

Applicant: Eastern Times Technology Co.,Ltd

Product: 3-MODE WIRELESS HOT-SWAP MECHANICAL

KEYBOARD

Model No.: K556RGB-PRO, ET-8855

Trademark: REDRAGON

Test Standards: FCC Part 15.249

Test result:

It is herewith confirmed and found to comply with the

requirements set up by ANSI C63.10 & FCC Part 15 Subpart C,

Paragraph 15.249 regulations for the evaluation of

electromagnetic compatibility

Approved By

7. 1

**Terry Tang** 

Manager

Dated: July 06, 2023

Results appearing herein relate only to the sample tested

The technical reports is issued errors and omissions exempt and is subject to withdrawal at

## SHENZHEN TIMEWAY TESTING LABORATORIES

Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West, Tong Le Village, Nanshan District, Shenzhen, China

Tel (755) 83448688, Fax (755) 83442996, E-Mail: info@timeway-lab.com

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## **Special Statement:**

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meet with ISO/IEC-17025 requirements, which is approved by CNAS. This approval result is accepted by MRA of APLAC.

Our test facility is recognized, certified, or accredited by the following organizations:

#### **CNAS-LAB Code: L2292**

The EMC Laboratory has been assessed and in compliance with CNAS-CL01 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:2017 General Requirements) for the Competence of testing Laboratories.

## FCC-Registration No.: 744189

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 744189.

## Industry Canada (IC) —Registration No.:5205A

The EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 5205A.

## **A2LA (Certification Number:5013.01)**

The EMC Laboratory has been accredited by the American Association for Laboratory Accreditation (A2LA). Certification Number:5013.01

CAB identifier: CN0033

Date: 2023-07-06



# Test Report Conclusion

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#### 1.0 General Details

#### 1.1 Test Lab Details

Name: SHENZHEN TIMEWAY TESTING LABORATORIES.

Address: Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West, Tong Le

Village, Nanshan District, Shenzhen, China

Telephone: (755) 83448688 Fax: (755) 83442996

Site on File with the Federal Communications Commission – United Sates

Registration Number: 744189 For 3m Anechoic Chamber

## 1.2 Applicant Details

Applicant: Eastern Times Technology Co.,Ltd

Address: Building D, Nan An Industrial Area, Youganpu Village, Fenggang Town, Dongguan City,

Guangdong, China.

Telephone: --Fax: --

## 1.3 Description of EUT

Product: 3-MODE WIRELESS HOT-SWAP MECHANICAL KEYBOARD

Manufacturer: Eastern Times Technology Co.,Ltd

Address: Building D, Nan An Industrial Area, Youganpu Village, Fenggang Town,

Dongguan City, Guangdong, China.

Trademark: REDRAGON
Model Number: K556RGB-PRO

Additional Model Name ET-8855

Rating: DC5V, 500mA or DC3.7V, 250mA
Battery DC3.7V, 1600mAh Li-ion battery

Modulation Type: GFSK

Operation Frequency: 2403-2480MHz

Channel Number: 16

Channel List (Unit: MHz): 2403, 2463, 2441, 2426, 2408, 2466, 2445, 2422, 2414, 2471, 2459, 2436,

2419, 2480, 2453, 2439

Hardware Version: 4A16 Software Version: 8855-A V1

Serial No.: RDK556RGB-PRO23042500950

Antenna Designation PCB antenna with gain 2.34dBi Max (Get from the antenna specification)

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1.4 Submitted Sample: 2 Samples

1.5 Test Duration

2023-05-22 to 2023-07-06

1.6 Test Uncertainty

Conducted Emissions Uncertainty = 3.6dB

Radiated Emissions below 1GHz Uncertainty =4.7dB

Radiated Emissions above 1GHz Uncertainty =6.0dB

Conducted Power Uncertainty = 6.0dB

Occupied Channel Bandwidth Uncertainty =5%

Conducted Emissions Uncertainty = 3.6dB

Note: The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.

1.7 Test Engineer

The sample tested by

Print Name: Andy Xing

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2.0 Test Equipment					
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date
ESPI Test Receiver	R&S	ESPI 3	100379	2022-07-15	2023-07-14
LISN	R&S	EZH3-Z5	100294	2022-07-18	2023-07-17
LISN	R&S	EZH3-Z5	100253	2022-07-18	2023-07-17
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2022-07-18	2023-07-17
Loop Antenna	EMCO	6507	00078608	2022-07-18	2025-07-17
Spectrum	R&S	FSIQ26	100292	2022-07-15	2023-07-14
Horn Antenna	A-INFO	LB-180400-KF	J211060660	2022-07-18	2025-07-17
Horn Antenna	R&S	BBHA 9120D	9120D-631	2022-07-18	2024-07-17
Power meter	Anritsu	ML2487A	6K00003613	2022-07-18	2023-07-17
Power sensor	Anritsu	MA2491A	32263	2022-07-18	2023-07-17
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2022-07-18	2025-07-17
9*6*6 Anechoic			N/A	2022-07-26	2025-07-25
EMI Test Receiver	RS	ESVB	826156/011	2022-07-15	2023-07-14
EMI Test Receiver	RS	ESCS 30	834115/006	2022-07-15	2023-07-14
Spectrum	HP/Agilent	E4407B	MY50441392	2022-07-15	2023-07-14
Spectrum	RS	FSP	1164.4391.38	2022-07-15	2023-07-14
RF Cable	Zhengdi	ZT26-NJ-NJ-8M/FA		2022-07-15	2023-07-14
RF Cable	Zhengdi	7m		2022-07-15	2023-07-14
Pre-Amplifier	Schwarebeck	BBV9743	#218	2022-07-15	2023-07-14
Pre-Amplifier	HP/Agilent	8449B	3008A00160	2022-07-15	2023-07-14
LISN	SCHAFFNER	NNB42	00012	2022-08-18	2023-07-17
ESPI Test Receiver	R&S	ESPI 3	100379	2022-07-15	2023-07-14
LISN	R&S	EZH3-Z5	100294	2022-07-18	2023-07-17

## 2.2 Automation Test Software

#### For Conducted Emission Test

Name	Version
EZ-EMC	Ver.EMC-CON 3A1.1

## For Radiated Emissions

Name	Version
EMI Test Software BL410-EV18.91	V18.905
EMI Test Software BL410-EV18.806 High Frequency	V18.06

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#### 3.0 Technical Details

## 3.1 Summary of test results

The EUT has	been tested	l according to	o the foll	owing s	specifications:

Standard	Test Type	Result	Notes
FCC Part 15, Paragraph 15.203	Antenna Requirement	Pass	Complies
FCC Part 15, Paragraph 15.207	Conducted Emission Test	Pass	Complies
FCC Part 15 Subpart C Paragraph 15.249(a) & 15.249(b) Limit	Field Strength of Fundamental	Pass	Complies
FCC Part 15, Paragraph 15.209	Radiated Emission Test	Pass	Complies
FCC Part 15 Subpart C Paragraph 15.249(d) Limit	Band Edge Test	Pass	Complies

#### 3.2 Test Standards

FCC Part 15 Subpart C, Paragraph 15.249, ANSI C63.4:2014 and ANSI C63.10:2013

#### 4.0 EUT Modification

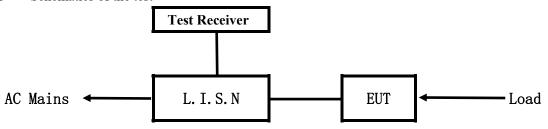
No modification by SHENZHEN TIMEWAY TESTING LABORATORIES

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#### 5. Power Line Conducted Emission Test

#### 5.1 Schematics of the test

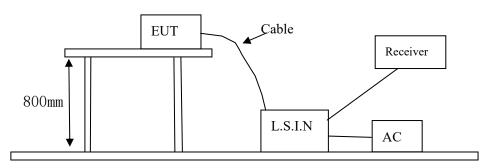


**EUT: Equipment Under Test** 

#### 5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.10-2013. The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.10-2013.

Test Voltage: 120V~, 60Hz Block diagram of Test setup



## 5.3 Configuration of the EUT

The EUT was configured according to ANSI C63.10-2013. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

16 channels are provided to the EUT

#### A. EUT

Device	Manufacturer	Model	FCC ID
3-MODE WIRELESS HOT-SWAP MECHANICAL	Eastern Times Technology CoLtd	K556RGB-PRO, ET-8855	TUVET-8855A
KEYBOARD	20.,114	L1 0055	

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#### B. Internal Device

Device	Manufacturer	Model	FCC ID/DOC
N/A			

## C. Peripherals

Device	Manufacturer	Model	Rating
Power Supply	KEYU	KA23-0502000DEU	Input: 100-240V~, 50/60Hz, 0.35A;
			Output: DC5V, 2A

5.4 EUT Operating Condition

Operating condition is according to ANSI C63.10-2013

- A Setup the EUT and simulators as shown on follow
- B Enable AF signal and confirm EUT active to normal condition

5.5 Power line conducted Emission Limit according to Paragraph 15.207

8 8 1					
Frequency	Limits (dB μ V)				
(MHz)	Quasi-peak Level	Average Level			
$0.15 \sim 0.50$	66.0~56.0*	56.0~46.0*			
$0.50 \sim 5.00$	56.0	46.0			
5.00 ~ 30.00	60.0	50.0			

Notes:

- 1. \*Decreasing linearly with logarithm of frequency.
- 2. The tighter limit shall apply at the transition frequencies

#### 5.6 Test Results:

Pass

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## A: Conducted Emission on Live Terminal (150kHz to 30MHz)

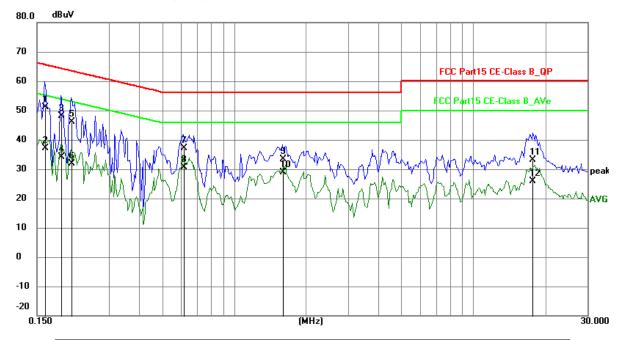
**EUT Operating Environment** 

Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 kPa

**EUT set Condition: Charging and Keep Transmitting** 

**Results: Pass** 

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1617	41.41	9.78	51.19	65.38	-14.19	QP	Р
2	0.1617	27.23	9.78	37.01	55.38	-18.37	AVG	Р
3	0.1890	38.40	9.76	48.16	64.08	-15.92	QP	Р
4	0.1890	24.31	9.76	34.07	54.08	-20.01	AVG	Р
5	0.2085	36.27	9.75	46.02	63.26	-17.24	QP	Р
6	0.2085	22.11	9.75	31.86	53.26	-21.40	AVG	J
7	0.6141	27.23	9.78	37.01	56.00	-18.99	QP	J
8	0.6141	20.94	9.78	30.72	46.00	-15.28	AVG	J
9	1.5969	23.63	9.80	33.43	56.00	-22.57	QP	J
10	1.5969	19.20	9.80	29.00	46.00	-17.00	AVG	J
11	17.7342	22.65	10.54	33.19	60.00	-26.81	QP	Р
12	17.7342	15.40	10.54	25.94	50.00	-24.06	AVG	Р

The report refers only to the sample tested and does not apply to the bulk.

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## B: Conducted Emission on Neutral Terminal (150kHz to 30MHz)

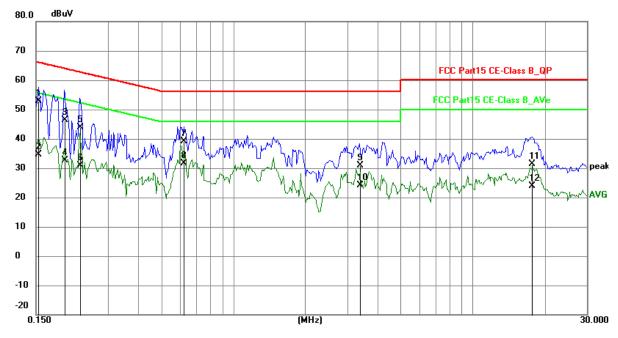
**EUT Operating Environment** 

Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 kPa

**EUT set Condition: Charging and Keep Transmitting** 

**Results: Pass** 

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1539	43.12	9.78	52.90	65.79	-12.89	QP	Р
2	0.1539	24.85	9.78	34.63	55.79	-21.16	AVG	Р
3	0.1968	36.62	9.75	46.37	63.74	-17.37	QP	Р
4	0.1968	22.84	9.75	32.59	53.74	-21.15	AVG	Р
5	0.2280	34.07	9.75	43.82	62.52	-18.70	QP	Р
6	0.2280	21.20	9.75	30.95	52.52	-21.57	AVG	Р
7	0.6219	29.31	9.78	39.09	56.00	-16.91	QP	Р
8	0.6219	21.86	9.78	31.64	46.00	-14.36	AVG	Р
9	3.3666	21.08	9.86	30.94	56.00	-25.06	QP	Р
10	3.3666	14.28	9.86	24.14	46.00	-21.86	AVG	Р
11	17.6250	20.76	10.54	31.30	60.00	-28.70	QP	Р
12	17.6250	13.40	10.54	23.94	50.00	-26.06	AVG	Р

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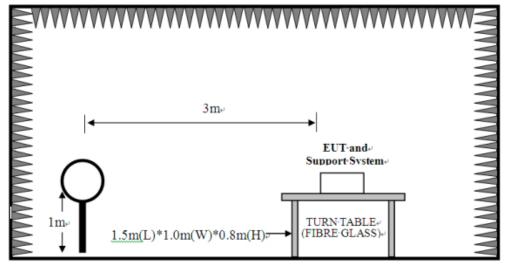


#### **6** Radiated Emission Test

- 6.1 Test Method and test Procedure:
- (1) The EUT was tested according to ANSI C63.10-2013. The radiated test was performed at Timeway EMC Laboratory. This site is on file with the FCC laboratory division, Registration No. 744189
- (2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.10-2013.
- (3) The frequency spectrum from 30 MHz to 25 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 kHz. All readings are above 1 GHz, peak values with a resolution bandwidth of 1 MHz (Note: for Fundamental frequency radiated emission measurement, RBW=3MHz, VBW=10MHz). Measurements were made at 3 meters.
- (4) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (5) The antenna polarization: Vertical polarization and Horizontal polarization.

## **Block diagram of Test setup**

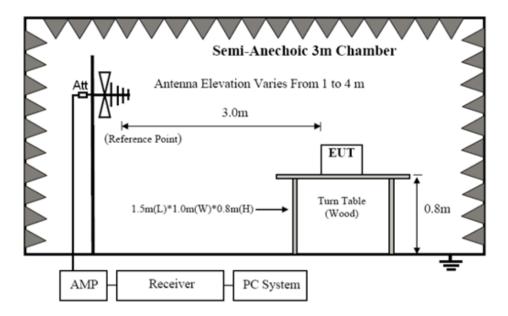
For radiated emissions from 9kHz to 30MHz



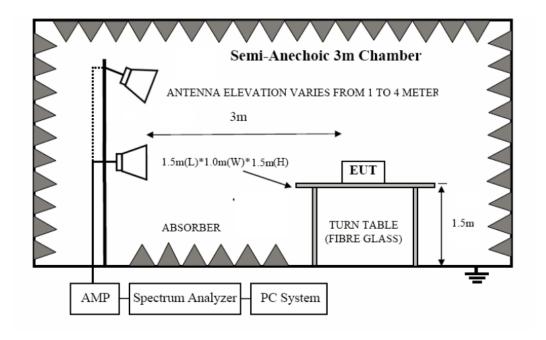
For radiated emissions from 30MHz to1GHz

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For radiated emissions above 1GHz



- 6.2 Configuration of The EUT

  Same as section 5.3 of this report
- 6.3 EUT Operating Condition

  Same as section 5.4 of this report.

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#### 6.4 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

## A FCC Part 15 Subpart C Paragraph 15.249(a) Limit

Fundamental Frequency	Field Stre	ngth of Fundame	ntal (3m)	Field Strength of Harmonics (3m)			
(MHz)	mV/m	dBuV/m uV/m dBuV/n				V/m	
2400-2483.5	50	94 (Average)	114 (Peak)	500	54 (Average)	74 (Peak)	

Note:

- 1. RF Field Strength (dBuV) = 20 log RF Voltage (uV)
- 2.Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
- 3. The emission limit in this paragraph is based on measurement instrumentation employing an average detector.

## B. Frequencies in restricted band are complied to limit on Paragraph 15.209.

Frequency Range (MHz)	Distance (m)	Field strength (dB $\mu$ V/m)			
0.009-0.490	3	20log(2400/F(kHz)) +40log (300/3)			
0.490-1.705	3	20log(24000/F(kHz)) +40log (30/3)			
1.705-30	3	69.5			
30-80	3	40.0			
88-216	3	43.5			
216-960	3	46.0			
Above 960	3	54.0			

Note:

- 1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
- 2. In the Above Table, the tighter limit applies at the band edges.
- 3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT
- 4. All scanning using PK detector. And the final emission level was get using QP detector for frequency range from 30-1000MHz.As to 1G-25G, the final emission level got using PK. For fundamental measurement, PK detector used.
- 5. For radiated emissions from 9kHz to 30MHz, the emission level is much less than the limit for more than 20dB. No necessary to take down the record.
- 6. Battery full charged during tests.

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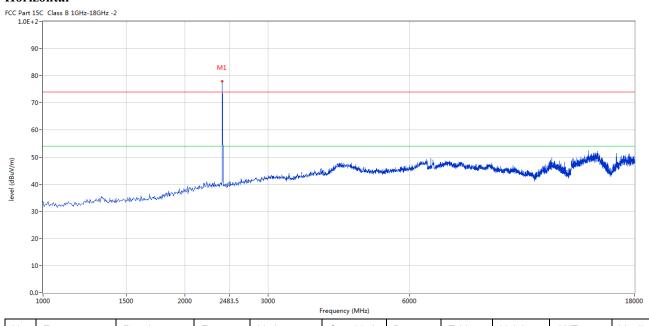


## 6.5 Test result

## A Fundamental & Harmonics Radiated Emission Data

Please refer to the following test plots for details: Low Channel-2403MHz

#### Horizontal



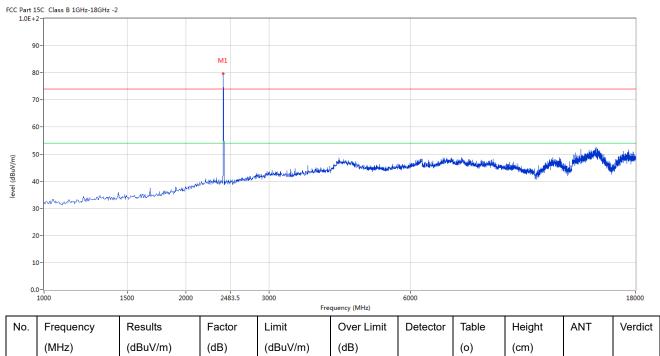
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2403	78.27	-3.57	114.0	-35.73	Peak	156.00	100	Horizontal	Pass

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## Vertical



	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2403	79.87	-3.57	114.0	-34.03	Peak	165.00	100	Vertical	Pass

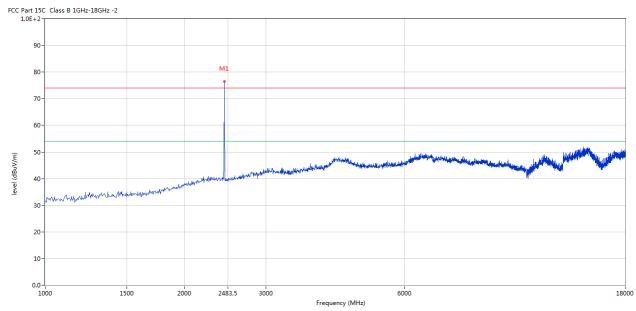
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Please refer to the following test plots for details: Middle Channel-2441MHz

#### Horizontal



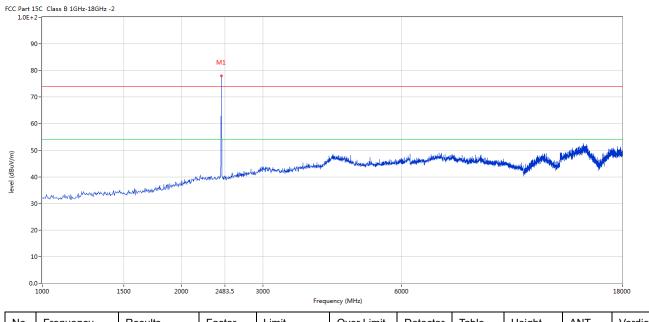
Ī	No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
		(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
	1	2441	76.44	-3.57	114.0	-37.56	Peak	148.00	100	Horizontal	Pass

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## Vertical



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2441	78.02	-3.57	114.0	-35.98	Peak	181.00	100	Vertical	Pass

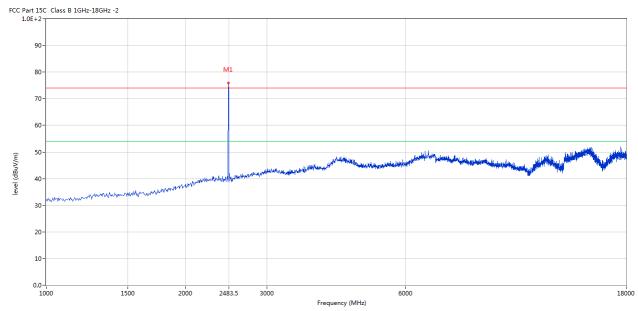
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Please refer to the following test plots for details: High Channel-2480MHz

#### Horizontal



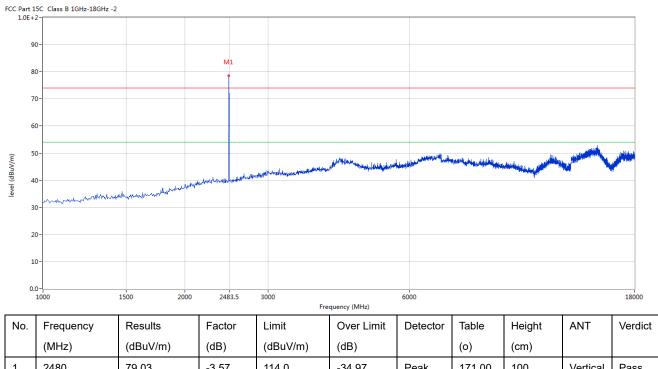
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2480	75.98	-3.57	114.0	-38.02	Peak	157.00	100	Horizontal	Pass

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## Vertical



171.00 Pass 2480 79.03 -3.57 114.0 -34.97 Peak 100 Vertical

Note: (2) Emission Level = Reading Level + Antenna Factor + Cable Loss-Amplifier

- (3) Margin=Emission-Limits
- (4) According to section 15.35(b), the peak limit is 20dB higher than the average limit
- (5) For test purpose, keep EUT continuous transmitting
- (5) For emission above 18GHz and Below 30MHz, it is only the floor noise. No necessary to take down.
- (6) the measured PK value less than the AV limit.

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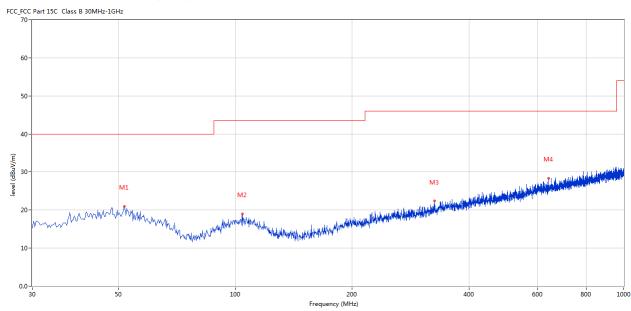


# B. General Radiated Emission Data Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting

**Results:** Pass

Please refer to following diagram for individual



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	51.820	20.99	-11.42	40.0	-19.01	Peak	117.00	100	Horizontal	Pass
2	104.186	18.95	-13.30	43.5	-24.55	Peak	244.00	100	Horizontal	Pass
3	325.534	22.35	-10.37	46.0	-23.65	Peak	337.00	100	Horizontal	Pass
4	640.947	28.38	-4.74	46.0	-17.62	Peak	47.00	100	Horizontal	Pass

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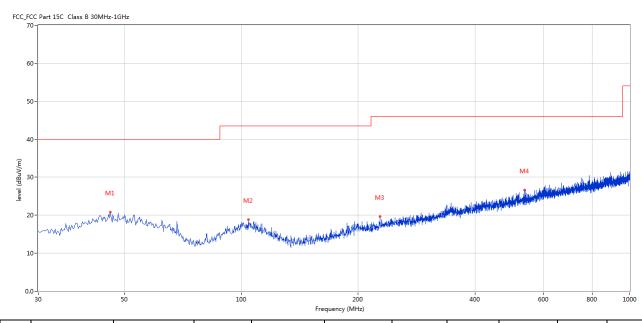


## Radiated Emission In Vertical (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting

Results: Pass

Please refer to following diagram for individual



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	46.001	20.79	-11.40	40.0	-19.21	Peak	321.00	100	Vertical	Pass
2	104.186	18.83	-13.30	43.5	-24.67	Peak	185.00	100	Vertical	Pass
3	227.588	19.64	-12.79	46.0	-26.36	Peak	174.00	100	Vertical	Pass
4	536.456	26.69	-6.41	46.0	-19.31	Peak	326.00	100	Vertical	Pass

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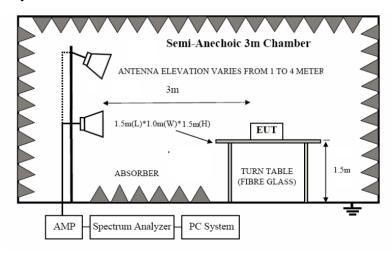


#### 7. Band Edge

#### 7.1 Test Method and test Procedure:

- (1) The EUT was tested according to ANSI C63.10–2013. The radiated test was performed at Timeway EMC Laboratory. This site is on file with the FCC laboratory division, Registration No. 744189
- (2) Set Spectrum as RBW=1MHz, VBW=3MHz and Peak detector used for PK value. RBW=1MHz, VBW=10Hz and Peak detector used for AV value.
- (3) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (4) The antenna polarization: Vertical polarization and Horizontal polarization.

## 7. 2 Radiated Test Setup



For the actual test configuration, please refer to the related items – Photos of Testing

## 7.3 Configuration of The EUT

Same as section 5.3 of this report

## 7.4 EUT Operating Condition

Same as section 5.4 of this report.

## 7.5 Band Edge Limit

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

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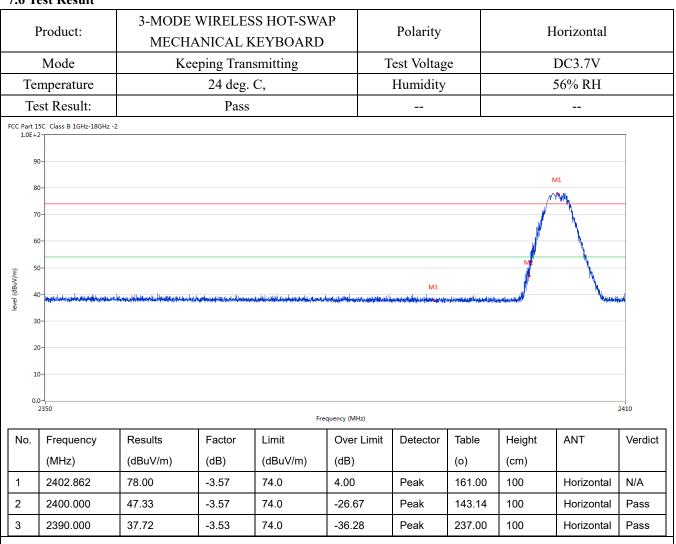
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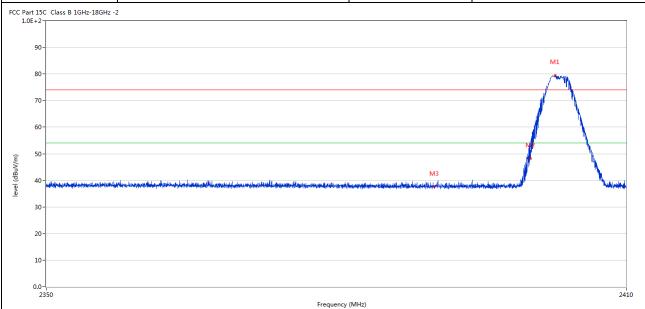
#### 7.6 Test Result



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Product:	3-MODE WIRELESS HOT-SWAP MECHANICAL KEYBOARD	Detector	Vertical
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass		

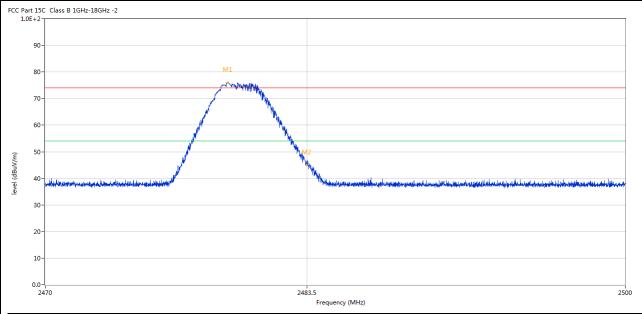


No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2402.562	79.48	-3.57	74.0	5.48	Peak	173.00	100	Vertical	N/A
2	2400.000	48.21	-3.57	74.0	-25.79	Peak	73.00	100	Vertical	Pass
3	2390.000	37.61	-3.53	74.0	-36.39	Peak	314.00	100	Vertical	Pass

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Product:	3-MODE WIRELESS HOT-SWAP MECHANICAL KEYBOARD	Polarity	Horizontal
Mode	Mode Keeping Transmitting		DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass		



No.	Frequency	Results	Factor	Limit	Over	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	Limit (dB)		(o)	(cm)		
1	2479.403	75.89	-3.57	74.0	1.89	Peak	152.00	100	Horizontal	N/A
2	2483.500	44.98	-3.57	74.0	-29.02	Peak	153.43	100	Horizontal	Pass

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]	Product: 3-MODE WIRELESS HOT-S MECHANICAL KEYBOA					Detector		Ve	ertical		
	Mode	Kε	eping Tran	nsmitting	Tes	st Voltage		DC3.7V			
Te	mperature		24 deg.	С,	Н	lumidity					
Те	est Result:		Pass								
CC Part 1 1.0E+	L5C Class B 1GHz-18GHz -:	2									
9	10-										
8	10-		M1								
7	70-		- MATANA	NYCON NO.							
6	60-		/	, M							
_ 5	60-	Jun 1	<u>(                                     </u>	M2							
о 4 (ш/мпар) јама	10 - Liquing of the party of th	Hannaga designation of the second		Mark Market	بخطيه أروان والمراد ومواد والمراد والم	thirmsoly, principle, and the conse	- Andrew Branch of the late of	i destina i astrologia i espera de la companya de l	rominya badika padasaya da iya	No-forward days a	
	0-										
	20-										
2											
	0-										
1	0-										
1				2483.5 Frequ	uency (MHz)					2500	
0.	0-	Results	Factor	Frequ	ouency (MHz)  Over Limit	Detector	Table	Height	ANT		
0.	0-	Results (dBuV/m)	Factor (dB)	Limit		Detector	Table (o)	Height (cm)	ANT		
1	o- 2470 Frequency			Limit (dBuV/m)	Over Limit	Detector Peak		_	ANT Vertical	verdic	

Note: 1. The PK emission level less than the AV limit. No necessary to record the AV emission level.

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## 8.0 Antenna Requirement

## **Applicable Standard**

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

This product has a PCB antenna. The antenna gain is 2.34dBi Max. It fulfills the requirement of this section. Test Result: Pass

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Product: 3-MODE WIRELESS HOT-SWAP MECHANICAL KEYBOARD				Test Mode		st Mode:	: Keep transmitting			
Mode	Keeping Transmitting				Test Voltage		DC3.7V			
Temperature		24 deg. C,			Humidity			56%	RH	
Test Result:	Pass				Detector			Pk	<u> </u>	
0dB Bandwidth		2.545MHz								
Ref Lvl	Marke ndB BW	r 1 [T1 r 20. 2.545090	.00 dB	VI	BW BW WT	100 ki 300 ki 5 m	Hz	F Att	20 dB	n
10 (18)	- DW	2.545090	JIO MHZ	21	N I		5 01	.II.C	аы	71
						<b>V</b> 1	[T1]	-5 2.40240	.82 dBm	n. Z
0		1	m A	$\gamma$		ndB BW ▼T1	5-13	2.54509	.00 dB 018 MHz	
-10			<del>/ \</del>	\_	M		[T1]	2.40163	.85 dBm 226 GHz .33 dBm	
-20 1MAX	T1	J				1	W <sub>T2</sub>	2.40417	735 GHz	11
-30								J. Mar	<u> </u>	
-40 -50							•		wh	ŗ.
-60										
-70										
-80										
-90 Center 2.4	103 GHz		500 }	κHz/				Spa	n 5 MHz	<u>]</u> :

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Product:	3-MODE WIRELESS HOT MECHANICAL KEYBO		Test Mode:	Keep tra	nsmitting	
Mode	Keeping Transmitting	g	Test Voltage	DC3.7V		
Temperature	24 deg. C,		Humidity	56%	6 RH	
Test Result:	Pass		Detector	P	PK	
20dB Bandwidth	2.405MHz					
Ŕ	Marker 1 [T1 ndB	] R	BW 100 kHz	RF Att	20 dB	
Ref Lvl 10 dBm	ndB 20.00 BW 2.40480962		BW 300 kHz WT 5 ms	Unit	dBm	
-10 -20 -1MAX -30 -40 -50 -60 -70			ndi BW V <sub>T</sub>	[T1] -6 2.44040 20 2.40480 [T1] -26 2.43977 [T1] -26 2.44217	.00 dB	
-90Center 2	.441 GHz	500 kHz/		Spa	n 5 MHz	
Date: 1.	JUL.2023 17:34:00					

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Product:	RELESS HOT-SW		Test Mode:			Keep tra	ansmitting		
Mode	g Transmitting			Test Voltage		DC3.7V			
Temperature	4 deg. C,			Humidity		56%	% RH		
Test Result:		Pass			Detector		I	PK	
20dB Bandwidth	2.	325MHz							
Ref Lvl	Marker ndB	1 [T1 ndB]		RBW VBW	100 kH		? Att	20 dB	
10 dBm		2.32464930 MH		SWT	5 ms		nit	dBm	ļ
0					▼1 [	T1]	-7 2.47940	.29 dBm	A
-10		1			BW ▼ <sub>T</sub>	[T1]	2.32464	930 MHz	
-20		N	<u></u>	~~	T WWA	[T1]	2.47886 -27 2.48118	273 GHz	
1MAX	TI	,			\	T2	2.10110	7737 0112	1MA
-40	ALL DOWNSON OF THE STATE OF THE					N.	4.Aa. ~	۸,	
-50 Manth	٧					•0	<b>V W V</b>	Mun	
-60									
-70									
-80									
-90 Center 2.4		50 54:24	0 kHz,	/			Spa	an 5 MHz	

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#### 10.0 FCC ID Label

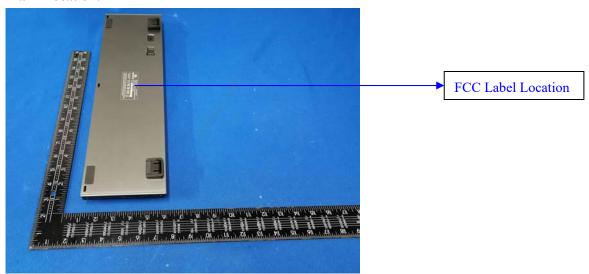
#### FCC ID: TUVET-8855A

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

#### Mark Location:



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#### 11.0 Photo of testing

#### 11.1 Conducted test View--



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#### Radiated emission test view



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11.2



## Outside View- keyboard



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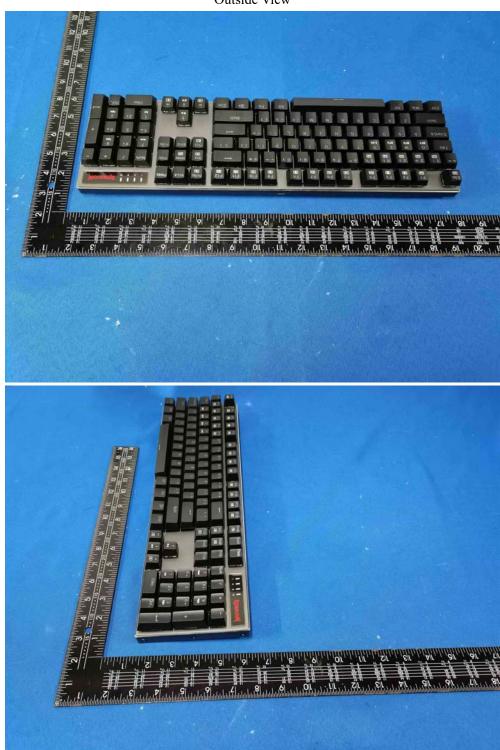
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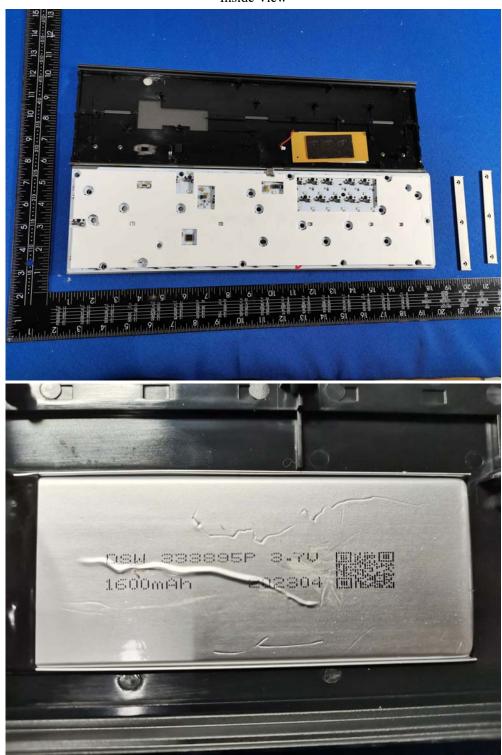
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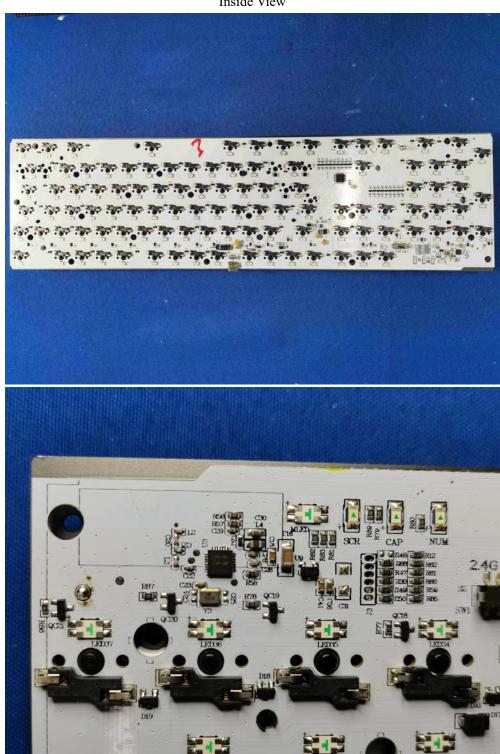
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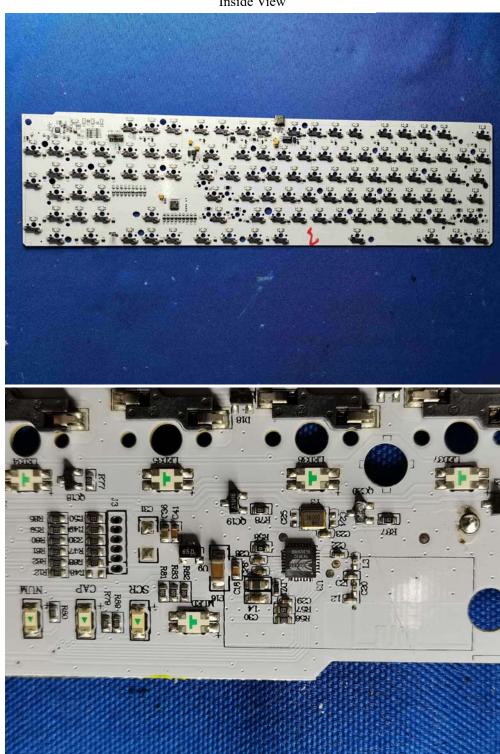
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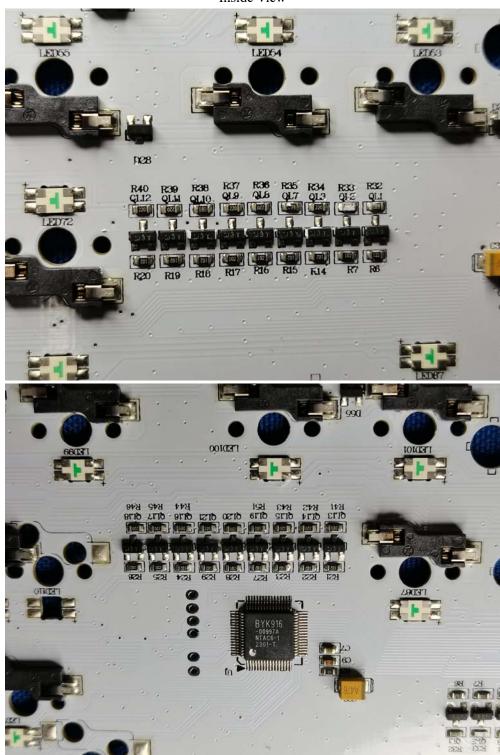
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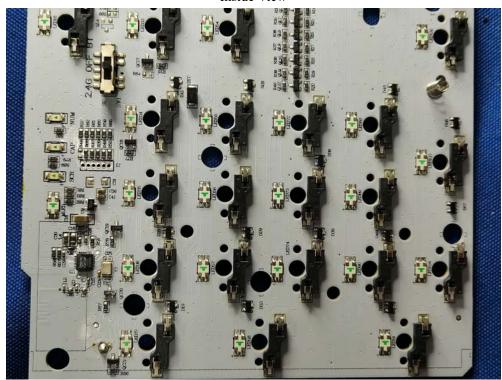
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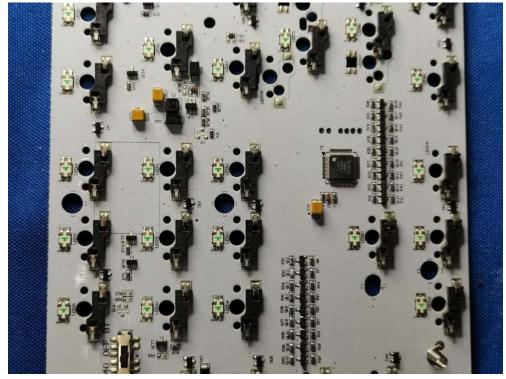
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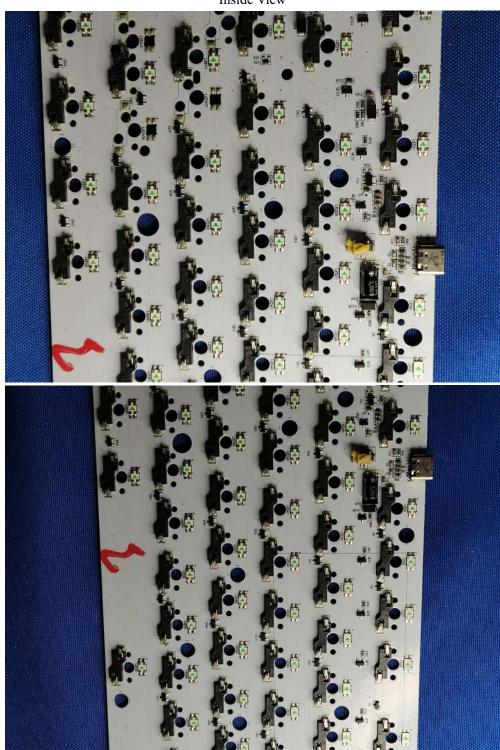
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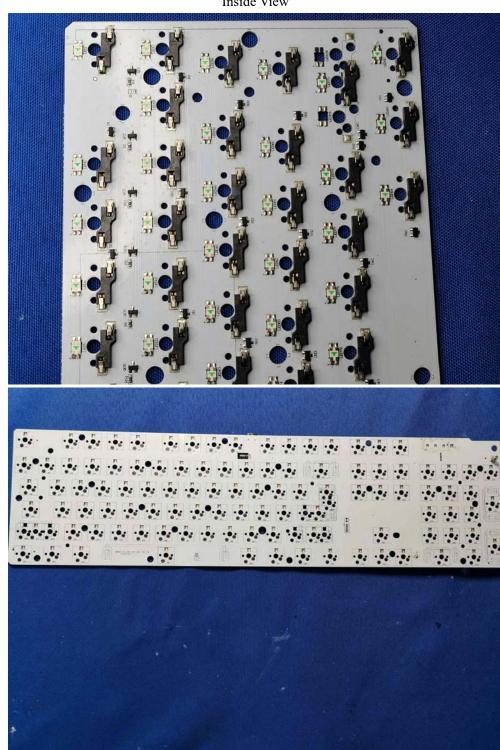
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