



ELECTROMAGNETIC COMPLIANCE TEST REPORT

For

LED Facial Beauty Device

Model: MZ01

Brand Name: N/A

Report No.: ENC2412201GZ30E1

Date of Issue: Dec. 29, 2024

Prepared For

Shenzhen Liyoutong Technology Co., Ltd.

**3-1, Wanxin Street, Pinghuan Community, Maluan Street, Pingshan District,
Shenzhen, China**

Prepared By

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1. VERIFICATION OF CONFORMITY

Equipment Under Test:	LED Facial Beauty Device
Model:	MZ01
Model Difference:	N/A
Brand Name:	N/A
Applicant:	Shenzhen Liyoutong Technology Co., Ltd. 3-1, Wanxin Street, Pinghuan Community, Maluan Street, Pingshan District, Shenzhen, China
Manufacturer:	Shenzhen Liyoutong Technology Co., Ltd. 3-1, Wanxin Street, Pinghuan Community, Maluan Street, Pingshan District, Shenzhen, China
Type of Test:	EMC Directive 2014/30/EU for CE Marking
Technical Standards:	EN IEC 55014-1:2021 EN IEC 55014-2:2021
File Number:	ENC2412201GZ30E1
Date of test:	Dec. 20, 2024 – Dec. 29, 2024
Deviation:	None
Condition of Test Sample:	Normal

The above equipment was tested by East Notice Certification Service Co., Ltd. for compliance with the requirements set forth in EMC Directive 2014/30/EU and the Technical Standards mentioned above. This said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment and the level of the immunity endurance of the equipment are within the compliance requirements. Should any objections to the test reports occurred, should submit it to the company within ten days since the issuing of the report, Fail to accept.

The test results of this report relate only to the tested sample identified in this report.

Checked By



Yemig Dec. 29, 2024

Authorized By



Ray Zhou Dec. 29, 2024

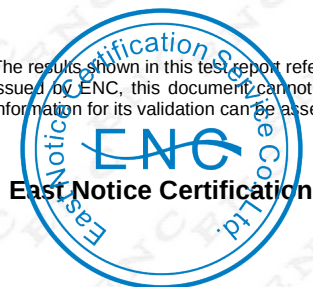
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2. TEST SUMMARY

Test	Test Method	Result
Emissions (EN IEC 55014-1:2021)		
Conducted emission, AC ports	EN IEC 55014-1:2021	N/A
Radiated Emission	EN IEC 55014-1:2021	PASS
Harmonic current emissions	EN IEC 61000-3-2:2019+A1:2021	N/A
Voltage fluctuations & flicker	EN 61000-3-3:2013+A1:2019+A2:2021	N/A
Immunity (EN IEC 55014-2:2021)		
Electrostatic Discharge Immunity (ESD)	IEC 61000-4-2:2008	PASS
Radiated Electromagnetic Field Immunity	IEC 61000-4-3:2020	PASS
Electrical Fast Transients (EFT)	IEC 61000-4-4:2012	N/A
Surge Immunity	IEC 61000-4-5:2017	N/A
Common Mode Conducted Immunity	IEC 61000-4-6:2013	N/A
Immunity to Conducted Disturbances Induced by RF Fields	IEC 61000-4-8:2009	N/A
Voltage Dips & Short Interruption	IEC 61000-4-11:2020	N/A

N/A: Not applicable

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3. SYSTEM DESCRIPTION

EUT Test Procedure:

1. Connect EUT and peripheral devices if need.
2. Power on the EUT, the EUT begins to work.
3. Make sure the EUT operates normally during the test.

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4. PRODUCT INFORMATION

Housing Type : Plastic
Power : DC 5V, 0.5A by USB port or Mobile power supply (1200mAh)

I/O Port Information (☒Applicable ☐Not Applicable)

I/O Port of EUT			
I/O Port Type	Q'TY	Cable	Tested with
DC Port	1	1.0m USB cable	1

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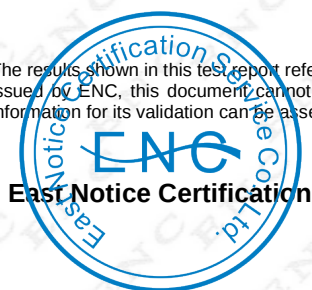
5. SUPPORT EQUIPMENT

Device Type	Manufacturer	Model Name	Serial No.	Data Cable	Power Cable
--	--	--	--	--	--

****Note:** All the above equipment/cables were placed in worse case positions to maximize emission signals during emission test.

Grounding: Grounding was in accordance with the manufacturer's requirements and conditions for the intended use.

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6. TEST FACILITY

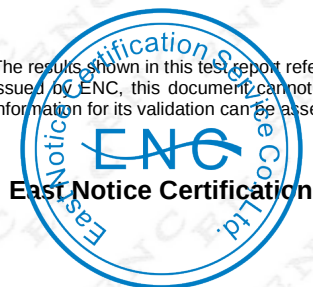
Location: 1/F, Haohui Commercial Building, Zhuji Street, Dongpu Town, Tianhe District, Guangzhou City, China

Description: There is one 3m semi-anechoic an area test sites and two line conducted labs for final test. The Open Area Test Sites and the Line Conducted labs are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4 and CISPR 14/EN IEC 55014-1 requirements.

Site Filing: The site description is on file with the Federal Communications Commission, 7435 Oakland Mills Road, Columbia, MD 21046.

Instrument Tolerance: All measuring equipment is in accord with ANSI C63.4 and CISPR 14 requirements that meet industry regulatory agency and accreditation agency requirement.

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7. EN IEC 55014 RADIATED EMISSION TEST**7.1. TEST EQUIPMENT OF RADIATED EMISSION TEST**

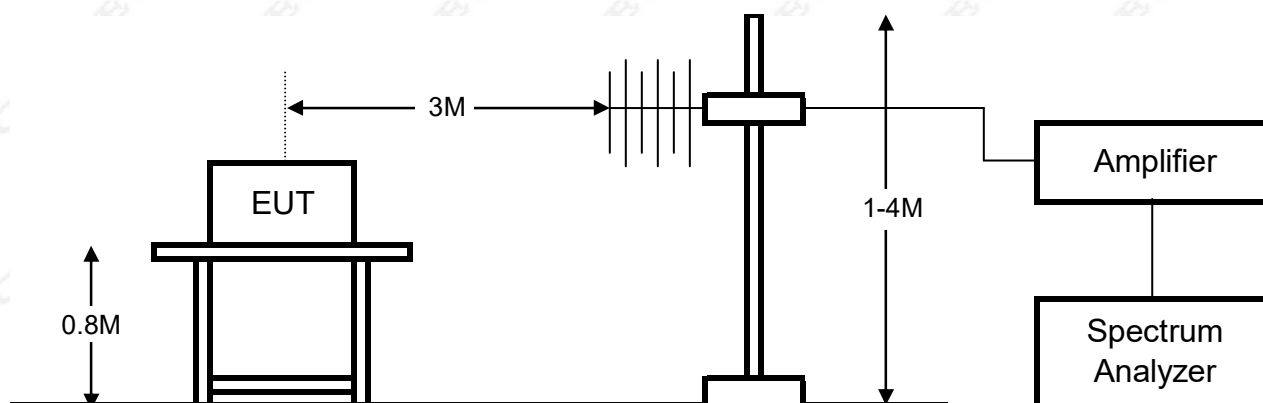
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Test Receiver	R&S	CISPR16	N/A	15/02/2024	14/02/2025
Absorbing Clamp	CSI	CLA-050	N/A	15/02/2024	14/02/2025
Cable	TS	TS@90	N/A	15/02/2024	14/02/2025

7.2. LIMITS OF RADIATED EMISSION TEST

Frequency (MHz)	Distance(Meters)	Field Strengths Limits (dB μ V/m)
30 ~ 230	3	40
230 ~ 1000	3	47

Note: (1) The tighter limit shall apply at the edge between two frequency bands.

(2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the EUT.

7.3. BLOCK DIAGRAM OF TEST SETUP

Test Procedure: The EUT was placed on a turn table which was 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level.

EUT was set 3 meters away from the receiving antenna which was mounted on a antenna tower. The antenna can move up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna (calibrated biconical and log periodical antenna) were used as a receiving antenna. Both horizontal and vertical polarization of the antenna were set on measurement.

The bandwidth of the R&S Test Receiver ESVP was set at 120kHz.

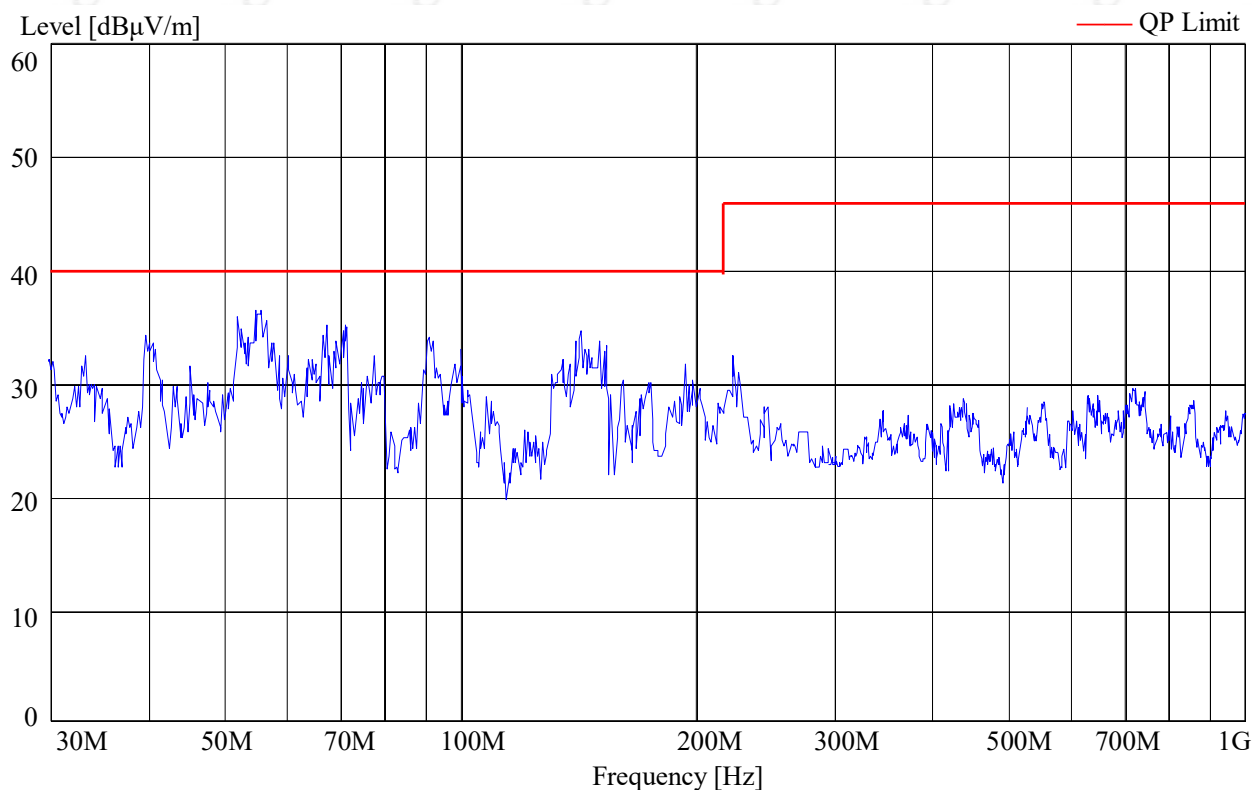
The frequency range from 30MHz to 1000MHz was checked.

According to the requirement of EN IEC 55014-1 (CISPR 14) clause 10.4, all cables leaving the Table-Top EUT for a connection outside the test side were fitted with ferrite clamps(specified by CISPR16-1) placed on the turn-table at the point where the cable reaches the turn-table.

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7.4. TEST RESULT OF RADIATED EMISSION TEST

Radiated Emission Measurement



Site: Site 3M

Polarization: Vertical

Limit: EN 55014 3M Radiation

Power: DC 5V

Temperature: 22°C

Humidity: 52%

EUT: LED Facial Beauty Device

M/N: MZ01

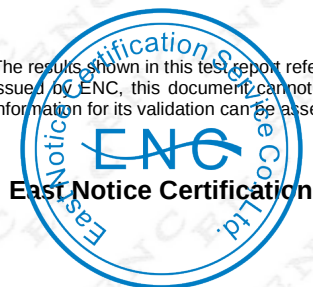
Mode: Normal

Note:

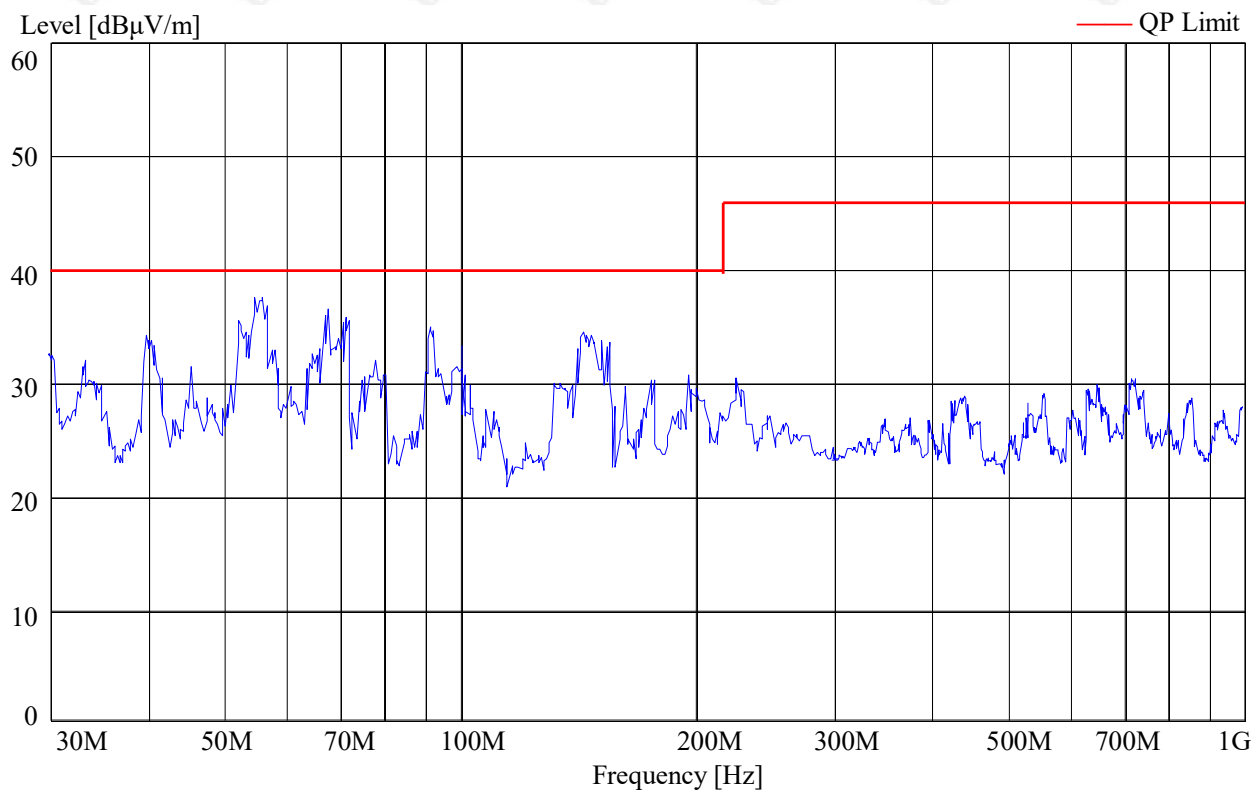
No.Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	Antenna Height	Table Degree
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree
1	51.716	34.72	0.12	34.84	40.00	-5.16	peak	
2 *	52.699	35.10	0.12	35.22	40.00	-4.78	peak	
3	66.804	34.04	0.13	34.17	40.00	-5.83	peak	
4	70.135	34.02	0.13	34.15	40.00	-5.85	peak	

RESULT: PASS

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Radiated Emission Measurement



Site: Site 3M

Limit: EN 55014 3M Radiation

Temperature: 22°C

EUT: LED Facial Beauty Device

M/N: MZ01

Mode: Normal

Note:

Polarization: Horizontal

Power: DC 5V

Humidity: 52%

No.Mk.	Freq. MHz	Reading Level dB μ V	Correct Factor dB	Measure- ment dB μ V/m	Limit dB μ V/m	Over dB	Detector	Antenna Height cm	Table Degree degree
1	51.773	34.68	0.12	34.80	40.00	-5.20	peak		
2 *	52.837	36.51	0.12	36.63	40.00	-3.37	peak		
3	66.818	35.27	0.13	35.40	40.00	-4.60	peak		
4	70.266	34.78	0.13	34.91	40.00	-5.09	peak		

RESULT: PASS

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8. IEC 61000-4-2 ESD IMMUNITY TEST

ELECTROSTATIC DISCHARGE (ESD) IMMUNITY TEST

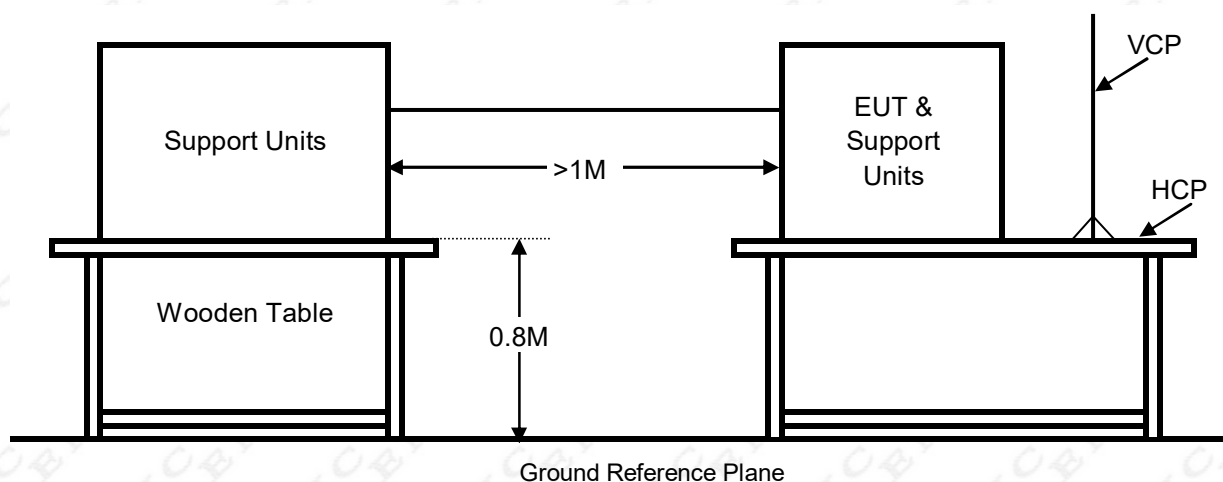
Port	: Enclosure
Basic Standard	: IEC 61000-4-2:2008
Test Level	: ± 8 kV (Air Discharge) ± 4 kV (Contact Discharge) ± 4 kV (Indirect Discharge)
Standard require	: B
Tester	: Sam Liu
Temperature	: 22°C
Humidity	: 52%

8.1. TEST EQUIPMENT OF ESD TEST

Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
ESD Simulator	EM-Test	EST883	N/A	15/02/2024	14/02/2025

8.2. BLOCK DIAGRAM OF TEST SETUP

(The 470 k ohm resistors are installed per standard requirement)



8.3. TEST PROCEDURE

The EUT was located 0.1 m minimum from all side of the HCP.

The support units were located 1 m minimum away from the EUT.

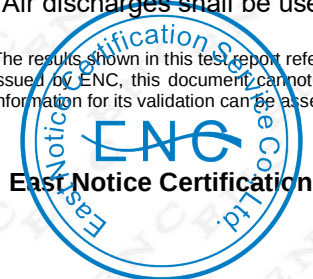
EUT worked with resistance load, and make sure EUT worked normally.

Activates the communication function if the EUT with such port(s).

As per the requirement of EN IEC 55014-2: Contact discharge is the preferred test method. 20 discharges (10 with positive and 10 negative polarity) shall be applied on each accessible metal part of the enclosure. In case of a non-conductive enclosure, discharges shall be applied on the horizontal or vertical coupling planes as specified in IEC 61000-4-2.

Air discharges shall be used where contact discharges cannot be applied.

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The following test condition was followed during the tests.

Note: As per the A2 to IEC 61000-4-2, a bleed resistor cable is connected between the EUT and HCP during the test.

The electrostatic discharges were applied as follows:

Amount of Discharges	Voltage	Coupling	Result (Pass/Fail)
Mini 20 /Point	±2kV; ±4kV	Contact Discharge	Pass
Mini 10 /Point	±2kV; ±4kV	Indirect Discharge HCP (Front)	Pass
Mini 10 /Point	±2kV; ±4kV	Indirect Discharge VCP (Left)	Pass
Mini 10 /Point	±2kV; ±4kV	Indirect Discharge VCP (Back)	Pass
Mini 10 /Point	±2kV; ±4kV	Indirect Discharge VCP (Right)	Pass
Mini 10 /Point	±2kV; ±4kV;±8kV;	Air Discharge	Pass

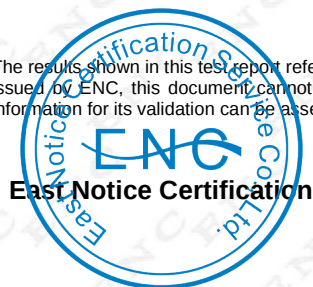
8.4. PERFORMANCE & RESULT

- ☐ Criteria A: The apparatus continues to operate as intended. 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. In some cases the performance level may be replaced by a permissible loss of performance.
- ☒ Criteria B: The apparatus continues 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. In some cases the performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed.
- ☐ Criteria C: Temporary loss of function is allowed, provided the functions self recoverable or can be restored by the operation of controls.

☒ **PASS**

☐ **FAIL**

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9. IEC 61000-4-3 TEST

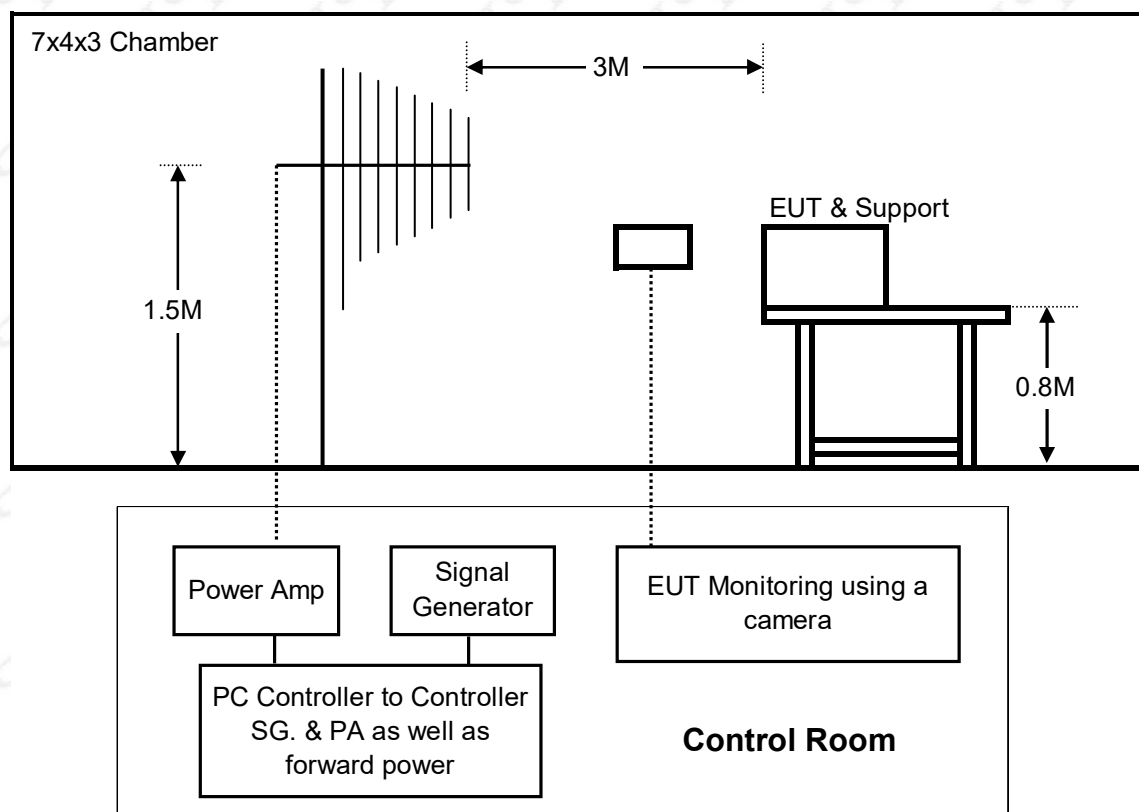
RADIATED ELECTROMAGNETIC FIELD IMMUNITY TEST

Port : Enclosure
Basic Standard : IEC 61000-4-3:2020
Test Level : 3V/m with 80% AM. 1kHz Modulation.
Standard require : A
Tester : Sam Liu
Temperature : 22°C
Humidity : 52%

9.1. TEST EQUIPMENT

Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Signal Generator	IFA	2023B	N/A	15/02/2024	14/02/2025
Power Amplifier	AR	150W1000	N/A	15/02/2024	14/02/2025
Power Antenna	AR	25S1G4A	N/A	15/02/2024	14/02/2025

9.2. BLOCK DIAGRAM OF TEST SETUP



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9.3. TEST PROCEDURE

The EUT was located at the edge of supporting table keep 3 meter away from transmitting antenna, it just the calibrated square area of field uniformity. The support units were located outside of the uniformity area, but the cable(s) connected with EUT were exposed to the calibrated field as per IEC 61000-4-3.

EUT worked with resistance load, and make sure EUT worked normally.

Setting the testing parameters of RS test software per IEC 61000-4-3.

Performing the test at each side of with specified level (30V/m) at 1% steps and test frequency from 80MHz to 2700MHz .

Recording the test result in following table.

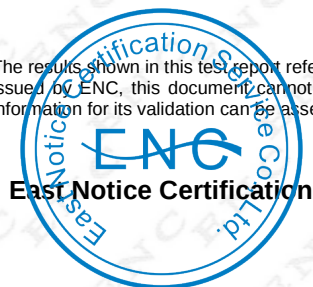
It is not necessary to perform test as per annex A of EN IEC 55014-2 if the EUT doesn't belong to TTE product.

IEC 61000-4-3 Final test conditions:

Test level : 3V/m
Steps : 1 % of fundamental
Dwell Time : 1 sec

Range (MHz)	Field	Modulation	Polarity	Position	Result (Pass/Fail)
80-2700	3V/m	AM	H	Front	Pass
80-2700	3V/m	AM	H	Left	Pass
80-2700	3V/m	AM	H	Back	Pass
80-2700	3V/m	AM	H	Right	Pass
80-2700	3V/m	AM	V	Front	Pass
80-2700	3V/m	AM	V	Left	Pass
80-2700	3V/m	AM	V	Back	Pass
80-2700	3V/m	AM	V	Right	Pass

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9.4. PERFORMANCE & RESULT

- ☒ Criteria A: The apparatus continues to operate as intended. 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. In some cases the performance level may be replaced by a permissible loss of performance.
- ☐ Criteria B: The apparatus continues 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. In some cases the performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed.
- ☐ Criteria C: Temporary loss of function is allowed, provided the functions self recoverable or can be restored by the operation of controls.

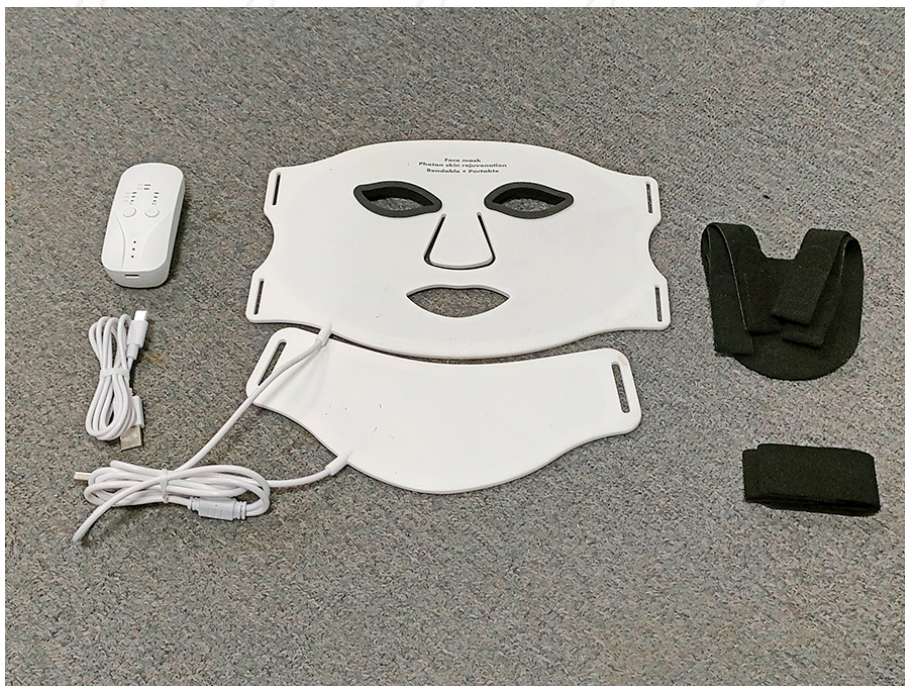
☒ **PASS**☐ **FAIL**

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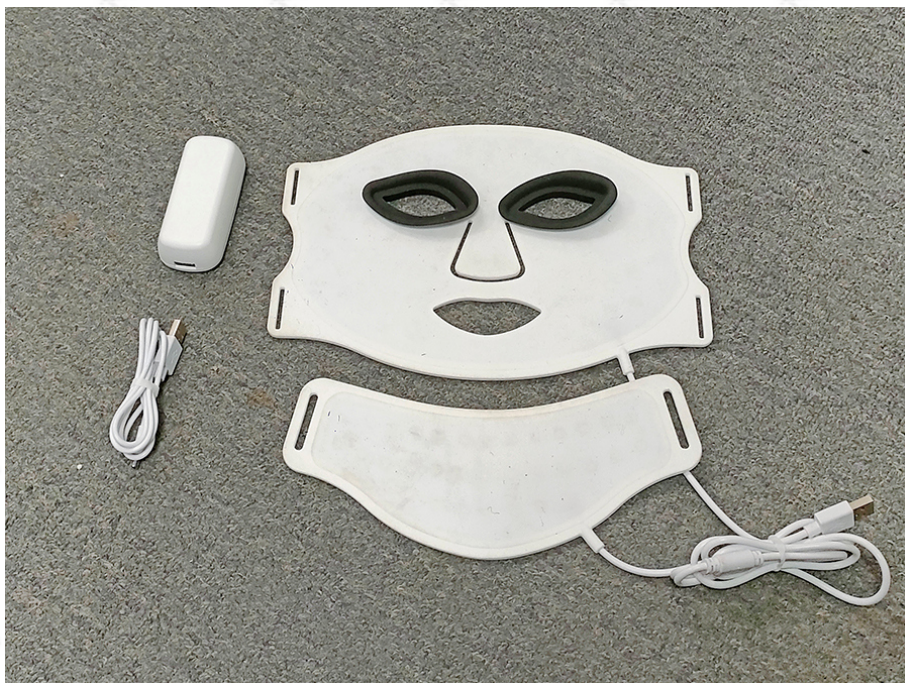


APPENDIX 1 PHOTOGRAPHS OF EUT

Overall View of EUT



Font View of EUT



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Side View of EUT



Front View of Controller



----END OF REPORT----

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