

TEST REPORT

FCC ID. :	2AG87NM-DB-3-R3	
Test Report No..... :	TCT250717E039	
Date of issue..... :	Nov. 06, 2025	
Testing laboratory	SHENZHEN TONGCE TESTING LAB	
Testing location/ address:	2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China	
Applicant's name..... :	Doodle Labs (SG) Pte Ltd	
Address..... :	601 MacPherson Road, Grantral Complex, Suite 07-15, Singapore 368242, Singapore	
Manufacturer's name ... :	Doodle Labs (SG) Pte Ltd	
Address..... :	601 MacPherson Road, Grantral Complex, Suite 07-15, Singapore 368242, Singapore	
Standard(s)	FCC CFR Title 47 Part 1.1307 FCC CFR Title 47 Part 2.1091	
Product Name..... :	Wi-Fi® Radio Transceiver	
Trade Mark	N/A	
Model/Type reference..... :	NM-DB-3-R3, NM-DB-2-R3, NO-DB-3-R3, NO-DB-2-R3, NM-DB-3M, NM-DB-2M, NM-DB-3U, NM-DB-2U, NIMBLE-DB-3M, NIMBLE-DB-2M, NIMBLE-DB-3U, NIMBLE-DB-2U	
Rating(s)..... :	DC 3.3V	
Date of receipt of test item	Jul. 17, 2025	
Date (s) of performance of test..... :	Jul. 17, 2025 ~ Nov. 06, 2025	
Tested by (+signature) ... :	Aaron MO	
Check by (+signature).... :	Beryl ZHAO	
Approved by (+signature):	Tomsin	

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1. General Product Information

1.1. EUT description

Product Name.....:	Wi-Fi® Radio Transceiver
Model/Type reference.....:	NM-DB-3-R3
Sample Number.....:	TCT250717E029-0101
Operation Frequency	For 2.4GWIFI: 2412MHz~2462MHz (802.11b/802.11g/802.11n(HT20)) 2422MHz~2452MHz (802.11n(HT40)) For 5GWIFI: Band 1: 5180MHz~5240MHz Band 3: 5745MHz~5825MHz
Modulation Type.....:	For 2.4GWIFI: DSSS (802.11b), OFDM (802.11g/802.11n) For 5GWIFI: 256QAM, 64QAM, 16QAM, BPSK, QPSK
Antenna Type.....:	External Antenna
Antenna Gain.....:	Antenna 0: 3dBi Antenna 1: 3dBi Antenna 2: 3dBi
Rating(s).....:	DC 3.3V

Note: The antenna gain listed in this report is provided by applicant, and the test laboratory is not responsible for this parameter.

1.2. Model(s) list

No.	Model No.	Tested with
1	NM-DB-3-R3	☒
Other models	NM-DB-2-R3, NO-DB-3-R3, NO-DB-2-R3, NM-DB-3M, NM-DB-2M, NM-DB-3U, NM-DB-2U, NIMBLE-DB-3M, NIMBLE-DB-2M, NIMBLE-DB-3U, NIMBLE-DB-2U	☐

Note: NM-DB-3-R3 is tested model, other models are derivative models. The models are identical in circuit and PCB layout, only different on the model names, antenna number and antenna connector. So the test data of NM-DB-3-R3 can represent the remaining models.

2. General Information

2.1. Test environment and mode

Item	Normal condition
Temperature	+25°C
Voltage	DC 3.3V
Humidity	56%
Atmospheric Pressure:	1008 mbar
Test Mode:	
Transmitting Mode:	Keep the EUT in continuous transmitting by select channel

2.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
/	/	/	/	/

Note:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

3. Facilities and Accreditations

3.1. Facilities

The test facility is recognized, certified, or accredited by the following organizations:

- FCC - Registration No.: 645098

SHENZHEN TONGCE TESTING LAB

Designation Number: CN1205

The testing lab has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

- A2LA-No.: 4320.01

SHENZHEN TONGCE TESTING LAB

The testing lab has been accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories.

3.2. Location

SHENZHEN TONGCE TESTING LAB

Address: 2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China

TEL: +86-755-27673339

4. Limit

According to §1.1310, the limit is as follow,

TABLE 1 TO § 1.1310(E)(1)—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
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(i) LIMITS FOR OCCUPATIONAL/CONTROLLED 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

f = frequency in MHz. * = Plane-wave equivalent power density.

5. Test Results and Measurement Data

According to §1.1307(b), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

Remark: 1)

SISO mode:

For 2.4G WIFI: The maximum output power is in 802.11b mode at 2437MHz, with antenna 2 is 23.49dBm (223.36mW), 3dBi antenna gain(2.00 numeric antenna gain);

For Band 1: The maximum output power is in 802.11a mode at 5240MHz, with antenna 2 is 22.37dBm (172.58mW), 3dBi antenna gain(2.00 numeric antenna gain)

For Band 3: The maximum output power is in 802.11a mode at 5785MHz, with antenna 1 is 21.63dBm (145.55mW), 3dBi antenna gain(2.00 numeric antenna gain)

MIMO mode:

For 2.4G WIFI: The maximum output power is in 802.11n(HT40) mode at 2437MHz, for total power is 26.98dBm (498.88mW), 3dBi antenna gain(with 2.00 numeric antenna gain)

For Band 1: The maximum output power is in 802.11n(HT20) mode at 5230MHz, for total power is 23.18dBm (207.97mW), 3dBi antenna gain(with 2.00 numeric antenna gain)

For Band 3: The maximum output power is in 802.11 n(HT40) mode at 5795MHz, for total power is 26.49dBm (445.66mW), 3dBi antenna gain(with 2.00 numeric antenna gain.)

- 2) For mobile or fixed location transmitters, no SAR consideration applied. The minimum separation generally be used is at least 20cm, even if the calculation indicate that the MPE distance would be lesser.

Calculation

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{3770}$

Where E = Field Strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power Density in milliwatts / square centimeter

Substituting the MPE safe distance using $d=20\text{cm}$ into above equation.

Yields: $S=0.000199 \times P \times G$

SISO mode:

Maximum Emissions Level					
Mode	Power(mW)	numeric antenna gain	Power density (mW/cm ²)	Limit (mW/cm ²)	Result
2.4G WIFI	223.36	2.00	0.088897	1.0	PASS
Band 1	172.58	2.00	0.068687		
Band 3	145.55	2.00	0.057929		

MIMO mode:

Maximum Emissions Level					
Mode	Power(mW)	numeric antenna gain	Power density (mW/cm ²)	Limit (mW/cm ²)	Result
2.4G WIFI	498.88	2.00	0.198554	1.0	PASS
Band 1	207.97	2.00	0.082772		
Band 3	445.66	2.00	0.177373		

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