

Hardware Installation Manual

for the

DataBlitz-2
DataBlitz-4
DataBlitz-8

(Part of the Zapateado Range)

Programmable Communication Controllers

April 2004

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Radio Frequency Interference (RFI)

The TCL range of multiport adapter cards have been verified to comply with the following international standards on RFI emissions:-

FCC PART 15 LIMIT A
BS EN 55022 : 1995 CLASS A
BS EN 55082-1 : 1992
CE Approved

WARRANTY

TCL provides a 12-month (from date of purchase) return to base warranty, to cover the **Zapateado** range of equipment against defective materials or workmanship.

This warranty does not apply if the adapter has been damaged by neglect, improper handling or by any other causes not arising directly from defective materials or workmanship.

Notice

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Quick Installation Guide for Windows

DataBlitz Adapter Card Installation

Switch power to the computer OFF and disconnect the mains power supply lead from the computer.

Remove the cover from the computer.

Insert the **DataBlitz** adapter card into a free PCI bus slot.

Screw the **DataBlitz** adapter card end-plate(s) to the computer chassis.

Connect (if necessary) the serial expansion cable to the **DataBlitz** adapter card.

Replace computer cover.

Re-connect mains power supply.

To check the card is operational - boot the computer into DOS and run the TCLDIAG program from the TCL UTILITIES diskette supplied with the **DataBlitz** adapter card. (If any problems are encountered see Appendix-2.)

Re Boot computer into the Windows 95 / 98 or Windows NT operating System.

Using the TCL 32-Bit Device Drivers disk Install the TCL Device driver.

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1 Introduction

1.1 Features

The **DataBlitz** range of adapter cards form part of the TCL **Zapateado** series of PCI adapter cards.

The **Zapateado** series of serial communication controller cards conform to the PCI bus specification version 2.1. The PCI interface provides a more efficient interface for transferring data between the system and the adapter cards.

The PCI bus system uses the ROM BIOS of the computer to allocate I/O and memory resources for the adapter cards. This means the user no longer has to set any switches or jumpers on the adapter cards when installing them into a system.

All the **Zapateado** series of adapter cards offer on-board surge protection as standard to protect the serial data and modem control lines for both RS232 and RS485 options.

Device Drivers for various operating systems are supplied free of charge with the **DataBlitz** range of adapter cards.

1.2 Options

The **Zapateado** series offers a range of buffered and intelligent adapter cards supporting 2, 4 and 8 port configurations. Each adapter card being available with either RS232 or RS422 line driver options.

2 Installation

2.1 General instructions

Always ensure that the mains supply is disconnected before attempting to connect or disconnect any kind of equipment.

All electronic components are extremely susceptible to damage from an electro-static charge. Always touch a grounded object before handling the **DataBlitz** adapter card.

Please refer also to the manufacturer's guide supplied with the computer system for instructions on installing an expansion card.

2.2 Installing the TCL controller card

The TCL **DataBlitz** range of adapter cards are PCI bus cards that require no user configuration.

Switch off the mains supply at the wall socket, then disconnect the mains cable from the computer unit.

Disconnect the keyboard and any peripheral devices. Remove the system-unit cover with reference to the manufacturer's instructions.

The TCL **DataBlitz** card should be fitted in an available PCI slot. The end bracket of the **DataBlitz** adapter card should be screwed to the computer chassis.

If an eight Port RJ-45 connector option is being installed then the additional four port RJ-45 flying lead end plate should also be screwed to the computer chassis. Confirm that the other end of the four port RJ-45 flying lead is connected to **JP2** on the top edge of the **DataBlitz** adapter card.

The system-unit cover should then be replaced.

It is now safe to re-connect all the peripheral cables and the power supply cable.

2.3 Connecting the DataBlitz Expansion Cable

Two types of expansion cables are available for the **DataBlitz-4 and DataBlitz-8** adapter cards. As standard the **DataBlitz** end-plate is supplied with a 68 Way SCSI-II type connector attached. TCL supply expansion cables that connect to the SCSI-II connector on the end plate, providing either a 9-Way D-Type or 25-Way D-Type pin out interface.

The **DataBlitz** adapter is also available with four RJ-45 8-Way connectors projecting through the **DataBlitz** end plate (in place of the SCSI-II connector). When this type of connector is ordered no expansion cable is required for the **DataBlitz-2** and **DataBlitz-4** port adapters.

When the **DataBlitz-8** is supplied with RJ-45 connectors, the first four ports (Ports 1...4) are made available via the four RJ-45 connectors projecting through the adapter card's end plate. The remaining four RJ-45 connectors (Ports 5...8) are supplied, attached to an end plate with a ribbon cable terminated with 34-Way Dual-in-Line (DIL) header, for connection to the **DataBlitz-8** expansion jumper.

2.3.1 Connecting the DataBlitz D-Type Expansion Cable

The **DataBlitz** adapter card will have a different expansion cable depending upon the number of ports the card supports and the type of electrical interface specified (RS232 / RS422-RS485). However all the D-Type expansion cables attach to the DataBlitz adapter card in the same manner.

- Install the **DataBlitz** card as described in 2.2.
- The 68-way connector at the end of the expansion cable should be carefully but firmly inserted into the connector on the end-plate of the **DataBlitz** card. The connector has a self locking latch which operates automatically.
- A slight tug on the connector should be enough to show whether the connector is locked on to the card or not.

NOTE: To disconnect the 68-way expansion cable press in the two release catches on either side of the connector, then gently pull the connector away from the card end-plate.

2.3.2 Connecting the DataBlitz RJ-45 Expansion Cable

The **DataBlitz-8** adapter card when ordered with RJ-45 connectors is supplied with four RJ-45 Connectors mounted on the adapter card (projecting through the end plate). A flying lead is also supplied with another four RJ-45 ports attached (for Ports 5...8). This flying lead must be connected to the **DataBlitz-8** adapter card and attached to the computer chassis to provide all 8 port connections.

- Install the **DataBlitz** card as described in 2.2.
- Connect the 34-Pin DIL header of the flying lead to **JP2** on the installed **DataBlitz-8** adapter card. Check the key on the 34-Pin ribbon cable connector is aligned correctly with the key slot in the JP2 connector. (JP2 is situated on the top edge of the **DataBlitz-8** adapter card).
- Fix the flying lead end plate (supporting the four RJ-45 connectors for Ports 5...8) to a spare slot in the computer. (Typically select the slot next to the **DataBlitz-8** card if that slot is vacant.). Ensure the end plate is securely screwed to the computer's chassis.

3 DataBlitz-2, -4 and -8

3.1 Features

The **DataBlitz** range of intelligent serial communications controllers allows 2, 4, and 8 terminals or other serial devices to be interfaced to an IBM compatible Personnel Computer supporting the PCI bus.

The **DataBlitz** adapter card incorporates a 40MHz AMD186-EM processor with 1024K bytes of private buffer and program memory. The controller is responsible for controlling data transfer to and from the attached terminals or serial devices; thus reducing the workload on the PC host processor.

All the **DataBlitz** range of controllers offer on-board surge protection as standard to protect the serial data and modem control lines (for both RS232 and RS485 options).

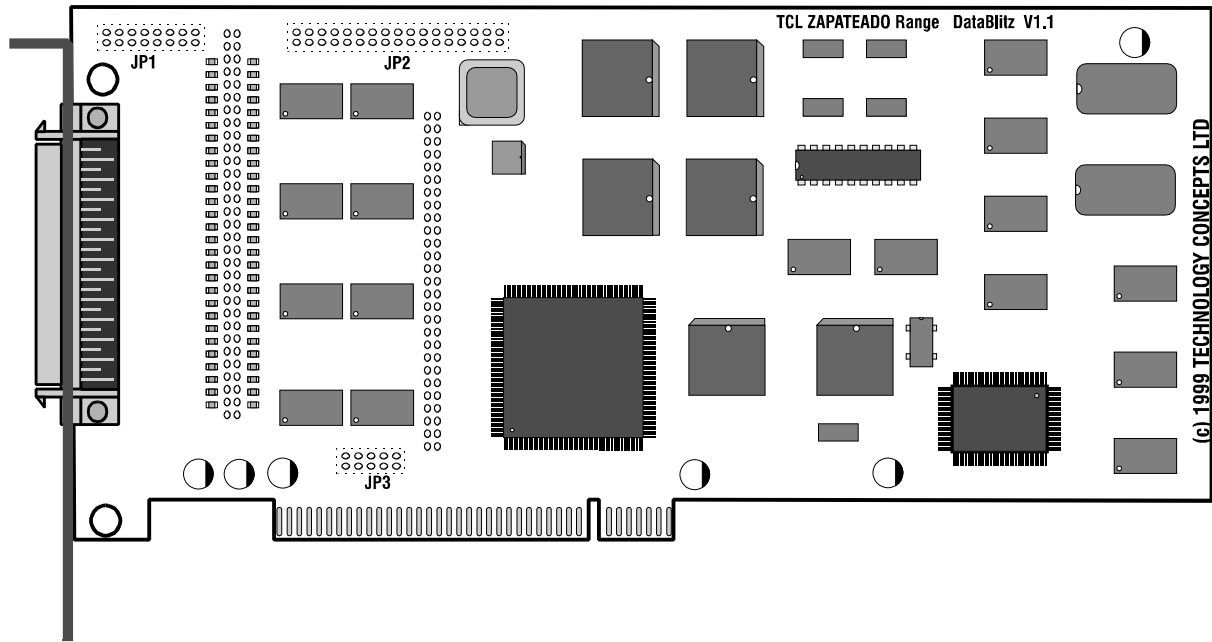
TCL supplied control software is downloaded to the card by a device driver loaded by the host operating system, allowing total flexibility in system application and configuration.

No host PC interrupts are used by TCL supplied device drivers.

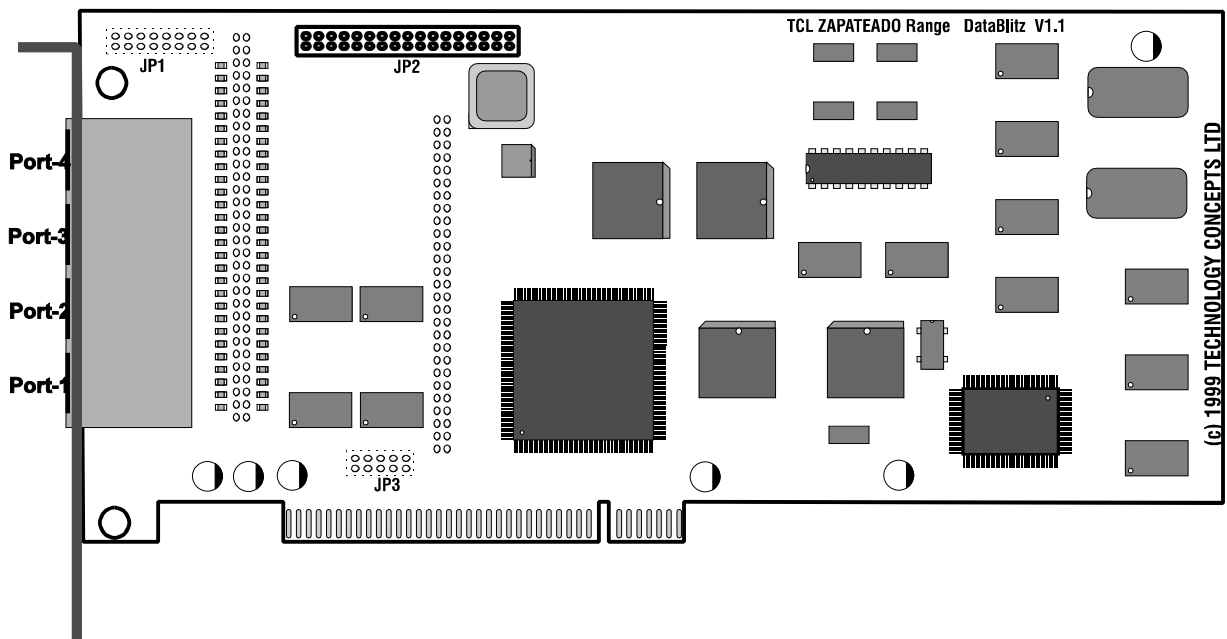
3.2 Options

The **DataBlitz** 2, 4 and 8 port adapters are available in both RS232 or RS422/RS485 options.

The **DataBlitz** 4 and 8 port adapters are available with different physical connectors. The RS232 version expansion connectors are available with either 9-Way D-Type male, 25 Way D-Type female or 8-Way RJ-45.



DataBlitz-8 Adapter card with SCSI-II Expansion connector on end plate.



DataBlitz-4 Adapter card with four on board RJ-45 connectors.

3.3 DataBlitz-2, -4 and -8 Technical Details

Processor: AMD 186-EM 40MHz

Memory: 1024K Bytes Onboard Private Memory

Interface: 1024K Byte Dual Ported Window interface to Host PC. Base address of adapter configured automatically by PCI Bios / Operating system.

Interrupts: No Interrupt resource is requested (or used) from the PCI Bios.

External

Interface: 68 Way SCSI-II Type connector (for attachment of expansion cable.)
Optional four on board RJ-45 Sockets. (Supporting 2 or 4 Ports).
Optional 34 DIL header for RJ-45 expansion lead. (For 8 ports RJ-45).

Serial I/O

Controllers: One, Two or Four AMD 85c30 Dual channel Asynchronous Serial Communication Controllers. System P-Clock 7.3728MHz.

Baud Rates: 50, 62.5, 75, 110, 134.5, 150, 200, 300, 600, 1200, 1800, 2000, 2400, 3600, 4800, 7200, 9600, 19200, 38400, 57600, 76800, 115200. Other baud rates are programmable subject to the maximum value of 115200.

Parity: None, Odd, Even.

Data Bits: 5, 6, 7, 8.

Stop Bits: 1, 1.5, 2.

Handshake

Signals: Modem handshaking signals.
DTR, RTS (Outputs RS232)
DSR, CTS, DCD (Inputs RS232)

RS422/RS485 Handshaking Signals.
DTR (Output RS422)
CTS (Input RS422)

Note: The RTS signal is not connected externally in RS422/485 mode. Instead it is used as the Driver Enable signal for TxD and DTR line drivers. Setting RTS low sets the Transmit and DTR line drivers to a high impedance state.

Serial I/O

Interface: Standard: V.24/RS-232 Serial drivers on all ports.
All serial RS232 I/O lines protected to 10KV
(human body model).

Option RS422 / RS485 Line Drivers.
All serial RS422/RS485 I/O lines protected to 15KV
(human body model).

Serial I/O

Connectors: Dependent on expansion cable and number of ports. The information given below indicates which cable part is supplied with each model of the **DataBlitz** range.

Model Number	I/F	Type	Cable Number
DataBlitz-2 211	RS232	RJ-45	N/A
DataBlitz-2 212	RS232	9D Male	Part No. 9535
DataBlitz-2 212-1	RS232	25D Male	Part No. 9537 ¹
DataBlitz-2 212-2	RS232	25D Female	Part No. 9538 ²
DataBlitz-2 212-4	RS422/485	9D Female	Part No. 9536
DataBlitz-4 213	RS232	RJ-45	N/A
DataBlitz-4 214	RS232	9D Male	Part No. 9506
DataBlitz-4 214-1	RS232	25D Male	Part No. 9524
DataBlitz-4 214-2	RS232	25D Female	Part No. 9507
DataBlitz-4 214-4	RS422/485	9D Female	Part No. 9529
DataBlitz-8 215	RS232	RJ-45	Part No. 9539
DataBlitz-8 216	RS232	9D Male	Part No. 9511
DataBlitz-8 216-1	RS232	25D Male	Part No. 9523
DataBlitz-8 216-2	RS232	25D Female	Part No. 9512
DataBlitz-8 216-4	RS422/485	9D Female	Part No. 9521

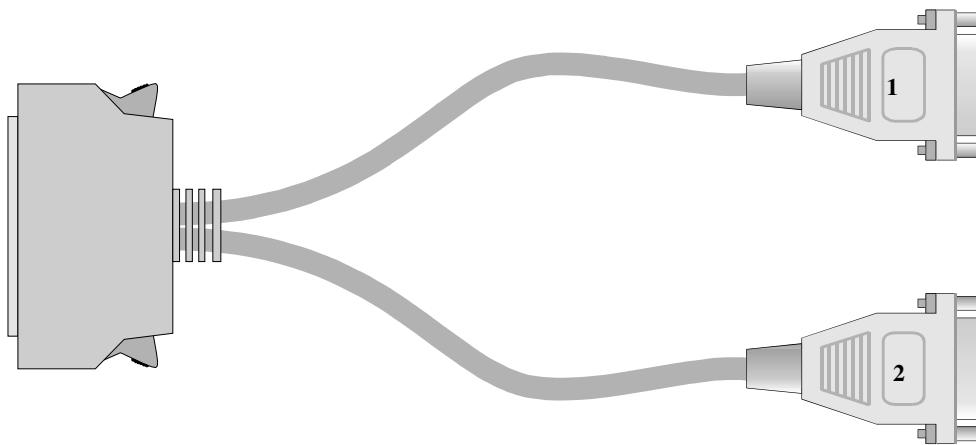
Power: [5v, @ 1000mA] [+12v, @200mA] [-12v, @200mA] Typical.

Size: 242mm x 128mm X 18mm Overall Dimensions
228mm x 106.5mm x 14mm PCB Dimensions

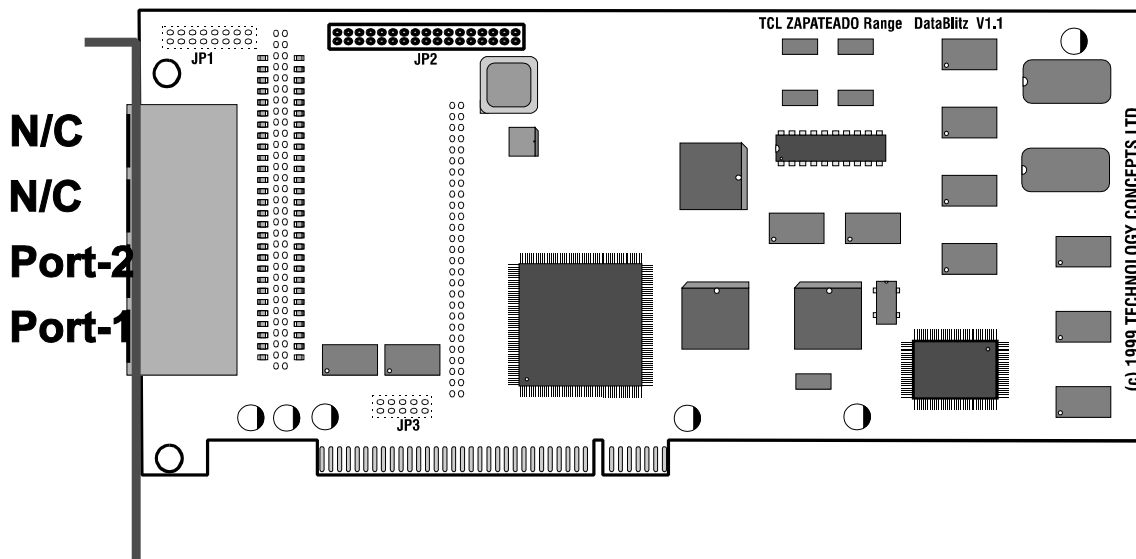
Net Weight: 140g

¹ Cable No. 9537, 9538 to special order only.

3.4 DataBlitz-2 Distribution Cables



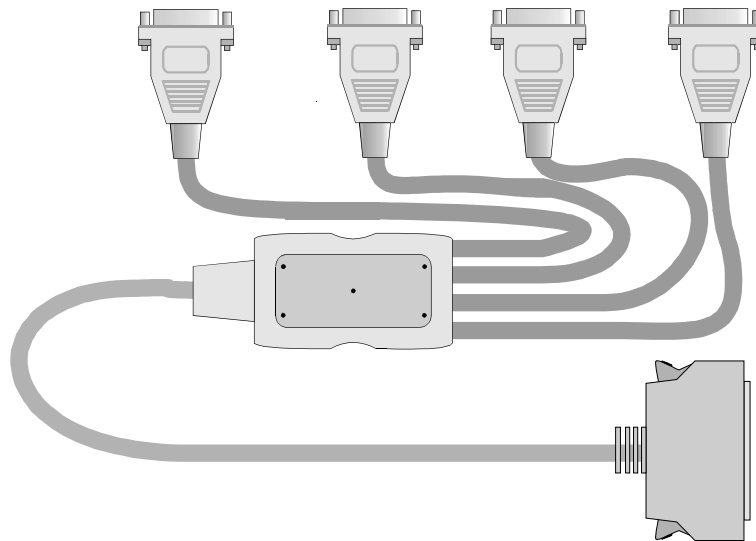
DataBlitz-2 RS232 Distribution Cable 9-Way D-Type Male (Part No. 9535)
DataBlitz-2 RS422/RS485 Distribution Cable 9-Way D-Type Female (Part No. 9536)



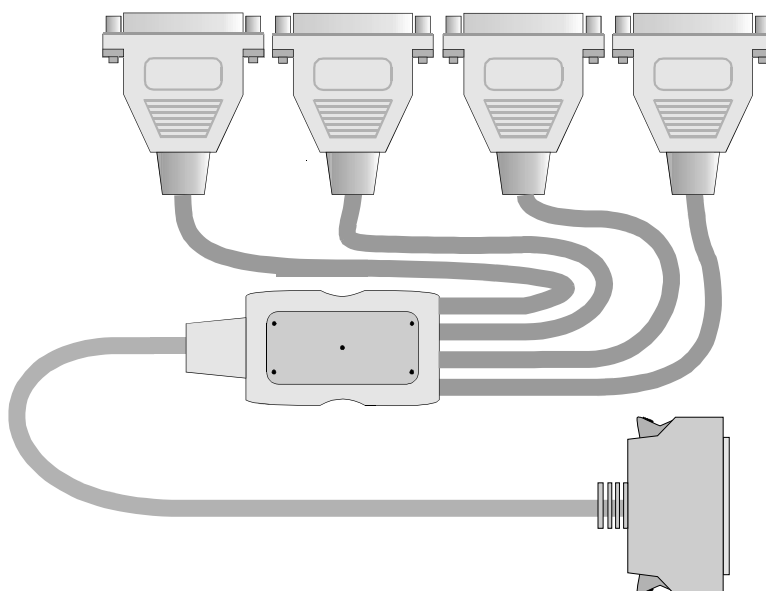
DataBlitz-2 Adapter Card with four on board RJ-45 connectors port allocation
(Model No. 211)

[Where **N/C** - No Connection to this RJ-45 socket should be made]

3.5 DataBlitz-4 Distribution Cables

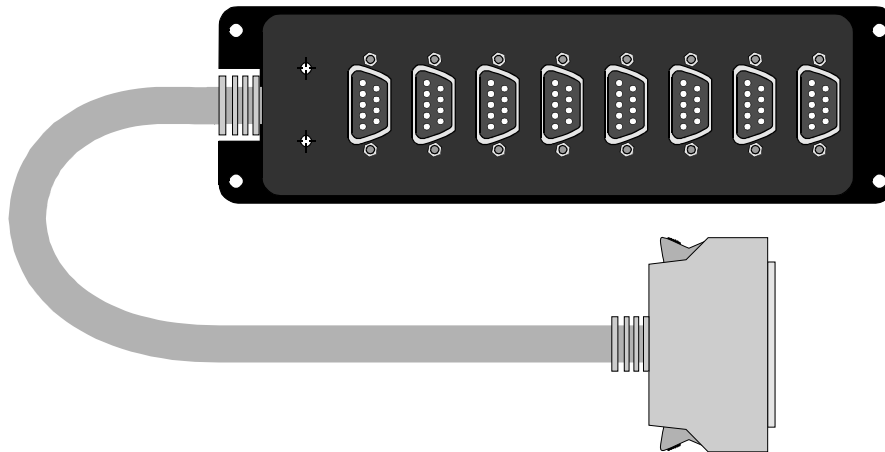


DataBlitz-4 RS232 Distribution Cable 9-Way D-Type Male (Part No. 9506)
DataBlitz-4 RS422/RS485 Distribution Cable 9-Way D-Type Female (Part No. 9529)

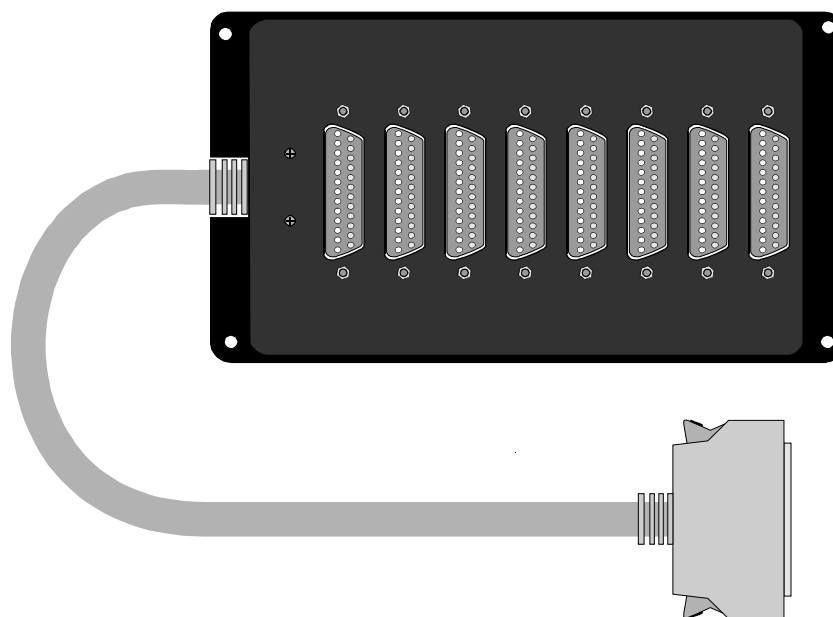


DataBlitz-4 RS232 Distribution Cable 25 Way D-Type male (Part No. 9524)
DataBlitz-4 RS232 Distribution Cable 25 Way D-Type female (Part No. 9507)

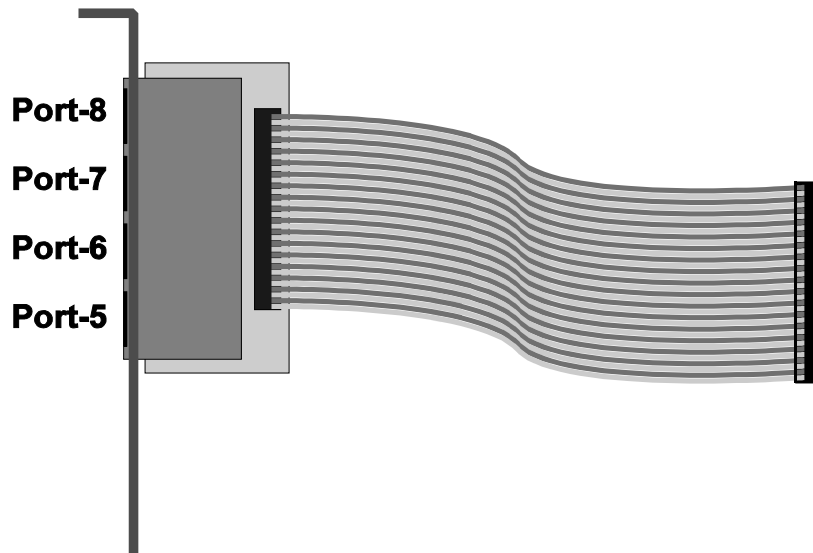
3.6 DataBlitz-8 Distribution Cables



DataBlitz-8 RS232 Distribution Cable 9-Way D-Type Male (Part No. 9511)
DataBlitz-8 RS422/485 Distribution Cable 9-Way D-Type Female (Part No. 9521)



DataBlitz-8 RS232 Distribution Cable 25 Way D-Type Male (Part No. 9523)
DataBlitz-8 RS232 Distribution Cable 25 Way D-Type Female (Part No. 9512)



DataBlitz-8 RS232 Distribution Lead four 8-Way RJ-45 Connectors (Part No. 9539)

3.7 DataBlitz Serial Connector Pinouts

TCL RS232 9-Way D-Type Male Pin Out (9506 / 9511 / 9535)					
Pin	Signal	I/O	Pin	Signal	I/O
1	Carrier Detect	I/P	6	Data Set Ready	I/P
2	Receive Data	I/P	7	Request to Send	O/P
3	Transmit Data	O/P	8	Clear to Send	I/P
4	Terminal Ready	O/P	9		
5	Signal Ground	---			

RS232 Pin out for Distribution Cables: Part No. 9506, 9511, 9535

TCL RS422 9-Way D-Type Female Pin Out (9521 / 9529 / 9536)					
Pin	Signal	I/O	Pin	Signal	I/O
1	+Receive Data	I/P	6	-Receive Data	I/P
2	+Clear to Send	I/P	7	-Clear to Send	O/P
3	-Transmit Data	O/P	8	-Terminal Ready	I/P
4	+Terminal Ready	O/P	9	Signal Ground	
5	+Transmit Data	O/P			

RS422 / 485 Pin out for Distribution Cables: Part No. 9529, 9521, 9536

TCL RS232 25-Way D-Type (Male & Female) Connector Pin Out					
Pin	Signal	I/O	Pin	Signal	I/O
1	Ground		14		
2	Transmit Data	O/P	15		
3	Receive Data	I/P	16		
4	Request to Send	O/P	17		
5	Clear to Send	I/P	18		
6	Data Set Ready	I/P	19		
7	Signal Ground		20	Terminal Ready	O/P
8	Data Carrier Detect	I/P	21		
9			22		
10			23		
11			24		
12			25		
13					

RS232 Pin out for Distribution Cables: Part No. 9524, 9512, 9523

TCL RS232 8-Way RJ-45 Pin Out (9539)					
Pin	Signal	I/O	Pin	Signal	I/O
1	Data Set Ready	I/P	5	Receive Data	I/P
2	Request to Send	O/P	6	Gnd	---
3	Data Carrier Detect	I/P	7	Clear to Send	I/P
4	Transmit Data	O/P	8	Data Terminal ready	O/P

RS232 Pin out for RJ-45 Adapter card sockets.
RS232 Pin out for RJ-45 Distribution Cable: Part No. 9539.

Appendices

Appendix 1 Wiring details

Part No. 9603 Standard Terminal to **TCL Serial Port**
5 Metre Length
25D-Type male to 9D-Type female

Part No. 9606 PC COM1/COM2 to **TCL Serial Port** or
NyCE Terminal to **TCL Serial Port**
5 Metre Length
9D-Type female to 9D-Type female

Standard Terminal to TCL Serial Port				
Terminal 25 Way D-Type male (Set for DTR flow control)		TCL 9 Way D-Type Female (Set for CTS flow control)		
TX	2	<----->	2	RX
RX	3	<----->	3	TX
GND	7	<----->	5	GND
DTR	20	<----->	8	CTS

Standard Terminal to **TCL Serial Port** Wiring Details TCL Part No 9603.

PC COM1 or COM2 (25 Way) to TCL Serial Port				
COM1/COM2 25 Way D-Type male (Set for DTR flow control)		TCL Serial Port 9 Way D-Type Female (Set for CTS flow control)		
TX	2	<----->	2	RX
RX	3	<----->	3	TX
GND	7	<----->	5	GND
DTR	20	<----->	8	CTS

PC COM Port (25 Way) to **TCL Serial Port**

PC COM1 or COM2 (9 Way) to TCL Serial Port				
COM1/COM2 9 Way D-Type female (Set for DTR flow control)		TCL Serial Port 9 Way D-Type Female (Set for CTS flow control)		
TX	3	<----->	2	RX
RX	2	<----->	3	TX
GND	5	<----->	5	GND
DTR	4	<----->	8	CTS

PC COM1/COM2 port (9 Way) to **TCL Serial Port** Wiring Details TCL Part No. 9606

Modem to TCL Serial Port				
Modem 25 Way D-Type male		TCL Serial Port 9 Way D-Type Female		
DCD 8		<----->	1	DCD
RX 3		<----->	2	RX
TX 2		<----->	3	TX
DTR 20		<----->	4	DTR
GND 7		<----->	5	GND
DSR 6		<----->	6	DSR
RTS 4		<----->	7	RTS
CTS 5		<----->	8	CTS
RI 22		<----->	9	RI

Modem (25 Way) to **TCL Serial Port**

Note: The Modem wiring details represent a general specification for standard DCE to DTE connections. In certain cases various modifications may need to be made, as all the signals shown above are not supported by some modems. Please contact your dealer or modem supplier for details.

Appendix 2 Trouble Shooting

The TCLDIAG program uses the PC's ROM BIOS functions to search for and return information about the identity and parameters of all PCI adapters in the system. However it will only display information on PCI adapters matching the **DataBlitz** ID code.

There are no user settings for PCI bus adapter cards. If the card is operational the TCL utility program TCLDIAG will display the PCI slot, allocated base address and interrupt number for the TCL **DataBlitz** adapter card.

If the adapter card is identified by the TCLDIAG program but fails ALL loop back tests then check:

If using a fan-out cable check that it is the correct fan out cable for the type of line drivers (RS232 or RS422) installed on the board. As standard the **DataBlitz** board is fitted with RS232 drivers. **If the DataBlitz card is fitted with a daughter board it is a RS422 version of the DataBlitz adapter.**

Cable Nos. 9506, 9524, 9507, 9611, 9523, 9512 should be used with RS232 line drivers.

Cable No. 9529, 9521 should be used with RS422 line drivers.

If the adapter card is identified by the TCLDIAG program but fails only some of the loop back tests then check:

If using a fan out cable attached to the end plate of the **DataBlitz**, check that the SCSI-II connector is correctly locked in place by both the top and bottom latch locking mechanisms.

If more than one **DataBlitz** card is installed in the system check the base addresses allocated by the PCI ROM BIOS to each card are unique and do not conflict. (The TCLDIAG program will report the base address values for each identified **DataBlitz** card.)

NOTES: