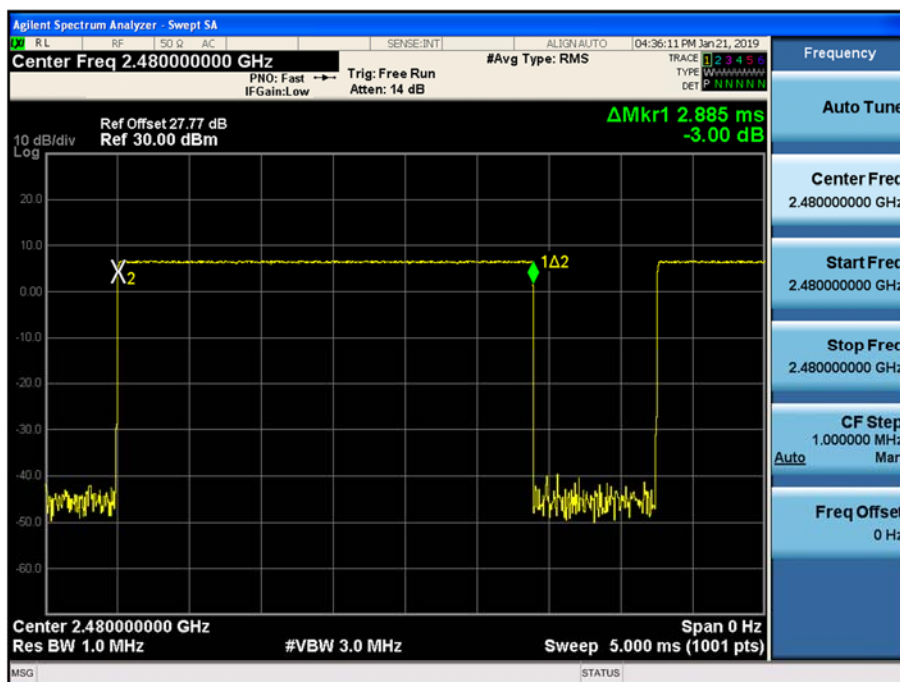


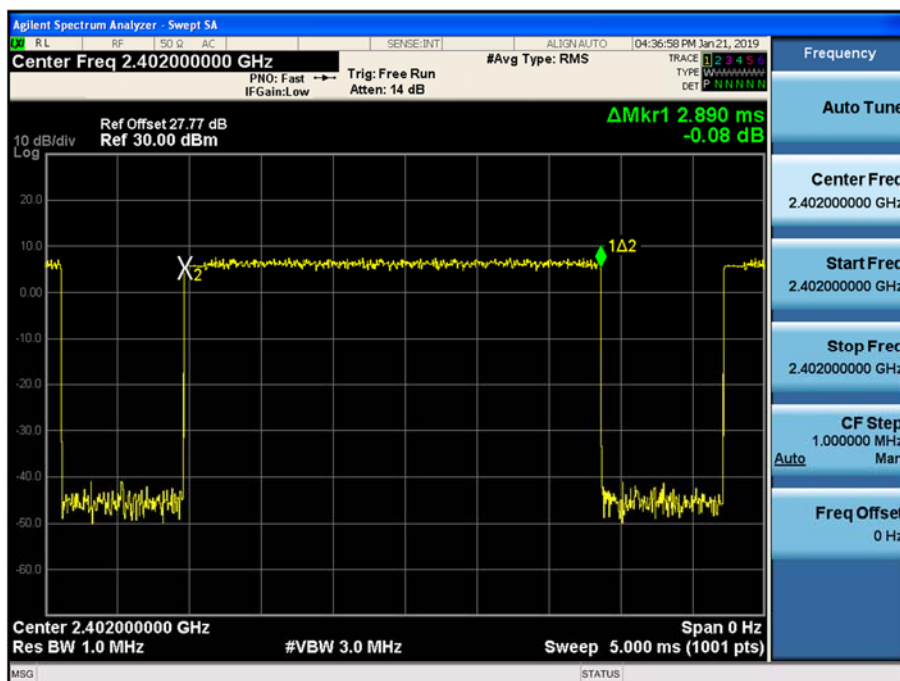
Test Plots (GFSK)

Dwell Time (CH.78)



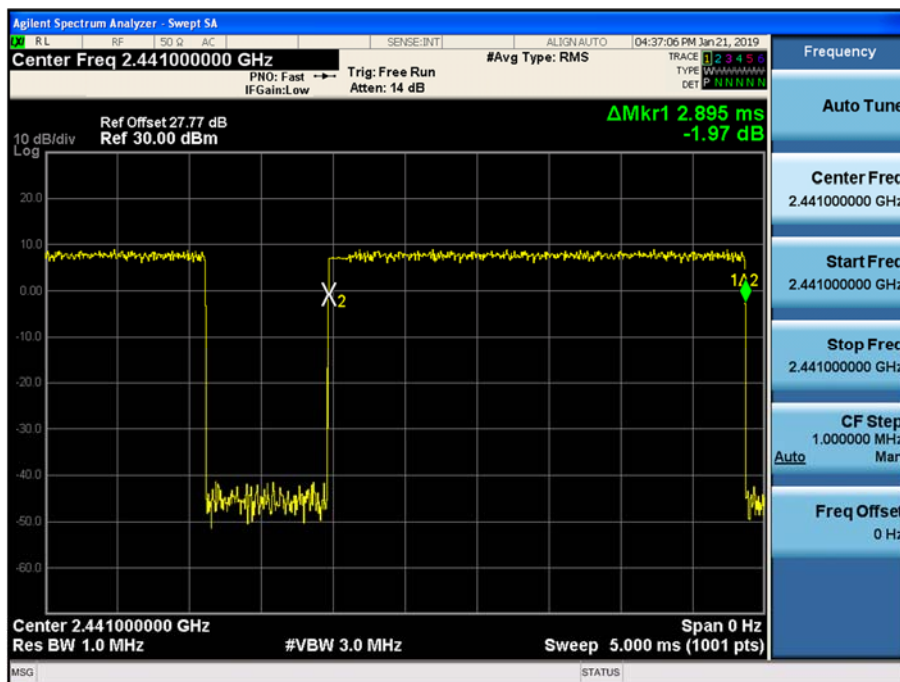
Test Plots (8DPSK)

Dwell Time (CH.0)



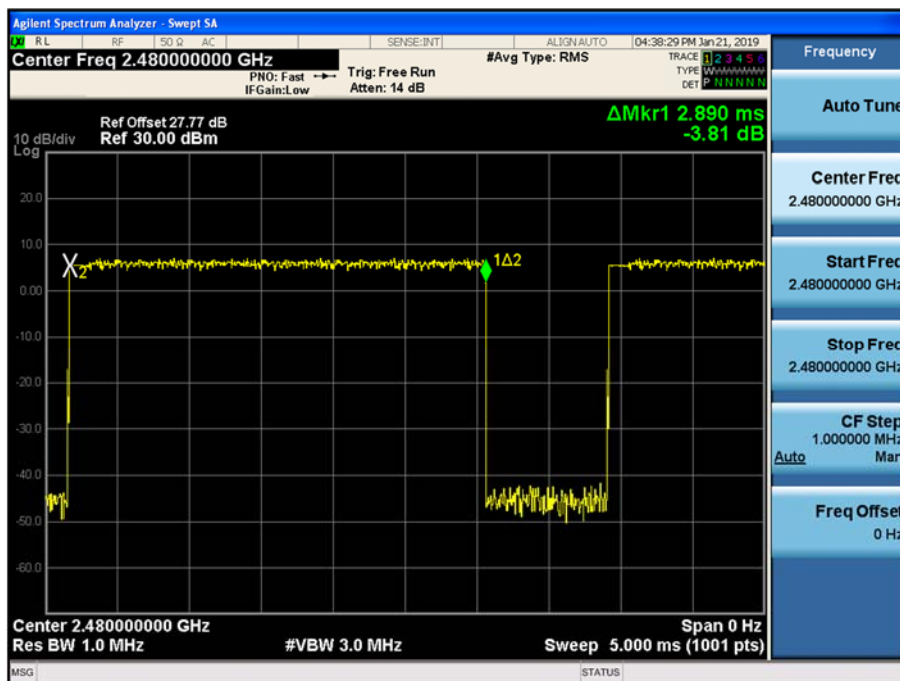
Test Plots (8DPSK)

Dwell Time (CH.39)



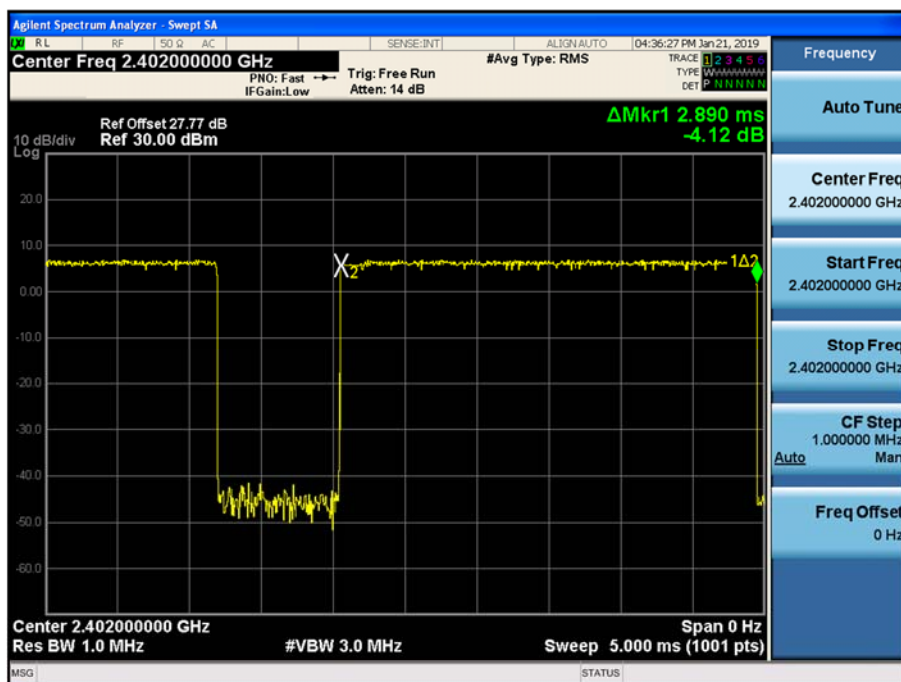
Test Plots (8DPSK)

Dwell Time (CH.78)



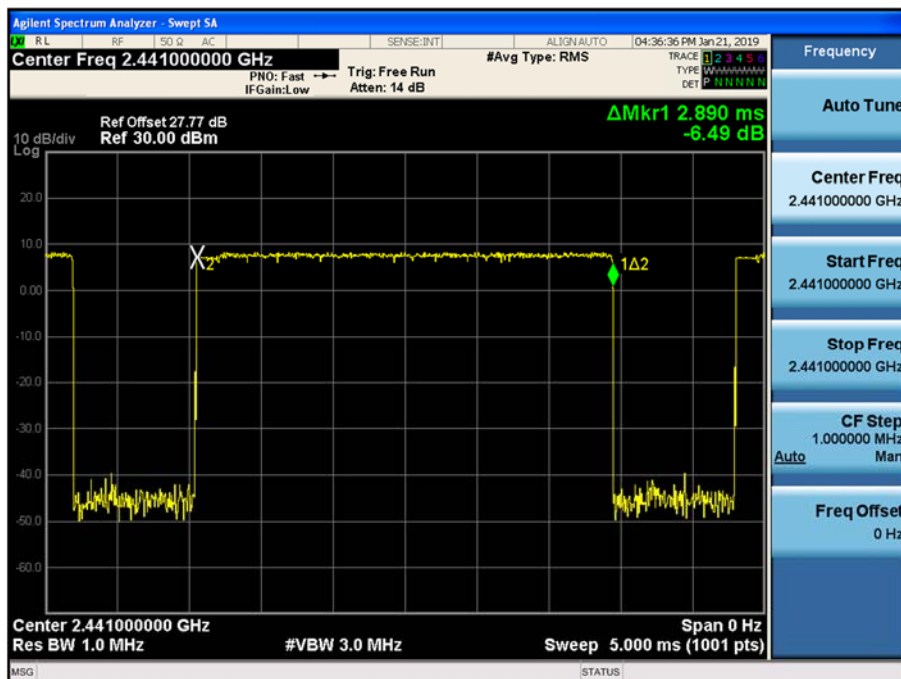
Test Plots ( $\pi/4$ DQPSK)

Dwell Time (CH.0)



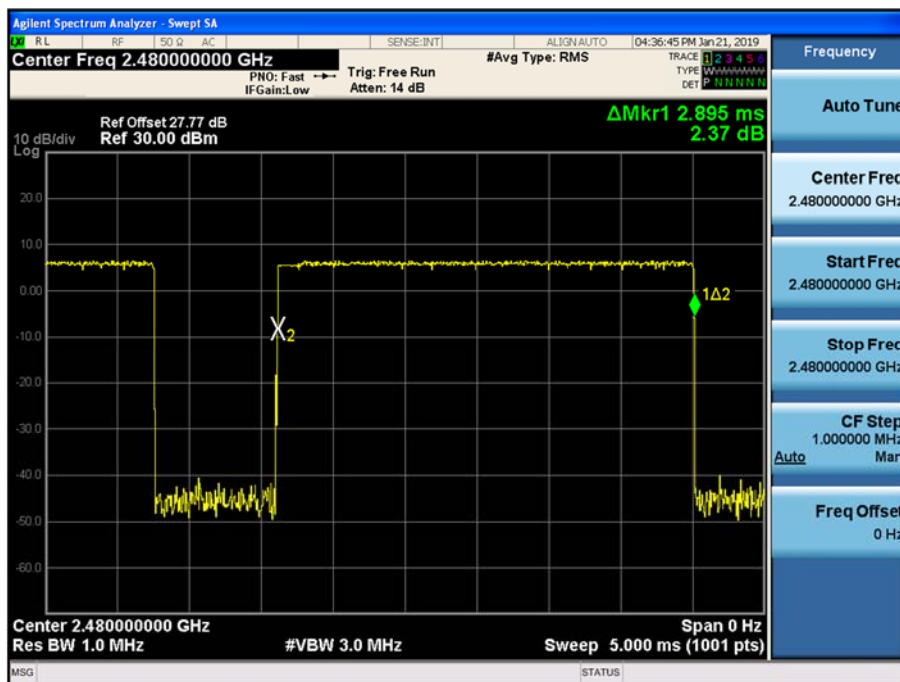
Test Plots ( $\pi/4$ DQPSK)

Dwell Time (CH.39)



Test Plots ( $\pi/4$ DQPSK)

Dwell Time (CH.78)



## **10.6 SPURIOUS EMISSIONS**

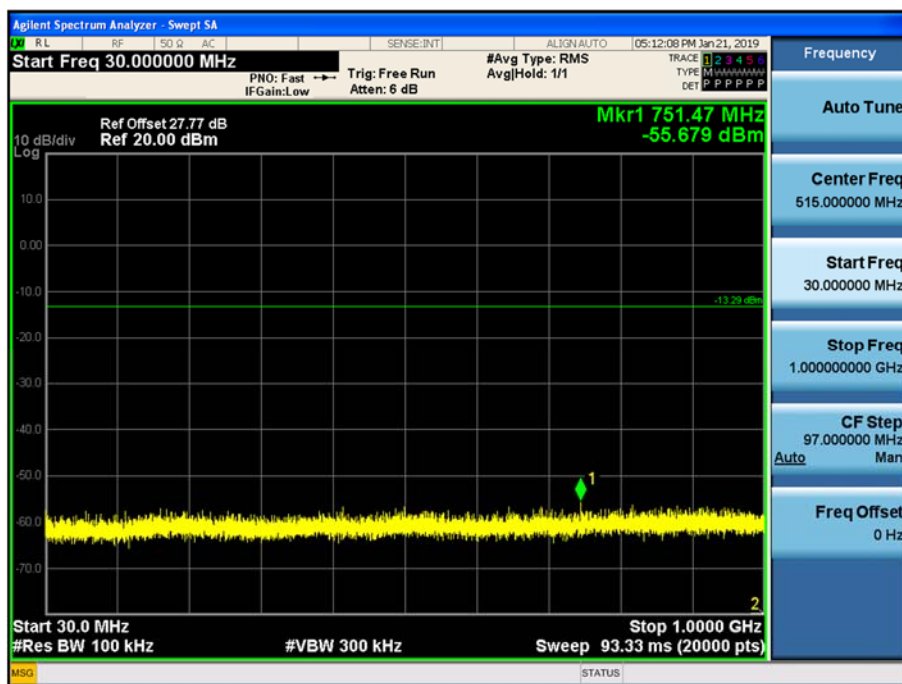
### **10.6.1 CONDUCTED SPURIOUS EMISSIONS**

Test Result : please refer to the plot below.

In order to simplify the report, attached plots were only the worst case channel and data rate.

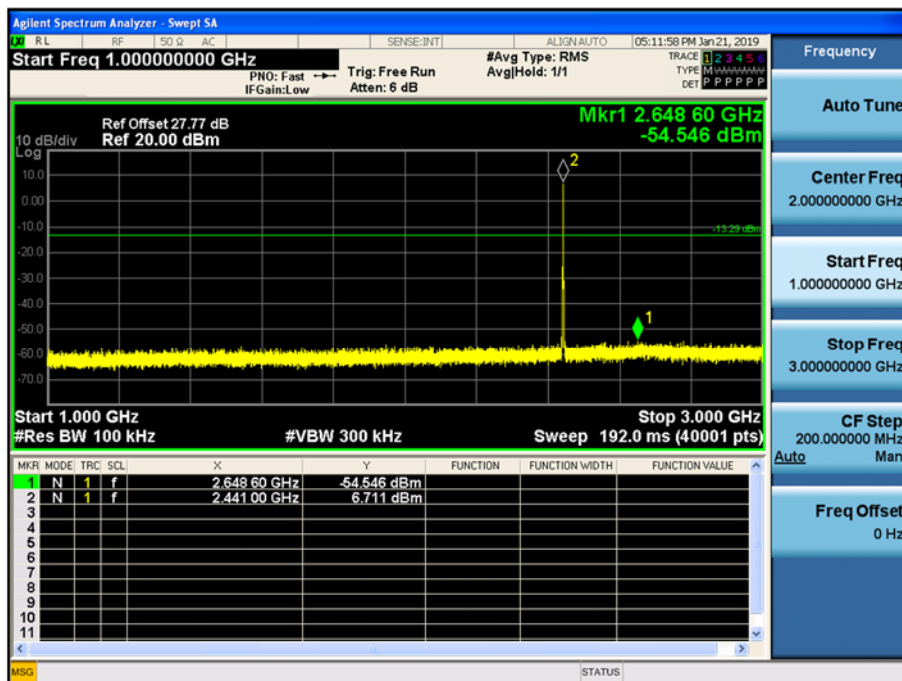
Test Plots (8DPSK)- 30 MHz - 1 GHz

Spurious Emission (CH.39)



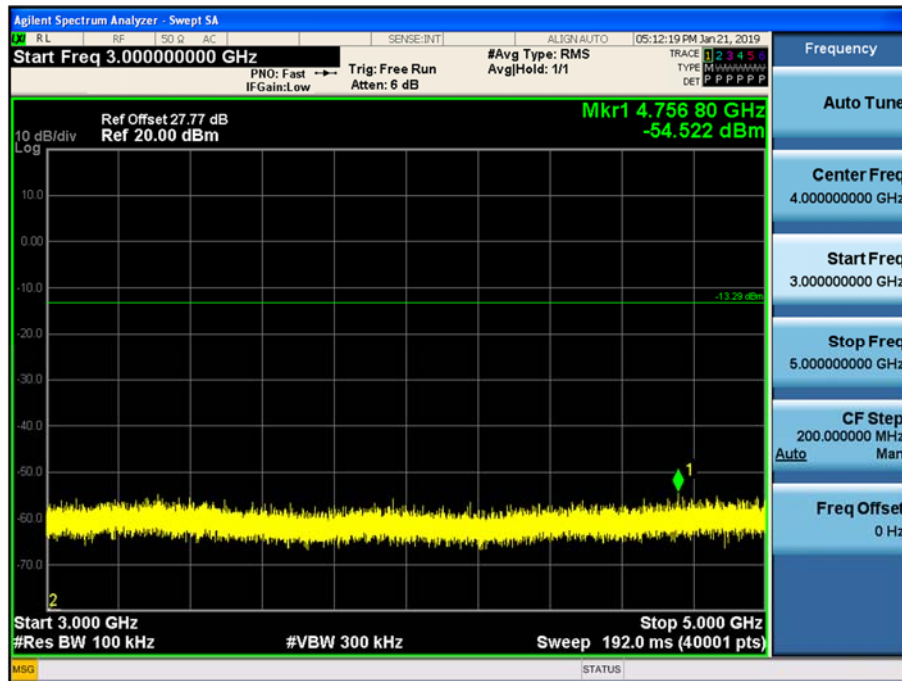
Test Plots (8DPSK)- 1 GHz – 3 GHz

Spurious Emission (CH.39)



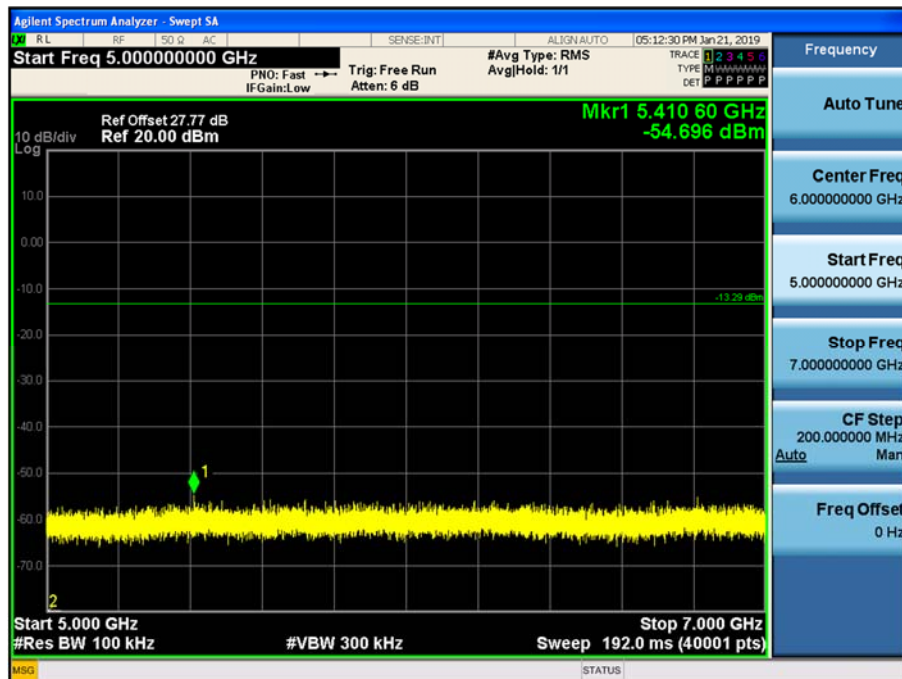
Test Plots(8DPSK)- 3 GHz - 5 GHz

Spurious Emission (CH.39)



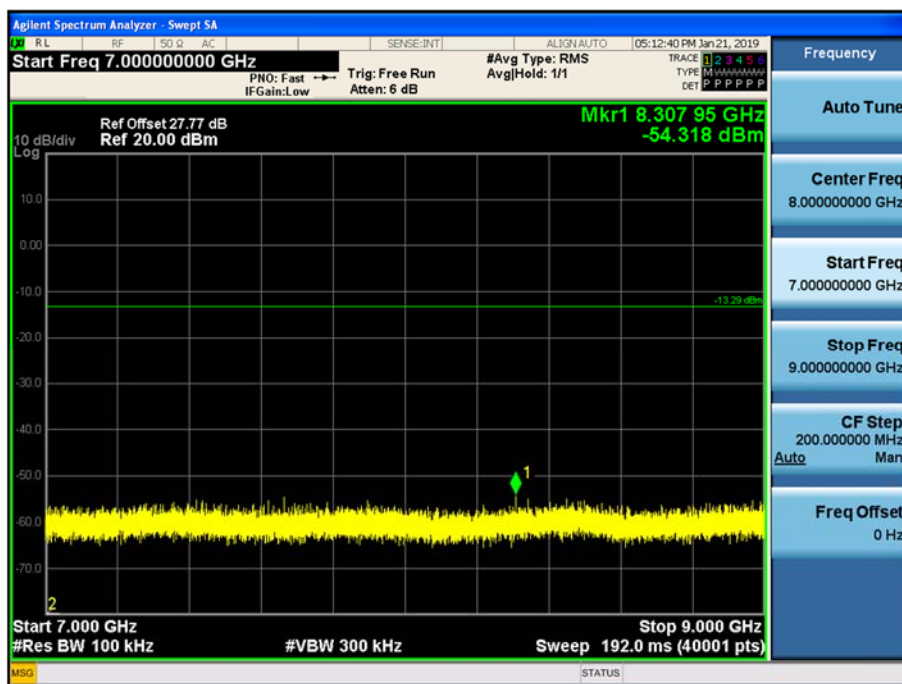
Test Plots (8DPSK)- 5 GHz - 7 GHz

Spurious Emission (CH.39)



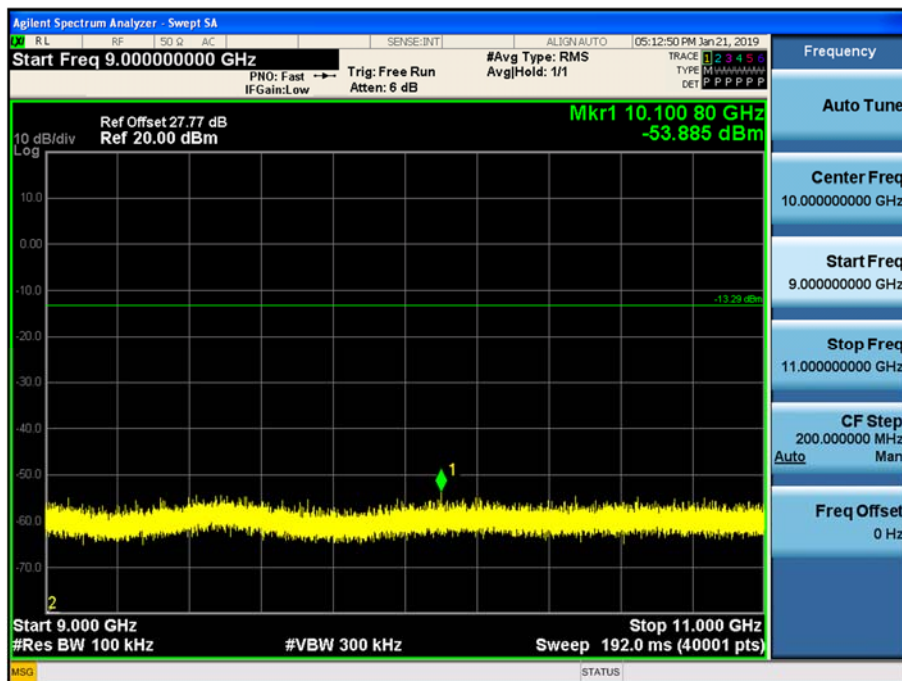
Test Plots(8DPSK)- 7 GHz - 9 GHz

Spurious Emission (CH.39)



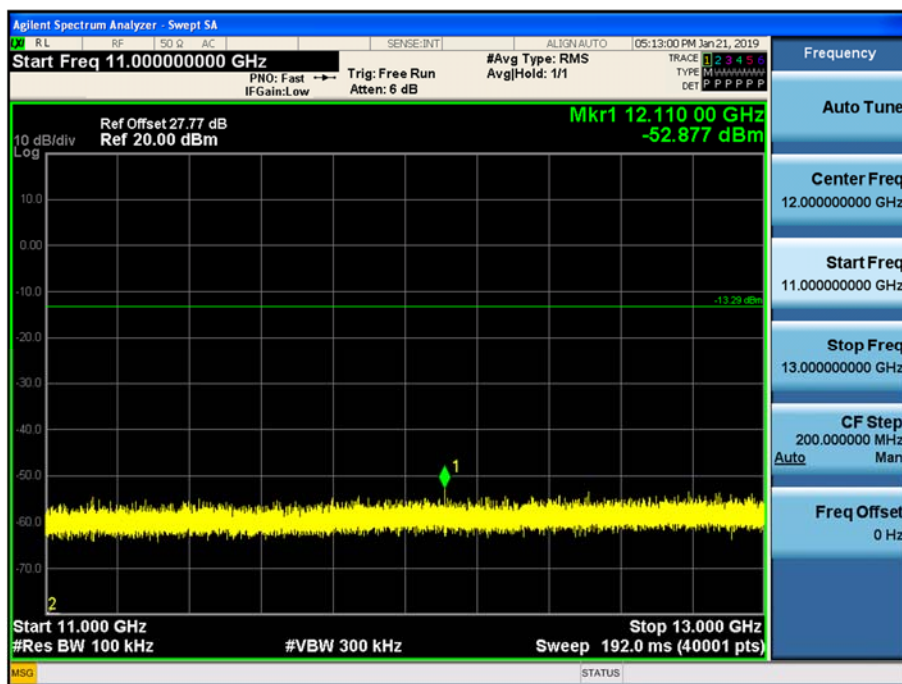
Test Plots(8DPSK)- 9 GHz - 11 GHz

Spurious Emission (CH.39)



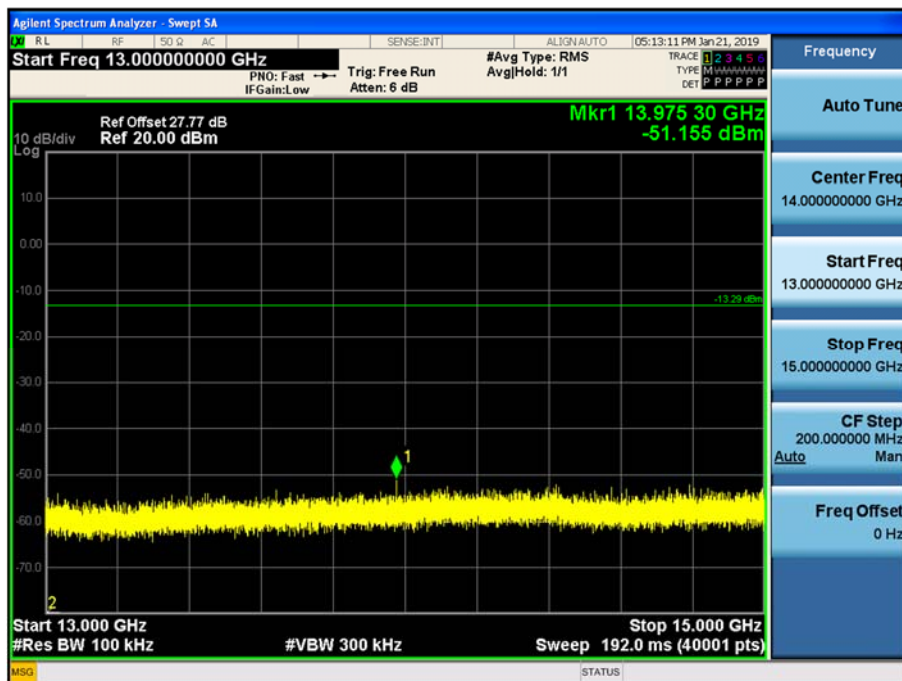
Test Plots(8DPSK) 11 GHz - 13 GHz

Spurious Emission (CH.39)



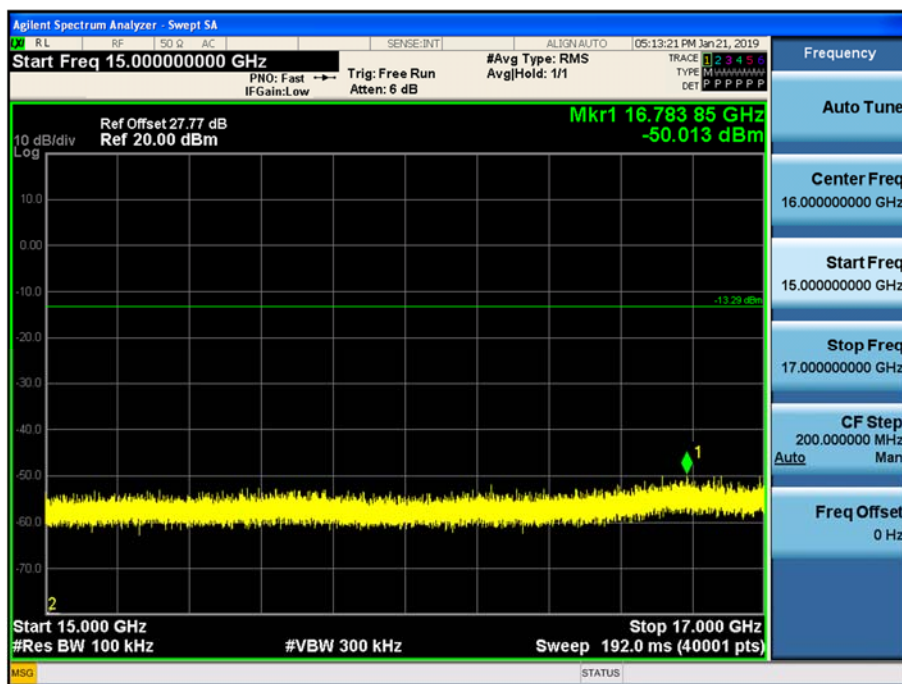
Test Plots (8DPSK)- 13 GHz – 15 GHz

Spurious Emission (CH.39)



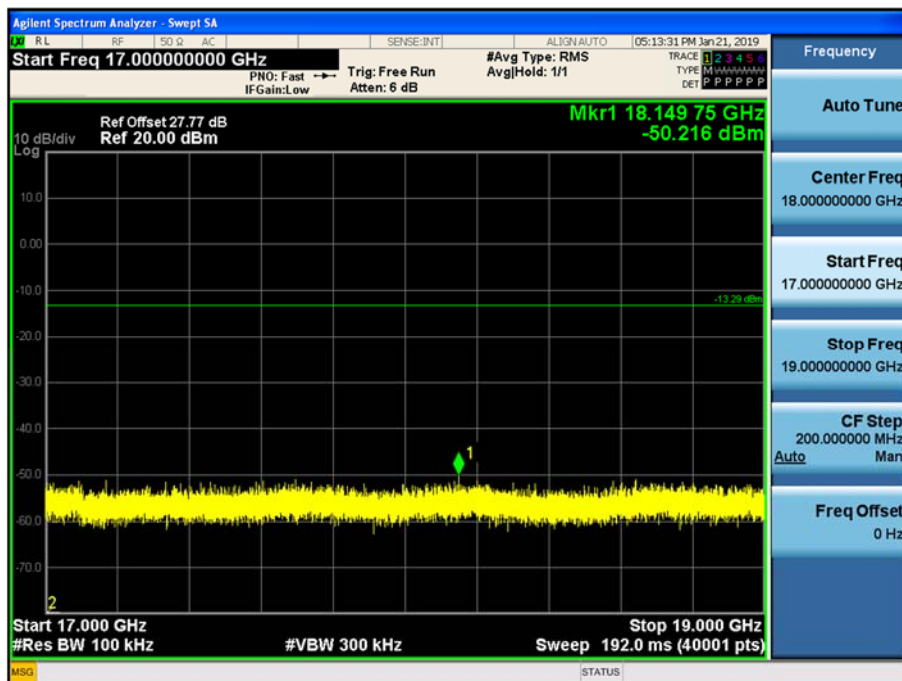
Test Plots(8DPSK)– 15 GHz - 17 GHz

Spurious Emission (CH.39)



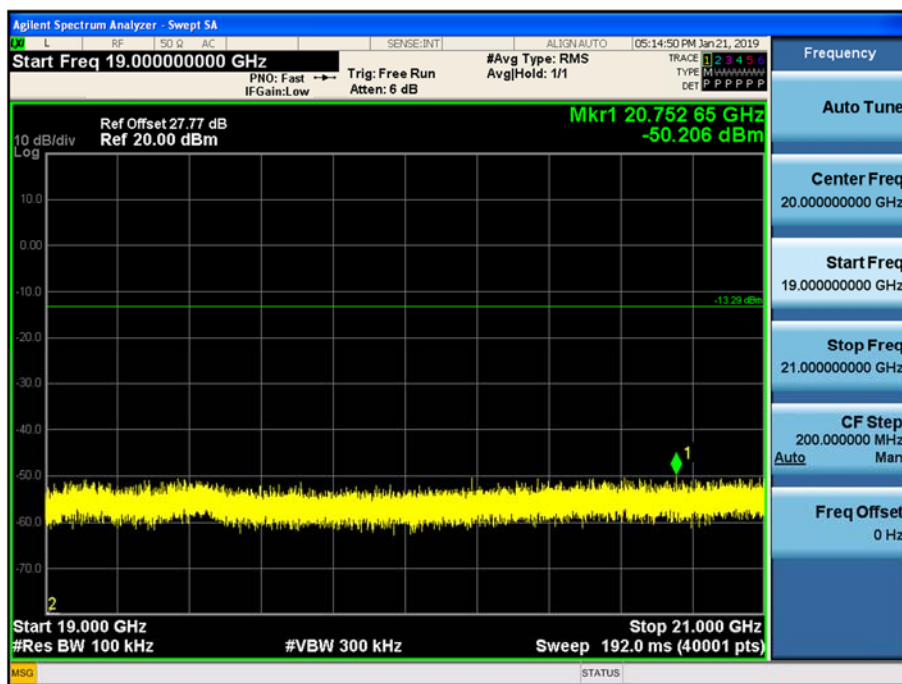
Test Plots(8DPSK)- 17 GHz - 19 GHz

Spurious Emission (CH.39)



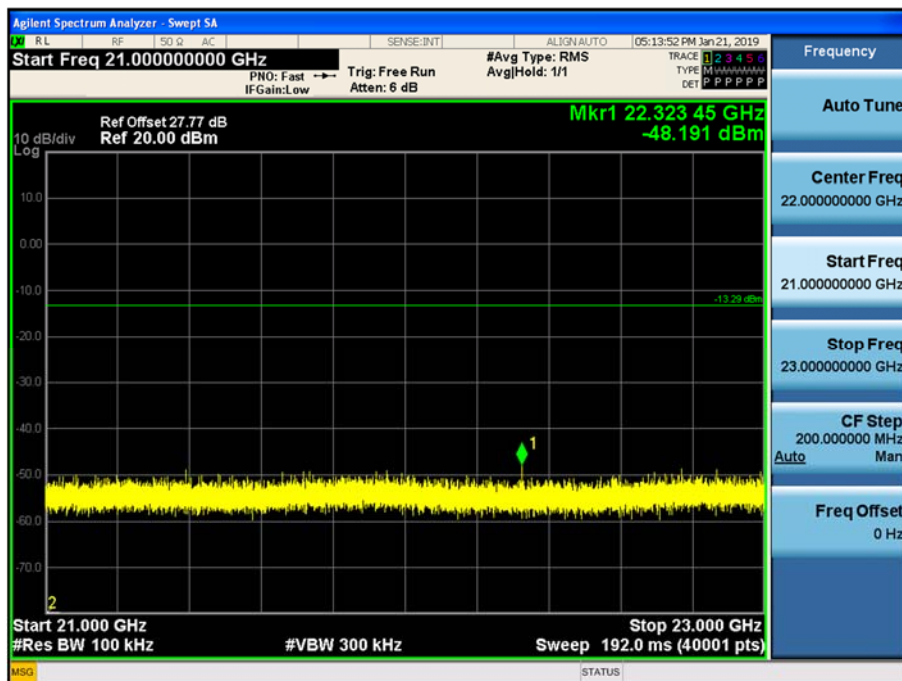
Test Plots (8DPSK)- 19 GHz - 21 GHz

Spurious Emission (CH.39)



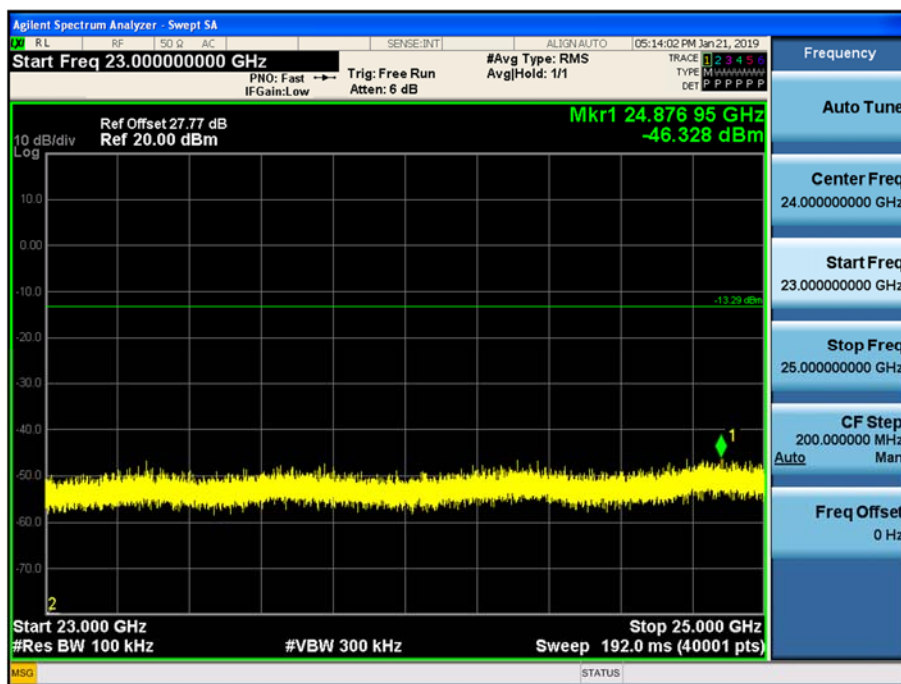
Test Plots (8DPSK)- 21 GHz - 23 GHz

Spurious Emission (CH.39)



Test Plots (8DPSK)- 23 GHz - 25 GHz

Spurious Emission (CH.39)



## 10.6.2 RADIATED SPURIOUS EMISSIONS

### Frequency Range : 9 kHz – 30MHz

| Frequency               | Reading | Ant. factor | Cable loss | Ant. POL | Total  | Limit  | Margin |
|-------------------------|---------|-------------|------------|----------|--------|--------|--------|
| MHz                     | dBuV/m  | dBm/m       | dBm        | (H/V)    | dBuV/m | dBuV/m | dB     |
| No Critical peaks found |         |             |            |          |        |        |        |

#### Note:

- The reading of emissions are attenuated more than 20 dB below the permissible limits or the field strength is too small to be measured.
- Distance extrapolation factor =  $40 \cdot \log(\text{specific distance} / \text{test distance})$  (dB)
- Limit line = specific Limits (dBuV) + Distance extrapolation factor
- Radiated test is performed with hopping off.
- The test results for below 30 MHz is correlated to an open site.  
The result on OFS is about 2 dB higher than semi-anechoic chamber(10 m chamber)

### Frequency Range : Below 1 GHz

| Frequency               | Reading | Ant. factor | Cable loss | Ant. POL | Total  | Limit  | Margin |
|-------------------------|---------|-------------|------------|----------|--------|--------|--------|
| MHz                     | dBuV/m  | dBm/m       | dBm        | (H/V)    | dBuV/m | dBuV/m | dB     |
| No Critical peaks found |         |             |            |          |        |        |        |

#### Note:

- Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Quasi peak detector mode.
- Radiated test is performed with hopping off.

**Frequency Range : Above 1 GHz**

Operation Mode: CH Low(GFSK)

| Frequency<br>[MHz] | Reading<br>[dBuV] | A.F + C.L - A.G + D.F<br>[dB] | Pol.<br>[H/V] | Total<br>[dBuV/m] | Limit<br>[dBuV/m] | Margin<br>[dB] | Measurement<br>Type |
|--------------------|-------------------|-------------------------------|---------------|-------------------|-------------------|----------------|---------------------|
| 4804               | 48.96             | 0.74                          | V             | 49.70             | 73.98             | 24.28          | PK                  |
| 4804               | 35.47             | 0.74                          | V             | 36.21             | 53.98             | 17.77          | AV                  |
| 7206               | 46.51             | 9.25                          | V             | 55.76             | 73.98             | 18.23          | PK                  |
| 7206               | 31.99             | 9.25                          | V             | 41.24             | 53.98             | 12.75          | AV                  |
| 4804               | 48.85             | 0.74                          | H             | 49.59             | 73.98             | 24.39          | PK                  |
| 4804               | 35.14             | 0.74                          | H             | 35.88             | 53.98             | 18.10          | AV                  |
| 7206               | 46.15             | 9.25                          | H             | 55.40             | 73.98             | 18.59          | PK                  |
| 7206               | 31.84             | 9.25                          | H             | 41.09             | 53.98             | 12.90          | AV                  |

Operation Mode: CH Low(8DPSK)

| Frequency<br>[MHz] | Reading<br>[dBuV] | A.F + C.L - A.G + D.F<br>[dB] | Pol.<br>[H/V] | Total<br>[dBuV/m] | Limit<br>[dBuV/m] | Margin<br>[dB] | Measurement<br>Type |
|--------------------|-------------------|-------------------------------|---------------|-------------------|-------------------|----------------|---------------------|
| 4804               | 49.12             | 0.74                          | V             | 49.86             | 73.98             | 24.12          | PK                  |
| 4804               | 35.35             | 0.74                          | V             | 36.09             | 53.98             | 17.89          | AV                  |
| 7206               | 46.21             | 9.25                          | V             | 55.46             | 73.98             | 18.53          | PK                  |
| 7206               | 32.08             | 9.25                          | V             | 41.33             | 53.98             | 12.66          | AV                  |
| 4804               | 48.66             | 0.74                          | H             | 49.40             | 73.98             | 24.58          | PK                  |
| 4804               | 35.30             | 0.74                          | H             | 36.04             | 53.98             | 17.94          | AV                  |
| 7206               | 45.11             | 9.25                          | H             | 54.36             | 73.98             | 19.63          | PK                  |
| 7206               | 32.01             | 9.25                          | H             | 41.26             | 53.98             | 12.73          | AV                  |

Operation Mode: CH Low( $\pi/4$ DQPSK)

| Frequency<br>[MHz] | Reading<br>[dBuV] | A.F + C.L - A.G + D.F<br>[dB] | Pol.<br>[H/V] | Total<br>[dBuV/m] | Limit<br>[dBuV/m] | Margin<br>[dB] | Measurement<br>Type |
|--------------------|-------------------|-------------------------------|---------------|-------------------|-------------------|----------------|---------------------|
| 4804               | 48.97             | 0.74                          | V             | 49.71             | 73.98             | 24.27          | PK                  |
| 4804               | 35.32             | 0.74                          | V             | 36.06             | 53.98             | 17.92          | AV                  |
| 7206               | 45.81             | 9.25                          | V             | 55.06             | 73.98             | 18.93          | PK                  |
| 7206               | 32.06             | 9.25                          | V             | 41.31             | 53.98             | 12.68          | AV                  |
| 4804               | 48.75             | 0.74                          | H             | 49.49             | 73.98             | 24.49          | PK                  |
| 4804               | 35.28             | 0.74                          | H             | 36.02             | 53.98             | 17.96          | AV                  |
| 7206               | 45.03             | 9.25                          | H             | 54.28             | 73.98             | 19.71          | PK                  |
| 7206               | 31.90             | 9.25                          | H             | 41.15             | 53.98             | 12.84          | AV                  |

## Operation Mode: CH Mid(GFSK)

| Frequency<br>[MHz] | Reading<br>[dBuV] | A.F + C.L - A.G + D.F<br>[dB] | Pol.<br>[H/V] | Total<br>[dBuV/m] | Limit<br>[dBuV/m] | Margin<br>[dB] | Measurement<br>Type |
|--------------------|-------------------|-------------------------------|---------------|-------------------|-------------------|----------------|---------------------|
| 4882               | 48.63             | 1.16                          | V             | 49.79             | 73.98             | 24.19          | PK                  |
| 4882               | 35.62             | 1.16                          | V             | 36.78             | 53.98             | 17.20          | AV                  |
| 7323               | 45.85             | 9.14                          | V             | 54.99             | 73.98             | 18.99          | PK                  |
| 7323               | 32.16             | 9.14                          | V             | 41.30             | 53.98             | 12.68          | AV                  |
| 4882               | 48.14             | 1.16                          | H             | 49.30             | 73.98             | 24.68          | PK                  |
| 4882               | 35.45             | 1.16                          | H             | 36.61             | 53.98             | 17.37          | AV                  |
| 7323               | 45.37             | 9.14                          | H             | 54.51             | 73.98             | 19.47          | PK                  |
| 7323               | 32.06             | 9.14                          | H             | 41.20             | 53.98             | 12.78          | AV                  |

## Operation Mode: CH Mid(8DPSK)

| Frequency<br>[MHz] | Reading<br>[dBuV] | A.F + C.L - A.G + D.F<br>[dB] | Pol.<br>[H/V] | Total<br>[dBuV/m] | Limit<br>[dBuV/m] | Margin<br>[dB] | Measurement<br>Type |
|--------------------|-------------------|-------------------------------|---------------|-------------------|-------------------|----------------|---------------------|
| 4882               | 48.65             | 1.16                          | V             | 49.81             | 73.98             | 24.17          | PK                  |
| 4882               | 35.65             | 1.16                          | V             | 36.81             | 53.98             | 17.17          | AV                  |
| 7323               | 45.58             | 9.14                          | V             | 54.72             | 73.98             | 19.26          | PK                  |
| 7323               | 32.14             | 9.14                          | V             | 41.28             | 53.98             | 12.70          | AV                  |
| 4882               | 48.11             | 1.16                          | H             | 49.27             | 73.98             | 24.71          | PK                  |
| 4882               | 35.48             | 1.16                          | H             | 36.64             | 53.98             | 17.34          | AV                  |
| 7323               | 44.89             | 9.14                          | H             | 54.03             | 73.98             | 19.95          | PK                  |
| 7323               | 32.05             | 9.14                          | H             | 41.19             | 53.98             | 12.79          | AV                  |

Operation Mode: CH Mid( $\pi/4$ DQPSK)

| Frequency<br>[MHz] | Reading<br>[dBuV] | A.F + C.L - A.G + D.F<br>[dB] | Pol.<br>[H/V] | Total<br>[dBuV/m] | Limit<br>[dBuV/m] | Margin<br>[dB] | Measurement<br>Type |
|--------------------|-------------------|-------------------------------|---------------|-------------------|-------------------|----------------|---------------------|
| 4882               | 48.70             | 1.16                          | V             | 49.86             | 73.98             | 24.12          | PK                  |
| 4882               | 35.72             | 1.16                          | V             | 36.88             | 53.98             | 17.10          | AV                  |
| 7323               | 45.96             | 9.14                          | V             | 55.1              | 73.98             | 18.88          | PK                  |
| 7323               | 32.11             | 9.14                          | V             | 41.25             | 53.98             | 12.73          | AV                  |
| 4882               | 48.09             | 1.16                          | H             | 49.25             | 73.98             | 24.73          | PK                  |
| 4882               | 35.56             | 1.16                          | H             | 36.72             | 53.98             | 17.26          | AV                  |
| 7323               | 46.11             | 9.14                          | H             | 55.25             | 73.98             | 18.73          | PK                  |
| 7323               | 32.08             | 9.14                          | H             | 41.22             | 53.98             | 12.76          | AV                  |

## Operation Mode: CH High(GFSK)

| Frequency<br>[MHz] | Reading<br>[dBuV] | A.F + C.L - A.G + D.F<br>[dB] | Pol.<br>[H/V] | Total<br>[dBuV/m] | Limit<br>[dBuV/m] | Margin<br>[dB] | Measurement<br>Type |
|--------------------|-------------------|-------------------------------|---------------|-------------------|-------------------|----------------|---------------------|
| 4960               | 49.91             | 0.76                          | V             | 50.67             | 73.98             | 23.31          | PK                  |
| 4960               | 36.55             | 0.76                          | V             | 37.31             | 53.98             | 16.67          | AV                  |
| 7440               | 45.80             | 9.86                          | V             | 55.66             | 73.98             | 18.32          | PK                  |
| 7440               | 31.83             | 9.86                          | V             | 41.69             | 53.98             | 12.29          | AV                  |
| 4960               | 49.06             | 0.76                          | H             | 49.82             | 73.98             | 24.16          | PK                  |
| 4960               | 36.48             | 0.76                          | H             | 37.24             | 53.98             | 16.74          | AV                  |
| 7440               | 44.75             | 9.86                          | H             | 54.61             | 73.98             | 19.37          | PK                  |
| 7440               | 31.72             | 9.86                          | H             | 41.58             | 53.98             | 12.40          | AV                  |

## Operation Mode: CH High(8DPSK)

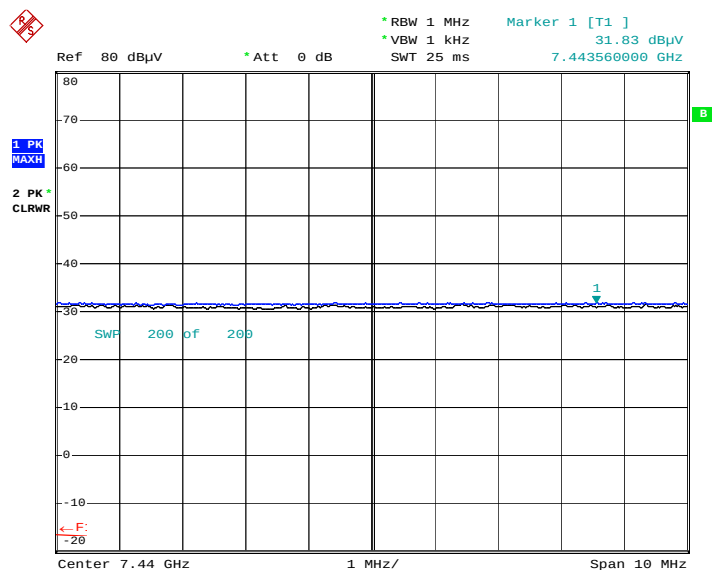
| Frequency<br>[MHz] | Reading<br>[dBuV] | A.F + C.L - A.G + D.F<br>[dB] | Pol.<br>[H/V] | Total<br>[dBuV/m] | Limit<br>[dBuV/m] | Margin<br>[dB] | Measurement<br>Type |
|--------------------|-------------------|-------------------------------|---------------|-------------------|-------------------|----------------|---------------------|
| 4960               | 49.78             | 0.76                          | V             | 50.54             | 73.98             | 23.44          | PK                  |
| 4960               | 36.46             | 0.76                          | V             | 37.22             | 53.98             | 16.76          | AV                  |
| 7440               | 46.01             | 9.86                          | V             | 55.87             | 73.98             | 18.11          | PK                  |
| 7440               | 32.04             | 9.86                          | V             | 41.90             | 53.98             | 12.08          | AV                  |
| 4960               | 49.56             | 0.76                          | H             | 50.32             | 73.98             | 23.66          | PK                  |
| 4960               | 36.31             | 0.76                          | H             | 37.07             | 53.98             | 16.91          | AV                  |
| 7440               | 45.30             | 9.86                          | H             | 55.16             | 73.98             | 18.82          | PK                  |
| 7440               | 31.79             | 9.86                          | H             | 41.65             | 53.98             | 12.33          | AV                  |

Operation Mode: CH High ( $\pi/4$ DQPSK)

| Frequency<br>[MHz] | Reading<br>[dBuV] | A.F + C.L - A.G + D.F<br>[dB] | Pol.<br>[H/V] | Total<br>[dBuV/m] | Limit<br>[dBuV/m] | Margin<br>[dB] | Measurement<br>Type |
|--------------------|-------------------|-------------------------------|---------------|-------------------|-------------------|----------------|---------------------|
| 4960               | 49.58             | 0.76                          | V             | 50.34             | 73.98             | 23.64          | PK                  |
| 4960               | 36.38             | 0.76                          | V             | 37.14             | 53.98             | 16.84          | AV                  |
| 7440               | 45.71             | 9.86                          | V             | 55.57             | 73.98             | 18.41          | PK                  |
| 7440               | 31.87             | 9.86                          | V             | 41.73             | 53.98             | 12.25          | AV                  |
| 4960               | 49.12             | 0.76                          | H             | 49.88             | 73.98             | 24.10          | PK                  |
| 4960               | 36.28             | 0.76                          | H             | 37.04             | 53.98             | 16.94          | AV                  |
| 7440               | 45.28             | 9.86                          | H             | 55.14             | 73.98             | 18.84          | PK                  |
| 7440               | 31.81             | 9.86                          | H             | 41.67             | 53.98             | 12.31          | AV                  |

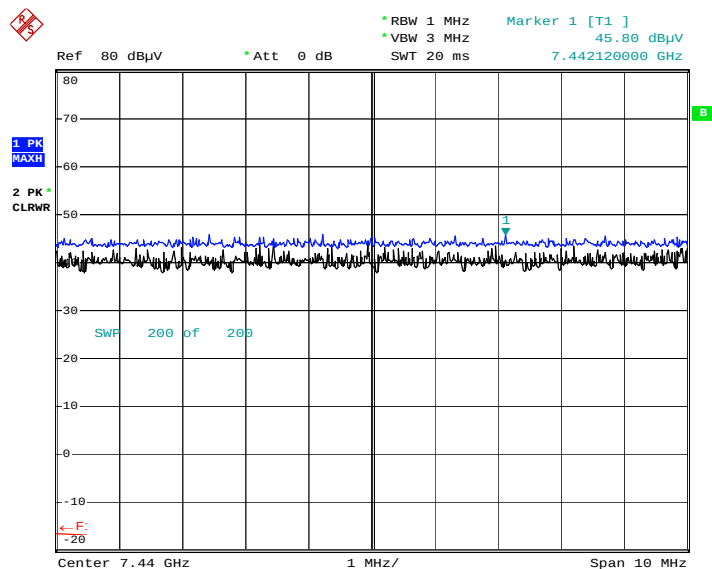
**RESULT PLOTS (Worst case : X-V)**

Radiated Spurious Emissions plot – Average Reading (GFSK, Ch.78 3rd Harmonic)



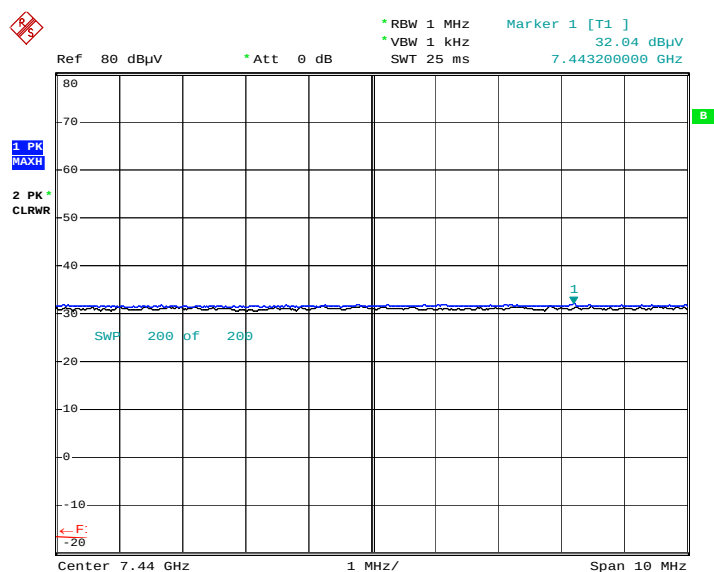
Date: 31.JAN.2019 09:20:57

Radiated Spurious Emissions plot – Peak Reading (GFSK, Ch.78 3rd Harmonic)



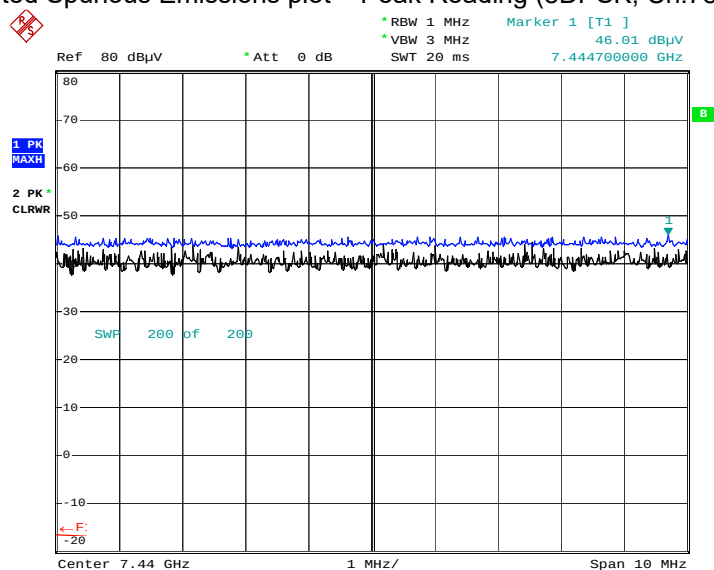
Date: 31.JAN.2019 09:19:45

Radiated Spurious Emissions plot – Average Reading (8DPSK, Ch.78 3rd Harmonic)



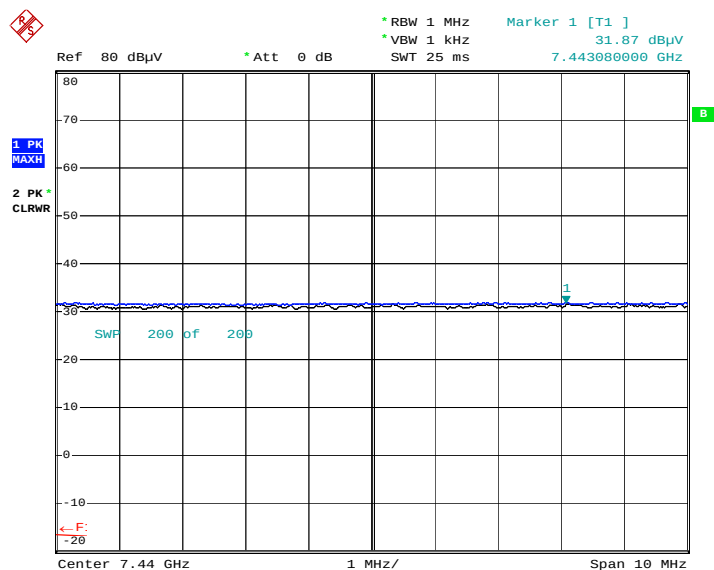
Date: 31.JAN.2019 09:23:00

Radiated Spurious Emissions plot – Peak Reading (8DPSK, Ch.78 3rd Harmonic)



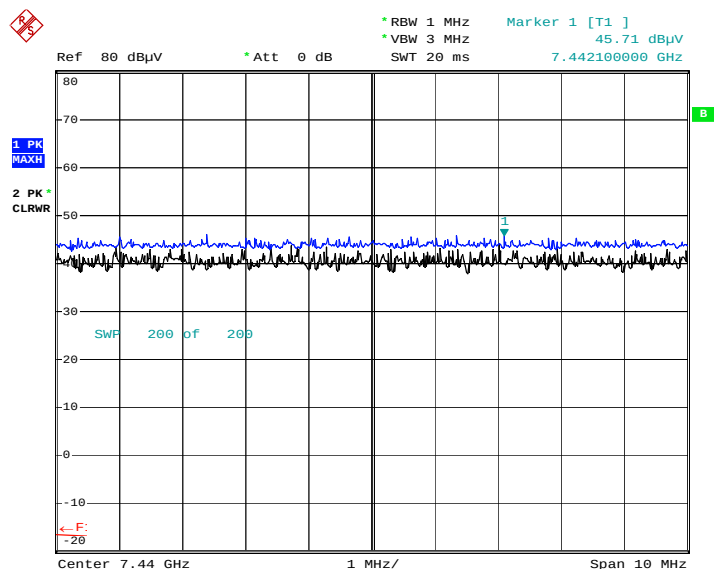
Date: 31.JAN.2019 09:22:35

Radiated Spurious Emissions plot – Average Reading ( $\pi/4$ DQPSK, Ch.78 3rd Harmonic)



Date: 31.JAN.2019 09:23:39

Radiated Spurious Emissions plot – Peak Reading ( $\pi/4$ DQPSK, Ch.78 3rd Harmonic)



Date: 31.JAN.2019 09:24:01

**Note:**

Plot of worst case are only reported.

### 10.6.3 RADIATED RESTRICTED BAND EDGES

|                     |                    |
|---------------------|--------------------|
| Operation Mode      | Normal(GFSK)       |
| Operating Frequency | 2402 MHz, 2480 MHz |
| Channel No          | CH 0, CH 78        |

| Frequency<br>[MHz] | Reading<br>[dBuV] | A.F + C.L + D.F<br>[dB] | Pol.<br>[H/V] | Total<br>[dBuV/m] | Limit<br>[dBuV/m] | Margin<br>[dB] | Measurement<br>Type |
|--------------------|-------------------|-------------------------|---------------|-------------------|-------------------|----------------|---------------------|
| 2390.0             | 22.07             | 33.29                   | H             | 55.36             | 73.98             | 18.62          | PK                  |
| 2390.0             | 8.77              | 33.29                   | H             | 42.06             | 53.98             | 11.92          | AV                  |
| 2390.0             | 21.99             | 33.29                   | V             | 55.28             | 73.98             | 18.70          | PK                  |
| 2390.0             | 8.71              | 33.29                   | V             | 42.00             | 53.98             | 11.98          | AV                  |
| 2483.5             | 25.84             | 33.39                   | H             | 59.23             | 73.98             | 14.75          | PK                  |
| 2483.5             | 11.66             | 33.39                   | H             | 45.05             | 53.98             | 8.93           | AV                  |
| 2483.5             | 25.81             | 33.39                   | V             | 59.20             | 73.98             | 14.78          | PK                  |
| 2483.5             | 11.32             | 33.39                   | V             | 44.71             | 53.98             | 9.28           | AV                  |

|                     |            |
|---------------------|------------|
| Operation Mode      | EDR(8DPSK) |
| Operating Frequency | 2402 MHz   |
| Channel No          | CH 0       |

| Frequency<br>[MHz] | Reading<br>[dBuV] | A.F + C.L + D.F<br>[dB] | Pol.<br>[H/V] | Total<br>[dBuV/m] | Limit<br>[dBuV/m] | Margin<br>[dB] | Measurement<br>Type |
|--------------------|-------------------|-------------------------|---------------|-------------------|-------------------|----------------|---------------------|
| 2390.0             | 18.81             | 33.29                   | H             | 52.10             | 73.98             | 21.89          | PK                  |
| 2390.0             | 8.61              | 33.29                   | H             | 41.90             | 53.98             | 12.08          | AV                  |
| 2390.0             | 18.57             | 33.29                   | V             | 51.86             | 73.98             | 22.12          | PK                  |
| 2390.0             | 8.55              | 33.29                   | V             | 41.84             | 53.98             | 12.14          | AV                  |

|                     |            |
|---------------------|------------|
| Operation Mode      | EDR(8DPSK) |
| Operating Frequency | 2480 MHz   |
| Channel No          | CH 78      |

| Frequency<br>[MHz] | Reading<br>[dBuV] | A.F + C.L + D.F<br>[dB] | Pol.<br>[H/V] | Total<br>[dBuV/m] | Limit<br>[dBuV/m] | Margin<br>[dB] | Measurement<br>Type |
|--------------------|-------------------|-------------------------|---------------|-------------------|-------------------|----------------|---------------------|
| 2483.5 ~2500       | 15.59             | 33.39                   | H             | 48.98             | 53.98             | 5.00           | AV                  |
| 2483.5 ~2500       | 14.40             | 33.39                   | V             | 47.79             | 53.98             | 6.19           | AV                  |

|                     |            |
|---------------------|------------|
| Operation Mode      | EDR(8DPSK) |
| Operating Frequency | 2480 MHz   |
| Channel No          | CH 78      |

| Frequency<br>[MHz] | Fund.<br>Reading<br>[dBuV] | A.F + C.L + D.F<br>[dB] | Pol.<br>[H/V] | Fund.Total<br>[dBuV/m] | Delta<br>value<br>[dBuV/m] | Total<br>[dBuV/m] | Limit<br>[dBuV/m] | Margin<br>[dB] | Measurement<br>Type |
|--------------------|----------------------------|-------------------------|---------------|------------------------|----------------------------|-------------------|-------------------|----------------|---------------------|
| * 2483.5~2485.5    | 69.42                      | 33.39                   | H             | 102.81                 | 49.80                      | 53.01             | 73.98             | 20.97          | PK                  |
| * 2483.5~2485.5    | 68.42                      | 33.39                   | V             | 101.81                 | 49.25                      | 52.56             | 73.98             | 21.42          | PK                  |

| Frequency<br>[MHz] | Reading<br>[dBuV] | A.F + C.L + D.F<br>[dB] | Pol.<br>[H/V] | Total<br>[dBuV/m] | Limit<br>[dBuV/m] | Margin<br>[dB] | Measurement<br>Type |
|--------------------|-------------------|-------------------------|---------------|-------------------|-------------------|----------------|---------------------|
| 2485.5 ~2500       | 27.49             | 33.39                   | H             | 60.88             | 73.98             | 13.10          | PK                  |
| 2485.5 ~2500       | 27.13             | 33.39                   | V             | 60.52             | 73.98             | 13.46          | PK                  |

[NOTE]

- \* : Procedure 6.10.6 (Marker-delta method) in ANSI 63.10-2013

|                     |                     |
|---------------------|---------------------|
| Operation Mode      | EDR( $\pi/4$ DQPSK) |
| Operating Frequency | 2402 MHz            |
| Channel No          | CH 0                |

| Frequency [MHz] | Reading [dBuV] | A.F + C.L + D.F [dB] | Pol. [H/V] | Total [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Measurement Type |
|-----------------|----------------|----------------------|------------|----------------|----------------|-------------|------------------|
| 2390.0          | 19.56          | 33.29                | H          | 52.85          | 73.98          | 21.14       | PK               |
| 2390.0          | 8.46           | 33.29                | H          | 41.75          | 53.98          | 12.23       | AV               |
| 2390.0          | 19.42          | 33.29                | V          | 52.71          | 73.98          | 21.27       | PK               |
| 2390.0          | 8.35           | 33.29                | V          | 41.64          | 53.98          | 12.34       | AV               |

|                     |                     |
|---------------------|---------------------|
| Operation Mode      | EDR( $\pi/4$ DQPSK) |
| Operating Frequency | 2480 MHz            |
| Channel No          | CH 78               |

| Frequency [MHz] | Reading [dBuV] | A.F + C.L + D.F [dB] | Pol. [H/V] | Total [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Measurement Type |
|-----------------|----------------|----------------------|------------|----------------|----------------|-------------|------------------|
| 2483.5          | 15.50          | 33.39                | H          | 48.89          | 53.98          | 5.10        | AV               |
| 2483.5          | 14.42          | 33.39                | V          | 47.81          | 53.98          | 6.17        | AV               |

|                     |                     |
|---------------------|---------------------|
| Operation Mode      | EDR( $\pi/4$ DQPSK) |
| Operating Frequency | 2480 MHz            |
| Channel No          | CH 78               |

| Frequency [MHz] | Fund. Reading [dBuV] | A.F + C.L + D.F [dB] | Pol. [H/V] | Fund.Total [dBuV/m] | Delta value [dBuV/m] | Total [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Measurement Type |
|-----------------|----------------------|----------------------|------------|---------------------|----------------------|----------------|----------------|-------------|------------------|
| * 2483.5~2485.5 | 69.17                | 33.39                | H          | 102.56              | 48.06                | 54.50          | 73.98          | 19.48       | PK               |
| * 2483.5~2485.5 | 69.05                | 33.39                | V          | 102.44              | 47.86                | 54.58          | 73.98          | 19.40       | PK               |

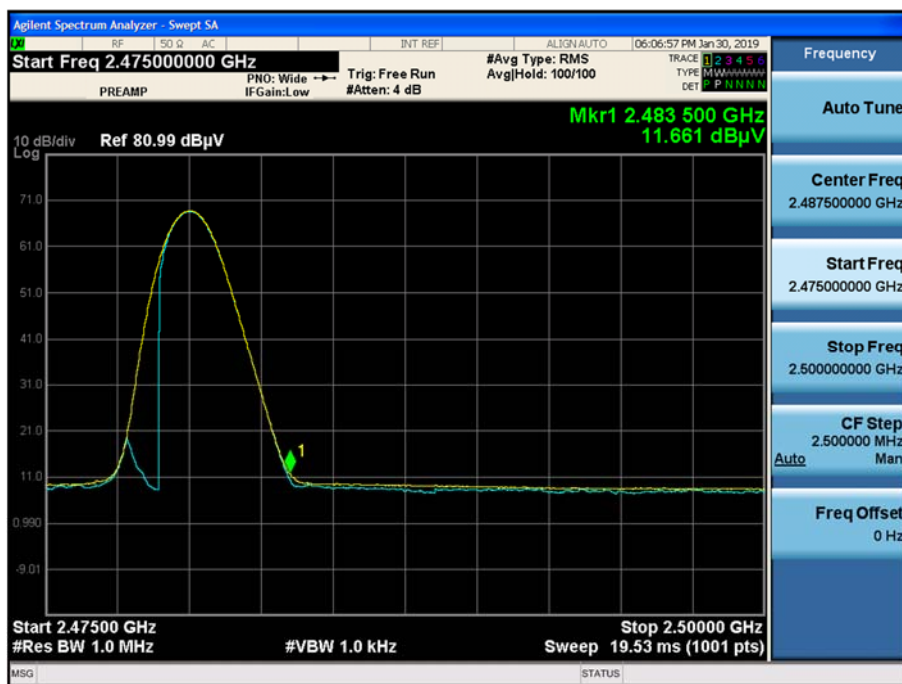
| Frequency [MHz] | Reading [dBuV] | A.F + C.L + D.F [dB] | Pol. [H/V] | Total [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Measurement Type |
|-----------------|----------------|----------------------|------------|----------------|----------------|-------------|------------------|
| 2485.5 ~2500    | 28.49          | 33.39                | H          | 61.88          | 73.98          | 12.10       | PK               |
| 2485.5 ~2500    | 28.12          | 33.39                | V          | 61.51          | 73.98          | 12.47       | PK               |

[NOTE]

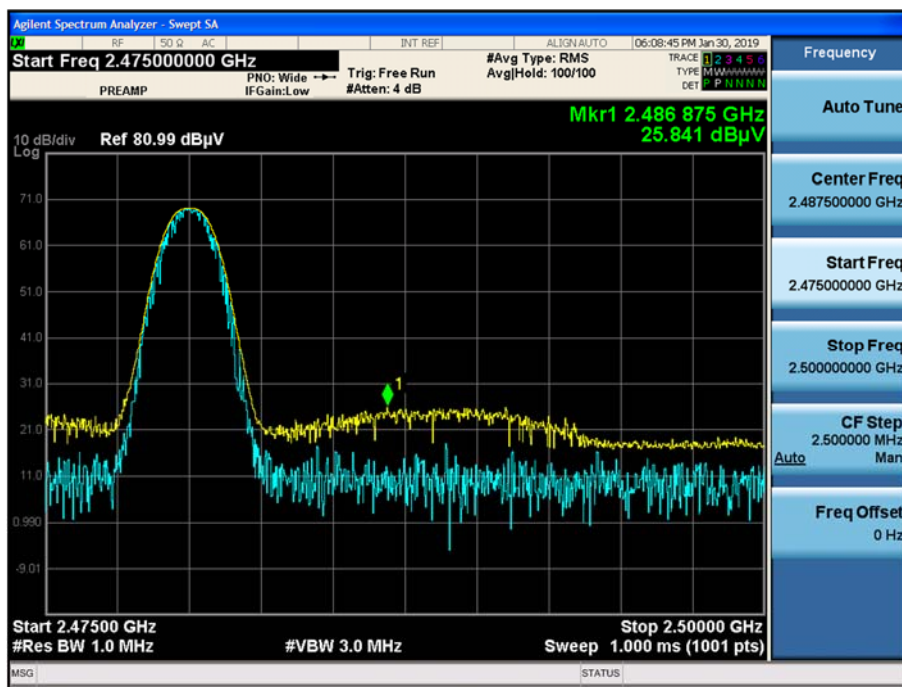
- \* : Procedure 6.10.6 (Marker-delta method) in ANSI 63.10-2013

## RESULT PLOTS (Worst case : X-H)

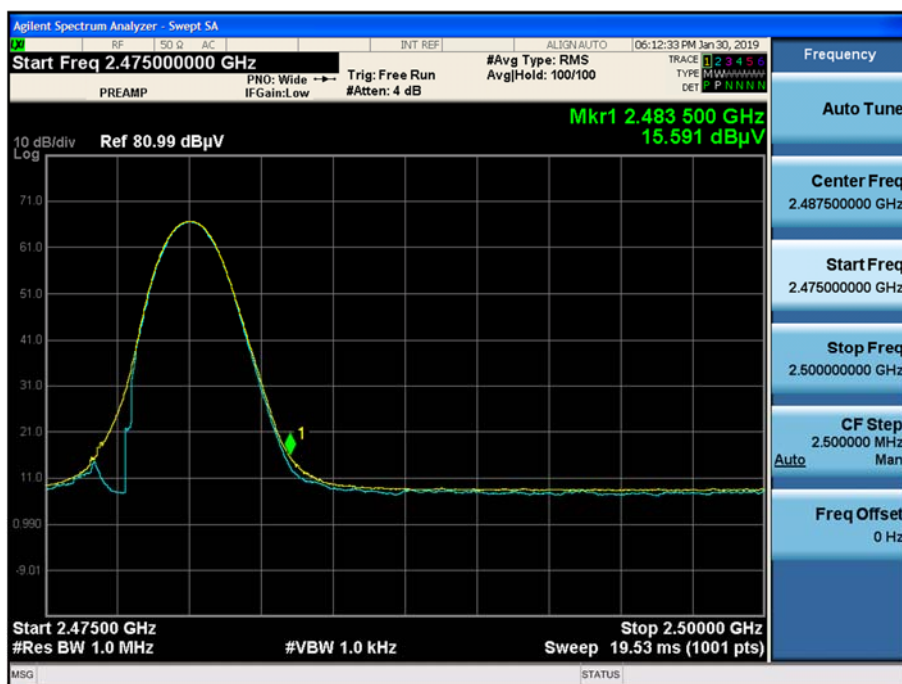
Radiated Restricted Band Edges plot – Average Reading (GFSK, Ch.78)



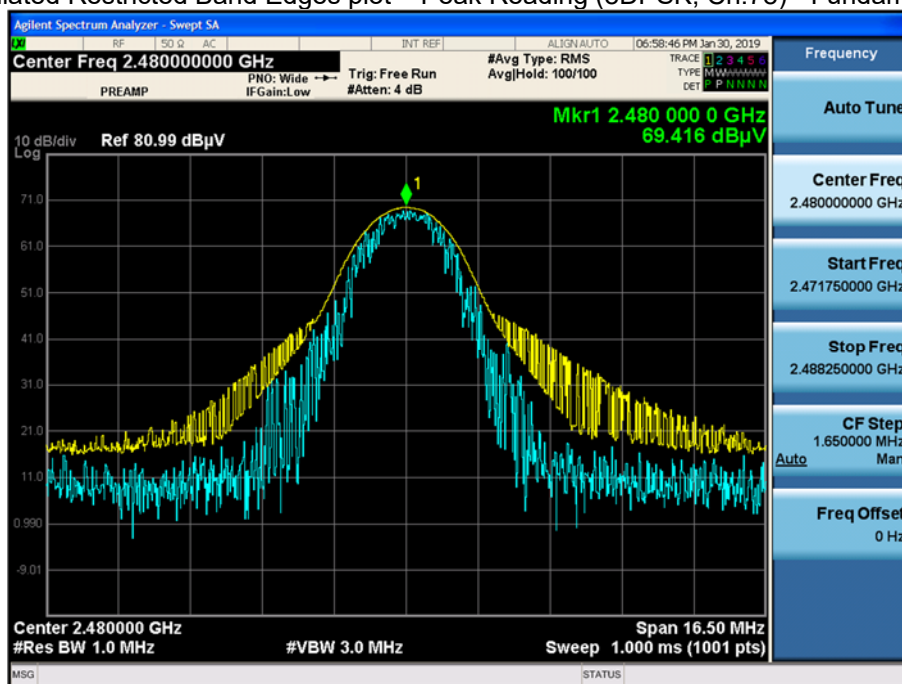
Radiated Restricted Band Edges plot – Peak Reading (GFSK, Ch.78)



Radiated Restricted Band Edges plot – Average Reading (8DPSK, Ch.78)



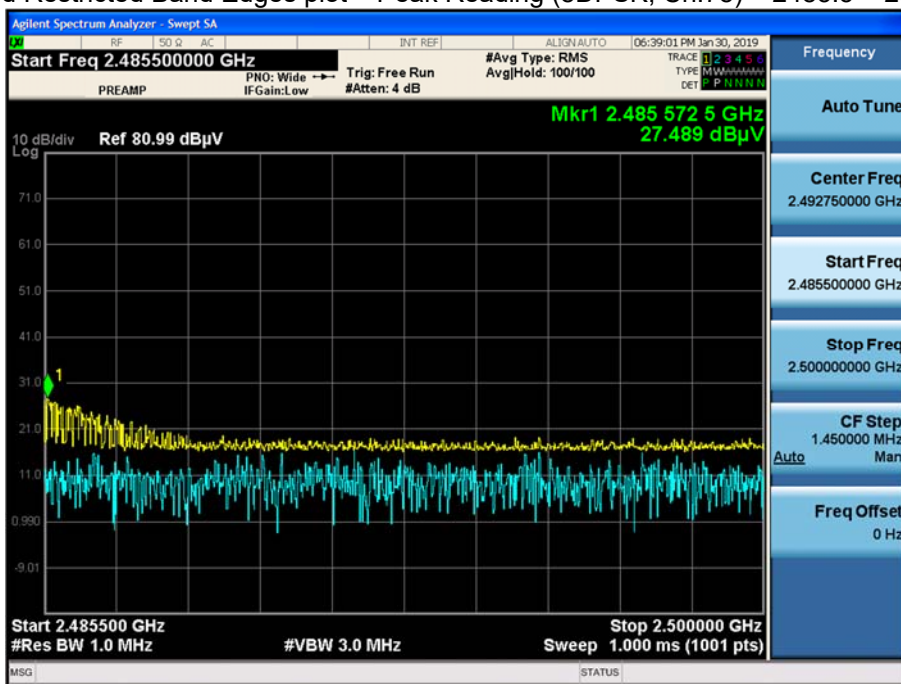
Radiated Restricted Band Edges plot – Peak Reading (8DPSK, Ch.78) - Fundamental



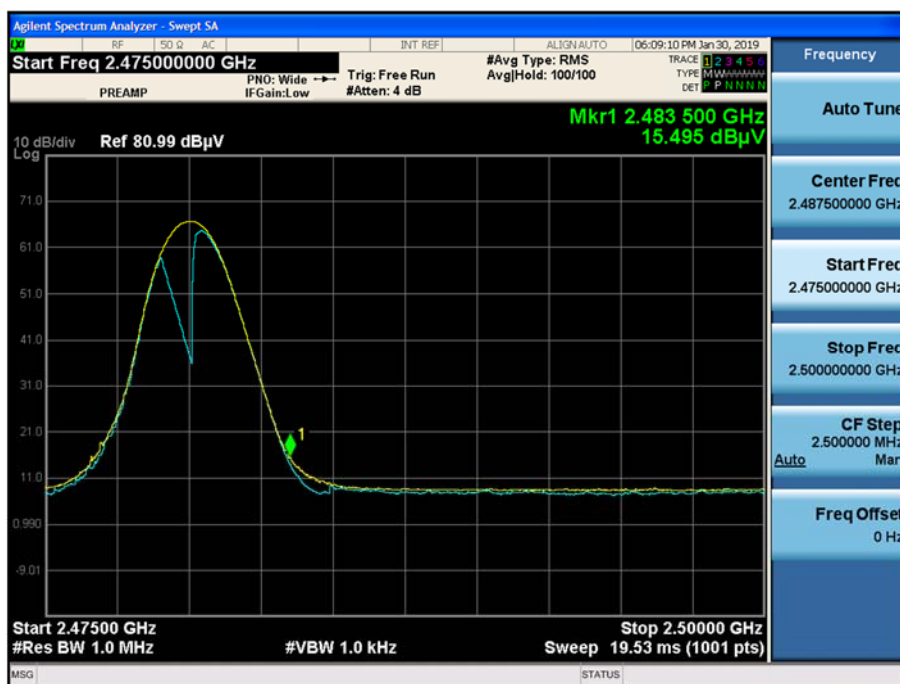
Radiated Restricted Band Edges plot – Peak Reading (8DPSK, Ch.78) – Delta-Marker



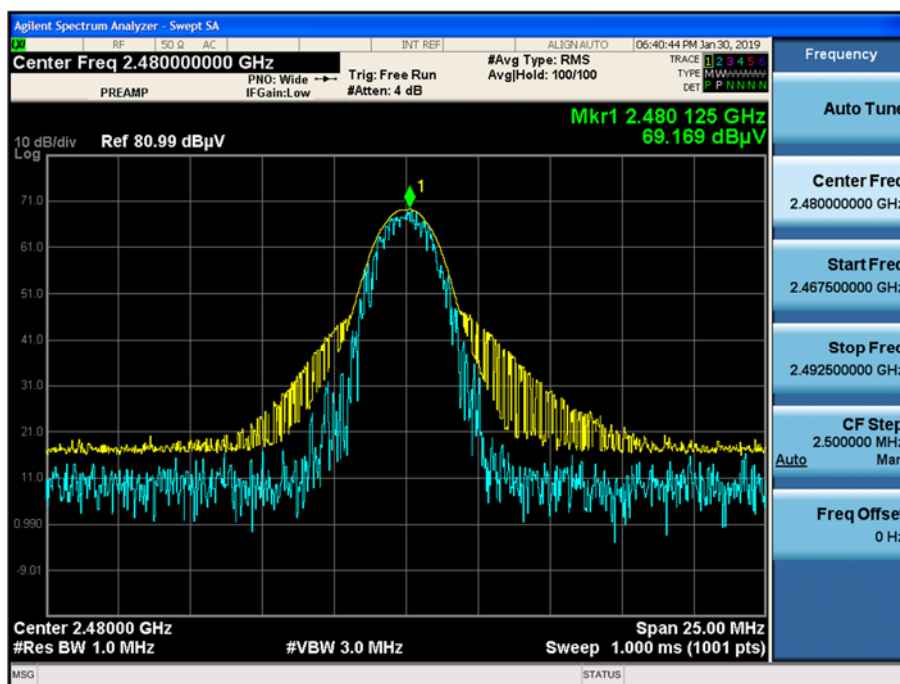
Radiated Restricted Band Edges plot – Peak Reading (8DPSK, Ch.78) – 2485.5 ~ 2500 MHz

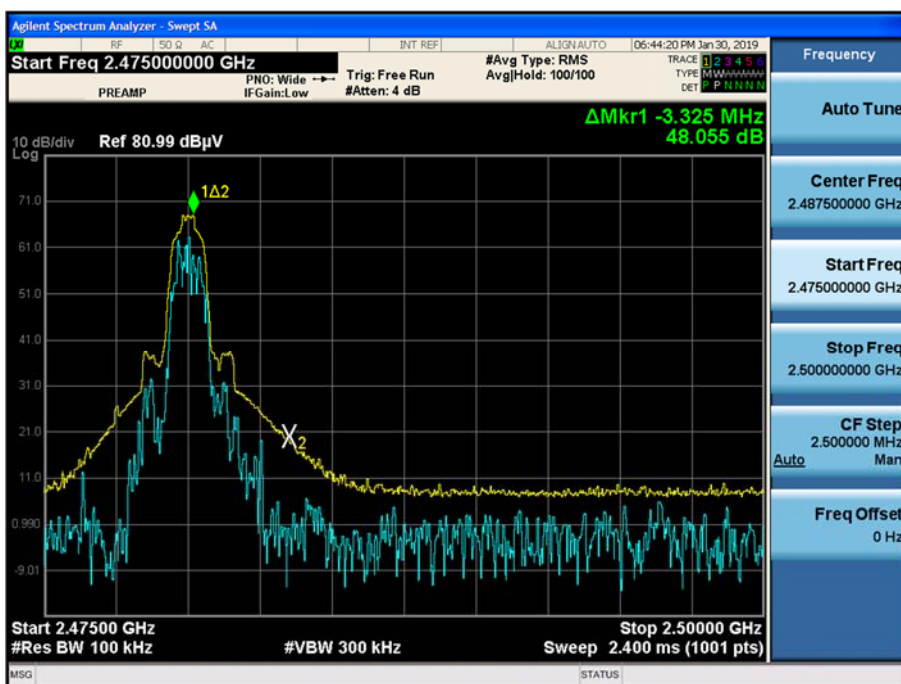
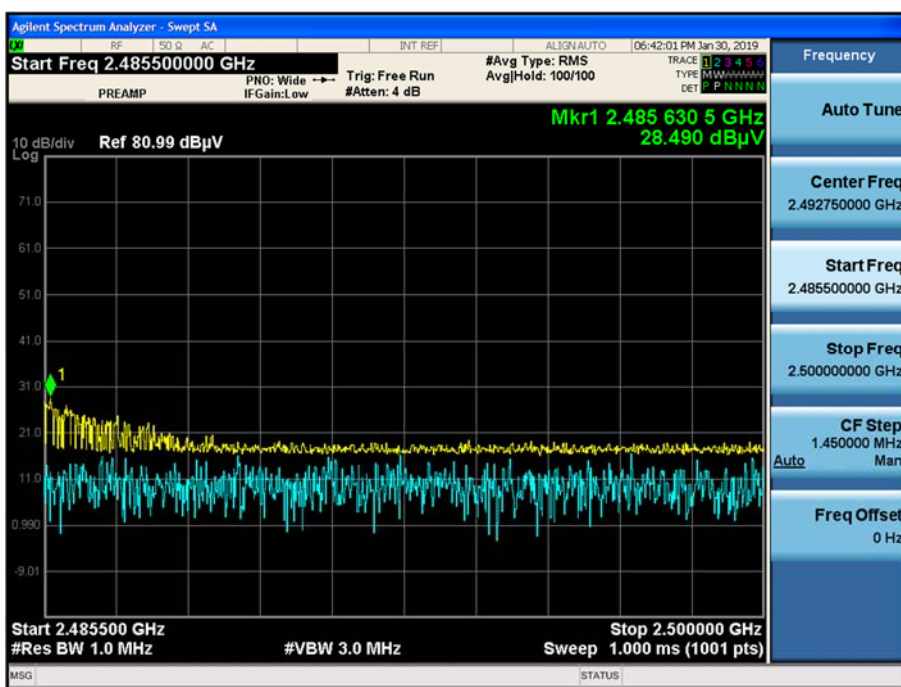


Radiated Restricted Band Edges plot – Average Reading ( $\pi/4$ DQPSK, Ch.78)



Radiated Restricted Band Edges plot – Peak Reading ( $\pi/4$ DQPSK, Ch.78) - Fundamental



Radiated Restricted Band Edges plot – Peak Reading ( $\pi/4$ DQPSK, Ch.78) – Delta-Marker

Radiated Restricted Band Edges plot – Peak Reading ( $\pi/4$ DQPSK, Ch.78) – 2485.5 ~ 2500 MHz

**Note:**

Plot of worst case are only reported.

## 10.7 POWERLINE CONDUCTED EMISSIONS

### Conducted Emissions (Line 1)

Test

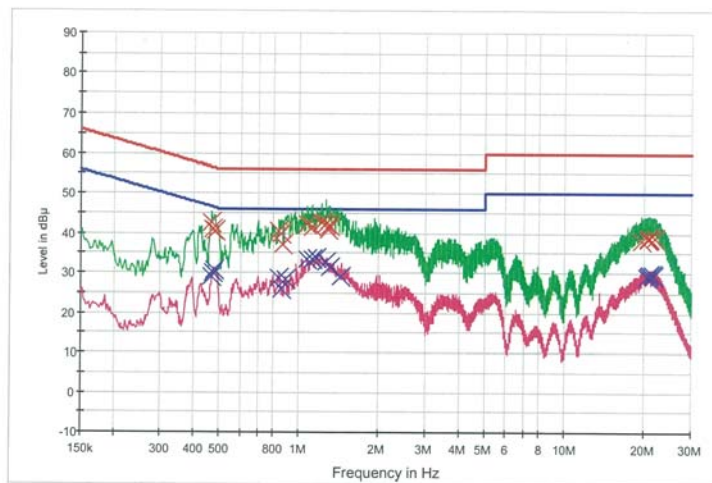
1 / 2

## HCT TEST Report

### Common Information

EUT: SM-T515  
Manufacturer: SAMSUNG  
Test Site: SHIELD ROOM  
Operating Conditions: BT L1

FCC CLASS B\_Exten Cable



— FCC CLASS B\_QP — FCC CLASS B\_AV — Preview Result 1-PK+  
— Preview Result 2-AVG × Final Result 1-QPK × Final Result 2-CAV

### Final Result 1

| Frequency (MHz) | QuasiPeak (dBuV) | Bandwidth (kHz) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dBuV) |
|-----------------|------------------|-----------------|--------|------|------------|-------------|--------------|
| 0.468000        | 42.5             | 9.000           | Off    | L1   | 9.8        | 14.0        | 56.5         |
| 0.474000        | 41.0             | 9.000           | Off    | L1   | 9.8        | 15.4        | 56.4         |
| 0.482000        | 40.5             | 9.000           | Off    | L1   | 9.8        | 15.8        | 56.3         |
| 0.840000        | 40.7             | 9.000           | Off    | L1   | 9.8        | 15.3        | 56.0         |
| 0.856000        | 39.7             | 9.000           | Off    | L1   | 9.8        | 16.3        | 56.0         |
| 0.864000        | 37.0             | 9.000           | Off    | L1   | 9.8        | 19.0        | 56.0         |
| 1.070000        | 42.1             | 9.000           | Off    | L1   | 9.8        | 13.9        | 56.0         |
| 1.118000        | 41.5             | 9.000           | Off    | L1   | 9.8        | 14.5        | 56.0         |
| 1.212000        | 42.6             | 9.000           | Off    | L1   | 9.8        | 13.4        | 56.0         |
| 1.260000        | 42.4             | 9.000           | Off    | L1   | 9.9        | 13.6        | 56.0         |
| 1.290000        | 41.0             | 9.000           | Off    | L1   | 9.9        | 15.0        | 56.0         |
| 1.304000        | 41.8             | 9.000           | Off    | L1   | 9.9        | 14.2        | 56.0         |
| 19.490000       | 38.3             | 9.000           | Off    | L1   | 10.6       | 21.7        | 60.0         |
| 20.560000       | 38.6             | 9.000           | Off    | L1   | 10.6       | 21.4        | 60.0         |
| 20.654000       | 38.8             | 9.000           | Off    | L1   | 10.6       | 21.2        | 60.0         |
| 20.846000       | 38.7             | 9.000           | Off    | L1   | 10.6       | 21.3        | 60.0         |
| 20.938000       | 39.0             | 9.000           | Off    | L1   | 10.6       | 21.0        | 60.0         |
| 21.820000       | 38.8             | 9.000           | Off    | L1   | 10.7       | 21.2        | 60.0         |

2019-02-13

오후 8:21:51

Test

2 / 2

### Final Result 2

| Frequency (MHz) | CAverage (dBuV) | Bandwidth (kHz) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dBuV) |
|-----------------|-----------------|-----------------|--------|------|------------|-------------|--------------|
| 0.466000        | 28.9            | 9.000           | Off    | L1   | 9.8        | 17.7        | 46.6         |
| 0.474000        | 30.1            | 9.000           | Off    | L1   | 9.8        | 16.4        | 46.4         |
| 0.478000        | 30.7            | 9.000           | Off    | L1   | 9.8        | 15.7        | 46.4         |
| 0.840000        | 28.8            | 9.000           | Off    | L1   | 9.8        | 17.2        | 46.0         |
| 0.856000        | 25.8            | 9.000           | Off    | L1   | 9.8        | 20.2        | 46.0         |
| 0.884000        | 28.5            | 9.000           | Off    | L1   | 9.8        | 17.5        | 46.0         |
| 1.074000        | 33.4            | 9.000           | Off    | L1   | 9.8        | 12.6        | 46.0         |
| 1.118000        | 33.3            | 9.000           | Off    | L1   | 9.8        | 12.7        | 46.0         |
| 1.166000        | 33.6            | 9.000           | Off    | L1   | 9.8        | 12.4        | 46.0         |
| 1.260000        | 32.8            | 9.000           | Off    | L1   | 9.9        | 13.2        | 46.0         |
| 1.304000        | 31.3            | 9.000           | Off    | L1   | 9.9        | 14.7        | 46.0         |
| 1.432000        | 29.0            | 9.000           | Off    | L1   | 9.9        | 17.0        | 46.0         |
| 20.378000       | 29.0            | 9.000           | Off    | L1   | 10.6       | 21.0        | 50.0         |
| 20.560000       | 29.4            | 9.000           | Off    | L1   | 10.6       | 20.6        | 50.0         |
| 20.938000       | 29.8            | 9.000           | Off    | L1   | 10.6       | 20.2        | 50.0         |
| 21.308000       | 29.5            | 9.000           | Off    | L1   | 10.6       | 20.5        | 50.0         |
| 21.536000       | 29.2            | 9.000           | Off    | L1   | 10.6       | 20.8        | 50.0         |
| 21.546000       | 29.2            | 9.000           | Off    | L1   | 10.6       | 20.8        | 50.0         |

2019-02-13

오후 8:21:51

## Conducted Emissions (Line 2)

Test

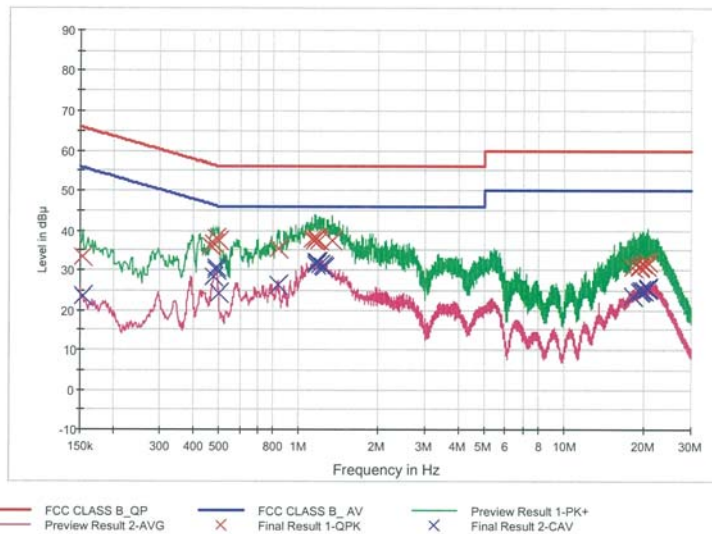
1 / 2

# HCT TEST Report

## Common Information

EUT: SM-T515  
Manufacturer: SAMSUNG  
Test Site: SHIELD ROOM  
Operating Conditions: BT N

FCC CLASS B\_Exten Cable



## Final Result 1

| Frequency (MHz) | QuasiPeak (dBμV) | Bandwidth (kHz) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dBμV) |
|-----------------|------------------|-----------------|--------|------|------------|-------------|--------------|
| 0.154000        | 33.2             | 9.000           | Off    | N    | 9.8        | 32.5        | 65.8         |
| 0.468000        | 36.2             | 9.000           | Off    | N    | 9.9        | 20.3        | 56.5         |
| 0.476000        | 36.9             | 9.000           | Off    | N    | 9.9        | 19.5        | 56.4         |
| 0.490000        | 38.1             | 9.000           | Off    | N    | 9.9        | 18.1        | 56.2         |
| 0.498000        | 37.6             | 9.000           | Off    | N    | 9.9        | 18.5        | 56.0         |
| 0.834000        | 35.5             | 9.000           | Off    | N    | 10.0       | 20.5        | 56.0         |
| 1.122000        | 37.6             | 9.000           | Off    | N    | 10.0       | 18.4        | 56.0         |
| 1.154000        | 37.3             | 9.000           | Off    | N    | 10.0       | 18.7        | 56.0         |
| 1.160000        | 38.1             | 9.000           | Off    | N    | 10.0       | 17.9        | 56.0         |
| 1.166000        | 37.9             | 9.000           | Off    | N    | 10.0       | 18.1        | 56.0         |
| 1.194000        | 37.6             | 9.000           | Off    | N    | 10.0       | 18.4        | 56.0         |
| 1.338000        | 37.3             | 9.000           | Off    | N    | 10.1       | 18.7        | 56.0         |
| 18.046000       | 30.5             | 9.000           | Off    | N    | 10.8       | 29.5        | 60.0         |
| 19.158000       | 30.8             | 9.000           | Off    | N    | 10.8       | 29.2        | 60.0         |
| 19.262000       | 30.9             | 9.000           | Off    | N    | 10.8       | 29.1        | 60.0         |
| 19.706000       | 31.6             | 9.000           | Off    | N    | 10.9       | 28.4        | 60.0         |
| 20.334000       | 31.2             | 9.000           | Off    | N    | 10.9       | 28.8        | 60.0         |
| 20.732000       | 31.9             | 9.000           | Off    | N    | 10.9       | 28.1        | 60.0         |

2019-02-13

오후 8:32:06

Test

2 / 2

### Final Result 2

| Frequency (MHz) | CAverage (dBuV) | Bandwidth (kHz) | Filter | Line | Corr. (dB) | Margin (dB) | Limit (dBuV) |
|-----------------|-----------------|-----------------|--------|------|------------|-------------|--------------|
| 0.154000        | 23.4            | 9.000           | Off    | N    | 9.8        | 32.4        | 55.8         |
| 0.478000        | 28.2            | 9.000           | Off    | N    | 9.9        | 18.2        | 46.4         |
| 0.486000        | 30.8            | 9.000           | Off    | N    | 9.9        | 15.4        | 46.2         |
| 0.490000        | 30.0            | 9.000           | Off    | N    | 9.9        | 16.2        | 46.2         |
| 0.498000        | 24.1            | 9.000           | Off    | N    | 9.9        | 21.9        | 46.0         |
| 0.834000        | 26.3            | 9.000           | Off    | N    | 10.0       | 19.7        | 46.0         |
| 1.160000        | 31.4            | 9.000           | Off    | N    | 10.0       | 14.6        | 46.0         |
| 1.164000        | 31.9            | 9.000           | Off    | N    | 10.0       | 14.1        | 46.0         |
| 1.176000        | 31.9            | 9.000           | Off    | N    | 10.0       | 14.1        | 46.0         |
| 1.198000        | 31.3            | 9.000           | Off    | N    | 10.0       | 14.7        | 46.0         |
| 1.238000        | 31.0            | 9.000           | Off    | N    | 10.0       | 15.0        | 46.0         |
| 1.246000        | 30.7            | 9.000           | Off    | N    | 10.0       | 15.3        | 46.0         |
| 18.148000       | 23.6            | 9.000           | Off    | N    | 10.8       | 26.4        | 50.0         |
| 19.262000       | 24.7            | 9.000           | Off    | N    | 10.8       | 25.3        | 50.0         |
| 19.356000       | 24.9            | 9.000           | Off    | N    | 10.9       | 25.1        | 50.0         |
| 19.910000       | 25.0            | 9.000           | Off    | N    | 10.9       | 25.0        | 50.0         |
| 20.590000       | 25.2            | 9.000           | Off    | N    | 10.9       | 24.8        | 50.0         |
| 20.732000       | 25.6            | 9.000           | Off    | N    | 10.9       | 24.4        | 50.0         |

2019-02-13

오후 8:32:06

## 11 LIST OF TEST EQUIPMENT

### Conducted Test

| Manufacturer    | Model / Equipment                            | Calibration Date | Calibration Interval | Serial No. |
|-----------------|----------------------------------------------|------------------|----------------------|------------|
| Rohde & Schwarz | ENV216 / LISN                                | 12/12/2018       | Annual               | 102245     |
| Rohde & Schwarz | ESCI / Test Receiver                         | 06/27/2018       | Annual               | 100033     |
| ESPACE          | SU-642 / Temperature Chamber                 | 03/30/2018       | Annual               | 0093008124 |
| Agilent         | N9020A / Signal Analyzer                     | 06/08/2018       | Annual               | MY51110085 |
| Agilent         | N9020A / Signal Analyzer                     | 06/08/2018       | Annual               | MY52090906 |
| Agilent         | N9030A / Signal Analyzer                     | 01/10/2019       | Annual               | MY49431210 |
| Rohde & Schwarz | OSP 120 / Power Measurement Set              | 07/26/2018       | Annual               | 101231     |
| Agilent         | N1911A / Power Meter                         | 04/16/2018       | Annual               | MY45100523 |
| Agilent         | N1921A / Power Sensor                        | 04/16/2018       | Annual               | MY52260025 |
| Agilent         | 87300B / Directional Coupler                 | 11/20/2018       | Annual               | 3116A03621 |
| Hewlett Packard | 11667B / Power Splitter                      | 06/07/2018       | Annual               | 05001      |
| Hewlett Packard | E3632A / DC Power Supply                     | 06/26/2018       | Annual               | KR75303960 |
| Agilent         | 8493C / Attenuator(10 dB)                    | 07/10/2018       | Annual               | 07560      |
| Chang Woo Inc.  | 18N-20dB / Attenuator(20 dB)                 | 05/09/2018       | Annual               | 8          |
| Rohde & Schwarz | EMC32 / Software                             | N/A              | N/A                  | N/A        |
| HCT CO., LTD.   | FCC WLAN&BT&BLE Conducted Test Software v3.0 | N/A              | N/A                  | N/A        |
| Rohde & Schwarz | CBT / Bluetooth Tester                       | 05/17/2018       | Annual               | 100422     |

### Note:

1. Equipment listed above that calibrated during the testing period was set for test after the calibration.
2. Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.

## **Radiated Test**

| Manufacturer           | Model / Equipment                                          | Calibration Date | Calibration Interval | Serial No.  |
|------------------------|------------------------------------------------------------|------------------|----------------------|-------------|
| Innco system           | CO3000 / Controller(Antenna mast)                          | N/A              | N/A                  | CO3000-4p   |
| Innco system           | MA4640/800-XP-EP / Antenna Position Tower                  | N/A              | N/A                  | N/A         |
| Audix                  | EM1000 / Controller                                        | N/A              | N/A                  | 060520      |
| Audix                  | Turn Table                                                 | N/A              | N/A                  | N/A         |
| Rohde & Schwarz        | Loop Antenna                                               | 08/23/2018       | Biennial             | 1513-175    |
| Schwarzbeck            | VULB 9168 / Hybrid Antenna                                 | 04/06/2017       | Biennial             | 760         |
| Schwarzbeck            | VULB 9160 / TRILOG Antenna                                 | 08/09/2018       | Biennial             | 9160-3368   |
| Schwarzbeck            | BBHA 9120D / Horn Antenna                                  | 05/02/2017       | Biennial             | 9120D-937   |
| Schwarzbeck            | BBHA9170 /<br>Horn Antenna(15 GHz ~ 40 GHz)                | 12/04/2017       | Biennial             | BBHA9170541 |
| Rohde & Schwarz        | FSP(9 kHz ~ 30 GHz) / Spectrum Analyzer                    | 09/03/2018       | Annual               | 100688      |
| Rohde & Schwarz        | FSV40-N / Spectrum Analyzer                                | 09/28/2018       | Annual               | 101068-SZ   |
| Agilent                | N9020A / Signal Analyzer                                   | 06/08/2018       | Annual               | MY51110085  |
| Wainwright Instruments | WHK3.0/18G-10EF / High Pass Filter                         | 06/07/2018       | Annual               | 8           |
| Wainwright Instruments | WHKX7.0/18G-8SS / High Pass Filter                         | 05/09/2018       | Annual               | 29          |
| Wainwright Instruments | WRCJV2400/2483.5-2370/2520-60/12SS /<br>Band Reject Filter | 06/29/2018       | Annual               | 2           |
| Wainwright Instruments | WRCJV5100/5850-40/50-8EEK /<br>Band Reject Filter          | 01/03/2019       | Annual               | 2           |
| Api tech.              | 18B-03 / Attenuator (3 dB)                                 | 06/07/2018       | Annual               | 1           |
| Agilent                | 8493C-10 / Attenuator(10 dB)                               | 07/17/2018       | Annual               | 08285       |
| CERNEX                 | CBLU1183540 / Power Amplifier                              | 07/10/2018       | Annual               | 22964       |
| CERNEX                 | CBL06185030 / Power Amplifier                              | 07/10/2018       | Annual               | 22965       |
| CERNEX                 | CBL18265035 / Power Amplifier                              | 01/03/2019       | Annual               | 22966       |
| CERNEX                 | CBL26405040 / Power Amplifier                              | 06/29/2018       | Annual               | 25956       |
| TESCOM                 | TC-3000C / Bluetooth Tester                                | 03/27/2018       | Annual               | 3000C000276 |

### **Note:**

1. Equipment listed above that calibrated during the testing period was set for test after the calibration.
2. Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.

## 12 ANNEX A\_ TEST SETUP PHOTO

Please refer to test setup photo file no. as follows;

| No. | Description         |
|-----|---------------------|
| 1   | HCT-RF-1902-FC037-P |
| 2   | HCT-RF-1902-FC038-P |
| 3   | HCT-RF-1902-FC039-P |
| 4   | HCT-RF-1902-FC040-P |
| 5   | HCT-RF-1902-FC041-P |
| 6   | HCT-RF-1902-FC042-P |