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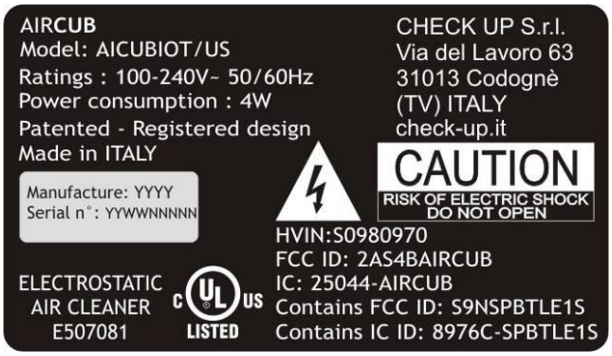
ASSESSMENT REPORT
No. PE18-0032074-01

performed in accordance with

FCC Rules: Code of Federal Regulations (CFR) no. 47
Part 15 Subpart C § 1.1307(b)(1)

PRODUCT	AIRCUB - 13.56 MHz and Bluetooth Low Energy modules integrated
MODEL(s) TESTED	AICUBIOT/US
FCC ID	2AS4BAIRCUB
TRADE MARK(s)	

APPLICANT	CHECK UP S.r.l – Via del Lavoro 63 – 21013 Codognè (TV)

ested by	Alessandro Macrì *[Laboratory technician]*	
Approved by	Giovanni Di Turi *[Laboratory manager]*	

Revision Sheet

Release No.	Date	Revision Description
Rev. 0	2019-07-01	First edition Digital signed - PE18-0032074-01_TR_FFC MPE fixed device - check-up_AICUBIOT

1. GENERAL DATA

SAMPLE		
Samples received on	**2019-04-09**	**(Item(s) sampled and sent by applicant)**
IMQ reference samples	**BEM**	**95144**
Samples tested No.	1	
Object under analysis recognition	**Not carried out** Except where stated, characteristics of products were taken from client description and were not verified by the laboratory	
Date of acceptance of test item	2019-05-30	
TEST LOCATION		
Testing dates	/	
Testing laboratory.	IMQ S.p.A. - Via Quintiliano, 43 – I-20138 Milano	
Testing site	Via Quintiliano, 43 – I-20138 Milano	
ENVIRONMENTAL CONDITIONING		
Parameter	***Measured***	
Ambient Temperature	24.4 °C	
Relative Humidity	53 %	
Atmospheric Pressure	1005 mbar	
The laboratory is monitored by a continuous environmental conditions measurements system. Temperature, humidity and pressure data are recorded on a weekly basis and stored in local archive.		
REMARKS		
Throughout this report a point is used as the decimal separator. The ability or reliability of this product to perform its intended function in a particular application has not been investigated. IMQ declines any responsibility derived from missing or wrong information provided aside by the applicant.		

2. REFERENCE DOCUMENT

DOCUMENT		DATE	TITLE
☒	47 CFR Part 15	2015	Radio Frequency Device

3. EQUIPMENT UNDER TEST (EUT) DETAILS

GENERAL DATA

MODEL (basic)	Description
AICUBIOT	Air purifier and air freshener with ion and ozone technology with 13.56 MHz and Bluetooth Low Energy modules integrated
VARIANTS (derived)	**Description**
/	/

FCC ID	2AS4BAIRCUB

Contains FCC ID module	S9NSPBTLE1S

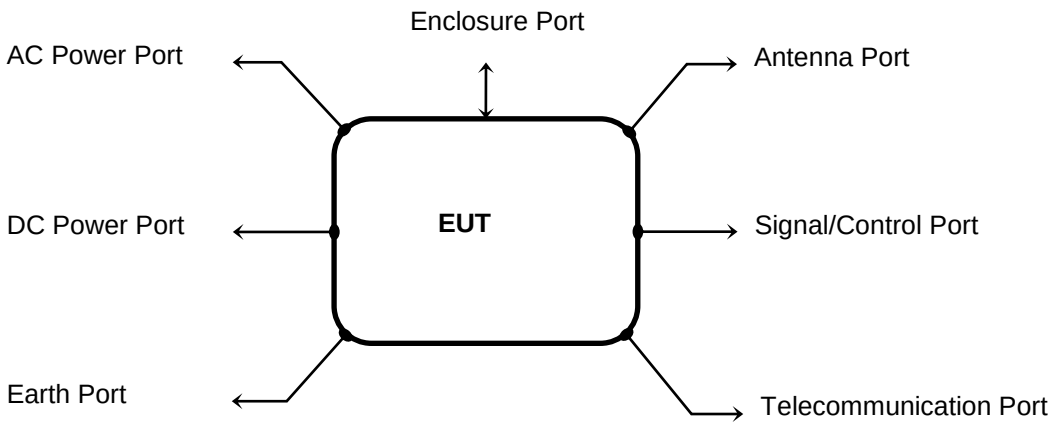
Manufacturer	CHECK UP S.r.l – Via del Lavoro 63 – 21013 Codognè (TV)

Type of equipment	RFID transmitter
Operating frequency	13.56 MHz
Max radiated power	/
Modulation	/
Channel Spacing	/
Channel bandwidth	
Antenna	Integrated
Number of channels	1

Type of equipment	Radio module *IC-ID 8976C-SPBTLE1S*
Operating frequency	2402 ÷ 2480 MHz
Equipment Class	DTS
Max radiated power	101.09 dBµV/m (at 3m distance)
Modulation	GFSK
Channel Spacing	2MHz
Channel bandwidth	1MHz
Antenna	Ceramic antenna (Johanson Technology p/n 2450AT18A100E) peak gain: +0.5 dBi average gain: -0.5 dBi
Number of channels	40

4. TEST CONFGURATION OF EQUIPMENT UNDER TEST

EUT PORTS



Port	Description	Max length
Enclosure	Plastic	/
AC power	100-240V 50/60 Hz	/
DC power	/	/
Signal & Control	/	/
Antenna	Integrated	/

SUPPORT EQUIPMENT

Defined as equipment needed for correct operation or loading of the EUT, but not considered as tested:

Equipment	Manufacturer	Model
/	/	/

ELECTROMAGNETICALLY RELEVANT COMPONENTS

Component	No.	Manufacturer	Model
Mainboard	1	CHECK UP	CS0980970.6
NFC reader	1	ST	ST25R3911B
Ionizer module	1	MURATA	MHM305
Bluetooth Low Energy 4.2	1	ST	SPBTLE-1S
Switching power supply 12Vdc Output 5 Vdc Output	2	MEAN WELL	IRM-02
Fan	1	SUNON	MF50151V1-B00U-A99

RFI SUPPRESSION DEVICES

Component	No.	Manufacturer	Model
Capacitor	2	KEMET	R46KF310000P1M
Varistor	1	EPCOS	S10K275G5

EMI PROTECTION DEVICES

Component	No.	Manufacturer	Model
/	/	/	/

EUT TECHNICAL DOCUMENTATION

Document	Reference
/	/

5. SUMMARY OF TEST RESULTS

POSSIBLE TEST CASE VERDICTS:	
Test object meets the requirement	PASS
Test object does not meet the requirement	FAIL
Test case does not apply to the test object	N.A.
Test not performed	N.P.

REF. OF RSS 102	TITLE	RESULT
§ 1.1307(b)(1)	RF exposure evaluation	PASS

6. TEST RESULTS

6.1 RF EXPOSURE EVALUATION

TEST REQUIREMENT	
Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines § 1.1307(b)(1).	
EUT classification (fixed, mobile or portable devices)	Fixed
Deviation to test procedure	None
EUT operating condition	#1
Remark	None
Testing dates	2019-07-01

Limit for maximum permissible Exposure (MPE)				
Frequency Range (MHz)	**Electric Field Strength (E) (V/m)**	**Magnetic Field Strength (H) (A/m)**	**Power Density (S) (mW/cm^2)**	**Avarage Time (minutes)**
(A) Limits for Occupational/Controlled Exposure				
0.3÷3.0	614	1.63	(100)*	6
3.0÷30	1842/f	4.89/f	($900/f^2$)*	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÷3.0	614	1.63	(100)*	30
3.0÷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÷100,000	--	--	1.0	30
F = Frequency in MHz *Plane-wave equivalent power density				

The distance from the device's transmitting antenna where the exposure level reaches the maximum permitted limit is calculated using the general equation:

$S = P*G/ 4\pi R^2$

Where:
S = Power Density (mW/cm^2)
P = Conducted power (mW)
G = Linear power gain relative to isotropic radiator (numeric gain)
R = Distance (cm)

RF Exposure evaluation

Low threshold limit			
Exposure category	**Frequency range *f*MHz**	**Limit Power Density (S) (mW/cm²)**	**Limit value (mW/cm²)**
General population	13.558	$180/f^2$	0.979
General population	2440	1	1

MEASUREMENTS RESULTS

Frequency (MHz)	Max. power at 3m. distance (dBµV/m)	Max. power (dBm)	Max. Power (W)	Equivalent plane wave power density @ 20 cm S (W/m²)	Limits (W/m²)	S / Limit
13.558	49.129	-46.10	$2.45x10^{-8}$	$4.89x10^{-08}$	$9.79x10^{-01}$	$4.99x10^{-8}$
2440	101.09	5.86	0.004	0.0077	1.00	0.0077
					Simultaneous transmission (Σ S/ Limit)	**0.0077**
					Limit	**1**

TEST RESULT

This value is less than the low threshold limit corresponding to the general population exposure category and therefore no SAR test is required.

END OF TEST REPORT