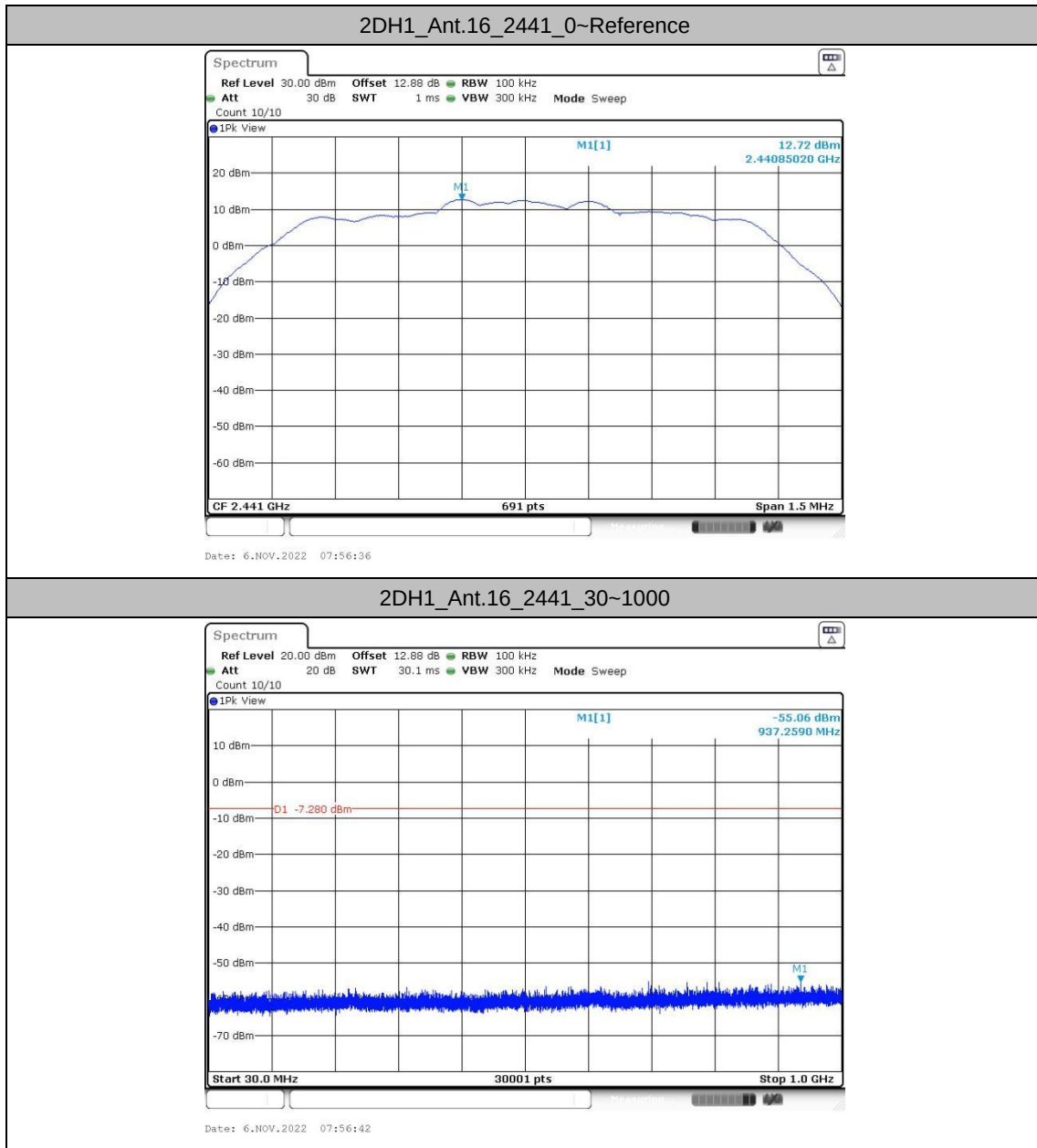
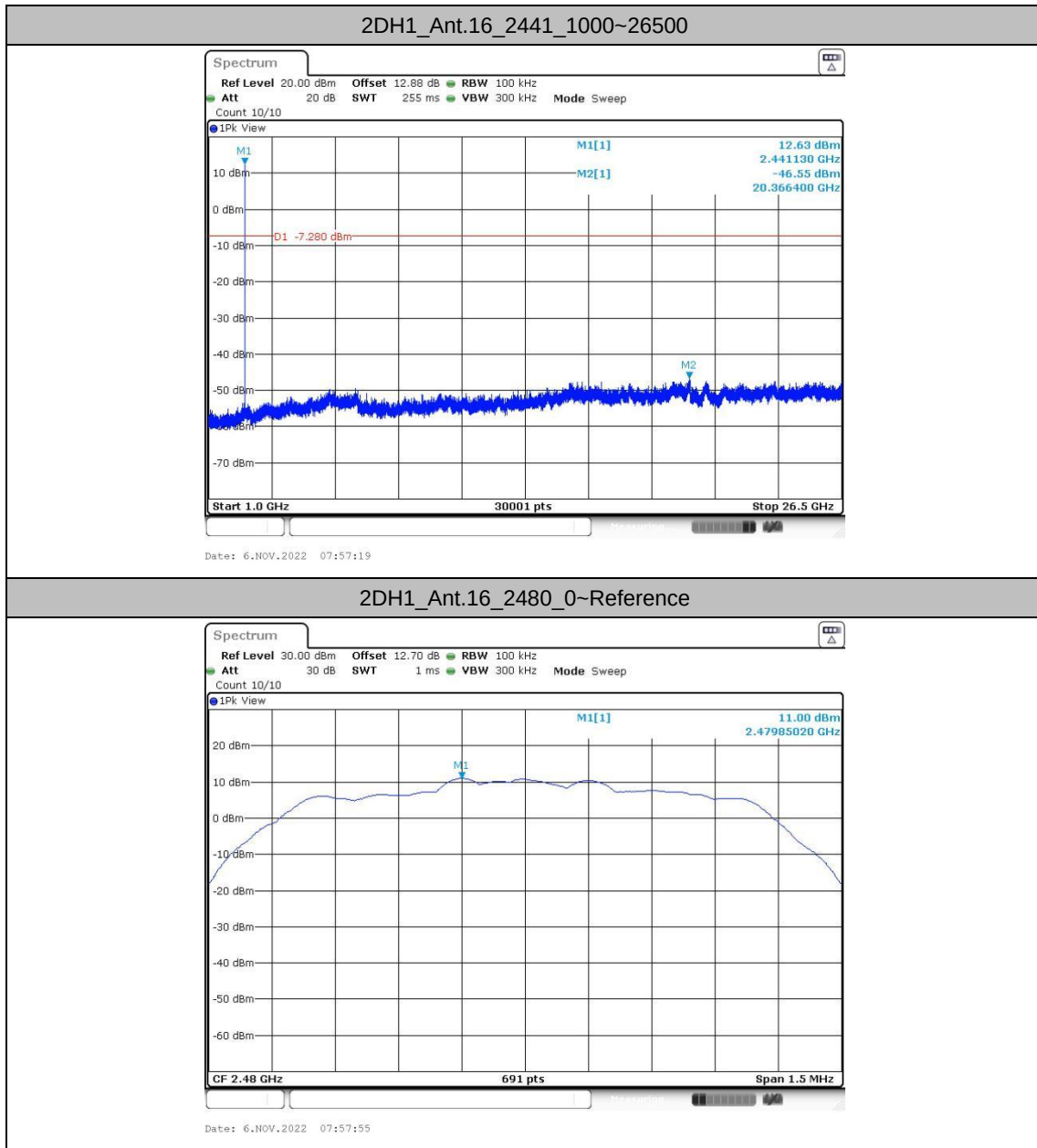
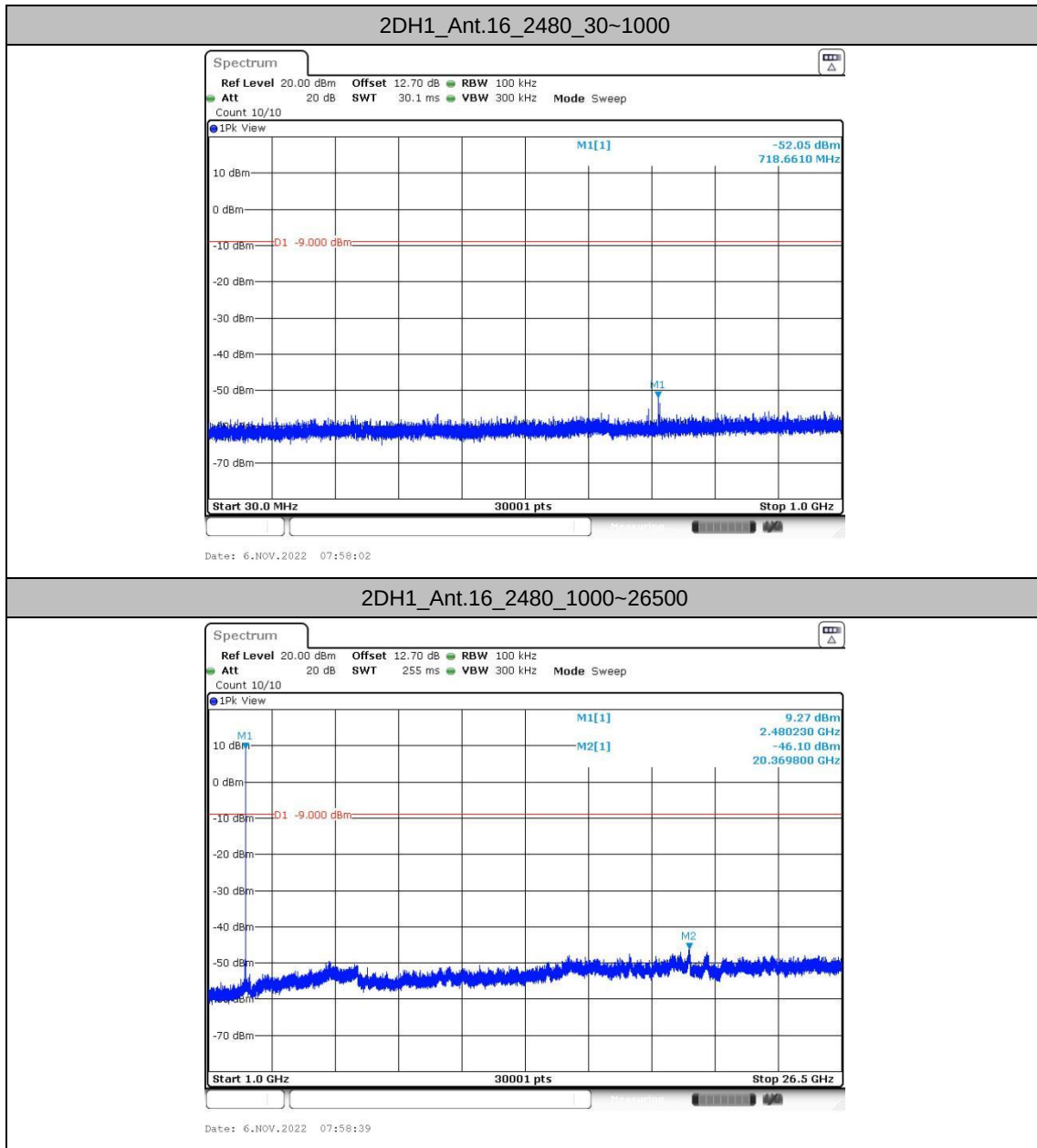
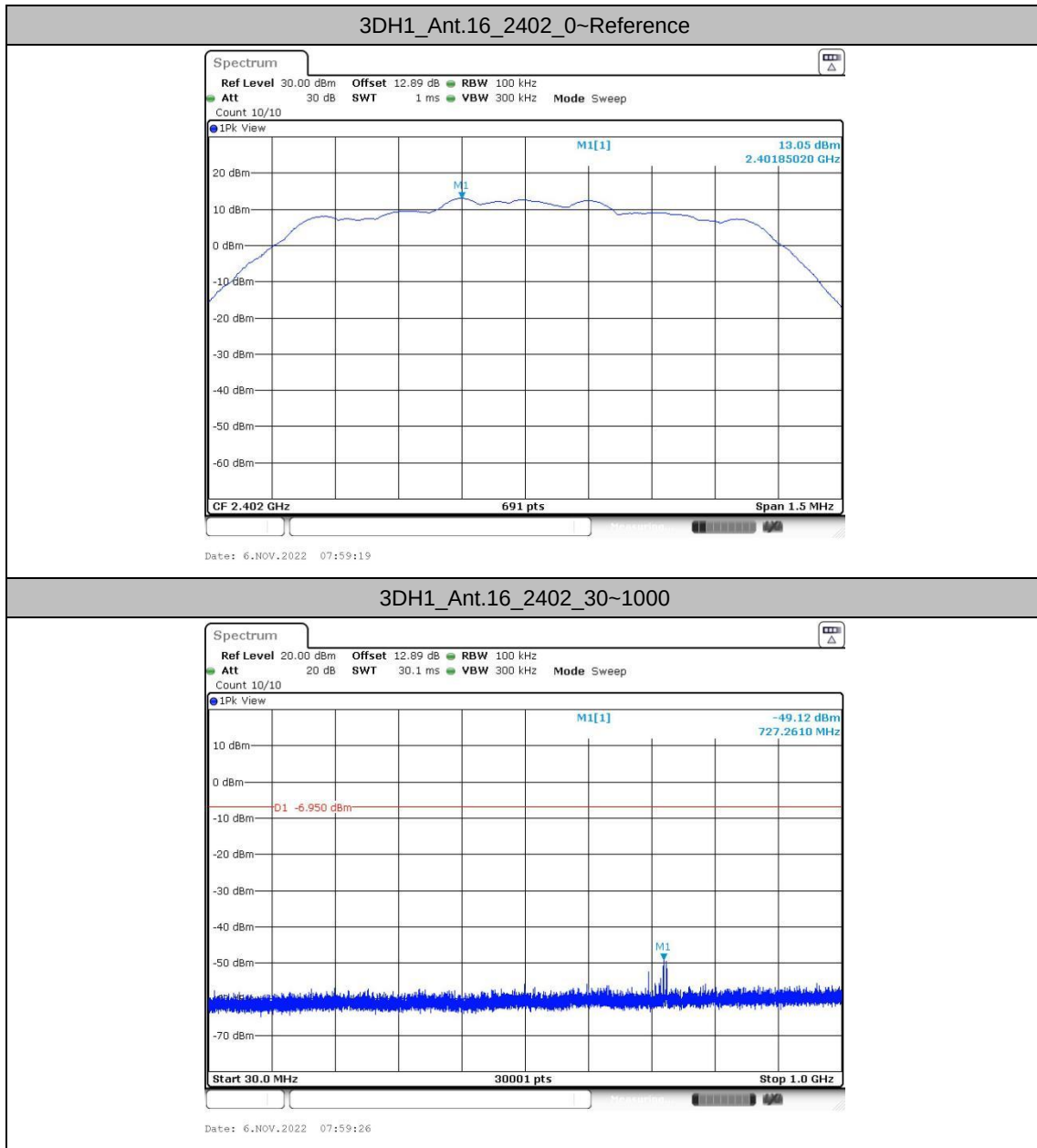
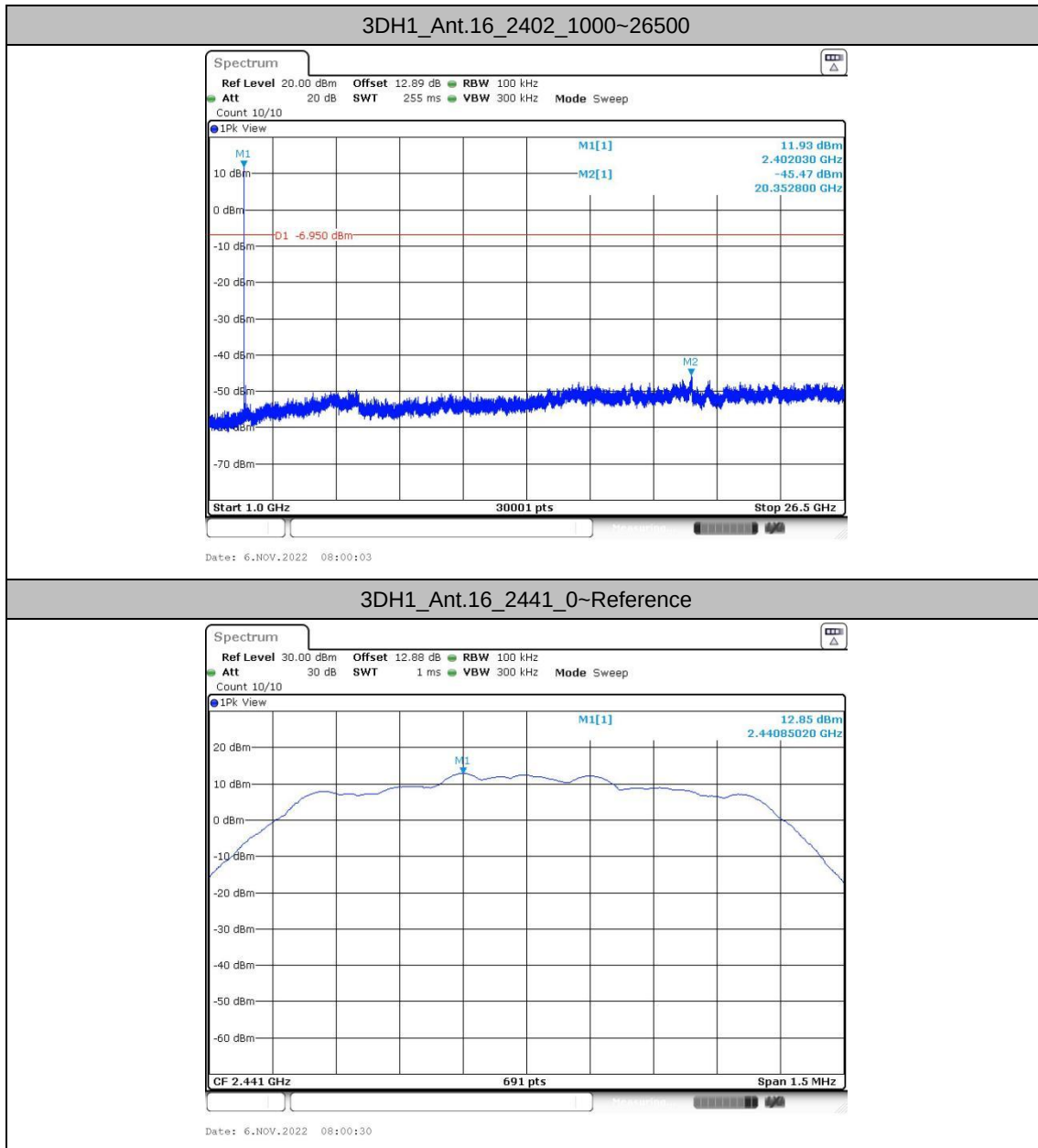


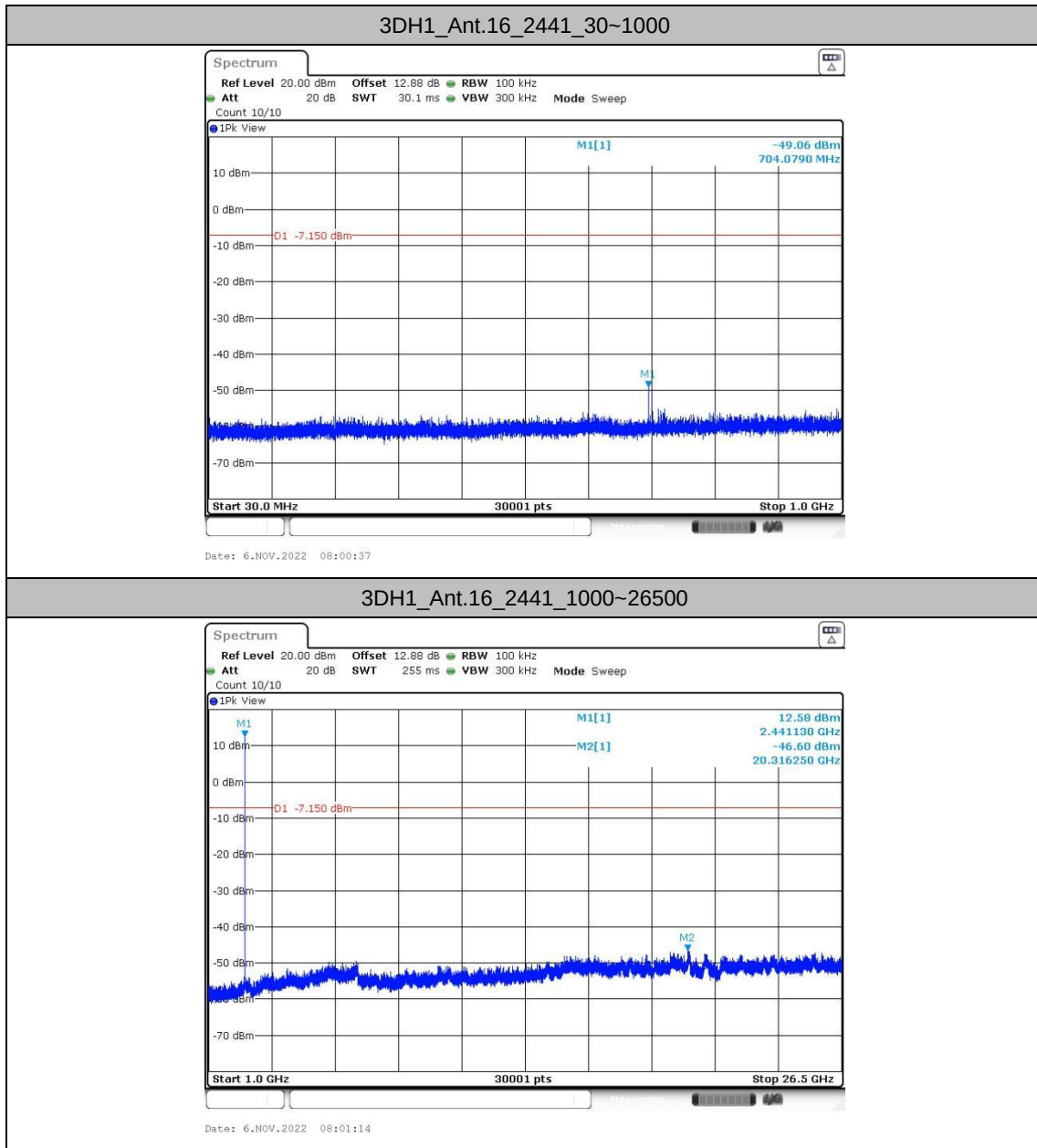


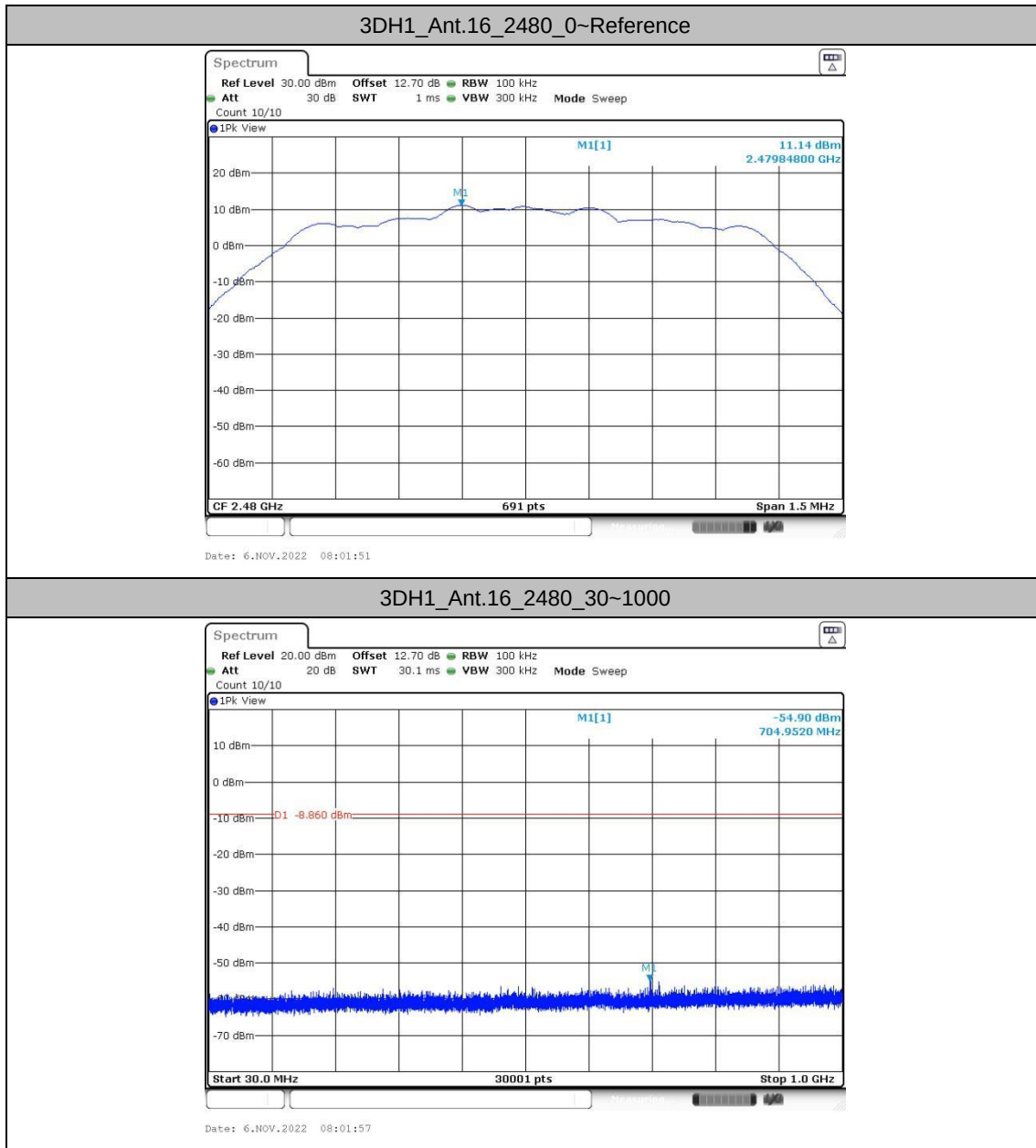


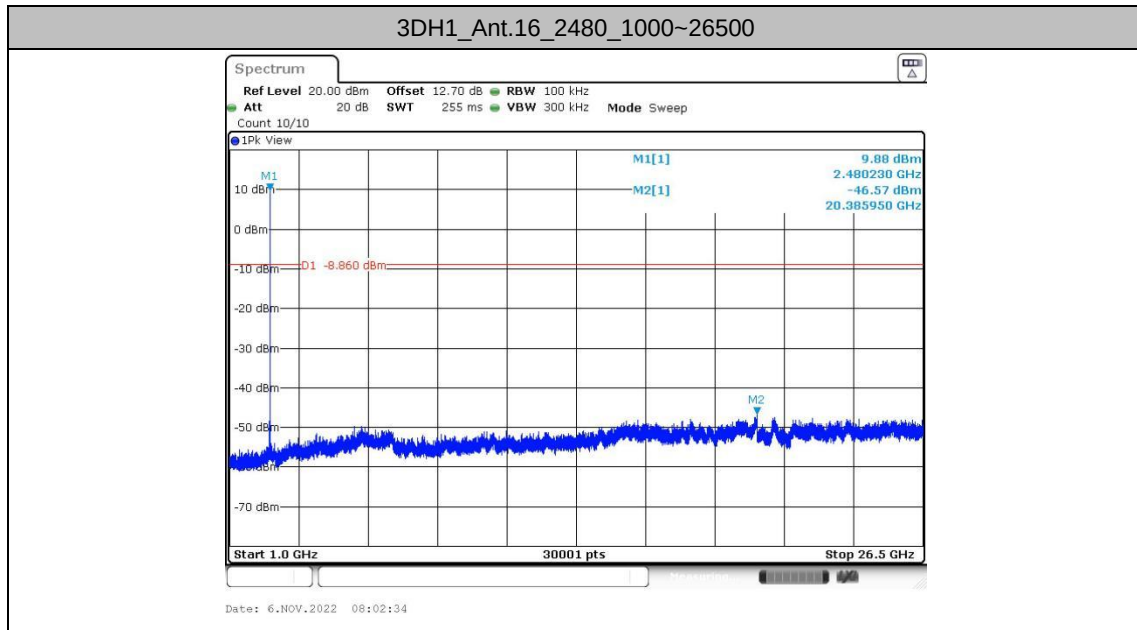








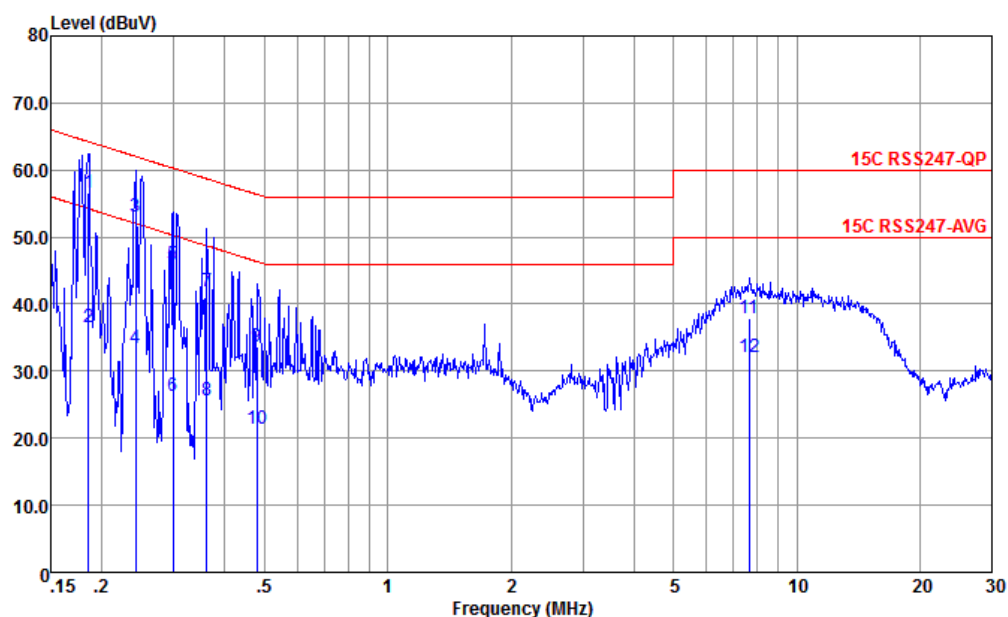






## Appendix B. AC Conducted Emission Test Results

|                 |                                                                                 |                     |             |
|-----------------|---------------------------------------------------------------------------------|---------------------|-------------|
| Test Engineer : | Amos                                                                            | Temperature :       | 25.3~26.2°C |
|                 |                                                                                 | Relative Humidity : | 38~40%      |
| Test Voltage :  | 120Vac / 60Hz                                                                   | Phase :             | Line        |
| Remark :        | All emissions not reported here are more than 10 dB below the prescribed limit. |                     |             |



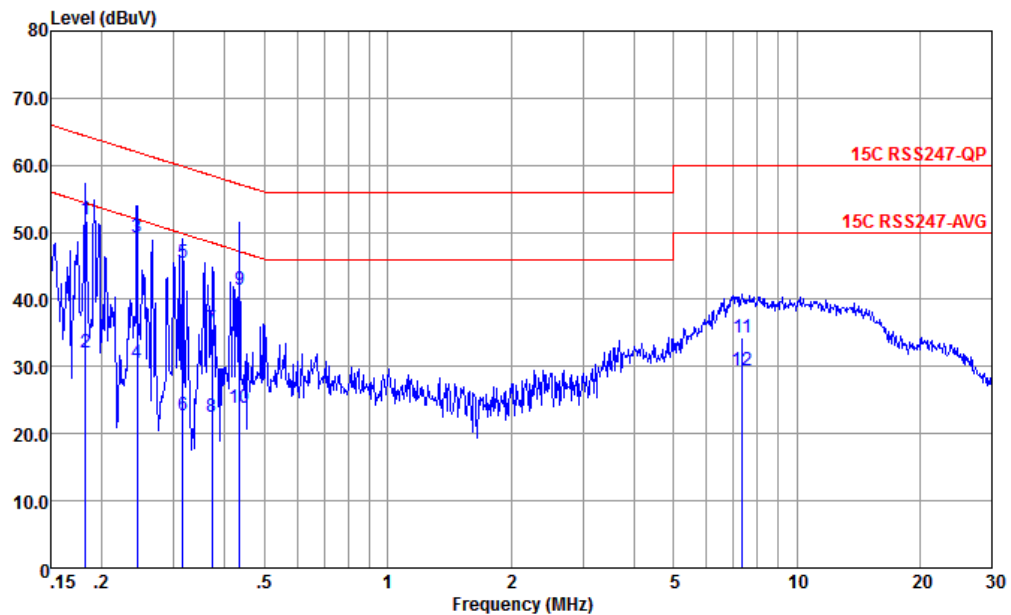
Site : CO01-KS

Condition : 15C RSS247-QP LISN-060105-LINE LINE

|     | Freq  | Level | Over   | Limit | Read  | LISN   | Cable | Remark  |
|-----|-------|-------|--------|-------|-------|--------|-------|---------|
|     | MHz   | dBuV  | Limit  | Line  | Level | Factor | Loss  |         |
|     |       |       | dB     | dBuV  | dBuV  | dB     | dB    |         |
| 1 * | 0.185 | 56.66 | -7.58  | 64.24 | 46.21 | 0.03   | 10.42 | QP      |
| 2   | 0.185 | 36.66 | -17.58 | 54.24 | 26.21 | 0.03   | 10.42 | Average |
| 3   | 0.242 | 52.93 | -9.11  | 62.04 | 42.50 | 0.04   | 10.39 | QP      |
| 4   | 0.242 | 33.33 | -18.71 | 52.04 | 22.90 | 0.04   | 10.39 | Average |
| 5   | 0.299 | 45.91 | -14.37 | 60.28 | 35.50 | 0.06   | 10.35 | QP      |
| 6   | 0.299 | 26.21 | -24.07 | 50.28 | 15.80 | 0.06   | 10.35 | Average |
| 7   | 0.361 | 41.84 | -16.85 | 58.69 | 31.49 | 0.03   | 10.32 | QP      |
| 8   | 0.361 | 25.54 | -23.15 | 48.69 | 15.19 | 0.03   | 10.32 | Average |
| 9   | 0.479 | 33.70 | -22.66 | 56.36 | 23.49 | -0.02  | 10.23 | QP      |
| 10  | 0.479 | 21.40 | -24.96 | 46.36 | 11.19 | -0.02  | 10.23 | Average |
| 11  | 7.646 | 37.80 | -22.20 | 60.00 | 27.60 | -0.15  | 10.35 | QP      |
| 12  | 7.646 | 32.00 | -18.00 | 50.00 | 21.80 | -0.15  | 10.35 | Average |



|                 |                                                                                 |                     |             |
|-----------------|---------------------------------------------------------------------------------|---------------------|-------------|
| Test Engineer : | Amos                                                                            | Temperature :       | 25.3~26.2°C |
|                 |                                                                                 | Relative Humidity : | 38~40%      |
| Test Voltage :  | 120Vac / 60Hz                                                                   | Phase :             | Neutral     |
| Remark :        | All emissions not reported here are more than 10 dB below the prescribed limit. |                     |             |



Site : CO01-KS  
Condition : 15C RSS247-QP LISN-060105-NEUTRAL NEUTRAL

|     | Freq  | Level | Over   | Limit | Read  | LISN   | Cable |         |
|-----|-------|-------|--------|-------|-------|--------|-------|---------|
|     | MHz   | dBuV  | Limit  | Line  | Level | Factor | Loss  | Remark  |
|     | MHz   | dBuV  | dB     | dBuV  | dBuV  | dB     | dB    |         |
| 1 * | 0.182 | 51.97 | -12.40 | 64.37 | 41.51 | 0.04   | 10.42 | QP      |
| 2   | 0.182 | 32.07 | -22.30 | 54.37 | 21.61 | 0.04   | 10.42 | Average |
| 3   | 0.244 | 49.19 | -12.76 | 61.95 | 38.80 | 0.00   | 10.39 | QP      |
| 4   | 0.244 | 30.59 | -21.36 | 51.95 | 20.20 | 0.00   | 10.39 | Average |
| 5   | 0.315 | 45.49 | -14.35 | 59.84 | 35.20 | -0.05  | 10.34 | QP      |
| 6   | 0.315 | 22.79 | -27.05 | 49.84 | 12.50 | -0.05  | 10.34 | Average |
| 7   | 0.371 | 35.75 | -22.72 | 58.47 | 25.50 | -0.06  | 10.31 | QP      |
| 8   | 0.371 | 22.45 | -26.02 | 48.47 | 12.20 | -0.06  | 10.31 | Average |
| 9   | 0.435 | 41.39 | -15.76 | 57.15 | 31.19 | -0.07  | 10.27 | QP      |
| 10  | 0.435 | 23.79 | -23.36 | 47.15 | 13.59 | -0.07  | 10.27 | Average |
| 11  | 7.368 | 34.38 | -25.62 | 60.00 | 24.20 | -0.13  | 10.31 | QP      |
| 12  | 7.368 | 29.48 | -20.52 | 50.00 | 19.30 | -0.13  | 10.31 | Average |

Note:

1. Level(dBμV) = Read Level(dBμV) + LISN Factor(dB) + Cable Loss(dB)
2. Over Limit(dB) = Level(dBμV) – Limit Line(dBμV)



## Appendix C. Radiated Spurious Emission

Both Ant.16 & Ant.7 are tested, only the worst results of Ant.16 are recorded in the report.

2.4GHz 2400~2483.5MHz

BT (Band Edge @ 3m)

| BT                     | Note                                                                                        | Frequency | Level      | Over Limit | Limit Line | Read Level | Antenna Factor | Path Loss | Preampl Factor | Ant Pos | Table Pos | Peak Avg. | Pol.    |
|------------------------|---------------------------------------------------------------------------------------------|-----------|------------|------------|------------|------------|----------------|-----------|----------------|---------|-----------|-----------|---------|
|                        |                                                                                             | ( MHz )   | ( dBμV/m ) | ( dB )     | ( dBμV/m ) | ( dBμV )   | ( dB/m )       | ( dB )    | ( dB )         | ( cm )  | ( deg )   | ( P/A )   | ( H/V ) |
| BT<br>CH 78<br>2480MHz | *                                                                                           | 2480      | 100.60     | -          | -          | 94.08      | 32.43          | 6.73      | 32.64          | 267     | 43        | P         | H       |
|                        |                                                                                             | 2480      | 75.81      | -          | -          | -          | -              | -         | -              | -       | -         | A         | H       |
|                        |                                                                                             | 2486.74   | 56.01      | -17.99     | 74         | 49.49      | 32.43          | 6.73      | 32.64          | 267     | 43        | P         | H       |
|                        |                                                                                             | 2486.74   | 31.22      | -22.78     | 54         | -          | -              | -         | -              | -       | -         | A         | H       |
|                        | *                                                                                           | 2480      | 106.29     | -          | -          | 99.77      | 32.43          | 6.73      | 32.64          | 222     | 8         | P         | V       |
|                        |                                                                                             | 2480      | 81.50      | -          | -          | -          | -              | -         | -              | -       | -         | A         | V       |
|                        |                                                                                             | 2484.46   | 53.88      | -20.12     | 74         | 47.36      | 32.43          | 6.73      | 32.64          | 222     | 8         | P         | V       |
|                        |                                                                                             | 2484.46   | 29.09      | -24.91     | 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 ) | Over<br>Limit<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 |                                                                                             | 4965                 | 40.8                | -33.2                   | 74                          | 58.8                      | 34.1                          | 9.61                   | 61.71                      | 300                  | 0                       | P                       | H               |
|                        |                                                                                             | 7440                 | 41.5                | -32.5                   | 74                          | 56.09                     | 35.7                          | 11.78                  | 62.07                      | 300                  | 0                       | P                       | H               |
|                        |                                                                                             | 4965                 | 40.05               | -33.95                  | 74                          | 58.05                     | 34.1                          | 9.61                   | 61.71                      | 100                  | 0                       | P                       | V               |
|                        |                                                                                             | 7440                 | 42.74               | -31.26                  | 74                          | 57.33                     | 35.7                          | 11.78                  | 62.07                      | 100                  | 0                       | P                       | V               |
| Remark                 | 1. No other spurious found.<br>2. All results are PASS against Peak and Average limit line. |                      |                     |                         |                             |                           |                               |                        |                            |                      |                         |                         |                 |



## Emission below 1GHz

## 2.4GHz BT (LF)

| 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) |
| 2.4GHz<br>BT<br>LF |                                                                            | 30        | 24.3       | -15.7  | 40         | 30.77  | 25.15    | 0.58   | 32.2   |        |         | P     | H     |
|                    |                                                                            | 92.08     | 20.2       | -23.3  | 43.5       | 35.09  | 15.86    | 1.51   | 32.26  |        |         | P     | H     |
|                    |                                                                            | 181.32    | 22.5       | -21    | 43.5       | 36.54  | 15.88    | 2.18   | 32.1   |        |         | P     | H     |
|                    |                                                                            | 259.89    | 26.12      | -19.88 | 46         | 37     | 18.7     | 2.6    | 32.18  |        |         | P     | H     |
|                    |                                                                            | 303.54    | 23.5       | -22.5  | 46         | 33.5   | 19.28    | 2.83   | 32.11  |        |         | P     | H     |
|                    |                                                                            | 827.34    | 34.55      | -11.45 | 46         | 35.8   | 26.42    | 4.68   | 32.35  |        |         | P     | H     |
|                    |                                                                            | 42.61     | 35.38      | -4.62  | 40         | 48.41  | 18.34    | 0.77   | 32.14  |        |         | P     | V     |
|                    |                                                                            | 90.14     | 26.28      | -17.22 | 43.5       | 41.1   | 16       | 1.48   | 32.3   |        |         | P     | V     |
|                    |                                                                            | 179.38    | 23.02      | -20.48 | 43.5       | 36.17  | 16.79    | 2.16   | 32.1   |        |         | P     | V     |
|                    |                                                                            | 244.37    | 23.71      | -22.29 | 46         | 34.34  | 19.04    | 2.52   | 32.19  |        |         | P     | V     |
|                    |                                                                            | 732.28    | 27.15      | -18.85 | 46         | 28.79  | 26.22    | 4.4    | 32.26  |        |         | P     | V     |
|                    |                                                                            | 831.22    | 28.78      | -17.22 | 46         | 29.35  | 27.09    | 4.7    | 32.36  |        |         | P     | V     |
| Remark             | 1. No other spurious found.<br>2. All results are PASS against limit line. |           |            |        |            |        |          |        |        |        |         |       |       |



**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.    |
|------------------------|------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|---------|---------|
|                        |      | ( 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)

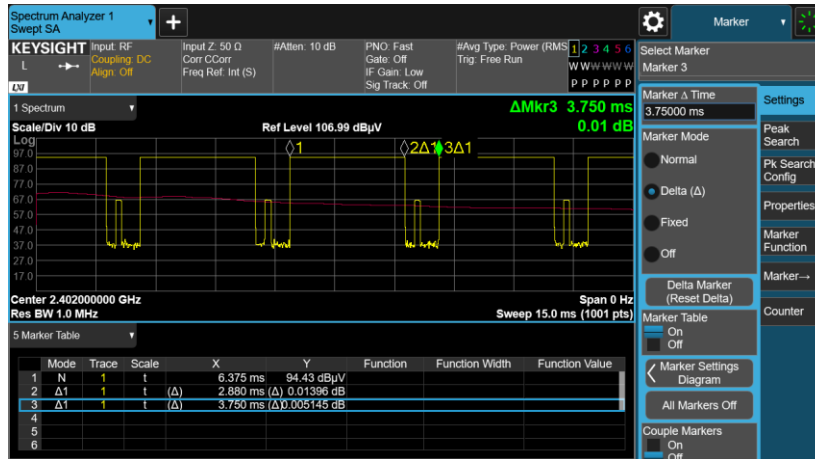
**For Average Limit @ 2390MHz:**

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)

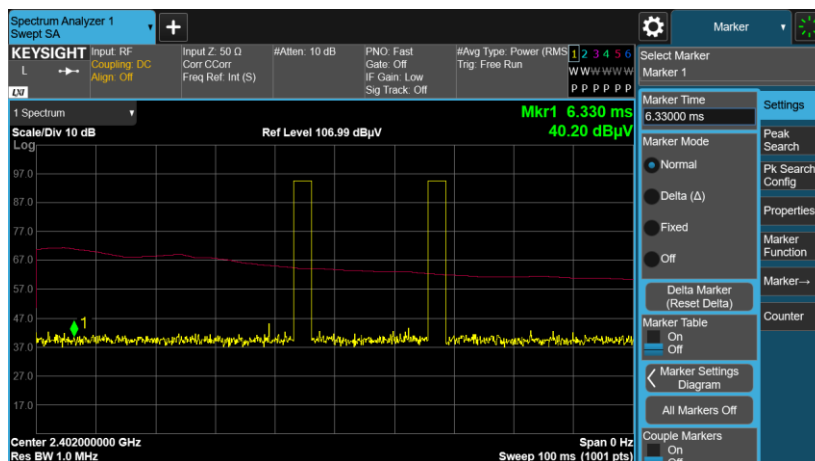
Both peak and average measured complies with the limit line, so test result is “PASS”.

## Appendix D. Duty Cycle Plots

### 2DH5 on time (One Pulse) Plot on Channel 39



### 2DH5 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. 2DH5 has the highest duty cycle worst case and is reported.