

CS3318VolumeControl 8channel version – mounting instructions

Thanks for buying this CS3318VolumeControl 8-channel pcb or kit! Now the fun of mounting starts. Make sure you read the complete instructions before you start mounting. Complete assembly can be done by an experienced hobbyist in about two hours. This circuit was designed to be used in a preamplifier project. More information can be found on the project page:

<http://www.djuke.nl/en/projects/10-pre-amplifiers/34-preamplifierv2>

List of components

The kit consists of the following components. If you bought the pcb, these components are suggested (but you can of course adapt it to your needs).

SMD-components

This kit contains (small) SMD components, which have been pre-mounted for convenience.

Qty	Value	Device	Parts
10	100n	C-0805	C1, C3, C5, C7, C9, C12, C14, C16, C35, C46
8	470n	C-1206	C2, C18, C20, C21, C22, C27, C28, C30
8	1n	C-1206	C4, C19, C23, C24, C26, C29, C31, C34
1	CS3318	LQFP-48	IC1
1	10k	R-1206	R1
26	100k	R-1206	R2, R6, R9, R10, R12, R15, R16, R18, R26, R27, R33, R40, R41, R42, R43, R53 R54, R56, R59, R60, R62, R65, R66, R68, R71, R72
1	1k5	R-1206	R20 (not premounted, for chaining, use only on first pcb)
1	3k3	R-1206	R22 (not premounted, for chaining, use only on first pcb)
1	0R	R-1206	R3 (not premounted, link analog and digital GND only at 1 point)
16	1k	R-1206	R4, R5, R8, R11, R14, R21, R23, R38, R39, R52, R55, R58, R61, R64, R67, R70
8	100	R-1206	R7, R13, R19, R36, R37, R57, R63, R69
1	TXB0104	SO-14	IC9
4	OPA2134U	SO-8	IC3, IC4, IC5, IC6
1	LD117AS33TR	V-REG	IC2

Through-hole components

Qty	Value	Device	Parts
5	22uF	C-elec2.5-5	C11, C13, C15, C17, C25
4	47uF/25	C-elec2.5-5	C6, C8, C10, C36
3	100uF	C-elec3.5-8	C32, C33, C40
4	3-pin	Con-KK	CH12-IN, CH34-IN, CH56-IN, CH78-IN
4	5-pin	Con-KK	CH12-OUT, CH34-OUT, CH56-OUT, CH78-OUT
2	2-pin	Con-KK	ENOUT, RESET
1	10-pin	Con-ML	CONTROL
1	3-pin	Con-Ptr	SUPPLY

Tools

Required:

- ✓ Soldering iron with small tip
- ✓ Flux, solder (0.5mm), solder wick
- ✓ Multi-meter (voltage and resistance)
- ✓ Side-cutting pliers, tweezers

Recommended:

- ✓ Adjustable power supply
- ✓ Oscilloscope
- ✓ PreampController pcb for testing

Mounting

Note that this kit contains (small) SMD components, which have been pre-mounted for convenience. The easiest way of mounting the remaining through-hole components is by starting with the components with the lowest height and build up the PCB in steps, where components of the same height are fitted and soldered in each step, so use this order: connectors, electrolytic capacitor.

Always double check all components before you solder them (especially the ones that are polarity dependent, electrolytic capacitors, etc), as it is difficult to remove them after soldering, much more time consuming and may break components or PCB.

Hints:

- Chaining multiple VolumeController pcs can be done by connecting ENout to Reset of the next pcb. Use R20/R22 only on the first pcb (to connect the PreampController reset to the CS3318).

- R3 can be used to link the Analog GND to Digital GND, which needs to be done only once in your setup.

Operating mode

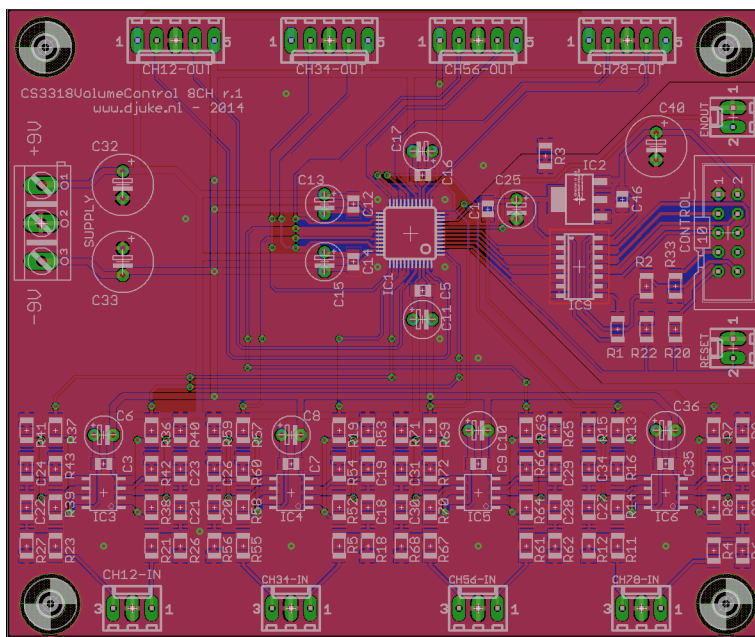
The circuit is intended to be controlled from a SPI master, like the PreampController pcb. Please refer to the schematic and datasheets if you intend to use it in some other way.

Testing

Double-check all soldering connections to make sure no shorts are present.

- Connect the CONTROL connector to a 5V SPI master (e.g. PreampController)
- Check the output voltage of IC2 (should be 3.3V)

Top silkscreen



Schematic

