

## 9.7 RADIATED SPURIOUS EMISSION

### 9.7.1 Applicable Standard

According to FCC Part 15.247(d) and 15.209 and DA 00-705

### 9.7.2 Conformance Limit

According to FCC Part 15.247(d): radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

According to FCC Part 15.205, Restricted bands

| MHz               | MHz                 | MHz           | GHz         |
|-------------------|---------------------|---------------|-------------|
| 0.090-0.110       | 16.42-16.423        | 399.9-410     | 4.5-5.15    |
| 10.495-0.505      | 16.69475-16.69525   | 608-614       | 5.35-5.46   |
| 2.1735-2.1905     | 16.80425-16.80475   | 960-1240      | 7.25-7.75   |
| 4.125-4.128       | 25.5-25.67          | 1300-1427     | 8.025-8.5   |
| 4.17725-4.17775   | 37.5-38.25          | 1435-1626.5   | 9.0-9.2     |
| 4.20725-4.20775   | 73-74.6             | 1645.5-1646.5 | 9.3-9.5     |
| 6.215-6.218       | 74.8-75.2           | 1660-1710     | 10.6-12.7   |
| 6.26775-6.26825   | 123-138             | 2200-2300     | 14.47-14.5  |
| 8.291-8.294       | 149.9-150.05        | 2310-2390     | 15.35-16.2  |
| 8.362-8.366       | 156.52475-156.52525 | 2483.5-2500   | 17.7-21.4   |
| 8.37625-8.38675   | 156.7-156.9         | 2690-2900     | 22.01-23.12 |
| 8.41425-8.41475   | 162.0125-167.17     | 3260-3267     | 23.6-24.0   |
| 12.29-12.293      | 167.72-173.2        | 3332-3339     | 31.2-31.8   |
| 12.51975-12.52025 | 240-285             | 3345.8-3358   | 36.43-36.5  |
| 12.57675-12.57725 | 322-335.4           | 3600-4400     | (2)         |
| 13.36-13.41       |                     |               |             |

According to FCC Part 15.205, the level of any transmitter spurious emission in Restricted bands shall not exceed the level of the emission specified in the following table

| Restricted Frequency(MHz) | Field Strength (μV/m) | Field Strength (dBμV/m) | Measurement Distance |
|---------------------------|-----------------------|-------------------------|----------------------|
| 0.009~0.490               | 2400/F(KHz)           | 20 log (uV/m)           | 300                  |
| 0.490~1.705               | 2400/F(KHz)           | 20 log (uV/m)           | 30                   |
| 1.705~30.0                | 30                    | 29.5                    | 30                   |
| 30-88                     | 100                   | 40                      | 3                    |
| 88-216                    | 150                   | 43.5                    | 3                    |
| 216-960                   | 200                   | 46                      | 3                    |
| Above 960                 | 500                   | 54                      | 3                    |

Remark :1. Emission level in dBuV/m=20 log (uV/m)

2. Measurement was performed at an antenna to the closed point of EUT distance of meters.

3. Distance extrapolation factor =40log(Specific distance/ test distance)( dB);

Limit line=Specific limits(dBuV) + distance extrapolation factor.

for the frequency ranges below 30 MHz, a narrower RBW is used for these ranges but the measured value should add a RBW correction factor (RBWCF) where RBWCF [dB] =10\*Ig(100 [kHz]/narrower RBW [kHz]). , the narrower RBW is 1 kHz and RBWCF is 20 dB for the frequency 9 kHz to 150 kHz, and the narrower RBW is 10 kHz and RBWCF is 10 dB for the frequency 150 kHz to 30 MHz.

### 9.7.3 Test Configuration

Test according to clause 7.2 radio frequency test setup 2

### 9.7.4 Test Procedure

This test is required for any spurious emission that falls in a Restricted Band, as defined in Section 15.205. It must be performed with the highest gain of each type of antenna proposed for use with the EUT. Use the following spectrum analyzer settings:

For Above 1GHz:

The EUT was placed on a turn table which is 1.5m above ground plane.

Maximum procedure was performed on the highest emissions to ensure EUT compliance.

Span = wide enough to fully capture the emission being measured

RBW = 1 MHz

VBW  $\geq$  RBW for peak measurement

VBW = 10Hz for Average measurement

Sweep = auto

Detector function = peak

Trace = max hold

For Below 1GHz:

The EUT was placed on a turn table which is 0.8m above ground plane.

Maximum procedure was performed on the highest emissions to ensure EUT compliance.

Span = wide enough to fully capture the emission being measured

RBW = 100 kHz

VBW  $\geq$  RBW

Sweep = auto

Detector function = peak

Trace = max hold

Follow the guidelines in ANSI C63.10-2013 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization, etc. A pre-amp and a high pass filter are required for this test, in order to provide the measuring system with sufficient sensitivity. Allow the trace to stabilize. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, which must comply with the limit specified in Section 15.35(b). Submit this data.

Now set the VBW to 10 Hz, while maintaining all of the other instrument settings. This peak level, once corrected, must comply with the limit specified in Section 15.209. If the dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a "duty cycle correction factor", derived from  $20\log(\text{dwell time}/100 \text{ ms})$ , in an effort to demonstrate compliance with the 15.209 limit. Submit this data.

Repeat above procedures until all frequency measured was complete.

### 9.7.5 Test Results

#### ■ Spurious Emission below 30MHz (9KHz to 30MHz)

Temperature: 24°C  
Humidity: 53 %  
Test mode: TX Mode

Test Date: June 13, 2015  
Test By: KING KONG

| Freq.<br>(MHz) | Ant.Pol.<br>H/V | Emission<br>Level(dBuV/m) |    | Limit 3m(dBuV/m) |    | Over(dB) |    |
|----------------|-----------------|---------------------------|----|------------------|----|----------|----|
|                |                 | PK                        | AV | PK               | AV | PK       | AV |
| --             | --              | --                        | -- | --               | -- | --       | -- |

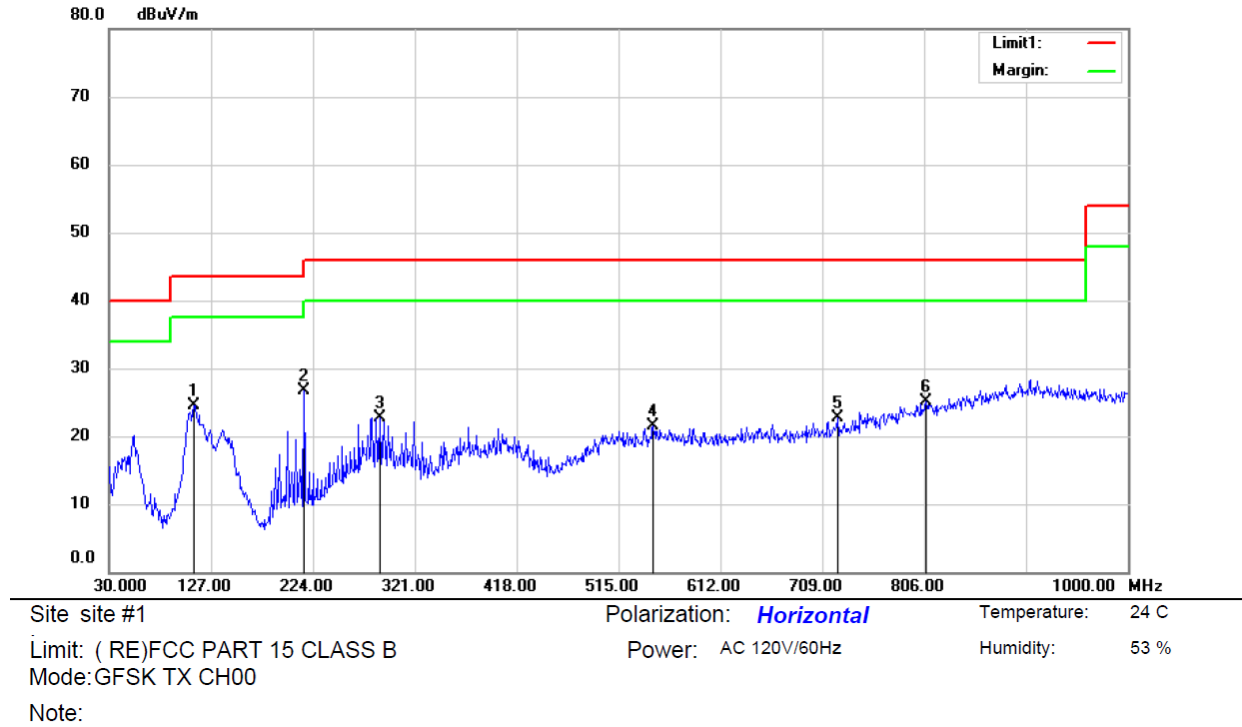
Note: the amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

Distance extrapolation factor =  $40\log(\text{Specific distance}/\text{test distance})$  (dB);

Limit line = Specific limits(dBuV) + distance extrapolation factor

■ Spurious Emission below 1GHz (30MHz to 1GHz)

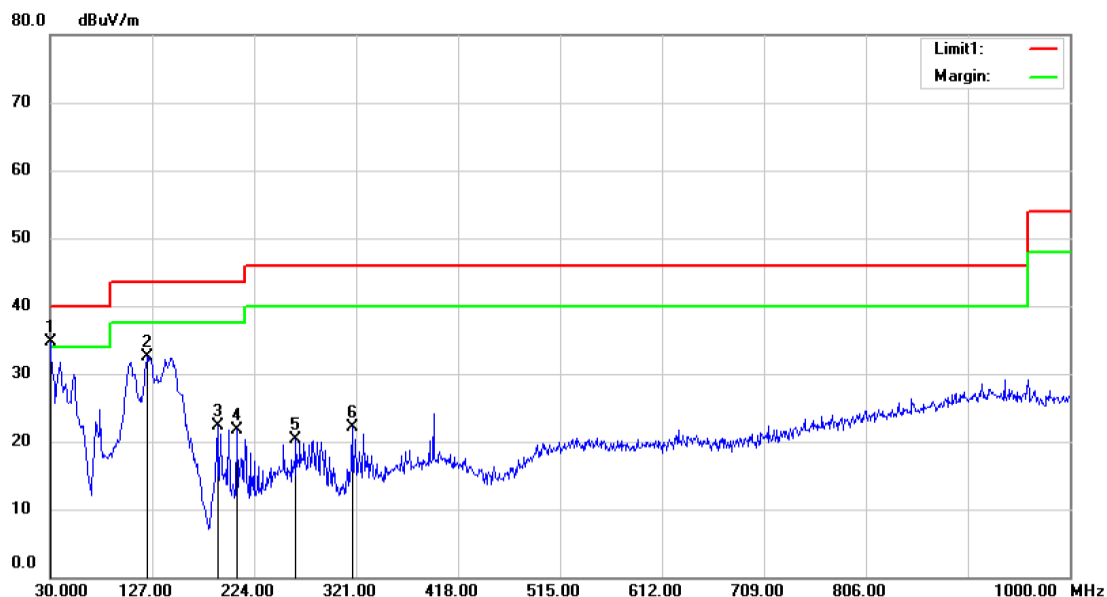
Bluetooth (GFSK, pi/4-DQPSK, 8DPSK) mode have been tested, and the worst result was report as below:



| No. | Mk. | Freq.    | Reading | Correct | Measure- | Limit  | Over   | Antenna | Table  |         |
|-----|-----|----------|---------|---------|----------|--------|--------|---------|--------|---------|
|     |     | MHz      | Level   | Factor  | ment     |        |        | Height  | Degree |         |
|     |     |          | dBuV    | dB      | dBuV/m   | dBuV/m | dB     | cm      | degree | Comment |
| 1   |     | 110.5100 | 38.90   | -14.33  | 24.57    | 43.50  | -18.93 | QP      |        |         |
| 2   | *   | 215.2700 | 43.13   | -16.38  | 26.75    | 43.50  | -16.75 | QP      |        |         |
| 3   |     | 288.0200 | 35.77   | -13.07  | 22.70    | 46.00  | -23.30 | QP      |        |         |
| 4   |     | 547.9800 | 28.99   | -7.42   | 21.57    | 46.00  | -24.43 | QP      |        |         |
| 5   |     | 723.5500 | 27.88   | -5.25   | 22.63    | 46.00  | -23.37 | QP      |        |         |
| 6   |     | 807.9400 | 27.89   | -2.69   | 25.20    | 46.00  | -20.80 | QP      |        |         |

\*:Maximum data    x:Over limit    !:over margin

Operator: CSL



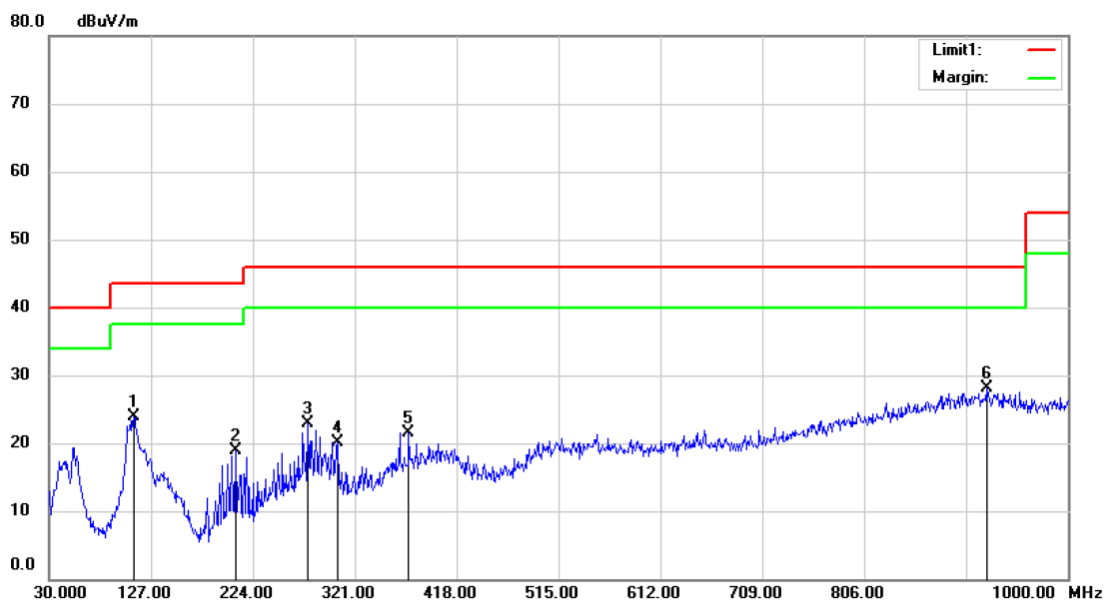
Site site #1  
 Limit: ( RE)FCC PART 15 CLASS B  
 Mode:GFSK TX CH00  
 Note:

Polarization: **Vertical**  
 Power: AC 120V/60Hz  
 Temperature: 24 C  
 Humidity: 53 %

| No. | Mk. | Freq.    | Reading | Correct | Measure- | Limit  | Over   | Antenna | Table  |         |
|-----|-----|----------|---------|---------|----------|--------|--------|---------|--------|---------|
|     |     | MHz      | Level   | Factor  | ment     |        |        | Height  | Degree |         |
|     |     |          | dBuV    | dB      | dBuV/m   | dBuV/m | dB     | cm      | degree | Comment |
| 1   | *   | 30.0000  | 51.22   | -16.46  | 34.76    | 40.00  | -5.24  | QP      |        |         |
| 2   |     | 122.1500 | 48.98   | -16.54  | 32.44    | 43.50  | -11.06 | QP      |        |         |
| 3   |     | 189.0800 | 39.73   | -17.44  | 22.29    | 43.50  | -21.21 | QP      |        |         |
| 4   |     | 207.5100 | 38.17   | -16.38  | 21.79    | 43.50  | -21.71 | QP      |        |         |
| 5   |     | 263.7700 | 33.10   | -12.75  | 20.35    | 46.00  | -25.65 | QP      |        |         |
| 6   |     | 317.1200 | 35.59   | -13.54  | 22.05    | 46.00  | -23.95 | QP      |        |         |

\*:Maximum data x:Over limit !:over margin

Operator: CSL

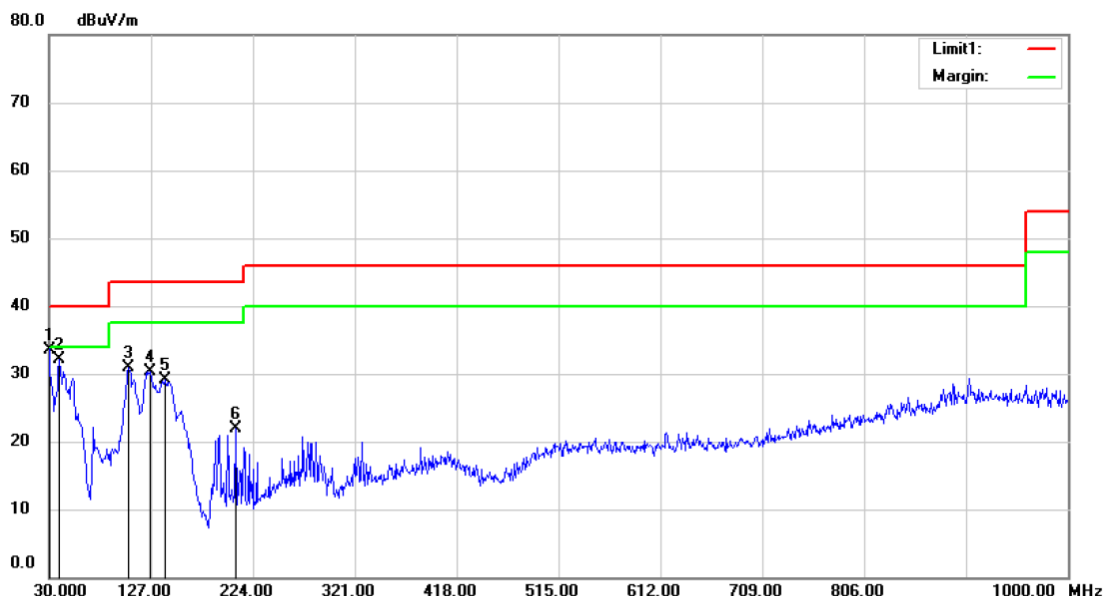


Site site #1 Polarization: **Horizontal** Temperature: 24 C  
Limit: ( RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %  
Mode:GFSK TX CH39  
Note:

| No. | Mk. | Freq.    | Reading | Correct | Measure- | Limit  | Over   | Antenna | Table  |         |
|-----|-----|----------|---------|---------|----------|--------|--------|---------|--------|---------|
|     |     | MHz      | Level   | Factor  | ment     |        |        | Height  | Degree |         |
|     |     |          | dBuV    | dB      | dBuV/m   | dBuV/m | dB     | cm      | degree | Comment |
| 1   |     | 110.5100 | 38.14   | -14.33  | 23.81    | 43.50  | -19.69 | QP      |        |         |
| 2   |     | 207.5100 | 35.32   | -16.38  | 18.94    | 43.50  | -24.56 | QP      |        |         |
| 3   |     | 276.3800 | 35.50   | -12.61  | 22.89    | 46.00  | -23.11 | QP      |        |         |
| 4   |     | 304.5100 | 33.87   | -13.76  | 20.11    | 46.00  | -25.89 | QP      |        |         |
| 5   |     | 372.4100 | 31.74   | -10.28  | 21.46    | 46.00  | -24.54 | QP      |        |         |
| 6   | *   | 922.4000 | 28.74   | -0.65   | 28.09    | 46.00  | -17.91 | QP      |        |         |

\*:Maximum data x:Over limit !:over margin

Operator: CSL



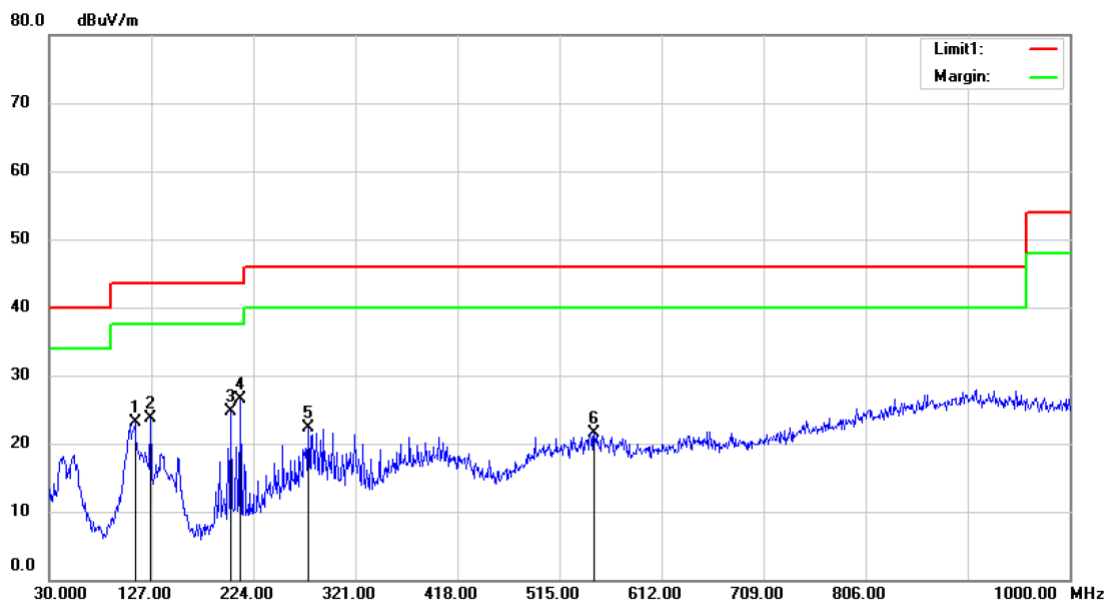
Site site #1  
Limit: ( RE)FCC PART 15 CLASS B  
Mode:GFSK TX CH39  
Note:

Polarization: **Vertical**  
Power: AC 120V/60Hz  
Temperature: 24 C  
Humidity: 53 %

| No. | Mk. | Freq.    | Reading | Correct | Measure- | Limit  | Over   | Antenna | Table  |         |
|-----|-----|----------|---------|---------|----------|--------|--------|---------|--------|---------|
|     |     | MHz      | Level   | Factor  | ment     |        |        | Height  | Degree |         |
|     |     |          | dBuV    | dB      | dBuV/m   | dBuV/m | dB     | cm      | degree | Comment |
| 1   | *   | 30.0000  | 50.06   | -16.46  | 33.60    | 40.00  | -6.40  | QP      |        |         |
| 2   |     | 39.7000  | 45.22   | -13.03  | 32.19    | 40.00  | -7.81  | QP      |        |         |
| 3   |     | 105.6600 | 44.94   | -14.12  | 30.82    | 43.50  | -12.68 | QP      |        |         |
| 4   |     | 126.0300 | 47.17   | -16.89  | 30.28    | 43.50  | -13.22 | QP      |        |         |
| 5   |     | 140.5800 | 46.81   | -17.80  | 29.01    | 43.50  | -14.49 | QP      |        |         |
| 6   |     | 207.5100 | 38.26   | -16.38  | 21.88    | 43.50  | -21.62 | QP      |        |         |

\*:Maximum data x:Over limit !:over margin

Operator: CSL

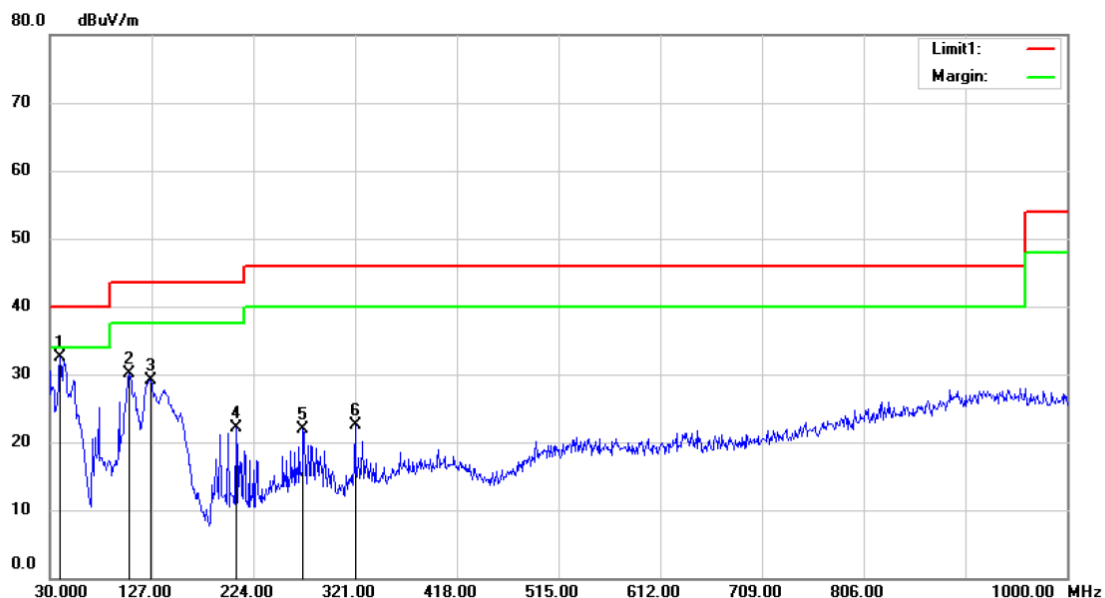


Site site #1 Polarization: **Horizontal** Temperature: 24 C  
Limit: ( RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %  
Mode:GFSK TX CH78  
Note:

| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV/m | Limit<br>dBuV/m | Over<br>dB | Antenna<br>Height<br>cm | Table<br>Degree<br>degree | Comment |
|-----|-----|--------------|--------------------------|-------------------------|----------------------------|-----------------|------------|-------------------------|---------------------------|---------|
| 1   |     | 111.4800     | 37.73                    | -14.54                  | 23.19                      | 43.50           | -20.31     | QP                      |                           |         |
| 2   |     | 126.0300     | 40.50                    | -16.89                  | 23.61                      | 43.50           | -19.89     | QP                      |                           |         |
| 3   |     | 202.6600     | 41.12                    | -16.40                  | 24.72                      | 43.50           | -18.78     | QP                      |                           |         |
| 4   | *   | 211.3900     | 42.89                    | -16.38                  | 26.51                      | 43.50           | -16.99     | QP                      |                           |         |
| 5   |     | 276.3800     | 34.84                    | -12.61                  | 22.23                      | 46.00           | -23.77     | QP                      |                           |         |
| 6   |     | 547.9800     | 28.93                    | -7.42                   | 21.51                      | 46.00           | -24.49     | QP                      |                           |         |

\*:Maximum data x:Over limit !:over margin

Operator: CSL



Site site #1 Polarization: **Vertical** Temperature: 24 C  
 Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %  
 Mode:GFSK TX CH78  
 Note:

| No. | Mk. | Freq.    | Reading | Correct | Measure- | Limit  | Over   | Antenna | Table  |         |
|-----|-----|----------|---------|---------|----------|--------|--------|---------|--------|---------|
|     |     | MHz      | Level   | Factor  | ment     |        |        | Height  | Degree |         |
|     |     |          | dBuV    | dB      | dBuV/m   | dBuV/m | dB     | cm      | degree | Comment |
| 1   | *   | 39.7000  | 45.58   | -13.03  | 32.55    | 40.00  | -7.45  | QP      |        |         |
| 2   |     | 105.6600 | 44.29   | -14.12  | 30.17    | 43.50  | -13.33 | QP      |        |         |
| 3   |     | 126.0300 | 46.08   | -16.89  | 29.19    | 43.50  | -14.31 | QP      |        |         |
| 4   |     | 207.5100 | 38.53   | -16.38  | 22.15    | 43.50  | -21.35 | QP      |        |         |
| 5   |     | 271.5300 | 34.53   | -12.67  | 21.86    | 46.00  | -24.14 | QP      |        |         |
| 6   |     | 321.0000 | 35.89   | -13.45  | 22.44    | 46.00  | -23.56 | QP      |        |         |

\*:Maximum data x:Over limit !:over margin

Operator: CSL

■ Spurious Emission Above 1GHz (1GHz to 25GHz)  
Bluetooth v2.0 /v2.1/v3.0 GFSK mode have been tested, and the worst result was report as below:

Temperature: 24℃ Test Date: June 13, 2015  
Humidity: 53 % Test By: KING KONG  
Test mode: GFSK Frequency: Channel 0: 2402MHz

| Freq.<br>(MHz) | Ant.Pol.<br>H/V | Emission Level(dBuV/m) |       | Limit 3m(dBuV/m) |       | Over(dB) |        |
|----------------|-----------------|------------------------|-------|------------------|-------|----------|--------|
|                |                 | PK                     | AV    | PK               | AV    | PK       | AV     |
| 10639.00       | V               | 48.95                  | 35.95 | 74.00            | 54.00 | -25.05   | -18.05 |
| 13733.00       | V               | 51.72                  | 37.54 | 74.00            | 54.00 | -22.28   | -16.46 |
| 15246.00       | V               | 51.43                  | 36.95 | 74.00            | 54.00 | -22.57   | -17.05 |
| --             | --              | --                     | --    | --               | --    | --       | --     |
| --             | --              | --                     | --    | --               | --    | --       | --     |
| 14447.00       | H               | 51.41                  | 36.75 | 74.00            | 54.00 | -22.59   | -17.25 |
| 15807.00       | H               | 52.31                  | 38.62 | 74.00            | 54.00 | -21.69   | -15.38 |
| 17116.00       | H               | 52.88                  | 36.85 | 74.00            | 54.00 | -21.12   | -17.15 |

Temperature: 24℃ Test Date: June 13, 2015  
Humidity: 53 % Test By: KING KONG  
Test mode: GFSK Frequency: Channel 39: 2441MHz

| Freq.<br>(MHz) | Ant.Pol.<br>H/V | Emission Level(dBuV/m) |       | Limit 3m(dBuV/m) |       | Over(dB) |        |
|----------------|-----------------|------------------------|-------|------------------|-------|----------|--------|
|                |                 | PK                     | AV    | PK               | AV    | PK       | AV     |
| 14141.00       | V               | 51.58                  | 36.75 | 74.00            | 54.00 | -22.42   | -17.25 |
| 14753.00       | V               | 52.02                  | 38.42 | 74.00            | 54.00 | -21.98   | -15.58 |
| 16402.00       | V               | 52.35                  | 38.26 | 74.00            | 54.00 | -21.65   | -15.74 |
| --             | --              | --                     | --    | --               | --    | --       | --     |
| --             | --              | --                     | --    | --               | --    | --       | --     |
| 13716.00       | H               | 50.68                  | 37.21 | 74.00            | 54.00 | -23.32   | -16.79 |
| 15926.00       | H               | 50.00                  | 36.53 | 74.00            | 54.00 | -24.00   | -17.47 |
| 18000.00       | H               | 51.66                  | 36.75 | 74.00            | 54.00 | -22.34   | -17.25 |

Temperature: 24℃ Test Date: June 13, 2015  
Humidity: 53 % Test By: KING KONG  
Test mode: GFSK Frequency: Channel 78: 2480MHz

| Freq.<br>(MHz) | Ant.Pol.<br>H/V | Emission Level(dBuV/m) |       | Limit 3m(dBuV/m) |       | Over(dB) |        |
|----------------|-----------------|------------------------|-------|------------------|-------|----------|--------|
|                |                 | PK                     | AV    | PK               | AV    | PK       | AV     |
| 13716.00       | V               | 51.00                  | 37.23 | 74.00            | 54.00 | -23.00   | -16.77 |
| 14821.00       | V               | 51.47                  | 36.94 | 74.00            | 54.00 | -22.53   | -17.06 |
| 16283.00       | V               | 51.91                  | 37.63 | 74.00            | 54.00 | -22.09   | -16.37 |
| --             | --              | --                     | --    | --               | --    | --       | --     |
| --             | --              | --                     | --    | --               | --    | --       | --     |
| 14804.00       | H               | 51.12                  | 36.85 | 74.00            | 54.00 | -22.88   | -17.15 |
| 16079.00       | H               | 51.32                  | 36.73 | 74.00            | 54.00 | -22.68   | -17.27 |
| 18000.00       | H               | 52.99                  | 38.61 | 74.00            | 54.00 | -21.01   | -15.39 |

Note: (1) All Readings are Peak Value (VBW=3MHz) and Peak Value (VBW=10Hz).  
(2) Emission Level= Reading Level+Probe Factor +Cable Loss.  
(3) Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

## ■ Spurious Emission in Restricted Band 2310-2390MHz and 2483.5-2500MHz

All the modulation modes were tested, the data of the worst mode are described in the following table

| Test Model | Spurious Emission in Restricted Band 2310-2390MHz |  |  |  |  |      |  |  |  |  |
|------------|---------------------------------------------------|--|--|--|--|------|--|--|--|--|
|            | Bluetooth v2.0 /v2.1/v3.0                         |  |  |  |  |      |  |  |  |  |
|            | Channel 0: 2402MHz                                |  |  |  |  | GFSK |  |  |  |  |

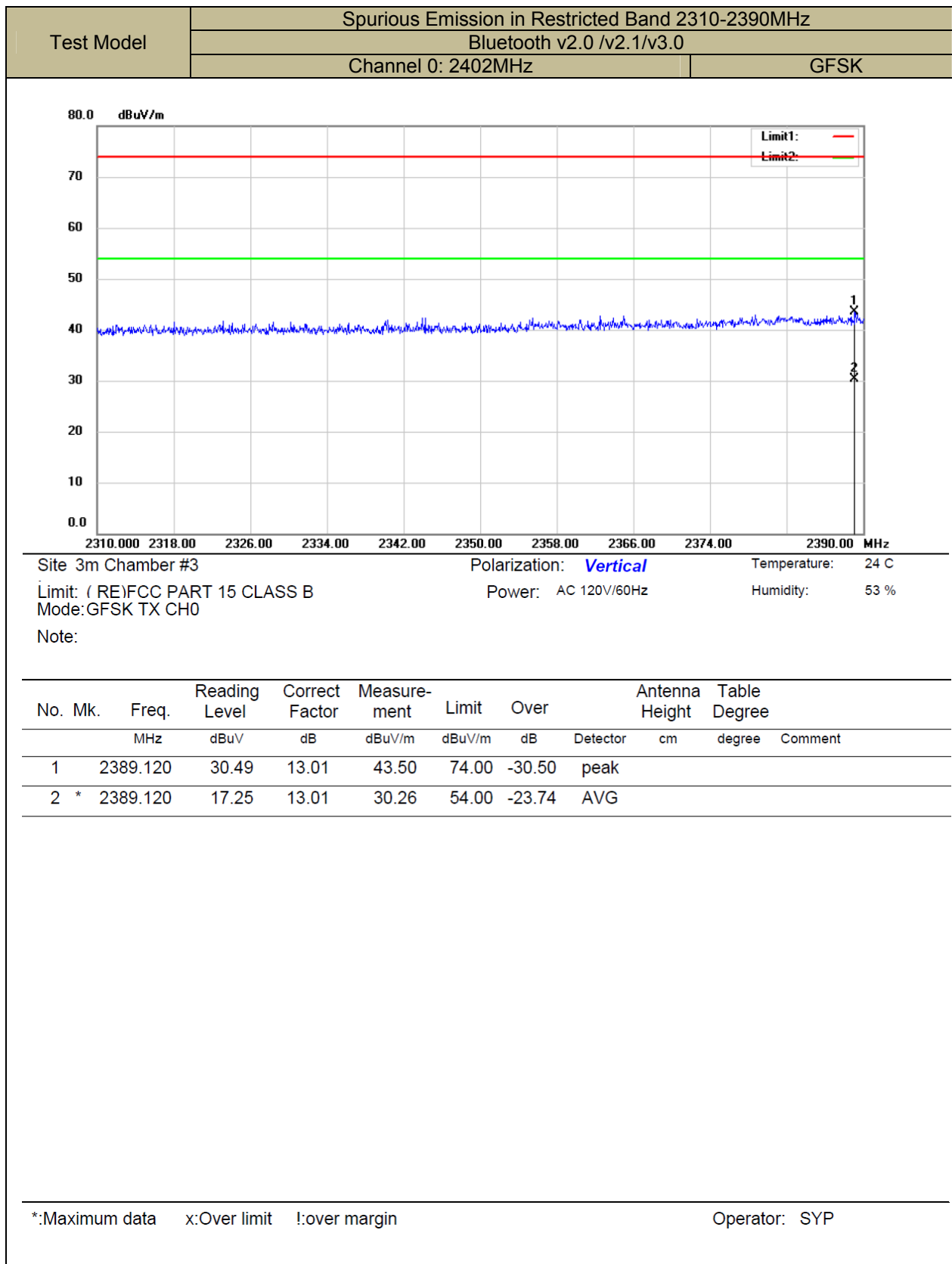
|                                 |                                 |                   |
|---------------------------------|---------------------------------|-------------------|
| Site 3m Chamber #3              | Polarization: <b>Horizontal</b> | Temperature: 24 C |
| Limit: ( RE)FCC PART 15 CLASS B | Power: AC 120V/60Hz             | Humidity: 53 %    |
| Mode:GFSK TX CH0                |                                 |                   |
| Note:                           |                                 |                   |

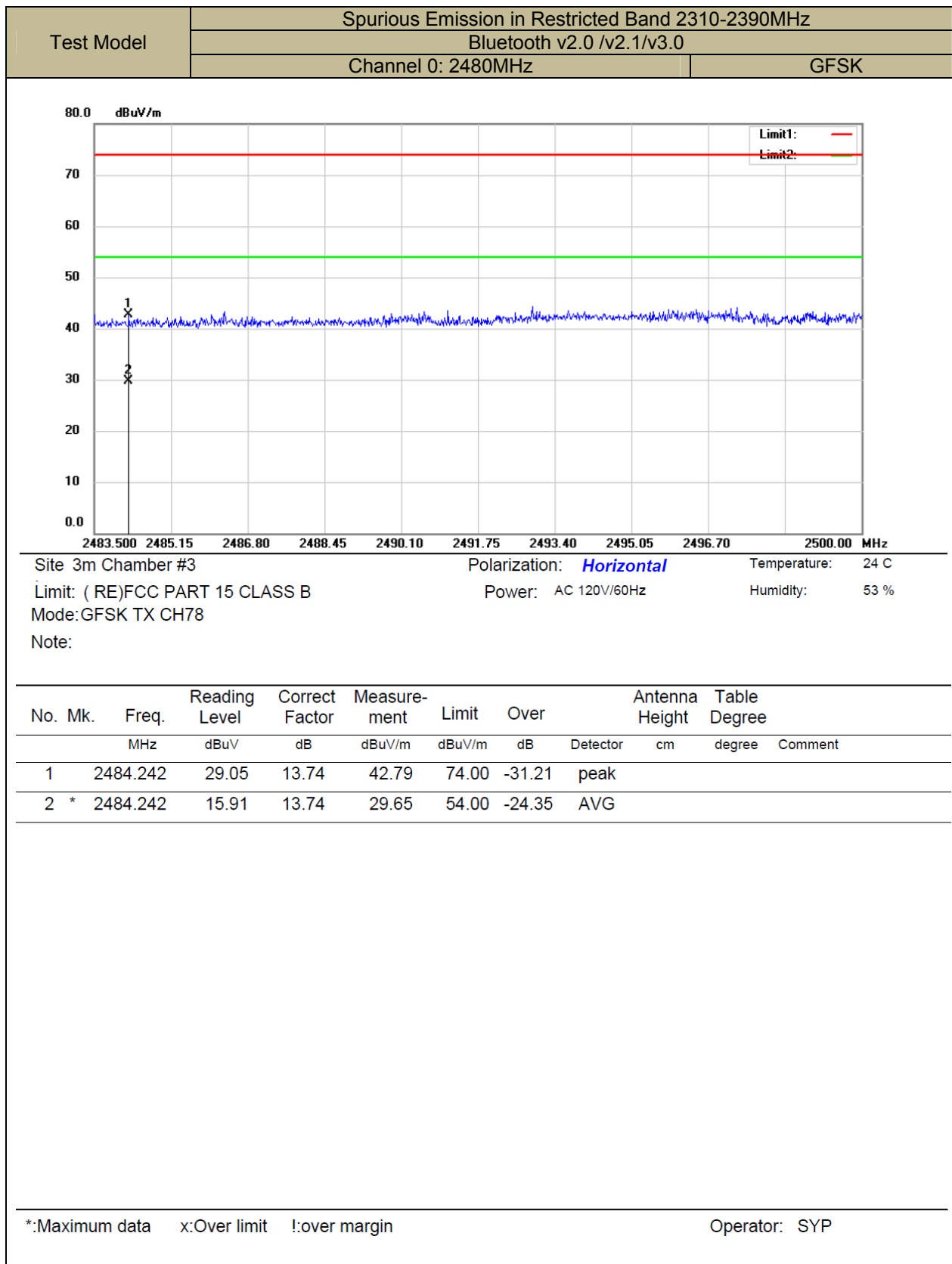
  

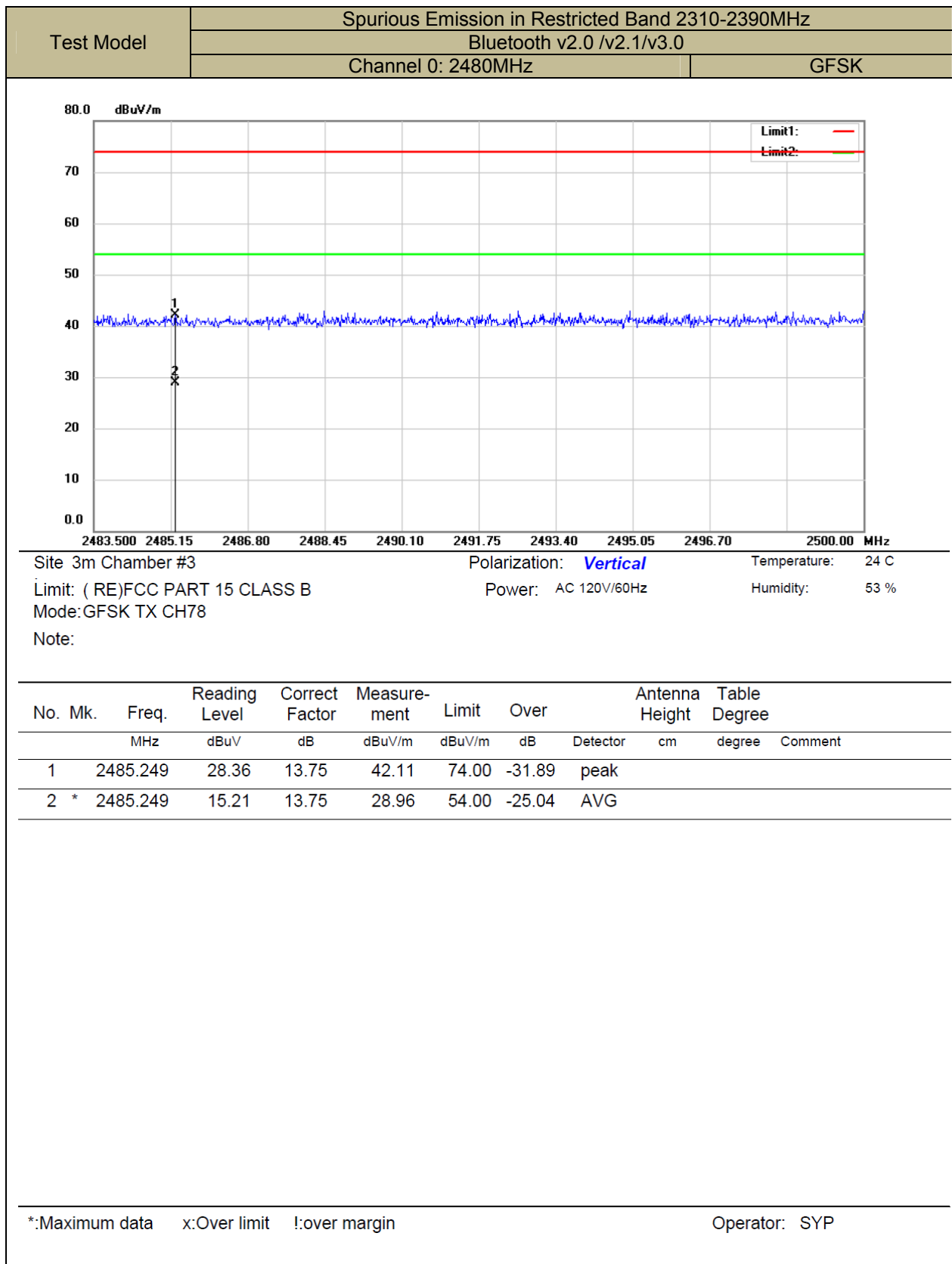
| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measure-ment | Limit  | Over   | Antenna Height | Table Degree |        |
|-----|-----|----------|---------------|----------------|--------------|--------|--------|----------------|--------------|--------|
|     |     | MHz      | dBuV          | dB             | dBuV/m       | dBuV/m | dB     | Detector       | cm           | degree |
| 1   |     | 2378.720 | 30.35         | 12.93          | 43.28        | 74.00  | -30.72 | peak           |              |        |
| 2   | *   | 2378.720 | 17.33         | 12.93          | 30.26        | 54.00  | -23.74 | AVG            |              |        |

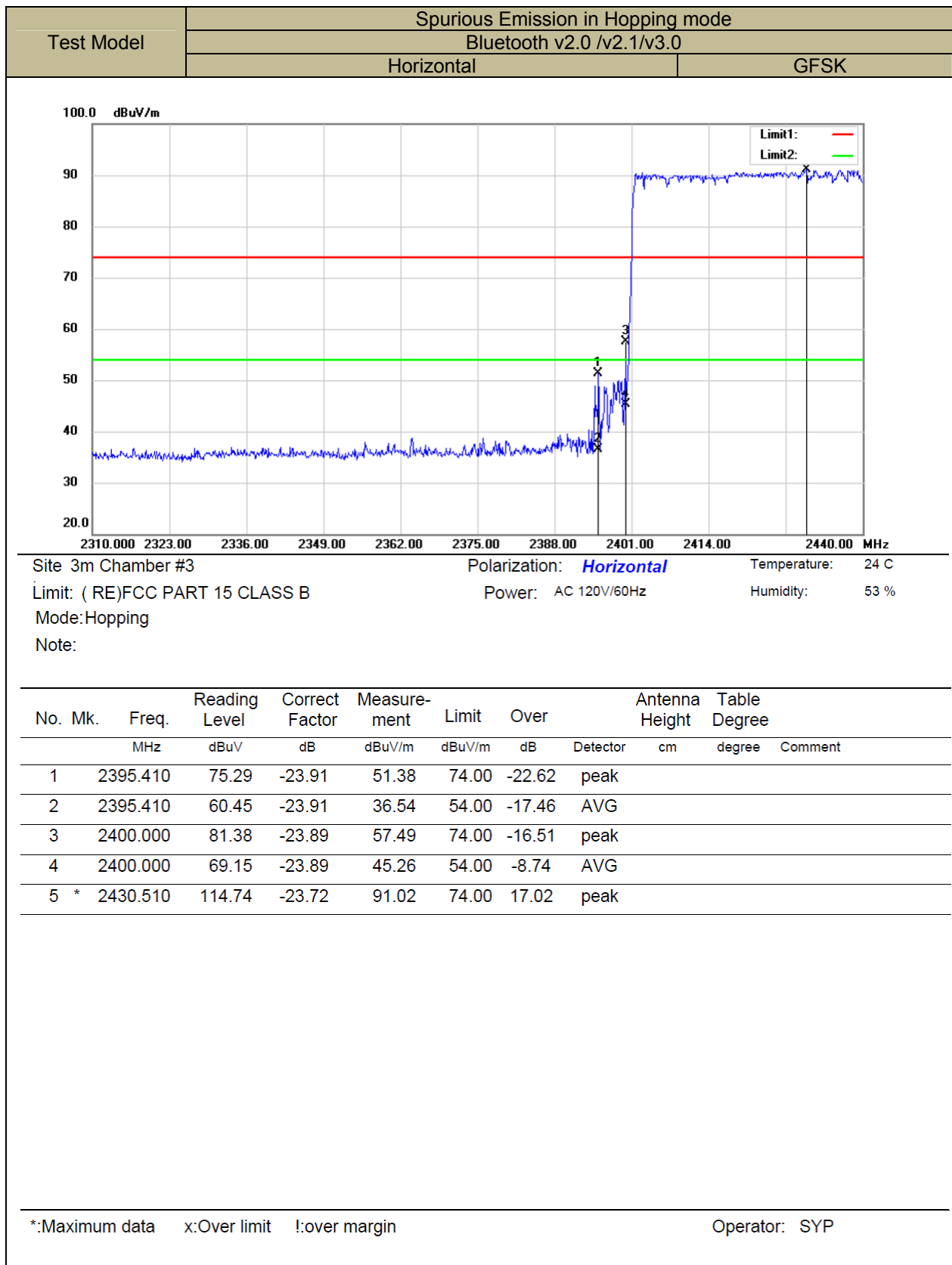
  

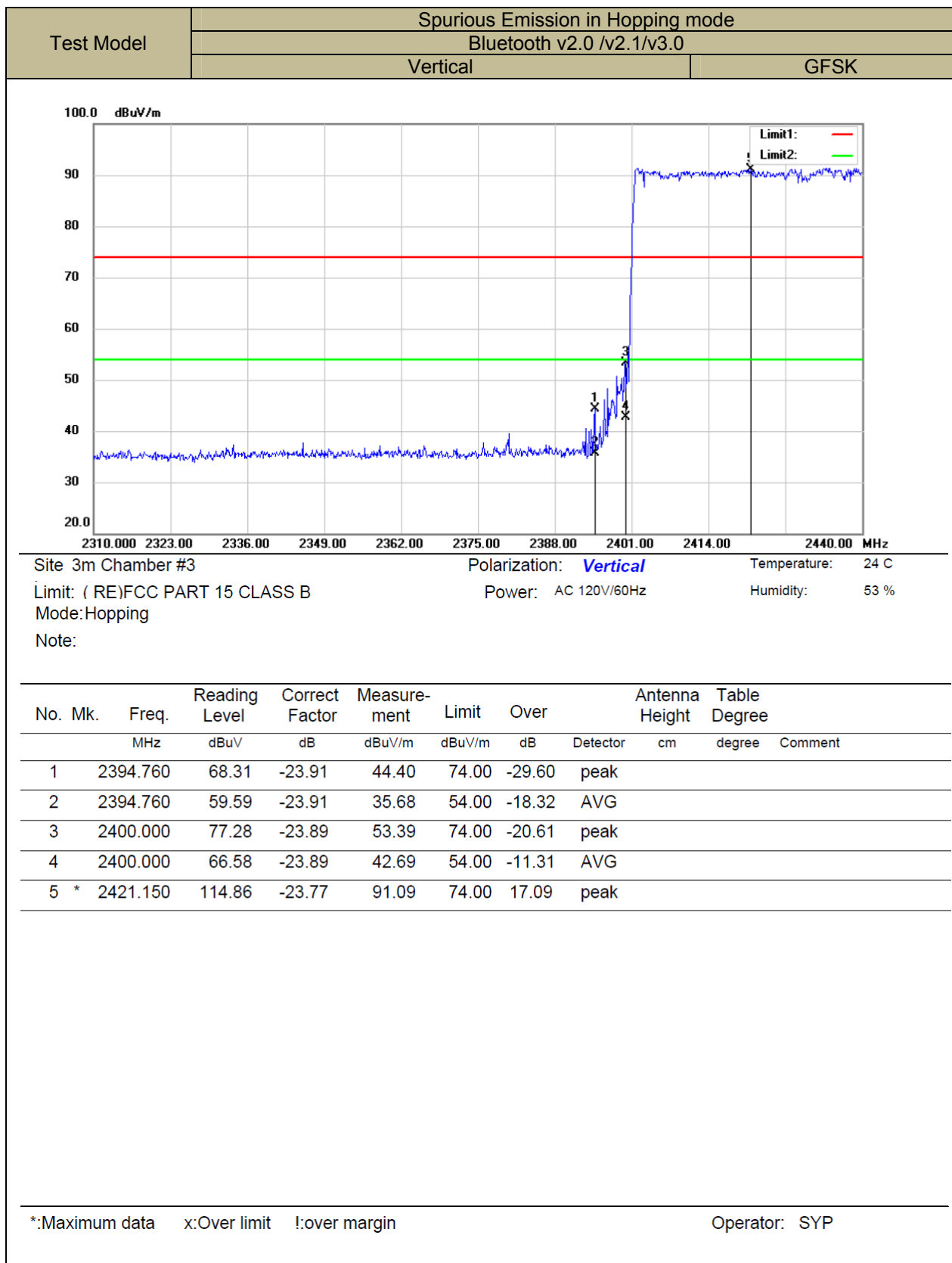
|                |              |               |               |
|----------------|--------------|---------------|---------------|
| *:Maximum data | x:Over limit | !:over margin | Operator: SYP |
|----------------|--------------|---------------|---------------|

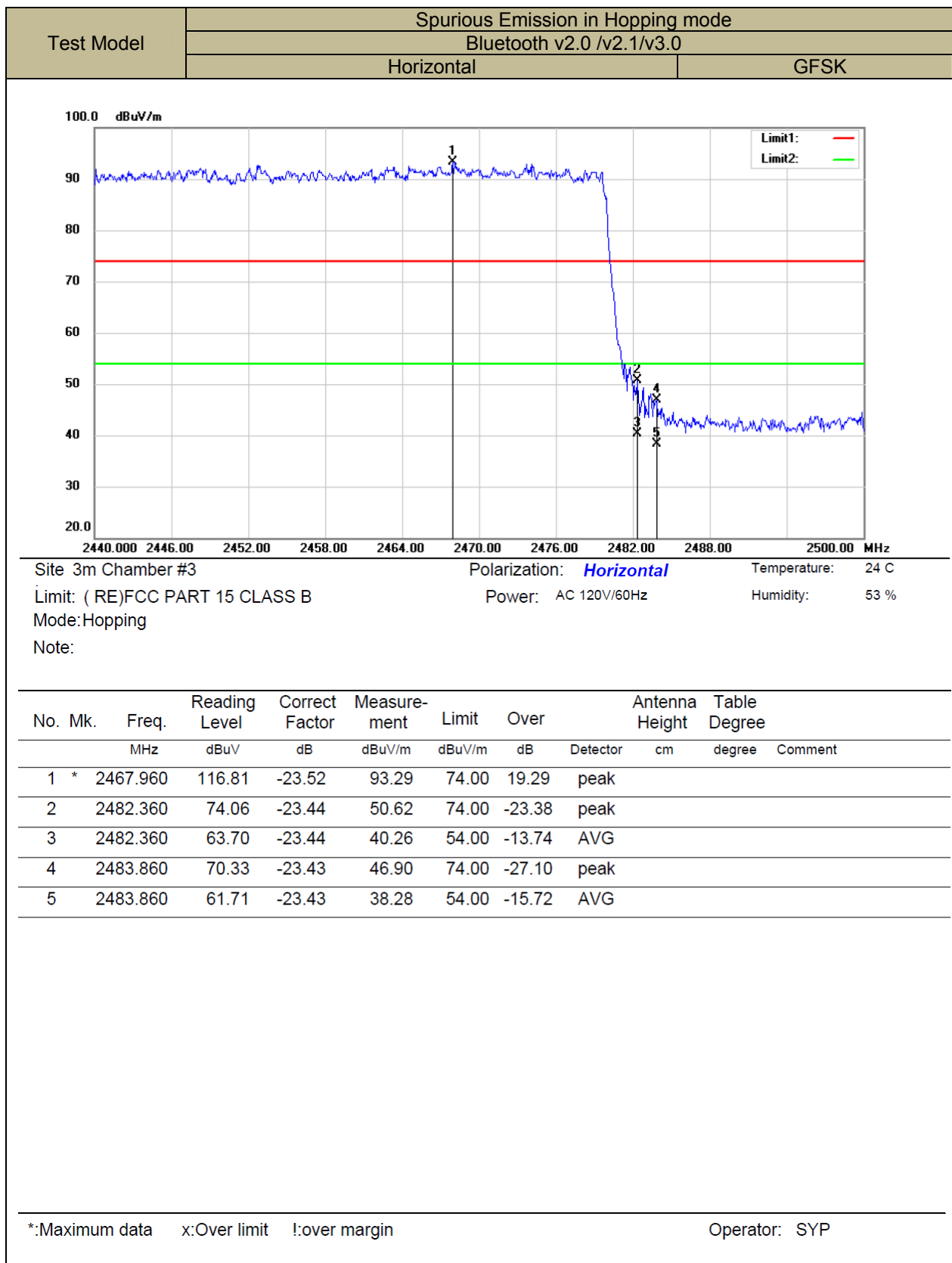


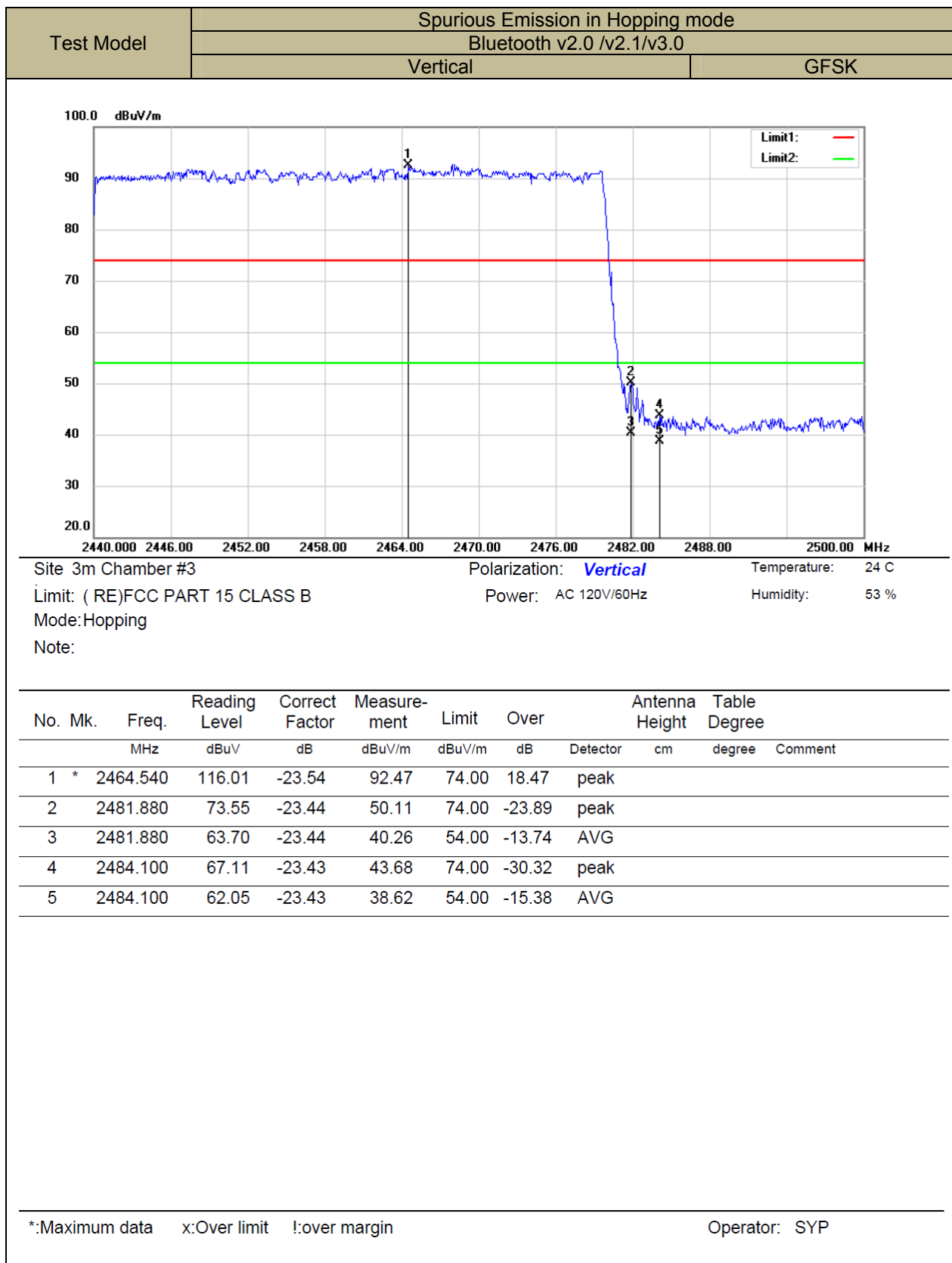












## 9.8 CONDUCTED EMISSION TEST

### 9.8.1 Applicable Standard

According to FCC Part 15.207(a)

### 9.8.2 Conformance Limit

| Conducted Emission Limit                                                                                                                                                  |            |         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------|
| Frequency(MHz)                                                                                                                                                            | Quasi-peak | Average |
| 0.15-0.5                                                                                                                                                                  | 66-56      | 56-46   |
| 0.5-5.0                                                                                                                                                                   | 56         | 46      |
| 5.0-30.0                                                                                                                                                                  | 60         | 50      |
| Note: 1. The lower limit shall apply at the transition frequencies<br>2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz. |            |         |

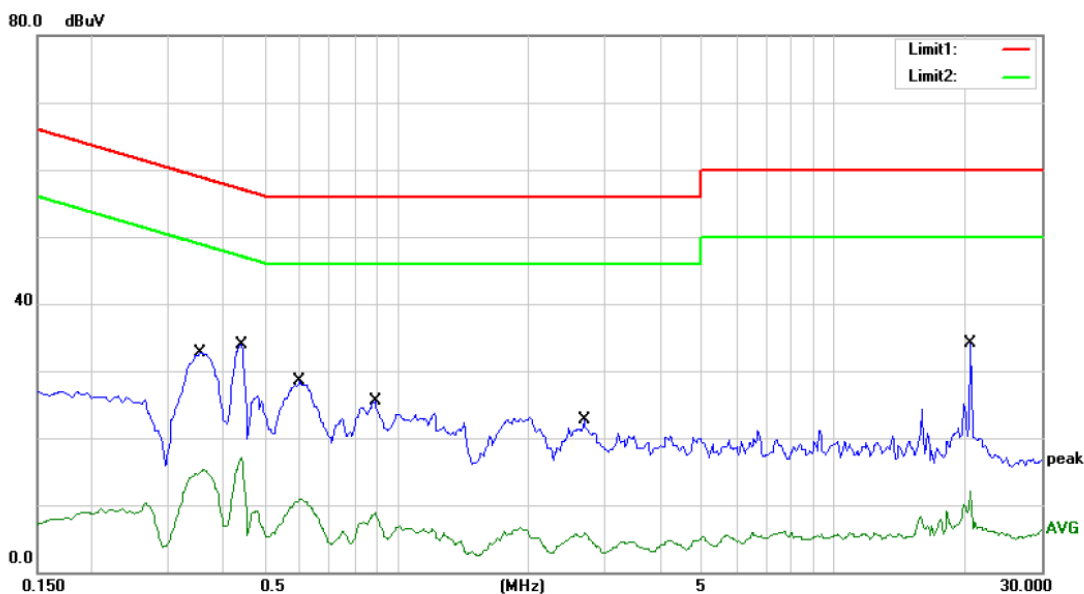
### 9.8.3 Test Configuration

Test according to clause 7.3 conducted emission test setup

### 9.8.4 Test Procedure

The EUT was placed on a table which is 0.8m above ground plane.  
 Maximum procedure was performed on the highest emissions to ensure EUT compliance.  
 Repeat above procedures until all frequency measured were complete.

### 9.8.5 Test Results



Site Conduction #1

Phase: **L1**

Temperature: 26

Limit: (CE)FCC PART 15 class B\_QP

Power: AC 120V/60Hz

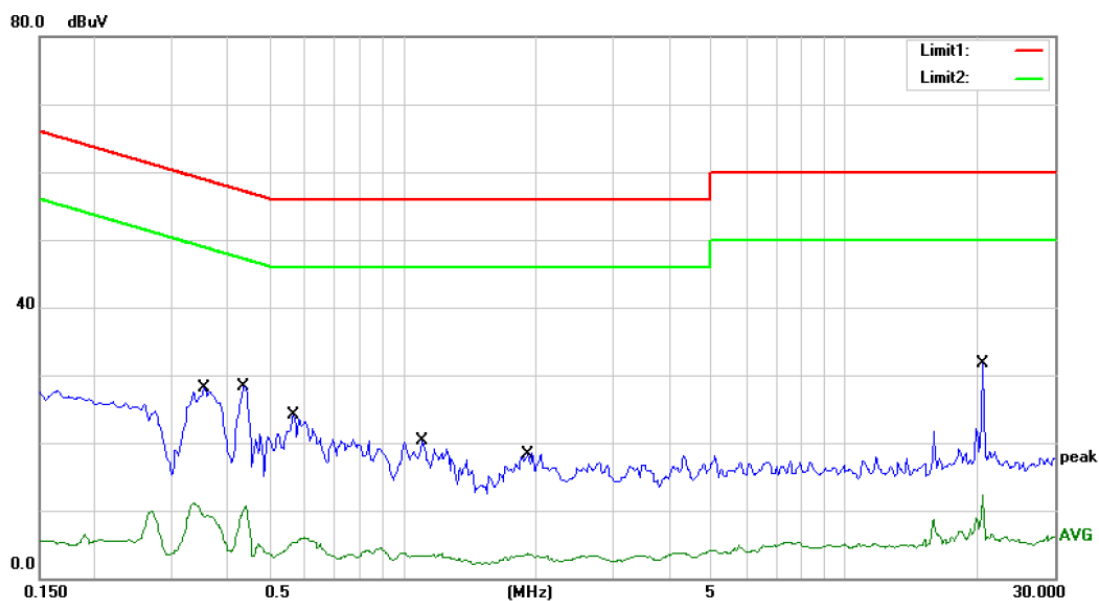
Humidity: 60 %

Mode: Bluetooth ON

Note:

| No. | Mk. | Freq.   | Reading Level | Correct Factor | Measure-ment | Limit | Over   |          |         |
|-----|-----|---------|---------------|----------------|--------------|-------|--------|----------|---------|
|     |     | MHz     | dBuV          | dB             | dBuV         | dBuV  | dB     | Detector | Comment |
| 1   |     | 0.3550  | 32.67         | 0.00           | 32.67        | 58.84 | -26.17 | QP       |         |
| 2   |     | 0.3550  | 15.30         | 0.00           | 15.30        | 48.84 | -33.54 | AVG      |         |
| 3   | *   | 0.4400  | 33.90         | 0.00           | 33.90        | 57.06 | -23.16 | QP       |         |
| 4   |     | 0.4400  | 17.08         | 0.00           | 17.08        | 47.06 | -29.98 | AVG      |         |
| 5   |     | 0.6000  | 28.43         | 0.00           | 28.43        | 56.00 | -27.57 | QP       |         |
| 6   |     | 0.6000  | 10.82         | 0.00           | 10.82        | 46.00 | -35.18 | AVG      |         |
| 7   |     | 0.8900  | 25.44         | 0.00           | 25.44        | 56.00 | -30.56 | QP       |         |
| 8   |     | 0.8900  | 8.93          | 0.00           | 8.93         | 46.00 | -37.07 | AVG      |         |
| 9   |     | 2.6850  | 22.77         | 0.00           | 22.77        | 56.00 | -33.23 | QP       |         |
| 10  |     | 2.6950  | 5.84          | 0.00           | 5.84         | 46.00 | -40.16 | AVG      |         |
| 11  |     | 20.5750 | 34.06         | 0.00           | 34.06        | 60.00 | -25.94 | QP       |         |
| 12  |     | 20.5750 | 12.07         | 0.00           | 12.07        | 50.00 | -37.93 | AVG      |         |

\*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: KK



Site Conduction #1

Phase: **N**

Temperature: 26

Limit: (CE)FCC PART 15 class B\_QP

Power: AC 120V/60Hz

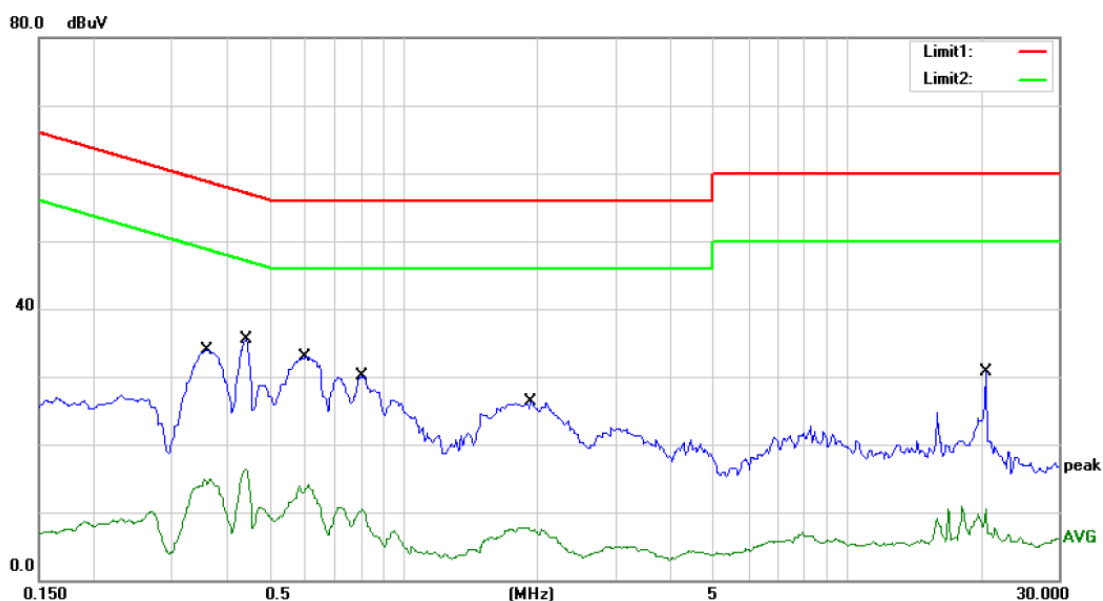
Humidity: 60 %

Mode: Bluetooth ON

Note:

| No. Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector | Comment |
|---------|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|---------|
| 1       | 0.3550       | 28.03                    | 0.00                    | 28.03                    | 58.84         | -30.81     | QP       |         |
| 2       | 0.3550       | 11.08                    | 0.00                    | 11.08                    | 48.84         | -37.76     | AVG      |         |
| 3       | 0.4350       | 28.31                    | 0.00                    | 28.31                    | 57.16         | -28.85     | QP       |         |
| 4       | 0.4350       | 10.64                    | 0.00                    | 10.64                    | 47.16         | -36.52     | AVG      |         |
| 5       | 0.5650       | 24.08                    | 0.00                    | 24.08                    | 56.00         | -31.92     | QP       |         |
| 6       | 0.5650       | 6.02                     | 0.00                    | 6.02                     | 46.00         | -39.98     | AVG      |         |
| 7       | 1.1050       | 20.31                    | 0.00                    | 20.31                    | 56.00         | -35.69     | QP       |         |
| 8       | 1.1050       | 3.74                     | 0.00                    | 3.74                     | 46.00         | -42.26     | AVG      |         |
| 9       | 1.9200       | 18.55                    | 0.00                    | 18.55                    | 56.00         | -37.45     | QP       |         |
| 10      | 1.9200       | 3.63                     | 0.00                    | 3.63                     | 46.00         | -42.37     | AVG      |         |
| 11 *    | 20.5750      | 31.61                    | 0.00                    | 31.61                    | 60.00         | -28.39     | QP       |         |
| 12      | 20.5750      | 12.29                    | 0.00                    | 12.29                    | 50.00         | -37.71     | AVG      |         |

\*:Maximum data    x:Over limit    !:over margin    Comment: Factor build in receiver.    Operator: KK



Site Conduction #1

Phase: **L1**

Temperature: 26

Limit: (CE)FCC PART 15 class B\_QP

Power: AC 240V/50Hz

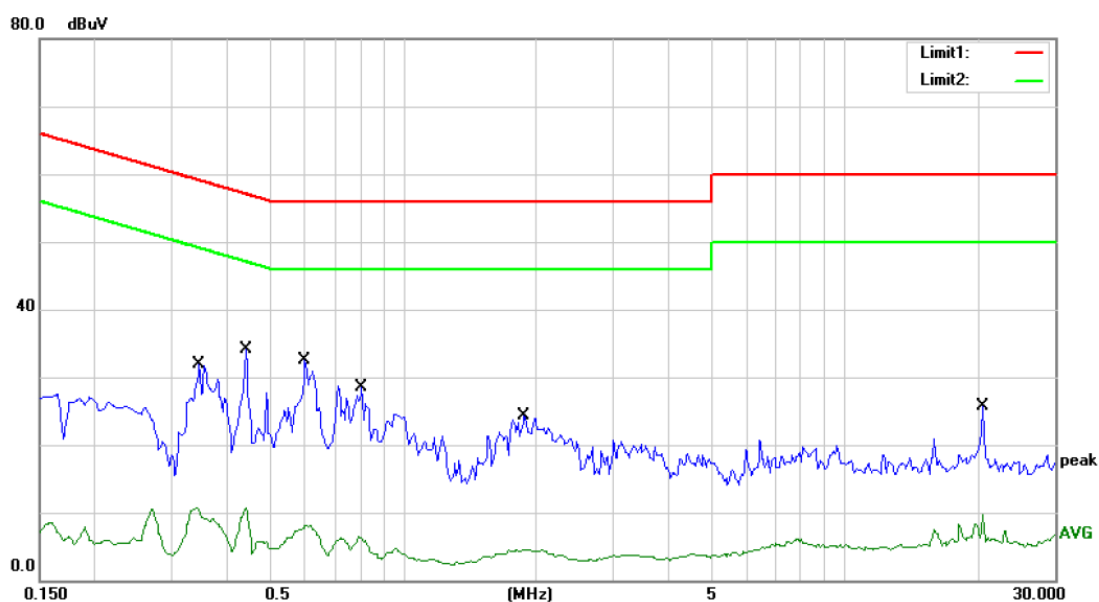
Humidity: 60 %

Mode: Bluetooth ON

Note:

| No. | Mk. | Freq.   | Reading Level | Correct Factor | Measurement | Limit | Over   |          |         |
|-----|-----|---------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz     | dBuV          | dB             | dBuV        | dBuV  | dB     | Detector | Comment |
| 1   |     | 0.3600  | 33.87         | 0.00           | 33.87       | 58.73 | -24.86 | QP       |         |
| 2   |     | 0.3600  | 14.86         | 0.00           | 14.86       | 48.73 | -33.87 | AVG      |         |
| 3   | *   | 0.4400  | 35.41         | 0.00           | 35.41       | 57.06 | -21.65 | QP       |         |
| 4   |     | 0.4400  | 16.37         | 0.00           | 16.37       | 47.06 | -30.69 | AVG      |         |
| 5   |     | 0.6000  | 32.85         | 0.00           | 32.85       | 56.00 | -23.15 | QP       |         |
| 6   |     | 0.6000  | 14.07         | 0.00           | 14.07       | 46.00 | -31.93 | AVG      |         |
| 7   |     | 0.8050  | 30.01         | 0.00           | 30.01       | 56.00 | -25.99 | QP       |         |
| 8   |     | 0.8050  | 10.46         | 0.00           | 10.46       | 46.00 | -35.54 | AVG      |         |
| 9   |     | 1.9350  | 26.30         | 0.00           | 26.30       | 56.00 | -29.70 | QP       |         |
| 10  |     | 1.9350  | 7.75          | 0.00           | 7.75        | 46.00 | -38.25 | AVG      |         |
| 11  |     | 20.5750 | 30.73         | 0.00           | 30.73       | 60.00 | -29.27 | QP       |         |
| 12  |     | 20.5750 | 10.40         | 0.00           | 10.40       | 50.00 | -39.60 | AVG      |         |

\*:Maximum data    x:Over limit    !:over margin    Comment: Factor build in receiver.    Operator: KK



Site Conduction #1  
 Limit: (CE)FCC PART 15 class B\_QP  
 Mode: Bluetooth ON  
 Note:

Phase: **N**  
 Power: AC 240V/50Hz  
 Temperature: 26  
 Humidity: 60 %

| No. Mk. | Freq.   | Reading Level | Correct Factor | Measurement | Limit | Over   |          |         |
|---------|---------|---------------|----------------|-------------|-------|--------|----------|---------|
|         | MHz     | dBuV          | dB             | dBuV        | dBuV  | dB     | Detector | Comment |
| 1       | 0.3450  | 31.84         | 0.00           | 31.84       | 59.08 | -27.24 | QP       |         |
| 2       | 0.3450  | 10.75         | 0.00           | 10.75       | 49.08 | -38.33 | AVG      |         |
| 3 *     | 0.4400  | 34.06         | 0.00           | 34.06       | 57.06 | -23.00 | QP       |         |
| 4       | 0.4400  | 10.79         | 0.00           | 10.79       | 47.06 | -36.27 | AVG      |         |
| 5       | 0.6000  | 32.58         | 0.00           | 32.58       | 56.00 | -23.42 | QP       |         |
| 6       | 0.6000  | 8.17          | 0.00           | 8.17        | 46.00 | -37.83 | AVG      |         |
| 7       | 0.8050  | 28.43         | 0.00           | 28.43       | 56.00 | -27.57 | QP       |         |
| 8       | 0.8050  | 6.41          | 0.00           | 6.41        | 46.00 | -39.59 | AVG      |         |
| 9       | 1.8850  | 24.36         | 0.00           | 24.36       | 56.00 | -31.64 | QP       |         |
| 10      | 1.8850  | 4.54          | 0.00           | 4.54        | 46.00 | -41.46 | AVG      |         |
| 11      | 20.5750 | 25.65         | 0.00           | 25.65       | 60.00 | -34.35 | QP       |         |
| 12      | 20.5750 | 9.71          | 0.00           | 9.71        | 50.00 | -40.29 | AVG      |         |

\*:Maximum data    x:Over limit    !:over margin    Comment: Factor build in receiver.    Operator: KK

## 9.9 ANTENNA APPLICATION

### 9.9.1 Antenna Requirement

| Standard            | Requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FCC CRF Part 15.203 | An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded. |

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

### 9.9.2 Result

The EUT'S antenna is PCB antenna, and the antenna can't be replaced by the user, which in accordance to section 15.203, please refer to the internal photos. The antenna's gain is 0dBi and meets the requirement.

END OF REPORT