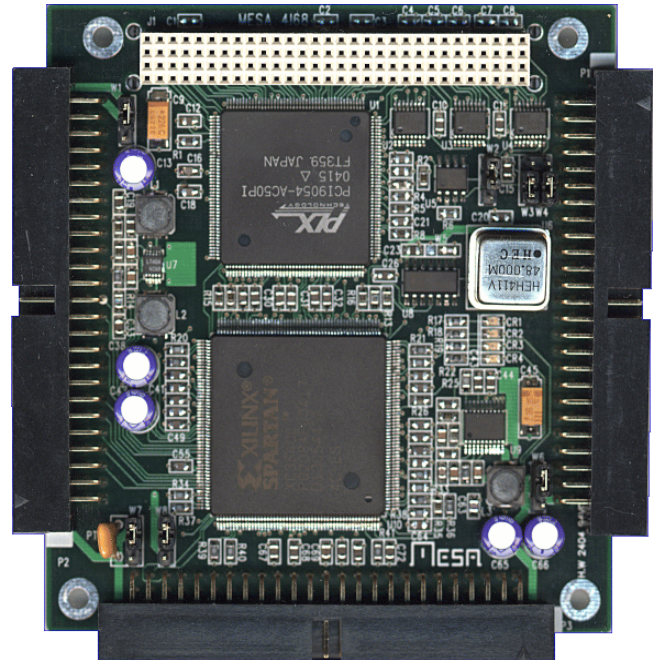# MESA

4I68 ANYTHING I/O CARD

- **Xilinx FPGA BASED I/O card**
- **72 I/O BITS**
- **24 mA output drive**
- **PC/104-PLUS interface**
- **Many I/O functions supplied**
- **DMA/ Busmaster capable interface**
- **5 LED status indicators**
- **Source supplied for all functions**
- **FPGA downloaded from host**
- **Low power consumption**
- **Made in USA - local support**
- **2 year warranty**

The MESA 4I68 is a general purpose programmable I/O card for the PC/104-PLUS bus. The 4I68 uses a 400K gate Xilinx Spartan3 FPGA for all logic, so it is truly an "Anything I/O" card.

The FPGA configuration is downloadable from the PC/104-PLUS bus side, allowing creation of almost any kind of specialized I/O function, even including micro-controllers in the FPGA.

A PCI bridge chip is used for FPGA interfacing, so that the FPGA designs need only interface to a simple 32 bit synchronous local bus.

The bridge chip supports Bus master and DMA transfers to and from system RAM for maximum performance.

The 4I68 uses three 50 pin connectors with I/O module rack compatible pinouts and interleaved grounds. One connector supports 10 LVDS differential pairs.

All I/O pins support DCI programmable termination. DCI reference resistance it 100 Ohms.

Several pre-made example configurations are provided, including a 72 bit parallel I/O with 32 bit host interface, a 12 channel host based servo motor controller, a 4 or 8 channel micro-controller based servo motor controller, and a 8 channel, 32 bit timer counter card capable of running at 100 MHz.

VHDL source is provided for all examples and custom I/O functions can be provided on a contract basis.

A FPGA configuration status LED plus 4 general purpose LEDs are available for circuit debugging or circuit status information.

A 48 MHz crystal oscillator is provided as the FPGA system clock. Higher or lower frequencies can be generated by the DLL built into the FPGA.

4I68 CONNECTOR PINOUT:

PIN#		4I68 SIGNAL (P1,P2,P3)	PIN#	4I68 SIGNAL
1		I/O 0,24,48	2	GND
3		I/O 1,25,49	4	GND
5		I/O 2,26,50	6	GND
7		I/O 3,27,51	8	GND
9	I	I/O 4,28,52	10	GND
11		I/O 5,29,53	12	GND
13		I/O 5,30,54	14	GND
15		I/O 7,31,55	16	GND
17		I/O 8,32,56	18	GND
19		I/O 9,33,57	20	GND
21		I/O 10,34,58	22	GND
23		I/O 11,35,59	24	GND
25		I/O 12,36,60	26	GND
27		I/O 13,37,61	28	GND
29		I/O 14,38,62	30	GND
31		I/O 15,39,63	32	GND
33		I/O 16,40,64	34	GND
35		I/O 17,41,65	36	GND
37		I/O 18,42,66	38	GND
39		I/O 19,43,67	40	GND
41		I/O 20,44,68	42	GND
43		I/O 21,45,69	44	GND
45		I/O 22,46,70	46	GND
47		I/O 23,47,71	48	GND
49		POWER	50	GND

ORDERING INFORMATION:

4I68   Anything I/O PC104-PLUS 72 bit - 3X 50 pin connectors

Add -I for industrial temperature range.

MESA ELECTRONICS 4-08