

Asynchronous adapter

Features

- 8 full duplex RS-232 channels
- Asynchronous mode
- Full modem control
- Data rate up to 921.6 kbaud
- Deep FIFO buffer (64 bytes)
- Register compatible with 16C550
- Octopus cable compatible with Digiboard
- PCI bus

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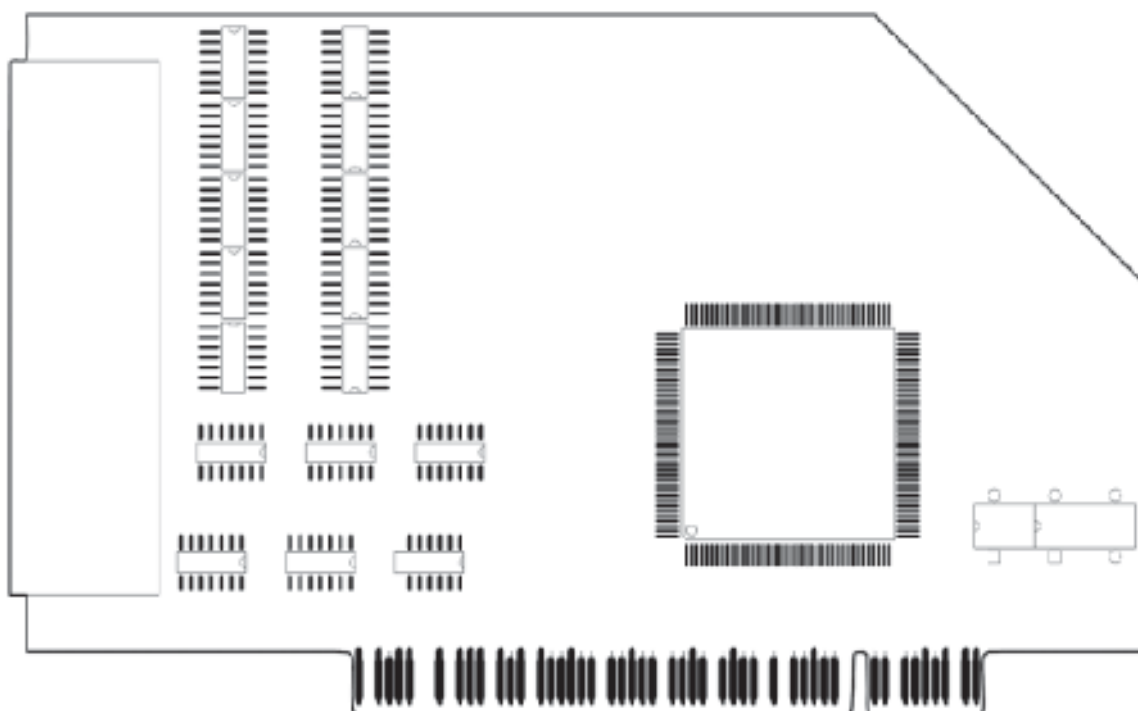
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Description

Cronyx-Omega2-PCI is an eight-port adapter of asynchronous serial RS-232 channels intended for use in Intel-compatible PCs supporting PCI bus.

The adapter is based on a state-of-the-art communication controller that determines its high performance capabilities:

- high reliability
- deep FIFO buffer (64 bytes)
- data rate up to 921.6 kbps
- compact design
- low power consumption

Software Installation

The adapter is supplied with two floppy disks: a bootable diagnostics diskette and a floppy disk containing drivers for a number of operating systems. In this chapter you will find brief instructions on testing the adapter and examples of driver settings.

Testing

To test the adapter boot your PC from the diagnostics diskette. The system will search for any adapters installed. Run «General Test» from «Test» menu. All adapter channels will be tested in the internal loopback mode.

«Parameters» menu is used to define the required data rate, bits per character, stop bits, parity, and test pattern settings.

«Channels» menu is used to test individual channels in the following modes: transmit only, receive only, internal loopback, external loopback.

For an example of running the test at 460 kbps data rate see the figure below.

Setup under Linux

You should use `omdetect` module to configure parameters of standard Linux serial driver for use with Cronyx Omega2-PCI adapter. Read the file from the floppy disk using «`mread`» utility (`mtools` package). Use «`tar`» utility to unpack files. Example:

```
mread a:omlx14.tgz .
tar xvzf omlx14.tgz
```

To start the installation open `linux/` directory and execute the following command:

```
make install
```

The following components will be installed in the system:

- 1) Loadable module `/lib/modules/omdetect.o`
- 2) Startup utility `/etc/rc.d/init.d/comega`

Reboot your PC. At the system start a recognition module will be automatically loaded which searches for any installed Cronyx-Omega family adapters and configures the standard serial driver to work with them.

For Linux 2.2.x kernel Omega2-PCI adapter requires to apply `serial.pch` patch to `/usr/src/linux/drivers/char/serial.c` file, and then to recompile and reinstall Linux kernel. Omega2-PCI and Omega-ISA adapters as well as Linux 2.4.x kernels do not require the above patch.

Setup under FreeBSD

Read the file from the floppy disk using «mread» utility (mtools package). Use «tar» utility to unpack files. Example:

```
mread a:ombsd12.tgz .  
tar xvzf ombstd12.tgz
```

To install the adapter you should have a privilege of Super User. System kernel texts (/usr/src/sys) should be installed prior the adapter installation.

- 1) Copy driver files to corresponding text directories of the operating system:

```
make install
```

- 2) Make sure the kernel configuration file has at least one «device sioN» string.

- 3) Update the kernel configuration:

```
cd /sys/i386/conf  
config YOUR_CONF
```

- 4) Recompile the kernel of the operating system:

```
cd /sys/compile/YOUR_CONF  
make depend && make && make install
```

- 5) Restart the operating system:

```
sync  
reboot
```

Setup under Windows

Windows driver has not been available yet at the time of printing this document. For information on the driver please visit www.cronyx.ru.

The screenshot shows a terminal window titled "Adapter Channel Setup" with a blue background. A white box in the center displays the results of an "Internal loopback test: 8 channels".

```
----- Loop -----  
Internal loopback test: 8 channels  
  
Transmitted bytes: 9'394'560  
Bits per second: 3'685'609  
  
Received bytes: 9'394'287  
Bits per second: 3'685'502  
  
Errors:  
data: -  
parity: -  
frame: -  
overrun: -  
  
Interrupts: 883'713  
per second: 34'669  
  
Test time: 00:00:25
```

Below the test results, a table shows the configuration for the adapter channel:

address	irq	fifo	MHz	adapter	channel	pattern
c202d000h	12	64	14.7456	Omega2-PCI	#0	digits
-	-	-	-	-	baud	check
-	-	-	-	-	460800	enable
-	-	-	-	-	8-N-1	

Connector pin assignments

Cronyx-Omega octopus cable is compatible with Digiboard cable

<i>DB-25 pin</i>	<i>RS-232 signal</i>	<i>HDB-78 pins of channels 1..8</i>
1	GND	Shield
2	TXD	30,50,11,10,40,2,63,64
3	RXD	55,17,37,56,28,8,46,27
4	RTS	51,31,12,14,21,41,62,60
5	CTS	16,53,59,57,25,4,9,45
6	DSR	54,34,58,38,5,42,29,26
7	GND	68,69,70,71,72,73,74,75
8	DCD	35,33,39,18,43,23,48,6
20	DTR	49,32,13,52,22,3,61,1
22	RI	36,15,20,19,44,24,47,7

Note: some cables can have channel numbers starting from zero.