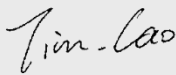
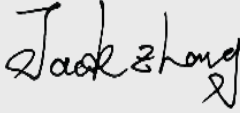


Test report No:
2440634R-RF-US-P20V01

SAR Exemption Evaluation Report

Product Name	AIROC Bluetooth LE Module
Trademark	
Model and /or type reference	CYW20829-P4TAI200, CYW20829-P4EPI200, CYW20829-P4EFI200
FCC ID	WAP829I20
Applicant's name / address	Cypress Semiconductor 198 Champion Ct, San Jose, California 95134, United States
Test method requested, standard	FCC 47CFR §2.1091
Verdict Summary	IN COMPLIANCE
Documented By (name / position & signature)	Tim Cao / Project Manager 
Approved by (name / position & signature)	Jack Zhang / Manager 
Date of issue	2024-07-08
Report Version	V1.0
Report template No	Template_FCC MPE-RF-V1.0

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COMPETENCES AND GUARANTEES

DEKRA is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

IMPORTANT: No parts of this report may be reproduced or quoted out of context, in any form or by any means, except in full, without the previous written permission of DEKRA.

GENERAL CONDITIONS

Test Location	No. 99, Hongye Road, Suzhou Industrial Park Suzhou, 215006, P.R. China
Date (receive sample)	Apr. 23, 2024
Date (start test)	May. 15, 2024
Date (finish test)	May. 25, 2024

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or Competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA.

ENVIRONMENTAL CONDITIONS

The climatic conditions during the tests are within the limits specified by the manufacturer for the operation of the EUT and the test equipment. The climatic conditions during the tests were within the following limits:

Ambient temperature	15°C - 35 °C
Relative Humidity air	30% - 60%

If explicitly required in the basic standard or applied product / product family standard the climatic values are recorded and documented separately in this test report.

POSSIBLE TEST CASE VERDICTS

Test case does not apply to test object	N/A
Test object does meet requirement	P (Pass) / PASS
Test object does not meet requirement	F (Fail) / FAIL
Not measured	N/M

ABBREVIATIONS

For the purposes of the present document, the following abbreviations apply:

EUT	: Equipment Under Test
QP	: Quasi-Peak
CAV	: CISPR Average
AV	: Average
CDN	: Coupling Decoupling Network
SAC	: Semi-Anechoic Chamber
OATS	: Open Area Test Site
BW	: Bandwidth
AM	: Amplitude Modulation
PM	: Pulse Modulation
HCP	: Horizontal Coupling Plane
VCP	: Vertical Coupling Plane
UN	: Nominal voltage
Tx	: Transmitter
Rx	: Receiver
N/A	: Not Applicable
N/M	: Not Measured

DOCUMENT HISTORY

Report No.	Version	Description	Issued Date
2440634R-RF-US-P20V01	V1.0	Initial issue of report.	2024-07-08

REMARKS AND COMMENTS

1. The equipment under test (EUT) does meet the essential requirements of the stated standard(s)/test(s).
2. These test results on the device are for the purpose of demonstrating Compliance with FCC 47CFR §2.1091.
3. The measurement result is considered in conformance with the requirement if it is within the prescribed limit, it is not necessary to account the uncertainty associated with the measurement result.
4. The test results presented in this report relate only to the object tested.
5. The test report shall not be reproduced without the written approval of DEKRA Testing and Certification (Suzhou) Co., Ltd.
6. This report will not be used for social proof function in China market.
7. DEKRA declines any responsibility with the following test data provided by customer that may affect the validity of result:

- Chapter 1.4 Antenna information.

1. RF Exposure Evaluation

1.1. Limits

According to § 1.1307(b)(3)(i)(B)

The available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold P_{th} (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by:

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

Where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right) \text{ and } f \text{ is in GHz;}$$

and

$$ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases}$$

d = the separation distance (cm);

Finally, when 10-g extremity SAR applies, SAR test exemption may be considered by applying a factor of 2.5 to the SAR-based exemption threshold.

1.2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

The temperature and related humidity: 18°C and 78% RH.

1.3. General Description of the Item(s)

Product Name	AIROC Bluetooth LE Module
Model No.....	CYW20829-P4TAI200, CYW20829-P4EPI200, CYW20829-P4EFI200
Trademark.....	
FCC ID.....	WAP829I20
SoftwareVersion	REV1.0
HardwareVersion.....	REV1.0
Operating temperature.....	-30°C to +85°C
Manufacturer	Cypress Semiconductor
Manufacturer address.....	198 Champion Ct, San Jose, California 95134, United States
Factory	FITTEC ELECTRONICS (Suzhou) CO., LTD.
Factory address.....	No. 29, Donfu Road, Loufeng East District, Suzhou Industrial Park, Suzhou, Jiangsu Province, P.R.China
Model difference	Three modules share the same design, the difference is antenna configuration, CYW20829-P4TAI200 is PCB antenna; CYW20829-P4EPI200 is RF pad which connect external antenna, CYW20829-P4EFI200 is RF connector which connect external antenna. CYW20829-P4EFI200 as the main test equipment, and the other 2 models verify power and RSE.

Wireless specification	Bluetooth (LE)					
Operating frequency range(s)	2402~2480MHz					
Type of Modulation	GFSK					
PHYS.....	☒	LE 1M	☒	LE 2M	☒	LE Coded S=2/8
Data Rate	☒	1Mbit/s	☒	2Mbit/s	☒	500/125 Kbit/s
Number of channels	40					

Rated power supply	Voltage and Frequency	
	☐	AC: 220 - 240 V, 50/60 Hz
	☐	AC: 100 - 240 Vac, 50/60 Hz
	☒	DC: 3.3 Vdc
	☐	Poe:
Mounting position	☐	Table top equipment
	☐	Wall/Ceiling mounted equipment
	☐	Floor standing equipment

	☐	Hand-held/Portable equipment
	☒	Other:

1.4. Antenna Information

Antenna Delivery	☒	1TX + 1RX		
	☐	2TX + 2RX		
	☐	Others:		
Antenna technology	☒	SISO		
	☐	MIMO	☐	CDD
			☐	Beam-forming
Antenna Type	☒	External	☒	Dipole
			☐	Sectorized
	☒	Internal	☐	Ceramic Chip
			☐	PIFA
			☒	PCB
			☐	Others.....
Antenna Gain	External Antenna		Internal Antenna	
	2.0 dBi		-0.5 dBi	

Note 1: The data shown in report was based on External Antenna which gain is higher.

Note 2: The antenna information for the EUT in clause 1.4 are provided and confirmed by the client.

1.5. Test Result of RF Exposure Evaluation

Mode	Exposure Condition	Pmax (dBm)	EIRP (mW)	ERP (mW)	Distance (mm)	f(GHz)	Pth (mW)	RF Exposure Test
Bluetooth	Body	20.95	124.45	75.86	200	2.480	3060	Exemption

Conclusion: Exemption from RF Exposure Testing.

_____ The End _____