

## ANNEX A: Test Result

### 1. Unwanted Emission

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in lie-down position (X axis) and the loop antenna is vertical, the others are vertical and horizontal. and the worst case was recorded.

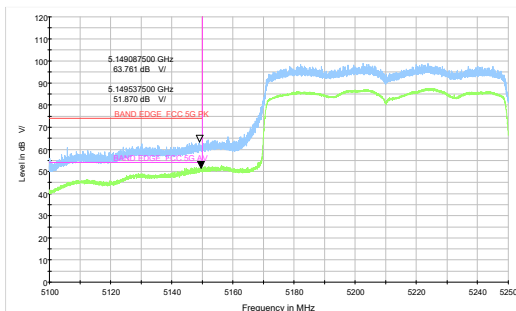
#### 1.1. Wi-Fi 5GHz

The following graphs display the maximum values of horizontal and vertical by software. Blue trace uses the peak detection, Green trace uses the average detection.

A symbol ( $\text{dB } \mu\text{V/m}$ ) in the test plot below means (dB $\mu\text{V/m}$ )

**The signal beyond the limit is carrier.**

802.11ac VHT80 –Channel 42: Peak + Average



## Result of RE

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier.

### Remark:

1. **Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)**
2. **Margin = Limit – Quasi-Peak/ MAX Peak/ Average**
3. **A symbol ( $\text{dB } \mu\text{V/m}$ ) in the test plot below means ( $\text{dB}\mu\text{V/m}$ )**
4. **The following graphs display the maximum values of horizontal and vertical by software.**
5. **For below 1GHz**

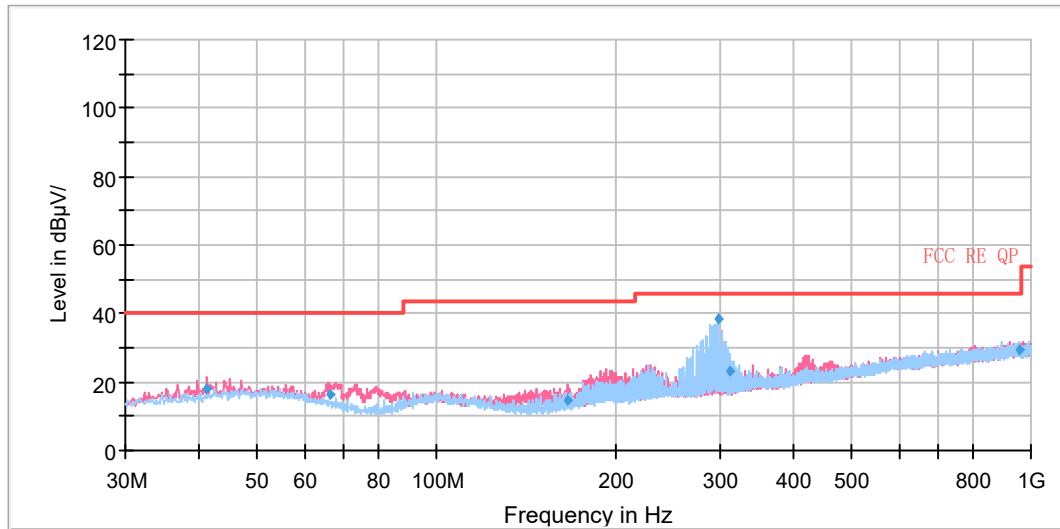
 QP Level @Spectrum Overview H 
  QP Level @Spectrum Overview V 
  QP Level @Final Results 
  QP Limit

### For above 1GHz

 PK Level @Spectrum Overview H 
  PK Level @Spectrum Overview V 
  PK Level @Final Results 
  PK Limit  
 AVG Level @Spectrum Overview H 
  AVG Level @Spectrum Overview V 
  AVG Level @Final Results 
  AVG Limit

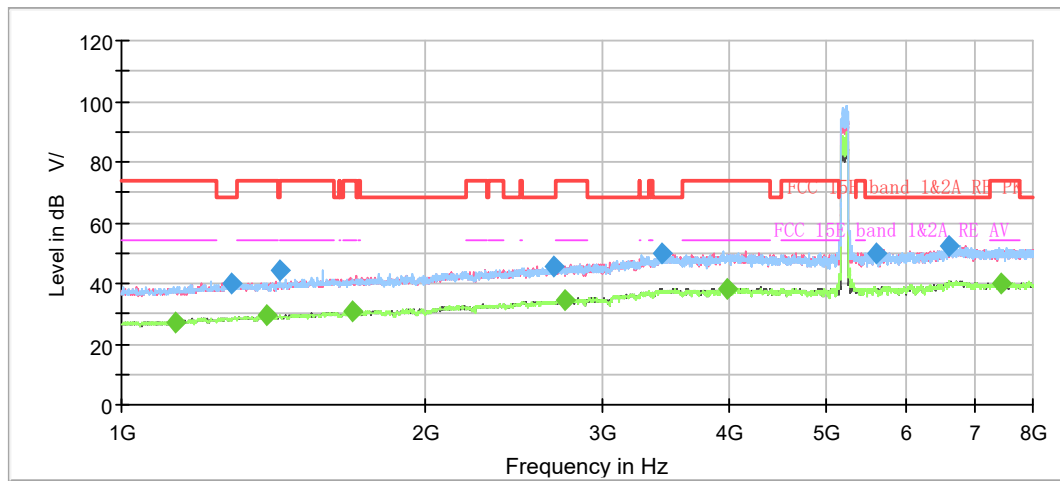
### Continuous TX mode:

802.11ac (VHT80) CH42



Radiates Emission from 30MHz to 1GHz

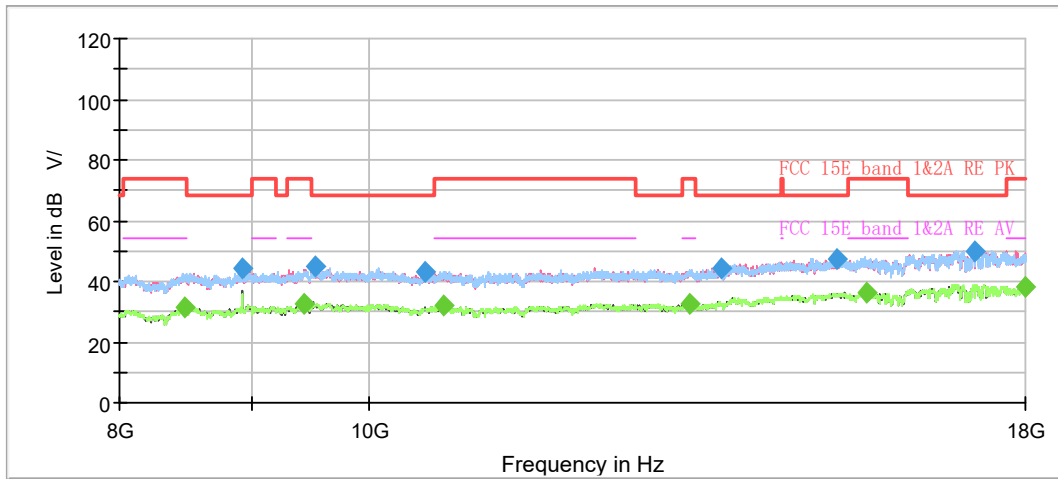
| Frequency (MHz) | Quasi-Peak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (cm) | Polarization | Azimuth (deg) | Correct Factor (dB) |
|-----------------|---------------------|----------------|-------------|-------------|--------------|---------------|---------------------|
| 41.20           | 18.13               | 40.00          | 21.87       | 102.0       | V            | 156.00        | 19                  |
| 66.21           | 16.43               | 40.00          | 23.57       | 102.0       | V            | 130.00        | 17                  |
| 166.28          | 14.67               | 43.50          | 28.83       | 102.0       | V            | 308.00        | 16                  |
| 298.69          | 38.60               | 46.00          | 7.40        | 102.0       | H            | 78.00         | 21                  |
| 311.91          | 22.93               | 46.00          | 23.07       | 101.0       | H            | 63.00         | 21                  |
| 957.48          | 29.23               | 46.00          | 16.77       | 102.0       | H            | 298.00        | 32                  |



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 8GHz

| Frequency (MHz) | MaxPeak (dBμV/m) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-----------------|-------------|-----|---------------|--------------|
| 1133.000000     | ---              | 27.37            | 54.00          | 26.63       | 500.0           | 200.0       | V   | 6.0           | -9.8         |
| 1287.875000     | 39.92            | ---              | 68.20          | 28.28       | 500.0           | 200.0       | H   | 67.0          | -8.3         |
| 1391.125000     | ---              | 29.34            | 54.00          | 24.66       | 500.0           | 200.0       | V   | 25.0          | -7.6         |
| 1434.000000     | 44.53            | ---              | 68.20          | 23.67       | 500.0           | 100.0       | H   | 319.0         | -7.4         |
| 1697.375000     | ---              | 30.73            | 54.00          | 23.27       | 500.0           | 100.0       | H   | 231.0         | -6.0         |
| 2680.875000     | 45.55            | ---              | 68.20          | 22.65       | 500.0           | 200.0       | V   | 0.0           | -1.8         |
| 2745.625000     | ---              | 34.66            | 54.00          | 19.34       | 500.0           | 100.0       | H   | 346.0         | -1.5         |
| 3427.250000     | 49.86            | ---              | 68.20          | 18.34       | 500.0           | 200.0       | H   | 198.0         | 1.5          |
| 3975.000000     | ---              | 38.23            | 54.00          | 15.77       | 500.0           | 200.0       | H   | 93.0          | 3.1          |
| 5596.375000     | 49.85            | ---              | 68.20          | 18.35       | 500.0           | 100.0       | H   | 257.0         | 5.7          |
| 6609.625000     | 52.57            | ---              | 68.20          | 15.63       | 500.0           | 200.0       | H   | 163.0         | 6.6          |
| 7433.875000     | ---              | 40.28            | 54.00          | 13.72       | 500.0           | 100.0       | V   | 113.0         | 7.1          |



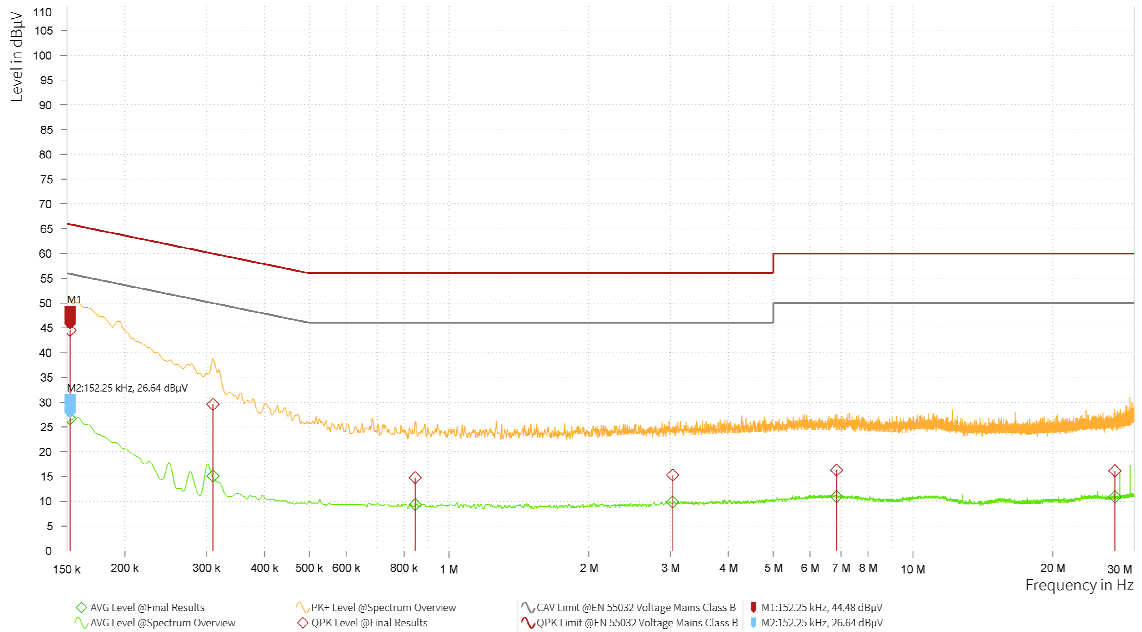
Radiates Emission from 8GHz to 18GHz

| Frequency (MHz) | MaxPeak (dBμV/m) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|------------------|----------------|-------------|-----------------|-------------|-----|---------------|--------------|
| 8485.000000     | ---              | 31.57            | 54.00          | 22.43       | 500.0           | 200.0       | H   | 0.0           | -1.8         |
| 8931.250000     | 44.55            | ---              | 68.20          | 23.65       | 500.0           | 100.0       | V   | 300.0         | -1.3         |
| 9442.500000     | ---              | 32.61            | 54.00          | 21.39       | 500.0           | 200.0       | V   | 358.0         | -0.4         |
| 9533.750000     | 44.81            | ---              | 68.20          | 23.39       | 500.0           | 200.0       | V   | 0.0           | -0.2         |
| 10516.250000    | 43.02            | ---              | 68.20          | 25.18       | 500.0           | 200.0       | H   | 326.0         | -1.0         |
| 10703.750000    | ---              | 32.04            | 54.00          | 21.96       | 500.0           | 200.0       | V   | 202.0         | -0.8         |
| 13328.750000    | ---              | 32.84            | 54.00          | 21.16       | 500.0           | 200.0       | V   | 340.0         | 2.3          |
| 13722.500000    | 44.51            | ---              | 68.20          | 23.69       | 500.0           | 100.0       | H   | 199.0         | 3.3          |
| 15218.750000    | 47.65            | ---              | 68.20          | 20.55       | 500.0           | 200.0       | V   | 69.0          | 5.4          |
| 15608.750000    | ---              | 36.06            | 54.00          | 17.94       | 500.0           | 200.0       | H   | 128.0         | 6.5          |
| 17202.500000    | 49.85            | ---              | 68.20          | 18.35       | 500.0           | 200.0       | V   | 120.0         | 9.1          |
| 18000.000000    | ---              | 38.29            | 54.00          | 15.71       | 500.0           | 100.0       | H   | 63.0          | 11.2         |

## 2. Conducted Emission

### 2.1. Wi-Fi 5GHz

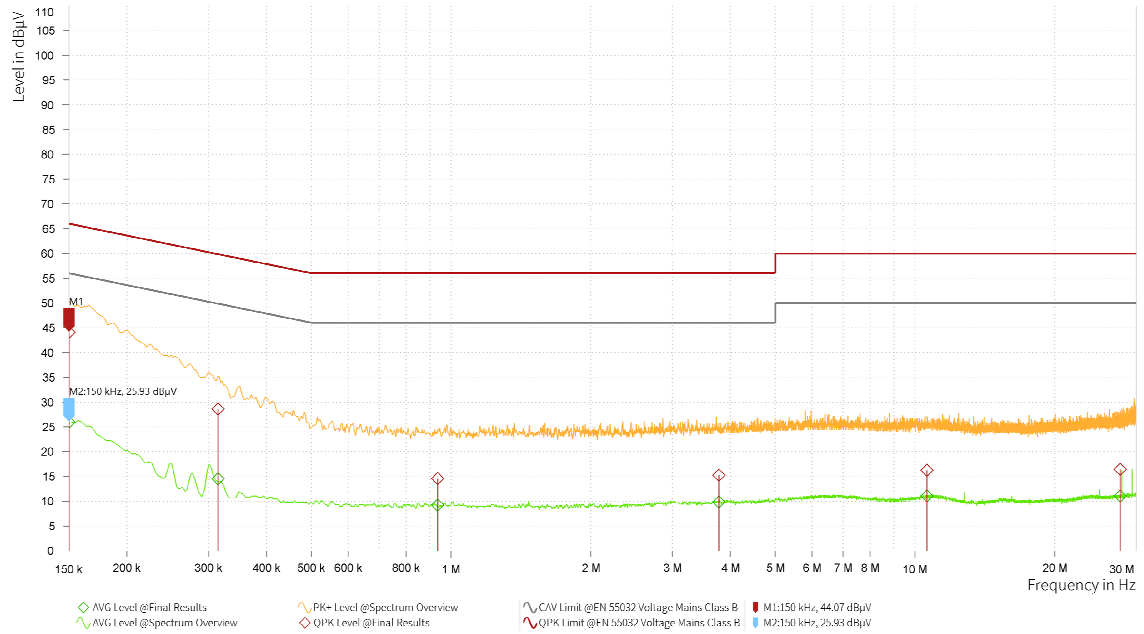
During the test, the Conducted Emission was performed in all modes with all channels. The test data of the worst-case condition was recorded in this report.



| Frequency [MHz] | QPK Level [dBμV] | QPK Limit [dBμV] | QPK Margin [dB] | AVG Level [dBμV] | AVG: CAV Limit [dBμV] | AVG Margin [dB] | Correction [dB] | Line | Meas. BW [kHz] | Meas. Time [s] |
|-----------------|------------------|------------------|-----------------|------------------|-----------------------|-----------------|-----------------|------|----------------|----------------|
| 0.152           | 44.48            | 65.88            | 21.39           | 26.64            | 55.88                 | 29.23           | 20.90           | L1   | 9.000          | 1.000          |
| 0.310           | 29.53            | 59.98            | 30.44           | 15.07            | 49.98                 | 34.91           | 20.93           | L1   | 9.000          | 1.000          |
| 0.845           | 14.73            | 56.00            | 41.27           | 9.34             | 46.00                 | 36.66           | 20.29           | L1   | 9.000          | 1.000          |
| 3.032           | 15.27            | 56.00            | 40.73           | 9.82             | 46.00                 | 36.18           | 19.48           | L1   | 9.000          | 1.000          |
| 6.848           | 16.26            | 60.00            | 43.74           | 10.94            | 50.00                 | 39.06           | 19.41           | L1   | 9.000          | 1.000          |
| 27.265          | 16.12            | 60.00            | 43.88           | 10.91            | 50.00                 | 39.09           | 19.81           | L1   | 9.000          | 1.000          |

**Remark: Correct factor=cable loss + LISN factor**

L line Conducted Emission from 150 kHz to 30 MHz



| Frequency [MHz] | QPK Level [dBµV] | QPK Limit [dBµV] | QPK Margin [dB] | AVG Level [dBµV] | AVG: CAV Limit [dBµV] | AVG Margin [dB] | Correction [dB] | Line | Meas. BW [kHz] | Meas. Time [s] |
|-----------------|------------------|------------------|-----------------|------------------|-----------------------|-----------------|-----------------|------|----------------|----------------|
| 0.150           | 44.07            | 66.00            | 21.93           | 25.93            | 56.00                 | 30.07           | 20.91           | N    | 9.000          | 1.000          |
| 0.314           | 28.61            | 59.86            | 31.25           | 14.52            | 49.86                 | 35.34           | 20.94           | N    | 9.000          | 1.000          |
| 0.935           | 14.54            | 56.00            | 41.46           | 9.22             | 46.00                 | 36.78           | 20.22           | N    | 9.000          | 1.000          |
| 3.777           | 15.22            | 56.00            | 40.78           | 9.81             | 46.00                 | 36.19           | 19.45           | N    | 9.000          | 1.000          |
| 10.613          | 16.24            | 60.00            | 43.76           | 11.06            | 50.00                 | 38.94           | 19.43           | N    | 9.000          | 1.000          |
| 27.706          | 16.43            | 60.00            | 43.57           | 11.05            | 50.00                 | 38.95           | 19.88           | N    | 9.000          | 1.000          |

**Remark: Correct factor=cable loss + LISN factor**

N line Conducted Emission from 150 kHz to 30 MHz