

# TEST REPORT

Report No.: BCTC2408450470E

Applicant: ShenzhenXingKeChuang Technology Co., Ltd.

Product Name: Non-contact level sensor

Test Model: XKC-Y25-V

Tested Date: 2024-08-01 to 2024-08-06

Issued Date: 2024-08-12

**Shenzhen BCTC Testing Co., Ltd.**



Product Name: Non-contact level sensor

Trademark: 

Model/Type Reference: XKC-Y25-V  
XKC-Y25-NPN24V, XKC-Y25-NPN5-12V, XKC-Y25-PNP5-12V,  
XKC-Y25-PNP24V, XKC-Y25-T12V, XKC-Y25-RS485, XKC-Y25-UART,  
XKC-Y25-V-S, XKC-Y25-NPN-S

Prepared For: ShenzhenXingKeChuang Technology Co., Ltd.

Address: No.1106, 11th Floor, Dahong Science and Technology Park, Xinyu Road,  
Xinqiao Street, Bao'an District, Shenzhen, China

Manufacturer: ShenzhenXingKeChuang Technology Co., Ltd.

Address: No.1106, 11th Floor, Dahong Science and Technology Park, Xinyu Road,  
Xinqiao Street, Bao'an District, Shenzhen, China

Prepared By: Shenzhen BCTC Testing Co., Ltd.

Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road,  
Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

Sample Received Date: 2024-08-01

Sample Tested Date: 2024-08-01 to 2024-08-06

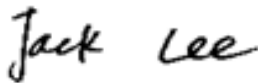
Issue Date: 2024-08-12

Report No.: BCTC2408450470E

Test Standards: EN IEC 61000-6-3:2021, EN IEC 61000-6-1:2019

Test Results: PASS

Tested by:



Jack Lee/ Project Handler

Approved by:



Zero Zhou/Reviewer

The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen BCTC Testing Co., Ltd, this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client.

## Table Of Content

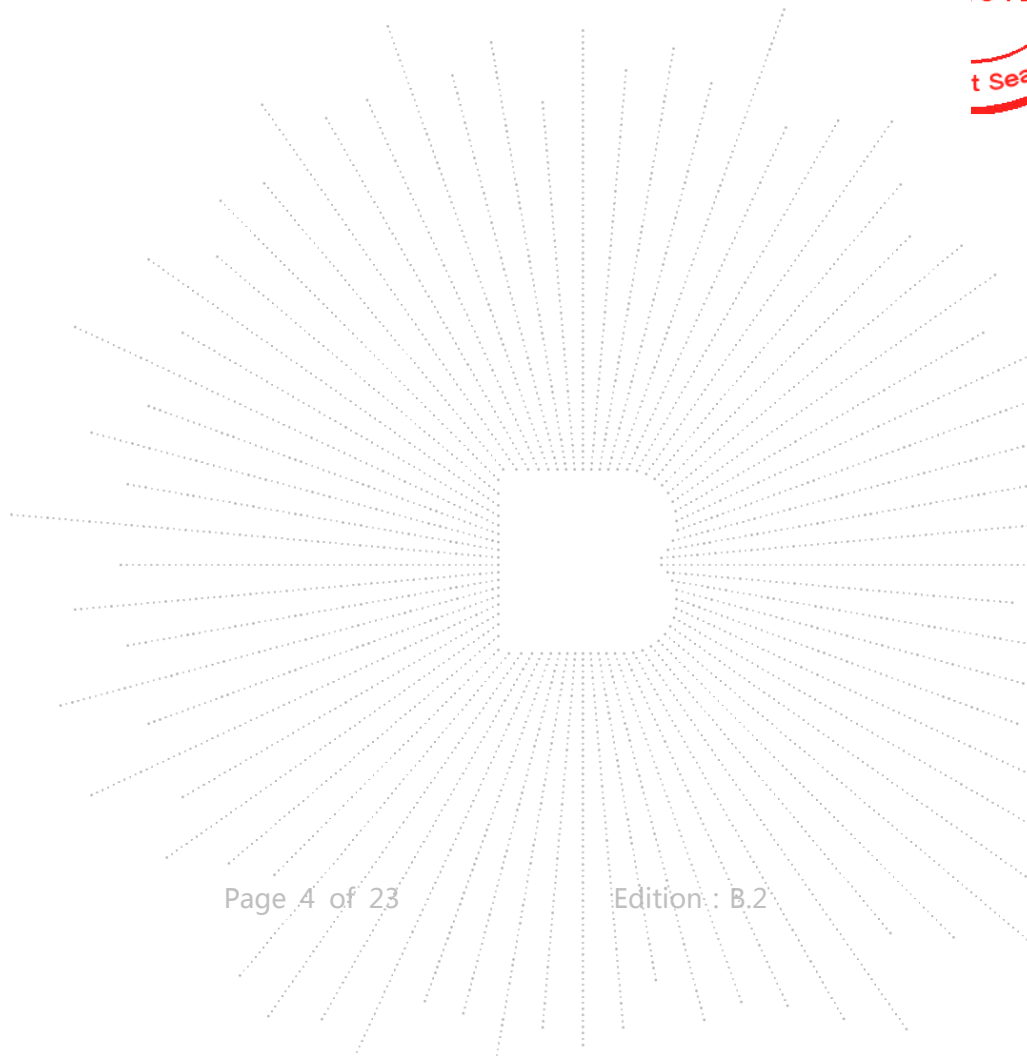
Test Report Declaration	Page
1. Version .....	4
2. Test Summary .....	5
3. Measurement Uncertainty .....	6
4. Product Information And Test Setup .....	7
4.1 Product Information .....	7
4.2 Test Setup Configuration .....	7
4.3 Support Equipment .....	7
4.4 Test Mode .....	8
5. Test Facility and test Instrument Used .....	9
5.1 Test Facility .....	9
5.2 Test Instrument Used .....	9
6. Radiated Emission Test .....	11
6.1 Block Diagram Of Test Setup .....	11
6.2 Limits .....	11
6.3 Test Procedure .....	11
6.4 Test Results .....	12
7. Immunity Test Of General The Performance Criteria .....	14
8. Electrostatic Discharge (ESD) .....	15
8.1 Test Specification .....	15
8.2 Block Diagram of Test Setup .....	15
8.3 Test Procedure .....	15
8.4 Test Results .....	16
9. Radio-Frequency Electromagnetic Field (RS) .....	17
9.1 Test Specification .....	17
9.2 Block Diagram of Test Setup .....	17
9.3 Test Procedure .....	17
9.4 Test Results .....	18
10. EUT Photographs .....	19
11. EUT Test Setup Photographs .....	21

(Note: N/A Means Not Applicable)

**1. Version**

Report No.	Issue Date	Description	Approved
BCTC2408450470E	2024-08-12	Original	Valid

TEST  
TC  
OVER  
t See



## 2. Test Summary

The Product has been tested according to the following specifications:

EMISSION		
Standard	Test Item	Test result
EN IEC 61000-6-3	Conducted Emission	N/A <sup>1</sup>
EN IEC 61000-6-3	Radiated Emission	Pass

IMMUNITY (EN IEC 61000-6-1)		
Standard	Test Item	Test result
EN IEC 61000-6-1	Electrostatic discharge (ESD)	Pass
EN IEC 61000-6-1	Radio-frequency electromagnetic field(RS)	Pass
EN IEC 61000-6-1	Fast transients (EFT)	N/A <sup>1</sup>
EN IEC 61000-6-1	Surges	N/A <sup>1</sup>
EN IEC 61000-6-1	Radio-frequency common mode(CS)	N/A <sup>1</sup>
EN IEC 61000-6-1	Power-frequency magnetic fields (PFMF)	N/A <sup>2</sup>
EN IEC 61000-6-1	Voltage dips and voltage interruptions (DIPS)	N/A <sup>1</sup>

Remark:

1. The EUT is powered by the DC only, the test item is not applicable.
2. The Product doesn't contain any device susceptible to magnetic fields.

### 3. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ .

Test item	Value (dB)
Radiated disturbance (30MHz-200MHz)	4.60
Radiated disturbance (200MHz-1000MHz)	5.20

CO., LTD.

## 4. Product Information And Test Setup

### 4.1 Product Information

**Ratings:** DC 5-24V  
**Model difference:** Main test model XKC-Y25-V: The model difference is named according to the market demand, only the model is different and the others are the same

**Cable of Product**

No.	Cable Type	Quantity	Provider	Length (m)	Specification	Note
1	--	--	--	--	--	--
2	--	--	--	--	--	--

### 4.2 Test Setup Configuration

See test photographs attached in EUT TEST SETUP Photographs for the actual connections between Product and support equipment.

### 4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note
1.	Adapter	Hoco	N18	---	---

**Notes:**

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

#### 4.4 Test Mode

Test item	Test Mode	Test Voltage
Radiated emission(30MHz-1GHz)	Working	DC 5V From Adapter
Electrostatic discharge (ESD)B <input checked="" type="checkbox"/> Air Discharge: $\pm 8\text{Kv}$ <input checked="" type="checkbox"/> Contact Discharge: $\pm 4\text{kV}$ <input checked="" type="checkbox"/> HCP & VCP: $\pm 4\text{kV}$ 10 times each point/	Working	DC 5V From Adapter
Continuous RF electromagnetic field disturbances(RS) 80MHz-1000MHz, 1400MHz-6000MHz, 10V/m,80% AM Front, Rear, Left, Right H/V	Working	DC 5V From Adapter





## 5. Test Facility and test Instrument Used

### 5.1 Test Facility

All measurement facilities used to collect the measurement data are located at Shenzhen BCTC Testing Co., Ltd. Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

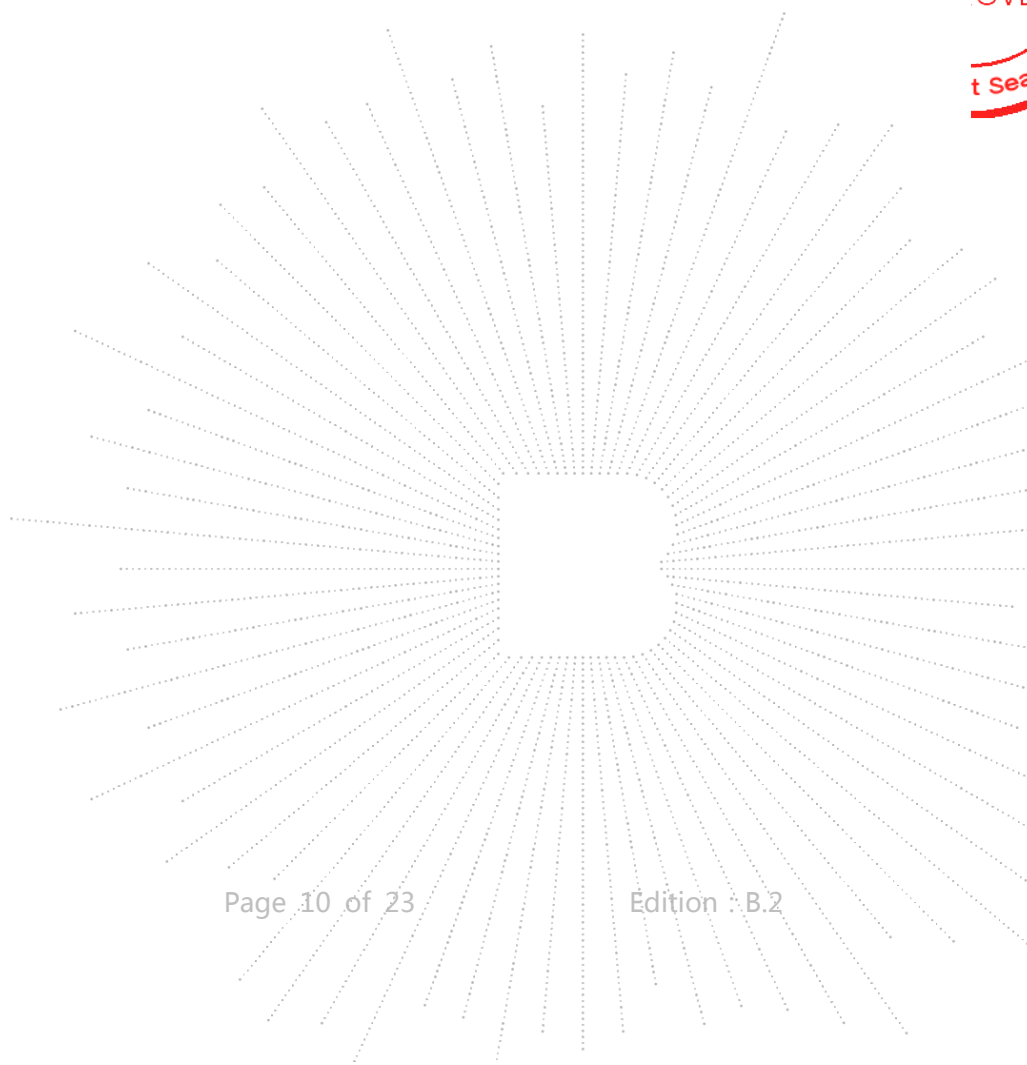
### 5.2 Test Instrument Used

Radiated Emissions Test (966 Chamber#01)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
966 chamber	ChengYu	966 Room	966	May 15, 2023	May 14, 2026
Receiver	R&S	ESRP	101154	May 16, 2024	May 15, 2025
Receiver	R&S	ESR3	102075	May 16, 2024	May 15, 2025
Amplifier	SKET	LAPA_01G1 8G-45dB	SK202104090 1	May 16, 2024	May 15, 2025
Amplifier	Schwarzbeck	BBV9744	9744-0037	May 16, 2024	May 15, 2025
TRILOG Broadband Antenna	schwarzbeck	VULB9163	942	May 21, 2024	May 20, 2025
Horn Antenna	schwarzbeck	BBHA9120D	1541	May 21, 2024	May 20, 2025
Software	Frad	EZ-EMC	FA-03A2 RE	\	\

Electrostatic Discharge Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Electrostatic Discharge Simulator	3C TEST	EDS 30T	ES031000123 059	Mar. 13, 2024	Mar. 12, 2025

Continuous RF Electromagnetic Field Disturbances Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Power meter	Keysight	E4419	A00065	May 16, 2024	May 15, 2025
Power sensor	Keysight	E9300A	US39211659	May 16, 2024	May 15, 2025
Power sensor	Keysight	E9300A	US39211305	May 16, 2024	May 15, 2025
Amplifier	SKET	HAP_801000-250W	21201805013	May 16, 2024	May 15, 2025
Amplifier	SKET	HAP_0103-75W	21201805014	May 16, 2024	May 15, 2025
Amplifier	SKET	HAP_0306-50W	21201805015	May 16, 2024	May 15, 2025
Stacked double Log.-Per. Antenna	Schwarzbeck	STLP 9129	00077	\	\
Field Probe	Narda	EP-601	611WX80256	May 25, 2024	May 24, 2025
Signal Generator	Agilent	N5181A	MY50143748	May 16, 2024	May 15, 2025
Software	SKET	EMC-S	1.2.0.18	\	\

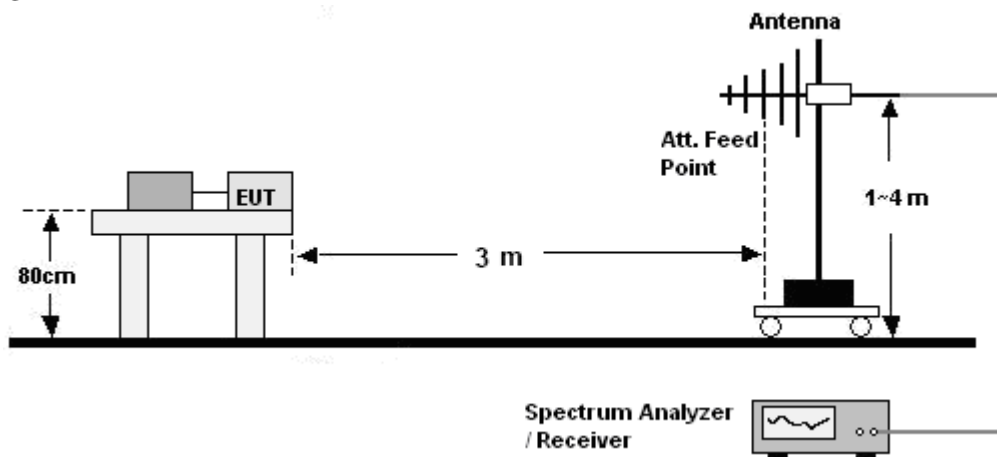
TEST  
TO  
OVER  
t See



## 6. Radiated Emission Test

### 6.1 Block Diagram Of Test Setup

30MHz ~ 1GHz:



### 6.2 Limits

Frequency (MHz)	Quasi-peak limits at 3m dB( $\mu$ V/m)
30-230	40
230-1000	47

**Note:** The lower limit shall apply at the transition frequencies.

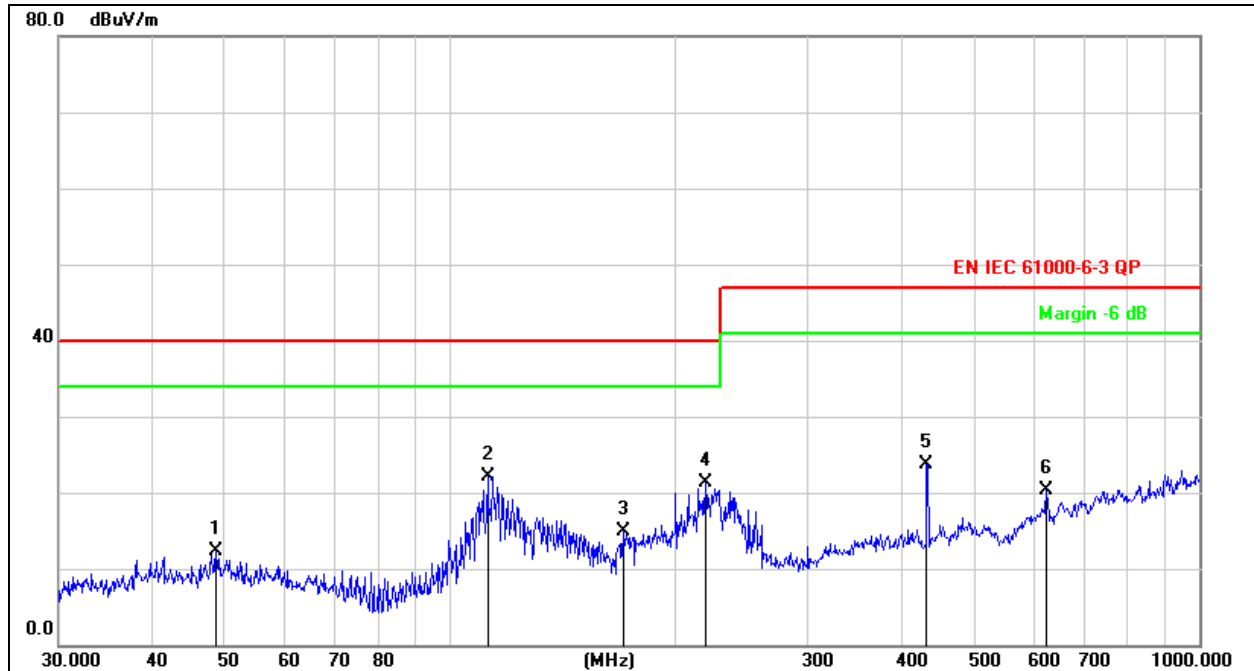
### 6.3 Test Procedure

30MHz ~ 1GHz:

- The Product was placed on the nonconductive turntable 0.8 m above the ground in a semi anechoic chamber.
- Set the spectrum analyzer/receiver in Peak detector, Max Hold mode, and 120 kHz RBW. Record the maximum field strength of all the pre-scan process in the full band when the antenna is varied between 1~4 m in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.
- For each frequency whose maximum record was higher or close to limit, measure its QP value: vary the antenna's height and rotate the turntable from 0 to 360 degrees to find the height and degree where Product radiated the maximum emission, then set the test frequency analyzer/receiver to QP Detector and specified bandwidth with Maximum Hold Mode, and record the maximum value.

## 6.4 Test Results

Temperature:	26 °C	Relative Humidity:	54%RH
Pressure:	101KPa	Phase :	Horizontal
Test Voltage :	DC 5V From Adapter	Test Mode:	Working

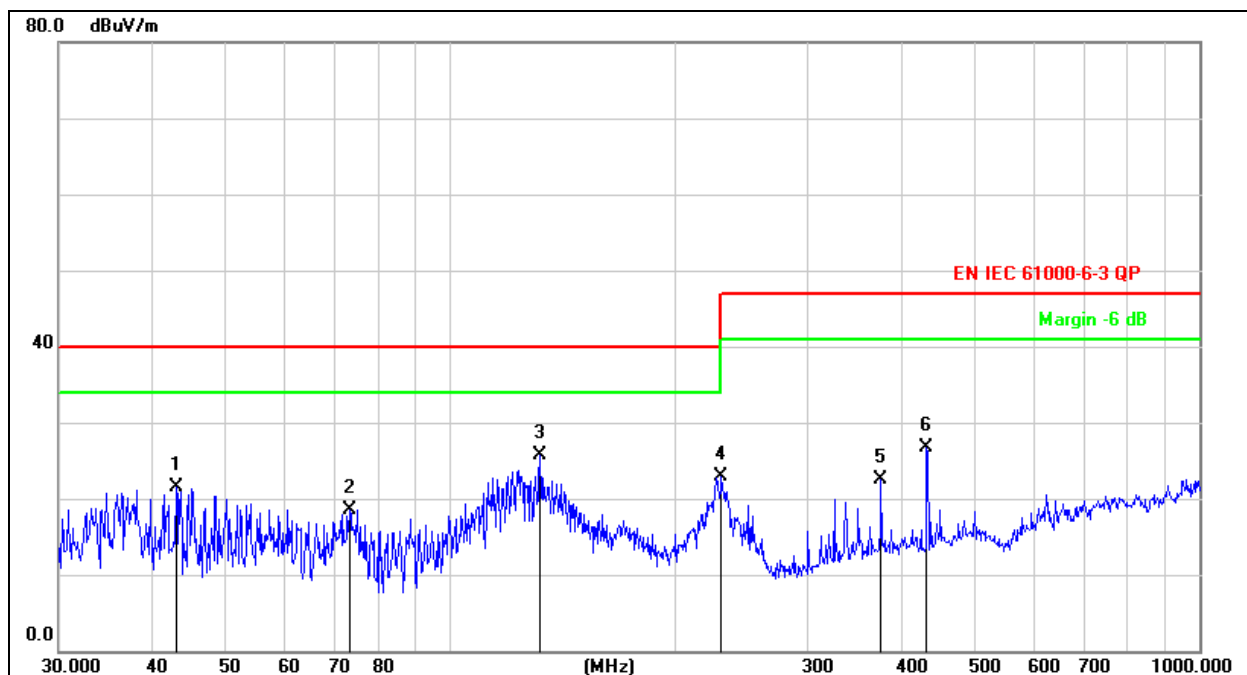


Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement = Reading Level + Correct Factor
3. Over = Measurement - Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		48.6719	26.31	-14.01	12.30	40.00	-27.70	QP
2	*	112.1305	38.89	-16.78	22.11	40.00	-17.89	QP
3		170.1948	32.74	-17.93	14.81	40.00	-25.19	QP
4		219.0753	36.49	-15.17	21.32	40.00	-18.68	QP
5		432.5457	33.88	-10.20	23.68	47.00	-23.32	QP
6		625.0780	26.95	-6.59	20.36	47.00	-26.64	QP

Temperature:	26 °C	Relative Humidity:	54%RH
Pressure:	101KPa	Phase :	Vertical
Test Voltage :	DC 5V From Adapter	Test Mode:	Working



Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

2. Measurement = Reading Level + Correct Factor

3. Over = Measurement - Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		43.0505	35.97	-14.47	21.50	40.00	-18.50	QP
2		73.3593	37.17	-18.59	18.58	40.00	-21.42	QP
3	*	131.7577	43.86	-18.15	25.71	40.00	-14.29	QP
4		230.0985	37.78	-14.86	22.92	47.00	-24.08	QP
5		375.9385	33.56	-11.15	22.41	47.00	-24.59	QP
6		432.5457	36.85	-10.20	26.65	47.00	-20.35	QP

## 7. Immunity Test Of General The Performance Criteria

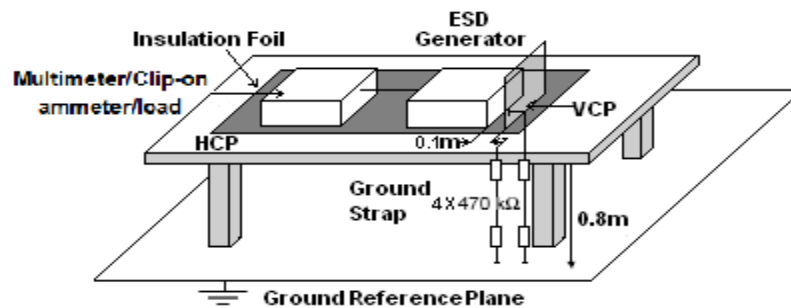
Product Standard	EN IEC 61000-6-1:2019 Clause 4
<b>CRITERION A</b>	The apparatus shall continue to operate as intended during and after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, either of these may be derived from the product description and documentation and what the user may reasonably expect from the apparatus if used as intended.
<b>CRITERION B</b>	The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. The performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed. No change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, either of these may be derived from the product description and documentation and what the user may reasonably expect from the apparatus if used as intended.
<b>CRITERION C</b>	Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls.

## 8. Electrostatic Discharge (ESD)

### 8.1 Test Specification

<b>Basic standard</b>	: IEC 61000-4-2
<b>Test Port</b>	: Enclosure port
<b>Discharge Impedance</b>	: 330 ohm / 150 pF
<b>Discharge Mode</b>	: Single Discharge
<b>Discharge Period</b>	: one second between each discharge

### 8.2 Block Diagram of Test Setup



### 8.3 Test Procedure

- Electrostatic discharges were applied only to those points and surfaces of the Product that are accessible to users during normal operation.
- The test was performed with at least ten single discharges on the pre-selected points in the most sensitive polarity.
- The time interval between two successive single discharges was at least 1 second.
- The ESD generator was held perpendicularly to the surface to which the discharge was applied and the return cable was at least 0.2 meters from the Product.
- Contact discharges were applied to the non-insulating coating, with the pointed tip of the generator penetrating the coating and contacting the conducting substrate.
- Air discharges were applied with the round discharge tip of the discharge electrode approaching the Product as fast as possible (without causing mechanical damage) to touch the Product. After each discharge, the ESD generator was removed from the Product and re-triggered for a new single discharge. The test was repeated until all discharges were complete.
- At least ten single discharges (in the most sensitive polarity) were applied to the Horizontal Coupling Plane at points on each side of the Product. The ESD generator was positioned vertically at a distance of 0.1 meters from the Product with the discharge electrode touching the HCP.
- At least ten single discharges (in the most sensitive polarity) were applied to the center of one vertical edge of the Vertical Coupling Plane in sufficiently different positions that the four faces of the Product were completely illuminated. The VCP (dimensions 0.5m x 0.5m) was placed vertically to and 0.1 meters from the Product.

#### 8.4 Test Results

Temperature:	26 °C	Relative Humidity:	54%RH
Pressure:	101kPa	Test Mode:	Working
Test Voltage :	DC 5V From Adapter		

Discharge Method	Discharge Position	Voltage (±kV)	Min. No. of Discharge per polarity (Each Point)	Required Level	Performance Criterion
Contact Discharge	Conductive Surfaces	4	10	B	A
	Indirect Discharge HCP	4	10	B	A
	Indirect Discharge VCP	4	10	B	A
Air Discharge	Slots, Apertures, and Insulating Surfaces	8	10	B	A

TEST  
TO  
OVER  
t See



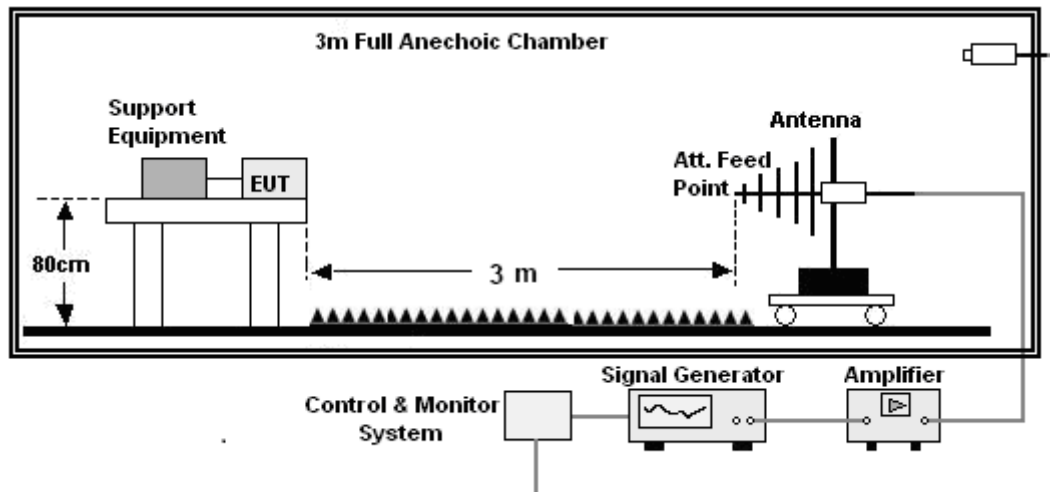
## 9. Radio-Frequency Electromagnetic Field (RS)

### 9.1 Test Specification

<b>Basic standard</b>	: IEC 61000-4-3
<b>Test Port</b>	: Enclosure port
<b>Step Size</b>	: 1%
<b>Modulation</b>	: 1kHz, 80% AM
<b>Dwell Time</b>	: 1 second
<b>Polarization</b>	: Horizontal & Vertical

### 9.2 Block Diagram of Test Setup

Below 1GHz:



### 9.3 Test Procedure

- The testing was performed in a fully-anechoic chamber. The transmit antenna was located at a distance of 3m or 1m from the Product.
- The frequency range is swept from 80MHz to 1000MHz and 1400MHz to 2700MHz, with the signal 80% amplitude modulated with a 1 kHz sine wave. The rate of sweep did not exceed  $1.5 \times 10^{-3}$  decade/s. Where the frequency range is swept incrementally, the step size was 1%.
- The test was performed with the Product exposed to both vertically and horizontally polarized fields on each of the four sides.

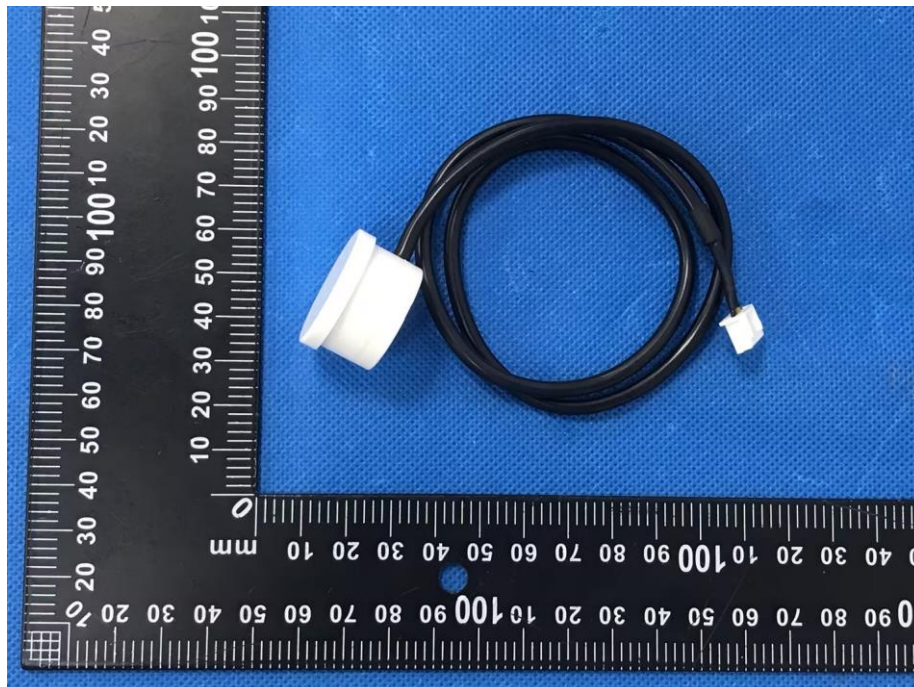
#### 9.4 Test Results

Temperature:	26 °C	Relative Humidity:	54%RH
Pressure:	101kPa	Test Mode:	Working
Test Voltage :	DC 5V From Adapter		

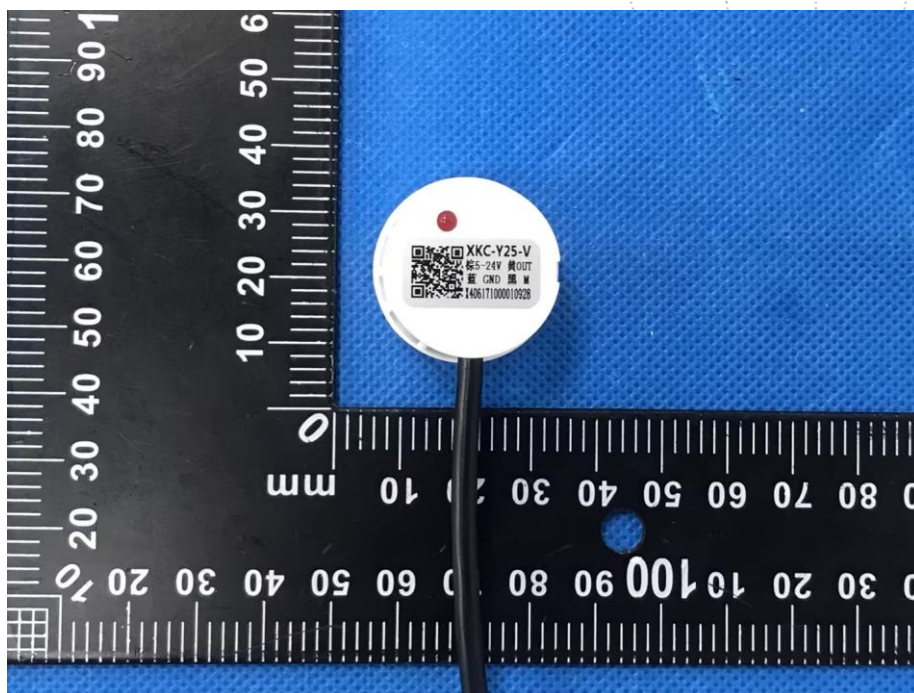
Frequency(MHz)	Position	Field Strength (V/m)	Required Level	Performance Criterion
80 - 1000	Front, Right, Back, Left	10	A	A
1400 - 6000	Front, Right, Back, Left	10	A	A

## 10. EUT Photographs

EUT Photo 1

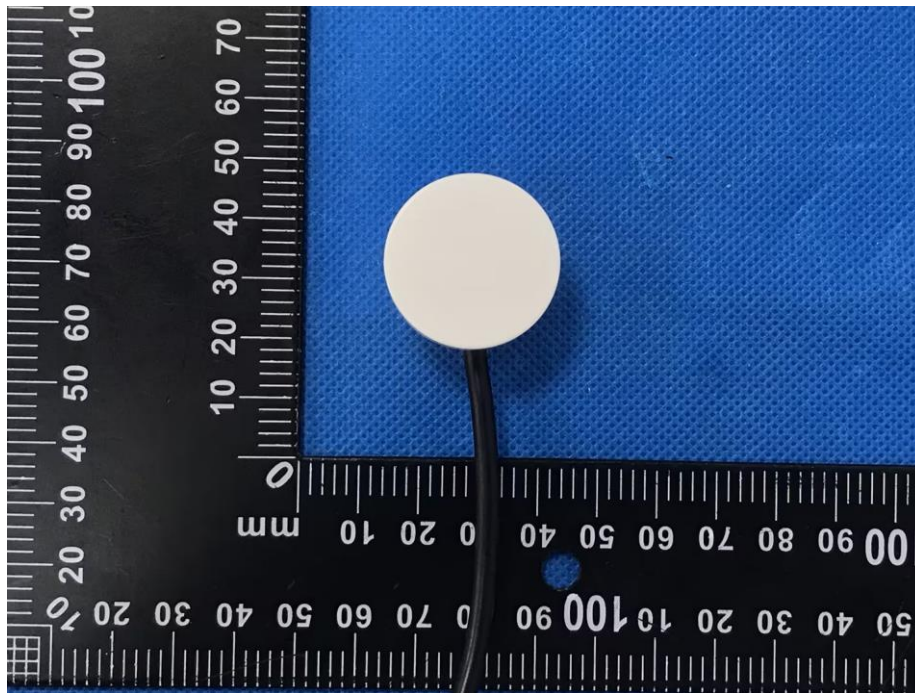


EUT Photo 2

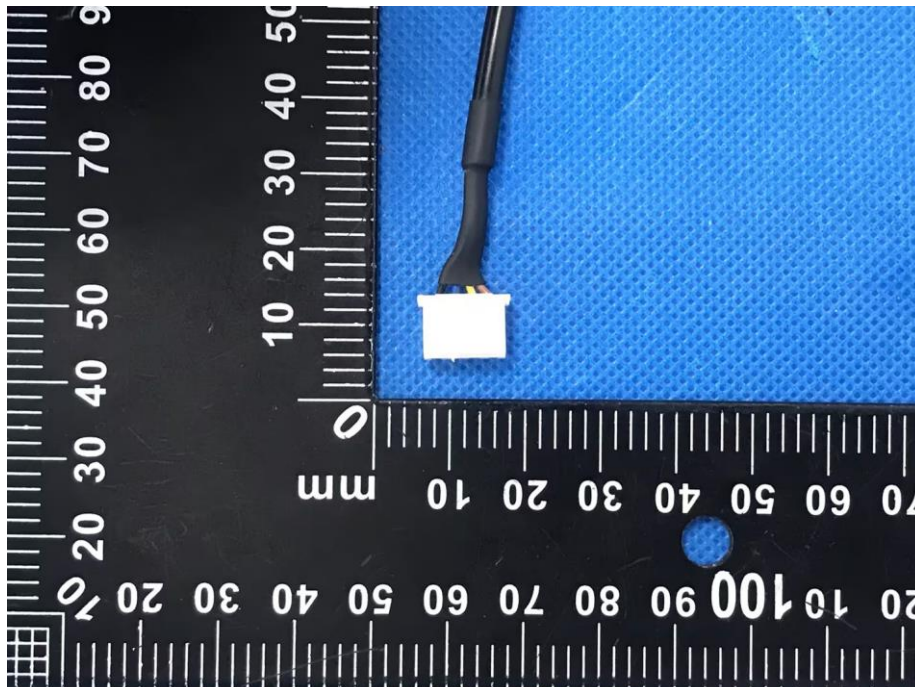




EUT Photo 3

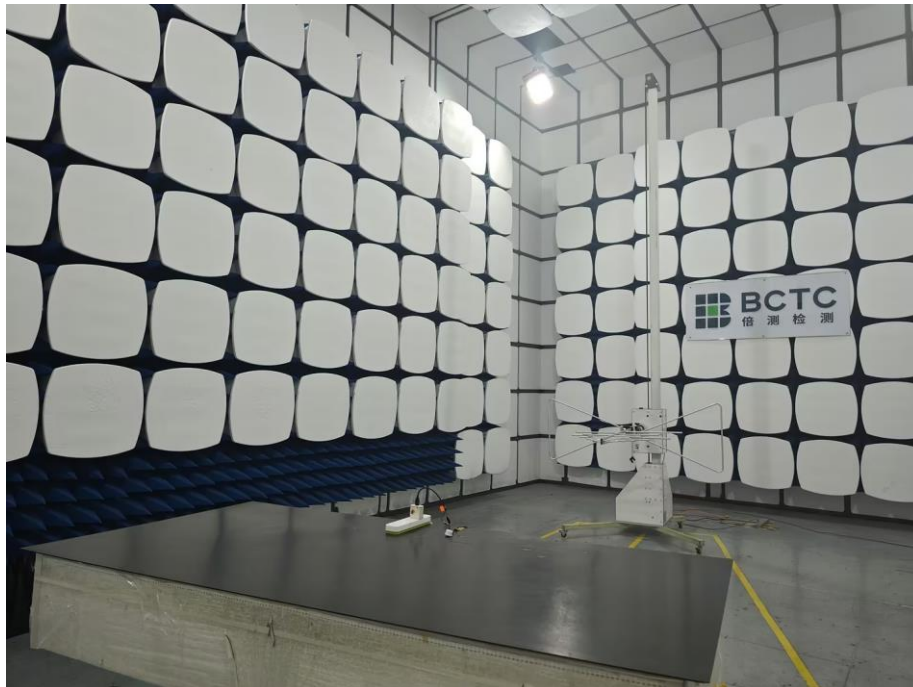


EUT Photo 4

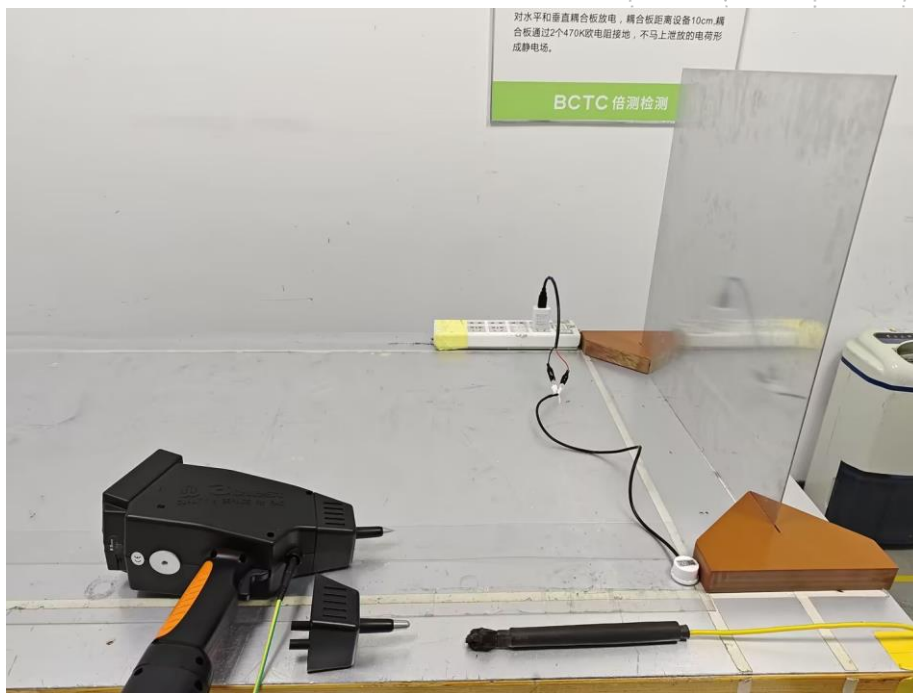


## 11. EUT Test Setup Photographs

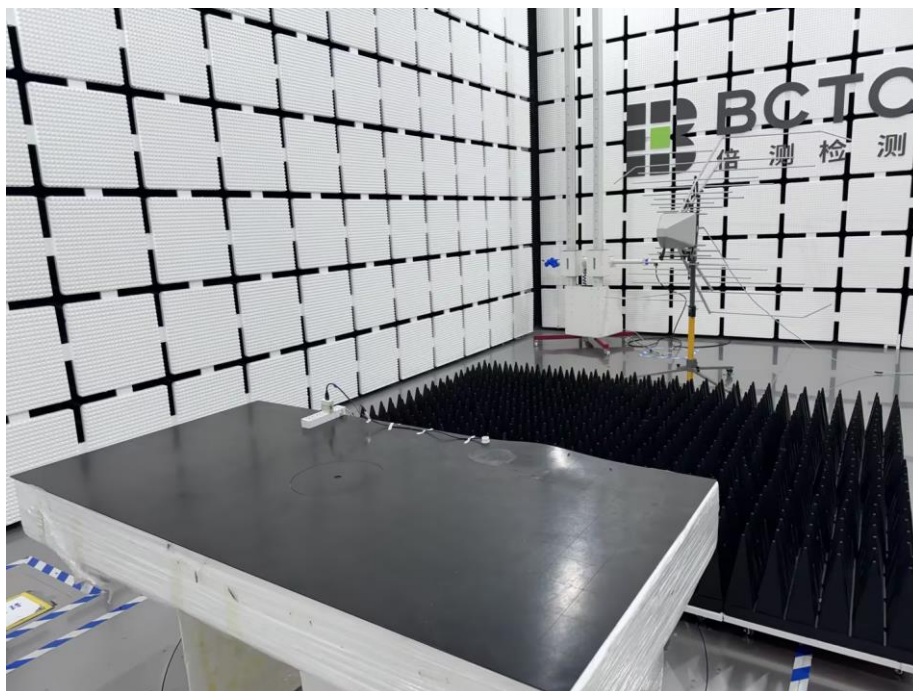
Radiated emission



ESD



RS



**STATEMENT**

1. The equipment lists are traceable to the national reference standards.
2. The test report can not be partially copied unless prior written approval is issued from our lab.
3. The test report is invalid without the "special seal for inspection and testing".
4. The test report is invalid without the signature of the approver.
5. The test process and test result is only related to the Unit Under Test.
6. Sample information is provided by the client and the laboratory is not responsible for its authenticity.
7. The quality system of our laboratory is in accordance with ISO/IEC17025.
8. If there is any objection to this test report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

**Address:**

1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

TEL: 400-788-9558

P.C.: 518103

FAX: 0755-33229357

Website: <http://www.chnbctc.com>

Consultation E-mail: [bctc@bctc-lab.com.cn](mailto:bctc@bctc-lab.com.cn)

Complaint/Advice E-mail: [advice@bctc-lab.com.cn](mailto:advice@bctc-lab.com.cn)

\*\*\*\*\* END \*\*\*\*\*

ing  
CO., LTD