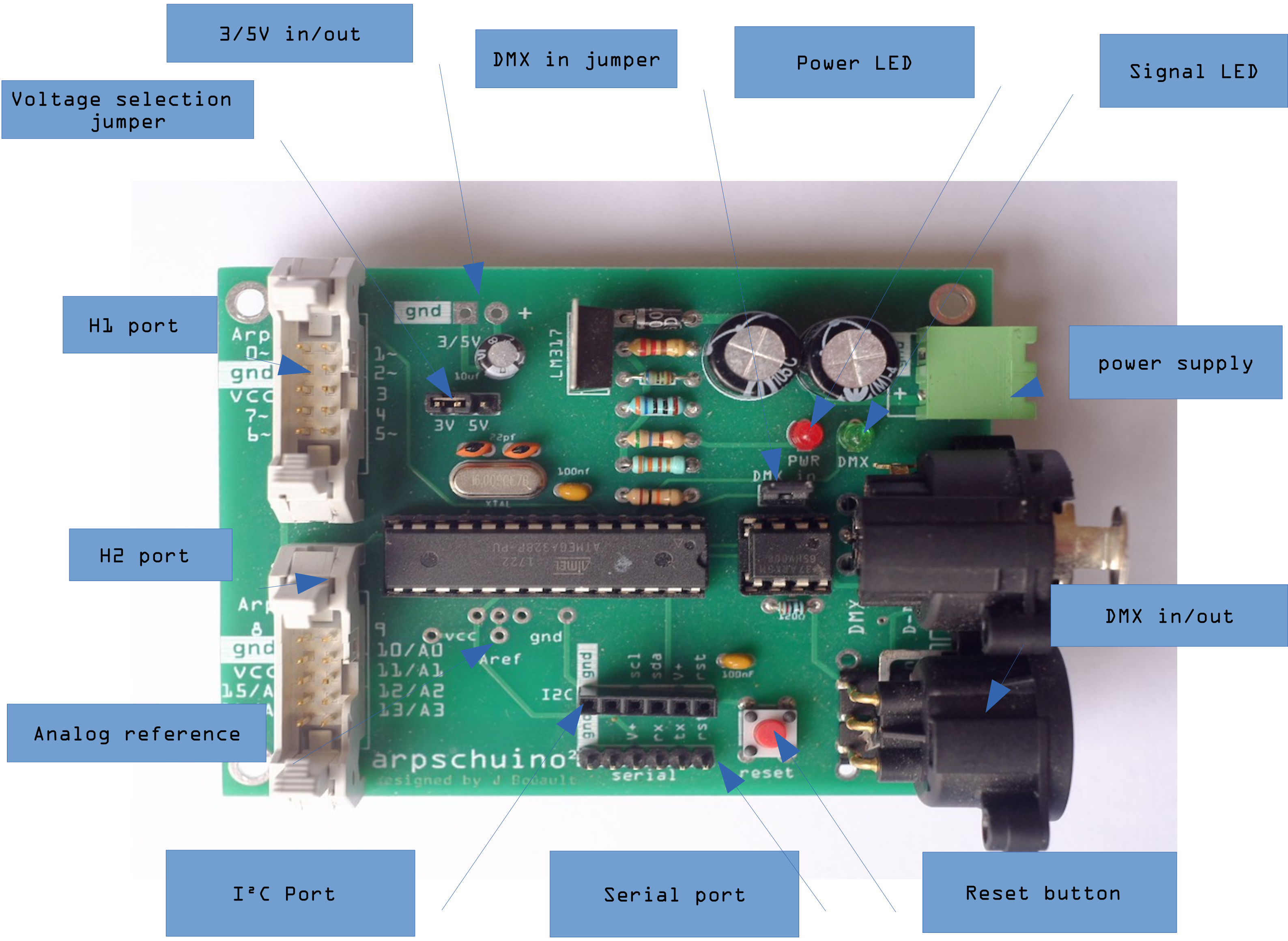
arpschuino^2

user guide

-1- Description :



- PH1 and H2 ports:
  These are the main inputs / outputs of the apschuino, each port includes 8 inputs / outputs and the mass (gnd).

- Serial port :
  The serial port is used to program the arpschuino.

- I^{2}C Port :
  To change the DMX address with the arpdress board, to connect the arpsensors, the spider board and many I^{2}C devices on the market.

- Reset button :
  As indicated by his name ! Also used to assign the address with the arpdress board.

- DMX in/out Ports :
  To receive or transmit DMX. Since the arpschuino^{2}R2, the card can be equipped directly with XLR sockets. Otherwise with the green connectors you will need XLR adapters to connect to the DMX network.

- Power supply :
  The arpschuino needs a DC power supply, the voltage must be between 6 and 15V. Ideally, avoid limit values, the best is a voltage between 7 and 12V. Since the R6 version, the arpschuino^2 can be equipped with a pre-regulator, which allows to supply it with a tension between 12 and 24V.

- DMX in jumper :
  To receive DMX, this jumper must be in place. To use the serial port, remove it.

- Signal LED :
  With the default code, the led flashes when receiving DMX. It can be used as multi-purpose LED, it is connected to pin D4 in Arduino language.

- Power LED :
  The led lights red when the arpschuino is powered on.

  If you find that the LEDs glow too bright, you can replace the corresponding resistors with 1Kohm resistors.

- 5V in/out :
  When the arpschuino is powered by the VCC port, you can pick up 5V to supply another circuit. Consumption should not exceed 300mA, so the voltage regulator should not heat up.

  This port can also be used to supply the arpschuino. Beware it is downstream of the voltage regulator, so it requires a perfectly regulated power supply, between 3 and 5V. To be used in the case of a power supply with three 1.5V batteries or a 3.7V li-ion battery.

- Voltage selection jumper :
  With arpschuino^2, you can choose the operating voltage via this jumper.

  Some devices such sensors or radio transceivers operate at 3.3 V and can be irreparably damaged by a voltage of 5V. Others need 5V to work, this jumper allows to adapt to these different scenarios.

- Analog reference :
  The analog reference can be set here by a voltage divider bridge or a small potentiometer. More info on the analog reference in arduino programming here.

-2- Default source code

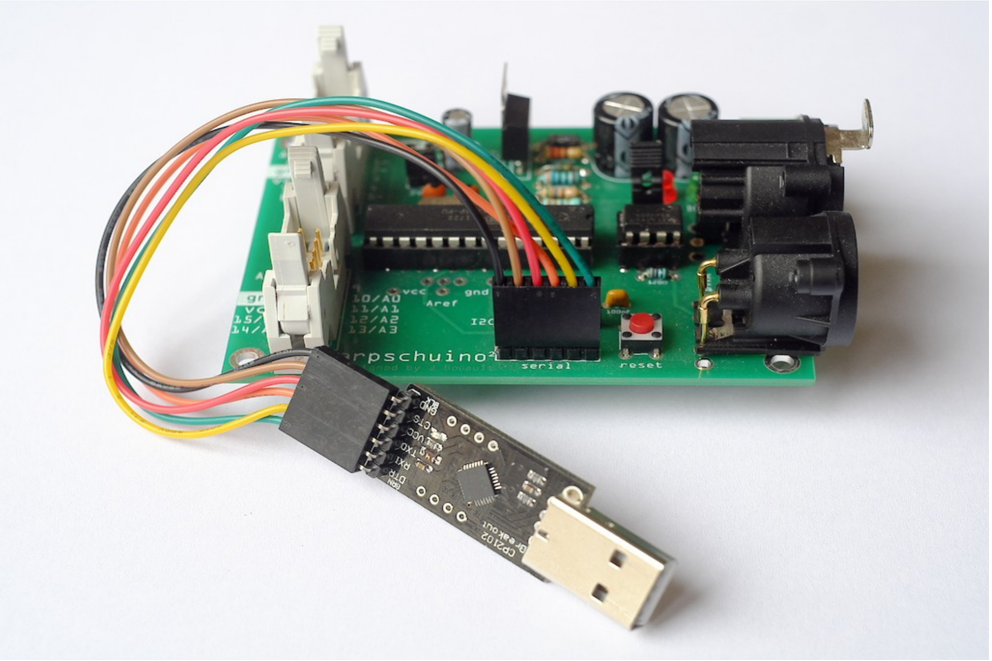
The arpschuino is provided pre-programmed. By default [arpschuino16soft_PWM] is loaded.
With this code, the apschuino is a 16-circuit low-voltage dimmer. The power part is entrusted to the apower.
The default DMX address is 1, it can be changed with the arpdress board.
On request the arpschuino can be pre-programmed with other programs or other addresses by default.

-3-Other source codes

- arpschuino 16 off/on: 16 off/on outputs. (see our relay tuto).
- arpschuino 6 pwm : only 6 dimmed output, but in ardware PWM with faster frequency, beter for the LED or motors.
- arpschuino2spider-board: drive spider-boards for ultra fine gradation in 12 bits.
- led pixel: to drive LED strips "NeopPixel" (here)
- arpschuino-arpsensors-to-DMX or to-serial: to receive data from different sensors with an arpsensors.

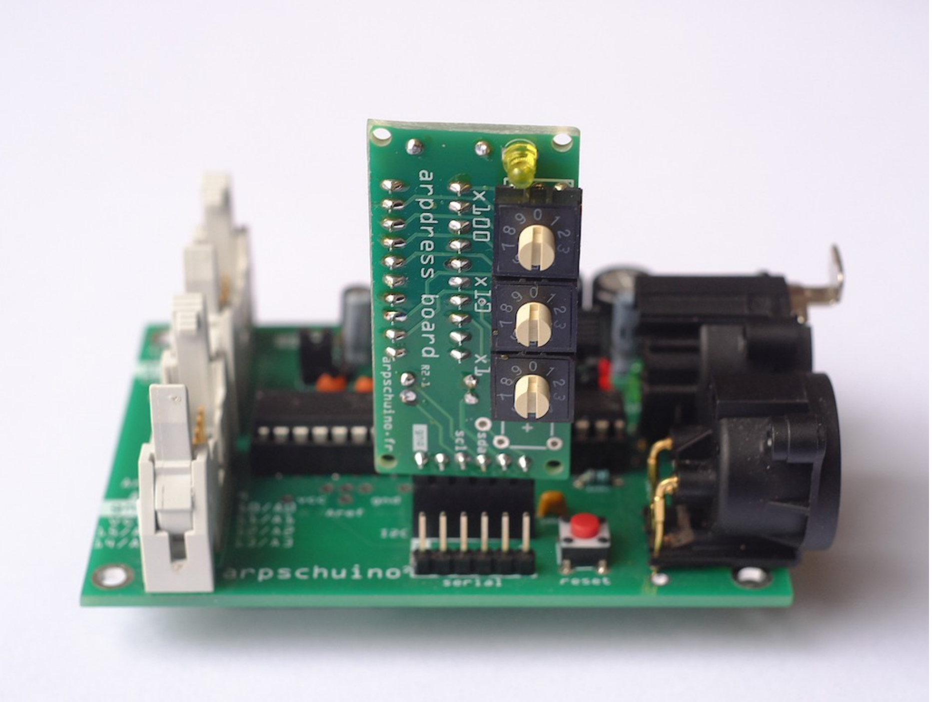
-4-Program arpschuino

The arpschuino is fully programmable, like an arduino. For that you will need an USB>serial programmer.
You will also need the arduino software, freely downloadable here, with the arpschuino core installed.
Everything is explained in detail in this tuto.



-5- Addressing with arpdress board

Changing the DMX address of your arpschuino with the apdress board is very simple. After setting the address with the 3 coding wheels, simply poke the arpdress board on the I^{2}C port and press the reset button on the arpschuino. The bottom port (H2) is to be disconnected during operation.



After the LEDs on each card flash, the address is saved. It is stored in the non-volatile memory, the eeprom, and will therefore be preserved after extinction of the arpschuino.