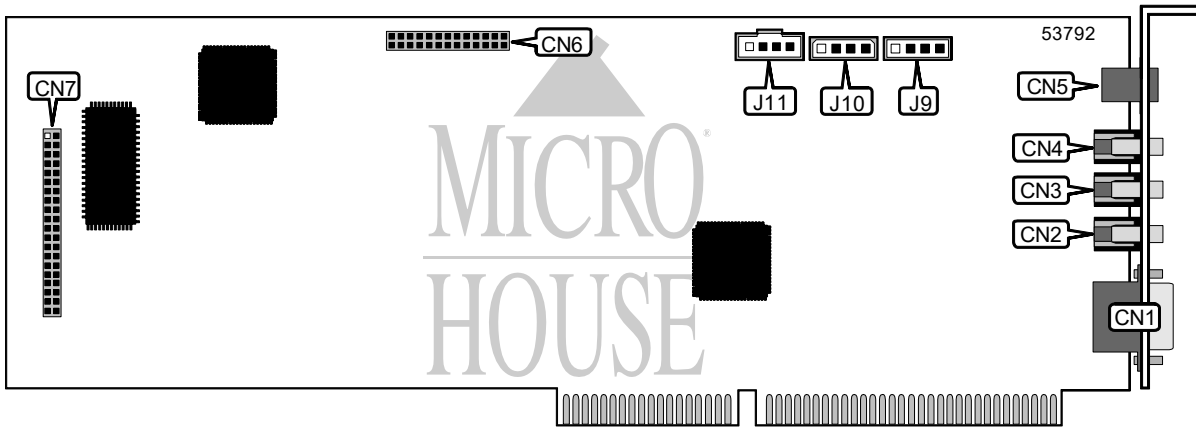


# BOCA RESEARCH, INC. SOUND EXPRESSION (SE14SRS)

Card Type	Sound/Modem card
Chip Set	Unidentified
Maximum Onboard Memory	Unidentified
I/O Options	Game/MIDI port, CD-ROM interface - IDE, Audio in - CD-ROM (3), speaker, line out, line in, microphone in, telephone jack
Maximum Modem Rate	14.4Kbps
Maximum Fax Rate	14.4Kbps
Data Modulation Protocol	Bell 103A/212A
Fax Modulation Protocol	ITU-T V.22, V.22bis, V.32, V.32bis
Error Correction/Compression	ITU-T V.17, V.21CH2, V.27ter, V.29
Fax Class	MNP5, V.42, V.42bis
Data Bus	Class I & II 16-bit ISA



CONNECTIONS			
Function	Location	Function	Location
Game/MIDI port	CN1	Wavetable	CN6
Speaker	CN2	CD-ROM interface - IDE	CN7
Line out	CN3	Audio in - CD-ROM (Mitsumi)	J9
Line in	CN4	Audio in - CD-ROM (Panasonic)	J10
RJ-11 telephone jack	CN5	Audio in - CD-ROM (Sony/IDE)	J11

SUPPORTED COMMAND SET
Basic AT Commands
<b>AT, '+++', 'comma', A/</b>
A, B, C, E, H, L, M, O, Q, R, S, T, U, V, W, X, Y, Z
&C, &F, &P, &q, &R, &S, &T, &V, &W, &Y, &Z
Extended AT Commands
\A, \B
%C, %E, %L, %Q
S Registers
S0, S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11, S12, S14, S16, S18, S21, S22, S23, S24, S25, S26, S27, S28, S29, S30, S31, S32, S33, S36, S38, S39, S40, S41, S46, S48, S82, S86, S91, S92, S95
Special Commands
+MS?, +MS
<b>Note:</b> See MHI Help File for full command documentation.

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**Proprietary AT Command Set**

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
D	Dial
DL	Re-dial last number
DP	Pulse dialing enabled
DS=n	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!	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;	Modem returned to idle state after dialing. The semicolon can only be placed at the end of the dial command.
D^	Disable dialing code.

REPORT INFORMATION	
Type:	Immediate
Format:	AT [cmds] I <i>n</i> [cmds]
Description:	Displays information requested
Command	Function
I0	Reports product ID
I1	Reports checksum
I2	Tests and reports ROM checksum
I3	Reports firmware revision
I4	Reports OEM-defined identifier string.
I5	Reports country code
I6	Reports modem data pump model

AUTO-MODE DETECTION	
Type:	Configuration
Format:	AT [cmds] N <i>n</i> [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
i N1	Permits handshaking at any speed supported by both modems.

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DATA TERMINAL READY (DTR)					
Type:	Configuration				
Format:	AT [cmds] &Dn [cmds]				
Description:	Selects modem response to DTR				
<b>Note: The action each variant of &amp;D causes depends on the setting of &amp;Q</b>					
	&Q Setting	&D0	&D1	&D2	&D3
i	&Q0, &Q5, &Q6	Command 0	Command 3	Command 2	Command 4
	&Q1, &Q4	Command 1	Command 3	Command 2	Command 4
	&Q2, &Q3	Command 2	Command 2	Command 2	Command 2
	Command	Function			
	Command 0	Modem does not respond to DTR			
	Command 1	Modem disconnects (hangs up) after DTR goes off; Auto-Answer not affected			
i	Command 2	Modem goes to command mode and disconnects (hangs up) after DTR goes off; Auto-Answer is disabled.			
	Command 3	Asynchronous escape sequence			
	Command 4	Modem does a soft reset			

FLOW CONTROL	
Type:	Configuration
Format:	AT [cmds] &Kn [cmds]
Description:	Enables flow control options
	Command
	&K0
i	&K3
	&K4
	&K5
	&K6
	Function
	Flow control disabled
	RTS/CTS flow control enabled
	XON/XOFF flow control enabled
	Enable transport XON/XOFF
	Enable both RTS/CTS and XON/XOFF

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BREAK TYPE			
Type:	Configuration		
Format:	AT [cmds] \Kn [cmds]		
Description:	Configures action of break signal		
Command	Break from DTE	Break from DTE during Direct Mode	Break received from remote modem
\K0	Online command mode enabled, send no break to remote modem	Break sent to remote modem and command entered	Buffers cleared, break sent to DTE
\K1	Break sent to remote modem and buffered cleared	Break sent to remote modem and command entered	Buffers cleared, break sent to DTE
\K2	Online command mode enabled, send no break to remote modem	Send break with transmitted data	Break sent immediately to DTE
\K3	Send break to remote modem immediately	Break sent to remote modem and command entered	Break sent immediately to DTE
\K4	Online command mode enabled, send no break to remote modem	Send break with transmitted data	Break sent with received data to the DTE
i \K5	Send break with transmitted data	Send break with transmitted data	Break sent with received data to the DTE

CONNECT MODE	
Type:	Configuration
Format:	AT [cmds] \Nn [cmds]
Description:	Controls the type of connection the modem will operate in
Command	Function
\N0	Normal mode enabled
\N1	Direct mode enabled
\N2	MNP reliable mode enabled
\N3	Auto-reliable mode or MNP auto-reliable mode enabled
\N4	V.42 reliable mode enabled
\N5	V.42 auto-reliable mode or MNP auto-reliable mode enabled

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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	
i S37=0	Speed of last connection	
S37=1-3	300bps	
S37=4	Reserved	
S37=5	1200bps	
S37=6	2400bps	
S37=7	V.23 mode	
S37=8	4800bps	
S37=9	9600bps	
S37=10	12.0Kbps	
S37=11	14.4Kbps	
S37=12	7200bps	

## RESULT CODES

BASIC RESULT CODES			
Numeric	Verbose	Wn	Function
0	OK	W0	Modem has successfully executed the previous command and has returned to the on-line command state.
1	CONNECT	W0	Connection established at unspecified rate.
2	RING	W0	Incoming ring detected.
3	NO CARRIER	W0	Carrier signal lost or no connection established.
4	ERROR	W0	Last command issued was not valid.
5	CONNECT 1200	W0	Connection established at 1200bps.
6	NO DIALTONE	W0	No dial tone was detected within the time allotted by S7.
7	BUSY	W0	A busy tone was detected after dialing.
8	NO ANSWER	W0	No quiet answer (ring-back followed by silence) was detected.
9	CONNECT 600	W0	Connection established at 600bps
10	CONNECT 2400	W0	Connection established at 2400bps.
11	CONNECT 4800	W0	Connection established at 4800bps.
12	CONNECT 9600	W0	Connection established at 9600bps.
13	CONNECT 7200	W0	Connected as data modem during answer.
14	CONNECT 12000	W0	Connection established at 12000bps.
15	CONNECT 14400	W0	Connection established at 14.4K bps.
16	CONNECT 19200	W0	Connection established at 19.2K bps.
17	CONNECT 38400	W0	Connection established at 38.4K bps.
18	CONNECT 57600	W0	Connection established at 57.6K bps.
19	CONNECT 115200	W0	Connection established at 115.2K bps.
22	CONNECT 75/1200	W0	Connection established at transmit 75/receive 1200bps.
23	CONNECT 1200/75	W0	Connection established at transmit 1200/receive 75bps.

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BASIC RESULT CODES (cont'd)			
Numeric	Verbose	Wn	Function
24	DELAYED	W0	Connection fails and number dialed is "delayed" due to country blacklisting.
32	BLACKLISTED	W0	Connection failed and the number dialed is considered "blacklisted"
33	FAX	W0	Fax connection established.
35	DATA	W0	Data connection established.

EXTENDED RESULT CODES			
Numeric	Verbose	Wn	Function
40	CARRIER 300	W1	Carrier signal at 300bps is detected.
44	CARRIER 1200/75	W1	Carrier signal at transmit 1200/receive 75bps is detected.
45	CARRIER 75/1200	W1	Carrier signal at transmit 1200/receive 75bps is detected.
46	CARRIER 1200	W1	Carrier signal at 1200bps is detected.
47	CARRIER 2400	W1	Carrier signal at 2400bps is detected.
48	CARRIER 4800	W1	Carrier signal at 4800bps is detected.
49	CARRIER 7200	W1	Carrier signal at 7200bps is detected.
50	CARRIER 9600	W1	Carrier signal at 9600bps is detected.
51	CARRIER 12000	W1	Carrier signal at 12.0K bps is detected.
52	CARRIER 14400	W1	Carrier signal at 14.4K bps is detected.
53	CARRIER 16800	W1	Carrier signal at 16.8K bps is detected.
54	CARRIER 19200	W1	Carrier signal at 19.2K bps is detected.
55	CARRIER 21600	W1	Carrier signal at 21.6K bps is detected.
56	CARRIER 24000	W1	Carrier signal at 24.0K bps is detected.
57	CARRIER 26400	W1	Carrier signal at 26.4K bps is detected.
58	CARRIER 28800	W1	Carrier signal at 28.8K bps is detected.
59	CONNECT 16800	W0	Connection established at 16.8K bps.
61	CONNECT 21600	W0	Connection established at 21.6K bps.
62	CONNECT 24000	W0	Connection established at 24.0K bps.
63	CONNECT 26400	W0	Connection established at 26.4K bps.
64	CONNECT 28800	W0	Connection established at 28.8K bps.
66	COMPRESSION: CLASS 5	W1	MNP Class 5 data compression was negotiated.
67	COMPRESSION: V.42BIS	W1	V.42bis data compression was negotiated.
69	COMPRESSION: NONE	W1	No data compression was negotiated.
70	PROTOCOL: NONE	W1	No protocol was negotiated.
77	PROTOCOL: LAP-M	W1	V.42 LAPM error-control was negotiated.
80	PROTOCOL: ALT	W1	MNP error-control was negotiated.
81	PROTOCOL: ALT- CELLULAR	W1	Modem connected in the MNP10 mode.