KURZWEIL™
Music Systems

# *Musician's Guide*

## Kurzweil 1200 Pro

Young Chang America
13336 Alondra Blvd.
Cerritos, CA 90701-2205
(310) 926-3200

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# Section I
## INTRODUCTION

### 1.1 About This Manual

This portion of the Musician's Guide has been designed to provide you with all the basic information you'll need to set up and operate your new 1200 Pro.

**Section I** provides introductory information that is of interest to every 1200 Pro owner. Section 1.3 (*Summary of Precautions*) is particularly important. We urge you to read it before you connect and operate your new instrument.

**Section II** shows how to connect your 1200 Pro.

**Section III** tells how to operate your new instrument. Procedures from basic Program selection to creating multi-timbral polyphony with MIDI sequencers are explained in a step-by-step fashion.

**Section IV** presents instructions for basic Program editing. Here, you will learn how to create layers, splits, and to modify existing Programs; how to add pre-programmed "compiled effects" to your presets; and how to save presets to the 1200 Pro's internal memory (RAM).

The Kurzweil 1200 Pro features the exceptional sonic quality of Kurzweil samples, coupled with the richness of digital synthesis and the flexibility of modular synthesizers. We urge you to study this manual carefully, and keep it with your instrument for reference, in order to make best use of your 1200 Pro's extraordinary musical potential. Once you've become familiar with the information in this part of the manual, you'll be ready to move on to Part II, the *Programming Reference*, and begin exploring the immense creative potential of your 1200 Pro.

Thank you for purchasing your new Kurzweil 1200 Pro!

### 1.2 Unpacking & Inspection

The Kurzweil 1200 Pro is delivered in a single corrugated cardboard shipping container. Upon unpacking your 1200 Pro, immediately inspect it for shipping damage. If it has been damaged in transit, you must place a claim with the carrier or with your Kurzweil dealer. Kurzweil Music Systems assumes no responsibility for shipping damage.

The carton should contain:

- Your new 1200 Pro
- A three-prong AC power cable
- This *Musician's Guide*
- A Warranty Registration Card

If any of these items is missing, contact your Kurzweil dealer.

When you first unpack your 1200 Pro, you'll notice that there is a strip of clear plastic tape covering the front-panel label plate. Its function is to protect the plate from scratches when the unit is being packed. You'll find that it peels off very easily.

We recommend that you save the shipping carton and protective inserts. For carrying and shipping, they provide the best protection short of a custom-made road case.

## 1.3 Summary of Precautions

- Keep this *Musician's Guide* and refer to it as needed when you connect and operate your 1200 Pro.
- Make sure that your AC power connection conforms to the guidelines given in Section 2.1 of this manual.
- To protect against shock hazards and ensure proper operation, *never* cut or disconnect the power cable ground pin. Don't use the power cable if it appears frayed.
- If the fuse in your 1200 Pro should blow, you must replace it with another of the same physical size and current rating. *Never* use a fuse with a higher rating, and *never* attempt to bypass the fuse with a hardwired connection.
- The Kurzweil 1200 Pro is normally shipped ready to operate with a mains AC voltage of 100 to 120 volts. If your local AC service is 200 to 240 volts, you *must* set the unit for the higher voltage. This should be done at an authorized Kurzweil service center. *Attempting to operate the 1200 Pro at too high a voltage will cause extensive damage to the unit.*
- Do not open the 1200 Pro case. There are no user-serviceable parts inside. Refer servicing to an authorized Kurzweil Service Center.
- Do not spill liquids into or on the 1200 Pro chassis.
- Do not allow the 1200 Pro to overheat. The 1200 Pro will operate at temperatures from 0–55° C (32-131° F). Make certain that your setup allows adequate ventilation to maintain this temperature range.
- Do not connect the audio outputs or MIDI connections to a voltage source such as a battery, power supply, mains AC source or amplifier output.
- Use only standard MIDI cables for MIDI connections. Do not use ordinary recording studio DIN cables. If you are uncertain how a cable is wired, don't use it.
- If you try a Hard Reset, be sure to press only the A and B buttons, and no others, when you turn the 1200 Pro back on. Pressing any other buttons while powering up may cause the unit to lock up. Refer to Section 3.9.

## 1.4 Description of Features

### 1.4.1 The Kurzweil 1200 Pro

The Kurzweil 1200 Pro is a powerful, cost-effective electronic musical instrument for live performance and recording. Combining both sample playback and digital emulation of a traditional modular synthesizer in a single unit, the 1200 Pro offers prodigious programming flexibility and sonic variety. It's multi-timbral, and is capable of responding to information on all 16 MIDI channels in any combination.

The 1200 Pro is a 20-note polyphonic rack-mount sample player and synthesizer (the Pro I is 24-note), featuring more than 150 preset Progams. It provides numerous features which make it a powerful addition to any MIDI system—features like Multi Mode, which allows you to play a different Program on each MIDI channel.

The Kurzweil 1200 Pro inherits the sonic legacy of the legendary Kurzweil 250®, the sampling synthesizer whose extraordinary fidelity and realism have made it a mainstay of professional music. Through VLSI (Very Large Scale Integration) integrated-circuit technology, Kurzweil engineers have succeeded in packing the 1200 Pro with a wide variety of sounds based on 16-bit floating-point digital samples.

The 1200 Pro also incorporates extensive programming features, including both Compiled Effects (pre-programmed, adjustable effects such as Chorus, Vibrato, Tremolo and Leslie) and Modular Effects (the digital equivalent of a traditional modular synthesizer, with complete user control over patch configuration and settings). User-created Programs may be stored in RAM (Random Access Memory) locations; the RAM is battery-backed so that user Programs are retained when the instrument is turned off or unplugged.* (Information on programming the 1200 Pro is found in Part II, the Programming Reference.

The 1200 Pro features a comprehensive and flexible MIDI implementation, with full user control over channel assignments, controller assignments, Program change mapping and other parameters. Any of the instrument's Programs may be assigned to any of the 16 MIDI channels for multi-timbral playback of sequences, and intelligent allocation of notes minimizes "note stealing." Finally, a unique, built-in MIDI-SCOPE function allows the instrument to provide a dynamic display of MIDI events as they are generated, and self-diagnostic routines help to pinpoint malfunctions, should they occur.

**AFTERTOUCH CAPABILITY**—The 1200 Pro responds to both mono (channel) pressure and poly (key) pressure (aftertouch). It can be programmed to enable you to control a wide variety of effects through aftertouch.

**CHANNEL ASSIGNMENT MEMORY**—The assignments you make in PLAY mode—enabling and disabling MIDI channels, and assigning Programs to them—are stored in a memory location called the MASTER Parameter Table. This table is part of the 1200 Pro's battery-backed RAM (Random Access Memory), and is retained when the unit is turned off. Thus, all channel assignments will be remembered the next time you power up.

**SYSEX FOR CHANNEL ENABLE AND MIDI MODE**—You can use system exclusive messages from your computer or sequencer to enable or disable MIDI channels on the 1200 Pro. You may also change the MIDI mode—Omni On (Omni), Omni Off (Poly), or Multi (Mult)—via SysEx messages. Section 12.3 in the Programming Reference tells you how.

## 1.4.2 1200 Pro Structure

The Kurzweil 1200 Pro is a multi-timbral instrument which allows flexible creation of split and layered timbres in many combinations. An individual timbre, or a fully-defined split and/or layered timbre setup, is termed a **Program**.

The 1200 Pro's preset Programs reside in ROM (Read Only Memory). Each Program has a unique name and one or more Program numbers (not the same as the PROG ID#, which we'll explain in Section VI). Preset Programs are listed in two groups of Program numbers, one beginning at 001, the other at 201. These two groups of Program numbers are actually the same Programs arranged in different combinations. This is a feature of the Program Lists stored in the 1200 Pro's ROM (see Section VI, Parameter 009).

Factory Programs cannot be erased; ROM is a permanent storage medium. You may, however, modify the Programs (by making a copy of the Program and changing the copy), then rename them and store them in RAM. Program numbers 401 - 499 are reserved for User-defined Programs, but as you'll learn, they can be assigned to any Program number, using the Program Lists.

* You may also use ObjectMover™ software to dump Programs and other items to your personal computer. ObjectMover is available from your Kurzweil dealer.

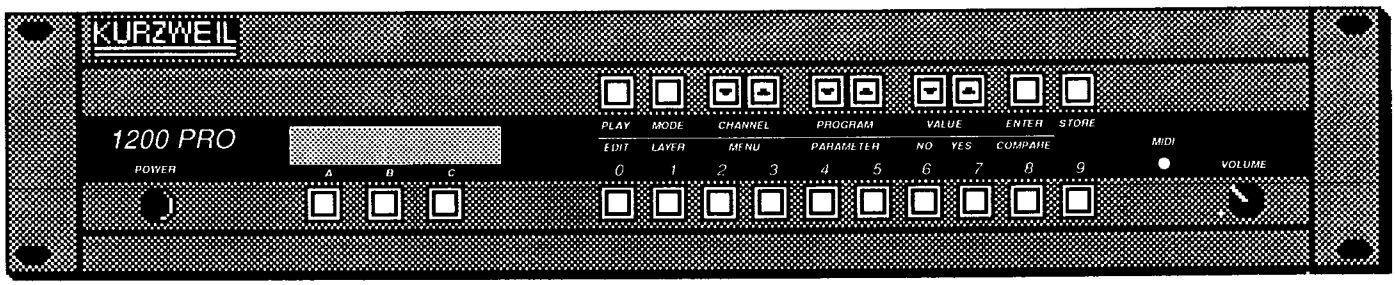



**Figure 1-1 1200 Pro Front Panel**

A Program may have up to four individual **Layers**. Each Layer may have its own **Soundfile**, or timbre, assigned to it, and each also may have a distinct set of **Effects** applied to that timbre. Individual Layers can be assigned to respond to any range of keys on your MIDI controller. The key ranges for successive Layers of a Program may or may not overlap. Programs having Layers whose key ranges do not overlap are referred to as **Split** Programs.

### 1.4.3 Front Panel Controls & Display

As the 1200 Pro front panel graphics indicate, several of the control buttons serve different functions depending upon the instrument's operating mode. The 1200 Pro has two basic operating modes: PLAY and EDIT. For each button whose action changes with the operating mode, the upper label indicates its PLAY mode function and the lower, its EDIT mode function.

**PLAY / EDIT** — Toggles between the two operating modes of the 1200 Pro.

**MODE / LAYER** — In PLAY mode, this button selects MIDI receive modes (Omni, Poly, or Mult). In EDIT mode, the LAYER button scrolls through the Layers of the currently selected Program.

**CHANNEL / MENU** — In PLAY mode, these buttons cycle through the 16 MIDI channels, wrapping at either end (for example, pressing the Down button when channel 1 is selected takes you to channel 16). In EDIT mode, they are used to access the various Edit Menus.

**PROGRAM / PARAMETER** — These buttons cycle through the Program numbers in PLAY mode, wrapping at either end. In EDIT mode, they select specific programming Parameters.

**VALUE** — In PLAY mode these buttons function only when the 1200 Pro is set for Mult mode play; in this case, they act to enable or disable the currently displayed MIDI channel (see Section 3.7). In EDIT mode, they are used to alter the value settings of Parameters (YES/UP increases the value, and

NO/DOWN decreases it) or to respond to question prompts from the 1200 Pro (for example, "Delete Program?").

***Note*** *— If you press and hold a button, its action will begin repeating rapidly after a brief interval. You can use this feature to move quickly through the range of a button's function.*

**DISPLAY** — This back-lit, two-line, 32-character LCD (Liquid Crystal Display) indicates the current status of the instrument. In EDIT mode, it displays Menu choices, Parameter values and prompts. The Display also functions as a power indicator.

**A, B, C: Alphabetic buttons**— These buttons select the 1200 Pro's Bin Banks (see Section 3.3.2).

**0 - 9 Numeric Buttons** — when you use one of the alphabetic buttons to select a Bank, the numeric buttons select a specific Bin in the selected Bank. The Bins usually contain Programs, but they can hold any of six different Object types. Please see Section 3.3.2 for a full description of Bin Banks and Bin Maps.

When in PLAY Mode, you'll use the numeric buttons with the ENTER button to select specific Program numbers. This is described in Section 3.3.1.

In EDIT mode, the buttons act as shortcuts for data entry. [0] represents the minimum allowable Value for the currently selected Parameter, and [9] represents the maximum. The buttons in between divide the range of Values for the current Parameter in equal increments. Pressing two adjacent numeral buttons simultaneously gives you a Value between the Values corresponding to those two buttons when pressed individually. In all, the data entry buttons give you 19 Values between minimum and maximum for the currently selected Parameter.

**ENTER/COMPARE**—The ENTER/COMPARE button on the 1200 Pro has a dual function. When in PLAY mode, it is used to select Programs by number, as described in Section 3.3.1. In EDIT mode, it activates the Compare function, which is described in Section 4.1.4.

**STORE**—In PLAY Mode, pressing the STORE button starts the process which lets you save Programs to the Bin Banks. In EDIT mode, pressing the STORE button will invoke the question "Save Program?" (or whatever Object you happen to be editing).

**POWER** — This switch controls AC power to the 1200 Pro.

**MIDI LED**—This LED (light-emitting diode) illuminates whenever a MIDI message is received from a MIDI controller.

**VOLUME**—This knob controls the audio output level of your 1200 Pro.

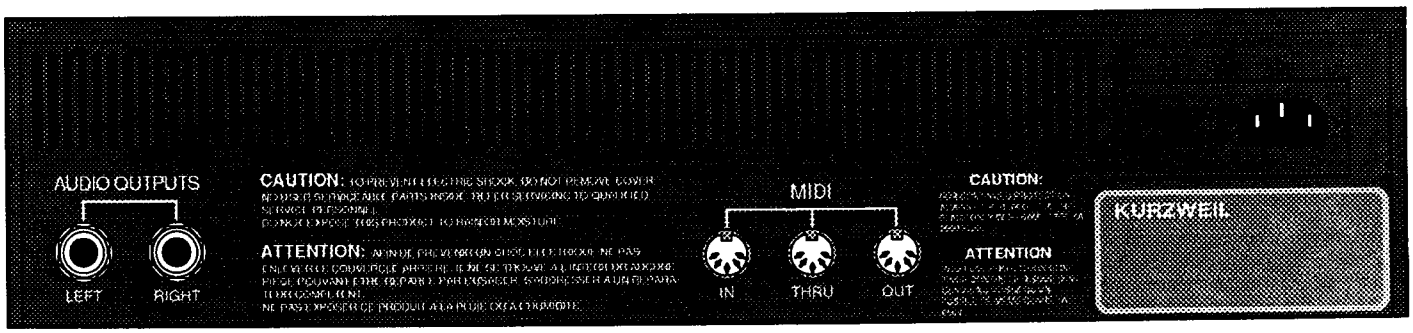



**Figure 1-2 1200 Pro Rear Panel**

## 1.4.4 Rear Panel Connectors

**AUDIO OUT** — The 1200 Pro features two outputs labeled LEFT and RIGHT, respectively. The connectors are standard 1/4 - inch monophonic phone jacks.

**MIDI IN** — This port receives data from a MIDI control source (such as a keyboard or a computer sequencer).

**MIDI THRU** — When MIDI data is received at the MIDI In port, the 1200 Pro echoes that data here. The Thru port is used to chain MIDI devices together.

**MIDI OUT** — This is the 1200 Pro's output port for transmitting MIDI data to other devices (see Section 3.5).

**AC Power Inlet** — This three-pin NEMA connector mates with the power cable supplied with the 1200 Pro. To ensure safety and proper operation, *do not use an ungrounded power cable with your 1200 Pro.*

**Fuse Compartment** — Your 1200 Pro is protected by a 1 Amp, 125 volt fuse. To open the fuse compartment, remove the power cable and gently pry the compartment cover outward with a flat-blade screwdriver.

***WARNING:***
***Never substitute a fuse with a higher rating, and never attempt to bypass the fuse.***

# Section II
## CONNECTIONS

## 2.1 AC Power

Please read this section carefully before you set up your 1200 Pro. When making connections, be sure to follow the precautions given here and in Section 1.3.

The recommended sequence of steps for connecting your 1200 Pro is:

1) Make certain that your 1200 Pro is set for the correct AC line voltage. If not, you'll need to take it to an authorized Kurzweil service center.

2) Plug the power cable into the AC Inlet of the 1200 Pro, then plug it into a grounded AC outlet.

3) Connect the 1200 Pro's audio outputs to your sound system.

4) Connect a standard MIDI cable from the MIDI Out port of your MIDI controller to the 1200 Pro's MIDI In port.

5) Turn on the 1200 Pro (it takes about 3 seconds to power up), then turn on your sound system.

The specific information that you need to perform these steps is given in this chapter. Refer to Figure 2-2 when you make your connections, and be sure to keep track of the Left and Right audio channels.

If you live in an area which uses a voltage higher than 120 V, you will need to have the voltage setting adjusted by an authorized Kurzweil service technician *before* you plug the 1200 Pro in. Excessive voltages will seriously damage the instrument.

Your 1200 Pro is supplied with a three-prong power cable, and will operate best if it is connected to a grounded AC outlet. This type of outlet is standard in the United States and is now quite common, although older buildings may have simple two-prong ungrounded outlets.

If your outlet is not fitted for a ground pin, you will have to use an adapter, as shown in Figure 2-1. You can purchase adapters like this at any hardware store. Notice that the adapter's ground wire (or lug) must be attached to the outlet plate mounting screw. *Don't cut or break off the ground pin on your 1200 Pro's power cable.*

***Caution: Operating the 1200 Pro at 220 volts without setting the voltage selector switch properly will seriously damage the unit.***

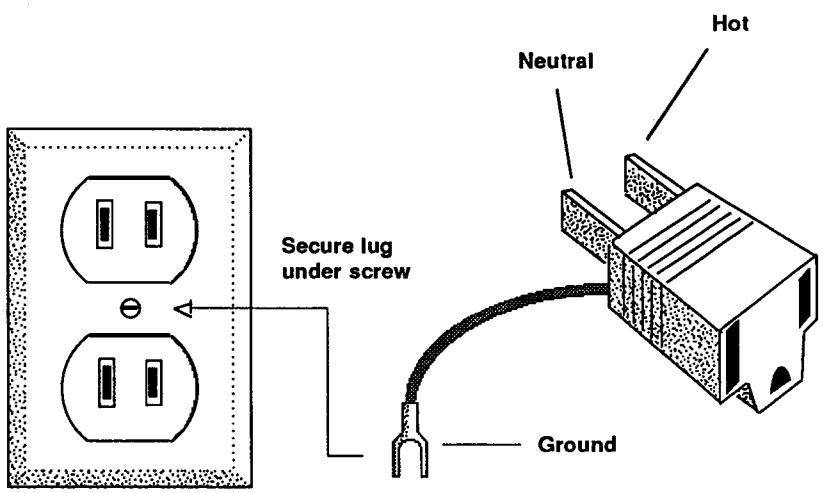



**Figure 2-1 Grounding AC Adapter (Use ONLY on Ungrounded Outlets)**

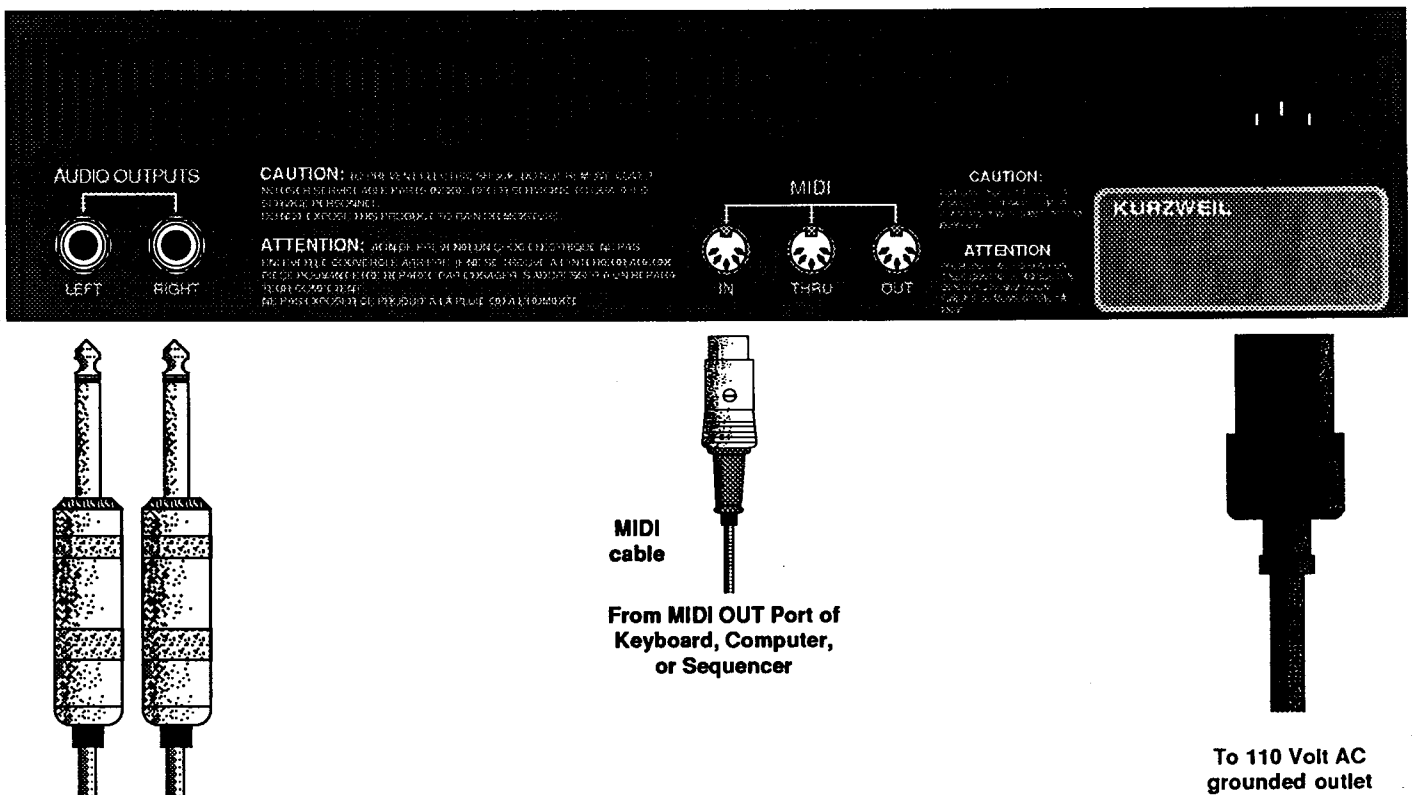



**Figure 2-2 Connecting The Kurzweil 1200 Pro**

## 2.2 Audio Outputs

The 1200 Pro is actually a specialized computer and, like other types of computers, it is susceptible to AC power surges (these may cause it to "freeze up" unexpectedly or, in the worst case, could damage the internal circuitry). For this reason, you should make sure that the unit is connected to a source of clean AC power of the proper voltage and line frequency.

***Note** —You can protect your 1200 Pro from power surges by purchasing and using a "surge suppressor" outlet. (Again, check with your local hardware store or a computer dealer.)*

To connect the 1200 Pro to your audio system, you'll need to know two things:

**Input sensitivity** — Identify the *least sensitive* input (that is, the input which "expects" the highest signal level).

**Input connectors** — Determine what type of connector that input requires.

The 1200 Pro delivers a line-level (-10 dBV, or 0.3 Volts) stereo signal, and its output connectors are standard 1/4-inch monophonic phone jacks. Most sound systems are designed to handle this type of output directly. If yours is not, then you may need to use special cables or adapters.

This section offers guidelines for connecting to various types of systems. Look for more information in the manual for your sound system.

### 2.2.1 Instrument Amplifiers

Instrument amplifiers are generally monophonic, and they usually feature inputs that are designed to connect directly to a guitar or other low-level source. The input connector is invariably a monophonic 1/4 - inch phone jack.

You can connect the 1200 Pro directly to an instrument amplifier using a standard audio cable (guitar cord), as shown in Figure 2-3(a). If your amplifier has dual inputs, you may connect each output to one of the inputs.

If your amplifier has only one input, use an audio cable to connect one 1200 Pro output to it (it doesn't matter which), then turn to Section 4.5 of this manual and use Master Parameter 020 to set your instrument for mono output. ***Don't try to use a "Y" adapter to connect both outputs to a single input.***

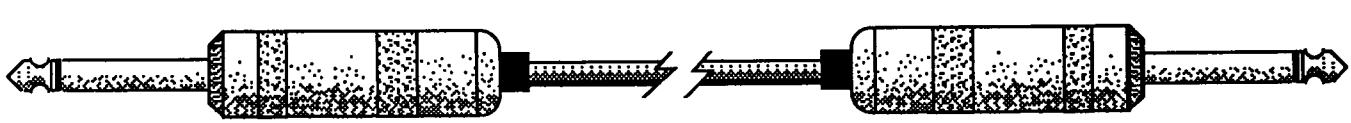


**Figure 2-3(a) Standard Audio Cable (Phone to Phone)**

Be aware that, since the 1200 Pro puts out a stronger signal than a guitar does, you may have to lower the VOLUME setting to avoid distortion.

## 2.2.2 Stereo Systems

Home stereos normally have several inputs designed to handle a variety of sound sources. The 1200 Pro is compatible with so-called "line level" home stereo inputs; these will be labeled LINE, AUX, TAPE, TUNER or CD IN. ***Don't use the PHONO inputs.***

The connector required will usually be an RCA-type male (sometimes called a "pin jack"). While you can buy adapters that will fit on the end of a standard audio cable and mate with an RCA input, we don't recommend that you use them. You'll get much better results if you use 1/4 - inch phone to RCA cables, as shown in Figure 2-3(b).

## 2.2.3 Mixing Consoles

Mixing consoles come in many shapes and sizes, with correspondingly varied capabilities and requirements. With consoles, it's particularly important to read and follow the recommendations given in the equipment's instruction manual.

Small semi-professional and DJ-type mixers usually incorporate LINE inputs with either 1/4 - inch phone or RCA-type connectors (on DJ mixers, the line-level inputs may be labeled TAPE). The 1200 Pro is entirely compatible with such inputs; use whichever of the cables in Figure 2-3 is appropriate.

Some larger home recording consoles offer a choice of using either LINE or MIC inputs for line-level sources. (You can identify such consoles by looking for a MIC pad switch and/or trim control on the input strip.) The LINE input connectors may be either 1/4 - inch phone or RCA; with consoles of this class, the MIC connectors are normally three-pin XLR-type.

In this case, you can easily connect the 1200 Pro to the LINE inputs — but sometimes there are distinct advantages to using MIC inputs. To do so, you'll need either a pair of adapters or cables with 1/4 - inch phone connectors on one end and XLR-type on the other (or you might use either a direct box or impedance-matching transformers; see the Appendix). If your Kurzweil dealer doesn't stock the cables you need, try a home electronics store. You may not be able to find adapters or cables like this off-the-shelf, however, so you might have to get out the soldering iron. Refer to the Appendix of this manual for information on making your own cables.

**Figure 2-3(b) Adapter Cable (Phone to RCA)**

# Section III
## OPERATION

## 3.1 Getting Started

Before you power up your 1200 Pro, set its VOLUME knob to minimum (turn it counter-clockwise until it stops). Turn on the 1200 Pro and wait for the display to initialize (about three seconds), then turn on your sound system.

When you first turn on the 1200 Pro, the front-panel display should look similar to Figure 3-1. This is a typical PLAY mode display, showing the current MIDI mode and channel, the currently-selected Bin Bank (see Section 3.3.2), the Program number and the Program name.

If your display reads "No PRG Assigned," press either of the PROGRAM buttons to select a Program other than number 000.

### 3.1.1 Setting the Output Level

The VOLUME knob allows you to match the level of the 1200 Pro's audio outputs to the input sensitivity of your sound system. In general, you should use the highest setting that does not overload the sound system input; this will result in the best audio quality with the least noise.

**Instrument amplifiers** — Most instrument amplifiers are designed to work with very low-level sources, and the 1200 Pro can easily overload them. To avoid distortion, you'll have to use a fairly low VOLUME setting.

Starting with the 1200 Pro's VOLUME knob at minimum, set the amplifier's volume control to about 20% to 30% of full volume. Then, while triggering notes from your controller, slowly bring up the 1200 Pro volume until the sound just begins to distort. (If it gets too loud, back off on the amp's volume control.) Now, reduce the 1200 Pro volume just until the sound is clear again, and use the amp's volume control to adjust for a comfortable listening level.

**Home stereos** — With home stereos, you normally should be able to leave the 1200 Pro's volume at maximum and set the stereo's volume control to taste. If you get distortion, try backing off on the VOLUME knob until it disappears. *Use caution; the 1200 Pro can generate more very-high and very-low frequency energy than the typical record, tape or CD. These signals can damage your speakers unless you keep the volume at a modest level.*

**Mixing consoles** — If you are using a LINE input, set the VOLUME knob to maximum and back it off only if distortion appears at normal fader settings.

With MIC inputs, use the pad (if there is one). Set the 1200 Pro VOLUME to maximum, and use the console input trim control to adjust for nominal 0VU readings when the console faders are set to the unity gain position (usually marked '0' or highlighted on the panel markings). If you can't get enough level, try switching the pad out.

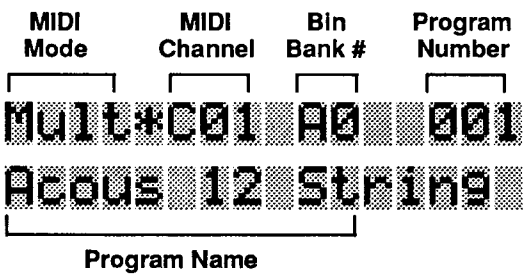



**Figure 3-1 PLAY Mode Display**

**If you don't get sound:**

- Make sure that everything is turned on (don't laugh — even the most experienced pros get caught by this one!).
- Check the MIDI LED to make sure the 1200 Pro is receiving MIDI information.
- Check your audio connections against Figure 2-2.
- If you're using a mixing console, be sure that the correct channels are enabled and assigned, the masters (and submasters, if applicable) are up, and the monitor is correctly assigned and turned up.
- Be sure that you haven't selected Program 000; it's not a sound.
- Turn the 1200 Pro off, then on.
- Try replacing your audio and/or MIDI cables.
- Perform a Soft Reset (see Section 3.9).
- Perform a Hard Reset (see Section 3.9).
- Call your Kurzweil dealer.

## 3.2 Automatic Demo Feature

Included with your new 1200 Pro is a RAM-based set of demonstration sequences. These sequences highlight the 1200 Pro's sounds and multi-timbral capabilities. You can start these Auto-demo sequences directly from PLAY Mode.

Start the Demo (enter DEMO Mode) by pressing the following three buttons simultaneously: the PLAY/EDIT button and both the PROGRAM buttons. In a few seconds, the first Demo sequence will begin to play. The Demo will automatically play through all the sequences in the Demo set, in the order of their Object ID numbers. When the highest-numbered sequence has been played, the demo will repeat.

While the sequences are playing, the 1200 Pro's display will show the word "Demo" in the upper left corner. As each se-quence begins, the display will show the name and number of the sequence for a few seconds, then will return to the DEMO Mode display. (The only difference between the DEMO Mode display and the PLAY Mode display is that the word "Demo" appears where the MIDI mode information normally is seen.)

While the Demo is running, you can use the ENTER and numeric buttons to select different Programs, or you can scroll through the Program Lists with the PROGRAM buttons.

The Demo may be stopped at any time by pressing the PLAY/EDIT button and PROGRAM buttons together. This returns you to PLAY Mode. The next time you enter DEMO mode, the Demo will begin with the next sequence in the list—unless you have done a soft reset or powered down since the last time you played the Demo. If so, the Demo will begin with the first sequence in the list.

If you want to free up some memory space, you can delete the RAM-based Demo sequences by doing a hard reset (Section 3.9). This will erase them **permanently**. If you're going to do this, you should do it before you save any of your own programming work, since a hard reset deletes all RAM information.

You also can use Parameter 035 to delete individual songs without affecting any other RAM information.

You can use ObjectMover™ to manipulate Demo sequences. ObjectMover is a patch librarian application available through your Kurzweil dealer. Macintosh and Atari versions are available; an IBM-compatible version is currently under development.

# Section III

When you open the 1200 Pro using ObjectMover, the Demo sequences will appear individually in the 1200 Pro window with all the other RAM Objects. Their Object type is indicated by the characters "SONG" followed by an Object ID number and the name of the sequence.

ObjectMover can be used to change a Demo sequence number or name, and to load, save or delete a Demo sequence—in other words, ObjectMover treats SONG Objects like any other 1000 Object.

Macintosh ObjectMover diskettes contain an application called Demo File Converter 1.0, which will enable you to convert any type 0 (zero) standard MIDI file to the 1200 Pro's format. If you have a sequencing program or hardware sequencer which can save sequences as type 0 MIDI files, you can convert them into SONG Objects. If the converted sequence files are 64K bytes or smaller in size, they can be loaded into the 1200 Pro's RAM and played back in DEMO Mode. A 64K SONG Object is roughly equivalent to 8,000 notes. If your computer is not a Macintosh, and you're interested in writing your own file conversion program, you can get the SONG Object data format documentation from Kurzweil User Support.

If you already own Macintosh ObjectMover, or if you purchase a Macintosh ObjectMover package which does not include Demo File Converter 1.0, you can get the conversion program (Mac version only) from your Kurzweil dealer.

If you're interested in developing your own demonstration sequences to load into the 1200 Pro's RAM, turn to Appendix Section 12.4 for a description of the SONG Objects' file formats.

## 3.3 Exploring Programs

Now that you've got everything working, you're ready to explore the world of great sounds that your 1200 Pro offers!

Use the PROGRAM buttons to change Programs: the UP button increases the Program number, and the DOWN button decreases it. To move rapidly through several Programs, press and hold one of the buttons. After a brief delay, the 1200 Pro will scroll through the Program list.

If you press both PROGRAM buttons at the same time, the 1200 Pro will jump to the beginning of the next Program List (Programs 101, 201, 301, etc.). This dual press technique is used for many of the 1200 Pro's functions, allowing you to bypass long lists or get to frequently-used elements.

To provide the greatest ease of operation in a variety of practical situations, the 1200 Pro actually offers three different ways to select Programs (in addition to selecting them directly from your controller—see Section 3.3.3). The simplest and most direct is the one described above — using the PROGRAM buttons to scroll through the Program list.

In performance situations, you'll want to change Programs more quickly. The 1200 Pro allows you to do this in two ways: you can use the ENTER button and numeric keys to select Programs by number, or you can select them from any of the 1200 Pro's three Bin Banks (see Section 3.3.2).

### 3.3.1 Selecting Programs By Number

If you know the number of the Program you wish to select, you can select it directly:

Press ENTER. The lower line of the display will show:

Program #:

Using the numeric buttons, enter the number of the Program that you want. (You don't have to enter leading zeros; for example, to get to Program 023, just press '2' and '3.') The display will show the numbers as you enter them.

Press ENTER again, and the 1200 Pro will revert to the standard PLAY mode display, with the Program that you selected ready to play.

You can enter a Program number from 0 to 999 using this method. If, however, you select a Program number which doesn't have a Program stored there, the display will show "not found" briefly, then will return to the previously selected Program.

### 3.3.2 Using the Bin Banks

**SELECTING PROGRAMS:** For even faster Program access, the 1200 Pro has a set of three Bin Banks. These Banks, labeled A, B and C, each contain ten "Bins," where you can store any ten Programs that you choose.

To select a Program from a Bin Bank, first press A, B, or C to select a Bank. The display's upper line will show which Bank has been selected. The letter indicating the selected Bank will be followed by a hyphen, prompting you to press a numeric button. When you do, the Program stored in that Bin is instantly selected, and you're ready to play.

Once a Bank is selected, you can select any of the Programs in that Bank simply by pressing one of the numeric buttons. The Bank will change only when you press one of the Bank (alphabetic) buttons.

**STORING PROGRAMS:** To assign a Program to a Bin Bank, press STORE, and the display will show something like this:

A0 = Program 1
Acous 12 String

This means that Bank A, Bin 0 is currently selected, and that Program number 1 (not necessarily PROG ID# 1) is ready to be stored in that Bin Bank location.

Now press A, B or C to select the Bank you wish to use. The display will show your selection. Now press one of the numeric buttons to select the desired Bin.

Now that you've selected the Bank and Bin, select the Program number you wish to store there by using the PROGRAM buttons to scroll through the Program list (dual presses skip to 101, 201, etc.) You can change the Bank, Bin and Program number as many times as you like.

When you have selected the Bank, Bin and Program number you want, press STORE again. The lower line of the display will show "Stored!" for about a second, then will return to where it was before you began the Store operation.

Most of the 1200 Pro's Bin Banks are preprogrammed to contain Programs with a variety of timbres. You also can use them to select a variety of factory programmed items like VelMaps, PrsMaps, or ITbls. See the discussion of Parameter 011 in Section VI.

**OTHER USES FOR BIN BANKS:** As you may have discovered already, the Bin Banks can store not only Programs, but several other features as well. These include Bin Maps (Section 6.6), Velocity Maps (Section 6.2), Pressure Maps (Section 6.4), Intonation Tables (Section 6.3), and Songs (SONG Objects—see Section 3.2). Any of these items—which we call "Objects"—can be stored in any Bank and Bin. Once you've become familiar with the features of each of these Objects, you'll store them in various combinations in the Bin Banks to give yourself enormous control over your 1200 Pro's performance configuration.

To store any of the Objects we've just mentioned into a Bin Bank, start the same way as you did to store a Program: press the STORE button. The display will look something like this:

A0 = Program 1
Acous 12 String

Now press either of the CHANNEL buttons to scroll through the list of Object types which can be stored; there are six of them. The list will wrap around when you get to the end.

When you see the **type** of Object you wish to store, use the PROGRAM buttons to scroll through the available Objects of that type. If the display does not change, you'll know that there aren't any other Objects of that type available.

When you find the specific Object you want to store, make sure the Bank and Bin assignments are correct, then press STORE. The lower line of the display will show "Stored!" briefly.

The Bin Banks give you 30 memory locations, where you can store any of six different types of Objects. The 1200 Pro thinks of those 30 locations as a single Object called a Bin Map. The 1200 Pro is capable of storing ten of these Bin Maps, which you can create, modify and select using the Bin Map Editor. This will be explained more fully in Section 6.6.

### 3.3.3 MIDI Program Changes

Since your 1200 Pro will be a MIDI Slave connected to some kind of MIDI controller—keyboard, computer, or hardware sequencer—the fastest way to make Program changes is to let MIDI do it for you. This can be done either by selecting Program numbers from the front panel of your keyboard, or by inserting MIDI Program Change events in the tracks of your sequences. In either case, the 1200 Pro will respond instantly to the Program Change messages.

The 1200 Pro can be programmed to ignore Program Change messages if you need it to. You also can program it to respond to Program Change messages in two different ways.

The default condition is what we call the "Extended Program Change" mode. It enables you to send *any* Program change number from 0 to 999 to the 1200 Pro, directly selecting the Program assigned to that Program number. The Kurzweil 1200 Pro is the only instrument which allows you to make direct MIDI selections of Programs numbered higher than 128.

The 1200 Pro also can be programmed to respond directly to Program Change messages from 0 to 99 only. In this case, if you send a Program Change number of 100 or higher, the 1200 Pro ignores the "hundreds" digit, and makes its Program selection according to the last two digits. For example, if you send a Program Change number of 123, the 1200 Pro will select Program number 23, leaving the hundreds digit unchanged. If Program 401 had been selected when you sent the Program Change number of 123, the 1200 would select Program number 423.

The Program Change responses we've just described are controlled by Master Parameter 004, "Receive Program Changes." You'll find more information about Program changes and Program Lists in Section VI.

## 3.4 PLAY Mode Performance Features

When you turn on your 1200 Pro, it's ready to perform (hence the term "PLAY Mode"). While you may never need to touch the front panel again, there are several features you may want to use.

**SELECT MIDI CHANNEL** Use either of the CHANNEL buttons to scroll through the MIDI channels, enabling you to view the Programs assigned to each channel. You'll use this feature to make manual Program changes, and to disable/enable or deassign/assign channels (see Section 3.7).

**SELECT PROGRAM NUMBER** You can change Program numbers by scrolling with the PROGRAM buttons, by pressing ENTER - Program number - ENTER, or by pressing a numeric button to select from the currently selected Bin Bank.

**SELECT BIN MAP** If you have a large number of Programs (or other Objects) that you use frequently, you probably will find that the 30 Bin Bank locations are not enough. By using the Bin Map Editor (Section 6.6), you can create numerous collections of Bin Bank assignments. Each of these Bin Maps contains 30 memory locations which correspond to buttons A0 - C9. These Bin Maps can be selected in the Master Parameter Menu, or directly from PLAY Mode.

To select a Bin Map from PLAY Mode, press the 0 and 1 buttons together. The lower line of the display will change to show:

Select Bin Map?

Simply press any of the numeric buttons, and the Bin Map with that ID number will be selected. The ID number is not normally visible, but you can see it when in the Bin Map Editor—see Section 6.6.

Note that only two Bin Maps—Bins and QuickMaps—are present in the 1200 Pro's memory when it arrives from your Kurzweil dealer. If you select a number which does not have a Bin Map assigned to it, the display will tell you that no map was found, and will return to PLAY Mode.

**SEND MIDI PROGRAM CHANGE** You can send a single MIDI Program Change command at any time, on any MIDI channel. To do this:

Press 6 and 7 together. The lower line of the display will show something like:

Chan 1 Prog 1

Use the CHANNEL buttons to change the MIDI channel you want to use for the message. Use the PROGRAM buttons to change the Program number you wish to send. Or enter a Program number of 0 to 127 using the numeric buttons. If you can't get the display to show the Program number you want, press 0, then enter the desired Program number.

Press NO or PLAY/EDIT to cancel. Press YES, ENTER, or STORE to send the change.

MIDI allows Program change numbers of 0 - 127 to be sent (which may correspond to 1 to 128 in some of your receiving instruments). The 1200 Pro will not allow you to select Program numbers higher than 127, since they're undefined in the MIDI spec.

**ALL NOTES OFF** MIDI messages sometimes get garbled or misinterpreted by the receiving device. One example of this kind of error is the "stuck note." If a Note On message is received, but no corresponding Note Off message is received to turn the note off, the note will sound indefinitely (until it decays naturally, or until the next Note Off for that note number is received). There is a special All Notes Off message that can be sent to eliminate any notes that are sounding after they should be.

To send an All Notes Off message from the 1200 Pro while in PLAY Mode:

Press 8 and 9 together. The lower line of the display will

briefly show "All Notes Off!" then will return to normal PLAY Mode status. This will silence the 1200 Pro, and will send an All Notes Off message to any devices receiving MIDI information from the 1200 Pro.

## 3.5 MIDI Operation

MIDI (Musical Instrument Digital Interface) is an international standard for data communication among musical instruments.

One of MIDI's most basic features is that it allows one instrument to be played remotely from the keyboard of another (termed the "master" keyboard), or from a computer sequencer. MIDI also permits transmission of a wide variety of messages and commands such as program changes, pitch bender and aftertouch information, as well as "system exclusive" messages that can be unique to a particular brand of synthesizer.

MIDI-equipped instruments may be chained together so that a single master controller can play several synthesizers at once. In order to allow independent control of each unit in a multi-instrument system, MIDI provides for allocating data across a total of 16 "channels" in any combination. Just like a television, a MIDI synthesizer can be set to receive information on a single channel (normally termed the instrument's "basic channel") while ignoring all other channels.

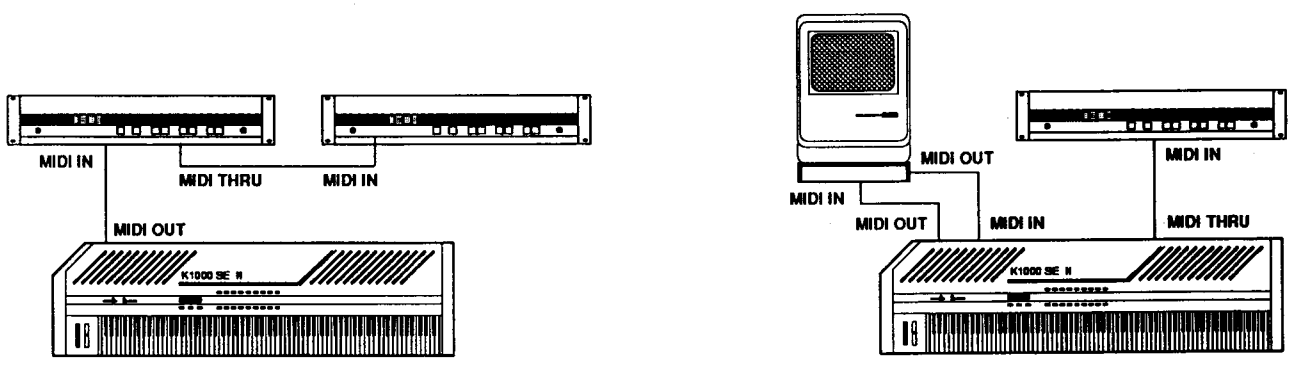
The 1200 Pro is a powerful MIDI instrument, offering a broad range of controls for both transmitting and receiving MIDI information.

### 3.5.1 Typical MIDI Connections

MIDI music systems range from very simple to extremely complex, depending upon the capabilities of the instruments and the demands of the application. Regardless of complexity, however, every MIDI system may be understood in terms of very simple models.

In live performance applications, many keyboardists use MIDI to control banks of synthesizers and outboard "expander" modules (such as the 1200 Pros), broadening their selection of timbres, and fattening their sounds through layering.

Figure 3-2(a) shows a simple MIDI setup of this type. A K1000 SE II's MIDI OUT port is




(a) Live Performance Setup

(b) MIDI Sequencing Setup

**Figure 3-2 Typical MIDI Connections**

connected to the MIDI IN of a 1200 Pro, and the Expander's MIDI THRU port is connected to the MIDI IN of another 1200 Expander. MIDI control signals from the SE II flow to the first 1200 Pro and are echoed from its THRU port to the second. This setup permits a variety of doubling and soloing combinations through control of MIDI channel assignments and the settings of individual instruments.

When composing or recording, many musicians use a MIDI sequencer to record and play back individual musical "tracks" (much like a multitrack tape recorder), controlling one or more synthesizers over MIDI.

A simple MIDI sequencing setup based on the 1200 Pro is shown in Figure 3-2(b). The MIDI OUT port of a K1000 SE II is connected to the MIDI IN port of the sequencer, and the sequencer's MIDI OUT port returns to the SE II's MIDI IN. The SE II's MIDI THRU port is routed to a 1200 Pro. The Echo feature of the sequencer (also called Patch Thru or Soft Thru) is activated—this is necessary to enable the 1200 Pro to receive MIDI information when playing from the SE II's keyboard.

In this case, MIDI messages from the SE II flow to the sequencer input and are recorded in computer memory—as well as being passed through to the 1200 Expander, since the sequencer's Patch Thru feature is enabled. During playback, the MIDI data stream passes from the sequencer back to the SE II MIDI IN and is echoed to the 1200 Pro from the SE II MIDI THRU port. Individual recorded tracks are assigned separate channel numbers, and the instruments are set to respond accordingly. This seemingly simple setup is capable of complex textures (up to 48 stacked notes utilizing up to 32 distinct timbres).

## 3.6 MIDI Modes

The MIDI specification includes a set of MIDI Modes. The MIDI Mode determines how an instrument will respond to incoming MIDI data. Normally, MIDI-equipped synthesizers are designed so that they can be switched among three or more different standard MIDI Modes. Each Mode has separate uses in multi-synthesizer and MIDI sequencer environments.

The 1200 Pro features three different MIDI Modes: Omni, Poly and Mult. In all three MIDI modes, the 1200 Pro operates *polyphonically* and *multi-timbrally* (that is, it is capable of playing more than one note and more than one sound at a time). The polyphonic limit of the 1200 Pro is 20 notes (24 notes for the Pro I), and the multitimbral limit is 16 (one sound for each MIDI channel). In Poly Mode, the multi-timbral limit is four (one sound for each Layer, unless complex Compiled Effects are used)

MIDI Modes are selected by pressing the MODE button in PLAY mode.

You can change the 1200 Pro's MIDI Mode via MIDI. In OMNI Mode, it will respond to Mode change messages on all channels. In Poly Mode, it will respond only on the basic channel. In MULT Mode, it will respond on all active channels.

### 3.6.1 Omni

When the 1200 Pro is set to Omni, it will respond to all incoming MIDI data regardless of channel assignments, and will play the currently-displayed Program for all note information received.

Omni is the simplest of the 1200 Pro's MIDI Modes. As a rule, however, Omni Mode is appropriate only when the 1200 Pro is the only instrument receiving data from a MIDI controller (therefore MIDI channel assignments are irrelevant). In multi-instrument systems, setting the 1200 Pro to Omni will cause it to double any instrument from which it receives MIDI data.

### 3.6.2 Poly

When set to Poly, the 1200 Pro will recognize only MIDI data that it receives on its basic channel (which in Poly mode is the currently selected channel). If you change the current channel with a CHANNEL button, the basic channel changes accordingly.

Poly Mode is useful for multi-instrument systems, when each instrument is set to receive on a single different MIDI channel. It allows independent control of the 1200 Pro, with full 20-note polyphony available to the currently-selected Program. When doing multi-track playback from a MIDI sequencer, you might also choose to use your 1200 Pro in Poly mode if it is playing only one part.

### 3.6.3 Mult

In Mult mode, the 1200 Pro is capable of responding to all 16 MIDI channels in any combination, *with a different Program assigned to each.* In other words, Channel 1 can be Grand Piano, Channel 2 can be Acoustic Bass, and channel 3, drums— all at the same time! (The available timbres vary with each Pro Series model).

Clearly, Mult mode is extremely useful for sequenced multitrack playback (Figure 3-2(b)), particularly if you have few synthesizers but want to create complex textures with several instrument sounds.

When the 1200 Pro is set to Mult mode, the CHANNEL buttons scroll among the 16 MIDI channels. While only one channel may be displayed at a time, the others remain active and retain their Program assignments.

The PROGRAM buttons are used to select the Program for the channel that is currently displayed. By scrolling sequentially through the channels and assigning a different Program to each, you can very quickly set up a complex multiple-instrument ensemble.

In the Mult mode display, the basic channel is indicated by an asterisk next to the channel number, as shown in Figure 3-3(a). While the concept of a "basic channel" has little meaning in Mult mode, the 1200 Pro nevertheless remembers its basic channel assignment if you switch to Poly.

## 3.7 Disabling & De-assigning Channels

There will be times when you will find it desirable to turn off one or more of the 1200 Pro's MIDI channels. You may, for instance, wish to silence a specific combination of channels when playing back a recorded sequence.

The 1200 Pro offers two methods for doing this: a channel may be *disabled* or it may be *deassigned.* Each method has particular advantages.

**Disabling Channels** — To disable a channel, press one of the CHANNEL buttons until the channel that you want to disable appears in the display, then press the VALUE NO button. The display should look something like Figure 3-3(b).

A disabled channel will ignore all MIDI data including note events, program changes, and controller events. It retains its current Program assignment, however, and can be re-enabled simply by pressing the VALUE YES button when the channel is displayed.

The channel disable function is very useful when you are slaving several MIDI devices to a single controller. You can easily instruct the 1200 Pro to ignore information on any channel simply by shutting the channel off.

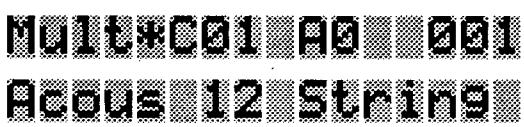
*Note that this function works only in Mult mode, and that you cannot disable the 1200 Pro's basic channel.*

**Deassigning Channels** — To deassign a channel, first select the channel using the CHANNEL buttons, then press the two PROGRAM buttons at the same time until the assigned Program is number 000 (or use the ENTER button procedure). The display should look like Figure 3-3(c).

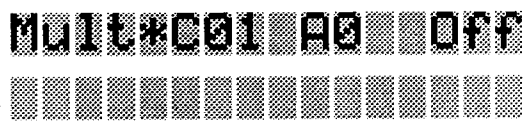
A deassigned channel simply plays a "null" Program. It still responds to MIDI note and controller events, but it won't be heard, since Program 000 is not a sound. To reassign the channel, you must select a different Program for it.

The deassign function is useful when you wish to turn channels on and off automatically over MIDI. (You might, for example, want to do this to control doublings in live performance.) To deassign a channel automatically, send it a MIDI program-change message that selects Program 000. You may have to use the Program List feature of the 1200 Pro for this, since you may not be able to select Program 000 directly from your controller. See section 6.5 for an explanation of Program Lists.) To reassign the channel at the appropriate time, send it another program-change message to select the Program that you want it to play.

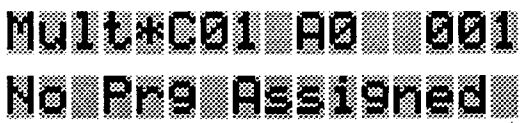
*The deassign function works in all MIDI modes, and does not affect MIDI information echoed at the 1200 Pro's MIDI THRU Port.*




(a) Basic Channel




(b) Disabled Channel




(c) Deassigned Channel

**Figure 3-3 Channel Displays**

# Section III

## 3.8 MIDISCOPE

The 1200 Pro incorporates a convenient function, called MIDISCOPE, which allows you to see and analyze MIDI events. To run MIDISCOPE from PLAY mode, press the PLAY / EDIT, CHANNEL UP and CHANNEL DOWN buttons simultaneously. The display will read:

MIDI Scope
any button quits

This message will remain until the 1200 Pro receives a MIDI event at its MIDI IN port. As soon as a MIDI event is received, the display will look something like Figure 3-4.

The upper line of the display shows the time in milliseconds since the last MIDI event, and the type of MIDI event that has been received. The lower line displays the MIDI channel over which the current event was transmitted, along with specific information about the event (in the case of note events, the key number with attack and release velocity values; for controller events, the MIDI control number and value).

Pressing any front-panel button will cause the 1200 Pro to exit MIDISCOPE and revert to PLAY mode.

Note that you will not hear any sound from your 1200 Pro while in MIDISCOPE. This is normal.

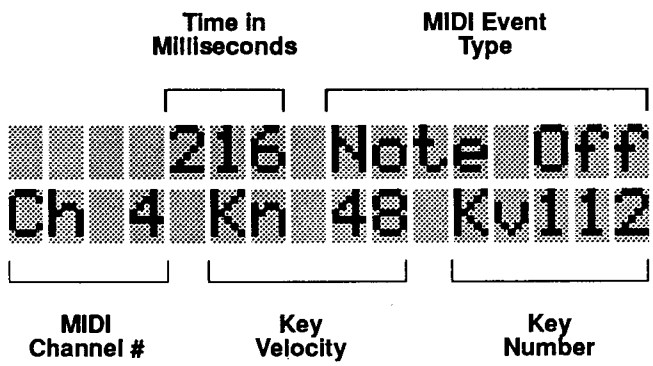



**Figure 3-4 Typical MIDISCOPE Display**

## 3.9 Resetting The 1200 Pro

On rare occasions, you may find that you will need to reset your 1200 Pro to get back in action.

A momentary power surge, for example, might "freeze up" the unit, making it unable to respond either to MIDI messages or to any of the front-panel buttons. Likewise, other unforeseen irregularities — such as SCR dimmer noise on the power line or electrical noise on the earth ground connection — may confuse the 1200 Pro's digital circuitry, resulting in unexpected behavior. The only solution to such problems may be to reset the unit.

The 1200 Pro allows two types of resets: Soft and Hard.

### 3.9.1 Soft Reset

A Soft Reset is the first option to try. It's a convenient way, for example, to reset all MIDI channels to their default states without editing each one individually. To perform a Soft Reset, press the VALUE NO, VALUE YES and PLAY / EDIT buttons together. The 1200 Pro will return to PLAY mode.

A Soft Reset re-initializes the 1200 Pro, but it preserves all Program and MIDI mode settings, and also leaves RAM-based user Programs intact. The Soft Reset is equivalent to turning off the 1200 Pro and turning it on again.

### 3.9.2 Hard Reset

The Hard Reset is a last-resort measure, since it not only re-initializes the 1200 Pro but also resets all user-defined settings. In a Hard Reset, all RAM objects are deleted (including RAM Demo songs), and all Parameters of the 1200 Pro are returned to their original Values.

To perform a Hard Reset, first turn the 1200 Pro off. Then, press and hold the A and B buttons simultaneously. While holding them down, turn the 1200 Pro back on. The 1200 Pro will revert to PLAY mode. You also can use Parameter 037 to do a Hard Reset.

## 3.10 Trouble Shooting Reference

**Sustain doesn't seem to be working**

This is likely to be due to an All Notes Off message being generated by one or more devices in your MIDI system. For example, some Roland MIDI devices (keyboards, sequencers, MIDI interfaces) will send an All Notes Off message whenever the MIDI data stream stops (for example, if all keys are released on your MIDI keyboard).

The Master Parameter Menu contains a Parameter (023) for adjusting the 1200 Pro's response to All Notes Off messages. There are two values: Hard and Soft. If this Parameter is set to Soft, then the 1200 Pro will respond to an All Notes Off message by terminating all notes which are not held on by a MIDI control (like Sustain). Notes held by Sustain or another control will decay normally. At a setting of Hard, all notes will be terminated regardless of any control information. Hard is the default setting.

If you are having trouble getting Sustain to work properly, select this Parameter and set it to Soft. This should take care of the problem.

**The Display flickers rapidly and the 1200 Pro hangs up**

This can occur in MIDI systems using a computer or sequencer, especially when Program Change information is being generated by either the 1200 Pro or another connected MIDI device. In many cases it will be due to MIDI information bouncing back and forth from your 1200 Pro to a computer or sequencer. If you have a MIDI loop between your 1200 Pro and another MIDI device (the 1200 Pro's MIDI Out or Thru is connected to the other device's MIDI In, and the other device's MIDI Out is connected to 1200 Pro's MIDI In), then MIDI information may be cycling endlessly between the two machines. You'll need to disrupt the loop.

If your 1200 Pro is connected to a MIDI sequencer or a computer running sequencer software that has an echo feature (often called Patch Thru, Play Thru, Soft Thru or Echo), try turning it off. This should correct the problem.

You can always disconnect one of the MIDI cables from the 1200 Pro, although this may defeat the purpose of your MIDI system.

**Phasing Effect**

Another possible problem related to the MIDI loop described above is a phasing effect in the 1200 Pro's sounds. If a patch sounds unusually out of tune or if it sounds as though more than one note is being played at a time (a chorusing effect) you may be accidentally sending many identical Note On commands when you intend to send only one. What is actually happening is that the 1200 Pro is playing each note twice. This means that one or more of the other devices in you MIDI system is receiving the same Note On information as the 1200 Pro, and is passing it through to the 1200 Pro. This causes the 1200 Pro to receive two Note On messages for every one that you intended. The delay between messages—even a few milliseconds between the first and second triggering of the sound—can create an unintended phasing effect.

This is easily stopped by disabling Echo (Patch Thru, Play Thru, Soft Thru, etc.) on your computer or sequencer.

# Section IV

## Basic Editing

## 4.1 Introduction

When you edit the Programs in your 1200 Pro, you make the instrument truly your own by tailoring its response to your playing style and its sound qualities to your musical taste.

This section covers the basics of editing the 1200 Pro, providing the necessary foundation for personalizing your instrument. Once you are familiar with this material, you'll be ready to move on to Part II, the *Programming Reference* and further explore the world that lies "behind the panel" of your instrument.

### 4.1.1 Voice Structure In The 1200 Pro

Figure 4-1 illustrates the hierarchical relationships among the major programming features of the 1200 Pro.

Each Program (often called voices, patches or sounds) originates in a digitally coded waveform, called a **Soundfile**. The Soundfile may be a sampled acoustic instrument sound (such as Fast Strings, Trumpet, and so on) or a digital representation of a basic electronic waveform (a Sine, Sawtooth or Square Wave, for example). The Soundfile is the primary determinant of the timbre, or sound quality, of the Program.

Soundfiles are assembled into a Program in **Layers** (one Soundfile per Layer). Within each Layer, the assigned Soundfile is treated to add unique characteristics, or to fine-tune its timbre and playing response. Layer treatments consist of **Effects** — which may be either **Compiled** or **Modular** — as well as a number of standard **Layer Parameters**.

A Program may have from one to four distinct, individually-programmed Layers, each of which may be defined to span any portion of the total range of a standard piano keyboard (MIDI note numbers 21 - 108, or A0 - C8). All of the Layers of a given Program are subjected globally to a set of **Program Parameters**, which determine playing characteristics for the Program as a whole.

Finally, every Program in the 1200 Pro's memory is subject to a set of **Master Parameters** which determine the overall playing characteristics of the instrument.

### 4.1.2 The Editing Process

Editing the 1200 Pro is a process of moving among Menus, selecting Parameters within each Menu, and manipulating the Values of those Parameters.

**Parameters** — A Parameter is an individual programmable function of the 1200 Pro (for example, Master Tuning or Pan). Parameters are selected using the PARAMETER UP and DOWN buttons while in EDIT Mode. By pressing both PARAMETER buttons at once, you can skip to frequently-used Parameters without having to scroll through a long list.

**Values** — Each Parameter has a Value which determines the way in which the 1200 Pro responds to the function controlled by that Parameter. Most Parameter Values are numerical and, where possible, scaled to musically or technically rational units (tuning Values are in semitones, quartertones or cents, for instance). Figure 4-2 is a list of numerical Value units used by the 1200 Pro, along with their abbreviations as they appear in the 1200 Pro display.

* Compiled Effects are preset sound-modifying programs that have been developed by Kurzweil's engineers to simulate various types of standard signal processing, such as Tremolo, Chorus, and Leslie effects. Modular Effects are sound-modifying programs that you design yourself, much as you would with a modular synthesizer. Editing of Modular Effects is covered in Part II of this manual, the *Programming Reference.*

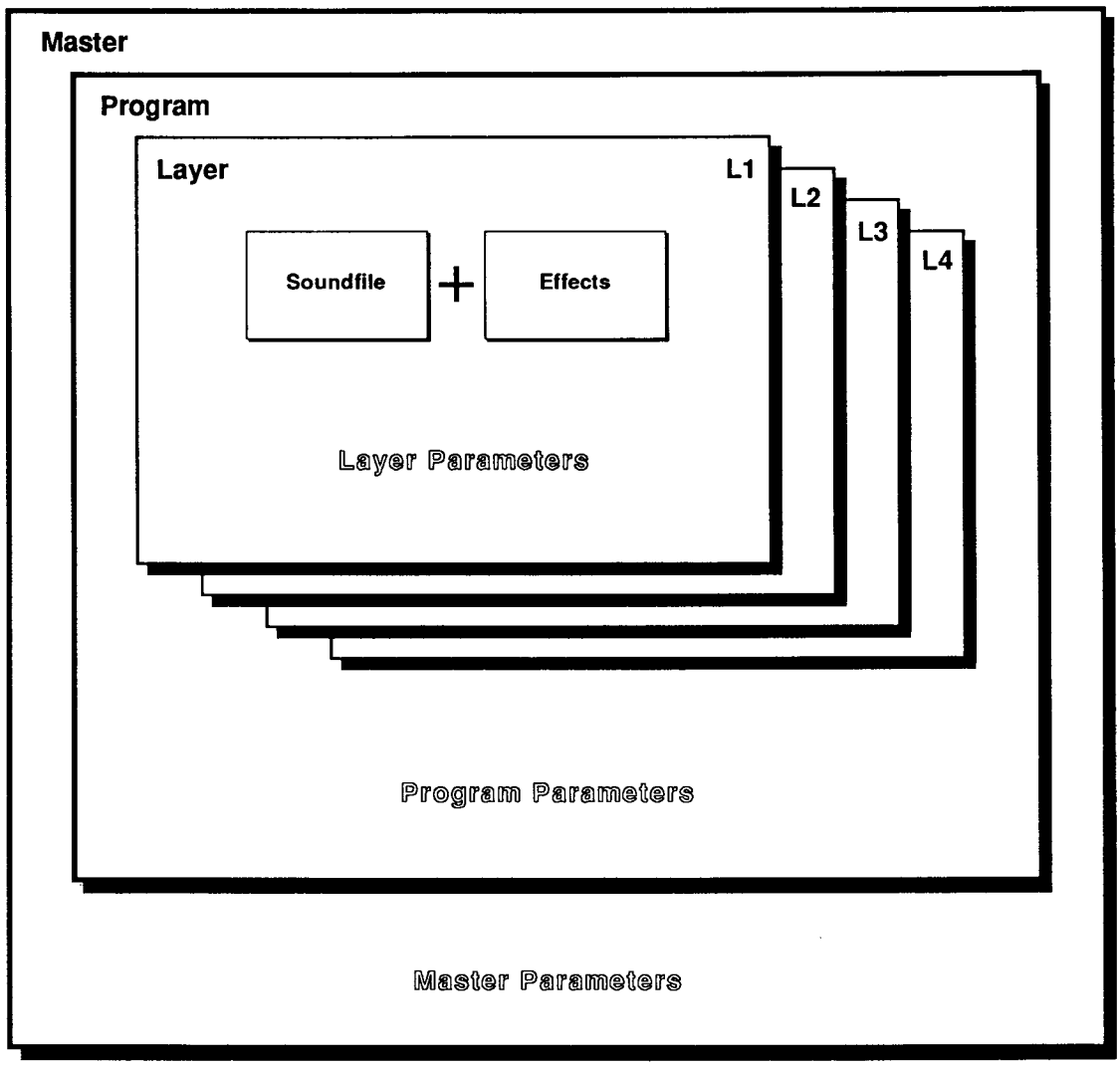



**Figure 4-1 Programming Hierarchy of the 1200 Pro**

In some cases, a Value may be expressed as a word (the name of a Soundfile, for instance), or a logical yes/no value (usually a response to a question prompt from the 1200 Pro). Values are assigned by pressing the VALUE YES and NO buttons; for numerical Values, YES increases the Value and NO decreases it.

**Menus** — To make the editing process as convenient and efficient as possible, Parameters with similar or related functions are organized into numbered Menus. The individual Parameters within each Menu are also numbered, and their numbering relates to the Menu number. For example, the sixth Parameter of the Master Menu (which is Menu number 000) is number 006. Similarly, the sixth Parameter of the Layer Menu (Menu number 200) is number 206.

**Navigating** — You might visualize the 1200 Pro's Parameters as being organized by number into the pages of a book. The MENU buttons move you from one page to another, while the PARAMETER buttons allow you to select specific entries on the currently viewed page.

You can jump from one Menu to another at any time. If you return to a Menu, the Parameter that you selected just before you left it will reappear in the display (as long as you have stayed in Edit Mode).

| Unit | Display |
|---|---|
| Semitone | ST |
| Quartertone (1/2 ST) | QT |
| Cent (1/100 ST) | ct |
| Hertz (cycles per second) | Hz |
| Percent | % |
| Decibel | dB |
| Second | s |
| Degree | deg |
| MIDI Velocity | vel |

**Figure 4-2 Numerical Value Units**

**Instant Feedback** — The 1200 Pro remains fully functional and responsive to your control while in Edit Mode. Each change in the Value of a Parameter is quickly entered, so you can hear the effect of your edits by playing the keyboard as you change Values (provided, of course, that the Parameter you modify is assigned to affect the current Program).

None of your changes will be permanent, however, until you save the Program into RAM. Furthermore, it's impossible to erase or permanently replace the ROM-based factory Programs. So, while you can hear the effects of all your edits, you needn't worry about being able to get the original Program back.

Feel free to experiment. When you have the sound you want, you can save it for future use.

**Confirmations** — Whenever you elect to make an edit that can't be undone (for example, deleting a Program), the 1200 Pro will first ask you "Are you sure?" This gives you a last chance to change your mind; answering YES will cause the edit to be executed. You may turn off this "confirmation" function, once you become proficient at editing. See Master Parameter 029.

### 4.1.3 Entering Edit Mode

To switch from PLAY to EDIT Mode, first select a Program to edit, then press the PLAY / EDIT button. The display should resemble Figure 4-3.

You are now in the Layer Menu. All of the Parameters in this Menu affect the individual Layers of a Program. The upper line of the display gives the current Layer number, the Menu name and the Parameter number. The lower line indicates the name of the current Parameter (Soundfile, in this example) and information associated with that Parameter — in this case, the name of the Soundfile assigned to this Layer.

*The only time that you will not see this display upon entering EDIT mode is when you have selected Program 000, a null Program. In this case, only the Master Menu will be available.*

By pressing the LAYER button, you can cycle through the Layers of the current Program and identify the Soundfile that is assigned to each one. If the Layer button appears to have no effect, then the Program has only one visible Layer (some Programs contain invisible Layers; see page 29).

The 1200 Pro's software has been designed to jump directly to Parameter 206 of the Layer menu because one of the most common (and most powerful) edits that you can make to a Program is to change its assigned Soundfile(s). You can try this now with the current Program: just press the VALUE UP or DOWN button to cycle through all of the Soundfiles. By triggering notes from your controller as you change Soundfiles, you can hear the effect of your changes. Using this method, you can quickly and easily create new voices.

Each Menu in EDIT Mode has a Parameter which normally appears when you select that Menu. Usually it is a Parameter that you'll be likely to use frequently. This is the Parameter you'll see when you select a given Menu for the first time upon entering EDIT Mode (this could be the first time after powering up, after a reset, or simply when returning to EDIT Mode after exiting to PLAY Mode). If, however, you leave a Menu then return to it **without** leaving EDIT Mode, then you will return to the Parameter which was displayed when you were last in that Menu.

### 4.1.4 The Compare Function

The Compare function allows you to hear the differences between your Programs before and after editing. To use the Compare function while editing,

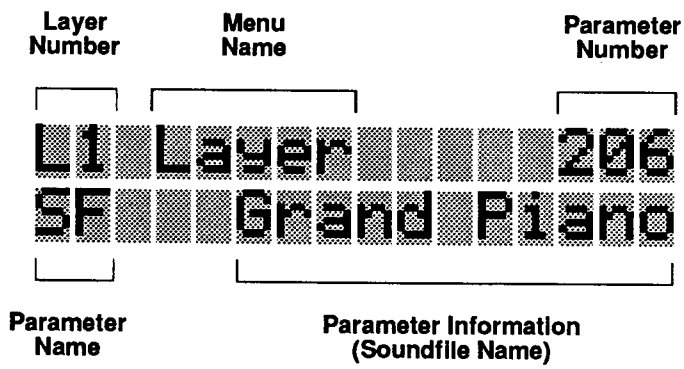



**Figure 4-3 Edit Mode Display**

simply press [COMPARE] after you have changed some aspect of the currently selected Program. The display will indicate the name and number of the unedited program, and when you trigger a note from your controller, you will hear the original, unedited Program. Press [COMPARE] again, and the display will return to the normal EDIT mode configuration, showing you the Value for the currently selected Parameter.

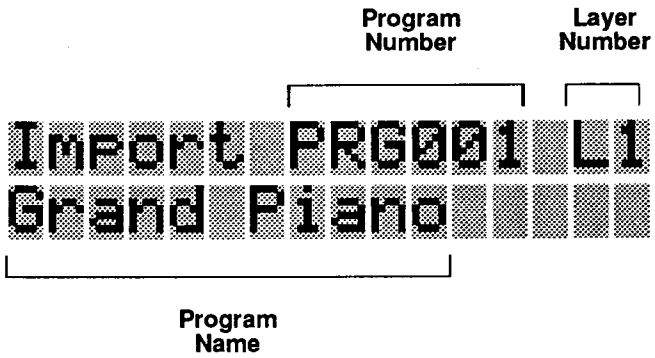



Figure 4-4 Importing a Layer

## 4.2 Creating Layers & Splits

The techniques of layering voices and creating keyboard splits are among the most powerful and widely-used tools in the synthesist's repertoire. The 1200 Pro accommodates both of these techniques in a few simple editing commands, all of which are within the Layer Menu.

### 4.2.1 Layered Programs

Layered voices are Programs which play two or more sounds each time a note is triggered.

The 1200 Pro's software provides two basic ways to create your own layered Programs. First, you may Import a Layer—along with all of its Effects and playing Parameters—from another existing Program into the one that you are editing. (This procedure allows you to use some of the more complex voice setups that come with your 1200 Pro without getting deeply into Modular Effect editing.) Second, you can create a new Layer from scratch.

**Getting Started** — To create a layered Program, begin in PLAY mode and select a base Program upon which to build. Then switch to EDIT mode and scroll through the Program's Layers with the LAYER button, so that you know how many Layers are available. (It's easiest to start with a Program having only one Layer, so that you have room to build on.)

**Importing a Layer** — Once you are sure that there is space to add another Layer, press the PARAMETER DOWN button to get to Parameter 203 of the Edit Menu. The screen display will read:

L1 Layer 203
Import Layer?

Answer YES to the prompt, and the display will resemble Figure 4-4.

The 1200 Pro has jumped to the first Layer of Program 001, the default for importing. From here, you can use the PROGRAM and LAYER buttons to scroll through the available

Programs and Layers, trying out different Layers to import. While doing so, you can trigger notes from your controller to hear the effect of your changes.

When you find a layered combination that you like, press YES to confirm your selection. The selected Layer will be added to your current Program, and the display will confirm the operation by showing:

Layer n
Imported

('n' will be the number of the new Layer). You've just created a layered Program. If you want to save it, turn to Section 4.4.2, *Saving Programs*. You can continue importing until you've created four Layers, which is the maximum the 1200 Pro allows. If you have used all available Layers and you try to import another, the 1200 Pro will tell you that no more Layers are available.

Some Compiled Effects require one or two additional "hidden" Layers in order to achieve their effect. These added Layers don't show up when you scroll through the Program with the LAYER button. In some cases, then, you may not have room for another Layer in a Program, even though it may look as though you should. This can occur either because the Program has more Layers than are shown in the display, or because the Layer that you wish to import has hidden Layers associated with it. You may be able to circumvent this restriction by selecting different Effects (see Section 4.3).

**Creating a New Layer** — Adding a new Layer will give you a mostly empty, "fresh" Layer to work with.

Use the PARAMETER buttons to select Parameter 201 of the Edit Menu. The display will read:

L1 Layer 201
New Layer?

Answer YES, and the 1200 Pro will add a new Layer to the current Program. The display will briefly show:

Layer n created

('n' will be the number of the new Layer). The default Soundfile for the new Layer will be Steel String 1, and the Effects Level will be set to Compiled with no Effect selected.

You may now use Parameter 206 to try out various Soundfiles, playing the keyboard to hear the results in each case. Once you have selected a Soundfile and are ready to add Effects to the new Layer, turn to Section 4.3 of this manual. To save the Program, consult Section 4.4.2, Saving Programs.

## 4.2.2 Split Programs

A Split Program is one in which different voices are assigned to different ranges of the MIDI keyboard.

For example, in live performance, you might want to be able to play accompanying chords with your left hand and melody with your right, using two different sounds. This would require a split Program in which the lower keys are assigned to one sound and the upper keys to another. The 1200 Pro's design easily accommodates splits.

To create a split Program, first build a layered Program incorporating the voices that you want to use. Then, use the PARAMETER buttons to select Parameter 209. The display will read:

L1 Layer 209
Set MIDI Range?

Parameter 209 allows you to assign each Layer in a Program to a specific range of keys. Use the LAYER button to select a Layer for editing, then press YES.

The display will prompt you to "Strike 1st key." Press the key on your controller (trigger a note) that corresponds to one extreme of the range that you want this Layer to cover. The

## 4.3 Using Compiled Effects

display will ask you to "Strike 2nd key." Trigger a note corresponding to the other extreme of the desired range.

The display will return to the "Set MIDI Range?" prompt. The range of the current Layer now includes the lowest and highest notes you triggered, plus all the notes in between. (Notice that you can trigger the notes in any order — lowest first, or highest first.)

You can now select another Layer with the LAYER button and assign it to the range you desire. The ranges of successive Layers can overlap, if you wish.

**Fine Tuning** — You can check and adjust the MIDI key range for any Layer using Parameters 210 ("Low Note") and 211 ("High Note"). Each displays the corresponding extreme of the current Layer's key range as a musical note Value (for example, C4 for middle C). Use the LAYER button to scroll through the Layers in your Program, and the VALUE buttons to adjust the range if necessary. The VALUE buttons step in semitone increments; pressing both at the same time will step upward by octaves. In either case, you can press and hold to scroll rapidly through note Values.

Effects are sound-modifying processes that add richness and character to your Programs.

In professional performance and recording, external effects units are almost always used to enhance the sound of electronic instruments. These "outboard" signal processors are powerful tools for making a track more distinctive and increasing its impact. They can also represent a substantial investment for the working musician.

The 1200 Pro incorporates a set of built-in Compiled Effects similar to those of popular outboard processors. Designed by Kurzweil engineers to give you quick access to commonly-used synth effects, these Effects enable you to give your Programs the variety and complexity that contemporary music requires. Most importantly, you can apply different types of Effects separately to each Layer of your Programs — so you can achieve results that are much more complicated and subtle than those of external effects units.

### 4.3.1 Selecting Effects

In order to use Compiled Effects, you must make certain that the Effects Edit Level of the Layer that you're working on is set to "Compiled."

In the Layer Menu, select Parameter 215, "Effects." If the current Effects Level is Modular, the display will read:

```
L1 Layer      215
FX       Modular
```

In this case, the current Layer already employs Modular Effects. These Effects contribute to its sound quality. Remember that a single Layer may use only one type of Effect: if you

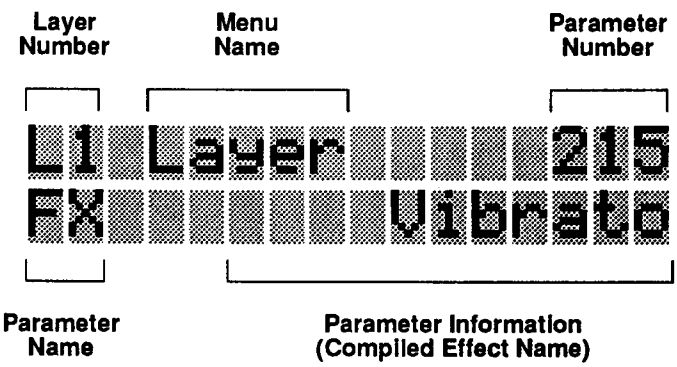



**Figure 4-5 Selecting a Compiled Effect**

change to Compiled Effects, you'll lose whatever contribution the Modular Effects provide. This may be fine — the change may not be extreme, and you might discover a new sound in the process. Just be aware that the results may be unexpected.

To change to Compiled Effects, press the appropriate PARAMETER button to select Parameter 216 and answer YES to the "Change Effects Edit Level?" prompt. If Master Parameter 029 ("Confirmation") is set to ON, the 1200 Pro will ask if you are sure. Answer YES, and the 1200 Pro will respond that the Effects Edit Level is changed to Compiled. You can now return to Parameter 215 and select an Effect.

When the current Effects Edit Level is Compiled, the display at Parameter 215 will resemble Figure 4-5. The upper line of the display shows the current Layer number, the name of the Menu (Layer) and the Parameter number (215). The lower line gives the Parameter name (FX) and the name of the currently-selected Effect. If no Effect is selected, the Effect name will be "None."

Use the VALUE buttons to scroll through the list of available Compiled Effects. While you change Effects, you can trigger notes from your controller to hear the results.

When you find an Effect that you like, you can do one of three things:

- Save the current Program as it is (see Section 4.4.2)
- Press LAYER to select the next Layer of your Program and add Effects to it
- Experiment with modifying the current Effect to fine-tune your sound

### 4.3.2 Modifying Effects

Once you have chosen a Compiled Effect that suits your taste, you can adjust its characteristics using the Parameters in the Effects Menu (#300).

Press one of the MENU buttons to reach Menu 300, then use the PARAMETER buttons to scroll through the available Parameters. You may change the value of any Parameter with the VALUE buttons. As you change Values, trigger notes from your controller to hear the results.

The Effects Menu Parameter list varies depending on which Compiled Effect has been selected. Figure 4-6 summarizes the Parameters for each Compiled Effect. (See also the *Programming Reference.)*

Once you have edited a Program to your satisfaction, you'll want to save it to a RAM location so that you can recall it when you need it.

If you've already made some basic edits and have tried switching back to PLAY Mode, you already know that the 1200 Pro automatically gives you a chance to save an edited Program when you exit EDIT Mode. The series of dialogs that it takes you through is exactly the same as that described in Section 4.4.2, *Saving Programs.* This feature is very useful if you are editing "on the fly" and want to get back into PLAY Mode quickly, but it bypasses the step of renaming the Program.

The 1200 Pro's software also offers a more thorough and orderly way of manipulating Programs in memory, allowing you to give each Program a unique name and then save it without leaving EDIT Mode. All of the commands that are involved are found in the Program Menu (Menu 100).

### 4.4.1 Naming Programs

While the 1200 Pro keeps track of Programs by number rather than name — and, in fact, allows you to have two or more Programs with the same name — you'll find it much easier to keep your Programs organized if you get into the habit of naming them before you save them.

**Vibrato**
- [301] Maximum Depth
- [302] Maximum Rate
- [303] Shape
- [304] Depth Control
- [305] Rate Control

**Delay Vibrato**
- [301] Maximum Depth
- [302] Maximum Rate
- [303] Shape
- [304] Delay
- [305] Ramp
- [306] Rate Control

**Tremolo**
- [301] Maximum Depth
- [302] Maximum Rate
- [303] Shape
- [304] Depth Control
- [305] Rate Control

**Delay Tremolo**
- [301] Maximum Depth
- [302] Maximum Rate
- [303] Shape
- [304] Delay
- [305] Ramp
- [306] Rate Control

**Leslie**
- [301] Rate
- [302] Depth
- [303] Ramp
- [304] Trigger

**Chorus 2***
- [301] Transpose
- [302] Detune
- [303] Delay
- [304] Enable
- [305] Pan 1
- [306] Pan 2

**Tremolo 2***
- [301] Maximum Rate
- [302] Maximum Depth
- [303] Shape
- [304] Rate Control
- [305] Depth Control
- [306] Pan 1
- [307] Pan 2

**Vibrato / Chorus 2***
- [301] Maximum Rate
- [302] Maximum Depth
- [303] Shape
- [304] Rate Control
- [305] Depth Control
- [306] Transpose
- [307] Detune
- [308] Delay
- [309] Enable
- [310] Pan 1
- [311] Pan 2

**Phaser 2***
- [301] Maximum Rate
- [302] Depth
- [303] Ramp
- [304] Shape
- [305] Rate Control
- [306] Detune
- [307] Delay
- [308] Pan 1
- [309] Pan 2

**Leslie 2***
- [301] Rate
- [302] Depth
- [303] Ramp
- [304] Trigger
- [305] Pan 1
- [306] Pan 2

**Chorus 3***
- [301] Transpose
- [302] Detune
- [303] Delay
- [304] Enable
- [305] Pan 1
- [306] Pan 2
- [307] Pan 3

**Echo 3***
- [301] Delay
- [302] Decay
- [303] Enable
- [304] Pan 1
- [305] Pan 2
- [306] Pan 3

*Uses additional "invisible" Layers.

**Figure 4-6 Parameters of the Effects Menu**

To name or rename a Program, press one of the MENU buttons to get to the Program Menu (100), then press the PARAMETER UP button to select Parameter 101. In answer to the prompt "Name Program?" press the VALUE YES button.

The display should now resemble Figure 4-7. The bottom line of the display shows the current Program name. An underscore cursor appears beneath the first letter of the name, indicating that the 1200 Pro is prepared to accept changes to that character.

The 1200 Pro's front-panel buttons take on special editing functions in the naming sequence, as shown in Figure 4-8.

**PLAY / EDIT** — Pressing the PLAY / EDIT button deletes the character above the cursor. All characters to the right of the cursor will move one position to the left.

**LAYER** — Pressing the LAYER button inserts a space at the cursor location. The character above the cursor (and all the characters to the right of it) will move one position to the right.

**MENU UP and DOWN** — The MENU buttons serve as cursor controls. MENU UP moves the cursor to the right, while DOWN moves it to the left. Pressing both MENU buttons at once advances the cursor to the first

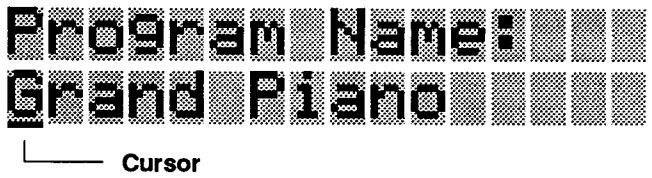



**Figure 4-7 Naming Programs**

alphanumeric character after a space (or after a non-alphanumeric character, such as '!'), allowing you to jump to the next word in the name.

**PARAMETER UP and DOWN** — The PARAMETER buttons select characters from a fixed list. UP advances forward through the list, while DOWN scrolls backward. Pressing both PARAMETER buttons skips through sections of the list, as follows:

**0** — Followed by numerals 1 through 9 and several symbols
**'A'** — Followed by upper case letters and assorted symbols
**'a'** — Followed by the rest of the alphabet in lower case
**Space** — Followed by an assortment of symbols

When you are satisfied with the name, press the VALUE YES button to confirm it. (You can also press the VALUE NO button to revert to the original name.) You will return to the "Name Program?" prompt, and the new name will be stored. You are now ready to save the Program to RAM.

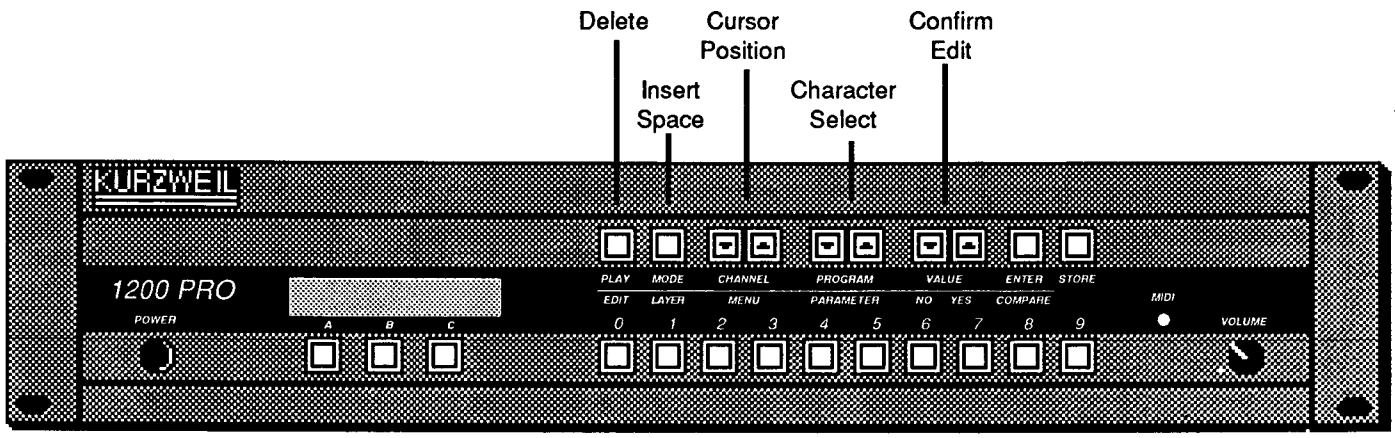



**Figure 4-8 Functions of Buttons in the Naming Sequence**

### 4.4.2 Saving Programs

Once you have named your Program, press the PARAMETER UP button to select Parameter 102. The 1200 Pro will respond with the prompt, "Save Program?"

If you answer YES to the "Save Program?" prompt, one of two things will happen. If you began by editing a preset (ROM) Program, the 1200 Pro will display the next available RAM Program ID# (starting at #255 and moving *downward*) and will suggest that your Program be given that ID# and that it be stored at the Program number displayed at the left of the LCD. If you began by editing a RAM Program, the 1200 Pro will ask you if you want to replace the displayed Program. Use the PROGRAM buttons to select a different ID# if you wish.

Answering YES again will cause the 1200 Pro to save the Program with the ID# and Program number assigned as displayed. (If you answer NO instead, at this point, the 1200 Pro will ask you if you want to discard your changes. YES will abort the save. NO will return to the Save Prog? prompt.)

When you save a Program, then after a second or so, the display will ask you if you want to update the Program List. The upper line of the display will show you the previously selected Program number (the one you had selected before you entered EDIT Mode), and the ID# assigned to it. If you answer YES, the 1200 Pro will automatically map the ID# of the new Program to the displayed Program number. This gives the new Program the Program number of the old, unedited Program, and removes the old Program from the current Program List. If you answer NO, the 1200 Pro will assign the new Program to the next available User Program number (they begin with Program number 401).

You'll want to update the PList when you've made adjustments to Programs you've been using, and plan to keep using after you've made the adjustments. If, on the other hand, you've created an entirely new, significantly different Program, you probably won't want to update the PList. You can always reassign the Program number later by editing the PList.

If this is unclear to you, the example in Section 6.5 will help.

The number of Programs you can create and save depends on their complexity. Once the 1200 Pro's memory is full, you won't be able to save any additional Programs without erasing existing ones. If you have ObjectMover,™ you can avoid this situation by saving Programs and other Objects to disk. See Section 5.2.

It's possible to save RAM Programs to the ID#s of the 1200 Pro's ROM (preset) Programs. If you do this, the new Program will "overwrite" the older ROM Program. This does not erase the ROM Program, but "hides" it "behind" the RAM Program. If you delete the RAM Program, the ROM Program will "reappear."

### 4.4.3 Deleting Programs

Deleting a Program (or any other Object) should be done with care, because once it's deleted, it's gone forever unless you have a backup. To delete a Program, simply answer YES to Parameter 103. If Parameter 029 is set to On, the 1200 Pro will ask you if you are sure you want to delete the Program. If you answer YES again, the Program will be deleted. Answer NO to cancel the deletion sequence.

## 4.5 Monophonic Output Setting

There may be occasions when you won't be able to take advantage of the 1200 Pro's stereo output capability.

Your present sound system may have only one input, for example. Or you might be undertaking a particularly complex project with a lot of sound sources, requiring you to free up every channel of your mixer that you can spare. Under these circumstances, if you connect just one of the 1200 Pro's two outputs, you will lose some proportion of the sound of every stereo Program unless you set the 1200 Pro for monophonic output.

To do so, use the MENU buttons to reach the Master Menu (number 000), then press the PARAMETER UP button to select Parameter 020, "Mono Output." The display will look like Figure 4-9.

The upper line of the display shows the current Layer number, the Menu name (Master) and the Parameter number. On the lower line is the Parameter name and default Value, OFF.

You may use either VALUE button to toggle the Value on and off. A Value of ON will cause the 1200 Pro to add its two audio channels and output the sum at both Output connectors, overriding all Pan settings of every Program. Note that this does not *erase* any Pan settings, however.

To restore stereo output capability, set this Parameter to OFF.

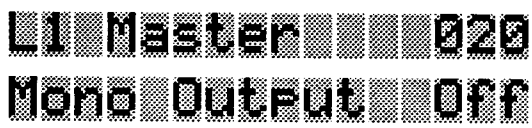



**Figure 4-9 Setting the 1200 Pro for Monophonic Output**

## 4.6 Advanced Program Editing

Now that you are familiar with the basic principles of editing — accessing Parameters within Menus, changing their Values, and saving the results as a new Program — you have the skills to begin getting into advanced editing procedures.

At the advanced level, you'll start from scratch with a digital emulation of a traditional modular synthesizer, putting together building-block elements to create Modular Effects. (The Compiled Effects that you've been working with were actually built using this same technique, and can be studied as examples of Modular Effect editing.) Advanced editing also gives you more control over the playing response of the 1200 Pro, allows you to explore alternate tuning systems, and permits extensive control over MIDI functions.

Advanced editing is covered in Part II, the *Programming Reference*. When you're ready to explore advanced Program editing, we recommend that you set aside some time to study the *Programming Reference* carefully. You'll find that time spent at the outset to gain a clear overview of the 1200 Pro's software will pay off later in the efficiency of your work and the quality of your Programs.

*Have fun!*

# Part II
# Programming Reference

## 5.1 About This Manual

This section of the manual has been designed to provide you with all of the information you will need to program your new 1200 Pro.

**Section V** introduces basic programming concepts and software features of the 1000 Series. This information is essential to understanding the following sections.

**Section VI** covers the Master Menu and its submenus. The Parameters of these menus affect all Programs, and determine general playing characteristics of the instrument.

**Section VII** presents the Program Menu, whose Parameters affect Programs individually.

**Section VIII** covers the Layer Menu. The Parameters of this Menu separately determine the characteristics of each Layer in a Program.

**Section IX** presents editing of Modular Effects, which represent the digital equivalent of a traditional modular synthesizer. The Parameters of the Modular Effects Menus provide very fine control of a Program's timbre.

**Section X** contains programming examples that are designed to demonstrate practical applications of the 1200 Pro's EDIT Mode.

**Section XI** is a quick-reference guide for use in programming the 1200 Pro. Charts and illustrations from both this part and from Part I, the *Performance Guide* are reproduced together here, so that you can find them quickly and easily. This Section also contains a list of standardized MIDI control numbers for your reference.

**Section XII**, the Appendix, provides information on Value resolutions in the 1200 Pro and describes self-diagnostic routines for the 1200 Pro. These routines can be very helpful if you suspect a malfunction in your instrument. You'll also find a discussion of the file format of SONG Objects.

***Important:*** *Entering the diagnostics will erase the 1200 Pro's RAM. Don't use them if you don't have a way to avoid losing the results of your programming.*

Also included in the appendix is technical information on interfacing your 1200 Pro with the "outside world." If you are making your own cables, or if you plan to use your 1200 Pro in professional performance and recording studios, you'll want to refer to this section. Finally, you'll find detailed technical specifications for the 1200 Pro.

Part One of this manual, the 1200 Pro *Performance Guide* contains important basic information about your new instrument. If you have not already done so, please take time to familiarize yourself with that section before proceeding through this *Programming Reference.*

## 5.2 1000 Series Objects

At many points in this manual, you will see references to Objects.

"Object" is a generic term which refers to programming features of 1000 Series instruments: items which can be named, saved, deleted, defined or programmed are termed Objects. Programs, Velocity Maps and Intonation Tables, for example, are Objects. So are the Effects Modules that are discussed in Section X of this manual.

Having already studied your *Performance Guide*, you are familiar by now with the procedures for naming, saving and deleting Programs. Similar procedures apply in the case of some other Objects: Velocity Maps (programmed features that define how the 1200 Pro responds to MIDI Velocity data), MIDI Program Maps (which determine both the transmission and reception of MIDI Program Change data), and Intonation Tables (which permit special tuning systems such as Just Intonation) are all treated in the same way.

# Section V

## 5.3 The Editing Menu System

In addition to using the programming features of your 1200 Pro, you can also manipulate Objects with ObjectMover™, an application developed by Kurzweil for popular personal computers. ObjectMover is a basic patch librarian program, enabling you to move 1000 Series Objects between two or more 1000s, and to program your 1000 from your computer screen. It also enables you to save Objects to disk in Library files.

ObjectMover is available for the Macintosh computer (512K RAM or more) and the Atari ST (520 or 1040). An IBM-compatible version is currently under development.

As described in Section IV of your *Performance Guide*, the 1200 Pro's EDIT Mode Parameters are grouped into Menus for convenient and efficient editing.

The first Parameter of each Menu is the name, or heading, of that Menu. All Menu heading numbers end in "0." Values are not assignable to Menu headings, so no Value or unit of measurement appears in the lower line of the display when a heading is shown. You can usually select the Menu heading or the first programming Parameter in a Menu with one or more dual presses of the PARAMETER buttons.

The system of Menus available for editing varies depending upon the current Effects Edit Level of the current Layer. When Compiled Effects are selected, for example, the Menus associated solely with Modular Effects editing will not appear in the display. Similarly, when Modular Effects are selected, Menu number 300 (the Effects Menu, which contains Compiled Effects Parameters) cannot be accessed.

Figure 5-1 summarizes the Edit Mode Menus that are available for each Effects Edit Level.

| | |
|---|---|
| 000 | MASTER |
| 100 | PROGRAM |
| 200 | LAYER |
| 300 | EFFECTS (Compiled Effects only) |
| 700 | Amp ENV (Amplitude Envelope 1) |
| 900 | ENV Ctl (Envelope Control) |

**(a) Compiled Effects Selected**

| | |
|---|---|
| 000 | MASTER |
| 100 | PROGRAM |
| 200 | LAYER |
| 410 | LFO1 (Local Low Frequency Oscillator 1) |
| 420 | LFO2 |
| 430 | gLFO1 (Global LFO1) |
| 440 | gLFO2 |
| 510 | ASR1 (Local Attack-Sustain-Release Envelope 1) |
| 520 | ASR2 |
| 530 | gASR1 (Global ASR1) |
| 540 | gASR2 |
| 600 | MXR (Mixer) |
| 650 | INV/NEG (Inverters and Negators) |
| 700 | Amp ENV (Amplitude Envelope 1) |
| 800 | ENV2 (Envelope 2) |
| 900 | ENV Ctl (Envelope Control) |
| 920 | Pitch Ctl (Pitch Control) |
| 940 | Amplitude Ctl (Amplitude Control) |

**(b) Modular Effects Selected**

**Figure 5-1 The Edit Mode Menus**

## 5.4 About Control Sources

As you work through this *Programming Reference*, you will often see "Control Source List" given as the Value for a Parameter. The 1200 Pro enables you to use a large number of internal and external Control Sources to modify dynamically the Values of Parameters and the functions of Effects Modules.

Mod wheels, footswitches and breath controllers are examples of Control Sources. MIDI data from a master keyboard, such as afterpressure, attack velocity and so on, also are Control Sources. The complete 1000 Series Control Source List is shown in Figures 5-2a and 5-2b (pages 40 and 41).

The assignment of Control Sources is an extremely powerful programming tool in the 1000 Series software. Notice that the Control Source List is very extensive. The 1200 Pro has been designed to offer maximum versatility and flexibility in programming. A wide variety of sonic and musical functions is easily achieved simply by navigating through the Edit Menus and systematically assigning Control Sources to various Parameters.

Naturally, some Control Sources will be logical choices for certain Parameters, but not for others. Control Sources appear in the display as possible Values for a Parameter only if they can actually be used to control that Parameter.

### 5.4.1 Control Source Configuration

Control Source data are expressed within the 1000 Series as a number between -1 and +1. The *configuration* of a Control Source determines how its output signal varies within that range. A given Control Source may have a unipolar, bipolar, or logical configuration.

**Unipolar Control Sources** generate signals ranging from 0 to +1.

**Bipolar Control Sources** generate signals between -1 and +1.

**Logical Control Sources** are Unipolar Sources whose signal values are limited to 0 and +1, with no intermediate values.

For example, the Sustain function is a Logical Control Source: it generates +1 when the pedal is pressed down, and 0 when it is released.

A slider (such as the Volume or Data Entry slider present on many MIDI keyboards) is Unipolar: it generates 0 at minimum, +1 at maximum, and +0.5 at its midpoint. The Mod Wheel Control Source is also Unipolar, generating 0 when the controller's wheel is at center and +1 at either extreme.

Many of the 1200 Pro's Effects Modules are Bipolar. The Low Frequency Oscillators, for instance, generate waveshapes which vary between -1 and +1 (LFOs also can be made unipolar; see Section 9.2).

### 5.4.2 Control Source Type

The 1200 Pro provides two *types* of Control Sources: local and global.

**Global Control Sources** affect every note that is generated by a given Program, with all notes receiving the same control signal. The MIDI Pitch Wheel is an example of a Global Control: if you hold two notes and move the Pitch Wheel on your controller, both notes will be bent equally at the same time and in the same direction.

**Local Control Sources** affect each note individually. Even when played at the same time, multiple notes each receive their own Local Control signals. MIDI polyphonic afterpressure is an example of a Local Control Source.

### 5.4.3 Descriptions of Control Sources

Please refer to Figure 5-2, the Control Source List, throughout this discussion.

**None** — Indicates that no Control Source has been assigned to the currently selected

| Name | Display | Config | Type |
|---|---|---|---|
| Off | OFF | Logical | Global |
| On | ON | Logical | Global |
| None | None | — | — |
| Modulation Wheel (MIDI 01) | M Wheel | Unipolar | Global |
| Breath Controller (MIDI 02) | Breath | | |
| MIDI 03 | MIDI 03 | | |
| Foot Switch (MIDI 04) | Foot | | |
| Portamento Time (MIDI 05) | PortTim | | |
| Data Entry (MIDI 06) | Data | | |
| Volume (MIDI 07) | Volume | | |
| Balance (MIDI 08) | Balance | | |
| MIDI 09 | MIDI 09 | | |
| Stereo Pan (MIDI 10) | Pan | | |
| Expression (MIDI 11) | Express | | |
| MIDI 12 | MIDI 12 | | |
| MIDI 13 | MIDI 13 | | |
| MIDI 14 | MIDI 14 | | |
| MIDI 15 | MIDI 15 | | |
| Performance Control A (MIDI 16) | Ctl A | | |
| Performance Control B (MIDI 17) | Ctl B | | |
| Performance Control C (MIDI 18) | Ctl C | | |
| Performance Control D (MIDI 19) | Ctl D | | |
| MIDI 20 | MIDI 20 | | |
| MIDI 21 | MIDI 21 | | |
| MIDI 22 | MIDI 22 | | |
| MIDI 23 | MIDI 23 | | |
| MIDI 24 | MIDI 24 | | |
| MIDI 25 | MIDI 25 | | |
| MIDI 26 | MIDI 26 | | |
| MIDI 27 | MIDI 27 | | |
| MIDI 28 | MIDI 28 | | |
| MIDI 29 | MIDI 29 | | |
| MIDI 30 | MIDI 30 | | |
| MIDI 31 | MIDI 31 | | |
| Sustain Pedal (MIDI 64) | Sustain | | |
| Portamento Switch (MIDI 65) | Port Sw | | |
| Sostenuto Pedal (MIDI 66) | Sost Pd | | |
| Soft Pedal (MIDI 67) | Soft Pd | | |
| MIDI 68 | MIDI 68 | | |
| Freeze Pedal (MIDI 69) | Frez Pd | | |
| MIDI 70 | MIDI 70 | | |
| MIDI 71 | MIDI 71 | | |
| MIDI 72 | MIDI 72 | | |
| MIDI 73 | MIDI 73 | | |
| MIDI 74 | MIDI 74 | | |
| MIDI 75 | MIDI 75 | | |
| MIDI 76 | MIDI 76 | | |
| MIDI 77 | MIDI 77 | | |
| MIDI 78 | MIDI 78 | | |
| MIDI 79 | MIDI 79 | | |

**Figure 5-2(a) 1000 Series Control Source List**

Parameter. When you create new Effects Modules, they usually default to this Value, which is equivalent to Off.

**OFF** — This is a constant Control Source value of 0. It is usually used to turn something off, or to hold a Parameter at its minimum value.

**ON** — This is a constant Control Source value of +1. It may be used to turn something on, or to hold a Parameter at its maximum value.

**MIDI 01–31 & 64–95** — Many MIDI Control Numbers (often called Destinations) are standardized for certain functions by the MIDI 1.0 Specification that manufacturers use as a guideline for their MIDI implementation. MIDI 07, for example, is normally associated with Volume.

Unlike most synthesizers, which ordinarily feature preprogrammed MIDI Control Number assignments that cannot be changed, the 1200 Pro offers full flexibility in its MIDI implementation. Parameters requiring Control Sources can be assigned to be controlled by almost any MIDI Control Number from 1–31 or 64–95. Control Numbers 1–31 are intended for use with continuous controllers like Volume. Control Numbers 64–95 are for use with switch controllers like a Sustain pedal.

Control Numbers 33–63 are reserved for use as the LSB (Least Significant Byte) for destinations 1–31, respectively. This allows greater resolution in the 1200 Pro's processing of control signals.

The Reference Section (Section XI) of this manual includes a list of the Control Numbers whose functions are standardized by the MIDI 1.0 Specification. Refer to the manual for your master controller for information regarding its MIDI implementation.

**Pitch Wheel** — The Pitch Wheel Control Source generates -1 when the MIDI controller's Pitch Wheel is at one extreme, and +1 at the other. The polarity (+ or -) of the value relative to the wheel's position (up or down) depends on the setting of the Bend Range Parameter (number 224, in the Layer Menu) for each Layer of the Program.

**Monophonic Pressure** — If you want one of your 1200 Pro's Parameters to be controlled by Monophonic (channel) afterpressure from your controller, assign this Control Source to that Parameter.

**Polyphonic Pressure** — Allows you to apply afterpressure signals on an individual basis to single notes (providing that you use a MIDI controller which will transmit this data).

| Name | Display | Config | Type |
|---|---|---|---|
| Performance Control E (MIDI 80) | Ctl E | Unipolar | Global |
| Performance Control F (MIDI 81) | Ctl F | | |
| Performance Control G (MIDI 82) | Ctl G | | |
| Performance Control H (MIDI 83) | Ctl H | | |
| MIDI 84 | MIDI 84 | | |
| MIDI 85 | MIDI 85 | | |
| MIDI 86 | MIDI 86 | | |
| MIDI 87 | MIDI 87 | | |
| MIDI 88 | MIDI 88 | | |
| MIDI 89 | MIDI 89 | | |
| MIDI 90 | MIDI 90 | | |
| MIDI 91 | MIDI 91 | | |
| MIDI 92 | MIDI 92 | | |
| MIDI 93 | MIDI 93 | | |
| MIDI 94 | MIDI 94 | | |
| MIDI 95 | MIDI 95 | | |
| Pitch Wheel | P Wheel | Bipolar | Global |
| Monophonic Afterpressure | M Press | Unipolar | Global |
| Poylphonic Afterpressure | P Press | Unipolar | Local |
| Attack Velocity | Att Vel | Unipolar | Local |
| Release Velocity | Rel Vel | Unipolar | Local |
| Note State | Note St | Logical | Local |
| Key State | Key St | Logical | Local |
| Key Number | Key Num | Unipolar | Local |
| Local LFO 1 Output | LFO1 | Bipolar | Local |
| Local LFO2 Ouptut | LFO2 | Bipolar | Local |
| Local LFO1 Phase | LFO1ph | Bipolar | Local |
| Local LFO2 Phase | LFO2ph | Bipolar | Local |
| Global LFO1 Output | gLFO1 | Bipolar | Global |
| Global LFO2 Output | gLFO2 | Bipolar | Global |
| Global LFO1 Phase | gLFO1ph | Bipolar | Global |
| Global LFO2 Phase | gLFO2ph | Bipolar | Global |
| Local ASR1 Output | ASR1 | Unipolar | Local |
| Local ASR2 Output | ASR2 | Unipolar | Local |
| Global ASR1 Output | gASR1 | Unipolar | Global |
| Global ASR2 Output | gASR2 | Unipolar | Global |
| Mixer 1 Output | MXR1 | Bipolar | Local |
| Mixer 2 Output | MXR2 | | |
| Inverter 1 Output | INV1 | | |
| Inverter 2 Output | INV2 | | |
| Negator 1 Output | NEG1 | | |
| Negator 2 Output | NEG2 | | |
| Amplitude Envelope | Amp ENV | Unipolar | Local |
| Envelope 2 | ENV2 | Bipolar | Local |
| Velocity Trigger 1 | VTrig1 | Logical | Local |
| Velocity Trigger 2 | VTrig2 | Logical | Local |
| Inverted Attack Velocity | InvAVel | Unipolar | Local |
| Inverted Release Velocity | InvRVel | Unipolar | Local |
| Playback Rate | PB Rate | Unipolar | Local |
| Absolute Pitch Wheel | Abs P-Whl | Unipolar | Global |
| Bipolar Mod Wheel | Bi M-Whl | Bipolar | Global |
| Channel State | Chan St | Logical | Global |

**Figure 5-2(b) 1000 Series Control Source List**

**Attack Velocity** — This Control Source causes a Parameter or Module to be controlled by the MIDI Attack Velocity of a given note.

The value generated by this Source depends not only on how hard you strike your MIDI controller's keys (or, more precisely, the Attack Velocity value associated with the notes you trigger from your controller), but also on which Velocity Map you have selected in the 1200 Pro's Master Menu. Values tend toward +1 with hard strikes (high velocity values), and toward 0 with soft strikes (low velocity values). A MIDI Attack Velocity signal is sent with each Note On message, and is translated into a dynamic level through the Master Velocity Map.

The table of Figure 5-3 shows the relationship between the force of your keystrikes and the approximate value generated by this Control Source.

| Keystrike Dynamic | Attack Velocity |
|---|---|
| fff | 1.0 |
| ff | 0.9 |
| f | 0.8 |
| mf | 0.6 |
| mp | 0.4 |
| p | 0.2 |
| pp | 0.1 |
| ppp | 0.05 |

**Figure 5-3 Approximate Attack Velocity Values**

**Release Velocity** — The MIDI Release Velocity signal is transmitted with each Note Off message, and is processed similarly to the Attack Velocity signal. The value of this Control Source will be 0 until a Note Off message is received.

**Note State** — This logical Control Source is directly related to the on/off state of the current note. It will be +1 (On) as long as the key that triggered the note is pressed or the note is sustained by the sustain, sostenuto, or freeze pedal functions. The value will be 0 (Off) if the key is released with no sustaining functions activated, or when the sustaining function is released.

**Key State** — This Source is similar to Note State, but is related only to the actual key that triggers a given note. When the key is pressed, it will generate a value of +1 (On); when the key is released, it will generate a value of 0 (Off) *regardless of whether a sustain function has been activated.*

**Key Number** — This Source's value is 0 when the lowest key of the related Layer is played from the controller, and +1 when the highest key of the Layer is played. Values for keys in between are interpolated linearly between 0 and +1. For example, if the low note of a Layer is C4 (middle C) and the high note is C8, then playing middle C will cause the Key Number Control Source to generate a value of 0; C8 will generate +1; and C6 will generate +0.5 (See Section VIII, Parameters 209–211).

**Inverse Attack Velocity** —This is an inverted version of Attack Velocity. The value of this Control Source is equal to +1 minus the Attack Velocity.

**Inverse Release Velocity** — Similar to Inverse Attack Velocity, the value of this Source is equal to +1 minus the value of Release Velocity.

**Playback Rate** — This is a complicated Control Source that depends on the playback rate of the root sample associated with the currently-played note.

A 1200 Pro Soundfile is actually a collection of several root samples, and transpositions of each of them, distributed in regions across the range of the keyboard. Each root has a different playback rate, as does each of the notes associated with that root.

This Control Source generates a signal approaching zero as the playback rate of the current note nears the minimum for its region, and approaching +1 as the playback rate nears maximum. Seemingly random variations between 0 and +1 can be attained using this Source.

**Effects Modules** — This group of Control Sources (LFOs, ASRs, Mixers, Inverters and Negators) consists of Kurzweil 1000 programming Modules. All are explained in Section IX.

**LFO Phase (for each of LFO 1 and 2, and gLFO 1 and 2)**— The "phase" of an LFO is given in degrees, with 360 degrees representing one complete cycle of the LFO. This control source linearly converts the current phase of the LFO into a control signal of ±1. 0° = -1, 359° = +1. Turn to section IV of your *Performance Guide* for a refresher on the 1200 Pro's interpretation of control signals. These Control Sources appear in the Control Source List as LFO1ph, LFO2ph, gLFO1ph, and gLFO2ph.

**Channel State (Chan St in Control Source List)**—A simple On/Off control, Channel state is On when *any* note is triggered or held by the controlling keyboard or another control. This Control Source is useful for triggering global ASRs, or for selecting between layers (used in conjunction with Layer Enable and Enable Sense) for legato response.

**Absolute Pitch Wheel Value (Abs P-Whl in Control Source List)**—When the controller's pitch wheel is at center, the value of this Control Source is 0. The value progresses linearly from 0 to 1 as you deflect the pitch wheel in either direction (maximum pitch wheel deflection gives a value of 1). Use this Control Source to trigger an effect any time you bend pitch with you controller.

**Bipolar Mod Wheel Value (Bi M-Whl in Control Source List)**—Like Abs P-Whl, the value of this Control Source is linked to the deflection of the Mod Wheel on your MIDI controller. Bi M-Whl is bipolar, however, which means that it sends a value of 0 with the Mod Wheel at center, -1 with the Mod Wheel at minimum, and +1 with the Mod Wheel at maximum.

## 5.5 Reading The Next Sections

Sections VI through X of this manual are devoted to explaining the functions of all of the Parameters in each of the Edit Mode Menus. These Sections are organized in ascending order according to the Menu numbers. The Parameters within each Menu are listed in numerical order as well.

At the beginning of each Menu Section, you will see a flowchart that summarizes the Parameters within that Menu and their relationships to one another. The chart also indicates which Parameters you can jump to with a dual press of the PARAMETER buttons. (In the text, these Parameters are numbered in outline type.) Refer to the flowchart when you are reading through the Section.

In the text, each individual Parameter description is headed as shown in Figure 5-4 (we have used Parameter number 208 as an example).

The Parameter number is followed by the name (often abbreviated) of the Parameter. For example, the name of Parameter 208 appears as "Kbd Tilt."

The black "bullet" item gives the range of possible Values for the Parameter —in this case, ±48 dB. If the Parameter can take several distinct Values, they are listed sequentially as they will appear in the display with repeated presses of the VALUE UP button.

The white bullet item tells you how the Parameter is affected by a dual press of the VALUE buttons (here, a dual press moves to the next highest multiple of 6 dB). When a dual press of the VALUE buttons is not recognized, the white bullet item is omitted.

As you can see, the material has been organized to make it as easy as possible for you to find the information that you need when programming your 1200 Pro. We recommend, however, that you read through all of the text once, in order to gain familiarity with the programming principles of the instrument's software and the range of capabilities at your command.

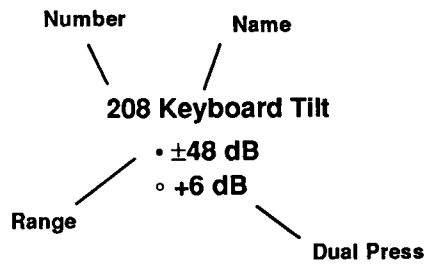



**Figure 5-4 Format for Parameter Headings**

# Section VI

## Master Menu

The Parameters in the Master Menu affect all of the 1200 Pro's sounds—unlike the Program Menu Parameters, for example, which affect only the Program whose Parameters you change.

The Master Menu is always available, even if you have selected Program 000. Values for all Master Parameters are preserved when you turn off your 1200 Pro.

**000 Master**

This is the Menu heading.

**001 Edit Channels**
**•Yes**

Parameter 001 enables you to set independent performance specifications for each MIDI channel—varying volume levels during mixdown, for example. When you answer Yes to this Parameter, you will move to a special list of Channel Editing Submenus for each MIDI channel (see Section 6.1).

The Channel Editing Submenu Parameters, when modified, will override all corresponding Layer assignments, enabling you to maintain performance characteristics for a particular MIDI channel even when you change the Program assigned to it.

**002 Reset Channels**
**• Yes**

Enables you to clear all changes you have made with Parameter 001. If you answer YES to this Parameter, you will disable all of the Channel Parameters, returning control to the Layer Parameters of each Program. You'll receive one or more warnings about the loss of data when you answer YES to this Parameter.

**003 Transmit Program Change**
**(Xmit Prg Chg in display)**
**• On**
**Off**
**Extended (Ext)**

This Parameter determines how the 1200 Pro sends Program Change messages from its MIDI Out port when you select a Program from its front panel—using any of the three methods: PROGRAM buttons, ENTER and numeric buttons, or Bin Banks.

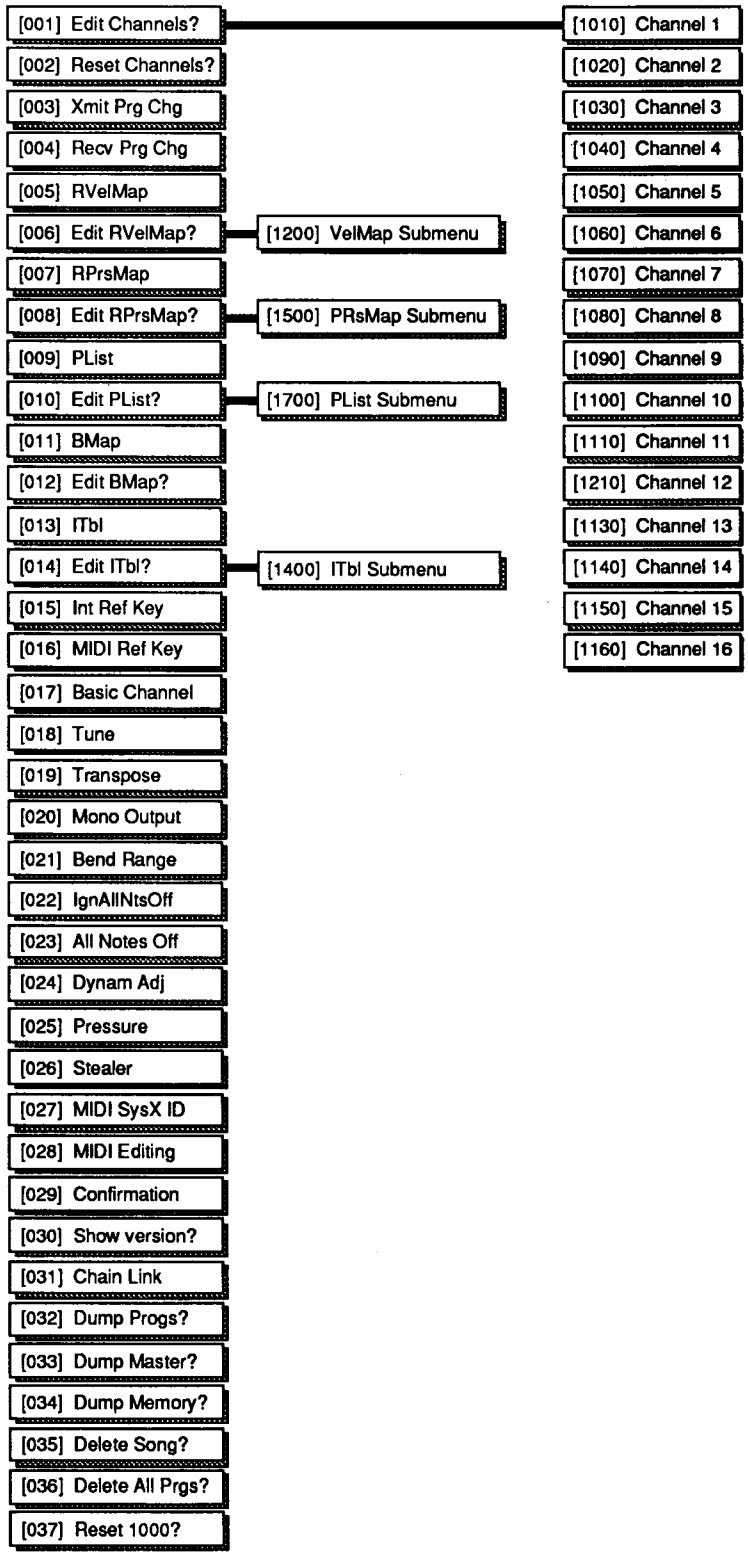
With Parameter 003 set to On, the 1200 Pro will send a Program Change message with the same Value as the Program you select—for Program Change numbers from 0 - 99. The 1200 Pro will simply ignore the hundreds digit in Program change numbers of 100 or higher, sending the lowest two digits only. For example, selecting Program number 121 would result in Program number 21 being sent from the 1200 Pro's MIDI Out port.

Use one of the VALUE buttons to set this Parameter to Off if you want to change Programs from the 1200 Pro's front panel without sending Program Change messages to connected MIDI devices.

Select a Value of Extended (the default) when you want to send Program Changes from the 1200 Pro via MIDI to other Kurzweil keyboards/expanders with Version 5 software. A Value of Extended enables the 1200 Pro to send the "extended" Program Change messages that simplify Program mapping with the 1200 Pro (and all 1000 Series products with version 5 software) Please see the separate discussion of Extended Program Changes on page 51.

# Section VI

## The Master Menu



**004 Receive Program Change (Rcv Prg Chg in display)**

- **On**
  **Off**
  **Extended**

Use this Parameter to determine how the 1200 Pro will respond to Program Change messages sent from connected MIDI devices.

The default Value is Ext. Use either of the VALUE buttons to change the Value to Off if you do not want the 1200 Pro to receive Program Change messages.

Select a Value of Extended when the 1200 Pro will be receiving "extended" Program Change messages from another MIDI device. See the discussion of Extended Program Changes on page 51 if you need further information.

With a Value of On, the 1200 Pro will respond to Program Change numbers 0 to 99 only, directly selecting the Program number received. If the Program number received is 100 or greater, the 1200 Pro will ignore the "hundreds" digit, and select the Program according to the lowest two digits. For example, a Program Change number of 123 would select Program number 23 in the 1200 Pro's current Program List.

**005 Receive Velocity Map (RVelMap in display)**

- **Hardest**
  **Harder**
  **Hard**
  **Medium**
  **Easy**
  **Easier**
  **Easiest**
  **DX7 Hard**
  **DX7 Medium**
  **DX7 Easy**
  **Linear**

Velocity Maps determine the relationship between attack velocity from your controller and the dynamics (loudness) and brightness of the sound produced by the 1200 Pro. Different Velocity Maps allow you to customize the dynamic response of the 1200 Pro to different MIDI controllers and playing styles.

In general, the "harder" the setting, the more velocity the 1200 Pro will require to achieve maximum dynamic levels. The "easier" the setting, the less velocity required to reach full dynamics.

Velocity Maps also may be edited, renamed and saved in non-volatile RAM. You'll want to select different VelMaps for use with different MIDI controllers or playing styles. See Parameters 006 and 1200 through 1212 (Section VI) for more information.

**006 Edit Receive Velocity Map**

- **Yes**

Answering YES to this Function Parameter will take you to the Velocity Map Submenu (See Section 6.2). You then will be able to edit the currently selected Velocity Map. (Be sure to select the Velocity Map you wish to edit **before** editing.)

**007 Receive Pressure Map (RPrs Map in display)**

- **Linear**
  **Low Bias**
  **Easier**
  **Easiest**
  **Dual Switch**

The 1200 Pro will respond to both monophonic (channel) and polyphonic (key) pressure (aftertouch). This Parameter enables you to select different pressure maps, thus modifying the 1200 Pro's response to pressure messages from your MIDI controller.

Your ears will give you the best comparison among the various pressure maps, but in general, the Linear map provides a consistent increase in effect as you increase the pressure. The Low bias setting will give you a greater initial effect with less pressure, tapering off as you add pressure. Easier and

Easiest give progressively greater effect at lower pressures. Dual switch provides a map with a large "gap" between effects at low and high pressures. This can be very effective when pressure is used as a Control source—for example, if MPress is used as the Layer Enable control for Layer 2 of a two-layer Program, then setting the RPrsMap to Dual switch will give you a convenient on/off switch for Layer 2, triggered by the amount of aftertouch you apply to your controller.

**008 Edit Receive Pressure Map**

**(Edit RPrs Map? in display)**

When you answer YES here, you will enter a Submenu containing Parameters 1500 - 1508. See Section 6.4.

**009 Program List**

**(PList in display)**

- **Browser I**
  **Browser II**
  **Library I**
  **Library II**
  **RAM Progs**

Program Lists (often called "maps," because they map one Program number to another) affect the way the 1200 Pro responds to Program Change messages sent from your MIDI controller. They also affect the Program numbers sent to connected MIDI devices from the 1200 Pro's own front panel.

Program Lists give you the flexibility to work around a significant limitation of the MIDI specification. The limitation is this: when using MIDI commands to change Programs, you can send Program Change Values of 0 to 127 (or 1 to 128)—and no higher. Since many of the 1200 Pro's Program numbers are outside this range, you'll need to use Program Lists to select those Programs from your MIDI controller. In the sidebar beginning on page 4449, you'll find a general overview of the 1200 Pro's Program mapping architecture. Also discussed are the basics of Program List editing.

**010 Edit PList?**

When you answer YES to this Function Parameter, you'll enter the Program List Editing Submenu, containing Parameters 1700 - 1705. See Section 6.5.

**011 Bin Map**

- **Bins**
  **QuickMaps**

You can create specific sets of Programs and store them in memory. These sets of ten Program numbers, called Bins, can be stored in any of three Banks, labeled A, B, and C. These Bin Banks can store 30 different Programs, allowing you to select them with a single press of the numeric buttons.

If you want to store more than 30 Program numbers, you can save the settings for your original Bin Banks in a Bin Map, and create additional Bin Maps, each containing a different set of 30 Program numbers.

Master Parameter 011 is used to select a Bin Map, both for performance and for editing. In PLAY mode, when you select a Program using the Bin Banks, the Program will be selected according to the Program numbers assigned to the current Bin Map. You also can select Bin Maps from the front panel in PLAY Mode. See Section 3.4.

The Map called Bins contains a selection of 1200 Pro Programs. The Map called QuickMaps contains Velocity Maps in Bank A, Pressure Maps in Bank B, and Intonation Tables in Bank C.

**012 Edit Bin Map**

Answer YES here, and you will enter Submenu 1800, Bin Btn Map. See Section 6.6.

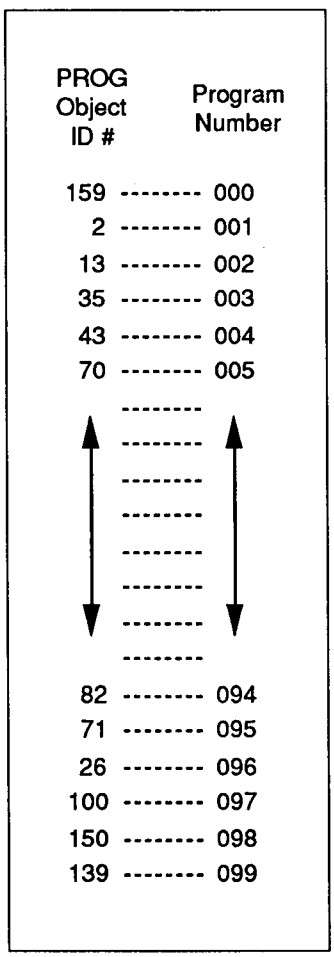



**Figure 6 - 1. Program ID#s map to Program numbers**

## Program Lists in the 1200 Pro

The 1200 Pro is a computer, rapidly processing blocks of information in response to the control messages you send. The 1200 Pro stores and processes many specialized blocks of information which we call "Objects." The 1200 Pro recognizes an Object by looking at its Type (Program, Bin Map, Intonation Table, etc.) and ID number (which Object of any particular type, since there are many of each type).

Programs are just one of the 1200 Pro's many types of Objects, all of which follow the same rules: every Object has a Type (PROG, in this case), and a unique ID number to distinguish it from other Objects of the same type.

When you select a 1200 Pro Program, the 1200 Pro finds it by looking for all Objects of type PROG, then searching through the Program Lists to find the ID number that corresponds to the Program number you selected. What is important to understand is that the ID number of the Program **is not necessarily** the same as the Program number you see in the 1200 Pro's display. This is because the 1200 Pro's Program List feature allows you to map any Program ID number to any display Program number. Often they will be different. Although this may seem difficult to understand at first, there are several advantages to this approach.

One major advantage concerns the MIDI limitation we mentioned earlier: MIDI allows the transmission of Program numbers from 0 to 127 (or 1 to 128) **only**. This means, for example, that a 1200 Pro Program (a PROG Object, to be precise) with ID number 255 cannot be selected directly from a MIDI controller. By editing a Program List, however, and mapping the PROG Object with ID 255 to a Program number from 0 to 127 (36, for example), you can select the Program from your MIDI controller by sending a Program Change number of 36. The 1200 Pro will receive the message, look to the appropriate Program List to see which PROG ID number is assigned to Program number 036, and will select that PROG Object, displaying its Program number. As far as the MIDI controller is concerned, you have just selected Program 036.

Figure 6-1 will help you visualize the relationship between PROG Objects (the information the 1200 Pro uses to generate its sounds) and the Program number (as seen in the 1200 Pro's display) to which the PROG Object is assigned. There also is a detailed description of Program List editing in Section 6.5.

Another sizable advantage of the 1200 Pro's Program List structure is that it offers an easily accessible library of 1000 Program numbers—ten Program Lists, each of which has 100 entries. Keep in mind that this does not mean that the 1200 Pro has a thousand Programs— it simply means that there are a thousand different Program numbers to which you can assign any of the PROG Objects currently stored in the 1200 Pro's ROM and RAM.

# Section VI

## Program Lists in the 1200 Pro (continued)

You might think of the Lists as being numbered like this: List 1, List 2, List 3, etc. You won't actually see the Lists numbered in the display—you'll see only the names of the Lists. Nevertheless, the Lists are easy to identify by their first digit. Program numbers 000 to 099 are contained in List 1 (Called "Browser I," unless you've changed it). Program numbers 100 - 199 are contained in List 2 (Browser II), and so on. Remember that these numbers are the numbers of the Programs as they appear in the 1200 Pro's display—don't confuse them with the actual PROG Object ID numbers. The Program Lists take care of relating the PROG ID numbers to the Program numbers.

If you plan to make all your Program selections from the 1200 Pro's front panel, you won't need to do any Program List editing. In this case, Program changes are extremely simple. You can select any Program number from 000 to 999 using the ENTER and numeric buttons. As long as a PROG Object is assigned to that Program number, it will be selected instantly. If the selected Program is not in the same Program List as the current Program, the 1200 Pro instantly switches to the appropriate List.

To select Program 925, for example (assuming you had already stored a PROG Object at Program number 925), you would simply press ENTER, 9, 2, 5, ENTER. Unlike many other instruments, you do not have to select the List first, selecting the Program afterward. You actually select the List and Program in one function. Pressing the 9 selects List 10 (Program numbers 900 - 999), then the 2 and 5 select Program number 25 within that List. All you need to remember is that the lead sound for your opening tune is Program number 925.

If you select a Program number which doesn't have a Program (PROG Object) assigned to it, the 1200 Pro will tell you that that Program number was not found. You then will return to the previously selected Program.

If you're wondering how you're going to select Program number 925 from your MIDI controller, or how to insert Program Change number 925 in a sequencer track, you'll find the answer in the sidebar entitled "Extended Program Changes," on page 51.

**013 Intonation Table**

- **Equal**
  **Classic Just**
  **Just w/b 7th**
  **Harmonic**
  **Just Harmonic**
  **Werkmeister**
  **1/5th Comma**
  **1/4th Comma**
  **Indian Raga**
  **Arabic**
  **Bali/Java1**
  **Bali/Java2**
  **Bali/Java3**
  **Tibetan**
  **CarlosAlpha**
  **Pyth w/aug4**
  **Pyth w/dim5**

Selects from a list of temperament tables which define the intervals between notes within the octave.

Intonation tables are listed by name. The default Value is Equal temperament, which is the temperament used on a standard piano.

All of the Intonation Tables preserve octave relationships (all Cs, for example, are spaced one octave apart), but each Table has different tunings for the intervals between semitones. In the "Equal" Table, for example, the interval between each semitone is 100 cts.

## Extended Program Changes

The 1200 Pro allows its Programs to be numbered from 000 to 999, yet all of its Program numbers are accessible from any standard MIDI controller, by sending Program Change numbers from 0 to 127 (or 1 to 128). The 1200 Pro's Extended Program Change feature makes it possible. Actually, the 1200 Pro responds normally only to Program Change numbers from 0 to 99. Above 99, the 1200 Pro either ignores the hundreds digit (if Parameters 003 and/or 004 are set to On), or it interprets them as signals to select PLists (if Parameters 003 and/or 004 are set to Ext).

Any of the 1200 Pro's Program numbers can be selected from an external MIDI controller with no more than two Program Change messages. Here's how it works. Any time the 1200 Pro receives a Program change number of 0 to 99, it responds by selecting the Program (PROG Object) stored at that Program number in the currently selected Program List. For example, if List 3 (Program numbers 200 - 299) is the currently selected PList, and you send the 1200 Pro a Program Change number of 64, the 1200 Pro will select Program number 264 (you'll see the number "264" in the display).

When Parameter 003 is set to Ext, the 1200 Pro sends an extra Program Change message when you select Program numbers above 99 from its front panel. The first Program Change number specifies the hundreds digit, and the second specifies the tens and ones. For example, if you selected Program number 925 from the front panel, the 1200 Pro would send Program Change number 109, then 25.

To select different PLists from an external MIDI controller, send Program Change numbers of 100 - 109. Program Change number 100 selects PList 1 (Programs 0 - 99). Program Change number 101 selects PList 2 (Programs 100 - 199) 103 selects PList 3, and so on. If, for example, the currently selected Program is Program number 264, and you want to select Program number 009, send the following Program Change numbers: 100 (selects PList 1) and 9 (selects Program number 9 in the current PList). It doesn't matter which of these Program Change messages you send first, although if you are inserting these Program Change numbers in a sequence track, make certain that they don't occur too close together, because some sequencers will not send two Program Change messages on the same tick. Set the Program Change messages to different ticks, or beat fractions, or whatever units your sequencer uses.

### 014 Edit Intonation Table

- **Yes**

Enables you to edit the current Intonation Table (the one selected with Parameter 013).

The Intonation Table Editor allows you to specify the size of each of the chromatic intervals in an octave, relative to the tonic (reference key). You select the Values for one octave, then the 1200 Pro extrapolates those intervals to the remaining octaves in its range.

Pressing YES in response to this Parameter takes you to the Edit Intonation Table Submenu, Parameters 1400 to 1414 (see Section 6.3). Be sure you have used Parameter 013 to select the Intonation Table that you want to edit before you start making changes.

### 015 Intonation Reference Key

- **C, C# . . . B**

Establishes a reference key (by specifying the tonic note of that key) for whichever Intonation Table is selected using Parameter 013. The default Value is C.

The reference key determines which key you should play in to make the Intonation Table sound "correct." It is important because the 1200 Pro cannot guess which key you'll be

playing in. Consider this example: You have chosen an Intonation Table which adjusts the minor 2nd (the interval between *do* and *di*) +100 ct, and have selected a Reference Key of C. This means that when you play any C# on the keyboard, you will actually hear a D from the 1200 Pro. If you play a piece of music suited to this intonation, it will sound fine *as long as you play in the key of C.*

If you modulate to the key of F, however, the piece will not sound the same, because the 1200 Pro still "thinks" that C is *do*. If you change the Reference Key to F, then the interval between F and F# will be adjusted appropriately.

**016 MIDI Reference Key**

- **Off**
  **On**

Allows you to use MIDI data to select a reference key, as an alternative to using Parameter 015.

In a performance situation, you might not have time to change reference keys using Parameter 015. You can use Parameter 016 to rapidly change your reference key as frequently as you wish.

With a Value of Off (the default), incoming MIDI data have no effect on the selection of a reference key.

Select a Value of On, and you can change the reference key by sending a MIDI Note On signal for MIDI Note numbers 0 to 11 (C-1 to B-1). A Note On signal at C-1 sets the reference key to C; a Note On signal at C#-1 sets the reference key to C#, and so on. A standard 88-key MIDI controller has keys beginning at MIDI Note number 21 (A0), so you probably will need to transpose down on your MIDI controller to use this feature.

***Note*** — As long as the Value for Parameter 016 is set On, a Note On signal in the range from C–1 to B–1 will not produce a sound on the 1200 Pro, but will only change the reference key.

**017 Basic MIDI Channel**

- **1–16**

Selects the basic MIDI channel for the 1200 Pro. The Basic Channel cannot be disabled, and disabled channels cannot be selected as the Basic Channel.

In Omni On Mode (Omni in the display), all channels will receive channel messages, including MIDI mode change messages. All other Channel messages will be received by all 16 channels. In Omni Off Mode (Poly in the display), the Basic Channel is the only channel that can receive Channel messages of any kind.

**018 Tune**

- **±100 ct**
- **+10 ct**

Tunes the entire instrument up or down as much as one semitone, in steps of one cent (1/100th of a semitone). A Value of 0 tunes the 1200 Pro to A4 = 440 Hz. A Value of -32 tunes it to A4 = 432, and a Value of -38 tunes to C4 = 256.

Master Tune is used to match the pitch of the 1200 Pro to that of another instrument or to a non-standard tuning.

**019 Transpose**

- **±60 ST**
- **+12 ST**

Transposes the pitch of the 1200 Pro as much as five octaves (±60 ST) up or down, in steps of one semitone (ST). One octave contains 12 ST.

Master Transposition lets you play in one key on your controller and hear your music in another key from the 1200 Pro. It affects incoming MIDI data, but not the data transmitted from the 1200 Pro's MIDI Out or Thru ports.

**020 Mono Output**

- **On**
  **Off**

Toggles between Mono and Stereo for the audio output.

A Value of On sums the left and right channel signals so that the entire audio signal is present at both outputs, overriding all Layer and Channel Pan settings and creating the effect of Mono output for all Layers of all Programs. (Note that this does not *alter* the Pan settings; it simply ignores them.) Use this setting if you do not have a stereo sound system, or if your amplifier has only one input.

A Value of Off allows individual Layers to be panned in stereo. Signal levels at the left and right outputs will be determined by the Value assigned to Layer Menu Parameter 230 (Section VIII) or the Channel Editing Parameters (Section 6.1).

**021 Pitch Bend Range**

- **Prog**
  **±6 QT**

Enables you to set a uniform range for Pitch Bend for the entire 1200 Pro, overriding the Bend Range settings of each Layer.

A Value of "Prog" (the default) will deactivate this Parameter, causing all Pitch Bend Ranges to be defined according to the Values set in each Layer for Parameter 224 in the Layer Menu.

Values of -6 to +6 QT (Quartertones) will cause the Bend Range of all Layers to be set correspondingly. Values above 0 will cause the Pitch to bend upward when the Pitch Wheel on your controller is pushed upward, while Values below 0 will cause the Pitch to bend downward when the Pitch Wheel is pushed upward.

**022 Ignore All Notes Off**

- **Off**
  **On**

Enables the 1200 Pro to respond to or ignore All Notes Off messages from your MIDI controller. This Parameter affects all MIDI channels. The default Value is Off, which means that the 1200 Pro will respond to All Notes Off messages.

Select a Value of On to ignore All Notes Off messages sent by your MIDI controller. This is an important feature, since some MIDI controllers send occasional All Notes Off messages even if you don't want them to.

Roland products, for example, send an All Notes Off signal whenever their MIDI data stream stops. If you are using a Roland product with your 1200 Pro, it may not sustain properly unless you set Parameter 022 to On. (As an alternative, you can leave this Parameter set to Off, and set Parameter 023 to Soft).

Select a Value of Off if you want the 1200 Pro to respond to All Notes Off messages. This will enable you to use any "Panic" or "All Notes Off" features that your MIDI controller may have: with a Value of Off, the 1200 Pro will cancel notes according to the setting you have chosen for Master Parameter 023.

**023 All Notes Off**

- **Hard**
  **Soft**

Some synthesizers and MIDI controllers send periodic All Notes Off messages, which can cause unwanted interruption in your music. The 1200 Pro enables you to choose between two options which affect the way the 1200 Pro responds to All Notes Off messages.

With a Value of Hard (the default), the 1200 Pro will respond to an All Notes Off message by terminating all currently sounding notes without exception. A Value of Soft enables the 1200 Pro to preserve all notes held by the sustain function. All others will be terminated.

Use either [VALUE] button to toggle between the Values for this Parameter. This Parameter is in effect only when Master Parameter 022 is set to Off. If Parameter 022 is set to On, All Notes Off messages will be ignored.

# Section VI

**024 Global Dynamic Range Adjust**

**(Dynam Adj in display)**

- **0 dB**
  **± 48 dB**

With this Parameter you may adjust the dynamic response of the entire 1200 Pro, much as you control the response of each individual Layer with Layer Parameter 218. Increasing the Value will increase the range between the least and greatest loudness achieved by any note when you vary the note-on velocity (or any amplitude control). Use either [VALUE] button to change the Value in 1 dB increments. Press and hold to scroll rapidly. Press both [VALUE] buttons at the same time to increase in steps of 6 dB, and to wrap from +48 dB to -48 dB. If your sound system is low on headroom, you might set this Parameter to a negative Value.

**025 Pressure**

- **Both**
  **Mono**
  **Poly**

Many of the effects in the 1200 Pro's preset Programs are controlled by pressure (aftertouch). The 1200 Pro allows you to select both monophonic (channel) and polyphonic (key) pressure as control sources.

You'll use this Parameter to define how the 1200 Pro responds to aftertouch signals from external MIDI controllers.

This Parameter's default setting of Both will enable you to hear all of the 1200 Pro's mono pressure effects, when triggered from a controller which sends mono (channel) aftertouch. It also allows 1200 Pro effects triggered by poly pressure to be controlled from an external MIDI device which sends poly pressure.

If you set this Parameter to Mono, the 1200 Pro will interpret all pressure signals as mono pressure signals. Even if you used a MIDI controller to send poly pressure messages, the 1200 Pro would respond to them as mono pressure messages.

Choose Poly to convert most mono pressure effects to poly pressure effects. You would want to do this only if you were controlling the 1200 Pro from a MIDI controller which is capable of sending poly pressure (such as the Kurzweil MIDIBOARD). With Pressure set to Poly, most 1200 Pro effects which are programmed to respond to mono pressure only will respond instead to poly pressure. Effects which are not affected by this conversion are global LFOs and ASRs.

If you assign poly pressure as the Control Source for an effect, and your controller can send only mono pressure messages, then you will not hear the effect when played from the controller unless you have this Parameter set to Mono. The effects would then be heard, but you would not have note-by-note control over the effect.

**026 Master Channel Stealing Algorithm**

**(Stealer in display)**

- **Prog (Program)**
  **Poly 1**
  **Poly 2**
  **Mono**

This Parameter is almost identical to its counterpart in the Program Menu. It allows you to select a channel stealing routine for the entire 1200 Pro, which overrides the Program-level Stealer setting for each individual Program. This is a quick way, for example, to make the entire 1200 Pro a monophonic sound source for use with monophonic MIDI controllers.

The default Value of Prog simply defers control of the Stealer routine to the individual Programs.

At Poly 1, when you retrigger a note (or group of notes) before the original note(s) has died out, the 1200 Pro will reuse the same channel (or group of channels) for the second note(s), silencing the first note(s).

At Poly 2, the 1200 Pro steals channels on the third triggering of the same note(s), instead of the second.

At Mono, as you would expect, only one audio channel is available at any time, making the entire 1200 Pro monophonic.

**027 MIDI System Exclusive ID**

- **0 to 126**
- **+16**

Provides a MIDI code to identify the 1200 Pro uniquely among various connected MIDI devices.

System Exclusive messages require a device identification code (in addition to the Manufacturer's code — Kurzweil's Manufacturer's Code is 07) in order to be able to address the correct MIDI device. This Parameter allows you to set the 1200 Pro's Sys Ex Device ID to any Value from 0 to 126. The 1200 Pro will receive Sys Ex messages — regardless of MIDI Mode, Basic Channel, or currently selected Channel — when its Sys Ex ID is properly addressed. The default Value for this Parameter is 0.

**028 MIDI Editing**

- **On**
  **Off**

Allows you to enable or disable MIDI editing capability.

Selecting a Value of On (the default Value) instructs the 1200 Pro to respond to certain incoming MIDI data as remote editing commands. Data received from the Non-registered Parameter Controls (e.g. MIDI 27), the Data Entry Control, and the Increment/Decrement MIDI buttons on remote MIDI devices will be interpreted as editing commands, and will change the Value of the currently selected Parameter, when in EDIT Mode.

With Parameter 028 set to Off, data from these controls will be ignored.

**029 Confirmation**

- **On**
  **Off**

Allows you to prevent the "Are you sure?" warnings that appear when you are at risk of losing, or significantly changing, data in the 1200 Pro's memory.

Once you have become an experienced 1200 Pro programmer, you may find some of the warnings about losing data unnecessary. This Parameter enables you to dispense with all but the most crucial warnings (one warning related to resetting the 1200 Pro will always remain). Simply select a Value of Off, and most of the "Are you sure?" warnings will disappear.

**030 Show Software Version**

- **Yes**

Allows you to view the version of the 1200 Pro's operating software. When you answer YES, the display's upper line briefly shows the Engine software version, and the lower line shows the Setup software version.

Pressing NO at this Parameter will move you to the next Parameter.

**031 MIDI Chain Link**

- **1/1 to 12/12**

Enables you to separately identify each of up to twelve 1200s linked in parallel via MIDI. Chain Link positions are displayed as two numbers divided by a slash mark. The first number represents the unit's position in the chain, and the second number represents the total number of units in the chain.

For example, if you had six 1200s chained together, the first unit in the chain should have Parameter 031 set to a Value of 1/6, and the last unit in the chain should have this Parameter set to a Value of 6/6. Each 1200 would be responsible for two notes in each octave of the MIDI keyboard.

This procedure allows you to play up to twelve 1200s simultaneously from one MIDI controller without MIDI delays. It also allows you to effectively create a 240-note (or more) polyphonic unit consisting of twelve 1200s!

### MIDI DUMP COMMANDS

The 1200 Pro offers three Master Menu MIDI dump commands which allow you to dump programming information from the 1200 Pro into a computer or sequencer, then load it back into the 1200 Pro. The dump commands also may be used to transfer information from one 1200 to another. Each of these dumps is initiated by pressing [YES] when the desired dump function's Parameter is visible in the 1200 Pro's display. These dumps also may be initiated by a system exclusive message from an external source.

#### 032 Dump Programs? (Dump Progs? in display)

Initiates a MIDI dump of all RAM Program information. Note that this dump includes only the Program-related Parameters, Values and Tables—not the actual Soundfiles themselves. You would not be able to use this Function Parameter, for example, to load the actual samples from one unit to another. You could, however, load the (RAM) Program information from one to the other, then use that Program information to affect the latter's Soundfiles according to the Program specifications of the former.

#### 033 Dump Master?

Causes the 1200 Pro to dump its Master Parameter Table. This is effective for creating files of Performance configurations, as a backup or as a means for quickly reconfiguring your 1200 Pro.

#### 034 Dump Memory?

Initiates a dump of all User and RAM objects. Answer [YES] to the prompt to initiate the dump. You may want to do this before you begin programming your 1200 Pro. This will give you a backup of the factory settings and whatever songs are stored in RAM.

**MIDI Dump For Programs and Other Objects**—You may dump Program information for individual Programs, using the Program Menu Function Parameter **107 Dump Prog?** Select Function Parameter 107 from the Program Menu, answer [YES], and the Program definition for the currently selected Program will be transmitted as a SysEx message.

There are also Master Menu Function Parameters for dumping several other Objects on an individual basis. These Function Parameters are located in the corresponding Master Submenus:
1213 Dump Vel Map? (answer [YES] to Parameter 006),
1705 Dump ProgList? (Parameter 010 Edit PList?),
1415 Dump Int Tab? (Parameter 014 Edit ITbl?),
1512 Dump Prs Map? (Parameter 008 Edit Prs Map?),
1805 Dump Bin Map? (Parameter 012 Edit Bin Map?),

#### 035 Delete Song?
- **Yes**

This Parameter enables you to delete individual songs (RAM Demo sequences), to free up memory. Answer YES to this Parameter to begin the standard deletion sequence as described in Section 4.4.3.

**036 Delete RAM Programs**
**(Delete All Prgs? in display)**
- **Yes**

Deletes all user-defined (RAM-based) Programs from the 1200 Pro. Use this Parameter to clear the RAM Program memory of your 1200 Pro without affecting the Master settings.

When you answer Yes to this Parameter, the 1200 Pro will give you two warnings (or one, if the Value of Parameter 029 is Off) before deleting your Programs. RAM Programs which are assigned to active MIDI channels will not be deleted.

**037 Reset 1000**
- **Yes**

Answering YES to this Parameter will delete all RAM-based Programs, all RAM Demo songs, and all Master Menu Values, including MIDI Program Maps, Intonation Tables, and settings for Tuning and Transposition. It restores all of the 1200 Pro's Parameters to their default Values.

You probably will not want to reset your 1200 Pro unless it seems hopelessly hung up, or if you are absolutely certain that you don't want to save any of your settings. If you really want to reset your 1200 Pro, however, press YES. You'll have as many as two additional opportunities to change your mind.

After your third response of YES, the display will disappear briefly, then reappear as it does when you power up. Only the factory settings will remain.

Keep in mind that at any time during the above sequence of responses, you may exit by pressing NO.

## 6.1 Channel Editing Submenu

When you Press YES in response to Parameter 001, you'll enter the Channel Editing Submenu.

The Channel Editing Submenu is divided into 16 sections, each of which has an identical list of Parameters which allow you to set performance specifications for each MIDI channel. Use either PARAMETER button to scroll through the list of Parameters for the currently selected MIDI channel. Use either MENU button to select the Menu for another Channel.

**1010 Channel 1**

This is the Menu heading for the first Menu in the Channel editing Submenu.

**1011 Volume Control**
- **Off**
  **On**

Enables/disables MIDI control over Volume for all Programs assigned to MIDI Channel 1.

A Value of On (the default) enables MIDI Volume control, assuming that you have a function on your MIDI controller that is assigned to control Volume (MIDI Control Number 7). A Value of Off causes the 1200 Pro to ignore any MIDI Volume messages received on MIDI channel 1.

**1012 Volume**
- **±48 dB**
- **+6 dB**

Sets the volume (loudness) for all Programs assigned to MIDI Channel 1. When the Value of Parameter 1011 is set to On, the maximum volume of Programs assigned to Channel 1 will be set by the Value of this Parameter.

Keep in mind that this volume level is relative to the other channels. If maximum volume is reached, the other channels will be reduced in volume. It is therefore better to adjust the Volume Parameter down, rather than up.

**1013 Pan Override**

- **Off**
  **On**

Enables you to determine Pan settings for all Programs assigned to MIDI Channel 1, overriding the Pan assignments in every Layer of those Programs. The default Value is Off.

A Value of On causes all Programs assigned to Channel 1 to use the Pan setting defined with Parameter 1014 (Pan).

A Value of Off leaves Pan settings as assigned for each Layer, according to the Values set for Layer Menu Parameter 230 (Stereo Pan).

**1014 Pan**

- **L to R**
  **Auto**
  **Inv Auto**

Enables you to define Channel Pan settings between the Left and Right Audio Outputs.

Use either VALUE button to change the Pan location. The display will show an asterisk (*) which indicates the position of the current Layer with respect to the Audio Outputs.

There are eleven normal positions, including the extremes (when the asterisk is immediately adjacent to the L or R). A position in between will place the output of MIDI Channel 1 Programs at different levels at each Audio Output, with the center position providing an equal balance between Audio Outputs.

If you select a Value which exceeds either extreme, the display will change to show two additional Values—Auto Pan and Inv Auto Pan. These provide Pan settings which are a function of MIDI Note number.

Select Auto Pan, and the lowest notes of the Program on MIDI Channel 1 will be directed to the Left Audio Output of the 1200 Pro. The highest notes will be directed to the Right Audio Output, with a progressive pan from left to right with each successively higher note.

Select Inv Auto Pan, and the Channel Pan function will be the reverse of the above (low notes to the right, and high to the left).

**1015 MIDI Range**

- **Off**
  **On**

Activates/deactivates Channel-based assignment of Low Note and High Note settings. The default Value is Off.

With the Value set to On, all Programs assigned to MIDI Channel 1 will be limited to the keyboard range defined by Parameters 1017 and 1018 of this Menu (or via MIDI, using Parameter 1016).

With the Value set to Off, keyboard ranges will be determined for each Layer according to the Values for Layer Menu Parameters 210 and 211 (or via MIDI using Parameter 209).

**1016 Set MIDI Range**

- **Yes**

Allows you to use your MIDI controller to set the range that will be assigned to any Program on MIDI Channel 1 if the Value of Parameter 1015 is set to On.

When you answer Yes to this Parameter, the display will prompt you to strike a key on your MIDI controller. When you do, the display will ask you to strike another key, and then will return to the "Set MIDI Range?" display. This sets a keyboard range between (and including) the two keys that you struck.

Press NO at any time to abort and return to the "Set MIDI Range?" display.

**1017 Low Note**

- **C0 to C8**
- **+ 1 octave (12 ST)**

Allows you to set or change the lowest note that can be used by Programs on MIDI channel 1.

The Value displayed is an alphanumeric character representing the keys of a MIDI controller. The letter (A, B, C, etc.) refers to the notes of the chromatic scale. Black keys (e.g. C-sharp) are represented by a letter and the symbol "#." The numeral indicates the octave number.

Some examples: Middle C is represented as C4. The F-sharp above Middle C is represented as F#4. The highest C on a standard piano is C8. The lowest C on a standard piano is C1, and the octave number increases at each C. All keys below C1 are considered to be in Octave 0; the lowest A on a standard piano, for example, is A0.

Notice that you may set a range that goes below the normal range of a standard piano keyboard. The range may also exceed the normal range of a particular Soundfile. Nothing will be heard if you strike a controller key outside the range of the Soundfile.

**1018 High Note**

- **C0 to C8**
- **+ 1 octave (12 ST)**

Allows you to set or change the highest note that can be used by Programs on MIDI channel 1. Parameter 1018 operates in exactly the same fashion as Parameter 1017.

Notice that the Values you set for each of these Parameters determine how the display wraps when you execute a dual press of the VALUE buttons. The available Values for Low Note will not exceed the Value set for High Note, and will wrap to C0 before reaching this limit. The available Values for High Note will not go below the Value set for Low Note, and will wrap to the Low Note Value from the highest octave above the Low Note Value.

**1019 Polyphonic Limit**

- **Off**
  **1-24**
- **8**
  **16**
  **24**
  **Off**

Enables you to set the Polyphonic Limit of Programs on MIDI channel 1, independent of the Programs on other MIDI channels.

With the Value set to Off (the default), polyphonic limits for each Program are determined according to the Values set for Program Menu Parameter 106 (Poly Limit).

At any Value from 1 to 24, all Programs assigned to MIDI Channel 1 will be limited to the number of simultaneous notes indicated by the Value you set.

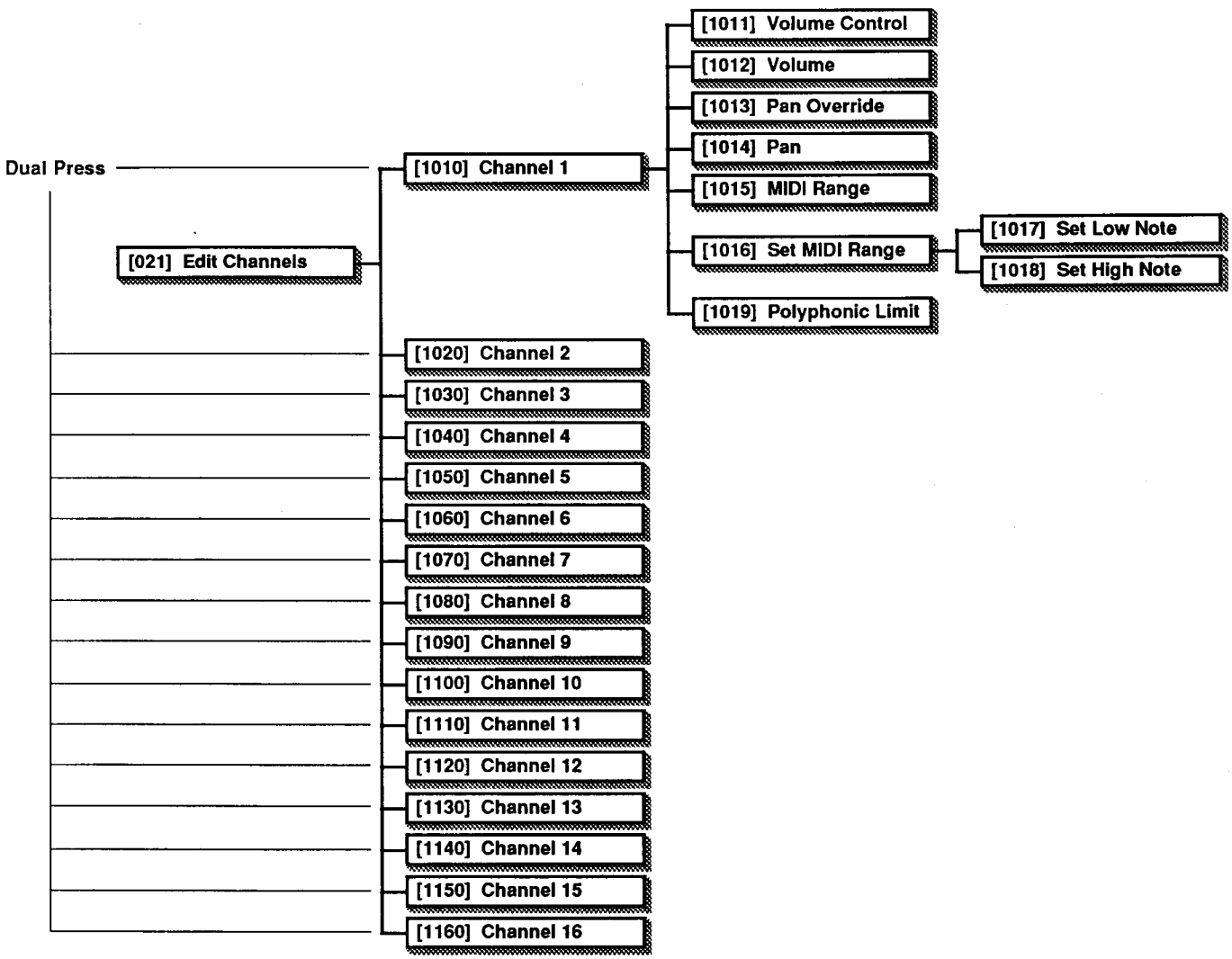
| | |
|---|---|
| 1020 – 1029 | MIDI Channel 2 |
| 1030 – 1039 | MIDI Channel 3 |
| 1040 – 1049 | MIDI Channel 4 |
| 1050 – 1059 | MIDI Channel 5 |
| 1060 – 1069 | MIDI Channel 6 |
| 1070 – 1079 | MIDI Channel 7 |
| 1080 – 1089 | MIDI Channel 8 |
| 1090 – 1099 | MIDI Channel 9 |
| 1100 – 1109 | MIDI Channel 10 |
| 1110 – 1119 | MIDI Channel 11 |
| 1120 – 1129 | MIDI Channel 12 |
| 1130 – 1139 | MIDI Channel 13 |
| 1140 – 1149 | MIDI Channel 14 |
| 1150 – 1159 | MIDI Channel 15 |
| 1160 – 1169 | MIDI Channel 16 |

Each of the above Menus operates in the same fashion as the Menu for MIDI Channel 1.

## EXITING THE MIDI CHANNEL SUBMENU

Press PLAY to return to the Master Menu.

# Section VI


Dual Press
[021] Edit Channels
[1010] Channel 1
[1011] Volume Control
[1012] Volume
[1013] Pan Override
[1014] Pan
[1015] MIDI Range
[1016] Set MIDI Range
[1017] Set Low Note
[1018] Set High Note
[1019] Polyphonic Limit
[1020] Channel 2
[1030] Channel 3
[1040] Channel 4
[1050] Channel 5
[1060] Channel 6
[1070] Channel 7
[1080] Channel 8
[1090] Channel 9
[1100] Channel 10
[1110] Channel 11
[1120] Channel 12
[1130] Channel 13
[1140] Channel 14
[1150] Channel 15
[1160] Channel 16

## 6.2 Velocity Map Submenu

Parameters 1200 through 1212 are accessed by answering YES to Master Parameter 006.

**1200 Velocity Map**

This is the heading for the Velocity Map Submenu.

**1201 Set MIDI Velocity Map**
- **Yes**

Enables you to set the softest (ppp) and the hardest (fff) Attack Velocity value for the current Velocity Map, using your controller's keys.

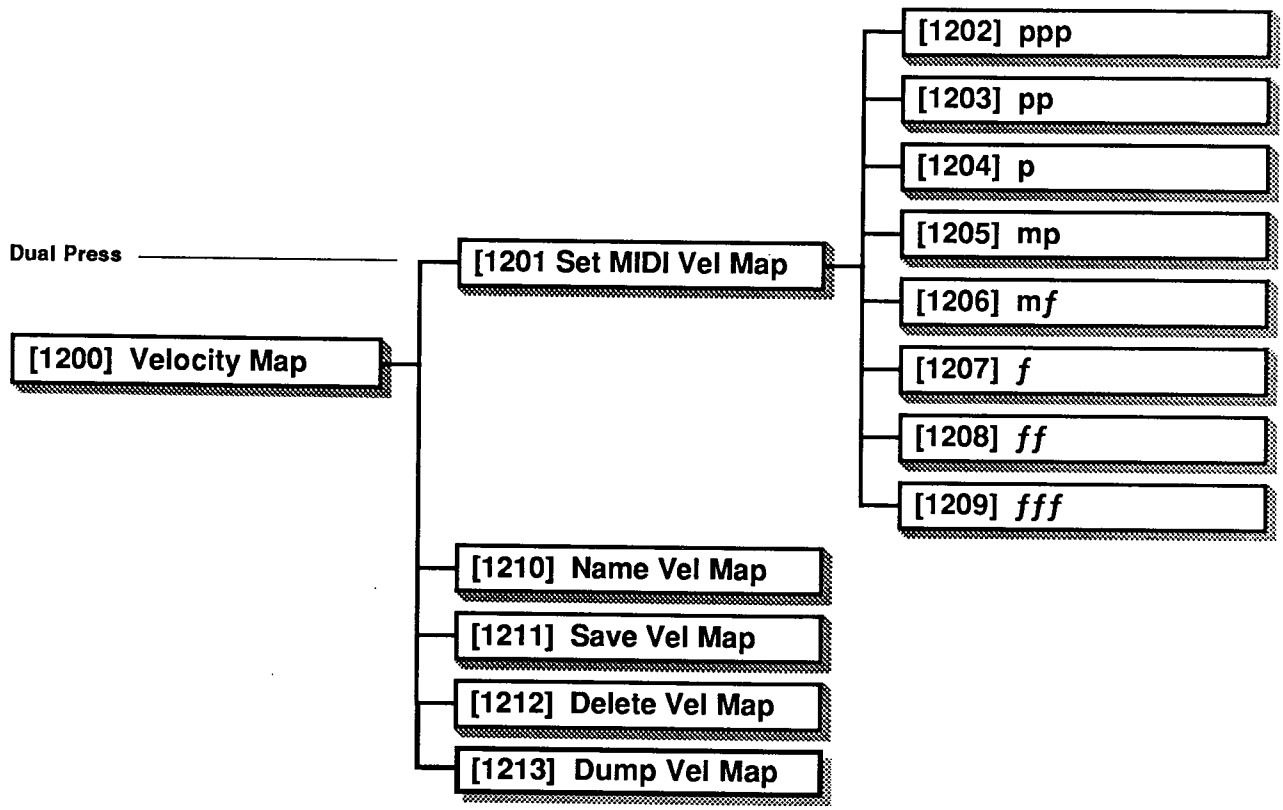
The 1200 Pro will interpolate the Values for the remaining six Velocity numbers in the Map, creating a linear Map from the minimum and maximum Velocity numbers you set with your controller.

Press Yes to activate the MIDI Velocity Map sequence. The display will prompt:

Strike key ppp!

If you change your mind at this point, press NO to exit to the "Set MIDI VMap?" display, then press a PARAMETER button to select another Parameter. Otherwise, strike a key, (trigger a note) using the Attack Velocity you wish to set as the *lowest* MIDI Velocity number for this Velocity Map. The display then will prompt:

Strike key fff!



Again, you may abort with the NO button. Otherwise, striking another key will set the *highest* MIDI Velocity number for the current Map. When the 1200 Pro has finished calculating the remaining six values, the display will return to Parameter 1201.

Now you can use the PARAMETER buttons to view the eight dynamic levels and the Values assigned by the 1200 Pro, and edit them if you choose. You'll notice that whichever keystrike is lighter will be assigned as the "ppp dynamics" keystrike; it doesn't matter if you struck it first or second.

If you wish to create unusual Velocity Maps, or non-linear ones, you can use Parameters 1202 through 1209 to set Velocity Map Values manually.

**1202 ppp**
**1203 pp**
**1204 p**
**1205 mp**
**1206 mf**
**1207 f**
**1208 ff**
**1209 fff**

- **0 to 127 vel**
- **+10 vel**

Parameters 1202 through 1209 enable you to edit the current Velocity Map. Editing of Velocity Maps is performed by setting MIDI velocity numbers (abbreviated "vel") for eight relative dynamic levels corresponding to the force with which you strike the keys on your MIDI controller (or the equivalent). These dynamic levels are labeled using standard musical terminology (ppp to *fff*).

The 1200 Pro will calculate the MIDI velocity numbers for every keystrike hardness level in between these Values.

**1210 Name Velocity Map**

- **Yes**

Enables you to name the current Velocity Map.

A YES answer activates the naming sequence. If you need a review of the naming procedure, see Section 4.4.1 of the *Performance Guide.*

**1211 Save Velocity Map**

- **Yes**

This Function Parameter saves (stores) the currently selected VelMap in RAM.

Press YES to initiate the saving sequence. If you need a review of the saving procedure, see Section 4.4.2 of the *Performance Guide.*

**1212 Delete Velocity Map**

- **Yes**

Enables you to delete (erase) the current Velocity Map.

Pressing YES will begin the deletion sequence as described in 4.4.3 of the *Performance Guide.*

**1213 Dump Velocity Map**

- **Yes**

Press Yes to initiate a SysEx dump of the current Velocity Map.

## EXITING THE VELOCITY MAP SUBMENU

Press PLAY to return to the Master Menu. If you've made any changes to the Velocity Map, you will be asked whether you want to save the Velocity Map before returning to the main Master Menu.

## 6.3 Intonation Table Editor Submenu

Parameters 1401 through 1411 let you create your own musical scale by modifying the chromatic intervals relative to the tonic.

**1400 Intonation Table**

**1401 Minor Second**
**1402 Major Second**
**1403 Minor Third**
**1404 Major Third**
**1405 Perfect Fourth**
**1406 Tritone**
**1407 Perfect Fifth**
**1408 Minor Sixth**
**1409 Major Sixth**
**1410 Dominant Seventh**
**1411 Major Seventh**

- **±1200 ct**
- **+100 ct**

The Values for Parameters 1401 to 1411 may be altered by up to 1200 ct (one octave) up or down, *relative to the notes of the equal-tempered scale.* If the Values for each of these Parameters is set at 0, an equal temperament is achieved.

You can use Parameter 014 (Edit Intonation Table) to study any of the preset Intonation Tables by following these steps:

1) Select the Intonation Table to be examined (Parameter 013);

2) Call up the Intonation Table Editor Submenu using Parameter 014;

3) Study the Values for Parameters 1401 through 1411.

**1412 Name Intonation Table**

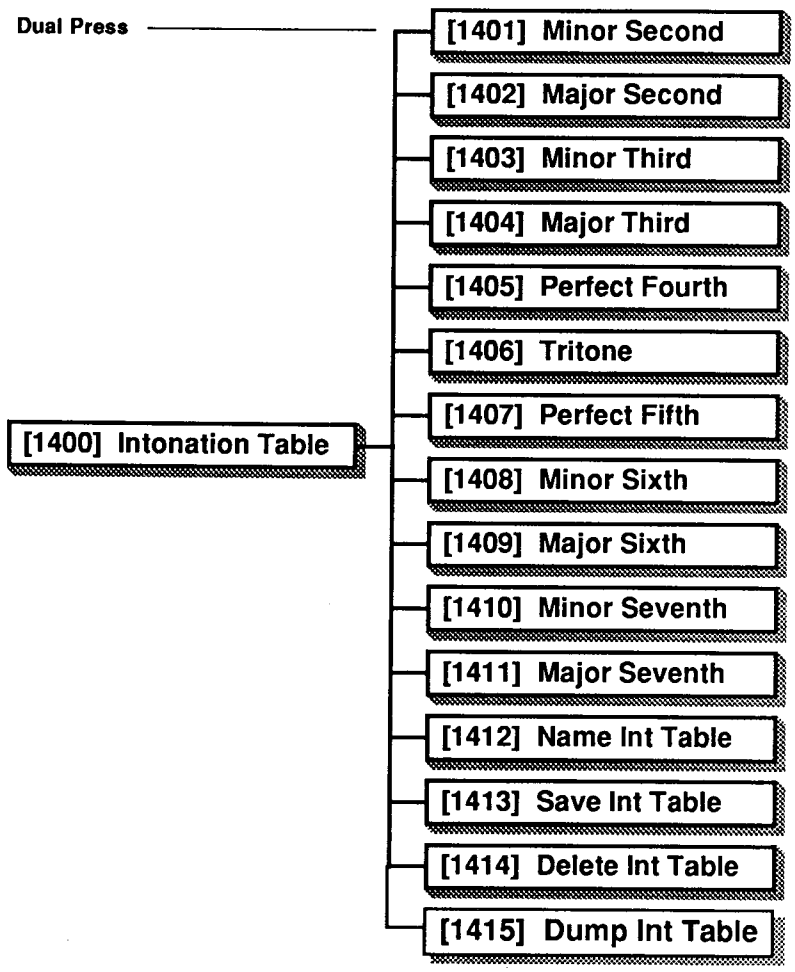
- **Yes**

Use this Function Parameter to name (or rename) the current Intonation Table. Press YES to initiate the naming sequence.

**1413 Save Intonation Table**

- **Yes**

Use this Function Parameter to save (store) an Intonation Table in RAM. Press YES to initiate saving.



## 6.4 Pressure Map Editor Submenu

**1414 Delete Intonation Table**

- **Yes**

Use this Function Parameter to delete (erase) the currently selected Intonation Table. Press YES to initiate deletion.

**1415 Dump Intonation Table**

- **Yes**

Press Yes to initiate a SysEx dump of the current Intonation Table.

## EXITING THE INTONATION TABLE SUBMENU

Press PLAY to return to the Master Menu. If you've made any changes to the Intonation Table, you will be asked whether you want to save the Intonation Table before returning to the main Master Menu.

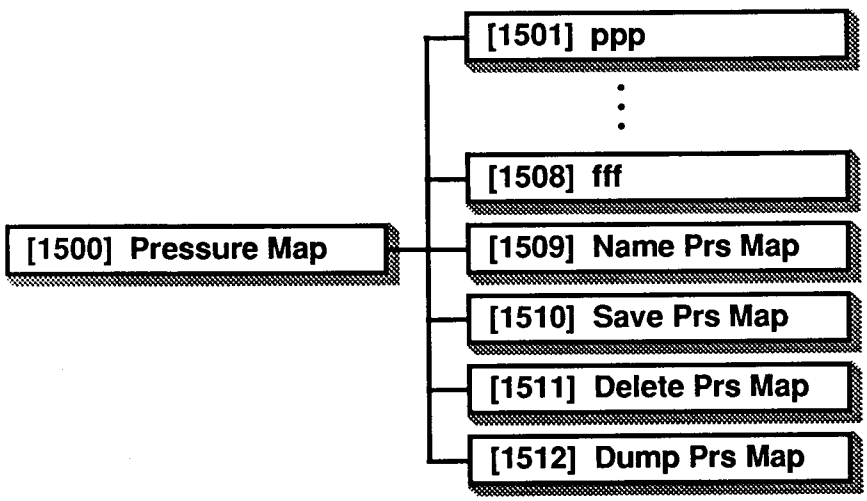
**1500 Pressure Map**

This is the Submenu heading.

**1501 ppp**
**1502 pp**
**1503 p**
**1504 mp**
**1505 mf**
**1506 f**
**1507 ff**
**1508 fff**

You'll use the VALUE buttons to assign a prs Value to each of these effect levels. "ppp" represents minimum effect, and "fff" is maximum effect. To best understand the relationship between the effect level and the prs Value, think of it as follows: the letters represent the amount of effect you will achieve with a given amount of pressure, scaled from 0 to 127. Thus, if you have a pressure map with ppp = 0, then you will get minimum effect when no pressure is applied. If ppp = 127, then you will get minimum effect when you are applying maximum pressure.

The best way to get an idea of appropriate settings is to select the Linear Pressure Map and use Parameters 1501 - 1508 to analyze the settings.




**1509 Name Pressure Map**
**(Name Prs Map? in display)**

Once you've made changes to a Pressure Map, you'll want to give it a distinguishing name. Answer YES here, and you will be able to name the Pressure Map in the standard fashion. Once you name it, you can then save it using Parameter 1510. This will preserve the original Pressure Map (the one you started with before editing) as well. See Section 4.4.1 for information about the naming procedure.

**1510 Save Pressure Map**
**(Save Prs Map? in display)**

This Parameter will allow you to save an edited Pressure Map to a RAM location with a unique number. Answer YES, and the display will automatically

assign the next available number to the map. You can change the number using the PROGRAM buttons. When the number you want is showing in the display, press YES to confirm the save. If you attempt to save to an occupied RAM location, you will be asked if you want to replace the existing map.

**1511 Delete Pressure Map (Delete Prs Map? in display)**

Answer YES here to delete the currently selected Pressure Map. Preset maps cannot be erased. If Confirmation (Master Parameter 029) is ON, you will be asked if you are sure you want to delete the map.

**1512 Dump Pressure Map (Dump Prs Map? in display)**

Answer YES here to initiate a SysEx dump of the current Pressure Map.

## EXITING THE PRESSURE MAP SUBMENU

Press PLAY to return to the Master Menu. If you've made any changes to the Pressure Map, you will be asked whether you want to save the Pressure Map before returning to the main Master Menu.

You'll edit PLists to customize the 1200 Pro's response to Program Change messages from other MIDI instruments, whether they're sequencers, other synths, or effects modules. If any devices will be receiving Program Changes made from the 1200 Pro's front panel, the Program Lists enable you to select any Program number (0 to 999), and automatically send a "legal" MIDI Program Change number of 0 to 127 (1 to 128) from the 1200 Pro's MIDI Out port.

## BASIC PLIST EDITING

The 1200 Pro features ten Program Lists, each containing 100 Program numbers. These PLists are stored either in ROM (factory Presets) or RAM (User-defined).

The PLists give you flexibility in two cases: when you want to select a Program in the 1200 Pro and, at the same time, send a Program Change number of 0 to 127 (or 1 to 128) to a receiving MIDI device; when you want the 1200 Pro to receive a Program change number from 0 to 127 (1 to 128) and automatically select any Program number from 0 to 999.

The first four Program Lists (containing Program numbers 0 - 399) are preprogrammed for your convenience. The first two, Browser I and II, contain every one of the 1200 Pro's Programs, mapped to the List in a sequence that features the variety of the 1200 Pro's sounds as you scroll through the Program List. The Lists called Library I and II feature the same set of Programs, mapped to the Lists in a sequence that collects all sounds of a particular category (like piano) into groups.

List 5 (Program numbers 400 - 499) is called "RAM Progs." When you save a newly created Program, it will be mapped to the first available Program number in this List—unless you update the Program List when the 1200 Pro prompts you. If you update the Program List, the new Program will replace the previously selected Program (the one you edited to create the new Program), automatically mapping itself to the currently selected Program List.

Here's an example. Imagine you select Program number 1, then enter EDIT Mode, and change the Soundfile. Then you rename the Program using the Name Program Parameter (#101). Next you select Parameter 102 Save Program?, and answer YES. The display says:

Save as ID# 255?
My new Prog

# Section VI

You can use the PARAMETER buttons at this point to change the ID# that will be assigned to the new Program.

Since the display says "Save" and not "Replace," you know that there is no Program which already has ID# 255. You answer YES, and the display tells you that the Program has been saved as ID#255 (no Program number has been assigned yet).

After a second, the display asks you if you want to update the Program List. The List that will be updated is the List which contains the original Program number. The display also shows the Program number of the original Program (1, in this case), and the ID# of the original Program (**not** the ID# of the new Program). The 1200 Pro is asking you this: "You selected Program number 1, whose ID# is 159 (or whatever), and edited it. You saved the edited Program as ID# 255, and asked me to update the Program List. Do you want me to assign your new Program—ID#255—to Program number 1, and remove the original Program from the Program 1 slot?" You answer YES. The List is instantly updated, and the 1200 Pro returns to PLAY Mode.

If your MIDI system calls for a lot of Program mapping, you'll want to spend some time organizing your Program Lists for maximum efficiency. As a rule, for both transmitting and receiving Program Change messages, you'll want to edit the entries in the first List, Browser I. This is because it contains the Program numbers between 0 and 99, which are the numbers you need to use for most MIDI devices available today.

You can change the entries in any of the Lists, then save the List as List number 6 - 10—without replacing any of the preset Lists your 1200 Pro arrived with. You can, however, replace the preset (ROM) Lists with Lists of your own. The preset Lists are not lost; they will reappear when you delete the Lists which "replaced" them. This is **not** true of Lists you create yourself, however. If you replace them, they're gone.

**1700 ProgList**

This is the heading for the Program List editor.

1701 **Edit Entries**
- **Yes**

When you select the Program List editing Submenu by answering Yes to Parameter 010, you arrive at Parameter 1701, which asks you if you wish to edit the entries in the currently selected MIDI Program List. (Make sure to use Parameter 009 to select the List you want to edit before entering the Program List editor.)

Answer Yes, and the display will look something like this :

Prog 1 = ID# 2
Acous 12 String

The term "Prog" refers to the Program number as you normally think of it; it's the number of the Program as it appears when you select it in PLAY Mode.

The ID number is the memory address that the 1200 Pro uses internally. Each Program (Object of type PROG) has only one ID number. **It is this number which is associated with the Program name you see on the display's lower line.**

The display is telling you this: "The Program List entry you are looking at contains the Program called 'Acous 12 String.' Its Object ID number is 2, and it is stored as Program 1." In other words, when you return to PLAY Mode, you will find the Program 'Acous 12 String' by selecting Program number 001.

If you want to edit this entry, use the VALUE buttons to scroll through the list of ID numbers. In other words, use the VALUE buttons to change the actual sound assigned to Program number 1. For example, let's

say you press the VALUE UP button. The display will change to:

Prog 1 = ID# 3
Chor E Guit 1

You're telling the 1200 Pro this: "Take the Program called 'Chor E Guit 1,' whose ID number is 3, and 'map' it to Program number 001." If you save this List, then return to PLAY Mode and select Program number 001, you'll find that it is now Chor E Guit 1, and no longer Acous 12 String.

Use the PARAMETER buttons to select a different Program number (this doesn't change the List, it merely lets you look at a different entry in the List). Dual presses of the PARAMETER buttons jump to the first Program number in the List.

Use the MENU DOWN button to shift the currently displayed ID#—and all ID#s "below" it on the List—"down" one space in the Program list, inserting ID# 0 in the empty space. If, for example, the display reads

"Prog 1 = ID# 159,"

and you press MENU DOWN, the display will change to

"Prog 1 = ID#0.

ID#159 will now be assigned to Prog 2, etc. If there are no empty spaces at the end of the list, the highest-numbered entry will be deleted.

Use the MENU UP button to delete the currently displayed ID# from the displayed position in the List. Using the same example, if you press MENU UP instead of MENU DOWN, ID#159 will be removed from the List, and all ID#s "below" it on the List will be moved "up" one Program number.

When you have made all the changes you want to, press YES, and you will return to the "Edit Entries?" display. You may then press the PARAMETER UP button to select Parameter 1702 (Name ProgList?).

**1702 Name ProgList**

- **Yes**

Enables you to give a unique name to the List you have edited, prior to saving. This procedure is similar to the naming procedure that is described in Section 4.4 of the *Performance Guide.*

**1703 Save ProgList**

- **Yes**

Enables you to save a newly-edited List to RAM. The saving procedure also is described in the *Performance Guide.*

**1704 Delete ProgList**

- **Yes**

Deletes the currently selected List. See the *Performance Guide* for a description of the deletion process.

**1705 Dump ProgList**

- **Yes**

Press Yes to initiate a SysEx dump of the currently selected Program List.

## EXITING THE PLIST SUBMENU

Press PLAY to return to the Master Menu. If you've made any changes to the PList, you will be asked whether you want to save the PList before returning to the main Master Menu.

## SECTION 6.6 Bin Map Editor Submenu

You remember that you're able to store Programs and several other Objects in the Bin Banks: three Banks of ten "addresses" which can be selected using the alphabetic and numeric buttons. A set of thirty such addresses can be stored as a Bin Map. The Bin Map Editor allows you to create and store additional Bin Maps, which you can select using Master Parameter 011, or from the front panel (using buttons 0 and 1 together).

# Section VI

The first step in editing Bin Maps is selecting the Bin Map you wish to edit (if you select it from the front panel, it will remain selected as you enter EDIT Mode).

When you answer YES to Parameter 012 Edit BMap? you will enter the Bin Map Editor Submenu. To edit the current BMap, answer YES to Parameter 1801 Edit Entries? The display will show you something like this:

A0 Program 1
Acous 12 String

This tells you that you are looking at Bin 0 in Bank A of the current Bin Map. The entry at A0 is a Program, and its number is 1. The two elements of this entry which you can change are the type of Object which is stored there (Program, VelMap, etc), and the number of the Object of the selected type.

To change the type of Object stored in the current Bin Bank, use either MENU button. For example, if you wanted to store a VelMap in A0 instead of a Program, you would use the MENU buttons to select the VelMap Object type.

To change the number of the currently displayed Object, use the PROGRAM buttons. Dual presses scroll (by hundreds) to the beginning of each PList. In the above example, you would use the PROGRAM buttons if you wanted to find another Program to store in Bin Bank A0.

Press an alphabetic button (A, B, or C) to select a different Bank within the current Bin Map. Use the numeric buttons to view what's stored in the different Bins within the current Bank.

When you've made your changes, press Play to exit the Submenu, then select Parameter 1802 to name the edited BMap. Then save it using Parameter 1803.

The preprogrammed Bin Bank assignments give you a sample of the different ways you can use Bin Maps to enhance your performance flexibility.

**1800 Bin Btn Map**

This is the Menu heading.

**1801 Edit Entries?**

- **Yes**

Answer YES to this Parameter when you want to change a Bin Map entry.

**1802 Name BMap?**

- **Yes**

Answering YES here starts the standard naming sequence as described in Section 4.4.1.

**1803 Save BMap?**

- **Yes**

Answering YES here starts the standard saving sequence as described in Section 4.4.2.

**1804 Delete BMap?**

- **Yes**

Answering YES here starts the standard deletion sequence as described in Section 4.4.3.

**1805 Dump BMap?**

- **Yes**

Answering YES here initiates a SysEx dump of the currently selected Bin Map.

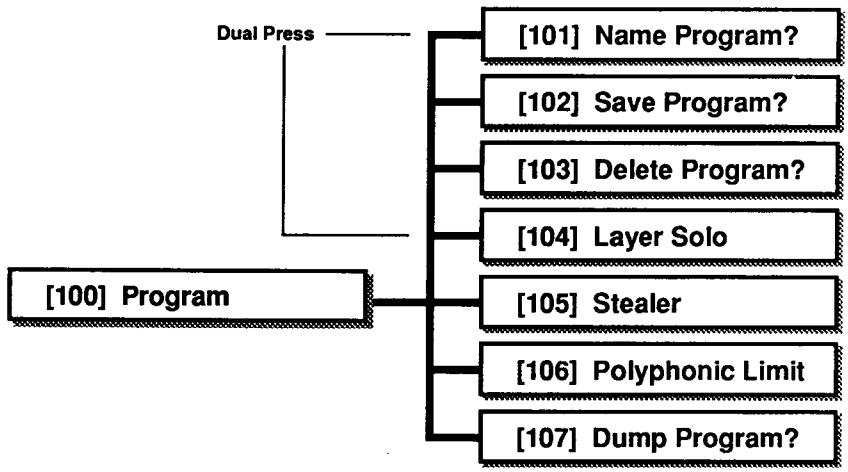
## EXITING THE BIN MAP SUBMENU

Press PLAY to return to the Master Menu. If you've made any changes to the Bin Map, you will be asked whether you want to save the Bin Map before returning to the main Master Menu.

# Section VII

## Program Menu

The Parameters in the Program Menu affect all Layers of the current Program. (In Edit Mode, the Program number appears in the upper right corner of the display.)




### 100 Program

This is the heading for the Program Menu.

### 101 Name Program

- **Yes**

This Parameter permits you to name (or rename) the current Program. Press YES to initiate the naming sequence. (See the *Performance Guide* for a review of naming Objects.)

### 102 Save Program

- **Yes**
  **No**

Use this Parameter to save Programs in RAM. For more information on saving Objects, see the *Performance Guide.*

### 103 Delete Program

- **Yes**
  **No**

Enables you to delete the current Program. An answer of YES initiates the deletion sequence. See the *Performance Guide* for a review of deleting Objects.

### 104 Layer Solo

- **Off**
  **Solo**
  **Mute**

This Parameter enables the current Layer of the current Program to be heard by itself, or to be silenced.

With a Value of Off, you will hear all Layers of the current Program. (This is the default.)

With a Value of Solo, you will hear only the current Layer.

With a Value of Mute, you will hear all Layers *except* the current Layer.

The Value of this Parameter remains constant as long as you stay in Edit Mode and do not save the Program or change Compiled Effects. If you set the Value to Solo, then as you change the current Layer with the LAYER button, you will hear each Layer by itself. You may also move to the Layer Menu, for example, and hear the effects of edits to the Layer.

There are several actions which will cause the Value of Parameter 104 to revert to Off:

- Returning to Play Mode
- Saving the current Program
- Adding or deleting Layers
- Changing from one Compiled Effect to another

Taking any of these actions may surprise you if you have forgotten that you have been soloing or muting Layers, since the sound of your Program will change. It is therefore a good idea to get in the habit of selecting the Layer Solo Parameter and setting it to Off before saving, exiting Edit Mode or changing Compiled Effects.

### 105 Channel Stealing

- **Mono**
  **Poly**
  **Poly 1**
  **Poly 2**

Enables you to choose between four channel-stealing algorithms.

"Channel stealing" refers to a loss of notes that occurs when the polyphonic limit of a synthesizer is exceeded. Depending on your playing style, you may experience channel-stealing at various points in your performance. Unless you layer heavily, you'll rarely encounter it. If you do, however, you can adjust the Value of this Parameter and possibly avoid channel-stealing.

**Mono** makes the 1200 Pro a monophonic machine *in the musical sense*: it will play only one note at a time (though will still produce a stereo output signal). You may find this useful if you are using your 1200 Pro in a multi-synth setup playing a solo that needs to be monophonic.

**Poly** is the default Value. With a Value of Poly, the stealer uses a complex software routine to determine the most musical way to steal notes when it becomes necessary. This is the Value that you will be most likely to use.

**Poly 1** uses a slightly different routine, stealing the same note if it is retriggered before the first note dies out. For example, in a three-Layer Program, one key-strike triggers three notes in your 1200 Pro using audio channels 1, 2, and 3. If you strike the same key on your controller before the first three notes have died out, the 1200 Pro will reuse channels 1, 2, and 3, stealing the first three notes and replacing them with the second three.

**Poly 2** operates much like Poly 1, but will steal the same note(s) half as often. Continuing the example of a three-Layer Program, if you struck Middle C on your controller, you would trigger audio channels 1, 2, and 3 in the 1200 Pro. Strike Middle C a second time (before the first notes die out), and you will trigger audio channels 4, 5, and 6 (Poly 1 would have retriggered 1, 2, and 3, stealing three notes). Strike Middle C a third time (before any notes have died out), and the 1200 Pro will retrigger audio channels 1, 2, and 3, stealing the first three notes.

### 106 Polyphonic Limit

- **Off**
  **1 to 24**
- **+8**

Enables you to set the maximum number of notes that can be played simultaneously in the current Program.

A Value of Off means that there are no restrictions on the number of notes dedicated to a given Program, other than the polyphonic limit of the 1200 Pro.

A Value other than Off determines the maximum number of simultaneous notes for the current Program.

### 107 Dump Program

- **Yes**

Answer Yes to initiate a SysEx dump of the current Program information.

# Section VIII

## Layer Menu

The Parameters in the Layer Menu control the characteristics of individual Layers of the current Program.

You must select a Layer (using the LAYER button) in order to edit it. If you change Layers within this menu, then subsequent edits will affect the newly-selected Layer.

**200 Layer**

This is the heading for the Layer Menu.

**201 New Layer**
**• Yes**

Use this Parameter to add a new Layer to the current Program. See Section 4.2.1 of the *Performance Guide* for further information.

**202 Duplicate Layer**
**• Yes**

This Parameter creates a copy of the current Layer (if space is still available in the current Program). The duplicated Layer takes the next available Layer number, and becomes the current Layer.

Press YES if you wish to duplicate the current Layer.

There are two cases in which the 1200 Pro will not allow you to duplicate Layers. The current Program may already contain the maximum of four Layers, or the Compiled effect assigned to the current Layer may require too many Modules for the 1200 Pro to duplicate (see Section V). In either case, you will be alerted that there are no more Layers available.

***NOTE*** — Some Programs having preset Compiled Effects (Chorus 2, for example) occupy two or more inseparable Layers. If an Effect requiring two Layers is selected for the current Layer in the current Program, then the Duplicate Layer Parameter will copy both Layers. (That is, the original Layer will actually comprise Layers 1 and 2, and duplicating it will create Layers 3 and 4.) If the Effect requires more than two Layers (as some do), the 1200 Pro will be unable to duplicate the Layer.

**203 Import Layer**
**• Yes**

Imports an existing Layer, from any Program, into the current Program.

The Layer you select is duplicated and inserted as the next-highest Layer in the Program that you are editing (as long as you have not reached your maximum of four Layers). Importing Layers allows you to move your favorite Layers from Program to Program without having to recreate them from scratch.

If the Program you are importing into uses one or more global Modules (gLFO or gASR), then Programs using the same Module(s) will not appear as you scroll through the Program List.

Pressing YES will begin the importing sequence. See Section 4.2.1 of the *Performance Guide* for a description of the procedure.

**204 Clean Layer**
**• Yes**

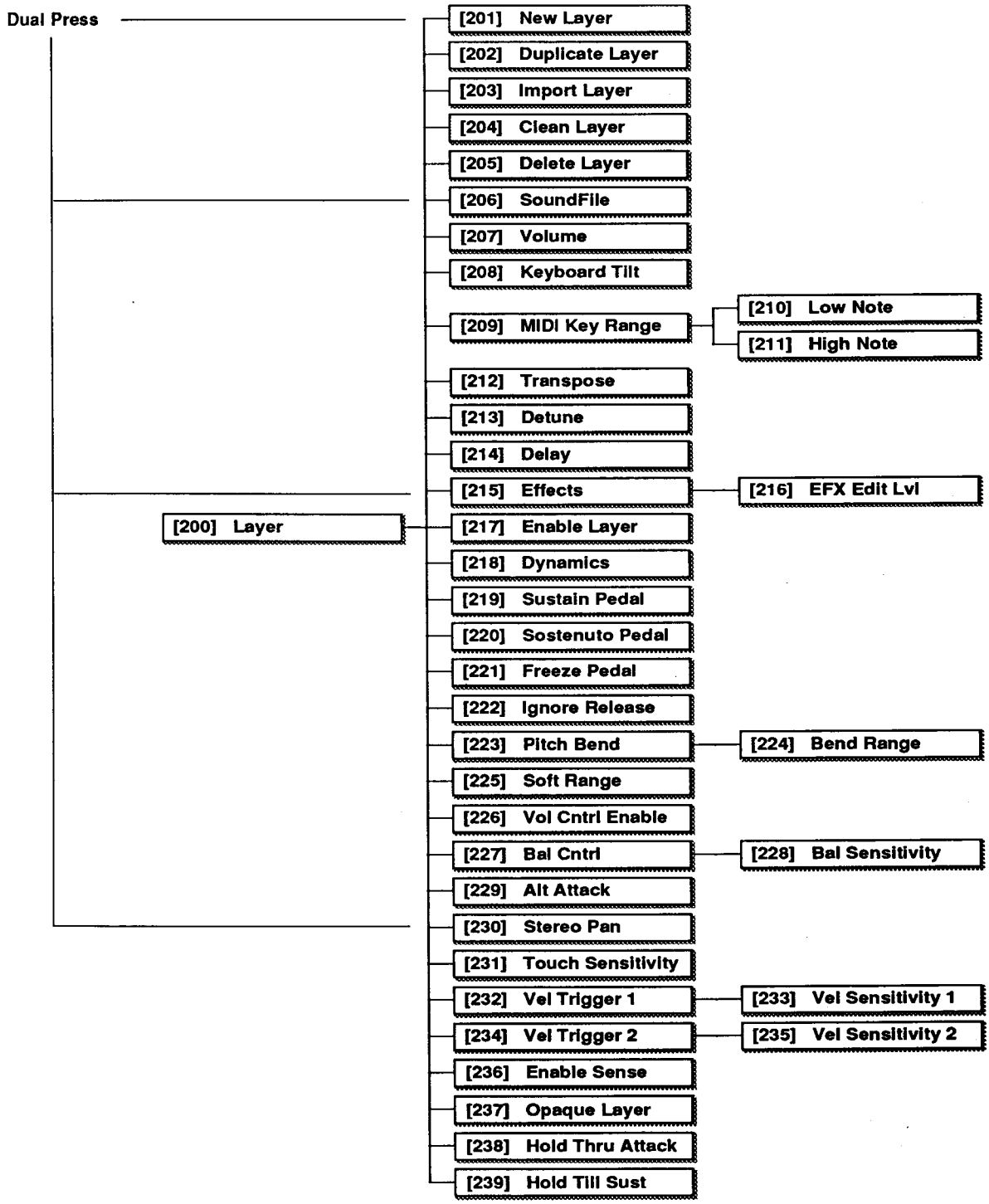
Deletes all Effects (Compiled or Modular) associated with the current Layer.

If the Layer is at the Compiled Effects Level, the Effects revert to "None." The Amplitude Envelope for the Layer, if defined, is deleted (see Section 9.6).

If the Layer is at the Modular Effects Level, all local Effects Modules are deleted. If the current Layer is the only Layer in the Program, then all global Modules will also be deleted (see Section IX).

Pressing YES will begin the Layer cleaning sequence. Press NO to abort the sequence and return to Parameter 204, or press either PARAMETER button to select another Parameter.

# Section VIII



**205 Delete Layer**

- **Yes**

Deletes the current Layer and renumbers the remaining Layers. A deleted Layer cannot be retrieved.

Answer YES to this Parameter in order to remove a Layer from a Program. If the current Program contains only one Layer, the display will notify you and then will return to the "Delete Layer?" display. (A Program must contain at least one Layer to exist; you can't remove the only Layer in a Program.)

**206 Soundfile**

- **Soundfile List**

Selects one of many possible Soundfiles for the current Layer. A Soundfile is the sampled sound data from which a Layer is constructed.

**207 Volume**

- **±48 dB**
  - **+6 dB**

Allows you to set the Volume (loudness) of the current Layer. Use this Parameter to balance Layers against each other.

Keep in mind that a Soundfile played at normal full volume (MIDI velocity = 127 and Amplitude Envelope reaches 100%) has 3–4 dB of headroom in which to get louder. Adjusting Parameter 207 to a Value greater than this will use up headroom quickly, "flattening" the volume curve's upper limit.

**208 Keyboard Tilt**

- **±48 dB**
  - **+6 dB**

Enables you to assign a progressive change in volume from the lowest note to the highest note in the current Layer.

For example, if the current Layer spans a keyboard range from C2 to C7 and you set the Value of this Parameter to +36 dB, then C7 will play 36 dB louder than C2 (if you strike both keys with equal force), and there will be a gradual increase as you ascend the scale.

A negative Value causes higher notes to be softer than lower ones.

**209 Set MIDI Range**

- **Yes**

Defines the area of the MIDI keyboard over which the current Layer will play, by prompting you to strike two keys on your controller to establish the low and high notes for the current Layer. The range will include the lowest key you struck, the highest key you struck, and all keys in between.

Once you have set the MIDI range for the current Layer, you can check and edit your Values using Parameters 210 and 211.

**210 Low Note**

- **C0 to C8**
  - **+1 octave (12 ST)**

Displays the lowest note of the defined range for the current Layer and allows you to edit it.

The Value is an alphanumeric character representing the keys of a MIDI controller. The letter (A, B, C, etc.) refers to the notes of the chromatic scale. Black keys (e.g. C-sharp) are represented by a letter and the symbol "#."

The numeral indicates the octave number. For example, Middle C is represented as C4. The F-sharp above Middle C is represented as F#4. The highest C on a standard piano is C8, and the lowest is C1. All keys below C1 are in Octave 0.

**211 High Note**

- **C0 to C8**
  - **+1 octave (12 ST)**

Displays the highest key of the range for the current Layer and allows you to change it. Parameter 211 operates in exactly the same fashion as Parameter 210.

***Note*** — The Values you set for Parameters 210 and 211 determine how the display wraps when you execute a dual press of the VALUE buttons. The available Values for Low Note will not exceed the Value set for High Note, and will wrap to C0

before reaching this limit. The available Values for High will not go below the Value set for Low Note, and will wrap from C8 to the Low Note Value.

**212 Transpose**

- **±60 ST**
- **+1 octave (12 ST)**

Transposes the current Layer in intervals of one semitone (ST). Each layer may be transposed up or down a maximum of five octaves.

Transposition allows you to set the pitch of a given Layer's Soundfile to a realistic range on the MIDI keyboard. It also allows you to create various intervals between the pitches of different Layers in a Program.

**213 Detune**

- **±100 ct**
- **+10 ct**

Adjusts the pitch of the current Layer up or down as much as one semitone in steps of 1 ct (1/100th semitone). A Value of "0" indicates no detuning.

Detuning is used to alter the pitches of Layers in a Program relative to each other. You can use Parameter 213 to create a chorus effect, for example, by creating multiple Layers using the same Soundfile and detuning each Layer slightly relative to the others.

Detuning can also be used to equally sharpen or flatten all of the Layers within a Program. This will change the pitch of that Program relative to other Programs, without affecting the overall tuning of the 1200 Pro.

**214 Delay**

- **0.000 s to 10.000 s**
- **Varies depending on the Value range**

Postpones the beginning of the sound in the current Layer. You can use Parameter 214 to create time-delay effects such as echoes and strums, or to create Programs that build in density over the duration of a sustained note.

**215 Effects**

- **None**
  **Vibrato**
  **Delay Vibrato**
  **Tremolo**
  **Delay Tremolo**
  **Leslie**
  **Chorus 2**
  **Tremolo 2**
  **Vibrato/Chorus 2**
  **Phaser 2**
  **Leslie 2**
  **Chorus 3**
  **Echo 3**

Allows you to select from the list of Compiled Effects when the 1200 Pro is set to operate at the Compiled Effects Level (see Section 4.3 of the *Performance Guide*).

**216 Change Effects Edit Level**

- **YES**

Selects either Compiled or Modular Effects Levels for the current Layer.

Within any one Program, each Layer may have a different set of Effects. While Modular and Compiled Effects can exist on different Layers in the same Program, however, you must choose one or the other for each individual Layer.

When Parameter 216 has been used to change to Compiled Effects, the characters "FX" and the name of the selected Effect will appear in the lower line of the display for Parameter 215. When Parameter 216 has been used to change to Modular Effects, the word "Modular" will appear as the Value for Parameter 215.

Press YES at Parameter 216 to change Effects Levels.

If you answer NO to the next prompt, you will remain at the current Effects level and the display will return to "Chg FX Edit Lvl?"

If you answer YES, the display will ask if you are sure (as long as you haven't turned off the confirmations). At this point, an answer of NO aborts the change and returns you to the "Chg FX Edit Lvl?" display, while YES puts the change into effect.

Changing from Compiled to Modular Effects enables you to study the Parameters of the current Compiled Effect (see Section 10.7).

**217 Enable Layer**

**• Control Source List**

Allows you to enable/disable the current Layer, or assign a MIDI Control Source to do so. A disabled Layer becomes silent.

A Value of OFF disables the current Layer, while a Value of ON enables it.

A Value assigned from the Control Source List permits you to toggle the Layer on and off, depending on the status of the Control Source you assign. For example, if you select a Value of MPress, then the current Layer will play only when monophonic (channel) aftertouch is applied by your controller.

***Note*** — Program Layers are either fully on or fully off. Assigning a continuous Control Source to this Parameter will not fade the Layer in gradually; rather, the Layer will be enabled once the Control Source exceeds its midpoint.

**218 Dynamics**

**• 0 to 90 dB**

**◦ +6 dB**

Limits the dynamic range of the current Layer.

The term "dynamic range" refers to the ratio between the loudest and softest sounds that the Layer can produce. For example, a Value of 60 means that the loudest sound you may trigger for the current Layer will be 60 dB louder than the softest sound.

A Value of 0 will create a Layer with no dynamic range: MIDI Velocity will not affect the loudness of the Layer (though Velocity may still affect the timbre of the Soundfile). A Value of 90 produces a Layer with the maximum dynamic range.

**219 Sustain Pedal**

**• On**
**Off**

Enables/disables the function of your controller's sustain pedal for the current Layer.

Select a Value of Off if you want the current Layer to ignore sustain pedal signals from your MIDI controller.

You can achieve interesting effects by setting Parameter 219 On for some Layers and Off for others. When you strike a chord and then release the keys with the sustain pedal pressed, all Layers with Parameter 219 set to On will continue to play, while those set to Off will begin their release segments.

**220 Sostenuto Pedal**

**• On**
**Off**

Enables/disables the function of your controller's sostenuto pedal for the current Layer.

Select a Value of Off if you want the current Layer to ignore sostenuto pedal signals from your MIDI controller.

If Sostenuto Pedal is enabled, then all notes whose keys are down at the time the pedal is pressed will be sustained for their natural duration.

**221 Freeze Pedal**

**• On**
**Off**

Enables/disables the function of the freeze pedal for the current Layer.

Select a Value of Off if you want the current Layer to ignore freeze pedal signals (switch control set to MIDI 69) from your MIDI controller.

With Freeze Pedal enabled, when you press the freeze pedal (assuming you have assigned one of your controller's switch pedals to control the Freeze function), all notes sounding at the time the pedal is pressed will be "frozen" and will sustain without change until the pedal is released — regardless of their normal decay settings.

Combinations of Layers with Freeze Pedal enabled and disabled will allow you to "freeze" some Layers while others continue to play the notes that you strike.

**222 Ignore Release**

- **Off**
  **On**

Allows the current Layer to respond to, or ignore, MIDI Note Off events (the release of individual keys).

Select a Value of Off, and the current Layer will respond normally to the release of keys. This is the default.

Select a Value of On, and the current Layer will ignore the release of keys: notes will continue to sound as though you were still holding down the keys that triggered them. Notes with natural decay will eventually die out, but notes with no decay (such as organ and trumpet) will sustain indefinitely. You therefore normally should not set Ignore Release to "On" for non-decaying sounds.

**223 Pitch Bend**

- **Off**
  **Key**
  **All**

Enables/disables Pitch Bend control of the current Layer.

A Value of Off causes the current Layer to ignore pitch bend signals.

A Value of Key will allow pitch bend *only* on notes whose triggers are on (keys held down) when the pitch bend is activated. Notes held with Sustain, for example, will not be affected. Pitch Bend will operate on affected notes until they are released.

A Value of All will allow pitch bend on all notes which are sounding when the pitch bend signal is sent, including notes whose keys are actually pressed, as well as notes which are sounding as a result of a Control function or a long release.

**224 Bend Range**

- **±6 QT**
- **+6 QT**

Sets the amount and direction of pitch bend for the current Layer.

The numerical value of Parameter 224 limits the amount of bend caused by a full throw of your controller's Pitch wheel. The maximum is six quartertones (QT), which is the same as three semitones (a minor third). The step size of one quartertone allows you to achieve subtle, microtonal pitch bends.

Negative Values reverse the Layer's response to the pitch wheel: if you normally push to bend pitch up, a negative Value will cause a push to bend pitch down.

**225 Soft Range**

- **±48 dB**
- **+6 dB**

Determines the amount of damping (decrease in volume) or boosting (increase in volume) of the current Layer when a switch pedal assigned to Soft is pressed.

A positive Value will reduce the volume of the current Layer when the soft pedal is pressed. A negative Value will boost the volume of the current Layer when the soft pedal is pressed, while a Value of 0 has no effect on the sound.

**226 Volume Control Enable**

- **On**
  **Off**

Enables/disables control over volume for the current Layer by any MIDI control source that can be assigned to MIDI Control Number 7. The ability to control Layer volume independently allows you to fade individual Layers in and out.

A Value of On means that you may control the volume for the current Layer via MIDI, while a Value of Off causes the current Layer to ignore any volume control signals.

### 227 Balance Control

**• Control Source List**

In a single-Layer Program, this functions as a MIDI Layer Volume Control. In a two-Layer Program, used in conjunction with Parameter 228 (Balance Sensitivity), it enables you to perform equal-power crossfades between Layers using any MIDI Control Source.

A Value of Off disables Balance Control.

A Value of On will attenuate (reduce) the Layer's volume by 18 dB.

Assign a Control Source (such as the Mod Wheel) to enable a MIDI control to attenuate the Layer. Figure 8-1 illustrates the effect on Layer volume of Control Sources assigned to Parameter 227.

The solid curve represents the effects of a Control Source when Parameter 228 (Balance Sensitivity) is set at Norm. With the Control Source at minimum, the Layer is not affected. At midpoint, the Layer is attenuated by 3 dB. With the Control Source at maximum, the Layer is attenuated by 18 dB.

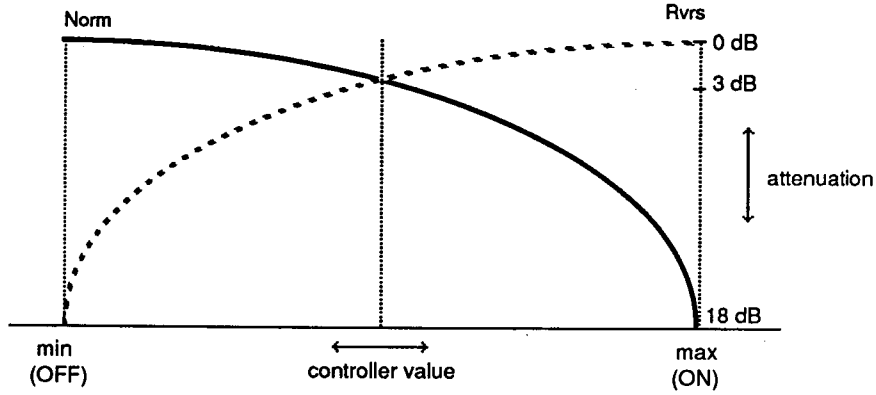



**Figure 8-1 Balance Control Response**

The dotted curve represents the effects of reversed (Rvrs) Balance Sensitivity.

If you create a two-Layer Program with different Soundfiles on each Layer, you can use Balance Control to achieve an equal-power crossfade between the two. Assign the same Control Source to each Layer using Parameter 227, then select Parameter 228 and set one Layer to Norm and the other to Rvrs. The resulting crossfade will have a maximum separation of 18 dB.

### 228 Balance Sensitivity

**• Norm/Rvrs**

Enables you to determine the polarity of the Balance Control in response to the control assigned to affect Balance (see Parameter 227 and Figure 8-1).

### 229 Alternate Attack

**• Control Source List**

Allows you to choose between the normal attack of the Layer's Soundfile and an alternate, later point in the Soundfile.

Many of the 1200 Pro's Soundfiles contain complex transients in the first few milliseconds of the attack. The alternate attack bypasses the attack transients of these sounds. The alternate attack for acoustic instrument timbres corresponds to the beginning of the loop section.

With a Value of Off, the normal attack for the current Layer's Soundfile will always be used.

A Value of On causes the Layer to use its alternate attack point at all times.

Select from the Control Source List to alternate between attack segments using a MIDI Control Source. If the assigned Source is below its midpoint at the start of the note, the normal attack will be used. If it is above midpoint, the alternate attack will be used.

**230 Stereo Pan**

- **L to R**
  **Auto**
  **Inv Auto**

Enables you to define Layer Pan settings between the Left and Right Audio Outputs.

Use either VALUE button to change the Pan location. The display will show an asterisk (*) which indicates the position of the current Layer with respect to the Audio Outputs. There are nine Pan positions, including the extremes.

If you select a Value which exceeds either extreme, the display will change to show two additional Values — Auto Pan and Inv Auto Pan. These provide Pan settings which are a function of MIDI Note number.

Select Auto Pan, and the lowest notes of the Layer will be directed to the Left Audio Output. The highest notes will go to the Right Audio Output, with a progressive pan from left to right for each successively higher note.

Inv Auto Pan provides the reverse of Auto Pan — low notes to the right, and high to the left. (This corresponds, for example, to the seating arrangement of orchestral string sections as heard from the audience's perspective.)

**231 Touch Sensitivity**

- **On**
  **Off**

Determines how the current Layer will respond to velocity data from your controller.

Select a Value of On, and higher MIDI Velocity numbers (corresponding to harder keystrikes) will cause corresponding increases in the loudness of notes.

With a Value of Off, the Layer will have no touch sensitivity. If the Soundfile has multiple timbre levels (as does Grand Piano, for example), the timbre corresponding to the maximum keystrike velocity will always be used. Each note will respond as if it had received a maximum-velocity signal from your controller.

**232 Velocity Trigger 1**

- **ppp to fff**

Velocity Trigger 1 is a Logical Control Source. Assigning a Velocity Trigger enables you to initiate an effect depending on the MIDI Velocity number sent by your controller. This Parameter allows you to set the dynamic level at which the Trigger is activated.

The 1200 Pro checks each Note On signal from your controller and compares its MIDI velocity number to the Value that you set for Parameter 232. If the MIDI velocity exceeds the threshold Value of the Parameter, Velocity Trigger 1 switches On (it is normally Off).

The Values for Parameter 232 are the same 8 dynamic levels used to set Velocity Maps. The actual MIDI Velocity required to reach the threshold depends, therefore, on the Velocity Map that you have selected with Master Parameter 005.

The action of Velocity Trigger 1 also depends on the setting of Parameter 233 (Velocity Sensitivity 1).

**233 Velocity Trigger 1 Sense**

- **Norm**
  **Rvrs**

Defines the response of Velocity Trigger 1 to Velocity signals.

With a Value of Norm, MIDI Velocity signals exceeding the Value of Parameter 232 will switch the Trigger On. Values below that will switch it Off.

A Value of Rvrs reverses the sensitivity of Velocity Trigger 1: the Trigger will normally be On,

and will switch Off when the threshold is reached.

**234 Velocity Trigger 2**
**235 Velocity Trigger 2 Sense**

Velocity Trigger 2 functions in the same way as Velocity Trigger 1 (see above).

**236 Layer Enable Sense (EnableSense in display)**

- **Norm**
  **Rvrs**

This Parameter works in conjunction with Parameter 217 Layer Enable, which gives you several options for turning Layers on and off. You may toggle the Value of EnableSense from Normal to Reversed by pressing either [VALUE] button. When you reverse EnableSense, then whatever control source you have assigned to enable the current Layer will be reversed in its function. Here's an example.

You want to switch quickly back and forth between two different synth sounds during a solo. Simply create a two-Layer Program using the sounds you want, then set both Layers to be enabled by the Sostenuto Pedal (or any controller you choose). Make sure that one of the Layers has EnableSense set to Norm, and the other to Rvrs. Then use the Sostenuto Pedal to alternate between the two sounds.

**237 Opaque Layer**

- **Off**
  **On**

This Parameter is very effective for creating complex Programs which give you numerous ways to activate and deactivate Layers. Setting the Value of this Parameter to On (with either [VALUE] button) makes the currently selected Layer "opaque," screening all higher-numbered Layers in the Program as long as the opaque Layer is playing.

For example, consider a Program which is a two-layer combination of Grand Piano and Stereo Piano. Layer 1, the Stereo Piano, is an opaque Layer, and covers a range from C3 to G6. Layer 2, the Grand Piano, covers the entire keyboard. When you play outside the range of the Stereo Piano, you will hear only the Grand Piano. When you play in the C3 to G6 range, you will hear only the Stereo Piano, since the Grand Piano Layer is eclipsed by the opaque Stereo Piano Layer.

Now set Layer 1's Layer Enable Parameter to Sostenuto (with EnableSense = Norm). Now, you ordinarily will hear the Grand Piano Layer throughout its entire range. Depress the Sostenuto pedal, and the Stereo Piano will replace the Grand Piano between C3 and G6 as long as the Sostenuto pedal is down.

**238 Hold Thru 1st Amp Env Attack Segment (HoldThruAttk in display)**

- **Off**
  **On**

Normally, when you release the trigger for a given note, the note immediately goes into its release, which is often instantaneous. Setting this Parameter to On (by pressing either [VALUE] button) will cause all notes in the current Layer to sustain through the first attack segment of their Amplitude Envelope (natural or user-programmed) regardless of when the note trigger is released.

**239 Hold Until Sustain Section of Amp Env (HoldTillSust in display)**

- **Off**
  **On**

This is similar to HoldThruAttk, except that with this Parameter set to On, all notes in the current Layer will sustain through the *last* segment of the attack section of the Amplitude Envelope. Note that this does not include the Attack End segment; you will not hear any sustain or loop that you may have programmed into your Amplitude Envelope.

# Section IX
## Modular Effects Editing

## 9.1 Introduction

Modular Effects represent the most advanced Program editing level of the 1000 Series.

When you select Modular Effects using Layer Parameter 216, you gain access to a digital emulation of a traditional modular synthesizer comprising a number of building-block elements, or "Modules." By navigating among the Modular Effects Menus and selecting Values for specific Parameters, you can freely "patch" together virtually any logical combination of Modules to obtain a very broad range of effects.

Just as in analog synthesizers, the 1200 Pro's Modules are grouped in two basic classes — signal generators and signal modifiers. Signal generators originate waveforms, while signal modifiers accept waveforms at their signal inputs and act upon them in specific ways. Both classes of Modules may be controlled externally by MIDI controllers or by other Modules.

Within these two classes, Modules are further distinguished as belonging to either of two separate groups — the audio group and the control group.

The audio group handles the sound signal that is actually heard at the 1200 Pro's Audio Outputs. Signals in the audio group originate from the 1200 Pro's Soundfile list.

The control group handles signals that are meant not to be heard by themselves, but to affect the actions of other Modules. Control group signals lie in the frequency range between DC and 50 Hz. They include both MIDI controller signals and output signals from control group Modules.

### 9.1.1 Conceptual Model

Figure 9-1 shows how the 1200 Pro's digitally-emulated modular synthesizer might look, were it to be implemented as a traditional analog instrument.

**Local Modules** — Each Layer of every Program accesses its own set of Local Modules which can provide independent and individual control over each note played in the Layer. Patches among Local Modules are unique to the Layer, and each Layer can have an entirely different Local Module configuration.

The audio group within each Layer begins with the originating Soundfile. Optionally, you can access two envelopes (Amplitude Envelope and Envelope 2), an amplitude modulator (Amplitude Control), and a frequency modulator (Pitch Control).

The remainder of the Local Modules in Figure 9-1 are all in the control group. They can be used to generate and process control signals for routing to the control inputs of Modules in either group within the Layer.

**Global Modules** — Each Program also may access a set of four Global Modules, all of which are control signal generators. These Modules send the same control signal to every Layer at once, but may be patched independently within each Layer.

### 9.1.2 Defining & Deleting Modules

To maximize efficient use of the 1200 Pro's Program memory, most of the Effects Modules shown in Figure 9-1 do not actually "exist" for a given Layer until you *create* them.

Modules are created simply by selecting any Parameter within their Menus (other than the Menu heading) using either PARAMETER button. Once created, a Module can be *defined* by assigning Values to its Parameters. If a Module has never been defined, or if an existing one has been deleted, it is said to be "undefined."

A Module may be deleted by selecting the first Parameter in its Menu (Delete Module) and answering YES to the prompt. After deleting the Module, the 1200 Pro will return to the Menu heading, where you will see "(undefined)" in the lower line of the display.

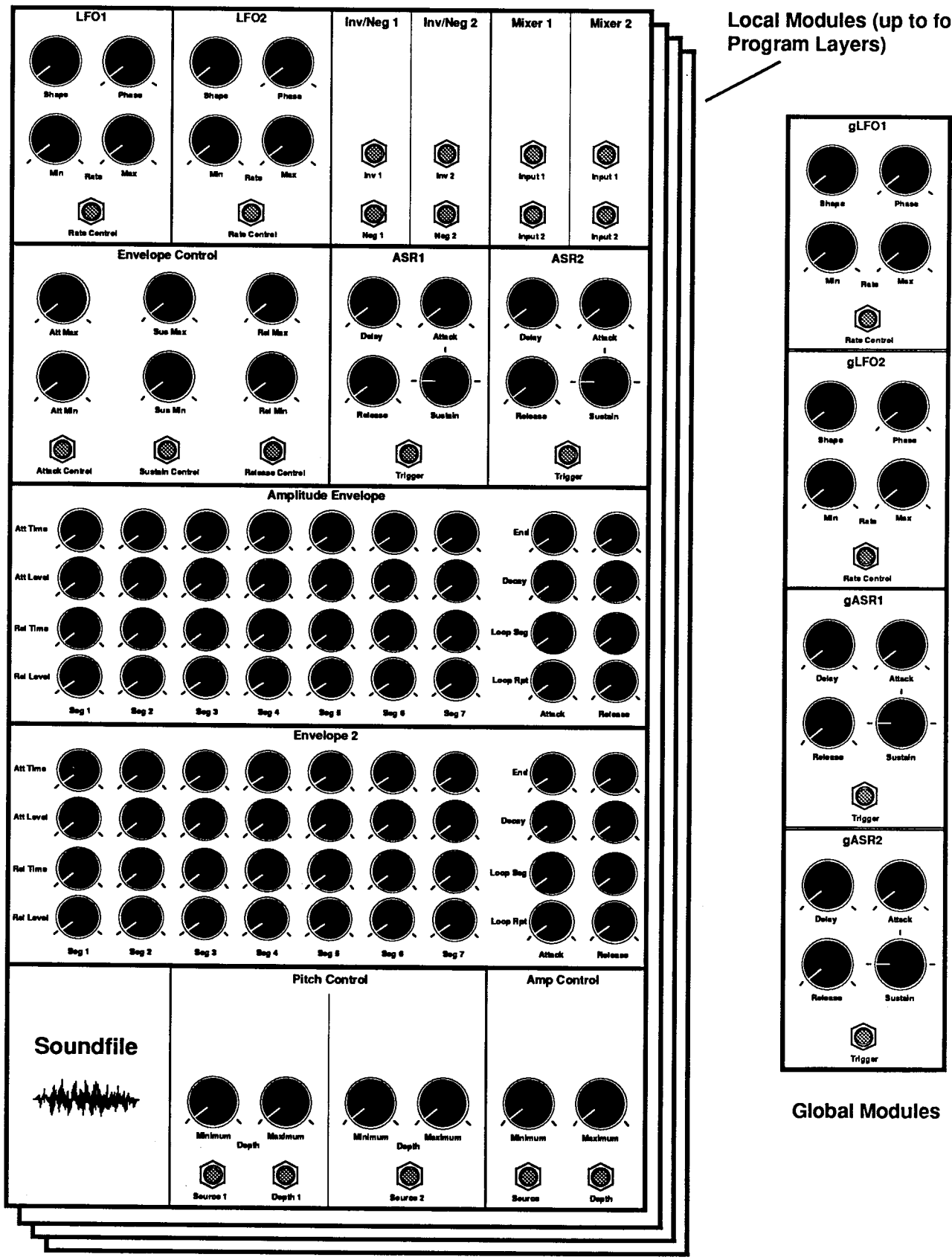



**Figure 9-1 Conceptual Model of 1000 Series Modular Effects (Each Program)**

***Note*** —In order to keep the memory of your 1200 Pro as free as possible, it is a good idea to delete any Modules that you are not using before saving a Program.

### 9.1.3 Patching Modules

The outputs of all of the control group Modules in Figure 9-1 can be visualized as being "hard-wired" to the Control Source List.

Where a control input jack is shown in the Figure, it indicates that you may input any logical selection from the Control Source List. All such patching is performed by moving among Parameters in the Menus and changing Values. Where a particular Module's output is not available for a given Parameter, it will not appear in the Control Source List as a possible Value for that Parameter.

The audio group Modules, by contrast, are "hard-wired" as they are created and defined. If no audio signal modifiers are selected, the Soundfile signal passes directly to the Program level. When you create an audio group module (such as Amplitude Envelope), it is automatically inserted in the audio chain.

## 9.2 Low Frequency Oscillators

The Low Frequency Oscillators (LFOs) are control signal generators that produce low-frequency waveshapes which may be routed to various control inputs. The Outputs of the LFO Modules are normally bipolar, but can be made unipolar by selecting a waveshape preceded by a "+" (see Parameter 415, below).

Each Program may have two global LFOs, and each Layer of every Program may have two local LFOs.

### 9.2.1 Local Low Frequency Oscillator 1

**410 LFO1**

This is the Menu heading.

**411 Delete LFO1**

**• Yes**

Deletes the LFO1 Module. Press YES to begin the deletion sequence.

**412 Minimum Rate**

**• 0.00 Hz to 50.00 Hz**

**◦ Varies depending on the Value range**

Sets the lowest LFO1 frequency (or rate) for the current Layer. This Parameter also determines the rate of LFO1 when the Rate Control (Parameter 414) is at its minimum Value, or is set to a Value of Off.

**413 Maximum Rate**

**• 0.00 Hz to 50.00 Hz**

**◦ Varies depending on the Value range**

Sets the highest LFO1 frequency (or rate) for the current Layer. This Parameter also determines the rate of LFO1 when the Rate Control (Parameter 414) is at its maximum Value, or is set to a Value of On.

**414 Rate Control**

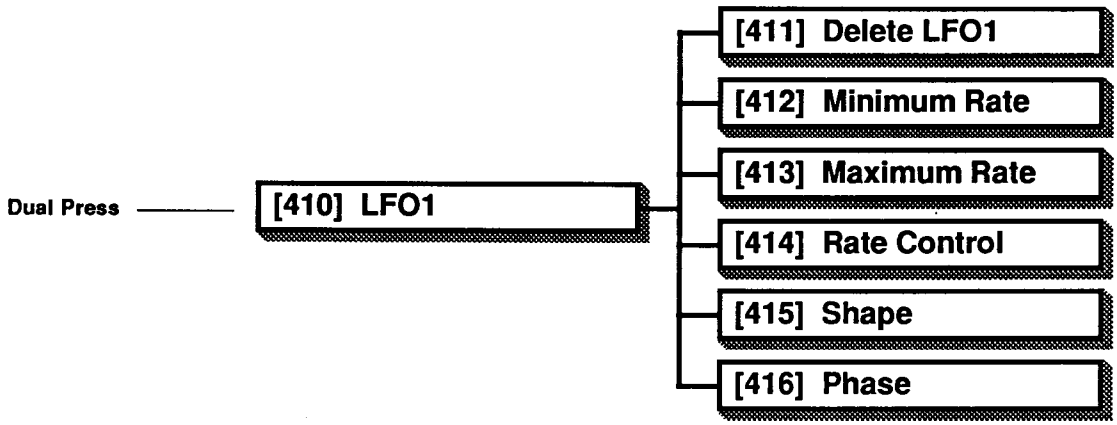
**• Control Source List**

This Parameter selects the rate control input for LFO1.

With a Value of Off, LFO1 will generate a Waveshape at a rate set by the Minimum Rate Parameter (see above). If On is chosen, LFO1 will generate a Waveshape at a rate set by the Maximum Rate Parameter.

You may also select an On/Off switching device, such as "Sustain" (the Sustain Pedal), to feed this input. Any switch will provide the Maximum Rate when the switch is On, and the Minimum Rate when it is Off.

Other Values can select a device that is capable of continuous control (such as Breath, Pressure, or Mod Wheel). Such a device will provide continuously variable control of LFO1's rate within the boundaries set by the Minimum Rate and Maximum Rate Parameters.




**415 Shape**

- **Sine**
  **Cosine**
  **+Sine**
  **+Cosine**
  **Rise Saw**
  **Fall Saw**
  **+Rise Saw**
  **+Fall Saw**
  **Square**
  **+Square**
  **Triangle**
  **+Triangle**
  **Dbl Pulse**
  **Circle**
  **Stair**
  **+Stair**
  **Asym Tri 1**
  **Asym Tri 2**
  **White Nz**
  **Red Nz**
  **Green Nz**
  **Blue Nz**

Selects the waveshape for LFO1. Waveshapes whose names are preceded by a "+" are unipolar and positive-going; all others are bipolar.

**416 Phase**

- **0°**
  **90°**
  **180°**
  **270°**

Determines the initial phase (starting point) for LFO1's output waveform.

Considering a sine wave for example, 0° is the beginning of the wave (amplitude 0, becoming positive); 90° is maximum positive amplitude; 180° is 0 amplitude, becoming negative; and 270° is maximum negative amplitude.

## 9.2.2 Local LFO2

**420 to 426 LFO2**

Parameters 420 through 426 control the the Local LFO2 Module. The programming procedures for LFO2 are identical to those for LFO1, so the descriptions of the Parameters for LFO1 apply to LFO2, as well.

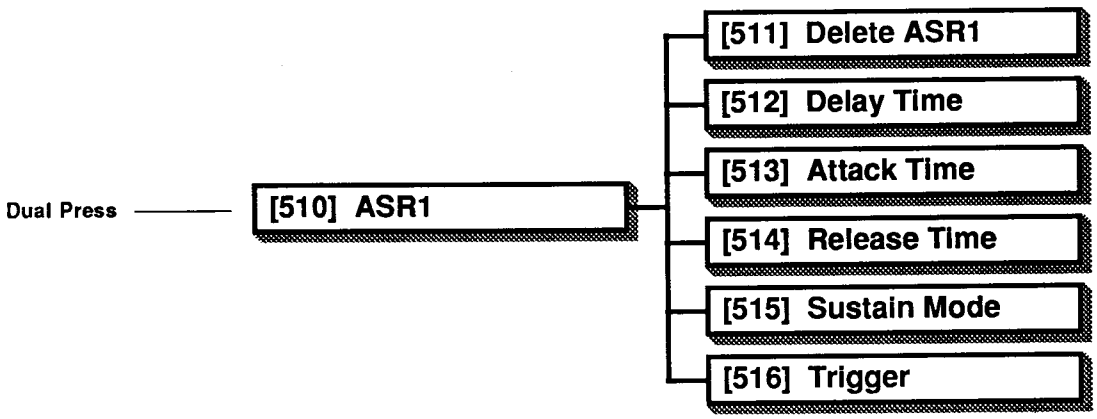
## 9.2.3 Global LFOs

**430 to 436 gLFO1**
**440 to 446 gLFO2**

Parameters 430 through 436 and 440 through 446 control the operation of the Global LFO Modules. The programming procedures for the global LFO Modules are identical to those for LFO1.

# Section IX

## 9.3 Attack Sustain Release Envelope Generators




### 9.3.1 Local ASR1

ASR1 generates, when triggered, a unipolar control signal with three segments that constitute an envelope: attack, sustain, and release.

ASR1 may be assigned from the Control Source List to any control input within the current Layer. The ASR envelope is often used to modify the amount or rate of another control signal.

510 **ASR1**

This is the Menu heading.

511 **Delete ASR1**

- **Yes**

Deletes the ASR1 Module from the current Layer. Answer YES to initiate the deletion sequence.

512 **Delay Time**

- **0.00 s to 10.00 s**
  - **Varies depending on the Value range**

Determines the amount of time, in seconds, before ASR1 begins generating its envelope after it has been triggered.

Select a Value of 0.00 s, and ASR1 will begin its attack segment immediately when it receives a trigger from any source (typically the keyboard).

For Values other than 0.00 s, there will be a time delay equal to the Value.

513 **Attack Time**

- **0.00 s to 10.00 s**
  - **Varies depending on the Value range**

Determines the length of the attack segment of the current ASR1. The term "attack time" refers to the time required for the attack segment to progress to its maximum, before beginning its sustain or release segment.

514 **Release Time**

- **0.00 s to 10.00 s**
  - **Varies depending on the Value range**

Determines the length of the release segment for ASR1. The term "release time" refers to the time required for the release segment (at the end of the sustain or attack segment) to progress to its minimum, which marks the end of the envelope.

**515 Sustain Mode**

- **Norm**
  **Hold**
  **Rept**

Enables you to select among three modes for the sustain segment of ASR1. Each Mode creates a significantly different effect.

**Normal** Mode causes ASR1 to generate a single two-segment envelope using only the attack and release segments. Even if the trigger is held on indefinitely, ASR1 will progress through its attack segment, then immediately proceed to its release segment, which will continue to the end of the envelope.

**Hold** Mode causes ASR1 to generate a single three-segment envelope. When the attack segment reaches its maximum, the maximum level will be sustained as long as the trigger for ASR1 is on. When the trigger is shut off, the release segment will begin and progress through to the end of the envelope.

**Repeat** Mode causes ASR1 to generate repetitive two-segment envelopes. When the end of a release segment is reached, the attack segment will begin again, and the envelope will repeat as long as the trigger is on. Once the trigger is shut off, the envelope will continue to the end of the last release segment.

**516 Trigger**

- **Control Source List**

Selects a Control Source for triggering ASR1.

With a Value of On, ASR1 will begin generating its envelope when a MIDI Note On is received, then progress according to the Mode that is set with Parameter 515. With the Value set to Off, the ASR will be disabled.

If the selected Control Source is a switch such as the Sustain pedal, ASR1 will be triggered when the switch goes from Off to On, and remains on as long as the switch remains on.

Some Values select Control Sources that are capable of producing continuously varying Control signals (the Modulation Wheel, for example). If you select one of these continuous Control Sources, the Trigger for ASR1 will switch on when the signal from the Control Source exceeds its midpoint. (This threshold is set by the 1200 Pro's system software, and is not programmable.)

## 9.3.2 Local ASR2

**520 to 526 ASR2**

The Parameters for ASR2 are identical to those for ASR1.

## 9.3.3 Global ASRs

**530 to 536 gASR1**
**540 to 546 gASR2**

gASR1 and gASR2 are global envelopes, so they affect all Layers of the Program to which they are assigned.

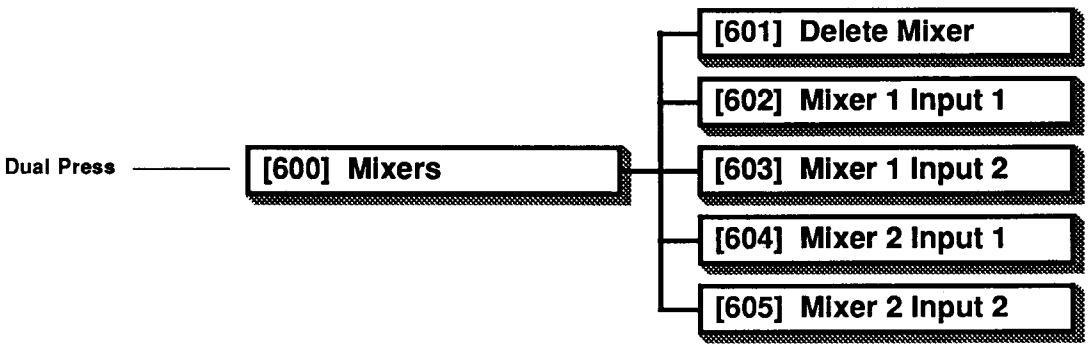
Each Program can have two global ASRs. Each Global ASR may be triggered by a different Control Source, and may be assigned to control different Modules. A global ASR will generate an envelope only if its Program is assigned to a MIDI channel.

The programming of Global ASRs is identical to that of the local ASRs.

***Note*** — "On" may not be a useful Value for gASRs, because with this Value, they would begin their envelopes as soon as their Program is assigned to a MIDI channel.

# Section IX

## 9.4 Local Mixers




The 1200 Pro provides two Mixers (MXR1 and MXR2), which may be separately programmed and assigned, for each Layer of a Program. These are local Modules: they affect each note in the current Layer independently.

Each Mixer has two Inputs to which you may assign any of the Layer's Control Sources. The Mixer adds together the two signals at its inputs, limits the sum to within ±1, and presents the sum at its output.

The Mixers' outputs are themselves Control Sources, and appear on the Control Source List, from which they may be assigned to any local Module Parameter that shows "Control Source List" as a Value. While each Mixer output has bipolar capability, it will be effectively unipolar if the mixer inputs are both unipolar control signals.

**600 Mixers**

This is the Menu heading.

**601 Delete Mixer**

**• Yes**

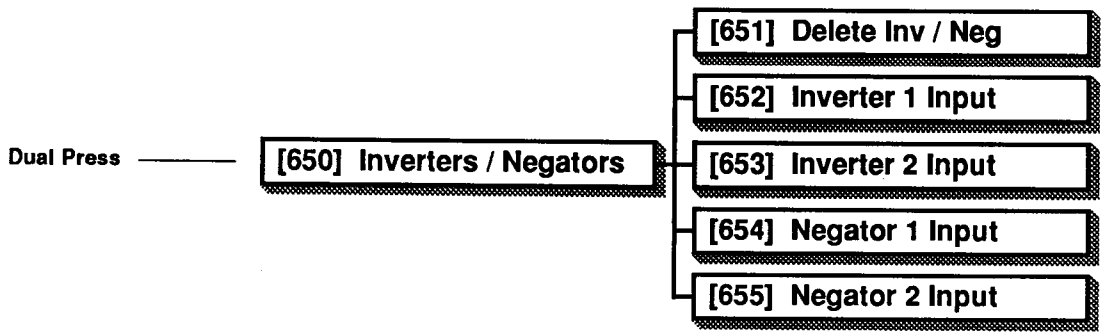
Deletes the Mixer Module for the current Layer. Pressing YES will initiate the deletion sequence.

**602 Mixer 1 Input 1**
**603 Mixer 1 Input 2**
**604 Mixer 2 Input 1**
**605 Mixer 2 Input 2**

**• Control Source List**

Parameters 602 to 605 allow you to assign Control Sources to the Inputs of each of the Mixers in the current Layer.

## 9.5 Local Inverters / Negators




The Inverters/Negators Module is a multiple-function Local Module: it provides you with two Inverters and two Negators, each of which operates independently, for each Layer in a Program. The Inverters and Negators are control signal processors, and their outputs are available as Control Sources that can be assigned to any local Module Parameter showing "Control Source List" for its Value.

The effect of an Inverter is shown in Figure 9-2. The Inverter reverses the *amplitude* of the input signal, leaving the sign unchanged. Negators are the converse of Inverters: Negators reverse the *sign* of the waveshape, while preserving its amplitude (see Figure 9-3).

Generally, Inverters are used with unipolar signals, while Negators are used with bipolar signals.

**650 Inverters/Negators**

This is the Menu heading.

**651 Delete Inverters/Negators**
**• Yes**

Enables you to delete the Inverter/Negator Module from the current Layer. Press YES to initiate the deletion sequence.

**652 Inverter 1 Input**
**653 Inverter 2 Input**
**• Control Source List**

Parameters 652 and 653 represent the Inputs of Inverters 1 and 2, respectively.

**654 Negator 1 Input**
**655 Negator 2 Input**
**• Control Source List**

Parameters 654 and 655 represent the Inputs of Negators 1 and 2, respectively.

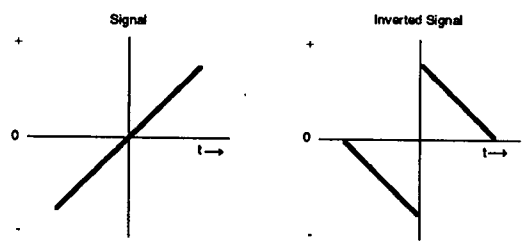



**Figure 9-2 Effect of Inverter**

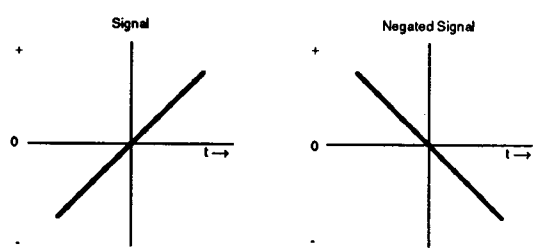



**Figure 9-3 Effect of Negator**

# Section IX

## 9.6 Amplitude Envelopes

Many of the 1200 Pro's Soundfiles use Amplitude Envelopes that are created as part of the process of digitizing the sounds.

When you select a Parameter from the Amplitude Envelope Menu, you replace the preprogrammed (or "natural") envelope with a default user-defined envelope having one attack and one release segment. This is your "blank palette" for the construction of your own Amplitude Envelope. (The original envelope is stored in ROM, and will be restored if you delete the user-defined envelope using Parameter 701 or exit Edit Mode without saving your changes.)

Amplitude Envelopes are unipolar, and may contain up to seven attack and seven release segments. Each segment of the Amplitude Envelope is defined by specifying a time and level. The first attack segment always starts at zero amplitude, and the final release segment always ends at zero amplitude.

***Note*** — The Local Amplitude Envelope and Envelope Control Modules are available at the Compiled Effects Editing Level, as well. The Envelope Control Module is described in Section 9.6.3.

### 9.6.1 Local Amplitude Envelope

**700 Amplitude Envelope**

This is the Menu heading.

**701 Delete Amplitude Envelope**

**• Yes**

Enables you to delete the Amplitude Envelope Module from the current Layer. Use this Parameter to restore the preprogrammed Amplitude Envelope (if any) to the current Layer.

Pressing YES will initiate the deletion sequence.

**702 Add Attack Segment**

**• Yes**

Enables you to add an attack segment to the Amplitude Envelope in the current Layer. Each Layer's Amplitude Envelope may contain as many as seven attack segments.

When you add or delete Envelope segments, any notes that your 1200 Pro is currently playing will be silenced. *You will not be able to play the 1200 Pro while adding or deleting Envelope segments.*

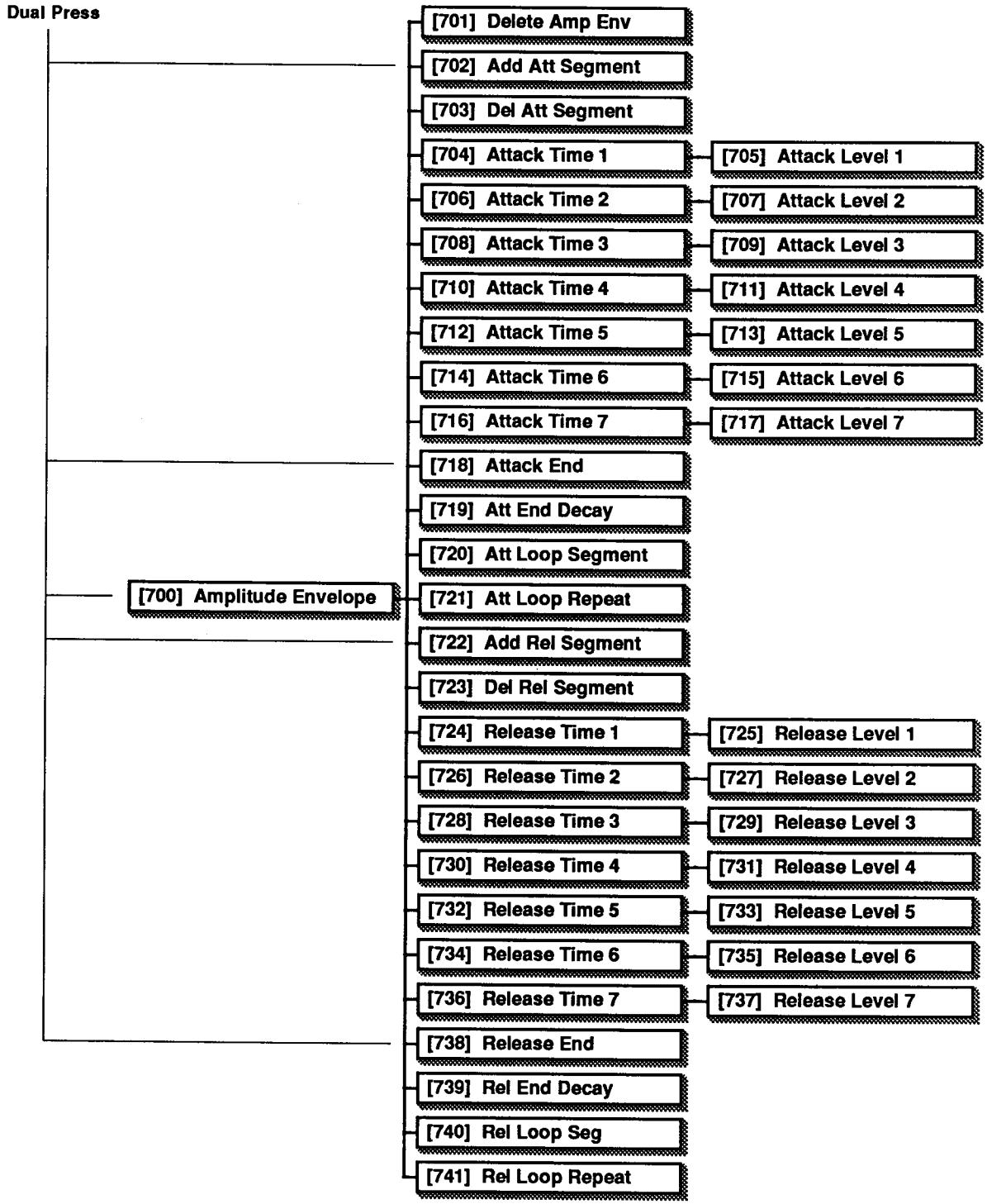
Press YES to start the insertion sequence. The display will prompt you. The lower line will show the index numbers of the envelope's existing segments, and a cursor (single-character underscoring) will show to the right of the highest number.

If you press NO here, you will return to the "Add Attack Seg?" display without adding a segment. (This is a convenient way to check the number of segments in an envelope without changing the envelope.) Press YES to add an envelope segment at the position of the cursor. All higher-numbered segments will be renumbered.

You may change the position of the cursor before pressing YES to select an insertion point between two existing segments. Use the PARAMETER buttons to move the cursor left or right. Choose a cursor location, press YES, and the new segment will appear at the cursor location.

If you attempt to add a segment to an envelope already containing seven segments, the display will alert you and then will return to the "Add Attack Seg?" display.

***NOTE*** — For each attack segment that your Amplitude Envelope contains, a pair of Parameters will be generated (see Parameters 704 through 717, below). These Parameters enable you to set the time and level for each of the attack segments in the envelope.


Dual Press
[700] Amplitude Envelope
[701] Delete Amp Env
[702] Add Att Segment
[703] Del Att Segment
[704] Attack Time 1
[705] Attack Level 1
[706] Attack Time 2
[707] Attack Level 2
[708] Attack Time 3
[709] Attack Level 3
[710] Attack Time 4
[711] Attack Level 4
[712] Attack Time 5
[713] Attack Level 5
[714] Attack Time 6
[715] Attack Level 6
[716] Attack Time 7
[717] Attack Level 7
[718] Attack End
[719] Att End Decay
[720] Att Loop Segment
[721] Att Loop Repeat
[722] Add Rel Segment
[723] Del Rel Segment
[724] Release Time 1
[725] Release Level 1
[726] Release Time 2
[727] Release Level 2
[728] Release Time 3
[729] Release Level 3
[730] Release Time 4
[731] Release Level 4
[732] Release Time 5
[733] Release Level 5
[734] Release Time 6
[735] Release Level 6
[736] Release Time 7
[737] Release Level 7
[738] Release End
[739] Rel End Decay
[740] Rel Loop Seg
[741] Rel Loop Repeat

The programming procedure for each of these pairs of Parameters is almost identical. The one exception is that the Value of Attack segment 1 defaults to 0.00s, and will remain so if you do not change it. The Values of all other Attack segments default to 0.01s, however; only the first Attack segment may have a Value of 0.00s.

The initial level for each Attack segment corresponds to the final level of the segment preceding it. In the case of Attack segment 1, this is always 0; for other segments, it will be equal to the Value that you set for the previous segment.

**703 Delete Attack Segment**

- **Yes**

Enables you to delete an attack segment of the Amplitude Envelope for the current Layer.

Pressing YES initiates the deletion sequence. The procedure is similar to that for adding attack segments (see Parameter 702, above).

***Note*** — Every envelope must have at least one attack segment. If you attempt to delete an attack segment from an envelope containing only one attack segment, the display will alert you, and then will return to the "Delete Attack Seg?" display without deleting the segment.

**704 Attack Time 1**

- **0.00 s to 10.00 s**
- **Varies depending on the Value range**

Determines the time in seconds required for Attack segment 1 to progress from zero amplitude to its specified level. (The level for Attack segment 1 is set using Parameter 705.) The default Value for Attack segment 1 is 0.00 s.

**705 Attack Level 1**

- **0% to 100%**
- **+20%**

Sets the level to which Attack Segment 1 increases during the time specified by Parameter 704.

**706 Attack Time 2**
**707 Attack Level 2**
**708 Attack Time 3**
**709 Attack Level 3**
**710 Attack Time 4**
**711 Attack Level 4**
**712 Attack Time 5**
**713 Attack Level 5**
**714 Attack Time 6**
**715 Attack Level 6**
**716 Attack Time 7**
**717 Attack Level 7**

See the descriptions for Parameters 704 and 705, above.

**718 Attack End**

- **Sustain**
  **Decay**
  **LoopFwd**
  **LoopBiD**

Defines a special attack segment which begins at the end of the highest-numbered regular attack segment. If you have defined only one attack segment, the Attack End segment will begin as soon as Attack Segment 1 has finished.

The four possible Values have different programming requirements. Parameters 719 through 721 relate only to certain Attack End Values, and will not appear in the display unless the relevant Attack End Value is selected with Parameter 718. If your Amplitude Envelope contains just one attack segment, you will have a choice between only two Values — Sustain and Decay.

**Sustain** will maintain the ending level of the final regular attack segment as long as the note trigger remains on. The first Release segment will not begin until the note trigger is released. Parameters 719 through 721 will not appear when you have selected Sustain.

**Loop Forward** will cause part or all of the Attack segment to repeat. You may program which attack segments will be

included in the loop by using Parameter 720, and how many times the loop will repeat before initiating the release segment by using Parameter 721.

When Loop Forward is selected, the Amplitude Envelope will progress normally through all of its programmed attack segments. Once it reaches the Attack End segment, the envelope will jump to the end of the segment that you specify with Parameter 720. It will ramp to the final level of the specified loop segment in a period of time equal to the Time setting for that segment. The Envelope then will again progress through to the Attack End segment, repeating the process as many times as you specify with Parameter 721.

**Loop Bidirectional** operates like Loop Forward, except that the Amplitude Envelope is played alternately backward and forward.

When Loop Bidirectional is selected, the Amplitude Envelope will progress normally through its programmed Attack segments. Once it reaches the Attack End segment, instead of jumping back to the beginning of the specified segment, the Envelope will reverse its direction and move back to the end of the specified loop segment.

***NOTE*** — The Attack and Release sections of an Envelope must have more than one segment before you will be able to select either of the looping options.

**Decay** will cause the Attack End segment to decay to zero amplitude within the time specified by Parameter 719 (described below). If the note trigger is released before the Attack End segment has finished, the release segment will begin at the current amplitude.

**719 Attack End Decay**

- **0.01 s to 10.00 s**
- **Varies depending on the Value range**

When the Value of Parameter 718 is set to Decay, this Parameter will be enabled. It allows you to determine the amount of time, in seconds, required for the Attack End segment to decay to zero from its specified Value.

**720 Attack Loop Segment**

- **1 to 7**

Enables you to specify the Attack segment to which the Amplitude Envelope returns when you have selected Loop Forward or Loop Bidirectional.

***Note*** — You cannot assign a Value which is higher than the number of Attack segments in your Amplitude Envelope.

**721 Attack Loop Repeat**

- **Inf**
- **1 to 255**
- **+10**

Determines the number of times the Amplitude Envelope will repeat the loop you have specified with Parameters 718 and 720. If you select a Value of Inf (infinite), the loop will repeat without interruption as long as the note trigger is held on; once the note trigger is released, the Envelope will proceed through the Release segment(s).

**722 Add Release Segment**

- **Yes**

Enables you to add up to seven Release segments to the current Amplitude Envelope. As with Attack segments, every Release segment that you add generates a pair of Parameters relating to the Time and Level for that segment.

Answer YES to add a Release segment. If there are no Release segments in the current Amplitude Envelope, the display will briefly notify you, and then will return to the "AddRelSeg?" display.

With one or more Release segment(s) in the Envelope, pressing YES generates a display with the existing Release segments shown in the lower line of the display, highest-numbered segment on the right.

A cursor will appear immediately to the right of the highest numeral. Use the PARAMETER buttons to move the cursor left and right.

Pressing NO here will return you to the "AddRelSeg?" display without adding the segment.

If you press YES instead, the 1200 Pro will add another segment, and the "AddRelSeg?" display will reappear. If you attempt to add a segment to an Envelope already containing the maximum of seven Release segments, the display will notify you and then the "AddRelSeg?" display will reappear.

**723 Delete Release Segment**

- **Yes**

Enables you to delete any Release segment in the current Amplitude Envelope.

Press YES to begin the deletion sequence. The procedure is similar to that for adding Release segments (Parameter 722, above).

If the Envelope contains only one Release segment and you attempt to delete it, the display will inform you, and quickly return to the "Del Release Seg?" display.

**724 Release Time 1**

- **0.01 s to 10.00 s**
  - **Varies depending on the Value range**

This Parameter determines the amount of time, in seconds, required for Release Segment 1 to decay from its initial level to the level that you specify with Parameter 725.

***Note*** — Each Release segment has a minimum time Value of 0.01 seconds. To achieve an instantaneous release, you must delete all Release segments, set Parameter 738 (Release End) to Decay, and set Parameter 739 (Release End Decay) to a Value of 0 s.

**725 Release Level 1**

- **0% to 100%**
  - **+20%**

Determines the decrease in amplitude of the current Release segment.

The first Release segment begins at an initial level of 100% and decreases to a percentage (set with this Parameter) of the initial level. The initial level is equal to the final level of the segment preceding it (or, in the case of the first Release segment, the level of the Attack End segment when the note trigger is released).

**726 Release Time 2**
**727 Release Level 2**
**728 Release Time 3**
**729 Release Level 3**
**730 Release Time 4**
**731 Release Level 4**
**732 Release Time 5**
**733 Release Level 5**
**734 Release Time 6**
**735 Release Level 6**
**736 Release Time 7**
**737 Release Level 7**

See the descriptions for Parameters 724 and 725, above.

**738 Release End**

- **Decay**
  **LoopFwd**
  **LoopBID**

Similar to Parameter 718 (Attack End), this parameter defines a special Envelope segment that begins at the end of the highest-numbered Release segment. If you have added no Release segments, the Release End segment begins when the note trigger is released.

The three possible Values for the Release End segment operate in the same fashion as the corresponding three types of Attack End segments (see Parameter 718). (The Value of Sustain is not available for the Release segment.)

**739 Release End Decay**

- **0.00 s to 10.00 s**
  - **Varies depending on the Value range**

Identical in function to Parameter 719 (Attack End Decay).

**740 Release Loop Segment**

- **1 to 7**

Identical in function to Parameter 720 (Attack Loop Segment).

**741 Release Loop Repeat**

- **Inf**
  **1 to 255**
  - **+10**

Identical in function to Parameter 721 (Attack Loop Repeat).

## 9.6.2 Envelope 2

**800 to 841 Envelope 2**

All of the Parameters for the programming of Envelope 2 are identical to those for the Amplitude Envelope (Parameters 700 through 741).

The sole difference between the Amplitude Envelope and Envelope 2 is that the Amplitude Envelope is unipolar (positive amplitudes only), while Envelope 2 is bipolar (both positive and negative amplitudes can be generated).

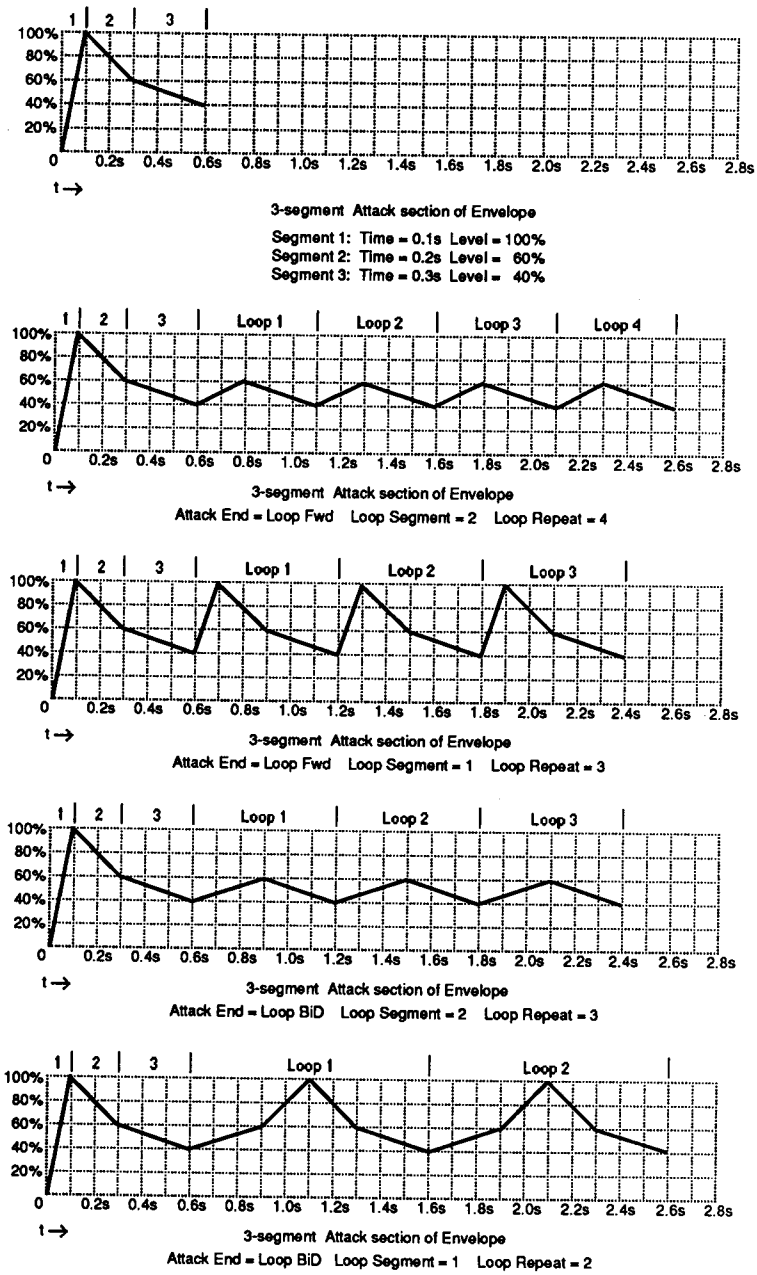
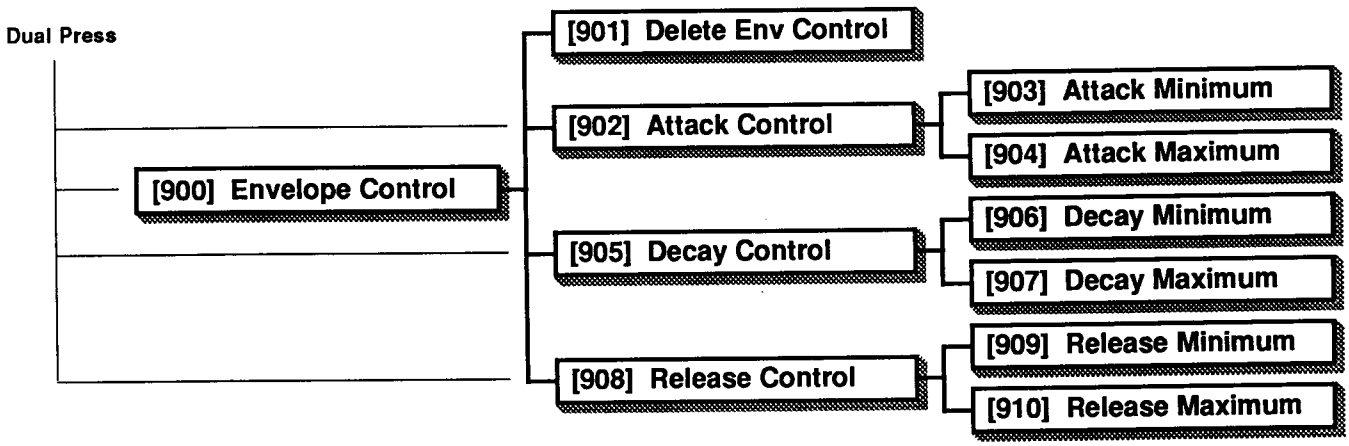



**Figure 9-4 Amplitude Envelope Programming Examples**

# Section IX




## 9.6.3 Envelope Control

The Envelope Control Module allows you to assign MIDI Control sources to multiply the specifications for the Amplitude Envelope and Envelope 2 by a factor of 0.1 to 10.0. This gives you real-time control over the specifications that you set for these Envelopes, affording a greater degree of performance versatility.

***Note*** — An Envelope must be defined in order to gain access to Parameters 902 through 904, which affect the Envelope's attack. You do not have to define an Envelope of your own to control the Decay and Release sections of the current Layer's preprogrammed envelope, however.

**900 Envelope Control**

This is the Menu heading.

**901 Delete Envelope Control**

- **YES**

Deletes all specifications for the Envelope Control Module. Pressing YES will initiate the deletion sequence.

**902 Attack Control**

- **Control Source List**

Enables you to determine which Control Source may be used to temporarily modify the Attack times of both of the Envelopes. The amount of modification is defined by Parameters 903 and 904.

**903 Attack Minimum**

- **x 0.100 to 10.000**
  - **Increase by factor of 10**

When the assigned Control Source (Parameter 902) sends its minimum Value, the Attack times of all the Attack segments in both Envelopes will be multiplied by the Value of this Parameter. (For example, if the Value is 0.100, the Attack times will be 1/10th their normally programmed Value.)

**904 Attack Maximum**

- **x 0.100 to 10.000**
  - **Increase by factor of 10**

When the assigned Control Source (Parameter 902) sends its maximum Value, the Attack

times of all the Attack segments in both Envelopes will be multiplied by the Value of this Parameter. (The 1200 Pro calculates the factor for Control Source Values between minimum and maximum.)

**905 Decay Control**

- **Control Source List**

Enables you to determine which Control Source may be used to temporarily modify the Decay times of both of the Envelopes.

Remember that a Decay section will exist only if you have assigned a Value of Decay to the Attack End Parameters (718 or 818) of either Envelope, or if both Envelopes are undefined and the preprogrammed envelope of the current Layer contains a Decay section.

**906 Decay Minimum**

- **x 0.100 to 10.000**
  - **Increase by factor of 10**

This Parameter operates for Decay times in the same fashion as Parameter 903 operates for Attack times.

**907 Decay Maximum**

- **x 0.100 to 10.000**
  - **Increase by factor of 10**

This Parameter operates for Decay times in the same fashion as Parameter 904 operates for Attack times.

**908 Release Control**

- **Control Source List**

Enables you to determine which Control Source may be used to temporarily modify the Release times of both of the Envelopes (or of the preprogrammed envelope, if both Envelopes are undefined).

**909 Release Minimum**

- **x 0.100 to 10.000**
  - **Increase by factor of 10**

This Parameter operates for Release times in the same fashion as Parameter 903 operates for Attack times.

**910 Release Maximum**

- **x 0.100 to 10.000**
  - **Increase by factor of 10**

This Parameter operates for Decay times in the same fashion as Parameter 904 operates for Attack times.

## 9.7 Pitch Control

The Pitch Control Module enables you to define two Control Sources for pitch modulation in each Layer of a Program. (See flowchart, next page.)

***Note*** — You do not have to define a Pitch Control Module in order to achieve Pitch Bend Effects. Pitch Bend is "hard-wired" to pitch control, and will function according to your specifications (Parameters 223 and 224) regardless of the status of the Pitch Control Module.

**920 Pitch Control**

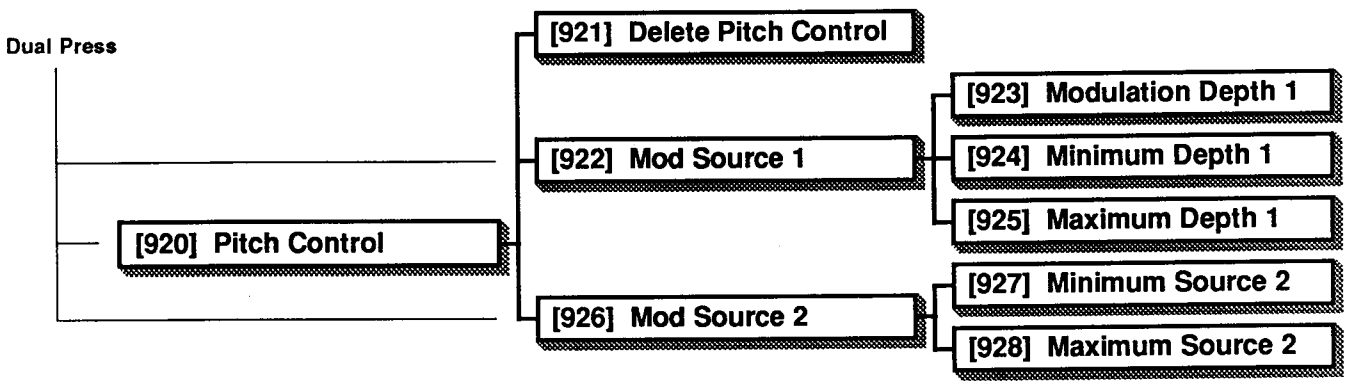
This is the Menu heading.

**921 Delete Pitch Control**

- **Yes**

Deletes the Pitch Control Module from the current Layer. Pressing YES will initiate the deletion sequence.

# Section IX




922 **Modulation Source 1**

- **Control Source List**

Determines which Control Source modifies pitch in the current Layer. Many of the 1200 Pro's preset Programs assign LFO1 as the Value for this Parameter, creating a Vibrato effect whenever LFO1 is triggered.

923 **Modulation Depth 1**

- **Control Source List**

Allows you to assign a Control Source to modify the depth of pitch modulation.

924 **Minimum Depth 1**

- **±100 ct**
  - **+10 ct**

Use this Parameter to define a fixed depth of pitch modulation at the minimum signal sent by Modulation Source 1. Pitch may be deflected up or down as far as one semitone (100 ct).

925 **Maximum Depth 1**

- **±100 ct**
  - **+10 ct**

Use this Parameter to define a fixed depth of pitch modulation at the maximum signal sent by Modulation Source 1.

926 **Modulation Source 2**

- **Control Source List**

This Parameter gives you a second source of control over pitch modulation.

Unlike Modulation Source 1, Modulation Source 2 does not allow a separate Control Source to modify the depth of modulation. Minimum and maximum pitch deflection are determined directly according to the Values you set with Parameters 927 and 928.

927 **Minimum Source 2**

- **±100 ct**
  - **+10 ct**

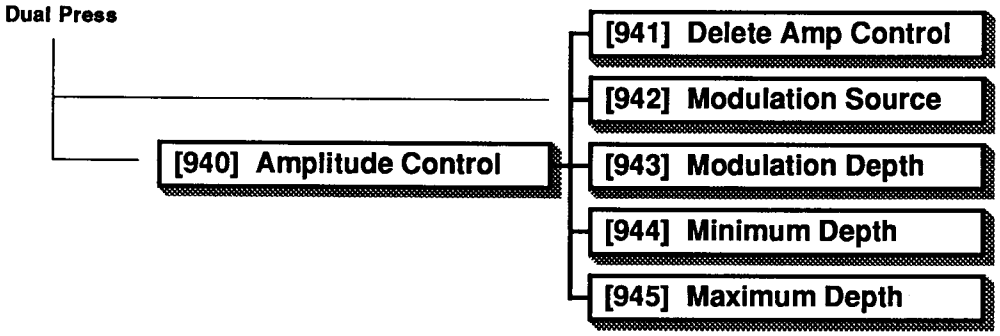
Defines the amount of pitch modulation which will occur when Modulation Source 2 sends its minimum signal.

928 **Maximum Source 2**

- **±100 ct**
  - **+10 ct**

Defines the amount of pitch modulation which will occur when Modulation Source 2 sends its maximum signal.

## 9.8 Amplitude Control




The Amplitude Control Module enables you to assign a Control Source to amplitude modulate the current Layer's output signal. The modulation is imposed in addition to—not in place of—the Amplitude Envelope (preprogrammed or user-defined).

**940 Amplitude Control**

This is the Menu heading.

**941 Delete Amplitude Control**

- **Yes**

Enables you to delete the Amplitude Control Module. Press YES to initiate the deletion sequence.

***Note*** — Deleting the Amplitude Control Module will not change the Amplitude Envelope. It merely removes the additional control over amplitude modulation that the Amplitude Control Module provides.

**942 Modulation Source**

- **Control Source List**

Enables you to assign the Control Source with which you will control Amplitude modulation.

**943 Modulation Depth**

- **Control Source List**

Enables you to assign a Control Source determining the amount (depth) of the modulation caused by the Amplitude Control Module.

**944 Minimum Depth**

- **±48 dB**
- **+6 dB**

Sets the amount (depth) of amplitude modulation when the Modulation Source (from Parameter 942) transmits its minimum signal.

**945 Maximum Depth**

- **±48 dB**
- **+6 dB**

Sets the amount (depth) of amplitude modulation when the Modulation Source (from Parameter 942) transmits its maximum signal.

## 10.3 Tremolo

Tremolo is similar to vibrato, but represents a variation in amplitude rather than pitch. Tremolo is included in most guitar amps, and the vibraphone incorporates an acoustical tremolo that is produced by a set of rotating valves inside its resonators.

Figure 10-2 illustrates a Tremolo patch (notice the similarity to Figure 10-1). The Amplitude Control Module is used to produce amplitude (loudness) modulation of the Soundfile by Global LFO1.

To create this patch:

- Select the "Palette" Program and enter Edit Mode. Optionally, select a different Soundfile for the new patch.
- Move to the Amplitude Control Menu (number 940), select Parameter 942 (Modulation Source), and set its Value to gLFO1.
- Select Parameter 943 (Modulation Depth) and set its Value to ON.
- Set Parameter 945 (Maximum Depth) to -3 dB.
- Move to the gLFO1 Menu (number 430), and set Parameter 433 (Maximum Rate) to 5.00 Hz.
- Finally, set Parameter 434 (Rate Control) to ON.

When you play your controller's keyboard, you will hear that each note now has a tremolo effect imposed on it.

You can elaborate on this patch by assigning different Control Sources to Parameters 434 (gLFO1 Rate Control) and 943 (Amplitude Control Modulation Depth). Greater Values for Parameters 433 (gLFO1 Maximum Rate) and 945 (Amplitude Control Maximum Depth) will produce more extreme effects.

***Note*** — We have used a Global LFO in this patch because tremolos on existing instruments (such as guitars and vibraphones) are global effects. That is, the tremolo effect "free-runs" all the time, and is imposed on every note in the same fashion. This differs from vibrato, which — on a clarinet, for example — is imposed by the player on each note individually.

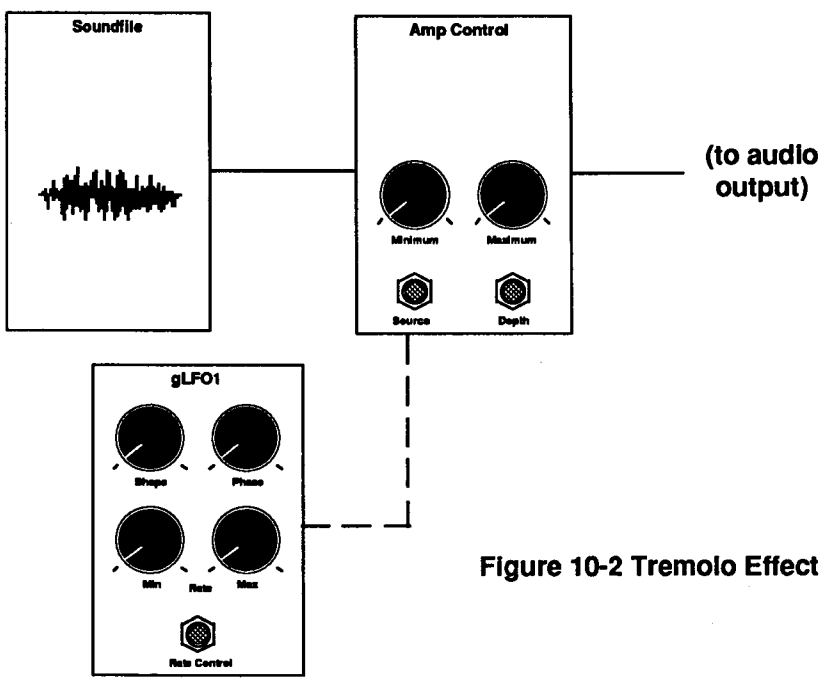



**Figure 10-2 Tremolo Effect**

## 10.4 Chorus

Chorusing is a pitch-related effect which simulates the sound of a section of instruments or voices (hence the term "chorus"). In such a section, minute variations in the pitches of individual voices produce a constantly varying cloud of "beat" frequencies as voices go in and out of tune with one another.

We can approximate this sound by using two Layers, each patched for a vibrato effect as shown in Figure 10-3. To create a chorus effect:

- Select the "Palette" Program and enter Edit Mode. Optionally, select a different Soundfile for the new patch.
- Following the instructions in Section 10.2, give the current Layer a vibrato effect, but with the following changes:
    - In the Pitch Control Menu, set Parameter 924 (Minimum Depth) to -2 ct and Parameter 925 (Maximum Depth) to +2 ct.
    - In the LFO1 Menu, set Parameter 413 (Maximum Rate) to 0.08 Hz.
- Now, select Layer Parameter 202 (Duplicate Layer) and press YES. The 1200 Pro will create a second Layer for the current Program.
- Select Parameter 213 (Detune) of Layer 2 and set it to 10 ct.
- Move to Parameter 413 (Maximum Rate) of Layer 2 and set it to 0.05 Hz.

When you play your controller's keyboard, you will hear that each note now has a slow, irregular varying chorus effect imposed on it. The density of the effect will change as you play thicker chords with different start times for individual notes.

You can elaborate on this patch by assigning different Control Sources to Parameters 414 (LFO1 Rate Control) and 923 (Pitch Control Modulation Depth 1). Greater Values for Parameters 413 (LFO1 Maximum Rate) and 925 (Pitch Control Maximum Depth 1) will produce more extreme effects.

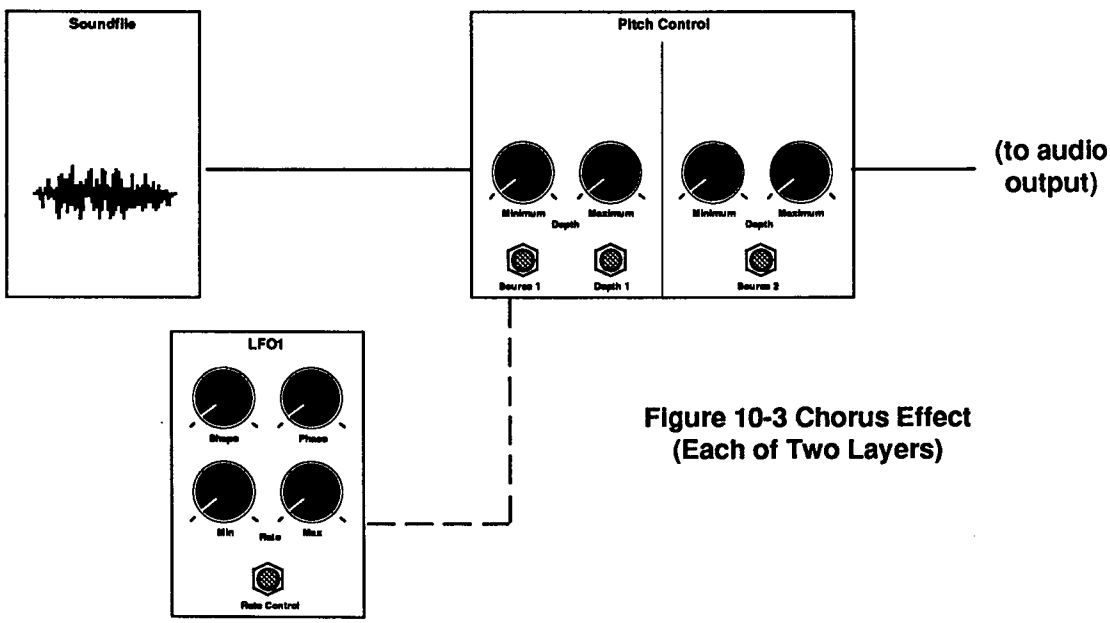



**Figure 10-3 Chorus Effect (Each of Two Layers)**

## 10.5 Leslie

The Leslie effect originated with a special loudspeaker cabinet that was made for Hammond electric organs. Within this cabinet, both the high-frequency and the low-frequency driver elements were coupled to a motor drive shaft that made them physically rotate. When the motor was switched on, a distinctive combination of pitch and amplitude modulation was produced as the elements whirled around in the cabinet.

We can approximate this effect with the patch in Figure 10-4 (next page). This complicated, two-Layer patch provides programmed pitch and amplitude modulation by two Global LFOs, controllable by your controller's Modulation Wheel. To create this patch:

- Select the "Palette" Program and enter Edit Mode. Optionally, select a different Soundfile for the new patch.
- Following the instructions in Section 10.2 and 10.3, give the current Layer both a vibrato effect and a tremolo effect, but with the following changes:
  - Make gLFO1 the Modulation Source for the Amplitude Control Module, and gLFO2 the Source for the Pitch Control.
  - In the Pitch Control Menu, set Parameter 924 (Minimum Depth 1) to -6 ct and Parameter 925 (Maximum Depth 1) to -14 ct. Set Parameter 923 (Modulation Depth 1) to MWheel.
  - In the Amplitude Control Menu, set Parameter 944 (Minimum Depth) to -3 dB and Parameter 945 (Maximum Depth) to -9 dB. Set Parameter 943 (Modulation Depth) to MWheel.
  - In the gLFO1 Menu, set Parameter 432 (Minimum Rate) to 3.60 Hz and Parameter 433 (Maximum Rate) to 7.50 Hz.
  - In the gLFO2 Menu, set Parameter 442 (Minimum Rate) to 3.60 Hz and Parameter 443 (Maximum Rate) to 6.30 Hz. Set Parameter 445 (Shape) to +Cosine.
- Now, select Layer Parameter 202 (Duplicate Layer) and press YES. The 1200 Pro will create a second Layer for the current Program.
- In the Pitch Control Menu of Layer 2, set Parameter 924 (Minimum Depth 1) to +6 ct and Parameter 925 (Maximum Depth 1) to +14 ct.
- In the Amplitude Control Menu of Layer 2, set Parameter 944 (Minimum Depth) to +3 dB and Parameter 945 (Maximum Depth) to +9 dB.

When you play your controller's keyboard, you will hear that the Program now has a slow, regular Leslie effect imposed on it. Adjusting the Mod Wheel should vary the intensity of the effect.

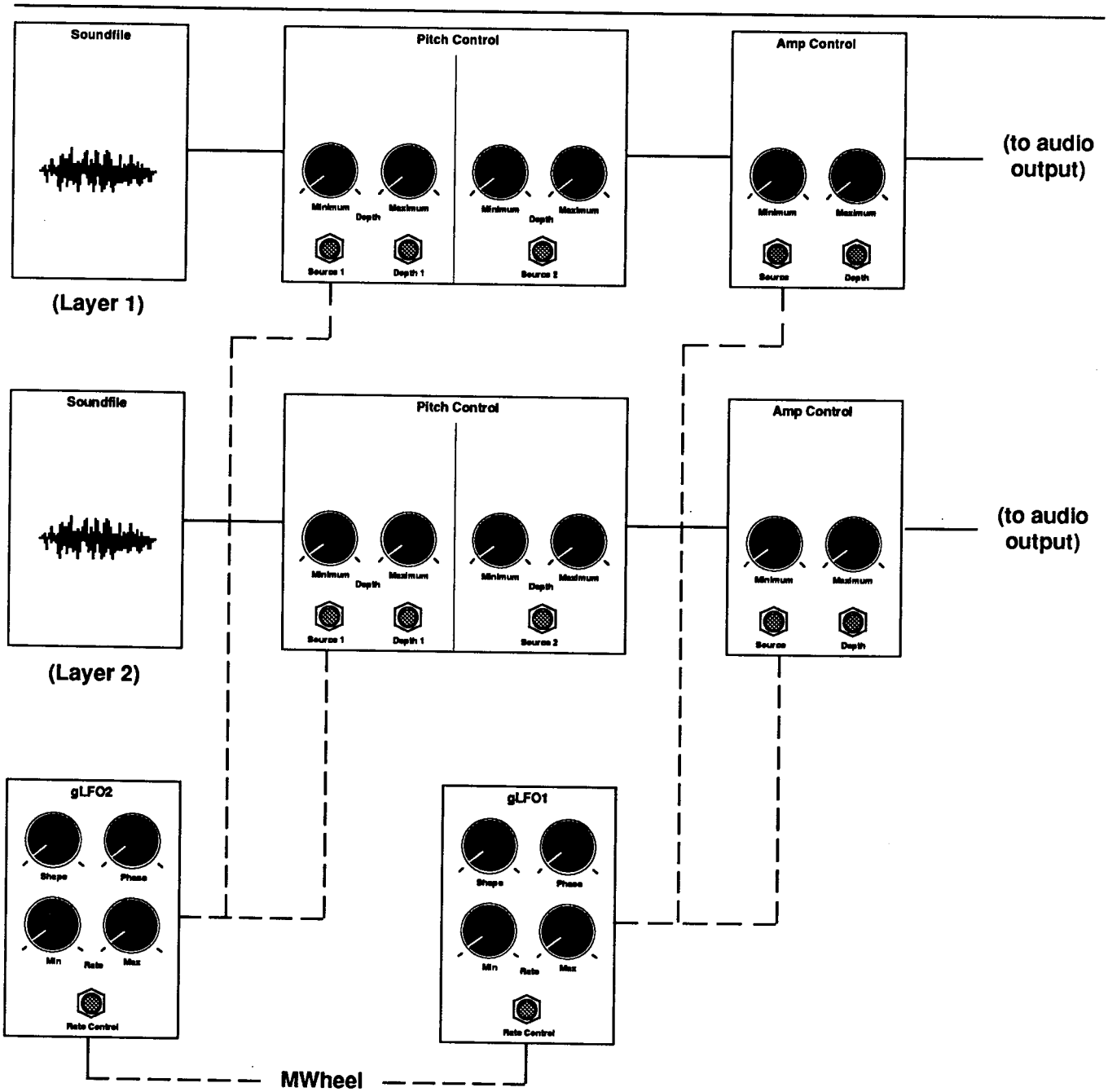



**Figure 10-4 Leslie Effect**

## 10.6 Using Velocity Triggers to Change Sounds

Some 1200 Pro Programs use dual Soundfiles. A Program with a dual Soundfile has access to two different sounds, even if there is only one Layer in the Program. The Electric Piano in the Pro I, for example, has a lot more "bite" when you play it hard—a bright sound is triggered by high velocities and a darker sound is triggered by low velocities.

The change in the Soundfiles in these kinds of programs is related to Note On Velocity. Each portion of the dual Soundfile is programmed to play within a specific range of Note On Velocities.

You can create a similar effect in a two-layer Program, using a Velocity Trigger. The Velocity Trigger can be used to bring in an additional Layer—one with the same Soundfile or a complete different one—or to cut out the first Layer and play only the second one. This is useful for building Programs with timbre changes based on Note On Velocity, and for Programs which allow you to get two completely different sounds from the same key of your controller's keyboard. Velocity Triggers can be used for many other purposes as well, but the effect described here is one of the most popular.

Here's how to build a Program which will play one sound when you play soft, and a different sound when you play hard:

Create a two-layer Program by adding a Layer to an existing one-Layer Program. Choose a Soundfile for Layer One (we'll call it Sound One), and a different Soundfile (Sound Two) for Layer Two. For each Layer, set the Value of Layer Enable (Layer Parameter 217) to VTrig 1. (There are two VTrigs for each Layer; use whichever you want, but keep track of your assignments.) Then select the VTrig 1 Parameter (Layer Parameter 232) for Layer One and set it to the level where you want the crossover to occur (ff is good for this example). Do the same for Layer Two.

If you test your work at this point, you should hear nothing if you play softer than the level you set for the VTrigs, and both Layers when you play above the VTrig threshold. If so, you're on the right track.

To set things up so that the sounds switch from soft to loud, you'll need to reverse the VTrig 1 Sense for one of the Layers. If you've set the VTrig at ff, and you want to hear Layer One when you play soft and Layer Two when you play hard, then select Layer One and locate the VTrig 1 Sense Parameter (Layer Parameter 233). Set its Value to Rvrs. At this setting, Layer One will play when the Note On Velocity is below the threshold set for VTrig 1. Leave the VTrig 1 Sense setting for Layer Two at Norm, and Layer Two will play only when the Note On Velocity is above the VTrig 1 Threshold.

## 10.7 Conclusion

These relatively simple examples only hint at the true programming power of the 1200 Pro. By carefully studying this *Programming Reference* and experimenting with your 1200's editing features, you will learn how to harness that power.

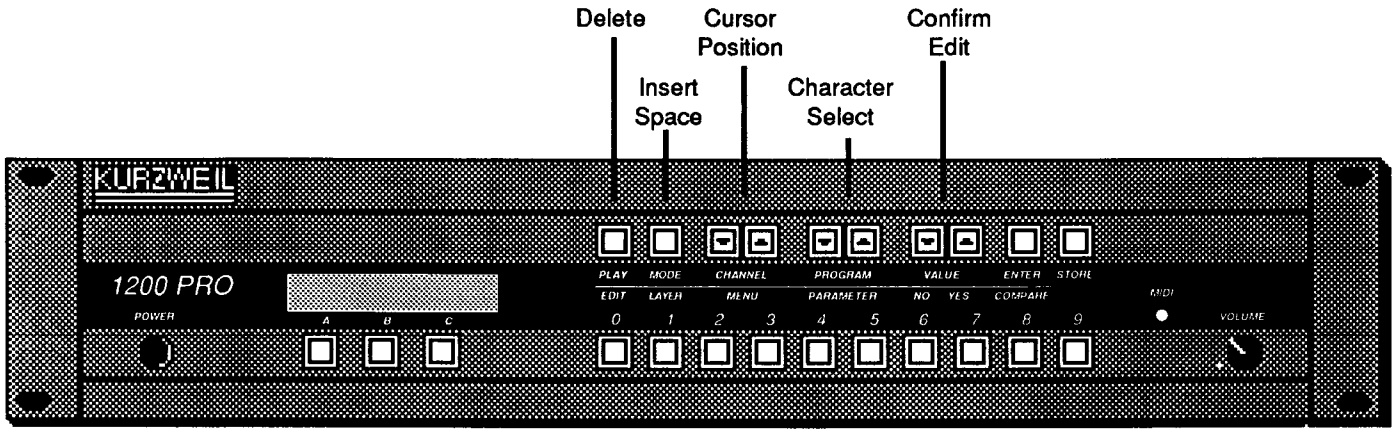
As an aid in learning about Effects editing, you can study the 1200's preprogrammed Compiled Effects. Assign a preset Compiled Effect to your "Palette" Program, then use Parameter 216 (Efx Edit Level) to change the Efx Edit Level to Modular. This will give you access to the Modular Effects Menus, allowing you to scroll through their Parameters and study the programmed Values for the Compiled Effect. (Changing from the Compiled to Modular Effects Level will also give you access to the "invisible" Layers generated by the more complex Compiled Effects.) You can also edit these Values, and then save the current Program to a RAM location.

***Note*** — If you return to the Compiled Effects Level before saving a Program which you have modified in this fashion, you will lose your changes. When you change from Modular to Compiled Effects, the connections between Modules are removed and replaced with the pre-programmed patches of the selected Compiled Effect.

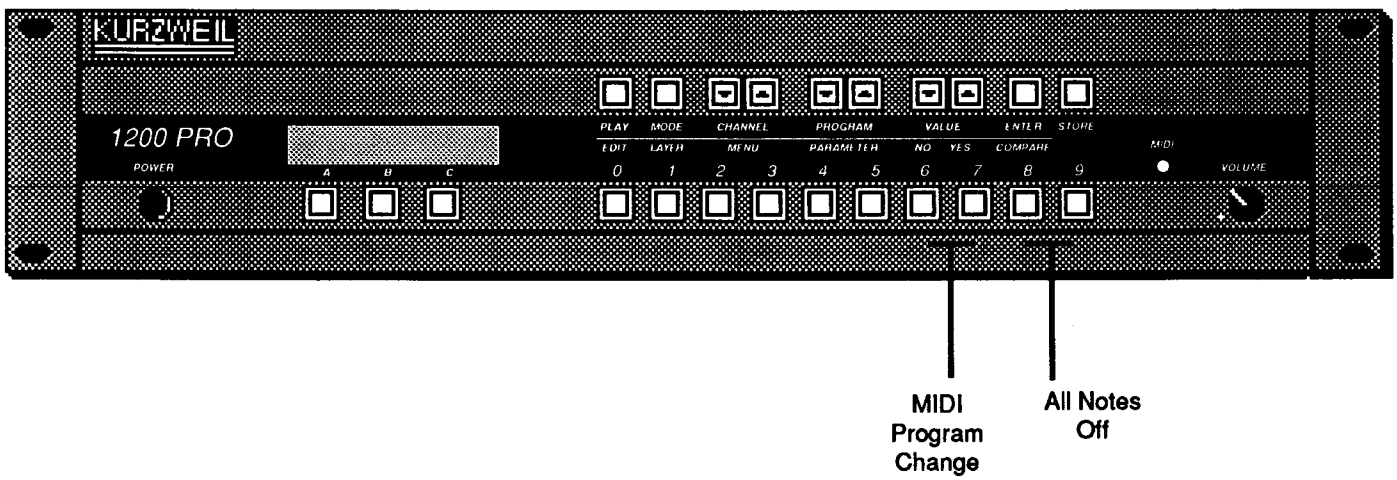
By applying your own personal creativity to Modular Effects editing, you can create a wealth of Programs that are uniquely yours, tailored to your personal musical style. And as you gain proficiency with the 1200 Pro's editing features, you'll find that the instrument allows you plenty of room to grow. In that process, it's important to remain open to the unexpected.

# Section XI
## REFERENCE

## 11.1 Functions of Buttons in the Naming Sequence




## 11.2 Performance Functions of Buttons in PLAY Mode



## 11.3 Compiled Effects Parameters

**Vibrato**

| | |
|---|---|
| [301] | Maximum Depth |
| [302] | Maximum Rate |
| [303] | Shape |
| [304] | Depth Control |
| [305] | Rate Control |

**Delay Vibrato**

| | |
|---|---|
| [301] | Maximum Depth |
| [302] | Maximum Rate |
| [303] | Shape |
| [304] | Delay |
| [305] | Ramp |
| [306] | Rate Control |

**Tremolo**

| | |
|---|---|
| [301] | Maximum Depth |
| [302] | Maximum Rate |
| [303] | Shape |
| [304] | Depth Control |
| [305] | Rate Control |

**Delay Tremolo**

| | |
|---|---|
| [301] | Maximum Depth |
| [302] | Maximum Rate |
| [303] | Shape |
| [304] | Delay |
| [305] | Ramp |
| [306] | Rate Control |

**Leslie**

| | |
|---|---|
| [301] | Rate |
| [302] | Depth |
| [303] | Ramp |
| [304] | Trigger |

**Chorus 2***

| | |
|---|---|
| [301] | Transpose |
| [302] | Detune |
| [303] | Delay |
| [304] | Enable |
| [305] | Pan 1 |
| [306] | Pan 2 |

**Tremolo 2***

| | |
|---|---|
| [301] | Maximum Rate |
| [302] | Maximum Depth |
| [303] | Shape |
| [304] | Rate Control |
| [305] | Depth Control |
| [306] | Pan 1 |
| [307] | Pan 2 |

**Vibrato / Chorus 2***

| | |
|---|---|
| [301] | Maximum Rate |
| [302] | Maximum Depth |
| [303] | Shape |
| [304] | Rate Control |
| [305] | Depth Control |
| [306] | Transpose |
| [307] | Detune |
| [308] | Delay |
| [309] | Enable |
| [310] | Pan 1 |
| [311] | Pan 2 |

**Phaser 2***

| | |
|---|---|
| [301] | Maximum Rate |
| [302] | Depth |
| [303] | Ramp |
| [304] | Shape |
| [305] | Rate Control |
| [306] | Detune |
| [307] | Delay |
| [308] | Pan 1 |
| [309] | Pan 2 |

**Leslie 2***

| | |
|---|---|
| [301] | Rate |
| [302] | Depth |
| [303] | Ramp |
| [304] | Trigger |
| [305] | Pan 1 |
| [306] | Pan 2 |

**Chorus 3***

| | |
|---|---|
| [301] | Transpose |
| [302] | Detune |
| [303] | Delay |
| [304] | Enable |
| [305] | Pan 1 |
| [306] | Pan 2 |
| [307] | Pan 3 |

**Echo 3***

| | |
|---|---|
| [301] | Delay |
| [302] | Decay |
| [303] | Enable |
| [304] | Pan 1 |
| [305] | Pan 2 |
| [306] | Pan 3 |

*Uses additional "invisible" Layers.

# Section XI

## 11.4 1000 Series Control Source List

| Name | Display | Config | Type |
|---|---|---|---|
| Off | OFF | Logical | Global |
| On | ON | Logical | Global |
| None | None | — | — |
| Modulation Wheel (MIDI 01) | M Wheel | Unipolar | Global |
| Breath Controller (MIDI 02) | Breath | | |
| MIDI 03 | MIDI 03 | | |
| Foot Switch (MIDI 04) | Foot | | |
| Portamento Time (MIDI 05) | PortTim | | |
| Data Entry (MIDI 06) | Data | | |
| Volume (MIDI 07) | Volume | | |
| Balance (MIDI 08) | Balance | | |
| MIDI 09 | MIDI 09 | | |
| Stereo Pan (MIDI 10) | Pan | | |
| Expression (MIDI 11) | Express | | |
| MIDI 12 | MIDI 12 | | |
| MIDI 13 | MIDI 13 | | |
| MIDI 14 | MIDI 14 | | |
| MIDI 15 | MIDI 15 | | |
| Performance Control A (MIDI 16) | Ctl A | | |
| Performance Control B (MIDI 17) | Ctl B | | |
| Performance Control C (MIDI 18) | Ctl C | | |
| Performance Control D (MIDI 19) | Ctl D | | |
| MIDI 20 | MIDI 20 | | |
| MIDI 21 | MIDI 21 | | |
| MIDI 22 | MIDI 22 | | |
| MIDI 23 | MIDI 23 | | |
| MIDI 24 | MIDI 24 | | |
| MIDI 25 | MIDI 25 | | |
| MIDI 26 | MIDI 26 | | |
| MIDI 27 | MIDI 27 | | |
| MIDI 28 | MIDI 28 | | |
| MIDI 29 | MIDI 29 | | |
| MIDI 30 | MIDI 30 | | |
| MIDI 31 | MIDI 31 | | |
| Sustain Pedal (MIDI 64) | Sustain | | |
| Portamento Switch (MIDI 65) | Port Sw | | |
| Sostenuto Pedal (MIDI 66) | Sost Pd | | |
| Soft Pedal (MIDI 67) | Soft Pd | | |
| MIDI 68 | MIDI 68 | | |
| Freeze Pedal (MIDI 69) | Frez Pd | | |
| MIDI 70 | MIDI 70 | | |
| MIDI 71 | MIDI 71 | | |
| MIDI 72 | MIDI 72 | | |
| MIDI 73 | MIDI 73 | | |
| MIDI 74 | MIDI 74 | | |
| MIDI 75 | MIDI 75 | | |
| MIDI 76 | MIDI 76 | | |
| MIDI 77 | MIDI 77 | | |

| Name | Display | Config | Type |
|---|---|---|---|
| MIDI 78 | MIDI 78 | Unipolar | Global |
| MIDI 79 | MIDI 79 | | |
| Performance Control E (MIDI 80) | Ctl E | | |
| Performance Control F (MIDI 81) | Ctl F | | |
| Performance Control G (MIDI 82) | Ctl G | | |
| Performance Control H (MIDI 83) | Ctl H | | |
| MIDI 84 | MIDI 84 | | |
| MIDI 85 | MIDI 85 | | |
| MIDI 86 | MIDI 86 | | |
| MIDI 87 | MIDI 87 | | |
| MIDI 88 | MIDI 88 | | |
| MIDI 89 | MIDI 89 | | |
| MIDI 90 | MIDI 90 | | |
| MIDI 91 | MIDI 91 | | |
| MIDI 92 | MIDI 92 | | |
| MIDI 93 | MIDI 93 | | |
| MIDI 94 | MIDI 94 | | |
| MIDI 95 | MIDI 95 | | |
| Pitch Wheel | P Wheel | Bipolar | Global |
| Monophonic Afterpressure | M Press | Unipolar | Global |
| Poylphonic Afterpressure | P Press | Unipolar | Local |
| Attack Velocity | Att Vel | Unipolar | Local |
| Release Velocity | Rel Vel | Unipolar | Local |
| Note State | Note St | Logical | Local |
| Key State | Key St | Logical | Local |
| Key Number | Key Num | Unipolar | Local |
| Local LFO 1 Output | LFO1 | Bipolar | Local |
| Local LFO2 Output | LFO2 | Bipolar | Local |
| Local LFO1 Phase | LFO1ph | Bipolar | Local |
| Local LFO2 Phase | LFO2ph | Bipolar | Local |
| Global LFO1 Output | gLFO1 | Bipolar | Global |
| Global LFO2 Output | gLFO2 | Bipolar | Global |
| Global LFO1 Phase | gLFO1ph | Bipolar | Global |
| Global LFO2 Phase | gLFO2ph | Bipolar | Global |
| Local ASR1 Output | ASR1 | Unipolar | Local |
| Local ASR2 Output | ASR2 | Unipolar | Local |
| Global ASR1 Output | gASR1 | Unipolar | Global |
| Global ASR2 Output | gASR2 | Unipolar | Global |
| Mixer 1 Output | MXR1 | Bipolar | Local |
| Mixer 2 Output | MXR2 | | |
| Inverter 1 Output | INV1 | | |
| Inverter 2 Output | INV2 | | |
| Negator 1 Output | NEG1 | | |
| Negator 2 Output | NEG2 | | |
| Amplitude Envelope | Amp ENV | Unipolar | Local |
| Envelope 2 | ENV2 | Bipolar | Local |
| Velocity Trigger 1 | VTrig1 | Logical | Local |
| Velocity Trigger 2 | VTrig2 | Logical | Local |
| Inverted Attack Velocity | InvAVel | Unipolar | Local |
| Inverted Release Velocity | InvRVel | Unipolar | Local |
| Playback Rate | PB Rate | Unipolar | Local |
| Absolute Pitch Wheel | Abs P-Whl | Unipolar | Global |
| Bipolar Mod Wheel | Bi M-Whl | Bipolar | Global |
| Channel State | Chan St | Logical | Global |

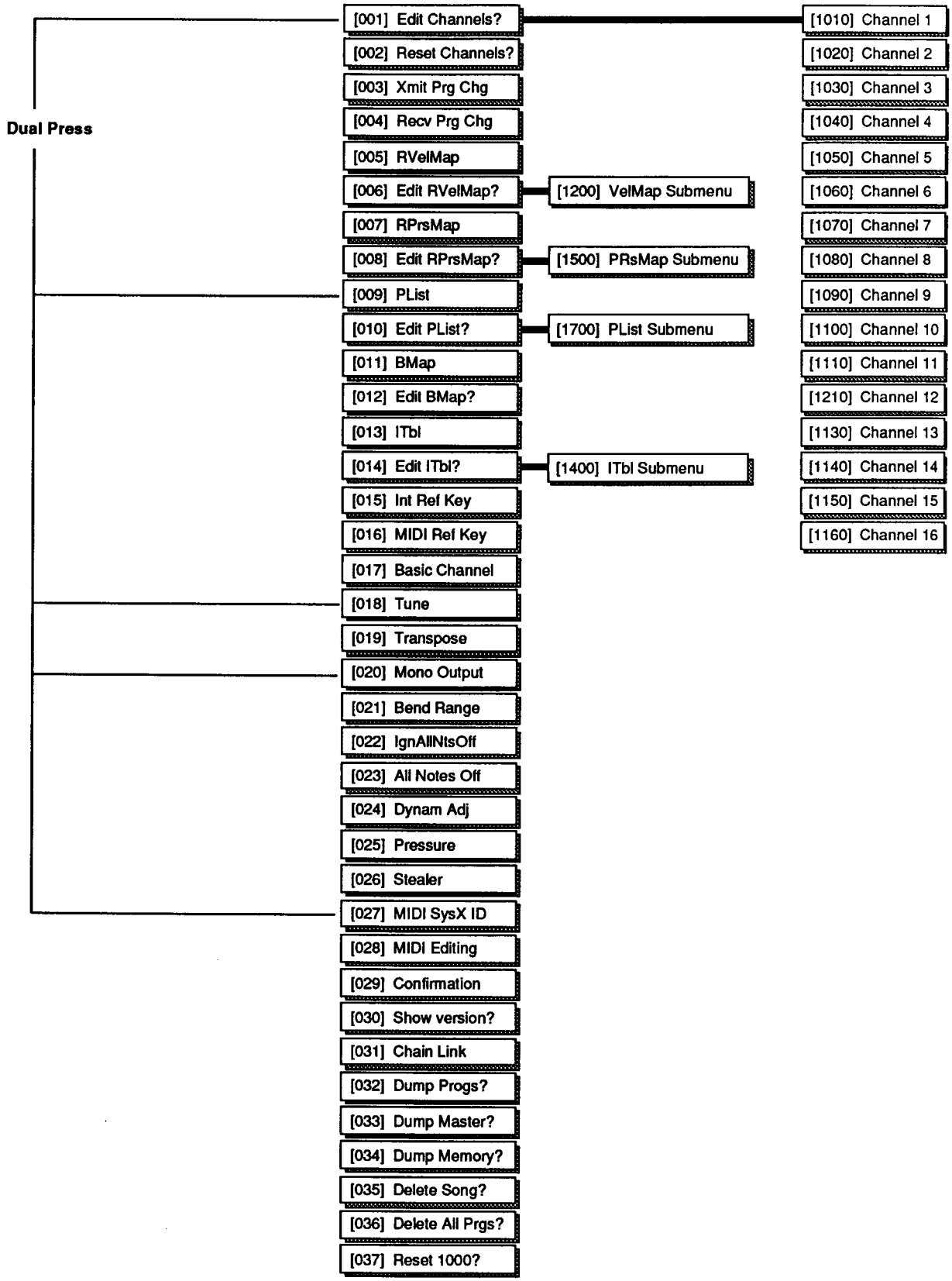
# Section XI

## 11.5 Standardized MIDI Control Numbers

| MIDI # | Name | 1200 Display |
|---|---|---|
| 01 | Modulation Wheel | M Wheel |
| 02 | Breath Controller | Breath |
| 04 | Foot Controller | Foot |
| 05 | Portamento Time | PortTim |
| 06 | Data Entry | Data |
| 07 | Volume | Volume |
| 08 | Balance | Balance |
| 10 | Pan | Pan |
| 11 | Expression | Express |
| 16 | Performance A | Ctl A |
| 17 | Performance B | Ctl B |
| 18 | Performance C | Ctl C |
| 19 | Performance D | Ctl D |
| 64 | Sustain Pedal | Sustain |
| 65 | Portamento Switch | Port Sw |
| 66 | Sostenuto Pedal | Sost Pd |
| 67 | Soft Pedal | Soft Pd |
| 69 | Freeze Pedal | Frez Pd |
| 80 | Performance E | Ctl E |
| 81 | Performance F | Ctl F |
| 82 | Performance G | Ctl G |
| 83 | Performance H | Ctl H |

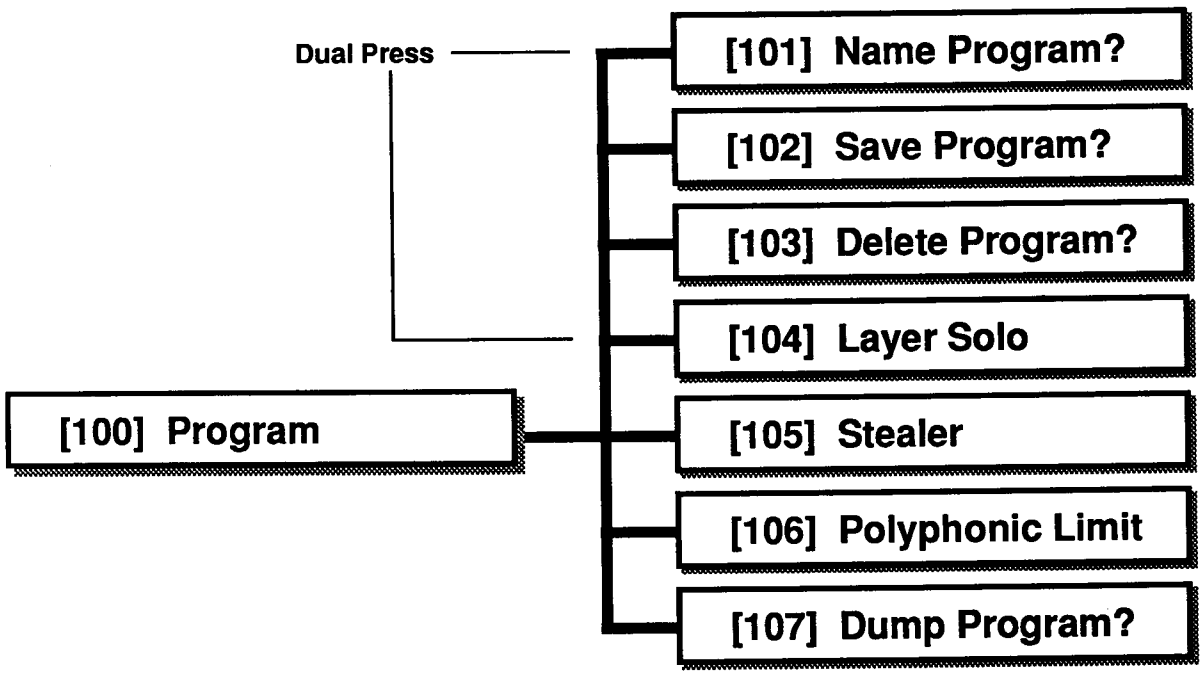
The MIDI Control Sources listed above are standardized in the MIDI 1.0 Specification. Most manufacturers of MIDI equipment acknowledge these standards, and program their products according to the functions indicated by the names of these Control destinations. For further information regarding the MIDI implementation for equipment that you wish to use with your SE II, consult the manufacturer's documentation.

## 11.6 The Master Menu

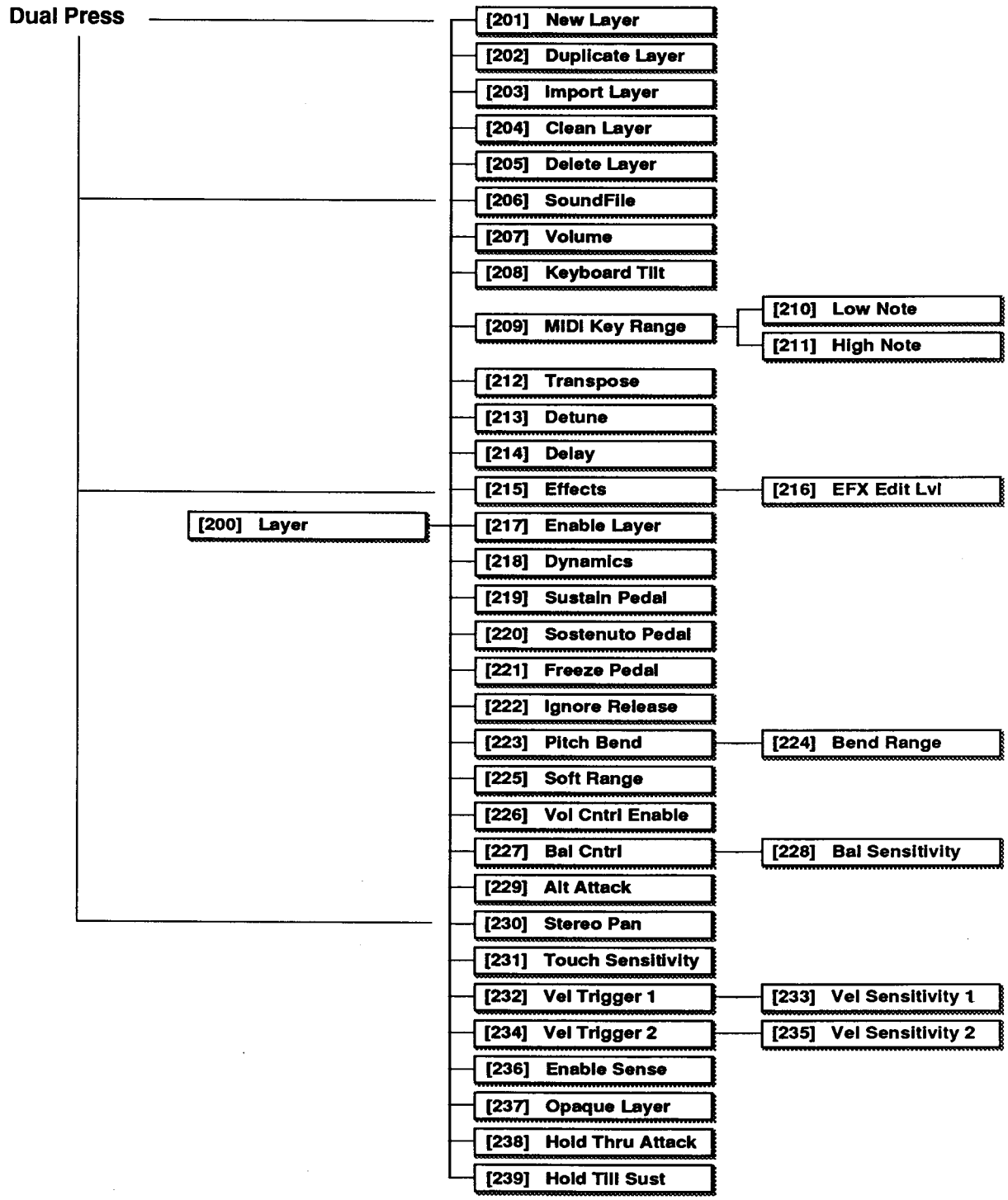


# Section XI

## 11.7 The Program Menu

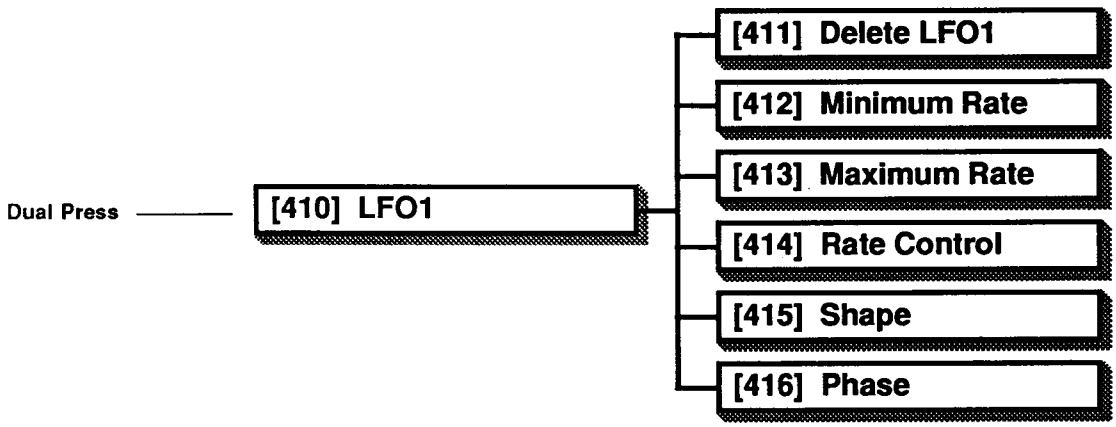


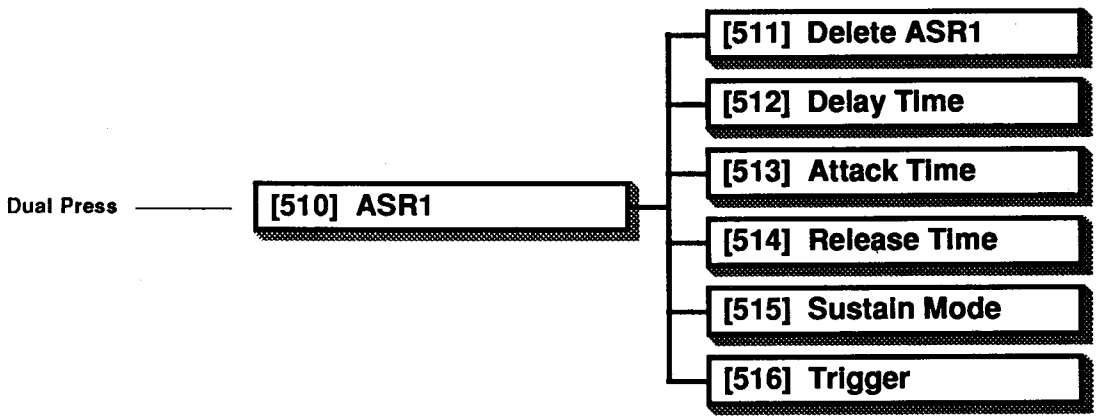
## 11.8 The Layer Menu

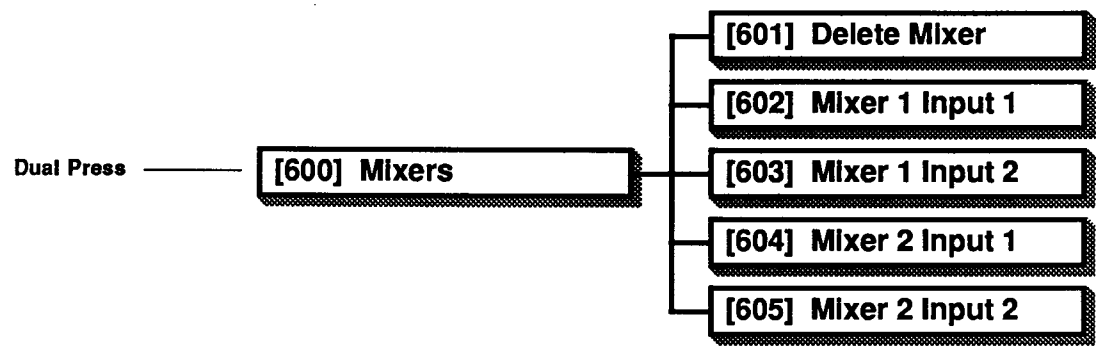


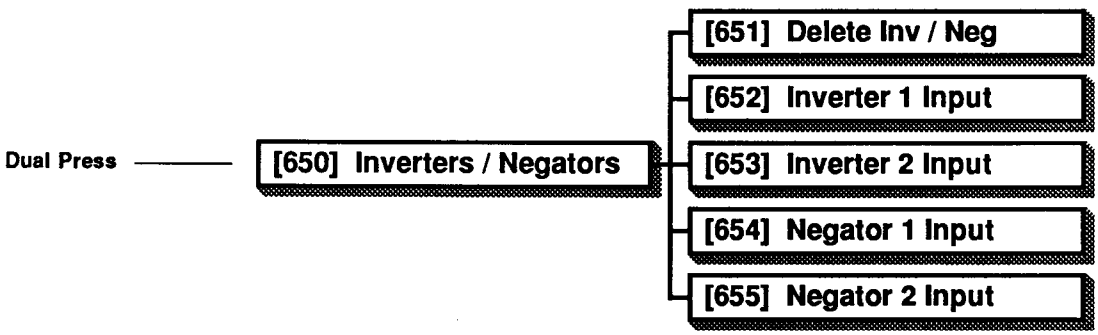
# Section XI

## 11.9 Modular Effects Menus

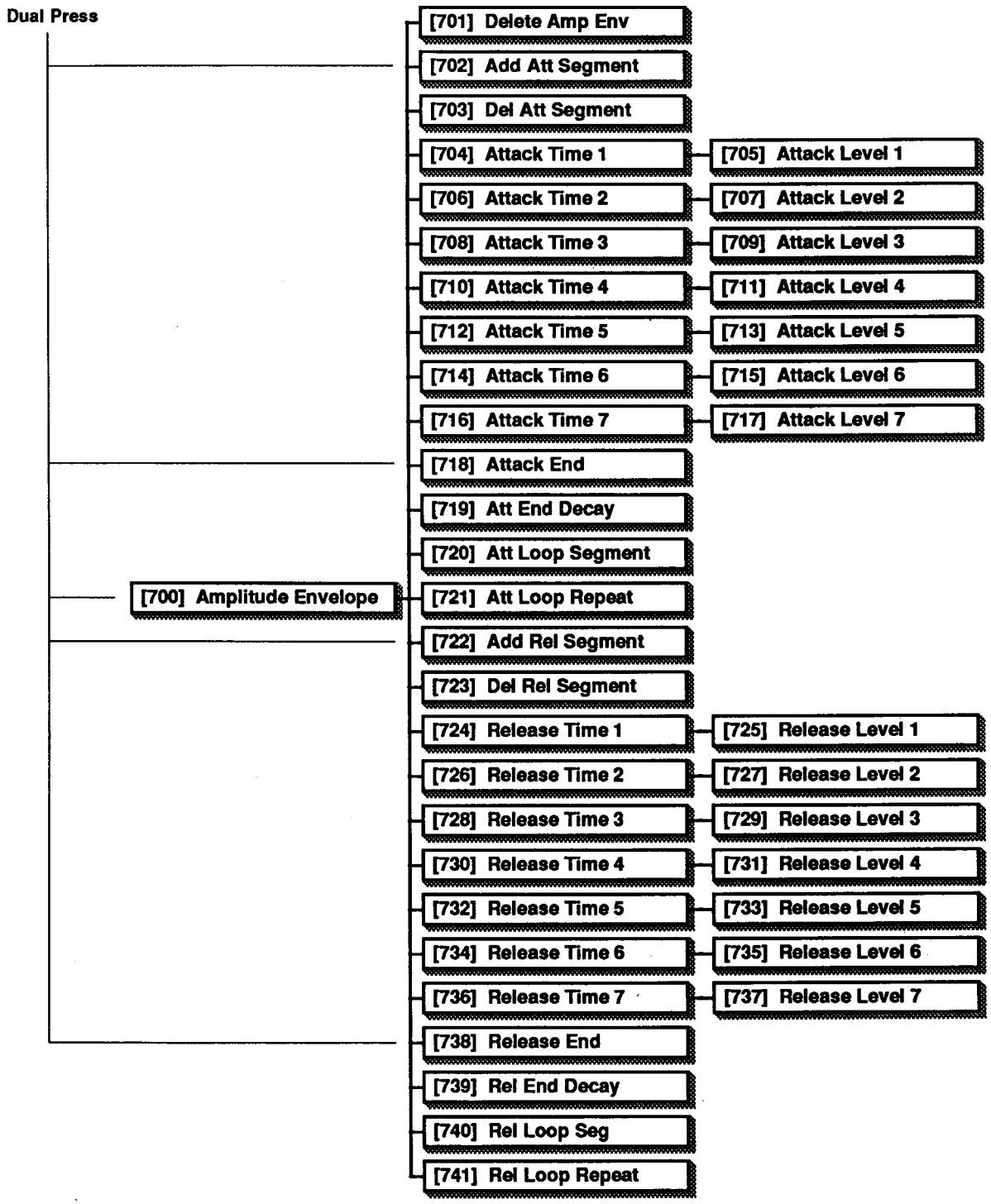


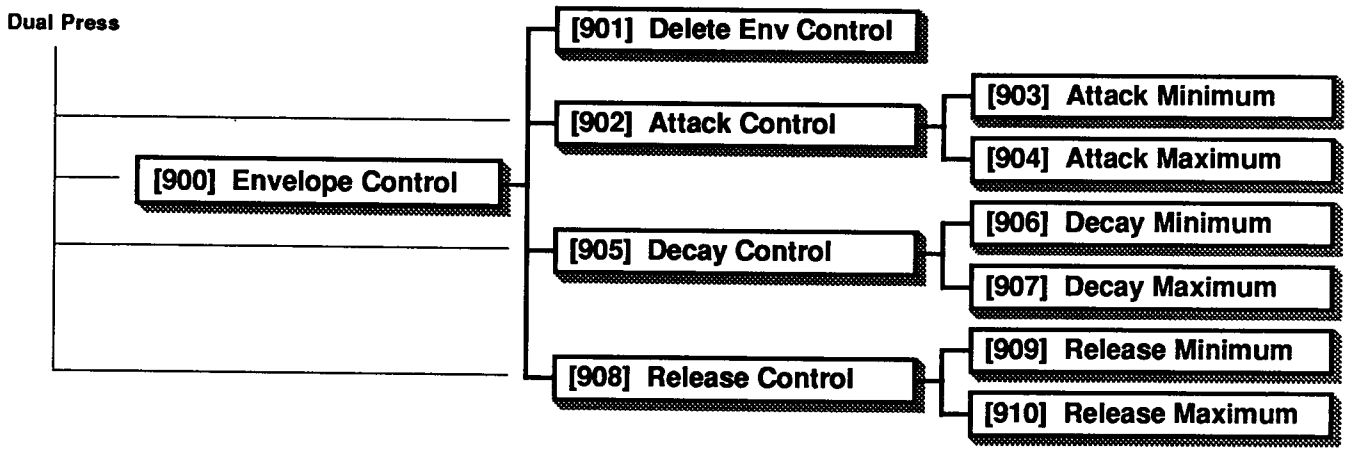



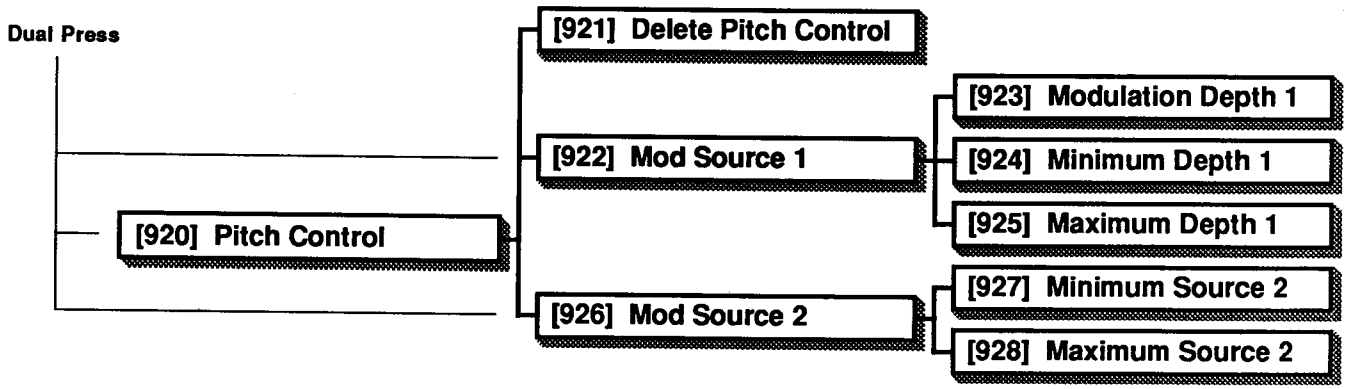

Dual Press
[600] Mixers
[601] Delete Mixer
[602] Mixer 1 Input 1
[603] Mixer 1 Input 2
[604] Mixer 2 Input 1
[605] Mixer 2 Input 2

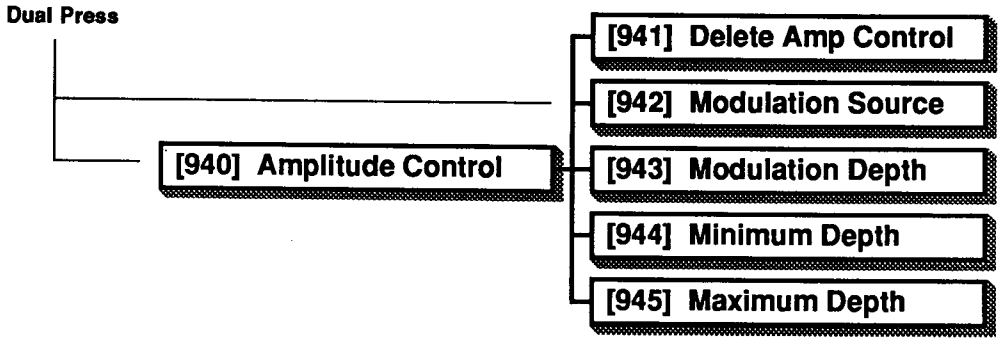

Dual Press
[650] Inverters / Negators
[651] Delete Inv / Neg
[652] Inverter 1 Input
[653] Inverter 2 Input
[654] Negator 1 Input
[655] Negator 2 Input

# Section XI


Dual Press
[700] Amplitude Envelope
[701] Delete Amp Env
[702] Add Att Segment
[703] Del Att Segment
[704] Attack Time 1
[705] Attack Level 1
[706] Attack Time 2
[707] Attack Level 2
[708] Attack Time 3
[709] Attack Level 3
[710] Attack Time 4
[711] Attack Level 4
[712] Attack Time 5
[713] Attack Level 5
[714] Attack Time 6
[715] Attack Level 6
[716] Attack Time 7
[717] Attack Level 7
[718] Attack End
[719] Att End Decay
[720] Att Loop Segment
[721] Att Loop Repeat
[722] Add Rel Segment
[723] Del Rel Segment
[724] Release Time 1
[725] Release Level 1
[726] Release Time 2
[727] Release Level 2
[728] Release Time 3
[729] Release Level 3
[730] Release Time 4
[731] Release Level 4
[732] Release Time 5
[733] Release Level 5
[734] Release Time 6
[735] Release Level 6
[736] Release Time 7
[737] Release Level 7
[738] Release End
[739] Rel End Decay
[740] Rel Loop Seg
[741] Rel Loop Repeat


Dual Press
[900] Envelope Control
[901] Delete Env Control
[902] Attack Control
[903] Attack Minimum
[904] Attack Maximum
[905] Decay Control
[906] Decay Minimum
[907] Decay Maximum
[908] Release Control
[909] Release Minimum
[910] Release Maximum


Dual Press
[920] Pitch Control
[921] Delete Pitch Control
[922] Mod Source 1
[923] Modulation Depth 1
[924] Minimum Depth 1
[925] Maximum Depth 1
[926] Mod Source 2
[927] Minimum Source 2
[928] Maximum Source 2


Dual Press
[940] Amplitude Control
[941] Delete Amp Control
[942] Modulation Source
[943] Modulation Depth
[944] Minimum Depth
[945] Maximum Depth

# Section XII
## APPENDIX

## 12.1 Value Resolutions

### 12.1.1 Time Values

In the 1200 Pro's Edit Menus, time is expressed in seconds, with a normal maximum resolution (amount of increase or decrease in Value with each button stroke) of 0.01 s. Time Values range from a minimum of 0.00 s to a maximum of 10.00 s.

As you scroll through the range of Values for a time-oriented Parameter, you will notice that the resolution *decreases* as the Value *increases*. By adjusting the minimum time increment upward as the Value increases, the 1200 Pro's software assures that, in each time range, you will be stepping by a perceptually significant increment. This feature speeds the editing process.

Figure 12-1 illustrates the 1200 Pro's normal editing resolution for each time Value range.

**Layer Delay** — Parameter 214 (Layer Delay) is the only Parameter in the 1200 Pro that allows greater than normal resolution over its entire range: the maximum resolution for Parameter 214 is one millisecond (0.001 s).

Kurzweil's software engineers have provided finer resolution for Layer Delay because it is the sole time-oriented Parameter for which very fine increments in Value can have a significant audible effect. Layer Delays may be used to produce a variety of effects, from chorusing (small delay Values) to strumming and echo effects (larger delay Values).

The resolution at various ranges for Parameter 214 is shown in Figure 12-2.

### 12.1.2 Rate Values

Rates are expressed in Hertz (cycles per second). As with Time Values, Rate Values have different resolutions in different ranges. Figure 12-3 illustrates the 1200 Pro's normal editing resolution for each rate (frequency) Value range.

| Range | Resolution |
|---|---|
| 0.00 – 1.00 s | .01 s |
| 1.00 – 2.00 s | .02 s |
| 2.00 – 5.00 s | .05 s |
| 5.00 – 9.00 s | .10 s |
| 9.00 – 10.00 s | .20 s |

**Figure 12-1 Time Value Resolution For Various Ranges**

| Range | Resolution |
|---|---|
| 0.000 – 0.050 s | .001 s |
| 0.050 – 0.100 s | .002 s |
| 0.100 – 0.200 s | .005 s |
| 0.200 – 0.500 s | .010 s |
| 0.500 – 1.000 s | .020 s |
| 1.000 – 2.000 s | .050 s |
| 2.000 – 10.000 s | .100 s |

**Figure 12-2 Layer Delay Time Value Resolution**

| Range | Resolution |
|---|---|
| 0.00 – 0.20 Hz | .01 Hz |
| 0.20 – 1.00 Hz | .05 Hz |
| 1.00 – 10.00 Hz | .10 Hz |
| 10.00 – 20.00 Hz | .20 Hz |
| 20.00 – 50.00 Hz | .50 Hz |

**Figure 12-3 Rate Value Resolution For Various Ranges**

## 12.2 Self-Diagnostics

The 1200 Pro's software includes a set of diagnostic routines which you can run yourself. If you suspect a malfunction in your 1200 Pro, you can use these diagnostics to help determine whether the unit needs to be serviced.

**WARNING:** The RAM test—part of the self-diagnostics—will completely erase the 1200 Pro's Random Access Memory. This will delete all of the programming changes you have made to the 1200 Pro, including User Programs, RAM Songs, Master Parameter settings, and control settings. Before performing the self-diagnostics on your 1200 Pro, you should save your programming work using ObjectMover. If you do not have ObjectMover, you may not wish to perform the self-diagnostics.

To enter self-diagnostic mode, first turn the 1200 Pro off. Connect a MIDI cable from the MIDI Out port to the MIDI In port. Hold down the "C" and PLAY/EDIT buttons, and turn the unit back on.

***Important*** — Set the Volume Slider to minimum. The Sound ROM Test generates full-volume waveforms which may damage your audio system.

The display will briefly show something like:

```
K1000KXA      Test
Supervisor    v1.50
```

It then will show:

```
KDIAGS MAIN MENU
>BURN IN
```

Press the PROGRAM UP button, and the display will respond:

```
KDIAGS MAIN MENU
>RUN ALL
```

Press YES, and the display will read:

```
NUMBER OF PASSES
>  1
```

Press YES again to begin the test sequence.

The display will identify each test while it is running, as follows:

```
Program ROM Test
Setup ROM Test
RAM Test
Battery Backup Test
Timer Test
UART Test
VLSI 1 Test
VLSI 2 Test
Sound ROM Test
One Sample Test
```

Eventually you will see a display for the Sine Wave test:

```
SINE WAVE
Step 1          1000 Hz
```

Press any button to step through the Sine Wave test's 11 steps, or Press NO to skip to the next test, the LCD test. This test runs automatically. When it is finished, the button test begins. Pressing each button in turn should display the button's function.

Press NO twice to exit the button test. When you do, the display will show a test summary:

```
PASSES>00001
ERRORS>00000
```

If the display shows anything other than 00000 for the number of errors, call your Kurzweil deal.

***Note***—If you do not make the MIDI cable connection loop described above, the 1200 Pro will register one test failure, and will generate a number of error messages. The error displays will last for only a few seconds each, and will not interrupt the test. At the end of the test summary, the display will show which test failed.

***A failed MIDI loop test probably does not indicate a malfunction.***

After displaying the tests results, the 1200 Pro will return to the ">BURN IN" display. Press the PROGRAM DOWN button. The display will read:

```
KDIAGS MAIN MENU
>EXIT
```

Press YES, and the 1200 Pro will return to Play Mode.

## 12.3 1000 Series Sysex Messages

The following is a description of system exclusive messages which can be sent to any Kurzweil 1000 Series product. All values are expressed in hexadecimal. In some cases, the decimal equivalent is given in parentheses immediately after the hexadecimal value.

**VERSION REQUEST**

The 1200 responds to the standard MIDI version request message:

$F0 $7E <device ID> $06 $01 $F7

The 1200 defaults to a Device ID of $00, although it may be set to any value from $00 to $7F (127). The 1200 Pro responds to version request messages in the following format:

```
$F0 $7E     <device ID> $06 $02   ; response to version request
            $07                   ; Kurzweil ID
            p1 p2 p3 p4           ; product ID
            e1 e2                 ; engine software version
            s1 s2                 ; setup software version
$F7
```

p1 through p4 represent four hexadecimal numerals which constitute the product ID. p1 is the major product heading (150 FS, 250, or 1000, ), and p2 through p4 distinguish the various models within the major headings.

The product ID code for a 1200 Pro, for example would be: p1 = $64 (100); p2 = $01; p3 = $05; p4 = $02. (p3 will vary depending on whether the unit is a Pro I, II, or III.) The table below shows the codes for various Kurzweil products with SysEx capabilities.

| ID# | | | PRODUCT | |
|---|---|---|---|---|
| $15 | | | | 150 FS |
| $19 (25) | | | | K250 or 250 RMX |
| $64 (100) | $01 | $00 | $00 | 1000PX |
| | $01 | $05 | $00 | AX PLUS |
| | $01 | $01 | $01 | PX PLUS |
| | $01 | $03 | $00 | 1000HX |
| | $01 | $02 | $00 | 1000SX |
| | $01 | $04 | $00 | 1000GX |
| | $02 | $01 | $00 | K1000 SE |
| | $03 | $01 | $01 | 1000EX |
| | $04 | $01 | $00 | EGP |
| p1 | p2 | p3 | p4 | |

e1, e2, s1, and s2 represent the hexadecimal values indicating the software version of the unit, e1 and e2 indicate the engine (operating system) software, which is common to groups of Kurzweil products. s1 and s2 indicate the setup software. It is the setup software which distinguishes a GX from an AX, etc. For both engine and setup software, the first numeral is the major version number, and the second is the subversion, if any. For example, version 1.0 would be represented as $01 $00. Version 2.14 would be $02 $0E (2 14 in decimal).

**REMOTE FRONT PANEL**

The remote front panel messages allow control of the 1200 Pro's front panel over MIDI. The format of the message is

$F0 $07 <device ID> $64 $01 <buttons> $F7

where $64 (100) is the major product ID (i.e., 1000 series) and <buttons> is any of a number of button codes:

| CODE | BUTTON | |
|---|---|---|
| $00 | (0) | digit '0' |
| . | . | . |
| . | . | . |
| . | . | . |
| $09 | (9) | digit '9' |

## 1000 Series Sysex Messages, continued...

| CODE | | BUTTON |
|---|---|---|
| $10 | (16) | play/edit |
| $11 | (17) | mode/layer |
| $12 | (18) | chan/menu increment |
| $13 | (19) | chan/menu decrement |
| $14 | (20) | chan/menu incr & decr (double press) |
| $15 | (21) | prog/param increment |
| $16 | (22) | prog/param decrement |
| $17 | (23) | prog/param incr & decr (double press) |
| $18 | (24) | value increment/yes |
| $19 | (25) | value decrement/no |
| $1A | (26) | value incr & decr (double press) |
| $1B | (27) | enter |
| $1C | (28) | store |
| $20 | (32) | bank 'A' |
| $21 | (33) | bank 'B' |
| $22 | (34) | bank 'C' |
| $7F | (127) | send display |

Whenever the special "send display" button ($7F) is sent, the 1000 responds with

$F0 $07 <device ID> $64 $02 <display text> $F7

where <display text> is the content of the 1000 display as ordinary ASCII characters.

**DUMP REQUEST MESSAGE**

$F0 $07 <device ID> $64 $03 <type-msb> <type lsb> <ID-msb> <ID-lsb> <RAM-flag> $F7

This message may be used to request a dump of any object or group of objects in the 1000's memory. The type and ID number select the object to be dumped. A type of $00 means all types and an ID number of $00 means all objects of the requested type. If the RAM-flag is TRUE (i.e., not zero) only objects stored in non-volatile RAM will be dumped. For example, to request a dump of all RAM based programs, use:

$F0 $07 <device ID> $64 $03 $00 $50 $00 $00 $01 $F7

To request a dump of the Master Parameter Table, use:

$F0 $07 <device ID> $64 $03 $00 $42 $00 $00 $01 $F7

To request a memory dump (User Objects and RAM), use:

$F0 $07 <device ID> $64 $03 $00 $42 $00 $10 $01 $F7

**CHANNEL SETUP MESSAGE**

$F0 $07 <device ID> $64 $04 <chan a> <mode a> <chan b> <mode b> etc... $F7

This message may be used to set the MIDI mode (Omni, Poly or Multi) and to enable or disable specific MIDI channels. If <chan a> (or subsequent) = $00, then it signals a mode change. A value of $01 for <mode a> (or later) indicates Omni mode, $02 is Poly, and $03 is Multi.

If <chan b> or subsequent is $01 through $10 (16), it is read as a MIDI channel number. In this case, the following <mode> byte value determines whether that MIDI channel is active. $00 enables the channel, and $01 disables it. For example, to put the instrument in Multi mode, with channels 1 thru 4 enabled, use:

```
$F0 $07 <device ID>  $64   $04   $00   $03   ; multi mode
                     $01   $00   $02   $00
                     $03   $00   $04   $00   ; enable 1-4
                     $05   $01   $06   $01
                     $07   $01   $08   $01
                     $09   $01   $0A   $01
                     $0B   $01   $0C   $01
                     $0D   $01   $0E   $01
                     $0F   $01   $10   $01   ; disable 5-16
$F7
```

## 12.4 SONG Object Format

A RAM based SONG (Demo) object is basically a MIDI File, Type 0, with a 1000 Series object header prepended to it. Demo songs may be loaded, named, renumbered or removed with ObjectMover. A separate program is needed to turn MIDI files into object files.

This section details the format of these object files for people wishing to write their own Demo object convertor programs.

The Demo object format is defined by the following "C" type definitions:

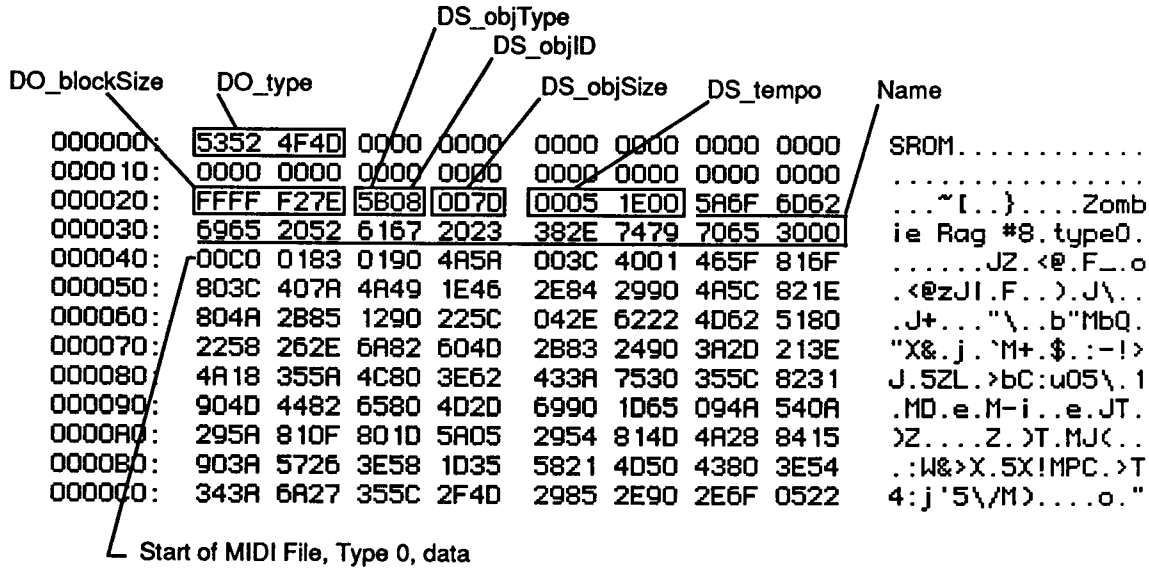
```
/* DemoTypes.h */
/* Data structure definitions for 1200 Demo objects */

/* file type, first longword in file */
#define SROM            0x53524F4D

/* Demo object type and id declarations */
#define Demo1200        0x5B
#define DemoIDBase      1

/* object file header, one per file */
typedef struct {
      long DO_type;             /* Demo (SROM) */
      word DO_rfu[14];          /* must be 0 */
      long DO_blockSize;        /* negative block size */
} dFHdr;

/* song header, one per song */
typedef struct {
      char DS_objType;          /* 0x5B is a Demo song */
      char DS_objID;            /* id (1..255) */
      word DS_objSize;          /* size of object */
      long DS_tempo;            /* actual initial beat increment */
} demoSong;

/* name of the object goes here, before the song itself */
/* (must be null terminated, even number of bytes) */
```

There may be more than one Demo song in an object file, in which case, there would be multiple song headers. All song objects must be word aligned. The Demo player will play them in the order of their resource IDs, in a repeating cycle.

*A note on the MIDI data itself.* It is recommended that your program remove, or truncate text meta-events from the data stream. Only the tempo meta-event is interpreted by the 1200. You can save precious memory space by removing unused meta-events. (Meta-events are defined in the MIDI Standard File document). Meta-events encountered by the Demo player are treated as null events and skipped.

The Demo player cannot play SysEx data recorded in the song. It should be stripped from the Demo object.

Here is a dump of the beginning of an actual 1200 Demo object file:




The block size in the object header is the size of all the objects in file, negated. (The 1200 Memory Manager uses this negation internally). The blockSize must include everything from itself to the end of file, so you will calculate DO_blockSize like this:

```
demoFile->DO_blockSize = -( fileSize - 32 );
```

The object size itself is calculated in a similar way. Object size should include all data from the type and id fields, to the end of your song. Because this is a 16 bit field there is therefore a 64K maximum size for demo objects.

The tempo field (DS_tempo) is a precalculated clock increment providing the initial tempo of the song. This is a 32 bit field which is added to the Demo clock every 2 milliseconds. The Demo clock counts off 1/480 of a quarter note times, with a 16 bit fraction. Your program can calculate the clock increment like this:

```
myDemo->DS_tempo = (long) bpm * (long) 1048;
```

Where bpm is the desired "beats per minute" for your song. If you are working from the MIDI file's "microseconds per beat" value the formula becomes:

```
myDemo->DS_tempo = (60000000/uspb) * (long) 1048;
```

Following the song header, comes the name field. This name may be any length (up to 64 chars) and must be terminated with a 0. The MIDI File song data starts on the next even address after that.

For more information on the MIDI Standard File format, contact the International MIDI Association (IMA).

# Section XII

## 12.5 Audio Outputs

Like most musical instruments, the 1200 Pro features unbalanced audio outputs. The nominal output signal level is -14 dBV, a compromise chosen to be compatible with both line-level consumer equipment and instrument amplifiers. With a maximum output signal level of +17 dBV, the 1200 Pro has sufficient capability to drive most audio equipment to full power, but gain should be added (usually at the mix console input stage) when the unit is used in +4 dBm systems. The recommended load impedance for the 1200 Pro's outputs is 10 kohms; do not connect it to 600 ohm (actual low-Z) inputs.

Since it employs a 16-bit floating point sampling process, the 1200 Pro is capable of very high audio quality. Care must be taken with the audio connections, particularly in recording applications, in order to preserve the inherent high fidelity of the Kurzweil samples.

### 12.5.1 Choosing Cables

Where the sound system input accommodates phone jacks, the 1200 Pro may be connected using guitar-type cables. Straight (rather than coiled) cords are preferred. Use only high-quality cables with good shielding and sufficient flexibility. Gold or MIL-spec brass connectors, if available, will provide the best long-term performance.

When making cables, choose highly flexible, rubber-jacketed cable with braided shielding (foil shielding is acceptable in fixed installations where the cables will not be handled or flexed). To minimize internal self-capacitance, use single-conductor (*not* dual-conductor) shielded cable.

### 12.5.2 Audio Connector Wiring

Figure 12-4 (next page) illustrates wiring practices for phone, RCA and XLR type connectors.

In the case of XLR connectors at balanced inputs, there is no clear standard for pin assignments: while many now advocate pin 2 "hot," a large proportion of professional audio equipment is pin 3 "hot." Depending upon the input circuit design, the choice may make virtually no difference in sound quality and signal level, but we can't guarantee that this will be the case. The best approach is to consult and follow the recommendations in the equipment's instruction manual.

The proper method for handling the unused pin at the balanced input similarly may vary dependent upon input circuit design. Some equipment will require that the unused pin be grounded; for other components, it may not matter. Again, check the instruction manual.

### 12.5.3 Use of Direct Boxes

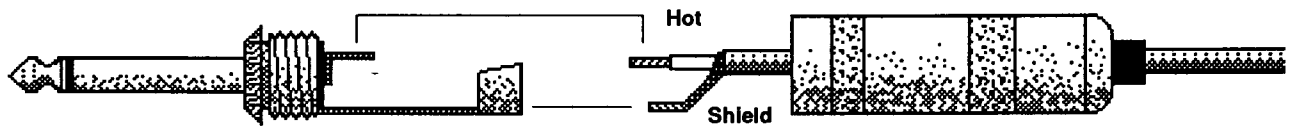
Both in the studio and in touring performance, some form of isolation may be required at the 1200 Pro output to control induced noise and hum. The most common solution is to use a "direct box."

The quality of different direct boxes varies from reasonable to downright awful, however. Many direct boxes are not designed to handle the higher signal level and broad frequency range of the 1200 Pro. With such units, you will hear a very noticeable degradation in sound quality when the box is inserted in line. Particularly in recording applications, this is usually unacceptable.

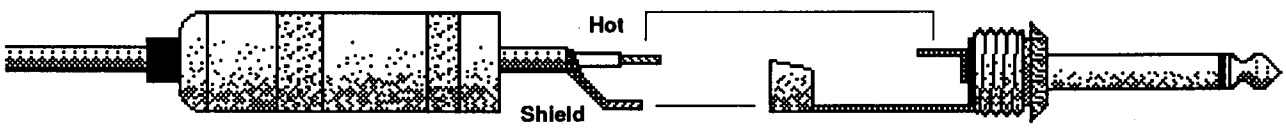
*To preserve the sonic fidelity of the 1200 Pro, it is extremely important to select a high-quality direct box which is designed for line-level isolation.*

For best performance in recording, in fact, a better solution is to simply use a good line transformer (10 kΩ : 10 kΩ), preferrably with dual Faraday shields.

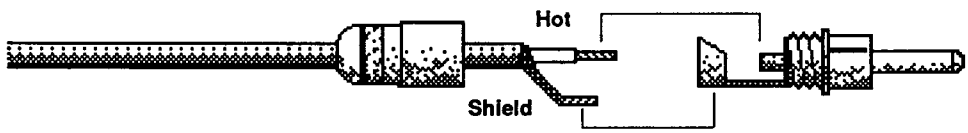
**1200 Pro Output Connection:**



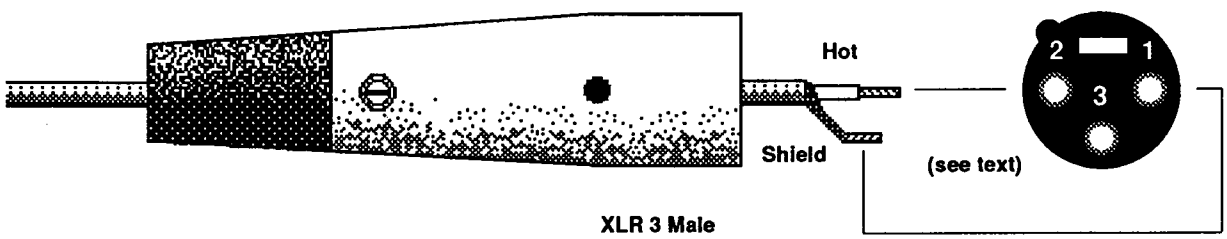

**System Input Connection:**




Phone Plug




RCA Plug




XLR 3 Male

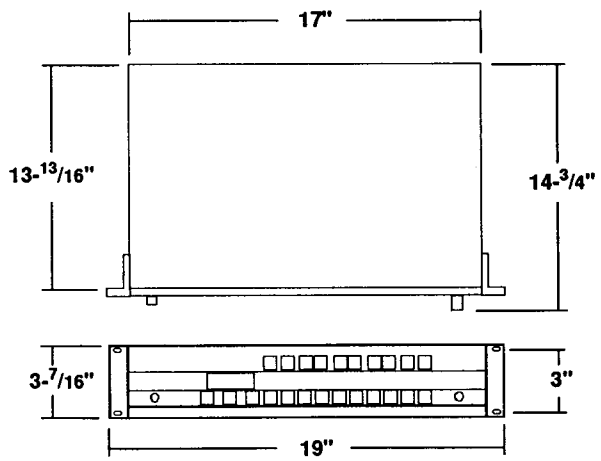
**Figure 12-4 Audio Connector Wiring**

# Section XII

## 12.6 Specifications

| | |
|---|---|
| **1200 Pro** | |
| Description | MIDI-controllable, 20-note polyphonic, multitimbral digital sample player and programmable wavetable synthesizer (Pro I is 24-note polyphonic |
| **Program Memory** | |
| Factory Presets | ROM (Read Only Memory), 167 presets (varies from model to model) |
| User-Programmable | 24 kbyte RAM (Random Access Memory) |
| RAM Battery Backup | Lithium battery, 3 – 5 years life expectancy |
| **Audio Outputs** | |
| Type | Stereo, unbalanced |
| Connectors | 1/4-inch tip/sleeve phone jack (x 2) |
| Nominal Output Level | -14 dBV |
| Maximum Output Level | +17 dBV |
| Impedance | 100 Ω |
| Recommended Load Impedance | 10 kΩ minimum |
| Output Noise | -86 dBV typical |
| **MIDI Connections** | |
| Type | In, Out, Thru |
| Connector | Standard DIN 5-pin |
| **Power Requirements** | |
| Voltage | 100 – 120 VAC, 50/60 Hz<br>200 – 240 VAC (technician adjustment) |
| Power Consumption | 30 Watts |
| Mains Protection | AGC 1 Amp, 125 Volt fuse |
| **Physical Dimensions** | 19" W x 3 7/16" H x 14 3/4" D |
| **Shipping Weight** | 20 lbs. (9.1 kg) |

**External Dimensions**



# MIDI Implementation Chart

Manufacturer:
**Kurzweil/Young Chang**

Dated: 11/20/89
Version: 1.0

Digital Synthesizers

Model: 1200 Pro Expander

| FUNCTION | | TRANSMITTED | RECOGNIZED | REMARKS |
|---|---|---|---|---|
| **Basic Channel** | Default | 1 | 1 | Memorized |
| | Changed | 1 – 16 | 1 – 16 | |
| **Mode** | Default | Mode 1 | Mode 1 | |
| | Messages | Mode 1 & 3 | Mode 1 & 3 | Memorized * |
| | Altered | | | |
| **Note Number** | | | 0 – 127 | Key range: C0 - C8 |
| | True Voice | 12 – 120 | 12 – 120 | |
| **Velocity** | Note ON | X | O | |
| | Note OFF | X | O | |
| **After Touch** | Keys | X | O | |
| | Channels | X | O | |
| **Pitch Bender** | | X | O | |
| **Control Change** | | X | O 1 – 31 | |
| | | | 33 – 63 | |
| | | | 64 – 95 | |
| **Program Change** | | O 0 – 99 | O 0 – 127 | May be mapped to |
| | True # | | 1 – 128 | 0 - 999 |
| **System Exclusive** | | O | O** | |
| **System Common** | Song Pos. | X | X | |
| | Song Sel. | X | X | |
| | Tune | X | X | |
| **System Real Time** | Clock | X | X | |
| | Messages | X | X | |
| **Aux Messages** | Local Control | X | O | |
| | All Notes Off | X | O | |
| | Active Sense | X | O | |
| | Reset | X | X | |

**Notes**

* Use MULT Mode to assign different Programs to each MIDI channel.

** Manufacturer's ID = 07. Device ID: default = 0; programmable 0 – 126

O = Yes
X = No

Mode 1: Omni On, Poly
Mode 2: Omni On, Mono
Mode 3: Omni Off, Poly
Mode 4: Omni Off, Mono

# Pro I Programs and Controls

| Number and Name | | Effect | Control Source |
|---|---|---|---|
| 201 | **Grand Piano** | Vibrato | Mod Whl |
| 202 | **Hardstrike Piano** | Vibrato | Mod Whl |
| 203 | **Ster Extnd Piano** | Vibrato | Mod Whl |
| 204 | **Ballad Piano** | Strings Enable | Mod Whl |
| | | Crossfade | Attack velocity |
| 205 | **Studio Piano 2** | Vibrato | Mod Whl |
| 206 | **Honky Tonk Piano** | Vibrato | Mod Whl |
| 207 | **Piano & Slow Str** | None | |
| 208 | **Dual E Piano** | Vibrato | Mod Whl |
| 209 | **Xfade E Piano** | Vibrato | Mod Whl |
| 210 | **Chorused E Piano** | Chorus depth | Mod Whl |
| 211 | **Fluid E Piano** | Tremolo | Mod Whl |
| 212 | **St Trem E Piano** | Tremolo rate | Mod Whl |
| 213 | **Grand & Electric** | Piano balance | Mod Whl |
| 214 | **Stereo RockPiano** | Vibrato | Mod Whl |
| 215 | **FuzzE Piano** | Chorus depth | Mod Whl |
| 216 | **E Pno w/ Bell** | Tremolo | Mod Whl |
| | | Strings Enable | Breath |
| 217 | **E Piano Pad** | Tremolo | Mod Whl |
| | | Strings/Choir | VTrig at *f* |
| 218 | **E Pno & PopFlute** | Tremolo | Breath |
| 219 | **Br Bass/E Pno** | Piano Tremolo | Mod Whl |
| 220 | **Steel String Gtr** | Vibrato | Mod Whl |
| 221 | **Acous 12 String** | Vibrato | Mod Whl |
| 222 | **Chorused Guitar** | Tremolo | Mod Whl |
| | | Percussive attack | Breath |
| 223 | **12 String&String** | Vibrato | Mod Whl |
| 224 | **BassPianoGuitar** | Vibrato | Mod Whl |
| 225 | **Delay Dulcimer** | Space Trem | Mod Whl |
| 226 | **Acoustic Bass** | Vibrato | Mod Whl, MPrs |
| 227 | **Brt A Bass%Piano** | Bass vibrato | Mod Whl |
| 228 | **Touch Ac Bass** | Drift sharp | Attack velocity |
| | **Drift flat** | Mod Whl, MPrs | |
| 229 | **Dual Bass** | Vibrato | Mod Whl |
| 230 | **Yes Bass** | Vibrato | Mod Whl |
| | | No slap | Chan St (legato play) |
| 231 | **Water Bass** | Vibrato | Mod Whl |
| 232 | **Ostinato Bass** | Vibrato | Mod Whl |
| 233 | **Wah Bass** | Envelope control | Mod Whl |
| 234 | **Distorted Mutes** | Chorus | Mod Whl |
| 235 | **Dist Mutes 5ths** | Alternate attack | Attack velocity |
| 236 | **Lead Guitar 1** | Vibrato | Mod Whl, MPrs |
| 237 | **Echo Guitar** | Vibrato | Mod Whl, MPrs |
| | | Echo rate | Breath |
| 238 | **Clean Kit 1** | Release control | Mod Whl |
| 239 | **Gate Rock Drm** | None | |
| 240 | **Big Kick&Snare** | Release control | Mod Whl |
| 241 | **Kit w/RvsCymbal** | Release control | Mod Whl |
| 242 | **GateEcho 76 Kit** | Echo volume | Mod Whl |
| 243 | **Monster Rock Drm** | None | |
| 244 | **16 Kit/Roll/Perc** | None | |
| 245 | **Rap Kit** | Release control | Mod Whl |
| 246 | **Drums & Congas** | Release control | Mod Whl |
| 247 | **Gated Congas** | Reverb balance | Mod Whl |
| 248 | **Perc Ensemble** | Release control | Mod Whl |

# Pro I Programs and Controls

| Number and Name | | Effect | Control Source |
|---|---|---|---|
| 249 | **Metalfest** | None | |
| 250 | **CaveTribe** | None | |
| 251 | **Tappy Triangle** | Tremolo | Mod Whl |
| 252 | **Echo Marimba** | Echo transpose | Mod Whl, Breath |
| 253 | **Guitar & Synth** | Vibrato | Mod Whl, MPrs |
| 254 | **Klavinyet** | Growl vibrato | Mod Whl |
| 255 | **HydroKlav** | None | |
| 256 | **Synth Hrpschrd** | Vibrato | Mod Whl |
| | | Tremolo | Breath |
| 257 | **Synth Banjo** | Attack timbre | Mod Whl |
| 258 | **Synth Kalimba** | Tremolo | Mod Whl |
| 259 | **Synth Pizz 1** | None | |
| 260 | **Canyon Horns** | Choppy Tremolo | Mod Whl |
| 261 | **Plucksynth 1** | Pitch envelope | Mod Whl |
| 262 | **Tootsynth** | Pitch envelope | Mod Whl |
| 263 | **Ringers** | Tremolo | Mod Whl |
| 264 | **Plucked Flute** | Tremolo | Mod Whl |
| | | Pitch envelope | Breath |
| 265 | **Just Like a Mini** | Vibrato | Mod Whl, MPrs |
| 266 | **aMaysing Flute** | Pitch envelope | Mod Whl |
| 267 | **Gooshy Lead** | Release control | Mod Whl |
| 268 | **Dyn Analog Lead** | Vibrato | Mod Whl, MPrs |
| | | Brightness | Attack velocity |
| 269 | **Jungle Flute** | Release control | Mod Whl |
| 270 | **Alien Voice Lead** | Echo rate | Mod Whl |
| | | Vibrato | MPrs, Breath |
| 271 | **Synth Bass Lead** | Vibrato | Mod Whl, MPrs |
| 272 | **Guitar Wave Lead** | Vibrato | Mod Whl, MPrs |
| | | Brightness | Attack velocity |
| 273 | **Bells w/ Echo** | Tremolo | Mod Whl |
| 274 | **Tingle Things** | Pitch envelope | Breath |
| 275 | **New Age Piano** | Tremolo | Mod Whl |
| 276 | **Space Filter** | Sweep envelope | Mod Whl |
| 277 | **Resonance Man** | Sweep envelope | Attack velocity |
| | | Vibrato | Mod Whl, MPrs |
| 278 | **PrsAnalogTrumpet** | Vibrato | Mod Whl, MPrs |
| 279 | **Analog Brass** | Vibrato | MPrs |
| | | Pitch envelope | MPrs |
| 280 | **Fusion Brass** | Vibrato | MPrs |
| | **Add fourth** | Mod Whl | |
| 281 | **Fat Synth** | Choppy tremolo | Mod Whl |
| 282 | **Wood 'n Air** | Underwater Tremolo | Mod Whl |
| 283 | **HybridSynthbrass** | Tremolo | Mod Whl |
| 284 | **Syn Brass & Str** | Brass envelope control | Mod Whl |
| 285 | **SynthOrchestra** | Tremolo | Mod Whl |
| 286 | **Synth Strings** | Vibrato | Mod Whl, MPrs |
| 287 | **Grand Strings** | Envelope control | Mod Whl |
| 288 | **Koto Orch** | None | |
| 289 | **Fast Strings** | Release control | Mod Whl |
| 290 | **Slow Strings** | *sfz* | Mod Whl |
| 291 | **Vel&Prs Strings** | Attack control | Attack velocity |
| | | Swell | MPrs |
| 292 | **Tremolando** | *sfz* decrescendo tremolo | VTrig at *f* |
| | | Tremolo rate | Mod Whl |

# Pro I Programs and Controls

| Number and Name | | Effect | Control Source |
|---|---|---|---|
| 293 | **Slapback Strings** | Tremolo | Mod Whl |
| 294 | **Stereo SloString** | Brightness | Attack velocity |
| 295 | **Bell & String** | Tremolo | Mod Whl |
| 296 | **Plucked Harp** | Vibrato | Mod Whl |
| 297 | **Andreas** | Strings enable | Mod Whl |
| 298 | **Bright Marimba** | Soft mallet | Mod Whl |
| 299 | **Gogo Marimba** | None | |
| 300 | **(No Program Assigned)** | | |
| 301 | **FluidPluckMarmba** | Piano enable | Mod Whl |
| 302 | **New Age Marimba** | Soft mallet | Mod Whl |
| 303 | **Vibes** | Tremolo | Mod Whl |
| 304 | **Fluid Vibes** | Tremolo | Mod Whl |
| 305 | **Ster Trem Vibes** | Tremolo rate | Mod Whl |
| 306 | **ABass+Ride%Vibes** | Ride disable | Breath |
| | | Tremolo rate & depth | Mod Whl |
| 307 | **Steel Drums** | None | |
| 308 | **Choir** | None | |
| 309 | **Fast Choir** | Vibrato | Mod Whl |
| 310 | **Cathedral Choir** | Slow stereo tremolo | Mod Whl |
| 311 | **Bell & Choir** | Tremolo | Mod Whl |
| 312 | **Hybrid Voices** | Tremolo | Mod Whl |
| 313 | **Tenor Sax** | Vibrato | Mod Whl, MPrs |
| | | Balance control | PWhl |
| 314 | **Prs Growl Tenor** | Growl | Mod Whl, MPrs |
| 315 | **Mel Room Sax** | None | |
| 316 | **PrsBrtTenorSax** | Vibrato | Mod Whl |
| | | Brightness | MPrs |
| 317 | **Flute** | Tremolo | Mod Whl, MPrs |
| 318 | **Reverb Flute** | Tremolo | Mod Whl, MPrs |
| | **Alternate attack** | Sustain | |
| 319 | **Wendy's Flute** | Tremolo depth | Inverse Attack velocity |
| 320 | **Echoplex Flute** | Tremolo | Mod Whl, MPrs |
| | | Alternate attack | Sustain |
| | | Echo rate | Breath |
| 321 | **Bamboo Flute** | Echo rate | Mod Whl |
| 322 | **Clarinet** | Vibrato | Mod Whl |
| 323 | **Chamber Band** | Woodwind solo | Mod Whl |
| | | Brass solo | Breath |
| 324 | **Prs Big Band** | Swell | Mod Whl, MPrs |
| 325 | **Horn Section** | Attack control | Attack velocity |
| 326 | **Solo Trumpet** | Reverb disable | Mod Whl |
| | | Brightness | Attack velocity |
| | | Balance control | PWhl |
| 327 | **Prs Vib Trumpet** | Vibrato | Mod Whl, MPrs |
| | | Brightness | Attack velocity |
| 328 | **Prs LeadTrumpets** | Swell | Mod Whl, MPrs |
| 329 | **Baritone Horn** | Vibrato | Mod Whl |
| 330 | **Warm Organ** | Tremolo | Mod Whl, MPrs |
| 331 | **Electric Organ** | Leslie switch | Mod Whl |
| 332 | **Organ w/ Preslie** | Leslie | MPrs |
| 333 | **Drawbars 2** | Drawbars | Mod Whl |
| 334 | **Full Stops** | Leslie switch | Mod Whl |
| 335 | **Clav Organ 2** | Leslie | Mod Whl |
| 336 | **Piano & Organ 2** | Vibrato | Mod Whl, MPrs |

# Pro I Programs and Controls

| Number and Name | | Effect | Control Source |
|---|---|---|---|
| 337 | **DynamicOrchestra** | Vibrato | Mod Whl |
| 338 | **Fluid Piano** | Vibrato | Mod Whl |
| | | Strings enable | VTrig at *ff* |
| 339 | **Orchestra 2** | Brass balance | Mod Whl |
| 340 | **String&Choir Pad** | Vibrato | Mod Whl |
| 341 | **Flootz** | Brightness | Mod Whl, MPrs |
| 342 | **SlowVibes** | Space tremolo | Mod Whl |
| 343 | **TriangleStrings** | Triangle sizzle | Mod Whl |
| 344 | **Q Orchestra** | None | |
| 345 | **Nuageux** | None | |
| 346 | **Slow Guitars** | Tremolo rate | Mod Whl |
| 347 | **Long Horns** | None | |
| 348 | **Texture Synth** | Tremolo | Mod Whl |
| 349 | **Breath Pad** | Brightness | Mod Whl, MPrs |
| 350 | **Slow Reed Pad** | Vibrato | Mod Whl |
| 351 | **Dark Phazer** | Release control | Mod Whl |
| 352 | **Krellian Falls** | None | |
| 353 | **Crickets** | Temperature | Key number |
| 354 | **Sister Ship** | None | |
| 355 | **Clockworks** | None | |
| 356 | **Klaus** | Doubling | Mod Whl |
| 357 | **Ecoplecks** | Echo rate Mod Whl | |
| | | Freeze | Sustain |
| 358 | **Surf/ Seagulls** | None | |
| 359 | **Sub Mergence** | None | |
| 360 | **Bats Away** | Modulation rate | Mod Whl |
| 361 | **Slow Cymbals** | Vibrato | Mod Whl |
| 362 | **Alien War** | None | |
| 363 | **TuningNote/Click** | Sine wave | Mod Whl |
| | | Balance | Breath |
| | | Clicks | C# 6 and up |

The first digit of each program Number is the list identifier: the 200s make up the PList "**Library I**" and the 300s make up list "**Library II.**"

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## A



## B



## C



## D



## E

# Section XIII

## N



## O



## P

# Section XIII

# Kurzweil 1200 Pro I Program Lists: Library I and Library II

## Acoustic Piano

201 Grand Piano
202 Hardstrike Piano
203 Ster Extnd Piano
204 Ballad Piano
205 Studio Piano 2
206 Honky Tonk Piano
207 Piano & Slow Str

## Electric Piano

208 Dual E Piano
209 Xfade E Piano
210 Chorused E Piano
211 Fluid E Piano
212 St Trem E Piano
213 Grand & Electric
214 Stereo RockPiano
215 FuzzE Piano
216 E Pno w/ Bell
217 E Piano Pad
218 E Pno & PopFlute
219 Br Bass/E Pno

## Acoustic Guitar

220 Steel String Gtr
221 Acous 12 String
222 Chorused Guitar
223 12 String&String
224 BassPianoGuitar
225 Delay Dulcimer

## Acoustic Bass

226 Acoustic Bass
227 Brt A Bass%Piano
228 Touch Ac Bass

## Electric Bass

229 Dual Bass
230 Yes Bass
231 Water Bass
232 Ostinato Bass
233 Wah Bass

## Electric Guitar

234 Distorted Mutes
235 Dist Mutes 5ths
236 Lead Guitar 1
237 Echo Guitar

## Drum Kit

238 Clean Kit 1
239 Gate Rock Drm
240 Big Kick&Snare
241 Kit w/RvsCymbal
242 GateEcho 76 Kit
243 Monster Rock Drm
244 16 Kit/Roll/Perc
245 Rap Kit
246 Drums & Congas

## Percussion Battery

247 Gated Congas
248 Perc Ensemble
249 Metalfest
250 CaveTribe
251 Tappy Triangle
252 Echo Marimba

## Synth Clavs

253 Guitar & Synth
254 Klavinyet
255 HydroKlav

## Percussive Synths

256 Synth Hrpschrd
257 Synth Banjo
258 Synth Kalimba
259 Synth Pizz 1
260 Canyon Horns
261 Plucksynth 1
262 Tootsynth
263 Ringers
264 Plucked Flute

## Lead Synths

265 Just Like a Mini
266 aMaysing Flute
267 Gooshy Lead
268 Dyn Analog Lead
269 Jungle Flute
270 Alien Voice Lead
271 Synth Bass Lead
272 Guitar Wave Lead

## Synth Bells

273 Bells w/ Echo
274 Tingle Things
275 New Age Piano

## Synth Brass

276 Space Filter
277 Resonance Man
278 PrsAnalogTrumpet
279 Analog Brass
280 Fusion Brass
281 Fat Synth
282 Wood 'n Air
283 HybridSynthbrass

## Synth Strings

284 Syn Brass & Str
285 SynthOrchestra
286 Synth Strings
287 Grand Strings
288 Koto Orch

## Orchestral Strings

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290 Slow Strings
291 Vel&Prs Strings
292 Tremolando

## Pop Strings

293 Slapback Strings
294 Stereo SloString
295 Bell & String

## Plucked Harp

296 Plucked Harp
297 Andreas

## Marimba

298 Bright Marimba
299 Gogo Marimba

300 (No Program Assigned)

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302 New Age Marimba

## Vibraphone

303 Vibes
304 Fluid Vibes
305 Ster Trem Vibes
306 ABass+Ride%Vibes
307 Steel Drums

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314 Prs Growl Tenor
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319 Wendy's Flute
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324 Prs Big Band
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327 Prs Vib Trumpet
328 Prs LeadTrumpets
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335 Clav Organ 2
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## Synth Pads

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341 Flootz
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357 Ecoplecks
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359 Sub Mergence
360 Bats Away
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362 Alien War

## Utility

363 TuningNote/Click

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