



# **FCC PART 15 SUBPART C FCC PART 15.247 TEST REPORT**

**FCC ID:2BP7M-FALCONAP1MINI**

**Report No:** CTSL2521220070ER01

**Product Name:** INTELLIGENT AIR PURIFIER

**Main Test Model:** Falcon AP1mini

**Series Models:** --

**Applicant:** Shenzhen Creality Ecosystem Technology Co., Ltd.

## **EXECUTIVE SUMMARY**

A sample of this product was tested and found to be in compliance with  
FCC PART 15C, FCC PART 15 SUBPART C (15.247).

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applicable to presented Test sample.

**CTSL Testing (Dongguan) Co., Ltd.**

Main company address: Building1, Houjie Road Houjie Town, Guangdong Province,  
Dongguan City P.R.C.

## Test Report

FCC ID:2BP7M-FALCONAP1MINI

|                         |                                                                                                                                                                                                                      |             |                      |            |                                                                                       |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------|------------|---------------------------------------------------------------------------------------|
| Applicant Name          | Shenzhen Creality Ecosystem Technology Co., Ltd.                                                                                                                                                                     |             |                      |            |                                                                                       |
| Applicant Address       | Room 1205, JinXiuHongDu Building, Meilong Blvd., Longhua Dist., Shenzhen, China 518131                                                                                                                               |             |                      |            |                                                                                       |
| Manufacturer Name       | GUANGDONG NEWOXY PURIFICATION TECHNOLOGY CO.,LTD                                                                                                                                                                     |             |                      |            |                                                                                       |
| Manufacturer Address    | No. 3 Jiangang Road, Chang'an Town, Dongguan City, Guangdong Province                                                                                                                                                |             |                      |            |                                                                                       |
| Trade Mark              | Falcon, Creality                                                                                                                                                                                                     |             |                      |            |                                                                                       |
| Product name            | INTELLIGENT AIR PURIFIER                                                                                                                                                                                             |             |                      |            |                                                                                       |
| Main Test Model         | Falcon AP1mini                                                                                                                                                                                                       |             |                      |            |                                                                                       |
| Series Models           | --                                                                                                                                                                                                                   |             |                      |            |                                                                                       |
| Standard                | FCC Part 15 Subpart C (15.247)<br>ANSI C63.10:2020<br>FCC KDB 558074 D01 15.247 Meas Guidance v05r02                                                                                                                 |             |                      |            |                                                                                       |
| Test Location           | ISO/IEC 17025 by ILAC-MRA is A2LA 7556.01<br>CTSL Testing (Dongguan) Co., Ltd.<br>Room 112, Building 1, No. 15, Jiaoyuansongshan Hetian Village, Houjie Town<br>Dongguan City, Guangdong, People's Republic of China |             |                      |            |                                                                                       |
| Receipt Date            | 2025.12.3                                                                                                                                                                                                            | Test period | 2025.12.3-2025.12.24 | Issue Date | 2025.12.24                                                                            |
| Conclusion              | The equipment under test was found to be compliance with the requirements of the standards applied.                                                                                                                  |             |                      |            |                                                                                       |
| Performs Testing:       | Ethan Zhao                                                                                                                                                                                                           | ethan zhao  |                      |            |  |
| Test Report Reviewer:   | Steve Qin                                                                                                                                                                                                            | steve qin   |                      |            |                                                                                       |
| Test Report Authorizer: | Alan Li                                                                                                                                                                                                              | Alan Li     |                      |            |                                                                                       |

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## 1. GENERAL INFORMATION

### 1.1. General Description of EUT (Equipment Under Test)

| Product Information                |                                                                                                                                                                                 |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Name                       | : INTELLIGENT AIR PURIFIER                                                                                                                                                      |
| Main Test Model                    | : Falcon AP1mini                                                                                                                                                                |
| Series Models                      | : --                                                                                                                                                                            |
| Power supply                       | : For SWITCHING ADAPTER<br>Input: 100-240V~50/60Hz 2.5A Max.;<br>Output: 24.0V= 3.5A 84.0W<br>For INTELLIGENT AIR PURIFIER: DC24V,55.0W<br>RF EUT:DC 3.3V From PCB board(DC 5V) |
| Battery                            | : --                                                                                                                                                                            |
| Software Version                   | : V1.0                                                                                                                                                                          |
| Hardware Version                   | : V1.0                                                                                                                                                                          |
| Equipment Under Test               |                                                                                                                                                                                 |
| Test supplied                      | : <input type="checkbox"/> supplied by the manufacturer<br><input checked="" type="checkbox"/> supplied by the lab (Auxiliary test supplied by test Lab)                        |
| Switching Power Supply information | : For SWITCHING ADAPTER<br>Input: 100-240V~50/60Hz 2.5A Max.;<br>Output: 24.0V= 3.5A 84.0W<br>For INTELLIGENT AIR PURIFIER: DC24V,55.0W<br>RF EUT:DC 3.3V From PCB board(DC 5V) |
| Wireless Specification             |                                                                                                                                                                                 |
| Supported Type                     | : Bluetooth 5.0(BLE)                                                                                                                                                            |
| Modulation Type                    | : GFSK                                                                                                                                                                          |
| Transmit data rate (LE)            | : LE 1 Mbps                                                                                                                                                                     |
| Transmitter rate                   | : 1MHz                                                                                                                                                                          |
| Number of channels                 | : 40 Channels                                                                                                                                                                   |
| Channel separation                 | : 1MHz                                                                                                                                                                          |
| Antenna Gain& type                 | : Refer to Section 1.2 of the report.                                                                                                                                           |
| Sample Type                        | : Prototype production                                                                                                                                                          |
| Type of Device                     | : <input type="checkbox"/> Portable Device; <input checked="" type="checkbox"/> Mobile Device; <input type="checkbox"/> Modular Device                                          |

Note: For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

## 1.2. Antenna Information

| Ant No. | Brand | Model Name | Antenna Type | Connector | Gain (dBi) |
|---------|-------|------------|--------------|-----------|------------|
| 1       | N/A   | N/A        | PCB Antenna  | N/A       | -0.25      |

Note:

1. The antenna gain is declared by the customer and the laboratory is not responsible for the accuracy of the antenna gain.

2. The test results of this report only apply to the sample as received.

## 2. SUMMARY OF TEST

### 2.1. Test Standards

FCC Rules Part 15.247: Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz.

ANSI C63.10:2020: American National Standard for Testing Unlicensed Wireless Devices  
FCC KDB 558074 D01 15.247 Meas Guidance v05r02

### 2.2. Summary of test result

| No. | Description of Test Item                  | FCC Standard Section                 | Results |
|-----|-------------------------------------------|--------------------------------------|---------|
| 1   | 6dB Bandwidth & 99% Bandwidth             | §15.247(a)(2)                        | PASS    |
| 2   | Maximum Peak Output Power                 | 15.247(b)(3)                         | PASS    |
| 3   | Power Spectral Density                    | 15.247(e)                            | PASS    |
| 4   | Conducted Band Edge                       | 15.247(d)                            | PASS    |
| 5   | Conducted Spurious Emissions              | 15.247(d)                            | PASS    |
| 6   | Radiated Spurious Emissions and Band Edge | 15.109/ 15.205/ 15.209/<br>15.247(d) | PASS    |
| 7   | AC Power Line Conducted Emissions         | 15.207(a)                            | PASS    |
| 8   | Antenna Requirement                       | 15.203                               | PASS    |

Note: "N/A" denotes test is not applicable in this test report.

## 2.3. Test Facilities

EMC Lab :

A2LA Certificate Number: 7556.01;  
CTSL Testing (Dongguan) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.  
The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.10 and CISPR 16-1-4:2010.

FCC-Registration No.: 0037614732;  
Test Firm Registration Number:750639;  
CTSL Testing (Dongguan) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

Industry Canada Registration Number. Is: 34801;  
CAB identifier: CN0192;  
CTSL Testing (Dongguan) Co., Ltd. The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.

Name of Firm : CTSL Testing (Dongguan) Co.,Ltd.

EMC test location/satellite location:

Room 112, Building 1, No. 15, Jiaoyuansongshan Hetian Village, Houjie Town Dongguan City, Guangdong, People's Republic of China City, Guangdong, China

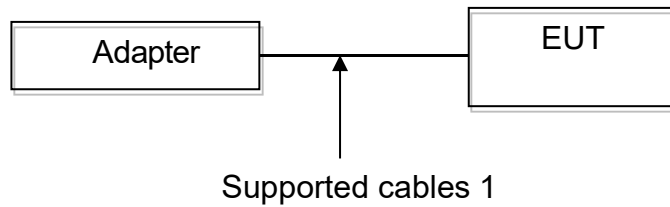
## 2.4. Measurement uncertainty

| Test Item                                               | Uncertainty                       |
|---------------------------------------------------------|-----------------------------------|
| Uncertainty for Conduction emission test                | $\pm 3.48\text{dB}$               |
| Uncertainty for spurious emissions test (Below 30MHz)   | $\pm 1.62\text{ dB}$              |
| Uncertainty for spurious emissions test (30MHz-1GHz)    | $\pm 4.60\text{ dB(Polarize: H)}$ |
|                                                         | $\pm 4.68\text{ dB(Polarize: V)}$ |
| Uncertainty for spurious emissions test (1GHz to 25GHz) | $\pm 4.96\text{dB}$               |
| Uncertainty for radio frequency                         | $7 \times 10^{-8}$                |
| Uncertainty for conducted RF Power                      | $1.08\text{dB}$                   |
| Uncertainty for Power density test                      | $0.26\text{dB}$                   |

Note: This uncertainty represents an expanded uncertainty expressed at approximately The 95% confidence level using a coverage factor of k=2.

## 2.5. Block Diagram

For radiated emissions test: EUT was placed on a turn table, which is 0.8 (or 1.5) meter high above ground. EUT was beset into Bluetooth test mode by software before test.



## 2.6. Assistant equipment used for test

| Item | Equipment         | Brand                             | Model Name/Type No. | FCC ID | Series No. |
|------|-------------------|-----------------------------------|---------------------|--------|------------|
| 1    | SWITCHING ADAPTER | Analog Power Electronic Co., Ltd. | BZ090-240350-E2     | -      | -          |
| 2    | Notebook          | Lenovo                            | ThinkPad E495       | -      | -          |

| Supported cables |               |              |        |                                           |
|------------------|---------------|--------------|--------|-------------------------------------------|
| Item             | Shielded Type | Ferrite Core | Length | Note                                      |
| 1                | NO            | NO           | 0.5m   | USB Extension Cable, supplied by the Lab. |
|                  |               |              |        |                                           |

## 2.7. Channel List

| BLE 1M&2M   |                 |             |                 |             |                 |             |                 |
|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|
| Channel No. | Frequency (MHz) | Channel No. | Frequency (MHz) | Channel No. | Frequency (MHz) | Channel No. | Frequency (MHz) |
| <b>00</b>   | <b>2402</b>     | 01          | 2404            | 02          | 2406            | 03          | 2408            |
| 04          | 2410            | 05          | 2402            | 06          | 2414            | 07          | 2416            |
| 08          | 2418            | 09          | 2420            | 10          | 2422            | 11          | 2424            |
| 12          | 2426            | 13          | 2428            | 14          | 2430            | 15          | 2432            |
| 16          | 2434            | 17          | 2436            | 18          | 2438            | <b>19</b>   | <b>2440</b>     |
| 20          | 2442            | 21          | 2444            | 22          | 2446            | 23          | 2448            |
| 24          | 2450            | 25          | 2452            | 26          | 2454            | 27          | 2456            |
| 28          | 2458            | 29          | 2460            | 30          | 2480            | 31          | 2464            |
| 32          | 2466            | 33          | 2468            | 34          | 2470            | 35          | 2472            |
| 36          | 2474            | 37          | 2476            | 38          | 2478            | <b>39</b>   | <b>2480</b>     |

## 2.8. Power Setting of Test Software

| Software Name       | Pandora_R22.24.1701 |         |         |
|---------------------|---------------------|---------|---------|
| Frequency (MHz)     | 2402                | 2440    | 2480    |
| BLE 1M-GFSK Setting | Default             | Default | Default |

Note: This information is provided by the applicant.

## 2.9. Test Equipment

| For Conducted Emission Test |                 |                      |            |                  |            |            |
|-----------------------------|-----------------|----------------------|------------|------------------|------------|------------|
| Equipment                   | Manufacturer    | Model No.            | Serial No. | Calibration Body | Last Cal.  | Next Cal.  |
| EMI Test Receiver           | Rohde & Schwarz | ESCI 3               | AT005      | GUANGZHOU NEM    | May 16,25  | May 15,26  |
| LISN                        | Rohde & Schwarz | ENV216               | AT006      | LISAI            | July 31,25 | July 30,26 |
| Pulse Limiter               | Rohde & Schwarz | ESH3-Z2              | AT007      | CCIC (Shenzhen)  | July 10,25 | July 09,26 |
| CE Cable                    | Times Microwave | LMR195UF-N MNM-1.50M | AT041      | GUANGZHOU NEM    | May 16,25  | May 15,26  |
| Test Software               | FARAD           | EZ-EMC Ver.3A1.1+    | N/A        | N/A              | N/A        | N/A        |

| For Radiated Emission Test (9kHz-30MHz) |                 |                   |            |                  |            |            |
|-----------------------------------------|-----------------|-------------------|------------|------------------|------------|------------|
| Equipment                               | Manufacturer    | Model No.         | Serial No. | Calibration Body | Last Cal.  | Next Cal.  |
| EMI TestReceiver                        | Rohde& Schwarz  | ESCI 7            | AT001      | Ti Group         | July 31,24 | July 30,26 |
| Active Loop Antenna                     | ZHINAN          | ZN30900C          | AT063      | LISAI            | Aug 03,24  | Aug 02,26  |
| Test Software                           | FARAD           | EZ-EMC Ver.3A1.1+ | N/A        | N/A              | N/A        | N/A        |
| 9kHz-30MHz Cable                        | Times Microwave | LMR195UF-N MNM-9M | AT045      | GUANGZHOU NEM    | May 16,25  | May 15,26  |

| For Radiated Emissions Test (30MHz-1000MHz) |                         |                                                                     |                   |                  |           |           |
|---------------------------------------------|-------------------------|---------------------------------------------------------------------|-------------------|------------------|-----------|-----------|
| Equipment                                   | Manufacturer            | Model No.                                                           | Serial No.        | Calibration Body | Last Cal. | Next Cal. |
| EMI Test Receiver                           | Rohde& Schwarz          | ESCI 7                                                              | AT001             | Ti Group         | Jun 12,25 | Jun 11,26 |
| Trilog-Broadband Antenna                    | SCHWARZBECK             | VULB 9168                                                           | AT002             | LISAI            | Aug 03,24 | Aug 02,26 |
| Test Software                               | FARAD                   | EZ-EMC Ver.3A1.1+                                                   | N/A               | N/A              | May 16,25 | May 15,26 |
| 30-1000MHz Cable                            | Times Microwave Systems | LMR195UF-N MRNMR-3.00 M+ LMR400UF-N MNM-3.00M+ LMR400UF-N MNM-3.00M | AT042+AT043+AT044 | GUANGZHOU NEM    | May 16,25 | May 15,26 |

| For Radiated Emission test (Above 1000MHz) |                         |                                      |              |                                                    |            |           |
|--------------------------------------------|-------------------------|--------------------------------------|--------------|----------------------------------------------------|------------|-----------|
| Equipment                                  | Manufacturer            | Model No.                            | Serial No.   | Calibration Body                                   | Last Cal.  | Next Cal. |
| Horn Antenna 1-18G                         | SCHWARZBECK             | BBHA 9120 D                          | AT003        | Shenzhen Academy of Metrology & Quality Inspection | Sep 23,24  | Sep 22,26 |
| Horn Antenna 18-40GHz                      | XIBAO                   | XB-WDB18-40K                         | AT064        | LISAI                                              | Feb 25,25  | Feb 24,26 |
| Broadband Preamplifier                     | SCHWARZBECK             | BBV 9718 D                           | AT004        | CCIC (Shenzhen)                                    | July 10,25 | July 9,26 |
| Low Noise Amplifier                        | MWRFTest                | DLA8-18-40G-2078                     | AT065        | GUANGZHOU NEM                                      | July 10,25 | July 9,26 |
| Spectrum Analyzer 40G                      | Keysight                | N9020B                               | AT066        | GUANGZHOU NEM                                      | May 13,25  | May 12,26 |
| Spectrum Analyzer 26.5G                    | Keysight                | N9020A                               | AT050        | GUANGZHOU NEM                                      | Jun 12,25  | Jun 11,26 |
| Radio switching unit                       | TiGroup                 | SU319                                | AT055        | N/A                                                | N/A        | N/A       |
| Filtering unit                             | TiGroup                 | SU319F                               | AT056        | N/A                                                | N/A        | N/A       |
| Test Software                              | BL                      | BL410-E V25.5 en                     | N/A          | N/A                                                | N/A        | N/A       |
| Above 1GHz Cable                           | Times Microwave Systems | SFT205-NMN M-7.0M+ SFT205-NMN M-2.0M | AT057+ AT058 | N/A                                                | N/A        | N/A       |

| For Connect EUT Antenna Terminal Test (RF Test system) |               |                  |            |                  |           |           |
|--------------------------------------------------------|---------------|------------------|------------|------------------|-----------|-----------|
| Equipment                                              | Manufacturer  | Model No.        | Serial No. | Calibration Body | Last Cal. | Next Cal. |
| Spectrum analyzer                                      | Keysight      | N9020A           | AT050      | GUANGZHOU NEM    | Jun 12,25 | Jun 11,26 |
| Analog signal source                                   | Keysight      | N5173B           | AT051      | GUANGZHOU NEM    | Jun 12,25 | Jun 11,26 |
| WIDEBAND RADIO COMMUNICATION TESTER                    | Rohde&Schwarz | CMW500           | AT052      | GUANGZHOU NEM    | Jun 12,25 | Jun 11,26 |
| Power probe unit                                       | Ti Group      | SU319P           | AT053      | GUANGZHOU NEM    | Jun 12,25 | Jun 11,26 |
| Switch unit                                            | Ti Group      | SU319S           | AT054      | N/A              | N/A       | N/A       |
| Test Software                                          | BL            | BL410R 3.5.2.621 | N/A        | N/A              | N/A       | N/A       |

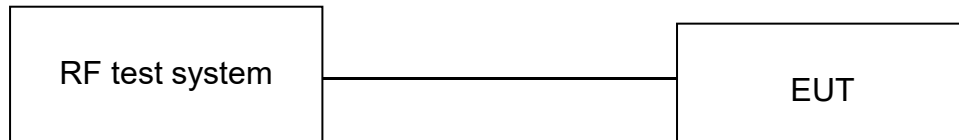
Remark: The power sensor is integrated into the Power Probe unit

### 3. 6DB BANDWIDTH

#### 3.1. Limit

Systems using digital modulation techniques operate in the 2400-2483.5 MHz, the minimum 6 dB bandwidth shall be at least 500 kHz.

#### 3.2. Test Setup



#### 3.3. Spectrum Analyzer Setting

| 6dB Bandwidth       |                   |
|---------------------|-------------------|
| Spectrum Parameters | Setting           |
| RBW                 | 100KHz            |
| VBW                 | 300KHz            |
| Span                | 2MHz(BLE 1M mode) |
| Sweep Time          | Auto              |
| Detector            | Peak              |
| Trace Mode          | Max Hold          |

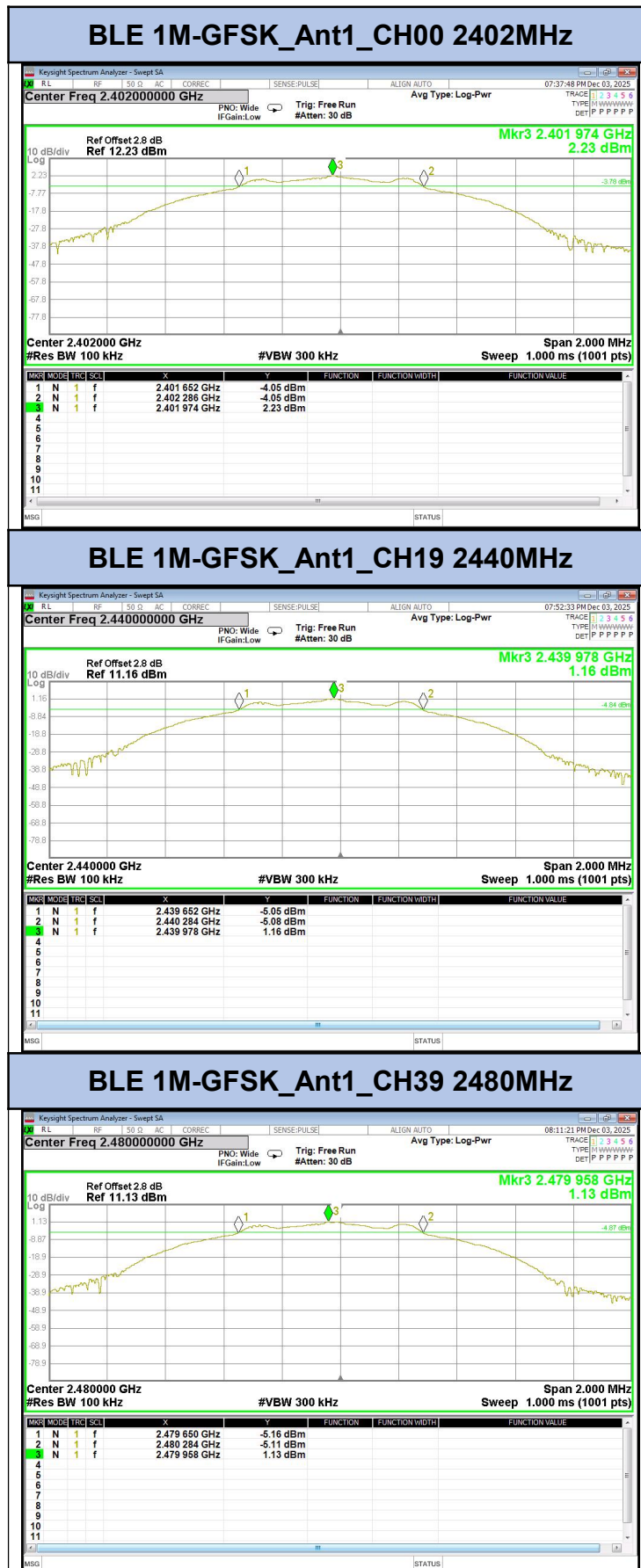
#### 3.4. Test Procedure

- The test according to ANSI C63.10 clause 11.8.
- Connect EUT antenna terminal to the spectrum analyzer with RF cable.
- Spectrum analyzer setting parameters in accordance with section 3.3.
- Set the EUT transmit continuously with maximum output power.
- Allow trace to stabilize, 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 6 dB relative to the maximum level measured in the fundamental emission.
- Repeat above procedures until all channels and test modes were measured.
- Record the results in the test report.

### 3.5. Test Result

| Test Mode      | Antenna | Channel&<br>Frequency | 6dB<br>Bandwidth | 6dB<br>Bandwidth<br>Conducted<br>Limit | Result |
|----------------|---------|-----------------------|------------------|----------------------------------------|--------|
|                |         | MHz                   | MHz              | KHz                                    |        |
| BLE<br>1M-GFSK | Ant1    | CH00 2402             | 0.634            | ≥500                                   | PASS   |
|                |         | CH19 2440             | 0.632            |                                        |        |
|                |         | CH39 2480             | 0.634            |                                        |        |

## 3.6.Original Test record

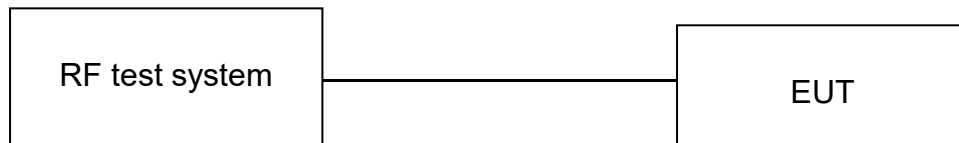


## 4. 99% BANDWIDTH

### 4.1.Limit

None; for reporting purpose only.

### 4.2. Test Setup



### 4.3. Spectrum Analyzer Setting

| 99% Occupied Bandwidth |                   |
|------------------------|-------------------|
| Spectrum Parameters    | Setting           |
| RBW                    | 30KHz             |
| VBW                    | 100KHz            |
| Span                   | 2MHz(BLE 1M mode) |
| Sweep Time             | Auto              |
| Detector               | Peak              |
| Trace Mode             | Max Hold          |

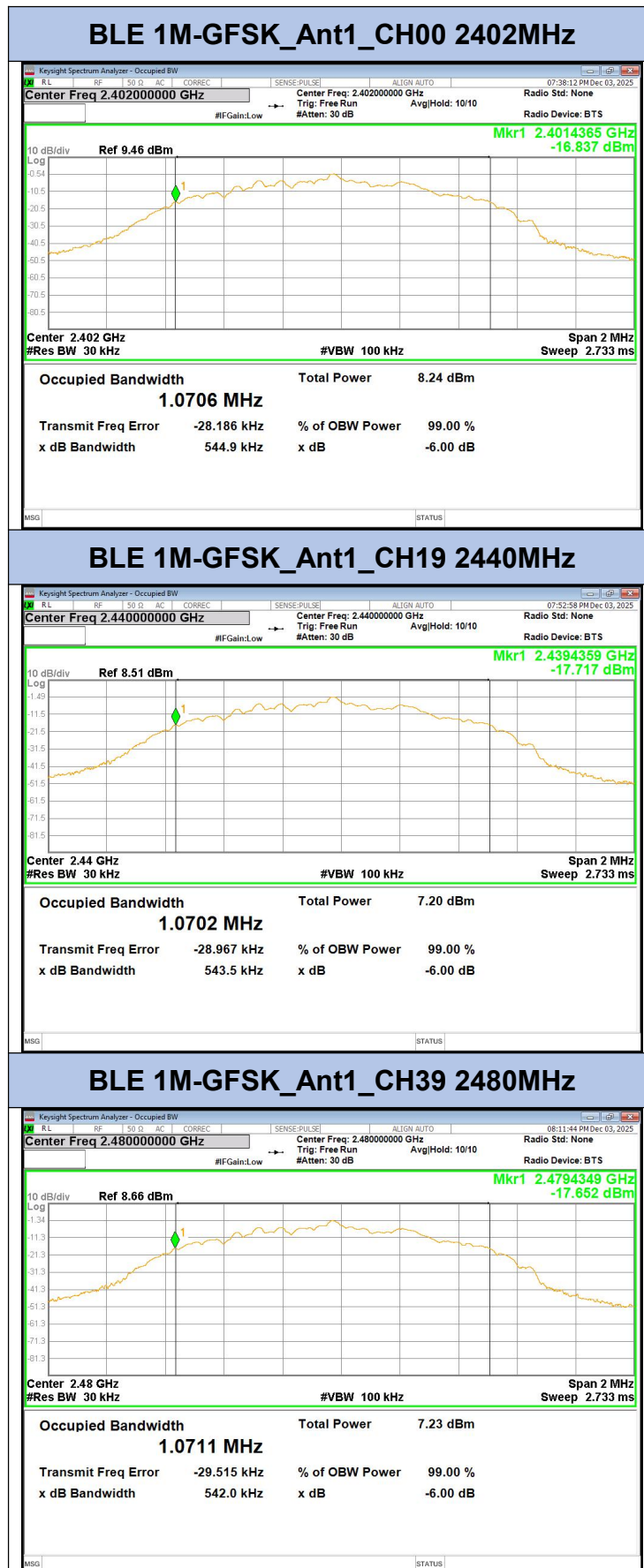
### 4.4. Test Procedure

- The test according to ANSI C63.10 clause 6.9.3.
- Connect EUT antenna terminal to the spectrum analyzer with RF cable.
- Spectrum analyzer setting parameters in accordance with section 4.3.
- Set the EUT transmit continuously with maximum output power.
- Repeat above procedures until all channels and test modes were measured.
- Record the results in the test report.

#### 4.5. Test Data

| Test Mode   | Antenna | Channel&<br>Frequency | Occupied Channel<br>Bandwidth |
|-------------|---------|-----------------------|-------------------------------|
|             |         | MHz                   | MHz                           |
| BLE 1M-GFSK | Ant1    | CH00 2402             | 1.071                         |
|             |         | CH19 2440             | 1.070                         |
|             |         | CH39 2480             | 1.071                         |

## 4.6.Original Test record

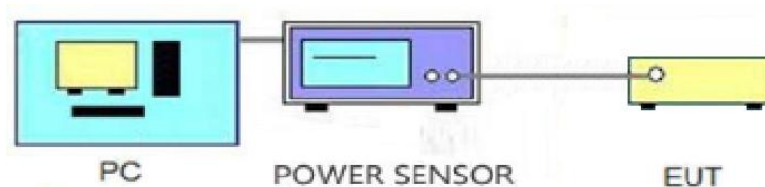


## 5. MAXIMUM PEAK OUTPUT POWER

### 5.1. Limit

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### 5.2. Test Setup



### 5.3. Test Procedure

- Connect each EUT's antenna output to power sensor by RF cable.
- Measure the PK output power of each antenna port by power sensor.

### 5.4. Test Result

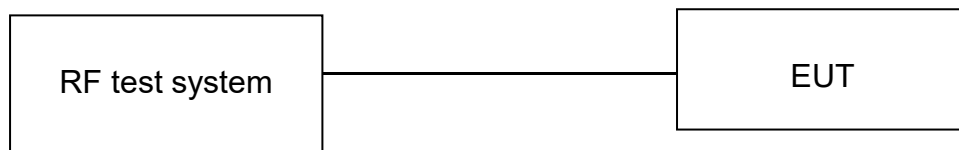
| Test Mode   | Antenna | Channel& Frequency | Peak Output Power | Limit | Result |
|-------------|---------|--------------------|-------------------|-------|--------|
|             |         | MHz                | dBm               | dBm   |        |
| BLE 1M-GFSK | Ant1    | CH00 2402          | 2.67              | 30    | PASS   |
|             |         | CH19 2440          | 1.64              |       |        |
|             |         | CH39 2480          | 1.59              |       |        |

## 6. POWER SPECTRAL DENSITY

### 6.1.Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

### 6.2.Test Setup



### 6.3.Spectrum Analyzer Setting

| Spectrum Parameters | Setting                     |
|---------------------|-----------------------------|
| RBW                 | 3KHz                        |
| VBW                 | 10KHz                       |
| Span                | 1.5 times the DTS bandwidth |
| Sweep Time          | Auto                        |
| Detector            | Peak                        |
| Trace Mode          | Max Hold                    |

### 6.4.Test Procedure

- Connect EUT antenna terminal to the spectrum analyzer with RF cable.
- Spectrum analyzer setting parameters in accordance with section 6.3.
- Set the EUT transmit continuously with maximum output power.
- Allow trace to stabilize, use the marker-to-peak function to set the marker to the peak of the emission.
- Repeat above procedures until all modes and channels were measured.
- Record the results in the test report.

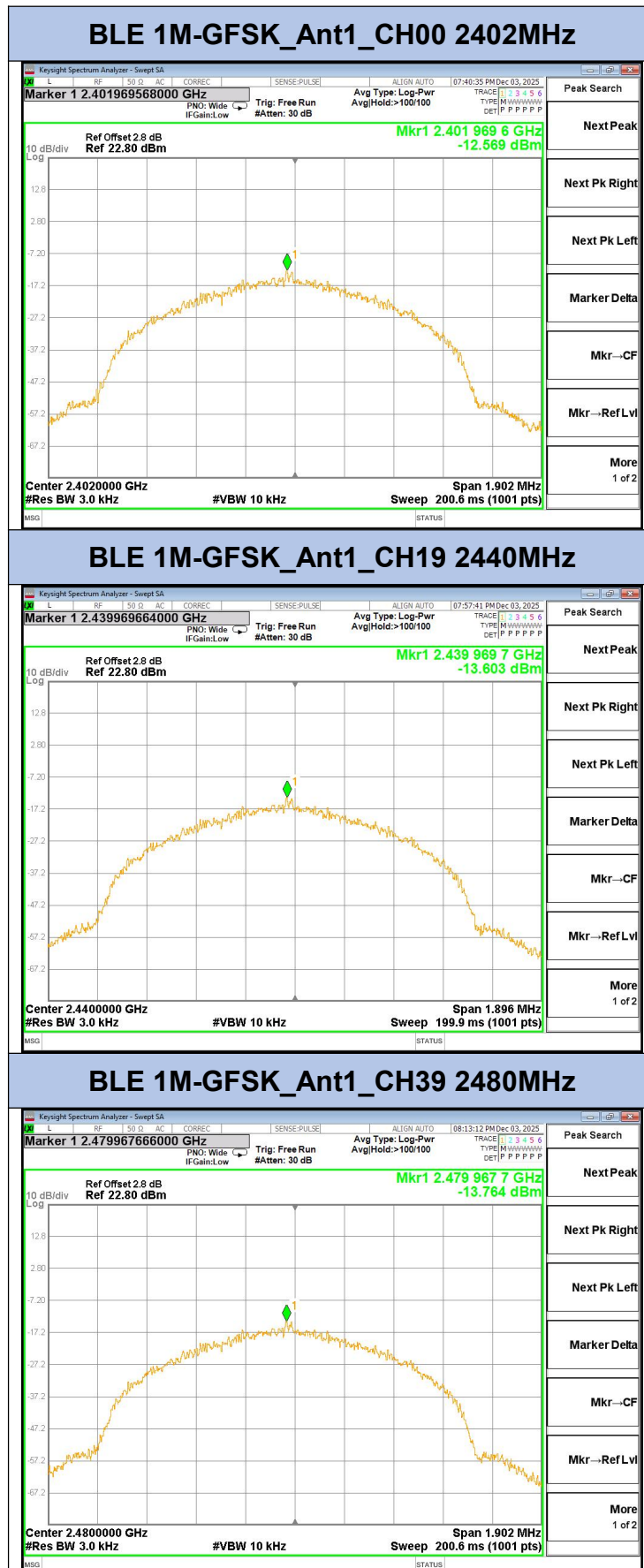
## 6.5. Test Result

| Test Mode   | Antenna | Channel & Frequency | Peak Power Spectral Density | Limit    | Result |
|-------------|---------|---------------------|-----------------------------|----------|--------|
|             |         | MHz                 | dBm/3KHz                    | dBm/3KHz |        |
| BLE 1M-GFSK | Ant1    | CH00 2402           | -12.569                     | 8.00     | PASS   |
|             |         | CH19 2440           | -13.603                     |          |        |
|             |         | CH39 2480           | -13.764                     |          |        |

Note:

- 1) If the test results under the Peak detector meet the limit requirements, then there is no need to consider the coefficient obtained by multiplying by the Duty cycle.

## 6.6.Original Test record

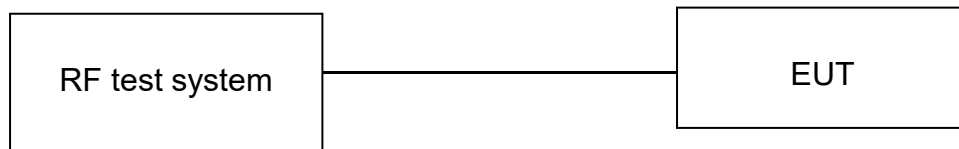


## 7. CONDUCTED BAND EDGE

### 7.1. Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, 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)).

### 7.2. Test Setup



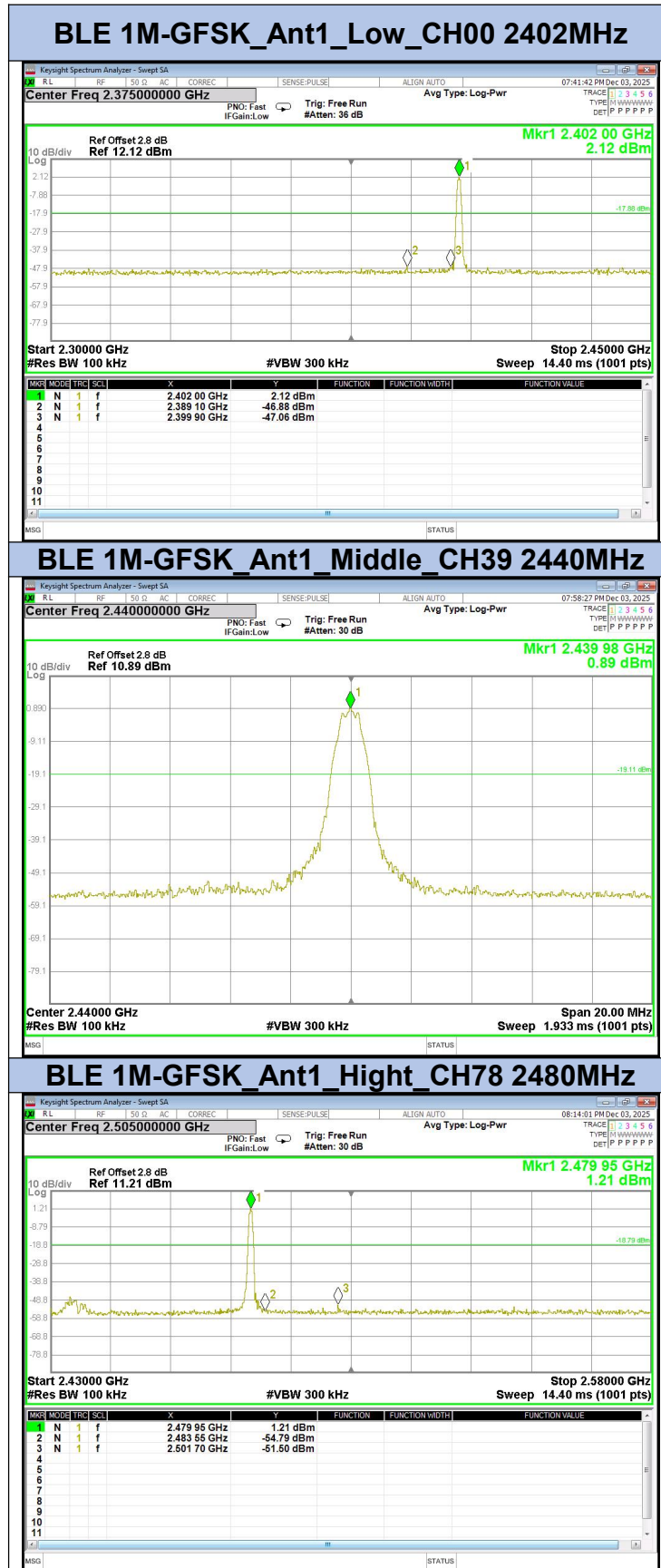
### 7.3. Spectrum Analyzer Setting

| Spectrum Parameters | Setting                    |
|---------------------|----------------------------|
| RBW                 | 100KHz                     |
| VBW                 | 300KHz                     |
| Span                | 1.5times the DTS bandwidth |
| Sweep Time          | Auto                       |
| Detector            | Peak                       |
| Trace Mode          | Max Hold                   |

### 7.4. Test Procedure

- Connect EUT antenna terminal to the spectrum analyzer with RF cable.
- Spectrum analyzer setting parameters in accordance with section 7.3.
- Set the EUT transmit continuously with maximum output power.
- Allow trace to stabilize, use the marker function to mark the highest emission level outside the authorized band.
- Repeat above procedures until all modes and channels were measured.
- Record the results in the test report
- BLE 1M-GFSK, all have been tested, the test data was recorded in report.

## 7.5. Test Result

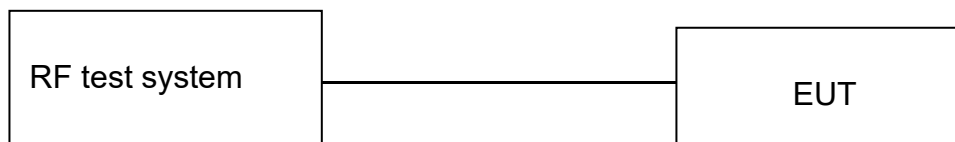


## 8. CONDUCTED SPURIOUS EMISSIONS

### 8.1. Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, 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)).

### 8.2. Test Setup



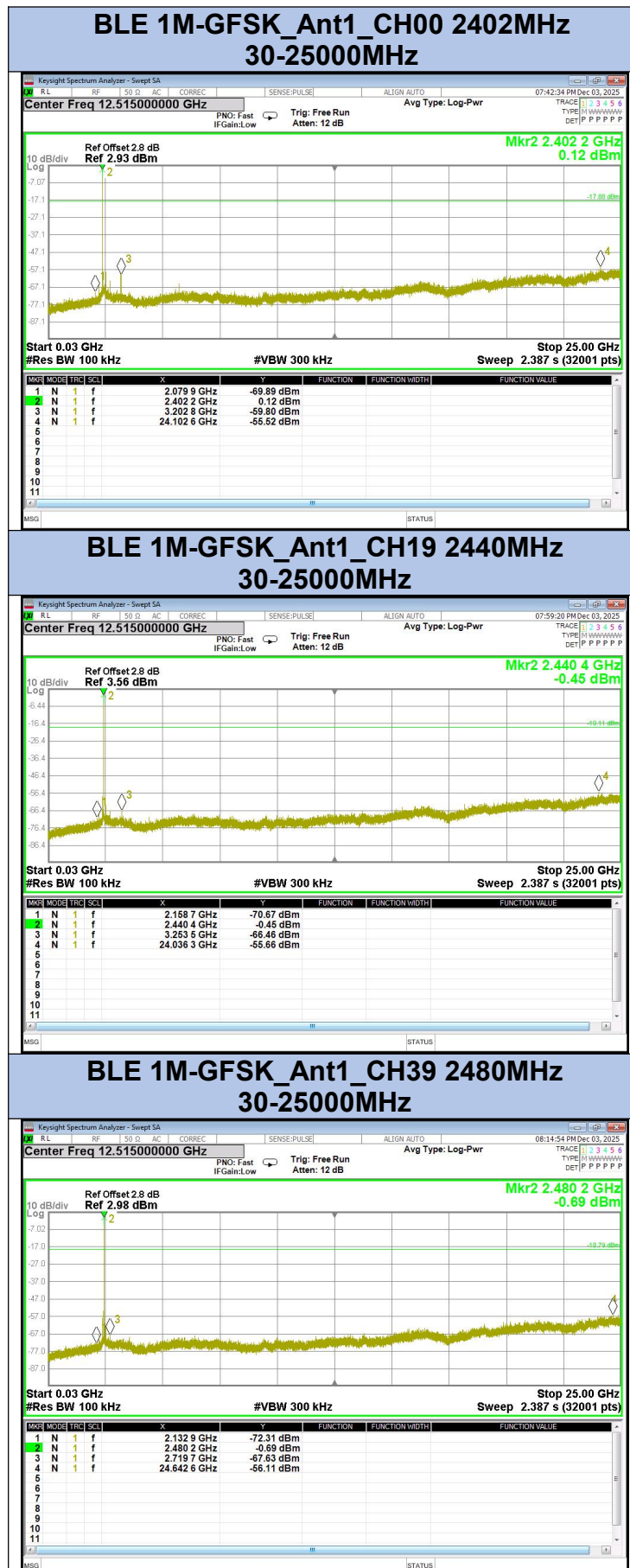
### 8.3. Spectrum Analyzer Setting

| Spectrum Parameters | Setting  |
|---------------------|----------|
| RBW                 | 100KHz   |
| VBW                 | 300KHz   |
| Start frequency     | 30MHz    |
| Stop frequency      | 25.0GHz  |
| Sweep Time          | Auto     |
| Detector            | Peak     |
| Trace Mode          | Max Hold |

### 8.4. Test Procedure

- Connect EUT antenna terminal to the spectrum analyzer with RF cable.
- Spectrum analyzer setting parameters in accordance with section 8.3.
- Set the EUT transmit continuously with maximum output power.
- Allow trace to stabilize, use the marker function to mark the highest emission level outside the authorized band.
- Repeat above procedures until all modes and channels were measured.
- Record the results in the test report.
- BLE 1M-GFSK, all have been tested, the test data was recorded in report.

## 8.5. Test Result



## 9. RADIATED SPURIOUS EMISSIONS AND BAND EDGE

### 9.1. Limit

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

#### 15.205 Restricted frequency band

| MHz                        | MHz                   | MHz             | GHz              |
|----------------------------|-----------------------|-----------------|------------------|
| 0.090 - 0.110              | 16.42 - 16.423        | 399.9 - 410     | 4.5 - 5.15       |
| <sup>1</sup> 0.495 - 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          | 108 - 121.94          | 1718.8 - 1722.2 | 13.25 - 13.4     |
| 6.31175 - 6.31225          | 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     | ( <sup>2</sup> ) |

#### 15.209 Limit

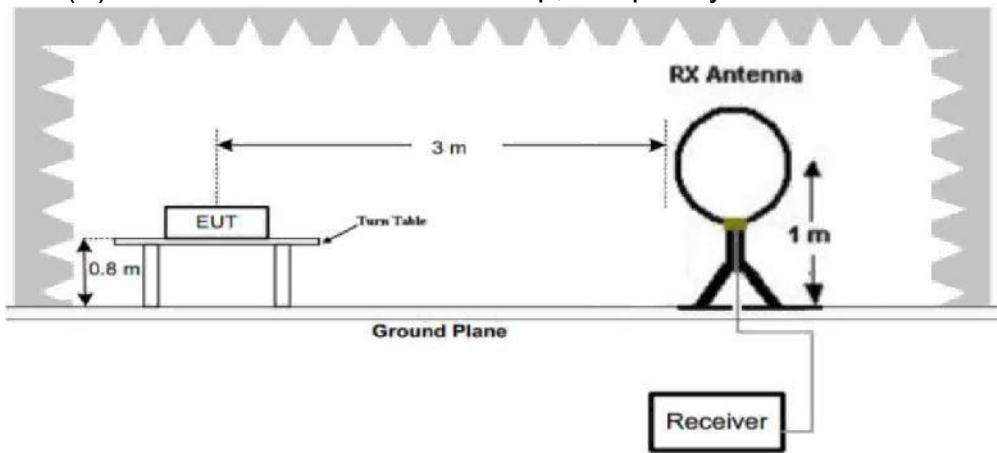
| Frequency (MHz) | Field Strength( $\mu$ V/m) | Distance(m) |
|-----------------|----------------------------|-------------|
| 0.009-0.490     | 2400/F(kHz)                | 300         |
| 0.490-1.705     | 24000/F(kHz)               | 30          |
| 1.705-30        | 30                         | 30          |
| 30-88           | 100                        | 3           |
| 88-216          | 150                        | 3           |
| 216-960         | 200                        | 3           |
| Above 960       | 500                        | 3           |

Note:

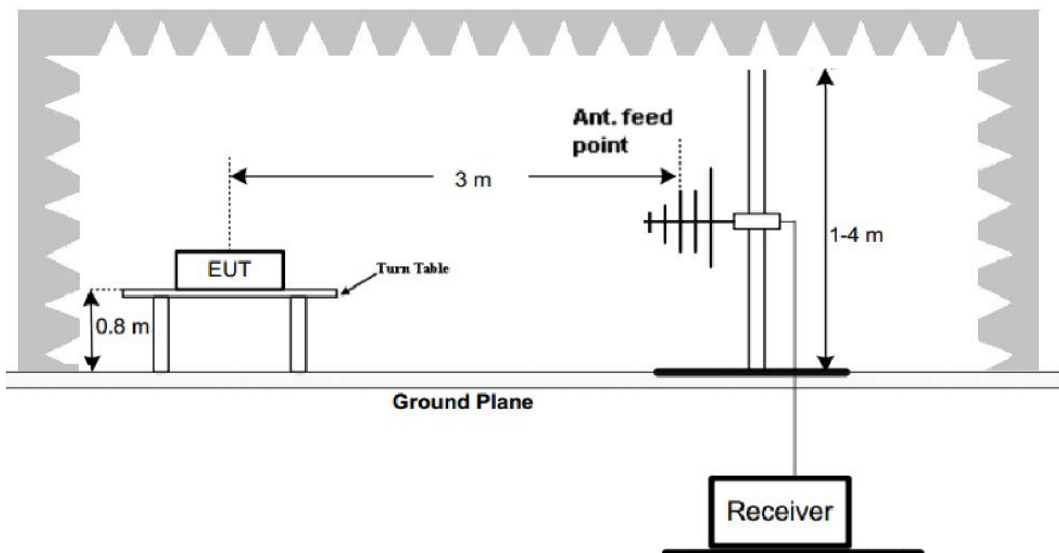
- (1) Emission level  $\text{dB}\mu\text{V} = 20 \log \text{Emission level } \mu\text{V/m}$ .
- (2) The smaller limit shall apply at the cross point between two frequency bands.
- (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

## 9.2. Test Setup

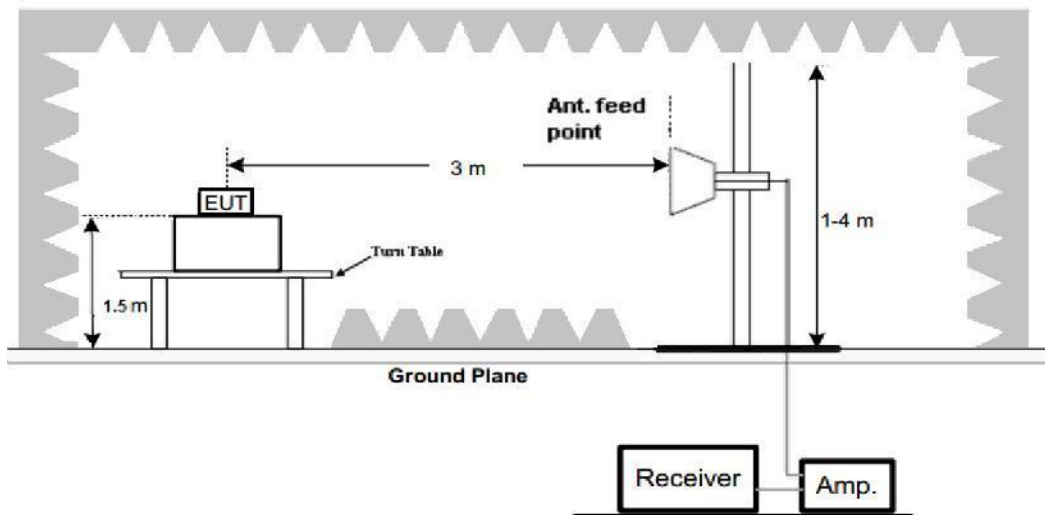
(A) Radiated Emission Test Set-Up, Frequency Below 30MHz

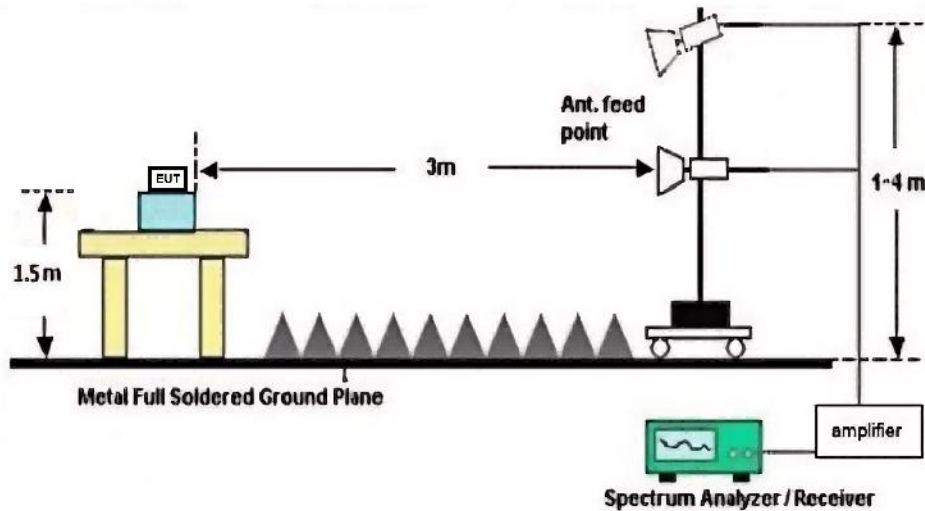


(B) Radiated Emission Test Set-Up, Frequency below 1000MHz



(C) Radiated Emission Test Set-Up, Frequency above 1GHz





### 9.3. Spectrum Analyzer Setting

| For 9KHz-150KHz     |                                           |
|---------------------|-------------------------------------------|
| Spectrum Parameters | Setting                                   |
| RBW                 | 300Hz (for Peak&AVG)/CISPR 200Hz (for QP) |
| VBW                 | 300Hz (for Peak&AVG)/CISPR 200Hz (for QP) |
| Start frequency     | 9KHz                                      |
| Stop frequency      | 150KHz                                    |
| Sweep Time          | Auto                                      |
| Detector            | PEAK/QP/AVG                               |
| Trace Mode          | Max Hold                                  |

| For 150KHz-30MHz    |          |
|---------------------|----------|
| Spectrum Parameters | Setting  |
| RBW                 | 9KHz     |
| VBW                 | 9KHz     |
| Start frequency     | 150KHz   |
| Stop frequency      | 30MHz    |
| Sweep Time          | Auto     |
| Detector            | QP       |
| Trace Mode          | Max Hold |

| For 30MHz-1GHz      |          |
|---------------------|----------|
| Spectrum Parameters | Setting  |
| RBW                 | 120KHz   |
| VBW                 | 300KHz   |
| Start frequency     | 30MHz    |
| Stop frequency      | 1GHz     |
| Sweep Time          | Auto     |
| Detector            | QP       |
| Trace Mode          | Max Hold |

| For Above 1GHz      |                  |                                    |
|---------------------|------------------|------------------------------------|
| Spectrum Parameters | Setting          |                                    |
| RBW                 | 1MHz             |                                    |
| VBW                 | PEAK Measurement | AVG Measurement                    |
|                     | 3MHz             | Duty cycle $\geq$ 98%, VBW=10Hz    |
|                     |                  | Duty cycle $<$ 98%, VBW $\geq$ 1/T |
| Start frequency     | 1GHz             |                                    |
| Stop frequency      | 25GHz            |                                    |
| Sweep Time          | Auto             |                                    |
| Detector            | PEAK             |                                    |
| Trace Mode          | Max Hold         |                                    |

## 9.4. Test Procedure

- a. EUT was placed on a turn table, which is 0.8-meter high above ground for below 1GHz test, and which is 1.5-meter high above ground for above 1GHz test.
- b. The diameter of the turntable is 2 meters. The EUT is located at the center of the edge of the test support table. Since the turntable is large enough, the EUT is placed at the center of the edge of the test support table as well as at the center of the turntable.
- c. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower.
- d. Set the EUT transmit continuously with maximum output power.
- e. The turn table can rotate 360 degrees to determine the position of the maximum emission level.
- f. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.
- g. EMI TestReceiver setting parameters in accordance with section 9.3.
- h. Repeat above procedures until all channels and test modes were measured.
- i. Record the results in the test report.

### Note:

1. For emissions above 1GHz, if peak level complies with average limit, then the average level is deemed to comply with average limit.
2. The frequency 2402MHz ,2440MHz and 2480MHz is fundamental frequency which no limit, the limit on plots is automatically generated by the software, it's not fundamental limit, we can't remove it.
3. For 30-1000MHz Radiation emissions, BLE 1M-GFSK, mode all have been tested, only worse case: BLE 1M-GFSK mode with CH00 2402MHz is reported. it was conducted under both DC 5V and AC 120V/ input voltages. There was no significant change in radiation emission. Only the test data under AC 120Vzoltage was recorded and included in the report.
4. Radiated emission test from 9KHz to 10th harmonic of fundamental was verified, and no emission found except system noise floor in 9KHz to 30MHz and not recorded in this report.
5. The amplitude of 18GHz to 25GHz spurious emission-that-is attenuated by more than 20dB below the-permissible-limit has no need-to-be-reported.
6. Radiated emission test from 25GHz to 40GHz of fundamental was verified, and no emission found except system noise floor in 25GHz to 40GHz and not recorded in this report.

## 9.5. Test Result

### Radiated Emissions 30-1000MHz

EUT: INTELLIGENT AIR PURIFIER

M/N: Falcon AP1mini

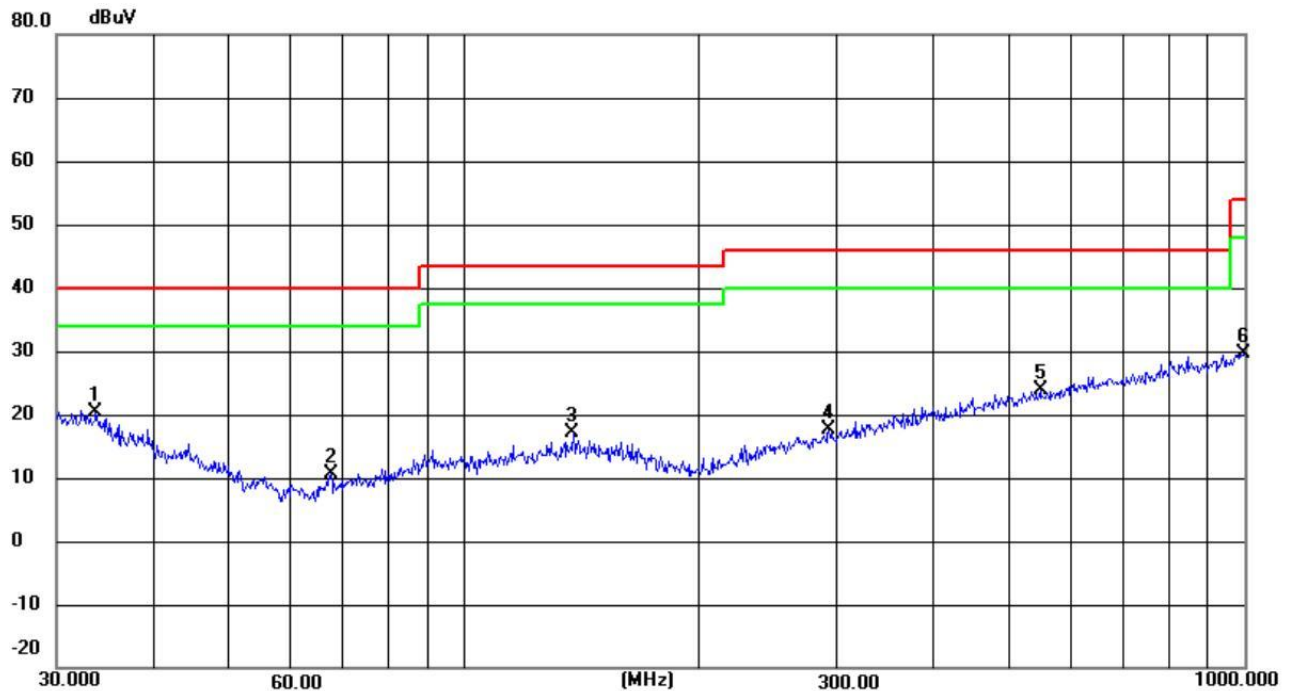
Test Voltage: AC 120V

Ant. Pol.: Horizontal

Test Mode: TX Mode

Note: only worse case: BLE 1M-GFSK mode with CH00 2402MHz is reported

Detailed results are shown below



| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>Factor(dB/<br>m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-----------------------------|--------------------|-------------------|----------------|--------|
| 1   | 33.6802            | 29.92             | -9.65                       | 20.27              | 40.00             | -19.73         | peak   |
| 2   | 67.4382            | 30.78             | -20.24                      | 10.54              | 40.00             | -29.46         | peak   |
| 3   | 137.9028           | 49.37             | -32.14                      | 17.23              | 43.50             | -26.27         | peak   |
| 4   | 293.0842           | 49.45             | -31.91                      | 17.54              | 46.00             | -28.46         | peak   |
| 5   | 547.0977           | 55.04             | -31.22                      | 23.82              | 46.00             | -22.18         | peak   |
| 6   | 996.4996           | 60.24             | -30.60                      | 29.64              | 54.00             | -24.36         | peak   |

Remarks: 1. Margin = Result (Result =Reading + Factor )-Limit  
 2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.  
 3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

EUT: INTELLIGENT AIR PURIFIER

M/N: Falcon AP1mini

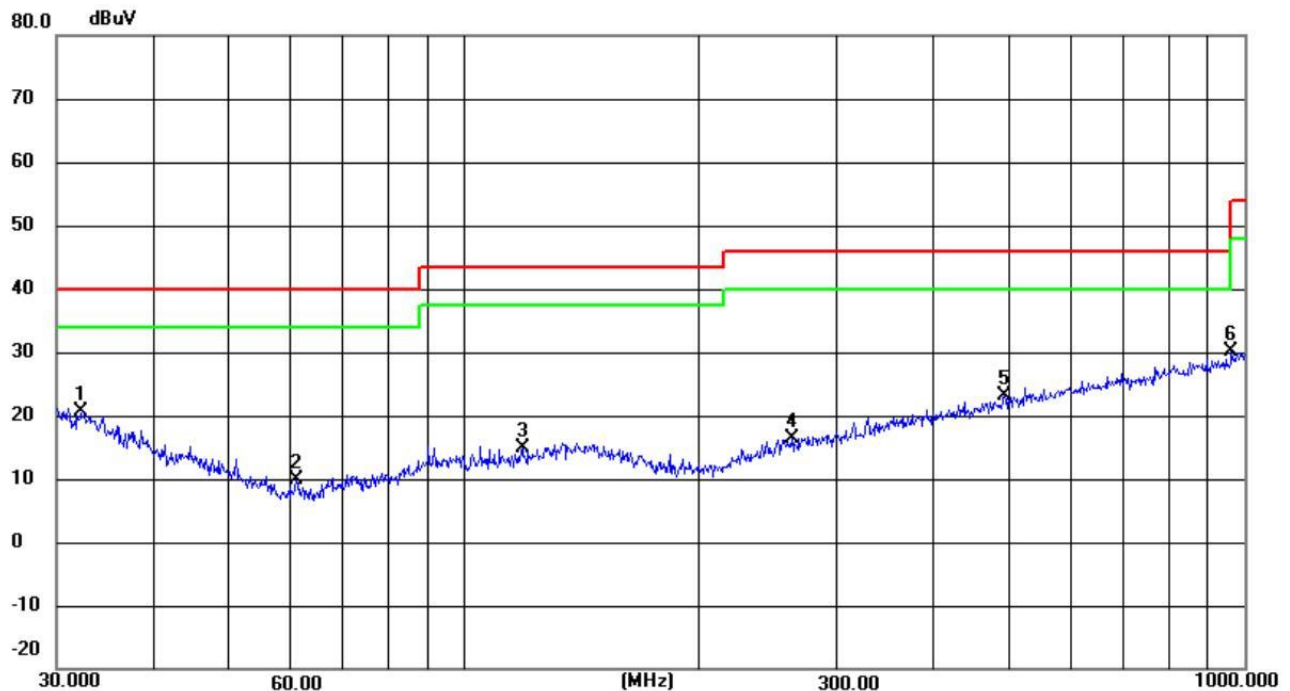
Test Voltage: AC 120V

Ant. Pol.: Vertical

Test Mode: TX Mode

Note: only worse case: BLE 1M-GFSK mode with CH00 2402MHz is reported

Detailed results are shown below



| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>Factor(dB/<br>m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-----------------------------|--------------------|-------------------|----------------|--------|
| 1   | 32.4059            | 29.46             | -8.79                       | 20.67              | 40.00             | -19.33         | peak   |
| 2   | 60.9176            | 30.76             | -20.90                      | 9.86               | 40.00             | -30.14         | peak   |
| 3   | 118.6014           | 47.03             | -32.17                      | 14.86              | 43.50             | -28.64         | peak   |
| 4   | 262.8955           | 48.22             | -31.96                      | 16.26              | 46.00             | -29.74         | peak   |
| 5   | 492.4685           | 54.57             | -31.32                      | 23.25              | 46.00             | -22.75         | peak   |
| 6   | 962.1623           | 60.89             | -30.64                      | 30.25              | 54.00             | -23.75         | peak   |

Remarks: 1. Margin = Result (Result =Reading + Factor )-Limit  
 2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.  
 3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

### Radiated Emissions Above 1GHz - BLE 1M-GFSK

|              |               |                    |         |
|--------------|---------------|--------------------|---------|
| Temperature: | 25 °C         | Relative Humidity: | 60%     |
| Test Mode:   | Low CH (GFSK) | Test Voltage:      | AC 120V |

#### Peak

| Frequency (MHz) | Reading (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark     |
|-----------------|----------------|-----------------------|-----------------|----------------------|-----------------|----------------|-------------|------------|
| 4804.00         | 32.28          | 31.78                 | 8.60            | 32.09                | 40.57           | 74             | -33.43      | Vertical   |
| 7206.00         | 30.27          | 36.15                 | 11.65           | 32.00                | 46.07           | 74             | -27.93      | Vertical   |
| 9608.00         | 31.15          | 37.95                 | 14.14           | 31.62                | 51.62           | 74             | -22.38      | Vertical   |
| 12010.00        | *              |                       |                 |                      |                 | 74             |             | Vertical   |
| 14412.00        | *              |                       |                 |                      |                 | 74             |             | Vertical   |
| 4804.00         | 34.88          | 31.78                 | 8.60            | 32.09                | 43.17           | 74             | -30.83      | Horizontal |
| 7206.00         | 30.07          | 36.15                 | 11.65           | 32.00                | 45.87           | 74             | -28.13      | Horizontal |
| 9608.00         | 29.2           | 37.95                 | 14.14           | 31.62                | 49.67           | 74             | -24.33      | Horizontal |
| 12010.00        | *              |                       |                 |                      |                 | 74             |             | Horizontal |
| 14412.00        | *              |                       |                 |                      |                 | 74             |             | Horizontal |

#### Avg

| Frequency (MHz) | Reading (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark     |
|-----------------|----------------|-----------------------|-----------------|----------------------|-----------------|----------------|-------------|------------|
| 4804.00         | 24.98          | 31.78                 | 8.60            | 32.09                | 33.27           | 54             | -20.73      | Vertical   |
| 7206.00         | 17.12          | 36.15                 | 11.65           | 32.00                | 32.92           | 54             | -21.08      | Vertical   |
| 9608.00         | 15.86          | 37.95                 | 14.14           | 31.62                | 36.33           | 54             | -17.67      | Vertical   |
| 12010.00        | *              |                       |                 |                      |                 | 54             |             | Vertical   |
| 14412.00        | *              |                       |                 |                      |                 | 54             |             | Vertical   |
| 4804.00         | 29             | 31.78                 | 8.60            | 32.09                | 37.29           | 54             | -16.71      | Horizontal |
| 7206.00         | 18.94          | 36.15                 | 11.65           | 32.00                | 34.74           | 54             | -19.26      | Horizontal |
| 9608.00         | 16.05          | 37.95                 | 14.14           | 31.62                | 36.52           | 54             | -17.48      | Horizontal |
| 12010.00        | *              |                       |                 |                      |                 | 54             |             | Horizontal |
| 14412.00        | *              |                       |                 |                      |                 | 54             |             | Horizontal |

#### Remark:

- 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."\*", means this data is the too weak instrument of signal is unable to test

|              |                  |                    |         |
|--------------|------------------|--------------------|---------|
| Temperature: | 25 °C            | Relative Humidity: | 60%     |
| Test Mode:   | Middle CH (GFSK) | Test Voltage:      | AC 120V |

### Peak

| Frequency (MHz) | Reading (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark     |
|-----------------|----------------|-----------------------|-----------------|----------------------|-----------------|----------------|-------------|------------|
| 4880.00         | 33.76          | 31.78                 | 8.60            | 32.09                | 42.16           | 74             | -31.84      | Vertical   |
| 7320.00         | 27.97          | 36.15                 | 11.65           | 32.00                | 44.17           | 74             | -29.83      | Vertical   |
| 9760.00         | 28.04          | 37.95                 | 14.14           | 31.62                | 49.02           | 74             | -24.98      | Vertical   |
| 12200.00        | *              |                       |                 |                      |                 | 74             |             | Vertical   |
| 14640.00        | *              |                       |                 |                      |                 | 74             |             | Vertical   |
| 4880.00         | 38.18          | 31.78                 | 8.60            | 32.09                | 46.58           | 74             | -27.42      | Horizontal |
| 7320.00         | 29.87          | 36.15                 | 11.65           | 32.00                | 46.07           | 74             | -27.93      | Horizontal |
| 9760.00         | 29.95          | 37.95                 | 14.14           | 31.62                | 50.93           | 74             | -23.07      | Horizontal |
| 12200.00        | *              |                       |                 |                      |                 | 74             |             | Horizontal |
| 14640.00        | *              |                       |                 |                      |                 | 74             |             | Horizontal |

### Avg

| Frequency (MHz) | Reading (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark     |
|-----------------|----------------|-----------------------|-----------------|----------------------|-----------------|----------------|-------------|------------|
| 4880.00         | 23.04          | 31.78                 | 8.60            | 32.09                | 31.44           | 54             | -22.56      | Vertical   |
| 7320.00         | 17.97          | 36.15                 | 11.65           | 32.00                | 34.17           | 54             | -19.83      | Vertical   |
| 9760.00         | 14.06          | 37.95                 | 14.14           | 31.62                | 35.04           | 54             | -18.96      | Vertical   |
| 12200.00        | *              |                       |                 |                      |                 | 54             |             | Vertical   |
| 14640.00        | *              |                       |                 |                      |                 | 54             |             | Vertical   |
| 4880.00         | 25.33          | 31.78                 | 8.60            | 32.09                | 33.73           | 54             | -20.27      | Horizontal |
| 7320.00         | 18.8           | 36.15                 | 11.65           | 32.00                | 35              | 54             | -19         | Horizontal |
| 9760.00         | 17.92          | 37.95                 | 14.14           | 31.62                | 38.9            | 54             | -15.1       | Horizontal |
| 12200.00        | *              |                       |                 |                      |                 | 54             |             | Horizontal |
| 14640.00        | *              |                       |                 |                      |                 | 54             |             | Horizontal |

### Remark:

- 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."\*", means this data is the too weak instrument of signal is unable to test

|              |                |                    |         |
|--------------|----------------|--------------------|---------|
| Temperature: | 25 °C          | Relative Humidity: | 60%     |
| Test Mode:   | High CH (GFSK) | Test Voltage:      | AC 120V |

### Peak

| Frequency (MHz) | Reading (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark     |
|-----------------|----------------|-----------------------|-----------------|----------------------|-----------------|----------------|-------------|------------|
| 4960.00         | 31             | 31.78                 | 8.60            | 32.09                | 39.5            | 74             | -34.5       | Vertical   |
| 7440.00         | 29.82          | 36.15                 | 11.65           | 32.00                | 46.42           | 74             | -27.58      | Vertical   |
| 9920.00         | 30.21          | 37.95                 | 14.14           | 31.62                | 51.52           | 74             | -22.48      | Vertical   |
| 12400.00        | *              |                       |                 |                      |                 | 74             |             | Vertical   |
| 14880.00        | *              |                       |                 |                      |                 | 74             |             | Vertical   |
| 4960.00         | 35.57          | 31.78                 | 8.60            | 32.09                | 44.07           | 74             | -29.93      | Horizontal |
| 7440.00         | 31.36          | 36.15                 | 11.65           | 32.00                | 47.96           | 74             | -26.04      | Horizontal |
| 9920.00         | 28.94          | 37.95                 | 14.14           | 31.62                | 50.25           | 74             | -23.75      | Horizontal |
| 12400.00        | *              |                       |                 |                      |                 | 74             |             | Horizontal |
| 14880.00        | *              |                       |                 |                      |                 | 74             |             | Horizontal |

### Avg

| Frequency (MHz) | Reading (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark     |
|-----------------|----------------|-----------------------|-----------------|----------------------|-----------------|----------------|-------------|------------|
| 4960.00         | 21.07          | 31.78                 | 8.60            | 32.09                | 29.57           | 54             | -24.43      | Vertical   |
| 7440.00         | 15.18          | 36.15                 | 11.65           | 32.00                | 31.78           | 54             | -22.22      | Vertical   |
| 9920.00         | 14.3           | 37.95                 | 14.14           | 31.62                | 35.61           | 54             | -18.39      | Vertical   |
| 12400.00        | *              |                       |                 |                      |                 | 54             |             | Vertical   |
| 14880.00        | *              |                       |                 |                      |                 | 54             |             | Vertical   |
| 4960.00         | 29.52          | 31.78                 | 8.60            | 32.09                | 38.02           | 54             | -15.98      | Horizontal |
| 7440.00         | 19.46          | 36.15                 | 11.65           | 32.00                | 36.06           | 54             | -17.94      | Horizontal |
| 9920.00         | 16.68          | 37.95                 | 14.14           | 31.62                | 37.99           | 54             | -16.01      | Horizontal |
| 12400.00        | *              |                       |                 |                      |                 | 54             |             | Horizontal |
| 14880.00        | *              |                       |                 |                      |                 | 54             |             | Horizontal |

### Remark:

- 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."\*", means this data is the too weak instrument of signal is unable to test

## Radiated Band Edge - BLE 1M-GFSK

Low CH (GFSK)

Peak

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 2310.00         | 34.87             | 27.61                 | 5.36            | 30.18              | 37.94          | 74                  | -36.06          | Horizontal   |
| 2390.00         | 36.93             | 27.59                 | 5.38            | 30.18              | 40.04          | 74                  | -33.96          | Horizontal   |
| 2310.00         | 39.66             | 27.61                 | 5.36            | 30.18              | 42.73          | 74                  | -31.27          | Vertical     |
| 2390.00         | 36.37             | 27.59                 | 5.38            | 30.18              | 39.48          | 74                  | -34.52          | Vertical     |

Avg

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|--------------|
| 2310.00         | 29.93             | 27.61                 | 5.36            | 30.18              | 33             | 54                  | -21             | Horizontal   |
| 2390.00         | 28.76             | 27.59                 | 5.38            | 30.18              | 31.87          | 54                  | -22.13          | Horizontal   |
| 2310.00         | 31                | 27.61                 | 5.36            | 30.18              | 34.07          | 54                  | -19.93          | Vertical     |
| 2390.00         | 26.25             | 27.59                 | 5.38            | 30.18              | 29.36          | 54                  | -24.64          | Vertical     |

Remark.

- 1.Final Level =Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor
- 2.The amplitude of spurious emissions which are attenuated more than 20 dB below the limits are not reported.
- 3.All restriction band have been tested, and only the worst case is shown in report

## High CH(GFSK)

## Peak

| Frequency<br>(MHz) | Read<br>Level<br>(dBuV) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Preamp<br>Factor<br>(dB) | Level<br>(dBuV/m) | Limit Line<br>(dBuV/m) | Over<br>Limit<br>(dB) | Polarization |
|--------------------|-------------------------|-----------------------------|-----------------------|--------------------------|-------------------|------------------------|-----------------------|--------------|
| 2483.50            | 35.07                   | 27.53                       | 5.47                  | 29.93                    | 38.14             | 74                     | -35.86                | Horizontal   |
| 2500.00            | 37.13                   | 27.55                       | 5.49                  | 29.93                    | 40.24             | 74                     | -33.76                | Horizontal   |
| 2483.50            | 39.86                   | 27.53                       | 5.47                  | 29.93                    | 42.93             | 74                     | -31.07                | Vertical     |
| 2500.00            | 36.57                   | 27.55                       | 5.49                  | 29.93                    | 39.68             | 74                     | -34.32                | Vertical     |

## Avg

| Frequency<br>(MHz) | Read<br>Level<br>(dBuV) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Preamp<br>Factor<br>(dB) | Level<br>(dBuV/m) | Limit Line<br>(dBuV/m) | Over<br>Limit<br>(dB) | Polarization |
|--------------------|-------------------------|-----------------------------|-----------------------|--------------------------|-------------------|------------------------|-----------------------|--------------|
| 2483.50            | 30.13                   | 27.53                       | 5.47                  | 29.93                    | 33.2              | 54                     | -20.8                 | Horizontal   |
| 2500.00            | 28.96                   | 27.55                       | 5.49                  | 29.93                    | 32.07             | 54                     | -21.93                | Horizontal   |
| 2483.50            | 31.2                    | 27.53                       | 5.47                  | 29.93                    | 34.27             | 54                     | -19.73                | Vertical     |
| 2500.00            | 26.45                   | 27.55                       | 5.49                  | 29.93                    | 29.56             | 54                     | -24.44                | Vertical     |

## Remark.

- 1.Final Level =Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor
- 2.The amplitude of spurious emissions which are attenuated more than 20 dB below the limits are not reported.
- 3.All restriction band have been tested, and only the worst case is shown in report

## 10. AC POWER LINE CONDUCTED EMISSIONS

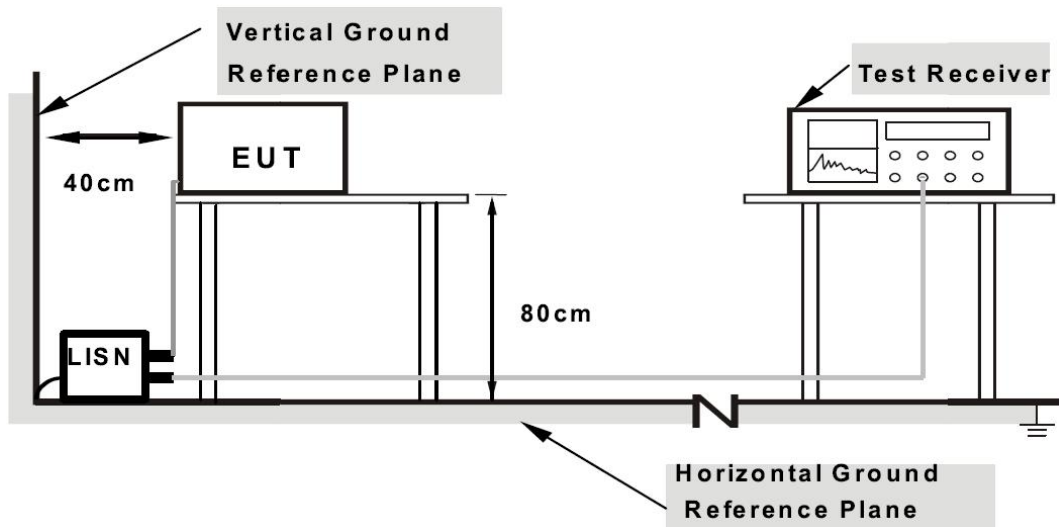
### 10.1. Limit

| Frequency       | Maximum RF Line Voltage          |                               |
|-----------------|----------------------------------|-------------------------------|
|                 | Quasi-Peak Level<br>dB( $\mu$ V) | Average Level<br>dB( $\mu$ V) |
| 150kHz ~ 500kHz | 79                               | 66                            |
| 500kHz ~ 30MHz  | 73                               | 60                            |

Note:

1. \* Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

### 10.2. Test Setup



### 10.3. Spectrum Analyzer Setting

| Spectrum Parameters | Setting  |
|---------------------|----------|
| RBW                 | 9KHz     |
| VBW                 | 9KHz     |
| Start frequency     | 150KHz   |
| Stop frequency      | 30MHz    |
| Sweep Time          | Auto     |
| Detector            | QP/AVG   |
| Trace Mode          | Max Hold |

#### 10.4. Test Procedure

- a. The EUT was placed on a non-metallic table, 80cm above the ground plane.
- b. The EUT Power connected to the power mains through a line impedance stabilization network.
- c. Provides a 50ohm coupling impedance for the EUT (Please refer the block diagram of the test setup and photographs).
- d. Set the EUT transmit continuously with maximum output power.
- e. EMI TestReceiver setting parameters in accordance with section 10.3.
- f. The AC line is checked to find out the maximum conducted emission. To find the maximum emission levels, the relative positions of equipment and all the interface cables shall be changed according to ANSI C63.10:2020 on Conducted Emission Test.
- g. Record the results in the test report. (only worse case: BLE 1M-GFSK mode with CH00 2402MHz is reported)

## 10.5. Test Result

EUT: INTELLIGENT AIR PURIFIER

M/N: Falcon AP1mini

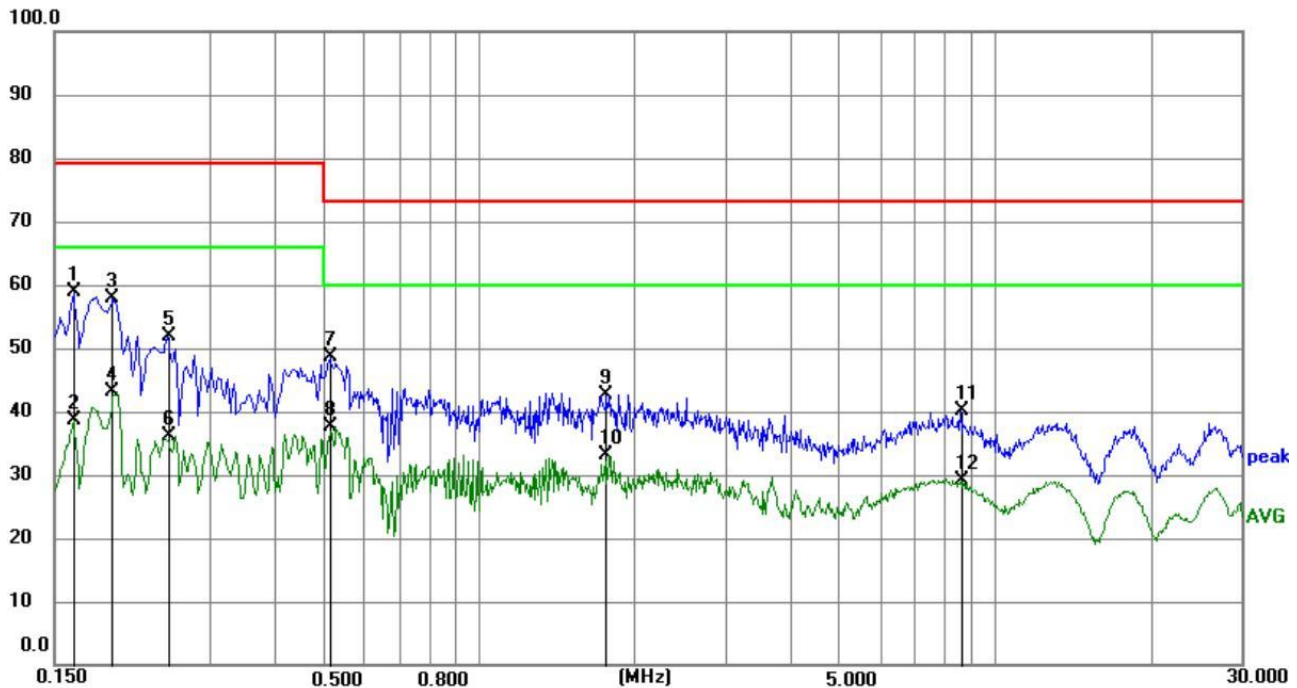
Test Voltage: AC 120V

Phase: Live

Test Mode: TX Mode

Note: only worse case: BLE 1M-GFSK mode with CH00 2402MHz is reported

Detailed results are shown below



| No. | Mk. | Freq.  | Reading | Correct | Measure- | Limit | Over  |          |
|-----|-----|--------|---------|---------|----------|-------|-------|----------|
|     |     | MHz    | Level   | Factor  | ment     |       |       | Detector |
| 1   | *   | 0.1635 | 48.57   | 10.22   | 58.79    | 79.00 | 20.21 | peak     |
| 2   |     | 0.1635 | 28.35   | 10.22   | 38.57    | 66.00 | 27.43 | AVG      |
| 3   |     | 0.1949 | 47.66   | 10.16   | 57.82    | 79.00 | 21.18 | peak     |
| 4   |     | 0.1949 | 33.06   | 10.16   | 43.22    | 66.00 | 22.78 | AVG      |
| 5   |     | 0.2490 | 41.76   | 10.16   | 51.92    | 79.00 | 27.08 | peak     |
| 6   |     | 0.2490 | 26.08   | 10.16   | 36.24    | 66.00 | 29.76 | AVG      |
| 7   |     | 0.5144 | 38.29   | 10.24   | 48.53    | 73.00 | 24.47 | peak     |
| 8   |     | 0.5144 | 27.30   | 10.24   | 37.54    | 60.00 | 22.46 | AVG      |
| 9   |     | 1.7654 | 32.31   | 10.38   | 42.69    | 73.00 | 30.31 | peak     |
| 10  |     | 1.7654 | 22.65   | 10.38   | 33.03    | 60.00 | 26.97 | AVG      |
| 11  |     | 8.5560 | 29.65   | 10.45   | 40.10    | 73.00 | 32.90 | peak     |
| 12  |     | 8.5560 | 18.63   | 10.45   | 29.08    | 60.00 | 30.92 | AVG      |

Remark: 1. All readings are Quasi-Peak and Average values

2. During the test, pre-scan all modes, only the worst case is recorded in the report. AC conducted emission pre-test at both at AC 120V modes, recorded worst case AC 120V.

EUT: INTELLIGENT AIR PURIFIER

M/N: Falcon AP1mini

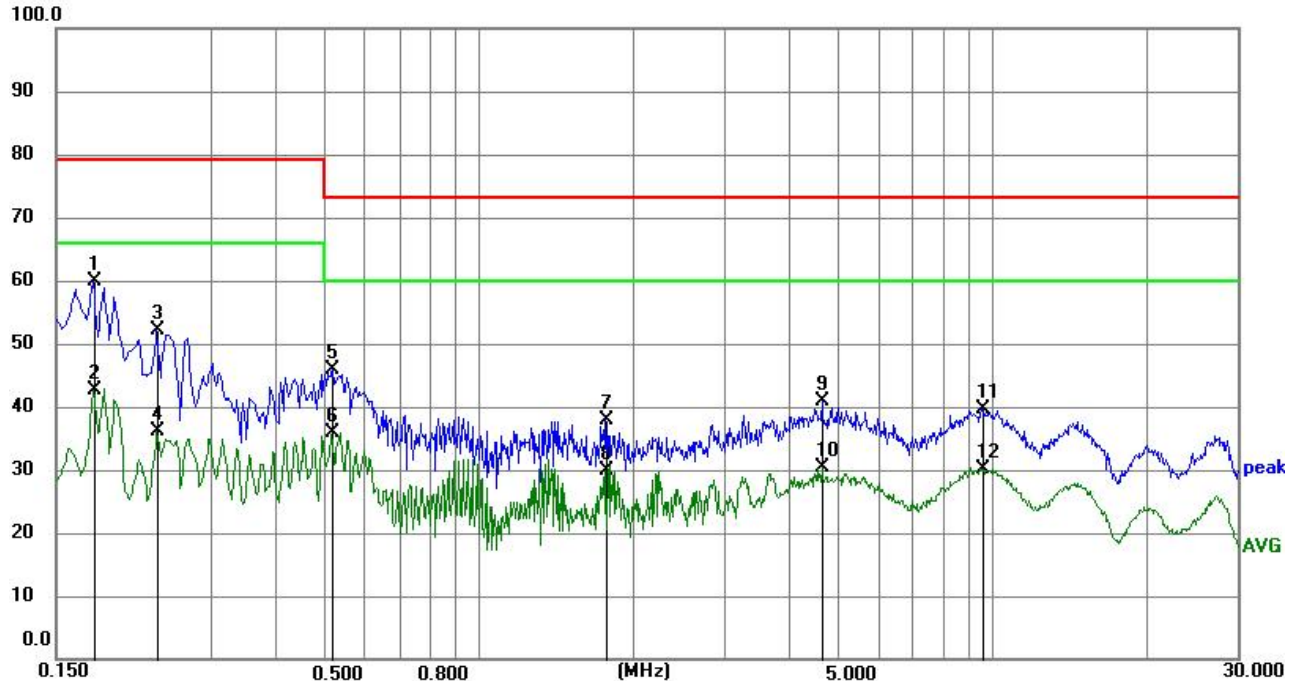
Test Voltage: AC 120V

Phase: Neutral

Test Mode: TX Mode

Note: only worse case: BLE 1M-GFSK mode with CH00 2402MHz is reported

Detailed results are shown below



| No. | Mk. | Freq.  | Reading Level | Correct Factor | Measurement | Limit | Over  |          |
|-----|-----|--------|---------------|----------------|-------------|-------|-------|----------|
|     |     | MHz    |               | dB             | dBuV        | dBuV  | dB    | Detector |
| 1   | *   | 0.1770 | 49.80         | 10.12          | 59.92       | 79.00 | 19.08 | peak     |
| 2   |     | 0.1770 | 32.59         | 10.12          | 42.71       | 66.00 | 23.29 | AVG      |
| 3   |     | 0.2355 | 42.02         | 10.10          | 52.12       | 79.00 | 26.88 | peak     |
| 4   |     | 0.2355 | 25.97         | 10.10          | 36.07       | 66.00 | 29.93 | AVG      |
| 5   |     | 0.5190 | 35.59         | 10.22          | 45.81       | 73.00 | 27.19 | peak     |
| 6   |     | 0.5190 | 25.57         | 10.22          | 35.79       | 60.00 | 24.21 | AVG      |
| 7   |     | 1.7655 | 27.59         | 10.38          | 37.97       | 73.00 | 35.03 | peak     |
| 8   |     | 1.7655 | 19.53         | 10.38          | 29.91       | 60.00 | 30.09 | AVG      |
| 9   |     | 4.6635 | 30.50         | 10.40          | 40.90       | 73.00 | 32.10 | peak     |
| 10  |     | 4.6635 | 19.87         | 10.40          | 30.27       | 60.00 | 29.73 | AVG      |
| 11  |     | 9.5460 | 29.07         | 10.55          | 39.62       | 73.00 | 33.38 | peak     |
| 12  |     | 9.5460 | 19.63         | 10.55          | 30.18       | 60.00 | 29.82 | AVG      |

Remark: 1. All readings are Quasi-Peak and Average values

2. During the test, pre-scan all modes, only the worst case is recorded in the report. AC conducted emission pre-test at both at AC 120V modes, recorded worst case AC 120V.

## 11. ANTENNA REQUIREMENTS

### 11.1. Limit

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, 15.221, or §15.236. 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.

### 11.2. Test Result

The antennas used for this product is PCB antenna, so compliance with antenna requirements. (Please refer to the EUT Internal Photos for details)



## 12.APPENDIX

"EUT of External Photos, EUT Internal Photos & Test Setup Photos" Please refer to the Annex A, Annex B& Annex C document.

**CTSL2521220070ER Annex A. EUT External Photos**

**CTSL2521220070ER Annex B. EUT Internal Photos**

**CTSL2521220070ER Annex C. Test Setup Photos**

-----*End of Test Report*-----

CTSL