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Report No.: 1408RSU00102
Report Version: V02
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RF Exposure Evaluation Declaration

FCC ID: TK4WLE600V5-27ESD

APPLICANT: Compex Systems Pte Ltd

Application Type: Certification

Product: WIRELESS-AC 2X2 27DBM NETWORK MINI PCIE
ADAPTER

Model No.: WLE600V5-27ESD

Brand Name: COMPEX

FCC Classification: Unlicensed National Information Infrastructure (UNII)

Reviewed By :

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The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

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Revision History

Report No.	Version	Description	Issue Date
1408RSU00102	Rev. 01	Initial report	09-30-2014
1408RSU00102	Rev. 02	Corrected the MPE result	05-09-2015

1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name	WIRELESS-AC 2X2 27DBM NETWORK MINI PCIE ADAPTER
Model No.	WLE600V5-27ESD
Frequency Range	802.11a/n/ac: 5150 ~ 5250MHz 5725 ~ 5850MHz
Type of Modulation	802.11a/n: OFDM
Maximum Output Power	802.11a: 28.74dBm 802.11n-HT20: 28.82dBm 802.11ac-VHT20: 28.71dBm 802.11n-HT40: 28.54dBm 802.11ac-VHT40: 29.16dBm 802.11ac-VHT80: 19.87dBm

2. RF Exposure Evaluation

2.1. 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: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

r = distance between observation point and center of the radiator in cm

P_d is the limit of MPE, 1mW/cm². 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.

2.2. Test Result of RF Exposure Evaluation

Product	WIRELESS-AC 2X2 27DBM NETWORK MINI PCIE ADAPTER
Test Item	RF Exposure Evaluation

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 25dBi for 5.2GHz and 7dBi for 5.8GHz in logarithm scale.

For 5G UNII Band:

Test Mode	Frequency Band (MHz)	Maximum Average Output Power (dBm)	Limit of Power Density S(mW/cm ²)	Safety Distance (cm)
802.11a	5180 ~ 5240	12.76	1	21.80
	5745 ~ 5825	28.74	1	17.27
802.11n-HT20	5180 ~ 5240	14.49	1	26.60
	5745 ~ 5825	28.82	1	17.43
802.11n-HT40	5190 ~ 5230	14.02	1	25.20
	5755 ~ 5795	28.54	1	16.88
802.11ac-VHT20	5180 ~ 5240	15.05	1	28.37
	5745 ~ 5825	28.71	1	17.21
802.11ac-VHT40	5190 ~ 5230	13.81	1	24.60
	5755 ~ 5795	29.16	1	18.13
802.11ac-VHT80	5210 ~ 5210	13.52	1	23.79
	5775 ~ 5775	19.87	1	6.22

CONCLUSION:

The Safety Distance of this equipment was 28.37 cm.

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