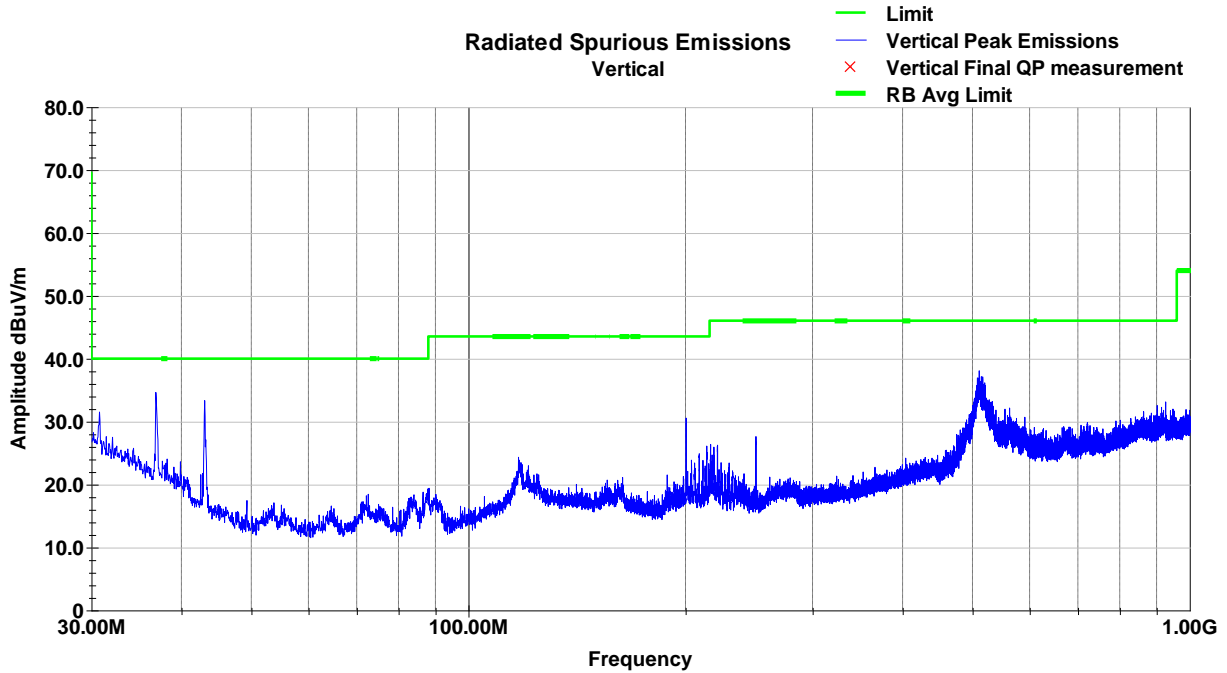
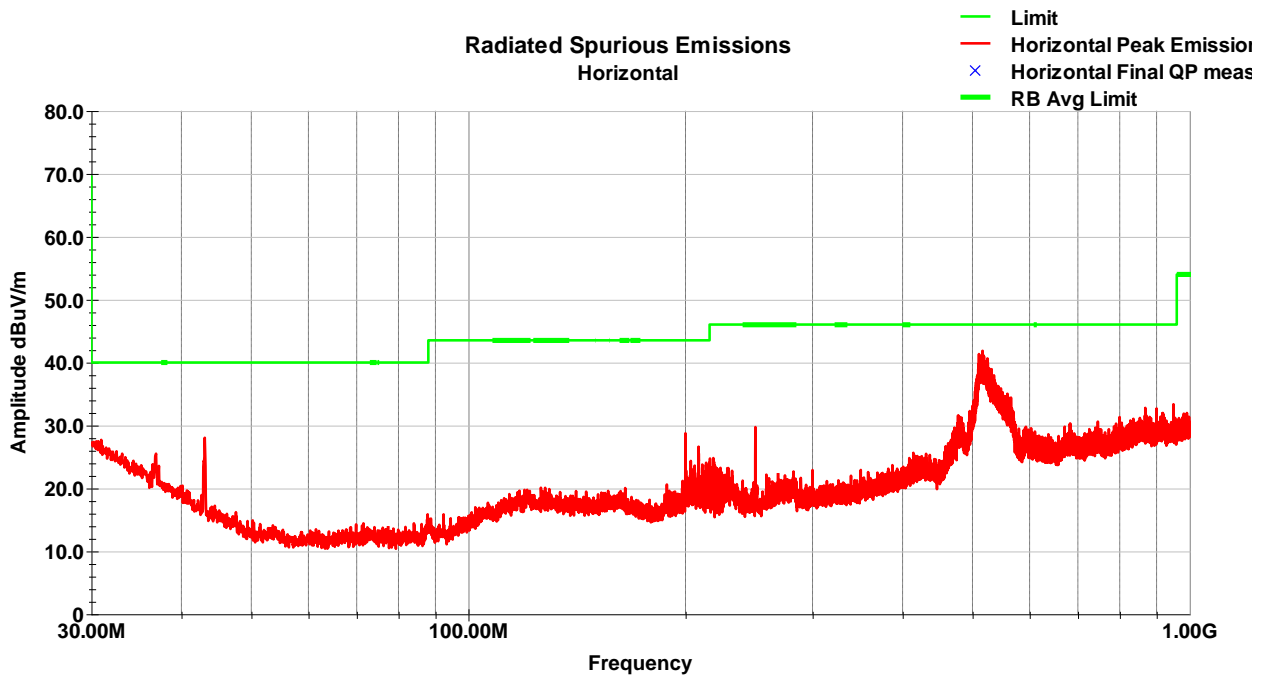


6.5.4 BLE

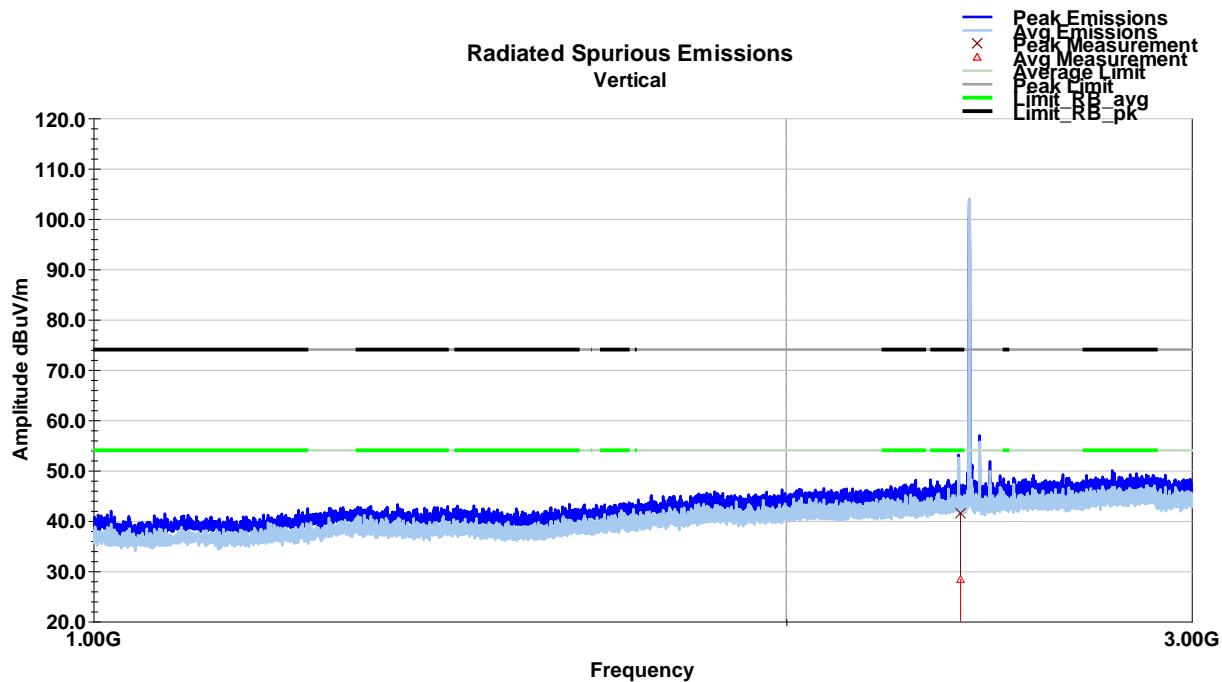
Vertical (30-1000MHz) (BLE – LCH)



Horizontal (30-1000MHz) (BLE – LCH)



Vertical (1-3GHz) (BLE – LCH)

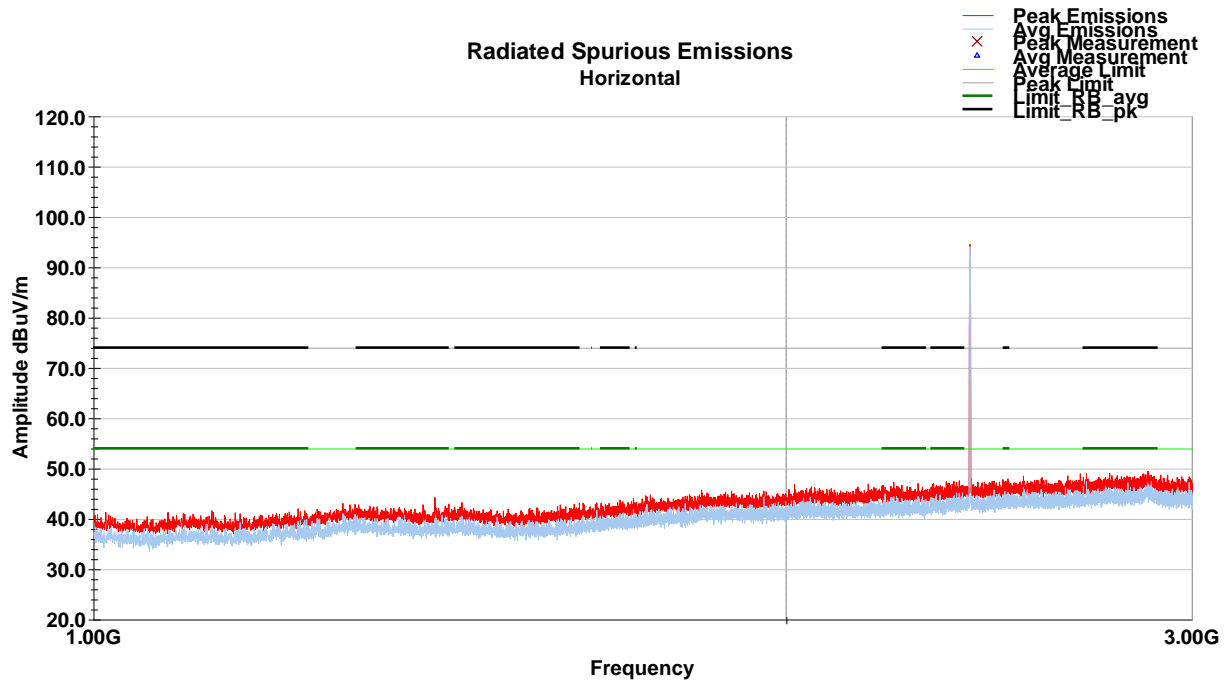


Vertical (1-3GHz) Data

| Frequency MHz | Raw Avg dBuV | Polarity (V/H) | Azimuth (degrees) | Height (cm) | AF (dB/m) | Loss (dB) | Amp (dB) | Final Avg dBuV/m | Limit (dBuV/m) | Margin (dB) |
|---------------------------------------|-----------------|-------------------|----------------------|----------------|--------------|--------------|-------------|---------------------|-------------------|----------------|
| 2380.96 | 36.0 | V | 351.0 | 205.0 | 31.8 | 2.8 | 42.1 | 28.4 | 54.0 | -25.6 |
| Final Avg = Raw Avg + AF + Loss - Amp | | | | | | | | | | |
| Margin = Final Avg - Limit | | | | | | | | | | |

| Frequency MHz | Raw Pk dBuV | Polarity (V/H) | Azimuth (degrees) | Height (cm) | AF (dB/m) | Loss (dB) | Amp (dB) | Final Pk dBuV/m | Limit dBuV/m | Margin dB |
|-------------------------------------|----------------|-------------------|----------------------|----------------|--------------|--------------|-------------|--------------------|-----------------|--------------|
| 2380.96 | 49.1 | V | 351.0 | 205.0 | 31.8 | 2.8 | 42.1 | 41.6 | 74.0 | -32.4 |
| Final Pk = Raw Pk + AF + Loss - Amp | | | | | | | | | | |
| Margin = Final Pk - Limit | | | | | | | | | | |

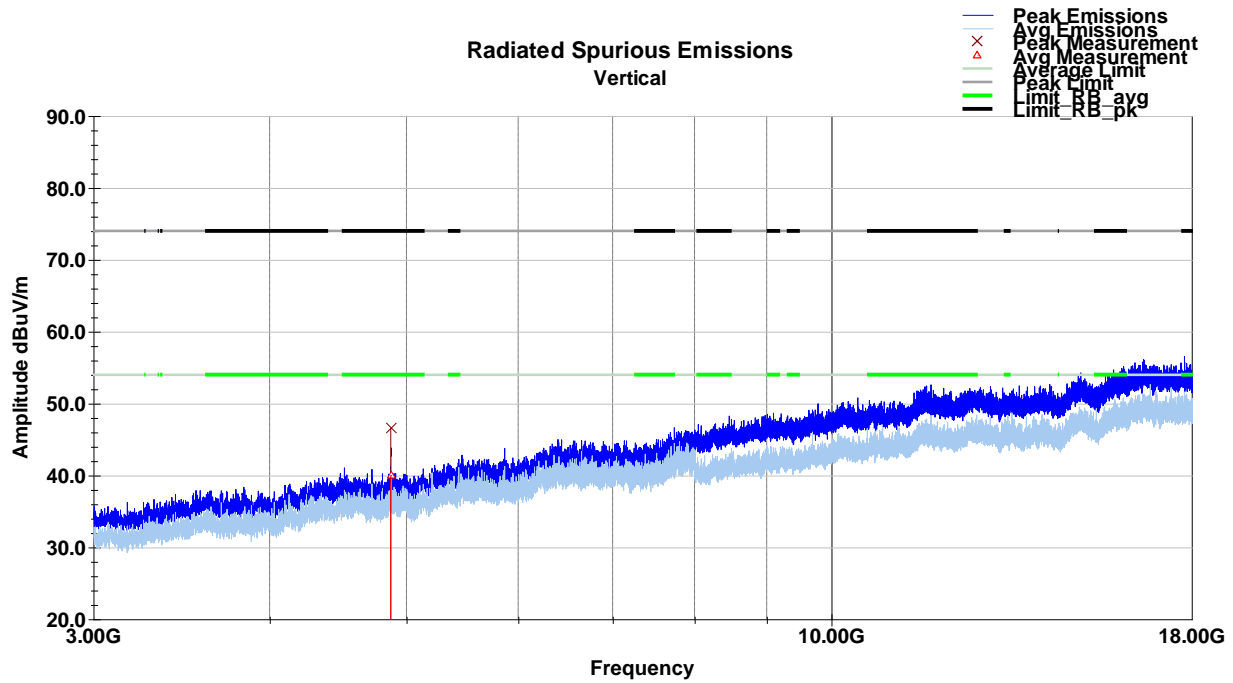
Horizontal (1-3GHz) (BLE – LCH)



Horizontal (1-3GHz) Data

No emissions were observed within 20dB of the limit.

Vertical (3-18GHz) (BLE – LCH)

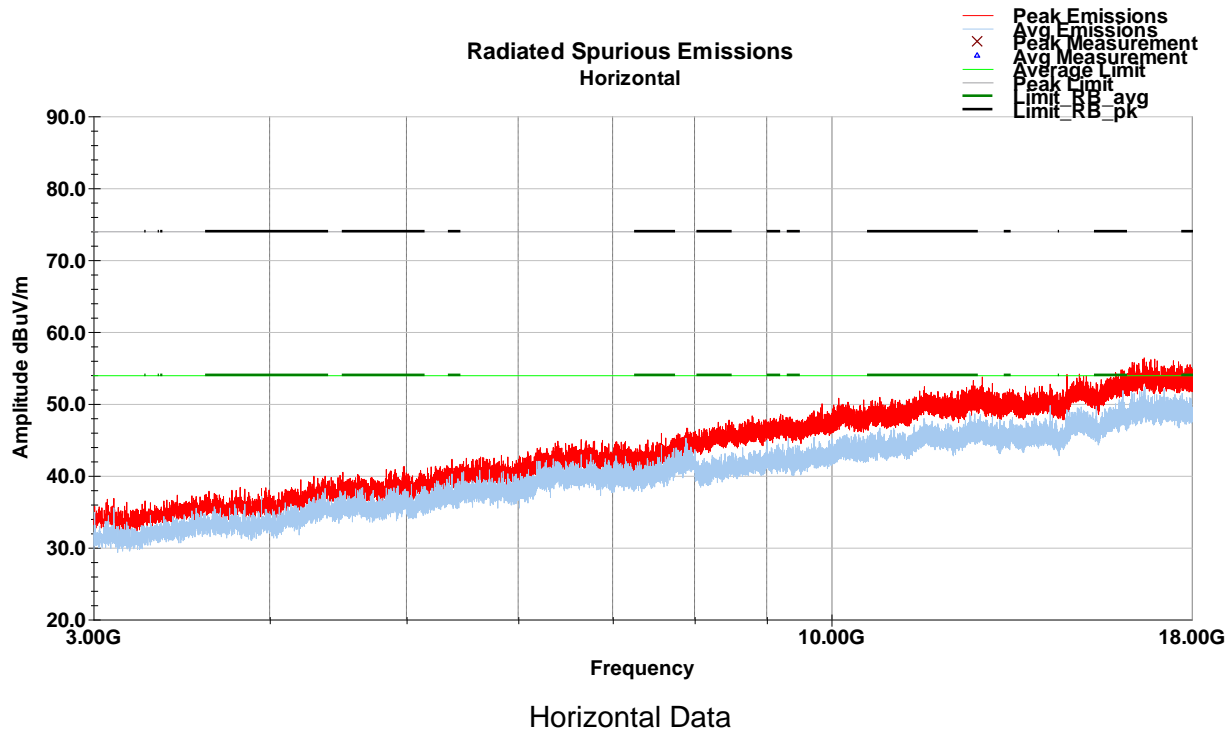


Vertical Data

| Frequency MHz | Raw Avg dBuV | Polarity (V/H) | Azimuth (degrees) | Height (cm) | AF (dB/m) | Loss (dB) | Amp (dB) | Final Avg dBuV/m | Limit (dBuV/m) | Margin (dB) |
|---------------------------------------|-----------------|-------------------|----------------------|----------------|--------------|--------------|-------------|---------------------|-------------------|----------------|
| 4874.28 | 36.9 | V | 139.0 | 175.0 | 34.1 | 2.8 | 33.7 | 40.0 | 54.0 | -13.9 |
| Final Avg = Raw Avg + AF + Loss - Amp | | | | | | | | | | |
| Margin = Final Avg - Limit | | | | | | | | | | |

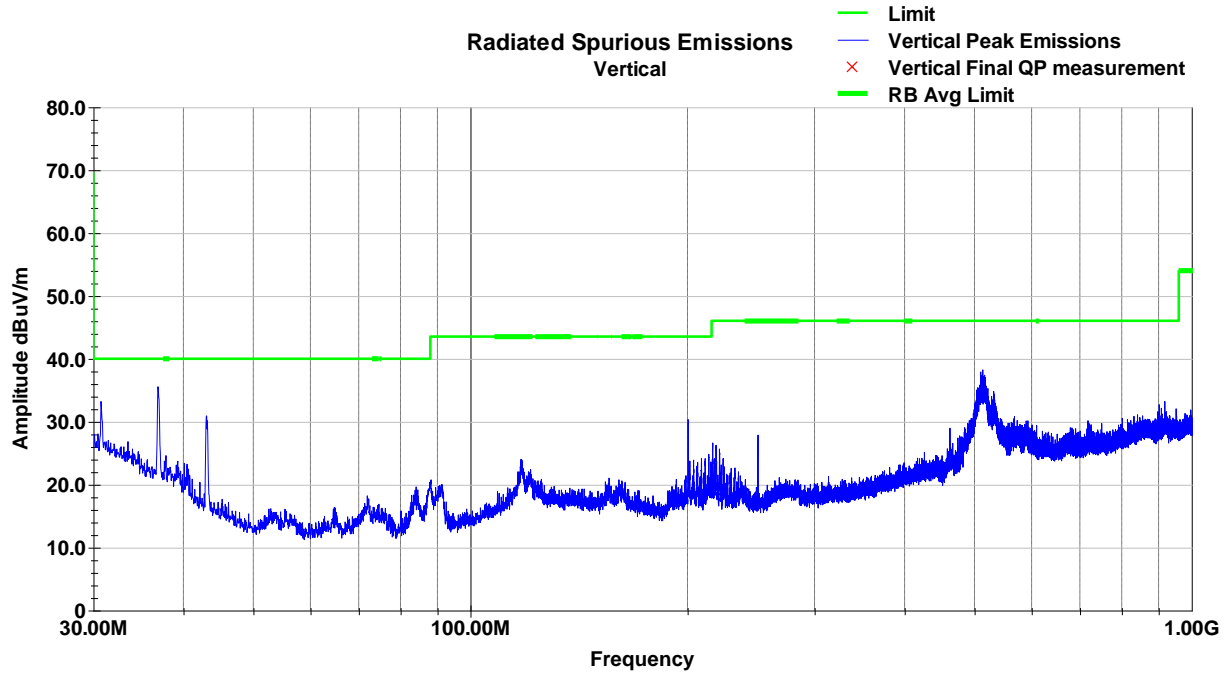
| Frequency MHz | Raw Pk dBuV | Polarity (V/H) | Azimuth (degrees) | Height (cm) | AF (dB/m) | Loss (dB) | Amp (dB) | Final Pk dBuV/m | Limit dBuV/m | Margin dB |
|-------------------------------------|----------------|-------------------|----------------------|----------------|--------------|--------------|-------------|--------------------|-----------------|--------------|
| 4874.28 | 43.4 | V | 139.0 | 175.0 | 34.1 | 2.8 | 33.7 | 46.6 | 74.0 | -27.4 |
| Final Pk = Raw Pk + AF + Loss - Amp | | | | | | | | | | |
| Margin = Final Pk - Limit | | | | | | | | | | |

Horizontal (3-18GHz) (BLE – LCH)

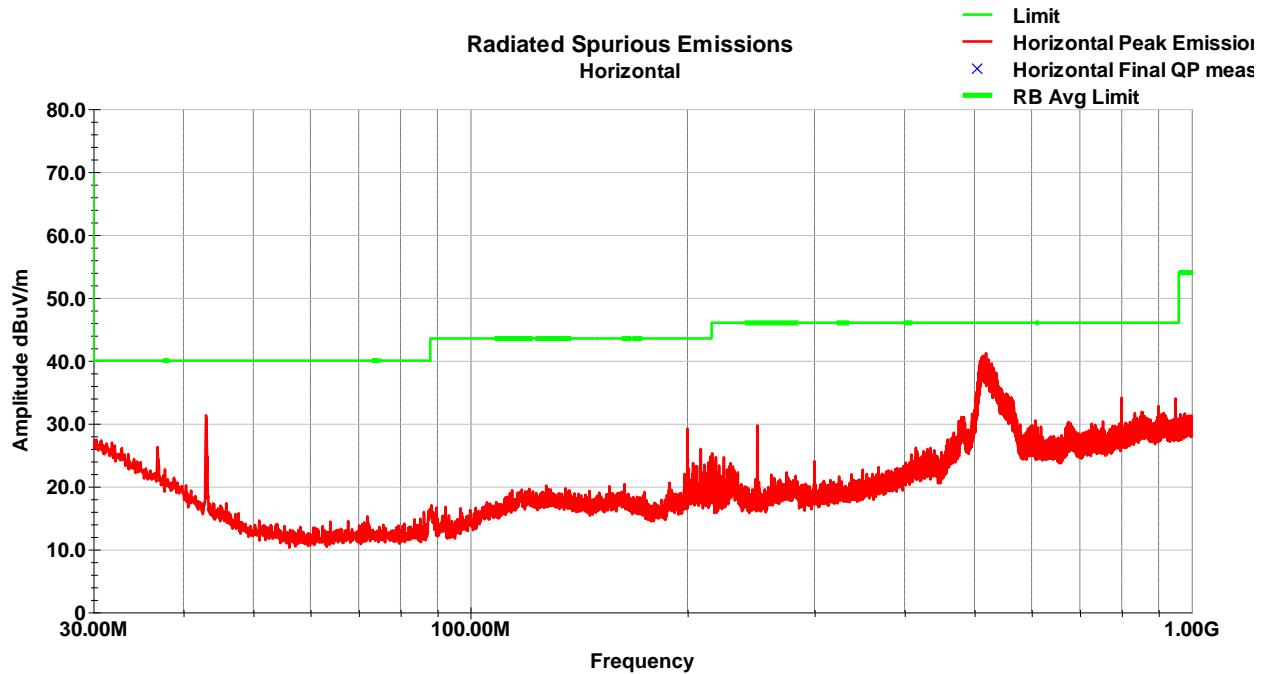


No emissions within 20dB of limit.

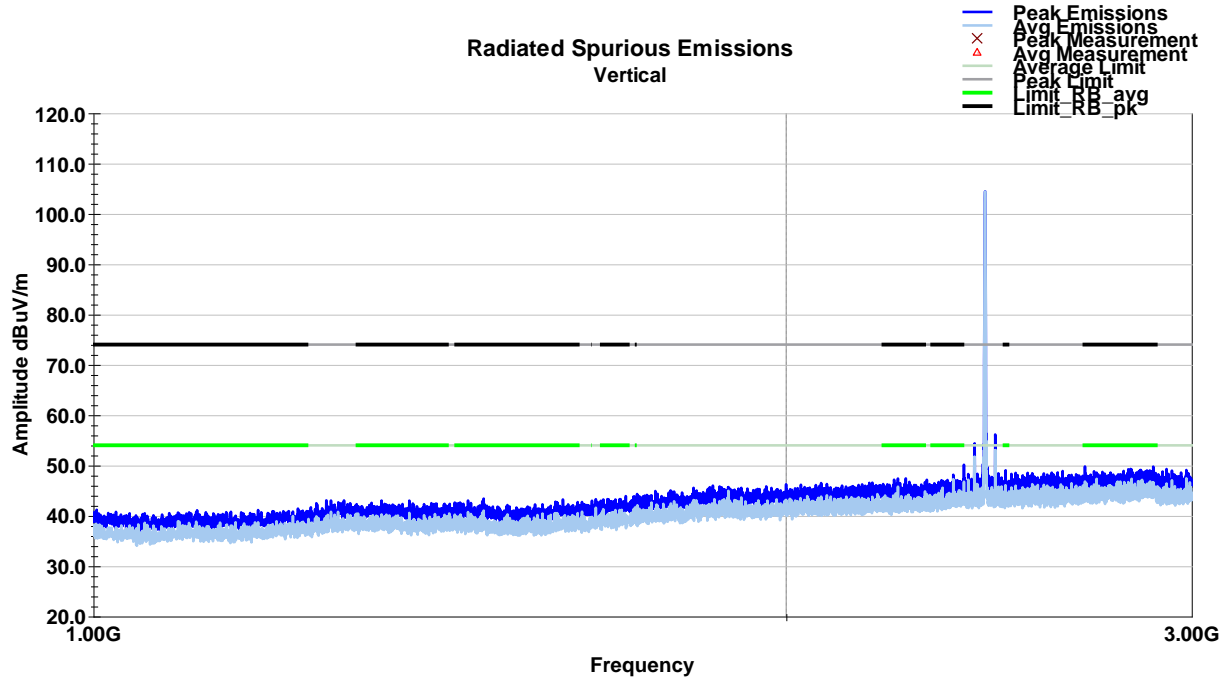
Vertical (30-1000MHz) (BLE – MCH)



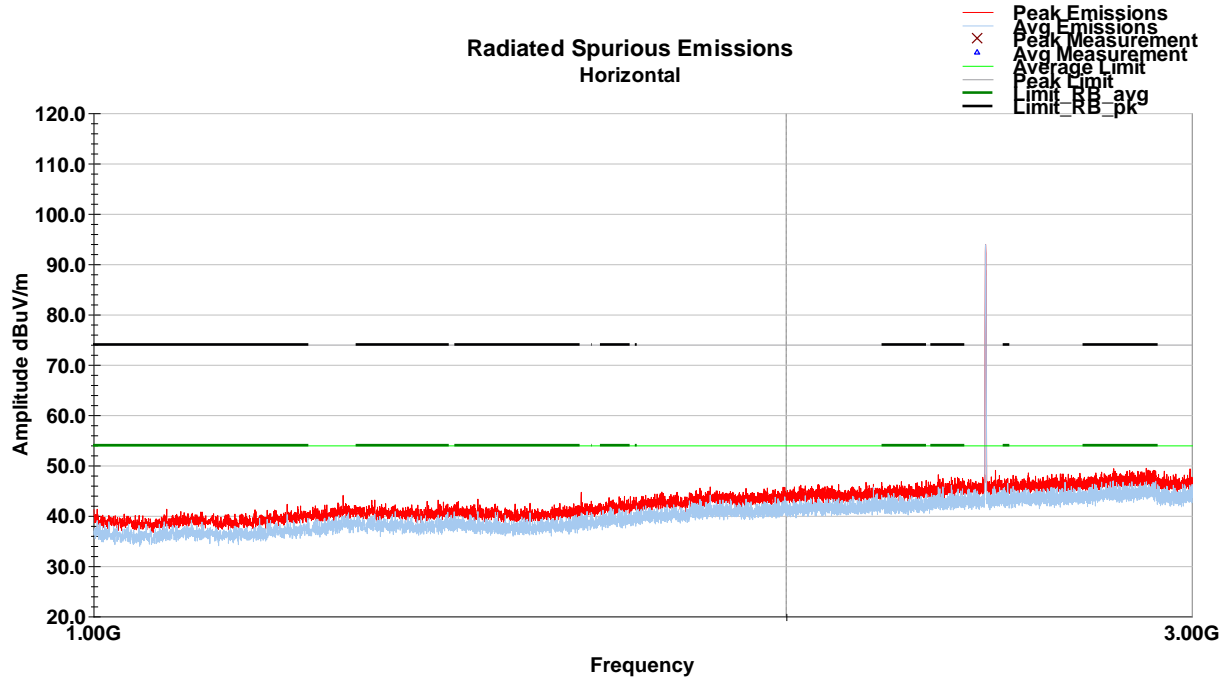
Horizontal (30-1000MHz) (BLE – MCH)



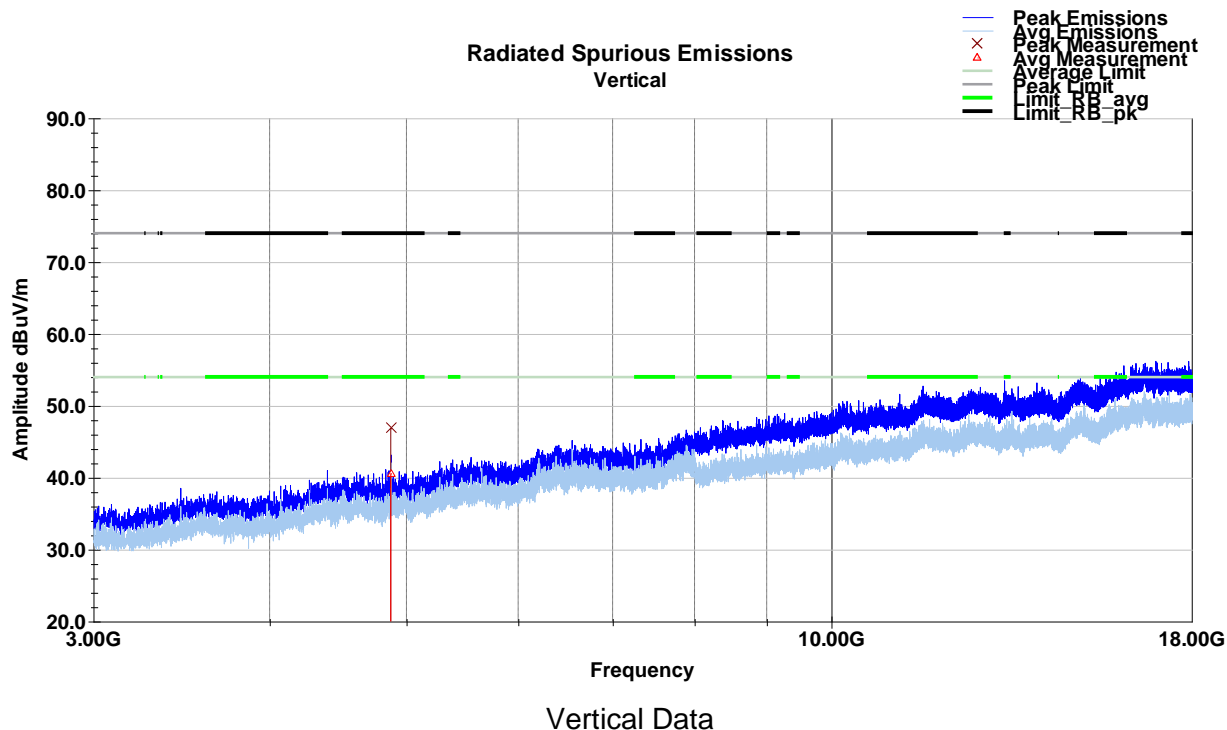
Vertical (1-3GHz) (BLE – MCH)



Horizontal (1-3GHz) (BLE – MCH)



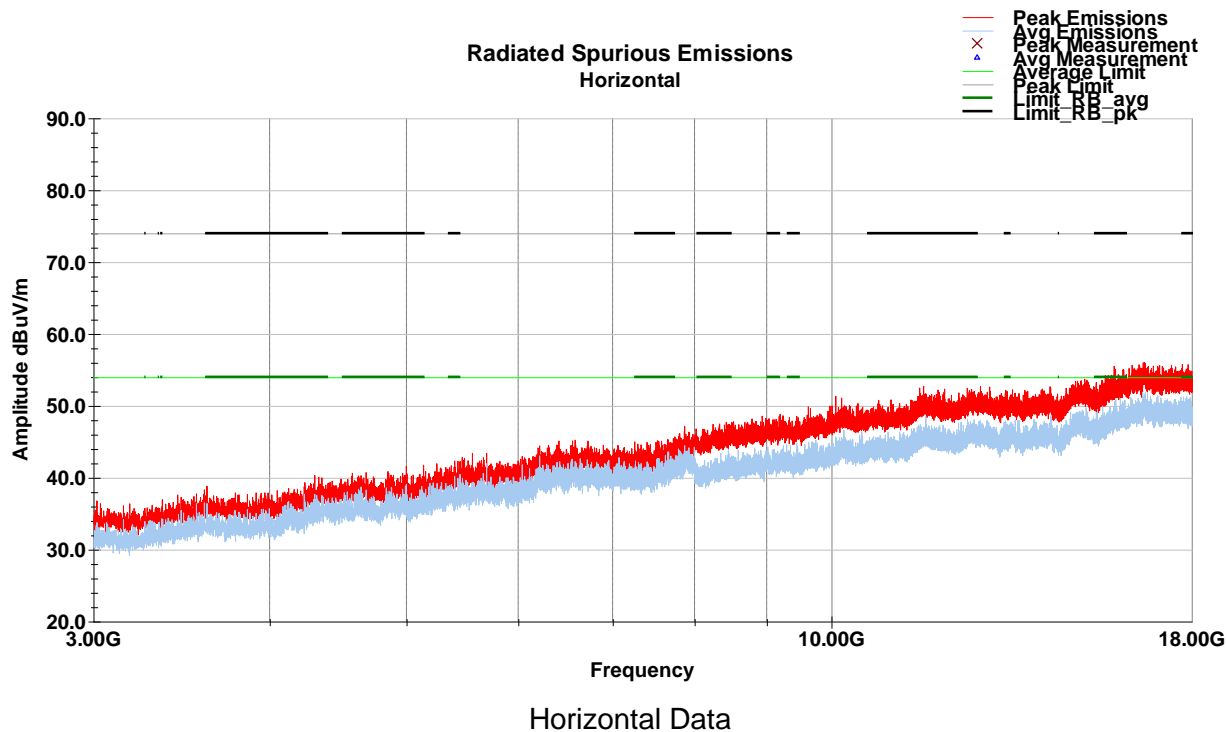
Vertical (3-18GHz) (BLE – MCH)



| Frequency MHz | Raw Avg dBuV | Polarity (V/H) | Azimuth (degrees) | Height (cm) | AF (dB/m) | Loss (dB) | Amp (dB) | Final Avg dBuV/m | Limit (dBuV/m) | Margin (dB) |
|---------------------------------------|-----------------|-------------------|----------------------|----------------|--------------|--------------|-------------|---------------------|-------------------|----------------|
| 4874.04 | 37.4 | V | 141.0 | 170.0 | 34.1 | 2.8 | 33.7 | 40.6 | 54.0 | -13.4 |
| Final Avg = Raw Avg + AF + Loss - Amp | | | | | | | | | | |
| Margin = Final Avg - Limit | | | | | | | | | | |

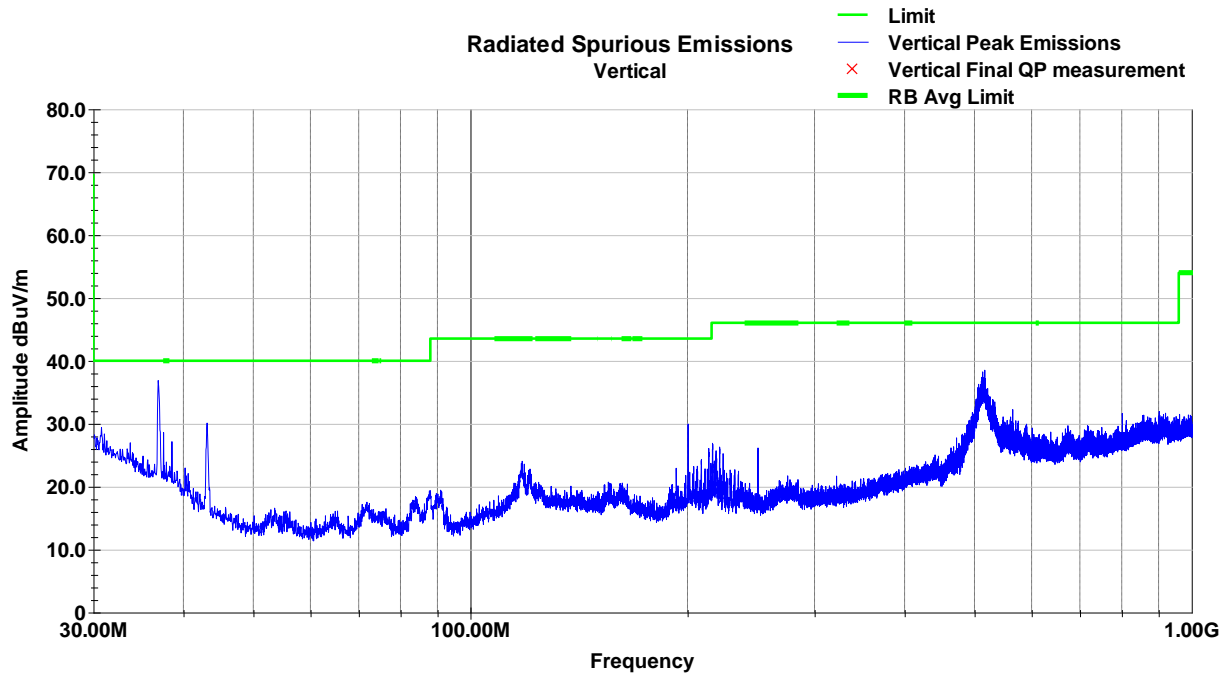
| Frequency MHz | Raw Pk dBuV | Polarity (V/H) | Azimuth (degrees) | Height (cm) | AF (dB/m) | Loss (dB) | Amp (dB) | Final Pk dBuV/m | Limit dBuV/m | Margin dB |
|-------------------------------------|----------------|-------------------|----------------------|----------------|--------------|--------------|-------------|--------------------|-----------------|--------------|
| 4874.04 | 43.7 | V | 141.0 | 170.0 | 34.1 | 2.8 | 33.7 | 46.9 | 74.0 | -27.1 |
| Final Pk = Raw Pk + AF + Loss - Amp | | | | | | | | | | |
| Margin = Final Pk - Limit | | | | | | | | | | |

Horizontal (3-18GHz) (BLE – MCH)

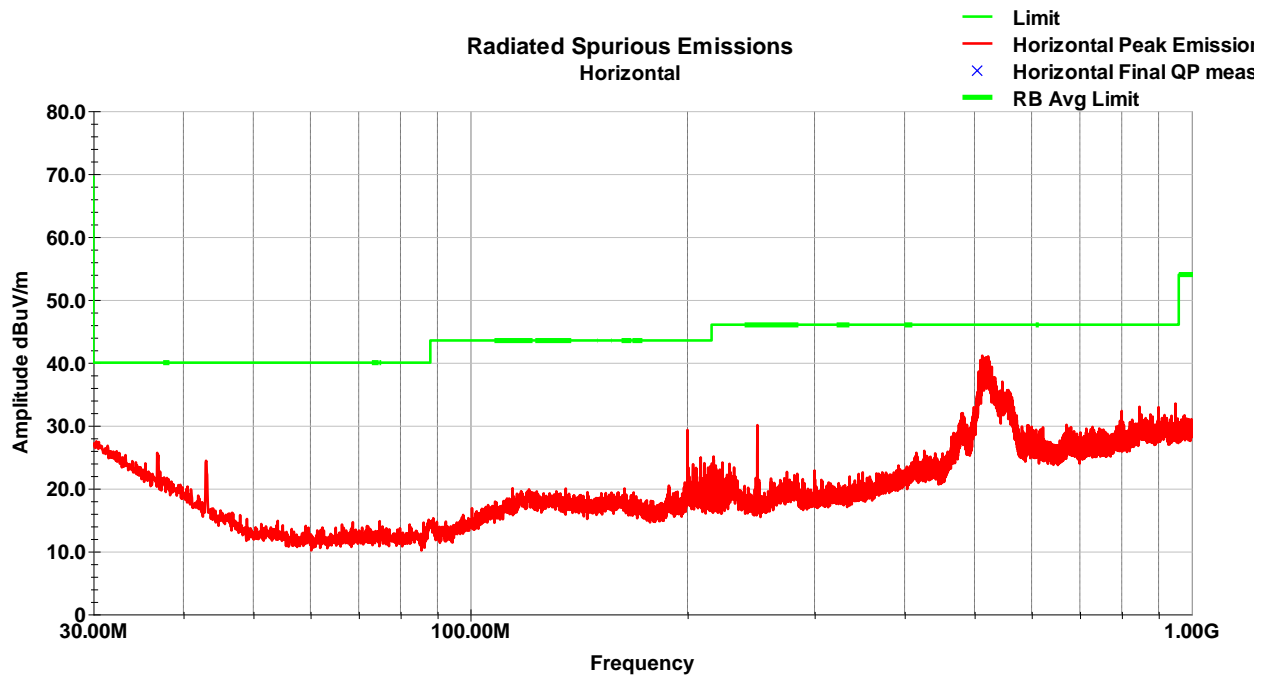


No emissions within 20dB of limit.

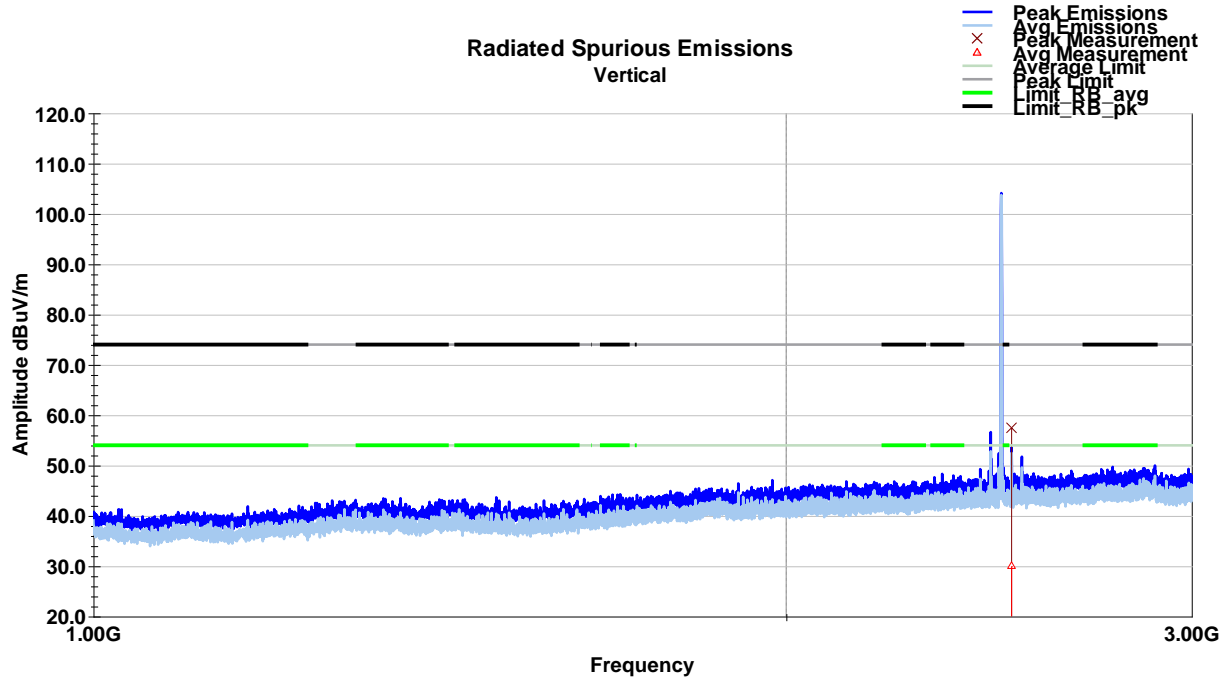
Vertical (30-1000MHz) (BLE – HCH)



Horizontal (30-1000MHz) (BLE – HCH)



Vertical (1-3GHz) (BLE – HCH)

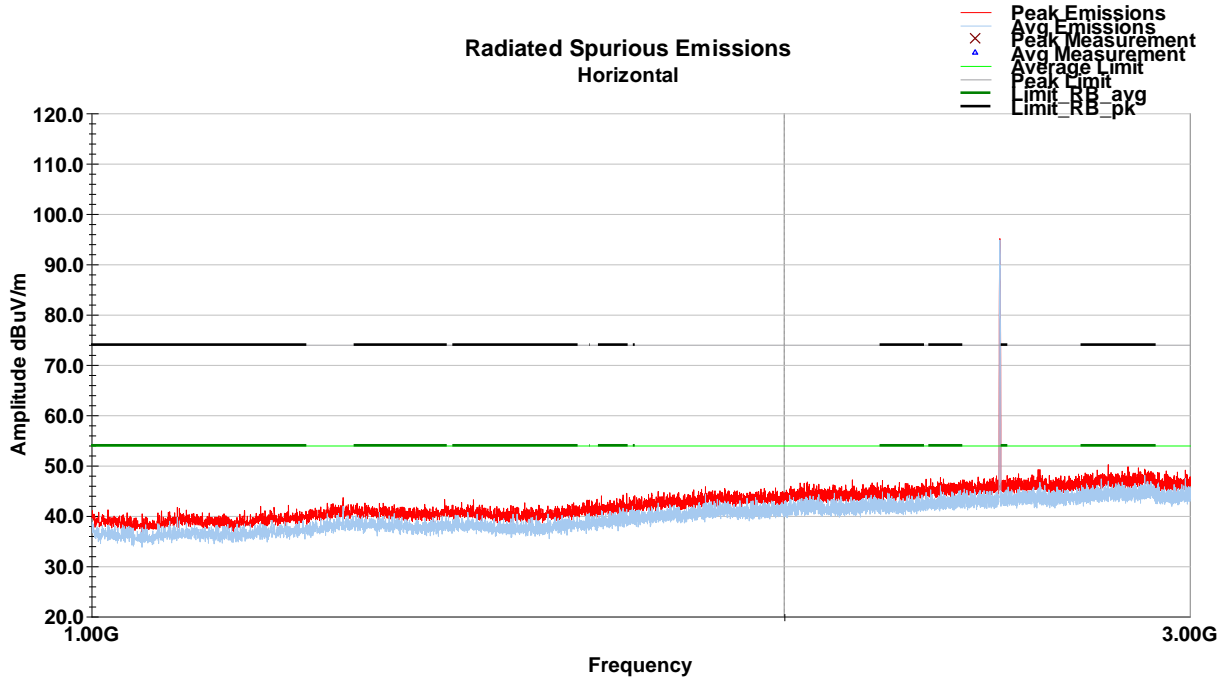


Vertical (1-3GHz) Data

| Frequency MHz | Raw Avg dBuV | Polarity (V/H) | Azimuth (degrees) | Height (cm) | AF (dB/m) | Loss (dB) | Amp (dB) | Final Avg dBuV/m | Limit (dBuV/m) | Margin (dB) |
|---------------------------------------|-----------------|-------------------|----------------------|----------------|--------------|--------------|-------------|---------------------|-------------------|----------------|
| 2505.80 | 37.1 | V | 23.0 | 121.0 | 32.2 | 2.8 | 42.2 | 30.0 | 54.0 | -24.0 |
| Final Avg = Raw Avg + AF + Loss - Amp | | | | | | | | | | |
| Margin = Final Avg - Limit | | | | | | | | | | |

| Frequency MHz | Raw Pk dBuV | Polarity (V/H) | Azimuth (degrees) | Height (cm) | AF (dB/m) | Loss (dB) | Amp (dB) | Final Pk dBuV/m | Limit dBuV/m | Margin dB |
|-------------------------------------|----------------|-------------------|----------------------|----------------|--------------|--------------|-------------|--------------------|-----------------|--------------|
| 2505.80 | 64.6 | V | 23.0 | 121.0 | 32.2 | 2.8 | 42.2 | 57.4 | 74.0 | -16.6 |
| Final Pk = Raw Pk + AF + Loss - Amp | | | | | | | | | | |
| Margin = Final Pk - Limit | | | | | | | | | | |

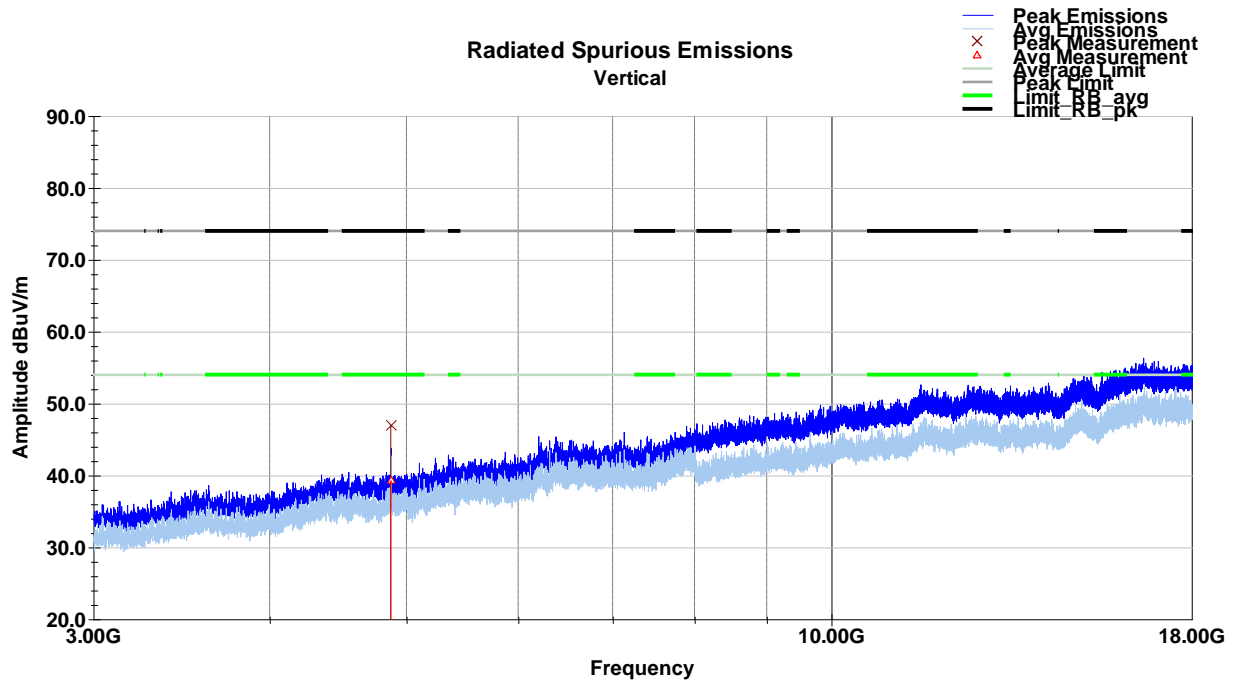
Horizontal (1-3GHz) (BLE – HCH)



Horizontal (1-3GHz) Data

No emissions within 20dB of the limit.

Vertical (3-18GHz) (BLE – HCH)

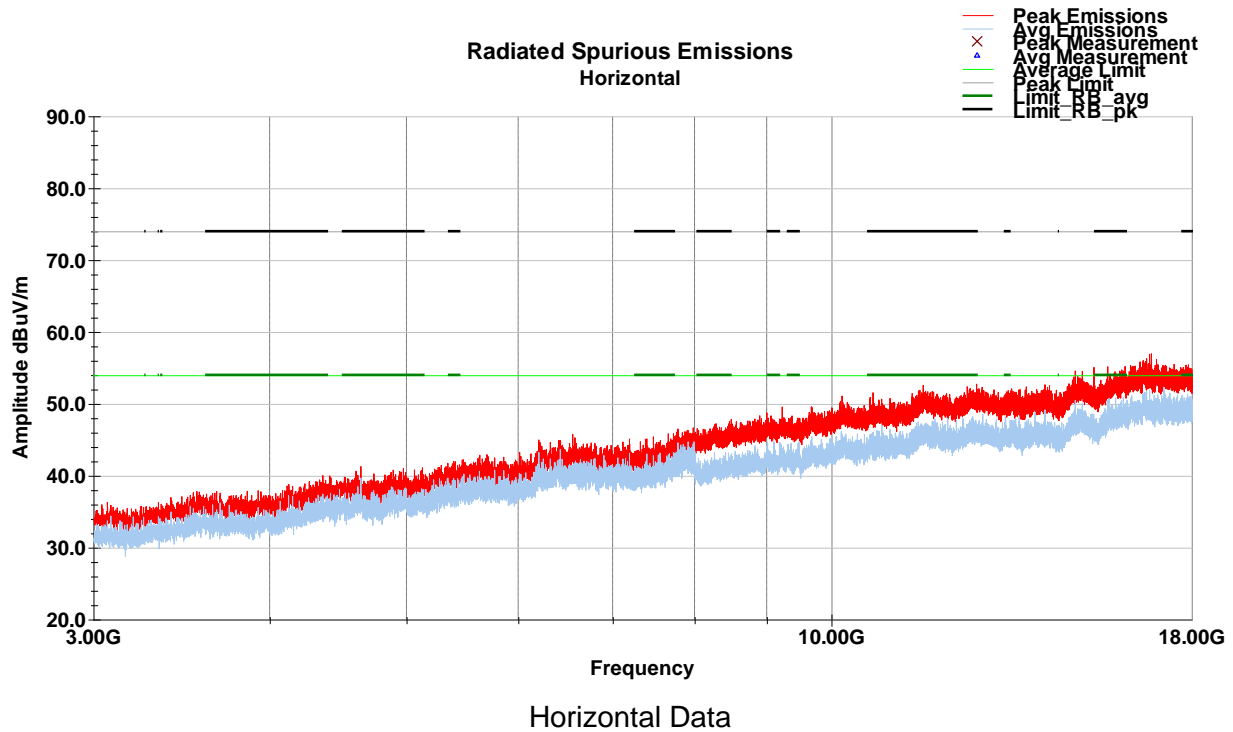


Vertical Data

| Frequency MHz | Raw Avg dBuV | Polarity (V/H) | Azimuth (degrees) | Height (cm) | AF (dB/m) | Loss (dB) | Amp (dB) | Final Avg dBuV/m | Limit (dBuV/m) | Margin (dB) |
|---------------------------------------|-----------------|-------------------|----------------------|----------------|--------------|--------------|-------------|---------------------|-------------------|----------------|
| 4873.80 | 36.1 | V | 157.0 | 180.0 | 34.1 | 2.8 | 33.7 | 39.3 | 54.0 | -14.7 |
| Final Avg = Raw Avg + AF + Loss - Amp | | | | | | | | | | |
| Margin = Final Avg - Limit | | | | | | | | | | |

| Frequency MHz | Raw Pk dBuV | Polarity (V/H) | Azimuth (degrees) | Height (cm) | AF (dB/m) | Loss (dB) | Amp (dB) | Final Pk dBuV/m | Limit dBuV/m | Margin dB |
|-------------------------------------|----------------|-------------------|----------------------|----------------|--------------|--------------|-------------|--------------------|-----------------|--------------|
| 4873.80 | 43.7 | V | 157.0 | 180.0 | 34.1 | 2.8 | 33.7 | 46.9 | 74.0 | -27.1 |
| Final Pk = Raw Pk + AF + Loss - Amp | | | | | | | | | | |
| Margin = Final Pk - Limit | | | | | | | | | | |

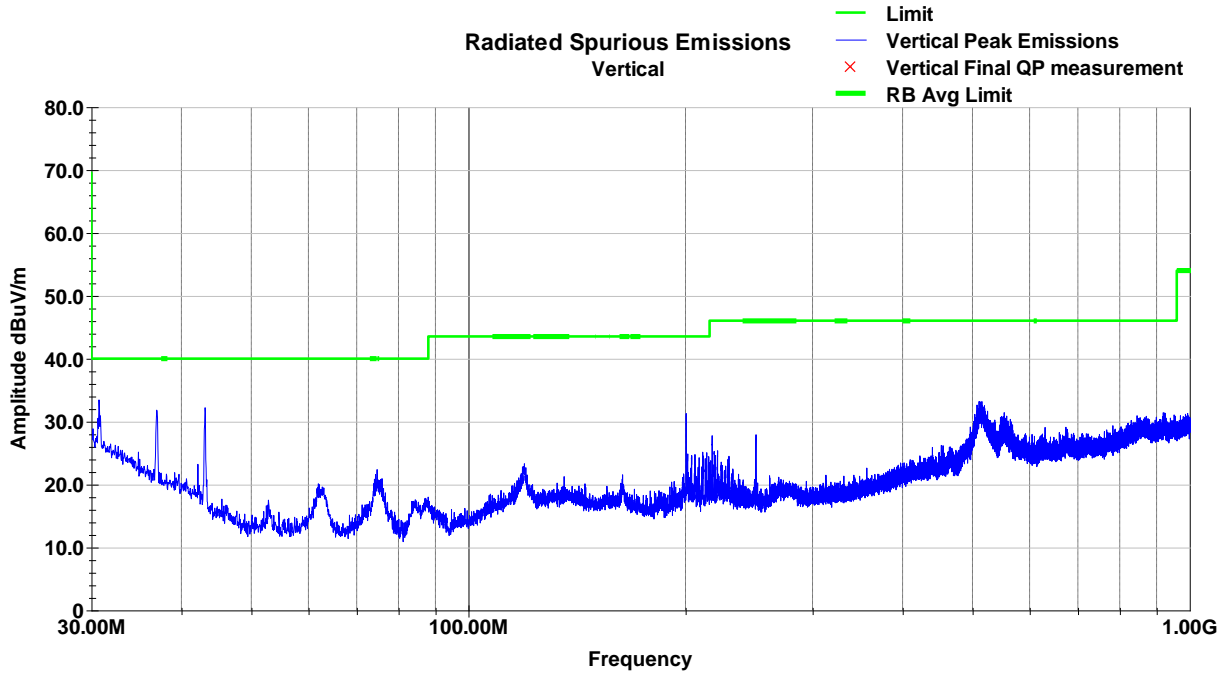
Horizontal (3-18GHz) (BLE – HCH)



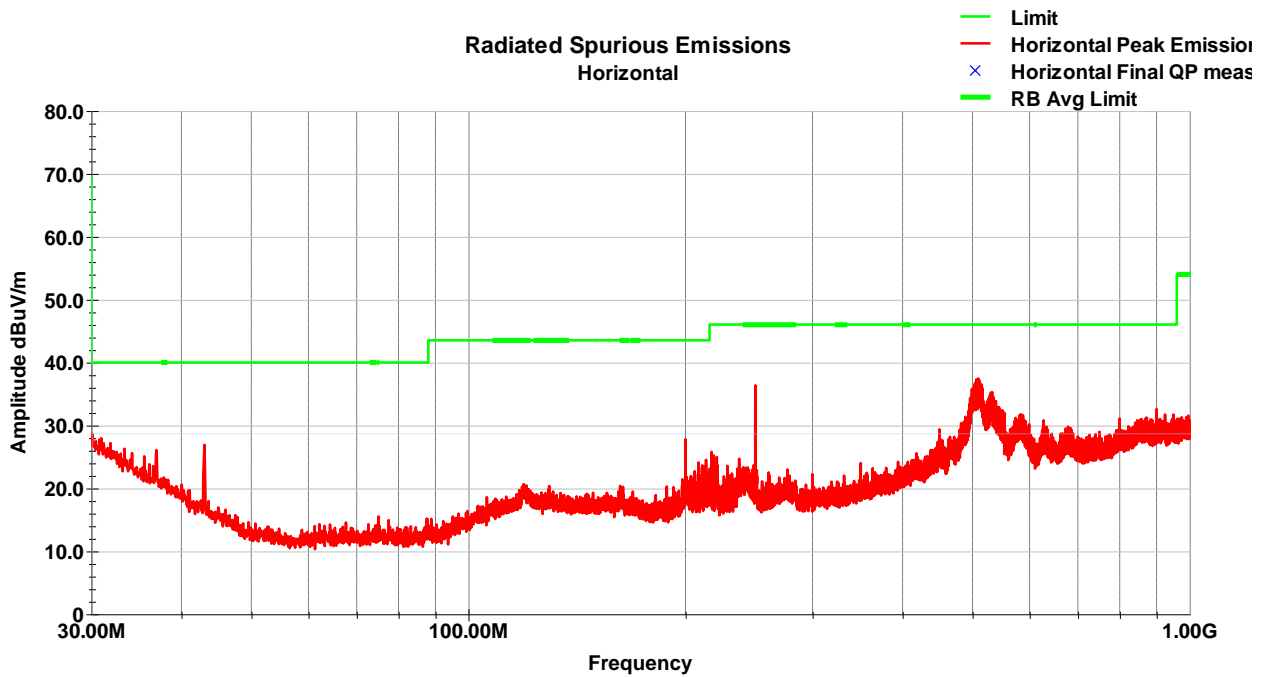
No emissions within 20dB of limit.

6.5.5 BT

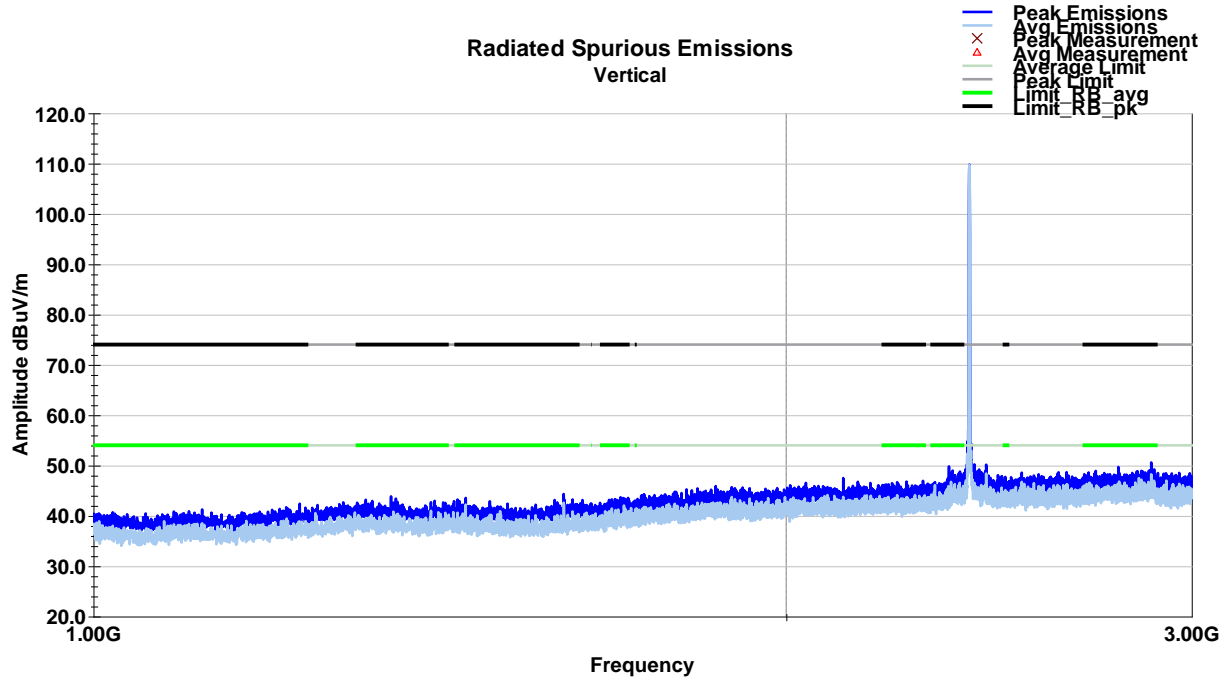
Vertical (30-1000MHz) (BTC – LCH)



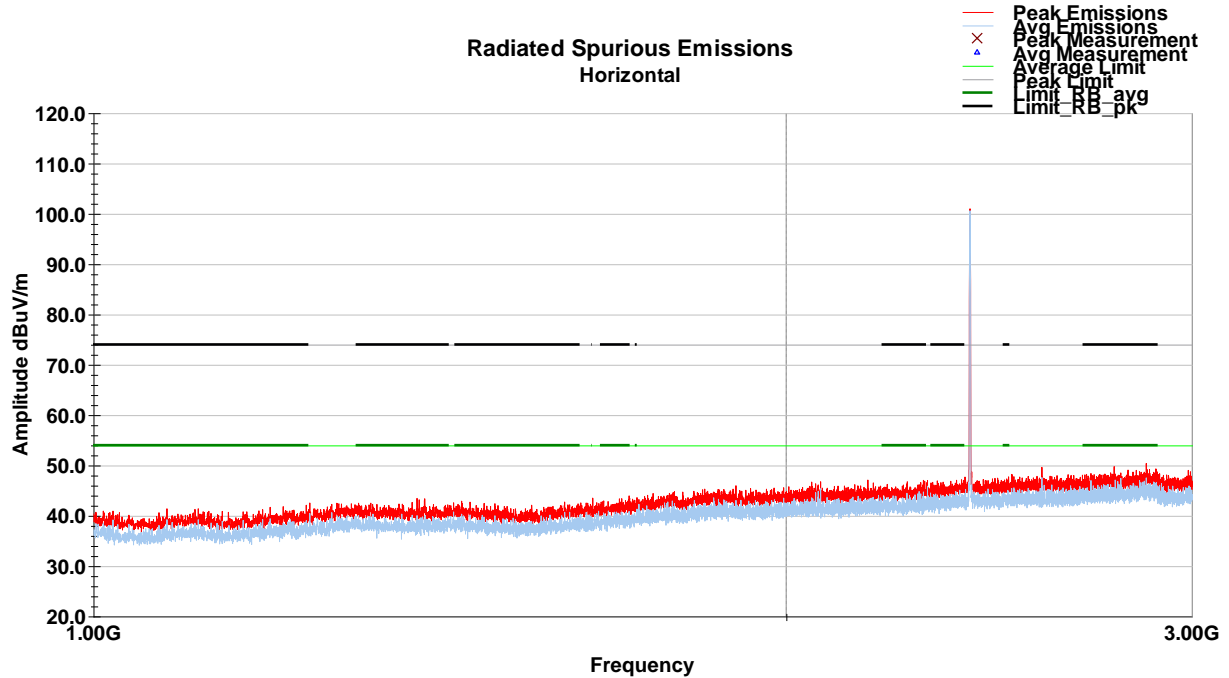
Horizontal (30-1000MHz) (BTC – LCH)



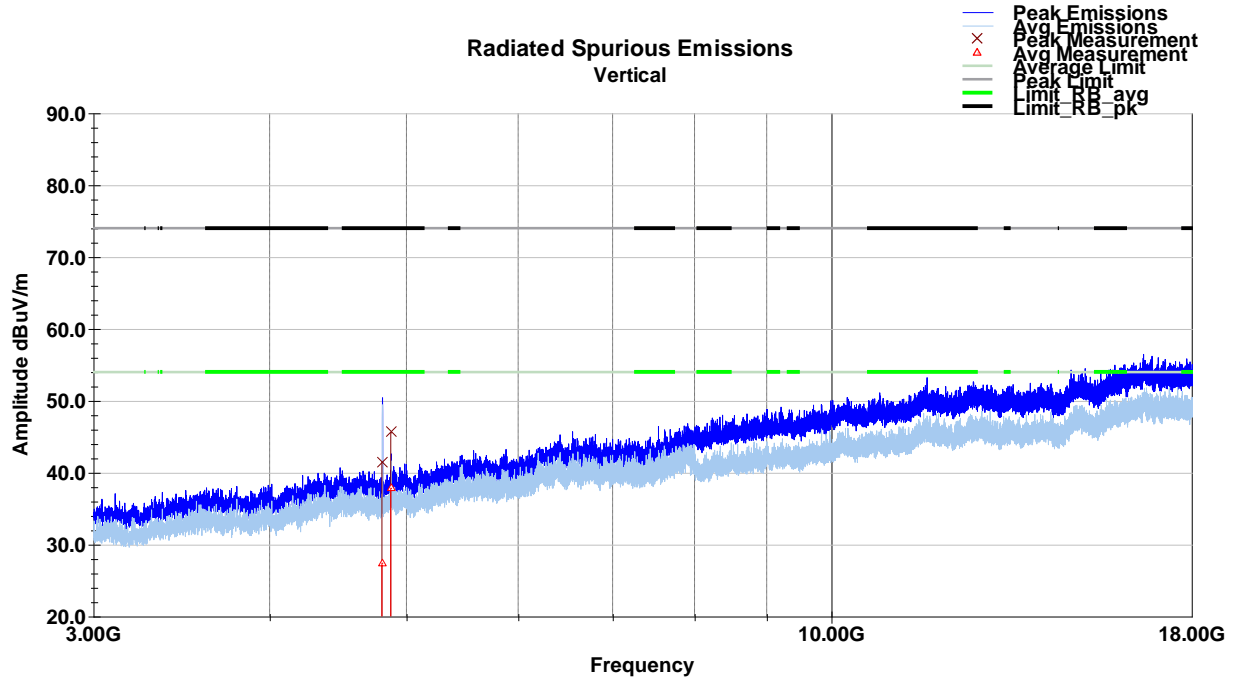
Vertical (1-3GHz) (BTC – LCH)



Horizontal (1-3GHz) (BTC – LCH)



Vertical (3-18GHz) (BTC – LCH)

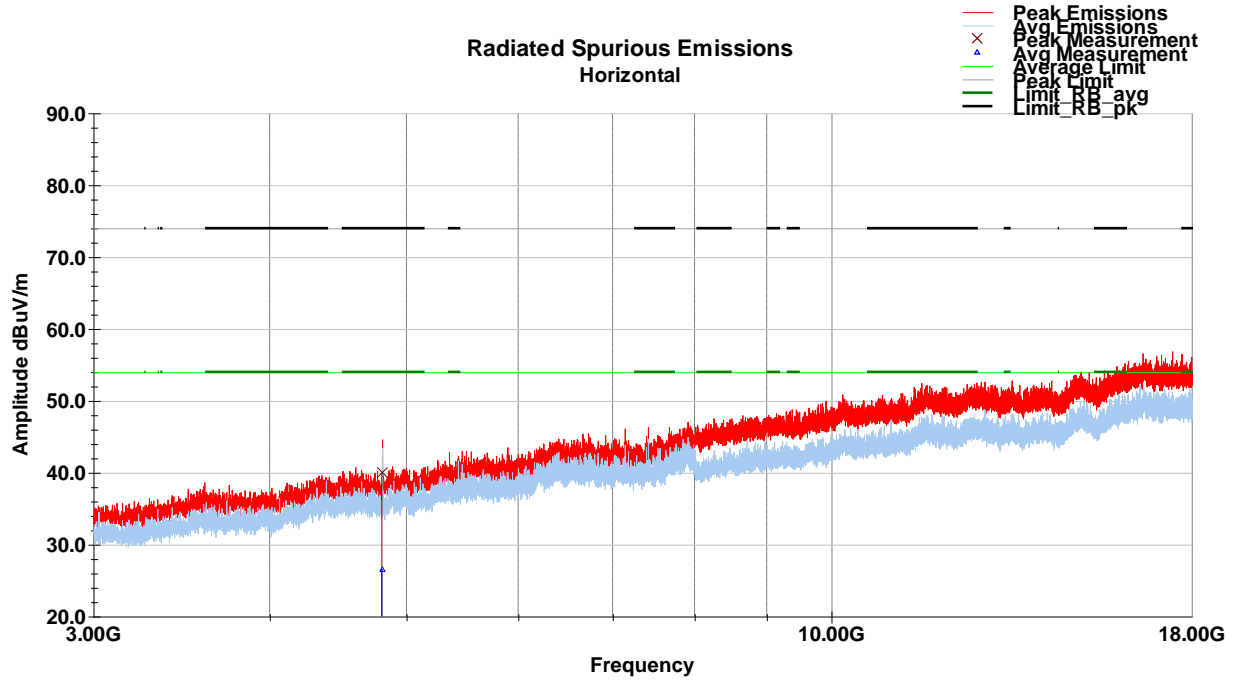


Vertical Data

| Frequency MHz | Raw Avg dBuV | Polarity (V/H) | Azimuth (degrees) | Height (cm) | AF (dB/m) | Loss (dB) | Amp (dB) | Final Avg dBuV/m | Limit (dBuV/m) | Margin (dB) |
|---------------------------------------|--------------|----------------|-------------------|-------------|-----------|-----------|----------|------------------|----------------|-------------|
| 4804.02 | 24.6 | V | 175.0 | 162.0 | 33.9 | 2.7 | 33.7 | 27.5 | 54.0 | -26.5 |
| 4874.28 | 34.7 | V | 154.0 | 178.0 | 34.1 | 2.8 | 33.7 | 37.9 | 54.0 | -16.1 |
| | | | | | | | | | | |
| Final Avg = Raw Avg + AF + Loss - Amp | | | | | | | | | | |
| Margin = Final Avg - Limit | | | | | | | | | | |

| Frequency MHz | Raw Pk dBuV | Polarity (V/H) | Azimuth (degrees) | Height (cm) | AF (dB/m) | Loss (dB) | Amp (dB) | Final Pk dBuV/m | Limit dBuV/m | Margin dB |
|-------------------------------------|-------------|----------------|-------------------|-------------|-----------|-----------|----------|-----------------|--------------|-----------|
| 4804.02 | 38.7 | V | 175.0 | 162.0 | 33.9 | 2.7 | 33.7 | 41.5 | 74.0 | -32.5 |
| 4874.28 | 42.5 | V | 154.0 | 178.0 | 34.1 | 2.8 | 33.7 | 45.6 | 74.0 | -28.4 |
| | | | | | | | | | | |
| Final Pk = Raw Pk + AF + Loss - Amp | | | | | | | | | | |
| Margin = Final Pk - Limit | | | | | | | | | | |

Horizontal (3-18GHz) (BTC – LCH)

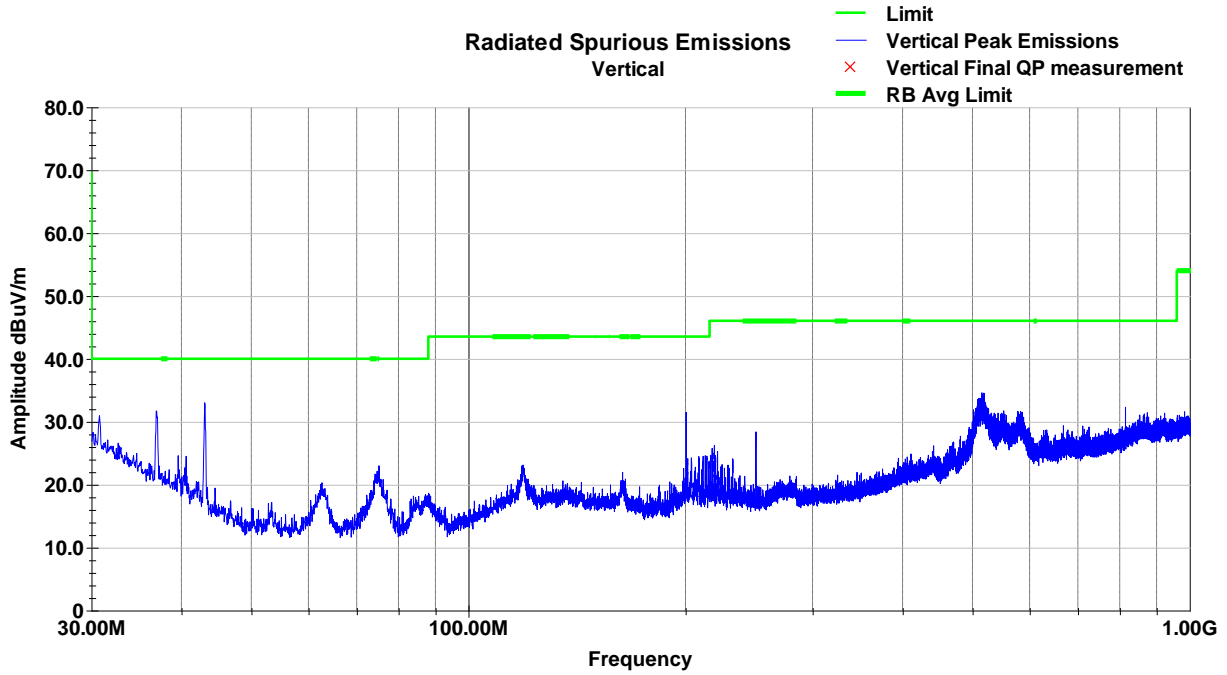


Horizontal Data

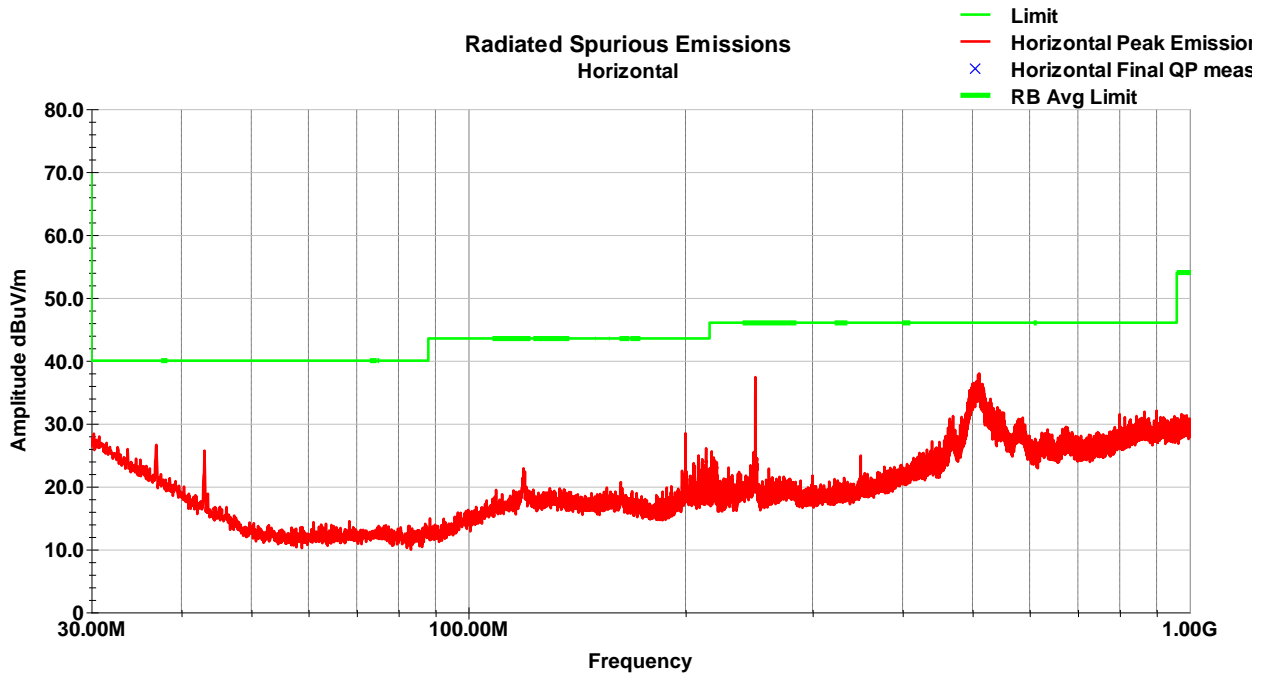
| Frequency MHz | Raw Avg dBuV | Polarity (V/H) | Azimuth (degrees) | Height (cm) | AF (dB/m) | Loss (dB) | Amp (dB) | Avg Value dBuV/m | Limit (dBuV/m) | Margin (dB) |
|---------------------------------------|-----------------|-------------------|----------------------|----------------|--------------|--------------|-------------|---------------------|-------------------|----------------|
| 4803.58 | 23.7 | H | 238.0 | 240.0 | 33.9 | 2.7 | 33.7 | 26.6 | 54.0 | -27.4 |
| Final Avg = Raw Avg + AF + Loss - Amp | | | | | | | | | | |
| Margin = Final Avg - Limit | | | | | | | | | | |

| Frequency MHz | Raw Pk dBuV | Polarity (V/H) | Azimuth (degrees) | Height (cm) | AF (dB/m) | Loss (dB) | Amp (dB) | Final Pk dBuV/m | Limit dBuV/m | Margin dB |
|-------------------------------------|----------------|-------------------|----------------------|----------------|--------------|--------------|-------------|--------------------|-----------------|--------------|
| 4803.58 | 37.1 | H | 238.0 | 240.0 | 33.9 | 2.7 | 33.7 | 40.0 | 74.0 | -34.0 |
| Final Pk = Raw Pk + AF + Loss - Amp | | | | | | | | | | |
| Margin = Final Pk - Limit | | | | | | | | | | |

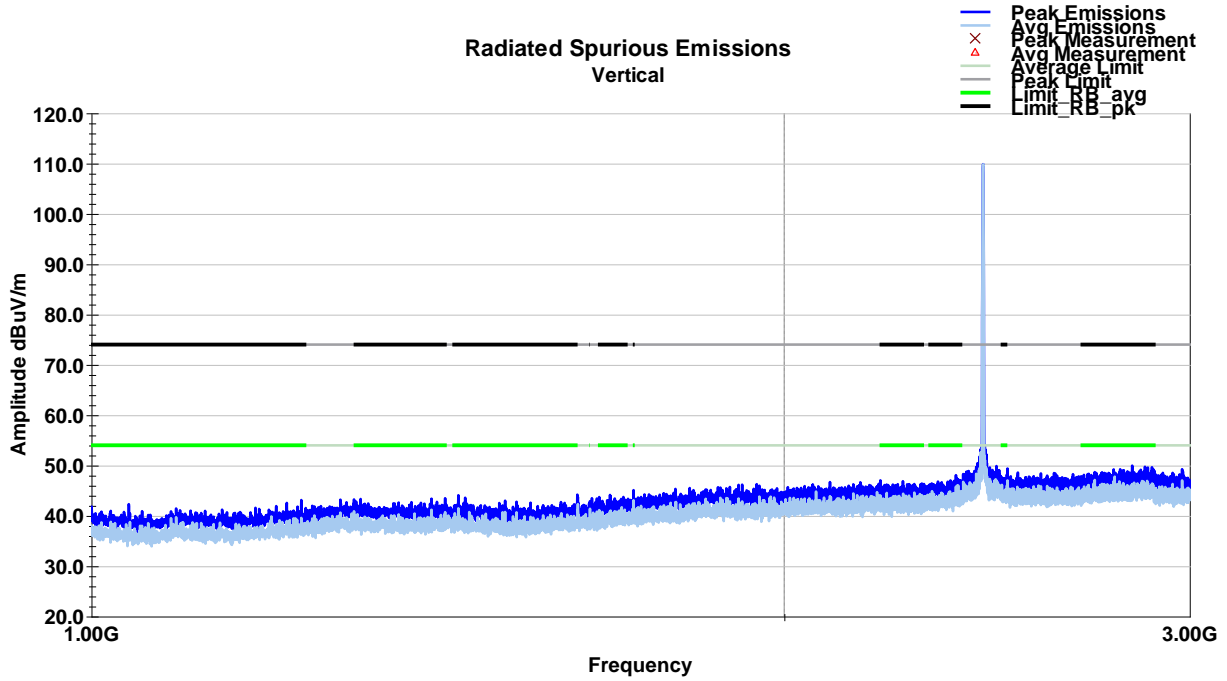
Vertical (30-1000MHz) (BTC – MCH)



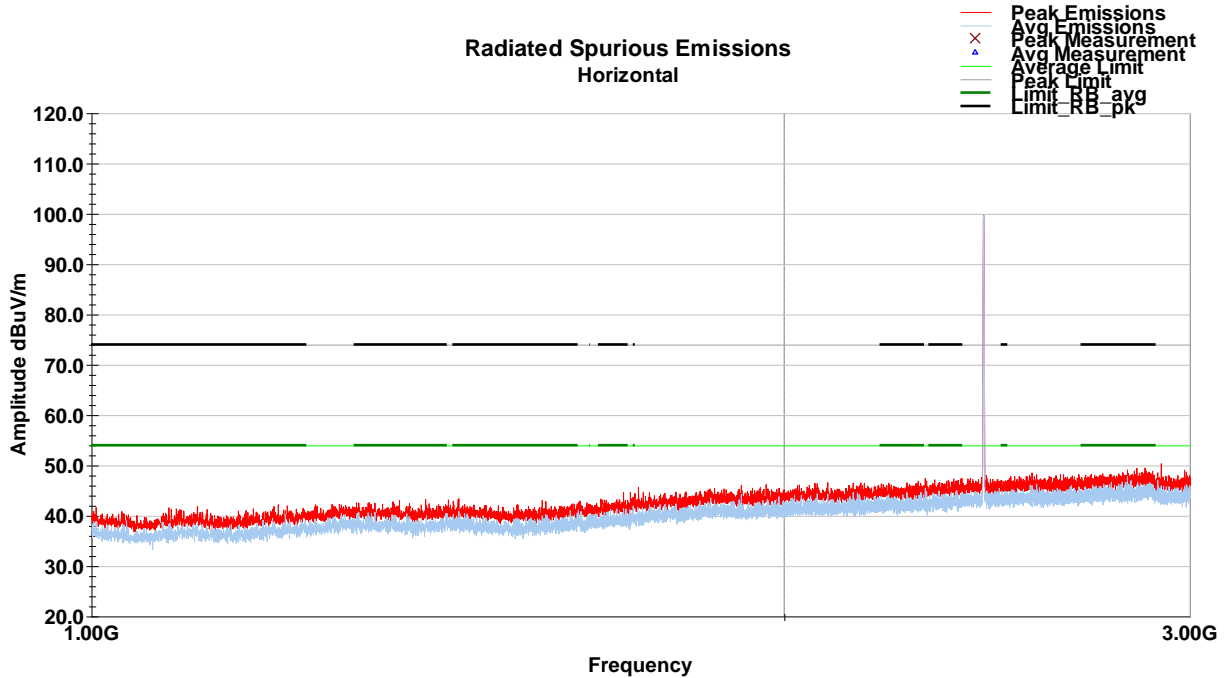
Horizontal (30-1000MHz) (BTC – MCH)



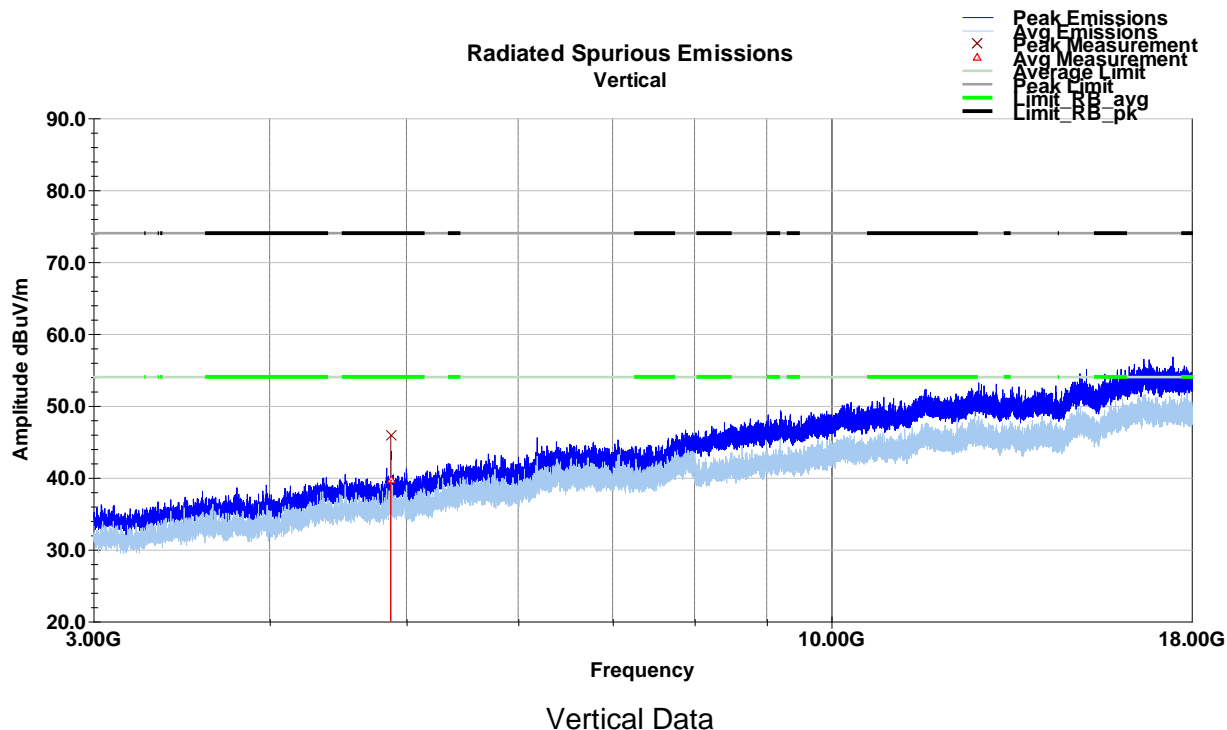
Vertical (1-3GHz) (BTC – MCH)



Horizontal (1-3GHz) (BTC – MCH)



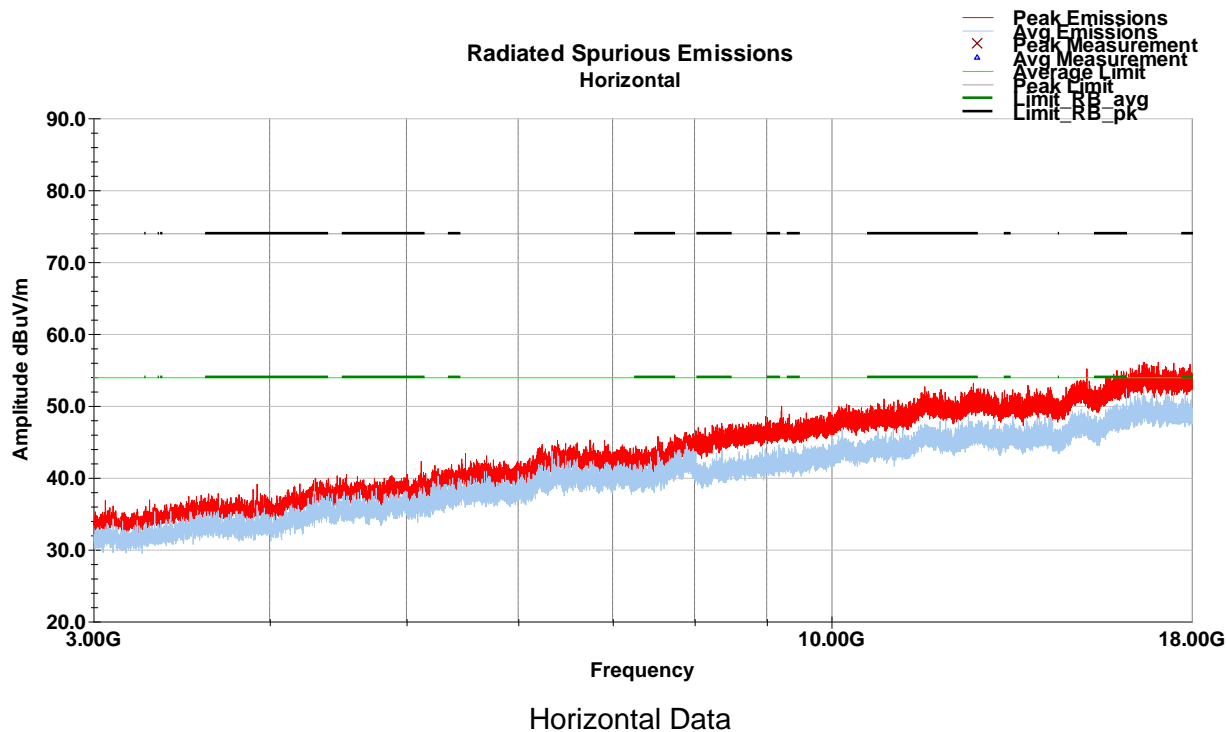
Vertical (3-18GHz) (BTC – MCH)



| Frequency MHz | Raw Avg dBuV | Polarity (V/H) | Azimuth (degrees) | Height (cm) | AF (dB/m) | Loss (dB) | Amp (dB) | Final Avg dBuV/m | Limit (dBuV/m) | Margin (dB) |
|---------------------------------------|-----------------|-------------------|----------------------|----------------|--------------|--------------|-------------|---------------------|-------------------|----------------|
| 4874.04 | 36.5 | V | 242.0 | 246.0 | 34.1 | 2.8 | 33.7 | 39.7 | 54.0 | -14.3 |
| Final Avg = Raw Avg + AF + Loss - Amp | | | | | | | | | | |
| Margin = Final Avg - Limit | | | | | | | | | | |

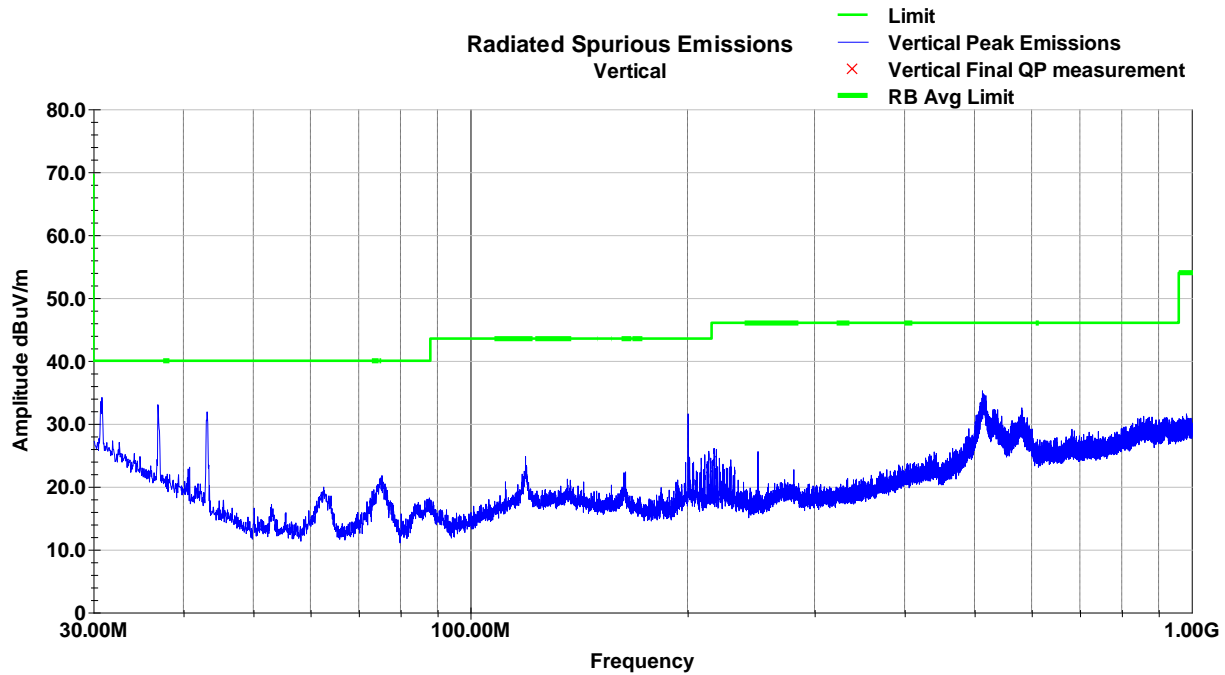
| Frequency MHz | Raw Pk dBuV | Polarity (V/H) | Azimuth (degrees) | Height (cm) | AF (dB/m) | Loss (dB) | Amp (dB) | Final Pk dBuV/m | Limit dBuV/m | Margin dB |
|-------------------------------------|----------------|-------------------|----------------------|----------------|--------------|--------------|-------------|--------------------|-----------------|--------------|
| 4874.04 | 42.7 | V | 242.0 | 246.0 | 34.1 | 2.8 | 33.7 | 45.8 | 74.0 | -28.2 |
| Final Pk = Raw Pk + AF + Loss - Amp | | | | | | | | | | |
| Margin = Final Pk - Limit | | | | | | | | | | |

Horizontal (3-18GHz) (BTC – MCH)

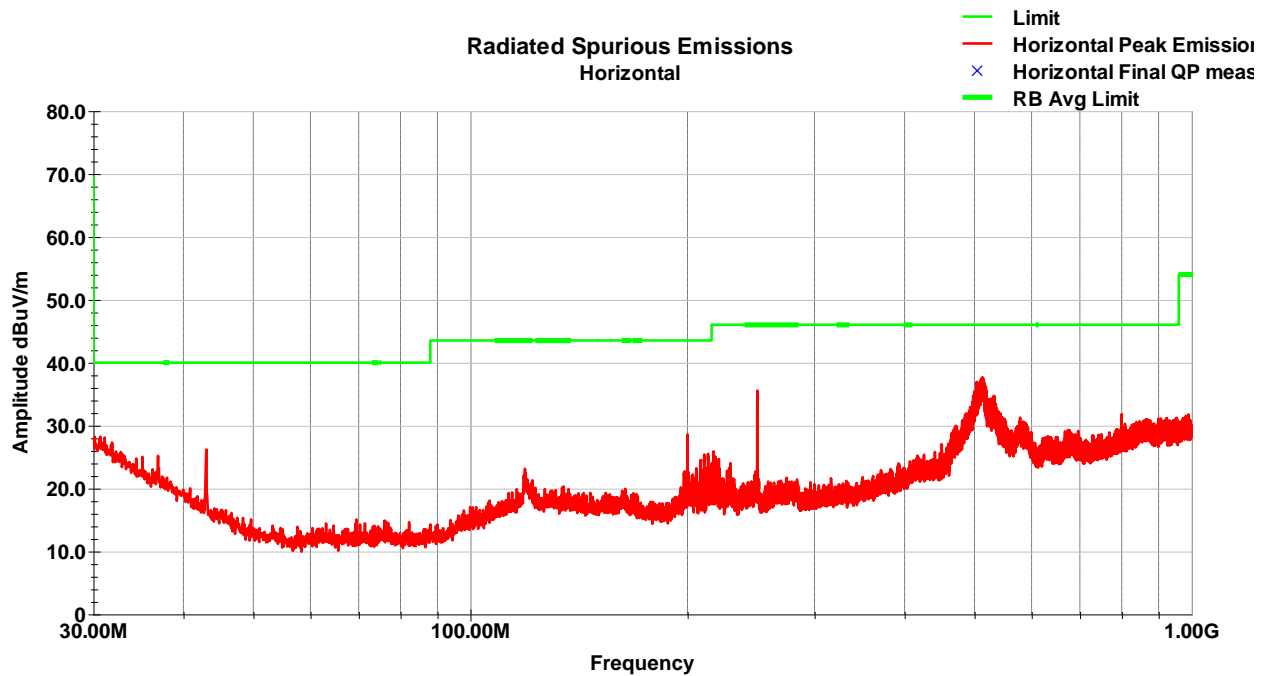


No emissions within 20dB of limit.

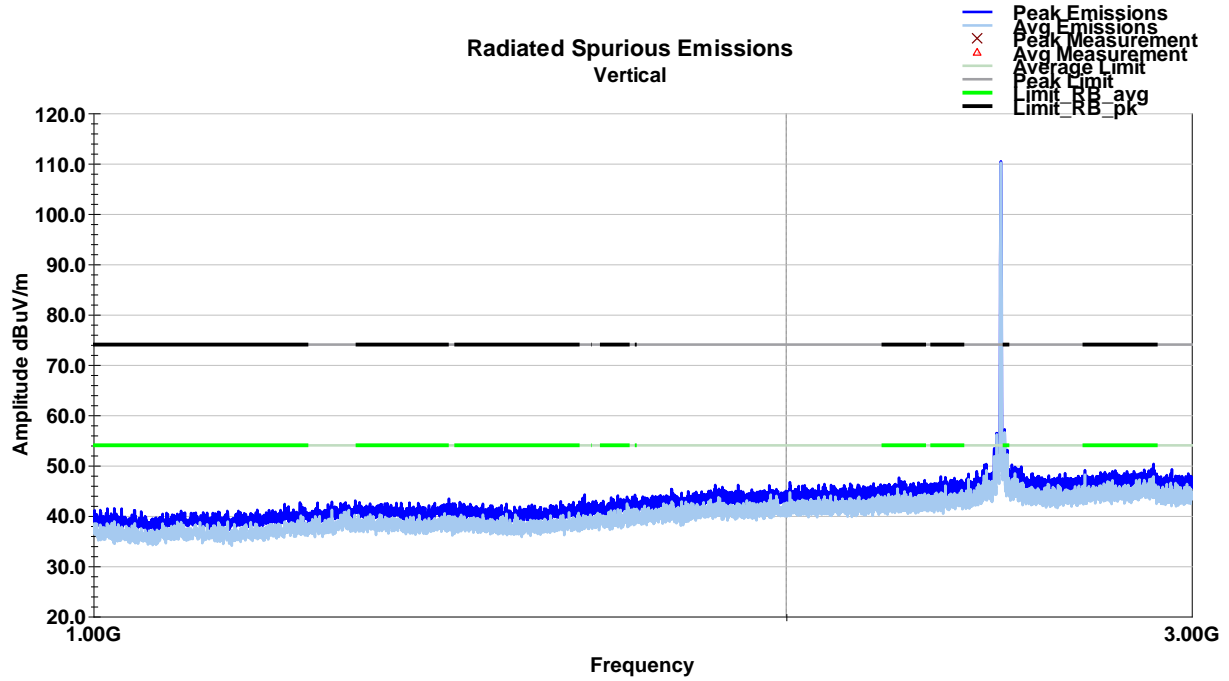
Vertical (30-1000MHz) (BTC – HCH)



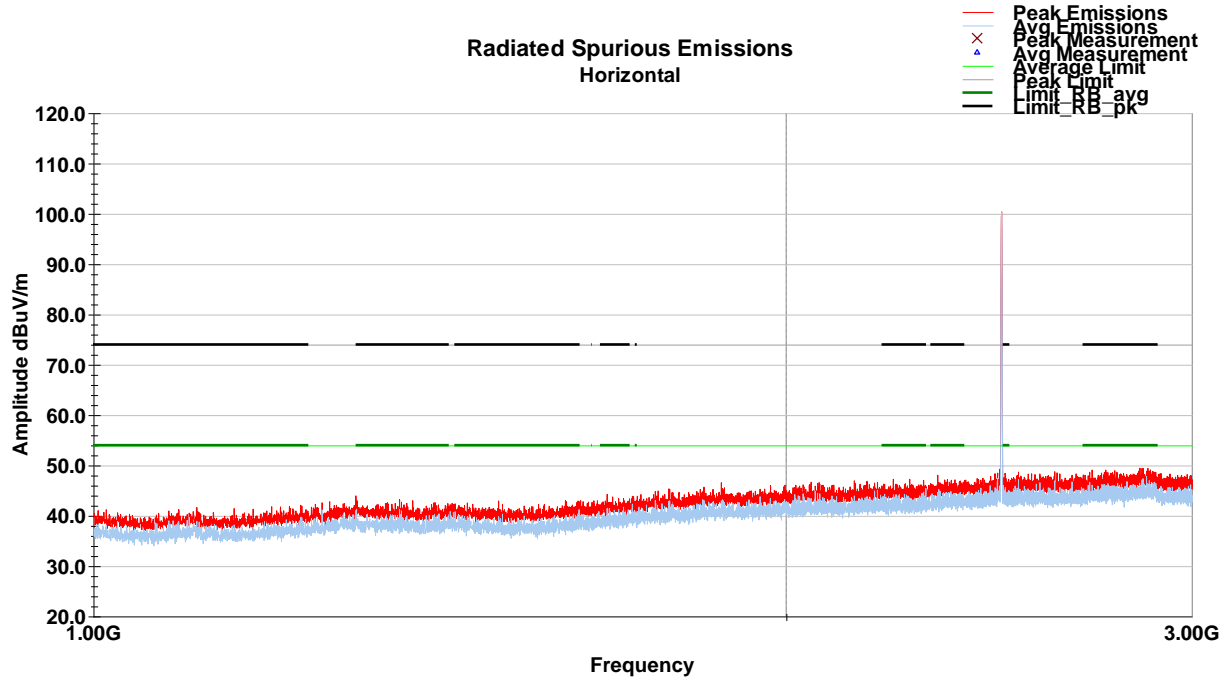
Horizontal (30-1000MHz) (BTC – HCH)



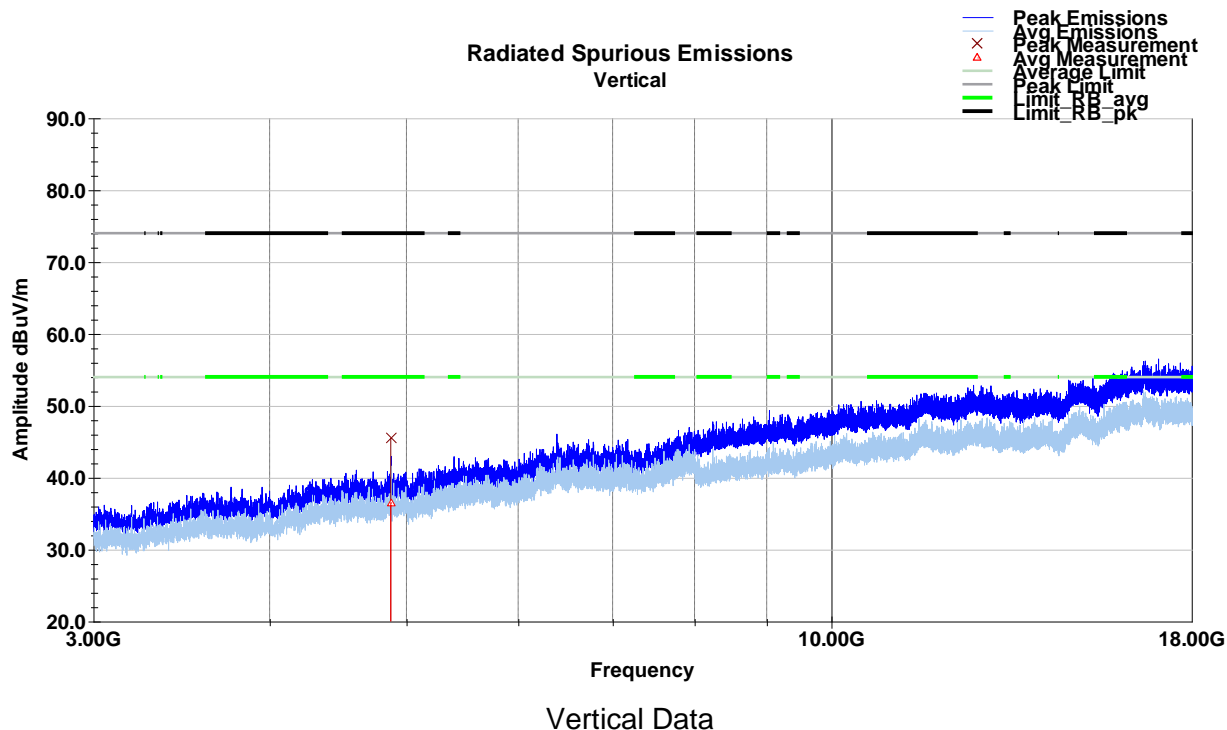
Vertical (1-3GHz) (BTC – HCH)



Horizontal (1-3GHz) (BTC – HCH)



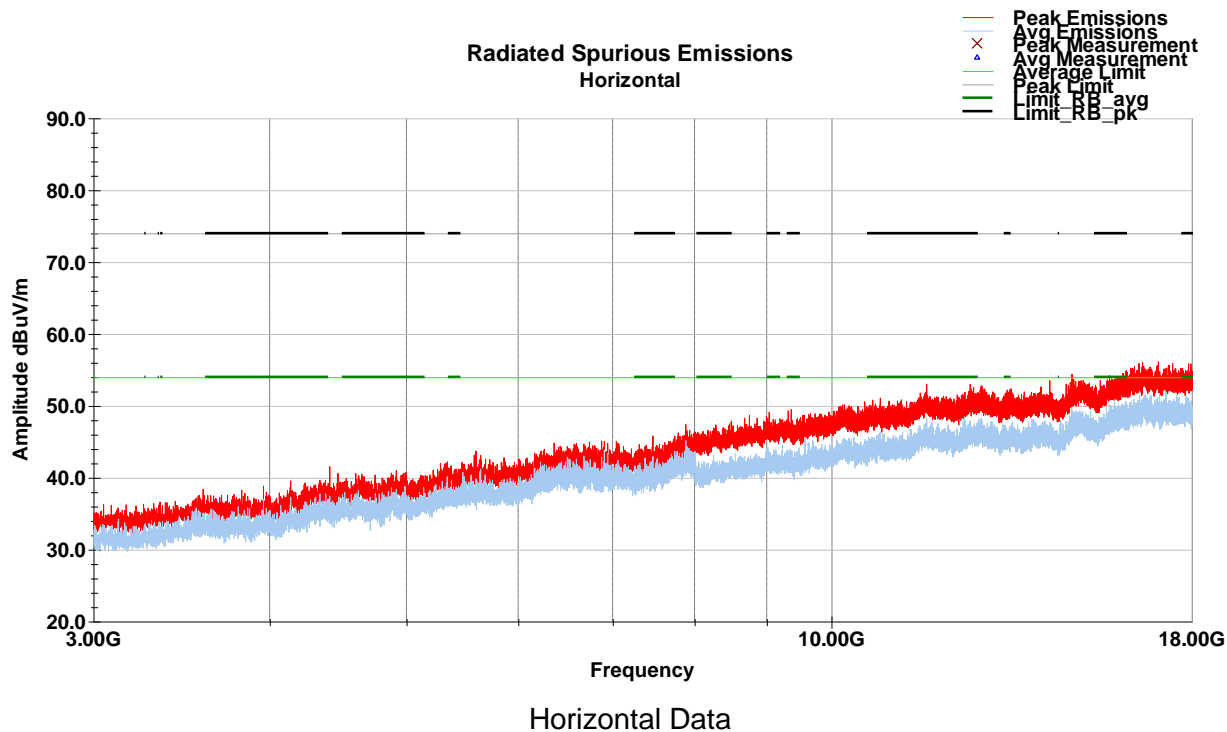
Vertical (3-18GHz) (BTC – HCH)



| Frequency MHz | Raw Avg dBuV | Polarity (V/H) | Azimuth (degrees) | Height (cm) | AF (dB/m) | Loss (dB) | Amp (dB) | Final Avg dBuV/m | Limit (dBuV/m) | Margin (dB) |
|---------------------------------------|-----------------|-------------------|----------------------|----------------|--------------|--------------|-------------|---------------------|-------------------|----------------|
| 4874.16 | 33.4 | V | 201.0 | 175.0 | 34.1 | 2.8 | 33.7 | 36.5 | 54.0 | -17.4 |
| Final Avg = Raw Avg + AF + Loss - Amp | | | | | | | | | | |
| Margin = Final Avg - Limit | | | | | | | | | | |

| Frequency MHz | Raw Pk dBuV | Polarity (V/H) | Azimuth (degrees) | Height (cm) | AF (dB/m) | Loss (dB) | Amp (dB) | Final Pk dBuV/m | Limit dBuV/m | Margin dB |
|-------------------------------------|----------------|-------------------|----------------------|----------------|--------------|--------------|-------------|--------------------|-----------------|--------------|
| 4874.16 | 42.4 | V | 201.0 | 175.0 | 34.1 | 2.8 | 33.7 | 45.5 | 74.0 | -28.5 |
| Final Pk = Raw Pk + AF + Loss - Amp | | | | | | | | | | |
| Margin = Final Pk - Limit | | | | | | | | | | |

Horizontal (3-18GHz) (BTC – HCH)



No emissions within 20dB of limit.

7 Antenna Requirement

7.1 Result

| Test Description | Test Specification | Test Result |
|---------------------|----------------------------------|-------------|
| Antenna Requirement | 47 CFR Part 15, Subpart C 15.203 | Compliant |

7.2 Requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit permanently attached antenna or of so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

7.3 Conclusion

The Device utilizes an 18' LMR Cable containing a nonstandard reverse polarity threaded Neill Concelman male connection (RP TNC Male Connector) to connect to the antenna and a standard SMA connection on the EUT side. The antenna is professionally installed and user will not be able to access once installed.

8 Measurement Uncertainty

The measurement uncertainty figures are be calculated in accordance with TR 100 028-1 [2] and correspond to an expansion factor (coverage factor) $k = 2$ (which provide confidence levels of 95,45 % in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)).

| Parameter | Expanded Uncertainty for Normal k factor equal to 2 | |
|-------------------------------|---|---------------------------|
| | Required | Laboratory Actual |
| Radio Frequency | $\pm 1 \times 10^{-5}$ | $\pm 9.8 \times 10^{-8}$ |
| total RF power, conducted | ± 1.5 dB | ± 1.2 dB |
| RF power density, conducted | ± 3 dB | ± 0.7 dB |
| spurious emissions, conducted | ± 3 dB | ± 2.1 dB |
| all emissions, radiated | ± 6 dB | ± 4.8 dB |
| temperature | $\pm 1^{\circ}\text{C}$ | $\pm 0.5^{\circ}\text{C}$ |
| humidity | ± 5 % | $\pm 3.5\%$ |
| DC and low frequency voltages | ± 3 % | $\pm 0.4\%$ |

9 Revision History

| Revision Level | Description of changes | Revision Date |
|----------------|--|---------------|
| 0 | Initial release | 19 June 2023 |
| 1 | Correction of Serial Number | 07 July 2023 |
| 2 | Section 8 updated to reference note from previous submittal. | 19 July 2023 |
| | | |
| | | |
| | | |
| | | |