

RF Exposure Evaluation declaration

Product Name	UAP AC
Model No.	UAP-AC Outdoor, UAP-AC
FCC ID	SWX-UAPAC

Applicant	Ubiquiti Networks.,Inc
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Report No.	14B0240R-RFUSP69V00

The test results relate only to the samples tested.

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

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1. RF Exposure Evaluation

1.1. 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

Friis Formula

Friis transmission formula: $Pd = (Pout * G) / (4 * \pi * r^2)$

Where

Pd = power density in mW/cm²

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 id the limit of MPE, 1 mW/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.

1.2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

The temperature and related humidity: 18°C and 78% RH.

1.3. Test Result of RF Exposure Evaluation

Product : UAPAC
 Test Item : RF Exposure Evaluation
 Test Site : No.3 OATS

RF Exposure_2.4GHz

Operation Frequency Range	2412-2462MHz, 2422-2452MHz
Maximum Conducted output power	24.75dBm
Antenna gain	8dBi
Directional antenna gain for N mode	8dBi +4.77dB=12.77dBi

Output Power Into Antenna & RF Exposure Evaluation Distance:

Output Power to Antenna (mW)	Power Density at R = 45 cm (mW/cm2)
298.5383	0.222006

RF Exposure_5GHz

Operation Frequency Range	5180-5240MHz, 5190-5230MHz, 5210MHz
Maximum Conducted output power	29.96dBm
Antenna gain	8dBi
Directional antenna gain for N mode	8dBi +4.77dB =12.77dBi

Output Power Into Antenna & RF Exposure Evaluation Distance:

Output Power to Antenna (mW)	Power Density at R = 45 cm (mW/cm2)
990.8319	0.736827

Total Power Density

Power Density (2.4GHz) (mW/cm2)	Power Density (5GHz) (mW/cm2)	Total Power Density (2.4GHz+5GHz) (mW/cm2)	Limit (mW/cm2)
0.222006	0.736827	0.958833	1

Note:

The Formula of calculated the MPE is : $CPD1/LPD1 + CPD2/LPD2 + \dots \dots \dots < 1$

CPD = Calculation power density

LPD = Limit of power density