RF EXPOSURE REPORT

Applicant:	Cognito Health Inc. 9F-1, No. 3, Yuanqu St. Nangang Dist., Taipei, 115 TAIWAN
Product Name:	Control Box
Brand Name:	Cognito Health
Model No.:	BA6E-31, BA6E-32
Model Difference:	BA6E-31 with LTE/GNSS module, BA6E-32 without LTE/GNSS module.
Report Number:	ES/2022/40001
FCC ID	2A5HF-BA6EN
Issue Date:	Apr. 26, 2022
Date of EUT Received:	Dec. 22, 2021

Approved By John Yeh
John Yeh

We hereby certify that:

The above equipment was evaluate by SGS Taiwan Ltd. The evaluation in this report is in compliance with FCC Rule Part §2.1091.

The results of this report relate only to the sample identified in this report.

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Revision History

Report Number	Revision	Description	Issue Date	Revised By	Remark
ES/2022/40001	00	Original.	Apr. 15, 2022	Ruby Ou	*
ES/2022/40001	01	Revised the power density calculation.	Apr. 26, 2022	Ruby Ou	*

Note:

1、 The remark "*" indicates modification of the report upon requests from certification body.

2、 Variant information of model numbers is provided by the applicant, test results of this report are applicable to the sample EUT(s) received.

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1 DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

1.1 Product Description

Product Name:	Control Box
Brand Name:	Cognito Health
Model No.:	BA6E-31, BA6E-32
Model Difference:	BA6E-31 with LTE/GNSS module, BA6E-32 without LTE/GNSS module.
Hardware Version:	N/A
Firmware Version:	N/A
Power Supply:	12Vdc from AC/DC Adapter

1.2 Evaluation site

Laboratory	Site Address		FCC Designation number	ISED Company Number	CAB Identifier
SGS Taiwan Ltd. Central RF Lab. (TAF code 3702)	☐	No. 134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, 24803, Taiwan.	TW0027	4620A	TW3702
	☒	No. 2, Keji 1st Rd., Guishan Township, Taoyuan County, 333 Taiwan.	TW0028	4620E	
	☐	1F, No. 8, Alley 15, Lane 120, Sec. 1, Nei Hu Road, Neihu District, Taipei City, 222 Taiwan.	TW0029	23862	

1.3 Antenna Information:

1.3.1 BT / WLAN 2.4GHz

Antenna Type	Supplier	Antenna Part No.	Freq. (MHz)	Peak Antenna Gain (dBi)
PIFA	ARISTOTLE	RFA-25-JP189-4B-120	2.4GHz	**1.87**

1.3.2 WLAN 5GHz

Antenna Type	Supplier	Antenna Part No.	Frequency (MHz)	Peak Antenna Gain (dBi)	Worst Antenna Gain
PIFA	ARISTOTLE	RFA-25-JP189-4B-120	5150~5350	**2.81**	
			5470~5725	**3.74**	V
			5725~5850	**3.26**	

1.3.3 WWAN

Antenna Type	Antenna Part No.
PCB	FP-GL01-11

Operating Frequency (MHz)				Ant 0 Peak Gain (dBi)
LTE-Band 2	1850	~	1910	4.3
LTE-Band 4	1710	~	1755	4.3

Note: Antenna information is provided by the applicant.

1.4 Rated Power

1.4.1 WWAN:

Operating Frequency (MHz)				Max. Output Power (dBm)	Antenna Gain (dBi)	EIRP / ERP (dBm)	FCC Operation Distance (cm)	FCC Power Density (mW/cm^2)	FCC Limit (mW/cm^2)	FCC Density / Limit	FCC Worst Case
LTE-Band 2	1850	~	1910	22.00	4.30	26.30	20	0.08	1.00	0.08	
LTE-Band 4	1710	~	1755	23.00	4.30	27.30	20	0.11	1.00	0.11	V

2 FCC MAXIMUM PERMISSIBLE EXPOSURE (MPE)

2.1 FCC Standard Applicable

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

This is a Mobile device, the MPE is required.

According to §1.1310 and §2.1091 RF exposure is calculated.

Limits for Maximum Permissive Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time (minute)
Limits for General Population/Uncontrolled Exposure				
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/1500	30
1500-100000	/	/	1.0	30

f = frequency in MHz

* = Plane-wave equipment power density

Prediction of MPE limit at a given distance

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

Where: S = Power density

P = Power input to antenna

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

2.2 Power Density Calculation (Worst Case)

FCC Standalone MPE

Operation Mode	Evaluation Frequency (MHz)	Operation Distance (cm)	Max.Output Power Include Tolerance (dBm)	Antenna Gain (dBi)	Max. EIRP (mW)	Power Density (PD) (mW/cm^2)	Limit (mW/cm^2)	Pass / Fail	Power Density / Limit	Collocated MPE
NFC	13.56	20	N/A	N/A	0.0000031	0.0000000006	0.979	Pass	0.0000000006	V
WLAN 2.4G	2437.00	20	24.15	1.87	399.94	0.080	1.000	Pass	0.080	V
WLAN 5G	5745.00	20	24.89	3.74	729.46	0.145	1.000	Pass	0.145	V
LTE-Band 2	1910.00	20	22	4.30	426.58	0.085	1.000	Pass	0.085	
LTE-Band 4	1755.00	20	23	4.30	537.03	0.107	1.000	Pass	0.107	V

Note: For conservativeness, the lowest uplink frequency of each band is used to determine the MPE limit of that band.

2.3 Collocated Power Density Calculation

FCC Collocated MPE

Operation Mode	Power Density / Limit	Σ (Power Density / Limit)
NFC	0.0000000006	0.332
WLAN 2.4G	0.080	
WLAN 5G	0.145	
LTE-Band 4	0.107	

Note:

1. Σ(Power Density / Limit): This is a summation of [(Power Density for each transmitter/antenna included in the simultaneous transmission) / (corresponding MPE limit)].

2. Considering the collocated transmitters, the aggregated (Power Density /limit) is smaller than 1, and MPE of collocated transmitters is compliant

~ End of Report ~