RF Exposure Evaluation Report

Product	:	JSOM CONNECT
Trade mark	:	JABIL
Model/Type reference	:	CONNECT0402, CONNECT0404, CONNECT0408, CONNECT0416
Serial Number	:	N/A
Report Number	:	EED32O81077803
FCC ID	:	2AXNJ-JSOM-CN2
Date of Issue	:	Aug. 17, 2022
Test Standards	:	47 CFR Part 1.1307 47 CFR Part 2.1093 KDB447498D01 General RF Exposure Guidance v06
Test result	:	PASS

Prepared for:

Jabil

10560 Dr M.L.K. Jr St N, St. Petersburg, Florida, United States

Prepared by:

Centre Testing International Group Co., Ltd.
Hongwei Industrial Zone, Bao'an 70 District,
Shenzhen, Guangdong, China
TEL: +86-755-3368 3668
FAX: +86-755-3368 3385

Compiled by:	Frazer Li	Reviewed by:	Tom Chen
	Frazer Li		Tom Chen
Approved by:	Aaron Ma	Date:	Aug. 17, 2022
	Aaron Ma		

Check No.: 3935190722

2 Version

Version No.	Date	Description
00	Aug. 17, 2022	Original

3 Contents

4 General Information

4.1 Client Information

Applicant:	Jabil
Address of Applicant:	10560 Dr M.L.K. Jr St N, St. Petersburg, Florida, United States
Manufacturer:	Jabil
Address of Manufacturer:	10560 Dr M.L.K. Jr St N, St. Petersburg, Florida, United States
Factory:	Jabil Precision Industry (Guangzhou) CO., LTD.
Address of Factory:	5th floor, Building C, No. 1199, Hulin Road, Huangpu District, Guangzhou, GuangDong (510700), China

4.2 General Description of EUT

Product Name:	JSOM CONNECT
Model No.:	CONNECT0402, CONNECT0404, CONNECT0408, CONNECT0416
Test Model No.:	CONNECT0402
Trade mark:	JABIL
EUT Supports Radios application:	Bluetooth 5.0 single mode: 2402-2480MHz 2.4GHz Wi-Fi: IEEE 802.11b/g/n(HT20): 2412MHz to 2472MHz IEEE 802.11n(HT40): 2422MHz to 2462MHz

4.3 Product Specification subjective to this standard

Frequency Range:	Bluetooth : 2402-2480MHz 2.4GHz Wi-Fi: IEEE 802.11b/g/n(HT20): 2412MHz to 2472MHz IEEE 802.11n(HT40): 2422MHz to 2462MHz			
Modulation Type:	BLE: GFSK IEEE for 802.11b:DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g:OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20/HT40): OFDM (64QAM, 16QAM,QPSK,BPSK)			
Test Power Grade:	Default			
Test Software of EUT:	Bluetooth LE:RTLBTAPP.exe; 2.4G WiFi:UI_mptool.exe			
Antenna Type (Bluetooth):	PCB antenna	PCB	Flex	FPC Self-adhesive
Antenna Gain (Bluetooth):	4.97dBi	3.45dBi	4.03dBi	2.17dBi
Note:Only the maximum antenna gain was tested.				

Antenna Type (Wi-Fi):	PCB antenna	PCB	Flex	FPC Self-adhesive
Antenna Gain (Wi-Fi):	4.97dBi	3.45dBi	4.03dBi	2.17dBi
Note:Only the maximum antenna gain was tested.				
Function (Wi-Fi):	☒SISO ☐2x2 MIMO ☐3x3 MIMO ☐4x4MIMO			
Power Supply:	DC 3.3V			
Max Conducted Peak Output Power:	BLE:2.09dBm, 2.4G WIFI:22.70dBm			
	The Max Conducted Peak Output Power data refer to the report EED32O81077801,EED32O81077802			
Sample Received Date:	Jul.19,2022			
Sample tested Date:	Jul.19,2022 to Aug. 08, 2022			

Remark:

Company Name and Address shown on Report, the sample(s) and sample Information were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.

Model No.: CONNECT0402, CONNECT0404, CONNECT0408, CONNECT0416
Only the model CONNECT0402 was tested,their electrical circuit design, layout, components used and internal wiring are identical.Only the flash memory size is different.

4.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd
Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China
Telephone: +86 (0) 755 33683668 Fax:+86 (0) 755 33683385
No tests were sub-contracted.
FCC Designation No.: CN1164

4.5 Deviation from Standards

None.

4.6 Abnormalities from Standard Conditions

None.

4.7 Other Information Requested by the Customer

None.

5 RF Exposure Evaluation

5.1 RF Exposure Compliance Requirement

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{377}$

Where E = Field strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{377 d^2}$$

Changing to units of mW and cm, using:

P (mW) = P (W) / 1000 and

d (cm) = d(m) / 100

Yields

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2}$$ **Equation 1**

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm^2

5.2 Maximum Permissible Exposure

Substituting the MPE safe distance using d = 20 cm into Equation 1:

$$S = 0.000199 \times P \times G$$

Where P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm^2

1)Tune up power:

①BLE:

Mode	Frequency (MHz)	Conducted Power (dBm)	Tune up tolerance	Max tune up power(dBm)	Max tune up power(mW)
BLE 1M	2402	0.34	-0.50±1	0.50	1.122
BLE 1M	2440	2.02	1.50±1	2.50	1.778
BLE 1M	2480	-0.25	-1.00±1	0	1.000
BLE 2M	2402	0.29	-0.50±1	0.50	1.122
BLE 2M	2440	2.09	1.50±1	2.50	1.778
BLE 2M	2480	-0.26	0±1	0	1.000

②2.4G WiFi:

Mode	Frequency (MHz)	Conducted Power (dBm)	Tune up tolerance	Max tune up power(dBm)	Max tune up power(mW)
b	2412	18.92	18.00±1	19.00	79.433
b	2437	18.60	18.00±1	19.00	79.433
b	2462	14.41	13.50±1	14.50	28.184
b	2467	16.66	16.00±1	17.00	50.119
b	2472	16.23	15.50±1	16.50	44.668
g	2412	20.09	19.50±1	20.50	112.202
g	2437	22.70	22.00±1	23.00	199.526
g	2462	13.27	12.50±1	13.50	22.387
g	2467	15.78	15.00±1	16.00	39.811
g	2472	16.01	15.50±1	16.50	44.668
n20	2412	19.75	19.00±1	20.00	100.000
n20	2437	22.27	21.50±1	22.50	177.828
n20	2462	13.62	13.00±1	14.00	25.119

n20	2467	16.23	15.50±1	16.50	44.668
n20	2472	16.27	15.50±1	16.50	44.668
n40	2422	19.60	19.00±1	20.00	100.000
n40	2437	21.93	21.00±1	22.00	158.489
n40	2452	17.77	17.00±1	18.00	63.096
n40	2457	20.38	19.50±1	20.50	112.202
n40	2462	20.32	19.50±1	20.50	112.202

Note :1.The max tune up power of BLE is 1.778mW,and 2.4G WiFi is 199.526mW.

2.The Max Conducted Peak Output Power data refer to the report EED32O81077801,EED32O81077802

2)calculation:

BLE:

P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
1.778	3.141	20	0.0011	1

2.4G WIFI:

P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
199.526	3.141	20	0.1247	1

Note:BLE and 2.4G WiFi cannot work at the same time.

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.

*** End of Report ***