

Report No.: NTC2502083F01

RF EVALUATION TEST REPORT

Applicant:	Chongqing Pinsheng Technology Co., Ltd.
Address	7Floor, No.5 middle Huangshan Avenue, North New Zone, Chongqing China.
Manufacturer	Chongqing Pinsheng Technology Co., Ltd.
Address	7Floor, No.5 middle Huangshan Avenue, North New Zone, Chongqing China.
Factory	Chongqing Pinsheng Technology Co., Ltd. DaTiejiang branch office
Address	NO.368, BOE Avenue, Beibei District, Chongqing China.
Product Name :	Label Printer
Brand Name:	MakelD
Model No :	L1-A, L1-B, L1-C, L1-D, L1-E, L1-F, L1-G, L1-H, L1-I, L1-J, L1, L2, L3, L4, L5, L6, L7, L8, L9, L10 (For model difference refer to section 2)
FCC ID	2BLKN-L1
Measurement Standard:	47 CFR PART 2, Section 2.1093 & 1.1310
Receipt Date of Samples :	February 13, 2025
Date of Tested	February 19, 2025 to March 17, 2025
Date of Report:	March 21, 2025

This report shows that above equipment is technically compliant with the requirements of the standards above. All test results in this report apply only to the tested sample(s). Without prior written approval of Dongguan Nore Testing Center Co., Ltd, this report shall not be reproduced except in full.

Prepared by

Alina Guo / Project Engineer



Iori Fan / Authorized Signatory



Table of Contents

1. General Description of EUT	4
2. Test Facility and Location	6
3. Applicable Standards and References	7
4. Maximum Permissible Exposure Limit	8
5. RF Exposure Evaluation Results	12



Revision History

Report Number	Description	Issued Date
NTC2502083F01	Initial Issue	2025-03-21



1. General Description of EUT

Product Information			
Product Name:	Label Printer		
Main Model Name:	L1-A		
Additional Model Name:	L1-B, L1-C, L1-D, L1-E, L1-F, L1-G, L1-H, L1-I, L1-J, L1, L2, L3, L4, L5, L6, L7, L8,		
	L9, L10		
Model Difference:	These models have the same circuit schematic, construction, PCB Layout and critical		
	components. The difference is model number due to trading purpose.		
S/N:	L1C24K00022		
Brand Name:	MakelD		
Hardware Version:	V1.0		
Software Version:	2.0.1		
Rating:	DC 5V come from USB port		
	DC 3.7V come from internal Li-ion battery		
Typical Arrangement:	Table-top		
I/O Port:	Refer to the user manual		
Accessories Information			
Adapter:	N/A		
Cable:	N/A		
Other:	N/A		
Additional Information			
Note:	According to these model differences, all tests were performed on model L1-A.		
Remark:	All the information above are provided by the manufacturer. More detailed feature of		
	the EUT please refers to the user manual.		



Technical Specification (BLE)			
Plustaath Versian			
Bluetooth Version.	VO.U		
Frequency Range:	2402-2480MHz		
Modulation Type:	GFSK		
Number of Channel:	40 (refer to following channel list for details)		
Channel Space:	2MHz		
Antenna Type:	PCB antenna*1		
Antenna Gain:	0.93 dBi (Declared by the manufacturer)		
RF PHY Support:	1Mbps, 2Mbps		
Technical Specification (RFID)			
Declaring the Frequency:	13.56MHz		
Modulation Type:	ASK		
Antenna Type:	PIFA antenna*1		
Antenna Gain:	0 dBi (Declared by manufacturer)		
Number of Channels:	1		



2. Test Facility and Location

Test Site	:	Dongguan Nore Testing Center Co., Ltd. (Dongguan NTC Co., Ltd.)		
Accreditations and	:	The Laboratory has been assessed and proved to be in compliance with		
Authorizations		CNAS/CL01		
		isted by CNAS, August 13, 2018		
		The Certificate Registration Number is L5795.		
		The Certificate is valid until August 13, 2030		
		The Laboratory has been assessed and proved to be in compliance with		
		ISO17025		
		Listed by A2LA, November 01, 2017		
		The Certificate Registration Number is 4429.01		
		The Certificate is valid until December 31, 2025		
		Listed by FCC, November 06, 2017		
		Test Firm Registration Number: 907417		
		Listed by Industry Canada, June 08, 2017		
		The Certificate Registration Number. Is 46405-9743A		
Test Site Location	:	Building D, Gaosheng Science and Technology Park, Hongtu Road,		
		Nancheng District, Dongguan City, Guangdong Province, China		



3. Applicable Standards and References

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

Test Standards:

47 CFR Part 1, 1.1307 47 CFR Part 2, 2.1093 & 1.1310 KDB 447498 D01 v06



4. Maximum Permissible Exposure Limit

§ 1.1310 Radiofrequency radiation exposure limits.

(a) Specific absorption rate (SAR) shall be used to evaluate the environmental impact of human exposure to radiofrequency (RF) radiation as specified in <u>§ 1.1307(b) of this part</u> within the frequency range of 100 kHz to 6 GHz (inclusive).

(b) The SAR limits for occupational/controlled exposure are 0.4 W/kg, as averaged over the whole body, and a peak spatial-average SAR of 8 W/kg, averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the parts of the human body treated as extremities, such as hands, wrists, feet, ankles, and pinnae, where the peak spatial-average SAR limit for occupational/controlled exposure is 20 W/kg, averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube). Exposure may be averaged over a time period not to exceed 6 minutes to determine compliance with occupational/controlled SAR limits.

(c) The SAR limits for general population/uncontrolled exposure are 0.08 W/kg, as averaged over the whole body, and a peak spatial-average SAR of 1.6 W/kg, averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the parts of the human body treated as extremities, such as hands, wrists, feet, ankles, and pinnae, where the peak spatial-average SAR limit is 4 W/kg, averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube). Exceptione in the shape of a cube). Exception are the peak spatial-average SAR limit is 4 W/kg, averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube). Exposure may be averaged over a time period not to exceed 30 minutes to determine compliance with general population/uncontrolled SAR limits.

(d) (1) Evaluation with respect to the SAR limits in this section must demonstrate compliance with both the whole-body and peak spatial-average limits using technically supported measurement or computational methods and exposure conditions in advance of authorization (licensing or equipment certification) and in a manner that facilitates independent assessment and, if appropriate, enforcement. Numerical computation of SAR must be supported by adequate documentation showing that the numerical method as implemented in the computational software has been fully validated; in addition, the equipment under test and exposure conditions must be modeled according to protocols established by FCC-accepted numerical computation standards or available FCC procedures for the specific computational method.

(2) For operations within the frequency range of 300 kHz and 6 GHz (inclusive), the limits for maximum permissible exposure (MPE), derived from whole-body SAR limits and listed in Table 1 in paragraph (e)(1) of this section, may be used instead of whole-body SAR limits as set forth in paragraphs (a) through (c) of this section to evaluate the environmental impact of human exposure to RF radiation as specified in § 1.1307(b) of this part, except for portable devices as defined in § 2.1093 of this chapter as these evaluations shall be performed according to the SAR provisions in § 2.1093.



(3) At operating frequencies above 6 GHz, the MPE limits listed in Table 1 in paragraph (e)(1) of this section shall be used in all cases to evaluate the environmental impact of human exposure to RF radiation as specified in § 1.1307(b) of this part.

(4) Both the MPE limits listed in Table 1 in paragraph (e)(1) of this section and the SAR limits as set forth in paragraphs (a) through (c) of this section are for continuous exposure, that is, for indefinite time periods. Exposure levels higher than the limits are permitted for shorter exposure times, as long as the average exposure over a period not more than the specified averaging time in Table 1 in paragraph (e)(1) is less than (or equal to) the exposure limits. Detailed information on our policies regarding procedures for evaluating compliance with all of these exposure limits can be found in the most recent edition of FCC's OET Bulletin 65. "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields," and its supplements, all available at the FCC's internet website: https://www.fcc.gov/general/oet-bulletins-line, and in the Office of Engineering and Technology (OET) Laboratory Division Knowledge Database (KDB)

(e)(1) Table 1 to § 1.1310(e)(1) sets forth limits for Maximum Permissible Exposure (MPE) to radiofrequency electromagnetic fields.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm²)	Averaging time (minutes)		
	(i) Limits for	Occupational/Contro	lled Exposure			
0.3–3.0	614	1.63	*(100)	≤6		
3.0–30	1842/f	4.89/f	*(900/f ²)	<6		
30–300	61.4	0.163	1.0	<6		
300–1,500	-	-	f/300	<6		
1,500–100,000	-	-	5	<6		
(ii) Limits for General Population/Uncontrolled Exposure						
0.3–1.34	614	1.63	*(100)	<30		
1.34–30	824/f	2.19/f	*(180/f ²)	<30		
30–300	27.5	0.073	0.2	<30		
300–1,500	-	-	f/1500	<30		
1,500–100,000	-	-	1.0	<30		
Note: f = frequency in MH:	Z.		1			

Table 1 to § 1.1310(e)(1)—Limits for Maximum Permissible Exposure (MPE)

* = Plane-wave equivalent power density.



Power density (S) is calculated by the following formula: $S = (P * G)/4\pi R^2$ Where, S = Power density (W/m²) P = Output power to antenna (W) R = Distance between radiating structure and observation point (m) R= 0.2cm G = Gain of antenna in numeric

 $\pi = 3.1416$

Portable Device

According to §15.247(i) and §1.1307b(1), 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 of the Commission's guidelines. See KDB 447498 D01 General RF Exposure Guidance v06, section 4.3.1.

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances \leq 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] $\cdot [\sqrt{f}(GHz)] \le 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR,16 where

·f(GHz) is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation17

The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is \leq 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

For 100 MHz to 6 GHz and test separation distances > 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following (also illustrated in Appendix B):

1) {[Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm)·(f(MHz)/150)]} mW, for 100 MHz to 1500 MHz

2) {[Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm) \cdot 10]} mW, for > 1500 MHz and \leq 6 GHz

c) For frequencies below 100 MHz, the following may be considered for SAR test exclusion (also illustrated in Appendix C):

1) For test separation distances > 50 mm and < 200 mm, the power threshold at the corresponding test separation distance at 100 MHz in step b) is multiplied by $[1 + \log(100/f(MHz))]$



2) For test separation distances \leq 50 mm, the power threshold determined by the equation in c) 1) for 50 mm and 100 MHz is multiplied by 1/2.

3) SAR measurement procedures are not established below 100 MHz.

When SAR test exclusion cannot be applied, a KDB inquiry is required to determine SAR evaluation requirements for any SAR test results below 100 MHz to be acceptable.



5. RF Exposure Evaluation Results

For NFC:

Single RF Source					
Mode	Frequency (MHz)	Field strength (dBuV/m)	Max. Output Power (dBm)	Max. Output Power (mW)	Threshold Value (mW)
ASK	13.56	38.70	-56.56	2.21e-6	442.97

For Bluetooth:

Channel	Channel Frequency (MHz)	Max Output power (dBm)	Max Output power (mW)	Calculation Value ^(Note 1)	Threshold Value
		GI	FSK (1Mbps)		
Low	2402	1.334	1.36	0.4216	3.0
Middle	2440	2.336	1.71	0.5342	3.0
High	2480	-0.133	0.97	0.3055	3.0
GFSK (2Mbps)					
Low	2402	2.021	1.59	0.4928	3.0
Middle	2440	2.033	1.60	0.4999	3.0
High	2480	-0.272	0.94	0.2961	3.0

Note: Calculation Value =[(max. power of channel, mW)/(min.

test separation distance, mm)] $\cdot [\sqrt{f(GHz)}]$.

Fox example: $1.71/5^*\sqrt{2.440}=0.5342 \le 3.0$

Multiple RF Source (Simultaneous Transmission)				
NFC Bluetooth Total Ratio Limi				
4.98e-9	0.178067	0.178067	1.0	

Conclusion:

According to 47 CFR 1.1310 (b)(c)(d)(e)(1) and KDB447498 D01 V06, the RF exposure analysis concludes that the product is compliant with the FCC RF exposure requirements in portable environment without distance restrictions.

---End---