MRT Technology (Taiwan) Co., Ltd
Phone: +886-3-3288388
Fax: +886-3-3288918
Web: www.mrt-cert.com

Report No.: 2105TW0102-U5
Report Version: 0.1
Issue Date: 2021-07-08

RF Exposure Evaluation Declaration

FCC ID	:	2AI9TOAW-AP135X
Applicant	:	ALE USA Inc.
Application Type	:	Certification
Product	:	OmniAccess Stellar
Model No.	:	OAW-AP1351
Brand Name	:	Alcatel-Lucent Enterprise
FCC Classification	:	Digital Transmission System (DTS) Unlicensed National Information Infrastructure (NII)
Test Procedure(s)	:	KDB 447498 D01v06
Received Date	:	March 17，2021

Tested By : Fran Chen
(Fran Chen)

Reviewed By : Paddy Chen
(Paddy Chen)

Approved By : Chenz Ker
(Chenz Ker)

Testing Laboratory
3261

Revision History

Report No.	Version	Description	Issue Date	Note
2105TW0102-U5	0.0	Original Report	2021-07-08	Invalid
2105TW0102-U5	0.1	Added the KDBs in front page	2021-07-20	Valid

CONTENTS

1. General Information

1.1. Applicant

ALE USA Inc.

26801 West Agoura Road, Calabasas, CA 91301, United States

1.2. Manufacturer

ALE USA Inc.

26801 West Agoura Road, Calabasas, CA 91301, United States

1.3. Testing Facility

☐	**Test Site - MRT Suzhou Laboratory**	
	Laboratory Location (Suzhou - Wuzhong)	
	D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China	
	Laboratory Location (Suzhou - SIP)	
	4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China	
	Laboratory Accreditations	
	A2LA: 3628.01	CNAS: L10551
	FCC: CN1166	ISED: CN0001
	VCCI: R-20025, G-20034, C-20020, T-20020	
☐	**Test Site - MRT Shenzhen Laboratory**	
	Laboratory Location (Shenzhen)	
	1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China	
	Laboratory Accreditations	
	A2LA: 3628.02	CNAS: L10551
	FCC: CN1284	ISED: CN0105
☒	**Test Site - MRT Taiwan Laboratory**	
	Laboratory Location (Taiwan)	
	No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)	
	Laboratory Accreditations	
	TAF: L3261-190725	
	FCC: 291082, TW3261	ISED: TW3261

2. PRODUCT INFORMATION

2.1. Feature of Equipment under Test

Product Name	OmniAccess Stellar
Model No.	OAW-AP1351
Brand Name	Alcatel-Lucent Enterprise
Operating Temperature	0 ~ 45 °C
Wi-Fi Specification	802.11a/b/g/n/ac/ax
Accessories	
AC to DC Adapter	Model: ADP-50GR B Input: 100-240V ~ 50/60Hz, 1.3A Output: 48.0V, 1.042A, 50.1W MAX
PoE Injector	Model: POE60U-1BT-X Input: 100-240V ~ 1.5A, 50/60Hz Output: 56.0V, 0.535A, (Pin 3,6+ to pin 1,2 Return); 56V dc, 0.535A(pin 4,5+ to Pin 7,8 Return)

Note:

1. The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.
2. The AC to DC adapter and PoE Injector are not sold with product.

2.2. Description of Available Antennas

Antenna Type	Frequency Band (MHz)	T_X Paths	Max Antenna Gain (dBi)	Directional Gain (dBi)		Beamforming Directional Gain (dBi)
				For Power	For PSD	
PIFA Antenna	2400 ~ 2483.5	4	3.9	3.9	9.92	9.92
Dipole Antenna	5150 ~ 5350	4	3.8	3.8	9.82	9.82
PIFA & Dipole Antenna	5470 ~ 5850	8	3.9	BW≥40M, 3.9 BW=20M, 6.9	12.93	12.93
Scanning						
Dipole Antenna	2400 ~ 2483.5	1	3.5	3.5	3.5	--
Dipole Antenna	5150 ~ 5250 & 5725 ~5850	1	3.9	3.9	3.9	--
Bluetooth						
Dipole Antenna	2400 ~ 2483.5	1	3.5	3.5	3.5	--

Remark:

1. The EUT supports Cyclic Delay Diversity (CDD) mode and beamforming mode.
2. All antenna information (Antenna type and Peak Gain) is provided by the manufacturer.
3. High gain antenna power setting will be reduced according to difference value of antenna gain declared by applicant.

3. RF Exposure Evaluation

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

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.

3.2. Test Result of RF Exposure Evaluation

Product	OmniAccess Stellar, OAW-AP1351
Test Item	RF Exposure Evaluation

Antenna Gain: Refer to clause 2.2.

Test Mode	Frequency Band (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	Maximum EIRP (dBm)
802.11b/g/n/ax	2412 ~ 2462	23.85	3.9	27.75
802.11a/n/ac/ax	5180~ 5350	26.18	3.8	29.98
802.11a/n/ac/ax	5470~ 5850	26.91	3.9	30.81
802.11 b/g Scan antenna	2412 ~ 2462	18.05	3.5	21.55
802.11a Scan antenna	5180~ 5240 5745~5825	19.06	3.9	22.96
BLE 1Mbps&2Mbps	2400~2483.5	18.04	3.5	21.54

Test Mode	Frequency Band (MHz)	Maximum EIRP (dBm)	Safety Distance (cm)	Power Density (mW/cm^2)	Limit of Power Density (mW/cm^2)
802.11b/g/n/ax	2412 ~ 2462	27.75	20	0.11850	1
802.11a/n/ac/ax	5180 ~ 5825	29.98	20	0.19803	1
802.11a/n/ac/ax	5470~ 5850	30.81	20	0.23973	1
802.11 b/g Scan antenna	2412 ~ 2462	21.55	20	0.02843	1
802.11a Scan antenna	5180~ 5240 5745~5825	22.96	20	0.03933	1
BLE 1Mbps&2Mbps	2400~2483.5	21.54	20	0.02836	1

CONCLUSION:

The 2.4G & 5G can't work simultaneously with Scan Wi-Fi.

The max Power Density at R (20 cm) = $0.11850 mW/cm^2 + 0.19803 mW/cm^2$ $+0.23973 mW/cm^2 + 0.02836 mW/cm^2 = 0.58462 mW/cm^2 < 1 mW/cm^2$.

So the safety distance is 20cm for device installed without any other radio equipment.

The End