

VME / S – Cubed Interface Card

The J & S Marine VME / S-Cubed Interface card provides a means of interfacing a VME Host Computer with two S-Cubed serial highways. Control and configuration of the card is achieved by using Wind River VxWorks® drivers, which can be called from the VME host application software.

The PEC supports a VME slave interface and provides sufficient memory to buffer at least one incoming and one outgoing message. It also provides a least one configuration and one status register that permits the card to be configured and controlled by the host computer.



The S-Cubed Interface PEC implements the S-Cubed protocols, including both normal transfers and Missile Firing Unit transfers (specifically for GWS 26). The PEC includes line terminator circuitry, and can be supplied with or without a front panel.

VME Interface

The card supports an A32 / D32 interface – slave operations only, and can be configured to be addressed on the VME at 16 different address windows, thus permitting non-interference with other cards in the system. The VME address is set by links on the card, and this information is also routed to the P2 connector, thus allowing off-board address configuration. The card also contains a number of registers that can be accessed via the VME interface, and used for such things as:

- Selecting the required VME interrupt level
- Setting the required interrupt vector number
- Selection of 14 possible interrupt events
- Selection of 10 possible self-test modes
- Setting frame activity timeout periods
- Setting a receive frame counter (can be used to generate an interrupt on reaching zero)

S-Cubed Interface

The card supports two S-Cubed interfaces, which operate independently, thus allowing the card to be used on a single network if required. Line terminator modules are included, so it can interface directly onto the S-Cubed network. It will generate and receive S-Cubed frames in accordance with the Ferranti S-Cubed standards SSS1 to SSS7. It also supports an additional timed polled response mode of operation, which is designed to interface specifically with the GWS26 (Sea Wolf) Missile Firing Unit.

J&S Marine operates a policy of continued development, specifications may change without prior notice.



Standard Message Transmission

The card contains a transmit FIFO which can be accessed over the VME interface by the user to transmit a message. The card will divide the message in the FIFO into S-Cubed frames of the appropriate size (determined by user), and then transmit the frame start sequence followed by frame data. A CRC byte will be calculated and appended for each frame, and if required, an interrupt can be generated when a frame has been transmitted. During no-data periods, the S-Cubed idle signal is transmitted.

Standard Message Reception

Messages received from the S-Cubed network are passed back to a receive FIFO, which is then read by the user over the VME interface. Both channels are capable of receiving S-Cubed data simultaneously, and if required, an interrupt can be generated when a frame, or number of frames, have been received. The card can also be configured to generate an interrupt on receiving an invalid frame CRC or on loss of the S-Cubed idle signal.

Timed / Polled-Response Message Transfers

The card supports a timed, polled-response mode of operation whereby a message/poll/response cycle occurs at a rate of 32 Hz.

Specifications

VME Interface:	IEEE1014 Rev C.1 (A32/D32 – slave only).	
S-Cubed Interface:	Compliant with Standards SSS1–SSS7	
Software:	Wind River VxWorks® drivers on CD-ROM	
Power Supplies:	+5V (+/- 0.25V) at 3A max. derived from VME	
Dimensions:	Double Eurocard VME (233.4 mm x 160 mm)	
Environmental:	Operational:	0° to 55°C, 0-85% RH at +45°C
	Storage:	-40° to +110°C
	Cooling:	Fan assistance recommended
MTBF:	25,000 Hours, Mil Std 217F	
Part Numbers:	PEC:	JS 6453 – 1000
	CD-ROM:	06045

For further information, please contact:

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