RF EXPOSURE Test Report

Product: ZERKAR InkTag

Trade Mark: N/A

Model Number: HZ03

FCC ID: 2BAUM-HZ03

Prepared for

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Prepared by

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TEST RESULT CERTIFICATION

Applicant's Name..... :	Shenzhen kingminson Electronic Co., Ltd.
Address ..... :	Room301, No. 192, Jiangshi Road, Shiwei Community, Matian Subdistrict, Guangming District, Shenzhen, Guangdong Province, China
Manufacturer's Name ..... :	Shenzhen kingminson Electronic Co., Ltd.
Address ..... :	Room301, No. 192, Jiangshi Road, Shiwei Community, Matian Subdistrict, Guangming District, Shenzhen, Guangdong Province, China

Product description

Product name ..... :	ZERKAR InkTag
Model Number ..... :	HZ03
Standards ..... :	FCC CFR 47 PART 1 , 1.1310
Test procedure..... :	KDB 447498 D01 General RF Exposure Guidance v06

This device described above has been tested by Shenzhen HongBiao Certification& Testing Co., Ltd and the test results show that the equipment under test (EUT) is in compliance with the EMC requirements. And it is applicable only to the tested sample identified in the report.

Date of Test ..... :

Date (s) of performance of tests..... :	Sept. 14, 2026~Sept. 22, 2026
Test Result..... :	**Pass**

Testing Engineer : Zoe Su

(Zoe Su)

Technical Manager : Hans Mou

(Hans Mou)

Authorized Signatory : Leo Su

(Leo Su)

Revision History

Revised No.	Date of Issue	Description
01	Sept. 22, 2026	Original

1 General Description

1.1 Description of EUT

Product name:	ZERKAR InkTag
Model name:	HZ03
Series Model:	HZ03A
Different of series model:	All the models are the same circuit and module, except the colour and model No..
Operation frequency:	2402-2480MHz
Modulation type:	GFSK
Bit Rate of transmitter:	1 Mbps, 2Mbps
Antenna type:	ANT1(ST17H66B): PCB Antenna ANT2(ST17H65B): Ceramic Antenna
Antenna gain:	ANT1(ST17H66B): 2.2dBi ANT2(ST17H65B): 2.67dBi
Max. output power:	ANT1(ST17H66B): 4.88dBm ANT2(ST17H65B): 3.99dBm
Hardware version:	V1.0
Software version:	V1.0
Battery:	DC 3V(CR2025)
Ratings:	DC 3V from battery
Adapter information:	N/A

1.2 Test Mode

Pretest Test Mode	Description of Mode
1	TX
2	/
3	/

1.3 Test Setup

See photographs of the test setup in the report for the actual setup and connections between EUT and support equipment.

1.4 Ancillary Equipment

Equipment	Model	S/N	Manufacturer
/	/	/	/

2 Test Facilities and Accreditations

2.1 Test Laboratory

Test Site	Shenzhen HongBiao Certification& Testing Co., Ltd
Test Site Location	Room 102, 201, Building 2, Yuanwanggu RFID Industrial Park, Tongguan Road, Tianliao Community, Yutang Street, Guangming District, Shenzhen, China
Telephone:	(86-755) 2998 9321
Fax:	(86-755) 2998 5110
Designation Number:	848916
FCC Registration No.:	CN1341
A2LA Certificate No.:	6765.01

2.2 Environmental Conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15ºC~35ºC
Relative Humidity:	20%~75%
Air Pressure:	98kPa~101kPa

2.3 Measurement Uncertainty

The reported uncertainty of measurement y ± U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.
The data and results quoted in this document are true and accurate values, and uncertainties are not involved in the calculations.
In addition, components and mass production processes that are similar to testing equipment may introduce additional deviations, and the manufacturer is solely responsible for the continued compliance of the equipment.

Measurement Frequency Range	U, (dB)	Note
RF frequency	$2x\ 10^{-5}$	
RF power, conducted	± 0.57 dB	
Temperature	±1 degree	
Humidity	± 5 %	

2.4 Test Software

Software name	Manufacturer	Model	Version
RF Test System	MWRF	MTS 8310	V2.0.0.0

3 List of Test Equipment

RF							
Item	Equipment No.	Equipment name	Manufacturer	Model	Serial No.	Calibration date	Due date
1	HB-E041	MXG Anaiog Signal Generator	Agilent	N5181A	MY47070421	2026-04-27	2027-04-26
2	HB-E042	WIDEBAND RADIO COMMUNICATION TESTER	R&S	CMW500	132108	2026-04-27	2027-04-26
3	HB-E043	MXG Anaiog Signal Generator	Agilent	N5182A	US46240335	2026-04-28	2027-04-27
4	HB-E044	Signal& spectrum Analyzer	R&S	FSV3044	101264	2026-04-28	2027-04-27
5	HB-E045	RF Control Box	Noyetec	NY100-RFCB	N/A	2026-04-28	2027-04-27
6	HB-E058	Thermometer Clock Humidity Monitor	N/A	HTC-1S	N/A	2026-04-30	2027-04-29

Note: the calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

4 RF Exposure

4.1 Standalone SAR test exclusion considerations

4.1.1. Limit

3.0 for 1g SAR.

4.1.2. Test Procedures

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Test Exclusion Threshold condition(s), listed below, is (are) satisfied.

These test exclusion conditions are based on source-based time-averaged maximum conducted output power of the RF channel requiring evaluation, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions.

The minimum test separation distance defined in 4.1 f) is determined by the smallest distance from the antenna and radiating structures or outer surface of the device, according to the host form factor, exposure conditions and platform requirements, to any part of the body or extremity of a user or bystander.

To qualify for SAR test exclusion, the test separation distances applied must be fully explained and justified, typically in the SAR measurement or SAR analysis report, by the operating configurations and exposure conditions of the transmitter and applicable host platform requirements, according to the required published RF exposure KDB procedures.

When no other RF exposure testing or reporting are required, a statement of justification and compliance must be included in the equipment approval, in lieu of the SAR report, to qualify for SAR test exclusion.

When required, the device specific conditions described in the other published RF exposure KDB procedures must be satisfied before applying these SAR test exclusion provisions.

a) 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:

[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR, and ≤ 7.5 for 10-g extremity SAR, where

- $f_{(GHz)}$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- The values 3.0 and 7.5 are referred to as *numeric thresholds* in step b) below

The test exclusions are applicable only when the minimum test separation distance is ≤ 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 according to 4.1 f) is applied to determine SAR test exclusion.

b) 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)·10]} mW, for > 1500 MHz and ≤ 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 ≤ 50 mm, the power threshold determined by the equation in c) 1) for 50 mm and 100 MHz is multiplied by ½
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.

4.1.3. Test Result

We use 5mm as separation distance to calculated.

Bluetooth DTS:

ANT1(ST17H66B):

Transmit Frequency (GHz)	Mode	Measured Power (dBm)	Tune-up power (dBm)	Max tune-up power(dBm)	Result calculation	1g SAR
2.402	GFSK(1M)	4.59	4±1	5	0.9802	3
2.440		4.45	4±1	5	0.9879	3
2.480		4.82	4±1	5	0.9960	3
2.402	GFSK(2M)	4.66	4±1	5	0.9802	3
2.440		4.51	4±1	5	0.9879	3
2.480		4.88	4±1	5	0.9960	3

ANT2(ST17H65B):

Transmit Frequency (GHz)	Mode	Measured Power (dBm)	Tune-up power (dBm)	Max tune-up power(dBm)	Result calculation	1g SAR
2.402	GFSK(1M)	3.99	3±1	4	0.7786	3
2.440		3.76	3±1	4	0.7847	3
2.480		3.52	3±1	4	0.7911	3
2.402	GFSK(2M)	3.99	3±1	4	0.7786	3
2.440		3.79	3±1	4	0.7847	3
2.480		3.52	3±1	4	0.7911	3

Results for transmit simultaneously

No.	Configurations	Maximum MPE Value			Limits
		BLE(ST17H66B)	BLE(ST17H65B)	Transmit simultaneously	
1	BLE(ANT1(ST17H66B)) + BLE(ANT2(ST17H65B))	0.3320	0.2637	0.5957	1

Conclusion:

For the max result: 0.5957≤ 1 for 1g SAR, No SAR is required.

******** END OF REPORT ********