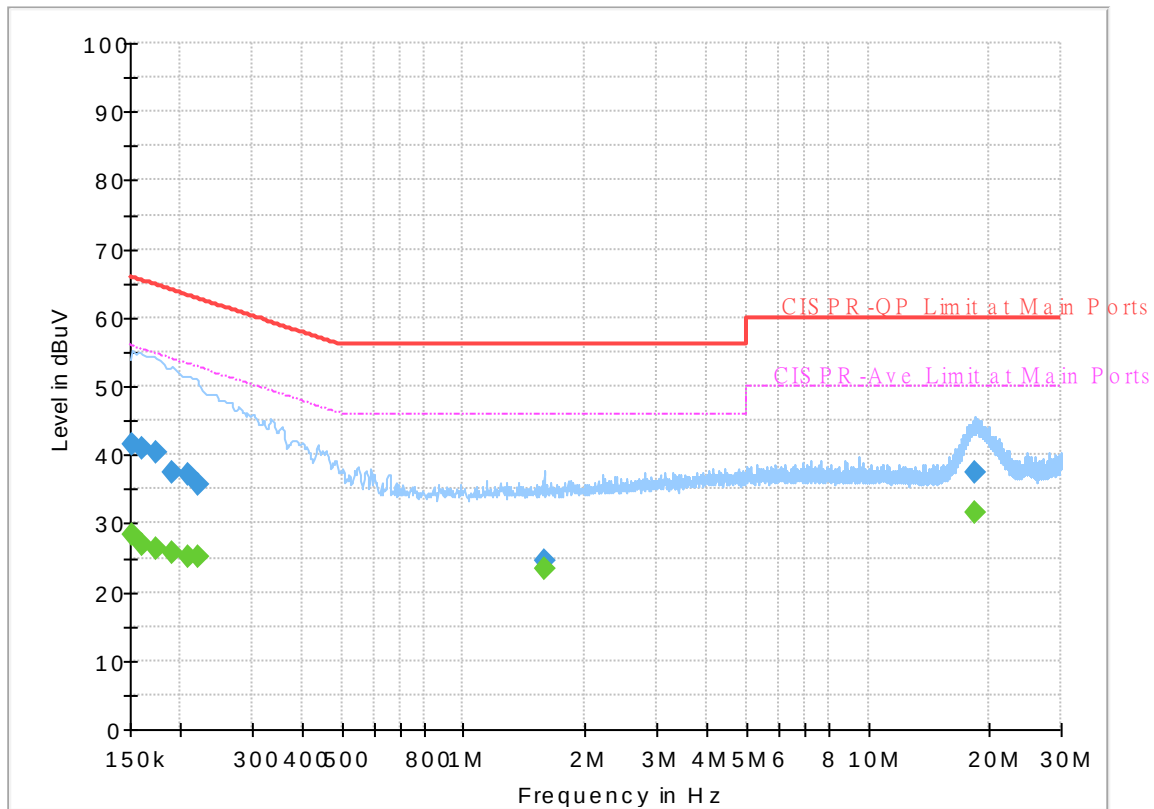


## EUT Information

Report NO : 1D2427-01  
Test Mode : Mode 1  
Test Voltage : 120Vac/60Hz  
Phase : Line

Full Spectrum



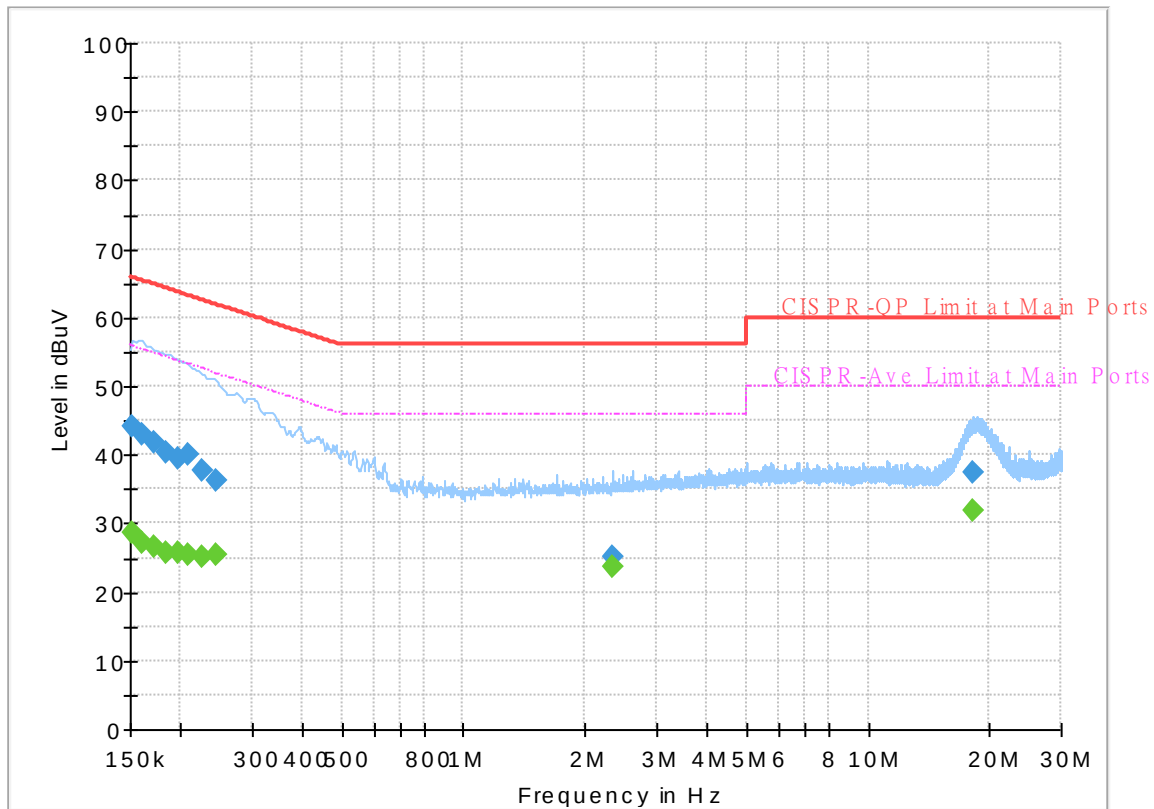
## Final\_Result

| Frequency (MHz) | QuasiPeak (dBuV) | CAverage (dBuV) | Limit (dBuV) | Margin (dB) | Line | Filter | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|------|--------|------------|
| 0.152250        | 41.47            | ---             | 65.88        | 24.41       | L1   | OFF    | 19.6       |
| 0.152250        | ---              | 28.50           | 55.88        | 27.38       | L1   | OFF    | 19.6       |
| 0.161250        | 40.85            | ---             | 65.40        | 24.55       | L1   | OFF    | 19.6       |
| 0.161250        | ---              | 26.79           | 55.40        | 28.61       | L1   | OFF    | 19.6       |
| 0.174750        | 40.34            | ---             | 64.73        | 24.39       | L1   | OFF    | 19.6       |
| 0.174750        | ---              | 26.34           | 54.73        | 28.39       | L1   | OFF    | 19.6       |
| 0.190500        | 37.34            | ---             | 64.02        | 26.68       | L1   | OFF    | 19.6       |
| 0.190500        | ---              | 25.59           | 54.02        | 28.43       | L1   | OFF    | 19.6       |
| 0.208500        | 37.16            | ---             | 63.27        | 26.11       | L1   | OFF    | 19.6       |
| 0.208500        | ---              | 25.23           | 53.27        | 28.04       | L1   | OFF    | 19.6       |
| 0.219750        | 35.67            | ---             | 62.83        | 27.16       | L1   | OFF    | 19.6       |
| 0.219750        | ---              | 25.24           | 52.83        | 27.59       | L1   | OFF    | 19.6       |
| 1.581000        | 24.65            | ---             | 56.00        | 31.35       | L1   | OFF    | 19.7       |
| 1.581000        | ---              | 23.30           | 46.00        | 22.70       | L1   | OFF    | 19.7       |
| 18.411000       | 37.34            | ---             | 60.00        | 22.66       | L1   | OFF    | 20.4       |
| 18.411000       | ---              | 31.70           | 50.00        | 18.30       | L1   | OFF    | 20.4       |

## EUT Information

Report NO : 1D2427-01  
Test Mode : Mode 1  
Test Voltage : 120Vac/60Hz  
Phase : Neutral

Full Spectrum



## Final Result

| Frequency (MHz) | QuasiPeak (dBuV) | CAverage (dBuV) | Limit (dBuV) | Margin (dB) | Line | Filter | Corr. (dB) |
|-----------------|------------------|-----------------|--------------|-------------|------|--------|------------|
| 0.152250        | ---              | 28.72           | 55.88        | 27.16       | N    | OFF    | 19.6       |
| 0.152250        | 44.02            | ---             | 65.88        | 21.86       | N    | OFF    | 19.6       |
| 0.161250        | ---              | 27.32           | 55.40        | 28.08       | N    | OFF    | 19.6       |
| 0.161250        | 42.86            | ---             | 65.40        | 22.54       | N    | OFF    | 19.6       |
| 0.172500        | ---              | 26.53           | 54.84        | 28.31       | N    | OFF    | 19.6       |
| 0.172500        | 41.77            | ---             | 64.84        | 23.07       | N    | OFF    | 19.6       |
| 0.183750        | ---              | 25.79           | 54.31        | 28.52       | N    | OFF    | 19.6       |
| 0.183750        | 40.48            | ---             | 64.31        | 23.83       | N    | OFF    | 19.6       |
| 0.197250        | ---              | 25.81           | 53.73        | 27.92       | N    | OFF    | 19.6       |
| 0.197250        | 39.42            | ---             | 63.73        | 24.31       | N    | OFF    | 19.6       |
| 0.208500        | ---              | 25.39           | 53.27        | 27.88       | N    | OFF    | 19.6       |
| 0.208500        | 40.10            | ---             | 63.27        | 23.17       | N    | OFF    | 19.6       |
| 0.226500        | ---              | 25.08           | 52.58        | 27.50       | N    | OFF    | 19.6       |
| 0.226500        | 37.79            | ---             | 62.58        | 24.79       | N    | OFF    | 19.6       |
| 0.244500        | ---              | 25.53           | 51.94        | 26.41       | N    | OFF    | 19.6       |
| 0.244500        | 36.14            | ---             | 61.94        | 25.80       | N    | OFF    | 19.6       |
| 2.332500        | ---              | 23.74           | 46.00        | 22.26       | N    | OFF    | 19.7       |
| 2.332500        | 25.22            | ---             | 56.00        | 30.78       | N    | OFF    | 19.7       |
| 18.264750       | ---              | 31.87           | 50.00        | 18.13       | N    | OFF    | 20.4       |
| 18.264750       | 37.56            | ---             | 60.00        | 22.44       | N    | OFF    | 20.4       |



## Appendix C. Radiated Spurious Emission

|                 |                         |                     |         |
|-----------------|-------------------------|---------------------|---------|
| Test Engineer : | Rain Lee and Jacky Hong | Temperature :       | 20~25°C |
|                 |                         | Relative Humidity : | 50~60%  |

### 2.4GHz 2400~2483.5MHz

#### BT (Band Edge @ 3m)

| BT                     | Note | Frequency | Level      | Margin | Limit<br>Line | Read<br>Level | Antenna<br>Factor | Path<br>Loss | Preamp<br>Factor | Ant<br>Pos | Table<br>Pos | Peak<br>Avg. | Pol.    |
|------------------------|------|-----------|------------|--------|---------------|---------------|-------------------|--------------|------------------|------------|--------------|--------------|---------|
|                        |      | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m )    | ( dBμV )      | ( dB/m )          | ( dB )       | ( dB )           | ( cm )     | ( deg )      | ( P/A )      | ( H/V ) |
| BT<br>CH00<br>2402MHz  |      | 2364.39   | 47.01      | -26.99 | 74            | 42.2          | 27.77             | 4.11         | 27.07            | 205        | 30           | P            | H       |
|                        |      | 2364.39   | 22.25      | -31.75 | 54            | -             | -                 | -            | -                | -          | -            | A            | H       |
|                        | *    | 2402      | 103.08     | -      | -             | 98.3          | 27.7              | 4.14         | 27.06            | 205        | 30           | P            | H       |
|                        |      | 2402      | 78.32      | 24.32  | 54            | -             | -                 | -            | -                | -          | -            | A            | H       |
|                        |      | 2364.915  | 47.07      | -26.93 | 74            | 42.26         | 27.77             | 4.11         | 27.07            | 100        | 80           | P            | V       |
|                        |      | 2364.915  | 22.31      | -31.69 | 54            | -             | -                 | -            | -                | -          | -            | A            | V       |
|                        | *    | 2402      | 103.87     | -      | -             | 99.09         | 27.7              | 4.14         | 27.06            | 100        | 80           | P            | V       |
|                        |      | 2402      | 79.11      | 25.11  | 54            | -             | -                 | -            | -                | -          | -            | A            | V       |
| BT<br>CH 39<br>2441MHz |      | 2319.94   | 46.49      | -27.51 | 74            | 41.47         | 28.04             | 4.07         | 27.09            | 253        | 131          | P            | H       |
|                        |      | 2319.94   | 21.73      | -32.27 | 54            | -             | -                 | -            | -                | -          | -            | A            | H       |
|                        | *    | 2441      | 103.71     | -      | -             | 98.96         | 27.62             | 4.18         | 27.05            | 253        | 131          | P            | H       |
|                        | *    | 2441      | 78.95      | -      | -             | -             | -                 | -            | -                | -          | -            | A            | H       |
|                        |      | 2487.61   | 45.65      | -28.35 | 74            | 40.78         | 27.68             | 4.22         | 27.03            | 253        | 131          | P            | H       |
|                        |      | 2487.61   | 20.89      | -33.11 | 54            | -             | -                 | -            | -                | -          | -            | A            | H       |
|                        |      | 2322.6    | 45.72      | -28.28 | 74            | 40.72         | 28.02             | 4.07         | 27.09            | 100        | 124          | P            | V       |
|                        |      | 2322.6    | 20.96      | -33.04 | 54            | -             | -                 | -            | -                | -          | -            | A            | V       |
|                        | *    | 2441      | 102.87     | -      | -             | 98.12         | 27.62             | 4.18         | 27.05            | 100        | 124          | P            | V       |
|                        | *    | 2441      | 78.11      | -      | -             | -             | -                 | -            | -                | -          | -            | A            | V       |
|                        |      | 2496.78   | 45.77      | -28.23 | 74            | 40.88         | 27.69             | 4.23         | 27.03            | 100        | 124          | P            | V       |
|                        |      | 2496.78   | 21.01      | -32.99 | 54            | -             | -                 | -            | -                | -          | -            | A            | V       |



| BT                     | Note                                                                                        | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Margin<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>(P/A) | Pol.<br>(H/V) |
|------------------------|---------------------------------------------------------------------------------------------|----------------------|---------------------|------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-----------------------|---------------|
| BT<br>CH 78<br>2480MHz | *                                                                                           | 2480                 | 103.49              | -                | -                           | 98.66                     | 27.66                         | 4.21                   | 27.04                      | 250                  | 132                     | P                     | H             |
|                        | *                                                                                           | 2480                 | 78.73               | -                | -                           | -                         | -                             | -                      | -                          | -                    | -                       | A                     | H             |
|                        |                                                                                             | 2484.28              | 46.56               | -27.44           | 74                          | 41.71                     | 27.67                         | 4.22                   | 27.04                      | 250                  | 132                     | P                     | H             |
|                        |                                                                                             | 2484.28              | 21.8                | -32.2            | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                     | H             |
|                        | *                                                                                           | 2480                 | 103.62              | -                | -                           | 98.79                     | 27.66                         | 4.21                   | 27.04                      | 116                  | 123                     | P                     | V             |
|                        | *                                                                                           | 2480                 | 78.86               | -                | -                           | -                         | -                             | -                      | -                          | -                    | -                       | A                     | V             |
|                        |                                                                                             | 2483.96              | 47.3                | -26.7            | 74                          | 42.45                     | 27.67                         | 4.22                   | 27.04                      | 116                  | 123                     | P                     | V             |
|                        |                                                                                             | 2483.96              | 22.54               | -31.46           | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                     | V             |
| Remark                 | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                       |               |

**2.4GHz 2400~2483.5MHz****BT (Harmonic @ 3m)**

| BT                     | Note | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Margin<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|------------------------|------|----------------------|---------------------|------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| BT<br>CH 00<br>2402MHz |      | 4804                 | 39.78               | -34.22           | 74                          | 58.92                     | 31.41                         | 6.79                   | 57.34                      | -                    | -                       | P                       | H               |
|                        |      | 4804                 | 15.02               | -38.98           | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                       | H               |
|                        |      | 10890                | 48.96               | -25.04           | 74                          | 54.5                      | 40.88                         | 9.99                   | 56.41                      | -                    | -                       | P                       | H               |
|                        |      | 10890                | 24.2                | -29.8            | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                       | H               |
|                        |      | 14505                | 49.48               | -24.52           | 74                          | 52.59                     | 41.91                         | 11.78                  | 56.8                       | -                    | -                       | P                       | H               |
|                        |      | 14505                | 24.72               | -29.28           | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                       | H               |
|                        |      | 18000                | 56.63               | -17.37           | 74                          | 51.61                     | 48.5                          | 13.55                  | 57.03                      | -                    | -                       | P                       | H               |
|                        |      | 18000                | 31.87               | -22.13           | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                       | H               |
|                        |      | 4804                 | 39.21               | -34.79           | 74                          | 58.35                     | 31.41                         | 6.79                   | 57.34                      | -                    | -                       | P                       | V               |
|                        |      | 4804                 | 14.45               | -39.55           | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                       | V               |
|                        |      | 10875                | 48.86               | -25.14           | 74                          | 54.44                     | 40.85                         | 9.98                   | 56.41                      | -                    | -                       | P                       | V               |
|                        |      | 10875                | 24.1                | -29.9            | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                       | V               |
|                        |      | 14475                | 49.63               | -24.37           | 74                          | 52.91                     | 41.8                          | 11.76                  | 56.84                      | -                    | -                       | P                       | V               |
|                        |      | 14475                | 24.87               | -29.13           | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                       | V               |
|                        |      | 18000                | 56.3                | -17.7            | 74                          | 51.28                     | 48.5                          | 13.55                  | 57.03                      | -                    | -                       | P                       | V               |
|                        |      | 18000                | 31.54               | -22.46           | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                       | V               |



| BT                     | Note | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Margin<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|------------------------|------|----------------------|---------------------|------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| BT<br>CH 39<br>2441MHz |      | 4882                 | 39.22               | -34.78           | 74                          | 58.17                     | 31.44                         | 6.83                   | 57.22                      | -                    | -                       | P                       | H               |
|                        |      | 4882                 | 14.46               | -39.54           | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                       | H               |
|                        |      | 7323                 | 44.62               | -29.38           | 74                          | 56.45                     | 37.05                         | 8.46                   | 57.34                      | -                    | -                       | P                       | H               |
|                        |      | 7323                 | 19.86               | -34.14           | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                       | H               |
|                        |      | 10740                | 49.14               | -24.86           | 74                          | 55.05                     | 40.58                         | 9.91                   | 56.4                       | -                    | -                       | P                       | H               |
|                        |      | 10740                | 24.38               | -29.62           | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                       | H               |
|                        |      | 14505                | 49.61               | -24.39           | 74                          | 52.72                     | 41.91                         | 11.78                  | 56.8                       | -                    | -                       | P                       | H               |
|                        |      | 14505                | 24.85               | -29.15           | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                       | H               |
|                        |      | 18000                | 56.95               | -17.05           | 74                          | 51.93                     | 48.5                          | 13.55                  | 57.03                      | -                    | -                       | P                       | H               |
|                        |      | 18000                | 32.19               | -21.81           | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                       | H               |
|                        |      | 4882                 | 39.43               | -34.57           | 74                          | 58.38                     | 31.44                         | 6.83                   | 57.22                      | -                    | -                       | P                       | V               |
|                        |      | 4882                 | 14.67               | -39.33           | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                       | V               |
|                        |      | 7323                 | 44.35               | -29.65           | 74                          | 56.18                     | 37.05                         | 8.46                   | 57.34                      | -                    | -                       | P                       | V               |
|                        |      | 7323                 | 19.59               | -34.41           | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                       | V               |
|                        |      | 10935                | 49.31               | -24.69           | 74                          | 54.87                     | 40.83                         | 10.02                  | 56.41                      | -                    | -                       | P                       | V               |
|                        |      | 10935                | 24.55               | -29.45           | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                       | V               |
|                        |      | 14475                | 50.18               | -23.82           | 74                          | 53.46                     | 41.8                          | 11.76                  | 56.84                      | -                    | -                       | P                       | V               |
|                        |      | 14475                | 25.42               | -28.58           | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                       | V               |
|                        |      | 18000                | 57.38               | -16.62           | 74                          | 52.36                     | 48.5                          | 13.55                  | 57.03                      | -                    | -                       | P                       | V               |
|                        |      | 18000                | 32.62               | -21.38           | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                       | V               |



| BT                              | Note                                                                                                                                                                                                                                                                                                                                           | Frequency<br>( MHz ) | Level<br>( dBμV/m ) | Margin<br>( dB ) | Limit<br>Line<br>( dBμV/m ) | Read<br>Level<br>( dBμV ) | Antenna<br>Factor<br>( dB/m ) | Path<br>Loss<br>( dB ) | Preamp<br>Factor<br>( dB ) | Ant<br>Pos<br>( cm ) | Table<br>Pos<br>( deg ) | Peak<br>Avg.<br>( P/A ) | Pol.<br>( H/V ) |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| <b>BT<br/>CH 78<br/>2480MHz</b> |                                                                                                                                                                                                                                                                                                                                                | 4960                 | 40.07               | -33.93           | 74                          | 58.59                     | 31.72                         | 6.86                   | 57.1                       | -                    | -                       | P                       | H               |
|                                 |                                                                                                                                                                                                                                                                                                                                                | 4960                 | 15.31               | -38.69           | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                       | H               |
|                                 |                                                                                                                                                                                                                                                                                                                                                | 7440                 | 44.18               | -29.82           | 74                          | 56.15                     | 37.02                         | 8.53                   | 57.52                      | -                    | -                       | P                       | H               |
|                                 |                                                                                                                                                                                                                                                                                                                                                | 7440                 | 19.42               | -34.58           | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                       | H               |
|                                 |                                                                                                                                                                                                                                                                                                                                                | 10905                | 48.96               | -25.04           | 74                          | 54.48                     | 40.89                         | 10                     | 56.41                      | -                    | -                       | P                       | H               |
|                                 |                                                                                                                                                                                                                                                                                                                                                | 10905                | 24.2                | -29.8            | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                       | H               |
|                                 |                                                                                                                                                                                                                                                                                                                                                | 14490                | 49.84               | -24.16           | 74                          | 53.02                     | 41.86                         | 11.77                  | 56.81                      | -                    | -                       | P                       | H               |
|                                 |                                                                                                                                                                                                                                                                                                                                                | 14490                | 25.08               | -28.92           | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                       | H               |
|                                 |                                                                                                                                                                                                                                                                                                                                                | 18000                | 56.26               | -17.74           | 74                          | 51.24                     | 48.5                          | 13.55                  | 57.03                      | -                    | -                       | P                       | H               |
|                                 |                                                                                                                                                                                                                                                                                                                                                | 18000                | 31.5                | -22.5            | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                       | H               |
|                                 |                                                                                                                                                                                                                                                                                                                                                | 4960                 | 39.6                | -34.4            | 74                          | 58.12                     | 31.72                         | 6.86                   | 57.1                       | -                    | -                       | P                       | V               |
|                                 |                                                                                                                                                                                                                                                                                                                                                | 4960                 | 14.84               | -39.16           | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                       | H               |
|                                 |                                                                                                                                                                                                                                                                                                                                                | 7440                 | 44.18               | -29.82           | 74                          | 56.15                     | 37.02                         | 8.53                   | 57.52                      | -                    | -                       | P                       | V               |
|                                 |                                                                                                                                                                                                                                                                                                                                                | 7440                 | 19.42               | -34.58           | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                       | V               |
|                                 |                                                                                                                                                                                                                                                                                                                                                | 10710                | 49.28               | -24.72           | 74                          | 55.26                     | 40.52                         | 9.9                    | 56.4                       | -                    | -                       | P                       | V               |
|                                 |                                                                                                                                                                                                                                                                                                                                                | 10710                | 24.52               | -29.48           | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                       | V               |
|                                 |                                                                                                                                                                                                                                                                                                                                                | 14475                | 49.63               | -24.37           | 74                          | 52.91                     | 41.8                          | 11.76                  | 56.84                      | -                    | -                       | P                       | V               |
|                                 |                                                                                                                                                                                                                                                                                                                                                | 14475                | 24.87               | -29.13           | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                       | V               |
|                                 |                                                                                                                                                                                                                                                                                                                                                | 17985                | 56.23               | -17.77           | 74                          | 51.62                     | 48.1                          | 13.54                  | 57.03                      | -                    | -                       | P                       | V               |
|                                 |                                                                                                                                                                                                                                                                                                                                                | 17985                | 31.47               | -22.53           | 54                          | -                         | -                             | -                      | -                          | -                    | -                       | A                       | V               |
| <b>Remark</b>                   | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line.<br>3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.<br>4. The emission level close to 18GHz is checked that the average emission level is noise floor only. |                      |                     |                  |                             |                           |                               |                        |                            |                      |                         |                         |                 |

**Emission above 18GHz****2.4GHz BT (SHF)**

| BT                           | Note                                                                                                                                                                                                                                                                            | Frequency | Level            | Margin | Limit            | Read         | Antenna  | Path   | Preamp | Ant    | Table   | Peak  | Pol.  |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------|--------|------------------|--------------|----------|--------|--------|--------|---------|-------|-------|
|                              |                                                                                                                                                                                                                                                                                 |           |                  |        | Line             | Level        | Factor   | Loss   | Factor | Pos    | Pos     | Avg.  |       |
|                              |                                                                                                                                                                                                                                                                                 | ( MHz )   | ( dB $\mu$ V/m ) | ( dB ) | ( dB $\mu$ V/m ) | (dB $\mu$ V) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | (P/A) | (H/V) |
| <b>2.4GHz<br/>BT<br/>SHF</b> |                                                                                                                                                                                                                                                                                 | 20160     | 38.36            | -35.64 | 74               | 57.47        | 37.69    | -3.26  | 53.54  | -      | -       | P     | H     |
|                              |                                                                                                                                                                                                                                                                                 | 24104     | 39.92            | -34.08 | 74               | 56.43        | 38.84    | -2.15  | 53.2   | -      | -       | P     | V     |
| <b>Remark</b>                | <ol style="list-style-type: none"><li>1. No other spurious found.</li><li>2. All results are PASS against limit line.</li><li>3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.</li></ol> |           |                  |        |                  |              |          |        |        |        |         |       |       |



## Emission below 1GHz

## 2.4GHz BT (LF)

| BT                 | Note                                                                                                                                                                                                                                             | Frequency | Level      | Margin | Limit      | Read   | Antenna  | Path   | Preamp | Ant    | Table   | Peak  | Pol.  |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|--------|------------|--------|----------|--------|--------|--------|---------|-------|-------|
|                    |                                                                                                                                                                                                                                                  |           |            |        | Line       | Level  | Factor   | Loss   | Factor | Pos    | Pos     | Avg.  |       |
|                    |                                                                                                                                                                                                                                                  | ( MHz )   | ( dBμV/m ) | ( dB ) | ( dBμV/m ) | (dBμV) | ( dB/m ) | ( dB ) | ( dB ) | ( cm ) | ( deg ) | (P/A) | (H/V) |
| 2.4GHz<br>BT<br>LF |                                                                                                                                                                                                                                                  | 30.97     | 21.86      | -18.14 | 40         | 29.25  | 24.24    | 0.72   | 32.35  | -      | -       | P     | H     |
|                    |                                                                                                                                                                                                                                                  | 127.97    | 22.05      | -21.45 | 43.5       | 35.79  | 17.42    | 1.14   | 32.3   | -      | -       | P     | H     |
|                    |                                                                                                                                                                                                                                                  | 231.76    | 25.34      | -20.66 | 46         | 39.87  | 16.29    | 1.43   | 32.25  | -      | -       | P     | H     |
|                    |                                                                                                                                                                                                                                                  | 478.14    | 24.37      | -21.63 | 46         | 30.73  | 23.79    | 2.01   | 32.16  | -      | -       | P     | H     |
|                    |                                                                                                                                                                                                                                                  | 692.51    | 27.4       | -18.6  | 46         | 30.81  | 26.44    | 2.33   | 32.18  | -      | -       | P     | H     |
|                    |                                                                                                                                                                                                                                                  | 903.97    | 34.31      | -11.69 | 46         | 34.11  | 29.16    | 2.54   | 31.5   | -      | -       | P     | H     |
|                    |                                                                                                                                                                                                                                                  | 30.97     | 21.89      | -18.11 | 40         | 29.28  | 24.24    | 0.72   | 32.35  | -      | -       | P     | V     |
|                    |                                                                                                                                                                                                                                                  | 111.48    | 21.94      | -21.56 | 43.5       | 36.24  | 16.92    | 1.1    | 32.32  | -      | -       | P     | V     |
|                    |                                                                                                                                                                                                                                                  | 224       | 23.28      | -22.72 | 46         | 38.64  | 15.47    | 1.42   | 32.25  | -      | -       | P     | V     |
|                    |                                                                                                                                                                                                                                                  | 565.44    | 26.42      | -19.58 | 46         | 30.42  | 26.13    | 2.12   | 32.25  | -      | -       | P     | V     |
|                    |                                                                                                                                                                                                                                                  | 717.73    | 30.08      | -15.92 | 46         | 33.05  | 26.87    | 2.33   | 32.17  | -      | -       | P     | V     |
|                    |                                                                                                                                                                                                                                                  | 897.18    | 34.46      | -11.54 | 46         | 34.45  | 29.01    | 2.54   | 31.54  | -      | -       | P     | V     |
| Remark             | 1. No other spurious found.<br>2. All results are PASS against limit line.<br>3. The emission position marked as “-” means no suspected emission found and emission level has at least 6dB margin against limit or emission is noise floor only. |           |            |        |            |        |          |        |        |        |         |       |       |



**Note symbol**

|     |                                                                                                                                                          |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| *   | <b>Fundamental Frequency</b> which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency. |
| !   | Test result is <b>over limit</b> line.                                                                                                                   |
| P/A | <b>P</b> eak or <b>A</b> verage                                                                                                                          |
| H/V | <b>H</b> orizontal or <b>V</b> ertical                                                                                                                   |

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.    |
|------------------------|------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|---------|---------|
|                        |      |           |            | Limit  | Line       | Level    | Factor   | Loss   | Factor | Pos    | Pos     | Avg.    |         |
|                        |      | ( 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       |

$$1. \text{ Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)}$$

$$2. \text{ Level(dB}\mu\text{V/m) =}$$

$$\text{Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dB}\mu\text{V) - Preamp Factor(dB)}$$

$$3. \text{ Over Limit(dB) = Level(dB}\mu\text{V/m) - Limit Line(dB}\mu\text{V/m)}$$

**For Peak Limit @ 2390MHz:**

$$1. \text{ Level(dB}\mu\text{V/m)}$$

$$= \text{Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dB}\mu\text{V) - Preamp Factor(dB)}$$

$$= 32.22(\text{dB/m}) + 4.58(\text{dB}) + 54.51(\text{dB}\mu\text{V}) - 35.86(\text{dB})$$

$$= 55.45(\text{dB}\mu\text{V/m})$$

$$2. \text{ Over Limit(dB)}$$

$$= \text{Level(dB}\mu\text{V/m) - Limit Line(dB}\mu\text{V/m)}$$

$$= 55.45(\text{dB}\mu\text{V/m}) - 74(\text{dB}\mu\text{V/m})$$

$$= -18.55(\text{dB})$$

**Peak measured complies with the limit line, so test result is "PASS".**

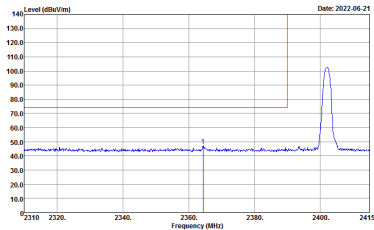
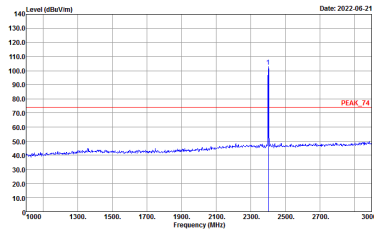


## Appendix D. Radiated Spurious Emission Plots

|                 |                         |                     |         |
|-----------------|-------------------------|---------------------|---------|
| Test Engineer : | Rain Lee and Jacky Hong | Temperature :       | 20~25°C |
|                 |                         | Relative Humidity : | 50~60%  |

2.4GHz 2400~2483.5MHz

BT (Band Edge @ 3m)

|      |                                                                                                                                                                                                                    |                                                                                                                                                                                                                  |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BT   | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                               |                                                                                                                                                                                                                  |
|      | BT CH00 2402MHz                                                                                                                                                                                                    |                                                                                                                                                                                                                  |
|      | Horizontal                                                                                                                                                                                                         | Fundamental                                                                                                                                                                                                      |
| Peak |  <p>Site : 03CH13-HY<br/>Condition : PEAK_BE_74 3m HORN_9120D_1241 HORIZONTAL<br/>: RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p> |  <p>Site : 03CH13-HY<br/>Condition : PEAK_74 3m HORN_9120D_1241 HORIZONTAL<br/>: RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p> |



| BT   | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                    |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      | BT CH00 2402MHz                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                    |
|      | Vertical                                                                                                                                                                                                                                                                                                                                                                               | Fundamental                                                                                                                                                                                                                                                                                                                                                                                        |
| Peak | <div><p>140<br/>130.0<br/>120.0<br/>110.0<br/>100.0<br/>90.0<br/>80.0<br/>70.0<br/>60.0<br/>50.0<br/>40.0<br/>30.0<br/>20.0<br/>10.0</p><p>Level (dBuV/m)</p><p>Date: 2022-06-21</p><p>2310 2320 2340 2360 2380 2400 2415</p><p>Frequency (MHz)</p><p>Site : 03CH13-HY<br/>Condition : PEAK_BE_74 3m HORN_91200_1241 VERTICAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p></div> | <div><p>140<br/>130.0<br/>120.0<br/>110.0<br/>100.0<br/>90.0<br/>80.0<br/>70.0<br/>60.0<br/>50.0<br/>40.0<br/>30.0<br/>20.0<br/>10.0</p><p>Level (dBuV/m)</p><p>Date: 2022-06-21</p><p>1000 1300 1500 1700 1900 2100 2300 2500 2700 3000</p><p>Frequency (MHz)</p><p>Site : 03CH13-HY<br/>Condition : PEAK_74 3m HORN_91200_1241 VERTICAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p></div> |



| BT   | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                          |                                                                                                                            |
|------|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
|      | BT CH39 2441MHz                                                                                                               |                                                                                                                            |
|      | Horizontal                                                                                                                    | Fundamental                                                                                                                |
| Peak | <p>Site : 03CH13-HY<br/>Condition : PEAK_BE_74 3m HORN_9120D_1241 HORIZONTAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | <p>Site : 03CH13-HY<br/>Condition : PEAK_74 3m HORN_9120D_1241 HORIZONTAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Peak | <p>Site : 03CH13-HY<br/>Condition : PEAK_BE_74 3m HORN_9120D_1241 HORIZONTAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | Left blank                                                                                                                 |



| BT   | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                        |                                                                                                                          |
|------|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
|      | BT CH39 2441MHz                                                                                                             |                                                                                                                          |
|      | Vertical                                                                                                                    | Fundamental                                                                                                              |
| Peak | <p>Site : 03CH13-HY<br/>Condition : PEAK_BE_74 3m HORN_9120D_1241 VERTICAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | <p>Site : 03CH13-HY<br/>Condition : PEAK_74 3m HORN_9120D_1241 VERTICAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Peak | <p>Site : 03CH13-HY<br/>Condition : PEAK_BE_74 3m HORN_9120D_1241 VERTICAL<br/>RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> | Left blank                                                                                                               |



|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                       |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BT   | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                       |
|      | BT CH78 2480MHz                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                       |
|      | Horizontal                                                                                                                                                                                                                                                                                                                                                                                                                                             | Fundamental                                                                                                                                                                                                                                                                                                                                                                                           |
| Peak | <div><p>140<br/>130.0<br/>120.0<br/>110.0<br/>100.0<br/>90.0<br/>80.0<br/>70.0<br/>60.0<br/>50.0<br/>40.0<br/>30.0<br/>20.0<br/>10.0</p><p>2400 2463.2465.2467.2469.2471.2473.2475.2477.2479.2481.2483.2485.2487.2489.2491.2493.2495.2497. 2500</p><p>Frequency (MHz)</p><p>Date: 2022-06-21</p><p>PEAK_BE_74</p><p>Site : 03CH13-HY<br/>Condition : PEAK_BE_74 3m HORN_91200_1241 HORIZONTAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p></div> | <div><p>140<br/>130.0<br/>120.0<br/>110.0<br/>100.0<br/>90.0<br/>80.0<br/>70.0<br/>60.0<br/>50.0<br/>40.0<br/>30.0<br/>20.0<br/>10.0</p><p>1000 1300. 1500. 1700. 1900. 2100. 2300. 2500. 2700. 3000</p><p>Frequency (MHz)</p><p>Date: 2022-06-21</p><p>PEAK_74</p><p>Site : 03CH13-HY<br/>Condition : PEAK_74 3m HORN_91200_1241 HORIZONTAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p></div> |



|      |                                                                                                                                                                                                       |                                                                                                                                                                                                 |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BT   | 2.4GHz 2400~2483.5MHz Band Edge @ 3m                                                                                                                                                                  |                                                                                                                                                                                                 |
|      | BT CH78 2480MHz                                                                                                                                                                                       |                                                                                                                                                                                                 |
|      | Vertical                                                                                                                                                                                              | Fundamental                                                                                                                                                                                     |
| Peak | <div><p>Level (dBuV/m)</p><p>Date: 2022-06-21</p><p>PEAK_BE_74</p><p>Site : 03CH13-HY<br/>Condition : PEAK_BE_74 3m HORN_9120D_1241 VERTICAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p></div> | <div><p>Level (dBuV/m)</p><p>Date: 2022-06-21</p><p>PEAK_74</p><p>Site : 03CH13-HY<br/>Condition : PEAK_74 3m HORN_9120D_1241 VERTICAL<br/>: RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p></div> |



2.4GHz 2400~2483.5MHz

BT (Harmonic @ 3m)

| BT           | 2.4GHz 2400~2483.5MHz Harmonic @ 3m                                                                                                  |                                                                                                                                    |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
|              | BT CH00 2402MHz                                                                                                                      |                                                                                                                                    |
|              | Horizontal                                                                                                                           | Vertical                                                                                                                           |
| Peak<br>Avg. | <div><p>Level (dBu/1m)</p><p>Date: 2022-06-21</p><p>Site : 03CH13-HY<br/>Condition : PEAK 74 3m HORN 91200 1241 HORIZONTAL</p></div> | <div><p>Level (dBu/1m)</p><p>Date: 2022-06-21</p><p>Site : 03CH13-HY<br/>Condition : PEAK 74 3m HORN 91200 1241 VERTICAL</p></div> |



|              |                                                                                                                                      |                                                                                                                                    |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| BT           | 2.4GHz 2400~2483.5MHz Harmonic @ 3m                                                                                                  |                                                                                                                                    |
|              | BT CH39 2441MHz                                                                                                                      |                                                                                                                                    |
|              | Horizontal                                                                                                                           | Vertical                                                                                                                           |
| Peak<br>Avg. | <div><p>Level (dBuV/m)</p><p>Date: 2022-06-21</p><p>Site : 03CH13-HY<br/>Condition : PEAK_74 3m HORN_91200_1241 HORIZONTAL</p></div> | <div><p>Level (dBuV/m)</p><p>Date: 2022-06-21</p><p>Site : 03CH13-HY<br/>Condition : PEAK_74 3m HORN_91200_1241 VERTICAL</p></div> |



|              |                                                                                                                                      |                                                                                                                                    |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| BT           | 2.4GHz 2400~2483.5MHz Harmonic @ 3m                                                                                                  |                                                                                                                                    |
|              | BT CH78 2480MHz                                                                                                                      |                                                                                                                                    |
|              | Horizontal                                                                                                                           | Vertical                                                                                                                           |
| Peak<br>Avg. | <div><p>Level (dBuV/m)</p><p>Date: 2022-06-21</p><p>Site : 03CH13-HY<br/>Condition : PEAK_74 3m HORN_91200_1241 HORIZONTAL</p></div> | <div><p>Level (dBuV/m)</p><p>Date: 2022-06-21</p><p>Site : 03CH13-HY<br/>Condition : PEAK_74 3m HORN_91200_1241 VERTICAL</p></div> |



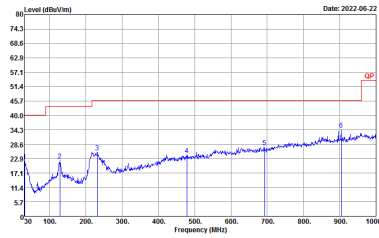
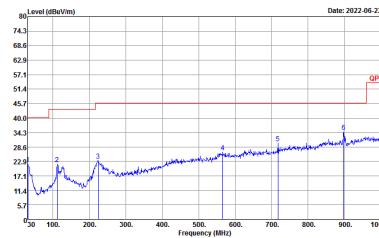
Emission above 18GHz  
2.4GHz BT (SHF @ 1m)

| BT           | 2.4GHz 2400~2483.5MHz                                                                                                                    |                                                                                                                                          |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
|              | BT SHF                                                                                                                                   |                                                                                                                                          |
|              | Horizontal                                                                                                                               | Vertical                                                                                                                                 |
| Peak<br>Avg. | <div><p>Level (dBuV/m)</p><p>Date: 2022-06-22</p><p>Site : 03CH13-HY<br/>Condition : PEAK_74_1M 1m SHF ANT_9170_00993 VERTICAL</p></div> | <div><p>Level (dBuV/m)</p><p>Date: 2022-06-22</p><p>Site : 03CH13-HY<br/>Condition : PEAK_74_1M 1m SHF ANT_9170_00993 VERTICAL</p></div> |



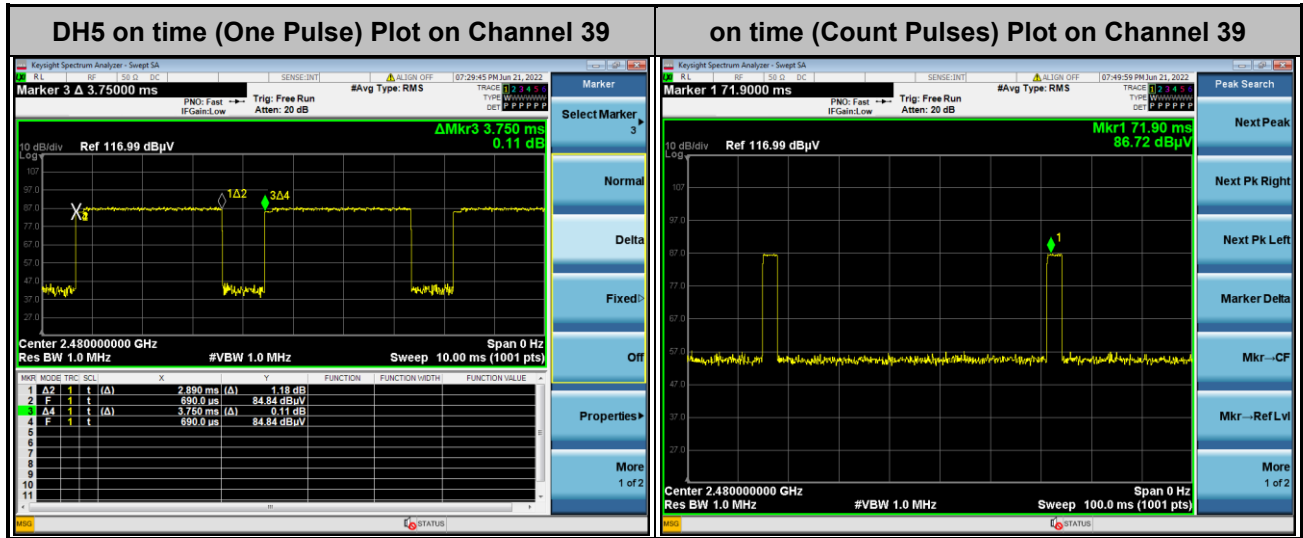
Emission below 1GHz

2.4GHz BT (LF)

| BT           | 2.4GHz 2400~2483.5MHz                                                                                                                                  |                                                                                                                                                       |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | BT LF                                                                                                                                                  |                                                                                                                                                       |
|              | Horizontal                                                                                                                                             | Vertical                                                                                                                                              |
| QP /<br>Peak |  <p>Site : 03CH13-HY<br/>Condition : QP 3m BILOG_40103 HORIZONTAL</p> |  <p>Site : 03CH13-HY<br/>Condition : QP 3m BILOG_40103 VERTICAL</p> |



## Appendix E. Duty Cycle Plots



### Note:

1. Worst case Duty cycle = on time/100 milliseconds =  $2 * 2.89 / 100 = 5.78 \%$
2. Worst case Duty cycle correction factor =  $20 * \log(\text{Duty cycle}) = -24.76 \text{ dB}$
3. DH5 has the highest duty cycle worst case and is reported.

### Duty Cycle Correction Factor Consideration for AFH mode:

Bluetooth normal hopping rate is 1600Hz and reduced to 800Hz in AFH mode; due to the reduced number of hopping frequencies, with the same packet configuration the dwell time in each channel frequency within 100msec period is longer in AFH mode than normal mode.

In AFH mode, the minimum hopping frequencies are 20, to get the longest dwell time DH5 packet is observed; the on time period to have DH5 packet completing one hopping sequence is

$$2.89 \text{ ms} \times 20 \text{ channels} = 57.8 \text{ ms}$$

There cannot be 2 complete hopping sequences within 100ms period, considering the random hopping behavior, maximum 2 hops can be possibly observed within the period.  $[100 \text{ ms} / 57.8 \text{ ms}] = 2 \text{ hops}$

Thus, the maximum possible ON time:

$$2.89 \text{ ms} \times 2 = 5.78 \text{ ms}$$

Worst case Duty Cycle Correction factor, which is derived from the maximum possible ON time,

$$20 \times \log(5.78 \text{ ms}/100 \text{ ms}) = -24.76 \text{ dB}$$

—————THE END—————