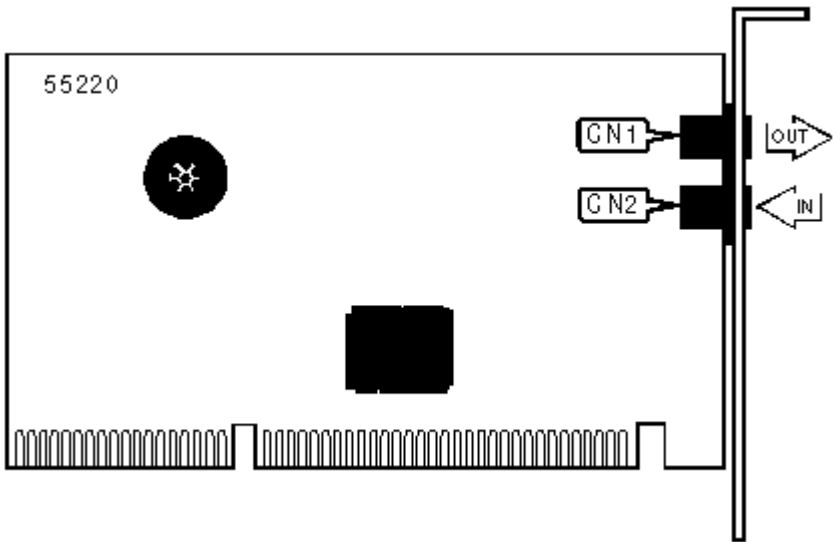


COMMWAVE V.34 PLUG & PLAY (VER.1.0)

Card Type	Modem (synchronous/asynchronous), Voice
Chipset	PCtel
Maximum Modem Rate	33.6Kbps
Maximum Fax Rate	14.4Kbps
Fax Class	Class I & II
Modem Modulation Protocol	Bell 103A/212A
	ITU-T V.21, V.22, V.22bis, V.23, V.32, V.32bis, V.34
Fax Modulation Protocol	ITU-T V.17, V.21 CH2, V.27ter, V.29
Error Correction/Compression	MNP5, V.42, V.42bis
Data Bus	16-bit ISA



CONNECTIONS

Function	Label	Function	Label
Line out	CN1	Line in	CN2

SUPPORTED COMMAND SET

Basic AT Commands

- AT, A/
- A, E, H, L, M, O, P, Q, T, V, W, X, Y, Z
- &C, &F, &G, &W, &X, &Y, &Z

Extended AT Commands

- \A, \B, \G, \K, \L, \N
- %C, %L, %Q

S Registers

S0, S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11, S12, S18, S25, S30, S32, S33, S38, S91

Special Commands

#CID

Voice Commands

#BDR, #MDL?, #MFR?, #REV?, #SPK, #TL, #VBQ?, #VBT, #VCI?, #VLS, #VRA, #VRN, #VRX

#VSD, #VSK, #VSP, #VSS, #VTD, #VTS, #VTX

Note: See MHI Help File for full command documentation.

Proprietary AT Command Set

AUTO-MODE DETECTION

Type:	Configuration
Format:	AT [cmds] Nn [cmds]
Description:	Selects various options for the automatic detection and negotiation of protocols during the handshake process if the modem is communicating with a remote modem of dissimilar speed.
Command	Function
N0	Auto-mode detection disabled
■ N1	Auto-mode detection enabled

COMMUNICATION PROTOCOLS

Type:	Configuration
Format:	AT [cmds] Bn [cmds]
Description:	Selects the communication protocol for data calls

Note: The B command allows the simultaneous selection of more than one suffix, enabling multiple protocols. Originate mode will transmit at 75bps and receive at 1200bps; answer mode will transmit at 1200bps and receive at 75bps

Command	Protocol
B0	ITU-T V.22
■ B1	Bell 212A
B2	ITU-T V.23

CONFIGURATION PROFILES

Type:	Immediate
Format:	AT [cmds] &V [cmds]
Description:	Displays active and stored configuration profiles

Command	Function
&V0	Display active profile
&V1	Display stored profiles
&V2	Display stored telephone numbers

DATA SET READY (DSR)

Type:	Configuration
Format:	AT [cmds] &Sn [cmds]
Description:	Selects DSR options

Command	Function
■ &S0	DSR forced high
&S1	DSR high only while modem is handshaking or connected

DATA TERMINAL READY (DTR)

Type:	Configuration
Format:	AT [cmds] &Dn [cmds]
Description:	Selects modem response to DTR

Command	Function
■ &D0	DTR forced high
&D1	DTR drop causes online command mode
&D2	DTR drop causes hang-up
&D3	DTR drop causes reset. &Y determines power-up profile

DIAL

Type:	Immediate
Format:	AT [cmds] D<#> [cmds]
Description:	Dials telephone number 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
DSn	Dial stored telephone number <i>n</i>
DT	Tone dialing enabled/Pulse dialing disabled
DW	Dialing resumed following dial tone detection
D,	Dialing paused for amount of time specified in S8 register
D@	Wait for Quiet Answer function enabled. Modem waits until a "quiet answer," a ring-back signal followed by 5 seconds of silence
D!	Flash function initiated. Modem commanded to go off-hook for specified time before returning on-hook.
D;	Modem returned to idle state after dialing. The semicolon can only be placed at the end of the dial command.
D^	1300Hz calling tone enabled

DISPLAY LIST

Type:	Immediate
Format:	AT [cmds] &\$ [cmds]
Description:	Displays a list of ampersand commands

FLOW CONTROL

Type:	Configuration
Format:	AT [cmds] &Kn [cmds]
Description:	Enables flow control options

Command	Function
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&K0	Flow control disabled
&K3	RTS/CTS flow control enabled
&K4	XON/XOFF flow control enabled
&K5	Transparent XON/XOFF flow control enabled
&K6	RTS/CTS & XON/XOFF flow control enabled

PULSE DIALING RATIO

Type:	Configuration
Format:	AT [cmds] &P <i>n</i> [cmds]
Description:	Selects pulse dial make/break ratio

Command	Function
&P0	39/61ms at 10pps (North America)
&P1	33/67ms at 10pps (Europe)

REPORT INFORMATION

Type:	Immediate
Format:	AT [cmds] I <i>n</i> [cmds]
Description:	Displays information requested

Command	Function
I0	Reports 5 digit product code
I1	Reports hardware variation code
I2	Reports internal code
I3	Reports software revision level
I4	Reports product feature

TEST MODES

Type:	Immediate
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Format: AT [cmds] &T*n*

Description: Selects test options

Command	Function
&T0	End current test
&T1	Begin local analog loopback test

TRELLIS CODING

Type: Configuration

Format: AT [cmds] &U*n* [cmds]

Description: Enables/disables trellis coding

Command	Function
■&U0	V.32 trellis coding enabled
&U1	V.32 trellis coding disabled

EXTENDED AT COMMAND SET

AUTO-RETRAIN - AUTO-FALLBACK/FALL-FORWARD

Type: Configuration

Format: AT [cmds] %E*n* [cmds]

Description: Controls auto-retrain mode and fallback/fall-forward

Command	Function
%E0	Auto-retrain disabled
%E1	Auto-retrain enabled
■ %E2	Auto-retrain & fallback enabled
%E3	Auto-retrain & fast hang-up enabled

S(status) REGISTERS

BIT RATE

Type: Register

Format	AT [cmds] S34= <i>n</i> [cmds]
Range:	0-11
Unit:	Kbps
Description:	Sets maximum bit rate for V.34

V.34 BAUD RATE

Type:	Register
Format	AT [cmds] S35= <i>n</i> [cmds]
Description:	Sets the minimum allowable baud rate for V.34 negotiation.
Command	Function
S35=0	2400bps
S35=1	2743bps
S35=2	2800bps
S35=3	3000bps
S35=4	3200bps
S35=5	3429bps

DCE LINE SPEED

Type:	Register
Format	AT [cmds] S37= <i>n</i> [cmds]
Description:	Sets the maximum allowable data exchange rate attempted during handshake process.
Command	Function
S37=0	Attempt to connect at highest speed
S37=3	300bps
S37=4	1200bps
S37=6	2400bps

S37=7	4800bps
S37=8	7200bps
S37=9	9600bps
S37=10	12.0Kbps
S37=11	14.4Kbps
S37=12	33.6Kbps

CONNECTION FAILURE CODES

Type:	Register
Format	AT [cmds] S86? [cmds]
Description:	Reports codes which correspond to the possible causes of a connection failure

Value	Meaning
0	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	Long Space Disconnect (Y1) time limit reached

VOICE COMMANDS

MODE SELECTION

Type:	Immediate
Format:	AT [cmds] #CLS= <i>n</i> [cmds]
Description:	Selects which mode the modem will operate in.

Command	Function
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#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.

RECORD GAIN

Type:	Configuration
Format:	AT [cmds] #RG= <i>hhhh</i> [cmds]
Default:	7FFF
Range:	0000 - 7FFF
Unit:	Unidentified (hexadecimal)
Description:	Sets the record gain. #RG? queries value

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:	Only 4 bits per sample compression ratio is supported, The #VBS? command will return 4.

Command	Function
■ #VBS=4	Modem records 4 bits per sample in ADPCM 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
#VSR=8000	Selects a sampling rate of 8000Hz