INDUSTRIAL COMPUTER SOURCE®

Model WINCOMM8/B & WINCOMM8/B-650 Product Manual

MANUAL NUMBER :   00750-121-2A

FOREWORD

This product manual provides information to install, operate and or program the referenced product(s) manufactured or distributed by Industrial Computer Source. The following pages contain information regarding the warranty and repair policies.

Technical assistance is available at: **1-800-480-0044**.

Manual Errors, Omissions and Bugs: A "Bug Sheet" is included as the last page of this manual. Please use the "Bug Sheet" if you experience any problems with the manual that requires correction.

Guarantee

A thirty day money-back guarantee is provided on all **standard** products sold. **Special order products** are covered by our Limited Warranty, _however they may not be returned for refund or credit._ _EPROMs, RAM, Flash EPROMs or other forms of solid electronic media are not returnable for credit - but for replacement only. Extended Warranty available. Consult factory._

Refunds

In order to receive refund on a product purchase price, the product must not have been damaged by the customer or by the common carrier chosen by the customer to return the goods, and the product must be returned complete (meaning all manuals, software, cables, etc.) within 30 days of receipt and in as-new and resalable condition. The **Return Procedure** must be followed to assure prompt refund.

Restocking Charges

Product returned _after_ 30 days, and _before_ 90 days, of the purchase will be subject to a **minimum** 20% restocking charge and any charges for damaged or missing parts.

Products not returned within 90 days of purchase, or products which are not in as-new and re-saleable condition, are not eligible for credit return and will be returned to the customer.

Limited Warranty

One-year limited warranty on all products sold with the exception of the "Performance Series" I/O products, which are warranted to the original purchaser for as long as they own the product, subject to all other conditions below, including those regarding neglect, misuse and acts of God. Within one year of purchase, Industrial Computer Source will repair or replace, at our option, any defective product. At any time after one year, we will repair or replace, at our option, any defective "Performance Series" I/O product sold. This does not include products damaged in shipment, or damaged through customer neglect or misuse. Industrial Computer Source will service the warranty for all standard catalog products for the first year from the date of shipment. After the first year, for products not manufactured by Industrial Computer Source, the remainder of the manufacturer's warranty, if any, will be serviced by the manufacturer directly.

The **Return Procedure** must be followed to assure repair or replacement. Industrial Computer Source will normally return your replacement or repaired item via UPS Blue. _Overnight delivery or delivery via other carriers is available at additional charge._

The limited warranty is void if the product has been subjected to alteration, neglect, misuse, or abuse; if any repairs have been attempted by anyone other than Industrial Computer Source or its authorized agent; or if the failure is caused by accident, acts of God, or other causes beyond the control of Industrial Computer Source or the manufacturer. Neglect, misuse, and abuse shall include any installation, operation, or maintenance of the product other than in accordance with the owners' manual.

No agent, dealer, distributor, service company, or other party is authorized to change, modify, or extend the terms of this Limited Warranty in any manner whatsoever. Industrial Computer Source reserves the right to make changes or improvements in any product without incurring any obligation to similarly alter products previously purchased.

Shipments not in compliance with this Guarantee and Limited Warranty Return Policy will not be accepted by Industrial Computer Source.

Return Procedure

For any Limited Warranty or Guarantee return, please contact Industrial Computer Source's Customer Service at **1-800-480-0044** and obtain a Return Material Authorization (RMA) Number. All product(s) returned to Industrial Computer Source for service or credit **must** be accompanied by a Return Material Authorization (RMA) Number. Freight on all returned items **must** be prepaid by the customer who is responsible for any loss or damage caused by common carrier in transit. Returns for Warranty **must** include a Failure Report for each unit, by serial number(s), as well as a copy of the original invoice showing date of purchase.

> To reduce risk of damage, returns of product must be in an Industrial Computer Source shipping container. If the original container has been lost or damaged, new shipping containers may be obtained from Industrial Computer Source Customer Service at a nominal cost.

Limitation of Liability

In no event shall Industrial Computer Source be liable for any defect in hardware or software or loss or inadequacy of data of any kind, or for any direct, indirect, incidental, or consequential damages in connection with or arising out of the performance or use of any product furnished hereunder. Industrial Computer Source liability shall in no event exceed the purchase price of the product purchased hereunder. The foregoing limitation of liability shall be equally applicable to any service provided by Industrial Computer Source or its authorized agent.

Some *Sales Items* and *Customized Systems* are **not** subject to the guarantee and limited warranty. However, in these instances any deviations will be disclosed prior to sales and noted in the original invoice. ***Industrial Computer Source reserves the right to refuse returns or credits on software or special order items.***

Advisories

Three types of advisories are used throughout the manual to stress important points or warn of potential hazards to the user or the system. They are the Note, the Caution, and the Warning. Following is an example of each type of advisory:

> **Note:** The note is used to present special instruction, or to provide extra information which may help to simplify the use of the product.

CAUTION!

A Caution is used to alert you to a situation which if ignored may cause injury or damage equipment.

WARNING!

A Warning is used to alert you of a situation which if ignored will cause serious injury.

Cautions and Warnings are accented with triangular symbols. The exclamation symbol is used in all cautions and warnings to help alert you to the important instructions. The lightning flash symbol is used on the left hand side of a caution or a warning if the advisory relates to the presence of voltage which may be of sufficient magnitude to cause electrical shock.

Use caution when servicing any electrical component. We have tried to identify the areas which may pose a Caution or Warning condition in this manual; however, Industrial Computer Source does not claim to have covered all situations which might require the use of a Caution or Warning.

You must refer to the documentation for any component you install into a computer system to insure proper precautions and procedures are followed.

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Chapter 1: Introduction

Overview

The **WINCOMM8/B** provides the PC with eight RS-232 asynchronous ports. The **WINCOMM8/B** allows for connection to any device utilizing the RS-232 electrical interface, such as modems, data-entry terminals, and plotters.

What's Included

The **WINCOMM8/B** is shipped with the following items. If any of these items are missing or damaged, contact the supplier.

- **WINCOMM8/B** Serial I/O Adapter
- "Octopus" Cable providing 8 DB-25 connectors.
- 3.5" Serial Utility Diskette
- User Manual

Factory Default Settings

The **WINCOMM8/B** factory default settings are as follows:

Port #	Base Address	IRQ
Port 1	280	2/9
Port 2	288	3
Port 3	290	4
Port 4	298	5
Port 5	2A0	2/9
Port 6	2A8	3
Port 7	2B0	4
Port 8	2B8	5

To install the **WINCOMM8/B** using factory default settings, refer to the Installation section of this manual.

For your reference, record installed **WINCOMM8/B** settings below:

Port #	Base Address	IRQ
Port 1		
Port 2		
Port 3		
Port 4		
Port 5		
Port 6		
Port 7		
Port 8		

The following table shows which port is connected to which connector and the corresponding address in the Factory Default setting.

Port #	DB-25#	Address	Example
1	1	Base+0	280-287
2	2	Base+8	288-28F
3	3	Base+16	290-297
4	4	Base+24	298-29F
5	5	Base+32	2A0-2A7
6	6	Base+40	2A8-2AF
7	7	Base+48	2B0-2B7
8	8	Base+56	2B8-2BF

Chapter 2: Card Setup

The **WINCOMM8/B** contains several jumper straps that must be set for proper operation.

Address Selection

The **WINCOMM8/B** occupies 64 I/O locations and can be addressed two different ways. If header E1 is set to the "Switch" position the **WINCOMM8/B** occupies 64 consecutive I/O locations and the DIP-switch is used to set the base address for these locations. The starting address for these 64 I/O locations must be on a 64 byte boundary i.e.: Hex 200, 240, 80, or 2C0. Be careful when selecting the base address as some selections conflict with existing PC ports. The following table shows several examples that usually do not cause a conflict.

Address	Binary		Switch Position Setting						
Hex	A9	A0	1	2	3	4	5	6	7
280-287	1010000XXX		Off	On	Off	On	On	On	On
2A0-2A7	1010100XXX		Off	On	Off	On	Off	On	On
2E8-2EF	1011101XXX		Off	On	Off	Off	Off	On	Off
2F8-2FF	1011111XXX		Off	On	Off	Off	Off	Off	Off
3E8-3EF	1111101XXX		Off	Off	Off	Off	Off	On	Off
300-307	1100000XXX		Off	Off	On	On	On	On	On
328-32F	1100101XXX		Off	Off	On	On	Off	On	Off
3F8-3FF	1111111XXX		Off	Off	Off	Off	Off	Off	Off

Table 1: Address Selection Table

Note: Some of these selections may not be valid for your system, due to port contention. If in doubt, call Sealevel Technical Support (864) 843-4343 for assistance. These addressing restrictions are simplified when using the "PAL" option.

Note: If Xenix is the operating system and COM1 is not installed, use base address 500 Hex and IRQ 4 (Xenix COM1:). If COM1: is installed, then select 580 Hex as a base address and IRQ 3 (Xenix COM2:).

The following illustration shows the correlation between the DIP-switch setting and the address bits used to determine the base address. In the example below, address 280 (Factory Default) is selected as a base.
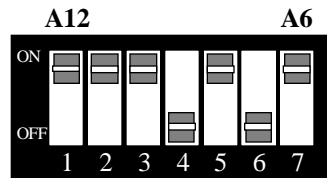

Figure 1: DIP-switch Illustration

Note: Setting the switch "On" or "Closed" corresponds to a "0" in the address, while leaving it "Off" or "Open" corresponds to a "1".

Refer to Appendix A for common address contentions.

"PAL" Addressing

If header E11 is set to the "PAL" position, the board can be addressed at many customized locations. Using the "PAL" option will allow you to obtain COM1: - COM4: addresses, XENIX COM: addresses, or any other standard or nonstandard address configuration. Using the "PAL" feature is a very cost-effective means of solving complex addressing problems. For more information on implementing the "PAL" option, please contact Technical Support.

IRQ Selection

The **WINCOMM8/B** has an interrupt selection jumper that corresponds to each port that may have to be set prior to use. The software you are using with the board will determine which interrupts, if any are to be used. The DOS serial port interface software does not use interrupts, while interrupt buffer programs do. DOS does not require the interrupt to be set, while most Multi - User Operating Systems will. Consult the particular manual for the software that you are using to determine the proper setting.

To set the interrupt for a particular port, first select the header for the port desired. Headers E1-E8 correspond to Ports 1-8. Next select an IRQ by placing one of the jumpers on the header location that corresponds to the IRQ number that you wish to use. Below is an example of a selected IRQ.
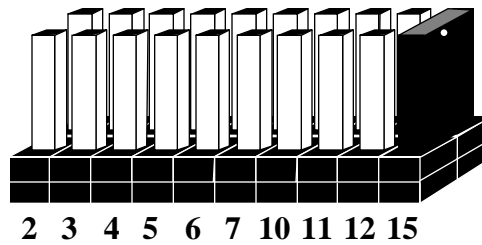

2 3 4 5 6 7 10 11 12 15

Figure 2: Headers E1 to E8 (IRQ15 selected)

Interrupt Mode Options

The **WINCOMM8/B** will allow each port to have an independent interrupt level or share an interrupt with another port on the adapter. The **WINCOMM8/B** will even share interrupts with a compatible port that is located on another adapter. The **WINCOMM8/B** can operate in three interrupt modes. Header E9 determines the interrupt mode for Ports 1-4 and header E10 determines the interrupt mode for ports 5-8.

"**N**" indicates the (**N**)ormal, single interrupt per port mode. "**S**" Indicates the (**S**)hared interrupt mode, which allows more than one port to access a single IRQ. Any two or more ports can share a common IRQ by placing the jumpers on the same IRQ setting, and setting the appropriate selections at E5. Consult your particular software for IRQ selection. If no interrupt is desired, remove the jumper. "**M**" indicates the inclusion of a 1K ohm pull-down resistor required on one port when sharing interrupts.
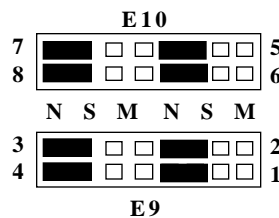
Figure 3: Header E9 and E10, Normal IRQ Mode

Set jumpers to "**S**" for shared interrupt mode on all blocks sharing an IRQ except one. Set that port block for "**M**". This provides the pull-down resistor circuit that makes sharing of IRQ possible. If you are using more than one **WINCOMM8/B** or a compatible adapter in a bus you should only have one port set to "**M**". The following example shows all four ports sharing a single IRQ.
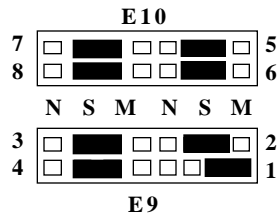
Figure 4: Header E9 and E10, Shared IRQ Mode

Set jumper to "**S**" if you are using more than one **WINCOMM8/B** in a bus or you wish to completely remove the pull-down resistor for hardware compatibility. **Setting the WINCOMM8/B in this configuration when it is not accompanied by a pull-down resistor will prevent the ports from triggering an interrupt**.

Figure 5: Header E9 and E10, Sharing IRQ's with another adapter

Chapter 3: Installation

The **WINCOMM8/B** can be installed in any of the full size PC expansion slots, but to access the "AT" or (E)ISA IRQs (10, 11, 12, 15) it must be installed in one of the 16 bit slots. The **WINCOMM8/B** conta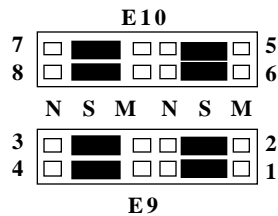ins several jumper straps for each port that must be set for proper operation prior to installing the **WINCOMM8/B** into the computer.

1. Turn off PC power. Disconnect the power cord.
2. Remove the PC case cover.
3. Locate an available slot and remove the blank metal slot cover.
4. Gently insert the **WINCOMM8/B** into the slot. Make sure that the adapter is seated properly.
5. Replace the screw.
6. Install the "Octopus" Cable
7. Replace the cover.
8. Connect the power cord.

Installation is complete.

Operating System Installation

Windows 3.x, Windows 95, Windows NT

Please refer to the /WINDOWS sub-directory on the Serial Utilities Diskette for help files and current information on the installation of the **WINCOMM8/B** in these operating systems.

OS/2

Please refer to the /OS2 sub-directory on the Serial Utilities Diskette for application notes on the installation of the **WINCOMM8/B** in this operating system.

QNX

Please refer to the /QNX sub-directory on the Serial Utilities Diskette for application notes on the installation of the **WINCOMM8/B** in this operating system

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Chapter 4: Technical Description

The **WINCOMM8/B** provides 8 additional serial ports for terminals, modems, printers, etc. The **WINCOMM8/B** utilizes the 16550 UART chip. This chip features programmable baud rate, data format, interrupt control and a 16 byte FIFO. The Model WINCOMM8/B-650 utilities the 16650 UART.

Features

- Eight RS-232 Ports with full modem control signals
- "PAL" addressing option allowing "Turn Key" configurations
- Selectable/Sharable Interrupts (IRQ's 2/9-7,10,11,12,& 15)
- Interrupt status port for Windows™ NT (listed in the NT Hardware compatibility list) and Green Leaf™ COM: libraries
- 8 DB-25 male connectors provided using the   "Octopus Cable"

Interrupt Status Port

The **WINCOMM8/B** provides the user with an **I**nterrupt **S**tatus **P**ort (ISP) for greater throughput when servicing multiple ports on a single interrupt line. The ISP is a read only 8-bit register that sets a corresponding bit when an interrupt is pending. Port 1 interrupt line corresponds with Bit D0 of the status port, Port 2 with D1 etc.

The ISP can be addressed two different ways. If header E11 is in the "Switch" position the Status Register is located at Base+7 on each port (Example: Base = 280 Hex, Status Port = 287, 28F… etc.). This allows any one of eight locations to be read to obtain the value in the status register. All eight status ports on the **WINCOMM8/B** are identical, so any one of the eight can be read. If header E11 is in the "PAL" position, the status port can be addressed at any location. Please contact for information on PAL programming and custom configurations.

Example: This indicates that Channel 2 has an interrupt pending.

Bit Position:	7	6	5	4	3	2	1	0
Value Read:	0	0	0	0	0	0	1	0

DB-25 Connector Pin Assignments

Signal	Name	Pin #	Mode
GND	Ground	7	
TD	Transmit Data	2	Output
RTS	Request To Send	4	Output
DTR	Data Terminal Ready	20	Output
RD	Receive Data	3	Input
CTS	Clear To Send	5	Input
DSR	Data Set Read y	6	Input
DCD	Data Carrier Detect	8	Input
RI	Ring Indicator	22	Input

DB-78 Connector Pin Assignments

Port #	1	2	3	4	5	6	7	8
TD	36	12	26	3	75	51	66	42
RD	37	11	27	2	76	50	67	41
RTS	17	31	8	22	57	70	47	61
CTS	16	32	7	23	56	71	46	62
DTR	35	13	25	4	74	52	65	43
DSR	18	30	9	21	58	69	48	60
DCD	38	10	29	1	77	49	68	40
RI	15	33	6	24	54	72	45	63
GND	34	14	25	5	73	53	64	44

Chapter 5: Specifications

Environmental Specifications

Temperature Range

Operating

0º to 50º C
(32º to 122º F)

Storage

-20º to 70º C
(-4º to 158º F)

Humidity Range

Operating

10 to 90% R.H. Non-Condensing

Storage

10 to 90% R.H. Non-Condensing

Manufacturing

*   IPC 610-A Class-III standards are adhered to with a 0.1 visual A.Q.L. and 100% Functional Testing.
*   All printed circuit boards are built to U.L. 94V0 rating and are 100% electrically tested. These printed circuit boards are solder mask over bare copper or solder mask over tin nickel.

Power Consumption

Supply line	+12 VDC	-12 VDC	+5 VDC
Rating	50 mA	50 mA	200 mA

Mean Time Between Failures (MTBF)

Greater than 150,000 hours. (Calculated)

Physical Dimensions

Board length	8.0 inches	(20.32 cm)
Board Height including Goldfingers	4.2 inches	(10.66 cm)
Board Height excluding Goldfingers	3.9 inches	(9.91 cm)

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Appendix A: Troubleshooting

A Serial Utility Diskette is supplied with the adapter and will be used in the troubleshooting proce-
dures. By using this diskette and following these simple steps, most common problems can be
eliminated 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 adapter so that there is no conflict with currently installed adapters. No two
    adapters can occupy the same I/O address.

3. Make sure the adapter is using a unique IRQ. While the   adapter does allow the sharing of
    IRQs, many other adapters (i.e. SCSI adapters & on-board serial ports) do not. The IRQ is
    typically selected via an on-board header block. Refer to the section on Card Setup for help
    in choosing an I/O address and IRQ.

4. Make sure the adapter is securely installed in a motherboard slot.

5. Use the supplied diskette and User Manual to verify that the adapter is configured correctly.
    The supplied diskette contains a diagnostic program "SSD" that will verify if an adapter is
    configured properly. This diagnostic program is written with the user in mind and is easy to
    use. Refer to the "README" file on the supplied diskette for detailed instructions on using
    "SSD".

6. The following are known I/O conflicts:

    •   The 278 and 378 settings may conflict with your printer I/O adapter.

    •   3B0 cannot be used if a Monochrome adapter is installed.

    •   3F8-3FF is typically reserved for COM1:

    •   2F8-2FF is typically reserved for COM2:

    •   3E8-3EF is typically reserved for COM3:

    •   2E8-2EF is typically reserved for COM4:

7. Please refer to your included diskette for any postproduction manual updates and application
    specific information.

8. Always use the diagnostic software when troubleshooting a problem. This will eliminate the
    software issue from the equation.

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Appendix B: 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-C/D/E or EIA/TIA-232-C/D/E. It is defined as "*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. The IBM PC computer defined the RS-232 port on a 9 pin D sub connector and subsequently the EIA/TIA approved this implementation as the EIA/TIA-574 standard. This standard has defined as the "*9-Position Non-Synchronous Interface between Data Terminal Equipment and Data Circuit-Terminating Equipment Employing Serial Binary Data Interchange*". Both implementations are in wide spread use and will be referred to as RS-232 in this document. RS-232 is capable of operating at data rates up to 20 Kbps / 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 define two types of interface circuits **D**ata **T**erminal **E**quipment (**DTE**) and **D**ata **C**ircuit-Terminating **E**quipment (**DCE***)*. The **WINCOMM8/B** Adapter is a DTE interface.

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Appendix C: 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. Character boundaries for asynchronous communications are defined by a starting bit followed by a pre-defined number of data bits (5, 6, 7, or 8). The end of the character is defined by the transmission of a pre-defined number of stop bits (usual 1, 1.5 or 2). An extra bit used for error detection is often appended before the stop bits.
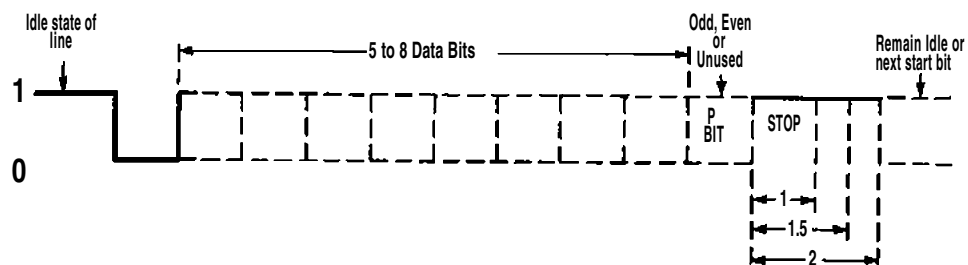

Figure 6: Asynchronous Communications Bit Diagram

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)

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Appendix D: WINCOMM8/B-650 Addendum

The **WINCOMM8/B-650** is equipped with a higher speed oscillator and the Startech 16C654 UART. This UART has a significantly larger FIFO (64 bytes as opposed to the 16 of the 16C554).

The **WINCOMM8/B-650** has a 7.3728 MHz oscillator, as opposed to the standard 1.8432 MHz oscillator, that allows data rates up to 460.8 K bps. To use the **WINCOMM8/B-650** with a standard communications package, or to achieve standard data rates (i.e. 1200, 2400, 9600…115.2K) simply select a data rate that is your target data rate divided by 4. For example, if you need a data rate of 9600, you would choose 2400, $9600 \div 4 = 2400$.

The following table shows some common data rates and the rates you should choose to match them.

For this Data Rate	Choose this Data Rate
1200 bps	300 bps
2400 bps	600 bps
4800 bps	1200 bps
9600 bps	4800bps
19.2K bps	9600 bps
38.4K bps	19.2K bps
57.6 K bps	38.4K bps
115.2 K bps	57.6 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	384
2400 bps	192
4800 bps	96
9600 bps	48
19.2K bps	24
38.4K bps	12
57.6K bps	8
115.2K bps	4
230.4K bps	2
460.8K bps	1

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Appendix D: Silk-Screen
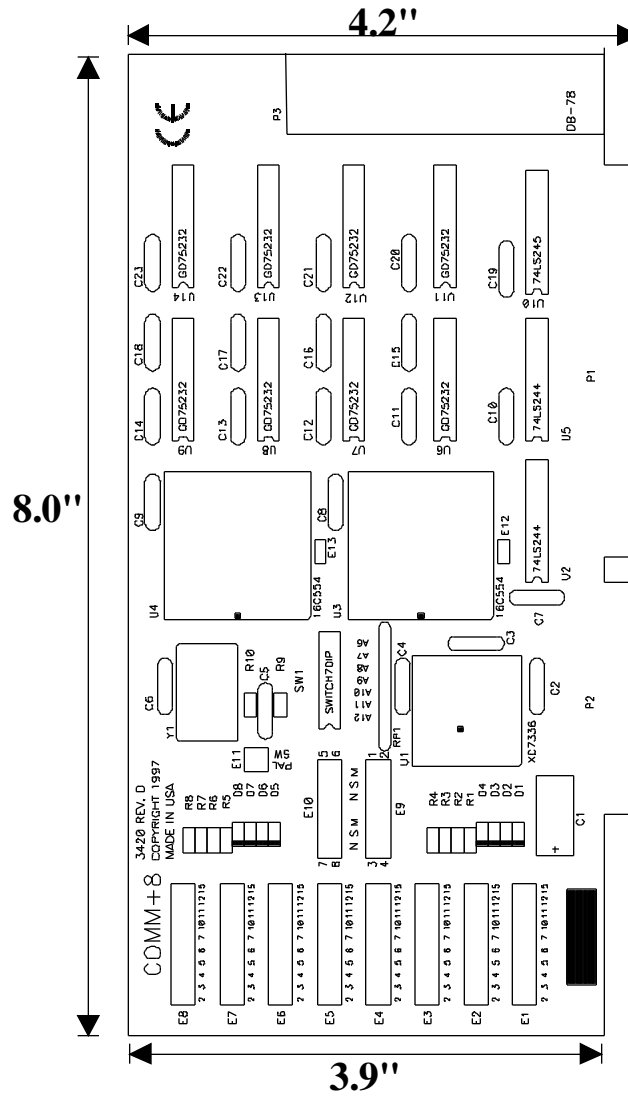
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Declaration of Conformity

INDUSTRIAL COMPUTER SOURCE®

9950 Barnes Canyon Road
San Diego, CA 92121-2720
(800) 523-2320

Industrial Computer Source declares under its own and full responsibility that the following products are compliant with the protection requirements of the 89/336/EEC and 73/23/EEC directives.

Only specific models listed on this declaration and labeled with the CE logo are CE compliant.

WINCOMM8/B   WINCOMM8/B-650

Conformity is accomplished by meeting the requirements of the following European harmonized standards:

EN 50081-1:1992 Emissions, Generic Requirements.
-EN 55022 Measurement of radio interference characteristics of information technology equipment.

EN 50082-2:1995 Immunity, Generic Requirements.
-EN 61000-4-2 Immunity to Electrostatic Discharge.
-ENV 50140 Immunity for radiated RF electromagnetic fields.

EN 50082-1:1992 Immunity, Generic Requirements.
-IEC 801-3:1984 Immunity for radiated electromagnetic fields.
-IEC 801-4:1988 Immunity for AC and I/O lines, fast transient common mode.
-IEC 65A/77B Immunity for AC lines, transients, common, and differential mode.

EN 60950:1992 Safety of Information Technology Equipment.

Information supporting this declaration is contained in the applicable Technical Construction file available from:

INDUSTRIAL COMPUTER SOURCE EUROPE®

Z.A. de Courtaboeuf
16, Avenue du Québec
B.P. 712
91961 LES ULIS Cedex

June 19, 1997
San Diego, CA

Mr. Steven R. Peltier
President & Chief Executive Officer

BUG REPORT

While we have tried to assure this manual is error free, it is a fact of life that works of man have errors. We request you to detail any errors you find on this BUG REPORT and return it to us. We will correct the errors/problems and send you a new manual as soon as available. Please return to:

INDUSTRIAL COMPUTER SOURCE ®

Attn: Documentation Department
P. O. Box 910557
San Diego, CA 92121-0557

Your Name: _____

Company Name: _____

Address 1: _____

Address 2: _____

Mail Stop: _____

City: _____ State: _____ Zip: _____

Phone: (_____) _____

Product: **WINCOMM8/B & WINCOMM8/B-650**

Manual Revision: **00750-121-2A**

Please list the page numbers and errors found. Thank you!