

HOSTESS™

2000

HOSTESS 2000

HARDWARE INSTALLATION

AND

CONFIGURATION

GUIDE



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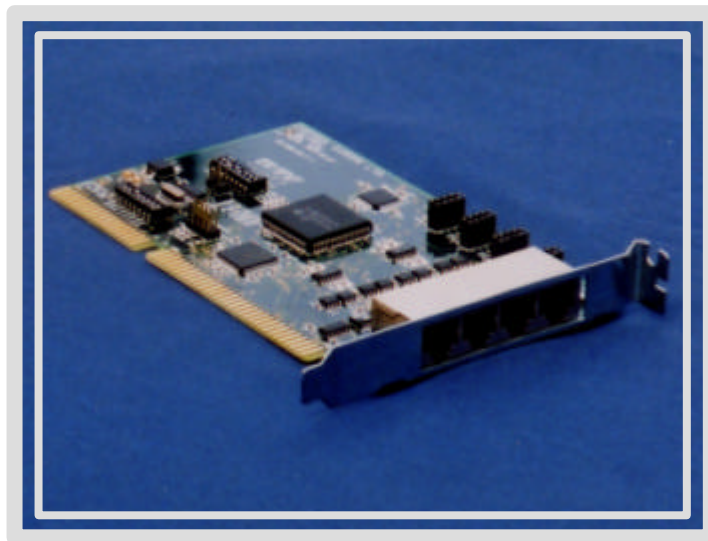
1.0 Introduction

The Hostess 2000

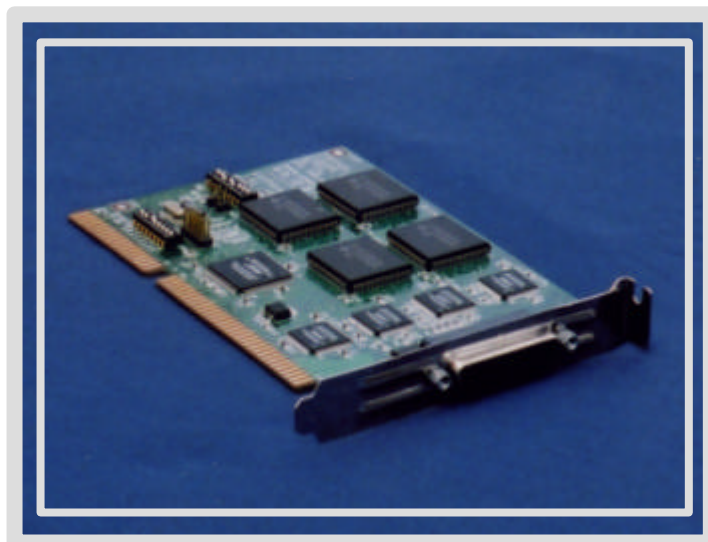
The Hostess 2000 products provide traditional Hostess reliability and high data rates in 16550 UART based serial cards. The Hostess 2000 offers a variety of ISA-bus interface models providing RJ11, RJ45, DB9 and DB25 connections supporting 4 to 16 ports.

This guide focuses on two versions :

Hostess 2000 RJ45 with 4 Ports



Hostess 2000 16 Port DB25 Multiplexed for connection to a RocketPort Interface



2.0 Caution

When installing Hostess 2000 cards always :

- Observe the warnings provided in this guide and those of the host computer and its guide.

Important Safety Information

To avoid contact with electrical current :



Warning

- Never install electrical wiring during an electrical storm.
- Never install the power plug in wet locations.
- Always use a screwdriver and other tools with insulated handles.

Hostess 2000 Safety Information
The Hostess 2000 consists entirely of SELV (Low Voltage) circuitry. Ensure a Creepage and Clearance distance of a minimum of 3 mm is maintained between the Hostess 2000 and any Mains (240V AC) or TNV (Telephone circuits). If in doubt ask a competent engineer to install the Hostess 2000 in your host computer

When installing Hostess 2000 cards always :

- Observe anti static precautions.



Caution

Take care when you handle the Hostess 2000, like any electronic device, it is sensitive to static electricity. Use normal static precautions such as wearing an earth ground strap.

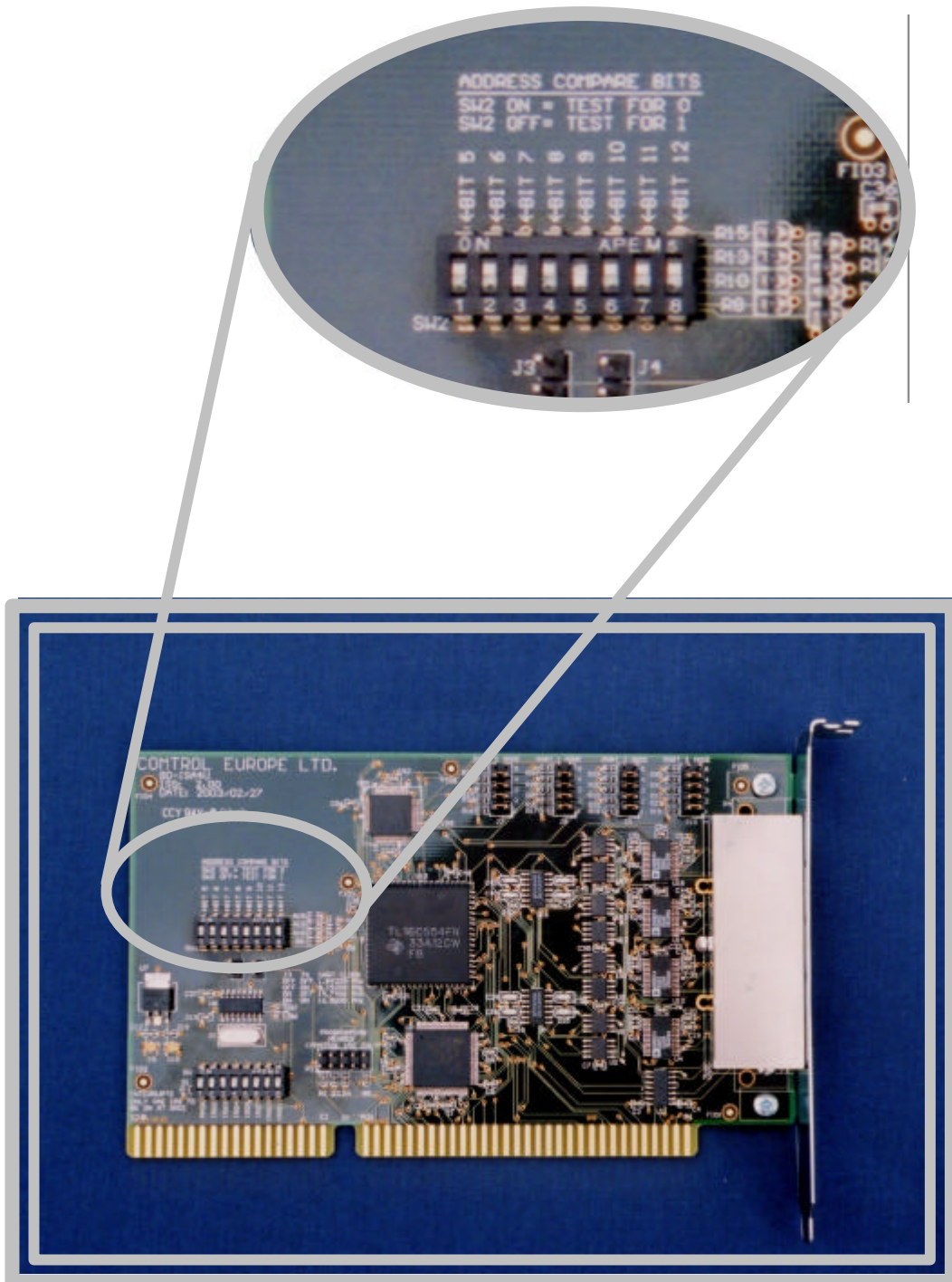
3.0 Installation Overview

Installation of a Hostess 2000 follows these general steps :

- Set the base I/O address switch positions
- Set the Mask Register switch positions
- Set the IRQ switch positions
- Set the UART clock speed links
- Set the port interface mode links for each port
- Install the Hostess 2000 in the host computer
- Attach the Control external interface and your peripherals
- Install the device driver

4.0 Set the Base I/O Address Switch Positions

SW2 sets the base I/O address



Hostess 2000 4 Port RJ45

The physical position of SW2 may vary slightly on different Hostess 2000 products. On the Hostess 2000 16 Port SW2 is positioned nearer the edge of the card.

Setting the Base I/O Address Hostess 2000 4RJ

SW2 Base I/O Address (Address Compare Bits)

Switch SW2 the Address Compare Bits switch specifies the I/O address to be used to access the Hostess 2000. The address selected will be the first in a block of 32 that the board will use, for example, setting the base address to 0x0280 will configure the Hostess 2000 to respond to all addresses in the range 0x280 to 0x29F

SW2 Setting for : Base Address 240 - Address Range 240 to 25F hex								
Address Bits	5	6	7	8	9	10	11	12
	ON (Value looked for when ON "0")							
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SW2 Pole	1	2	3	4	5	6	7	8
	OFF (Value looked for when OFF "1")							

SW2 Setting for : Base Address 280 - Address Range 280 to 29F hex								
Address Bits	5	6	7	8	9	10	11	12
DEFAULT	ON (Value looked for when ON "0")							
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SW2 Pole	1	2	3	4	5	6	7	8
	OFF (Value looked for when OFF "1")							

The factory default setting of I/O address 0x280 is configured by selecting SW2 switch positions :

- Poles 1, 2, 4, 6, 7 and 8 "ON" Value 0
- Poles 3 and 5 "OFF" Value 1

Note : The default I/O address from the factory is set to 280500

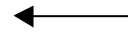
SW2 Setting for : Base Address 500 - Address Range 500 to 51F hex								
Address Bits	5	6	7	8	9	10	11	12
	ON (Value looked for when ON "0")							
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SW2 Pole	1	2	3	4	5	6	7	8
	OFF (Value looked for when OFF "1")							

SW2 Setting for : Base Address 580 - Address Range 580 to 59F hex								
Address Bits	5	6	7	8	9	10	11	12
	ON (Value looked for when ON "0")							
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SW2 Pole	1	2	3	4	5	6	7	8
	OFF (Value looked for when OFF "1")							

Note :
 SW2 Pole 8 must be "ON" for a 4 Port Hostess 2000 and "OFF" for an 8 Port Hostess 2000.
 The 8 Port default is 3, 5 and 8 "ON" giving 280 to 2BF

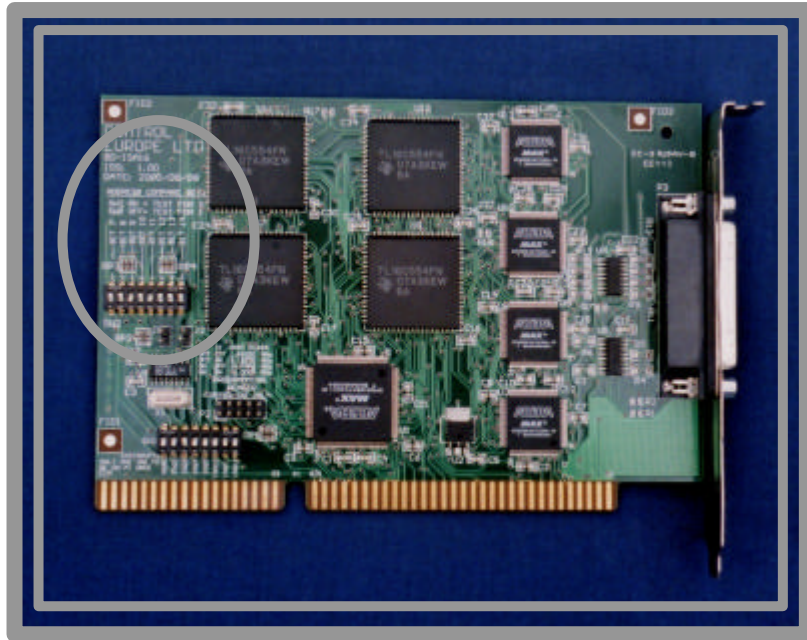
Hostess 2000 4RJ Understanding how the Binary 8 pole switch represents the Hex values

SW2					5	6	7	8	9	10	11	12				
	ON (Value looked for when ON "0")															
	[Switch positions: 5, 6, 7, 8, 9, 10, 11, 12 are ON (black); 1, 2, 3, 4 are OFF (white)]															
	1 2 3 4 5 6 7 8															
	OFF (Value looked for when OFF "1")															
	[Switch positions: 1, 2, 3, 4 are ON (black); 5, 6, 7, 8 are OFF (white)]															
Address Bit	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Hex	1	2	4	8	1	2	4	8	1	2	4	8	1	2	4	8
Binary	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
I/O Base Address	0				8				2				0			



Note : Read the I/O Base address from right to left

Setting the Base I/O Address Hostess 2000 16 DB25



SW2 Base I/O Address (Address Compare Bits)

Switch SW2 the Address Compare Bits switch specifies the I/O address to be used to access the Hostess 2000 16 DB25. The card requires 0x80 (128 Decimal) locations in I/O space. The default I/O address is 0x500

SW2 Setting for : Base Address 280 - Address Range 500 to 57F hex								
Address Bits	7	8	9	10	11	12	13	14
DEFAULT	ON (Value looked for when ON "0")							
SW2 Pole	1	2	3	4	5	6	7	8
	OFF (Value looked for when OFF "1")							

The factory default setting of I/O address 0x500 is configured by selecting SW2 switch positions :

Poles 1, 3, 5, 6, 7 and 8 "ON" Value 0

Poles 2 and 4 "OFF" Value 1

SW2 Setting for : Base Address 240 - Address Range 200 to 27F hex								
Address Bits	7	8	9	10	11	12	13	14
	ON (Value looked for when ON "0")							
SW2 Pole	1	2	3	4	5	6	7	8
	OFF (Value looked for when OFF "1")							

SW2 Setting for : Base Address 500 - Address Range 280 to 2FF hex								
Address Bits	7	8	9	10	11	12	13	14
	ON (Value looked for when ON "0")							
SW2 Pole	1	2	3	4	5	6	7	8
	OFF (Value looked for when OFF "1")							

SW2 Setting for : Base Address 580 - Address Range 580 to 5FF hex								
Address Bits	7	8	9	10	11	12	13	14
	ON (Value looked for when ON "0")							
SW2 Pole	1	2	3	4	5	6	7	8
	OFF (Value looked for when OFF "1")							

Hostess 2000 16 DB25 Understanding how the Binary 8 pole switch represents the Hex values

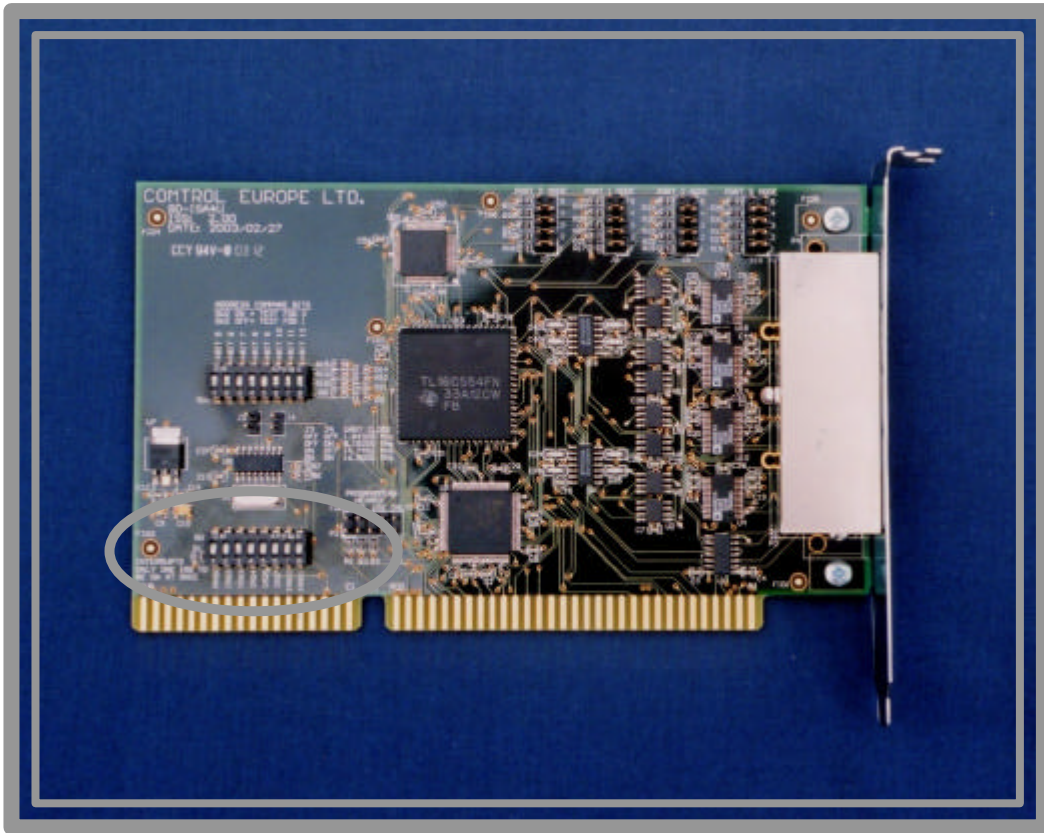
SW2								5	6	7	8	9	10	11	12		
	ON (Value looked for when ON "0")																
									1	2	3	4	5	6	7	8	
	OFF (Value looked for when OFF "1")																
Address Bit	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Hex	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
Binary	1	2	4	8	1	2	4	8	1	2	4	8	1	2	4	8	
Binary	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	
I/O Base Address	0				0				5				0				



Note : Read the I/O Base address from right to left

5.0 Set the Mask Register Switch Positions

Setting SW1 Pole 1 “Mask Register” (All Hostess 2000 card types)



Hostess 2000 4 Port RJ45 The mask register function is available through Switch SW1

Pole 1 of the SW1 is the “Mask Register” enable signal. This signal, when enabled by selecting Pole 1 to be “ON”, allows the driver to enable or disable the interrupt for each serial port present; when set to “OFF” all interrupts are enabled and the “Mask Register” has no effect.

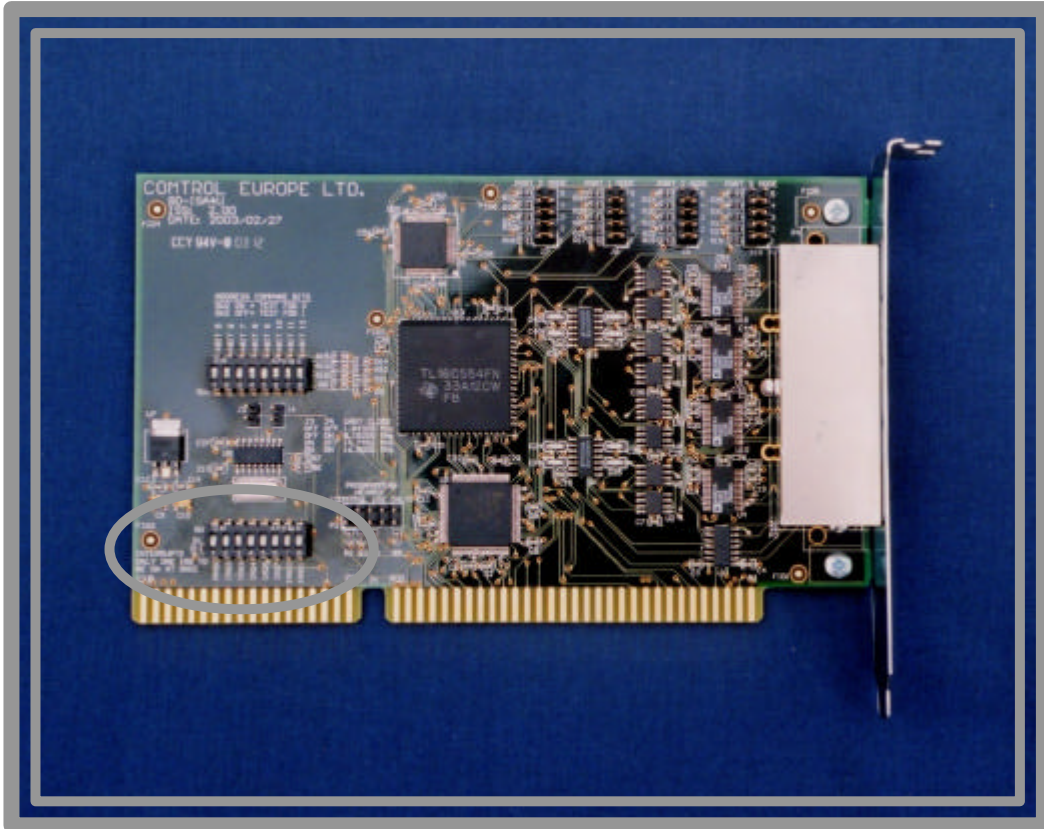
For Control supplied drivers, the Microsoft operating systems expect this to be “OFF” (e.g. DOS, Windows 95, 98, NT, also QNX, OS/2)

The Unix like operating systems expect it to be “ON” (e.g. AT&T, Interactive 386/ix, Microport V/386, SCO Xenix, SCO Unix, SCO OpenServer, SunOS).

SW1 Setting for : Pole 1 “Mask Register”								
	ON							
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SW1 Pole	1	2	3	4	5	6	7	8
	OFF							
	MASK	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6.0 Set the IRQ Switch Positions

Setting the IRQ Switch Positions (All Hostess 2000 card types)



Hostess 2000 4 Port RJ45

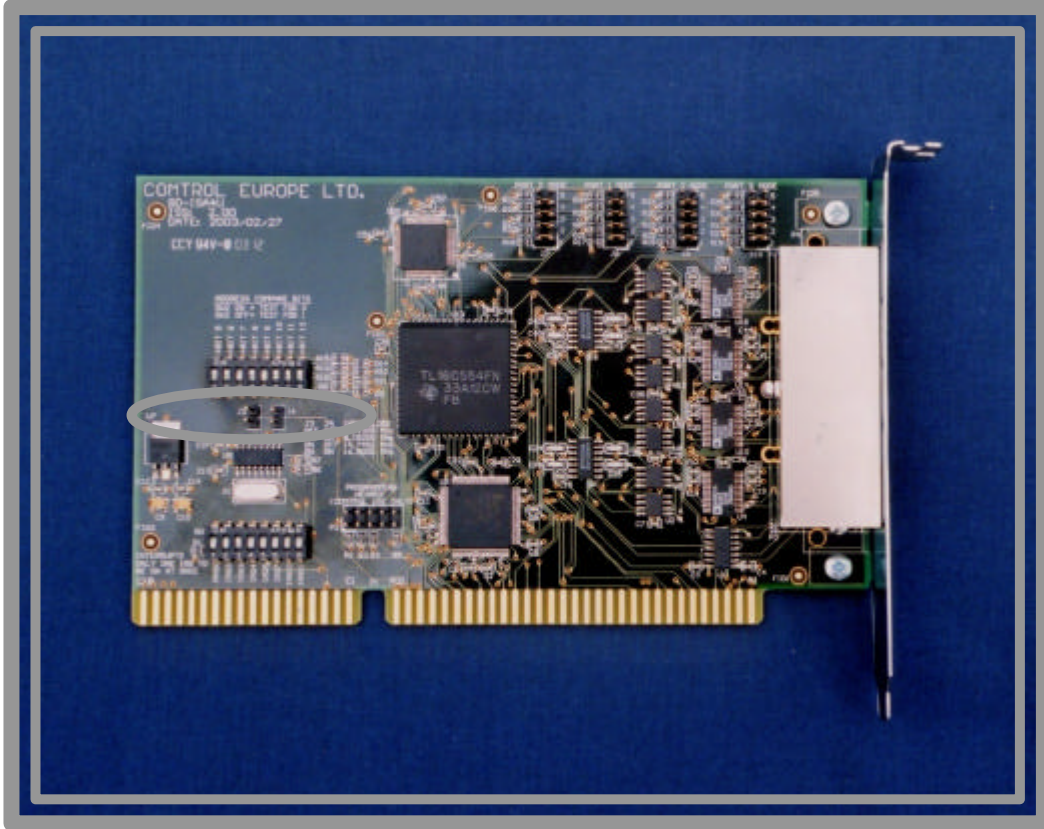
SW1 Poles 2 to 8 select which physical IRQ line to be used. No more than one of these is to be “ON” at any given time.

The default IRQ setting is IRQ5. This board cannot share its IRQ with any other board.

SW1 Setting for : IRQ									
		ON							
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SW1 Pole		1	2	3	4	5	6	7	8
		OFF							
	MASK	IRQ2 or 9	IRQ3	IRQ4	IRQ5	IRQ7	IRQ10	IRQ11	

7.0 Set the UART Clock Speed Links

Setting Jumpers J3 and J4 UART Clock Speed (All Hostess 2000 card types)



Hostess 2000 4 Port RJ45

There are four UART clock speed settings available, they are selected using the pin headers J3 and J4. All the Control standard drivers use the slowest clock speed (unless otherwise stated), this is therefore the default setting. It is possible to use faster clock speeds in which case the actual baud rates selected will be faster in proportion to the speed increase. Some of the other settings exist to allow users to write their own software to have special baud rates generated exactly.

The table below lists the speeds available and the multiplication ratio showing how much faster the real baud rate will be relative to the driver assuming a 1.8432 MHz clock.

Jumpers J3 and J4 UART Clock Speed			
Jumper J3	Jumper J4	Clock rate	Multiplication factor
Link Not Fitted	Not Fitted	1.8432 MHz	x 1 DEFAULT
Link Not Fitted	Link Fitted	8.192 MHz	x 4.444444
Link Fitted	Link Not Fitted	14.7456 MHz	x 8
Link Fitted	Link Fitted	16 MHz	x 8.680555

Figure 1 below shows the default setting with no links fitted to J3 and J4

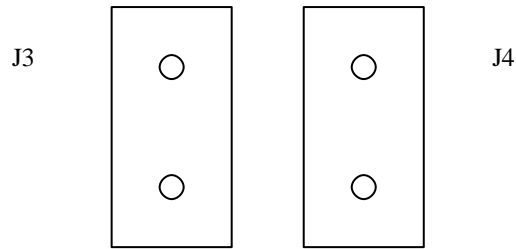
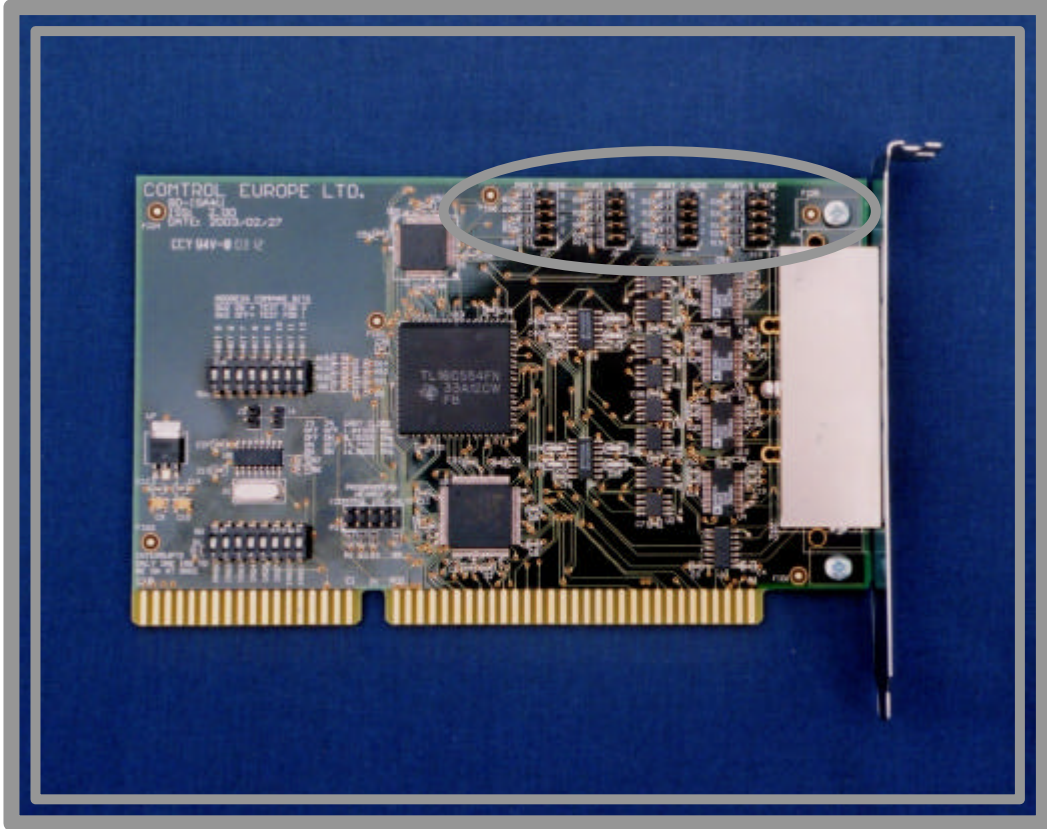


Figure 1

When selecting baud rates and UART clock speeds, remember that the maximum speed that the RS-232 parts are rated for is 230.4 kbaud, and the RS-422/485 parts are rated up to 250 kbaud. If baud rates faster than this are required contact Comtrol.

8.0 Set the Port Interface Mode Links for Each Port

Communication Mode Selection



Hostess 2000 4 Port RJ45

Each port is independently configured for its operating mode using a 5 x 2 Jumper block. This block is associated with each port according to the table below:

Port Number	Jumper Block
0	J7
1	J8
2	J9
3	J10

To use the Jumper blocks it will be noticed that there are numbers (1 to 5) for each position to fit a link. The table below shows how each mode may be selected with reference to fitting links in these numbered positions. This list is not exhaustive and other combinations than those shown below are not to be used.

ON – Link fitted

OFF – Link not fitted

Link 5	Link 4	Link 3	Link 2	Link 1	Mode	Notes
OFF	ON	ON	OFF	OFF	RS-232	
OFF	ON	ON	ON	ON	RS-422 (normal)	Transmitter and receiver always enabled
OFF	OFF	ON	OFF	ON	RS-422 (hot standby)	Transmitter and receiver enabled by RTS On
OFF	ON	OFF	ON	OFF	RS-422 (hot standby)	Transmitter and receiver enabled by DTR On
ON	OFF	ON	OFF	ON	RS-485 (normal)	Transmit when RTS On Receive when RTS Off
ON	ON	OFF	ON	OFF	RS-485 (normal)	Transmit when DTR On Receive when DTR Off
ON	OFF	ON	ON	OFF	RS-485 (hot standby)	Transmit when DTR On Receive when RTS On
ON	ON	OFF	OFF	ON	RS-485 (hot standby)	Transmit when RTS On Receive when DTR On
ON	ON	ON	OFF	ON	RS-485 (receiver always on)	Transmit when RTS On Receive always
ON	ON	ON	ON	OFF	RS-485 (receiver always on)	Transmit when DTR On Receive always
OFF	ON	ON	ON	ON	RS-485 (four-wire master)	Transmit always Receive always
OFF	ON	ON	OFF	ON	RS-485 (four-wire slave)	Transmit when RTS On Receive always
OFF	ON	ON	ON	OFF	RS-485 (four-wire slave)	Transmit when RTS On Receive always
OFF	OFF	OFF	OFF	OFF	Port Disabled	

Note: The standard drivers may not have all the modes above available, in most cases only RS-232 and RS-422 (normal) are supported.

Hostess 2000 RJ8

When configuring the RJ8 and additional 4 sets of headers will need to be configured.

Hostess 2000 8 or 16 DB25

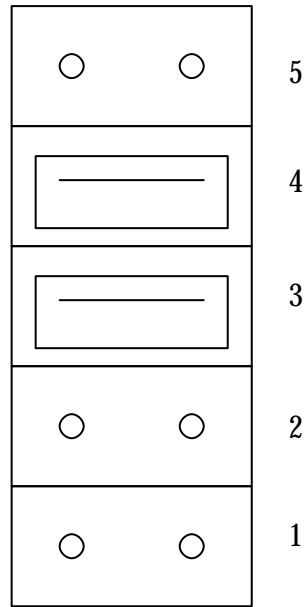
When configuring the 16 DB25 it has no on board port interface mode headers. It connects directly to a Rocket Port Interface which has its own configuration guide.

Use a RocketPort Interface for RS232 or RS422

Use a Universal interface for RS485 or special versions of RS232.

Figure 2 below shows Port 0 configured for RS-232

PORT 0 MODE



J7

Figure 2

9.0 Install the Hostess 2000 in the Host Computer

Check the switches and links are configured for your chosen installation as described earlier in this guide.

Always follow Safety and static precaution guidelines.

If in doubt ask a competent engineer to install the Hostess 2000 in your host computer

Using the Host Computer instructions :

1. Shut down the host System
2. Turn the power switch for the host system supply to the OFF position
3. Disconnect the mains plug from the power socket
4. Remove the host system cover
5. Select a slot to install the Hostess 2000
6. Remove the expansion slot cover
7. Insert the Hostess 2000 in the expansion slot, making sure that it is properly seated
8. Attach the Hostess 2000 to the chassis with the expansion slot screw
9. Repeat steps 5 to 8 for each Hostess 2000
10. Replace the cover on the host system

10.0 Attach the Control External Interface and Your Peripherals

Connector Pinouts

This board will have been built in either of two styles, one uses RJ-45 connectors and the other uses a DB37 and “Quadcable” attachment to provide four DB25 plug connections.

Note : It is important to note that the documentation for the predecessor to this board, specifically the Hostess 554, showed the RS-422 signal polarity incorrectly. This document shows the pin connections as they really are. The consequence of this is that it makes the pinout of this board look inconsistent with respect to the older product but this is not the case and the two boards can be interchanged without affecting the cable arrangements previously made. The naming convention for these signals uses “+” and “A” interchangeably, and likewise “-” is synonymous with “B”.

RJ-45 connectors have 8 pins, the function of these depends on whether RS-232 or RS-422/485 is selected. Also in RS-422/485 mode. This is detailed in the tables below:

RJ-45 in RS-232 Mode		
Pin Number	Signal	Direction with respect to this card
1	RTS	Output
2	DTR	Output
3	Ground	-
4	TXD	Output
5	RXD	Input
6	DCD	Input
7	DSR	Input
8	CTS	Input

RJ-45 in RS-422 Mode		
Pin Number	Signal	Direction with respect to this card
1	TXD-	Output
2	-	-
3	Ground	-
4	RXD-	Input
5	RXD+	Input
6	-	-
7	-	-
8	TXD+	Output

RJ-45 in RS-485 Mode		
Pin Number	Signal	Direction with respect to this card
1	TXD-/RXD-	Output/Input
2	-	-
3	Ground	-
4	-	-
5	-	-
6	-	-
7	-	-
8	TXD+/RXD+	Output/Input

In either RS-422 or RS-485 mode, the “Ground” signal is not necessary, however, as it remains connected at the socket the user is made aware to avoid accidentally connecting to this pin.

“Quadcable” boards have a DB37 Socket instead of the RJ-45 connector and is supplied with a cable assembly that converts from one DB37 Socket to four DB25 Plugs. The pinouts of these DB25 connectors depends on whether RS-232 or RS-422/485 has been selected. The pinout for the DB25 plugs is shown below:

DB25 Plug in RS-232 Mode		
Pin Number	Signal	Direction with respect to this card
2	TXD	Output
3	RXD	Input
4	RTS	Output
5	CTS	Input
6	DSR	Input
7	Ground	-
8	DCD	Input
20	DTR	Output
22	RI	Input

DB25 Plug in RS-422 Mode		
Pin Number	Signal	Direction with respect to this card
2	RXD-	Input
3	RXD+	Input
4	TXD-	Output
5	TXD+	Output
7	Ground	-

DB25 Plug in RS-485 Mode		
Pin Number	Signal	Direction with respect to this card
4	TXD-/RXD-	Output/Input
5	TXD+/RXD+	Output/Input
7	Ground	-

When RS-422 mode is selected the RS-232 signals DTR, DSR and DCD are active and may be used if required. Their connector positions are the same as in RS-232 mode.

11.0 Install the Device Driver

Current drivers are available from the Control US office website.

[Http://www.comtrol.com/download.asp](http://www.comtrol.com/download.asp)

Follow the installation instructions provided with the device drivers

Appendix A Technical Support

If you need technical support, contact Comtrol Europe using one of the following methods.

Contact Method	Comtrol Europe
Email	support@comtrol.co.uk
Web site	http://www.comtrol.co.uk
Fax	+44 (0) 1 869-323-211
Phone	+44 (0) 1 869-323-220

Appendix B Hostess 2000 Specifications

Hardware Specifications

The following table lists hardware specifications for the Serial Hub Solo.

Topic	Specification
Supply input Hostess 2000 4J	+5VDC rated at 190 mA +12VDC rated at 20 mA -12VDC rated at 20 mA
Hostess 2000 8J	+5VDC rated at 250 mA +12VDC rated at 80 mA -12VDC rated at 80 mA
Hostess 2000 8 DB25	+5VDC rated at 215 mA +12VDC N/A -12VDC N/A
Hostess 2000 16 DB25	+5VDC rated at 300 mA +12VDC N/A -12VDC N/A
Power consumption :	
Hostess 2000 4J	2.38 Watts
Hostess 2000 8J	3.17 Watts
Hostess 2000 8 DB25	1.08 Watts
Hostess 2000 16 DB25	1.50 Watts
UART type	16C554 or equivalent
Baud rate/port (maximum) Using 1.8432 MHz clock Or when using a faster clock	50 baud to 115.2 kbaud Up to 230.4 kbaud (RS232) Up to 250 kbaud (RS-422/485)
Serial interface	RS-232, RS-422, and RS-485
Connector types :	
Hostess 2000 4J	4 RJ45 8 way connectors
Hostess 2000 8J	8 RJ45 8 way connectors
Hostess 2000 8 DB25	DB25 25 way D type (Multiplexed)
Hostess 2000 16 DB25	DB25 25 way D type (Multiplexed)
Data bits	5, 6, 7 or 8
Parity	Odd, Even, None, Mark or Space
Stop bits	1, 1.5 or 2
Modem control signals	RS-232 : RTS, CTS, DTR, DSR & DCD (RI is available on DB25 versions). RS-422 : None, RTS and DTR may be used for transceiver enable control
Bus interface	ISA

I/O address space requirements	Any 32 byte block aligned to a 32 byte boundary in the range 0x0000 to 0x1FE0
Memory address space requirements	None
ISA bus interrupt	One from IRQ2, IRQ3, IRQ4, IRQ5, IRQ7, IRQ10 or IRQ11,
Supported operating systems	DOS, OS/2, Linux, Win 3.1, Win NT, Win 9X, Unix, Xenix, SCO, Multiuser DOS.
Dimensions (Excluding cables) :	H x W x D approximate
Hostess 2000 4J	22 mm x 170 mm x 120 mm
Hostess 2000 8J	22 mm x 170 mm x 120 mm
Hostess 2000 8 DB25	22 mm x 170 mm x 120 mm
Hostess 2000 16 DB25	22 mm x 170 mm x 120 mm
Weight (Excluding cables) :	
Hostess 2000 4J	90 g
Hostess 2000 8J	104 g
Hostess 2000 8 DB25	95 g
Hostess 2000 16 DB25	106 g

Environmental Specifications

This table lists the environmental conditions.

Environmental Conditions	Value
Air temperature :	
System on (operational)	0 to 50°C
System off (storage)	-20 to 85°C
Altitude	0 to 10,000 feet
Heat output :	
Hostess 2000 4J	2.38 Watts
Hostess 2000 8J	3.17 Watts
Hostess 2000 8 DB25	1.08 Watts
Hostess 2000 16 DB25	1.50 Watts
Humidity (non-condensing) :	
System on (operational)	5% to 90%
System off (storage)	5% to 95%
Mean time between failures (MTBF) :	
(Excluding external interface)	
Hostess 2000 4J	Greater than 30 years estimated
Hostess 2000 8J	Greater than 30 years estimated
Hostess 2000 8 DB25	Greater than 30 years estimated
Hostess 2000 16 DB25	Greater than 30 years estimated

Notices

Radio Frequency Interference (RFI)

This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures :

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.