

Applicant: Eastern Times Technology Co.,Ltd

Product: REDRAGON WIRELESS CRYSTAL 75% GASKET

MECHANICAL KEYBOARD

Model No.: K649CT-RGB-PRO, BBK649CT-RGB-PRO,

K649CTB-RGB-PRO, ET-8882

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

Terry Tong

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

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Photo of Test Setup and EUT View.

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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: REDRAGON WIRELESS CRYSTAL 75% GASKET 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: K649CT-RGB-PRO

Additional Model Name BBK649CT-RGB-PRO, K649CTB-RGB-PRO, ET-8882

Rating: DC5V, 825mA or DC3.7V, 325mA
Battery DC3.7V, 3000mAh 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: 8882-A TX V1

Software Version: 3D56

Serial No.: RDK649CT-RGB-PR023042501514

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

1.4 Submitted Sample: 2 Samples

1.5 Test Duration

2023-06-12 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	1	2022-07-15	2023-07-14
RF Cable	Zhengdi	7m	1	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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#### **Technical Details** 3.0

#### 3.1 **Summary of test results**

The EUT has been tested according to the following 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**

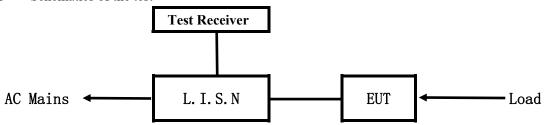
No modification by SHENZHEN TIMEWAY TESTING LABORATORIES

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### 5. Power Line Conducted Emission Test

### 5.1 Schematics of the test

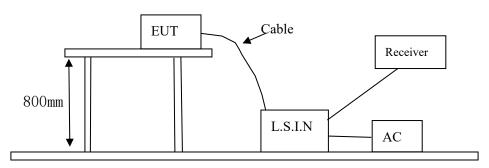


**EUT: Equipment Under Test** 

### 5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.4-2014. The Frequency spectrum from 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.4 –2014.

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



### 5.3 Configuration of the EUT

The EUT was configured according to ANSI C63.4-2014. 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
REDRAGON WIRELESS		K649CT-RGB-PRO,	
CRYSTAL 75% GASKET	Eastern Times Technology	BBK649CT-RGB-PRO,	TUVET-8882A
MECHANICAL	Co.,Ltd	K649CTB-RGB-PRO,	1UVE1-8882A
KEYBOARD		ET-8882	

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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 C63.4 -2014

- 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

Frequency	Limits (dB $\mu$ 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)

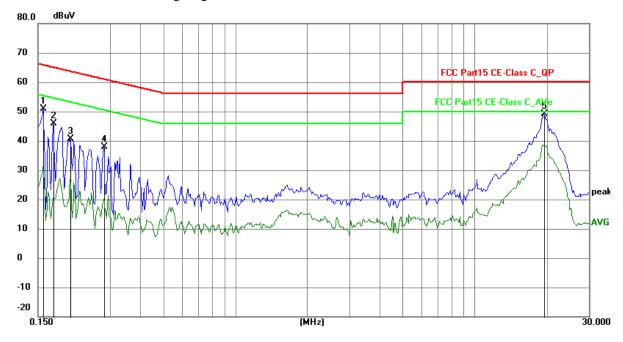
**EUT Operating Environment** 

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	0.1578	40.99	9.78	50.77	65.58	-14.81	peak	Р
2	0.1734	36.23	9.77	46.00	64.80	-18.80	peak	Р
3	0.2046	30.87	9.75	40.62	63.42	-22.80	peak	Р
4	0.2826	28.15	9.76	37.91	60.74	-22.83	peak	Р
5	19.4541	38.45	10.65	49.10	60.00	-10.90	peak	Р

Note: the PK measurement level less than the QP and AV limit, so no necessary to record the final QP and AV test result.

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

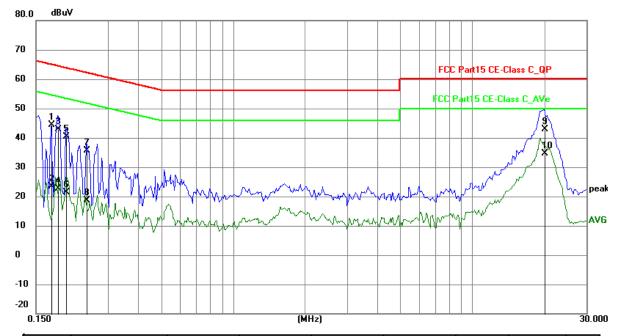
**EUT Operating Environment** 

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	0.1734	34.56	9.77	44.33	64.80	-20.47	QP	Р
2	0.1734	13.67	9.77	23.44	54.80	-31.36	AVG	Р
3	0.1850	33.11	9.76	42.87	64.26	-21.39	QP	Р
4	0.1850	12.75	9.76	22.51	54.26	-31.75	AVG	Р
5	0.2007	30.54	9.75	40.29	63.58	-23.29	QP	Р
6	0.2007	11.69	9.75	21.44	53.58	-32.14	AVG	Р
7	0.2436	25.99	9.75	35.74	61.97	-26.23	QP	Р
8	0.2436	8.83	9.75	18.58	51.97	-33.39	AVG	Р
9	19.9728	32.32	10.68	43.00	60.00	-17.00	QP	Р
10	19.9728	23.91	10.68	34.59	50.00	-15.41	AVG	Р

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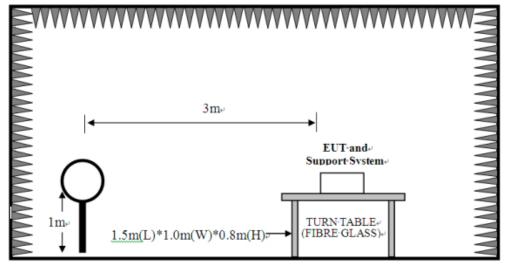


### **6** Radiated Emission Test

- 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**

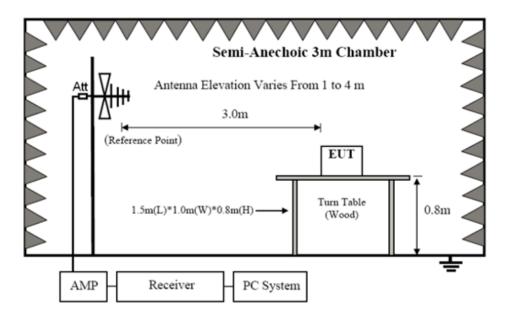
For radiated emissions from 9kHz to 30MHz



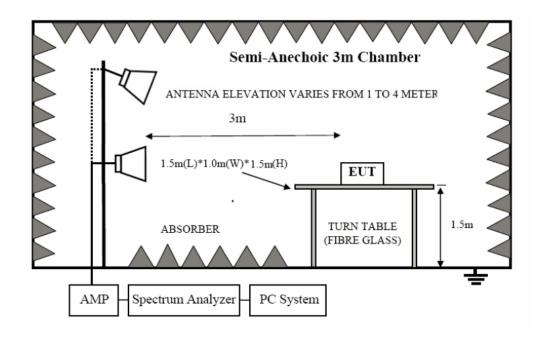
For radiated emissions from 30MHz to1GHz

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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 Strength of Fundamental (3m)			Field S	trength of Harmo	onics (3m)
(MHz)	mV/m	dBuV/m		uV/m	dBu	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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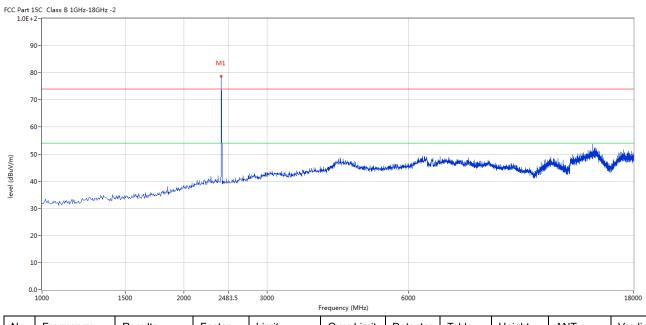


### 6.5 Test result

## A Fundamental & Harmonics Radiated Emission Data

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

### Horizontal



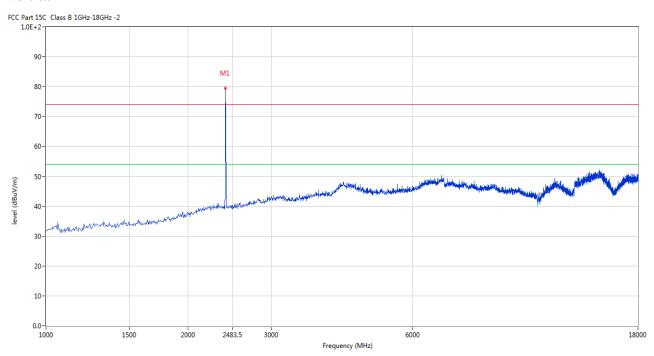
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2403	78.59	-3.57	114.0	-35.41	Peak	136.00	100	Horizontal	Pass

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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	2403	79.46	-3.57	114.0	-34.54	Peak	176.00	100	Vertical	Pass

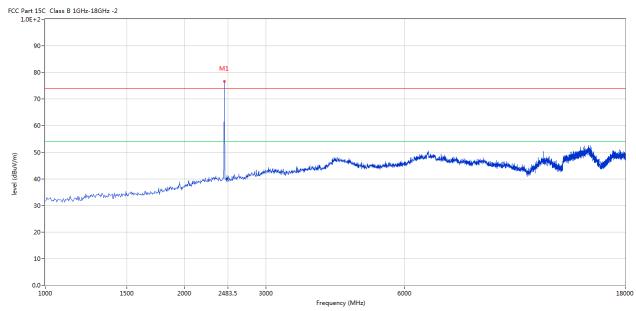
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Please refer to the following test plots for details: Middle Channel-2441MHz

### Horizontal



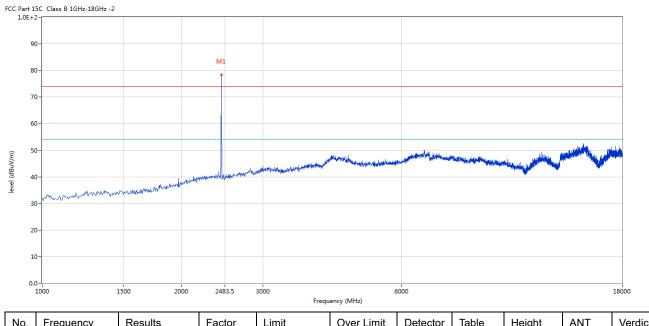
Ī	No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
		(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
	1	2441	76.57	-3.57	114.0	-37.43	Peak	159.00	100	Horizontal	Pass

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### Vertical



ſ	No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
		(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
Ī	1	2441	78.34	-3.57	114.0	-35.66	Peak	158.00	100	Vertical	Pass

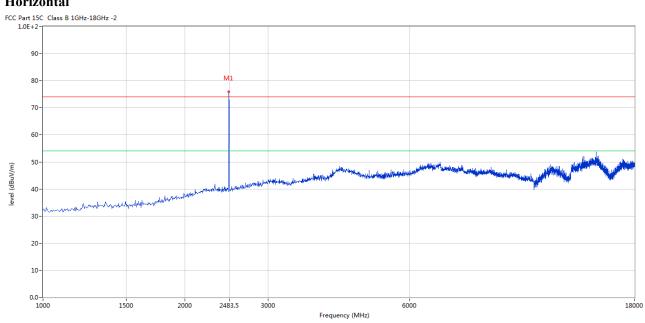
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Please refer to the following test plots for details: High Channel-2480MHz

### Horizontal



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2480	75.85	-3.57	114.0	-38.15	Peak	133.00	100	Horizontal	Pass

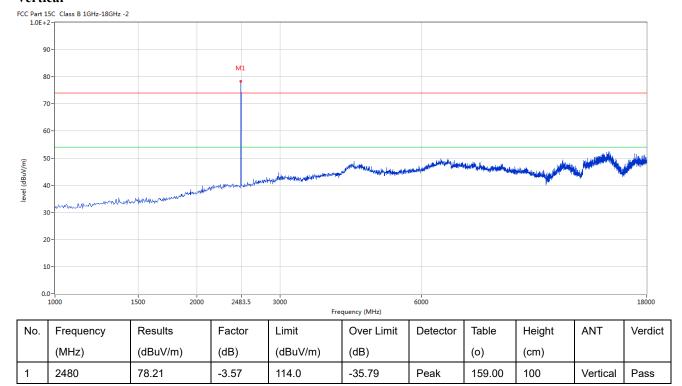
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### Vertical



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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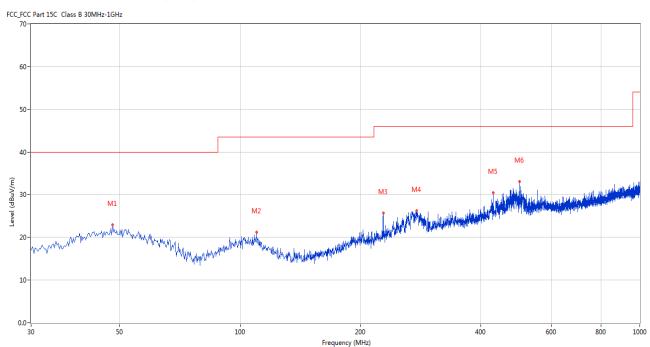


# B. General Radiated Emission Data Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting

**Results:** Pass

Please refer to following diagram for individual



No.	Frequency	Results	Factor	Limit	Margin	Detector	Table	Height	Antenna	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(Degree)	(cm)		
1	47.941	22.90	-11.30	40.0	17.10	Peak	29.00	100	Horizontal	Pass
2	110.005	21.20	-13.60	43.5	22.30	Peak	312.00	100	Horizontal	Pass
3	228.073	25.68	-12.77	46.0	20.32	Peak	240.00	100	Horizontal	Pass
4	276.318	26.26	-11.61	46.0	19.74	Peak	273.00	100	Horizontal	Pass
5	430.025	30.50	-7.97	46.0	15.50	Peak	324.00	100	Horizontal	Pass
6	499.848	33.09	-6.90	46.0	12.91	Peak	305.00	100	Horizontal	Pass

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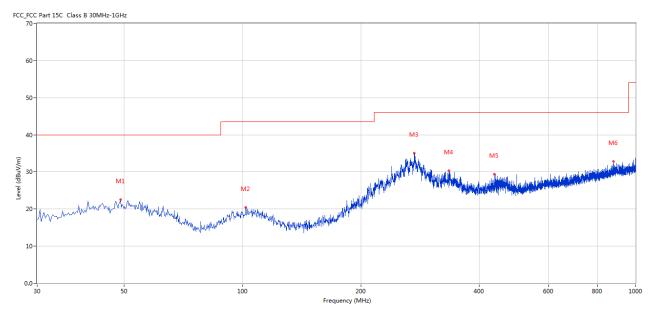


## Radiated Emission In Vertical (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting

**Results:** Pass

Please refer to following diagram for individual



No.	Frequency	Results	Factor	Limit	Margin	Detector	Table	Height	Antenna	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(Degree)	(cm)		
1	48.910	22.56	-11.21	40.0	17.44	Peak	333.00	100	Vertical	Pass
2	101.762	20.41	-13.43	43.5	23.09	Peak	107.00	100	Vertical	Pass
3	273.652	35.13	-11.64	46.0	10.87	Peak	72.00	100	Vertical	Pass
4	335.231	30.36	-9.95	46.0	15.64	Peak	65.00	100	Vertical	Pass
5	437.298	29.43	-8.03	46.0	16.57	Peak	290.00	100	Vertical	Pass
6	878.538	32.78	-1.99	46.0	13.22	Peak	38.00	100	Vertical	Pass

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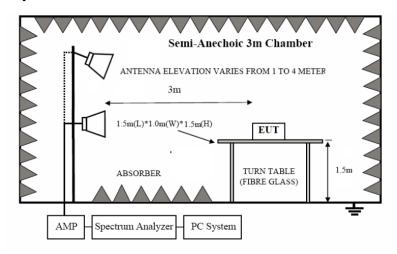
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### 7. Band Edge

### 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.

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

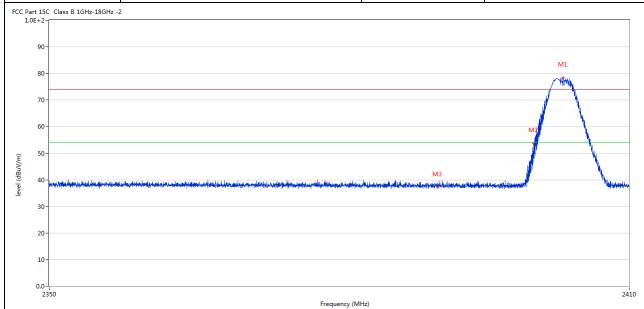
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### 7.6 Test Result

Product:	REDRAGON WIRELESS CRYSTAL 75% GASKET MECHANICAL KEYBOARD	Polarity	Horizontal
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	2403.072	78.35	-3.57	74.0	4.35	Peak	135.00	100	Horizontal	N/A
2	2400.000	53.71	-3.57	74.0	-20.29	Peak	154.00	100	Horizontal	Pass
3	2390.000	37.22	-3.53	74.0	-36.78	Peak	199.33	100	Horizontal	Pass
Ü	2000.000	07.22	0.00	74.0	00.70	1 can	100.00	100	Tionzontai	ı u

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		•			•					
]	Product:	75% GA		ESS CRYSTA CHANICAL		Detector		V	ertical	
	M - 1 -				Т-	-4 37-14		D	C2 7V	
	Mode	Kee	ping Trans			st Voltage			C3.7V	
	mperature		24 deg. (	Ξ,	Н	Iumidity		56	5% RH	
Te	est Result:		Pass							
FCC Part 1 1.0E+	15C Class B 1GHz-18GHz -	2								
	90-									
9	,,,,							ı	M1	
8	30-								AMM.	
7	70-								1	
6	50-							ſ	"\	
								M	- The state of the	
(w//	50-							, j	$\overline{}$	
level (dBuV/m)	الراوا والمرافع والمراوا والمراوا والمراوا والمراوا والمراوا والمراوا والمراوا والمراوا والمراوا	والمستن والمسترار والمستران والمسترار	erejeskantenesisekakususususus.	helder discussional lights for the total to take the light	المعادمة والمستوارة والماران والمعادر	M3	بعاده المراجعة والمتحاط والمتح	الإدريسيس	'W <sub>k</sub>	Marielan
	30-		. , , , , , , , ,		Proceedings of the second			Control of the		
2	20-									
1	10-									
0	-0.									
-	2350			Frequ	uency (MHz)					2410
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2402.652	79.40	-3.57	, ,	5.40	Peak	183.00	100	Vertical	N/A
		1	+	+				<del>                                     </del>	<del>                                     </del>	
2	2400.000	48.59	-3.57	74.0	-25.41	Peak	178.00	100	Vertical	Pass
	2400.000 2390.000	48.59 38.21	-3.57 -3.53	_	-25.41 -35.79	Peak Peak	178.00 91.67	100	Vertical Vertical	Pass Pass

No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2402.652	79.40	-3.57	74.0	5.40	Peak	183.00	100	Vertical	N/A
2	2400.000	48.59	-3.57	74.0	-25.41	Peak	178.00	100	Vertical	Pass
3	2390.000	38.21	-3.53	74.0	-35.79	Peak	91.67	100	Vertical	Pass

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-	Product:			ELESS CRY		Pola	rity		Horizonta	.1
-	r roduct.	7570 €	KEYB(			1 010	irrty		Horizona	<b>1</b> 1
	Mode	K	Leeping Tr	ansmitting		Test V	oltage		DC3.7V	
Te	mperature		24 de	g. C,		Hum			56% RH	
Te	est Result:		Pa	SS		-	-			
Part :	15C Class B 1GHz-18GHz -	2								
g	90-									
8	30-		M1							
7	70-			PROPERTY.						
·				<b>N</b>						
6	50-		1	**************************************						
. 5	50-	JI.	/	M2						
. 5	10-			1	<b>k</b>					
7	and property lighty look by the house white	10世代の大学の大学の大学の大学の大学の大学の大学の大学の大学の大学の大学の大学の大学の			· · · · · · · · · · · · · · · · · · ·	riplioneries de la company	والمراجع المراجع والمراجع	description of the birth service	Conf. Apr., 1924 and Wilder and Assistance of the	Made and make
3	30-									
2	20-									
1	10-									
0	.0-  2470			2483.5	Frequency (MHz)					2500
No.	Frequency	Results	Factor	Limit	Over	Detector	Table	Height	ANT	Verdi
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	Limit (dB)		(o)	(cm)		
1	2479.838	75.39	-3.57	74.0	1.39	Peak	161.00	100	Horizontal	N/A
2	2483.500	44.15	-3.57	74.0	-29.85	Peak	180.00	100	Horizontal	Pass

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]	Product:	REDRAGON WIRELESS CRYSTAL 75% GASKET MECHANICAL KEYBOARD				Detector		Ve	ertical	
	Mode	Ke	eping Tran	nsmitting	Tes	st Voltage	DC3.7V			
Te	mperature	24 deg. C,			Н	lumidity		56% RH		
Те	est Result:	Pass								
1.0E+ 9 8 8 7 6 (w/\ngp)   anal			M1	2483.5	quency (MHz)	in the contract of the contrac	Rayer reservoir a harde busser of	glik dan sije sali kalan papanilipandi	n New Myseur engag of Mandewi desigland en	2500
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdic
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
		77.94	-3.57	74.0	3.94	Peak	153.00	100	Vertical	N/A
1	2479.778					1		1	+	

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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	REDRAGO	N WIRELES	SS CRYSTA	L					
Product:	75% GA	SKET MECI	HANICAL		Test Mode	e:	Keep tran	smitting	
	KEYBOARD								
Mode	Keeping Transmitting				Test Volta	ge	DC3.7V		
Temperature	24 deg. C, Pass 2.435MHz				Humidity	У	56% RH PK 		
Test Result:					Detector	•			
0dB Bandwidth									
	Marke	er 1 [T1 n	ndB]	RB	W 100	kHz R	F Att	20 dB	
Ref Lvl	ndB		00 dB	VB		kHz			
10 dBm	BW	2.434869	74 MHz	SW	T 5	ms U	nit	dBn	n –
					•	1 [T1]	- 5	.95 dBm	ı Z
							2.40240	381 GHz	
0		1			ne		20	.00 dB	
			, M	\	B¹		2.43486	974 MHz	
-10		<del>                                     </del>	Mary Mary	1			2.40173	246 GHz	
		lln v st		M	~~ ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	T2 [T1]	-24	.93 dBm	1
-20	т·1	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				<b>Ч</b> <u>т</u> 2	2.40416	733 GHz	11
IMAX	Tim	7				<b>Y</b>			
-30	John 1970 1970 1970 1970 1970 1970 1970 1970								
80						\	^		
-40						- m/h	AND TANKING	ty .	
Nav								Jun.	
-50									
-60									
-70									
-80									
-90									
Center 2.	403 GHz		500 k	Hz/			Spa	n 5 MHz	:

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Product:	REDRAGON WIRELESS CRYSTAL 75% GASKET MECHANICAL KEYBOARD				Test Mode:		Keep transmitting		
Mode	Keeping	Transmitting		Test Voltage			DC	3.7V	
Temperature	24 deg. C,				Humidity		56% RH		
Test Result:	Pass				Detector		PK		
20dB Bandwidth	2.315MHz								
Ref Lvl	ndB	1 [T1 ndB] 20.00 dB .31462926 MHz	Z	BW BW WT	100 kH 300 kH 5 ms	z	F Att	20 dB	
10		1	~		nds BW VTI	[T1]	-6 2.44040 20 2.31462 -26 2.43984	.73 dBm 381 GHz .00 dB 926 MHz .83 dBm	A
-20 1MAX	To the state of th	A V	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	,^^W	W.V.L.	[T1]	-26 2.44215	269 GHz .17 dBm 731 GHz	1MA
-40	AND AND THE						tww.	Markey	
-60									
-70									
-80									
-90 Center 2	.441 GHz .JUL.2023 17:3		kHz/				Spa	n 5 MHz	

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Product:	REDRAGON WIRELESS CRYSTA 75% GASKET MECHANICAL KEYBOARD	L Test Mode:	Keep transmitting		
Mode	Keeping Transmitting	Test Voltage	DC3.7V		
Temperature	24 deg. C,	Humidity	56% RH		
Test Result:	Pass	Detector	PK		
20dB Bandwidth	2.265MHz				
Ref Lvl 10 dBm	Marker 1 [T1 ndB]  ndB 20.00 dB  BW 2.26452906 MHz	RBW 100 kH VBW 300 kH SWT 5 ms	z		
-10 -20 -1MAX -30 -40 -50 -60 -70 -80		nd8 BW VT	T2 2.48115731 GHz  2.48115731 GHz  1MA		
-90 Center 2	.48 GHz 500 .JUL.2023 17:56:35	cHz/	Span 5 MHz		

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### 10.0 FCC ID Label

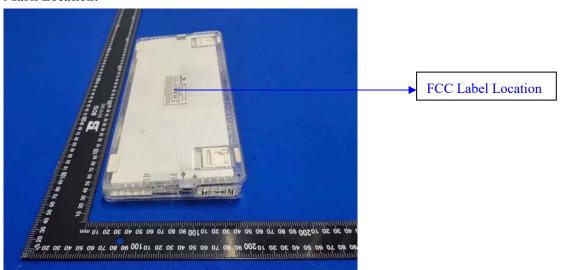
### FCC ID: TUVET-8882A

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--



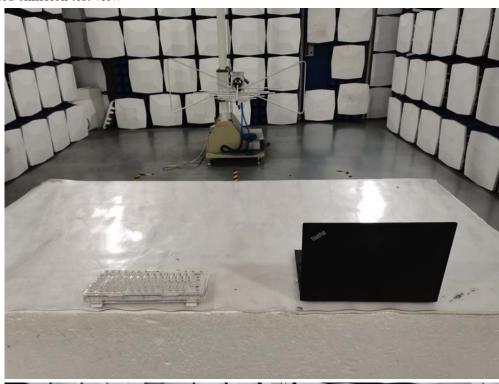
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# Radiated emission test view





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

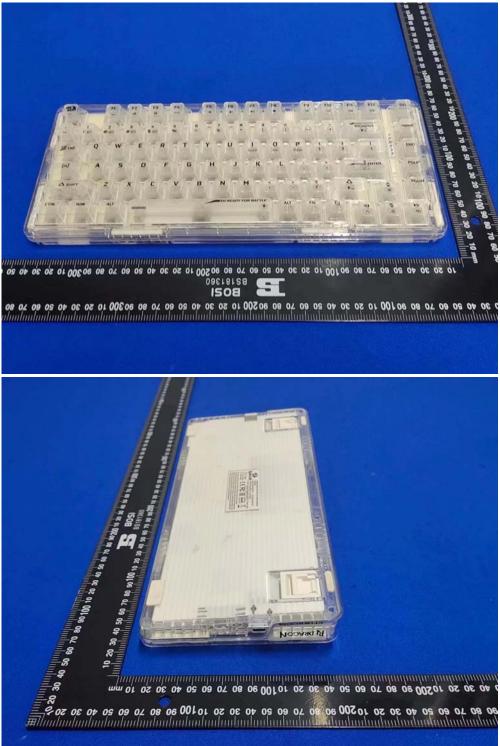
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#### 11.2 Outside View- keyboard



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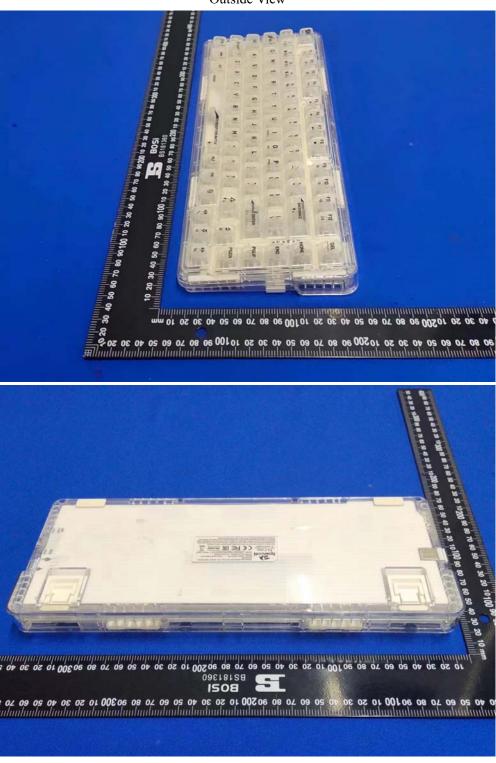
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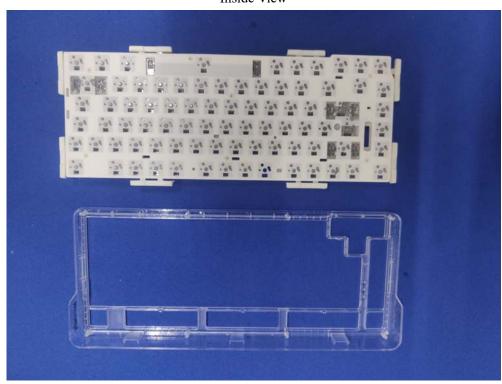
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Inside View





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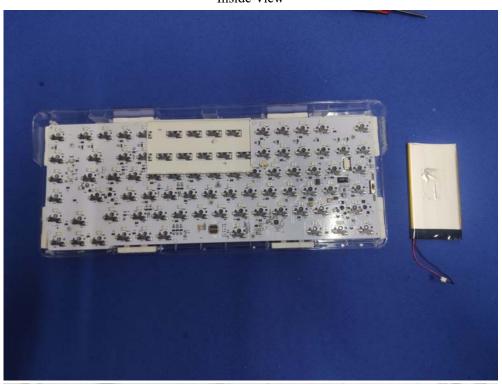
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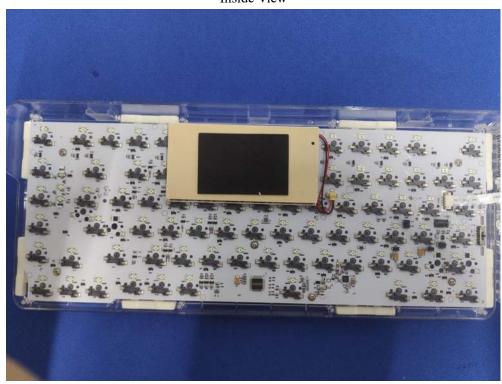
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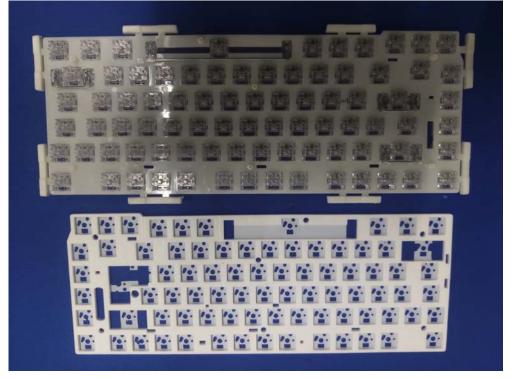
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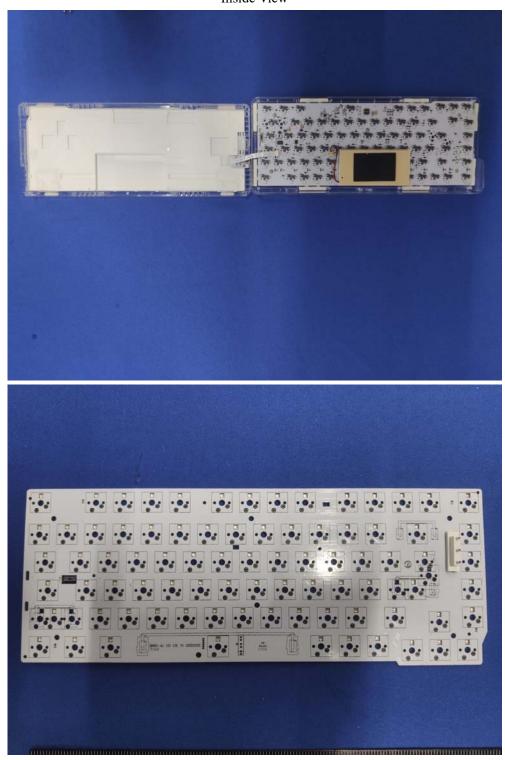
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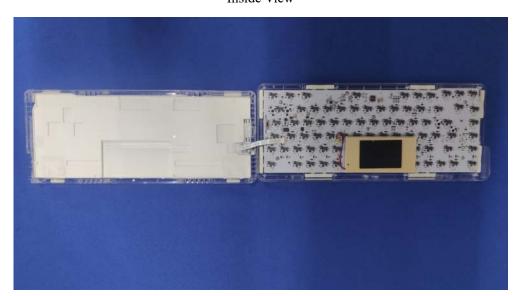
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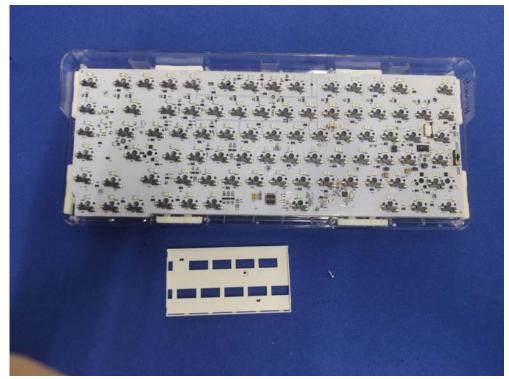
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