RF Exposure Evaluation Report

APPLICANT	: Huawei technologies Co.,Ltd.
EQUIPMENT	: eM300-8a
BRAND NAME	: Quectel
MODEL NAME	: eM300-8a
MARKETING NAME	: Quectel
FCC ID	: QIS201705EM300
STANDARD	: 47 CFR Part 2.1091

We, Sporton International (KunShan) INC., would like to declare that the device has been evaluated in accordance with 47 CFR Part 2.1091, and pass the limit. Without written approval of Sporton International (KunShan) INC., the test report shall not be reproduced except in full.

Mark Qu

Prepared by: Mark Qu / Manager

Jones Tsai

Approved by: Jones Tsai / Manager

Testing Laboratory 2627

Sporton International (KunShan) INC.
No.3-2, Pingxiang Road, Kunshan Development Zone, Jiangsu, China

Table of Contents

Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA742612	Rev. 01	Initial issue of report	May 05, 2017

1. Administration Data

1.1. Testing Laboratory

Testing Laboratory	
Test Site	Sporton International (KunShan) INC.
Test Site Location	No.3-2, Pingxiang Road, Kunshan Development Zone, Jiangsu, China TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958

Applicant	
Company Name	Huawei technologies Co.,Ltd.
Address	Administration Building, headquarters of Huawei technologies Co., Ltd. Bantian, longgang District, ShenZhen, 518129, P.R.China

Manufacturer	
Company Name	Quectel Wireless Solutions Co.,Ltd.
Address	Room 501, Building 13, No.99 Tianzhou Road, Xuhui District, Shanghai

2. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	eM300-8a
Brand Name	Quectel
Model Name	eM300-8a
Marketing Name	Quectel
FCC ID	QIS201705EM300
Wireless Technology and Frequency Range	902.5 MHz ~ 927.4 MHz
Type of Modulation	QPSK
Antenna Type	External Antenna
HW Version	V1.1
SW Version	V100R001C00B105
EUT Stage	Production Unit

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

3. Maximum RF average output power among production units

eLTE-IoT
Tune-up(Unit: dBm)
26.00

4. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f2)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f2)	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$S = \frac{PG}{4\pi R^2}$$

Where:
S = Power Density
P = Output Power at Antenna Terminals
G = Gain of Transmit Antenna (linear gain)
R = Distance from Transmitting Antenna

5. Radio Frequency Radiation Exposure Evaluation

5.1. Standalone Power Density Calculation

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum ERP (dBm)	Maximum ERP (W)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)
902.5-927.4 MHz	902.5	4.0	26.0	27.850	0.610	30.000	1.000	1000	0.199	0.602

Note: For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.