

FCC PART 15C&RSS-210  
Measurement and Test Report  
For  
Shenzhen wanmai technology innovation Co.,LTD

FCC ID :2BHLY-WC165A

|                                                                                                                                                                                                                                                  |                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| FCC/RSS Rule(s)/Methods:                                                                                                                                                                                                                         | FCC CFR Title 47 Part 15 Subpart C Section 15.249<br>RSS-210 Issue 11, June 25, 2024<br>RSS-Gen Issue 5, February 2021<br>ANSI C63.10:2020 |
| Product Description:                                                                                                                                                                                                                             | Digital Wall Clock                                                                                                                         |
| Trademark                                                                                                                                                                                                                                        | /                                                                                                                                          |
| Model/Type reference.:                                                                                                                                                                                                                           | AC-WC165A, AC-WC120A, AC-WC120S,<br>AC-WC130A, AC-WC130S, AC-WC165S,<br>AC-WC260A, AC-WC260S, AC-WC360A,<br>AC-WC360S                      |
| Report No.:                                                                                                                                                                                                                                      | MAX25021402750021F                                                                                                                         |
| Date of receipt of test item                                                                                                                                                                                                                     | : Feb. 07, 2025                                                                                                                            |
| Date of sampling                                                                                                                                                                                                                                 | : Feb. 07, 2025                                                                                                                            |
| Tested Date:                                                                                                                                                                                                                                     | Feb. 07, 2025 to Feb. 17, 2025                                                                                                             |
| Issued Date:                                                                                                                                                                                                                                     | Feb. 17, 2025                                                                                                                              |
| Tested By:                                                                                                                                                                                                                                       | Lris Yao/ Engineer                                                                                                                         |
| Reviewed By:                                                                                                                                                                                                                                     | Levi Xiao/ EMC Manager                                                                                                                     |
| Approved & Authorized By:                                                                                                                                                                                                                        | Salon Ouyang / PSQ Manager                                                                                                                 |
| MAXLAB Testing Co., Ltd.<br>1/F, Building B, Xinshidai GR Park, Shiyan Street, Bao'an District, Shenzhen, Shiyan<br>Street, Bao'an District, Shenzhen, Guangdong, 518052, People' s Republic of China<br>Tel: 400-882-9628 Fax: 86- 755-26508703 |                                                                                                                                            |

| <b>Table of Contents</b>                                          | <b>Page</b> |
|-------------------------------------------------------------------|-------------|
| <b>1.VERSION .....</b>                                            | <b>3</b>    |
| <b>2. SUMMARY OF TEST RESULTS .....</b>                           | <b>4</b>    |
| 2.1 TEST FACILITY .....                                           | 5           |
| 2.2 MEASUREMENT UNCERTAINTY .....                                 | 5           |
| <b>3. GENERAL INFORMATION .....</b>                               | <b>6</b>    |
| 3.1 GENERAL DESCRIPTION .....                                     | 6           |
| 3.2 DESCRIPTION OF TEST MODES .....                               | 8           |
| 3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED ..... | 8           |
| 3.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE) .....            | 8           |
| 3.5 EQUIPMENTS LIST FOR ALL TEST ITEMS .....                      | 9           |
| <b>4. EMC EMISSION TEST .....</b>                                 | <b>11</b>   |
| 4.1 CONDUCTED EMISSION MEASUREMENT .....                          | 11          |
| 4.1.1 POWER LINE CONDUCTED EMISSION Limits .....                  | 11          |
| 4.1.2 TEST PROCEDURE .....                                        | 11          |
| 4.1.3 DEVIATION FROM TEST STANDARD .....                          | 11          |
| 4.1.4 TEST SETUP .....                                            | 12          |
| 4.1.5 EUT OPERATING CONDITIONS .....                              | 12          |
| 4.2.1 RADIATED EMISSION LIMITS .....                              | 15          |
| 4.2.2 TEST PROCEDURE .....                                        | 16          |
| 4.2.3 DEVIATION FROM TEST STANDARD .....                          | 16          |
| 4.2.4 TEST SETUP .....                                            | 16          |
| 4.2.5 EUT OPERATING CONDITIONS .....                              | 17          |
| <b>5. CHANNEL BANDWIDTH .....</b>                                 | <b>24</b>   |
| 5.1 APPLIED PROCEDURES / LIMIT .....                              | 24          |
| 5.3 DEVIATION FROM STANDARD .....                                 | 24          |
| 5.4 TEST SETUP .....                                              | 24          |
| 5.5 EUT OPERATION CONDITIONS .....                                | 24          |
| 5.6 TEST RESULT .....                                             | 25          |
| <b>6.ANTENNA REQUIREMENT .....</b>                                | <b>27</b>   |
| <b>7. TEST SETUP PHOTO .....</b>                                  | <b>28</b>   |
| <b>8. EUT CONSTRUCTIONAL DETAILS .....</b>                        | <b>28</b>   |

1.VERSION

| Report No.           | Version | Description             | Approved      |
|----------------------|---------|-------------------------|---------------|
| MAX25021402750021F-1 | Rev.01  | Initial issue of report | Feb. 17, 2025 |
|                      |         |                         |               |
|                      |         |                         |               |

## 2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

| FCC Part15 (15.249) , Subpart C<br>RSS-210 Issue 11, June 25, 2024/RSS-Gen Issue 5, February 2021 |                                          |          |        |
|---------------------------------------------------------------------------------------------------|------------------------------------------|----------|--------|
| Standard Section                                                                                  | Test Item                                | Judgment | Remark |
| FCC part 15.203/15.249 (c)<br>RSS-Gen Section 6.8                                                 | Antenna requirement                      | PASS     |        |
| FCC part 15.207<br>RSS-Gen Section 8.8                                                            | AC Power Line Conducted Emission         | PASS     |        |
| FCC part 15.15.249 (a)<br>RSS-210 B.10(a)                                                         | Field strength of the fundamental signal | PASS     |        |
| FCC part 15.15.249 (a) (d)/15.209<br>RSS-210 B.10(b)<br>RSS GEN 8.10                              | Spurious emissions                       | PASS     |        |
| FCC part 15.249 (d)/15.205<br>RSS-210 B.10(b)<br>RSS GEN 8.9                                      | Band edge                                | PASS     |        |
| FCC part 15.215 (c)<br>RSS-Gen Section 6.7                                                        | 20dB Occupied Bandwidth                  | PASS     |        |

NOTE:

(1)“N/A” denotes test is not applicable in this Test Report

## 2.1 TEST FACILITY

MAXLAB Testing Co., Ltd.

Add. : 1/F, Building B, Xinshidai GR Park, Shiyan Street, Bao'an District, Shenzhen, Shiyan Street, Bao'an District, Shenzhen, Guangdong, 518052, People's Republic of China

FCC Test Firm Registration Number: 562200

Designation Number: CN1338

IC Registered No.: 11093A

Designation Number: CN0019

## 2.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $y \pm U$  , where expended uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$  , providing a level of confidence of approximately 95 % .

| No. | Item                                              | Uncertainty            |
|-----|---------------------------------------------------|------------------------|
| 1   | 3m camber Radiated spurious emission(9KHz-30MHz)  | U=4.5dB                |
| 2   | 3m camber Radiated spurious emission(30MHz-1GHz)  | U=4.8dB                |
| 3   | 3m chamber Radiated spurious emission(1GHz-6GHz)  | U=4.9dB                |
| 4   | 3m chamber Radiated spurious emission(6GHz-40GHz) | U=5.0dB                |
| 5   | Conducted disturbance                             | U=3.2dB                |
| 6   | RF Band Edge                                      | U=1.68dB               |
| 7   | RF power conducted                                | U=1.86dB               |
| 8   | RF conducted Spurious Emission                    | U=2.2dB                |
| 9   | RF Power Spectral Density                         | U=1.75dB               |
| 10  | humidity uncertainty                              | U=5.3%                 |
| 11  | Temperature uncertainty                           | U=0.59°C               |
| 12  | OBW uncertainty                                   | $U \pm 0.02\text{KHz}$ |

### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION

|                             |                                                                                                                                 |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Applicant:                  | Shenzhen wanmai technology innovation Co.,LTD                                                                                   |
| Address of applicant(FCC):  | 4#501, Pingshan MinQi TechnoPark, Lishan Road, Taoyuan Street, Nanshan District, Shenzhen, China                                |
| Address of applicant(ISED): | 4#501, Pingshan MinQi TechnoPark, Lishan Road, Taoyuan Street, Nanshan District Shenzhen Guangdong 518000 China                 |
| Manufacturer:               | Shenzhen Tingrui Technology Co., Ltd                                                                                            |
| Address of manufacturer:    | A808, Jieshun Technology Center, No. 5, Guansheng Second Road, Luhua Community, Guanhu Street, Longhua District, Shenzhen China |
| Product Name:               | Digital Wall Clock                                                                                                              |
| HVIN.:                      | AC-WC165A                                                                                                                       |
| Model Different.:           | Only the model names are different.                                                                                             |
| Hardware version            | V1.0                                                                                                                            |
| Software version            | V1.0                                                                                                                            |
| Serial No.:                 | N/A                                                                                                                             |
| Sample(s) Status:           | Engineer sample                                                                                                                 |
| Sample number.:             | MAX20250123154                                                                                                                  |
| Operation Frequency:        | 2402MHz~2480MHz                                                                                                                 |
| Channel Numbers:            | 40                                                                                                                              |
| Channel Separation:         | 2MHz                                                                                                                            |
| Modulation Type:            | GFSK                                                                                                                            |
| Antenna Type:               | PCB antenna                                                                                                                     |
| Antenna gain:               | -0.58dBi                                                                                                                        |
| Power supply:               | DC 5V from USB port                                                                                                             |
| SWITCHING POWER ADAPTER:    | N/A                                                                                                                             |

| Operation Frequency each of channel |           |         |           |         |           |         |           |
|-------------------------------------|-----------|---------|-----------|---------|-----------|---------|-----------|
| Channel                             | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
| 1                                   | 2402 MHz  | 11      | 2422 MHz  | 21      | 2442 MHz  | 31      | 2462 MHz  |
| 2                                   | 2404 MHz  | 12      | 2424 MHz  | 22      | 2444 MHz  | 32      | 2464 MHz  |
| 3                                   | 2406 MHz  | 13      | 2426 MHz  | 23      | 2446 MHz  | 33      | 2466 MHz  |
| 4                                   | 2408 MHz  | 14      | 2428 MHz  | 24      | 2448 MHz  | 34      | 2468 MHz  |
| 5                                   | 2410 MHz  | 15      | 2430 MHz  | 25      | 2450 MHz  | 35      | 2470 MHz  |
| 6                                   | 2412 MHz  | 16      | 2432 MHz  | 26      | 2452 MHz  | 36      | 2472 MHz  |
| 7                                   | 2414 MHz  | 17      | 2434 MHz  | 27      | 2454 MHz  | 37      | 2474 MHz  |
| 8                                   | 2416 MHz  | 18      | 2436 MHz  | 28      | 2456 MHz  | 38      | 2476 MHz  |
| 9                                   | 2418 MHz  | 19      | 2438 MHz  | 29      | 2458 MHz  | 39      | 2478 MHz  |
| 10                                  | 2420 MHz  | 20      | 2440 MHz  | 30      | 2460 MHz  | 40      | 2480 MHz  |

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

| Channel             | Frequency |
|---------------------|-----------|
| The lowest channel  | 2402MHz   |
| The middle channel  | 2440MHz   |
| The Highest channel | 2480MHz   |

## 3.2 DESCRIPTION OF TEST MODES

|                                                                                                                                                                                                                                       |                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Transmitting mode                                                                                                                                                                                                                     | Keep the EUT in continuously transmitting mode |
| Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data. |                                                |

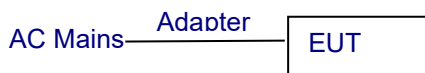
|                   |               |
|-------------------|---------------|
| Test Software     | BLE Test Tool |
| Power level setup | <0dBm         |

## 3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Conducted Emission



Radiated Emission



Conducted Spurious



## 3.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| Item | Equipment | Mfr/Brand | Model/Type No. | Series No. | Note     |
|------|-----------|-----------|----------------|------------|----------|
| /    | ADAPTER   | anker     | ADS-5002000C   | /          | DC 5V/2A |
|      |           |           |                |            |          |
|      |           |           |                |            |          |
|      |           |           |                |            |          |

| Item | Shielded Type | Ferrite Core | Length | Note |
|------|---------------|--------------|--------|------|
|      |               |              |        |      |
|      |               |              |        |      |
|      |               |              |        |      |

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.



## 3.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

| Conducted Emission               |                         |                      |            |              |            |
|----------------------------------|-------------------------|----------------------|------------|--------------|------------|
| Test Equipment                   | Manufacturer            | Model                | Serial No. | Date of Cal. | Due Date   |
| Shielding Room                   | ZhongYu Electron        | 7.3(L)x3.1(W)x2.9(H) | BSL252     | 2024-10-27   | 2025-10-26 |
| EMI Test Receiver                | R&S                     | ESCI 7               | BSL552     | 2024-10-27   | 2025-10-26 |
| Coaxial Switch                   | ANRITSU CORP            | MP59B                | BSL225     | 2024-10-27   | 2025-10-26 |
| ENV216<br>2-L-V-NETZNACH<br>B.DE | ROHDE&SCHWARZ           | ENV216               | BSL226     | 2024-10-27   | 2025-10-26 |
| Coaxial Cable                    | BSL                     | N/A                  | BSL227     | N/A          | N/A        |
| EMI Test Software                | AUDIX                   | E3                   | N/A        | N/A          | N/A        |
| Thermo meter                     | KTJ                     | TA328                | BSL233     | 2024-10-27   | 2025-10-26 |
| Absorbing clamp                  | Elektronik-Feinmechanik | MDS21                | BSL229     | 2024-10-27   | 2025-10-26 |
| LISN                             | R&S                     | ENV216               | 308        | 2024-10-27   | 2025-10-26 |
| LISN                             | R&S                     | ENV216               | 314        | 2024-10-27   | 2025-10-26 |

| Radiation Test equipment         |                                |                          |            |              |            |
|----------------------------------|--------------------------------|--------------------------|------------|--------------|------------|
| Test Equipment                   | Manufacturer                   | Model                    | Serial No. | Date of Cal. | Due Date   |
| 3m Semi- Anechoic Chamber        | ZhongYu Electron               | 9.2(L)*6.2(W)*<br>6.4(H) | BSL250     | 2024-10-27   | 2025-10-26 |
| Control Room                     | ZhongYu Electron               | 6.2(L)*2.5(W)*<br>2.4(H) | BSL251     | N/A          | N/A        |
| EMI Test Receiver                | Rohde & Schwarz                | ESU26                    | BSL203     | 2024-10-27   | 2025-10-26 |
| BiConiLog Antenna                | SCHWARZBECK<br>MESS-ELEKTRONIK | VULB9163                 | BSL214     | 2024-10-27   | 2025-10-26 |
| Double -ridged<br>waveguide horn | SCHWARZBECK<br>MESS-ELEKTRONIK | BBHA 9120 D              | BSL208     | 2024-10-27   | 2025-10-26 |
| Horn Antenna                     | ETS-LINDGREN                   | 3160                     | BSL217     | 2024-10-27   | 2025-10-26 |
| EMI Test Software                | AUDIX                          | E3                       | N/A        | N/A          | N/A        |
| Coaxial Cable                    | BSL                            | N/A                      | BSL213     | 2024-10-27   | 2025-10-26 |
| Coaxial Cable                    | BSL                            | N/A                      | BSL211     | 2024-10-27   | 2025-10-26 |
| Coaxial cable                    | BSL                            | N/A                      | BSL210     | 2024-10-27   | 2025-10-26 |
| Coaxial Cable                    | BSL                            | N/A                      | BSL212     | 2024-10-27   | 2025-10-26 |

|                                           |                 |                             |        |            |            |
|-------------------------------------------|-----------------|-----------------------------|--------|------------|------------|
| Amplifier(100kHz-3 GHz)                   | HP              | 8347A                       | BSL204 | 2024-10-27 | 2025-10-26 |
| Amplifier(2GHz-20 GHz)                    | HP              | 84722A                      | BSL206 | 2024-10-27 | 2025-10-26 |
| Amplifier<br>(18-26GHz)                   | Rohde & Schwarz | AFS33-18002<br>650-30-8P-44 | BSL218 | 2024-10-27 | 2025-10-26 |
| Band filter                               | Amindeon        | 82346                       | BSL219 | 2024-10-27 | 2025-10-26 |
| Power Meter                               | Anritsu         | ML2495A                     | BSL540 | 2024-10-27 | 2025-10-26 |
| Power Sensor                              | Anritsu         | MA2411B                     | BSL541 | 2024-10-27 | 2025-10-26 |
| Wideband Radio<br>Communication<br>Tester | Rohde & Schwarz | CMW500                      | BSL575 | 2024-10-27 | 2025-10-26 |
| Splitter                                  | Agilent         | 11636B                      | BSL237 | 2024-10-27 | 2025-10-26 |
| Loop Antenna                              | ZHINAN          | ZN30900A                    | BSL534 | 2024-10-27 | 2025-10-26 |
| Breitband<br>hornantenne                  | SCHWARZBECK     | BBHA 9170                   | BSL579 | 2024-10-27 | 2025-10-26 |
| Amplifier                                 | TDK             | PA-02-02                    | BSL574 | 2024-10-27 | 2025-10-26 |
| Amplifier                                 | TDK             | PA-02-03                    | BSL576 | 2024-10-27 | 2025-10-26 |
| PSA Series<br>Spectrum Analyzer           | Rohde & Schwarz | FSP                         | BSL578 | 2024-10-27 | 2025-10-26 |

| RF Conducted Test:                                      |              |                      |            |              |            |
|---------------------------------------------------------|--------------|----------------------|------------|--------------|------------|
| Test Equipment                                          | Manufacturer | Model                | Serial No. | Date of Cal. | Due Date   |
| MXA Signal<br>Analyzer                                  | Agilent      | N9020A               | BSL566     | 2024-10-27   | 2025-10-26 |
| EMI Test Receiver                                       | R&S          | ESCI 7               | BSL552     | 2024-10-27   | 2025-10-26 |
| Spectrum Analyzer                                       | Agilent      | E4440A               | BSL533     | 2024-10-27   | 2025-10-26 |
| MXG vector Signal<br>Generators                         | Agilent      | N5182A               | BSL567     | 2024-10-27   | 2025-10-26 |
| ESG Analog Signal<br>Generator                          | Agilent      | E4428C               | BSL568     | 2024-10-27   | 2025-10-26 |
| USB RF Power<br>Sensor                                  | DARE         | RPR3006W             | BSL569     | 2024-10-27   | 2025-10-26 |
| RF Switch Box                                           | Shongyi      | RFSW3003328          | BSL571     | 2024-10-27   | 2025-10-26 |
| Programmable<br>Constant Temp &<br>Humi Test<br>Chamber | WEWON        | WHTH-150L-40-88<br>0 | BSL572     | 2024-10-27   | 2025-10-26 |

#### 4. EMC EMISSION TEST

##### 4.1 CONDUCTED EMISSION MEASUREMENT

|                       |                                                 |
|-----------------------|-------------------------------------------------|
| Test Requirement:     | FCC Part15 C Section 15.207&RSS-Gen Section 8.8 |
| Test Method:          | ANSI C63.10:2020                                |
| Test Frequency Range: | 150KHz to 30MHz                                 |
| Receiver setup:       | RBW=9KHz, VBW=30KHz, Sweep time=auto            |

##### 4.1.1 POWER LINE CONDUCTED EMISSION Limits

| FREQUENCY (MHz) | Limit (dBuV) |           | Standard |
|-----------------|--------------|-----------|----------|
|                 | Quas-peak    | Average   |          |
| 0.15 -0.5       | 66 - 56 *    | 56 - 46 * | FCC      |
| 0.50 -5.0       | 56.00        | 46.00     | FCC      |
| 5.0 -30.0       | 60.00        | 50.00     | FCC      |

Note:

(1) \*Decreases with the logarithm of the frequency.

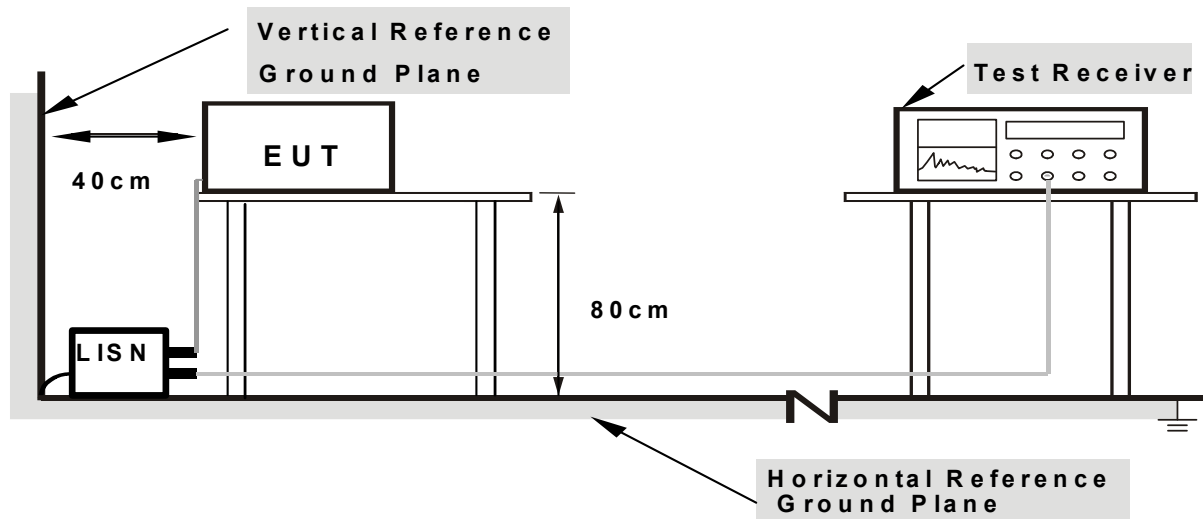
##### 4.1.2 TEST PROCEDURE

- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

##### 4.1.3 DEVIATION FROM TEST STANDARD

No deviation

#### 4.1.4 TEST SETUP



**Note: 1. Support units were connected to second LISN.**

**2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes**

#### 4.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to Charging during test. This operating condition was tested and used to collect the included data.

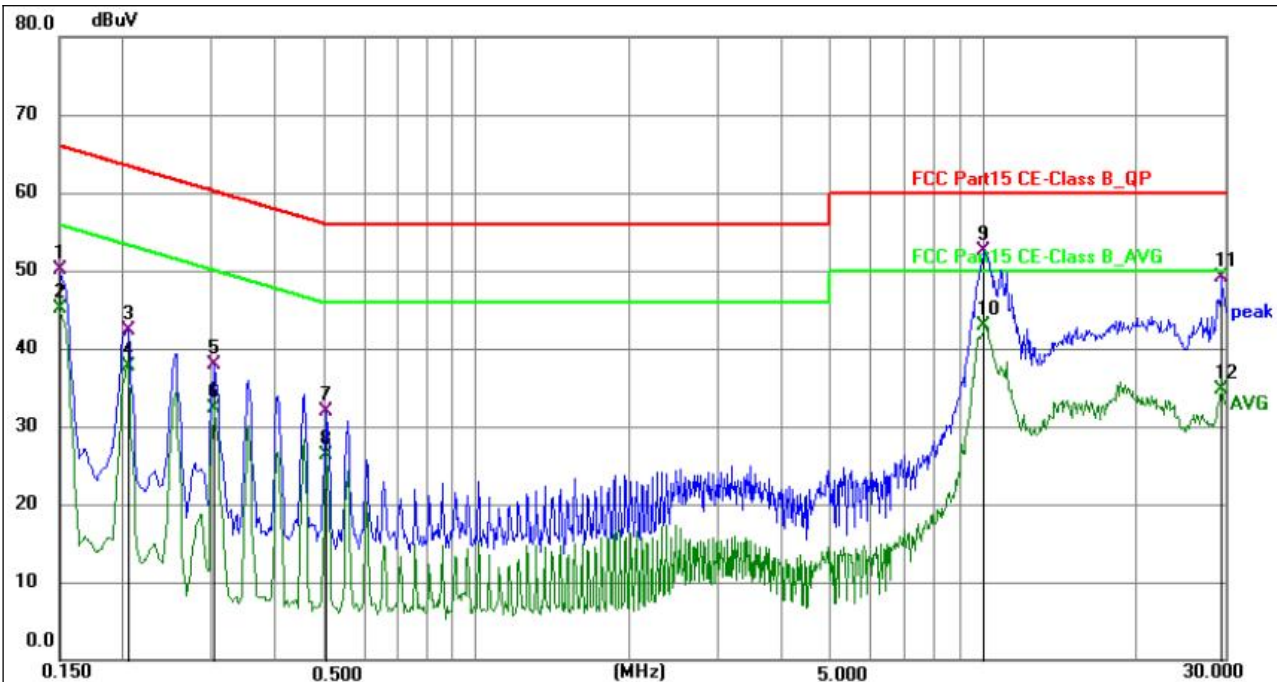
We pretest AC 120V and AC 230V, the worst voltage was AC 120V and the data recording in the report.

#### 4.1.6 Test Result

PASS

## 4.1.6 Test Result ( Worst case GFSK 2402MHz )

|                |              |                    |     |
|----------------|--------------|--------------------|-----|
| Temperature :  | 26°C         | Relative Humidity: | 54% |
| Pressure :     | 101kPa       | Phase :            | L   |
| Test Voltage : | AC 120V/60Hz |                    |     |

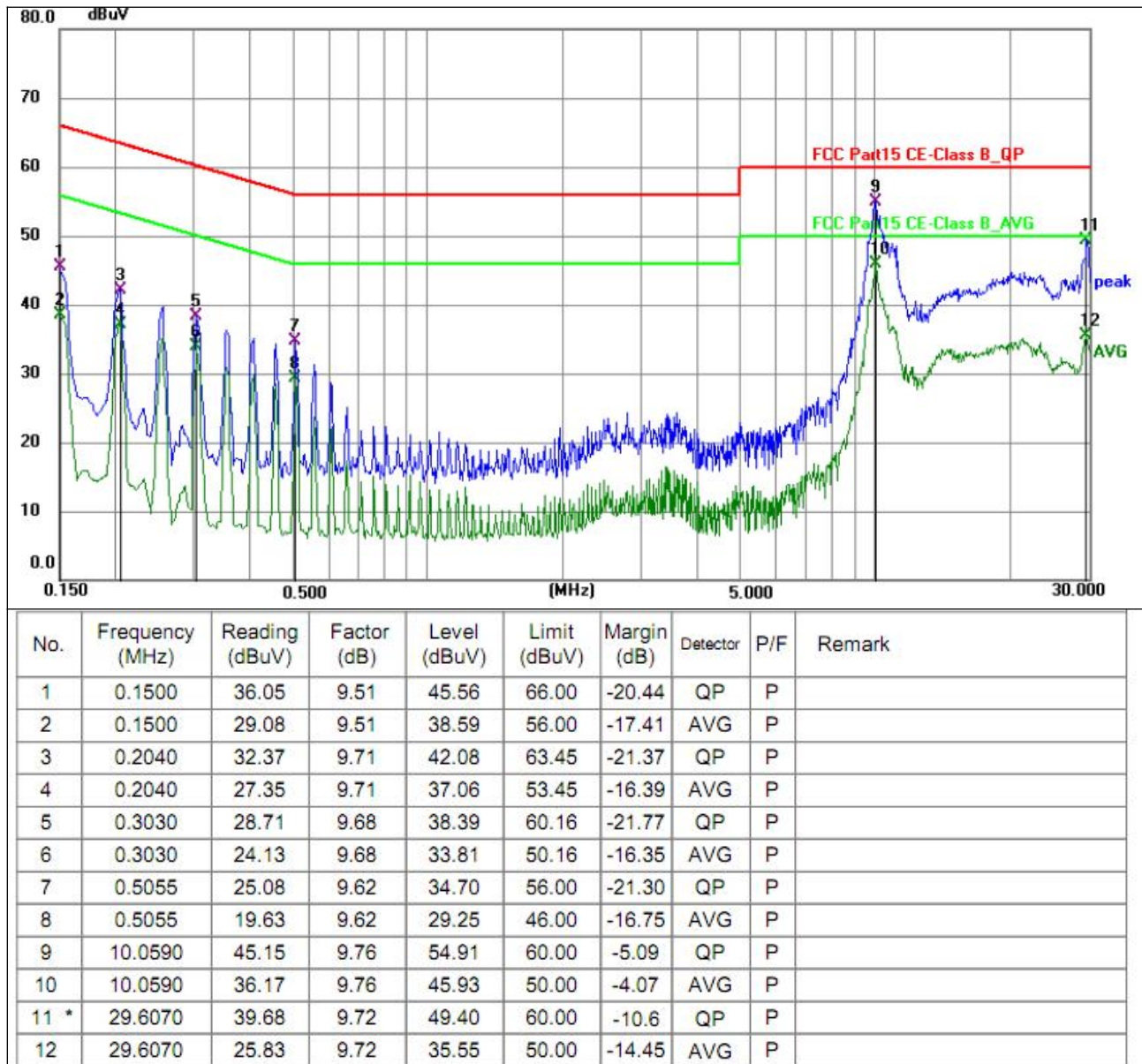


| No.  | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector | P/F | Remark |
|------|-----------------|----------------|-------------|--------------|--------------|-------------|----------|-----|--------|
| 1    | 0.1500          | 40.58          | 9.51        | 50.09        | 66.00        | -15.91      | QP       | P   |        |
| 2    | 0.1500          | 35.61          | 9.51        | 45.12        | 56.00        | -10.88      | AVG      | P   |        |
| 3    | 0.2040          | 32.61          | 9.71        | 42.32        | 63.45        | -21.13      | QP       | P   |        |
| 4    | 0.2040          | 28.02          | 9.71        | 37.73        | 53.45        | -15.72      | AVG      | P   |        |
| 5    | 0.3030          | 28.24          | 9.68        | 37.92        | 60.16        | -22.24      | QP       | P   |        |
| 6    | 0.3030          | 22.62          | 9.68        | 32.30        | 50.16        | -17.86      | AVG      | P   |        |
| 7    | 0.5055          | 22.30          | 9.62        | 31.92        | 56.00        | -24.08      | QP       | P   |        |
| 8    | 0.5055          | 16.65          | 9.62        | 26.27        | 46.00        | -19.73      | AVG      | P   |        |
| 9    | 10.0410         | 42.82          | 9.76        | 52.58        | 60.00        | -7.42       | QP       | P   |        |
| 10 * | 10.0410         | 33.16          | 9.76        | 42.92        | 50.00        | -7.08       | AVG      | P   |        |
| 11   | 29.6565         | 39.30          | 9.72        | 49.02        | 60.00        | -10.98      | QP       | P   |        |
| 12   | 29.6565         | 24.92          | 9.72        | 34.64        | 50.00        | -15.36      | AVG      | P   |        |

## Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Measurement Level = Reading level + Correct Factor

|                |              |                    |     |
|----------------|--------------|--------------------|-----|
| Temperature :  | 26°C         | Relative Humidity: | 54% |
| Pressure :     | 101kPa       | Phase :            | N   |
| Test Voltage : | AC 120V/60Hz |                    |     |



## Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Measurement Level = Reading level + Correct Factor

**4.2 Radiated Spurious Emissions, Restrict band and Field Strength of The Fundamental Signal**

|                       |                                                                                                                               |            |        |        |            |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------|------------|--------|--------|------------|
| Test Requirement:     | FCC CFR47 Part 15 Section 15.209 & 15.205&15.249<br>RSS-210 B.10(a)& RSS-210 B.10(b)&RSS GEN 8.10&RSS-210 B.10(b)&RSS GEN 8.9 |            |        |        |            |
| Test Method:          | ANSI C63.10:2020                                                                                                              |            |        |        |            |
| Test Frequency Range: | 9kHz to 25GHz                                                                                                                 |            |        |        |            |
| Test site:            | Measurement Distance: 3m                                                                                                      |            |        |        |            |
| Receiver setup:       | Frequency                                                                                                                     | Detector   | RBW    | VBW    | Value      |
|                       | 9KHz-150KHz                                                                                                                   | Quasi-peak | 200Hz  | 600Hz  | Quasi-peak |
|                       | 150KHz-30MHz                                                                                                                  | Quasi-peak | 9KHz   | 30KHz  | Quasi-peak |
|                       | 30MHz-1GHz                                                                                                                    | Quasi-peak | 100KHz | 300KHz | Quasi-peak |
|                       | Above 1GHz                                                                                                                    | Peak       | 1MHz   | 3MHz   | Peak       |
|                       |                                                                                                                               | Peak       | 1MHz   | 10Hz   | Average    |

**4.2.1 RADIATED EMISSION LIMITS**

| Frequencies (MHz) | Field Strength (micorvolts/meter) | Measurement Distance (meters) |
|-------------------|-----------------------------------|-------------------------------|
| 0.009~0.490       | 2400/F(KHz)                       | 300                           |
| 0.490~1.705       | 24000/F(KHz)                      | 30                            |
| 1.705~30.0        | 30                                | 30                            |
| 30~88             | 100                               | 3                             |
| 88~216            | 150                               | 3                             |
| 216~960           | 200                               | 3                             |
| Above 960         | 500                               | 3                             |

**LIMITS OF RADIATED EMISSION MEASUREMENT**

| FREQUENCY (MHz) | Limit (dBuV/m) (at 3M) |         |
|-----------------|------------------------|---------|
|                 | PEAK                   | AVERAGE |
| Above 1000      | 74                     | 54      |

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).



#### 4.2.2 TEST PROCEDURE

- a. The measuring distance of at 3 m shall be used for measurements at frequency up to 25GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-chamber test. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8m; above 1GHz, the height was 1.5m, the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.
- g. For the radiated emission test above 1GHz:

Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response.

The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

Note:

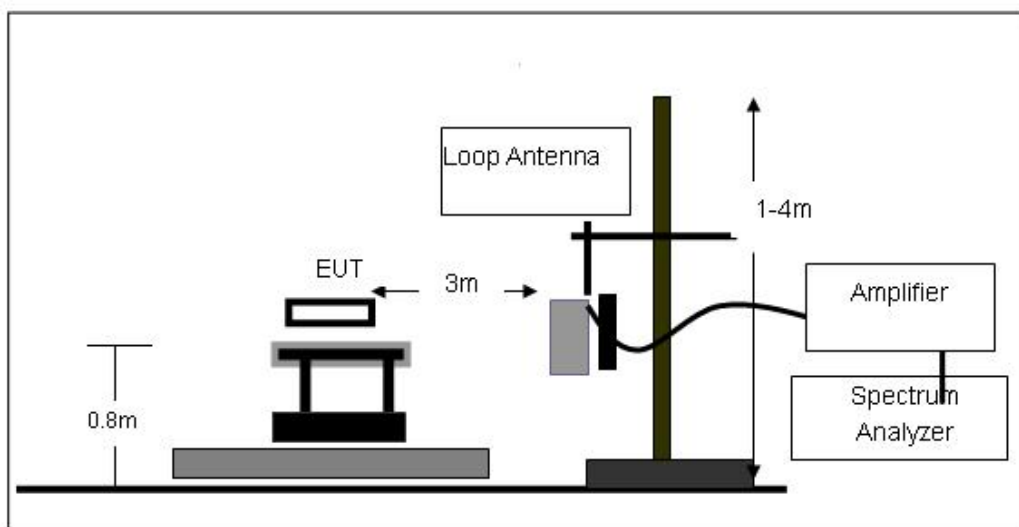
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

#### 4.2.3 DEVIATION FROM TEST STANDARD

No deviation

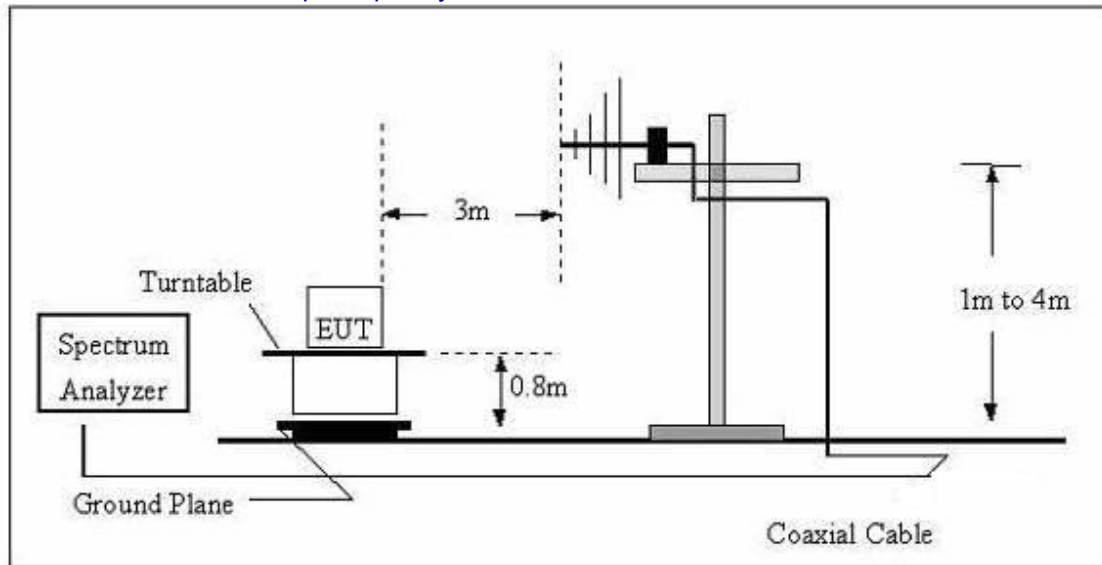
#### 4.2.4 TEST SETUP

##### (A) Radiated Emission Test-Up Frequency Below 30MHz

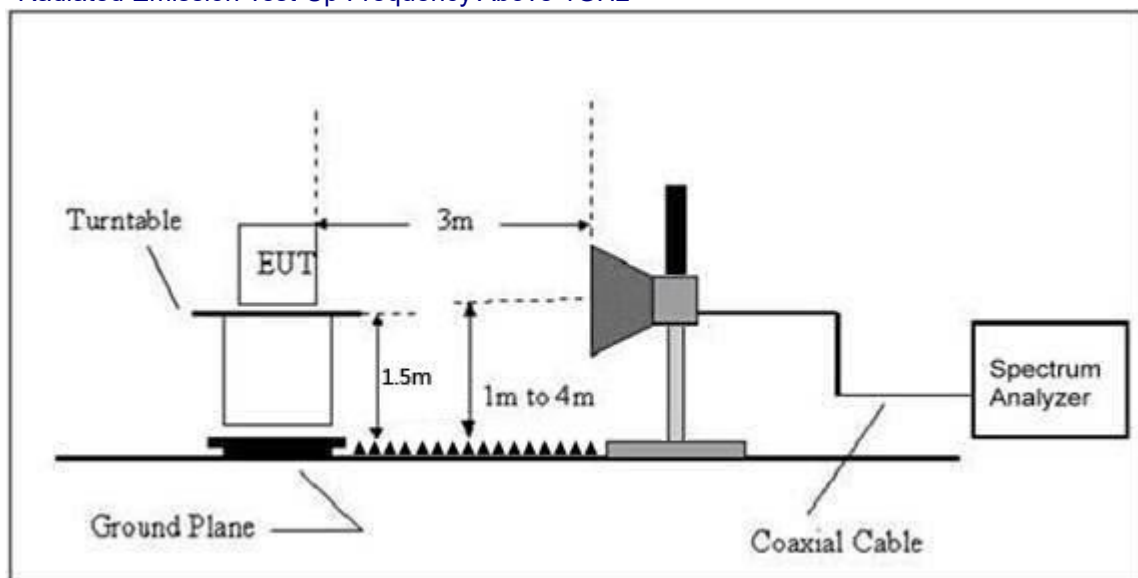




## (B) Radiated Emission Test-Up Frequency 30MHz~1GHz



## (C) Radiated Emission Test-Up Frequency Above 1GHz



## 4.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

## 4.2.6 TEST RESULTS (Between 9KHz – 30 MHz)

The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o) & RSS-Gen 6.13, the test result no need to reported.

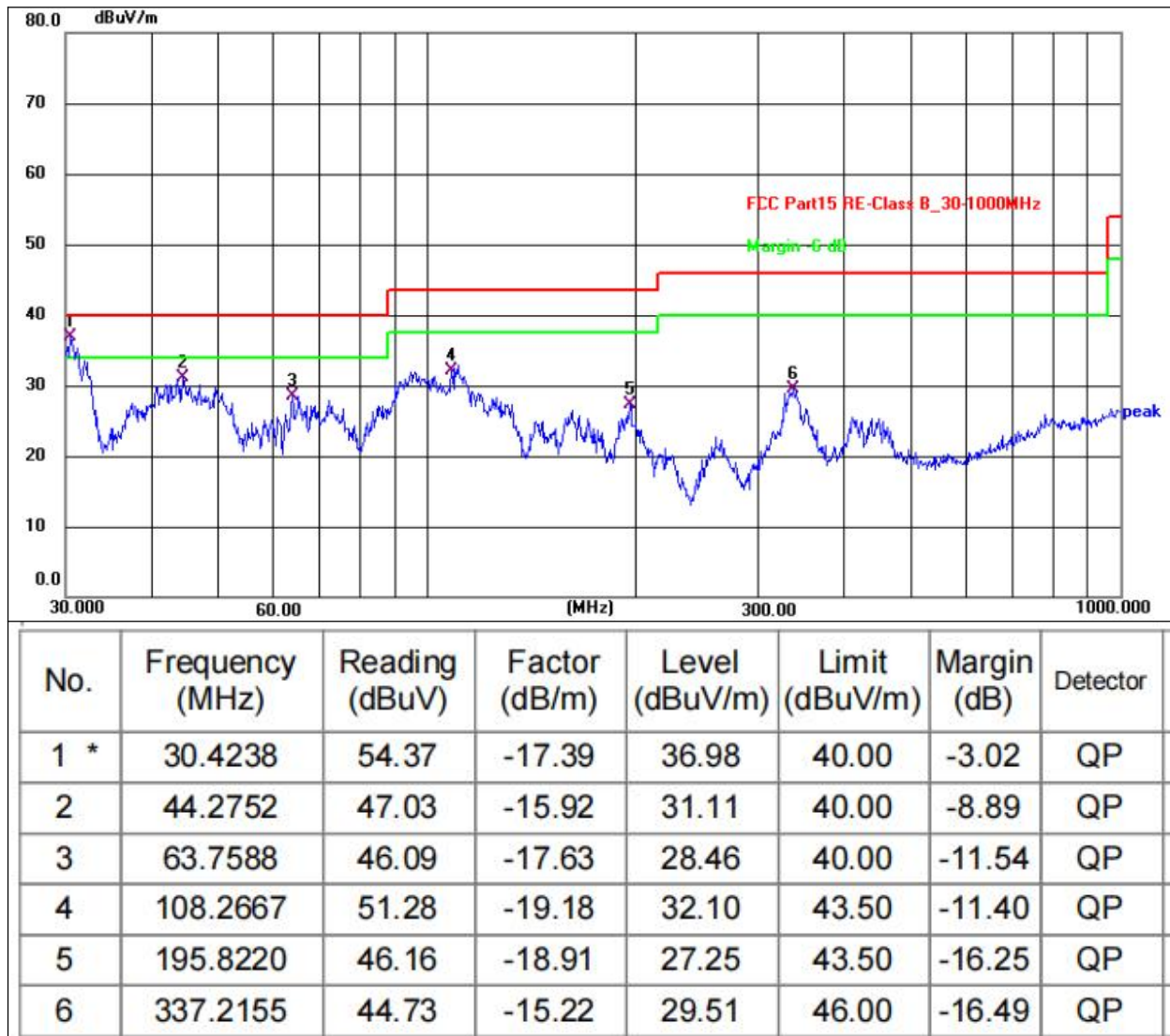
Between 30MHz – 1GHz ( Worst case GFSK 2402MHz )

|               |              |                    |            |
|---------------|--------------|--------------------|------------|
| Temperature:  | 26℃          | Relative Humidity: | 54%        |
| Pressure:     | 101kPa       | Polarization:      | Horizontal |
| Test Voltage: | AC 120V/60Hz |                    |            |



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1   | 30.3173         | 42.79          | -17.41        | 25.38          | 40.00          | -14.62      | QP       |
| 2   | 65.1145         | 45.85          | -17.75        | 28.10          | 40.00          | -11.90      | QP       |
| 3   | 102.3597        | 47.89          | -19.80        | 28.09          | 43.50          | -15.41      | QP       |
| 4   | 169.0054        | 43.99          | -16.36        | 27.63          | 43.50          | -15.87      | QP       |
| 5   | 211.5265        | 49.85          | -19.18        | 30.67          | 43.50          | -12.83      | QP       |
| 6 * | 333.6867        | 52.91          | -15.25        | 37.66          | 46.00          | -8.34       | QP       |

|               |              |                    |          |
|---------------|--------------|--------------------|----------|
| Temperature:  | 26°C         | Relative Humidity: | 54%      |
| Pressure:     | 101kPa       | Polarization:      | Vertical |
| Test Voltage: | AC 120V/60Hz |                    |          |



## Remarks:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.
3. The test data shows only the worst case GFSK mode

1GHz~25GHz

| Polar<br>(H/V)      | Frequency | Meter<br>Reading | Pre-ampli<br>fier | Cable<br>Loss | Antenna<br>Factor | Emission<br>Level | Limits   | Margin | Detector<br>Type |
|---------------------|-----------|------------------|-------------------|---------------|-------------------|-------------------|----------|--------|------------------|
|                     | (MHz)     | (dBuV)           | (dB)              | (dB)          | (dB)              | (dBuV/m)          | (dBuV/m) | (dB)   |                  |
| Low Channel:2402MHz |           |                  |                   |               |                   |                   |          |        |                  |
| V                   | 4804.00   | 51.56            | 30.55             | 5.77          | 24.66             | 51.44             | 74.00    | -22.56 | Pk               |
| V                   | 4804.00   | 43.88            | 30.55             | 5.77          | 24.66             | 43.76             | 54.00    | -10.24 | AV               |
| V                   | 7206.00   | 52.69            | 30.33             | 6.32          | 24.55             | 53.23             | 74.00    | -20.77 | Pk               |
| V                   | 7206.00   | 43.27            | 30.33             | 6.32          | 24.55             | 43.81             | 54.00    | -10.19 | AV               |
| V                   | 9608.00   | 53.68            | 30.85             | 7.45          | 24.69             | 54.97             | 74.00    | -19.03 | Pk               |
| V                   | 9608.00   | 43.34            | 30.85             | 7.45          | 24.69             | 44.63             | 54.00    | -9.37  | AV               |
| V                   | 12010.00  | 54.66            | 31.02             | 8.99          | 25.57             | 58.20             | 74.00    | -15.80 | Pk               |
| V                   | 12010.00  | 43.15            | 31.02             | 8.99          | 25.57             | 46.69             | 54.00    | -7.31  | AV               |
| H                   | 4804.00   | 54.18            | 30.55             | 5.77          | 24.66             | 54.06             | 74.00    | -19.94 | Pk               |
| H                   | 4804.00   | 43.30            | 30.55             | 5.77          | 24.66             | 43.18             | 54.00    | -10.82 | AV               |
| H                   | 7206.00   | 51.12            | 30.33             | 6.32          | 24.55             | 51.66             | 74.00    | -22.34 | Pk               |
| H                   | 7206.00   | 43.99            | 30.33             | 6.32          | 24.55             | 44.53             | 54.00    | -9.47  | AV               |
| H                   | 9608.00   | 50.28            | 30.85             | 7.45          | 24.69             | 51.57             | 74.00    | -22.43 | Pk               |
| H                   | 9608.00   | 43.33            | 30.85             | 7.45          | 24.69             | 44.62             | 54.00    | -9.38  | AV               |
| H                   | 12010.00  | 50.34            | 31.02             | 8.99          | 25.57             | 53.88             | 74.00    | -20.12 | Pk               |
| H                   | 12010.00  | 43.99            | 31.02             | 8.99          | 25.57             | 47.53             | 54.00    | -6.47  | AV               |

| Polar<br>(H/V)         | Frequency | Meter<br>Reading | Pre-ampli<br>fier | Cable<br>Loss | Antenna<br>Factor | Emission<br>Level | Limits   | Margin | Detector<br>Type |
|------------------------|-----------|------------------|-------------------|---------------|-------------------|-------------------|----------|--------|------------------|
|                        | (MHz)     | (dBuV)           | (dB)              | (dB)          | (dB)              | (dBuV/m)          | (dBuV/m) | (dB)   |                  |
| Middle Channel:2440MHz |           |                  |                   |               |                   |                   |          |        |                  |
| V                      | 4880.00   | 52.74            | 30.55             | 5.77          | 24.66             | 52.62             | 74.00    | -21.38 | Pk               |
| V                      | 4880.00   | 43.08            | 30.55             | 5.77          | 24.66             | 42.96             | 54.00    | -11.04 | AV               |
| V                      | 7320.00   | 51.27            | 30.33             | 6.32          | 24.55             | 51.81             | 74.00    | -22.19 | Pk               |
| V                      | 7320.00   | 43.61            | 30.33             | 6.32          | 24.55             | 44.15             | 54.00    | -9.85  | AV               |
| V                      | 9760.00   | 53.52            | 30.85             | 7.45          | 24.69             | 54.81             | 74.00    | -19.19 | Pk               |
| V                      | 9760.00   | 43.90            | 30.85             | 7.45          | 24.69             | 45.19             | 54.00    | -8.81  | AV               |
| V                      | 12200.00  | 51.50            | 31.02             | 8.99          | 25.57             | 55.04             | 74.00    | -18.96 | Pk               |
| V                      | 12200.00  | 43.84            | 31.02             | 8.99          | 25.57             | 47.38             | 54.00    | -6.62  | AV               |
| H                      | 4880.00   | 52.15            | 30.55             | 5.77          | 24.66             | 52.03             | 74.00    | -21.97 | Pk               |
| H                      | 4880.00   | 43.27            | 30.55             | 5.77          | 24.66             | 43.15             | 54.00    | -10.85 | AV               |
| H                      | 7320.00   | 52.93            | 30.33             | 6.32          | 24.55             | 53.47             | 74.00    | -20.53 | Pk               |
| H                      | 7320.00   | 43.58            | 30.33             | 6.32          | 24.55             | 44.12             | 54.00    | -9.88  | AV               |
| H                      | 9760.00   | 51.47            | 30.85             | 7.45          | 24.69             | 52.76             | 74.00    | -21.24 | Pk               |
| H                      | 9760.00   | 43.62            | 30.85             | 7.45          | 24.69             | 44.91             | 54.00    | -9.09  | AV               |
| H                      | 12200.00  | 53.65            | 31.02             | 8.99          | 25.57             | 57.19             | 74.00    | -16.81 | Pk               |
| H                      | 12200.00  | 43.71            | 31.02             | 8.99          | 25.57             | 47.25             | 54.00    | -6.75  | AV               |

| Polar<br>(H/V)       | Frequency | Meter<br>Reading | Pre-ampli<br>fier | Cable<br>Loss | Antenna<br>Factor | Emission<br>Level | Limits   | Margin | Detector<br>Type |
|----------------------|-----------|------------------|-------------------|---------------|-------------------|-------------------|----------|--------|------------------|
|                      | (MHz)     | (dBuV)           | (dB)              | (dB)          | (dB)              | (dBuV/m)          | (dBuV/m) | (dB)   |                  |
| High Channel:2480MHz |           |                  |                   |               |                   |                   |          |        |                  |
| V                    | 4960.00   | 50.07            | 30.55             | 5.77          | 24.66             | 49.95             | 74.00    | -24.05 | Pk               |
| V                    | 4960.00   | 43.89            | 30.55             | 5.77          | 24.66             | 43.77             | 54.00    | -10.23 | AV               |
| V                    | 7440.00   | 51.72            | 30.33             | 6.32          | 24.55             | 52.26             | 74.00    | -21.74 | Pk               |
| V                    | 7440.00   | 43.11            | 30.33             | 6.32          | 24.55             | 43.65             | 54.00    | -10.35 | AV               |
| V                    | 9920.00   | 54.73            | 30.85             | 7.45          | 24.69             | 56.02             | 74.00    | -17.98 | Pk               |
| V                    | 9920.00   | 43.49            | 30.85             | 7.45          | 24.69             | 44.78             | 54.00    | -9.22  | AV               |
| V                    | 12400.00  | 54.20            | 31.02             | 8.99          | 25.57             | 57.74             | 74.00    | -16.26 | Pk               |
| V                    | 12400.00  | 43.40            | 31.02             | 8.99          | 25.57             | 46.94             | 54.00    | -7.06  | AV               |
| H                    | 4960.00   | 54.54            | 30.55             | 5.77          | 24.66             | 54.42             | 74.00    | -19.58 | Pk               |
| H                    | 4960.00   | 43.70            | 30.55             | 5.77          | 24.66             | 43.58             | 54.00    | -10.42 | AV               |
| H                    | 7440.00   | 50.62            | 30.33             | 6.32          | 24.55             | 51.16             | 74.00    | -22.84 | Pk               |
| H                    | 7440.00   | 43.39            | 30.33             | 6.32          | 24.55             | 43.93             | 54.00    | -10.07 | AV               |
| H                    | 9920.00   | 50.75            | 30.85             | 7.45          | 24.69             | 52.04             | 74.00    | -21.96 | Pk               |
| H                    | 9920.00   | 43.09            | 30.85             | 7.45          | 24.69             | 44.38             | 54.00    | -9.62  | AV               |
| H                    | 12400.00  | 54.68            | 31.02             | 8.99          | 25.57             | 58.22             | 74.00    | -15.78 | Pk               |
| H                    | 12400.00  | 43.13            | 31.02             | 8.99          | 25.57             | 46.67             | 54.00    | -7.33  | AV               |

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,  
Margin= Emission Level - Limit

2. If peak below the average limit, the average emission was no test.

3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

## Spurious Emission in Restricted Band 2310-2400 and 2483.5-2500MHz

|      | Polar<br>(H/V)        | Frequenc<br>y<br>(MHz) | Meter<br>Reading<br>(dBuV) | Pre-<br>amplifier<br>(dB) | Cable<br>Loss<br>(dB) | Antenna<br>Factor<br>(dB/m) | Emission<br>level<br>(dBuV/m) | Limit<br>(dBuV<br>/m) | Detec<br>tor<br>Type | Result |
|------|-----------------------|------------------------|----------------------------|---------------------------|-----------------------|-----------------------------|-------------------------------|-----------------------|----------------------|--------|
| GFSK | Low Channel: 2402MHz  |                        |                            |                           |                       |                             |                               |                       |                      |        |
|      | H                     | 2390.00                | 54.12                      | 30.22                     | 4.85                  | 23.98                       | 52.73                         | 74.00                 | Pk                   | PASS   |
|      | H                     | 2390.00                | 44.37                      | 30.22                     | 4.85                  | 23.98                       | 42.98                         | 54.00                 | AV                   | PASS   |
|      | H                     | 2400.00                | 53.18                      | 30.22                     | 4.85                  | 23.98                       | 51.79                         | 74.00                 | Pk                   | PASS   |
|      | H                     | 2400.00                | 44.58                      | 30.22                     | 4.85                  | 23.98                       | 43.19                         | 54.00                 | AV                   | PASS   |
|      | V                     | 2390.00                | 53.41                      | 30.22                     | 4.85                  | 23.98                       | 52.02                         | 74.00                 | Pk                   | PASS   |
|      | V                     | 2390.00                | 44.64                      | 30.22                     | 4.85                  | 23.98                       | 43.25                         | 54.00                 | AV                   | PASS   |
|      | V                     | 2400.00                | 53.25                      | 30.22                     | 4.85                  | 23.98                       | 51.86                         | 74.00                 | Pk                   | PASS   |
|      | V                     | 2400.00                | 44.13                      | 30.22                     | 4.85                  | 23.98                       | 42.74                         | 54.00                 | AV                   | PASS   |
|      | High Channel: 2480MHz |                        |                            |                           |                       |                             |                               |                       |                      |        |
|      | H                     | 2483.50                | 53.87                      | 30.22                     | 4.85                  | 23.98                       | 52.48                         | 74.00                 | Pk                   | PASS   |
|      | H                     | 2483.50                | 44.15                      | 30.22                     | 4.85                  | 23.98                       | 42.76                         | 54.00                 | AV                   | PASS   |
|      | H                     | 2500.00                | 53.68                      | 30.22                     | 4.85                  | 23.98                       | 52.29                         | 74.00                 | Pk                   | PASS   |
|      | H                     | 2500.00                | 44.84                      | 30.22                     | 4.85                  | 23.98                       | 43.45                         | 54.00                 | AV                   | PASS   |
|      | V                     | 2483.50                | 54.60                      | 30.22                     | 4.85                  | 23.98                       | 53.21                         | 74.00                 | Pk                   | PASS   |
|      | V                     | 2483.50                | 44.94                      | 30.22                     | 4.85                  | 23.98                       | 43.55                         | 54.00                 | AV                   | PASS   |
|      | V                     | 2500.00                | 54.15                      | 30.22                     | 4.85                  | 23.98                       | 52.76                         | 74.00                 | Pk                   | PASS   |
|      | V                     | 2500.00                | 44.61                      | 30.22                     | 4.85                  | 23.98                       | 43.22                         | 54.00                 | AV                   | PASS   |

## Remark:

Emission Level = Meter Reading + Antenna Factor + Cable Loss - Pre-amplifier, Margin= Emission Level - Limit  
 . The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

## Field Strength of The Fundamental Signal Data

## GFSK

| Frequency            | Receiver Reading | Detector    | Turn table Angle | RX Antenna |       | Corrected Factor | Corrected Amplitude | Limit          | Margin |
|----------------------|------------------|-------------|------------------|------------|-------|------------------|---------------------|----------------|--------|
|                      |                  |             |                  | Height     | Polar |                  |                     |                |        |
| (MHz)                | (dB $\mu$ V)     | (PK/QP/Ave) | Degree           | (m)        | (H/V) | (dB)             | (dB $\mu$ V/m)      | (dB $\mu$ V/m) | (dB)   |
| Low Channel: 2402MHz |                  |             |                  |            |       |                  |                     |                |        |
| 2402                 | 103.17           | PK          | 230              | 1.8        | V     | -1.06            | <b>102.11</b>       | 114.00         | -11.89 |
| 2402                 | 90.58            | Ave         | 289              | 1.9        | V     | -1.06            | 89.52               | 94.00          | -4.48  |
| 2402                 | 102.66           | PK          | 130              | 1.4        | H     | -1.06            | 101.60              | 114.00         | -12.40 |
| 2402                 | 89.88            | Ave         | 130              | 1.4        | H     | -1.06            | 88.82               | 94.00          | -5.18  |

## Mid CH

| Frequency              | Receiver Reading | Detector    | Turn table Angle | RX Antenna |       | Corrected Factor | Corrected Amplitude | Limit          | Margin |
|------------------------|------------------|-------------|------------------|------------|-------|------------------|---------------------|----------------|--------|
|                        |                  |             |                  | Height     | Polar |                  |                     |                |        |
| (MHz)                  | (dB $\mu$ V)     | (PK/QP/Ave) | Degree           | (m)        | (H/V) | (dB)             | (dB $\mu$ V/m)      | (dB $\mu$ V/m) | (dB)   |
| Middle Channel:2440MHz |                  |             |                  |            |       |                  |                     |                |        |
| 2440                   | 102.12           | PK          | 229              | 1.3        | V     | -1.32            | 100.80              | 114.00         | -13.20 |
| 2440                   | 89.05            | Ave         | 229              | 1.3        | V     | -1.32            | 87.73               | 94.00          | -6.27  |
| 2440                   | 102.88           | PK          | 156              | 1.6        | H     | -1.32            | 101.56              | 114.00         | -12.44 |
| 2440                   | 90.77            | Ave         | 156              | 1.6        | H     | -1.32            | 89.45               | 94.00          | -4.55  |

## High CH

| Frequency             | Receiver Reading | Detector    | Turn table Angle | RX Antenna |       | Corrected Factor | Corrected Amplitude | Limit          | Margin |
|-----------------------|------------------|-------------|------------------|------------|-------|------------------|---------------------|----------------|--------|
|                       |                  |             |                  | Height     | Polar |                  |                     |                |        |
| (MHz)                 | (dB $\mu$ V)     | (PK/QP/Ave) | Degree           | (m)        | (H/V) | (dB)             | (dB $\mu$ V/m)      | (dB $\mu$ V/m) | (dB)   |
| High Channel: 2480MHz |                  |             |                  |            |       |                  |                     |                |        |
| 2480                  | 102.07           | PK          | 164              | 1.7        | V     | -1.78            | 100.29              | 114.00         | -13.71 |
| 2480                  | 90.65            | Ave         | 164              | 1.7        | V     | -1.78            | 88.87               | 94.00          | -5.13  |
| 2480                  | 102.98           | PK          | 264              | 1.9        | H     | -1.78            | 101.20              | 114.00         | -12.80 |
| 2480                  | 91.68            | Ave         | 264              | 1.9        | H     | -1.78            | 89.90               | 94.00          | -4.10  |

## 5. CHANNEL BANDWIDTH

|                   |                                                      |
|-------------------|------------------------------------------------------|
| Test Requirement: | FCC CFR47 Part 15 Section 15.215&RSS-Gen Section 6.7 |
| Test Method:      | ANSI C63.10:2020                                     |

### 5.1 APPLIED PROCEDURES / LIMIT

| FCC Part15 (15.215) , Subpart C |           |                   |                          |        |
|---------------------------------|-----------|-------------------|--------------------------|--------|
| Section                         | Test Item | Limit             | Frequency Range<br>(MHz) | Result |
| 15.215                          | Bandwidth | (-20dB bandwidth) | 2400-2483.5              | PASS   |

### 5.2 TEST PROCEDURE

1. Set the spectrum analyzer: RBW = 1%-5% OBW
2. Set the video bandwidth (VBW)  $\geq 3 \times$  RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by -20 dB relative to the maximum level measured in the fundamental emission.

### 5.3 DEVIATION FROM STANDARD

No deviation.

### 5.4 TEST SETUP



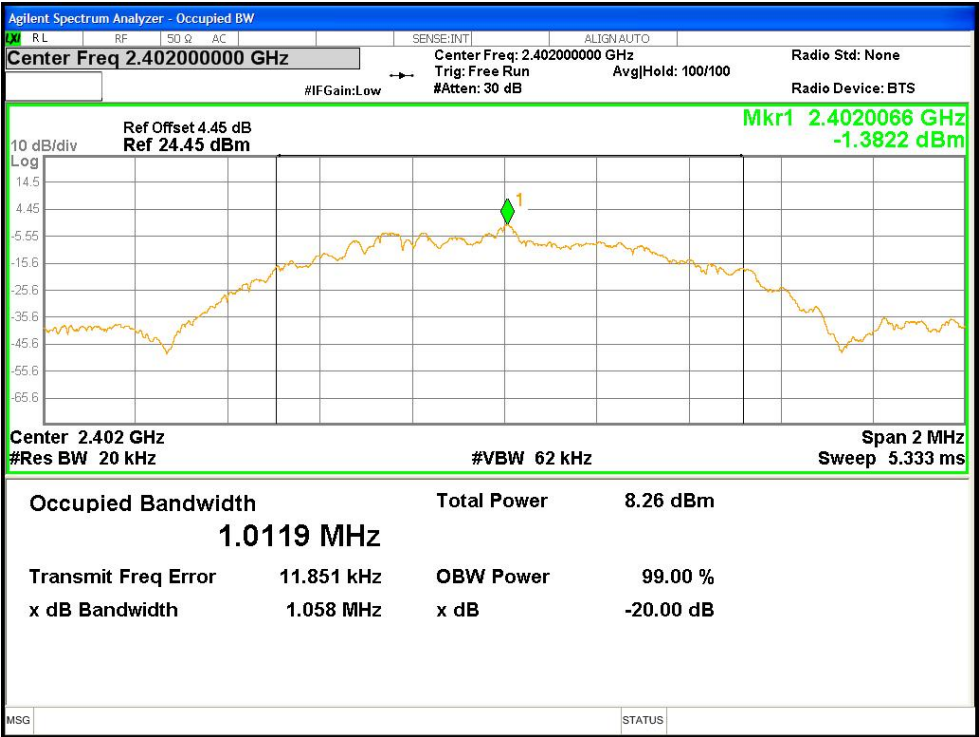
### 5.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

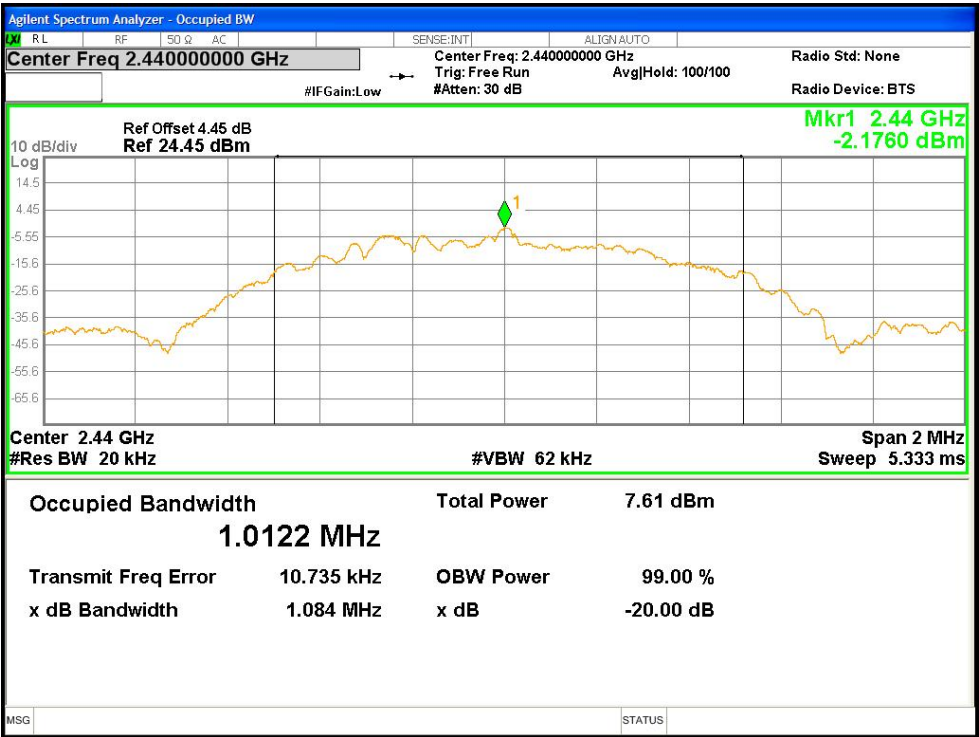


5.6 TEST RESULT

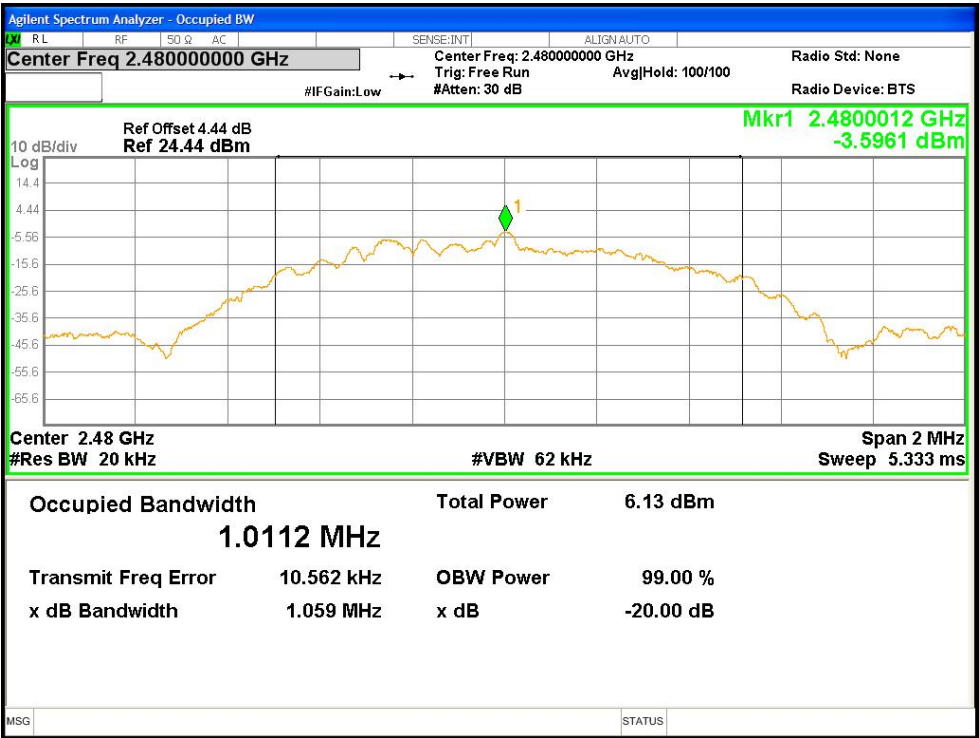
| Mode   | Frequency<br>(MHz) | Antenna | 99% OBW (MHz) | -20dB OBW (MHz) |
|--------|--------------------|---------|---------------|-----------------|
| BLE 1M | 2402               | Ant1    | 1.012         | 1.058           |
| BLE 1M | 2440               | Ant1    | 1.012         | 1.084           |
| BLE 1M | 2480               | Ant1    | 1.011         | 1.059           |



OBW NVNT BLE 1M 2402MHz Ant1



OBW NVNT BLE 1M 2440MHz Ant1



OBW NVNT BLE 1M 2480MHz Ant1

**6.ANTENNA REQUIREMENT**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| Standard requirement:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | FCC Part15 C Section 15.203&RSS-Gen Section 6.8 |
| <p>15.203 requirement:</p> <p>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, 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.</p> <p>According to the RSS-GEN section 6.8, 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. This product has an PCB antenna fulfil the requirement of this section</p> |                                                 |
| EUT Antenna:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                 |
| The antenna is PCB ANT, the best case gain of the antennas is -0.58dBi, reference to the appendix II for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                 |

## **7. TEST SETUP PHOTO**

Reference to the appendix I for details.

## **8. EUT CONSTRUCTIONAL DETAILS**

Reference to the appendix II for details.

**\*\*\*\*\* END OF REPORT \*\*\*\*\***