

USRobotics®

56K* Commands

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Typing Commands

- Type commands in either upper or lower case, not a combination. Use the Backspace key to delete errors. (You cannot delete the original AT command since it is stored in the modem buffer.)
- If a command has numeric options and you do not include a number, zero is assumed. For example, if you type **ATB**, the command **ATB0** is assumed.
- Every command except **A/**, **+++**, and **A>** must begin with the AT prefix and be entered by pressing **ENTER**.
- The maximum command length is 58 characters. The modem does not count the AT prefix, carriage returns, or spaces.

All defaults are based on the &F1—Hardware Flow Control template loaded in NVRAM when the modem is shipped. Defaults are listed in *italics*.

Note: Defaults are marked with an asterisk (*).

Basic Commands

<control key>S Stop or restart help screens.

<control key>C or

<control key>K Stop help screens.

\$ Use in conjunction with *D*, *S*, or *&* commands (or just *AT*) to display a basic command list; online help.

A Manual Answer: goes off hook in answer mode. Pressing any key aborts the operations.

A/ Re-executes the last issued command. Used mainly to redial. Does not require the *AT* prefix or a Carriage Return.

Any key Aborts off-hook dial/answer operation and hangs up.

AT Required command prefix, except with *A/*, *+++*, and *A>*. Use alone to test for OK result code.

Bn **U.S./ITU-T answer sequence**

* *B0* *ITU-T answer sequence*

B1 U.S. answer tone

TECHNICAL REFERENCE

Dn **Dials the specified phone number, includes the following:**

	0-9	Numeric digits
	#, *	Extended touch-tone pad tones
	L	Dials the last dialed number
*	P	Pulse (rotary) dial
	R	Originates call using answer (reverse) frequencies
	Sn	Dials the phone number string stored in NVRAM at position n (n = 0–3); phone numbers are stored with the &Zn=s command
	T	Tone dial
	,	(Comma) Pause, See S8 definition; which it is linked to
	;	(Semicolon) Return to Command mode after dialling
	/	Delays for 125 ms. before proceeding with dial string
	W	Wait for second dial tone (X2 or X4); linked to S6 register
	@	Dials, waits for quiet answer, and continues (X3 or higher)
	\$	Displays a list of Dial commands

En **Sets local echo**

	E0	Echo OFF
*	E1	<i>Modem displays keyboard commands</i>

TECHNICAL REFERENCE

Fn **Sets online local echo of transmitted data ON/OFF**

F0 Local echo ON, modem sends a copy of data it sends to the remote system to your screen

* F1 *Local echo OFF, receiving system may send a remote echo of data it receives*

Hn **Controls ON/OFF hook**

H0 Hangs up (goes on hook)

H1 Goes off hook

In **Displays the following information**

I0 Four-digit product code

I1 Results of ROM checksum

I2 Results of RAM checksum

I3 Product type

I4 Current modem settings

I5 Nonvolatile memory (NVRAM) settings

I6 Link diagnostics

I7 Product configuration

I9 Plug and Play information

I11 Extended link diagnostics

TECHNICAL REFERENCE

Ln Controls speaker volume (internals only)

	L0	Lowest volume
	L1	Low volume
*	L2	<i>Medium volume</i>
	L3	High volume

Mn Operates speaker

	M0	Speaker always OFF
*	M1	<i>Speaker ON until CONNECT</i>
	M2	Speaker always ON
	M3	Speaker ON after dial, until CONNECT

On Returns online

	O0	Returns online
	O1	Returns online and retrains

Qn Displays/suppresses result codes

*	Q0	<i>Displays result codes</i>
	Q1	Quiet mode; no result codes
	Q2	Displays result codes only in Originate mode

TECHNICAL REFERENCE

Sr.b=n Sets bit *.b* of register *r* to *n* (0/OFF or 1/ON)

Sr=n Sets register *r* to *n*.

Sr? Displays contents of S-Register *r*

S\$ Displays a list of the S-Registers

Vn Displays verbal/numeric result codes

V0 Numeric codes

* V1 Verbal codes

Xn Sets result code displayed, default is X4

Result Codes	Xn Setting				
	X0	X1	X2	X3	X4
0/OK	•	•	•	•	•
1/CONNECT	•	•	•	•	•
2/RING	•	•	•	•	•
3/NO CARRIER	•	•	•	•	•
4/ERROR	•	•	•	•	•
5/CONNECT 1200		•	•	•	•
6/NO DIAL TONE			•		•
7/BUSY				•	•
8/NO ANSWER*				•	•
9/Reserved					

*Requires @ in dial string; replaces NO CARRIER

TECHNICAL REFERENCE

Xn (Continued)	Xn Setting					
	Result Codes (Continued)	X0	X1	X2	X3	X4
	10/CONNECT 2400		•	•	•	•
	11/RINGING					•
	13/CONNECT 9600		•	•	•	•
	18/CONNECT 4800		•	•	•	•
	20/CONNECT 7200		•	•	•	•
	21/CONNECT 12000		•	•	•	•
	25/CONNECT 14400		•	•	•	•
	43/CONNECT 16800		•	•	•	•
	85/CONNECT 19200		•	•	•	•
	91/CONNECT 21600		•	•	•	•
	99/CONNECT 24000		•	•	•	•
	103/CONNECT 26400		•	•	•	•
	107/CONNECT 28800		•	•	•	•
	151/CONNECT 31200		•	•	•	•
	155/CONNECT 33600		•	•	•	•
	256/CONNECT 28000		•	•	•	•
	260/CONNECT 29333		•	•	•	•
	264/CONNECT 30666		•	•	•	•
	268/CONNECT 32000		•	•	•	•
	180/CONNECT 33333		•	•	•	•
	272/CONNECT 34666		•	•	•	•

TECHNICAL REFERENCE

Xn (Continued)	Xn Setting					
Result Codes (Continued)	X0	X1	X2	X3	X4	
276/CONNECT 36000		•	•	•	•	
184/CONNECT 37333		•	•	•	•	
280/CONNECT 38666		•	•	•	•	
284/CONNECT 40000		•	•	•	•	
188/CONNECT 41333		•	•	•	•	
192/CONNECT 42666		•	•	•	•	
196/CONNECT 44000		•	•	•	•	
200/CONNECT 45333		•	•	•	•	
204/CONNECT 46666		•	•	•	•	
208/CONNECT 48000		•	•	•	•	
212/CONNECT 49333		•	•	•	•	
216/CONNECT 50666		•	•	•	•	
220/CONNECT 52000		•	•	•	•	
224/CONNECT 53333		•	•	•	•	
228/CONNECT 54666		•	•	•	•	
232/CONNECT 56000		•	•	•	•	
236/CONNECT 57333		•	•	•	•	
Adaptive Dialling			•	•	•	
Wait for 2nd Dial Tone (W)			•		•	
Wait for Answer (@)				•	•	
Fast Dial					•	

TECHNICAL REFERENCE

Yn **Selects power-on/reset default configuration**

- * Y0 *Use profile 0 setting in NVRAM*
- Y1 *Use profile 1 setting in NVRAM*
- Y2 *Use factory configuration 0 (&F0)*
- Y3 *Use factory configuration 1 (&F1)*
- Y4 *Use factory configuration 2 (&F2)*

Z **Resets modem**

- Z0 *Resets modem to NVRAM profile selected by Y command or dip 7*
- Z1 *Resets modem to NVRAM profile 0*
- Z2 *Resets modem to NVRAM profile 1*
- Z3 *Resets modem to factory default profile 0 (&F0)*
- Z4 *Resets modem to factory default profile 1 (&F1)*
- Z5 *Resets modem to factory default profile 2 (&F2)*

Extended Data Commands

&\$ **Displays a list of ampersand (&) commands**

&An **Enables/disables additional result code subsets (see Xn)**

- &A0 *ARQ result codes disabled*
- &A1 *ARQ result codes enabled*
- &A2 *Modulation indicator added*
- *- &A3 *Protocol indicators addedæ LAPM/MNP/NONE (error control) and V42bis/MNP5 (data compression)*

TECHNICAL REFERENCE

&Bn	Manages modem's serial port rate
	&B0 Variable, follows connection rate
*	&B1 <i>Fixed serial port rate</i>
	&B2 Fixed in ARQ mode, variable in non-ARQ mode
&Cn	Controls Carrier Detect (CD) signal.
	&C0 CD override
*	&C1 <i>Normal CD operations</i>
&Dn	Controls Data Terminal Ready (DTR) operations
	&D0 DTR override
	&D1 DTR toggle causes online Command mode
*	&D2 <i>Normal DTR operations</i>
	&D3 Resets on receipt of DTR
&Fn	Loads a read-only (non-programmable) factory configuration
	&F0 Generic template, no flow control
	&F1 Hardware flow control template
	&F2 Software flow control template

TECHNICAL REFERENCE

&Hn Sets Transmit Data (TD) flow control (see also &Rn)

- &H0 Flow control disabled
- * &H1 *Hardware flow control, Clear to Send (CTS)*
- &H2 Software flow control, XON/XOFF
- &H3 Hardware and software flow control

&In Sets Receive Data (RD) software flow control (see also &Rn)

- &I0 *Software flow control disabled*
- &I1 XON/XOFF signals to your modem and remote system
- &I2 XON/XOFF signals to your modem only

&Kn Enables/disables data compression

- &K0 Data compression disabled
- * &K1 *Auto enable/disable*
- &K2 Data compression enabled
- &K3 MNP5 compression disabled

&Mn Sets Error Control (ARQ) for connections at 1200 bps and higher

- &M0 Normal mode, error control disabled
- &M1 Reserved
- &M2 Reserved
- &M3 Reserved
- * &M4 *Normal/ARQ*
- &M5 ARQ mode

TECHNICAL REFERENCE

&Nn Sets connect speed, if connection cannot be made at this speed, the modem will hang up. When used in conjunction with &Un and &Un is greater than 0, &Nn sets the ceiling connect speed. &Un sets the floor connect speed. (See also the table in the &Un section.)

*	&N0	Connection speed is determined by the remote modem
	&N1	300 bps
	&N2	1200 bps
	&N3	2400 bps
	&N4	4800 bps
	&N5	7200 bps
	&N6	9600 bps
	&N7	12,000 bps
	&N8	14,400 bps
	&N9	16,800 bps
	&N10	19,200 bps
	&N11	21,600 bps
	&N12	24,000 bps
	&N13	26,400 bps
	&N14	28,800 bps
	&N15	31,200 bps
	&N16	33,600 bps

&Rn Sets Receive Data (RD) hardware flow control, Request to Send (RTS) (see also &Hn)

&R0	Reserved
&R1	Modem ignores RTS

TECHNICAL REFERENCE

* &R2 *Received Data to computer only on RTS*

&Sn Controls Data Set Ready (DSR) operations

* &S0 *DSR override; always ON*
 &S1 Modem controls DSR

&Tn Begins test modes.

 &T0 Ends testing
 &T1 Analogue Loopback
 &T2 Reserved
 &T3 Local Digital Loopback
 &T4 Enables Remote Digital Loopback
* &T5 *Prohibits Remote Digital Loopback*
 &T6 Initiates Remote Digital Loopback
 &T7 Remote Digital with self-test and error detector
 &T8 Analogue Loopback with self-test and error detector

TECHNICAL REFERENCE

&Un

&U0	<i>No restrictions on the minimum speed for the connection</i>
&U1	300 bps
&U2	1200 bps
&U3	2400 bps
&U4	4800 bps
&U5	7200 bps
&U6	9600 bps
&U7	12,000 bps
&U8	14,400 bps
&U9	16,800 bps
&U10	19,200 bps
&U11	21,600 bps
&U12	24,000 bps
&U13	26,400 bps
&U14	28,800 bps
&U15	31,200 bps
&U16	33,600 bps

TECHNICAL REFERENCE

&Wn Writes current configuration to NVRAM templates

&W0 Modifies the NVRAM 0 template (Y0)
&W1 Modifies the NVRAM 1 template (Y1)

&Yn Sets break handling

&Y0 Destructive, but doesn't send break
* &Y1 *Destructive, expedited*
&Y2 Nondestructive, expedited
&Y3 Nondestructive, unexpedited

&Zn=s Writes phone number string *s* to NVRAM at position *n* (*n* = 0–3)

&Zn=L Writes last executed dial string to NVRAM at position *n* (*n* = 0–3)

&Zn? Displays the phone number stored at position *n* (*n* = 0–3)

&ZL? Displays the last executed dial string

+++ Escapes to online-command mode

S-Registers

To change a setting, use the `ATSr=n` command, where *r* is the register and *n* is a decimal value from 0 – 255 (unless otherwise indicated).

Register	Default	Function
S0	0	Sets the number of rings on which to answer in Auto Answer mode. When set to 0, Auto Answer is disabled.
S1	0	Counts and stores the number of rings from an incoming call. (S0 must be greater than 0.)
S2	43	Stores the ASCII decimal code for the escape code character. Default character is +. A value of 128 – 255 disables the escape code.
S3	13	Stores the ASCII code for the Carriage Return character. Valid range is 0 – 127.
S4	10	Stores the ASCII decimal code for the Line Feed character. Valid range is 0 – 127.
S5	8	Stores the ASCII decimal code for the Backspace character. A value of 128–255 disables the Backspace key's delete function.
S6	2	Sets the number of seconds the modem waits before dialling. If <i>Xn</i> is set to X2 or X4, this is the time-out length if there isn't a dial tone.
S7	60	Sets the number of seconds the modem waits for a carrier.

TECHNICAL REFERENCE

Register	Default	Function																		
S8	2	Sets the duration, in seconds, for the pause (,) option in the Dial command.																		
S9	6	Sets the required duration, in tenths of a second, of the remote modem's carrier signal before recognition by the 3Com U.S. Robotics modem.																		
S10	14	Sets the duration, in tenths of a second, that the modem waits to hang up after loss of carrier. This guard time allows the modem to distinguish between a line disturbance from a true disconnect (hang up) by the remote modem. Note: If you set S10 = 255, the modem will not hang up when carrier is lost. Dropping DTR hangs up the modem.																		
S11	70	Sets the duration and spacing, in milliseconds, for tone dialling.																		
S12	50	Sets the duration, in fiftieths of a second, of the guard time for the escape code sequence (+++).																		
S13	0	Bit-mapped register. Select the bit(s) you want on and set S13 to the total of the values in the Value column. For example, ATS13 = 17 enables bit 0 (value is 1) and bit 4 (value is 16). <table> <tr> <th>Bit</th><th>Value</th><th>Result</th></tr> <tr> <td>0</td><td>1</td><td>Reset when DTR drops.</td></tr> <tr> <td>1</td><td>2</td><td>Reset non-MNP transmit buffer from 1.5K to 128 bytes.*</td></tr> <tr> <td>2</td><td>4</td><td>Set backspace key to delete.</td></tr> <tr> <td>3</td><td>8</td><td>On DTR signal, auto dial the number stored in NVRAM at position 0.</td></tr> <tr> <td>4</td><td>16</td><td>At power on/reset, auto dial the number stored in NVRAM at position 0.</td></tr> </table>	Bit	Value	Result	0	1	Reset when DTR drops.	1	2	Reset non-MNP transmit buffer from 1.5K to 128 bytes.*	2	4	Set backspace key to delete.	3	8	On DTR signal, auto dial the number stored in NVRAM at position 0.	4	16	At power on/reset, auto dial the number stored in NVRAM at position 0.
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TECHNICAL REFERENCE

Register Default Function

S13 (Continued)

Bit	Value	Result
5	32	Reserved
6	64	Disable quick retrains.
7	128	Disconnect on escape code.

* The 1.5K-byte non-ARQ buffer allows data transfer with Xmodem- and Ymodem-type file transfer protocols without using flow control.

The 128-byte option lets remote users with slower modems keep data you're sending from scrolling off their screens. When remote users send your computer an XOFF (Ctrl-S) and you stop transmitting, the data in transit from your modem's buffer does not exceed the size of their screen. This is also very helpful in situations when a remote modem/printer application is losing characters.

S14 0 Reserved

S15 0 Bit-mapped register setup. To set the register, see instructions for S13.

Bit	Value	Result
0	1	Disable ARQ/MNP for V.22.
1	2	Disable ARQ/MNP for V.22bis.
2	4	Disable ARQ/MNP V.32/V.32bis/V.32terbo.
3	8	Disable MNP handshake.
4	16	Disable MNP level 4.

TECHNICAL REFERENCE

Register Default Function

S15 (Continued)

Bit	Value	Result
5	32	Disable MNP level 3.
6	64	MNP incompatibility.
7	128	Disable V.42 operation.

To disable V.42 detect phase, select the total of the values for bits 3 and 7 (in other words S15 = 136 [the sum of values 8 and 128])

S16	0	Reserved
S17	0	Reserved
S18	0	Test timer for &T loopback testing. Sets the time in seconds of testing before the modem automatically times out and terminates the test. When set to 0, the timer is disabled. Valid range is 1-255.
S19	0	Sets the duration, in minutes, for the inactivity timer. The timer activates when there is no data activity on the phone line; at time-out the modem hangs up. S19 = 0 disables the timer.
S20	0	Reserved
S21	10	Sets the length, in 10-millisecond units, of breaks sent from the modem to the computer; applies to MNP or V.42 mode only.

TECHNICAL REFERENCE

Register	Default	Function																								
S22	17	Stores the ASCII decimal code for the XON character.																								
S23	19	Stores the ASCII decimal code for the XOFF character.																								
S24	0	Reserved																								
S25	20	Sets the duration, in hundredths of a second, that DTR must be dropped so that the modem doesn't interpret a random glitch as a DTR loss. (Most users will want to use the default; this register is useful for setting compatibility with older systems running under older operating software.)																								
S26	0	Reserved																								
S27	0	Bit-mapped register setup. To set the register, see instructions for S13.																								
		<table> <tr> <th>Bit</th><th>Value</th><th>Result</th></tr> <tr> <td>0</td><td>1</td><td>Enables ITU-T V.21 modulation at 300 bps for U.K. calls</td></tr> <tr> <td>1</td><td>2</td><td>Enables unencoded (non-trellis coded) modulation in V.32 mode.</td></tr> <tr> <td>2</td><td>4</td><td>Disables V.32 modulation.</td></tr> <tr> <td>3</td><td>8</td><td>Disables 2100 Hz answer tone to allow two V.42 modems to connect faster.</td></tr> <tr> <td>4</td><td>16</td><td>Enables V.23 fallback mode.</td></tr> <tr> <td>5</td><td>32</td><td>Disables V.32bis mode.</td></tr> <tr> <td>6</td><td>64</td><td>Disable V.42 selective reject.</td></tr> </table>	Bit	Value	Result	0	1	Enables ITU-T V.21 modulation at 300 bps for U.K. calls	1	2	Enables unencoded (non-trellis coded) modulation in V.32 mode.	2	4	Disables V.32 modulation.	3	8	Disables 2100 Hz answer tone to allow two V.42 modems to connect faster.	4	16	Enables V.23 fallback mode.	5	32	Disables V.32bis mode.	6	64	Disable V.42 selective reject.
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TECHNICAL REFERENCE

Register	Default	Function
S27 (Continued)		
		Bit Value Result 7 128 Software compatibility mode. This setting disables the codes and displays the 9600 code instead. The actual rate of the call can be viewed on the ATI6 screen. Used for unusual software incompatibilities. Some software may not accept 7200, 12,000, and 14,400 bps or greater result codes.
S28	0	Eliminates the V.32 answer tones for a faster connection.
	8	Default item, all times are in tenths of seconds.
	255	Disables all connections except V.32 at 9600 bps.
S29	20	Sets the duration, in tenths of a second, of the V.21 answer mode fallback timer.
S30	0	Reserved
S31	128	Reserved

TECHNICAL REFERENCE

Register	Default	Function																											
S32	2	Bit-mapped register setup. To set the register, see the instructions for S13.																											
		<table> <tr> <th>Bit</th><th>Value</th><th>Result</th></tr> <tr> <td>0</td><td>1</td><td>V.8 Call Indicate enabled.</td></tr> <tr> <td>1</td><td>2</td><td>Enables V.8 mode.</td></tr> <tr> <td>2</td><td>4</td><td>Reserved.</td></tr> <tr> <td>3</td><td>8</td><td>Disable V.34 modulation.</td></tr> <tr> <td>4</td><td>16</td><td>Disable V.34+ modulation.</td></tr> <tr> <td>5</td><td>32</td><td>Disable x2 modulation.</td></tr> <tr> <td>6</td><td>64</td><td>Disable V.90 modulation.</td></tr> <tr> <td>7</td><td>128</td><td>Reserved.</td></tr> </table>	Bit	Value	Result	0	1	V.8 Call Indicate enabled.	1	2	Enables V.8 mode.	2	4	Reserved.	3	8	Disable V.34 modulation.	4	16	Disable V.34+ modulation.	5	32	Disable x2 modulation.	6	64	Disable V.90 modulation.	7	128	Reserved.
Bit	Value	Result																											
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4	16	Disable V.34+ modulation.																											
5	32	Disable x2 modulation.																											
6	64	Disable V.90 modulation.																											
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S33	0	Bit-mapped register setup. To set the register, see the instructions for S13.																											
		<table> <tr> <th>Bit</th><th>Value</th><th>Result</th></tr> <tr> <td>0</td><td>1</td><td>Disable 2400 symbol rate.</td></tr> <tr> <td>1</td><td>2</td><td>Disable 2743 symbol rate.</td></tr> <tr> <td>2</td><td>4</td><td>Disable 2800 symbol rate.</td></tr> <tr> <td>3</td><td>8</td><td>Disable 3000 symbol rate.</td></tr> <tr> <td>4</td><td>16</td><td>Disable 3200 symbol rate.</td></tr> <tr> <td>5</td><td>32</td><td>Disable 3429 symbol rate.</td></tr> <tr> <td>6</td><td>64</td><td>Reserved</td></tr> <tr> <td>7</td><td>128</td><td>Disable shaping.</td></tr> </table>	Bit	Value	Result	0	1	Disable 2400 symbol rate.	1	2	Disable 2743 symbol rate.	2	4	Disable 2800 symbol rate.	3	8	Disable 3000 symbol rate.	4	16	Disable 3200 symbol rate.	5	32	Disable 3429 symbol rate.	6	64	Reserved	7	128	Disable shaping.
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2	4	Disable 2800 symbol rate.																											
3	8	Disable 3000 symbol rate.																											
4	16	Disable 3200 symbol rate.																											
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TECHNICAL REFERENCE

Register	Default	Function																											
S34	0	Bit-mapped register setup. To set registers, see instructions for S13. <table> <tr> <th>Bit</th><th>Value</th><th>Result</th></tr> <tr> <td>0</td><td>1</td><td>Disable 8S-2D trellis encoding.</td></tr> <tr> <td>1</td><td>2</td><td>Disable 16S-4D trellis encoding.</td></tr> <tr> <td>2</td><td>4</td><td>Disable 32S-2D trellis encoding.</td></tr> <tr> <td>3</td><td>8</td><td>Disable 64S-4D trellis encoding.</td></tr> <tr> <td>4</td><td>16</td><td>Disable non-linear coding.</td></tr> <tr> <td>5</td><td>32</td><td>Disable TX level deviation.</td></tr> <tr> <td>6</td><td>64</td><td>Disable Pre-emphasis.</td></tr> <tr> <td>7</td><td>128</td><td>Disable Pre-coding.</td></tr> </table>	Bit	Value	Result	0	1	Disable 8S-2D trellis encoding.	1	2	Disable 16S-4D trellis encoding.	2	4	Disable 32S-2D trellis encoding.	3	8	Disable 64S-4D trellis encoding.	4	16	Disable non-linear coding.	5	32	Disable TX level deviation.	6	64	Disable Pre-emphasis.	7	128	Disable Pre-coding.
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0	1	Disable 8S-2D trellis encoding.																											
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3	8	Disable 64S-4D trellis encoding.																											
4	16	Disable non-linear coding.																											
5	32	Disable TX level deviation.																											
6	64	Disable Pre-emphasis.																											
7	128	Disable Pre-coding.																											
S35-S37		Reserved																											
S38	0	Sets an optional delay, in seconds, before a forced hang-up and clearing of the Transmit buffer when DTR drops during an ARQ call. This allows time for a remote modem to acknowledge receipt of all transmitted data before it is disconnected. The modem immediately hangs up when DTR drops. This option only applies to connections terminated by dropping DTR. If the modem receives the ATH command, it ignores S38 and immediately hangs up.																											
S39-S40		Reserved																											
S41	0	Reserved																											
S42	0	Reserved																											

Fax Commands

+FCLASS=<i>n</i>	Sets the mode of operation <i>FCLASS=0</i> <i>Data mode</i> <i>FCLASS=1</i> Group 3 Facsimile Service Class 1 mode <i>FCLASS=2.0</i> Group 3 Facsimile Service Class 2.0 mode
FCLASS?	Displays the current FCLASS mode (see mode descriptions above)
+FCLASS=?	Displays the FCLASS mode options (see mode descriptions above)
+FTS=<i>n</i>	Stops the fax transmission. Then the modem waits for a specified time before OK appears on screen. The pause is set in 10 millisecond intervals. <i>n</i> is the number of 10 millisecond intervals that pass before OK appears. (<i>n</i> =0-255)
+FRS=<i>n</i>	Makes the modem wait for a specified length of silence before sending OK to the screen. The pause is set in 10 millisecond intervals. <i>n</i> is the number of 10 millisecond intervals that pass before OK appears. (<i>n</i> =0-255) Note: This command terminates with OK when either the specified amount of silence is detected or when the user anything (which is ignored).
+FTM=<i>n</i>	Transmits data using the modulation specified by <i>n</i> . (<i>n</i> = 3, 24, 48, 72, 96, 97, 98, 121, 122, 145, or 146) Note: See the "Screen Messages" table at the end of this section for an explanation of messages that appear in response to this command.

TECHNICAL REFERENCE

- +FRM=*n*** Receives data using the modulation specified by *n*. (*n* = 3, 24, 48, 72, 96, 97, 98, 121, 122, 145, or 146)
Note: See the “Screen Messages” table at the end of this section for an explanation of messages that appear in response to this command.
- +FTH=*n*** Transmits data framed in the HDLC protocol using the modulation specified by *n*. (*n* = 3, 24, 48, 72, 96, 97, 98, 121, 122, 145, or 146)
Note: See the “Screen Messages” table at the end of this section for an explanation of messages that appear in response to this command.
- +FRH=*n*** Receives data framed in the HDLC protocol using the modulation specified by *n*. (*n* = 3, 24, 48, 72, 96, 97, 98, 121, 122, 145, or 146)
Note: See the “Screen Messages” table at the end of this section for an explanation of messages that appear in response to this command.

Screen Messages

Displayed as a number	Displayed in words	Description
0	OK	The previous command has been processed successfully.
1	CONNECT	The modem has just connected to another modem.
2	RING	Reports the receipt of a network altering ring.
3	NO CARRIER	No carrier is being received from the modem.
4	ERROR	The previous command line has not been recognized or was completed abnormally.
5	NO DIAL TONE	(Optional) Dial tone was not received within the time-out period.
6	BUSY	(Optional) A busy signal was detected.
64	CONNECT/ FAX	(Optional) The modem has established a connection. This response is used only when the fax mode is selected.

Front Panel Lights (External Modems Only)

Symbol	Meaning	Status
AA	Auto Answer	Answer mode: ON when register S0 is set to 1 or higher (Auto Answer), and when answering a call; OFF when modem originates a call. Light flashes when there is an incoming call.
CD	Carrier Detect	ON if modem receives a valid data signal (carrier) from a remote modem, indicating that data transmission is possible. Always ON if CD override is ON (&C0).
RD	Received Data	Flashes when modem sends result codes or passes received data bits from remote.
SD	Send Data	Flashes when computer sends a data bit to modem.
TR	Data Terminal Ready	ON if modem receives a DTR signal from computer. Always ON (modem ignores DTR) if the DTR override is ON (&D0).

TECHNICAL REFERENCE

Symbol	Meaning	Status
CS.....	Clear to Send	ON until modem lowers CTS when Transmit Data hardware flow control is enabled (&H1, &H3).
ARQ/	Error Control/	
FAX.....	Fax Operations	Data Mode: Automatic Repeat Request. ON if modem is set to &M4 or &M5 and successfully establishes an error control connection. Flashes when modem retransmits data to remote modem.
.....		Fax Mode: Flashes to indicate fax mode.
.....		56K Message Modem: Dual color LED with green indicating 56K Message Modem is enabled and red indicating it is off. Solid green indicates no new messages. Each new message will be indicated by a single slow blink. Fast blinking indicates that the flash memory is full.
OH	Off Hook	ON when modem accesses the phone line. Off when modem is On Hook.

TECHNICAL REFERENCE

The Serial Interface

The serial interface is a standard developed by the Electronic Industries Association (EIA). It defines the signals and voltages used when data is exchanged between a computer and a modem or serial printer.

The entire standard covers many more functions than are used in most data communications applications. Data is transmitted between the devices over a shielded serial cable with a 25-pin male (DB-25P) connector to the modem and a 25-pin, 9-pin, 8-pin, or custom-built connector to the computer.

Pin assignments are factory-set in the 56K Message Modem to match the standard DB-25 assignments in the following table. DB-9 connectors for IBM/AT-compatible computers should be wired at the computer end of the cable as shown in the DB-9 column.

Serial Interface Pin Definitions

DB-25DB-9 Circuit			Function	Signal Source Computer/Modem
1	—	AA	Chassis Ground	Both
2	3	BA	Transmitted Data	Computer
3	2	BB	Received Data	Modem
4	7	CA	Request to Send	Computer
5	8	CB	Clear to Send	Modem
6	6	CC	Data Set Ready	Modem
7	5	AB	Signal Ground	Both

TECHNICAL REFERENCE

DB-25DB-9 Circuit			Function	Signal Source Computer/Modem
8	1	CF	Carrier Detect	Modem
12	—	SCF	Speed Indicate	Modem
20	4	CD	Data Terminal Ready	Computer
22	9	CE	Ring Indicate	Modem



*IMPORTANT! In accordance with the ITU standard for V.90 transmissions, this modem is capable of 56 Kbps downloads. However, the download speeds you experience may be lower due to varying line conditions and other factors. Uploads from users to server equipment travel at speeds up to 31.2 Kbps. An analogue phone line compatible with the ITU V.90 standard USRobotics proprietary 56K technology, and an Internet provider or corporate host site with the ITU V.90 standard or USRobotics proprietary 56K technology are necessary for these high-speed downloads.

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