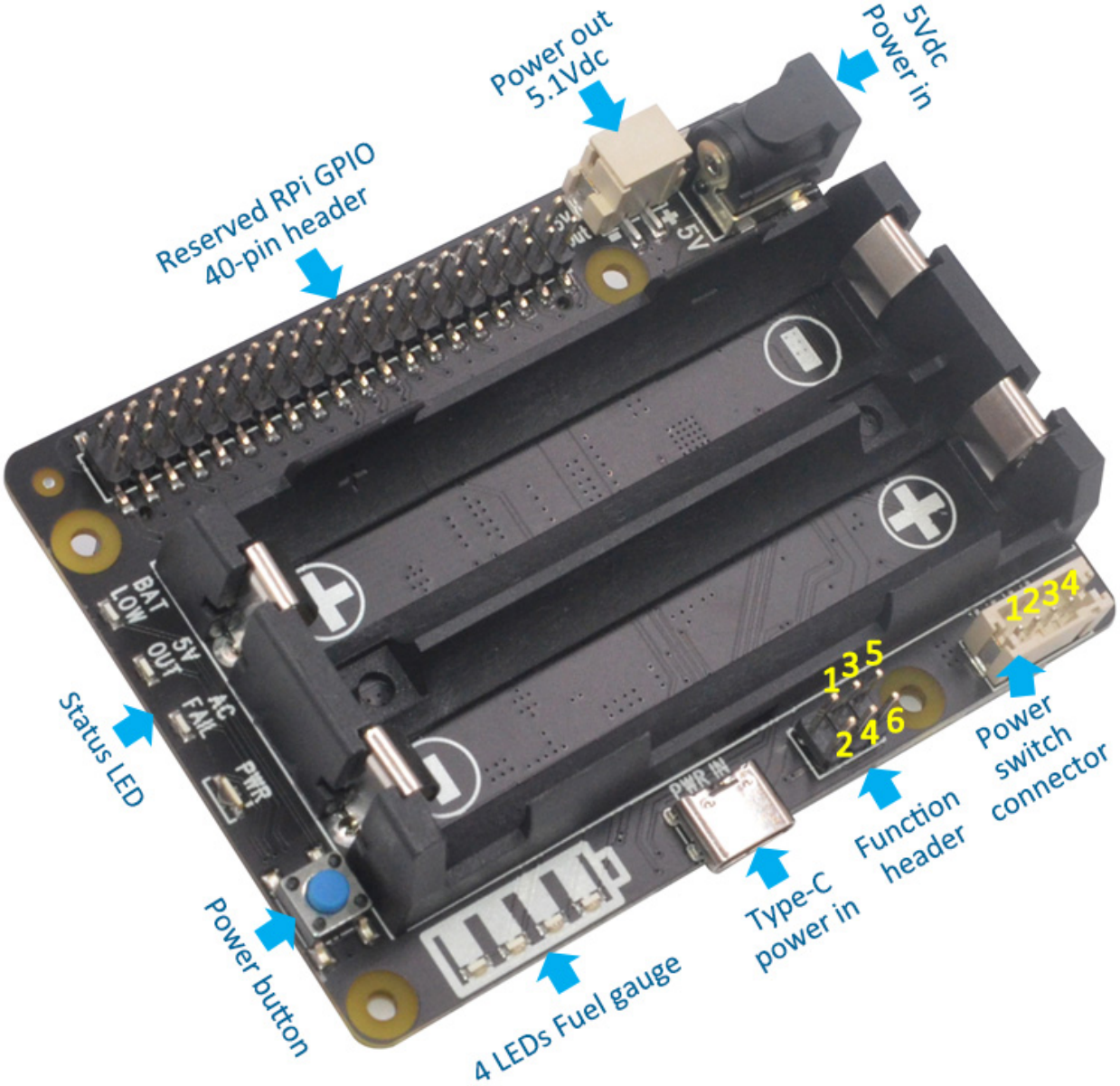
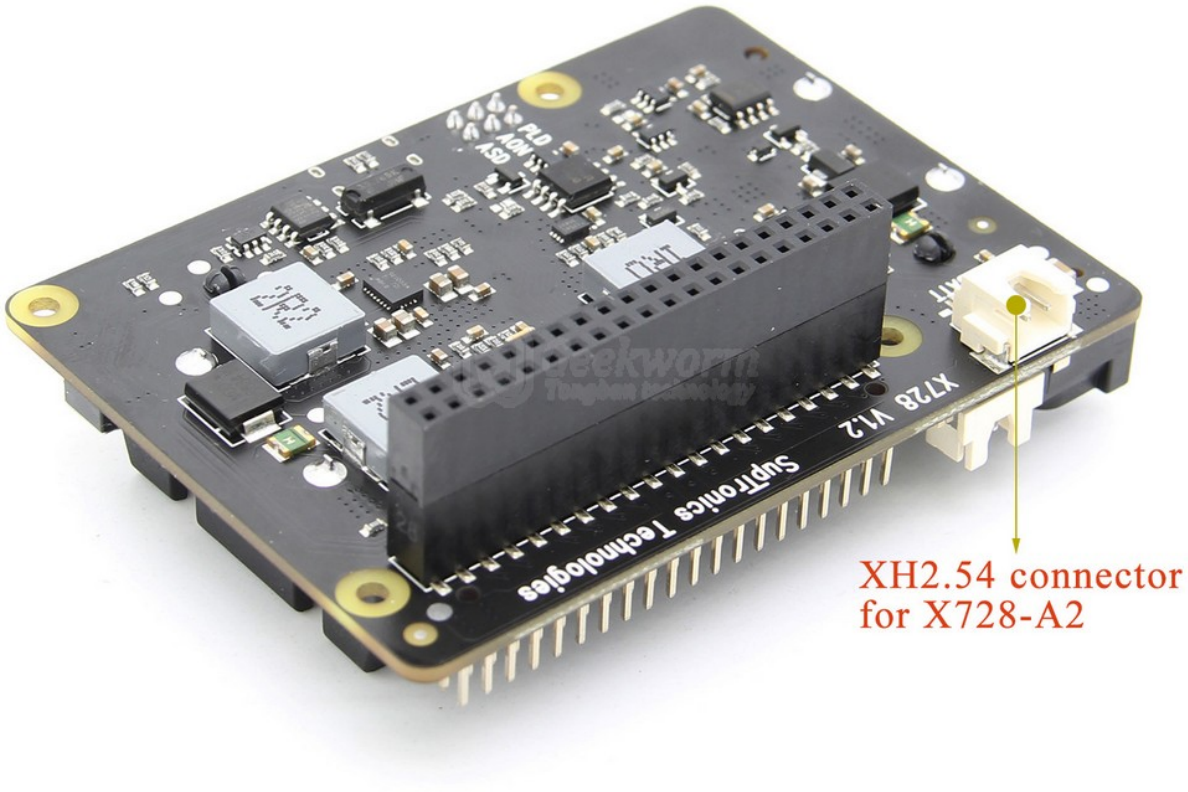
X728-hardware





Power Jack and Connectors

Power input	5Vdc +/- 5% ,≥3A
DC Power Plug Size	5.5*2.5mm
USB power in socket	Type-C
UPS power output	5.1Vdc 8A
Power output connector	XH2.54mm 2pin

1. X728 powers the Raspberry Pi via the 40-pin header (Pin 2 & 4)
2. Don't power the Raspberry Pi via the Pi's type-C USB socket
3. X728 can be powered via the onboard DC jack or Type-C USB power socket

6-Pin Function Header

Jumper Name	Usage
PLD (Power loss detection)"	Short - AC Power loss or power adapter failure detection enabled (Active if power adapter disconnected) Open - Power loss detection disabled
AON (Auto power-on)	Short - Auto power-on when power applied (Will delay 3 seconds before powering on) Open - Auto power-on disabled
ASD (Auto shutdown)	Short - Automatic shutdown enabled when battery low (≤3Vdc) (Battery must be >3V and installed before enabling this function) Open - Automatic shutdown disabled Procedure to enable ASD function --IMPORTANT 1. Battery voltage must be >3Vdc 2. Insert the battery into the holder 3. Wait 3 seconds then insert the jumper 4. If the jumper inserted before battery, remove battery & jumper then repeat step 1, 2 and 3.

Connector for External Power Switch

Pin No.	Pin Description
1	Power on/off control connecting to switch
2	Ground
3	LED+ for battery low indicator
4	LED+ for power on, rebooting and shutdown

1. Please use momentary switch only and don't use latching switch
2. Connector - Pitch 2.0mm 4pos

Power button (Script for power mgnt installed)

Press and Release	Raspberry Pi and X728 turn on
Press and hold for 1~2 seconds	System rebooting
Press and hold for 3~7 seconds	System shutting down
Press and hold for >8 seconds	Force shutdown

Function LEDs

LED Name	Usage
BAT LOW	LED red on indicates battery low (≤3.0Vdc) or blue power button pressed (Jumper for ASD inserted)
5V OUT	LED green on flashing indicates 5V power out and UPS powered by battery
AC FAIL	LED red on indicates AC power loss or PSU failure or PSU disconnected
PWR	LED blue indicates Stays on - Power on Blinks rapidly - system rebooting Blinks slowly - Shutting down

Fuel gauge - LED Indicator

Operation of Discharging:

Capacity C (%)	D1	D2	D3	D4
C ≥75%	ON	ON	ON	ON
50%≤C < 75%	ON	ON	ON	OFF
25%≤C < 50%	ON	ON	OFF	OFF
3%≤C < 25%	ON	OFF	OFF	OFF
0% < C < 3%	Flashing	OFF	OFF	OFF

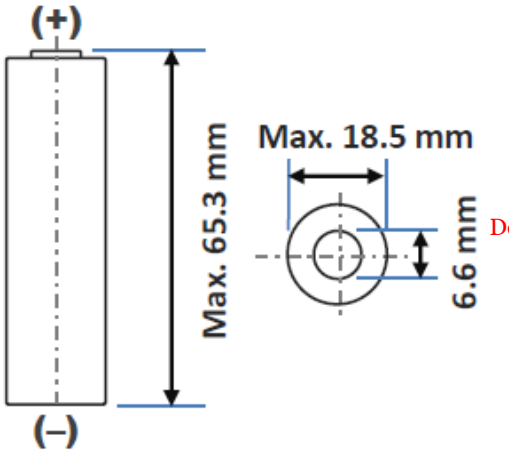
Operation of charging:

Capacity C (%)	D1	D2	D3	D4
Fully charged	ON	ON	ON	ON
75%≤C	ON	ON	ON	Flashing
50%≤C < 75%	ON	ON	Flashing	OFF
25%≤C < 50%	ON	Flashing	OFF	OFF
C < 25%	Flashing	OFF	OFF	OFF

Pins and GPIO used

Pin No.	Usage
2, 4	+5V power supply
3, 5	I2C for RTC and battery fuel-gauge systems
6	Ground
29	GPIO5 for power management
32	GPIO12 for power management
33	GPIO13 for power management
31	GPIO6 for AC power loss detection (Jumper for PLD inserted, High=power loss,Low=Power supply normal)

18650 battery dimension



Do not use 18650 battery with built-in protection circuit

Installation Guide

Geekworm X728 Installation Guide

1. Push 4pcs screws (M2.5*6mm) up through the mounting hole on the underside of the Raspberry Pi.

2. Screw 4pcs F/F spacers (M2.5*20mm) down until it is hand tight.

3. a) Plug the X728 board straight into your Raspberry Pi's GPIO header
b) Double check polarity of battery's connector before put 18650 batteries into the battery holder

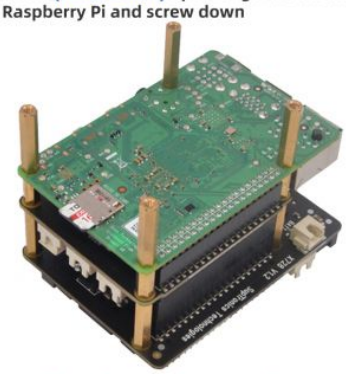
4. Optional -For use with X728-A1 cooling fan.
Screw 4pcs F/F spacer (M2.5*12mm) down until it is hand tight

5. Plug the X728-A1 cooling fan board straight into your Raspberry Pi's GPIO header and screw down 4pcs (M/F spacer M2.5*21mm) spacers

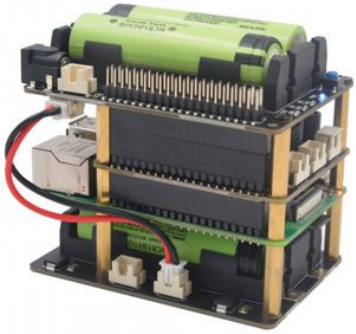
6. Plug the X728 board straight into X728-A1's GPIO header and screw down by 4pcs (Screws M2.5*5mm)

7. Optional -For use with X728-A2 2-Cell battery holder
Unscrew the 4 screws on the underside of your Raspberry Pi

8. Push 4pcs M/F spacers (M2.5*23mm) up through the mounting hole on the underside of the Raspberry Pi and screw down



9. a) Double check polarity of battery's connector before placing18650 batteries into the battery holder
b) Place the X728-A2 on the underside of the Raspberry Pi and screw down by 4pcs (M2.5*5mm screws)
c) Plug in the 2-pin power cable into the "BATT' female sockets on the X728 and X728-A2 board



10. WiKi and user manual for reference, please scan the QR code:

Return to X728