

Astral PowerStation Cell User Guide



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Introduction

The Astral PowerStation Cell is a multi-cell, fast charger for batteries used with Astral transmitters.

Key Features

- Accommodates 6x XL-B14500, 4x XL-B18650, or combination of 3x XL-B14500 and 2x XL-B18650 batteries.
- Desktop or Rack-mountable (requires optional rack-mount kit).
- Daisy chain multiple units with smart power-distribution.
 - Desktop: up to 4 daisy-chained chargers.
 - Rack-mount: accommodates up to 3 chargers.
- Powered by USB-C for fast charging.
 - Includes a 45W USB-C power supply for one fully-loaded charger.
 - Optional 140W USB-C power supply supports up to four fully-loaded daisy-chained chargers.
- Removable latching door keeps batteries secure during transport and rack mounting.

Whats In The Box

- Astral PowerStation Cell
- Rubber protective bung (for multi-pin connector)
- 4x rubber feet

Safety Information

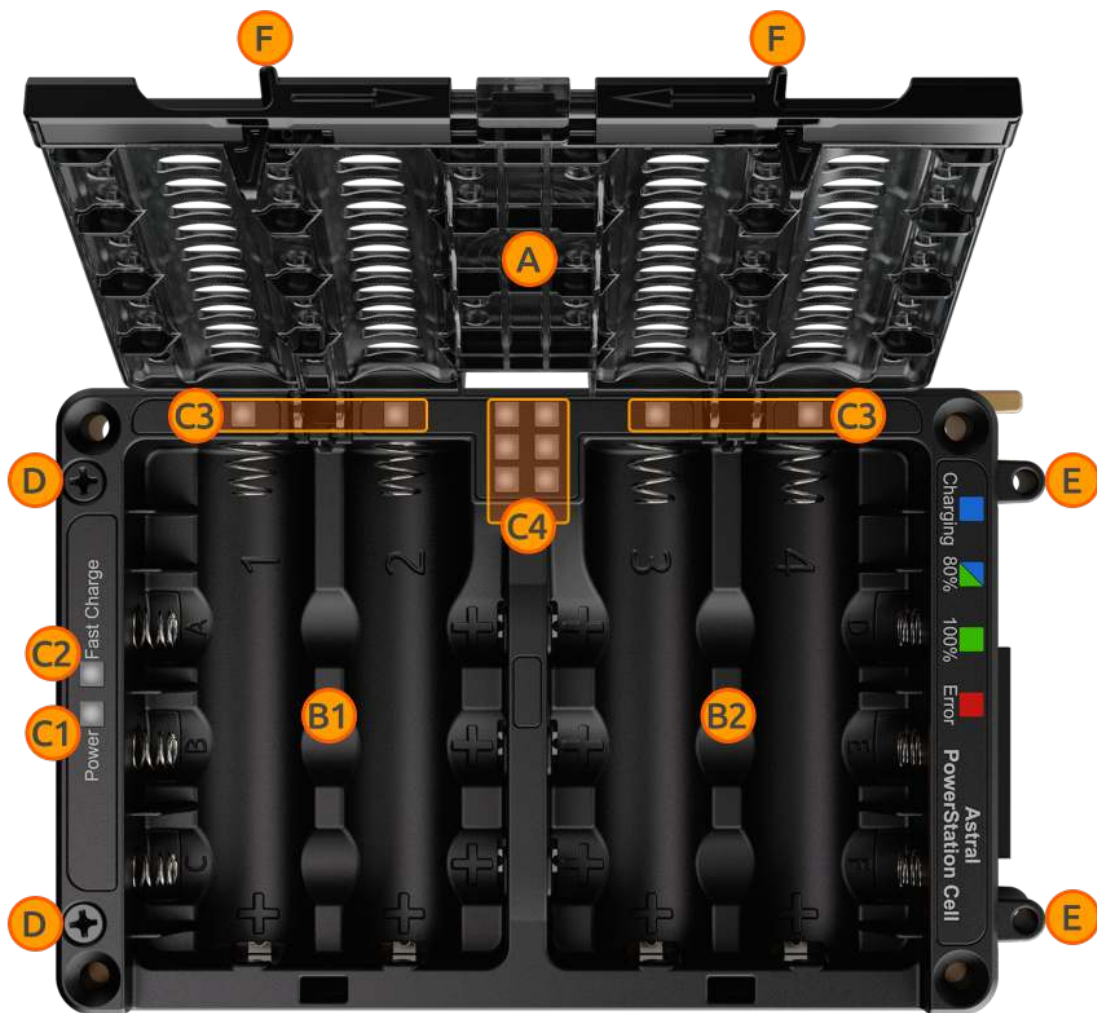
CAUTION:

- Risk of fire or explosion - please only charge specified type of rechargeable Li-ion battery (14500)
- Disposal of a battery into fire or a hot oven, or mechanically crushing or cutting of a battery, can result in explosion
- Leaving a battery in extremely high temperature surrounds can result in an explosion or the leakage of flammable liquid or gas

- A battery subjected to extremely low air pressure can result in an explosion or the leakage of flammable liquid or gas.

Panel Descriptions

Top Panel



A. Removable Door

The door prevents batteries from falling out when rack-mounted or during transportation. To access the batteries, squeeze both sliding latches (F) and lift the door. To remove the door, pull it outward while fully open. To reinstall,

carefully align door hinge protrusions with chassis notches and push door toward chassis.

B1, B2. Battery Bays

The Astral PowerStation Cell includes two battery bays, B1 and B2. Each bay has compartments for accommodating 3x 14500 or 2x 18650 Li-ion batteries.

Insert batteries with the spring-contact side first, matching the positive and negative ends to the correct terminals. Remove batteries positive terminal first.

Each battery compartment has its own charging status LED.

C1-C4. Charging Status LEDs

- C1: Power LED:
 - Green = On.
 - Flashing Red = insufficient power or voltage from power source.
- C2: Fast Charge LED: Green = Fast charging
- C3/C4: Battery status LEDs, one per battery. [a]-[f] for XL-B14500; 1-4 for XL-B18650
 - Green = 100% charged
 - Alternating green/blue = 80% charged
 - Blue = charging
 - Flashing Blue = identifying battery type and condition
 - Flashing Red = Charging error. Charging is suspended for any of these conditions:
 - Unsupported battery chemistry
 - Over-temperature, over-voltage, over-current
 - Incorrect battery insertion
 - Short-circuited battery
 - Dead battery



D. Interlocking Screws

Screw holes for securing daisy-chained units.

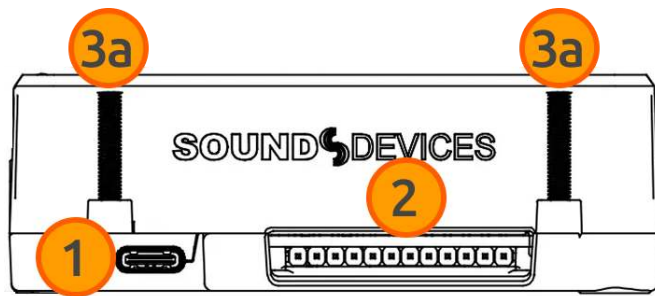
E. Interlocking Dovetails

Slide into an adjacent unit's slots to help align the female multi-pin connector with the male connector.

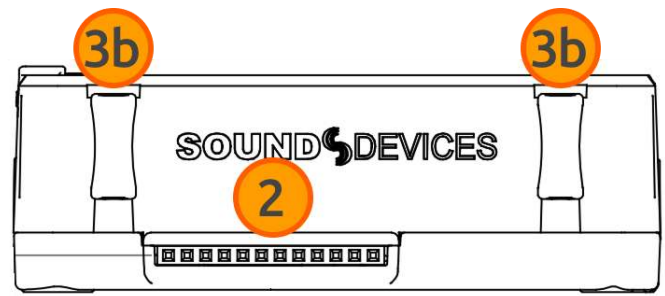
F. Sliding Door Latches

Squeeze latches together to release the door.

Side Panels



Left panel



Right panel

1 USB-C Power Input

The Astral PowerStation Cell uses USB-C for power. Connect the power supply to the USB-C port on the bottom panel. Make sure the cable sits in the inset channel so the unit can lie flat.

- For single-unit charging, use the included 45W power supply.
- For multi-unit daisy-chained charging, use the 140W power supply (not included). Connect its USB-C output to the first unit, then link additional units using the side panel multi-pin connectors.

2 Multi-pin Connectors for Daisy-Chaining Units

The multi-pin connectors play a crucial role in facilitating intelligent power management and ensure that power can flow efficiently from one unit to the next in a daisy-chain configuration. This setup not only simplifies the wiring process but also enhances the overall reliability and scalability of the system, allowing additional units to be added or removed with ease while maintaining consistent power distribution throughout the chain.

3 Dovetail Extrusions for Aligning Daisy-Chained Units

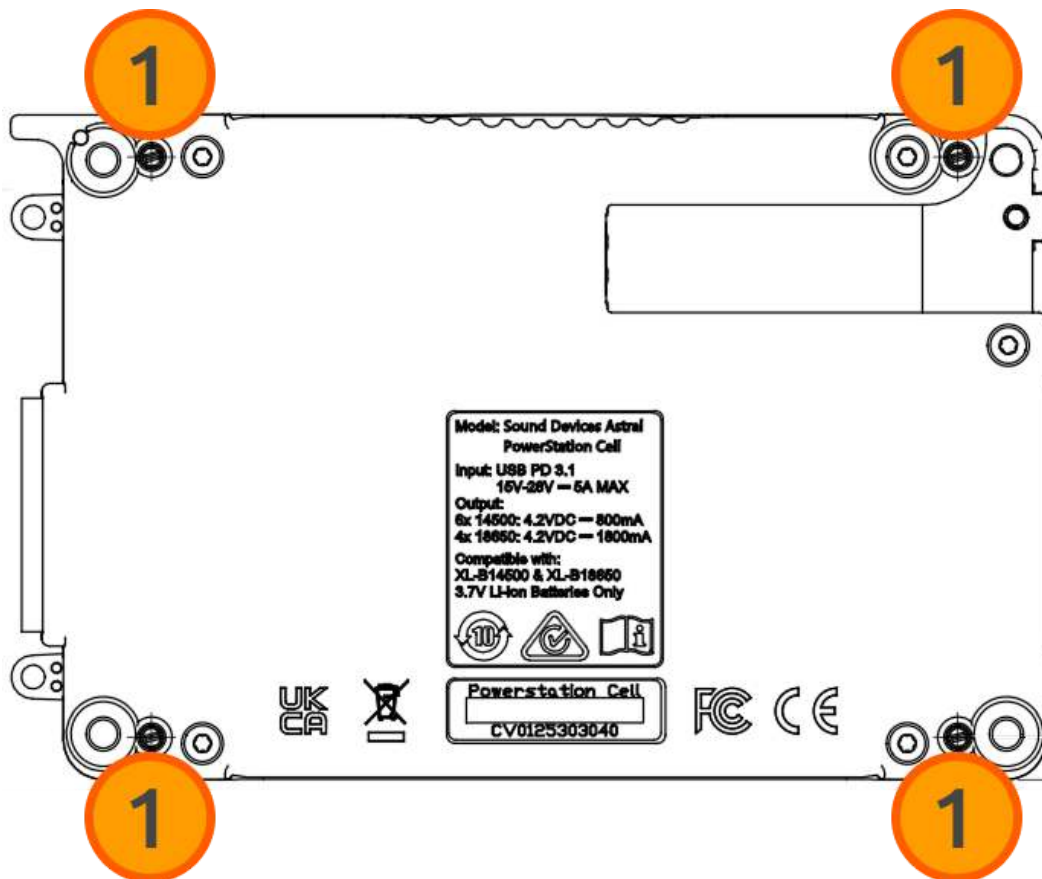
When connecting Astral PowerStation Cell units in a daisy-chain, remove the two installed screws on the left side of the unit (when door is at top), align the units so that the dovetail extrusion on the first unit engages with the receiving groove on the second, then slide them together until fully seated. This will ensure that the multi-pin male connector on one unit aligns and fits securely with the multi-pin female connector on the next unit.

Once connected, secure the units using the two screws previously removed.



Example with 3 daisy-chained units

Bottom Panel



Mounting Screw Holes

- 1 Screw holes for mounting the PowerStation Cell to the optional rack-mount accessory.

Optional Accessories

- Astral PowerStation PSU 45W
- Astral PowerStation PSU 140W
- Astral PowerStation Cable (240W)
- Astral PowerStation Rack Kit

Rack-mounting



Daisy-chained Astral PowerStation Cells on the Rack-Mount Kit

The Astral PowerStation Rack-mount kit enables up to 3 Astral PowerStation Cells to be mounted in a 2RU rack space.

Parts included in the Rack-mount kit:

- 2RU, 19" rack plate
- 12x PowerStation Cell mounting screws
(18-8 Stainless Steel Pan Head Phillips Screw, M3 x 0.50 mm Thread, 6mm Long)

Tools required

- Philips screwdriver #1

Assembling PowerStation Cells to the Rack Plate:

- 1 Decide how many Astral PowerStation Cell units to mount. If using multiple, connect them in a daisy-chain first. See [Dovetail Extrusions for Daisy-Chaining Units](#).
- 2 Place the PowerStation Cell assembly upside down on a flat surface. Set the rack plate on top with the rack ears facing down. *Note: Remove any rubber feet from the PowerStation Cell before installation.*

- 3 Align the rack plate's screw holes with the mounting holes on each PowerStation Cell. Attach the plate using the provided screws.

Specifications

	XL-B14500	XL-B18650
Number of Batteries	6	4
Max Power Consumption	25W	35W
Reverse Battery Protection	yes	yes
Max Battery Charge Voltage	4.2V	4.2V
Max Battery Charge Current	0.7A	1.8A
Operating Temperature	0°C to 40°C	0°C to 40°C
Weight	368g / 13.0oz	442g / 15.7oz