

# ONYX-MM



**EXTENSIVE SOFTWARE** control of features is the highlight of this digital I/O module featuring 48 digital I/O lines, 3 16-bit counter/timers, and 3 independent PC bus interrupt inputs.

The 48 digital I/O lines on Onyx-MM are based on 2 82C55 ICs. They can be programmed for input or output in groups of 8 lines. Direct as well as strobed (latched) I/O modes are supported, and all I/O lines are connected to 10K $\Omega$  pull-up resistors.

## FEATURES

- ◆ 48 digital I/O lines
- ◆ 3 16-bit counter/timers
- ◆ 3 PC/104 bus interrupt lines
- ◆ On-board 4MHz clock oscillator
- ◆ Programmable counter and interrupt sources
- ◆ Can generate bus interrupts at programmable intervals
- ◆ Software and technical manual included

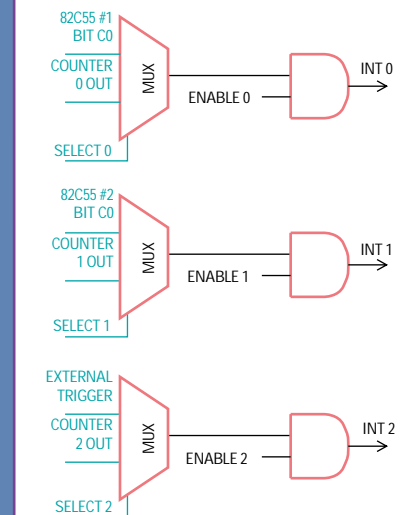
The 3 16-bit counter/timers are based on an 82C54 IC. They are controlled through a configuration register on Onyx-MM (in addition to the standard 82C54 configuration register). The counter inputs can be switched between external signals, the on-board 4MHz clock oscillator, or counter outputs, all under software control. By using one counter's output as another counter's input, you can cascade counters in software to create a 32-bit or 48-bit counter.

Onyx-MM also features programmable interrupt operations. A second software-controlled register on board configures up to 3 interrupt lines on the PC bus. Interrupts can be generated by the counter/timer outputs, digital I/O lines, or an external input line. This lets you use a counter to generate bus interrupts at a programmed periodic rate, generate hardware interrupts under software control, or generate interrupts in response to an external event.

### 82C55 Digital I/O IC

Onyx-MM provides 24 digital I/O lines using an 82C55 IC. All lines contain 10K $\Omega$  pull-up resistors, and the directions of all lines are programmable in 4- and 8-bit groups. A complete datasheet for this part is included in the user manual, and you may also download the datasheet from our website.

## INTERRUPT CONFIGURATION



### Interrupt Configuration

A unique feature of Onyx-MM is its interrupt control. The board has three separate interrupt circuits. A control register allows you to select each interrupt's source from among counter outputs, digital I/O lines, or a dedicated external interrupt input line. You can also individually enable and disable each interrupt. All interrupt circuits are tristate / active high with jumper-enabled 1K $\Omega$  pull-down resistors to implement interrupt sharing in accordance with the PC/104 specification.

