

RF EXPOSURE EVALUATION REPORT

FCC ID : 2ADEFAT-CD1
Equipment : Airtame Radio Module
Brand Name : Airtame
Model Name : AT-CD1
Applicant : Airtame ApS
Danneskiold Samsoes Alle 24, 1sal TV, Copenhagen K 1434, Denmark
Manufacturer : Airtame ApS
Danneskiold Samsoes Alle 24, 1sal TV, Copenhagen K 1434, Denmark
Standard : 47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC has been evaluated this product in accordance with 47 CFR Part2.1091 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.

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Approved by: Cona Huang / Deputy Manager



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History of this test report

Report No.	Version	Description	Issued Date
FA210727003	Rev. 01	Initial issue of report	Jul. 15, 2022

1. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	Airtame Radio Module
Brand Name	Airtame
Model Name	AT-CD1
FCC ID	2ADEFAT-CD1
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: 5470 MHz ~ 5725 MHz WLAN 5.8GHz Band: 5725 MHz ~ 5855 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz
Mode	WLAN: 802.11a/b/g/n HT20/HT40/VHT80 Bluetooth BR/EDR/LE
Remark: 1. Antenna information as below table. RF Exposure Evaluation choose highest gain for calculation.	

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

Antenna Information (Electrical Requirement for cable length)		
CN28:2.4GHz/5GHz wifi (15 cm long antenna)		
Frequency Range	2.4GHz~2.5GHz	5.15GHz ~ 5.85GHz
Peak Gain (Max)	2.8dBi	3.7dBi
CN27:2.4GHz/5GHz wifi (10 cm long antenna)		
Frequency Range	2.4GHz~2.5GHz	5.15GHz ~ 5.85GHz
Peak Gain (Max)	3.0dBi	4.0dBi
CN29:BLE/BT (10 cm long antenna)		
Frequency Range	2.4GHz ~ 2.5GHz	
Peak Gain (Max)	3.0dBi	

2. Maximum RF average output power among production units

WLAN / Bluetooth	Tune-Up Limit
2.4GHz WLAN	19.5
5GHz WLAN	20.5
Bluetooth	10.0

3. RF Exposure Limit Introduction

According to Part1.1307b, Or the available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold Pth (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). Pth is given by:

$$P_{th} \text{ (mW)} = ERP_{20cm} (d / 20)^x \text{ for distance } d \leq 20cm$$

$$P_{th} \text{ (mW)} = ERP_{20cm} \text{ for distance } 20cm < d \leq 40cm$$

$$x = -\log_{10} \left(\frac{60}{ERP_{20cm} \sqrt{f}} \right)$$

$$ERP_{20cm} \text{ (mW)} \begin{matrix} 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz:} & 2040 f \\ 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz:} & 3060 \end{matrix}$$

4. RF Exposure Evaluation

4.1. Standalone assessment

Separation distance: 20cm

Band	Antenna Gain (dBi)	Maximum Conducted Power (dBm)	Maximum EIRP (dBm)	Maximum ERP (dBm)	Maximum EIRP (mW)	Maximum ERP (mW)	P _{th}	P _{th} (mW)	Part1.1307 option(b) Threshold (mW)	Part1.1307 option(b) P/Pth
WLAN2.4GHz Band	3.00	19.50	22.50	20.35	177.83	108.39	20.35	108.39	3060.000	0.035
WLAN5GHz Band	4.00	20.50	24.50	22.35	281.84	171.79	22.35	171.79	3060.000	0.056
Bluetooth	3.00	10.00	13.00	10.85	19.95	12.16	10.85	12.16	3060.000	0.004

Maximum 2.4GHz WLAN Power Density / Limit	Maximum 5GHz WLAN Power Density / Limit	Maximum Bluetooth Power Density / Limit	Σ(Power Density / Limit) of 2.4GHz WLAN +5GHz WLAN +Bluetooth
0.035	0.056	0.004	0.095

Note:

1. According part1.1307b, the P/Pth Ratio is using for Sim-Tx analysis, above table was showing WLAN transmitting with Bluetooth and the summation ratio is smaller than 1.

Conclusion:

According to 47 CFR §1.1307, the RF exposure analysis concludes that the RF Exposure is FCC compliant.