

Custom External Battery Pack Build

External A1 Battery
[6S2P - 6S1P Setup]

Important Details

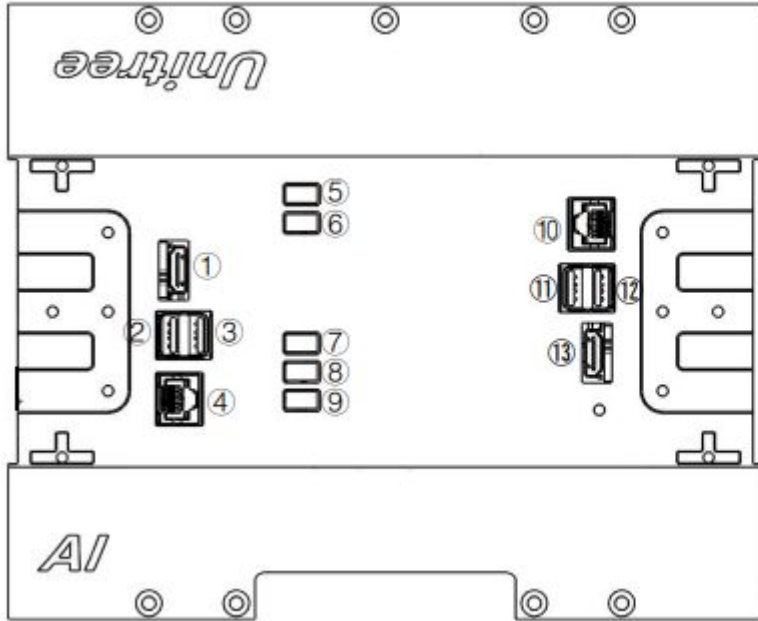
A1 Battery Pack Specifications

● Battery

Capacity	4200 mAh
Voltage	21.6 V
Battery Type	Lithium-ion 6S



A1 Interface Diagram



1. TX2 HDMI
2. TX2 USB3.0
3. TX2 USB2.0
4. Ethernet Interface 1
5. Power Input 24V
6. Power Input 24V
7. Power Output (5V, 2A)
8. Power Output (12V, 2A)
9. Power Output (19V, 2A)
10. Ethernet Interface 2
11. MiniPC USB2.0
12. MiniPC USB3.0
13. MiniPC HDMI

Port 5 will be used for connecting the external battery.

6S2P Built Battery Concept Idea / Notes

Each Battery: + ICR18650 2000mah 3.7v TP LI-ION MH46259

WL312The video below shows A1 being powered from a power supply.

[A1 External Battery Video](#)



Build Process

Materials Needed/Building Instructions Alternative Method

External A1 Battery
[6S2P Setup]

IMPORTANT:

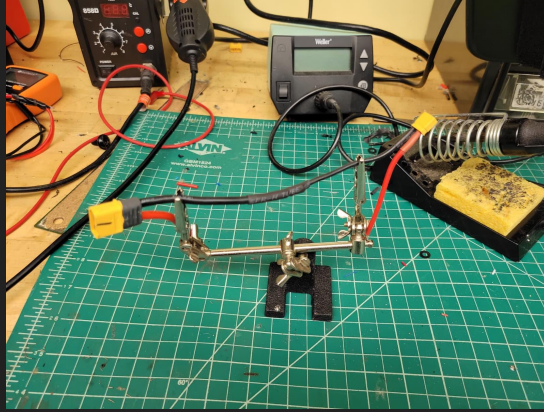
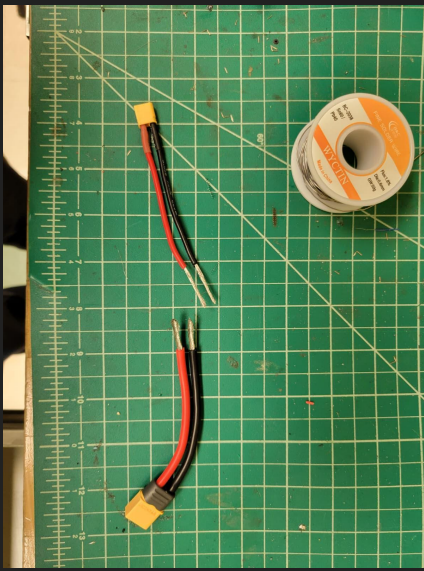
*Video Being Followed: <https://www.youtube.com/watch?v=NgNddKpP9mw> *
Another Video Same Build More instruction:
<https://www.youtube.com/watch?v=gro976ya41g>

Battery Pack and Issue



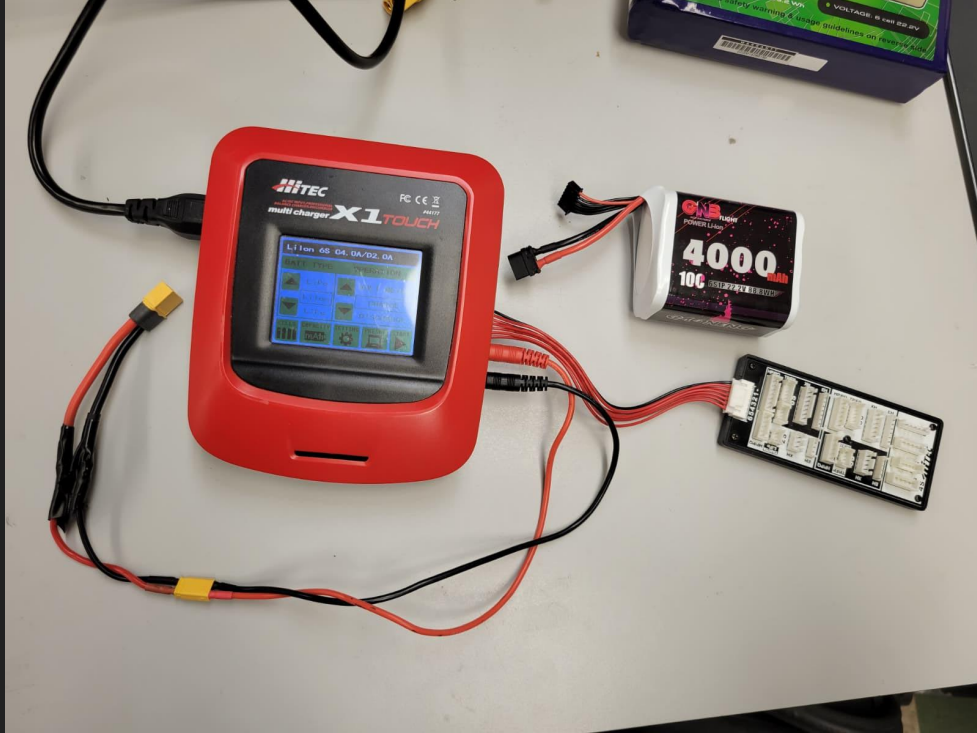
When I tried to connect the battery directly to the A1, I realized it didn't fit because the battery's connector is an XT60U-T Female, while the A1 requires an XT30 Male connector.

I found and gathered an XT60 Male Connector and an XT30 Male Connector



To solve this, I found a Male XT60 connector and a small Male XT30 connector, cut off their wires, stripped them, soldered them together, and applied heat shrink tubing. Essentially, I made my own XT60 Male to XT30 Male adapter. I then connected this adapter to the battery and plugged it into the A1.

Charging Instructions



Acquire the following items as shown in the image on the left

- Hitec Multi Charger X1 Touch
- 4000 mAh Gaoneng Battery

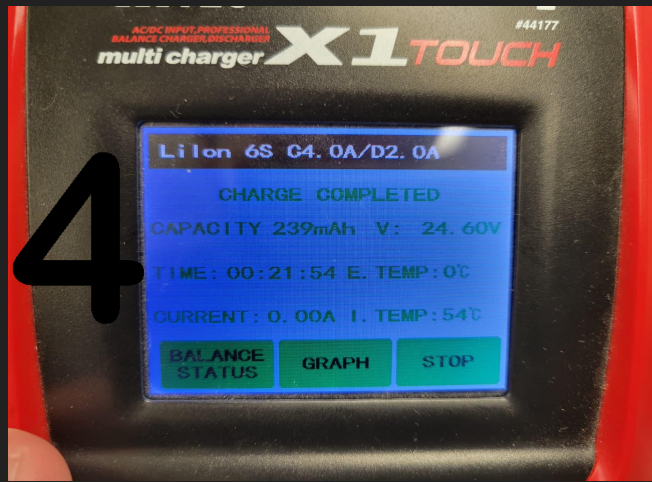
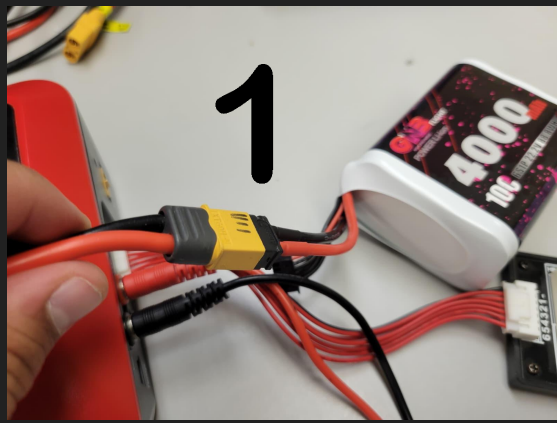


Ensure Correct Settings

These are the settings needed for charging

- Lilon 6S
- 4.0A
- Discharge Rate: 2.0A
- Capacity: 4000mAh
- Nominal Voltage: 25.2V



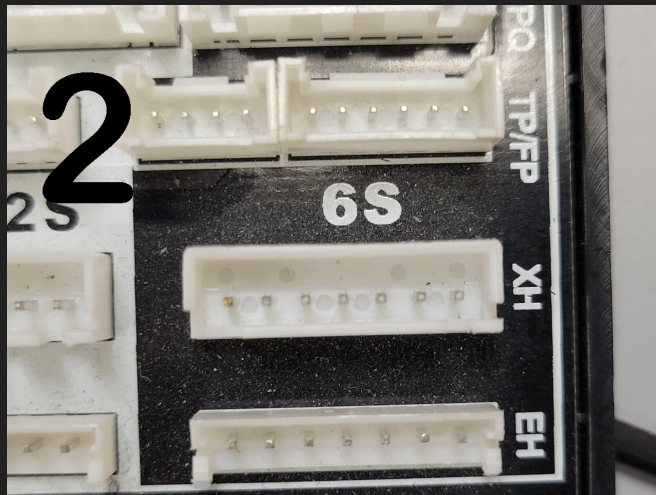


1. Plug in the battery's XT60 Female into the Chargers XT60 Male

2. Verify That the balance lead port you will connect into is the 6S HX

3. Plug in the balance lead entirely

4. Press Start on the charger to begin



Final A1 Custom External Battery Video Recording

[GPIP A1 External Battery Test.mp4](#)

The good news is that it works perfectly. After making the connector, I used the A1 for a good amount of time and didn't encounter any issues. Some things to note is that, i've calculated an approximate 30 minute run time in continuous movement.

H Nickel Strips - Ease of Assembly

The ones we already have are weaker



Click to see full view



2P Nickel Plating Strip 0.15x27mm (16.4ft/roll)
Spacing 20.25mm used for 2 Parallel 18650
Batteries Spot Welding DIY 18650 Battery Pack

Brand: JichuET

4.6 ★★★★★ (118)

\$15⁹⁹

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Size: 0.15x27mm(5M)

0.15x27mm(5M)

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0.15x8x100mm(100PCS)

\$9.99
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Material	Nickel
Brand	JichuET
Color	Silver
Shape	Rectangular
Item Diameter	27 Millimeters

About this item

6S 14A/20A 25.2V-26V PCB BMS Protection Board for 6 Pack 18650 Li-ion Lithium Cell Module Arrival

-For the 6S2P build-



Size:34*53.5*3.0mm
Upper working current: 14A
(pay attention to heat dissipation)
Upper limit instantaneous current:20A
Equilibrium current:56mA







Overcharge voltage range:4.25v±0.05v


Over discharge voltage range:2.7v±0.05v

Static current:less than 30uA

Charging voltage: 25.2V-26V

Short circuit protection: protectable, delayed self-recovery





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6S 14A/20A 25.2V-26V PCB BMS Protection Board for 6 Pack 18650 Li-ion Lithium Cell Module Arrival

Brand: Generic
[Search this page](#)


\$7²⁴

- 6S 14A/20A 25.2V-26V PCB BMS Protection Board For 6 Pack 18650 Li-ion Lithium Cell Module Arrival

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Battery PCB Board for 13Series 48V/54.6V Li-...
\$13.24 ✓prime

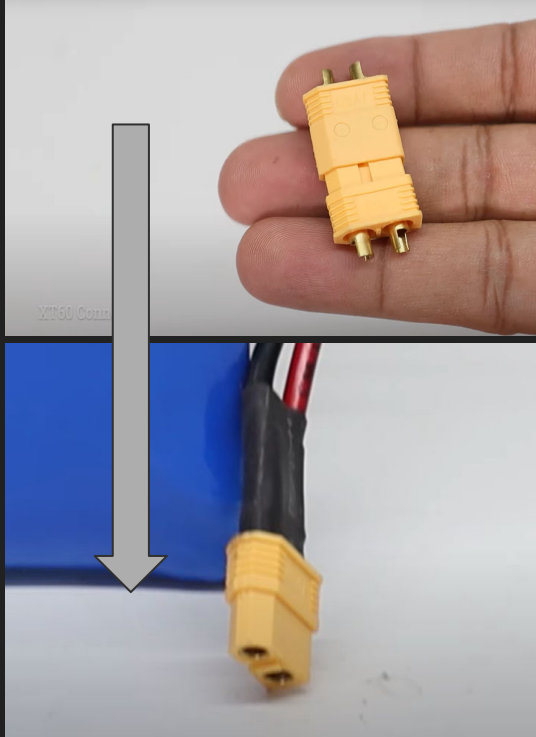



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Male To Female Pair Attachment XT60

Detaches to to become
bottom photo below this





10474

DigiKey Part Number 1568-10474-ND

Manufacturer [SparkFun Electronics](#)

Manufacturer Product Number 10474

Description XT60 CONNECTORS MALE/FEMALE PAIR

Manufacturer Standard Lead Time 12 Weeks

Customer Reference

Detailed Description - Connector

Datasheet [Datasheet](#)

EDA/CAD Models [10474 Models](#)

Image shown is a representation only. Exact specifications should be obtained from the product data sheet.

In-Stock: 3,070


Can ship immediately


QUANTITY

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All prices are in USD

Bulk

QUANTITY	UNIT PRICE	EXT PRICE
 1	\$2.50000	\$2.50

 Manufacturers Standard Package

Product Attributes

Female To DC



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Ask Rufus

Can it handle high power demands?

Is it easy to connect?

Does it work with other devices?

Ask something else



Amass XT60 XT-60 Female to DC 5.5/2.5mm Jack Power Adapter for FPV Monitor Power

Brand: Generic

4.1 (33) | [Search this page](#)

\$7⁹⁹

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Compatible Devices Monitor

Specific Uses For Product Monitor

Connector Type XT60, 5.5mm/2.5mm DC

Color Black

Brand Generic

About this item

- **Compatible Devices:** Works with FPV monitors for power supply
- **High Current Rating:** 1.5 amp output for fast charging
- **Durable Construction:** Made from sturdy plastic with metal connectors
- **Quick Connector:** 5.5mm and 2.5mm jack plugs for easy use
- **Compact Size:** Small 60mm x 60mm footprint saves space

[See more product details](#)



[Report an issue with this product or seller](#)

25.2V Power Supply Adapter Charger Lithium ion Battery Charger Power Adapter with Indicator Light



[Click to see full view](#)

Ask Rufus

Does it charge batteries safely?

Is it compatible with other devices?

Does it have overcharge protection?

[Ask something else](#)



25.2V 1A Battery Power Adapter, AC100-240V Battery Charger Power Adapter Charging Power Supply for Headlights Toy Cars

[Visit the Qililu Store](#)

3.6 ★★★★★ (4) | [Search this page](#)

\$6⁹⁴

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Brand	Qililu
Connectivity Technology	DC Barrel
Connector Type	Barrel Connector (5.5mm x 2.5mm)
Compatible Devices	Headlights, Toy Cars, Balance Cars
Included	1 x AC Adapter
Comments	
See more	

About this item

- [Features] --- Input: AC100-240V 50/60Hz, Output: 25.2V 1A, Cable Length: 100cm, Interface: about 5.5 * 2.5mm / 0.2 * 0.1in.
- [Wide Application] --- 25.2V 1A power adapter, compatible with a variety of devices, suitable for headlights, toy cars, balance cars, etc.
- [Quality Material] --- This Battery Power Adapter is made of ABS shell, high temperature and fire-resistant, more assured to use.
- [Multiple] --- Overcharge, short circuit, over current and over temperature, you can rest assured to use it.
- [Easy to Use] --- LED indicator to easily see the charging situation, the charger will display a red light when charging and turn green from red when the battery is fully charged.

[See more product details](#)

● Slow (1 Amp) Charger

25.2V 1A Battery Charger Power Adapter Specification:

- Type: Battery Power Adapter
- Material: ABS
- Interface: about 5.5 * 2.5mm / 0.2 * 0.1in
- Output current: 1A
- Weight: Approx. 94.4g

Reference Video - (Custom Adjustments Will Be Implemented

Reference Video:

<https://www.youtube.com/watch?v=NgNddKpP9mw>