8　Expanding the ASR-X Pro

Overview

The ASR-X Pro provides some exciting opportunities for expansion, described in this chapter—follow all of the instructions provided carefully, to ensure that you don't injure your ASR-X Pro, or yourself.

An Important Note About Electro Static Discharge

Many of the internal components in the ASR-X Pro and areas of its expansion boards are susceptible to Electro Static Discharge (ESD), commonly known as "static." Electro static discharge can damage or destroy electronic devices. Here are some procedures you can follow when handling electronic devices in order to minimize the possibility of causing ESD damage:

- Before opening your ASR-X Pro or handling the expansion boards you should be grounded. Use a ground strap to discharge any static electric charge built up on your body. The ground strap attaches to your wrist and any unpainted metal surface within the ASR-X Pro.
- Avoid any unnecessary movement, such as scuffing your feet when handling electronic devices, since most movement can generate additional charges of static electricity.
- Minimize the handling of the expansion boards. Keep them in their static-free packages until needed. Transport or store the expansion boards only in their protective packages.
- When handling the expansion boards, avoid touching the connector pins. Try to handle the expansion boards by the edges only.

If you have any questions concerning the installation of ASR-X Pro expansion options, or for additional technical support, please contact your authorized ENSONIQ dealer or ENSONIQ Customer Service at (610) 647-3930 Monday through Friday 9:30 a.m. to 12:15 p.m. and 1:15 p.m. to 6:30 p.m. Eastern Time.
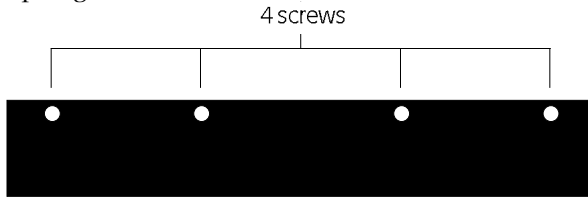
Opening the ASR-X Pro

1. Turn of the ASR-X Pro's power and unplug the AC cable from its rear-panel jack.
2. Place your ASR-X Pro on a flat surface, normal-side up, leaving an empty space on the surface to the left of the ASR-X Pro left equal to the width of the ASR-X Pro.
3. Locate the ten hex screws along the left, right and lower edges of the ASR-X Pro's upper panel.
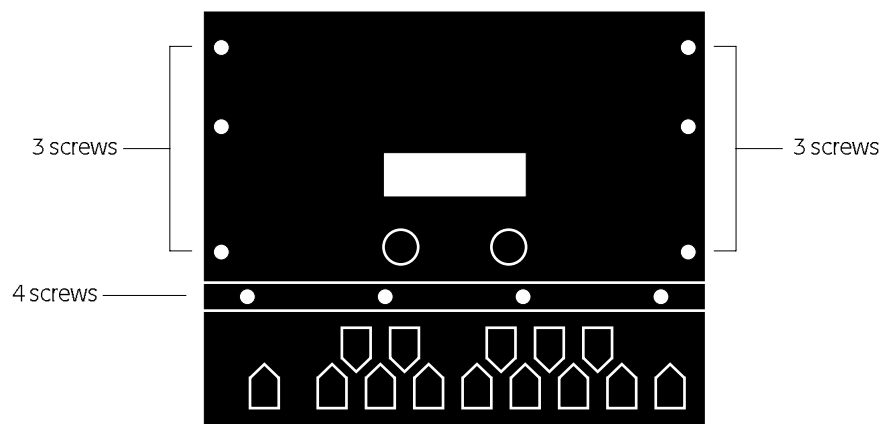

The ASR-X Pro when viewed from the top

4. Using the hex wrench supplied in your ASR-X Pro accessory kit, remove the ten screws. Put the screws in a safe location—you'll need them again when you close up the ASR-X Pro.

5. Turn the ASR-X Pro around so that its rear panel is facing you, and locate the four Phillips-head screws along its top edge.

4 screws

6. Remove the four screws, and place them with the first ten.
7. Rotate the ASR-X Pro back to its original position.
8. Gently lift the right-hand edge of the ASR-X Pro's lid, opening it out and towards the left as you would a book. Be careful—the lid is not hinged to the chassis of the ASR-X Pro—take care not to break or damage the ribbon connector connecting the lid to the ASR-X Pro's main board.

The ribbon connector
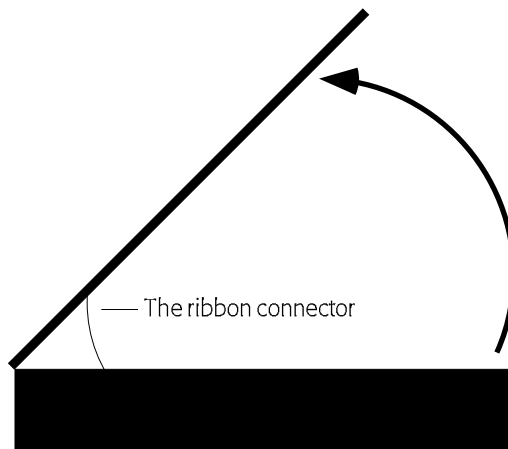
Carefully lift the lid as you would open a book.

9. Rest the lid, display-side-down, on the surface to the left of the ASR-X Pro.

Installing Additional Sampling/Resampling Memory

The ASR-X Pro ships from the factory with 2 MB (megabytes) of memory in which you can store sampled/resampled waves and sequencer data. You can install up to 64 additional MB of memory (for a total of 66 MB) by installing standard 4, 8, 16 or 32 megabyte SIMM chips.

Amount of memory installed	approx. mono sampling time	approx. stereo sampling time
2 MB (as shipped from the factory)	15 seconds	7 seconds
6 MB (with 4-MB SIMM installed)	63 seconds	31 seconds
10 MB (with 8-MB SIMM installed)	107 seconds	53 seconds
18 MB (with 16-MB SIMM installed)	202 seconds	101 seconds
34 MB (with 32-MB SIMM installed)	392 seconds	196 seconds
50 MB (with a 32 and 16 MB SIMM installed)	583 seconds	291 seconds
66 MB (with two 32 MB SIMMs installed)	773 seconds	386 seconds

Note: When memory is increased to 10 MB or higher, sequence memory is automatically expanded to 512 kilobytes.

What is a SIMM Chip?

"SIMM" is an acronym for "Single In-line Memory Module." A SIMM is a small circuit boards onto which have been placed smaller DRAM—for "dynamic random access memory"—chips.

Which SIMMs Can be Installed in the ASR-X Pro?

The ASR-X Pro accepts any standard 72-pin SIMM that meets these standards:

- The SIMM is 70ns (nanoseconds) or faster.
- The SIMM is a 5-volt chip (3-volt SIMMs will not properly fit the ASR-X Pro SIMM socket).
- Either extended data output (EDO) or non-EDO SIMMs can be used.
- The SIMM is either a x32 or x36 chip.

Note: The two sockets have different SIMM memory size requirements—see "Installing Memory in the Proper SIMM Sockets" later in this chapter.

SIMM Installation Procedure

Warning: It's worth reading through the following procedures before actually performing them, so you'll know what to expect along the way. Don't forget to follow the guidelines in "An Important Note About Electro Static Discharge" at the beginning of this chapter.

### Locating the SIMM Sockets on the ASR-X Pro Main Board

Before proceeding, follow the instructions in "Opening the ASR-X Pro," earlier in this chapter.

1. Looking down into the ASR-X Pro with the pads towards you, the SIMM sockets are located as shown by the arrow in the illustration below:
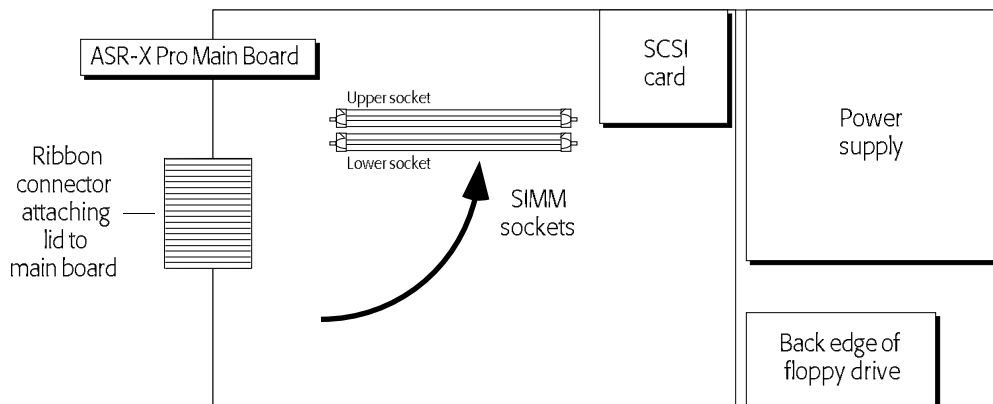
The main board contains many elements not shown.
Drawing not to scale.

2. Viewed from the front, each SIMM socket looks something like this:
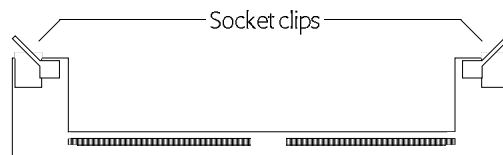
Installing Memory in the Proper SIMM Sockets

To increase your ASR-X Pro's memory up to 34 MB, use only the lower socket—this socket can accommodate 4, 8, 16 and 32 MB SIMMs. When the lower socket contains a 32 MB SIMM, you can install a 16 or 32 MB SIMM in the upper socket to increase the ASR-X Pro's memory to 50 or 66 MB.

Installing a SIMM chip into a SIMM Socket

Before proceeding, see "Opening the ASR-X Pro," and "Locating the SIMM Sockets on the ASR-X Pro Main Board."

1. Orient your SIMM chip so that its edge connector is downward, and its alignment notch is facing to the left, as shown.
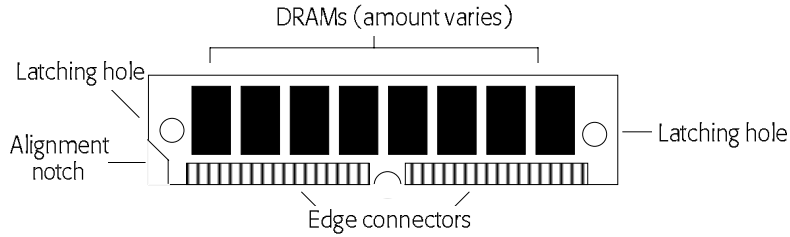
2. Approaching the SIMM socket from its back side—the side closest to the ASR-X Pro's rear-panel connectors—place your chip's edge connector in the slot in the center of the socket.
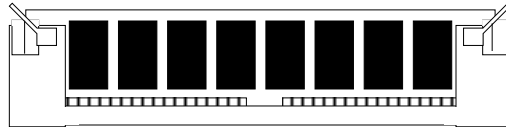
3. Using two hands, gently press the upper edge of the back of your chip so that it tilts forward between the two metal clips on the socket.

4. Continue pressing forward until both socket clips snap into place against the front edge of the chip —you'll hear a click when this occurs.

5. Replace the ASR-X Pro's lid and eight screws removed in Steps 3-6 of "Opening the ASR-X Pro," earlier in this section.

6. Reconnect the ASR-X Pro's AC power.
   When you turn your ASR-X Pro back on, your new memory will be available for use.

SIMM Removal Procedure

Before proceeding, you'll need to open your ASR-X Pro. Follow the instructions in "Opening the ASR-X Pro," earlier in this chapter. "Locating the SIMM Sockets on the ASR-X Pro Main Board" tells you how to find the SIMM socket.

1. Gently pull outward each of the SIMM socket's metal clips, one at a time—you'll be able to hear or feel when each clip lets go of the chip's edge.

2. When both clips have let go of the SIMM's edges, you can lift the chip out of the socket.

3. Replace the ASR-X Pro's lid and eight screws removed in Steps 3-6 of "Opening the ASR-X Pro."

4. Reconnect the ASR-X Pro's AC power.

Installing an ENSONIQ EXP-Series Wave Expansion Board

The ASR-X Pro can accommodate an ENSONIQ EXP expansion board. These boards add new wave data and sounds to the ASR-X Pro. For more information on the EXP-Series Wave Expansion boards, call ENSONIQ at 610-647-3930 or visit the ENSONIQ World Wide Web site at *http://www.ensoniq.com*.

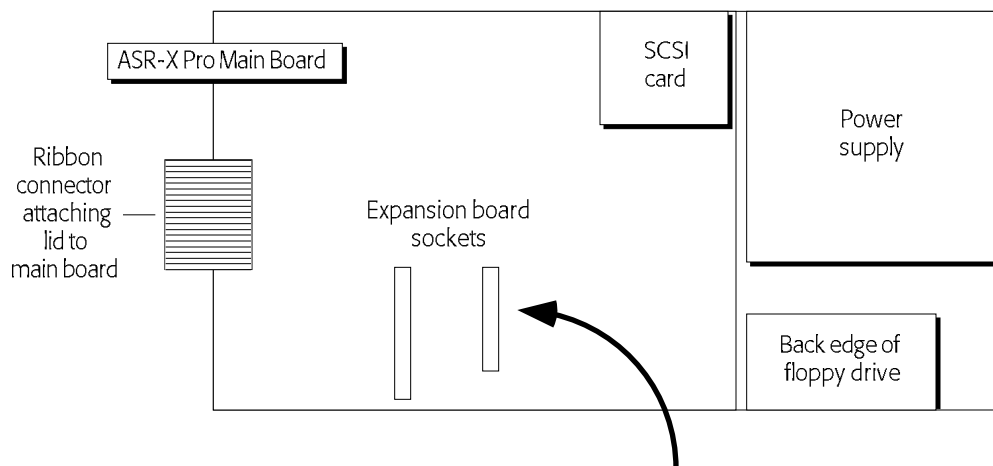## EXP-Series Wave Expansion Board Installation Procedure

Warning: It's worth taking a moment to read through the following procedures before actually performing them, so you'll know what to expect along the way. Follow the guidelines in "An Important Note About Electro Static Discharge" at the beginning of this chapter.

Locating the Wave Expansion Board Sockets on the ASR-X Pro Main Board

Before proceeding, you'll need to open your ASR-X Pro.
Follow the instructions in "Opening the ASR-X Pro," earlier in this chapter.

1. Looking down into the ASR-X Pro with the pads towards you, the expansion board sockets are located as shown by the arrow in the illustration below:

The main board contains many elements not shown.
Drawing not to scale.

ASR-X Pro Main Board

Ribbon connector attaching lid to main board

Expansion board sockets

SCSI card

Power supply

Back edge of floppy drive

Installing an EXP-Series Wave Expansion Board

Before proceeding, you'll need to open your ASR-X Pro by following the instructions in "Opening the ASR-X Pro," earlier in this chapter. "Locating the Wave Expansion Board Sockets on the ASR-X Pro Main Board," above, tells you how to find the EXP board sockets.

1. Examine your expansion board. Notice that it has a 50-pin and a 40-pin connector.

    When you turn the expansion board over, connector-side-down, its connectors will line up with the sockets in the ASR-X Pro. It's in this position that the board is installed.
2. Align your expansion board above the sockets on the ASR-X Pro main board.
4. Press the expansion board down firmly into the main board sockets so that it makes a physical (and electrical) connection with your ASR-X Pro. The expansion board's connectors must be inserted into both of the main board's sockets in order to work properly.
5. Replace the ASR-X Pro's lid and screws, reconnect its power cord, power up and follow the instructions in "To Identify an Installed Expansion Board," below, to verify that the ASR-X Pro is properly recognizing the expansion board.
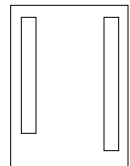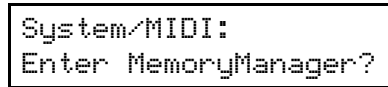
Note: To remove and expansion board, lift it gently from its sockets on the main board.
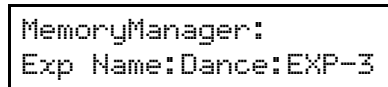
To Identify An Installed Expansion Board

1. Press the System/MIDI button.

Disk / Global
Load   Save   System

All Notes Off   ⋁ Save All   MIDI

2. Turn the Parameter knob until the display shows:

```
System/MIDI:
Enter MemoryManager?
```

3. Press the Yes button.
2. Turn the Parameter knob until the display shows:

```
MemoryManager:
Exp Name:Dance:EXP-3
```

↑
The name of the board you've installed

This will show the name of the installed expansion board.

> **Note:** If you've installed an expansion board and the ASR-X Pro does not show its name, carefully repeat the instructions in "Installing an EXP-Series Wave Expansion Board." If the ASR-X Pro still doesn't recognize the expansion board, call your authorized ENSONIQ dealer or ENSONIQ Customer Service at 610-647-3930.

Updating the ASR-X Pro Operating System

With most electronic devices, operating system (O.S.) upgrades have become common. For ENSONIQ products, an operating system upgrade provides system enhancements, and often, additional features. The ASR-X Pro O.S. is stored in its FLASH memory, and can be updated by loading a new version of the O.S. from a floppy disk. The contents of FLASH are retained even when the ASR-X Pro is turned off.

You can find information about—and download—the latest version of the ASR-X Pro operating system from ENSONIQ's World Wide Web site at *http://www.ensoniq.com*.

> **Tip:** If you're not connected to the Internet, call ENSONIQ Customer Service at 610-647-3930, or contact your authorized ENSONIQ dealer. An up-to-date O.S. list for all ENSONIQ products can also be found in the Transoniq Hacker, a third-party monthly publication (for more information, call 1-503-227-6848).

Operating System Updating Procedure

Learning The Version Number Of the Currently Installed Operating System

1. Press the Disk/Global Save and hold it down.
2. While continuing to hold down the Save button, press the System/MIDI button.

Disk / Global
Load   Save   System

All Notes Off   ⋁ Save All   MIDI

The display briefly shows you the version number of the operating system in your ASR-X Pro:

```
   ENSONIQ ASR-X Pro
O.S. Version:   1.00
```

Preparing the Operating System Floppy Disk

1. Download the operating system update from the ENSONIQ Web site (URL).
2. On your computer, DOS-format an HD floppy disk, naming the floppy "ASRXOSDISK."
3. Copy the downloaded O.S. file to the floppy.

Loading an Operating System into FLASH

1. Power down the ASR-X Pro.
2. Insert the floppy containing the O.S. into the ASR-X Pro's floppy drive.
3. Turn on the ASR-X Pro—when it detects an operating system version different than the one currently written to FLASH it will present this display:

```
  Load OS from disk?
   Press YES or NO
```

4. Press the Enter/Yes button—the process of loading the O.S. will take about a minute.

Note: If you power up the ASR-X Pro with the O.S. floppy inserted and encounter the above message, but don't wish to change your operating system version, press the Exit/No button.