Dayton Audio LBB-5Sv2 Lithium Battery Charger

- Batteries sold separately: 18650 x5
    1. Use only flat top 18650 batteries, and not 18650 batteries with a button top on the positive side
- Package includes
    1. LBB-5Sv2 x1
    2. 20in stranded power cable x1
    3. 8.5in stranded 4-pin plug

Power Supply

- Between 5 VDC and 24 VDC, center positive
- Minimum 2A capable recommended
- 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-5Sv2
    - If a battery's polarity is not marked, check for vent holes or a dimple around the rim of the positive side
- You must plug in the power supply to activate the battery board
- If a battery goes bad, the board will cease all output

Charging Tips

- The LBB-5Sv2 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 level batteries will be slowly drained before all cells are charged together
- It is necessary to start with all new batteries with the same mAh capacity
- Remove the batteries before storing LBB-5Sv2 for a prolonged amount of time
- The DIP switches on S2 control the charge rate by restricting current. If you notice your power supply beginning to get hot, it could be shortening the life of your batteries. Check the setting of your dip switches. The DIP switches must be set to one of the following settings:

Switch positions	Charge current
OFF-OFF-OFF-OFF	0.50A
ON-OFF-OFF-OFF	0.60A
ON-ON-OFF-OFF	0.70A
ON-ON-ON-OFF	0.80A
ON-ON-ON-ON	0.90A

J2 Pin	Value
1	VIN
2	GND

J7 Pin	Value
1	LED+
2	LED-

(J21) (J27) Pin	Value
1	BATT
2	BATT
3	GND
4	GND

J22 Pin	Value
1	BATT
2	GND

J3 Pin	Value
1	VIN
2	VIN
3	GND
4	GND
5	BATT
6	BATT

J6 Pin	Value
1	LED+
2	LED-

J16 Pin	Value
1	POWER
2	SWITCH
3	LED4
4	LED3
5	LED2
6	LED1

(J19) Pin	Value
1	BATT
2	BATT
3	BATT
4	GND
5	GND
6	GND

| J5 Pin	Value
1	VIN
2	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-5Sv2; otherwise over-current protection will not function.**

Use the following guidelines to determine which LBB-5Sv2 output ports will work best for your project:

- Higher Current Applications – Use J19 or J22 when a high amount of current is needed for extended periods of time
  - o Examples of high current uses: larger amplifier boards, LED arrays, large DC motors
- Lower Current Applications – Use J21 or J27 when less current is needed
  - o Examples of lower current uses: small/medium amplifier boards, smartphone battery bank, PC fans
- Maximum Current – The LBB-5Sv2 is capable of supplying 5A total from all combined outputs at 21VDC, for a combined output of 105W

Quick-Start Wiring Diagram
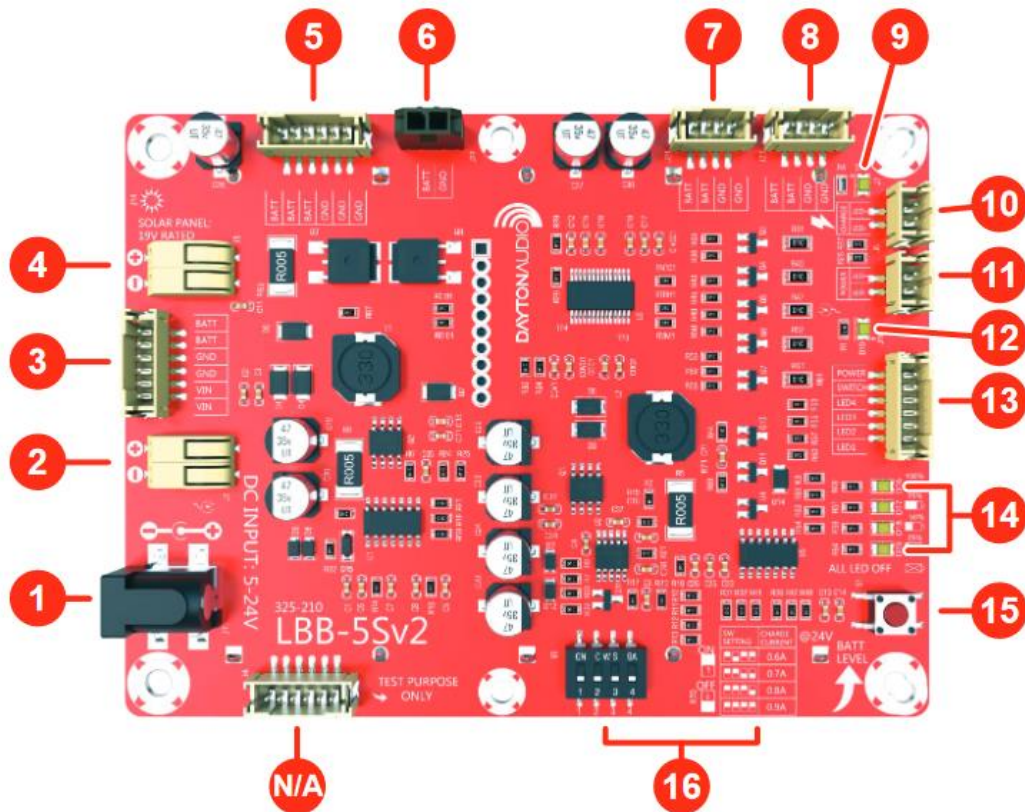
1. **(J1)** 5 – 24 VDC power input
2. **(J2)** 5 – 24 VDC power input for bare wire
3. **(J3)** Multifunction expansion port, see page 5
4. **(J5)** 15 – 24V Solar panel power input
5. **(J19)** 24 VDC output port
6. **(J22)** 21 VDC output port
7. **(J21)** 21 VDC output port
8. **(J27)** 21 VDC output port
9. LED charging indicator
   a. ON = Charging
   b. OFF = Fully charged
10. **(J7)** External charge indicator LED, see page 5
11. **(J6)** External LED indicator for power status, see page 5
12. Power indicator status LED
    a. ON = Power
    b. OFF = No power
13. **(J16)** Multiple external LED Indicator port, see page 5
14. Battery level LED indicators
15. Short press S1 to display battery level readout on LEDs
16. 4-Position DIP switch to control charging current, see table under **Charging Tips** on page 2

J3 – 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 3, accessories can be plugged into J3 to expand the options the battery board provides. The Dayton Audio LBB-5EB Expansion Board is an easy and effective way to add a 5VDC output to your project. This will allow you to charge smartphones and power other 5VDC devices. There is also a DC input jack to charge the LBB-5Sv2 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.
J3 power specification: 5VDC, 2A maximum output

J6 – External power port indicator LED

J6 can be used as an external indicator to display input power is present.

J7 – External charge indicator LED

J7 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. This serves the same function as D13 on the board just above J7.

J16 – External battery status indicator LEDs

J16 can be used as an external indicator to display the battery level status of the board, serving the same purpose as D16, D17, D18, D19, just below J16. Following the pinout on page 3, 4 LEDs and a momentary switch/button can be connected such that the battery level is displayed by the 4 LEDs. Pressing the momentary switch/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%

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 expansion socket (J3) and not the external battery charge status socket.

Note: The Dayton Audio LBB-5Sv2 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-5Sv2 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 @ 5A Max (combined outputs)
Supply: 5 to 24 VDC, at least 1.5A recommended
DC coax jack size: 2.1 x 5.5mm center positive
Dimensions: 4.8" W x 3.6" D x 1.38" H