

IRMP on STM32 – much simplified construction manual

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Foreword

These instructions aim at making building the receiver as simple as possible.

Basic solder skills are needed though for the Maple Mini pins and the powerswitch cable.

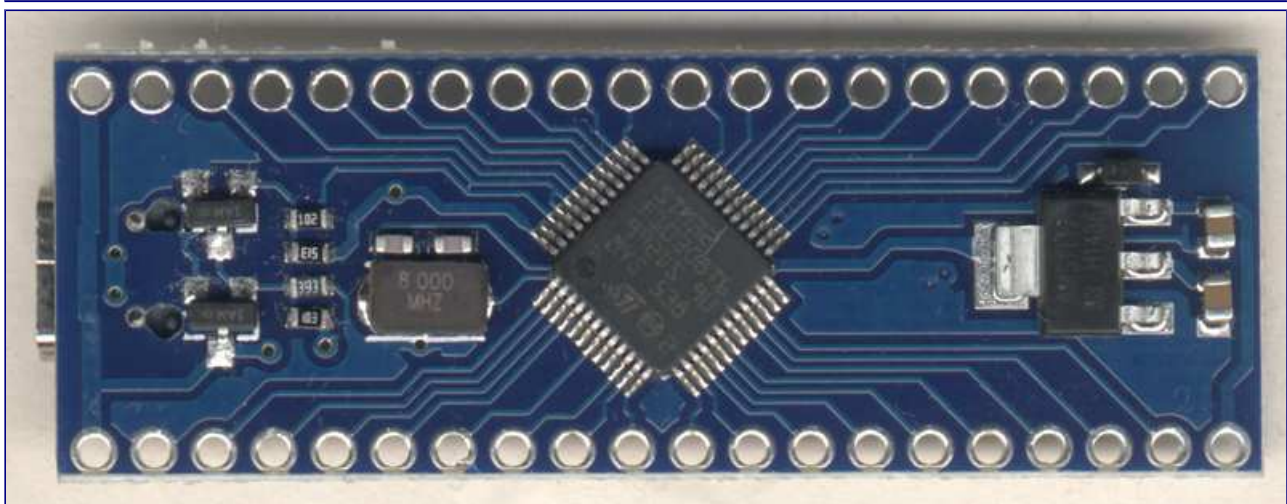
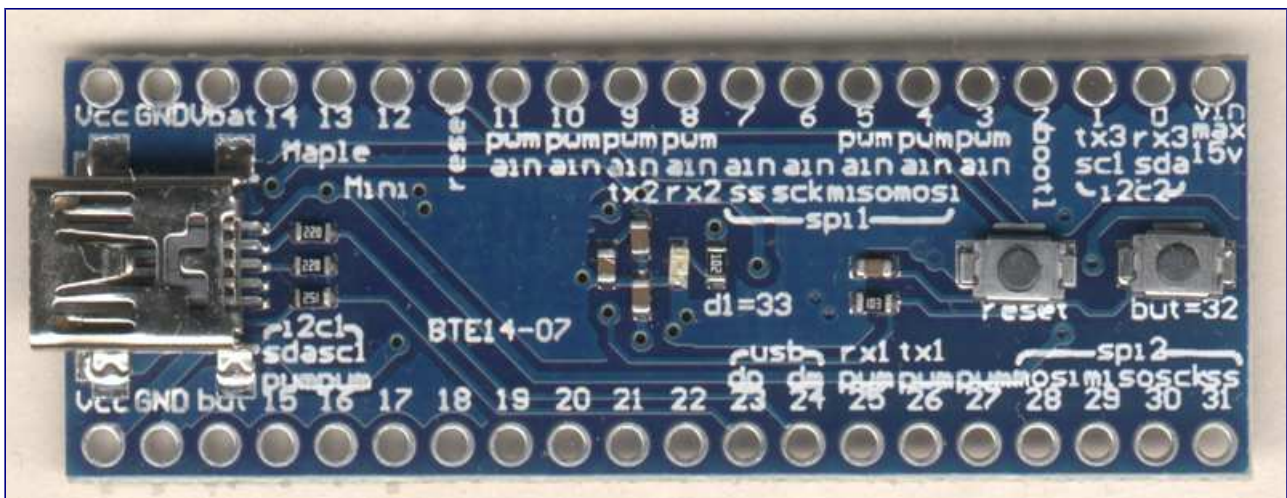
This is only for IR reception and PC power on.

Buy

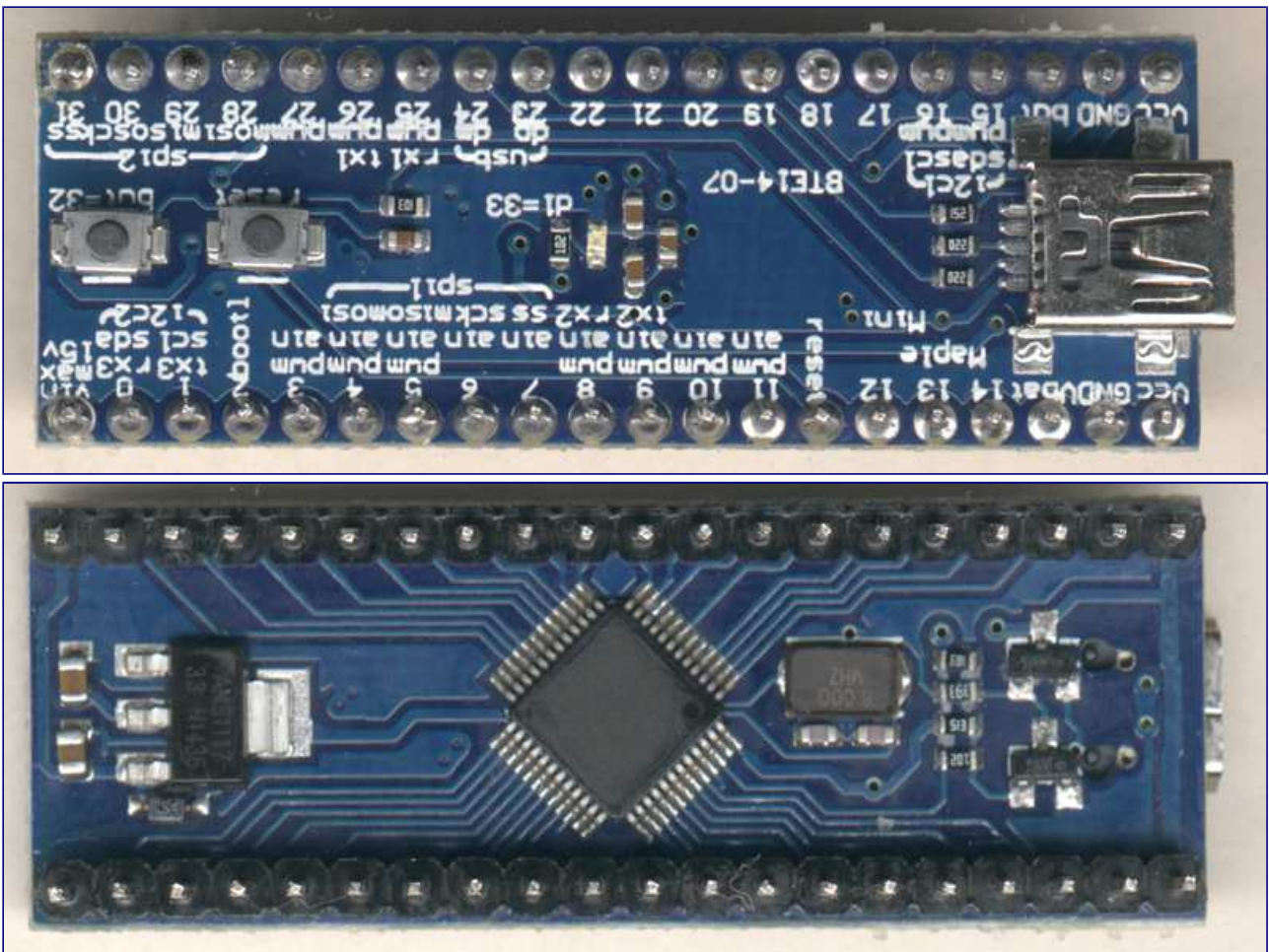
You need

- a Maple Mini Clone [1], keyword for ebay: „ Maple Mini“
- DuPont connector female – female, keyword: DuPont 20cm female female
- DuPont connector female – male, keyword: DuPont 10cm female male
- TSOP4838 (depending on needed frequency), keyword: TSOP4838
- a 220 ohm resistor, keyword: 220 ohm metal film

[1] http://wiki.stm32duino.com/index.php?title=Maple_Mini



Both sides of a new Maple Mini.



All Pins are soldered in here. It would be sufficient to solder only the 4 needed pins, though.

Firmware flashing

The Firmware gets flashed with the bootloader present on the Maple Mini. Get the Maple Mini Firmware xxx_MapleMini_SC_BL_jrie.bin from

https://github.com/j1rie/IRMP_STM32/tree/master/binaries/firmware_for_bootloader/SimpleCircuit

Get FlashDFUSe.sh resp. FlashDFUSe.bat from

https://github.com/j1rie/IRMP_STM32/tree/master/bootloader

Execute on the command line

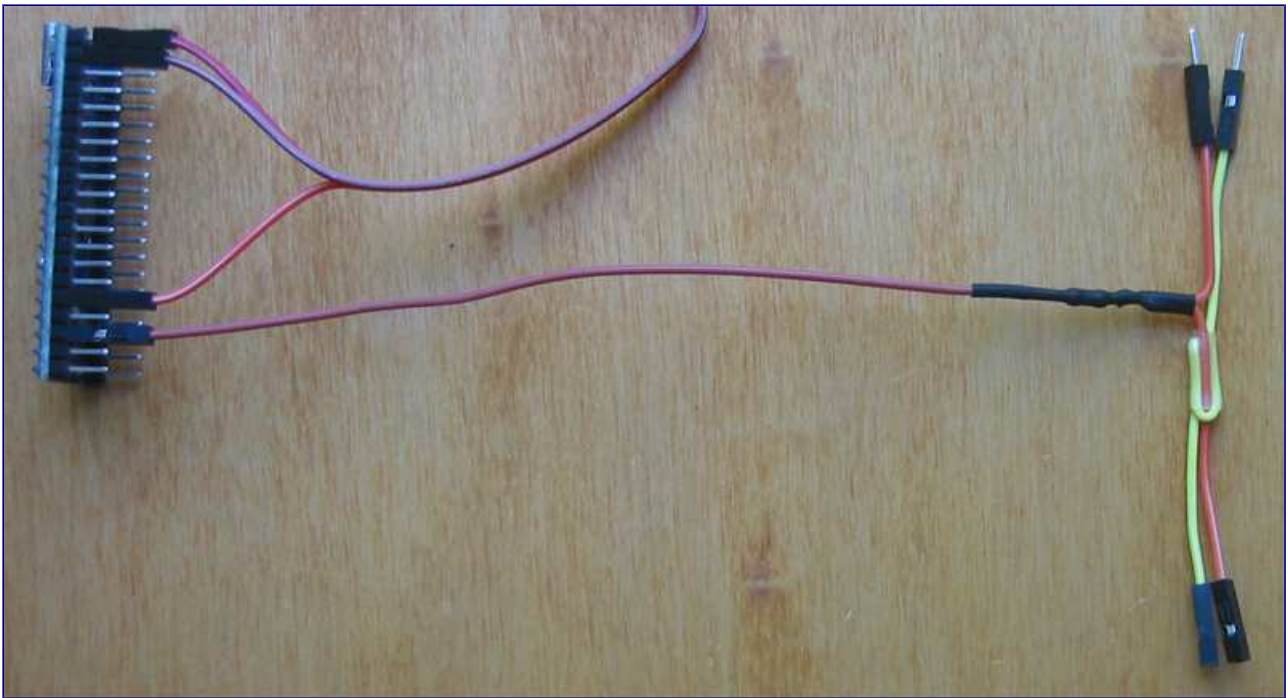
- Linux: FlashDFUSe.sh xxx_MapleMini_SC_BL_jrie.bin
- Windows: FlashDFUSe.bat xxx_MapleMini_SC_BL_jrie.bin

and connect the Maple Mini.

When finished you see: Download [=====] 100%.

Solder Cables

Split a 10cm cable, connect both ends and the 220 ohm resistor, connect the other end of the resistor with the 20cm cable, from which one socket is cut off. Shrink the solder connections, attach the other 10cm cable with shrink tube.



Connect Cables

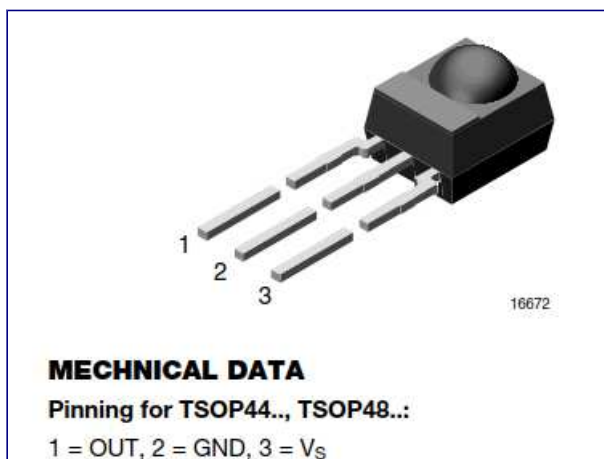
The TSOP is directly connected to the corresponding pins, the pair of cables is inserted between the power on pins of the mainboard and the connector from the power button and the mainboard's active power switch pin is pulled down via the resistor (220 ohm).

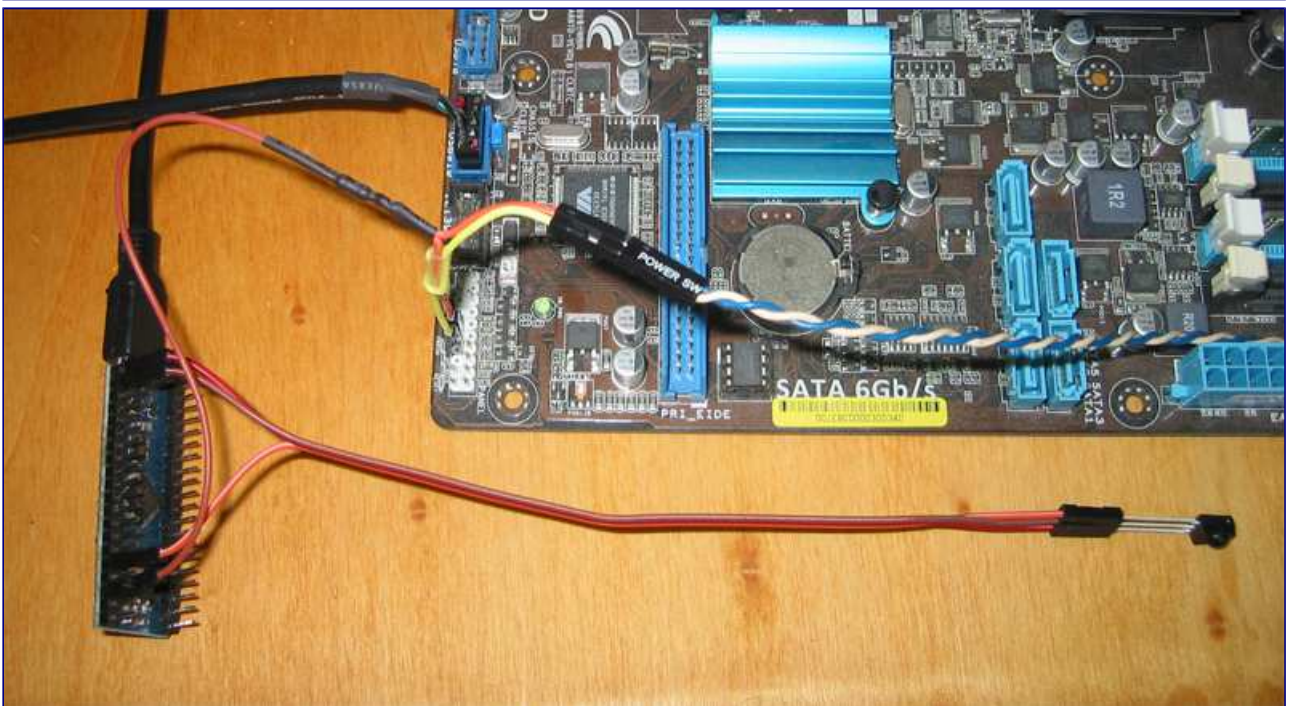
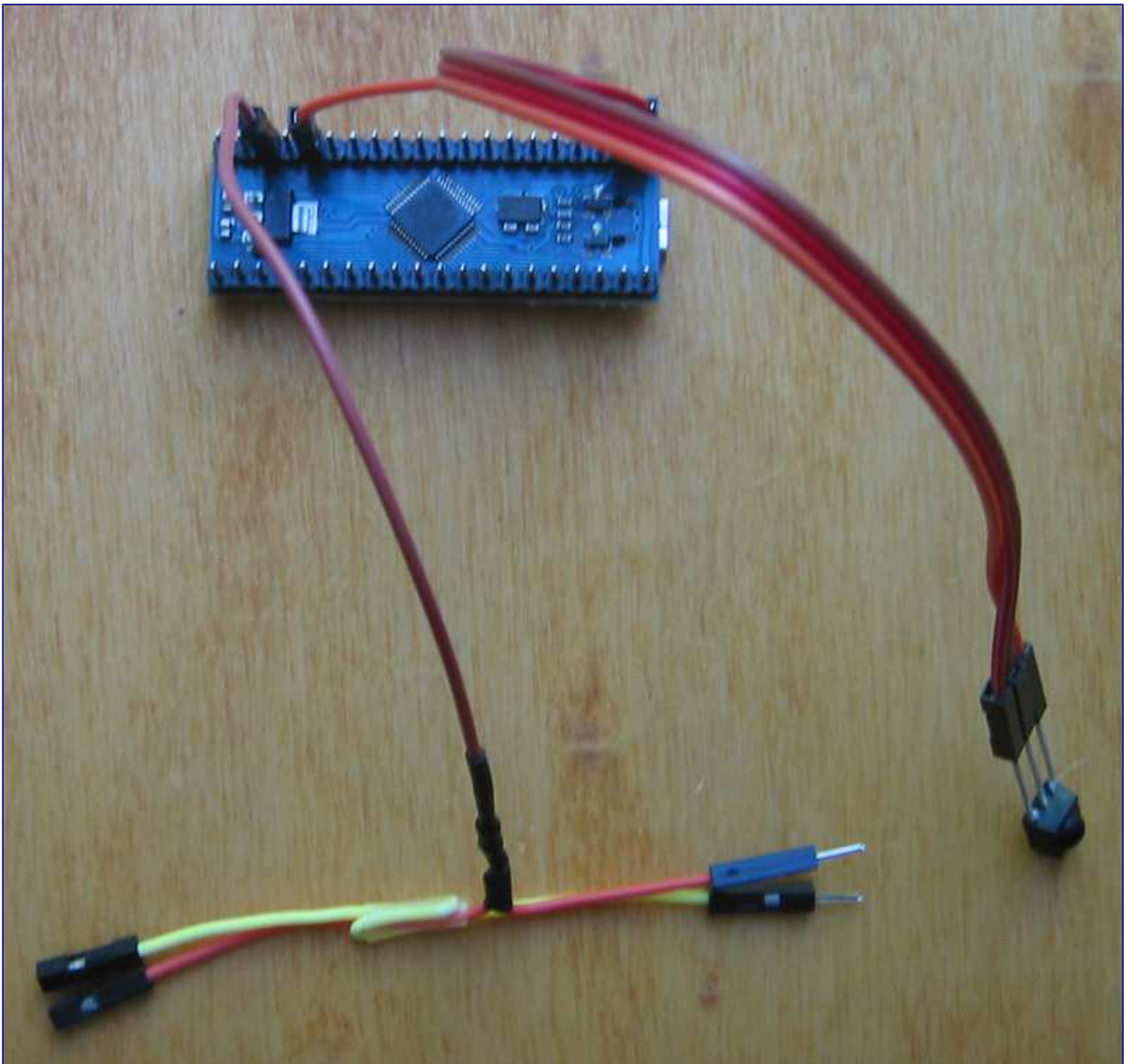
Power on pin = B10 = „1“ ↔ 220 ohm

IR-in-Pin = B0 = „3“ ↔ TSOP out

„VCC“ ↔ TSOP V_s

„GND“ ↔ TSOP GND





Learning Wakeup

If the first wakeup is empty, the first received IR data will be stored into the first wakeup.

You could enter the new wakeup IR data as well via remote control with the configuration program.

Testing (Linux/Windows)

Windows: Get stm32IRconfig_gui.exe from

https://github.com/j1rie/IRMP_STM32/tree/master/binaries/stm32IRconfig_gui/Windows , connect the receiver, start stm32IRconfig_gui, press "receive mode" and test

or get stm32IRconfig.exe from

https://github.com/j1rie/IRMP_STM32/tree/master/binaries/stm32IRconfig/Windows , connect the receiver, start stm32IRconfig, enter m for monitor mode and test.

EventGhost with Generic HID supports the receiver.

Please note: Switching on only happens, if the PC is powered off.

Linux: EasyVDR and yaVDR support the receiver and have the needed packets. Otherwise you need to build them yourself.

Check your motherboard

To check, if your motherboard is compatible, you can test the powerswitch pins of the mainboard like this.

Measure if one pin is on ground and the other on ca. +3,3V or +5V. Then short-circuit both via a multimeter, and measure the current. It is usually only few mA, and as long as it is below 25 mA, the test is passed.

So far there was no report on an incompatible motherboard.

Buy ready to use receivers

In case you don't want to solder:

<https://www.vdr-portal.de/forum/index.php?thread/130398-irmp-stm32-usb-ir-empf%C3%A4nger/>

Discussion

Questions and comments can be put here: <http://www.vdr-portal.de/board18-vdr-hardware/board13-fernbedienungen/123572-irmp-auf-stm32-ein-usb-ir-empf%C3%A4nger-sender-einschalter-mit-wakeup-timer/>