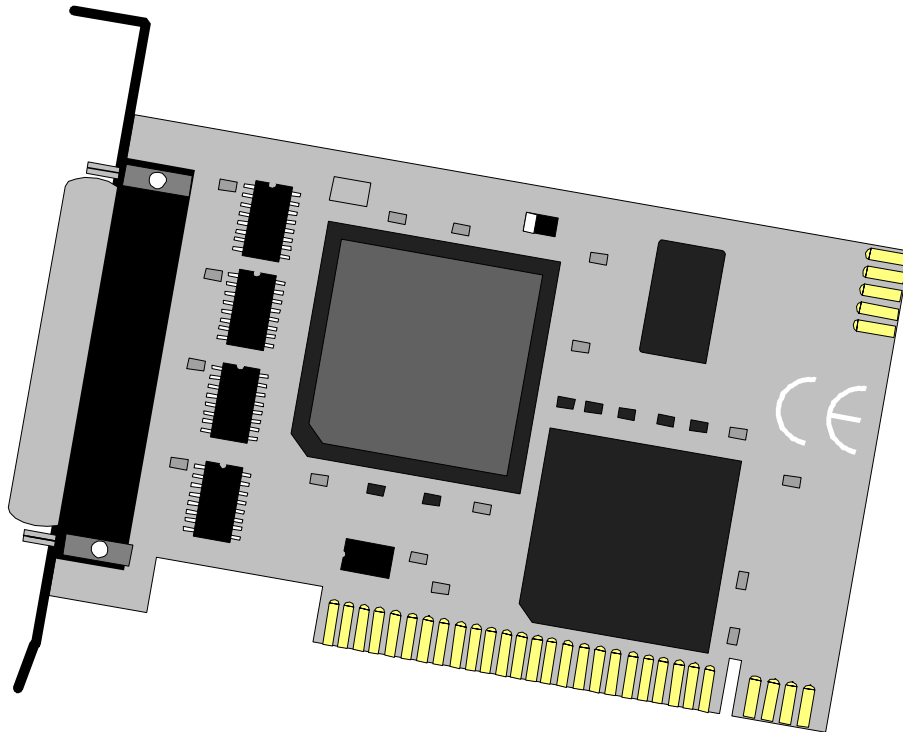


SEALEVEL

SYSTEMS INCORPORATED

ACB-232. PCITM

USER MANUAL



Part # 9015

Sealevel Systems, Inc
155 Technology Place
P.O. Box 830
Liberty, SC 29657 USA

Phone: (864) 843-4343
FAX: (864) 843-3067
www.sealevel.com

Contents

INTRODUCTION	3
OVERVIEW	3
WHAT'S INCLUDED	3
INSTALLATION	3
OPERATION SYSTEM INSTALLATION	3
SYSTEM INSTALLATION.....	3
TECHNICAL DESCRIPTION	4
FEATURES	4
Internal Baud Rate Generator	4
I/O Registers Definition - Control and Status	4
25 PIN CONNECTOR SIGNAL LAYOUTS (DB-25 MALE).....	5
RS-232 Signals	5
SPECIFICATIONS	6
ENVIRONMENTAL SPECIFICATIONS	6
POWER CONSUMPTION	6
MEAN TIME BETWEEN FAILURES (MTBF).....	6
PHYSICAL DIMENSIONS.....	6
APPENDIX A - TROUBLESHOOTING	7
APPENDIX B - HOW TO GET ASSISTANCE	8
APPENDIX C - ELECTRICAL INTERFACE	9
RS-232	9
APPENDIX D - SILK-SCREEN	10
APPENDIX E - COMPLIANCE NOTICES	11
FEDERAL COMMUNICATIONS COMMISSION STATEMENT.....	11
EMC DIRECTIVE STATEMENT.....	11
WARRANTY	12

© 2001i Sealevel Systems, Incorporated. All rights reserved.

Introduction

Overview

The *ACB-232.PCI* adapter provides the PC with a single channel multi-protocol serial interface utilizing the Zilog Z85230 (ESCC™), which is suitable for the most popular communication protocols including HDLC/SDLC, X.25, Bi-Sync, Mono-Sync, and asynchronous.

The *ACB-232.PCI* is compliant with EIA/TIA-232E.

What's Included

The *ACB-232.PCI* is shipped with the following items. If any of these items are missing or damaged, contact the supplier.

- *ACB-232.PCI* Adapter
- Sealevel Software

Installation

Operation System Installation

Note: For the 9015 to work properly in Windows 2000, Plug and Play OS must be turned off in the BIOS.

Choose **Install Software** at the beginning of the CD and select **Install SeaMAC**.

System Installation

The *ACB-232.PCI* can be installed in any of the PCI expansion slots.

1. Turn off PC power. Disconnect the power cord.
2. Remove the PC case cover.
3. Locate an available PCI slot and remove the blank metal slot cover.
4. Gently insert the *ACB-232.PCI* into the slot. Make sure the adapter is seated properly.
5. Replace the screw.
6. Replace the cover.
7. Connect the power cord.

Installation is complete.

Technical Description

The *ACB-232.PCI* utilizes the Zilog 85230 Enhanced Serial Communications Controller (ESCC). This chip features programmable baud rate, data format and interrupt control. Refer to the ESCC Users Manual for details on programming the 85230 ESCC chip.

Features

- One channel of synchronous or asynchronous communications using the Zilog Z85230 chip
- EIA/TIA-232 Signals supported TD, RD, CTS, RTS, DCD, DSR, DTR, TXC, RXC, TSET, RI
- Programmable options for Transmit clock as input or output
- Software programmable baud rate

Internal Baud Rate Generator

The baud rate of the ESCC is programmed under software control. The standard oscillator supplied with the board is 7.3728 MHz. However, other oscillator values can be substituted to achieve different baud rates.

I/O Registers Definition - Control and Status

The control and status registers occupy 12 consecutive locations.

The following tables provide a functional description of the bit positions.

X = do not care { } = always this value

Address	Mode	D7	D6	D5	D4	D3	D2	D1	D0
Base+4	RD	{0}	IRQST	{0}	{0}	{0}	{0}	{0}	{0}
Base+4	WR	X	X	X	X	X	X	X	X
Base+5	RD	{0}	{0}	SYNCA_RTS	SYNCA_CTS	{0}	{0}	{0}	{0}
Base+5	WR	X	X	SYNCA_RTS	SYNCA_CTS	X	X	X	X
Base+6	RD	{0}	{0}	{0}	{0}	{0}	{0}	TSETSLA	RXCOPTA
Base+6	WR	X	X	X	X	X	X	TSETSLA	RXCOPTA
Base+14	RD	SD7	SD6	SD5	SD4	SD3	SD2	SD1	SD0
Base+15	RD	SD15	SD14	SD13	SD12	SD11	SD10	SD9	SD8

Field	Description
IRQST	SCC interrupt status: 1 = No interrupt pending on IUSC; 0 = Interrupt pending on IUSC.
TSETSLA	CHAN A – TSET clock source 0 = TRXCA as source, 1= received TXC as source (0 on power up)
RXCOPTA	RXCOPTA – 0 = selects received RXC for RTXCA, 1 = selects SCC PCLK for RTXCA (0 on power up)
SYNCA_RTS	SYNCA_RTS – 0 = SYNCA is high, 1 = SYNCA connected to RTS (0 on power up)
SYNCA_CTS	SYNCA_CTS – 0 = SYNCA is high, 1 = SYNCA connected to CTS (0 on power up)
SD0-SD15	Optional security feature. Unique value per customer or application. (default value = FFFF)

RI- is connected to Port B CTS on the 85230

DSR- is connected to Port B DCD on the 85230

25 Pin Connector Signal Layouts (DB-25 Male)

RS-232 Signals

Signal	Name	Pin #	Mode
GND	Ground	7	
RD	Receive Data	3	Input
CTS	Clear To Send	5	Input
DSR	Data Set Ready	6	Input
DCD	Data Carrier Detect	8	Input
TM	Test Mode	25	Input
TXC	Transmit Clock	15	Input
RXC	Receive Clock	17	Input
RI	Ring Indicator	22	Input
TSET	Transmit Signal Element Timing	24	Output
DTR	Data Terminal Ready	20	Output
TD	Transmit Data	2	Output
RTS	Request To Send	4	Output

RI- is connected to Port B CTS on the 85230

DSR- is connected to Port B DCD on the 85230

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 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.

Specifications

Environmental Specifications

Specification	Operating	Storage
Temperature Range	0 to 50 °C (32 to 122 °F)	-20 to 70 °C (-4 to 158 °F)
Humidity Range	10 - 90% R.H. Non Condensing	10 - 90% R.H. Non Condensing

Power Consumption

Supply line	+12VDC	-12VDC	+5 VDC
Rating	50mA	50mA	< 350 mA

Mean Time Between Failures (MTBF)

Greater than 150,000 hours. (Calculated)

Physical Dimensions

Board length	4.75 inches	(12.065 cm.)
Board Height including Goldfingers	3.50 inches	(8.890 cm.)
Board Height excluding Goldfingers	3.175 inches	(8.065 cm.)

Appendix A - Troubleshooting

The Developers Toolkit Software is supplied with the Sealevel Systems adapter and will be used in the troubleshooting procedures. Using this software and following these simple steps 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 the 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. Make sure the Sealevel Systems adapter is securely installed in a PCI slot.
3. Use the supplied software and User Manual to verify that the Sealevel Systems adapter is configured correctly. The supplied software contains a diagnostic program "SSDMP" that will verify if the adapter is configured properly. This diagnostic program is written with the user in mind and is easy to use.
4. Windows users can use the installed programs in the SeaMAC folder to verify operation.

Appendix B - How To Get Assistance

Please refer to Appendix A - Troubleshooting prior to calling Technical Support.

1. Read this manual thoroughly before attempting to install the adapter in your system.
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 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.
4. 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.

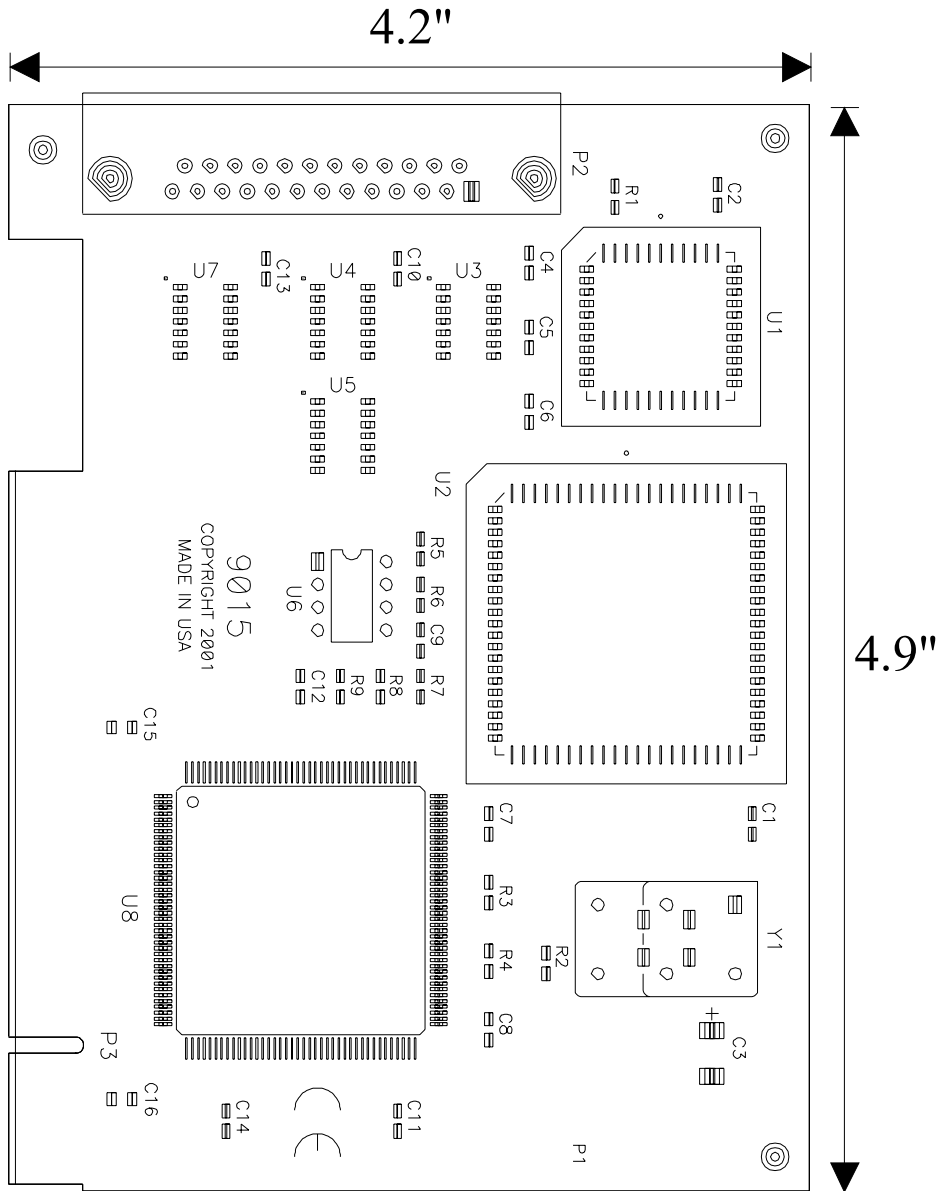
RETURN AUTHORIZATION MUST BE OBTAINED FROM SEALEVEL SYSTEMS BEFORE RETURNED MERCHANDISE WILL BE ACCEPTED. AUTHORIZATION CAN BE OBTAINED BY CALLING SEALEVEL SYSTEMS AND REQUESTING A RETURN MERCHANDISE AUTHORIZATION (RMA) NUMBER.

Appendix C - Electrical Interface

RS-232

Quite possibly the most widely used communication standard is RS-232. This implementation has been defined and revised several times and is often referred to as RS-232 or EIA/TIA-232. It is defined by the EIA as the *Interface between Data Terminal Equipment and Data Circuit- Terminating Equipment Employing Serial Binary Data Interchange*. The mechanical implementation of RS-232 is on a 25 pin D sub connector. RS-232 is capable of operating at data rates up to 20 Kbps at distances less than 50 ft. The absolute maximum data rate may vary due to line conditions and cable lengths. RS-232 often operates at 38.4 Kbps over very short distances. The voltage levels defined by RS-232 range from -12 to +12 volts. RS-232 is a single ended or unbalanced interface, meaning that a single electrical signal is compared to a common signal (ground) to determine binary logic states. A voltage of +12 volts (usually +3 to +10 volts) represents a binary 0 (space) and -12 volts (-3 to -10 volts) denotes a binary 1 (mark). The RS-232 and the EIA/TIA-574 specification defines two type of interface circuits, Data Terminal Equipment (DTE) and Data Circuit-Terminating Equipment (DCE). The Sealevel Systems adapter is a DTE interface.

Appendix D - Silk-Screen



Appendix E - Compliance Notices

Federal Communications Commission Statement

FCC - This equipment has been tested and found to comply with the limits for Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in such case the user will be required to correct the interference at his own expense.

EMC Directive Statement



Products bearing the CE Label fulfill the requirements of the EMC directive (89/336/EEC) and of the low-voltage directive (73/23/EEC) issued by the European Commission.

To obey these directives, the following European standards must be met:

- **EN55022 Class A** - “Limits and methods of measurement of radio interference characteristics of information technology equipment”
- **EN55024** -‘Information technology equipment Immunity characteristics Limits and methods of measurement’
- **EN60950 (IEC950)** - “Safety of information technology equipment, including electrical business equipment”

Warning

This is a Class A Product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Always use cabling provided with this product if possible. If no cable is provided or if an alternate cable is required, use high quality shielded cabling to maintain compliance with FCC/EMC directives.

Warranty

Sealevel Systems, Inc. warrants this product to be in good working order for a period of one year from the date of purchase. Should this product fail to be in good working order at any time during this period, Sealevel Systems will, at its option, replace or repair it at no additional charge except as set forth in the following terms. This warranty does not apply to products damaged by misuse, modifications, accident or disaster.

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.

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.

Sealevel Systems, Incorporated
155 Technology Place
P.O. Box 830
Liberty, SC 29657 USA
(864) 843-4343 FAX: (864) 843-3067
www.sealevel.com
email: support@sealevel.com

Technical Support is available from 8 a.m. to 5 p.m. Eastern time.
Monday - Friday

Trademarks

Sealevel Systems, Incorporated acknowledges that all trademarks referenced in this manual are the service mark, trademark, or registered trademark of the respective company.

ACB-232.PCI is a trademark of Sealevel Systems, Incorporated.