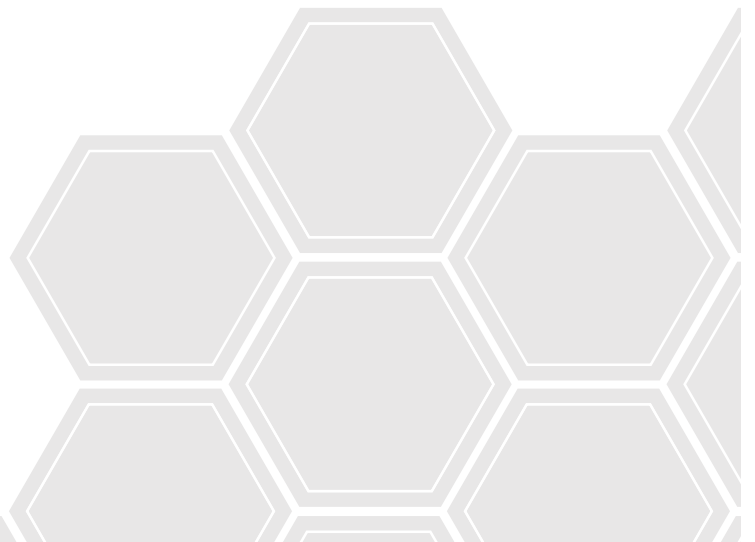


COM EXPRESS SOLUTIONS



SEALEVEL®



CUSTOM SOLUTIONS

COM EXPRESS FOR PUBLIC SAFETY COMMUNICATIONS

Several years ago, a leading global corporation in critical two-way wireless communications systems used by public safety and government organizations contracted Sealevel to design an ultra-reliable industrial computer to monitor and control remote broadcast sites nationwide. Sealevel responded with a solid-state system that included all the dense I/O required packaged in a compact 1U, rackmount enclosure. The customer was so satisfied with the operation and quality of over 1,500 units installed to date that they commissioned Sealevel to refresh the design and upgrade to a faster processor and more memory for compatibility with today's information assurance software, which is required for new installations.

THE SEALEVEL SOLUTION

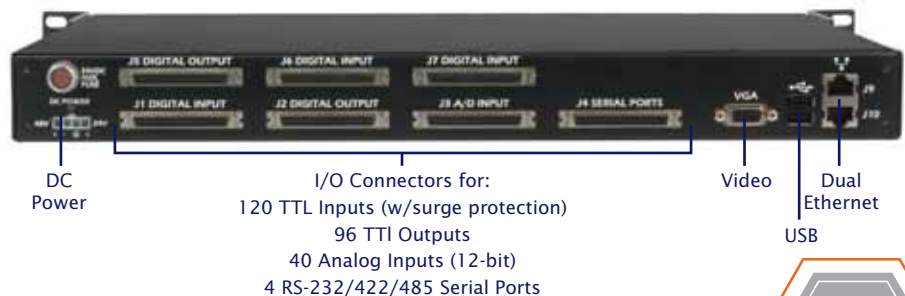
Sealevel designed a COM Express baseboard with all the required I/O into a rugged, 1U rackmount chassis. A 1.2GHz Core 2 Duo COM Express processor module mounts to the baseboard to add the high-speed portion of the system including processor, chipset, memory, and video. An internal battery and power detection circuit allows the unit to continue to operate when power loss is detected to effect an orderly power down and record the status of other components in the communications rack. Since the systems are not always in environmentally controlled buildings, all extended temperature parts were selected for the design in order to accommodate the wide temperature specification.

APPLICATION REQUIREMENTS

- Dual Core Processor
- Minimum 4GB RAM
- Dual 10/100 Ethernet
- 4 x RS-232/422/485 ports
- VGA video
- 120 Digital Inputs
- 96 Digital Outputs
- 40 A/D Inputs
- **Internal Battery Backup**
- -30°C–60°C Operation

BATTERY-BACKUP PROTECTION

Improper shutdown of an industrial computer can result in corruption of the operating system and costly downtime. Sealevel's internal battery-backup feature senses power loss and signals the system's processor to perform an orderly shutdown while maintaining DC power for more than five minutes. This extra level of reliability can be built into your next custom system.

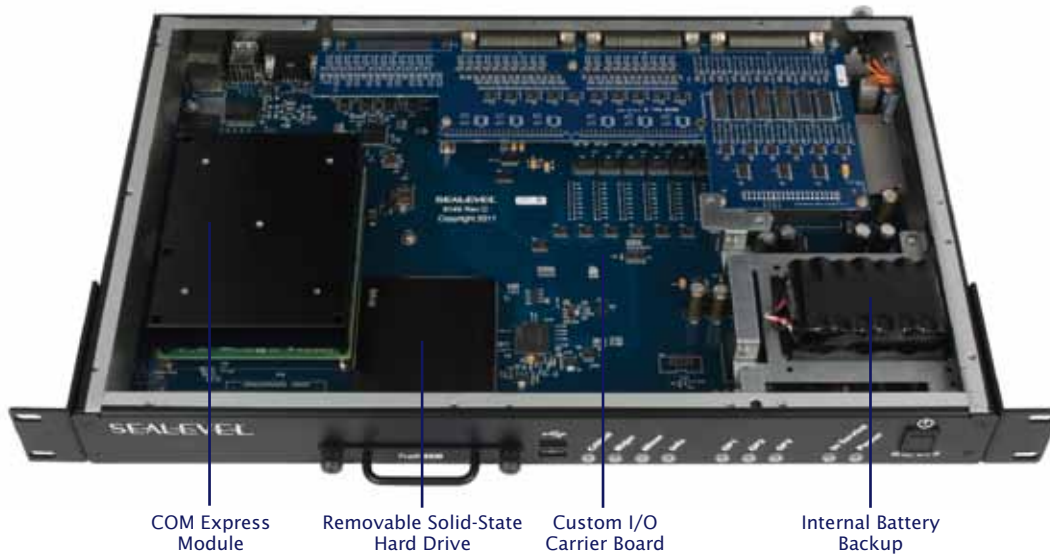


COM EXPRESS SOLUTIONS

Sealevel COM Express systems combine an off-the-shelf Computer on Module (COM) containing the functionality common to most systems (processor, memory, graphics, USB, Ethernet, SATA) with a custom carrier board that includes application specific I/O and interface connectors. This combination provides the benefits of a full custom design while reducing the time, cost, and risk of custom system design. COM Express systems are the perfect solution for OEMs in demanding vertical markets such as military, oil and gas, communications, and process control.

SERIOUS ADVANTAGES

- Speed to market
- Scalability
- Application specific I/O
- Flexible mechanical configuration
- Vibration resistance
- Extended operating temperature
- Long-term availability
- Superior life cycle management



COM EXPRESS MODULES

COM Express modules offer a selection of processors ranging from powerful multi-core Intel i7 and i3 to the popular ATOM. Low power designs eliminate the need for cooling fans, greatly enhancing system reliability. Extended temperature models are available offering -40°C to +85°C operating temperature range.

COM Express modules contain the core computer functionality most affected by changing technology. Since the modules are based on an industry standard specification, COM Express systems are easily updated to stay current with the latest technology.



COM E Module	Processor	Temperature Range
TCA/N2800	Dual Core Atom 1.8GHz	0 to +60°C
IBR-i3-R-3217UE	Dual Core i3 1.6GHz	-40 to +85°C
IBR-i7-R-3517UE	Dual Core i7 1.7GHz	-40 to +85°C

SERIOUS PERFORMANCE

COM EXPRESS CARRIER BOARDS AND SYSTEMS

Sealevel carrier boards leverage the company's 26+ years as a leader in I/O and communications products to provide carrier board and full system solutions in the fastest time possible. Common I/O features include serial, analog, and digital I/O. Sealevel's extensive library of proven I/O circuits can be included as required to meet the specific I/O count, voltage ranges, and connector types required.

SERIOUS PERFORMANCE

- State-of-the-art processors
- Serial, digital, and analog I/O
- FPGA capability for custom I/O
- Rugged mechanical design
- Easy system upgrade and maintenance
- Solid-state operation with no moving parts

SEALEVEL CAPABILITIES

- Electrical design
- Mechanical design
- Firmware and software drivers
- Product compliance and certification
- Environmental stress screening



Get started now with COM Express Quick Start Kits

SCALING

THE CAPABILITIES OF COM EXPRESS

Let Sealevel design one board that can be used for multiple applications to maximize the wide range of COM Express configurations in today's marketplace.

You may have an application that requires a low-voltage CPU, small amount of RAM and no display while another application requires the latest multicore CPU, several gigabytes of RAM and dual displays. Since COM Express modules are compatible with other modules of the same type and configuration, one Sealevel carrier board will support both applications by simply changing the COM Express module. No matter what the conditions demand, we'll build a rugged, reliable, complete COM Express system that can handle your most serious challenges.

RELIO R2 COM EXPRESS-BASED INDUSTRIAL COMPUTER

Using COM Express architecture, the Relio R2 is a fanless, off-the-shelf solution perfect for smaller volume applications that require high reliability, flexible I/O expansion, scalable processing, and a long product life cycle. Available with a variety of processor choices, the system offers impressive standard features and powerful capabilities for up to 4 expansion I/O boards. Choose from an array of digital, analog, and serial modules perfect for most industrial control and data acquisition applications.

R2 SYSTEMS OFFER:

- i7, i3 or ATOM processor
- 2 GB Ethernet ports
- 4 USB ports
- 2 RS-232 serial ports
- 1 RS-485 serial port
- Display port video
- HD audio
- Up to 4 expansion slots for digital, analog and serial I/O
- 18-36VDC operation
- Compatible with Windows or Linux operating systems



RELIO R3 COM EXPRESS-BASED RACKMOUNT COMPUTER

Sealevel's Relio R3 is a solid-state 3U rackmount industrial computer designed using the COM Express architecture for maximum flexibility and product lifecycle. Available with a choice of processors, up to 19 expansion modules can be added to match application requirements. Choose from an array of digital, analog, and serial modules designed for demanding industrial applications where ruggedness and reliability is a must.

RELIO R3 SYSTEMS OFFER:

- Choice of processors including Intel i7, i3, and ATOM
- 2 Gigabit Ethernet ports
- 4 USB 2.0 ports
- 2 RS-232 serial ports
- 1 RS-485 serial port
- Display port external video interface
- 7" Touchscreen LCD operator interface on front panel
- HD audio
- Up to 18 expansion slots for digital, analog and serial I/O
- 1 PCIe bus expansion slot
- Completely solid state operation for maximum reliability
- Fast, solid state SATA HDD
- 18-36VDC
- Compatible with Windows or Linux operating systems



EXPANSION MODULE OPTIONS FOR R2 AND R3

PART NUMBER	DESCRIPTION
8510	16 Isolated Digital Inputs (3-30 VDC)
8511	16 Isolated Digital Inputs (0-132 VAC)
8520	16 Isolated Relay Outputs (5-30 VDC; 5-250 VAC)
6510	8 Isolated Analog Inputs
6511	6 RTD Inputs
6512	6 Thermocouple Inputs (Type E, J, or K)
6520	8 Isolated 4-20mA Analog Outputs
7541	4 RS-232 Serial Ports
7543	4 RS-232/422/485 Serial Ports



The R3 provides 19 locations for analog, serial and I/O expansion.



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