



Report No.: TW2203123E

File reference No.: 2022-03-30

Applicant: Shenzhen xinyanghongye Technology Co,Ltd.

Product: Wireless Keyboard

Model No.: K420E, K280E, K140E, KB-047, KB-057, KB-027

Trademark: N/A

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

A handwritten signature in black ink that reads "Terry Tang".

Terry Tang

Manager

Dated: March 30, 2022

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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Test Report Conclusion

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1.0 General Details

1.1 Test Lab Details

Name : SHENZHEN TIMEWAY TESTING LABORATORIES.
Address: Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West, Tong Le Village, Nanshan District, Shenzhen, China
Telephone: (755) 83448688
Fax: (755) 83442996
Site on File with the Federal Communications Commission – United States
Registration Number: 744189
For 3m Anechoic Chamber

1.2 Applicant Details

Applicant: Shenzhen xinyanghongye Technology Co,Ltd.
Address: Area A,3rd fioor, building 2,Yimlang industrial zone, shangtun, heshuikou community, gongming office, Guangming New District, Shenzhen, china
Telephone: 0755-88210277
Fax: 0755-88210377

1.3 Description of EUT

Product:	Wireless Keyboard
Manufacturer:	Shenzhen xinyanghongye Technology Co,Ltd.
Address:	Area A,3rd fioor, building 2,Yimlang industrial zone, shangtun, heshuikou community, gongming office, Guangming New District, Shenzhen, china
Trademark:	N/A
Model Number:	K420E
Additional Model Name	K280E, K140E, KB-047, KB-057, KB-027
Hardware Version:	K420-V3.0
Software Version:	K420_220307_V0_140/K420_220307_V0_K280/K420_220307_V0_K420
Serial No.:	420E0BT220001
Rating:	4.2V, 0.2A, 0.66W
Battery:	DC3.7V, 280mAh Li-ion battery
Modulation Type:	GFSK, Bluetooth Low Energy (BLE)
Operation Frequency:	2402-2480MHz
Channel Separate:	2MHz
Channel Number:	40
Antenna Designation	PCB antenna with gain 0dBi Max (Get from the antenna specification)

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1.4 Submitted Sample: 2 pcs

1.5 Test Duration

2022-03-09 to 2022-03-30

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

A handwritten signature in black ink that reads "Andy Xing".

Print Name: Andy Xing

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2.0 Test Equipment

Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date
ESPI Test Receiver	R&S	ESPI 3	100379	2021-06-18	2022-06-17
LISN	R&S	EZH3-Z5	100294	2021-06-18	2022-06-17
LISN	R&S	EZH3-Z5	100253	2021-06-18	2022-06-17
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2021-06-18	2022-06-17
Loop Antenna	EMCO	6507	00078608	2021-06-18	2024-06-17
Spectrum	R&S	FSIQ26	100292	2021-06-18	2022-06-17
Horn Antenna	A-INFO	LB-180400-KF	J211060660	2021-06-18	2022-06-17
Horn Antenna	R&S	BBHA 9120D	9120D-631	2021-07-02	2024-07-01
Power meter	Anritsu	ML2487A	6K00003613	2021-06-18	2022-06-17
Power sensor	Anritsu	MA2491A	32263	2021-06-18	2022-06-17
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2021-07-02	2024-07-01
9*6*6 Anechoic	--	--	N/A	2021-07-02	2022-07-01
EMI Test Receiver	RS	ESVB	826156/011	2021-06-18	2022-06-17
EMI Test Receiver	RS	ESH3	860904/006	2021-06-18	2022-06-17
Spectrum	HP/Agilent	ESA-L1500A	US37451154	2021-06-18	2022-06-17
Spectrum	HP/Agilent	E4407B	MY50441392	2021-06-18	2022-06-17
Spectrum	RS	FSP	1164.4391.38	2021-01-16	2022-01-15
RF Cable	Zhengdi	ZT26-NJ-NJ-8M/FA	--	2021-06-18	2022-06-17
RF Cable	Zhengdi	7m	--	2021-06-18	2022-06-17
RF Switch	EM	EMSW18	060391	2021-06-18	2022-06-17
Pre-Amplifier	Schwarebeck	BBV9743	#218	2021-06-18	2022-06-17
Pre-Amplifier	HP/Agilent	8449B	3008A00160	2021-06-18	2022-06-17
LISN	SCHAFFNER	NNB42	00012	2022-01-05	2023-01-04

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

3.2 Test Standards

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

4.0 EUT Modification

No modification by SHENZHEN TIMEWAY TESTING LABORATORIES

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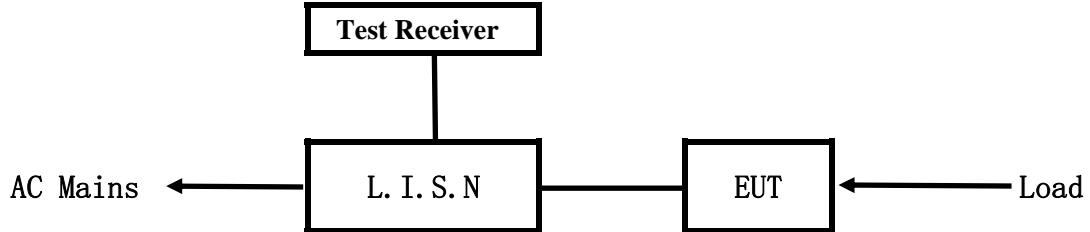
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5. Power Line Conducted Emission Test

5.1 Schematics of the test



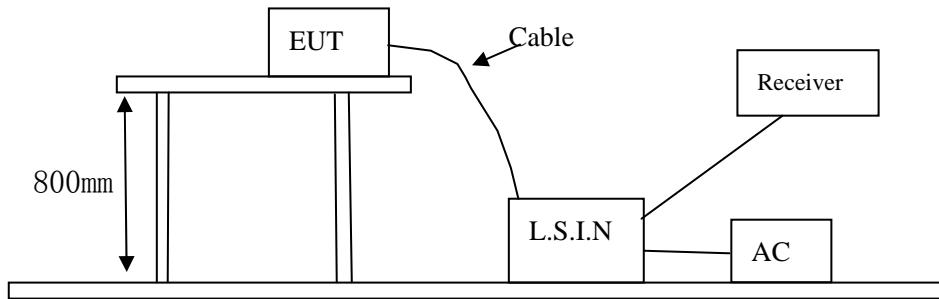
EUT: Equipment Under Test

5.2 Test Method and test Procedure

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

Test Voltage: 120V~, 60Hz

Block diagram of Test setup



5.3 Configuration of the EUT

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

40 channels are provided to the EUT

A. EUT

Device	Manufacturer	Model	FCC ID
Wireless Keyboard	Shenzhen xinyanghongye Technology Co,Ltd.	K420E, K280E, K140E, KB-047, KB-057, KB-027	2A5QA-CK1BT000A

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B. Internal Device

Device	Manufacturer	Model	FCC ID/DOC
N/A			

C. Peripherals

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

5.4 EUT Operating Condition

Operating condition is according to ANSI C63.10-2013

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

5.5 Power line conducted Emission Limit according to Paragraph 15.207

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

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

5.6 Test Results:

Pass

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

EUT Operating Environment

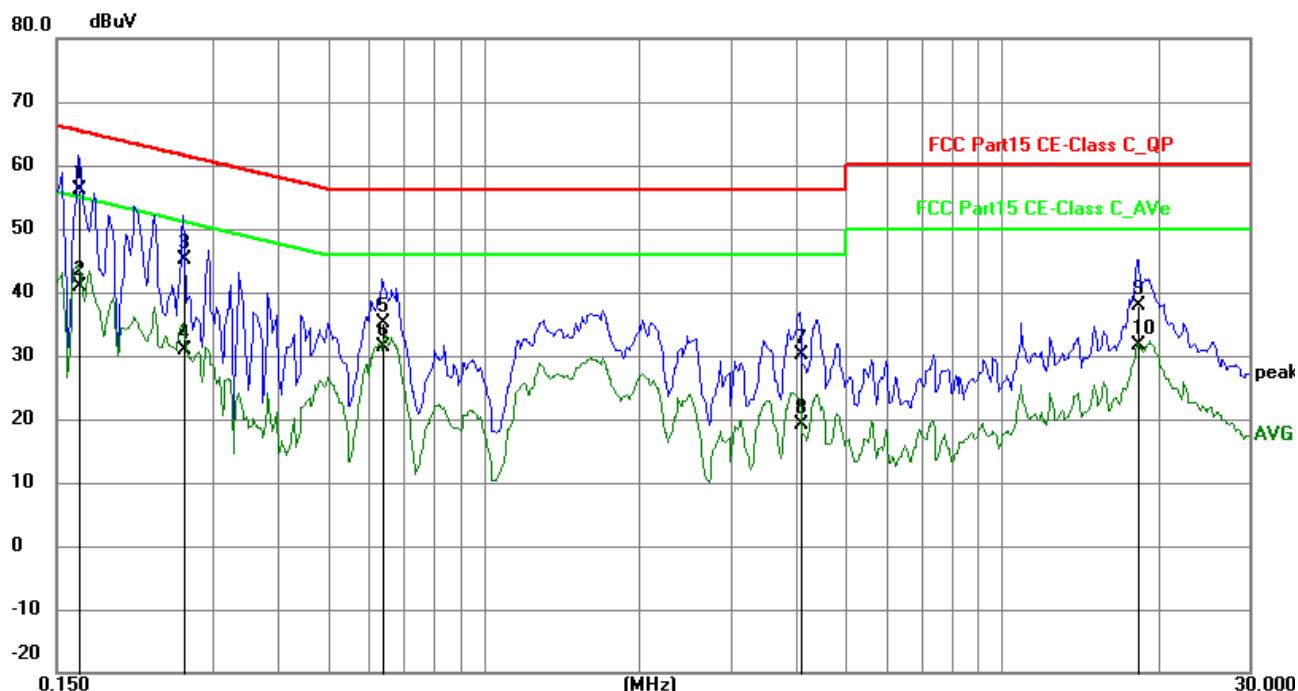
Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 kPa

EUT set Condition: Charging and Keep Transmitting

Model: K420E

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	0.1655	46.31	9.77	56.08	65.18	-9.10	QP	P
2	0.1655	31.23	9.77	41.00	55.18	-14.18	AVG	P
3	0.2631	35.26	9.75	45.01	61.33	-16.32	QP	P
4	0.2631	21.06	9.75	30.81	51.33	-20.52	AVG	P
5	0.6375	25.44	9.78	35.22	56.00	-20.78	QP	P
6	0.6375	21.64	9.78	31.42	46.00	-14.58	AVG	P
7	4.0764	20.31	9.89	30.20	56.00	-25.80	QP	P
8	4.0764	9.16	9.89	19.05	46.00	-26.95	AVG	P
9	18.3270	27.35	10.58	37.93	60.00	-22.07	QP	P
10	18.3270	21.09	10.58	31.67	50.00	-18.33	AVG	P

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

EUT Operating Environment

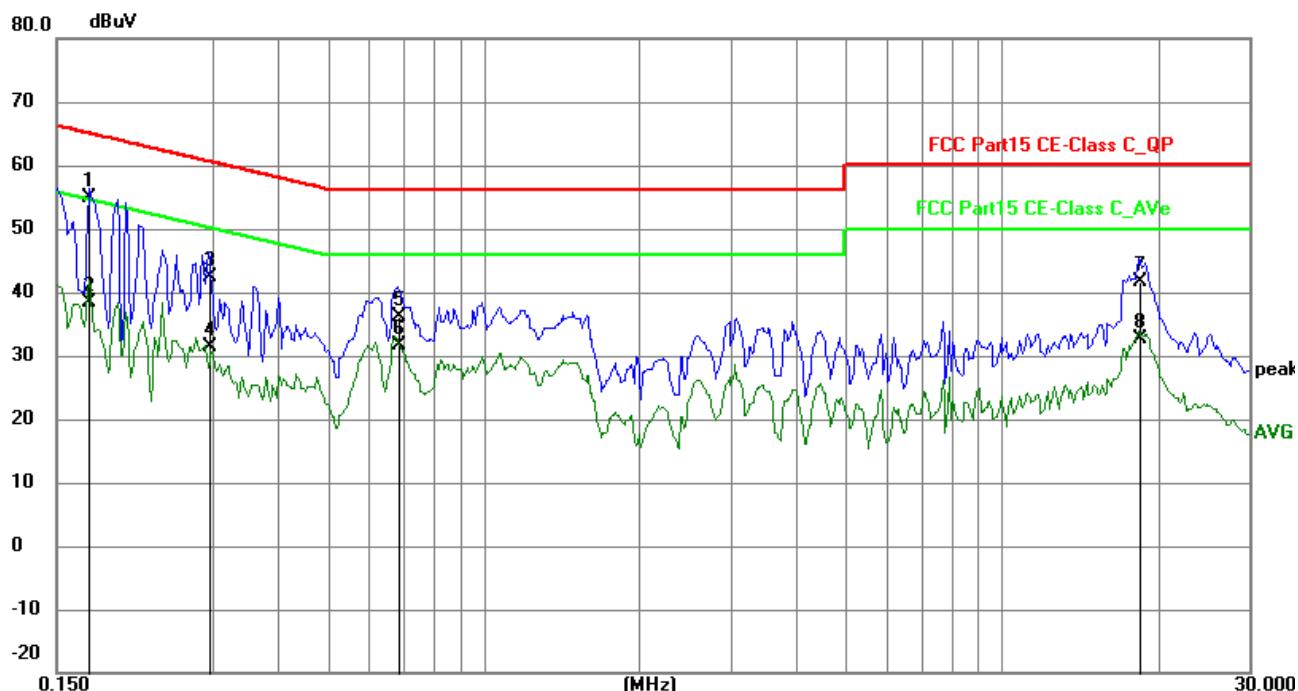
Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 kPa

EUT set Condition: Charging and Keep Transmitting

Model: K420E

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	0.1726	45.21	9.77	54.98	64.83	-9.85	QP	P
2	0.1726	28.67	9.77	38.44	54.83	-16.39	AVG	P
3	0.2943	32.64	9.76	42.40	60.40	-18.00	QP	P
4	0.2943	21.62	9.76	31.38	50.40	-19.02	AVG	P
5	0.6843	26.39	9.78	36.17	56.00	-19.83	QP	P
6	0.6843	21.85	9.78	31.63	46.00	-14.37	AVG	P
7	18.4516	31.03	10.59	41.62	60.00	-18.38	QP	P
8	18.4516	22.15	10.59	32.74	50.00	-17.26	AVG	P

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

EUT Operating Environment

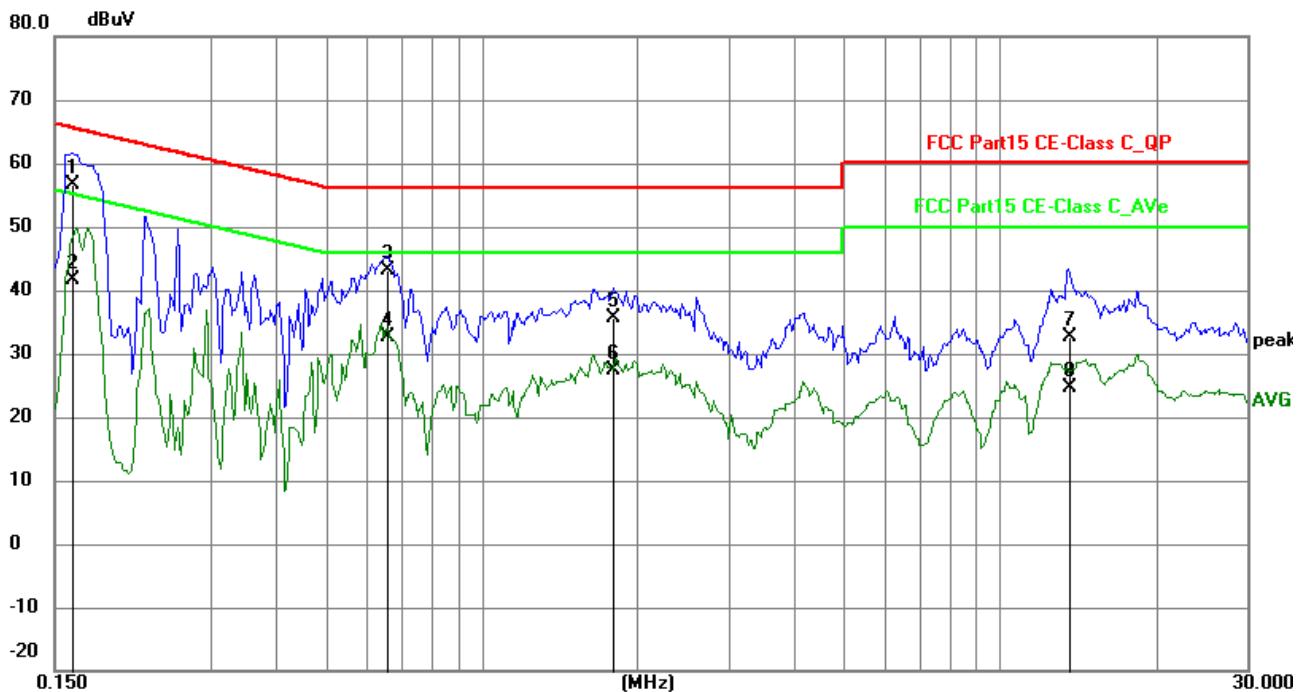
Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 kPa

EUT set Condition: Charging and Keep Transmitting

Model: K280E

Results: Pass

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1617	46.80	9.78	56.58	65.38	-8.80	QP	P
2	0.1617	31.95	9.78	41.73	55.38	-13.65	AVG	P
3	0.6570	33.27	9.78	43.05	56.00	-12.95	QP	P
4	0.6570	22.73	9.78	32.51	46.00	-13.49	AVG	P
5	1.7997	25.82	9.80	35.62	56.00	-20.38	QP	P
6	1.7997	17.49	9.80	27.29	46.00	-18.71	AVG	P
7	13.5612	22.37	10.32	32.69	60.00	-27.31	QP	P
8	13.5612	14.43	10.32	24.75	50.00	-25.25	AVG	P

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

EUT Operating Environment

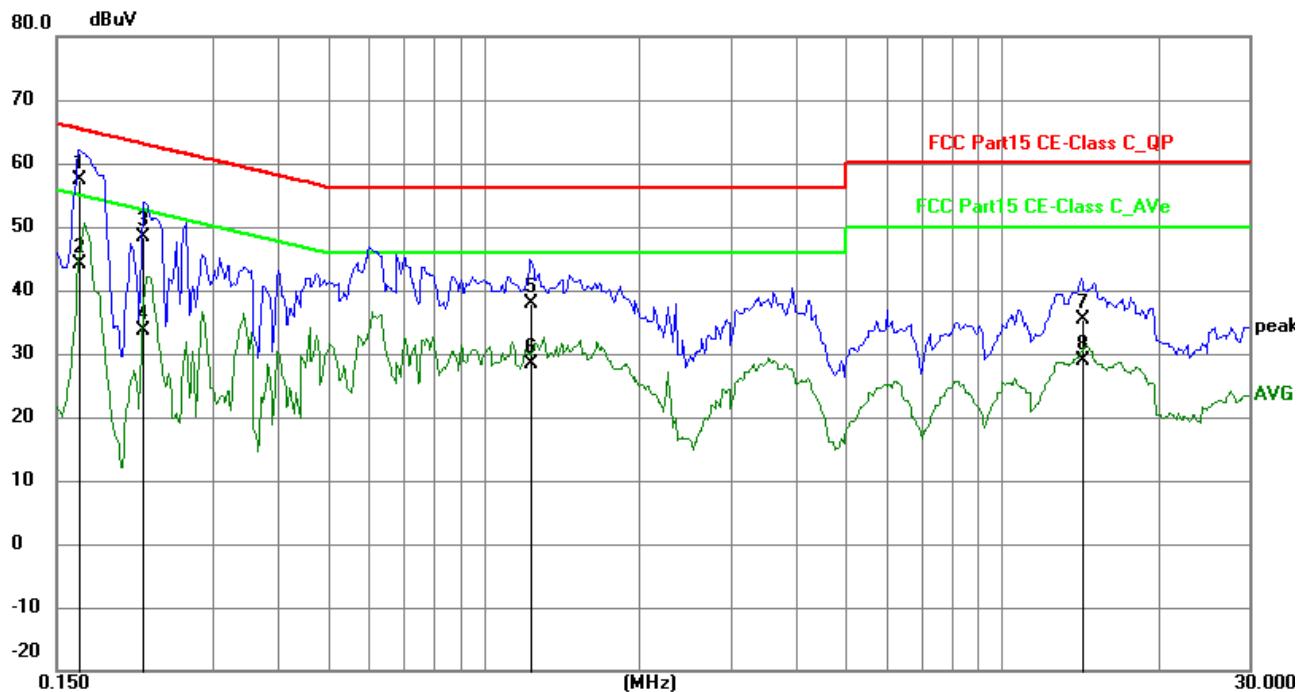
Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 kPa

EUT set Condition: Charging and Keep Transmitting

Model: K280E

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	0.1655	47.73	9.77	57.50	65.18	-7.68	QP	P
2	0.1655	34.27	9.77	44.04	55.18	-11.14	AVG	P
3	0.2202	38.58	9.75	48.33	62.81	-14.48	QP	P
4	0.2202	23.77	9.75	33.52	52.81	-19.29	AVG	P
5	1.2342	28.13	9.79	37.92	56.00	-18.08	QP	P
6	1.2342	18.63	9.79	28.42	46.00	-17.58	AVG	P
7	14.2476	25.07	10.35	35.42	60.00	-24.58	QP	P
8	14.2476	18.42	10.35	28.77	50.00	-21.23	AVG	P

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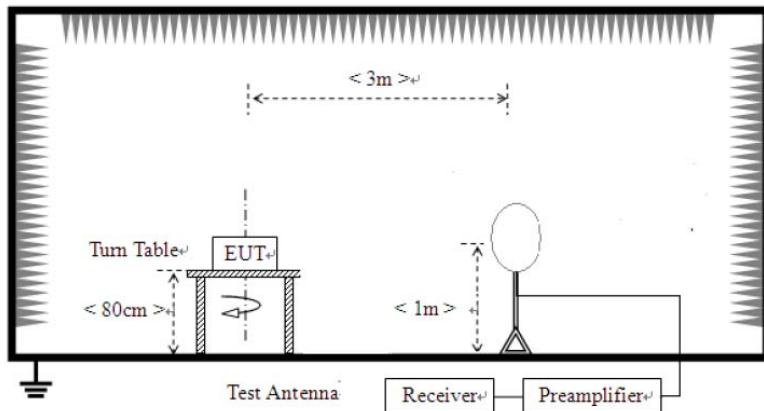
6.0 Radiated Emission Test

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 height 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



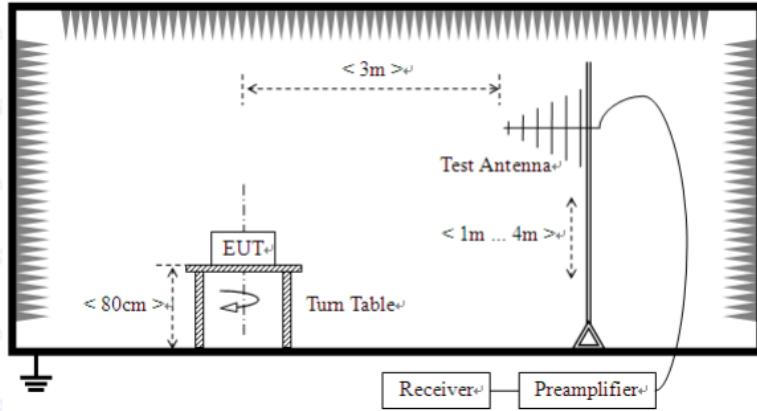
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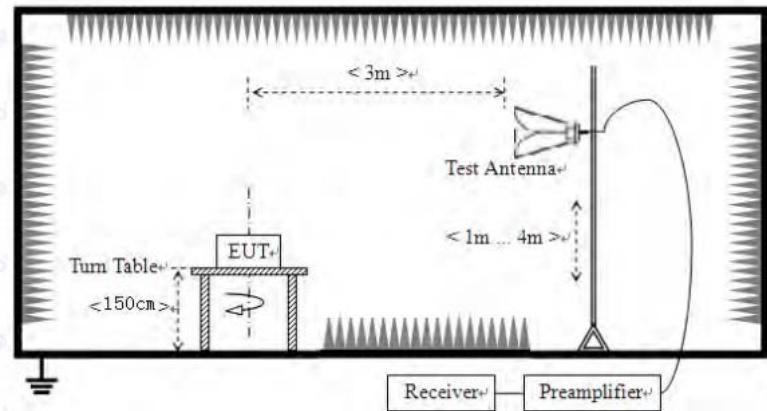
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For radiated emissions from 30MHz to1GHz



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.

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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 (MHz)	Field Strength of Fundamental (3m)			Field Strength of Harmonics (3m)		
	mV/m	dBuV/m		uV/m	dBuV/m	
2400-2483.5	50	94 (Average)	114 (Peak)	500	54 (Average)	74 (Peak)

Note:

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

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

Frequency Range (MHz)	Distance (m)	Field strength (dB μ V/m)
0.009-0.490	3	$20\log(2400/F(\text{kHz})) + 40\log(300/3)$
0.490-1.705	3	$20\log(24000/F(\text{kHz})) + 40\log(30/3)$
1.705-30	3	69.5
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 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 tests.

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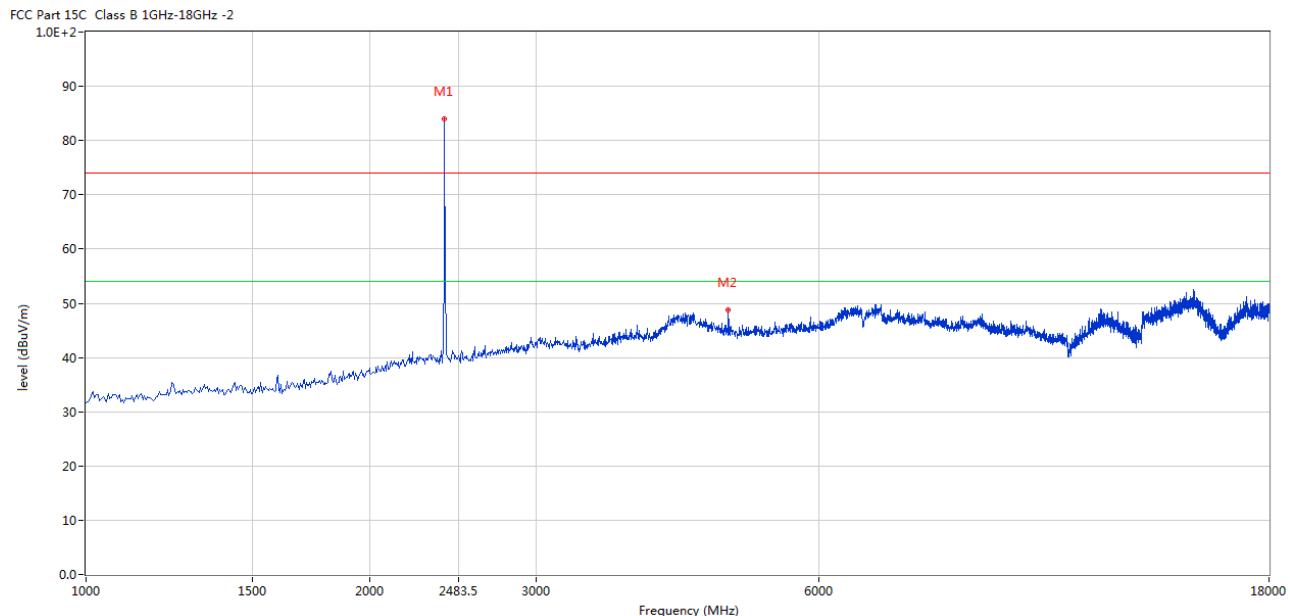


6.5 Test result

A Fundamental & Harmonics Radiated Emission Data

Please refer to the following test plots for details: Low Channel-2402MHz

Horizontal



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dB)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2401.765	84.22	-3.57	114.0	-29.78	Peak	236.00	100	Horizontal	Pass
2	4802.799	48.84	3.12	74.0	-25.16	Peak	347.00	100	Horizontal	Pass

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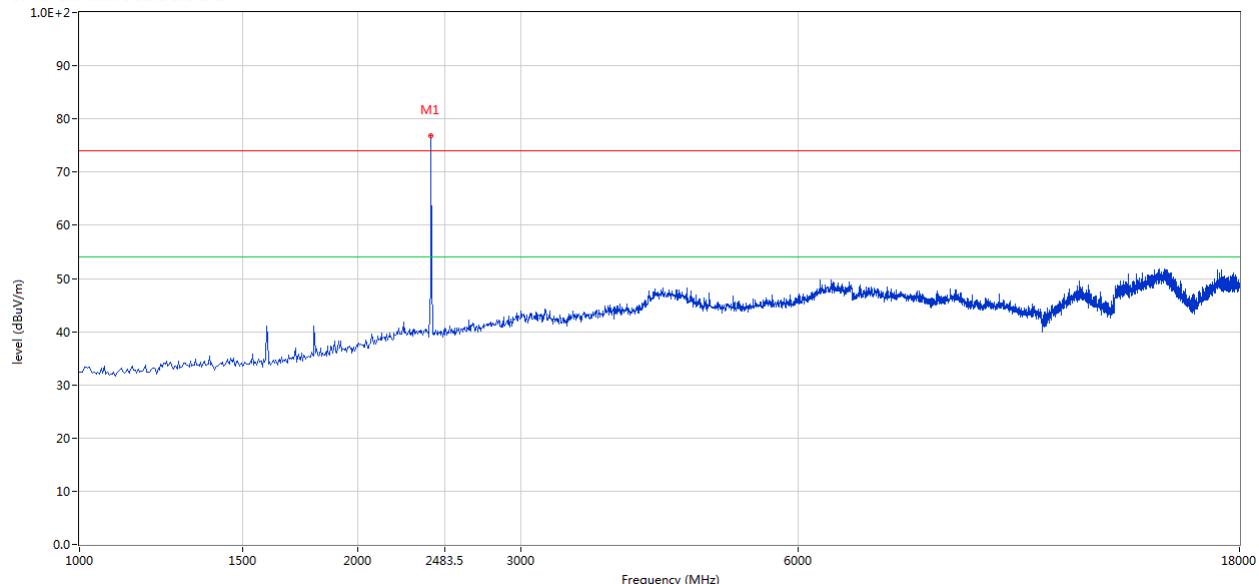
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Vertical

FCC Part 15C Class B 1GHz-18GHz -2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2401.765	76.79	-3.57	114.0	-37.21	Peak	196.00	100	Vertical	Pass

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

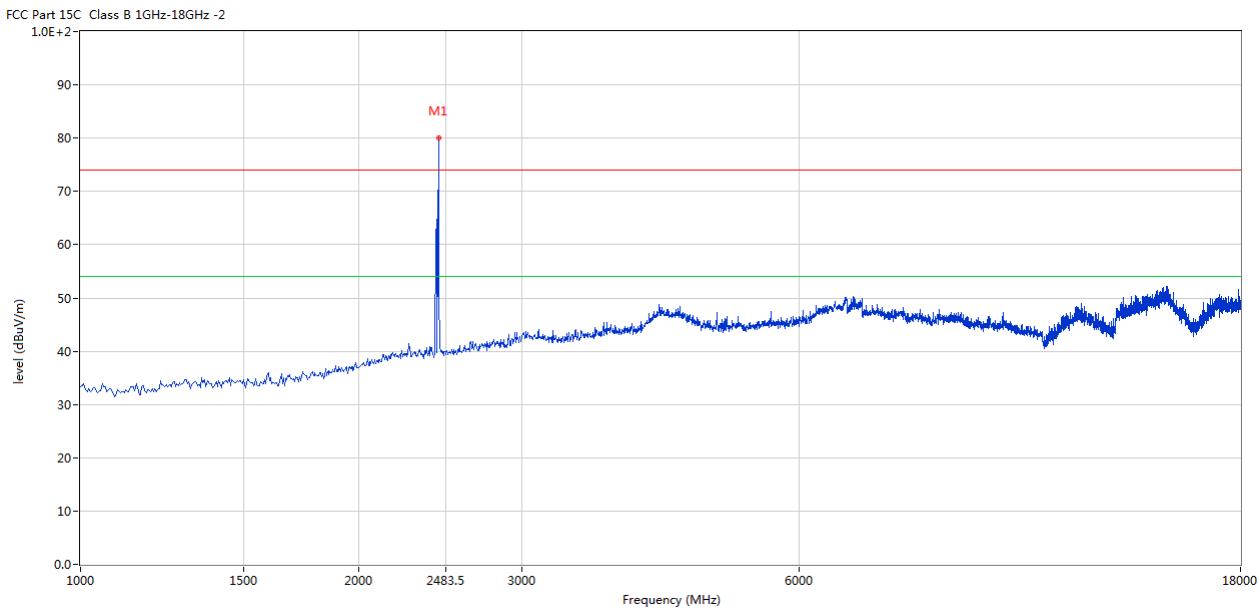
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Please refer to the following test plots for details: Middle Channel-2440MHz

Horizontal



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2439.862	80.06	-3.57	114.0	-33.94	Peak	268.00	100	Horizontal	Pass

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

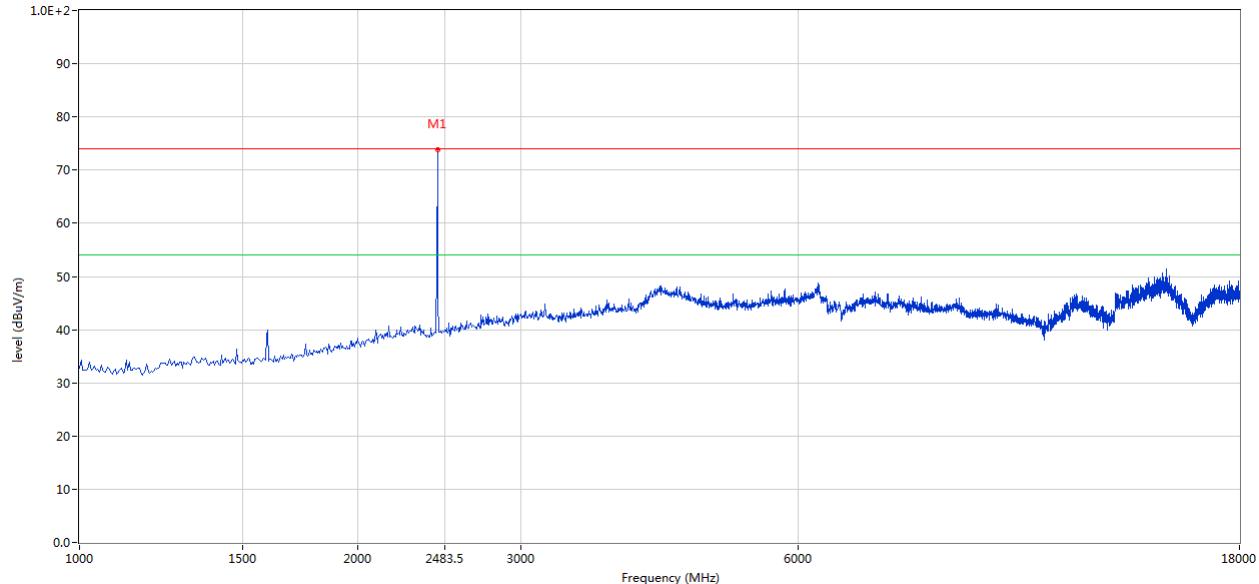
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Vertical

FCC Part 15C Class B 1GHz-18GHz -2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2439.862	73.75	-3.57	114.0	-40.25	Peak	270.00	100	Vertical	Pass

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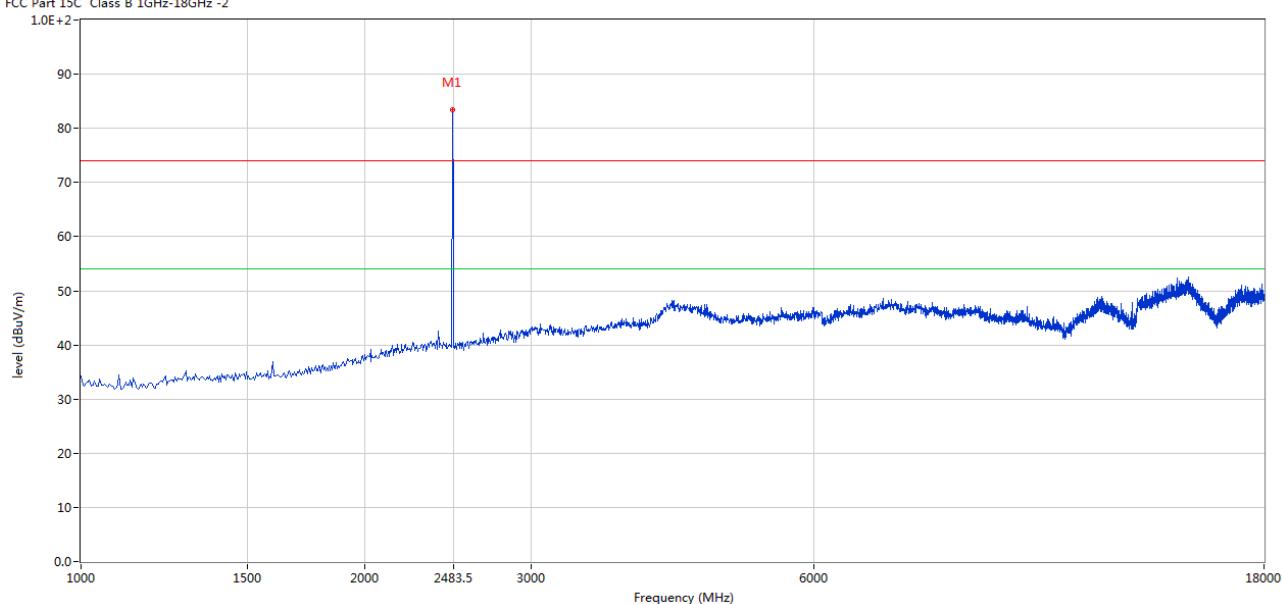
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Please refer to the following test plots for details: High Channel-2480MHz

Horizontal

FCC Part 15C Class B 1GHz-18GHz -2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2479.726	83.81	-3.57	114.0	-30.19	Peak	181.00	100	Horizontal	Pass

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

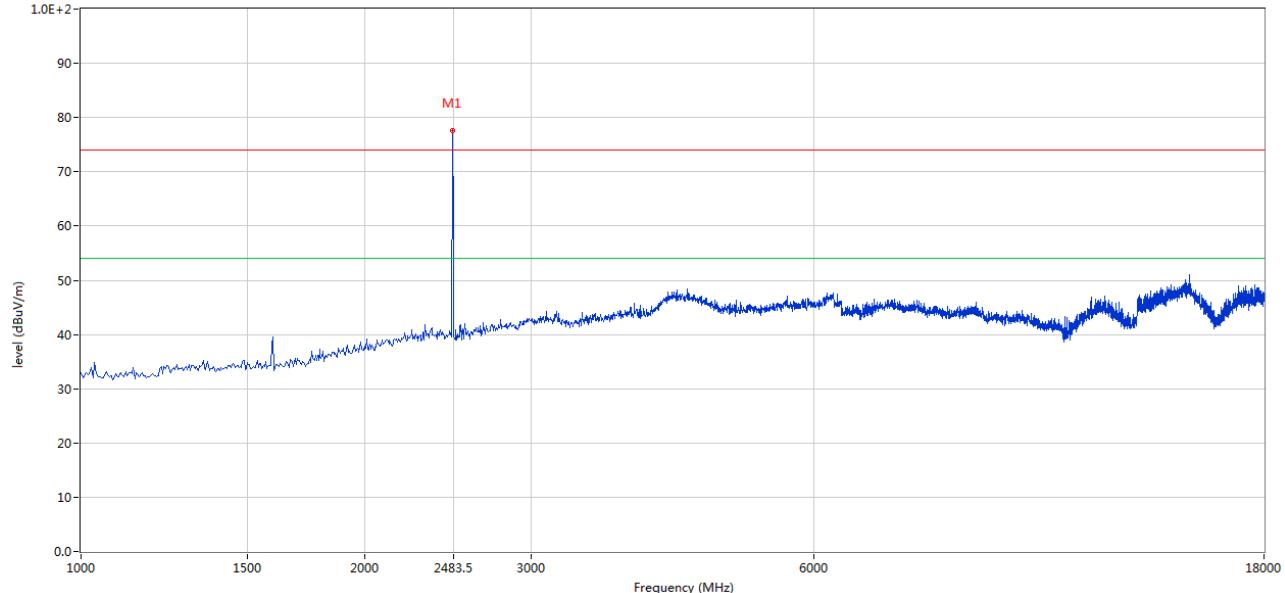
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Vertical

FCC Part 15C Class B 1GHz-18GHz -2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2479.726	77.65	-3.57	114.0	-36.35	Peak	0.00	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

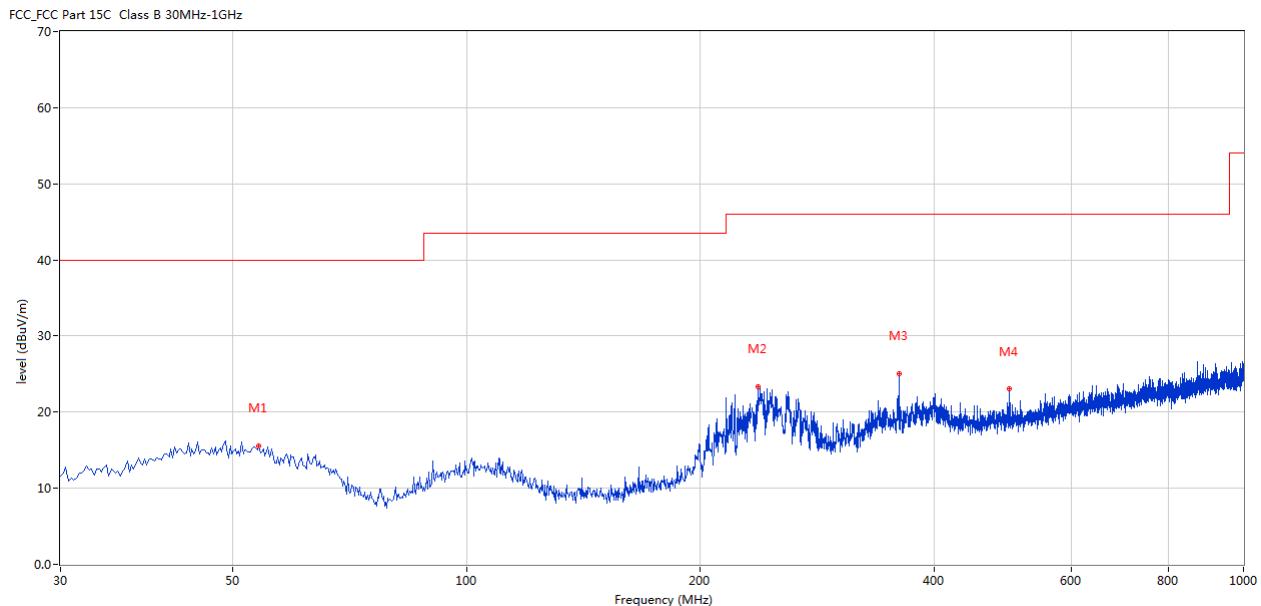
Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting

Model: K420E

Results: Pass

Please refer to following diagram for individual



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	54.001	15.53	-11.54	40.0	-24.47	Peak	166.00	100	Horizontal	Pass
2	237.043	23.31	-12.37	46.0	-22.69	Peak	44.00	100	Horizontal	Pass
3	360.202	25.07	-9.48	46.0	-20.93	Peak	80.00	100	Horizontal	Pass
4	500.090	23.01	-6.91	46.0	-22.99	Peak	295.00	100	Horizontal	Pass

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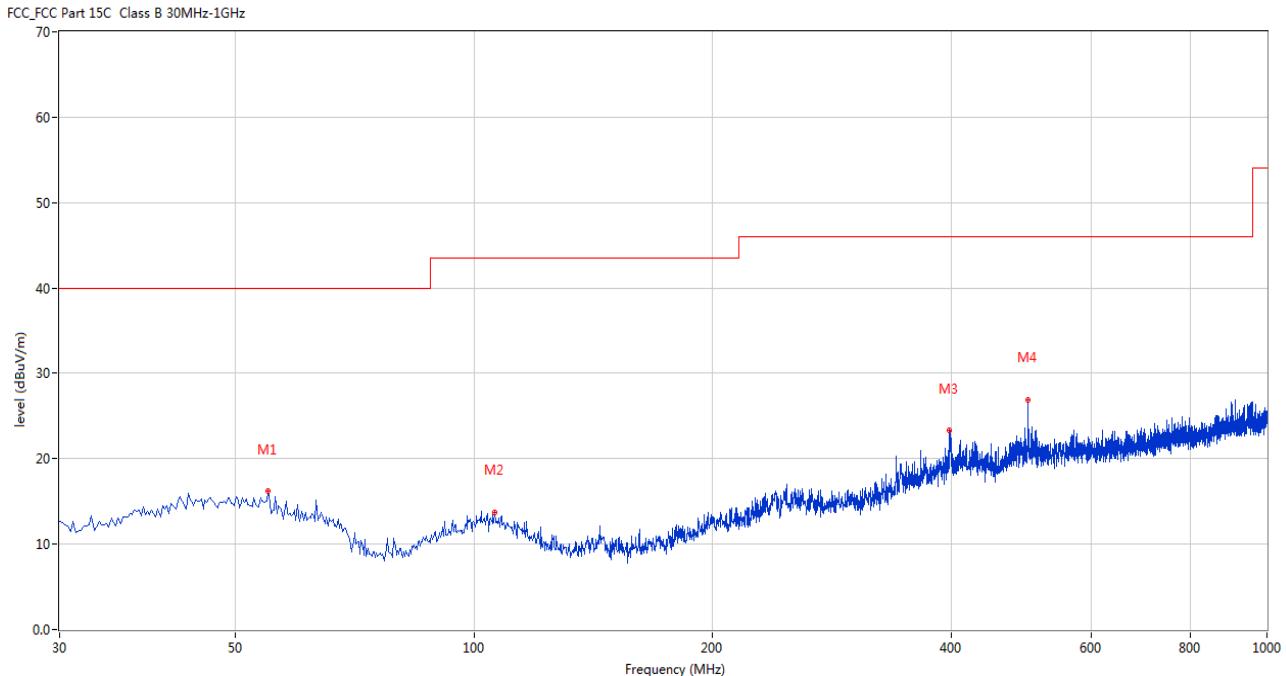


Radiated Emission In Vertical (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting
Model: K420E

Results: Pass

Please refer to following diagram for individual



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	54.971	16.16	-11.77	40.0	-23.84	Peak	26.00	110	Vertical	Pass
2	106.126	13.75	-13.32	43.5	-29.75	Peak	341.00	110	Vertical	Pass
3	397.053	23.28	-8.73	46.0	-22.72	Peak	21.00	110	Vertical	Pass
4	500.090	26.91	-6.91	46.0	-19.09	Peak	356.00	110	Vertical	Pass

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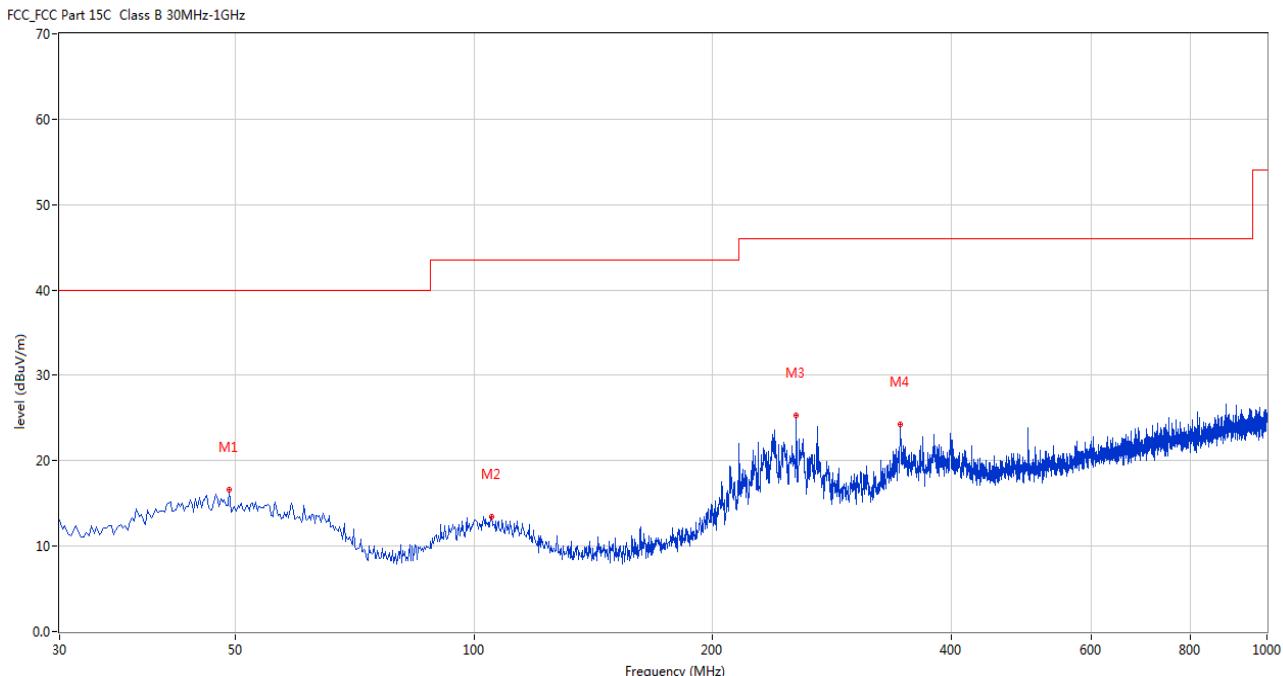


Radiated Emission In Horizontal (30MHz---1000MHz)

EUT set Condition: Keep Tx transmitting
Model: K280E

Results: Pass

Please refer to following diagram for individual



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	49.153	16.58	-11.24	40.0	-23.42	Peak	64.00	100	Horizontal	Pass
2	105.156	13.44	-13.23	43.5	-30.06	Peak	31.00	100	Horizontal	Pass
3	254.984	25.33	-11.94	46.0	-20.67	Peak	263.00	100	Horizontal	Pass
4	344.686	24.25	-9.53	46.0	-21.75	Peak	87.00	100	Horizontal	Pass

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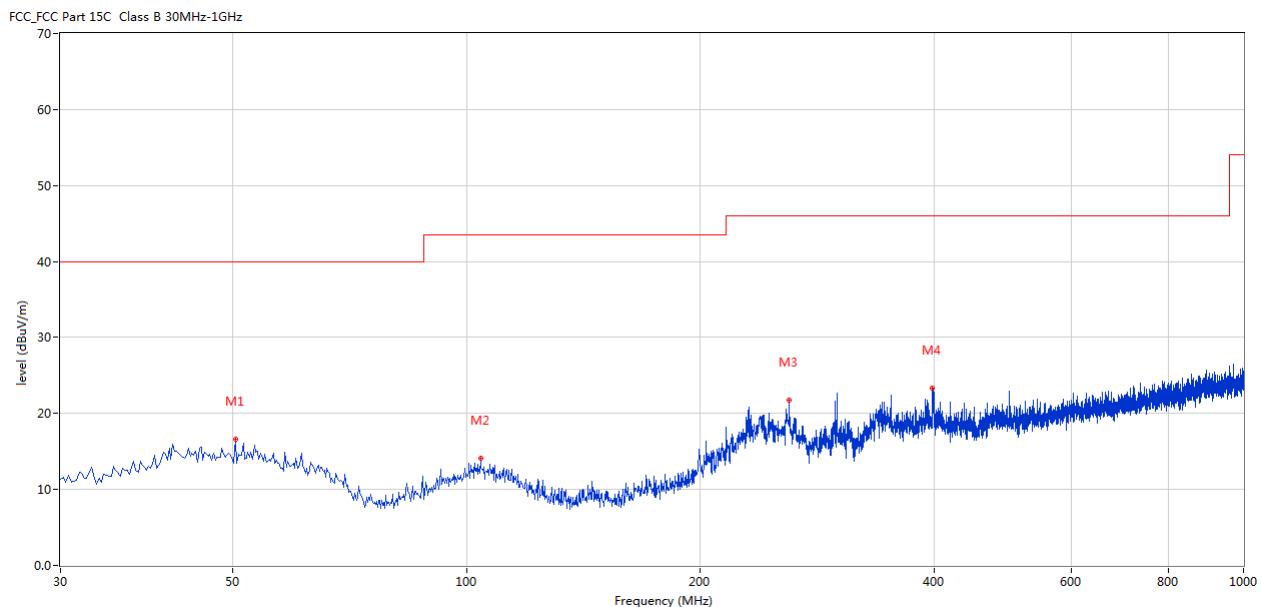


Radiated Emission In Vertical (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting
Model: K280E

Results: Pass

Please refer to following diagram for individual



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	50.365	16.56	-11.39	40.0	-23.44	Peak	246.00	100	Vertical	Pass
2	104.186	14.07	-13.30	43.5	-29.43	Peak	206.00	100	Vertical	Pass
3	260.317	21.78	-11.84	46.0	-24.22	Peak	277.00	100	Vertical	Pass
4	397.538	23.31	-8.71	46.0	-22.69	Peak	275.00	100	Vertical	Pass

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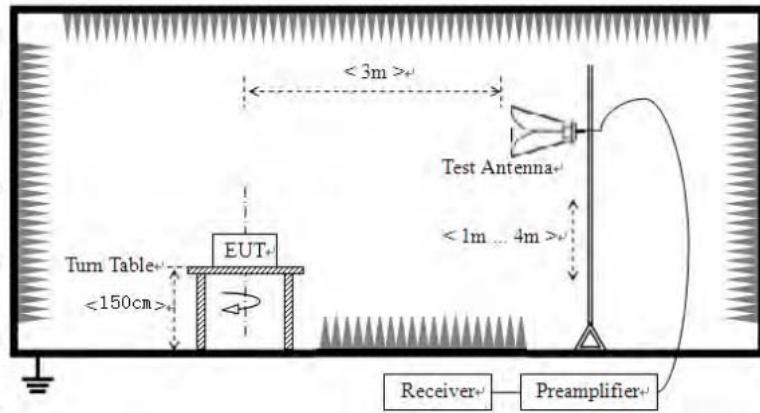


7. Band Edge

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 height 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

Product:	Wireless Keyboard		Polarity	Horizontal						
Mode	Keeping Transmitting		Test Voltage	DC3.7V						
Temperature	24 deg. C,		Humidity	56% RH						
Test Result:	Pass		--	--						
FCC Part 15C Class B 1GHz-18GHz -2										
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2402.202	84.01	-3.57	74.0	10.01	Peak	217.00	100	Horizontal	N/A
2	2400.087	61.13	-3.57	74.0	-12.87	Peak	124.00	100	Horizontal	Pass
2**	2400.087	49.05	-3.57	54.0	-4.95	AV	124.00	100	Horizontal	Pass
3	2390.025	38.46	-3.53	74.0	-35.54	Peak	36.00	100	Horizontal	Pass

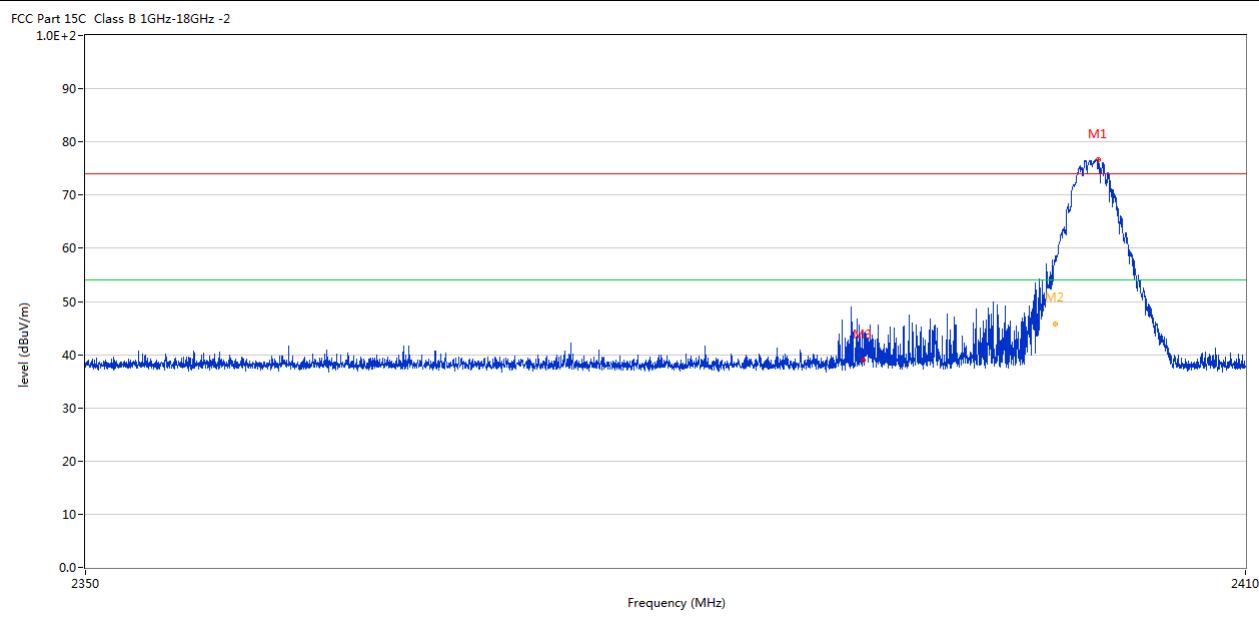
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Product:	Wireless Keyboard	Detector	Vertical
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	--	--



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2402.292	76.62	-3.57	74.0	2.62	Peak	195.00	100	Vertical	N/A
2	2400.072	58.59	-3.57	74.0	-15.41	Peak	195.00	100	Vertical	Pass
2**	2400.072	45.76	-3.57	54.0	-8.24	AV	195.00	100	Vertical	Pass
3	2390.070	38.94	-3.53	74.0	-35.06	Peak	309.00	100	Vertical	Pass

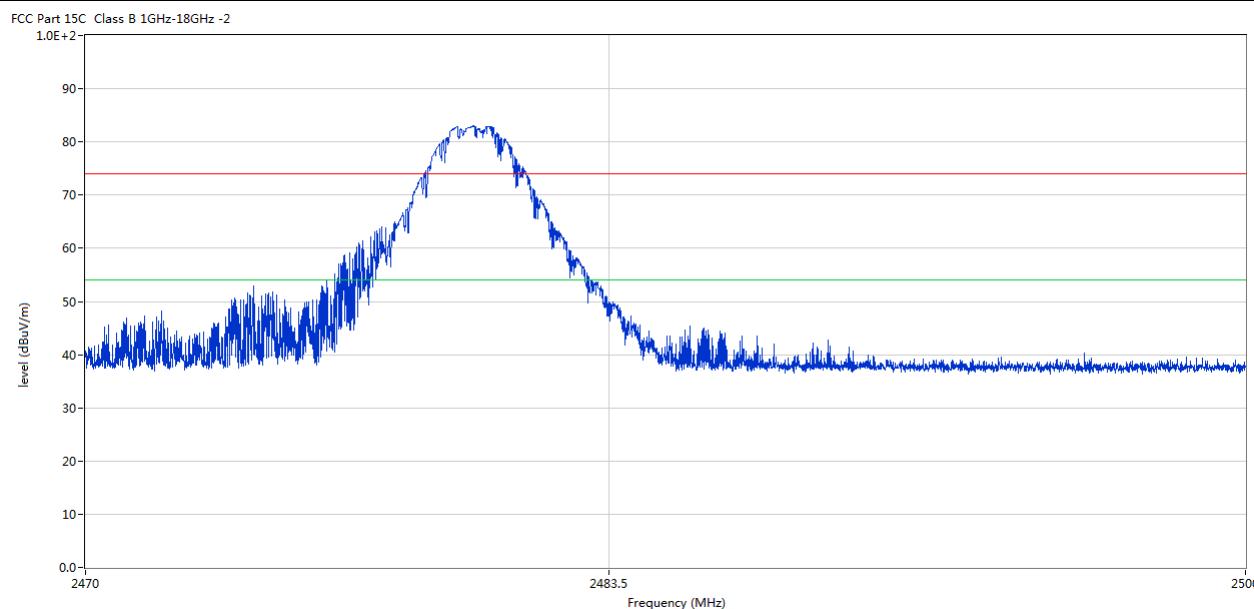
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Product:	Wireless Keyboard	Polarity	Horizontal
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	--	--



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2479.980	82.98	-3.57	74.0	8.98	Peak	221.00	100	Horizontal	N/A
2	2483.407	51.05	-3.57	74.0	-22.95	Peak	226.00	100	Horizontal	Pass

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

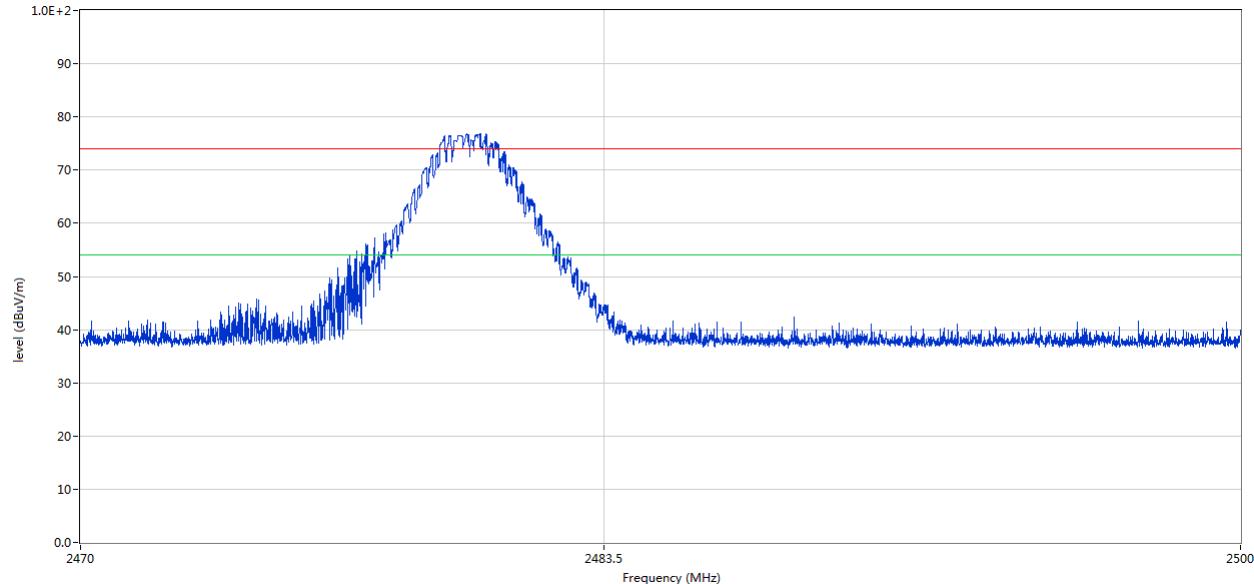
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Product:	Wireless Keyboard	Detector	Vertical
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	--	--

FCC Part 15C Class B 1GHz-18GHz -2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2480.280	76.76	-3.57	74.0	2.76	Peak	194.00	100	Vertical	N/A
2	2483.369	44.87	-3.57	74.0	-29.13	Peak	199.00	100	Vertical	Pass

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

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8.0 Antenna Requirement

Applicable Standard

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

This product has a PCB antenna with gain 0dBi Max.

Test Result: Pass

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9.0 20dB Bandwidth Measurement

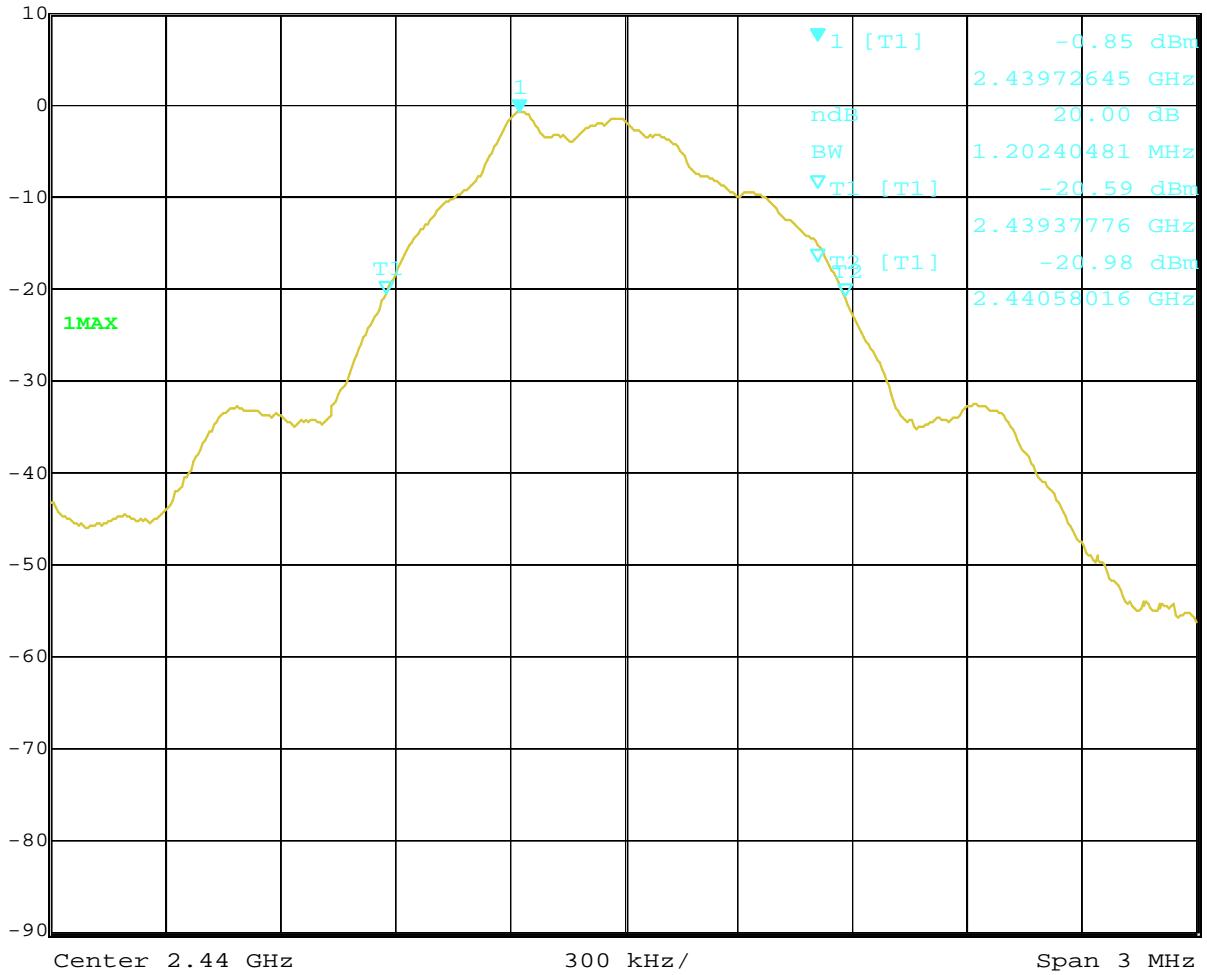
Product:	Wireless Keyboard	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	1.208MHz	--	--
<p>Ref Lvl 10 dBm Marker 1 [T1 ndB] ndB 20.00 dB RBW 100 kHz RF Att 20 dB</p> <p>BW 1.20841683 MHz VBW 300 kHz Unit dBm</p>			
<p>▼1 [T1] -1.32 dBm 2.40173246 GHz</p> <p>ndB 20.00 dB</p> <p>BW 1.20841683 MHz</p> <p>▼T1 [T1] -21.18 dBm 2.40137776 GHz</p> <p>▼T2 [T1] -21.48 dBm 2.40258617 GHz</p> <p>IMA</p>			
<p>Center 2.402 GHz 300 kHz / Span 3 MHz</p>			
<p>Date: 26.MAR.2022 09:53:03</p>			

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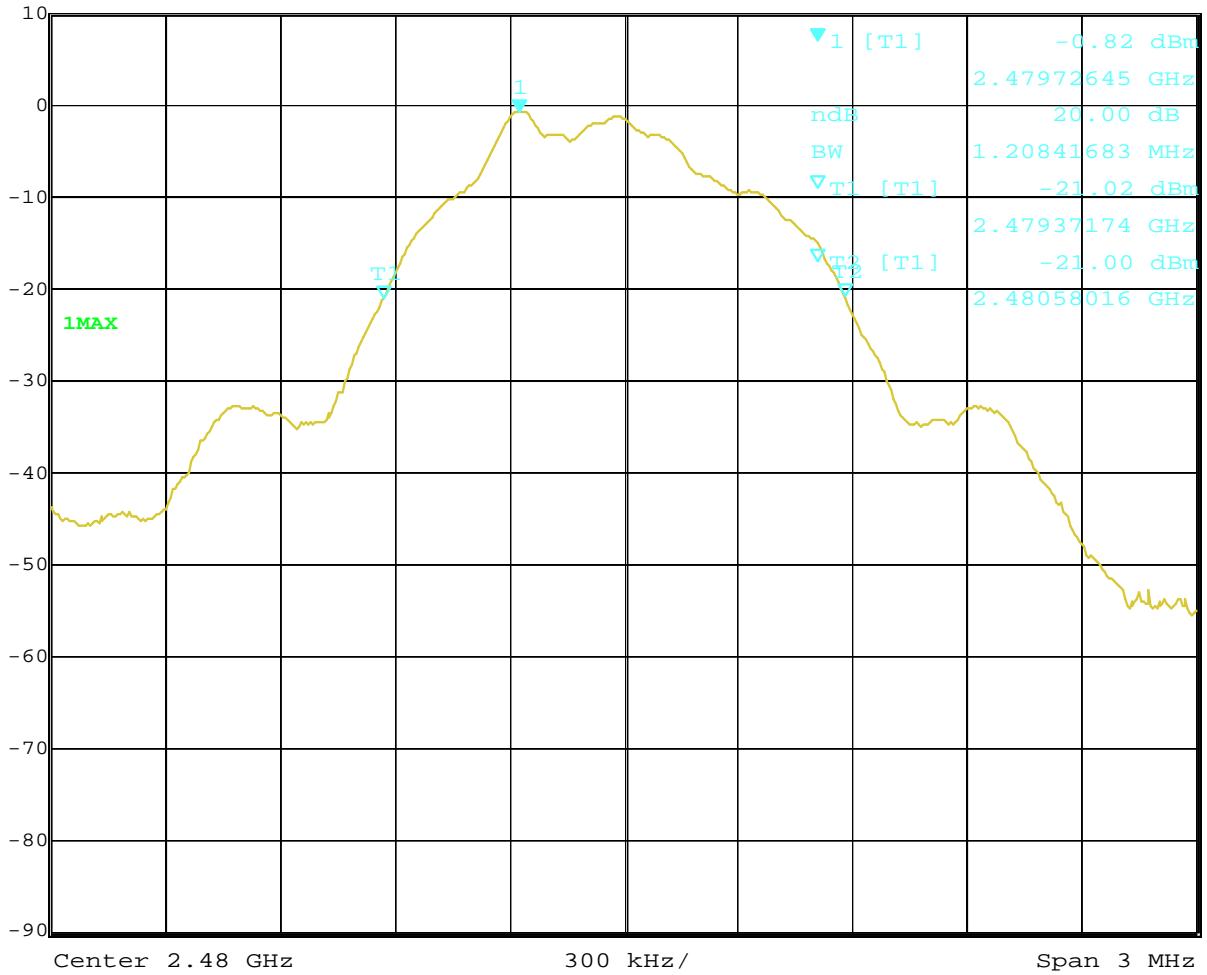
Product:	Wireless Keyboard	Test Mode:	Keep transmitting					
Mode	Keeping Transmitting	Test Voltage	DC3.7V					
Temperature	24 deg. C,	Humidity	56% RH					
Test Result:	Pass	Detector	PK					
20dB Bandwidth	1.202MHz	--	--					
 Ref Lvl 10 dBm								
Marker 1 [T1 ndB] 20.00 dB ndB 20.00 dB BW 1.20240481 MHz RBW 100 kHz VBW 300 kHz SWT 5 ms RF Att 20 dB Unit dBm								
 A								
Date: 26.MAR.2022 09:58:46								

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Product:	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	1.208MHz	--	--														
 Ref Lvl <table> <tr> <td>Marker 1 [T1 ndB]</td> <td>RBW 100 kHz</td> <td>RF Att 20 dB</td> </tr> <tr> <td>ndB 20.00 dB</td> <td>VBW 300 kHz</td> <td></td> </tr> <tr> <td>10 dBm</td> <td>SWT 5 ms</td> <td>Unit dBm</td> </tr> <tr> <td>BW 1.20841683 MHz</td> <td></td> <td></td> </tr> </table>						Marker 1 [T1 ndB]	RBW 100 kHz	RF Att 20 dB	ndB 20.00 dB	VBW 300 kHz		10 dBm	SWT 5 ms	Unit dBm	BW 1.20841683 MHz		
Marker 1 [T1 ndB]	RBW 100 kHz	RF Att 20 dB															
ndB 20.00 dB	VBW 300 kHz																
10 dBm	SWT 5 ms	Unit dBm															
BW 1.20841683 MHz																	
 A <p>1MAX</p> <p>1MA</p> <p>Center 2.48 GHz</p> <p>300 kHz /</p> <p>Span 3 MHz</p>																	
Date: 26.MAR.2022 10:28:17																	

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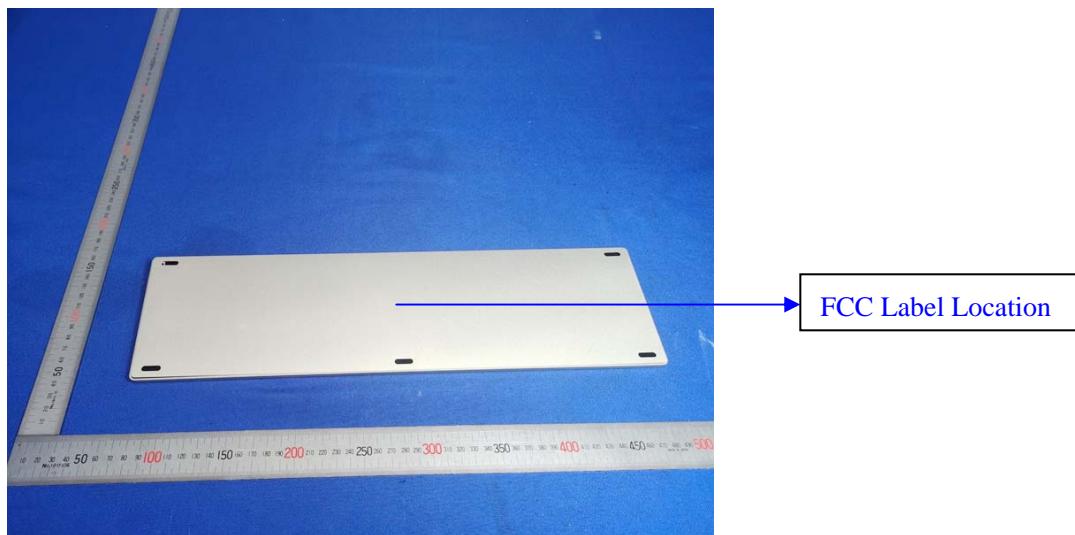
10.0 FCC ID Label

FCC ID: 2A5QA-CK1BT000A

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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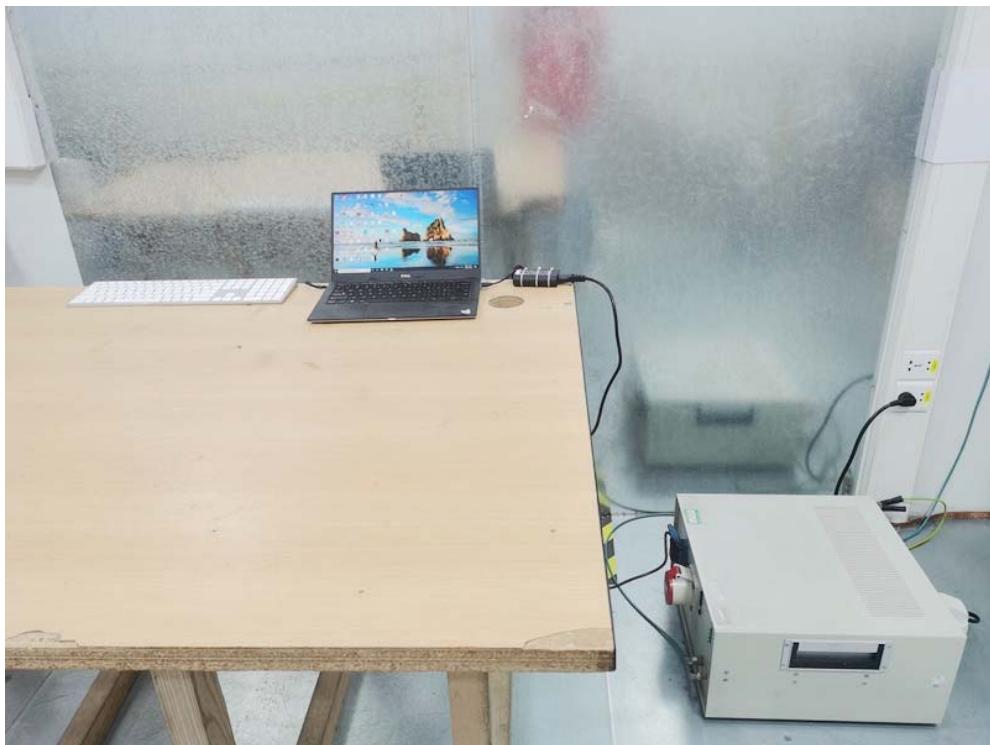
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11.0 Photo of testing

11.1 Conducted test View



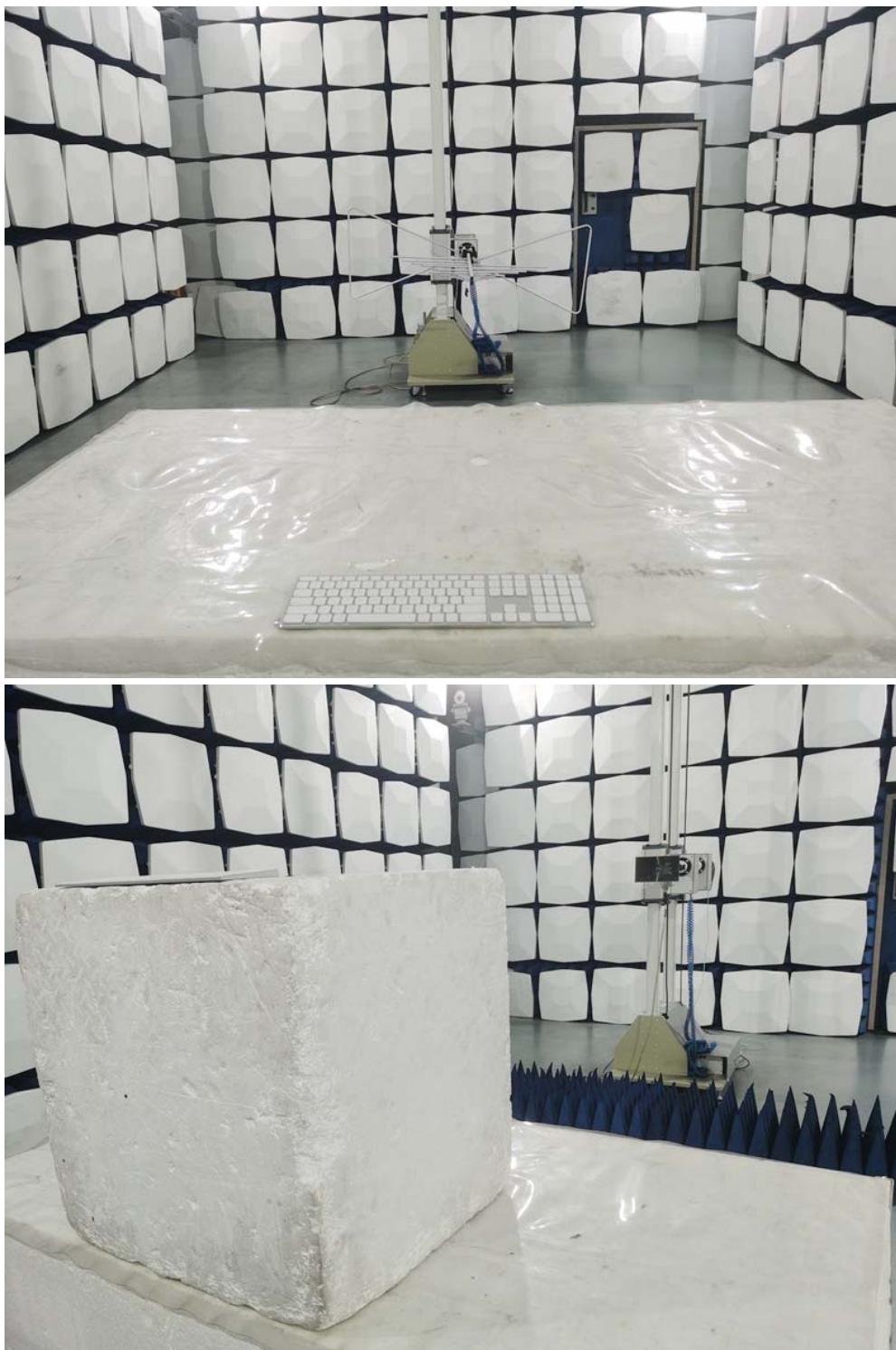
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Radiated emission test view



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11.2 Photographs – EUT

Outside View-K420E, KB-047



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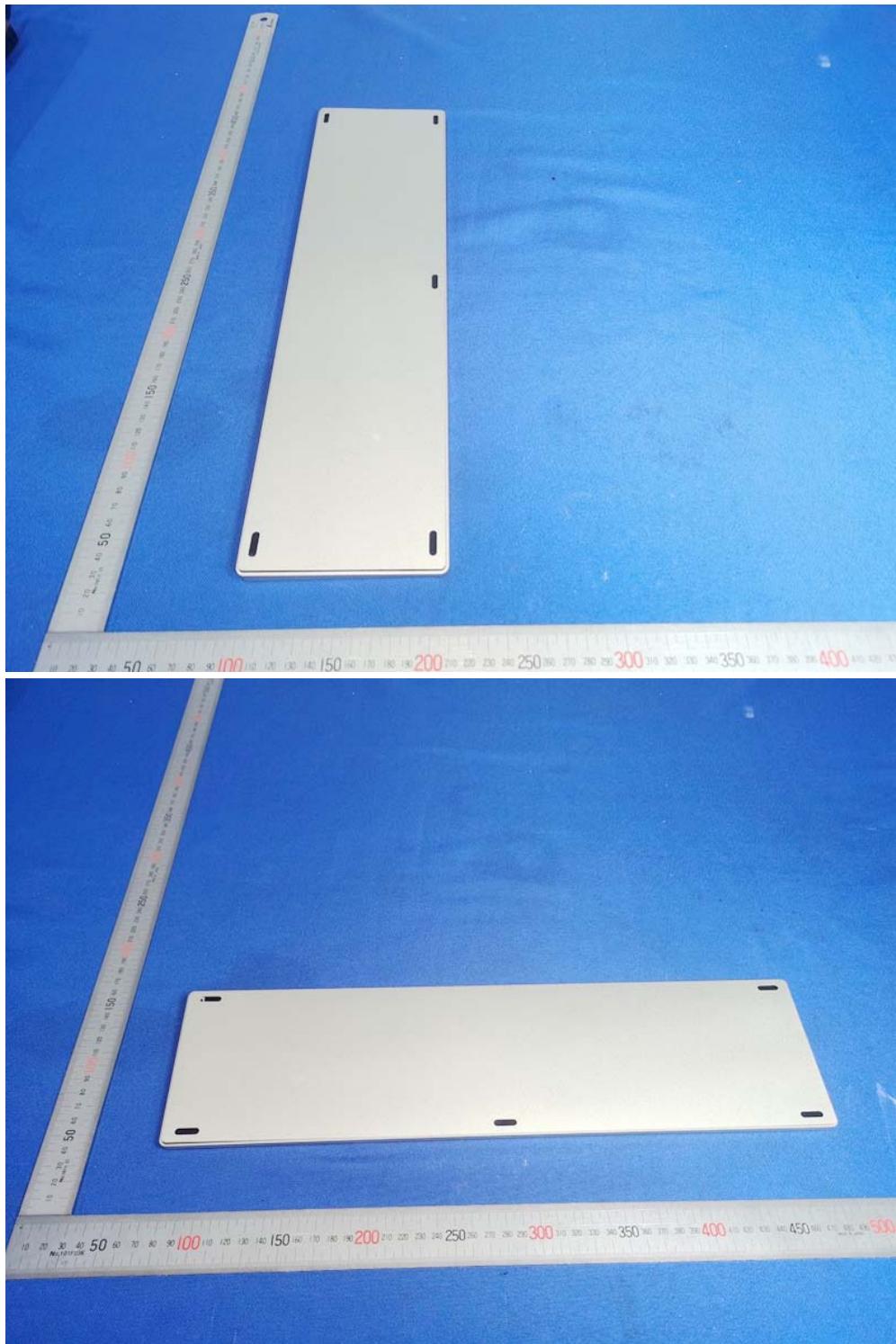
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Photo for the EUT

Outside View-K420E, KB-047



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Photo for the EUT

Inside View-K420E, KB-047



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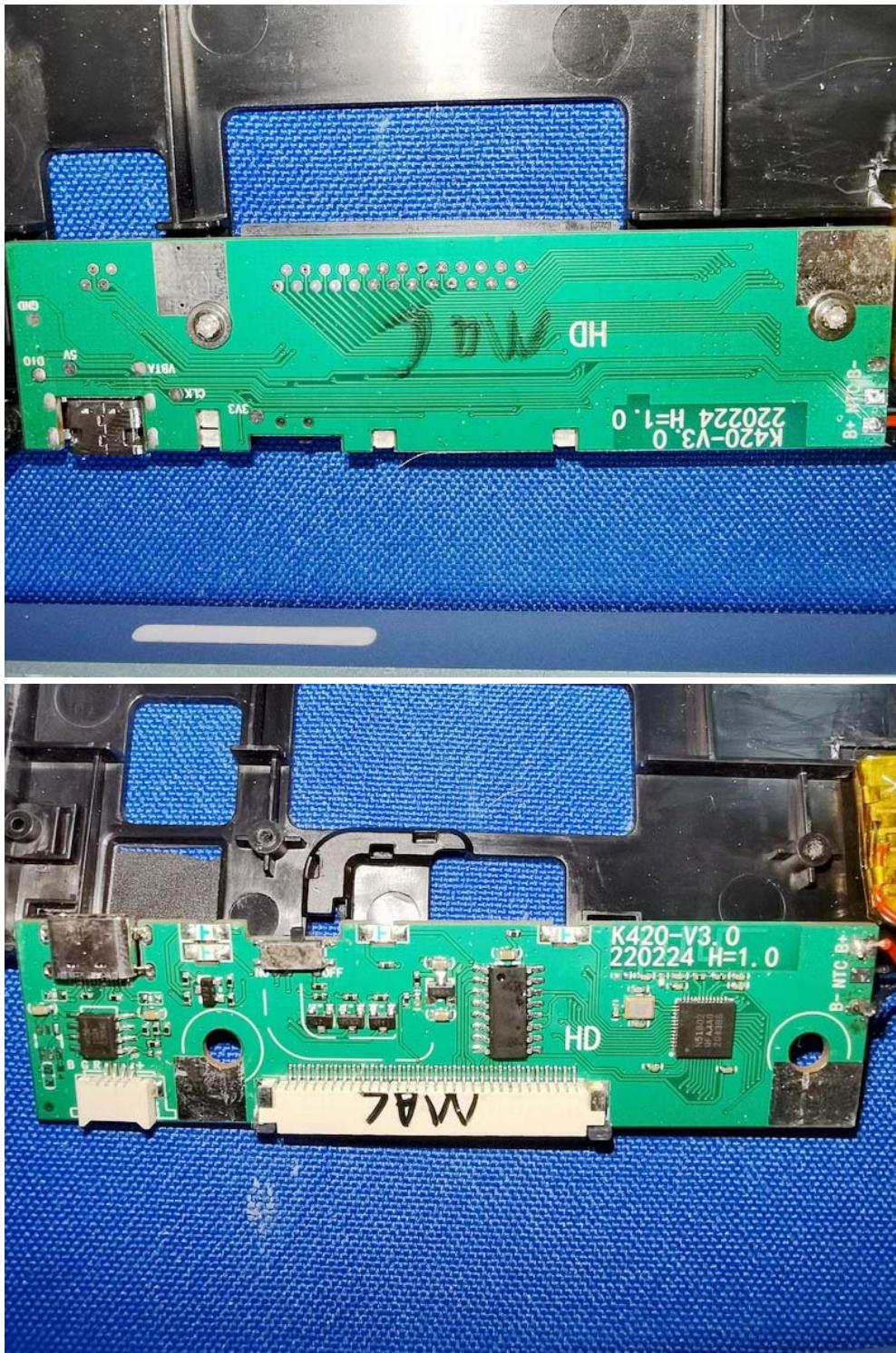
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Inside View-K420E, KB-047



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Photo for the EUT

Outside View-K280E, KB-057



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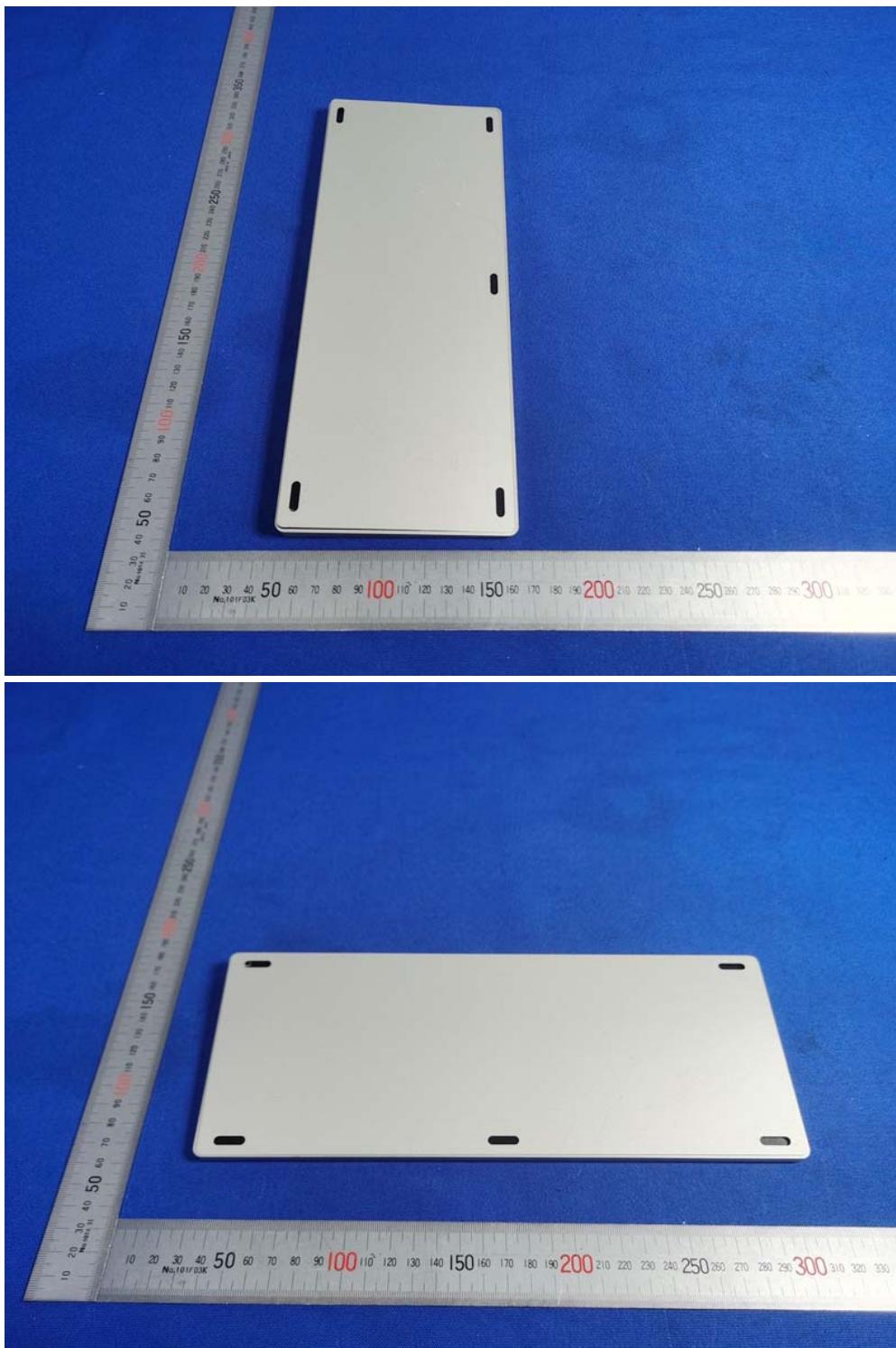
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Photo for the EUT

Outside View-K280E, KB-057



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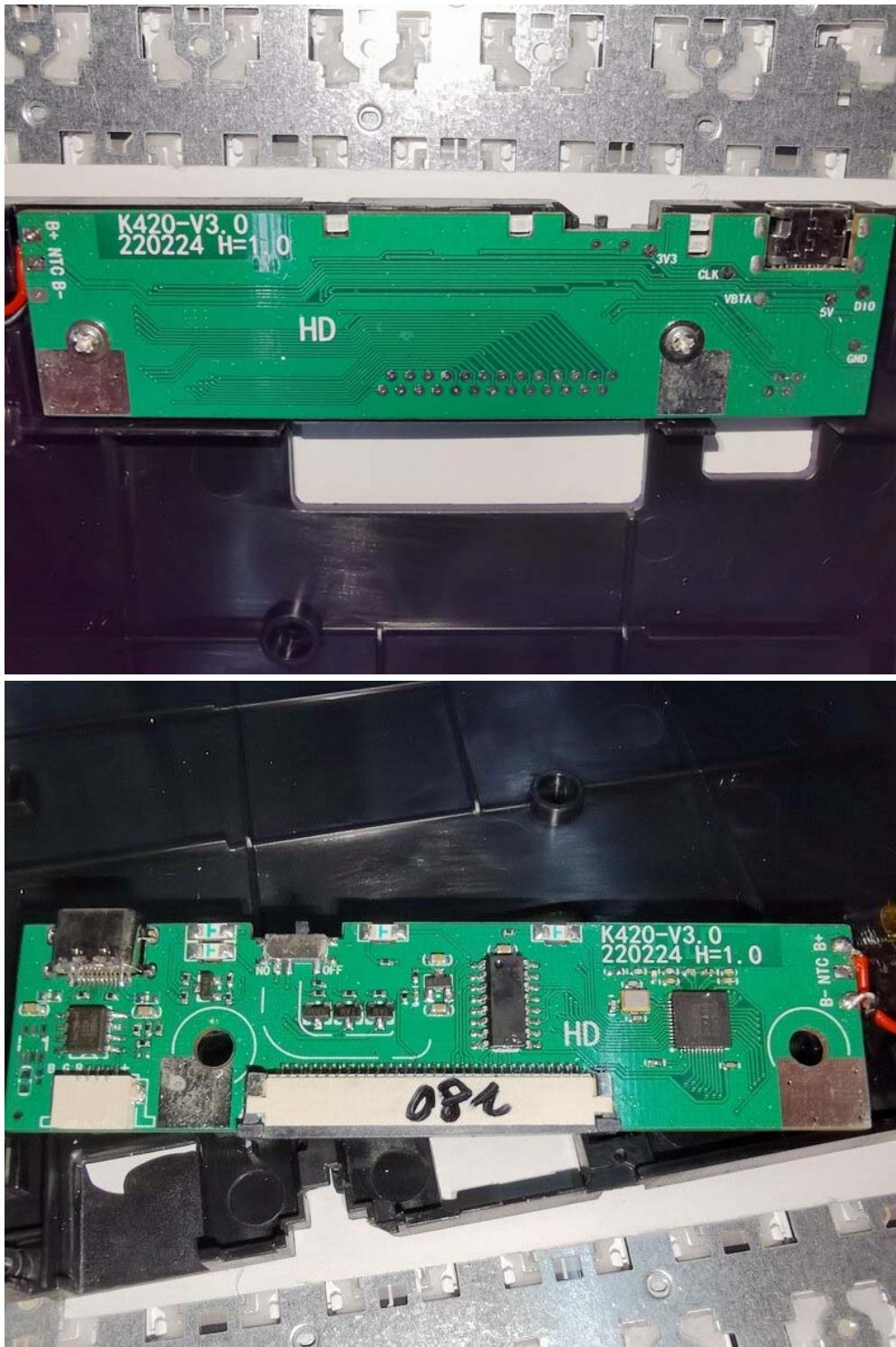
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Inside View-K280E, KB-057



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Inside View-K280E, KB-057



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Photo for the EUT

Outside View-K140E, KB-027



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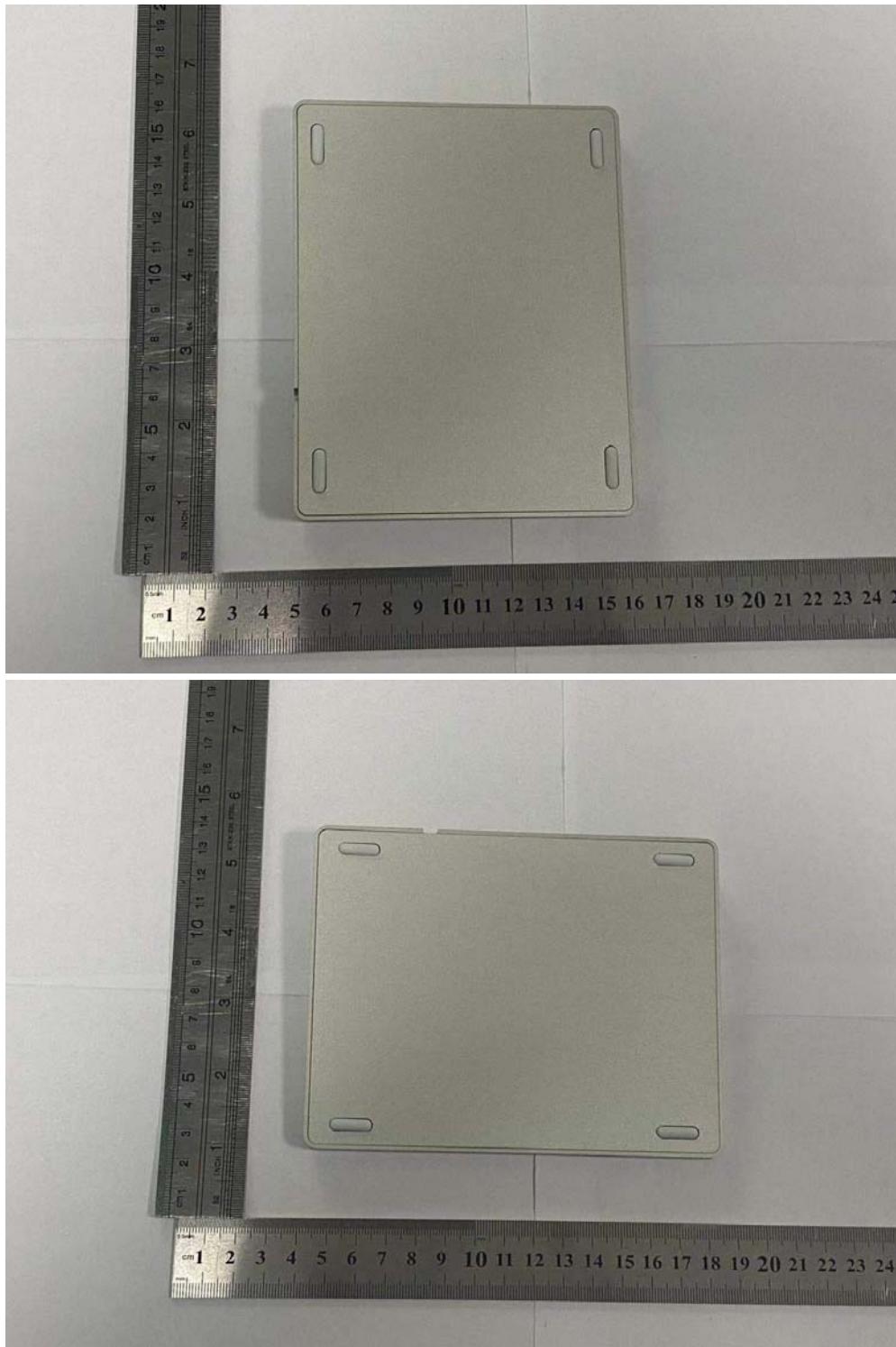
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Photo for the EUT

Outside View-K140E, KB-027



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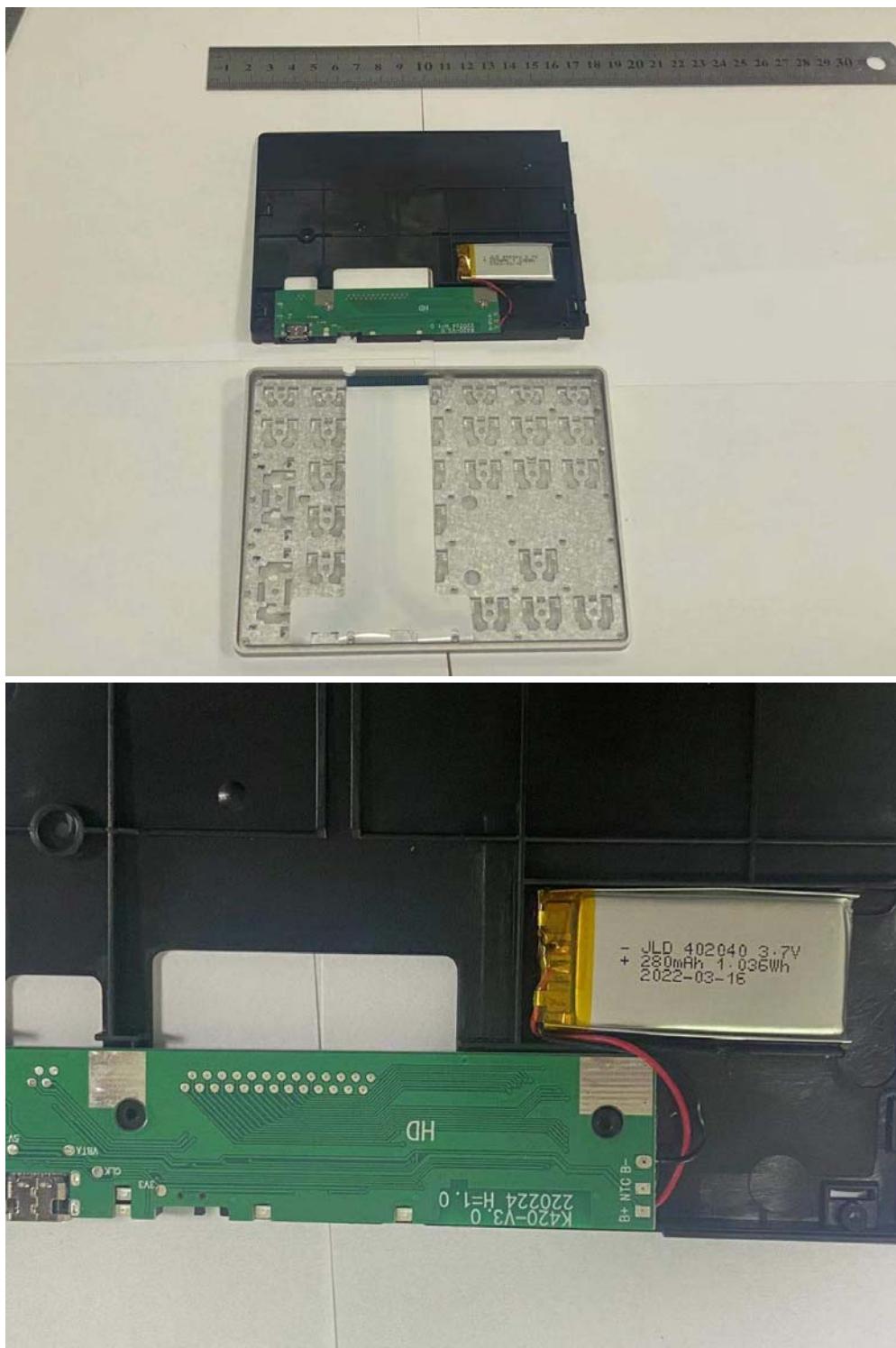
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Photo for the EUT

Inside View-K140E, KB-027



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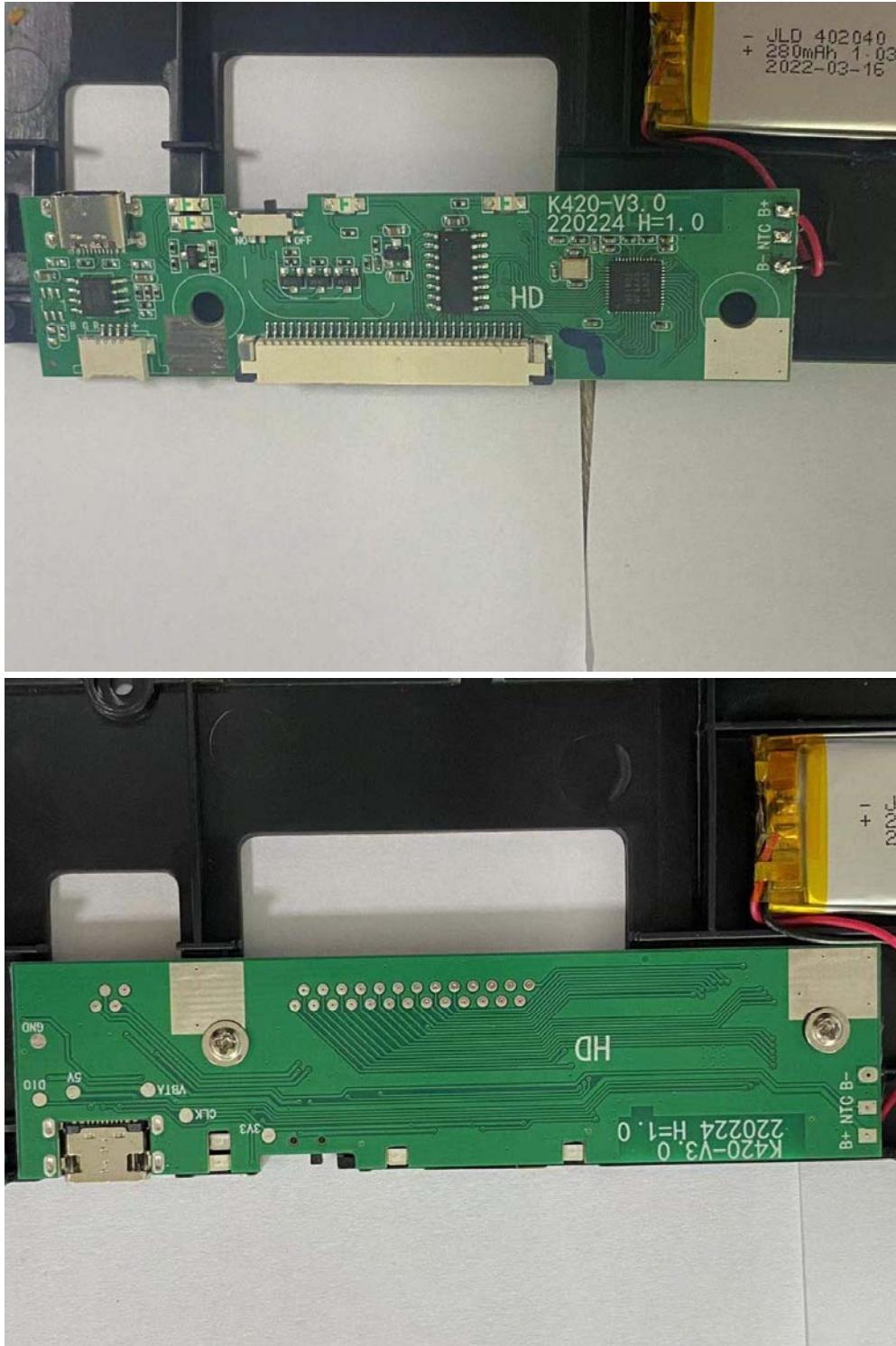
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Photo for the EUT

Inside View-K140E, KB-027



--End of the report--

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