SCSI & Memory Board

SCSI Protocol controller and Memory Carrier for the Mini-Module and VMEbus systems

Features

SCSI controller

- Supports the ANSI X3.131-1986 standard
- On-board 48mA single-ended drivers
- Target or initiator role
- Direct control of all SCSI signals
- Transfers up to 3.0Mbytes / sec
- Fast pseudo DMA mode
- Interrupt generation on data and errors
- Based on the 5380 chip
- LED busy monitoring
- OS9 system available

Memory expansion

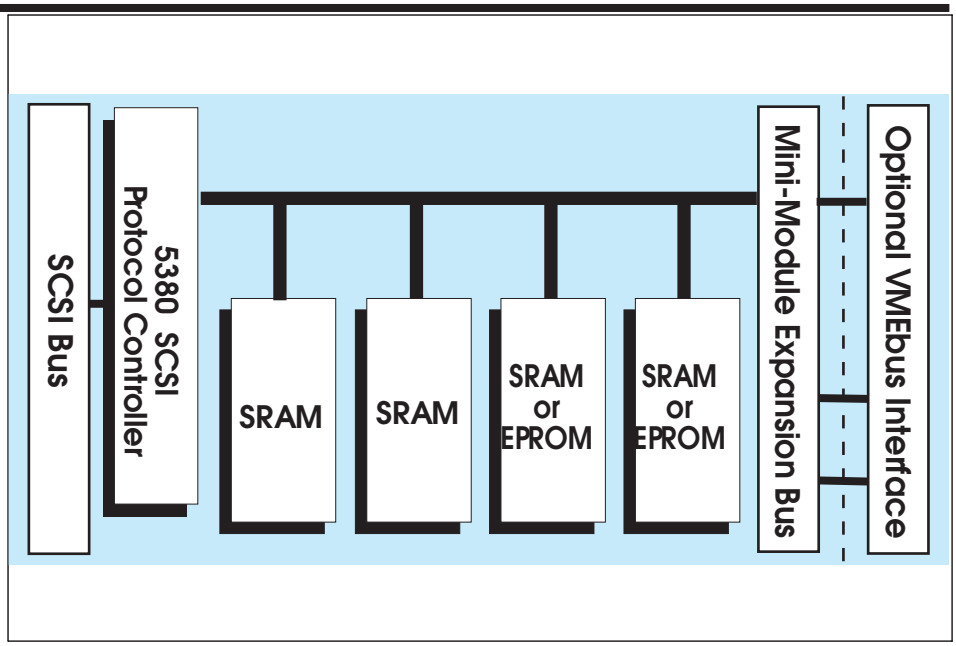
- Four 32-pin JEDEC sockets
- 512k or 2Mbyte size options
- RAM and / or EPROM mix
- Fully battery backed RAM
- 5V only operation
- Low power CMOS design (120mA)
- Up to 4 boards per system
- 32-byte address space

Module Bus Slave

- Compatible with Mini-Module
- Software drivers and examples
- Low cost target
- Small size 100*118mm

VMEbus Slave Rev C.1

- 3U single height euro-card
- 100*160mm



Description

This dual purpose board extends the I/O facilities of the CPU by adding a SCSI protocol controller and 4 JEDEC 32 pin memory sockets. The board has been designed to give access to SCSI peripherals on both the Mini-Module and VMEbus systems. The most popular peripheral, the hard disc drive, is available in all sizes from 20M-byte to over 1Gbyte. Other SCSI devices include floppy drives and tape back-up units. The memory option on the board provides the extra RAM memory required with hard disc systems. A CPU board and this SCSI board will produce a complete system, e.g. OS9 system: 16MHz 68000, 2Mbyte RAM and hard disc controller. The EPROM option provides for those less frequent applications when a large amount of program storage is required. Note, the CPU has its own EPROMs. The card is one from the range of 'Dual-Bus' cards. It can be supplied in standard single euro-card VMEbus form or as a two thirds size on 'PRObus'. The 'PRObus' is effectively the PROcessor bus with minimum bus buffering. It is compatible with the Mini-Module CPU and becomes very cost effective when targeting small systems. The SCSI, memory board is fabricated with low power CMOS components requiring only 120mA, from a single 5V supply, with 512k-byte of battery backed RAM fitted. The SCSI controller uses the popular 5380 chip which supports the ANSI X3.131-1986 standard. Primarily designed to be a target controller for Hard and floppy discs, the chip can function as initiator or a target. The device supports arbitration as well as re-selection. An on board LED shows that the bus is in use and the bus terminating resistors are socketed to allow removal for small low power applications. The memory option on the board allows up to four 32 pin JEDEC devices to be fitted. The board can be fitted with four RAMs, or two RAMs with two EPROMs, giving an extra 512k-byte of memory for the Mini-Module and 2M-byte for the VMEbus. The RAM is fully battery backed and is ideal for program or data storage. The Mini-Module version of this card comes complete with all the necessary software drivers. These are the low level SCSI protocols and must not be confused with a full disc operating system. With these drivers it is possible to read and write sectors on a disc or format the drive. For VMEbus and Mini-Module users we have the popular OS9 system software. When the SCSI card is combined with our CPU card it forms a very respectable budget OS9 system. All that is required are the drives and the power supply. We would highly recommend access to the data sheet for the 5380 for low level programmers.

Specification

SCSI protocol controller

ANSI X3.131-1986

Output <0.5V at 48mA

Input

Low <0.8V

High >2.0V
Hysteresis 325mV typ.
Max. 0.5V outside of supply
Termination
Socketed
220 / 330 Ohms

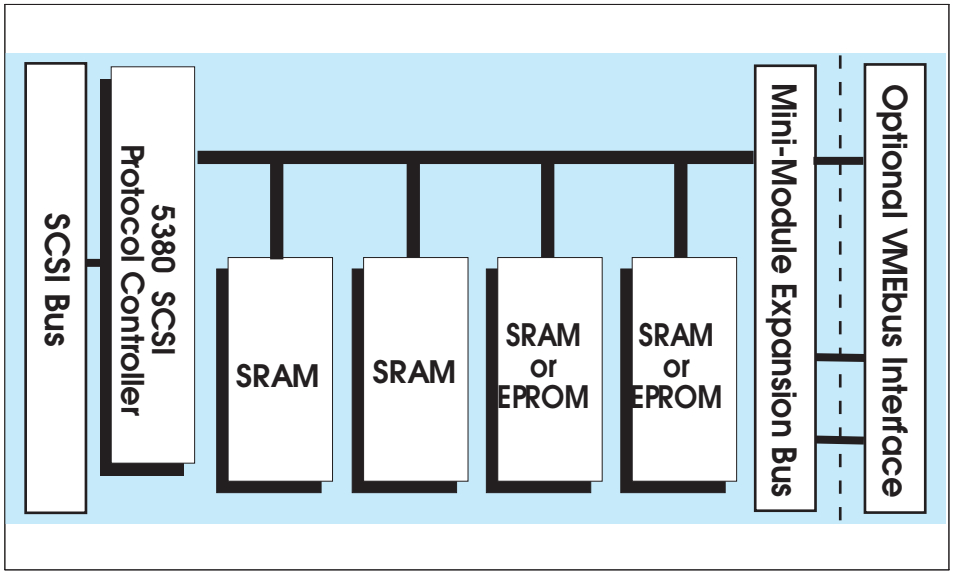
Memory Types

SRAM (4 off)
128K*8
512K*8 (VMEbus only)
EPROM (2 off)
128K*8
256K*8
512K*8 (VMEbus only)

Battery back up

NiCd Battery
10mA / hr
RAM standby (from full charge)
1000 hrs typ. (10uA)
25 hrs (worst case 0-70 degC 400uA)
Charge / Discharge ratio 100:1 typ

Module Bus



A14:D8 32-byte peripheral bus space
A20:D16 memory expansion space
Mini-Module compatible
Size 100*118mm

VMEbus

SCSI protocol controller
A16:D8 32-byte short address space
$29, $2D modifiers
Interrupter IRQ(1-7)
Memory expansion
A23:D16 main address space
8 map options
$39,3A,3D,3E modifiers
Size 100*160mm

Connectors

SCSI 50-way box IDC
64 way Module Bus
or 96 way VMEbus DIN

Power Consumption at 5V typ.

90mA K502 (board only)
300mA K510 (RAM + terminated SCSI)
120mA if termination is removed
All VMEbus boards add 100mA

Temperature Range

0 to 70 degC

Order Codes

Module Bus Version

K-500	512K-byte RAM
K-502	EPROM only (2 sockets)
K-505	SCSI controller
K-510	SCSI + 512K-byte RAM

VMEbus version

D-500	512K-byte RAM
D-502	EPROM only (2 sockets)
D-520	2M-byte RAM
D-505	SCSI controller
D-510	SCSI + 512K-byte RAM
D-525	SCSI + 2M-byte RAM

Miscellaneous

MK-500	Technical manual

K500 970530

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