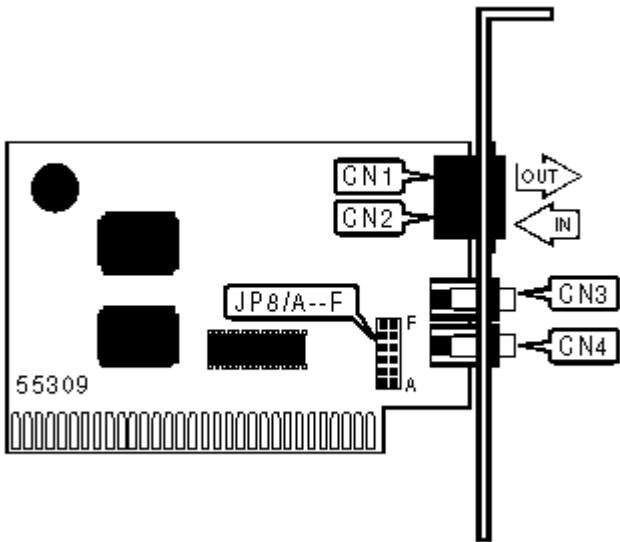


PCA111M (JUMPER VER.)

|                              |   |
|------------------------------|---|
| Card Type                    | Modem   |
| Chip Set                     | Unidentified                                  |
| I/O Options                  | Line out, line in, microphone in, speaker out |
| Maximum Modem Rate           | 14.4Kbps                                      |
| Maximum Fax Rate             | 14.4Kbps                                      |
| Data Modulation Protocol     | Bell 103/212A                                 |
|                              | ITU-T V.22, V.22bis, V.23, V.32, V.32bis      |
| 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                     | 8-bit ISA                                     |



CONNECTIONS

| Function         | Label | Function      | Label |
|------------------|-------|---------------|-------|
| Line out (RJ-11) | CN1   | Speaker out   | CN3   |
| Line in (RJ-11)  | CN2   | Microphone in | CN4   |

SERIAL PORT ADDRESS

| Setting     | JP8/A  | JP8/B  |
|-------------|--------|--------|
| COM1 (3F8h) | Closed | Closed |
| COM2 (2F8h) | Open   | Closed |
| COM3 (3E8h) | Closed | Open   |
| COM4 (2E8h) | Open   | Open   |

INTERRUPT

| Setting | JP8/C | JP8/D | JP8/E | JP8/F |
|---------|-------|-------|-------|-------|
|---------|-------|-------|-------|-------|

|      |        |        |        |        |
|------|--------|--------|--------|--------|
| IRQ2 | Closed | Open   | Open   | Open   |
| IRQ3 | Open   | Closed | Open   | Open   |
| IRQ4 | Open   | Open   | Closed | Open   |
| IRQ5 | Open   | Open   | Open   | Closed |

## SUPPORTED COMMAND SET

### Basic AT Commands

AT, **■**+++**■**, A/

A, E, H, M, O, P, T, V, X, Y, Z

&C, &F, &G, &M, &T, &V, &W, &X, &Y, &Z

### Extended AT Commands

%A, %C, %E, %Q

\A, \B, \C, \G, \J, \K, \Q, \T, \X

### S Registers

S0, S1, S2, S3, S4, S5, S6, S7, S8, S9,S10, S11, S12, S14, S16, S18, S21, S22, S23, S25

S26, S27, S30, S91

**Note:** See MHI Help File for full command documentation.

## PROPRIETARY AT COMMAND SET

### AUTO-MODE DETECTION

|                     |  |
|---------------------|--|
| <b>Type:</b>        | Configuration  |
| <b>Format:</b>      | AT [cmds] N <i>n</i> [cmds]  |
| <b>Description:</b> | 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; handshake begins at line speed designated by the %B command              |
| <b>■</b> N1 | Auto-mode detection enabled; handshake begins at line speed designated by the %B command and DTE speed |

## COMMUNICATION PROTOCOLS

|                     |   |
|---------------------|---|
| <b>Type:</b>        | Configuration                                     |
| <b>Format:</b>      | AT [cmds] B <i>n</i> [cmds]                       |
| <b>Description:</b> | 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   |
| ■ B1    | Bell 212A at 1200bps  |
| B2      | ITU-T V.22 at 75/1200Kbps in originate mode, 1200/75Kbps in answer mode |

## DATA SET READY (DSR)

|                     |                              |
|---------------------|------------------------------|
| <b>Type:</b>        | Configuration                |
| <b>Format:</b>      | AT [cmds] &S <i>n</i> [cmds] |
| <b>Description:</b> | Selects DSR options          |

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

## DATA TERMINAL READY (DTR)

|                     |                               |
|---------------------|-------------------------------|
| <b>Type:</b>        | Configuration                 |
| <b>Format:</b>      | AT [cmds] &D <i>n</i> [cmds]  |
| <b>Description:</b> | Selects modem response to DTR |

| Command | Function                              |
|---------|---------------------------------------|
| ■ &D0   | DTR ignored                           |
| &D1     | DTR toggle causes online command mode |
| &D2     | DTR toggle causes modem to go on-hook |
| &D3     | Modem reset on DTR toggle             |

## DIAL

|                     |   |
|---------------------|---|
| <b>Type:</b>        | Immediate   |
| <b>Format:</b>      | AT [cmds] D<#> [cmds]   |
| <b>Description:</b> | Dials telephone number according to any modifiers included in the string                    |
| <b>Note:</b>        | Any combination of modifiers can be used to produce the desired dial functions in sequence. |

| Command      | Function   |
|--------------|--|
| DP           | Pulse dialing enabled  |
| DR           | Answer mode enabled; originate mode disabled following handshake initiation.   |
| DS= <i>n</i> | 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^           | Data calling tone enabled  |
| D;           | Modem returned to idle state after dialing. The semicolon can only be placed at the end of the dial command.   |

## FLOW CONTROL

|                     |                              |
|---------------------|------------------------------|
| <b>Type:</b>        | Configuration                |
| <b>Format:</b>      | AT [cmds] &K <i>n</i> [cmds] |
| <b>Description:</b> | Enables flow control options |

| Command | Function                      |
|---------|-------------------------------|
| &K0     | Flow control disabled         |
| &K3     | RTS/CTS flow control enabled  |
| ■ &K4   | XON/XOFF flow control enabled |

## LINE TYPE

| Type:        | Configuration                |
|--------------|------------------------------|
| Format:      | AT [cmds] &Ln [cmds]         |
| Description: | Selects line type            |
| Command      | Line Type                    |
| ■ &L0        | Switched line (PSTN/Dial-up) |
| &L1          | Leased line                  |
| &L2          | Power-on leased line         |

PULSE DIALING RATIO

| Type:        | Configuration                       |
|--------------|-------------------------------------|
| Format:      | AT [cmds] &Pn [cmds]                |
| Description: | Selects pulse dial make/break ratio |
| Command      | Function                            |
| ■ &P0        | 39/61ms at 10pps (North America)    |
| &P1          | 33/67ms at 10pps (Europe)           |
| &P2          | 39/61ms at 20pps                    |

REPORT INFORMATION

| Type:        | Immediate                      |
|--------------|--------------------------------|
| Format:      | AT [cmds] In [cmds]            |
| Description: | Displays information requested |
| Command      | Function                       |
| I0           | Reports product code           |
| I1           | Reports ROM checksum           |
| I2           | Tests and reports ROM checksum |
| I3           | Reports model ID & firmware ID |
| I5           | Reports country code           |

## RESULT CODES

**Type:** Configuration

**Format:** AT [cmds] Q*n* [cmds]

**Description:** Enables modem to send result codes to the DTE

| Command | Function   |
|---------|--|
| ■ Q0    | Result code sending enabled  |
| Q1      | Result code sending disabled   |
| Q2      | "Ring" result code disabled. In answer mode; CONNECT and NO CARRIER disabled |

## SPEAKER VOLUME

**Type:** Configuration

**Format:** AT [cmds] L*n* [cmds]

**Description:** Controls speaker volume

| Command | Function               |
|---------|------------------------|
| L0      | Low volume setting     |
| L1      | Low volume setting     |
| ■ L2    | Medium volume setting  |
| L3      | Highest volume setting |

## EXTENDED AT COMMAND SET

### CONNECTION SPEED

**Type:** Configuration

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

**Description:** Selects maximum modem connection speed

| Command | Function |
|---------|----------|
| %B300   | 300bps   |
| %B1200  | 1200bps  |

|           |          |
|-----------|----------|
| %B2400    | 2400bps  |
| %B4800    | 4800bps  |
| %B7200    | 7200bps  |
| %B9600    | 9600bps  |
| %B12000   | 12.0Kbps |
| ■ %B14400 | 14.4Kbps |

CONNECT MODE

|              |   |
|--------------|---|
| Type:        | Configuration   |
| Format:      | AT [cmds] \N <i>n</i> [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 enabled |
| \N4     | V.42 reliable mode enabled |
| \N5     | V.42/Normal mode enabled   |
| \N6     | V.42/MNP mode enabled      |
| \N7     | MNP/Normal mode enabled    |

EXTENDED RESULT CODES

|              |                               |
|--------------|-------------------------------|
| Type:        | Configuration                 |
| Format:      | AT [cmds] \V <i>n</i> [cmds]  |
| Description: | Selects extended result codes |

| Command | Function  |
|---------|---|
| \V0     | DCE speed displayed. Extended result codes disabled           |
| \V1     | DCE speed; simple reliable mode extended result codes enabled |

|       |   |
|-------|---|
| ■ \V2 | DCE speed; detailed reliable mode extended result codes enabled |
| \V3   | DTE speed only  |

## S(status) -REGISTERS

### AUTO-RELIABLE FALLBACK CHARACTER

|                     |   |
|---------------------|---|
| <b>Type:</b>        | Register  |
| <b>Format:</b>      | AT [cmds] S29= <i>n</i> [cmds]                                  |
| <b>Range:</b>       | 0-127   |
| <b>Unit:</b>        | ASCII   |
| <b>Description:</b> | Sets the character used as the auto-reliable fallback character |

### BIT-MAPPED REGISTER S15

|                     |  |
|---------------------|--|
| <b>Format:</b>      | AT [cmds] S15= <i>n</i> [cmds]                           |
| <b>Range:</b>       | 0-255  |
| <b>Unit:</b>        | Bit-mapped   |
| <b>Description:</b> | Controls MNP options, break types, DTE rate adjustments. |
| <b>Note:</b>        | Further information is currently unavailable             |

### BIT-MAPPED REGISTER S17

|                     |  |
|---------------------|--|
| <b>Format:</b>      | AT [cmds] S17= <i>n</i> [cmds]                                   |
| <b>Range:</b>       | 0-255  |
| <b>Unit:</b>        | Bit-mapped   |
| <b>Description:</b> | Controls reliable mode, data compression, and extended responses |
| <b>Note:</b>        | Further information is currently unavailable                     |

### BIT-MAPPED REGISTER S19

|                |                                |
|----------------|--------------------------------|
| <b>Format:</b> | AT [cmds] S19= <i>n</i> [cmds] |
| <b>Range:</b>  | 0-255                          |
| <b>Unit:</b>   | Bit-mapped                     |



**Description:** Determines flow control, echo, XON/XOFF pass-through

**Note:** Further information is currently unavailable

#### BIT-MAPPED REGISTER S20

**Format:** AT [cmds] S20=*n* [cmds]

**Range:** 0-255

**Unit:** Bit-mapped

**Description:** Sets PC/NEC baud rate options, guard tones

**Note:** Further information is currently unavailable

#### BIT-MAPPED REGISTER S24

**Format:** AT [cmds] S24=*n* [cmds]

**Range:** 0-255

**Unit:** Bit-mapped

**Description:** Controls make/break ratio, auto retrain, V.34/VFC, auto mode

**Note:** Further information is currently unavailable

#### BIT-MAPPED REGISTER S28

**Format:** AT [cmds] S28=*n* [cmds]

**Range:** Unidentified

**Unit:** Bit-mapped

**Description:** Determine DCE rate

**Note:** Further information is currently unavailable

#### SLEEP TIMER

**Type:** Register

**Format:** AT [cmds] S13=*n* [cmds]

**Range:** 0-255

**Unit:** 1 second

**Description:**

Maximum duration of DTE and DCE inactivity allowed prior to initiating low-power sleep mode.