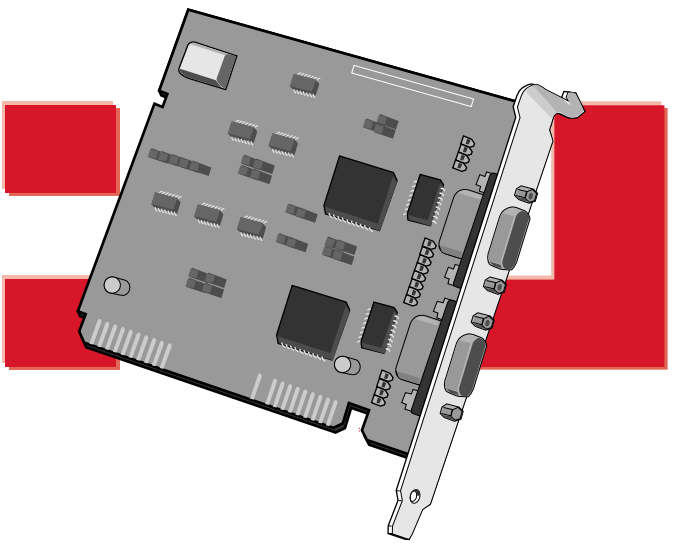
IOXTRA

2 Port High Speed Serial card

Installation and Configuration Guide



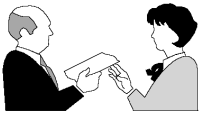
CHASE RESEARCH
CONNECTING THE WORLD

Ref: IOX/001/101

Before You Begin your Installation

The product you have purchased is designed to be easily installed into most IBM PC or compatible systems. Many products have large, easy-to-read legends to allow for the easy configuring of the product. This installation manual contains detailed instructions. Most included software has automatic installation programs to place the software correctly onto your computer. However, as all computers are configured differently, you may be required to perform some basic DOS or Windows tasks. If you are not familiar with basic DOS commands such as DIR, CD, or EDIT, you should check your DOS manual, or seek assistance from your local computer dealer to install the product.

How to get Technical Assistance



The dealer that you purchased this product (or your computer) from is the first place you should go for technical assistance. The dealer is usually the most qualified source of help and is most familiar with your system and how this product should be installed. Many dealers have customer service and technical support programmes, with varying levels of support offered, depending on your needs and computer knowledge.

Please contact the dealer first whenever a problem occurs.

Damaged or Missing Items

We use many world-class quality assurance programmes to ensure the product you purchased is of the highest caliber. Sometimes, however, a component may be missing from the box, or is damaged or corrupt in some way. If this happens, immediately return the entire package to your place of purchase so you may exchange it for a new one. Your dealer should be able to provide you with an exchange far more quickly than by contacting us directly. If for some reason you are unable to return the product directly to its place of purchase, refer to the "Servicing Your Product" and "Warranty" sections in this manual for instructions.

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1 Introduction

Congratulations on the purchase of your IOXTRA from Chase Research, a leader in high-tech computer enhancement products. The streamlined *EXPRESS* Install provided on page 2 is intended for more knowledgeable and experienced users.

1.1 Package Contents

Make sure you have received the following items:

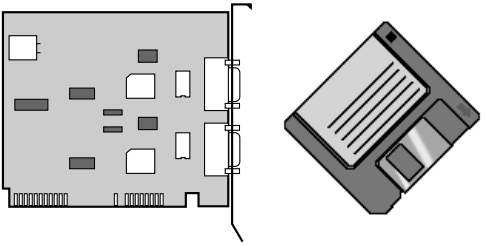
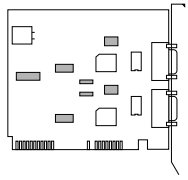


Figure 1-1: The IOXTRA board and Driver diskette

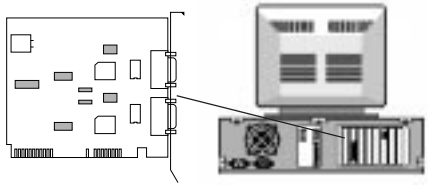
If any items are missing or appear damaged, contact your dealer for assistance.

1.2 EXPRESS Install

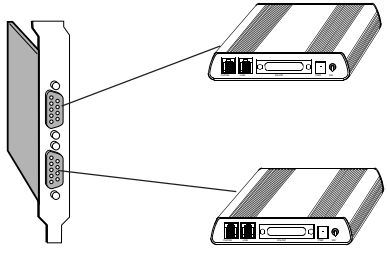
Check jumper settings. EXPRESS Install assumes acceptance of default configuration. If you need to change default settings, refer to Section 2.



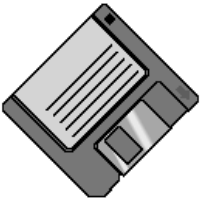
Install the IOXTRA card in 8- or 16- bit slot.



Attach the cable(s) for your device(s).



Install driver for high-speed performance.



- For additional details on physical installation, see Section 3.
- For aditional details on installing the driver, see Section 4.
- For assistance, if you encounter difficulties, see Appendix A.

1.3 Product Overview

You have purchased the IOXTRA from Chase Research for the IBM and compatible family of personal computers. Chase Research is a leading manufacturer of connectivity products. Compatible with ISA or EISA systems, the IOXTRA has two 9-pin male serial port connectors. It features a convenient compact size and can be installed in either an 8- or 16-bit slot depending on your system. Addresses and interrupts used for each port are jumper-selectable. Drivers for high performance are included on the diskette.

The IOXTRA also features high-speed buffer 16C650 UART technology. Its 32-byte FIFO buffers can send and receive data with throughput speeds up to a maximum of 460Kbps to increase data throughput between the host PC and its serial devices. Modem control signals are also provided.

Take a few minutes now and read this manual before installing the IOXTRA board. Doing so may prevent difficulties later. Our customer support experience has shown that many costly and time-consuming calls to our technical support staff can be avoided with closer attention to the information provided here.

2 Board Configuration

2.1 Introduction

You can define each port for a specific application as necessary.

To:	Use	Default
Select a COM address for serial port A	J7	COM3
Select a COM address for serial port B	J6	COM4
Enable or disable serial port A	J4	Enabled
Enable or disable serial port B	J5	Enabled
Select an IRQ for serial port A	J2	IRQ5
Select an IRQ for serial port B	J3	IRQ9
Select I/O address for clock set	J1	2C0, 2C8

Table 2-1: Jumper blocks for specific applications.

Legends printed on the board's silk screen clearly identify which pins to jumper in order to select a desired setting.

NOTE:

A pair of pins is jumpered when the small plastic sleeve, or covering (often blue) is fitted over both pins. A specific set of jumpered pins indicates certain COM and IRQ addresses for a particular device. Jumpers are changed or set by pulling the plastic sleeve up and fitting it on a different pair of exposed pins in the same jumper block.

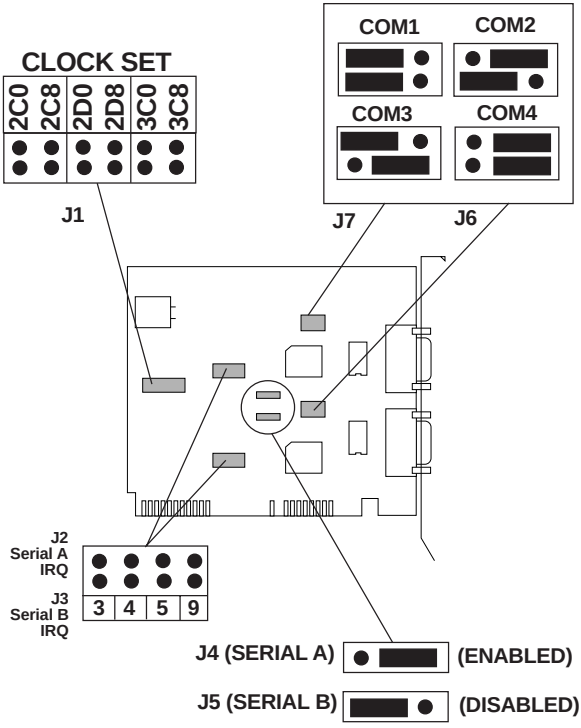


Figure 2-1: IOXTRA Jumper locations and default settings.

2.2 Serial Device Interface 'A' or 'B'

The IOXTRA board features two high speed 16C650 UART chips for the serial ports. Serial device interfaces 'A' and 'B' have a 9-pin male D-shell connector, and are used to connect to any asynchronous serial device using a standard EIA RS-232 interface. Examples of such devices are serial printers, plotters, and modems. Serial ports 'A' and 'B' can be set via a jumper for one of the following options:

COM1 (03F8h):	**First serial port**
COM2 (02F8h):	**Second serial port**
COM3 (03E8h):	**Third serial port**
COM4 (02E8h):	**Fourth serial port**
DISABLED:	**No port is visible to system**

The interrupt request choices are IRQ3, IRQ4, IRQ5, IRQ9.

Clock set is used to select baud rates above 115Kbps:

2C0, 2C8
2D0, 2D8
3C0, 3C8

Before you install the IOXTRA board, you need to set the jumpers for your configuration. Always turn the system off before attempting the reconfiguring, removal, or installation of the IOXTRA board.

You can change configurations on the IOXTRA to suit your needs simply by moving a jumper or combination of jumpers from one pair of pins to another.

See the preceding page for the default settings for an IOXTRA being installed in an IBM AT or compatible. With the defaults chosen as an example, the IOXTRA is providing two additional serial ports to a system with COM1 and COM2 already installed.

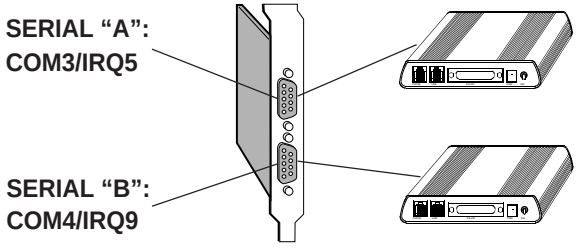
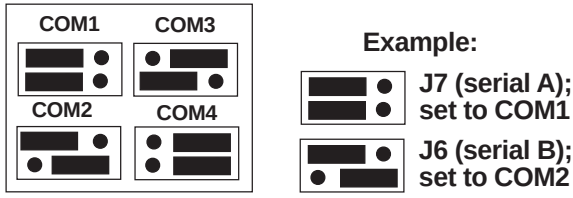


Figure 2-2: Example showing two additional serial ports.

Changing the Defaults

To set the COM ports, simply move the jumpers to the appropriate COM designation as shown in the legend printed on the top of the board.



Refer to Section *2.3 Configuring the Interrupts* to set the proper interrupts for the serial ports.

If serial port 'A' and/or 'B' is to be DISABLED, then move the jumper for that serial port to the DISABLED position. See Section *2.4 Disabling an Unused Device*.

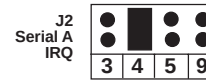
(DISABLED)

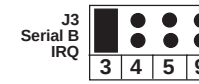
(ENABLED)

NOTE: Do not place more than one jumper in each row of this section.

2.3 Configuring for Interrupts

Generally, COM1 uses IRQ4 and COM2 uses IRQ3. If your system already contains either of these ports (COM1 or COM2), then you must NOT USE that IRQ on the IOXTRA board. If the IRQ is used by two ports, a conflict will result. Refer to Section *2.4 Disabling an Unused Device*. If your software permits, you may use an IRQ5 or an IRQ9 as long as they do not conflict with another device. Example: Serial port 'A' is configured as IRQ4 and Serial port 'B' is configured as IRQ3.





2.4 Disabling an Unused Device

You can disable a device or IRQ simply by moving the respective jumper. For example, to disable Serial 'B', locate the Serial 'B' jumper matrix. Move the plastic jumper to the DISABLED position.

See example overleaf.

Example:

J4  **(serial A) (ENABLED)**

J4  **(serial A) (DISABLED)**

J5  **(serial B) (ENABLED)**

J5  **(serial B) (DISABLED)**

2.5 Selecting an I/O Address Pair for the Clock Set

You must select two additional I/O addresses for setting the clock to standard or high-speed mode. These addresses are used by the driver software provided to set the clock speed of the 16C650 UARTs. Your choices are:

- 2C0 and 2C8 (**DEFAULT**)
- 2D0 and 2D8
- 3C0 and 3C8 (do not use this address if you are using LPT2, or a VGA color graphics adapter)

If another device is not using the default setting, leave it as is.

If another device is using the default settings, select one of the other two settings. Change jumpers accordingly and make sure to note which pair of addresses you chose.

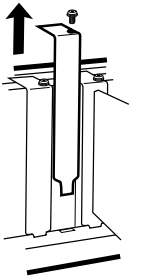
When you have completed configuring the IOXTRA board, continue with *Section 3 Physical Installation.*

3 Physical Installation

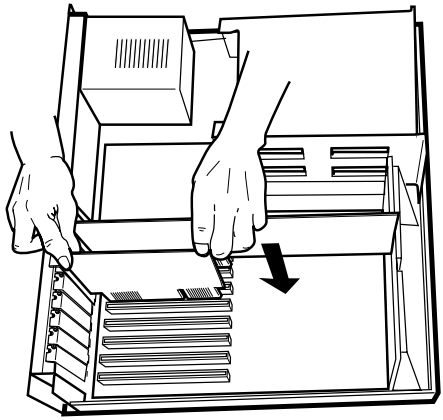
3.1 Board Installation

The IOXTRA board is simple and quick to install. Take a few moments to read over the directions before you begin.

1. Remove your system cover, remembering to power down your system first. You may find it necessary to remove other adapter boards or detach cables. If so, make note of where everything goes. Now, select an empty expansion slot. The IOXTRA functions equally well in either an 8- or 16-bit slot. Choose either depending on convenience. Remove the screw and the metal plate that covers the external access to the slot you have selected.



2. Insert the IOXTRA board in the slot you have selected so the edge connector on the bottom rear of the board mates with the socket on the motherboard (see figure overleaf). Press down firmly on the board. Use the removed screw to secure the board.



3. Replace any other adapter boards you may have removed and re-attach any detached internal cables. Slide the cover back over the chassis taking care not to let it catch on the disk drive or power cables. Once the cover is in place, replace all the screws that you removed earlier. Reconnect all previously removed external cables.

4. Attach the cable(s) for the device(s) you will be using to the appropriate connector and tighten them down with screws attached to the end of the cable(s).

4 Driver Installation

This section describes the installation of the drivers for Windows® 3.1, Windows for Workgroups® and Windows 95®. To install these drivers, you must run **setup.exe** from the driver disk.

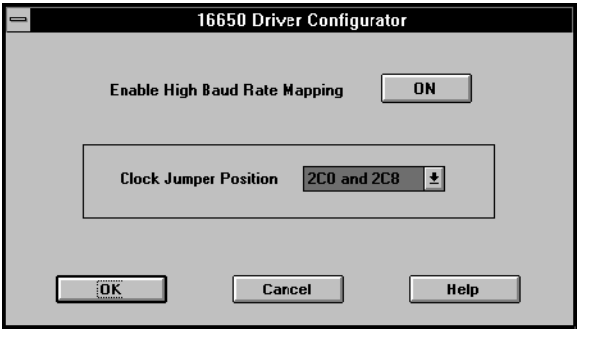
For information on availability of other drivers for this card, please refer to Appendix D.

Note: Please install Windows 95® driver *before* the hardware.

4.1 Windows® 3.1 and Windows for Workgroups®

Once you have selected the installation path, the files are copied to your hard drive.

A Program Group will then be created containing two icons, one for Configuration and one for Removal. The Configuration utility will be automatically run.



The Configurator installs the driver into Windows® itself and allows you to set the Clock Jumper Pair and the higher Baud rates.

If the '**Enable High Baud Rate Mapping**' switch is set to '**ON**', then all baud rates selected by applications will be multiplied by four.

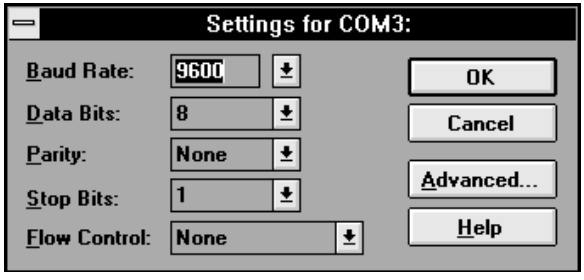
For example, if you use an application to set the Baud Rate to 57600 and the High Baud Rate Mapping has been enabled, the actual Baud Rate will be 57600 * 4 = 230400.

When you have selected the Clock Jumper Pair set on your card and indicated whether **High Baud Rate Mapping** should be on or off, click **OK** to continue. High Baud Rates can be switched on or off at any time.

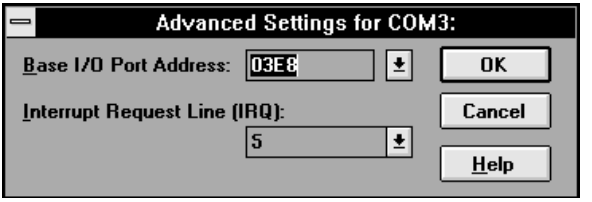
Next, the Configurator will present the Ports Setup Utility window.

Select one of the ports for the IOXTRA and click on **Settings**.

The window below will appear (shown for COM3).



These settings usually only apply for serial printers and most applications override them, don't worry too much about what they are set to, and instead click on **Advanced** to move onto the next section.



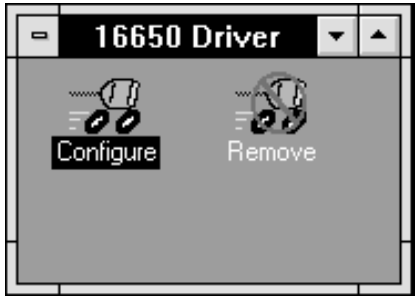
Make sure the address and IRQ for the port is the same as those selected on the card. The default settings for the card are shown below:

Port	Address	IRQ
COM3	03E8	5
COM4	02E8	9

If you changed any of the default jumper settings on the IOXTRA, make sure the settings here match what you selected on the board.

When you click on **OK** to accept the values, the Ports Setup utility may tell you that the values have changed and you need to restart Windows®. Select **Don't Restart Now** at this stage so that you can continue and set up the next port. Selecting this takes you back a step to the **Settings** window, where you can simply select **OK** to start on the next port you need to setup.

Having gone through the same process for the second port, this time select **Restart Windows**. If the Port Setup Utility doesn't ask if you want to restart, exit Windows® and restart. The Program Group created looks as follows:



To change the configuration at any time, double click the **Configure** icon. To remove the IOXTRA driver and reinstall the standard windows driver, double click the **Remove** icon.

4.2 Windows 95®

Having run **setup.exe** as previously described, 'Add New Hardware Wizard' will automatically start.

Follow the help instructions on screen.

The Baud rates 230400 and 460800 can be selected for Windows 95® applications. For other Windows® applications, 57600 and 115200 are automatically mapped to these rates.

A Troubleshooting

Before contacting your dealer, please review the following list of problems and solutions to see if any of them apply to your situation.

SYMPTOM	POSSIBLE REMEDY
No response from a peripheral device. (i.e. printer, plotter, modem, etc.)	Verify that the peripheral device is powered on, ready, on-line, and/or securely connected at BOTH ends of the cable. Be sure the application software is configured to recognize the port that you are attempting to use and that the port in question is actually the port intended to be active. Check the IOXTRA jumper settings to insure that the intended port is enabled and that there are no conflicting ports or shared interrupts. Is board set to correct mode? (Normal or high-speed?)
COM3 and/or COM4 do not function.	The system is functioning normally; IBM never intended COM3 or COM4 to be initialized during boot-up. It will be necessary for your application software to initialize these COM ports.
My mouse won't work when connected to my IOXTRA	The IOXTRA high-speed serial card is unsuitable for use with a mouse. Use one of your existing COM ports for the mouse.

I am not sure how to set the IRQs.	In general, IRQ4 belongs to COM1. IRQ3 belongs to COM2. COM3 and COM4 can be set to IRQ5, or IRQ9. Avoid sharing IRQs. The IRQ settings in your software must match the settings jumpered on the board.
No response when working at speeds exceeding 115 Kbps.	Verify that the external device is capable of those speeds. Make sure the board is set to enhanced (high-speed) mode with the Chase driver.
The board will not work in enhanced mode.	The clock settings must be set correctly with the Chase driver to match the clock set jumper on the board. This setting must not conflict with any other hardware.
The board does not work when the clock set is jumpered to 3C0 and 3C8.	It is conflicting with LPT2 or your VGA adapter. Use a different jumper setting and adjust accordingly with the driver software.
Diagnostic programs such as Checkit report failures on serial ports or wrong UART speed.	The diagnostics program used must be capable of testing 650 UARTS. Most diagnostics programs can test only 450 and 550 UARTs.

My favourite DOS program doesn't work on the 650 card

Many DOS programs are written to talk to the serial ports directly and assume COM1 and COM3 will be IRQ4 and COM2 and COM4 will be IRQ3. Try these settings to get the program working.

In Windows 95® I cannot get my 16 bit applications to use the higher speed Baud rates

Turn Baud Rate Mapping on for 16 bit applications. This will map the speeds 57600 and 115200 onto 230400 and 460800 respectively.

Running Diagnostics under 'Install New Modem' in Windows 95® reports the incorrect UART

The diagnostics function in Windows 95® only knows about 450 and 550 UART types. A high-speed UART device is not recognised.

B Pin Assignments

This section is provided for users who are interested in the pin assignments for each port on the IOXTRA.

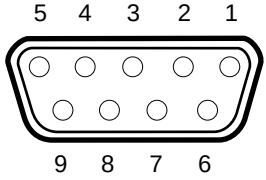


Figure B-1: The 9 pin socket on the IOXTRA

Pin No.	Line Name
1	Carrier Detect
2	Receive Data
3	Transmit Data
4	Data Terminal Ready
5	Signal Ground
6	Data Set Ready
7	Request to Send
8	Clear to Send
9	Ring Indicator

Table B-1: Table of Pin Assignments for the IOXTRA ports

Lifetime Warranty Policy

Limited Warranty. Chase Research products carry a limited lifetime parts and labour warranty, that is, Chase Research warrants each new electronic product to be free from defective materials and workmanship and agree to remedy any such defect either by repair or replacement, at our discretion, of any unit of our manufacture, which under normal installation, use and service, exhibits such defect: provided that the unit is delivered to us or our authorised service centre, intact, for our examination, with all transportation charges prepaid to our premises, within the serviceable lifetime of the computer system or network for which it was purchased by its original purchaser and provided that such examination discloses, in our judgement, that it is thus defective. Repair or replacement of the defective part will be the sole remedy available under this limited warranty.

This warranty does not extend to any of our products which have been subjected to misuse, neglect, accident, fire, flood, physical damage, incorrect wiring not of our doing, improper installation, unauthorised modification, use in violation of instructions furnished by us or repair by an unauthorised third party.

This warranty will be deemed void, if the product's serial number or other identification marks have been defaced, damaged or removed.

This warranty is in lieu of all warranties expressed or implied and no representative or person is authorised to assume for us any liability in connection with the sale of our products.

We make no warranties of merchantability, fitness for a particular purpose or of technological value and shall not be liable for any incidental, special or consequential damages resulting from the use, inability to use, or failure of any of our products.

Your statutory rights are not affected by this warranty.

Transportation costs of returning defective Chase products to our facilities will be paid by you and transportation costs of returning such Chase products to you will be paid by us. For return of defective products, you will first obtain an RMA (Return Merchandise Agreement) number from us and return the defective part(s), we will ship the replacement part(s) to you as soon as possible.

If we determine that the Chase product is not covered by the warranty, then the cost of repair of the Chase product at our then current rate and all transportation costs will be paid by you.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF TECHNOLOGICAL VALUE.

We will not be liable for any warranty offered by you which differs from the warrant quoted above. We do not warrant, and you will not make or permit to be made, any alterations or modifications of any Chase products without our prior written consent. You agree to defend, hold harmless, and indemnify us, including court costs and attorney's fees, against claim, suits, demands, liabilities, damages, or judgements of any kind related to or arising out of any unauthorised alterations or modifications of such Chase products made or permitted by you or related to warranties by you which differ from the warranty quoted above.

Limited Lifetime Warranty-Addendum

Part 1 details what is deemed outside of warranty cover.

Part 2 explains the possible causes and recommended precautions to take to avoid such failures.

Part 1

The following are deemed to be outside of the Limited Lifetime Warranty cover and are therefore treated as chargeable repairs:

Multiple Port Failure
Multiple LAN Port Failure
Track Damage
Non Chase Repair Damage
Other Damage
No Fault Found
Upgrades

Part 2

Multiple Port Failure

This is where more than one port has been damaged. Possible causes are listed below:

- Plugging a defective peripheral into the port
- Plugging a live peripheral into the port
- Plugging a defective data cable into the port
- An external high voltage being applied - mains surge / lightning strike

Recommended precautions:

- Always switch the peripheral off before connection or disconnection to the port
- Never run a product with any port failures, this can in time destroy the unit

Multiple LAN Port Failure

This is where both thick, thin or UTP LAN ports are defective. Possible causes are listed below:

- A high voltage being applied to the LAN cable

Track Damage

Track damage can seriously affect functionality and may result in total breakdown of the product. Possible causes are listed below:

- By not taking care when installing / removing a board from a system
- A high voltage being applied to the unit or power supply.

Non Chase Repair Damage

This is where a product has been repaired by an unauthorised third party and the unit has suffered damage caused by poor workmanship or where non-approved or incorrect components have been fitted.

Other Damage

Other damage covers problems which are not detailed elsewhere in this document. Possible causes are listed below:

- Fluid spillage into the unit
- Fire or corrosion
- Mechanical damage, i.e. physical damage to casing or connectors

No Fault Found

No fault found covers any product tested that is found to be not faulty and will be subject to a handling charge.

Upgrades

In an effort to improve the quality of our products, all repairs will have upgrades applied that improve the reliability of the product. All other upgrades such as enhanced features will be chargeable at the applicable rate.

D Servicing Your IOXTRA

If your IOXTRA requires service, first contact the dealer from whom you purchased the product. If the dealer is unable to assist you, and you must contact Chase Research, please follow the instructions below. Our electronic BBS is available 24 hours a day at 01256 842811 and will support data transmission speeds up to 14.4Kbps with settings of N, 8, 1. If you have a modem, the BBS may be helpful (especially during off hours) if you have a question about product settings or compatibility, or if you wish to download driver software or utilities.

Please refer to the back cover for details of our web site and ftp addresses.

Quality Customer Service

At Chase Research, we constantly endeavour to provide you the customer with a product and service which is second to none. However, you may feel that there are certain aspects of our service which we could further improve or that there is a matter which you would like us to investigate on your behalf.

This is where the Chase Customer Help Desk can assist. If you have reason to comment on a Chase product or service, or indeed, can put forward a suggestion as to how we could improve our services, please contact one of our Customer Help Desk representatives at the Chase Basingstoke headquarters in the U.K.

The telephone number is **UK +44 (0)1256 352260**, the fax number is **UK +44 (0)1256 810159** and the Email address is **cust@chaser.co.uk**.

We genuinely value your feedback to us and we will endeavour to act upon all comments as quickly and effectively as possible.

Thank You

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