RF Exposure Evaluation Declaration

FCC ID:	TK4WLE600VX
Applicant:	Compex Systems Pte Ltd.
Product:	802.11ac Dual Band Module
Model No.:	WLE600VX, WLE600VX-I
Brand Name:	COMPEX
FCC Rule Part(s):	FCC Part 2 (Section 2.1091)

Reviewed By: Jame Yuan

Approved By: Robin Wu

Revision History

Report No.	Version	Description	Issue Date	Note
2103RSU076-U3	Rev. 01	Initial Report	08-15-2021	Valid

1. General Information

1.1. Applicant

Compex Systems Pte Ltd

No:9 Harrison Road, Harrison Industrial Building, #05-01, Singapore

1.2. Manufacturer

Compex Systems Pte Ltd

No:9 Harrison Road, Harrison Industrial Building, #05-01, Singapore

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. Equipment Description

Product Name:	802.11ac Dual Band Module
Model No.:	WLE600VX, WLE600VX-I
Wi-Fi Specification:	802.11a/b/g/n/ac
Antenna Delivery:	2*TX + 2*RX

Note: The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.

2.2. Antenna Description

Antenna Type	Manufacturer	T_X Paths	Max Antenna Gain (dBi)
Omni Antenna	Smart Ant Inc	2	2.4GHz: 4.5, 5GHz: 7.0

Note: The device didn't support transmit beam-forming mode and Cyclic Delay Diversity (CDD) mode, and the transmit signals are uncorrected, so no add array gain to the band power and band PSD.

3. RF Exposure Evaluation

3.1. Test Limit

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
1500-100000	--	--	5	6
(B) Limits for General Population / Uncontrolled Exposures				
300-1500	--	--	f/1500	6
1500-100000	--	--	1	30

f= Frequency in MHz

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

Where

P_d = power density in mW/cm^2

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

P_d 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

Product	802.11ac Dual Band Module
Test Item	RF Exposure Evaluation

Antenna Gain: Refer to clause 2.2.

Test Mode	Frequency Band (MHz)	Max Conducted Power (dBm)	Power Density at R = 20 cm (mW/cm^2)	Limit (mW/cm^2)
802.11b/g/n	2412 ~ 2462	23.0	0.1119	1
802.11a/n/ac	5180 ~ 5240	21.5	0.1408	1
	5260 ~ 5320			
	5500 ~ 5720			
	5745 ~ 5825			

Note: Maximum turn-up power for 2.4GHz is 23dBm, Maximum turn-up power for 5GHz is 21.5dBm.

Conclusion:

The max Power Density at R (20 cm) = 0.1408mW/cm^2 < 1mW/cm^2.

So the EUT complies with the requirement.

The End

Appendix - EUT Photograph

Refer to “2103RSU076-UE” file.