



## RF Exposure Evaluation Declaration

**FCC ID:** TK4MMN344VX

**APPLICANT:** Compex Systems Pte Ltd

**Application Type:** Certification

**Product:** WIRELESS ACCESS POINT

**Model No.:** MMN344LV-A

**Trademark:** COMPEX

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

Unlicensed National Information Infrastructure (UNII)

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( 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	Note
1707RSU02704	Rev. 01	Initial report	08-10-2017	Invalid
1707RSU02704	Rev. 02	Deleted some test data	09-15-2017	Valid

## 1. PRODUCT INFORMATION

### 1.1. Equipment Description

Product Name	WIRELESS ACCESS POINT
Model No.	MMN344LV-A
Brand Name	COMPEX
Wi-Fi Specification	802.11a/b/g/n/ac
Frequency Range	<b><u>2.4GHz:</u></b> For 802.11b/g/n-HT20: 2412 ~ 2462 MHz For 802.11n-HT40: 2422 ~ 2452 MHz <b><u>5GHz:</u></b> For 802.11a/n-HT20/ac-VHT20: 5180~5240MHz, 5745~5825MHz For 802.11n-HT40/ac-VHT40: 5190~5230MHz, 5755~5795MHz For 802.11ac-VHT80: 5210MHz, 5775MHz
Type of Modulation	802.11b: DSSS 802.11g/a/n/ac: OFDM

### 1.2. Antenna Description

Antenna Type	Frequency Band (MHz)	Max Antenna Gain (dBi)
Dipole Antenna	2412 ~ 2462	2
	5150 ~ 5825	2

## 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	WIRELESS ACCESS POINT
Test Item	RF Exposure Evaluation

Antenna Gain: Refer to clause 1.2.

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	22.03	0.0503	1
802.11a/n/ac	5180 ~ 5240, 5745 ~ 5825	24.63	0.0916	1

### CONCLUSION:

Both of the WLAN 2.4GHz Band and WLAN 5GHz Band can transmit simultaneously. Therefore, the Max Power Density at R (20 cm) = 0.0503mW/cm<sup>2</sup> + 0.0916mW/cm<sup>2</sup> = 0.1419mW/cm<sup>2</sup> < 1mW/cm<sup>2</sup>.

So the EUT complies with the requirement.

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The End

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