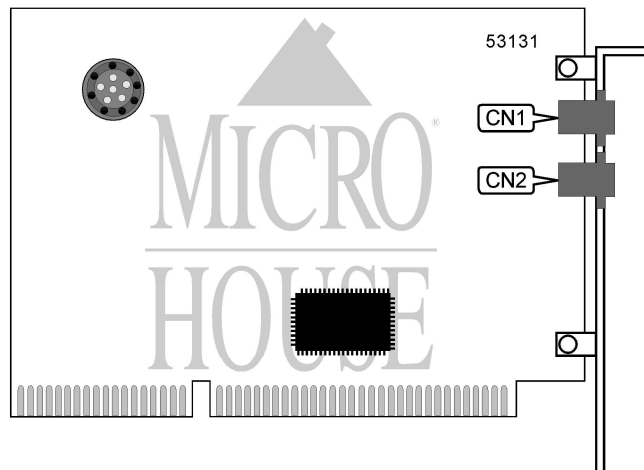


ACS COMPUTER GROUP

V.34 PLUG AND PLAY INTERNAL

Card Type	Modem (asynchronous)
Chipset	Unidentified
I/O Options	Voice, speakerphone
Maximum Data Rate	33.6Kbps
Maximum Fax Rate	14.4Kbps
Data Bus	16-bit ISA
Fax Class	Class I
Data Modulation	Bell 103A/212A
	ITU-T V.21, V.22, V.22bis, V.23, V.32, V.32bis, V.34
Fax Modulation	ITU-T V.17, V.27ter, V.29
Error	MNP5, V.42, V.42bis
Correction/Compression	



CONNECTIONS			
Function	Label	Function	Label
Line in	CN1	Line out	CN2

SUPPORTED STANDARD COMMANDS	
Basic AT Commands	
+++ , 'comma' , A/	
A, E, H, L, M, N, O, P, Q, T, V, W, X, Y, Z	
&C, &D, &F, &G, &K, &P, &S, &T, &V, &W, &Y, &Z	
Extended AT Commands	
\A, \B, \G, \K, \L, \N	
%C, %E, %L, %Q	
Special AT Commands	
#CID	
S-Registers	
S0, S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11, S12, S18, S25, S30, S32, S33, S38, S91	
Note: See MHI documentation for complete information.	

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Proprietary AT Command Set

COMMUNICATION PROTOCOLS	
Type:	Configuration
Format:	AT [cmds] B <i>n</i> [cmds]
Description:	Selects the communication protocol for low-speed data calls.
Command	Protocol
B0	Modem will use ITU-T V.22 at 300 or 1200bps.
i B1	Modem will use Bell 212A at 300 or 1200bps.
B2	Modem will use V.23 at 1200bps.

CONNECTION FAILURE CODE	
Type:	Register
Format	AT [cmds] S86? [cmds]
Description:	Displays a code which corresponds to the reason the connection failed.
Value	Meaning
0	No failure - normal hang up.
4	Carrier signal lost.
5	No error-control detected for remote modem during feature negotiation.
6	Remote modem failed to respond to feature negotiation.
9	No common protocol found.
12	No failure - remote modem disconnected normally.
13	Remote modem failed to respond after 10 re-transmissions same message.
14	Violation of negotiated protocol caused failure.
20	Inactivity time out.

DIAL	
Type:	Immediate
Format:	AT [cmds] D<#>[cmds]
Description:	Dials the telephone number indicated according to any modifiers included in the string.
Note:	Any combination of modifiers can be used to produce the desired dial functions in sequence.
Command	Function
DL	Re-dial last number.
DP	Pulse dialing enabled.
DS <i>n</i>	Dial stored telephone number <i>n</i> .
DT	Tone dialing enabled.
DW	Dialing resumed following dial tone detection.
D,	Dialing paused for amount of time specified in S8 register.
D!	Flash function initiated. Modem commanded to go off-hook for specified time before returning on-hook.

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DIAL (CON'T)	
Command	Function
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^	Enable calling tone for this call.
D;	Modem returned to idle state after dialing. The semicolon can only be placed at the end of the dial command.

DISPLAY INFORMATION	
Type:	Immediate
Format:	AT [cmds] ln [cmds]
Description:	Displays information requested about the modem.
Command	Function
I0	Displays product identification code.
I1	Displays ROM checksum.
I2	Displays internal code.
I3	Displays firmware revision.
I4	Displays product features.

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

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

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

HELP	
Type:	Immediate
Format:	AT [cmds] &\$ [cmds]
Description:	Displays a help screen of all ampersand commands.

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LINE SPEED	
Type:	Register
Format	AT [cmds] S37= <i>n</i> [cmds]
Description:	Sets the maximum connect speed attempted during handshake process.
Command	Function
i S37=0	Attempt fastest speed connection possible.
S37=3	Attempt to connect at 300bps.
S37=4	Attempt to connect at 1200bps.
S37=6	Attempt to connect at 2400bps.
S37=7	Attempt to connect at 4800bps.
S37=8	Attempt to connect at 7200bps.
S37=9	Attempt to connect at 9600bps.
S37=10	Attempt to connect at 12Kbps.
S37=11	Attempt to connect at 14.4Kbps.
S37=12	Attempt a V.34 connection.

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 I mode.
#CLS=8	Modem will operate in voice mode.

SPEAKERPHONE OPTIONS	
Type:	Configuration
Format:	AT [cmds] #SPK= <i>x,y,z</i> [cmds]
Description:	Sets various options for speakerphone functions.
Command	Function
<i>x</i> =0	Microphone disabled.
<i>x</i> =1	Microphone enabled.
<i>x</i> =2	Microphone enabled with maximum gain, speaker disabled.
Default (y):	5
Range (y):	0 - 16
Unit (y):	-2 dBm
Description (y):	Sets the attenuation level for speaker output in voice mode.
<i>z</i> =0	Microphone gain set to 0 dBm.
<i>z</i> =1	Microphone gain set to 6 dBm.
<i>z</i> =2	Microphone gain set to 9.5 dBm.
<i>z</i> =3	Microphone gain set to 12 dBm.

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

TONE GENERATOR - DIRECT ENTRY	
Type:	Immediate
Format:	AT [cmds] #VTS=[m, n, x]
Range:	m 2000-3000, n 2000-3000, 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. Specifying a 0 for one frequency will generate a single-frequency tone.

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.

TRELLIS CODING	
Type:	Configuration
Format:	AT [cmds] &Un [cmds]
Description:	Selects whether the modem will use trellis coding.
Command	Function
i &U0	Trellis coding enabled.
&U1	Trellis coding disabled.

V.34 MINIMUM BAUD RATE	
Type:	Configuration
Format:	AT [cmds] S35= <i>n</i> [cmds]
Description:	Selects the minimum baud rate for V.34 mode.
Command	Function
i S35=0	Minimum baud rate is 2400 baud.
S35=1	Minimum baud rate is 2743 baud.
S35=2	Minimum baud rate is 2800 baud.
S35=3	Minimum baud rate is 3000 baud.
S35=4	Minimum baud rate is 3200 baud.
S35=5	Minimum baud rate is 3429 baud.

V.34 LINE SPEED	
Type:	Configuration
Format:	AT [cmds] S34= <i>n</i> [cmds]
Description:	Selects what speed the modem will attempt to connect at in V.34 mode.
Command	Function
S34=0	Modem will attempt to connect at 2400bps in V.34 mode.
S34=1	Modem will attempt to connect at 4800bps in V.34 mode.
S34=2	Modem will attempt to connect at 7200bps in V.34 mode.
S34=3	Modem will attempt to connect at 9600bps in V.34 mode.
S34=4	Modem will attempt to connect at 12Kbps in V.34 mode.
S34=5	Modem will attempt to connect at 14.4Kbps in V.34 mode.
S34=6	Modem will attempt to connect at 16.8Kbps in V.34 mode.
S34=7	Modem will attempt to connect at 19.2Kbps in V.34 mode.
S34=8	Modem will attempt to connect at 21.6Kbps in V.34 mode.
S34=9	Modem will attempt to connect at 24Kbps in V.34 mode.
S34=10	Modem will attempt to connect at 26.4Kbps in V.34 mode.
S34=11	Modem will attempt to connect at 28.8Kbps in V.34 mode.
S34=12	Modem will attempt to connect at 31.2Kbps in V.34 mode.
i S34=13	Modem will attempt to connect at 33.6Kbps in V.34 mode.

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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 - 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 DEVICE	
Type:	Configuration
Format:	AT [cmds] #VLS= <i>n</i> [cmds]
Description:	Selects the I/O device for the DSP chip.
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=4	Telephone line and handset used for voice I/O; internal speaker enabled.
#VLS=6	Speakerphone used for voice I/O.

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

VOICE RECORD GAIN	
Type:	Configuration
Format:	AT [cmds] #RG= <i>hhhh</i> [cmds]
Default:	7FFF
Range:	0000 - 7FFF
Unit:	Unidentified (hexadecimal)
Description:	Sets the gain level for recording in voice mode.

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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:	Unidentified
Range:	0 - 255
Unit:	10 mS
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.

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.

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VOICE TRANSMISSION GAIN LEVEL	
Type:	Configuration
Format:	AT [cmds] #TL=hhh [cmds]
Default:	3FFF
Range:	0000 - 7FFF
Unit:	Unidentified (hexadecimal)
Description:	Sets the gain level for sending audio in voice mode.

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