

# ONYX-MM

3 COUNTER/TIMERS, 48 DIGITAL I/O, PROGRAMMABLE INTERRUPTS

SPECIFICATIONS	
<b>COUNTER/TIMERS</b>	
Chip	82C54-2
Counter/timers	3, 16 bits wide
Maximum input freq.	10MHz
On-board osc.	4MHz $\pm 0.1\%$
Signal type	TTL
Input voltage,	Low: 0.5V min, 0.8V max High: 2.0V min, 5.5V max
Input current	-200 $\mu$ A max (low), 2mA max (high)
Output voltage	Low: 0.0V min, 0.4V max High: 3.0V min, Vcc -0.4V max
Output current	$\pm 2.5$ mA max, each line
Pullup resistors	10K all input lines
<b>DIGITAL I/O</b>	
Chip	82C55A (qty. 2)
Number of I/O lines	48 (6 8-bit ports)
Direction	Programmable for each port
Output current	$\pm 2.5$ mA max, each line
Pullup resistors	10K all input lines
<b>INTERRUPTS</b>	
Number of interrupts	3
Interrupt level	2 - 7
Interrupt sources	Counter/timer outputs, Interrupt input, or DIO line C0 (programmable)
<b>GENERAL</b>	
Power supply	+5V $\pm 10\%$ @ 120mA typical
Operating temp.	-40 to +85°C
PC/104 Bus	8 bits
Weight	2.8oz / 79g

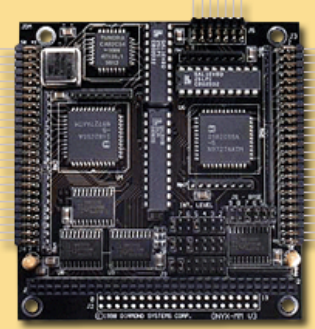
Onyx-MM provides industry-standard I/O chips for counting, timing, and digital I/O operations as well as real-time control. The 82C54 IC has 3 16-bit counter/timers that can be used for counting, rate generator, one-shot generator, or square wave generator. In addition to the chip's internal counter configuration register, Onyx-MM contains a separate control register that is used to select the input source for each counter. You can select the on-board 4MHz clock, an external digital signal, or even another counter's output, so you can cascade counters together.

The 2 82C55 chips provide a total of 48 lines of digital I/O. Each chip has 3 8-bit ports with programmable direction. All ports power up in input mode, and all digital I/O lines have 10K pull-up resistors.

The board also has 3 PC/104 bus interrupt lines controllable in software and supported by our Universal Driver software. You can select a counter output, a digital input signal, or an external trigger input as the interrupt source. With Onyx-MM you can generate interrupts at programmable rates or based on external events, and run custom code each time an interrupt occurs.

The 48 digital I/O lines are made available on two 50-pin headers, with 24 lines on each header in OPTO22-style pinout. The counter/timer signals are accessed on a separate 14-pin header. Mating cables are C-50-18 (2 per board) and C-14-18 (one per board).

See I/O connector pinout diagrams on next page.



- ? 3 16-bit counter/timers using 82C54 chip
- ? Programmable counter sources – internal clock, external signal, or previous counter output
- ? 48 digital I/O using 2 82C55 chips
- ? Programmable port directions
- ?  $\pm 2.5$ mA output current on DIO lines
- ? DIO lines have 10K $\Omega$  pull-up resistors
- ? 3 PC/104 bus interrupts with programmable sources
- ? Timer-controlled interrupt capability
- ? -40 to +85°C operation
- ? FREE Universal Driver software included

## ORDERING GUIDE

OMM-XT 48 digital I/O, 3 ctr/timers  
For cables and accessories, see pages 46-47.

