

## Certificate of Compliance

**Certificate Number: BOKE-220401024C**

**Applicant.....:** **Shenzhen Shangren Technology Co., Ltd**  
**Address.....:** 5037, block a, building 2, overseas decoration building, No. 112, Zhenhua Road, Huahang community, Huaqiangbei street, Futian District, Shenzhen  
**Manufacturer.....:** **Shenzhen Shangren Technology Co., Ltd**  
**Address.....:** 5037, block a, building 2, overseas decoration building, No. 112, Zhenhua Road, Huahang community, Huaqiangbei street, Futian District, Shenzhen  
**Product.....:** **Pea pod**  
**Brand Name.....:** **N/A**  
**Model No. ....:** **Z2**  
**Model No. ....:** **Z3, Z5, Z6, Z7, Z8, Z10, B21, A18, L01, L02, L03, T008, T019, T015, B20, B23, B18**  
**Test Standard.....:** **EN 55032:2015+A11:2020**  
**EN 55035:2017+A11:2020**

The EUT described above has been tested by us with the listed standards and found in compliance with the council EMC directive 2014/30/EU. It is possible to use CE marking to demonstrate the compliance with this EMC Directive. It is only valid in connection with the test report number: BOKE-220401024E.



**Shenzhen Boke Testing Co., Ltd.**

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## 1. Revision History

Report No.	Issue Date	Description	Approved
BOKE-220401024E	Apr. 27, 2022	Original	Valid



## 2. Test Summary

<b>Emission-EN 55032</b>			
Requirement - Test	Test Method	Limit	Result
Conducted Emission	CISPR 16-2-1	Class B	N/A
Radiated Emission	CISPR 16-2-3	Class B	PASS
Harmonic current emissions	EN 61000-3-2	Class A	N/A
Voltage changes, voltage fluctuations and flicker	EN 61000-3-3	Clause 5	N/A
<b>Immunity-EN 55035</b>			
Requirement - Test	Test Method	Performance criteria	Result
Electrostatic discharges (ESD)	EN 61000-4-2	B	PASS
Electromagnetic field	EN 61000-4-3	A	PASS
Electrical fast transients/burst (EFT/B)	EN 61000-4-4	B	N/A
Surges	EN 61000-4-5	B	N/A
Conducted RF	EN 61000-4-6	A	N/A
Power frequency magnetic field	EN 61000-4-8	A	N/A
Voltage dips and Short interruptions	EN 61000-4-11	B & C	N/A

Remark: N/A is abbreviation for Not Applicable.

The test was carried out in all the test modes, only the worst data are list in report.

### 3. General Information

#### 3.1. Description of EUT

Product:	Pea pod
Trademark:	N/A
Model Name:	Z2 Z3, Z5, Z6, Z7, Z8, Z10, B21, A18, L01, L02, L03, T008, T019, T015, B20, B23, B18
Model Difference:	Model name
Rated Power Supply:	Input: 5V $\overline{\text{---}}$ 500mA Battery: DC 3.7V 1.48Wh
Normal Testing Voltage:	DC 3.7V
Category of EUT:	<input type="checkbox"/> Class A <input checked="" type="checkbox"/> Class B
Configuration:	<input checked="" type="checkbox"/> Table-top <input type="checkbox"/> Floor-standing
Accessory Device:	N/A

Note:

1. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

#### 3.2. Test conditions

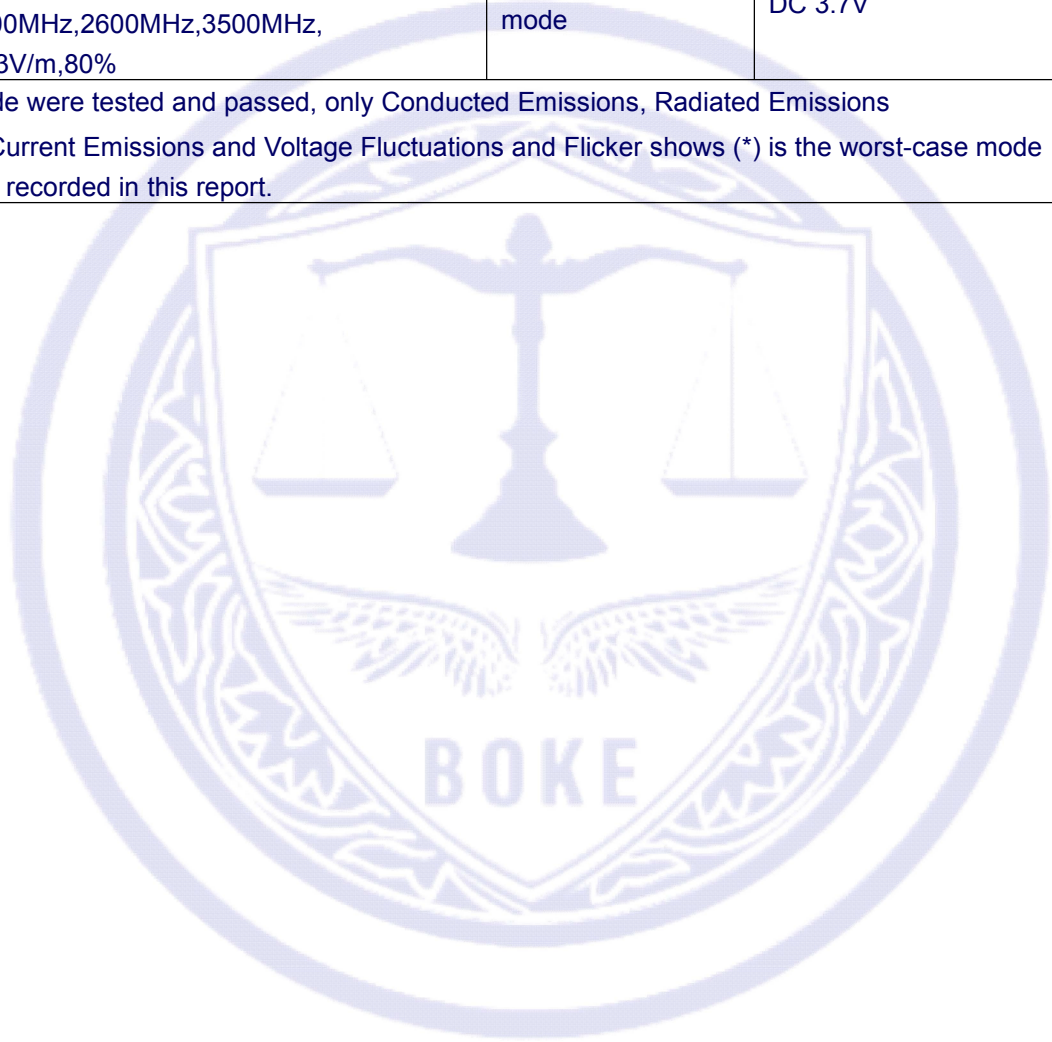
Temperature: 15-35°C  
 Relative Humidity: 30-60 %  
 Atmospheric pressure: 800hPa-1060hPa

#### 3.3. Block diagram of EUT configuration



### 3.4. Test Mode

Test item	Test Mode	Test Voltage
Radiated emissions(30MHz-1GHz) Class B	Normal operation mode	DC 3.7V
Electrostatic discharge (ESD) B <input checked="" type="checkbox"/> Air Discharge: ±8kV <input checked="" type="checkbox"/> Contact Discharge: ±4kV <input checked="" type="checkbox"/> HCP & VCP: ±4kV	Normal operation mode	DC 3.7V
Continuous RF electromagnetic field disturbances(RS) A 80MHz-1000MHz,2600MHz,3500MHz, 5000MHz, 3V/m,80%	Normal operation mode	DC 3.7V
All test mode were tested and passed, only Conducted Emissions, Radiated Emissions Harmonic Current Emissions and Voltage Fluctuations and Flicker shows (*) is the worst-case mode which were recorded in this report.		



## 4. Facilities

### 4.1. Test Facility

All measurement facilities used to collect the measurement data are located at BOKE.

### 4.2. Test Instruments

Conducted emissions Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Receiver	R&S	ESR	102075	Aug. 10, 2021	Aug. 09, 2022
LISN	R&S	ENV216	101375	Aug. 10, 2021	Aug. 09, 2022
ISN	HPX	ISN T800	S1509001	Aug. 10, 2021	Aug. 09, 2022

Radiated emissions Test (966 chamber)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
966 chamber	ChengYu	966 Room	966	Aug. 10, 2021	Aug. 09, 2022
Receiver	R&S	ESRP	101154	Aug. 10, 2021	Aug. 09, 2022
Amplifier	Schwarzbeck	BBV9718	9718-309	Aug. 10, 2021	Aug. 09, 2022
Amplifier	Schwarzbeck	BBV9744	9744-0037	Aug. 10, 2021	Aug. 09, 2022
TRILOG Broadband Antenna	schwarzbeck	VULB 9163	VULB9163-9 42	Aug. 10, 2021	Aug. 09, 2022
Horn Antenna	SCHWARZBECK	BBHA9120D	1201	Aug. 10, 2021	Aug. 09, 2022

Flicker Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Harmonic & Flicker Tester	LAPLAEC	AC2000A	439263	Aug. 10, 2021	Aug. 09, 2022
AC Power Supply	LAPLAEC	PCR4000 M	631589	Aug. 10, 2021	Aug. 09, 2022

Electrostatic discharge Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
ESD Tester	3C TEST	EDS 30V	ES0121614	Aug. 10, 2021	Aug. 09, 2022
ESD Tester	KIKISUI	KES4201A	UH002321	Aug. 10, 2021	Aug. 09, 2022

Continuous RF electromagnetic field disturbances Test (SMQ --- site)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Signal Generator	HP	8648A	3625U00573	Aug. 10, 2021	Aug. 09, 2022
Amplifier	A&R	500A100	17034	Aug. 10, 2021	Aug. 09, 2022
Amplifier	A&R	100W/1000M1	17028	Aug. 10, 2021	Aug. 09, 2022
Audio Analyzer (20Hz~1GHz)	Panasonic	2023B	202301/428	Aug. 10, 2021	Aug. 09, 2022
Isotropic Field Probe	A&R	FP2000	16755	Aug. 10, 2021	Aug. 09, 2022
Antenna	EMCO	3108	9507-2534	Aug. 10, 2021	Aug. 09, 2022
Log-periodic Antenna	A&R	AT1080	16812	Aug. 10, 2021	Aug. 09, 2022

EFT and Surge and Voltage dips and interruptions Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Compact Generator	TRANSIENT	TRA2000	646	Aug. 10, 2021	Aug. 09, 2022
Coupling Clamp	PARTNER	CN-EFT1000	CN-EFT1000-1624	Aug. 10, 2021	Aug. 09, 2022

Continuous induced RF disturbances Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
C/S Test System	SCHLODER	CDG-6000-75	126B1405/2016	Aug. 10, 2021	Aug. 09, 2022
Attenuator	SCHLODER	6DB DC-1G	HA1630	Aug. 10, 2021	Aug. 09, 2022
CDN	SCHLODER	CDN M2/M3	A2210389/2016	Aug. 10, 2021	Aug. 09, 2022
Injection Clamp	SCHLOBER	EMCL-20	132A1272/2016	Aug. 10, 2021	Aug. 09, 2022

### 4.3. 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)
Conducted Emission (150kHz-30MHz)	3.20
Radiated Emission(30MHz~1GHz)	4.80
Radiated Emission(1GHz~6GHz)	4.90

## 5. Emission

### 5.1. Conducted Emission

#### 5.1.1. Limit

Requirements for conducted emissions from the AC mains power ports of Class A equipment

Frequency range MHz	Coupling device	Detector type / bandwidth	Class A limits dB(μV)
0,15 to 0,5	AMN	Quasi Peak / 9 kHz	79
0,5 to 30			73
0,15 to 0,5		Average / 9 kHz	66
0,5 to 30			60

Requirements for asymmetric mode conducted emissions from Class A equipment

Frequency range MHz	Coupling device	Detector type / bandwidth	Class A limits dB(μV)
0,15 to 0,5	AAN	Quasi Peak / 9 kHz	97 to 87
0,5 to 30			87
0,15 to 0,5		Average / 9 kHz	84 to 74
0,5 to 30			74

Requirements for conducted emissions from the AC mains power ports of Class B equipment

Frequency range MHz	Coupling device	Detector type / bandwidth	Class B limits dB(μV)
0,15 to 0,5	AMN	Quasi Peak / 9 kHz	66 to 56
0,5 to 5			56
5 to 30			60
0,15 to 0,5		Average / 9 kHz	56 to 46
0,5 to 5			46
5 to 30			50

Requirements for asymmetric mode conducted emissions from Class B equipment

Frequency range MHz	Coupling device	Detector type / bandwidth	Class B limits dB(μV)
0,15 to 0,5	AAN	Quasi Peak / 9 kHz	84 to 74
0,5 to 30			74
0,15 to 0,5		Average / 9 kHz	74 to 64
0,5 to 30			64



## 5.2. Radiated emissions

### 5.2.1. Limit

Requirements for radiated emissions for class A equipment

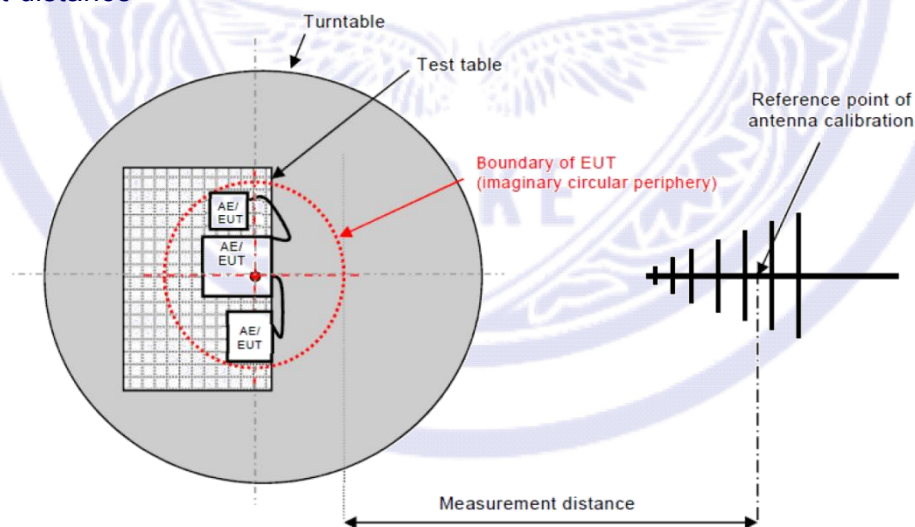
Frequency range MHz	Measurement			Class A limits dB( $\mu$ V/m)
	Facility	Distance m	Detector type / bandwidth	
30 to 230	SAC	3	Quasi Peak / 120 kHz	50
230 to 1 000				57
1 000 to 3 000	FSOATS	3	Average / 1MHz	56
3 000 to 6 000				60
1 000 to 3 000		3	Peak / 1MHz	76
3 000 to 6 000				80

Requirements for radiated emissions for class B equipment

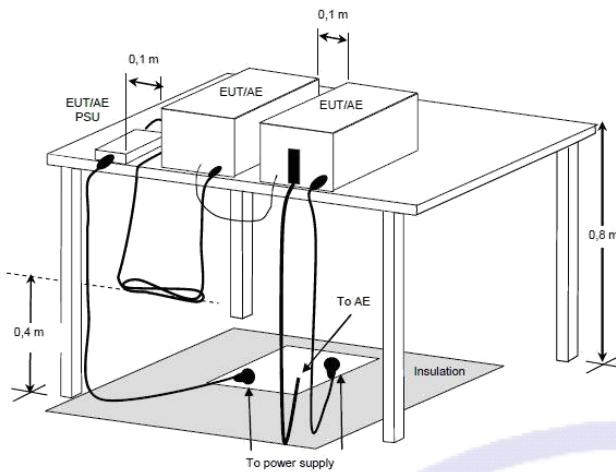
Frequency range MHz	Measurement			Class B limits dB( $\mu$ V/m)
	Facility	Distance m	Detector type / bandwidth	
30 to 230	SAC	3	Quasi Peak / 120 kHz	40
230 to 1 000				47
1 000 to 3 000	FSOATS	3	Average / 1MHz	50
3 000 to 6 000				54
1 000 to 3 000		3	Peak / 1MHz	70
3 000 to 6 000				74

### 5.2.2. Block diagram of test setup

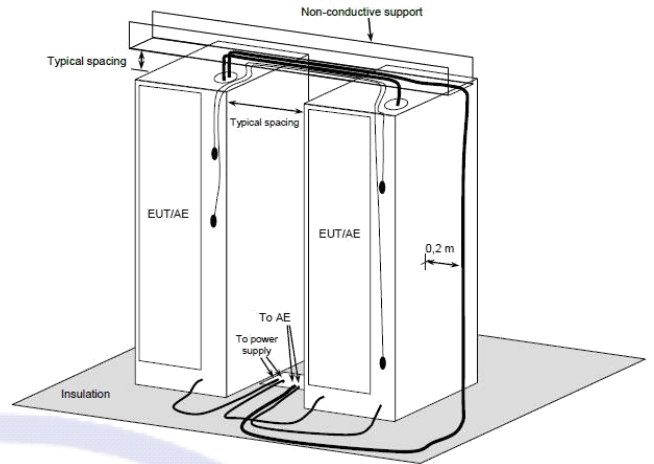
#### Measurement distance



For table-top equipment



For floor standing equipment



### 5.2.3. Test procedure

The measurement was performed in a semi-anechoic chamber. The distance from EUT to receiving antenna is 3 meters. Measurement was performed according to clause 7.3 of CISPR 16-2-3.

Highest internal frequency ( $F_x$ )	Highest measured frequency	Measured Bandwidth
$F_x \leq 108$ MHz	1 GHz	120kHz
$108$ MHz $< F_x \leq 500$ MHz	2 GHz	1MHz
$500$ MHz $< F_x \leq 1$ GHz	5 GHz	1MHz
$F_x > 1$ GHz	$5 \times F_x$ up to a maximum of 6 GHz	1MHz

NOTE 1 For FM and TV broadcast receivers,  $F_x$  is determined from the highest frequency generated or used excluding the local oscillator and tuned frequencies.

NOTE 2  $F_x$  is highest fundamental frequency generated or used within the EUT or highest frequency at which it operates.

NOTE 3 For outdoor units of home satellite receiving systems highest measured frequency shall be 18 GHz.

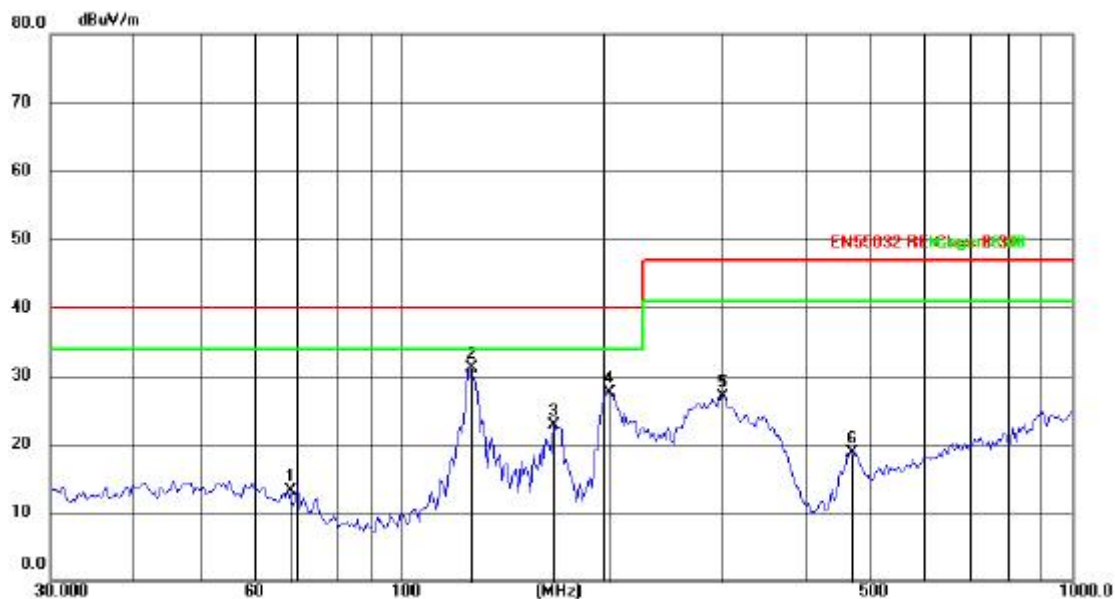
Where  $F_x$  is unknown, the radiated emission measurements shall be performed up to 6 GHz.

### 5.2.4. Test results

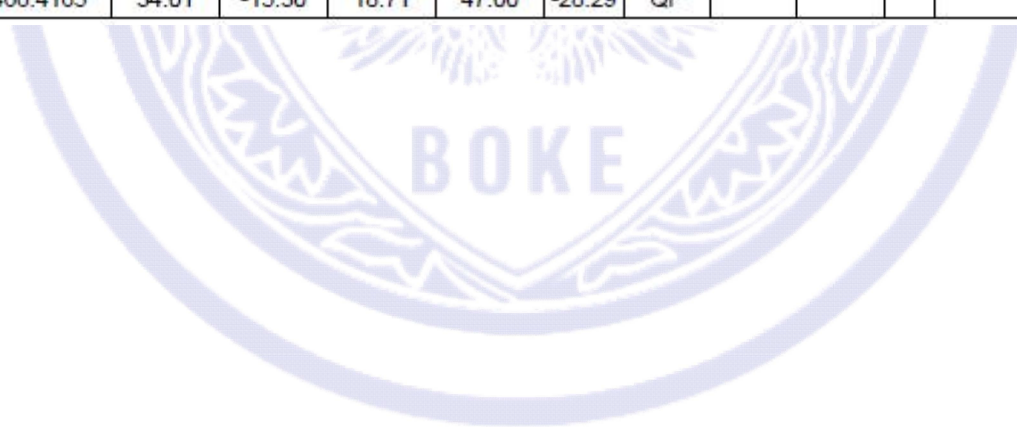
**PASS**

Please refer to the following page.

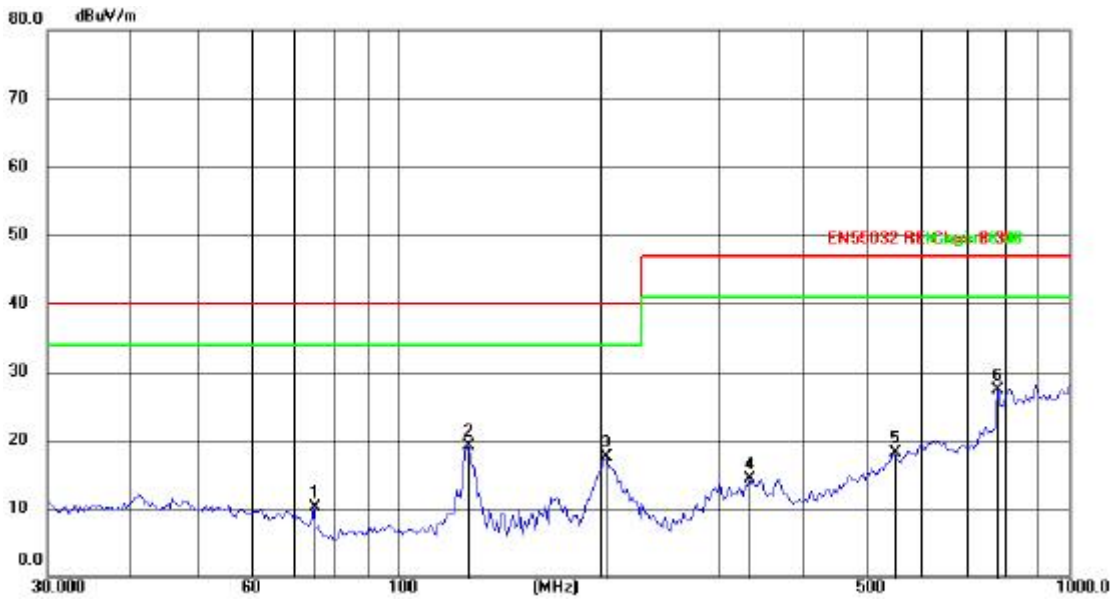
Polarization: H



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	67.7939	29.50	-16.31	13.19	40.00	-26.81	QP				
2	126.3286	49.52	-18.32	31.20	40.00	-8.80	QP				
3	168.7093	40.31	-17.60	22.71	40.00	-17.29	QP				
4	202.8104	47.24	-19.68	27.56	40.00	-12.44	QP				
5	300.8943	45.85	-18.98	26.87	47.00	-20.13	QP				
6	466.4165	34.01	-15.30	18.71	47.00	-28.29	QP				



Polarization: V



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	74.6569	30.55	-20.52	10.03	40.00	-29.97	QP				
2	126.3286	40.66	-21.50	19.16	40.00	-20.84	QP				
3	204.5961	39.10	-21.67	17.43	40.00	-22.57	QP				
4	334.2722	33.59	-19.20	14.39	47.00	-32.61	QP				
5	546.1393	29.96	-11.83	18.13	47.00	-28.87	QP				
6	782.3453	33.61	-6.29	27.32	47.00	-19.68	QP				

Note: Level=Reading+Factor  
 Margin=Level-Limit

## 6. Immunity

### Performance criteria

#### Performance criterion **A**

The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss function is allowed below a performance level specified by the manufacturer, when the equipment 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, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

#### Performance criterion **B**

The equipment shall continue to operate as intended after the test. No degradation of performance or loss function is allowed below a performance level specified by the manufacturer, when the equipment is used as intended. 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 specified by the manufacturer, either of these may be derived from the product description and documentation and what the user may reasonably expect from equipment if used as intended.

#### Performance criterion **C**

Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by operation of the controls.

## 6.1. Electrostatic discharges (ESD)

### 6.1.1. Test Levels and Performance Criterion

Severity Level 2 for signal and control ports

Severity Level 2 for input and output DC power ports

Severity Level 2 for input and output AC power ports

Open circuit output test voltage and repetition frequency of the impulses				
Level	Power ports, earth port (PE)		Signal, and control ports	
	Voltage peak	Repetition frequency	Voltage peak	Repetition frequency
	kV	kHz	kV	kHz
1	0,5	5 or 100	0,25	5 or 100
2	1	5 or 100	0,5	5 or 100
3	2	5 or 100	1	5 or 100
4	4	5 or 100	2	5 or 100
X <sup>a</sup>	Special	Special	Special	Special
The use of 5 kHz repetition frequency is traditional, however, 100 kHz is closer to reality. Product committees should determine which frequencies are relevant for specific products or product types. With some products, there may be no clear distinction between power ports and signal ports, in which case it is up to product committees to make this determination for test purposes.				
<sup>a</sup> "X" can be any level, above, below or in between the others. The level shall be specified in the dedicated equipment specification.				

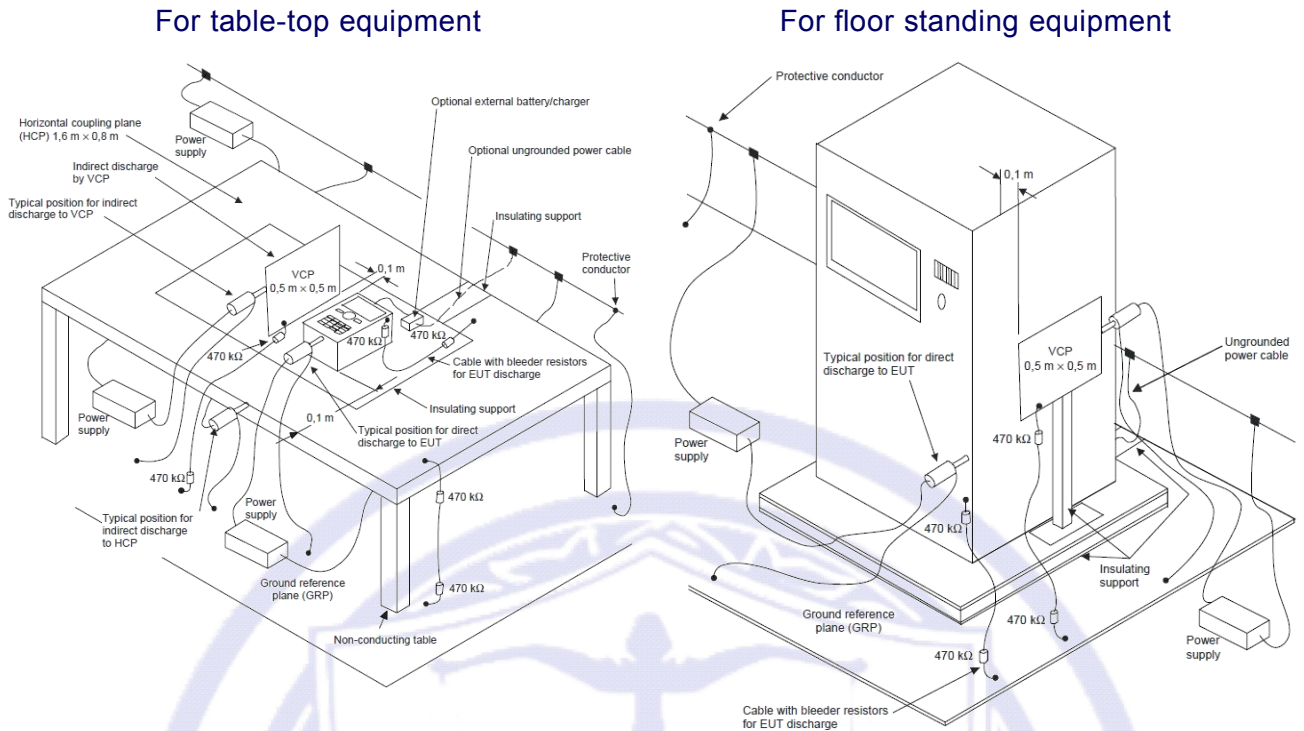
Performance criterion: **B**

### 6.1.2. Test Levels and Performance Criterion

Characteristics	Test levels
Air discharge	±8 kV
Contact discharge	±4 kV

Performance criterion: **B**

### 6.1.3. Test setup



### 6.1.4. Test Procedure

Measurement was performed in shielded room.  
 Measurement procedure was applied according to EN 61000-4-2 clause 8.  
 The test method and equipment were specified by EN 61000-4-2.

### 6.1.5. Test Result

**PASS**

Please refer to the following page.

No.	Location of discharge	Polarity	Discharge	Number of discharges	Test level kV	Result
1	HCP top side	P&N	C	25	4	Pass
2	HCP bottom side	P&N	C	25	4	Pass
3	VCP right side	P&N	C	25	4	Pass
4	VCP left side	P&N	C	25	4	Pass
5	Points on conductive surface	P&N	C	25	4	Pass
6	Points on non-conductive surface	P&N	A	10	8	Pass

HCP = Horizontal coupling plate    VCP = Vertical coupling plate    N = Negative    P = Positive  
 A = Air discharge    C = Contact discharge

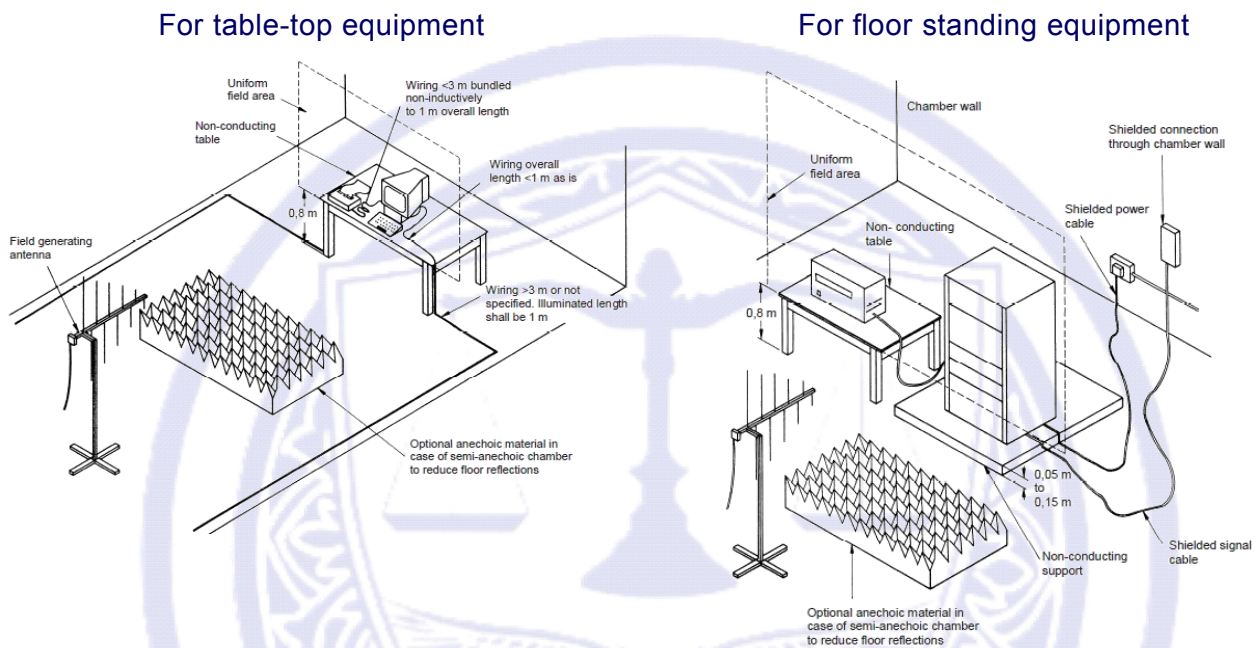
## 6.2. Electromagnetic field

### 6.2.1. Test Levels and Performance Criterion

Characteristics	Test levels	Test levels
Frequency range	80 MHz to 1 000 MHz,	1 800MHz, 2 600MHz, 3 500MHz, 5 000MHz
Test level	3 V/m (unmodulated)	1 V/m (unmodulated)
Modulation	1 kHz, 80 % AM, sine wave	1 kHz, 80 % AM, sine wave

Performance criterion: **A**

### 6.2.2. Test setup



### 6.2.3. Test Procedure

Measurement was performed in full-anechoic chamber.  
 Measurement procedure was applied according to EN 61000-4-3 clause 8.  
 The test method and equipment was specified by EN 61000-4-3.

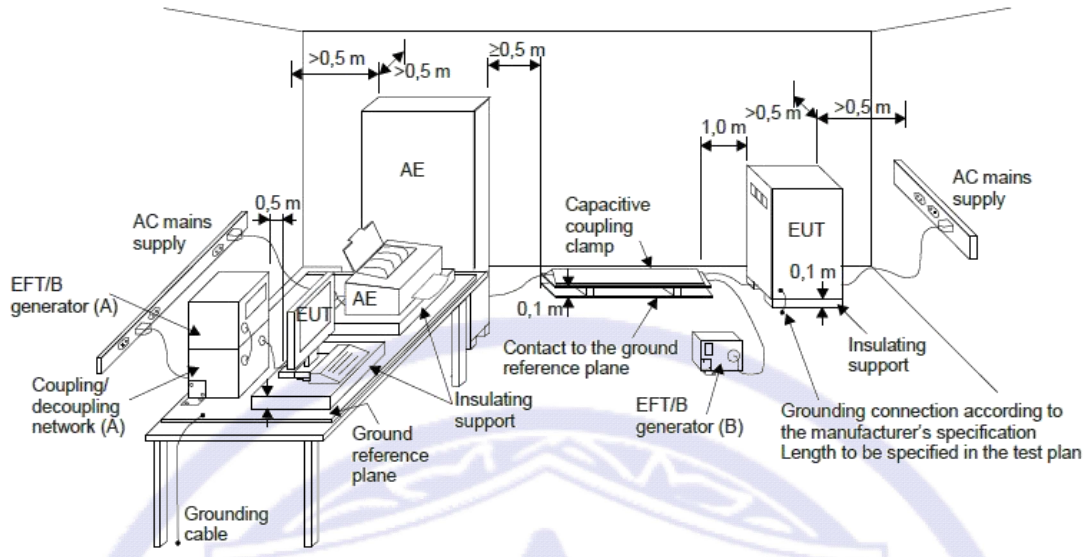
### 6.2.4. Test Result

**PASS**

Frequency (MHz)	Polarization	Test level (V/m)	Modulation	Exposed location	Result
80-1 000, 1 800, 2 600, 3 500, 5000	H & V	3	1 kHz, 80% AM, 1 % increment	All sides	Pass

### 6.3. Electrical fast transients/burst (EFT/B)

#### 6.3.1. Test setup



#### 6.3.2. Test Procedure

Measurement was performed in shielded room.

Measurement procedure was applied according to EN 61000-4-4 clause 8.

The test method and equipment was specified by EN 61000-4-4.

#### 6.3.3. Test Result

The EUT is powered by the DC only, the test item is not applicable.

**6.4. Surges**

**6.4.1. Test Levels and Performance Criterion**

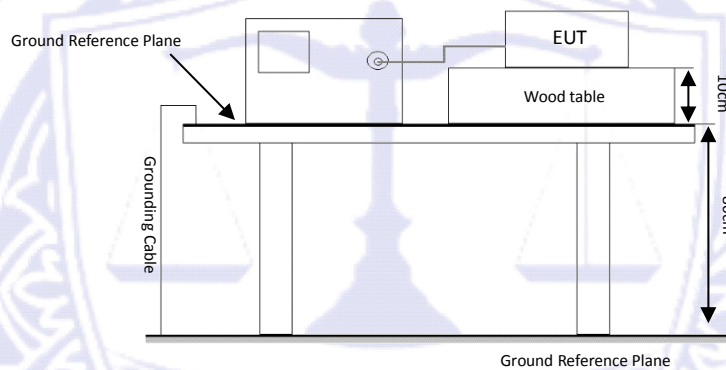
Severity Level 2 for line to line 1.0KV, Severity Level 2 for line to ground at 2.0KV

Level	Open-circuit test voltage $\pm 10\%$ (kV)
1	0,5
2	1
3	2
4	4
X <sup>a</sup>	Special

<sup>a</sup> "X" can be any level, above, below or in between the others. The level shall be specified in the dedicated equipment specification.

Performance criterion: **B**

**6.4.2. Test setup**



**6.4.3. Test Procedure**

Measurement was performed in shielded room.  
 Measurement procedure was applied according to EN 61000-4-5 clause 8.  
 The test method and equipment was specified by EN 61000-4-5.

**6.4.4. Test Result**

The EUT is powered by the DC only, the test item is not applicable.

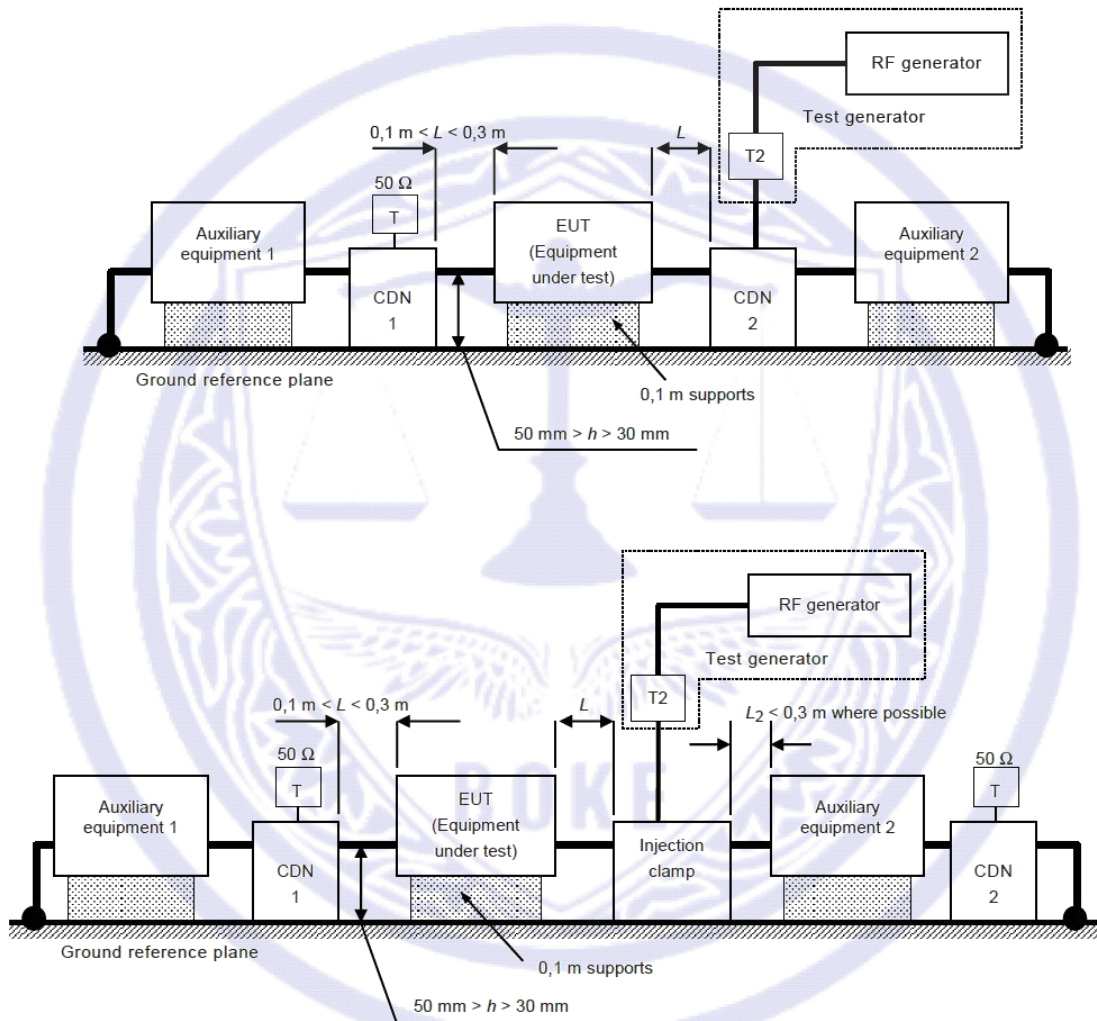
**6.5. Conducted RF**

**6.5.1. Test Levels and Performance Criterion**

Frequency ranges MHz	Test level V	Modulation
0,15 to 10	3	80% AM (1kHz)
10 to 30	3 to 1	
30 to 80	1	

Performance criterion: **A**

**6.5.2. Test setup**



### 6.5.3. Test Procedure

Measurement procedure was applied according to EN 61000-4-6 clause 8.  
The test method and equipment was specified by EN 61000-4-6.

### 6.5.4. Test Result

The EUT is powered by the DC only, the test item is not applicable.



## 7. Photographs of EUT

**EUT Photo 1**



**EUT Photo 2**



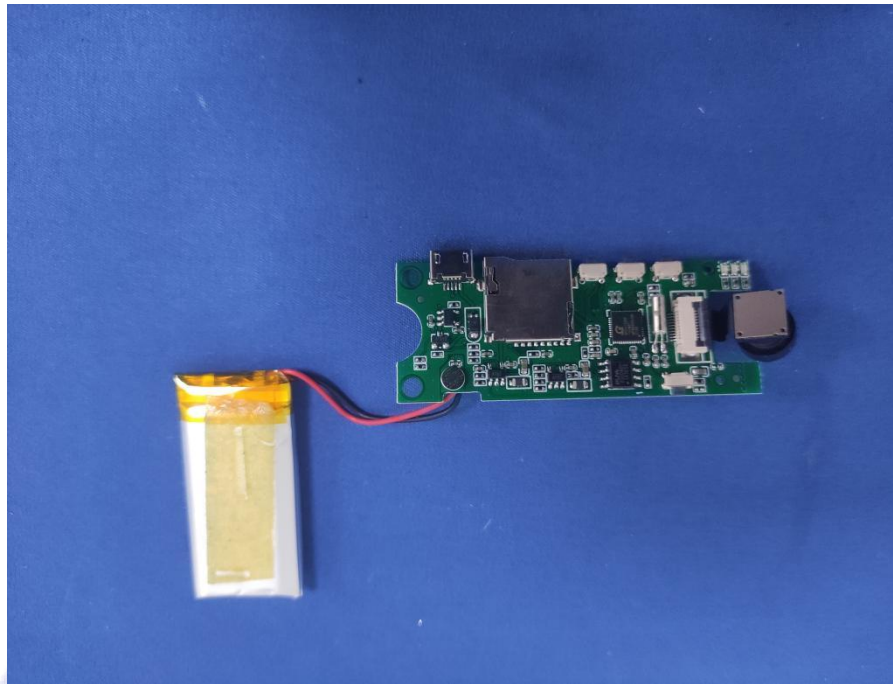
**EUT Photo 3**



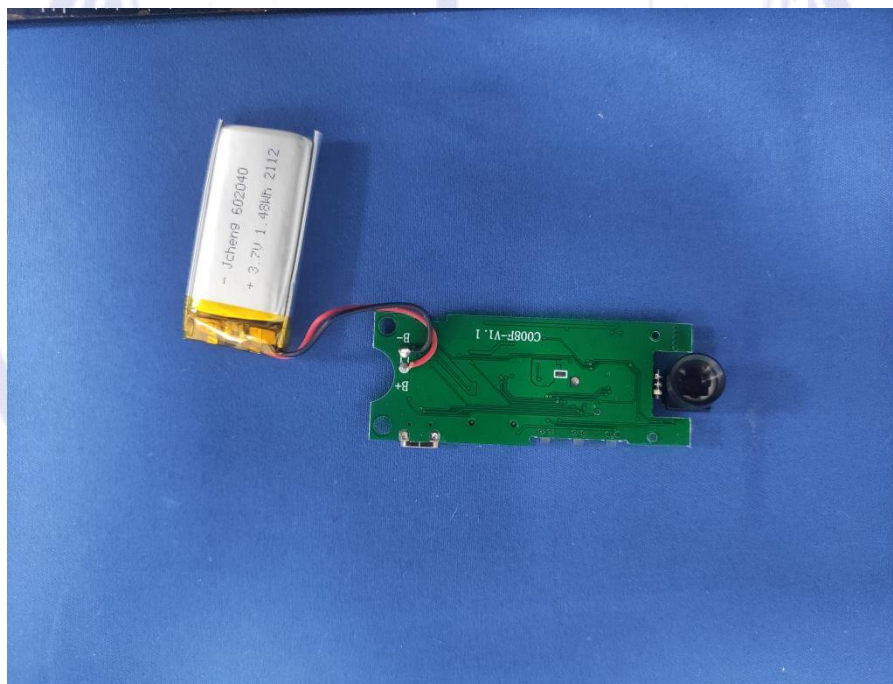
**EUT Photo 4**



**EUT Photo 5**



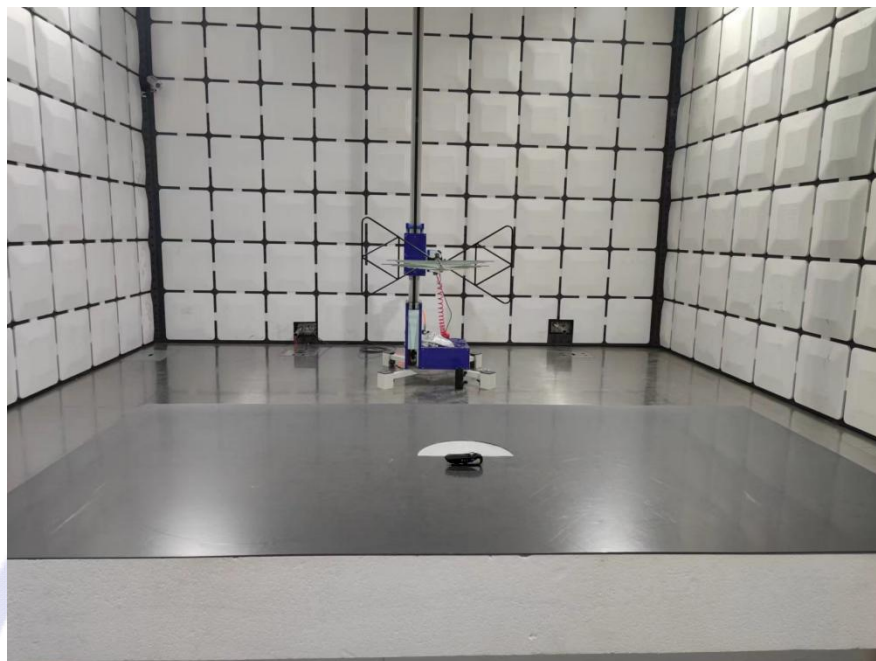
**EUT Photo 6**



**EUT Photo 7**



## 8. Test Setup Photographs



\*\*\* End of Report\*\*\*