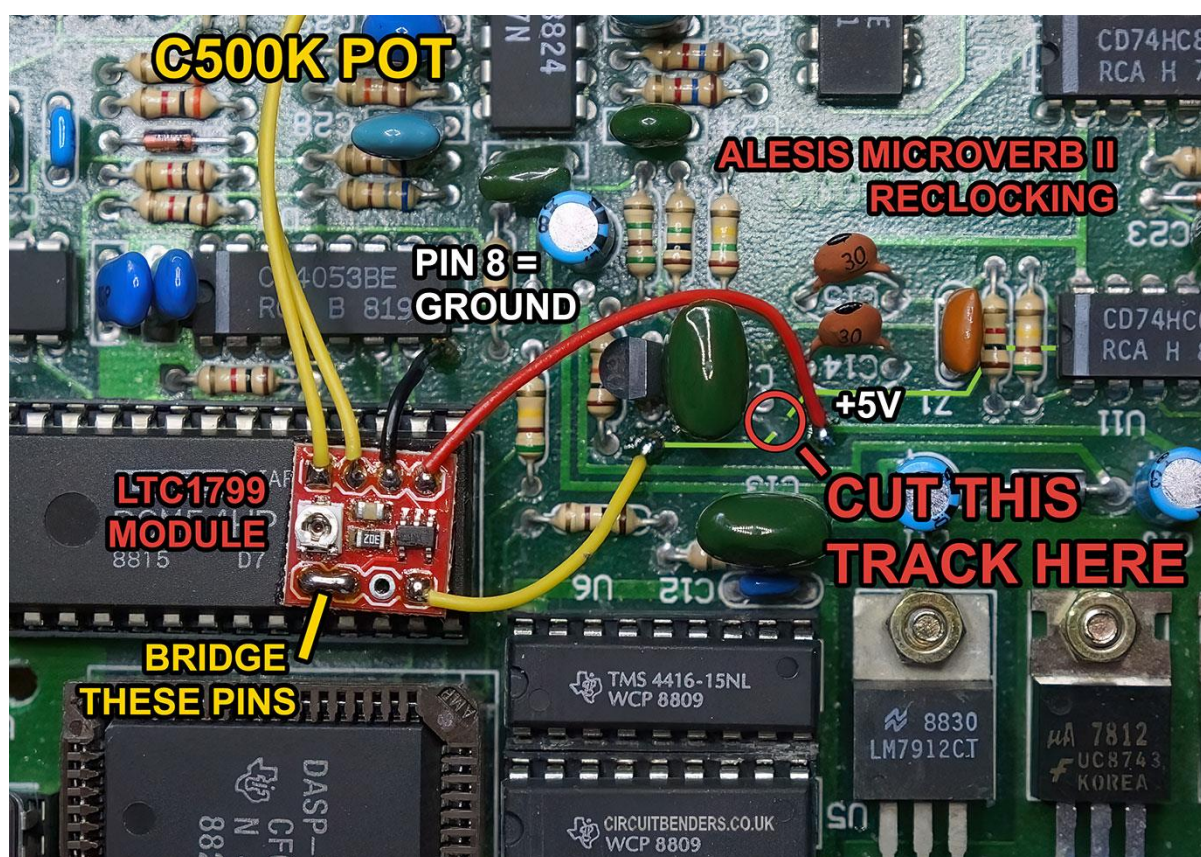


circuitbenders.co.uk – Alesis Microverb I & II reclocking

This guide is going to show you how to install a LTC1799 reclocking module to adjust the system clock speed of either a Microverb I or II. They are effectively the same unit so the same guide applies to both.

You're going to need a LTC1799 clock module than can be bought from our website [HERE](#). You'll also need a potentiometer and a knob, neither of which we currently sell. We usually use a C500K pot, but you could use a bigger or smaller value depending on preference. A bigger value will give you more range, but how much of that extra range is actually usable is debateable. A smaller value will possibly restrict the range to above where noise becomes an issue and reverbs are still recognisable as being reverbs, but we find C500K is the sweet spot. Make sure you get a C curve antilog response pot or you will find all the control is bunched up at one end of the rotation. [Tayda Electronic](#) in Thailand are excellent for this kind of thing and often have faster and cheaper shipping from the other side of the planet than buying locally, especially if you're buying a few things at once, but it'll depend where you are in the world.



The first thing to do is cut the circuit track where its indicated on the image. This can be done with a sharp blade if you're careful, but its easy to slip and end up cutting something you really didn't want to disconnect. We'd recommend using a Dremel or other small hobby drill with a small bit to act as a kind of end mill to grind the track away. Then you need to short the two pins on the LTC module as shown where it says 'bridge these pins'. This sets the correct frequency range for the LTC clock.

Decide where you want the LTC1799 module mounted, then cut all the wiring to the correct length and solder them to the module before positioning it. We usually use double sided adhesive foam designed for mounting number plates to stick it down so its not going anywhere. Once you have it stuck in place, solder the other ends of the wiring to the correct points on the Microverb board. If its not clear, the black ground wire goes to pin 8 of that logic chip, which is the one on the corner.

The pot should be wired as shown below. It doesn't matter which way round the wires are.



If you only have an 'A' curve log pot you can use the middle and left pin and the response curve will be the same, but the pot will operate in reverse with higher clock frequencies in the anticlockwise direction.

It might be an idea to insulate your pot pins with heatshrink as shown above, to avoid shorts on the main board, but its probably not 100% necessary as long as you mount the pot accurately.

You now need to mount the pot. We normally do this by drilling a hole in the position below.



We highly recommend that you take the front panel off to do this. You do not want to be stressing pot connections and flailing around wildly with a drill attempting to do it with the main board still attached. You will have to be accurate when you drill this hole as there really isn't much room to manoeuvre between the rear moldings for the front panel pots. That point five of a mm accuracy might be a little hopeful, but thats the exact centre position between the moldings on the rear of the panel, so get as close as you can. Drill a small pilot hole first and then use a bigger drill bit for the actual hole

If your pot has a plastic dust cap on the base then you'll probably have to take it off so the pot fits.

The pot should be mounted so that the pins are pointed towards the hole in the panel for the LED.

All you need to do now is to set the maximum clock speed trimmer on the LTC1799 board. To do this you should set the pot around halfway up, plug in your audio inputs and output, then turn the unit on. If all has gone to plan you'll probably be hearing some grainy effects obviously processed fairly slowly at this point. Turn the clock speed up using the pot either until it gets to maximum, or until the effects

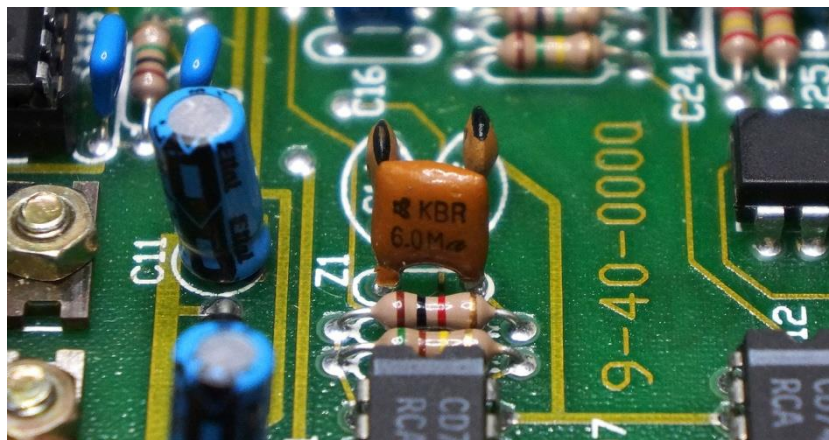
break up and distort. If you've got to maximum without the effect dropping out or distorting then you can then use the trimmer on the LTC1799 board to slowly raise the clock speed until the effects break up, and then carefully lower it again to below this point. This has set the maximum clock speed to just under the crash point. If the effects break up before the pot is set to maximum, use the trimmer to lower the clock speed until you can get the pot to maximum without the effect breaking up, and then use the same technique as described to set the maximum clock speed.

Reassemble everything and you should now have a reclocked Microverb I or II!



NOTES:

Without a schematic it is unclear whether the standard clock provided by the ceramic resonator is still used anywhere in the circuit once the LTC1799 module is installed.



It doesn't seem like it is, but we may be wrong about that as Alesis did some weird things with clock distribution and buffering in this era. If you were upgrading a Microverb I to become a Microverb II with the resistor changes detailed in the MVB operating switcher guide, then it might still be worthwhile to change the 6mHz ceramic resonator to a 8mHz one. On the other hand it might make no difference at all once the unit is reclocked.

You are going to get some background noise and aliasing whine becoming apparent as you clock the Microverb down. This is normal and is sadly unavoidable. Presumably the whine is always there, but at the standard clock speed its way above the human hearing range and/or is removed with filtering. As you clock the thing down the whine comes down into audio ranges and you start to hear it. Having said that, we'd advise comparing your unit to the demos on the site and if yours is a lot worse, then either clean or replace the input sockets. For some reason if the automatic socket switching for the mono/stereo summing isn't working right you will get a hell of a lot more whine. Cleaning the socket switching with some contact cleaner, or just replacing them, can often reduce the noise considerably.