



# RF Exposure Evaluation Declaration

Product Name: Wireless Access Point

Model No. : AP305CX

FCC ID : QXO-AP305C

Applicant: Extreme Networks, Inc

Address : Extreme Networks, 6480 Via Del Oro / San

Jose, CA 95119 U.S.A.

Date of Receipt: Oct. 14, 2020

Issued Date : Dec. 02, 2020

Report No. : 20A0241R-RF-US-P20V01

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

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# **Test Report Certification**

Issued Date: Dec. 02, 2020

Report No.: 20A0241R-RF-US-P20V01



Product Name : Wireless Access Point Applicant : Extreme Networks, Inc

Address : Extreme Networks, 6480 Via Del Oro / San Jose, CA

95119 U.S.A.

Manufacturer : Extreme Networks, Inc

Address : Extreme Networks, 6480 Via Del Oro / San Jose, CA

95119 U.S.A.

Model No. : 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/cm2)	Average Time (Minutes)			
(A) Limits for (	Occupational/ Con	trol Exposures					
300-1500	-		F/300	6			
1500-100,000	-		5	6			
(B) Limits for (	(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\*r2)

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 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:  $18\,^{\circ}$ C and  $78\,^{\circ}$  RH.

1.3. Test Result of RF Exposure Evaluation

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

## **Antenna Information:**

## 2.4GHz WiFi

## ML-2452-PTA2M2-036:

Ante	enna Model No	).	N/A								
Ante	enna Manufact	turer	N/A								
Ante	enna Delivery		$\boxtimes$								
Ante	enna Technolo	gy	$\boxtimes$	siso							
						Basic	methodology				
						Secto	rized antenna sy	stem	3		
				MIMO		Cross	-polarized anten	nas			
				IVIIIVIO		Unequ	ıal antenna gain	s, witl	n equal transmit powers		
					$\boxtimes$	Spatial Multiplexing					
					$\boxtimes$	Cyclic	Delay Diversity	(CDD	))		
Ante	enna Type		OMN	NI							
Cate	egorization		Correlated								
Ante	enna Gain										
۸ ۱	anna Taabaala		Ant Gain(Radio 0)								
Ante	enna Technolo	ogy	(dBi)								
	CICO	⊠Ant1	4								
	SISO	⊠Ant2	t2 4								
⊠CDD				4dBi for Power; 7.01dBi for PSD							
$\boxtimes$	Beam-forming	7.01dBi for Power; 7.01dBi for PSD									



# ML-2452-PTA4M4-036:

Ante	enna Model No	<b>)</b> .	N/A									
Ante	enna Manufact	turer	N/A									
Ante	enna Delivery		$\boxtimes$	☐ 1*TX+1*RX ☐ 2*TX+2*RX ☐ 3*TX+3*RX								
Ante	enna Technolo	gy	$\boxtimes$	SISO	SISO							
						Basic	methodology					
						Secto	rized antenna sy	/stem	S			
				MIMO		Cross	-polarized anten	nas				
				IVIIIVIO		Unequal antenna gains, with equal transmit powe						
					$\boxtimes$	Spatial Multiplexing						
					$\boxtimes$	Cyclic	Delay Diversity	(CDE	))			
Ante	enna Type		MO	OMNI								
Ante	enna Gain											
A	anna Taabaala		Ant Gain(Radio 0)									
Antenna Technology			(dBi)									
	0100	⊠Ant1	5									
	SISO	⊠Ant2					5					
$\boxtimes$	CDD		5dBi for Power; 8.01dBi for PSD									
$\boxtimes$	Beam-forming	<u> </u>	8.01dBi for Power; 8.01dBi for PSD									



# AI-DQ04360S:

Ante	enna Model No	).	N/A								
Ante	enna Manufact	urer	N/A								
Ante	enna Delivery		$\boxtimes$	1*TX+1*RX							
Ante	enna Technolo	ду	$\boxtimes$	SISO							
						Basic	methodology				
						Secto	rized antenna s	ysten	าร		
				MIMO		Cross	-polarized ante	nnas			
				IVIIIVIO		Unequal antenna gains, with equal transmit power					
					$\boxtimes$	Spatial Multiplexing					
					$\boxtimes$	Cyclic	Delay Diversity	(CD	D)		
Ante	enna Type		MO	<b>N</b>							
Cate	egorization		Correlated								
Ante	enna Gain										
Λ m+	anna Taabaala	· «» /	Ant Gain(Radio 0)								
Antenna Technology			(dBi)								
	CICO	⊠Ant1					5.5				
	SISO	⊠Ant2		5.5							
⊠CDD				5.5dBi for Power; 8.51dBi for PSD							
⊠ Beam-forming				8.51dBi for Power; 8.51dBi for PSD							



# ML-2452-SEC6M4-036:

Ante	enna Model N	0.	N/A								
Ante	enna Manufac	turer	N/A								
Ante	enna Delivery			1*TX+1*F	1*TX+1*RX						
Ante	enna Technolo	ogy		⊠ siso							
						Basic	methodology				
						Secto	rized antenna s	ysten	ns		
				NAINAO		Cross	s-polarized anter	nnas			
				MIMO		Unequal antenna gains, with equal transmit power					
					$\boxtimes$	Spatial Multiplexing					
					$\boxtimes$	Cyclic	Delay Diversity	/ (CDI	D)		
Ante	enna Type		Sec	or							
Cate	egorization		Corr	Correlated							
Ante	enna Gain										
A 4-	anna Tachnala	~ <i>~</i>	Ant Gain(Radio 0)								
Ante	enna Technolo	(dBi)									
	0100	⊠Ant1	6.9								
	SISO	,									
$\boxtimes$	CDD		6.9dBi for Power; 9.91dBi for PSD								
$\boxtimes$	Beam-forming	eam-forming 9.91dBi for Power; 9.91dBi for PSD						r PSD			



# **5GHz WiFi**

# ML-2452-PTA2M2-036:

Antenna Model No.	A								
Antenna Manufacturer	N/A								
Antenna Delivery	☐ 1*TX+1*RX ☐ 2*TX+2*RX ☐ 3*TX+3*RX								
Antenna Technology	⊠ SISO								
	☐ Basic methodology								
	☐ Sectorized antenna systems								
	MIMO Unequal antenna gains, with equal transmit powers								
Antenna Type	OMNI								
Categorization	Correlated								
Antenna Gain									
Antonno Tookaalom	Ant Gain(Radio 0)								
Antenna Technology	(dBi)								
⊠Ant1	5								
SISO ⊠Ant2	5								
⊠CDD	5dBi for Power; 8.01dBi for PSD								
⊠ Beam-forming	8.01dBi for Power; 8.01dBi for PSD								
	Ant Gain(Radio 1)								
Antenna Technology	(dBi)								
⊠Ant3	5								
⊠ SISO ⊠Ant4	5								
⊠CDD	5dBi for Power; 8.01dBi for PSD								
⊠ Beam-forming	8.01dBi for Power; 8.01dBi for PSD								



# ML-2452-PTA4M4-036:

Ante	enna Model No	0.	N/A								
Ante	enna Manufac	turer	N/A								
Ante	enna Delivery		$\boxtimes$	☐ 1*TX+1*RX ☐ 2*TX+2*RX ☐ 3*TX+3*RX							
Ante	enna Technolo	ogy	$\boxtimes$	SISO							
						Basic	methodo	ology			
						Secto	rized an	tenna sys	stem	S	
				MIMO		cross	-polarize	ed antenr	nas		
				IVIIIVIO		Jnequ	ual anter	nna gains	s, witl	h equal transmit powers	
					$\boxtimes$ S	Spatia	al Multipl	exing			
					$\boxtimes$ C	Cyclic	Delay D	Diversity (	(CDD	))	
Ante	enna Type		OMI	<b>VI</b>							
Cate	egorization		Corr	Correlated							
Ante	enna Gain										
۸۰۰	onna Taabaala	~ <i>~</i>	Ant Gain(Radio 0)								
Ante	enna Technolo	ogy	(dBi)								
	0100	⊠Ant1	6.6								
	SISO	⊠Ant2		6.6							
$\boxtimes$	CDD				6.6	dBi fo	or Powe	r; 9.61dB	i for	PSD	
$\boxtimes$	Beam-forming	<u> </u>			9.61	ldBi f	or Powe	r; 9.61dE	Bi for	PSD	
			Ant Gain(Radio 1)								
Antenna Technology			(dBi)								
⊠Ant3			6.6								
	SISO	⊠Ant4		6.6							
⊠CDD				6.6dBi for Power; 9.61dBi for PSD							
				9.61dBi for Power; 9.61dBi for PSD							



# AI-DQ04360S:

Ante	enna Model No	Э.		N/A								
Antenna Manufacturer			r	N/A								
Ante	enna Delivery			$\boxtimes$	□       1*TX+1*RX       □       2*TX+2*RX       □       3*TX+3*RX						3*TX+3*RX	
Ante	enna Technolo	gy		$\boxtimes$	⊠ siso							
							Basic	methodology	y			
							Sectorized antenna systems					
					MIMO		cross	-polarized ar	ntenna	as		
					IVIIIVIO	□ L	Jnequ	ual antenna (	gains,	with	n equal transmit powers	
						$\boxtimes$ S	Spatia	I Multiplexin	g			
							Cyclic	Delay Diver	sity (C	CDD	)	
Ante	enna Type			OMI	VI							
Cate	egorization			Corr	Correlated							
Ante	enna Gain											
Λnte	anna Tachnala	201		Ant Gain(Radio 0)								
Ante	enna Technolo	ogy		(dBi)								
	0.00	$\boxtimes$	Ant1	6								
	SISO		Ant2		6							
$\boxtimes$	CDD					60	Bi fo	Power; 9.0	1dBi f	or P	SD	
$\boxtimes$	Beam-forming	9				9.01	ldBi f	or Power; 9.	01dBi	i for	PSD	
Λ 1 -	T l l.			Ant Gain(Radio 1)								
Antenna Technology						(dBi)						
⊠Ant3				6								
	SISO	$\boxtimes$	Ant4					6				
⊠CDD				6dBi for Power; 9.01dBi for PSD								
$\boxtimes$	Beam-forming	3			9.01dBi for Power; 9.01dBi for PSD							



# ML-2452-SEC6M4-036:

Ante	enna Model N	0.	N/A								
Ante	enna Manufac	turer	N/A								
Ante	enna Delivery		$\boxtimes$	☐ 1*TX+1*RX ☐ 2*TX+2*RX ☐ 3*TX+3*RX							
Ante	enna Technolo	ogy	$\boxtimes$	SISO							
						Basic	method	ology			
						Secto	rized an	tenna sys	stems	S	
				MIMO		Cross	-polarize	ed antenr	nas		
				IVIIIVIO		Jnequ	ual anter	nna gains	s, witl	h equal transmit powers	
						Spatia	al Multipl	exing			
						Cyclic	: Delay [	Diversity (	(CDD	))	
Ante	enna Type		Sec	tor							
Cate	egorization		Corr	Correlated							
Ante	enna Gain										
A 10.4.6	anna Tachnala	~ <i>~</i>		Ant Gain(Radio 0)							
Ante	enna Technolo	ogy	(dBi)								
	0100	⊠Ant1	7.2								
	SISO	⊠Ant2		7.2							
$\boxtimes$	CDD				7.2	2dBi 1	or Powe	er; 7.2dBi	for F	PSD	
$\boxtimes$	Beam-forming	<u> </u>			7.2	2dBi f	or Powe	er; 7.2dBi	for F	PSD	
			Ant Gain(Radio 1)								
Antenna Technology			(dBi)								
⊠Ant3			7.2								
	SISO	⊠Ant4		7.2							
⊠CDD				7.2dBi for Power; 10.21dBi for PSD							
$\boxtimes$	Beam-forming	<u> </u>		10.21dBi for Power; 10.21dBi for PSD							



# **Power Density**

## Standalone modes:

## AP305CX:

Test Mode	Frequency Band (MHz)	Maximum EIRP (dBm)	Power Density at R = 20cm (mW/cm2)	Power Density Limit at R = 20 cm (mW/cm2)
802.11b/g/n/ac/ax	2400 ~ 2483.5	29.45	0.175	1.0
802.11a/n/ac/ax(Radio 0)	5150 ~ 5350	27.06	0.101	1.0
802.11a/n/ac/ax(Radio 1)	5150 ~ 5350 5470 ~ 5850	28.80	0.151	1.0
BLE	2400 ~ 2483.5	9.72	0.002	1.0

## Simultaneous transmission:

## **AP305CX:**

Wireless Configure	Frequency Range (MHz)	Maximum EIRP (dBm)	Limit of Power Density S(mW/cm2)	Power Density S at R = 20 cm (mW/cm2)	Rate	Limit
WIFI(Radi o 0)	5150 ~ 5350	27.06	1.0	0.101	0.252	4
WIFI(Radi o 1)	5470 ~ 5850	28.32	1.0	0.151	0.252	1

The EUT support simultaneously transmit with WIFI 2.4G+5G, 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.

<ul><li>The End</li></ul>	