

We Listen. Think And Create.

COMMUNICATIONS
I/O PRODUCTS

sealevel.com

inspiring
technology

SEALEVEL
PRODUCT CATALOG





We've been listening,
thinking, and creating
for almost 20 years.

Dear Colleague,

Thank you for your interest in Sealevel Systems. Since 1986, our mission has been to develop the most innovative, reliable I/O solutions available. These past 20 years have seen much growth and opportunity for Sealevel Systems. The relationships and confidence we have built and earned is obvious in everything we do, from a 10-year-old ISA card (now RoHS compliant!) to our new modular PC and I/O "building blocks". Watch for more neat products in these areas.

If you are already a Sealevel customer, I thank you. If not, I invite you to try our quality, service, and support. Thanks again.

Sincerely,

Tom O'Hanlan



About Sealevel Systems, Inc.

Since 1986, Sealevel Systems has manufactured serial and digital I/O products recognized as best in class by top commercial, military, and aerospace companies. Thanks to our loyal customers, 2005 marked Sealevel's most successful year. To allow for continued growth and to accommodate you better, we've just moved into a new 45,000 square foot facility on a 17-acre site in Liberty, SC.



Over the last year, we've been busy designing a number of new products. We currently manufacture over 250 standard I/O devices enabling interface to your host system via Ethernet, USB, or a variety of bus types including PCI, PC/104, and PCMCIA. At the system level, the Relio™ family of solid-state embedded I/O servers elevates industrial computing to new degrees of expandability and reliability. Please visit www.sealevel.com for details, technical documentation, application examples, and a complete listing of accessories.

Technical Support

Our experienced staff of application engineers provides the best assistance available. Call us before you order for help selecting the right product or after the sale for answers to your hardware or software questions. Knowledgeable, friendly technical support is available Monday through Friday from 8am to 5pm EST.

Lifetime Warranty

We are so confident that our I/O products will give you the dependability you expect that we extend an industry-leading Lifetime Warranty. If any Sealevel I/O product fails during normal use, simply contact us for fast repair or replacement.

RoHS/WEEE Compliance & Green Initiatives

Sealevel Systems is committed to providing our customers reliable products that comply with RoHS (2002/95/EC), WEEE (2002/96/EC), and other green initiatives being adopted by the global community. The RoHS directive restricts the use of lead and certain other hazardous materials in electronic products marketed to the European Union. Sealevel is designing all new products for RoHS compatibility as well as modifying legacy products and manufacturing processes for RoHS compliance. We will continue to offer **both** RoHS compliant and non-compliant products to meet global and domestic customer demand. Please call us or visit our website for up-to-date information.

The Earth was not given to us by our parents, it is loaned to us by our children.

- Proverb

Custom Product Design

Some of our best new product ideas come from our customers. Sealevel's talented team of hardware and software engineers can take custom designs from inception to production in as little as six weeks. Call us today with your custom requirements. **We'll Listen. Think. And Create.**



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Serial I/O Ethernet

Connect with confidence. SeaLINK Ethernet serial servers offer the easiest way to network enable RS-232, RS-422, and RS-485 serial devices. Powered by a 32-bit embedded microprocessor, SeaLINK products reliably communicate over multiple ports at sustained rates up to 230K bps. All SeaLINK devices use industry-standard TCP/IP protocol (RFC-2217) and allow any host to access serial ports as virtual COM ports. Serial tunneling is also supported, allowing two native serial devices to communicate over a network.

One & Two-Port Ethernet Serial Servers

Mount compact single and dual-port SeaLINK products almost anywhere to access serial peripherals from your network. The popular, optically isolated 4103 includes an isolated digital input and Reed relay output to enable remote monitoring and control capabilities.

All Ethernet serial servers include:

- » Power supply
- » Ethernet patch cable
- » Crossover cable
- » Serial loopback
- » QuickStart guide

Additional accessories are available at www.sealevel.com.



One & Two-Port Ethernet Serial Servers						
Item#	Ports	RS-232	RS-422	RS-485	Isolated	Price
4101	1	•				\$189
4102	1		•	•		\$199
4103	1	•	•	•	•	\$299
4104	1	•	•	•		\$209
4201	2	•				\$349
4202	2		•	•		\$369
4203	2	•	•	•		\$389

Four, Eight, & Sixteen-Port Ethernet Serial Servers

Item#	Ports	RS-232	RS-422	RS-485	Price
4401	4	•			\$499
4402	4		•	•	\$549
4403	4	•	•	•	\$569
4801	8	•			\$699
4802	8		•	•	\$749
4803	8	•	•	•	\$799
4161	16	•			\$999
4162	16		•	•	\$1049
4163	16	•	•	•	\$1099

Four, Eight, & Sixteen-Port Ethernet Serial Servers

Boasting fast throughput and flexible configuration, SeaLINK multiport Ethernet serial servers allow connection of up to 16 serial devices to a network. Four and eight-port models are designed for table or DIN rail mounting, while 16-port products are 1U, 19" rackmount compatible.



Serial I/O

USB

USB is ubiquitous. Take advantage with SeaLINK USB serial adapters. Whether you require one serial port or sixteen, SeaLINK USB devices will have you quickly communicating with RS-232, RS-422, and RS-485 peripherals. Unlike traditional UART-based devices, SeaLINK USB products use a state-machine architecture that reduces host processor overhead for faster, more reliable communications.



One & Two-Port USB Serial Adapters

SeaLINK USB devices are the easiest, most reliable way to add serial ports to a PC. The 2106 integrates a six-foot cable and is ruggedized for use in industrial or marine environments. The 2108 and 2208 connect to standard USB header connectors found on most motherboards and mount in any available PC slot. All single and dual-port SeaLINK devices are powered by the USB connection.

One & Two-Port USB Serial Adapters

Item#	Ports	RS-232	RS-422	RS-485	Isolated	USB Powered	Connector	Price
2101	1	•				•	DB-25M	\$89
2102	1		•	•		•	DB-25M	\$129
2103	1	•			•	•	DB-25M	\$129
2104	1		•	•	•	•	DB-25M	\$139
2105	1	•				•	DB-9M	\$79
2106	1		•			•	DB-9M	\$109
2108	1	•				•	DB-9M	\$69
2201	2	•				•	DB-9M	\$159
2202	2		•	•		•	DB-9M	\$189
2203	2	•	•	•		•	DB-9M	\$229
2208	2	•				•	DB-9M	\$129

SERIAL I/O - USB



Four, Eight, & Sixteen-Port USB Adapters

Item#	Ports	RS-232	RS-422	RS-485	USB Powered	Connector	Price
2401	4	•			•	DB-9M	\$209
2402	4		•	•	•	DB-9M	\$239
2403	4	•	•	•	•	DB-9M	\$279
2801	8	•			•	DB-9M	\$399
2802	8		•	•	•	DB-9M	\$449
2803	8	•	•	•	•	DB-9M	\$499
2161	16	•				RJ-45	\$729
2167	16	•		•		RJ-45	\$799

Four, Eight, and Sixteen-Port USB Serial Adapters

Designed for quick field installation, multiport SeaLINK USB products offer fast, reliable RS-232, RS-422, and RS-485 communications. Sixteen-port devices include two convenient USB 1.1 downstream connections to allow daisy chaining SeaLINK USB devices or interfacing standard USB peripherals. Each port on the 2167 is individually configurable for RS-232 or RS-485 by simply selecting the appropriate cable pinout.

Easily customize serial wiring connections using DB9, DB25, RJ45, and screw terminal accessories. Visit www.sealevel.com for details.

Serial I/O

PCI

Still going strong. Sealevel's PCI bus serial boards offer the widest choice of I/O connectivity available. Options include RS-232, RS-422/485, and RS-232/422/485 multi-interface boards. Choose from low profile or standard PCI form factors as well as universal bus (3.3V and 5V) versions compatible with new and legacy computer systems. Enhanced UART options are available that support custom baud rates and 9-bit protocol. A variety of cabling and termination accessories simplify installation, and Sealevel's commitment to long-term availability guarantees the board you design in today will be available and supported for years to come.

In 1994, Sealevel invented the RS-485 'auto-enable' circuit that automatically handles RS-485 driver enable. Many competing products use inferior methods of RS-485 control, including a 'one-shot' circuit, that limits data rates and can result in data loss. Boards with the Sealevel 'auto-enable' circuit are compatible with standard COM drivers and can be utilized for RS-485 communications at virtually any baud rate and word length.

Low Profile
PCI



Low Profile PCI RS-232

Ports 1
Item # 7104
Price \$109

- » 16C850 buffered UART with 128-byte FIFOs
- » Data rates to 460.8K bps
- » All modem control signals implemented
- » DB-9M connector

Low Profile
PCI



Low Profile PCI RS-422/485

Ports 1
Item # 7107
Price \$129

- » Configurable for RS-422 or RS-485
- » 16C950 buffered UART with 128-byte FIFOs
- » Data rates to 921.6K bps
- » Accepts +5/+12VDC and passes voltage through on connector pin 9
- » DB-9M connector

Low Profile
PCI



Low Profile PCI RS-232/422/485

Ports 1
Item # 7106
Price \$169

- » Configurable for RS-232, RS-422, or RS-485
- » RS-485 auto-enable circuit
- » 16C850 buffered UART with 128-byte FIFOs
- » Data rates to 460.8K bps
- » DB-25M connector

Low Profile
PCI



Low Profile PCI Isolated RS-232/422/485

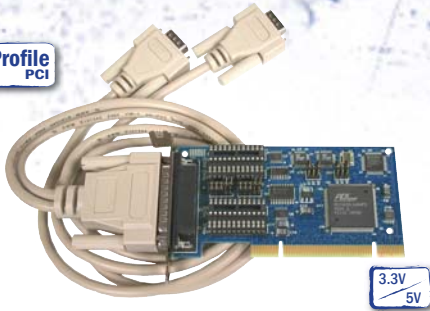
Ports 1
Item # 7108
Price \$229

- » Configurable for RS-232, RS-422, or RS-485
- » RS-485 auto-enable circuit
- » Optical isolation provides protection against transients and ground loops
- » 16C850 buffered UART with 128-byte FIFOs
- » Data rates to 921.6K bps
- » DB-25M connector



denotes universal bus PCI compatible with 3.3V & 5V systems

Low Profile PCI

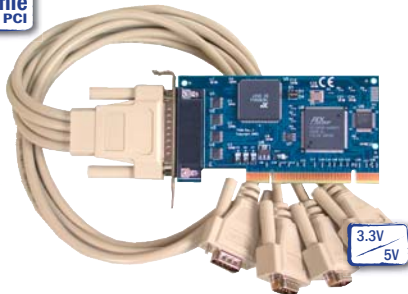


Low Profile PCI RS-232/422/485

Ports 2
Item # 7205
Price \$209

- » Each port individually configurable for RS-232, RS-422, or RS-485
- » RS-485 auto-enable circuit
- » 16C850 buffered UARTs with 128-byte FIFOs
- » Data rates to 460.8K bps
- » 36" cable terminates to two DB-9M connectors

Low Profile PCI

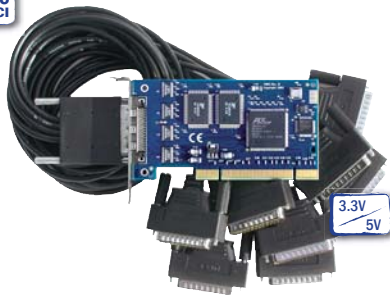


Low Profile PCI RS-232

Ports 4
Item # 7406-DB9
Price \$229

- » 16C854 buffered UART with 128-byte FIFOs
- » Data rates to 460.8K bps
- » All modem control signals implemented
- » 36" cable terminates to four DB-9M connectors
- » Available with DB-25M fan-out cable

Low Profile PCI



Low Profile PCI RS-232

Ports 8
Item # 7803
Price \$399

- » 16C864 buffered UARTs with 128-byte FIFOs
- » Data rates to 460.8K bps
- » All modem control signals implemented
- » 36" cable terminates to eight DB-25M connectors
- » Available with DB-9M fan-out cable



PCI Isolated RS-232/422/485

Ports 1
Item # 7103
Price \$229

- » Configurable for RS-232, RS-422, or RS-485
- » RS-485 auto-enable circuit
- » Optical isolation provides protection against transients and ground loops
- » 16C850 buffered UART with 128-byte FIFOs
- » Data rates to 460.8K bps
- » DB-25M connector



PCI RS-232

Ports 2
Item # 7202
Price \$129

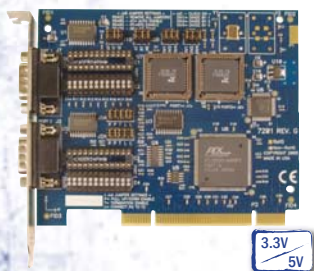
- » 16C550 buffered UARTs with 16-byte FIFOs
- » Data rates to 460.8K bps
- » All modem control signals implemented
- » Two DB-9M connectors



PCI RS-422/485

Ports 2
Item # 7204
Price \$189

- » Each port individually configurable for RS-422 or RS-485
- » RS-485 auto-enable circuit
- » 16C550 buffered UARTs with 16-byte FIFOs
- » Data rates to 460.8K bps
- » Two DB-9M connectors



PCI RS-232/422/485

Ports 2
Item # 7201
Price \$209

- » Each port individually configurable for RS-232, RS-422, or RS-485
- » RS-485 auto-enable circuit
- » 16C850 buffered UARTs with 128-byte FIFOs
- » Data rates to 460.8K bps
- » Two DB-9M connectors



PCI Isolated RS-232/422/485

Ports 2
Item # 7203
Price \$329

- » Each port individually configurable for RS-232, RS-422, or RS-485
- » RS-485 auto-enable circuit
- » Optical isolation provides protection against transients and ground loops
- » 16C850 buffered UARTs with 128-byte FIFOs
- » Data rates to 460.8K bps
- » Two DB-9M connectors



PCI RS-232

Ports 4
Item # 7401-DB9
Price \$229

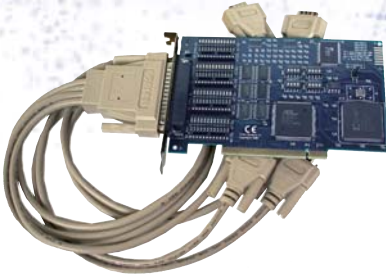
- » 16C554 buffered UART with 16-byte FIFOs
- » Data rates to 460.8K bps
- » All modem control signals implemented
- » 36" cable terminates to four DB-9M connectors
- » Available with DB-25M fan-out cable



PCI RS-422/485

Ports 4
Item # 7402
Price \$279

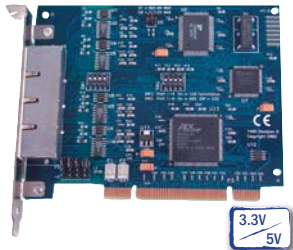
- » Each port individually configurable for RS-422 or RS-485
- » RS-485 auto-enable circuit
- » 16C550 buffered UARTs with 16-byte FIFOs
- » Data rates to 460.8K bps
- » 36" cable terminates to four DB-9M connectors



**PCI
RS-232/422/485**

Ports 4
Item # 7404
Price \$319

- » Each port individually configurable for RS-232, RS-422, or RS-485
- » RS-485 auto-enable circuit
- » 16C864 buffered UART with 128-byte FIFOs
- » Data rates to 460.8K bps
- » 36" cable terminates to four DB-9M connectors



**PCI
RS-232/485**

Ports 4
Item # 7405
Price \$319

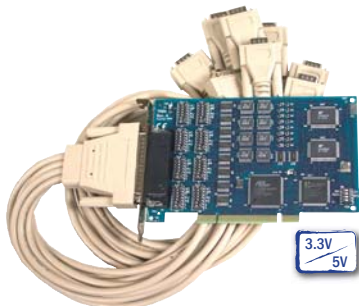
- » Each port individually configurable for RS-232 or RS-485
- » RS-485 auto-enable circuit
- » 16C864 buffered UART with 128-byte FIFOs
- » Data rates to 921.6K bps
- » Four RJ45 connectors
- » Power (+5V or +12V) provided on pin 5 of each connector



**PCI
RS-232**

Ports 8
Item # 7801
Price \$299

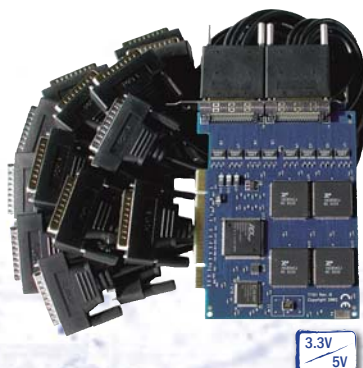
- » 16C554 buffered UARTs with 16-byte FIFOs
- » Data rates to 460.8K bps
- » All modem control signals implemented
- » 36" cable terminates to eight DB-25M connectors
- » Available with DB-9M fan-out cable



**PCI
RS-232/422/485**

Ports 8
Item # 7804
Price \$449

- » Each port individually configurable for RS-232, RS-422, or RS-485
- » RS-485 auto-enable circuit
- » 16C864 buffered UARTs with 128-byte FIFOs
- » Data rates to 921.6K bps
- » 36" cable terminates to eight DB-9M connectors



**PCI
RS-232**

Ports 16
Item # 7161
Price \$599

- » 16C854 buffered UARTs with 128-byte FIFOs
- » Data rates to 460.8K bps
- » All modem control signals implemented
- » Two 36" cables terminate to 16 DB-25M connectors
- » Available with DB-9M fan-out cables

Serial I/O

PC/104

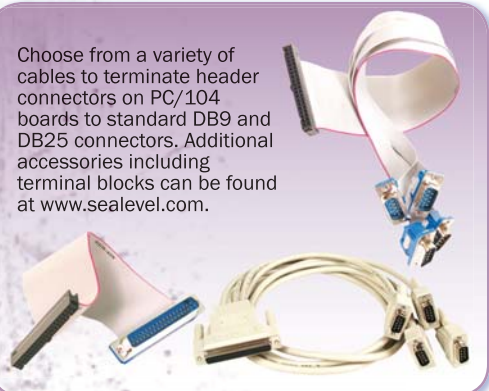
Embed with assurance. Sealevel PC/104 modules offer flexible serial expansion options and are designed to meet the core needs of PC/104 applications requiring high reliability, small size, and long-term availability. Sealevel PC/104 modules are available in extended temperature versions (-40 °C to +85 °C) suitable for the most demanding applications.

PC/104 Modules

For easy configuration even after installation, 3540 modules offer four serial ports individually software-selectable for RS-232, RS-422, or RS-485. For serial intensive applications, the 3588 provides eight two-wire RS-485 ports. The board includes UARTs with 128-byte FIFOs for fast, error-free communications at data rates to 921.6K bps.



Choose from a variety of cables to terminate header connectors on PC/104 boards to standard DB9 and DB25 connectors. Additional accessories including terminal blocks can be found at www.sealevel.com.



PC/104 Serial Adapters

Item#	Ports	RS-232	RS-422	RS-485	Price
3551	1	•			\$99
3550	1		•	•	\$109
3502	2	•	•	•	\$169
3542	4	•			\$179
3543	4		•	•	\$189
3544	4	•	•	•	\$199
3540	4	•	•	•	\$279
3588	8			•	\$219

PC/104 I/O Kits

Sealevel PC/104 kits offer a standardized method for interfacing real-world I/O connections. Simply design our 3.2" x 3.1" "Portholes" into your enclosure to mix and match PC/104 I/O kits for maximum configurability. See our PC/104 kits in action in our Relio embedded I/O servers (pp. 20-21). Find details on our full line of PC/104 products and accessories at www.sealevel.com.

4 Port RS-232/422/485



Item# 3541-KT

16 Opto-Isolated Inputs/ 16 Reed Relay Outputs



Item# 3730-KT

8 Channel A/D, 2 Channel D/A



Item# 3820-KT

Wireless Ethernet



Item# 3950-KT

Serial I/O

PCMCIA & CompactFlash®

Get mobile. Sealevel PCMCIA and CompactFlash cards add RS-232, RS-422, and RS-485 functionality to laptops, PDAs, tablets, and other portable devices not normally equipped with serial ports. Robust software drivers make installation a snap. All products conform strictly to industry specifications guaranteeing compatibility with your host device.

PCMCIA Cards

Easily add one or two serial ports via PCMCIA expansion slots. The flexible 3623 PCMCIA serial interface card provides two serial ports individually configurable for RS-232, RS-422, or RS-485. The card implements all modem control signals for maximum compatibility with a wide range of peripherals. The 3604 uses a high-speed UART with 128-byte FIFOs and supports RS-232 data rates to 460.8K bps.

PCMCIA Serial Cards

Item#	Ports	RS-232	RS-422	RS-485	Connector	Price
3603	1	•			DB-25M	\$199
3604	1	•			DB-25M	\$249
3602	1		•	•	DB-25M	\$199
3622	2	•			DB-9M	\$299
3623	2	•	•	•	DB-25M	\$339



Need PCMCIA cable strain relief? The BK-SR2 is available at www.sealevel.com.



CompactFlash Adapters

Sealevel CompactFlash modules are compatible with both 3.3V and 5V host devices and can operate at speeds up to 921.6K bps. Designed for harsh environments, the 3201 dual-port RS-232 card provides optical isolation to protect the host device from potentially damaging voltage transients and ground loops. All Sealevel CompactFlash serial cards are supported by Windows® CE, CE .NET, and Windows Mobile® equipped Pocket PCs, PDAs, and handheld PCs. Simply insert the card in an available CompactFlash slot and it will be recognized by the host device.

Adapt your CompactFlash serial interface for use in low profile PCI and PCMCIA slots. See www.sealevel.com for more information.



CompactFlash Serial Adapters

Item#	Ports	RS-232	RS-422	RS-485	Isolated	Connector	Price
3101	1	•				DB-9M	\$119
3102	1		•	•		DB-9M	\$149
3201	2	•			•	DB-9M	\$189

Serial I/O Synchronous

When timing matters. Critical military, aerospace, and commercial applications depend on Sealevel designs for the most reliable synchronous communications available. Choose from a variety of RS-232 and RS-232/422/485 multi-interface products that support HDLC/SDLC protocol using our SeaMAC V4 device driver. SeaMAC V4 also supports certain configurations of monosync, bisync, and raw modes. Optional cables are available to connect RS-449, RS-530, RS-530A, V.35, and X.21 interfaces. Contact our knowledgeable technical support staff or visit our website for more details.

PCMCIA & Low Profile PCI

Perfect for a variety of portable synchronous serial applications, the 3612 PCMCIA serial interface utilizes a Zilog® Z85233 Enhanced Serial Communication Controller (ESCC) and terminates to a DB-25M connector. For high-speed applications, the 5104 low profile PCI serial interface provides one synchronous serial port capable of data rates to 10M bps. The board utilizes a Zilog Z16C32 Integrated Universal Serial Controller (IUSC) with built-in DMA controller, 256 bytes static memory, and 32-byte FIFOs. The 5104 offers universal bus (3.3V and 5V) compatibility with both new and legacy computers.



Ribbon and molded interface cables are available for RS-232/422/485/449/530, V.35, and X.21. Additional accessories are available at www.sealevel.com.

Serial I/O - Synchronous

Item#	Bus	RS-232	RS-422	RS-485	Controller	Max. Data	Price
5103	Low Profile PCI	•			Z85230	128K bps	\$299
5104	Low Profile PCI	•	•	•	Z16C32	10M bps	\$499
5102	PCI	•	•	•	Z85230	128K bps	\$309
3512	PC/104	•	•	•	Z85230	128K bps	\$259
3514	PC/104-Plus	•	•	•	Z16C32	10M bps	\$499
3612	PCMCIA	•	•	•	Z85233	64K bps	\$339

PC/104-Plus

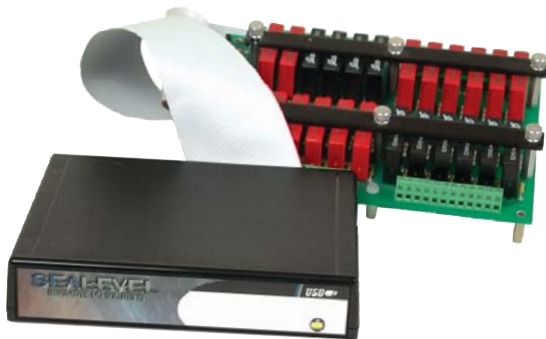
The 3514 PC/104-Plus serial interface provides one synchronous serial port configurable for RS-232, RS-422, or RS-485. The 3514 utilizes a Zilog Z16C32 IUSC with built-in DMA controller, 256 bytes static memory, and 32-byte FIFOs. The module is capable of data rates to 10M bps and can operate with either 3.3V or 5V signal levels for maximum compatibility with a variety of host processors.



Digital I/O

USB

Control more with USB. Sealevel USB digital I/O products are an effective way to monitor and control a variety of signals from sensors, switches, push buttons, and industrial automation systems. Choose from optically isolated inputs, Reed and Form C relay outputs, and TTL interfaces. DIN-rail mounting is supported, and extended temperature versions are available. To simplify installation, a printed copy of the *USB Digital I/O QuickStart Guide* is included with all USB digital I/O orders.



TTL Interface

Monitor and control high-voltage AC and DC loads from any computer's USB port with Sealevel 8203 and 8205 modules. Both products use standard 50-pin ribbon cable connections compatible with industry-standard relay racks. Find details on our line of solid-state relays and relay racks at www.sealevel.com.

USB Digital I/O

Item#	Inputs	Outputs	USB Powered	Price
8209	8 Optically Isolated	8 Reed Relays	•	\$259
8206	8 Optically Isolated	8 Form C Relays	•	\$269
8207	16 Optically Isolated		•	\$229
8208		16 Reed Relays	•	\$299
8203	48 Channel Parallel I/O (TTL)			\$229
8205	96 Channel Parallel I/O (TTL)			\$279



Isolated Inputs/Relay Outputs

The versatile 8206 adapter provides 8 optically isolated inputs and 8 Form C relay outputs well-suited to many PC-based control and automation applications. The Form C relays are rated up to 60VDC @ 2A, while the inputs are compatible with 24VDC signals. The 8206 is powered from the USB connection and onboard removable screw terminals simplify field wiring.



The Digital I/O Handbook, available at www.sealevel.com, clearly explains real-world digital input/output implementation from both a hardware and software perspective.

SeaI/O

Digital I/O

Seal/O Data Acquisition Modules

Distribute control. Seal/O modules connect to a host PC or controller via Ethernet, USB, RS-485, or RS-232, and multiple units can be daisy chained using convenient pass-through connectors to create a powerful distributed control and monitoring network.

Choose from a variety of I/O configurations, each designed for maximum flexibility and easy field wiring. For quick software implementation, application programs or third-party software can use Sealevel's SeaMAX libraries or industry-standard Modbus protocol.

- » Powerful software configuration & diagnostic tools
- » Address selectable via software or switch
- » Easily daisy chain multiple units
- » Selectable RS-485 line conditioning
- » Flexible mounting options
- » Modbus TCP and Modbus RTU compatible



Intelligent Control	Choose One	BASE MODULES	HOST INTERFACE	BENEFITS	PRICE
		E-Series	Ethernet Modbus TCP	E-Series modules are compatible with 10/100BaseT Ethernet and allow remote monitoring and control of digital and analog I/O from anywhere on your network. Compatibility with Modbus TCP allows communication with Modbus-compliant devices over any TCP/IP network.	From \$419
		M-Series	RS-485 Modbus RTU	M-Series and S-Series modules offer a convenient method for adding digital I/O to industrial computers and legacy PLC systems. The modules communicate with a host using industry-standard Modbus RTU protocol and are compatible with third-party Modbus software.	From \$289
		S-Series	RS-232 Modbus RTU		From \$309
		U-Series	USB Modbus RTU	U-Series modules provide digital and analog I/O through any available USB port. Sealevel is the first to allow a distributed I/O network to be controlled from a traditional point-to-point USB host connection transforming any USB-equipped PC into a powerful controller.	From \$299
Expandable I/O	Add Many	EXPANSION MODULES	SEAI/O INTERFACE	BENEFITS	PRICE
		N-Series	Connects to Base Modules via RS-485 Modbus RTU	N-Series expansion modules communicate with Base modules via RS-485 Modbus RTU and allows mixing and matching up to 246 expansion units to create the most efficient I/O configuration. Expansion modules can be located together with the Base module, or a network of expansion modules can be distributed throughout your facility using RJ45 pass-through connectors included on each Seal/O device and inexpensive CAT5 cabling.	From \$239

SeaI/O – 16 Isolated Inputs/ 16 Reed Relay Outputs

Item # 410 Series
Price From \$309



- » 16 nonpolarized optically isolated inputs
- » 30VDC max. input
- » 300V isolation
- » 6.2K ohms series input resistance
- » 16 SPST Form A Reed relays
- » 60VDC @ 500mA max. contact rating

SeaI/O – 16 Isolated Inputs/ 8 Form C Outputs

Item # 420 Series
Price From \$279



- » 16 nonpolarized optically isolated inputs
- » 30VDC max. input
- » 300V isolation
- » 6.2K ohms series input resistance
- » 8 SPDT Form C relays
- » 60VDC @ 2A max. contact rating

SeaI/O – 32 Isolated Inputs

Item # 430 Series
Price From \$269



- » 32 nonpolarized optically isolated inputs
- » 30VDC max. input
- » 300V isolation
- » 6.2K ohms series input resistance

SeaI/O – 32 Reed Relay Outputs

Item # 440 Series
Price From \$359



- » 32 SPST Form A Reed relays
- » 10VA max. power
- » 60VDC max. contact voltage
- » 500mA max. contact current

SeaI/O – 16 Form C Relay Outputs

Item # 450 Series
Price From \$289



- » 16 SPDT Form C relays
- » 60VDC max. contact voltage
- » 2A max. contact current
- » Normally-open and normally-closed contacts on connector

SeaI/O – 96 Bit TTL I/O

Item # 462 & 463 Series
Price From \$239



- » 96 bits of buffered TTL I/O
- » Programmable as input or output in 8-bit groups
- » 462 Series - Two DB-78 connectors
- » 463 Series - Standard 50-pin ribbon cables

SeaI/O – Analog & Digital I/O Combo

Item # 470 Series
Price From \$489



- » 8 differential or 16 single-ended 12-bit A/D inputs
- » Inputs configurable for 4-20mA inputs
- » 2 12-bit D/A outputs
- » 8 optically isolated inputs
- » 8 open-collector 24V outputs

SeaI/O – 8 Isolated Inputs/ 8 High-Current Form C Outputs

Item # 520 Series
Price From \$299



- » 8 nonpolarized optically isolated inputs
- » 30VDC max. input
- » 8 high-current Form C relays
- » 240VAC/125VDC max. contact rating
- » 7A max. contact current

Digital I/O PCI

Place your PC in control. Sealevel PCI digital I/O boards offer a variety of input and output configurations to best match your application requirements. Optically isolated inputs protect the host computer from transients and ground loops commonly found in industrial environments, while Reed and Form C relay outputs provide reliable, long-life switch closures. Reed relays are normally open and close when energized. Form C relays include both normally open and normally closed contacts and can handle higher current loads. For high-voltage requirements, our TTL interfaces provide convenient connections to industry-standard solid-state relay racks.

Choose from a number of helpful accessories to simplify digital I/O applications. Terminal blocks that break out molded cables to screw terminals are especially helpful for connecting field wiring.



Terminal blocks, relay racks, solid-state relays, and additional digital I/O accessories are available at www.sealevel.com.

Low Profile
PCI



Low Profile PCI 8 Isolated Inputs/ 8 Reed Relay Outputs

I/O	8/8
Item #	8012
Price	\$239

- ▶ Eight optically isolated inputs
- ▶ 30VDC max. input
- ▶ Eight SPST Form A Reed relays
- ▶ 60VDC @ 500mA max. contact rating
- ▶ Power (+5V and +12V) and ground provided on connector
- ▶ DB-44F connector

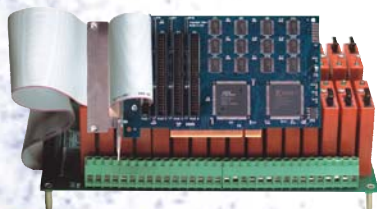
Low Profile
PCI



Low Profile PCI 24 Channel TTL

I/O	24
Item #	8018
Price	\$159

- ▶ 24 channels of buffered TTL I/O
- ▶ Each 8-bit port individually configurable as input or output
- ▶ Each bit will sink 24mA or source 15mA
- ▶ 10K pull up resistors on each bit
- ▶ +5V power and ground provided on connector
- ▶ 40" cable terminates to industry-standard 50-pin IDC connector



PCI 32/48/96 Channel TTL

I/O	Item #	Price
32	8010	\$179
48	8005	\$199
96	8009	\$299

- ▶ 32, 48, or 96 channels of buffered TTL I/O
- ▶ Each 8-bit port individually configurable as input or output
- ▶ Each bit will sink 24mA or source 15mA
- ▶ 10K pull up resistors on each bit
- ▶ +5V power and ground provided on connector
- ▶ Industry-standard 50-pin header connectors



denotes universal bus PCI compatible with 3.3V & 5V systems



**PCI
16 Isolated Inputs**

I/O 16
Item # 8006
Price \$219

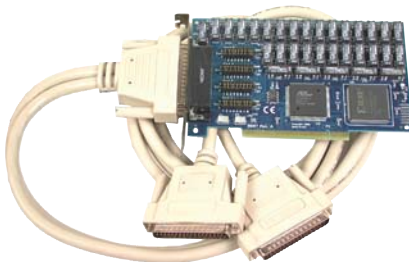
- » 16 optically isolated inputs
- » 30VDC max. input
- » 300V isolation
- » Power (+5V and +12V) and ground provided on connector
- » DB-37F connector



**PCI
16 Reed Relay Outputs**

I/O 16
Item # 8003
Price \$259

- » 16 SPST Form A Reed relays
- » 60VDC @ 500mA max. contact rating
- » Power (+5V and +12V) and ground provided on connector
- » DB-37M connector



**PCI
32 Reed Relay Outputs**

I/O 32
Item # 8007
Price \$469

- » 32 SPST Form A Reed relays
- » 60VDC @ 500mA max. contact rating
- » Power (+5V and +12V) and ground provided on connector
- » 72" cable terminates to two DB-37M connectors



**PCI
16 Isolated Inputs/
16 Reed Relay Outputs**

I/O 16/16
Item # 8004
Price \$399

- » 16 optically isolated inputs
- » 30VDC max. input
- » 300V isolation
- » 16 SPST Form A Reed relays
- » 60VDC @ 500mA max. contact rating
- » 72" cable terminates to DB-37M and DB-37F connectors



**PCI
8 Isolated Inputs/
8 Form C Relay Outputs**

I/O 8/8
Item # 8011
Price \$249

- » Eight optically isolated inputs
- » 30VDC max. input
- » 300V isolation
- » Eight SPDT Form C relays
- » 60VDC @ 2A max. contact rating
- » DB-44F connector

Digital I/O

PC/104 & eI/O

Optimize I/O solutions. Sealevel PC/104 and eI/O modules interface to a wide variety of inputs and outputs and are perfect for military or commercial applications where small size and ruggedness are paramount.

For maximum flexibility, eI/O modules offer expansion in groups of eight inputs or eight outputs per module. This modularity allows the user to mix and match modules providing relay, optically isolated in/out, and other commonly used I/O to create a customized embedded I/O subsystem optimized for size and cost-effectiveness. Connection to eI/O modules is accomplished via an industry-standard 50-pin cable interface (PB24/32) compatible with a number of bus-based controllers including Sealevel's PIO series of boards and USB adapters.

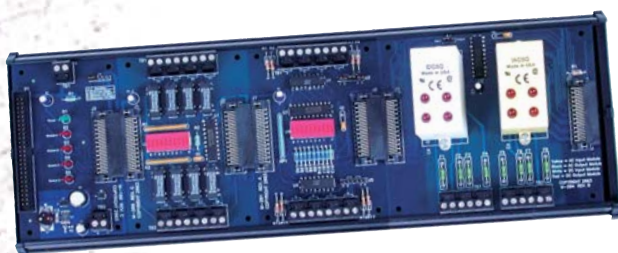


Quad Solid-State Relay (QSSR) modules are available at www.sealevel.com to connect high-voltage AC and DC signals.

PC/104 Digital I/O

Item#	Inputs	Outputs	Price
3710		16 Reed Relays	\$249
3720	16 Optically Isolated		\$219
3730	16 Optically Isolated	16 Reed Relays	\$279
3701	48 Channel Parallel I/O (TTL)		\$149

Note: PC/104 analog I/O modules also available



eI/O Modules

Item#	Baseboards		Price
M200	Baseboard Module Interfaces to eI/O Input/Output Boards		\$69
M210	Expansion Module Connects PC/104 3810/3820 Boards to eI/O Input/Output Boards and 5B Signal Conditioning Modules		\$89
Item#	Inputs	Outputs	Price
M240	8 Optically Isolated		\$79
M250		8 Opto-Isolated Darlington Array, Open-Collector	\$79
M251		8 Opto-Isolated Source Driver, Emitter-Follower	\$79
M260		8 Form A Relays	\$89
M270		8 Form C Relays (2A)	\$99
M271		8 Form C Relays (8A)	\$109
M280	Carrier Board Accepts 1 or 2 QSSR Input/Output Modules		\$69

Industrial Computing

Relio Embedded I/O Servers

Expand with reliability. Designed for I/O intensive applications where ruggedness is a must, the Relio family of embedded I/O servers combines the reliability of a PLC with the configurability of an industrial computer. Relio systems are completely fanless. Embedded software can run from CompactFlash, eliminating hard drives and resulting in true solid-state operation. The Relio's unmatched expansion capabilities can be readily adapted to a wide variety of OEM and industrial applications. All Relio systems offer:

- » Bullet-Proof Reliability
- » Solid-State Operation
- » Versatile I/O Selection
- » Wide Temperature Range
- » Shock and Vibration Tolerance
- » Dependable Design Consistency
- » Long-Term Availability

Choose from three versions of Relio systems, each providing powerful standard features and expansion options.



Relio™
R1000



R1000 systems provide all core processing functions in a rugged metal enclosure small enough to mount in virtually any application. Based on a 600MHz ULV Intel® Celeron® M processor, the system offers excellent computing power, low power consumption, and wide operating temperature range. Standard I/O includes 10/100BaseT Ethernet, dual serial ports, USB, and analog video. Local or remote I/O expansion is available using Sealevel Seal/O modules.

Available in a variety of configurations providing optically isolated inputs, relay outputs, and TTL interfaces to industry-standard solid-state relay racks, up to 247 Seal/O modules can be controlled by the R1000 via RS-485 Modbus RTU. Using the convenient VESA mounting adapter, the R1000 and Seal/O expansion modules mount directly to LCD monitors to create a robust, expandable flat panel computing solution. Call today or visit our website for more information.

Features

- 600MHz ULV Intel Celeron M processor
- CompactFlash socket
- Up to 1GB RAM
- 10/100BaseT Ethernet
- Two serial ports
- High-speed USB 2.0 port
- Dual USB 1.1 ports
- Analog video
- 9-30VDC power input
- Compact size - 7.5"(L) x 5.1"(W) x 1.8"(H)
- Wide temperature operation - 0°C to 50°C

R1000 with Seal/O Expansion



R1000 with Seal/O Expansion and Flat Panel Monitor



Relio™ R2000

Available with up to a 1.4GHz Intel Pentium® M processor, the R2000 offers exceptional performance and flexible I/O expansion. Fanless operation is possible up to 50°C, and using the Windows XP Embedded operating system you can operate from CompactFlash, achieving the ultimate in reliability — no moving parts.

Packed with standard features including dual 10/100BaseT Ethernet, two serial ports, and two USB ports, the R2000 excels in I/O intensive applications. Expand with up to three PC/104 kits (p. 10) that terminate to real-world connectors on the rear of the R2000 chassis. A Seal/O module (p. 14) or a CDRW/DVD can be installed in the front of the chassis.

Features

Processors

- ▶ 400MHz ULV Intel Celeron
- ▶ 650MHz ULV Intel Celeron
- ▶ 933MHz LV Intel Pentium III
- ▶ 600MHz ULV Intel Celeron M
- ▶ 1.0GHz ULV Intel Celeron M 373
- ▶ 1.4GHz Intel Pentium M 738

CompactFlash socket

Optional hard disk drive

Up to 1GB RAM

Dual 10/100BaseT Ethernet

Two serial ports

Dual USB 1.1 ports

Analog video

5VDC power input; optional redundant 18-30VDC input

11.4"(W) X 8.0"(D) X 4.4"(H)

Wide temperature operation - 0°C to 50°C

DC Power Input

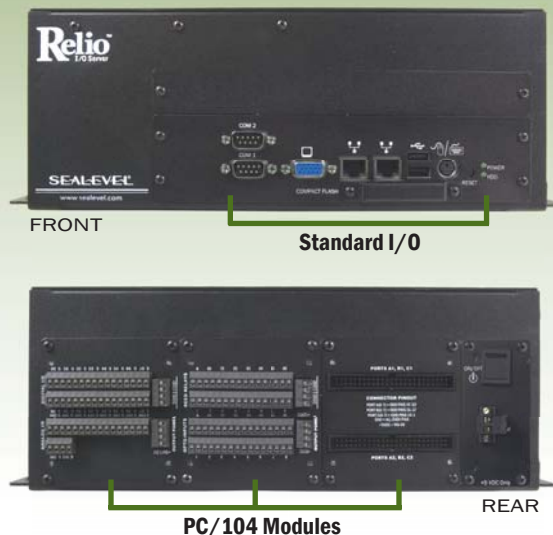
R2000 systems can be powered from a 5VDC source or choose the redundant 18-30VDC option for ultimate reliability.



R2000 with Optional CD-ROM Installed



R2000 with Three PC/104 Expansion Modules Installed



R2000 with Sealevel Seal/O & PC/104 Expansion Installed



Two Expansion Sites Available When Seal/O or CD-ROM Is Installed

Relio™ R3000

Designed for installation in 19" EIA racks, Relio R3000 systems offer a wealth of standard I/O including dual 10/100BaseT Ethernet, four RS-232/422/485 serial ports, four USB ports, and analog video. For I/O intensive applications, interface to a wide variety of real-world devices using Sealevel's robust PC/104 kits (p. 10) or Seal/O modules (p. 14).

R3000 systems offer unmatched expansion capabilities. Unique I/O plates allow access to PC/104 or Seal/O connections on both the front and rear of the enclosure. Maximum configurations allow three Seal/O modules with three PC/104 kits, or six Seal/O modules. An optional CD-ROM can replace one Seal/O module.

Features

Processors

- ▶ 400MHz ULV Intel Celeron
- ▶ 650MHz ULV Intel Celeron
- ▶ 933MHz LV Intel Pentium III
- ▶ 600MHz ULV Intel Celeron M
- ▶ 1.0GHz ULV Intel Celeron M 373
- ▶ 1.4GHz Intel Pentium M 738

CompactFlash socket

Optional hard disk drive

Up to 1GB RAM

Dual 10/100BaseT Ethernet

Four RS-232/422/485 serial ports

Four USB 1.1 ports

Analog video

5VDC power input; optional redundant 18-30VDC input

17.0"(W) X 11.0"(D) X 3.5"(H)

Wide temperature operation - 0 °C to 50 °C

DC Power Input

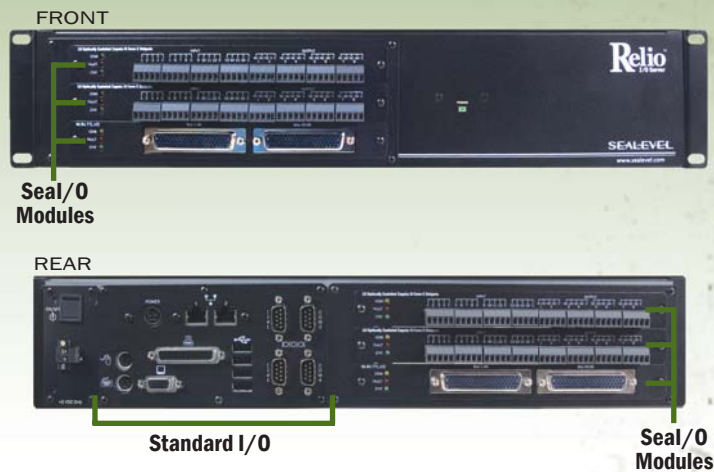
R3000 systems can be powered from a 5VDC source or choose the redundant 18-30VDC option for ultimate reliability.



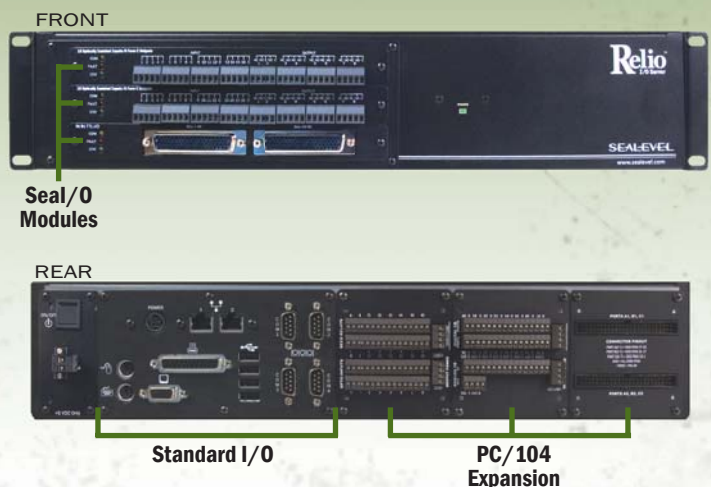
R3000 with Optional CD-ROM & Two Seal/O Modules Installed



R3000 with Six Seal/O Modules Installed



R3000 with Three Seal/O & Three PC/104 Modules Installed



Seal/O & PC/104 Modules can be installed in front and rear.

Relio Custom Designs

Sealevel's design team can create a custom Relio system optimized for your particular application. You can even begin development immediately on a standard Relio while your custom unit is designed. Full details are available in our Relio brochure or by visiting our website.

Take a look at what we've done for other customers:

Relio™
CUSTOM



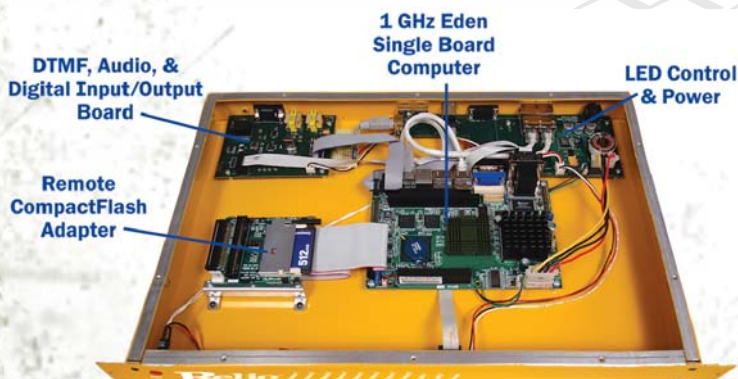
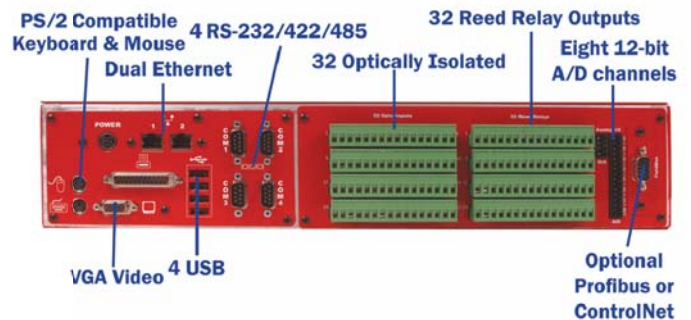
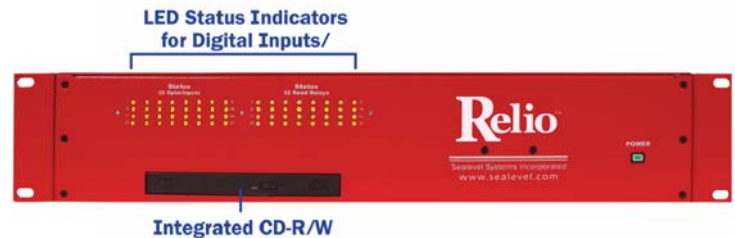
Emergency Communications

Designed for deployment in remote locations, this 1U rackmount Relio system operates on the Windows XP Embedded operating system and incorporates 120 optically isolated inputs, 96 digital outputs, 40 12-bit A/D channels, serial, USB, and Ethernet functionality. Color LEDs on the front panel display system health and other parameters.

"...we used the prototype hardware for the first time... It worked perfectly."
-William B.

Public Security Systems

Used as a controller in a Homeland Security application, this 2U Relio includes 32 optically isolated inputs, 32 relay outputs, A/D, D/A, and fieldbus connectivity. Removable screw terminals make digital and analog I/O wiring convenient. 64 discrete LEDs mounted in the front of the enclosure display real-time I/O status for easy troubleshooting.



Event Notification

A customer specializing in hazardous event warning systems contracted Sealevel to design a 1U rackmount Relio that included DTMF (Dual-Tone Multi-Frequency) and event monitoring capabilities. The system runs from CompactFlash on the XPe platform and uses eight tricolor LEDs to display status information.

Software

Sealevel Software Suite

Sealevel software enables maximum utilization of our entire family of I/O products. Driver level and application support across multiple operating systems including Windows, Linux®, and QNX® facilitate rapid prototyping and debugging. Whether your application requires robust serial communications or digital control/monitoring, Sealevel software provides the solution.

The Sealevel Software Suite consists of:

SeaCOM

Asynchronous Serial Drivers for Windows 95/98/ME/NT/2000/XP

SeaCOM advanced serial drivers make using our asynchronous serial products easy. SeaCOM provides IRQ sharing, support for a variety of UARTs (16C650, 16C750, 16C850, 16C950), 9-bit data support, isochronous communication, and automatic RS-485 RTS enable for products without automatic hardware control. Included applications allow terminal mode operations, bit error rate testing (BERT), and throughput monitoring. Recent versions of Linux and QNX offer native support for Sealevel asynchronous devices; call for details.

SeaMAC

Synchronous Serial Drivers for Windows 2000/XP and Linux

SeaMAC (Sealevel Systems Media Access Control) offers a family of developer oriented solutions for Windows and Linux. SeaMAC supports many popular protocols including HDLC/SDLC and certain configurations of bisync, monosync, and raw (bit-shifter) modes. Check our website for more detailed information on supported protocols and software partners. With SeaMAC, implementing fast, error-free synchronous communication is easier than ever.

SeaMAX

Seal/O Module Software for Windows 2000/XP

SeaMAX software is a collection of software libraries, configuration utilities, and diagnostic tools that facilitate rapid application development for Modbus-compliant Seal/O modules. Linux support is also offered; call for details.

SeaLINK

Ethernet Serial Drivers for Windows 98/ME/NT/2000/XP

SeaLINK is the virtual COM port redirector used with Sealevel Ethernet serial servers that enables any host to transparently access serial devices across a TCP/IP network. Applications can communicate with the virtual COM ports on a remote Ethernet serial server as easily as if they were directly connected to the host computer.

Seal/O

Digital I/O Drivers for Windows 98/ME/NT/2000/XP and Linux

Seal/O is a developer's toolkit for Sealevel PCI, USB, PC/104, and ISA digital I/O products. Seal/O allows control of individual relays or groups of relays. Direct input and programmable timed monitoring of inputs with event notification is also supported.

Sample & Utility Software

All Sealevel software includes a variety of samples and utilities to reduce development time and assist in troubleshooting. Source code is included for all samples and is often useful in end-user application programs.

Accessories

Sealevel accessories allow one-stop shopping for all your serial and digital I/O requirements.



- » Cables
- » Terminal Blocks
- » Books & References
- » Adapters & Converters
- » Power Supplies
- » Wireless Devices
- » Relay Racks & Relays
- » USB Devices
- » Ethernet Devices
- » Racks & Brackets
- » Seal/O Accessories
- » Industrial Computing Accessories

Please visit our website at
www.sealevel.com for a
complete listing.



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