MEDIAFORTE PRODUCTS PTE., LTD.
COMMLINK 28.8 INTERAL MODEM

Card Type	Modem/Fax card
Chip Set	Unidentified
I/O Options	Line out (RJ-11), line in (RJ-11)
Maximum Modem Rate	28.8Kbps
Maximum Fax Rate	14.4Kbps
Data Modulation Protocol	Bell 103A/212A
	ITU-T V.21, V.22, V.22bis, V.23, V.32, V.32bis, V34
Fax Modulation Protocol	ITU-T V.17, V.27ter, V.29
Error Correction/Compression	MNP5, V.42, V.42bis
Fax Class	Class I & II
Data Bus	16-bit ISA
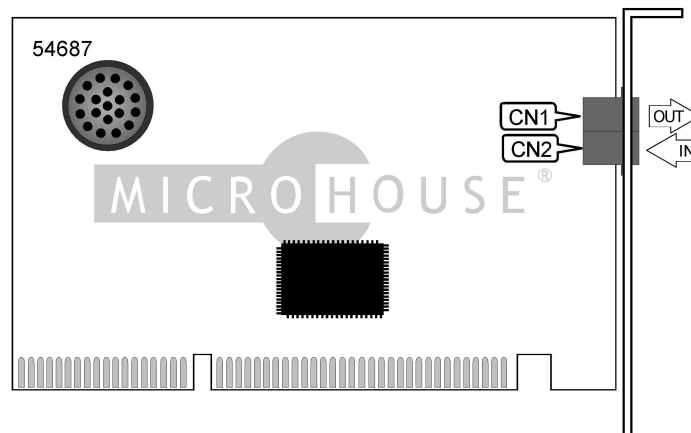
CONNECTIONS			
Function	**Label**	**Function**	**Label**
Line out	CN1	Line in	CN2

SUPPORTED COMMAND SET
Basic AT Commands
AT, '+++', A/
A, C, E, H, L, M, O, P, Q, S, T, V, X, Y, Z
&C, &F, &G &Q, &U &W, &Y, &Z
Extended AT Commands
\A, \B, \G, \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
Voice Commands
#CID, #MDL?, #MFR?, #REV?, #CLS, #SPK, #TL, #VBQ?, #VBT, #VCI?, #VRA, #VRX, #VSK, #VSS
#VTD, #VTS, #VTX
Note: See MHI Help File for full command documentation.

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Proprietary AT Command Set

AUTO-MODE DETECTION	
Type:	Configuration
Format:	AT [cmds] N*n* [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
í N1	Auto-mode detection enabled

COMMUNICATION PROTOCOLS	
Type:	Configuration
Format:	AT [cmds] B*n* [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.**	

Command	Protocol
B0	ITU-T V.22 at 1200bps
í B1	Bell 212A at 1200bps
B2	ITU-T V.23 at 1200bps

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] &S*n* [cmds]
Description:	Selects DSR options

Command	Function
&S0	DSR forced high
&S1	DSR on in on-line mode, off in command mode

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DATA TERMINAL READY (DTR)	
Type:	Configuration
Format:	AT [cmds] &D*n* [cmds]
Description:	Selects modem response to DTR
Command	**Function**
í &D0	DTR is ignored (assumed on)
&D1	Modem goes to command mode after DTR goes is off
&D2	Modem goes to command mode and disconnects (hangs up) after DTR goes off
&D3	Modem is initialized after DTR goes off

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
DS=n	Dial stored telephone number *n*
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!	Flash function initiated. Modem commanded to go off-hook for specified time before returning on-hook.
D@	Wait for Quite 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^	1300Hz calling tone enabled
D;	Modem returned to idle state after dialing. The semicolon can only be placed at the end of the dial command.

EXTENDED RESULT CODES	
Type:	Configuration
Format:	AT [cmds] W*n* [cmds]
Description:	Enables selection of additional result codes when S95=0; otherwise, S95 takes precedence.
Command	**Function**
W0	Report DTE speed
W1	Report result code
W2	Report DCE speed

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FLOW CONTROL	
Type:	Configuration
Format:	AT [cmds] &K*n* [cmds]
Description:	Enables flow control options
Command	**Function**
&K0	Flow control disabled
&K3	RTS/CTS flow control enabled
&K4	XON/XOFF flow control enabled
&K5	Transparent XON/XOFF flow control enabled
&K6	XON/XOFF and RTS/CTS flow control enabled

PULSE DIALING RATIO	
Type:	Configuration
Format:	AT [cmds] &P*n* [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*n* [cmds]
Description:	Displays information requested
Command	**Function**
I0	Reports product code
I1	Reports hardware variation code
I2	Reports internal code
I3	Reports software revision number
I4	Reports product feature

TEST MODES	
Type:	Immediate
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**
í&U0	Trellis coding enabled
&U1	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-fallback/fall-forward enabled
%E3	Fast hang-up

BREAK TYPE			
Type:	Configuration		
Format:	AT [cmds] \K*n* [cmds]		
Description:	Configures action of break signal		
Command	**Break from DTE during NORMAL or MNP mode**	**Break from modem during DIRECT mode**	**Break from remote modem during NORMAL mode**
\K0	Online command mode enabled, send no break to remote modem	Send break to remote modem, online command mode enabled	Buffers cleared, break sent to DTE
\K1	Break sent to remote modem and buffered cleared	Send break to remote modem, online command mode enabled	Buffers cleared, break sent to DTE
\K2	Online command mode enabled, send no break to remote modem	Send break to remote modem	Break sent immediately to DTE
\K3	Send break to remote modem immediately	Send break to remote modem, online command mode enabled	Break sent immediately to DTE
\K4	Online command mode enabled, send no break to remote modem	Send break to remote modem	Break sent with received data to the DTE
\K5	Send break with transmitted data	Send break to remote modem	Break sent with received data to the DTE

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S(status) -REGISTERS

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 time limit reached

DCE LINE SPEED	
Type:	Register
Format	AT [cmds] S37=*n* [cmds]
Description:	Sets the maximum allowable data exchange rate attempted during handshake process.
Command	**Function**
S37=0	Speed of last connection
S37=3	Connect at 300bps
S37=4	Connect at 1200bps
S37=6	Connect at 2400bps
S37=7	Connect at 4800bps
S37=8	Connect at 7200bps
S37=9	Connect at 9600bps
S37=10	Connect at 12.0Kbps
S37=11	Connect at 14.4Kbps
S37=12	Connect at 28.8Kbps

V.34 DATA RATE	
Type:	Register
Format	AT [cmds] S34=*n* [cmds]
Range	0-11
Description:	Sets the maximum bit rate for V.34. Default is S34=11 (28.8Kbps)

V.34 SYMBOL RATE	
Type:	Register
Format	AT [cmds] S35=*n* [cmds]
Range	0-5
Description:	Sets the minimum baud rate for V.34. Default is S35=0 (2400bps)

AT Voice Command Set

RECORDING GAIN	
Type:	Immediate
Format:	AT [cmds] #RG=*hhhh* [cmds]
Default:	7FFF
Range:	0000 - 7FFF
Unit:	Unidentified (hexadecimal)
Description:	Sets the voice recording gain level

SILENCE DETECTION	
Type:	Configuration
Format:	AT [cmds] #VSD=*n* [cmds]
Description:	Enables/disables voice receive mode silence detection.
Note:	Function not supported by modem

VOICE DEVICE	
Type:	Configuration
Format:	AT [cmds] #VLS=*n* [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
í #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=6	Speakerphone used for voice I/O.

VOICE - LOCAL SERIAL PORT SPEED	
Type:	Configuration
Format:	AT [cmds] #BDR=*n* [cmds]
Range:	0-48
Unit:	2400 baud (rate = *n* * 2400)
Description:	Sets the speed of the local serial port when in voice mode.

VOICE RING DETECT TIME	
Type:	Configuration
Format:	AT [cmds] #VRN=*n* [cmds]
Default:	Unidentified
Range:	0-255
Unit:	10ms
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=*n* [cmds]
Description:	Selects the number of bits per sample that the modem records.
Note:	Modem only supports 4 bits per sample in ADPCM encoding.

VOICE SAMPLING RATE	
Type:	Configuration
Format:	AT [cmds] #VSR=*n* [cmds]
Description:	Sets the sampling rate used when recording voice signals.
Note:	Modem only supports a sampling rate to 8000Hz

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