This addendum corrects information in the *AST-3780 and AST-3780/A User’s Manual*. Please replace the original pages with the updated pages from this addendum as follows:

<table>
<thead>
<tr>
<th>Original Pages</th>
<th>Updated Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>xiii through xvi</td>
<td>xiii through xvi</td>
</tr>
<tr>
<td>2-1 through 2-6</td>
<td>2-1 through 2-6</td>
</tr>
<tr>
<td>3-5 and 3-6</td>
<td>3-5 and 3-6</td>
</tr>
<tr>
<td>3-11 through 3-22</td>
<td>3-11 through 3-22</td>
</tr>
</tbody>
</table>
Local Connections Using the Null Modem

The CC-432 and CC-432A adapters each include a null modem. You can configure the adapter to allow communication to the host computer for short distances (up to 50 feet) without using a modem.

Figure 1. Local Connection Using Null Modem.
Local Connection Using Limited Distance Modem

To connect RS-232 devices over 50 feet, but less than one mile, use a limited distance modem. This connection is over RS-232 cable.

Figure 2. Local Connection Using a Limited Distance Modem.
Remote Connection Using a Modem

If you are planning to use a modem to connect a remote host over standard (voice-grade) telephone lines, you have a choice of many different kinds of modems. They range in speeds, up to 9600 baud. AST-3780 operates with any standard synchronous modem.

![Diagram of Remote Connection Using a Modem]

Figure 3. Remote Connection Using a Modem.
Before you can install the CC-432 adapter board, you must first install your AST-3780 software. To do this, you must copy the master diskette to a backup diskette, then install the program from the back-up diskette to the computer.

You can install your AST-3780 software either on a diskette or in a subdirectory of your hard disk. This section describes both methods of installation.

2.1 Floppy Diskette Drive Installation

If you plan to operate your AST-3780 software from a diskette, refer to this section for instructions on creating a backup diskette. Otherwise, skip to Section 2.2 for hard disk installation procedures.

2.1.1 Making a BackUp Diskette

Before you begin using the AST-3780 emulation diskette, make a backup copy of your master diskette and put the original in a safe place. That way, you can always make another copy if the one you are working on is damaged.

This subsection separates the backup procedures for PC and PS/2 systems. Follow the procedures described for your particular system.
Getting Started

PC, XT, AT, and PS/2 Models 25 and 30

Before you begin, make sure you have at least one blank, 5.25-inch formatted diskette (for PCs) or 3.5-inch diskette (for PS/2 models 25 and 30) on which to make the backup. (For information on how to format a diskette, see the FORMAT command in your DOS Manual.)

STEP 1

Boot the system with the DOS diskette: This should be a working copy of DOS and not the original master diskette.

STEP 2

Copy the AST-3780 Program Diskette to your backup diskette: Once the DOS prompt appears on your screen, use the COPY command to copy all the files on the AST-3780 program diskette to your backup. (Refer to your DOS Manual if you are not sure about the COPY command.) The following files should be copied:

<table>
<thead>
<tr>
<th>File</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFG3780.EXE</td>
<td>Configurator program</td>
</tr>
<tr>
<td>IP.EXE</td>
<td>Interactive emulator program</td>
</tr>
<tr>
<td>CMDP.EXE</td>
<td>Batch emulator program</td>
</tr>
<tr>
<td>EMDAT.PRM</td>
<td>Configuration parameters file</td>
</tr>
<tr>
<td>EMSCRN.FRM</td>
<td>Configuration Screen driver file</td>
</tr>
<tr>
<td>CC432TEST.COM</td>
<td>CC-432 diagnostic program</td>
</tr>
</tbody>
</table>

STEP 3

Store your program diskette: Once you have made a backup diskette, store the original AST-3780 program diskette in a safe place and use your backup copy.

You are now ready to install the CC-432 adapter. For instructions on doing this, refer to the CC-432 User’s Manual.
PS/2 Models 50, 60, and 80

Before you can install your CC-432A, you need to make a working copy of your AST-3780A program diskette. To do so, you need the following:

- PS/2 Model 50, 60, or 80 reference diskette (included with your PS/2 computer).
- One blank, high-density 3.5-inch diskette (which will become your working reference diskette and your Emulation working diskette).

Follow these steps in order:

STEP 1

Write-protect your original program diskette: To protect your AST-3780A program diskette from being accidentally overwritten, slide up the write-protect tab on the back of the diskette, as shown in Figure 2-1.
STEP 2
Start up your system: Boot your computer.

STEP 3
Back up the AST-3780A program diskette to a blank diskette (this is the working copy of your reference diskette): At the DOS prompt, type this command:

```
DISKCOPY A: B: <Enter>
```

The following prompt appears:

Insert SOURCE diskette in drive A:

Press any key when ready . . .
Follow these steps to insert your diskettes:

- **If your computer has two floppy drives:** Insert your program diskette (the source disk) in drive A and your blank diskette (the target) in drive B. Press any key to start copying.

- **If you have one floppy drive:** Insert your program diskette in drive A and press any key to continue. When the computer is ready to write to your blank diskette, this prompt appears:

  Insert TARGET diskette in drive A:

  Press any key when ready . . .

Remove your original program diskette and insert your blank diskette. Press any key to resume copying. When the computer tells you to insert the source diskette again, remove the target diskette and reinsert the IBM reference diskette.

Use the DIR command to make sure you have successfully copied the following files:

<table>
<thead>
<tr>
<th>File</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFG3780A.EXE</td>
<td>Configurator program</td>
</tr>
<tr>
<td>IP.EXE</td>
<td>Interactive emulator program</td>
</tr>
<tr>
<td>CMDP.EXE</td>
<td>Batch emulator program</td>
</tr>
<tr>
<td>EMDAT.PRM</td>
<td>Configuration parameters file</td>
</tr>
<tr>
<td>EMSCRN.FRM</td>
<td>Screen driver file</td>
</tr>
<tr>
<td>432ATEST.COM</td>
<td>CC432A diagnostic program</td>
</tr>
<tr>
<td>@7092.ADF</td>
<td>CC-432A configuration file</td>
</tr>
</tbody>
</table>

Copy the @7092.ADF file to your IBM reference diskette to configure the CC-432A board. For information on this procedure, refer to your CC-432A User’s Manual.
Getting Started

When the computer is finished copying, the following message appears:

Copy complete.

Copy another (Y/N)?

Press N.

You must use a high-density 3.5-inch diskette for your backup diskette. If you get this message after you insert your blank diskette:

Drive types or diskette types not compatible.

replace your blank diskette with a high-density diskette.

You are now ready to install the CC-432A in your computer. See your AST Research CC-432A User’s Manual for installation procedures.

2.2 Hard Disk Installation

If you plan to operate your AST-3780 software from a hard disk, refer to the following section for instructions on creating an AST-3780 directory and installing your files.

2.2.1 Creating Your AST-3780 Directory

STEP 1
Make sure you are in the root directory of your hard disk: For example, if the name of your hard disk drive is C, type the following at your DOS prompt:

C: < Enter >
CD\ < Enter >
If you do not want to create or modify a file, type N and press \textless Enter\r\textgreater. This returns you to Figure 3-2.

3.3 Selecting Configuration Parameters

After you create or modify the configuration file, the screen in Figure 3-3 appears:

![Configuration File Edit Menu]

Figure 3-3. Configuration File Edit Menu.

Use this menu to create a new configuration file or modify an existing one.
NOTE

If you are using the AST-3780A version, the IRQ option does not appear in the previous screen or in the current configuration list. Instead, the configuration file, @7092.ADF, automatically sets the interrupt request line for you.

You may need to change the configuration values listed in Figure 3-3 as your emulation environment dictates. For specific requirements, refer to your system operator's manual.

To change a specific parameter, highlight one of the options at the top of the edit menu (MODE, TRANSMIT, RECEIVE, XPARENT_SW, and so on.) with the <Right Arrow> and <Left Arrow> and press <Enter>. You can also press the first letter of the option name (for example, press "T" to enter the Transmit menu). As you move to each option, a brief explanation appears below it.

To return to DOS without storing changes, select QUIT. To return to the previous option, press <Esc>.

Each of these options controls one or more of the configuration parameters listed in Figure 3-3. Refer to Table 3-1 for the option and its corresponding parameters.
3.5.4 Gross Transmission Timeout

If you select the T_TIMEOUT option from the Transmission Parameters menu, the following message and prompt appears.

**Gross Transmission Timeout**

Current Gross Transmit timeout: 100
New value (or Enter Key if you don't want to change): 

This parameter defines the maximum time (in seconds) the line waits once the emulator has been given the command to transmit. The default time is 100 seconds. After this, it displays an error message and ends the program.

Either select a new timeout value, press <Esc> to return to the previous menu, or select QUIT to return to DOS without saving changes.

**NOTE**

Only use a gross transmission timeout value when running CMDP, the batch mode version of the emulator.

3.6 Configuring the Receive Parameters

If you select the RECEIVE option from the main menu, the following menu appears.

**Receive Parameters Configuration**

DEVSEL  PRTSTRING  R_TIMEOUT  AUTO_TIMEOUT  QUIT
Below these options is a brief description of the option currently highlighted. Below this appears the current receive parameters:

Current Receive Configuration

- Disk Selection Code: 18
- Printer Selection Code: 17
- Printer Initialization Characters: 15 0
- Current Gross Receive Timeout: 300
- Current Auto. Receive Timeout: 45

This menu enables you to specify which reception options your computer has while communicating with the host.

Either select a new receive parameter, press <Esc> to return to the previous menu, or select QUIT to return to DOS without saving changes.

### 3.6.1 Device Selection Codes

When you select DEVSEL from the Receive Parameters menu, the following message and prompt appears.

Device Selection Codes

Current Values (Punch,Print): 17, 18

New Value (Punch): _

The punch and print parameters are used with the General Receive feature. The punch code defines the diskette (punch) selection, and the print code defines the printer selection. Both values must be entered as decimal EBCDIC, where:

\[ 18 = 3780 \text{ Punch code (DC2)} \]

\[ 17 = 3780 \text{ Print code (DC1)} \]
Either select a new device code, press <Esc> to return to the previous menu, or select QUIT to return to DOS without saving changes.

3.6.2 Printer Initialization Characters

When you select the PRTSTRING option, the following message and prompt appears.

Printer Init. String

Current Initialization Characters: 15 0
New Value: _

This parameter is a string of characters used by the emulator to initialize an attached printer device (LPT1:). This can be used to set the printer (using IBM or Epson MX-80 format) to condensed print mode allowing 132 characters on each line. To learn what character string your line printer needs to initialize it, refer to your printer operator’s manual.

Specify as many values as you require by first entering a numeric value and pressing <Enter>. (All values should be in decimal format, not hexadecimal.) The number you entered disappears and is replaced by a new blank. Continue to enter numbers and press <Enter> until you are finished. To end the string, type in "0" and press <Enter>. The program returns you to the previous menu.
3.6.3 Gross Receive Timeout

When you select the R_TIMEOUT option from the Receive Parameters menu, the following message and prompt appears.

Gross Receive Timeout

Current Gross Receive Timeout: 300

New value (or Enter Key if you don’t want to change): ...

The Gross Receive Timeout parameter defines the maximum time in seconds the system allows for a timeout during receiving. If data is not received within this time, the program displays an error message and terminate. The default value is 300 seconds (5 minutes).

To specify a new timeout duration, enter a number at the cursor position and press <Enter>. Either select a new timeout, press <Esc> to return to the previous menu, or select QUIT to return to DOS without saving changes.

NOTE

Only use a gross receive timeout value when running the emulator in CMDP.

3.6.4 Auto. Receive Timeout

When you select the AUTO_TIMEOUT option from the Receive Parameters menu, the following message and prompt appears.

Auto. Receive Timeout

Current Auto. Receive Timeout: 45

New value (or Enter Key if you don’t want to change): ...
Software Configuration

The Auto. Receive Timeout parameter defines the maximum number of seconds the system will wait between the end of one receive file and the beginning of the next. If the next file is not received within this time, the program moves to the next command.

To specify a new timeout duration, enter a number at the cursor position and press <Enter>. Either select a new timeout, press <Esc> to return to the previous menu, or select QUIT to return to DOS without saving changes.

3.7 Setting Transparent Parameters

When you select XPARENT_SW from the main menu, the following menu displays.

```
Transparent Parameters

0 1 2 3 QUIT
```

This parameter determines whether data undergoes ASCII/EBCDIC translation in the transparent mode. If it is set for translation, both transmit and receive translation takes place.

At the same time, you can specify whether you want data blocked or deblocked in transparent mode. If you choose deblock, the program deblocks received records at 80-character intervals. Use this when receiving transparent punch data from the host. Set this parameter to 1 when transferring files between two personal computers in transparent mode.

Each option number represents a different combination of the two variables:

- 0 = translate/no deblock
- 1 = no translate/no deblock
- 2 = translate/ deblock
- 3 = no translate/deblock
To change the default setting (Translate/Deblock), select the appropriate setting. The meaning of each option number is explained beneath the option list as it is highlighted. The current transparent parameters are displayed beneath the brief explanation.

Either select a new parameter, press `<Esc>` to return to the previous menu, or select QUIT to return to DOS without saving changes.
3.8 Defining the Interrupt Request Line

When you select IRQ from the main menu, the following menu appears.

**Interrupt Request Line**

2 3 4 5 6 7 QUIT

This parameter determines the hardware interrupt request line the emulator uses during the program's operation. Do not change this value from the default (2) unless a hardware device conflict exists. For more information, refer to the *CC-432 Advanced Communication Board User's Manual*.

Either select a new interrupt request line, press `<Esc>` to return to the previous menu, or select QUIT to return to DOS without saving changes.

**NOTE**

If you are using the AST-3780A emulator program, do not select an interrupt request line. The program automatically selects an interrupt request line for you.

3.9 Editing the Translation Tables

The AST-3780 program provides complete ASCII and EBCDIC translation tables. These translation tables are stored on a separate file named MAPDFT.AST. Normally, you are communicating with a host system that uses conventional character sets and therefore, conventional translation tables; however, sometimes you need to edit your translation tables to communicate successfully with the host.
Getting Started

To edit the translation tables, select the EDIT_TABLES option from the main configuration menu. The table shown in Figure 3-5 appears.

Figure 3-5. EBCDIC- to-ASCII Translation Table.
To change the EBCDIC-to-ASCII values for any of the hexadecimal characters shown, enter a new two-digit hexadecimal character code at the cursor position and press <Enter>. This alters the EBCDIC character code as it is translated to its ASCII equivalent. Continue to enter new values as needed until you are finished. Press <Esc> to exit this table. The table shown in Figure 3-6 appears.

![ASCII to EBCDIC Translation Table](image)

Figure 3-6. ASCII-to-EBCDIC Translation Table.
To change the ASCII-to-EBCDIC values for any of the hexadecimal characters shown, enter a new two-digit hexadecimal character code at the cursor and press `<Enter>`. This alters the ASCII character code as it is translated to its EBCDIC character code equivalent. Continue to enter new values as needed until you are finished. Press `<Esc>` to exit this table and return to the main menu.

You have now completed your configuration file. Press `<Esc>` to return to the main menu, save, and quit.

### 3.10 Starting the AST-3780 Emulator

Once you have created the configuration file (EMDAT.PRM), you are ready to enter the AST-3780 emulator program. The emulator operates in one of two ways:

- Keyboard Controlled (IP).
- Batch File Controlled (CMRP).

#### 3.10.1 Keyboard Controlled

Start the AST-3780 interactive program by entering the following command at the DOS prompt.

```
IP <Enter>
```

The keyboard controlled, interactive version of AST-3780 comes up and you can initiate communications between your computer and the host system.
See Section 4 for information on running in the interactive mode. Once you have started the AST-3780 emulator, turn on your modem and connect it to the host. Refer to your modem user's manual for information on how this is done.

3.10.2 Batch File Control

You invoke the emulator in batch mode by entering the following command.

```
CMDP < file.bat < Enter >
```

<file.bat> represents the name of the batch file you created for this program. The batch file name must be preceded by the "less-than" (<) symbol. If the file is stored on another directory or in another drive, include the full pathname (directory or drive designator, subdirectory designator, and so on). For complete instructions on creating a pathname, see your DOS Manual.

See Section 5 for information on running in the batch mode. Once you have started the AST-3780 emulator, turn on your modem and connect it to the host. Refer to your modem user's manual for information.
3.11 Initializing a Serial Printer

If you have a serial printer connected to your computer, you can use it as an output device by executing the appropriate DOS commands before running the AST-3780 program. The following example illustrates this procedure.

```
A> MODE COM1: 1200, N, 8, 1 <Enter>
A> MODE LPT1: =COM1:< Enter>
A> IP <Enter>
```

1200 is a selected baud rate.

N indicates no parity.

8 indicates 8 data bits.

1 indicates 1 stop bit.

$LPT1: =COM1:$ tells the program that you are defining line printer 1 as the port supporting the above communications parameters.

These options differ from printer to printer. Refer to your printer manual for the baud rate, parity, data bit, and stop bit specifications used for your specific printer.

Once you have initialized your printer, you can print out any data produced from your communications with the host through your serial printer.