



**Corsham Technologies, LLC**

*www.corshamtech.com*

*617 Stokes Road, Suite 4-299*

*Medford, NJ 08055*

## **SS-30 Parallel Board**

### **Introduction**

Thank you for buying our SS-30 Parallel Board!

This is a basic 68B21 board that provides two eight bit ports and four handshake ports. It is very easy to program and interface with thanks to the multiple sets of connectors provided along the top. It is also an essential part of our SD Card System.

### **Features**

The board is somewhat compatible with the SWTPC MP-L but does not have the buffering and has different connectors. Their buffering limited what each pin could be used for, while our board is completely open for use.

Features:

- Software compatible with MP-L.
- Plugs into any SS-30 slot.
- Has a 68B21 PIA
- One set of connectors are single row for easy connection to experiments.
- Another connector has all pins along with ground and +8 volts for powering external circuits.
- Provides easy jumpers for enabling interrupts, if desired.

## Connectors

There are two sets of connectors for accessing the I/O lines of the 6821. JP3 and JP4 have each pin conveniently labeled to make it easier to connect your devices to them.



JP5 is a bit more complicated, as it was meant as an easy way to connect external devices to the parallel board, such as our SD Card System. It has all of the same pins as JP3 and JP4, along with ground and +8 volts directly from the SS-30 bus. This is meant to power external devices, such as the Arduino on our SD Card.



Pin 1 is in the upper right, and it is indicated by the small dot. Pin 3 is immediately to its left, pin 5 next, etc. All of the odd numbered pins are in the top row, while the even numbered pins are on the bottom row. Pin 2 is directly under pin 1.

Pins 23 and 24 are +8 volts, and pins 25 and 26 are ground. Be aware that 8 volts is not a normal logic level and will almost certainly damage any TTL or CMOS chip designed to operate at 5 volts or less! If an external board wishes to use the power from this connector, it will need to have an appropriate voltage regulator on-board.

Note that none of the lines are buffered, so be careful when connecting external devices to the 6821! It is easy to destroy fragile chips with high voltages or too much current. If in doubt, there are many, many web pages that discuss how to connect “outside world” devices to microprocessors.

Odd numbered pin usage, from pin 1 through 25:

PA0, PA1, PA2, PA3, PA4, PA5, PA6, PA7, CA1, CA2, unused, +8 VDC, Ground

Even numbered pin usage, from pin 2 through 26:

PB0, PB1, PB2, PB3, PB4, PB5, PB6, PB7, CB1, CB2, unused, +8 VDC, Ground

Please consult the schematic before making connections to the board.

## Interrupts

Interrupts weren't very popular back in the early days of microcomputers, as most people preferred the simplicity of polled I/O. However, JP1 and JP2 allow the interrupt output lines from the 6821 to be connected to either the NMI or IRQ line. You will have to write your own drivers to make use of interrupts.

Do not fear interrupts! Once you get them working, you won't want to go back to polling!

## Revision History

Version	Changes
A	Initial Beta.
B	Addition of dual-row header

## Errata

## Parts List

Part	Number	Description
PCB	1	Printed Circuit Board (Corsham Tech)
J1	3	Molex 09-52-3101
JP1, JP2	2	1x3 pin header, .1" spacing
JP3, JP4	2	1x11 pin header, .1" spacing
JP5	1	2x13 male connector, keyed
C1, C2	2	10uf, 25v electrolytic capacitor

C3	1	.1 uf disc capacitor
IC1	1	7805 +5 VDC regulator, TO-220 case
IC2	1	MC68B21 PIA
	1	40 pin socket for IC2