



MRT Technology (Suzhou) Co., Ltd  
Phone: +86-512-66308358  
Fax: +86-512-66308368  
Web: www.mrt-cert.com

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## RF Exposure Evaluation Declaration

**FCC ID:** TK4WLE900VX

**APPLICANT:** Compex Systems Pte Ltd

**Application Type:** Certification

**Product:** 802.11ac Dual Band Module

**Model No.:** WLE900VX

**Brand Name:** COMPEX

**FCC Classification:** Digital Transmission System (DTS)

Unlicensed National Information Infrastructure (UNII)

Reviewed By :   
( Robin Wu )

Approved By :   
( Marlin Chen )



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
1503RSU03004	Rev. 01	Initial report	05-18-2015
1503RSU03004	Rev. 02	Modify some test data and format	06-07-2015

## 1. PRODUCT INFORMATION

### 1.1. Equipment Description

Product Name	802.11ac Dual Band Module
Model No.	WLE900VX
Power Type	POE input
Frequency Range	<b>For 2.4GHz Band:</b> 802.11b/g/n: 2412 ~ 2462 MHz <b>For 5.0GHz Band:</b> 802.11a/n/ac: 5150 ~ 5350MHz 5470 ~ 5725MHz 5725 ~ 5850MHz
Type of Modulation	802.11b: DSSS 802.11g/a/n/ac: OFDM

### 1.2. Antenna Description

Antenna Type	Manufacturer	Tx Paths	Max Directional Gain (dBi)
Panel Antenna 1#	Compex Systems Pte Ltd	3	2.4GHz: 11.0
Panel Antenna 2#	Kenbotong Communication LTD	3	2.4GHz: 10.0 5GHz: 10.0
Panel Antenna 3#	Smart Ant Inc	3	2.4GHz: 7.0 5GHz: 7.0
Panel Antenna 4#	TAOGLAS Inc	3	2.4GHz: 4.5 5GHz: 6.7
Panel Antenna 5#	Compex Systems Pte Ltd	3	2.4GHz: 5.0 5GHz: 5.0
Panel Antenna 6#	Compex Systems Pte Ltd	3	2.4GHz: 5.0 5GHz: 5.0
Dipole Antenna 1#	Kunshan Wavelink Electronic Co., Ltd.	3	2.4GHz: 2.0 5GHz: 2.0

## 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 <sup>2</sup> )	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<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

Pd is the limit of MPE, 1mW/cm<sup>2</sup>. 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	802.11ac Dual Band Module
Test Item	RF Exposure Evaluation

Antenna Gain: Refer to Clause 1.2 of antenna description.

Test Mode	Frequency Band (MHz)	Maximum Average Output Power (dBm)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
802.11b/g/n	2412 ~ 2462	24.30	0.6741	1
802.11a/n/ac	5180 ~ 5240	21.79	0.1506	1
802.11a/n/ac	5260 ~ 5320	22.86	0.1926	1
802.11a/n/ac	5500 ~ 5720	22.92	0.1953	1
802.11a/n/ac	5745 ~ 5825	24.97	0.6248	1

### CONCLUSION:

The Max Power Density at R (20 cm) = 0.6741mW/cm<sup>2</sup> < 1mW/cm<sup>2</sup>.

So the EUT complies with the requirement.

The End