

## RF Exposure Report

**Report No.:** SA170918D11

**FCC ID:** 2AI9TOAW-AP123X

**Test Model:** OAW-AP1231, OAW-AP1232

**Received Date:** Jul. 13, 2017

**Test Date:** Jul. 17 ~ Nov. 10, 2017

**Issued Date:** Dec. 19, 2017

**Applicant:** ALE USA Inc.

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

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**FCC Registration /  
Designation Number:** 198487 / TW2021



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## Table of Contents

<b>Release Control Record</b> .....	<b>3</b>
<b>1 Certificate of Conformity</b> .....	<b>4</b>
<b>2 RF Exposure</b> .....	<b>5</b>
2.1 Limits For Maximum Permissible Exposure (MPE).....	5
2.2 MPE Calculation Formula .....	5
2.3 Classification .....	5
2.4 Calculation Result Of Maximum Conducted Power .....	6

### Release Control Record

Issue No.	Description	Date Issued
SA170918D11	Original release.	Nov. 14, 2017

## 1 Certificate of Conformity

**Product:** OmniAccess Stellar  
**Brand:** Alcatel-Lucent Enterprise  
**Test Model:** OAW-AP1231, OAW-AP1232  
**Sample Status:** Engineering sample  
**Applicant:** ALE USA Inc.  
**Test Date:** Jul. 17 ~ Nov. 10, 2017  
**Standards:** FCC Part 2 (Section 2.1091)  
KDB 447498 D01 General RF Exposure Guidance v06  
IEEE C95.1-1992

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 EMC characteristics under the conditions specified in this report.

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Jessica Cheng / Senior Specialist

**Approved by :** Rex Lai , **Date:** Dec. 19, 2017  
Rex Lai / Associate Technical Manager

## 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 37cm away from the body of the user.

So, this device is classified as **Mobile Device**.

## 2.4 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> )
2412-2462	28.36	10.02	37	0.4003	1
5180-5240	18.44	10.49	37	0.0454	1
5745-5825	29.54	10.49	37	0.5853	1
2402-2480 Bluetooth EDR	4.91	4.89	37	0.0006	1
2402-2480 Bluetooth LE	4.52	4.89	37	0.0005	1

**NOTE:**

2.4GHz Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / 4] = 10.02\text{dBi}$

5.0GHz Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / 4] = 10.49\text{dBi}$

The Max Power = Max tune up power

As client's request, the maximum gain is chosen for final tests.

**Conclusion:**

The formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + WLAN 5GHz + Bluetooth EDR =  $0.4003 + 0.5853 + 0.0006 = 0.9862$

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

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