



## TEST REPORT

**EN55032:2015+A11:2020 / EN55035:2017+A11:2020**

**Report Reference No.**.....: **TZ230504340-E**

Compiled by

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Date of issue.....: 2023/5/18

Testing Laboratory Name .....: Shenzhen Tongzhou Testing Co.,Ltd

Address.....: 1th Floor, Building 1, Haomai High-tech Park, Huating Road 387,  
Dalang Street, Longhua, Shenzhen, China

**Applicant's name**.....: **HONGKONG EGA COMMERCIAL CO., LIMITED**

Address.....: Unit 2A, 17/F, Glenealy Tower, No.1 Glenealy Central, Hong Kong  
S.A.R

### Test specification:

Standard .....: **EN55032:2015+A11:2020**  
**EN55035:2017+A11:2020**

TRF Originator .....: Shenzhen Tongzhou Testing Co.,Ltd

Master TRF .....: Dated 2021-07

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**Test item description** ..... : Wired headset

Trade Mark .....: EGA

Model/Type reference.....: EP02

Listed Models .....: N/A

Result.....: **Pass**



Report No.: TZ230504340-E

## TEST REPORT

<b>Test Report No. :</b>	<b>TZ230504340-E</b>	2023/5/18
		Date of issue

Equipment under Test : Wired headset

Model /Type : EP02

Listed Models : N/A

**Applicant** : **HONGKONG EGA COMMERCIAL CO., LIMITED**

Address : Unit 2A, 17/F, Glenealy Tower, No.1 Glenealy Central,  
Hong Kong S.A.R

**Manufacturer** : **HONGKONG EGA COMMERCIAL CO., LIMITED**

Address : Unit 2A, 17/F, Glenealy Tower, No.1 Glenealy Central,  
Hong Kong S.A.R

<b>Test Result</b> according to the standards on page 4:	<b>PASS</b>
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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:

[EN55032:2015+A11:2020](#) Electromagnetic compatibility of multimedia equipment - Emission Requirements

[EN55035:2017+A11:2020](#) Electromagnetic compatibility of multimedia equipment - Immunity requirements



## 2. SUMMARY

### 2.1. General Remarks

Date of receipt of test sample	:	2023/5/14
Testing commenced on	:	2023/5/14
Testing concluded on	:	2023/5/17

### 2.2. Equipment Under Test

#### Power supply system utilised

Power supply voltage	:	<input checked="" type="radio"/> 230V / 50 Hz	<input type="radio"/> 115V / 60Hz
		<input type="radio"/> 12 V DC	<input type="radio"/> 24 V DC
		<input type="radio"/> Other (specified in blank below)	

### 2.3. EUT operation mode

The EUT has been tested under typical operating condition.

Mode(s)	Description	Conect to GRP
1	Normal working	No



## 2.4. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

● - supplied by the manufacturer

○ - Supplied by the lab

<input type="radio"/>	Mobile Phone	Model :	H3 Pro
<input type="radio"/>		Lab. Code:	SZTZ-ZB-EMC-009

## 2.5. Performance level

The test results shall be classified in terms of the loss of function or degradation of performance of the equipment under test relative to a performance criteria defined by its manufacturer or the requestor of the test, or agreed between the manufacturer and the purchaser of the product. Examples of functions defined by the manufacturer to be evaluated during testing include, but are not limited to, the following:

- essential operational modes and states;
- tests of all peripheral access(hard disks, floppy disks, printers, keyboard, mouse, etc.);
- quality of software execution
- quality of data display and transmission
- quality of speech transmission

**Definition related to the performance level:**

- based on the used product standard
- based on the declaration of the manufacturer, requestor or purchaser

### **Criterion A:**

The apparatus shall continue to operate as intended without operator intervention. No degradation of performance or loss of 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.

### **Criterion B:**

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

### **Criterion C:**

Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls, or by any operation specified in the instructions for use.

## 2.6. Modifications

No modifications were implemented to meet testing criteria.



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## 2.7. NOTE

Function	Test Standards	Reference Report
EMC	EN55032:2015+A11:2020 EN55035:2017+A11:2020	TZ230504340-E



### **3. TEST ENVIRONMENT**

#### **3.1. Address of the test laboratory**

Shenzhen Tongzhou Testing Co.,Ltd  
1th Floor, Building 1, Haomai High-tech Park, Huating Road 387, Dalang Street, Longhua, Shenzhen,  
China

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 (2014)  
and CISPR Publication 22.

#### **3.2. Environmental conditions**

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

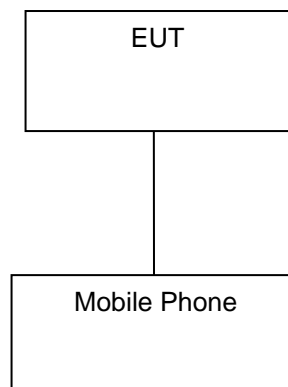
Temperature: 15-35 ° C

Humidity: 30-60 %

Atmospheric pressure: 950-1050mbar

#### **3.3. Configuration of Tested System**

**Fig. 2-1 Configuration of Tested System**







### 3.4. Test Description

Emission Measurement requirements		
Radiated Emission	EN55032:2015+A11:2020	PASS
Conducted Disturbance	EN55032:2015+A11:2020	N/A
Antenna Terminal Disturbance	EN55032:2015+A11:2020	N/A
Harmonic Current	EN IEC 61000-3-2:2019	N/A
Voltage Fluctuation and Flicker	EN61000-3-3:2013+A1:2019	N/A
Immunity Measurement requirements		
Electrostatic Discharge	EN55035:2017+A11:2020 IEC 61000-4-2: 2008	PASS
RF Field Strength Susceptibility	EN55035:2017+A11:2020 IEC 61000-4-3: 2010	PASS
Electrical Fast Transient/Burst Test	EN55035:2017+A11:2020 IEC 61000-4-4: 2012	N/A
Surge Test	EN55035:2017+A11:2020 IEC 61000-4-5: 2005	N/A
Conducted Susceptibility Test	EN55035:2017+A11:2020 IEC 61000-4-6: 2008	N/A
Voltage Dips and Interruptions	EN55035:2017+A11:2020 IEC 61000-4-11: 2004	N/A
Power Frequency Magnetic Field Susceptibility Test	EN55035:2017+A11:2020 IEC 61000-4-8: 2009	N/A
Boardband impulsive conducted disturbance	EN55035:2017+A11:2020	N/A

Remark: The measurement uncertainty is not included in the test result.

### 3.5. 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 Shenzhen Tongzhou Testing Co.,Ltd 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.

Hereafter the best measurement capability for Shenzhen Tongzhou Testing Co.,Ltd is reported:

Test Item	Frequency Range	Uncertainty	Note
Radiation Uncertainty	30MHz~1000MHz	±3.92dB	(1)
Conduction Uncertainty	150kHz~30MHz	±2.71dB	(1)

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



### 3.6. Equipments Used during the Test

Conducted emission						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI-7	100849/003	2022/12/28	2023/12/27
2	Artificial Mains	ROHDE & SCHWARZ	ENV 216	101333-IP	2022/12/28	2023/12/27
3	EMI Test Software	ROHDE & SCHWARZ	ESK1	V1.71	N/A	N/A

Radiated emission						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due
1	Test Receiver	R&S	ESCI-7	100849/003	2022/12/28	2023/12/27
2	wideband Antenna	Schwarzbeck	VULB 9163	958	2022/11/13	2025/11/12
3	Horn Antenna	Schwarzbeck	BBHA 9120D	01989	2022/11/13	2025/11/12
4	Amplifier	Schwarzbeck	BBV 9743	209	2022/12/28	2023/12/27
5	Amplifier	Tonscend	TSAMP-0518SE	--	2022/12/28	2023/12/27
6	Postional Controller	MF	MF7802	--	--	--
7	RE test software	Tonscend	JS32-RE	V2.0.2.0	--	--

RF Electromagnetic Field						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due
1	Horn Antenna	COMMW	ZAB-1-18G-50	20171109	2022/7/4	2023/7/3
2	Bilog Antenna	Sunol Sciences	JB3	N/A	2022/7/3	2025/7/2
3	Power Amplifier	Micotop	MPA-80-1000-250	MPA1808208	2022/6/18	2023/6/17
4	Power Amplifier	Micotop	MPA-1000-6000-100	MPA1808210	2022/6/18	2023/6/17
5	Signal Switch	Micotop	MSW-80-6000-PA	MPA1808211	2022/6/18	2023/6/17
6	Signal generator	Agilent	N5181A	MY49060403	2022/6/18	2023/6/17
7	Power Meter	Agilent	E4419B	US392155053	2022/6/18	2023/6/17
8	Power Sensor	Agilent	E9301H	MY41495659	2022/6/18	2023/6/17
9	RS test software	Farad	EMC-RS	V:2.0.1.3	--	--

## 4. TEST CONDITIONS AND RESULTS

### 4.1. Emission Measurement Requirements

#### 4.1.1. Radiated Emission

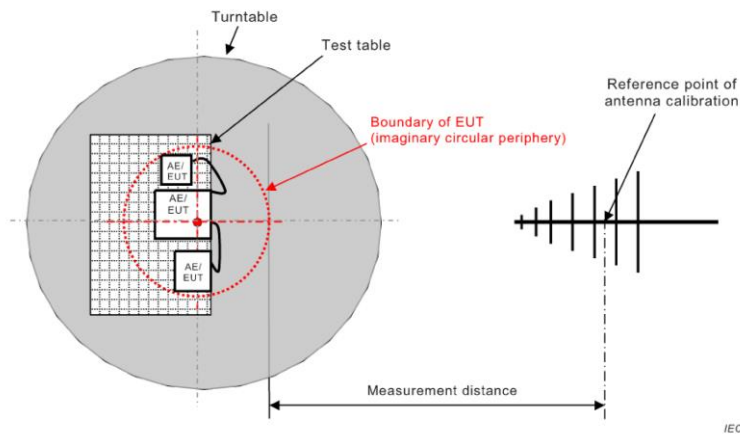
##### LIMIT

The ancillary equipment shall meet the class B limits given in CENELEC EN 55032 [1], annex A tables A.4 and A.5.

Alternatively, for ancillary equipment intended to be used exclusively in an industrial environment or telecommunication centres, the class A limits given in CENELEC EN 55032 [1], annex A tables A.2 and A.3 may be used.

If EUT is also a FM Receiver, it shall meet CENELEC EN 55032 [3], annex A tables A.6

##### TEST CONFIGURATION



**Note: Cable on the RGP must be insulated.**

##### TEST PROCEDURE

Please refer to CENELEC EN 55032 [1], annex A.2. for the measurement methods.

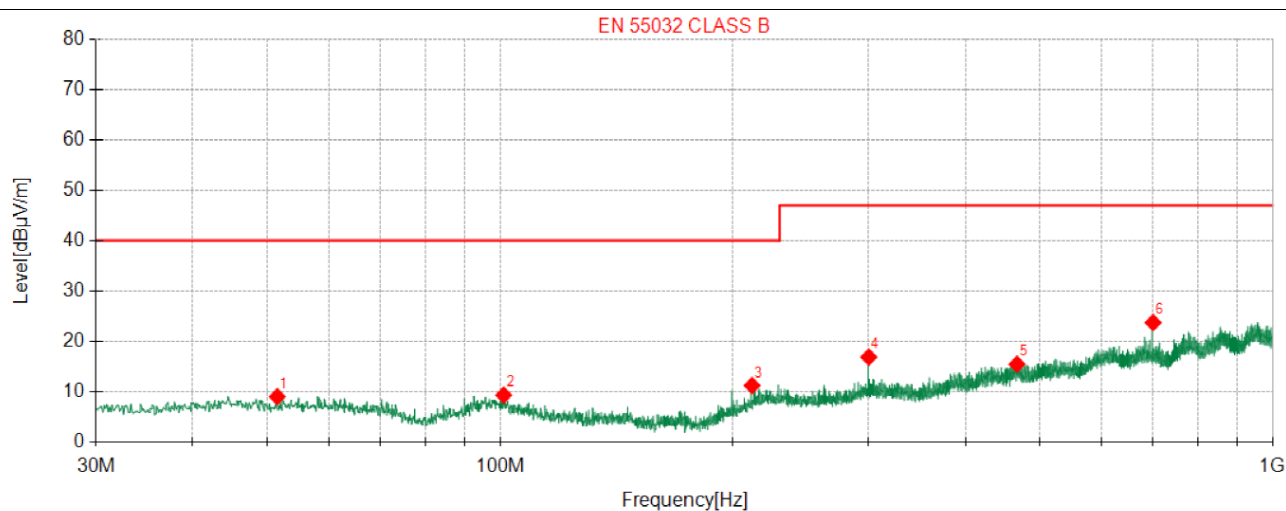
##### Climatic conditions

- ambient temperature : 25 °C
- relative humidity: 55%
- atmospheric pressure: 960 mbar

##### TEST RESULTS



# Radiated Emission Below 1000MHz



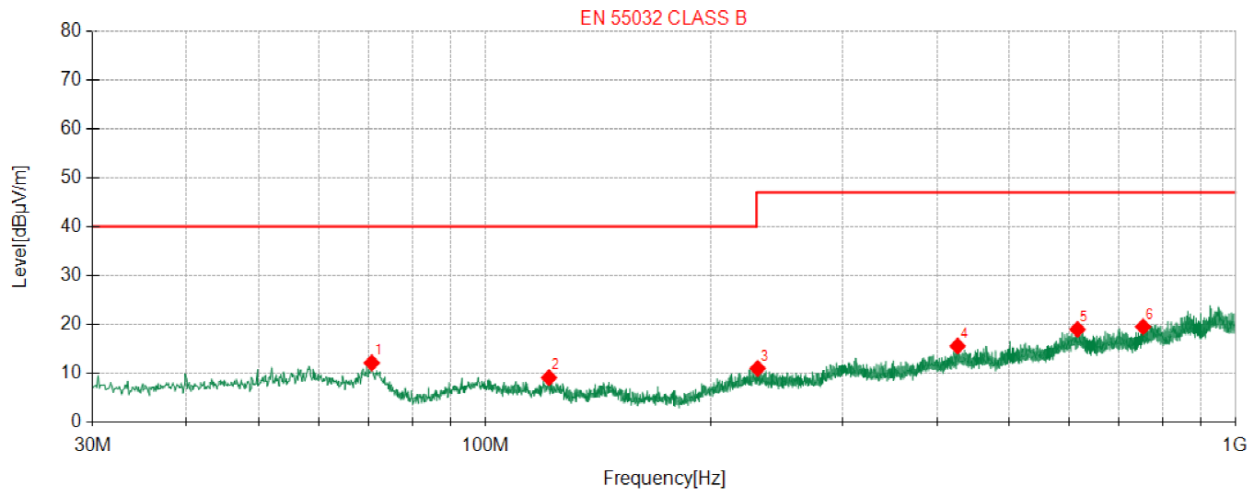
◆ QP Detector

## Suspected Data List

NO.	Freq. [MHz]	Factor [dB/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	51.461	-14.40	9.10	40.00	30.90	100	152	Horizontal
2	101.05	-15.98	9.41	40.00	30.59	100	308	Horizontal
3	211.87	-15.07	11.32	40.00	28.68	100	334	Horizontal
4	300.02	-12.81	16.95	47.00	30.05	100	249	Horizontal
5	466.62	-8.71	15.54	47.00	31.46	100	226	Horizontal
6	700.02	-4.35	23.79	47.00	23.21	100	239	Horizontal

Note:

1. Level [dBμV/m] = Reading [dBμV] + Factor [dB/m]
2. Margin [dB] = Limit [dBμV/m] - Level [dBμV/m].
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

**Suspected Data List**

NO.	Freq. [MHz]	Factor [dB/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	70.618	-17.44	12.18	40.00	27.82	100	346	Vertical
2	121.66	-16.65	9.17	40.00	30.83	100	93	Vertical
3	230.79	-14.49	11.05	47.00	35.95	100	100	Vertical
4	426.36	-9.44	15.62	47.00	31.38	100	36	Vertical
5	616.00	-5.82	19.03	47.00	27.97	100	142	Vertical
6	753.37	-4.12	19.56	47.00	27.44	100	14	Vertical

**Note:**

1. Level [dBμV/m] = Reading [dBμV] + Factor [dB/m]
2. Margin [dB] = Limit [dBμV/m] - Level [dBμV/m].
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.



## 4.2. Immunity Measurement Requirements

### 4.2.1. Electrostatic Discharge

#### LIMIT

Please refer to EN 61000-4-2

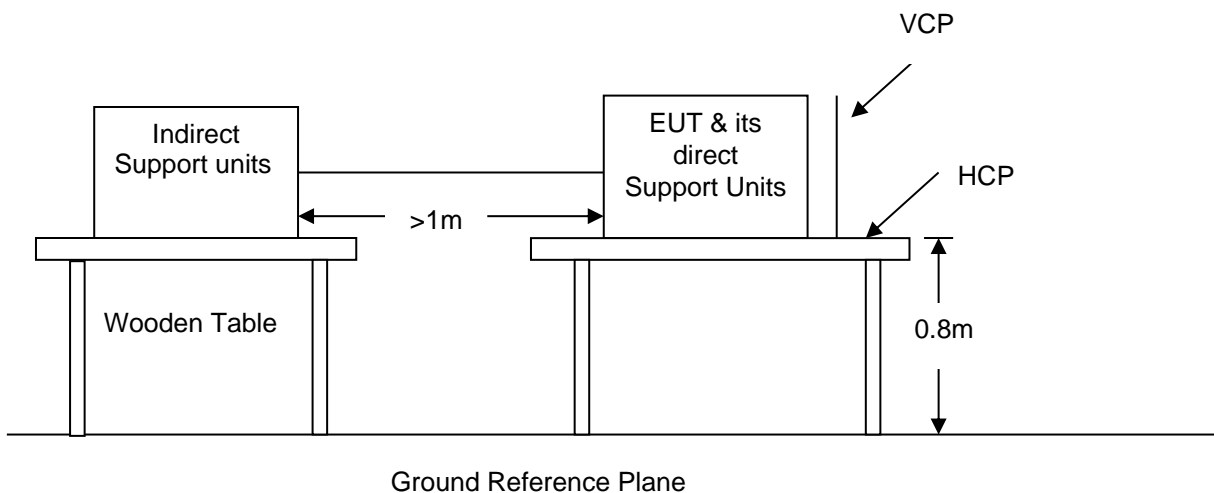
#### TEST LEVELS OF ELECTROSTATIC DISCHARGE

Test level: Contact Discharge at  $\pm 2, \pm 4$  KV    Air Discharge at  $\pm 2, \pm 4, \pm 8$  KV

Level	Test Voltage Contact Discharge (KV)	Test Voltage Air Discharge (KV)
1	2	2
2	4	4
3	6	8
4	8	15
X	Special	Special

Performance criterion: **B**

#### Test Configuration



#### Test procedure

Please refer to EN 61000-4-2 for the measurement methods.

#### Test results

##### **Contact Discharge:**

The ESD generator is held perpendicular to the surface to which the discharge is applied and the tip of the discharge electrode touch the surface of EUT. Then turn the discharge switch. The generator is then re-triggered for a new single discharge and repeated at least 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed

##### **Air Discharge:**

Air discharge is used where contact discharge can't be applied. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge



electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated at least 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

#### Indirect discharge for horizontal coupling plane:

At least 10 single discharges shall be applied to the horizontal coupling plane, at points on each side of the EUT.

#### Indirect discharge for vertical coupling plane:

At least 10 single discharges shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

#### Climatic conditions

- ambient temperature : 25 °C
- relative humidity: 55%
- atmospheric pressure: 960 mbar

#### Description of the Electrostatic Discharges (ESD)

Point of Discharge	Applied Voltage (KV)	Total No. of Discharge (Each Point)	Results	Criteria Level	Remark
Air Test Point	±2	20	Pass	B	-
	±4	20	Pass	B	-
	±8	20	Pass	B	-
Contact Discharge Test Points	±2	20	Pass	B	
	±4	20	Pass	B	
VCP (4 sides)	±2	20	Pass	B	-
	±4	20	Pass	B	-
HCP (4 sides)	±2	20	Pass	B	-
	±4	20	Pass	B	-

The requirements are **Fulfilled**

Performance Criterion: **B**

**Remarks:** The ancillary equipment's specification for an acceptable level of performance or degradation of performance during and/or after the ESD tests.

#### Description of Discharge Point

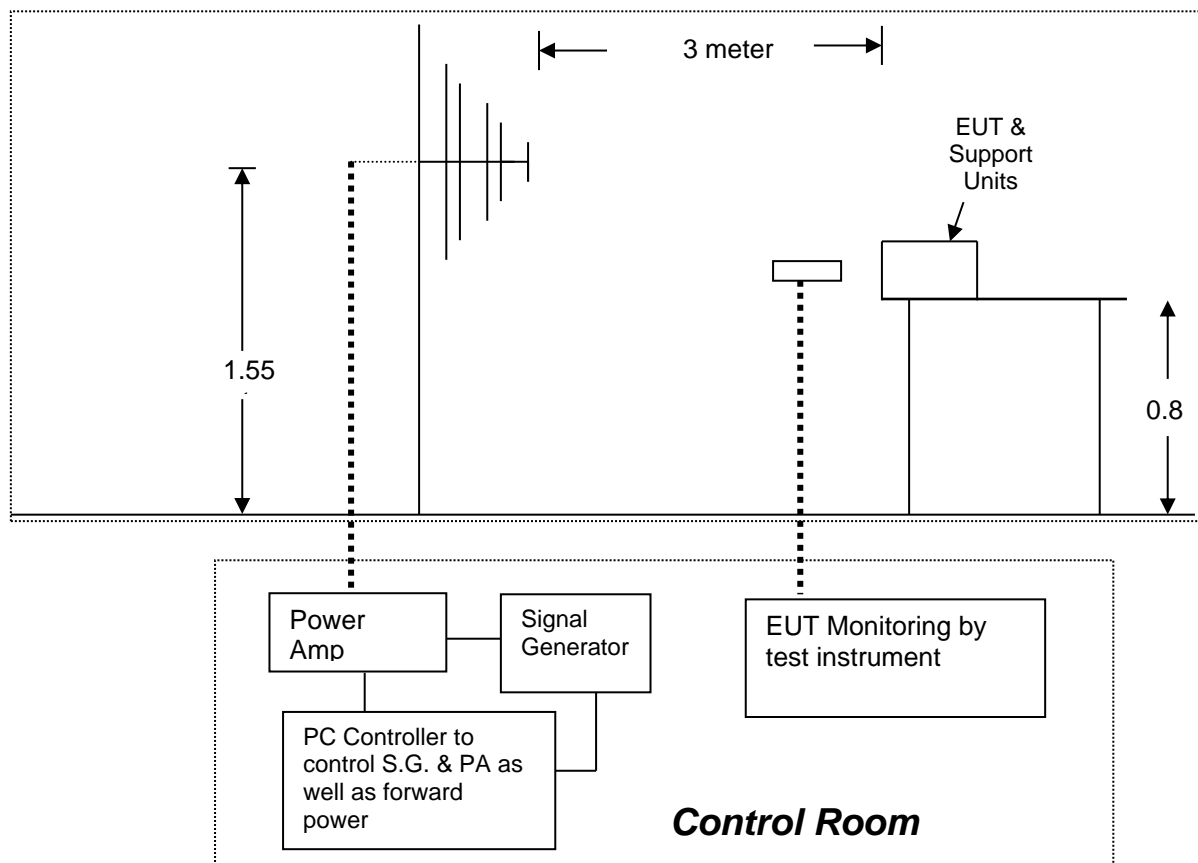
Contact Discharge		Air Discharge	
●	Metallic Part	○	Plastic Screws
○	Metallic Case	●	Plastic Case(gap)
○	Metallic Connect ports	○	Plastic Connect Ports
○	Metallic Junctions	○	Plastic Junctions
○	Others (Antenna Port)	○	Others

## 4.2.2. RF Field Strength Susceptibility

### LIMIT

Please refer to EN 61000-4-3

### Test Configuration



### TEST LEVELS OF RF FIELD STRENGTH SUSCEPTIBILITY

Test level: RF Field Strength Susceptibility: 3V/m

Level	RF Field Strength Susceptibility (V/m)
1	1
2	3
3	10
X	Special

Performance criterion: **A**

### TEST PROCEDURE

Please refer to EN 61000-4-3 for the measurement methods.

### Climatic conditions





- ambient temperature : 25 °C
- relative humidity: 55%
- atmospheric pressure: 960 mbar

## TEST RESULTS

### ☒ Result of Final Tests

#### ☒ Swept Test

Freq. Range (MHz)	Field	Modulation	Polarity	Position	Mode	Result (Pass/Fail)
80-1000	3V/m	Yes	H / V	Front	Normal Operating	PASS
80-1000	3V/m	Yes	H / V	Right	Normal Operating	PASS
80-1000	3V/m	Yes	H / V	Back	Normal Operating	PASS
80-1000	3V/m	Yes	H / V	Left	Normal Operating	PASS

#### ☐ Spot Test

Freq. Range (MHz)	Field	Modulation	Polarity	Position	Mode	Result (Pass/Fail)
1800, 2600, 3500, 5000	3V/m	Yes	H / V	Front	Normal Operating	PASS
1800, 2600, 3500, 5000	3V/m	Yes	H / V	Right	Normal Operating	PASS
1800, 2600, 3500, 5000	3V/m	Yes	H / V	Back	Normal Operating	PASS
1800, 2600, 3500, 5000	3V/m	Yes	H / V	Left	Normal Operating	PASS

### PERFORMANCE CRITERIA

Criteria requested	<input checked="" type="checkbox"/> A / <input type="checkbox"/> B / <input type="checkbox"/> C
Criteria meet	<input checked="" type="checkbox"/> A / <input type="checkbox"/> B / <input type="checkbox"/> C

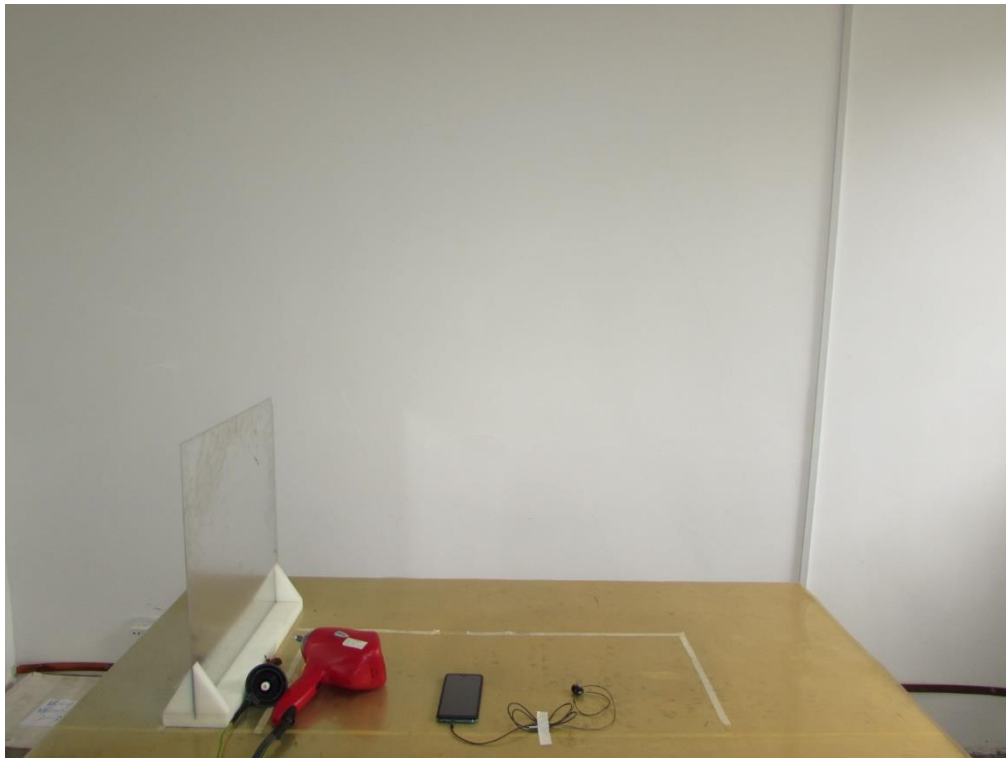


## 5. Test Setup Photos of the EUT

### 5.1. Radiated Emission Test Setup

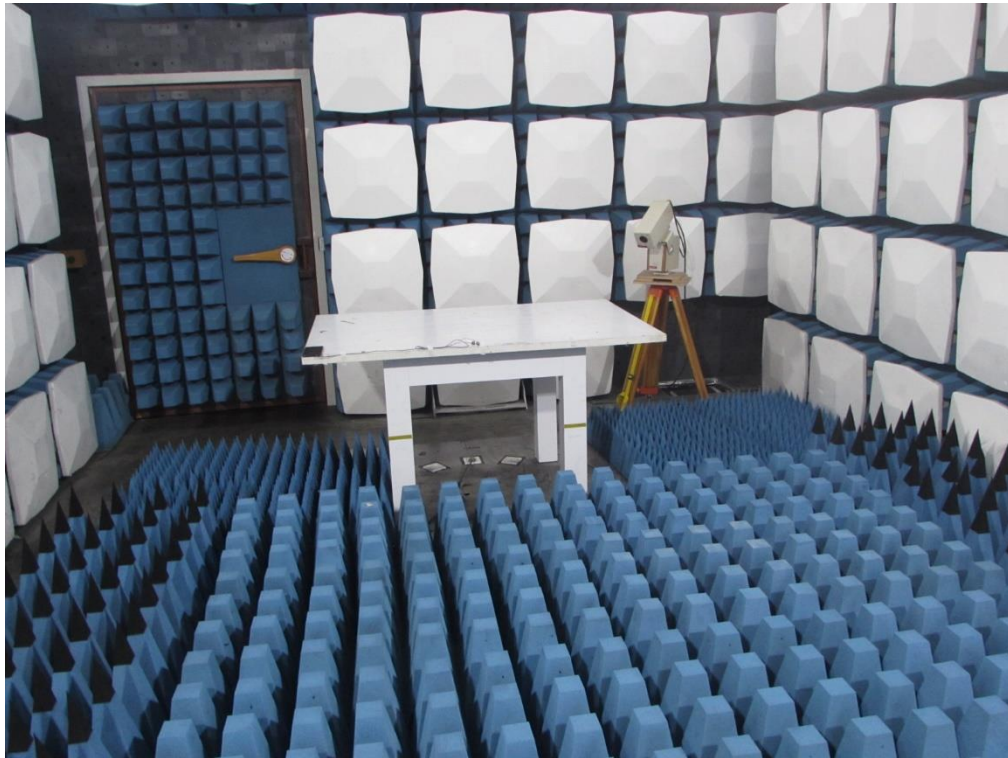


### 5.2. Electrostatic discharge Test Setup





### 5.3. RF Electromagnetic Field





## 6. External and Internal Photos of the EUT



.....End of Report.....