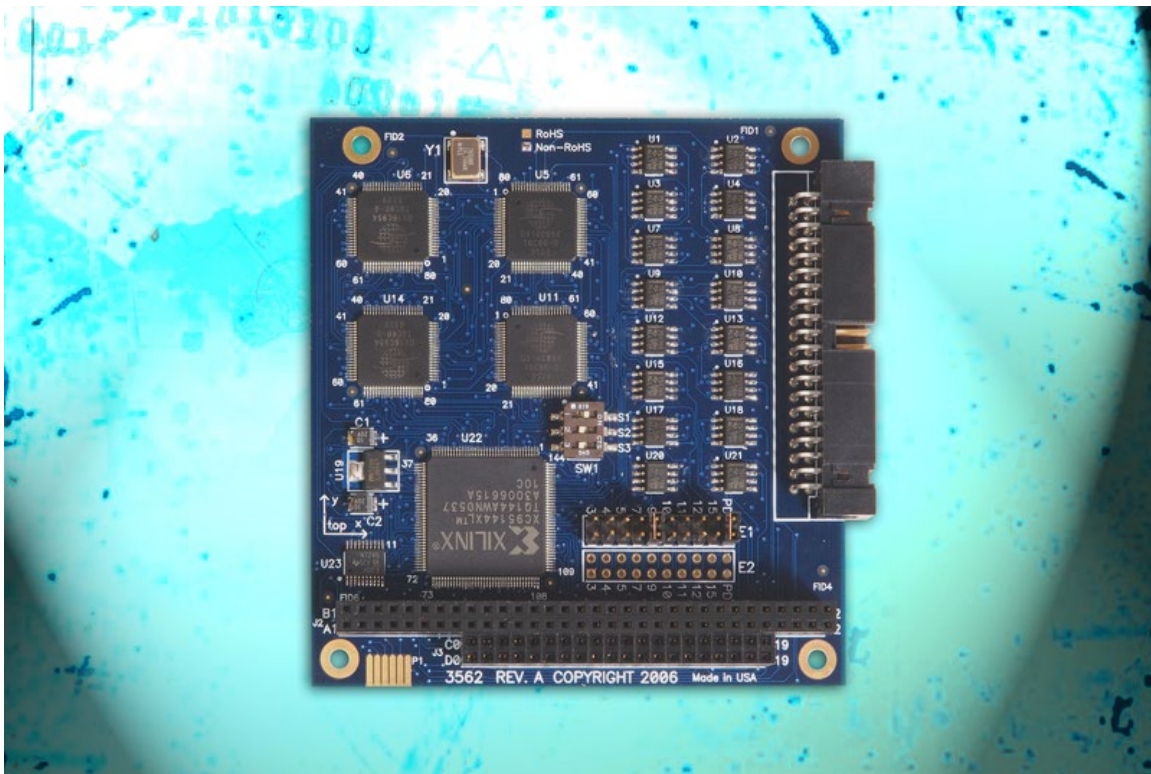


# SIO-104+16.485

User Manual | 3562



SEALEVEL®

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# Introduction

The SIO-104+16.485, Item Number 3562, is a PC/104 serial interface module with sixteen 2-wire RS-485 serial interface ports, supporting data rates up to 921.6K bps. The board is designed using four 16C954 UARTs with 128-byte FIFOs. The 16C954 features a flexible clock prescaler (from 1 to 31.875), 9-bit protocol support, and isochronous mode.

RS-485 is optimized for 'Multi-Drop' or 'Party-line' operations selecting data from multiple peripherals (as many as 31 devices can be connected on an RS-485 bus). Optional terminal block adapters are available to simplify field-wiring connections.

The SIO-104+16.485 is designed to be used with a variety of Operating Systems including Windows 98/NT/ME/2000/XP, Linux, and DOS. The SeaCOM API (Application Programmer Interface) available for the SIO-104+16.485 provides a variety of useful high-level function calls implemented as a Windows dynamic link library (DLL) and as a Linux kernel module and library. In addition to the API, SeaCOM includes sample code and utilities to simplify software development.

## Other Sealevel PC104 Serial Interface Products

- ULTRA SIO-104 (Item Number 3550) - Single Port RS-422/485
- SIO-104 (Item Number 3551) - Single Port RS-232
- SIO.104+2 (Item Number 3502) - Dual Port RS-232/422/485
- C4-104.ULTRA (Item Number 3540) - Four Port RS-232/422/485
- SIO4-104.2+2 (Item Number 3542) - Four Port RS-232
- SIO4-104.2+2 (Item Number 3543) - Four Port 422/485
- SIO4-104.2+2 (Item Number 3544) - 2 Port RS-232 & 2 Port 422/485
- SIO-104+8.485 (Item Number 3588) - 8 Port 2-wire RS-485

# Before You Get Started

## What's Included

The **SIO-104+16.485** is shipped with the following items. If any of these items is missing or damaged, please contact Sealevel for replacement.

- **SIO-104+16.485** Adapter

## Advisory Conventions



### Warning

The highest level of importance 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.

## Optional Items

Depending upon your application, you are likely to find one or more of the following items useful with the **SIO-104+16.485**. All items can be purchased from our website ([www.sealevel.com](http://www.sealevel.com)) or by calling our sales team at 864-843-4343.

## Cables Options

- **IDC40 Ribbon Cable to (2) DB25M, 30" in Length - (P/N CA338)**
  - Terminates a 40-pin header to two bulkhead mountable DB25 Male connectors.
- **DB25F to DB25M Extension Cable, 72" in Length - (P/N CA104)**
  - Standard DB25 extension cable with full one-to-one pin out.
- **DB25F to 25 Screw Terminals - Terminal Block - (P/N TB04)**
  - Mountable terminal block with a DB25 Female connector wired to 25 screw terminals. All screw terminals are labeled with the number corresponding to the pin on the DB25 connector.

# Hardware Setup

## Address Selection

The **SIO4-104.2+2** occupies 16 consecutive I/O locations. The DIP-switch (SW1) is used to set the base address for these locations and the IRQ mode options. Be careful when selecting the base address as some selections conflict with existing PC ports. The following table shows the addressing options available. If different address options are required, please contact Sealevel Systems Technical Support about a custom PAL option.

Switch	Settings						
SW1-1	OFF	OFF	OFF	ON	ON	ON	ON
SW1-2	OFF	ON	ON	OFF	OFF	ON	ON
SW1-3	ON	OFF	ON	OFF	ON	OFF	ON
Ports	Addresses						
Port 1	300	400	500	600	1500	3220	4220
Port 2	308	408	508	608	1508	3228	4228
Port 3	310	410	510	610	1510	3230	4230

<b>Port 4</b>	318	418	518	618	1518	3238	4238
<b>Port 5</b>	320	420	520	620	1520	3240	4240
<b>Port 6</b>	328	428	528	628	1528	3248	4248
<b>Port 7</b>	330	430	530	630	1530	3250	4250
<b>Port 8</b>	338	438	538	638	1538	3258	4258
<b>Port 9</b>	340	440	540	640	1540	3260	4260
<b>Port 10</b>	348	448	548	648	1548	3268	4268
<b>Port 11</b>	350	450	550	650	1550	3270	4270
<b>Port 12</b>	358	458	558	658	1558	3278	4278
<b>Port 13</b>	360	460	560	660	1560	3280	4280
<b>Port 14</b>	368	468	568	668	1568	3288	4288
<b>Port 15</b>	370	470	570	670	1570	3290	4290
<b>Port 16</b>	378	478	578	678	1578	3298	4298



Setting SW1-1, SW1-2, and SW1-3 all to OFF disables the card, which may be useful for troubleshooting purposes.

## Interrupt Configuration

The board is set up to always share interrupts. There is a jumper labeled “PD” which is located at (E1) on the SIO-104+16.485. Setting this jumper enables a 1K-ohm pull-down (biasing) resistor required on one adapter when sharing interrupts. The jumper should always be enabled on single SIO-104+16.485 installations (non-shared mode). In multiple SIO-104+16.485 installations, only one board should have the jumper enabled.

## IRQ Selection

The SIO-104+16.485 has an interrupt selection jumper located at (E1), which should be set prior to use, if an interrupt is required by your application software. Consult the user manual for the application software being used to determine the proper setting. The SIO-104+16.485 supports the following interrupts:

3, 4, 5, 7, 9, 10, 11, 12, and 15

## Clock Modes

The SIO-104+16.485 utilizes a 14.7456 MHz oscillator. This is eight times faster than the standard COM: port oscillator, which typically is 1.8432 MHz. This allows the adapter to achieve a maximum data rate of 921.6Kbps. The following sections outline the baud rate calculations and instructions for achieving your desired baud rate.

## RS-485 Enable

RS-485 is optimized for party line or multi-drop applications. The output of the RS-485 driver is capable of being active (enabled) or tri-state (disabled). This capability allows multiple PCs to be connected in a multi-drop bus and selectively polled. Using the Sealevel SeaCOM driver, RS-485 enable is handled in hardware by the UART. This allows the RS-485 driver to be tri-stated when inactive on a multi-drop polled network. The SIO-104+16.485 is equipped with four 16C954 UARTs that enable the RS-485 driver automatically.

## Line Termination

Typically, each end of the RS-485 bus must have line-terminating resistors. The SIO-104+16.485 features a 120W resistor across each RS-485 input and a 510W pull-down resistor combination that biases the receiver inputs. The board is not designed to have multiple adapters on the same RS-485 network. Contact Sealevel Technical Support if you have questions on how to remove this termination.

## RS-485 'Echo'

The RS-485 'Echo' is the result of connecting the receiver inputs to the transmitter outputs. Every time a character is transmitted, it is also received. The SIO-104+16.485 automatically suppresses this 'Echo'.

## Baud Rates and Oscillator value

The following table shows some common data rates and the rates you should choose to achieve them when using the SIO-104+16.485. If using Windows 95, 98, ME, 2000, or XP, the oscillator value (14.7456 MHz) should be entered into the 'Advanced' tab on the Device Manager applet. Typically this is done automatically when the Sealevel Software driver is loaded.

When using Windows NT, the 'Advanced Ports' applet in the Control Panel should be launched and the oscillator value entered manually in the 'Advanced' tab, or all data rates will be eight (8) times the selected rate. For example if a data rate of 19.2Kbps is selected, the actual data rate will be 153.6K bps. When using any other OS (i.e. Linux or DOS) the following table should be used:

For this Data Rate	Choose this Data Rate
1200 bps	150 bps
2400 bps	300 bps
4800 bps	600 bps
9600 bps	1200 bps
19.2K bps	2400 bps
57.6 K bps	4800 bps
115.2 K bps	14.4K bps
230.4K bps	28.8K bps
460.8K bps	57.6 K bps
921.6K bps	115.2 K bps

If your communications package allows the use of Baud rate divisors, choose the appropriate divisor from the following table:

For this Data Rate	Choose this Divisor
1200 bps	768
2400 bps	384
4800 bps	192
9600 bps	96
19.2K bps	48
38.4K bps	24
57.6K bps	12
115.2K bps	8
230.4K bps	4
460.8K bps	2
921.6K bps	1



# 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](mailto:support@sealevel.com) to receive access to the proper driver download and installation instructions.

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1. Begin by locating, selecting, and installing the correct software from the website - [SeaCOM software](#).
2. Select the "SeaCOM for Windows" download link.
3. The setup file will automatically detect the operating environment and install the proper components.
4. Run the Add/Remove Hardware utility located in Control Panel. Double click the icon to launch the Wizard. When the Choose Hardware Task appears choose Add/Troubleshoot a device. At that point Windows will search for Plug and Play devices. Since the ISA board is not Plug and Play it will not be found. If Windows finds something you were not expecting, cancel that install and click 'Next'. When Choose a Hardware Device appears select 'Add a new device'. Windows will then ask if you want it to search and you select 'No, I want to select the hardware from a list', then click 'Next'. You will then see Hardware Type. If you are installing a single port serial card, select Ports (COM & LPT). If you are installing a multi-port serial card (two or more ports), choose Multi-port serial adapters and click 'Next'. The Select a Device Driver window will appear. On the left side find Sealevel Systems, Inc. and on the right side of the window select the card type you are installing.
5. Windows will now show a warning message that it could not detect the settings of the device and that you must enter the settings manually. Click 'OK'. The Add New Hardware Wizard Properties window will appear. This window will show the default settings for the I/O address and one IRQ. The one IRQ will mean that you will be sharing one IRQ for all ports on the board for a multi-port card. You will only need one IRQ if installing a single port card. Since Windows cannot detect the settings there may be a conflict with another device or the settings shown may not be the settings you wish to use. To change the settings choose 'Basic Configuration 0001' next to the heading 'Setting Based On'. When this configuration is chosen the Resources, window will appear with all question marks. Simply choose each Input/Output Range and IRQ and change the settings to match the board settings. Make sure there are no conflicts with other devices that would appear at the

bottom of the window under 'Conflicting Device List'. After you have either accepted the default settings or changed the settings, the Start Hardware Installation window will appear. Click 'Next'.

6. The next window that may appear will be the Digital Signature Not Found. Do not search for digitally signed software and continue with installation. The Completing the Add/Remove Hardware Wizard window will appear. You will be given a chance to change the resource settings again at this point if necessary. Choose 'Finish'. At this point you will need to restart your computer. After restarting the Found New Hardware window will appear for each port that you are installing. To confirm that the drivers installed, you can now look in Device Manager under Ports (COM & LPT) and each of the ports should show with their corresponding COM number.

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 3562 to your system. Refer to the Hardware Installation section for details.

## Linux Installation



You MUST have "root" privileges to install the software and drivers.



The syntax is case sensitive.

SeaCOM for Linux can be downloaded here: <https://www.sealevel.com/support/software-seacom-linux/>. It includes the **README** and the **Serial-HOWTO** help files (located at seacom/dox/howto). This series of files both explains typical Linux serial implementations and informs the user about Linux syntax and preferred practices.



User can use a program such as 7-Zip to extract the tar.gz file.

In addition, the software selectable interface settings can be accessed by referencing **seacom/utilities/3562mode**.

## 3rd Party Software Support

Third party software support for many HMI/MMI and other process control software is accessible through links on the Sealevel's website. For the most up to date information on third party software support, please visit: <https://www.sealevel.com/support/3rd-party-software-support/>.

For additional software support, including QNX, please call Sealevel Systems' Technical Support, (864) 843-4343. Our technical support is free and available from 8:00 AM - 5:00 PM Eastern Time, Monday through Friday. For email support contact: [support@sealevel.com](mailto:support@sealevel.com).

## Physical Installation

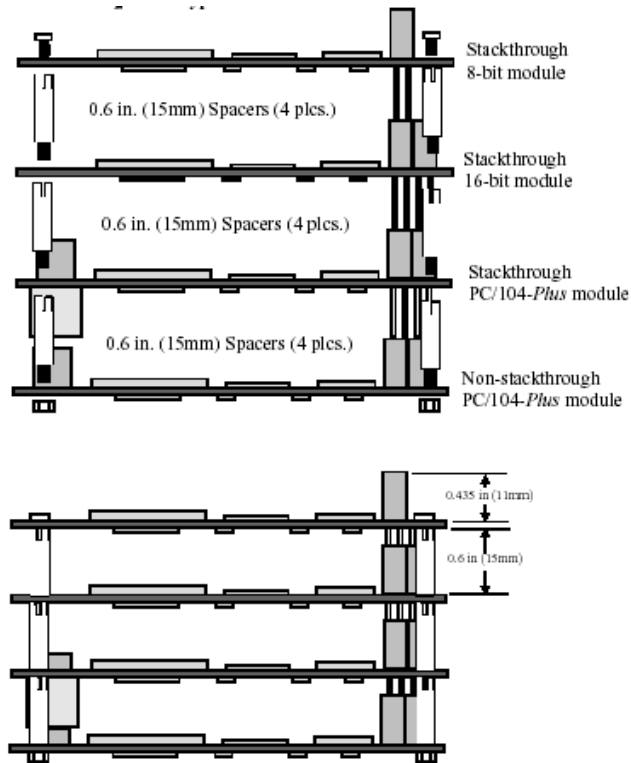
Extreme care should be taken when installing the SIO-104+16.485 to avoid causing damage to the connectors. After the adapter is installed, connect your I/O cable to the 40-pin header located at J1. Refer to Hardware Setup for information on setting the address and jumper options before inserting the SIO-104+16.485 onto the stack.



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

1. **Turn off power. Disconnect the power cord.**
2. Gently insert the SIO-104+16.485 connector noting proper key orientation of the expansion connector on a PC/104 compatible card. The SIO-104+16.485 adapter is keyed per the current PC/104 Specification. This will aid in preventing the adapter from being inserted incorrectly.
3. Mounting hardware (nylon stand-offs and screws) is provided to ensure a good mechanical connection. Retain any mounting hardware not used to allow for future expansion.
4. Replace the cover.
5. Connect the power cord and power up the machine.

The SIO-104+16.485 is now ready for use.



## Physical Connection

The port signals for the SIO-104+16.485 are physically connected via a 40-pin box header located at board position J1. The following table shows the connector pinout for the 40-pin header.

Ports 1 - 16 (J1)		
PORT	PINS	RS-485
1	1	Data +
	2	Data -
2	3	Data +
	4	Data -
3	5	Data +
	6	Data -
4	7	Data +
	8	Data -
GND	9	GND
	10	GND

5	11	Data +
	12	Data -
6	13	Data +
	14	Data -
7	15	Data +
	16	Data -
8	17	Data +
	18	Data -
GND	19	GND
	20	GND
9	21	Data +
	22	Data -
10	23	Data +
	24	Data -
11	25	Data +
	26	Data -
12	27	Data +
	28	Data -
GND	29	GND
	30	GND
13	31	Data +
	32	Data -
14	33	Data +
	34	Data -
15	35	Data +
	36	Data -
16	37	Data +
	38	Data -
GND	39	GND
	40	GND

## Cabling Option

Sealevel provides the option to output the SIO-104+16.485 board's signals via DB25 Male connectors. Item number CA338 is a 40-pin ribbon cable with two (2) DB25M connectors. The pinout for the CA338 is shown in the following table.

40-PIN	SIGNAL	DB25 #1	40-PIN	SIGNAL	DB25 #2
1	Data1 +	1	21	Data9 +	1
2	Data1 -	14	22	Data9 -	14
3	Data2 +	2	23	Data10 +	2
4	Data2 -	15	24	Data10 -	15
5	Data3 +	3	25	Data11 +	3
6	Data3 -	16	26	Data11 -	16
7	Data4 +	4	27	Data12 +	4
8	Data4 -	17	28	Data12 -	17
9	GND	5	29	GND	5
10	GND	18	30	GND	18
11	Data5 +	6	31	Data13 +	6
12	Data5 -	19	32	Data13 -	19
13	Data6 +	7	33	Data14 +	7
14	Data6 -	20	34	Data14 -	20
15	Data7 +	8	35	Data15 +	8
16	Data7 -	21	36	Data15 -	21
17	Data8 +	9	37	Data16 +	9
18	Data8 -	22	38	Data16 -	22
19	GND	10	39	GND	10
20	GND	23	40	GND	23

## CA338 DB25 Pin Out

The CA338 cable is designed to be used with item number TB04, a DB25 terminal block. The TB04 has a DB25F connector that breaks out to 25 screw terminals. All screw terminals are labeled with the number corresponding to the pin on the DB25 connector. The following table shows the signals as they are brought out on the DB25M connectors. The pin numbers listed below correspond to the DB25M connectors and the labels on the TB04 terminal block.

DB25 #1 (Ports 1-8)			DB25 #2 (Ports 9-16)		
PORT	PIN	RS-485	PORT	PIN	RS-485
1	1	Data +	9	1	Data +
	14	Data -		14	Data -
2	2	Data +	10	2	Data +
	15	Data -		15	Data -
3	3	Data +	11	3	Data +
	16	Data -		16	Data -
4	4	Data +	12	4	Data +
	17	Data -		17	Data -
GND	5	GND	GND	5	GND
	18	GND		18	GND
5	6	Data +	13	6	Data +
	19	Data -		19	Data -
6	7	Data +	14	7	Data +
	20	Data -		20	Data -
7	8	Data +	15	8	Data +
	21	Data -		21	Data -
8	9	Data +	16	9	Data +
	22	Data -		22	Data -
GND	10	GND	GND	10	GND
	23	GND		23	GND

# Electrical Characteristics

## Features

- Sixteen 2-wire RS-485 serial ports
- 16C954 buffered UARTs with 128-byte FIFOs
- Automatic RS-485 enable/disable
- IRQ interrupt status port
- Supports interrupt sharing
- Data rates to 921.6K bps
- Extended temperature range available (-40°C - +85°C)

## Specifications

### Environmental Specifications

Specification	Operating	Storage
Temperature Range	0° to 70° C (32° to 158° F)	-50° to 105° C (-58° to 221° F)
Humidity Range	10 to 90% R.H. Non-Condensing	10 to 90% R.H. Non-Condensing

## Power Requirements

Supply line	+5 VDC
Rating	600 mA

## Physical Dimensions

Board length	3.775 inches (9.59 cm)
Board Width	3.55 inches (9.02 cm)

## Manufacturing

All Sealevel Systems Printed Circuit boards are built to UL 94V0 rating and are 100% electrically tested. These printed circuit boards are solder mask over bare copper with either Electroless Nickel Immersion Gold (ENIG) or Hot Air Solder Leveled (HASL) finish.



# 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. Install software first. After installing the software then proceed to Physical Installation section of the manual.
2. 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.
3. Configure your Sealevel Systems adapter so that there is no conflict with currently installed adapters. No two adapters can occupy the same I/O address.
4. 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.
5. Make sure the Sealevel Systems adapter is securely installed.
6. For Windows operating systems, 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.
7. 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 A.M. - 5:00 P.M., Eastern Time Monday through Friday. For email support contact [support@sealevel.com](mailto: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 an 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.asp>.
4. Sealevel Systems maintains a web page on the Internet. Our home page address is [www.sealevel.com](http://www.sealevel.com). The latest software updates, and newest manuals are available via our web site.
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. For email support contact [support@sealevel.com](mailto:support@sealevel.com).

**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

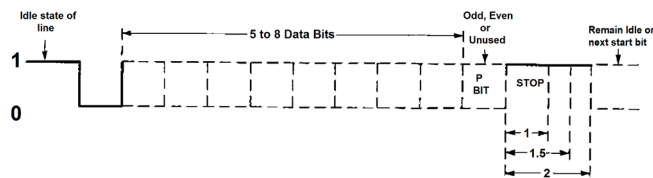
## RS-485

RS-485 is backwardly compatible with RS-422; however, it is optimized for party line or multi-drop applications. The output of the RS-422/485 driver is capable of being **Active** (enabled) or **Tri-State** (disabled). This capability allows multiple ports to be connected in a multi-drop bus and selectively polled. RS-485 allows cable lengths up to 4000 feet and data rates up to 10 Megabits per second. The signal levels for RS-485 are the same as those defined by RS-422. RS-485 has electrical characteristics that allow for 32 drivers and 32 receivers to be connected to one line. This interface is ideal for multi-drop or network environments. RS-485 tri-state driver (not dual-state) will allow the electrical presence of the driver to be removed from the line. Only one driver may be active at a time and the other driver(s) must be tri-stated. RS-485 can be cabled in two ways, two wire and four wire mode. Two-wire mode does not allow for full duplex communication and requires that data be transferred in only one direction at a time. For half-duplex operation, the two transmit pins should be connected to the two receive pins (Tx+ to Rx+ and Tx- to Rx-). Four wire mode allows full duplex data transfers. RS-485 does not define a connector pin-out or a set of modem control signals. RS-485 does not define a physical connector.

# Appendix D – Asynchronous Communications

Serial data communications implies that individual bits of a character are transmitted consecutively to a receiver that assembles the bits back into a character. Data rate, error checking, handshaking, and character framing (start/stop bits) are pre-defined and must correspond at both the transmitting and receiving ends.

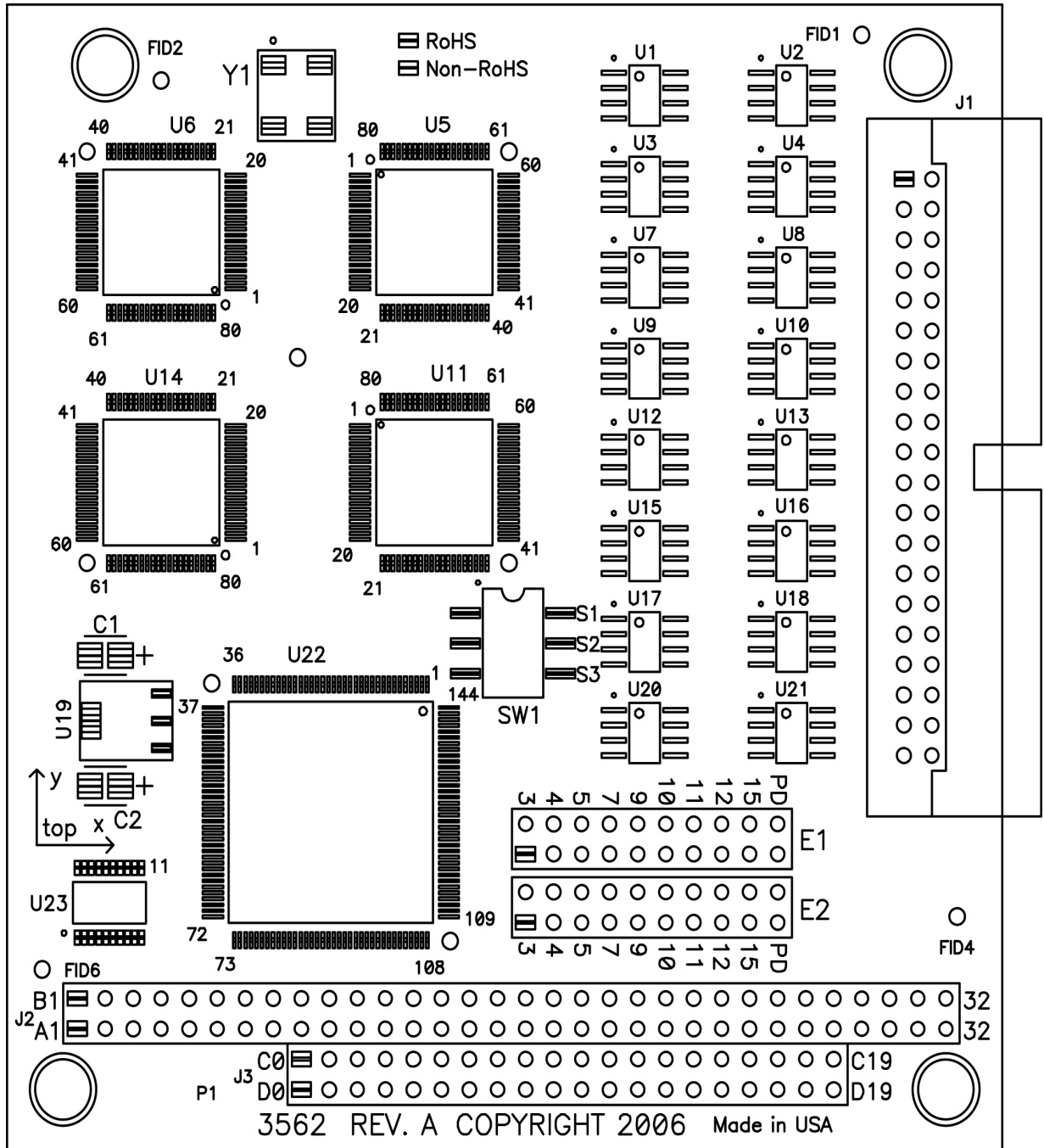
Asynchronous communications is the standard means of serial data communication for PC compatibles and PS/2 computers. The original PC was equipped with a communication or COM: port that was designed around an 8250 Universal Asynchronous Receiver Transmitter (UART). This device allows asynchronous serial data to be transferred through a simple and straightforward programming interface. A start bit, followed by a pre-defined number of data bits (5, 6, 7, or 8) defines character boundaries for asynchronous communications. The end of the character is defined by the transmission of a pre-defined number of stop bits (usually 1, 1.5 or 2). An extra bit used for error detection is often appended before the stop bits.



*Asynchronous Communications Bit Diagram*

This special bit is called the parity bit. Parity is a simple method of determining if a data bit has been lost or corrupted during transmission. There are several methods for implementing a parity check to guard against data corruption. Common methods are called (E)ven Parity or (O)dd Parity. Sometimes parity is not used to detect errors on the data stream. This is referred to as (N)o parity. Because each bit in asynchronous communications is sent consecutively, it is easy to generalize asynchronous communications by stating that each character is wrapped (framed) by pre-defined bits to mark the beginning and end of the serial transmission of the character. The data rate and communication parameters for asynchronous communications have to be the same at both the transmitting and receiving ends. The communication parameters are baud rate, parity, number of data bits per character, and stop bits (i.e., 9600,N,8,1).

# Appendix E – Silk Screen – 3562 PCB



# 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 in 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, 8:00 AM to 5:00 PM EST
Phone	864-843-4343
Email	<a href="mailto:support@sealevel.com">support@sealevel.com</a>

## Trademarks

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