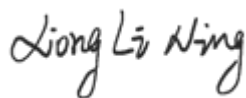


TEST REPORT

Applicant: Heilongjiang Huida Technology Co., Ltd
Building 1. Science and Technology Innovation
Headquarters, Shenzhen(Harbin)industrial Park,
Address: No.288 Zhigu Street, Songbei District, Harbin,
China
Equipment Type: Wireless Data Terminal
Model Name: HD201B (refer to section 2.3)
Brand Name: HUIDA TECH
FCC ID: 2BBNT-HD201B
Test Standard: 47 CFR Part 2.1091
KDB 447498 D04 v01
Sample Arrival Date: Nov. 27, 2024
Test Date: Dec. 08, 2024 - Dec. 12, 2024
Date of Issue: Mar. 28, 2025

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

Tested by: Xiong Lining**Checked by:** Xu Rui**Approved by:** Tolan Tu

(Testing Director)



Revision History

<u>Version</u>	<u>Issue Date</u>	<u>Revisions Content</u>
<u>Rev. 01</u>	<u>Mar. 28, 2025</u>	<u>Initial Issue</u>

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1 GENERAL INFORMATION

1.1 Test Laboratory

Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100

1.2 Test Location

Name	Shenzhen BALUN Technology Co., Ltd.
Location	☐ Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
	☒ 1/F, Building B, Ganghongji High-tech Intelligent Industrial Park, No. 1008, Songbai Road, Yangguang Community, Xili Sub-district, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Accreditation Certificate	The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Heilongjiang Huida Technology Co., Ltd
Address	Building 1. Science and Technology Innovation Headquarters, Shenzhen(Harbin)Industrial Park, No.288 Zhigu Street, Songbei District, Harbin, China

2.2 Manufacturer Information

Manufacturer	Heilongjiang Huida Technology Co., Ltd
Address	Building 1. Science and Technology Innovation Headquarters, Shenzhen(Harbin)Industrial Park, No.288 Zhigu Street, Songbei District, Harbin, China

2.3 General Description for Equipment under Test (EUT)

EUT Name	Wireless Data Terminal
Model Name Under Test	HD201B
Series Model Name	HD201, HD201C
Description of Model name differentiation	All models are same with electrical parameters and internal circuit structure, but only differ in model name. (this information provided by the applicant)
Hardware Version	HD201_MOBILEGNSS_P3
Software Version	N/A
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.4 Technical Information

Network and Wireless connectivity	WIFI 802.11b, 802.11g, 802.11n Radio, GPS, BDS, GLONASS, Galileo, QZSS
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The requirement for the following technical information of the EUT was tested in this report:

Operating Mode	WIFI, Radio	
Frequency Range	WIFI	2412 ~ 2462 MHz
	Radio	450 ~ 470 MHz
Antenna Type	WIFI	PCB Antenna
	Radio	Rod Antenna
Exposure Category	General Population/Uncontrolled Exposure	
Product Type	Mobile Device	

3 SUMMARY OF TEST RESULT

3.1 Test Standards

No.	Identity	Document Title
1	KDB 447498 D04 v01	447498 D04 Interim General RF Exposure Guidance v01

3.2 Limit Standards

No.	Identity	Document Title
1	47 CFR Part 2.1091	Radiofrequency radiation exposure evaluation: mobile devices

4 DEVICE CATEGORY AND LEVELS LIMITS

Mobile Devices:

CFR Title 47 §2.1091(b)

(b) For purposes of this section, a mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons.

FCC KDB 447498 D04 General RF Exposure Guidance v01 Limit

Frequencies above 300 kHz but at distances $R > \lambda/2\pi$, R is the antenna-person separation distance.

λ =wavelength of transmitted signal.

Can calculate from the frequency of operation using $v=f*\lambda$

v =speed of light= $3*10^8$ m/s

f =frequency(Hz)

Primarily an MPE-based exclusion but also SAR-based where $\lambda/2\pi$ is < 20 cm.

TABLE B.1—THRESHOLDS FOR SINGLE RF SOURCES
SUBJECT TO ROUTINE ENVIRONMENTAL EVALUATION

RF Source Frequency			Minimum Distance			Threshold ERP
f_L MHz		f_H MHz	$\lambda_L / 2\pi$		$\lambda_H / 2\pi$	W
0.3	–	1.34	159 m	–	35.6 m	$1,920 R^2$
1.34	–	30	35.6 m	–	1.6 m	$3,450 R^2/f^2$
30	–	300	1.6 m	–	159 mm	$3.83 R^2$
300	–	1,500	159 mm	–	31.8 mm	$0.0128 R^2 f$
1,500	–	100,000	31.8 mm	–	0.5 mm	$19.2 R^2$
Subscripts L and H are low and high; λ is wavelength. From § 1.1307(b)(3)(i)(C), modified by adding Minimum Distance columns.						

5 ASSESSMENT RESULT

5.1 Output Power

Mode	WIFI	Radio
Conducted Power (dBm)	15.68	30.54
Antenna Gain (dBi)	1.0	2.0
EIRP (dBm)	16.68	32.54

Note: This report listed the worst case conducted power value, please refer to BL-SZ24B1362-601, 2502Q01043E-RF-00 report for more details.

5.2 Tune-up power

Mode	Conducted Power Range (dBm)	EIRP Range (dBm)	ERP Range (dBm)
WIFI	[14.00, 16.00]	[15.00, 17.00]	[12.85, 14.85]
Radio	[29.00, 31.00]	[31.00, 33.00]	[28.85, 30.85]

Note1: ERP= EIRP -2.15dB.
Note2: According KDB 447498 D04, used the greater of maximum conducted power and ERP to compare with the threshold value Pth.

5.3 RF Exposure Evaluation Result

Evolution Mode	Frequency (MHz)	Distance (mm)	$\lambda / 2 \pi$ (mm)	$R > \lambda / 2 \pi$
WIFI	2462	500	19	Yes
Radio	450	500	106	Yes

Note: According to the product instructions, the distance between the product and the human body is not less than 500mm.

Evolution Mode	Maximum power (dBm)	Maximum power (W)	Distance (mm)	Threshold Power (W)	Power / Limit	Verdict
WIFI	16.00	0.040	500	480.000	0.0001	Pass
Radio	31.00	1.259	500	144.000	0.0087	Pass

5.4 Collocated Power Calculation

Evolution mode	Frequency (MHz)	Power /Limit	$\Sigma(\text{Power} / \text{Limit})$ of WIFI + Radio	Verdict
WIFI	2462	0.0001	0.0088	Pass
Radio	450	0.0087		

Note:

1. $\Sigma(\text{Power} / \text{Limit})$: This is a summation of [(power for each transmitter/ antenna included in the simultaneous transmission)/ (corresponding Power limit)], for WIFI + Radio.
2. Both of the 2.462GHz/0.45GHz can transmit simultaneously, the formula of calculated the Power is $CP1 / LP1 + CP2 / LP2 + \dots \text{etc.} < 1$
 CP = Calculation power
 LP = Limit of power
3. The worst-case situation is 0.0088, which is less than "1". This confirmed that the device comply with FCC KDB 447498 D04 Power limit.
4. The DUT work frequency range used is 2412 MHz ~ 2462 MHz and 450 MHz ~ 470 MHz the result close to the limit by the above formula, so we select worst case power to calculate the exclusion power threshold.

5.5 Conclusion

This EUT is deemed to comply with the reference level limits, therefore the basic restrictions are compliant with human exposure limits.

Statement

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--END OF REPORT--