

Building Instructions for Christmas Module & Ball

Christmas Ball

<i>What is included:</i>	<i>You need:</i>
<ul style="list-style-type: none">• 3 blinky LEDs• Battery holder• Power switch	<ul style="list-style-type: none">• Good soldering iron• Wirecutter• Much light• Maybe a multimeter• Battery type CR2032

Step 1: Battery holder



First solder one side of the battery holder to one of the two big soldering points on the PCB. The holder itself has no polarity, as long as the „+“ mark faces upwards.

Check if the second soldering point of the battery holder is aligned correctly. Now you can solder that one, too.

Step 2: Power Switch

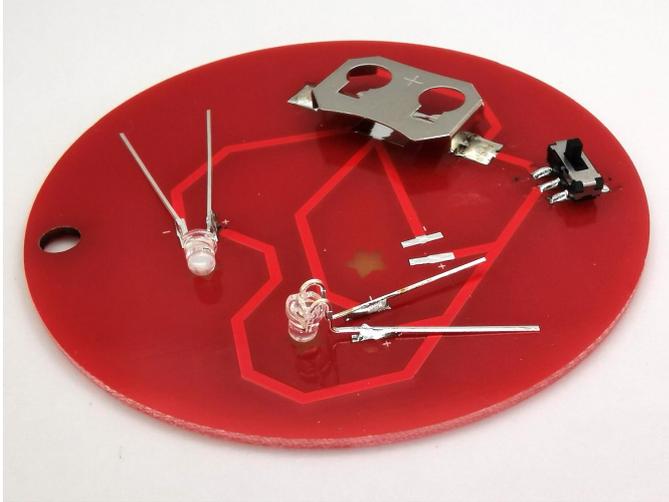
Now it's about the switch and as you did before, solder one of the pins first. Then check if the switch is placed correctly on the solder pads, before you do the other pins. The switch has no polarity, as long as the orientation of the pins match with the solder pads on the PCB, you're good.



Step 3: LEDs

The LEDs have a polarity. Their orientation is marked on the PCB by a „+“ and „-“ sign. The long leg of the LED is plus, the short one is minus.

Prepare one of the two solder pads by heating it up and adding some solder to it without soldering the LED itself. This will make the actual soldering of the LED a bit easier, as you don't have to handle the iron, solder and the LED at the same time then.



Before you bend the LEDs, please check the orientation/polarity of the LEDs. Then bend the LEDs close to their heads, as shown in the picture. It will give a better lighting effect when you do it like that, so Santa Claus can recognize you from far away. Or you can leave the LEDs straight on the PCB, also possible but the light show is a bit less effective.

Now solder the correct leg (plus/minus – you remember...) of the LED to the previously soldered pad and make sure that the body of the LED is above the free/non-red area, as otherwise the emitting light would be blocked by the red solder mask. Then you can solder the second leg of the LED.

Before you cut the legs short, check again the polarity of the LEDs, matching indicator print and long/short leg, as explained above. Then shorten the legs of the LEDs behind the soldering joint. Hint: if you keep the long leg still a bit longer than the other one you can later identify polarity easily in case of mistakes.

Step 4: Inserting the battery

When you have soldered all LEDs, have shortened the legs, please check again all soldering areas for short circuits and good soldering joints before you insert the battery. Please note the polarity of the battery.

When the LEDs are blinking happily, it's time to hang the ball on the Christmas tree or somewhere else and look at it proudly. Santa will be happy!



Christmas Module

What is included:	You need:
<ul style="list-style-type: none">• 4 blinky LEDs• 2 resistors 470 Ohm• One 10 pin power connector	<ul style="list-style-type: none">• Good soldering iron• Wirecutter• Much light• Maybe a multimeter• Eurorack Bus Cable

Step 1: 10 Pin Power Connector



This is the connector, where you later connect your Eurorack Bus-cable (not included), like on any other module.

White Stripe has to match with the red stripe on your Bus-cable, also as usual.

First solder one of the pins to one of the solder pads on the PCB. Then check if the connector is aligned correctly with the corresponding solder pads on the PCB. If all is ok, you can solder all the other pins.

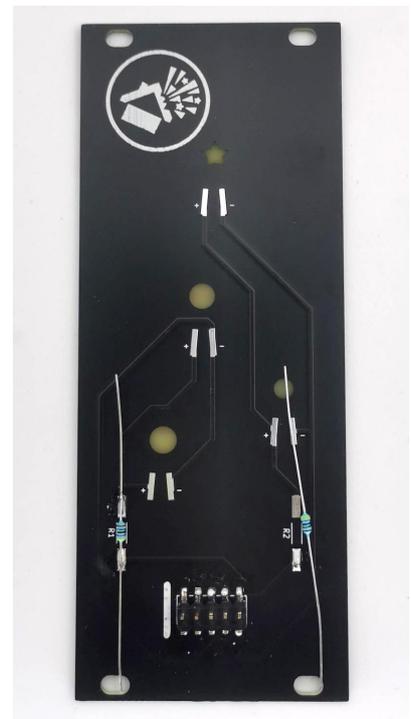
There must be no overlaps and bridges between the solder pads! They have to be clearly separated.

Step 2: Resistors

Positions for the two identical resistors are marked with R1 and R2. They have no polarity, means they can be this way or the other way around. Prepare one of each solder pads, by heating it up and adding some solder to it without soldering the resistor itself. This will make the actual soldering of the resistor a bit easier, as you don't have to handle the iron, solder and resistor at the same time then.

Then place the resistor across the area (R1 or R2), hold it down and solder one of the legs onto the prepared solder pad. In the next step solder the second leg to the other solder pad. Check the quality of your soldering and if you were successful, do the other resistor.

When both are done, you can cut off the un-needed parts of the resistor legs and shorten them.



Step 3: LEDs

Three LEDs are identical, one is different. Which goes where is totally up to you, please decide where to place the different one. The process is the same as for the christmas ball further up in the document. To get an idea how it should look like, please see the picture there before you bend the heads of the LEDs.

The LEDs have a polarity. Their orientation is marked on the PCB by a „+“ and „-“ sign. The long leg of the LED is plus, the short one is minus.

Prepare one of the two solder pads by heating it up and adding some solder to it without soldering the LED itself. This will make the actual soldering of the LED a bit easier, as you don't have to handle the iron, solder and the LED at the same time then.

Before you bend the LEDs, please check the orientation/polarity of the LEDs. Then bend the LEDs close to their heads, as shown in the picture. It will give a better lighting effect when you do it like that, so Santa Claus can recognize you from far away. Or you can leave the LEDs straight on the PCB, also possible but the light show is a bit less effective.

Now solder the correct leg (plus/minus – you remember...) of the LED to the previously soldered pad and make sure that the body of the LED is above the free/non-black area, as otherwise the emitting light would be blocked by the black solder mask. Then you can solder the second leg of the LED.

Before you cut the legs short, check again the polarity of the LEDs, matching indicator print and long/short leg, as explained above. Then shorten the legs of the LEDs behind the soldering joint. Hint: if you keep the long leg still a bit longer than the other one you can later identify polarity easily in case of mistakes.

When ready, check again all soldering joints before plug it into your Modular. In case of doubt, check the module with a multimeter for short circuits.

The whole Exploding Shed team wishes you a merry christmas and a happy new year!

May universal consciousness be with you!

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