



**FCC RF EXPOSURE REPORT**

*For*  
**Outdoor Wireless LAN Access Point**

**MODEL NUMBER: AP8030DN**

**FCC ID: QISAP8030DN**

**REPORT NUMBER: 4788310840.1-6**

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*Prepared for*  
**HUAWEI TECHNOLOGIES CO., LTD.**  
**Administration Building, Huawei Technologies Co., Ltd. Bantian, Longgang**  
**District, Shenzhen, P.R. China, 518129**

*Prepared by*  
**UL Verification Services (Guangzhou) Co., Ltd, Song Shan Lake Branch**  
**Building 10, Innovation Technology Park, No. 1, Li Bin Road, Song Shan Lake**  
**Hi-Tech Development Zone**  
**Dongguan, People's Republic of China**  
**Tel: +86 769 22038881**  
**Fax: +86 769 33244054**  
**Website: [www.ul.com](http://www.ul.com)**



Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
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# 1. ATTESTATION OF TEST RESULTS

## Applicant Information

Company Name: HUAWEI TECHNOLOGIES CO., LTD.

Address: Administration Building, Huawei Technologies Co., Ltd. Bantian, Longgang District, Shenzhen, P.R. China, 518129

## Manufacturer Information

Company Name: HUAWEI TECHNOLOGIES CO., LTD.

Address: Administration Building, Huawei Technologies Co., Ltd. Bantian, Longgang District, Shenzhen, P.R. China, 518129

## EUT Description

EUT Name: Outdoor Wireless LAN Access Point  
 Model: AP8030DN  
 Brand Name: HUAWEI  
 Sample Status: Normal  
 Sample ID: 1358586  
 Sample Received Date: January 04, 2018  
 Date of Tested: January 04, 2018~ July 22, 2018

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC 47CFR§2.1091	Complies

Tested By:

Checked By:

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Miller Ma  
 Engineer Project Associate

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Shawn Wen  
 Laboratory Leader

Approved By:

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Stephen Guo  
 Laboratory Manager



## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091.

## 3. FACILITIES AND ACCREDITATION

Accreditation Certificate	<p><b>A2LA (Certificate No.: 4102.01)</b> UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA.</p> <p><b>FCC (FCC Designation No.: CN1187)</b> UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules</p> <p><b>IC(Company No.: 21320)</b> UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with Industry Canada. The Company Number is 21320.</p> <p><b>VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011)</b> UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name: Chamber D, the VCCI registration No. is G-20019 and R-20004 Shielding Room B, the VCCI registration No. is C-20012 and T-20011</p>
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Note 1: All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China

## 4. REQUIREMENT

### LIMIT AND CALCULATION METHOD

Systems operating under the provisions of FCC 47 CFR section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as mobile device whereby a distance of 0.2m normally can be maintained between the user and the device, and below RF Permissible Exposure limit shall comply with.

Limits for General Population/Uncontrolled Exposure

### RF EXPOSURE LIMIT

Frequency Range (MHz)	E-field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> or S (Minutes)
0.3 -- 1.34	614	1.63	(100)*	30
1.34 -- 30	824/f	2.19/f	(180/f <sup>2</sup> )*	30
30 -- 300	27.5	0.073	0.2	30
300 -- 1500	--	--	f/1500	30
1500 -- 100,000	--	--	1.0	30

### CALCULATION METHOD

$$S = PG / 4\pi R^2$$

Where:

S=power density

P=power input to antenna

G=power gain of the antenna in the direction of interest relative to an isotropic radiator

R=distance to the center of radiation of the antenna

**CALCULATED RESULTS****For 1TX Mode**

2.4GHz WIFI					
Frequency	Max Tune Up Power		Power Density	Power Density Limit	Test Result
MHz	dBm	mW	mW/cm <sup>2</sup>	mW/cm <sup>2</sup>	--
2412~2462	21.0	125.89	0.088	1.0	Complies

5GHzWIFI (UNII-1)					
Frequency	Max Tune Up Power		Power Density	Power Density Limit	Test Result
MHz	dBm	mW	mW/cm <sup>2</sup>	mW/cm <sup>2</sup>	--
5180~5240	9.5	8.91	0.006	1.0	Complies

5GHzWIFI (UNII-2)					
Frequency	Max Tune Up Power		Power Density	Power Density Limit	Test Result
MHz	dBm	mW	mW/cm <sup>2</sup>	mW/cm <sup>2</sup>	--
5260~5320	18.5	70.79	0.050	1.0	Complies

5GHzWIFI (UNII-2)					
Frequency	Max Tune Up Power		Power Density	Power Density Limit	Test Result
MHz	dBm	mW	mW/cm <sup>2</sup>	mW/cm <sup>2</sup>	--
5500~5720	18.5	70.79	0.050	1.0	Complies



5GHzWIFI (UNII-3)					
Frequency	Max Tune Up Power		Power Density	Power Density Limit	Test Result
MHz	dBm	mW	mW/cm <sup>2</sup>	mW/cm <sup>2</sup>	--
5725~5825	24.5	281.24	0.198	1.0	Complies





## For 2TX Mode

2.4GHz WIFI					
Frequency	Max Tune Up Power		Power Density	Power Density Limit	Test Result
MHz	dBm	mW	mW/cm <sup>2</sup>	mW/cm <sup>2</sup>	--
2412~2462	21.0	125.89	0.177	1.0	Complies

5GHzWIFI (UNII-1)					
Frequency	Max Tune Up Power		Power Density	Power Density Limit	Test Result
MHz	dBm	mW	mW/cm <sup>2</sup>	mW/cm <sup>2</sup>	--
5180~5240	6.5	4.47	0.006	1.0	Complies

5GHzWIFI (UNII-2)					
Frequency	Max Tune Up Power		Power Density	Power Density Limit	Test Result
MHz	dBm	mW	mW/cm <sup>2</sup>	mW/cm <sup>2</sup>	--
5260~5320	15.5	35.48	0.050	1.0	Complies

5GHzWIFI (UNII-2)					
Frequency	Max Tune Up Power		Power Density	Power Density Limit	Test Result
MHz	dBm	mW	mW/cm <sup>2</sup>	mW/cm <sup>2</sup>	--
5500~5720	15.5	35.48	0.050	1.0	Complies



5GHzWIFI (UNII-3)					
Frequency	Max Tune Up Power		Power Density	Power Density Limit	Test Result
MHz	dBm	mW	mW/cm <sup>2</sup>	mW/cm <sup>2</sup>	--
5725~5825	21.5	141.25	0.198	1.0	Complies



## For 3TX Mode

2.4GHz WIFI					
Frequency	Max Tune Up Power		Power Density	Power Density Limit	Test Result
MHz	dBm	mW	mW/cm <sup>2</sup>	mW/cm <sup>2</sup>	--
2412~2462	19.5	89.13	0.188	1.0	Complies

5GHzWIFI (UNII-1)					
Frequency	Max Tune Up Power		Power Density	Power Density Limit	Test Result
MHz	dBm	mW	mW/cm <sup>2</sup>	mW/cm <sup>2</sup>	--
5180~5240	4.7	2.95	0.007	1.0	Complies

5GHzWIFI (UNII-2)					
Frequency	Max Tune Up Power		Power Density	Power Density Limit	Test Result
MHz	dBm	mW	mW/cm <sup>2</sup>	mW/cm <sup>2</sup>	--
5260~5320	13.5	22.39	0.047	1.0	Complies

5GHzWIFI (UNII-2)					
Frequency	Max Tune Up Power		Power Density	Power Density Limit	Test Result
MHz	dBm	mW	mW/cm <sup>2</sup>	mW/cm <sup>2</sup>	--
5500~5720	13.5	22.39	0.047	1.0	Complies



5GHzWIFI (UNII-3)					
Frequency	Max Tune Up Power		Power Density	Power Density Limit	Test Result
MHz	dBm	mW	mW/cm <sup>2</sup>	mW/cm <sup>2</sup>	--
5725~5825	19.5	89.13	0.187	1.0	Complies

**For 2.4GHz and 5GHz WIFI can be transmitted simultaneously**

2.4GHz+5GHzWIFI (UNII-3)						
Frequency	Max Tune Up Power		Power Density	Power Density ( Sum )	Power Density Limit	Test Result
MHz	dBm	mW	mW/cm <sup>2</sup>	mW/cm <sup>2</sup>	mW/cm <sup>2</sup>	--
2412~2462	19.5	89.13	0.188	0.386	1.0	Complies
5725~5825	24.5	281.24	0.198			Complies

- Note: 1. direction =Antenna Gain+10 log(N<sub>ANT</sub>) where N<sub>ANT</sub> is the number of outputs, G<sub>ANT</sub> is the Antenna gain.  $\pi=3.141$ , Antenna Gain=11.5dBi, N<sub>ANT</sub>=1 for 1TX Mode, N<sub>ANT</sub>=2 for 2TX Mode, N<sub>ANT</sub>=3 for 3TX
3. The minimum separation distance of the device is greater than 40cm.
4. Calculate by WORST-CASE mode.
5. Owing to the maximum Calculated Result is below the limit, so it deemed to comply with the basic restrictions.
6. Max Tune Up Power by manufacturer's declaration
7. 2.4GHz and 5GHz WIFI can be transmitted simultaneously.

## END OF REPORT