



RF Exposure Evaluation Declaration

Product Name : Wireless Access Point
Model No. : AP305C, AP305CX
FCC ID : QXO-AP305C

Applicant : Extreme Networks, Inc
Address : 6480 Via Del Oro, San Jose, CA 95119

Date of Receipt : Jun. 27, 2019
Issued Date : Oct. 16, 2019
Report No. : 1962097R-RF-US-P20V02
Report Version : V1.0

The test results presented in this report relate only to the object tested.

The measurement result is considered in conformance with the requirement if it is within the prescribed limit, It is not necessary to account the uncertainty associated with the measurement result, unless the specification, standard or customer have special requirements

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Test Report Certification

Issued Date: Oct. 16, 2019

Report No.: 1962097R-RF-US-P20V02



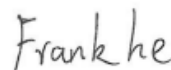
Product Name : Wireless Access Point
Applicant : Extreme Networks, Inc
Address : 6480 Via Del Oro, San Jose, CA 95119
Manufacturer : Extreme Networks, Inc
Address : 6480 Via Del Oro, San Jose, CA 95119
Model No. : AP305C, AP305CX
Brand : Extreme Networks
FCC ID : QXO-AP305C
EUT Voltage : POE 48V
Applicable Standard : KDB 447498D01V06
FCC Part1.1310
Test Result : Complied
Performed Location : DEKRA Testing and Certification (Suzhou) Co., Ltd.
No.99 Hongye Rd., Suzhou Industrial Park, Suzhou,
215006, Jiangsu, China
TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098
FCC Designation Number: CN1199

Documented By :



(Project Assistant: Kitty Li)

Reviewed By :



(Senior Engineer: Frank He)

Approved By :



(Engineer Supervisor: Jack Zhang)

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

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, 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 and 78% RH.

1.3. Test Result of RF Exposure Evaluation

Product	:	Wireless Access Point
Test Item	:	RF Exposure Evaluation
Test Site	:	AC-6

Antenna Information:

BLE:

AP305C:

Antenna Model No.	N/A					
Antenna Manufacturer	N/A					
Antenna Delivery	☒	1*TX+1*RX	☐	2*TX+2*RX	☐	3*TX+3*RX
Antenna Technology	☒	SISO				
	☐	MIMO	☐	Basic methodology		
			☐	Sectorized antenna systems		
			☐	Cross-polarized antennas		
			☐	Unequal antenna gains, with equal transmit powers		
			☐	Spatial Multiplexing		
			☐	Cyclic Delay Diversity (CDD)		
Antenna Type	PIFA					
Antenna Gain	2.4dBi					

AP305CX:

Antenna Model No.	N/A					
Antenna Manufacturer	N/A					
Antenna Delivery	☒	1*TX+1*RX	☐	2*TX+2*RX	☐	3*TX+3*RX
Antenna Technology	☒	SISO				
	☐	MIMO	☐	Basic methodology		
			☐	Sectorized antenna systems		
			☐	Cross-polarized antennas		
			☐	Unequal antenna gains, with equal transmit powers		
			☐	Spatial Multiplexing		
			☐	Cyclic Delay Diversity (CDD)		
Antenna Type	Dipole					
Antenna Gain	3.12dBi					

2.4G:**AP305C:**

Antenna Model No.		N/A			
Antenna Manufacturer		N/A			
Antenna Delivery		☒ 1*TX+1*RX	☒ 2*TX+2*RX	☐ 3*TX+3*RX	
Antenna Technology		☒ SISO			
		☒ MIMO	☐ Basic methodology		
			☐ Sectorized antenna systems		
			☐ Cross-polarized antennas		
			☐ Unequal antenna gains, with equal transmit powers		
			☒ Spatial Multiplexing		
			☒ Cyclic Delay Diversity (CDD)		
Antenna Type		PIFA			
Antenna Gain					
Antenna Technology		Ant Gain(eth1) (dBi)			
☒ SISO	☒ Ant1	2.67			
	☒ Ant2	2.37			
☒ CDD		2.67dBi for Power; 5.67dBi for PSD			
☒ Beam-forming		5.67dBi for Power; 5.67dBi for PSD			

AP305CX:

Antenna Model No.	N/A				
Antenna Manufacturer	N/A				
Antenna Delivery	☒	1*TX+1*RX	☒	2*TX+2*RX	☐ 3*TX+3*RX
Antenna Technology	☒	SISO			
	☒	MIMO	☐	Basic methodology	
			☐	Sectorized antenna systems	
			☐	Cross-polarized antennas	
			☐	Unequal antenna gains, with equal transmit powers	
			☒	Spatial Multiplexing	
			☒	Cyclic Delay Diversity (CDD)	
Antenna Type	Dipole				
Antenna Gain					
Antenna Technology			Ant Gain(eth1) (dBi)		
☒	SISO	☒ Ant1	2.63		
☒		Ant2	2.02		
☒	CDD		2.63dBi for Power; 5.63dBi for PSD		
☒	Beam-forming		5.63dBi for Power; 5.63dBi for PSD		

5G:**AP305C:**

Antenna Model No.	N/A				
Antenna Manufacturer	N/A				
Antenna Delivery	☒	1*TX+1*RX	☒	2*TX+2*RX	☐ 3*TX+3*RX
Antenna Technology	☒	SISO			
	☒	MIMO	☐	Basic methodology	
			☐	Sectorized antenna systems	
			☐	Cross-polarized antennas	
			☐	Unequal antenna gains, with equal transmit powers	
			☒	Spatial Multiplexing	
			☒	Cyclic Delay Diversity (CDD)	
Antenna Type	PIFA				
Antenna Gain					
Antenna Technology	Ant Gain(eth1) (dBi)				
☒ SISO	☒ Ant1	3.97			
	☒ Ant2	3.45			
☒ CDD	3.97dBi for Power; 6.97dBi for PSD				
☒ Beam-forming	6.97dBi for Power; 6.97dBi for PSD				
Antenna Technology	Ant Gain(eth2) (dBi)				
☒ SISO	☒ Ant3	3.75			
	☒ Ant4	2.95			
☒ CDD	3.75dBi for Power; 6.75dBi for PSD				
☒ Beam-forming	6.75dBi for Power; 6.75dBi for PSD				

AP305CX:

Antenna Model No.	N/A				
Antenna Manufacturer	N/A				
Antenna Delivery	☒	1*TX+1*RX	☒	2*TX+2*RX	☐ 3*TX+3*RX
Antenna Technology	☒	SISO			
	☒	MIMO	☐	Basic methodology	
			☐	Sectorized antenna systems	
			☐	Cross-polarized antennas	
			☐	Unequal antenna gains, with equal transmit powers	
			☒	Spatial Multiplexing	
			☒	Cyclic Delay Diversity (CDD)	
Antenna Type	Dipole				
Antenna Gain					
Antenna Technology			Ant Gain(eth1) (dBi)		
☒	SISO	☒ Ant1	2.51		
☒		Ant2	2.67		
☒	CDD		2.67dBi for Power; 5.67dBi for PSD		
☒	Beam-forming		5.67dBi for Power; 5.67dBi for PSD		
Antenna Technology			Ant Gain(eth2) (dBi)		
☒	SISO	☒ Ant3	4.00		
☒		Ant4	4.37		
☒	CDD		4.37dBi for Power; 7.37dBi for PSD		
☒	Beam-forming		7.37dBi for Power; 7.37dBi for PSD		

Power Density

Standalone modes:

AP305C:

Test Mode	Frequency Band (MHz)	Maximum EIRP (dBm)	Power Density at R = 20cm (mW/cm ²)	Power Density Limit at R = 20 cm (mW/cm ²)
802.11b/g/n/ac/ax	2400 ~ 2483.5	28.23	0.132	1.0
802.11a/n/ac/ax(Eth1)	5150 ~ 5350	29.40	0.173	1.0
802.11a/n/ac/ax(Eth2)	5150 ~ 5350 5470 ~ 5850	29.86	0.193	1.0
BLE	2400 ~ 2483.5	7.27	0.001	1.0

AP305CX:

Test Mode	Frequency Band (MHz)	Maximum EIRP (dBm)	Power Density at R = 20cm (mW/cm ²)	Power Density Limit at R = 20 cm (mW/cm ²)
802.11b/g/n/ac/ax	2400 ~ 2483.5	28.19	0.131	1.0
802.11a/n/ac/ax(Eth1)	5150 ~ 5350	28.10	0.128	1.0
802.11a/n/ac/ax(Eth2)	5150 ~ 5350 5470 ~ 5850	30.48	0.222	1.0
BLE	2400 ~ 2483.5	7.99	0.001	1.0

Simultaneous transmission:**AP305C:**

Wireless Configure	Frequency Range (MHz)	Maximum EIRP (dBm)	Limit of Power Density S(mW/cm ²)	Power Density S at R = 20 cm (mW/cm ²)	Rate	Limit
WIFI(Eth1)	5150 ~ 5350	29.40	1.0	0.173	0.366	1
WIFI(Eth2)	5470 ~ 5850	29.86	1.0	0.193		

The EUT support simultaneously transmit with WIFI 2.4G+5G, WIFI 5G+BLE, WIFI 5G+WIFI 5G. The worst combination should be shown in the report. The simultaneously safety distance is 20cm for installed for Wireless Access Point without any other radio equipment.

AP305CX:

Wireless Configure	Frequency Range (MHz)	Maximum EIRP (dBm)	Limit of Power Density S(mW/cm ²)	Power Density S at R = 20 cm (mW/cm ²)	Rate	Limit
WIFI(Eth1)	5150 ~ 5350	28.10	1.0	0.128	0.35	1
WIFI(Eth2)	5470 ~ 5850	30.48	1.0	0.222		

The EUT support simultaneously transmit with WIFI 2.4G+5G, WIFI 5G+BLE, WIFI 5G+WIFI 5G. The worst combination should be shown in the report. The simultaneously safety distance is 20cm for installed for Wireless Access Point without any other radio equipment.

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