



A calculation example for radiated spurious emission is shown as below:

| BT                     | Note | Frequency | Level      | Over   | Limit      | Read     | Antenna  | Path   | Preamp | Ant    | Table   | Peak    | Pol.    |
|------------------------|------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|---------|---------|
|                        |      | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | ( dBμV ) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | ( P/A ) | ( H/V ) |
| BT<br>CH 00<br>2402MHz |      | 2390      | 55.45      | -18.55 | 74         | 54.51    | 32.22    | 4.58   | 35.86  | 103    | 308     | P       | H       |
|                        |      | 2390      | 43.54      | -10.46 | 54         | 42.6     | 32.22    | 4.58   | 35.86  | 103    | 308     | A       | H       |

1. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)
2. Level(dBμV/m) =  
Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
3. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

**For Peak Limit @ 2390MHz:**

1. Level(dBμV/m)  
= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)  
= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)  
= 55.45 (dBμV/m)
2. Over Limit(dB)  
= Level(dBμV/m) – Limit Line(dBμV/m)  
= 55.45(dBμV/m) – 74(dBμV/m)  
= -18.55(dB)

**For Average Limit @ 2390MHz:**

1. Level(dBμV/m)  
= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)  
= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)  
= 43.54 (dBμV/m)
2. Over Limit(dB)  
= Level(dBμV/m) – Limit Line(dBμV/m)  
= 43.54(dBμV/m) – 54(dBμV/m)  
= -10.46(dB)

Both peak and average measured complies with the limit line, so test result is “PASS”.



## Appendix D. Radiated Spurious Emission Plots

Note symbol

|    |                       |
|----|-----------------------|
| -L | Low channel location  |
| -R | High channel location |



2.4GHz 2400~2483.5MHz

BT (Band Edge @ 3m)

| BT   | 2.4GHz 2400~2483.5MHz Band Edge @ 3m  |  |
|------|---|--|
| ANT  | BT CH00 2402MHz   |  |
| 1    | Horizontal  | Fundamental  |
| Peak | <p>Date: 1<br/>Date: 2022-01-27</p> <p>Site: 03CH03-SZ<br/>Condition: PEAK_BE_74 3m HF_ANT_3117_0107 HORIZONTAL<br/>Project: 102129-01<br/>Mode: Mode 1<br/>SN: #7 GR810H030027002V<br/>Plane: X with Accessory<br/>Config: CE-01</p> | <p>Date: 2<br/>Date: 2022-01-27</p> <p>Site: 03CH03-SZ<br/>Condition: PEAK_74 3m HF_ANT_3117_0107 HORIZONTAL<br/>Project: 102129-01<br/>Mode: Mode 1<br/>SN: #7 GR810H030027002V<br/>Plane: X with Accessory<br/>Config: CE-01</p> |



|             |  |   |
|-------------|--|---|
| <b>BT</b>   | <b>2.4GHz 2400~2483.5MHz Band Edge @ 3m</b>  |   |
| <b>ANT</b>  | <b>BT CH00 2402MHz</b>   |   |
| <b>1</b>    | <b>Vertical</b>  | <b>Fundamental</b>  |
| <b>Peak</b> | <p>             Date: 3<br/>             Date: 2022-01-27<br/>             Site : 03CH02-SZ<br/>             Condition : PEAK_BE_74 3m HF_ANT_3117_0107 VERTICAL<br/>             Project : 102129-01<br/>             Mode : Mode 1<br/>             SN : #7.G0510H02027002V<br/>             Plane : X with Accessory<br/>             Config : CE-01           </p> | <p>             Date: 4<br/>             Date: 2022-01-27<br/>             Site : 03CH02-SZ<br/>             Condition : PEAK_74 3m HF_ANT_3117_0107 VERTICAL<br/>             Project : 102129-01<br/>             Mode : Mode 1<br/>             SN : #7.G0510H02027002V<br/>             Plane : X with Accessory<br/>             Config : CE-01           </p> |

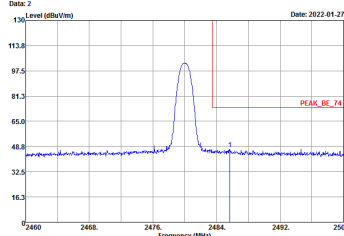
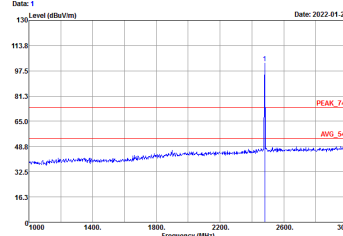


| BT   | 2.4GHz 2400~2483.5MHz Band Edge @ 3m   |   |
|------|--|---|
| ANT  | BT CH39 2441MHz  |   |
| 1    | Horizontal   | Fundamental   |
| Peak | <p>Date: 1<br/>Date: 2022-01-27</p> <p>Site : 03CH02-SZ<br/>Condition : PEAK_BE_74 3m HF_ANT_3117_0107 HORIZONTAL<br/>Project : 102129-01<br/>Mode : Mode 2<br/>SN : #7.G8B1YH032027002V<br/>Plane : X with Accessory<br/>Config : CE-01</p> | <p>Date: 2<br/>Date: 2022-01-27</p> <p>Site : 03CH02-SZ<br/>Condition : PEAK_74 3m HF_ANT_3117_0107 HORIZONTAL<br/>Project : 102129-01<br/>Mode : Mode 2<br/>SN : #7.G8B1YH032027002V<br/>Plane : X with Accessory<br/>Config : CE-01</p> |
| Peak | <p>Date: 3<br/>Date: 2022-01-27</p> <p>Site : 03CH02-SZ<br/>Condition : PEAK_BE_74 3m HF_ANT_3117_0107 HORIZONTAL<br/>Project : 102129-01<br/>Mode : Mode 2<br/>SN : #7.G8B1YH032027002V<br/>Plane : X with Accessory<br/>Config : CE-01</p> | Left blank  |

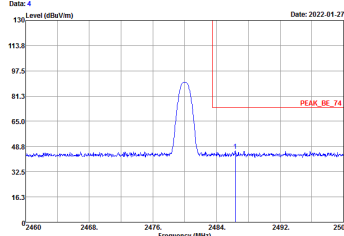
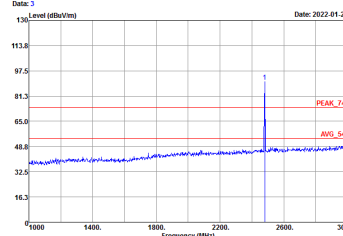


| BT   | 2.4GHz 2400~2483.5MHz Band Edge @ 3m   |   |
|------|--|---|
| ANT  | BT CH39 2441MHz  |   |
| 1    | Vertical   | Fundamental   |
| Peak | <p>Date: 4<br/>Date: 2022-01-27</p> <p>Site : 03CH02-SZ<br/>Condition : PEAK_BE_74 3m HF_ANT_3117_0107 VERTICAL<br/>Project : 102129-01<br/>Mode : Mode 2<br/>SN : #7.G8B1YH032027002V<br/>Plane : X with Accessory<br/>Config : CE-01</p> | <p>Date: 5<br/>Date: 2022-01-27</p> <p>Site : 03CH02-SZ<br/>Condition : PEAK_74 3m HF_ANT_3117_0107 VERTICAL<br/>Project : 102129-01<br/>Mode : Mode 2<br/>SN : #7.G8B1YH032027002V<br/>Plane : X with Accessory<br/>Config : CE-01</p> |
| Peak | <p>Date: 6<br/>Date: 2022-01-27</p> <p>Site : 03CH02-SZ<br/>Condition : PEAK_BE_74 3m HF_ANT_3117_0107 VERTICAL<br/>Project : 102129-01<br/>Mode : Mode 2<br/>SN : #7.G8B1YH032027002V<br/>Plane : X with Accessory<br/>Config : CE-01</p> | Left blank  |



|             |   |  |
|-------------|---|--|
| <b>BT</b>   | <b>2.4GHz 2400~2483.5MHz Band Edge @ 3m</b>   |  |
| <b>ANT</b>  | <b>BT CH78 2480MHz</b>  |  |
| <b>1</b>    | <b>Horizontal</b>   | <b>Fundamental</b>   |
| <b>Peak</b> |  <p>           Date: 2<br/>           Level (dBm/Vm)<br/>           Date: 2022-01-27<br/>           Frequency (MHz)<br/>           PEAK_BE_74<br/>           Site : 03CH02-SZ<br/>           Condition : PEAK_BE_74 3m HF_ANT_3117_0107 HORIZONTAL<br/>           Project : 102129-01<br/>           Mode : Mode 3<br/>           SN : #7.G0510M02027002V<br/>           Plane : X with Accessory<br/>           Config : CE-01         </p> |  <p>           Date: 1<br/>           Level (dBm/Vm)<br/>           Date: 2022-01-27<br/>           Frequency (MHz)<br/>           PEAK_74<br/>           AVG_54<br/>           Site : 03CH02-SZ<br/>           Condition : PEAK_74 3m HF_ANT_3117_0107 HORIZONTAL<br/>           Project : 102129-01<br/>           Mode : Mode 3<br/>           SN : #7.G0510M02027002V<br/>           Plane : X with Accessory<br/>           Config : CE-01         </p> |



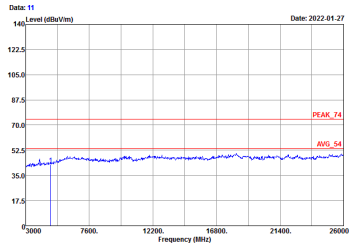
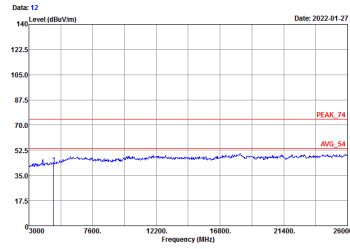
| BT   | 2.4GHz 2400~2483.5MHz Band Edge @ 3m  |   |
|------|---|---|
| ANT  | BT CH78 2480MHz   |   |
| 1    | Vertical  | Fundamental   |
| Peak |  <p>Date: 4<br/>Date: 2022-01-27</p> <p>Site : 03CH02-SZ<br/>Condition : PEAK_BE_74 3m HF_ANT_3117_0107 VERTICAL<br/>Project : 102129-01<br/>Mode : Mode 3<br/>SN : #7.G0510H02027002V<br/>Plane : X with Accessory<br/>Config : CE-01</p> |  <p>Date: 3<br/>Date: 2022-01-27</p> <p>Site : 03CH02-SZ<br/>Condition : PEAK_74 3m HF_ANT_3117_0107 VERTICAL<br/>Project : 102129-01<br/>Mode : Mode 3<br/>SN : #7.G0510H02027002V<br/>Plane : X with Accessory<br/>Config : CE-01</p> |



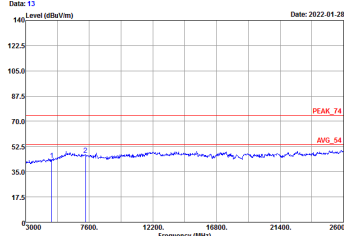
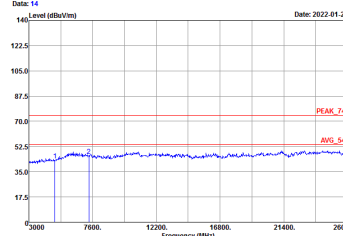


2.4GHz 2400~2483.5MHz

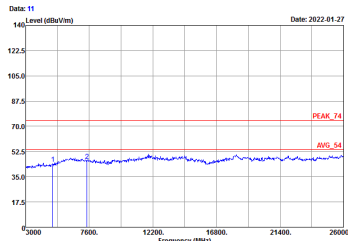
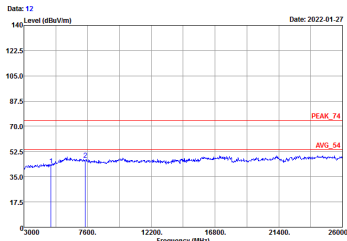
BT (Harmonic @ 3m)

| BT                                    | 2.4GHz 2400~2483.5MHz Harmonic @ 3m   |  |
|---------------------------------------|---|--|
| ANT                                   | BT CH00 2402MHz   |  |
| 1                                     | Horizontal  | Vertical   |
| <p><b>Peak</b></p> <p><b>Avg.</b></p> |  <p>Site : 03CH02-S2<br/> Condition : PEAK_74 3m HF_ANT_3117_0107 HORIZONTAL<br/> Project : 102129-01<br/> Mode : Mode 1<br/> SN : #7_G0910H032027002V<br/> Plane : X with Accessory<br/> Config : CE-01</p> |  <p>Site : 03CH02-S2<br/> Condition : PEAK_74 3m HF_ANT_3117_0107 VERTICAL<br/> Project : 102129-01<br/> Mode : Mode 1<br/> SN : #7_G0910H032027002V<br/> Plane : X with Accessory<br/> Config : CE-01</p> |



|                                       |  |   |
|---------------------------------------|--|---|
| <b>BT</b>                             | <b>2.4GHz 2400~2483.5MHz Harmonic @ 3m</b>   |   |
| <b>ANT</b>                            | <b>BT CH39 2441MHz</b>   |   |
| <b>1</b>                              | <b>Horizontal</b>  | <b>Vertical</b>   |
| <p><b>Peak</b></p> <p><b>Avg.</b></p> |  <p>Site : 03CH02-SZ<br/>         Condition : PEAK_74 3m HF_ANT_3117_0107 HORIZONTAL<br/>         Project : 102129-01<br/>         Mode : Mode 2<br/>         SN : #7.G6510H6102027002V<br/>         Plane : X with Accessory<br/>         Config : CE-01</p> |  <p>Site : 03CH02-SZ<br/>         Condition : PEAK_74 3m HF_ANT_3117_0107 VERTICAL<br/>         Project : 102129-01<br/>         Mode : Mode 2<br/>         SN : #7.G6510H6102027002V<br/>         Plane : X with Accessory<br/>         Config : CE-01</p> |



|                      |  |   |
|----------------------|--|---|
| <b>BT</b>            | <b>2.4GHz 2400~2483.5MHz Harmonic @ 3m</b>   |   |
| <b>ANT</b>           | <b>BT CH78 2480MHz</b>   |   |
| <b>1</b>             | <b>Horizontal</b>  | <b>Vertical</b>   |
| <b>Peak<br/>Avg.</b> |  <p>Site : 03CH02-SZ<br/> Condition : PEAK_74 3m HF_ANT_3117_0107 HORIZONTAL<br/> Project : 102129-01<br/> Mode : Mode 3<br/> SN : #7.G0510H02027002V<br/> Plane : X with Accessory<br/> Config : CE-01</p> |  <p>Site : 03CH02-SZ<br/> Condition : PEAK_74 3m HF_ANT_3117_0107 VERTICAL<br/> Project : 102129-01<br/> Mode : Mode 3<br/> SN : #7.G0510H02027002V<br/> Plane : X with Accessory<br/> Config : CE-01</p> |



Emission below 1GHz
2.4GHz BT (LF)

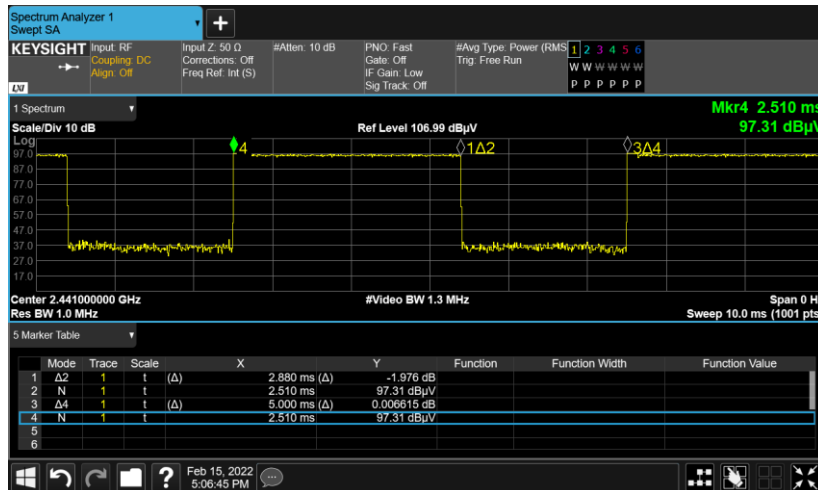
Table with 2 columns: BT (2.4GHz 2400~2483.5MHz) and ANT (BT LF). It contains two sub-tables for 'Horizontal' and 'Vertical' orientations, each with a graph of Level (dBuV/m) vs Frequency (MHz) and associated test parameters.

## Appendix E. Duty Cycle Plots

### 3DH5 on time (One Pulse) Plot on Channel 39



### 3DH5 on time (Count Pulses) Plot on Channel 39



**Note:**

1. Worst case Duty cycle = on time/100 milliseconds =  $2 * 2.88 / 100 = 5.76 \%$
2. Worst case Duty cycle correction factor =  $20 * \log(\text{Duty cycle}) = -24.79 \text{ dB}$
3. 3DH5 has the highest duty cycle worst case and is reported.