

Report No.: File Reference No.:	TW2009127E 2020-10-27
Applicant:	Eastern Times Technology Co.,Ltd
Product:	DUAL MODE RGB MECHANICAL KEYBOARD
Model No.:	K599-KRS, ET-8475
Brand Name:	REDRAGON
Test Standards:	FCC Part 15.249
Test Result:	It is herewith confirmed and found to comply with the requirements set up by ANSI C63.4&FCC Part 15 Subpart C, Paragraph 15.249 regulations for the evaluation of electromagnetic compatibility
Apparated Byo Action of the second se	electromagnetic compatibility

Dated:

Mana

TIFIC

October 27, 2020

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



# **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 17025:2005 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

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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<br/>Village, Nanshan District, Shenzhen, ChinaTelephone:(755) 83448688Fax:(755) 83442996Site on File with the Federal Communications Commission – United SatesRegistration Number: 744189For 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:	DUAL MODE RGB MECHANICAL KEYBOARD
Manufacturer:	Eastern Times Technology Co.,Ltd
Address:	Building D,Nan An Industrial Area,Youganpu Village,Fenggang Town, Dongguan
	City,Guangdong,China.
Brand Name:	REDRAGON
Model Number:	K599-KRS
Additional Model Name	ET-8475
Input Voltage:	5V, 350mA, Battery: 3.7V, 350mA
Modulation Type:	GFSK
Operation Frequency	2408-2474MHz
Channel Spacing:	2MHz
Channel Number:	34
Software Version:	RK-DualKB-Device-MA138K9-3-200120-1.00-0105-FCB6.hex
Hardware Version:	MA138K9-3 SSOP28
Antenna Designation	PCB antenna with gain -0.58dBi Max (Declared by the applicant)

- 1.4 Submitted Sample
  - 1 Sample

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- 1.5 Test Duration 2020-09-11 to 2020-10-27
- 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



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2.0 Test Equipment	2.0 Test Equipment					
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date	
ESPI Test Receiver	R&S	ESPI 3	100379	2020-06-23	2021-06-22	
LISN	R&S	EZH3-Z5	100294	2020-06-23	2021-06-22	
LISN	R&S	EZH3-Z5	100253	2020-06-23	2021-06-22	
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2020-06-23	2021-06-22	
Loop Antenna	EMCO	6507	00078608	2018-06-25	2021-06-24	
Spectrum	R&S	FSIQ26	100292	2020-06-23	2021-06-22	
Horn Antenna	A-INFO	LB-180400-KF	J211060660	2020-06-23	2021-06-22	
Horn Antenna	R&S	BBHA 9120D	9120D-631	2018-07-09	2021-07-08	
Power meter	Anritsu	ML2487A	6K00003613	2020-06-23	2021-06-22	
Power sensor	Anritsu	MA2491A	32263	2020-06-23	2021-06-22	
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2018-07-04	2021-07-03	
9*6*6 Anechoic			N/A	2018-02-07	2021-02-06	
EMI Test Receiver	RS	ESVB	826156/011	2020-06-23	2021-06-22	
EMI Test Receiver	RS	ESH3	860904/006	2020-06-23	2021-06-22	
Spectrum	HP/Agilent	ESA-L1500A	US37451154	2020-06-23	2021-06-22	
Spectrum	HP/Agilent	E4407B	MY50441392	2020-06-23	2021-06-22	
Spectrum	RS	FSP	1164.4391.38	2020-01-16	2021-01-15	
RF Cable	Zhengdi	ZT26-NJ-NJ-8 M/FA		2020-06-23	2021-06-22	
RF Cable	Zhengdi	7m		2020-06-23	2021-06-22	
RF Switch	EM	EMSW18	060391	2020-06-23	2021-06-22	
Pre-Amplifier	Schwarebeck	BBV9743	#218	2020-06-23	2021-06-22	
Pre-Amplifier	HP/Agilent	8449B	3008A00160	2020-06-23	2021-06-22	
LISN	SCHAFFNER	NNB42	00012	2020-01-07	2021-01-06	

# 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	V18.06
Frequency	

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The EUT has been tested according to the following specifications:

# **3.0** Technical Details

#### 3.1 Summary of test results

Standard	Test Type	Result	Notes
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
CC Part 15, Paragraph 15.209 and RSS-210	Radiated Emission Test	Pass	Complies
CC 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

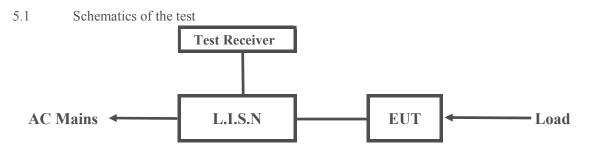
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# 5. Power Line Conducted Emission Test

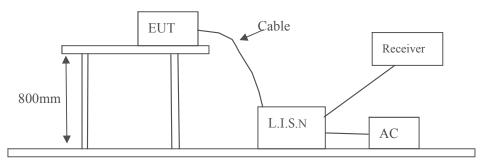


EUT: Equipment Under Test

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 500hm/50uH as specified by section 5.1 of ANSI C63.4-2014. AC120V 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. One channels are provided to the EUT

А.	EUT
	201

Device	Manufacturer	Model	FCC ID
DUAL MODE RGB MECHANICAL KEYBOARD	Eastern Times Technology Co.,Ltd	K599-KRS, ET-8475	TUVET-8475

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#### B. Internal Device

2.				
	Device	Manufacturer	Model	FCC ID/SDOC
	N/A			

#### C. Peripherals

Device	Manufacturer	Model	Rating
Power Supply	KEYU	KA23-0502000DEU	Input: 100-240V~, 50/60Hz,
			0.35A;
			Output: DC3.7V, 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

	Class B Lin	nits (dBµV)
Frequency(MH	Z) 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
$5.00~\sim~30.00$	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:

The frequency spectrum from 0.15MHz to 30MHz was investigated. All reading are quasi-peak values with a resolution bandwidth of 9kHz.

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Pass

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

# **EUT Operating Environment**

Temperature: 25°C Humidity: 75%RH

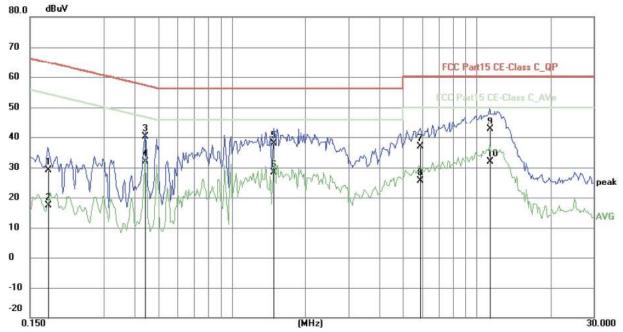
Atmospheric Pressure: 101 kPa

# EUT set Condition: Keyboard TX Under Charging Mode

# Equipment Level: Class B

**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	0.1773	19.34	9.77	29.11	64.61	-35.50	QP	Ρ
2	0.1773	7.63	9.77	17.40	54.61	-37.21	AVG	Ρ
3	0.4425	30.38	9.77	40.15	57.01	-16.86	QP	Ρ
4	0.4425	22.21	9.77	31.98	47.01	-15.03	AVG	Ρ
5	1.4838	27.98	9.79	37.77	56.00	-18.23	QP	Ρ
6	1.4838	18.55	9.79	28.34	46.00	-17.66	AVG	Ρ
7	5.8859	27.01	9.97	36.98	60.00	-23.02	QP	Ρ
8	5.8859	15.70	9.97	25.67	50.00	-24.33	AVG	Ρ
9	11.2719	32.36	10.22	42.58	60.00	-17.42	QP	Ρ
10	11.2719	21.78	10.22	32.00	50.00	-18.00	AVG	Ρ

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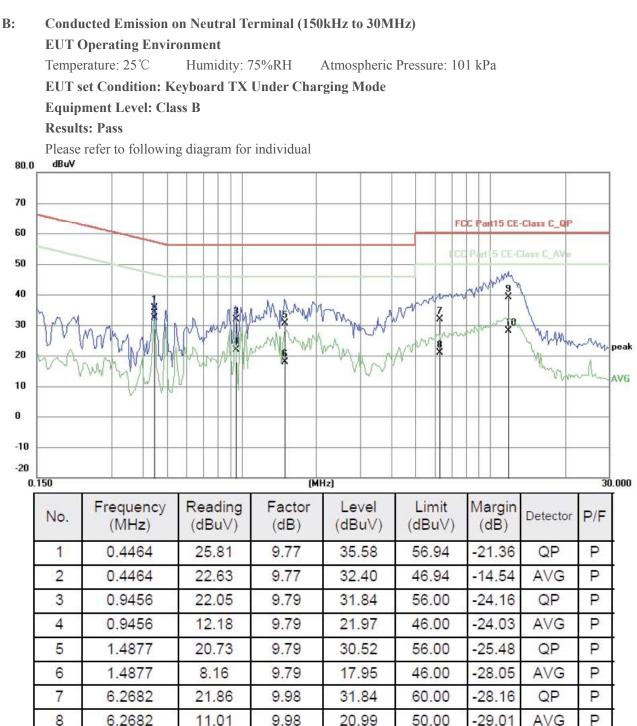


Ρ

Ρ

QP

AVG



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28.84

17.91

11.8530

11.8530

9

10

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39.08

28.15

60.00

50.00

-20.92

-21.85

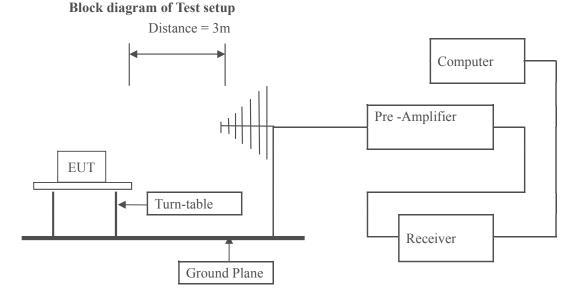
10.24

10.24



# 6 Radiated Emission Test

- 6.1 Test Method and test Procedure:
- 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.



- 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	ength of Fundame	ental (3m)	Field Strength of Harmonics (3m)		
(MHz)	mV/m	dBu	V/m	uV/m	dBu	V/m
2400-2483.5	50	94 (Average) 114 (Peak)		500	54 (Average)	74 (Peak)
	1 (15 75)		· · · · · ·			

# 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 ( $dB\mu V/m$ )
30-88	3	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

Note: 1. RF Voltage (dBuV) =  $20 \log \text{RF}$  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 below 30MHz, it was the floor noise.

6. Battery fully charged was used during tests.

(7) X,Y,Z are all have been tested, only worse case is reported

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6.5	Test re	sult			
Α	Funda	amental & Harmonics	Radiated	<b>Emission Data</b>	
Product:		DUAL MODE RGB		Test Mode:	Keep transmitting-Low Channel
		MECHANICAL KEYBO	ARD		
Test Item	1:	Fundamental Radiated	Emission	Temperature:	25℃
		Data			
Test Volt	age:	DC3.7V		Humidity:	56%
Test Resu	ult:	Pass			

Frequency	Emission PK/AV	Horiz /	Limits PK/AV	Margin
(MHz)	(dBuV/m)	Vert	(dBuV/m)	( <b>d</b> B)
2408	86.33 (PK)	Н	114/94	-7.67
2408	76.19 (PK)	V	114/94	-17.81
4816	47.57 (PK)	Н	74/54	-6.43
4816	48.50 (PK)	V	74/54	-5.50
7224		H/V	74/54	
9632		H/V	74/54	
12040		H/V	74/54	
14448		H/V	74/54	
16856		H/V	74/54	
19264		H/V	74/54	
21672		H/V	74/54	
24080		H/V	74/54	

Note: (1) PK= Peak, AV= Average

(2) Emission Level = Reading Level + Antenna Factor + Cable Loss - Pre-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

(6) The PK emission level less than the AV limit. No necessary to record the AV emission level.

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Product:	DUAL MODE RGB	Test Mode:	Keep transmitting-Middle Channel
	MECHANICAL KEYBOARD		
Test Item:	Fundamental Radiated Emission	Temperature:	25°C
	Data		
Test Voltage:	DC3.7V	Humidity:	56%
Test Result:	Pass		

Frequency	<b>Emission PK/AV</b>	Horiz /	Limits PK/AV	Margin
(MHz)	(dBuV/m)	Vert	(dBuV/m)	( <b>dB</b> )
2440	85.36 (PK)	Н	114/94	-8.64
2440	76.44 (PK)	V	114/94	-17.56
4880	49.42 (PK)	Н	74/54	-4.58
4880	48.27 (PK)	V	74/54	-5.73
7320		H/V	74/54	
9760		H/V	74/54	
12200		H/V	74/54	
14640		H/V	74/54	
17080		H/V	74/54	
19520		H/V	74/54	
21960		H/V	74/54	
24400		H/V	74/54	

Note: (1) PK= Peak, AV= Average

(2) Emission Level = Reading Level + Antenna Factor + Cable Loss - Pre-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

(6) The PK emission level less than the AV limit. No necessary to record the AV emission level.

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

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Product:	DUAL MODE RGB	Test Mode:	Keep transmitting-High Channel
	MECHANICAL KEYBOARD		
Test Item:	Fundamental Radiated Emission	Temperature:	25°C
	Data		
Test Voltage:	DC3.7V	Humidity:	56%
Test Result:	Pass		

Frequency (MHz)	Emission PK/AV (dBuV/m)	Horiz / Vert	Limits PK/AV (dBuV/m)	Margin (dB)
2474	86.14 (PK)	Н	114/94	-7.86
2474	79.11 (PK)	V	114/94	-14.89
4948	49.74 (PK)	Н	74/54	-4.26
4948	48.55 (PK)	V	74/54	-5.45
7422		Н	74/54	
7422		V	74/54	
9896		H/V	74/54	
12370		H/V	74/54	
14844		H/V	74/54	
17318		H/V	74/54	
19792		H/V	74/54	
22266		H/V	74/54	
24740		H/V	74/54	

Note: (1) PK= Peak, AV= Average

(2) Emission Level = Reading Level + Antenna Factor + Cable Loss - Pre-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

(6) The PK emission level less than the AV limit. No necessary to record the AV emission level.

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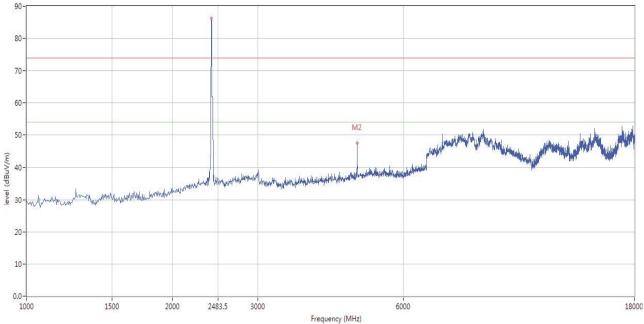
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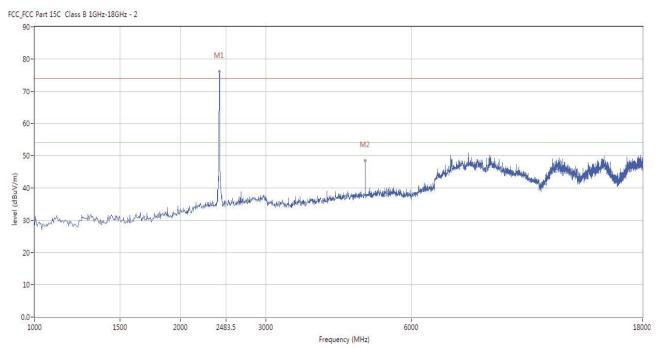
Please refer to the following test plots for details: Low Channel

# Horizontal

FCC\_FCC Part 15C Class B 1GHz-18GHz - 2 90-



# Vertical



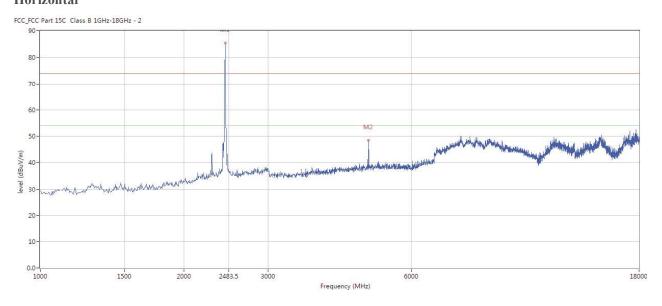
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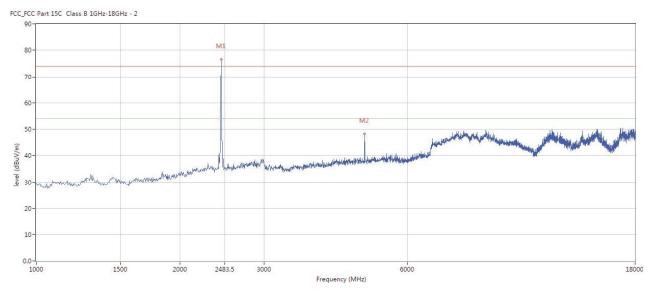


# Page 18 of 40

# Please refer to the following test plots for details: Middle Channel **Horizontal**



#### Vertical



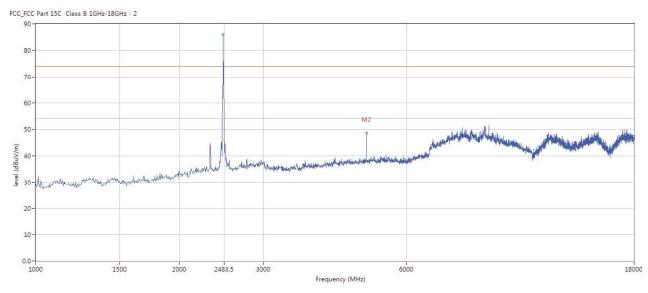
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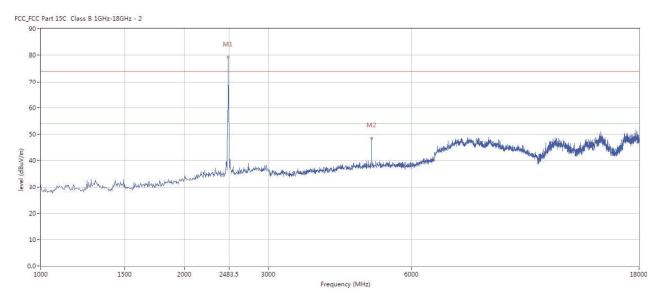


Please refer to the following test plots for details: High Channel

# Horizontal



# Vertical



For emission above 18GHz, It is only the floor noise. No necessary to take down.

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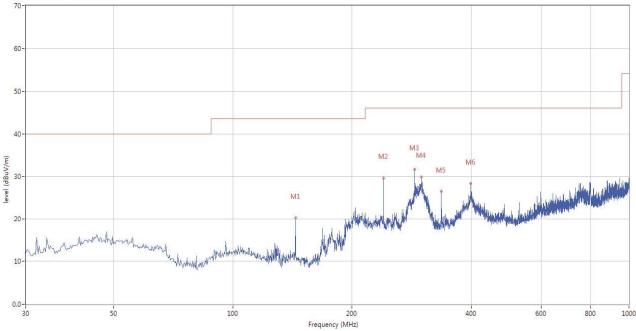
# B. General Radiated Emission Data Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting

# Results: Pass

Please refer to following diagram for individual

FCC\_FCC Part 15C Class B 30MHz-1GHz



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	143.947	20.25	-17.10	43.5	-23.25	Peak	155.00	200	Horizontal	Pass
2	239.953	29.71	-12.33	46.0	-16.29	Peak	0.00	200	Horizontal	Pass
3	287.956	31.68	-11.27	46.0	-14.32	Peak	0.00	200	Horizontal	Pass
4	298.865	29.92	-11.10	46.0	-16.08	Peak	0.00	200	Horizontal	Pass
5	335.959	26.47	-9.91	46.0	-19.53	Peak	0.00	200	Horizontal	Pass
6	398.993	28.28	-8.62	46.0	-17.72	Peak	0.00	200	Horizontal	Pass

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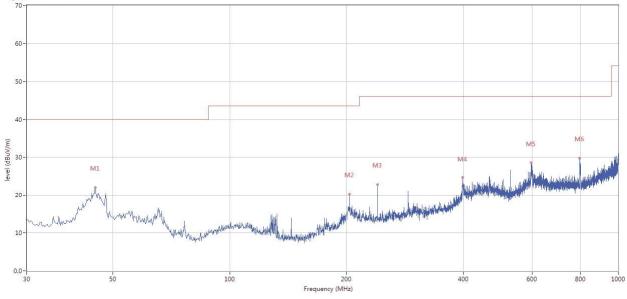
Radiated Emission In Vertical (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting

#### Results: Pass

Please refer to following diagram for individual

FCC\_FCC Part 15C Class B 30MHz-1GHz



No.	Frequen	Results	Factor	Limit	Over	Detector	Table (o)	Height	ANT	Verdict
	cy (MHz)	(dBuV/m	(dB)	(dBuV/m	Limit			(cm)		
		)		)	(dB)					
1	45.031	22.06	-11.41	40.0	-17.94	Peak	132.00	100	Vertical	Pass
2	203.344	20.34	-13.46	43.5	-23.16	Peak	130.00	200	Vertical	Pass
3	239.953	22.80	-12.33	46.0	-23.20	Peak	93.00	200	Vertical	Pass
4	397.053	24.59	-8.73	46.0	-21.41	Peak	87.00	100	Vertical	Pass
5	596.581	28.48	-5.13	46.0	-17.52	Peak	87.00	100	Vertical	Pass
6	796.593	29.83	-3.07	46.0	-16.17	Peak	0.00	200	Vertical	Pass

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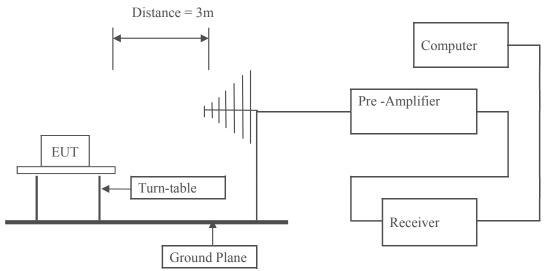


# 7. Band Edge

# 7.1 Test Method and test Procedure:

- 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
- (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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#### 7.6 Test Result

Pr	Product:		DUAL MODE RGB MECHANICAL KEYBOARD					Horizontal			
N	Mode		Keepin	ig Transmitt	ting	Test V	Voltage		DC3.	7V	
Tem	perature		24 deg. C,			Hun	nidity		56%	RH	
Test	t Result:			Pass							
CC_FCC Part	t 15C Class B 1GHz-1	8GHz - 2									
80-									$\int$		
70- 60-									-	2	
50-		San Lucio Sca	مر من من المراجع . المراجع المراجع المراجع . المراجع المراجع المراجع .	elines (r. stellests to statistical	-	hementionthic graph					
(W/A0-	bulikasyleeskyssereessekk	aliteri falla da basera partikat	alle under had star i bed	edenneligt et en		handensterritionsflightfo					
123063	bali buga den de ante de ante de de ante de de ante de	abert fall a better over any fart	, elde <u>n weeks too soons</u> t id	edenalisteria kielien ein		haartaribisebistaadhah					
40- 40- 20- 10-	bulikusyleakupteren sikk	nanger an	alde soeder to a torrik of	nter lighten di kidipatén		ha ya a shi sa ka ya daga daga daga daga daga daga daga					
40- 10-	hadi turi ogʻa shqiptari ang sht	alteri hari (dada bara marika	, star weeks our specific of	nenalistenia kalisteni	Frequency (Mł					2.	
40- 40- 20- 10-	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)			Table (o)	Height (cm)	ANT	22 Verdict	
40- 40- 20- 10- 2350	Frequency	Results	Factor	Limit	Frequency (MF Over Limit	iz)	Table (o) 31.00		ANT	1	
40- 40- 20- 10- 2350 No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Frequency (MF Over Limit (dB)	<sup>1z)</sup> Detector		(cm)		Verdict	
40- 40- 20- 10- 2350	Frequency (MHz) 2400.667	Results (dBuV/m) 50.26	Factor (dB) -3.57	Limit (dBuV/m) 54.0	Frequency (MF Over Limit (dB) -3.74	<sup>iz)</sup> Detector Peak	31.00	(cm) 100	Н	Verdict Pass	

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Pro	Product: MECH			, MODE RO CAL KEYB		Detec	tor	Vertical			
Ν	/lode		Keepin	g Transmitt	ing	Test Vo	ltage		DC3.7V	1	
Temp	perature		24	4 deg. C,		Humio	dity	56% RH			
Test	Result:			Pass							
90	15C Class B 1GHz-1	8GHz - 2							$\overline{}$		
60- 50- 40- 30-	and the first of the second	sty the skick with the second sing	n dalah dari dari dari dalah seri dal	Yerese selver a faire and	it before and it is a service of	land a land a start of the star	1 million and the second	$\sim$	-	Y	
50-	seendstallisk eksisteristerise	ally black back where a visit sign	ngdadd dwyddwyad o ddallau y dd	Harita, Ali baada Isaaca	iller and and a start and	lanashadiraangaloof <sup>ad</sup>		$\overline{\mathbf{N}}$		Y	
50- 40- 30-	aqashadhabahanni araa	shiphashi konchuternarnshting	ngabada na pasimu ga najaga pandal	Harrora, sala kutu kutu kutu kutu kutu kutu kutu kut	all be a far a	lantari da de materi de la segui				h	
50- 40- 30- 20-	aqadhalfab qilanisi qaa	shiphashishnichutternarnskring	ngaladd dwyddinwydd wlydd a yrdd	Harrisen, og ble de skande de føren og en skort	Frequency (Mb					2	
50- 40- 20- 10- 2350	Frequency	Results	Factor	Limit	iyadafadi "Yoo" Kud		Table (o)	Height	ANT	2 Verdict	
50- 40- 30- 20- 10- 2350 No.					Frequency (Mł	Hz)	Table (o)	Height (cm)	ANT	1	
50- 40- 20- 10- 0.0- 2350	Frequency	Results	Factor	Limit	Frequency (Mi Over Limit	Hz)	Table (o) 51.00	-	ANT	1	

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P	roduct:	ME		L MODE RO		Pola	arity		Horizo	ontal	
]	Mode		Keepir	ng Transmit	ting	Test V	oltage	DC3.7V			
Ten	nperature		2	4 deg. C,		Hum	idity		56%	RH	
Tes	t Result:			Pass		-	-				
80- 70-	rt 15C Class B 1GHz-1	3GHz - 2	/								
60- 50- 40- 20- 10-		Harrow Contraction of the second seco	In the second		A have the second	M2	and a state of a state of the s	ning and the state of the state	udat for the defense of the	and the second	half-to-to-to-to-to-to-to-to-to-to-to-to-to-
60- 50- 40- 20-		Alexander and a second se	Sample and a second		Frequency (N	2483.5		Nieszehlministenistenistenistenistenistenistenist	n an	erter na estadoria tradição tradição	250
60- 50- 40- 20- 10- 0.0-	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Frequency (N Over Limit (dB)	2483.5		Height (cm)	ANT	Verdict	250

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Product:	ME		MODE RG CAL KEYB	Dete	ector	Vertical				
Mode		Keeping	g Transmitti	ng	Test V	oltage	DC3.7V			
Temperature		24	4 deg. C,		Hum	idity		56%	RH	
Test Result:			Pass		-	-				
90- 80- 70-	8GHz - 2		M1							
60- 50- 40- 20- 10- 2260		by we		Frequency (M	2483.5	addautedauter an	ha gand the second parts	en e	neerigte main feature that the state of the	25
50- 6 40- 30- 20- 10- 0.0-	Results	Factor	Limit	Frequency (N	2483.5	Table (o)	Height	ANT	Verdict	25
50- 60 40- 20- 10- 0.0- 2460	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)		2483.5 IHz)					25
50- 6 6 6 6 6 6 6 6 6 6 6 6 6				Over	2483.5 IHz)		Height			25

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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 -0.58dBi Max. It fulfills the requirement of this section. Test Result: Pass

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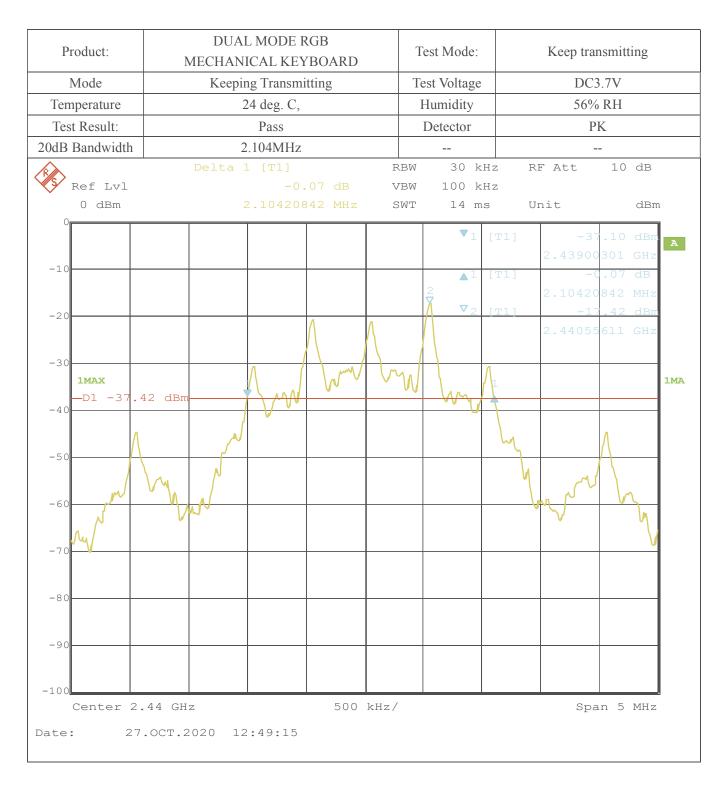


9.0 20dB Bandwidt	h Measurement										
Product:	DUAL MODE RGB MECHANICAL KEYBOARD					est Mode:	Keep transmitting				
Mode	Keep	Test Voltage		DC3.7V							
Temperature		24 deg. C,			Humidity			56% RH			
Test Result:	Pass					Detector		РК			
20dB Bandwidth		2.094MHz	r 1						-		
Ref Lvl 0 dBm	Delta		.47 dB	VI	BW BW WT	30 k 100 k 14 m	Hz	F Att nit	10 dB dBn	n	
		2.094100			/V 1		.5 0.			1	
-10						▼1	[T1]	-35 2.40701	.58 dBm 303 GHz	A	
-10						$\mathbf{A}^{1}$	[T1]	-1 2.09418 -17	.47 dB 838 MHz .60 dBm		
-20			$\land$	$\wedge$				± /	611 GHz		
-30 1MAX -D1 -37.6	dBm		M	V	W	Am				1MA	
-40	M					A	In 1				
- 50 - 60	M						h	1 m	h.		
-70								$\searrow$	M		
-80											
-90											
-100 Center 2.		<u> </u>	500	kHz/	l			Spa	n 5 MHz	8	
Date: 27	OCT.2020 1	2:47:37									

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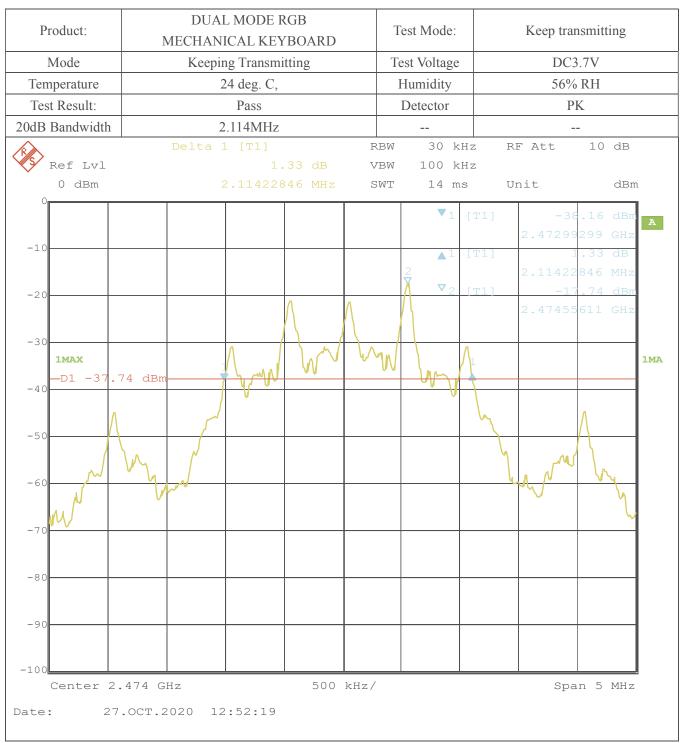


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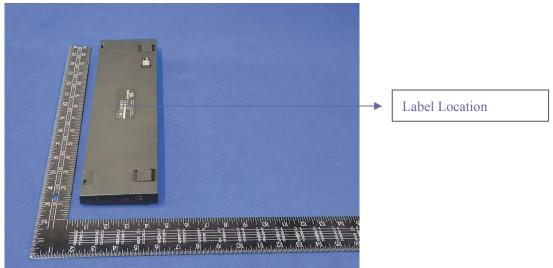


# 10.0 FCC ID Label

# FCC ID: TUVET-8475

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:**



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

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# 11.0 Photo of testing

11.1 Conducted test View

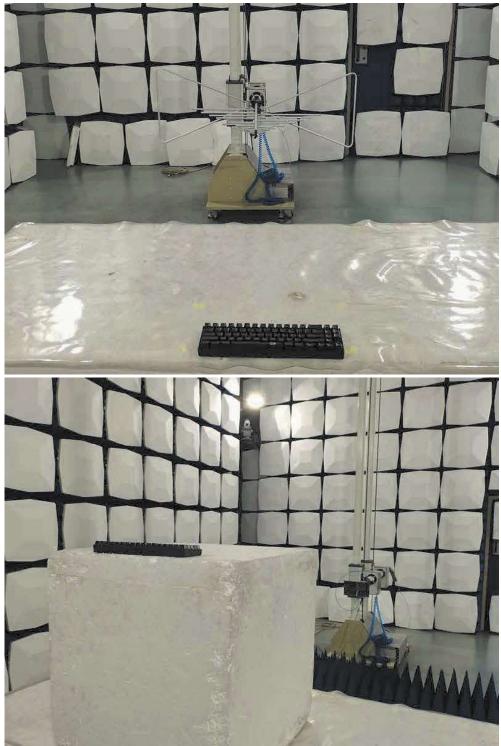


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# 11.2 Radiated emission test view



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11.3 Photographs – EUT

Outside View

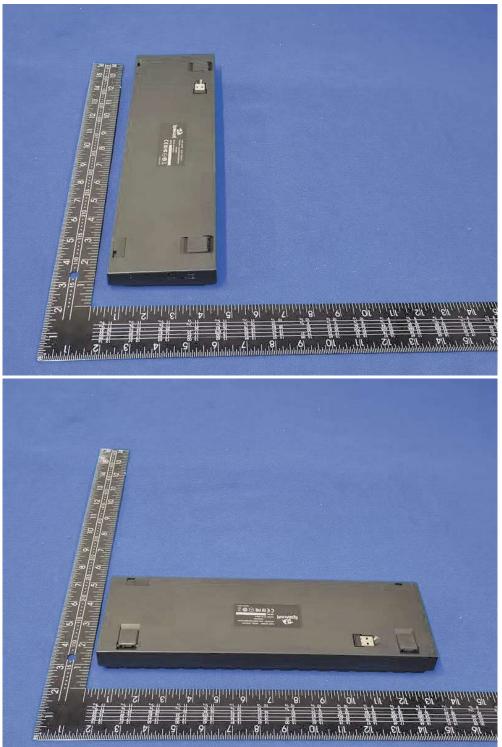


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Outside View



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Outside View

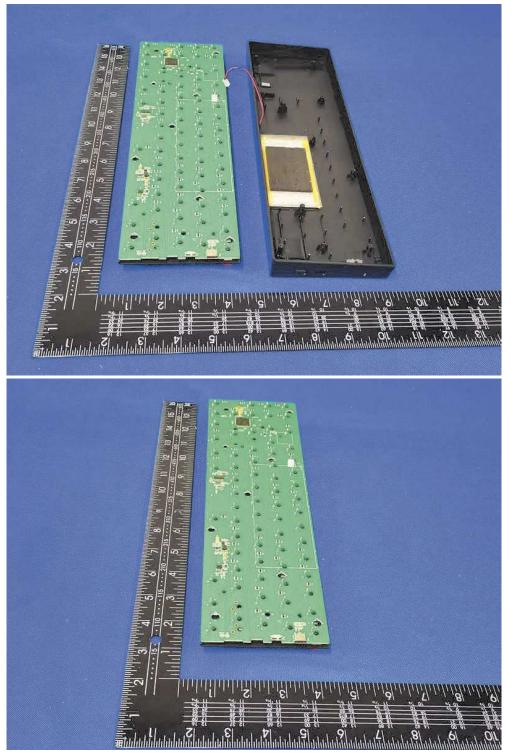


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Inside view

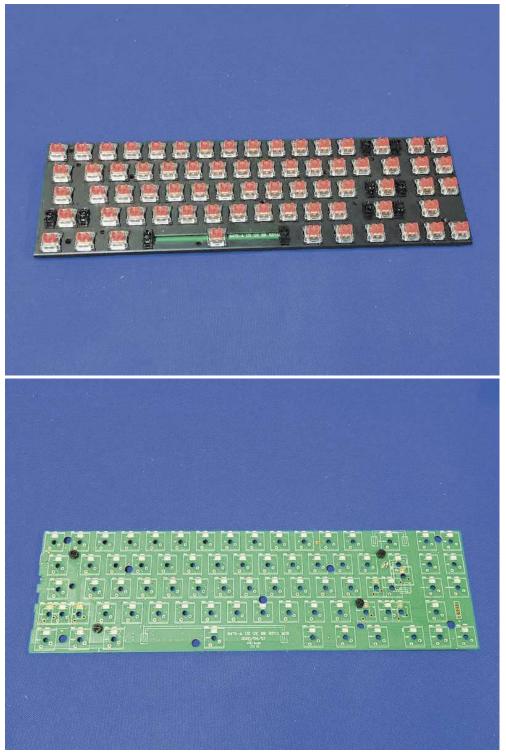


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Inside view

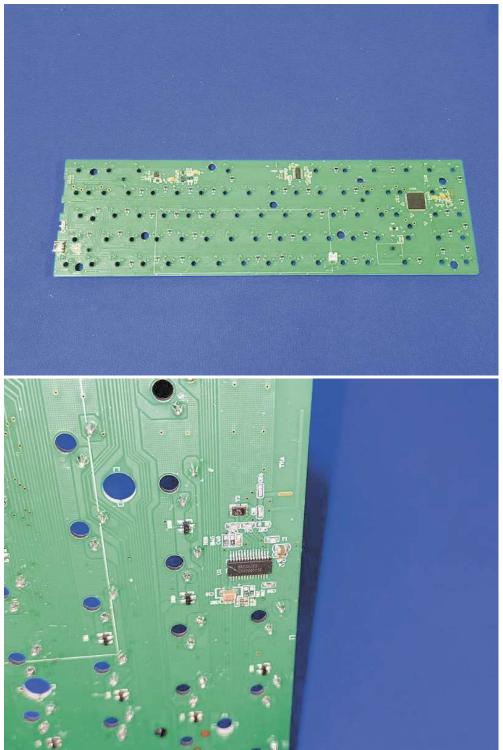


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Inside view



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Inside view



--End of the report--

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