

Applicant: Eastern Times Technology Co.,Ltd

Product: REDRAGON LOW-PROFILE WITH G KEYS WIRELESS

**KEYBOARD** 

Model No.: K653-RGB-PRO, K653W-RGB-PRO, ET-8822

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 Tang

Manager

Dated: October 27, 2023

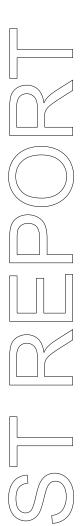
Results appearing herein relate only to the sample tested

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



Report No.: TW2308322-01E Page 2 of 42

Date: 2023-10-27



# **Special Statement:**

### 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** 

28

29

33

Report No.: TW2308322-01E

Date: 2023-10-27



# Test Report Conclusion

#### Content 1.0 General Details.... 1.1 Test Lab Details.... Applicant Details..... 1.2 4 1.3 Description of EUT .... 4 1.4 Submitted Sample.... 4 Test Duration. 1.5 5 5 1.6 Test Uncertainty. 1.7 Test By..... 5 2.0 List of Measurement Equipment..... 6 7 3.0 Technical Details..... 3.1 Summary of Test Results.... 7 3.2 7 Test Standards.... 4.0 EUT Modification. 7 Power Line Conducted Emission Test.... 5.0 8 Schematics of the Test..... 5.1 8 5.2 Test Method and Test Procedure. 8 Configuration of the EUT..... 5.3 5.4 EUT Operating Condition. 9 Conducted Emission Limit. 9 5.5 5.6 Test Result.... 9 6.0 Radiated Emission test.... 12 Test Method and Test Procedure. 6.1 12 6.2 Configuration of the EUT..... 13 6.3 EUT Operation Condition. 13 Radiated Emission Limit. 6.4 13 Test Result..... 6.5 15 7.0 Band Edge.... 23 7.1 Test Method and Test Procedure. 23 7.2 Radiated Test Setup. 23 7.3 Configuration of the EUT..... 23 7.4 EUT Operating Condition. 23 7.5 Band Edge Limit..... 23 7.6 Band Edge Test Result. 24

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

8.0

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Antenna Requirement.

20dB bandwidth measurement....

FCC ID Label....

Photo of Test Setup and EUT View....

In the event of the improper use of the report. The SHENZHEN TIMEWAY TESTING LABORATORIES. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.

Date: 2023-10-27



#### 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 LOW-PROFILE WITH G KEYS WIRELESS 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: K653-RGB-PRO

Additional Model Name K653W-RGB-PRO, ET-8822

Rating: Input: DC5V, 710mA or DC3.7V, 360mA

Battery: DC3.7V, 1900mAh Li-ion battery

Hardware Version: 8822-A V1

Software Version: E359

Serial No.: RDK653- RGB-PRO23051501002

Operation Frequency: 2403-2480MHz

Channel Number: 16

Channel List (Unit: MHz): 2403, 2424, 2441, 2461, 2414, 2435, 2450, 2470, 2409, 2429, 2455, 2475,

2419, 2445, 2465, 2480

Antenna Designation PCB antenna with gain 2.34dB maximum (Get from the antenna specification)

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Report No.: TW2308322-01E Page 5 of 42

Date: 2023-10-27



1.4 Submitted Sample: 2 Samples

1.5 Test Duration

2023-08-25 to 2023-10-27

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

Print Name: Andy Xing

Page 6 of 42

Report No.: TW2308322-01E

Date: 2023-10-27



2.0 Test Equipment								
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date			
ESPI Test Receiver	R&S	ESPI 3	100379	2023-07-14	2024-07-13			
LISN	R&S	EZH3-Z5	100294	2023-07-14	2024-07-13			
LISN	R&S	EZH3-Z5	100253	2023-07-14	2024-07-13			
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2023-07-14	2024-07-13			
Loop Antenna	EMCO	6507	00078608	2022-07-18	2025-07-17			
Spectrum	R&S	FSIQ26	100292	2023-07-14	2024-07-13			
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	2023-07-14	2024-07-13			
Power sensor	Anritsu	MA2491A	32263	2023-07-14	2024-07-13			
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	2023-07-14	2024-07-13			
EMI Test Receiver	RS	ESCS 30	834115/006	2023-07-14	2024-07-13			
Spectrum	HP/Agilent	E4407B	MY50441392	2023-07-14	2024-07-13			
Spectrum	RS	FSP	1164.4391.38	2023-07-14	2024-07-13			
RF Cable	Zhengdi	ZT26-NJ-NJ-8M/FA		2023-07-14	2024-07-13			
RF Cable	Zhengdi	7m		2023-07-14	2024-07-13			
Pre-Amplifier	Schwarebeck	BBV9743	#218	2023-07-14	2024-07-13			
Pre-Amplifier	HP/Agilent	8449B	3008A00160	2023-07-14	2024-07-13			
LISN	SCHAFFNER	NNB42	00012	2023-07-14	2024-07-13			
ESPI Test Receiver	R&S	ESPI 3	100379	2023-07-14	2024-07-13			
LISN	R&S	EZH3-Z5	100294	2023-07-14	2024-07-13			

#### 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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Page 7 of 42

Report No.: TW2308322-01E

Date: 2023-10-27



#### 3.0 Technical Details

#### 3.1 Summary of test results

	The EUT has	been tested	l 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
FCC Part 15.215(c)	20dB bandwidth	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

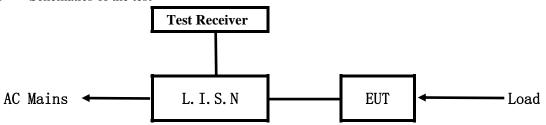
No modification by SHENZHEN TIMEWAY TESTING LABORATORIES

Date: 2023-10-27



#### 5.0 Power Line Conducted Emission Test

#### 5.1 Schematics of the test

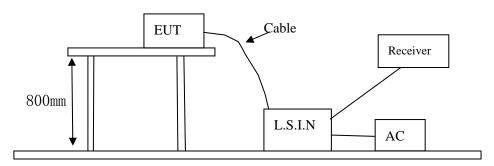


**EUT: Equipment Under Test** 

#### 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
REDRAGON			
LOW-PROFILE WITH G	Eastern Times Technology	K653-RGB-PRO,	TUVET-8822A
KEYS WIRELESS	Co.,Ltd	K653W-RGB-PRO, ET-8822	1UVE1-8822A
KEYBOARD			

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Report No.: TW2308322-01E Page 9 of 42

Date: 2023-10-27



#### 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

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:

Date: 2023-10-27

Report No.: TW2308322-01E



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

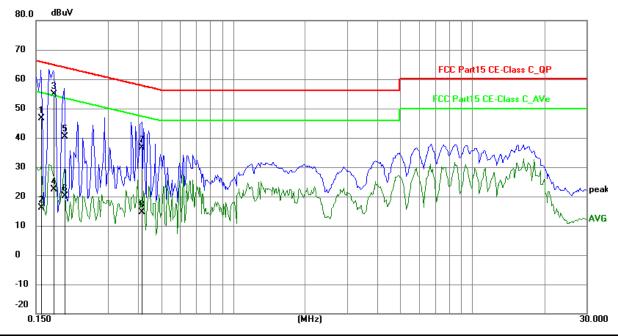
#### **EUT Operating Environment**

Temperature: 25°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	36.89	9.78	46.67	65.58	-18.91	QP	Р
2	0.1578	6.26	9.78	16.04	55.58	-39.54	AVG	Р
3	0.1773	45.10	9.77	54.87	64.61	-9.74	QP	Р
4	0.1773	12.69	9.77	22.46	54.61	-32.15	AVG	Р
5	0.1968	30.69	9.75	40.44	63.74	-23.30	QP	Р
6	0.1968	10.49	9.75	20.24	53.74	-33.50	AVG	Р
7	0.4152	26.79	9.76	36.55	57.54	-20.99	Q Q	Р
8	0.4152	4.75	9.76	14.51	47.54	-33.03	AVG	Р

Date: 2023-10-27



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

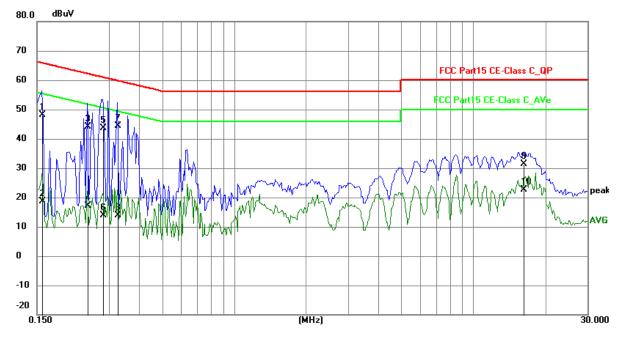
#### **EUT Operating Environment**

Temperature: 25°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	38.39	9.78	48.17	65.58	-17.41	QP	Р
2	0.1578	8.86	9.78	18.64	55.58	-36.94	AVG	Р
3	0.2436	34.37	9.75	44.12	61.97	-17.85	QP	Р
4	0.2436	7.50	9.75	17.25	51.97	-34.72	AVG	Р
5	0.2826	33.93	9.76	43.69	60.74	-17.05	QP	Р
6	0.2826	4.00	9.76	13.76	50.74	-36.98	AVG	Р
7	0.3255	34.56	9.76	44.32	59.57	-15.25	QP	Р
8	0.3255	4.02	9.76	13.78	49.57	-35.79	AVG	Р
9	16.2366	20.86	10.45	31.31	60.00	-28.69	QP	Р
10	16.2366	12.07	10.45	22.52	50.00	-27.48	AVG	Р

Date: 2023-10-27



#### **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 9kHz to 25 GHz was investigated. The frequency spectrum is set as follows:

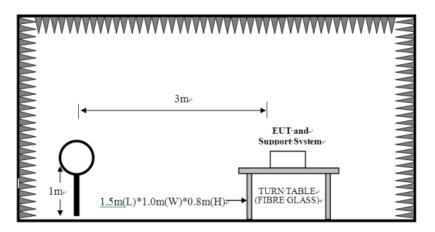
Frequency	Detector	RBW	VBW	Value
9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
ADOVE IGHZ	Peak	1MHz	10Hz	Average

(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**

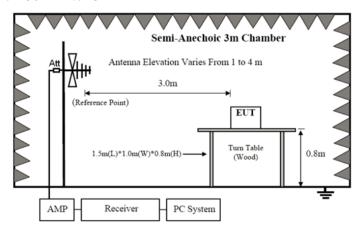
For radiated emissions from 9kHz to 30MHz



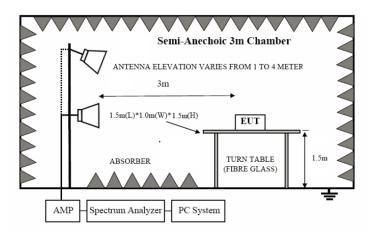
Date: 2023-10-27



For radiated emissions from 30MHz to1GHz



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.
- 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 Fundamental (3m)	Field S	trength of Harmonics (3m)
(MHz)	mV/m	dBuV/m	uV/m	dBuV/m

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Report No.: TW2308322-01E Page 14 of 42

Date: 2023-10-27



2400 2402 5	<b>5</b> 0	04 (4	114 (D 1)	<b>-</b> 00	<b>5 4 4 4</b>	74 (Pools)
2400-2483.5	50	94 (Average)	114 (Peak)	500	54 (Average)	74 (Peak)
2 <del>1</del> 00-2 <del>1</del> 03.3	50	JT (Miverage)	11+ (1 cak)	500	J+ (Michago)	/ + (1 0

Note:

- 1. RF Field Strength  $(dBuV) = 20 \log RF \text{ Voltage } (uV)$
- 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		43.5
216-960	3	46.0
Above 960	3	54.0

Note:

- 1. RF Voltage  $(dBuV) = 20 \log RF \text{ Voltage } (uV)$
- 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. Battery fully charged was used during the test.

Report No.: TW2308322-01E Page 15 of 42

Date: 2023-10-27

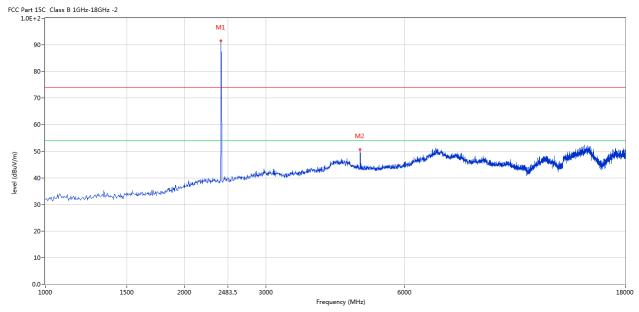


#### 6.5 Test result

## A Fundamental & Harmonics Radiated Emission Data

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

#### Horizontal



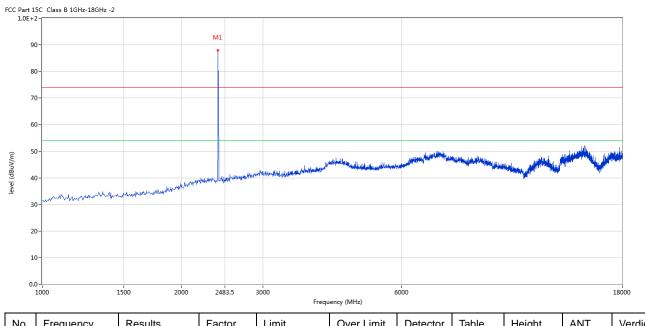
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2403	91.53	-3.57	114.0	-22.47	Peak	161.00	100	Horizontal	Pass
2	4802.799	50.66	3.12	74.0	-23.34	Peak	205.00	100	Horizontal	Pass

Report No.: TW2308322-01E Page 16 of 42

Date: 2023-10-27



## Vertical



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2403	87.88	-3.57	114.0	-26.12	Peak	286.00	100	Vertical	Pass

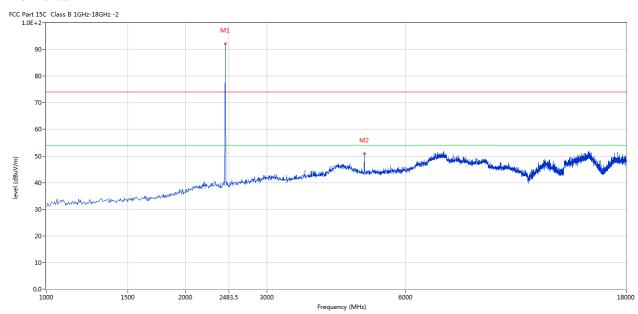
Report No.: TW2308322-01E Page 17 of 42

Date: 2023-10-27



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

#### **Horizontal**



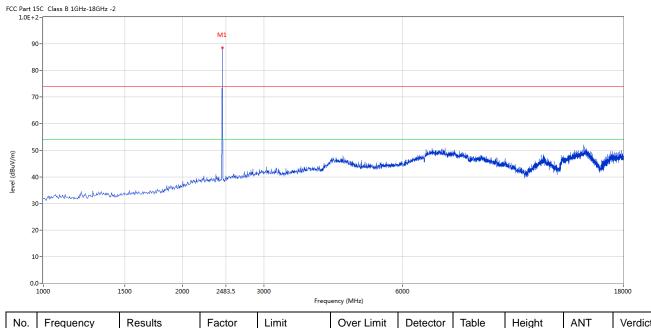
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2441	92.13	-3.57	114.0	-21.87	Peak	166.00	100	Horizontal	Pass
2	4879.280	50.84	3.20	74.0	-23.16	Peak	172.00	100	Horizontal	Pass

Report No.: TW2308322-01E Page 18 of 42

Date: 2023-10-27



#### Vertical



١	No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
		(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	1	2441	88.44	-3.57	114.0	-25.56	Peak	287.00	100	Vertical	Pass

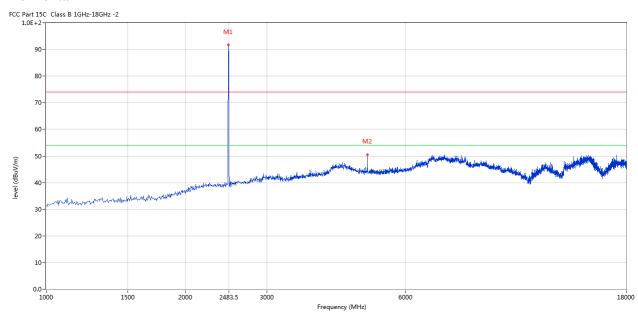
Report No.: TW2308322-01E Page 19 of 42

Date: 2023-10-27



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	91.66	-3.57	114.0	-22.34	Peak	167.00	100	Horizontal	Pass
2	4960.010	50.55	3.36	74.0	-23.45	Peak	167.00	100	Horizontal	Pass

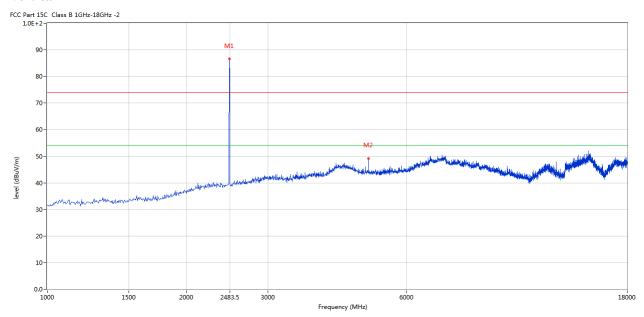
Page 20 of 42

Report No.: TW2308322-01E

Date: 2023-10-27



#### Vertical



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2480	87.67	-3.57	114.0	-26.33	Peak	289.00	100	Vertical	Pass
2	4960.010	49.20	3.36	74.0	-24.80	Peak	289.00	100	Vertical	Pass

Note: (1) Emission Level = Reading Level + Antenna Factor + Cable Loss-Amplifier

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

Report No.: TW2308322-01E Page 21 of 42

Date: 2023-10-27

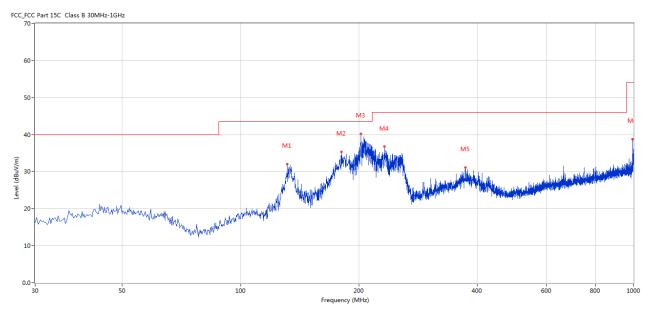


# B. General Radiated Emission Data Radiated Emission In Horizontal (30MHz----1000MHz)

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	131.582	32.06	-16.93	43.5	11.44	Peak	265.00	100	Horizontal	Pass
2	180.312	35.37	-15.27	43.5	8.13	Peak	272.00	100	Horizontal	Pass
3	202.617	40.19	-13.40	43.5	3.31	Peak	360.00	100	Horizontal	Pass
4	232.437	36.72	-12.53	46.0	9.28	Peak	255.00	100	Horizontal	Pass
5	373.779	31.13	-9.48	46.0	14.87	Peak	360.00	100	Horizontal	Pass
6	995.394	38.77	-1.26	54.0	15.23	Peak	295.00	100	Horizontal	Pass

Report No.: TW2308322-01E Page 22 of 42

Date: 2023-10-27

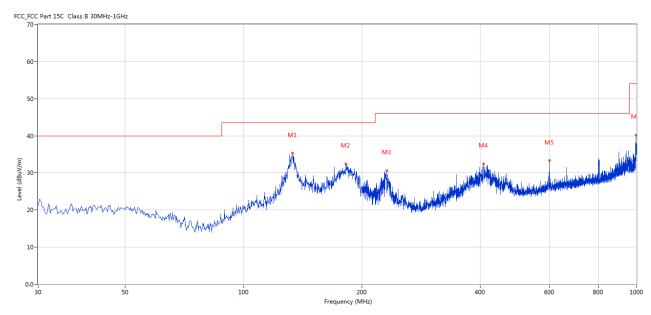


#### Radiated Emission In Vertical (30MHz----1000MHz)

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	133.279	35.27	-16.99	43.5	8.23	Peak	229.00	100	Vertical	Pass
2	182.009	32.43	-15.03	43.5	11.07	Peak	28.00	100	Vertical	Pass
3	231.710	30.53	-12.58	46.0	15.47	Peak	88.00	100	Vertical	Pass
4	408.690	32.38	-8.35	46.0	13.62	Peak	303.00	100	Vertical	Pass
5	599.975	33.29	-4.95	46.0	12.71	Peak	99.00	100	Vertical	Pass
6	997.333	40.26	-1.24	54.0	13.74	Peak	335.00	100	Vertical	Pass

Date: 2023-10-27

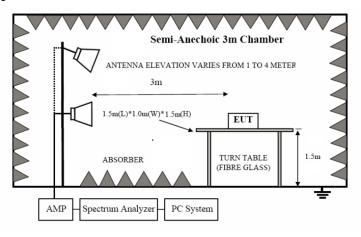


#### 7. Band Edge

#### 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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Report No.: TW2308322-01E Page 24 of 42

Date: 2023-10-27



#### 7.6 Test Result

]	Product:			PROFILE W SS KEYBOA		Polar	ity		Horizontal	
	Mode	I	Keeping Tr	ansmitting		Test Vo	ltage		DC3.7V	
Te	mperature		24 de			Humio			56% RH	
	est Result:		Pas							
	Part 15C Class B 1GHz-18	GHz -2			<u> </u>					
	90- 80- 70- 60-							M2	M1	
level (dBuV/m)	30 - 20 - 10 - 2350	a distribution, corporate polytica y card and but	يهاهيرن يبهو إنابلانك وخوام الامراس ا	ત્યું તે ત્યું કર્યા કર્યા કર્યા કર્યા કર્યા છે. કર્યું કર્યા કર્યા કર્યા કર્યા કર્યા કર્યા કર્યા કર્યા કર્યા ક	The second secon	N. Anthonores shake the con-	13 Ludip ini kish kish diga diga kishli	Association of the second		2410
	30- 20- 10- 2350			and the second of the second o	Frequency (MHz)	sti <mark>n</mark> kturni, stánkur	uniformina kana dan dan dan dan dan dan dan dan dan	Height	ANT	1
	30- 20- 10-	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	The second secon		Table	Height (cm)	ANT	1
No.	30- 20- 10- 2350	Results	Factor	Limit	Frequency (MHz)  Over Limit	sti <mark>n</mark> kturni, stánkur	Table	_	ANT Horizontal	1
No.	30- 20- 10- 2350 Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Frequency (MHz)  Over Limit (dB)	Detector	Table (o)	(cm)		Verdic
(w/\ngp)   No.	30- 20- 10- 2350 Frequency (MHz) 2402.427	Results (dBuV/m) 91.45	Factor (dB) -3.57	Limit (dBuV/m) 74.0	Frequency (MHz)  Over Limit (dB)  17.45	Detector	Table (o) 165.00	(cm)	Horizontal	Verdic

Report No.: TW2308322-01E Page 25 of 42

Date: 2023-10-27

10-



	Product:		REDRAGON LOW-PROFILE WITH G KEYS WIRELESS KEYBOARD	Detector	Vertical
	Mode		Keeping Transmitting	Test Voltage	DC3.7V
Te	Temperature		24 deg. C,	Humidity	56% RH
T	Test Result:		Pass		
	ort 15C DE+2-r	Class B 1GHz-18GHz	·-2		
	90-				M1
	80-				
	70 - 60 -				
evel (dBuV/m)	50-			M3	<u> </u>
level (c	40-	ويتواريه الملاورية الموارية الموارية والموارية	der under Vertriegenscheit dem Africke deutscheitspellente geworkt Hengen, beitreicht ausgebeiten in des Anderscheitspellente sentliche Anderscheitspellente deutscheit der Anderscheitspellente deutscheit des Anderscheitspellente deutscheitspellente deutsche deutscheitspellente deutsche deutsche deutscheitspellente deutsche deutsch	مديدة فالإعلام والمسر التأميلان بحارأه الأوجون المياجوب الماحون المساوية	Martin Martin
	30-				
	20-				

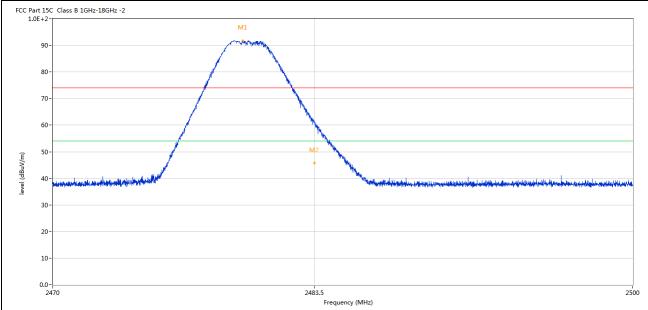
	2390 Frequency (MHz)									2410	
	No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
		(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
	1	2402.337	87.79	-3.57	74.0	13.79	Peak	283.00	100	Vertical	N/A
	2	2400.000	64.87	-3.57	74.0	-9.13	Peak	280.86	100	Vertical	Pass
	2**	2400.000	49.80	-3.57	54.0	-4.20	AV	280.86	100	Vertical	Pass
	3	2390.000	37.47	-3.53	74.0	-36.53	Peak	179.67	100	Vertical	Pass
Г											

Report No.: TW2308322-01E Page 26 of 42

Date: 2023-10-27



Product:	REDRAGON LOW-PROFILE WITH G KEYS WIRELESS KEYBOARD	Polarity	Horizontal	
Mode	Keeping Transmitting	Test Voltage	DC3.7V	
Temperature	24 deg. C,	Humidity	56% RH	
Test Result:	Pass			



Ν	۱o.	Frequency	Results	Factor	Limit	Over	Detector	Table	Height	ANT	Verdict
		(MHz)	(dBuV/m)	(dB)	(dBuV/m)	Limit (dB)		(o)	(cm)		
1		2479.785	91.43	-3.57	74.0	17.43	Peak	163.00	100	Horizontal	N/A
2	2	2483.500	60.77	-3.57	74.0	-13.23	Peak	186.43	100	Horizontal	Pass
2	**	2483.500	45.69	-3.57	54.0	-8.31	AV	186.43	100	Horizontal	Pass

Page 27 of 42

Report No.: TW2308322-01E

Date: 2023-10-27



Product:		REDRAGON LOW-PROFILE WITH G KEYS WIRELESS KEYBOARD				Detector		Vertical			
Mode		Keeping Transmitting				Test Voltage DC3.		DC3.7V			
Temperature			24 de	g. C,		Humio					
Те	est Result:		Pa	ss							
	rt 15C Class B 1GHz-18GH:	z -2									
	90- 80- 70- 60-		M1	Way and Black							
level (dBuV/m)	50 - 40 - 30 - 20 -	**************************************		M2	man management de de la company de la compan	dental territorial designation of the state of	and the ladest chapt in	ulini sepanta andre de state de primero	Patrialisation and applications and a	er og sen seg skapligt.	
level (dBuV/m)	30-	# A Strate Live Complete		M2		danka watee ji Marawa deeleya	mariki iliba, izdaniliz wakaza hi	aki aprire e ta sa kirin ini an	Alityk-athaconomentholoxichi		
	30 - 10 - 0.0 - 10 - 0.0 - 10 - 0.0 - 10 - 0.0 - 10 - 0.0 -	Results	Factor		5	Detector	Table	Height	ANT	2500	
	30 - 20 - 10 - 2470		Factor (dB)	2483.	5 Frequency (MHz)					2500	
No.	30- 20- 10- 2470	Results		2483.: Limit	5 Frequency (MHz)		Table	Height		2500	
(w/ngp) javal	30- 20- 10- 2470 Frequency (MHz)	Results (dBuV/m)	(dB)	Limit (dBuV/m)	5 Frequency (MHz) Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	2500 Verdic	

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

Date: 2023-10-27



Page 28 of 42

# 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 with gain 2.34dBi maximum. It fulfills the requirement of this section.

Test Result: Pass

Date: 2023-10-27



Page 29 of 42

#### 9.0 20dB Bandwidth Measurement

#### **Test Configuration**



#### **Test Procedure**

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 30kHz RBW and 100kHz VBW.

The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

#### Limit

N/A

Page 30 of 42

Span 5 MHz

Report No.: TW2308322-01E

Date: 2023-10-27



#### **Test Result**

Product:	REDRAGON LOW-PRO KEYS WIRELESS KI		Test Mode:	Keep transmitting		
Mode	Keeping Transm	nitting	Test Voltage	DC3.7	'V	
Temperature	24 deg. C,		Humidity	56% R	Н	
Test Result:	Pass		Detector	PK		
20dB Bandwidth	2.310MHz					
Ref 10 d	Bm *Att 20 c	*RBW 10 *VBW 30 dB *SWT 10	0 kHz	er 1 [T1 ] -6.45 dBm 2.402420000 GHz		
10			ndB BW Temp	[T1] 20.00 dB 2.310000000 MHz 1 [T1 nd8]	A	
1 PK MAXH	1		Temp	-26.88 dBm 2.401810000 GHz 2 [TI nd8]	II	
20		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		-26.79 dBm 2.404120000 GHz	II	
30	TA C		T2			
-40						
50				301	3DB	
60						
70						
80						
-90						

Date: 26.OCT.2023 10:24:08

Center 2.403 GHz

500 kHz/

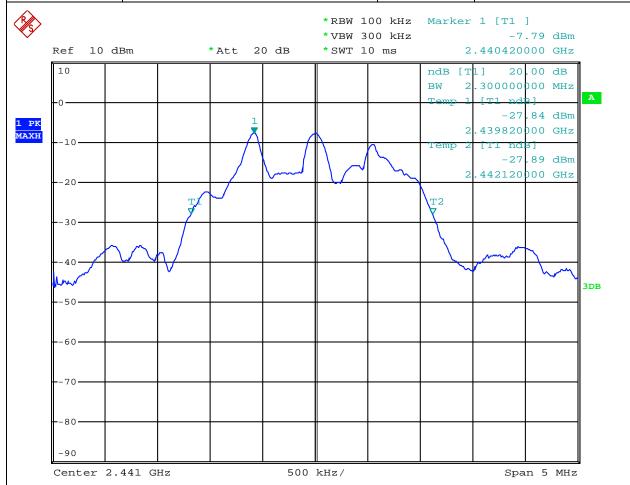
Page 31 of 42

Report No.: TW2308322-01E

Date: 2023-10-27



Product:	REDRAGON LOW-PROFILE WITH G KEYS WIRELESS KEYBOARD	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	2.300MHz		



Date: 26.OCT.2023 10:34:56

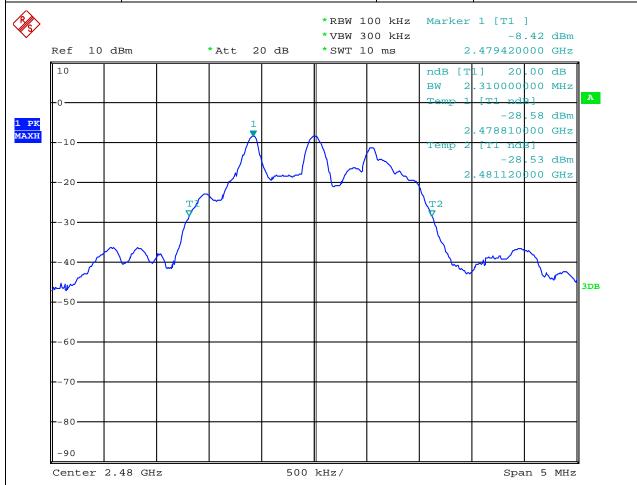
Page 32 of 42

Report No.: TW2308322-01E

Date: 2023-10-27



Product:	REDRAGON LOW-PROFILE WITH G KEYS WIRELESS KEYBOARD	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	2.310MHz		



Date: 26.OCT.2023 10:30:03

Report No.: TW2308322-01E Page 33 of 42

Date: 2023-10-27



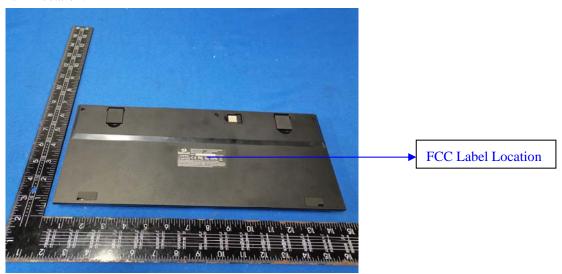
#### 10.0 FCC ID Label

#### FCC ID: TUVET-8822A

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:



Page 34 of 42

Report No.: TW2308322-01E

Date: 2023-10-27



#### 11.0 Photo of testing

#### 11.1 Conducted test View



Page 35 of 42

Report No.: TW2308322-01E

Date: 2023-10-27



#### Radiated emission test view



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Date: 2023-10-27



#### 11.2 Photographs – EUT

#### Outside View



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Page 37 of 42

Report No.: TW2308322-01E

Date: 2023-10-27



Outside View



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Page 38 of 42

Report No.: TW2308322-01E

Date: 2023-10-27



Outside View



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Page 39 of 42

Report No.: TW2308322-01E

Date: 2023-10-27



Outside View





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Page 40 of 42

Report No.: TW2308322-01E

Date: 2023-10-27



Inside View



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Page 41 of 42

Report No.: TW2308322-01E

Date: 2023-10-27





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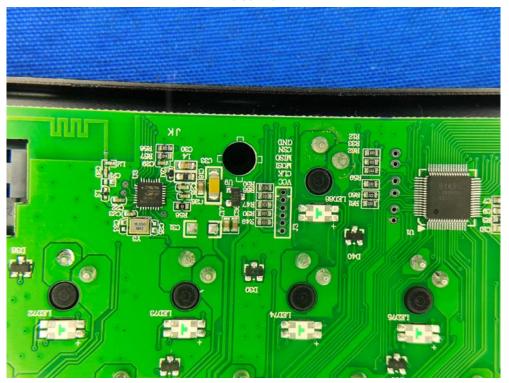
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Report No.: TW2308322-01E Page 42 of 42

Date: 2023-10-27



Inside View



-- End of the report--