

Signal Animator Assembly

Circuit board and components supplied in kits are RoHS compliant. Using RoHS-compliant (non-lead) solder will result in a finished board that is also RoHS compliant. If maintaining RoHS-compliance is not important to you, you may use solder containing lead.

To avoid excessive heating of components, it is recommended that one lead of each component at a time be soldered, followed by some time for the component to cool. If multiple components are in the same step, go on to solder the same lead of the next component, to give the first component time to cool.

Component Order of Assembly

There is no mandatory order of assembly for components. However, the job may be a little easier by starting with the shortest components (ones that lie flattest on the board) and work towards the taller components.

Some components must be oriented correctly. These are described in the order of shortest to tallest:

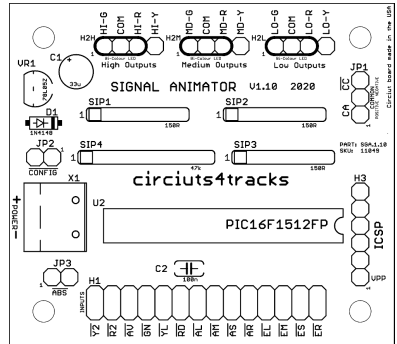


Figure 1

- Diode D1
Diode D1 is only used when the SGA is powered by 8-16 volts. Orientation is important. The cathode lead of the diode is marked by a dark band on the diode and this must be oriented so that it is at the same end as the line on the image on the circuit board.

- Integrated Circuit U2
Pin 1 of the IC must be oriented at the end with the notch image on the circuit board. The end of the device with pin 1 will have a notch similar to the image, and may also have a dot next to pin 1. Compare the photo in Figure 2 with the layout shown in Figure 1.



Figure 2

- Resistor Networks SIP1, SIP2, and SIP3
These are 150Ω, have six pins, and have the number "6X-2-151LF" on them. Pin 1 of each SIP, denoted with a dot, is positioned at the end marked with a "1" on the circuit board, as shown in Figure 3.



Figure 3

- Resistor Network SIP4

These are 47k Ω , have eight pins, and have the number "8X-1-473LF" on them. Pin 1 of the SIP, denoted with a dot, is positioned at the end marked with a "1" on the circuit board, as shown in Figure 4.

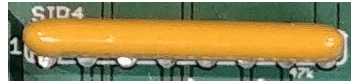


Figure 4

- Capacitor C2

Orientation is not important. This is a blue ceramic capacitor with the number "104" on one side.

- Voltage Regulator VR1



Figure 5

The voltage regulator is only used when the SGA is powered by 8-16 volts. This voltage regulator must be oriented so that its package matches the image on the circuit board. Compare photo in Figure 5 with the image in Figure 1. The flat edge of the voltage regulator is at the top in both figures.

- Jumpers JP1, JP2, and JP3

JP1 is a 1x3 header while JP2 and JP3 are 1x2 headers, orientation is not important. A jumper is required on JP1 for operation and will be attached to the 1x3 header in the package. It should be removed during assembly.

- Input Header H1

This is a 2x14 header, orientation is not important.

- Output Headers H2H, H2M, and H2L

These are 1x4 headers, orientation is not important.

- Screw terminal block X1

X1 is for the power input and is green in colour. It should be oriented so the terminal connections face the edge of the circuit board.

- Capacitor C1

This is the 33 μ F capacitor and must be oriented so that its longer lead goes through the hole marked with a "+".

Cutting Bridge Pads for 8-16 Volt Version

The circuit board for the SGA is designed to be used either with a 5 VDC regulated power supply or with an 8-16 VDC unregulated supply. For the unregulated power supply, components D1 and VR1 must be installed, and two traces must be cut.

These are highlighted in Figure 6.

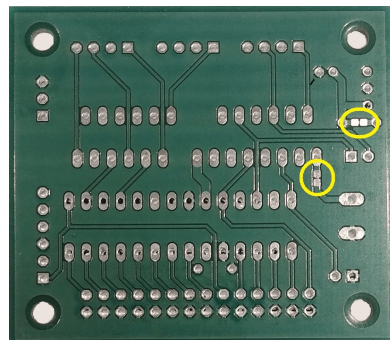


Figure 6

Warranty

Card and components are warranted against manufacturing defects for a period of one year from date of purchase. As the circumstances under which this kit is assembled and installed cannot be controlled, failure of the SGA due to assembly or installation problems cannot be warranted. This includes overheating during assembly, misuse, miswiring, operation under loads beyond its specifications, or short circuits. The warranty is voided if the SGA is connected to a power supply outside its rated voltage, or if it is connected to an AC power supply of any voltage.

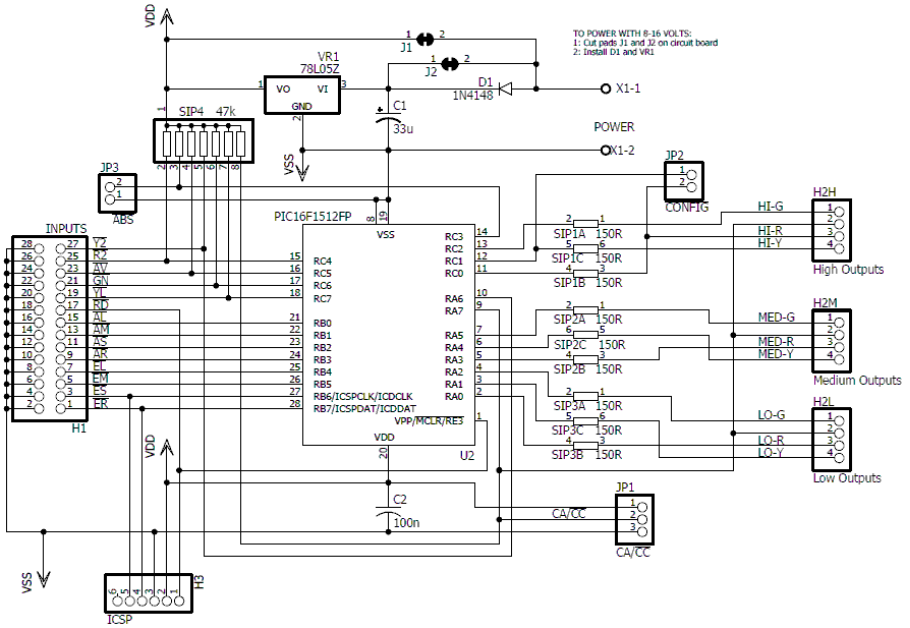
If the SGA fails for non-warranted reasons, it can be replaced with no questions asked for the cost of \$22.50 plus shipping (this fee subject to change).

Email to **circuits@daxack.ca** for information on warranty or non-warranty replacement.

Installation

See the enclosed installation instruction sheet.

Circuit Schematic



Component values:

C1	33µF, 35 volt electrolytic
C2	100 nF, 50 volt ceramic capacitor
D1*	1N4148
H1	2x14 header
H2H, H2M, H2L	1x4 header
JP1	1x3 header
JP2, JP3	1x2 header
SIP1, SIP2, SIP3	150R 3RES 6SIP
SIP4	47k 7RES 8SIP
U2	PIC16F1512 microcontroller
VR1 *	78L05Z regulator
X1	2-position screw terminal block

* D1 and VR1 are only needed when powering from a 8-16-volt unregulated supply, plus traces between square pads must be cut on the bottom of the board (see Figure 6).

This document is available in PDF format on our website.