

# User Manual

Model: T875QDW

## Table of contents

1、 描述 / DESCRIPTION .....	3
2、 输入特性 / INPUT CHARACTERISTICS .....	3
3、 输出特性 / OUTPUT CHARACTERISTICS .....	3-5
4、 保护功能 / PROTECTION FUNCTION .....	5-6
5、 环境要求 / ENVIRONMENTAL REQUIREMENT .....	6
6、 性能及结构参数 / SPECIFICATION & MECHANICAL REQUIREMENT .....	7-8
7、 外形 & 丝印图 / OUTLINE DRAWING & SILK PRINT.....	9-10

## 1、描述 / DESCRIPTION:

This specification is applied to T875QDW of desktop charger, it is compliance to Qualcomm's QC4+ (QC4/3.0/2.0) /FCP/AFC charging protocol and USB 3.1 PD/PPS; Also with Hub function and wireless charger ( rated output power 5W ) compliance to Qi's protocol. So there are 4 function ( PD & QC4+ & Wireless charging & Hub function ) in one (T875QDW) by three ports ( type-C port + Hub port + Wireless charging port ) .

## 2、输入特性 / INPUT CHARACTERISTICS:

### 2.1 输入电压/Input Voltage:

额定电压/Rated Voltage : 100-240Vac

调整范围/Variation Range : 90-264Vac

### 2.2 输入频率 / Input Frequency :

额定频率/ Rated Frequency : 50/60Hz.

调整频率/Variation Frequency : 47-63Hz

### 2.3 输入电流 / Input Current :

当输入交流电压为额定值的下限电压且负载满载时,最大输入交流电流 1.8A.

1.8Amp Max.; while the lower limited voltage of AC input and DC output fully load.

### 2.4 浪涌电流 / Inrush Current :

当输出为额定负载,环境温度为 25°C,输入 240Vac 冷态起动时的最大浪涌电流小于 30A.

30Amps Max.; while cold start at 240Vac input and connected with rated load on 25°C ambient.

### 2.5 AC 漏电流 / AC Leakage Current :

当输入电压 240Vac 时,最大漏电流为 0.3mA.

0.3mA Max while the 240V AC input.

## 3、输出特性 / OUTPUT CHARACTERISTICS :

### 3.1 输出功率 / Output Power

Port	Output Mode	Output Voltage	Rated current	Rated Power
C port (USB3.1 Type-C Port)	On Normal state	5Vdc	3.0A	15W
	On USB 3.1 PD3.0 state	9Vdc	3.0A	27W
		12Vdc	3.0A	36W
		15Vdc	3.0A	45W
		20Vdc	3.0A	60W
	On USB 3.1 PPS/QC4 state	3.3 ~ 21Vdc	2.8A	9.24 ~ 58.8W
On QC 3.0/2.0/AFC/FCP state (the function only be enable on "Charging" state)	5V	3.0A	15W	
	9V	2.0A	18W	
	12V	1.5A	18W	
HUB port (USB2.0 Reversible Type-A Port)	On "Charging" state	5V	2.4A	12W
	On "Data transfer" state	5V	0.5A	2.5W
Wireless charger	On Normal state	5V	1.0A	5W
Wireless charger + HUB port Are both Output	On Normal state	5V	3.0A max.	15W max.

Remark:

- # The C port support PD3.0/PPS/QC4+/FCP/AFC and A port's D+/D- auto identify BC1.2/Samsung/Apple device charging.
- # The C port embedded OTP ( over temperature protection ) function. If the temperature of C port's type-C connector exceeds  $100^{\circ}\text{C} \pm 10\%$ , the C port output will be disable and C port's indicator will fast flashing till temperature drop below  $70^{\circ}\text{C} \pm 10\%$  ; re-plug loading to restart power output .
- # The Type C port's indicator will light blue when the PD3.0/PPS/QC4+/FCP/AFC active of type C port ; light Green when 5Vnormal output and light off when disconnected loading device and no output ;light flash when OCP or OTP be occurred.
- # The Function Switch with two positions ( Data transfer / Charging state ) ; if shift the Function Switch to "Data transfer" position that USB2.0 data transfer between the type C port with Hub port ; and charging current only 5V/0.5A of Hub port . ; the type C port only can PD/QC4 charging and QC3.0/2.0/AFC/FCP charging function will be disable at same time . If shift the Function Switch to "Charging" state that Hub port with 5V/2.4A charging function only ( D+/D- auto identify ) and disable data transfer function between the type C port with Hub port ; at same time the type C port can PD/QC4+/FCP/AFC charging and active dependent on device loading .
- # The embedded wireless charger on the top of plastic case ( rated output power 5Wmax ). Compliance with Qi's protocol.

### 3.2 负载特性与调整率 / Combined Load and Line Regulation

Voltage	Max. Load	Line Regulation	Load Regulation
5Vdc	3A	$\pm 3\%$	$\pm 8\%$
9Vdc	3A	$\pm 3\%$	$\pm 8\%$
12Vdc	3A	$\pm 3\%$	$\pm 8\%$
15Vdc	3A	$\pm 3\%$	$\pm 8\%$
20Vdc	3A	$\pm 3\%$	$\pm 8\%$

### 3.3 纹波 / Ripple :

测试条件:在额定电压及额定负载条件下,使用示波器带宽为 20MHz 连接到充电器的输出,同时输出端并联一个 47uF 的电解电容和一个 0.1uF 的瓷片电容.

Under normal voltage output and connected rated load, the ripple and noise are as follows while measure by DSC (20MHZ bandwidth) and parallel connected 47uF & 0.1uF on output.

电压 Voltage	最大纹波/最大噪音 Ripple and Noise (Max.)
5Vdc	100mVp-p
9Vdc	100mVp-p
12Vdc	100mVp-p
15Vdc	100mVp-p
20Vdc	100mVp-p

### 3.4 启动延迟时间 / Turn on delay time:

当输入 115Vac 和输出最大负载时，最大启动时间为 2S.

2 seconds Max.; while 115V AC input and output connected with Max. output loading.

### 3.5 上升时间 / Rise time:

当输入 115Vac 和输出最大负载时最大时间为 5mS.

5ms Max.; while 115V AC input and output connected with Max. output loading.

### 3.6 保持时间 / Hold up time :

当输入 115Vac 和输出最大负载时，最小保持时间为 30mS .

30ms Minimum hold up time while 115V AC input and output connected with Max. output loading.

### 3.7 效率 / Efficiency :

当 115/230Vac 输入电压时, 1/4、1/2、3/4 和满载计算平均效率, 最小 84%。

84% Min., while 115/230Vac input voltage, 1/4、1/2、3/4 and full loading calculate average efficiency.

### 4、保护功能 / PROTECTION FUNCTION :

#### 4.1 输出短路保护 / Output's Short Circuit Protection

USB 输出口会停止输出当短路发生时 ; 在短路解除时能自动恢复正常工作。

The device's USB output port will be shut down while short circuit happen and it will auto recovered while short circuit fault be removed.

#### 4.2 输出过流保护 / Output's Over Current Protection :

A. 如果 C 口单独使用时输出电流超出 3.1 节中宣告各电压档位最大电流值的 10%~30%, C 口输出关闭同时 C 口指示灯快速闪烁 3~5 秒后熄灭。要经过插拔后重新启动。

If the output current of C port exceeds Max. loading current value 10%~30% of various voltage shown in section 3.1 when only C port single output , the C port output will be disabled and C port's LED indicator will flashing for 3~5 seconds the turn off. Re-plug loading to restart the power output.

C port OCP value PD output Voltage	Minimum	Typical	Maximum
5Vdc	3.3A	3.6A	3.9A
9Vdc	3.3A	3.6A	3.9A
12Vdc	3.3A	3.6A	3.9A
15Vdc	3.3A	3.6A	3.9A
20Vdc	3.3A	3.6A	3.9A

B. 当 Function Switch 拨到"Charging"位置时 ; Hub 口单独使用时最大电流 2.4A, 如果与 Hub 与无线充电同时使用则最大电流限制为 3A。

When the Function Switch shift to "Charging" position ; If only Hub port be single output , the output current of Hub port will be 2.4A . The output current will be 3.0A max if Hub port and wireless charger are both output at the same time.

The OCP when Hub port + Wireless charger both output	Minimum	Typical	Maximum
5Vdc	3.3A	3.6A	3.9A

C. 如果在 AC/DC 端的总输出电流超过 7.0A, AC/DC 电源端将会关闭输出。过流故障排除后, 电源将自动恢复正常工作.

If AC/DC convert total output current exceeds 7.0A, the AC/DC will shut down and will be auto recovered while over current fault be removed.

#### 4.3 Type-C 连接器的过温保护 / Type-C connector's Over Temperature Protection (OTP) :

当 C port 的 Type-C 连接器温度超过 100 度 $\pm$ 10%时关闭 C port 输出且指示灯闪烁, 温度回复到低于 70 度 $\pm$ 10%时自动恢复输出

If the temperature of C port's type-C connector exceeds 100°C $\pm$ 10%, the C port output will be disable and C port's LED indicator will fast flashing till temperature drop to below 70°C $\pm$ 10%.

### 5、环境要求/ENVIRONMENTAL REQUIREMET :

#### 5.1 工作温度 / Operating Temperature :

0°C - 35°C, 满载,正常工作.

0°C to 35°C, Full load, Normal operation.

#### 5.2 储藏温度 / Storage Temperature: -20°C to 80°C

带外壳及包装 / With case & package

#### 5.3 工作湿度 / Relative Humidity :

5% (0°C) - 90% (35°C), 72 小时, 满载, 正常工作.

5% (0°C) - 90% (35°C) RH, 72Hrs, Full load, Normal operating.

#### 5.4 跌落试验 / Dropping Packed :

插墙式跌落高度为 1 米、桌面式跌落高度为 760mm ;

1M for wall plug type and 760mm for desktop type as above described.

测试台面是厚 13mm 的夹木板, 离地面高 19-20mm

The horizontal surface consists of hardwood at least 13mm thick, mounted on two layers of plywood each 19mm to 20mm thick, all supported on a concrete or equivalent non-resilient floor.

## 6、性能及结构参数 / Specification & Mechanical

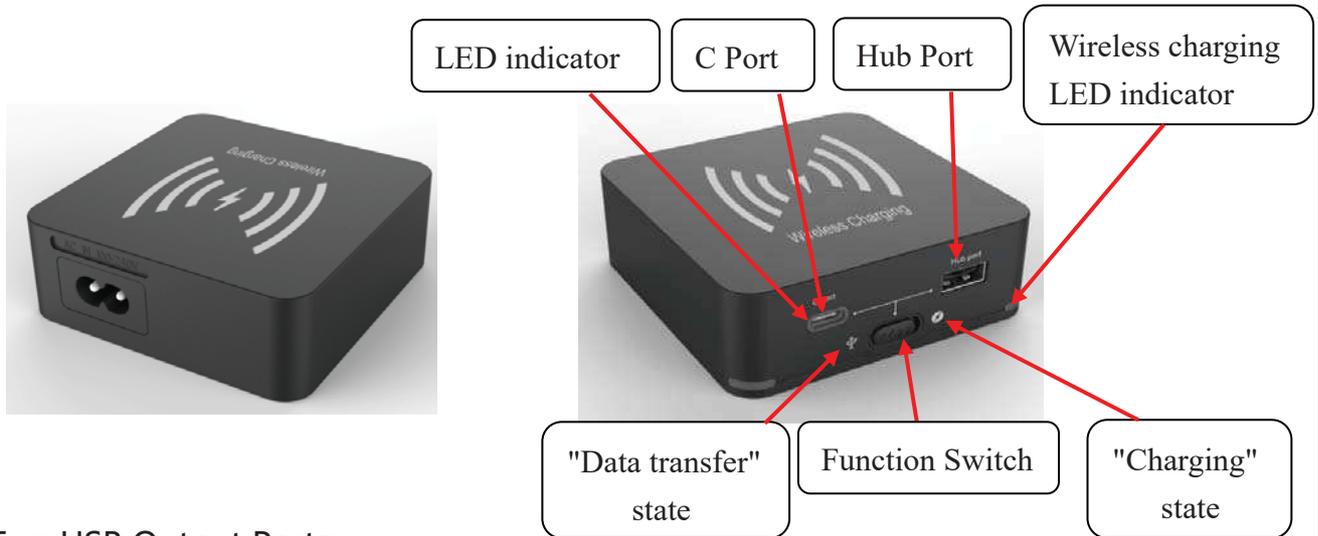
### 6.1 外壳 / Enclosure :

外壳尺寸 / The power supply Requirement :

size: L80 x W80 x H30mm;

### 6.2 产品净重 / Product Weight : 240g

### 6.3 性能说明 / Detail Specification :



#### # Two USB Output Ports:

(1). C Port (USB3.1 Type-C port embedded USB3.1 PD3.0/PPS/QC4/QC3.0/QC2.0 /AFC/FCP function):

a. on Normal state : 5V/3A

b. on USB 3.1 PD state : 60W PD output => 20V/3A or 15V/3A or 9V/3A

c. on PD PPS/QC4 state : 58.8W PD output  
=> 3.3~21V/2.8A

d. on QC3.0/2.0 state(the function will be enable only when the Function Switch on the "Charging" state ) : 18W output => 5V/3A or 9V/2A or 12V/1.5A

(2). Hub Port (USB2.0 Reversible Type-A Port) :

a. on "Data transfer" state : USB2.0 data transfer between the type C port with the Hub port ; the charging current 5V/0.5A on this state .

b. on "Charging" state : charging only ( data transfer disable ) and D+/D- Auto identify ; support BC1.2/Samsung/Huawei/Apple device ; the charging current 5V/2.4A on this state .

#One 5W wireless charger

Rated output power 5W max of wireless charger compliance with Qi's protocol. the total output current 5V/3A max when Hub port and wireless charger are both output.

# 1Pc LED indicator for Type-C Port:

- a. Light off : Type-C port disconnected loading. No output voltage.
- b. Light green : Type-C port on normal state and output 5V
- c. Light Blue : Type-C port on PD3/PPS/QC4.0/QC3.0/QC2.0/AFC/FCP state and output voltage according to quick charging state.
- d. Light flashing : OCP or OTP be occurred of Type-C port

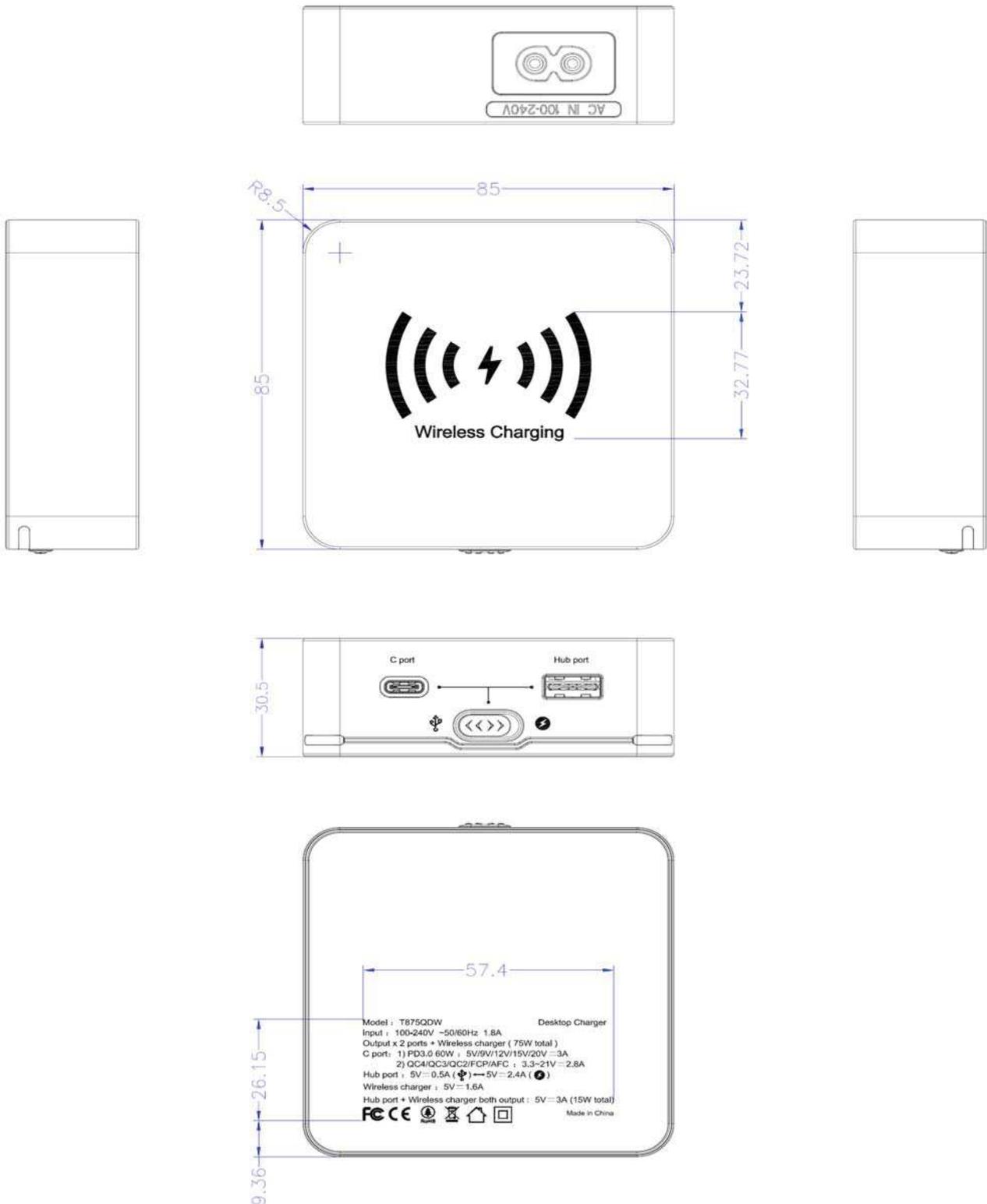
#1Pc LED indicator for Wireless charger

- a. Light off : Wireless charger is ready for use.
- b. Light green : wireless charger is in charging state.
- c. Light Blue : device charging completed.
- d. Light Green + Blue toggle : error occurred.

# The Function Switch are setting at the "Data transfer" state or the "Charging" state for the Hub port.

- a. When switch to "Charging" position, the C port and the Hub port are on the charging state without data transfer . The charging current for Hub port is 5V/2.4A max and PD/QC4+/AFC/FCP charging for the C port at this state .
- b. When switch to "Data transfer" position, the C port and the Hub port can be used as a Hub that performing the data transmission between a computer/mobile phone or a USB storage. The charging current for Hub port is 5V/0.5A and PD/QC4 charging ( the QC3.0/2.0/AFC/FCP function will be disable ) for the C port at this state .

7、外形&絲印圖 / OUTLINE DRAWING & SILK PRINT:



## **FCC STATEMENT**

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: 1) this device may not cause harmful interference, and 2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

RF Exposure: A distance of 15 cm shall be maintained between the antenna and users, and the transmitter may not be co-located with any other transmitter or antenna.