RF Exposure Evaluation Declaration

FCC ID:	2APPT-2960
Applicant:	Airthings ASA
Product:	View Plus / View Pollution / View Radon
Model No.:	2960 / 2980 / 2989
Brand Name:	Airthings
FCC Rule Part(s):	FCC Part 2.1091

Reviewed By: Sherry Jiang

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Revision History

Report No.	Version	Description	Issue Date	Note
2103RSU015-U4	Rev. 01	Initial Report	06-08-2021	Valid

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1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name	View Plus / View Pollution / View Radon
Model No.	2960 / 2980 / 2989
Brand Name	Airthings
SRD Radio	Various bands in the 865-928MHz range (region dependent)
Wi-Fi Specification	802.11b/g/n-HT20
Bluetooth Version	v5.1 Single mode
Operating Temp.	4 ~ 40°C
Rated Input	5VDC (USB cable) or batteries
Remark: The differences between the three products (models) are: View Plus: Sensors for PM2.5, Radon, CO2, VOC, Temp, Humidity, Air Pressure, Noise, Light View Pollution: Sensors for PM2.5, Temp, Humidity, Light View Radon: Sensors for Radon, Temp, Humidity, Light The RF characteristics are the same. so we chose View Plus for testing.	

1.2. Product Specification Subjective to this Report

Wi-Fi 2.4G	
Frequency Range	802.11b/g/n-HT20: 2412 ~ 2462MHz
Channel Number	802.11b/g/n-HT20: 11
Modulation	802.11b: DSSS 802.11g/n: OFDM
Antenna Type	Chip antenna
Antenna Gain	1.6 dBi
BLE	
Frequency Range	2402 ~ 2480MHz
Channel Number	40
Type of modulation	GFSK
Data Rate	1Mbps & 2Mbps
Antenna Type	PCB antenna
Antenna Gain	3.3 dBi
SRD	
Operating Frequency	905.6 ~ 926 MHz
Type of Modulation	FSK
Antenna Type	PCB antenna
Antenna Gain	5 dBi

Note: Above information is declared by manufacturer.

2. RF Exposure Evaluation

2.1. Limits for FCC:

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	f/1500	6
1500-100,000	--	--	1	30

f= Frequency in MHz

Calculation Formula: $Pd = (Pout*G)/(4*pi*r^2)$

Where

Pd = power density in mW/cm^2

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

r = distance between observation point and center of the radiator in cm

Pd is the limit of MPE, $1mW/cm^2$. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

2.2. Test Result of RF Exposure Evaluation for FCC

Product	View Plus / View Pollution / View Radon
Test Item	RF Exposure Evaluation

FCC:

Test Mode	Frequency Band (MHz)	Maximum Average Output Power (dBm)	E.I.R.P Including Tune-up (dBm)	Power Density at R = 20 cm (mW/cm^2)	Limit (mW/cm^2)
Wi-Fi 2.4G	2412 ~ 2462	15.30	19.10	0.0162	1
Bluetooth-LE	2400 ~ 2483.5	5.47	9.27	0.0017	1
SRD	905.6 ~ 926	13.50	19.00	0.0158	1

CONCLUSION:

The Max Power Density at R (20 cm) = (0.0162+0.0017+0.0158) mW/cm^2=0.0337 mW/cm^2 < 1 mW/cm^2.

The device is excluded for SAR test and complies with the FCC exposure requirements since the maximum conducted peak output power is lower than the SAR test exclusion thresholds.
So, the EUT complies with RF Exposure requirement.

The End

Appendix A - EUT Photograph

Refer to “2103RSU015-UE” file.