

Xpand!™

Version 1.0



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chapter 1

Introduction

Welcome to the Xpand!™ virtual workstation plug-in.

Xpand! is a plug-in instrument that is developed with the musician, arranger, composer and music producer in mind—a sonic powerhouse, which features a thousand high-quality factory sounds, suitable for any music genre. Its intuitive interface allows users, no matter their level of sound-designing skill, to quickly create or adjust sounds to their needs in virtually no time.

The Xpand! engine consists of a sample playback, FM, wavetable, and virtual analogue synth architecture, capable of creating complex sounds very efficiently, allowing for multiple simultaneous patches with integrated effects on any Pro Tools system.

Features

Supported Formats

Xpand! is only available in RTAS® format for Windows XP and Mac OS X.

Supported Systems

Xpand! is supported on the following systems:

- Pro Tools|HD®
- Pro Tools LE™
- Pro Tools M-Powered™

Xpand! requires Pro Tools 7.0 or higher.

Sample Rate and Channel Format Support

Xpand! supports 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz, and 192 kHz sample rates.

Xpand! works with mono and stereo formats only.

Control Surface Support

Xpand! can be operated from the following control surfaces:

- Digidesign® Digi 002®
- Digidesign Command|8®
- Digidesign Control|24™
- Digidesign D-Command™
- Digidesign D-Control™
- Digidesign ProControl®
- Mackie HUI-compatible controllers

System Requirements

To use Xpand!, you need the following:

- A DigiDesign-qualified Pro Tools|HD system, Pro Tools LE system, or Pro Tools M-Powered system

Compatibility Information

DigiDesign can only assure compatibility and provide support for hardware and software it has tested and approved.

For a list of DigiDesign-qualified computers, operating systems, hard drives, and third-party devices, refer to the latest compatibility information on the DigiDesign Web site (www.digidesign.com).

Working With Plug-ins

Refer to the *DigiRack Plug-Ins Guide* for information on working with plug-ins, including:

- Using Plug-Ins as Inserts
- The Plug-In Window
- Adjusting Plug-In Parameters
- Automating Plug-Ins
- Using the Plug-In Settings Librarian

Conventions Used in This Guide

All DigiDesign guides use the following conventions to indicate menu choices and key commands:

| Convention | Action |
|---------------------|--|
| File > Save Session | Choose Save Session from the File menu |
| Control+N | Hold down the Control key and press the N key |
| Control-click | Hold down the Control key and click the mouse button |
| Right-click | Click with the right mouse button |

The following symbols are used to highlight important information:



User Tips are helpful hints for getting the most from your Pro Tools system.



Important Notices include information that could affect your Pro Tools session data or the performance of your Pro Tools system.



Shortcuts show you useful keyboard or mouse shortcuts.



Cross References point to related sections in this guide or other Pro Tools Guides.

chapter 2

Installation

Installing Xpand!

To install Xpand!:

- 1 Double-click the Xpand! installer application.
- 2 Follow the on-screen instructions to complete the installation.

The Xpand! installer puts the Xpand! plug-in files in the following location:

On Windows Program Files\Common Files\
Digidesign\DAE\Plug-Ins

On Mac OS X /Library/Application Support/
Digidesign/Plug-Ins

By default, the Xpand! installer puts the plug-in's content file (Xpand!.dat) in the following location (content folder):

On Windows Program Files\Digidesign\Xpand!

On Mac OS X /Library/Application Support/
Digidesign/ Xpand!



The Xpand! plug-in is not copy-protected and does not need to be authorized.

Removing Xpand!

If you need to remove the Xpand! plug-in from your system, follow the instructions below for your computer platform.

Windows XP

To remove the Xpand! plug-in:

- 1 From the Start menu, choose Settings > Control Panel > Software.
- 2 Select the Xpand! plug-in from the list of installed applications and click the Change/Remove button.
- 3 Follow the on-screen instructions to remove the plug-in.

Mac OS X

To remove the Xpand! plug-in:

- Drag all files with “Xpand!” in their names from the Plug-Ins and the content folder to the Trash, or to the Plug-Ins (Unused) folder.

chapter 3

Operate Xpand!

Xpand! is a virtual music workstation featuring a broad range of sound generation possibilities including multi-sampled instruments as well as FM, wavetable, and virtual analogue synthesis.

Getting started with Xpand! is very easy and self-explanatory, especially if you are already familiar with virtual instruments or hardware workstations.

Note that Xpand! is not multi-timbral—one instance is assigned to one MIDI channel and provides four synthesizer slots, each with individual Mix, MIDI, Arpeggiator, Modulation and Effects settings. A slot can hold one of 500 synthesizer presets, called *Parts*.

The settings of all four slots and their respective Parts can be saved as a single *Patch*. Xpand! comes with a set of over 1000 Patches, created by renowned sound designers. It's worth browsing through these Patches to get an impression of the versatility of Xpand!.



Patch is another name for the plug-in settings. Refer to the DigiRack Plug-Ins Guide for information on working with RTAS plug-ins.

Editing Parameters

Using a Mouse

You can adjust Xpand! plug-in controls by clicking and dragging the control's slider or knob, or by moving over it and scrolling up or down with the scroll wheel.

Adjust rotary controls by clicking and dragging horizontally or vertically. Parameter values increase as you drag upward or to the right, and decrease as you drag downward or to the left.



Dragging a control

Keyboard Shortcuts

- ◆ For finer adjustments, hold down Control (Windows) or Command (Macintosh) while moving the control.
- ◆ To return a control to its default value, Alt-click (Windows) or Option-click (Macintosh) the control.

Using a Control Surface

Xpand! can be controlled from any control surface supported by Pro Tools. Refer to the appropriate controller product guide for more information.

Assigning Parameters to MIDI Controllers



In addition to pre-assigned MIDI controllers such as Sustain Pedal and Volume, you can assign MIDI controllers to Xpand! parameters for automation or real-time control from a MIDI keyboard or control surface. MIDI assignments are saved per Patch.

To assign Xpand! parameters of to a MIDI controller:

- Right-click (Windows) or Control-click (Macintosh) the control, select “Assign” and choose a controller number from the pop-up MIDI CC list.

-or-

- Right-click (Windows)/Control-click (Macintosh) the control, select “Learn” from the menu and move the desired knob or controller on your MIDI keyboard or sequencer. Xpand! will set this MIDI controller to the parameter you have chosen.

To remove a MIDI controller assignment:

- Right-click (Windows) or Control-click (Macintosh) an assigned control and choose “Forget” to remove its MIDI controller assignment.

 See Appendix A for a list of MIDI controllers and their standard assignment to parameters.

 Xpand! has pre-defined parameter assignments for Digidesign and supported third party hardware control surfaces.

Smart Knobs



The upper section of Xpand! provides 6 useful pre-assigned controls called Smart knobs. These are intended for quickly adapting a preset Part or Patch to your session in terms of feel, timbre, enveloping and other settings. For each Part, the Smart knobs are intelligently pre-assigned to important parameters by professional sound designers to make working with Xpand! as easy as possible. The assigned parameter is displayed in the black field below each knob.

Smart Knob Assignment List



Select from the list on the left to set whether Xpand! displays the Smart knobs for the whole Patch (Global) or for a specific Part (A, B, C, D).

Level (Master Volume)



On the right-hand of the Smart knob section there is a master Volume control as well as a Clip indicator.

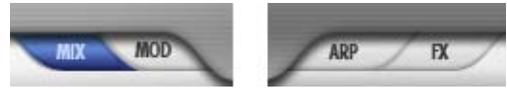
Smart Display



The Smart display is a context-sensitive text display. When you select a Patch or Part, it displays some descriptive text. When editing knobs or controls, it displays the parameter name and value. It does not display parameter values of incoming automation. Click parameters (without moving the mouse) to show their current value without changing it.

Select “Global” from the Smart Knob Assignment list to show a short description of the currently selected Patch.

Edit Pages



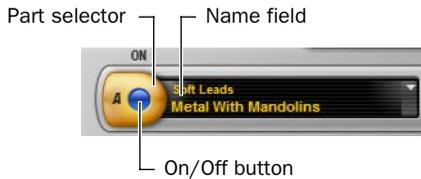
Below the Smart knob section are four tabs for accessing different control pages where you can edit the Parts in more detail. Click one of the four tabs on either side of the Smart display to display the respective page.

| Tab | Controls |
|-----|--------------------------------|
| MIX | Mixer, Panning, FX Sends, MIDI |
| MOD | Modulation Matrix Settings |
| ARP | Arpeggiator Settings |
| FX | Load & Edit Effects |

Mix (Mixer) Page

This page is where you set up each Part's volume, position in the stereo field and its send amount to the built-in effects. There are also settings for MIDI input transposition and key range to set up split layers.

Select and Load Parts



Activate or deactivate the slot by clicking its blue button. When the slot is activated the button is lit.

Click the area surrounding the On/Off button to select the Part, so its Smart knobs are displayed.

To load a Part into the slot, click into the black Name field and choose a Part from the pop-up list. You can also browse through the Parts by moving the mouse cursor above the Name field and moving the scroll wheel up or down.

 See Appendix B for a list of all available Parts.

Level



Move the slider to set the Part's volume level, increasing volume to the right and decreasing to the left. The blue meter shows the slot's audio output. The Level control appears on all four pages—on Mix and Arp pages as a slider, on the Mod and FX pages as a knob.

Pan (Panning)

Move to the right or left to set the Part's position in the stereo field. The Panning control appears also on the Arpeggiator and the FX page.

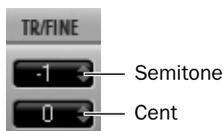
FX1

This knob is the Part's send amount to FX1. Adjust the Part's feed into the effect by moving the knob.

FX2

This knob is the Part's send amount to FX2. Adjust the Part's feed into the effect by moving the knob.

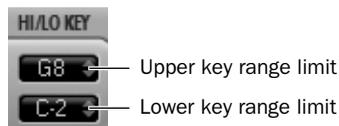
Tr/Fine



The Tr/Fine (Transpose/Fine) section includes two different controls for transposing incoming MIDI notes. The Semitone control (the upper control) transposes incoming notes up or down in semitones. For finer control, use the Cents control (the lower control), which transposes notes up or down in cents.

Click the control and drag up or down to increase or decrease its value.

Hi/Lo Key



Use the Hi/Lo Key controls to assign Parts to different keyboard ranges. This can be useful for splitting your keyboard across different Parts. For example, Part A holding a bass sound could be assigned C-1 to B2 and Part 2 your synth lead assigned C3 to G8.

To assign a Part to a certain key range do the following:

- Click the Upper/Lower key range limit control and drag up or down to increase or decrease its value.

-or-

- Do the following:
 - Right-click the control and choose Learn.
 - Then press the appropriate key on your MIDI keyboard.

Mod (Modulation) Page



The Mod page lets you easily create sophisticated modulation settings for shaping a Part. Your MIDI keyboard's modulation wheel and pressure (also called aftertouch) can be used as modulation sources.

Normally, the modulation wheel provides a periodically repeating modulation such as vibrato, and aftertouch provides a static offset to the selected destination such as volume or filter swells.

Many Xpand! Patches and Parts have pre-assigned settings for modulation wheel and pressure. With the following controls you can adapt them or create your own.

Modulation Wheel Controls

Shape & Destination



Select the waveform shape for the modulation from the upper pop-up list—an LFO waveform used to modulate the selected destination. For most waveforms there is a choice of a freely adjustable and a tempo-synchronized setting (Sync), except for “Off” and “Random.” If the pop-up is set to Off the movements of the modulation wheel will directly modulate the destination without a time varying waveform.

Select a destination for the modulation by your MIDI keyboard's modulation wheel from the lower pop-up list:

| Destination | Description |
|-------------|--|
| Pitch | Affects the Part's pitch. |
| Wave | Changes the sound based on its Part. For example, shaping waveforms, FM modulation depth, sample start point offset, detuning. |
| Filter | Affects the Part's filter cutoff frequency. |
| Volume | Affects the Part's volume level. |
| Pan | Affects the Part's position in the stereo field. |

Rate

Move this knob to set the speed or rate of the modulation wheel's modulation. When using a synchronized shape (such as Saw Sync), the Rate control sets the speed in fixed, tempo synchronized steps. When using other shapes (such as Sine, Tri, and Saw), the LFO speed is freely adjustable.

Depth

This knob sets the strength or amount of how much the signal is affected by the modulation. Depth is a bipolar control, which means that it can be set to positive or negative values.

 *For example, with the modulation wheel's shape set to Off and destination to Pan, moving the mod wheel up makes the signal go to the left (negative Depth value) or to the right (positive Depth value).*

Pressure Controls

Many MIDI keyboards provide pressure (also called aftertouch) to generate a MIDI control signal which depends on how hard you press down held keys after the initial “note on.”

With Xpand! you can use this control signal to modulate a number of useful controls.

Destination



Select a destination for the modulation by your MIDI keyboard’s pressure from the pop-up list:

| Destination | Description |
|-------------|--|
| Pitch | Affects the Part’s pitch. |
| Wave | Changes the sound based on its Part. For example, shaping waveforms, FM modulation depth, sample start point offset, detuning. |
| Filter | Affects the Part’s filter cutoff frequency. |
| Volume | Affects the Part’s volume level. |

Depth

This knob sets how much the signal is affected by the pressure control signal. Depth is a bipolar control, which means that it can be set to positive and negative values.

 *For example, with destination set to Filter, applying aftertouch increases (positive Depth value) or decreases (negative Depth value) the filter cutoff frequency.*

Arp (Arpeggiator) Page



The arpeggiator automatically triggers the notes that are played simultaneously in pre-defined rhythmical patterns. Each Part has its own Arpeggiator.

Some Parts, such as Action Pads and Loops, automatically switch on the Arpeggiator as it forms an integral part of their sound.

On/Off

Click this button to activate or deactivate the Arpeggiator. The Arpeggiator will trigger the input notes in the selected pattern as long as the notes are held. When the Arpeggiator is activated the button is lit.

Latch

Click the Latch button to activate Latch mode playback. In this mode, the Part's Arpeggiator will continue to play after releasing keys until playback is stopped. Released keys are only removed from the arpeggio when new keys are pressed. When Latch mode is activated, the button is lit.

 *When the Arpeggiator is switched on, the Sustain pedal acts as a Latch switch to keep the arpeggiator running.*

Mode

Click the Mode display to select an Arpeggiator mode from the appearing pop-up list. An Arpeggiator Mode is a pre-defined rhythmical pattern the Arpeggiator uses to trigger held notes.

 *See Appendix C for details of the available Arpeggiator modes.*

Rate

Click the Rate display to select the arpeggiator's Rate or speed from the list. For example "1" stands for a whole note and "32" stands for a 1/32nd note. Dotted and triplet timing are indicated by an asterisk (*) or "T" respectively.

FX (Effects) Page



Xpand! provides two FX (effects) per instance. Send controls for each Part are located on the Mix and FX pages.

On/Off



Click the button to activate or deactivate the effect. The button is lit when the effect is activated.

Type



Click the FX type display to select an effect from the pop-up list.

Parameters 1 & 2



Edit the selected effect by two parameters. The parameters are varying and depend on the type of effect.

 See Appendix D for a list of all Effects and their available parameters.

To FX1 (FX2 Send to FX1)

This control sends the output signal of FX2 into FX1 instead of directly to the output. When set to 100%, FX2 and FX1 are connected in parallel, rather than in series at 0%.

appendix a

MIDI Controller Assignment

Default controller assignments to parameters:

| MIDI CC | Standard Function |
|---------|-------------------------|
| 7 | Master Output Level |
| 10 | Part A Pan |
| 16 | Part A Smart Knob 1 |
| 17 | Part A Smart Knob 2 |
| 18 | Part A Smart Knob 3 |
| 19 | Part A Smart Knob 4 |
| 72 | Global Release |
| 73 | Global Attack |
| 74 | Global Cutoff |
| 75 | Global Decay |
| 79 | Global Filter Env Depth |
| 80 | Part A Smart Knob 5 |
| 81 | Part A Smart Knob 6 |
| 91 | Part A FX1 Send |
| 93 | Part A FX2 Send |



Universal real-time octave tuning SysEx messages are supported!

Some controllers have a standard function if the controller is not assigned to a parameter:

| MIDI CC | Standard Function |
|---------|-------------------|
| 1 | Modulation Wheel |
| 5 | Glide Time |
| 11 | Expression |
| 64 | Sustain Pedal |
| 65 | Glide On/Off |

Some controllers have a standard function and cannot be assigned to a parameter:

| MIDI CC | Standard Function |
|---------|-------------------|
| 6 | RPN Data Entry |
| 100 | RPN Select (LSB) |
| 101 | RPN Select (MSB) |
| 120 | All Sound Off |
| 121 | Reset Controllers |
| 123 | All Notes Off |

Supported RPNs:

| | |
|---|---|
| 0 | Example: Pitch Bend Range CC100 = 0, CC101 = 0, CC6 = bend range in semitones |
| 1 | Example: Fine Tune CC100 = 0, CC101 = 1, CC6 = fine tune amount |

appendix b

Available Parts

Folders

| |
|------------------|
| Soft Pads |
| Bright Pads |
| Action Pads |
| Pad Layers |
| Percussive |
| Polysynths |
| Synth Brass |
| Soft Leads |
| Hard Leads |
| Ambience + FX |
| Acoustic Piano |
| Electric Pianos |
| Organs |
| Clavinets |
| Strings |
| Vocals |
| Brass + Woodwind |
| Mallets |
| Bells |
| Guitars |
| Ethnic |

Folders (Cont.)

| |
|--------------|
| Hits |
| Synth Basses |
| Basses |
| Drums |
| Percussion |
| Loops |
| Basics |

Softpads

| |
|----------------------|
| Sweepscape |
| Massive Pad |
| Sea Spray |
| Shimmer |
| Singing Pad |
| Sweeping Overtones |
| Epic Pad |
| Phaser Pad |
| Gentle Bells Sweep |
| Triangle Bend |
| Gentle Man |
| Bell Pad |
| Gentle Pulser |
| Rich Chaos |
| Kapow Pad |
| Simple Sine |
| Mother Of All Pads |
| Swoosh Pad |
| 80s Synth Stack |
| Basic Soft Pad |
| Distance |
| Fat Octave Pad |
| Fehler Tron Choir |
| Fehler Tron Strings |
| Grand Octave |
| Mellow Band Pass Pad |
| Cuddly Pad |
| Noise Band 1 |

Softpads (Cont.)

| |
|--------------------|
| Triangle Pad |
| Simple Saw |
| Soft Noiseband |
| Soft + Squarish |
| Soft Machinegun |
| Square Sample&Hold |
| Squarish |
| Warm + Fluffy |
| Warmth |
| Smooth Wavetable |
| Slow Swimmer |
| Sine Bend |
| Synthetic Woods |

Bright Pads

| |
|-----------------------|
| Majestic |
| Bright Bend Up Pad |
| Oceanica |
| Slap Bells |
| Bright HPF Sweep |
| Classic 5th Sweeper |
| Super Smooth |
| Mysterious Bells |
| Sweeper |
| Artificially Enhanced |
| Electric Pad |
| Sawtooth Bend |
| PWM Bend |

Bright Pads (Cont.)

| |
|-------------------|
| Fuzzy Saws 1 |
| Band Pass Square |
| Bright Octaves |
| Heavy Octaves |
| Phaser Jet |
| Resolution |
| Steamy Square |
| Tune Up |
| Big Belly Pad |
| Bright PWM |
| Bright Sync Sweep |
| Bright Sync Waves |
| Bright Wave Bells |
| Floater |
| Fuzzy Saws 2 |
| Fuzzy Saws 3 |
| High Pass Sweeper |
| Nice Sweeper |
| Saw + Strings |
| Soft Square Pad |
| Square Bend |
| Big Sweeper |
| Sparkle |
| Digital Cascade |
| Soft Fizzle |

Action Pads

| |
|----------------------|
| Glittering Pad |
| Harmonics Reso Atmos |
| Synco Funk |
| Vocoder Loop Pad |
| Sample & Hold Pad 2 |
| Hollow Phaser Gate |
| Accented Gater |
| Sample & Hold Pad 1 |
| Rich Pad + Sparkles |

Pad Layers

| |
|------------------------|
| Classic Bell |
| Dirt Monster |
| Lightness |
| Lunar Desert |
| Menacing |
| Heavy Breathing |
| Wavetable Saw Sweep |
| Alien Landscape |
| Kalimba Melody |
| Subsonic Whup |
| Bright Noise Sweep |
| Wavetable Tinkles |
| Psychedelic Monks |
| Pulsing Sparkle |
| Inharmonic |
| Nightmare Vox |
| Wavetable Square Sweep |
| Falling Noise Pulse |
| Rhythmic HP |
| Sparkles |
| Noise Layer |
| Magic Sequence |
| Varied Pulse |
| Pulsing LP Noise |
| Windchimes |
| Belly |
| S&H Noise Sweep |
| Sweeping Saw LFO |

Pad Layers (Cont.)

| |
|---------------------|
| Heaviness |
| Bendy Chime |
| Dancing Harmonics |
| Eerie Space |
| Ghost Choir |
| Dark Bells |
| Heavy Chimes Pad |
| Living Thing |
| Meta Trill |
| Rev Glock |
| Slow Metal Sweeper |
| Sprinkles |
| Syncerator |
| Wavetable Seq Sweep |
| Chimey |
| Bellissimo |
| Pulsing Schwoong |
| Anvils |
| Glitter |
| Noise Sweep |
| Deep Space |
| Noise Band 2 |
| Pulsing HP Noise |
| Cave Drips |

Percussive

| |
|------------------------|
| Hollow Arp |
| Metal Noise Arp |
| Strung Up |
| Random Chime |
| Popper |
| Galloping Woodblocks |
| Arpogee |
| Saw Arp |
| Arpy 1 |
| Soft FM Arpeggio |
| Syncophant |
| Tiney Arp |
| FM Tinemaker |
| Tinemaker |
| Sequencer Perc 1 |
| Sequencer Perc 2 |
| Hammered Metal Slap |
| Steam Pipes |
| Timbale 1 |
| Noise Crash |
| Piano Attack Partial |
| Organ Key Clicks |
| Belly Attack Partial |
| E Piano Attack Partial |
| Clav Attack Partial |
| FM Mallet |
| FM Metallic Breath |
| FM Metallic |

Percussive (Cont.)

| |
|--------------------------|
| FM Percussive |
| Vibes Attack Partial |
| Tapped Bottle |
| Analog Pulse |
| Analog Saw |
| Ac Guitar Attack Partial |
| Muted El Guitar Attack |
| Synth Guitar |
| Bass Guitar Pick |
| Hat |
| 80s Cowbell |
| Agogo 1 |
| Agogo 2 |
| Analog Metal |
| Bent Metal |
| Castanet Attack Partial |
| Chine Type |
| Woody |
| Crash |
| Electro Blip |
| Electro Hat |
| Electro Ride |
| Electro Tom |
| Electro Wood |
| Endless Kick |
| Flexible Noise |
| Galloping Pipes |
| Jingle Bell |

Percussive (Cont.)

| |
|----------------|
| Kick Drum |
| Metal Girl |
| Metal Guy |
| Pitched Cabasa |
| Reso Zap |
| Steamy Pipes |
| Tambourine |
| Timbale 2 |
| Triangle |
| Windchimes |
| Woodblock |

Polysynths

| |
|--------------------|
| Attackertronic |
| D Something 1 |
| Techno Stadium |
| Porta Bend |
| Smooth Metal |
| Simple Strings |
| Sparkling |
| Bright Zapper |
| Standard Bend Poly |
| Bruce The Saw |
| Bug Terminator |
| Classic Saw Poly |
| Sync Attack |
| Diffused Saws |
| Digital Fantasy |
| Percy Saw |
| Puncher |
| Big Strings |
| Slapback |
| Stratosphere |
| Attack Sweep |
| Basic Pulse Width |
| Big Octave Strings |
| Bright n Smooth |
| Chorus Strings |
| Classic Digi Metal |
| D Something 2 |
| Digital Metal |

Polysynths (Cont.)

| |
|-------------------|
| Lush Digi Stack |
| Percussive Choral |
| Perky Chords |
| Propogate |
| Sync Funk |
| Techno Chords |
| Tines Pad |
| Vocalised |
| Wavy |

Synth Brass

| |
|---------------------|
| Attack Brass |
| Classic Synth Horns |
| Spitty Synth Brass |
| Warm Horns |
| Bright n Bendy |
| Brighter Horns |
| Bright Synth Brass |
| Tune Up Brass |
| Brite n Tite |
| Attack Reso Brass |

Soft Leads

| |
|----------------------|
| Nice Saw |
| Lost In Space |
| Metal With Mandolins |
| Not Too Phased |
| Unison Square Lead |
| Soft Sync |
| Chime Lead |
| Clicky Phaser Lead |
| Nice Wave |
| Resonating Lead |
| Smooth Square |
| Vocalish |
| Theremin |
| Calliope |
| Bend Saw |
| Light Square Lead |
| Tri Self Oscillating |
| Soft Saw |
| Whiner |
| Fuzzy Pulse |

Hard Leads

| |
|------------------|
| Saw Stack |
| Dangerous |
| Velosync |
| A Little Phased |
| Excited |
| Deep Fried |
| Dynamic Dirt |
| Square Stack |
| Insyncerator |
| Digi Lead |
| Dirty Square |
| Square Uni Sync |
| Fifth Saw |
| Nasty 5th |
| Pauls State |
| Saw 5th |
| Saw Octave Stack |
| Saw Octave |
| Saw Stack 2 |
| Simple Saw |
| Syncer |
| The Razor |
| Wire Lead |
| Bright Unison |
| 1 Osc Pulse Lead |

Ambience + FX

| |
|------------------------|
| Underwater Cave |
| Snoring Vogon |
| Reverse Melody |
| S&H Reso Atmos |
| Vogon Alarm Clock |
| It's Damp In Here |
| Lonely Space Traveller |
| Flying Zapper |
| Pulsating Sub |
| Mans Best Friend |
| Didjeridont |
| Ambient Droplets |
| Subsonic |
| Heavy Wind |
| Pressure Leak |
| Slave Ship |
| Ambient Resonance |
| Ausserirdische |
| Chatter |
| Cosmic Hail Storm |
| Drunken Organist |
| Gentle Grains |
| Harp On |
| Musical Cosmology |
| Rhythmatron |
| Rhythmetic |

Acoustic Piano

| |
|-----------------------|
| Natural Grand Piano |
| Grand Piano Eco |
| Reduced Piano |
| Resonant Ambience |
| Resonant Ambience Eco |
| Honky Tonk Piano |
| Upright Piano |
| Piano Soft Layer |
| Piano Med Soft Layer |
| Piano Med Hard Layer |
| Piano Hard Layer |
| Piano Hardest Layer |

Electric Pianos

| |
|-------------------|
| Suitcase |
| Suitcase Selector |
| Mark 1 |
| Mark 1 Selector |
| Wurlli |
| Wurlli Selector |
| Pretty FM |
| Warmth FM |
| Synth EP |
| FM EP Body |
| FM Piano Bodies 1 |
| Analog Piano Body |
| FM Tinemaker |
| Tinemaker |

Organs

| |
|------------------------|
| The Classic B |
| Clean + Warm |
| Full Bars |
| Dirty 70s |
| Full n Rich |
| Jazz |
| Kick Me |
| Paler Shade Of White |
| Reggae Organ |
| The Kid |
| Cruisey Chap |
| Cartoon OClock |
| Nice n Smooth |
| Full Rock |
| Clean + Funky |
| Huge Cathedral |
| Welcome |
| Cathedral Organ |
| Simple Cathedral Organ |
| Tonewheels Bleed |
| Transistor Bleed |

Clavinets

| |
|-------------------------|
| Clavinet |
| Clavinet + Tone Control |
| Voice Mod Clav |
| Wah Clav |
| Bi-Phaser Clav |
| Phaser Clav |
| Tremolo Clav |
| Amped Clav |

Strings

| |
|-----------------------|
| Big Legato Strings |
| Big Legato Pad |
| Formant Shift Strings |
| Soft Legato Strings |
| Soft Legato Pad |
| Bright Legato Strings |
| Bright Legato Pad |
| Pizzicato Strings |
| Legato-Pizzicato |
| Hybrid Strings Stack |
| Hybrid Pad |
| Formant Shift Hybrid |

Vocals

| |
|---------------------|
| Aah Choir |
| Aah Choir Pad |
| Aah Choir High Pass |
| Ooh Choir |
| Ooh Choir Pad |
| Ooh Choir High Pass |
| Ooh To Aah Choir |
| Aah To Ooh Choir |
| Breathy Hybrid |
| Breathy Pad |
| Breathy High Pass |
| Smooth Hybrid |
| Smooth Pad |
| Smooth High Pass |
| Digi Choir |
| Digi Pad |
| Digi High Pass |
| Old Faithful |
| Faithful Pad |
| Faithful High Pass |
| Classic Fair |
| Fair Pad |
| Fair High Pass |

Brass + Woodwind

| |
|-----------------------|
| Natural Brass Section |
| Brass Soft Layer |
| Brass Hard Layer |
| Bigger Section |
| Hybrid Brass |
| Hybrid Octaves |
| French Horns |
| Hybrid Horns |
| Solo Trumpet |
| Soft Trumpet |
| Hard Trumpet |
| Trumpets Section |
| Tenor Sax |
| Soft Tenor Sax |
| Hard Tenor Sax |
| Tenor Saxes Section |
| Clarinet |
| Soft Clarinet |
| Hard Clarinet |

Mallets

| |
|--------------|
| Vibraphone |
| Marimba |
| Xylophone |
| Music Box |
| Bent Marimba |
| Vibratone |

Bells

| |
|------------------------|
| Glockenspiel 1 |
| Tubular Bells |
| Pretty Chimes |
| Light Bells |
| Analog Chimes |
| Big FM Bells |
| Complex Bells |
| Digi Buzz Bells |
| Digital Spectral |
| FM Bells Stack |
| Glassy Glockenspiel |
| Huge Bending Bells Pad |
| Nasal Bells |
| Reso Noise Bells |
| Woodpecker Bells |
| Pitched Triangle |
| Church Bells Loop |
| Reversed Glock Melody |
| Glock Gliss Down |
| Glock Gliss Up |

Guitars

| |
|-----------------------------|
| Steel String Acoustic |
| Steel String Ac + Harmonics |
| Steel String Ac Harmonics |
| Soft Steel String |
| Med Steel String |
| Hard Steel String |
| Nylon String Acoustic |
| Nylon String Ac + Harmonics |
| Nylon String Ac Harmonics |
| Soft Nylon String |
| Med Soft Nylon String |
| Med Hard Nylon String |
| Hard Nylon String |
| Very Hard Nylon String |
| Clean Electric Guitar |
| Mod Wah Clean |
| Dynamic Wah Clean |
| Dirty Guitar |
| Mod Wah Dirty |
| Dynamic Wah Dirty |
| Clean Electric 1+5 Strum |
| Clean Major Bar Chord |
| Clean Minor Bar Chord |
| Powerchords + Feedback |

Ethnic

| |
|-------------------|
| Sitar |
| Gentle Sitar |
| Kalimba |
| Melodic Kalimba |
| Panpipes |
| Soft Panpipes |
| Hard Panpipes |
| Panpipes Pad |
| Percy Bottle |
| Soft Bottle |
| Synth Bottle Perc |

Hits

| |
|-----------------|
| Orchestra Hit 1 |
| Orchestra Hit 2 |
| Orchestra Hit 3 |
| Orchestra Hit 4 |
| Orchestra Hit 5 |
| Orchestra Hit 6 |
| Orchestra Hit 7 |

Synth Bases

| |
|------------------------|
| Pulse Thumper |
| Wide Unison Saw Bass |
| Two Osc 303 Imposter |
| Percy FM Bass |
| Ultra Fuzz Attack |
| Tek Bass |
| Phaser Face Bass |
| Simple Analog Thumper |
| Rave Saw + Sync Bass |
| Subsonic 2 |
| Super Fuzz |
| Octa Saw Bass |
| Sync Bass |
| Car Chase Bass |
| Pulsating Vocal Fuzz |
| Aliased Wavetable Bass |
| Dirty Fooger Bass |
| FM Velo Start Bass |
| Gritty Saw Bass |
| Hybrid Thump Bass |
| Jupiter Unison Bass |
| Metallic Fuzz Bass |
| MKS Uni Bass 2 |
| MKS Uni Saw |
| Reso Wow Bass |
| Rubberly Bass |
| Simple Saw Bass |
| Simple Wow Bass |

Synth Bases (Cont.)

| |
|------------------------------|
| Subsonic 1 |
| The Lonely Guy |
| Tight Ow Bass |
| 303 Imposter |
| Unison Square Bass |
| Wide Unison Bass |
| 1 Osc Saw Bass |
| 1 Osc Saw Sync Bass |
| 1 Osc Square-Pulse Bass |
| 1 Osc Square-Pulse Sync Bass |
| 2 Osc Pulse Sync Attack Bass |
| 2 Osc Saw Sync Attack Bass |

Basses

| |
|-----------------------|
| Full Pick Bass |
| Soft Pick Bass |
| Hard Pick Bass |
| Full Finger Bass |
| Soft Finger Bass |
| Hard Finger Bass |
| Very Hard Finger Bass |
| Double Bass |
| Soft Double Bass |
| Medium Double Bass |
| Hard Double Bass |

Drums

| |
|-------------------------|
| Kicks Selector |
| Snare Selector |
| Hats+Toms+Cyms Selector |
| Clap+Cow+Tam Selector |
| Kicks Menu |
| Snare Menu |
| Sidesticks Menu |
| Claps Menu |
| Hi-Hats Menu |
| Toms Menu |
| Crashes Menu |
| Splashes Menu |
| Rides Menu |
| China Type Menu |
| Cowbells + Tams Menu |

Percussion

| |
|------------------------|
| Natural Percussion |
| Electronic Percussion |
| Conga Menu 1 |
| Conga Menu 2 |
| Bongo Menu 1 |
| Bongo Menu 2 |
| Tambourine Menu |
| Maracas Menu |
| Bongos+Congas+Timbales |
| Metallic + Wooden Perc |
| Shaken Percussion |
| Windchimes |
| Timpani |
| Timpani Low Velo |
| Timpani Med Velo |
| Timpani Hard Velo |
| Taiko |

Loops

| |
|----------------------|
| Human Beatbox 080 |
| Acoustic Drums 100 |
| Acoustic Drums 120 |
| Acoustic Rock 120 |
| Acoustic Vintage 100 |
| Reggae 120 |
| Big Beat 100 01 |
| Big Beat 100 02 |
| Big Beat 100 03 |
| Big Beat 100 04 |
| Big Beat 100 05 |
| Electronic 110 01 |
| Electronic 110 02 |
| Electronic 110 03 |
| Electronic 110 04 |
| Electronic 110 05 |
| Electronic 120 01 |
| Electronic 120 02 |
| Electronic Perc 120 |
| Drum n Bass 160 01 |
| Drum n Bass 160 02 |
| Drum n Bass 160 03 |
| Drum n Bass 160 04 |
| Perc Loops 90 |
| Tek Chords 120 |
| Melodic Loops 100 |

Basics

| |
|-------------------|
| Poly Saw |
| Poly Square |
| Poly Pulse |
| Poly PWM |
| Poly Triangle |
| Poly Sine |
| Poly Digital Wave |
| Poly Electro Drum |
| Mono Saw |
| Mono Square |
| Mono Pulse |
| Mono PWM |
| Mono Triangle |
| Mono Sine |
| Mono Digital Wave |

appendix c

Arpeggiator Modes

| Arpeggio | Description |
|------------|---|
| Up | The held notes are played from lowest to highest. |
| Up 2 | Same as Up, but with 2 octave range (held notes are repeated an octave higher). |
| Up 3 | Same as Up, with 3 octave range. |
| Down | The held notes are played from highest to lowest. |
| Down 2 | Same as Down, with 2 octave range. |
| Down 3 | Same as Down, with 3 octave range. |
| U & D | Up and Down: The held notes are played lowest-to-highest-to-lowest. |
| U & D 2 | Same as U & D with 2 octave range. |
| U & D 3 | Same as U & D with 3 octave range. |
| U & D 3T | Same as U&D 3, but with a swung/triplet feel. |
| Play Order | The held notes are triggered in the order they were pressed. |
| Random | On each step, one of the held notes is selected randomly. |

| Arpeggio | Description |
|---------------------|---|
| Random 2 | Same as Random, but notes an octave above are also played. |
| Synth Bass | A typical synth bass pattern is played with the lowest held note. |
| Disco Bass | A simple bass riff is played with the lowest held note and an octave above. |
| House Piano | Hold a bass note and a chord to hear the riff as intended. |
| Latin Piano | A different riff with a latin feel—hold a chord! |
| Pattern 1, 2, 3 | Three different “techno” patterns where the held chord is repeated. |
| Vol Gate 1, 2, 3, 4 | Four patterns that periodically mute the sound instead of retriggering the notes. |
| Loop | This mode is used by Parts in the Drum Loop, Percussion Loop and Melodic Loop categories. You can adjust the speed of the loop, and also experiment with other arpeggiator modes for loop playback. |
| Loop Shuffle | Same as Loop, but alternate notes are delayed by 25% for a shuffle feel. |
| Loop Swing | Same as Loop, but alternate notes are delayed by 50% for a swing feel. |

appendix d

Effects And Parameters

| Category | Name | Knob 1 | Knob 2 |
|----------|----------------|--------|---------|
| Hall | Hall | Size | Shape |
| | Soft Hall | Size | Shape |
| | Bright Hall | Size | Shape |
| | Predelay Hall | Size | Pre-Del |
| | Dense Hall | Size | Shape |
| Room | Room | Size | Shape |
| | Soft Room | Size | Shape |
| | Bright Room | Size | Shape |
| | Predelay Room | Size | Pre-Del |
| | Dense Room | Size | Shape |
| Plate | Plate | Size | EQ |
| | Soft Plate | Size | EQ |
| | Bright Plate | Size | EQ |
| | Predelay Plate | Size | Pre-Del |
| | Dense Plate | Size | EQ |

| Category | Name | Knob 1 | Knob 2 |
|-----------------|-------------------|---------------|---------------|
| Special Reverb | Cho+Rev | Chor Depth | Rev Size |
| | Cho+Rev Soft | Chor Depth | Rev Size |
| | Cho+Rev Bright | Chor Depth | Rev Size |
| | Non-Linear | Size | EQ |
| | Reverse | Size | Diff |
| | Early Reflections | Size | EQ |
| | Drum Room | Size | EQ |
| | Club | Size | Shape |
| | Overheads | Size | Height |
| | Stadium | Size | EQ |
| | Flapper | Size | Diff |
| | Close | Size | EQ |
| | Resonators | Pitch | Decay |

| Category | Name | Knob 1 | Knob 2 |
|-----------------|-------------------|---------------|---------------|
| Delay | Delay | Delay | Feedback |
| | Lofi Delay | Delay | Feedback |
| | Stereo Delay | Delay | Feedback |
| | Lofi Stereo Delay | Delay | Feedback |
| | Ping Pong | Delay | Feedback |
| | Lofi Ping Pong | Delay | Feedback |
| | Gallop Echo | Delay | Feedback |
| | Tape Echo | Delay | Feedback |
| | Ducking Delay | Delay | Feedback |
| | Cloud Delay | Delay | Feedback |
| | Chaos Delay | Grain | Feedback |
| | Modulation | Chorus | Rate |
| Rich Chorus | | Rate | Depth |
| Ensemble | | Rate | Depth |
| Space Chorus | | Rate | Depth |
| Quad Chorus | | Rate | Depth |
| Voice Mod | | Rate | Vowel |
| Phaser | | Rate | Depth |
| Bi-Phaser | | Rate | Depth |
| Deep Phaser | | Rate | Depth |
| Flanger | | Rate | Depth |
| Detune | | Detune | Delay |
| Pitch Shift | | Left | Right |



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