



中国认可  
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检测  
TESTING  
CNAS L5313



# SAR Exemption Evaluation Report

Product Name : EZ-BT WICED Module

Model No. : CYBT-353027-02

FCC ID : WAP3027

Applicant : Cypress Semiconductor

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

Date of Receipt : Jan. 31, 2018

Test Date : Feb. 01, 2018~ Apr. 19, 2018

Issued Date : Apr. 20, 2018

Report No. : 1812155R-RF-US-P20V02

Report Version : V1.0

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by CNAS, TAF any agency of the government.

The test report shall not be reproduced without the written approval of DEKRA Testing & Certification (Suzhou) Co., Ltd.


# Test Report Certification

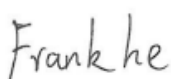
Issued Date : Apr. 20, 2018


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Applicant : Cypress Semiconductor  
Address : 198 Champion Ct, San Jose, California 95134  
United States  
Manufacturer : Cypress Semiconductor  
Address : 198 Champion Ct, San Jose, California 95134  
United States  
Model No. : CYBT-353027-02  
FCC ID : WAP3027  
EUT Voltage : DC 2.3-3.6V  
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 Registration Number: 800392;

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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:

$$\left[ \frac{\text{max. power of channel, including tune-up tolerance, mW}}{\text{min. test separation distance, mm}} \right] \cdot [f(\text{GHz})]$$

$\leq 3.0$  for 1-g SAR and  $\leq 7.5$  for 10-g extremity SAR, where

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

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

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

a) The power threshold at the corresponding test separation distance at 100 MHz in step 2) is multiplied by  $[1 + \log(100/f(\text{MHz}))]$  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  $\frac{1}{2}$  for test separation distances  $\leq 50$  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 WICED Module
Test Item	:	RF Exposure Evaluation
Test Site	:	AC-6

● Antenna Gain:

Model No.	N/A		
Antenna manufacturer	N/A		
Antenna Delivery	<input checked="" type="checkbox"/>	1*TX+1*RX	<input type="checkbox"/> 2*TX+2*RX <input type="checkbox"/> 3*TX+3*RX
Antenna technology	<input checked="" type="checkbox"/>	SISO	
	<input type="checkbox"/>	MIMO	<input type="checkbox"/> Basic
			<input type="checkbox"/> CDD
			<input type="checkbox"/> Sectorized
			<input type="checkbox"/> Beam-forming
Antenna Type	<input type="checkbox"/>	External	<input type="checkbox"/> Dipole
			<input type="checkbox"/> Sectorized
	<input checked="" type="checkbox"/>	Internal	<input type="checkbox"/> PIFA
			<input type="checkbox"/> PCB
			<input checked="" type="checkbox"/> Ceramic Chip Antenna
			<input type="checkbox"/> Monopole Antenna
Antenna Technology	Ant Gain (dBi)		
<input checked="" type="checkbox"/> SISO	-1		

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

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

Maximum conducted tune-up power is 9.9dBm for BT3.0, 7.0dBm for BLE:

Band	Exposure Condition	Pmax	Pmax	Distance	f(GHz)	calculation result	Stand-alone Test exclusion threshold	SAR Test
		(dBm)	(mw)	(mm)				
BT3.0	Body	9.9	9.772	6	2.441	2.545	3.00	No
BLE	Body	7.0	5.012	6	2.44	1.305	3.00	No

Conclusion: 2.4GHz SAR was not required.

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