

RIVER
Creative TECHNOLOGY

Crux

Dual discrete core VCA
DIY instructions

January 7, 2016
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Disclaimer

When you buy a Eurorack module, you buy a part of a bigger and highly flexible system. River Creative Technology modules have been designed with the utmost care for your safety, as well as the safety of the module itself and the other parts of your Eurorack system. However, it is important to realize that I cannot foresee all potential risks and wrongdoings related to operation in your specific system. In the case of DIY products, I attempt to provide you with the information to safely and successfully construct your own modules, but still assumes you have sufficient skills in handling potentially lethal voltages and the required construction tools safely. Therefore, River Creative Technology cannot be held responsible for any harm to you/others, or to your/their equipment (including electric shocks, fire, damage, malfunctions and accidents involving soldering or mechanical assembly). I hope you understand. By buying a River product, I assume you are aware of this.

1 Introduction

These instructions guide you through the process of assembling your Crux DIY-kit, which I would encourage most people to try. I have always enjoyed learning and practicing DIY construction of musical gear. It often changes the way you look at an instrument, how you feel when playing it, and boosts self-confidence in the skills you need for maintenance.

The River DIY-kits come with all the parts you need to finish the module yourself. Also, the circuit board was already partly assembled for you with the smallest (SMD) components. This means you don't have to read schematics, and have a high chance of success when building your module. The circuit board was

carefully layed-out, keeping sensitive small SMD parts away as much as possible from the spaces where the DIY components go in. Still, I ask you to be extra careful not to touch the SMD parts with your soldering iron by accident. For the rest of the instructions, I assume you have the knowledge and equipment to solder and know how to handle electricity and electrical components safely. If you don't, I refer you to the many online tutorials on soldering and electrical basics (such as avoiding damage due to static electricity).

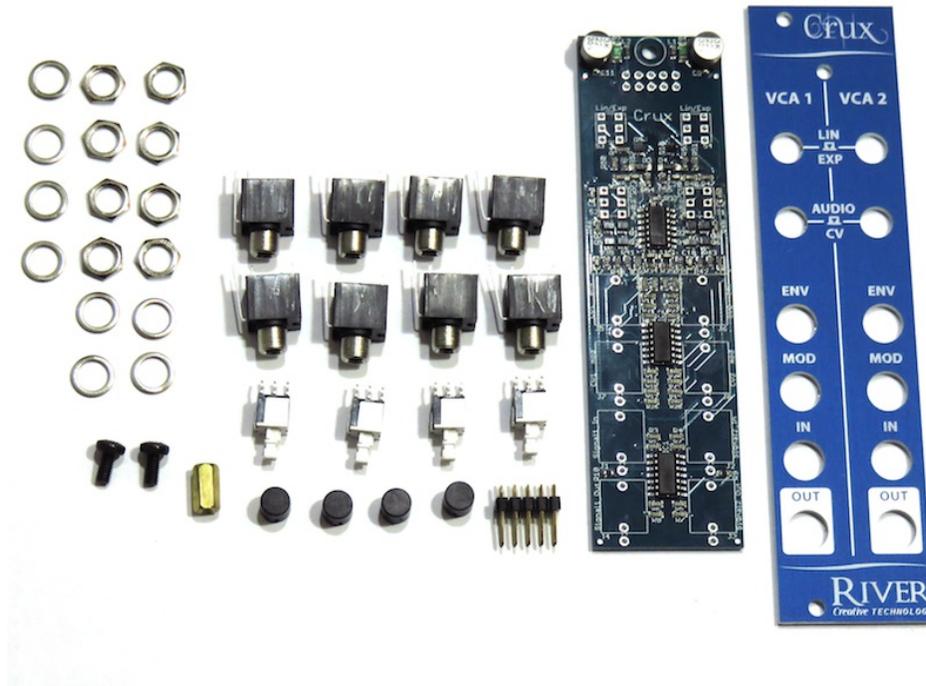


Figure 1: Contents of the Crux DIY kit

2 Assembly instructions

Three important tips:

1. Please stick to the order of assembly below, as you may otherwise run into the problems when trying to reach all required places on the board with your soldering iron.
2. Please, be very careful not to touch the small components already on the circuit board with your soldering iron (and preferably also not with your hands).
3. Make sure you have electrically discharged yourself before handling the board, don't wear that static sweater, and generally avoid touching component pins as much as possible. There are ESD-sensitive components on the circuit board.

2.1 Power socket

It's a good idea to start with the power socket (SV1). Take some time to identify what's going to be the front and the back of the circuit board. The River logo resides on the back of the circuit board. This is also where you want the pins of your power socket to become available for connection to a power cable. So put it in through the back, keep it straight, and apply solder on the front side of the circuit board.

2.2 Pushbutton switches and caps

Places for the pushbutton switches (S1, S2, S3, S4) can be found on the front side of the circuit board. Mind the orientation of the switches, such that the white clip on one side of the switch goes in pointing upwards on the circuit board, towards the power connector. Make sure the switches are put in straight and as far as they can. This will later give you a good alignment with the holes on the front panel.

The black round button caps can simply be pressed on. I found it to be easiest to have the slots on the cap pointing sideways. Pressing them down on the switch heads requires a bit of force, and becomes easier when you tilt the caps slightly. Make sure you don't damage the switch heads with excessive force.

2.3 Panel stand-off

Together with the minijack sockets, the stand-off supports the attachment of the front-panel later in the process. Use one of the black M3 screws inserted through the back of the circuit board, through the hole, to attach the brass stand-off on the front side of the circuit board. Tighten with a screw-driver, no extreme force is required, just tight enough to make sure vibrations will not make the connection loosen.

2.4 Sockets

The minijack sockets (J1, J2, J3, J4, J5, J6, J7, J8) support most of the connection between circuit board and front panel, lining them up properly with the front panel is important. Insert them with the two closest pins pointing downward on the circuit board, but do not solder yet. Temporarily put on the front panel and hold in place manually. This allows you to wiggle the sockets until they line up perfectly with the holes in the front panel. Make sure there is no gap left between the black square portion of the sockets and front panel (check this on all sides). Hold the front panel in place while you now solder the socket pins from the back. I found this easiest when you have the solder wire attached somewhere, and move the solder points and soldering iron underneath while holding the front panel and circuit board together. If this is tricky, aim for a temporary solder joint, enough to hold the sockets in place, and finish them later without the front panel on.

2.5 Frontpanel

The front panel is attached with the washers and nuts to the minijack sockets, and with a M3 black screw to the stand-off. I recommend tightening the nuts by hand as far as possible, and finishing off with a fitting wrench socket (no need to attach the wrench itself, you don't need that much force).

ATTENTION: when you use a wrench socket to tighten the nuts, it is very easy to leave permanent marks on the front panel or in the printing. I strongly recommend you make a small mold of paper, cardboard or plastic you can insert between the panel and the wrench socket. Simply cut out the dimensions of the nut from a piece of paper and hold the mold between the panel and the tool as you tighten the nuts.

3 Connecting the module

Euro-rack is a great format, but has one flaw. The power connection standards are prone to confusion. When you connect the module, make sure you line up the power cable on your power supply or bus board with the red stripe pointing to the -12V line, and the same way on the module. This River module is protected against damage from reversed power connections, but I cannot take responsibility for how the rest of your system might handle such an incident.

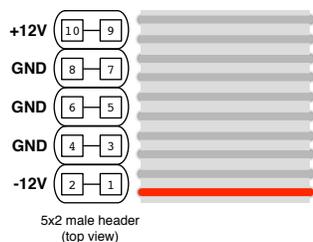


Figure 2: Power connector with ribbon cable

4 Calibration

The Crux requires no calibration.

5 Warranty

Warranty is governed by Dutch law for all River Creative Technology products. This warranty covers any defect in the manufacturing of this product for one year following the date of purchase. This warranty does not cover any damage or malfunction caused by incorrect use - such as, but not limited to, power cables connected backwards, excessive voltage levels, or exposure to extreme temperature, moisture levels or chemical substances.

The warranty covers replacement or repair, as decided by River Creative Technology. Please contact our customer service (info@riversynths.com) for a return authorization before sending the module. The cost of sending a module back for servicing is paid for by the customer, unless Dutch warranty law prescribes otherwise. Modifications to any product, or repair attempts to a pre-assembled product will void warranty.