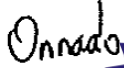




# TEST REPORT

FCC ID. .... :	2BMBU-NODEX100	
Test Report No..... :	TCT241118E045	
Date of issue..... :	Dec. 12, 2024	
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..... :	HELIOQ INC.	
Address..... :	254 Chapman Rd, Ste 208 #20159, Newark, DELAWARE 19702	
Manufacturer's name ... :	HELIOQ INC.	
Address..... :	254 Chapman Rd, Ste 208 #20159, Newark, DELAWARE 19702	
Standard(s) .....	FCC CFR Title 47 Part 1.1307	
Product Name..... :	Helioq NodeX Computing Server	
Trade Mark .....	N/A	
Model/Type reference..... :	NodeX 100, NodeX 200, NodeX 300, S-DA004	
Rating(s)..... :	Adapter Information: MODEL: CS-1204000 INPUT: AC 100-240V, 50/60Hz, 2A Max. OUTPUT: DC 12.0V, 4.0A, 48.0W	
Date of receipt of test item .....	Nov. 18, 2024	
Date (s) of performance of test..... :	Nov. 18, 2024 ~ Dec. 12, 2024	
Tested by (+signature) ... :	Onnado YE	
Check by (+signature).... :	Beryl ZHAO	
Approved by (+signature):	Tomsin	

**General disclaimer:**

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## Table of Contents

<b>1. General Product Information .....</b>	<b>3</b>
1.1. EUT description .....	3
1.2. Model(s) list.....	3
<b>2. General Information.....</b>	<b>4</b>
2.1. Test environment and mode.....	4
2.2. Description of Support Units.....	4
<b>3. Facilities and Accreditations .....</b>	<b>5</b>
3.1. Facilities .....	5
3.2. Location .....	5
<b>4. Test Results and Measurement Data .....</b>	<b>6</b>

## 1. General Product Information

### 1.1. EUT description

Product Name.....:	Helioq NodeX Computing Server
Model/Type reference.....:	NodeX 100
Sample Number.....:	TCT241118E026-0101
Operation Frequency .....	For BT/BLE: 2402MHz~2480MHz For 2.4G WIFI: 2412MHz~2462MHz (802.11b/802.11g/802.11n(HT20)/802.11ax(HE20)) 2422MHz~2452MHz (802.11n(HT40)/802.11ax(HE40)) For 5G WIFI: Band 1: 5180 MHz ~ 5240 MHz Band 3: 5745 MHz ~ 5825 MHz
Modulation Type .....	For BT: GFSK, $\pi/4$ -DQPSK, 8DPSK For BLE: GFSK For 2.4G WIFI: 802.11b: Direct Sequence Spread Spectrum (DSSS) 802.11g/802.11n: Orthogonal Frequency Division Multiplexing(OFDM) For 5G WIFI: 256QAM, 64QAM, 16QAM, BPSK, QPSK
Antenna Type.....:	FPC Antenna
Antenna Gain.....:	For BT/BLE: 3.53dBi For 2.4G WIFI: Antenna 1: 3.53dBi Antenna 2: 3.05dBi For 5G WIFI: Band 1: Antenna 1: 3.03dBi, Antenna 2: 2.57dBi Band 3: Antenna 1: 3.11dBi, Antenna 2: 2.48dBi
Rating(s).....:	Adapter Information: MODEL: CS-1204000 INPUT: AC 100-240V, 50/60Hz, 2A Max. OUTPUT: DC 12.0V, 4.0A, 48.0W

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	NodeX 100	<input checked="" type="checkbox"/>
Other models	NodeX 200, NodeX 300, S-DA004	<input type="checkbox"/>

Note: NodeX 100 is tested model, other models are derivative models. The models are identical in circuit and PCB layout, only different on the model names, solid state drive capacity and appearance color. So the test data of NodeX 100 can represent the remaining models.

## 2. General Information

### 2.1. Test environment and mode

Item	Normal condition
Temperature	+25°C
Voltage	AC 120V
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. For conducted measurements (Output Power, 20dB Occupied Bandwidth, Carrier Frequencies Separation, Hopping Channel Number, Dwell Time, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.

### 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.

- IC - Registration No.: 10668A

SHENZHEN TONGCE TESTING LAB

CAB identifier: CN0031

The testing lab has been registered by Innovation, Science and Economic Development Canada for radio equipment testing.

#### 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. 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 BT:** The maximum output power for antenna is 8.96dBm (7.87mW) at 2441MHz, 3.53dBi antenna gain(with 2.25 numeric antenna gain.)

**For BLE:** The maximum output power for antenna is -1.78dBm (0.66mW) at 2440MHz, 3.53dBi antenna gain(with 2.25 numeric antenna gain.)

**For 2.4G WIFI:** The maximum output power for antenna is 13.58dBm (22.80mW) at 2452MHz, 3.53dBi antenna gain(with 2.25 numeric antenna gain.)

**For 5G WIFI:** The maximum output power for antenna is 15.29dBm (33.81mW) at 5795MHz, 3.11dBi antenna gain(with 2.05 numeric antenna gain.)

**MIMO mode:**

**For 2.4G WIFI:** The maximum output power is in 802.11n(HT40) mode at 2452MHz, for total power is 16.15dBm (41.21mW), 3.53dBi antenna gain(with 2.25 numeric antenna gain)

**For 5G WIFI:** The maximum output power is in 802.11ac(VHT40) mode at 5795MHz, for total power is 17.46dBm (55.72mW), 3.11dBi antenna gain(with 2.05 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:

Mode	Power(mW)	numeric antenna gain	Power density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Result
BT	7.87	2.25	0.003524	1.0	PASS
BLE	0.66	2.25	0.000296		
2.4G WIFI	22.80	2.25	0.010209		
5G WIFI	33.81	2.05	0.013793		

## MIMO mode:

Maximum Emissions Level					
Mode	Power(mW)	numeric antenna gain	Power density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Result
2.4G WIFI	41.21	2.25	0.018452	1.0	PASS
5G WIFI	55.72	2.05	0.022731		

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