

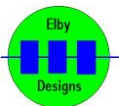


## ES114 Universal Slope Generator

### Construction Guide

Revision 1.0

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# ES114 Universal Slope Generator

Construction of the ES114 requires the assembly of 4 boards:-

Column 1 - Panther Jack PCB  
Column 2 - ES114 Column 2 PCB  
Column 3 - Panther Jack PCB  
Backboard - ES114 PCB

Constructors should refer to the printed Component Overlay for any specific comments regarding the board assemblies, the Bill of Materials for the current value of all components and [General Construction Notes](#) for general pcb assembly guidelines. You are advised to check all of these documents on our website to ensure you have the latest copy.

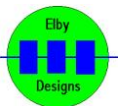
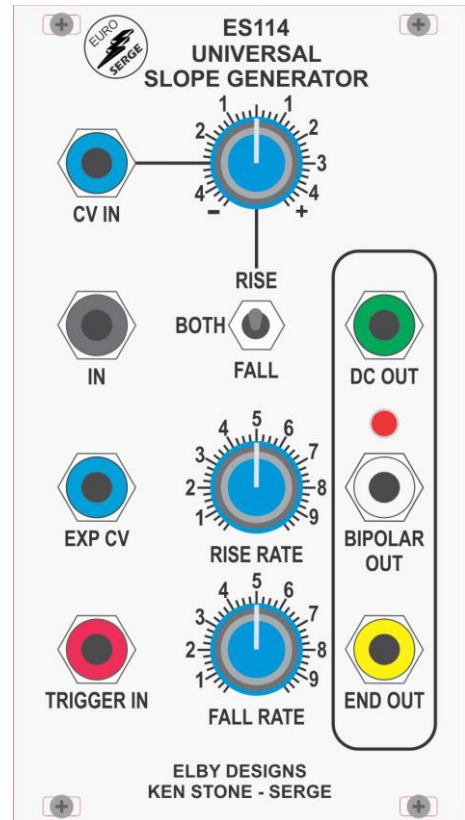
## Assembly

1. Assemble all Carrier Board assemblies
2. Fit all components to the boards following normal assembly guidelines except for the switch sub-assembly and LED.
3. Assemble the 3 support boards first
4. Install the Column 2 Support Board and solder the switch sub-assembly in to place
5. Remove the Column 2 assembly and insert the Column 3 board
6. Carefully form the LED legs, insert and solder in to place.
7. Install the Column 2 assembly
8. Install the Column 1 assembly
9. Assemble the Main board and then mount on to the column boards ensuring that the IDC connectors are properly aligned.

## Calibration

There are 2 adjustments provided for on the ES114.

1. Patch [END OUT] to [TRIGGER IN]
2. Monitor [DC OUT]
3. Adjust [RISE RATE] and [FALL RATE] to produce a triangle wave shape running at about 100Hz
4. Adjust P101 so that [DC OUT] output is 5V pk-pk
5. Monitor [BIPOLAR OUT]
6. Adjust P201 so that [BIPOLAR OUT] is centred around 0V



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