

# **RF Exposure Report**

**Report No.:** SA171128C32

FCC ID: UCC-AX500

Test Model: AX500-X, AX500-S, AX500-T

Received Date: Nov. 28, 2017

**Test Date:** Dec. 15, 2017 ~ Mar. 06, 2018

**Issued Date:** Mar. 12, 2018

Applicant: Altai Technologies Limited

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33383, TAIWAN (R.O.C.)





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# **Release Control Record**

Issue No.	Description	Date Issued
SA171128C32	Original release	Mar. 12, 2018



# 1 Certificate of Conformity

Product: Wireless 802.11 abgn/ac device

Brand: Altai

Model: AX500-X, AX500-S, AX500-T

Sample Status: Engineering sample

Applicant: Altai Technologies Limited

**Test Date:** Dec. 15, 2017 ~ Mar. 06, 2018

Standards: FCC Part 2 (Section 2.1091)

KDB 447498 D03 (January 17, 2014)

**IEEE C95.1** 

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Prepared by : , Date: Mar. 12, 2018

Polly Chien / Specialist

Approved by: , Date: Mar. 12, 2018

Bruce Chen / Project Engineer



# 2 RF Exposure

# 2.1 Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Average Time (minutes)				
Limits For General Population / Uncontrolled Exposure								
300-1500			F/1500	30				
1500-100,000			1.0	30				

F = Frequency in MHz

# 2.2 MPE Calculation Formula

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

where

Pd = power density in mW/cm<sup>2</sup>

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

# 2.3 Classification

The antenna of this product, under normal use condition, is at least 36cm away from the body of the user. So, this device is classified as **Mobile Device**.

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### 3 Calculation Result of Maximum Conducted Power

Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm²)				
EUT Model: AX500-X									
2412-2462	26.54	8.01	36	0.185	1				
5180-5240	4.75	19.01	36	0.015	1				
5745-5825	19.69	19.01	36	0.482	1				
EUT Model: AX500-S									
2412-2462	27.19	11.81	36	0.488	1				
5180-5240	6.88	17.11	36	0.015	1				
5745-5825	21.77	17.11	36	0.474	1				
EUT Model: AX500-T									
2412-2462	20.44	9.61	36	0.062	1				
5180-5240	12.90	10.91	36	0.016	1				
5745-5825	27.59	10.91	36	0.460	1				

Note:

EUT Model: AX500-X

2.4GHz Band: Directional gain = 5dBi + 10log(2) = 8.01dBi 5GHz Band: Directional gain = 16dBi +10log (2) = 19.01dBi

EUT Model: AX500-S

2.4GHz Band: Directional gain = 8.8dBi + 10log(2) = 11.81dBi 5GHz Band: Directional gain = 14.10dBi +10log (2) = 17.11dBi

EUT Model: AX500-T

2.4GHz Band: Directional gain = 6.6dBi + 10log(2) = 9.61dBi 5GHz Band: Directional gain = 7.90dBi +10log (2) = 10.91dBi



### **Conclusion:**

2.4GHz & 5GHz Band 1 or 2.4GHz & 5GHz Band 4 can transmit at same time.

The formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + .....etc. < 1

CPD = Calculation power density

LPD = Limit of power density

EUT Model: AX500-X

WLAN 2.4GHz + WLAN 5GHz = 0.185 +0.482 = 0.667

EUT Model: AX500-S

WLAN 2.4GHz + WLAN 5GHz = 0.488 + 0.474 = 0.962

EUT Model: AX500-T

WLAN 2.4GHz + WLAN 5GHz = 0.062 + 0.460 = 0.522

Therefore the maximum calculations of above situations are less than the "1" limit.

---END---