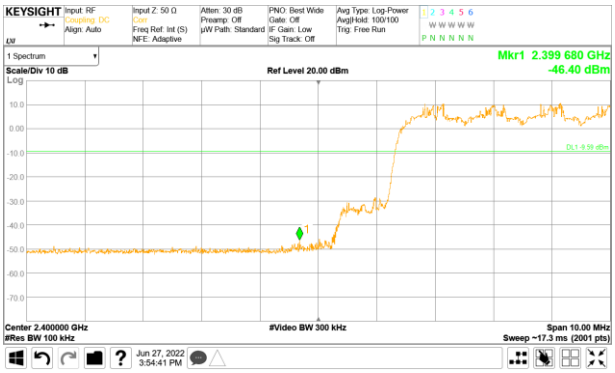
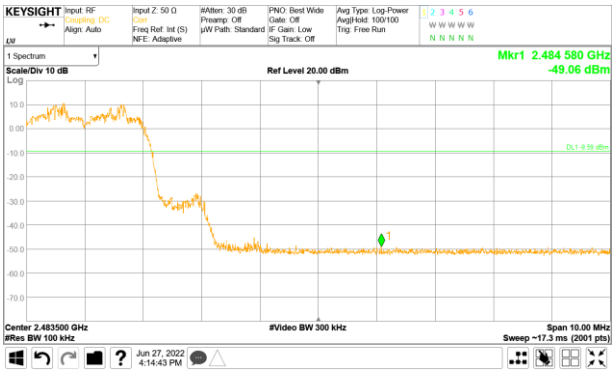
**SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON**




**LOW BANDEDGE**

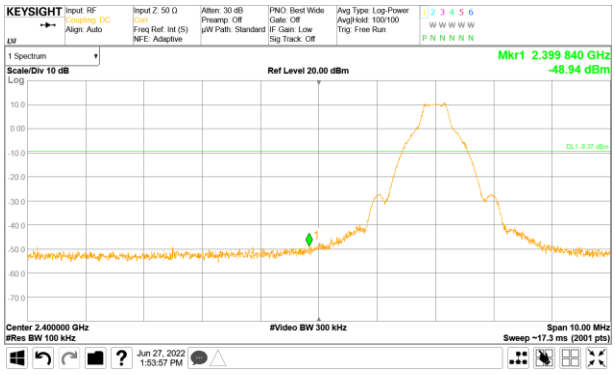



**HIGH BANDEDGE**

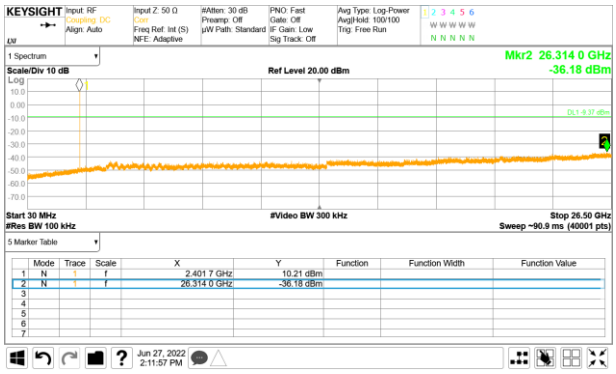
- **Right**

## 9.8.3. BLUETOOTH BASIC DATA RATE GFSK MODULATION

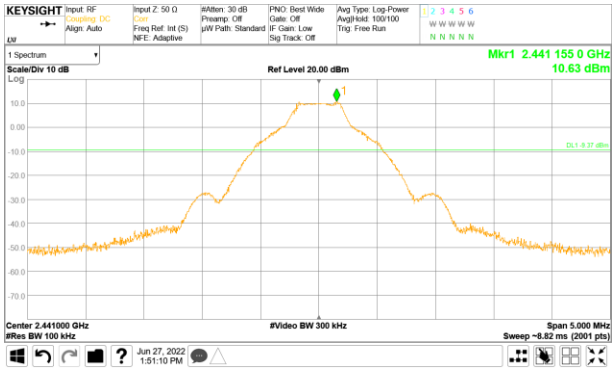
**SPURIOUS EMISSIONS, NON-HOPPING**



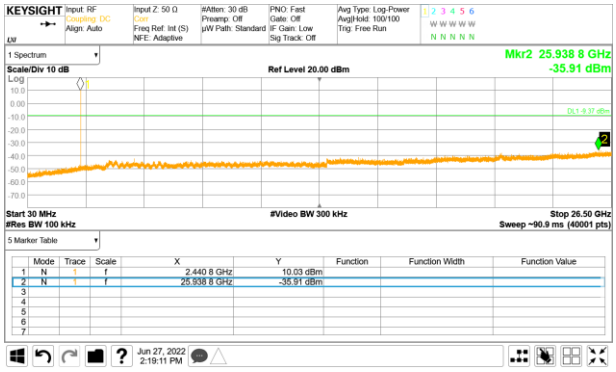

**LOW CHANNEL BANDEDGE**



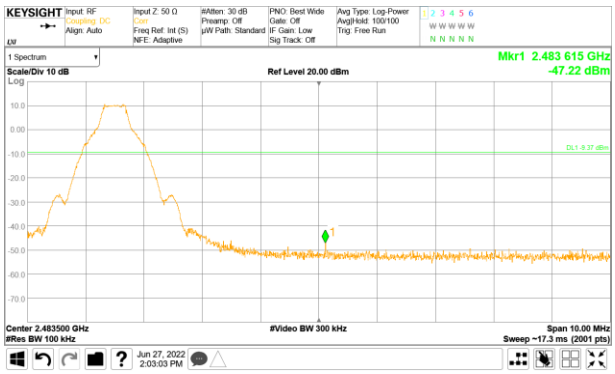

**OUT-OF-BAND LOW CHANNEL**



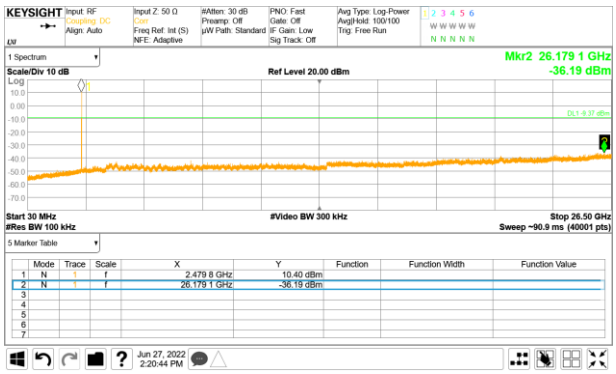

**IN-BAND REFERENCE LEVEL**




**OUT-OF-BAND MID CHANNEL**

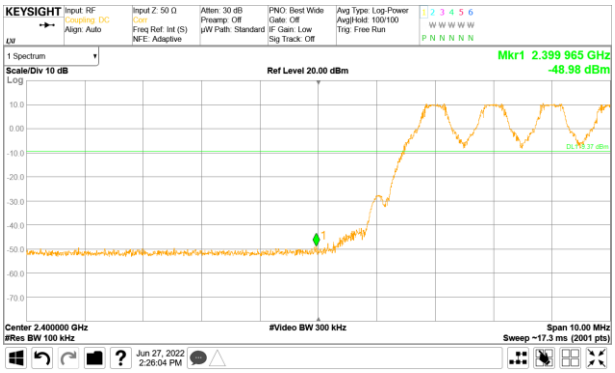



**HIGH CHANNEL BANDEDGE**

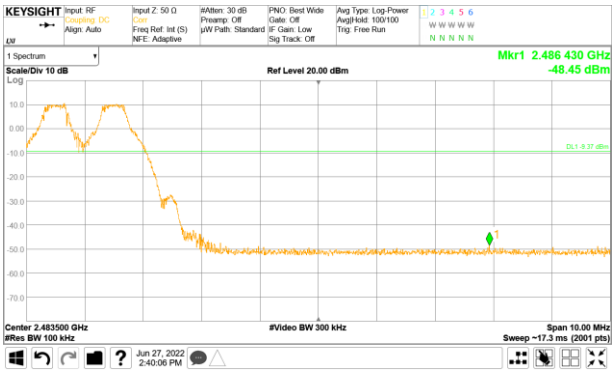



**OUT-OF-BAND HIGH CHANNEL**

**SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON**



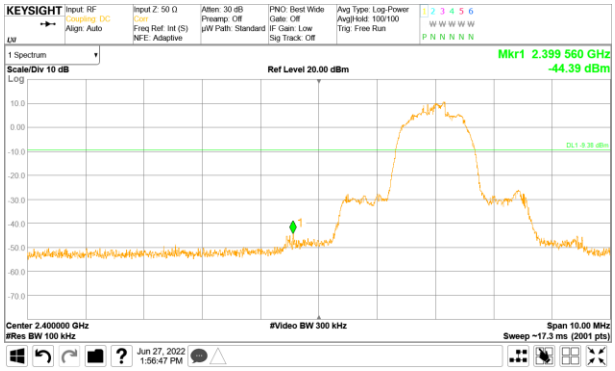

**LOW BANDEDGE**



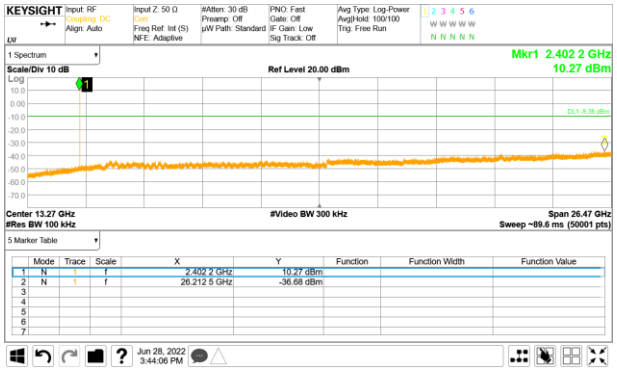

**HIGH BANDEDGE**

# 9.8.4. BLUETOOTH ENHANCED DATA RATE 8DPSK MODULATION

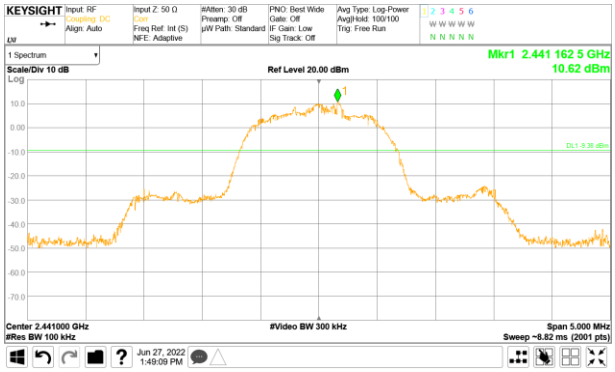
## SPURIOUS EMISSIONS, NON-HOPPING



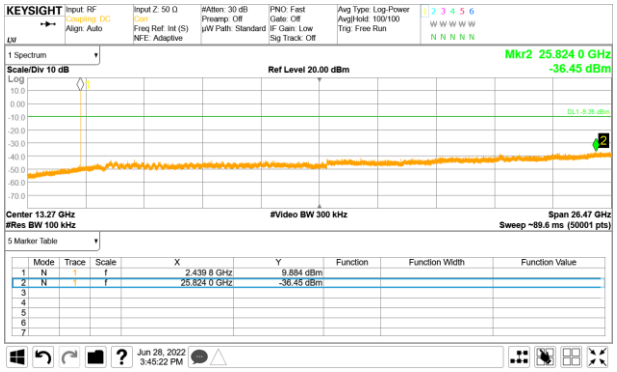

LOW CHANNEL BANDEDGE



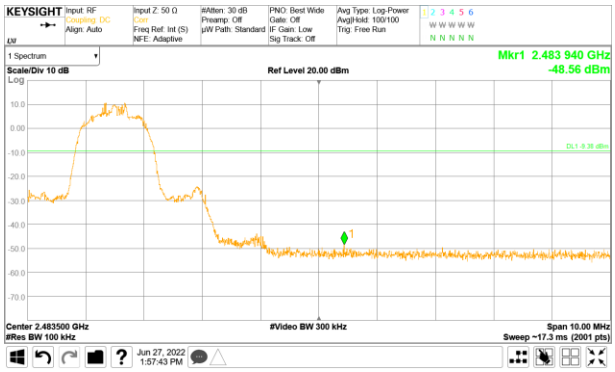

OUT-OF-BAND LOW CHANNEL



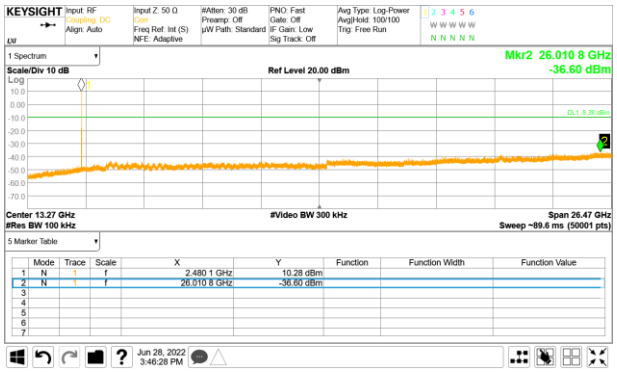

IN-BAND REFERENCE LEVEL




OUT-OF-BAND MID CHANNEL

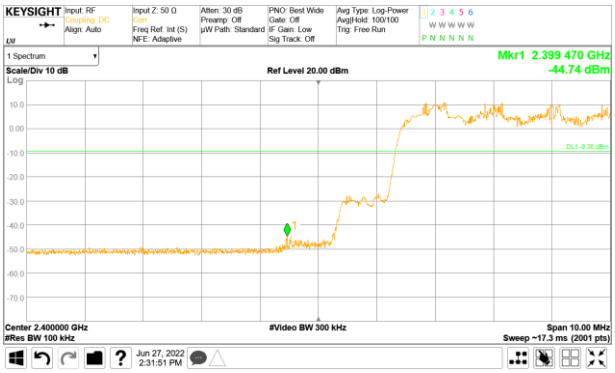



HIGH CHANNEL BANDEDGE

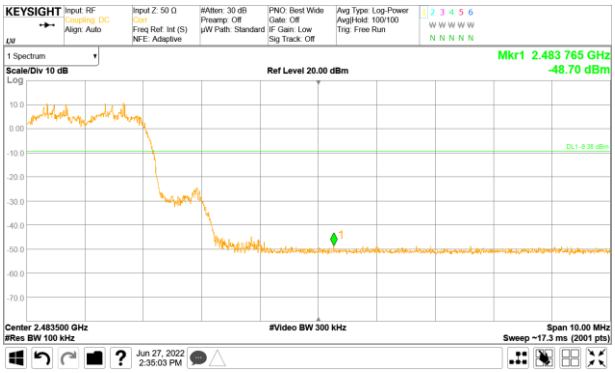



OUT-OF-BAND HIGH CHANNEL

**SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON**




**LOW BANDEDGE**




**HIGH BANDEDGE**

# 10. RADIATED TEST RESULTS

## 10.1. LIMITS AND PROCEDURE

**LIMITS**

FCC §15.205 and §15.209

RSS-Gen 8.9 and 8.10

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

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

FCC Part 15.205 (a) : Only spurious emissions are permitted in any of the frequency bands listed below :

| MHz | MHz | MHz | MHz | GHz | GHz |
|---|---|---|---|---|---|
| 0.009 ~ 0.110 | 8.41425 ~ 8.41475 | 108 ~ 121.94 | 1300 ~ 1427 | 4.5 ~ 5.15 | 14.47 ~ 14.5 |
| 0.495 ~ 0.505 | 12.29 ~ 12.293 | 123 ~ 138 | 1435 ~ 1626.5 | 5.35 ~ 5.46 | 15.35 ~ 16.2 |
| 2.1735 ~ 2.1905 | 12.51975 ~ 12.52025 | 149.9 ~ 150.05 | 1645.5 ~ 1646.5 | 7.25 ~ 7.75 | 17.7 ~ 21.4 |
| 4.125 ~ 4.128 | 12.57675 ~ 12.57725 | 156.52475 ~ | 1660 ~ 1710 | 8.025 ~ 8.5 | 22.01 ~ 23.12 |
| 4.17725 ~ 4.17775 | 13.36 ~ 13.41 | 156.52525 | 1718.8 ~ 1722.2 | 9.0 ~ 9.2 | 23.6 ~ 24.0 |
| 4.20725 ~ 4.20775 | 16.42 ~ 16.423 | 156.7 ~ 156.9 | 2200 ~ 2300 | 9.3 ~ 9.5 | 31.2 ~ 31.8 |
| 6.215 ~ 6.218 | 16.69475 ~ 16.69525 | 162.0125 ~ | 2310 ~ 2390 | 10.6 ~ 12.7 | 36.43 ~ 36.5 |
| 6.26775 ~ 6.26825 | 16.80425 ~ 16.80475 | 167.17 | 2483.5 ~ 2500 | 13.25 ~ 13.4 | Above 38.6 |
| 6.31175 ~ 6.31225 | 25.5 ~ 25.67 | 167.72 ~ 173.2 | 2655 ~ 2900 | | |
| 8.291 ~ 8.294 | 37.5 ~ 38.25 | 240 ~ 285 | 3260 ~ 3267 | | |
| 8.362 ~ 8.366 | 73 ~ 74.6 | 322 ~ 335.4 | 3332 ~ 3339 | | |
| 8.37625 ~ 8.38675 | 74.8 ~ 75.2 | 399.90 ~ 410 | 3345.8 ~ 3358 | | |
| | | 608 ~ 614 | 3600 ~ 4400 | | |
| | | 960 ~ 1240 | | | |

▪ FCC Part 15.205(b) : The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §15.35 apply to these measurements.

**TEST PROCEDURE**

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

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

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements.(Pre-scans to detect harmonic and spurious emissions, the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 kHz for peak measurements.)

For band edge measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1/T (on time) for average measurement.

GFSK = 1/T = 1 / 0.002876S = 347Hz.

The minimum VBW was 347Hz, but test receiver(ESU40) couldn't set value 347Hz. Due to this reason, testing VBW was set to 500Hz(Worst cases).

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

Note : Emission was pre-scanned from 9kHz to 30MHz; No emissions were detected which was at least 20dB below the specification limit (consider distance correction factor).
Per FCC part 15.31(o), test results were not reported.

Although these tests were performed other than open field test site, adequate comparison measurements were confirmed against 30 m open field test site.
Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the one of tests made in an open field based on KDB 414788.

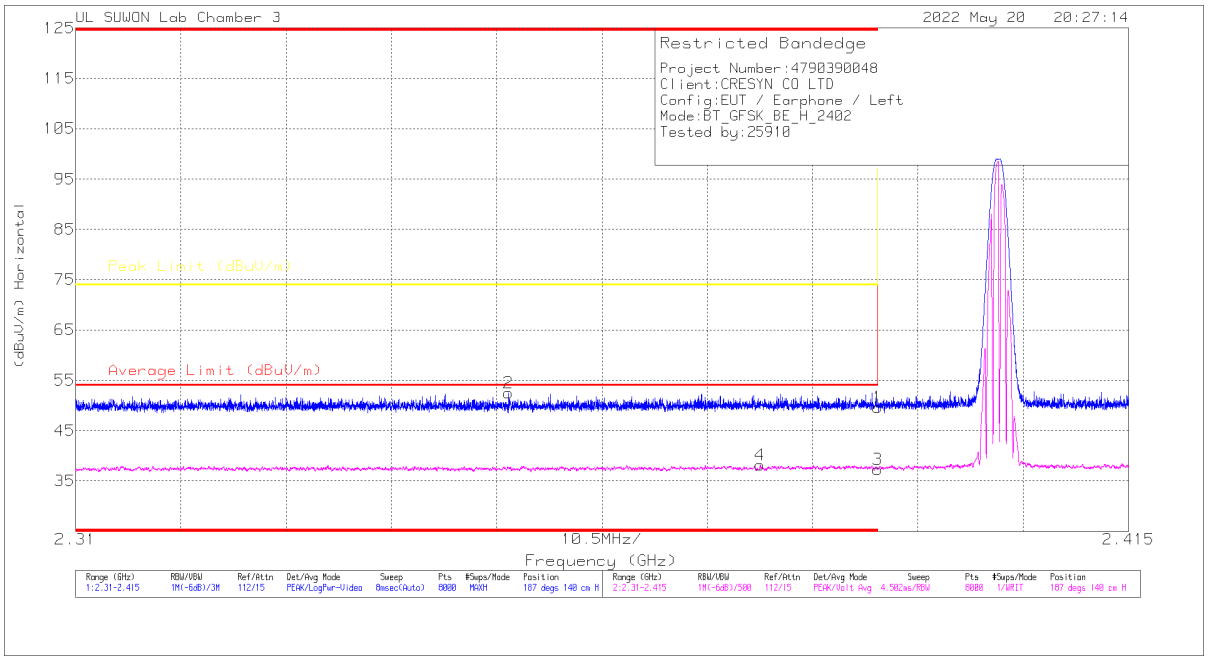
## 10.2. TRANSMITTER ABOVE 1 GHz

- **Left**

### 10.2.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION

## BANDEDGE (LOW CHANNEL)

### HORIZONTAL RESULT

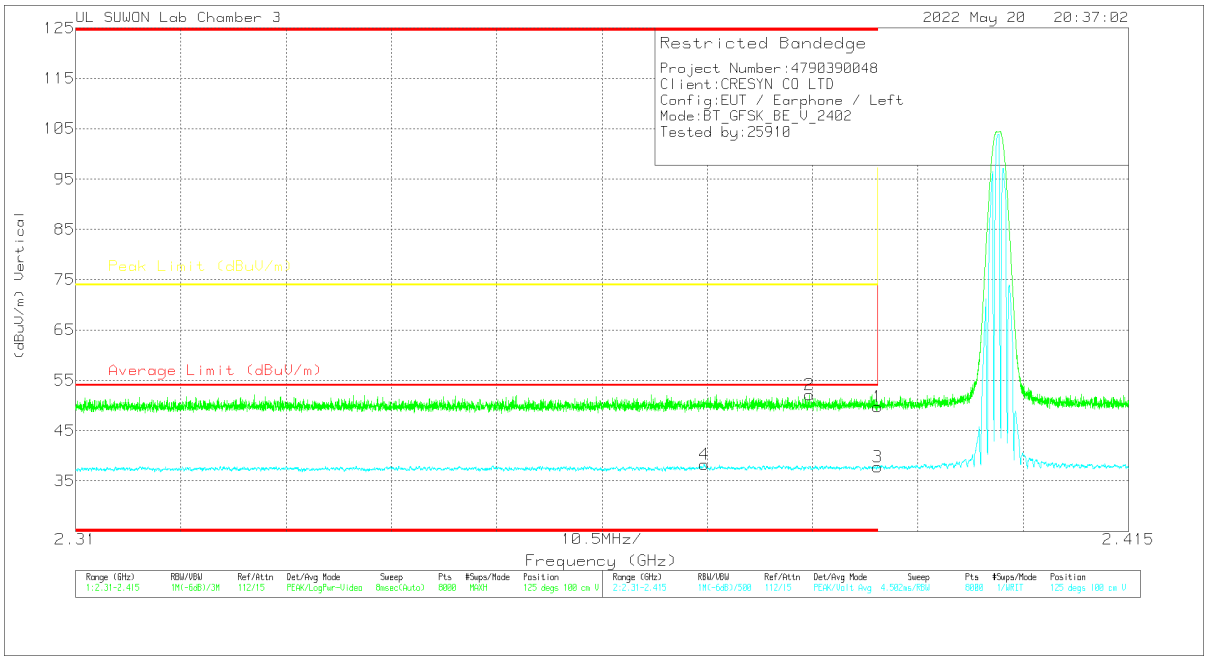



Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 10dB_ATT[dB] | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 2.39 | 41.58 | Pk | 32.8 | -24.8 | 49.58 | - | - | 74 | -24.42 | 187 | 140 | H |
| 2 | * 2.35316 | 44.84 | Pk | 32.6 | -24.9 | 52.54 | - | - | 74 | -21.46 | 187 | 140 | H |
| 3 | * 2.39 | 29.28 | VA1T | 32.8 | -24.8 | 37.28 | 54 | -16.72 | - | - | 187 | 140 | H |
| 4 | * 2.37827 | 30.42 | VA1T | 32.7 | -24.9 | 38.22 | 54 | -15.78 | - | - | 187 | 140 | H |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

# VERTICAL RESULT



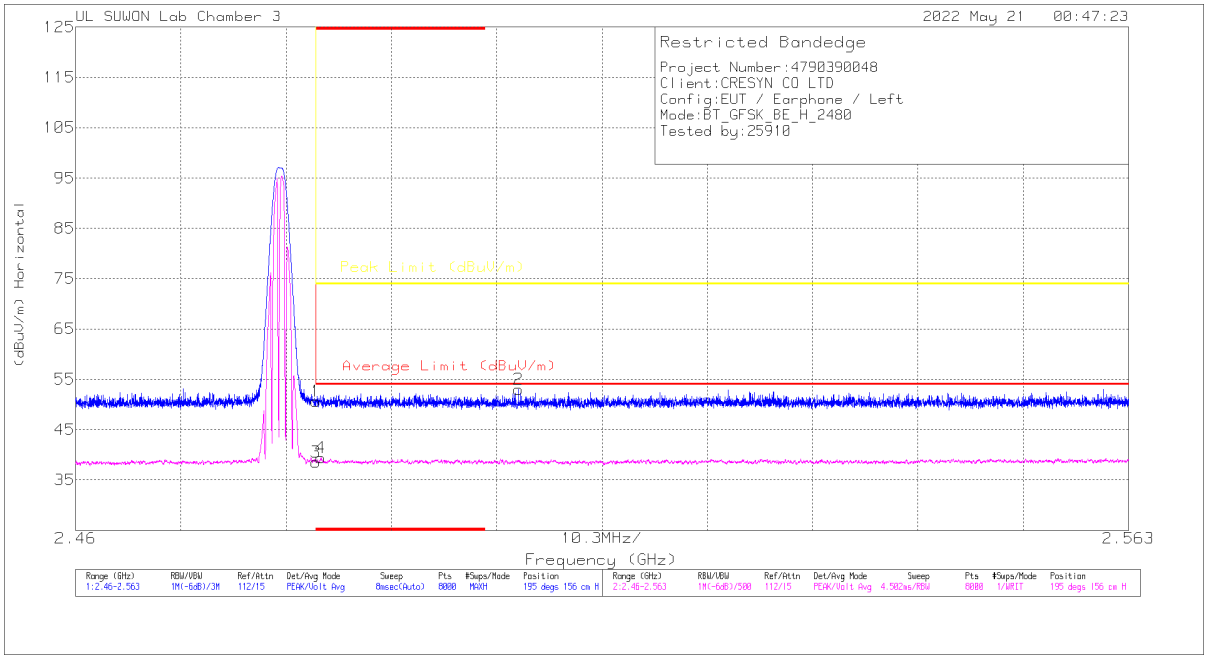

## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 10dB_ATT[dB] | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 2.39 | 41.77 | Pk | 32.8 | -24.8 | 49.77 | - | - | 74 | -24.23 | 125 | 100 | V |
| 2 | * 2.38317 | 44.37 | Pk | 32.7 | -24.9 | 52.17 | - | - | 74 | -21.83 | 125 | 100 | V |
| 3 | * 2.39 | 29.78 | VA1T | 32.8 | -24.8 | 37.78 | 54 | -16.22 | - | - | 125 | 100 | V |
| 4 | * 2.37267 | 30.54 | VA1T | 32.7 | -24.9 | 38.34 | 54 | -15.66 | - | - | 125 | 100 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

## BANDEDGE (HIGH CHANNEL)

### HORIZONTAL RESULT

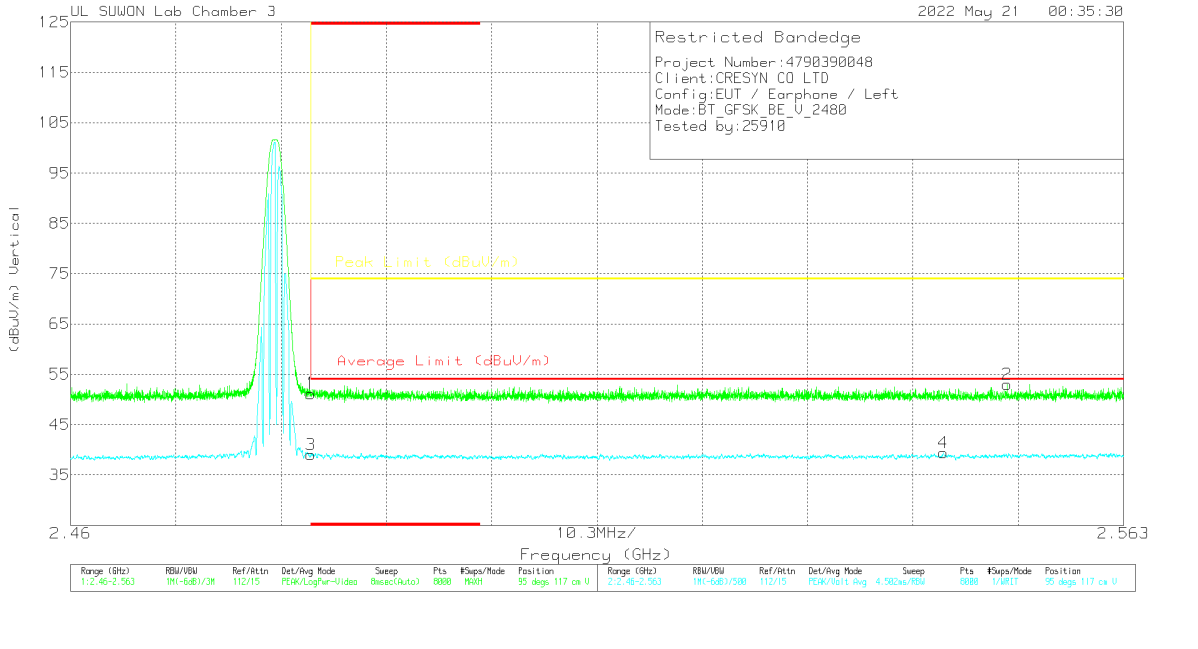



### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 10dB_ATT[dB] | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 2.4835 | 42.44 | Pk | 32.9 | -24.7 | 50.64 | - | - | 74 | -23.36 | 195 | 156 | H |
| 2 | 2.50332 | 44.78 | Pk | 32.9 | -24.7 | 52.98 | - | - | 74 | -21.02 | 195 | 156 | H |
| 3 | * 2.4835 | 30.36 | VA1T | 32.9 | -24.7 | 38.56 | 54 | -15.44 | - | - | 195 | 156 | H |
| 4 | * 2.484 | 31.2 | VA1T | 32.9 | -24.7 | 39.4 | 54 | -14.6 | - | - | 195 | 156 | H |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

## VERTICAL RESULT



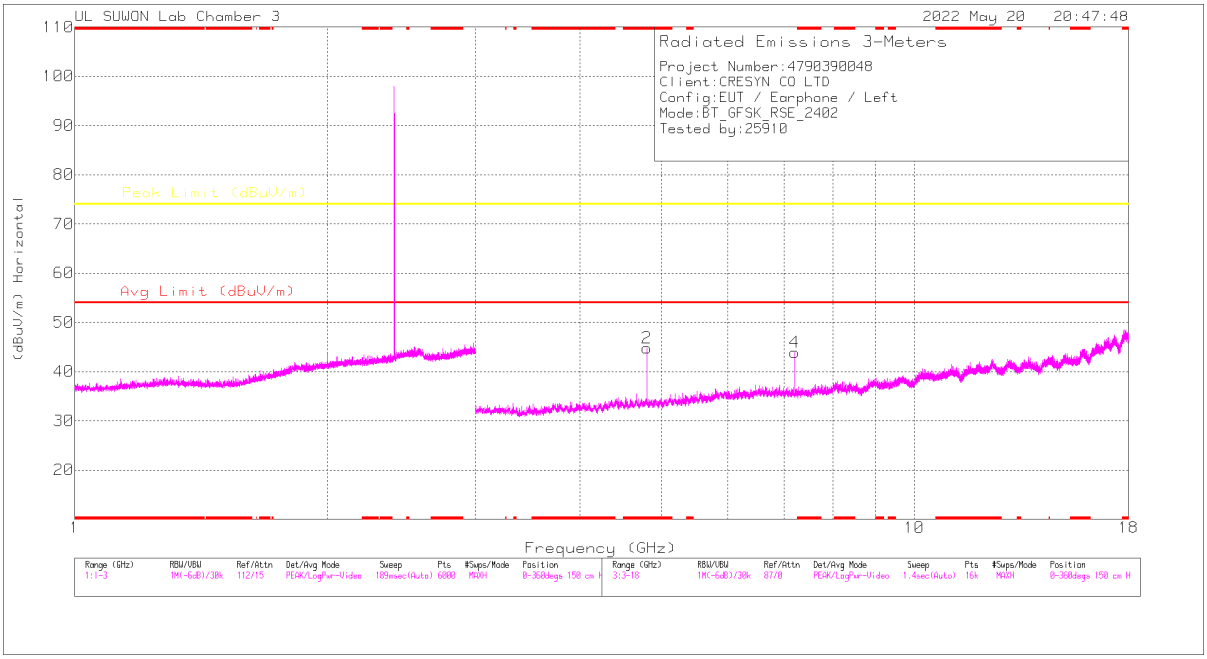

## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 10dB_ATT[dB] | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 2.4835 | 42.99 | Pk | 32.9 | -24.7 | 51.19 | - | - | 74 | -22.81 | 95 | 117 | V |
| 2 | 2.55162 | 44.75 | Pk | 32.9 | -24.6 | 53.05 | - | - | 74 | -20.95 | 95 | 117 | V |
| 3 | * 2.4835 | 30.79 | VA1T | 32.9 | -24.7 | 38.99 | 54 | -15.01 | - | - | 95 | 117 | V |
| 4 | 2.54537 | 31.09 | VA1T | 32.9 | -24.6 | 39.39 | 54 | -14.61 | - | - | 95 | 117 | V |

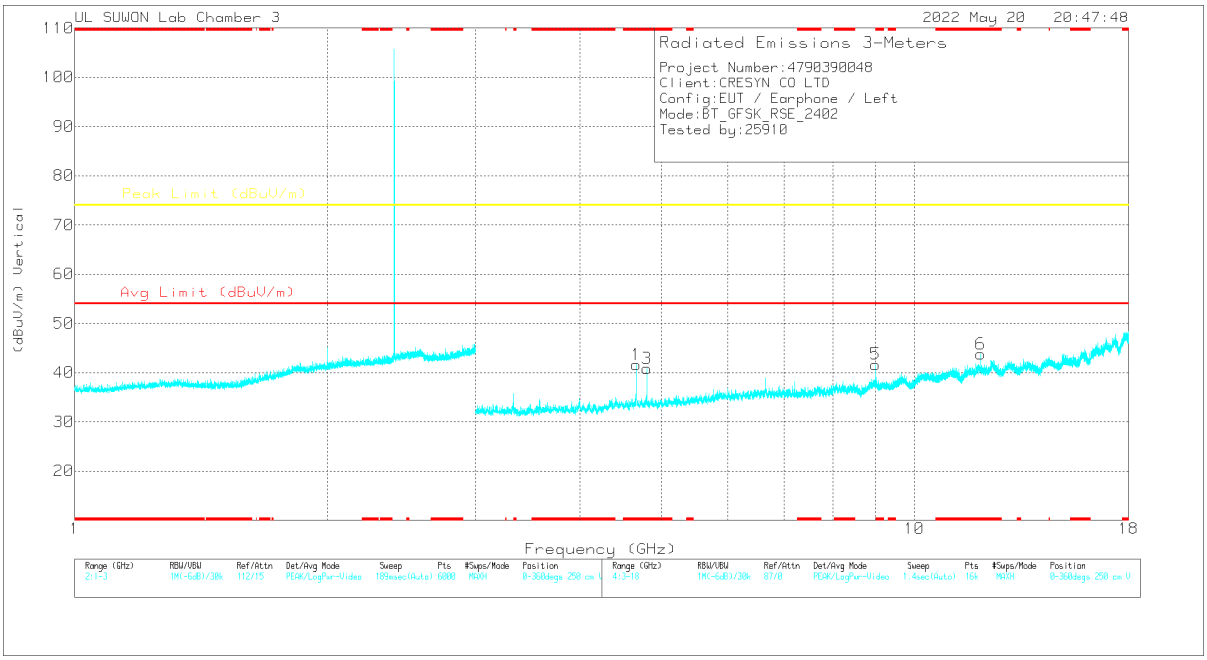
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

## HARMONICS AND SPURIOUS EMISSIONS

### LOW CHANNEL RESULTS




### HORIZONTAL




### VERTICAL

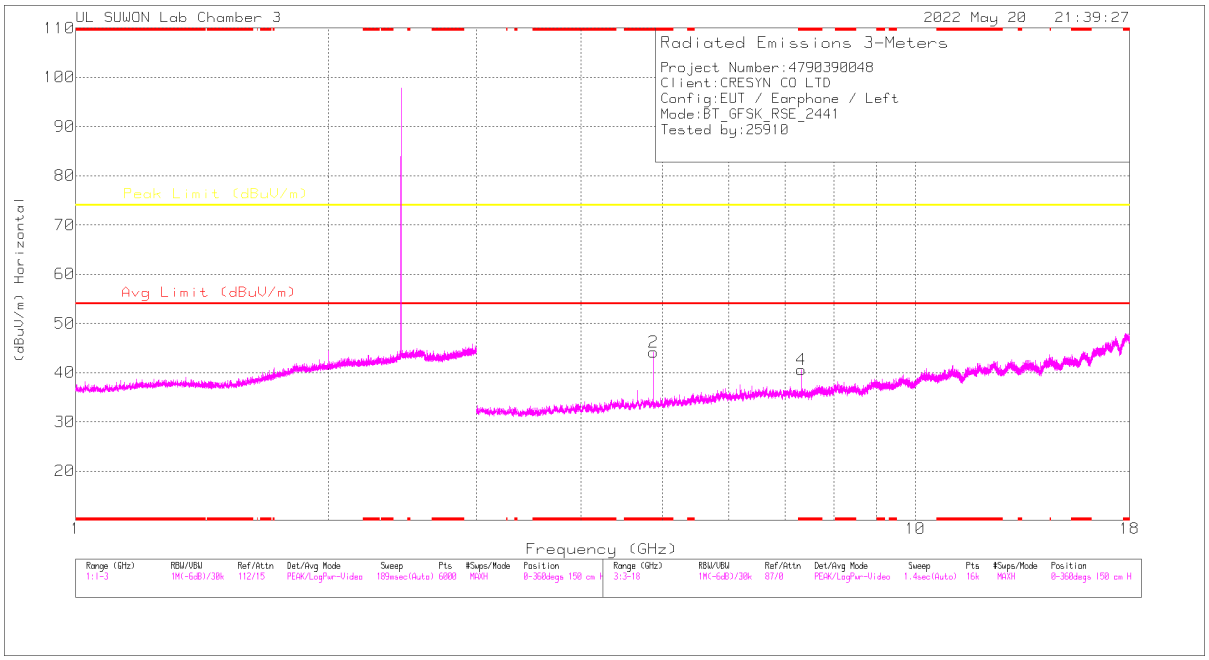
Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

## RADIATED EMISSIONS

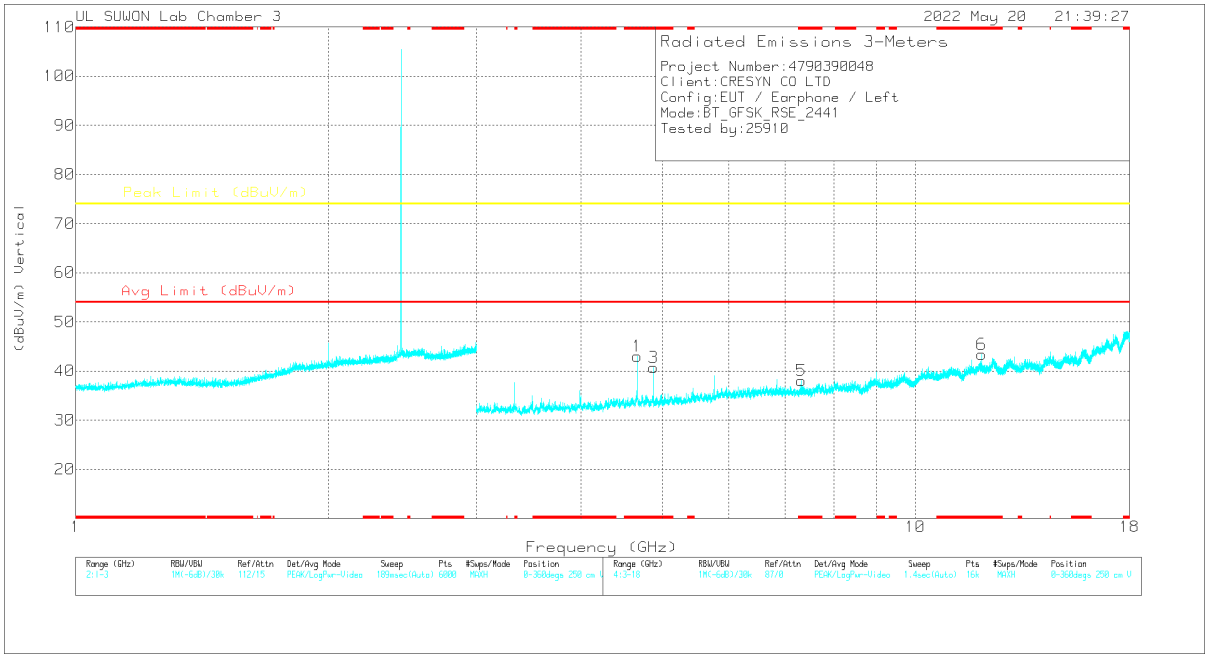
| Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 3GHz_HP[dB] | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * 4.80416 | 42.91 | PKFH | 34.6 | -29.9 | 47.61 | - | - | 74 | -26.39 | 311 | 101 | H |
| * 4.80404 | 36.58 | VA1T | 34.6 | -29.9 | 41.28 | 54 | -12.72 | - | - | 311 | 101 | H |
| 7.20638 | 39.13 | PKFH | 36.1 | -25.6 | 49.63 | - | - | 74 | -24.37 | 59 | 102 | H |
| * 4.66666 | 44.51 | PKFH | 34.5 | -30 | 49.01 | - | - | 74 | -24.99 | 268 | 100 | V |
| * 4.66648 | 37.56 | VA1T | 34.5 | -30 | 42.06 | 54 | -11.94 | - | - | 268 | 100 | V |
| * 4.80352 | 42.14 | PKFH | 34.6 | -29.9 | 46.84 | - | - | 74 | -27.16 | 173 | 379 | V |
| * 4.80408 | 34.93 | VA1T | 34.6 | -29.9 | 39.63 | 54 | -14.37 | - | - | 173 | 379 | V |
| * 9.00147 | 32.13 | PKFH | 36.8 | -22.3 | 46.63 | - | - | 74 | -27.37 | 147 | 128 | V |
| * 9 | 21.28 | VA1T | 36.8 | -22.3 | 35.78 | 54 | -18.22 | - | - | 147 | 128 | V |
| * 11.99954 | 33.51 | PKFH | 39.2 | -21.9 | 50.81 | - | - | 74 | -23.19 | 101 | 100 | V |
| * 11.99933 | 25.74 | VA1T | 39.2 | -21.9 | 43.04 | 54 | -10.96 | - | - | 101 | 100 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

## MID CHANNEL RESULTS




## HORIZONTAL




## VERTICAL

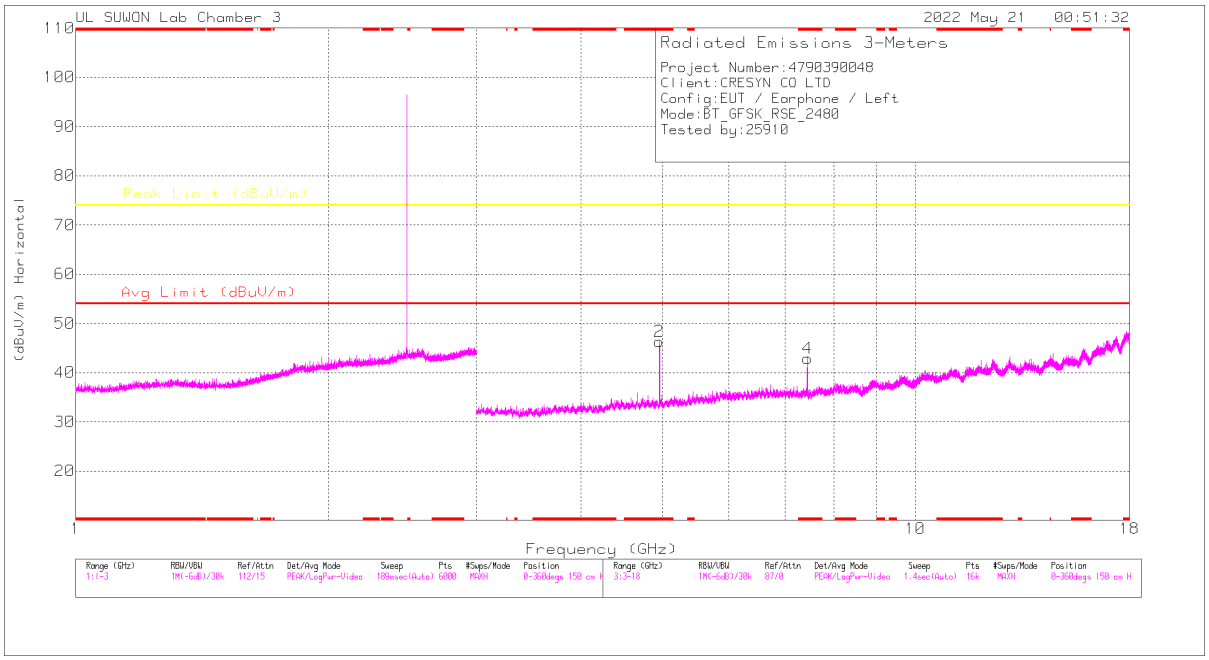
Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

## RADIATED EMISSIONS

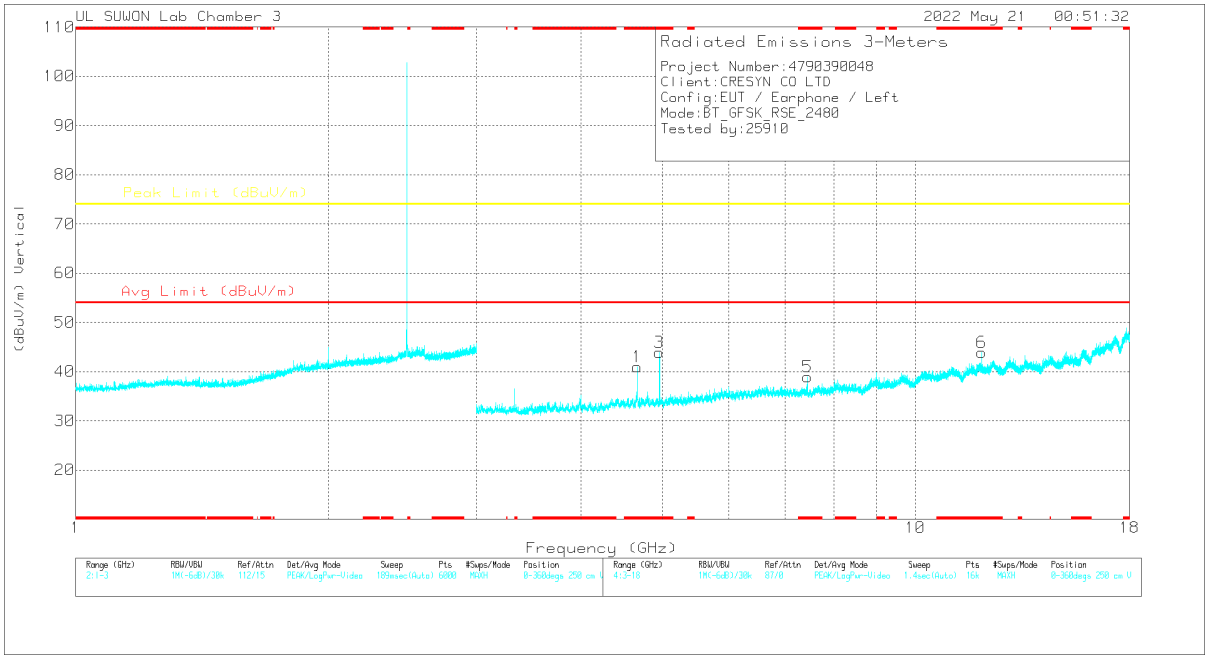
| Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 3GHz_HP[dB] | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * 4.8815 | 43.73 | PKFH | 34.7 | -30.6 | 47.83 | - | - | 74 | -26.17 | 311 | 103 | H |
| * 4.88204 | 37.19 | VA1T | 34.7 | -30.7 | 41.19 | 54 | -12.81 | - | - | 311 | 103 | H |
| * 7.32352 | 36.82 | PKFH | 36 | -25.1 | 47.72 | - | - | 74 | -26.28 | 81 | 106 | H |
| * 7.32309 | 27.35 | VA1T | 36 | -25.1 | 38.25 | 54 | -15.75 | - | - | 81 | 106 | H |
| * 4.66664 | 44.1 | PKFH | 34.5 | -30 | 48.6 | - | - | 74 | -25.4 | 267 | 100 | V |
| * 4.66642 | 37.03 | VA1T | 34.5 | -30 | 41.53 | 54 | -12.47 | - | - | 267 | 100 | V |
| * 4.88167 | 42.8 | PKFH | 34.7 | -30.7 | 46.8 | - | - | 74 | -27.2 | 173 | 387 | V |
| * 4.88206 | 35.85 | VA1T | 34.7 | -30.7 | 39.85 | 54 | -14.15 | - | - | 173 | 387 | V |
| * 7.32354 | 34.8 | PKFH | 36 | -25.1 | 45.7 | - | - | 74 | -28.3 | 198 | 101 | V |
| * 7.32283 | 23.28 | VA1T | 36 | -25.1 | 34.18 | 54 | -19.82 | - | - | 198 | 101 | V |
| * 11.99957 | 32.68 | PKFH | 39.2 | -21.9 | 49.98 | - | - | 74 | -24.02 | 268 | 101 | V |
| * 11.99944 | 25.08 | VA1T | 39.2 | -21.9 | 42.38 | 54 | -11.62 | - | - | 268 | 101 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

## HIGH CHANNEL RESULTS




## HORIZONTAL




## VERTICAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

## RADIATED EMISSIONS

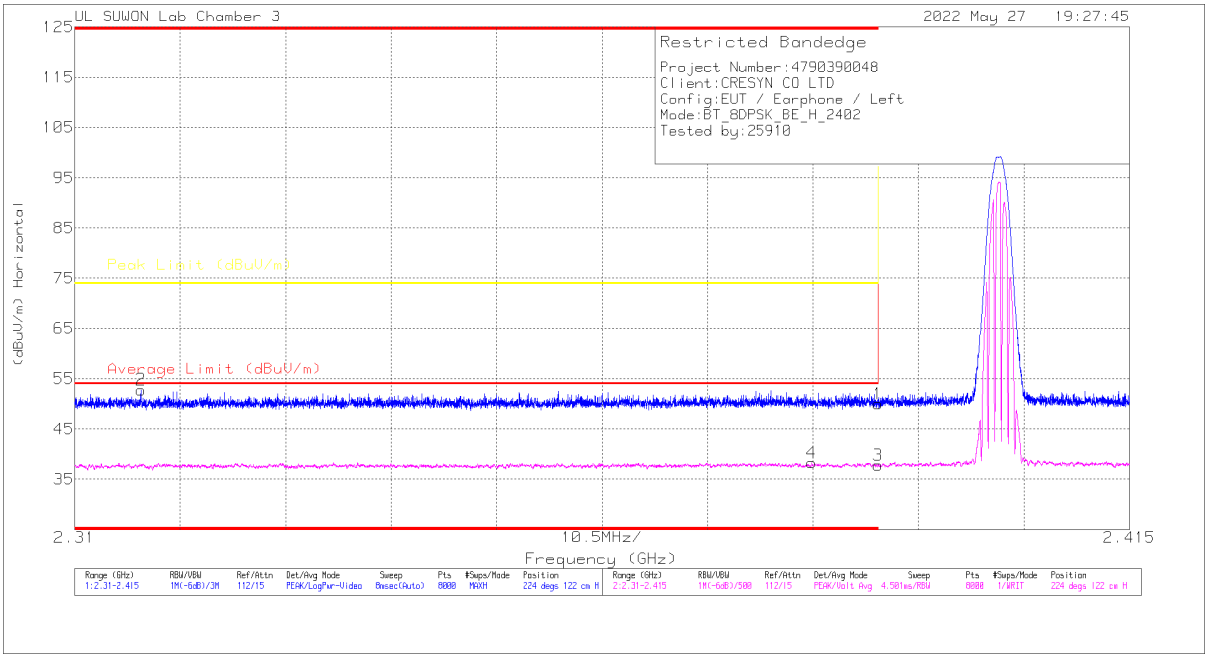
| Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 3GHz_HP[dB] | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * 4.96024 | 45.18 | PKFH | 34.7 | -30.4 | 49.48 | - | - | 74 | -24.52 | 50 | 375 | H |
| * 4.95998 | 40.79 | VA1T | 34.7 | -30.4 | 45.09 | 54 | -8.91 | - | - | 50 | 375 | H |
| * 7.44039 | 39 | PKFH | 36 | -24.8 | 50.2 | - | - | 74 | -23.8 | 74 | 105 | H |
| * 7.4401 | 31.58 | VA1T | 36 | -24.8 | 42.78 | 54 | -11.22 | - | - | 74 | 105 | H |
| * 4.66622 | 42.94 | PKFH | 34.5 | -30 | 47.44 | - | - | 74 | -26.56 | 55 | 110 | V |
| * 4.66641 | 35.41 | VA1T | 34.5 | -30 | 39.91 | 54 | -14.09 | - | - | 55 | 110 | V |
| * 4.95973 | 44.38 | PKFH | 34.7 | -30.4 | 48.68 | - | - | 74 | -25.32 | 208 | 105 | V |
| * 4.95996 | 35.81 | VA1T | 34.7 | -30.4 | 40.11 | 54 | -13.89 | - | - | 208 | 105 | V |
| * 7.43954 | 36.56 | PKFH | 36 | -24.8 | 47.76 | - | - | 74 | -26.24 | 156 | 393 | V |
| * 7.4401 | 26.85 | VA1T | 36 | -24.8 | 38.05 | 54 | -15.95 | - | - | 156 | 393 | V |
| * 11.99948 | 32.83 | PKFH | 39.2 | -21.9 | 50.13 | - | - | 74 | -23.87 | 99 | 100 | V |
| * 11.99952 | 25.86 | VA1T | 39.2 | -21.9 | 43.16 | 54 | -10.84 | - | - | 99 | 100 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

## 10.2.2. BLUETOOTH ENHANCED DATA RATE 8DPSK MODULATION

## BANDEDGE (LOW CHANNEL)

### HORIZONTAL RESULT

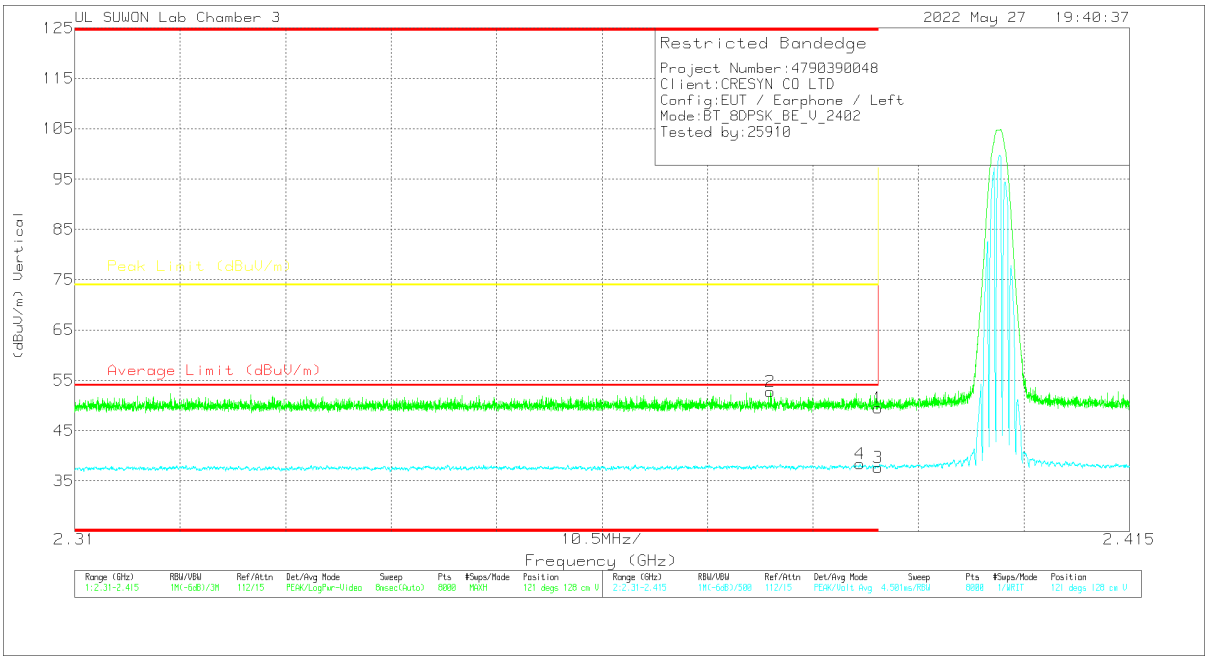



Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 10dB_ATT[dB] | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 2.39 | 41.98 | Pk | 32.8 | -24.8 | 49.98 | - | - | 74 | -24.02 | 224 | 122 | H |
| 2 | * 2.31659 | 45.21 | Pk | 32.5 | -24.9 | 52.81 | - | - | 74 | -21.19 | 224 | 122 | H |
| 3 | * 2.39 | 29.81 | VA1T | 32.8 | -24.8 | 37.81 | 54 | -16.19 | - | - | 224 | 122 | H |
| 4 | * 2.38337 | 30.52 | VA1T | 32.7 | -24.9 | 38.32 | 54 | -15.68 | - | - | 224 | 122 | H |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

# VERTICAL RESULT



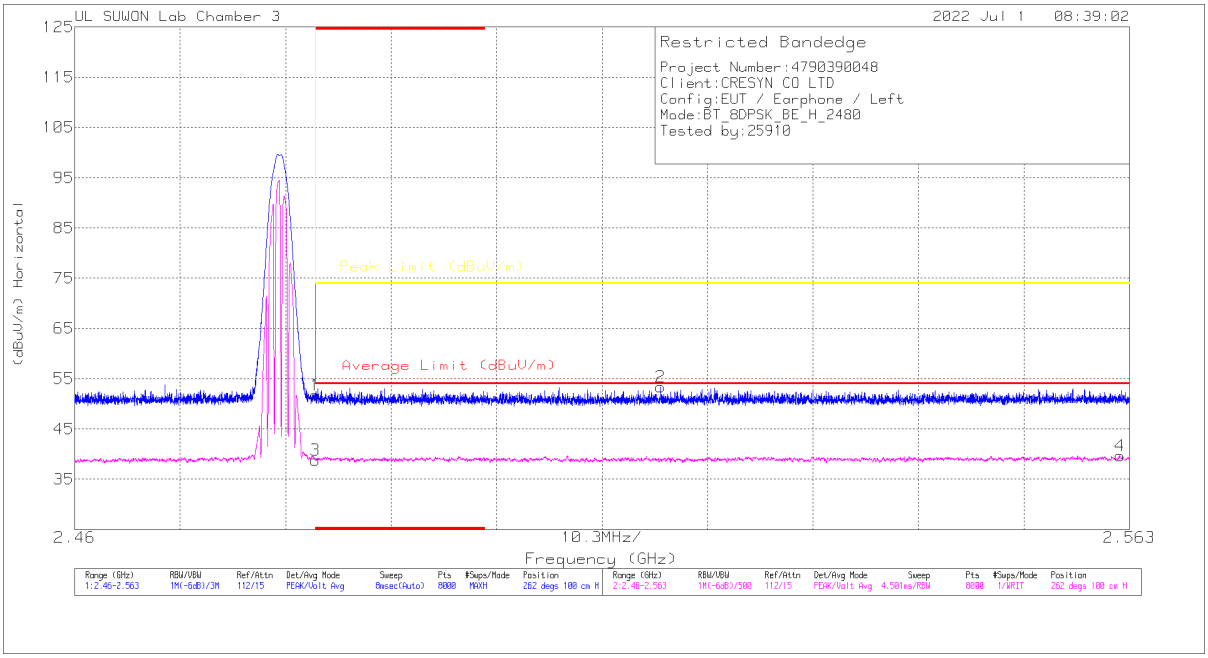

## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 10dB_ATT[dB] | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 2.39 | 41.51 | Pk | 32.8 | -24.8 | 49.51 | - | - | 74 | -24.49 | 121 | 128 | V |
| 2 | * 2.37927 | 44.98 | Pk | 32.7 | -24.9 | 52.78 | - | - | 74 | -21.22 | 121 | 128 | V |
| 3 | * 2.39 | 29.69 | VA1T | 32.8 | -24.8 | 37.69 | 54 | -16.31 | - | - | 121 | 128 | V |
| 4 | * 2.38817 | 30.4 | VA1T | 32.8 | -24.8 | 38.4 | 54 | -15.6 | - | - | 121 | 128 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

## BANDEDGE (HIGH CHANNEL)

### HORIZONTAL RESULT

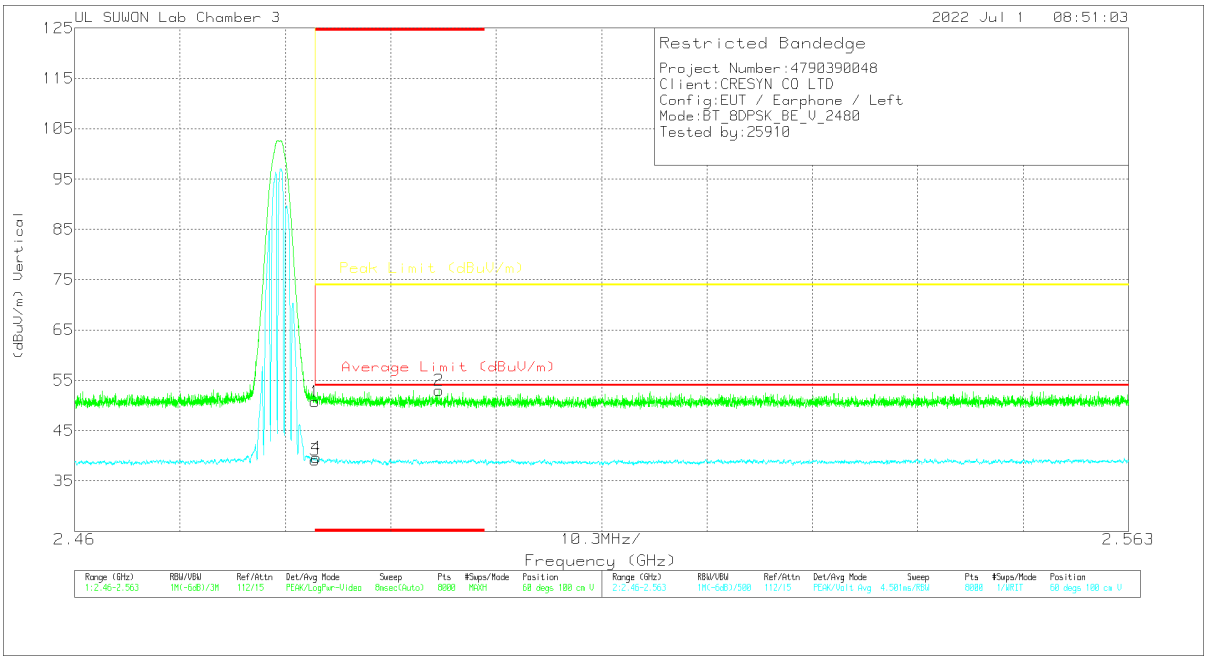



### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 10dB_ATT[dB] | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 2.4835 | 43.56 | Pk | 32.9 | -24.7 | 51.76 | - | - | 74 | -22.24 | 262 | 100 | H |
| 2 | 2.51723 | 45.2 | Pk | 32.9 | -24.7 | 53.4 | - | - | 74 | -20.6 | 262 | 100 | H |
| 3 | * 2.4835 | 30.55 | VA1T | 32.9 | -24.7 | 38.75 | 54 | -15.25 | - | - | 262 | 100 | H |
| 4 | 2.56206 | 31.36 | VA1T | 32.9 | -24.6 | 39.66 | 54 | -14.34 | - | - | 262 | 100 | H |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

## VERTICAL RESULT



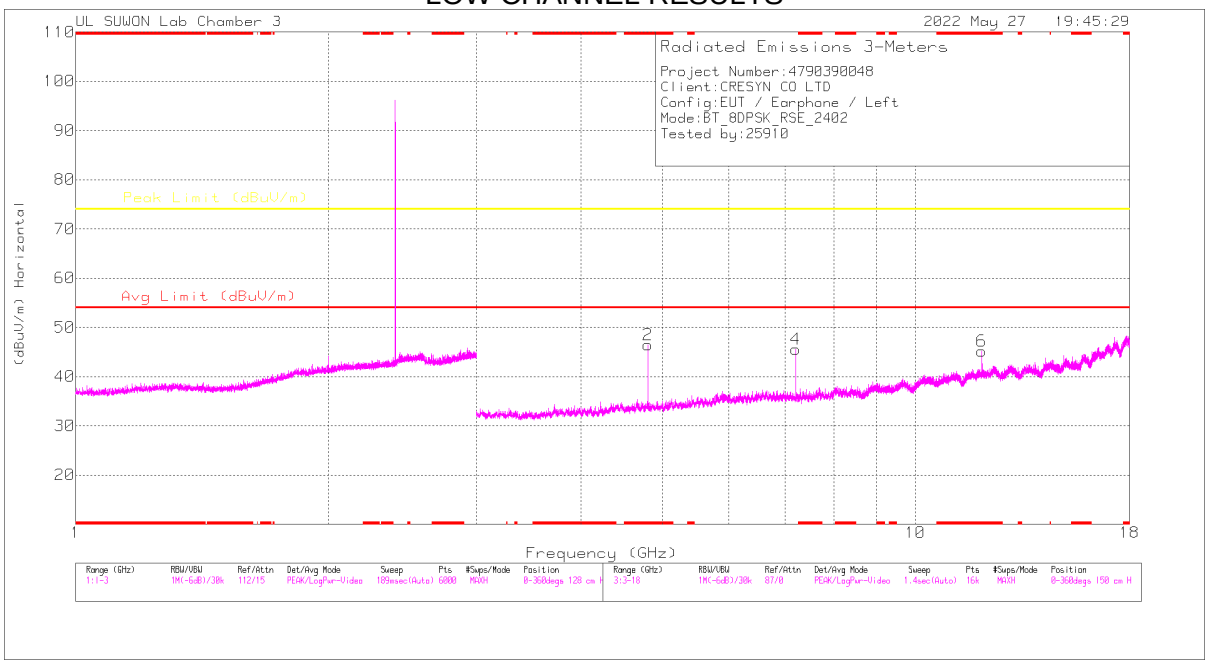

## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 10dB_ATT[dB] | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 2.4835 | 42.59 | Pk | 32.9 | -24.7 | 50.79 | - | - | 74 | -23.21 | 60 | 100 | V |
| 2 | * 2.49562 | 44.77 | Pk | 32.9 | -24.7 | 52.97 | - | - | 74 | -21.03 | 60 | 100 | V |
| 3 | * 2.4835 | 30.96 | VA1T | 32.9 | -24.7 | 39.16 | 54 | -14.84 | - | - | 60 | 100 | V |
| 4 | * 2.4836 | 31.46 | VA1T | 32.9 | -24.7 | 39.66 | 54 | -14.34 | - | - | 60 | 100 | V |

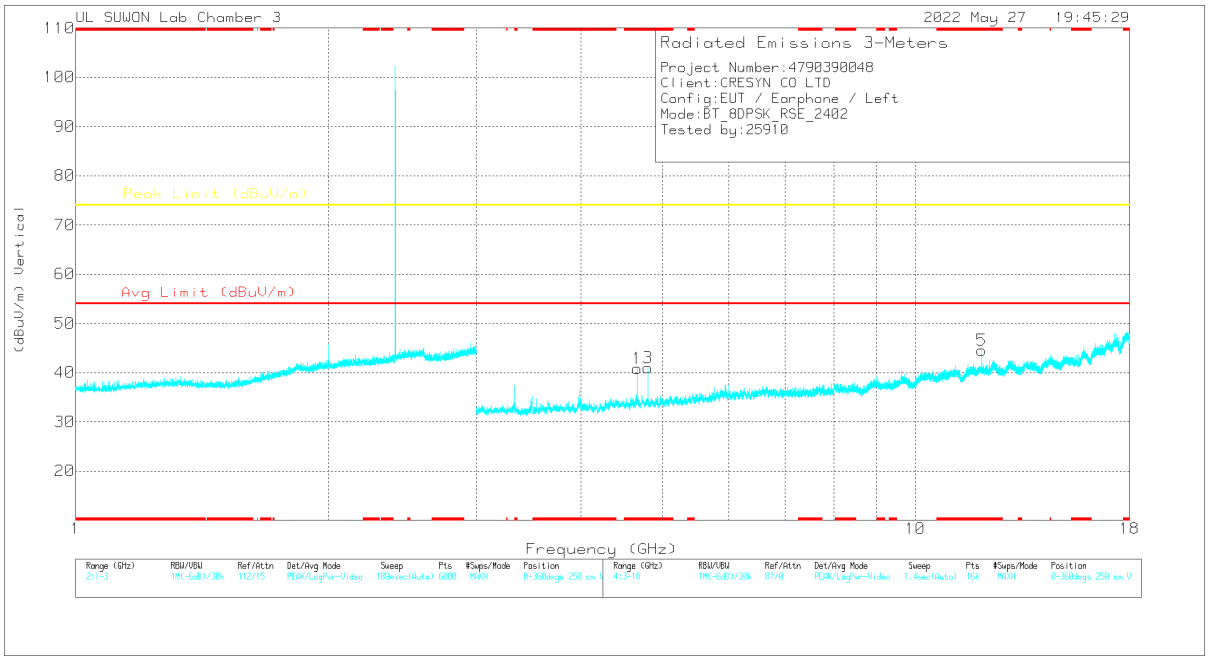
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

## HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS




**HORIZONTAL**




**VERTICAL**

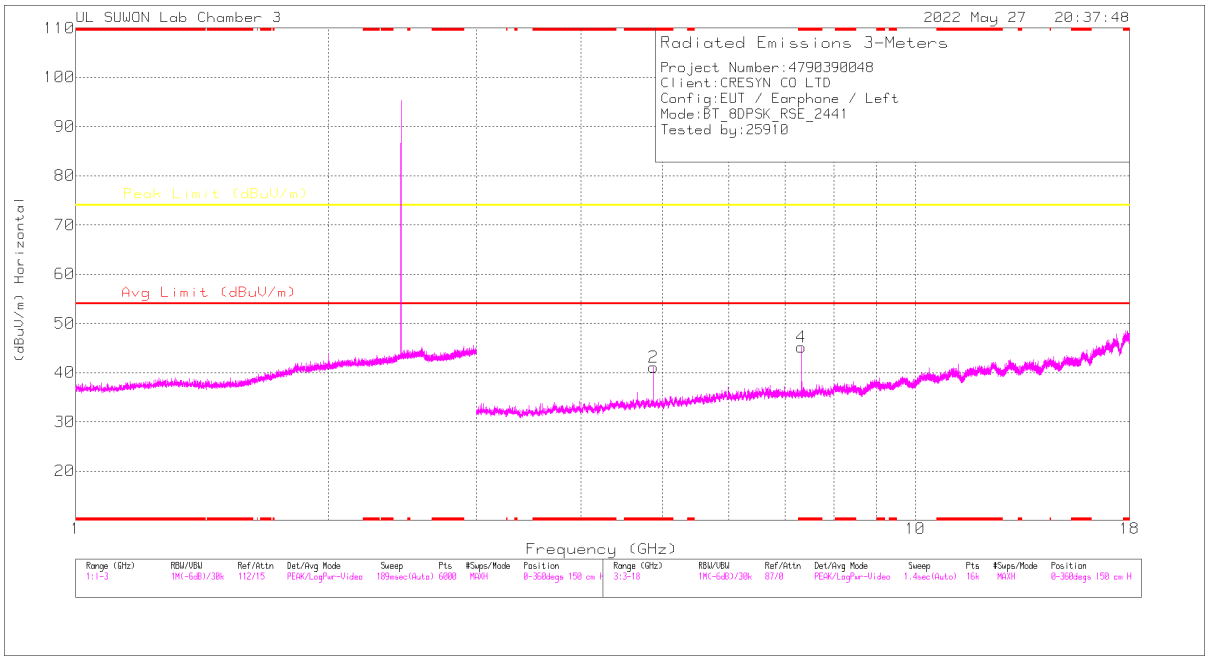
Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

## RADIATED EMISSIONS

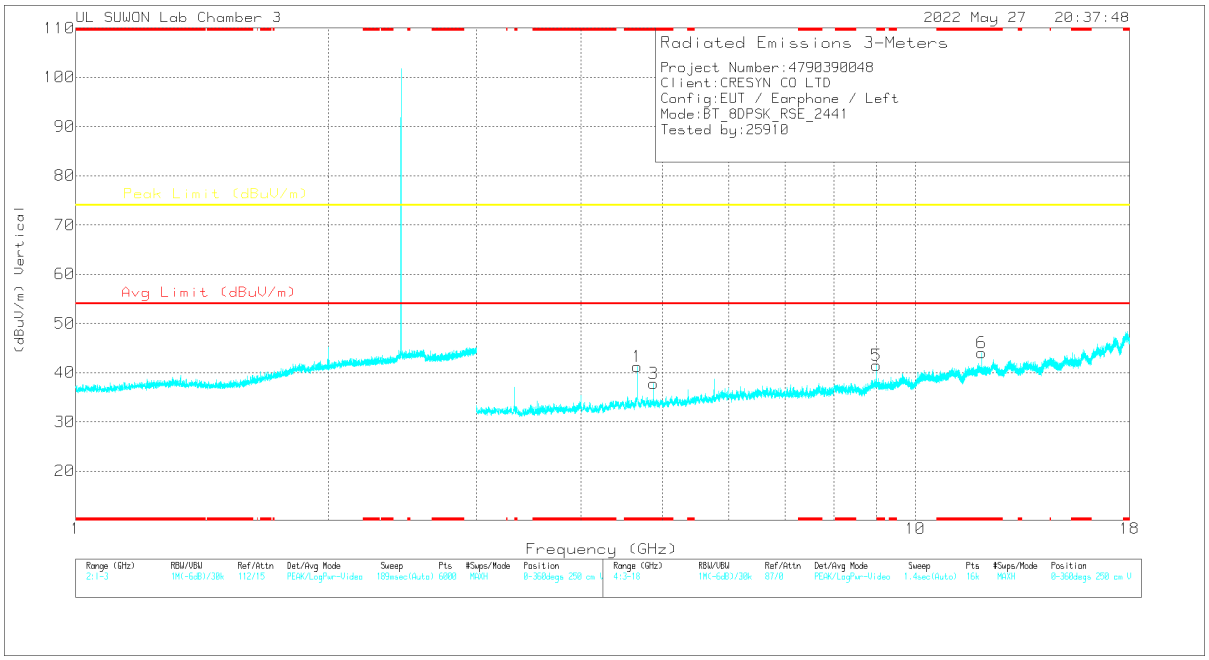
| Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 3GHz_HP[dB] | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * 4.80371 | 46.08 | PKFH | 34.6 | -29.9 | 50.78 | - | - | 74 | -23.22 | 47 | 104 | H |
| * 4.80392 | 34 | VA1T | 34.6 | -29.9 | 38.7 | 54 | -15.3 | - | - | 47 | 104 | H |
| 7.20657 | 40.46 | PKFH | 36.1 | -25.6 | 50.96 | - | - | 74 | -23.04 | 68 | 104 | H |
| * 12.01036 | 32.83 | PKFH | 39.2 | -21.9 | 50.13 | - | - | 74 | -23.87 | 307 | 101 | H |
| * 12.0105 | 19.85 | VA1T | 39.2 | -21.9 | 37.15 | 54 | -16.85 | - | - | 307 | 101 | H |
| * 4.66632 | 43.84 | PKFH | 34.5 | -30 | 48.34 | - | - | 74 | -25.66 | 273 | 107 | V |
| * 4.66636 | 37.06 | VA1T | 34.5 | -30 | 41.56 | 54 | -12.44 | - | - | 273 | 107 | V |
| * 4.8039 | 42.41 | PKFH | 34.6 | -29.9 | 47.11 | - | - | 74 | -26.89 | 171 | 110 | V |
| * 4.80402 | 31.97 | VA1T | 34.6 | -29.9 | 36.67 | 54 | -17.33 | - | - | 171 | 110 | V |
| * 11.99933 | 33.05 | PKFH | 39.2 | -21.9 | 50.35 | - | - | 74 | -23.65 | 265 | 110 | V |
| * 11.9995 | 26.7 | VA1T | 39.2 | -21.9 | 44 | 54 | -10 | - | - | 265 | 110 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

## MID CHANNEL RESULTS




## HORIZONTAL




## VERTICAL

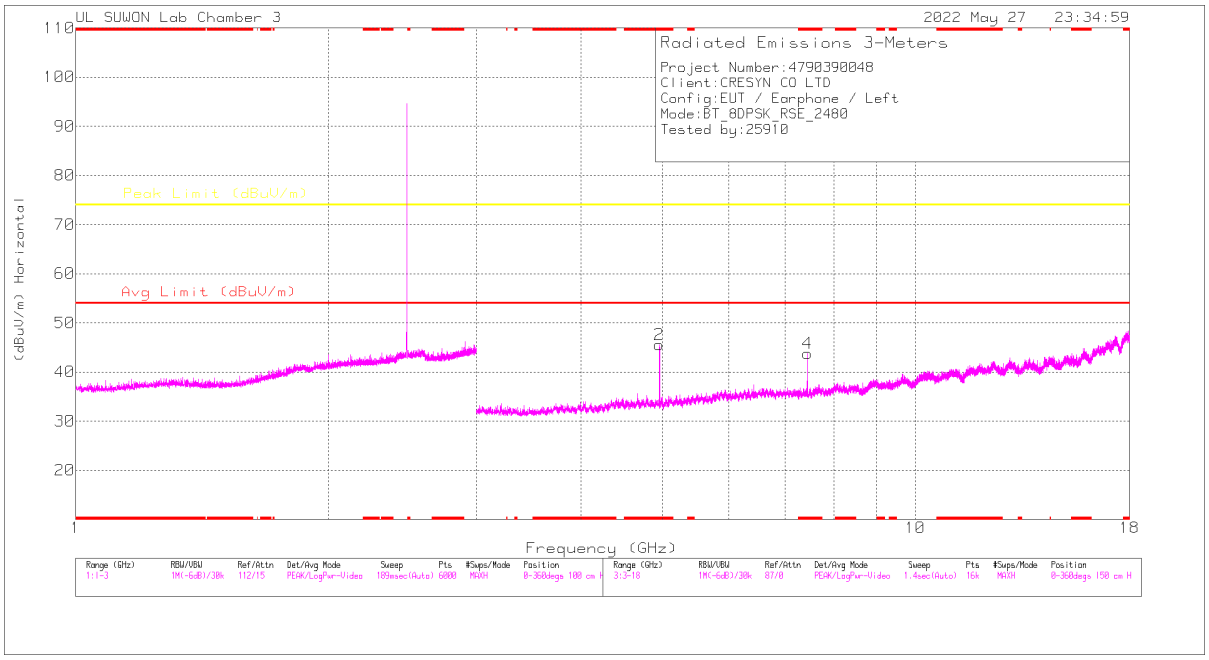
Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

## RADIATED EMISSIONS

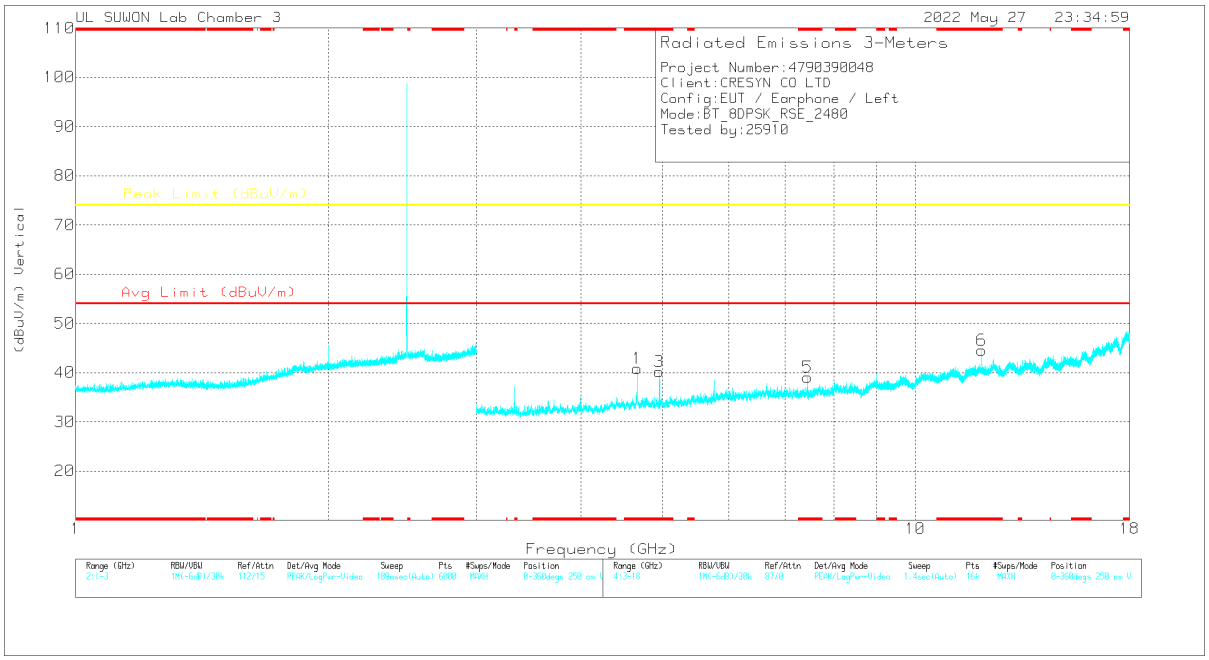
| Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 3GHz_HP[dB] | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * 4.88162 | 43.72 | PKFH | 34.7 | -30.7 | 47.72 | - | - | 74 | -26.28 | 55 | 103 | H |
| * 4.88208 | 32.91 | VA1T | 34.7 | -30.7 | 36.91 | 54 | -17.09 | - | - | 55 | 103 | H |
| * 7.32341 | 37.56 | PKFH | 36 | -25.1 | 48.46 | - | - | 74 | -25.54 | 76 | 100 | H |
| * 7.32292 | 23.9 | VA1T | 36 | -25.1 | 34.8 | 54 | -19.2 | - | - | 76 | 100 | H |
| * 4.66651 | 43.77 | PKFH | 34.5 | -30 | 48.27 | - | - | 74 | -25.73 | 271 | 105 | V |
| * 4.66645 | 36.71 | VA1T | 34.5 | -30 | 41.21 | 54 | -12.79 | - | - | 271 | 105 | V |
| * 4.88214 | 41.33 | PKFH | 34.7 | -30.7 | 45.33 | - | - | 74 | -28.67 | 169 | 100 | V |
| * 4.88206 | 32.21 | VA1T | 34.7 | -30.7 | 36.21 | 54 | -17.79 | - | - | 169 | 100 | V |
| * 9.00004 | 31.51 | PKFH | 36.8 | -22.3 | 46.01 | - | - | 74 | -27.99 | 149 | 152 | V |
| * 9 | 20.83 | VA1T | 36.8 | -22.3 | 35.33 | 54 | -18.67 | - | - | 149 | 152 | V |
| * 11.99967 | 33.44 | PKFH | 39.2 | -21.9 | 50.74 | - | - | 74 | -23.26 | 265 | 112 | V |
| * 11.99953 | 26.91 | VA1T | 39.2 | -21.9 | 44.21 | 54 | -9.79 | - | - | 265 | 112 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

## HIGH CHANNEL RESULTS




## HORIZONTAL




## VERTICAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

## RADIATED EMISSIONS

| Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 3GHz_HP[dB] | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * 4.96004 | 43.7 | PKFH | 34.7 | -30.4 | 48 | - | - | 74 | -26 | 276 | 110 | H |
| * 4.95984 | 34.43 | VA1T | 34.7 | -30.4 | 38.73 | 54 | -15.27 | - | - | 276 | 110 | H |
| * 7.44042 | 38.59 | PKFH | 36 | -24.8 | 49.79 | - | - | 74 | -24.21 | 75 | 107 | H |
| * 7.43999 | 24.4 | VA1T | 36 | -24.8 | 35.6 | 54 | -18.4 | - | - | 75 | 107 | H |
| * 4.66619 | 43.33 | PKFH | 34.5 | -30 | 47.83 | - | - | 74 | -26.17 | 270 | 101 | V |
| * 4.66639 | 36.93 | VA1T | 34.5 | -30 | 41.43 | 54 | -12.57 | - | - | 270 | 101 | V |
| * 4.96003 | 42.27 | PKFH | 34.7 | -30.4 | 46.57 | - | - | 74 | -27.43 | 309 | 109 | V |
| * 4.95995 | 34.71 | VA1T | 34.7 | -30.4 | 39.01 | 54 | -14.99 | - | - | 309 | 109 | V |
| * 7.44011 | 35.6 | PKFH | 36 | -24.8 | 46.8 | - | - | 74 | -27.2 | 166 | 100 | V |
| * 7.43998 | 22.66 | VA1T | 36 | -24.8 | 33.86 | 54 | -20.14 | - | - | 166 | 100 | V |
| * 11.99963 | 32.84 | PKFH | 39.2 | -21.9 | 50.14 | - | - | 74 | -23.86 | 264 | 112 | V |
| * 11.99951 | 25.87 | VA1T | 39.2 | -21.9 | 43.17 | 54 | -10.83 | - | - | 264 | 112 | V |

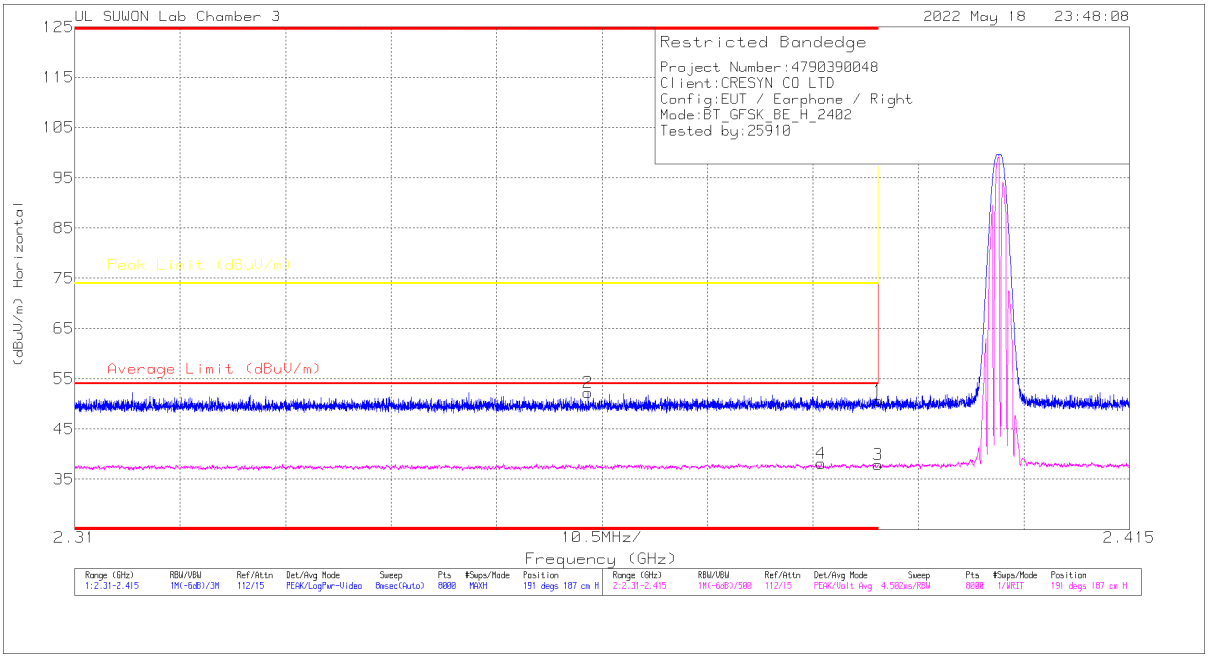
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

- **Right**

### 10.2.3. BLUETOOTH BASIC DATA RATE GFSK MODULATION

## BANDEDGE (LOW CHANNEL)

### HORIZONTAL RESULT

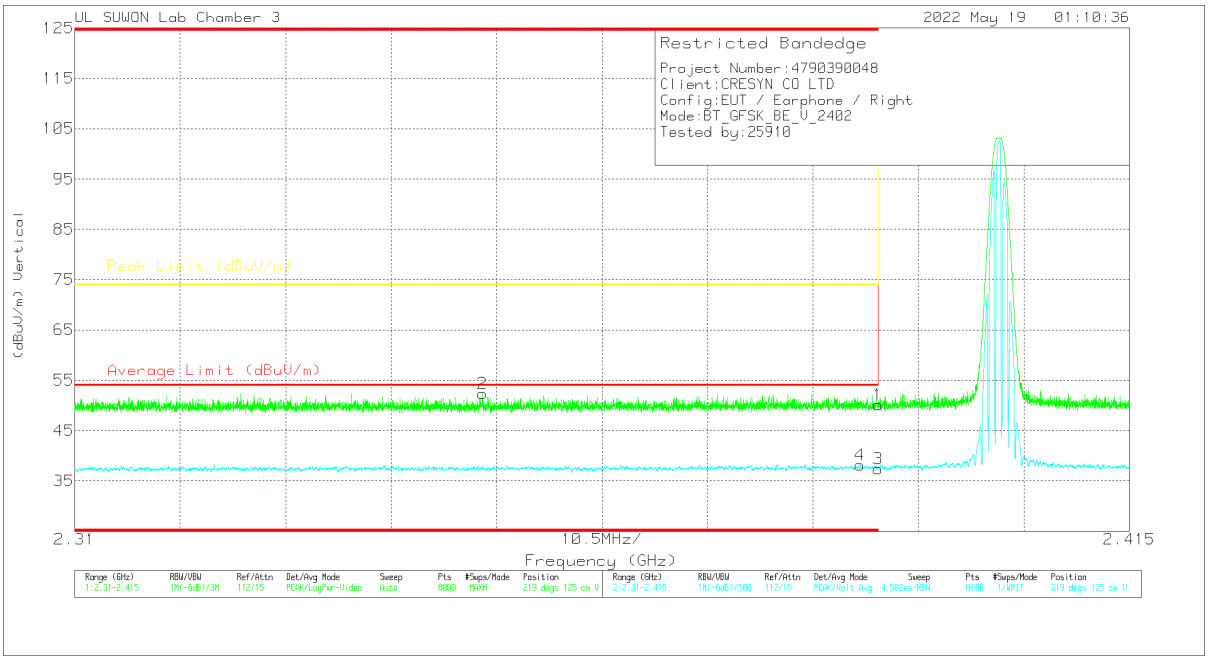



Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 10dB_ATT[dB] | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 2.39 | 42.61 | Pk | 32.8 | -24.8 | 50.61 | - | - | 74 | -23.39 | 191 | 187 | H |
| 2 | * 2.36109 | 44.59 | Pk | 32.6 | -24.9 | 52.29 | - | - | 74 | -21.71 | 191 | 187 | H |
| 3 | * 2.39 | 29.9 | VA1T | 32.8 | -24.8 | 37.9 | 54 | -16.1 | - | - | 191 | 187 | H |
| 4 | * 2.38433 | 30.39 | VA1T | 32.7 | -24.9 | 38.19 | 54 | -15.81 | - | - | 191 | 187 | H |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

# VERTICAL RESULT



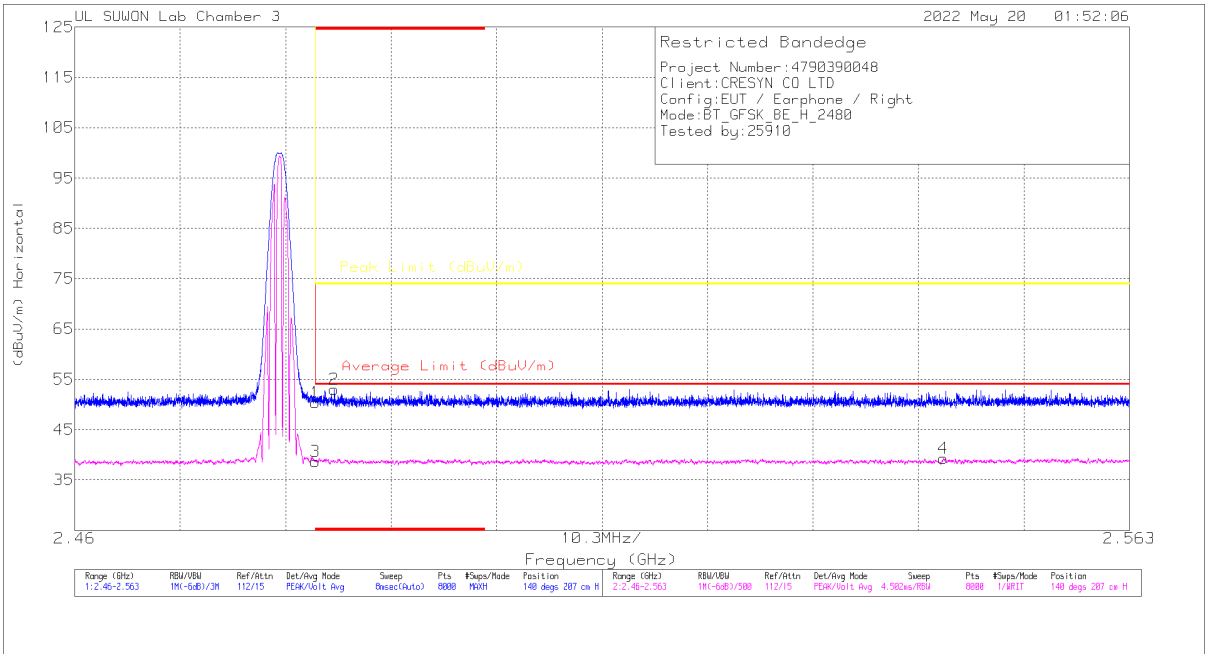

## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 10dB_ATT[dB] | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 2.39 | 42.1 | Pk | 32.8 | -24.8 | 50.1 | - | - | 74 | -23.9 | 219 | 125 | V |
| 2 | * 2.3506 | 44.68 | Pk | 32.6 | -24.9 | 52.38 | - | - | 74 | -21.62 | 219 | 125 | V |
| 3 | * 2.39 | 29.47 | VA1T | 32.8 | -24.8 | 37.47 | 54 | -16.53 | - | - | 219 | 125 | V |
| 4 | * 2.3882 | 30.14 | VA1T | 32.8 | -24.8 | 38.14 | 54 | -15.86 | - | - | 219 | 125 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

## BANDEDGE (HIGH CHANNEL)

### HORIZONTAL RESULT

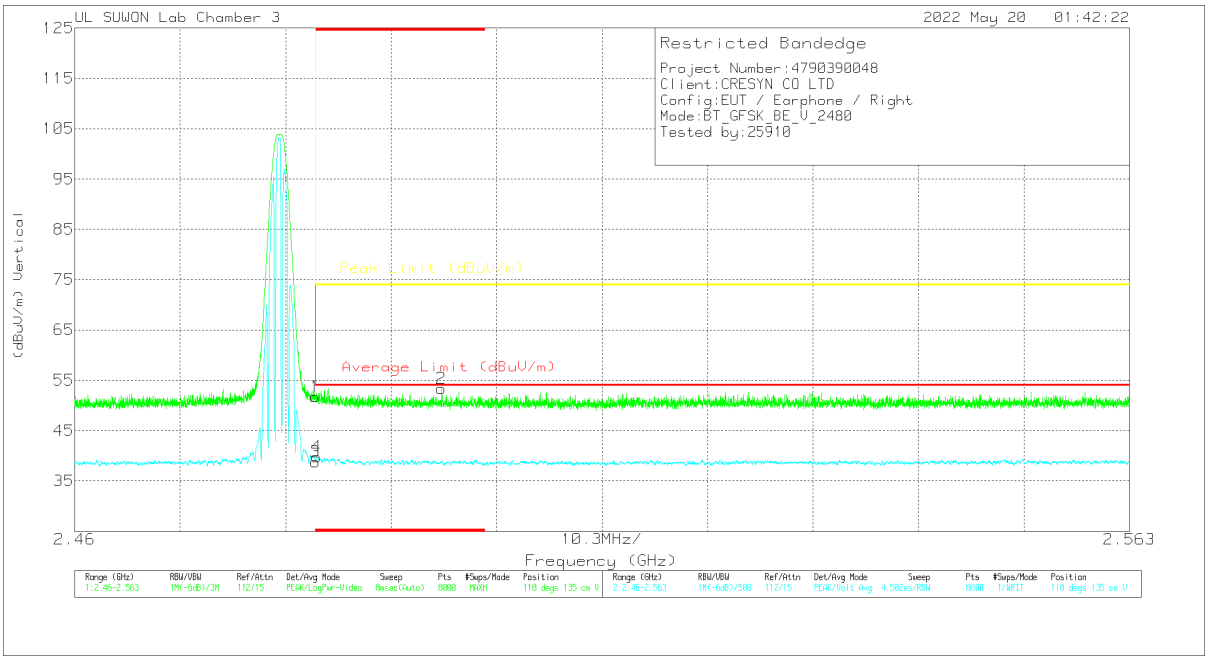



### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 10dB_ATT[dB] | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 2.4835 | 42.21 | Pk | 32.9 | -24.7 | 50.41 | - | - | 74 | -23.59 | 140 | 207 | H |
| 2 | * 2.48535 | 44.75 | Pk | 32.9 | -24.7 | 52.95 | - | - | 74 | -21.05 | 140 | 207 | H |
| 3 | * 2.4835 | 30.43 | VA1T | 32.9 | -24.7 | 38.63 | 54 | -15.37 | - | - | 140 | 207 | H |
| 4 | 2.54483 | 31.03 | VA1T | 32.9 | -24.6 | 39.33 | 54 | -14.67 | - | - | 140 | 207 | H |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

## VERTICAL RESULT



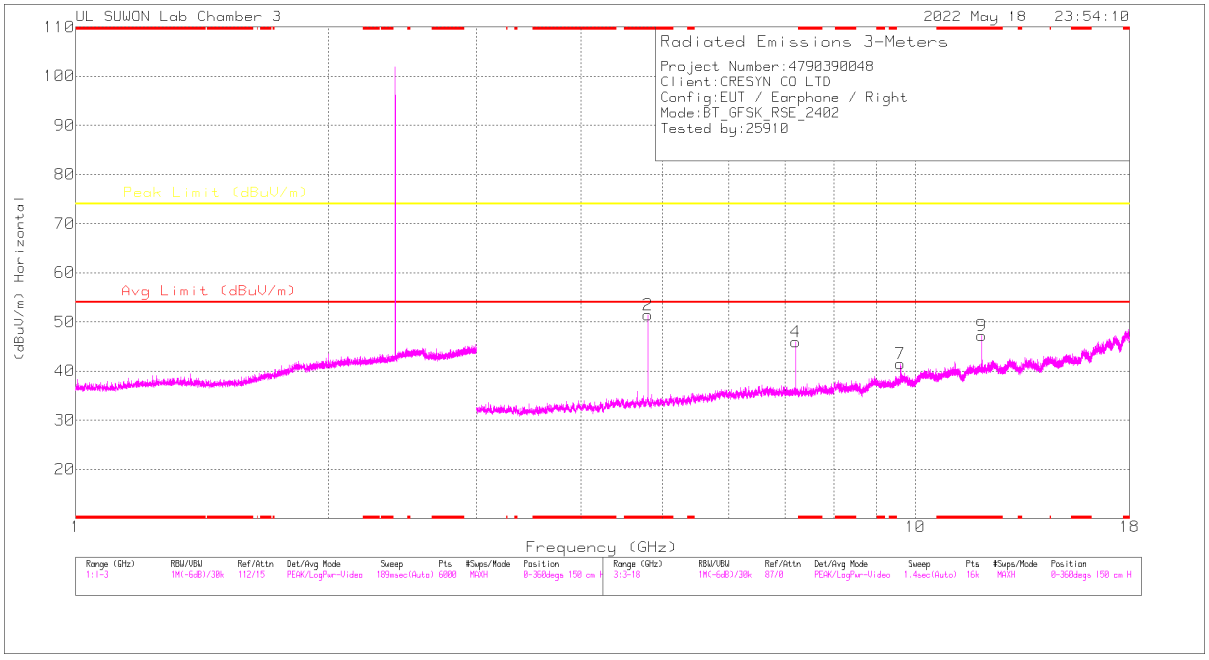

## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 10dB_ATT[dB] | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 2.4835 | 43.54 | Pk | 32.9 | -24.7 | 51.74 | - | - | 74 | -22.26 | 118 | 135 | V |
| 2 | * 2.49579 | 45.2 | Pk | 32.9 | -24.7 | 53.4 | - | - | 74 | -20.6 | 118 | 135 | V |
| 3 | * 2.4835 | 30.64 | VA1T | 32.9 | -24.7 | 38.84 | 54 | -15.16 | - | - | 118 | 135 | V |
| 4 | * 2.48364 | 31.6 | VA1T | 32.9 | -24.7 | 39.8 | 54 | -14.2 | - | - | 118 | 135 | V |

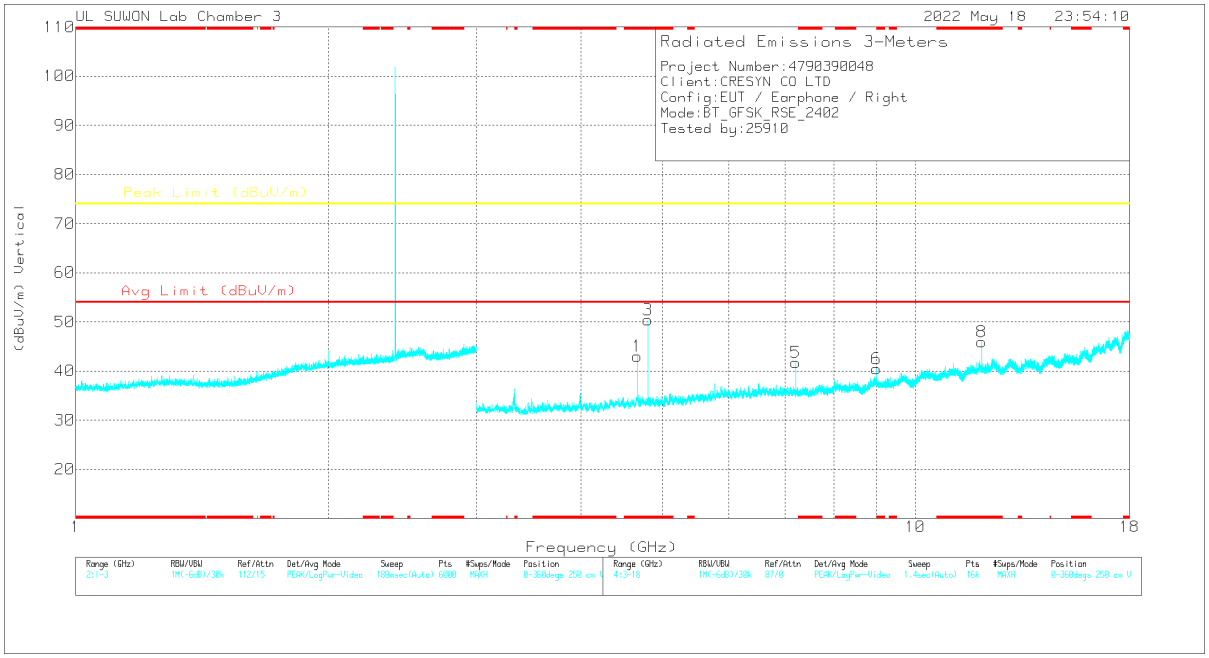
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

## HARMONICS AND SPURIOUS EMISSIONS

### LOW CHANNEL RESULTS




### HORIZONTAL




### VERTICAL

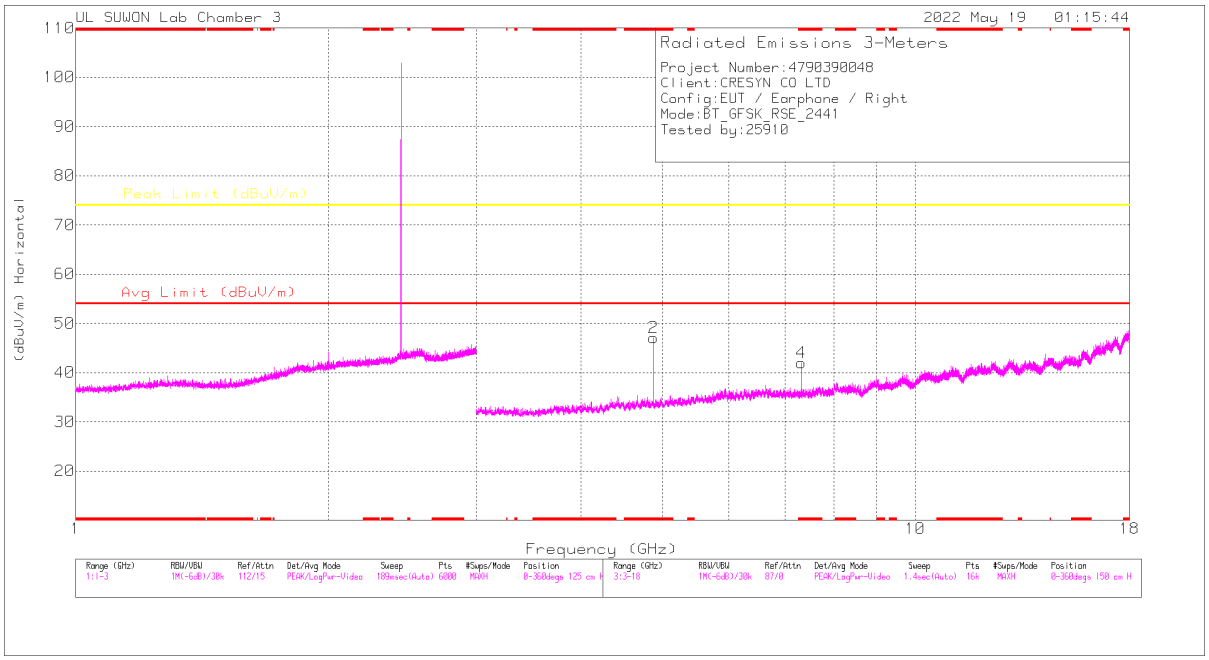
Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

## RADIATED EMISSIONS

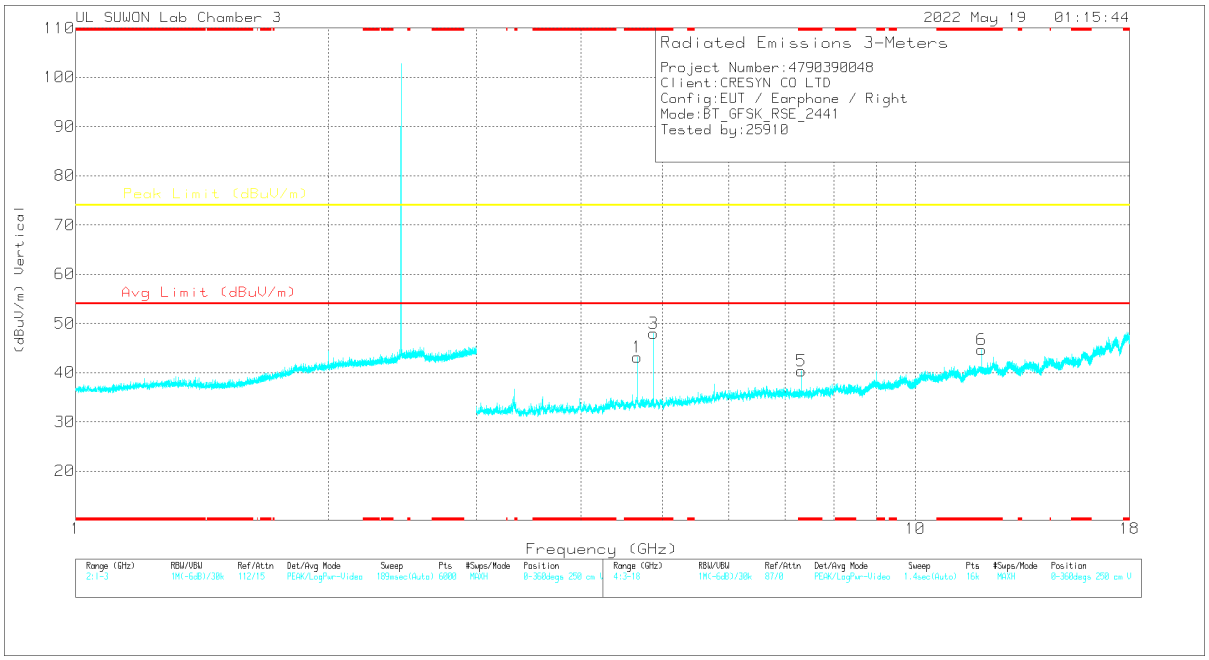
| Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 3GHz_HP[dB] | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * 4.80375 | 49.15 | PKFH | 34.6 | -29.9 | 53.85 | - | - | 74 | -20.15 | 320 | 112 | H |
| * 4.80386 | 44.81 | VA1T | 34.6 | -29.9 | 49.51 | 54 | -4.49 | - | - | 320 | 112 | H |
| 7.20554 | 40.64 | PKFH | 36.1 | -25.6 | 51.14 | - | - | 74 | -22.86 | 282 | 126 | H |
| 9.60828 | 32.66 | PKFH | 37.3 | -21.8 | 48.16 | - | - | 74 | -25.84 | 39 | 100 | H |
| * 12.00931 | 35.38 | PKFH | 39.2 | -21.9 | 52.68 | - | - | 74 | -21.32 | 52 | 100 | H |
| * 12.00935 | 24.75 | VA1T | 39.2 | -21.9 | 42.05 | 54 | -11.95 | - | - | 52 | 100 | H |
| * 4.66628 | 44.49 | PKFH | 34.5 | -30 | 48.99 | - | - | 74 | -25.01 | 96 | 107 | V |
| * 4.66648 | 37.61 | VA1T | 34.5 | -30 | 42.11 | 54 | -11.89 | - | - | 96 | 107 | V |
| * 4.80407 | 50.74 | PKFH | 34.6 | -29.9 | 55.44 | - | - | 74 | -18.56 | 205 | 100 | V |
| * 4.80394 | 45.38 | VA1T | 34.6 | -29.9 | 50.08 | 54 | -3.92 | - | - | 205 | 100 | V |
| 7.20554 | 38.2 | PKFH | 36.1 | -25.6 | 48.7 | - | - | 74 | -25.3 | 199 | 131 | V |
| 8.99864 | 31.42 | PKFH | 36.8 | -22.3 | 45.92 | - | - | 74 | -28.08 | 35 | 120 | V |
| * 11.99946 | 34.43 | PKFH | 39.2 | -21.9 | 51.73 | - | - | 74 | -22.27 | 91 | 101 | V |
| * 11.99947 | 26.84 | VA1T | 39.2 | -21.9 | 44.14 | 54 | -9.86 | - | - | 91 | 101 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

## MID CHANNEL RESULTS




## HORIZONTAL




## VERTICAL

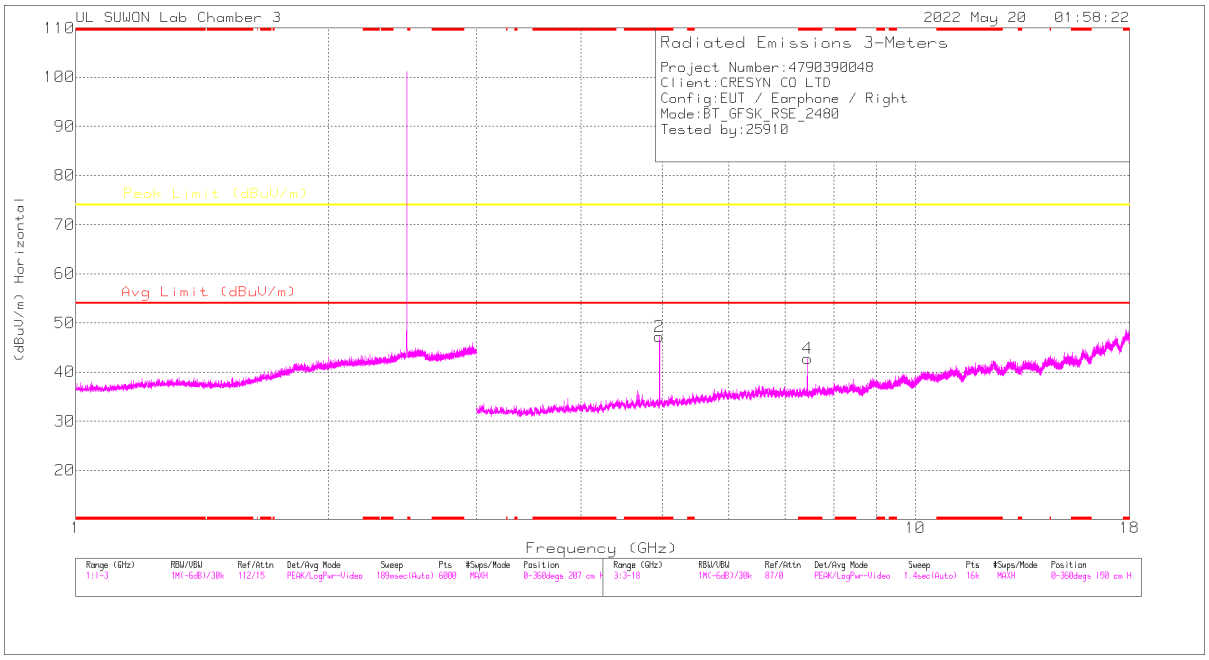
Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

## RADIATED EMISSIONS

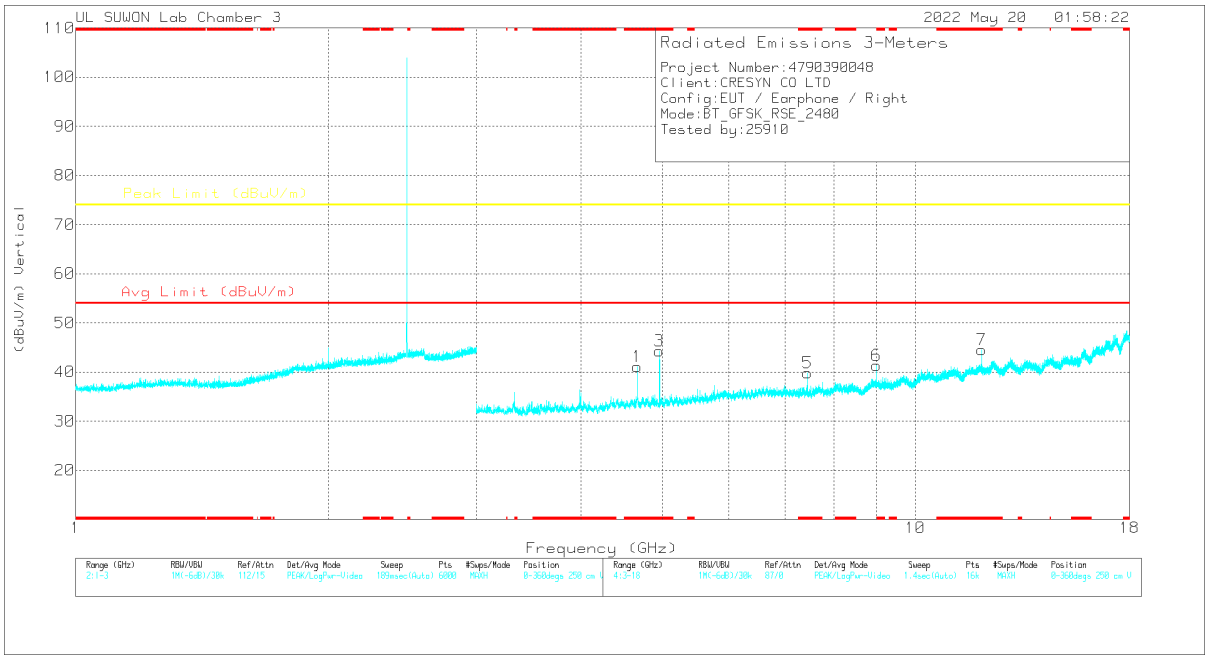
| Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_0021895 7 | 3GHz_HP[dB] | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * 4.88229 | 47.3 | PKFH | 34.7 | -30.7 | 51.3 | - | - | 74 | -22.7 | 320 | 366 | H |
| * 4.88207 | 42.07 | VA1T | 34.7 | -30.7 | 46.07 | 54 | -7.93 | - | - | 320 | 366 | H |
| * 7.32247 | 37.9 | PKFH | 36 | -25.1 | 48.8 | - | - | 74 | -25.2 | 279 | 112 | H |
| * 7.32298 | 30.74 | VA1T | 36 | -25.1 | 41.64 | 54 | -12.36 | - | - | 279 | 112 | H |
| * 4.66656 | 44.18 | PKFH | 34.5 | -30 | 48.68 | - | - | 74 | -25.32 | 98 | 100 | V |
| * 4.6664 | 37.9 | VA1T | 34.5 | -30 | 42.4 | 54 | -11.6 | - | - | 98 | 100 | V |
| * 4.88185 | 45.41 | PKFH | 34.7 | -30.7 | 49.41 | - | - | 74 | -24.59 | 159 | 105 | V |
| * 4.8821 | 37.22 | VA1T | 34.7 | -30.7 | 41.22 | 54 | -12.78 | - | - | 159 | 105 | V |
| * 7.32231 | 34.85 | PKFH | 36 | -25.1 | 45.75 | - | - | 74 | -28.25 | 211 | 392 | V |
| * 7.32284 | 24.39 | VA1T | 36 | -25.1 | 35.29 | 54 | -18.71 | - | - | 211 | 392 | V |
| * 11.9996 | 32.94 | PKFH | 39.2 | -21.9 | 50.24 | - | - | 74 | -23.76 | 266 | 106 | V |
| * 11.9994 | 25.98 | VA1T | 39.2 | -21.9 | 43.28 | 54 | -10.72 | - | - | 266 | 106 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

## HIGH CHANNEL RESULTS




## HORIZONTAL




## VERTICAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

## RADIATED EMISSIONS

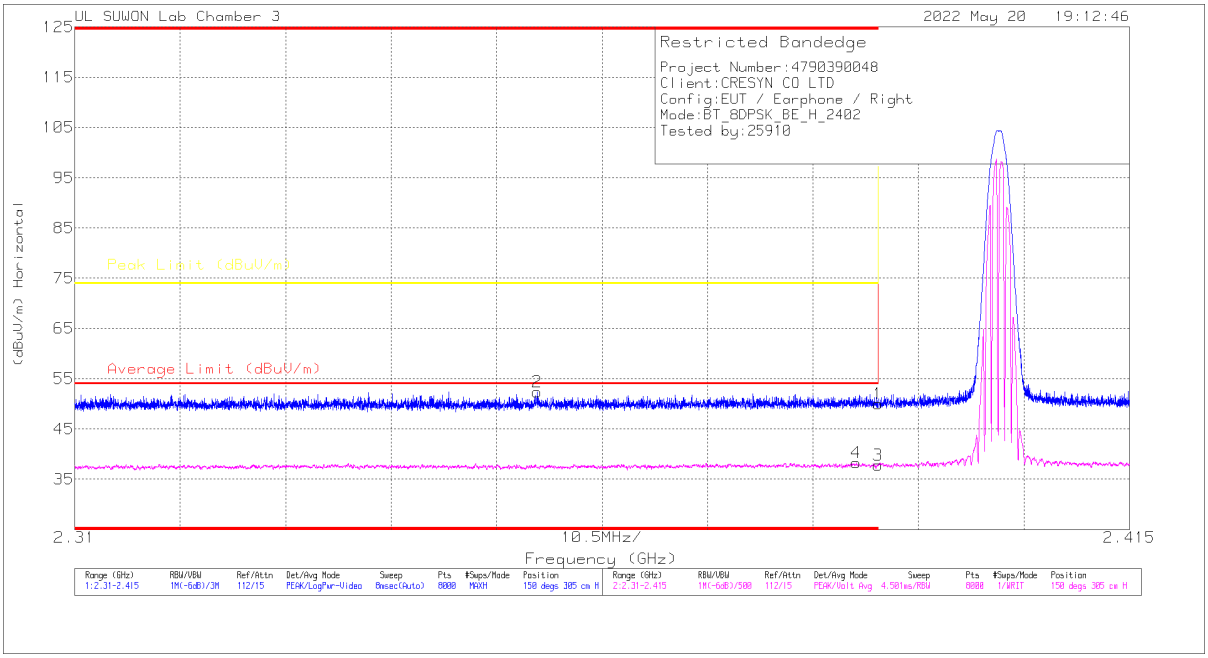
| Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 3GHz_HP[dB] | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * 4.96019 | 46.6 | PKFH | 34.7 | -30.4 | 50.9 | - | - | 74 | -23.1 | 285 | 116 | H |
| * 4.96005 | 41.9 | VA1T | 34.7 | -30.4 | 46.2 | 54 | -7.8 | - | - | 285 | 116 | H |
| * 7.4405 | 38.26 | PKFH | 36 | -24.8 | 49.46 | - | - | 74 | -24.54 | 308 | 104 | H |
| * 7.43996 | 30.15 | VA1T | 36 | -24.8 | 41.35 | 54 | -12.65 | - | - | 308 | 104 | H |
| * 4.66671 | 44.22 | PKFH | 34.5 | -30 | 48.72 | - | - | 74 | -25.28 | 60 | 100 | V |
| * 4.66636 | 37.04 | VA1T | 34.5 | -30 | 41.54 | 54 | -12.46 | - | - | 60 | 100 | V |
| * 4.95985 | 46 | PKFH | 34.7 | -30.4 | 50.3 | - | - | 74 | -23.7 | 167 | 104 | V |
| * 4.96 | 39.01 | VA1T | 34.7 | -30.4 | 43.31 | 54 | -10.69 | - | - | 167 | 104 | V |
| * 7.43954 | 36 | PKFH | 36 | -24.8 | 47.2 | - | - | 74 | -26.8 | 212 | 100 | V |
| * 7.44008 | 26.09 | VA1T | 36 | -24.8 | 37.29 | 54 | -16.71 | - | - | 212 | 100 | V |
| * 9.00003 | 31.96 | PKFH | 36.8 | -22.3 | 46.46 | - | - | 74 | -27.54 | 358 | 121 | V |
| * 9000 | 20.2 | VA1T | 36.8 | -22.3 | 34.7 | 54 | -19.3 | - | - | 358 | 121 | V |
| * 11.99922 | 34.6 | PKFH | 39.2 | -21.9 | 51.9 | - | - | 74 | -22.1 | 103 | 100 | V |
| * 11.99948 | 26.77 | VA1T | 39.2 | -21.9 | 44.07 | 54 | -9.93 | - | - | 103 | 100 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

## 10.2.4. BLUETOOTH ENHANCED DATA RATE 8DPSK MODULATION

## BANDEDGE (LOW CHANNEL)

### HORIZONTAL RESULT

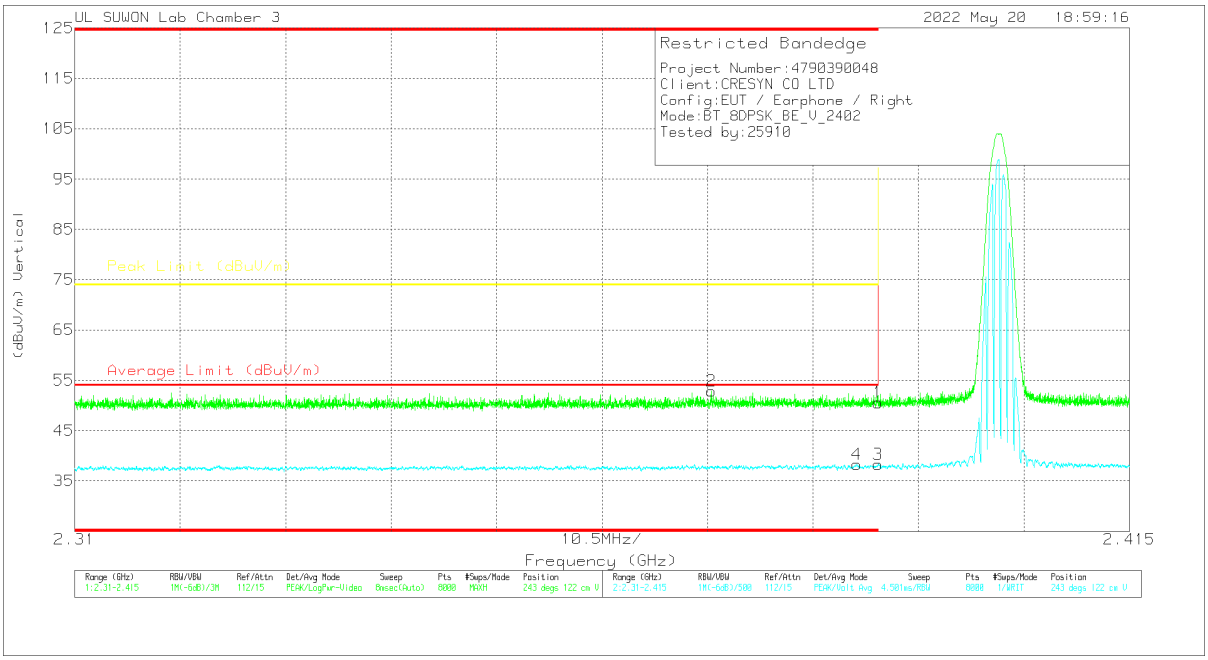



Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 10dB_ATT[dB] | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 2.39 | 41.97 | Pk | 32.8 | -24.8 | 49.97 | - | - | 74 | -24.03 | 150 | 305 | H |
| 2 | * 2.35604 | 44.72 | Pk | 32.6 | -24.9 | 52.42 | - | - | 74 | -21.58 | 150 | 305 | H |
| 3 | * 2.39 | 29.81 | VA1T | 32.8 | -24.8 | 37.81 | 54 | -16.19 | - | - | 150 | 305 | H |
| 4 | * 2.38779 | 30.31 | VA1T | 32.8 | -24.8 | 38.31 | 54 | -15.69 | - | - | 150 | 305 | H |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

# VERTICAL RESULT



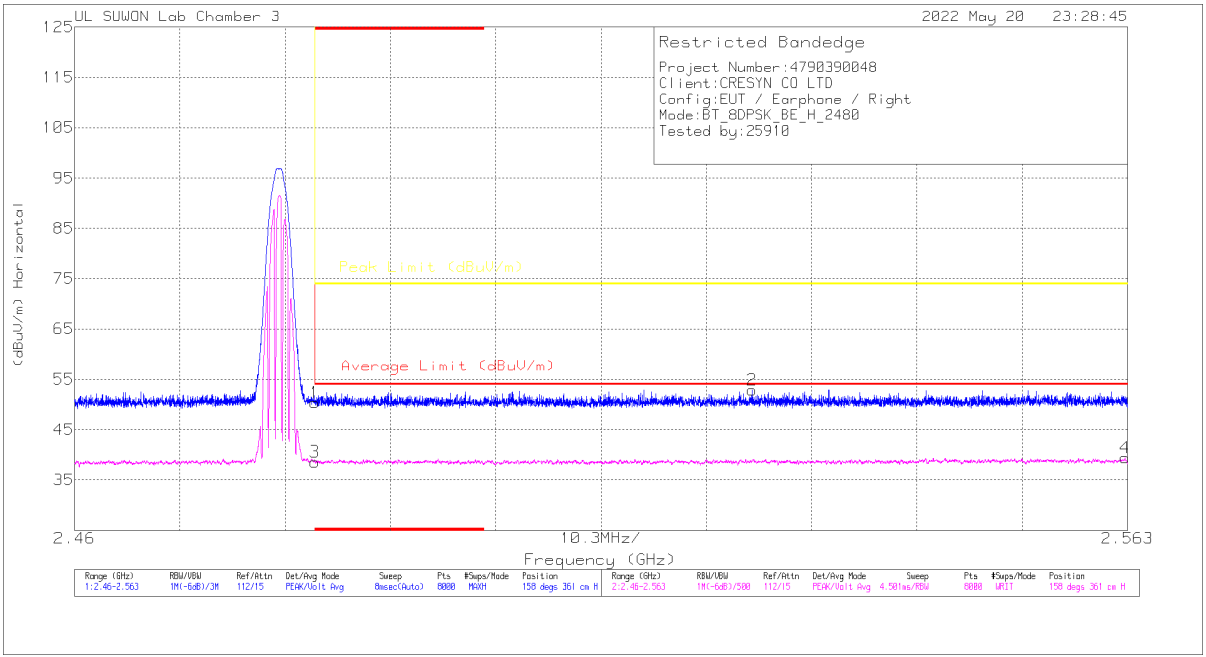

## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 10dB_ATT[dB] | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 2.39 | 42.57 | Pk | 32.8 | -24.8 | 50.57 | - | - | 74 | -23.43 | 243 | 122 | V |
| 2 | * 2.37336 | 45.12 | Pk | 32.7 | -24.9 | 52.92 | - | - | 74 | -21.08 | 243 | 122 | V |
| 3 | * 2.39 | 30.25 | VA1T | 32.8 | -24.8 | 38.25 | 54 | -15.75 | - | - | 243 | 122 | V |
| 4 | * 2.38784 | 30.3 | VA1T | 32.8 | -24.8 | 38.3 | 54 | -15.7 | - | - | 243 | 122 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

## BANDEDGE (HIGH CHANNEL)

### HORIZONTAL RESULT

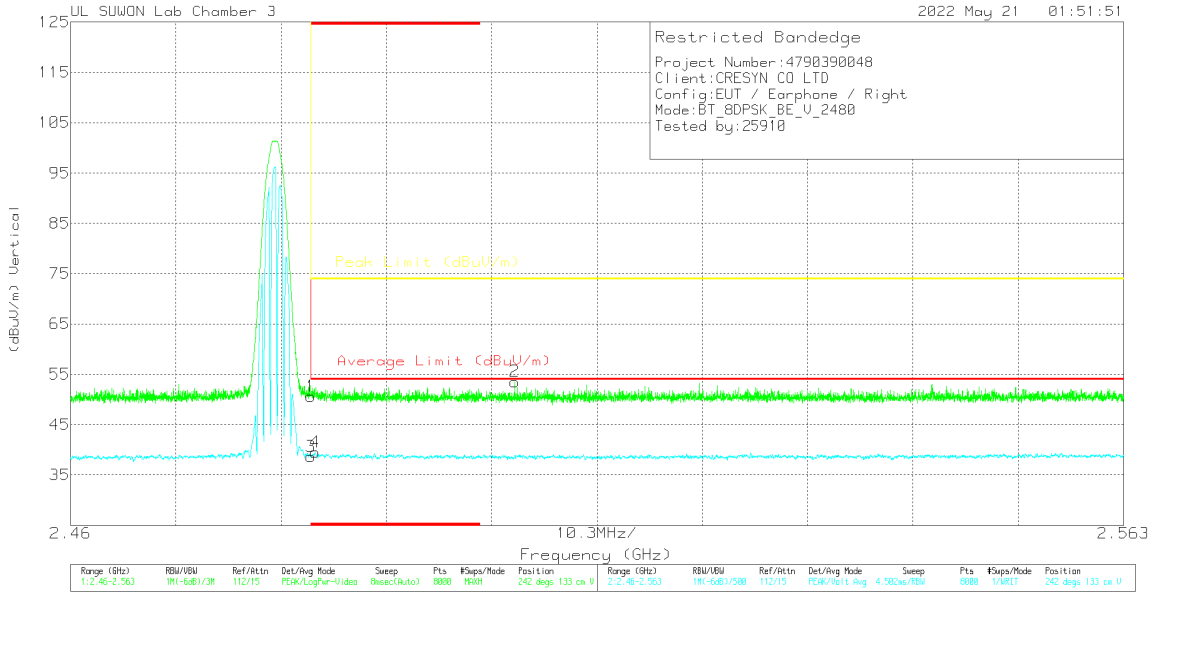



### Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 10dB_ATT[dB] | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 2.4835 | 42.23 | Pk | 32.9 | -24.7 | 50.43 | - | - | 74 | -23.57 | 158 | 361 | H |
| 2 | 2.5263 | 44.62 | Pk | 32.9 | -24.6 | 52.92 | - | - | 74 | -21.08 | 158 | 361 | H |
| 3 | * 2.4835 | 30.4 | VA1T | 32.9 | -24.7 | 38.6 | 54 | -15.4 | - | - | 158 | 361 | H |
| 4 | 2.56275 | 31.16 | VA1T | 32.9 | -24.7 | 39.36 | 54 | -14.64 | - | - | 158 | 361 | H |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

## VERTICAL RESULT



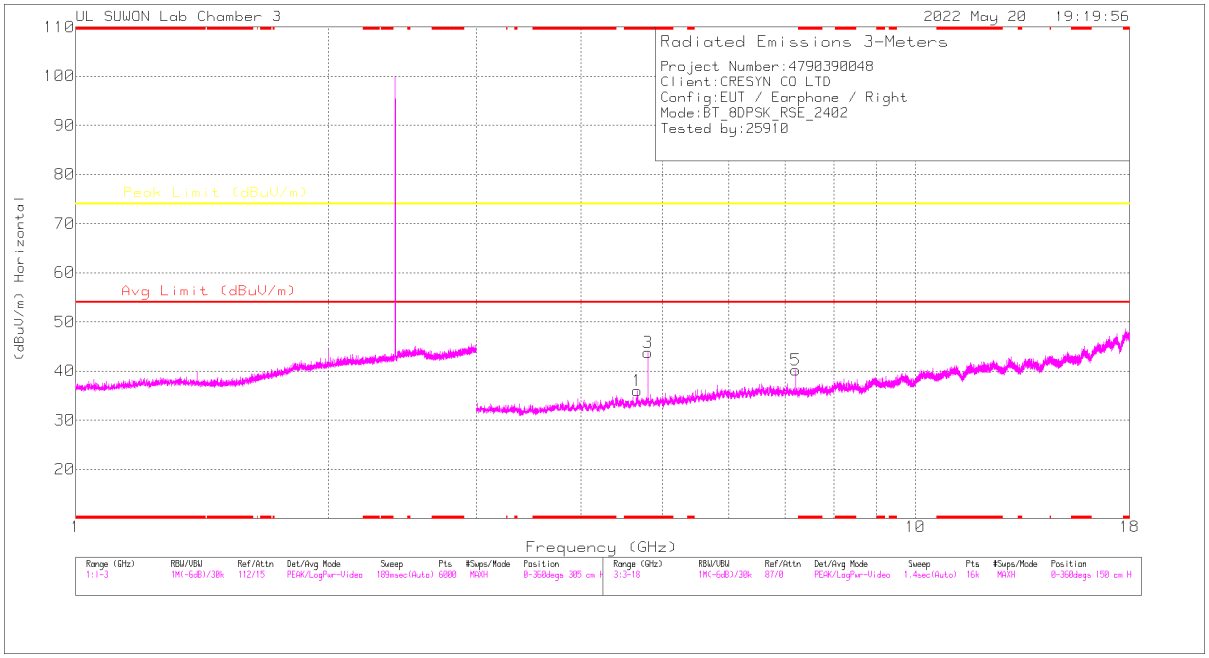

## Trace Markers

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 10dB_ATT[dB] | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * 2.4835 | 42.46 | Pk | 32.9 | -24.7 | 50.66 | - | - | 74 | -23.34 | 242 | 133 | V |
| 2 | 2.50346 | 45.36 | Pk | 32.9 | -24.7 | 53.56 | - | - | 74 | -20.44 | 242 | 133 | V |
| 3 | * 2.4835 | 30.45 | VA1T | 32.9 | -24.7 | 38.65 | 54 | -15.35 | - | - | 242 | 133 | V |
| 4 | * 2.48393 | 31.38 | VA1T | 32.9 | -24.7 | 39.58 | 54 | -14.42 | - | - | 242 | 133 | V |

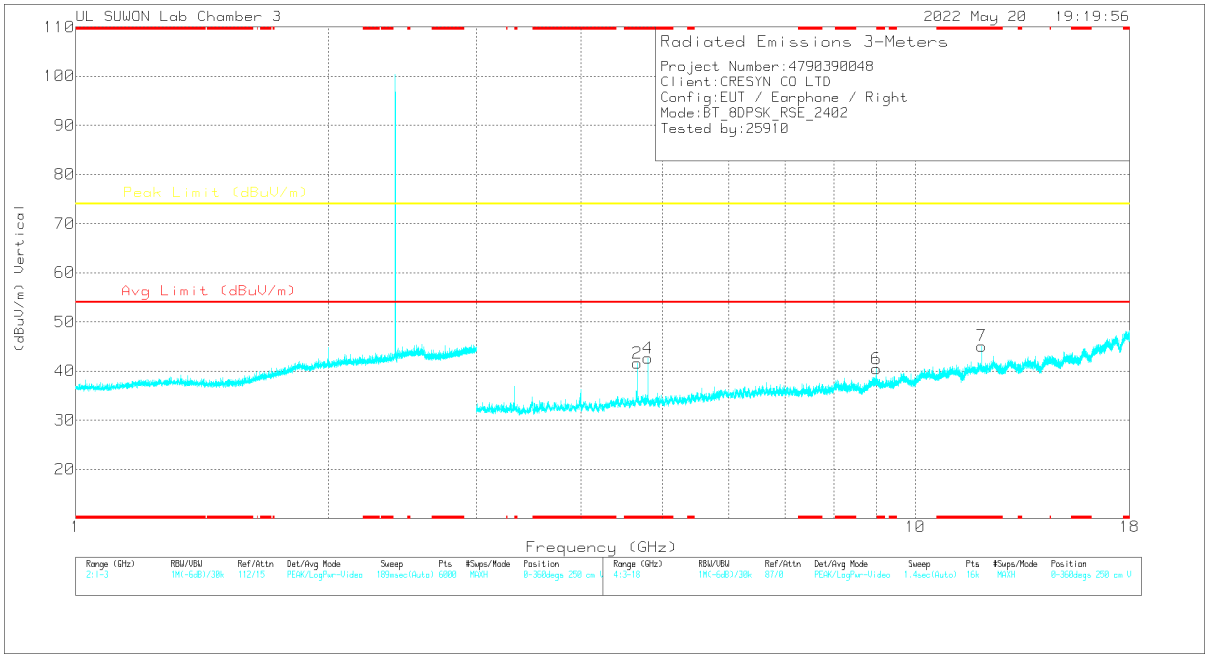
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

## HARMONICS AND SPURIOUS EMISSIONS

### LOW CHANNEL RESULTS




### HORIZONTAL




### VERTICAL

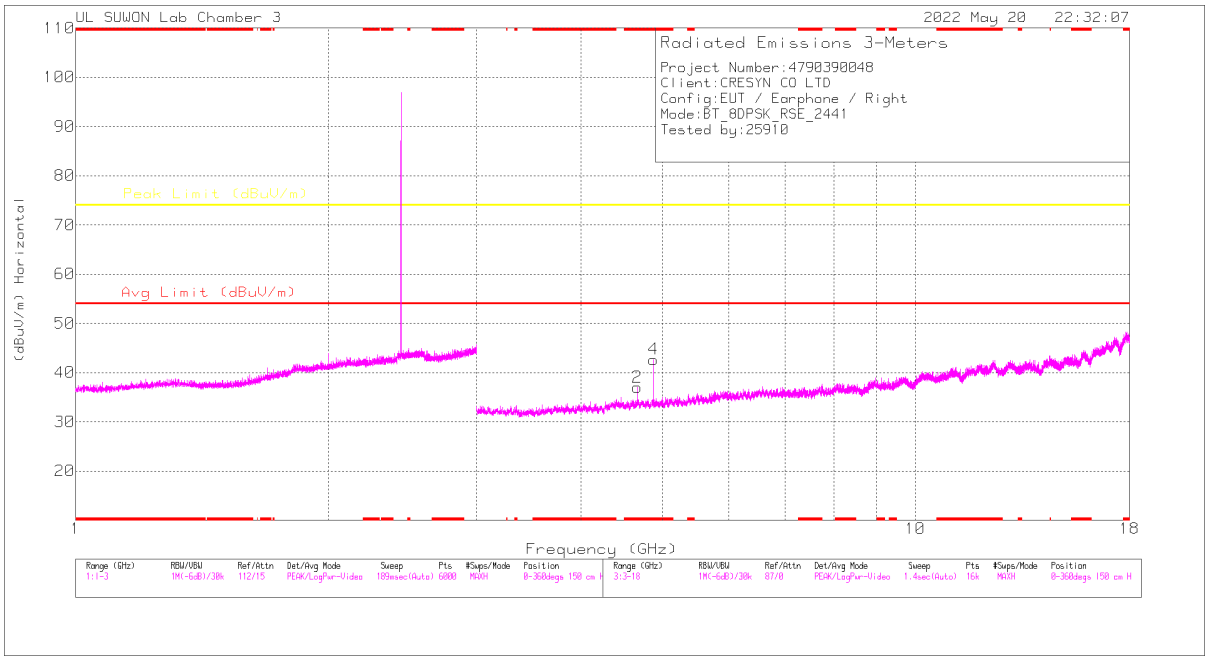
Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

## RADIATED EMISSIONS

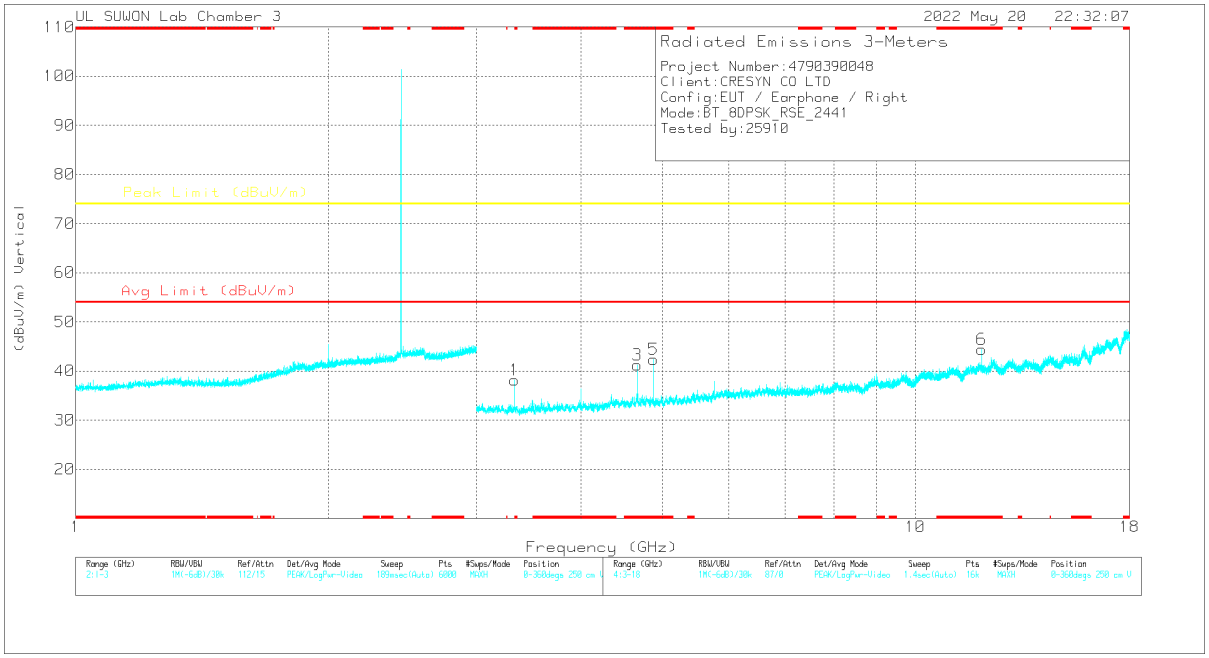
| Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 3GHz_HP[dB] | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * 4.66586 | 39.76 | PKFH | 34.5 | -30 | 44.26 | - | - | 74 | -29.74 | 179 | 100 | H |
| * 4.66645 | 29.24 | VA1T | 34.5 | -30 | 33.74 | 54 | -20.26 | - | - | 179 | 100 | H |
| * 4.8039 | 46.36 | PKFH | 34.6 | -29.9 | 51.06 | - | - | 74 | -22.94 | 208 | 212 | H |
| * 4.80389 | 36.16 | VA1T | 34.6 | -29.9 | 40.86 | 54 | -13.14 | - | - | 208 | 212 | H |
| 7.20562 | 36.78 | PKFH | 36.1 | -25.6 | 47.28 | - | - | 74 | -26.72 | 252 | 103 | H |
| * 4.66669 | 44.53 | PKFH | 34.5 | -30 | 49.03 | - | - | 74 | -24.97 | 270 | 103 | V |
| * 4.66654 | 37.12 | VA1T | 34.5 | -30 | 41.62 | 54 | -12.38 | - | - | 270 | 103 | V |
| * 4.80419 | 45.95 | PKFH | 34.6 | -29.9 | 50.65 | - | - | 74 | -23.35 | 208 | 101 | V |
| * 4.80391 | 36.85 | VA1T | 34.6 | -29.9 | 41.55 | 54 | -12.45 | - | - | 208 | 101 | V |
| * 9 | 31.3 | PKFH | 36.8 | -22.3 | 45.8 | - | - | 74 | -28.2 | 204 | 107 | V |
| * 9 | 20.97 | VA1T | 36.8 | -22.3 | 35.47 | 54 | -18.53 | - | - | 204 | 107 | V |
| * 11.99951 | 33.4 | PKFH | 39.2 | -21.9 | 50.7 | - | - | 74 | -23.3 | 106 | 106 | V |
| * 11.99943 | 25.42 | VA1T | 39.2 | -21.9 | 42.72 | 54 | -11.28 | - | - | 106 | 106 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

## MID CHANNEL RESULTS




## HORIZONTAL




## VERTICAL

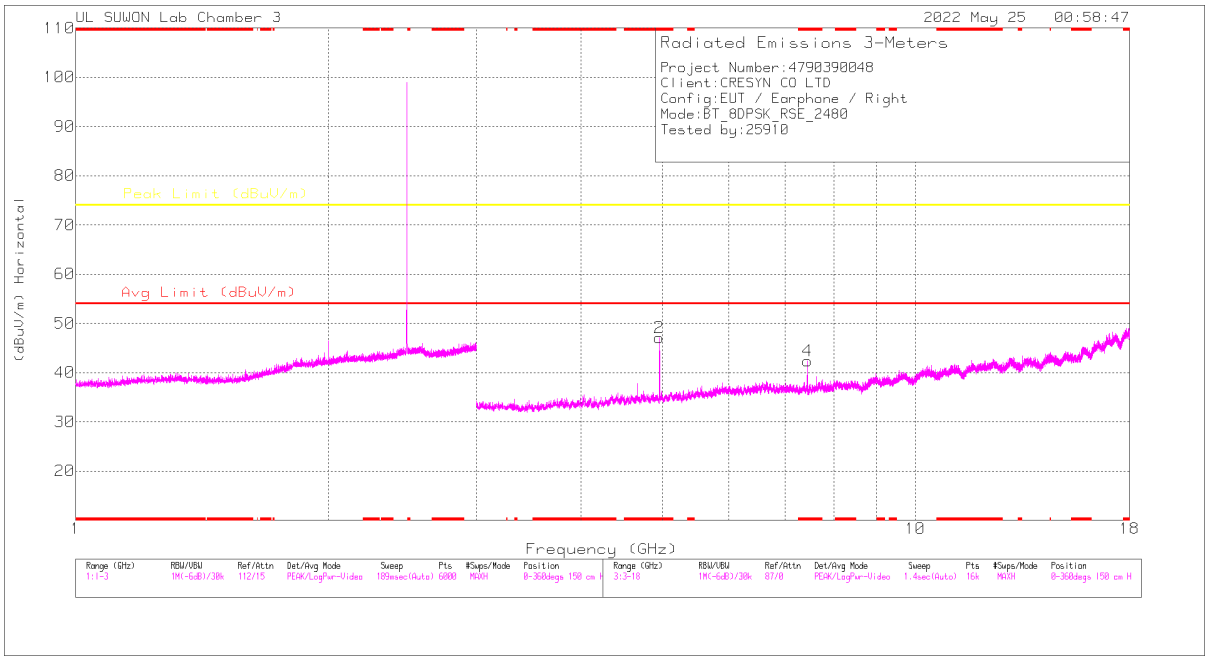
Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

## RADIATED EMISSIONS

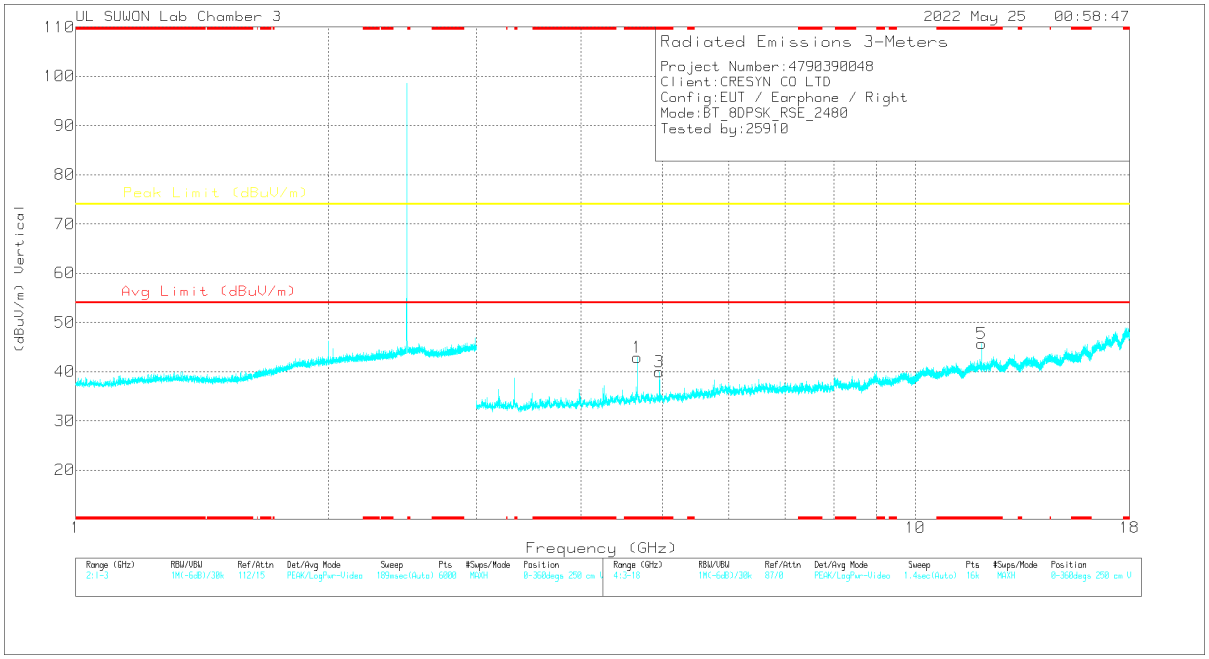
| Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 3GHz_HP[dB] | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * 4.66636 | 39.98 | PKFH | 34.5 | -30 | 44.48 | - | - | 74 | -29.52 | 201 | 108 | H |
| * 4.66634 | 30.62 | VA1T | 34.5 | -30 | 35.12 | 54 | -18.88 | - | - | 201 | 108 | H |
| * 4.88235 | 45.73 | PKFH | 34.7 | -30.7 | 49.73 | - | - | 74 | -24.27 | 249 | 269 | H |
| * 4.88186 | 34.29 | VA1T | 34.7 | -30.7 | 38.29 | 54 | -15.71 | - | - | 249 | 269 | H |
| * 3.33326 | 42.92 | PKFH | 33.3 | -32.6 | 43.62 | - | - | 74 | -30.38 | 106 | 103 | V |
| * 3.33323 | 35.69 | VA1T | 33.3 | -32.6 | 36.39 | 54 | -17.61 | - | - | 106 | 103 | V |
| * 4.66659 | 43.5 | PKFH | 34.5 | -30 | 48 | - | - | 74 | -26 | 259 | 103 | V |
| * 4.66644 | 36.51 | VA1T | 34.5 | -30 | 41.01 | 54 | -12.99 | - | - | 259 | 103 | V |
| * 4.88174 | 44.15 | PKFH | 34.7 | -30.7 | 48.15 | - | - | 74 | -25.85 | 219 | 144 | V |
| * 4.8821 | 34.55 | VA1T | 34.7 | -30.7 | 38.55 | 54 | -15.45 | - | - | 219 | 144 | V |
| * 11.99953 | 33.3 | PKFH | 39.2 | -21.9 | 50.6 | - | - | 74 | -23.4 | 105 | 115 | V |
| * 11.99945 | 25.63 | VA1T | 39.2 | -21.9 | 42.93 | 54 | -11.07 | - | - | 105 | 115 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

## HIGH CHANNEL RESULTS




## HORIZONTAL




## VERTICAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

## RADIATED EMISSIONS

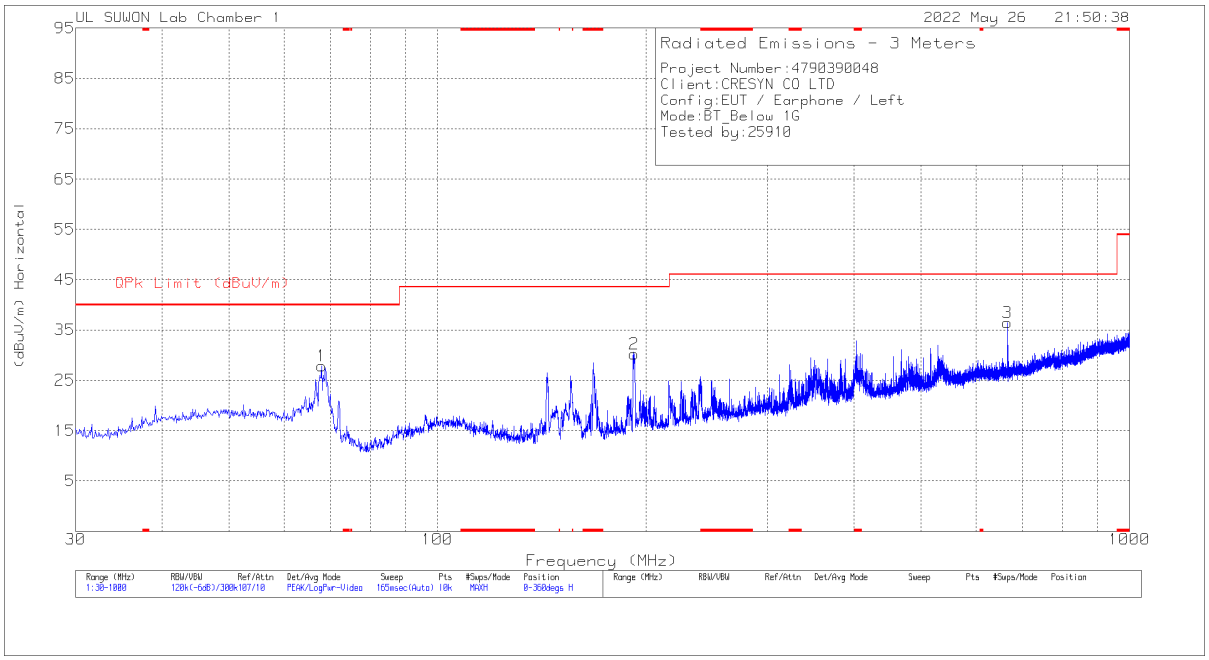
| Frequency (GHz) | Meter Reading (dBuV) | Det | 3117_00218957 | 3GHz_HP[dB] | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * 4.96041 | 46.84 | PKFH | 34.7 | -30.4 | 51.14 | - | - | 74 | -22.86 | 268 | 115 | H |
| * 4.95992 | 36.6 | VA1T | 34.7 | -30.4 | 40.9 | 54 | -13.1 | - | - | 268 | 115 | H |
| * 7.43972 | 36.65 | PKFH | 36 | -24.8 | 47.85 | - | - | 74 | -26.15 | 294 | 100 | H |
| * 7.43972 | 23.7 | VA1T | 36 | -24.8 | 34.9 | 54 | -19.1 | - | - | 294 | 100 | H |
| * 4.66657 | 39.5 | PKFH | 34.5 | -30 | 44 | - | - | 74 | -30 | 161 | 122 | H |
| * 4.66651 | 30.87 | VA1T | 34.5 | -30 | 35.37 | 54 | -18.63 | - | - | 161 | 122 | H |
| * 4.96026 | 47.23 | PKFH | 34.7 | -30.4 | 51.53 | - | - | 74 | -22.47 | 268 | 115 | H |
| * 4.95999 | 36.23 | VA1T | 34.7 | -30.4 | 40.53 | 54 | -13.47 | - | - | 268 | 115 | H |
| * 12.00003 | 32.1 | PKFH | 39.2 | -21.9 | 49.4 | - | - | 74 | -24.6 | 292 | 102 | H |
| * 11.9994 | 22.22 | VA1T | 39.2 | -21.9 | 39.52 | 54 | -14.48 | - | - | 292 | 102 | H |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

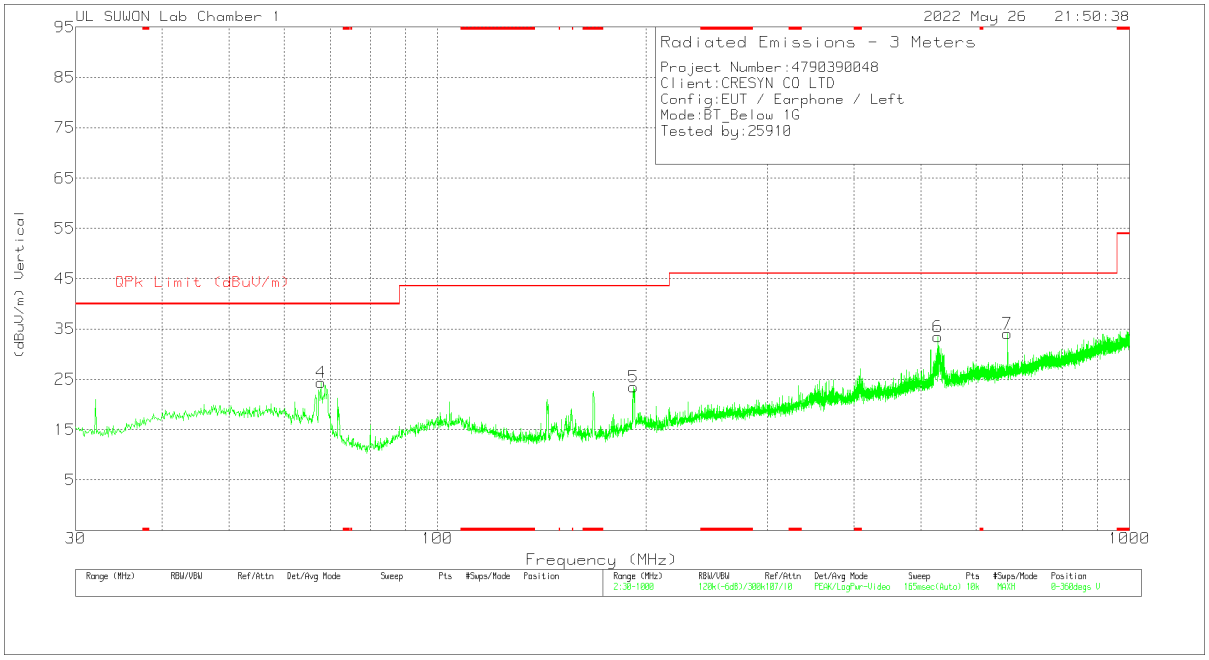
## 10.3. WORST CASE BELOW 1 GHZ

- **Left**

**SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)**




**HORIZONTAL**




**VERTICAL**

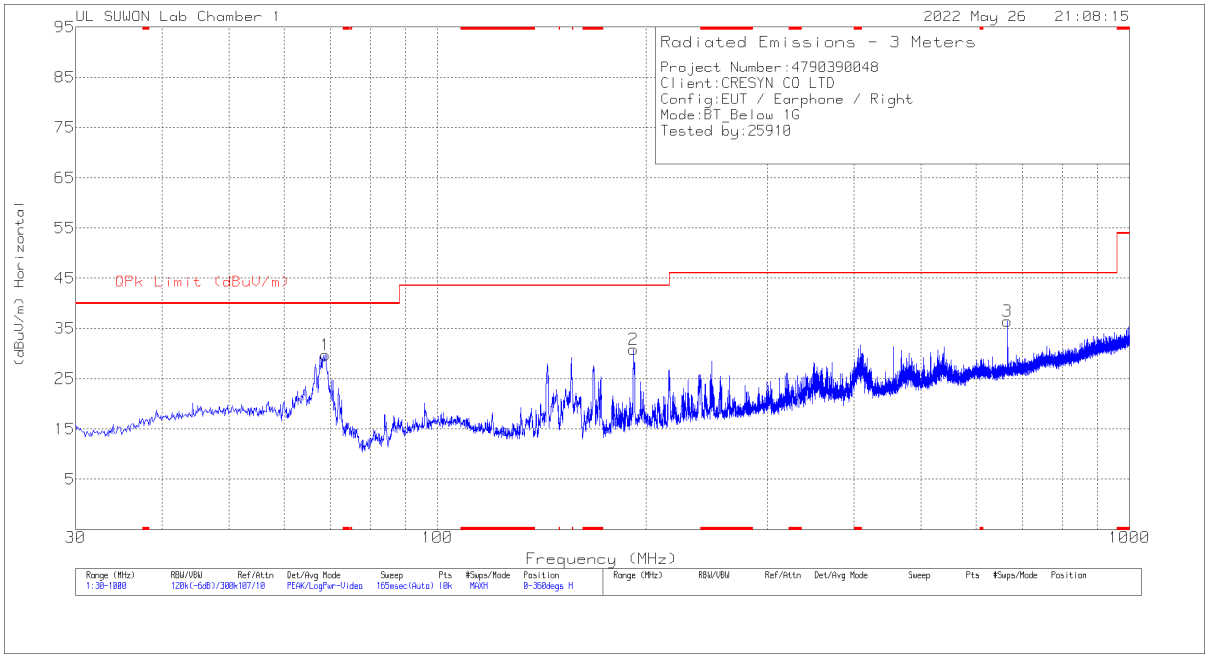
## Below 1GHz Data

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | VULB9163_750 | Below_1G[dB] | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 68.024 | 42.33 | Pk | 16.2 | -30.7 | 27.83 | 40 | -12.17 | 0-360 | 200 | H |
| 2 | 192.4265 | 42.6 | Pk | 16.9 | -29.3 | 30.2 | 43.52 | -13.32 | 0-360 | 100 | H |
| 3 | 666.708 | 38.01 | Pk | 25.4 | -26.9 | 36.51 | 46.02 | -9.51 | 0-360 | 100 | H |
| 4 | 67.83 | 38.62 | Pk | 16.3 | -30.6 | 24.32 | 40 | -15.68 | 0-360 | 400 | V |
| 5 | 191.99 | 36.1 | Pk | 16.8 | -29.4 | 23.5 | 43.52 | -20.02 | 0-360 | 200 | V |
| 6 | 527.998 | 37.58 | Pk | 23.4 | -27.5 | 33.48 | 46.02 | -12.54 | 0-360 | 200 | V |
| 7 | 666.708 | 35.54 | Pk | 25.4 | -26.9 | 34.04 | 46.02 | -11.98 | 0-360 | 300 | V |

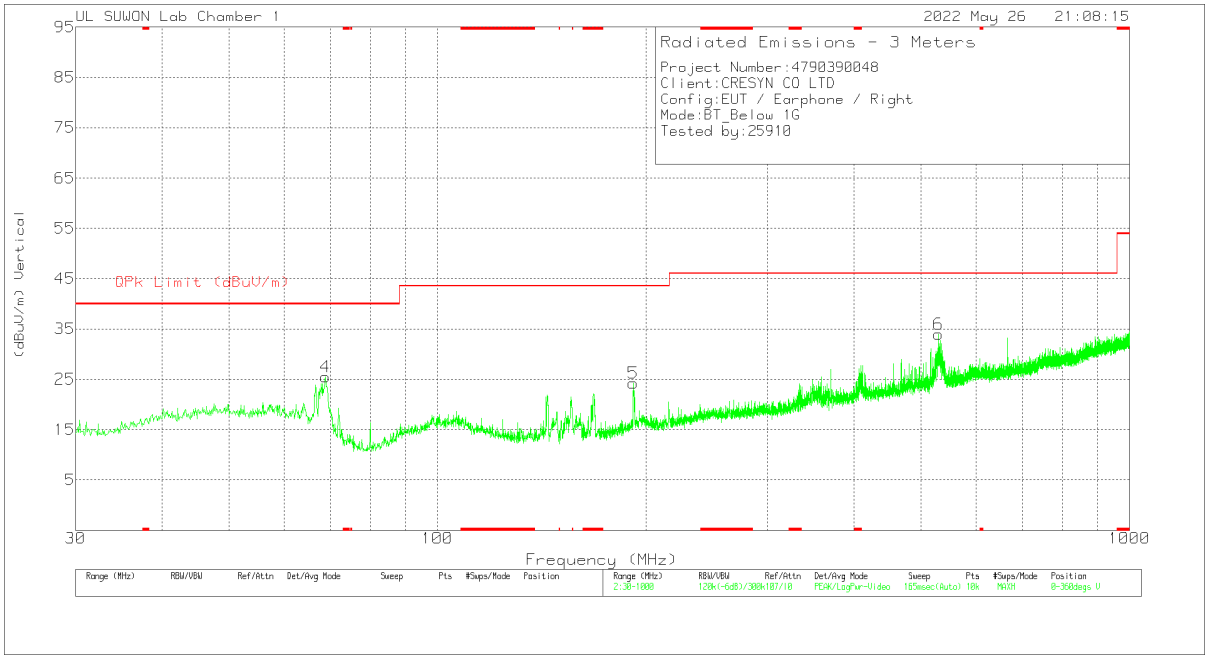
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector

- **Right**

**SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)**




**HORIZONTAL**




**VERTICAL**

## Below 1GHz Data

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | VULB9163_750 | Below_1G[dB] | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 68.897 | 44.59 | Pk | 15.8 | -30.7 | 29.69 | 40 | -10.31 | 0-360 | 200 | H |
| 2 | 191.99 | 43.46 | Pk | 16.8 | -29.4 | 30.86 | 43.52 | -12.66 | 0-360 | 100 | H |
| 3 | 666.708 | 37.96 | Pk | 25.4 | -26.9 | 36.46 | 46.02 | -9.56 | 0-360 | 100 | H |
| 4 | 68.897 | 40.44 | Pk | 15.8 | -30.7 | 25.54 | 40 | -14.46 | 0-360 | 400 | V |
| 5 | 191.796 | 36.69 | Pk | 16.8 | -29.3 | 24.19 | 43.52 | -19.33 | 0-360 | 200 | V |
| 6 | 529.938 | 38.04 | Pk | 23.4 | -27.5 | 33.94 | 46.02 | -12.08 | 0-360 | 200 | V |

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

# 11. AC POWER LINE CONDUCTED EMISSIONS

**LIMITS**

FCC §15.207 (a)

RSS-GEN[8.8]

| Frequency of Emission (MHz) | Conducted Limit (dBuV) | |
|---|---|---|
| | Quasi-peak | Average |
| 0.15-0.5 | 66 to 56 * | 56 to 46 * |
| 0.5-5 | 56 | 46 |
| 5-30 | 60 | 50 |

* Decreases with the logarithm of the frequency.

**TEST PROCEDURE**

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.10.

The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both NEUTRAL and HOT lines.

**RESULTS: N/P**

**Note. The AC power line test was not performed because the EUT does not operate Bluetooth mode while charging.**

# END OF TEST REPORT