

# TEST REPORT

Report No.: BCTC2206256789-1E

---

Applicant: ROCKPI TRADING LIMITED

---

Product Name: ROCK Pi E

---

Model/Type reference: ROCK Pi E D8W2

---

Tested Date: 2022-06-30 to 2022-07-05

---

Issued Date: 2022-07-07

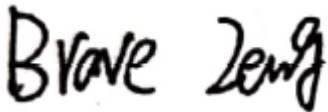
---

**Shenzhen BCTC Testing Co., Ltd.**



Product Name: ROCK Pi E  
Trademark: N/A  
Model/Type reference: ROCK Pi E D8W2  
ROCK Pi E D8W2P, ROCK Pi E D4W1P  
Prepared For: ROCKPI TRADING LIMITED  
Address: Room 11, 27 / f, Ga wah international centre, 191 Javaroad, north point, Hong Kong  
Manufacturer: ROCKPI TRADING LIMITED  
Address: Room 11, 27 / f, Ga wah international centre, 191 Javaroad, north point, Hong Kong  
Prepared By: Shenzhen BCTC Testing Co., Ltd.  
Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Tangwei, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China  
Sample Received Date: 2022-06-30  
Sample tested Date: 2022-06-30 to 2022-07-05  
Issue Date: 2022-07-07  
Report No.: BCTC2206256789-1E  
Test Standards: EN IEC 62311:2020  
Test Results: PASS  
Remark: This is RED Health test report.

Tested by:



Brave Zeng/ Project Handler

Approved by:



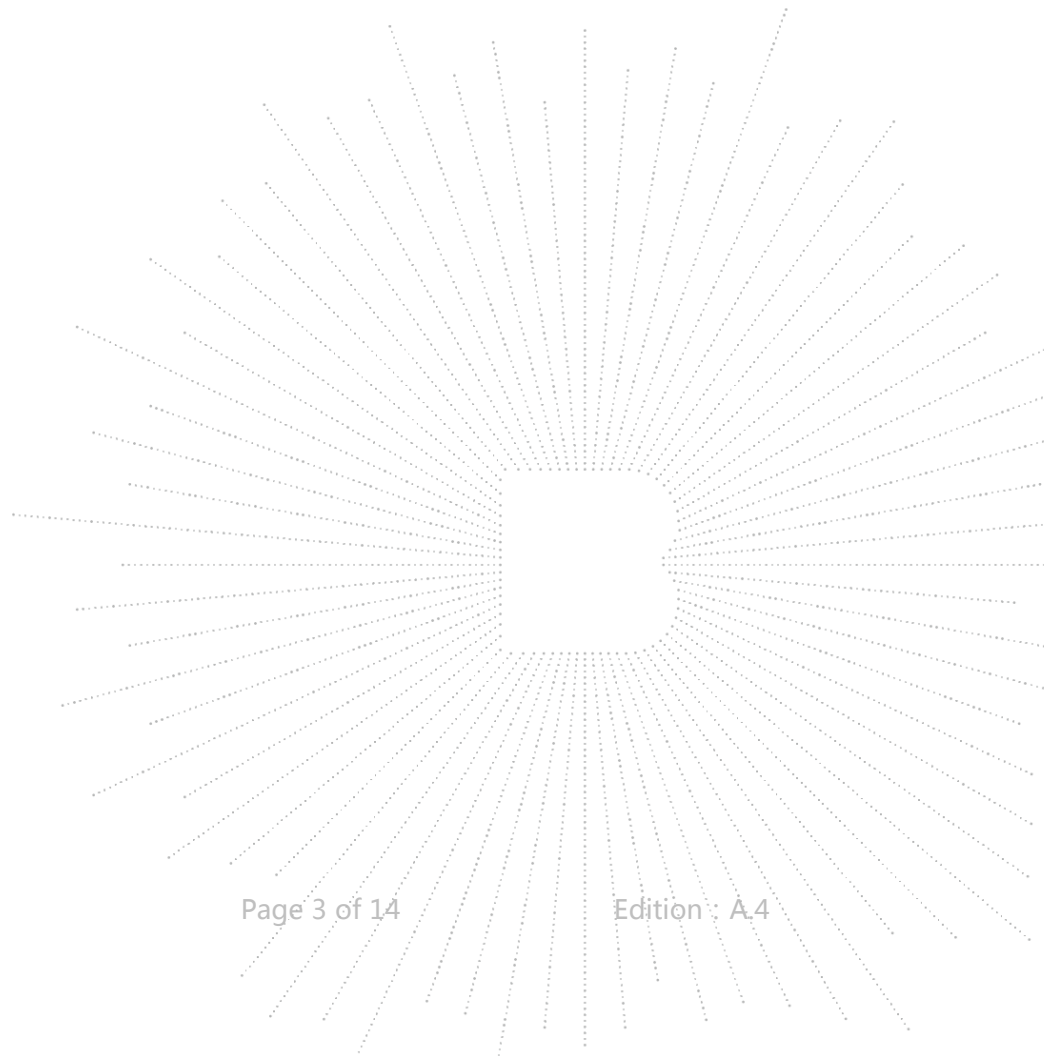
Zero Zhou/Reviewer

The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen BCTC Testing Co., Ltd, this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client.

## Table Of Content

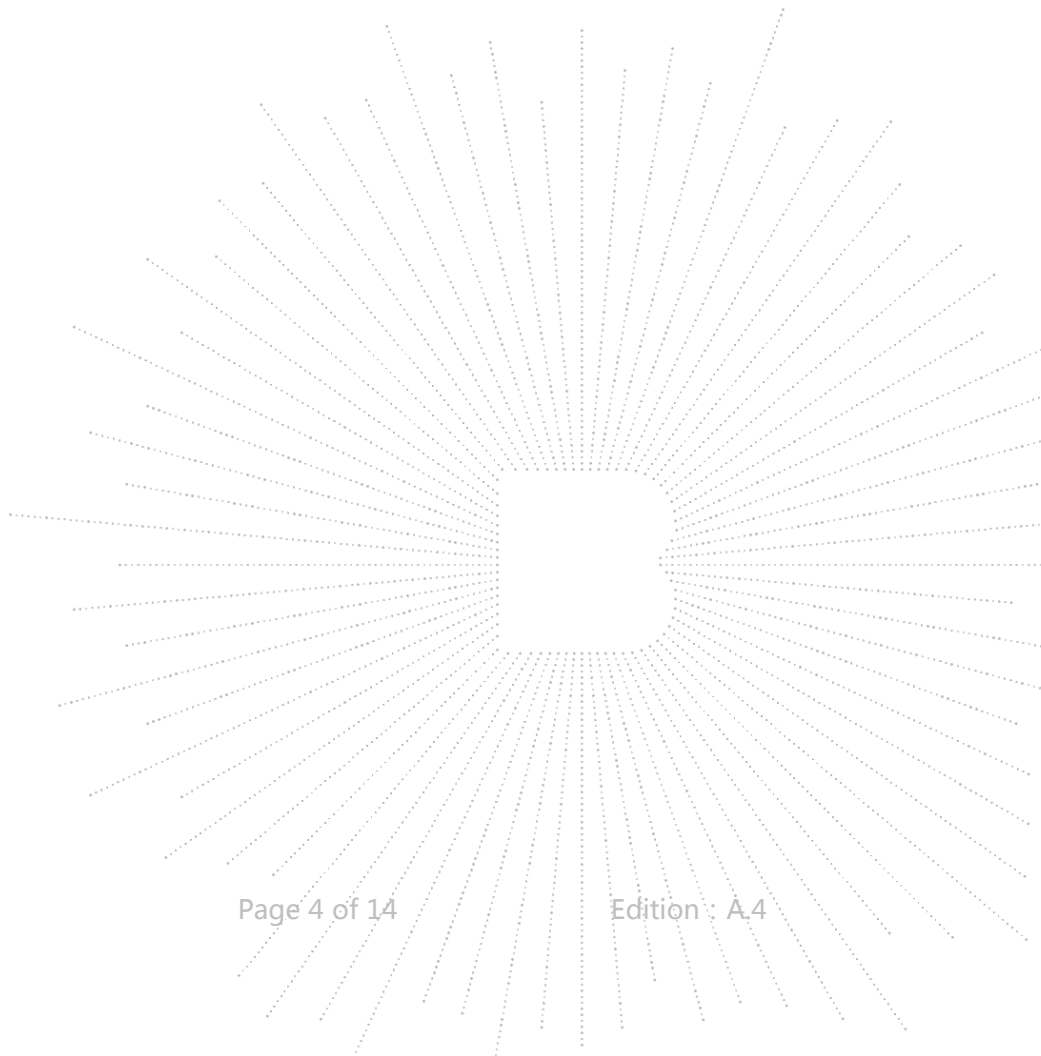
Test Report Declaration	Page
1. Version .....	4
2. Product Information And Test Setup .....	5
2.1 Product Information.....	5
3. Health Requirements.....	6
3.1 Limits.....	6
3.2 Exposure Evaluation .....	7
4. EUT Photographs.....	8

(Note: N/A Means Not Applicable)



**1. Version**

<b>Report No.</b>	<b>Issue Date</b>	<b>Description</b>	<b>Approved</b>
BCTC2206256789-1E	2022-07-07	Original	Valid



## 2. Product Information And Test Setup

### 2.1 Product Information

Model/Type reference:	ROCK Pi E D8W2 ROCK Pi E D8W2P, ROCK Pi E D4W1P
Model differences:	All the model are the same circuit and RF module, except model names.
Bluetooth version:	BT 5.0
Hardware Version:	N/A
Software Version:	N/A
Operation Frequency:	Bluetooth(EDR+BLE): 2402-2480MHz WIFI(2.4GHz): IEEE 802.11b/g/n HT20: 2412-2472MHz HT40: 2422-2462MHz WIFI(5GHz): IEEE 802.11a/n/ac HT20:5180MHz-5240MHz IEEE 802.11n/ac HT40:5190MHz-5230MHz IEEE 802.11ac HT80:5210MHz WIFI(5.8GHz): IEEE 802.11a/n/ac HT20:5745MHz-5825MHz IEEE 802.11n/ac HT40:5755 MHz-5795MHz IEEE 802.11ac HT80:5775MHz
Max. RF output power:	Bluetooth(EDR): 1.85 dBm Bluetooth(BLE): 0.25 dBm WIFI(2.4GHz): 12.41 dBm WIFI(5GHz): 11.54 dBm WIFI(5.8GHz): 10.08 dBm
Type of Modulation:	Bluetooth(EDR): GFSK, $\pi$ /4DQPSK, 8DPSK Bluetooth(BLE):GFSK WIFI(2.4GHz+5GHz): DSSS, OFDM WIFI(5.8GHz): OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM
Antenna installation:	Internal antenna
Antenna Gain:	2 dBi
Ratings:	DC 5V From Adapter

### 3. Health Requirements

#### 3.1 Limits

According to Council Recommendation: the criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation.

Reference levels for electric, magnetic and electromagnetic fields (0Hz to 300GHz, unperturbed RMS values)

Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field ( $\mu\text{T}$ )	Equivalent plane wave power density Seq (W/m <sup>2</sup> )
0-1 Hz	-	$3.2 \times 10^4$	$4 \times 10^4$	-
1-8 Hz	10000	$3.2 \times 10^4 / f^2$	$4 \times 10^4 / f^2$	-
8-25 Hz	10000	$4000 / f$	$5000 / f$	-
0.025-0.8 kHz	$250 / f$	$4 / f$	$5 / f$	-
0.8-3 kHz	$250 / f$	5	6.25	-
3-150 kHz	87	5	6.25	-
0.15-1 MHz	87	$0.73 / f$	$0.92 / f$	-
1-10 MHz	$87 / f^{1/2}$	$0.73 / f$	$0.92 / f$	-
10-400 MHz	28	0.073	0.095	2
400-2000 MHz	$1.375 f^{1/2}$	$0.0037 f^{1/2}$	$0.0046 f^{1/2}$	$f / 200$
2-300 GHz	61	0.16	0.2	10

Note:

1. f as indicated in the frequency range column.
2. For frequencies between 100 kHz and 10 GHz, Seq, E<sup>2</sup>, H<sup>2</sup> and B<sup>2</sup> are to be averaged over any six-minute period.
3. For frequencies exceeding 10 GHz, Seq, E<sup>2</sup>, H<sup>2</sup> and B<sup>2</sup> are to be averaged over any  $68 / f^{1.05}$  minute period (f in GHz).

### 3.2 Exposure Evaluation

From Council Recommendation 1999/519/EC table 2, the maximum power density is 10 W/m<sup>2</sup>.

Power density (S) is calculated by the following formula:

$$S = PG * \text{Duty factor} / 4\pi R^2$$

P = Peak Power Input to antenna (Watts)

G =Antenna Gain (numeric)

R = distance to the center of radiation of antenna (in meter) = 0.20 m

Note:

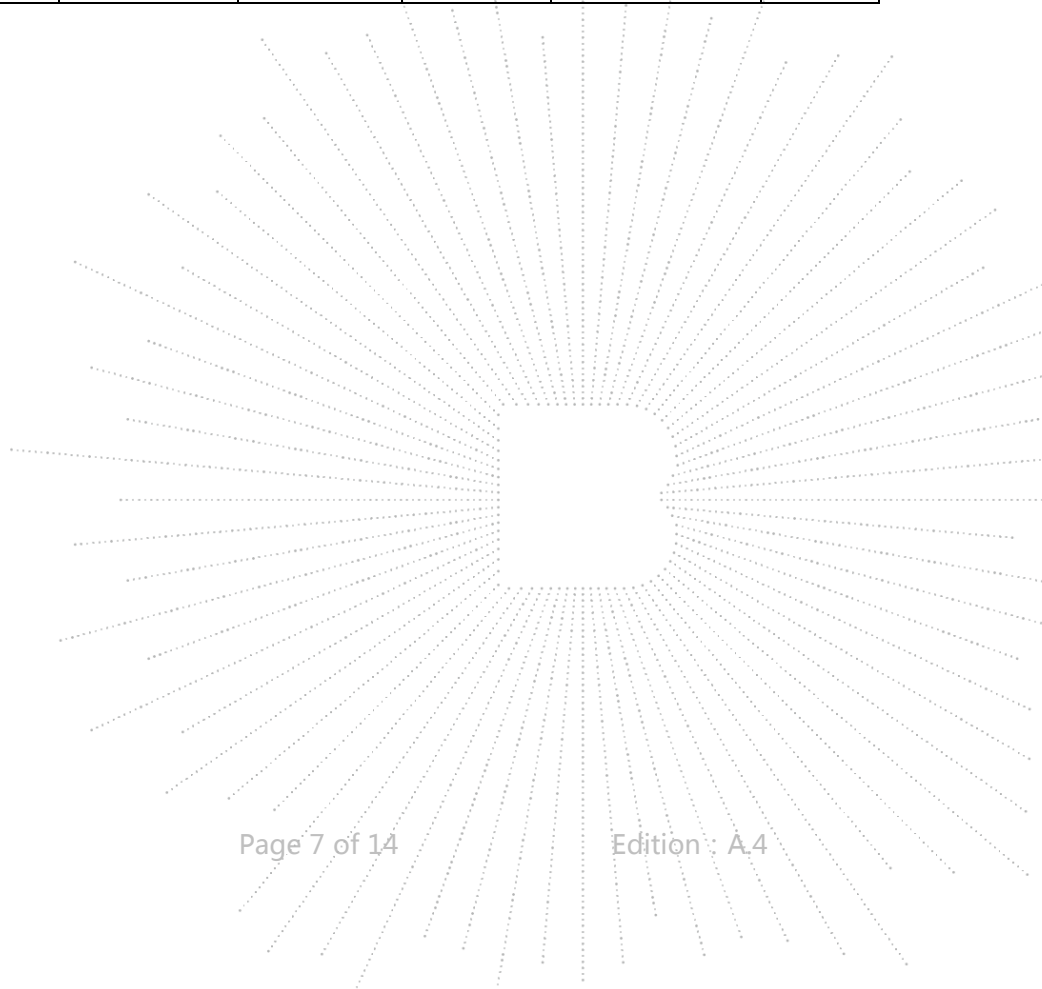
1)  $P \text{ (Watts)} = (10^{(\text{dBm} / 10)}) / 1000$

2)  $G \text{ (Antenna gain in numeric)} = 10^{(\text{Antenna gain in dBi} / 10)}$

3) Duty factor=1.0

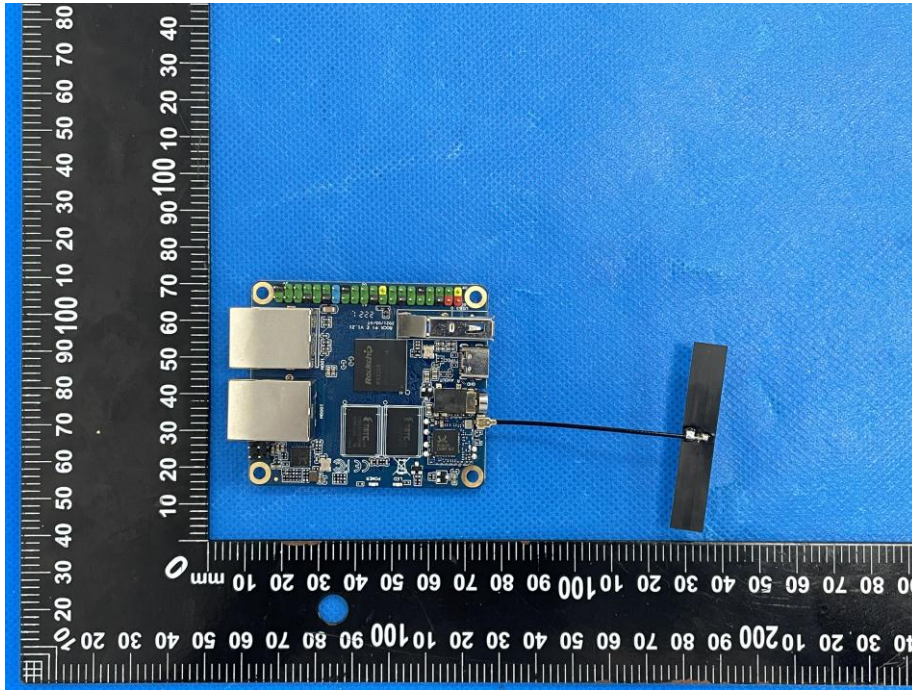
4)  $\pi = 3.142$

Mode	Total Antenna Gain (dBi)	Total Antenna Gain (numeric)	Max. Total Output Power (dBm)	Max. Total Output Power (W)	Duty factor	Calculated RF Exposure (W/ m <sup>2</sup> )	Limit (W/ m <sup>2</sup> )
BT	2.00	1.5849	1.85	0.0015	1.00	0.0048	10
BLE	2.00	1.5849	0.25	0.0011	1.00	0.0033	10
2.4GHz	2.00	1.5849	12.41	0.0174	1.00	0.0549	10
5.1GHz	2.00	1.5849	11.54	0.0143	1.00	0.0449	10
5.8GHz	2.00	1.5849	10.08	0.0102	1.00	0.0321	10

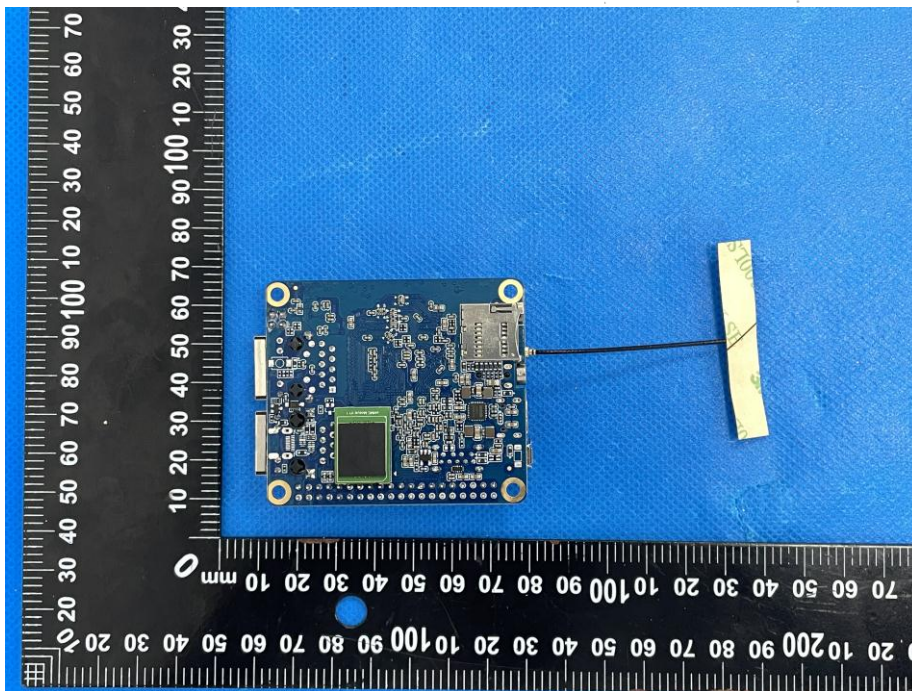


#### 4. EUT Photographs

EUT Photo 1

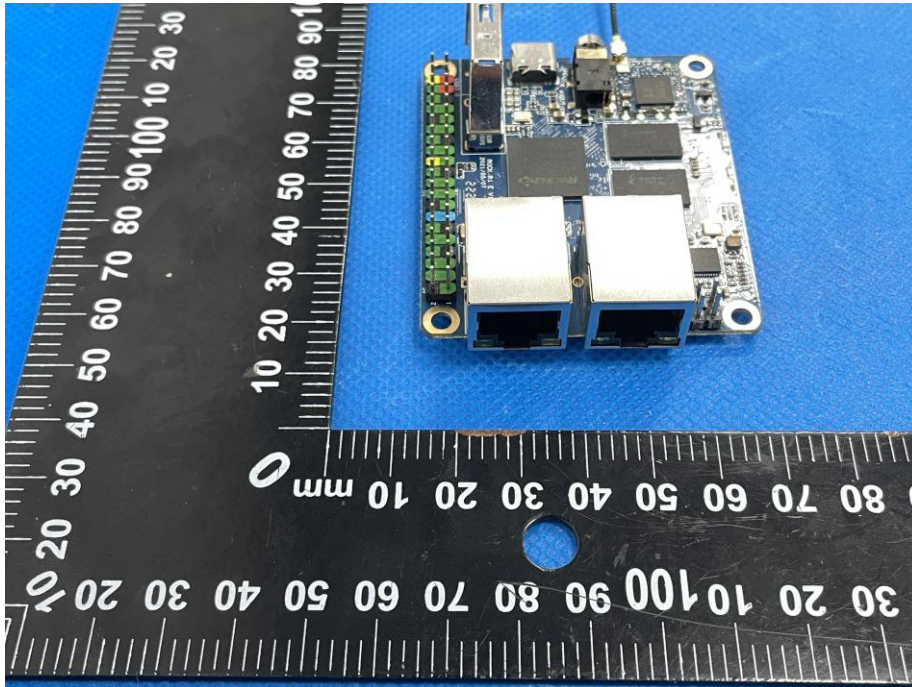


EUT Photo 2

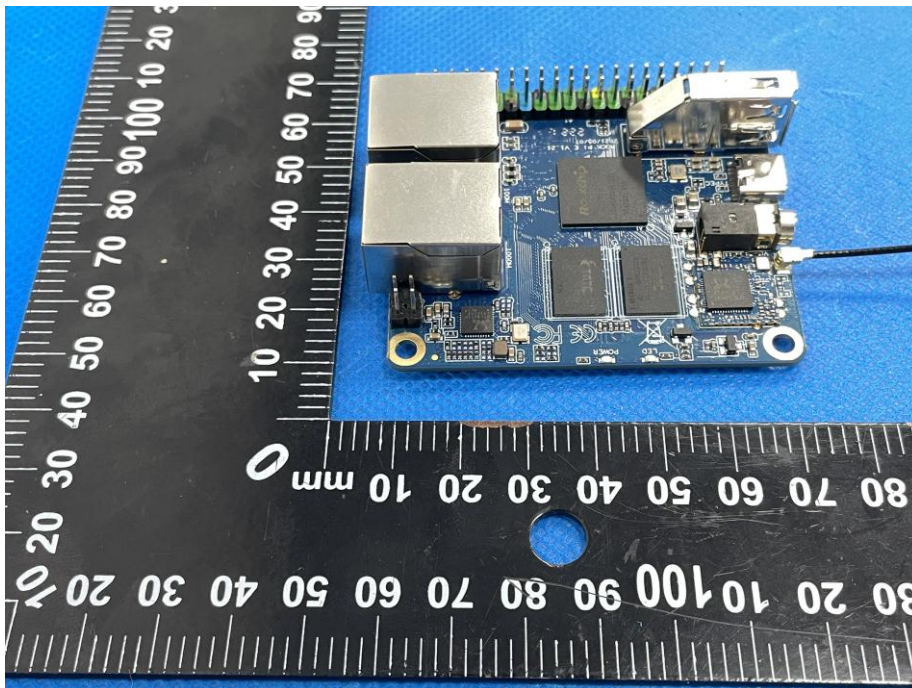




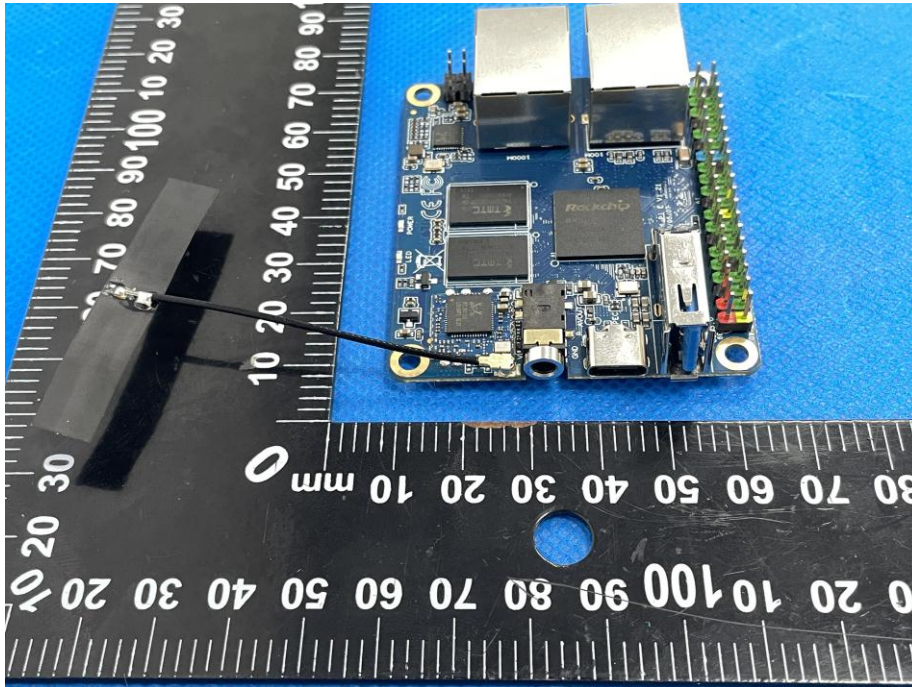
EUT Photo 3



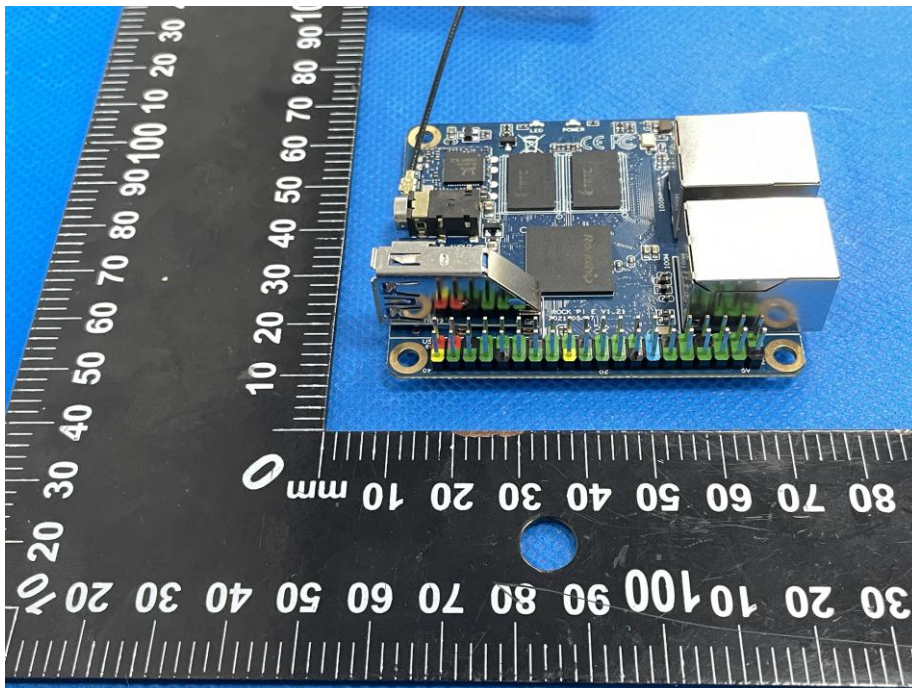
EUT Photo 4



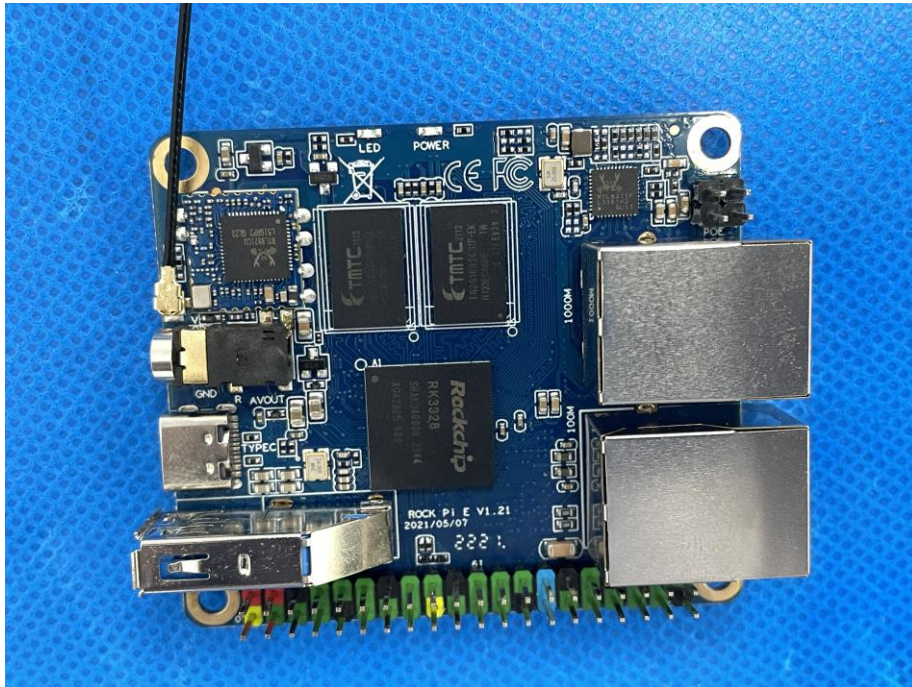
EUT Photo 5



EUT Photo 6



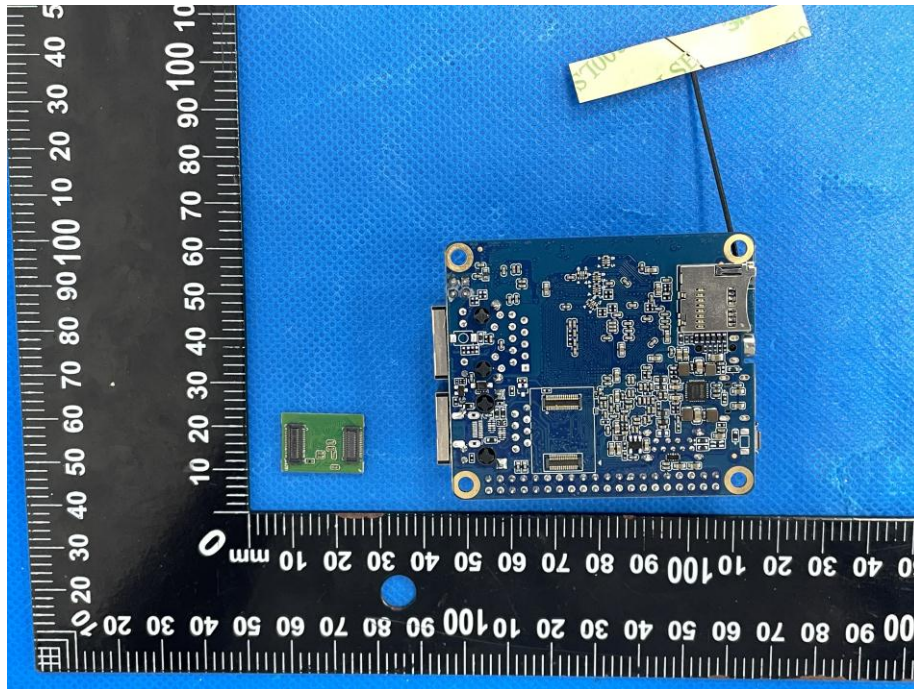
EUT Photo 7



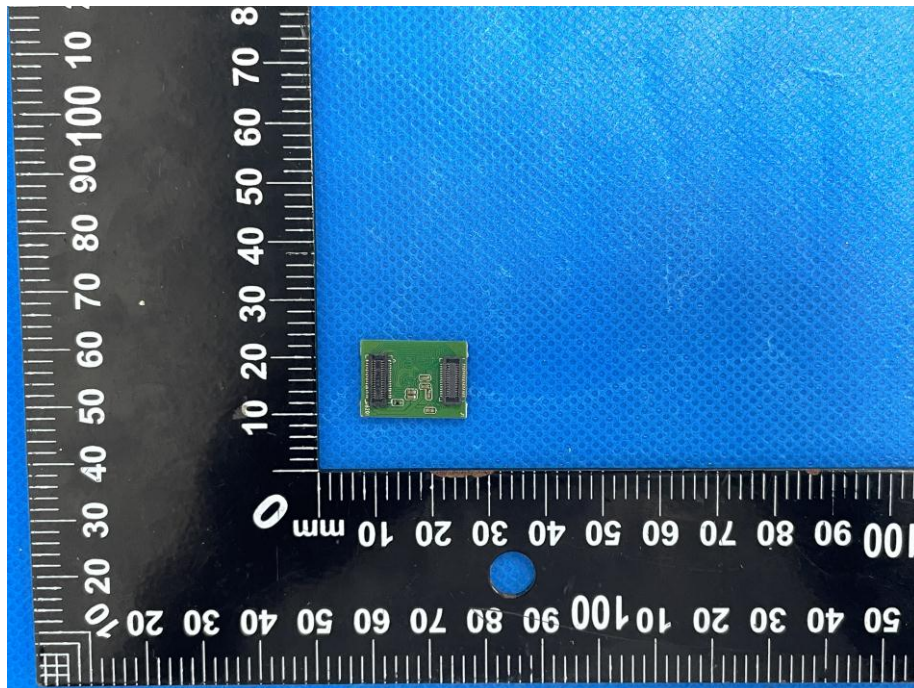
EUT Photo 8



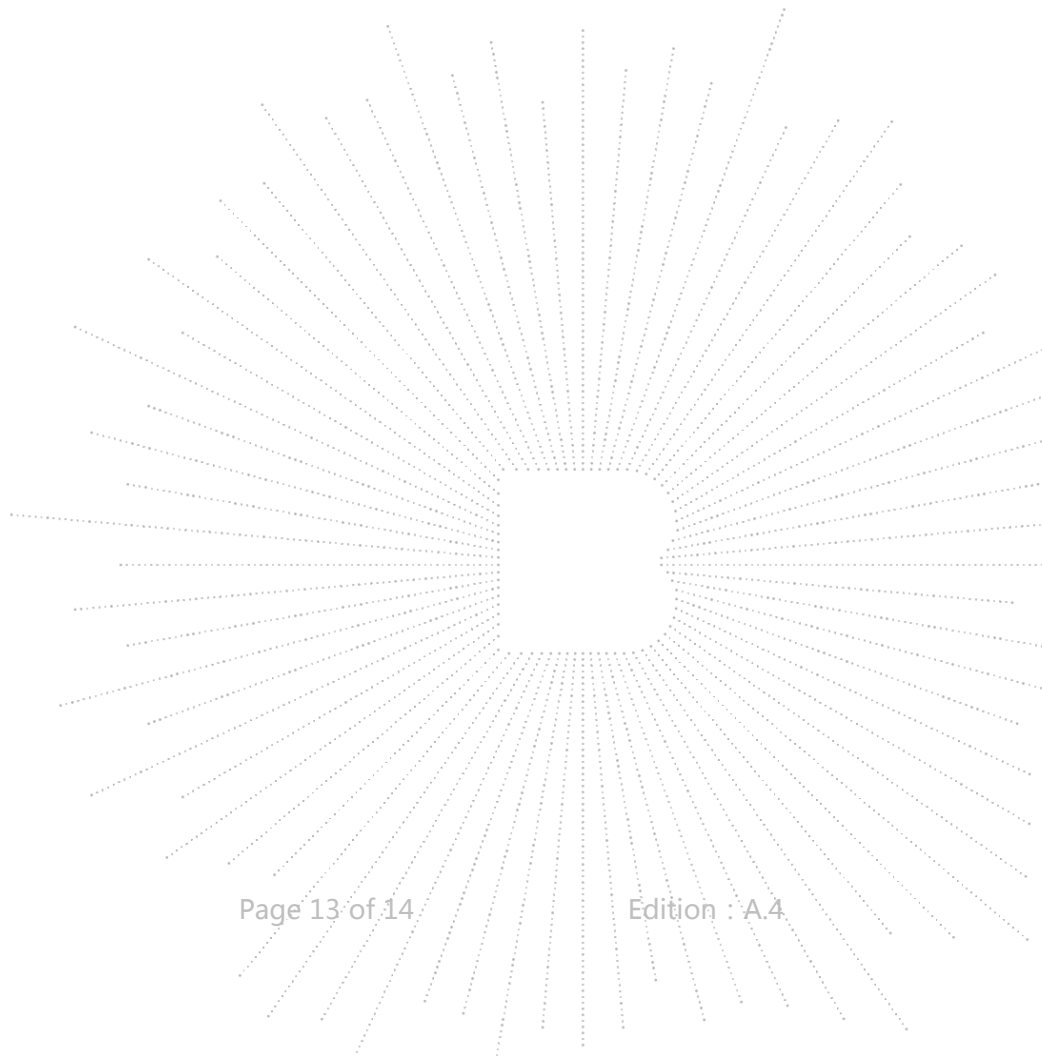
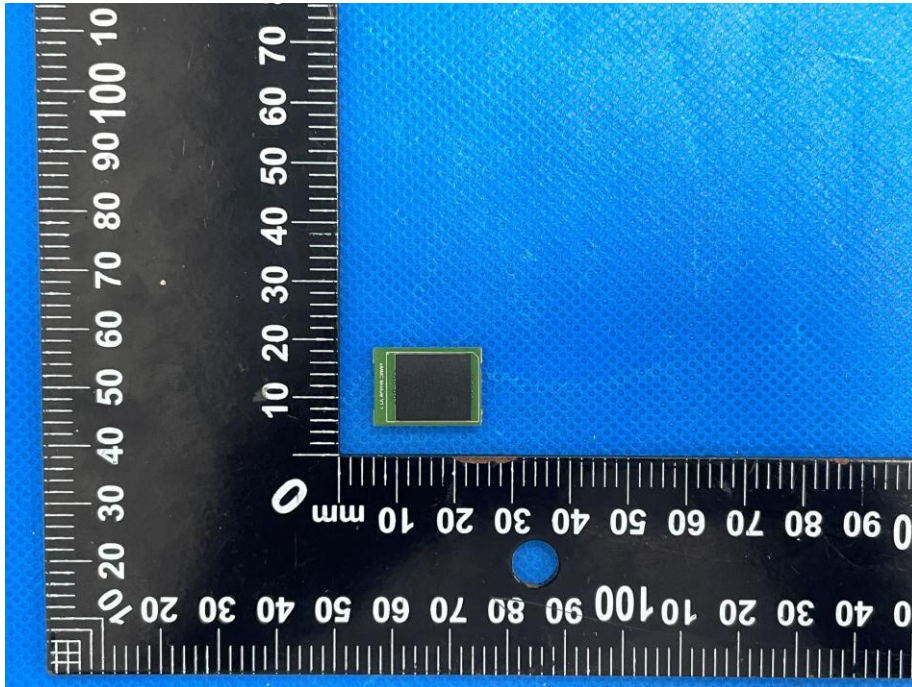
EUT Photo 9



EUT Photo 10



EUT Photo 11



## STATEMENT

- 1.The equipment lists are traceable to the national reference standards.
- 2.The test report can not be partially copied unless prior written approval is issued from our lab.
- 3.The test report is invalid without stamp of laboratory.
- 4.The test report is invalid without signature of person(s) testing and authorizing.
- 5.The test process and test result is only related to the Unit Under Test.
- 6.The quality system of our laboratory is in accordance with ISO/IEC17025.
- 7.If there is any objection to report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

Address:

1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Tangwei, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

TEL : 400-788-9558

P.C.: 518103

FAX : 0755-33229357

Website : <http://www.chnbctc.com>

E-Mail : [bctc@bctc-lab.com.cn](mailto:bctc@bctc-lab.com.cn)

\*\*\*\*\* END \*\*\*\*\*