

TEST REPORT

Report No.: BCTC2312909125-5E

Applicant: MINIX Technology Limited

Product Name: Mini PC

Test Model: RIC SJ64-4W

Tested Date: 2023-11-30 to 2023-12-04

Issued Date: 2023-12-06

Shenzhen BCTC Technology Co., Ltd.



Product Name: Mini PC

Trademark: MINIX

Model/Type reference: RIC SJ64-4W, RIC SJ64-8W, RIC SJ64-16W, RIC SJ64-4U,
RIC SJ64-8U, RIC SJ64-16U, RIC SJ64-MB, RIC SJ64xxxxxxxxx
(x can be 0-9, A-Z, a-z, "-", "_", "/" or blank for marketing purpose)

Prepared For: MINIX Technology Limited

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Kowloon, Hong Kong.

Manufacturer: MINIX Technology Limited

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Prepared By: Shenzhen BCTC Technology Co., Ltd.

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Sample Received Date: 2023-11-30

Sample tested Date: 2023-11-30 to 2023-12-04

Report No.: BCTC2312909125-5E

Test Standards: EN IEC 62311:2020

Test Results: PASS

Remark: This is Health test report.

Tested by:



Kang Chen / Project Handler

Approved by:



Sewen Guo/Reviewer

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1. Version

Report No.	Issue Date	Description	Approved
BCTC2312909125-5E	2023-12-06	Original	Valid

Remark *: these modules have been tested and comply with EN301893 requirements, According to technical characteristic, only one item need retest for this device. For all other items' test results please reference original module's test report.

Note*: On the basis of the original report (BCTC2304879606-3E), the application program of the product has been modified, adding WIFI 5G Band 1 and Band 4, the other remains unchanged, only need to carry out radiation detection, and other refer to the original report



2. Product Information and Test Setup

2.1 Product Information

Model/Type reference:	RIC SJ64-4W, RIC SJ64-8W, RIC SJ64-16W, RIC SJ64-4U, RIC SJ64-8U, RIC SJ64-16U, RIC SJ64-MB, RIC SJ64xxxxxxxx (x can be 0-9, A-Z, a-z, "-", "_", "/" or blank for marketing purpose)	
Model differences:	These models are identical in circuitry and electrical, mechanical and physical construction; Only the appearance is different; We chose RIC SJ64-4W as the final test prototype	
Antenna installation:	External antenna	
Antenna Gain:	BT	0 dBi
	WiFi(2.4GHz)	0 dBi
	WiFi (5.1GHz):	0 dBi
	WiFi (5.8GHz):	0 dBi
Ratings:	AC 100-240V~50/60Hz	
Adapter:	Mode: NB-65B19 Input: 100-240VAC,50/60Hz, 1.6A Max Output: 19V/3.42A	

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 (μ T)	Equivalent plane wave power density Seq (W/m ²)
0-1 Hz	-	3.2×10^4	4×10^4	-
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, E², H² and B² are to be averaged over any six-minute period.
3. For frequencies exceeding 10 GHz, Seq, E², H² and B² 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/m².

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) $\pi = 3.142$

WIFI

Antenna Gain (dBi)	Antenna Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (W)	Duty factor	Calculated RF Exposure (W/ m ²)	Limit (W/ m ²)
0	1	20	0.1	1.00	0.1989	10

BT

Antenna Gain (dBi)	Antenna Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (W)	Duty factor	Calculated RF Exposure (W/ m ²)	Limit (W/ m ²)
0	1	20	0.1	1.00	0.1989	10



5.1GHz WIFI:

Antenna Gain (dBi)	Antenna Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (W)	Duty factor	Calculated RF Exposure (W/ m ²)	Limit (W/ m ²)
0	1	23	0.1995	1.00	0.3969	10

5.8GHz WIFI:

Antenna Gain (dBi)	Antenna Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (W)	Duty factor	Calculated RF Exposure (W/ m ²)	Limit (W/ m ²)
0	1	14	0.0251	1.00	0.0500	10

CONCLUSION of simultaneous transmitter

BT and WiFi can transmit simultaneously, the formula of Calculated RF Exposure is:

$$\text{WIFI+BT} = 0.1989 + 0.3969 = 0.5958 \text{ W/ m}^2$$

This confirmed that the device comply with EN62311 RF Exposure limit.



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 the "special seal for inspection and testing".
4. The test report is invalid without the signature of the approver.
5. The test process and test result is only related to the Unit Under Test.
6. Sample information is provided by the client and the laboratory is not responsible for its authenticity.
7. The quality system of our laboratory is in accordance with ISO/IEC17025.
8. If there is any objection to this test report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

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