TEDDY TILT

BUILD GUIDE

THANK YOU SO MUCH FOR PURCHASING THIS TEDDY KIT!

As with everything we make at TEDDY we try to keep it as simple as possible, but yet useful in relation to music, sound or performance. Oh, and affordable! All keywords when it comes to the main philosophy of TEDDY Modules. And in the process of creation you will learn things about how your modules work or even getting acquainted with the materials you're working with. So yes, we dare to say our modules are fun for beginners as well as advanced builders.

Exploding Shed guides on Synth DIY
https://www.exploding-shed.com/synth-diy-guides

And as a hello and thank you towards our Leipzig friends we would also like to tell you about their great webshop with all kinds of kits, projects, tools and material in case you need some (more) quality products for your (new) hobby. And yes, there are way more places to find info, but we've pointed you to a place where we ourselves are happy about sharing with you.

SO, WHAT'S THIS MODULE ALL ABOUT?

Remember the high/low dial on an amplifier? More bass and less treble when you turn it counter clockwise and less bass more treble when you turn it clockwise? Well, that is exactly what this module does! It is called the TILT because of the tilting slope.

It's one knob to rule them all. Turn CCW and you have an LPF, turn CW and you have an HPF. And no, it's not exactly those filters, but those are the effects you will hear. The cutoff frequency is around 1 kHz and with this choice it becomes a very usable utility.

A happy user who helped us design and test it wrote: "I love how simple this is. Just one knob to slide from thick to thin, from dark to bright. It's especially great on the bass drum. I know, it's not the typical way to use it, but I really like it for this in particular. Because somehow it feels like a DJ filter, yet it kind of preserves the timbre you've worked so hard to shape."

We can't really add anything I suppose ...

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A FEW GENERAL POINTERS BEFORE WE START ...

Well, it's time we start making this thing. And because you're "building and learning" our Build Guide looks a bit different then ones you possibly already have seen in the past. We haven't labelled the parts for example. It's all in a bag and you will simply need to learn how to read or measure values. This way you will get a better feeling of what you are doing and why. And of course there is a reasonable multimeter in your workplace, right?

REMINDER: If this is all new to you, please take some time to read about Synth DIY. TEDDY Modules do NOT come with a guarantee of a working module if you mess up.

1. The first rule in soldering is you go from low to high, where it is about the height of the components. Reason: It's easier to flip the board when there aren't things sticking out. Really, it is that simple! There might be moments however we will advise you to not follow this first rule because it sometimes gets tricky to solder specific parts if everything else is in its place;
2. The BOM a.k.a. Bill of Materials is the guideline of all the things that have to be soldered. You will find it on the next page(s). Check and double check the values of the components before you solder them;
3. Some components are polar meaning there is a positive and negative side. Or more general, how they work is dependent on their orientation;
4. With diodes, there is ALWAYS one side with a stripe/line. This should match the line on the PCB;
5. Electrolytic capacitors - the big black ones - have one longer leg which is always the positive one. The side of the capacitor where the shorter leg is has a mark (white line). There are also *Non Polar* versions of the electrolytic capacitors, but they miss the marking on the case so it doesn't matter how you solder them, even if one leg is longer than the other one;
6. IC's have a marking at Pin 1, and Pin 1 is always the first pin left of the indent at the PCB Marking. So it's important you align the dent on the IC-holder with the dent on the PCB. Don't ever solder the IC's directly without the holder. It's way easier to replace the IC this way in case you mess things up;
7. For transistors or other three legged elements, always align the flat side of the component to the flat side on the PCB.

This is not a full list of all possible elements, so if there is something extra just as big as a diode, fit it in with them. One of the most important lessons in electronics: Think logically.

Get acquainted with your material and (try to) think logically!

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SOLDERING THE TEDDY TILT MODULE

In this chapter all the specifics about soldering the TILT will be written down. But we're keeping it very to the point because the important stuff is already written in the previous chapter. Which part goes where can be found in the BOM on the next page(s).

1. Resistors and diodes ([1]). The stripe/line on the diodes should match the line on the PCB;
2. Solder the IC-holder. Make sure the dent on the holder aligns with the dent/mark on the PCB;
3. Ceramic capacitors. These are the "yellow drops" and they have their values on them;
4. Film capacitors. No polarity and they also have their value on them;
5. Electrolytic capacitors. Watch the polarity (long leg is positive, negative side has a white line);
6. Place and solder the boxed header for the power. The gap on the box should match the marking on the PCB.

The first side of the PCB is now finished and we're off to the pot and jacks.

1. Add the jacks and pot in their place, drop the faceplate over them and loosely tighten the nuts where needed;
2. Turn the PCB over, stabilize it a bit and solder the points that need to be soldered;
3. Tighten the nuts;
4. Put the knobs on the pots. When the gap is horizontally aligned with the three legs the pot is 'centered';
5. Put the IC into the holders and make sure the marking on the IC follows the marking /dent on the PCB/holder.

You did it! The module is done!

[1] The diodes used to protect your module from reverse polarity can be labelled 1N4001 to 1N4007 or 1N5817to 1N5819. These all work the same and are within specifications.

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ALMOST THERE ...

There is one final thing you have to put together and that is the power cable ...

1. You will notice that one of the sides of both the headers has a little expulsion. If this expulsion faces you, pin 1 which is standardised to be the red line is on the left. Most headers emphasize this with a little triangular marker, but it's sometimes difficult to see. So the expulsion is a more certain way of identifying the orientation;
2. You just put the end of the cable in the header and make sure the red line is in place;
3. Use pliers (I personally use a small pipe wrench) to squeeze the header evenly and tighten the cable in its place. Do the same with the other header.

Please note: Make sure that on the 16 pin header the cable is properly aligned and the red line is on the position of pin 1 as described earlier. You don't want to short circuit stuff because it might break the power supply or other modules. TEDDY modules are protected for this, but ... Other modules might react differently and we can not (and will not) take responsibility for your mistakes.

DONE !!!

And there we have it, the final words that need to be said. Everything you do is your own responsibility. You are working with voltages, currents and high temperature molten metal. Be careful, be responsible, RTFM and if you are not sure, ask for help.

We *CAN* not (and *WILL* not) take responsibility for *YOUR* mistakes.

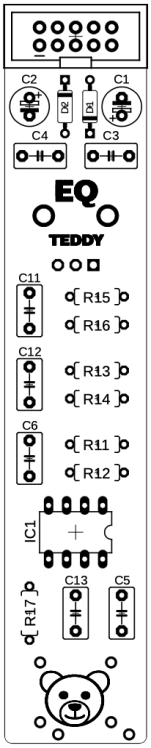
There is a FaceBook group called TEDDY Modules Support which is a community driven 'builders helping builders' and you can find all our contact information below.

CONTACT INFORMATION

website: teddy.modules.nu
mail: teddy@modules.nu
shop: bearmodules.etsy.com
fb support: www.facebook.com/groups/teddymodulessupport

TEDDY TILT

BILL OF MATERIALS



RESISTORS

1k	1	R17
2k2	2	R13, R15
6k8	2	R14, R16
10k	2	R11, R12

CAPS

22pF (22 or 220)	1	C13
33nF (333, film)	2	C11, C12
100nF (104)	4	C3, C4, C5, C6
10uF (elco)	2	C1, C2

DIODES

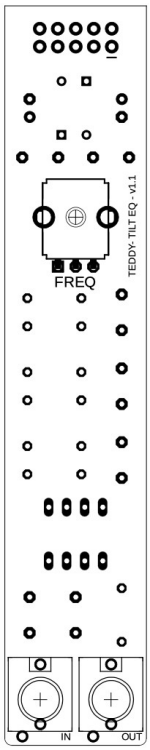
1n4001	2	D1, D2

ICS

TL072	1	IC1

HARDWARE

POWERHEADER	1	



POTMETERS

B10k	1	FREQ

HARDWARE

THONKIES	2	IN, OUT