

ETSI EN 301 489-1 & -17 TEST REPORT
for

Zhuhai Gotech Intelligent Technology Co., Ltd.

Door Bell

Model Number: MD7L

Additional Model: MD7LA, MD7LB, MD8L, MD8LA, MD9L

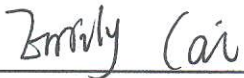
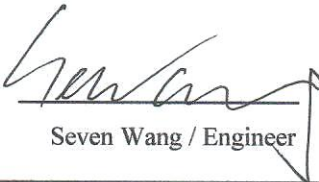

Applicant:	Zhuhai Gotech Intelligent Technology Co., Ltd.
Address:	66 Yongda Road, Hongqi Town, Jinwan District, 519090 Zhuhai, P.R.China
Prepared By:	EST Technology Co., Ltd.
	Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China
Tel: 86-769-83081888-808	

Report Number:	ESTE-R2206045
Date of Test:	May. 17~Jun. 08, 2022
Date of Report:	Jun. 13, 2022

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EST Technology Co., Ltd.

Applicant: Address:	Zhuhai Gotech Intelligent Technology Co., Ltd. 66 Yongda Road, Hongqi Town, Jinwan District, 519090 Zhuhai, P.R.China		
Manufacturer: Address:	Zhuhai Gotech Intelligent Technology Co., Ltd. 66 Yongda Road, Hongqi Town, Jinwan District, 519090 Zhuhai, P.R.China		
Factory: Address:	Zhuhai Gotech Intelligent Technology Co., Ltd. 2 jinliang Road, Hongqi Town, Jinwan District, Zhuhai 519090 P.R. China		
E.U.T:	Door Bell		
Model Number:	MD7L		
Additional Model:	MD7LA, MD7LB, MD8L, MD8LA, MD9L Note: They are identical except model name.		
Power Supply:	DC 3.7V From Battery; DC 5V From Adapter Input AC 100-240V, 50/60Hz		
Test Voltage:	DC 3.7V From Battery; DC 5V From Adapter Input AC 230V/50Hz		
Trade Name:	STAVIX	Serial No.:	-----
Date of Receipt:	May. 17, 2022	Date of Test:	May. 17~Jun. 08, 2022
Test Specification:	ETSI EN 301 489-1 V2.2.3 :2019-11 ETSI EN 301 489-17 V3.2.4 :2020-09		
Test Result:	<p>The device described above is tested by EST Technology Co., Ltd.. The measurement results were contained in this test report and EST Technology Co., Ltd. was assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliance with the ETSI EN 301 489-1/-17 requirements.</p> <p>This report applies to above tested sample only and shall not be reproduced in part without written approval of EST Technology Co., Ltd. Date: Jun. 13, 2022</p>		
Prepared by:	Reviewed by:	Approved by:	
 Emily Cai / Assistant	 Seven Wang / Engineer	 Iceman.Hu / Manager	
Other Aspects:	N/A		
<i>Abbreviations: OK/P=passed fail/F=failed n.a/N=not applicable E.U.T=equipment under tested</i>			
<i>This test report is based on a single evaluation of one sample of above mentioned products ,It is not permitted to be duplicated in extracts without written approval of EST Technology Co., Ltd.</i>			

1.SUMMARY OF MEASUREMENTS AND RESULTS

1.1. Standard description

ETSI EN 301 489 -1 V2.2.3 (2019): ElectroMagnetic Compatibility (EMC) standard for radio equipment and services;Part 1: Common technical requirements;Harmonised Standard for ElectroMagnetic Compatibility.

ETSI EN 301 489-17 V3.2.4 (2020): ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for Broadband Data Transmission Systems; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU.

1.2. Compliance with ETSI EN301 489-1 & -17

CLAUSE	TEST PARAMETER	APPLICATION	BASIC STANDARF OR TEST METHOD	RESULTS
EMC emission				
8.2	Radiated emission	Enclosure of ancillary equipment	EN 55032: 2015	PASS
8.3	Conducted emission	DC power input/output port	EN 55032: 2015	N/A
8.4	Conducted emission	AC mains input/output port	EN 55032: 2015	PASS
8.5	Harmonic Current Emissions	AC mains input port	EN 61000-3-2: 2014	N/A
8.6	Voltage Fluctuation & Flicker	AC mains input port	EN 61000-3-3: 2013	N/A
8.7	Conducted emission	Wired network port	EN 55032: 2015	N/A
Immunity				
9.2	RF electromagnetic field	Enclosure	EN 61000-4-3: 2006+A1: 2008+A2: 2010	PASS
9.3	Electrostatic Discharge	Enclosure	EN 61000-4-2: 2009	PASS
9.4	Fast transients common mode	Signal, wired network and control ports, DC and AC power ports	EN 61000-4-4: 2012	N/A
9.5	RF Common mode	Signal, wired network and control ports, DC and AC power ports	EN 61000-4-6: 2014	N/A
9.6	Transients and Surges	DC power input ports for vehicular use	ISO 7637-2: 2004	N/A
9.7	Voltage dips and interruptions	AC mains power input ports	EN 61000-4-11: 2004	N/A
9.8	Surges, line to line and line to ground	AC mains power input ports, wired network ports	EN 61000-4-5: 2014+A1: 2017	N/A
N/A is an abbreviation for Not Applicable.				

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

Product Name	:	Door Bell	
Model Number	:	MD7L	
Modulation	:	IEEE 802.11b mode: DSSS(CCK/QPSK/BPSK) IEEE 802.11g/n mode: OFDM (BPSK/QPSK/16QAM/64QAM)	
Operation frequency	:	IEEE 802.11b/g/n HT20:2412MHz~2472MHz	
Number of channel	:	2.4G Band IEEE 802.11b/ g / n HT20: 13 Channels	
Antenna	:	Internal antenna	
		Frequency Range	Antenna
		2412MHz~2472MHz	2.0 dBi
Software	:	V1.0.X.XX	
Hardware	:	SP550C	
Temperature Range	:	-10°C ~ +50°C	

2.2. Test Facilities

EMC Lab : Certificated by CNAS, CHINA
Registration No.: L5288
This Certificate is valid until: November 12, 2023

Certificated by FCC, USA
Designation Number: CN1215
This Certificate is valid until: January 31, 2024

Certificated by A2LA, USA
Registration No.: 4366.01
This Certificate is valid until: January 31, 2024

Certificated by Industry Canada
CAB identifier No.: CN0035
This Certificate is valid until: January 31, 2024

Certificated by VCCI, Japan
Registration No.:C-14103; T-20073; R-13663;
R-20103; G-20097
Date of registration: Apr. 20, 2020
This Certificate is valid until: Apr. 19, 2023

Certificated by TUV Rheinland, Germany
Registration No.: UA 50413872 0001
Date of registration: July 31, 2018

Certificated by Intertek
Registration No.: 2011-RTL-L2-64
Date of registration: November 08, 2018

Name of Firm : EST Technology Co., Ltd.

Site Location : Chilingxiang, Qishantou, Santun, Houjie, Dongguan,
Guangdong, China

2.3. Measurement uncertainty

Test Item	Uncertainty
Uncertainty for Conduction emission test	±3.48dB
Uncertainty for spurious emissions test (30MHz-1GHz)	±4.60 dB(Polarize: H)
	±4.68 dB(Polarize: V)
Uncertainty for spurious emissions test (1GHz to 18GHz)	±4.96dB
Uncertainty for radio frequency	7×10^{-8}
Uncertainty for conducted RF Power	0.20dB
Uncertainty for Power density test	0.26dB

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

2.4. Assistant equipment used for test

2.4.1. iPad

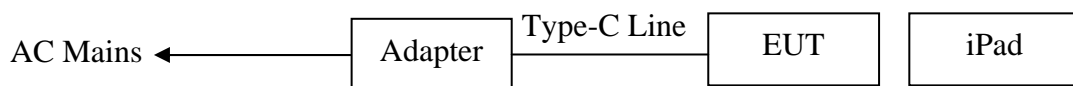
M / N : A1893
S / N : DMPY3KL5JF8K
Manufacturer : Apple

2.4.2. Adapter

M / N : A1357
Input : AC 100-240V, 50-60Hz, 0.45A
Output : DC 5V, 2A

Note: Don't configuration adapter when it sales on the Market, The adapter provided by the laboratory.

2.5. EUT Configuration and operation conditions for test.



(EUT: Door Bell)

1	Type-C Line	Unshielded, Detachable 0.5m
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2.6. Test mode

2.6.1. Charging + Working

2.6.2. Working

Note: The worst case has recorded in the report.

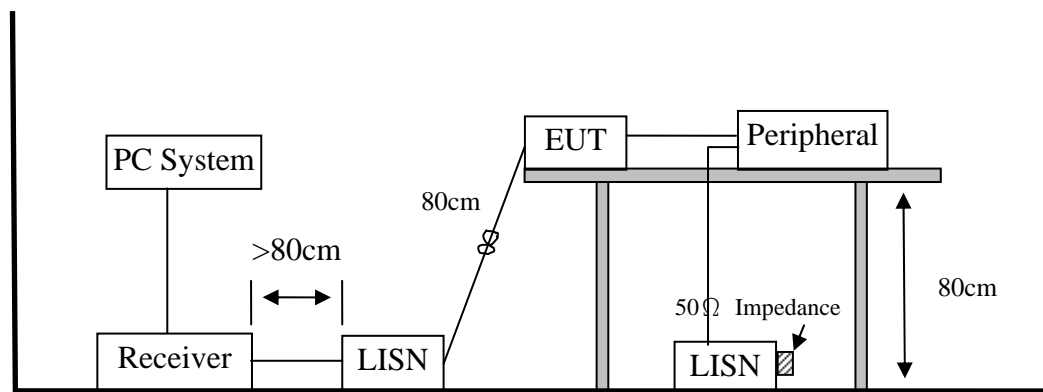
3. CONDUCTED DISTURBANCE AT MAINS TERMINALS TEST

3.1. Test Equipment

3.1.1. For AC Main Port

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESHS30	EST-E001	June 13,21	1 Year
V-LISN	SCHWABE	NNBM 8124	EST-E043	June 13,21	1 Year
V-LISN	SCHWABE	NNBM 8124	EST-E044	June 13,21	1 Year
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A
Calibration Lab: LISAI					

3.2. Block Diagram of Test Setup



3.3. Operating Condition of EUT

- 3.3.1. Setup the EUT and simulator as shown as Section 2.5.
- 3.3.2. Turned on the power of all equipment.
- 3.3.3. Reference 2.6.

3.4. Test Procedure

3.4.1. For AC Main Port (Main Terminal)

The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Power connected to the power mains through a line impedance stabilization network (L.I.S.N. 1#). This provided a 50-ohm coupling impedance for the EUT (Please refer to the block diagram of the test setup and photographs). Both sides of power line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to EN 55032 on conducted Disturbance test.

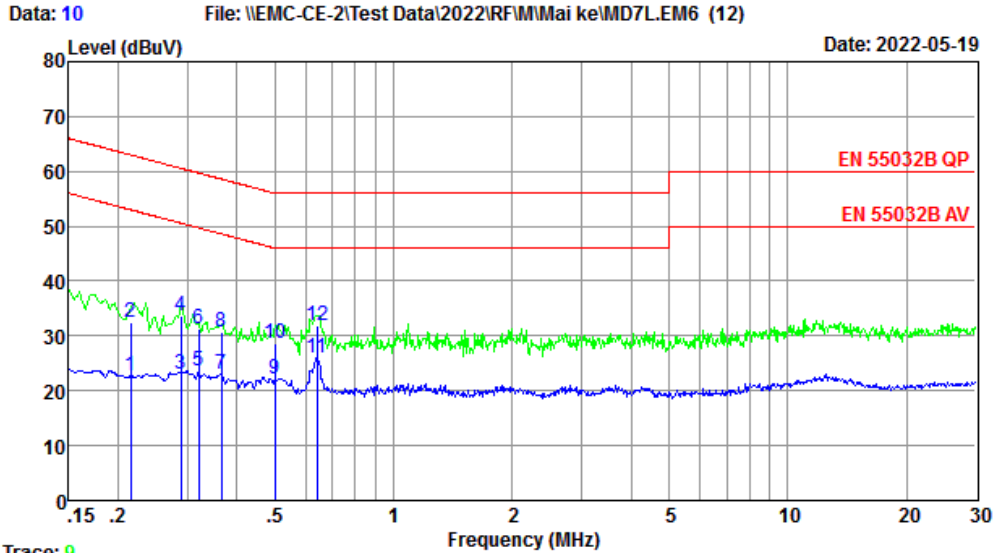
3.5. Conducted Disturbance at Mains Terminals Test Results

PASS. (All emissions not reported below are too low against the prescribed limits.)

3.6. Test Data

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Trace: 9
 Site no : 2#CE Shield Room Data no. : 10
 Env. / Ins. : Temp:22.8°C Humi:58% Press:101.30kPa LINE Phase : NEUTRAL
 Limit : EN 55032B QP
 Engineer : ZSX
 EUT : Door Bell
 Power : DC 5V From Adapter Input AC 230V/50Hz
 M/N : MD7L
 Test Mode : Working

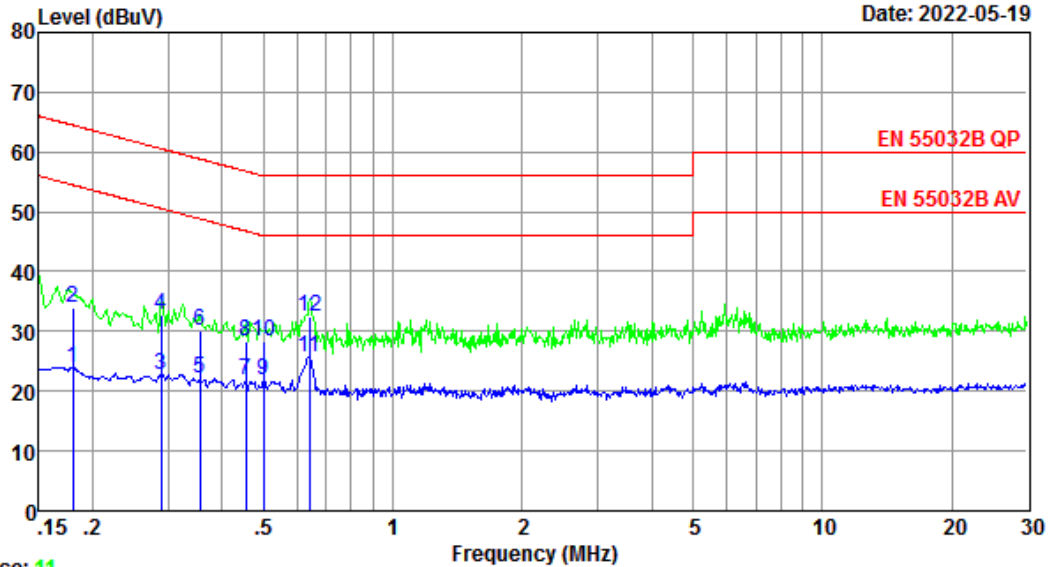
	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.2151	9.78	9.84	3.11	22.73	53.01	30.28	Average
2	0.2151	9.78	9.84	12.90	32.52	63.01	30.49	QP
3	0.2893	9.84	9.92	3.38	23.14	50.54	27.40	Average
4	0.2893	9.84	9.92	13.77	33.53	60.54	27.01	QP
5	0.3200	9.83	9.92	3.79	23.54	49.71	26.17	Average
6	0.3200	9.83	9.92	11.63	31.38	59.71	28.33	QP
7	0.3653	9.74	9.92	3.43	23.09	48.61	25.52	Average
8	0.3653	9.74	9.92	11.15	30.81	58.61	27.80	QP
9	0.4994	9.76	9.92	2.57	22.25	46.01	23.76	Average
10	0.4994	9.76	9.92	8.96	28.64	56.01	27.37	QP
11	0.6406	9.75	9.92	6.42	26.09	46.00	19.91	Average
12	0.6406	9.75	9.92	12.29	31.96	56.00	24.04	QP

Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading.
 2. Margin=Limit - Emission Level.
 3. If the average limit is met when using a quasi-peak detector,
 the EUT shall be deemed to meet both limits and measurement
 with average detector is unnecessary.



Data: 12 File: \\EMC-CE-2\Test Data\2022\RFMM\Mai ke\MD7L.EM6 (12)

Date: 2022-05-19



Trace: 11

Site no : 2#CE Shield Room Data no. : 12
 Env. / Ins. : Temp:22.8°C Humi:58% Press:101.30kPa LINE Phase : LINE
 Limit : EN 55032B QP
 Engineer : ZSX
 EUT : Door Bell
 Power : DC 5V From Adapter Input AC 230V/50Hz
 M/N : MD7L
 Test Mode : Working

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.1796	9.84	9.77	4.45	24.06	54.50	30.44	Average
2	0.1796	9.84	9.77	14.29	33.90	64.50	30.60	QP
3	0.2893	9.77	9.92	3.15	22.84	50.54	27.70	Average
4	0.2893	9.77	9.92	12.97	32.66	60.54	27.88	QP
5	0.3558	9.81	9.92	2.52	22.25	48.83	26.58	Average
6	0.3558	9.81	9.92	10.38	30.11	58.83	28.72	QP
7	0.4539	9.84	9.92	2.11	21.87	46.80	24.93	Average
8	0.4539	9.84	9.92	8.65	28.41	56.80	28.39	QP
9	0.4994	9.84	9.92	1.97	21.73	46.01	24.28	Average
10	0.4994	9.84	9.92	8.62	28.38	56.01	27.63	QP
11	0.6406	9.83	9.92	5.87	25.62	46.00	20.38	Average
12	0.6406	9.83	9.92	12.62	32.37	56.00	23.63	QP

Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading.
 2. Margin=Limit - Emission Level.
 3. If the average limit is met when using a quasi-peak detector,
 the EUT shall be deemed to meet both limits and measurement
 with average detector is unnecessary.

4.RADIATED EMISSION TEST

4.1. Test Equipment

4.1.1.For frequency range 30MHz~1GHz (At Anechoic Chamber)

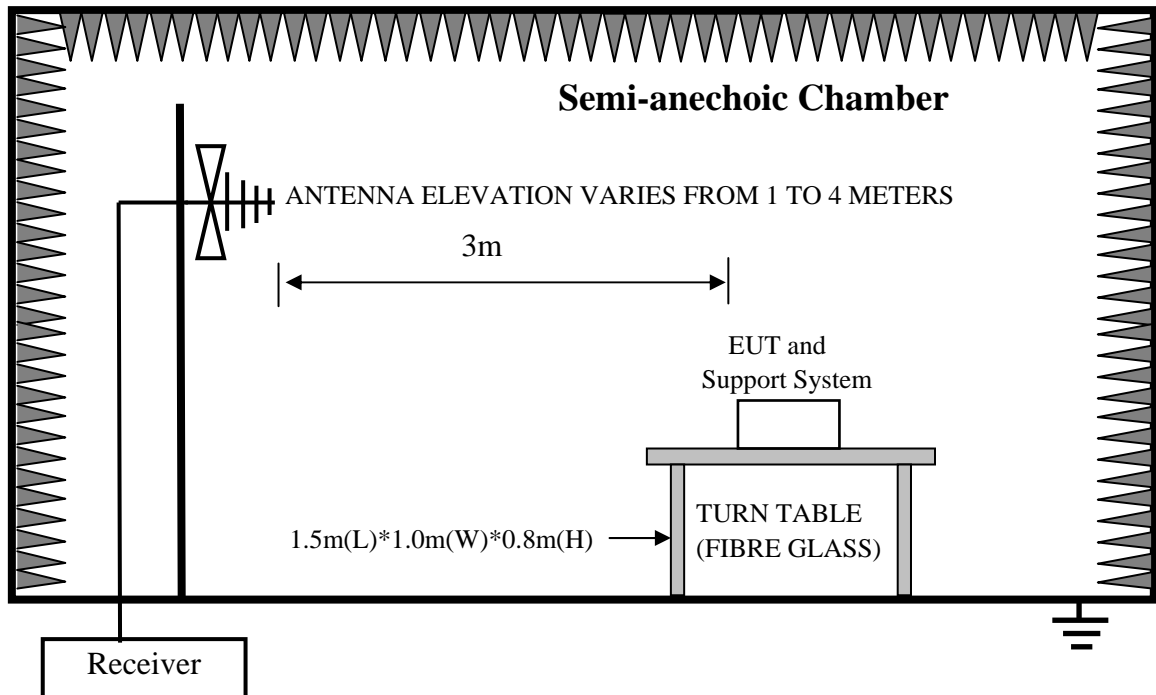
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESR7	EST-E047	June 13,21	1 Year
Bilog Antenna	Teseq	CBL 6111D	EST-E034	June 13,21	1 Year
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A
Calibration Lab: LISAI					

4.1.2.For frequency range 1GHz~6GHz (At Anechoic Chamber)

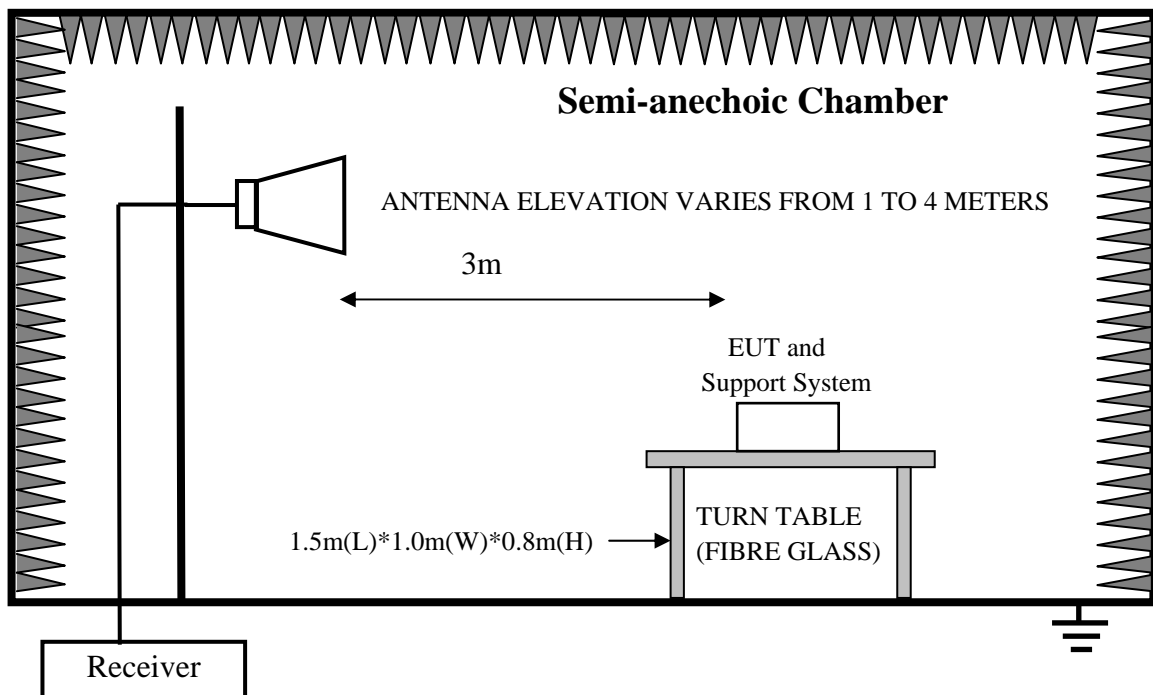
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESR7	EST-E047	June 13,21	1 Year
Horn Antenna	SCHWARZBECK	BBHA 9120 D	EST-E031	June 13,21	1 Year
Signal Amplifier	SCHWARZBECK	BBV9718	EST-E032	June 13,21	1 Year
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A
Calibration Lab: LISAI					

4.2. Block Diagram of Test Setup

4.2.1. In Anechoic Chamber Test Setup Diagram for 30MHz~1000MHz



4.2.2. In Anechoic Chamber Test Setup Diagram for 1-6GHz



4.3. Operating Condition of EUT

4.3.1. Setup the EUT and simulator as shown as Section 2.5.

4.3.2. Turned on the power of all equipment.

4.3.3. Reference 2.6.

4.4. Test Procedure

The EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber. An antenna was located 3m or 10m from the EUT on an adjustable mast. A pre-scan was first performed in order to find prominent radiated emissions. For final emissions measurements at each frequency of interest, the EUT were rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all the interface cables were changed according to EN 301489 on Radiated Disturbance test.

The bandwidth setting on the test receiver (R&S TEST RECEIVER ESCI) is 120 kHz.

The resolution bandwidth of the Spectrum Analyzer ESR7 was set at 1MHz. (For above 1GHz)

The frequency range from 30MHz to 1000MHz was pre-scanned with a peak detector and all final readings of measurement from Test Receiver are Quasi-Peak values.

The frequency range from 1GHz to 6GHz was checked with peak and average detector, measurement distance is 3m in 10m chamber.

4.5. Test Results

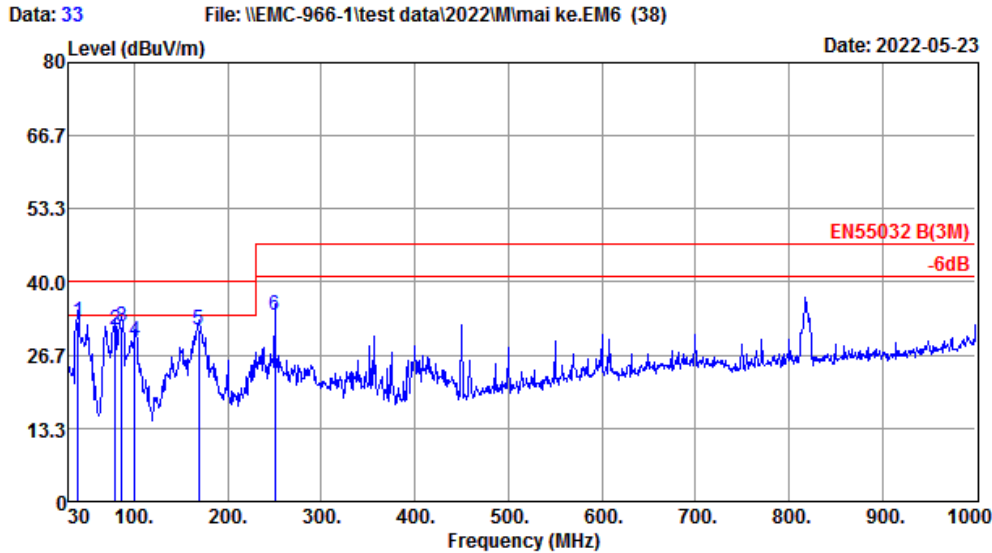
PASS. (All emissions not reported below are too low against the prescribed limits.)

4.6. TEST DATA

30MHz-1GHz

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Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



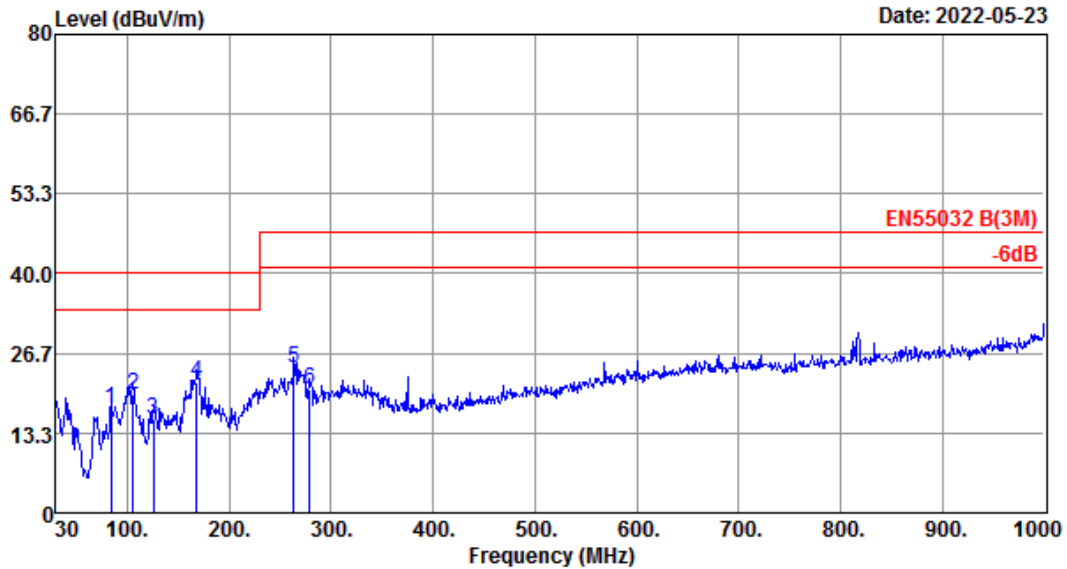
Site no. : 1# 966 Chamber Data no. : 33
 Dis. / Ant. : 3m 37062 Ant. pol. : VERTICAL
 Limit : EN55032 B(3M)
 Env. / Ins. : Temp:23.1°C;Humi:52%;Press:101.52kPa
 Engineer : MRS
 EUT : Door Bell
 Power : DC 5V From Adapter Input AC 230V/50Hz
 M/N : MD7L
 Test Mode : Charging+Working

	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	39.70	12.70	0.61	19.43	32.74	40.00	7.26	QP
2	79.47	7.65	0.94	22.80	31.39	40.00	8.61	QP
3	86.26	8.82	0.92	22.05	31.79	40.00	8.21	QP
4	100.81	10.18	0.98	18.05	29.21	40.00	10.79	QP
5	168.71	10.00	1.20	20.00	31.20	40.00	8.80	QP
6	250.19	12.70	1.54	19.85	34.09	47.00	12.91	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

Data: 34 File: \\EMC-966-1\test data\2022\IM\mai ke.EM6 (38)

Date: 2022-05-23



Site no. : 1# 966 Chamber Data no. : 34
 Dis. / Ant. : 3m 37062 Ant. pol. : HORIZONTAL
 Limit : EN55032 B(3M)
 Env. / Ins. : Temp:23.1°C;Humi:52%;Press:101.52kPa
 Engineer : MRS
 EUT : Door Bell
 Power : DC 5V From Adapter Input AC 230V/50Hz
 M/N : MD7L
 Test Mode : Charging+Working

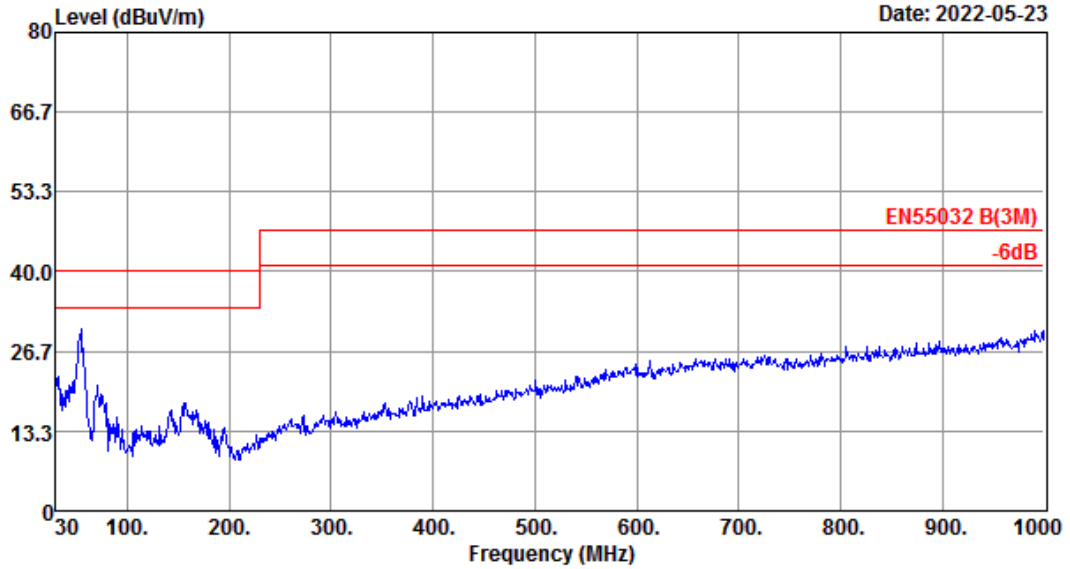
	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	84.32	8.44	0.96	7.92	17.32	40.00	22.68	QP
2	105.66	10.56	1.12	8.07	19.75	40.00	20.25	QP
3	126.03	11.82	1.04	2.74	15.60	40.00	24.40	QP
4	167.74	10.20	1.17	10.49	21.86	40.00	18.14	QP
5	263.77	13.90	1.55	8.64	24.09	47.00	22.91	QP
6	279.29	12.60	1.61	6.35	20.56	47.00	26.44	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

Data: 37

File: \\EMC-966-1\test data\2022\IM\mai ke.EM6 (38)

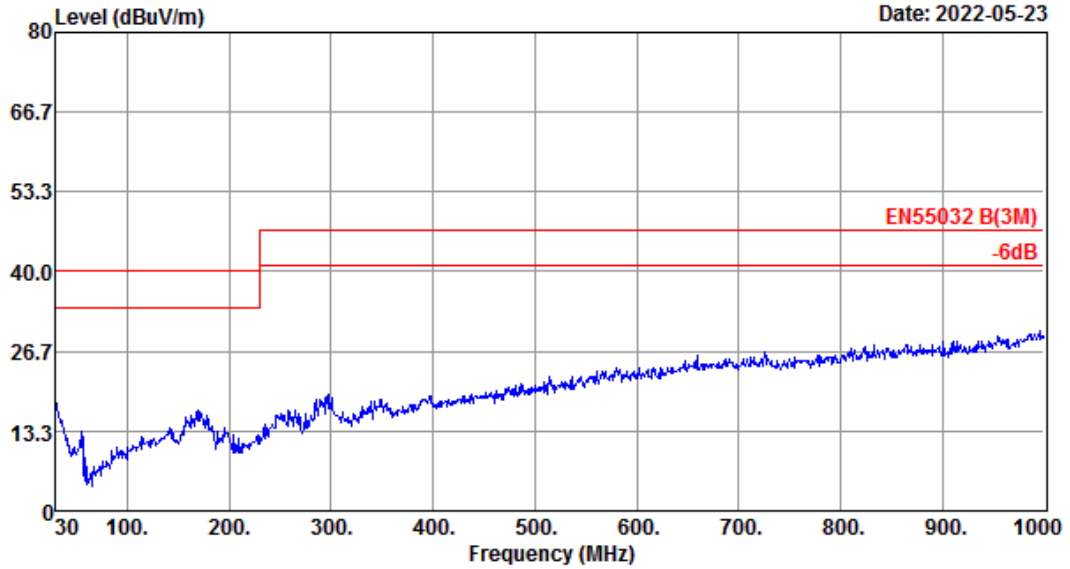
Date: 2022-05-23



Site no. : 1# 966 Chamber Data no. : 37
 Dis. / Ant. : 3m 37062 Ant. pol. : VERTICAL
 Limit : EN55032 B(3M)
 Env. / Ins. : Temp:23.1°C;Humi:52%;Press:101.52kPa
 Engineer : MRS
 EUT : Door Bell
 Power : DC 3.7V From Battery
 M/N : MD7L
 Test Mode : Working

Data: 38 File: \\EMC-966-1\test data\2022\IM\mai ke.EM6 (38)

Date: 2022-05-23

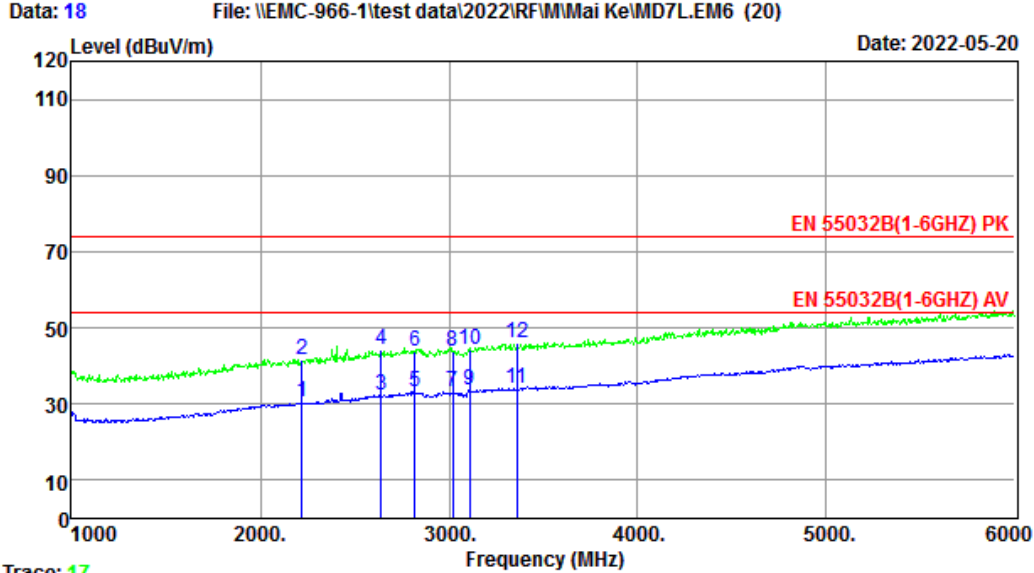


Site no. : 1# 966 Chamber Data no. : 38
 Dis. / Ant. : 3m 37062 Ant. pol. : HORIZONTAL
 Limit : EN55032 B(3M)
 Env. / Ins. : Temp:23.1°C;Humi:52%;Press:101.52kPa
 Engineer : MRS
 EUT : Door Bell
 Power : DC 3.7V From Battery
 M/N : MD7L
 Test Mode : Working

Above 1GHz

EST Technology

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Trace: 17
 Site no. : 1# 966 Chamber Data no. : 18
 Dis. / Ant. : 3m 9120D 1-18G Ant. pol. : HORIZONTAL
 Limit : EN 55032B(1-6GHZ) PK
 Env. / Ins. : Temp:24.2℃;Humi:51%;Press:101.82kPa
 Engineer : MRS
 EUT : Door Bell
 Power : DC 5V From Adapter Input AC 230V/50Hz
 M/N : MD7L
 Test Mode : Charging+Working

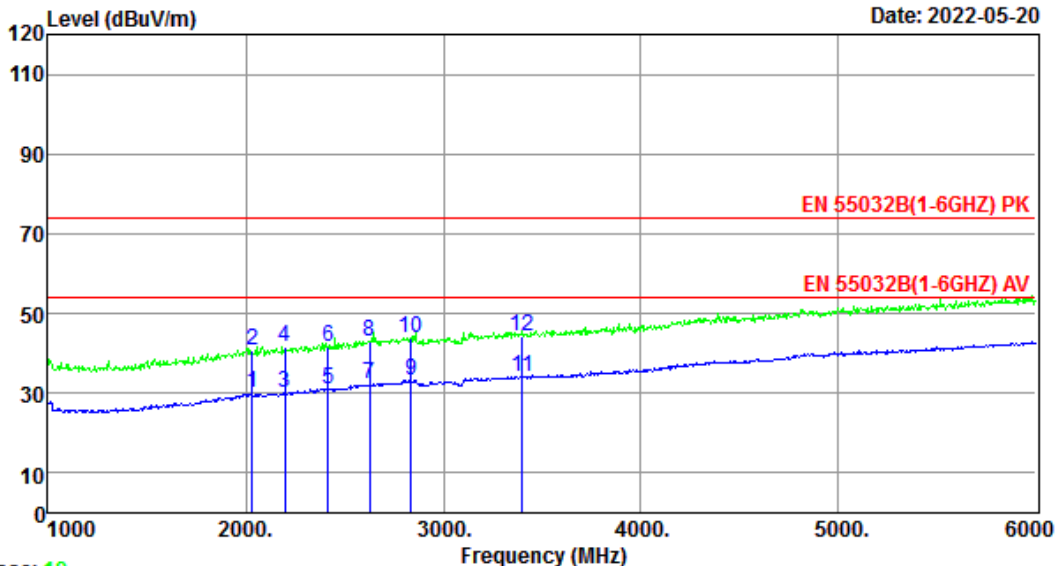
	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2220.00	27.12	2.95	0.29	30.36	50.00	19.64	Average
2	2220.00	27.12	2.95	11.60	41.67	70.00	28.33	Peak
3	2640.00	27.80	3.34	1.17	32.31	50.00	17.69	Average
4	2640.00	27.80	3.34	13.29	44.43	70.00	25.57	Peak
5	2820.00	28.35	3.51	1.45	33.31	50.00	16.69	Average
6	2820.00	28.35	3.51	11.95	43.81	70.00	26.19	Peak
7	3020.00	28.90	3.72	0.47	33.09	54.00	20.91	Average
8	3020.00	28.90	3.72	11.31	43.93	74.00	30.07	Peak
9	3110.00	28.88	3.85	1.10	33.83	54.00	20.17	Average
10	3110.00	28.88	3.85	11.70	44.43	74.00	29.57	Peak
11	3360.00	28.83	4.26	1.16	34.25	54.00	19.75	Average
12	3360.00	28.83	4.26	12.95	46.04	74.00	27.96	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.



Data: 20 File: \\EMC-966-1\test data\2022\RFMM\Mai Ke\MD7L\EM6 (20)

Date: 2022-05-20



Trace: 19

Site no. : 1# 966 Chamber Data no. : 20
 Dis. / Ant. : 3m 9120D 1-18G Ant. pol. : VERTICAL
 Limit : EN 55032B(1-6GHZ) PK
 Env. / Ins. : Temp:24.2°C;Humi:51%;Press:101.82kPa
 Engineer : MRS
 EUT : Door Bell
 Power : DC 5V From Adapter Input AC 230V/50Hz
 M/N : MD7L
 Test Mode : Charging+Working

	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2035.00	26.93	2.77	0.19	29.89	50.00	20.11	Average
2	2035.00	26.93	2.77	10.91	40.61	70.00	29.39	Peak
3	2200.00	27.11	2.93	0.23	30.27	50.00	19.73	Average
4	2200.00	27.11	2.93	11.61	41.65	70.00	28.35	Peak
5	2415.00	27.31	3.13	0.66	31.10	50.00	18.90	Average
6	2415.00	27.31	3.13	11.32	41.76	70.00	28.24	Peak
7	2625.00	27.80	3.34	1.04	32.18	50.00	17.82	Average
8	2625.00	27.80	3.34	11.95	43.09	70.00	26.91	Peak
9	2835.00	28.40	3.53	1.22	33.15	50.00	16.85	Average
10	2835.00	28.40	3.53	11.92	43.85	70.00	26.15	Peak
11	3400.00	28.82	4.32	1.17	34.31	54.00	19.69	Average
12	3400.00	28.82	4.32	11.36	44.50	74.00	29.50	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

5. IMMUNITY PERFORMANCE CRITERIA

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 level by its manufacturer or the requestor of the test, or the agreed between the manufacturer and the purchaser of the product.

Definition related to the performance level:

1. Based on the used product standard
2. Based on the declaration of the manufacturer, requestor or purchaser

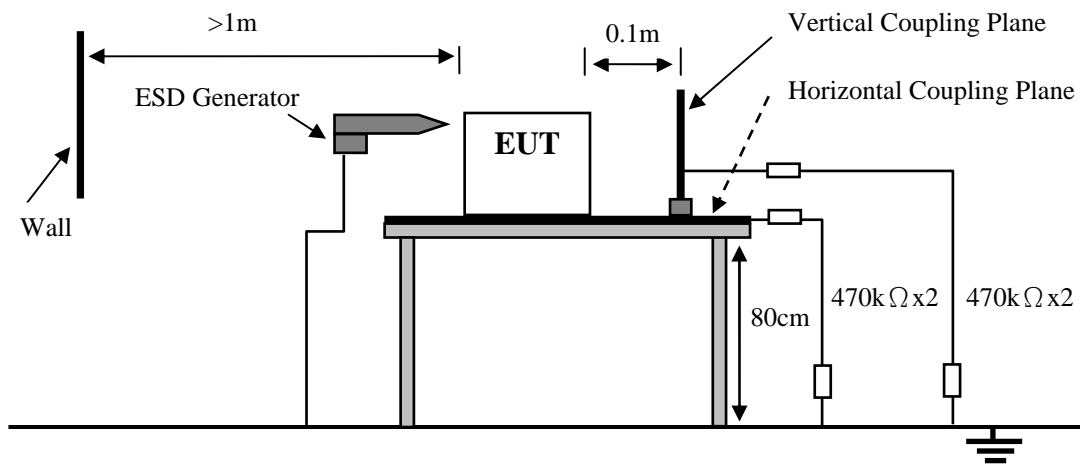
Criteria	During test	After test
A	Shall operate as intended. May show degradation of performance (see note 1). Shall be no loss of function. Shall be no unintentional transmissions.	Shall operate as intended. Shall be no degradation of performance (see note 2). Shall be no loss of function. Shall be no loss of stored data or user programmable functions.
B	May show loss of function (one or more). May show degradation of performance (see note 1). No unintentional transmissions.	Functions shall be self-recoverable. Shall operate as intended after recovering. Shall be no degradation of performance (see note 2). Shall be no loss of stored data or user programmable functions.
C	May be loss of function (one or more).	Functions shall be recoverable by the operator. Shall operate as intended after recovering. Shall be no degradation of performance (see note 2).
<p>NOTE 1: Degradation of performance during the test is understood as a degradation to a level not below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some cases the specified minimum performance level may be replaced by a permissible degradation of performance. If the minimum performance level or the permissible performance degradation is not specified by the manufacturer then either of these may be derived from the product description and documentation (including leaflets and advertising) and what the user may reasonably expect from the apparatus if used as intended.</p> <p>NOTE 2: No degradation of performance after the test is understood as no degradation below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some cases the specified minimum performance level may be replaced by a permissible degradation of performance. After the test no change of actual operating data or user retrievable data is allowed. If the minimum performance level or the permissible performance degradation is not specified by the manufacturer then either of these may be derived from the product description and documentation (including leaflets and advertising) and what the user may reasonably expect from the apparatus if used as intended.</p>		

6. ELECTROSTATIC DISCHARGE IMMUNITY TEST

6.1. Test Equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
ESD Tester	Tesq	NSG437	EST-E073	June 13,21	1 Year
Calibration Lab: LISAI					

6.2. Block Diagram of Test Setup



6.3. Test Levels and Performance Criteria

Severity Level	Test Voltage Contact Discharge (kV)	Test Voltage Air Discharge (kV)	Performance criterion
1.	2	2	B
2.	4	4	
3.	6	8	
4.	8	15	
X	Special	Special	

6.4. Operating Condition of EUT

Refer to 2.6.

6.5. Test Procedure

6.5.1. Air Discharge:

The test was applied on non-conductive surfaces of EUT. The round discharge tip of the discharge electrode was approached as fast as possible to touch the EUT. After each discharge, the discharge electrode was removed from the EUT. The generator was re-triggered for a new single discharge and repeated 20 times for each pre-selected test point. This procedure was repeated until all the air discharge completed

6.5.2. Contact Discharge:

All the procedure was same as Section 8.7.1. except that the generator was re-triggered for a new single discharge and repeated 50 times for each pre-selected test point. The tip of the discharge electrode was touching the EUT before the discharge switch was operated.

6.5.3. Indirect discharge for horizontal coupling plane

At least 20 single discharges were applied to the horizontal coupling plane, at points on each side of the EUT. The discharge electrode positions vertically at a distance of 0.1m from the EUT and with the discharge electrode touching the coupling plane.

6.5.4. Indirect discharge for vertical coupling plane

At least 20 single discharges were applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 0.5m, was placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges were applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

6.6. Test Information

Applicant	:	Zhuhai Gotech Intelligent Technology Co., Ltd.
EUT	:	Door Bell
M/N	:	MD7L
Test Voltage	:	DC 5V From Adapter Input AC 230V/50Hz; DC 3.7V From Battery
Test Engineer	:	Viking
Test Date	:	2022-06-06
Temperature	:	24.5°C
Humidity	:	49%
Pressure	:	101.10kPa
Test Mode	:	Refer to 2.6
Required Performance	:	B
Actual Performance	:	B

6.7. Test Results

Air Discharge: $\pm 2\text{kV}$ $\pm 4\text{kV}$ $\pm 8\text{kV}$ # For Air Discharge each Point Positive 10 times and negative 10 times discharge.
 Contact Discharge: $\pm 2\text{kV}$ $\pm 4\text{kV}$ # For Contact Discharge each point positive 25 times and negative 25 times discharge
 For the time interval between successive single discharges an initial value of one second.

Discharge Voltage (kV)	Type of discharge	Dischargeable Points	Performance		Result (Pass/Fail)
			Required	Observation	
± 2	Contact	1,2	B	B	Pass
± 4	Contact	1,2	B	B	Pass
± 2	Air	3,4	B	B	Pass
± 4	Air	3,4	B	B	Pass
± 8	Air	3,4	B	B	Pass
± 2	HCP-Bottom	Edge of the HCP	B	B	Pass
± 2	VCP-Front	Center of the VCP	B	B	Pass
± 2	VCP-Left	Center of the VCP	B	B	Pass
± 2	VCP-Back	Center of the VCP	B	B	Pass
± 2	VCP-Right	Center of the VCP	B	B	Pass
± 4	HCP-Bottom	Edge of the HCP	B	B	Pass
± 4	VCP-Front	Center of the VCP	B	B	Pass
± 4	VCP-Left	Center of the VCP	B	B	Pass
± 4	VCP-Back	Center of the VCP	B	B	Pass
± 4	VCP-Right	Center of the VCP	B	B	Pass
Discharge Points Description					
<u>1</u>	Screw				
<u>2</u>	Type-C Port				
<u>3</u>	Type-C Port				
<u>4</u>	Slot				
Note:					
1、 The screen was flashing during the test, but self-recoverable after the test.					

Discharge was considered on Contact and Air and Horizontal Coupling Plane (HCP) and Vertical Coupling Plane (VCP).

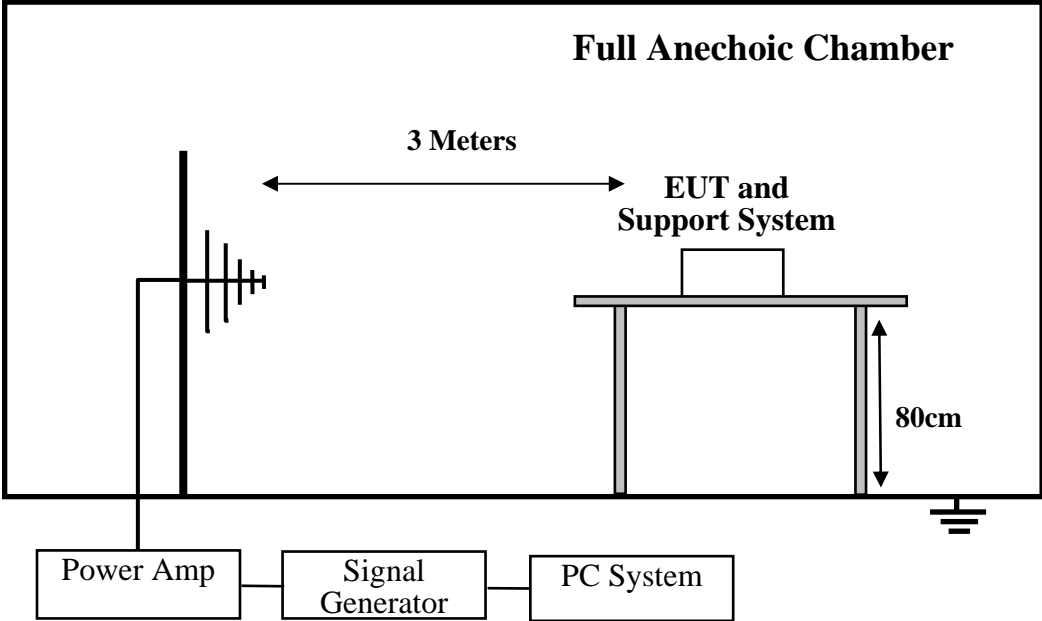
7. RF FIELD STRENGTH SUSCEPTIBILITY TEST

7.1. Test Equipment

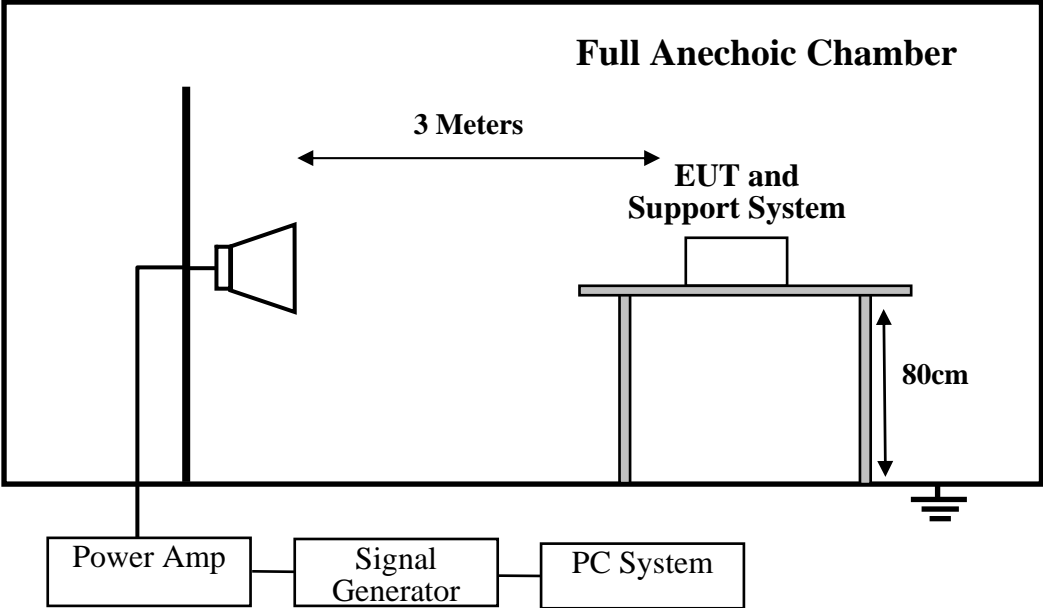
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Signal Generator	Agilent	N5181A	EST-E060	June 13,21	1 Year
Power Amplifier	SKET	HAP801000M-250 W	EST-E061	N/A	N/A
Power Amplifier	SKET	HAP0103G-75W	EST-E062	N/A	N/A
Power Amplifier	SKET	HAP0306G-50W	EST-E063	N/A	N/A
Power Meter	Agilent	E4419B	EST-E064	June 13,21	1 Year
Power sensor	Agilent	E9301A	EST-E065	June 13,21	1 Year
Power sensor	HP	E9301A	EST-E066	June 13,21	1 Year
Antenna	Schwarzbeck	STLP 9129	EST-E059	N/A	N/A
E-Field Probe	Narda	EP-601	EST-E067	June 13,21	1 Year
Test Software	SKET	EMC-S	V1.2.0.48	N/A	N/A
Calibration Lab: LISAI					

7.2. Block Diagram of Test Setup

Frequency For 80-1000MHz



Frequency For 1.0-6.0GHz



7.3. Test Severity Level and Performance Criteria

Severity Level	Test Field Strength V/m	Performance Criteria
1.	1	A
2.	3	
3.	10	
X.	Special	

7.4. Operating Condition of EUT

Refer to 2.6

7.5. Test Procedure

The field sensor is placed on the EUT table (0.8 meter above the ground) which is 3 meters (for frequency range 80MHz-1GHz) and 1 meters (for 1.0GHz-6.0GHz) away from the transmitting antenna. Through the signal generator, power amplifier and transmitting antenna to produce a uniformity field strength (3V/m measured by field sensor) around the EUT table from frequency range 80MHz-1000MHz, 1.0GHz-6.0GHz and records the signal generator's output level at the same time for whole measured frequency range. Then, put EUT and its simulators on the EUT turn table and keep them 3 meters away from the transmitting antenna which is mounted on an antenna tower and fixes at 3 meter height above the ground. Using the recorded signal generator's output level to measure the EUT from frequency range 80MHz-1000MHz, 1.0GHz-6.0GHz and both horizontal & vertical polarization of antenna must be set and measured. Each of the four sides of EUT must be faced this transmitting antenna and measures individually.

All the scanning conditions are as follows:

Test conditions	
Frequency	80MHz-1GHz, 1.0GHz—6.0GHz
Frequency increments step	1% of momentary used
Test level	3V/m (unmodulated)
Dwell time	3s
Test signal	80% amplitude modulated by 1kHz sinusoidal audio signal

7.6. Test Information

Applicant	:	Zhuhai Gotech Intelligent Technology Co., Ltd.
EUT	:	Door Bell
M/N	:	MD7L
Test Voltage	:	DC 5V From Adapter Input AC 230V/50Hz; DC 3.7V From Battery
Test Engineer	:	Viking
Test Date	:	2022-06-06
Temperature	:	24.9°C
Humidity	:	51%
Pressure	:	101.10kPa
Test Mode	:	Refer to 2.6
Required Performance	:	A
Actual Performance	:	A

7.7. Test Results

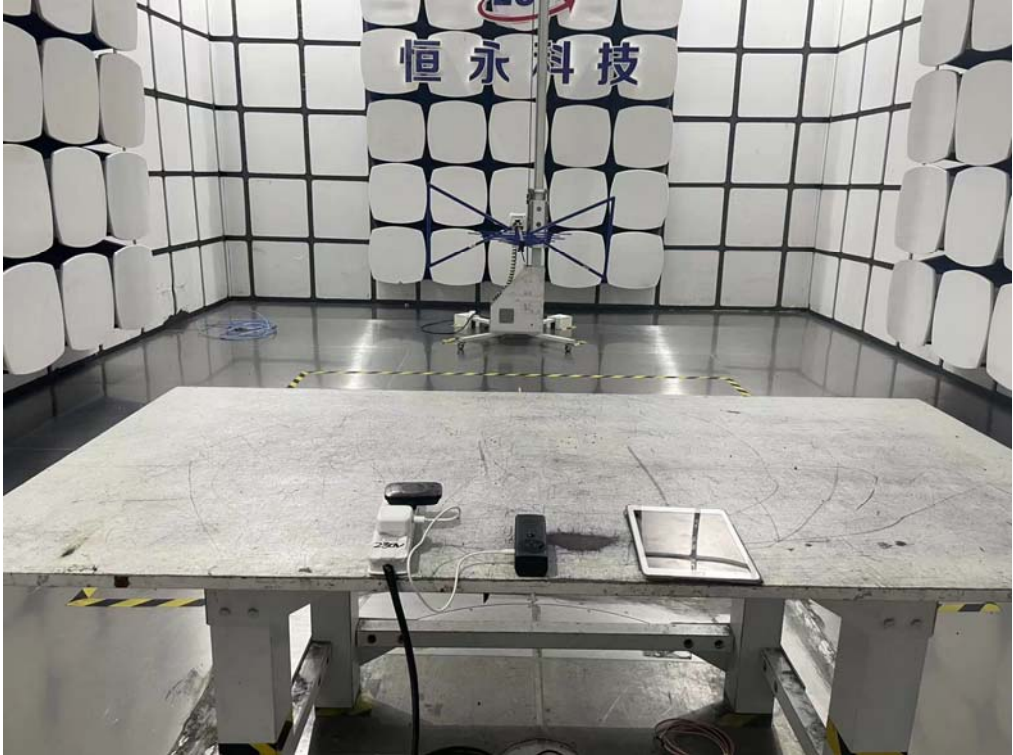
Modulation: <input checked="" type="checkbox"/> AM <input type="checkbox"/> Pulse <input type="checkbox"/> none 1 kHz 80%					
Frequency Range :80 MHz -1000MHz					
EUT vs Antenna Position	Test antenna :Horizontal		Test antenna :Vertical		Result (Pass / Fail)
	Required	Observation	Required	Observation	
Front	A	A	A	A	Pass
Right	A	A	A	A	Pass
Rear	A	A	A	A	Pass
Left	A	A	A	A	Pass
Performance: There was no change compared with initial operation during the test.					
Frequency Range : 1.0GHz—6.0GHz					
EUT vs Antenna Position	Test antenna :Horizontal		Test antenna :Vertical		Result (Pass / Fail)
	Required	Observation	Required	Observation	
Front	A	A	A	A	Pass
Right	A	A	A	A	Pass
Rear	A	A	A	A	Pass
Left	A	A	A	A	Pass
Note:					
1、 There was no change compared with initial operation during the test.					

8. PHOTOGRAPHS OF TEST SETUP

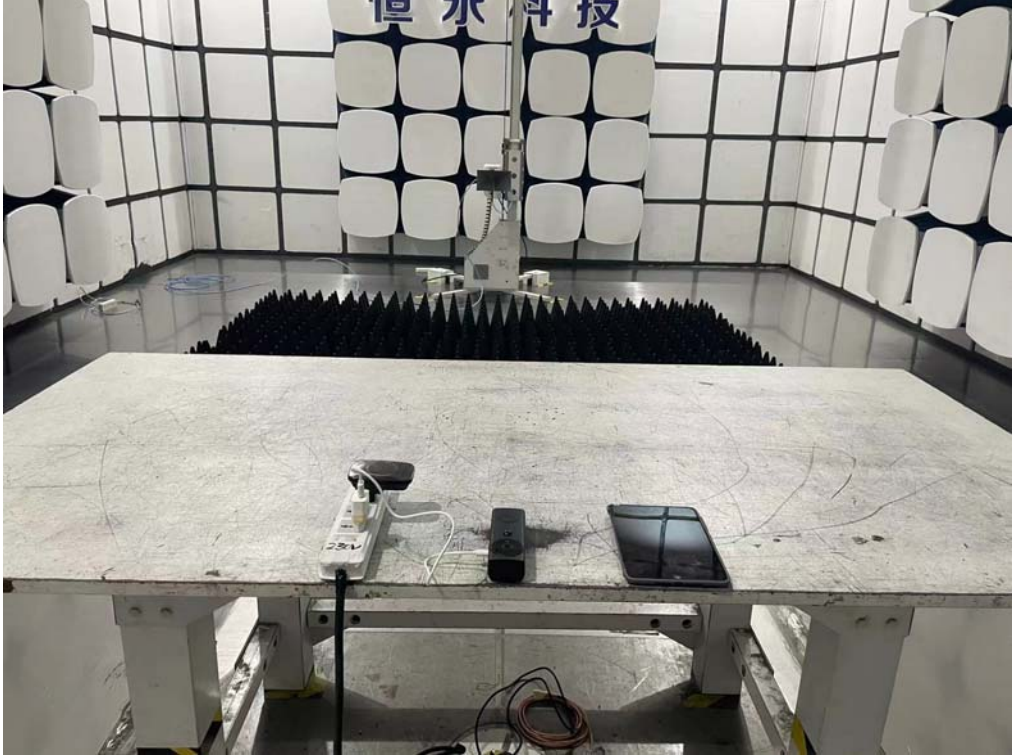
8.1. Set-up for Conducted disturbance at mains terminals test



8.2. Set-up for Radiated(30MHz-1GHz) test



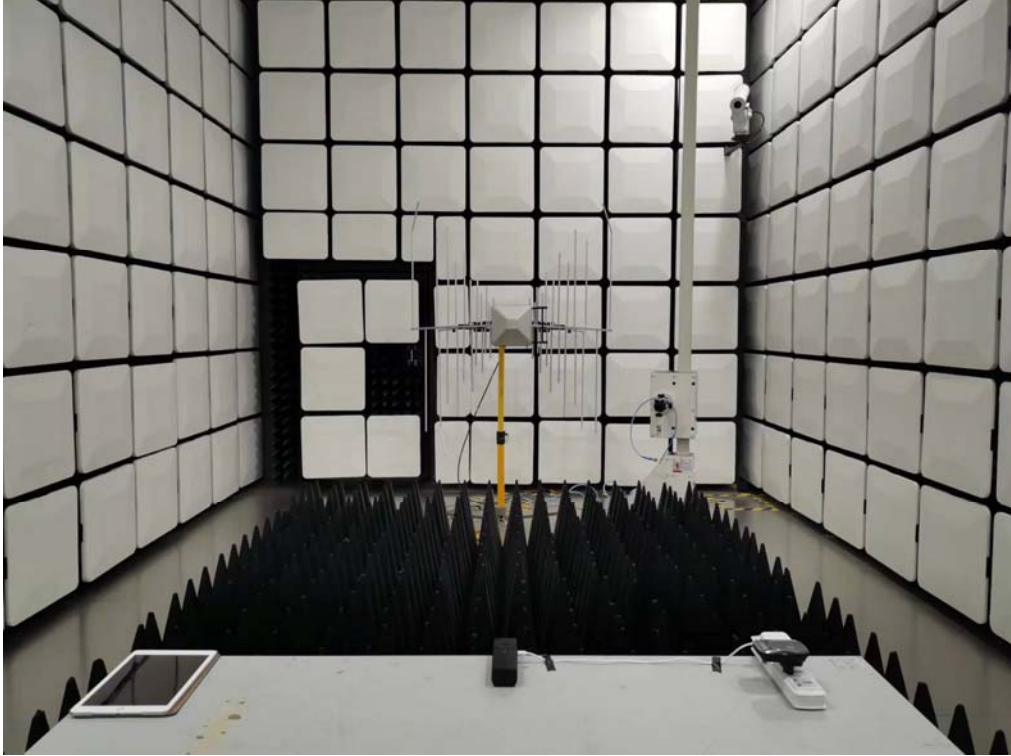
8.3. Set-up for Radiated(Above 1GHz) test



8.4. Set-up for Electrostatic discharge immunity test



8.5. Set-up for RF field strength susceptibility test



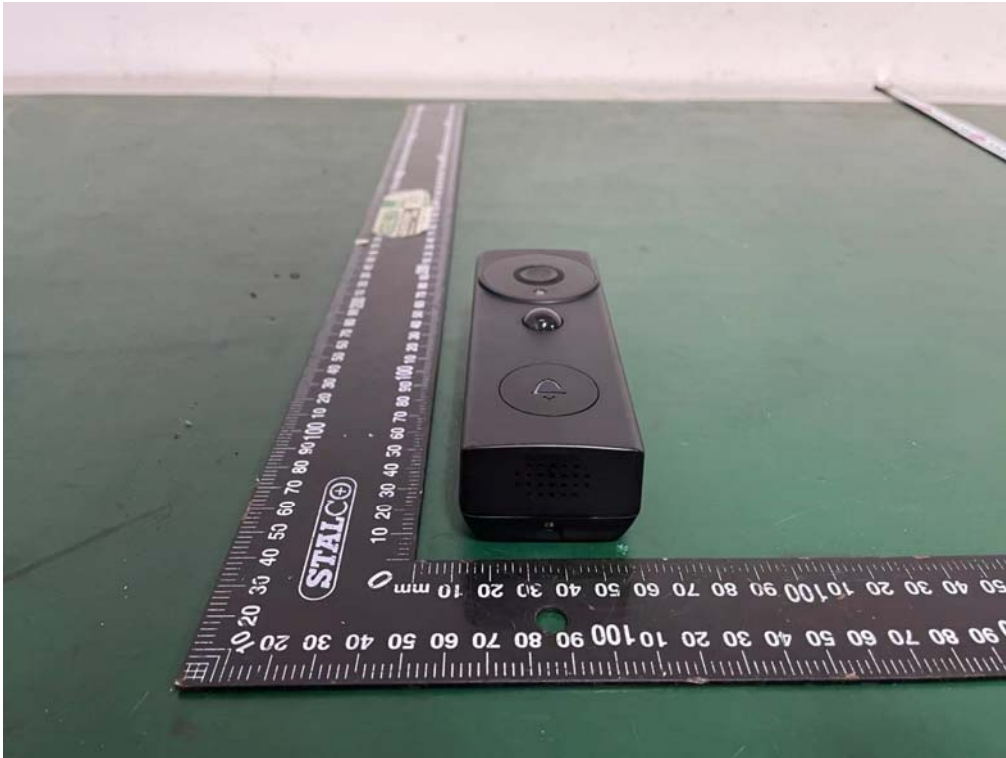
9.PHOTOGRAPHS OF EUT

External Photos
M/N: MD7L



External Photos

M/N: MD7L



External Photos

M/N: MD7L



External Photos

M/N: MD7L



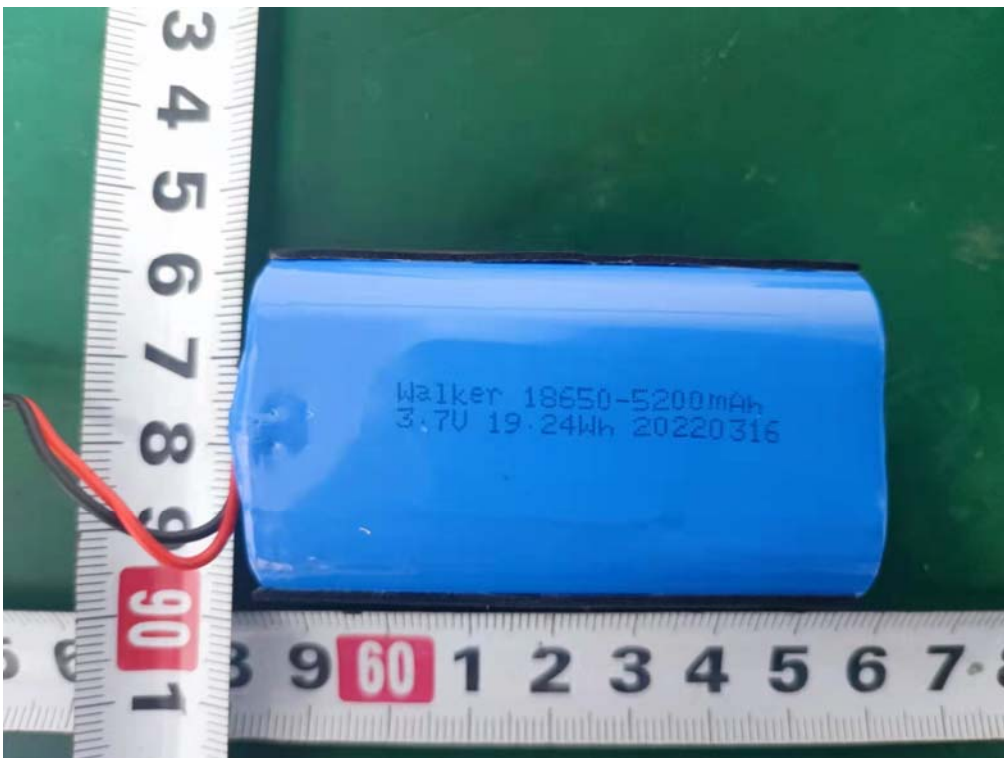
External Photos

M/N: MD7L



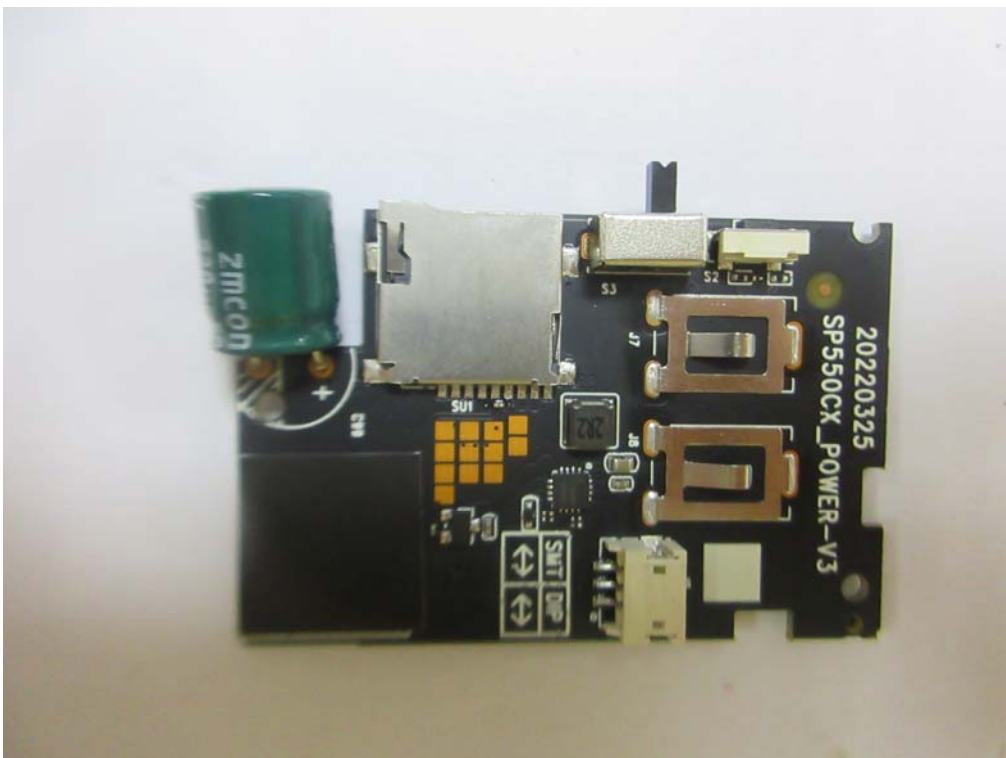
Internal Photos

M/N: MD7L



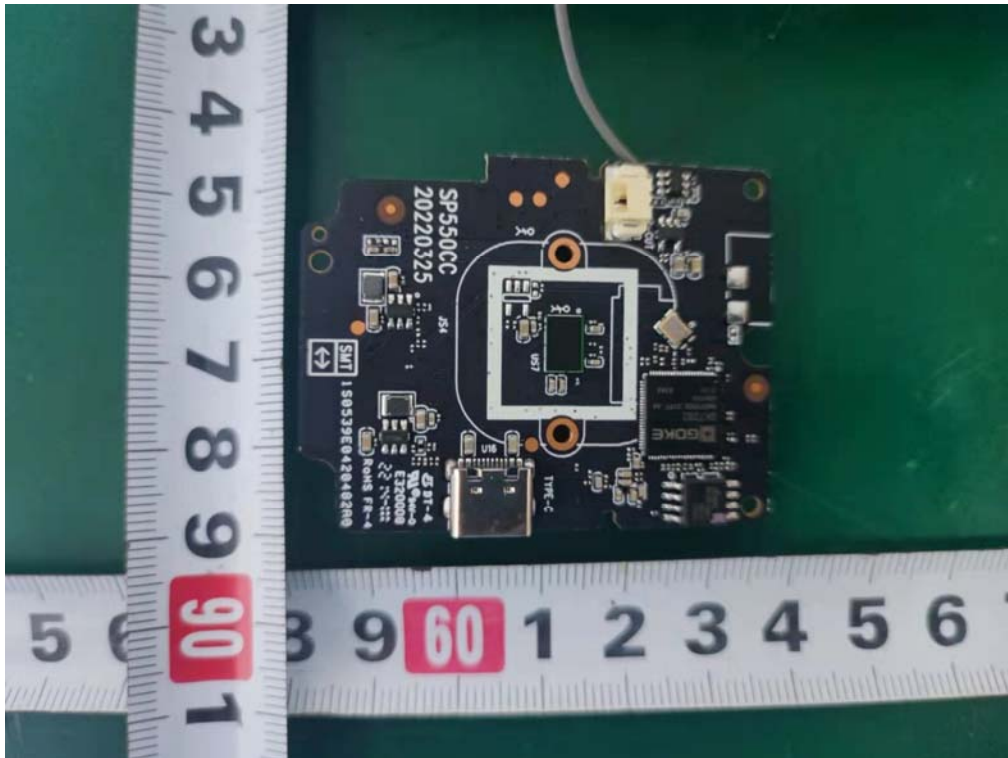
Internal Photos

M/N: MD7L



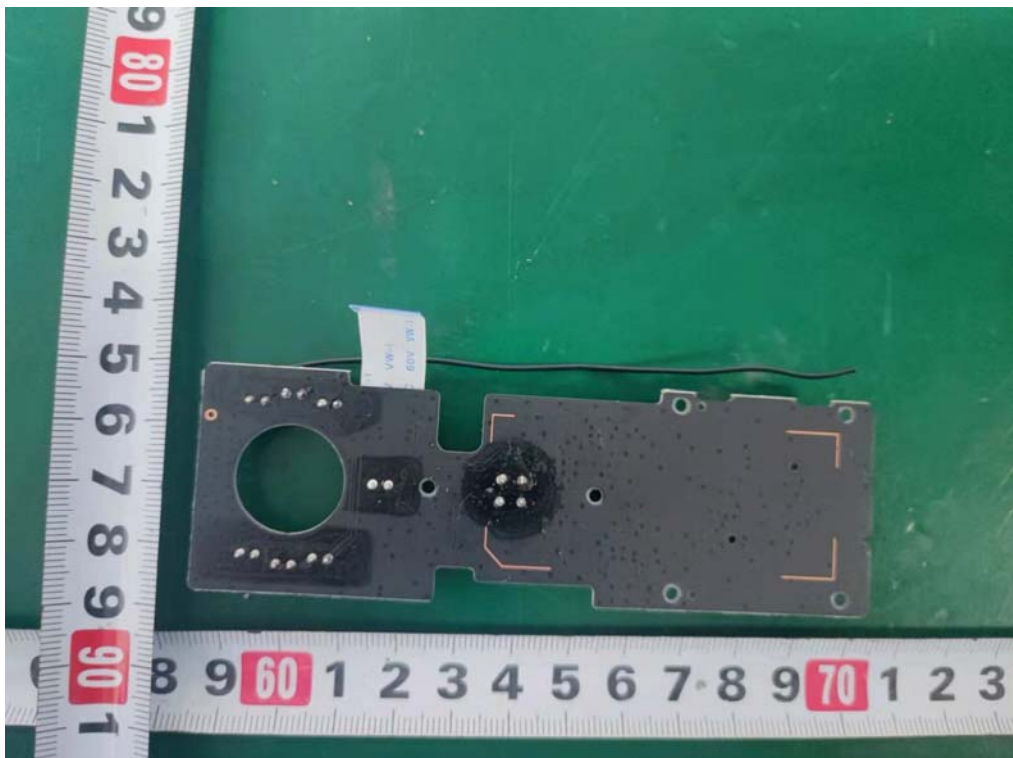
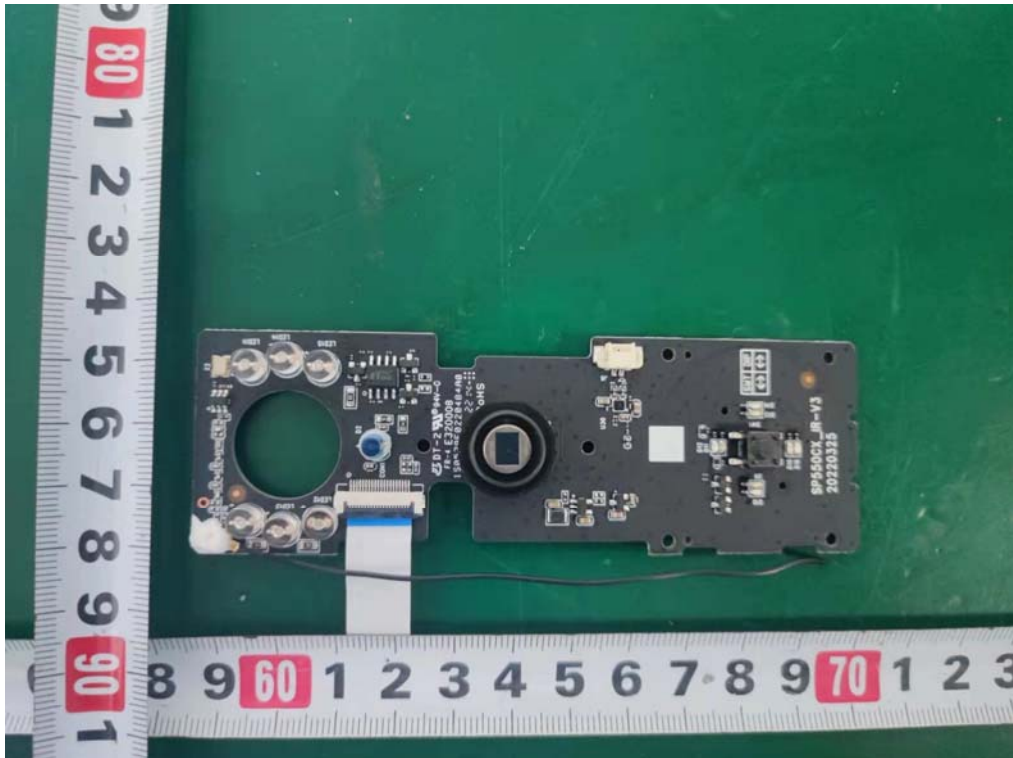
Internal Photos

M/N: MD7L



Internal Photos

M/N: MD7L



Internal Photos

M/N: MD7L



Wi-Fi
Antenna

End of Test Report