



Report No.: TW2012007E File reference No.: 2021-03-29

Applicant: Eastern Times Technology Co.,Ltd

Product: MECHANICAL GAMING KEYBOARD

Model No.: K503-KS (see the page 4 for additional models)

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

Approved By

Jack Chung

Jack Chung

Manager

Dated: March 29, 2021

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 17025:2005 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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Test Report Conclusion Content

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

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Band Edge Test Result.

Antenna Requirement.....

20dB bandwidth measurement....

FCC ID Label.

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: MECHANICAL GAMING 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: K503-KS

Additional Model Name ET-8487, K503-WS, K503-KS-UK, K503-WS-UK, K503-KS-DE,

K503-WS-DE, K503-KS-FR, K503-WS-FR, K503-KS-IT, K503-WS-IT, K503-KS-ES, K503-WS-ES, S101-KS, S101-KS-UK, S101-KS-UK, S101-KS-DE, S101-KS-DE, S101-KS-FR, S101-KS-FR, S101-KS-IT,

S101-KS-IT, S101-KS-ES, S101-KS-ES

Rating: Input: DC5V, 1A

Battery: DC3.7V, 2500mAh Li-ion battery

Modulation Type: FSK

Operation Frequency: 2410-2468MHz

Channel Separation: 2MHz
Channel Number: 30

Hardware Version: MA138K9-3 SSOP28

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Software Version: RK-DualKB-Device-MA138K9-3-200120-1.00-0105-FCB6.hex

Antenna Designation PCB antenna with gain -2.0dBi Max (Declared by the applicant)

1.4 Submitted Sample: 1 Sample

1.5 Test Duration

2020-12-01 to 2021-03-29

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

Terry Tang

The sample tested by

Print Name: Terry Tang

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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	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	2020-07-06	2021-07-05
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	2021-01-06	2022-01-05

2.2 Automation Test Software

For Conducted Emission Test

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

For Radiated Emissions

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

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3.0 Technical Details

3.1 Summary of test results

The EUT has been tested according to the following specifications:

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
FCC Part 15, Paragraph 15.209 and RSS-210	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

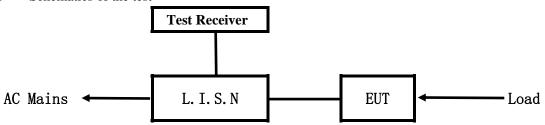
No modification by SHENZHEN TIMEWAY TESTING LABORATORIES

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5. Power Line Conducted Emission Test

5.1 Schematics of the test

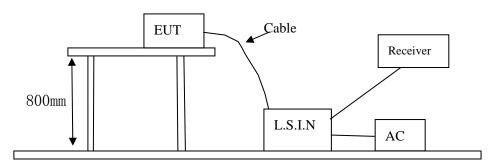


EUT: Equipment Under Test

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.

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

A. EUT

Device	Manufacturer	Model	FCC ID
MECHANICAL	Eastern Times Technology	K503-KS (see the page 4	TUVET-8487
GAMING KEYBOARD	Co.,Ltd	for additional models)	10 VE1-040/

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B. Internal Device

Device	Manufacturer	Model	FCC ID/DOC
N/A			

C. Peripherals

Device	Manufacturer Model Rating				
PC	ThinkPad	R4			

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

	0 0 1					
Frequency		Limits (dB μ V)				
	(MHz)	Quasi-peak Level	Average Level			
	$0.15 \sim 0.50$	66.0~56.0*	56.0~46.0*			
	$0.50 \sim 5.00$	56.0	46.0			
	$5.00 \sim 30.00$	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:

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

EUT Operating Environment

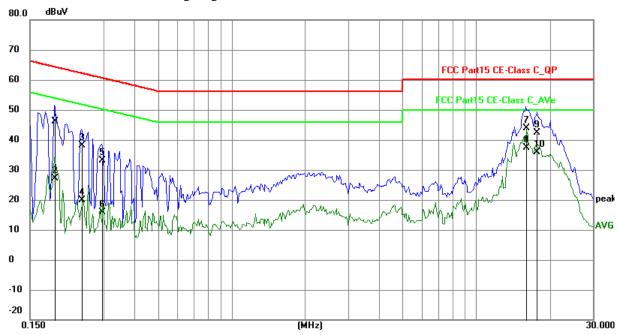
Temperature: 25°C Humidity: 75%RH Atmospheric Pressure: 101 kPa

EUT set Condition: Keyboard Under Charging Mode and Keep Transmitting

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	0.1890	36.25	9.76	46.01	64.08	-18.07	QP	Р
2	0.1890	17.39	9.76	27.15	54.08	-26.93	AVG	Р
3	0.2436	28.49	9.75	38.24	61.97	-23.73	QP	Р
4	0.2436	10.09	9.75	19.84	51.97	-32.13	AVG	Р
5	0.2943	23.33	9.76	33.09	60.40	-27.31	QP	Р
6	0.2943	6.14	9.76	15.90	50.40	-34.50	AVG	Р
7	15.9870	33.32	10.44	43.76	60.00	-16.24	QP	Р
8	15.9870	26.98	10.44	37.42	50.00	-12.58	AVG	Р
9	17.7030	31.82	10.54	42.36	60.00	-17.64	QP	Р
10	17.7030	25.40	10.54	35.94	50.00	-14.06	AVG	Р

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

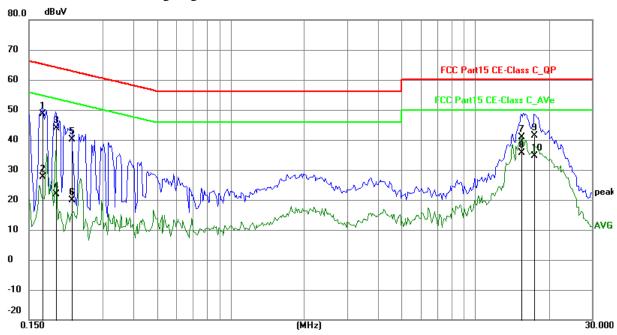
EUT Operating Environment

Temperature: 25°C Humidity: 75%RH Atmospheric Pressure: 101 kPa **EUT set Condition: Keyboard Under Charging Mode and Keep Transmitting**

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	0.1695	38.79	9.77	48.56	64.98	-16.42	QP	Р
2	0.1695	17.83	9.77	27.60	54.98	-27.38	AVG	Р
3	0.1929	34.20	9.75	43.95	63.91	-19.96	QP	Р
4	0.1929	12.18	9.75	21.93	53.91	-31.98	AVG	Р
5	0.2241	30.47	9.75	40.22	62.67	-22.45	QP	Р
6	0.2241	10.01	9.75	19.76	52.67	-32.91	AVG	Р
7	15.4371	30.39	10.41	40.80	60.00	-19.20	QP	Р
8	15.4371	25.13	10.41	35.54	50.00	-14.46	AVG	Р
9	17.4143	30.85	10.52	41.37	60.00	-18.63	QP	Р
10	17.4143	24.15	10.52	34.67	50.00	-15.33	AVG	Р

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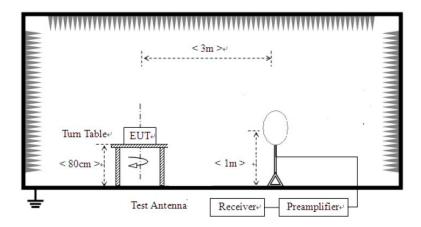


6 Radiated Emission Test

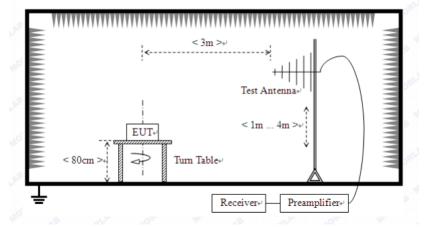
- 6.1 Test Method and test Procedure:
- (1) The EUT was tested according to ANSI C63.10-2013. The radiated test was performed at Timeway EMC Laboratory. This site is on file with the FCC laboratory division, Registration No. 744189
- (2) The EUT, peripherals were put on the turntable which table size 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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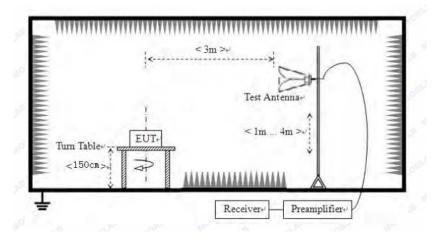
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For radiated emissions above 1GHz



- 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.
- 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	ntal (3m)	Field Strength of Harmonics (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 $(dBuV) = 20 \log RF \text{ Voltage } (uV)$
- 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.

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

Frequency Range (MHz)	Distance (m)	Field strength (dB μ 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 $(dBuV) = 20 \log RF \text{ Voltage } (uV)$
- 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. This is a handhold device. The radiated emissions should be tested under 3-axes position (Lying, Side, and Stand), After pre-test. It was found that the worse radiated emission was get at the lying position.
- 5. 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.
- 6. Battery fully charged was used during the radiated emissions test.

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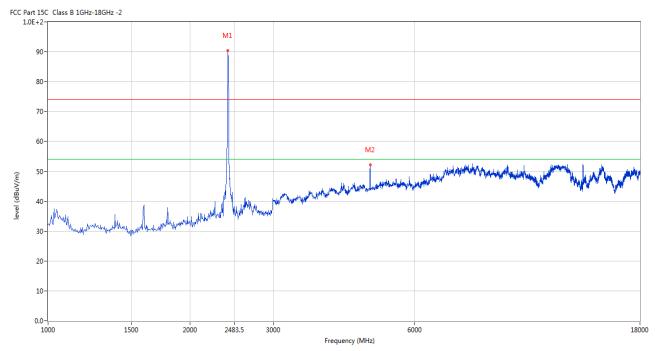


6.5 Test result

A Fundamental & Harmonics Radiated Emission Data

Please refer to the following test plots for details: Low Channel-2410MHz

Horizontal



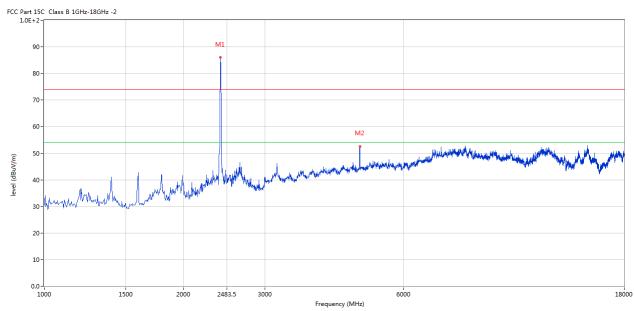
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	2406.750	90.45	-3.57	114.0	-23.55	Peak	52.00	100	Horizontal	Pass
2	4820.750	52.19	3.14	74.0	-21.81	Peak	288.00	100	Horizontal	Pass

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Vertical



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	2406.750	86.05	-3.57	114.0	-27.95	Peak	92.00	100	Vertical	Pass
2	4820.750	52.58	3.14	74.0	-21.42	Peak	162.00	100	Vertical	Pass

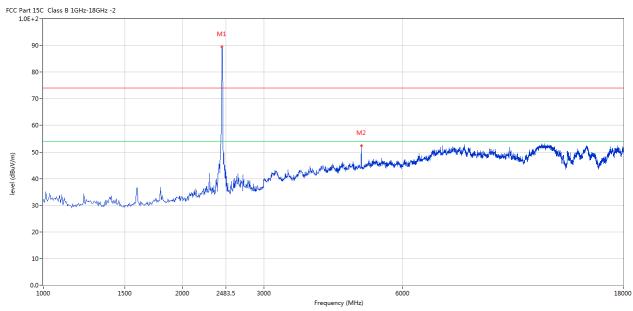
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Please refer to the following test plots for details: Middle Channel-2440MHz

Horizontal



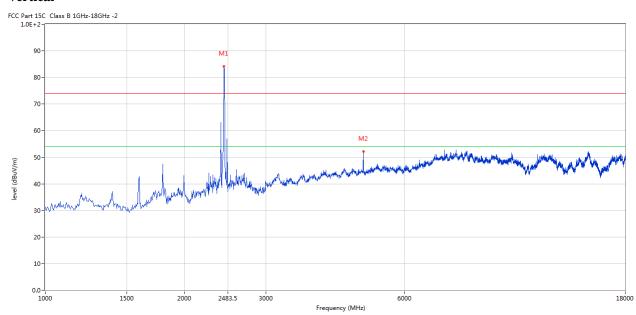
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	2440.750	89.43	-3.57	114.0	-24.57	Peak	65.00	100	Horizontal	Pass
2	4880.250	52.33	3.20	74.0	-21.67	Peak	282.00	100	Horizontal	Pass

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Vertical



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	2440.750	84.10	-3.57	114.0	-29.90	Peak	94.00	100	Vertical	Pass
2	4880.250	53.16	3.20	74.0	-20.84	Peak	166.00	100	Vertical	Pass

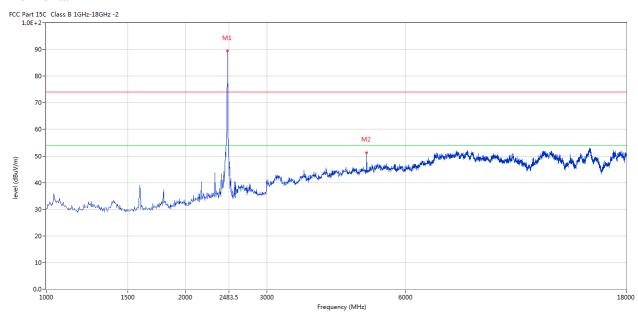
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Please refer to the following test plots for details: High Channel-2468MHz

Horizontal



No.	Frequency	Results	Factor	Limit	Over	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	Limit (dB)			(cm)		
1	2466.250	89.41	-3.57	114.0	-24.59	Peak	69.00	100	Horizontal	Pass
2	4935.500	51.26	3.30	74.0	-22.74	Peak	273.00	100	Horizontal	Pass

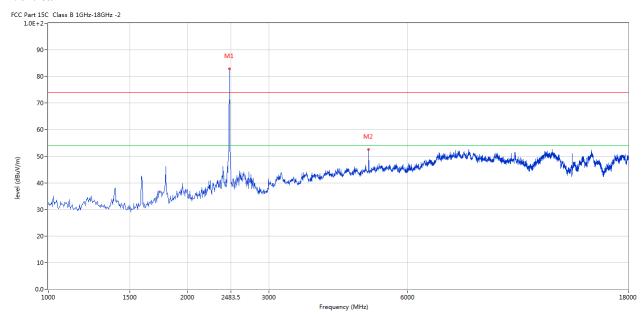
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Vertical



No.	Frequency	Results	Factor	Limit	Over	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	Limit (dB)			(cm)		
1	2466.250	82.77	-3.57	114.0	8.77	Peak	86.00	100	Vertical	Pass
2	4935.500	52.51	3.30	74.0	-21.49	Peak	158.00	100	Vertical	Pass

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

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

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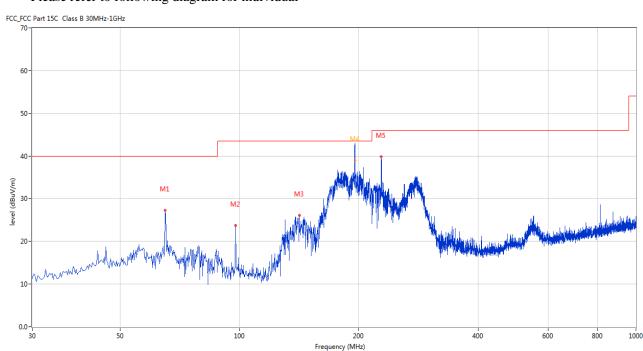


B. General Radiated Emission Data Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting

Results: Pass

Please refer to following diagram for individual



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	64.911	27.35	-13.55	40.0	-12.65	Peak	330.00	100	Horizontal	Pass
2	97.641	23.69	-13.79	43.5	-19.81	Peak	146.00	200	Horizontal	Pass
3	141.522	26.15	-17.28	43.5	-17.35	Peak	347.00	200	Horizontal	Pass
4	195.567	44.18	-13.74	43.5	0.68	Peak	340.00	192	Horizontal	N/A
4*	195.567	39.05	-13.74	43.5	-4.45	QP	340.00	192	Horizontal	Pass
5	227.831	39.78	-12.78	46.0	-6.22	Peak	360.00	200	Horizontal	Pass

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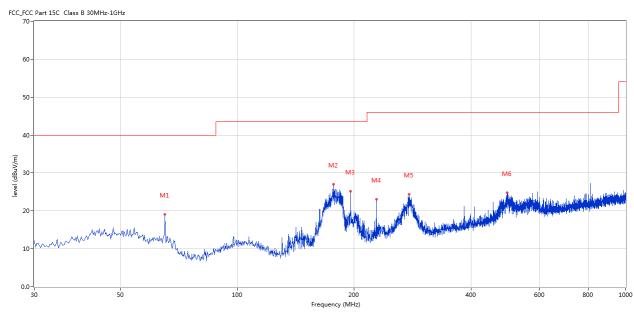


Radiated Emission In Vertical (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting

Results: Pass

Please refer to following diagram for individual



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	65.154	19.18	-13.63	40.0	-20.82	Peak	360.00	100	Vertical	Pass
2	176.676	27.09	-15.71	43.5	-16.41	Peak	277.00	100	Vertical	Pass
3	195.586	25.16	-13.70	43.5	-18.34	Peak	314.00	100	Vertical	Pass
4	228.315	23.04	-12.75	46.0	-22.96	Peak	252.00	100	Vertical	Pass
5	277.046	24.39	-11.54	46.0	-21.61	Peak	53.00	100	Vertical	Pass
6	495.726	24.75	-7.13	46.0	-21.25	Peak	360.00	100	Vertical	Pass

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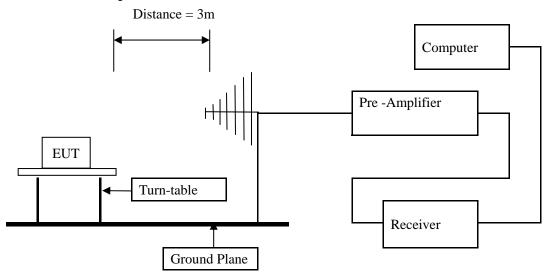


7. Band Edge

7.1 Test Method and test Procedure:

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

7. 2 Radiated Test Setup



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

7.3 Configuration of The EUT

Same as section 5.3 of this report

7.4 EUT Operating Condition

Same as section 5.4 of this report.

7.5 Band Edge Limit

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

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2400.335

2390.702

2

41.29

45.63

-3.56

-3.54

74.0

74.0

-12.71

-28.37

ΑV

Peak

291.00

291.00

100

100

Horizontal

Horizontal

Pass

Pass



Mode Keeping Transmitting Test Voltage DC3.7V Temperature 24 deg. C, Humidity 56% RH Test Result: Pass Test 15C Class B 1GHz-18GHz -2 Test 24 Test Class B 1GHz-18GHz -2 Test 25 Test Result: Pass Test R	56% RH		
Test Result: Pass Int 15C Class 8 16Hz-18GHz -2 90 80 70 40 20 10 00		24 deg. C,	DC3.7V
THE C Class B 16Hz-186Hz -2 90 80 70 60 40 10 10			56% RH
DE +2	24	Pass	
80	24		
80	24		
70- 60- 50- 40- 20- 10-	24		\sim
60- 50- 40- 20- 10-	24		/ \
50- 40- 30- 10- 0.0	24		
50- 40- 30- 10- 0.0	24		·
	24		
30- 20- 10-	24		
30- 20- 10-	24	Marie Marie Marie Landau	
20- 10-	24	I WANTED TO THE TANK	
10-	24	A distance of the second	
0.0-	24		
0.0-	24		
0.0-	24		
2350			
Frequency (MHz)	T		24
	ANT Verdi		
(MHz) (dBuV/m) (dB) (dBuV/m) (dB) (cm)		factor Limit	ANT Verdi

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P	Product:	MECHA	NICAL	GAMING I	KEYBOARI	D Det	ector		Vertical	1
	Mode		Keepin	g Transmitt	ing	Test V	Voltage		DC3.7V	1
Ter	mperature		2	4 deg. C,		Hun	nidity		56% RF	Ŧ
Tes	st Result:			Pass						
C Part 15	5C Class B 1GHz-18GH:	z -2				,	•			
1.01.72										
90)-								~	
80)-								-/-	
70)-									
60)-									\sim
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50)-				\sim	Λ				-
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/nngp) 40	o- Literatura de la constitución de l -	and respectively of the second	indistrated in the state of the	والمراجع أوالمراجع والمراجع وا	And the second second	Marine		N i		W
30 20	s - Urulpi sari Vand ping badi tang n -	androne in the Marian laying the	indising kalpunik d ^{a ma} dipu	ilman de est de la companie de la c		Agin Hyaha	wite, by			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
40 30	s - Urulpi sari Vand ping badi tang n -	and remaining the second second	indering the special principles	ingschaffelantassikerin innba		Marie Marie	unio, la			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
30 20	s - Urulpi sari Vand ping badi tang n -	pank-rangingh p ^{alkh} haitan jayangha	indising designation of the desi	Lagur de pol ^{toko} andress giber kirali ez			uries, justine			2422
30 20 10 0.0 2	2350		hadish qabaqili d ^{alad} ala	ingan di pelitari	Frequency (N	ν/Hz)				1
30 20	Frequency	Results	Factor	Limit	Over		Table (o)	Height	ANT	242d Verdict
30 20 10 0.0 2	2350		Factor (dB)	Limit (dBuV/m)	1	ν/Hz)		Height (cm)	ANT	1
30 20 10 0.0 2	Frequency	Results			Over	ν/Hz)			ANT Vertical	1
30 20 10 0.0 2	Frequency (MHz)	Results (dBuV/m)	(dB)	(dBuV/m)	Over Limit (dB)	MHz) Detector	Table (o)	(cm)		Verdict

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Product:	MECHA	NICAL C	3AMING K	EYBOARD	Polari	ty		Horizontal	
Mode		Keeping	Transmitti	ng	Test Vol	tage		DC3.7V	
Temperature		24	deg. C,		Humid	lity		56% RH	
Test Result:			Pass						
C Part 15C Class B 1GHz-18G 1.0E+2-	lz -2								
90-				4					
50-				MANA	The same of the sa	Mariania de la fina de	^{Many} dd dwydd dwyr ei fe gannwyd	And the state of t	ek-bankankalikek-s
50-		- Indiana in the second		MAN		Walter State of the State of th	^{ma} ndad mybellesire elecenatud	A CONTRACTOR OF THE PARTY OF TH	at the state of th
50- 40- 30- 20-				Frequency (MHz)	2483.5	Mariania de propiedo de pr	^{an} ta kapitalanga ete apanagi	Made destruction	2500
50- 40- 30- 20- 10-	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Frequency (MHz) Over Limit (dB)	2483.5	Table (o)	Height (cm)	ANT	

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Produ	uct:	MECHAI	NICAL (GAMING K	EYBOARD	Detect	tor		Vertical	
Mod	de		Keeping	g Transmitti	ng	Test Vol	ltage		DC3.7V	
Temper	rature		24	deg. C,		Humid	lity		56% RH	
Test Re	esult:			Pass						
90 - 80 -	s B 1GHz-18GHz	-2								
50- 40- 30- 20- 10- 2460					Frequency (MHz)	2483.5	hitak paliphira dipindangan melepada 1981	mbahada Parak da dipha penanth	showed which the showed the showe	2500
30- 20- 10- 2460	requency	Results	Factor	Limit	Frequency (MHz) Over Limit	2483.5	Table (o)	Height	ANT	Paris Fazza Pagas
30- 20- 10- 2460	requency 1Hz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)		2483.5			Mary City Group Parties	2500

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

2. This is a handhold device. The radiated emissions should be tested under 3-axes position (Lying, Side, and Stand), After pre-test. It was found that the worse radiated emission was get at the lying position.

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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 -2.0dBi Max. It fulfills the requirement of this section. Test Result: Pass

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Product: MECHANICAL GAMING KEYBOAR				ARD	Test Mode:		Keep transmitting				
Mode Keeping Transmitting						Test Voltage		DC3.7V			
Temperature 24 deg. C,						Humidity Detector		56% RH			
Test Result:		Pass							PK		
dB Bandwidth		2.194MHz									
>		Marker	1 [T1 r	ndB]	RI	ЗW	100 k	Hz RI	7 Att	20 dB	
Ref Lvl		ndB	20.	.00 dB	VI	BW	300 k	Hz			
10 dBm		BW 2	2.194388	378 MHz	SI	TW	5 m	s Uı	nit	dBm	ı
10							v ₁	[T1]	-8	3.70 dBm	A
									2.41051	603 GHz	A
0							ndB		20	0.00 dB	
						1	BW ∇ _{T1}	F2-2	2.19438		
-10			/	\		7	V .T.1	[T1]	-28 2 40891	.90 dBm	
			N.	V. Mary M	L WILL	V	\setminus $\triangledown_{\mathrm{T2}}$	[T1]	-29		
-20				<i>V</i> · ·	0000		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		2.41110	721 GHz	
1MAX		T/K	www				The way	T ²			1M
- 40 MM	lala.	مم کلاهم						W VIII	. July		
-50 North 1	200							Y	M. Marie	W July	
-60											
70											
-80											
-90											
Center 2	.41 GH			500	kHz/				Spa	ın 5 MHz	

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Product:	MECHANICAL GAMING KEYBOARD						est Mode:		Keep transmitting DC3.7V 56% RH PK			
Mode Keeping Transmitting						Te	est Voltage	;				
Temperature	24 deg. C, Pass 2.275MHz					Humidity Detector						
Test Result:												
20dB Bandwidth												
(s)	1	Marker	1 [T1 n	ıdB]	R	.BW	100 k	Hz R	F Att	20 dB		
Ref Lvl		ndB	20.	00 dB	V	BW	300 k	Hz				
10 dBm		BW 2	2.274549	10 MHz	S	WT	5 m	s U	nit	dBm	ı	
10							v ₁	[T1]	-13	3.06 dBm		
									2.44050	601 GHz	A	
0							ndl	3	20	0.00 dB		
							BW		2.27454	910 MHz		
-10							∇_{T}	[T1]	-33	3.08 dBm		
							$\bigvee \ lacksquare$	2 [T1]	2.43886	273 GHz 3.10 dBm		
-20				\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	~~~	\mathcal{A}	1		2.44113	3727 GHz		
1MAX			المر				<i></i>				1MA	
-30		/	~~~					\T2				
		NAME OF THE PARTY						V				
-40	- Mary	N. J.						/	marken	many.		
-50												
-60												
-70												
-80												
-90												
Center 2	.44 GHz			500	kHz/				Spa	an 5 MHz		

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Product:	MECH	ANICAL GAMING KEYBOARD				Test Mode:			Keep transmitting			
Mode	Keeping Transmitting 24 deg. C, Pass					Test Voltage Humidity Detector			DC3.7V 56% RH PK			
Temperature												
Test Result:												
0dB Bandwidth												
\triangle		Marker	1 [T1 n	ndB]	RBW	100	kHz	R	F Att	20	dВ	
Ref Lvl		ndB		00 dB	VBW	300	kHz					
10 dBm		BW	2.244488	898 MHz	SWT	5	ms	U	nit		dBm	
10						_	1 [7	1]	_13	1.17	dBm	
								-,	2.46849		GHZ	
0						n	dВ		20	.00	dB	
						В	W		2.24448	898 1	MHz	
-10						abla	TI [T1]	-33	.33	dBm	
			ſ	\		Ť			2.46687	275	GHz	
-20			\int	\	/	\ \ \ \ \ \ \	т2 [T1]	-33	.12	dBm	
1MAX			~	~~~~					2.46911	.723	GHz 1M	
			MANANA D			Yww.						
-30		7					Y	2				
		at Mark						V				
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-60												
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-80												
-90 Center 2	166 :	_		500						in 5 1		

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10.0 FCC ID Label

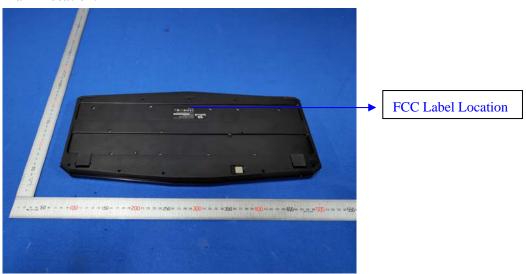
FCC ID: TUVET-8487

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



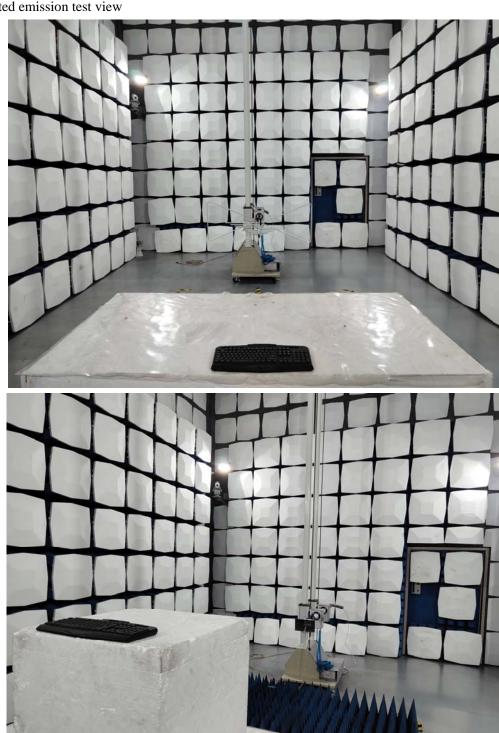
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11.2 Radiated emission test view



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11.3 Photographs – EUT

Outside View



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Photographs - EUT

Outside View



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Outside View



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Inside view



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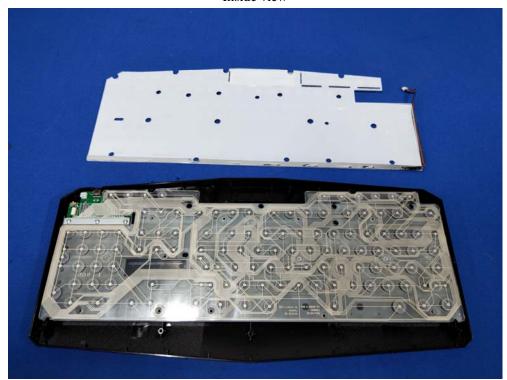
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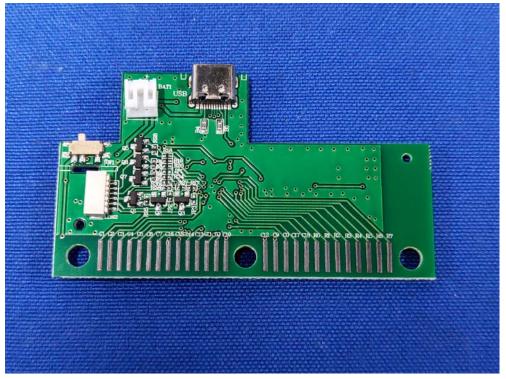
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Inside view





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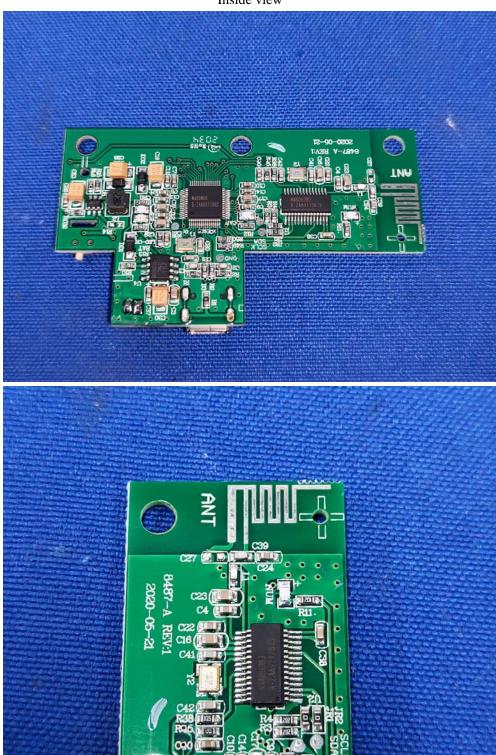
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Inside view



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