



## **FCC RF EXPOSURE REPORT**

*For*

**GPON Terminal**

**MODEL NUMBER: EchoLife EG8247Q**

**FCC ID: QISEG8247Q**

**REPORT NUMBER: 4788418338.1-4**

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*Prepared for*

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*Prepared by*

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	07/30/2018	Initial Issue	Miller Ma
V1	11/07/2018	Updated the 4.0 chapter of the report.	Miller Ma



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## 1. ATTESTATION OF TEST RESULTS

### Applicant Information

Company Name: HUAWEI TECHNOLOGIES CO., LTD.  
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### 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: GPON Terminal  
Model: EchoLife EG8247Q; EchoLife EG8245Q; EchoLife HG8247Q5;  
EchoLife HG8245Q5.  
Brand Name: HUAWEI  
Sample Status: Normal  
Sample ID: 1607492  
Sample Received Date: May 22, 2018  
Date of Tested: May 22, 2018~ June 22, 2018

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC 47CFR§2.1091	Complies

Tested By:

Miller Ma  
Engineer Project Associate

Checked By:

Shawn Wen  
Laboratory Leader

Approved By:

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.</p> <p>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 SISO 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	23	199.53	0.0629	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	26	398.11	0.1255	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	24	251.19	0.0792	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	24	251.19	0.0792	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	26	398.11	0.1255	1.0	Complies

**For MIMO 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	23.77	238.23	0.2254	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	29	794.33	0.7515	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	24	251.19	0.2376	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	24	251.19	0.2376	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	29	794.33	0.7515	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	23.77	238.23	0.2254	0.9769	1.0	Complies
5725~5825	29	794.33	0.7515			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=2.0dBi, N<sub>ANT</sub>=1 for 1TX Mode, N<sub>ANT</sub>=2 for 2TX Mode, N<sub>ANT</sub>=3 for 3TX.
2. The minimum separation distance of the device is greater than 20cm.
3. Calculate by WORST-CASE mode.
4. Owing to the maximum Calculated Result is below the limit, so it deemed to comply with the basic restrictions.
5. Max Tune Up Power by manufacturer's declaration
6. 2.4GHz and 5GHz WIFI can be transmitted simultaneously.

## END OF REPORT