

# EMC Test Report



**Report No.:** LAB-QJRZ220914EMCB1

**Product:** KEYBOADR AND MOUSE ADAPTER

**Trade Name:** Mingpin

**Model Name:** MB-658P(KX), B-658(KMIX), B-659(KBOX), B-K3, MB-209, B-209P, MB-657, B-656,MB-655, IX, MIX3, UBOX , P10, B-676, MB-676P, B-656P,MB-657P, B-103, MB-655P

**Test date:** Apr 09,2021 to Apr, 13,2024

**Report date:** **Apr, 13,2024**

**Prepared for:** Shenzhen Gamtec Technology Development Co.,Ltd.  
No.5th, Jinyuan, Shancheng Industry Zone, Shiyuan Town,  
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## 1 Test Summary

Test procedures according to the technical standards:

<u>EMC Emission</u>				
Standard	Test Item	Limit	Judgment	Remark
EN 55032:2015	Conducted Emission	Class B	PASS	
	Radiated Emission	Class B	PASS	
EN 61000-3-2:2019	Harmonic Current Emission	Class A or D NOTE (2)	PASS	
EN 61000-3-3:2013	Voltage Fluctuations & Flicker	-----	PASS	
<u>EMC Immunity</u>				
Section EN 55035:2017+A1:2020	Test Item	Performance Criteria	Judgment	Remark
EN 61000-4-2	Electrostatic Discharge Measurement	B	PASS	
EN 61000-4-3	RF Field Strength Susceptibility Measurement	B	PASS	
EN 61000-4-4	Electrical Fast Transient/Burst Measurement	A	PASS	
EN 61000-4-5	Surge Immunity Measurement	A	PASS	
EN 61000-4-6	Conducted Susceptibility Measurement	A	PASS	
EN 61000-4-8	Power Frequency Magnetic Field Immunity (50/60Hz)	A	Mingpin	
EN 61000-4-11	Voltage Dips and Interruptions Measurement	A	PASS	

NOTE:

- (1) "Mingpin" denotes test is not applicable in this Test Report
- (2) The power consumption of EUT is less than 75W and no Limits apply.
- (3) For client's request and manual description, the test will not be executed.

## 2 General Information

### 2.1 General Description Of EUT

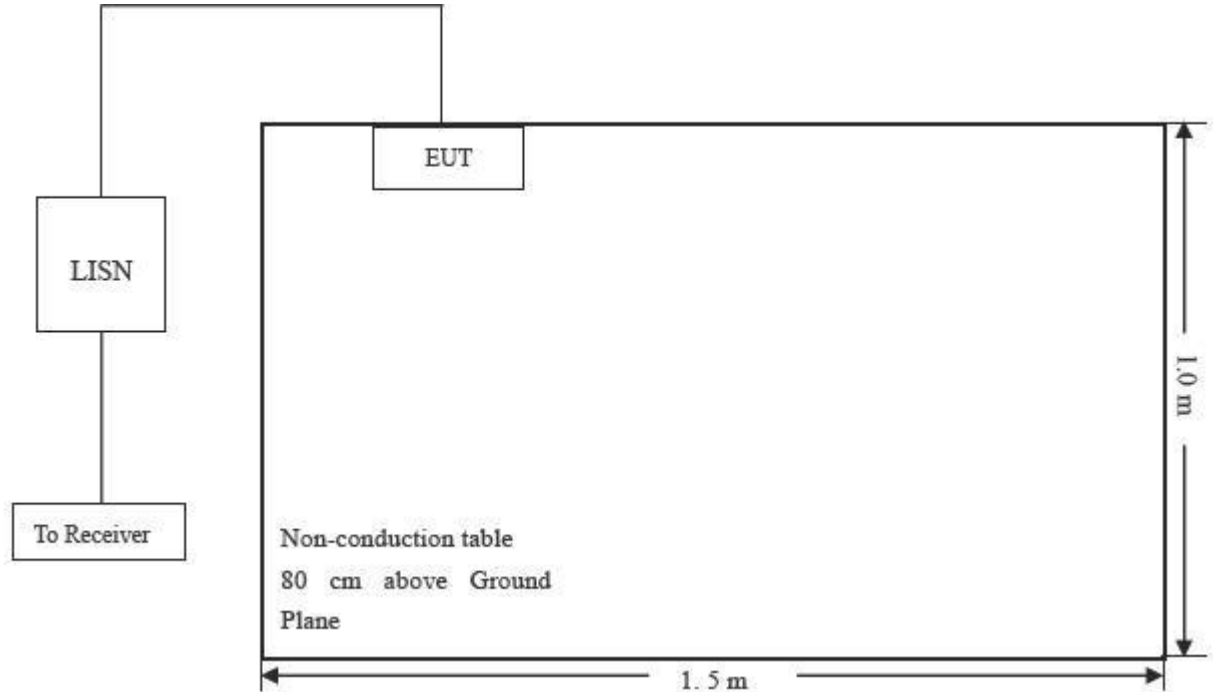
Manufacturer:	Shenzhen Gamtec Technology Development Co.,Ltd. .
Manufacturer Address:	No.5th, Jinyuan, Shancheng Industry Zone, Shiyan Town, Baoan District, Shenzhen,Guangdong ,China
EUT Name:	KEYBOADR AND MOUSE ADAPTER
Trade Name:	Mingpin
Model No:	MB-658P(KX)
Attached No.:	/
Power Supply:	Input: AC5V,1A Output: DC 5V,1A Max
Test Supply:	3.7V/1A
Power Cord:	/
Signal Cable:	/

### 3 Equipments List For All Test Items

No.	Equipment	Manufacturer	Model No.	S/N	Cal date
1	EMI Test Receiver	R&S	ESCI	100612	2020-05-05
2	EMI Test Receiver	R&S	ESPI	100067	2020-05-05
3	Amplifier	HP	8447D	1937A02415	2020-05-05
4	Single Power Conductor Module	FCC	FCC-LISN-5-50-1-01-CISPR25	07118	2020-05-05
5	TRILOG Broadband Test-Antenna	SCHWARZBECK	VULB9163	9163-387	2020-05-05
6	Horn Antenna		BBHA9120A	B08000991-0021	2020-05-05
7	High Field Biconical Antenna	ELECTRO-METRICS	EM-6913	169	2020-05-05
8	Log Periodic Antenna		EM-6950	818	2020-05-05
9	Remote Active Vertical Antenna		EM-6892	354	2020-05-05
10	Power Clamp	SCHWARZBECK	MDS-21	3898	2020-05-05
11	Single Power Conductor Module	FCC	FCC-LISN-5-50-1-01-CISPR25	07254	2020-05-05
12	Teo Line Single Phase Module	SCHWARZBECK	NSLK8128	D-69124	2020-05-05
13	Positioning Controller	C&C	CC-C-1F	MF7802155	2020-05-05
14	Electrostatic Discharge Simulator	TESEQ	NSG437	128	2020-05-05
15	Fast Transient Burst Generator	SCHAFFNER	MODULA6150	34587	2020-05-05
16	Fast Transient Noise Simulator	Noiseken	FNS-105AX	31438	2020-05-05
17	Capacitive Coupling Clamp	TESEQ	CDN8014	25115	2020-05-05
18	Color TV Pattern Generator	PHILIPS	PM5418	TM209966	Mingpin
19	Power Frequency Magnetic Field Gene	EVERFINE	EMS61000-8K	608085	2020-05-05
20	Triple-Loop Antenna	EVERFINE	LLA-2	607035	2020-05-05
21	10dB attenuator	SCHWARZBECK	MTAIMP-136	R65.90.0009	2020-05-05

## 4. Conducted Emission

### 4.1 Block Diagram of Test Setup



(EUT: NECKLACE PORTABLE AIR PURIFIER)

### 4.2 Measurement Standard and Limits of Radiated Disturbances

#### 4.2.1 Standard:

EN 55032:2015

#### 4.2.2 Limits

Frequency (MHz)	Limit (dB $\mu$ V)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	54	49
5.00 ~ 30.00	59	51

Note:

- (1) The tighter limit shall apply at the edge between two frequency bands.
- (2) The limit of " \* " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

### 4.3 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is  $\pm 2.88$  dB.

### 4.4 Test Procedure

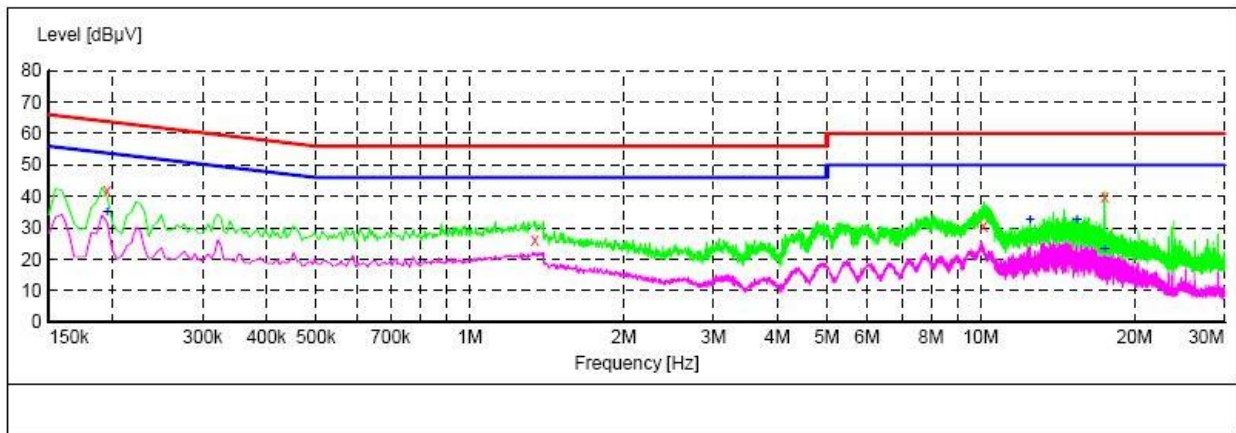
Test is conducting under the description of EN 55032 Power line communication apparatus used in low-voltage installations - Radio disturbance characteristics - Limits and methods of measurement - Part 1: Apparatus for in-home use.

### 4.5 Measurement Results

PASS.

EUT	: KEYBOARDR AND MOUSE ADAPTER	Applicant	: Shenzhen Gamtec Technology Development Co.,Ltd. .
M/N	: MB-658P(KX)	Mode	: ON
Test Item	: Conducted Emission	Phase Polarity	: Line

**SCAN TABLE: "Voltage (9K-30M)FIN"**  
Short Description: 150K-30M Voltage



#### MEASUREMENT RESULT:

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.195000	41.70	10.1	64	22.1	QP	L1	GND
1.341500	26.40	10.4	56	29.6	QP	L1	GND
10.125500	30.60	10.6	60	29.4	QP	L1	GND
17.487500	40.10	10.7	60	19.9	QP	L1	GND

#### MEASUREMENT RESULT:

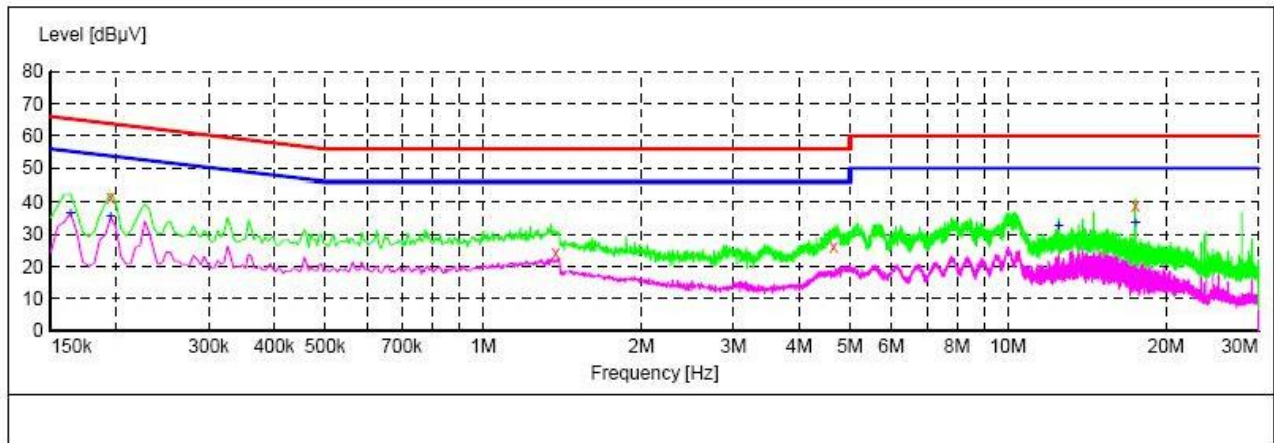
Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.195000	34.80	10.1	54	19.0	AV	L1	GND
12.506000	32.60	10.6	50	17.4	AV	L1	GND
15.453500	32.60	10.7	50	17.4	AV	L1	GND
17.487500	23.30	10.7	50	26.7	AV	L1	GND



EUT	: KEYBOADR AND MOUSE ADAPTER	Applicant	: Shenzhen Gamtec Technology Development Co.,Ltd.
M/N	: MB-658P(KX)	Mode	: ON
Test Site	: Conducted Emission	Phase Polarity	: Neutral

**SCAN TABLE: "Voltage (9K-30M) FIN"**

Short Description: 150K-30M Voltage



**MEASUREMENT RESULT:**

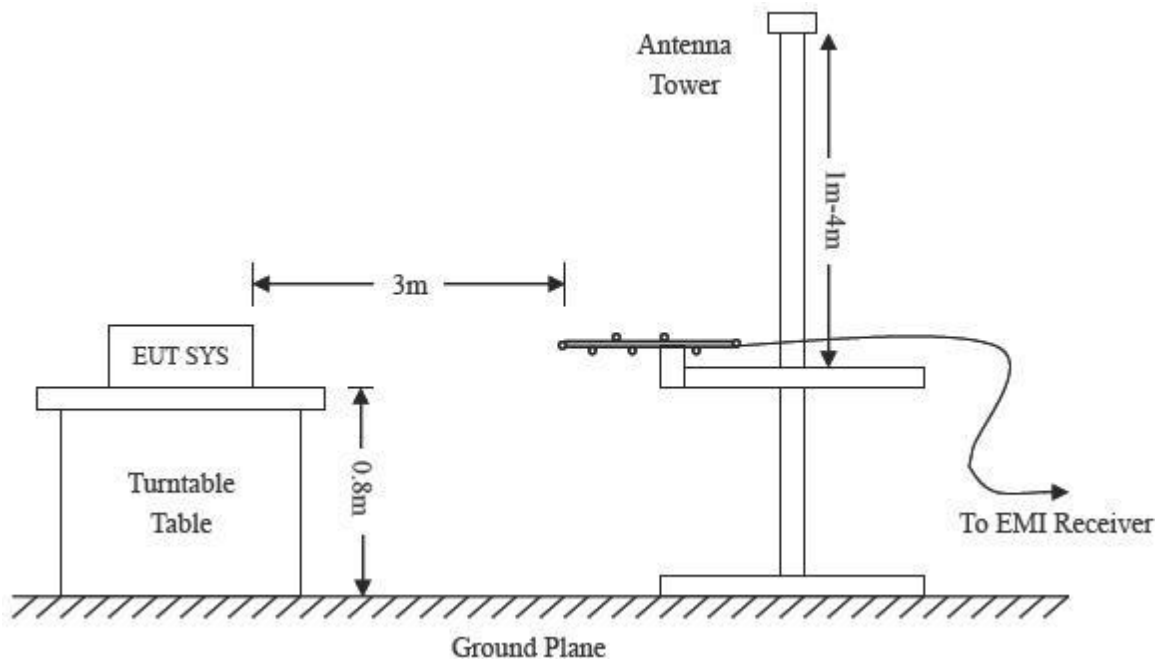
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.195000	41.40	10.1	64	22.4	QP	N	GND
1.373000	24.40	10.3	56	31.6	QP	N	GND
4.658000	26.30	10.5	56	29.7	QP	N	GND
17.483000	39.00	10.7	60	21.0	QP	N	GND

**MEASUREMENT RESULT:**

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.163500	36.30	10.1	55	19.0	AV	N	GND
0.195000	35.40	10.1	54	18.4	AV	N	GND
12.506000	32.50	10.6	50	17.5	AV	N	GND
17.483000	33.40	10.7	50	16.6	AV	N	GND

## 5 Radiated Emissions

### 5.1 Block Diagram of Test Setup



(EUT: KEYBOARD AND MOUSE ADAPTER)

### 5.2 Measurement Standard and Limits of Radiated Disturbances

#### 5.2.1 Standard:

EN 55032:2015

#### 5.2.2 Limits

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

Frequency (MHz)	Distance (Meters)	Field Strengths Limits AV(dB $\mu$ V/m)	Field Strengths Limits PK(dB $\mu$ V/m)
1000~3000	3	50	70
3000-6000	3	54	74

Note:

- (1) The tighter limit shall apply at the edge between two frequency bands.
- (2) Distance refers to the distance in meters between the test instrument antenna and the closest point of any part of the E.U.T.

### 5.3 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is  $\pm 5.10$  dB.

#### 5.4 Test Procedure

Test is conducting under the description of EN 55032 Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement.

#### 5.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Indicated Reading + Antenna Factor + Cable Factor - Amplifier Gain

The Margin column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dB  $\mu$  V means the emission is 6dB  $\mu$  V below the maximum limit for Class B device. The equation for margin calculation is as follows:

Margin = EN 55032 Class B Limit – Corr. Ampl.

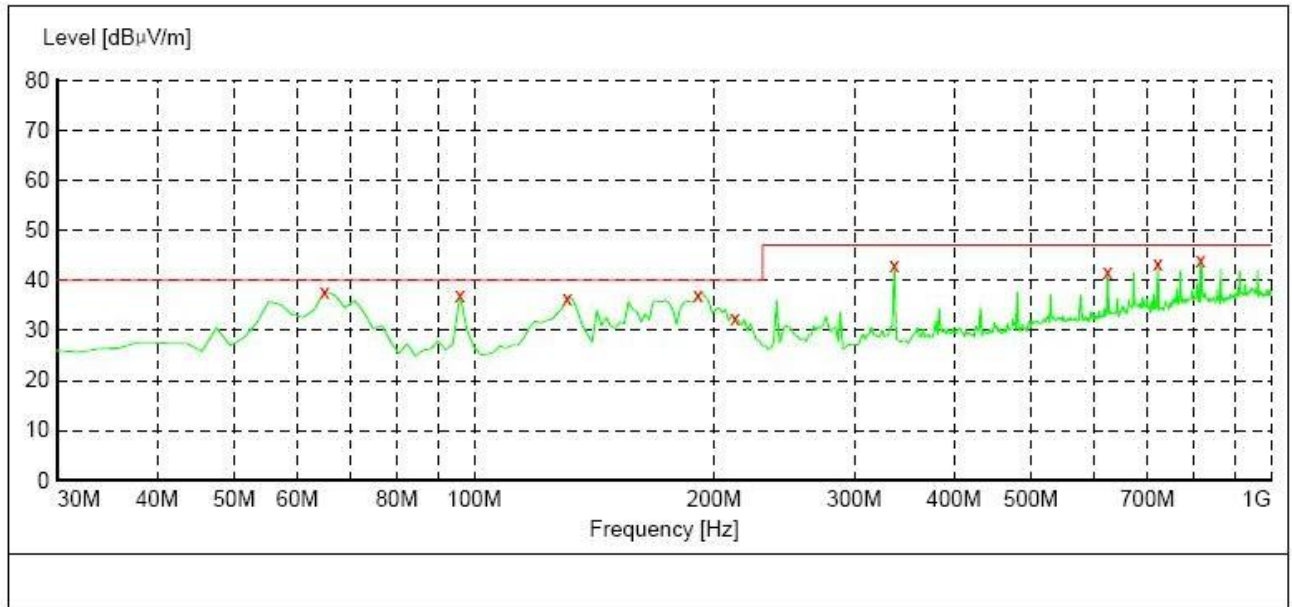
#### 5.6 Measurement Results

PASS.

EUT	: KEYBOADR AND MOUSE ADAPTER	Applicant	: Shenzhen Gamtec Technology Development Co.,Ltd. .
M/N	: MB-658P(KX)	Mode	: ON
Test Site	: Radiated Emission	Test Specification	: Horizontal

**SWEEP TABLE: "test (30M-1G)"**

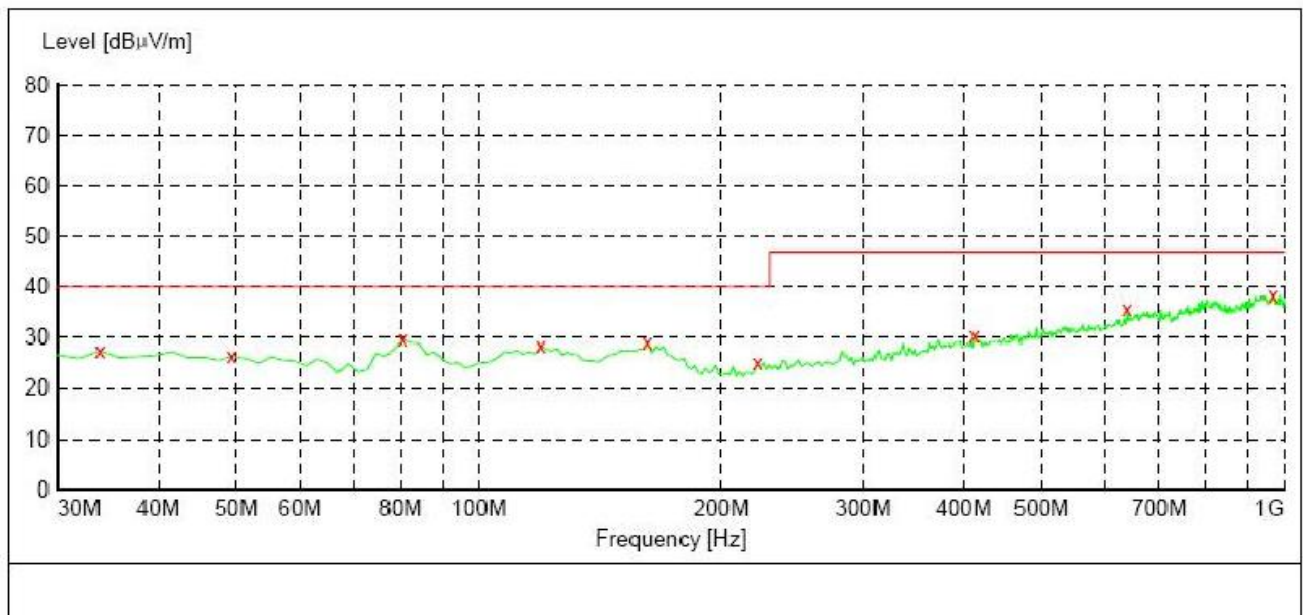
Short Description:		Field Strength			
Start	Stop	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	500.0 ms	100 kHz	VULB9168



EUT	: KEYBOADR AND MOUSE ADAPTER	Applicant	: Shenzhen Gamtec Technology Development Co.,Ltd.
M/N	: MB-658P(KX)	Mode	: ON
Test Site	: Radiated Emission	Test Specification	: Vertical

**SWEEP TABLE: "test (30M-1G)"**

Short Description:		Field Strength			
Start	Stop	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	500.0 ms	100 kHz	VULB9168



**MEASUREMENT RESULT:**

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
33.880000	27.40	13.9	40.0	12.6	---	100.0	0.00	VERTICAL
49.400000	26.40	14.1	40.0	13.6	---	100.0	0.00	VERTICAL
80.440000	29.70	10.2	40.0	10.3	---	100.0	0.00	VERTICAL
119.240000	28.40	13.1	40.0	11.6	---	100.0	0.00	VERTICAL
161.920000	29.10	15.2	40.0	10.9	---	100.0	0.00	VERTICAL
222.060000	25.20	12.3	40.0	14.8	---	100.0	0.00	VERTICAL
412.180000	30.60	17.1	47.0	16.4	---	100.0	0.00	VERTICAL
637.220000	35.80	21.5	47.0	11.2	---	100.0	0.00	VERTICAL
967.020000	38.50	25.4	47.0	8.5	---	100.0	0.00	VERTICAL

## 6 Harmonic Current Measurement (EN 61000-3-2)

### 6.1 Measurement Standard and Limits of Harmonics Current

#### 6.1.1 Standard:

EN 61000-3-2:2019, Clause 7.1 Limits for Class A equipment.

#### 6.1.2 Limits

IEC 555-2					
Table - I			Table - II		
Equipment Category	Harmonic Order n	Max. Permissible Harmonic Current (in Amperes)	Equipment Category	Harmonic Order n	Max. Permissible Harmonic Current (in Amperes)
Non Portable Tools or TV Receivers	Odd Harmonics		TV Receivers	Odd Harmonics	
	3	2.30		3	0.80
	5	1.14		5	0.60
	7	0.77		7	0.45
	9	0.40		9	0.30
	11	0.33		11	0.17
	13	0.21		13	0.12
	15 ≤ n ≤ 39	0.15 · 15/n		15 ≤ n ≤ 39	0.10 · 15/n
	Even Harmonics			Even Harmonics	
	2	1.08		2	0.30
4	0.43	4	0.15		
8	0.30				
8 ≤ n ≤ 40	0.23 · 8/n	DC	0.05		

EN 61000-3-2/IEC 61000-3-2					
Equipment Category	Max. Permissible Harmonic Current (in Amperes)	Equipment Category	Harmonic Order n	Max. Permissible Harmonic Current (in A) (mA/w)	
Class A	Same as Limits Specified in 4-2.1, Table - I, but only odd harmonics required	Class D	3	2.30	3.4
			5	1.14	1.9
			7	0.77	1.0
			9	0.40	0.5
			11	0.33	0.35
			13 ≤ n ≤ 39	see Table I	3.85/n
only odd harmonics required					

Class A POWER ≤ 75W

### 6.2 Test Results

**PASS.**

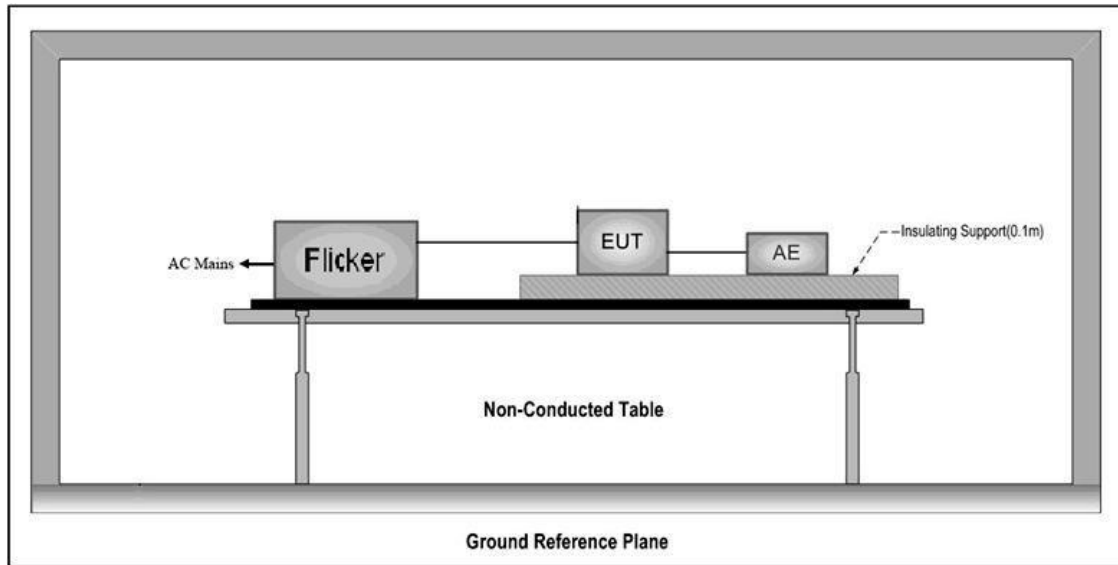
According to Clause 7 of EN61000-3-2, the EUT rated power is less than 75W, belong to 'equipment with a rated power of 75W or less', therefore 'limits are not specified in this edition of the standards'. It is deem to full fit the requirements of the standards.

Result: The EUT complies with the requirements of this section



## 7 VOLTAGE FLUCTUATIONS & FLICKER MEASUREMENT

### 7.1 Block Diagram of Test Setup



(EUT:KEYBOARDR AND MOUSE ADAPTER)

### 7.2 Measurement Standard and Limits of Voltage Fluctuation and Flickers

#### 7.2.1 Standard:

EN 61000-3-3:2013, Limit: Clause 5.

#### 7.2.2 Limits

Tests	Limits		Descriptions
	IEC555-3	IEC/EN 61000-3-3	
Pst	≤ 1.0, Tp= 10 min.	≤ 1.0, Tp= 10 min.	Short Term Flicker Indicator
Plt	N/A	≤ 0.65, Tp=2 hr.	Long Term Flicker Indicator
dc	≤ 3%	≤ 3.3%	Relative Steady-State V-Chang
dmax	≤ 4%	≤ 4%	Maximum Relative V-change
d (t)	N/A	≤ 3.3% for > 500 ms	Relative V-change characteristic

### 7.3 Application of Voltage Fluctuations and Flicker Test

Compliance to these standards ensures that tested equipment will not generate harmonic currents at levels that cause unacceptable degradation of the main enMingpinment. This directly contributes to meeting compatibility levels established in other EMC standards, which defines compatibility levels for low-frequency conducted disturbances in low-voltage supply systems.

### 7.4 Test Results

**PASS.**

Result: The EUT complies with the requirements of this section.

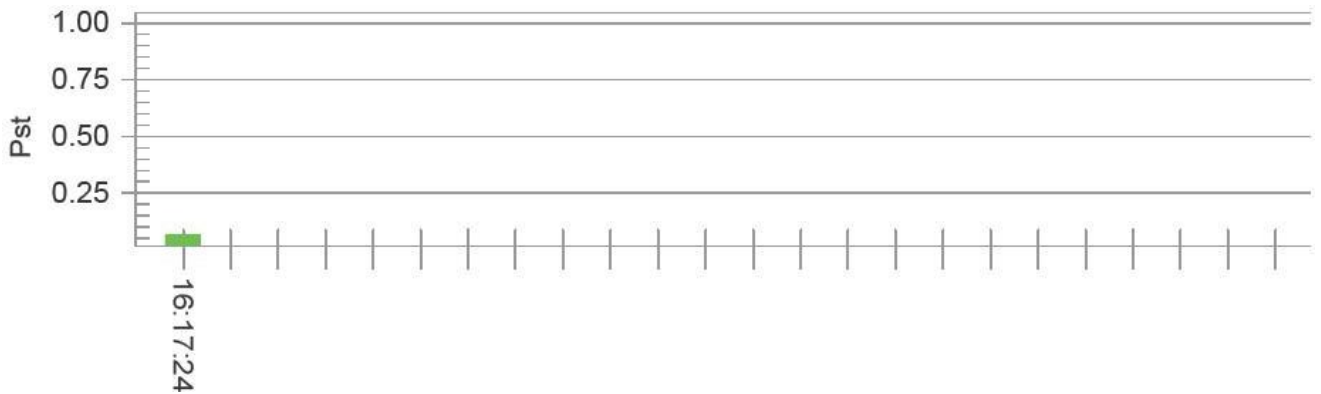
Please refer to the following pages.

## Test Report

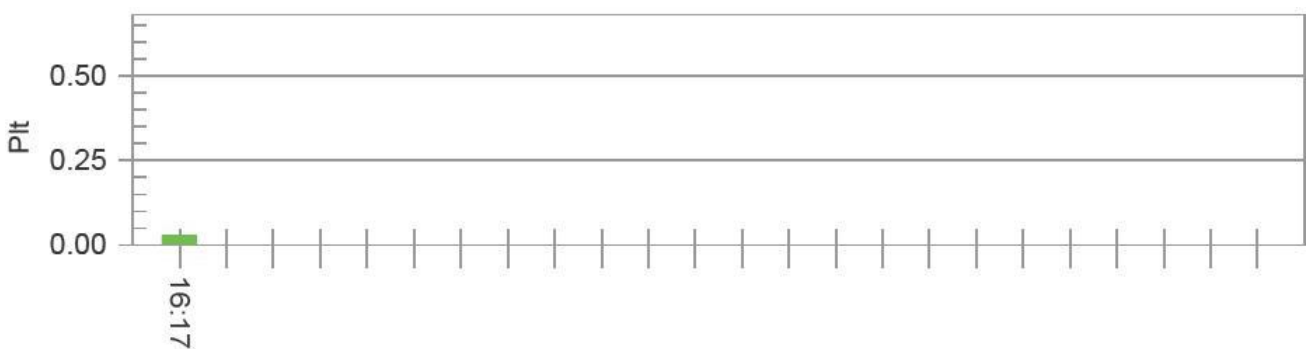
Date of Test	: 09:59 Apr, 13,2024
Standard Used	: EN/IEC 61000-3-3 Flicker
Short Time (Pst)	: 10 min
Observation Time	: 10 min (1 Flicker measurement)
Flicker Meter	: 3.7V/1A
Customer	: Shenzhen Gamtec Technology Development Co.,Ltd.
E. U. T.	: KEYBOADR AND MOUSE ADAPTER
M/N	: MB-658P(KX)
Test Result	

## Maximum Flicker Results

Pst<sub>i</sub> and limit line



Plt and limit line



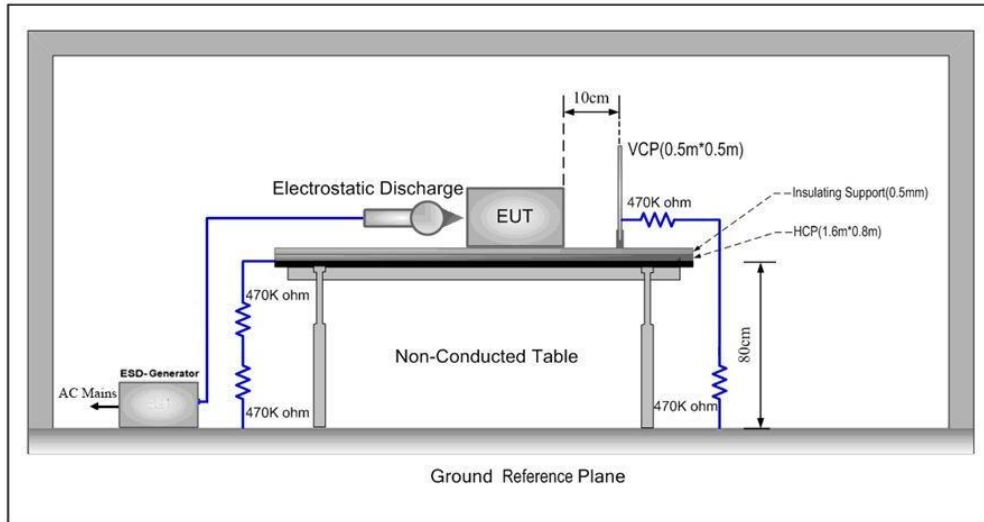
	EUT Values	Limit	Result
Pst	0.064	1.00	PASS
dc [%]	0.00	3.30	PASS
dmax [%]	0.00	4.00	PASS
dt >3.3%[s]	0.00	0.50	PASS



## 8 Electrostatic Discharge TEST

### 8.1 Block Diagram of Test Setup

#### Block Diagram of connection between the EUT and simulators



(EUT: KEYBOARDR AND MOUSE ADAPTER)

### 8.2 Test Standard

EN55035: 2010+A1:2015 (EN 61000-4-2)

### 8.3 Severity Levels and Performance Criterion

#### 8.3.1 Severity Level

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

#### 8.3.2 Performance Criterion: B

### 8.4 Test Results

**PASS**

Electrostatic discharge immunity test data, Please refer to the following page.

## ELECTROSTATIC DISCHARGE TEST

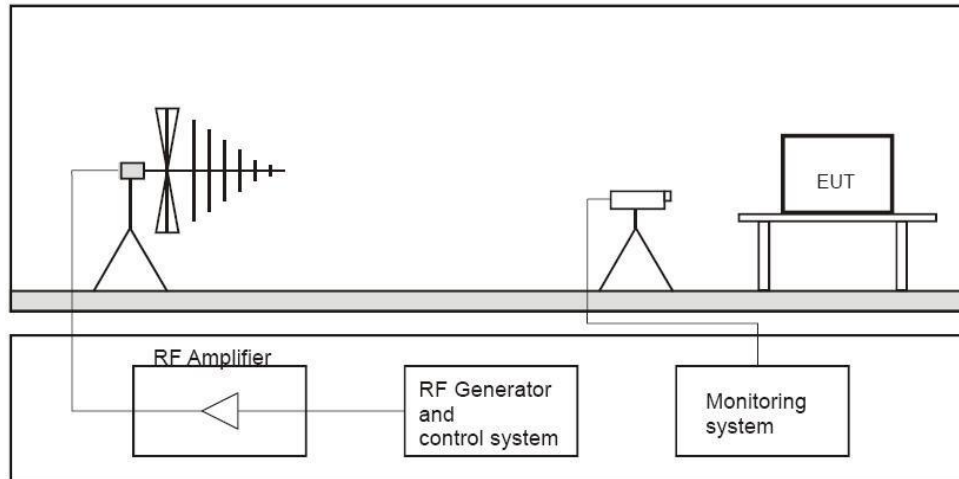
Applicant	: Shenzhen Gamtec Technology Development Co.,Ltd. .	Test Date	: Apr, 13,2024
EUT	: KEYBOADR AND MOUSE ADAPTER	Temperature	: 22°C
M/N	: MB-658P(KX)	Humidity	: 52%
Power Supply	: 3.7V/1A	Criterion	: EN55035

### Test Mode: ON

	Test Levels (kV)							
	-2	+2	-4	+4	-6	+6	-8	+8
<b>Air Discharge</b>								
Aperture	A	A	A	A	A	A	A	A
Surface	A	A	A	A	A	A	A	A
Output port	A	A	A	A	A	A	A	A
<b>Direct Contact Discharge</b>								
/	/	/	/	/				
	Test Levels (kV)							
	Indirect Contact Discharge(HCP)				Indirect Contact Discharge(VCP)			
	-2	+2	-4	+4	-2	+2	-4	+4
Front Side	A	A	A	A	A	A	A	A
Top Side	A	A	A	A	A	A	A	A
Back Side	A	A	A	A	A	A	A	A
Left Side	A	A	A	A	A	A	A	A
Right Side	A	A	A	A	A	A	A	A

## 9 Radio Frequency electromagnetic Field Test

### 9.1 Block Diagram of Test Setup



(EUT: KEYBOARDR AND MOUSE ADAPTER)

### 9.2 Test Standard

EN 55035:2017+A1:2020 (EN 61000-4-3)

### 9.3 Severity Levels and Performance Criterion

#### 9.3.1 Severity Level

Level	Field Strength V/m
1.	1
2.	3
3.	10
X.	Special

#### 9.3.2 Performance Criterion: A

### 9.4 Test Results

PASS.

Continuous radiated disturbances test data, please refer to the following page.

## Radio Frequency Electromagnetic Field Test

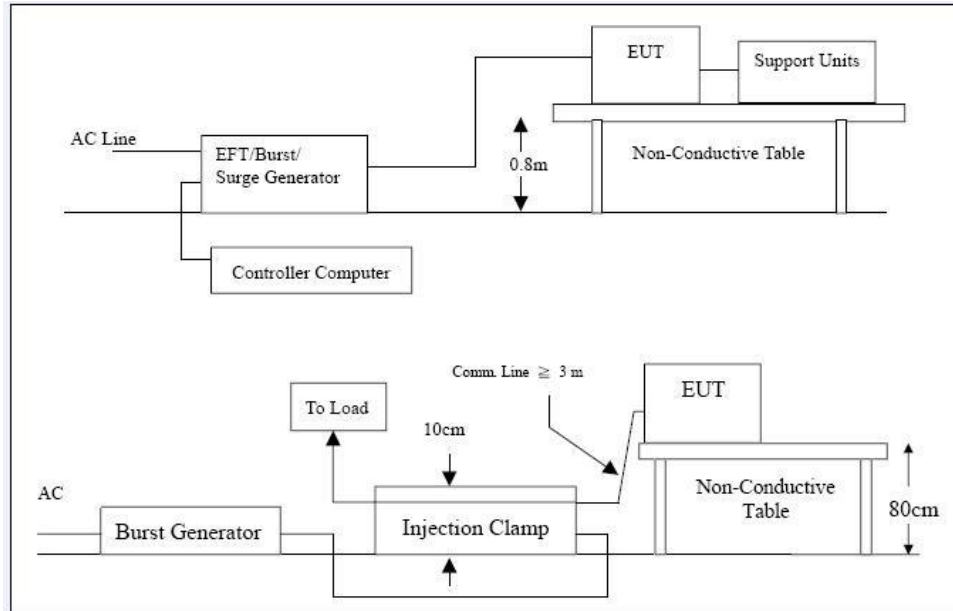
Applicant	: Shenzhen Gamtec Technology Development Co.,Ltd. .	: <b>Apr, 13,2024</b>
EUT	: KEYBOADR AND MOUSE ADAPTER	Temperature : 22°C
M/N	: MB-658P(KX)	Humidity : 52%
Power Supply	: 3.7V/1A	Criterion : EN55035

**Test Mode: ON**

Frequency Range(MHz)	Field (V/m)	Front		Rear		Left Side		Right Side	
		Vert	Hori	Vert	Hori	Vert	Hori	Vert	Hori
80-1000	3	A	A	A	A	A	A	A	A
1400-2700	3	/	/	/	/	/	/	/	/

## 10 Electrical Fast Transient/Burst Test

### 10.1 Block Diagram of Test Setup



(EUT: KEYBOARDR AND MOUSE ADAPTER)

### 10.2 Test Standard

EN 55035:2017+A1:2020 (EN 61000-4-4)

### 10.3 Severity Levels and Performance Criterion

#### 10.3.1 Severity Level

Open Circuit Output Test Voltage and Repetition Rate of The Impulses		
Level	On PC Lines	On I/O (Input/Output) Signal data and control lines
1	±0.5 KV	±0.25 KV
2	±1 KV	±0.5 KV
3	±2 KV	±1 KV
4	±4 KV	±2 KV
X	Special	Special

NOTE 1: Use of 5 KHz repetition rates is traditional; however, 100 KHz is closer to reality. Product committees should determine which frequencies are relevant for specific products or product types.  
 NOTE 2: With some products, there may be no clear distinction, between power ports and I/O ports, in which case it is up to product committees to make this determination for test purposes.

"X" is an open level. The level has to be specified in the dedicated equipment specification.

**10.3.2** Performance Criterion: B

## 10.4 Test Results

PASS

Electrical fast transients test data, please refer to the following page.

## Electrical Fast Transient/Burst Test Results

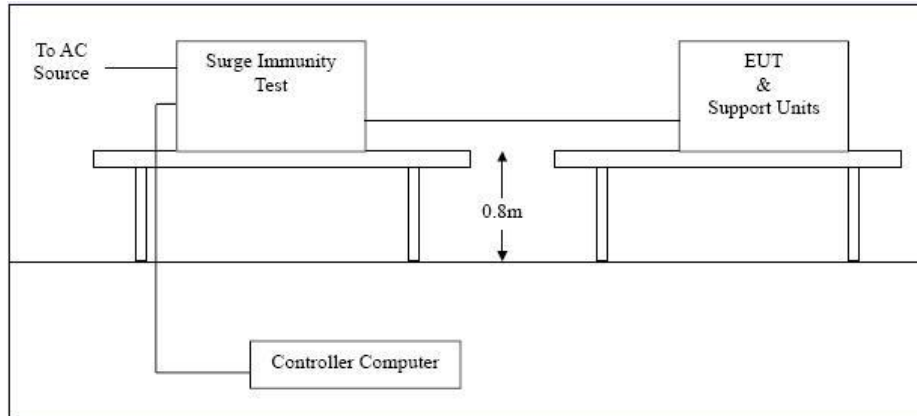
Standard	:	<input checked="" type="radio"/> IEC 61000-4-4 <input type="radio"/> EN 61000-4-4	Result : <input type="radio"/> PASS / <input checked="" type="radio"/> FAIL
Applicant	:	Shenzhen Gamtec Technology Development Co.,Ltd. .	
EUT	:	KEYBOADR AND MOUSE ADAPTER	
M/N	:	MB-658P(KX)	
Input Voltage	:	3.7V/1A	
Criterion	:	B	
Ambient Condition	:	20°C, 50%RH	

Test Mode: ON

EN 61000-4-4		Test Levels (kV)							
		-0.5	+0.5	-1.0	+1.0	-2.0	+2.0	-4.0	+4.0
Power Supply Power Port of EUT	L1	A	A	A	A	/	/	/	/
	L2	A	A	A	A	/	/	/	/
	PE	/	/	/	/	/	/	/	/
	L1+L2	A	A	A	A	/	/	/	/
	L1+PE	/	/	/	/	/	/	/	/
	L2+PE	/	/	/	/	/	/	/	/
	L1+L2+PE	/	/	/	/	/	/	/	/
Signal ports		/	/	/	/	/	/	/	/

## 11 SURGE immunity Test

### 11.1 Block Diagram of Test Setup



(EUT: KEYBOARD AND MOUSE ADAPTER)

### 11.2 Test Standard

EN 55035:2017+A1:2020 (EN 61000-4-5)

### 11.3 Severity Levels and Performance Criterion

#### 11.3.1 Severity Level

Severity Level	Open-Circuit Test Voltage KV
1	±0.5
2	±1.0
3	±2.0
4	±4.0
*	Special

#### 11.3.2 Performance Criterion: B

### 11.4 Test Results

**PASS.**

Surge test data, please refer to the following page.



## Surge Immunity Test Results

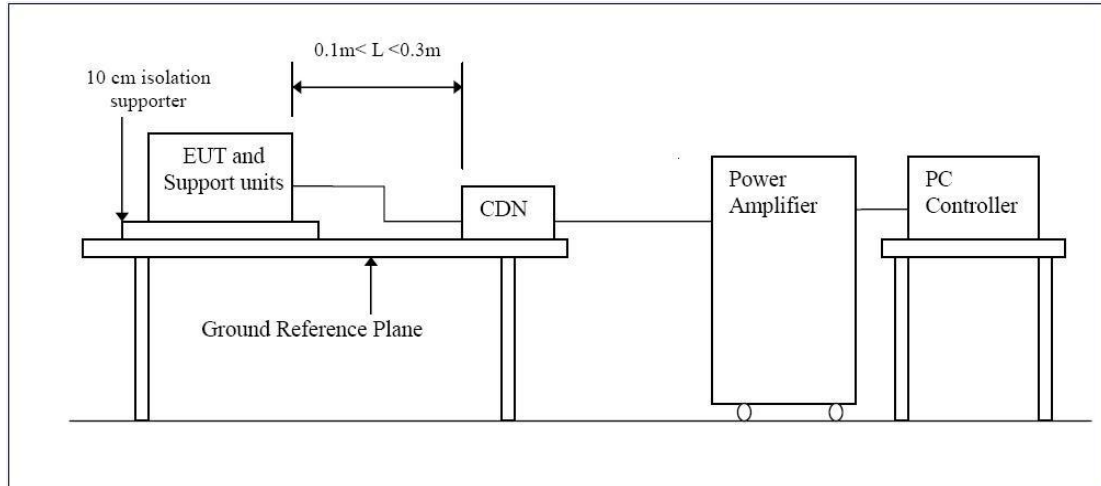
Applicant	: Shenzhen Gamtec Technology Development Co.,Ltd.	Test Date	: Apr, 13,2024
EUT	: .KEYBOARDR AND MOUSE	Temperature	: 20°C
M/N	: ADAPTER	Humidity	: 50%
Power Supply	: 3.7V/1A	Test Engineer	: LiuXi

### Test Mode: ON

Level	Voltage	Poll	Path	Pass	Fail
1	0.5kV	±	L-N	A	/
2	1 kV	±	L-N	A	/
3	2 kV	±	L-PE, N-PE	/	/
4	4 kV	±	L-N, L-PE, N-PE	/	/

## 12 Conducted Susceptibility Test

### 12.1 Block Diagram of Test Setup



(EUT: KEYBOARD AND MOUSE ADAPTER)

### 12.2 Test Standard

EN 55035:2017+A1:2020 (EN 61000-4-6)

### 12.3 Severity Levels and Performance Criterion

#### 12.3.1 Severity Level

Level	Field Strength V
1	1
2	3
3	10
X	Special

#### 12.3.2 Performance Criterion: A

### 12.4 Test Results

**PASS**

Continuous conducted disturbances test data, please refer to the following page.

## Conducted Susceptibility Test Results

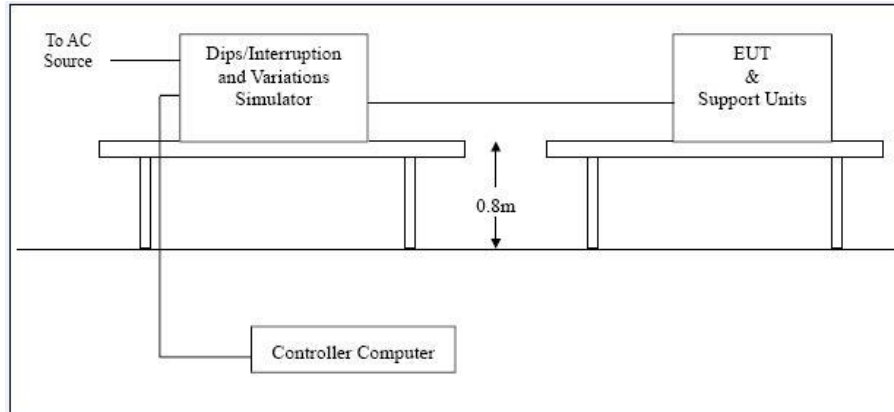
Applicant	: Shenzhen Gamtec Technology Development	Test Date	: Apr, 13,2024
EUT	: Co.,Ltd.	Temperature	: 20°C
M/N	: ,	Humidity	: 50%
Power Supply	: 3.7V/1A	Frequency step	: 1% of fundamental
Frequency Range	: A/N	Dwell time	: 1s

### Test Mode: ON

Level	Voltage(V) (rms, unmodulated)	Modulated	Pass	Fail
1	1	AM 80%, 1kHz sinewave	/	/
2	3	AM 80%, 1kHz sinewave	A	/
3	10	AM 80%, 1kHz sinewave	/	/
X	Special	/	/	/

## 13. Voltage dips and interruptions test

### 13.1 Block Diagram of Test Setup



(EUT: KEYBOARDR AND MOUSE ADAPTER)

### 13.2 Test Standard

**EN 55035:2017+A1:2020 (EN 61000-4-11)**

### 13.3 Severity Levels and Performance Criterion

#### 13.3.1 Severity Level

Test Level %UT	Voltage Dip and Short Interruptions %UT	Duration (in period)
0	100	0.5 1 5 10 25 50 *
40	60	
70	30	

#### 13.3.2 Performance Criterion: B&C

### 13.4 Test Results

**PASS.**

Voltage dips and interruptions test data, please refer to the following page.

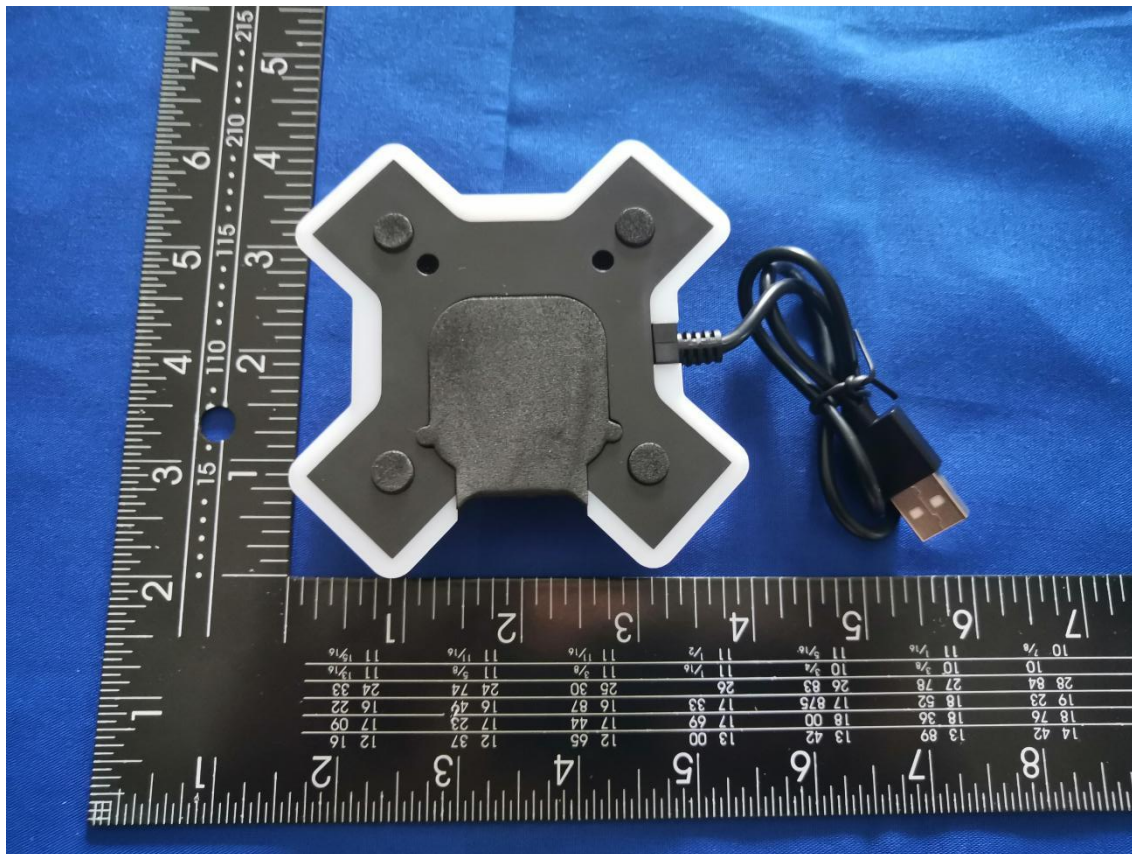
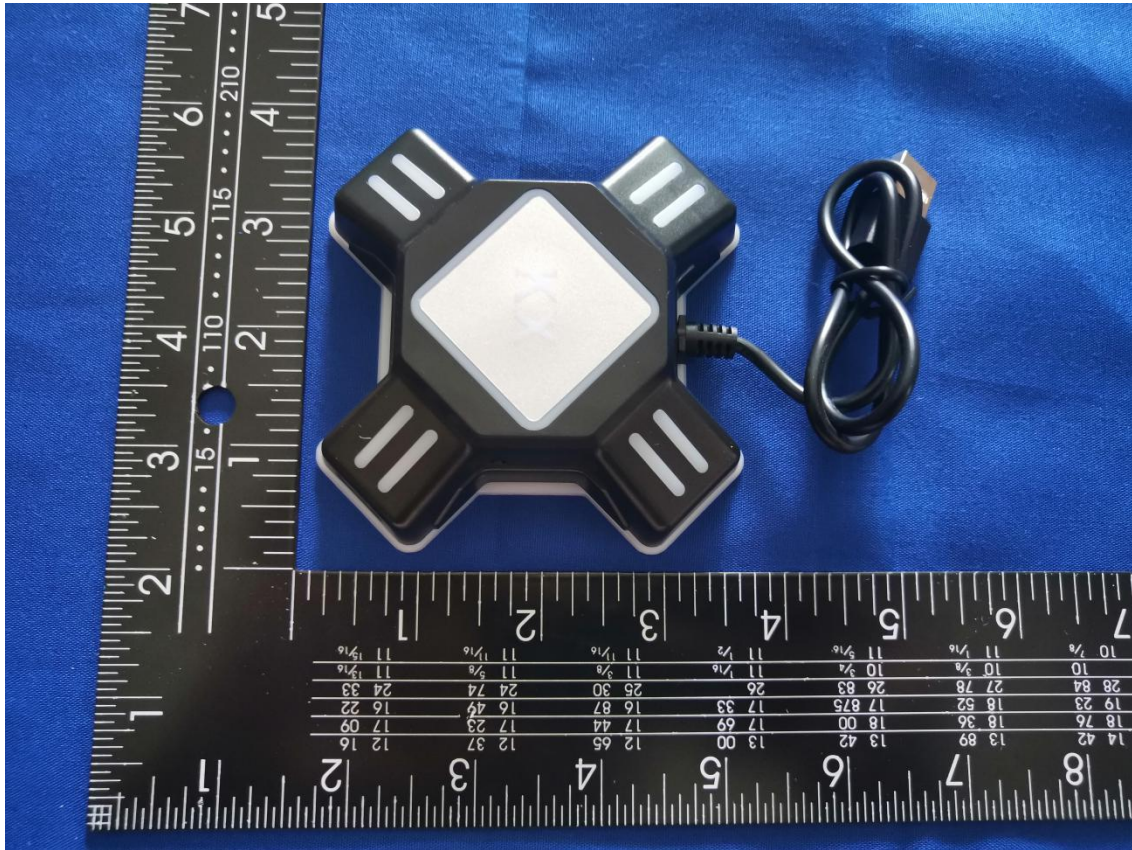
## Voltage Dips and Interruptions Test Results

Applicant	: Shenzhen Gamtec Technology Development	Test Date	: Apr, 13,2024
EUT	: Co.,Ltd.	Temperature	: 20°C
M/N	: ,	Humidity	: 50%
Power Supply	: 3.7V/1A	Test Engineer	:
U	: Voltage dips in % UT (UT is rated voltage for the EUT)		

### Test Mode: ON

Level	U	Test duration	Phase Angle	N	Pass	Fail
1	100%	10ms	0/90/180/270	3	B	/
3	30%	500ms	0/90/180/270	3	C	/
4	100%	5000ms	0/90/180/270	3	C	/

## APPEND



**End of Report**

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