



TEST REPORT

For RF Expose

Report No..... : CHTW25110072

Project No : SHT2511087603W

FCC ID : 2AN9S-ABX00112

Applicant's name..... : Arduino S.r.l.

Address : Via Andrea Appiani, 25, 20900 MONZA (Italy)

Product Name : Arduino Nano Matter, Arduino Nano Matter (with headers)

Trade Mark..... : 

Model No..... : ABX00112

Listed Model(s) : ABX00137

Standard..... : **FCC Part 2 (Section 2.1091)**

Date of receipt of test sample..... : 2024/11/19

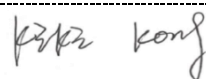
Date of testing..... : 2024/11/16-2024/12/16,2025/11/13-2025/11/28

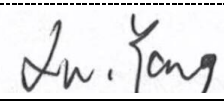
Date of issue..... : 2025/12/01

Result : **Pass**



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Testing Laboratory Name..... : Shenzhen Huatongwei International Inspection Co., Ltd.

Address : Building 7, Baiwang Idea Factory, No.1051, Songbai Road, Yangguang Community, Xili Subdistrict, Nanshan District, Shenzhen, Guangdong, China

Test Report Form No. : R0066

Test Report Form(s) Originator : Shenzhen Huatongwei International Inspection Co., Ltd.

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1. TEST STANDARDS AND REPORT VERSION

1.1. Test standards

The tests were performed according to following standards:

[FCC Part 2 \(Section 2.1091\)](#)- Radiofrequency radiation exposure evaluation: mobile devices.

[KDB 447498 D04 Interim General RF Exposure Guidance v01](#)- RF Exposure Procedures and Equipment Authorization Policies for Mobile and Portable Devices

[FCC Part 1 \(Section 1.1307\)](#)- Actions that may have a significant environmental effect, for which Environmental Assessments (EAs) must be prepared.

1.2. Report version information

Revision No.	Date of issue	Description
N/A	2025-12-01	Original

2. SUMMARY

2.1. Client Information

Applicant:	Arduino S.r.l.
Address:	Via Andrea Appiani, 25, 20900 MONZA (Italy)
Manufacturer:	Arduino S.r.l.
Address:	Via Andrea Appiani, 25, 20900 MONZA (Italy)

2.2. Product Description

Product Name:	Arduino Nano Matter, Arduino Nano Matter (with headers)
Trade Mark:	
Model No.:	ABX00112
Listed Model(s):	ABX00137
Power supply:	DC 5V
Hardware version:	v 0.5
Software version:	v 2.1.0

2.3. Radio Specification Description

Bluetooth	
Support function:	BLE 1M,BLE 2M
Modulation:	GFSK
Operation frequency:	2402MHz~2480MHz
Channel number:	40
Channel separation:	2MHz
Antenna type:	Ceramic Antenna
Antenna gain:	-1.00dBi
2.4GHz Band	
Modulation:	GFSK
Operation frequency:	2405MHz~2480MHz
Channel number:	16
Channel separation:	5MHz
Antenna type:	Ceramic Antenna
Antenna gain:	-1.00dBi

2.4. Testing Laboratory Information

Laboratory Name	Shenzhen Huatongwei International Inspection Co., Ltd.
Laboratory Location	Building 7, Baiwang Idea Factory, No.1051, Songbai Road, Yangguang Community, Xili Subdistrict, Nanshan District, Shenzhen, Guangdong, China
Contact information:	Tel: 400-963-0755 E-mail: cs@szhtw.com.cn http://www.szhtw.com.cn

3. RF EXPOSURE

LIMIT

☉ **Single transmitter:**

The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

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)
(A) Limits for Occupational/Controlled Exposures				
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
300–1500	-	-	f/300	6
1500–100,000	-	-	5	6
(B) 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
300–1500	-	-	f/1500	30
1500–100,000	-	-	1.0	30

Note: f = frequency in MHz

☉ **Simultaneous transmission:**

Simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in a host device is ≤1.0.

EVALUATION METHOD

Transmission formula: $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where

P_d = power density in mW/cm², P_{out} = output power to antenna in mW, G = gain of antenna in linear scale;

P_i = 3.1416, R = distance between observation point and center of the radiator in cm

TEST RESULT

☒ **Passed** ☐ **Not Applicable**

Single transmitter:

Radio Type	Frequency range (MHz)	Conducted Average Power (dBm)	Maximum Tune-up (dBm)	Power Density (mW/cm ²)	Limit (mW/cm ²)	Result
BLE	2402-2480	3.87	4.00	0.0004	1.0000	Pass
2.4G	2405-2480	7.93	8.00	0.001	1.0000	Pass

Consider the BLE and 2.4G can transmitting simultaneously, the total transmitting MPE rate as below formula:

$$\text{MPE rate} = \text{Power density of BLE/limit} + \text{Power density of 2.4G/limit} < 1$$

The worst case is BLE and 2.4G transmitting simultaneously, the result as below:

Simultaneous transmission (Worst Case):

Evaluation mode	Power density/limit	Sum of the MPE rate	limit
BLE	0.0004	0.0014	1
2.4G	0.001		

Note:

- 1) The maximum antenna gain is -1.00dBi
- 2) The exposure evaluation safety distance is 20cm.

4. EXTERNAL AND INTERNAL PHOTOS OF THE EUT

Reference to the test report No. CHTW25110070

-----End of Report-----