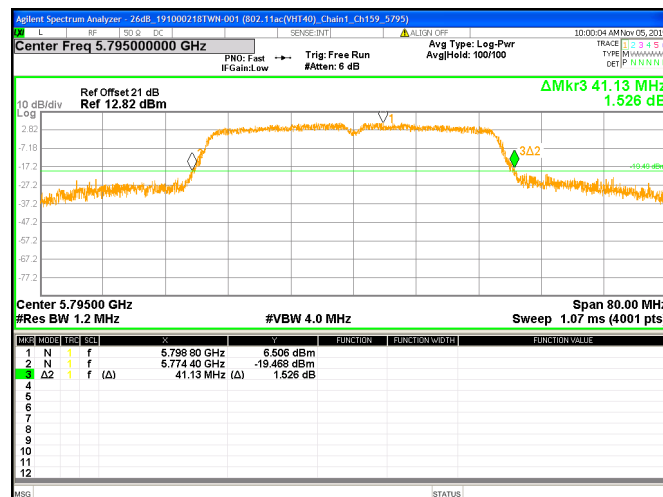
## Chain1 : Emission Bandwidth-26dB @ 802.11ac(VHT40) Mode Ch134



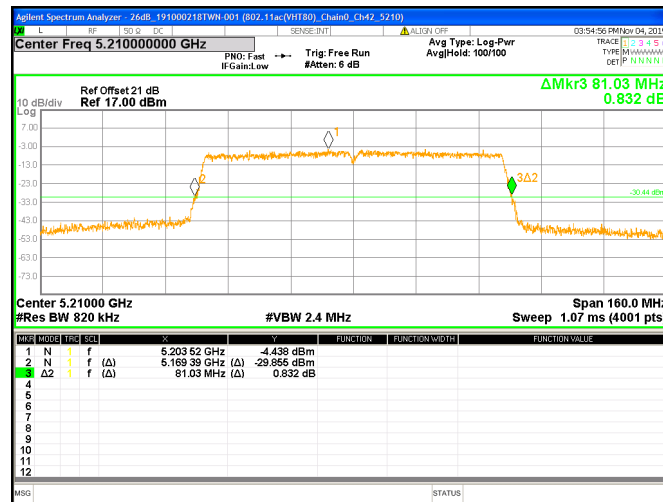
## Chain1 : Emission Bandwidth-26dB @ 802.11ac(VHT40) Mode Ch151



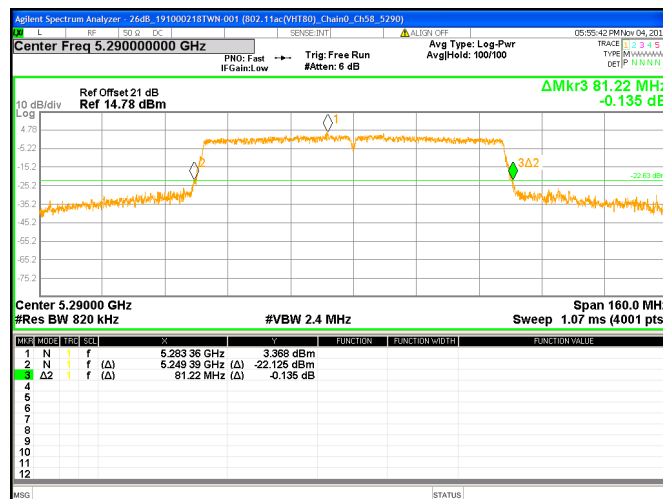
## Chain1 : Emission Bandwidth-26dB @ 802.11ac(VHT40) Mode Ch159



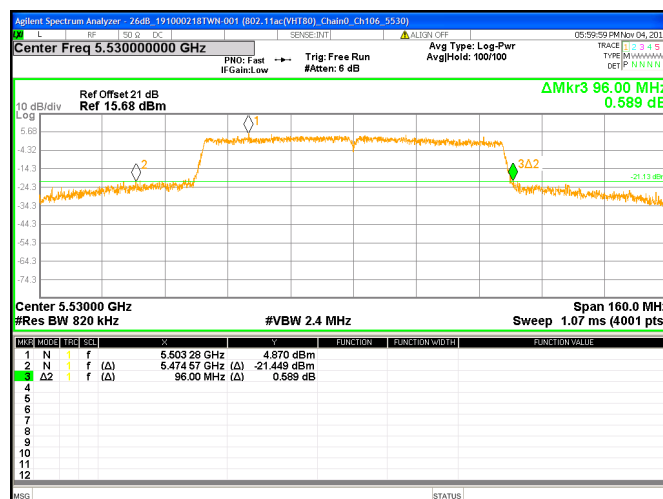
## Chain0 : Emission Bandwidth-26dB @ 802.11ac(VHT80) Mode Ch42



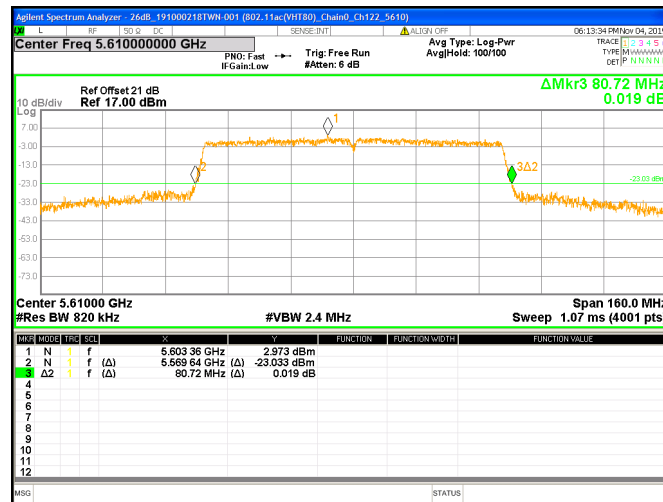
## Chain0 : Emission Bandwidth-26dB @ 802.11ac(VHT80) Mode Ch58



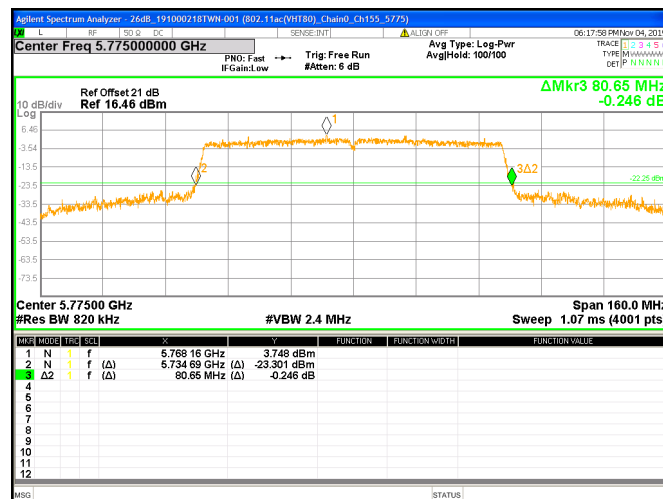
## Chain0 : Emission Bandwidth-26dB @ 802.11ac(VHT80) Mode Ch106



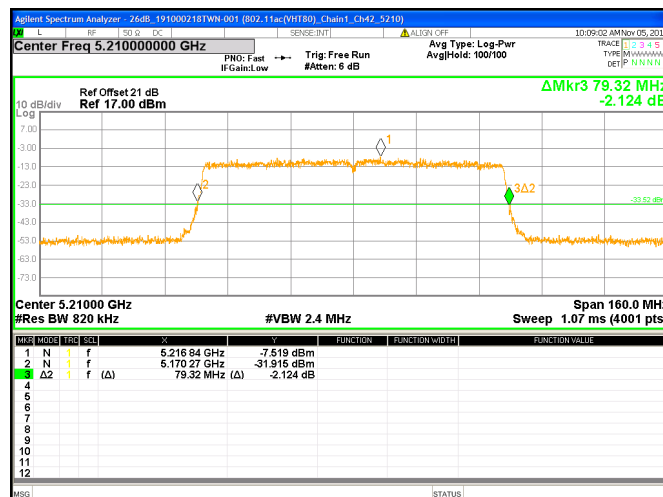
## Chain0 : Emission Bandwidth-26dB @ 802.11ac(VHT80) Mode Ch122



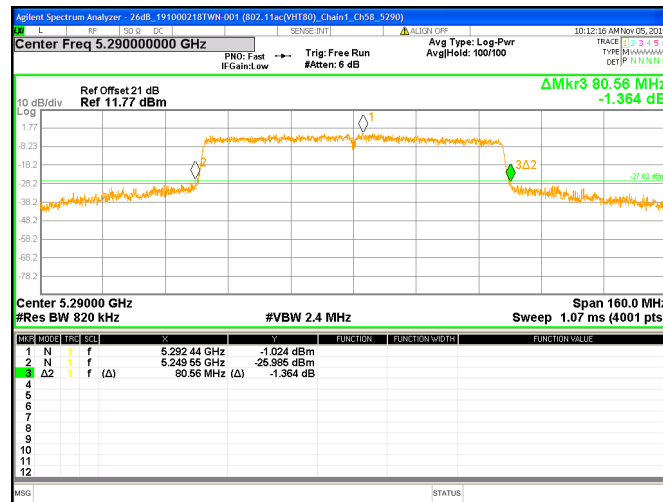
## Chain0 : Emission Bandwidth-26dB @ 802.11ac(VHT80) Mode Ch155



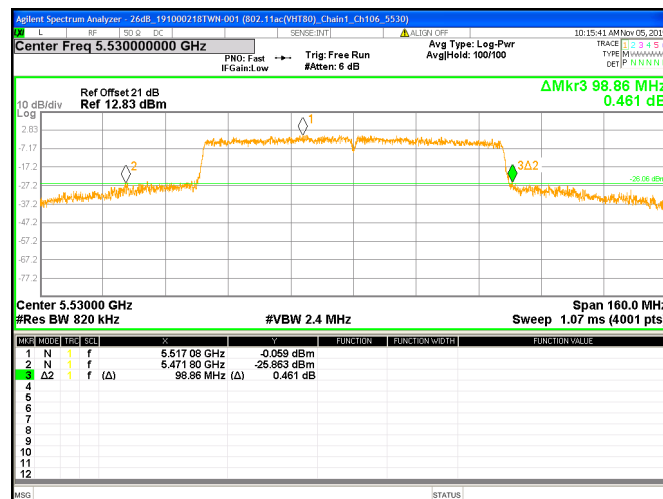
## Chain1 : Emission Bandwidth-26dB @ 802.11ac(VHT80) Mode Ch42



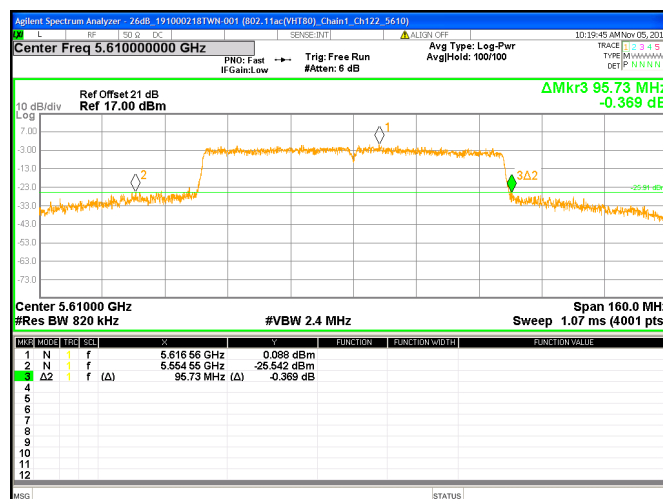
## Chain1 : Emission Bandwidth-26dB @ 802.11ac(VHT80) Mode Ch58



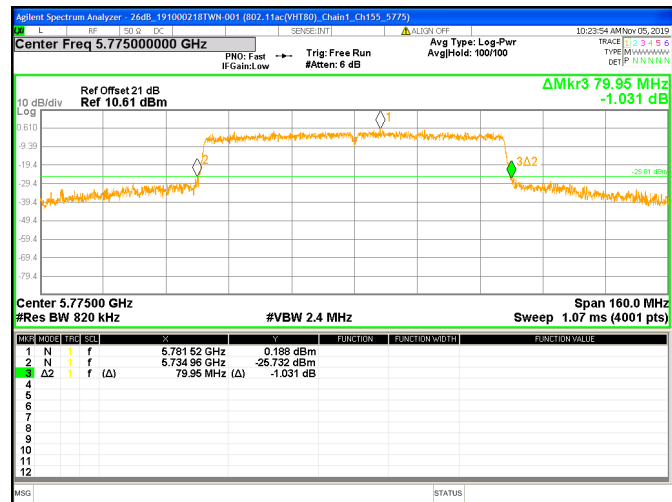
## Chain1 : Emission Bandwidth-26dB @ 802.11ac(VHT80) Mode Ch106



## Chain1 : Emission Bandwidth-26dB @ 802.11ac(VHT80) Mode Ch122



**Chain1 : Emission Bandwidth-26dB @ 802.11ac(VHT80) Mode Ch155**



## 5. Emissions in Restricted Frequency Bands (Radiated emission measurements)

### 5.1 Operating environment

|                    |    |    |
|--------------------|----|----|
| Temperature:       | 25 | °C |
| Relative Humidity: | 57 | %  |

### 5.2 Limit for emission in restricted frequency bands (Radiated emission measurement)

| Frequency (MHz) | Field Strength (microvolts/meter) | Measurement distance (meters) |
|-----------------|-----------------------------------|-------------------------------|
| 0.009~0.490     | 2400/F(kHz)                       | 300                           |
| 0.490~1.705     | 2400/F(kHz)                       | 30                            |
| 1.705~30        | 30                                | 30                            |
| 30-88           | 100                               | 3                             |
| 88-216          | 150                               | 3                             |
| 216-960         | 200                               | 3                             |
| Above 960       | 500                               | 3                             |

Remark:

1. In the above table, the tighter limit applies at the band edges.
2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system

As specified in 15.407(b), 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:

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.

However, an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the  $-27$  dBm/MHz or  $-17$  dBm/MHz peak emission limit.

### 5.3 Measuring instrument setting

#### Below 1GHz measurement

| Receiver settings |                                                                             |
|-------------------|-----------------------------------------------------------------------------|
| Receiver function | Setting                                                                     |
| Detector          | QP                                                                          |
| RBW               | 9-150 kHz ; 200-300 Hz<br>0.15-30 MHz; 9-10 kHz<br>30-1000 MHz; 100-120 kHz |
| VBW               | $\geq 3 \times$ RBW                                                         |
| Sweep             | Auto couple                                                                 |
| Attenuation       | Auto                                                                        |

#### Above 1GHz measurement

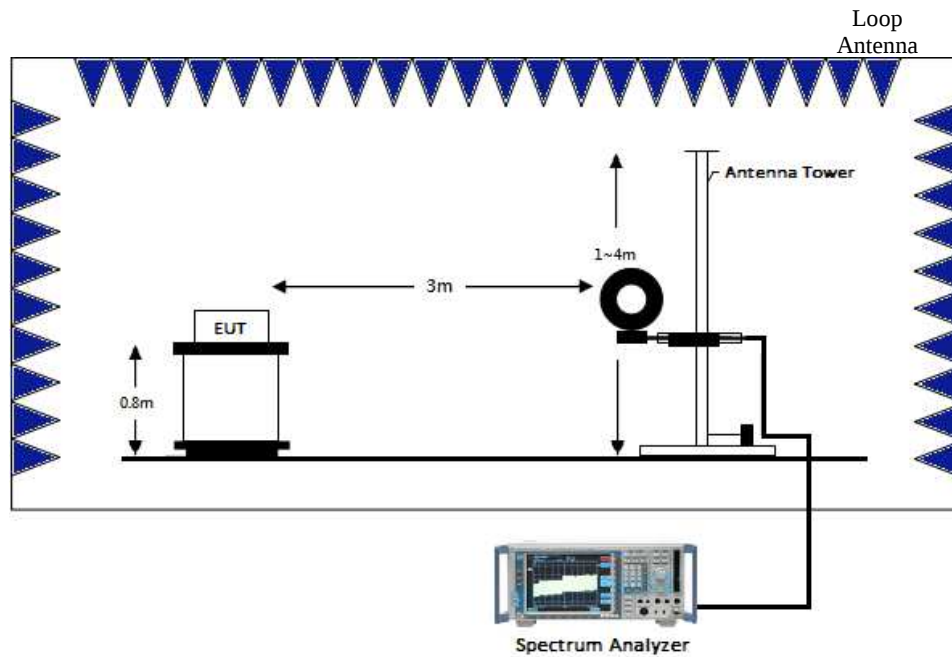
| Spectrum analyzer settings |                                 |
|----------------------------|---------------------------------|
| Spectrum Analyzer function | Setting                         |
| Detector                   | Peak                            |
| RBW                        | 1MHz                            |
| VBW                        | 3MHz for Peak; 10Hz for Average |
| Sweep                      | Auto couple                     |
| Start Frequency            | 1GHz                            |
| Stop Frequency             | Tenth harmonic                  |
| Attenuation                | Auto                            |

## 5.4 Test procedure

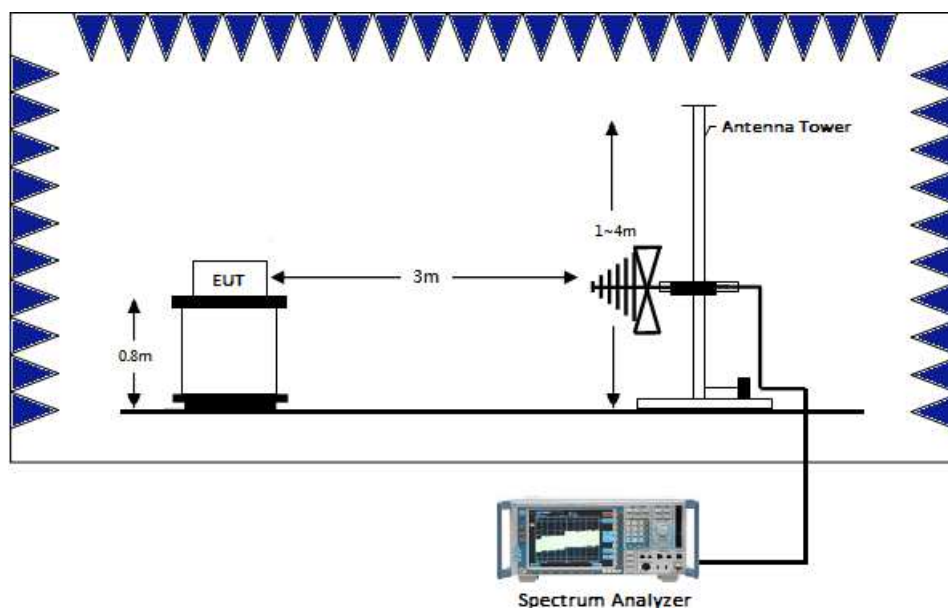
1. Configure the EUT according to ANSI C63.10: 2013 The EUT was placed on the top of the turntable 1.5 meter above ground for above 1GHz and placed on the top of the turntable 0.8 meter above ground for below 1GHz. The center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the companion devices. The turntable was rotated by 360 degree to find the position of the maximum emission level.
3. The height of the receiving antenna was varied between one meter and four meters above ground to find the maximum emission field strength of the both horizontal and vertical polarization
4. If find the frequencies above the limit or below within 3dB, the antenna tower was scan (from 1m to 4m) and then the turntable was rotated to find the maximum reading.
5. Set the test-receiver system to peak or CISPR quasi-peak detector with specified bandwidth under maximum hold mode.
6. For emissions above 1GHz, use 1MHz VBW and 3MHz RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.  
Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response.
7. If the emissions level of the EUT in peak mode was 3dB lower than the average limit specified then testing will be stopped and peak values of the EUT will be reported.  
Otherwise, the emissions which do not have 3dB margin will be measured using the quasi-peak method for below 1GHz.
8. For testing above 1GHz, The emissions level of the EUT in peak mode was lower than average limit, then testing will be stopped and peak values of the EUT will be reported, otherwise, the emission will be measured in average mode again and reported.
9. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be quasi-peak measured by receiver.

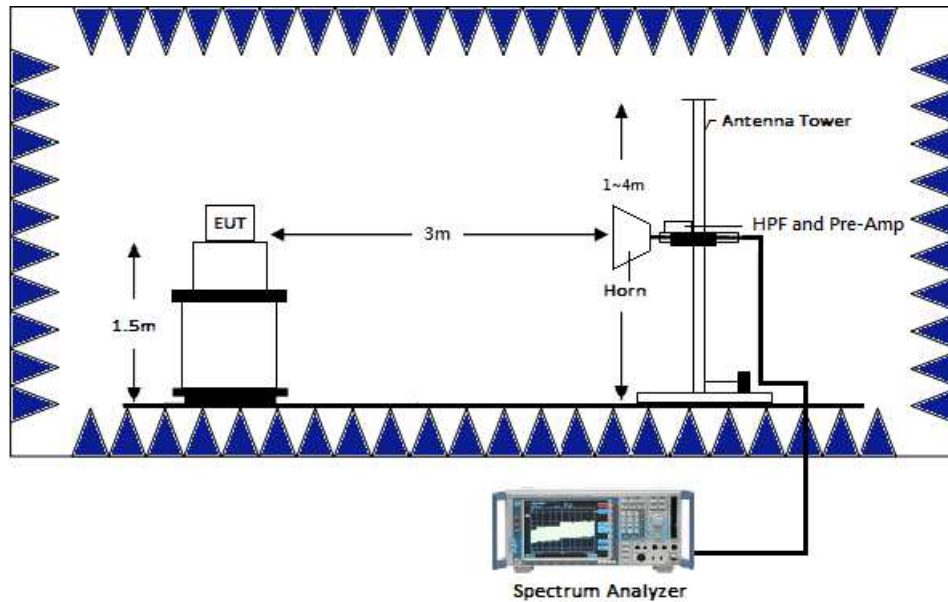
## 5.5 Test configuration

### 5.5.1 Radiated emission from 9 kHz to 30MHz using Loop Antenna



### 5.5.2 Radiated emission below 1GHz using Bilog Antenna



**5.5.3 Radiated emission above 1GHz using Horn Antenna**

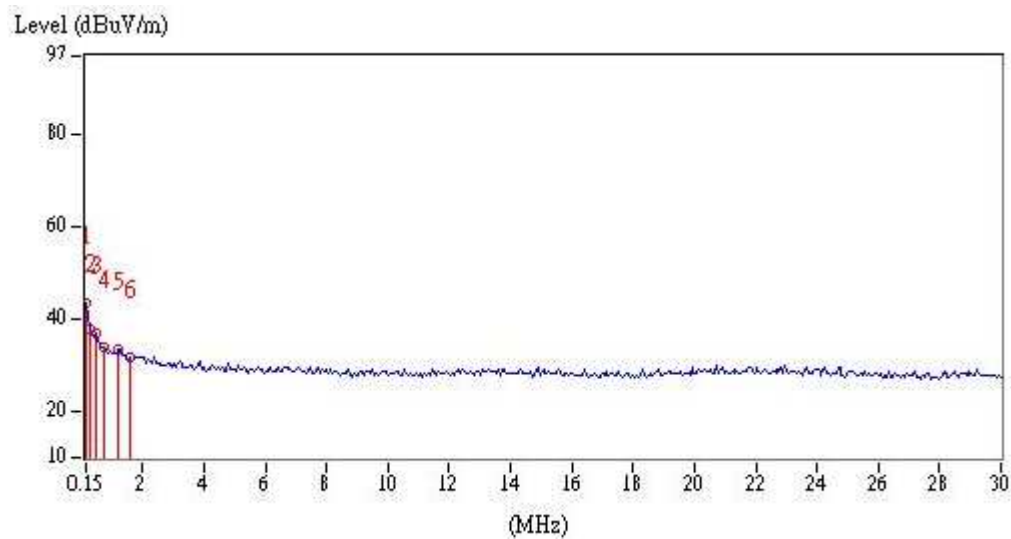
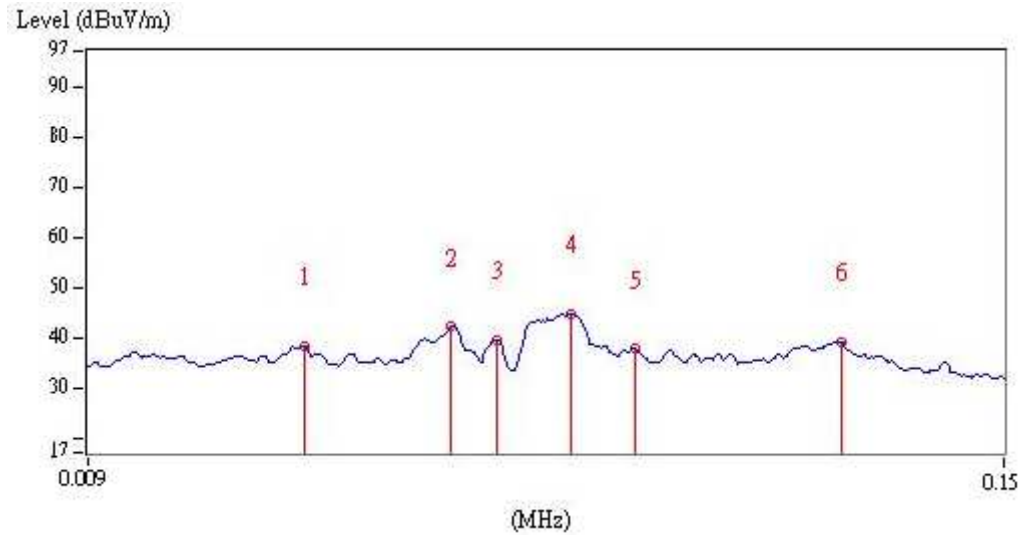
## 5.6 Test results

### 5.6.1 Measurement results: frequencies from 9 kHz to 30MHz

The test was performed on EUT under 802.11a/ac continuously transmitting mode. The worst case occurred at 802.11a Channel 157.

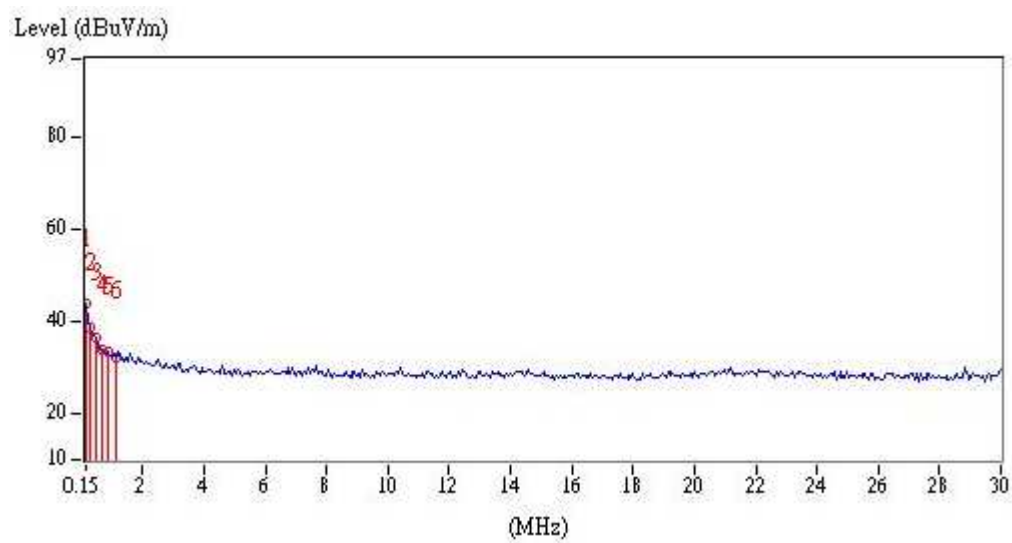
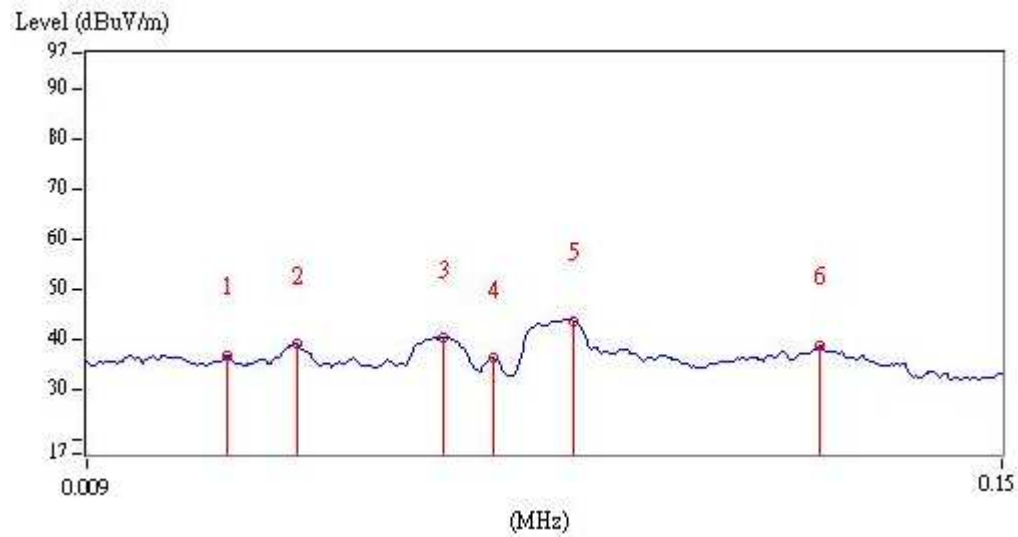
| Ant Polarity  | Frequency<br>(MHz) | Detector | Factor<br>(dB/m) | Reading<br>(dBμV) | Corrected<br>Reading<br>(dBμV/m) | Limit<br>@ 3m<br>(dBμV/m) | Margin<br>(dB) |
|---------------|--------------------|----------|------------------|-------------------|----------------------------------|---------------------------|----------------|
| Perpendicular | 0.04               | AV       | 18.84            | 19.45             | 38.29                            | 115.56                    | -77.27         |
| Perpendicular | 0.06               | AV       | 18.58            | 23.47             | 42.05                            | 112.04                    | -69.99         |
| Perpendicular | 0.07               | AV       | 18.52            | 20.91             | 39.43                            | 110.70                    | -71.27         |
| Perpendicular | 0.08               | AV       | 18.44            | 26.20             | 44.64                            | 109.54                    | -64.90         |
| Perpendicular | 0.09               | AV       | 18.36            | 19.43             | 37.79                            | 108.52                    | -70.73         |
| Perpendicular | 0.12               | AV       | 18.32            | 20.77             | 39.09                            | 106.02                    | -66.93         |
| Perpendicular | 0.15               | AV       | 18.34            | 25.22             | 43.56                            | 104.08                    | -60.52         |
| Perpendicular | 0.27               | AV       | 18.40            | 19.37             | 37.77                            | 98.98                     | -61.21         |
| Perpendicular | 0.45               | AV       | 18.50            | 18.59             | 37.09                            | 94.54                     | -57.45         |
| Perpendicular | 0.75               | QP       | 18.70            | 15.43             | 34.13                            | 70.10                     | -35.97         |
| Perpendicular | 1.22               | QP       | 18.87            | 14.64             | 33.51                            | 65.88                     | -32.37         |
| Perpendicular | 1.58               | QP       | 18.89            | 12.91             | 31.80                            | 63.63                     | -31.83         |

Remark: Corr. Factor = Antenna Factor + Cable Loss



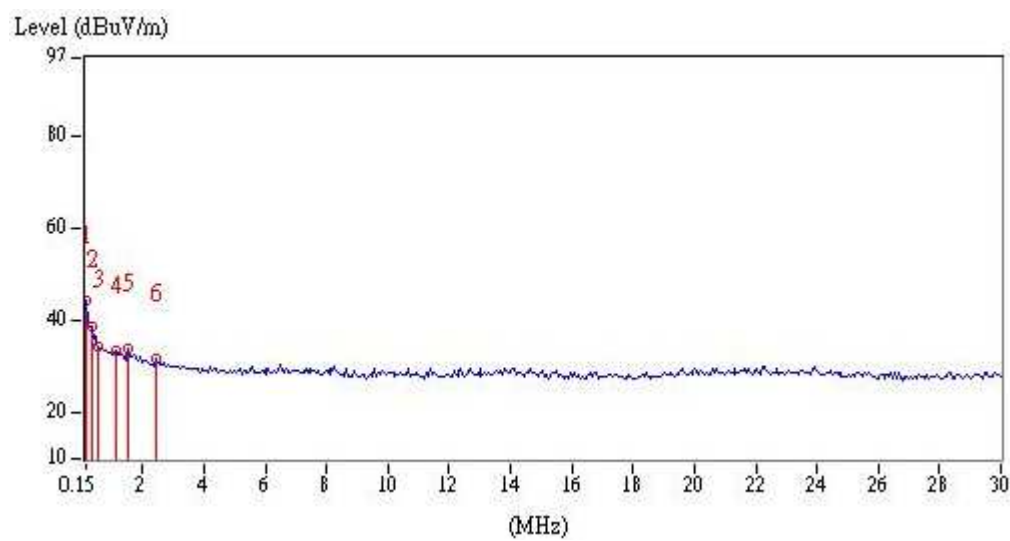
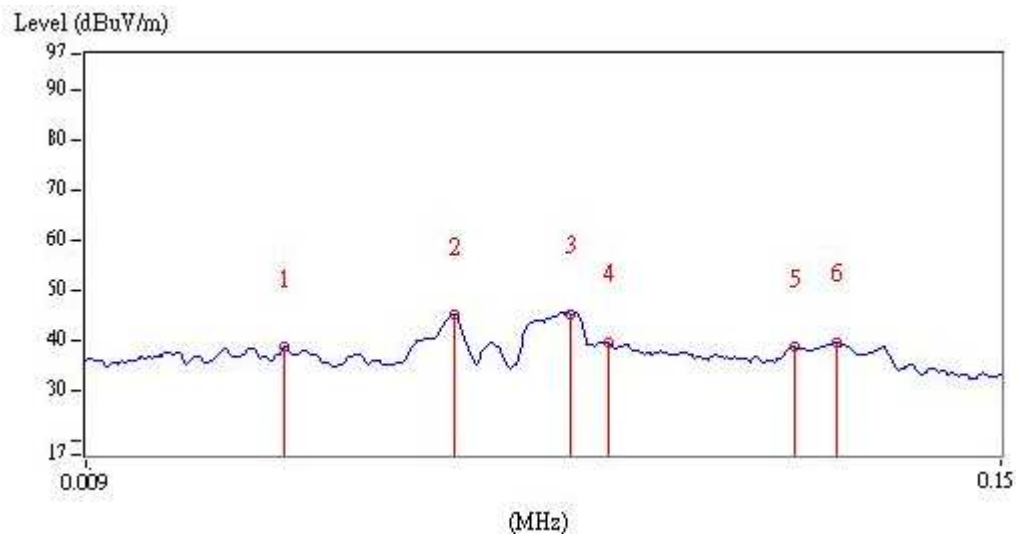
| Ant Polarity | Frequency<br>(MHz) | Detector | Factor<br>(dB/m) | Reading<br>(dBμV) | Corrected<br>Reading<br>(dBμV/m) | Limit<br>@ 3m<br>(dBμV/m) | Margin<br>(dB) |
|--------------|--------------------|----------|------------------|-------------------|----------------------------------|---------------------------|----------------|
| Parallel     | 0.03               | AV       | 19.08            | 17.54             | 36.62                            | 118.06                    | -81.44         |
| Parallel     | 0.04               | AV       | 18.86            | 20.11             | 38.97                            | 115.56                    | -76.59         |
| Parallel     | 0.06               | AV       | 18.58            | 21.54             | 40.12                            | 112.04                    | -71.92         |
| Parallel     | 0.07               | AV       | 18.53            | 17.64             | 36.17                            | 110.70                    | -74.53         |
| Parallel     | 0.08               | AV       | 18.43            | 25.08             | 43.51                            | 109.54                    | -66.03         |
| Parallel     | 0.12               | AV       | 18.32            | 20.28             | 38.60                            | 106.02                    | -67.42         |
| Parallel     | 0.15               | AV       | 18.34            | 25.44             | 43.78                            | 104.08                    | -60.30         |
| Parallel     | 0.27               | AV       | 18.40            | 20.28             | 38.68                            | 98.98                     | -60.30         |
| Parallel     | 0.51               | QP       | 18.54            | 17.93             | 36.47                            | 73.45                     | -36.98         |
| Parallel     | 0.69               | QP       | 18.66            | 15.07             | 33.73                            | 70.83                     | -37.10         |
| Parallel     | 0.87               | QP       | 18.78            | 14.50             | 33.28                            | 68.81                     | -35.53         |
| Parallel     | 1.11               | QP       | 18.87            | 13.52             | 32.39                            | 66.70                     | -34.31         |

Remark: Corr. Factor = Antenna Factor + Cable Loss



| Ant Polarity    | Frequency<br>(MHz) | Detector | Factor<br>(dB/m) | Reading<br>(dBμV) | Corrected<br>Reading<br>(dBμV/m) | Limit<br>@ 3m<br>(dBμV/m) | Margin<br>(dB) |
|-----------------|--------------------|----------|------------------|-------------------|----------------------------------|---------------------------|----------------|
| Ground-parallel | 0.04               | AV       | 18.90            | 19.57             | 38.47                            | 115.56                    | -77.09         |
| Ground-parallel | 0.07               | AV       | 18.57            | 26.38             | 44.95                            | 110.70                    | -65.75         |
| Ground-parallel | 0.08               | AV       | 18.43            | 26.69             | 45.12                            | 109.54                    | -64.42         |
| Ground-parallel | 0.09               | AV       | 18.39            | 21.04             | 39.43                            | 108.52                    | -69.09         |
| Ground-parallel | 0.11               | QP       | 18.32            | 20.26             | 38.58                            | 106.78                    | -68.20         |
| Ground-parallel | 0.12               | AV       | 18.32            | 21.10             | 39.42                            | 106.02                    | -66.60         |
| Ground-parallel | 0.15               | AV       | 18.34            | 26.02             | 44.36                            | 104.08                    | -59.72         |
| Ground-parallel | 0.33               | AV       | 18.44            | 20.29             | 38.73                            | 97.23                     | -58.50         |
| Ground-parallel | 0.57               | QP       | 18.58            | 15.97             | 34.55                            | 72.49                     | -37.94         |
| Ground-parallel | 1.11               | QP       | 18.87            | 14.57             | 33.44                            | 66.70                     | -33.26         |
| Ground-parallel | 1.52               | QP       | 18.89            | 14.99             | 33.88                            | 63.97                     | -30.09         |
| Ground-parallel | 2.42               | QP       | 18.95            | 12.74             | 31.69                            | 69.54                     | -37.85         |

Remark: Corr. Factor = Antenna Factor + Cable Loss



### 5.6.2 Measurement results: frequencies from 30 MHz to 1GHz

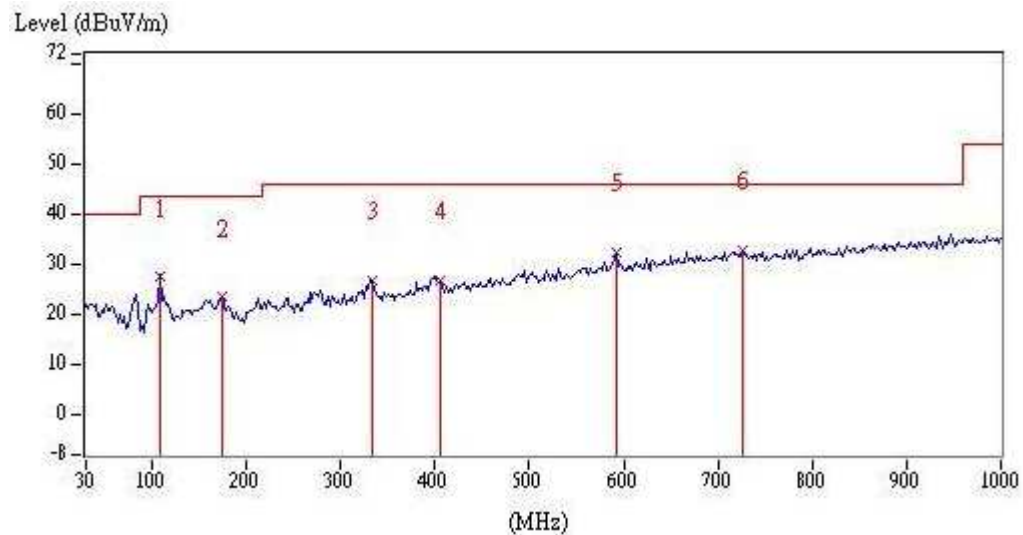
The test was performed on EUT under 802.11a/ac continuously transmitting mode. The worst case occurred at 802.11a Channel 157.

| Antenna Polariz. (V/H) | Freq. (MHz) | Receiver Detector | Corr. Factor (dB/m) | Reading (dBuV) | Corrected Level (dBuV/m) | Limit @ 3 m (dBuV/m) | Margin (dB) |
|------------------------|-------------|-------------------|---------------------|----------------|--------------------------|----------------------|-------------|
| Vertical               | 107.60      | QP                | 16.65               | 10.82          | 27.47                    | 43.50                | -16.03      |
| Vertical               | 173.56      | QP                | 19.82               | 3.75           | 23.57                    | 43.50                | -19.93      |
| Vertical               | 334.58      | QP                | 22.56               | 4.41           | 26.97                    | 46.00                | -19.03      |
| Vertical               | 406.36      | QP                | 24.40               | 2.55           | 26.95                    | 46.00                | -19.05      |
| Vertical               | 592.60      | QP                | 28.43               | 4.16           | 32.59                    | 46.00                | -13.41      |
| Vertical               | 726.46      | QP                | 30.41               | 2.55           | 32.96                    | 46.00                | -13.04      |
| Horizontal             | 173.56      | QP                | 19.82               | 8.58           | 28.40                    | 43.50                | -15.10      |
| Horizontal             | 243.40      | QP                | 20.50               | 8.46           | 28.96                    | 46.00                | -17.04      |
| Horizontal             | 268.62      | QP                | 20.96               | 5.87           | 26.83                    | 46.00                | -19.17      |
| Horizontal             | 336.52      | QP                | 22.60               | 12.31          | 34.91                    | 46.00                | -11.09      |
| Horizontal             | 571.26      | QP                | 27.86               | 1.64           | 29.50                    | 46.00                | -16.50      |
| Horizontal             | 732.28      | QP                | 30.51               | 1.08           | 31.59                    | 46.00                | -14.41      |

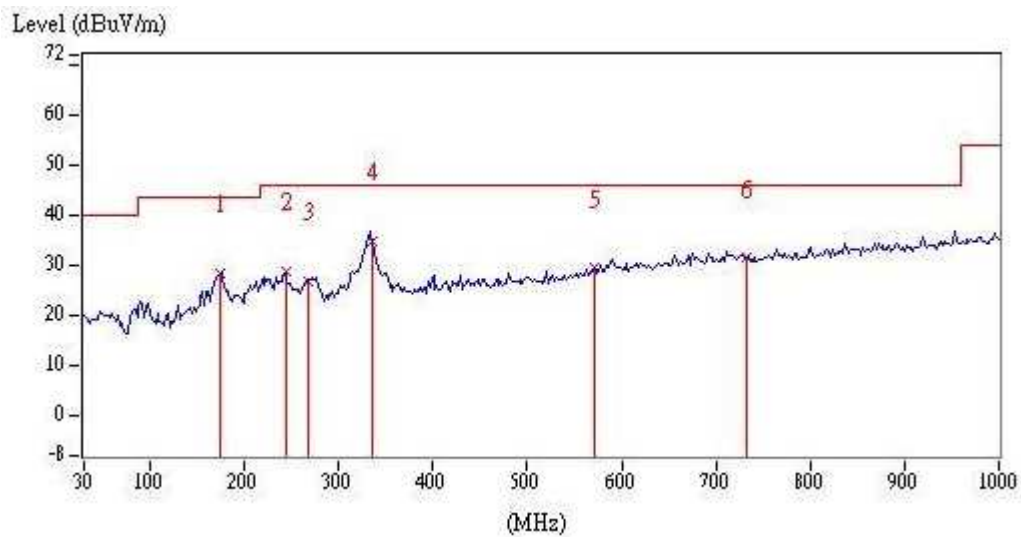
Remark:

1. Corr. Factor = Antenna Factor + Cable Loss
2. Corrected Level = Reading + Corr. Factor

## Vertical



## Horizontal



### 5.6.3 Measurement results: frequency above 1GHz to 40GHz

#### Chain0+1

| Mode          | Frequency<br>(MHz) | Spectrum<br>Analyzer<br>Detector | Ant.<br>Pol.<br>(H/V) | Correction<br>Factor<br>(dB/m) | Reading<br>(dBμV) | Corrected<br>Reading<br>(dBμV/m) | Limit<br>@ 3 m<br>(dBμV/m) | Margin<br>(dB) |
|---------------|--------------------|----------------------------------|-----------------------|--------------------------------|-------------------|----------------------------------|----------------------------|----------------|
| 802.11a_Ch36  | 10360              | PK                               | V                     | 21.43                          | 38.02             | 59.45                            | 74.00                      | -14.55         |
|               | 10360              | AV                               | V                     | 21.43                          | 30.73             | 52.16                            | 54.00                      | -1.84          |
|               | 10360              | PK                               | H                     | 21.43                          | 31.92             | 53.35                            | 74.00                      | -20.65         |
| 802.11a_Ch44  | 10440              | PK                               | V                     | 21.87                          | 40.05             | 61.92                            | 74.00                      | -12.08         |
|               | 10440              | AV                               | V                     | 21.87                          | 30.75             | 52.62                            | 54.00                      | -1.38          |
|               | 10440              | PK                               | H                     | 21.87                          | 30.91             | 52.78                            | 74.00                      | -21.22         |
| 802.11a_Ch48  | 10480              | PK                               | V                     | 22.08                          | 38.64             | 60.72                            | 74.00                      | -13.28         |
|               | 10480              | AV                               | V                     | 22.08                          | 31.61             | 53.69                            | 54.00                      | -0.31          |
|               | 10480              | PK                               | H                     | 22.08                          | 33.05             | 55.13                            | 74.00                      | -18.87         |
|               | 10480              | AV                               | H                     | 22.08                          | 24.40             | 46.48                            | 54.00                      | -7.52          |
| 802.11a_Ch52  | 10520              | PK                               | V                     | 22.26                          | 41.26             | 63.52                            | 74.00                      | -10.48         |
|               | 10520              | AV                               | V                     | 22.26                          | 30.85             | 53.11                            | 54.00                      | -0.89          |
|               | 10520              | PK                               | H                     | 22.26                          | 30.93             | 53.19                            | 74.00                      | -20.81         |
| 802.11a_Ch60  | 10600              | PK                               | V                     | 22.54                          | 39.57             | 62.11                            | 74.00                      | -11.89         |
|               | 10600              | AV                               | V                     | 22.54                          | 30.22             | 52.76                            | 54.00                      | -1.24          |
|               | 10600              | PK                               | H                     | 22.54                          | 30.26             | 52.80                            | 74.00                      | -21.20         |
| 802.11a_Ch64  | 10640              | PK                               | V                     | 22.68                          | 37.91             | 60.59                            | 74.00                      | -13.41         |
|               | 10640              | AV                               | V                     | 22.68                          | 30.17             | 52.85                            | 54.00                      | -1.15          |
|               | 10640              | PK                               | H                     | 22.68                          | 32.76             | 55.44                            | 74.00                      | -18.56         |
|               | 10640              | AV                               | H                     | 22.68                          | 24.05             | 46.73                            | 54.00                      | -7.27          |
| 802.11a_Ch100 | 11000              | PK                               | V                     | 23.95                          | 37.01             | 60.96                            | 74.00                      | -13.04         |
|               | 11000              | AV                               | V                     | 23.95                          | 28.88             | 52.83                            | 54.00                      | -1.17          |
|               | 11000              | PK                               | H                     | 23.95                          | 32.53             | 56.48                            | 74.00                      | -17.52         |
|               | 11000              | AV                               | H                     | 23.95                          | 24.07             | 48.02                            | 54.00                      | -5.98          |
| 802.11a_Ch120 | 11200              | PK                               | V                     | 23.74                          | 35.44             | 59.18                            | 74.00                      | -14.82         |
|               | 11200              | AV                               | V                     | 23.74                          | 28.63             | 52.37                            | 54.00                      | -1.63          |
|               | 11200              | PK                               | H                     | 23.74                          | 31.45             | 55.19                            | 74.00                      | -18.81         |
|               | 11200              | AV                               | H                     | 23.74                          | 21.04             | 44.78                            | 54.00                      | -9.22          |
| 802.11a_Ch140 | 11400              | PK                               | V                     | 23.53                          | 34.86             | 58.39                            | 74.00                      | -15.61         |
|               | 11400              | AV                               | V                     | 23.53                          | 29.08             | 52.61                            | 54.00                      | -1.39          |
|               | 11400              | PK                               | H                     | 23.53                          | 31.55             | 55.08                            | 74.00                      | -18.92         |
|               | 11400              | AV                               | H                     | 23.53                          | 22.09             | 45.62                            | 54.00                      | -8.38          |

Remark: Correction Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Pre\_Amplifier Gain

| Mode                 | Frequency<br>(MHz) | Spectrum<br>Analyzer<br>Detector | Ant.<br>Pol.<br>(H/V) | Correction<br>Factor<br>(dB/m) | Reading<br>(dBμV) | Corrected<br>Reading<br>(dBμV/m) | Limit<br>@ 3 m<br>(dBμV/m) | Margin<br>(dB) |
|----------------------|--------------------|----------------------------------|-----------------------|--------------------------------|-------------------|----------------------------------|----------------------------|----------------|
| 802.11a_Ch149        | 11490              | PK                               | V                     | 23.43                          | 35.43             | 58.86                            | 74.00                      | -15.14         |
|                      | 11490              | AV                               | V                     | 23.43                          | 28.93             | 52.36                            | 54.00                      | -1.64          |
|                      | 11490              | PK                               | H                     | 23.43                          | 30.86             | 54.29                            | 74.00                      | -19.71         |
|                      | 11490              | AV                               | H                     | 23.43                          | 22.66             | 46.09                            | 54.00                      | -7.91          |
| 802.11a_Ch157        | 11570              | PK                               | V                     | 23.14                          | 35.57             | 58.71                            | 74.00                      | -15.29         |
|                      | 11570              | AV                               | V                     | 23.14                          | 29.32             | 52.46                            | 54.00                      | -1.54          |
|                      | 11570              | PK                               | H                     | 23.14                          | 29.18             | 52.32                            | 74.00                      | -21.68         |
| 802.11a_Ch165        | 11650              | PK                               | V                     | 22.83                          | 34.96             | 57.79                            | 74.00                      | -16.21         |
|                      | 11650              | AV                               | V                     | 22.83                          | 29.97             | 52.80                            | 54.00                      | -1.20          |
|                      | 11650              | PK                               | H                     | 22.83                          | 30.41             | 53.24                            | 74.00                      | -20.76         |
| 802.11ac(VHT20)_Ch36 | 10360              | PK                               | V                     | 21.43                          | 37.88             | 59.31                            | 74.00                      | -14.69         |
|                      | 10360              | AV                               | V                     | 21.43                          | 31.00             | 52.43                            | 54.00                      | -1.57          |
|                      | 1385               | PK                               | H                     | -6.52                          | 52.22             | 45.70                            | 74.00                      | -28.30         |
|                      | 10360              | PK                               | H                     | 21.43                          | 29.30             | 50.73                            | 74.00                      | -23.27         |
| 802.11ac(VHT20)_Ch44 | 10440              | PK                               | V                     | 21.87                          | 39.02             | 60.89                            | 74.00                      | -13.11         |
|                      | 10440              | AV                               | V                     | 21.87                          | 30.39             | 52.26                            | 54.00                      | -1.74          |
|                      | 1418               | PK                               | H                     | -6.36                          | 53.74             | 47.38                            | 74.00                      | -26.62         |
|                      | 10440              | PK                               | H                     | 21.87                          | 31.75             | 53.62                            | 74.00                      | -20.38         |
| 802.11ac(VHT20)_Ch48 | 10480              | PK                               | V                     | 22.08                          | 40.66             | 62.74                            | 74.00                      | -11.26         |
|                      | 10480              | AV                               | V                     | 22.08                          | 31.30             | 53.38                            | 54.00                      | -0.62          |
|                      | 1396               | PK                               | H                     | -6.46                          | 53.13             | 46.67                            | 74.00                      | -27.33         |
|                      | 10480              | PK                               | H                     | 22.08                          | 32.64             | 54.72                            | 74.00                      | -19.28         |
|                      | 10480              | AV                               | H                     | 22.08                          | 24.20             | 46.28                            | 54.00                      | -7.72          |
| 802.11ac(VHT20)_Ch52 | 10520              | PK                               | V                     | 22.26                          | 40.04             | 62.30                            | 74.00                      | -11.70         |
|                      | 10520              | AV                               | V                     | 22.26                          | 30.71             | 52.97                            | 54.00                      | -1.03          |
|                      | 1396               | PK                               | H                     | -6.46                          | 51.17             | 44.71                            | 74.00                      | -29.29         |
|                      | 10520              | PK                               | H                     | 22.26                          | 32.69             | 54.95                            | 74.00                      | -19.05         |
|                      | 10520              | AV                               | H                     | 22.26                          | 24.26             | 46.52                            | 54.00                      | -7.48          |
| 802.11ac(VHT20)_Ch60 | 10600              | PK                               | V                     | 22.54                          | 39.22             | 61.76                            | 74.00                      | -12.24         |
|                      | 10600              | AV                               | V                     | 22.54                          | 31.08             | 53.62                            | 54.00                      | -0.38          |
|                      | 10600              | PK                               | H                     | 22.54                          | 33.99             | 56.53                            | 74.00                      | -17.47         |
|                      | 10600              | AV                               | H                     | 22.54                          | 25.63             | 48.17                            | 54.00                      | -5.83          |
| 802.11ac(VHT20)_Ch64 | 10640              | PK                               | V                     | 22.68                          | 36.68             | 59.36                            | 74.00                      | -14.64         |
|                      | 10640              | AV                               | V                     | 22.68                          | 30.00             | 52.68                            | 54.00                      | -1.32          |
|                      | 10640              | PK                               | H                     | 22.68                          | 32.60             | 55.28                            | 74.00                      | -18.72         |
|                      | 10640              | AV                               | H                     | 22.68                          | 25.08             | 47.76                            | 54.00                      | -6.24          |

Remark: Correction Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Pre\_Amplifier Gain

| Mode                  | Frequency<br>(MHz) | Spectrum<br>Analyzer<br>Detector | Ant.<br>Pol.<br>(H/V) | Correction<br>Factor<br>(dB/m) | Reading<br>(dBμV) | Corrected<br>Reading<br>(dBμV/m) | Limit<br>@ 3 m<br>(dBμV/m) | Margin<br>(dB) |
|-----------------------|--------------------|----------------------------------|-----------------------|--------------------------------|-------------------|----------------------------------|----------------------------|----------------|
| 802.11ac(VHT20)_Ch100 | 11000              | PK                               | V                     | 23.95                          | 37.66             | 61.61                            | 74.00                      | -12.39         |
|                       | 11000              | AV                               | V                     | 23.95                          | 28.58             | 52.53                            | 54.00                      | -1.47          |
|                       | 11000              | PK                               | H                     | 23.95                          | 33.40             | 57.35                            | 74.00                      | -16.65         |
|                       | 11000              | AV                               | H                     | 23.95                          | 24.86             | 48.81                            | 54.00                      | -5.19          |
| 802.11ac(VHT20)_Ch120 | 11200              | PK                               | V                     | 23.74                          | 36.00             | 59.74                            | 74.00                      | -14.26         |
|                       | 11200              | AV                               | V                     | 23.74                          | 24.92             | 48.66                            | 54.00                      | -5.34          |
|                       | 11200              | PK                               | H                     | 23.74                          | 29.49             | 53.23                            | 74.00                      | -20.77         |
| 802.11ac(VHT20)_Ch140 | 11400              | PK                               | V                     | 23.53                          | 33.86             | 57.39                            | 74.00                      | -16.61         |
|                       | 11400              | AV                               | H                     | 23.53                          | 25.79             | 49.32                            | 54.00                      | -4.68          |
|                       | 11400              | PK                               | H                     | 23.53                          | 28.86             | 52.39                            | 74.00                      | -21.61         |
| 802.11ac(VHT20)_Ch149 | 11490              | PK                               | V                     | 23.43                          | 36.62             | 60.05                            | 74.00                      | -13.95         |
|                       | 11490              | AV                               | V                     | 23.43                          | 27.86             | 51.29                            | 54.00                      | -2.71          |
|                       | 11490              | PK                               | H                     | 23.43                          | 31.04             | 54.47                            | 74.00                      | -19.53         |
|                       | 11490              | AV                               | H                     | 23.43                          | 22.44             | 45.87                            | 54.00                      | -8.13          |
| 802.11ac(VHT20)_Ch157 | 11570              | PK                               | V                     | 23.14                          | 38.13             | 61.27                            | 74.00                      | -12.73         |
|                       | 11570              | AV                               | V                     | 23.14                          | 28.99             | 52.13                            | 54.00                      | -1.87          |
|                       | 11570              | PK                               | H                     | 23.14                          | 29.71             | 52.85                            | 74.00                      | -21.15         |
| 802.11ac(VHT20)_Ch165 | 11650              | PK                               | V                     | 22.83                          | 35.76             | 58.59                            | 74.00                      | -15.41         |
|                       | 11650              | AV                               | V                     | 22.83                          | 28.50             | 51.33                            | 54.00                      | -2.67          |
|                       | 11650              | PK                               | H                     | 22.83                          | 30.46             | 53.29                            | 74.00                      | -20.71         |
| 802.11ac(VHT40)_Ch38  | 10380              | PK                               | V                     | 21.54                          | 36.80             | 58.34                            | 74.00                      | -15.66         |
|                       | 10380              | AV                               | V                     | 21.54                          | 30.83             | 52.37                            | 54.00                      | -1.63          |
|                       | 1396               | PK                               | H                     | -6.46                          | 51.78             | 45.32                            | 74.00                      | -28.68         |
|                       | 10380              | PK                               | H                     | 21.54                          | 29.41             | 50.95                            | 74.00                      | -23.05         |
| 802.11ac(VHT40)_Ch46  | 10460              | PK                               | V                     | 21.97                          | 38.46             | 60.43                            | 74.00                      | -13.57         |
|                       | 10460              | AV                               | V                     | 21.97                          | 30.63             | 52.60                            | 54.00                      | -1.40          |
|                       | 1396               | PK                               | H                     | -6.46                          | 52.21             | 45.75                            | 74.00                      | -28.25         |
|                       | 10460              | PK                               | H                     | 21.97                          | 33.13             | 55.10                            | 74.00                      | -18.90         |
|                       | 10460              | AV                               | H                     | 21.97                          | 24.59             | 46.56                            | 54.00                      | -7.44          |
| 802.11ac(VHT40)_Ch54  | 10540              | PK                               | V                     | 22.33                          | 40.40             | 62.73                            | 74.00                      | -11.27         |
|                       | 10540              | AV                               | V                     | 22.33                          | 31.24             | 53.57                            | 54.00                      | -0.43          |
|                       | 1407               | PK                               | H                     | -6.41                          | 50.97             | 44.56                            | 74.00                      | -29.44         |
|                       | 10540              | PK                               | H                     | 22.33                          | 32.63             | 54.96                            | 74.00                      | -19.04         |
|                       | 10540              | AV                               | H                     | 22.33                          | 24.11             | 46.44                            | 54.00                      | -7.56          |

Remark: Correction Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Pre\_Amplifier Gain

| Mode                  | Frequency<br>(MHz) | Spectrum<br>Analyzer<br>Detector | Ant.<br>Pol.<br>(H/V) | Correction<br>Factor<br>(dB/m) | Reading<br>(dBμV) | Corrected<br>Reading<br>(dBμV/m) | Limit<br>@ 3 m<br>(dBμV/m) | Margin<br>(dB) |
|-----------------------|--------------------|----------------------------------|-----------------------|--------------------------------|-------------------|----------------------------------|----------------------------|----------------|
| 802.11ac(VHT40)_Ch62  | 10620              | PK                               | V                     | 22.61                          | 38.29             | 60.90                            | 74.00                      | -13.10         |
|                       | 10620              | AV                               | V                     | 22.61                          | 30.78             | 53.39                            | 54.00                      | -0.61          |
|                       | 1396               | PK                               | H                     | -6.46                          | 52.17             | 45.71                            | 74.00                      | -28.29         |
|                       | 10620              | PK                               | H                     | 22.61                          | 32.22             | 54.83                            | 74.00                      | -19.17         |
|                       | 10620              | AV                               | H                     | 22.61                          | 23.72             | 46.33                            | 54.00                      | -7.67          |
| 802.11ac(VHT40)_Ch102 | 11020              | PK                               | V                     | 23.93                          | 36.86             | 60.79                            | 74.00                      | -13.21         |
|                       | 11020              | AV                               | V                     | 23.93                          | 28.65             | 52.58                            | 54.00                      | -1.42          |
|                       | 1396               | PK                               | H                     | -6.46                          | 51.64             | 45.18                            | 74.00                      | -28.82         |
|                       | 11020              | PK                               | H                     | 23.93                          | 32.30             | 56.23                            | 74.00                      | -17.77         |
|                       | 11020              | AV                               | H                     | 23.93                          | 24.52             | 48.45                            | 54.00                      | -5.55          |
| 802.11ac(VHT40)_Ch118 | 11180              | PK                               | V                     | 23.76                          | 33.82             | 57.58                            | 74.00                      | -16.42         |
|                       | 11180              | AV                               | V                     | 23.76                          | 25.59             | 49.35                            | 54.00                      | -4.65          |
|                       | 1396               | PK                               | H                     | -6.46                          | 52.59             | 46.13                            | 74.00                      | -27.87         |
|                       | 11180              | PK                               | H                     | 23.76                          | 31.28             | 55.04                            | 74.00                      | -18.96         |
|                       | 11180              | AV                               | H                     | 23.76                          | 22.14             | 45.90                            | 54.00                      | -8.10          |
| 802.11ac(VHT40)_Ch134 | 11340              | PK                               | V                     | 23.59                          | 33.54             | 57.13                            | 74.00                      | -16.87         |
|                       | 11340              | AV                               | V                     | 23.59                          | 25.79             | 49.38                            | 54.00                      | -4.62          |
|                       | 11340              | PK                               | H                     | 23.59                          | 29.11             | 52.70                            | 74.00                      | -21.30         |
| 802.11ac(VHT40)_Ch151 | 11510              | PK                               | V                     | 23.38                          | 32.51             | 55.89                            | 74.00                      | -18.11         |
|                       | 11510              | AV                               | V                     | 23.38                          | 25.95             | 49.33                            | 54.00                      | -4.67          |
|                       | 11510              | PK                               | V                     | 23.38                          | 29.38             | 52.76                            | 74.00                      | -21.24         |
| 802.11ac(VHT40)_Ch159 | 11590              | PK                               | V                     | 23.07                          | 32.44             | 55.51                            | 74.00                      | -18.49         |
|                       | 11590              | AV                               | V                     | 23.07                          | 25.58             | 48.65                            | 54.00                      | -5.35          |
|                       | 11590              | PK                               | H                     | 23.07                          | 26.63             | 49.70                            | 74.00                      | -24.30         |
| 802.11ac(VHT80)_Ch42  | 10420              | PK                               | V                     | 21.76                          | 34.44             | 56.20                            | 74.00                      | -17.80         |
|                       | 10420              | AV                               | V                     | 21.76                          | 27.46             | 49.22                            | 54.00                      | -4.78          |
|                       | 1396               | PK                               | H                     | -6.46                          | 50.75             | 44.29                            | 74.00                      | -29.71         |
|                       | 10420              | PK                               | H                     | 21.76                          | 28.51             | 50.27                            | 74.00                      | -23.73         |
| 802.11ac(VHT80)_Ch58  | 10580              | PK                               | V                     | 22.47                          | 36.77             | 59.24                            | 74.00                      | -14.76         |
|                       | 10580              | AV                               | V                     | 22.47                          | 29.49             | 51.96                            | 54.00                      | -2.04          |
|                       | 1385               | PK                               | H                     | -6.52                          | 52.30             | 45.78                            | 74.00                      | -28.22         |
|                       | 10580              | PK                               | H                     | 22.47                          | 31.27             | 53.74                            | 74.00                      | -20.26         |
| 802.11ac(VHT80)_Ch106 | 11060              | PK                               | V                     | 23.89                          | 32.18             | 56.07                            | 74.00                      | -17.93         |
|                       | 11060              | AV                               | V                     | 23.89                          | 22.67             | 46.56                            | 54.00                      | -7.44          |
|                       | 1396               | PK                               | H                     | -6.46                          | 50.95             | 44.49                            | 74.00                      | -29.51         |
|                       | 11060              | PK                               | H                     | 23.89                          | 27.93             | 51.82                            | 74.00                      | -22.18         |

Remark: Correction Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Pre\_Amplifier Gain

| Mode                  | Frequency<br>(MHz) | Spectrum<br>Analyzer<br>Detector | Ant.<br>Pol.<br>(H/V) | Correction<br>Factor<br>(dB/m) | Reading<br>(dBμV) | Corrected<br>Reading<br>(dBμV/m) | Limit<br>@ 3 m<br>(dBμV/m) | Margin<br>(dB) |
|-----------------------|--------------------|----------------------------------|-----------------------|--------------------------------|-------------------|----------------------------------|----------------------------|----------------|
| 802.11ac(VHT80)_Ch122 | 11220              | PK                               | V                     | 23.72                          | 29.89             | 53.61                            | 74.00                      | -20.39         |
|                       | 1396               | PK                               | H                     | -6.46                          | 50.22             | 43.76                            | 74.00                      | -30.24         |
|                       | 11220              | PK                               | H                     | 23.72                          | 25.67             | 49.39                            | 74.00                      | -24.61         |
| 802.11ac(VHT80)_Ch155 | 11550              | PK                               | V                     | 23.22                          | 27.92             | 51.14                            | 74.00                      | -22.86         |
|                       | 1396               | PK                               | H                     | -6.46                          | 51.22             | 44.76                            | 74.00                      | -29.24         |
|                       | 11550              | PK                               | H                     | 23.22                          | 23.93             | 47.15                            | 74.00                      | -26.85         |

Remark: Correction Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Pre\_Amplifier Gain

## 6. Emission on The Band Edge

### 6.1 Operating environment

|                    |                   |    |
|--------------------|-------------------|----|
| Temperature:       | 25                | °C |
| Relative Humidity: | 57                | %  |
| Requirement        | 15.407(b), 15.205 |    |

### 6.2 Measuring instrument setting

| Spectrum analyzer settings |                                 |
|----------------------------|---------------------------------|
| Spectrum Analyzer function | Setting                         |
| Detector                   | Peak                            |
| RBW                        | 1MHz                            |
| VBW                        | 3MHz for Peak; 10Hz for Average |
| Sweep                      | Auto couple                     |
| Restrict bands             | 4500~5150MHz                    |
|                            | 5350 ~5460MHz                   |
| Attenuation                | Auto                            |

| Applicable to | Limit            |
|---------------|------------------|
|               | EIRP Limit (dBm) |
| 5725-5850MHz  | PK               |
|               | -27~27           |

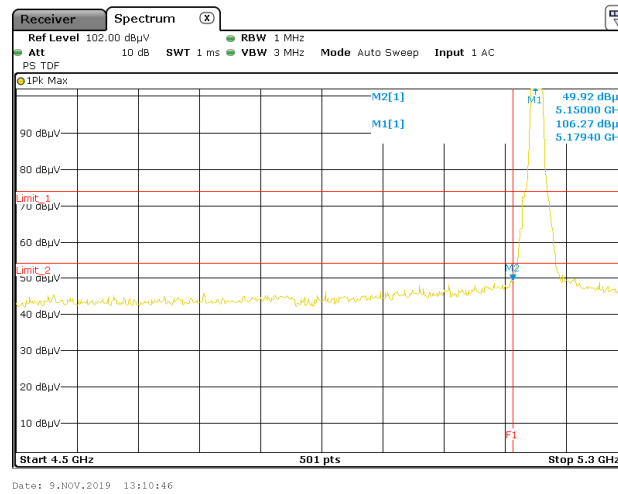
### 6.3 Test procedure

The test procedure is the same as clause 5.4

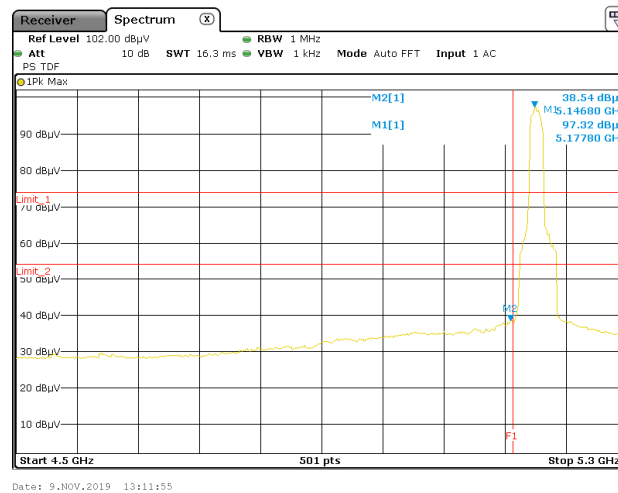
## 6.4 Test Result

| Mode                | Frequency<br>(MHz) | Spectrum<br>Analyzer<br>Detector | Ant.<br>Pol.<br>(H/V) | Correction<br>Factor<br>(dB/m) | Reading<br>(dBμV) | Corrected<br>Reading<br>(dBμV/m) | Limit<br>@ 3 m<br>(dBμV/m) | Margin<br>(dB) | Restricted<br>band<br>(MHz) |
|---------------------|--------------------|----------------------------------|-----------------------|--------------------------------|-------------------|----------------------------------|----------------------------|----------------|-----------------------------|
| 802.11a             | 5150.00            | PK                               | V                     | 4.45                           | 45.47             | 49.92                            | 74                         | -24.08         | 4500~5150                   |
|                     | 5146.80            | AV                               | V                     | 4.45                           | 34.09             | 38.54                            | 54                         | -15.46         |                             |
|                     | 5354.31            | PK                               | V                     | 4.46                           | 42.31             | 46.77                            | 74                         | -27.23         | 5350~5460                   |
|                     | 5354.31            | AV                               | V                     | 4.46                           | 31.05             | 35.51                            | 54                         | -18.49         |                             |
| 802.11ac<br>(VHT20) | 5138.80            | PK                               | V                     | 4.45                           | 46.75             | 51.20                            | 74                         | -22.80         | 4500~5150                   |
|                     | 5150.00            | AV                               | V                     | 4.46                           | 34.36             | 38.82                            | 54                         | -15.18         |                             |
|                     | 5351.44            | PK                               | V                     | 4.46                           | 39.53             | 43.99                            | 74                         | -30.01         | 5350~5460                   |
|                     | 5352.87            | AV                               | V                     | 4.46                           | 31.27             | 35.73                            | 54                         | -18.27         |                             |
| 802.11ac<br>(VHT40) | 5150.00            | PK                               | V                     | 4.45                           | 66.70             | 71.15                            | 74                         | -2.85          | 4500~5150                   |
|                     | 5150.00            | AV                               | V                     | 4.45                           | 47.20             | 51.65                            | 54                         | -2.35          |                             |
|                     | 5355.75            | PK                               | V                     | 4.46                           | 41.40             | 45.86                            | 74                         | -28.14         | 5350~5460                   |
|                     | 5352.87            | AV                               | V                     | 4.46                           | 30.88             | 35.34                            | 54                         | -18.66         |                             |
| 802.11ac<br>(VHT80) | 5150.00            | PK                               | V                     | 4.45                           | 58.68             | 63.13                            | 74                         | -10.87         | 4500~5150                   |
|                     | 5150.00            | AV                               | V                     | 4.45                           | 46.77             | 51.22                            | 54                         | -2.78          |                             |
|                     | 5350.00            | PK                               | V                     | 4.46                           | 38.86             | 43.32                            | 74                         | -30.68         | 5350~5460                   |
|                     | 5350.00            | AV                               | V                     | 4.46                           | 29.06             | 33.52                            | 54                         | -20.48         |                             |

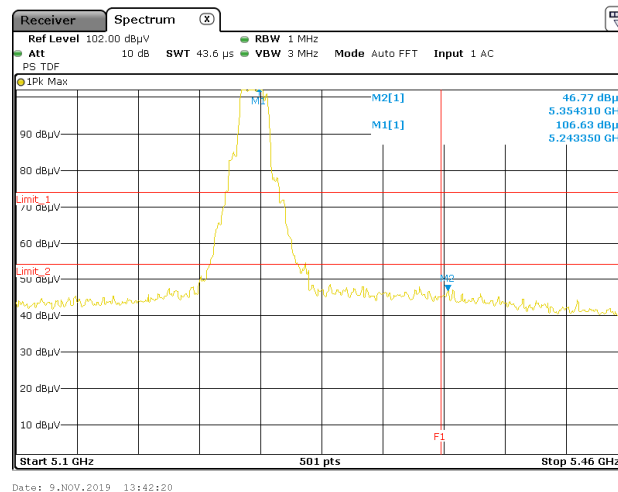
### Chain0+1 : Restricted Band Bandedge @ 802.11a Mode Ch36 PK



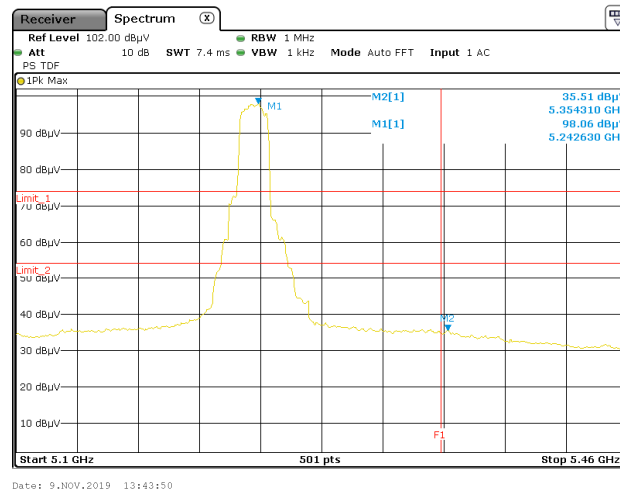
### Chain0+1 : Restricted Band Bandedge @ 802.11a Mode Ch36 AV



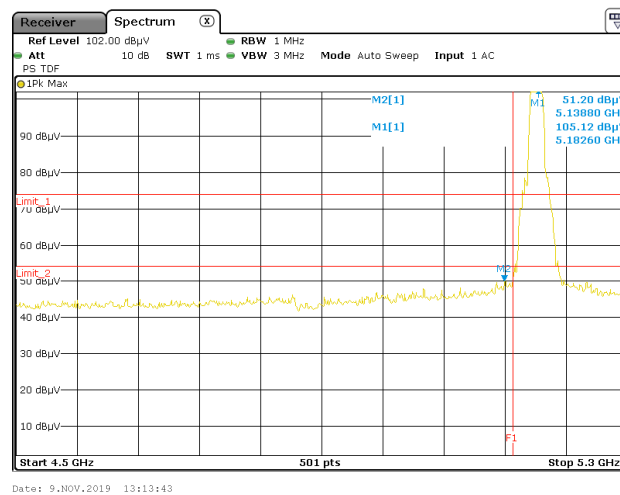
### Chain0+1 : Restricted Band Bandedge @ 802.11a Mode Ch48 PK



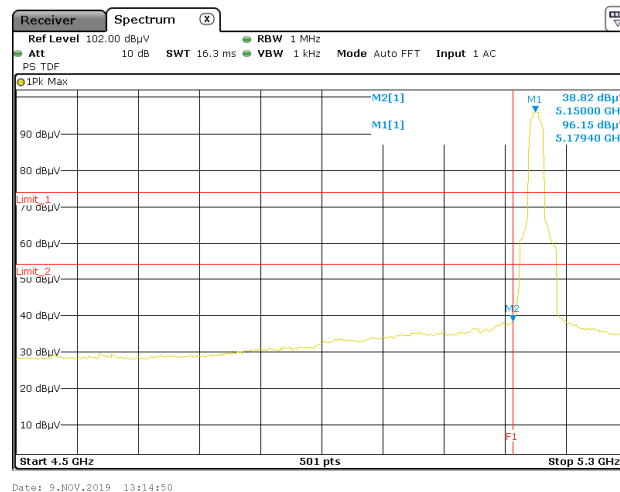
## Chain0+1 : Restricted Band Bandedge @ 802.11a Mode Ch48 AV



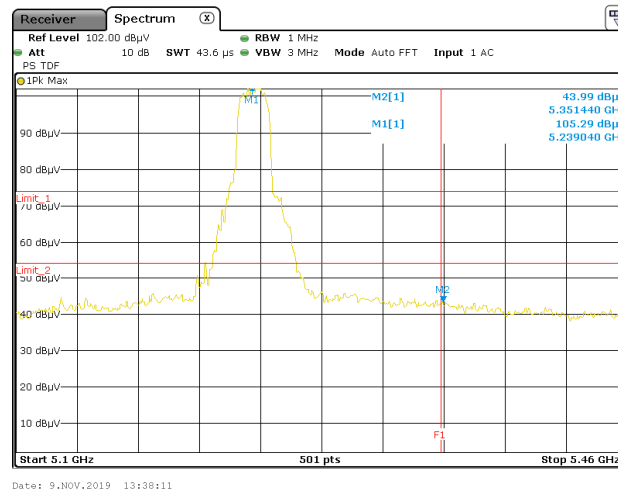
## Chain0+1 : Restricted Band Bandedge @ 802.11ac(VHT20) Mode Ch36 PK



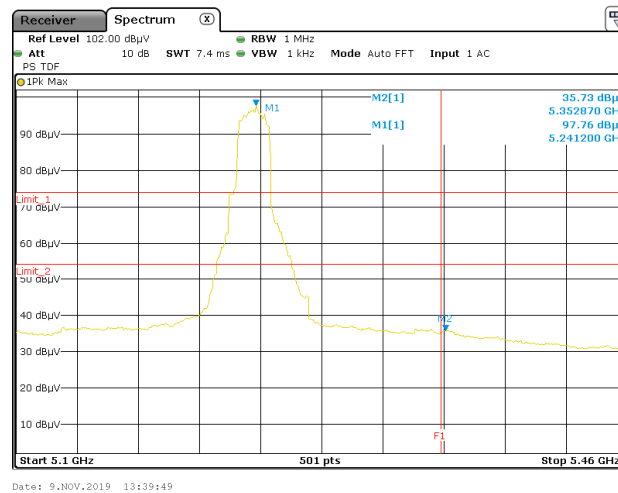
## Chain0+1 : Restricted Band Bandedge @ 802.11ac(VHT20) Mode Ch36 AV



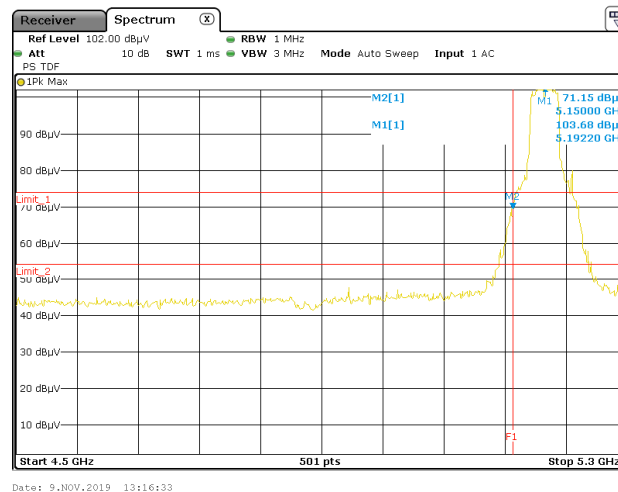
## Chain0+1 : Restricted Band Bandedge @ 802.11ac(VHT20) Mode Ch48 PK



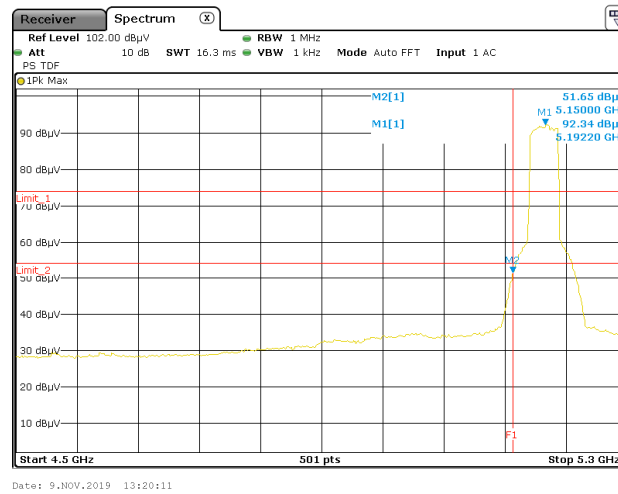
## Chain0+1 : Restricted Band Bandedge @ 802.11ac(VHT20) Mode Ch48 AV



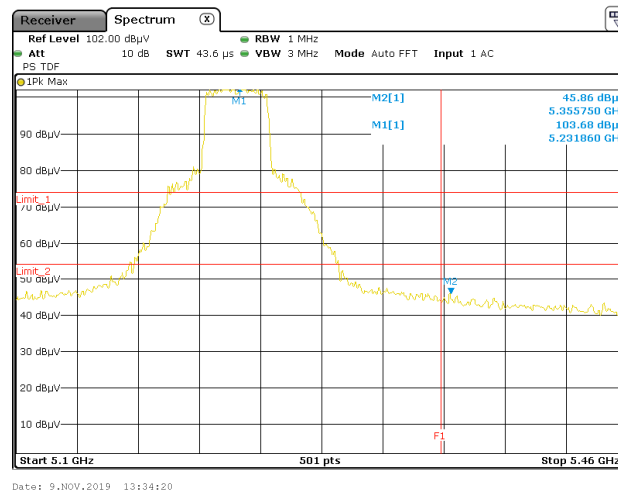
## Chain0+1 : Restricted Band Bandedge @ 802.11ac(VHT40) Mode Ch38 PK



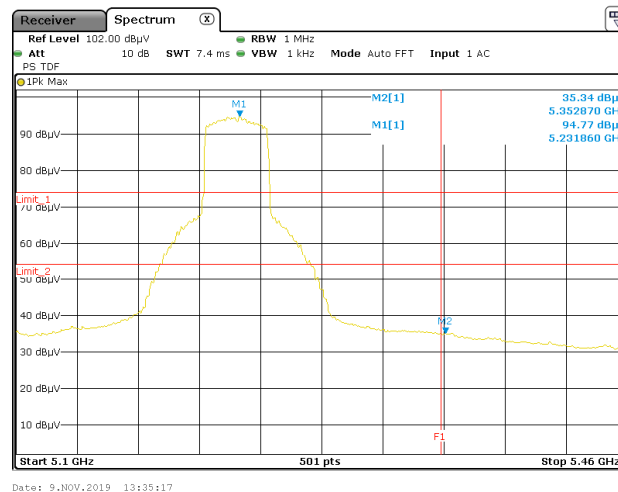
## Chain0+1 : Restricted Band Bandedge @ 802.11ac(VHT40) Mode Ch38 AV



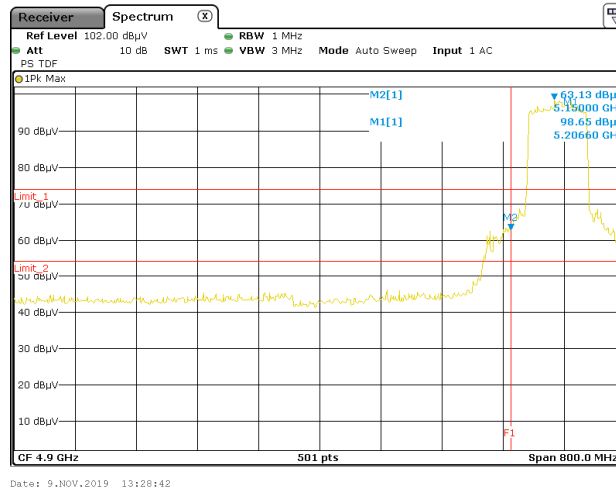
## Chain0+1 : Restricted Band Bandedge @ 802.11ac(VHT40) Mode Ch46 PK



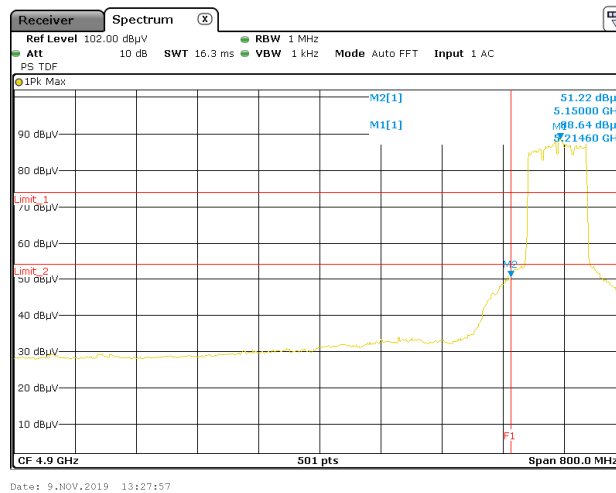
## Chain0+1 : Restricted Band Bandedge @ 802.11ac(VHT40) Mode Ch46 AV



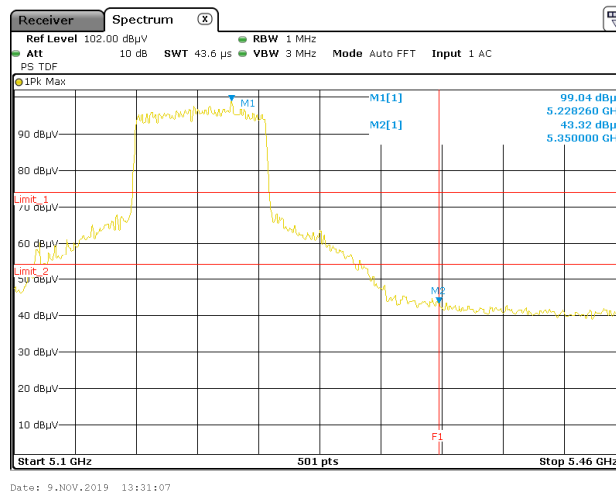
**Chain0+1 : Restricted Band Bandedge @ 802.11ac(VHT80) Mode Ch42 PK**



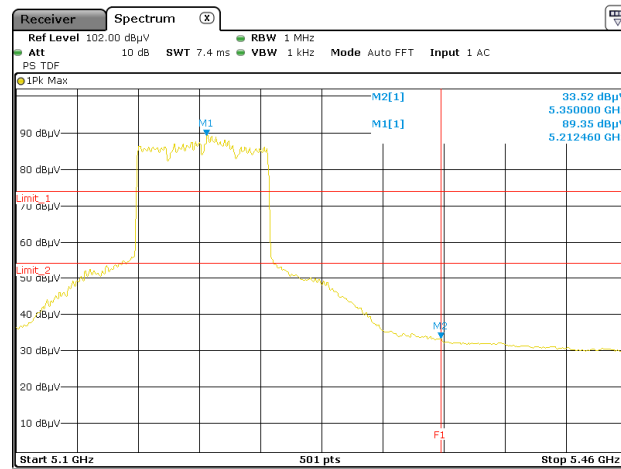
**Chain0+1 : Restricted Band Bandedge @ 802.11ac(VHT80) Mode Ch42 AV**



**Chain0+1 : Restricted Band Bandedge @ 802.11ac(VHT80) Mode Ch42 PK**

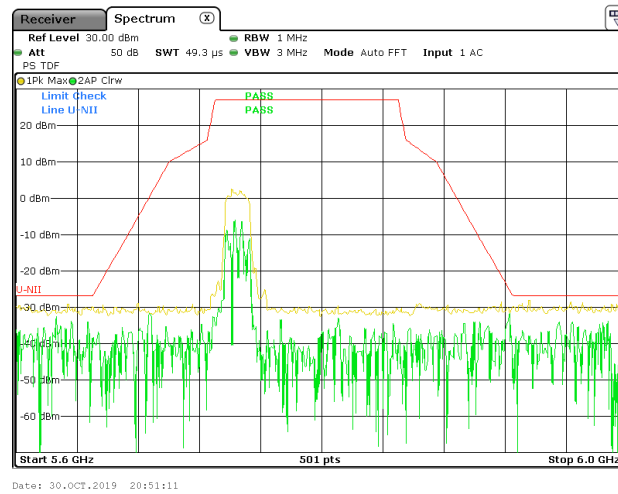


## Chain0+1 : Restricted Band Bandedge @ 802.11ac(VHT80) Mode Ch42 AV

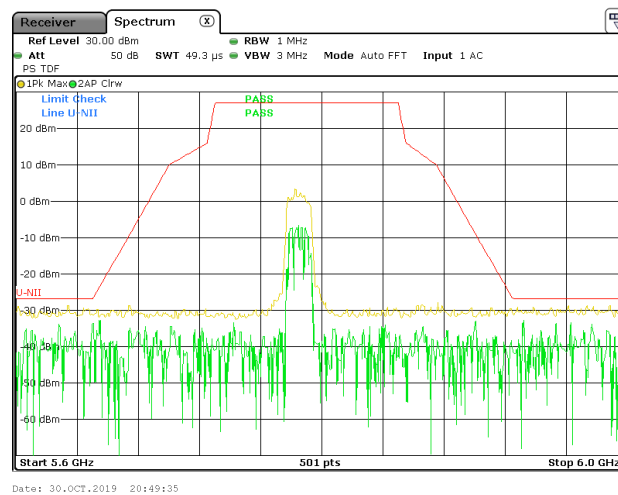


Date: 9.NOV.2019 13:31:52

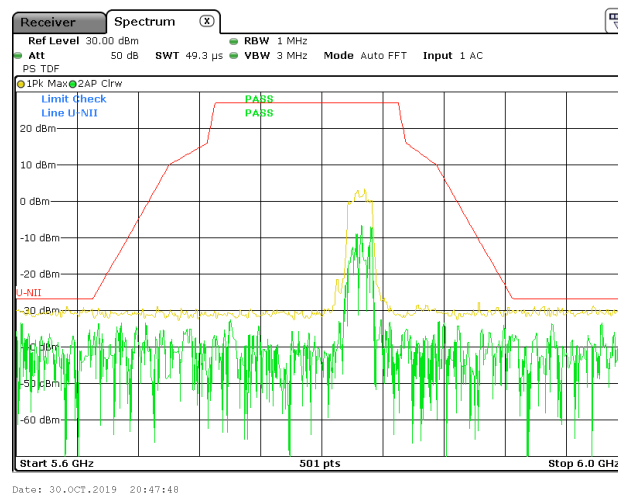
**Chain0+1 : Out-of-band emission limits for U-NII-3 @ mode 802.11a Ch149**



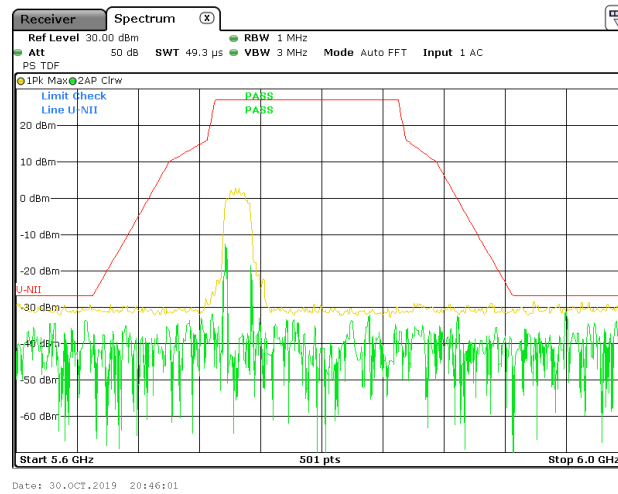
**Chain0+1 : Out-of-band emission limits for U-NII-3 @ mode 802.11a Ch157**



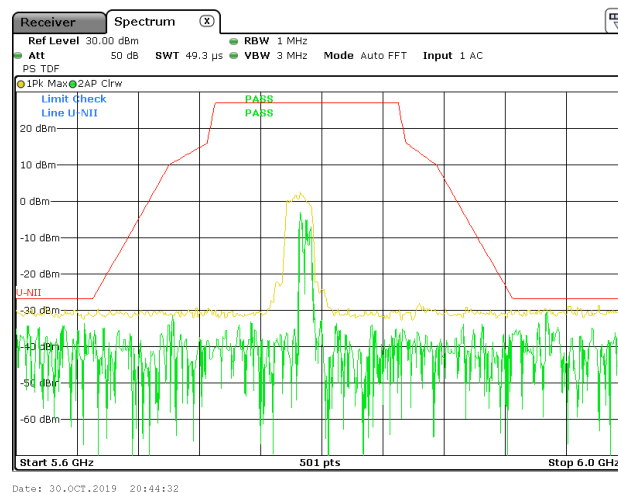
**Chain0+1 : Out-of-band emission limits for U-NII-3 @ mode 802.11a Ch165**



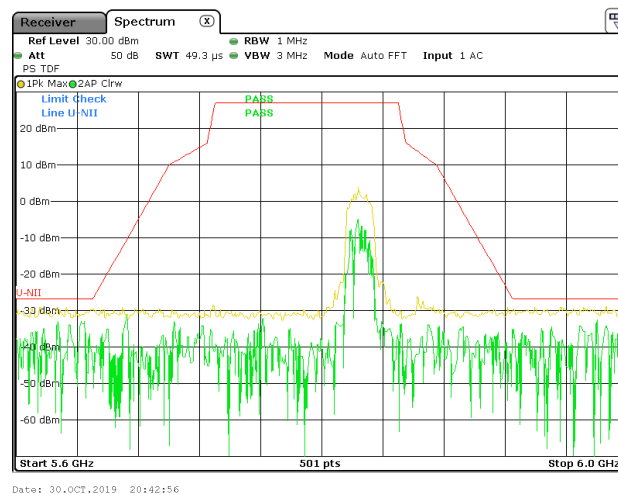
## Chain0+1 : Out-of-band emission limits for U-NII-3 @ mode 802.11ac(VHT20) Ch149



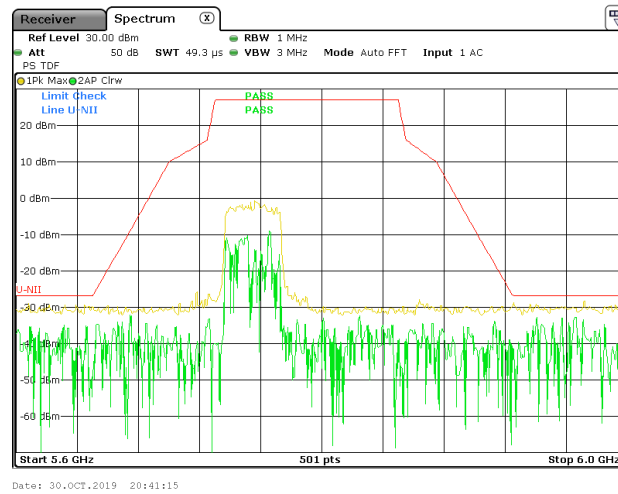
## Chain0+1 : Out-of-band emission limits for U-NII-3 @ mode 802.11ac(VHT20) Ch157



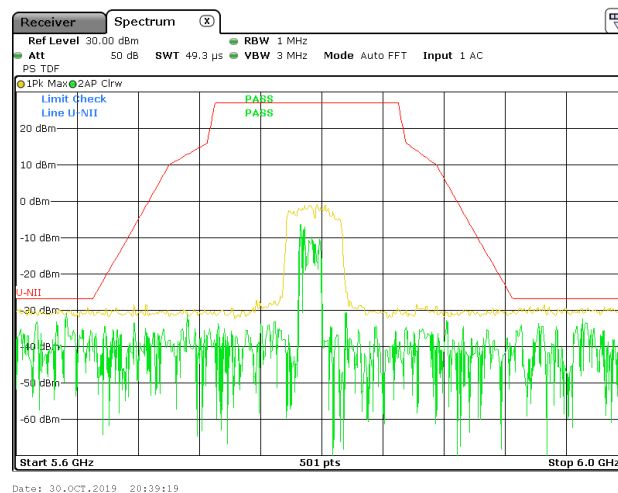
## Chain0+1 : Out-of-band emission limits for U-NII-3 @ mode 802.11ac(VHT20) Ch165



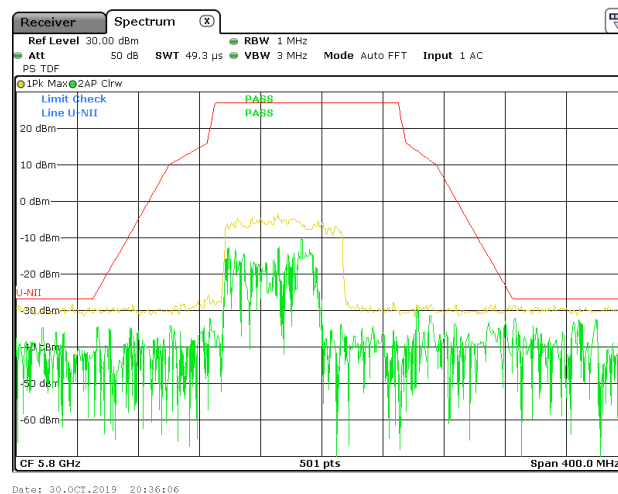
**Chain0+1 : Out-of-band emission limits for U-NII-3 @ mode 802.11ac(VHT40) Ch151**



**Chain0+1 : Out-of-band emission limits for U-NII-3 @ mode 802.11ac(VHT40) Ch159**



**Chain0+1 : Out-of-band emission limits for U-NII-3 @ mode 802.11ac(VHT80) Ch155**



## 7. Dynamic Frequency Selection (DFS) test

### 7.1 Operating environment

|                    |    |    |
|--------------------|----|----|
| Temperature:       | 24 | °C |
| Relative Humidity: | 56 | %  |

### 7.2 UNII Device Description

1. The UAP-AC-M operates in the following UNII bands:

- a. 5250-5350 MHz
- b. 5470-5725 MHz

2. Operating mode:

The EUT was defined as the client without radar detection function.

Associating peripheral:

The device was set up to associate with the master device (UAP-AC-M).

3. The maximum EIRP of this device is 24.70 dBm from UNII band. This device doesn't exceed 27dBm EIRP, so no transmit power control is implemented.

4. Below are the available 50 ohm antenna assemblies and their corresponding gains. 0dBi gain was used to set the -63dBm threshold level (-62dBm+1dB) during calibration of the conducted test setup.

5. Information regarding the parameters of the detected Radar Waveforms is not available to the end user.

### 7.2.1 Operating mode

Performance was measured at an active frequency of 5260 and 5500MHz, and the radar signal was centered at 5260 and 5500 MHz.

One laptop PC is connected to the AP via a wire Ethernet connection. A separate laptop PC is used as a host computer for the Station. The AP and the Station transmit output levels are set to normal operating condition.

System architectures were used under IP based mode.

### 7.3 Test Protocol and Requirements

For a Master Device, the DFS conformance requirements will be verified utilizing one short pulse radar type. Additionally, the Channel Move Time and Channel Closing Transmission Time requirements will be verified utilizing the long pulse radar type. The statistical performance check will be verified utilizing all radar type.

For a Client Device without DFS, the channel move time and channel closing transmission time requirements will be verified with one short pulse radar type.

For testing a Client Device with In-Service Monitoring, two configurations must be tested.

The Client Device detects the radar waveform:

The channel move time and channel closing transmission time requirements will be verified utilizing short pulse radar type and the long pulse radar type. The statistical performance check will be verified utilizing all radar types.

The Master Device detects the radar waveform:

The channel move time and channel closing transmission time requirements will be verified utilizing short pulse radar type.

A UNII network will employ a DFS function to:

- detect signals from radar systems and to avoid co-channel operation with these systems
- provide on aggregate a Uniform Spreading of the Operating Channels across the entire band. This applies to the 5250-5350 MHz and/ or 5470-5725 MHz bands.

Within the context of the operation of the DFS function, a UNII device will operate in either Master Mode or Client Mode. UNII devices operating in Client Mode can only operate in a network controlled by a UNII device operating in Master Mode.

The tables as below summarize the information contained.

**Applicability of DFS Requirements Prior to Use of a Channel**

| Requirement                     | Operational Mode |                                |                             |
|---------------------------------|------------------|--------------------------------|-----------------------------|
|                                 | Master           | Client Without Radar Detection | Client With Radar Detection |
| Non-Occupancy Period            | Yes              | Not required                   | Yes                         |
| DFS Detection Threshold         | Yes              | Not required                   | Yes                         |
| Channel Availability Check Time | Yes              | Not required                   | Not required                |
| Uniform Spreading               | Yes              | Not required                   | Not required                |
| UNII Detection Bandwidth        | Yes              | Not required                   | Yes                         |

**Applicability of DFS requirements during normal operation**

| Requirement                       | Operational Mode |                                |                             |
|-----------------------------------|------------------|--------------------------------|-----------------------------|
|                                   | Master           | Client Without Radar Detection | Client With Radar Detection |
| DFS Detection Threshold           | Yes              | Not required                   | Yes                         |
| Channel Closing Transmission Time | Yes              | Yes                            | Yes                         |
| Channel Move Time                 | Yes              | Yes                            | Yes                         |
| UNII Detection Bandwidth          | Yes              | Not required                   | Yes                         |

#### 7.4 DFS Detection Thresholds and Limitations of each Parameter

| Maximum Transmit Power                                                                                                                                                                                                                                                                                                                                                                                  | Value (See Notes 1 and 2) |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| $\geq 200$ mW                                                                                                                                                                                                                                                                                                                                                                                           | -64 dBm                   |
| $\leq 200$ mW                                                                                                                                                                                                                                                                                                                                                                                           | -62 dBm                   |
| <p>Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna.</p> <p>Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.</p> |                           |

| Parameter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Value                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Non-occupancy Period                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Minimum 30 minutes                                                                                    |
| Channel Availability Check Time                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 60 seconds                                                                                            |
| Channel Move Time                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 10 seconds (See Note 1)                                                                               |
| Channel Closing Transmission Time                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period (See Note 1 and 2) |
| UNII Detection Bandwidth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Minimum 80% of the UNII 99% transmission power bandwidth. (See Note 3)                                |
| <p>Note 1: The instant that the Channel Move Time and the Channel Closing Transmission Time begins is as follows:</p> <ul style="list-style-type: none"> <li>• For the Short Pulse Radar Test Signals this instant is the end of the Burst.</li> <li>• For the Frequency Hopping radar Test Signal, this instant is the end of the last radar Burst generated.</li> <li>• For the Long Pulse Radar Test Signal this instant is the end of the 12 second period defining the Radar Waveform.</li> </ul> <p>Note 2: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.</p> <p>Note 3: During the U-NII Detection Bandwidth detection test, radar type 1 is used and for each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.</p> |                                                                                                       |

## 7.5 Radar Test Waveforms

This section provides the parameters for required test waveforms, minimum percentage of successful detections, and the minimum number of trials that must be used for determining DFS conformance. Step intervals of 0.1 microsecond for Pulse Width, 1 microsecond for PRI, 1 MHz for chirp width and 1 for the number of pulses will be utilized for the random determination of specific test waveforms.

### Short Pulse Radar Test Waveforms

| Radar Type                  | Pulse Width (μsec) | PRI (μsec) | Number of Pulses | Minimum Percentage of Successful Detection | Minimum Number of Trials |
|-----------------------------|--------------------|------------|------------------|--------------------------------------------|--------------------------|
| 1                           | 1                  | 1428       | 18               | 60%                                        | 30                       |
| 2                           | 1-5                | 150-230    | 23-29            | 60%                                        | 30                       |
| 3                           | 6-10               | 200-500    | 16-18            | 60%                                        | 30                       |
| 4                           | 11-20              | 200-500    | 12-16            | 60%                                        | 30                       |
| Aggregate (Radar Types 1-4) |                    |            |                  | 80%                                        | 120                      |

A minimum of 30 unique waveforms are required for each of the Short Pulse Radar Type 2 through 4. For Short Pulse Radar Type 1, the same waveform is used a minimum of 30 times. If more than 30 waveforms are used for Short Pulse Radar Type 2 through 4, then each additional waveform must also be unique and not repeated from the previous waveforms.

The aggregate is the average of the percentage of successful detections of Short Pulse Radar Type 1-4.

### Long Pulse Radar Test Waveforms

| Radar Type | Pulse Width (μsec) | Chirp Width (MHz) | PRI (μsec) | Number of Pulses per Burst | Number of Bursts | Minimum Percentage of Successful Detection | Minimum Number of Trials |
|------------|--------------------|-------------------|------------|----------------------------|------------------|--------------------------------------------|--------------------------|
| 5          | 50-100             | 5-20              | 1000-2000  | 1-3                        | 8-20             | 80%                                        | 30                       |

The parameters for this waveform are randomly chosen. Thirty unique waveforms are required for the Long Pulse radar test signal. If more than 30 waveforms are used for the Long Pulse radar test signal, then each additional waveform must also be unique and not repeated from the previous waveforms.

Each waveform is defined as follows:

- 1) The transmission period for the Long Pulse Radar test signal is 12 seconds.
- 2) There are a total of 8 to 20 Bursts in the 12 second period, with the number of Bursts being randomly chosen. This number is Burst\_Count.
- 3) Each Burst consists of 1 to 3 pulses, with the number of pulses being randomly chosen. Each Burst within the 12 second sequence may have a different number of pulses.
- 4) The pulse width is between 50 and 100 microseconds, with the pulse width being randomly chosen. Each pulse within a Burst will have the same pulse width. Pulses in different Bursts may have different pulse widths.
- 5) Each pulse has a linear FM chirp between 5 and 20 MHz, with the chirp width being randomly chosen. Each pulse within a Burst will have the same chirp width. Pulses in different Bursts may have different chirp widths. The chirp is centered on the pulse. For example, with a radar frequency of 5300 MHz and a 20 MHz chirped signal, the chirp starts at 5290 MHz and ends at 5310 MHz.
- 6) If more than one pulse is present in a Burst, the time between the pulses will be between 1000 and 2000 microseconds, with the time being randomly chosen. If three pulses are present in a Burst, the time between the first and second pulses is chosen independently of the time between the second and third pulses.
- 7) The 12 second transmission period is divided into even intervals. The number of intervals is equal to Burst\_Count. Each interval is of length  $(12,000,000 / \text{Burst\_Count})$  microseconds. Each interval contains one Burst. The start time for the Burst, relative to the beginning of the interval, is between 1 and  $[(12,000,000 / \text{Burst\_Count}) - (\text{Total Burst Length}) + (\text{One Random PRI Interval})]$  microseconds, with the start time being randomly chosen. The step interval for the start time is 1 microsecond. The start time for each Burst is chosen independently.

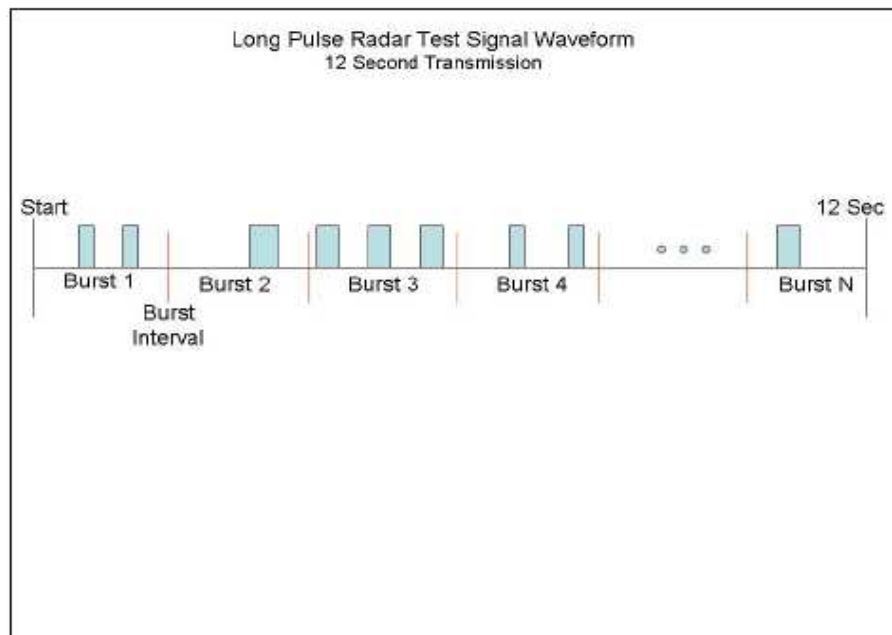
A representative example of a Long Pulse radar test waveform:

- 1) The total test signal length is 12 seconds.
- 2) 8 Bursts are randomly generated for the Burst\_Count.
- 3) Burst 1 has 2 randomly generated pulses.
- 4) The pulse width (for both pulses) is randomly selected to be 75 microseconds.

## TEST REPORT

- 5) The PRI is randomly selected to be at 1213 microseconds.
- 6) Bursts 2 through 8 are generated using steps 3 – 5.
- 7) Each Burst is contained in even intervals of 1,500,000 microseconds. The starting location for Pulse 1, Burst 1 is randomly generated (1 to 1,500,000 minus the total Burst 1 length + 1 random PRI interval) at the 325,001 microsecond step. Bursts 2 through 8 randomly fall in successive 1,500,000 microsecond intervals (i.e. Burst 2 falls in the 1,500,001 – 3,000,000 microsecond range).

*Graphical Representation of a Long Pulse radar Test Waveform*



### Frequency Hopping Radar Test Waveforms

| Radar Type | Pulse Width (μsec) | PRI (μsec) | Pulses per Hop | Hopping Rate (kHz) | Hopping Sequence Length (msec) | Minimum Percentage of Successful Detection | Minimum Number of Trials |
|------------|--------------------|------------|----------------|--------------------|--------------------------------|--------------------------------------------|--------------------------|
| 6          | 1                  | 333        | 9              | 0.333              | 300                            | 70%                                        | 30                       |

For the Frequency Hopping Radar Type, the same *Burst* parameters are used for each waveform.

The hopping sequence is different for each waveform and a 100-length segment is selected from the hopping sequence defined by the following algorithm:

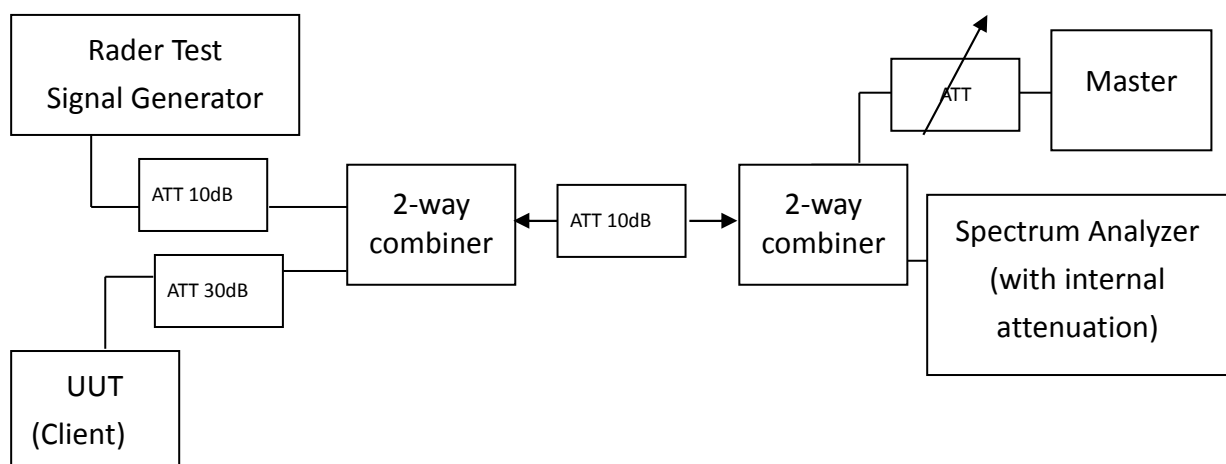
The first frequency in a hopping sequence is selected randomly from the group of 475 integer frequencies from 5250 – 5724 MHz. Next, the frequency that was just chosen is removed from the group and a frequency is randomly selected from the remaining 474 frequencies in the group. This process continues until all 475 frequencies are chosen for the set. For selection of a random frequency, the frequencies remaining within the group are always treated as equally likely.

## 7.6 Radar Waveform Calibration

The following equipment setup was used to calibrate the conducted radar waveform. A spectrum analyzer is used to establish the test signal level for each radar type. During this process, there were no transmissions by either Master or Client device. The spectrum analyzer was switched to the zero span (time domain) mode at the frequency of the radar waveform generator. The peak detection was utilized. The spectrum analyzer RBW and VBW were set to at least 3MHz.

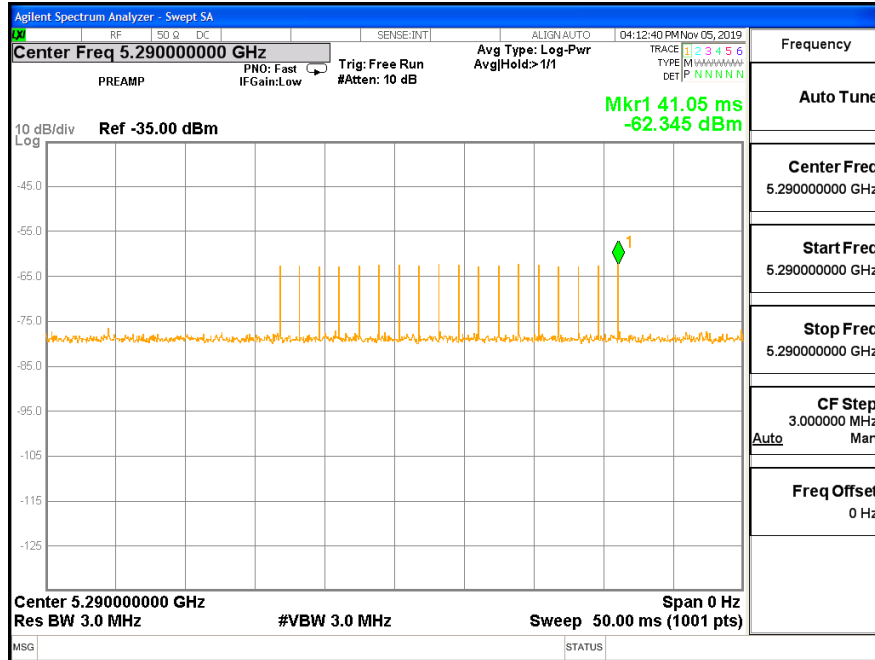
The signal generator amplitude and/ or step attenuators were set so that the power level measured at the spectrum analyzer was equal to the DFS detection threshold that is required for the tests.

The signal generator amplitude was set so that the power level measured at the spectrum analyzer was –61 dBm.

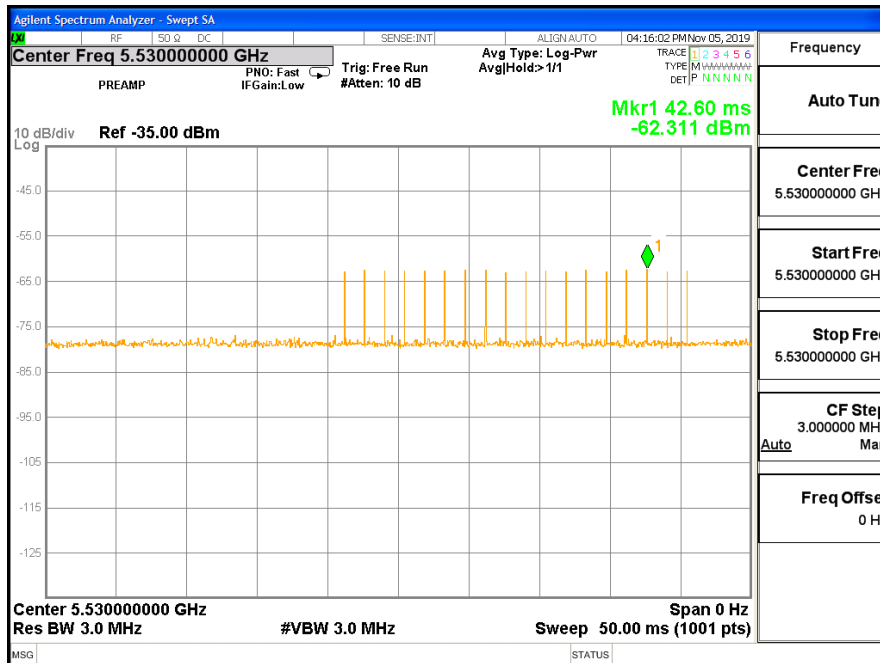


## 7.6.1 Radar Waveform Calibration Plots

### Type Radar Signal @ 802.11a mode at 5290 MHz



### Type Radar Signal @ 802.11a mode at 5530 MHz



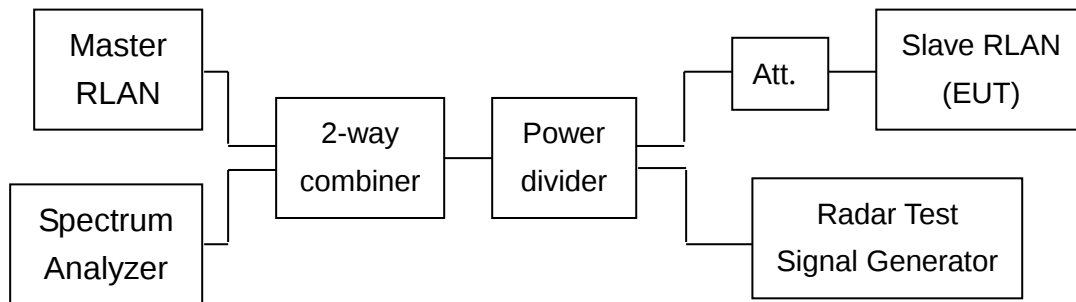
## 7.7 Test instruments and setup

### 7.7.1 Deviation about the radar waveform

No deviation.

### 7.7.2 Test setup

Setup for Client with injection at the Master (Client Mode without DFS detection)



## 7.8 DFS test results

### 7.8.1 Test summary

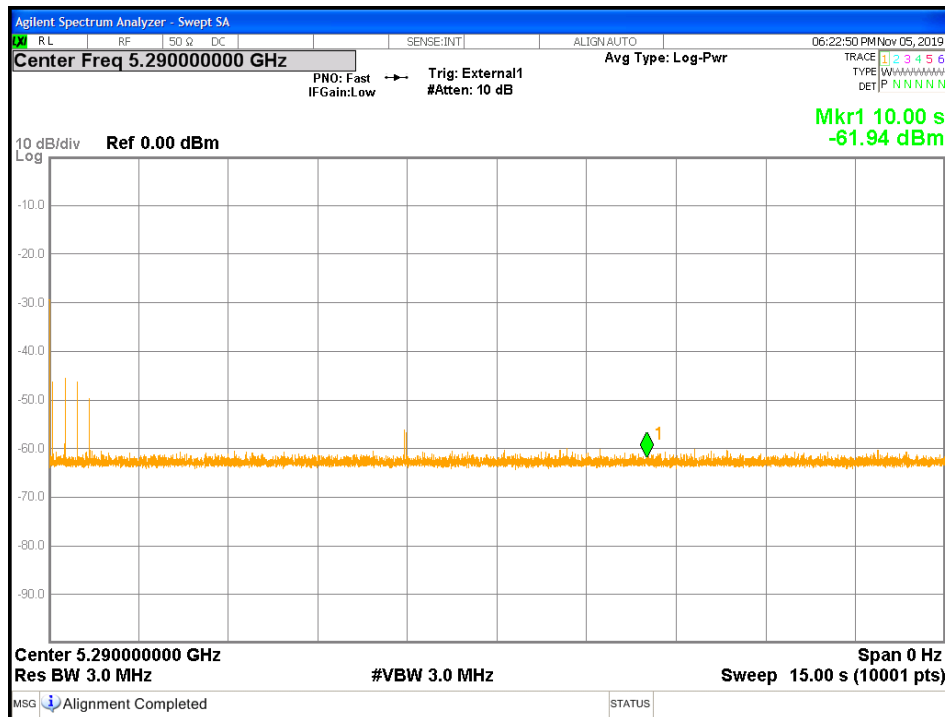
This EUT was defined as the Client without DFS detection.

| Clause | Parameter                         | Required     | Result |
|--------|-----------------------------------|--------------|--------|
| 15.407 | DFS Detection Threshold           | Not Required | N/A    |
| 15.407 | Channel Availability Check Time   | Not Required | N/A    |
| 15.407 | Channel Move Time                 | Applicable   | Pass   |
| 15.407 | Channel Closing Transmission Time | Applicable   | Pass   |
| 15.407 | Non-Occupancy Period              | Not Required | N/A    |
| 15.407 | Uniform Spreading                 | Not Required | N/A    |
| 15.407 | UNII Detection Bandwidth          | Not Required | N/A    |

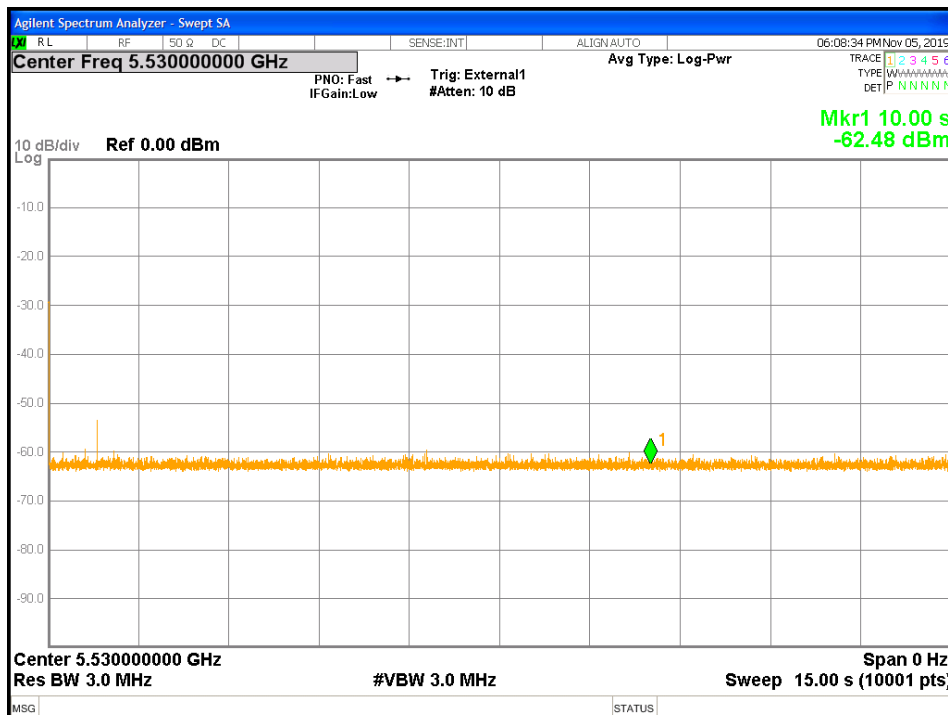
## 7.8.2 DFS test result

### 7.8.2.1 Channel Move time

#### Channel Move time (5290MHz)

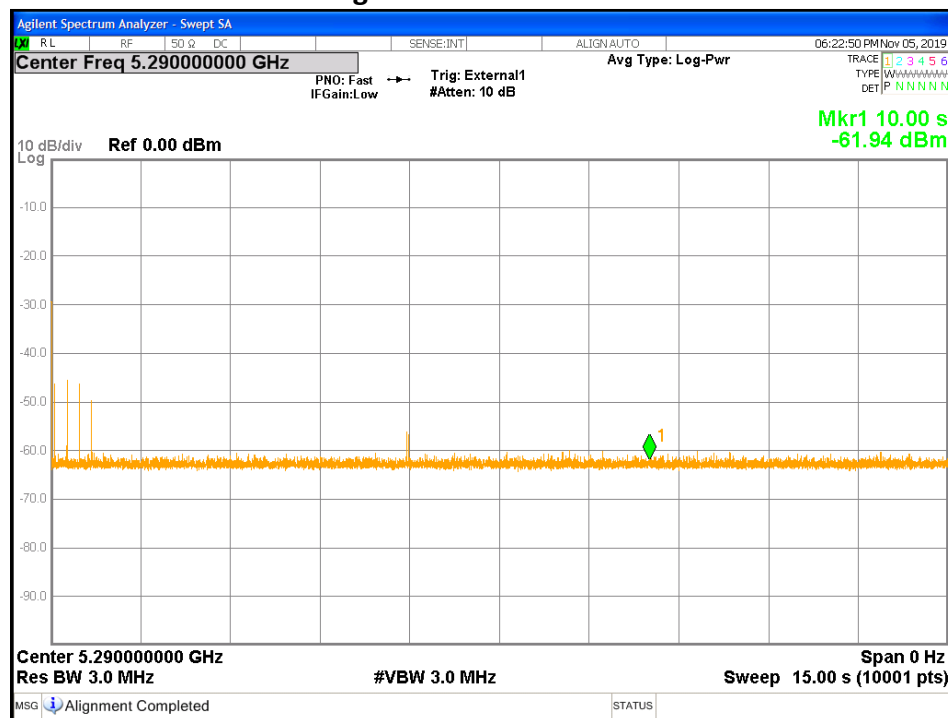


#### Channel Move time (5530MHz)

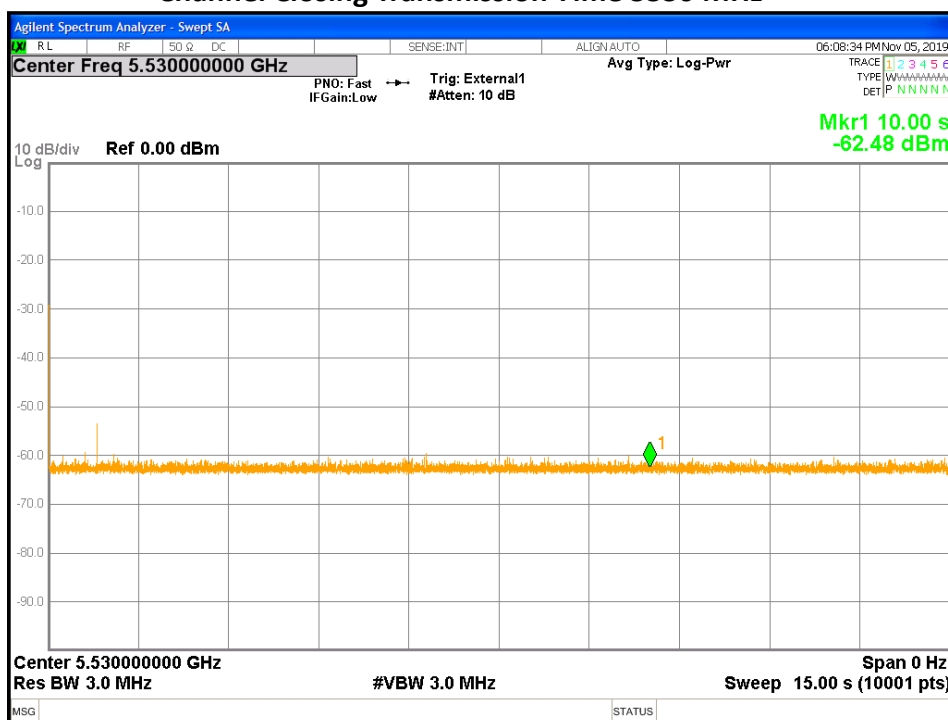


### 7.8.2.2 Channel Closing Transmission Time

### Channel Closing Transmission Time 5290 MHz



### Channel Closing Transmission Time 5530 MHz



| Mode            | Channel | Frequency (MHz) | Radar Type | Single pulse (ms) | Pulse number | Total time (ms) |
|-----------------|---------|-----------------|------------|-------------------|--------------|-----------------|
| 802.11ac(VHT80) | 58      | 5290            | 1          | 1.50              | 5            | 7.50            |
| 802.11ac(VHT80) | 106     | 5530            | 1          | 1.50              | 1            | 1.50            |

## 8.AC Power Line Conducted Emission

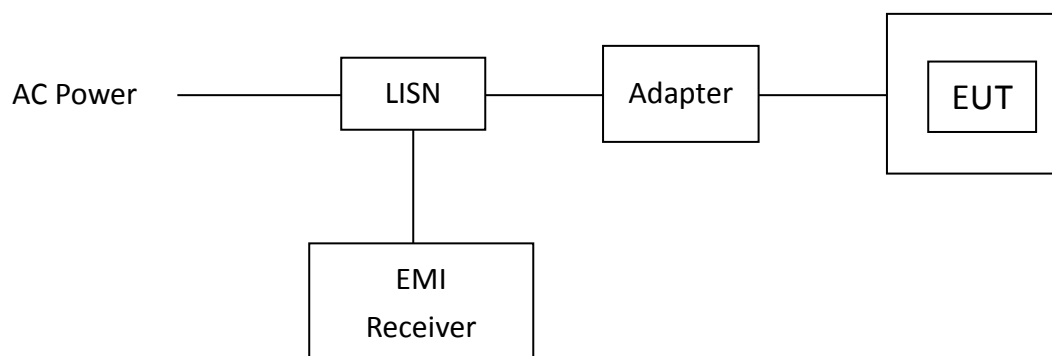
### 8.1 Measuring instrument setting

| Receiver Function | Setting |
|-------------------|---------|
| Detector          | QP      |
| Start frequency   | 0.15MHz |
| Stop frequency    | 30MHz   |
| IF bandwidth      | 9 kHz   |
| Attenuation       | 10dB    |

### 8.2 Test Procedure

|        |                                                                                                                                                                                                                               |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Step 1 | Configure the EUT according to ANSI C63.10:2013. The EUT or host of EHT has to be placed 0.4 meter far from the conducting wall of the shielding room and at least 80 centimeters from any other grounded conducting surface. |
| Step 2 | Connect EUT or host of EUT to the power mains through a line impedance stabilization network.                                                                                                                                 |
| Step 3 | All the companion devices are connected to the other LISN. The LISN should provide 50Uh/50ohms coupling impedance.                                                                                                            |
| Step 4 | The frequency range from 150 kHz to 30MHz was searched.                                                                                                                                                                       |
| Step 5 | Set the test-receiver system to peak detector and specified bandwidth with maximum hold mode.                                                                                                                                 |
| Step 6 | The measurement has to be done between each power line and ground at the power terminal.                                                                                                                                      |

### 8.3 Test Diagram



#### 8.4 Limit

| Frequency<br>(MHz) | Conducted Limit (dBuV) |         |
|--------------------|------------------------|---------|
|                    | Q.P.                   | Ave.    |
| 0.15~0.50          | 66 – 56                | 56 – 46 |
| 0.50~5.00          | 56                     | 46      |
| 5.00~30.0          | 60                     | 50      |

#### 8.5 Operating Environment Condition

|                              |      |
|------------------------------|------|
| Temperature (°C) :           | 22   |
| Relative Humidity (%) :      | 55   |
| Atmospheric Pressure (hPa) : | 1009 |

## 8.6 Test Results

Phase: Live Line

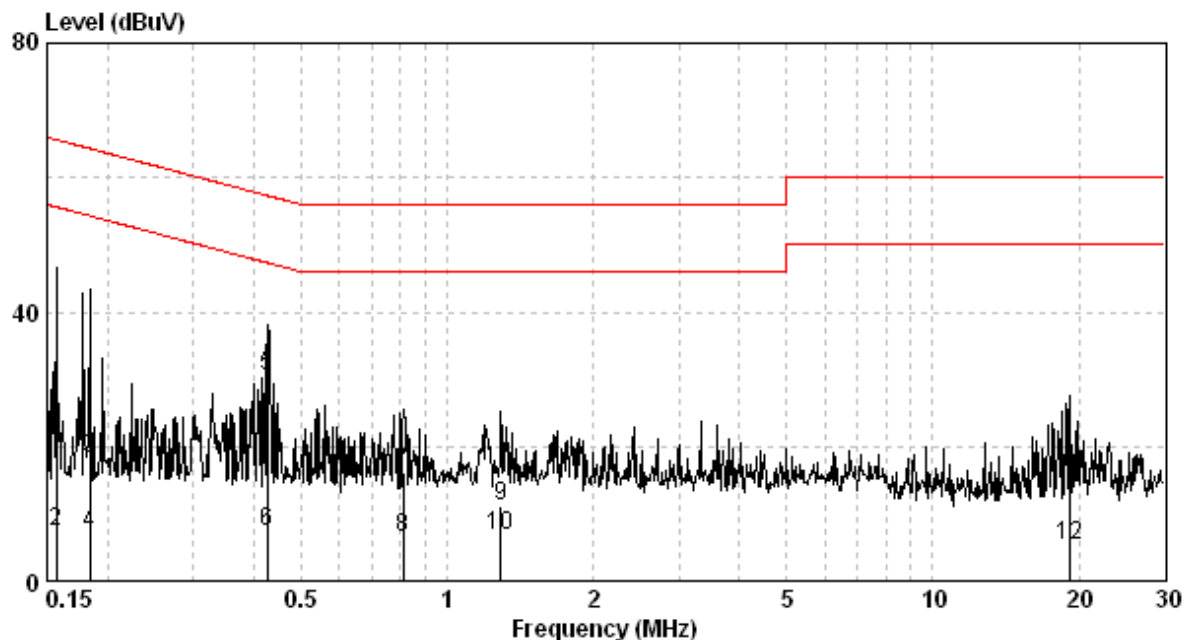
Model No.: SB30

Test Condition: Tx mode

| Frequency<br>(MHz) | Corr.<br>Factor<br>(dB) | Reading<br>QP<br>(dBuV) | Level<br>QP<br>(dBuV) | Limit<br>QP<br>(dBuV) | Reading<br>AV<br>(dBuV) | Level<br>AV<br>(dBuV) | Limit<br>AV<br>(dBuV) | Margin<br>(dB) |        |
|--------------------|-------------------------|-------------------------|-----------------------|-----------------------|-------------------------|-----------------------|-----------------------|----------------|--------|
|                    |                         |                         |                       |                       |                         |                       |                       | QP             | AV     |
| 0.156              | 9.70                    | 14.45                   | 24.15                 | 65.65                 | -2.24                   | 7.46                  | 55.65                 | -41.49         | -48.18 |
| 0.183              | 9.69                    | 8.43                    | 18.13                 | 64.33                 | -2.78                   | 6.92                  | 54.33                 | -46.20         | -47.41 |
| 0.426              | 9.70                    | 20.80                   | 30.50                 | 57.33                 | -2.46                   | 7.24                  | 47.33                 | -26.84         | -40.09 |
| 0.813              | 9.72                    | 6.26                    | 15.98                 | 56.00                 | -3.41                   | 6.31                  | 46.00                 | -40.02         | -39.69 |
| 1.289              | 9.74                    | 1.54                    | 11.28                 | 56.00                 | -3.14                   | 6.60                  | 46.00                 | -44.72         | -39.40 |
| 19.224             | 9.83                    | 5.77                    | 15.60                 | 60.00                 | -4.43                   | 5.40                  | 50.00                 | -44.40         | -44.60 |

Remark:

1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)
2. Level (dBuV) = Corr. Factor (dB) + Reading (dBuV)
3. Margin (dB) = Level (dBuV) – Limit (dBuV)



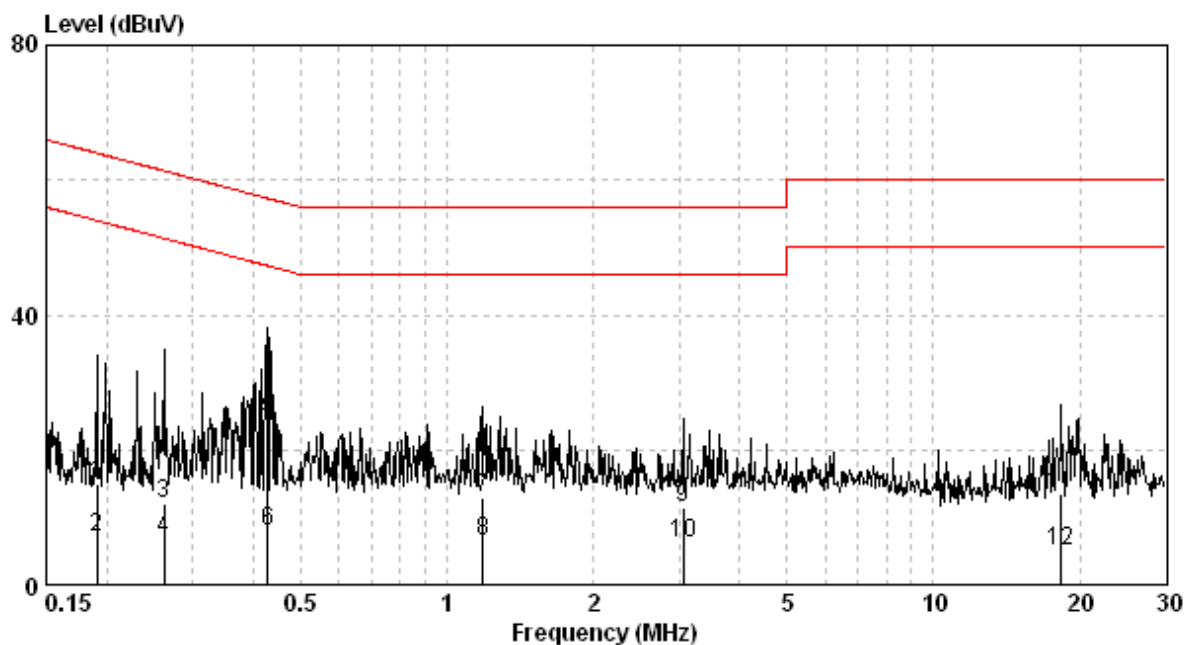
## TEST REPORT

Phase: Neutral Line  
Model No.: SB30  
Test Condition: Tx mode

| Frequency<br>(MHz) | Corr.<br>Factor<br>(dB) | Reading<br>QP<br>(dBuV) | Level<br>QP<br>(dBuV) | Limit<br>QP<br>(dBuV) | Reading<br>AV<br>(dBuV) | Level<br>AV<br>(dBuV) | Limit<br>AV<br>(dBuV) | Margin<br>(dB) |        |
|--------------------|-------------------------|-------------------------|-----------------------|-----------------------|-------------------------|-----------------------|-----------------------|----------------|--------|
|                    |                         |                         |                       |                       |                         |                       |                       | QP             | AV     |
| 0.190              | 9.71                    | 5.12                    | 14.83                 | 64.02                 | -2.61                   | 7.10                  | 54.02                 | -49.19         | -46.92 |
| 0.262              | 9.71                    | 2.36                    | 12.07                 | 61.38                 | -2.98                   | 6.72                  | 51.38                 | -49.31         | -44.66 |
| 0.428              | 9.71                    | 15.01                   | 24.72                 | 57.29                 | -1.67                   | 8.04                  | 47.29                 | -32.57         | -39.24 |
| 1.184              | 9.75                    | 3.01                    | 12.75                 | 56.00                 | -3.33                   | 6.42                  | 46.00                 | -43.25         | -39.58 |
| 3.058              | 9.80                    | 1.66                    | 11.45                 | 56.00                 | -3.61                   | 6.18                  | 46.00                 | -44.55         | -39.82 |
| 18.328             | 9.91                    | 3.69                    | 13.60                 | 60.00                 | -4.92                   | 4.99                  | 50.00                 | -46.40         | -45.01 |

### Remark:

1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)
2. Level (dBuV) = Corr. Factor (dB) + Reading (dBuV)
3. Margin (dB) = Level (dBuV) – Limit (dBuV)



**Appendix A: Test equipment list**

| Test Equipment/<br>Test site         | Brand                          | Model No.            | Serial No. | Calibration Date | Next Calibration Date |
|--------------------------------------|--------------------------------|----------------------|------------|------------------|-----------------------|
| ESCI EMI Test Receiver               | Rohde & Schwarz                | ESCI                 | 100018     | 2018/11/14       | 2019/11/13            |
| Signal Analyzer                      | Agilent                        | N9030A               | MY51380492 | 2019/08/21       | 2020/08/19            |
| Active Loop Antenna                  | SCHWARZBECK<br>MESS-ELEKTRONIC | FMZB1519             | 1519-067   | 2019/04/19       | 2020/04/17            |
| Broadband Antenna                    | SHWARZBECK                     | VULB 9168            | 9168-172   | 2019/06/05       | 2020/06/03            |
| Horn Antenna                         | SHWARZBECK                     | BBHA 9120 D          | 9120D-456  | 2019/02/01       | 2020/01/31            |
| Power Meter                          | Anritsu                        | ML2495A              | 0844001    | 2019/10/23       | 2020/10/21            |
| Power Sensor                         | Anritsu                        | MA2411B              | 0738452    | 2019/10/23       | 2020/10/21            |
| 966-2(A) Cable                       | SUHNER                         | SMA / EX 100         | N/A        | 2019/08/19       | 2020/08/17            |
| 966-2(B) Cable                       | SUHNER                         | SUCOFLEX 104P        | CB0005     | 2019/08/19       | 2020/08/17            |
| RF Cable                             | SUHNER                         | SUCOFLEX 102         | CB0006     | 2019/05/02       | 2020/04/30            |
| Hight Pass Filter                    | Wainwright                     | WHKX3.0/18G-12<br>SS | N/A        | 2019/05/30       | 2020/05/28            |
| 966-2_3m<br>Semi-Anechoic<br>Chamber | 966_2                          | CEM-966_2            | N/A        | 2019/02/23       | 2020/02/22            |

Note: No Calibration Required (NCR)

| Test Equipment/<br>Test site | Brand  | Model No.    | Serial No.  | Calibration<br>Date | Next<br>Calibration<br>Date |
|------------------------------|--------|--------------|-------------|---------------------|-----------------------------|
| EMI Receiver                 | R&S    | ESCI         | 100059      | 2018/11/07          | 2019/11/06                  |
| Two-Line<br>V-Network        | R&S    | ENV216       | 101159      | 2019/06/12          | 2020/06/10                  |
| Two-Line<br>-V-Network       | R&S    | ESH3-Z5      | 825562/003  | 2019/08/27          | 2020/08/25                  |
| CON-1<br>Shielded Room       | N/A    | N/A          | N/A         | NCR                 | NCR                         |
| CON-1 Cable                  | SUHNER | SUCOFLEX-104 | 26438414    | 2019/05/02          | 2020/04/30                  |
| Test software                | Audix  | e3           | 4.20040112L | NCR                 | NCR                         |

Note: No Calibration Required (NCR).

## Appendix B: Measurement Uncertainty

This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of  $k=2$ .

| Item                                                                                                           | Uncertainty |
|----------------------------------------------------------------------------------------------------------------|-------------|
| Vertically polarized radiated disturbances from 30MHz~1GHz in a semi-anechoic chamber at a distance of 3m      | 4.90 dB     |
| Horizontally polarized radiated disturbances from 30MHz~1GHz in a semi-anechoic chamber at a distance of 3m    | 4.89 dB     |
| Vertically polarized Radiated disturbances from 1GHz~18GHz in a semi-anechoic chamber at a distance of 3m      | 4.29 dB     |
| Horizontally polarized Radiated disturbances from 1GHz~18GHz in a semi-anechoic chamber at a distance of 3m    | 4.29 dB     |
| Vertically polarized Radiated disturbances from 18GHz~26.5GHz in a semi-anechoic chamber at a distance of 1m   | 2.45 dB     |
| Horizontally polarized Radiated disturbances from 18GHz~26.5GHz in a semi-anechoic chamber at a distance of 1m | 2.45 dB     |
| Radiated disturbances from 9kHz~30MHz in a semi-anechoic chamber at a distance of 3m                           | 3.32 dB     |
| Emission on the Band Edge Test                                                                                 | 4.29 dB     |
| Minimum 6 dB Bandwidth                                                                                         | 7.69 %      |
| Maximum Peak Conducted Output Power                                                                            | 0.37 dB     |
| Power Spectral Density                                                                                         | 1.15 dB     |
| Emissions In Non-Restricted Frequency Bands                                                                    | 1.15 dB     |
| AC Power Line Conducted Emission                                                                               | 2.52 dB     |