

9 ASYNCHRONOUS SERIAL PORTS

9.1 GENERAL

ETRAX 100 contains four complete asynchronous serial receivers/transmitters with full buffering and parity control. Each serial port has one handshake signal in each direction. The receiver/transmitter supports standard baud rates from 300 up to 1,843,200 baud and a non-standard 6,250,000 baud rate.

9.2 CONNECTION TO INPUT/OUTPUT PINS

The pins of serial ports 0 and 1 are available in all configurations. The pins of serial port 2 are multiplexed with the pins of SCSI port 0/ATA, and those of serial port 3 are multiplexed with the pins of SCSI port 1/ATA.

9.3 BAUD RATE SELECTION

The baud rate can be set individually for each port, and separately for input and output. The available baud rate selections are shown in the table below.

Baud rates		
6,250,000	115,200	4800
1,843,200	57,600	2400
921,600	38,400	1200
460,800	19,200	600
230,400	9600	300

Table 9-1 Baud rates available for the serial ports.

9.4 OPERATION MODES

The serial port receiver and transmitter can be configured for odd, even or no parity, 7 or 8 data bits and 1 or 2 stop bits. The transmitter can be set to handle $\overline{\text{CTS}}$ automatically, or to ignore $\overline{\text{CTS}}$. The receiver can be configured to stop the transmitter when the xoff character is detected. The character code for xoff is configurable.

The serial ports can be polled or interrupt driven, or they can be connected to the internal DMA channels as shown in the table below:

9 Asynchronous Serial Ports

Serial port	DMA channel	
	In	Out
Serial 0	Channel 7	Channel 6
Serial 1	Channel 9	Channel 8
Serial 2	Channel 3	Channel 2
Serial 3	Channel 5	Channel 4

Table 9-2 Internal DMA channels used for the different serial ports.

Serial port 0 can be used when bootstrapping ETRAX 100, see Bootstrap Methods on page 43.