

Editor: Korg X/N Series

This *Galaxy Plus Editors* module adds support for the Korg X2, X3, X5, X5D, X5DR, 05R/W, N264, N364. This editor manual describes only features specific to the Korg X/N Series Editor. See your Galaxy manual for information on:

- Installing Editor and Librarian modules;
- Loading/sending Bundles, Banks, and Patches;
- Using common editing features such as graphic envelopes, pop-up menus, and numericals.

You should also read the “device specific” online Help, which is available from the Apple **Help** menu when an Edit or Librarian Window is active.

ABOUT THIS DOCUMENT

This manual does not attempt to teach programming for the supported Korg devices and it does not discuss each parameter in detail. Often, the effect of one parameter depends on the settings of other parameters. If you alter a parameter and don't hear any change in sound, examine how other parameters may affect the desired outcome. Refer to your Korg manual to learn how various parameters interact and affect the overall sound.

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CH 1: THE X/N SERIES STRUCTURE

MULTISOUND

The X/N series devices all share a common sonic architecture. The basic building block of any patch consists of one or more *Multi-sounds*. The prefix “Multi” is a bit misleading: do not confuse this term with *Combinations* or *Double Mode*. The Multisound is a single sampled waveform, such as Organ or Oboe.

PROGRAM

A *Program* consists of a Multisound modified by a Variable Digital Filter (VDF) and a Variable Digital Amplifier (VDA). Two Multisounds can be combined in a single Program using Double Mode to produce a thicker, more complex tone.

☆ *NOTE: The overall polyphony (simultaneous notes) is reduced by half in Double Mode. For example, the X5 produces 32 notes when using all single Multisounds. Consult your Korg manual for information on the polyphony limits of your instrument.*

COMBINATIONS

Combinations are used to:

- Assign different Programs to different keyboard ranges (split keyboard) allowing you to play different instrument sounds with each hand;
- Layer different Programs on the same keyboard range, creating thick, complex sounds.

MULTIMODE

Multi Mode allows the X/N series devices to be used as 16 channel multi-timbral tone generators. This mode is generally used to play a multitrack song from a computer or sequencer. The channels default to match the tracks (1-16) but can be reassigned.

EFFECTS

The X/N series devices provide two digital multi-effects processors that can be used in a wide variety of configurations to produce reverb, chorus, flange, rotary speaker, equalizer, distortion, and delay effects. Each Program can be assigned an effect setting that is used when that Program is played. However, a Program's effect settings are ignored when the Program is used in a Combination or Multi. Each Combination and Multi has its own effect assignment.

The next chapters discuss the editing controls for each of these basic components.

CH 2: EDITING PROGRAMS

To edit a Program:

- ① Open or create a new Bundle for your Korg X/N series device.
- ② Double-click the Program icon in the Bundle Window to open the Program Bank.
- ③ Select a Program and click the **Edit** button to open the Program Edit Window.

THE PROGRAM EDIT WINDOW

The Program Edit Window consists of five basic editing blocks:

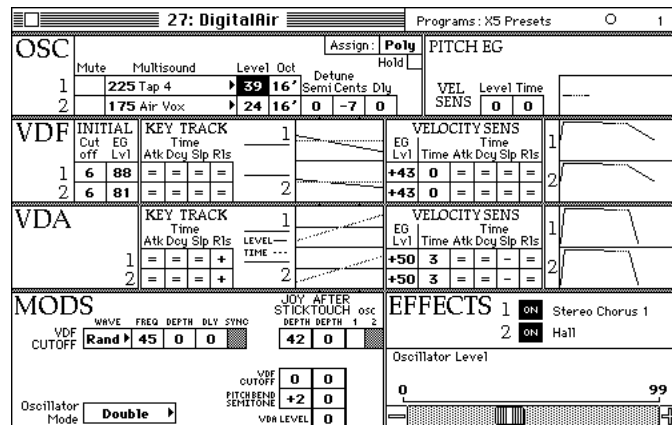


Figure 1: Program Edit Window

- **OSC:** Controls parameters affecting Oscillators 1 and 2.
- **VDF:** Controls parameters affecting Variable Digital Filters 1 and 2.
- **VDA:** Controls parameters affecting the Variable Digital Amplifiers 1 and 2.
- **MODS:** Controls modulation parameters.
- **EFFECTS:** Displays the active effects and provides access to editing for each effect.

NOTE: Any selected parameter is displayed in the lower left of the Effects Edit Window as a scroll bar control.

Parameters for each of the five areas are discussed in the following sections.

OSC

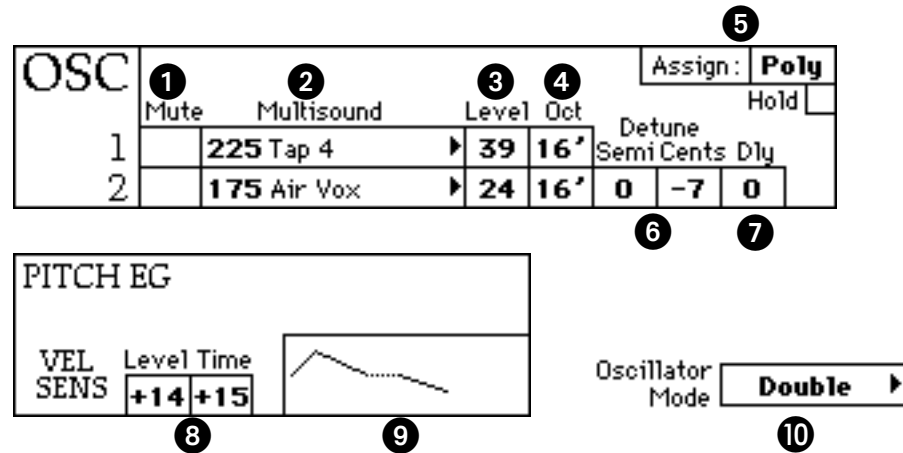


Figure 2: Program Edit Window, Oscillator Parameters

- ① **Mute:** Mutes/un-mutes the oscillator.
- ② **Multisound:** Selects the multisound for the oscillator.
- ③ **Level:** Sets the level for the oscillator.
- ④ **Oct:** Sets the octave for the oscillator.
- ⑤ **Assign:** Toggles between Poly (multiple notes played simultaneously) and Mono (turns off last note when next note is played). Check the **Hold** box to sustain notes after the key is released.
- ⑥ **Detune:** Sets the number of semitones (**Semi**) and cents (**Cents**) that Oscillator 2 is detuned from its normal pitch.
- ⑦ **Delay:** Sets an initial delay before which the sound of Oscillator 2 is heard.

PITCH EG

The Pitch EG section controls the pitch envelope generator for the Program. These parameters control how the pitch changes over time and how the velocity affects the pitch envelope. [Figure 2](#) shows the PITCH EG section underneath, rather than to the side of, the OSC section for clarity.

- ⑧ The **Level** and **Time** fields control how velocity affects the pitch envelope.

- 9 Click on the small pitch envelope to display a larger, editable graphic representation of the envelope (shown in the upper portion of [Figure 3](#)) at the bottom of the window. The PITCH EG section (shown in the lower portion of [Figure 3](#)) also changes to display the Attack, Decay, and Release times/levels.

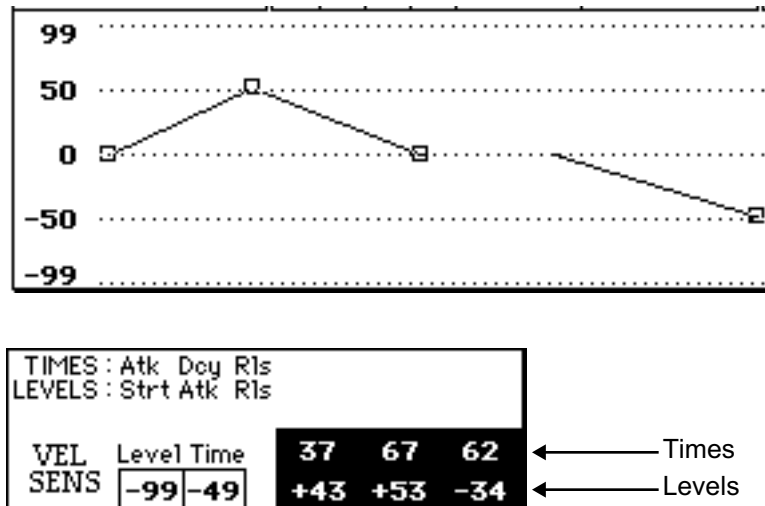


Figure 3: Pitch Envelope and Parameters

Drag the squares to change the times and levels. The square on the far left can not be moved horizontally (in time) because it represents the beginning of the envelope. The third square from the left can not be moved vertically (level) because it controls the *time* at which the pitch returns to normal after the note is struck but before it is released.

Moving the squares in the pitch envelope graphic changes the corresponding parameters in the pitch envelope fields. You can also set the pitch envelope fields explicitly and observe the corresponding changes to the pitch envelope graphic.

- 10 **Oscillator Mode:** Although this field is displayed at the bottom of the Program Edit Window (see [Figure 1](#)), it is integrally associated with the OSC section. Select Single, Double, or Drums mode by dragging in the field or from the pop-up menu that appears by clicking on the arrow at the far right of the field.

NOTE: When in Single or Drum mode, parameters for Oscillator 2 are not available.

Osc EXTRAS

With the Program Edit Window active, choose **Edit>Edit Osc Extras** to open the Osc Extras Window.

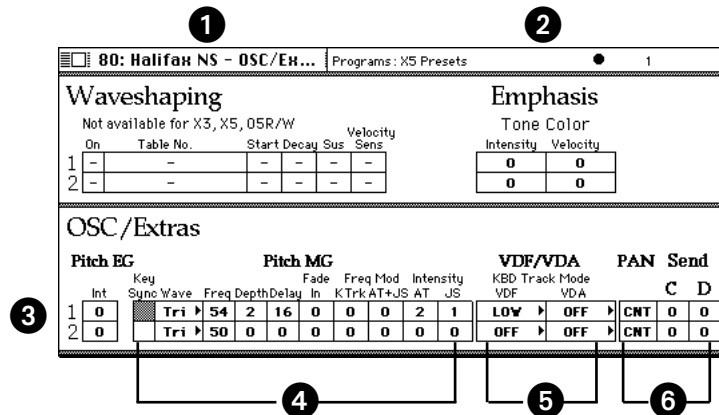


Figure 4: Osc Extras Window

- ❶ **Waveshaping:** Not implemented for the X/N series editor.
- ❷ **Emphasis:** The **Intensity** and **Velocity** fields configure how much the VDF affects the Tone Color of the oscillator and how much the keyboard velocity influences this effect.
- ❸ **Pitch EG:** The **Int** field determines the intensity with which the Pitch EG affects the pitch of the oscillator.
- ❹ The **Pitch MG** fields control the pitch modulation of the oscillator.
 - **Key Sync:** This toggle determines whether the modulation continues (OFF) or restarts (ON) for each new note.
 - **Wave:** Selects the Pitch MG wave type.
 - **Freq:** Selects the frequency of the pitch modulation.
 - **Depth:** Sets the depth of the pitch modulation.
 - **Delay:** Sets the delay before pitch modulation begins.
 - **Fade In:** Sets the rate at which the modulation reaches the **Int** (intensity) setting after the Delay.
 - **Freq KTrk:** Sets the pitch modulation sensitivity to keyboard tracking.
 - **Mod AT + JS:** Sets how much the **Freq** is increased by After Touch and the Joystick (MIDI Controller #1).
 - **AT Intensity:** Sets the amount that After Touch affects the modulation **Int** setting.
 - **JS Intensity:** Sets the amount that the Joystick affects the modulation **Int** setting.
- ❺ **VDF/VDA KBD Track Mode:** Determines how the VDF and VDA EGs are affected by keyboard tracking.

- ⑥ **Pan and Send:** The Pan and Send controls determine how much output is sent to the A, B, C, and D buses that are routed to the effects processors. The **Pan** setting splits the output between buses A and B. The **Send** setting feeds buses C and D.

VDF The VDF section is divided into three sections: INITIAL, KEY TRACK, and VELOCITY SENS. The VELOCITY SENS section (lower portion of [Figure 5](#)) is shown below, instead of to the right of, the KEY TRACK section for clarity.

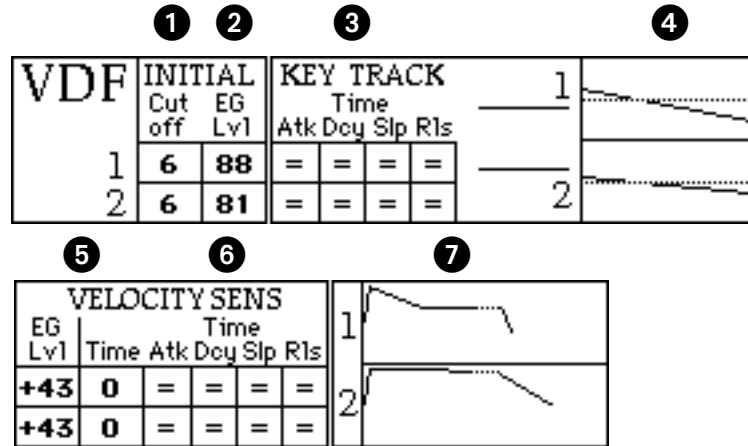


Figure 5: Program Edit Window, Filter Parameters

INITIAL

- ① **Cutoff:** Sets the initial VDF cutoff frequency prior to the effects of the VDF EG.
- ② **EG Level:** Sets the initial VDF level prior to the effects of the VDF EG.

KEY TRACK

- ③ **Time:** These fields set the Attack (Atk), Decay (Dcy), Slope (Slp), and Release (Rls) values to +, -, or =. They determine how the VDF EG Time values are affected by keyboard tracking.
- ④ **Keyboard Tracking:** Clicking here displays the Keyboard Tracking Intensity (Int), EG Time (EGtm), and Key fields in place of the small graphic. A larger graphic representation (not editable) of their relationship is also displayed to the right of the fields.

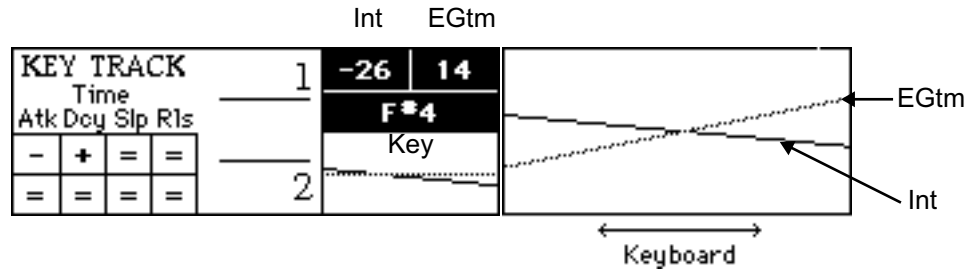


Figure 6: Key Tracking Parameters

Set the Int and EGtm fields and observe the changes to the graphic on the right. The intersection of the two lines denotes the Key.

VELOCITY SENS

- ⑤ **EG Level and Time:** These fields determine how the VDF EG is affected by note velocity.
- ⑥ **Time:** These fields set the Attack (Atk), Decay (Dcy), Slope (Slp), and Release (Rls) values to +, -, or =. They determine how the VDF EG Time values are affected by keyboard velocity.
- ⑦ **VDF EG:** Click here to open a larger, editable VDF EG graphic that appears in bottom of the Program Edit Window. The fields corresponding to each point in the graphic are displayed in place of the small VDF EG graphic. Drag the points or set the fields to change the VDF EG values.

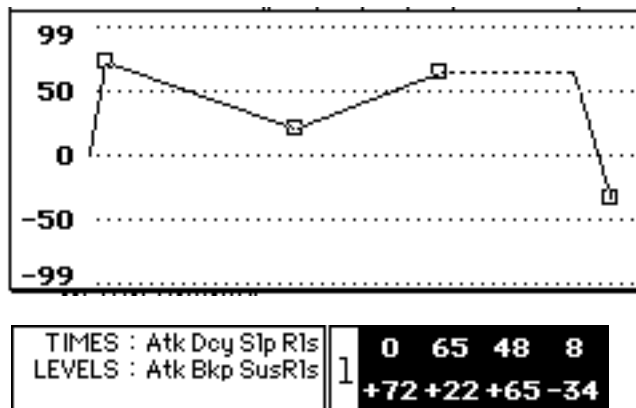


Figure 7: Filter Envelope and Parameters

VDA The VDA section controls the Variable Digital Amplifiers 1 and 2. The VDA controls for keyboard tracking/sensitivity and EGs function in a similar manner to those described in the VDF section.

MODS This section sets the parameters that affect VDF modulation, and how the Joy Stick and After Touch affect modulation. The OSC 1 and 2 boxes (far right of [Figure 8](#)) enable/disable each oscillator from being modulated.

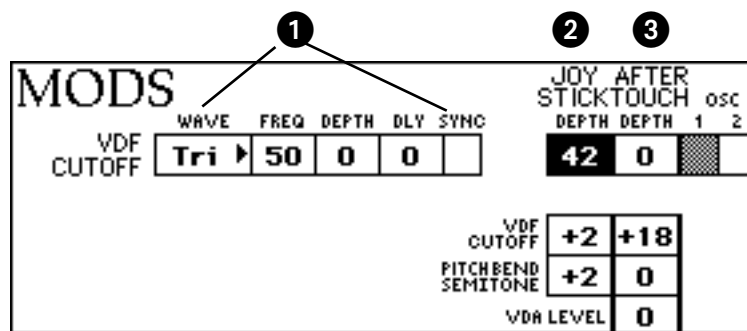


Figure 8: Program Edit Window, Modulation Parameters

- ❶ **VDF Cutoff:** Sets the Wave, Freq, Depth, Delay and Sync parameters for the modulation.
- ❷ **Joy Stick:** This column sets the Depth, VDF Cutoff, and Pitch Bend parameters affected by the Joy Stick.
- ❸ **After Touch:** This column sets the Depth, VDF Cutoff, Pitch Bend, and VDA Level parameters affected by After Touch.

EFFECTS The EFFECTS section lists the assigned effects and whether the effect is ON or OFF.

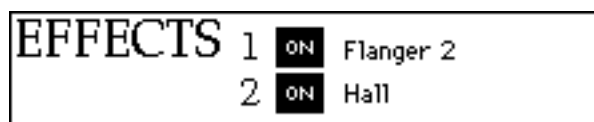


Figure 9: Program Edit Window, Effects

Click the ON/OFF toggle to turn the effect ON or OFF.

Select effect 1 or 2 and choose **Edit>Edit Effects** or double-click the “1” or “2” to open the Effects Edit Window for the Program.

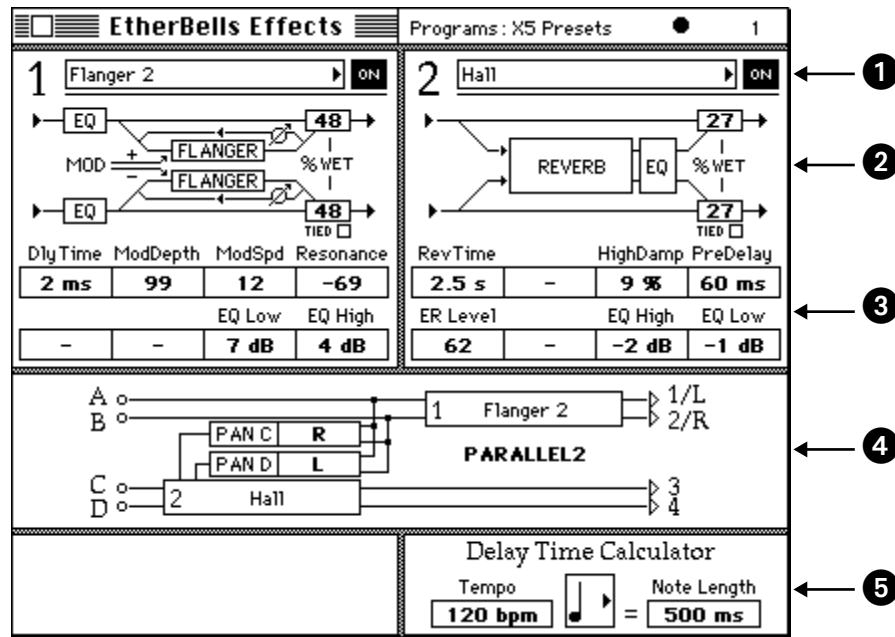


Figure 10: Effects Edit Window

- ❶ Selects the effect for Effect 1 or 2 and sets the ON/OFF toggle.
- ❷ Displays a schematic representation of the effect. The Wet/Dry balance is editable.

NOTE: The "Tied" checkbox is inactive for the X/N series devices.

- ❸ This section contains the numerical fields that pertain to the effect.
- ❹ This section displays the effect configuration, output balance and routing. Click anywhere in the graphic (except in the Pan numerical fields) to select it. The whole graphic behaves like a numerical field and can be changed between Serial and Parallel configuration options. Click in the Pan numerical fields to set the Pan either for output or input to the next effect.
- ❺ **Delay Time Calculator:** Opcode includes this tool to calculate delay times for a selected note value and tempo to synchronize delay effects with the tempo and rhythm of the musical material. The calculated time value may then be copied and pasted into any Time numerical, such as Early Reflection, PreDelay, or Reverb/Delay.

EFFECT MODS

Choose **Edit>Edit Effect Mods** to open the Effect Modulation Window.

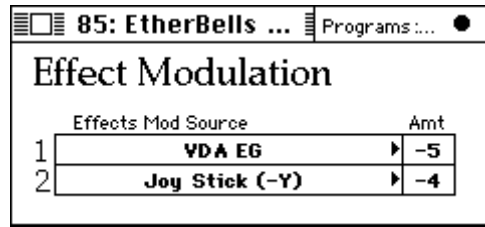


Figure 11: Effect Modulation Window

A different **Effects Mod Source** and **Amount** can be selected for each effects processor. Each effect has 1 parameter that can be affected by the modulation source.

SELECTING PARAMETER GROUPS

In addition to the standard editing techniques that you are already familiar with, the X/N series Program editor provides a few editing shortcuts that you'll find useful as you edit Programs:

- Click on the "1" or "2" in the OSC, VDF, VDA, or EFFECTS sections to select all parameters for that section. This allows groups of parameters to be copied/pasted from within the same Program or to other Programs.
- Clicking on the title of most parameter groups selects its parameters. For example, clicking on EFFECTS selects the entire effects system. Clicking on the VDF Cutoff area selects all of its parameters.
- Choosing **Edit>Select System 1** or **Edit>Select System 2** selects all parameters that pertain exclusively to oscillator 1 or 2.

NOTE: The status area below the EFFECTS section displays what is currently selected.

CH 3: EDITING COMBINATIONS

To edit a Combination:

- ① Open or create a new Bundle for your Korg X/N series device.
- ② Double-click the Combi icon in the Bundle Window to open the Combination Bank.
- ③ Select a Combination and click the **Edit** button to open the Combination Edit Window.

THE COMBINATION EDIT WINDOW

All of the parameters in the Combination Edit Window are simple numerical fields, pop-up menus and checkboxes. Each Program can be:

- Assigned a MIDI channel, output level and pan, note and velocity range, and tuning;
- Enabled to receive program change, sustain pedal, After Touch, and continuous controller messages;
- Sent to buses C and D.

0: Star*Burst												Combis : X5 Presets		1	
COMBINATION				EFFECTS 1 <input checked="" type="checkbox"/> Flanger 1		EFFECTS 2 <input checked="" type="checkbox"/> Flanger-Delay									
Mute	Program	MIDI Chan	Level	Output/ Pan	Note Range	Velocity Range	Detune Semitone	Cents	PGM CHG	SUS PDL	AFT TCH	CTL CHG	EXT PGM	Send C	Send D
1	020A GlideSweep	1G	98	A06	C-1 C4	68 127	+12	0	-					P	P
2	089A 50's SciFi	1G	76	A10	C#4 G9	1 127	0	0						P	5
3	090A SteamCloud	1G	76	PRG	C-1 G9	1 127	0	0						P	P
4	080A Halfax NS	1G	96	CNT	C-1 C4	18 127	+12	0						4	P
5	097A OoooooPad	1G	51	CNT	C#4 G9	1 127	0	0						6	6
6	008A PowerSynth	1G	103	CNT	C-1 B3	1 94	0	0	-					0	0
7	014A Power Rock	1G	74	CNT	C-1 B3	1 127	0	0						0	0
8	000A Sunrise	1G	127	CNT	C-1 G9	0 127	0	0						0	0

Figure 12: Combination Edit Window

TIMBREDRAW™ WINDOW

The Combination Editor provides the ability to create complex and expressive layered sounds. It is difficult, however, to grasp how keyboard and velocity ranges interact to create the overall sound by observing the Combination Edit Window.

The TimbreDraw Window graphically depicts note and velocity ranges for all Programs in a Combination. The ranges can be graphically edited to define how the Programs work together across the entire keyboard range to create the desired overall sound.

**TIMBREDRAW™
WINDOW**

With the Combination Edit Window active, choose **Edit>TimbreDraw** to open the TimbreDraw Window.

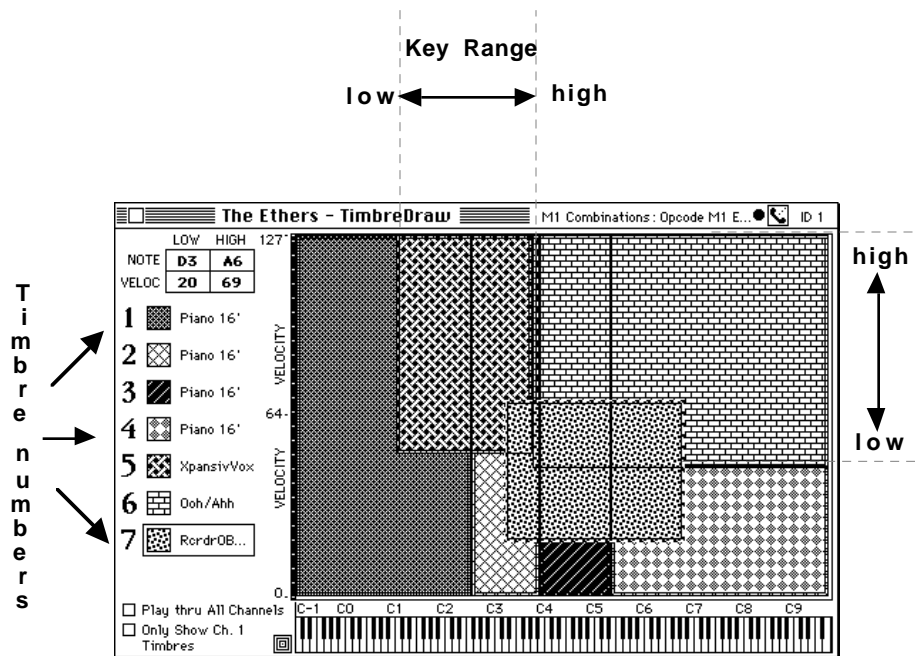


Figure 13: TimbreDraw™ Window

TimbreDraw is a two-dimensional grid that displays and edits note and velocity regions. Each Program's Note and Velocity range is displayed as a patterned rectangle. The vertical size and position is determined by the Program's Velocity range, and the width and horizontal position by the Note range.

Along the left side of the window are a number of "palette" items, or square blocks of pattern, flanked by a Timbre number on the left and a Program name on the right. Each palette item represents a Program within the Combination.

Selecting a palette item activates a moving "Marquee" around the item's active area within the grid, brings it to the front, and draws a rectangle around the palette item.

Since Timbres with identical Key and Velocity ranges are visually indistinguishable, they are selected as a group when any of the identical Timbres are selected individually. The fill pattern of the palette item most recently selected is displayed by the active TimbreDraw rectangle, indicating that it is ready to be edited. When this Timbre is edited, it's no longer linked as part of its former group.

The Key and Velocity ranges for each Timbre can be changed using the numerical values in the upper left corner, or by graphically modifying the range by dragging toward or away from the center of the rectangle. Dragging horizontally changes the key range; dragging vertically changes the velocity range.

As you drag within the grid, the rectangle's position is tracked by the numerals, as well as by the keyboard graphic below it (keys corresponding to your current position are grayed).

☆ *NOTE: Unlike MouseKeys and DrumKeys, this keyboard does not output MIDI notes. For information on testing the effect of your TimbreDraw editing, see [GridPlay \(pg. 15\)](#).*

Two horizontal scales, or magnifications, are available:

- **127 keys**-MIDI's total pitch range;
- **91 keys**-slightly longer than most MIDI keyboard controller's range; more appropriate to the usable range of most MultiSounds; easier to look at.

Clicking on the toggle to the left of the keyboard alternates the two views. It's distinguished from other toggles by its concentric squares.



Figure 14: Toggle to Select Magnification

On the vertical axis, 0, 50, and 100% of MIDI velocity are designated by the numbers 1, 64, and 127, respectively. The narrow black vertical bar next to these numbers displays increments of five velocity numbers.

COPYING LAYERED TIMBRES

	LOW	HIGH
NOTE	C-1	F2
VELOC	1	127

To copy a Timbre's Velocity and Note ranges:

- ① Click on **Note** (or **Veloc**) in the upper left corner of the TimbreDraw Window to select both Velocity and Note values.
- ② Choose **Edit>Copy Parameters**.

- ③ Select the Timbre you wish to paste to by clicking on its palette item.
- ④ Choose **Edit>Paste Parameters**.

To ungroup these identically dimensioned regions, click on one of the palette items currently selected, and either alter a number or drag a rectangle border.

☆ *NOTE: This copy operation differs from copying an entire Timbre to another because only the Key and Velocity parameters are copied and pasted.*

It is not advisable to stack more than three Timbres on the same range and MIDI channel, especially when their Programs are of the Double type. Exceeding this limit uses the available polyphony very quickly. Using the sustain pedal while playing an arpeggio or glissando will show how quickly the number of notes heard dwindles when layering in this fashion. Using only Single-type Programs in a layered Combination helps avoid this undesirable limitation.

GRIDPLAY

You may test the result of your TimbreDraw activity by option-clicking within the grid, generating a MIDI note corresponding to the coordinates on the grid.

CONSTRAINING PLAY TO ONE NOTE OR ONE VELOCITY

You may shift-option-drag in a vertical direction to compare velocity variations of a single pitch; shift-option-drag in a horizontal direction to compare pitch variations at a single velocity.

PLAY THRU ALL CHANNELS

When selected, this toggle allows notes played on the MouseKeys to be transmitted on all channels in the current Combination. When not selected, notes are sent out only on the channel of the active Timbre (surrounded by the rectangular marquee) if **Auto** is selected in the MouseKeys Window. Turn off this toggle to hear and view one Timbre when two or more Timbres are layered on different channels.

☆ *NOTE: When this toggle is changed, the channels in the MouseKeys Window are modified to reflect the new value.*

ONLY SHOW CH. <N>TIMBRES

When selected, only Timbres assigned to that channel are displayed in the TimbreDraw grid. This allows you to temporarily “clean-up” a crowded TimbreDraw Window, so you can concentrate on a single Timbre, or on several Timbres using the same channel.

CH 4: EDITING GLOBAL PARAMETERS AND DRUM KITS

To edit Global Parameters and Drum Kits:

- ① Open or create a new Bundle for your Korg X/N series device.
- ② Double-click the Global/Drumkits icon in the Bundle Window to open that Bank.
- ③ Click the **Edit** button to enter the Global/Drumkits Edit Window.

THE GLOBAL/DRUMKITS EDIT WINDOW

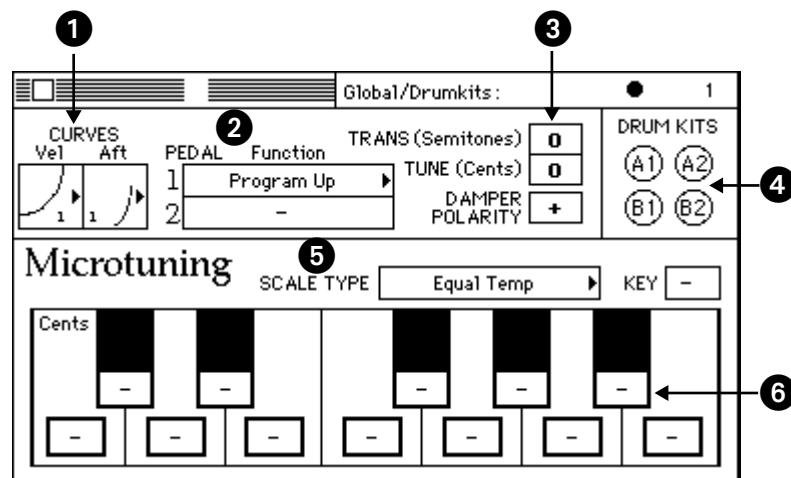


Figure 15: Global/Drumkits Edit Window

- ① **Curves:** The Velocity and AfterTouch curves are accessed by dragging in the graphic as a numerical field or clicking on the arrows to pop-up a menu listing all the curves.
- ② **Pedal Settings:** The function of Pedal 1 is chosen from the **Function** pop-up menu. Click in the **Damper Polarity** field to specify the type of pedal used for the damper pedal (Pedal 2).

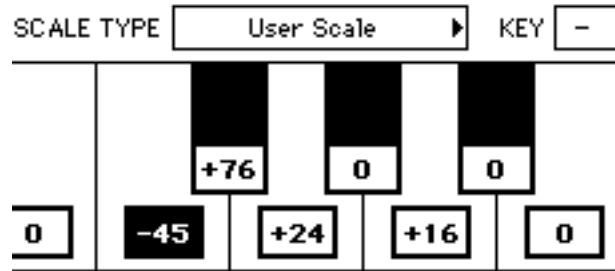
NOTE: Not all of the Korg X/N series devices have support for pedal parameters; therefore these parameters may not be displayed.

- ③ **Trans and Tune:** These fields determine the overall transposition and detuning for the entire keyboard.

- 4 **Drum Kits:** Double-click on any Drum Kit to edit it.

NOTE: Some Korg devices have only 2 Drum Kits and will not display B1 and B2.

- 5 **Scale Type:** This pop-up menu provides access to 10 preset tunings and one User Scale. When choosing a scale type of Pure Major or Pure Minor, the **Key** field specifies the desired key.
- 6 **Microtuning:** When choosing User Scale as the Scale Type, each of the twelve notes within an octave can be tuned +/- 99 cents.



DRUM KIT EDIT WINDOW

To edit a Drum Kit, simply double-click it from the Global/Drumkits Edit Window. In order to hear the Drum Kit you are editing, you must choose **Edit>Send Audition Program**.

DrumKit A1										Global/Drumkits: X5 Presets 0 1									
Instrument	Key	Tune 10¢	Lvl	Dcy	Pan	Ex	Send C	D		Instrument	Key	Tune 10¢	Lvl	Dcy	Pan	Ex	Send C	D	
30 17 Snare 4	B0	-26	0	+55	B13	EX1	3	45		142 Spectrum 1	C#7	-16	0	+99	A07	EX1	4		
31 11 Syn Kick 2	B7	0	0	+56	B01	EX2	3	46		72 Slap Conga	A#1	-55	0	+100	B05	---	4		
32 11 Syn Kick 2	A#7	0	0	+83	B05	---	0	47		78 Tabla 2	C7	0	0	+101	B10	EX3	4		
33 14 Snare 1	A7	0	0	+82	A15	---	1	48		84 OpenTriang	C2	-33	0	+24	A05	---	0	5	
34 14 Snare 1	G#7	-60	0	+95	A08	---	2	49		No Assign	B6	0	0	+23	B10	EX1	1	5	
35 14 Snare 1	D6	0	0	+67	B15	---	3	4		No Assign	A#6	0	0	+25	A09	EX2	2	5	
36 14 Snare 1	G7	0	0	+69	A12	EX3	4	4		No Assign	A6	+34	0	+26	B03	EX1	3	5	
37 14 Snare 1	F#7	0	0	+68	A02	EX1	5	4		No Assign	G#6	0	0	+8	B03	EX1	4	5	
38 14 Snare 1	F7	0	0	+87	A02	EX1	6	4		14 Snare 1	G6	-39	0	+31	A15	---	5	5	
39 14 Snare 1	F#9	-33	0	+72	B07	EX1	7	4		14 Snare 1	C-1	+99	0	+96	B12	---	6	5	
40 17 Snare 4	B2	0	0	+72	CNT	EX2	8	4		14 Snare 1	C-1	0	0	+71	A07	EX1	7	5	
41 11 Syn Kick 2	D#-1	0	0	+91	CNT	EX2	9	4		11 Syn Kick 2	C#9	0	0	+63	A08	EX1	8	5	
42 11 Syn Kick 2	E7	0	0	+84	B03	EX1	4	4		20 LightSnare	E3	-34	0	+63	A12	EX3	9	5	
43 142 Spectrum 1	D#7	0	0	+90	A07	EX1	4	4		8 ProcessKick	G3	-44	0	+38	A09	EX2	5		
44 17 Snare 4	D7	0	0	+85	B03	EX1	4	4		17 Snare 4	E9	0	0	+64	B11	EX2	5		

Figure 16: Drum Kit Edit Window

Each Drum Kit can contain up to 60 drum sound assignments (indexes) with settings for key range, tuning, level, decay, pan, group assign (Ex), and sends. The editor has two pages that can be displayed by hitting the arrow in the upper left corner. All fields are numericals or pop-up menus.

Hitting a key on the keyboard graphic at the bottom of the window or selecting a drum by clicking on its number at the left of the column displays the index, or range, that note occupies on the keyboard.

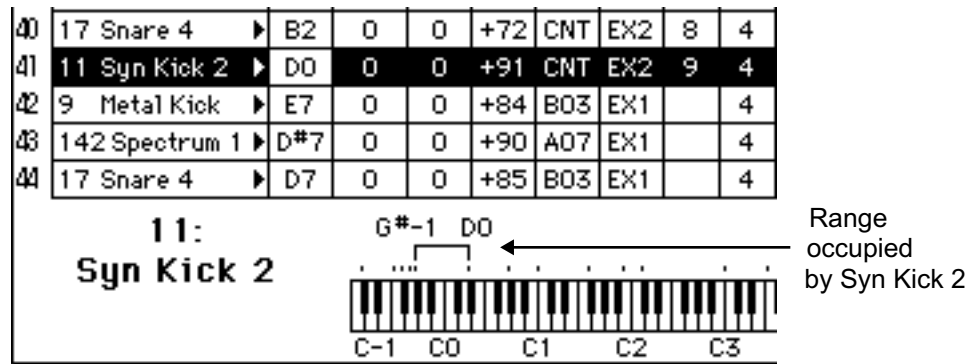


Figure 17: Displaying range information for a selected drum sound

The right side of the index bracket, representing the top note in the drum range, can be dragged to another location but may not cross another boundary. Index bounds are contiguous, not overlapping.