RF EXPOSURE REPORT



Report No.: Q181023S005-FCC-H

Supersede Report No.: N/A

| Applicant | TP-LINK Technologies Co., Ltd. | | | |
|---|--------------------------------|---------------------------|--|--|
| Product Name | C5 Plus smartphone | | | |
| Model No. | TP7031C | TP7031C | | |
| Serial No. | TP7031CXYZZ | | | |
| Test Standard | FCC 2.1093 | | | |
| Test Date | Nov. 06 to Nov. 20, 2018 | | | |
| Issue Date | Nov. 22, 2018 | | | |
| Test Result | Pass Fail | | | |
| Equipment complied with the specification | | | | |
| Equipment did not comply with the specification | | | | |
| Janon Liona | | David Huang | | |
| Aaron Liang Test Engineer | | David Huang Checked By | | |

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Test result presented in this test report is applicable to the tested sample only

Issued by:

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Laboratories Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.



In addition to testing and certification, SIEMIC provides initial design reviews and compliance management throughout a project. Our extensive experience with China, Asia Pacific, North America, European, and International compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

Accreditations for Conformity Assessment

| Country/Region | Scope |
|----------------|------------------------------------|
| USA | EMC, RF/Wireless, SAR, Telecom |
| Canada | EMC, RF/Wireless, SAR, Telecom |
| Taiwan | EMC, RF, Telecom, SAR, Safety |
| Hong Kong | RF/Wireless, SAR, Telecom |
| Australia | EMC, RF, Telecom, SAR, Safety |
| Korea | EMI, EMS, RF, SAR, Telecom, Safety |
| Japan | EMI, RF/Wireless, SAR, Telecom |
| Singapore | EMC, RF, SAR, Telecom |
| Europe | EMC, RF, SAR, Telecom, Safety |



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1. Report Revision History

| Report No. | Report Version | Description | Issue Date |
|-------------------|----------------|-------------|---------------|
| Q181023S005-FCC-H | NONE | Original | Nov. 22, 2018 |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

2. Customer information

| Applicant Name | TP-LINK Technologies Co., Ltd. | |
|------------------|--|--|
| Applicant Add | Building 24-1F/3F/4F/5F, 28-1F/2F/3F/4F Science and Technology Park, Shennan | |
| | Road, Nanshan District, Shenzhen City, Guangdong Province, P.R. China | |
| Manufacturer | TP-LINK Technologies Co.,Ltd | |
| Manufacturer Add | Building 24-1F/3F/4F/5F, 28-1F/2F/3F/4F Science and Technology Park, Shennan | |
| | Road, Nanshan District, Shenzhen City, Guangdong Province, P.R. China | |

3. Test site information

| Lab performing tests | SIEMIC (Shenzhen-China) LABORATORIES | |
|----------------------|---|--|
| | Zone A, Floor 1, Building 2 Wan Ye Long Technology Park | |
| Lab Address | South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China | |
| | 518108 | |
| FCC Test Site No. | 535293 | |
| IC Test Site No. | 4842E-1 | |
| Test Software | Radiated Emission Program-To Shenzhen v2.0 | |



Serial Model:

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4. Equipment under Test (EUT) Information

Main Model: TP7031C

TP7031CXYZZ

(Model Difference

Description of Model Name Differentiation:

X=2, indicates Grey; X=4, indicates Gold; X=7, indicates Blue;

X=8, indicates Red;

Y=0, indicates the memory is 512MB RAM + 8GB Flash; Y=1, indicates the memory is 1GB RAM + 8GB Flash; Y=2, indicates the

memory is 1GB RAM + 16GB Flash;

Z=' A' to ' Z' , ZZ indicates different regions or customers.

All models are same with electrical parameters and internal circuit

structure.)

Date EUT received: Nov. 05, 2018

Test Date(s): Nov. 06 to Nov. 20, 2018

Antenna Gain: Bluetooth/BLE: -0.5dBi

Antenna Type: PIFA Antenna

Bluetooth: GFSK, π /4DQPSK, 8DPSK Type of Modulation:

BLE: GFSK

RF Operating Frequency (ies): Bluetooth& BLE: 2402-2480 MHz



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Bluetooth: 79CH Number of Channels:

BLE: 40CH

Port: Please refer to the user's manual

Adapter :

Model: A8-501000

Input: AC100-240V~50/60Hz,0.2A Max

Output: DC 5.0V, 1.0A

Battery:

Input Power: Model: NBL-40A2150

Spec: 3.8V, 2150mAh from Li-ion

Limited charge voltage: 4.35V Rating:3.8V/2150mAh/8.17Wh

Typical3.8V/2200mAh/8.36Wh

Trade Name : neffos

FCC ID: TE7C5PLUSV1



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5. FCC §2.1093 - Radiofrequency radiation exposure evaluation: portable devices.

5.1 RF Exposure

Standard Requirement:

According to §15.247 (i) and §1.1307(b)(1), systems operating under the provisions of this 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.

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] $\cdot [\sqrt{f_{(GHz)}}] \le 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, 16 where

- f_(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation¹⁷
- The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is ≤ 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

Routine SAR evaluation refers to that specifically required by § 2.1093, using measurements or computer simulation. When routine SAR evaluation is not required, portable transmitters with output power greater than the applicable low threshold require SAR evaluation to qualify for TCB approval.

result = $P\sqrt{F}/D$

P= Maximum turn-up power in mW

F= Channel frequency in GHz

D= Minimum test separation distance in mm



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5.2 Test Result

Bluetooth Mode:

| Modulation | СН | Freque | Conducted Power | Tune Up Power | Max Tune Up Power | Max Tune Up Power | Result | Limit |
|------------|------|--------|-----------------|---------------|-------------------|-------------------|--------|-------|
| | | (MHz) | (dBm) | (dBm) | (dBm) | (mW) | | |
| GFSK | Low | 2402 | 5.981 | 5±1 | 6 | 3.981 | 1.23 | 3 |
| | Mid | 2441 | 6.278 | 6±1 | 7 | 5.012 | 1.57 | 3 |
| | High | 2480 | 6.370 | 6±1 | 7 | 5.012 | 1.58 | 3 |
| π /4 DQPSK | Low | 2402 | 6.069 | 6±1 | 7 | 5.012 | 1.55 | 3 |
| | Mid | 2441 | 6.077 | 6±1 | 7 | 5.012 | 1.57 | 3 |
| | High | 2480 | 5.813 | 5±1 | 6 | 3.981 | 1.25 | 3 |
| 8-DPSK | Low | 2402 | 5.805 | 5±1 | 6 | 3.981 | 1.23 | 3 |
| | Mid | 2441 | 6.099 | 6±1 | 7 | 5.012 | 1.57 | 3 |
| | High | 2480 | 5.912 | 5±1 | 6 | 3.981 | 1.25 | 3 |

BLE Mode:

| Modulation | СН | Freq (MHz) | Conducted Power (dBm) | Tune Up Power (dBm) | Max Tune Up Power (dBm) | Max Tune Up Power (mW) | Result | Limit |
|------------|------|---------------|-----------------------|---------------------------|-------------------------|------------------------|--------|-------|
| GFSK | Low | 2402 | 5.666 | 5±1 | 6 | 3.981 | 1.23 | 3 |
| | Mid | 2440 | 6.060 | 6±1 | 7 | 5.012 | 1.57 | 3 |
| | High | 2480 | 5.831 | 5±1 | 6 | 3.981 | 1.25 | 3 |

Result: Compliance

No SAR measurement is required.