

RF EXPOSURE Test Report

Product: Minilaptop

Trade Mark: N/A

Model Number: NA105H

FCC ID: 2BB3W-NA105H

Prepared for

ShenZhen ZhiWei Technology Co., Ltd
6th Floor, Bld 8, Lijincheng Industrial Park Longhua Street, Longhua District
shenzhen China

Prepared by

Shenzhen HongBiao Certification& Testing Co., Ltd
Room 102, 201, Building 2, Yuanwanggu RFID Industrial Park, Tongguan
Road, Tianliao Community, Yutang Street, Guangming District, Shenzhen,
China
Tel.: +86-755-2998 9321 Fax.: +86-755-2998 5110
Website: <http://www.sz-hongbiao.com>

Table of Contents

1	GENERAL DESCRIPTION	5
1.1	DESCRIPTION OF EUT	5
1.2	TEST MODE.....	6
1.3	TEST SETUP	6
1.4	ANCILLARY EQUIPMENT	6
2	TEST FACILITIES AND ACCREDITATIONS	7
2.1	TEST LABORATORY	7
2.2	ENVIRONMENTAL CONDITIONS	7
2.3	MEASUREMENT UNCERTAINTY	7
2.4	TEST SOFTWARE	7
3	LIST OF TEST EQUIPMENT	8
4	RF EXPOSURE.....	9
4.1	STANDALONE SAR TEST EXCLUSION CONSIDERATIONS.....	9
4.1.1.	<i>Limit</i>	9
4.1.2.	<i>Test Procedures</i>	9
4.1.3.	<i>Test Result</i>	10

TEST RESULT CERTIFICATION

Applicant's Name : ShenZhen ZhiWei Technology Co., Ltd
Address : 6th Floor, Bld 8, Lijincheng Industrial Park Longhua Street,
Longhua District shenzhen China
Manufacturer's Name : ShenZhen ZhiWei Technology Co., Ltd
Address : 6th Floor, Bld 8, Lijincheng Industrial Park Longhua Street,
Longhua District shenzhen China

Product description

Product name : Minilaptop
Model Number : NA105H

Standards : FCC CFR 47 PART 1 , 1.1310

Test procedure : KDB 447498 D01 General RF Exposure Guidance v06

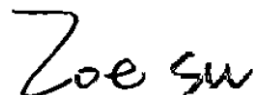
This device described above has been tested by Shenzhen HongBiao Certification& Testing Co., Ltd and the test results show that the equipment under test (EUT) is in compliance with the EMC requirements. And it is applicable only to the tested sample identified in the report.

Date of Test :

Date (s) of performance of tests : June 20, 2025~ July 01, 2025

Test Result : **Pass**

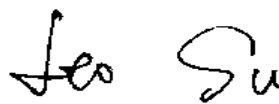
Testing Engineer :


(Z o e S u)

Technical Manager :


(G a r y L u)

Authorized Signatory :


(L e o S u)

Revision History

[illegible]

1 General Description

1.1 Description of EUT

Product name:	Minilaptop
Model name:	NA105H
Series Model:	N/A
Different of series model:	N/A
Operation frequency:	BT: 2402-2480MHz WiFi 2.4G: 802.11b/g/n/ax 20: 2412~2462 MHz 802.11n/ax 40: 2422~2452 MHz WiFi 5G: 5180 MHz to 5240 MHz
Modulation type:	BT: GFSK, $\pi/4$ -DQPSK, 8DPSK WiFi 2.4G: IEEE 802.11b: DSSS (DBPSK, DQPSK, CCK) IEEE 802.11g/n/ax (HT20/HT40): OFDM (64QAM, 16QAM, QPSK, BPSK) WiFi 5G: OFDM with BPSK/QPSK/16QAM/64QAM/256QAM for 802.11a/n/ac/ax
Bit Rate of transmitter:	BT: 1 Mbps, 2Mbps, 3Mbps WiFi 2.4G: 802.11b: 11/5.5/2/1 Mbps 802.11g: 54/48/36/24/18/12/9/6Mbps 802.11n/ax(20MHz) use 800 ns GI: 65.0/58.5/52.0/39.0/26.0/19.5/13.0/6.5 Mbps (MCS0~MCS7) 802.11n/ax(40MHz) use 800 ns GI: 13.5/27/40.5/54/81/108/121.5/135Mbps WiFi 5G: 802.11a: 6,9,12,18,24,36,48,54Mbps; 802.11n(HT20/HT40): MCS0-MCS15; 802.11ac/ax(VHT20/HE20): NSS1, MCS0-MCS8 802.11ac/ax(VHT40/HE40): NSS1, MCS0-MCS9 802.11ac/ax(VHT80/HE80): NSS1, MCS0-MCS9
Antenna type:	Internal Antenna
Antenna gain:	BT/WiFi 2.4G: 3.85dBi WiFi: 5G: 2.75dBi
Max. output power:	BT: -0.82dBm WiFi 2.4G: 8.65dBm WiFi 5G: 7.29dBm
Hardware version:	IP3-DNN20A
Software version:	DNN20AV3.54.rom
Battery:	Norminal Voltage: 7.6Vd.c Rated Capacity: 3800mAh, 28.88Wh Charge Limited Voltage: 8.7V

Power supply:	DC 12V from adapter AC 120V/60Hz
Adapter information:	Model: J302-1203000UX Input: 100-240V~50/60Hz 1.5A Output: 12.0V=3.0A 36.0W

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
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:	15°C~35°C
Relative Humidity:	20%~75%
Air Pressure:	98kPa~101kPa

2.3 Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, 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	2×10^{-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 Anaio Signal Generator	Agilent	N5181A	MY47070421	2025-05-07	2026-05-06
2	HB-E042	WIDEBAND RADIO COMMUNICATION TESTER	R&S	CMW500	132108	2025-05-08	2026-05-07
3	HB-E043	MXG Anaio Signal Generator	Agilent	N5182A	US46240335	2025-05-08	2026-05-07
4	HB-E044	Signal & spectrum Analyzer	R&S	FSV3044	101264	2025-05-07	2026-05-06
5	HB-E045	RF Control Box	Noyetec	NY100-R FCB	N/A	2025-05-08	2026-05-07
6	HB-E058	Thermometer Clock Humidity Monitor	N/A	HTC-1S	N/A	2025-05-09	2026-05-08

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:

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

- $f_{(\text{GHz})}$ 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) $\{[\text{Power allowed at } \textit{numeric threshold} \text{ for } 50 \text{ mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot (f(\text{MHz})/150)]\}$ mW, for 100 MHz to 1500 MHz
- 2) $\{[\text{Power allowed at } \textit{numeric threshold} \text{ for } 50 \text{ mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot 10]\}$ 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 $[1 + \log(100/f(\text{MHz}))]$
- 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 $\frac{1}{2}$
- 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.

4.1.3. Test Result

We use 5mm as separation distance to calculated.

Bluetooth DSS (Worst):

Transmit Frequency (GHz)	Mode	Measured Power (dBm)	Tune-up power (dBm)	Max tune-up power(dBm)	Result calculation	1g SAR
2.402	8DPSK	-0.82	$(-1)\pm 1$	0	0.3100	3

WiFi 2.4G (Worst):

Transmit Frequency (GHz)	Mode	Measured Power (dBm)	Tune-up power (dBm)	Max tune-up power(dBm)	Result calculation	1g SAR
2.462	802.11g	8.65	8 ± 1	9	2.4927	3

WiFi 5G (Worst):

Transmit Frequency (GHz)	Mode	Measured Power (dBm)	Tune-up power (dBm)	Max tune-up power(dBm)	Result calculation	1g SAR
5.230	11ax(HE40)	7.29	6.5 ± 1	7.5	2.5721	3

Conclusion:

Simultaneous transmit:

NO,	Configurations	Maximum MPE Value			Limits
		WiFi 2.4G	BT	Transmit simultaneously	
1	WiFi 2.4G+BT	0.8309	0.1033	0.9342	1
NO,	Configurations	Maximum MPE Value			Limits
		WiFi 5G	BT	Transmit simultaneously	
1	WiFi 5G+BT	0.8574	0.1033	0.9607	1

Note:

According to KDB 447498 D01 General RF Exposure Guidance v06, At the transmit simultaneously calculation method is as follows:

Transmit simultaneously MPE = Σ of MPE ratios

MPE ratios = Field strengths or power density / MPE limit at the test frequency

For the max result: $0.9607 \leq 1.0$ SAR, No SAR is required.

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