

SIO-232.CF

User Manual | 3101



SEALEVEL®

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Overview

The SIO-232.CF card is an RS-232 CompactFlash serial card with the following features:

- Type I CompactFlash form factor for CF+ equipped PDAs, Handheld PCs, laptops, etc.
- *Supported in Windows 95, 98, 98SE, Me, NT4, 2000, XP, CE and PocketPC*
- 16C550 compatible, buffered UART with 16-byte FIFO
- Data rates to 921.6K bps
- Switchable x1 or x8 baud rate supports up to 921.6K baud
- 3.3V or 5V 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 DB-9M connector

Introduction

The SIO-232.CF card is an RS-232 serial card designed using a 16C550 compatible UART. The serial data and control lines are buffered using ESD protected RS-232 transceivers.

Industry standard baud rates up to 921.6K bps are supported, together with 16-byte TX and RX FIFOs. A small switch is located at the back edge of the card, which allows selection of “x1” or “x8” baud rate multiplier. This feature allows up to 921.6K bps operation without needing special device drivers on the host (in x8 mode you simply multiply the setting shown on the host by 8 to get the real serial data rate - e.g., 19.2K bps set in software with “x8” mode gives 153.6K bps data rate physically in hardware). See section 5 for the switch settings.

The SIO-232.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.CF is an I/O type device and requires a CF+ capable slot.

Before You Get Started

What's Included

The SIO-232.CF is shipped with the following items. If any of these items are missing or damaged, please contact Sealevel for replacement.

- **SIO-232.CF – RS-232 Serial Interface Adapter**
- **12" long cable that terminates with a DB-9M connector with female jackscrews**

Advisory Conventions



Warning

The highest level of importance is used to stress a condition where damage could result to the product, or the user could suffer serious injury.



Important

The middle level of importance used to highlight information that might not seem obvious or a situation that could cause the product to fail.



Note

The lowest level of importance used to provide background information, additional tips, or other non-critical facts that will not affect the use of the product.

Installation the SIO-232.CF

Software Installation

Windows Installation



Do not install the Adapter in the machine until the software has been fully installed.



Only users running Windows 7 or newer should utilize these instructions for accessing and installing the appropriate driver via Sealevel's website. If you are utilizing an operating system prior to Windows 7, please contact Sealevel by calling 864.843.4343 or emailing support@sealevel.com to receive access to the proper driver download and installation instructions.

You will first need to install SeaCOM prior to using the SIO-232.CF. Installing SeaCOM software that is available Sealevel's website (www.sealevel.com) will copy the necessary files into the proper Windows folders. Windows will use these files to "recognize" the SIO-232.CF card.

1. Begin by locating, selecting, and installing the correct software: [Sealevel Seacom Software](#).
2. Select the link for 'SeaCOM for Windows'.
3. The setup file will automatically detect the operating environment and install the proper components.

To confirm that the SeaCOM driver has been successfully installed, click on the 'Start' button, and then select 'All Programs'. You should see the 'SeaCOM' program folder listed.

You are now ready to proceed with connecting the 3101 to your system. Refer to the Hardware Specification section for details.



Windows NT4 requires additional third-party Card & Socket Services (additional charge, not included)



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 SIO-232.CF card and it will appear in a list when you go to set up a “Connection”.

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:

<https://web.archive.org/web/20101212202122/http://cam.com/vxhpc.html>

For additional information on connecting your PocketPC or if you are using any other older versions of Windows, such as Windows 95/98/ME/NT/2000, please call Sealevel Systems’ Technical Support, (864) 843-4343. Our technical support is free and available from 8:00 AM to 5:00 PM Eastern Time Monday through Friday. For email support contact support@sealevel.com.

Hardware Specification

4.1 Pinout

The SIO-232.CF is supplied with a 12" long cable that terminates with a DB-9M connector with female jackscrews (to match the port at the back of a PC). The pinout below applies to the SIO-232.CF and the DB-9M connector on the supplied cable (the cable is pinned one-to-one).

PIN	NAME	FUNCTION
1*	DCD	Data Carrier Detect input
2	RX	Receive Data input
3	TX	Transmit Data output
4	DTR	Data Terminal Ready output
5	GND	GROUND (0V)
6	DSR	Data Set Ready input
7	RTS	Request To Send output
8	CTS	Clear To Send input
9	RI	Ring Indicate input
Shield	-	See note**

* Pin 1 is nearest the edge of the card.

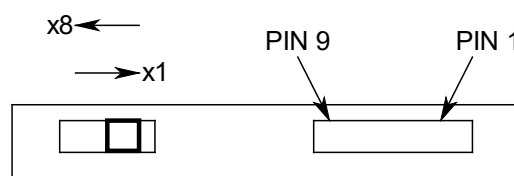
**The cable shield is grounded at the card-end, runs the full length of the cable, and is not connected at the equipment end (i.e., does not connect to the DB-9 shell) to help to avoid ground loops.



Please terminate any control signals that are not going to be used. The most common way to do this is connect RTS to CTS and RI. Also, connect DCD to DTR and DSR. Terminating these pins, if not used, will help insure you get the best performance from your adapter.



The mating connector type: Honda RMC-E9F2S-BSLA2N-A2



4.2 Electrical

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

RS-232 SIGNALS: Typical output level $\pm 5.5V$ (open circuit voltages)

ESD PROTECTION: All RS-232 signal lines on the SIO-232.CF card are protected against electrostatic discharge (ESD)

15kv - human body model

8kv - IEC1000-4-2, contact discharge

15kv - IEC1000-4-2, air-gap discharge

UART CLOCK SPEED: Switch selectable Baud rate multiplier:

x1: UART CLOCK is 1.8432MHz -> 115.2K bps max

x8: UART CLOCK is 14.7456MHz -> 921.6K bps max

4.3 Power Consumption

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

VCC CURRENT: 20mA typical @ 5V, 13mA typical @ 3.3V

IN STANDBY MODE: 14mA typical @ 5V, 5mA typical @ 3.3V

4.4 Mechanical

CARD MASS: 10g typical (0.352 oz.)

FORM FACTOR: 36.4mm x 42.8mm x 3.3 mm overall (1.43" x 1.68" x 0.13")

4.5 Environmental

HUMIDITY: <80% R.H. (non-condensing)

TEMP: 0-50°C ambient (32-122°F)

4.6 Notes on Serial Data Throughput

The maximum bit rate of 921.6K bps does not imply that the maximum sustained throughput rate of the serial port will be as high. The actual throughput that can be achieved depends on many factors including the host PC speed, the serial data block size, duty cycle, and overall host interrupt latency.

4.7 Baud Rate Settings

The table below illustrates the common baud rate values available for each of the baud rate multiplier switch positions:

HOST SETTING	SWITCH = x1	SWITCH = x8
300 bps	300 bps	2400 bps
1200 bps	1200 bps	9600 bps
2400 bps	2400 bps	19.2K bps
4800 bps	4800 bps	38.4K bps
9600 bps	9600 bps	76.8K bps
19.2K bps	19.2K bps	153.6K bps
38.4K bps	38.4K bps	307.2K bps
57.6K bps	57.6K bps	460.8K bps
115.2K bps	115.2K bps	921.6K bps

Appendix A – Troubleshooting

The adapter should provide years of trouble-free service. However, in the event that device appears to not be functioning incorrectly, the following tips can eliminate most common problems without the need to call Technical Support.

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. In Windows, 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:

<https://web.archive.org/web/20101212202122/http://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 help eliminate any software issues and identify any hardware conflicts.

If these steps do not solve your problem, please call Sealevel Systems' Technical Support, (864) 843-4343. Our technical support is free and available from 8:00 AM to 5:00 PM Eastern Time Monday through Friday. For email support contact support@sealevel.com.

Appendix B – How To Get Assistance

Please refer to Troubleshooting Guide prior to calling Technical Support.

1. Begin by reading through the Trouble Shooting Guide in [Appendix A](#). If assistance is still needed, please see below.
2. When calling for technical assistance, please have your user manual and current adapter settings. If possible, please have the adapter installed in a computer ready to run diagnostics.
3. Sealevel Systems provides a FAQ section on its web site. Please refer to this to answer many common questions. This section can be found at <http://www.sealevel.com/faq.htm> .
4. Sealevel Systems maintains a Home page on the Internet. Our home page address is www.sealevel.com. The latest software updates, and newest manuals are available via our FTP site that can be accessed from our home page.
5. Technical support is available Monday to Friday from 8:00 A.M. to 5:00 P.M. Eastern Time. Technical support can be reached at (864) 843-4343.

RETURN AUTHORIZATION MUST BE OBTAINED FROM SEALEVEL SYSTEMS BEFORE RETURNED MERCHANDISE WILL BE ACCEPTED. AUTHORIZATION CAN BE OBTAINED BY CALLING SEALEVEL SYSTEMS AND REQUESTING A RETURN MERCHANDISE AUTHORIZATION (RMA) NUMBER.

Warranty

Sealevel's commitment to providing the best I/O solutions is reflected in the Lifetime Warranty that is standard on all Sealevel manufactured I/O 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 achieved ISO-9001:2015 certification in 2018.

Warranty Policy

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 the warranty period. 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, abuse, accidents, or acts of nature are not covered under this warranty.

Warranty service may be obtained by delivering the Product to Sealevel and providing proof of purchase. Customer agrees to ensure 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.

This warranty applies to Sealevel manufactured Product. Product purchased through Sealevel but manufactured by a third party will retain the original manufacturer's warranty.

Non-Warranty Repair/Retest

Products returned due to damage or misuse and Products retested with no problem found are subject to repair/retest charges. A purchase order or credit card number and authorization must be provided in order to obtain an RMA (Return Merchandise Authorization) number prior to returning Product.

How to obtain an RMA (Return Merchandise Authorization)

If you need to return a product for warranty or non-warranty repair, you must first obtain an RMA number. Please contact Sealevel Systems, Inc. Technical Support for assistance:

Available	Monday – Friday, 8:00AM to 5:00PM EST
Phone	864-843-4343
Email	support@sealevel.com

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