RF EXPOSURE EVALUATION REPORT

FCC ID	:	**WAP-CYSBSYS-RP01**
Equipment	:	**Wifi 802.11b/g/n/ac + BT/BLE**
Brand Name	:	**Cypress**
Model Name	:	**CYSBSYS-RP01**
Applicant	:	**Cypress Semiconductor, Inc. 198 Champion Court San Jose, CA 95134**
Manufacturer	:	**Cypress Semiconductor, Inc. 198 Champion Court San Jose, CA 95134**
Standard	:	**47 CFR Part 2.1091**

We, SPORTON INTERNATIONAL INC has been evaluated this product in accordance with 47 CFR Part 2.1091 and it complies with applicable limit.

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC evaluation.

The results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full

Cona Huang

Approved by: Cona Huang / Deputy Manager

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History of this test report

Report No.	Version	Description	Issued Date
FA201216001	Rev. 01	Initial issue of report	Mar. 02, 2021

1. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	Wifi 802.11b/g/n/ac + BT/BLE
Brand Name	Cypress
Model Name	CYSBSYS-RP01
FCC ID	WAP-CYSBSYS-RP01
Wireless Technology and Frequency Range	WLAN 2.4GHz Band: 2400 MHz ~ 2483.5 MHz WLAN 5.2GHz Band: 5150 MHz ~ 5250 MHz WLAN 5.3GHz Band: 5250 MHz ~ 5350 MHz WLAN 5.5GHz Band: 5500 MHz ~ 5720 MHz WLAN 5.8GHz Band: 5725 MHz ~ 5825 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz
Mode	WLAN: 802.11a/n/ac HT20/VHT20 Bluetooth BR/EDR/LE
HW Version	4.1
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

Reviewed by: Jason Wang

Report Producer: Daisy Peng

2. Maximum RF average output power among production units

Mode	Average power (dBm)				
	BR / EDR			LE	
	1Mbps	2Mbps	3Mbps	1Mbps	2Mbps
Tune-up Limit	10.5	7.5	7.5	7.5	7.5

	Mode	Channel	Frequency (MHz)	Tune-Up Limit
2.4GHz WLAN	802.11b 1Mbps	1	2412	19.00
		6	2437	19.00
		11	2462	19.00
	802.11g 6Mbps	1	2412	18.00
		6	2437	18.00
		11	2462	17.00
	802.11n-HT20 MCS0	1	2412	18.00
		6	2437	18.00
		11	2462	17.00

	Mode	Channel	Frequency (MHz)	Tune-Up Limit
5.2 GHz WLAN	802.11a 6Mbps	36	5180	17.50
		44	5220	18.00
		48	5240	18.00
	802.11n-HT20 MCS0	36	5180	17.50
		44	5220	18.00
		48	5240	18.00
	802.11ac-VHT20 MCS8	36	5180	17.50
		44	5220	18.00
		48	5240	18.00

	Mode	Channel	Frequency (MHz)	Tune-Up Limit
5.3 GHz WLAN	802.11a 6Mbps	52	5260	18.00
		60	5300	18.00
		64	5320	18.00
	802.11n-HT20 MCS0	52	5260	18.00
		60	5300	18.00
		64	5320	17.50
	802.11ac-VHT20 MCS8	52	5260	18.00
		60	5300	18.00
		64	5320	17.50

	Mode	Channel	Frequency (MHz)	Tune-Up Limit
5.5 GHz WLAN	802.11a 6Mbps	100	5500	18.00
		116	5580	18.00
		140	5700	18.00
		144	5720	18.00
	802.11n-HT20 MCS0	100	5500	17.50
		116	5580	18.00
		140	5700	17.50
		144	5720	18.00
	802.11ac-VHT20 MCS8	100	5500	17.50
		116	5580	18.00
		140	5700	17.50
		144	5720	18.00

	Mode	Channel	Frequency (MHz)	Tune-Up Limit
5.8 GHz WLAN	802.11a 6Mbps	149	5745	18.00
		157	5785	18.00
		165	5825	18.00
	802.11n-HT20 MCS0	149	5745	18.00
		157	5785	18.00
		165	5825	18.00
	802.11ac-VHT20 MCS8	149	5745	18.00
		157	5785	18.00
		165	5825	18.00

3. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f2)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f2)	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$S = \frac{PG}{4\pi R^2}$$

Where:
S = Power Density
P = Output Power at Antenna Terminals
G = Gain of Transmit Antenna (linear gain)
R = Distance from Transmitting Antenna

4. Radio Frequency Radiation Exposure Evaluation

4.1. Standalone Power Density Calculation

Band	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)
WLAN2.4GHz Band	0.8	19.0	19.8	0.10	95.50	0.019	1.000
WLAN5GHz Band	1.0	18.0	19.0	0.08	79.43	0.016	1.000
Bluetooth	0.8	10.5	11.3	0.01	13.49	0.003	1.000

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.