

Hangzhou Tuya Information Technology Co.,Ltd MPE ASSESSMENT REPORT

Report Type:

FCC MPE assessment report

Model:

TYAUX F

REPORT NUMBER:

190700514SHA-002

ISSUE DATE:

July 24, 2019

DOCUMENT CONTROL NUMBER:

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Report no.: 190700514SHA-002

Applicant: Hangzhou Tuya Information Technology Co.,Ltd

Room701, Building 3, More Center, No.87 GuDun Road, Hangzhou,

Zhejiang, China

Manufacturer: Hangzhou Tuya Information Technology Co.,Ltd

Room701, Building 3, More Center, No.87 GuDun Road, Hangzhou,

Zhejiang, China

FCC ID: 2ANDL-TYAUX-F

SUMMARY:

PREPARED BY:

Erick Liu

The equipment complies with the requirements according to the following standard(s) or Specification:

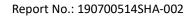
KDB447498 D01 General RF Exposure Guidance v06 FCC Part2.1091, FCC Part2.1093 FCC Part1.1307(b)

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Gn'or Liu	Wakeyou
Project Engineer	Reviewer

REVIEWED BY:

Wakeyou Wang

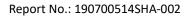
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Revision History

Report No.	Version	Description	Issued Date
190700514SHA-002	Rev. 01	Initial issue of report	July 24, 2019





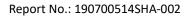
1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	WIFI Module	
Type/Model:	TYAUX_F	
Description of EUT:	EUT is a Wi-Fi module and has only one model.	
Rating:	12V DC	
Category of EUT:	Class B	
EUT type:	☐ Table top ☐ Floor standing	
Software Version:	/	
Hardware Version:	/	
Sample received date:	July 02, 2019	
Date of test:	July 05, 2019 – July 24, 2019	

1.2 Technical Specification

Frequency Range:	2400MHz ~ 2483.5MHz		
Support Standards:	IEEE 802.11b, IEEE 802.11g, IEEE 802.11n-HT20, IEEE 802.11n-HT40		
	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK)		
	IEEE 802.11g: OFDM (64-QAM, 16-QAM, QPSK, BPSK)		
	IEEE 802.11n-HT20: OFDM (64-QAM, 16-QAM, QPSK, BPSK)		
Type of Modulation:	IEEE 802.11n-HT40: OFDM (64-QAM, 16-QAM, QPSK, BPSK)		
	11 Channels for 802.11b, 802.11g and 802.11n(HT20)		
Channel Number:	7 Channels for 802.11n(HT40)		
	IEEE 802.11b: Up to 11 Mbps		
	IEEE 802.11g: Up to 54 Mbps		
	IEEE 802.11n-HT20: Up to MCS7		
Data Rate:	IEEE 802.11n-HT40: Up to MCS7		
Channel Separation:	5 MHz		
Antenna Information:	2.5dBi, PCB antenna		

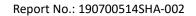




1.3 Description of Test Facility

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	CNAS Accreditation Lab
recognized,	Registration No. CNAS L0139
certified, or	FCC Accredited Lab
accredited by these	Designation Number: CN1175
organizations:	Designation Number. CN1173
	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





2 MPE Assessment

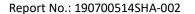
Test result: Pass

2.1 MPE Assessment Limit

Mobile device exposure for standalone operations:

Frequency range	E-field strength	H-field strength	B-field	Equivalent plane wave
	(V/m)	(A/m)	(uT)	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 \leq 1.0





2.2 Assessment Results

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

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

Where $S = power density in mW/cm^2$

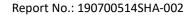
P = Radiated transmit power in mW

G = numeric gain of transmit antenna

R = distance (cm)

As we can see from the test report 190700514SHA-001: The maximum radiated power = 18.87dBm = 77.09 mW; Here R is chosen to be 20cm,

 $S = P / (4\pi R^2) = 108.64 / (4 * 3.14 * 20 * 20) = 0.0153 \text{ mW/cm}^2 < 1 \text{ mW/cm}^2$





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.