Wieheister

portable universal jack routing thing

assembly instructions*

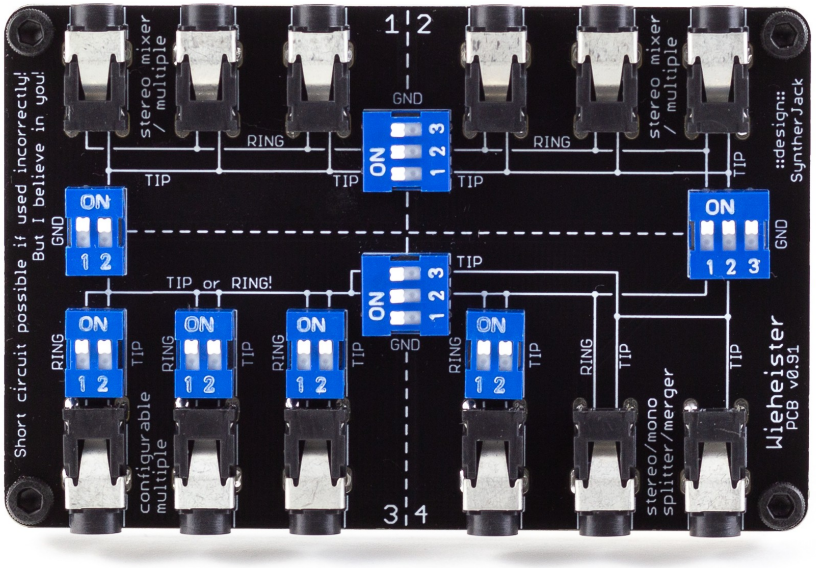
v0.9

by SyntherJack.net

*I've tried to keep it short and informative. Nobody reads manuals.

Main features:

- „swiss knife” of audio utility devices, among others can be used as:
  - mixer,
  - multiple,
  - splitter,
  - mono ⇔ stereo converter.
- performs unique audio routing tasks,
- high quality components,
- designed for portability.



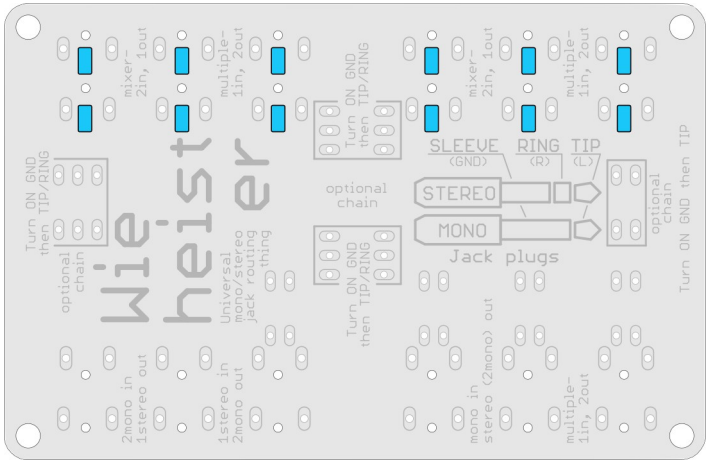
Mechanical data:

- size : 93 x 60 x 16 mm,
- weight : 58 g.

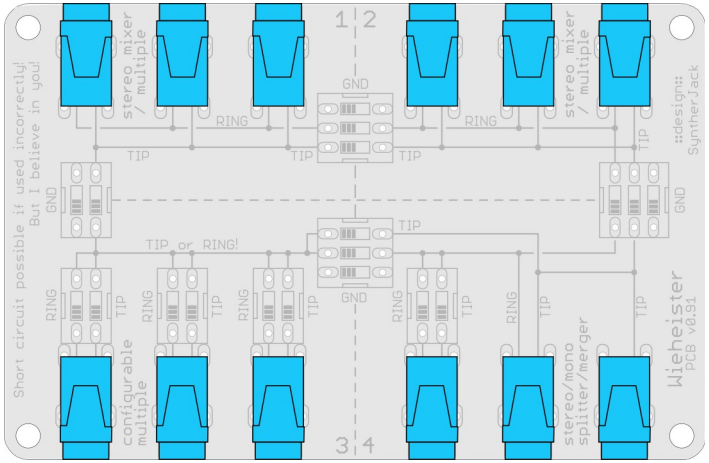
Electrical data:

- power supply : passive (no battery),
- switches current rating : 50 mA at 12 VDC.

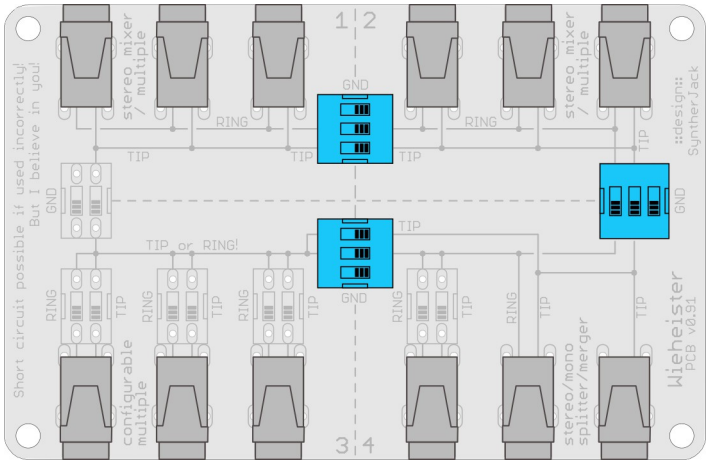
BILL OF MATERIALS				
	Part/value	**Count**	**Part on PCB**	**Description**
Resistors				
1	10 kΩ	12	not marked	1206, thick film, 0,25 W, 5%
Mechanical				
2	Jack socket	12	not marked (outline only)	Lumberg 1503-08
3	DIP switch, 2P	5	not marked (outline only)	2-pole DIP switch
4	DIP switch, 3P	3	not marked (outline only)	3-pole DIP switch
5	Screw	4	-	10 mm, M3
6	Nut	8	-	M3
7	Bottom cover	1	-	custom
8	PCB	1	-	custom



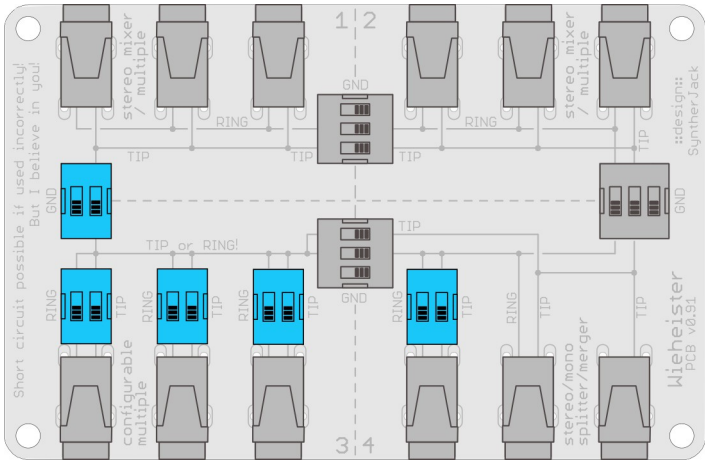
Step I : solder twelve 10 kΩ SMD resistors. There is no outline for them on the PCB, but you should be able to locate the solering pads.



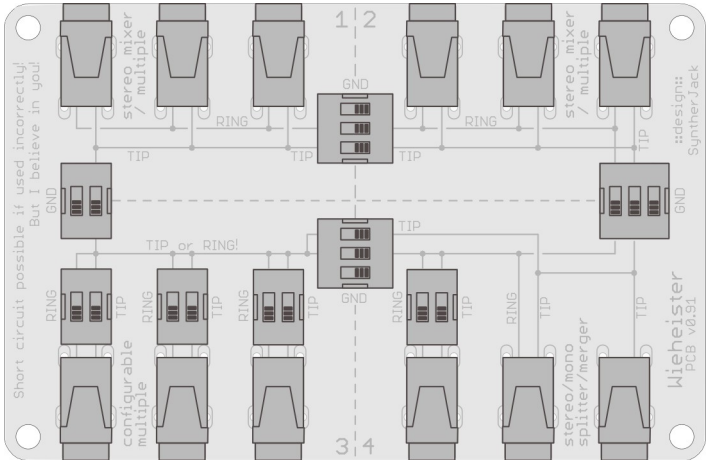
Step II : turn over the PCB and solder twelve jack connectors. (Usually I solder only one lead of each socket, align them, then solder all remaining leads).



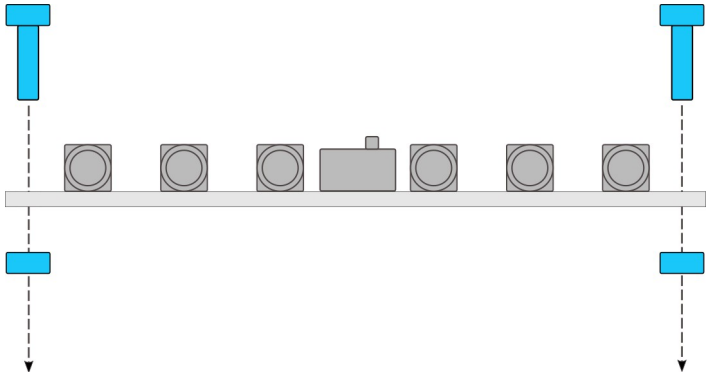
Step III : solder three 3-pole DIP switches.



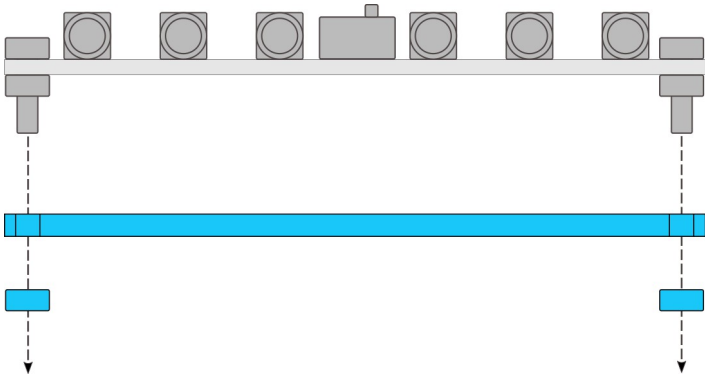
Step IV : solder five 2-pole DIP switches.



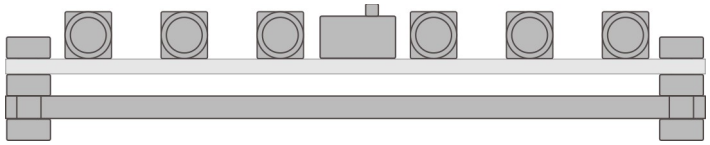
Step V : inspection – double check all the joints. They should be nice and shiny. If you have isopropyl alcohol, clean them.



Step VI : insert four screws using nuts and lock them with nuts, use your fingers, no additional tools are needed.



Step VII : remove protection form acrylic bottom cover and screw it on with four nuts.



Step VIII : tighten the nuts to be shure you won't lost any part of Wieheister!

Step IX : Congratulations! Your routing thing is ready! Take it everywhere, as it can save your life!

Operation manual

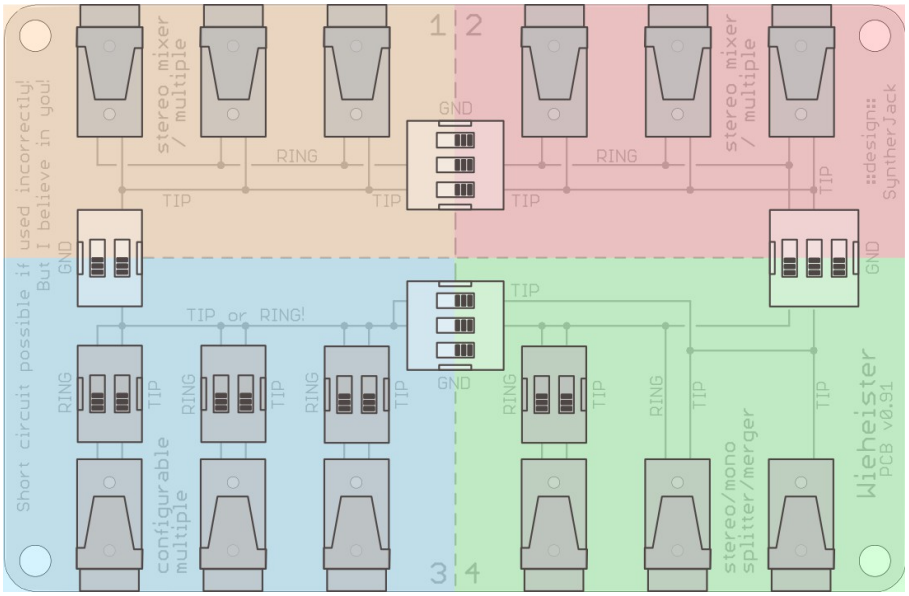
I know Wiheister is a bit counfusing device. To get most of it, be shure you understand how it works.

Basic structure:

- Wiheister is divided into 4 sections, which main functions are:
  - stereo / mono mixer, multiple (**1**) and (**2**),
  - configurable multiple (**3**),
  - stereo/mono splitter/merger (**4**).

- If sections are not joined (switches <u>not</u> in ON position), they work fully separately (their signal grounds are not connected) and can perform different tasks at the same time.

- Adjacent sections can be joined via switches to perform custom functions.



Lets take a closer look!

Controls:

- 4 DIP switches (3x 3P and 1x 2P) for section joining,
- 3 DIP switches (3x 2P) for configurable multiple (section 3).

Inputs/outputs:

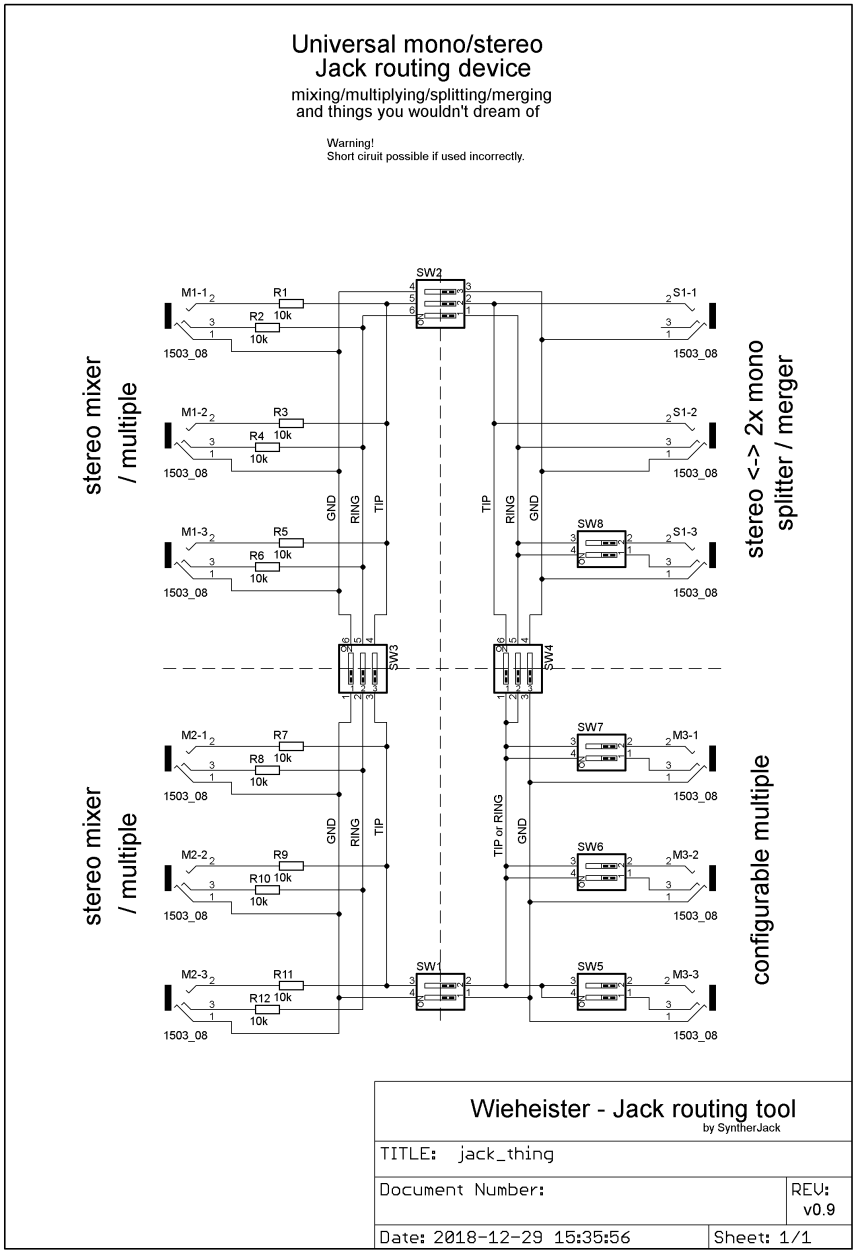
- basically, all jack sockets can act as input or output - it depends on function you want to perform.

First run:

- turn all DIP switches in OFF position (the one opposite to ON),
- think, what you want to do and do it.

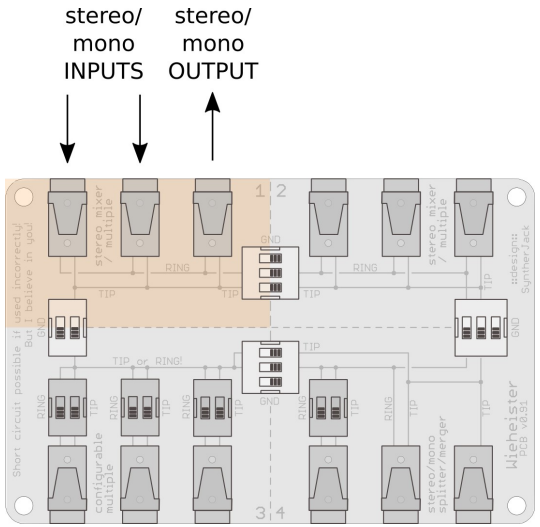
Notes:

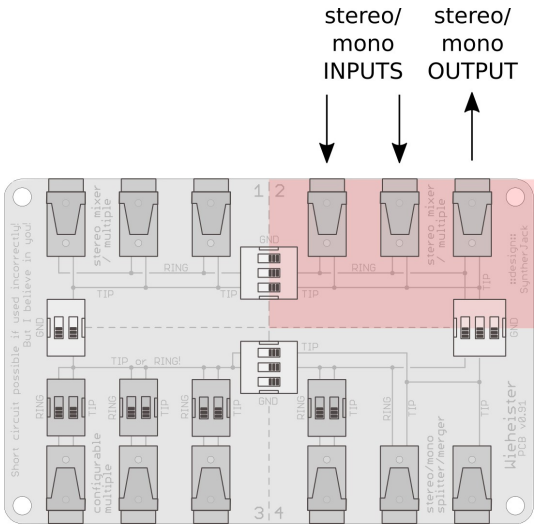
- if used incorrectly, in very rare cases Wiheister can be dangerous to some equpment. Be shure you know what you are doing. Think before you short-circuit two signals.
- PCB is one big cheat sheet, inspect it carefully and you will find a lot of useful information. In general, front side tells everything about signals routing – track how TIP (usually left channel) and RING (right channel) are distributed.
- If used as mixer, expect some output signal level drop – it is standard behaviour for passive mixers.



Section 1 and 2 as **mixer**

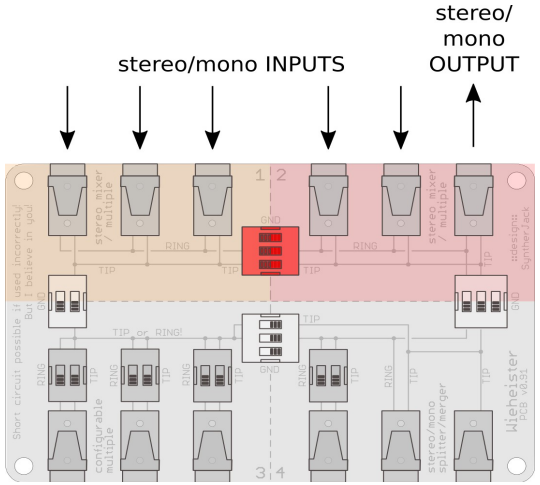
Sections 1 and 2 are identical and can be used as separate audio or CV signals passive mixers.

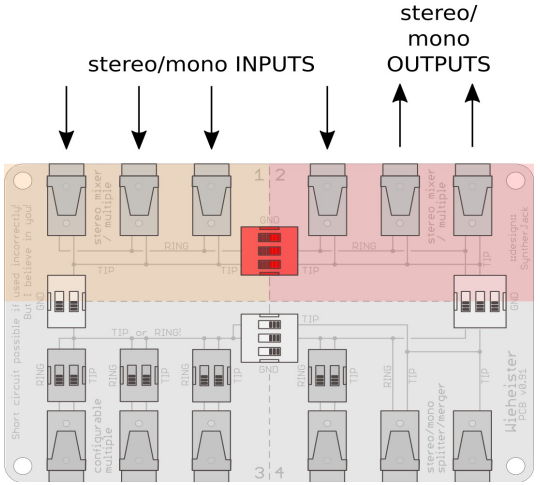




Section 1 and 2 can be joined together (all sliders of switch in ON position) to implement more advanced functions.

Any Jack socket can act like an input or output, so mixer with two (or even three) outputs is not a problem.

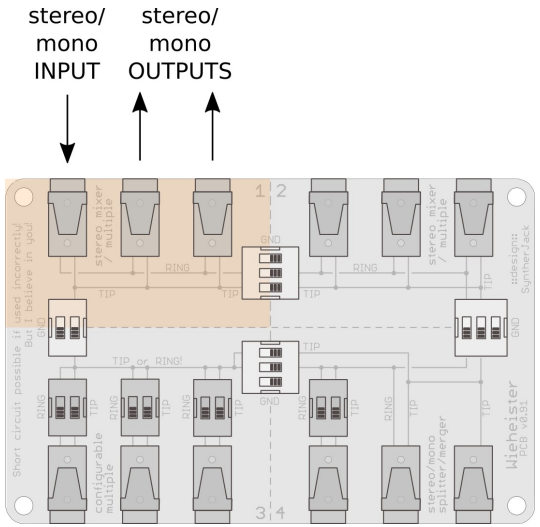


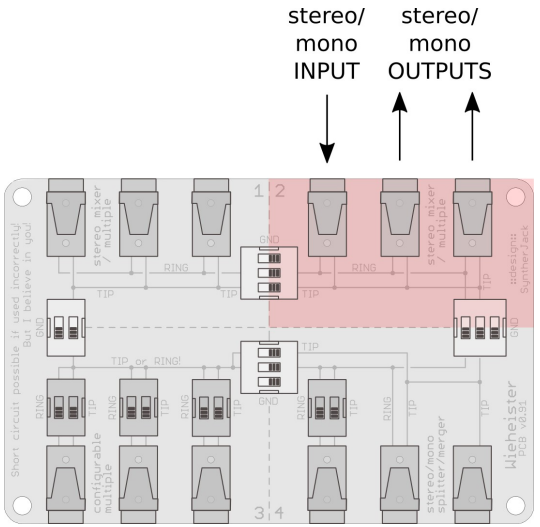


Section 1 and 2 as **multiple**

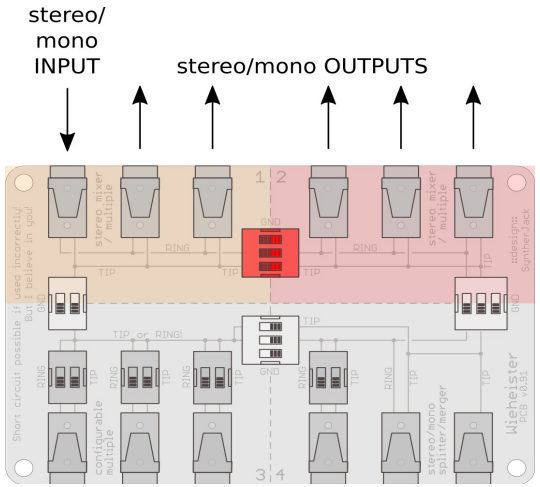
Because <u>any</u> Jack socket can act like an input or output, building a passive multiple is also possible.

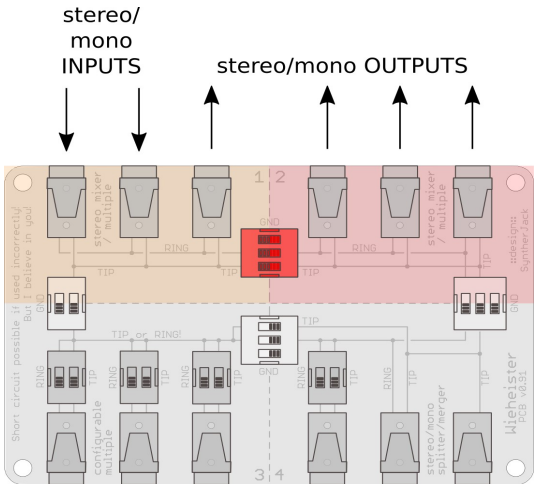
If separated, both sections can be used at the same time. Of course, first can be used as a multiple and second as a mixer.





Section 1 and 2 can be joined together (all sliders of switch in ON position) to implement more advanced functions, like 1 to 5 multiple or mixer/multiple crossover.



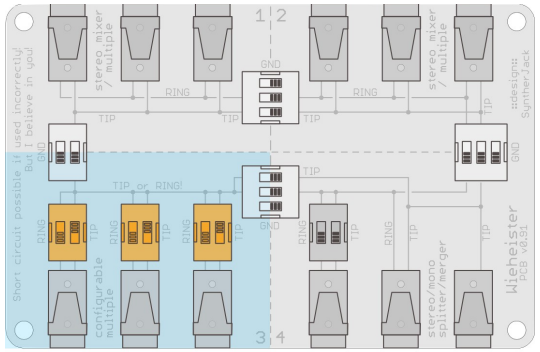


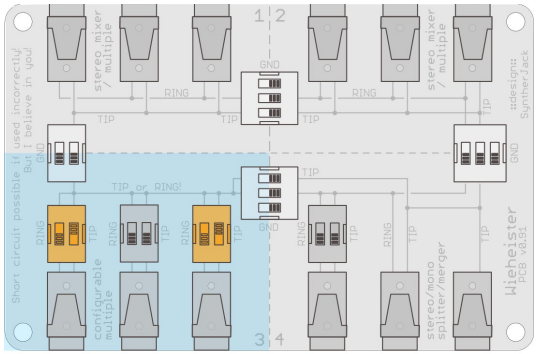
Section 3 – **configurable multiple**

Can be used as multiple or channel manipulator . It don't mix signals!

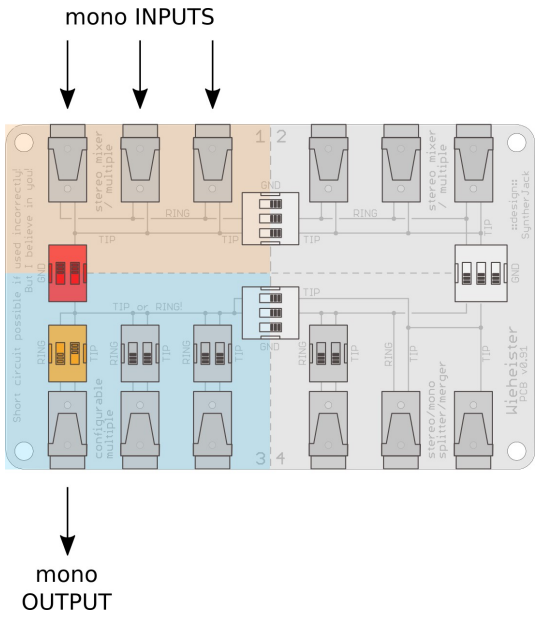
Both sliders on each switch can't be in ON position! It marked on PCB – choose TIP or RING!

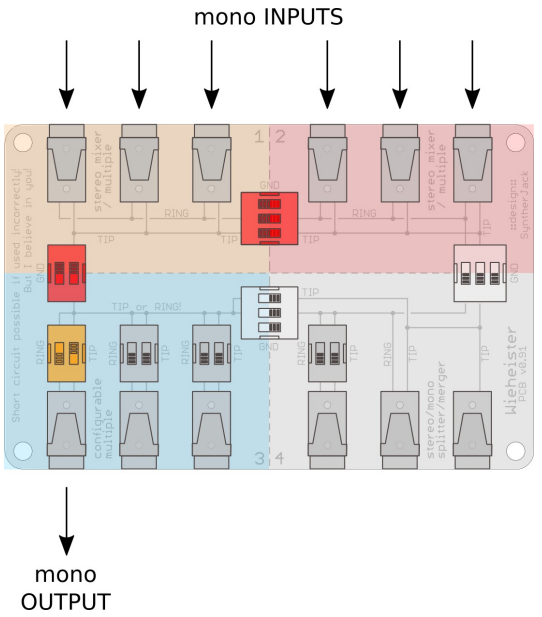
(unless you really know what you are doing)





In combination with other sections in can act as a passive mono mixer with up to 6 inputs.

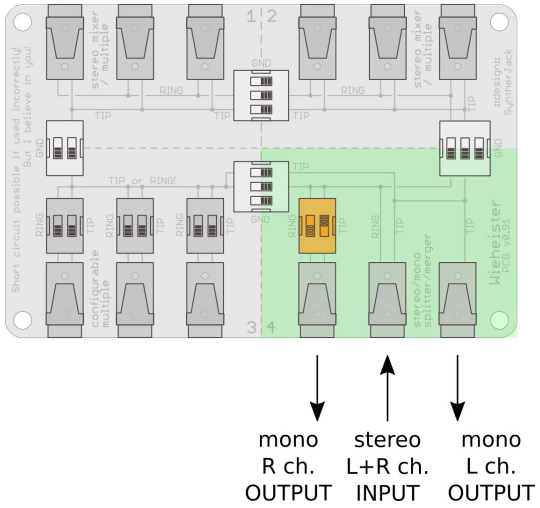


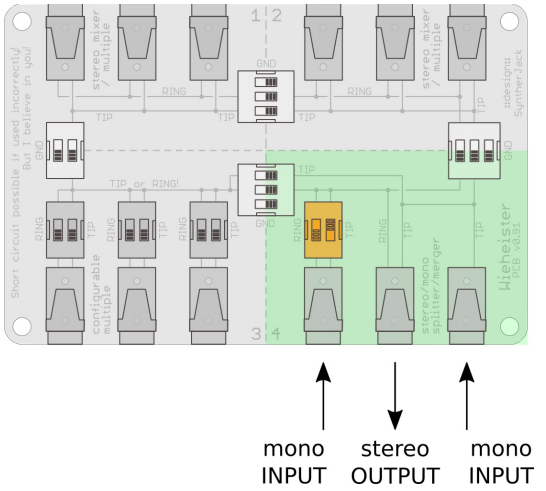


Section 4 – **splitter/merger**

It was orginally designed to split audio and clock signal from my TE Pocket Operator output, but it can split any stereo signal.

It can be also used to merge two signals from mono sources to one stereo jack plug.





Together with section 3, it can multiply desired channel (f.e. to sync up to 5 Pocket Operators).

Alternatively you can merge sections 1,2 and 4 to create stereo mixer with 6 inputs.