



Report No.: PTC25121907801E-E03

CERTIFICATION TEST REPORT

FCC ID: 2BTTG-K120

IC: 34993-K120

Product	:	K120
Model Name	:	K120
HVIN	:	K120_CTR_V1.0
Brand	:	Desloc
Report No.	:	PTC25121907801E-E03
Prepared for		
Hangzhou Key to the Future Technology Co., Ltd.		
Room 102-2, Building 1, No. 7 Jianghui South Road, Changhe Subdistrict Binjiang District, Hangzhou City, Zhejiang Province, China, 310051		
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TEST RESULT CERTIFICATION

Applicant's name : Hangzhou Key to the Future Technology Co., Ltd
Address : Room 102-2, Building 1, No.7 Jianghui South Road, Changhe Subdistrict Binjiang District, Hangzhou City, Zhejiang Province, China, 310051
Manufacture's name : Zhejiang Desman Intelligent Technology Co., LTD
Address : Floor 1-3, Building 1, No.7 Jianghui South Road, Binjiang District, Hangzhou City, Zhejiang Province, China, 310051
Product name : K120
Model name : K120
Test procedure : FCC CFR47 Part 1.1307(b)(1)
RSS-102 Issue 6 December 15, 2023
Test Date : Jan. 04, 2026 to Mar. 02, 2026
Date of Issue : Mar. 02, 2026
Test Result : PASS

This device described above has been tested by PTC, and the test results show that the equipment under test (EUT) is in compliance with the FCC and ISED requirements. And it is applicable only to the tested sample identified in the report.

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Test Engineer:

A handwritten signature in black ink, appearing to read 'Jack Zhou'.

Jack Zhou / Engineer

Technical Manager:

A handwritten signature in black ink, appearing to read 'Simon Pu'.

Simon Pu / Manager



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2 Test Summary

Test Items	Test Requirement	Result
Maximum Permissible Exposure (Exposure of Humans to RF Fields)	FCC CFR47 Part 1.1307(b)(1) RSS-102 Issue 6 December 15, 2023	PASS
Remark:		
N/A: Not Applicable		



3 General Information

3.1 General Description of E.U.T.

Product Name	:	K120
Model Name	:	K120
Specification	:	BLE 802.11b/g/n HT20/HT40
Operation Frequency	:	2402-2480MHz 2412-2462MHz for 802.11b/g/ n(HT20) 2422-2452MHz for 802.11 n(HT40)
Number of Channel	:	40 channels For DTS 11 channels for 802.11b/g/ n(HT20) 7 channels for 802.11n(HT40)
Type of Modulation	:	GFSK, For DTS DSSS with DBPSK/DQPSK/CCK for 802.11b; OFDM with BPSK/QPSK/16QAM/64QAM for 802.11g/n;
Antenna installation	:	FPC
Antenna Gain	:	BT: 3.62 dBi 2.4G WI-FI: 3.39 dBi
Power supply	:	Input: DC 5V Li-ion Battery : ZNS-MN-28B Voltage: 3.7 V
Hardware Version	:	S120_CTR_V203_B257_20250829
Software Version	:	DES.AAN_L003.A02_20251128



4 RF Exposure

Test Requirement : FCC Part 1.1307(b)(1); RSS-102 Issue 6 December 15, 2023

Evaluation Method : KDB 447498 D01 General RF Exposure Guidance v06;
RSS-102 Issue 6 December 15, 2023

4.1 Requirements

FCC Requirements:

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2 m normally can be maintained between the user and the device.

ISED Requirements:

According to the RSS-102 Issue 6 December 15, 2023, the following RF exposure evaluation shall to demonstrate RF exposure compliance.

Field reference level (FRL) exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm (i.e. mobile devices), except when the device operates as follows:

- below 20 MHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than 1 W (adjusted for tune-up tolerance)
- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than $4.49/f^{0.5}$ W (adjusted for tune-up tolerance), where f is in MHz
- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance)
- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz
- at or above 6 GHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than 5 W (adjusted for tune-up tolerance)

In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the EIRP was derived.



4.2 The procedures / limit

(A) Limits for Occupational / Controlled Exposure

Frequency Range	Electric Field	Magnetic Field	Power Density (S)	Averaging Time
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range	Electric Field	Magnetic Field	Power Density (S)	Averaging Time
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ; *Plane-wave equivalent power density



4.3 MPE Calculation Method

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power Density: } P_d \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

E = Electric field (V/m)

P = Peak RF output power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

$$P_d = \frac{30 \times P \times G}{377 \times d^2}$$

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained

4.4 Test Result

FCC Test Result:

Item	Antenna Gain (numeric)	Max. Peak Output Power (dBm)	Tune up tolerance (dBm)	Max Tune Up Power (mW)	Power Density (mW/cm ²)	Limit of Power Density (mW/cm ²)	Result
BLE_1M_2402	2.30	3.44	3.44±1	2.7797	0.001273	1	Pass
11B_2437	2.18	8.47	8.47±1	8.8512	0.003844	1	Pass

ISED Test Result:

Transmit frequency (MHz)	Maximum EIRP (dBm)	Maximum EIRP Tune up tolerance (dBm)	Tolerance Maximum EIRP (W)	Exemption Limits (W)	Verdict
BLE_1M_2402	7.06	7.06±1	0.0064	2.676	PASS
11B_2437	11.86	11.86±1	0.0193	2.703	PASS



4.5 Simultaneous MPE Result

FCC Simultaneous Transmit:

BLE MPE ratio	WLAN ratio	Simultaneous MPE ratio	MPE Limits ratio	Test result
0.001273	0.003844	0.005117	1	PASS

Conclusion:

Both of the BLE and WLAN can transmit simultaneously, the formula of calculated the exposure is:
 $(CPD1/LPD1) + (CPD2/LPD2) + \dots \text{etc.} < 1$
CPD=Calculation Power Density; LPD= Limit of Power Density
Therefore, the calculation of this situation is $(0.001273/1) + (0.003844/1) = 0.005117$.
which is less than the "1" limit.

ISED Simultaneous Transmit:

BLE_1M Maximum EIRP ratio	WLAN Maximum EIRP ratio	Simultaneous Maximum EIRP ratio	Maximum EIRP Limits ratio	Test result
0.002392	0.007140	0.009532	1	PASS

Conclusion:

Both of the BLE and WLAN can transmit simultaneously, the formula of calculated the exposure is:
 $(ME1/LME1) + (ME2/LME2) + \dots \text{etc.} < 1$
ME= Maximum EIRP; LME= Exemption Limits
Therefore, the calculation of this situation is $(0.0064 / 2.676) + (0.0193/2.703) = 0.009532$.

*****THE END REPORT*****