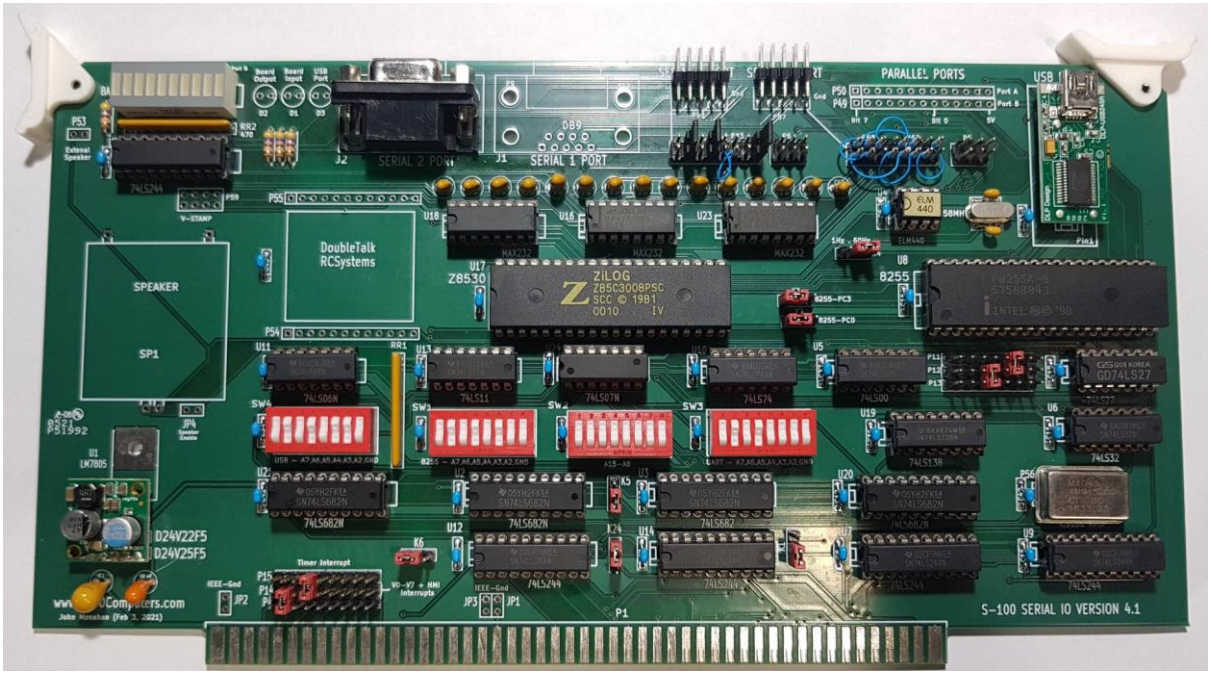
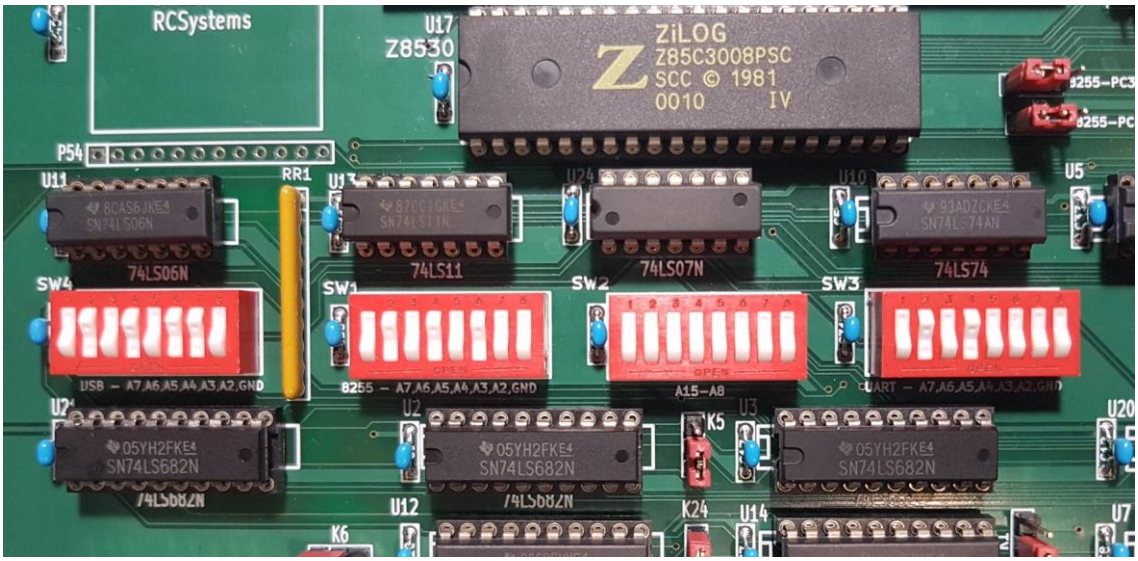
Configuration

The S-100 Serial IO Version 4 board must be configured as follows:



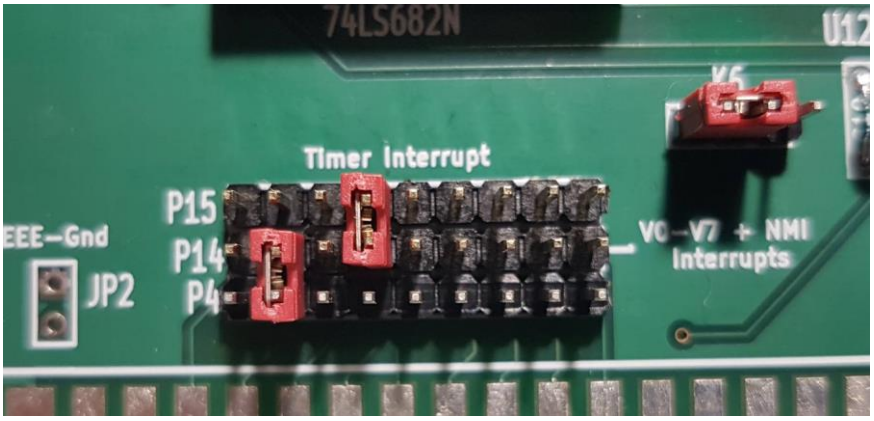
The Port Address (SW1, SW2, SW3 and SW4) DIP switches must be set as follows:

DIP Switch	SW1	SW2	SW3	SW4
1	Closed	Closed	Closed	Closed
2	Open	Closed	Open	Open
3	Closed	Closed	Closed	Closed
4	Open	Closed	Open	Open
5	Closed	Closed	Closed	Closed
6	Open	Closed	Closed	Open
7	Closed	Closed	Closed	Open
8	Closed	Closed	Closed	Closed



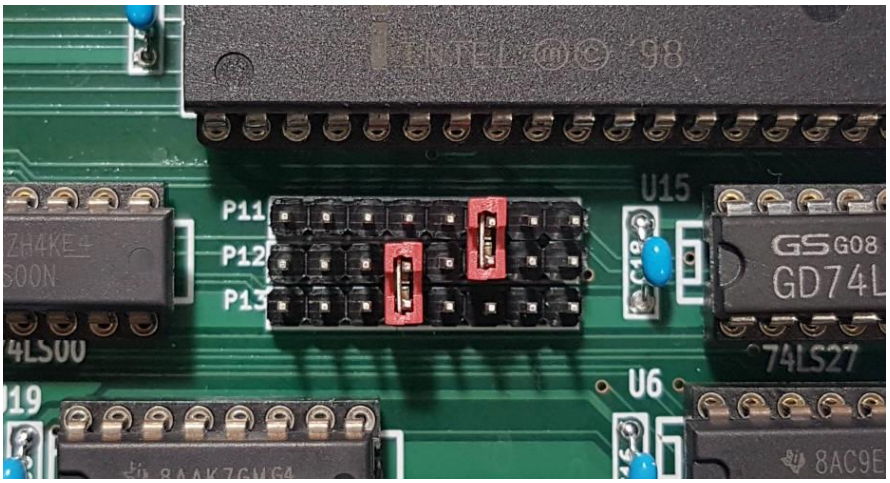
The UART and Timer Interrupt (P4, P14 & P15) jumpers must be set as follows:

P14 Jumper	Vectored Interrupt	Description
P15-4	1	Timer Interrupt
P4-2	3	UART interrupt



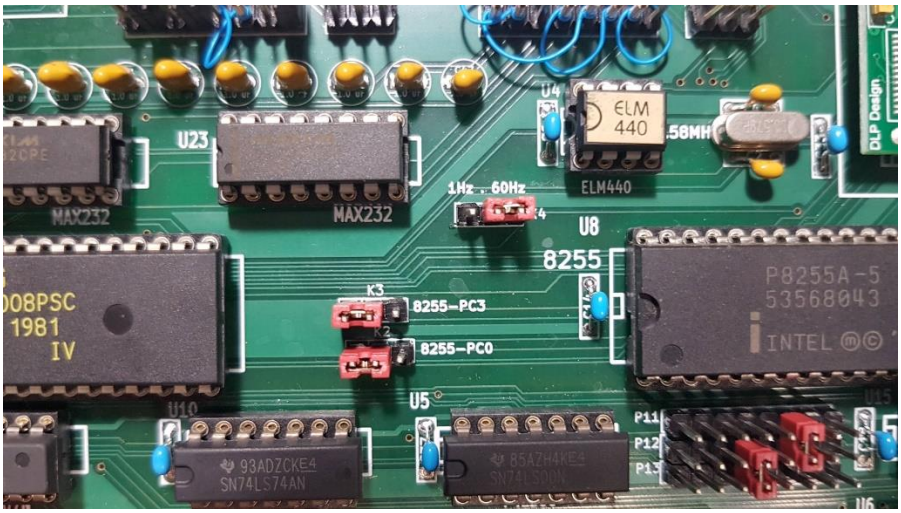
The UART and Timer Interrupt Acknowledge (P11, P12 & P13) jumpers must be set as follows:

P12 Jumper	Description
P13-4	Timer Interrupt acknowledge
P11-6	UART Interrupt acknowledge



The 8255-PC0 (K2), 8255-PC3 (K3) & Timer frequency (K4) jumpers must be set as follows:

Jumper	Position	
K2	1-2	
K3	1-2	
K4	2-3	60Hz



Testing

The boards configuration and functionality should be verified before attempting to boot Cromix-Plus for the first time.

Using the supplied monitor ROM for the 68030 board perform the following tests.

Serial Port 1

Serial Port 1 must be functioning with interrupts in order to boot Cromix-Plus.

I/O Test

Connect a terminal or terminal emulator to Serial Port 1, port parameters are: 9600,N,8,1.

At the 68030 Monitor prompt enter the following commands:

`A:> sinit a`	Initialise Serial Port 1 (A)
`A:> sout a`	Any characters typed on the console should be echoed on the serial port's terminal. Typing an escape character on the console will terminate the command.
`A:> sloop a`	Any character typed on the serial port's terminal should be echoed on the terminal and on the console. Typing an escape character on the console will terminate the command.

Do not proceed until this test is functioning correctly.

Interrupt Test

At the 68030 Monitor prompt enter the following commands to enable UART interrupts:

`A:> scmd a 9 8`	Z8530 WR9 – Master interrupt enable
`A:> irqm 4`	Set the 68030 IRQ Mask to 4, the IRQ Mask must be less than the interrupt level (5 for the serial ports).

Typing 'q','w','e','r', 't' on the serial port's terminal, the following should be displayed on the console:

```
A:> scmd a 9 8
A:> irqm 4
A:> S65,I20,Aq S65,I20,Aw S65,I20,Ae S65,I20,Ar S65,I20,At
A:>
```

At the 68030 Monitor prompt enter the following commands to disable UART interrupts:

```
A:> scmd a 9 0
A:> irqm 7
```

Do not proceed until this test is functioning correctly.

Serial Port 2

Serial Port 2 is not required to boot Cromix Plus. However, if it is functioning with interrupts, it can be used with a terminal for a second user session.

I/O Test

Connect a terminal or terminal emulator to Serial Port 2, port parameters are: 9600,N,8,1.

At the 68030 Monitor prompt enter the following commands:

`A:> sinit b`	Initialise Serial Port 2 (B)
`A:> sout b`	Any characters typed on the console should be echoed on the serial port's terminal. Typing an escape character on the console will terminate the command.
`A:> sloop b`	Any character typed on the serial port's terminal should be echoed on the terminal and on the console. Typing an escape character on the console will terminate the command.

Do not proceed until this test is functioning correctly.

Interrupt Test

At the 68030 Monitor prompt enter the following commands to enable UART interrupts:

`A:> scmd a 9 8`	Z8530 WR9 – Master interrupt enable
`A:> irqm 4`	Set the 68030 IRQ Mask to 4, the IRQ Mask must be less than the interrupt level (5 for the serial ports).

Typing 'q','w','e','r', 't' on the serial port's terminal, the following should be displayed on the console:

```
A:> scmd a 9 8
A:> irqm 4
A:> S65,I20,Aq S65,I20,Aw S65,I20,Ae S65,I20,Ar S65,I20,At
A:>
```

At the 68030 Monitor prompt enter the following commands to disable UART interrupts:

```
A:> scmd a 9 0
A:> irqm 7
```

Do not proceed until this test is functioning correctly.

Timer Interrupt

Cromix Plus will boot without a functioning timer interrupt. However, all functionality that requires an incrementing clock will fail.

At the 68030 Monitor prompt enter the following commands:

`A:> irqz`	Zero interrupt counts
`A:> irqm 2`	Set the 68030s IRQ mask to less than the interrupt level
`A:> irqc`	Display the interrupt counts, irq 3 should be incrementing.

```
A:> irqz
A:> irqm 2
A:> irqc
Interrupt counts:
[1] 00000000
[2] 00000000
[3] 00000145
[4] 00000000
[5] 00000000
[6] 00000000
[7] 00000000

A:> irqc
Interrupt counts:
[1] 00000000
[2] 00000000
[3] 00000254
[4] 00000000
[5] 00000000
[6] 00000000
[7] 00000000

A:> irqm 7
```

At the 68030 Monitor prompt enter the following command to disable interrupts:

`A:> irqm 7`