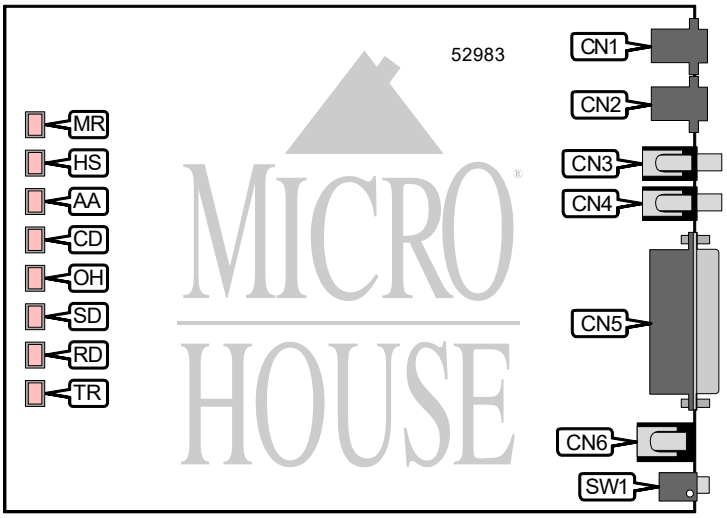
SIMA TECHNOLOGY CO., LTD.
V.34SV

Card Type	Modem (synchronous/asynchronous)
Chip Set	Unidentified
I/O Options	Voice, speaker out, microphone in
Maximum Data Rate	33.6Kbps
Maximum Fax Rate	14.4Kbps
Data Bus	Serial
Fax Class	Class I & II
Data Modulation Protocol	Bell 103A/212A ITU-T V.21, V.22, V.22bis, V.23, V.32, V.32bis, V.34 Rockwell V.FC
Fax Modulation Protocol	ITU-T V.17, V.21CH2, V.27ter, V.29
Error Correction/Compression	MNP5, V.42, V.42bis



CONNECTIONS			
Function	**Label**	**Function**	**Label**
Line out	CN1	RS-232/422	CN5
Line in	CN2	DC power	CN6
Speaker out	CN3	Power switch	SW1
Microphone in	CN4		

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DIAGNOSTIC LED(S)			
LED	**Color**	**Status**	**Condition**
MR	Red	On	Power is on
MR	Red	Blinking	Modem is in test mode
MR	Red	Off	Power is off
HS	Red	On	Modem is operating at 4800bps or faster
HS	Red	Off	Modem is operating at slower than 4800bps
AA	Red	On	Auto-answer enabled
AA	Red	Off	Auto-answer disabled
AA	Red	Blinking	Phone is ringing
CD	Red	On	Carrier signal detected
CD	Red	Off	Carrier signal not detected
OH	Red	On	Modem is off-hook
OH	Red	Off	Modem is on-hook
SD	Red	On	Modem is transmitting data
SD	Red	Off	Modem is not transmitting data
RD	Red	On	Modem is receiving data
RD	Red	Off	Modem is not receiving data
TR	Red	On	DTR signal is high
TR	Red	Off	DTR signal is low

SUPPORTED STANDARD COMMANDS
Basic AT Commands
+++, ‘comma’, A/
A, B, D, E, H, L, M, N, O, P, Q, T, V, W, X, Y, Z
&C, &D, &F, &G, &K, &M, &P, &Q, &R, &S, &T, &V, &W, &X, &Y, &Z
Extended AT Commands
\A, \B, \G, \K, \L, \N, \W
%C, %F, %L, %Q, %T
Special AT Commands
#CID, :E, *H, -K,)M, @M, +MS, -Q
S-Registers
S0, S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S12, S14, S16, S18, S21, S22, S23, S24, S25, S27, S29
S30, S31, S32, S33, S36, S38, S39, S40, S46, S48, S86, S91, S92, S95, S201
Note: See MHI documentation for complete information.

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Proprietary AT Command Set

AUTO-RETRAIN - AUTO-FALLBACK/FALL-FORWARD	
Type:	Configuration
Format:	AT [cmds] %E*n* [cmds]
Description:	Controls auto-retrain, auto-fall-back/fall-forward, and the line quality monitor.

Command	Function
í %E0	Line quality monitor and auto-retrain disabled.
%E1	Line quality monitor and auto-retrain enabled.
%E2	Line quality monitor and auto-fallback/fall-forward enabled.
%E3	Line quality monitor, auto-retrain, and fast hangup enabled.

AUTOSYNC	
Format	AT [cmds] S19=*n* [cmds]
Default:	0
Range:	0 - 31
Unit:	Bit-mapped
Description:	Sets options for Hayes AutoSync functions.

Bit	Value	Function
0	0	Not used.
1	í 0	BSC enabled.
	1	HDLC enabled.
2	í 0	HDLC address detection disabled.
	1	HDLC address detection enabled.
3	í 0	NRZI bit encoding enabled.
	1	NRZ bit encoding enabled.
4	í 0	Mark idle enabled.
	1	Flag or sync idle enabled.

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BIT-MAPPED REGISTER S28		
Format		AT [cmds] S28=*n* [cmds]
Default:		0
Range:		0 - 154
Description:		Controls V.23 split speed mode, pulse dialing ratio, and MNP10 cellular link negotiation speed.
Bit	**Value**	**Function**
0	0	Not used
1	í 0	75bps transmit, 1200bps receive enabled
	1	1200bps transmit, 75bps receive enabled
2	0	Not used
4, 3	í 00	39ms make/61ms break at 10pps
	01	33ms make/67ms break at 10pps
	10	39ms make/61ms break at 20pps
	11	33ms make/67ms break at 20pps
5	0	Not used
7, 6	í 00	MNP10 link will be negotiated at highest possible speed.
	01	MNP10 link will be negotiated at 1200bps.
	10	MNP10 link will be negotiated at 4800bps.

BIT-MAPPED REGISTER S41		
Format		AT [cmds] S41=*n* [cmds]
Default:		131
Range:		0 - 219
Description:		Controls compression type, auto-retrain and fall-back/fall-forward, flow control, and MNP mode.
Note:		Be aware that bit 6 is out of order.
Bit	**Value**	**Function**
1, 0	00	Data compression disabled.
	01	MNP5 enabled.
	10	V.42bis enabled.
	í 11	MNP5 and V.42bis enabled.
6, 2	í 00	Auto-retrain disabled.
	01	Auto-retrain enabled.
	10	Fall-back/fall-forward enabled.
3	í 0	Flow control disabled.
	1	Flow control enabled.
4	í 0	Stream mode for MNP.
	1	Block mode for MNP.
5	0	Not used.
7	0	Fall-back to V.22bis and V.22 disabled.
	í 1	Fall-back to V.22bis and V.22 enabled.

COUNTRY CODE	
Type:	Configuration
Format:	AT [cmds] *NC*nn* [cmds]
Description:	Sets the country code for the modem.

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DISPLAY CONFIGURATION AND STATISTICS	
Type:	Immediate
Format:	AT [cmds] \S [cmds]
Description:	Displays the settings of all commands and statistics about the current connection.

DISPLAY DELAYED NUMBERS	
Type:	Immediate
Format:	AT [cmds] *D*n* [cmds]
Description:	Displays all numbers on the delayed list.

DISPLAY FORBIDDEN NUMBERS	
Type:	Immediate
Format:	AT [cmds] *B*n* [cmds]
Description:	Displays all numbers on the forbidden list.

DISPLAY MANUFACTURER	
Type:	Immediate
Format:	AT [cmds] #MFR? [cmds]
Description:	Displays the 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.

HDLC ADDRESS	
Type:	Register
Format:	AT [cmds] S20=*n* [cmds]
Default:	0
Range:	0-255
Unit:	1 ASCII character
Description:	Sets the HDLC address and BSC character.

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LINE SPEED	
Type:	Configuration
Format	AT [cmds] F*n* [cmds]
Description:	Sets the desired line connection speed.
Command	**Function**
í F0	Auto-detect connect speed.
F1	Connect at 300bps with V.21 or Bell 103.
F3	Connect at 1200/75bps with V.23.
F4	Connect at 1200bps with V.22 or Bell 212A.
F5	Connect at 2400bps with V.22bis.
F6	Connect at 4800bps with V.32 or V.32bis.
F7	Connect at 7200bps with V.32.
F8	Connect at 9600bps with V.32 or V.32bis.
F9	Connect at 12Kbps with V.32bis.
F10	Connect at 14.4Kbps with V.32bis.
F13	Connect at 14.4Kbps with V.FC.
F14	Connect at 16.8Kbps with V.FC.
F15	Connect at 19.2Kbps with V.FC.
F16	Connect at 21.6Kbps with V.FC.
F17	Connect at 24.4Kbps with V.FC.
F18	Connect at 26.4Kbps with V.FC.
F19	Connect at 28.8Kbps with V.FC.

LINE SPEED	
Type:	Register
Format	AT [cmds] S37=*n* [cmds]
Description:	Sets the desired line connection speed.
Command	**Function**
í S37=0	Auto-detect connect speed.
S37=1	Connect at 75bps.
S37=2	Connect at 110bps.
S37=3	Connect at 300bps.
S37=4	Connect at 600bps.
S37=5	Connect at 1200bps with V.22.
S37=6	Connect at 2400bps with V.22bis.
S37=7	Connect at 1200/75bps with V.23.
S37=8	Connect at 4800bps with V.32 or V.32bis.
S37=9	Connect at 9600bps with V.32 or V.32bis.
S37=10	Connect at 12Kbps with V.32bis.
S37=11	Connect at 14.4Kbps with V.32bis.
S37=12	Connect at 7200bps with V.32bis.
S37=15	Connect at 14.4Kbps with V.FC.

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LINE SPEED (CON'T)	
Command	**Function**
S37=16	Connect at 16.8Kbps with V.FC.
S37=17	Connect at 19.2Kbps with V.FC.
S37=18	Connect at 21.6Kbps with V.FC.
S37=19	Connect at 24.4Kbps with V.FC.
S37=20	Connect at 26.4Kbps with V.FC.
S37=21	Connect at 28.8Kbps with V.FC.

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

MODULATION SELECTION	
Type:	Configuration
Format:	AT [cmds] +MS=*x*,*y*,*z*,*a*,*b*,*c* [cmds]
Description:	Sets options for active protocol; the transfer rates specified by *z*, *a*, *b*, and *c* must be valid for the protocol selected.
Note:	The *z* and *a* parameters specify the minimum and maximum originate mode connect speeds, respectively; the *b* and *c* parameters specify the minimum and maximum answer mode connect speeds, respectively.
Command	**Function**
x=0	Use V.21 modulation.
x=1	Use V.22 modulation.
x=2	Use V.22bis modulation.
x=3	Use V.23 modulation.
x=9	Use V.32 modulation.
x=10	Use V.32bis modulation.
í *x*=11	Use V.34 modulation.
x=64	Use Bell 103 modulation.
x=69	Use Bell 212A modulation.
x=74	Use V.FC modulation.
y=0	Automode disabled.
í *y*=1	Auto-detect highest speed enabled without V.8 (except V.34 which always uses V.8).
y=2	Auto-detect highest speed enabled with V.8.

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MODULATION SELECTION (CON'T)	
Command	**Function**
z, *a*, *b*, *c*=300	Set minimum or maximum connection speed at 300bps.
z, *a*, *b*, *c*=1200	Set minimum or maximum connection speed at 1200bps.
z, *a*, *b*, *c*=2400	Set minimum or maximum connection speed at 2400bps.
z, *a*, *b*, *c*=4800	Set minimum or maximum connection speed at 4800bps.
z, *a*, *b*, *c*=7200	Set minimum or maximum connection speed at 7200bps.
z, *a*, *b*, *c*=9600	Set minimum or maximum connection speed at 9600bps.
z, *a*, *b*, *c*=12000	Set minimum or maximum connection speed at 12Kbps.
z, *a*, *b*, *c*=14400	Set minimum or maximum connection speed at 14.4Kbps.
z, *a*, *b*, *c*=16800	Set minimum or maximum connection speed at 16.8Kbps.
z, *a*, *b*, *c*=19200	Set minimum or maximum connection speed at 19.2Kbps.
z, *a*, *b*, *c*=21600	Set minimum or maximum connection speed at 21.6Kbps.
z, *a*, *b*, *c*=24000	Set minimum or maximum connection speed at 24Kbps.
z, *a*, *b*, *c*=26400	Set minimum or maximum connection speed at 26.4Kbps.
z, *a*, *b*, *c*=28800	Set minimum or maximum connection speed at 28.8Kbps.

PULSE DIALING MODE	
Type:	Configuration
Format:	AT [cmds] *Z*n* [cmds]
Description:	Sets the number of pulses per digit dialed while in pulse mode.
Command	**Function**
í *Z0	Number of pulses generated is equal to the dialed digit value (0 digit generates 10 pulses).
*Z1	Number of pulses generated is equal to the dialed digit value plus one (0 digit generates 1 pulse).

REPORT INFORMATION	
Type:	Immediate
Format:	AT [cmds] I*n* [cmds]
Description:	Displays requested information about the modem.
Command	**Function**
I0	Reports product identification code.
I1	Reports ROM checksum.
I2	Tests and reports ROM checksum.
I3	Reports firmware version and interface type.
I4	Reports OEM response.
I5	Reports country code.
I6	Reports data pump model and version.

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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.

Value	Function
0	V.25 1300Hz calling tone is not dete
í 1	V.25 1300Hz calling tone is detecte
0	T.30 1100Hz fax tone is not detecte
í 1	T.30 1100Hz fax tone is detected.
0	V.25/T.30 2100Hz answer tone is no
í 1	V.25/T.30 2100Hz answer tone is de
0	Bell 2225Hz answer tone is not dete
í 1	Bell 2225Hz answer tone is detecte
0	Call progress tones are not detecte
í 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=*n* [cmds]
Default:	10
Range:	0 - 40
Unit:	0.1 second
Description:	Sets the length of DTMF tones that are generated.

VOICE BUFFER SPACE	
Type:	Configuration
Format:	AT [cmds] #VSK=*n* [cmds]
Default:	255
Range:	0 - 255
Unit:	1 byte
Description:	Sets the amount of free space there must be in the transmit buffer before the XON signal is sent.

VOICE DEVICE	
Type:	Configuration
Format:	AT [cmds] #VLS=*n* [cmds]
Description:	Selects the I/O device for the DSP chip.

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.

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.

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VOICE - LOCAL SERIAL PORT SPEED	
Type:	Configuration
Format:	AT [cmds] #BDR=*n* [cmds]
Description:	Sets the speed of the local serial port.
Command	**Function**
#BDR=1	Set speed to 2400bps.
#BDR=2	Set speed to 4800bps.
#BDR=4	Set speed to 9600bps.
#BDR=6	Set speed to 14.4Kbps.
#BDR=8	Set speed to 19.2Kbps.
#BDR=16	Set speed to 38.4Kbps.
#BDR=24	Set speed to 57.6Kbps.

VOICE RE-RING DETECT TIME	
Type:	Configuration
Format:	AT [cmds] #VRA=*n* [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=*n* [cmds]
Default:	Unidentified
Range:	Unidentified
Unit:	Unidentified
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 SAMPLE QUALITY	
Type:	Configuration
Format:	AT [cmds] #VBS=*n* [cmds]
Description:	Selects the number of bits per sample that the modem records.
Command	**Function**
#VBS=2	Modem records 2 bits per sample in ADPCM encoding.
#VBS=3	Modem records 3 bits per sample in ADPCM encoding.
í #VBS=4	Modem records 4 bits per sample in ADPCM encoding.

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

VOICE SILENCE DETECTION	
Type:	Configuration
Format:	AT [cmds] #VSD=*n* [cmds]
Description:	Selects whether the modem will attempt to recognize periods of silence when receiving a voice signal.
Command	**Function**
#VSD=0	Silence detection disabled.
#VSD=1	Silence detection enabled.

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

VOICE SILENCE DETECTION THRESHOLD	
Type:	Configuration
Format:	AT [cmds] #VSS=*n* [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.