

Using an STC Auto Programmer with STCGAL

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The STC Auto Programmer

A cool thing with STC's MCU is you only need a USB-to-serial adapter to program them. However, as the MCU programming procedure requires to power cycle it, you may find much more convenient to buy, in the same low price range, an "**STC Auto Programmer USB-TTL**". You can easily find it on AliExpress, for instance. Here's what it looks like:

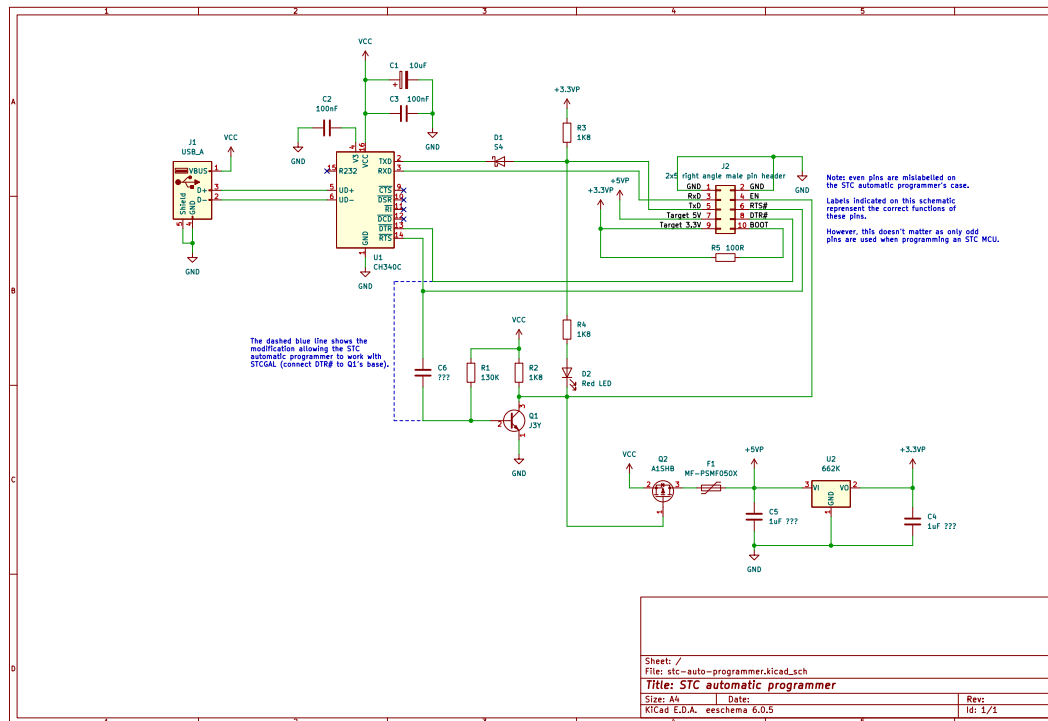


However, this adapter was designed for use with STC-ISP and the way STCGAL power cycles the MCU is a little different, which will require a little modification.

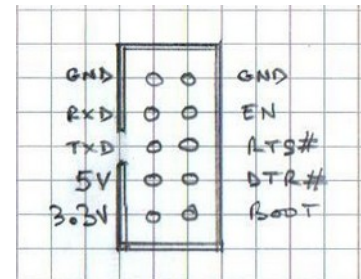
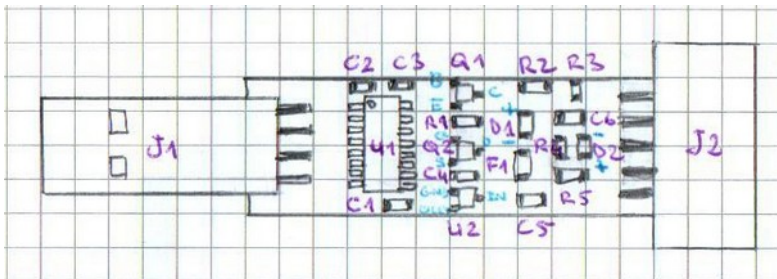
IMPORTANT: this modification is not needed when using **stcgal-patched**. All you need is to use the **-A rts** option together with the **-a** option. See <https://github.com/area-8051/stcgal-patched>.

Hardware modification for use with STCGAL

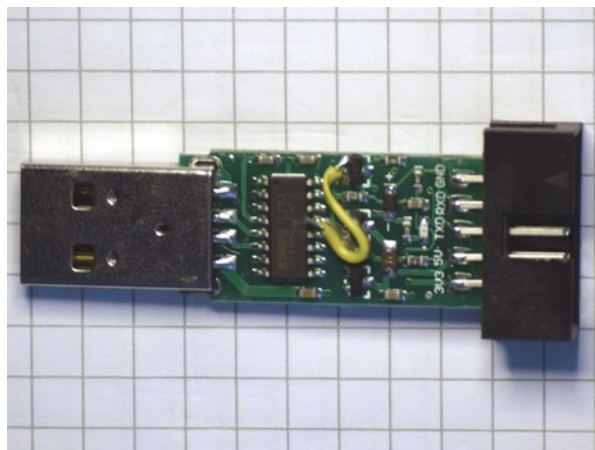
Apparently, STC-ISP wiggles $\overline{\text{RTS}}$ to power cycle the MCU, whereas STCGAL just asserts $\overline{\text{DTR}}$ low for 0.5 second, so the required modification is pretty straightforward, as shown on the schematic below:



Here are also the board layout and connector pinout for reference:



As you can see, the modification is as easy as a piece of wire and 2 drops of solder:



The Improved STC MCU Programmer

If you like DIY electronics, building an STC MCU programmer yourself is easy, and allows you to customise it to your taste. The **Improved_STC_MCU_Programmer/** directory of this repository contains an example of such a custom programmer, with the following improvements:

- RESET push button to allow for manual power cycling of the target MCU.
- Slide switch to select the target MCU's supply voltage.
- Schottky diode on TxD to prevent parasite powering of the target MCU.
- USB B socket instead of a USB A plug so the programmer can be placed further away from the computer, and leaves room to connect other devices on adjacent USB ports of the computer.

