



# RF Exposure Evaluation Declaration

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**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.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

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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	<p><b>2.4GHz:</b>            For 802.11b/g/n-HT20: 2412 ~ 2462 MHz            For 802.11n-HT40: 2422 ~ 2452 MHz</p> <p><b>5GHz:</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</p>
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:  $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = 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<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) =  $0.0503\text{mW}/\text{cm}^2 + 0.0916\text{mW}/\text{cm}^2 = 0.1419\text{mW}/\text{cm}^2 < 1\text{mW}/\text{cm}^2$ .

So the EUT complies with the requirement.

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