

B *Cable and Modem Configuration*

This appendix describes the serial port connectors and the cable configurations for various types of serial cables that can be used with NeXT computers. It also covers the appropriate configuration settings for several modems. The cables described here are appropriate for use with 68040-based NeXT computers. For cable specifications for 68030-based NeXT computers, see the UNIX manual page for **zs**.

Cable Configurations

This section describes the pins on the serial ports of a NeXT computer, and also describes cable configurations for several purposes. The tables describing cable configurations contain a column listing the pins for one connector, and a second column listing the pins for the other connector. A pin listed on the left should be connected to the pin listed on the right of the same line.

Intel-based (PC AT) Serial Ports

The PC AT compatible computers support two serial ports. Be sure to read the documentation for your computer to verify its implementation. The original PC AT provided a DB-9 male connector for the (PC-DOS) COM1 serial port. The pinouts for the DB-9 connector and corresponding EIA/TIA-232-E specification (formerly RS-232) are shown as follows:

DB-9**Pin**

1
2
3
4
5
6
7
8
9

EIA/TIA-232-E**Pin****Signal**

8 DCD
3 RXD
2 TXD
20 DTR
7 SIGNAL COMMON
6 DSR
4 RTS
5 CTS
22 RI

(RLSD) (CXR)

The DB-9 casing surrounding the pins provides the current path for ^aframe ground^o (also known as ^ashield ground^o or ^aearth ground^o).

NeXT Computer Serial Ports

Serial ports A and B use 8-pin miniature DIN (MiniDIN-8) connectors. Both ports on a 68040-based NeXT computer are RS-423 compatible; the ports on a 68030-based NeXT computer are RS-422 compatible (though different). The following diagram and table describe the pin configuration of each port:

Pin	Signal	Pin	Signal
1	DTR	5	RXD
2	DCD	6	RTS
3	TXD	7	RTXC

4 GND

8 CTS

NeXT-to-Modem Cable (MiniDIN-8 to DB-25)

The following table describes the configuration of a cable used to connect a 68040-based NeXT computer to an asynchronous modem. This configuration supports RTS/CTS hardware flow control.

MiniDIN-8		DB-25	
Pin	Signal	Pin	Signal
1	DTR	20	DTR
2	DCD	8	DCD
3	TXD	2	TXD
4	GND	7	GND
5	RXD	3	RXD
6	RTS	4	RTS
7		(Not connected)	
8	CTS	5	CTS

NeXT Null-Modem Cable (MiniDIN-8 to DB-25)

The following table describes the configuration of a null-modem style cable used to connect a terminal, printer, or other computer to a NeXT computer. This configuration supports RTS/CTS hardware flow control.

MiniDIN-8		RS-232	
Pin	Signal	Pin	Signal
1	DTR	8	DCD
2	DCD	20	DTR
3	TXD	3	RXD
4	GND	7	GND
5	RXD	2	TXD
6	RTS	5	CTS

7		(Not connected)
8	CTS	4 RTS

NeXT Null-Modem Cable (MiniDIN-8 to MiniDIN-8)

The following table describes the configuration of a null-modem style cable used to connect two 68040-based NeXT computers. This configuration supports RTS/CTS hardware flow control.

MiniDIN-8		MiniDIN-8	
Pin	Signal	Pin	Signal
1	DTR	2	DCD
2	DCD	1	DTR
3	TXD	5	RXD
4	GND	4	GND
5	RXD	3	TXD
6	RTS	8	CTS
7		(Not connected)	
8	CTS	6	RTS

NeXT Null-Modem Cable (DTR Flow Control)

The following table describes the configuration of a null-modem cable used to connect a NeXT computer to a printer that only supports DTR hardware flow control, rather than RTS/CTS hardware flow control.

MiniDIN-8		RS-232	
Pin	Signal	Pin	Signal
1	DTR	8	DCD
2	DCD	5	CTS
3	TXD	3	RXD
4	GND	7	GND
5	RXD	2	TXD

6	RTS	20	DTR
7		(Not connected)	
8	CTS	4	RTS

Sample Modem Configurations

The following are sample configurations for various commonly used modems that are known to be compatible with NeXT computers. The presence of a particular modem configuration is not an endorsement for that modem, nor is the absence of a particular modem configuration the reverse.

In the configuration examples, anything listed in **bold** is the command entered to display the configuration. Modem settings that are critical for correct operation and changed from their default values are listed in *italics*. Not all of the parameters listed are mandatory for correct operation. For more information, see Chapter 7, ^aAttaching Peripheral Devices,^o the UNIX manual page for **zs**, and your modem manual.

All configurations support both dial-in and dial-out operation.

Telebit T2500

Register numbers separated from their names by an equals sign (=) are set to their default values; those separated by a colon (:) have been changed from the default.

ATn?

```
E1 F1 M1 Q0 P V1 W0 X0 Y0 &P0 &T4      Version GA2.00
S00=001 S01=000 S02=043 S03=013 S04=010 S05=008 S06=002 S07:070 S08=002 S09=006
S10=007 S11=070 S12:255 S18:010 S25=005 S26=000 S38=000
S41:003 S45=000 S47=004 S48=000 S49=000
S50=000 S51:254 S52:002 S54:003 S55=000 S56=017 S57=019 S58:002 S59:062
S60=000 S61:001 S62:006 S63=001 S64=000 S65=000 S66=001 S67=000 S68:255 S69=000
S90=000 S91=000 S92:001 S93:010 S94=001 S95:002 S96=001
S100=000 S101=000 S102=000 S104=000 S105=001
```

```
S110:001 S111:030 S112=001
S121=000 S130:005 S131:001
S150=000 S151=004 S152=001 S153=001 S154=000 S155=000
S160=010 S161=020 S162=002 S163=003 S164=007 S255=000
OK
```

To configure the modem without hardware flow control, set the following registers to the indicated values:

```
S58=0 S66=0 S67=0 S68=0
```

Hayes Smartmodem 2400

Some of these register settings can't be saved in nonvolatile storage. Note that this modem doesn't support hardware flow control.

AT&v

ACTIVE PROFILE:

```
B1 E1 L1 M1 Q0 V1 X0 Y0 &C1 &D3 &G0 &J0 &L0 &P0 &Q0 &R1 &S1 &X0 &Y0
S00:001 S01:000 S02:043 S03:013 S04:010 S05:008 S06:002 S07:030
S08:002 S09:006 S10:014 S12:255 S14:0AH S16:00H S18:000 S21:7CH
S22:75H S23:07H S25:010 S26:001 S27:40H
```

STORED PROFILE 0:

```
B1 E1 L1 M1 Q0 V1 X0 Y0 &C1 &D3 &G0 &J0 &L0 &P0 &Q0 &R1 &S1 &X0
S00:001 S14:0AH S18:000 S21:7CH S22:75H S23:07H S25:010 S26:001
S27:40H
```

STORED PROFILE 1:

```
B1 E1 L1 M1 Q0 V1 X0 Y0 &C1 &D3 &G0 &J0 &L0 &P0 &Q0 &R1 &S0 &X0
S00:001 S14:0AH S18:000 S21:3CH S22:75H S23:07H S25:010 S26:001
S27:40H
```

OK

Hayes Smartmodem 9600 V.32

Some of these register settings can't be saved in nonvolatile storage. Note that this modem doesn't support hardware flow control.

AT&V

ACTIVE PROFILE:

B1 E1 L1 M1 N1 T Q2 V1 X4 Y0 &B1 &C1 &D3 &G0 &J0 &L0 &M0 &P0 &Q0 &R1 &S1 &T4
&U0 &X0 &Y0

S00:001 S01:000 S02:043 S03:013 S04:010 S05:008 S06:002 S07:070 S08:002
S09:006 S10:014 S11:095 S12:255 S18:000 S25:005 S26:001 S37:009 S59:000
S60:001 S61:000 S62:000 S63:010 S64:000 S65:000 S66:000 S67:001

STORED PROFILE 0:

B1 E1 L1 M1 N1 T Q2 V1 X4 Y0 &B1 &C1 &D3 &G0 &J0 &L0 &M0 &P0 &Q0 &R1 &S1 &T4
&U0 &X0

S00:001 S02:043 S07:070 S11:095 S25:005 S26:001 S37:009 S59:000
S60:001 S61:000 S62:000 S63:010 S64:000 S65:000 S66:000 S67:001

STORED PROFILE 1:

B1 E1 L2 M1 N1 P Q0 V1 X4 Y0 &B1 &C0 &D0 &G0 &J0 &L0 &M0 &P0 &Q0 &R0 &S0 &T4
&U0 &X0

S00:000 S02:043 S07:030 S11:095 S25:005 S26:001 S37:000 S59:000
S60:001 S61:000 S62:000 S63:010 S64:000 S65:000 S66:000 S67:001

OK

Fastcomm 9696 FDX

+ bottom DIP switch: 1-8 OPEN

ATE	Terminal Echo	ON	
ATF	Transmit data Echo	OFF	
ATM	Speaker Control	1	
ATP	Terminal Parity	Even	
ATQ	Result Code Quiet	OFF	
ATV	Result Code Verbose	ON	
ATX	Result Code Set	4	Full
	Call progress		Full
AT&B	Freeze DTE rate		ON
AT&C	Carrier Detect mode		Forced

AT&D	DTR mode	0	
AT&H	Transmit Flow Control		0 - None
AT&I	Receive Flow Control		1 - Hardware (cts/rts)
AT&J	Phone Jack Select	RJ-11	
AT&M	MNP and Sync mode	6	Async data , MNP ,compression
AT&N	Data rate	0	Highest Available Speed
AT&P	Dial pulse ratio	US	
AT&R	Sync RTS mode		
AT&S	DSR mode	Forced	
AT&T	Self Test Modes		
AT&Y	Break handling		
AT&Z	Stored number dialing storage		

To configure the modem without hardware flow control, modify the following setting to the indicated value:

AT&I	Receive Flow Control	0 - None
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Microcom QX/V.32c MNP Class 9 Modem (SX Mode)

+ front DIP switch:	UUDDUUUUUU
+ rear DIP switch:	DUUDUUUU

MODEM BPS	9600	SB9600
MODEM FLOW	OFF	SFM0
MODEM MODE	AUT	SMAUT (SMNOR)
AUTO ANS	ON	AAON
SERIAL BPS	9600	S1B9600
BPS ADJUST	ON	BAON
SERIAL FLOW	ON	SF13
PASS XON/XOFF	OFF	SX0
PARITY	7E	S1P1
BREAK	5	SBRK5

- STRIKE ANY KEY TO CONTINUE -

EXIT CHAR	000	SE0
CMD ECHO	ON	SCEON

RESULTS	ON	SCEON
RESULT TYPE	LONG	SCEON
CONN MNP-	ON	CLS1
DATA ECHO	OFF	SDEOFF
INACT TIMER	00	SIT0
AUTO RETRAIN	ON	RTON
COMPRESSION	ALL	COMP3
MAX BLK SIZE	256	BLK3
AUTO BUFF	0	AUT0
AUTO CHAR	000	SAC0
EMULATING HP	OFF	HP0

- STRIKE ANY KEY TO CONTINUE -

PAUSE TIME	003	SPT3
DTR	2	SD2
CARR DET	0	S1C0
DSR	0	S1D0
RING IND	1	S1R1
SPKR CTRL	0	SA0
LEASE LINE	OFF	SLLOFF
DISC DELAY	000	DBD0
REM CHAR	042	SRA42
REM ENABLE	OFF	RAOFF
REM SEC	OFF	RSECOFF
ASYNC/SYNC	0	SNC0
CTS/RTS	ON	CRTS0

- STRIKE ANY KEY TO CONTINUE -

RDLB ENABLE	ON	RLBON
DIAL MODE	ON	DCON
PULSE DIAL	US	SDP0
GUARD TONE	0	SG0
PAR CHK	OFF	PAROFF
MANUAL DIAL	OFF	SMD0
BELL	ON	BELLON
EQUALIZER	ON	EQ1
SPEED MATCH	ON	MS1

To configure the modem without hardware flow control, modify the following setting to the indicated value:

SERIAL FLOW

OFF

SF10