# TESTREPORT

| | |
|---|---|
| Applicant Name : | Xiamen VBeT Electronic Co., Ltd. |
| Address : | N403, Weiye Building, Xiamen Pioneering Park for Overseas Chinese Scholars, PRC |
| ReportNumber: | SZNS220303-07023E-RF-00B |
| FCC ID: | 2AC67-BT50U |

**Test Standard (s)**

FCC PART 15B, CLASS B

**Sample Description**

| | |
|---|---|
| Product Type: | UC Link |
| Model No.: | BT 50U |
| Multiple Model(s) No.: | N/A |
| Trade Mark: | VT |
| Date Received: | 2022/03/03 |
| Date of Test: | 2022/04/07 |
| Report Date: | 2022/04/11 |

| | |
|---|---|
| Test Result: | Pass* |

* In the configuration tested, the EUT complied with the standards above.

**Prepared andChecked By:**

Black Ding

EMC Engineer

**Approved By:**

Candy Li

EMC Engineer

**Note:** This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "★".

Shenzhen Accurate Technology Co., Ltd. is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with an asterisk '*'. Customer model name, addresses, names, trademarks etc. are not considered data.
This report cannot be reproduced except in full, without prior written approval of the Company. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

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## Test Report Declaration

| | | |
|---|---|---|
| Applicant | .: | Xiamen VBeT Electronic Co., Ltd. |
| Manufacturer | : | Xiamen VBeT Electronic Co., Ltd. |
| Product | : | UC Link |
| Model No. | : | BT 50U |
| Trade Mark | : | VT |

Measurement Procedure Used:

**FCC Rules and Regulations Part 15 Subpart B Class B**
**ANSI C63.4: 2014**

The device described above is tested by Shenzhen Accurate Technology Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart B Class B limits both radiated and conducted emissions.The measurement results are contained in this test report and Shenzhen Accurate Technology Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Shenzhen Accurate Technology Co., Ltd.

# 1. TEST RESULTS SUMMARY

| Test Items | Test Standard | Test Results |
|---|---|---|
| Power Line Conducted Emission (0.15-30MHz) | FCC Part 15 Subpart B | Pass |
| Radiated Emission (30-1000MHz) | FCC Part 15 Subpart B | Pass |
| Radiated Emission (Above 1GHz) | FCC Part 15 Subpart B | Pass |

# 2. GENERAL INFORMATION

## 2.1.Description of Device (EUT)

| | | |
|---|---|---|
| Product | : | UC Link |
| Model No. | : | BT 50U |
| Rating | : | DC 5V |
| Trade Mark | : | VT |
| Remark(s) | : | The highest operation frequency is 2480MHz. |
| Applicant | : | Xiamen VBeT Electronic Co., Ltd. |
| Address | : | N403, Weiye Building, Xiamen Pioneering Park for Overseas Chinese Scholars, PRC |
| Manufacturer | : | Xiamen VBeT Electronic Co., Ltd. |
| Address | : | N403, Weiye Building, Xiamen Pioneering Park for Overseas Chinese Scholars, PRC |
| Date of sample received | : | Mar. 03, 2022 |
| Date of Test | : | Apr. 07, 2022 |
| Sample Number | : | SZNS220303-07023E-RF-S1 |

## 2.2.Test Mode

Mode: Working(BT link with headset)

Accessory and Auxiliary Equipment

| | | |
|---|---|---|
| Headset | : | VBeT<br>Model: VT X300 BT |
| Notebook | : | DELL<br>Model: Latitude E6410<br>S/N: 11429208685 |
| Router | : | Model: DS-3WR03-E<br>S/N: 10021642429 |

## 2.3.Description of Test Facility

EMC Lab : Accredited by American Association for Laboratory Accreditation (A2LA)
The Certificate Number is 4297.01

Listed by Innovation, Science and Economic Development Canada (ISEDC)
The Registration Number is 5077A

Accredited by China National Accreditation Service for Conformity Assessment (CNAS)
The Registration Number is CNAS L3193

Name of Firm : Shenzhen Accurate Technology Co., Ltd.

Site Location : 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China

## 2.4.Measurement Uncertainty

Radiated emission expanded uncertainty (30MHz-1000MHz) : *U=4.28dB, k=2*

Radiated emission expanded uncertainty (1GHz -18GHz) : *U=4.98dB, k=2*

Radiated emission expanded uncertainty (18GHz - 26.5GHz) : *U=5.06dB, k=2*

Radiated emission expanded uncertainty (26.5GHz - 40GHz) : *U=4.72dB, k=2*

Conduction Emission Expanded Uncertainty (0.15kHz-30MHz) : *U=2.72dB, k=2*

# 3. MEASURING DEVICE AND TEST EQUIPMENT

## 3.1.For Conducted Emission Test

| Item | Manufacturer | Equipment | Model No. | Serial No. | Last Cal. | Cal. Interval |
|---|---|---|---|---|---|---|
| 1. | Rohde& Schwarz | EMI Test Receiver | ESCI | 100784 | 2021/12/13 | 2022/12/12 |
| 2. | Rohde & Schwarz | L.I.S.N. | ENV216 | 101314 | 2021/12/13 | 2022/12/12 |
| 3. | Anritsu Corp | 50 Coaxial Switch | MP59B | 6100237248 | 2021/12/13 | 2022/12/12 |
| 4. | Conducted Emission Test Software: e3 19821b (V9) | | | | | |

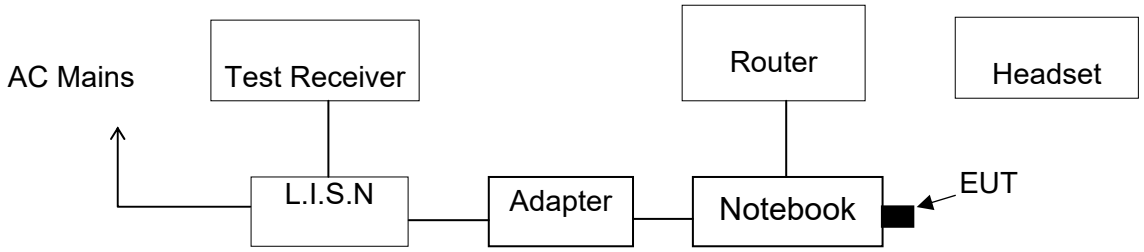
## 3.2.For Radiated Emission Measurement

| Item | Manufacturer | Equipment | Model No. | Serial No. | Last Cal. | Cal. Interval |
|---|---|---|---|---|---|---|
| 1. | Rohde& Schwarz | Test Receiver | ESR | 102725 | 2021/12/13 | 2022/12/12 |
| 2. | Rohde&Schwarz | Spectrum Analyzer | FSV40 | 101949 | 2021/12/13 | 2022/12/12 |
| 3. | SONOMA INSTRUMENT | Amplifier | 310 N | 186131 | 2021/11/09 | 2022/11/08 |
| 4. | A.H. Systems, inc. | Preamplifier | PAM-0118P | 135 | 2021/11/09 | 2022/11/08 |
| 5. | Schwarzbeck | Bilog Antenna | VULB9163 | 9163-323 | 2021/07/06 | 2024/07/05 |
| 6. | Schwarzbeck | Horn Antenna | BBHA9120D | 9120D-1067 | 2020/01/05 | 2023/01/04 |
| 7. | Unknown | RF Coaxial Cable | No.10 | N050 | 2021/12/14 | 2022/12/13 |
| 8. | Unknown | RF Coaxial Cable | No.11 | N1000 | 2021/12/14 | 2022/12/13 |
| 9. | Unknown | RF Coaxial Cable | No.12 | N040 | 2021/12/14 | 2022/12/13 |
| 10. | Unknown | RF Coaxial Cable | No.13 | N300 | 2021/12/14 | 2022/12/13 |
| 11. | Unknown | RF Coaxial Cable | No.14 | N800 | 2021/12/14 | 2022/12/13 |
| 12. | Radiated Emission Test Software: e3 19821b (V9) | | | | | |

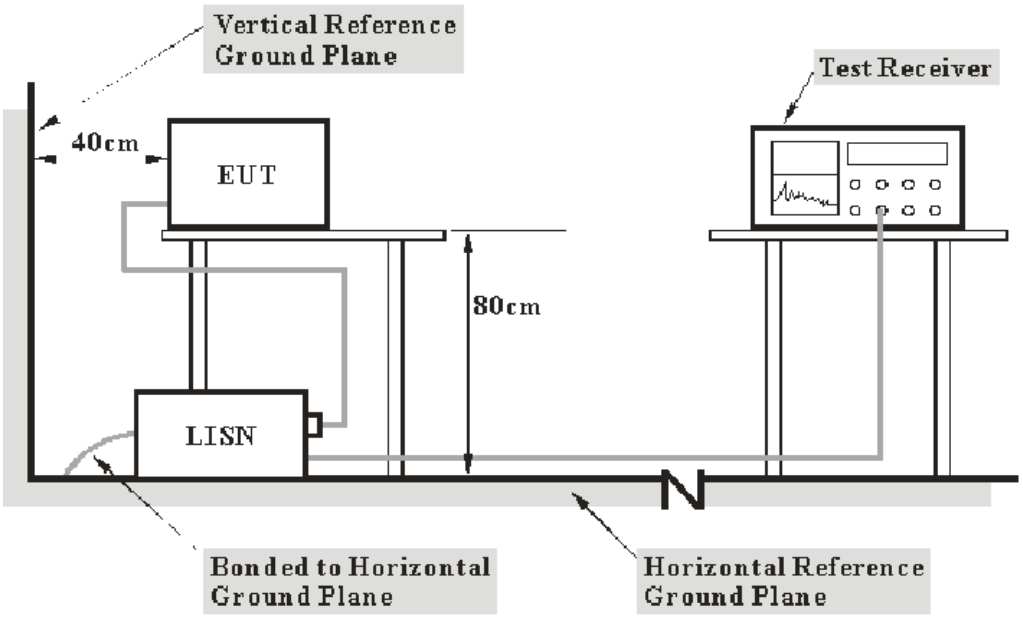
# 4. POWER LINE CONDUCTED MEASUREMENT

## 4.1.Block Diagram of Test Setup

### 4.1.1.Block diagram of connection between the EUT and simulators




### 4.1.2.Test System Setup




Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

## 4.2.Power Line Conducted Emission Measurement Limits (Class B)

| Frequency (MHz) | Limit dB(μV) | |
|---|---|---|
| | Quasi-peak Level | Average Level |
| 0.15 - 0.50 | 66.0 – 56.0 * | 56.0 – 46.0 * |
| 0.50 - 5.00 | 56.0 | 46.0 |
| 5.00 - 30.00 | 60.0 | 50.0 |
| NOTE1: The lower limit shall apply at the transition frequencies.<br>NOTE2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz. | | |

## 4.3.Test mode description

Mode: Working

## 4.4.Manufacturer

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

### 4.4.1.UC Link

Model Number : BT 50U

Manufacturer : Xiamen VBeT Electronic Co., Ltd.

## 4.5.Operating Condition of EUT

4.5.1.Setup the EUT and simulator as shown as Section 4.1.

4.5.2.Turn on the power of all equipment.

4.5.3.Let the EUT work in test mode and measure it.

## 4.6.Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines 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 ANSI C63.4: 2014 on Conducted Emission Measurement.

The bandwidth of test receiver is set at 9kHz.
The frequency range from 150kHz to 30MHz is checked.

## 4.7.DataExplain

Over Limit = Level (dBμV) - Limit(dBμV)

## 4.8.Power Line Conducted Emission Measurement Results

**PASS.**

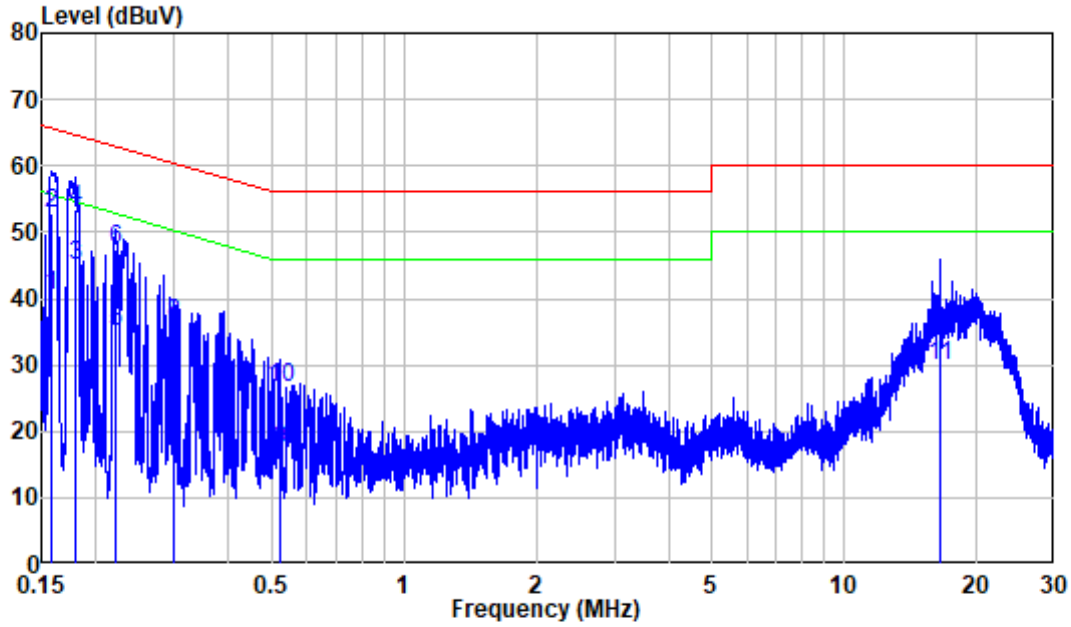
The frequency range from 150kHz to 30MHz is checked.

Maximizing procedure was performed on the six (6) highest emissions of the EUT. Emissions attenuated more than 20 dB below the permissible value are not reported.

All data was recorded in the Quasi-peak and average detection mode.

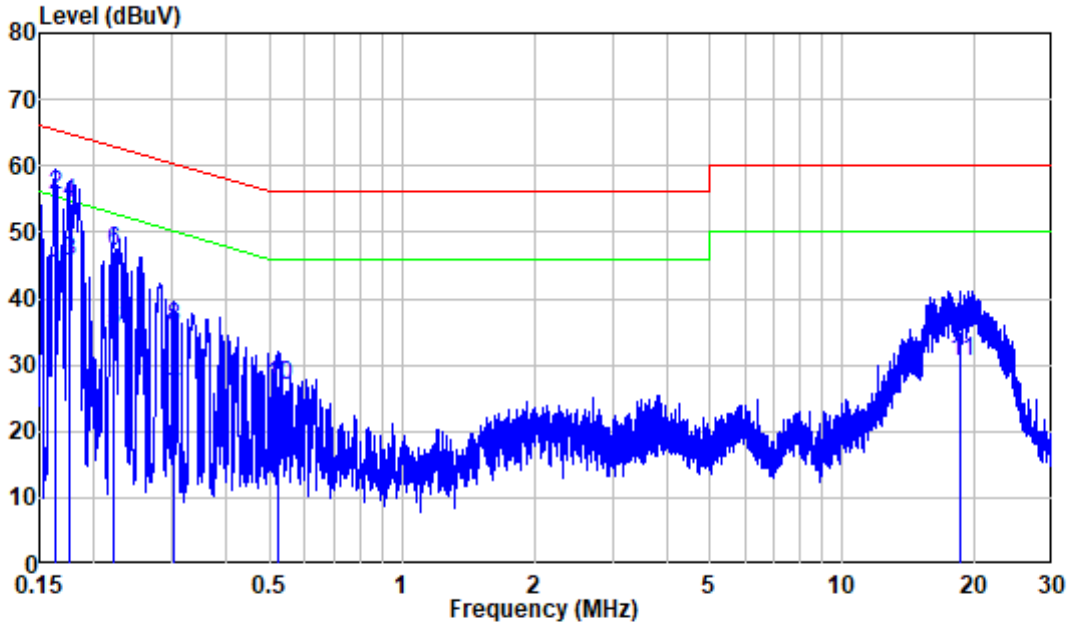
The spectral diagrams are attached as below.

| | | | |
|---|---|---|---|
| **Job No.:** | **SZNS220303-07023E-RF** | **Power:** | **AC 120V 60Hz** |
| **Eut:** | **UC Link** | **Test By:** | **Jason Liu** |
| **Model:** | **BT 50U** | **Test item:** | **Conducted emission** |
| **Climatic:** | **24° C 55%RH 101kPa** | **Date:** | **2022.4.7** |




Site : Shielding Room
Condition: Line
Mode : Working
Model : BT 50U
Power : AC 120V 60Hz

| | Freq | Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dB | dBuV | dBuV | dBuV | dB | |
| 1 | 0.158 | 9.80 | 30.60 | 40.40 | 55.57 | -15.17 | Average |
| 2 | 0.158 | 9.80 | 43.15 | 52.95 | 65.57 | -12.62 | QP |
| 3 | 0.180 | 9.80 | 35.27 | 45.07 | 54.49 | -9.42 | Average |
| 4 | 0.180 | 9.80 | 43.77 | 53.57 | 64.49 | -10.92 | QP |
| 5 | 0.221 | 9.80 | 25.21 | 35.01 | 52.78 | -17.77 | Average |
| 6 | 0.221 | 9.80 | 37.45 | 47.25 | 62.78 | -15.53 | QP |
| 7 | 0.301 | 9.80 | 16.58 | 26.38 | 50.21 | -23.83 | Average |
| 8 | 0.301 | 9.80 | 26.49 | 36.29 | 60.21 | -23.92 | QP |
| 9 | 0.521 | 9.81 | 7.54 | 17.35 | 46.00 | -28.65 | Average |
| 10 | 0.521 | 9.81 | 16.87 | 26.68 | 56.00 | -29.32 | QP |
| 11 | 16.464 | 9.96 | 20.03 | 29.99 | 50.00 | -20.01 | Average |
| 12 | 16.464 | 9.96 | 25.06 | 35.02 | 60.00 | -24.98 | QP |



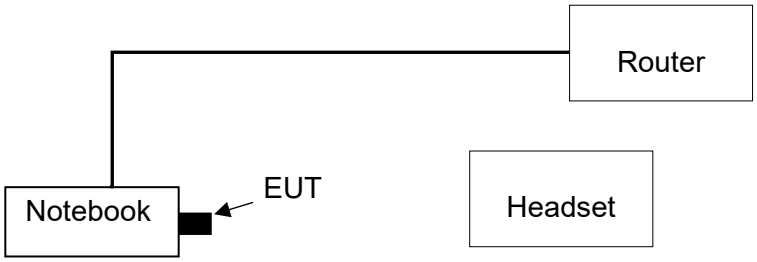

Site : Shielding Room
Condition: Neutral
Mode : Working
Model : BT 50U
Power : AC 120V 60Hz

| | Freq | Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dB | dBuV | dBuV | dBuV | dB | |
| 1 | 0.163 | 9.80 | 33.66 | 43.46 | 55.30 | -11.84 | Average |
| 2 | 0.163 | 9.80 | 45.90 | 55.70 | 65.30 | -9.60 | QP |
| 3 | 0.175 | 9.80 | 35.92 | 45.72 | 54.71 | -8.99 | Average |
| 4 | 0.175 | 9.80 | 44.60 | 54.40 | 64.71 | -10.31 | QP |
| 5 | 0.221 | 9.80 | 25.12 | 34.92 | 52.78 | -17.86 | Average |
| 6 | 0.221 | 9.80 | 37.29 | 47.09 | 62.78 | -15.69 | QP |
| 7 | 0.304 | 9.80 | 15.26 | 25.06 | 50.14 | -25.08 | Average |
| 8 | 0.304 | 9.80 | 25.93 | 35.73 | 60.14 | -24.41 | QP |
| 9 | 0.524 | 9.81 | 8.91 | 18.72 | 46.00 | -27.28 | Average |
| 10 | 0.524 | 9.81 | 17.10 | 26.91 | 56.00 | -29.09 | QP |
| 11 | 18.548 | 10.09 | 20.35 | 30.44 | 50.00 | -19.56 | Average |
| 12 | 18.548 | 10.09 | 24.92 | 35.01 | 60.00 | -24.99 | QP |

# 5. RADIATED EMISSION MEASUREMENT

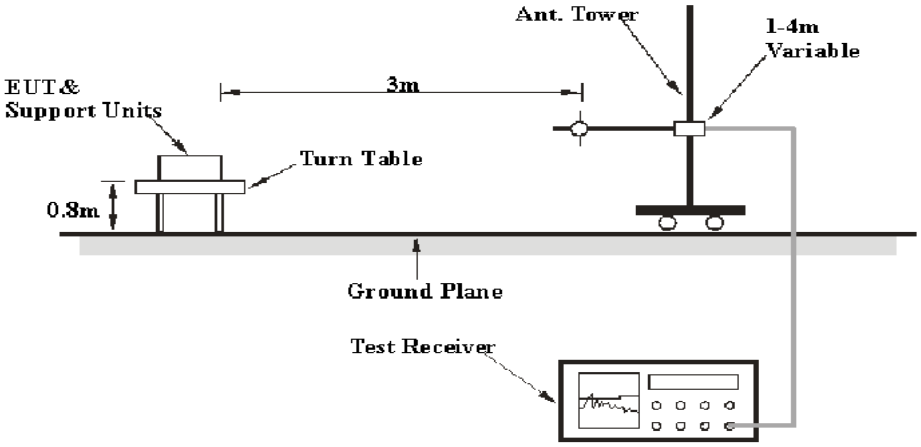
## 5.1.Block Diagram of Test Setup

### 5.1.1.Block diagram of connection between the EUT and simulators

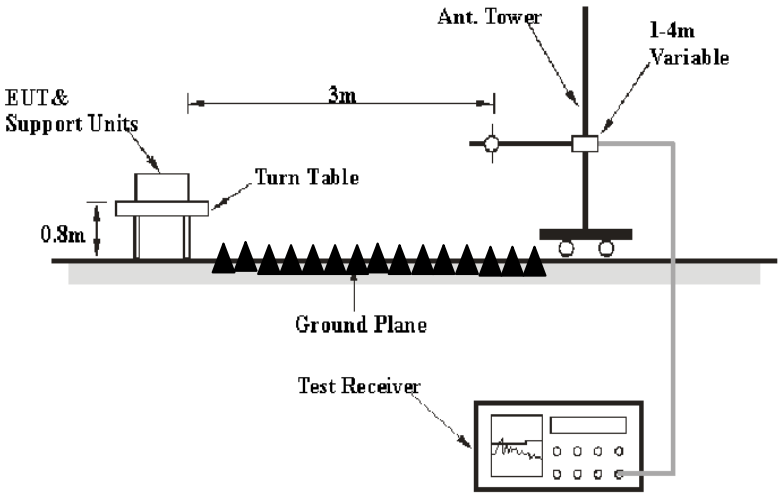



### 5.1.2.Test System Setup

**Below 1GHz:**




**Above 1GHz:**



## 5.2.Radiated Emission Limit (Class B)

All emanations from a class B device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below:

| Frequency MHz | Distance Meters | Field Strengths QP Limit | |
|---|---|---|---|
| | | μV/m | dB(μV/m) |
| 30-88 | 3 | 100 | 40.0 |
| 88-216 | 3 | 150 | 43.5 |
| 216-960 | 3 | 200 | 46.0 |
| Above 960 | 3 | 500 | 54.0 |
| Remark:<br>(1) Emission level dB(μV) = 20 log Emission level μV/m.<br>(2)The smaller limit shall apply at the cross point between two frequency bands.<br>(3) Distance is the distance in meters between the measuring instrument antenna and the closest point of any part of the device or system. | | | |

| Frequency MHz | Distance Meters | Field StrengthsLimit | |
|---|---|---|---|
| | | Peak dB(μV/m) | AVGdB(μV/m) |
| Above 1GHz | 3 | 74 | 54 |

## 5.3.Test Mode Description

Mode: Working

## 5.4.Manufacturer

The following equipments are installed on Radiated Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

### 5.4.1.UC Link

Model Number : BT 50U

Manufacturer : Xiamen VBeT Electronic Co., Ltd.

## 5.5.Operating Condition of EUT

5.5.1. Setup the EUT and simulator as shown as Section 5.1.

5.5.2. Turn on the power of all equipment.

5.5.3. Let the EUT work in test mode and measure it.

## 5.6.Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 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 polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4: 2014 on radiated emission measurement.

The bandwidth of the Receiver/Spectrum Analyzer is set at 9kHz in 9kHz-30MHz, 120 kHz in 30-1000MHz, and 1MHz in above 1000MHz.

The frequency range from 30MHz to 13000MHz is investigated.

| Highest frequency generated or used in the device or on which the device operates or tunes (MHz) | Upper frequency of measurement range (MHz) |
|---|---|
| Below 1.705 ..... | 30. |
| 1.705–108 ..... | 1000. |
| 108–500 ..... | 2000. |
| 500–1000 ..... | 5000. |
| Above 1000 ..... | 5th harmonic of the highest frequency or 40 GHz, whichever is lower. |

## 5.7.Data Sample

Over limit (dB) = Result(dBμv/m) - Limit (dBμv/m)
QP = Quasi-peak Reading

The “Over limit” column of the following data tables indicates the degree of compliance with the applicable limit. For example, an over limit of -7dB means the emission is 7dB below the limit.

## 5.8.Radiated Emission Measurement Result

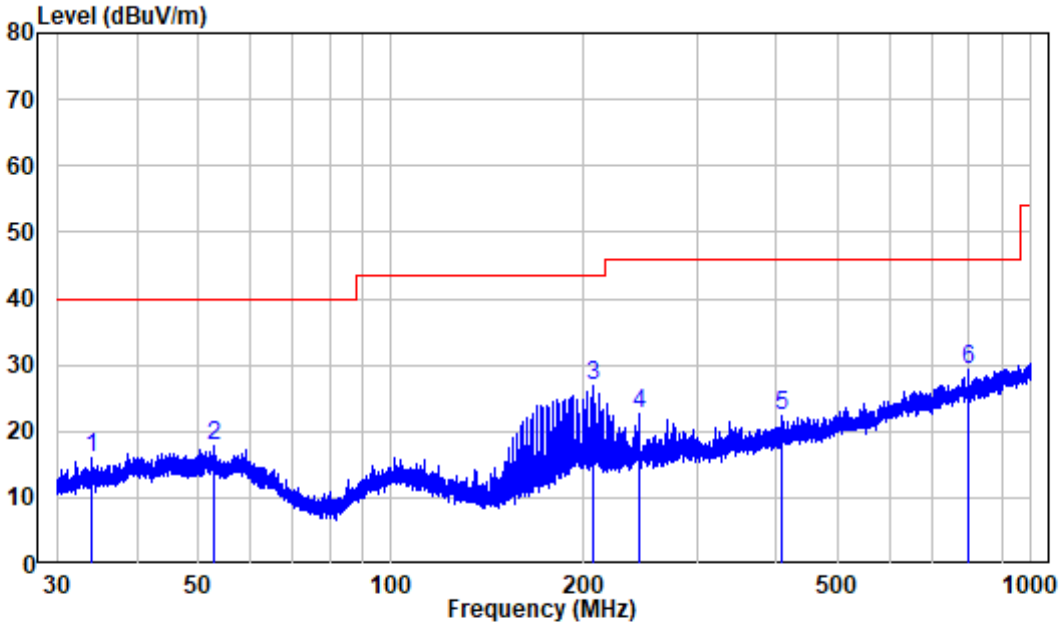
**PASS.**

The frequency range from 30MHz to 13GHz is investigated.
The spectral diagrams are attached as below.

Note 1: For below 1GHz, the test result of peak was less than the limit of QP more than 6dB, so just peak values were recorded.
Note 2: For above 1GHz, the test result of peak was less than the limit of average, so just peak values were recorded.
Note 3: For above 1GHz, the other spurious emission is 20dB below to the limit or in the noise floor was not recorded.
Note 4: Pre-scan in the X,Y and Z axes of orientation, the worst case X-axes of orientation was recorded

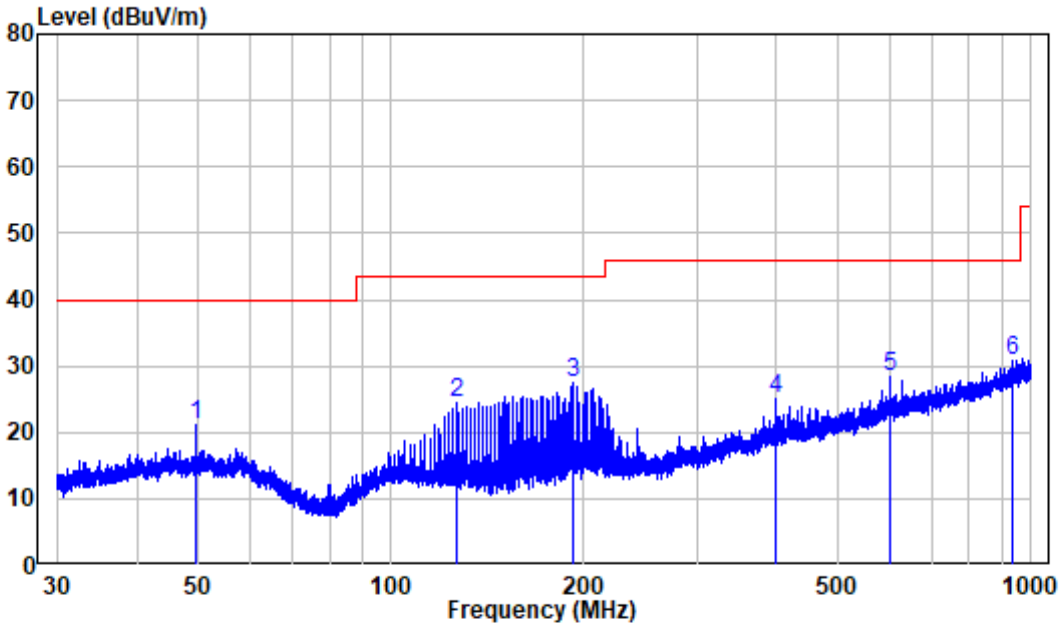
| | | | |
|---|---|---|---|
| **Job No.:** | **SZNS220303-07023E-RF** | **Power:** | **120V 60Hz** |
| **EUT:** | UC Link | **Test By:** | **Level Li** |
| **Model:** | **BT 50U** | **Test item:** | **Radiated emission** |
| **Climatic:** | **25° C 55%RH 101kPa** | **Date:** | **2022.4.7** |

30MHz~1GHz




Site : chamber
Condition: 3m HORIZONTAL
Job No. : SZNS220303-07023E-RF
Test Mode: Working

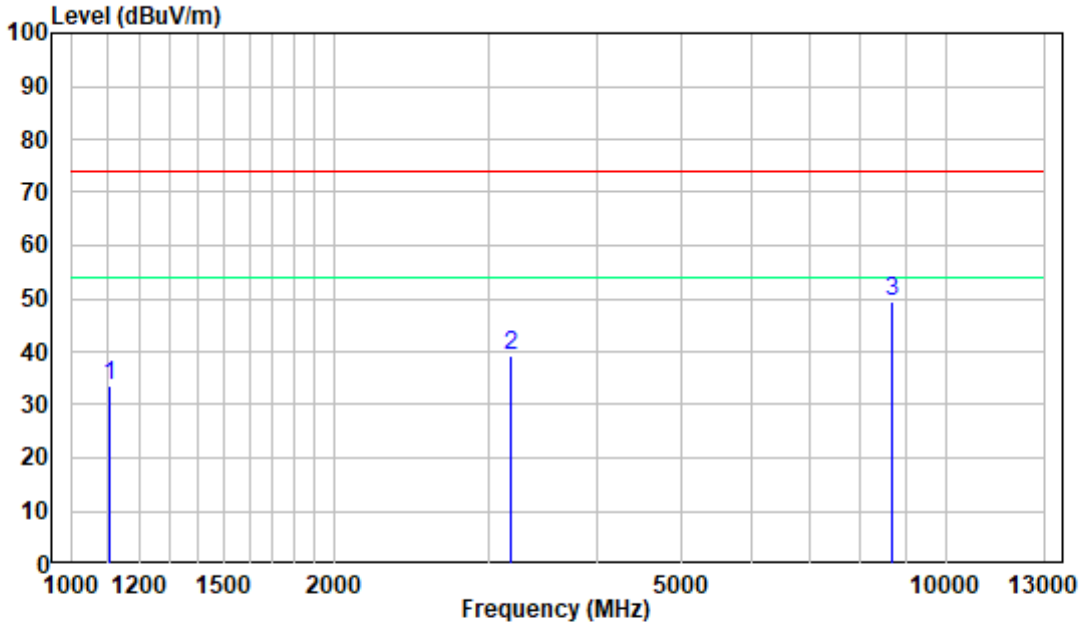
| | Freq | Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dB/m | dBuV | dBuV/m | dBuV/m | dB | |
| 1 | 33.917 | -11.86 | 27.72 | 15.86 | 40.00 | -24.14 | Peak |
| 2 | 52.969 | -10.16 | 28.10 | 17.94 | 40.00 | -22.06 | Peak |
| 3 | 206.941 | -11.84 | 38.84 | 27.00 | 43.50 | -16.50 | Peak |
| 4 | 243.911 | -10.65 | 33.43 | 22.78 | 46.00 | -23.22 | Peak |
| 5 | 406.444 | -6.61 | 28.96 | 22.35 | 46.00 | -23.65 | Peak |
| 6 | 799.681 | -0.34 | 29.62 | 29.28 | 46.00 | -16.72 | Peak |




Site : chamber
Condition: 3m VERTICAL
Job No. : SZNS220303-07023E-RF
Test Mode: Working

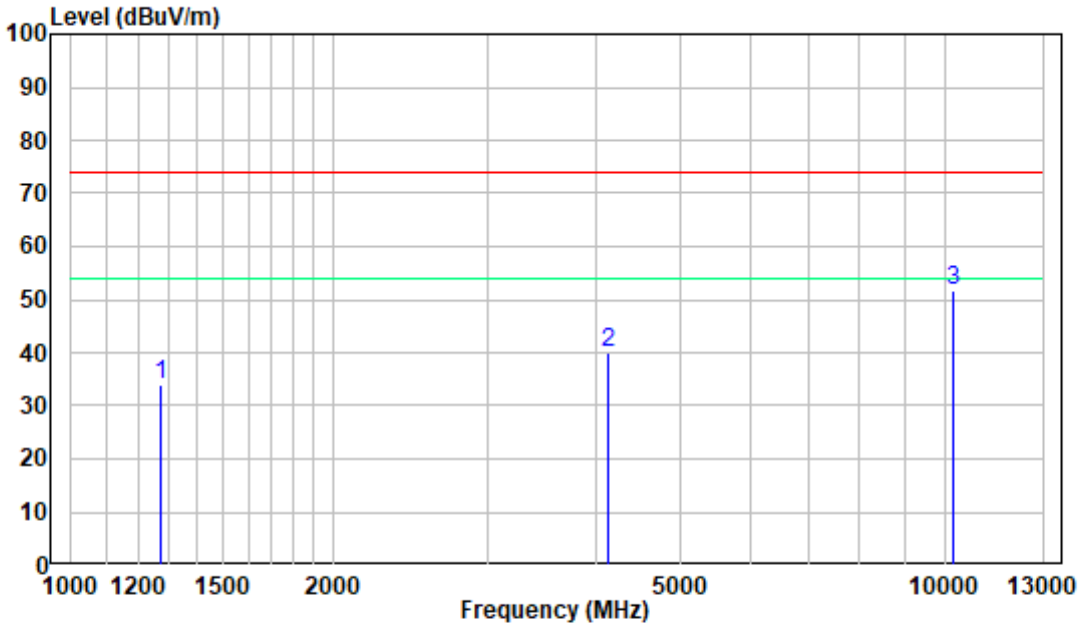
| | Freq | Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dB/m | dBuV | dBuV/m | dBuV/m | dB | |
| 1 | 49.446 | -9.94 | 30.97 | 21.03 | 40.00 | -18.97 | Peak |
| 2 | 126.939 | -14.54 | 38.99 | 24.45 | 43.50 | -19.05 | Peak |
| 3 | 192.925 | -11.28 | 38.65 | 27.37 | 43.50 | -16.13 | Peak |
| 4 | 398.331 | -6.75 | 31.71 | 24.96 | 46.00 | -21.04 | Peak |
| 5 | 600.110 | -2.43 | 30.82 | 28.39 | 46.00 | -17.61 | Peak |
| 6 | 934.317 | 1.78 | 28.99 | 30.77 | 46.00 | -15.23 | Peak |

Above 1GHz:




Site : chamber
Condition: 3m VERTICAL
Job No. : SZNS220303-07023E-RF
Test Mode: Working

| | Freq | Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dB/m | dBuV | dBuV/m | dBuV/m | dB | |
| 1 | 1105.000 | -10.37 | 43.89 | 33.52 | 74.00 | -40.48 | Peak |
| 2 | 3181.000 | -5.90 | 45.27 | 39.37 | 74.00 | -34.63 | Peak |
| 3 | 8695.000 | 5.15 | 44.43 | 49.58 | 74.00 | -24.42 | Peak |




Site : chamber
Condition: 3m VERTICAL
Job No. : SZNS220303-07023E-RF
Test Mode: Working

| | Freq | Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dB/m | dBuV | dBuV/m | dBuV/m | dB | |
| 1 | 1273.000 | -10.15 | 44.14 | 33.99 | 74.00 | -40.01 | Peak |
| 2 | 4117.000 | -5.23 | 45.33 | 40.10 | 74.00 | -33.90 | Peak |
| 3 | 10244.500 | 7.75 | 44.01 | 51.76 | 74.00 | -22.24 | Peak |

---------- THE END OF TEST REPORT ----------