

## 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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**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

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**Test Location:** No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 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 :** Polly Chen, **Date:** Mar. 12, 2018  
Polly Chen / Specialist

**Approved by :** Bruce Chen, **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

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

where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = 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**.

### 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/cm <sup>2</sup> )
<b>EUT Model: AX500-X</b>					
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
<b>EUT Model: AX500-S</b>					
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
<b>EUT Model: AX500-T</b>					
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:

$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$

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.

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