2400-BPS (250-3025B) Internal Modem Registers Faxback Doc. # 5793
Internal Modem

Your modem has 19 registers. These registers are memory locations inside your modem. These registers control some aspects of your modem's operation. You usually do not have to worry about setting any register. The default values work for most applications.

REGISTER SUMMARY

The following chart summarizes your modem's registers.

REGISTER	RANGE	UNIT	DEFAULT	DESCRIPTION
S0	0-255	rings	0	Ring to answer on
S1	0-255	rings	0	Number of rings passed
S2	0-127	ASCII	43	Escape code character
S3	0-127	ASCII	13	Command terminator
S4	0-127	ASCII	10	Line feed character
S5	0-127	ASCII	8	Backspace character
S6	0-255	seconds	2	Wait time for dial tone
S7	0-255	seconds	30	Wait time for carrier
S8	0-255	seconds	2	Pause time for comma
S9	0-255	1/10 sec	6	Carrier detect response time
S10	0-255	1/10 sec	14	Carrier loss hangup delay
S11	0-255	1/100 sec	95	Touch-tone timing
S12	0-255	1/50 sec	50	Escape code timing
S13		Not used		
S14		Bit mapped		Option register
S15		Not used		
S16		Bit mapped		Option register
S17		Not used		
S18	0-255	seconds	0	Test duration
S19		Not used		
S20		Not used		

S21		Bit mapped		Option register
S22		Bit mapped		Option register
S23		Bit mapped		Option register
S24		Not used		
S25	0-255	seconds	5	Delay to DTR
S26	0-255	seconds		RTS - CTS delay interval
S27		Bit mapped		Option register

VIEWING REGISTER

To view the contents of a register, in the command mode type:

ATSr? ENTER Where r is the register number.

Your modem returns:

nn Where nn is the current setting of the register.

OK

You can view the contents of several registers with one command:

ATSr?Sr?Sr? ENTER

Your modem returns:

nn First register
nn Second register
nn Third register
OK

SETTING REGISTERS

To change the contents of a register, in the command mode type:

ATSr=n ENTER Where r is the register number and n is the new value.

Your modem returns:

OK

You can set the contents of several registers with one command:

AT Sr=n Sr=n Sr=n ENTER

Your modem returns:

OK

REGISTER S0-AUTO ANSWER CONTROL

This register determines how many times your phone rings before your modem answers. If you set this register to 0, your modem does not answer the telephone. The default value for this register is 0.

REGISTER S1-RING COUNTER

This register contains the count of the current number of rings. If your telephone does not ring again within 8 seconds, the register resets to 0. You should never need to set the value in this register.

REGISTER S2-ESCAPE CODE ASCII VALUE

This register contains the ASCII value of the escape code. You must set this value to a legitimate ASCII character within the range 0-127. Setting this code to greater than 127 disables the escape code. See "Switching From the Communications to the Command Mode" in "Dialing and Answering with the AT Command Set," earlier in this manual. The default value for this register is 43 (ASCII value of +).

REGISTER S3-COMMAND TERMINATOR

This register contains the ASCII value of the character you use to end and execute a command. You should never need to change this value. The default for this register is 13 (ASCII value of ENTER).

REGISTER S4-LINE FEED ASCII VALUE

This register sets the character your modem sends after any result code. Your should never need to change this value. If you do not want your modem to send a line feed after the result code, set this register to 0. The default value for this register is 10 (ASCII value for line feed).

REGISTER S5-BACKSPACE ASCII VALUE

This resets the character your modem uses as a backspace character for editing. You do not normally need to change this register. The default value is 8 (ASCII backspace).

REGISTER 6-WAIT FOR DIAL TONE DURATION

This register sets how many seconds your modem waits to begin dialing after it goes off hook. If your modem begins dialing before the dial tone starts, your call might not go through. You can set this register to a higher value to provide a longer delay. The default value is 2 (setting to 0 or 1 also give a 2 second delay).

REGISTER S7-WAIT FOR CARRIER DURATION

This register sets how long your modem waits after dialing to detect a carrier from an answering modem. If this time expires without a carrier detect, your modem returns the NO CARRIER result code. The default value is 30.

REGISTER S8-DIALING PAUSE (,) DURATION

This register sets how many seconds your modem pauses when it encounters a comma (,) in the dialing sequence. If you dial from a system that requires a second dial tone (like a PABX system), you might need to increase the duration of this pause if your modem is not waiting long enough for an outside line. The default value is 2.

REGISTER S9-CARRIER DETECT RESPONSE TIME

Sets the length of time for the modem to acknowledge a valid carrier. Default is 6/10 seconds.

REGISTER S10-CARRIER LOSS TO DISCONNECT DURATION

This register sets how many tenths of a second (1/10 seconds) your modem waits to disconnect from the phone line after the other modem's carrier stops. In some areas with poor quality phone service, the carrier can occasionally drop out and cause your modem to disconnect during a call. If you set this register to 255, your modem considers the carrier always present. The default value is 14 (1.4 seconds).

REGISTER S11-TOUCH TONE DIALING SPEED

This register controls the dialing rate during tone dialing (no effect on pulse dialing). The default value of 95 sets a rate of about seven digits per second.

REGISTER S12-ESCAPE CODE GUARD TIME

This register sets the length of time (in 1/50 second increments) you must pause before and after the escape code for your modem to recognize the escape code. See "Switching From the Communications to the Command Mode" in "Dialing and Answering the AT Command Set," earlier in this manual. The default value is 50 (1 second).

REGISTER S13-NOT USED

REGISTER S14-BIT MAPPED OPTIONS

This register is a bit-mapped register that shows the status of some of the operation options. Normally, you do not write to this register. You use specific commands to set these options.

BIT	VALUE	DESCRIPTION
0	Not used	
1	0	Local echo disabled
	1	Local echo enabled
2	0	Result codes enabled
	1	Result codes disabled
3	0	Result codes as numbers
		Result codes as words
4	Not used	
5	0	Tone dial
	1	Pulse dial
6	Not used	
7	0	Answer mode Originate mode

REGISTER S15-NOT USED

REGISTER S16-TEST MODE OPTION REGISTER

This register is a bit-mapped register that shows the status of the test functions. Normally you don't write to this register. You use the &T command to change these options. See "Modem Test Commands" for more information.

BIT	VALUE	DESCRIPTION
0	0	Analog loopback disabled
	1	Analog loopback enabled (&T1)
1	Not used	
2	0	Digital loopback disabled
	1	Digital loopback enabled (&T3)
3	0	Loopback not in process
	1	Responding to remote digital loopback
4	0	Remote digital loopback disabled
	1	Remote digital loopback enabled (&T6)
5	0	Remote digital loopback, self test disabled
	1	Remote digital loopback, self test enabled (&T7)
6	0	Analog loopback with self test disabled
	1	Analog loopback with self test enabled (&T8)
7	Not used	

REGISTER S17-NOT USED

REGISTER S18-TEST TIMER

This register controls the duration in seconds for the test. The default value is 0. This causes the modem to perform any test until you cancel it with the &T0 command. See "Modem Test Commands" for more information.

REGISTER S19-NOT USED

REGISTER S20-NOT USED

REGISTER S21-BIT MAPPED OPTIONS

This register is a bit-mapped register that shows the status of the &D, &C, and Y commands. You do not normally write to this register. Use the individual commands to affect these options.

BIT	VALUE	DESCRIPTION
0	Not used	
1	Not used	
2	Not used	
3,4	00	&D0 (Forced DTR)
	10	&D1 (Async command state)
	01	&D2 (On hook, async command state, disabled auto answer)
	11	&D3 (Assumes initialization state)
5	0	&C0 (Carrier detect forced)
	1	&C1 (Carrier detect true)
6	Not used	
7	0	Y0 (Disable long space disconnect)

	1	&Y1 (Enable long space disconnect)

REGISTER S22-BIT MAPPED OPTIONS

This register is a bit-mapped register that shows the status of the M, X, and &P commands. You do not normally write to this register. Use the individual commands to affect these options.

BIT	VALUE	DESCRIPTION
0,1	Not used	
2,3	00	M0 (Speaker disabled)
	10	M1 (Speaker disabled during data transfer)
	01	M2 (Speaker always on)
	11	M3 (Speaker disabled during dialing & data transfer)
4,5,6	000	X0 (Result code status)
	100	X1 (Result code status)
	101	X2 (Result code status)
	110	X3 (Result code status)
	111	X4 (Result code status)
7	0	&P0 (U.S. make/break dial pulse ratio)
	1	&P1 (U.K./Hong Kong make/break dial pulse ratio)

REGISTER S23-BIT MAPPED OPTIONS

This register is a bit-mapped register that shows your modem's current communications settings, and the status of the &G command. You do not normally write to this register. The modem sets the communications settings automatically.

BIT	VALUE	DESCRIPTION
0	0	Response to remote digital loopback disabled.
		Response to remote digital loopback enabled.
1,2	00	300 bps
	10	12 bps
	11	24 bps
3	Not used	
4,5	00	Even parity
	10	Space parity
	01	Odd parity
	11	Mark/No parity
6,7	00	&G0 (No guard tone)
	10	&G1 (550 Hz guard tone)
	01	&G2 (1800 Hz guard tone)

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