



RF EXPOSURE REPORT

For

2.4GHz Wi-Fi/ Bluetooth module

MODEL NUMBER: ESP32-C3-WIZ2012

PROJECT NUMBER: 4789839465

REPORT NUMBER: 4789839465-3

FCC ID: 2AGBW-WIZ2012

IC: 20812-WIZ2012

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Prepared for

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V0	05/14/2021	Initial Issue	



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1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name: Signify (China) Investment Co., Ltd
Address: #204, Block 2, 690 Bibo Road, Zhang Jiang High-Tech Park, Shanghai, China

Manufacturer Information

Company Name: Signify (China) Investment Co., Ltd
Address: #204, Block 2, 690 Bibo Road, Zhang Jiang High-Tech Park, Shanghai, China

EUT Description

Product Name: 2.4GHz Wi-Fi/ Bluetooth module
Model Name: ESP32-C3-WIZ2012
Sample Number: 3686975
Data of Receipt Sample: Mar. 08, 2021
Date Tested: Mar. 09, 2021~ May. 13, 2021

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC Guidelines for Human Exposure IEEE C95.1	Complies

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with KDB 447498 D01 General RF Exposure Guidance v06 and FCC Guidelines for Human Exposure IEEE C95.1.

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	<p>A2LA (Certificate No.: 4829.01) UL-CCIC COMPANY LIMITED has been assessed and proved to be in compliance with A2LA.</p> <p>FCC (FCC Designation No.: CN1247) UL-CCIC COMPANY LIMITED has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules.</p> <p>IC (IC Designation No.: 25056) UL-CCIC COMPANY LIMITED has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules.</p>
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Note 1: All tests measurement facilities use to collect the measurement data are located at No. 2, Chengwan Road, Suzhou Industrial Park, Suzhou 215122, People's Republic of China

Note 2: For below 30MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. These measurements below 30MHz had been correlated to measurements performed on an OFS.

Note 3: The test anechoic chamber in UL-CCIC COMPANY LIMITED had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.



4. REQUIREMENT

LIMIT

Limits for General Population/Uncontrolled Exposure

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
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/150	30
1500-100,000	--	--	1.0	30

Note 1: f = frequency in MHz, * means Plane-wave equivalent power density

Note 2: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Note 3: The limit value 1.0mW/cm² is available for this EUT.

MPE CALCULATION METHOD

$$S = PG / (4\pi R^2)$$

where: S = power density (in appropriate units, e.g. mW/ cm²)

P = power input to the antenna (in appropriate units, e.g., mW) (the measured power value refer to the tune-up document)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)



CALCULATED RESULTS

Radio Frequency Radiation Exposure Evaluation

WIFI (Worst case)							
Mode	Tune-up Power(P)		Antenna Gain		Power Density	Limit	Test Result
11B	(dBm)	(mW)	(dBi)	(Numeric)	(mW/cm ²)	(mW/cm ²)	--
	20.5	112.20	5.19	3.30	0.0738	1	Complies

Note: The calculated distance is 20cm.

BLE (Worst case)							
Mode	Tune-up Power(P)		Antenna Gain		Power Density	Limit	Test Result
BLE	(dBm)	(mW)	(dBi)	(Numeric)	(mW/cm ²)	(mW/cm ²)	--
	4	2.51	5.19	3.30	0.002	1	Complies

Note: The calculated distance is 20cm.

END OF REPORT