# FCC Test Report

Report No.: AGC00021131106FE08

| | | |
|---|---|---|
| **FCC ID** | : | ZG8BLE02 |
| **APPLICATION PURPOSE** | : | Original Equipment |
| **PRODUCT DESIGNATION** | : | Pedometer |
| **BRAND NAME** | : | N/A |
| **MODEL NAME** | : | BLE02, BLE05 |
| **CLIENT** | : | LANYA ELECTRONIC Co., Ltd. |
| **DATE OF ISSUE** | : | Nov.12, 2013 |
| **STANDARD(S)** | : | FCC Part 15 Rules |
| **REPORT VERSION** | : | V1.0 |

*A*ttestation of *G*lobal *C*ompliance (Shenzhen) Co., Ltd

## Report Revise Record

| Report Version | Revise Time | Issued Date | Valid Version | Notes |
|---|---|---|---|---|
| V1.0 | / | Nov.12, 2013 | Valid | Original Report |

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## 1. VERIFICATION OF COMPLIANCE

| | |
|---|---|
| **Applicant** | LANYA ELECTRONIC Co., Ltd. |
| **Address** | 3F, Workshop of 6,Lijincheng Science&Technology Industrial Area,The East Road of Industrial AREA,longhua Street,Bao'an District,Shenzhen City,Guangdong Province,P.R.China |
| **Manufacturer** | LANYA ELECTRONIC Co., Ltd. |
| **Address** | 3F, Workshop of 6,Lijincheng Science&Technology Industrial Area,The East Road of Industrial AREA,longhua Street,Bao'an District,Shenzhen City,Guangdong Province,P.R.China |
| **Product Designation** | Pedometer |
| **Brand Name** | N/A |
| **Test Model** | BLE02 |
| **Series Model** | BLE05 |
| **Difference description** | All the same except for the appearance. |
| **Date of test** | Nov.09 2013 to Nov.11, 2013 |
| **Deviation** | None |
| **Condition of Test Sample** | Normal |
| **Report Template** | AGCRT-US-BLE/RF (2013-03-01) |

**WE HEREBY CERTIFY THAT:**

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2003) and the energy emitted by the sample EUT tested as described in this report is in compliance with requirement of FCC Part 15 Rules requirement.

Prepared By

Water Zuo Nov.12, 2013

Checked By

Forrest Lei Nov.12, 2013

Authorized By

Solger Zhang Nov.12, 2013

# 2.GENERAL INFORMATION

## 2.1PRODUCT DESCRIPTION

The EUT is designed as a “Pedometer”. It is designed by way of utilizing the FHSS technology to achieve the system operation.

A major technical description of EUT is described as following

| | |
|---|---|
| Operation Frequency | 2.402 GHz to 2.480GHz |
| Bluetooth Version | V4.0 |
| Modulation | GFSK |
| Number of channels | 40 Channel(37 Hopping Channel,3 advertising Channel) |
| Antenna Designation | Integral antenna |
| Antenna Gain | 2.0dBi |
| Hardware Version | BLE02 |
| Software Version | BLE02 |
| Power Supply | DC3.0V by Built-in Li-ion Battery |

## 2.2 RELATED SUBMITTAL(S)/GRANT(S)

This submittal(s) (test report) is intended for **FCC ID: ZG8BLE02** filing to comply with Section 15.247of the FCC Part 15, Subpart C Rules.

## 2.3TEST METHODOLOGY

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.
The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted accordingly in reference to the Operating Instructions. The EUT was tested in all three orthogonal planes and the worse case was showed.

## 2.4 TEST FACILITY

All measurement facilities used to collect the measurement data are located at
Attestation of Global Compliance (Shenzhen) Co, Ltd

2/F., Building 2, No.1-No.4, Chaxi Sanwei Technical Industrial Park, Gushu, Xixiang, Bao'an District, Shenzhen, Guangdong, China.

FCC register No.: 259865

## 2.5 SPECIAL ACCESSORIES

Refer to section 2.2.

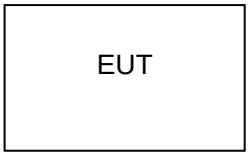
## 2.6 EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

# 3. SYSTEM TEST CONFIGURATION

## 3.1 CONFIGURATION OF TESTED SYSTEM

**Configuration:** Normal Operating




**Configuration:** Continuous TX


## 3.2 EQUIPMENT USED IN TESTED SYSTEM

| Item | Equipment | Mfr/Brand | Model/Type No. | Remark |
|---|---|---|---|---|
| 1 | Pedometer | N/A | BLE02 | EUT |
| 2 | Battery | N/A | N/A | Accessory |
| 3 | PC | Dell | INSPIRON | A.E |
| 4 | Control Board | N/A | T13 | A.E |

## 4. SUMMARY OF TEST RESULTS

| FCC RULES | DESCRIPTION OF TEST | RESULT |
|---|---|---|
| § 15.203 | Antenna Requirement | Compliant |
| §15.209<br>§15.247(d) | Radiated Emission | Compliant |
| §15.247(d) | Band Edges | Compliant |
| §15.247 | 6 dB Bandwidth | Compliant |
| §15.247(b) | Conducted Power | Compliant |
| §15.247(e) | Maximum Conducted Output Power SPECTRAL Density | Compliant |
| §15.207 | Line Conduction Emission | N/A |

Note: N/A means not applicable.

## 5. DESCRIPTION OF TEST MODES

The EUT has been operated in three modulations: GFSK independently.

| NO. | TEST MODE DESCRIPTION |
|---|---|
| 1 | Low channel TX |
| 2 | Middle channel TX |
| 3 | High channel TX |
| 4 | Normal Operating (BT) |

Note:
1. All the test modes can be supply by Built-in Li-ion battery, only the result of the worst case was recorded in the report if no any records.
2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.

# 6. ANTENNA REQUIREMENT

## 6.1. STANDARD APPLICABLE

According to FCC 15.203, An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 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.

## 6.2. TEST RESULT

This product has a permanent antenna, fulfill the requirement of this section.

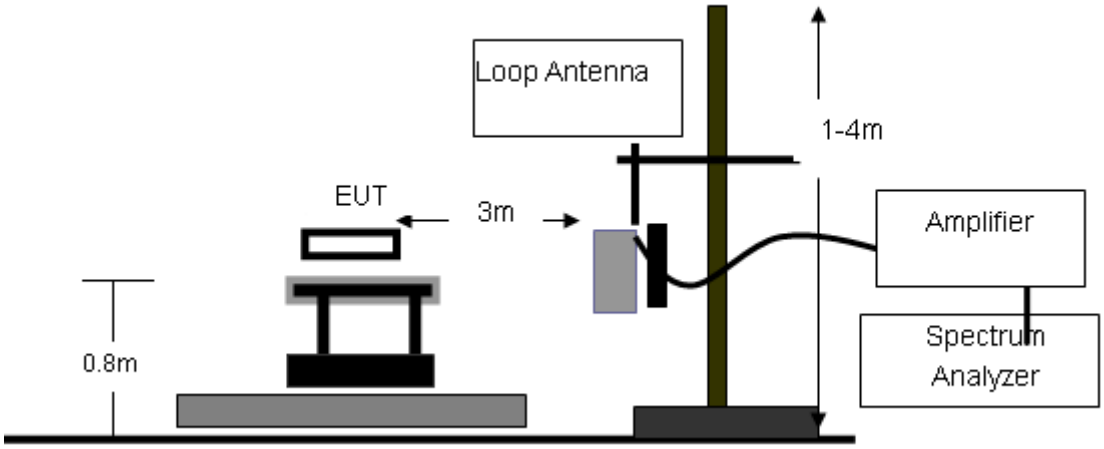
# 7. RADIATED EMISSION

## 7.1 MEASUREMENT PROCEDURE

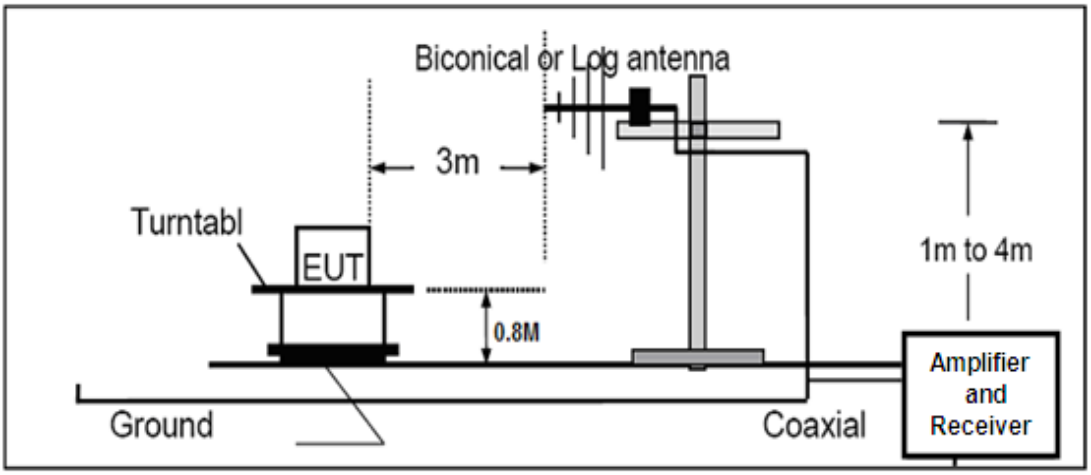
1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High - Low scan is not required in this case.

**7.2 TEST SETUP**

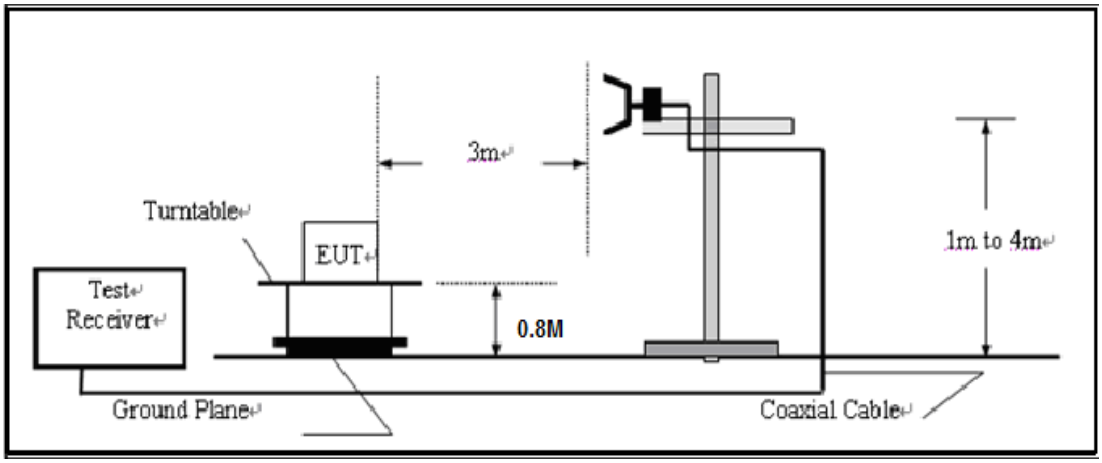
RADIATED EMISSION TEST SETUP BELOW 30MHz




RADIATED EMISSION TEST SETUP 30MHz-1000MHz




RADIATED EMISSION TEST SETUP ABOVE 1000MHz



**7.3 LIMITS AND MEASUREMENT RESULT**

15.209 Limit in the below table has to be followed

| 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 |

Note: All modes were tested For restricted band radiated emission,
the test records reported below are the worst result compared to other modes.

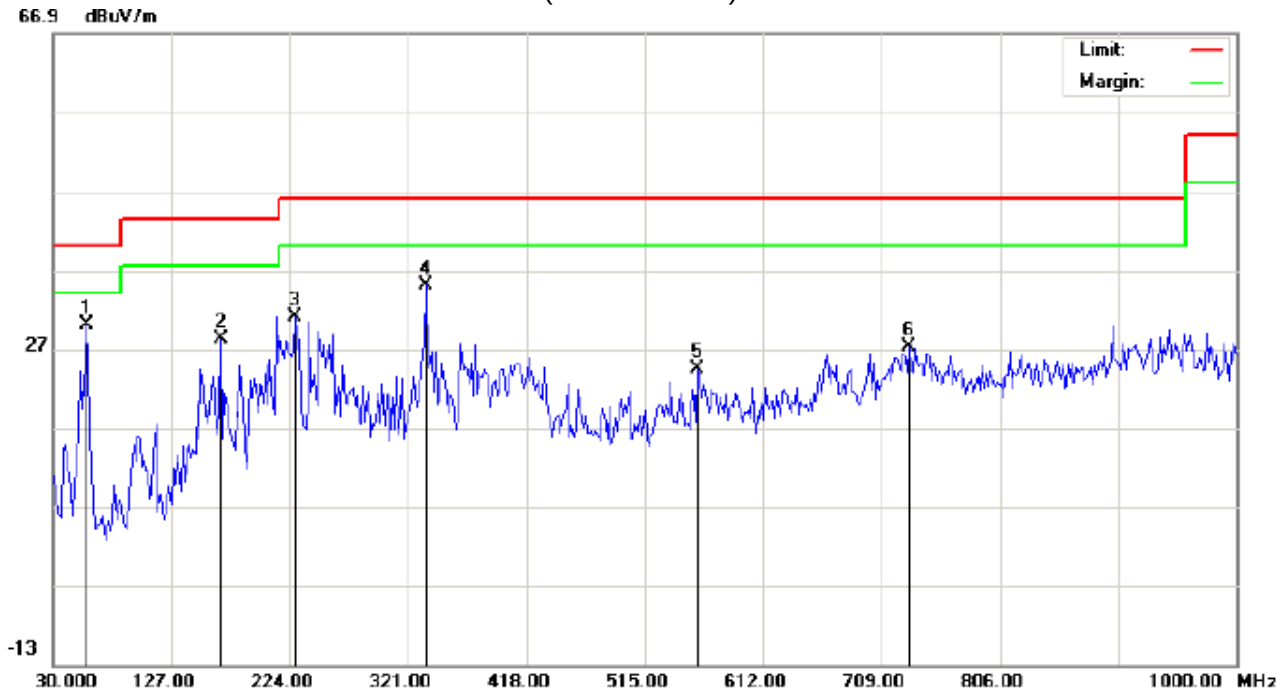
**7.4 TEST RESULT**

**RADIATED EMISSION BELOW 30MHZ**

No emission found between lowest internal used/generated frequencies to 30MHz.

## RADIATED EMISSION BELOW 1GHZ

RADIATED EMISSION TEST- (30MHZ-1GHZ)-LOW CHANNEL-HORIZONTAL




Site: site #1
Limit: FCC Class B 3M Radiation
EUT:Pedometer
M/N:BLE02
Mode: Low Channel TX
Note:

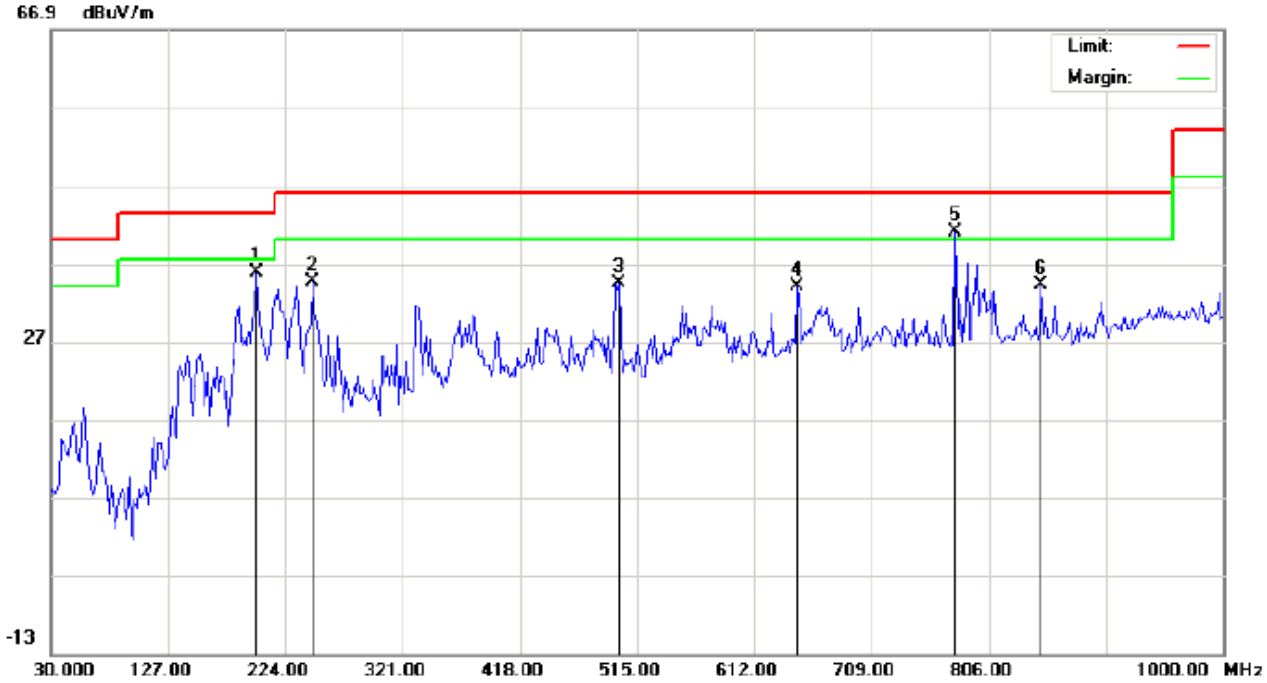
Polarization: *Horizontal*
Power:
Distance:

Temperature: 26
Humidity: 60 %

| No. | Mk. | Freq. | Reading | Factor | Measurement | Limit | Over | Detector | Antenna Height | Table Degree | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | | cm | degree | |
| 1 | * | 57.4833 | 18.78 | 11.17 | 29.95 | 40.00 | -10.05 | peak | | | |
| 2 | | 167.4167 | 14.36 | 13.75 | 28.11 | 43.50 | -15.39 | peak | | | |
| 3 | | 228.8500 | 18.00 | 13.10 | 31.10 | 46.00 | -14.90 | peak | | | |
| 4 | | 335.5500 | 17.24 | 17.78 | 35.02 | 46.00 | -10.98 | peak | | | |
| 5 | | 558.6500 | 1.66 | 22.70 | 24.36 | 46.00 | -21.64 | peak | | | |
| 6 | | 731.6332 | 1.13 | 26.10 | 27.23 | 46.00 | -18.77 | peak | | | |

**RESULT: PASS**

RADIATED EMISSION TEST- (30MHZ-1GHZ)-LOW CHANNEL -VERTICAL




Site: site #1
Limit: FCC Class B 3M Radiation
EUT:Pedometer
M/N:BLE02
Mode: Low Channel TX
Note:

Polarization: *Vertical*
Power:
Distance:

Temperature: 26
Humidity: 60 %

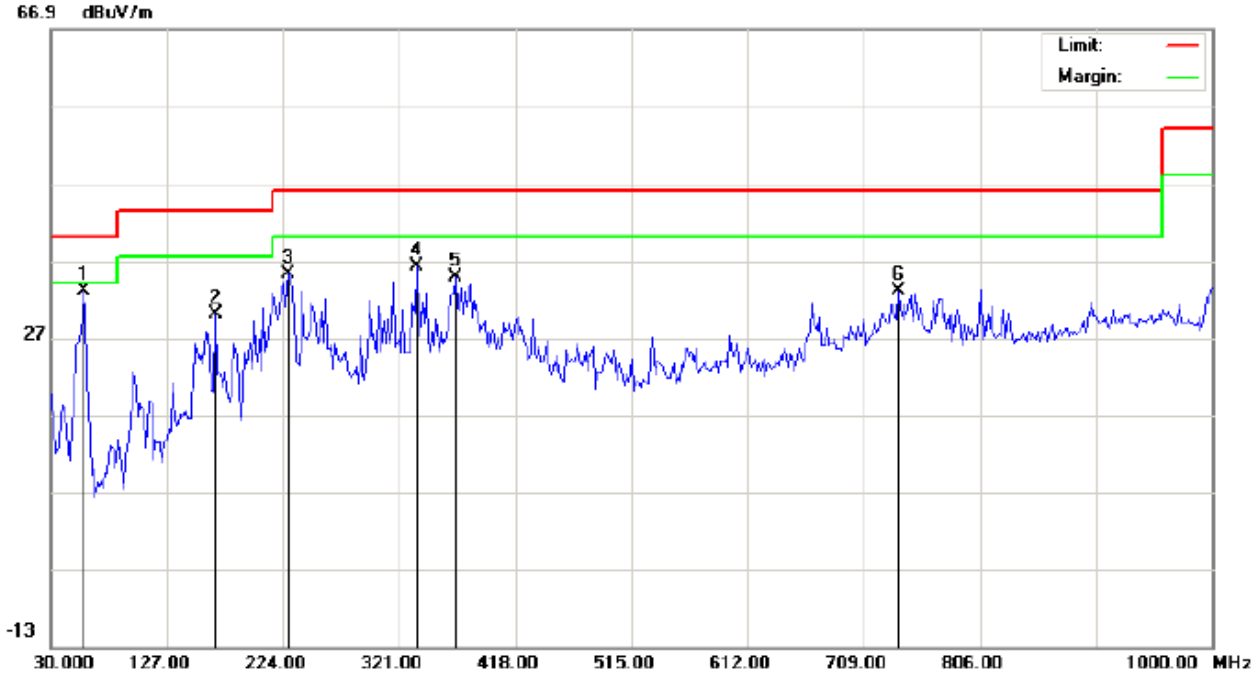
| No. | Mk. | Freq. | Reading | Factor | Measurement | Limit | Over | Detector | Antenna Height | Table Degree | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | | cm | degree | |
| 1 | | 199.7500 | 26.80 | 9.06 | 35.86 | 43.50 | -7.64 | peak | | | |
| 2 | | 246.6333 | 21.06 | 13.57 | 34.63 | 46.00 | -11.37 | peak | | | |
| 3 | | 500.4500 | 13.35 | 21.14 | 34.49 | 46.00 | -11.51 | peak | | | |
| 4 | | 647.5667 | 10.24 | 23.80 | 34.04 | 46.00 | -11.96 | peak | | | |
| 5 | * | 778.5167 | 13.90 | 27.02 | 40.92 | 46.00 | -5.08 | peak | | | |
| 6 | | 849.6500 | 6.98 | 27.31 | 34.29 | 46.00 | -11.71 | peak | | | |

**RESULT: PASS**

**Note:** 1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.

2. The “Factor” value can be calculated automatically by software of measurement system.

RADIATED EMISSION TEST- (30MHZ-1GHZ)-MIDDLE CHANNEL-HORIZONTAL




Site: site #1
Limit: FCC Class B 3M Radiation
EUT:Pedometer
M/N:BLE02
Mode: Middle Channel TX
Note:

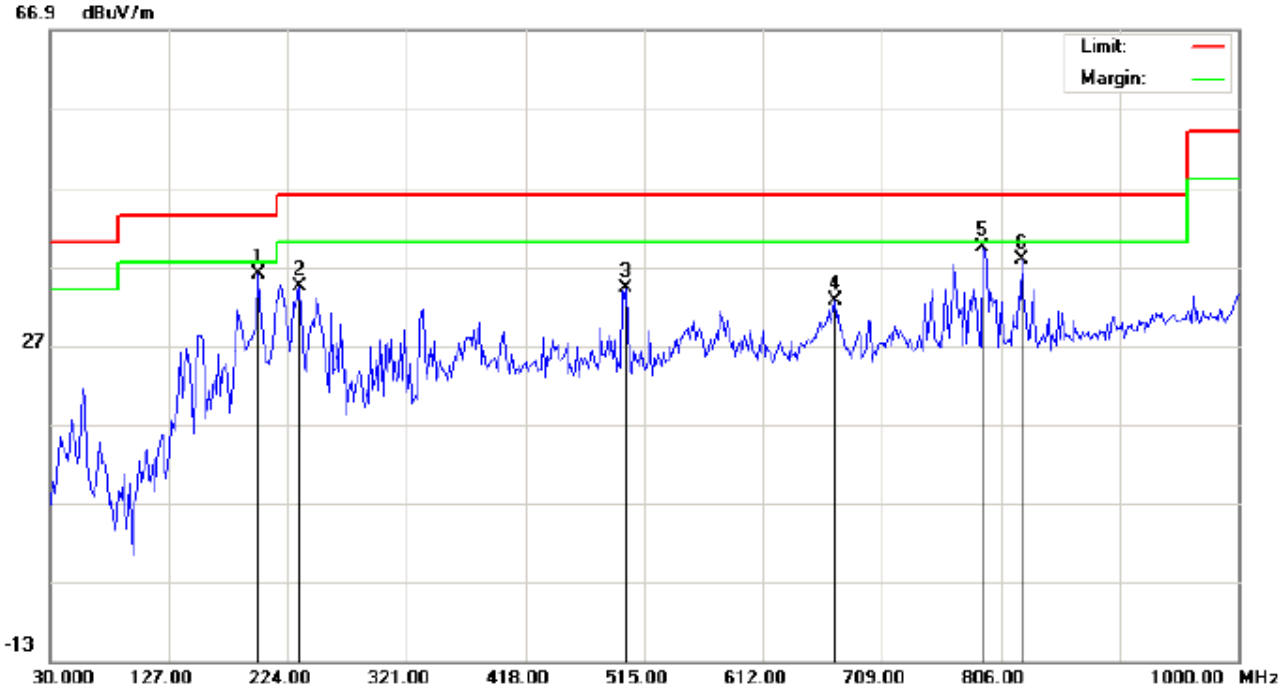
Polarization: *Horizontal*
Power:
Distance:

Temperature: 26
Humidity: 60 %

| No. | Mk. | Freq. | Reading | Factor | Measurement | Limit | Over | Detector | Antenna Height | Table Degree | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | | cm | degree | |
| 1 | * | 57.4833 | 21.75 | 11.17 | 32.92 | 40.00 | -7.08 | peak | | | |
| 2 | | 167.4167 | 16.16 | 13.75 | 29.91 | 43.50 | -13.59 | peak | | | |
| 3 | | 228.8500 | 22.16 | 13.10 | 35.26 | 46.00 | -10.74 | peak | | | |
| 4 | | 335.5500 | 18.41 | 17.78 | 36.19 | 46.00 | -9.81 | peak | | | |
| 5 | | 367.8833 | 15.99 | 18.86 | 34.85 | 46.00 | -11.15 | peak | | | |
| 6 | | 738.1000 | 6.68 | 26.29 | 32.97 | 46.00 | -13.03 | peak | | | |

**RESULT: PASS**

RADIATED EMISSION TEST- (30MHZ-1GHZ)- MIDDLE CHANNEL -VERTICAL




Site: site #1
Limit: FCC Class B 3M Radiation
EUT:Pedometer
M/N:BLE02
Mode: Middle Channel TX
Note:

Polarization: *Vertical*
Power:
Distance:

Temperature: 26
Humidity: 60 %

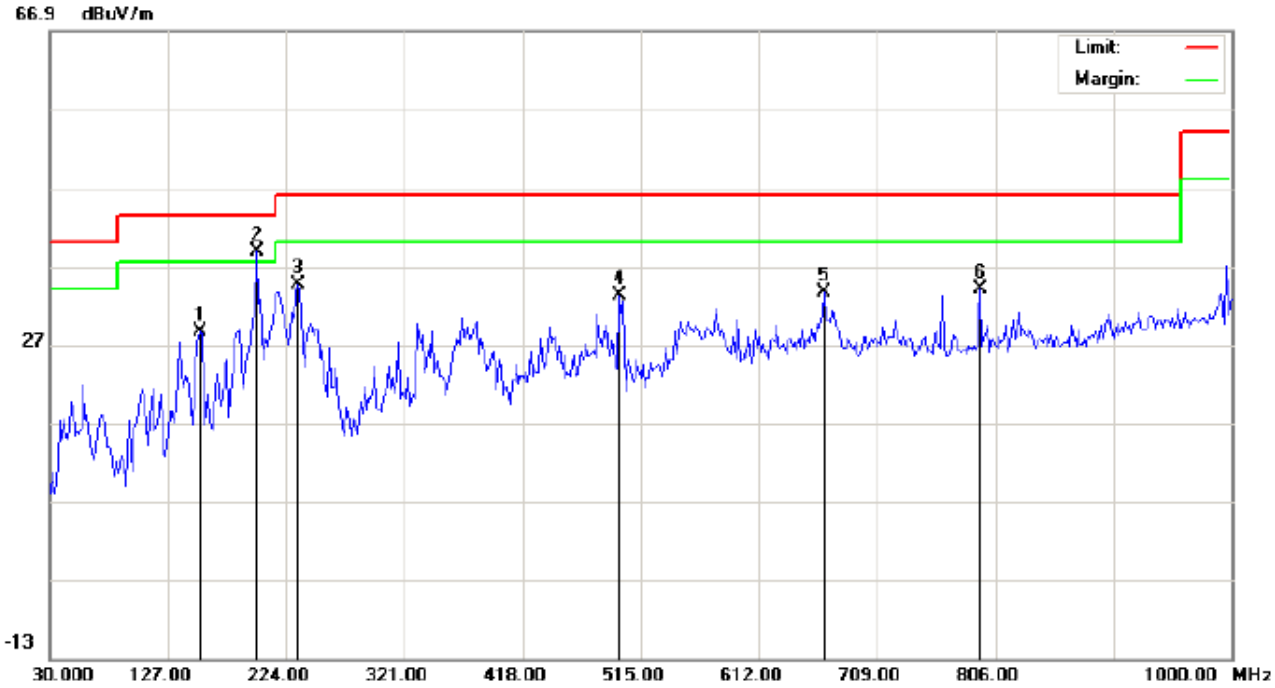
| No. | Mk | Freq. | Reading | Factor | Measurement | Limit | Over | Detector | Antenna Height | Table Degree | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | . | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | | cm | degree | |
| 1 | | 199.7500 | 27.03 | 9.06 | 36.09 | 43.50 | -7.41 | peak | | | |
| 2 | | 233.7000 | 22.07 | 12.30 | 34.37 | 46.00 | -11.63 | peak | | | |
| 3 | | 500.4500 | 12.98 | 21.14 | 34.12 | 46.00 | -11.88 | peak | | | |
| 4 | | 670.2000 | 8.18 | 24.39 | 32.57 | 46.00 | -13.43 | peak | | | |
| 5 | * | 791.4500 | 12.28 | 27.20 | 39.48 | 46.00 | -6.52 | peak | | | |
| 6 | | 823.7833 | 10.48 | 27.32 | 37.80 | 46.00 | -8.20 | peak | | | |

**RESULT: PASS**

**Note:** 1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.

2. The “Factor” value can be calculated automatically by software of measurement system.

RADIATED EMISSION TEST- (30MHZ-1GHZ)-HIGH CHANNEL-HORIZONTAL




Site: site #1
Limit: FCC Class B 3M Radiation
EUT:Pedometer
M/N:BLE02
Mode: High Channel TX
Note:

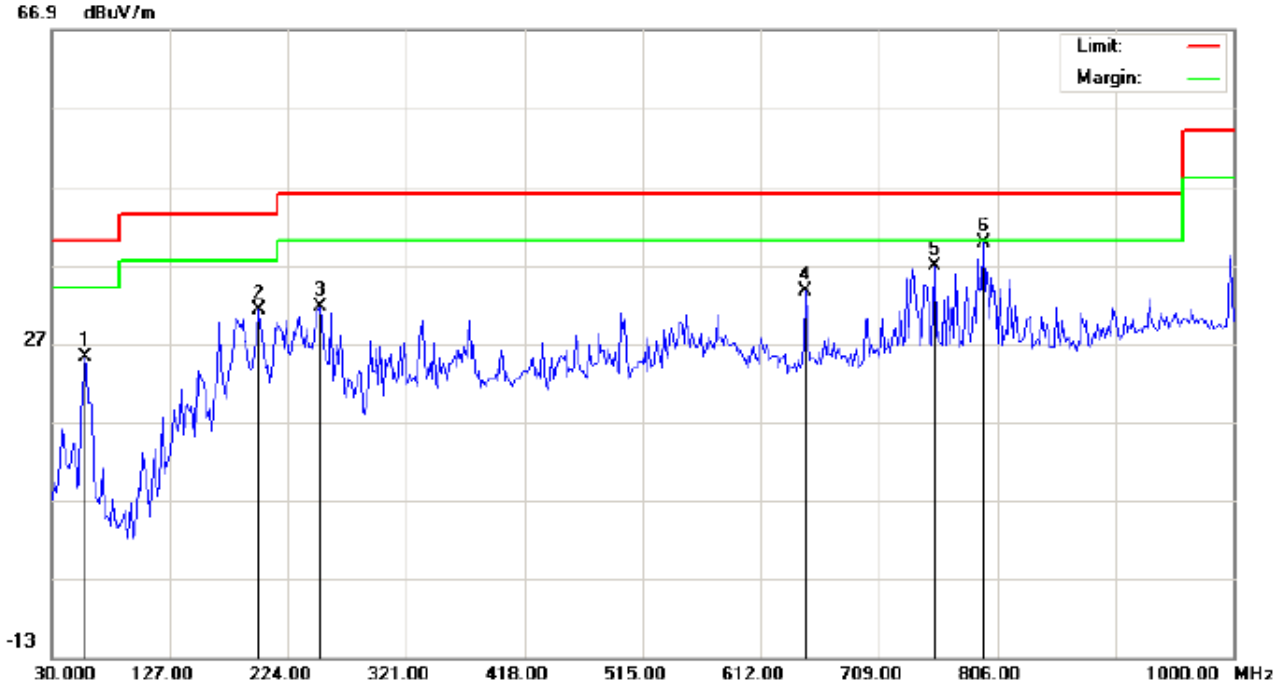
Polarization: *Horizontal*
Power:
Distance:

Temperature: 26
Humidity: 60 %

| No. | Mk | Freq. | Reading | Factor | Measurement | Limit | Over | Detector | Antenna Height | Table Degree | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | - | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | | cm | degree | |
| 1 | | 152.8667 | 13.42 | 15.28 | 28.70 | 43.50 | -14.80 | peak | | | |
| 2 | * | 199.7500 | 26.91 | 11.99 | 38.90 | 43.50 | -4.60 | peak | | | |
| 3 | | 233.7000 | 21.30 | 13.28 | 34.58 | 46.00 | -11.42 | peak | | | |
| 4 | | 497.2167 | 12.11 | 21.10 | 33.21 | 46.00 | -12.79 | peak | | | |
| 5 | | 665.3500 | 9.27 | 24.26 | 33.53 | 46.00 | -12.47 | peak | | | |
| 6 | | 793.0667 | 6.74 | 27.22 | 33.96 | 46.00 | -12.04 | peak | | | |

**RESULT: PASS**

RADIATED EMISSION TEST- (30MHZ-1GHZ)-HIGH CHANNEL -VERTICAL




Site: site #1
Limit: FCC Class B 3M Radiation
EUT:Pedometer
M/N:BLE02
Mode: High Channel TX
Note:

Polarization: *Vertical*
Power:
Distance:

Temperature: 26
Humidity: 60 %

| No. | Mk | Freq. | Reading | Factor | Measurement | Limit | Over | Detector | Antenna Height | Table Degree | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | | cm | degree | |
| 1 | | 57.4833 | 16.94 | 8.17 | 25.11 | 40.00 | -14.89 | peak | | | |
| 2 | | 199.7500 | 22.14 | 9.06 | 31.20 | 43.50 | -12.30 | peak | | | |
| 3 | | 249.8667 | 17.65 | 13.89 | 31.54 | 46.00 | -14.46 | peak | | | |
| 4 | | 649.1833 | 9.74 | 23.83 | 33.57 | 46.00 | -12.43 | peak | | | |
| 5 | | 754.2667 | 10.10 | 26.69 | 36.79 | 46.00 | -9.21 | peak | | | |
| 6 | * | 794.6833 | 12.49 | 27.25 | 39.74 | 46.00 | -6.26 | peak | | | |

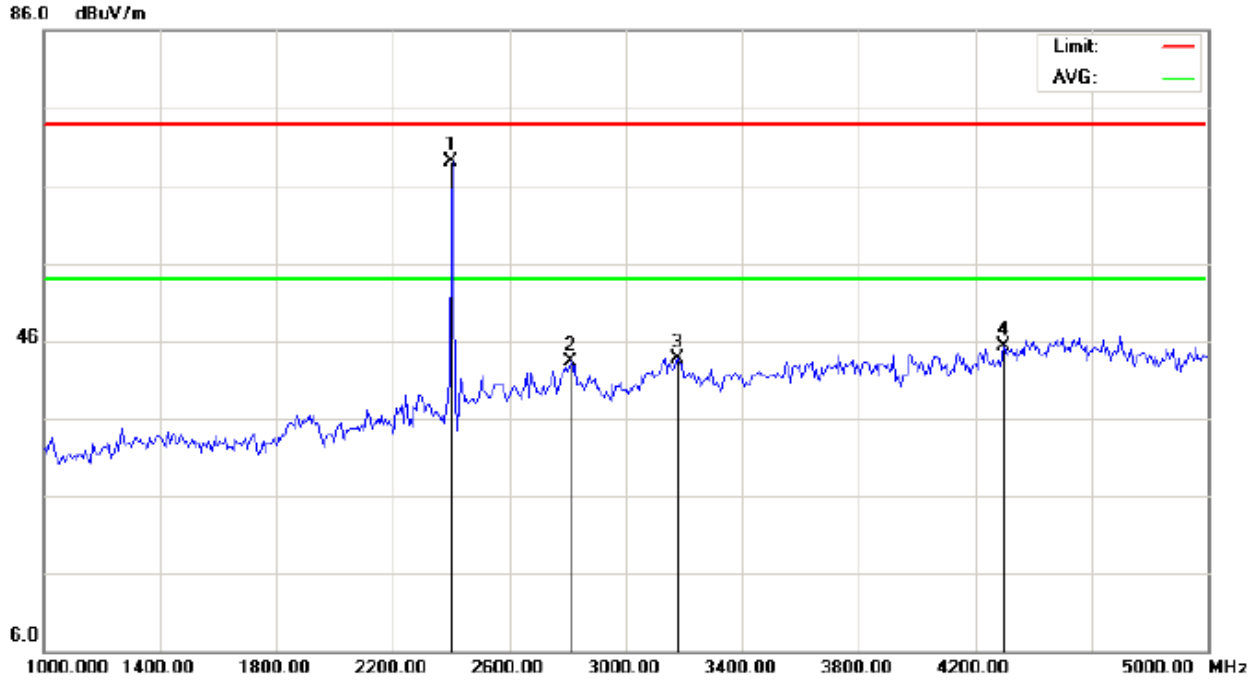
**RESULT: PASS**

**Note:** 1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.

2. The “Factor” value can be calculated automatically by software of measurement system.

## RADIATED EMISSION ABOVE 1GHZ

RADIATED EMISSION TEST- (ABOVE 1GHZ)-LOW CHANNEL-HORIZONTAL




Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)
EUT: Pedometer
M/N: BLE02
Mode: low channel TX
Note:

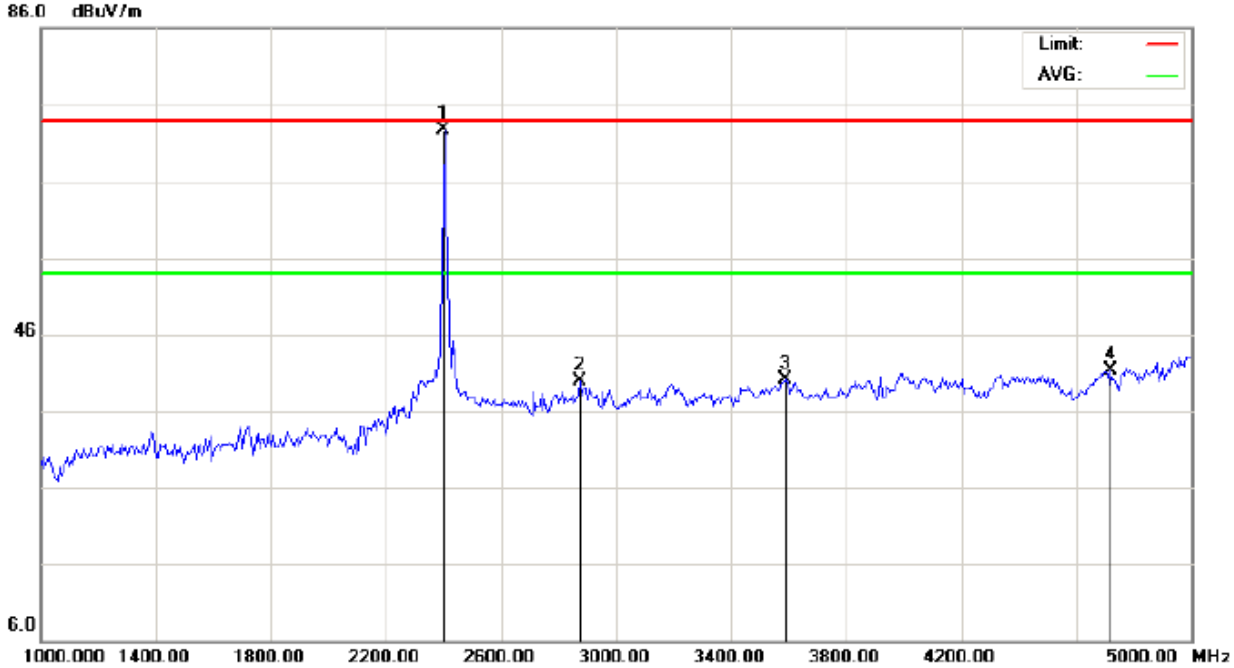
Polarization: *Horizontal*
Power:
Distance:

Temperature: 26
Humidity: 60 %

| No. | Mk | Freq. | Reading | Factor | Measurement | Limit | Over | Detector | Antenna Height | Table Degree | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | - | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | | cm | degree | |
| 1 | * | 2402.000 | 78.82 | -9.68 | 69.14 | 74.00 | -4.86 | peak | | | |
| 2 | | 2813.333 | 52.21 | -8.81 | 43.40 | 74.00 | -30.60 | peak | | | |
| 3 | | 3180.000 | 51.80 | -8.19 | 43.61 | 74.00 | -30.39 | peak | | | |
| 4 | | 4300.000 | 49.13 | -3.79 | 45.34 | 74.00 | -28.66 | peak | | | |

**RESULT: PASS**

RADIATED EMISSION TEST-(ABOVE 1GHZ)-LOW CHANNEL-VERTICAL




Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)
EUT: Pedometer
M/N: BLE02
Mode: low channel TX
Note:

Polarization: *Vertical*
Power:
Distance:

Temperature: 26
Humidity: 60 %

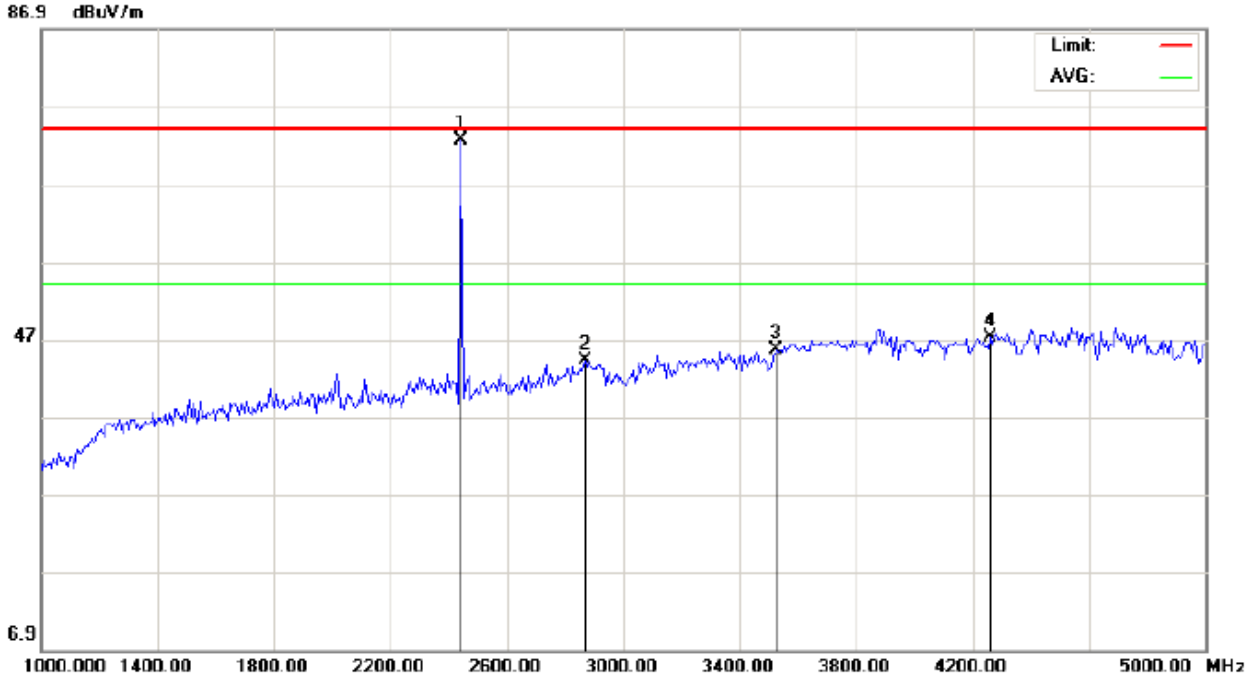
| No. | Mk | Freq. | Reading | Factor | Measurement | Limit | Over | Detector | Antenna Height | Table Degree | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | - | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | | cm | degree | |
| 1 | * | 2402.000 | 82.32 | -9.68 | 72.64 | 74.00 | -1.36 | peak | | | |
| 2 | | 2873.333 | 48.64 | -8.67 | 39.97 | 74.00 | -34.03 | peak | | | |
| 3 | | 3586.667 | 47.44 | -7.36 | 40.08 | 74.00 | -33.92 | peak | | | |
| 4 | | 4720.000 | 43.93 | -2.53 | 41.40 | 74.00 | -32.60 | peak | | | |

**RESULT: PASS**

**Note:** 1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.

2. The “Factor” value can be calculated automatically by software of measurement system.

RADIATED EMISSION TEST-(ABOVE 1GHZ)-MIDDLE CHANNEL-HORIZONTAL




Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)
EUT: Pedometer
M/N: BLE02
Mode: middle channel TX
Note:

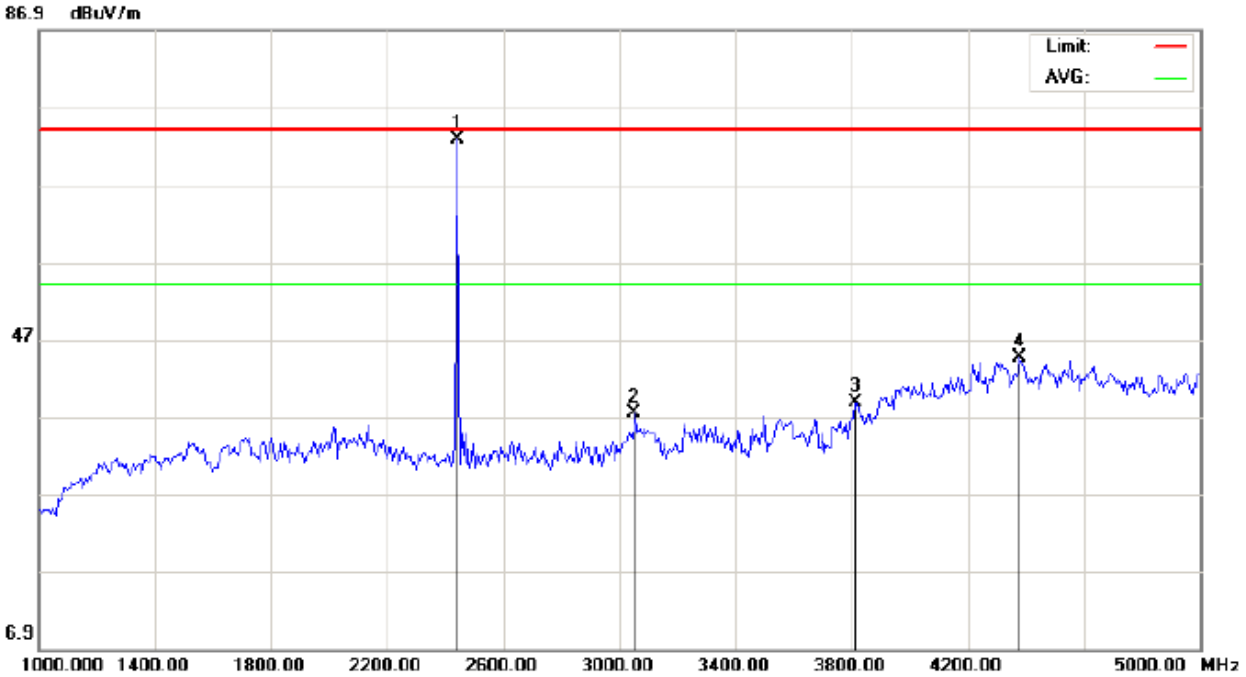
Polarization: *Horizontal*
Power:
Distance:

Temperature: 26
Humidity: 60 %

| No. | Mk | Freq. | Reading | Factor | Measurement | Limit | Over | Detector | Antenna Height | Table Degree | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | - | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | | cm | degree | |
| 1 | * | 2440.000 | 82.20 | -9.64 | 72.56 | 74.00 | -1.44 | peak | | | |
| 2 | | 2866.667 | 52.85 | -8.68 | 44.17 | 74.00 | -29.83 | peak | | | |
| 3 | | 3526.667 | 53.35 | -7.73 | 45.62 | 74.00 | -28.38 | peak | | | |
| 4 | | 4260.000 | 51.11 | -3.93 | 47.18 | 74.00 | -26.82 | peak | | | |

**RESULT: PASS**

RADIATED EMISSION TEST-(ABOVE 1GHZ)-MIDDLE CHANNEL-VERTICAL




Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)
EUT: Pedometer
M/N: BLE02
Mode: middle channel TX
Note:

Polarization: *Vertical*
Power:
Distance:

Temperature: 26
Humidity: 60 %

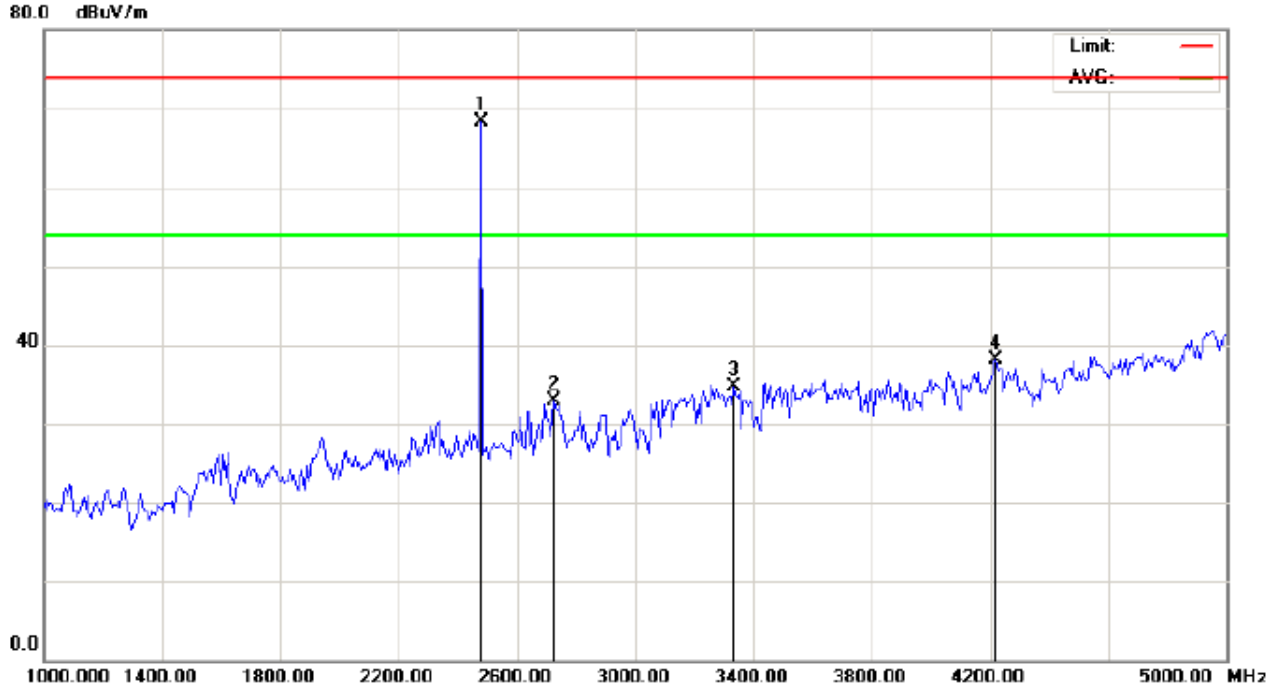
| No. | Mk | Freq. | Reading | Factor | Measurement | Limit | Over | Detector | Antenna Height | Table Degree | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | - | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | | cm | degree | |
| 1 | * | 2440.000 | 82.39 | -9.64 | 72.75 | 74.00 | -1.25 | peak | | | |
| 2 | | 3053.333 | 45.78 | -8.31 | 37.47 | 74.00 | -36.53 | peak | | | |
| 3 | | 3813.333 | 44.78 | -5.96 | 38.82 | 74.00 | -35.18 | peak | | | |
| 4 | | 4380.000 | 48.15 | -3.52 | 44.63 | 74.00 | -29.37 | peak | | | |

**RESULT: PASS**

**Note:** 1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.

2. The “Factor” value can be calculated automatically by software of measurement system.

RADIATED EMISSION TEST-(ABOVE 1GHZ)-HIGH CHANNEL-HORIZONTAL




Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)
EUT: Pedometer
M/N: BLE02
Mode: high channel TX
Note:

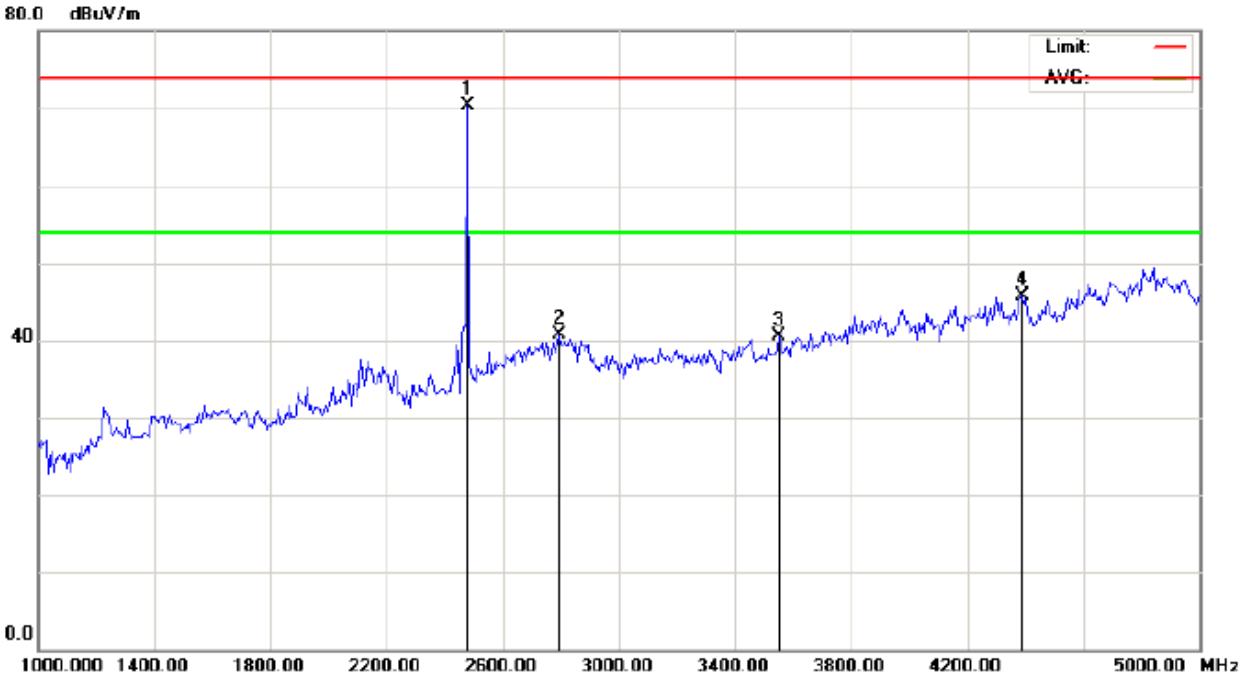
Polarization: *Horizontal*
Power:
Distance:

Temperature: 26
Humidity: 60 %

| No. | Mk. | Freq. | Reading | Factor | Measurement | Limit | Over | Detector | Antenna Height | Table Degree | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | | cm | degree | |
| 1 | * | 2480.000 | 77.85 | -9.59 | 68.26 | 74.00 | -5.74 | peak | | | |
| 2 | | 2726.667 | 42.01 | -9.02 | 32.99 | 74.00 | -41.01 | peak | | | |
| 3 | | 3333.333 | 42.70 | -8.05 | 34.65 | 74.00 | -39.35 | peak | | | |
| 4 | | 4220.000 | 42.08 | -4.06 | 38.02 | 74.00 | -35.98 | peak | | | |

**RESULT: PASS**

RADIATED EMISSION TEST-(ABOVE 1GHZ)-HIGH CHANNEL-VERTICAL




Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)
EUT: Pedometer
M/N: BLE02
Mode: high channel TX
Note:

Polarization: *Vertical*
Power:
Distance:

Temperature: 26
Humidity: 60 %

| No. | Mk. | Freq. | Reading | Factor | Measurement | Limit | Over | Detector | Antenna Height | Table Degree | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | | cm | degree | |
| 1 | * | 2480.000 | 79.94 | -9.59 | 70.35 | 74.00 | -3.65 | peak | | | |
| 2 | | 2793.333 | 49.52 | -8.86 | 40.66 | 74.00 | -33.34 | peak | | | |
| 3 | | 3553.333 | 48.12 | -7.56 | 40.56 | 74.00 | -33.44 | peak | | | |
| 4 | | 4386.667 | 49.15 | -3.50 | 45.65 | 74.00 | -28.35 | peak | | | |

**RESULT: PASS**

**Note:** 5~25GHz at least have 20dB margin. No recording in the test report.

Factor=Antenna Factor+ Cable loss-Amplifier gain,

Margin=Measurement-Limit.

The “Factor” value can be calculated automatically by software of measurement system.

# 8. BAND EDGE EMISSION

## 8.1. MEASUREMENT PROCEDURE

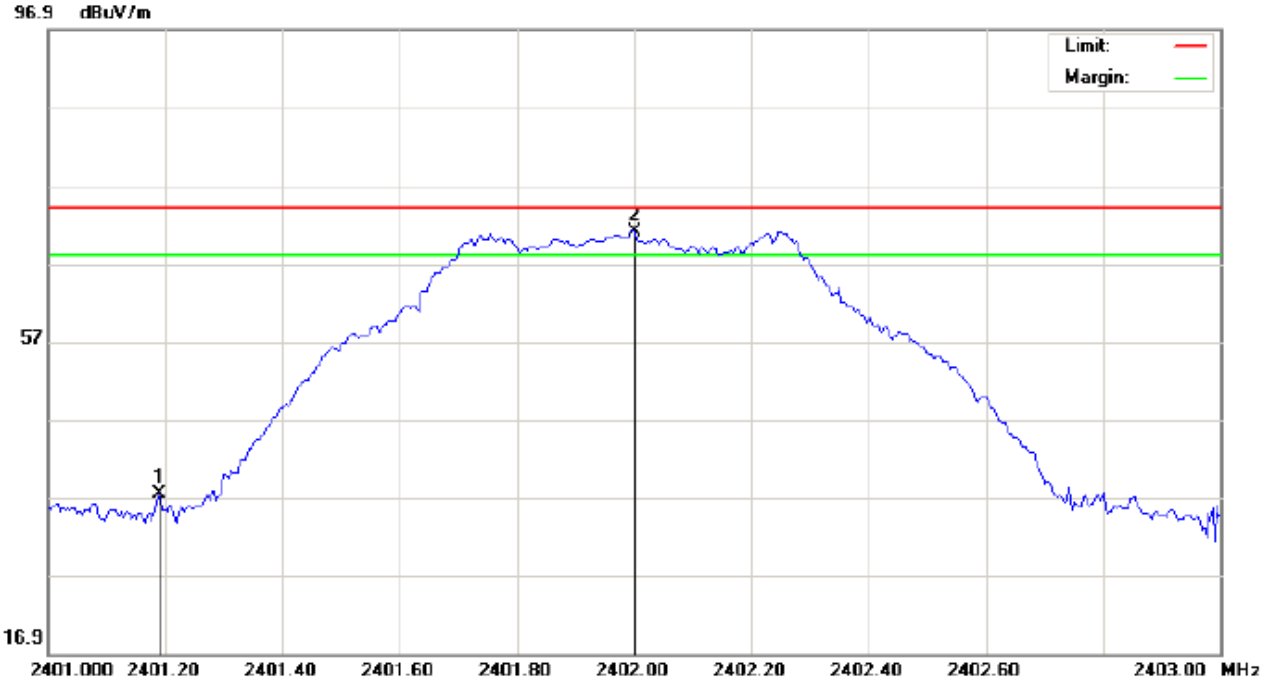
1. Set the EUT Work on the top, the bottom operation frequency individually.
2. Set Span = 2MHz, RBW>=100 KHz, VBW>=3RBW, Center frequency =Operation frequency
3. The band edges was measured and recorded.

## 8.2. TEST SET-UP

Radiated same as 7.2

## 8.3. TEST RESULT

TEST PLOT OF BAND EDGE FOR LOW CHANNEL -Horizontal



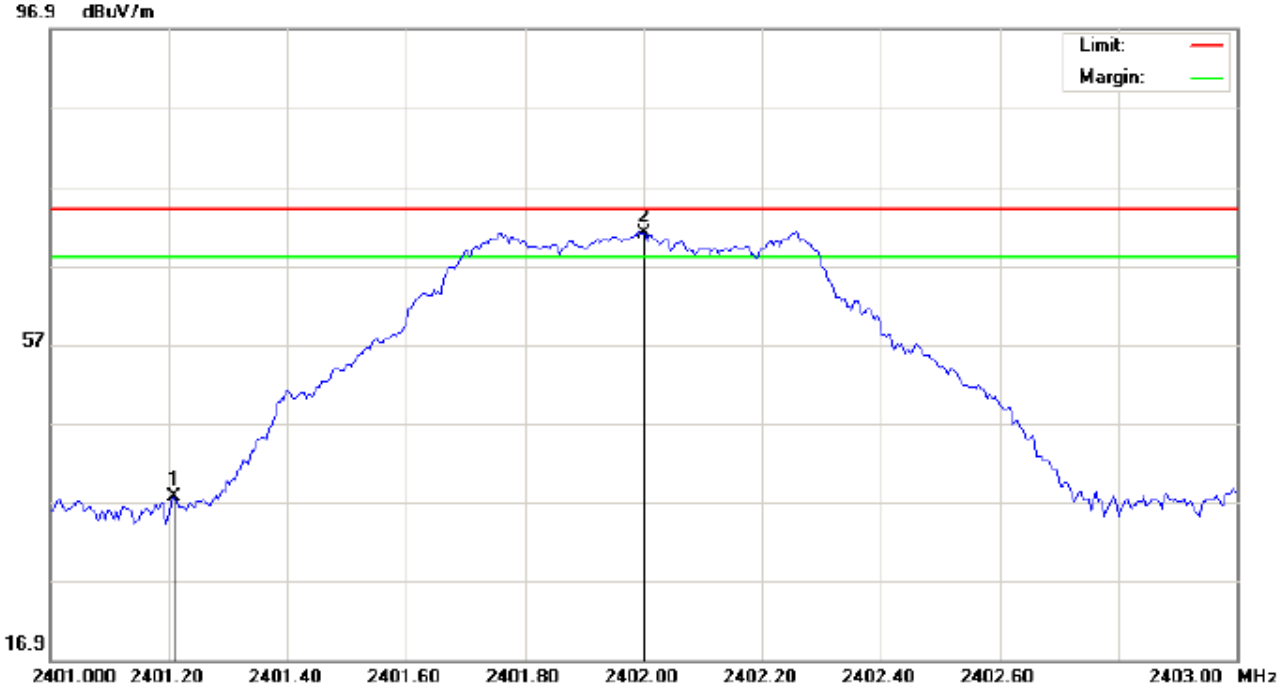

Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)
EUT:Pedometer
M/N:BLE02
Mode: Low channel TX
Note:

Polarization: *Horizontal*
Power:
Distance: 3m

Temperature: 26
Humidity: 60 %

| No. | Mk | Freq. | Reading | Factor | Measurement | Limit | Over | Detector | Antenna Height | Table Degree | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | - | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | | cm | degree | |
| 1 | | 2401.190 | 47.08 | -9.68 | 37.40 | 74.00 | -36.60 | peak | | | |
| 2 | * | 2402.000 | 80.71 | -9.68 | 71.03 | 74.00 | -2.97 | peak | | | |

TEST PLOT OF BAND EDGE FOR LOW CHANNEL - Vertical




Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)
EUT:Pedometer
M/N:BLE02
Mode: Low channel TX
Note:

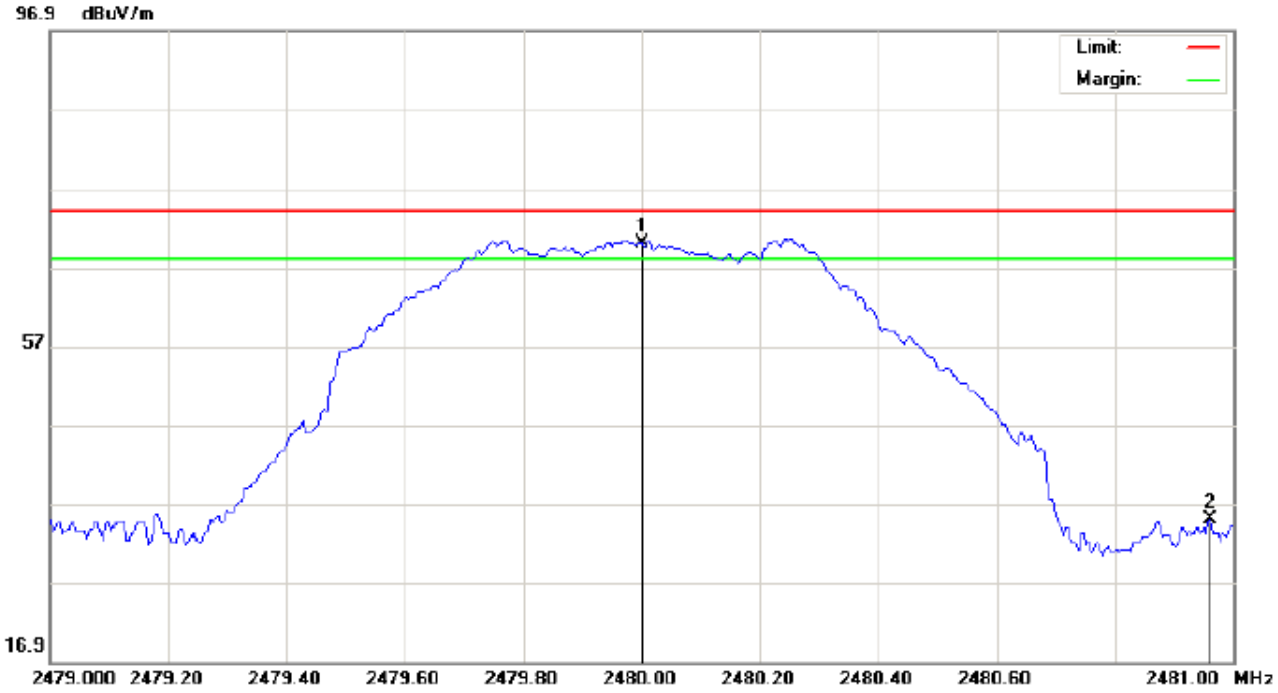
Polarization: *Vertical*
Power:
Distance: 3m

Temperature: 26
Humidity: 60 %

| No. | Mk | Freq. | Reading | Factor | Measurement | Limit | Over | Detector | Antenna Height | Table Degree | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | | cm | degree | |
| 1 | | 2401.210 | 47.32 | -9.68 | 37.64 | 74.00 | -36.36 | peak | | | |
| 2 | * | 2402.000 | 80.75 | -9.68 | 71.07 | 74.00 | -2.93 | peak | | | |

**RESULT: PASS**

TEST PLOT OF BAND EDGE FOR HIGH CHANNEL –Horizontal



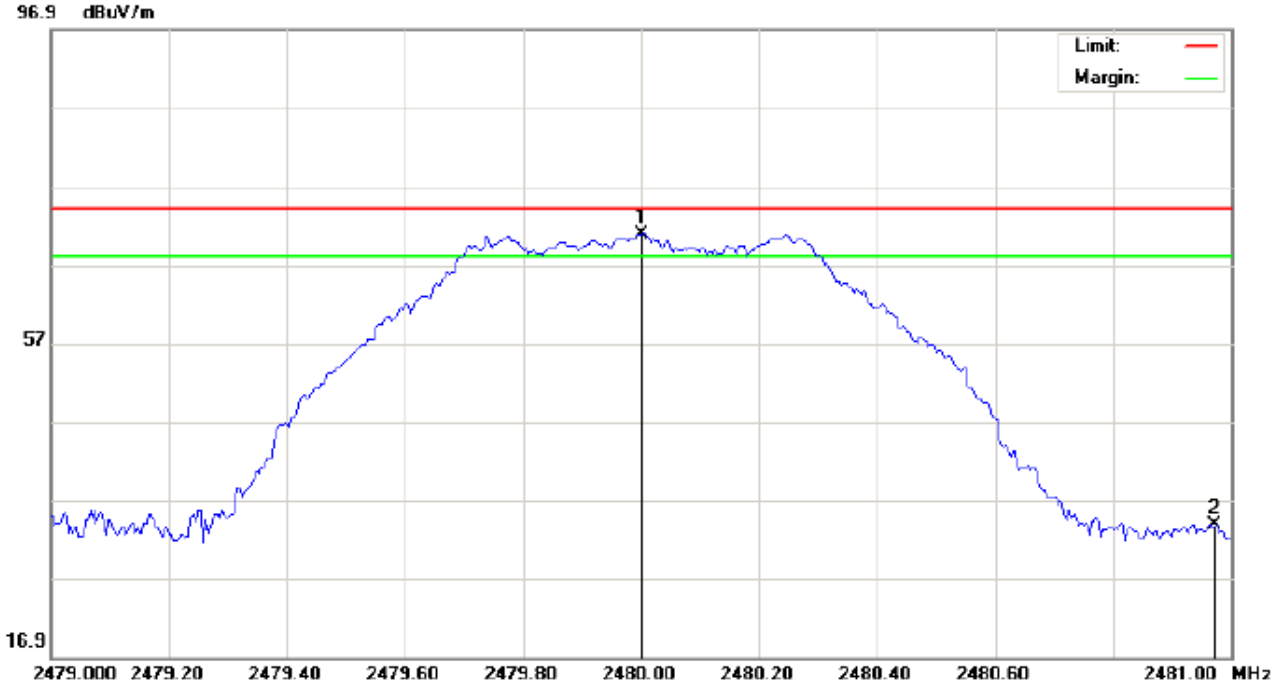

Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)
EUT:Pedometer
M/N:BLE02
Mode: High channel TX
Note:

Polarization: *Horizontal*
Power:
Distance: 3m

Temperature: 26
Humidity: 60 %

| No. | Mk | Freq. | Reading | Factor | Measurement | Limit | Over | Detector | Antenna Height | Table Degree | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | . | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | | cm | degree | |
| 1 | * | 2480.000 | 79.59 | -9.59 | 70.00 | 74.00 | -4.00 | peak | | | |
| 2 | | 2480.960 | 44.51 | -9.59 | 34.92 | 74.00 | -39.08 | peak | | | |

TEST PLOT OF BAND EDGE FOR HIGH CHANNEL -Vertical




Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)
EUT:Pedometer
M/N:BLE02
Mode: High channel TX
Note:

Polarization: *Vertical*
Power:
Distance: 3m

Temperature: 26
Humidity: 60 %

| No. | Mk | Freq. | Reading | Factor | Measurement | Limit | Over | Detector | Antenna Height | Table Degree | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | - | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | | cm | degree | |
| 1 | * | 2480.000 | 80.36 | -9.59 | 70.77 | 74.00 | -3.23 | peak | | | |
| 2 | | 2480.973 | 43.36 | -9.59 | 33.77 | 74.00 | -40.23 | peak | | | |

**RESULT: PASS**

**Note:** Factor=Antenna Factor+ Cable loss-Amplifier gain, Margin=Measurement-Limit.
The “Factor” value can be calculated automatically by software of measurement system.

# 9. 6DB BANDWIDTH

## 9.1. TEST EQUIPMENT LIST AND DETAILS

| Equipment | Manufacturer | Model | S/N | Cal. Date | Cal. Due |
|---|---|---|---|---|---|
| PSA SERIES SPECTRUM ANALYZER | AGILENT | E4440A | US41421290 | 07/17/2013 | 07/16/2014 |
| RECEIVER ANTENNA | ETS | 2175 | 57337 | 07/17/2013 | 07/16/2014 |

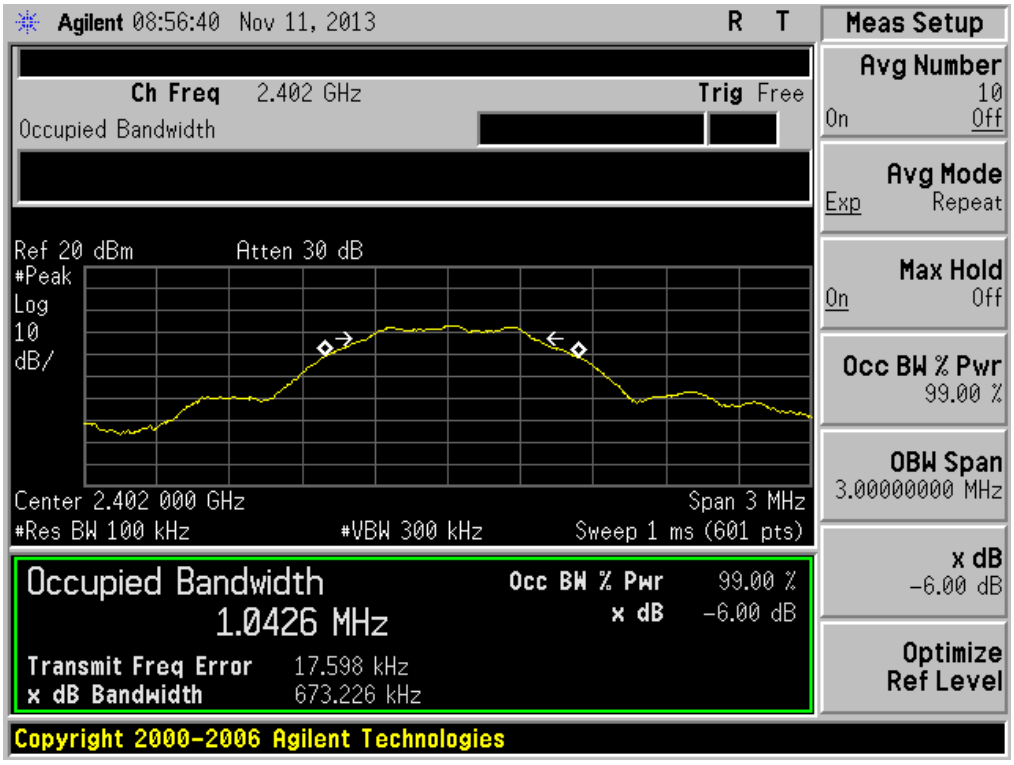
## 9.2. TEST PROCEDURE

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
3. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
3. Set SPA Centre Frequency = Operation Frequency, RBW= 100 KHz, VBW≥3*RBW.
4. Set SPA Trace 1 Max hold, then View.

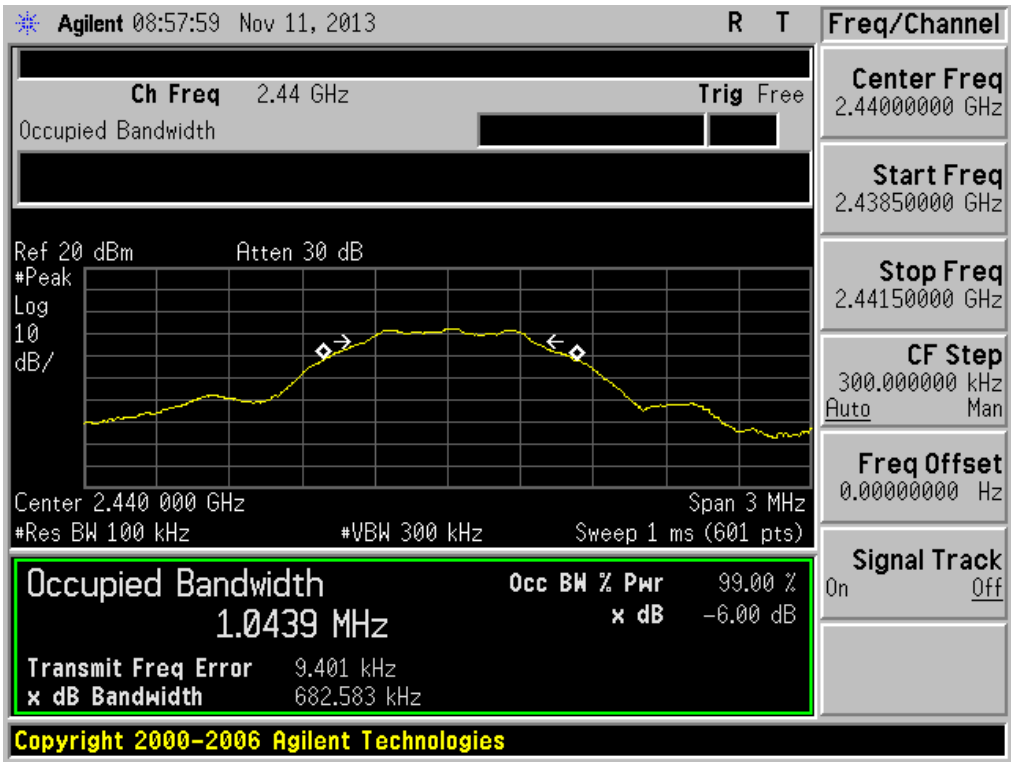
## 9.3. SUMMARY OF TEST RESULTS/PLOTS

| Channel | 6dB Bandwidth (KHz) | Minimum Limit (KHz) | Pass/Fail |
|---|---|---|---|
| Low | 673.226 | 500KHz | Pass |
| Middle | 682.583 | | Pass |
| High | 673.726 | | Pass |

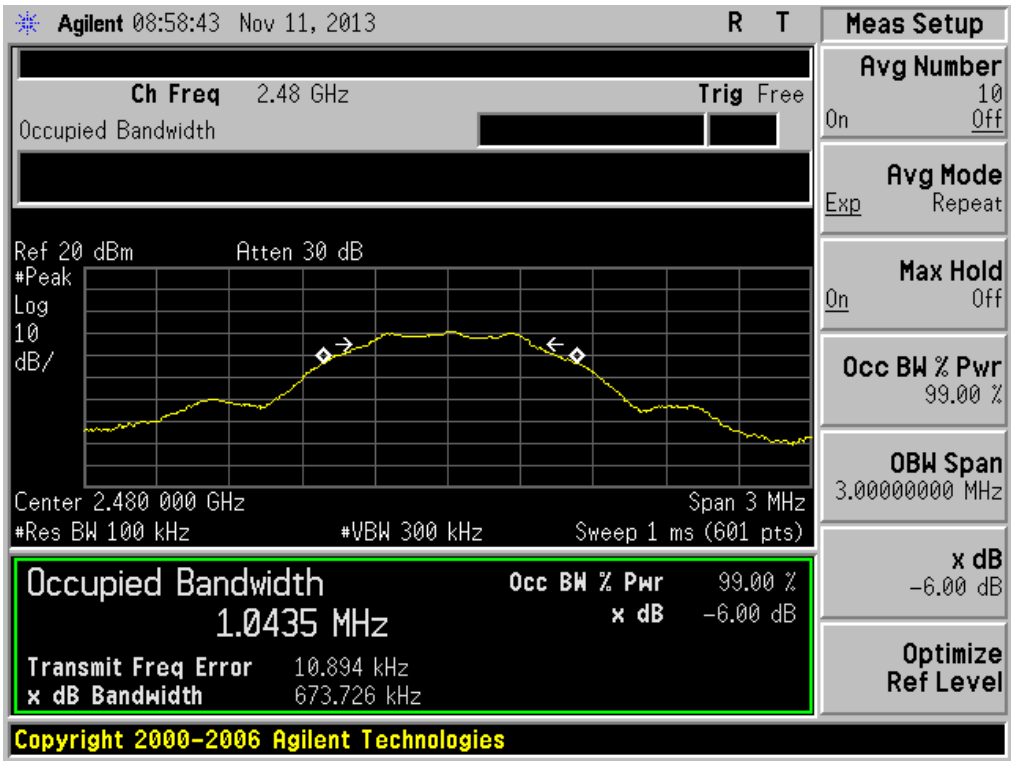
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL




TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



# 10. CONDUCTED OUTPUT POWER

## 10.1. MEASUREMENT PROCEDURE

For peak power test:

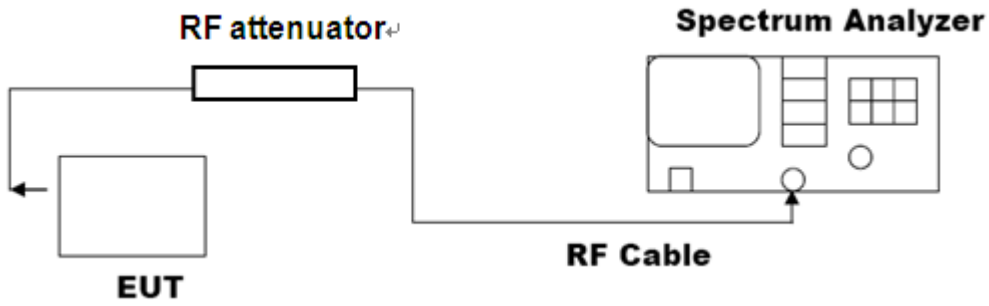
1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
3. Set the EUT Work on the top, middle and the bottom operation frequency individually.
4. Use the following spectrum analyzer settings:
   Set the RBW = 1 MHz
   Set the VBW ≥ 3 RBW
   Set the span ≥ 1.5 x DTS bandwidth
   Detector = peak
   Sweep time = auto couple
   Trace mode = max hold
5. Allow the trace to stabilize. Use the instrument's band/channel power measurement function with the band limits set equal to the DTS bandwidth edges.
6. Record the result form the Spectrum Analyzer.

For average power test:

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Connect EUT RF output port to power probe through an RF attenuator.
3. Connect the power probe to the PC.
4. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
5. Record the maximum power from the software.
6. The maximum peak power shall be less 1W (30dBm).

**Note**：The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements

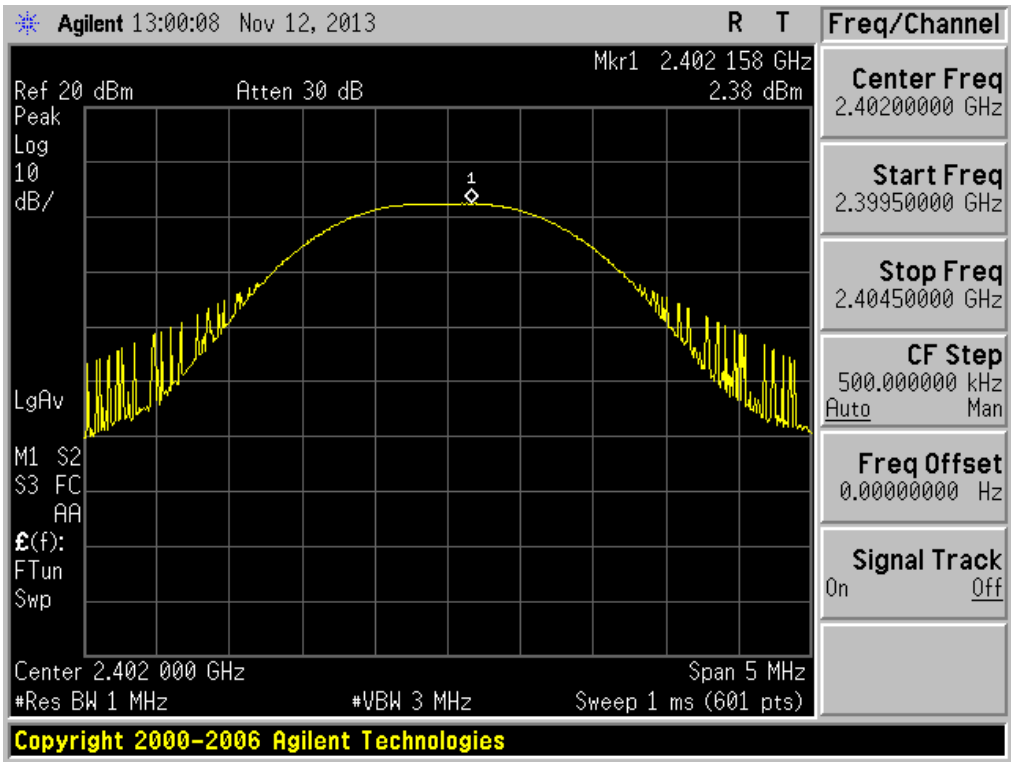
## 10.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



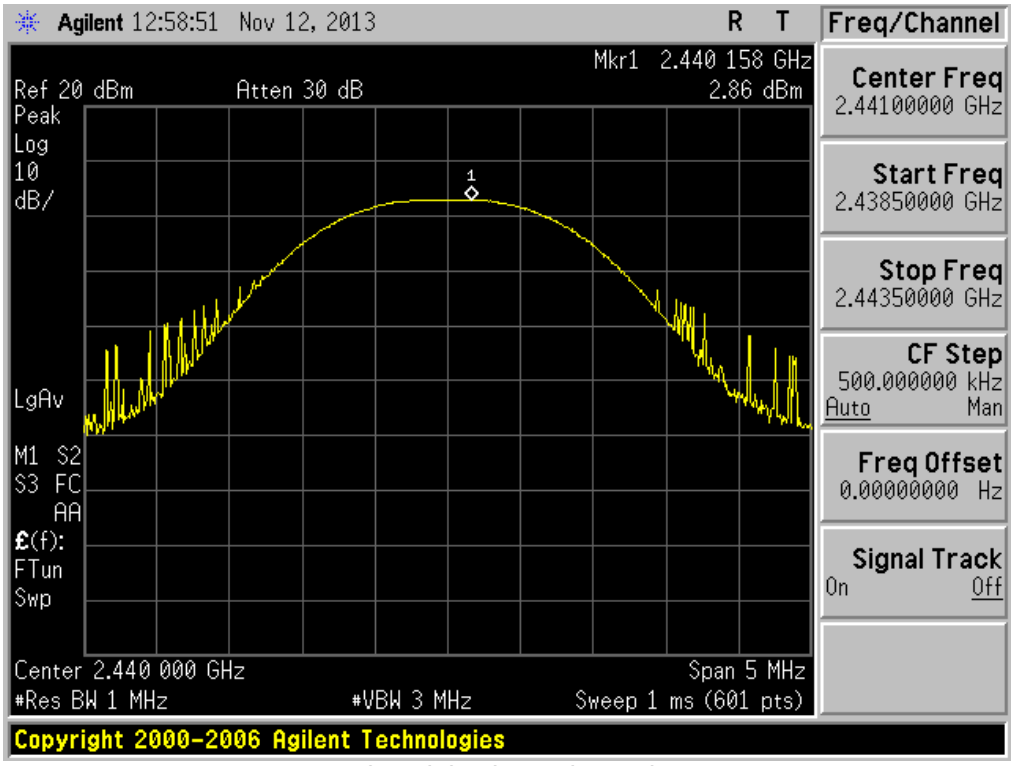
## 10.3. LIMITS AND MEASUREMENT RESULT

| Channel | Average Power (dBm) | Peak Power (dBm) | Applicable Limits (dBm) | Pass/Fail |
|---|---|---|---|---|
| Low Channel | 0.53 | 2.38 | 30 | Pass |
| Middle Channel | 0.97 | 2.86 | 30 | Pass |
| High Channel | 1.23 | 3.14 | 30 | Pass |

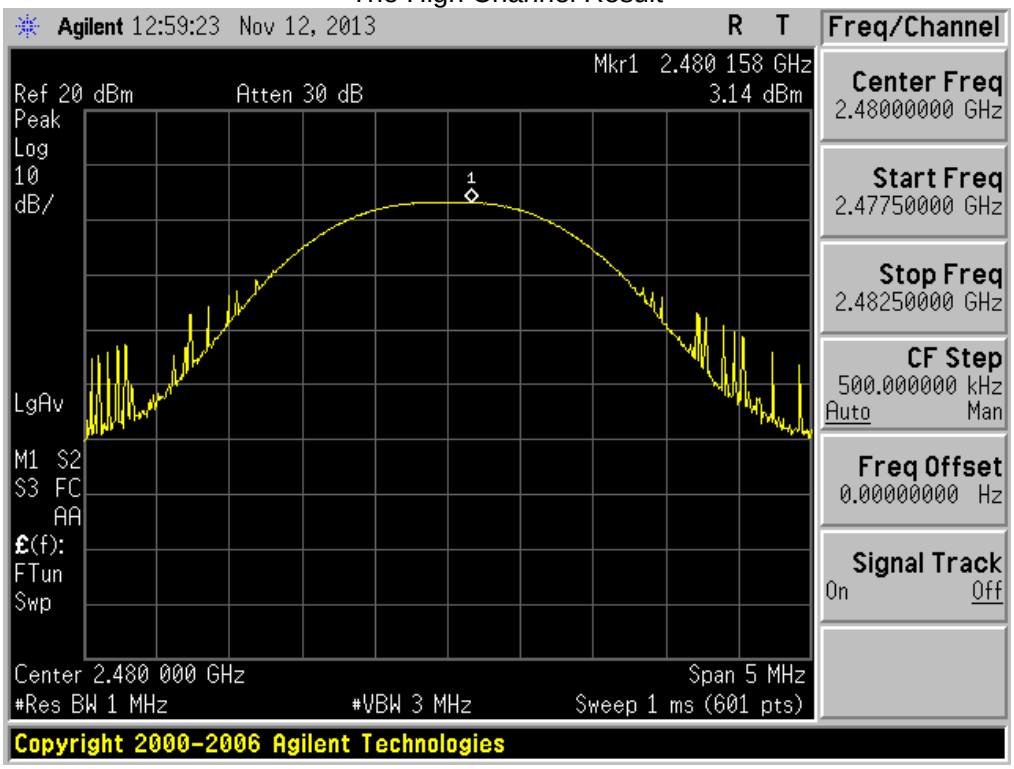
The Low Channel Result



The Middle Channel Result




The High Channel Result



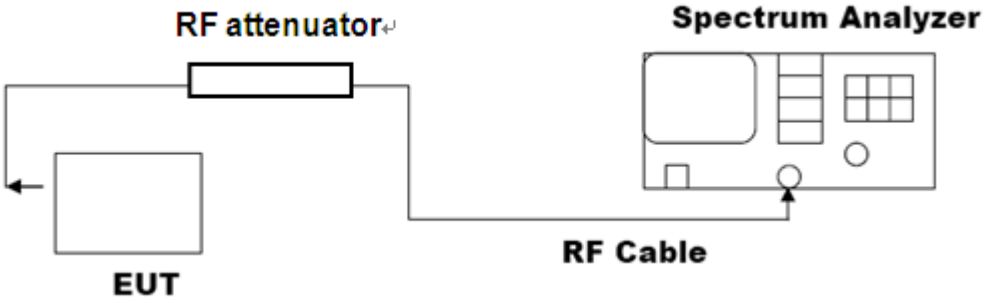
# 11. MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSITY

## 11.1 MEASUREMENT PROCEDURE

(1). The EUT was placed on a turn table which is 0.8m above ground plane.
(2). Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
(3). Set the EUT Work on the top, the middle and the bottom operation frequency individually.
(4). Set the span to 1.5times the DTS bandwidth, RBW: 3kHz<=RBW<=100KHz, VBW>=3*RBW
(5). Set SPA Trace 1 Max hold, then View.

**Note:** The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

## 11.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



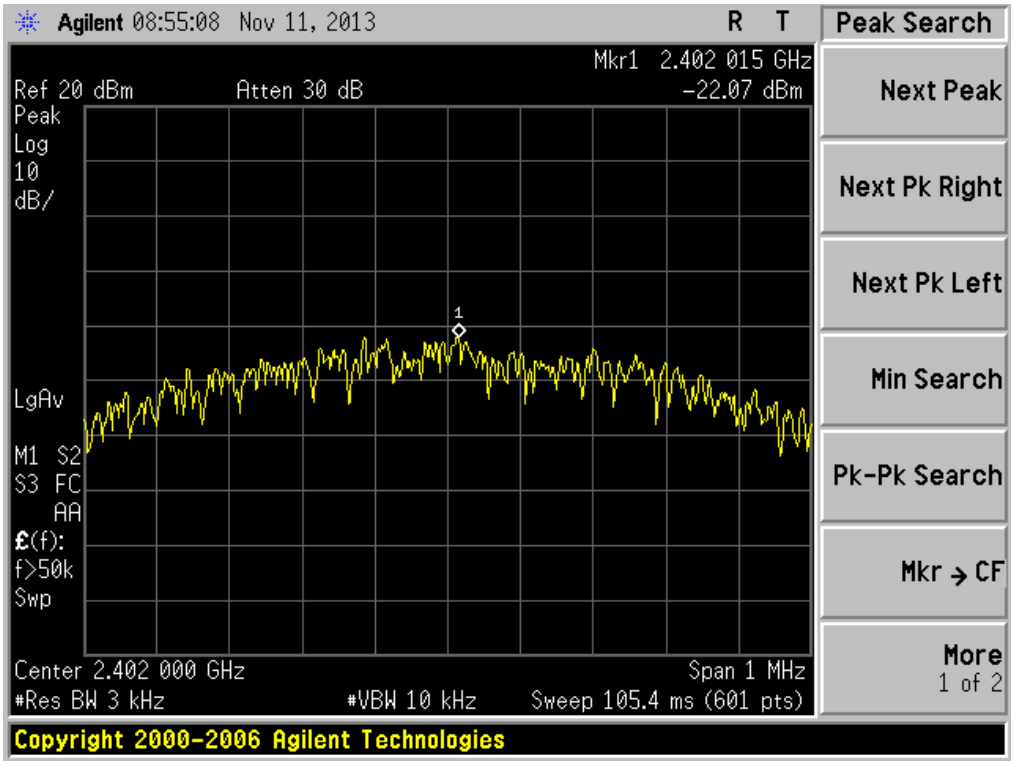

## 11.3 MEASUREMENT EQUIPMENT USED

| Equipment | Manufacturer | Model | S/N | Cal. Date | Cal. Due |
|---|---|---|---|---|---|
| PSA SERIES SPECTRUM ANALYZER | AGILENT | E4440A | US41421290 | 07/17/2013 | 07/16/2014 |
| RECEIVER ANTENNA | ETS | 2175 | 57337 | 07/17/2013 | 07/16/2014 |

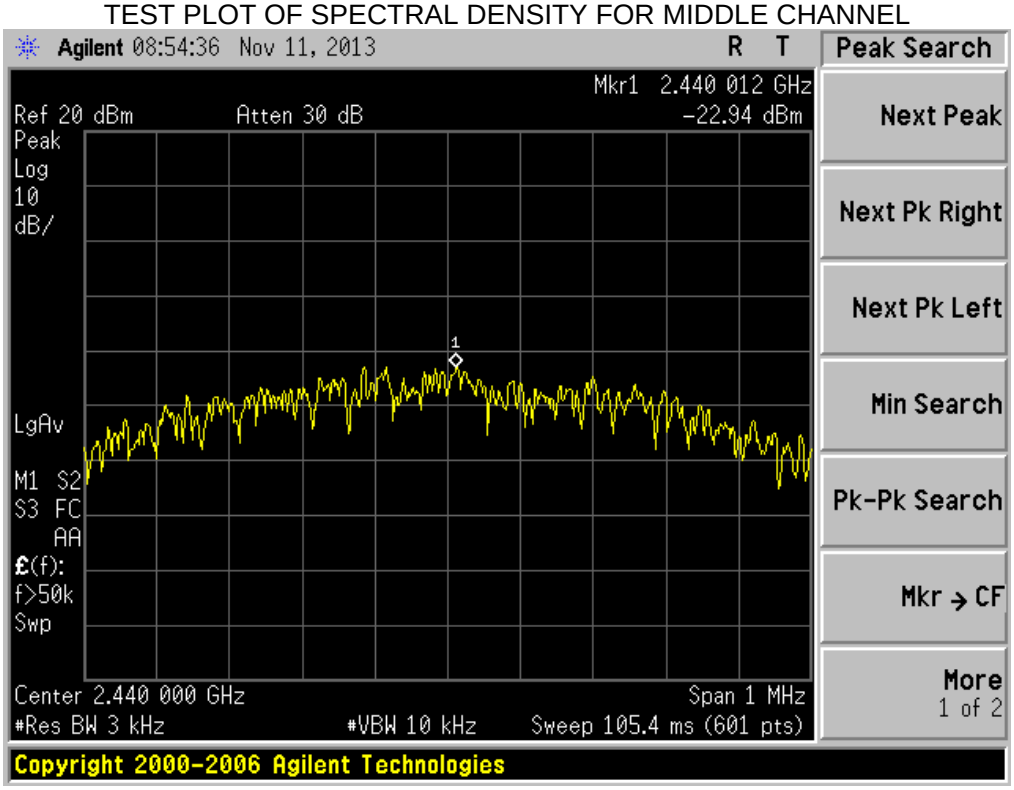
## 11.4 LIMITS AND MEASUREMENT RESULT

| Channel No. | PSD (dBm) | Limit (dBm) | Result |
|---|---|---|---|
| Low Channel | -22.07 | 8 | Pass |
| Middle Channel | -22.94 | 8 | Pass |
| High Channel | -24.49 | 8 | Pass |

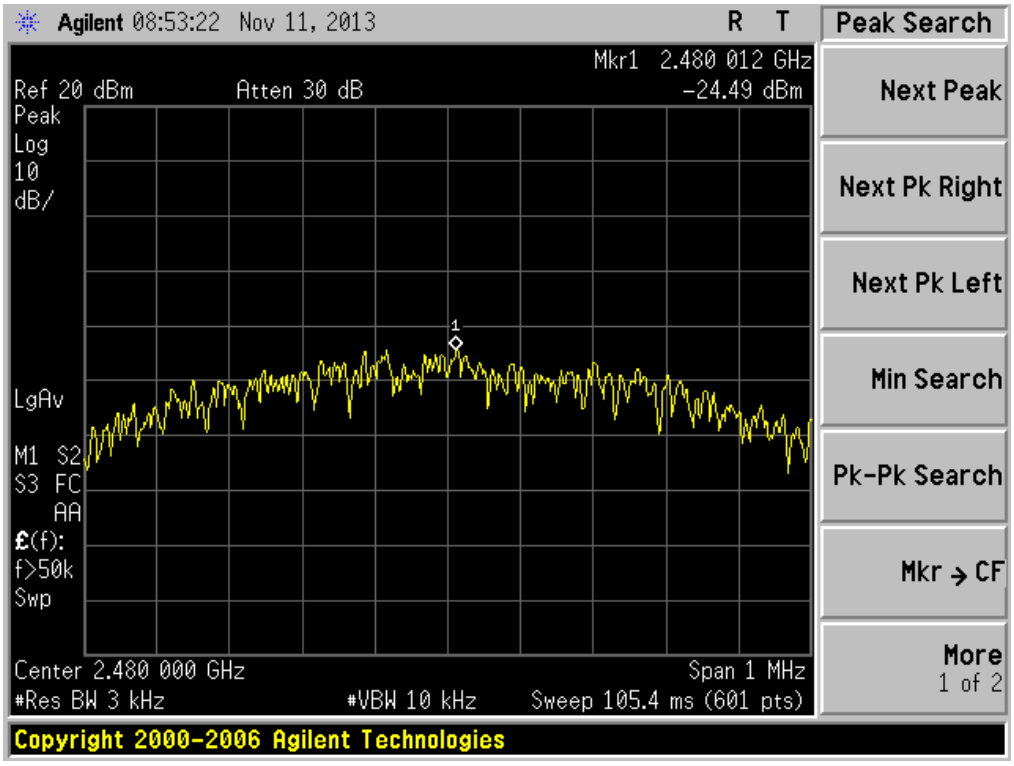
TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL




TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL

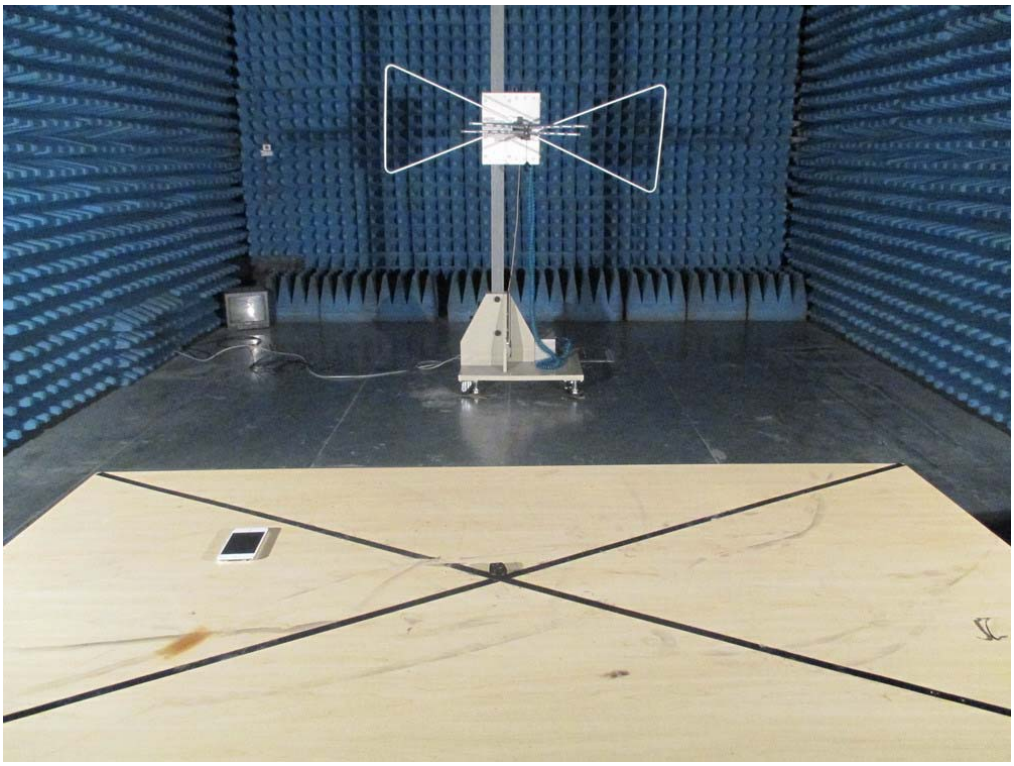


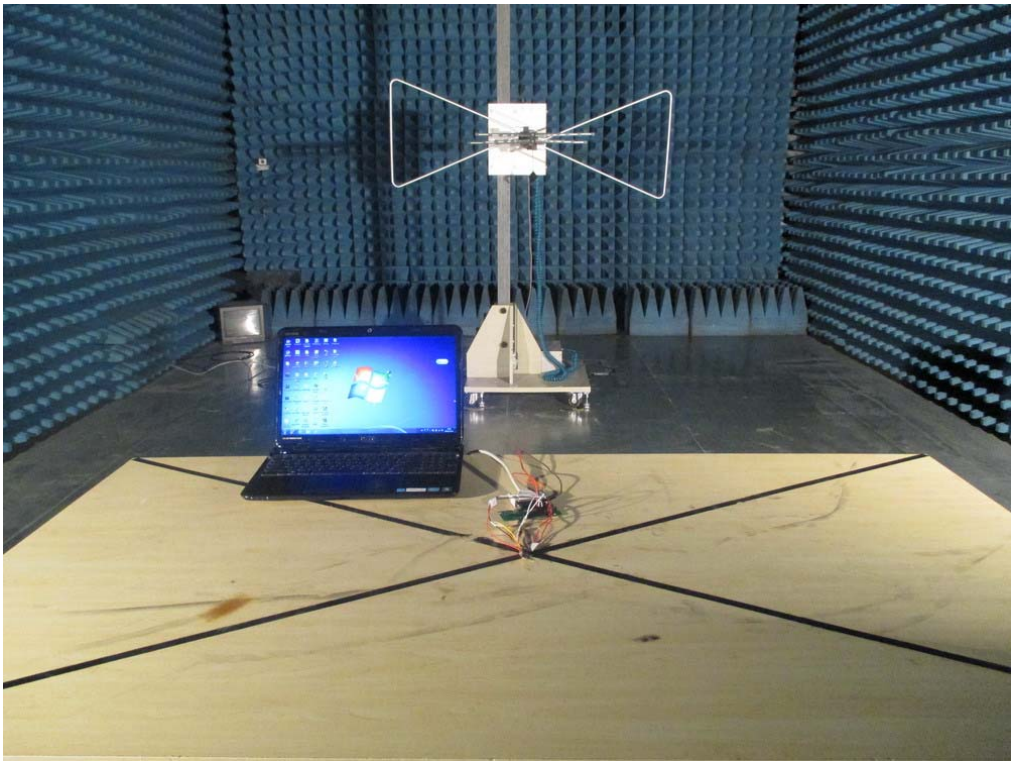
TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL



# APPENDIX A: PHOTOGRAPHS OF TEST SETUP

FCC RADIATED EMISSION TEST SETUP





# APPENDIX B: PHOTOGRAPHS OF EUT

TOP VIEW OF EUT

BOTTOM VIEW OF EUT

FRONT VIEW OF EUT

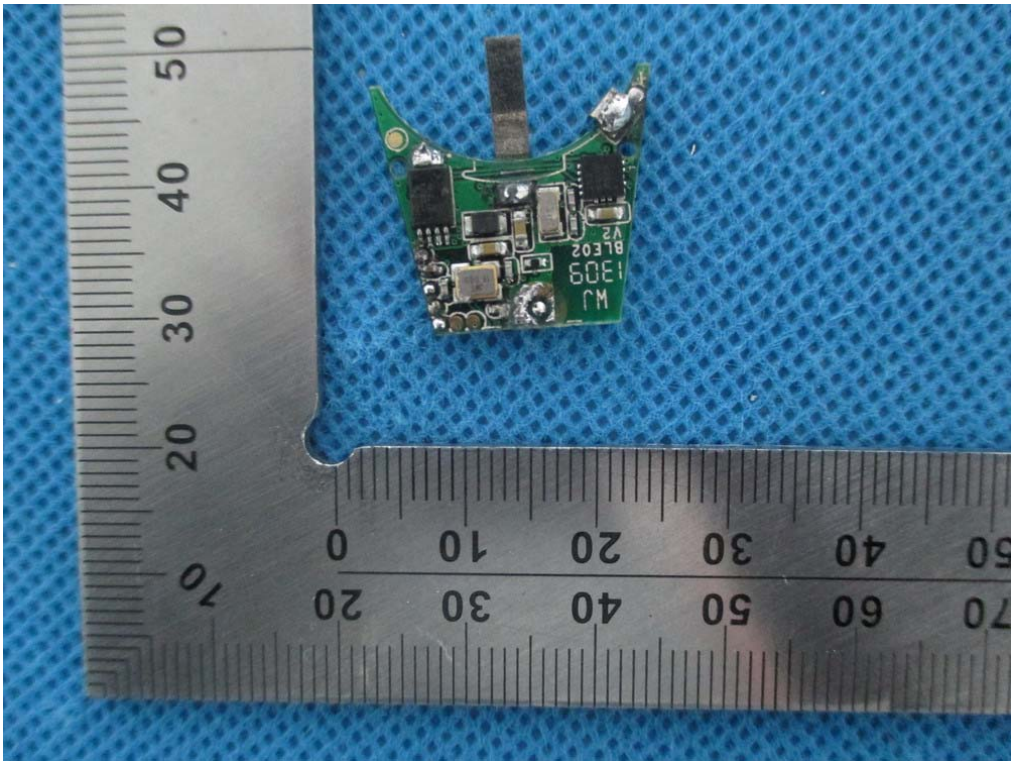
BACK VIEW OF EUT

LEFT VIEW OF EUT

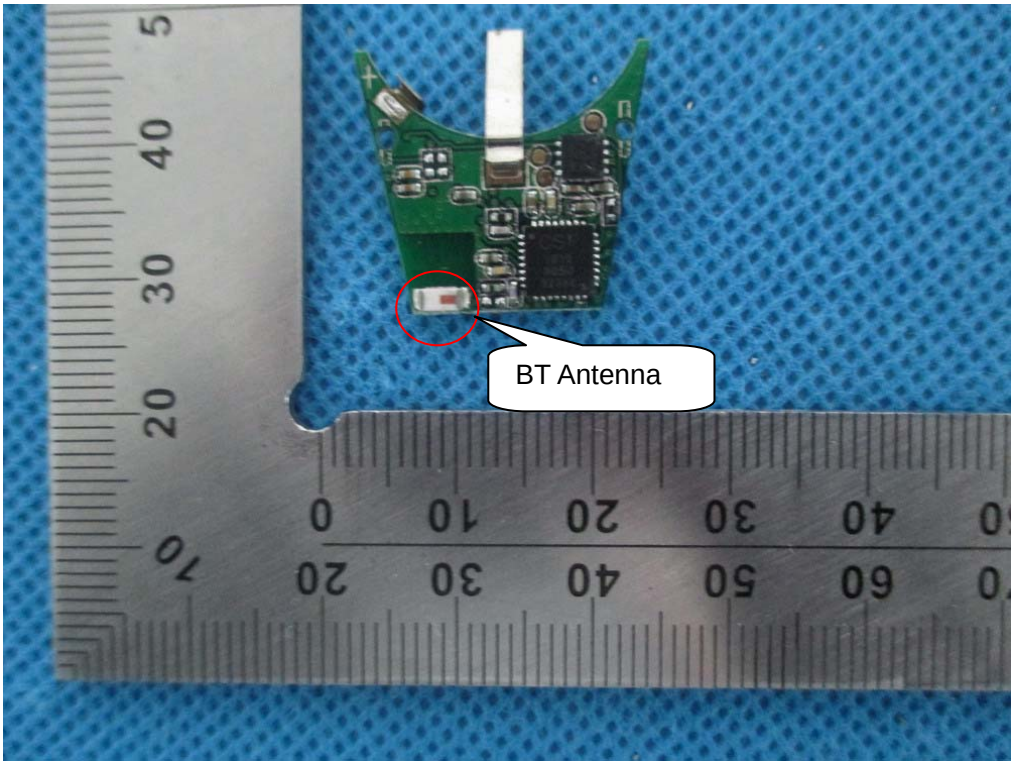
RIGHT VIEW OF EUT

OPEN VIEW OF EUT

INTERNAL VIEW OF EUT-1



INTERNAL VIEW OF EUT-2




**----END OF REPORT----**