

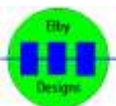


ES31 Stereo Output Module

Construction Guide

Revision 1.0

October 5th, 2017



ELBY Designs - Laurie Biddulph

9 Follan Close, Kariong, NSW 2250, Australia

elby-designs@bigpond.com

<http://www.elby-designs.com>

ES31 Stereo Output Module

Construction of the ES31 requires the assembly of 5 boards:-

- Column 1 - ES30 Channel PCB ([3D Model](#))
- Column 2 - ES30 Channel PCB ([3D Model](#))
- Back Board - ES30 Main PCB ([3D Model](#))
- Column 3 - ES31 PCB ([3D Model](#))
- Column 3 - ASM306 Support Board ([3D Model](#))

Constructors should refer to the printed Component Overlay for any specific comments regarding the board assembly, 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.

1. Start assembly by following the [ES30 Build Guide](#)
2. Install the ES30 as per the guide

With the ES30 section built you can move on to the final construction stage for Column 3.

1. Assemble the J201 Carrier Board assembly ([3D Model](#))
2. Fit all components to the main board following normal assembly guidelines except the J101 sub-assembly
3. Mount the sub-assembly and offer up to the front panel securing using the supplied nuts.
4. Remove the 3rd section (J7) of the ASM306 Support Board - use a pair of strong side cutters or a small hacksaw.
5. Solder wires to the 6 points on the Support Board, using the associated anchor points to hold the wires secure - see *Figure 1*.
6. Fit the remaining components excluding the 2x jacks
7. Loosely mount the 2x jacks on to the front panel, checking that the slanted corner of each jack is furthest from the nearest edge of the panel and that the jack bush is properly located in the panel, and then tighten the nut
8. Offer up the Support Board and solder in to place
9. Check the lengths of each of the wires and then strip approximately 3mm off each wire and attach the crimps.
10. Fit the crimped wires in to the 2x MTA housings and connect to their respective headers on the main board

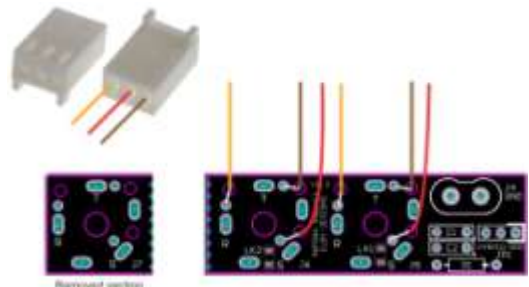
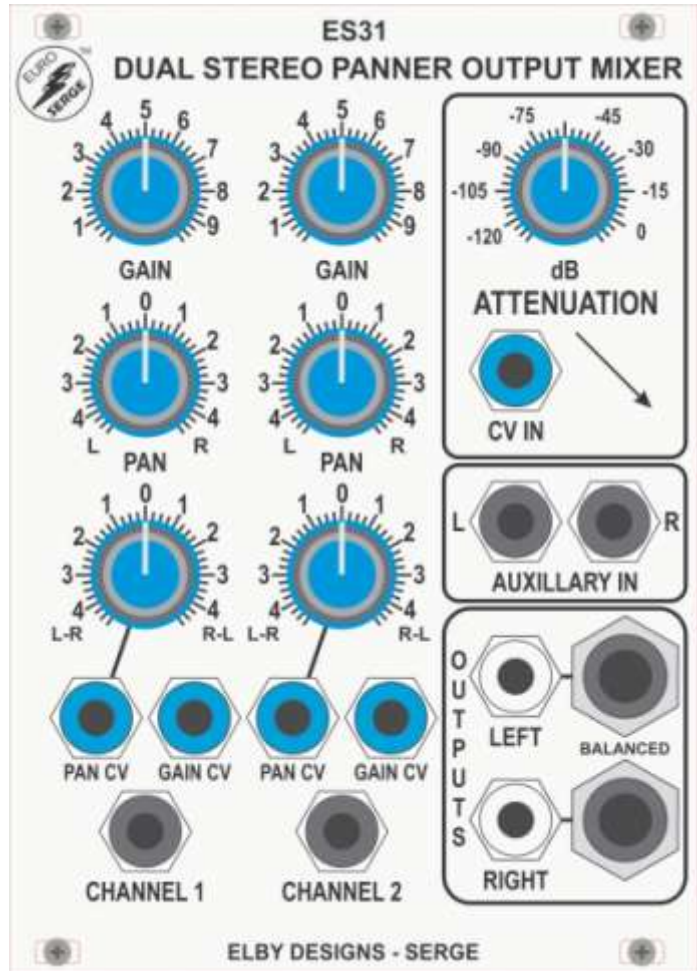
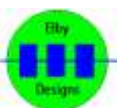


Figure 1

Calibration

Equipment required:

1. 50Hz 5VDC p-p sawtooth wave
2. 1kHz 5VAC p-p triangle wave



ELBY Designs - Laurie Biddulph

9 Follan Close, Kariong, NSW 2250, Australia

elby-designs@bigpond.com

<http://www.elby-designs.com>

ES31 Stereo Output Module

Calibration procedure:

Set [ATTENUATION] fully clockwise to '0dB'

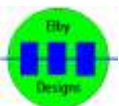
CV Feedthrough Adjust

CHANNEL 1

1. Set [GAIN] fully clockwise
2. Connect 50Hz 5VDC sawtooth to [PAN CV][1]
3. Set [PAN][1] to 'L'
4. Set [PAN CV][1] to 'L-R'
5. Monitor TP5
6. Adjust P101 for minimum output
7. Set [PAN] [1] to 'R'
8. Set [PAN CV][1] to 'R-L'
9. Monitor TP6
10. Adjust P102 for minimum output

CHANNEL 2

1. Set [GAIN] fully clockwise
2. Connect 50Hz 5VDC sawtooth to [PAN CV][2]
3. Set [PAN][2] to 'L'
4. Set [PAN CV][2] to 'L-R'
5. Monitor TP6
6. Adjust P202 for minimum output
7. Set [PAN][2] to 'R'
8. Set [PAN CV][2] to 'R-L'
9. Monitor TP5
10. Adjust P201 for minimum output



ELBY Designs - Laurie Biddulph

9 Follan Close, Kariong, NSW 2250, Australia

elby-designs@bigpond.com <http://www.elby-designs.com>

ES31 Stereo Output Module

GAIN ADJUST

CHANNEL 1

1. Set [GAIN][1] fully clockwise
2. Connect 1kHz 5VAC triangle to [CHANNEL 1]
3. Set [PAN][1] to 'R'
4. Monitor TP5
5. Adjust P103[1] for an output of 5.5VAC p-p
6. Set [PAN][1] to 'L'
7. Monitor TP6
8. Adjust P104[1] for an output of 5.5VAC p-p

CHANNEL 2

1. Set [GAIN] fully clockwise
2. Connect 1kHz 5VAC triangle to [CHANNEL 2]
3. Set [PAN][2] to 'R'
4. Monitor TP5
5. Adjust P103[2] for an output of 5.5VAC p-p
6. Set [PAN][2] to 'L'
7. Monitor TP6
8. Adjust P104[2] for an output of 5.5VAC p-p

