Logicbus

SEALEVEL PRODUCT GUIDE
BY LOGICBUS

WWW.LOGICBUS.COM.MX
WWW.LOGICBUS.COM
VENTAS@LOGICBUS.COM
SOPORTE@LOGICBUS.COM

GUADALAJARA
(33)-3823-4349
FAX (33)-3854-5975
USA
(619)-616-7350
CIUDAD DE MÉXICO
(55)-8995-3820
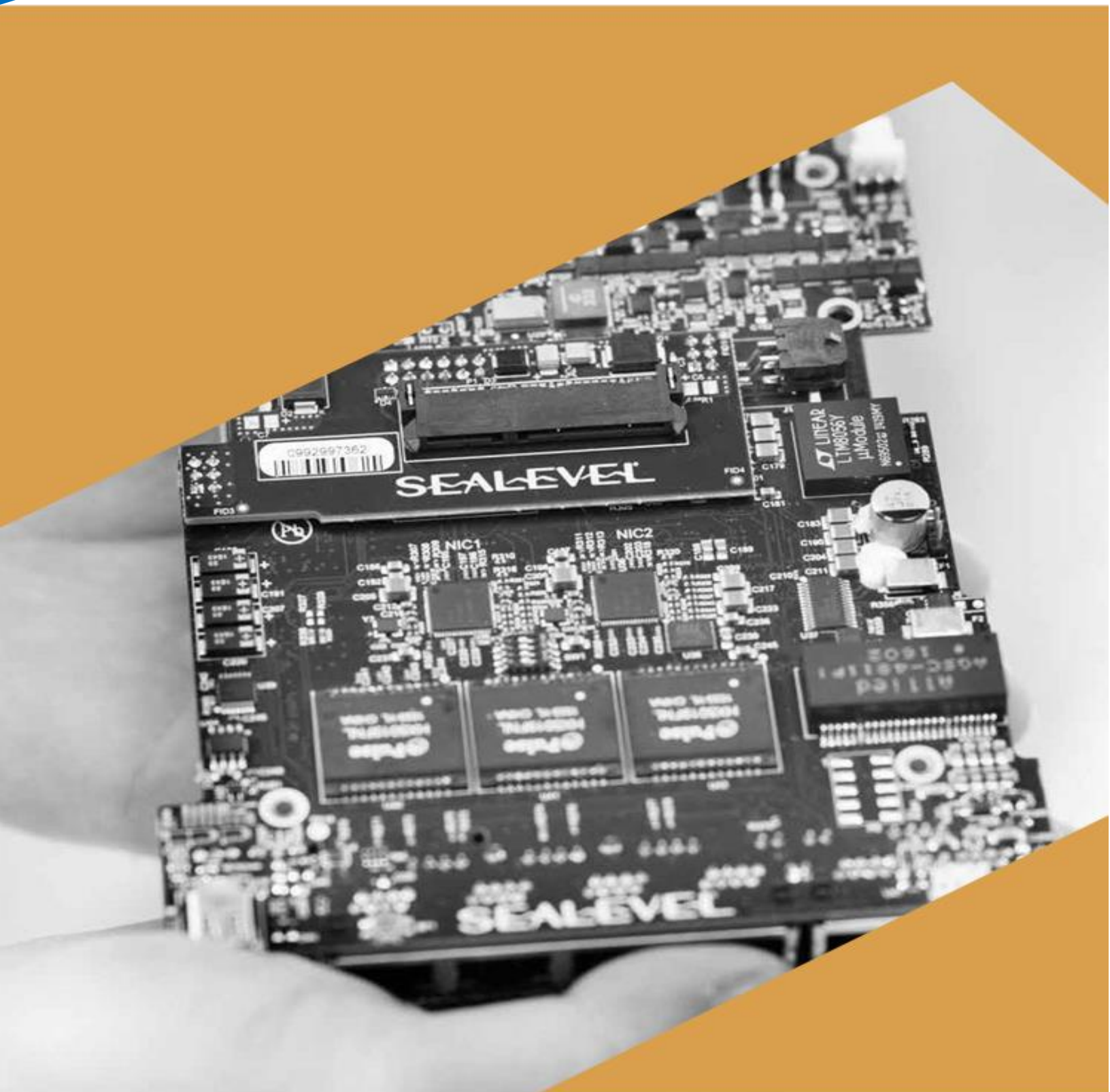
Designed for I/O intensive applications, our industrial computers, touch panel PCs and COM Express solutions offer unmatched computing power combined with versatile configurability. And, for extreme environments, we have options for extended temperature and power tolerant hardware.

RELIO ™ R1

A solid-state, industrial computer designed for applications requiring powerful processing, a compact footprint, wide operating temperature, and shock and vibration resistance.

The Relio R1 features up to 8 GB of DDR3L RAM with a choice of Intel® quad-core, dual-core, or single-core Atom™ processor in a DIN Rail compatible enclosure. Our most rugged computer, the R1 is designed to exceed military shock and vibration requirements.
And, with an impressive operating range of -40° to +70°C, the R1 is redefining "extended." CAN bus 2.0b, GPS and wireless network options are also available.

RELIO ™ R2

A rugged, solid-state embedded industrial computer designed for applications requiring a small footprint, high reliability, scalable processing and a long product life cycle.

Configure your Relio R2 with Intel® dual-core Atom™, i3 and i7 processors and up to 16 GB RAM. The system requires low power consumption while operating fanless over a wide operating temperature range of 0° to +50°C. Standard features include dual Gigabit Ethernet, four SeaLATCH (see page 55) locking USB 2.0 ports, three serial ports, DisplayPort video and audio interfaces

Automation   Sensors   Industrial Computers   Data Acquisition   Test & Measurement Equipment   North America   Central and South America

RELIO ™ R3

A solid-state 3U rackmount computer designed for applications requiring high reliability, maximum I/O expansion, scalable processing and a long product life cycle.

With a total of 18 SeaRAQ™ I/O expansion slots, the Relio R3 offers unprecedented expansion capabilities supporting a variety of real- world analog I/O configurations such as A/D inputs, 4-20 mA outputs, 0-20 mA inputs, thermocouples and RTD inputs. Optically isolated inputs, relay outputs and additional serial interfaces are also available

RELIO ™ R4

A fanless, solid-state 1U rackmount computer with no internal cables. The system is ideal for rugged applications that demand high reliability, I/O expansion, scalable processing and a long product life cycle.

Featuring two SeaRAQ™ I/O expansion slots, the Relio R4 offers extra expansion capabilities and supports a variety of real-world analog I/O configurations such as A/D inputs, 4-20 mA outputs, 0-20 mA inputs, thermocouples and RTD inputs. Optically isolated inputs, relay outputs and additional serial interfaces are also available

HazPAC® HAZARDOUS-AREA PANEL PC

The HazPAC R9-8.4 is a Class I, Division 2; ATEX Zone 2 touchscreen computer designed for ultimate reliability in hazardous-areas.

The HazPAC R9-8.4 combines a powerful RISC-based computer, bright, 8.4" widescreen LCD display, and resistive touchscreen to create a flat panel computer perfect for a wide variety of hazardous-area and control applications. The HazPAC is Modbus-compatible making it ideal for controlling a network of Modbus I/O devices, including Sealevel eI/O and SeaI/O modules.

Modbus SSD Software Tools

Modbus SSD is a suite of software tools designed to speed the development time for embedded panel PC applications, and is included with all Sealevel SeaPAC and HazPAC touchscreen computers. This suite helps simplify Modbus application development.

HazPAC® HAZARDOUS-AREA PANEL PC

The SeaPAC R9-7R is a wide temperature, low-cost touchscreen computer designed to run Windows CE or Linux operating systems

The SeaPAC R9-7R offers an amazing -30° to +70°C operating temperature range with no heaters or cooling fans required. The system features a 7" industrial LCD with LED backlight that gives the display extended life over CCFT-backlit models. The Modbus-compatible computer is designed for panel mount applications and includes an aluminum front bezel that maintains NEMA 4/IP65 protection from sprayed liquids.

WWW.LOGICBUS.COM.MX
WWW.LOGICBUS.COM
VENTAS@LOGICBUS.COM
SOPORTE@LOGICBUS.COM

GUADALAJARA
(33)-3823-4349
FAX (33)-3854-5975
USA
(619)-616-7350
CIUDAD DE MÉXICO
(55)-8995-3820

COM EXPRESS® CARRIER BOARDS

Sealevel COM Express systems combine an off-the-shelf Computer on Module (COM) containing the functionality common to most industrial PCs (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 offering the reduced time, cost and risk of an off-the-shelf solution. COM Express systems are perfect for OEMs in demanding vertical markets such as military, oil and gas, communications and process control.

Feature:

- Maintenance-free design eliminate cables, fans, hard drive and other moving parts
- Speed to market
- Scalability
- Application-specific I/O
- Flexible mechanical configuration
- Vibration resistance
- Extended operating temperature
- Long-term availability
- Superior life cycle management

CUSTOM CARRIER BOARD

Sealevel's industrial carrier boards are designed with an extended operating temperature range of -40° to +85°C (COM module dependent). And, with a variety of networking, serial, I/O, and other expansion features, there are options for nearly every application

COM EXPRESS 12000

The COM Express 12000 is a small carrier board that features dual Gigabit Ethernet and five USB 2.0 ports (four are high-retention).

Features:

- Supports COM Express Type 6 Basic or Compact
- SATA 2.5" SSD, and DisplayPort video interface
- Includes two mPCIe slots, one RS-485 and two RS-232 ports
- 18-36 VDC Input Power
- PCB Dimensions: 8.00" x 4.235"

COM EXPRESS 12001

The COM Express 12001 offers dual Gigabit Ethernet and six USB 2.0 ports (two are high-retention).

Features:

- Supports COM Express Type 6 Basic or Compact
- SATA 2.5" SSD, DisplayPort and VGA video interfaces
- Includes one mPCIe slot, one RS-422/485 and two RS-232 ports
- 18-36 VDC Input Power
- PCB Dimensions: 9.6" x 7.82"

COM EXPRESS 12004

The COM Express 12004 is a compact carrier board with enhanced networking capabilities offering dual Gigabit Ethernet and 100BASE FX Fiber Optic, four USB 2.0 latching Molex connectors, ideal for reliable, embedded applications.

Features:

- Supports COM Express Type 6 Compact
- Includes SATA and embedded connectors for two-wire RS-485, LVTTL, DVI-D and LVDS (with 12V Backlight Power)
- 8-40 VDC Input Power
- PCB Dimensions: 5.85" x 5.13"

WWW.LOGICBUS.COM.MX
WWW.LOGICBUS.COM
VENTAS@LOGICBUS.COM
SOPORTE@LOGICBUS.COM

GUADALAJARA
(33)-3823-4349
FAX (33)-3854-5975
USA
(619)-616-7350
CIUDAD DE MÉXICO
(55)-8995-3820

Automation

Sensors

Industrial Computers

Data Acquisition

Test & Measurement Equipment

North America

Central and South America

We are proud to work with the most talented engineers from around the world to solve difficult problems in diverse environments. No matter your application requirements, Sealevel can provide a solution that perfectly fits your needs.

DESIGN SPECIFICATION & PROJECT MANAGEMENT

Sealevel makes hundreds of standard products, designed with a focus on long-term availability, but often OEM customers need a solution tailored to fit their unique requirements. Sealevel understands the advantages an optimized design can offer. Customizations range from oscillator modifications for non-standard serial baud rates to the development of completely private-labeled industrial computers integrated with I/O functionality from one of our standard products. If an off-the-shelf solution doesn't meet your requirements for performance, quality or cost, call us to turn Sealevel's expertise into your next product.

ELECTRICAL DESIGN

Sealevel has provided custom I/O board designs for customers since 1986. Whether you need a plug-in card solution such as PCIe or a complex system design, our experience can be leveraged to create the design you need on time and within budget.

MECHANICAL DESIGN

Using advanced 3D modeling tools from SolidWorks®, complex mechanical projects are accomplished with amazing speed and accuracy. Every aspect of the design is modeled, including board and connector placement, so there are no surprises when prototypes arrive. These models are used to communicate the design with you before we build to ensure that all expectations are met.

For applications that require extended temperature operation, we employ thermal modeling to predict environmental performance. These simulations help determine the best component selection and placement in the design phase, saving valuable time and money required to correct problems otherwise not found until prototype testing.

SOFTWARE DESIGN

Sealevel's staff includes software engineers, computer engineers and computer scientists for a team adept in solving the most complex embedded software challenges. Our engineers use industry-standard software development processes to ensure the highest quality deliverables. Past projects include development of custom board support packages (BSPs), microcontroller firmware, drivers, application program interfaces (APIs) and utilities. Whether you are using Windows 10, Windows Embedded CE, Linux or embedded firmware, we can help.

WWW.LOGICBUS.COM.MX
WWW.LOGICBUS.COM
VENTAS@LOGICBUS.COM
SOPORTE@LOGICBUS.COM

GUADALAJARA
(33)-3823-4349
FAX (33)-3854-5975
USA
(619)-616-7350
CIUDAD DE MÉXICO
(55)-8995-3820

PRODUCT COMPLIANCE & CERTIFICATION

Sealevel has the test equipment and knowledge to provide screening of prototypes for electromagnetic interference (EMI) emissions and susceptibility as well as environmental performance including temperature and rain testing prior to evaluation at certified labs. This pre-test screening saves the time and cost of official laboratory testing until passing results are proven likely. Sealevel maintains relationships with certified testing laboratories, including the Clemson University International Center for Automotive Research (CU-ICAR) located near our facility, to simplify receiving final, official certifications.

ENVIRONMENTAL STRESS SCREENING

For products that require the highest reliability, Environmental Stress Screening (ESS) can accelerate defects that may otherwise not be detected until a field failure occurs. This is done by subjecting the unit under test to rapid thermal cycling and vibration testing that can precipitate latent defects such as cold solder joints, loose fasteners or poor wire crimps.

Defects found during ESS can be addressed rapidly to determine root cause and implement a corrective action to eliminate recurrence and improve the overall quality level of the product.

Both our custom and standard products give us a chance to not only show what we know, but to always learn more. These real-world applications document our introduction to new challenges and how we meet specific requirements to deliver results.

PUBLIC SAFETY

911 Dispatch Console

Sealevel worked with a leading provider of 911 call systems to create a state-of-the-art dispatch console that helps increase the efficiency and safety of First Responders. Based on COM Express architecture, the system provides an amazing amount of functionality in a 1U space including a digital signal processor (DSP) for audio processing, 12 audio input channels and 12 audio output channels.

Emergency Wireless Communications Systems Management

This 1U custom system is also based on COM Express and is installed in remote communication tower locations across North America where reliability is of the utmost importance. Packing 256 channels of analog and digital I/O, the system is rated for -30° to +60°C operation

TRANSPORTATION

Automotive Tester

Sealevel partnered with an automotive equipment supplier to manufacture a low-power, portable tester used on automotive assembly lines all over the world. The system uses a Qseven COM module to minimize size and power requirements. In addition to the COM carrier board, we also developed sixadditional PCBs necessary for the assembly. Turnkey final assembly and testing is done at Sealevel and the product drop ships to the end user.

MILITARY

Mobile Networking

Effective communications create an advantage on the battlefield. Sealevel designed a custom COM Express carrier board used in a line of compact new servers that delivers this tactical advantage. The systems are designed to operate on a wide range of input power to comply with MIL-STD-810 specifications.

Laptop Docking Station

Sealevel's electrical and mechanical design team was challenged to design two complete, military-grade docking stations that met complex packaging requirements and required five custom PCBs for I/O. The docking stations were designed and tested to an extensive list of MIL standards for shock, vibration, moisture, EMC, radiated emissions and safety.

OIL AND GAS

Thermal Management

A customer that makes thermal control systems for hazardous-area locations including oil refineries wanted a Class 1 Division 2 flat panel computer designed to operate over a wide temperature range. Sealevel responded with a system designed around an 8.4" TFT display with LED backlight that operates from -40° to +60°C without requiring heaters or fans. Operator interface is made simple through a rugged, glass resistive touchscreen.

MINING

Intelligent Endpoint for Heavy Equipment

Sealevel's customer needed a custom carrier board to work with the COM Express module they selected for their application. The carrier supplies a managed switch with four Gigabit Ethernet ports and seven multi-interface serial ports to interface to the data bus that helps run their huge machines. Wide temperature range and vibration tolerance were key to making the design a success.

WWW.LOGICBUS.COM.MX
WWW.LOGICBUS.COM
VENTAS@LOGICBUS.COM
SOPORTE@LOGICBUS.COM

GUADALAJARA
(33)-3823-4349
FAX (33)-3854-5975
USA
(619)-616-7350
CIUDAD DE MÉXICO
(55)-8995-3820

FACILITY MANAGEMENT

Sign Monitor

We partnered with a manufacturer of outdoor signage to add intelligence to control sign scheduling and brightness levels. Rules-based actions, alarms and notifications allow sign operators to monitor sign status, power consumption and other system-level events. Sealevel's Industrial Internet of Things products connect existing infrastructure to our SeaCloud™ engine to allow remote monitoring and control.

Meter Data Translation

A global leader in pioneering innovations for the dairy industry partnered with Sealevel to enhance their advanced solutions for the milking parlor arena. Our USB-to-serial devices send and receive data and translate it for use by the customer's propriety software program. Sealevel's software engineers worked to create a custom program to meet a unique set of COM port assignments to round out the solution.

Logicbus

WWW.LOGICBUS.COM.MX
WWW.LOGICBUS.COM
VENTAS@LOGICBUS.COM
SOPORTE@LOGICBUS.COM

GUADALAJARA
(33)-3823-4349
FAX (33)-3854-5975

USA
(619)-616-7350

CIUDAD DE MÉXICO
(55)-8995-3820
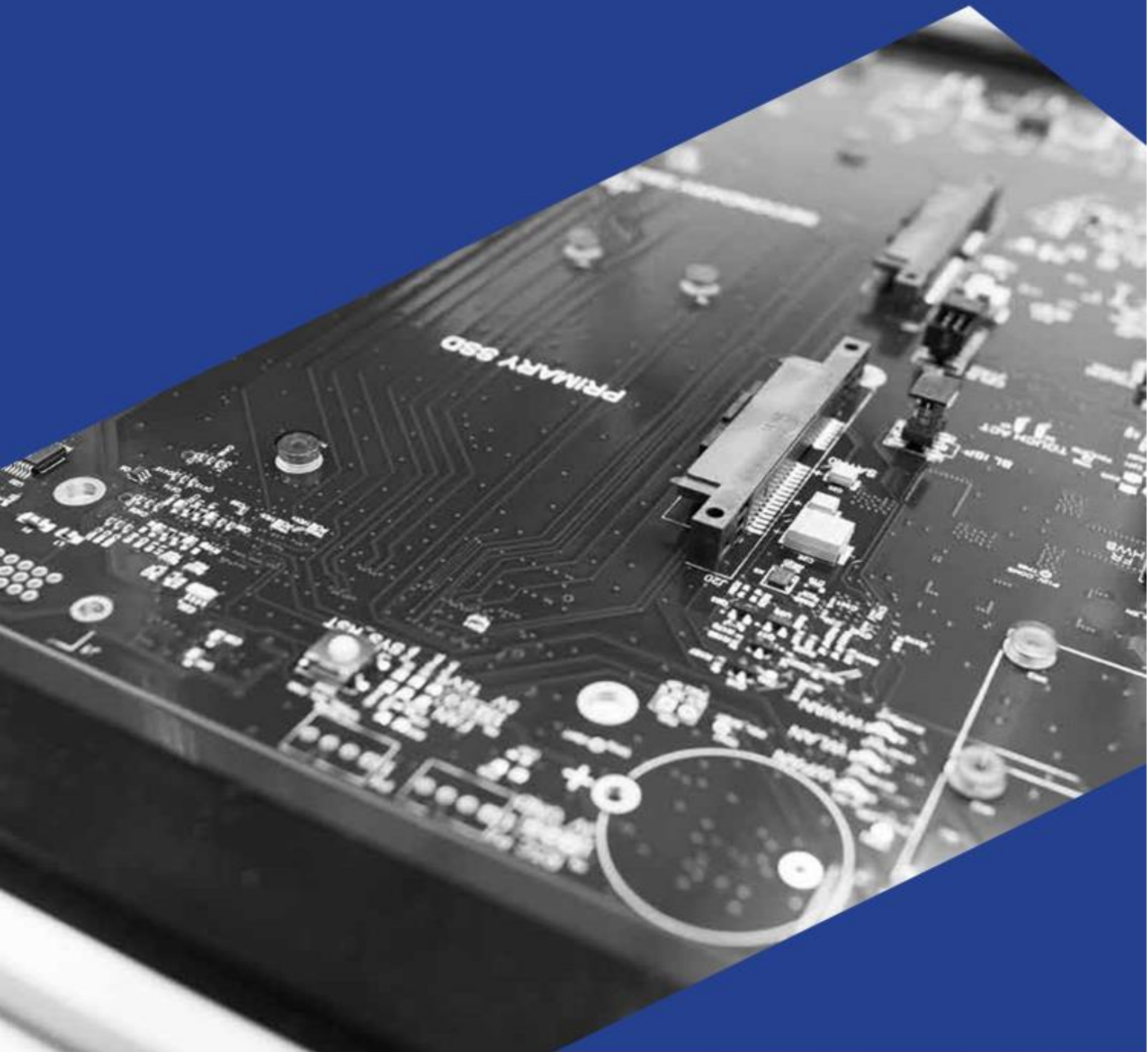
INTERNET OF THINGS

Sealevel SeaConnect™ allows you to monitor and control real-world processes and interfaces with nearly any sensor. Choose from a variety of form factors, all seamlessly streaming data to our SeaCloud engine for analysis and response. Enjoy the freedom of continuous connection, and continuous control.

SeaConnect™ IoT SOLUTIONS
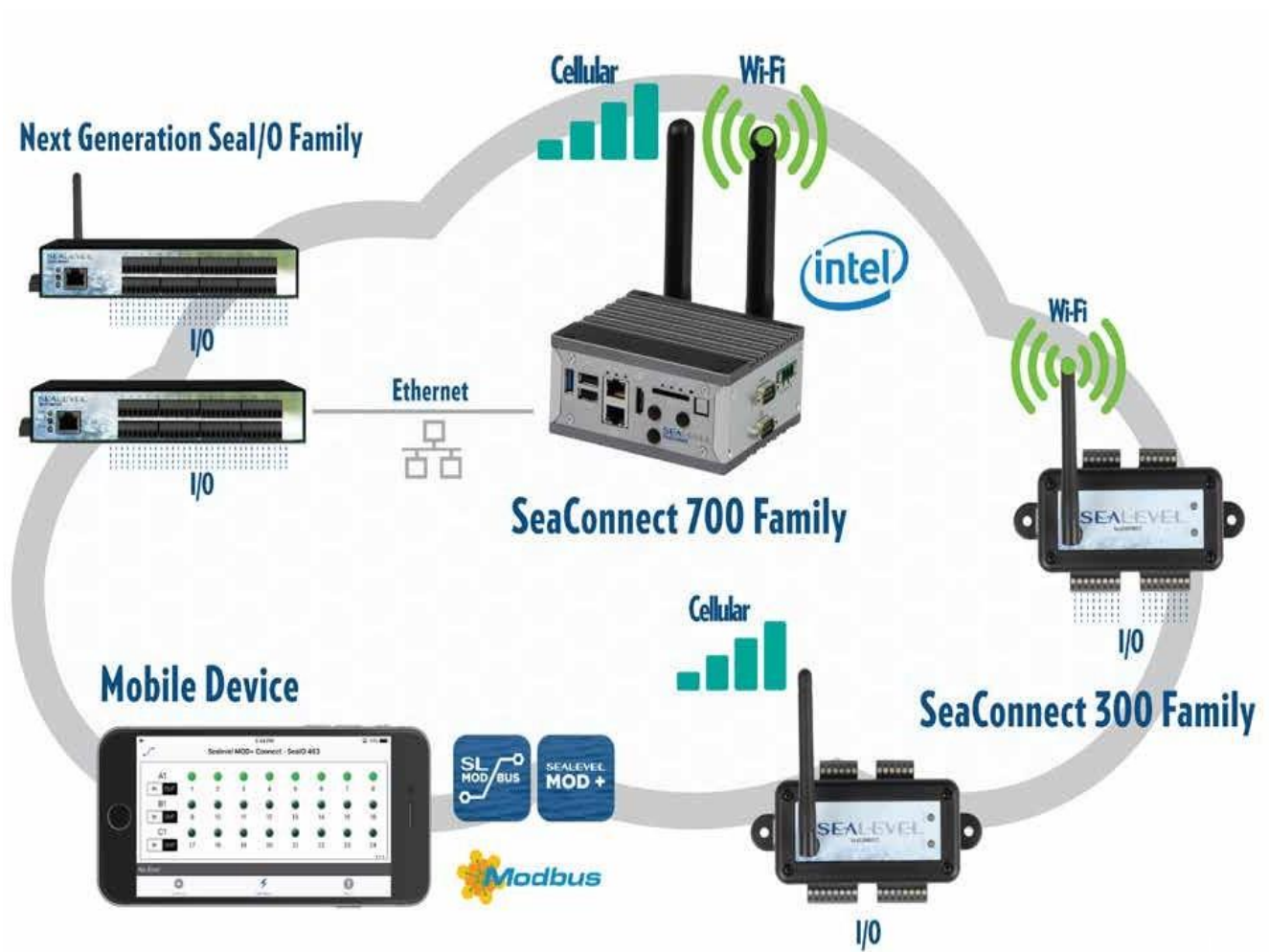
SeaConnect™ 300 FAMILY

Need connectivity at the edge? Look no further than the SeaConnect 300. Small and cost-effective, the SeaConnect 300 offers essential connectivity to analog, digital and serial I/O. The SeaConnect 300 supports Modbus TCP and is available with a variety of real-world I/O interfaces, including serial, I2C, 1-Wire®, digital and analog I/O.

Features:

- TI CC3200 Cortex ARM-M4 CPU with integrated wireless capability
- Wireless 802.11b/g/n provides 256-bit encryption and WPA2 security with station and access point modes
- Cellular model includes a Verizon 4G Cat 1 LTE cellular modem
- Four dry contact or powered optically isolated inputs, two Form C relay outputs, and 2 12-bit Differential A/D outputs
- Onboard temperature sensor for location monitoring
- Supports Modbus TCP
- 5 VDC input power via convenient, 2-pin removable terminal block

NEXT GENERATION SeaI/O FAMILY

Sealevel's Next Generation SeaI/O solutions feature enhanced Ethernet and wireless interfaces with secure cloud-based capabilities, such as event monitoring and configurable messaging as well as future-proof, FPGA-based, programmable hardware design. For the ultimate versatility, there are a variety of I/O configurations, daisy-chain expansion options, and a Modbus gateway feature, allowing for virtually limitless device configuration and integration.

Features:

- Fully configurable I/O
- 10/100BaseT Ethernet Modbus TCP host interface
- PoE version eliminates the need for a power supply
- Field wiring is simplified via removable 3.5mm screw terminal blocks
- Supports input power via terminal block or modular connector
- Optional DIN Rail or table mount
- Daisy chain up to 246 modules

WWW.LOGICBUS.COM.MX
WWW.LOGICBUS.COM
VENTAS@LOGICBUS.COM
SOPORTE@LOGICBUS.COM

GUADALAJARA
(33)-3823-4349
FAX (33)-3854-5975
USA
(619)-616-7350
CIUDAD DE MÉXICO
(55)-8995-3820

SeaConnect™ 700 FAMILY

The SeaConnect 700 yields genuine remote control and monitoring and the computational power you require. With fully programmable, gateway computing and robust I/O, the SeaConnect 700 is ideal for industrial automation, machine automation, transportation and facility communications.

Features:

- Based on Intel® Atom™ E3845/E3826 SoC processors
- Ultra-compact, aluminum alloy enclosure is ideal for applications demanding reliability in harsh environments
- Dual Gigabit Ethernet, two serial ports, two USB 2.0 and one USB 3.0 por video and SD Card storage
- Includes two Mini PCIe slots (one supporting mSATA)
- Optional digital I/O and DIN Rail or wall mounting capabilities
- 6-36 VDC input power via convenient, 3-pin removable terminal block

SeaConnect 700 Family

SeaCloud™

SeaCloud provides powerful, built-in, analytical tools and rules-based controls that can be customized for your specific process needs. And, with an easy-to-use API to configure your application requirements, remote monitoring and control have never been more accessible.

Features:

- Streaming analytics
- Alarm monitoring
- Event notifications and alarm generation
- Predictive maintenance
- Automated response
- Ethernet, wireless, or cellular access
- Remote monitoring and dashboards
- Custom apps
- Supports Modbus transmit and receive

1-Wire® INTERFACE

The 1-Wire® interface supports 1-Wire devices, including different types of temperature sensors and weather instruments. Multiple devices can be daisy-chained on the same 1-Wire® network.

Mod+ Connect and Modbus Connect APPS

The Mod+ Connect app is a diagnostic utility for eI/O and SeaI/O modules that allows you to view and change device settings, as well as monitor and control I/O banks. The Modbus Connect app enables you to access the registers, coils and discrete I/O of your Sealevel Modbus devices.

WWW.LOGICBUS.COM.MX
WWW.LOGICBUS.COM
VENTAS@LOGICBUS.COM
SOPORTE@LOGICBUS.COM

GUADALAJARA
(33)-3823-4349
FAX (33)-3854-5975
USA
(619)-616-7350
CIUDAD DE MÉXICO
(55)-8995-3820

Our asynchronous and synchronous serial interfaces are designed for high-speed applications. Whether you choose a bus-based, USB, or Ethernet solution, installation is easy and you will be communicating with your serial devices quickly.

ETHERNET ASYNCHRONOUS

SeaLINK® Ethernet serial servers offer the easiest way to connect RS-232, RS-422, and RS-485 serial devices to your Ethernet network. All SeaLINK devices use industry standard TCP/IP protocol enabling any host to access serial ports as virtual COM ports

Features:

- **Serial ports appear as virtual COM ports to host computer**
- **Supports custom baud rates and 9-bit protocol**
- **Communicate over multiple ports at data rates to 230 Kbps**
- **Built-in watchdog/reset circuit for fault tolerance**
- **Rugged metal enclosures designed for industrial environments**

SeaLINK® ONE & TWO-PORT ETHERNET SERIAL SERVERS

PART#	#PORT	ELECTRICAL INTERFACE	CONNECTORS	
4101			1x	
4102	1	RS-422, RS-485	1x	
4103			1x	+
4104	1	RS-232, RS-422, RS-485	1x	
4201				
4202	2	RS-422, RS-485	2x	
4203				

Rock solid device!

"I am the IT manager for a waste and recycling company in the Northeast. We have been using the 4101 serial server for about three years connected to a truck scale head in a kiosk. The kiosk gets very hot in the summer! I have never had to reboot or check on the 4101 as it just keeps reading. In the three years the 4101 has been running, we haven't had any problems."

1 – 4103 has optically isolated serial port, one isolated digital input and one Reed relay output.

WWW.LOGICBUS.COM.MX
WWW.LOGICBUS.COM
VENTAS@LOGICBUS.COM
SOPORTE@LOGICBUS.COM

GUADALAJARA
(33)-3823-4349
FAX (33)-3854-5975
USA
(619)-616-7350
CIUDAD DE MÉXICO
(55)-8995-3820

ETHERNET ASYNCHRONOUS

SeaLINK® FOUR, EIGHT & SIXTEEN-PORT ETHERNET SERIAL SERVERS

PART#	# PORT	ELECTRICAL INTERFACE	CONNECTORS	
4401	4	RS-232	4x	
4402	4	RS-422, RS-485	4x	
4403	4	RS-232, RS-422, RS-485	4x	
4801	8	RS-232,	8x	
4802	8	RS-422, RS-485	8x	
4803	8	RS-232, RS-422, RS-485	8x	
4161	16	RS-232	16x	
4162	16	RS-422, RS-485	16x	
4163	16	RS-232, RS-422, RS-485	16x	

PCI EXPRESS AND PCI ASYNCHRONOUS

Proven Serial Solutions for the Backplane Sealevel PCI Express X1 serial boards utilize deep FIFOs for maximum reliability in data intensive applications. Software developed for standard PCI boards will also work with Sealevel PCI Express serial boards, simplifying your transition to this next-generation PCI bus.

Features:
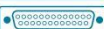
- Available in a variety of electrical interfaces for low profile and standard PC slots
- Multi-interface adapters are configurable for RS-232, RS-422 and RS-485electrical interfaces
- Ultra high-speed (UHS) adapters communicate at serial data rates beyond 1 Mbps
- All adapters communicate over multiple ports at data rates to 921.6 Kbps
- PCI Express serial adapters are still available in legacy PCI versions
- Sealevel SeaCOM software supports Microsoft® Windows and Linux operating systems

SeaCOM Asynchronous Serial Software Suite

SeaCOM Async Serial Software Suite includes drivers and utilities that make installation and operation easy in Microsoft Windows and Linux environments. The SeaCOM enhanced serial driver takes advantage of the advanced UART features of Sealevel serial adapters without requiring changes to your software application.

PCI EXPRESS ASYNCHRONOUS

PCI EXPRESS ASYNCHRONOUS SERIAL ADAPTERS

PART#	# PORT	ELECTRICAL INTERFACE	PC BRACKET [1]	CONNECTORS	
7106e	1	RS-232, RS-422, RS-485 (UHS [2])	LP	1x	
7202e	2	RS-232	LP	2x	
7203e	2	Isolated RS-232, RS-422, RS-485	SP	2x	
7204e	2	RS-422, RS-485	LP	2x	
7205ec	2	RS-232, RS-422, RS-485 (UHS [2])	LP	2x	
7402e	4	RS-422, RS-485	LP	4x	
7404e	4	RS-232, RS-422, RS-485	SP	4x	
7406e	4	RS-232	LP	4x	or
7802e	8	RS-422, RS-485	LP	8x	
7803e	8	RS-232	LP	8x	or
7804e	8	RS-232, RS-422, RS-485	SP	8x	
7161e	16	RS-232	SP	16x	or

1 – LP adapters require low profile PC slots (standard profile bracket available); SP adapters require a standard profile PC slot.

2 – Ultra high-speed UART (based on traditional 950-series UART) has 256-byte Tx/Rx FIFOs, and bus-derived 125 MHz baud rate generator with flexible clock prescalar supports wide range of standard & non-standard data rates.

PCI ASYNCHRONOUS SERIAL ADAPTERS

PART#	# PORT	ELECTRICAL INTERFACE	PC BRACKET [1]	CONNECTORS	
7104	1	RS-232	LP	1x	
7106	1	RS-232, RS-422, RS-485	LP	1x	
7107	1 [2]	RS-422, RS-485	LP	1x	
7108	1	Isolated RS-232, RS-422, RS-485	LP	1x	
7201	2	RS-232, RS-422, RS-485	SP	2x	
7202	2	RS-232	SP	2x	
7203	2	Isolated RS-232, RS-422, RS-485	SP	2x	
7204	2	RS-422, RS-485	SP	2x	
7205	2	RS-232, RS-422, RS-485	LP	2x	
7402	4	RS-422, RS-485	SP	4x	
7404	4	RS-232, RS-422, RS-485	SP	4x	
7405	4	RS-232, RS-485	SP	4x	
7406	4	RS-232	LP	4x	or
7803	8	RS-232	LP	8x	or
7804	8	RS-232, RS-422, RS-485	SP	8x	
7161	16	RS-232	SP	16x	or

1 – LP adapters require low profile PC slots (standard profile bracket available); SP adapters require a standard profile PC slot.
2 – 7107 provides 5 or 12 VDC, via host power supply, to pin 9 of DB9M serial port for powering serial devices.

USB ASYNCHRONOUS

Whether you require one port or sixteen, SeaLINK® USB serial adapters will have you quickly communicating with your peripherals. Choose the enclosure that works for your application.

Features:

- Largest selection of USB serial adapters available, including models with software configurable electrical interfaces
- Authentic FTDI ICs ensure years of reliable, glitch-free communications
- Programmable baud rates and data formats
- Communicate over multiple ports at data rates to 921.6 Kbps
- High retention USB connectors prevent accidental removal of standard USB cables
- Multiport adapters available as OEM (board-only) versions without enclosure
- Sealevel SeaCOM software supports Microsoft Windows and Linux operating systems

OEM versions of all USB serial adapters are available for easily

USB ASYNCHRONOUS

Host Connector Legend

SeaLATCH® Locking USB	High-Retention USB Type B	Cable Adapters USB Type A	

SeaLINK® ONE & TWO-PORT USB SERIAL ADAPTERS

PART#	# PORT	ELECTRICAL INTERFACE	HOST INTERFACE		CONNECTORS
2105R	1	RS-232		1x	
2106	1	RS-422		1x	
2107	1	RS-485		1x	
2113	1 [1]	Isolated RS-232, RS-422, RS-485		1x	
2201	2	RS-232		2x	
2202	2	RS-422, RS-485		2x	
2203	2	RS-232, RS-422, RS-485		2x	
2213	2 [1]	Isolated RS-232, RS-422, RS-485		2x	

1 – 2103, 2113 and 2213 feature optically isolated serial ports.

USB ASYNCHRONOUS

SeaLINK® USB SERIAL ADAPTERS WITH SOFTWARE CONFIGURABLE INTERFACE

PART#	# PORT	ELECTRICAL INTERFACE	HOST INTERFACE		CONNECTORS	
2123	1	RS-232, RS-422, RS-485			1x	
2223	2	RS-232, RS-422, RS-485			2x	
2423	4	RS-232, RS-422, RS-485			4x	
2433	4 [1,2]	RS-232, RS-422, RS-485			4x	
2823	8	RS-232, RS-422, RS-485			8x	
2833	8 [1,2]	RS-232, RS-422, RS-485			8x	

1 – 2433 and 2833 provide 5 VDC @ 500mA on pin 9 of each DB9M serial port for powering serial devices.
2 – 2433 and 2833 include two convenient USB 1.1 hub ports.

USB ASYNCHRONOUS

SeaLINK® FOUR, EIGHT & SIXTEEN-PORT USB SERIAL ADAPTERS

PART#	# PORT	ELECTRICAL INTERFACE	HOST INTERFACE		CONNECTORS
2401	4	RS-232			4x
2402	4	RS-422, RS-485			4x
2403	4	RS-232, RS-422, RS-485			4x
2404	4	RS-232			4x
2407	4	RS-232, RS-485 VersaCom [1]			4x
2801	8	RS-232			8x
2802	8	RS-422, RS-485			8x
2803	8	RS-232, RS-422, RS-485			8x
2804	8	RS-232			8x
2807	8	RS-232, RS-485 VersaCom [1]			8x
2161	16+2[2]	RS-232			16x
2162	16	RS-232		2.0	16x
2164	16	RS-422, RS-485		2.0	16x
2167	16+2[2]	RS-232, RS-485 VersaCom [1]			

1 – 2407, 2807 and 2167 VersaCom design allows RS-232 or 2-wire RS-485 selection via cabling on each port.
2 – 2161 and 2167 include two convenient USB 1.1 hub ports.

Logicbus

WWW.LOGICBUS.COM.MX
WWW.LOGICBUS.COM
VENTAS@LOGICBUS.COM
SOPORTE@LOGICBUS.COM

GUADALAJARA
(33)-3823-4349
FAX (33)-3854-5975
USA
(619)-616-7350
CIUDAD DE MÉXICO
(55)-8995-3820

USB ASYNCHRONOUS
OEM EMBEDDED ONE & TWO-PORT USB SERIAL ADAPTERS

PART#	# PORT	ELECTRICAL INTERFACE	PC BRACKET [1]	SOFTWARE CONFIGURABLE	CONNECTORS	
2108	1	RS-232	LP		1x	
2208	2	RS-232	SP		2x	
2128	1	RS-232, RS-422, RS-485	SP	Y	1x	
2228	2	RS-232, RS-422, RS-485	SP	Y	2x	

1 – LP adapters require low profile PC slots (standard profile bracket available); SP adapters require a standard profile PC slot.

Relio™ R2 Sync Server

A rugged, solid-state industrial computer designed for applications requiring synchronous communications, small size, high reliability, powerful processing and a long product life cycle.

The Relio R2 Sync Server combines powerful processing with robust synchronous communications that are perfect for radar, satellite and other military applications. The system is compliant with MIL-STD-810 shock and vibration specifications and features four synchronous serial ports using the popular Zilog® Z85230 ESCC.

PCI EXPRESS & PCI SYNCHRONOUS

Sealevel PCI Express and PCI synchronous serial adapters are trusted for critical military, aerospace and commercial applications where reliable, high-speed communications are required.

Features:

- Multi-interface adapters are configurable for RS-232, RS-422, RS-485, RS-530, RS-530A or V.35 electrical interfaces
- Zilog Z16C32 IUSC supports sync serial data rates to 10 Mbps
- Zilog Z85230 ESCC supports sync serial data rates to 128 Kbps
- PCI Express adapters are X1 compliant
- All PCI Express Sync adapters are also available in legacy PCI versions
- Low-profile adapters are compatible with all standard sized PCI Express slots
- Sealevel SeaMAC software supports HDLC, SDLC, asynchronous, and certain configurations on monosync, bi-sync and raw modes in Microsoft® Windows and Linux operating systems

Custom Design for Critical Applications

Our designs are an integral part of critical applications including radar, UAV ground control systems, and tactical communications. For example, Sealevel partnered with the Defense Information Systems Agency (DISA) to develop the ACC-188, a non-proprietary, interoperable USB synchronous interface that works seamlessly with their tactical data communications software application. If a standard product doesn't meet your needs, let Sealevel create a custom solution tailored to your specific requirements.

PCI EXPRESS & PCI SYNCHRONOUS

PCI EXPRESS & PCI SYNCHRONOUS SERIAL ADAPTERS

PART#	# PORT	ELECTRICAL INTERFACE	PC BRACKET[1]	SOFTWARE CONFIGURABLE	CONNECTORS	
2108	1	RS-232	LP		1x	
2208	2	RS-232	SP		2x	
2128	1	RS-232, RS-422, RS-485	SP	Y	1x	
2228	2	RS-232, RS-422, RS-485	SP	Y	2x	

1 – LP adapters require low profile PC slots (standard profile bracket available); SP adapters require a standard profile PC slot.

WWW.LOGICBUS.COM.MX
WWW.LOGICBUS.COM
VENTAS@LOGICBUS.COM
SOPORTE@LOGICBUS.COM

GUADALAJARA
(33)-3823-4349
FAX (33)-3854-5975
USA
(619)-616-7350
CIUDAD DE MÉXICO
(55)-8995-3820

Our digital and analog I/O products enable you to remotely monitor - and control - real-world signals. From single inputs to entire networks, our expandable solutions can be configured to meet your specific needs.

eI/O ETHERNET & PoE ANALOG AND DIGITAL I/O MODULES

eI/O Ethernet I/O modules are cost-effective and allow remote monitoring of analog and digital I/O from anywhere on your Ethernet network. A variety of I/O options include optically isolated inputs, Reed, Form C and solid-state relay outputs, and analog to digital inputs. Multifunction modules combine commonly used digital inputs and outputs with analog I/O configurable for a variety of voltage ranges. Choose modules powered by your 9-30 VDC source or via the RJ45 connector with Power over Ethernet (802.3af) versions.

Feature:

- Removable screw terminal blocks simplify field wiring
- Ready for DIN Rail mounting, or removable plastic clip can be attached to walls or other surfaces
- Communicate with eI/O modules using industry standard Modbus TCP protocol or use Sealevel SeaMAX API software libraries from your application
- Sealevel SeaMAX software supports Microsoft Windows and Linux operating systems

Sealevel Modbus Connect

The Sealevel Modbus Connect app allows you to access the registers, coils and discrete I/O of your Sealevel Modbus devices. Modbus Connect is compatible with iPad, iPhone and iPod touch mobile devices running iOS 7 or later, with an active Wi-Fi or cellular data connection.

With Sealevel Modbus Connect, you can:

Monitor Sealevel remote I/O devices on a Local Area Network (LAN) or over the Internet.
Perform low-level control of Sealevel Modbus devices.
Perform stress testing of connected hardware.
Learn about Modbus/TCP protocol and packet data.
Troubleshoot network and communication problems.
Perform equipment demonstrations.

PART#		INPUTS	OUTPUTS
9-30 VDC	PoE		
110E	110PoE	4 Optically Isolated	4 Reed Relays
120E	120PoE	4 Optically Isolated	4 Form C Relays
130E	130PoE	4 Optically Isolated	
140E	140PoE		4 Reed Relays
150E	150PoE		4 Form C Relays
160E	160PoE	32 Channel Parallel I/O (TTL)	
170E	170PoE	2 Optically Isolated Dry Contacts, 8 Analog to Digital Inputs	2 Solid-State Relays

WWW.LOGICBUS.COM.MX
WWW.LOGICBUS.COM
VENTAS@LOGICBUS.COM
SOPORTE@LOGICBUS.COM

GUADALAJARA
(33)-3823-4349
FAX (33)-3854-5975
USA
(619)-616-7350
CIUDAD DE MÉXICO
(55)-8995-3820

SeaI/O REMOTE DATA ACQUISITION MODULES

Sealevel's SeaI/O data acquisition modules provide powerful digital, analog and serial expansion to any computer. Connect to the host via wireless, Ethernet, USB, RS-485 or RS-232 to add the functionality required for your particular application. Multiple units can be daisy chained using convenient pass-through connectors to create a versatile remote control and monitoring network. Perfect for a variety of applications including process control, broadcast automation, security and facility management.

Features:

- Versatile host interface selection – choose Wireless, Ethernet, USB, RS-485 or RS-232
- Mix and match up to 246 expansion modules to create the perfect I/O configuration for your application
- Powerful software configuration and diagnostic tools
- Address selectable via software or switch
- Easily daisy chain multiple units together in a stack or distributed network
- Selectable RS-485 line conditioning and flexible mounting options
- Operates over a wide 9-30 VDC input range and is powered by your source or a varietyof power supply options
- Communicate with SeaI/O modules using industry standard Modbus TCP/RTU protocols or use Sealevel SeaMAX API software libraries from your application
- Sealevel SeaMAX software supports Microsoft Windows and Linux operating systems

SeaI/O modules can be mounted directly to Sealevel SeaPAC (8.4" or larger) touchscreen computers and communicate over Modbus RTU. One or more SeaI/O modules can be physically attached to the SeaPAC or located up to 4000 feet away. The computer and I/O can be removed from the display for easy field upgrades.
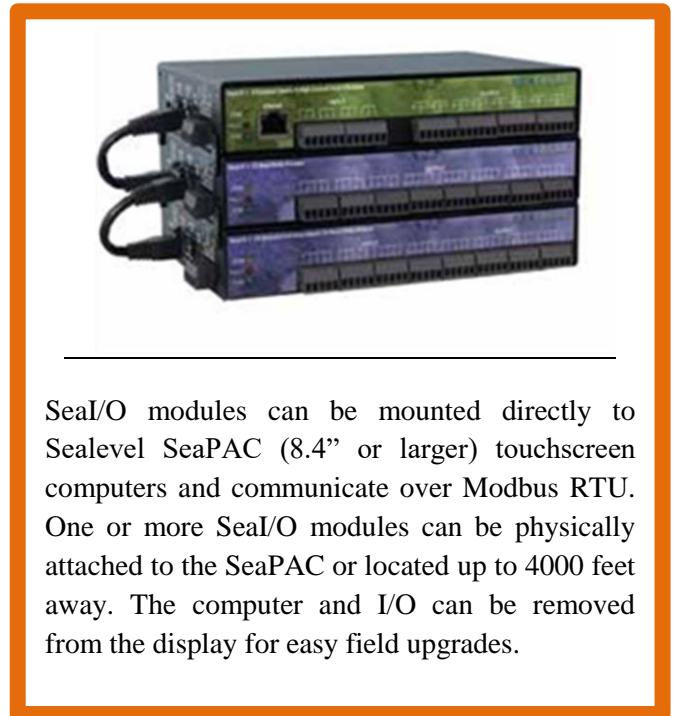
SeaI/O REMOTE DATA ACQUISITION MODULES

BASE MODULES	HOST INTERFACE	DESCRIPTION
W-Series	Wireless Ethernet (Modbus TCP)	Control I/O remotely using an 802.11b/g connection. Suitable for a wide range of applications and environments, Sealevel's robust wireless interface provides easy installation and reliable communication.
E-Series	Ethernet (Modbus TCP)	SeaI/O Ethernet modules are compatible with 10/100BaseT Ethernet and allow remote monitoring and control of I/O from anywhere on your network.
U-Series	USB (Modbus RTU)	SeaI/O USB modules allow any USB port to interface your I/O. Sealevel's innovative SeaLATCH locking USB cable design and highretention USB connector guarantee trouble-free connectivity even in high vibration or industrial environments.
M-Series	RS-485 (Modbus RTU)	Targeted for traditional plant floor automation applications, SeaI/O RS-485 modules are compatible with industry standard Modbus RTU protocol, which allows SeaI/O to operate with a wide variety of PLCs and third-party Modbus controllers.
S-Series	RS-232 (Modbus RTU)	Turn any computer into a powerful data acquisition system with SeaI/O RS-232 modules. SeaI/O expands traditional RS232 point-to-point communications to allow control of up to 247 modules from a single serial port.
EXPANSION MODULES	**SeaI/O INTERFACE**	**DESCRIPTION**
N-Series	RS-485 (Modbus RTU) to Base Modules	Expansion modules communicate with base modules via RS-485 (Modbus RTU) over convenient RJ45 pass-through connectors and inexpensive CAT5e cabling. Modules can be located together in a stack or distributed throughout your facility up to 4000 feet away

WWW.LOGICBUS.COM.MX
WWW.LOGICBUS.COM
VENTAS@LOGICBUS.COM
SOPORTE@LOGICBUS.COM

GUADALAJARA
(33)-3823-4349
FAX (33)-3854-5975
USA
(619)-616-7350
CIUDAD DE MÉXICO
(55)-8995-3820

Seal/O INTERFACES

PART#	INPUTS	OUTPUTS
410-	16 Optically Isolated	16 Reed Relays
420-	16 Optically Isolated	8 Form C Relays
430-	32 Optically Isolated	
440-		32 Reed Relays
450-		16 Form C Relays
462-	96 Channel Parallel I/O (TTL)	
463-	96 Channel Parallel I/O (TTL)	
470-	8 Optically Isolated, 16 A/D	2 D/A, 8 Open-Collector
520-	8 Optically Isolated	8 High-Current Form C Relays
530-	16 Optically Isolated	16 Open-Collector
540-		32 Open-Collector
570-	8 Optically Isolated, 8 16-Bit A/D	8 Form C Relays
580E/PoE	32 Isolated Dry Contacts	

Multifunction SeaI/O Modules

Sealevel multifunction SeaI/O modules combine commonly used digital inputs and outputs with analog I/O selectable for a variety of voltage ranges or 4-20ma current loop. This mix of I/O allows you to optimize the cost and size of your distributed I/O network.

SeaRAQ™ ANALOG & DIGITAL I/O EXPANSION MODULES

SeaRAQ™ modules support a variety of real-world analog I/O configurations such as A/D inputs, 4-20 mA outputs, 0-20 mA inputs, thermocouples and RTD inputs. Optically isolated inputs, relay outputs and additional serial interfaces are also available.

Feature:

- Provides unprecedented expansion capabilities for Sealevel Relio R3 and R4 industrial computers
- Communicate with SeaRAQ™ modules using industry standard Modbus RTU protocol or use Sealevel SeaMAX API software libraries from your application
- Field wiring is simplified via removable, high-retention Phoenix-style terminal blocks
- Sealevel SeaMAX software supports Microsoft Windows and Linux operating systems

Relio R3 industrial computers

The Relio R3 is a solid-state, fanless 3U rackmount computer for applications requiring high reliability, maximum I/O expansion and wide operating temperature range. Built on the advantages of COM Express architecture, the system is powered by an Intel Atom dual core processor and offers 18 SeaRAQ™ expansion slots for analog, digital and serial I/O.

Relio R4 industrial computers

The Relio R4 is a cable-free and fanless,
solid-state computer for industrial rackmount applications. The system offers the advantages of COM Express architecture featuring your choice of Intel dual-core processor (i7, i3, or Atom) and includes a wealth of standard I/O in a space-saving, 1U rackmount enclosure. Two SeaRAQ™ expansion slots are available on the
rear of the enclosure for digital, analog and serial I/O expansion.

SeaRAQ™ I/O EXPANSION MODULES

PART#	DESCRIPTION
6510	8 Channel-to-Channel Isolated A/D Inputs
6511	6 Isolated RTD Analog Inputs
6512	6 Isolated Thermocouple Inputs (Type E, J or K)
6513	8 Channel Isolated Differential A/D Inputs
6520	8 Channel Isolated 4-20 mA Current Loop Transmitter Outputs
7543	4 Port RS-232/422/485 Serial Interface Adapter
8510	16 Isolated Digital Inputs (3-30 VDC)
8511	16 Isolated Digital Inputs (0-132 VAC)
8512	16 Channel Isolated Digital Inputs, 4 Form C Relay Outputs
8520	16 Isolated Form A Relay Outputs
8521	8 Isolated Form A Relay Outputs

PCI EXPRESS & PCI DIGITAL

Sealevel PCI Express digital I/O boards are designed for computers with X1 PCI Express slots and are compatible with any PCI Express slot. PCI Express and PC boards are available for low-profile and standard profile PC slots. Digital I/O boards are available with optically isolated inputs and Reed relay outputs, as well as Form C relays and TTL. Optically isolated inputs protect the PC from voltage spikes common to industrial environments while Reed relay outputs provide reliable, long-life switch closures suitable for low current applications.

Features:

- All PCI Express I/O adapters are also available in legacy PCI versions PCI Express adapters are X1 compliant
- Sealevel SeaIO Classic software supports Windows® Windows and Linux operating systems

The Digital I/O Handbook: Digital I/O Explained

Renowned technical author Jon Titus and the CEO of Sealevel Systems, Tom O'Hanlan, clearly explain real-world digital input/ output implementation from both a hardware and software perspective. Whether you are a practicing engineer or a student, The Digital I/O Handbook will provide helpful insight.

Covers a wide range of devices including optically isolated inputs, relays and sensors
Shows many helpful circuit diagrams and drawings
Includes software code examples
Presents common problems and solutions
Detailed glossary of common industry terms
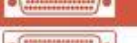
PCI EXPRESS DIGITAL I/O ADAPTERS

PART#	INPUTS	OUTPUTS	PC BRACKET [1]	CONNECTORS
8003e		16 Reed Relays	SP	
8004e	16 Optically Isolated (3-13V)	16 Reed Relays	SP	
8004He	16 Optically Isolated (10-30V)	16 Reed Relays	SP	
8006e	16 Optically Isolated (3-13V)		SP	
8006He	16 Optically Isolated (10-30V)		SP	
8012e	8 Optically Isolated (3-30V)	8 Reed Relays	LP	

1 – LP adapters require low profile PC slots (standard profile bracket available); SP adapters require a standard profile PC slot.

PCI DIGITAL I/O ADAPTERS

PART#	INPUTS	OUTPUTS	PC BRACKET [1]	CONNECTORS
8004H				
8005	48 Channel Parallel I/O (TTL)		SP	2x
8006H				
8007		32 Reed Relays	SP	2x
8010	32 Channel Parallel I/O (TTL)		SP	
8012				
8012H	8 Optically Isolated (10-30V)	8 Reed Relays	LP	
8018				

1 – LP adapters require low profile PC slots (standard profile bracket available); SP adapters require a standard profile PC slot.

SeaDAC™ & SeaDAC™ Lite USB DIGITAL I/O MODULES

SeaDAC and SeaDAC Lite USB digital I/O modules connect to any computer's USB port and offer choices including optically isolated inputs, Reed and Form C relays and TTL interface to industry standard solid-state relay racks. Robust software drivers make implementation and troubleshooting easy using Microsoft Windows and Linux operating systems.

Features:

- Modules are powered by the USB host interface and consume less than 500 mA
- All SeaDAC models feature high-retention USB connectors to prevent accidental removal of standard USB cables
- SeaDAC Lite products offer Sealevel's exclusive SeaLATCH locking USB port that provides a secure connection with SeaLATCH USB cables via metal thumbscrews
- Removable screw terminal blocks simplify field wiring
- Communicate with SeaDAC I/O modules using industry standard Modbus RTU protocol or use Sealevel SeaMAX API software libraries from your application
- Sealevel SeaMAX software supports Microsoft Windows and Linux operating systems

SeaLATCH Locking USB Connectors

The USB interface has become a common interface and is frequently accepted in industrial applications. However, the USB connector was originally designed for home/office users to quickly connect and disconnect peripherals. As a result, accidental cable disconnection is the most common point of failure with USB industrial I/O devices. The thumbscrew on a SeaLATCH USB cable provides a secure metal-to-metal connection preventing accidental disconnection. SeaLATCH connectors are fully compatible with standard USB cables.

SeaDAC

PART#	INPUTS	OUTPUTS
8221	16 Optically Isolated	16 Reed Relays
8222	16 Optically Isolated	8 Form C Relays
8223	32 Optically Isolated	
8224		32 Reed Relays
8225		16 Form C Relays
8227	8 Optically Isolated, 8 A/D	8 24V PLC, 2 D/A
8232	8 Optically Isolated	8 High-Current Form C Relays

WWW.LOGICBUS.COM.MX
WWW.LOGICBUS.COM
VENTAS@LOGICBUS.COM
SOPORTE@LOGICBUS.COM

GUADALAJARA
(33)-3823-4349
FAX (33)-3854-5975
USA
(619)-616-7350
CIUDAD DE MÉXICO
(55)-8995-3820

SeaDAC Lite

PART#	INPUTS	OUTPUTS
8111	4 Optically Isolated	4 Reed Relays
8112	4 Optically Isolated	4 Form C Relays
8113	4 Optically Isolated	
8114		4 Reed Relays
8115		4 Form C Relays
8126	32 Channel Parallel I/O (TTL)	

Logicbus

WWW.LOGICBUS.COM.MX
WWW.LOGICBUS.COM

VENTAS@LOGICBUS.COM
SOPORTE@LOGICBUS.COM

GUADALAJARA
(33)-3823-4349
FAX (33)-3854-5975

USA
(619)-616-7350

CIUDAD DE MÉXICO
(55)-8995-3820

YOUR HARDWARE IS ONLY AS GOOD AS YOUR SOFTWARE

Sealevel hardware is backed by powerful software that makes installation and operation easy using Microsoft® Windows and Linux operating systems. Sealevel offers a variety of software solutions to meet your application requirements.

SERIAL SOLUTIONS

SeaCOM – Asynchronous Serial for Windows/Linux

Sealevel's SeaCOM enhanced serial driver makes using the features of our asynchronous serial products easy. In addition to being completely compatible with the Microsoft Windows Serial Driver, SeaCOM also makes use of advanced UART features without requiring changes to your software application. The user can preconfigure advanced features in the SeaCOM driver using Windows Device Manager

SeaLINK® – Virtual COM Ports for Sealevel Ethernet Serial Servers in Windows/Linux

SeaLINK® software drivers and utilities simplify the installation of Sealevel Ethernet serial servers. After installation, the serial ports appear as virtual COM ports to the host machine. Standard serial operating calls guarantee compatibility with legacy serial devices and enable backward compatibility with existing software applications. Serial tunneling is supported, allowing two native serial devices to communicate over a network without a computer. Alternatively, raw data socket mode is supported, completely eliminating the need for a driver.

SeaMAC – Synchronous Serial for Windows/Linux

SeaMAC for Windows provides a powerful WIN32 interface (CreateFile, ReadFile, WriteFile, etc.) for Sealevel synchronous serial products. While asynchronous communications has one standard character format, synchronous communications comes in many formats. We provide support for many popular protocols including HDLC/SDLC (MAC level), bisync, monosync, external sync and raw (bit-shifter) modes.

iOS & I/O SOLUTIONS

Sealevel Mod+ Connect – Digital I/O for Ios

Mod+ Connect is a diagnostic and test utility for all Sealevel eI/O and SeaI/O modules. The utility allows you to view and change device settings, as well as monitor and control the I/O banks of the connected module. Mod+ Connect is compatible with iPhones running iOS 9 or later with an active wireless or cellular data connection.

Sealevel Modbus Connect – Digital I/O for iOS

The Sealevel Modbus Connect app allows you to access the registers, coils and discrete I/O of your Sealevel Modbus devices using industry-standard Modbus commands. Modbus Connect is compatible with mobile devices running iOS 7 or later with an active wireless or cellular data connection.

Automation   Sensors   Industrial Computers   Data Acquisition   Test & Measurement Equipment   North America   Central and South America

SeaMAX – Digital I/O and Modbus TCP/RTU in Windows/Linux

The SeaMAX Suite is a collection of configuration/diagnostic utilities and software libraries that enable rapid application development. The SeaMAX API, included in the SeaMAX Suite, provides a common application interface for Sealevel SeaI/O, eI/O and SeaDAC data acquisition modules. SeaMAX is designed to simplify application development by requiring little knowledge of the underlying communication protocols of these devices and eliminating the need for low-level programming. SeaMAX is available in an unmanaged library and a wrapper library that provides an interface to the API from managed code.

SeaI/O Classic – Digital I/O for Windows/Linux

The SeaI/O Classic software package is a Windows developer's toolkit for Sealevel board-based and legacy USB Digital I/O devices. The SeaI/O API provides a variety of useful high-level function calls implemented in a Windows dynamic link library (DLL) that gives access to the hardware from Windows-based platforms such as Visual C++. In addition to the API, SeaI/O includes an ActiveX control along with sample code and utilities to simplify software development.

WWW.LOGICBUS.COM.MX
WWW.LOGICBUS.COM
VENTAS@LOGICBUS.COM
SOPORTE@LOGICBUS.COM

GUADALAJARA
(33)-3823-4349
FAX (33)-3854-5975
USA
(619)-616-7350
CIUDAD DE MÉXICO
(55)-8995-3820