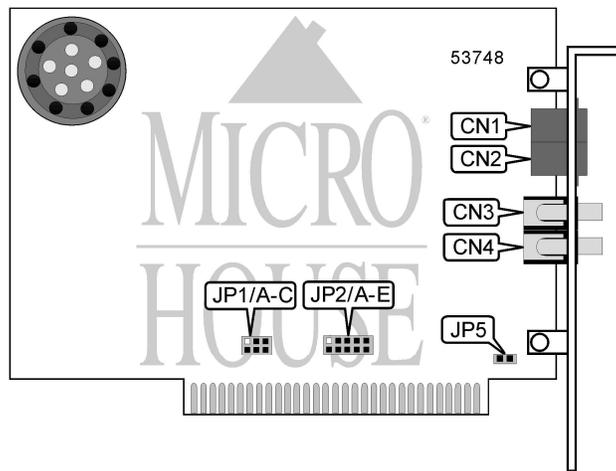


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Card Type	Modem (asynchronous)
Chipset	Unidentified
I/O Options	Voice, speakerphone, microphone in, speaker out
Maximum Data Rate	56Kbps
Maximum Fax Rate	14.4Kbps
Data Modulation	Bell 103A/212A ITU-T V.21, V.22, V.22bis, V.23, V.32, V.32bis, V.34 U.S. Robotics x2
Fax Modulation	ITU-T V.17, V.21CH2, V.27ter, V.29
Error Correction/Compression	MNP5, V.42, V.42bis
Fax Class	Class I & II
Data Bus	8-bit ISA
Card Size	Full height, one-third length



CONNECTIONS			
Function	Label	Function	Label
Telephone line out	CN1	Microphone in or speaker out	CN3
Telephone line in	CN2	Microphone in or speaker out	CN4
Note: It is not known which of CN3 and CN4 is the microphone in jack and which is the speaker out jack.			

USER CONFIGURABLE SETTINGS			
Setting	Label	Position	
Plug-N-Play disabled	JP1/C	Closed	i
Plug-N-Play enabled	JP1/C	Open	
Speakers attached to CN4 are stereo	JP5	Closed	
Speakers attached to CN4 are mono	JP5	Open	
Note: When JP1/C is set for Plug-N-Play mode, all other applicable settings must also be set for Plug-N-Play mode.			

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SERIAL PORT ADDRESS SELECTION		
Setting	JP1/A	JP1/B
3F8h (COM1:)	Closed	Closed
i 2E8h (COM2:)	Open	Closed
3F8h (COM3:)	Closed	Open
2E8h (COM4:)	Open	Open
Plug-N-Play	Open	Open

INTERRUPT SELECTION					
Setting	JP2/A	JP2/B	JP2/C	JP2/D	JP2/E
2	Closed	Open	Open	Open	Open
i 3	Open	Closed	Open	Open	Open
4	Open	Open	Closed	Open	Open
5	Open	Open	Open	Closed	Open
7	Open	Open	Open	Open	Closed
Plug-N-Play	Open	Open	Open	Open	Open

SUPPORTED STANDARD COMMANDS
Basic AT Commands
+++ , 'comma' , A/
A, B, E, F, H, L, M, O, P, T, V, X, Z
&C, &D, &F, &G, &P, &R, &S, &T, &W
S-Registers
S0, S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11, S12, S18, S25
Note: See MHI help file for complete information.

UNIDENTIFIED COMMANDS	
Command	Default
S13	0
S15	0
S16	0
S27	0
S32	0
S33	0
S34	0

Continued on next page. . .

Proprietary AT Command Set

BREAK LENGTH	
Type:	Register
Format:	AT [cmds] S21= <i>n</i> [cmds]
Default:	10
Range:	0 - 255
Unit:	10 ms
Description:	Sets the length of the breaks sent from modem to the DTE when in error correction mode .

BREAK TYPE	
Type:	Configuration
Format:	AT [cmds] &Y <i>n</i> [cmds]
Description:	Configures action of break signal.
Command	Function
&Y0	Break empties buffer.
i &Y1	Break empties buffer and is sent immediately.
&Y2	Break does not empty buffer and is sent immediately.

COMPRESSION MODE	
Type:	Configuration
Format:	AT [cmds] &K <i>n</i> [cmds]
Description:	Selects the type of data compression that will be used.
Command	Function
&K0	Data compression disabled.
i &K1	Auto-detect compression mode.
&K2	Data compression enabled.
&K3	MNP5 data compression only enabled.

CONNECTION SPEED LOWER LIMIT	
Type:	Configuration
Format:	AT [cmds] &U <i>n</i> [cmds]
Description:	Sets slowest allowed connection speed if &N is set to 1 or higher.
Command	Function
&U0	No minimum connect speed.
&U1	Set minimum connect speed to 300bps.
&U2	Set minimum connect speed to 1200bps.
&U3	Set minimum connect speed to 2400bps.
&U4	Set minimum connect speed to 4800bps.
&U5	Set minimum connect speed to 7200bps.
&U6	Set minimum connect speed to 9600bps.
&U7	Set minimum connect speed to 12Kbps.
&U8	Set minimum connect speed to 14.4Kbps.
&U9	Set minimum connect speed to 16.8Kbps.

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CONNECTION SPEED LOWER LIMIT (CON'T)	
Command	Function
&U10	Set minimum connect speed to 19.2Kbps.
&U11	Set minimum connect speed to 21.6Kbps.
&U12	Set minimum connect speed to 24Kbps.
&U13	Set minimum connect speed to 26.4Kbps.
&U14	Set minimum connect speed to 28.8Kbps.
&U15	Set minimum connect speed to 31.2Kbps.
&U16	Set minimum connect speed to 33.6Kbps.
&U17	Set minimum connect speed to 33.3Kbps.
&U18	Set minimum connect speed to 37.3Kbps.
&U19	Set minimum connect speed to 41.3Kbps.
&U20	Set minimum connect speed to 42.6Kbps.
&U21	Set minimum connect speed to 44Kbps.
&U22	Set minimum connect speed to 45.3Kbps.
&U23	Set minimum connect speed to 46.6Kbps.
&U24	Set minimum connect speed to 48Kbps.
&U25	Set minimum connect speed to 49.3Kbps.
&U26	Set minimum connect speed to 50.6Kbps.
&U27	Set minimum connect speed to 52Kbps.
&U28	Set minimum connect speed to 53.3Kbps.
&U29	Set minimum connect speed to 54.6Kbps.
&U30	Set minimum connect speed to 56Kbps.
&U31	Set minimum connect speed to 57.3Kbps.

CONNECTION SPEED UPPER LIMIT	
Type:	Configuration
Format:	AT [cmds] &Nn [cmds]
Description:	Sets required connection speed if &U is set to 0; otherwise, sets fastest allowed connection speed.
Command	Function
&N0	No maximum connect speed.
&N1	Set maximum connect speed to 300bps.
&N2	Set maximum connect speed to 1200bps.
&N3	Set maximum connect speed to 2400bps.
&N4	Set maximum connect speed to 4800bps.
&N5	Set maximum connect speed to 7200bps.
&N6	Set maximum connect speed to 9600bps.
&N7	Set maximum connect speed to 12Kbps.
&N8	Set maximum connect speed to 14.4Kbps.
&N9	Set maximum connect speed to 16.8Kbps.
&N10	Set maximum connect speed to 19.2Kbps.
&N11	Set maximum connect speed to 21.6Kbps.
&N12	Set maximum connect speed to 24Kbps.
&N13	Set maximum connect speed to 26.4Kbps.
&N14	Set maximum connect speed to 28.8Kbps.

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CONNECTION SPEED UPPER LIMIT (CON'T)	
Command	Function
&N15	Set maximum connect speed to 31.2Kbps.
&N16	Set maximum connect speed to 33.6Kbps.
&N17	Set maximum connect speed to 33.3Kbps.
&N18	Set maximum connect speed to 37.3Kbps.
&N19	Set maximum connect speed to 41.3Kbps.
&N20	Set maximum connect speed to 42.6Kbps.
&N21	Set maximum connect speed to 44Kbps.
&N22	Set maximum connect speed to 45.3Kbps.
&N23	Set maximum connect speed to 46.6Kbps.
&N24	Set maximum connect speed to 48Kbps.
&N25	Set maximum connect speed to 49.3Kbps.
&N26	Set maximum connect speed to 50.6Kbps.
&N27	Set maximum connect speed to 52Kbps.
&N28	Set maximum connect speed to 53.3Kbps.
&N29	Set maximum connect speed to 54.6Kbps.
&N30	Set maximum connect speed to 56Kbps.
&N31	Set maximum connect speed to 57.3Kbps.

DIAL	
Type:	Immediate
Format:	AT [cmds] D<#>;[cmds]
Description:	Dials the telephone number indicated according to any modifiers included in the string.
Command	Function
DL	Re-dial last number.
DP	Pulse dialing enabled.
DR	Answer mode enabled; originate mode disabled following handshake initiation.
DS n	Dial stored telephone number n .
DT	Tone dialing enabled.
DW	Dialing resumed following dial tone detection.
D,	Dialing paused for amount of time specified in S8 register.
D/	Dialing paused for 1/8 second.
D!	Flash function initiated. Modem commanded to go off-hook for specified time before returning on-hook.
D@	Wait for Quiet Answer function enabled. Modem waits until a "quiet answer," a ring-back signal followed by silence up to the time specified in S7, is received prior to executing the rest of the dial string.
D\$	Wait for prompt tone detection function enabled. Waits for prompt tone for amount of time specified by the S7 command.
D;	Modem returned to idle state after dialing. The semicolon can only be placed at the end of the dial command.

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DISPLAY CHIPSET MANUFACTURER	
Type:	Immediate
Format:	AT [cmds] #MFR? [cmds]
Description:	Displays the voice chipset manufacturer's name.

DISPLAY CHIPSET MODEL NAME	
Type:	Immediate
Format:	AT [cmds] #MDL? [cmds]
Description:	Displays the model name of the modem's voice chipset.

DISPLAY CHIPSET REVISION	
Type:	Immediate
Format:	AT [cmds] #REV? [cmds]
Description:	Displays the revision level of the modem's voice chipset.

DISPLAY HELP SCREEN - AMPERSAND	
Type:	Configuration
Format:	AT [cmds] &\$ [cmds]
Description:	Displays the help screen on the AT& commands.

DISPLAY HELP SCREEN - BASIC	
Type:	Configuration
Format:	AT [cmds] \$ [cmds]
Description:	Displays the basic help screen.

DISPLAY HELP SCREEN - DIAL	
Type:	Configuration
Format:	AT [cmds] D\$ [cmds]
Description:	Displays the help screen on the dialing commands.

DISPLAY HELP SCREEN - REGISTERS	
Type:	Configuration
Format:	AT [cmds] S\$ [cmds]
Description:	Displays the help screen for S registers.

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DISPLAY INFORMATION	
Type:	Immediate
Format:	AT [cmds] In [cmds]
Description:	Displays modem properties.
Command	Function
I0	Displays product identification code.
I1	Tests and displays ROM checksum result.
I2	Tests and displays RAM checksum result.
I3	Displays product identification.
I4	Displays current command settings.
I5	Displays current NVRAM settings.
I6	Displays current connection's statistics.
I7	Displays product configuration.

ERROR CORRECTION MODE	
Type:	Configuration
Format:	AT [cmds] &Mn [cmds]
Description:	Selects active error correction protocols.
Command	Function
&M0	Normal mode only.
i &M4	Auto-detect mode.
&M5	Error correction mode only.

EXTENDED RESULT CODES	
Type:	Configuration
Format:	AT [cmds] &An [cmds]
Description:	Selects extended result codes.
Command	Function
&A0	Extended result codes disabled.
&A1	Error correction result codes enabled.
&A2	V.32 result code enabled.
i &A3	Error correction and compression result codes enabled.

FLOW CONTROL TYPE	
Type:	Configuration
Format:	AT [cmds] &Hn [cmds]
Description:	Sets type of flow control used by modem.
Command	Function
&H0	Flow control disabled.
i &H1	CTS/RTS flow control enabled.
&H2	XON/XOFF flow control enabled.
&H3	CTS/RTS and XON/XOFF flow control enabled.

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FLOW CONTROL CHARACTER - XOFF	
Type:	Register
Format:	AT [cmds] S23= <i>n</i> [cmds]
Default:	19
Range:	0 - 127
Unit:	1 ASCII character
Description:	Sets the character used to represent XOFF.

FLOW CONTROL CHARACTER - XON	
Type:	Register
Format:	AT [cmds] S22= <i>n</i> [cmds]
Default:	17
Range:	0 - 127
Unit:	1 ASCII character
Description:	Sets the character used to represent XON.

FLOW CONTROL - MODEM-TO-MODEM	
Type:	Configuration
Format:	AT [cmds] &I <i>n</i> [cmds]
Description:	Selects the type of modem-to-modem flow control used.
Command	Function
&I0	Software flow control disabled.
&I1	XON/XOFF pass-through enabled.
&I2	XON/XOFF pass-through disabled.
&I3	Hewlett-Packard ENQ/ACK host mode enabled.
&I4	Hewlett-Packard ENQ/ACK terminal mode enabled.
&I5	XON/XOFF pass-through enabled in normal mode and disabled in error-correcting mode.

LOCK SERIAL PORT	
Type:	Configuration
Format:	AT [cmds] &B <i>n</i> [cmds]
Description:	Sets operation of serial port speed.
Command	Function
&B0	Serial speed follows connect speed.
&B1	Serial speed locked.
i &B2	Serial speed locked in error correction mode only.

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MODE SELECTION	
Type:	Immediate
Format:	AT [cmds] #CLS= <i>n</i> [cmds]
Description:	Selects which mode the modem will operate in.
Command	Function
#CLS=0	Modem will operate in data mode.
#CLS=1	Modem will operate in fax class 1 mode.
#CLS=2	Modem will operate in fax class 2 mode.
#CLS=8	Modem will operate in voice mode.

PROFILE ON POWER-UP	
Type:	Configuration
Format:	AT [cmds] Y <i>n</i> [cmds]
Description:	Selects the profile that the modem will reset to on power-up.
Command	Function
i Y0	Modem resets to user profile 0 on power-up.
Y1	Modem resets to user profile 1 on power-up.
Y2	Modem resets to factory profile 0 on power-up.
Y3	Modem resets to factory profile 1 on power-up.
Y4	Modem resets to factory profile 2 on power-up.
Y6	Displays current connection's statistics.

RESULT CODES	
Type:	Configuration
Format:	AT [cmds] Q <i>n</i> [cmds]
Description:	Enables modem to send result codes to the DTE.
Command	Function
i Q0	Result codes enabled.
Q1	Result codes disabled.
Q2	Result codes enabled in originate mode only.

STORE TELEPHONE NUMBER	
Type:	Configuration
Format:	AT [cmds] &Z <i>n</i> =<#> AT [cmds] &Z <i>n</i> =L
Description:	Writes selected telephone numbers into the non-volatile memory at location <i>n</i> . If the second form is used, the modem will store the last number dialed.

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TONE DETECTION

AT [cmds] #VTD=x,y,z [cmds]

x,y,z 63

0 - 63

Sets which tones the tone detection will report.

The value of x sets the tone detection modes in voice transmit mode, y sets the voice command mode.

Value	Function
0	DTMF tones are not detected.
i 1	DTMF tones are detected.
0	V.25 1300Hz calling tone is not detected.
i 1	V.25 1300Hz calling tone is detected.
0	T.30 1100Hz fax tone is not detected.
i 1	T.30 1100Hz fax tone is detected.
0	V.25/T.30 2100Hz answer tone is not detected.
i 1	V.25/T.30 2100Hz answer tone is detected.
0	Bell 2225Hz answer tone is not detected.
i 1	Bell 2225Hz answer tone is detected.
0	Call progress tones are not detected.
i 1	Call progress tones are detected.

TONE GENERATOR - DIRECT ENTRY

Type:	Immediate
Format:	AT [cmds] #VTS=[m, n, x]
Range:	m 200-3000, n 200-3000, x 0-255
Unit:	m 1 Hz, n 1 Hz, x .1 second
Description:	Generates a dual-frequency tone for duration x at frequencies m and n.

TONE GENERATOR - TIMED PHONE KEYS

Type:	Immediate
Format:	AT [cmds] #VTS={a, n}
Range:	a 0-9, A-D, #, *; x 0-255
Unit:	x .1 second
Description:	Generates the DTMF tone for duration x for the character a.

TONE GENERATOR - PHONE KEYS

Type:	Immediate
Format:	AT [cmds] #VTS=a
Range:	0-9, A-D, #, *
Description:	Generates the DTMF tones for the characters in the string for the duration set with +VBT.

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TONE GENERATOR LENGTH	
Format:	AT [cmds] #VBT= <i>n</i> [cmds]
Default:	10
Range:	0 - 40
Unit:	0.1 second
Description:	Sets the length of DTMF tones that are generated.

V.21 ANSWER MODE FALLBACK TIMER	
Type:	Register
Format:	AT [cmds] S29= <i>n</i> [cmds]
Default:	20
Range:	0 - 255
Unit:	.1 second
Description:	The function of this register is unidentified.

V.32 HANDSHAKE TIME	
Type:	Register
Format:	AT [cmds] S28= <i>n</i> [cmds]
Default:	8
Range:	0 - 255
Unit:	.1 second
Description:	Sets length of V.32 handshaking phase.

VOICE BUFFER SPACE	
Type:	Configuration
Format:	AT [cmds] #VSK= <i>n</i> [cmds]
Default:	255
Range:	0 - 255
Unit:	1 byte
Description:	Sets the amount of data the modem can send into the buffer after the XOFF signal is sent.

VOICE DEVICE	
Type:	Configuration
Format:	AT [cmds] #VLS= <i>n</i> [cmds]
Description:	Selects the I/O device for the DSP chip.
Note:	This modem may not support all options listed below. The #VLS? command will display the available options.
Command	Function
i #VLS=0	Telephone line and handset used for voice I/O.
#VLS=1	Telephone handset used for voice I/O.
#VLS=2	Internal speaker only used for voice I/O.
#VLS=3	External microphone only used for voice I/O.
#VLS=4	Telephone line and handset used for voice I/O; internal speaker enabled.
#VLS=7	Handset muted by disconnecting the handset or speakerphone from the telephone line.
#VLS=9	Connects handset (or speakerphone) to DSP chip for recording or playback.

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VOICE - DISPLAY BUFFER SIZE	
Type:	Immediate
Format:	AT [cmds] #VBQ? [cmds]
Description:	Displays the size of the voice buffer.

VOICE - DISPLAY COMPRESSION TYPE	
Type:	Immediate
Format:	AT [cmds] #VCI? [cmds]
Description:	Displays the type of compression currently in use.

VOICE - LOCAL SERIAL PORT SPEED	
Type:	Configuration
Format:	AT [cmds] #BDR= <i>n</i> [cmds]
Default:	0
Range:	0 - 48
Unit:	2400bps
Description:	Sets the speed of the local serial port when in voice mode. A value of 0 indicates that the modem should auto-detect the correct serial port speed.

VOICE RE-RING DETECT TIME	
Type:	Configuration
Format:	AT [cmds] #VRA= <i>n</i> [cmds]
Default:	70
Range:	0 -255
Unit:	10 mS
Description:	Sets the maximum time the modem will wait for the remote station to ring again before it assumes that it has gone off-hook.

VOICE RECEIVE	
Type:	Immediate
Format:	AT [cmds] #VRX
Description:	Commands the modem to begin receiving voice data.

VOICE RING DETECT TIME	
Type:	Configuration
Format:	AT [cmds] #VRN= <i>n</i> [cmds]
Default:	70
Range:	0 - 255
Unit:	.1 second
Description:	Sets the maximum time the modem will wait for the remote station to ring before it assumes that it went off-hook before it rang.

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VOICE SAMPLE QUALITY	
Type:	Configuration
Format:	AT [cmds] #VBS= <i>n</i> [cmds]
Description:	Selects the number of bits per sample that the modem records.
Note:	This modem may not support all options listed below. The #VBS? command will display the available options.
Command	Function
#VBS=2	Modem records 2 bits per sample in ADPCM encoding.
#VBS=3	Modem records 3 bits per sample in ADPCM encoding.
i #VBS=4	Modem records 4 bits per sample in ADPCM encoding.
#VBS=8	Modem records 8 bits per sample in PCM encoding.
#VBS=16	Modem records 16 bits per sample in PCM encoding.

VOICE SAMPLING RATE	
Type:	Configuration
Format:	AT [cmds] #VSR= <i>n</i> [cmds]
Description:	Sets the sampling rate used when recording voice signals.
Command	Function
i #VSR=7200	Selects a sampling rate of 7.2KHz.
#VSR=8000	Selects a sampling rate of 8KHz.
#VSR=11025	Selects a sampling rate of 11.025KHz in PCM encoding only.

VOICE SILENCE DETECTION TIME	
Type:	Configuration
Format:	AT [cmds] #VSP= <i>n</i> [cmds]
Default:	55
Range:	0 - 255
Unit:	.1 second
Description:	Sets the minimum amount of silence that the modem will detect.

VOICE SILENCE DETECTION THRESHOLD	
Type:	Configuration
Format:	AT [cmds] #VSS= <i>n</i> [cmds]
Description:	Sets the threshold of sensitivity that the modem uses to determine silence detection.
Command	Function
#VSS=0	Silence detection disabled.
#VSS=1	Minimum silence detection sensitivity.
#VSS=2	Standard silence detection sensitivity.
#VSS=3	Maximum silence detection sensitivity.

VOICE TRANSMIT	
Type:	Immediate
Format:	AT [cmds] #VTX
Description:	Commands the modem to begin transmitting voice data.