



# Serial I/O

## 8 Channel Serial Interface Card for VMEbus and Mini-Module Systems

The photograph shows the Module 8 channel RS-232 version of the serial card with a ribbon cable interface.

### Features

- 8 channels on single height card
- 4 channel option
- RS232 or RS485 buffers
- Connects to 8 'D' connectors
- Low power CMOS design
- Software selectable 50 to 1M baud
- Independent sync/async channels
- SDLC/HDLC protocols
- CRC generation and checking
- Easy X.25 implementations
- Digital Phase-Locked Loop
- NRZ,NRZ1 or FM encoding
- 256 byte address space
- Full vectored interrupts
- Software drivers for 68K and Mini-Module systems

### PRObus Slave

- Compatible with Mini-Module
- Low cost target
- Small size 100\*118mm

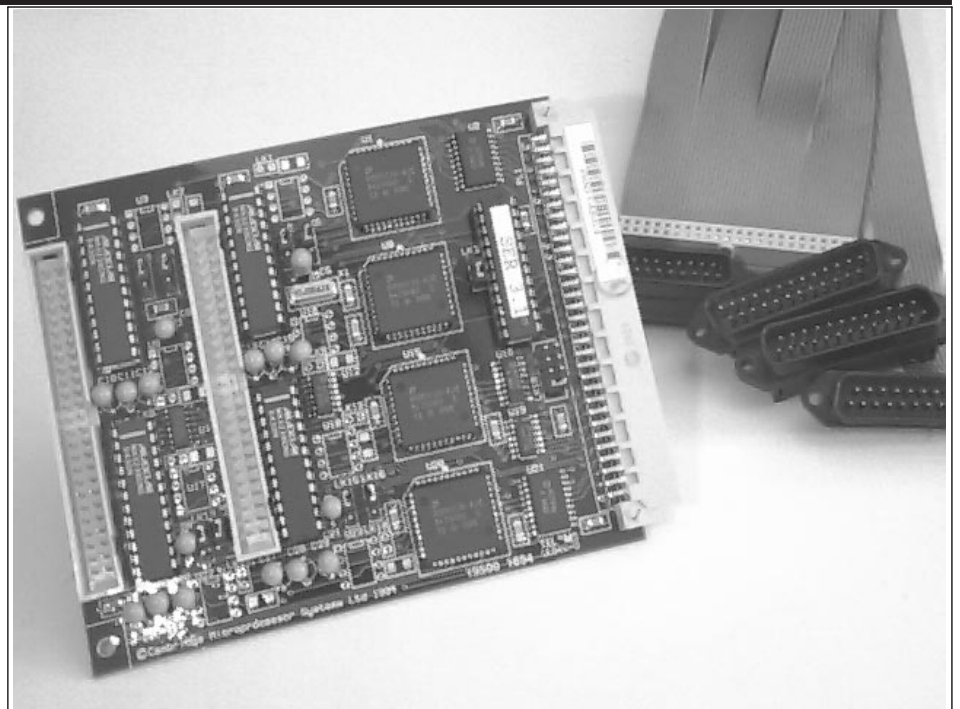
### VMEbus Slave

- VMEbus Slave Rev C.1
- 3U single-height Euro-card 100\*160mm

### Description

The V-800/4 is designed to provide multifunction support for handling the very large variety of serial communication protocols available. The card can be programmed to satisfy special serial communications requirements as well as to follow standard formats such as byte orientated synchronous, bit-oriented synchronous and asynchronous. Once programmed the card will relieve the CPU of tasks formally accomplished by the CPU. eg. built in X.25 protocols can leave the card to look after the data framing and CRC checking.

Each channel can handle all asyn-



nous formats, regardless of data size, number of stop bits, or parity requirements. Synchronous formats include character, byte and bit-oriented protocols. Each of the eight channels can be configured for RS232 or as an RS485 multidrop network. The design is based on four Z8530 serial communications controllers. Each of these features it own baud rate generator for asynchronous or synchronous operation. We can supply mixtures of RS-232 and RS-485 buffers as long as they are in pairs, ie 2, 4, 6 or 8 ports with the same serial port buffers.

Within each operating mode, each channel also allows for protocol variations by checking odd or even parity bits, character insertion or deletion, CRC generation and checking, break and abort generation and detection and many other protocol dependent features.

The asynchronous mode offers up to 1M baud with 5-8 data bits, 1-2 stop bits, break, parity, over run and framing error detection.

The synchronous modes offer NRZ, NRZI or FM data encoding with internal character synchronisation and CRC checking. The SDLC/HDLC modes

have comprehensive frame-level control, automatic zero insertion and deletion, 1-field residue handling, abort generation and detection, CRC generation and checking and SDLC loop mode operation. As used in X.25 implementations.

This card is one from the range of 'Dual-bus' cards. It can be supplied in standard single height euro-card form for the VMEbus 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. Each bus option can be purchased as an eight channel board or a four channel board. Each set of 4 channels is brought out via the 'RS' buffers to a 50 way IDC connector. This cable can be split into 4 sections which are pin compatible with the standard serial 25 or 15 way 'D' shells commonly found on IBM PCs and other terminals, see the photograph above.

The card occupies 256 bytes of short address space and provides full vectored interrupt capability on any level.

## Specification

### Serial interface

8/4 full duplex channels

### Asynchronous capabilities

baud rates 50 to 1M bits/sec  
bits per character 5,6,7 or 8  
stop bits 1,1/2 or 2  
parity odd,even or none  
break generation or detection  
error detection  
parity, overrun and framing

### Synchronous capabilities

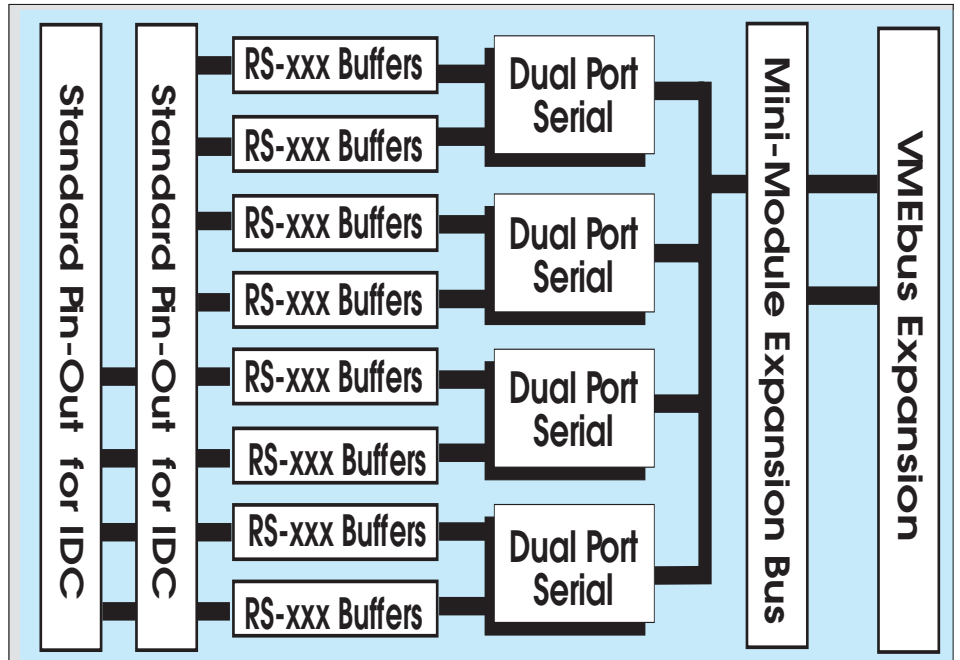
baud rates  
250 Kbit/sec FM decoding  
125 Kbit/sec NRZ1 decoding  
Internal character sync  
phase locked loop  
sync characters  
1 or 2 in separate regs  
auto insert and delete  
CRC generation and detection

### SDLC/HDLC capabilities

abort generation and checking  
auto zero insert and delete  
auto flag insert  
address field recognition  
1-field residue handling  
CRC generation and detection

### SDLC

loop mode



EOP entry and exit

### Output buffers

RS232 single ended  
RS485 differential network

### PRObus

A14:D8 256 byte peripheral bus space  
Mini-Module Compatible  
Size 100\*118mm

### VMEbus Slave Interface

Rev C.1  
Data transfer A16:D8

Modifiers \$29,\$2D

Interrupter IRQ(k) k=1,2...7  
256 bytes short address space  
Size 100\*160mm

### Connectors

2 50-way I/O bus IDC connector  
96-way VMEbus connector or  
64-way PRObus connector

### Power requirements

+5 Volts 200mA (typ)

### Temperature Range

0 to 70 degC

-40 to +85 degC is available if required.  
Please contact us for price and delivery.

### Humidity

0 to 90% RH (non condensing)



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## Order Codes

### PRObus Version

K-800 8 Channel Module RS232 Serial card

K-804 4 Channel Module RS232 Serial card

K-805 4 Channel Module Serial card  
2 x RS-232, 2 x RS-485

### VMEbus Version

V-800 8 Channel VMEbus RS232 Serial card

V-804 4 Channel VMEbus RS232 Serial card

### Miscellaneous

MV-800 Technical Manual

DAZ8030SCC Z8530 Technical Manual

V800 970307

01371 875644



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