

RF Exposure Evaluation Declaration

FCC ID: 2APO3AA-B4

APPLICANT: TRIANGLE TECHNOLOGY(HK) CO., LIMITED

Application Type: Certification

Product: Acute Angle PC

Model No.: AA-B4

Trademark: Acute Angle

FCC Classification: Digital Transmission System (DTS)
FCC Part 15 Spread Spectrum Transmitter(DSS)
Unlicensed National Information Infrastructure (UNII)

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The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

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Revision History

Report No.	Version	Description	Issue Date	Note
1803TW0106-U7	Rev. 01	Initial report	05-02-2018	Valid

1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name:	Acute Angle PC
Model No.:	AA-B4
Brand Name:	Acute Angle
Wi-Fi Specification:	802.11a/b/g/n/ac
Bluetooth Specification:	v4.0 dual mode
Components	
Adapter	Brand Name: XinSPower Model No.: A241-1202000U Input Power: 100 - 240V ~ 50/60Hz, 0.8A Output Power: 12VDC 2000mA

1.2. Antenna Description

Antenna Type	Frequency Band (MHz)	TX Paths	Antenna Gain (dBi)	
			Main Antenna / Ant A (For Wi-Fi)	Aux Antenna / Ant B (For Wi-Fi & BT)
PIFA Antenna	2400 ~ 2483.5	1*1	0.81	0.46
	5150 ~ 5850	1*1	-0.09	-0.14

Note: Both Ant A and Ant B can transmit, but only one port is transmitting at the same time. They cannot transmit simultaneously.

2. RF Exposure Evaluation

2.1. Limits

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: $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

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

P_d is the limit of MPE, 1mW/cm². 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

Product	Acute Angle PC
Test Item	RF Exposure Evaluation

Antenna Gain: Refer to clause 1.2.

Test Mode	Frequency Band (MHz)	Maximum Output Power (dBm)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)
Bluetooth	2402 ~ 2480	4.24	0.0006	1
Bluetooth-LE	2402 ~ 2480	2.98	0.0004	1
802.11b/g/n	2412 ~ 2462	18.62	0.0161	1
802.11a/n/ac	5150 ~ 5250	17.34	0.0106	1
	5250 ~ 5350	17.41	0.0106	1
	5500 ~ 5720	17.81	0.0116	1
	5745 ~ 5825	17.55	0.0110	1

CONCULISON:

Both of the WLAN 2.4GHz Band and BT or WLAN 5.8GHz Band and BT can transmit simultaneously.

Therefore, the Max Power Density at R (20 cm) = max [(0.0161mW/cm² + 0.0006mW/cm²) : (0.0006mW/cm² + 0.0116mW/cm²)] = 0.0167mW/cm² < 1mW/cm².

So the EUT complies with the requirement.

The End