

ODROID-UPS

Compatible with ODROID-U3

ODROID-UPS is a board of UPS(Uninterruptible Power Supply) that can be plugged on the neat of ODROID-U3 via tiny 8 pin IO connector. The UPS kit contains the charger circuit, batteries, 5Volt output DCDC converter circuit and 5V/2A power adapter.

With the 3,000mAh battery capacity, ODROID-U3 can run about 1~2 hours of heavy computing without AC power.

If you don't need to AC_OK signal, the UPS can works with X/ X2/U2.

You can NOT use this UPS with the ODROID-XU series because of limited output current.



PACKAGE INCLUDES



- ODROID-UPS board with 1500mh * 2 battery pack
- 4 x 20mm PCB spacers (Plastic)
- 4 x 11mm PCB spacers (Metal)
- 4 x 10mm PCB spacers (Plastic)
- 5V/2A Power Supply

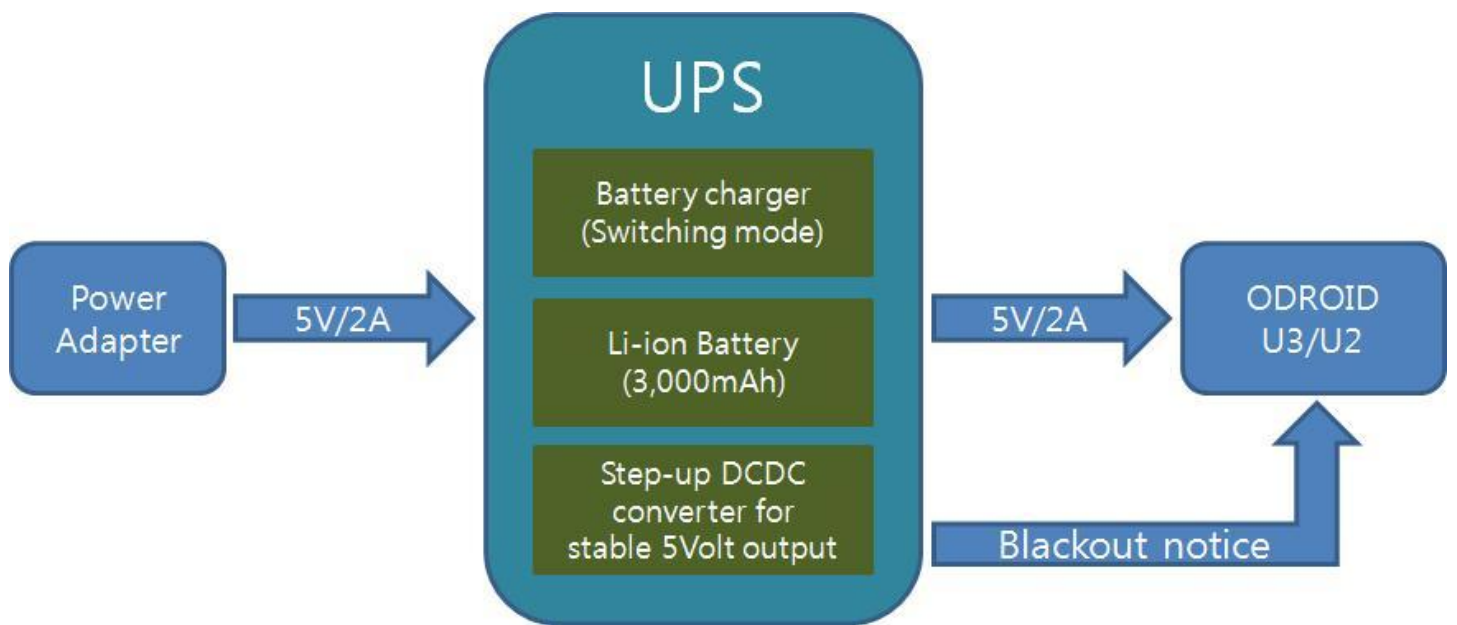


How to connect the DC Plug cable for ODROID-U2 or X2/X



Solder it as per the picture.
Red line is +(positive) and Black line is - (negative)

BLOCK DIAGRAM



SCHEMATICS : http://dn.odroid.com/UPS/UPS_U3_Schematics.pdf

Electrical specification

Item	Specification	Comments
Battery Capacity	2 x 1500mAh	Lithium Ion Polymer battery
Charging Time	1hr 30min ~ 2 hrs	
Charging Current	2 x 1000mA	1,000mA / battery
Input Power	2000mA @ DC 5V	Use the bundled Power supply
Maximum Output Power	2000mA @ DC 5V	
Battery Life	4 hrs approx.	See the below test condition

* Test condition for the battery Life

ODROID-U3
 Ubuntu 13.10 with Chromium browser running
 WIFI Module 3
 USB Keyboard
 USB Mouse
 Idle current : 250 ~ 300mA @5V

Example of automatic shutdown

The AC_OK signals are connected to GPIO199/GPIO200 in the 8-pin header socket of ODROID-U3. When the blackout or sudden disconnection of AC outlet happens, the system will shut down automatically after 1 minute by this script.

This bash script is continuously checking the status of AC status.

```

#!/bin/bash

echo 199 > /sys/class/gpio/export
echo 200 > /sys/class/gpio/export
echo in > /sys/class/gpio/gpio199/direction
echo in > /sys/class/gpio/gpio200/direction

get_ac_status() {
    ac1=`cat /sys/class/gpio/gpio199/value`
    ac2=`cat /sys/class/gpio/gpio200/value`
  }
  
```

```
    if [ "$ac1" -eq 1 -o "$ac2" -eq "1" ]; then
        export ACJACK="off"
    else
        export ACJACK="on"
    fi
}
while :
do
    get_ac_status

    if [ "$ACJACK" == "off" ]; then
        shutdown -P 1
    fi

    sleep 1;
done
```

How to assemble with ODROID-U3

1. Unplug the 2 battery connector cables.
2. Assemble the PCB spacers. The metal spacers must be placed between ODROID-U3 and UPS PCB.
3. Align 8 pin header and plug it to the 8 pin socket of ODROID-U3.
4. Plug the 2 battery connector cables. U3 will turn on.
5. Connect DC-Plug of PSU into the DC-Jack on the ODROID-UPS board.

Caution

The DC/DC converters have an automatic shutdown/trip function which is activated when the load is very high even very short period.

The battery pack also has very sensitive protection circuit.

So the in-rush current can disconnect all the electrical path.

In this case, you must unplug the battery connectors and DC-plug to reset the protection circuit.