

PCM-3605

PC-104 modem card + serial RS-232 port

User's manual v0

Contents

General information

Features	3
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Configuration

Jumper settings	4
Connector Pinout	4
Driver installation	5

Appendix

AT Command reference	6
S-Registers	15
Result Codes	17

The PCM-3605 PC/104 modem module is a hardware modem, running of a dual 16550 serial UART controller.

Features -

Hardware modem running at speeds of :

14.4 kbps (V.32bis, V.17, V.29, V.27.ter and V.21 channel 2)

33.6 kbps (V.34, V.32bis, V.32, V.22bis, V.22, V.23, and V.21)

56.6* kbps (V.90/K56flex, V.32bis, V.32bis, V.32, V.22bis, V.22, V.23, and V.21)

*** Note this is determined by looking at U6 on the modem board and reading the number off.

The chips are as follows:

SMARTSCM/144 = 14.4 kbps

SMARTSCM/336 = 33.6 kbps

SMARTSCM/566 = 56.6* kbps

*Capable of receiving downloads at up to 56 Kbps and sending at up to 31.2 Kbps. Actual download speeds you experience may be lower due to varying line conditions. Maximum download speeds in the U.S. and Canada are limited to 53K, due to regulatory limits on power output. Requires compatible analog phone line and server equipment.

RS-232 Header

Capable of speeds up to 128kbps.

Jumper configurable IO range for both Modem and Serial port

Jumper configurable IRQ for both Modem and Serial port

Jumper listings –

JB1 IRQ for Serial port
JB2 IRQ for Modem
JB3 I/O Base address for Serial port
JB4 I/O Base address for Modem

Jumper settings for JB1 & JB2

The number next to the jumper directly corresponds to the IRQ assigned to the proper UART controller. For example JB1 Set to 05 is the serial port set to IRQ 5.

Jumper settings for JB3 & JB4

The numbers (in hexadecimal) are added to the base address of 200.

For example JB3 with jumpers at: 008, 020, 040, 080 and 100 is the serial port set to an address of 3E8.

The default jumper settings are:

JB1 5
JB2 11
JB3 008, 020, 040, 080, 100 (3E8)
JB4 008, 020, 040, 080 (2E8)

JK1 and JK2 are wired in parallel, thus there is no difference from one jack to the other.

HDR1 is the connector on board for the RS-232 Serial connector.

*** Pin one is the pin with the square pad on the solder side of the board.

Pin	Signal
1	DCD
2	RX
3	TX
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
10	NC

Drivers

Win 9x, WinNT, Win 2000

The modem being a hardware MODEM, will work fine using the standard windows modem drivers.

*** Note older versions of windows only have the "standard 28.8 MODEM" driver. This will not effect the performance of faster modems as they negotiate the connection rate by default.

Unix (all version)

Set the modem's jumpers to the desired IRQ and base address.

In the setserial configuration file (typically `/etc/init.d/setserial.sh`), add the following lines:

```
setserial /dev/ttyS2 port x irq y
setserial /dev/ttyS3 port xx irq yy
```

This will set up the modem's UARTS so they can be used in Linux. Substitute `x`, `y` and `xx`, `yy` with the appropriate values taken from the jumper settings.

AT Command listing.

Introduction

The AT commands are used to control the operation of your modem. They are called AT commands because each command must be preceded by the characters AT to get the ATtention of the modem.

AT commands can be issued only when the modem is in command mode or online command mode. The modem is in command mode whenever it is not connected to another modem. The modem is in data mode whenever it is connected to another modem and ready to exchange data. Online command mode is a temporary state in which you can issue commands to the modem while connected to another modem. To put the modem into online command mode from data mode, you must issue an escape sequence (**+++**) followed immediately by the AT characters and the command, e.g., **+++ATH** to hang up the modem. To return to data mode from online command mode, you must issue the command **AT0**.

To send AT commands to the modem you must use a communications program, such as the HyperTerminal applet in Windows 98/95 and NT 4.0, or some other available terminal program. You can issue commands to the modem either directly, by typing them in the terminal window of the communications program, or indirectly, by configuring the operating system or communications program to send the commands automatically. Fortunately, communications programs make daily operation of modems effortless by hiding the commands from the user. Most users, therefore, need to use AT commands only when reconfiguring the modem, e.g., to turn autoanswer on or off.

The format for entering an AT command is **ATXn**, where X is the command and n is the specific value for the command, sometimes called the command parameter. The value is always a number. If the value is zero, you can omit it from the command; thus, **AT&W** is equivalent to **AT&W0**. Most commands have a default value, which is the value that is set at the factory. The default values are shown in the "AT Command Summary" (See below).

You must press ENTER (depending on the terminal program it could be some other key) to send the command to the modem. Any time the modem receives a command, it sends a response known as a result code. The most common result codes are OK, ERROR, and the CONNECT messages that the modem sends to the computer when it is connecting to another modem. For a table of valid result codes, see "Result Codes" at the end of this section.

You can issue several commands in one line, in what is called a command string. The command string begins with **AT** and ends when you press ENTER. Spaces to separate the commands are optional; they are ignored by the command interpreter. The most familiar command string is the initialization string, which is used to configure the modem when it is turned on or reset, or when your communications software calls another modem.

AT Command Summary

Command:		AT Attention Code
Values:		n/a
Description:		The attention code precedes all command lines except A/ , A: , and escape sequences.
Command:		ENTER Key
Values:		n/a
Description:		Press the ENTER (RETURN) key to execute most commands.
Command:	A	Answer
Values:		n/a
Description:		Answer call before final ring.
Command:	A/	Repeat Last Command
Values:		n/a
Description:		Repeat the last command string. Do not precede this command with AT . Do not press ENTER to execute.
Command:	Bn	Communication Standard Setting
Values:		n = 0–3, 15, 16
Default:		1 and 16
Description:	B0	Select ITU-T V.22 mode when modem is at 1200 bps.
	B1	Select Bell 212A when modem is at 1200 bps.
	B2	Deselect V.23 reverse channel (same as B3).
	B3	Deselect V.23 reverse channel (same as B2).
	B15	Select V.21 when the modem is at 300 bps.
	B16	Select Bell 103J when the modem is at 300 bps.
Command:	Ds	Dial
Values:		s = dial string (phone number and dial modifiers)
Default:		none
Description:		Dial telephone number s, where s may up to 40 characters long and include the 0–9, *, #, A, B, C, and D characters, and the L, P, T, V, W, S, comma (,), semicolon (;), !, @, ^ and \$ dial string modifiers.
		Dial string modifiers:
	L	Redial last number. (Must be placed immediately after ATD .)
	P	Pulse-dial following numbers in command.
	T	Tone-dial following numbers in command (default).
	V	Switch to speakerphone mode and dial the following number. Use ATH command to hang up.
	W	Wait for a new dial tone before continuing to dial. (X2 , X4 , X5 , X6 , or X7 must be selected.)
	,	Pause during dialing for time set in register S8.
	;	Return to command mode after dialing. (Place at end of dial string.)
	!	Hook flash. Causes the modem to go on-hook for one-half second, then off-hook again.
	@	Wait for quiet answer. Causes modem to wait for a ringback, then 5 seconds of silence, before processing next part of command. If silence is not detected, the modem returns a NO ANSWER code.
	^	Disable data calling tone transmission.
	\$	Detect AT&T call card “bong” tone. The character should follow the phone number and precede the user’s call card number: ATDT1028806127853500\$123456789
Command:	DS=y	Dial Stored Telephone Number
Values:		n = 0–3
Default:		none
Description:		Dial a number previously stored in directory number y by the &Zy=x command.
Example:		ATDS=3

Command:	En	Echo Command Mode Characters
Values:		n = 0 or 1
Default:		1
Description:	E0	Do not echo keyboard input to the terminal.
	E1	Do echo keyboard input to the terminal.
Command:	Fn	Echo Online Data Characters
Values:		n = 1
Default:		1
Description:	F0	Enable online data character echo. (Not supported.)
	F1	Disable online data character echo (included for backward compatibility with some software).
Command:	Hn	Hook Control
Values:		n = 0 or 1
Default:		0
Description:	H0	Go on-hook (hang up).
	H1	Go off-hook (make the phone line busy).
Command:	In	Information Request
Values:		n = 0–5, 9, 11
Default:		None
Description:	I0	Display default speed and controller firmware version.
	I1	Calculate and display ROM checksum (e.g., 12AB).
	I2	Check ROM and verify the checksum, displaying OK or ERROR.
	I3	Display default speed and controller firmware version.
	I4	Display firmware version for data pump (e.g., 94).
	I5	Display the board ID: software version, hardware version, and country ID
	I9	Display the country code (e.g., NA Ver. 1).
	I11	Display diagnostic information for the last modem connection, such as DSP and firmware version, link type, line speed, serial speed, type of error correction/data compression, number of past retrains, etc.
Command:	Ln	Monitor Speaker Volume
Values:		n = 0, 1, 2, or 3
Default:		2
Description:	L0	Select low volume.
	L1	Select low volume.
	L2	Select medium volume.
	L3	Select high volume.
Command:	Mn	Monitor Speaker Mode
Values:		n = 0, 1, 2, or 3
Default:		1
Description:	M0	Speaker always off.
	M1	Speaker on until carrier signal detected.
	M2	Speaker always on when modem is off-hook.
	M3	Speaker on until carrier is detected, except while dialing.
Command:	Nn	Modulation Handshake
Values:		n = 0 or 1
Default:		1
Description:	N0	Modem performs handshake only at communication standard specified by S37 and the B command.
	N1	Modem begins handshake at communication standard specified by S37 and the B command. During handshake, fallback to a lower speed can occur.

Command:	On	Return Online to Data Mode
Values:		0, 1, 3
Default:		None
Description:	O0	Exit online command mode and return to data mode (see +++AT<CR> escape sequence).
	O1	Issue a retrain and return to online data mode.
	O3	Issue a rate renegotiation and return to data mode.
Command:	P	Pulse Dialing
Values:		P, T
Default:		T
Description:		Configures the modem for pulse (non-touch-tone) dialing. Dialed digits are pulsed until a T command or dial modifier is received.
Command:	Qn	Result Codes Enable/Disable
Values:		n = 0 or 1
Default:		0
Description:	Q0	Enable result codes.
	Q1	Disable result codes.
	Q2	Returns an OK for backward compatibility with some software.
Command:	Sr=n	Set Register Value
Values:		r = S-register number; n varies
Default:		None
Description:		Set value of register Sr to value of n, where n is entered in decimal format. E.g., S0=1 .
Command:	Sr?	Read Register Value
Values:		r = S-register number
Default:		None
Description:		Read value of register Sr and display it in 3-digit decimal form. E.g., S2? gives the response 043.
Command:	T	Tone Dialing
Values:		P, T
Default:		T
Description:		Configures the modem for DTMF (touch-tone) dialing. Dialed digits are tone dialed until a P command or dial modifier is received.
Command:	Vn	Result Code Format
Values:		n = 0 or 1
Default:		1
Description:	V0	Displays result codes as digits (terse response).
	V1	Displays result codes as words (verbose response).
Command:	Wn	Result Code Options
Values:		n = 0, 1, or 2
Default:		2
Description:	W0	CONNECT result code reports serial port speed, disables protocol result codes.
	W1	CONNECT result code reports serial port speed, enables protocol result codes.
	W2	CONNECT result code reports line speed, enables protocol result codes.

Command:	Xn	Result Code Selection
Values:		n = 0–7
Default:		4
Description:	X0	Basic result codes (e.g., CONNECT); does not look for dial tone or busy signal.
	X1	Extended result codes (e.g., CONNECT 46000 V42bis); does not look for dial tone or busy signal.
	X2	Extended result codes with NO DIALTONE; does not look for busy signal.
	X3	Extended result codes with BUSY; does not look for dial tone.
	X4	Extended result codes with NO DIALTONE and BUSY.
	X5	Extended result codes with NO DIALTONE and BUSY.
	X6	Extended result codes with NO DIALTONE and BUSY.
	X7	Basic result codes with NO DIALTONE and BUSY.
Command:	Zn	Modem Reset
Values:		n = 0 or 1
Default:		None
Description:	Z0	Reset modem to profile saved by the last &W command.
	Z1	Same as Z0 .
Command:	&Cn	Data Carrier Detect (DCD) Control
Values:		n = 0 or 1
Default:		1
Description:	&C0	Forces the DCD circuit to be always high.
	&C1	DCD goes high when the remote modem's carrier signal is detected, and goes low when the carrier signal is not detected.
Command:	&Dn	Data Terminal Ready (DTR) Control
Values:		n = 0, 1, 2, or 3
Default:		2
Description:	&D0	Modem ignores the true status of the DTR signal and responds as if it is always on.
	&D1	If DTR drops while in online data mode, the modem enters command mode, issues an OK, and remains connected.
	&D2	If DTR drops while in online data mode, the modem hangs up. If the signal is not present, the modem will not answer or dial.
	&D3	If DTR drops, the modem hangs up and resets as if an ATZ command were issued.
Command:	&Fn	Load Factory Settings
Values:		n = 0
Default:		None
Description:	&F0	Load factory settings as active configuration. Note: See also the Z command.
Command:	&Gn	V.22bis Guard Tone Control
Values:		n = 0, 1, or 2
Default:		0
Description:	&G0	Disable guard tone.
	&G1	Set guard tone to 550 Hz.
	&G2	Set guard tone to 1800 Hz.
		Note: The &G command is not used in North America.
Command:	&Kn	Flow Control Selection
Values:		n = 0, 3, or 4
Defaults:		3
Description:	&K0	Disable flow control.
	&K3	Enable CTS/RTS hardware flow control.
	&K4	Enable XON/XOFF software flow control.

Command:	&Pn	Pulse Dial Make-to-Break Ratio Selection
Values:		n = 0, 1, or 2
Default:		0
Description:	&P0	60/40 make-to-break ratio
	&P1	67/33 make-to-break ratio
	&P2	20 pulses per second
		Note: The &P command is used only in Japan.
Command:	&Qn	Asynchronous Communications Mode
Values:		n = 0, 5, 6, 8, or 9
Default:		5
Description:	&Q0	Asynchronous with data buffering. Same as \N0 .
	&Q5	Error control with data buffering. Same as \N3 .
	&Q6	Asynchronous with data buffering. Same as \N0 .
	&Q8	MNP error control mode. If MNP error control is not established, the modem falls back according to the setting in S36 .
	&Q9	V.42 or MNP error control mode. If neither error control is established, the modem falls back according to the setting in S36 .
Command:	&Sn	Data Set Ready (DSR) Control
Values:		n = 0 or 1
Default:		0
Description:	&S0	Force DSR always high (on).
	&S1	Let DSR go high only during a connection at power-on or following the ATZ command.
Command:	&V	Display Current Settings
Values:		n/a
Description:		Displays the active modem settings, including the callback security settings if callback security is enabled. If the setup password has been entered, it also displays the callback security passwords.
Command:	&Wn	Store Current Configuration
Values:		n = 0
Default:		0
Description:	&W0	Stores current modem settings in non-volatile memory and causes them to be loaded at power-on or following the ATZ command instead of the factory defaults. See also the &F command.
	&W1	Clears user default settings from non-volatile memory and causes the factory defaults to be loaded at power-on or following the ATZ command.
Command:	&Zy=x	Store Dialing Command
Values:		y = 0–3 (callback security disabled) or 0–29 (callback security enabled) x = Dialing command
Default:		None
Description:		Stores dialing command x in memory location y. Dial the stored number using the command ATDS=y . See also the #CBSn command. For callback security options.
Command:	\An	Select Maximum MNP Block Size
Values:		n = 0, 1, 2, or 3
Default:		3
Description:	\A0	64-character maximum.
	\A1	128-character maximum.
	\A2	192-character maximum.
	\A3	256-character maximum.

Command:	\Bn	Transmit Break
Values:		n = 0–9 in 100 ms units
Default:		3
Description:		In non-error-correction mode only, sends a break signal of the specified length to a remote modem. Works in conjunction with the \K command.
Command:	\Jn	Data Buffer Control
Values:		n = 0
Default:		0
Description:	\J0	Enable data buffer—serial port speed is independent of connect speed.
	\J1	Disable data buffer—serial port speed is forced to the line speed.
Command:	\Kn	Break Control
Values:		n = 0–5
Default:		5
Description:		Controls the response of the modem to a break received from the computer, the remote modem, or the \B command. The response is different for each of three different states. Data mode. The modem receives the break from the computer:
	\K0	Enter online command mode, no break sent to the remote modem.
	\K1	Clear data buffers and send break to the remote modem.
	\K2	Same as \K0 .
	\K3	Send break immediately to the remote modem .
	\K4	Same as \K0 .
	\K5	Send break to the remote modem in sequence with the transmitted data.
	Data mode. The modem receives the break from the remote modem:	
	\K0	Clear data buffers and send break to the computer.
	\K1	Same as \K0 .
	\K2	Send break immediately to the computer.
	\K3	Same as \K2 .
	\K4	Send break to the computer in sequence with the received data.
	\K5	Same as \K4 .
	Online command mode. The modem receives a \Bn command from the computer:	
	\K0	Clear data buffers and send break to the remote modem.
	\K1	Same as \K0 .
	\K2	Send break immediately to the remote modem.
	\K3	Same as \K2 .
	\K4	Send break to the remote modem in sequence with the transmitted data.
	\K5	Same as \K4 .
Command:	\Nn	Error Correction Mode Selection
Values:		n = 0–5, or 7
Default:		3
Description:	\N0	Non-error correction mode with data buffering (buffer mode; same as &Q6).
	\N1	Direct mode.
	\N2	MNP reliable mode. If the modem cannot make an MNP connection, it disconnects.
	\N3	V.42/MNP auto-reliable mode. The modem attempts first to connect in V.42 error correction mode, then in MNP mode, and finally in non-error-correction (buffer) mode with continued operation.
	\N4	V.42 reliable mode.If the modem cannot make a V.42 connection, it disconnects.
	\N5	V.42, MNP, or non-error correction (same as \N3).
	\N7	V.42, MNP, or non-error correction (same as \N3).
Command:	\Qn	Flow Control Selection
Values:		n = 0, 1, or 3
Default:		3
Description:	\Q0	Disable flow control (same as &K0).
	\Q1	XON/XOFF software flow control (same as &K4).
	\Q2	CTS-only flow control. Not supported.
	\Q3	RTS/CTS hardware flow control (same as &K3).

Command: **\Tn** **Inactivity Timer**
 Values: n = 0, 1–255
 Default: 0
 Description: \Tn Sets the time (in minutes) after the last character is sent or received that the modem waits before disconnecting. A value of zero disables the timer. Applies only in buffer mode.

Note: You can also set the inactivity timer by changing the value of **S30**.

Command: **\Vn** **Protocol Result Code**
 Values: n = 0, 1, or 2
 Default: 1
 Description: \V0 Disable the appending of the protocol result code to the DCE speed.
 \V1 Enable the appending of the protocol result code to the DCE speed.
 \V2 Same as \V1.

Command: **\Xn** **XON/XOFF Pass-Through**
 Values: n = 0 or 1
 Defaults: 0
 Description: \X0 Modem responds to and discards XON/XOFF characters.
 \X1 Modem responds to and passes XON/XOFF characters.

Command: **-Cn** **Data Calling Tone**
 Values: n = 0 or 1
 Defaults: 0
 Description: -C0 Disable V.25 data calling tone to deny remote data/fax/voice discrimination.
 -C1 Enable V.25 data calling tone to allow remote data/fax/voice discrimination.

Command: **%B** **View Numbers in Blacklist**
 Values: n/a
 Description: If blacklisting is in effect, **AT%B** displays the numbers for which the last call attempted in the previous two hours failed. In countries that do not require blacklisting, the ERROR result code appears.

Command: **%Cn** **Data Compression Control**
 Values: n = 0 or 1
 Default: 1
 Description: %C0 Disable V.42bis/MNP 5 data compression.
 %C1 Enable V.42bis/MNP 5 data compression.

Command: **%DCn** **AT Command Control**
 Values: n = 0 or 1
 Default: 0
 Description: %DC0 The modem responds to AT commands.
 %DC1 The modem ignores AT commands.

Note: The modem will respond to **AT%DC** for 10 seconds after power-up.

Command: **%En** **Fallback and Fall Forward Control**
 Values: n = 0, 1, or 2
 Default: 2
 Description: %E0 Disable fallback and fall forward.
 %E1 Enable fallback, disable fall forward.
 %E2 Enable fallback and fall forward.

Command: **\$Dn** **DTR Dialing**
 Values: n = 0 or 1
 Default: 0
 Description: \$D0 Disables DTR dialing.
 \$D1 Dials the number in memory location 0 when DTR goes high.

Command: **+ES=n** **Enable Synchronous Buffered Mode**
 Values: n = 6
 Default: None

Description: Allows an H.324 video application direct access to the synchronous data channel. On underflow, the modem sends HDLC flag idle (0x7E) to the remote modem. This special error control mode is overridden by any of the following commands: **&F**, **&M**, **&Q**, or **\N**.

AT+ES=? shows the only allowed value.
AT+ES? shows the current value.

Command: **#Sx** **Enter Setup Password**
Values: x= password (1–8 characters, case sensitive)
Default: MTSMODEM
Description: Enters the remote configuration setup password.

Command: **#S=x** **Store Setup Password**
Values: x= password (1–8 characters, case sensitive)
Default: MTSMODEM
Description: Stores a new remote configuration setup password.

Command: **+++AT<CR>** **Escape Sequence**
Values: n/a
Description: Puts the modem in command mode (and optionally issues a command) while remaining online. Type **+++AT** and up to ten command characters, then press ENTER. Used mostly to issue the hang-up command: **+++ATH<CR>**.

Command: **%%%AT<CR>** **Remote Configuration Escape Sequence**
Values: n/a
Description: Initiates remote configuration mode while online with remote modem. The remote configuration escape character (%) is defined in register **S13**.

S-Registers

Certain modem values, or parameters, are stored in memory locations called S-registers. Use the **S** command to read or to alter the contents of S-registers (see previous section).

Register	Unit	Range	Default	Description
S0	1 ring	0, 1–255	1	Sets the number of rings until the modem answers. ATS0=0 disables autoanswer completely.
S1	1 ring	0–255	0	Counts the rings that have occurred.
S2	decimal	0–127 128–255	43 (+)	Sets ASCII code for the escape sequence character. Values greater than 127 disable escape.
S3	decimal	0–127	13 (^M)	Sets the ASCII code for the carriage return character.
S4	decimal	0–127	10 (^J)	Sets the ASCII code for the line feed character.
S5	decimal	0–32 33–127	8 (^H)	Sets the ASCII code for the backspace character. Values greater than 32 disable backspace.
S6	seconds	2–65*	2*	Sets the time the modem waits after it goes off-hook before it begins to dial the telephone number.
S7	seconds	1–255*	50*	Sets the time the modem waits for a carrier signal before aborting a call. Also sets the wait for silence time for the @ dial modifier.
S8	seconds	0–65	2	Sets the length of a pause caused by a comma character in a dialing command.
S9	decimal	0, 1–127	37 (%)	Sets ASCII code for remote configuration escape character. S9=0 disables remote configuration.
S10	100 ms	1–254	20	Sets how long a carrier signal must be lost before the modem disconnects.
S11	1 ms	50–150*	95*	Sets spacing and duration of dialing tones.
S28	decimal	0, 1–255	1	0 disables, 1–255 enables V.34 modulation.
S30	1 minute	0, 1–255	0	Sets the length of time that the modem waits before disconnecting when no data is sent or received. A value of zero disables the timer. See also the \T command.
S35	decimal	0–1	0	0 disables, 1 enables the V.25 data calling tone, which allows remote data/fax/voice discrimination.
S36	decimal	0–7	7	Specifies the action to take in the event of a negotiation failure when error control is selected. (See S48 .)

S37 decimal 0–19 0 Sets the maximum V.34 “upstream” speed at which the modem attempts to connect.
 0 = maximum modem speed
 1 = reserved
 2 = 1200/75 bps
 3 = 300 bps
 4 = reserved
 5 = 1200 bps
 6 = 2400 bps
 7 = 4800 bps
 8 = 7200 bps
 9 = 9600 bps
 10 = 12000 bps
 11 = 14400 bps
 12 = 16800 bps
 13 = 19200 bps
 14 = 21600 bps
 15 = 24000 bps
 16 = 26400 bps
 17 = 28800 bps
 18 = 31200 bps
 19 = 33600 bps

S43 decimal 0–1 1 For testing and debugging only. Enables/disables V.32bis start-up auto mode operation. 0 = disable; 1 = enable.

S48 decimal 7 or 128 7 Enables (7) or disables (128) LAPM negotiation. The following table lists the **S36** and **S48** configuration settings for certain types of connections.

	S48=7	S48=128
S32=0, 2	LAPM or hangup	Do Not Use
S36=1, 3	LAPM or async	Async
S36=4, 6	LAPM, MNP, or hangup	MNP or hangup
S36=5, 7	LAPM, MNP, or aysnc	MNP or async

S89 seconds 0, 5–25510 Sets the length of time in the off-line command mode before the modem goes into standby mode. A value of zero prevents standby mode; a value of 1–4 sets the value to 5.

Result Codes

In command mode your modem can send responses called *result codes* to your computer. Result codes are used by communications programs and can also appear on your monitor.

Terse	Verbose	Description
0	OK	Command executed
1	CONNECT	Modem connected to line
2	RING	Ring signal detected
3	NO CARRIER	Carrier signal lost or not detected
4	ERROR	Invalid command
5*	CONNECT 1200	Connected at 1200 bps
6	NO DIALTONE	No dial tone detected
7	BUSY	Busy signal detected
8	NO ANSWER	No answer at remote end
10*	CONNECT 2400	Connected at 2400 bps
11*	CONNECT 4800	Connected at 4800 bps
12*	CONNECT 9600	Connected at 9600 bps
13*	CONNECT 14400	Connected at 14400 bps
14*	CONNECT 19200	Connected at 19200 bps
24*	CONNECT 7200	Connected at 7200 bps
25*	CONNECT 12000	Connected at 12000 bps
26*	CONNECT 16800	Connected at 16800 bps
40*	CONNECT 300	Connected at 300 bps
55*	CONNECT 21600	Connected at 21600 bps
56*	CONNECT 24000	Connected at 24000 bps
57*	CONNECT 26400	Connected at 26400 bps
58*	CONNECT 28800	Connected at 28800 bps
59*	CONNECT 31200	Connected at 31200 bps
60*	CONNECT 33600	Connected at 33600 bps
88	DELAYED	Delay is in effect for the dialed number
89	BLACKLISTED	Dialed number is blacklisted
90	BLACKLIST FULL	Blacklist is full

* *EC* is added to these result codes when the extended result codes configuration option is enabled. *EC* is replaced by one of the following codes, depending on the type of error control connection:

V42bis —V.42 error control (LAP-M) and V.42bis data compression

V42 —V.42 error control (LAP-M) only

MNP5 —MNP 4 error control and MNP 5 data compression

MNP4 —MNP 4 error control only

NoEC —No error control protocol).