HUAWEI Technologies Co., Ltd.

MPE ASSESSMENT REPORT

Report Type:
FCC MPE assessment report

Model:
eM300-8a V2R1

REPORT NUMBER:
181101512SHA-004

ISSUE DATE:
February 4, 2019

DOCUMENT CONTROL NUMBER:
TTRFFCCMPE-01_V1

Intertek Testing Services Shanghai
Building No.86, 1198 Qinzhou Road (North)
Caohejing Development Zone
Shanghai 200233, China

Telephone: 86 21 6127 8200
www.intertek.com

Total Quality. Assured.

TEST REPORT

Report no.: 181101512SHA-004

Applicant:	HUAWEI Technologies Co., Ltd. Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, 518129
Manufacturer:	HUAWEI Technologies Co., Ltd. Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, 518129
FCC ID:	QISEM300-8AMC

SUMMARY:

The equipment complies with the requirements according to the following standard(s) or Specification:
KDB447498 D01 General RF Exposure Guidance v06 FCC Part2.1091, FCC Part2.1093 FCC Part1.1307(b)

PREPARED BY:	**REVIEWED BY:**
Project Engineer Erick Liu	Reviewer Daniel Zhao

TEST REPORT

Revision History

Report No.	Version	Description	Issued Date
181101512SHA-004	Rev. 01	Initial issue of report	February 4, 2019

TEST REPORT

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	eLTE-IoT Module
Type/Model:	eM300-8a V2R1
Description of EUT:	Huawei eLTE-IoT module series are the wireless modules designed for the Internet of Things (IoT) industry, providing narrowband and low-power-consumption radio data bearer for interconnection with the network. Huawei eLTE-IoT module series also provide a UART port for integration into various industrial devices.
Rating:	DC 3.8V
Category of EUT:	Class B
EUT type:	☒ Table top ☐ Floor standing
Software Version:	/
Hardware Version:	/
Sample received date:	December 6, 2018
Date of test:	December 11, 2018 – January 12, 2019

1.2 Technical Specification

Frequency Band:	902MHz ~ 928MHz
Support Standards:	IEEE 802.15.4
Modulation Technique:	Frequency Hopping Spread Spectrum (FHSS)
Type of Modulation:	QPSK
Channel Number:	756
Antenna:	External Antenna, 2.5dBi

1.3 Description of Test Facility

Name:	Intertek Testing Services Shanghai
Address:	Building 86, No. 1198 Qinzhou Road(North), Shanghai 200233, P.R. China
Telephone:	86 21 61278200
Telefax:	86 21 54262353

The test facility is recognized, certified, or accredited by these organizations:	CNAS Accreditation Lab Registration No. CNAS L0139
	FCC Accredited Lab Designation Number: CN1175
	IC Registration Lab Registration code No.: 2042B-1
	VCCI Registration Lab Registration No.: R-4243, G-845, C-4723, T-2252
	A2LA Accreditation Lab Certificate Number: 3309.02

Total Quality. Assured.

TEST REPORT

2 MPE Assessment

Test result: Pass

2.1 MPE Assessment Limit

Mobile device exposure for standalone operations:

Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (uT)	Equivalent plane wave power density S_{eq} (W/m^2)
0-1 Hz	-	$3,2 \times 10^4$	4×10^4	-
1-8 Hz	10 000	$3,2 \times 10^4/f^2$	$4 \times 10^4/f^2$	-
8-25 Hz	10 000	4 000/f	5 000/f	-
0,025-0,8 kHz	250/f	4/f	5/f	-
0,8-3 kHz	250/f	5	6,25	-
3-150 kHz	87	5	6,25	-
0,15-1 MHz	87	0,73/f	0,92/f	-
1-10 MHz	$87/f^{1/2}$	0,73/f	0,92/f	-
10-400 MHz	28	0,073	0,092	2
400-2 000 MHz	$1,375\ f^{1/2}$	$0,0037\ f^{1/2}$	$0,0046\ f^{1/2}$	f/200
2-300 GHz	61	0,16	0,20	10

Mobile device exposure for simultaneous transmission operations: **the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in a host device is ≤ 1.0**

Total Quality. Assured.

TEST REPORT

2.2 Assessment Results

Power density (S) is calculated according to the formula:

$S = P / (4\pi R^2)$

Where S = power density in mW/cm^2

P = Radiated transmit power in mW

G = numeric gain of transmit antenna

R = distance (cm)

As we can see from the test report 181101512SHA-003:
The maximum radiated power = 26.218dBm = 418.60 mW;
Here R is chosen to be 20cm,

$S = P / (4\pi R^2) = 418.60 / (4 * 3.14 * 20 * 20) = 0.083\ mW/cm^2 < 1\ mW/cm^2$

Total Quality. Assured.

TEST REPORT

Appendix I

Definition below must be outlined in the User Manual:

To satisfy FCC RF exposure requirements, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation.
To ensure compliance, operations at closer than this distance is not recommended.

********** END **********