



SAR Exemption Evaluation Report

Product Name	•	EZ-BT Module			
Model No.	:	CYBT-243053-02			
FCC ID		WAP3053			

Applicant : Cypress Semiconductor Address : 198 Champion Ct, San Jose, California 95134 United States

Date of Receipt	:	Jul. 04, 2019
Issued Date	:	Aug. 08, 2019
Report No.	:	1972038R-RF-US-P20V02
Report Version	:	V1.0

The test results presented in this report relate only to the object tested.

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, unless the specification, standard or customer have special requirements

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Test Report Certification

Issued Date : Aug. 08, 2019 Report No. : 1972038R-RF-US-P20V02

		DEKRA
Product Name		EZ-BT Module
Applicant	:	Cypress Semiconductor
Address	:	198 Champion Ct, San Jose, California 95134 Unite States
Manufacturer	:	Cypress Semiconductor
Address	:	198 Champion Ct, San Jose, California 95134 United States
Factory	:	Wujiang Sigmatron Electronics Co., Ltd
Address	:	386 Huahong Rd, Wujiang, Suzhou, Jiangsu, China
Model No.	:	CYBT-243053-02
FCC ID	:	WAP3053
EUT Voltage	:	DC 2.6-3.6 V
Test Voltage	:	DC 3.3V
Applicable Standard	:	KDB 447498 D01v06
Test Result	:	Complied
Performed Location	:	DEKRA Testing & Certification (Suzhou) Co., Ltd. No.99 Hongye Rd., Suzhou Industrial Park, Suzhou, 215006, Jiangsu, China TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098 FCC Designation Number: CN1199
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1. RF Exposure Evaluation

1.1. Limits

According to KDB 447498 D01 General RF Exposure Guidance v06

4.3.1 Standalone SAR test exclusion considerations

1) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances \leq 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] \cdot [f(GHz)] \leq 3.0 for 1-g SAR and \leq 7.5 for 10-g extremity SAR,where

f(GHz) is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation

The result is rounded to one decimal place for comparison

3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum test separation distance is \leq 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

2) At 100 MHz to 6 GHz and for test separation distances > 50 mm, the SAR test exclusion threshold is determined according to the following, and as illustrated in Appendix B:

a) [Power allowed at numeric threshold for 50 mm in step 1) + (test separation distance - 50 mm) \cdot (f(MHz)/150)] mW, at 100 MHz to 1500 MHz

b) [Power allowed at numeric threshold for 50 mm in step 1) + (test separation distance - 50 mm) \cdot 10] mW at > 1500 MHz and ≤ 6 GHz

3) The 1-g and 10-g SAR test exclusion thresholds for below 100 MHz at test separation distances ≤ 50 mm are determined by:

a) The power threshold at the corresponding test separation distance at 100 MHz in step 2) is

multiplied by [1 + log(100/f(MHz))] for test separation distances > 50 mm and < 200 mm

b) The power threshold determined by the equation in a) for 50 mm and 100 MHz is multiplied by ½ for test separation distances ≤ 50 mm

c) SAR measurement procedures are not established below 100 MHz. When SAR test exclusion cannot be applied, a KDB inquiry is required to determine SAR evaluation requirements for any test results to be acceptable. Note: when the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.



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 and 78% RH.

1.3. Test Result of RF Exposure Evaluation

Product	:	EZ-BT Module				
Test Item	:	RF Exposure Evaluation				
Test Site	:	AC-6				

• Antenna Information

Antenna manufacturer	N/A							
Antenna Delivery	\boxtimes	1*TX+1*R	X		2*TX+2*RX		3*TX+3*RX	
Antenna technology	\boxtimes	SISO						
		MIMO		Basic				
				CDD				
				Beam-forming				
Antenna Type		External		Dipole				
	\boxtimes	Internal		PIFA				
			\boxtimes	РСВ				
				Ceramic Chip Antenna				
				Stamping Antenna				
				Metal plate type F antenna				
				Monopole antenna				
Antenna Gain	-0.5dBi							



Based on The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances \leq 50 mm and the formula below:

Estimated SAR=
$$\sqrt{f(GHz)} * \frac{(Max Power of channel, mW)}{Min. Separation Distance, mm}$$

The tune-up power is 0.5dB, so the maximum conducted power we used to calculate RF exposure is 10.66dBm.

	Dmax	Dmax	Distanco			Stand-alone		
Dand	Exposure	FIIIdX	гшах	Distance	f(GHz)	calculation	Test	
Бапо	Condition	(dDm)	(7014)	(mm)		result	exclusion	SAR TESI
			(mw)				threshold	
BT	Body	10.66	11.64	7	2.440	2.60	3.00	No

Conclusion: 2.4GHz SAR was not required.

—— The End