COML 2232F

CompactFlash+ 2-Port RS-232 Serial Interface Card

USER'S MANUAL

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Overview

The COML 2232F 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

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About the COML 2232F

The COML 2232F 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 ISOGND connection shared by the two ports.

The COML 2232F 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 COML 2232F is an I/O type device and requires a CF+ capable slot.

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Installing the COML 2232F

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

You will first need to install SeaCOM prior to using the COML 2232F. 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 COML 2232F 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 COML 2232F 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

4.1 PINOUT

The COML 2232F 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	**RX1**	**Receive Data input 1**
3	**TX1**	**Transmit Data output 1**
4	-	-
5	**ISOGND**	**ISOLATED GROUND**
6	-	-
7	**RTS1**	**Request To Send output 1**
8	**CTS1**	**Clear To Send input 1**
9	-	-
Shell	-	**See note***

PORT2

PIN	NAME	FUNCTION
1	-	-
2	**RX2**	**Receive Data input 2**
3	**TX2**	**Transmit Data output 2**
4	-	-
5	**ISOGND**	**ISOLATED GROUND**
6	-	-
7	**RTS2**	**Request To Send output 2**
8	**CTS2**	**Clear To Send input 2**
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)

RS-232 SIGNALS:	Typical output level ±5.5V (open circuit voltages) TX, RX, CTS and RTS are supported on each port
UART CLOCK SPEED:	1.8432MHz, max baud rate 115.2K bps
ISOLATION:	Isolation is defined between ISOGND and host 0V supply (metal case of card and cable shield braid) and can be up to +/-50V, DC to 60Hz. The two ports share a common ground (ISOGND): no isolation exists between the two ports
SCAVENGED POWER:	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
UNUSED SIGNALS:	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)

VCC CURRENT:	35mA typical @ 3.3V

4.4 MECHANICAL

MASS:	15g typical (0.352 oz.)
FORM FACTOR:	36.4mm x 42.8mm x 5.0 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)

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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 CyberResearch adapter so that there is no conflict with currently installed adapters. No two adapters can occupy the same I/O space.

3.   Try the CyberResearch adapter with a unique IRQ. While the CyberResearch adapter does allow the sharing of IRQs, many other adapters (i.e., SCSI adapters & on-board serial ports) do not.

4.   Make sure the CyberResearch 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 CyberResearch diagnostic software when troubleshooting a problem. This will eliminate any software issues from the equation.

Product Service

Diagnosis and Debug

CyberResearch, Inc. maintains technical support lines staffed by experienced Applications Engineers and Technicians. There is no charge to call and we will return your call promptly if it is received while our lines are busy. Most problems encountered with data acquisition products can be solved over the phone. Signal connections and programming are the two most common sources of difficulty. CyberResearch support personnel can help you solve these problems, especially if you are prepared for the call.

To ensure your call's overall success and expediency:

1)   Have the phone close to the PC so you can conveniently and quickly take action that the Applications Engineer might suggest.
2)   Be prepared to open your PC, remove boards, report back-switch or jumper settings, and possibly change settings before reinstalling the modules.
3)   Have a volt meter handy to take measurements of the signals you are trying to measure as well as the signals on the board, module, or power supply.
4)   Isolate problem areas that are not working as you expected.
5)   Have the source code to the program you are having trouble with available so that preceding and prerequisite modes can be referenced and discussed.
6)   Have the manual at hand. Also have the product's utility disks and any other relevant disks nearby so programs and version numbers can be checked.

Preparation will facilitate the diagnosis procedure, save you time, and avoid repeated calls. Here are a few preliminary actions you can take before you call which may solve some of the more common problems:

1)   Check the PC-bus power and any power supply signals.
2)   Check the voltage level of the signal between SIGNAL HIGH and SIGNAL LOW, or SIGNAL+ and SIGNAL– . It CANNOT exceed the full scale range of the board.
3)   Check the other boards in your PC or modules on the network for address and interrupt conflicts.
4)   Refer to the example programs as a baseline for comparing code.

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Warranty Notice

CyberResearch, Inc. warrants that this equipment as furnished will be free from defects in material and workmanship for a period of one year from the confirmed date of purchase by the original buyer and that upon written notice of any such defect, CyberResearch, Inc. will, at its option, repair or replace the defective item under the terms of this warranty, subject to the provisions and specific exclusions listed herein.

This warranty shall not apply to equipment that has been previously repaired or altered outside our plant in any way which may, in the judgment of the manufacturer, affect its reliability. Nor will it apply if the equipment has been used in a manner exceeding or inconsistent with its specifications or if the serial number has been removed.

CyberResearch, Inc. does not assume any liability for consequential damages as a result from our products uses, and in any event our liability shall not exceed the original selling price of the equipment.

The equipment warranty shall constitute the sole and exclusive remedy of any Buyer of Seller equipment and the sole and exclusive liability of the Seller, its successors or assigns, in connection with equipment purchased and in lieu of all other warranties expressed implied or statutory, including, but not limited to, any implied warranty of merchant ability or fitness and all other obligations or liabilities of seller, its successors or assigns.

The equipment must be returned postage prepaid. Package it securely and insure it. You will be charged for parts and labor if the warranty period has expired.

Returns and RMAs

If a CyberResearch product has been diagnosed as being non-functional, is visibly damaged, or must be returned for any other reason, please call for an assigned RMA number. The RMA number is a key piece of information that lets us track and process returned merchandise with the fastest possible turnaround time.

PLEASE CALL FOR AN RMA NUMBER!

Packages returned without an RMA number will be refused!

In most cases, a returned package will be refused at the receiving dock if its contents are not known. The RMA number allows us to reference the history of returned products and determine if they are meeting your application's requirements. When you call customer service for your RMA number, you will be asked to provide information about the product you are returning, your address, and a contact person at your organization.

Please make sure that the RMA number is prominently displayed on the outside of the box.

• Thank You •

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