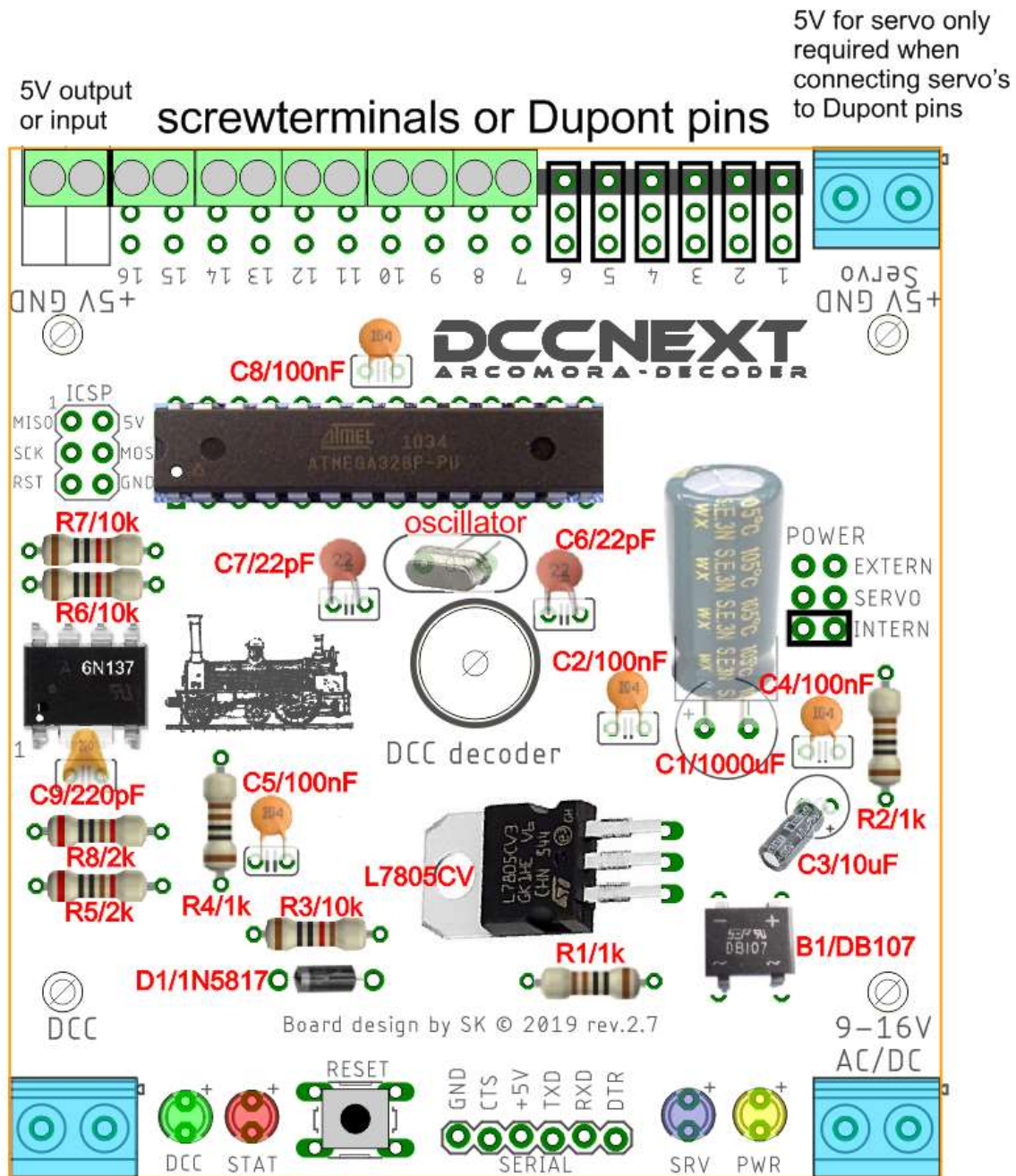


# Assembly manual DCCNext

Place all components on the print as indicated below.



Check if all parts are present. Contact Arcomora if you miss something.

Partslist resistors/capacitors:

R1, R2, R4: 1k ohm. Brown, black, black, brown, brown. (may also be 330 ohm)

R3, R6, R7: 10k ohm. Brown, black, black, red, brown

R5, R8: 2k ohm. Red, black, black, brown, brown

C1: 1000 microFarad C3: 10 microFarad C2, C4, C5, C8: 100 nanoFarad ('104')

C6, C7: 22 picoFarad ('22') C9: 220 picoFarad ('221')

**Please note: The screw terminal for the 5Volt connection may be blue!**

1. Place all resistors R1 to R8. Note the color codes
2. Place diode D1. Note the orientation.
3. Place both IC feet. Note the orientation. The cut-outs to the edge of the print.

Make sure that ALL pins protrude through the print. If placed incorrectly, that is no problem; pay extra attention to the placement of the ICs.

4. Install the DB107 diode bridge and the L7805. Secure the L7805 with a nut and bolt.

Note the orientation of both components.

5. Install all capacitors except C1 (1000uF) and C3 (10uF). C6 and C7 have an imprint 22. C9 has an imprint 221. The others (100 nF) have an imprint of 104.

6. Place the oscillator and the reset switch. Keep the oscillator 5 mm. above the pcb.

7. Cut 2 pieces of 3 Dupont pins and place them in the holes at C1. Place the jumper over the middle pins (servo); then they remain well positioned.

After soldering, place the jumper over the pins at Internal. See below for an explanation of the power options

8. Place the 4 LEDs with the correct color. Note the orientation. The long leg is the plus (+).

9. Cut a piece of 6 Dupont pins and place this at Serial.

If desired, you can also solder the hooked Dupont pin as supplied with the USB interface. (See also below for the USB connection options).

10. **Only if you want to be able to connect servos directly:**

Cut pieces of 3 pins and solder them on the print. Do this preferably from port 1. Naturally you must also configure the servos for these ports at Mardec. By using both 2-pole and 3-pole connections you can make any number of 2 to 12 servos. Only one servo is not possible.

11. Slide the required number of terminal blocks together and solder them onto the print. If you have not used servo pins, you must assemble them all. Place the terminals on the print first. Then turn it over and push the print against the worktop. Because of this the terminals are stuck and you can easily solder.

**NOTE: Instead of 6 green 2-pole connections, one blue and 5 green connections can be added. Use the blue one for the 5Volt connection.**

12. Install the 3 blue big screw terminals. Do this in the same way as the green screw terminals.

13. Install capacitor C3. Note the orientation; the long leg is the plus.

14. Install capacitor C1. Note the orientation. First lay the capacitor flat against the PCB before soldering.

15. Install IC 6n137 and the ATMEGA328P processor. Usually the legs are too far apart so that they do not fit well in the foot.

To bend them, place one side against the work surface and push all legs at the same time a little to the right. Do this for both sides.

Pay attention to the orientation when installing!

16. Now connect the USB interface to the PC.

**If all is well, the red status LED will now flash quickly.**



If you also use the box, stick the stickers on the lid.



**Note:** on the connector side, the sticker must be folded over the edge.

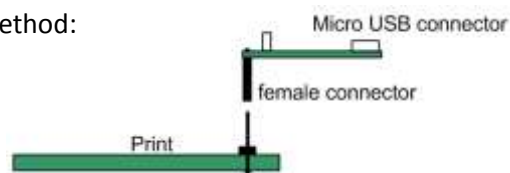
**Tip:** Stick a piece of transparent plastic over both stickers for protection.

(not included!)

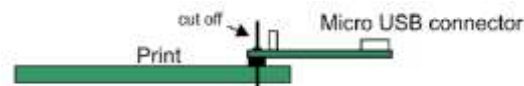
## USB-Serial Interface

The USB interface can be mounted in 4 different ways:

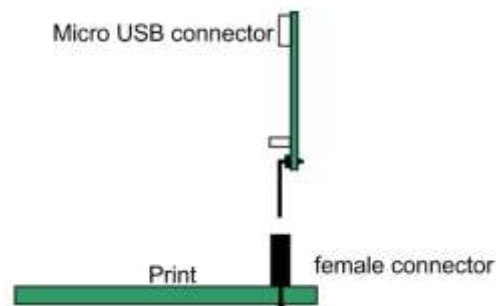
- 1) Standard method:



- 2) Fixed soldered:



- 3) Hooked method:

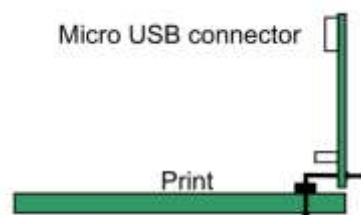


This method saves space. The danger is that the interface is set up incorrectly; so with the USB connector on the other side.

However, only one set of female connector with angled connector is supplied.

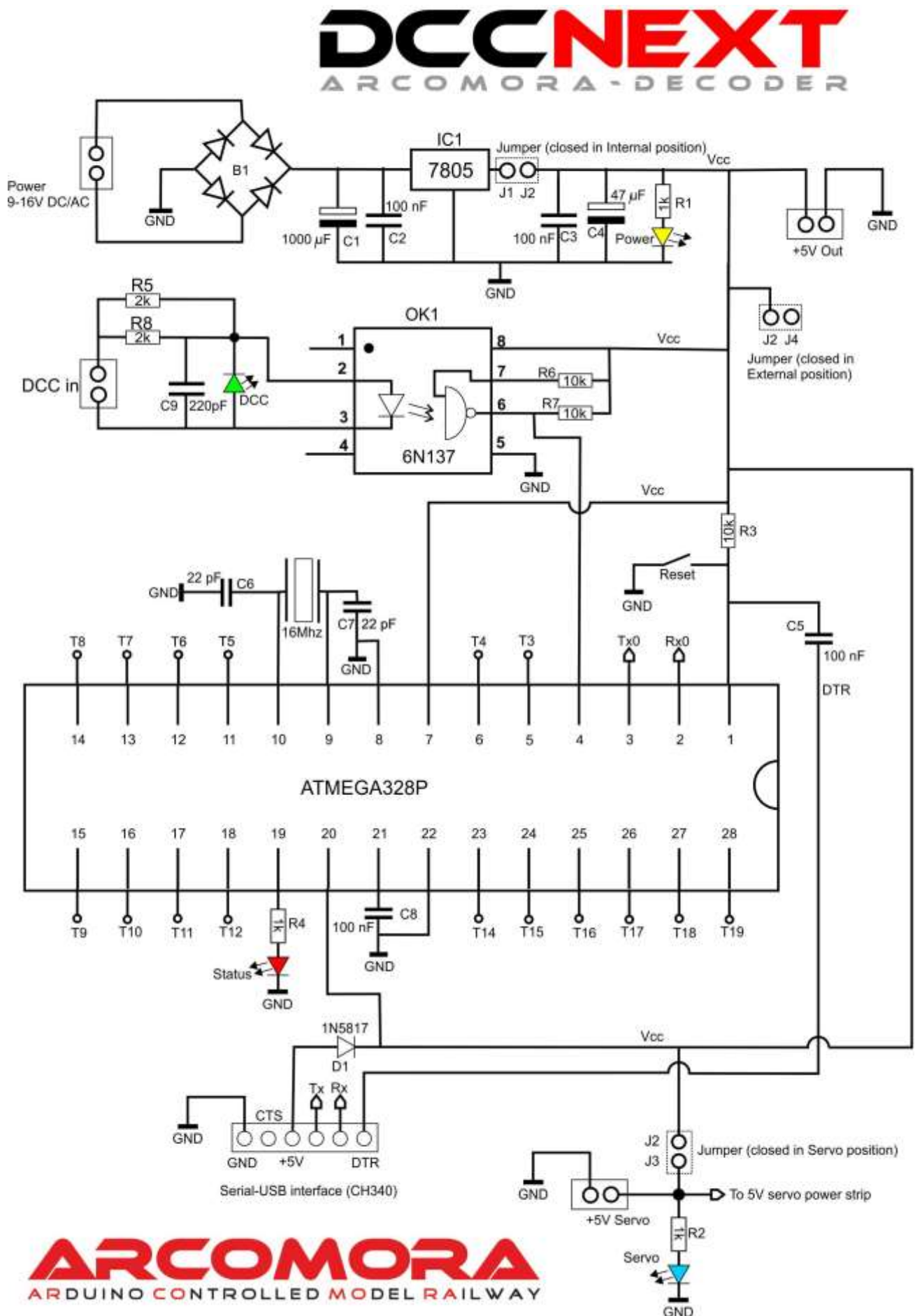
So if you want to use the interface on multiple prints, an extra female connector is needed.

- 4) Hooked soldered:



**Make sure that the switch is in the 5V position!**

Schema:





## Power Options:

There are 3 options for supplying power to the DCCNext.

1) **Internal.** The DCCNext is powered by the Power circuit on the print.

Connect a supply voltage to the blue screw connectors

For servos connected to the Dupont pins, a separate 5 Volt must also be connected.

A voltage is available for LEDs (max 800mA) at the 5V output. Never connect a relay or servo permanently to this. Just do that for testing

Set the jumper to the Internal position.

2) **Servo.** The DCCNext is powered from the 5 Volt for the servos. Use a power supply of sufficient power. This 5V is also available on the 5V output on which, e.g. relays can be connected.

Do not connect a power supply to the normal input.

Set the jumper to the Servo position.

3) **External.** The DCCNext is powered from the green 5 Volt terminals.

This can be a low power supply.

For servos connected to the Dupont pins, a separate 5V must also be connected

Do not connect a power supply to the normal input.

Set the jumper to the External position.

**If you don't know what to do then choose option 1 (Internal)**

