

Dayton Audio LBB-5v2 Lithium Battery Charger

Dayton Audio LBB-5v2

- Batteries sold separately: 26650 x5
 1. Use only flat top 26650 batteries, and not 26650 batteries with a button top on the positive side
- Package includes
 1. LBB-5v2 x1
 2. 20" 2-conductor cable
 3. 8" 4-conductor cable

Power Supply

- Between 5 VDC and 24 VDC, center positive
- Recommended 1.5A capable
- 2.1 x 5.5mm center positive coax plug

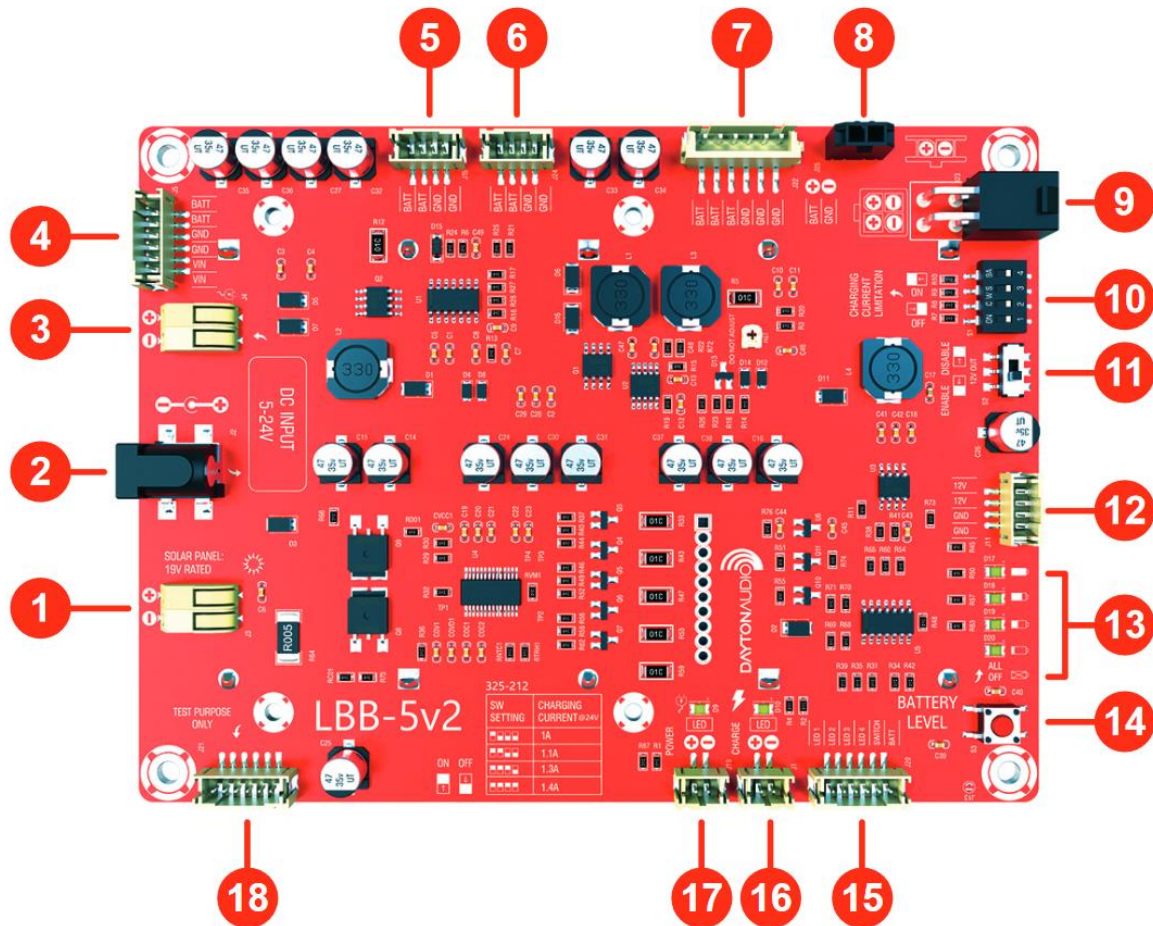
Installing Batteries

- Plug in all wiring harnesses necessary for project before installing batteries
- Match the + side of the battery with the + marker on the LBB-5v2
 - If a battery's polarity is not marked, check for vent holes or a dimple around the rim of the positive side
- If a battery goes bad, the board will cease all output

Charging Tips

- The LBB-5v2 uses a BMS (Battery Management System) to monitor the voltage of each cell individually in order to charge them to the same capacity
- If one battery is significantly lower in charge than the others, it may take days for all batteries to reach full capacity
 - Higher charge level batteries will be slowly drained before all cells are charged up together
- It is necessary to start with all new batteries with the same mAh capacity
- Remove the batteries before storing LBB-5v2 for a prolonged amount of time
- You must plug in the power supply to activate the battery board

Quick-Start Wiring Guide



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|--|---|
| <p>1. J3: 15-24 VDC solar panel input</p> <p>2. J2: 5-24 VDC power input</p> <p>3. J4: 5-24 VDC power input</p> <p>4. J5: Multifunction expansion port, see page 5</p> <p>5. J15: 21 VDC power output</p> <p>6. J24: 21 VDC power output</p> <p>7. J22: 21 VDC power output</p> <p>8. J25: 21 VDC power output</p> <p>9. J23: 21 VDC power output</p> <p>10. S1: Charging speed DIP switches, see page 5</p> | <p>11. S2: 12 VDC output switch, see page 6</p> <p>12. J11: 12 VDC power output</p> <p>13. Battery level indicator</p> <p>14. S3: Battery level indicator momentary button</p> <p>15. J20: External LED battery level indicator port, see page 5</p> <p>16. J1: External charge status port, see page 5</p> <p>17. J19: External power status indicator, see page 5</p> <p>18. Not used</p> |
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Pinouts

J1 Pin	Value
1	LED+
2	LED-

J2, J3, J4 Pin	Value
1	VIN
2	GND

J5 Pin	Value
1	VIN
2	VIN
3	GND
4	GND
5	BATT
6	BATT

J11 Pin	Value
1	12VDC
2	12VDC
3	GND
4	GND

J15 Pin	Value
1	BATT
2	BATT
3	GND
4	GND

J19 Pin	Value
1	LED+
2	LED-

J20 Pin	Value
1	POWER
2	SWITCH
3	LED4
4	LED3
5	LED2
6	LED1

J25 Pin	Value
1	BATT
2	GND

J23 Pin	Value
1	BATT
2	BATT
3	GND
4	GND

J24 Pin	Value
1	BATT
2	BATT
3	GND
4	GND

J22 Pin	Value
1	BATT
2	BATT
3	BATT
4	GND
5	GND
6	GND

Output Current Capabilities

How much current your project draws will be the limiting factor when using any battery pack. **Do not connect project directly to batteries, use only the voltage output ports of the LBB-5v2. Otherwise, over-current protection will not function.** Use the following guidelines to determine which LBB-5v2 output ports will work best for your project:

- Higher Current Applications – Use J22, J23, J25 when a high amount of current is needed for extended periods of time
 - Examples of high current uses: larger amplifier boards, LED arrays, large DC motors
- Lower Current Applications – Use J11, J15, J24 when less current is needed
 - Examples of lower current uses: small/medium amplifier boards, smartphone battery bank, PC fans
- Maximum Current – The LBB-5v2 is capable of supplying 10A total at 21VDC from the outputs, for a combined output of 210W

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J19 – External power status indicator LED

J19 can be used as an external indicator to display the ON/OFF status off the battery board. Following the pinout on page 4, an LED can be connected such that an ON status indicates the board is active and an OFF status indicates the board is inactive.

J1 – External charge indicator LED

Similar to the function described above in J19, J1 is used as an external indicator to display the charging status of the battery board. ON indicates the board is charging, OFF indicates the board is not charging, or has completed charging if the board is plugged in.

J5 – Feature extension port

The feature extension port is a part of what makes the Dayton Audio line of battery modules so versatile. Being mindful of the pinout on page 4, accessories can be plugged into J5 to expand the options the battery board provides. The Dayton Audio LBB-5EB Expansion Board is an easy and effective way to add a 5 VDC output to your project. This will allow you to charge smartphones and power other 5 VDC devices. There is also a DC input jack to charge the LBB-5v2 directly through the LBB-5EB. The LED on the LBB-5EB remains on, so if the LED draining the batteries is of concern, it can be removed.

J5 power specification: 5 VDC, 2A maximum output

J20 – External battery status indicator LEDs

J20 can be used as an external indicator to display the battery level status of the board, serving the same purpose as D17, D18, D19, D20, just below J11. Following the pinout on page 4, four LEDs and a momentary button can be connected such that the battery level is displayed by the 4 LEDs while the button is depressed. The Dayton Audio LBB-5CL is an easy way to implement all external LED functions. Pressing the momentary button will illuminate the number of LEDs corresponding the status of the battery.

1 LED = 25%

2 LEDs = 50%

3 LEDs = 75%

4 LEDs = 100%

S1 – Charging Speed DIP Switches

The LBB-5v2 has the ability to restrict the charge current of the batteries. If the battery board is creating excessive heat, a lower charge current setting will allow it to run cooler. A higher current setting on these DIP switches will charge the board faster, however it is important to monitor the temperature of the board during the first uses to ensure it does not charge hot. A slower charging current will also extend the life of the batteries. See table below for switch key:

Switch Status	Charge Current
OFF-OFF-OFF-OFF	0.8A
ON-OFF-OFF-OFF	1.0A
ON-ON-OFF-OFF	1.1A
ON-ON-ON-OFF	1.3A
ON-ON-ON-ON	1.4A

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S2 – 12 VDC Output Switch

The LBB-5v2 has a switchable 12 VDC output port located at J11 (see pinout on page 4). Simply flip the switch to ENABLE to activate 12 VDC on J11, or flip the switch to DISABLE to turn it off.

Troubleshooting

Battery board not supplying power – Remove then replace one battery (new battery not necessary) and momentarily plug in your power supply. This will restart the charging circuit and will reactivate the battery supply

LBB-5EB expansion not working – ensure the LBB-5EB is plugged into the extension port (J5) and not the external battery charge status socket.

Note: The Dayton Audio LBB-5v2 is an independent battery holder board and its design does not work with Dayton Audio KAB board's built-in charge circuit. Plug the LBB-5v2 into the two wire DC input on the KAB boards or use Dayton Audio battery board KAB-BE with Dayton Audio KAB Bluetooth amp boards.

Specifications

Output voltage: 21 VDC @ 10A Max (combined outputs)

Supply: 5 – 24 VDC, at least 1.5A recommended

DC jack: 2.1 x 5.5mm center positive

Dimensions: 6" W x 4.5" D x 1.71" H