**CENTRE OF TESTING SERVICE INTERNATIONAL**

**OPERATE ACCORDING TO ISO/IEC 17025**

# FCC ID TEST REPORT

**TEST REPORT NUMBER : CGZ3150504-00502-EF**

**CENTRE OF TESTING SERVICE CO., LTD.**

A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China

# TEST REPORT For FCC ID

# 47 CFR PART 15 OCT, 2014

| | |
|---|---|
| **Report Reference No. .....** | CGZ3150504-00502-EF |
| Date of issue ..... | 11 May 2015 |
| **Testing Laboratory Name ..... ** | **CENTRE OF TESTING SERVICE CO., LTD.** |
| Address ..... | A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China |
| Testing location/ procedure ..... | Full application of Harmonised standards ■<br>Partial application of Harmonised standards □<br>Other standard testing method □ |
| **Applicant's name ..... ** | Shenzhen Hastech industries Co., Ltd. |
| Address ..... | G-A1 BLDG, Democracy West Industry Park, Shajing Town, Baoan District, Shenzhen, China |
| **Test specification ..... ** | |
| Standard ..... | **47 CFR PART 15 OCT, 2014** |
| **Test Report Form No. .....** | CTSEMC-1.0 |
| TRF Originator ..... | CENTRE OF TESTING SERVICE CO., LTD. |
| Master TRF ..... | Dated 2009-01 |



| | |
|---|---|
| **Test item description..... ** | Bluetooth Keyboard |
| Trade Mark..... | / |
| Manufacturer..... | Shenzhen Hastech industries Co., Ltd. |
| Model/Type reference..... | HB125 |
| Ratings..... | DC3.7V power supply by Battery<br>Output : 5V Charging by USB Port |
| Operating Frequency..... | 2402.0MHz ~2480.0MHz |
| Result ..... | **Positive** |

| **Compiled by:** | **Supervised by:** | **Approved by:** |
|---|---|---|
| Kate zhang / Fileadministrators | Duke yang / Technique principal | Vincent yao / Manager |



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# FCC ID -- T E S T  R E P O R T

| Test Report No. : CGZ3150504-00502-EF | 11 May 2015<br>Date of issue |
|---|---|

| | |
|---|---|
| Type / Model..... | HB125 |
| EUT..... | Bluetooth Keyboard |
| **Applicant……** | Shenzhen Hastech industries Co., Ltd. |
| Address..... | G-A1 BLDG, Democracy West Industry Park, Shajing Town, Baoan District, Shenzhen, China |
| Telephone..... | +86-13723466464 |
| Fax..... | +86-0755-29542655 |
| Contact..... | Jiangwei |
| **Manufacturer……** | Shenzhen Hastech industries Co., Ltd. |
| Address..... | G-A1 BLDG, Democracy West Industry Park, Shajing Town, Baoan District, Shenzhen, China |
| Telephone..... | +86-13723466464 |
| Fax..... | +86-0755-29542655 |
| Contact..... | Jiangwei |
| **Factory……** | Shenzhen Hastech industries Co., Ltd. |
| Address..... | G-A1 BLDG, Democracy West Industry Park, Shajing Town, Baoan District, Shenzhen, China |
| Telephone..... | +86-13723466464 |
| Fax..... | +86-0755-29542655 |
| Contact..... | Jiangwei |

**Test Result** according to the standards on page 1: **PASSED**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.



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# 1.TEST STANDARDS

The tests were performed according to following standards:

■ **47 CFR PART 15 OCT, 2014**
■ **ANSI C63.4-2009**

# 2.SUMMARY

## 2.1 GENERAL REMARKS

| | |
|---|---|
| Date of receipt of test sample | 04 May 2015 |
| | |
| Testing commenced on | 04~08 May 2015 |
| | |
| Testing concluded on | 11 May 2015 |

## 2.2 FINAL ASSESSMENT

The FCC requirements pertaining to the technical standards and tested operation modes are

■ - fulfilled.
☐ - **not** fulfilled.

The equipment under test
■ - fulfils the FCC requirements cited on page 1.
☐ - **does not** fulfil the FCC requirements cited on page 1.

# 3.EQUIPMENT UNDER TEST

## 3.1 Power supply system utilised

Power supply voltage : ■ 3.7V by Battery
■ Charging by Notebook

## 3.2 Short description of the Equipment under Test (EUT)

Number of tested samples: **1**
Serial number: Prototype

## 3.3 EUT operation mode

The equipment under test was operated during the measurement under the following conditions:
☐ - Standby
☐ TX- Y position
☐ TX- Zposition
■ TX- X position
■ Charging

Operation mode 1:TX-X Position Low (2402MHz) , TX-X Position Middle (2440MHz ),
TX-X Position High (2480MHz)
Operation mode 2:Charging

Note:Operation mode 1 TX -X position of EUT is the radiated test worst case; so only these test results be recorded in the test report.



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## 3.4 EUT configuration

### 3.4.1. Description of configuration (EUT)

| | | |
|---|---|---|
| Description | : | Bluetooth Keyboard |
| Model Number | : | HB125 |
| Operation frequency | : | 2402~ 2480 MHz ISM Band |
| Radio Technology | : | V3.0 |
| Modulation Technology | : | GFSK |
| Antenna | : | PCB antenna, met requirement of FCC 15.203 |

### 3.4.2. Tested Supporting System Details

3.4.2.1. Notebook

| | | |
|---|---|---|
| M/N | : | F83VF |
| S/N | : | N/A |
| Manufacturer | : | AUSU |
| Power Cord | : | / |
| FCC ID | : | ID |



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# 4.TEST ENVIRONMENT

## 4.1 Address of the test laboratory

A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China

Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406

## 4.2 Test facility

The test facility is recognized, certified, or accredited by the following organizations:

### CNAS-Lab Code: L3394

CENTRE OF TESTING SERVICE CO., LTD has been assessed and proved to be in compliance with CNAS-CL01: 2006 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

### IC-Registration No.: 8374A

The 3m Alternate Test Site of CENTRE OF TESTING SERVICE CO., LTD has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 8374A on June 6, 2011.

### FCC-Registration No.: 971995

CENTRE OF TESTING SERVICE CO., LTD, EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration No.791995, July 13,2012.

## 4.3 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

| | |
|---|---|
| Temperature: | 15~35 ° C |
| | |
| Humidity: | 25~75 % |
| | |
| Atmospheric pressure: | 86~106 kPa |

## 4.4 Definitions of symbols used in this test report

■ - The black square indicates that the listed condition, standard or equipment is applicable for this report.

□ - The empty square indicates that the listed condition, standard or equipment is **not** applicable for this report.

## 4.5 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the CTS quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

### 4.6 Measurement Uncertainty

| Test Item | Frequency Range | Uncertainty | Note |
|---|---|---|---|
| Conduction disturbance | 150kHz~30MHz | ±1.22dB | (1) |
| Power disturbance | 30MHz~300MHz | ±1.38dB | (1) |
| Radiation emission (3m) | 30MHz~300MHz | ±3.14dB | (1) |
| | 300MHz~1000MHz | ±3.18dB | (1) |
| | 1GHz~26.5GHz | ±3.54dB | (1) |

(1).This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

## 5.Summary of standards and results

### 5.1.Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

| EMISSION | | |
|---|---|---|
| **Description of Test Item** | **Standard** | **Results** |
| Conducted Emission Test | FCC Part 15 : 15.207<br>ANSI C63.4-2009 | PASSED |
| Radiated Emission Test | FCC Part 15 C: 15.249<br>FCC Part 15 : 109<br>ANSI C63.4-2009 | PASSED |
| Band Edge Compliance Test | FCC Part 15 C: 15.249<br>ANSI C63.4-2009 | PASSED |
| N/A is an abbreviation for Not Applicable. | | |



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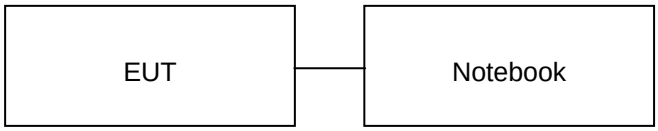
# 6.Power Line Conducted Emission Test

## 6.1.Test Equipment

| Conducted Disturbance | | | | | |
|---|---|---|---|---|---|
| Item | Test Equipment | Manufacturer | Model No. | Serial No. | Last Cal. |
| 1 | EMI Test Receiver | ROHDE & SCHWARZ | ESHS10 | 842884/012 | 2014/11 |
| 2 | Artificial Mains | ROHDE & SCHWARZ | ESH3-Z5 | 832479/025 | 2014/11 |
| 3 | Artificial Mains | ROHDE & SCHWARZ | ESH3-Z5 | 832479/026 | 2014/11 |
| 4 | Pulse Limiter | ROHDE & SCHWARZ | ESHSZ2 | 100301 | 2014/11 |
| 5 | EMI Test Software | ROHDE & SCHWARZ | ESK1 | N/A | 2014/11 |

## 6.2. Block Diagram of Test Setup




***(EUT:*** Bluetooth Keyboard***)***

## 6.3. Power Line Conducted Emission Test Limits

**Standard:RSS-Gen:7.2.4,FCC Part 15 : 15.207,ANSI C63.4-2009**

| Frequency | Maximum RF Line Voltage | |
|---|---|---|
| | Quasi-Peak Level dB(μV) | Average Level dB(μV) |
| 150kHz ~ 500kHz | 66 ~ 56* | 56 ~ 46* |
| 500kHz ~ 5MHz | 56 | 46 |
| 5MHz ~ 30MHz | 60 | 50 |

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

## 6.4.Test Procedure

The Notebook connected to the power mains through a line impedance stabilization network (L.I.S.N.#2). This provides a 50 ohm coupling impedance for the EUT. Please refer the block diagram of the test setup and photographs. The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N.#1). Power on the PC and let it work normally, we use a keyboard test soft ware, let EUT working in test mode, then test it. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC Part 15C on Conducted Emission Test.

## 6.5. Power Line Conducted Emission Test Results

**PASSED.**

The frequency range from 150KHz~30MHz is investigated. Please see the following pages.



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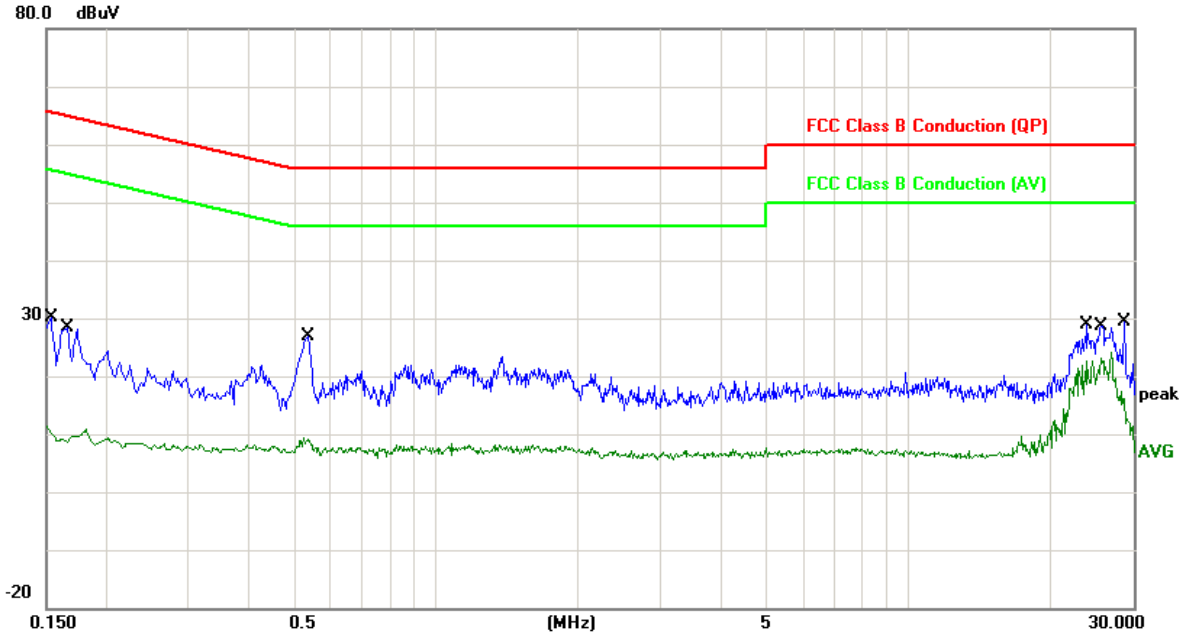
| | | | |
|---|---|---|---|
| Test point: | L | Result: | ■ - passed |
| Frequency range: | 0.15MHz~30MHz | | □ - not passed |

| | |
|---|---|
| EUT | Bluetooth Keyboard |
| Test Condition | Ambient Temperature: 25°C Humidity: 56% |
| Test Date: | 04~08 May 2015 |
| Operator | **Duke** |
| MODEL NO | HB125 |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|---|---|---|---|---|---|---|---|
| 1 | 0.1539 | 10.82 | 9.48 | 20.30 | 65.78 | -45.48 | QP |
| 2 | 0.1539 | 10.82 | -1.68 | 9.14 | 55.78 | -46.64 | AVG |
| 3 | 0.1660 | 10.82 | 7.29 | 18.11 | 65.15 | -47.04 | QP |
| 4 | 0.1660 | 10.82 | -2.15 | 8.67 | 55.15 | -46.48 | AVG |
| 5 | 0.5380 | 10.91 | 10.36 | 21.27 | 56.00 | -34.73 | QP |
| 6 | 0.5380 | 10.91 | -1.95 | 8.96 | 46.00 | -37.04 | AVG |
| 7 | 24.0100 | 11.13 | 13.50 | 24.63 | 60.00 | -35.37 | QP |
| 8 | 24.0100 | 11.13 | 9.52 | 20.65 | 50.00 | -29.35 | AVG |
| 9 | 25.6299 | 11.16 | 14.84 | 26.00 | 60.00 | -34.00 | QP |
| 10 | 25.6299 | 11.16 | 10.24 | 21.40 | 50.00 | -28.60 | AVG |
| 11 | 28.6300 | 11.21 | 7.47 | 18.68 | 60.00 | -41.32 | QP |
| 12 | 28.6300 | 11.21 | 2.76 | 13.97 | 50.00 | -36.03 | AVG |
| Remark: Other frequency mini margin all >6 dB of Limit | | | | | | | |



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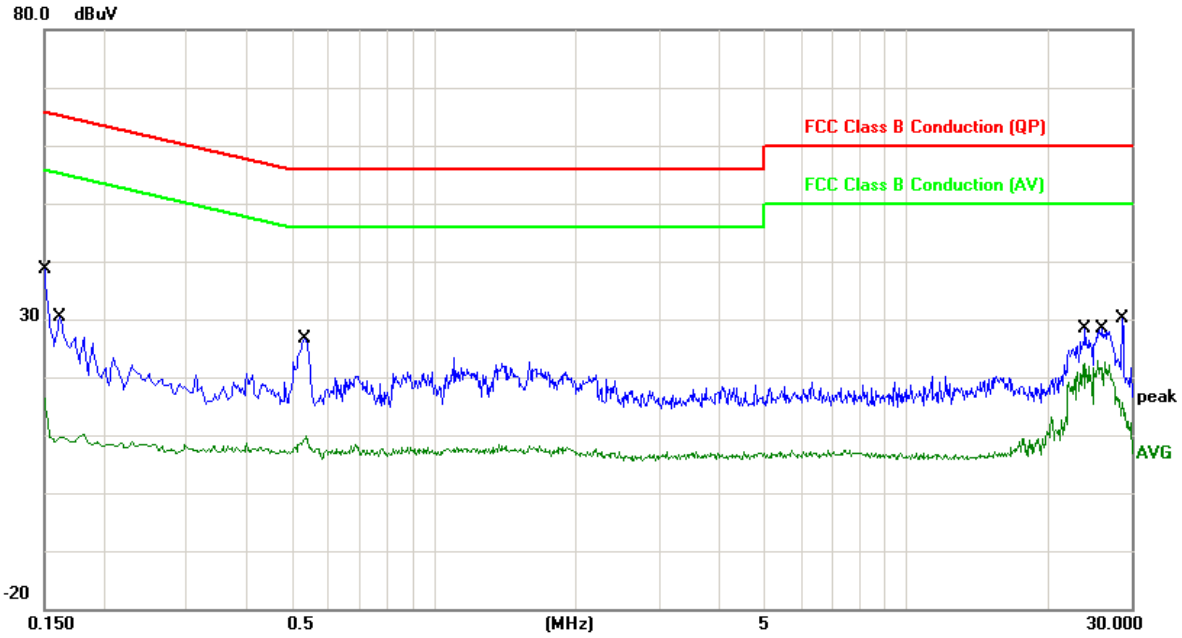
| | | | |
|---|---|---|---|
| Test point: | N | Result: | ■ - passed |
| Frequency range: | 0.15MHz~30MHz | | □ - not passed |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|---|---|---|---|---|---|---|---|
| 1 | 0.1500 | 10.80 | 18.41 | 29.21 | 65.99 | -36.78 | QP |
| 2 | 0.1500 | 10.80 | 2.52 | 13.32 | 55.99 | -42.67 | AVG |
| 3 | 0.1620 | 10.80 | 8.59 | 19.39 | 65.36 | -45.97 | QP |
| 4 | 0.1620 | 10.80 | -1.90 | 8.90 | 55.36 | -46.46 | AVG |
| 5 | 0.5340 | 10.90 | 10.38 | 21.28 | 56.00 | -34.72 | QP |
| 6 | 0.5340 | 10.90 | -1.92 | 8.98 | 46.00 | -37.02 | AVG |
| 7 | 23.9500 | 11.07 | 15.47 | 26.54 | 60.00 | -33.46 | QP |
| 8 | 23.9500 | 11.07 | 11.32 | 22.39 | 50.00 | -27.61 | AVG |
| 9 | 26.0500 | 11.11 | 14.75 | 25.86 | 60.00 | -34.14 | QP |
| 10 | 26.0500 | 11.11 | 9.92 | 21.03 | 50.00 | -28.97 | AVG |
| 11 | 28.6900 | 11.15 | 12.52 | 23.67 | 60.00 | -36.33 | QP |
| 12 | 28.6900 | 11.15 | 3.42 | 14.57 | 50.00 | -35.43 | AVG |
| Remark: Other frequency mini margin all >6 dB of Limit | | | | | | | |



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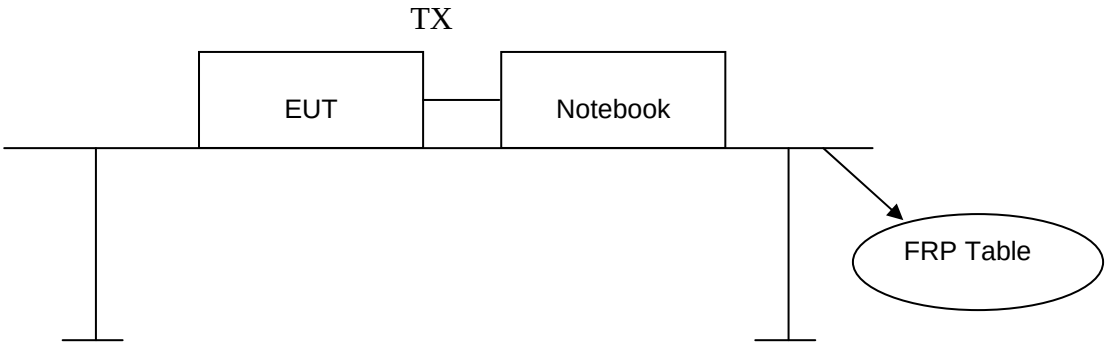
# 7. Radiated disturbance (electric field)

## 7.1.Test Equipment

| Radiated disturbance (electric field) | | | | | |
|---|---|---|---|---|---|
| Item | Test Equipment | Manufacturer | Model No. | Serial No. | Last Cal. |
| 1 | EMI Test Receiver | ROHDE & SCHWARZ | ESCI | 100868 | 2014/11 |
| 2 | Biconical Antenna | ROHDE & SCHWARZ | HK116 | 100221 | 2015/03 |
| 3 | Log per Antenna | ROHDE & SCHWARZ | HL223 | 100226 | 2015/03 |
| 4 | Log per Antenna | ROHDE & SCHWARZ | HL050 | 100186 | 2015/03 |
| 5 | Signal analyzer | ROHDE & SCHWARZ | FSIQ26 | 100311 | 2015/03 |
| 6 | Loop Antenna | A.R.A | PLA-1030/B | 1030 | 2014/11 |

## 7.2.Block Diagram of Test Setup

### 7.2.1 Block Diagram of connection between EUT and simulators




***(EUT***: Bluetooth Keyboard***)***



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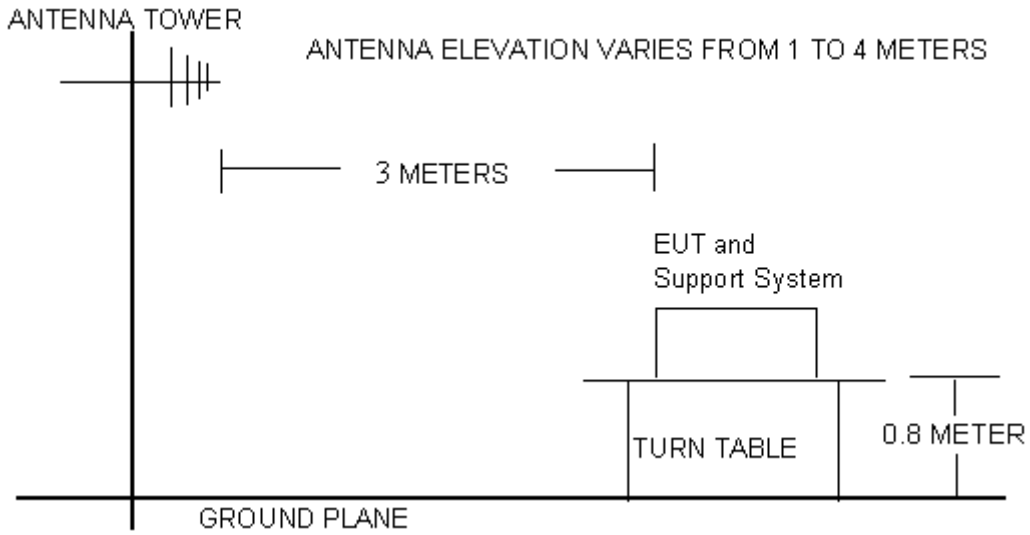
### 7.2.2 Anechoic Chamber Setup Diagram




## 7.3.Radiated Emission Limit :

### Standard:FCC 15.249 , FCC 15.209.

Except as provided in paragraph (a) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

| Fundamental Frequency (MHz) | Field Strength of Fundamental (mV/m) | Field Strength of Harmonics (μV/m) |
|---|---|---|
| 902-928 | 50 | 500 |
| 2400-2483.5 | 50 | 500 |
| 5725-5875 | 50 | 500 |
| 24000-24250 | 250 | 2500 |

| FREQUENCY MHz | DISTANCE Meters | FIELD STRENGTHS LIMIT | |
|---|---|---|---|
| | | μV/m | dB(μV)/m |
| 0.009 ~ 0.490 | 300 | 2400/F(kHz) | --- |
| 0.490 ~ 1.705 | 30 | 24000/F(kHz) | --- |
| 1.705 ~ 30 | 30 | 30 | --- |
| 30 ~ 88 | 3 | 100 | 40.0 |
| 88 ~ 216 | 3 | 150 | 43.5 |
| 216 ~ 960 | 3 | 200 | 46.0 |
| 960 ~ 1000 | 3 | 500 | 54.0 |
| Above 1000 | 3 | Other:74.0 dB(μV)/m (Peak)<br>54.0 dB(μV)/m (Average) | |

Remark: (1) Emission level dBμV = 20 log Emission level μV/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.



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## 7.4.Test Procedure

The EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on Test. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-2009on radiated emission Test.

The frequency range from 30MHz to 1000MHz and above 1GHz. is investigated. Please see the following pages.

All measurements for radiated emissions within the restricted bands were performed using a Quasi-Peak detector with 120kHz RBW below 1GHz and a Peak and Average detector with 2MHz RBW above 1GHz,

All measurements for radiated emissions within the restricted bands were performed using a Quasi-Peak detector with 300kHz VBW below 1GHz and a Peak detector with1MHz VBW above 1GHz, A average detector with 10Hz VBW above 1GHz

Pretest x, y, z position of EUT, final, select the worst case x position test and record the test results in the report.

The test modes (TX Mode) is tested in Anechoic Chamber and all the scanning waveforms are reported on section 7.5

## 7.5.Radiated Emission Test Results

**PASSED.**

The frequency range from 9KHz~30MHz,30MHz to 230MHz, 230MHz to 1000MHz and above 1GHz. is investigated. Please see the following pages.



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| | | | |
|---|---|---|---|
| Test Mode: | TX –X Position Mode | Result: | ■ - passed<br>□ - not passed |
| Frequency range: | 9KHz~30MHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|---|---|---|---|---|---|---|---|
| Remark: The test result reading value is to low, margin all > 10dB of the limit. | | | | | | | |



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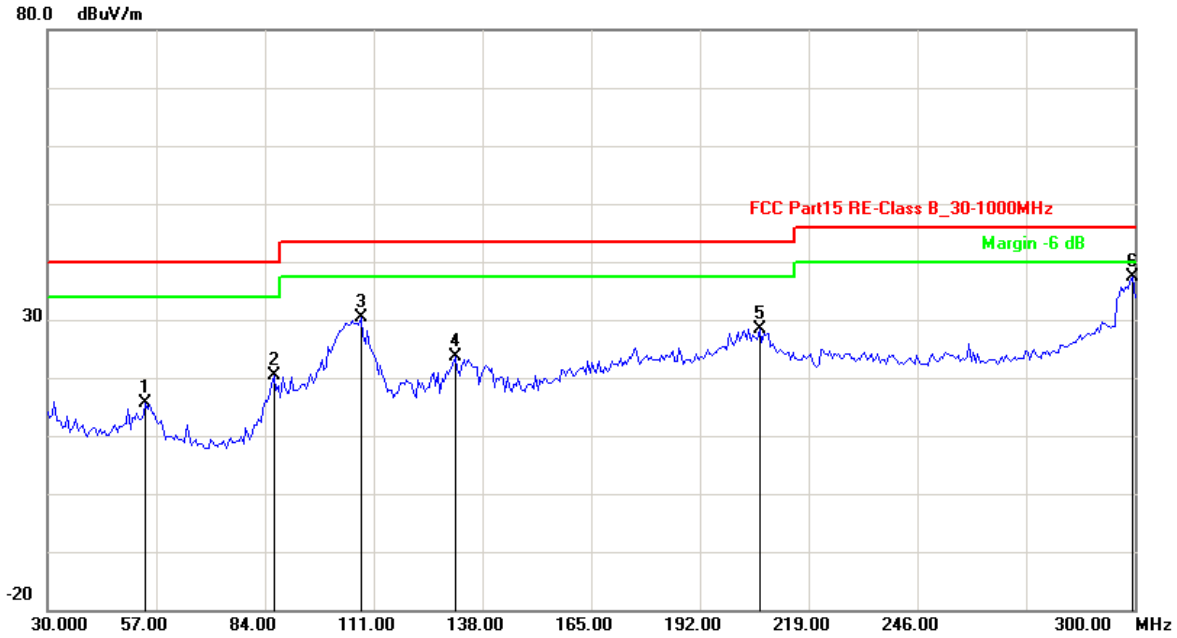
| | | | |
|---|---|---|---|
| Channel: | TX –X Position | Result: | ■ - passed<br>☐ - not passed |
| Test point: | Horizontal | | |
| Frequency range: | 30MHz-1GHz | | |

| | |
|---|---|
| EUT | Bluetooth Keyboard |
| Test Condition | Ambient Temperature: 25°C Humidity: 56% |
| Test distance | 3 Meter |
| Test Date: | 04~08 May 2015 |
| Operator | **Duke** |
| MODEL NO | HB125 |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|---|---|---|---|---|---|---|---|
| 1 | 54.3487 | -19.09 | 34.77 | 15.68 | 40.00 | -24.32 | QP |
| 2 | 86.2725 | -19.44 | 39.89 | 20.45 | 40.00 | -19.55 | QP |
| 3 | 107.9158 | -17.49 | 47.77 | 30.28 | 43.50 | -13.22 | QP |
| 4 | 131.1824 | -16.13 | 39.71 | 23.58 | 43.50 | -19.92 | QP |
| 5 | 206.9339 | -10.83 | 39.24 | 28.41 | 43.50 | -15.09 | QP |
| 6 | 299.4589 | -1.56 | 38.93 | 37.37 | 46.00 | -8.63 | QP |
| Remark: Other frequency mini margin all >6 dB of Limit | | | | | | | |



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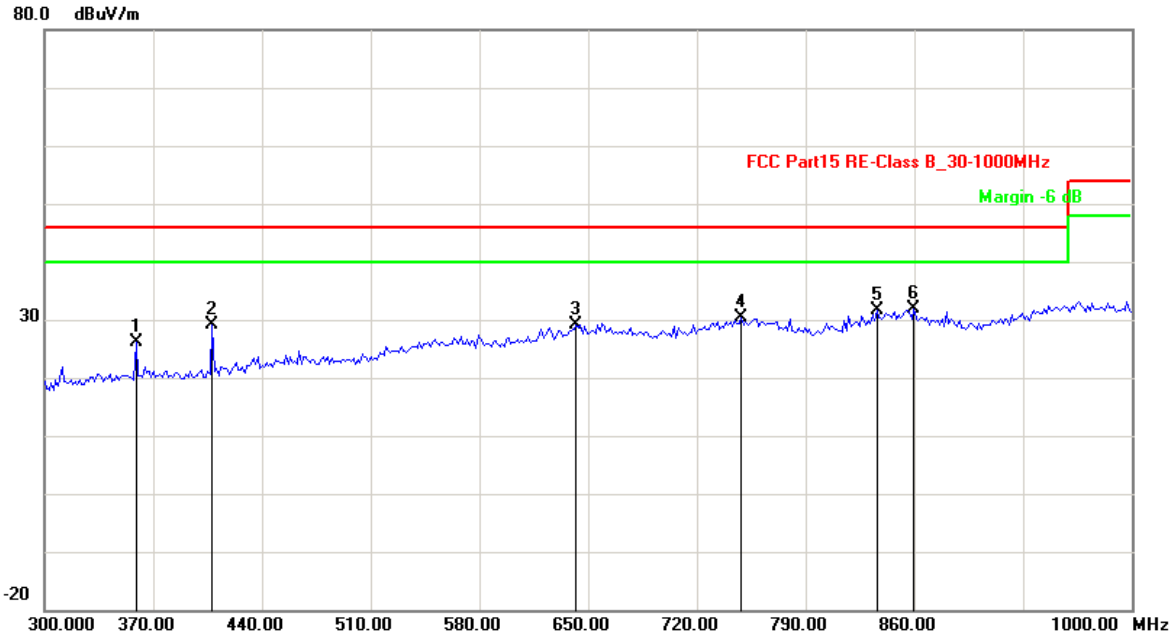


| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|---|---|---|---|---|---|---|---|
| 1 | 358.9178 | -11.20 | 37.24 | 26.04 | 46.00 | -19.96 | QP |
| 2 | 408.0160 | -10.18 | 39.22 | 29.04 | 46.00 | -16.96 | QP |
| 3 | 642.2846 | -3.59 | 32.62 | 29.03 | 46.00 | -16.97 | QP |
| 4 | 748.8978 | -1.65 | 32.13 | 30.48 | 46.00 | -15.52 | QP |
| 5 | 835.8717 | -1.13 | 32.83 | 31.70 | 46.00 | -14.30 | QP |
| 6 | 859.7194 | -0.58 | 32.51 | 31.93 | 46.00 | -14.07 | QP |
| Remark: Other frequency mini margin all >6 dB of Limit | | | | | | | |



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| | | | |
|---|---|---|---|
| Channel: | TX –X Position Low CH | Result: | ■ - passed<br>□ - not passed |
| Test point: | Horizontal | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|---|---|---|---|---|---|---|---|
| 1 | 2402.00 | -6.84 | 97.79 | 90.95 | 114.00 | -23.05 | Peak |
| 2 | 2402.00 | -6.84 | 95.90 | 89.06 | 94.00 | -4.94 | AVG |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|---|---|---|---|---|---|---|---|
| 1 | 1969.940 | -9.43 | 40.41 | 30.98 | 74.00 | -43.02 | peak |
| 2 | 1969.940 | -9.43 | 29.44 | 20.01 | 54.00 | -33.99 | AVG |
| 3 | 4284.569 | 0.83 | 38.03 | 38.86 | 74.00 | -35.14 | peak |
| 4 | 4284.569 | 0.83 | 22.43 | 23.26 | 54.00 | -30.74 | AVG |
| Remark: Other frequency mini margin all >6 dB of Limit | | | | | | | |

| | | | |
|---|---|---|---|
| Channel: | TX –X Position Middle CH | Result: | ■ - passed<br>□ - not passed |
| Test point: | Horizontal | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|---|---|---|---|---|---|---|---|
| 1 | 2440.00 | -6.62 | 97.47 | 90.85 | 114.00 | -23.15 | Peak |
| 2 | 2440.00 | -6.62 | 96.24 | 89.62 | 94.00 | -4.38 | AVG |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|---|---|---|---|---|---|---|---|
| 1 | 1991.984 | -9.28 | 40.79 | 31.51 | 74.00 | -42.49 | peak |
| 2 | 1991.984 | -9.28 | 29.44 | 20.16 | 54.00 | -33.84 | AVG |
| 3 | 4438.878 | 1.40 | 39.27 | 40.67 | 74.00 | -33.33 | peak |
| 4 | 4438.878 | 1.40 | 25.18 | 26.58 | 54.00 | -27.42 | AVG |
| Remark: Other frequency mini margin all >6 dB of Limit | | | | | | | |

| | | | |
|---|---|---|---|
| Channel: | TX –X Position High CH | Result: | ■ - passed<br>□ - not passed |
| Test point: | Horizontal | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|---|---|---|---|---|---|---|---|
| 1 | 2480.00 | -6.38 | 97.46 | 91.08 | 114.00 | -22.92 | Peak |
| 2 | 2480.00 | -6.38 | 95.69 | 89.31 | 94.00 | -4.69 | AVG |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|---|---|---|---|---|---|---|---|
| 1 | 3468.938 | -1.73 | 37.32 | 35.59 | 74.00 | -38.41 | peak |
| 2 | 3468.938 | -1.73 | 23.05 | 21.32 | 54.00 | -32.68 | AVG |
| 3 | 5959.920 | 6.46 | 40.66 | 47.12 | 74.00 | -26.88 | peak |
| 4 | 5959.920 | 6.46 | 26.17 | 32.63 | 54.00 | -21.37 | AVG |
| Remark: Other frequency mini margin all >6 dB of Limit | | | | | | | |



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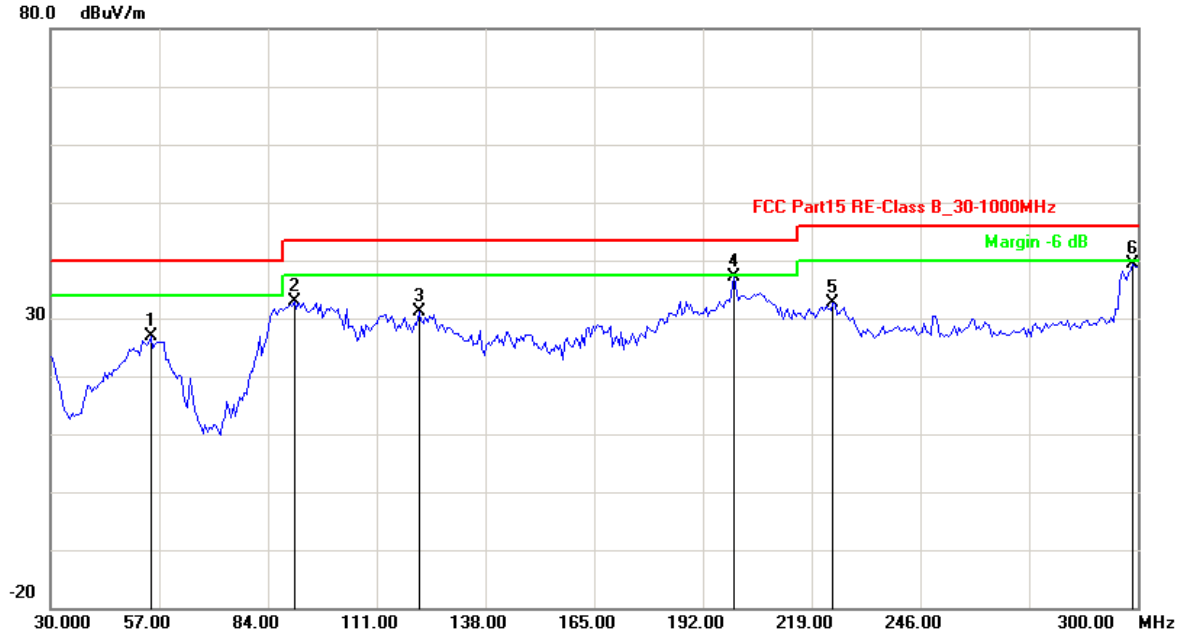
| | | | |
|---|---|---|---|
| Channel: | TX –X Position | Result: | ■ - passed<br>□ - not passed |
| Test point: | Vertical | | |
| Frequency range: | 30MHz-1GHz | | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|---|---|---|---|---|---|---|---|
| 1 | 54.8898 | -19.14 | 45.97 | 26.83 | 40.00 | -13.17 | QP |
| 2 | 90.6012 | -19.08 | 51.89 | 32.81 | 43.50 | -10.69 | QP |
| 3 | 121.4429 | -16.64 | 47.89 | 31.25 | 43.50 | -12.25 | QP |
| 4 | 199.8998 | -12.31 | 49.38 | 37.07 | 43.50 | -6.43 | QP |
| 5 | 224.2485 | -11.23 | 43.93 | 32.70 | 46.00 | -13.30 | QP |
| 6 | 298.9178 | -1.71 | 41.03 | 39.32 | 46.00 | -6.68 | QP |
| Remark: Other frequency mini margin all >6 dB of Limit | | | | | | | |



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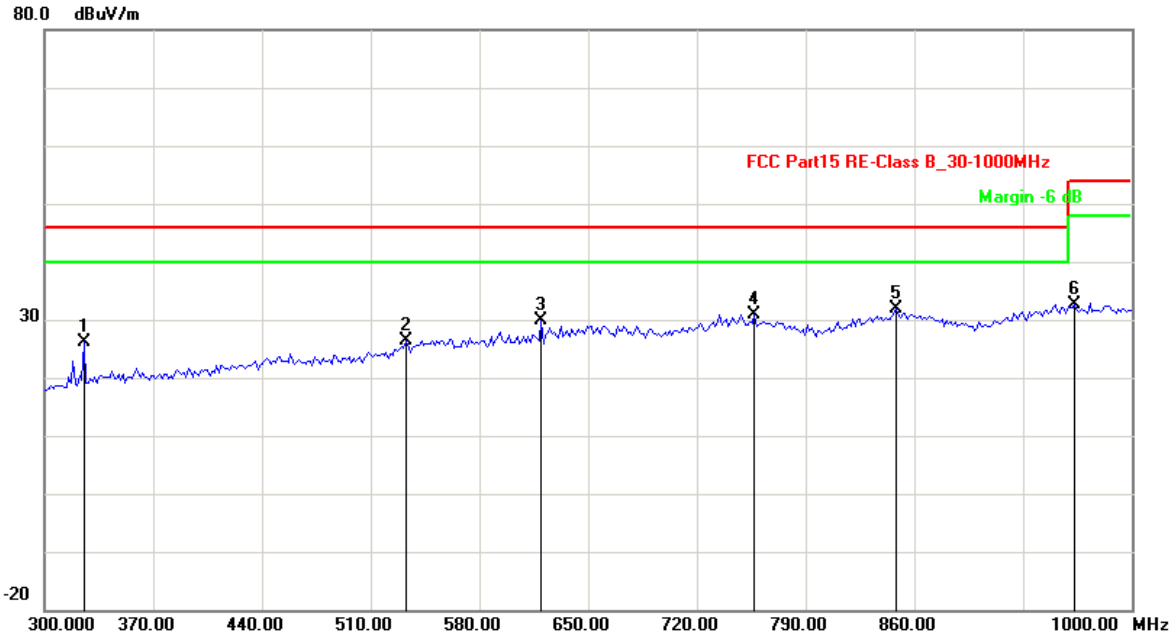


| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|---|---|---|---|---|---|---|---|
| 1 | 325.2505 | -12.47 | 38.61 | 26.14 | 46.00 | -19.86 | QP |
| 2 | 532.8657 | -6.52 | 32.80 | 26.28 | 46.00 | -19.72 | QP |
| 3 | 619.8397 | -4.63 | 34.54 | 29.91 | 46.00 | -16.09 | QP |
| 4 | 757.3146 | -1.84 | 32.63 | 30.79 | 46.00 | -15.21 | QP |
| 5 | 848.4970 | -0.38 | 32.29 | 31.91 | 46.00 | -14.09 | QP |
| 6 | 963.5271 | 0.29 | 32.33 | 32.62 | 54.00 | -21.38 | QP |
| Remark: Other frequency mini margin all >6 dB of Limit | | | | | | | |



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| | | | |
|---|---|---|---|
| Channel: | TX –X Position Low CH | Result: | ■ - passed<br>□ - not passed |
| Test point: | Vertical | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|---|---|---|---|---|---|---|---|
| 1 | 2402.00 | -6.84 | 96.62 | 89.78 | 114.00 | -24.22 | Peak |
| 2 | 2402.00 | -6.84 | 94.19 | 87.35 | 94.00 | -6.65 | AVG |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|---|---|---|---|---|---|---|---|
| 1 | 1947.896 | -9.57 | 40.44 | 30.87 | 74.00 | -43.13 | peak |
| 2 | 1947.896 | -9.57 | 29.90 | 20.33 | 54.00 | -33.67 | AVG |
| 3 | 3623.247 | -1.27 | 38.50 | 37.23 | 74.00 | -36.77 | peak |
| 4 | 3623.247 | -1.27 | 24.43 | 23.16 | 54.00 | -30.84 | AVG |
| Remark: Other frequency mini margin all >6 dB of Limit | | | | | | | |

| | | | |
|---|---|---|---|
| Channel: | TX –X Position Middle CH | Result: | ■ - passed<br>□ - not passed |
| Test point: | Vertical | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|---|---|---|---|---|---|---|---|
| 1 | 2440.00 | -6.62 | 96.36 | 89.74 | 114.00 | -24.26 | Peak |
| 2 | 2440.00 | -6.62 | 93.94 | 87.32 | 94.00 | -6.68 | AVG |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|---|---|---|---|---|---|---|---|
| 1 | 3645.291 | -1.21 | 38.26 | 37.05 | 74.00 | -36.95 | peak |
| 2 | 3645.291 | -1.21 | 24.62 | 23.41 | 54.00 | -30.59 | AVG |
| 3 | 5893.788 | 6.21 | 40.98 | 47.19 | 74.00 | -26.81 | peak |
| 4 | 5893.788 | 6.21 | 27.31 | 33.52 | 54.00 | -20.48 | AVG |
| Remark: Other frequency mini margin all >6 dB of Limit | | | | | | | |

| | | | |
|---|---|---|---|
| Channel: | TX –X Position High CH | Result: | ■ - passed<br>□ - not passed |
| Test point: | Vertical | | |
| Frequency range: | 1GHz-26.5GHz | | |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|---|---|---|---|---|---|---|---|
| 1 | 2480.00 | -6.38 | 95.56 | 89.18 | 114.00 | -24.82 | Peak |
| 2 | 2480.00 | -6.38 | 93.52 | 87.14 | 94.00 | -6.86 | AVG |

| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|---|---|---|---|---|---|---|---|
| 1 | 3050.100 | -3.36 | 39.23 | 35.87 | 74.00 | -38.13 | peak |
| 2 | 3050.100 | -3.36 | 24.39 | 21.03 | 54.00 | -32.97 | AVG |
| 3 | 5937.876 | 6.38 | 40.40 | 46.78 | 74.00 | -27.22 | peak |
| 4 | 5937.876 | 6.38 | 26.24 | 32.62 | 54.00 | -21.38 | AVG |
| Remark: Other frequency mini margin all >6 dB of Limit | | | | | | | |



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# 8. Band Edge Compliance test

## 8.1. Test Equipment

| Band Edge Compliance test | | | | | |
|---|---|---|---|---|---|
| Item | Test Equipment | Manufacturer | Model No. | Serial No. | Last Cal. |
| 1 | EMI Test Receiver | ROHDE & SCHWARZ | ESCI | 10868 | 2014/11 |
| 2 | Log per Antenna | ROHDE & SCHWARZ | HL050 | 100186 | 2015/03 |
| 3 | Signal analyzer | ROHDE & SCHWARZ | FSIQ26 | 100311 | 2015/03 |

## 8.2. Test procedure

1、 The EUT operates at hopping-off test mode. The lowest or highest channels are tested to verify the largest transmission and spurious emissions power at the continuous transmission mode.
2、 Max hold the trace of the setp 1,and the EUT operates at hopping-on test mode to verify the largest spurious emissions power.
3、 Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
(a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
(b) AVERAGE: RBW=1MHz ; VBW=1/on time(1KHz) / Sweep=AUTO

## 8.3. Test Results

**PASSED.**

The EUT operates at hopping-off test mode. The lowest and highest channels are tested to verify the band edge emissions.

| Test Mode | Channel Marked Frequency | Test Result Highest Emission (dBuv/m) | | | |
|---|---|---|---|---|---|
| | | Horizontal | | Vertical | |
| | | Peak | Average | Peak | Average |
| Low Channel | 2390MHz | 29.33 | 19.34 | 28.73 | 19.25 |
| | 2400MHz | 64.22 | 61.59 | 62.85 | 59.87 |
| High Channel | 2483.5MHz | 49.73 | 47.92 | 48.08 | 45.78 |
| | 2500MHz | 28.68 | 18.56 | 29.05 | 18.61 |



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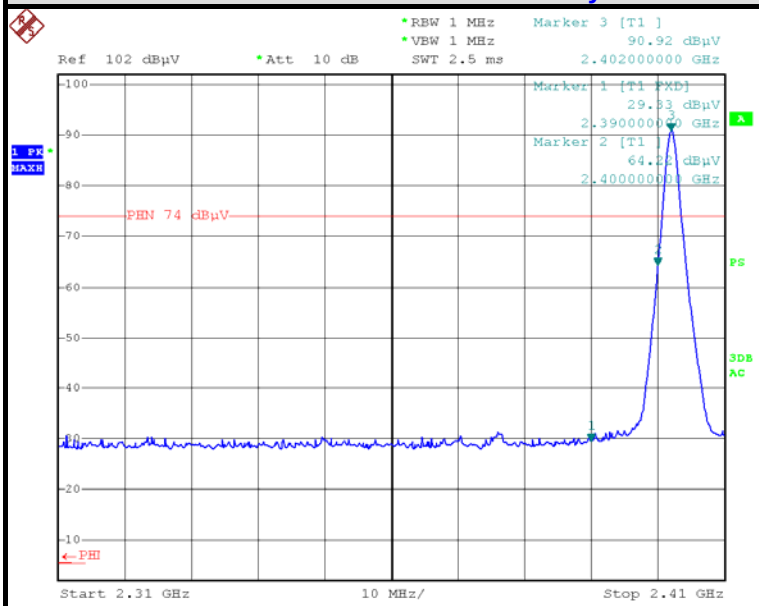
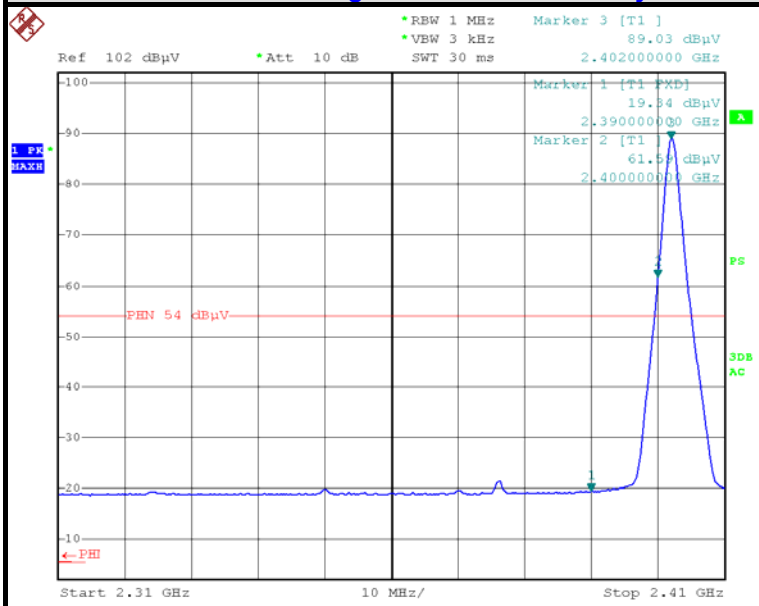
## Band Edges (Low)

**Detector mode:Peak** **Polarity:Horizontal**




**Detector mode:Average** **Polarity:Horizontal**



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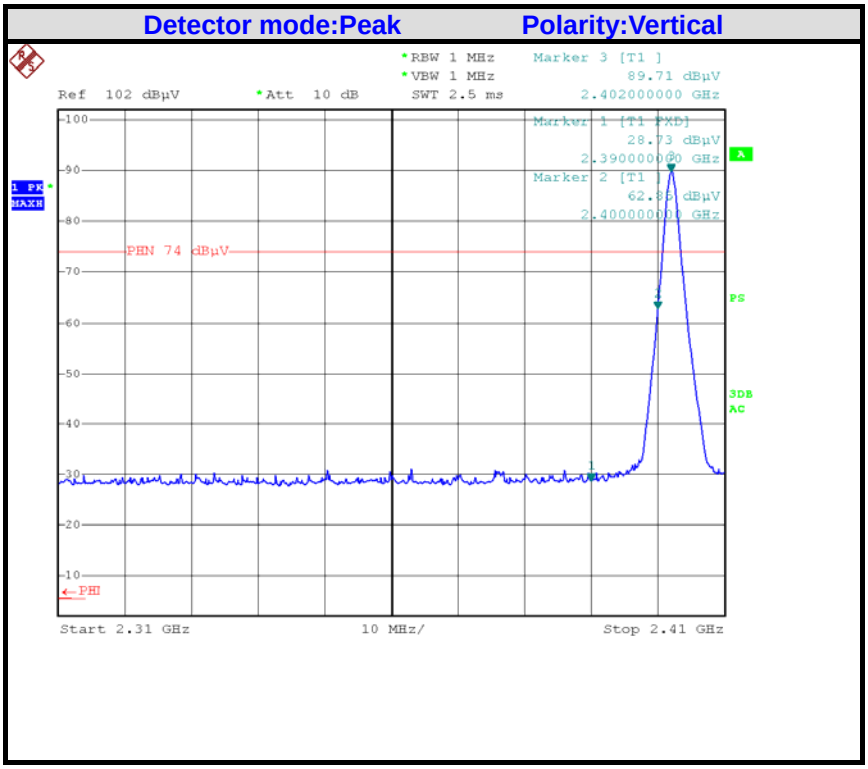
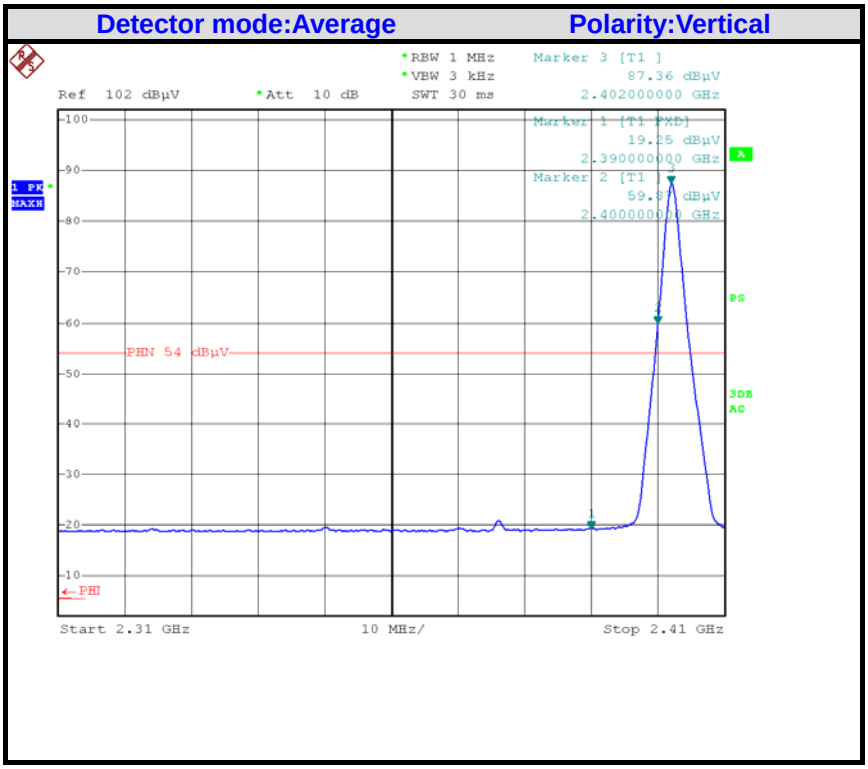
**Detector mode:Peak** **Polarity:Vertical**




**Detector mode:Average** **Polarity:Vertical**



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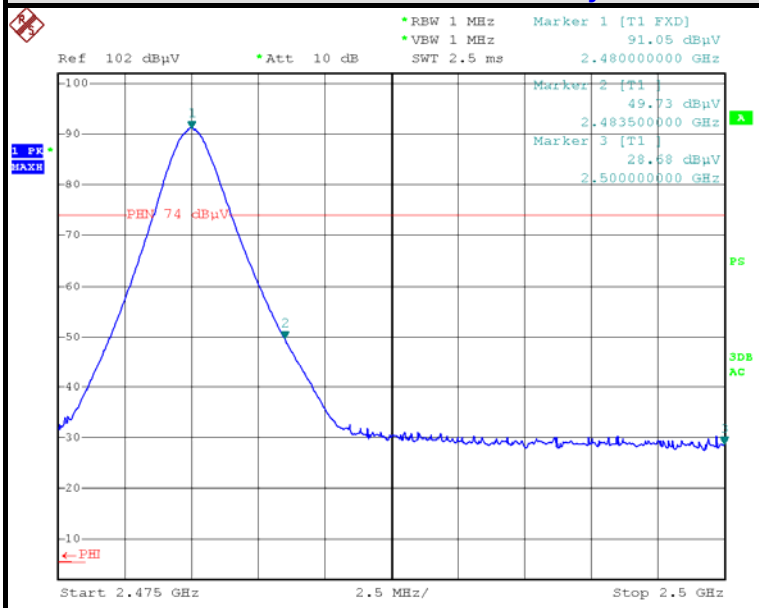
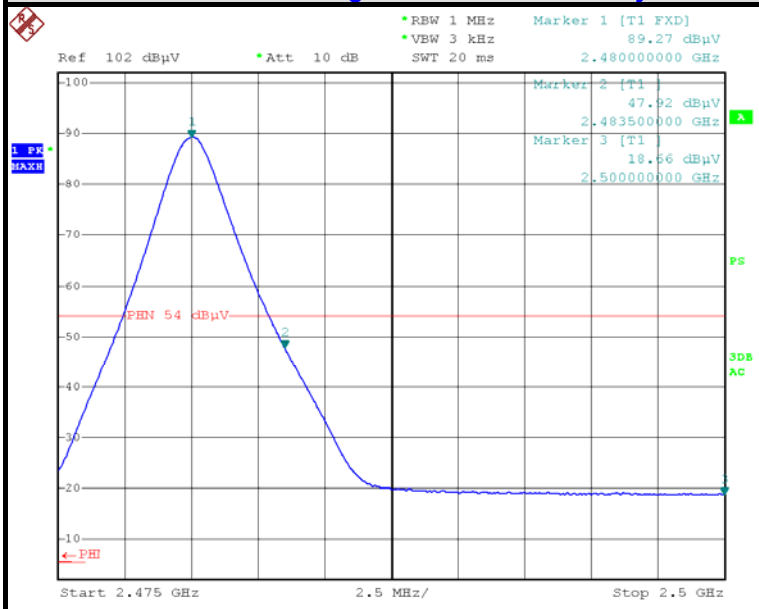
## Band Edges (High)

**Detector mode:Peak** **Polarity:Horizontal**




**Detector mode:Average** **Polarity:Horizontal**



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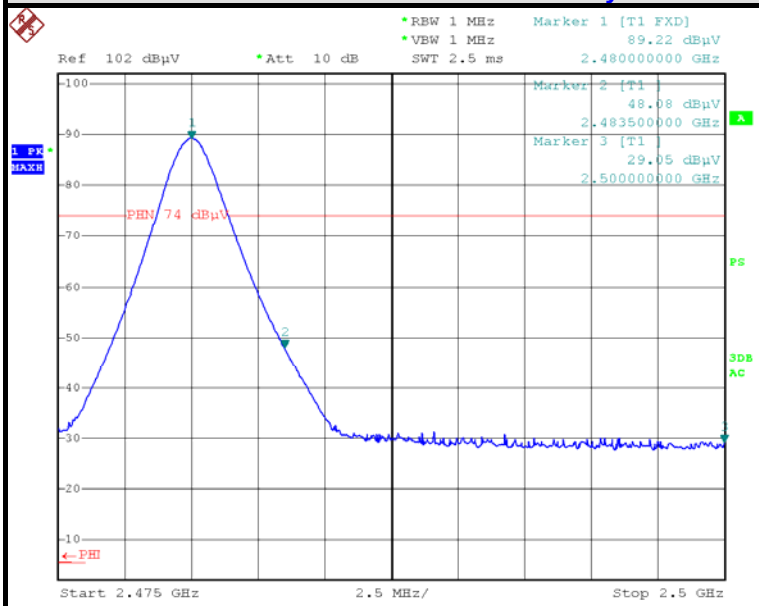
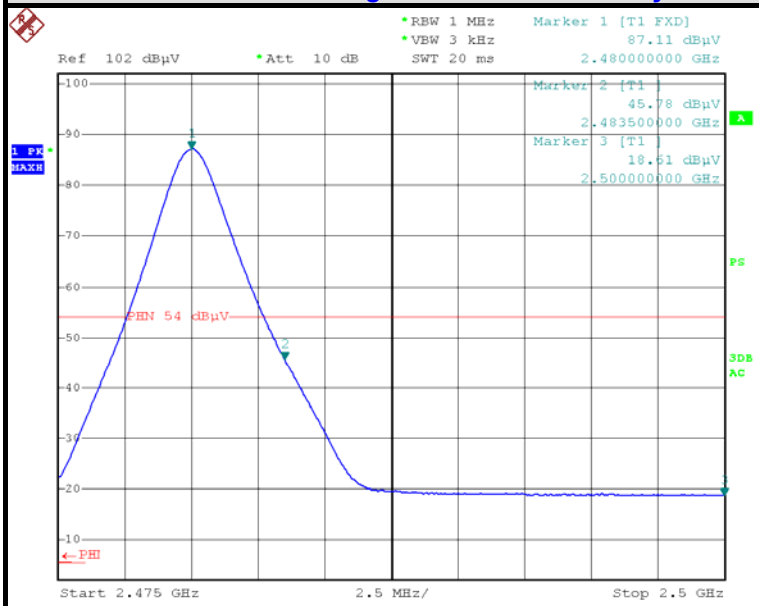
**Detector mode:Peak** **Polarity:Vertical**




**Detector mode:Average** **Polarity:Vertical**



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# 9.Deviation to test specifications

The following identical model(s):

**N/A**

Belong to the tested device:

Product description: **Bluetooth Keyboard**
Model name: **HB125**



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