

Assembly instructions for the dansfing.uk YM2149F MIDI Synthesiser.

This is a quick guide to building your Y M 2 1 4 9 F MIDI Synth.

It's best to solder the small parts first and work your way up to the tallest

You also need to be aware of components that can only go in one way round to function

But if you compare with the photos and the video you should be fine

Right so let's get started

First we're going to start with the diode, make sure that the line on the diode matches with the line on the printed circuit board.

Now we're going to install the eight resistors, make sure the colours match those in the photos.

Next we install the 22 pF capacitors, these form part of the clock for the A T Mega chip.

These can be soldered either way round.

Add the 16 MHz crystal, it doesn't matter which way round this goes.

Take the 6N 1 3 8 opto isolator, make sure the dot denoting pin 1 is next to the square pad.

Next we install the 7 4 L S 9 3, this is the clock divider for the Y M 2 1 4 9 F.

Make sure the dot denoting pin 1 is next to the square pad.

Now install the power L E D and the MIDI activity L E D, the long legs go in the square pads.

Add the 7805 voltage regulator, we need to bend the legs so that the device sits against the printed circuit board.

When installing the 10 μ F capacitors make sure the negative legs go in the square pads

Soldering the 3.5 mm audio and TRS midi sockets require you to hold the socket in place, add solder to one leg first then you can straighten the sockets before you complete the other two connections.

We are now ready for the 8 MHz crystal oscillator, the square corner of the package denotes pin one, hold to the board whilst you solder in place.

Next, we install the 28 pin dip chip holder, matching the orientation with PCB.

Now for the 100 nF polyester box capacitors, there are three of these, insert all of them, solder one leg on each capacitor and then straighten them before soldering the adjacent leg.

And the same for the 4.7 nF capacitor.

Adding the slide switches is much the same, insert holding in place so they are straight vertically, solder one leg so you can make them straight horizontally. Then solder the other two pins.

The push button switch should hold itself in place while you solder it. Just be careful not to bend the legs as you insert

The YM2149 chip can be soldered straight into the board or via a chip holder, in this case I'm using turned machined strips. I add these to the chip before I solder it into the board as it prevents any legs of the chip from being bent. You may have your own method.

The DC power socket again needs holding in place, only soldering one pin so you are able to straighten the connector before soldering the last two pins.

The 100 micro Farad capacitor can be soldered in, Make sure the negative leg goes in the square pad.

The 1uF capacitor can be soldered in with the negative leg going into the square pad.

Add the 50 K potentiometer, solder one leg, straighten, then solder the rest.

The 5pin din can now be soldered in place.

Lastly, we can add the programming socket. Hold in place, solder one pin, straighten, then complete the connections.

You now need to examine your solder work, making sure there are no unwanted solder bridges between connections.

When you're happy, you can apply power.

If you ordered the kit, your chips will already be pre-programmed and your activity light should flash when it is powered up.

You should now be ready to plug the synthesiser into a mixer or amplifier, when powered up or after the reset button is pressed you should hear some musical notes.

Great! you got it working!

If not, check your work, or get in touch by email.