

# ISO-232+2.CF User Manual

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Part Number 3201

**SEALEVEL**  
SYSTEMS INCORPORATED

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## OVERVIEW

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The ISO-232+2.CF card is an isolated dual-port RS-232 CompactFlash serial card with the following features:

- Type II CompactFlash form factor for CF+ equipped PDAs, Handheld PCs, laptops, etc.
- SeaCOM software provided for Windows 95, 98, 98SE, Me, 2000, and XP
- Drivers not required for Windows CE and PocketPC
- 16C550 compatible, buffered UART with 16-byte FIFO
- RS-232 interfaces are isolated up to +/-50 VDC relative to local host ground.
- Data rates to 115.2K bps
- 3.3V compatible
- All modem control signal signals implemented
- Compatible with all standard serial COM software
- Software controlled power management
- Low power consumption
- Detachable 12" cable with two DB-9M connectors

## ABOUT THE ISO-232+2.CF

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The ISO-232+2.CF card is an isolated dual-port RS-232 serial card designed using a 16C550 compatible UART. The serial data and control lines are buffered using isolated RS-232 drivers that allow the RS-232 interfaces to be isolated up to +/-50 VDC relative to local host ground.

Industry standard baud rates up to 115.2K bps are supported, together with 16-byte TX and RX FIFOs. Each port has TX, RX, CTS and RTS signals, and there is a common ISO GND connection shared by the two ports.

The SIO-232+2.CF conforms to the industry standard CompactFlash+ interface that allows connection of peripherals to the system bus of a laptop, handheld PC or PDA. The CF+ specification extends the earlier memory-only CompactFlash interface to allow I/O devices and extra power for the card. The SIO-232+2.CF is an I/O type device and requires a CF+ capable slot.

# INSTALLING THE ISO-232+2.CF

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## 3.1 Windows 95, 98, 98SE, Me, 2000, XP

You will first need to install SeaCOM prior to using the ISO-232+2.CF. Installing the supplied SeaCOM software that comes with your product will copy the necessary files into the proper Windows folders. Windows will use these files to “recognize” the ISO-232+2.CF card.

**IMPORTANT:** In Windows XP SP1, you will need to apply a “hot fix” from Microsoft to correct a bug that causes the ports to appear to be installed properly, yet are non-functional. Please contact Sealevel Systems technical support for assistance.

For Windows 95/98/ME/NT/2000, the diagnostic tool ‘WinSSD’ is installed in the SeaCOM folder on the Start Menu during the setup process. First find the ports using the Device Manager, then use ‘WinSSD’ to verify that the ports are functional.

## 3.2 Windows CE, PocketPC

There is no need to install any software for Windows CE or PocketPC. Simply insert the ISO-232+2.CF card and two entries will appear in a list when you go to set up a “Connection”.

**Note:** The standard OS drivers allow use of only one port at a time.

For Windows CE and PocketPC, the utility ‘vxHpc’ is available from Cambridge Computer Corporation, free for a 30-day evaluation or a nominal charge for a license. ‘vxHpc’ is a high performance serial and telnet communication software application that can help you connect to various terminal devices and can also be used to perform a simple loopback test.

The latest version and instructions are available here:

<http://www.cam.com/vxhpc.html>

# HARDWARE SPECIFICATION

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## 4.1 PINOUT

The ISO-232+2.CF is supplied with a 12” Y-cable that terminates with two DB-9M connectors with female jackscrews (to match the port at the back of a PC). The pinout below applies to the DB-9M connectors on the supplied cable. “Port1” and “Port2” is marked on the cables.

### PORT1

PIN	NAME	FUNCTION
1	-	-
2	<b>RX1</b>	<b>Receive Data input 1</b>
3	<b>TX1</b>	<b>Transmit Data output 1</b>
4	-	-
5	<b>ISOGND</b>	<b>ISOLATED GROUND</b>
6	-	-
7	<b>RTS1</b>	<b>Request To Send output 1</b>
8	<b>CTS1</b>	<b>Clear To Send input 1</b>
9	-	-
Shell	-	See note*

### PORT2

PIN	NAME	FUNCTION
1	-	-
2	<b>RX2</b>	<b>Receive Data input 2</b>
3	<b>TX2</b>	<b>Transmit Data output 2</b>
4	-	-
5	<b>ISOGND</b>	<b>ISOLATED GROUND</b>
6	-	-
7	<b>RTS2</b>	<b>Request To Send output 2</b>
8	<b>CTS2</b>	<b>Clear To Send input 2</b>
9	-	-
Shell	-	See note*

\* The cable shield is grounded at the card-end, runs the full length of the cable and is not connected at the equipment end (i.e., does not connect to the DB-9 shell) to help to avoid ground loops.

**Technical Note:** Please terminate any control signals that are not going to be used. The most common way to do this is connect RTS to CTS. Terminating these pins, if not used, will help insure you get the best performance from your adapter.

## 4.2 ELECTRICAL

All figures quoted are typical parameters @ 25°C (77°F)

<b>RS-232 SIGNALS:</b>	Typical output level $\pm 5.5V$ (open circuit voltages) TX, RX, CTS and RTS are supported on each port
<b>UART CLOCK SPEED:</b>	1.8432MHz, max baud rate 115.2K bps
<b>ISOLATION:</b>	Isolation is defined between ISOGND and host 0V supply (metal case of card and cable shield braid) and can be up to $\pm 50V$ , DC to 60Hz. The two ports share a common ground (ISOGND): no isolation exists between the two ports
<b>SCAVENGED POWER:</b>	The isolation driver circuit will only supply enough power to guarantee correct RS-232 signal operation into 3K-ohm loads on TX and RTS. Using terminal equipment that scavenges power from the RS-232 signals may not work
<b>UNUSED SIGNALS:</b>	If RX or CTS inputs are not used, make sure they are looped back into TX and RTS respectively to prevent them from floating

## 4.3 POWER CONSUMPTION

All figures quoted are typical parameters @ 25°C (77°F)

<b>VCC CURRENT:</b>	35mA typical @ 3.3V
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## 4.4 MECHANICAL

<b>MASS:</b>	15g typical (0.352 oz.)
<b>FORM FACTOR:</b>	36.4mm x 42.8mm x 5.0 mm overall (1.43" x 1.68" x 0.13")

## 4.5 ENVIRONMENTAL

<b>HUMIDITY:</b>	<80% R.H. (non-condensing)
<b>TEMP:</b>	0-50°C ambient (32-122°F)

## TROUBLESHOOTING

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1. Identify all I/O adapters currently installed in your system. This includes your on-board serial ports, controller cards, sound cards, etc. The I/O addresses used by these adapters, as well as the IRQ (if any) should be identified.
2. Configure your Sealevel Systems adapter so that there is no conflict with currently installed adapters. No two adapters can occupy the same I/O space.
3. Try the Sealevel Systems adapter with a unique IRQ. While the Sealevel Systems adapter does allow the sharing of IRQs, many other adapters (i.e., SCSI adapters & on-board serial ports) do not.
4. Make sure the Sealevel Systems adapter is securely installed.
5. For Windows 95/98/ME/NT/2000, the diagnostic tool 'WinSSD' is installed in the SeaCOM folder on the Start Menu during the setup process. First find the ports using the Device Manager, then use 'WinSSD' to verify that the ports are functional.
6. For Windows CE and PocketPC, the utility 'vxHpc' is available from Cambridge Computer Corporation, free for a 30-day evaluation or a nominal charge for a license. 'vxHpc' is a high performance serial and telnet communication software application that can help you connect to various terminal devices and can also be used to perform a simple loopback test. The latest version and instructions are available here:  
<http://www.cam.com/vxhpc.html>
7. Remember, if 'No Echo' mode is selected, a data loopback cannot be accomplished.
8. Always use the Sealevel Systems diagnostic software when troubleshooting a problem. This will eliminate any software issues from the equation.



# WARRANTY

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Sealevel's commitment to providing the best I/O solutions is reflected in the Lifetime Warranty that is standard on all Sealevel manufactured products. We are able to offer this warranty due to our control of manufacturing quality and the historically high reliability of our products in the field. Sealevel products are designed and manufactured at its Liberty, South Carolina facility, allowing direct control over product development, production, burn-in and testing.

Sealevel Systems, Inc. (hereafter "Sealevel") warrants that the Product shall conform to and perform in accordance with published technical specifications and shall be free of defects in materials and workmanship for life. In the event of failure, Sealevel will repair or replace the product at Sealevel's sole discretion. Failures resulting from misapplication or misuse of the Product, failure to adhere to any specifications or instructions, or failure resulting from neglect or abuse are not covered under this warranty.

Warranty service is obtained by delivering the Product to Sealevel and providing proof of purchase. Return authorization must be obtained from Sealevel Systems before returned merchandise will be accepted. Authorization is obtained by calling Sealevel Systems and requesting a Return Merchandise Authorization (RMA) number. The Customer agrees to insure the Product or assume the risk of loss or damage in transit, to prepay shipping charges to Sealevel, and to use the original shipping container or equivalent. Warranty is valid only for original purchaser and is not transferable.

Sealevel Systems assumes no liability for any damages, lost profits, lost savings or any other incidental or consequential damage resulting from the use, misuse of, or inability to use this product. Sealevel Systems will not be liable for any claim made by any other related party. This warranty applies to Sealevel manufactured Product. Product purchased through Sealevel but manufactured by a third party will retain the original manufacturer's warranty.

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