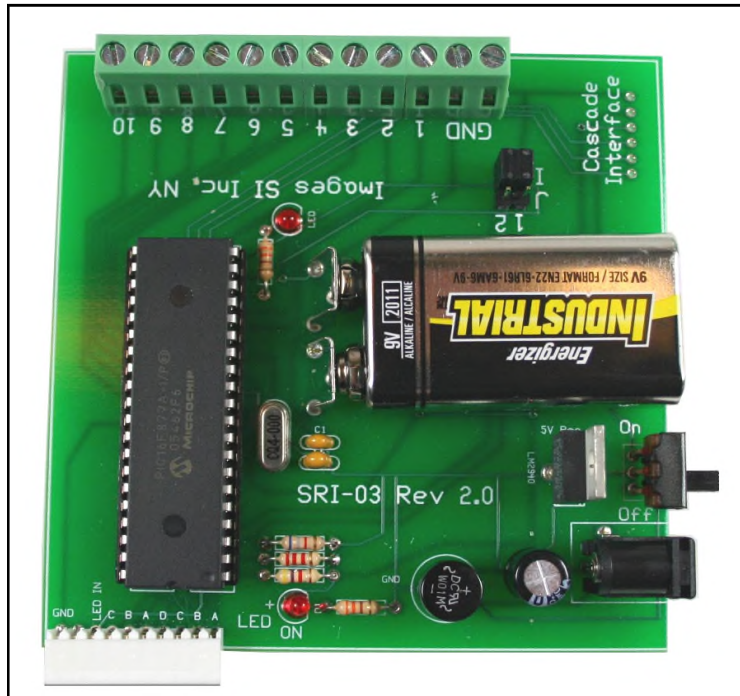


SRI-03 Speech Recognition Interface



Data and Construction Booklet

The Speech Recognition Interface SRI-03 allows one to use the SR-07 Speech Recognition Circuit to create speech controlled electrical devices. The SRI-03 incorporates ten logic high (+5V) outputs corresponding to the first ten recognized words by the SR-07 Speech Recognition Circuit. Using this interface easily allows the speech recognition circuit to activate or deactivate 10 electrical circuits or devices.

General Recognition Information:

There is approximately ¼ second delay from word recognition to output activation. The circuit automatically detects and discards the three possible error codes 55, 66 and 77 from the speech recognition circuit (SR-07).

The SR-07 speech recognition circuit should be trained before connecting to the SRI-03 interface. The SR-07's 10-position display header plugs into the speech recognition interface's (SRI-03) 10-position female header.

SRI-03 Outputs:

The SR-07's trained word number 1 activates output 1 on the speech interface board. Trained word number 2 activates output number 2. And so on.

Setting the Option Mode:

The SRI-03 has two jumpers labeled J and I. Setting these jumpers determine which mode the SRI-03 will operate in; Standard, Momentary 1/10 sec. or 1/4 sec. and latched. Options are only read on power up. Changing the option setting with the power on will not change the mode.



Options Jumper Settings

1 2		1 2	
J		J	
I		I	
= Standard		= Latched	
1 2		1 2	
J		J	
I		I	
= Mom. 1/10 sec.		= Mom. 1/4 sec.	

Standard Option:

Using the standard SRI-03 option, only one output may be activated at a time. The SRI-03 also has a latch and momentary option; see latch option below for more information).

To turn on any output:

Say the word that corresponds to the output you want to go high.

To turn all outputs off:

To turn any output off use the “stop or control” word (trained as word number 11 or above).

To turn one output off and another output on:

To automatically turn one output off while turning another output high, simply say the trained word for the output you wish to activate.

Momentary Options:

Similar to standard option, with the exception that the output remains high only momentarily, either 1/10 second or 1/4 second, as defined in Options Settings box.

Latch Option:

The standard and momentary options can only activate one output at a time. The latch option, overcomes this limitation. Using the latch option any output may remain high while other outputs are being activated or deactivated.

The latch function operates in the following manner. The first time a trained word number is recognized, it activates the output associated with the word number as before. This output will remain high until the trained word is recognized for a second time. So the first time a trained word is recognized it activates the output. The second time a trained word is recognized it will deactivate the output. In between activating and deactivating any particular output, you may activate and deactivate any and all other outputs.



Electrical Connections:

Electrical connections to the logic high outputs are made through the screw-terminals. Unscrew the top screw. Strip approximately 3/8" of insulation from 22 gauge electrical wire. Insert 3/8" length of stripped wire into the front of the screw terminal. Tighten top screw down to make good electrical connection.

In order for the circuit to see the logic high output make sure the ground terminal from the SRI-03 is connected to the ground of the circuit you are connecting too.

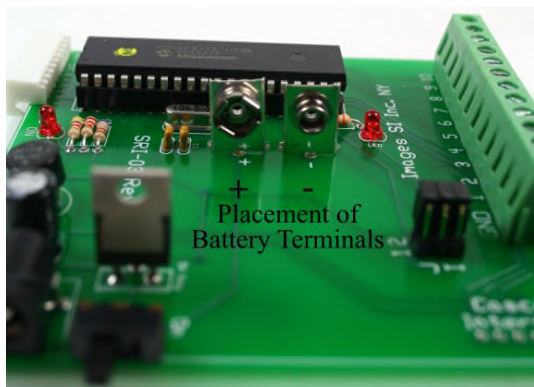
Construction:

The topside of the printed circuit board has white silk-screened component drawings. The components are mounted on the top (silk screen side) of the pc board. Soldering the components on the opposite side. After soldering the component excess wire is clipped off.

Begin construction by mounting and soldering the R-10, 4.7 K ohm resistor (color bands yellow purple, red, gold/silver), R11 2.2K ohm resistor (color bands red, red, red, gold) R12, 6.8K ohm resistor (color bands blue, gray, red, gold/silver), 330 ohm resistor (color bands orange, orange, brown, gold/silver).

Next mount and solder the IC socket 16F877A. If the IC socket has a half circle cutout or mark on one end, orientate that end with the half circle cutout on the white silkscreen drawing. This will help you orientate the installation of the IC later on. Next mount and solder the 10-position right angle female header, 4.0 MHz crystal, and the .22pf capacitors in spaces marked C1 and C2 by the crystal. Next mount and solder, on-off pc mounted switch, DC Power Jack, and the LM2940 voltage regulator. When mounting the red LED's the longer lead on the LED is the positive terminal.

The next components to mount and solder are the three screw terminal connectors. These terminals may be locked together using the tongue and groove slots on the side. Mount four units together using the tongue and grooves before placing them onto the pc board. Make sure the wire opening for the terminals are facing outward before soldering.



Mount and solder the capacitor C1 (330 uf) and bridge rectifier making sure to orientate the positive terminal of each component to the positive lead on the pc board. Mount and solder the 9 Volt battery terminals, see photo to left. Mount and solder the two 3 pin header. Set the jumper according to the options found on page 2.

Now you are ready to install the IC into it's respective socket making sure to orientate the chip properly. Begin first by identifying the top of the IC. The top of the IC has a marker. Many times it is a half circle cutout. Other times it is a small mark or dot that identifies pin 1 on the IC. In every case the top marks locates pin 1 on the top of the IC package. Orientate the top of the IC with the white silkscreen drawings on the pc board. The white silkscreen drawing will have a half circle cutout. Install the IC into their socket.

Parts List:

- 1 Printed Circuit Board
- 1 resistor 4.7K (yellow, purple, red, gold/silver)
- 1 resistor 2.2K (red, red, red, gold)
- 1 resistor 6.8K (blue, gray, red, gold/silver)
- 2 resistor 330 ohm (orange, orange, brown)
- 1 LM2940 voltage regulator
- 1 on-off pc mounted switch
- 2 Red LED
- 1 4.0 MHz crystal
- 1 10-position right angle female header
- 1 Bridge rectifier
- 1 330 uf capacitor (May be substituted with any value between 100 & 1000 uf)
- 2 Battery terminals
- 1 DC power jack
- 4 Screw Block Terminals
- 2 .22pf capacitors
- 1 PIC 16F877A (pre-programmed)
- 1 ICS 40 PIN socket
- 2 3 pin headers
- 2 Jumpers

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