

EXHIBIT C

User Manual

USB FAXMODEM

USER'S MANUAL

FCC Connection Information

FCC Part 68

This equipment complies with Part 68 of the FCC Rules. On the bottom of this equipment is a label that contains the FCC Registration Number and Ringer Equivalence Number (REN) for this equipment. You must provide this information to the telephone company upon request.

The REN is useful to determine the quantity of devices you may connect to the telephone line and still have all of those devices ring when your number is called. In most, but not all areas, the sum of the REN's of all devices connected to one line should not exceed five (5.0). To be certain of the number of devices you may connect to your line, as determined by the REN, you should contact your local telephone company to determine the maximum REN for your calling area.

If the modem causes harm to the telephone network, the telephone company may discontinue your service temporarily. If possible, they will notify you in advance. But if advance notice isn't practical, you will be notified as soon as possible. You will be advised of your right to file a complaint with the FCC.

The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the proper operation of your equipment. If they do, you will be notified in advance to give you an opportunity to maintain uninterrupted telephone service.

If you experience trouble with this modem, please contact your dealer for repair/warranty information. The telephone company may ask you to disconnect this equipment from the network until the problem has been corrected or you are sure that the equipment is not malfunctioning.

This equipment may not be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs.

Installation

This device is equipped with a USOC RJ11C connector.

FCC Part 15

The modem generates and uses radio frequency energy. If it is not installed and used properly in strict accordance with the user's manual, it may cause interference with radio and television reception. The modem has been tested and found to comply with the limits for Class B computing devices in accordance with the specifications in Subpart B, Part 15 of the FCC regulations. These specifications are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. FCC regulations require that shielded interface cables be used with your modem.

If interference does occur, we suggest the following measures be taken to rectify the problem:

- 1) Move the receiving antenna.
- 2) Move the modem away from the radio or TV.
- 3) Plug the modem into a different electrical outlet.
- 4) Discuss the problem with a qualified radio/TV technician.

CAUTION :

Changes or modifications not expressly approved by the party responsible for compliance to the FCC Rules could void the user's authority to operate this equipment.

Cable connections :

All equipment connected to this modem must use shielded cables as the interconnection means.

Notes :

Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
 - (2) This device must accept any interference received including interference that may cause undesired operation.
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TABLE OF CONTENTS

Chapter 1	Installation
Chapter 2	Command Line Syntax and Response Codes
Chapter 3	Commands
Chapter 4	Modem's S-registers
Appendix A	Modular Telephone Diagrams
Appendix B	ASCII Character Table

Chapter 1 Installation

The complete package includes:

- 1) The modem unit
- 2) The user's manual
- 3) A RJ-11 modular phone cable
- 4) A USB Cable
- 5) Communications software (optional)

Carefully inspect for shipping damage. If any is found, immediately repack the modem in the original packing material and contact your dealer.

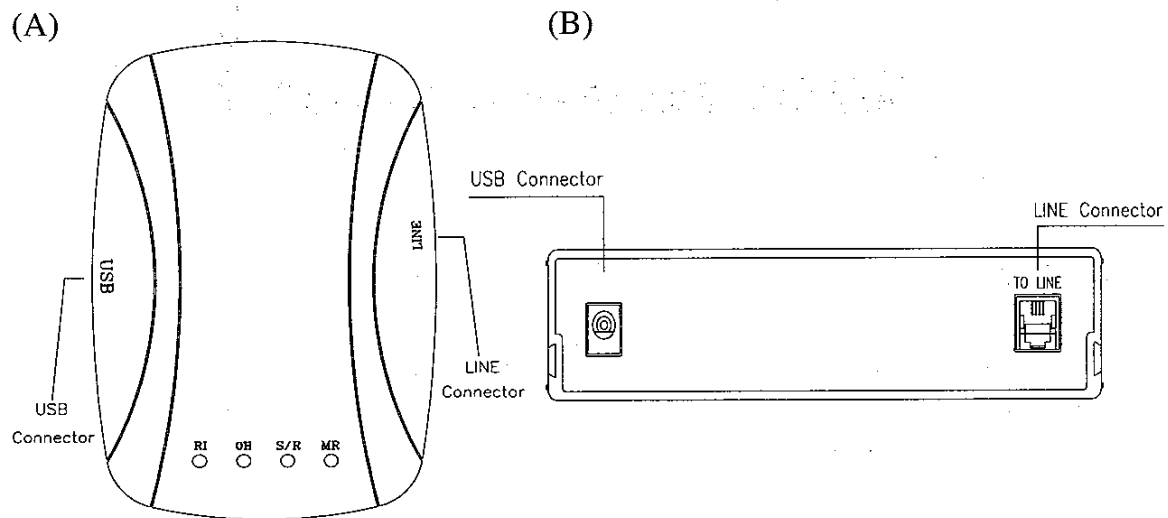
Look at the Modem

There are four LED indicators on the front panel of your modem as shown. In the schematic below each of which displays an operational status. The LEDs from left to right are:

RI OH S/R MR
○ ○ ○ ○

RI: Ring indicate
OH: Off-hook
S/R: Send & Receive data
MR: Modem ready

There are 2 types of USB modem, the positions of USB connector and modular jack are shown below.



Installing the Modem

Your modem fits nearly beneath a standard telephone set. The distance between the computer and the modem will be determined by the length of the USB cable. A suitable location for your modem should be:

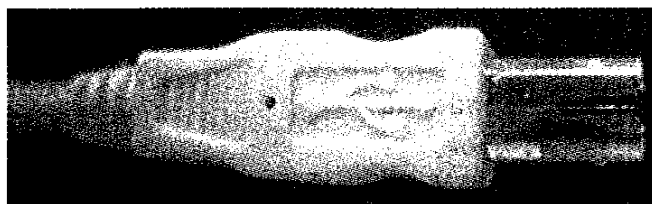
- 1) Close to a good quality telephone line wall outlet.
- 2) Where the LED indicators are clearly visible.

To connect the hardware, please follow the procedures below:

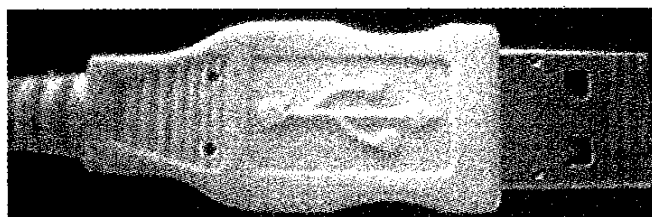
<Step01> Connect the modem to the computer:

First, use a USB cable between the modem and computer. Plug the connector of the USB cable to the modem. (Fig. 1-1)

Then, plug the other end of the cable to your computer USB port. (Fig. 1-2)

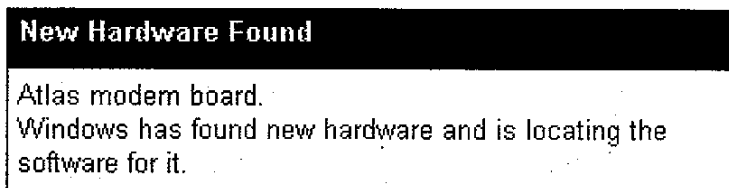


(Fig. 1-1)



(Fig. 1-2)

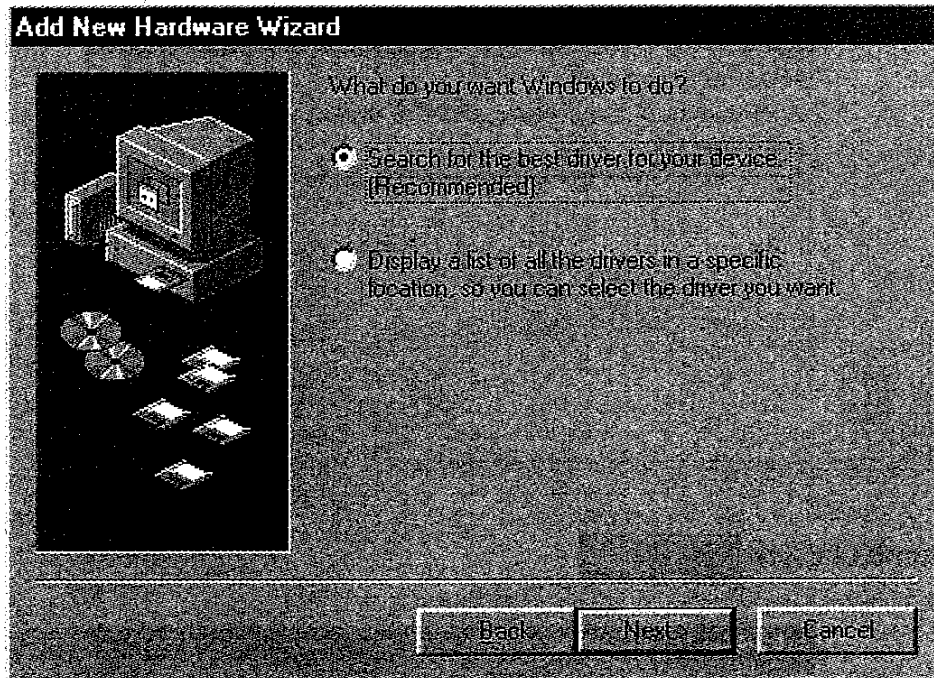
<Step02> The computer has found new hardware.




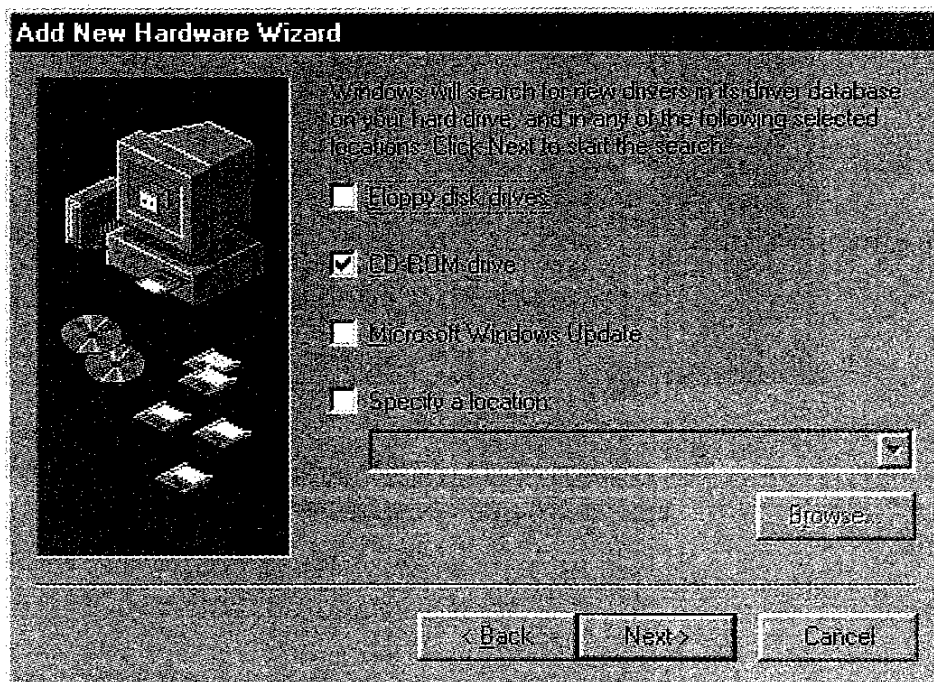
<Step03> Click 



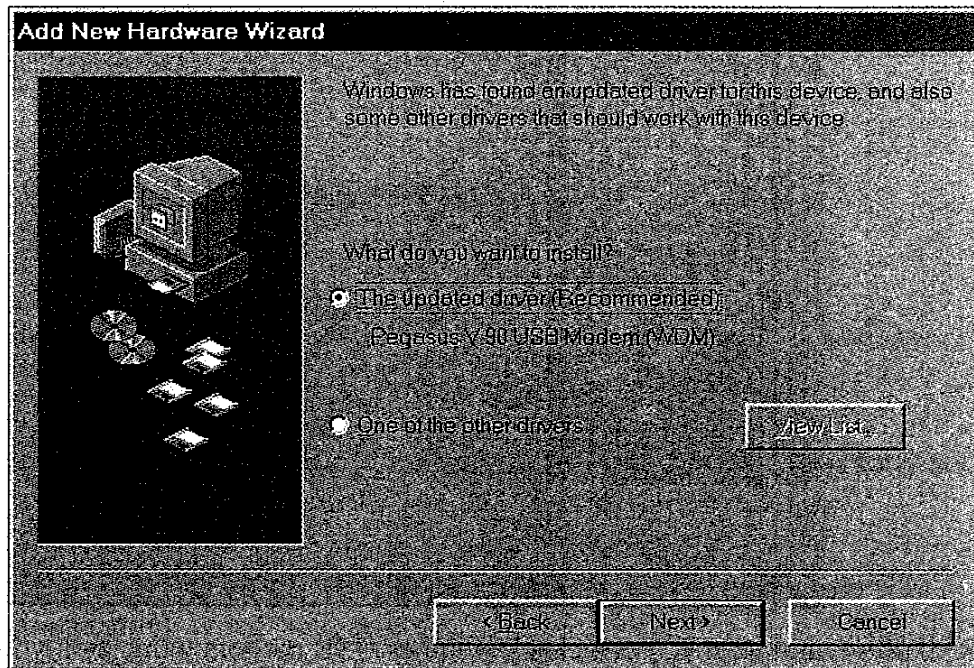
<Step04> Click 



<Step05> Insert CD-ROM to CD-ROM drive and select CD-ROM drive, then Click 




<Step06> Click 



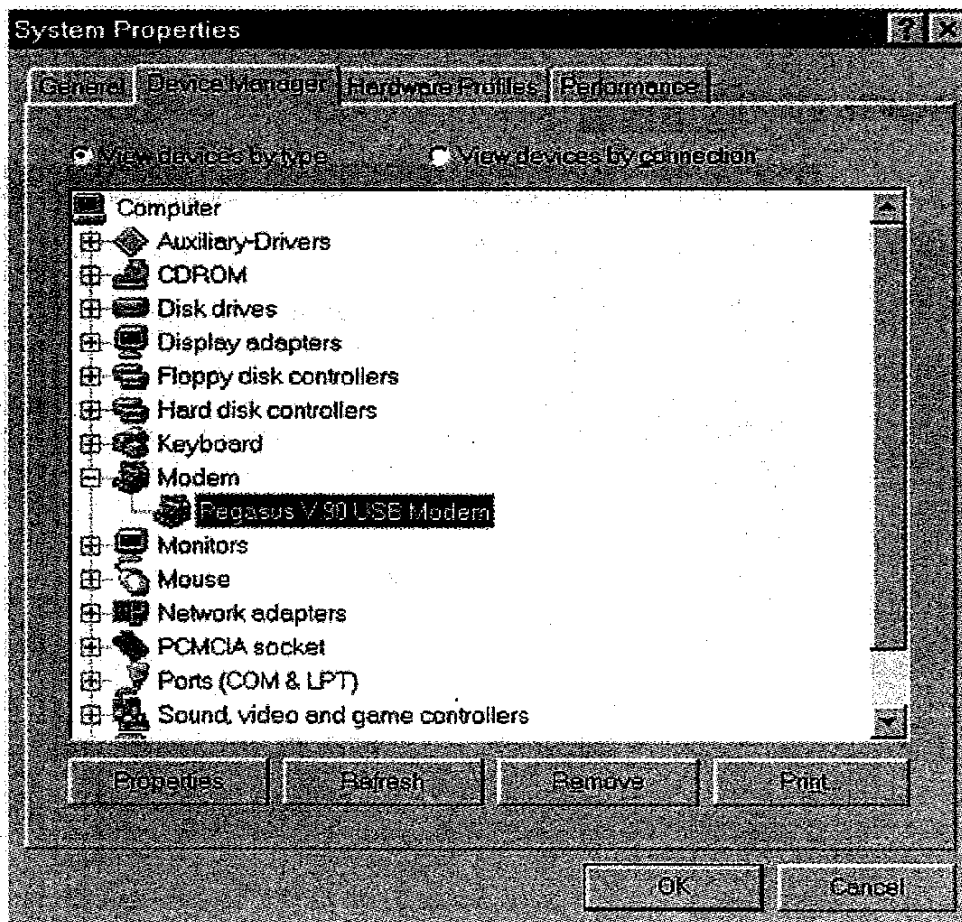
<Step07> Click 



<Step08> Click 



<Step09> and then you can check whether USB modem work with your system in "Device manger" as shown below.



<Step10> Connect the modem to a telephone line

Unplug the cable of your telephone set from the wall outlet. Plug one end of the supplied telephone cable to the outlet. Then, plug the other end to the jack marked "TO LINE" on the rear panel of the modem.

Communication Software Configuration

Most popular communications software packages will work well with your modem.

Turn on your computer first, then the modem. Boot the communication software and check the following parameters:

- 1) The serial port number.
- 2) The communication speed and protocol.
- 3) Data format: data bit, stop bit and parity.

Set the serial port number to COM1, COM2, COM3 or COM4 according to which your modem is connected. Note that one port should be assigned to only one device, otherwise, the two devices will conflict with each other.

Chapter 2 Command Line Syntax and Response Codes

The modem responds to commands from the DTE and to activity on the line by signalling to the DTE in the form of result codes. The result codes that the modem can send are described below.

Two forms of each result code are available: long-form, an English-like “verbose” response, and short-form, a data-like numeric response (included in parentheses following the long-form). The long-form code is preceded and terminated by the sequence <CR><LF>. The short-form is terminated by <CR>, only with no preceding sequence.

If result messages are suppressed, nothing is returned to the DTE.

- 00 - OK
- 01 - CONNECT
- 02 - RING
- 03 - NO CARRIER
- 04 - ERROR
- 05 - CONNECT 1200 EC*
- 06 - NO DIALTONE
- 07 - BUSY
- 08 - NO ANSWER
- 10 - CONNECT 2400 EC*
- 11 - CONNECT 4800 EC*
- 12 - CONNECT 9600 EC*
- 13 - CONNECT 14400 EC*
- 14 - CONNECT 19200 EC*
- 24 - CONNECT 7200 EC*
- 25 - CONNECT 12000 EC*
- 86 - CONNECT 16800 EC*
- 40 - CONNECT 300 EC*
- 55 - CONNECT 21600 EC*
- 56 - CONNECT 24000 EC*
- 57 - CONNECT 26400 EC*
- 58 - CONNECT 28800 EC*

-
- 59 - CARRIER 31200 EC*
 - 60 - CARRIER 33600 EC*
 - 28 - CARRIER 38400 EC*
 - 18 - CARRIER 57600 EC*
 - 87 - CARRIER 115200 EC*
 - 88 - DELAYED
 - 89 - BLACKLISTED
 - 90 - BLACKLISTFULL

Additional Result Codes

Verbose	Numeric
"28000"	100
"29333"	101
"30666"	102
"33333"	103
"34666"	104
"37333"	105
"38666"	106
"41333"	107
"42666"	108
"45333"	109
"46666"	110
"49333"	111
"50666"	112
"53333"	113
"54666"	114

Chapter 3 Commands

The modem will respond to the commands detailed below. Parameters applicable to each command are listed with the command description. The defaults shown for each configuration command are those used in the factory profile 0.

Standard "AT" Commands

- A/ Repeat Last Command.
- A Answer Command.
- C0 Transmit carrier always off.
- C1 Normal transmit carrier switching.
- D Go into originate mode (dial calls); attempt to go to online state. The following modifiers can be used after the D command.
 - L Redials last number. Should be the first character following ATD, ignored otherwise.
 - P Pulse dialing.
 - T Touch-tone dialing (default).
 - , Pause during dialing. Pause for time specified in Register S8 before processing the next character in the dial string.
 - W Wait for dial tone, Modem waits for a second dial tone before processing the dial string.
 - V The modem switches to speakerphone mode and dials the number. If silence is not detected, the modem sends a NO ANSWER result code back to the user.
 - ! Hook flash. Causes the modem to go on-hook for 0.5 seconds and then return to off-hook.
 - ; Return to command mode. Causes the modem to return to command mode after dialing the number, without disconnecting the call.
 - ^ Disable data calling tone transmission.
 - S=n Dial a telephone number previously stored using the &Zn=x command

(see the &Zn=x command for further information). The range of nis 0-3.
\$ Bong tone detection.

- E0 Disables echo to the computer.
E1 Enables echo to the computer (default).
F0 Online data character echo enabled (NOT SUPPORTED, ERROR).
F1 Online character echo disabled.
H0 Modem goes on-hook (default).
H1 Modem goes off-hook.
- I1 Returns default speed and controller firmware version. (same as I3)
I2 Calculates ROM checksum and displays it on the DTE (e.g., 12AB)
I3 Performs a ROM check and calculates and verifies the checksum displaying
OK or ERROR.
I4 Returns firmware version for data pump (e.g., 94).
I5 Returns the board ID: software version, hardware version, and country ID
(e.g., ??????????)
I6 Returns country code.
- L0 Selects low volume.
L1 Selects low volume.
L2 Selects medium volume (default).
L3 Selects high volume.
- M0 The speaker is off.
M1 The speaker is on until the modem detects the carrier signal (default).
M2 Turn speaker is always on when modem is off-hook.
M3 The speaker is on until the carrier is detected, except while dialing.
- N0 When originating or answering, this is for handshake only at the
communication standard specified by S37 and the ATB command.
N1 When originating or answering, begin the handshake only at the
communication standard specified by S37 and the ATB command. During
handshake, fallback to a lower speed may occur (default).
- O0 Instructs the modem to exit on-line command mode and return to data mode
(see AT Escape Sequence, +++).
O1 This command issues a retrain before returning to on-line data mode.
O2 This command issues a rate renegotiation before returning to on-line data
mode.
- P Force pulse dialing.

Q0 Enables modem to send result codes to the computer (default).
 Q1 Disables modem from sending result codes to the computer.

T Select Tone Dialing

V0 Displays result codes as digits.

V1 Displays result codes as text (default).

W0 CONNECT result code reports DTE speed. Disable protocol result codes.

W1 CONNECT result code reports DTE speed. Enable protocol result codes.

W2 CONNECT result code reports DCE speed. Enable protocol result codes.(default).

	<u>Ext. Result Code</u>	<u>Dial Tone Detect</u>	<u>Busy Tone Detect</u>
X0	Disable	Disable	Disable
X1	Enable	Disable	Disable
X2	Enable	Enable	Disable
X3	Enable	Disable	Enable
X4	Enable	Enable	Enable (default)
X5	Enable	Enable	Enable
X6	Enable	Enable	Enable
X7	Disable	Enable	Enable

Y0 Disable long space disconnect (default).

Y1 Enable lone space disconnect. NOT SUPPORTED.

Zn Recall Stored Profile

This command instructs the modem chip set to go on-hook and restore the profile saved by the last &W command. Either Z0 or Z1 restores the same single profile.

&B0 Disable V.32 auto retrain - NOT SUPPORTED.

&B0 Enable V.32 auto retrain (default).

&C0 The state of the carrier from the remote modem is ignored. DCD circuit is always on.

&C1 DCD turns on when the remote modem's carrier signal is detected, and off when the carrier signal is not detected (default).

&D0 Ignore. The modem ignores the true status of DTR and treats it as always on. This should only be used if your computer does not provide DTR to the modem.

&D1 If the DTR signal is not detected while in on-line data mode, the modem enters command mode, issues OK result code, and remains connected.

&D2	If the DTR signal is not detected while in on-line data mode, the modem disconnects (default).
&D3	Monitor DTR signal when an on-to-off transition occurs, the modem performs a soft reset as if the ATZ command was received.
&F0	Recall factory setting as active configuration.
&G0	Guard tone disabled (default).
&G1	Sets guard tone to 550 Hz.
&G2	Sets guard tone to 1800 Hz.
&J0	The auxiliary relay is never closed.
&J1	NOT SUPPORTED, responds ERROR.
&K0	Disable flow control.
&K1	Reserved.
&K2	Reserved.
&K3	Enable RTS/CTS flow control (default).
&K4	Enable XON/XOFF flow control.
&M0	Asynchronous mode (default).
&M1	Reserved.
&M2	Reserved.
&M3	Reserved.
&M4	Reserved.
&P0	34/66 make/break ration (10 pps) (default).
&P1	34/66 make/break ration (20 pps).
&Q0	Asynchronous Mode, buffered. Same as \NO.
&Q1	Reserved.
&Q2	Reserved.
&Q3	Reserved.
&Q4	Reserved.
&Q5	Error Control Mode, buffered (default). Same as \N3
&Q6	Asynchronous Mode, buffered. Same as \NO.
&Q7	Reserved.
&Q8	MNP error control mode. If an MNP error control protocol is not established, the modem will fallback according to the current user setting in S36.
&Q9	V.42 or MNP error control mode. If neither error control protocol is established, the modem will fallback according to the current user setting in S36.

&S0	DSR always ON (default).
&S1	DSR comes on when establishing a connection and goes off when the connection ends.
&T0	Abort. Stops any test in progress.
&T1	Local analog loop. This test verifies modem operation, as well as the connection between the modem and computer. Any data entered at the local DTE is modulated, then demodulated, and returned to the local DTE. To work properly, the modem must be off-line.
&T3	Local digital loopback test.
&T6	Remote digital loopback test. This test can verify the integrity of the local modem, the communications link, and the remote modem. Any data entered at the local DTE is sent to, and returned from, the remote modem. To work properly, the modems must be on-line with error control disabled.
&V	View Active Configuration and Stored Profile.
&W	Store Current Configuration.
&Y0	Select stored profile 0 on power-up.
&Y1	ERROR.
&Zn=x	Store Telephone Number This command is used to store up to four dialing strings in the modem's nonvolatile memory for later dialing. The format for the command is &Zn=" stored number" where n is the location 0-2 to which the number should be written. The dial string may contain up to 40 characters. The ATDS=n command dials using the string stored in location n.
\G0	Returns an "OK" for compatibility (default).
\G1	NOT SUPPORTED responds ERROR.
\J0	Turn off feature (default).
\J1	Turn on feature.
\K0	Reserved, returns ERROR.
\K1	Reserved, returns ERROR.
\K2	Reserved, returns ERROR.
\K3	Reserved, returns ERROR.
\K4	Reserved, returns ERROR.
\K5	Modem sends the break to the remote modem in sequence with the transmitted data, nondestructive/non-expedited (default).

\N0	Buffer mode. No error control (same as &Q6).
\N1	Direct mode.
\N2	MNP or disconnect mode. The modem attempts to connect using MNP 2/3/4 error control procedures. If this fails, the modem disconnects. This is also known as MNP reliable mode.
\N3	V.42 MNP, or buffer (default). The modem attempts to connect in V.42 error control mode. If this fails, the modem attempts to connect in MNP mode. If that fails, the modem connects in buffer mode and continues operation. This is also known as V.42/MNP auto reliable mode (same as &Q5).
\N4	V.42 or disconnected. The modem attempts to connect in V.42 error control mode. If this fails, the call will be disconnected.
\N5	V.42 MNP or buffer (same as \N3).
\N7	V.42 MNP or buffer (same as \N3).
\Q0	Disable flow control. Same as &K0.
\Q1	XON/XOFF software flow control. Same as &K4.
\Q2	CTS-only flow control. This is not supported and the response is ERROR.
\Q3	RTS/CTS to DTE (default). Same as &K3.
\Tn	Inactivity Timer (n=0~255)
\W0	Disable protocol result code appended to DCE speed.
\W1	Enable protocol result code appended to DCE speed (default).
-Cn	Data Calling Tone
-C0	Disabled (default).
-C1	Enabled.
\X0	Modem processes XON/XOFF flow control characters locally (DEFAULT).
\X1	NOT SUPPORTED responds ERROR.
%B	View Numbers in Blacklist
%C0	V.42bis/MNP 5 disabled. No data compression.
%C1	V.42bis/MNP 5 enabled. Data compression enabled (default).

Chapter 4 Modem's S-registers

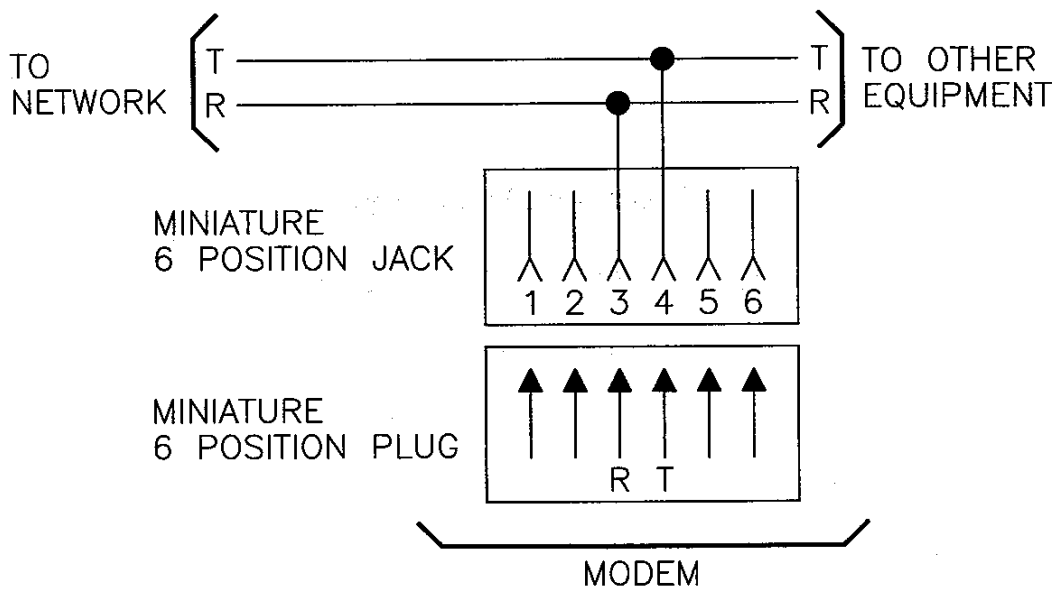
Register	Function	Range / unit	Default
S0	Auto Answer Ring Number	0-255 / rings	0
S1	Ring Counter	0-255 / rings	0
S2	AT Escape Character	0-255 / ASCII	43
S3	Command Line Termination Character (user defined)	0-127 / ASCII	13
S4	Response Formatting Character	0-127 / ASCII	10
S5	Command Line Editing Character	0-32 / ASCII	8
S6	Wait Before Dialing	2-65 / seconds	2
S7	Connection Completion Time-Out	1-255 / seconds	50
S8	Comma Dial Modifier Time	0-65 / seconds	2
S10	Automatic Disconnect Delay	1-254 / .1 seconds	20
S11	DTMF Dialing Speed	50-150 / .001seconds	95
S12	Escape Guard Time	0-255 / .02 seconds	50
S28	V.34 Modulation Enable/Disable	0-255 /	1
S30	Inactivity Timer	0-255 / minutes	0
S35	Data Calling Tone	0-1 /	0
S36	Negotiation Fallback (default7)		

Register	Function	Range/Unit	Default
S36=0,2	Hang up.		
S36=1,3	Fall back to an asynchronous connection.		
S36=4,6	Attempt MNP. If MNP fails, hang up.		
S36=5,7	Attempt MNP. If MNP fails, fall back to asynchronous connection.		
S37	Dial Line Rate (default 0)		
S37=0	maximum modem speed		
S37=1	reserved		
S37=2	1200/75 bits/s		
S37=3	300 bits/s		
S37=4	reserved		
S37=5	1200 bits/s		
S37=6	2400 bits/s		
S37=7	4800 bits/s		
S37=8	7200 bits/s		
S37=9	9600 bits/s		
S37=10	12000 bits/s		
S37=11	14400 bits/s		
S37=12	16800 bits/s		
S37=13	19200 bits/s		
S37=14	21600 bits/s		
S37=15	24000 bits/s		
S37=16	26400 bits/s		
S37=17	28800 bits/s		
S37=18	31200 bits/s		
S37=19	33600 bits/s		
S38	Downstream rate selection for V.90 mode		
S38=0	V.90 disabled		
S38=1	V.90 autorate		
S38=2	28000bps		
S38=3	29333bps		
S38=4	30666bps		
S38=5	32000bps		
S38=6	33333bps		
S38=7	34666bps		
S38=8	36000bps		
S38=9	37333bps		
S38=10	38666bps		
S38=11	40000bps		

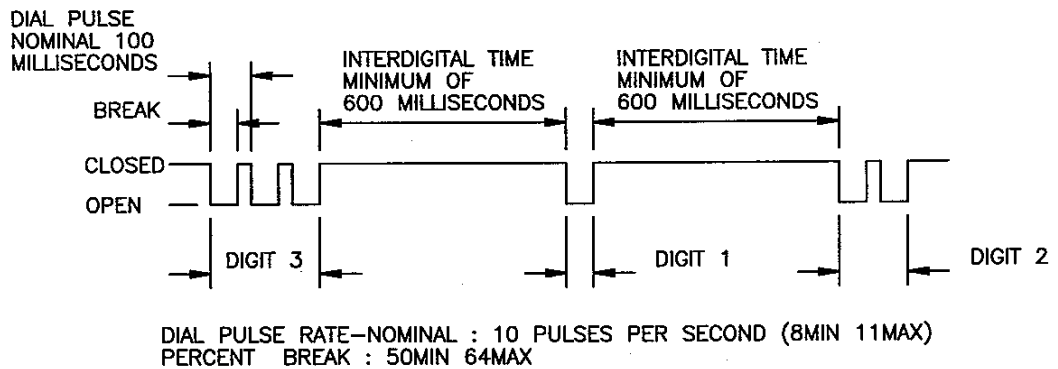
Register	Function	Range/Unit	Default
S38=12	41333bps		
S38=13	42666bps		
S38=14	44000bps		
S38=15	45333bps		
S38=16	46666bps		
S38=17	48000bps		
S38=18	49333bps		
S38=19	50666bps		
S38=20	52000bps		
S38=21	53333bps		
S38=22	54666bps		
S38=23	56000bps		
S42	Auto Rate (default 1, range 0/4 1)	0-1	1
S43	Auto Mode (default 1, range 0/4 1)	0-1	1
S48	LAPM Error Control and Feature Negotiation (default7)		
S48=7	Negotiation enabled.		
S48=128	Negotiation disabled; forces immediate fallback options specified in S36.		
S89	Timer to Control Sleep Mode	0,5-255	10

Modular Telephone Diagrams

This appendix summarizes the modular telephone diagrams, dial pulse and touchtone specifications.



RJ11 Modular telephone diagram



Dial pulse specifications

	North America	Japan	Other area
Break Ratio	61%	67%	67%
Break Length	61ms	67ms	67ms
Dial Pulse Length	100ms	200ms	100ms
Dual Pulse Rate	10pps	20pps	10pps
Interdigit Time	789ms	783ms	783ms

Touch-tone Frequencies

	1209	1336	1477	1633Hz
697	1	2	3	A
770	4	5	6	B
852	7	8	9	C
941Hz	*	0	#	D

Appendix

B

ASCII Character Table

The conversion table below lists the complete set of ASCII characters coded for digital processing in binary notation (base 2). They are listed below with their equivalents in decimal notation (base 10) and hexadecimal notation (base 16).

CODE	DEC	HEX	CODE	DEC	HEX	CODE	DEC	HEX	CODE	DEC	HEX
NUL	0	00	SP	32	20	@	64	40	,	96	60
CTRL A	1	01	!	33	21	A	65	41	a	97	61
CTRL B	2	02	"	34	22	B	66	42	b	98	62
CTRL C	3	03	#	35	23	C	67	43	c	99	63
CTRL D	4	04	\$	36	24	D	68	44	d	100	64
CTRL E	5	05	%	37	25	E	69	45	e	101	65
CTRL F	6	06	&	38	26	F	70	46	f	102	66
CTRL G	7	07	,	39	27	G	71	47	g	103	67
CTRL H	8	08	(	40	28	H	72	48	h	104	68
CTRL I	9	09	)	41	29	I	73	49	i	105	69
CTRL J	10	0A	•	42	2A	J	74	4A	j	106	6A
CTRL K	11	0B	+	43	2B	K	75	4B	k	107	6B
CTRL L	12	0C	,	44	2C	L	76	4C	l	108	6C
CTRL M	13	0D	-	45	2D	M	77	4D	m	109	6D
CTRL N	14	0E	.	46	2E	N	78	4E	n	110	6E
CTRL O	15	0F	/	47	2F	O	79	4F	o	111	6F
CTRL P	16	10	0	48	30	P	80	50	p	112	70
CTRL Q	17	11	1	49	31	Q	81	51	q	113	71
CTRL R	18	12	2	50	32	R	82	52	r	114	72
CTRL S	19	13	3	51	33	S	83	53	s	115	73
CTRL T	20	14	4	52	34	T	84	54	t	116	74
CTRL U	21	15	5	53	35	U	85	55	u	117	75
CTRL V	22	16	6	54	36	V	86	56	v	118	76
CTRL W	23	17	7	55	37	W	87	57	w	119	77
CTRL X	24	18	8	56	38	X	88	58	x	120	78
CTRL Y	25	19	9	57	39	Y	89	59	y	121	79
CTRL Z	26	1A	:	58	3A	Z	90	5A	z	122	7A
ESC	27	1B	;	59	3B	[	91	5B	}	123	7B
FS	28	1C	<	60	3C	/	92	5C	l	124	7C
GS	29	1D	=	61	3D	]	93	5D	{	125	7D
RS	30	1E	>	62	3E	A	94	5E	~	126	7E
US	31	1F	?	63	3F	-	95	5F	DEL	127	7F

PART NO.: 506-10076-00