

Original in Swedish: <http://www.flexitune.se/document/FLEXITUNE-II-Bygganvisning.pdf>

Initial English translation by Hervé Layec alias Ceyal

Disclaimer: In case of any discrepancies between the original and the translation, the original remains

1 Before you begin to build
Please read through this memo entirely before beginning to build!

1.1 Necessary tools

In order to build Flexitune II, you need the following:

- Soldering iron
- Solder (see Note 1)
- *Cutting pliers*
- Pliers
- Screwdriver (Phillips n°1)

It can also be good to have the following:

- *Desoldering Braid/Vacuum Desoldering Tool* to correct mistakes
- *Magnifying glass* in order to check *soldering*
- Some form of weight in order to maintain the components when soldering
- " Helping hand "
- Multimeter

1.2 Kit's contents

The following parts are included in the kit:

- Box
- Printed Board
- *Plug* for the adjustment's hole
- Two screws to the printed board
- Two screws to the box
- Decalcomania for the box
- Components according to 1.2.1.

(Note 1) The board can be soldered with either common solder or lead-free solder. Soldering the board can be a little more difficult than for a traditional printed circuit board. Increase the temperature and/or use a broader point so it will not last any problems!

1.2.1 Component list

Component	Value	Remark	type
R1	Potentiometer		
R2	(Power) Resistor		
R3-R4	47 kOhm		
R5-R8	10 kOhm		
R9	3.3 kOhm		
R10	68 Ohm		
R11	1.8 kOhm		
R12	270 Ohm		
D1	P6KE20A	Observe polarity	
D2	1N4007	Observe polarity	
D3-D5	BZX55 4V7	Observe polarity	
D6	1N4148	Observe polarity	
C1	0.1µF	Observe polarity	
C2	0.33µF	Observe polarity	
C3-C4	100nF		

V1	LM78M05CT	(Voltage regulator)
Q1	BC547C	(transistor)
Q2	IRF540N	(power transistor)
M1	ATtiny26	(μ P)
J1	Connector	

2 Construction instruction

2.1 The board

Begin with assembling the components on the board. As a suggestion : use the same order as the one of the component list [see section 1.2.1]. Please be careful and remember that certain components must be turned into the correct direction (polarity). Look into picture 1 to see how the board will look like when all the components are assembled.

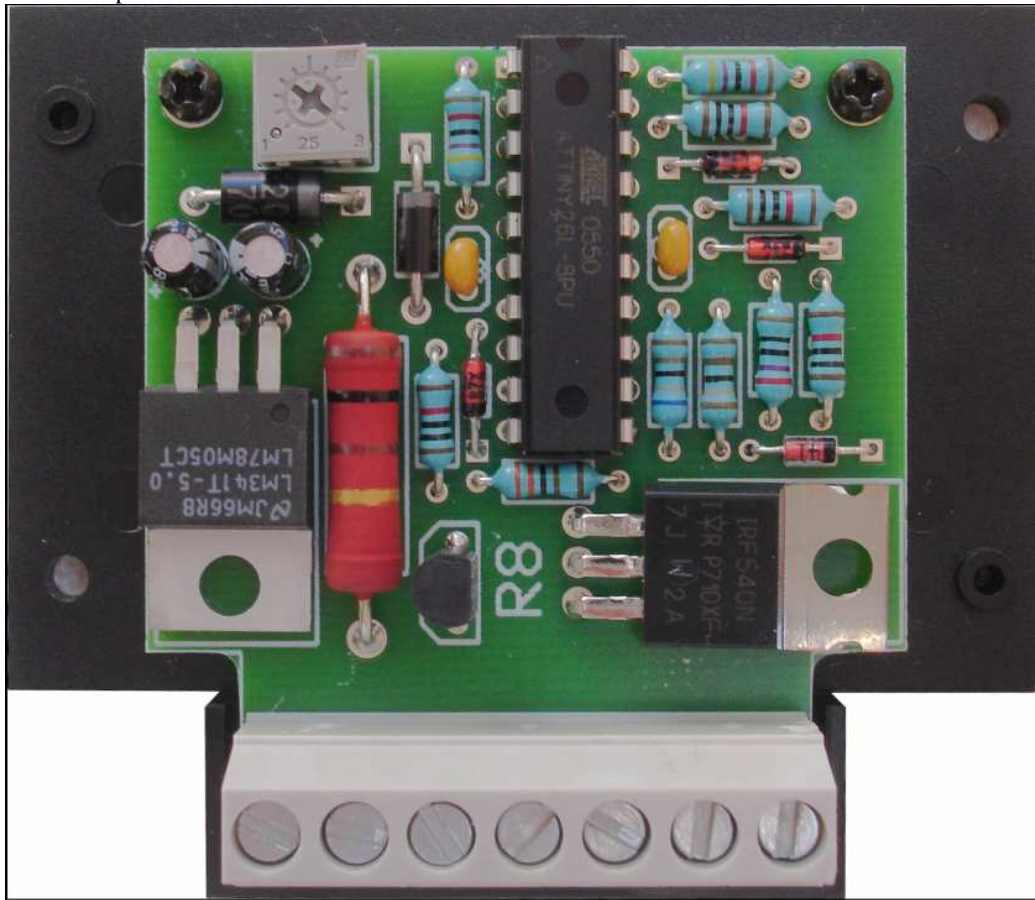


Figure 1: Printed board assembled at the bottom part of the box

Pay special attention on the following:

· Resistances R3-R12 are color coded:

68 Ohm	Blue, Grey, Black, Gold	Brown
270 Ohm	Red, Purple, Black, Black	Brown
1.8 kOhm	Brown, Grey, Black, Brown	Brown
3.3 kOhm	Orange, Orange, Black, Brown	Brown
10 kOhm	Brown, Black, Black, Red	Brown
47 kOhm	Yellow, Purple, Black, Red	Brown

Use a multimeter to check the values if you are uncertain!

· C1 and C2 must be turned into the correct direction. Turn the white bands (that means minus) against the one on the card, see figure 1.

· D1-D6 must be turned into the correct direction. Turn the dash on the diode to the same direction as the dash on the card.

· Turn V1 and Q2 according to figure 1

· Adapt the legs on Q1 to the holes and turn it into correct directions (flat side against

flat side of the board).

- Bend the legs of M1 (take care of the side), putting the legs against a table and then slanting it until the legs fit the holes of the printed board. Pay attention enough when turning M1 to correct directions - it is not easy to solder a component with so many legs!

BEFORE YOU GO ON!

Check every solder and check that each component is located on the correct place and is turned into the correct direction. Compare with picture 1.

2.2 The box

- Screw the board to the bottom part of the box.
- Install the cap and screw it to the box.
- Set permanently the cap in the hole over the potentiometer.
- Set permanently the decalcomania on the top of the box.

When everything is completed, it should look like as in figure 2.



Figure 2: Completed assembled Flexitune

2.3 Basic position

Set the potentiometer to 25% as a basic starting position.

2.4 Test

A simple test that one should do is to connect a LED (or a voltmeter) between 12V and LED ; when connecting GND and 12V to the appropriate voltage source, Flexitune should start blinking the LED (the voltmeter should jump between 0V and 12V).