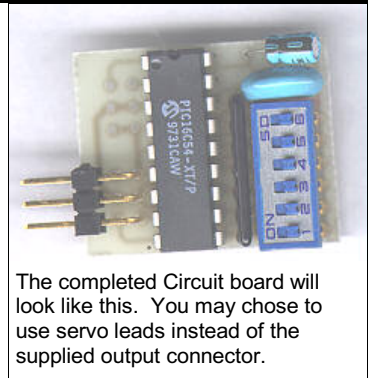


PREFACE

This guide is written to get the average modeller with some electronics knowledge through the steps to construct an Ohmark Electronics Elevon Mixer Mk 1.0 from the parts provided in this Kit.

There is nothing too difficult in this procedure, as long as you stick to the steps, and check your work thoroughly for obvious mistakes. Some experience soldering on small circuit boards would be a definite advantage though.

Before you start to build your mixer, read through these instructions, and the second part of the manual, which is the instructions normally sold with the assembled version of the Elevon Mixer Mk1.0.



The completed Circuit board will look like this. You may chose to use servo leads instead of the supplied output connector.

BITS YOU WILL NEED THAT DON'T COME WITH THE KIT.

Almost everything you need to make your mixer is in this kit. The only parts not included are the input leads.

We decided to leave these out of the kit so that you could decide yourself what type of leads you wanted to use. You can also replace the output connector supplied with leads as well. It's up to you.

You will need to decide what sort of leads you're going to use before you start assembling your mixer.

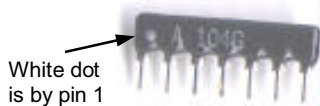
You will also need the following tools:

- Soldering Iron.
- Small wire cutters. (Pliers)
- Some fine "multicore" solder.
- A sharp modelling knife.
- Heat shrink gun. (you can use a candle, but be careful!)

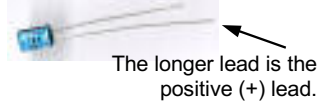
PARTS CHECKLIST

In the small plastic bag in the kit you should find the following parts:

100K SIL Resistor (R1)



10uf Capacitor (C1)



Ceramic Resonator (X1)



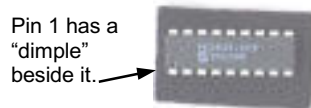
Printed Circuit Board



6 way DIP switch (SW1)



Microprocessor (IC1)



Output Connector (J1)



Heat shrink



Quickly check through the contents of the bag, being careful not to drop any parts. Small Electronic components are very good at hiding under tables and behind furniture.

The microprocessor (IC1) is a static sensitive device, this means that you should be careful when handing the device, and not remove it from the protective foam it comes in until you are ready to solder it into the circuit board.

Some of these components (IC1, C1, and R1) need to be inserted into the circuit board the correct way around for the mixer to work correctly.

Take note of how to identify "Pin 1" on the SIL resistor, and the Microprocessor. There is a small white dot on the pin one end

of the SIL resistor, and the dimple on IC1 is beside Pin1. The positive lead on the Capacitor is the longer of the two leads.

Check that you can identify these features before you move on.

INPUT AND OUTPUT CONNECTORS

The standard mixer is sold with two standard servo leads for input connectors, and the output connect you have with the kit version. The output connector will fit 99% of radio gear.

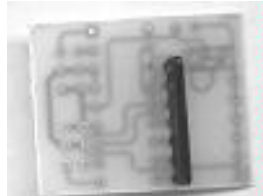
If you wish you can replace the output connector with two standard male servo leads. IF you decide to use male servo leads instead of the supplied connector it is often cheaper to purchase to servo extension leads and cut them in half.

ASSEMBLY

This assembly process assumes that the builder has at some experience soldering, and does not describe in detail the method of soldering the individual components into the Circuit board.

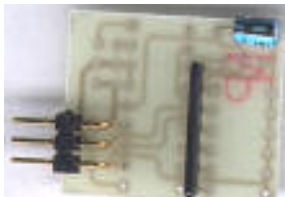
1)

Insert and solder the SIL resistor first. Pin 1 is towards to top of this picture. Check the component placement diagram.



2)

Insert the output connector and Capacitor next. If you do not intend to use the output connector supplied leave it out at this stage.



The longest lead of the capacitor goes in the right most hole. The long lead is the positive (+). Check the components placement diagram and the illustrated parts list to double check this.

Before you solder in the capacitor bend it flat against the PCB as shown in the photo above.

3)

Next comes the switch (SW1) and resonator. The switch is inserted so that the numbers run along the right hand side of the PCB, viewed from this angle.



The resonator (X1) can go either way around.

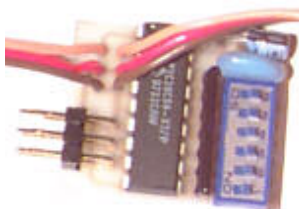
4)

The last major component is IC1. Pin 1 is in the top left of this photo. When handling the IC try not to handle the pins of the IC more than is necessary, and if possible earth yourself to avoid static damage to the device.



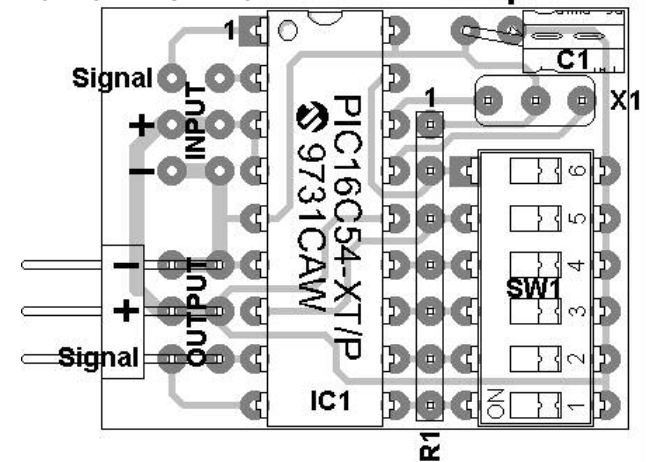
5)

Solder in your input leads. Also at this stage solder in the output leads if you are using separate output leads instead of the connector provided.



Note that the negative leads (Black or brown) go 'together' on the PCB. Double check against the Components Placement diagram. On Futaba leads the black goes to negative (-) the red to positive (+) and the white to the signal connection.

COMPONENTS PLACEMENT



This diagram, in combination with the parts diagrams on page 1 will give you all the correct placement for the parts in the mixer. Be careful when putting the input leads in that you get the correct connections.

In this view input one is the left three holes, and the right three make up input two.

The circuit board is shown with the tracks away from the camera in all views. All components are inserted from the "top" and soldered to the track side of the PCB in a conventional manner.

Note that pin 1 of the SIL resistor (R1) is at the top in this view.

6)

Check over your soldering, making sure there are no bridges between tracks. You can test the mixer now by connecting it to a receiver and two servos as described later in the manual. If it fails to work, check back over the component placement, and soldering.

7)

Put the heat shrink over the mixer PCB and heat it with a heat gun or carefully with a match or candle until shrunk around the mixer.



8)

Trim the ends of the heat shrink, being careful not to cut the input or output leads as you do.

Carefully cut a hole in the heat shrink with a sharp pointed blade to allow access to the DIP switch (SW1) and you're finished.

