You can read the recommendations in the user guide, the technical guide or the installation guide for ROLAND JUNO-DI EDITOR. You'll find the answers to all your questions on the ROLAND JUNO-DI EDITOR in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

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JUNO-Di Editor
Owner's Manual

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Manual abstract:

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1. Introduction
JUNO-Di Editor is an application that lets you use your computer to make settings for the JUNO-Di parameters.

2. Connections and Settings
Connect the JUNO-Di and your computer as described in the JUNO-Di owner's manual. JUNO-Di Editor may not operate correctly if these connections are not made correctly.
* The first time you use JUNO-Di Editor, it may take as long as one minute or more for the program to start up. This is because the software needs to obtain all the preset names from the JUNO-Di, then save them as a file on your computer's hard disk. This is normal, and should not be a cause for concern.

2-1. Connecting via USB cable
If the JUNO-Di is connected to your computer by a USB cable, you must power up the JUNO-Di before you start up JUNO-Di Editor. Do not disconnect the USB cable connected to the JUNO-Di while JUNO-Di Editor is running. When using the software for the first time, you must set

up MIDI devices using the procedure below. 1. Select [VENDER] as the USB driver on the JUNO-Di. 2.

Install the USB driver from the included "JUNO-Di Editor" CD-ROM into your computer. 3. Start up JUNO-Di Editor. 4. Choose the menu command [SETUP] - "Set Up MIDI Devices" to open the dialog box, and for JUNO-Di Input/ Output, choose "JUNO." For details on switching the USB driver, refer to the JUNO-Di owner's manual. 2-2. Connecting via MIDI cables A separate MIDI interface is required in order to connect the JUNO-Di with your computer using MIDI cables. Connect both the MIDI IN and MIDI OUT connectors on the MIDI interface connected to your computer to the MIDI connectors on the JUNO-Di. When using the software for the first time, you must choose the menu command [SETUP] - "Set Up MIDI Devices" to open the dialog box, and for JUNO-Di Input/Output, choose the port to which JUNO-Di is connected.

*3 Using the JUNO-Di Editor 3. About the Menus 3-1. FILE "Open" loads a file saved by JUNO-Di Editor containing the state of JUNO-Di Editor. * The "Open" command of the toolbar does the same thing in Windows. The "Save" and "Save As" commands will save a file that preserves the current state of JUNO-Di Editor.*

* The "Save" command of the toolbar does the same thing in Windows. "Export SMF" will save one of the following items in the form of SMF data. The currently selected: · Performance · Performance and the Patches/Rhythm Sets used in that performance · Patch/Rhythm Set Use "Import SMF" to load these settings. 3-2. EDIT The "Initialize" command initializes the settings of the currently selected Performance/Patch/Rhythm Set.

This command is useful when you want to create data from scratch. The "Copy" command copies the settings to the clipboard. The "Paste" command pastes the settings from the clipboard to the copy destination you select. The "Copy MIDI Message to Clipboard" command copies the MIDI message (character string) displayed at "MIDI MESSAGE" to the clipboard. 3-3. SETUP Set the JUNO-Di Input/Output to the port to which the JUNO-Di is connected in "Set Up MIDI Devices." Through provides a thru-connection from the MIDI OUT of any desired MIDI device to the MIDI IN of any other MIDI device. 4 Using the JUNO-Di Editor 4. Using the JUNO-Di Editor Navigation block Main block · By clicking the buttons in the Navigation block you can select the parameters that will be shown in the Main block. · The Main block is the editing area for the parameters you selected in the Navigation block.

4-1. Reading/writing/synchronize settings The [READ]/[WRITE]/[SYNC] buttons are located in the top line of the main window. Loading the settings To load the JUNO-Di's settings into JUNO-Di Editor, click the [READ] button. The settings of the patch currently selected on the JUNO-Di will be loaded. Writing the settings To write the edited data to the JUNO-Di, click the [WRITE] button. The data that will be written (patch or rhythm set/performance/system) will depend on the parameter that is currently selected.

Synchronizing the settings To synchronize the JUNO-Di with the Editor, click the [SYNC] button. This is a command that you will need to use only if using JUNO-Di Editor together with JUNO-Di Librarian. For details, refer to 5. Notes Concerning Use of JUNO-Di Editor Together with JUNO-Di Librarian (p. 7). 5 Using the JUNO-Di Editor 4-2. How to edit values You can edit values by clicking (and dragging) the buttons, sliders, or knobs. · If you feel that the sliders and knobs in the panel are too small, and find it difficult to make detailed settings, try clicking (and holding) a knob or slider and then dragging the mouse farther away. This lets you set the value at any position as long as you continue holding down the mouse button.

When doing so, you will be able to make precise adjustments to the value whenever the mouse cursor is away from the center of the knob or slider. · When a value is displayed, you can also press the cursor keys (up/down) to modify it. 4-3. Initializing a value Windows XP/Vista Users You can initialize the value of a parameter by holding down the Ctrl key of your computer and clicking the slider or knob of that parameter. Macintosh Users You can initialize the value of a parameter by holding down the command key of your computer and clicking the slider or knob of that parameter.

4-4. About the KEYBOARD button When you click the [KEYBOARD] button located in the top line of the main window, the Keyboard window will appear, allowing you to transmit note messages by clicking your mouse. Use the sliders to set the transmit channel and velocity. Clicking the [OCT] button will shift the octave. The note number transmitted when you press the third "C" from the left, which is indicated by the Å¢ symbol, is shown below the [OCT] button. 6 Using the JUNO-Di Editor 5. Notes Concerning Use of JUNO-Di Editor Together with JUNO-Di Librarian You may experience some of the problems below if JUN textures. With the factory settings, Patch mode is selected. Controller Section (controllers such as keyboard, pitch bend/modulation lever, etc.) Controller Section This section consists of a keyboard, pitch bend/modulation lever, the panel buttons and knobs, D Beam controller, and pedals connected to the rear panel.

The performance information generated when you press/release a key or press a hold pedal are transmitted as MIDI messages to the sound generator section and/or an external MIDI device. How a Performance is Structured A performance has a patch or rhythm set assigned to each of the 16 parts, and can simultaneously handle 16 sounds. Because the JUNO-Di sound generator can control multiple sounds (instruments) it is called a Multi-timbral sound generator. Sound Generator Section This section produces the sound. It receives MIDI messages from the controller section, song player section, or an external MIDI device, generates musical sound according to the MIDI messages that were received, and outputs the sound from the output jacks and headphone jack. Performance Part 16 Part 1 Patch/ Rhythm Set Song Player Section The Song Player is used to play back audio files or SMF data saved in USB memory. It can also play rhythm patterns in a variety of styles. You can play along on the keyboard accompanied by the song or rhythm pattern played by the Song Player. When using the JUNO-Di's Song Player to play songs, you can create a "playlist" to specify the order in which songs will play. To create playlists, you need to use the included "Playlist Editor.

" For details, refer to the JUNO-Di Owner's Manual. Part A "part" is something to which you assign a patch or rhythm set. In Performance mode, each performance has sixteen parts, and you can assign a patch or rhythm set to each part. 9 Overview The JUNO-Di will enter Performance mode if you turn on Split, Dual, or Super Layer. Of the sixteen parts of the performance, Split or Dual use parts 1 and 2, and Super Layer uses parts 1 through 5.

When you turn on each of these functions, the settings of the JUNO-Di will be as follows. How a Patch is Structured Patches are the basic sound configurations that you play during a performance. Each patch can be configured by combining up to four tones. Each tone can be turned on/off individually, allowing you to select the tones that will produce sound. When you turn Split on Split refers to settings for the key ranges of parts 1 and 2 that result in them being separated into upper and lower zones.

The lowest key of the upper zone is called the split point. Parts 1 and 2 will be assigned as follows. The indication shown on the display screen of the instrument itself is given in parentheses ( ). Patch Tone 1 Tone 2 Tone 3 Tone 4 Example 1: A Patch consisting of only one Tone (Tones 24 are turned off). Part name Part 1: UPPER (U) Part 2: LOWER (L) Key range From the split point key to G9 From C-1 to one key to the left of the split point Patch Tone 1 Tone 2 Tone 3 Tone 4 When you turn Dual on Dual refers to settings in which the key ranges of parts 1 and 2 overlap. The indication shown on the display screen of the instrument itself is given in parentheses ( ). Example 2: A Patch consisting of four Tones. Tones On the JUNO-Di, the tones are the smallest unit of sound. However, it is not possible to play a tone by itself. The patch is the unit of sound which can be played, and the tones are the basic building blocks which make up the patch.

Part name Part 1: PART 1 (1) Part 2: PART 2 (2) Key range C-1--G9 C-1--G9 Tone LFO 1 LFO 2 When you turn Super Layer on The sound of part 1 will be assigned to parts 1--5, and the following settings will be made. Parameter Layer Value 2--5 Explanation The number of parts used. Detune (FINE TUNE) will be applied to parts 2--5. Part 2: 0--30 Part 3: This will be the inverse of the part 2 value. For example, if part 2 is set to "+2," part 3 will be set to "-2." Part 4: This will be 1.5 times the value of part 2. Part 5: This will be 1.5 times the value of part 3. WG TVF TVA Pitch Envelope TVF Envelope TVA Envelope control signal Detune audio signal WG (Wave Generator) 0--30 Specifies the PCM waveform (wave) that is the basis of the sound, and determines how the pitch of the sound will change.

TVF (Time Variant Filter) Specifies how the frequency components of the sound will change. TVA (Time Variant Amplifier) Specifies the volume changes and the sound's position in a stereo soundfield. Envelope You use Envelope to initiate changes to occur to a sound over time. There are separate envelopes for Pitch, TVF (filter), and TVA (volume). 10 Overview LFO (Low Frequency Oscillator) Use the LFO to create cyclic changes (modulation) in a sound. The JUNO-Di has two LFOs. Either one or both can be applied to effect the WG (pitch), TVF (filter) and/or TVA (volume).

When an LFO is applied to the WG pitch, a vibrato effect is produced. When an LFO is applied to the TVF cutoff frequency, a wah effect is produced. When an LFO is applied to the TVA volume, a tremolo effect is produced.

Calculating the Number of Voices Being Used The JUNO-Di is able to play up to 128 notes simultaneously. The polyphony, or the number of voices (sounds) does not refer only to the number of patches actually being played, but changes according to the number of tones used in the patches, and the number of waves used in the tones. The following method is used to calculate the number of sounds used for one patch being played. (Number of patches being played) x (Number of tones used by patches being played) x (Number of waves used in the tones) For example, a patch that combines four tones, each of which use two waves, will use eight notes of polyphony at once. Also, when playing in Performance mode, the number of sounds for each part is counted to obtain the total number of sounds for all parts. How a Rhythm Set is Structured Rhythm sets are groups of a number of different percussion instrument sounds. Since percussion instruments generally do not play melodies, there is no need for a percussion instrument sound to be able to play a scale on the keyboard. It is, however, more important that as many percussion instruments as possible be available to you at the same time. Therefore, each key (note number) of a rhythm set will produce a different percussion instrument. How a Patch Sounds When the JUNO-Di is requested to play more than 128 voices simultaneously, currently sounding notes will be turned off to make room for newly requested notes.

The note with the lowest priority will be turned off first. The order of priority is determined by the Patch Priority setting (PRIORITY; p. 29). Patch Priority can be set either to "LAST" or "LOUDEST." When "LAST" is selected, a newly requested note that exceeds the 128 voice limit will cause the first-played of the currently sounding notes to be turned off. When "LOUDEST" is selected, the quietest of the currently sounding notes will be turned off. Usually, "LAST" is selected. Rhythm Set Note number 98 (D7) Note number 97 (C#7) Note number 36 (C2) Note number 35 (B1) Rhythm Tone (Percussion instrument sound) WG Pitch Envelope TVF TVF Envelope TVA TVA Envelope Note priority in Performance Mode Since Performance mode is usually used to play an ensemble consisting of several patches, it is important to decide which parts take priority. Priority is specified by the Voice Reserve settings (VOICE RESERVE; p. 60). When a note within a patch needs to be turned off to make room for a new note, the Patch Priority setting of the patch will apply (PRIORITY; p. 29). * There are four wave generators for each rhythm tone (percussion instrument sounds). * LFO is not included in the rhythm tones (percussion instrument sounds). Voice Reserve The JUNO-Di has a Voice Reserve function that lets you reserve a minimum number of notes that will always be available for each part. For example if Voice Reserve is set to "10" for part 16, part 16 will always have 10 notes of sound-producing capacity available to it even if a total of more than 128 notes (total for all parts) are being requested. When you make Voice Reserve settings, you need to take into account the number of notes you want to play on each part as well as the number of tones used by the selected patch (VOICE RESERVE; p. 60). It is not possible to make Voice Reserve settings that would cause the total of all parts to be greater than 64 voices. 11 Overview About the Effects The JUNO-Di has built-in effect units, and you can independently edit each unit's settings.

Effects in Patch Mode The multi-effects, chorus and reverb effects can be set up individually for each patch/rhythm set. Adjusting the signal level to be sent to each effects unit (Send Level) provides control over the effect intensity that's applied to each tone. Multi-Effects The multi-effects are multi-purpose effects that completely change the sound type by changing the sound itself. Contained are 79 different effects types; select and use the type that suits your aims. In addition to effects types composed of simple effects such as Distortion, Flanger, and other such effects, you can also set up a wide variety of other effects, even connecting effects in series or in parallel. Furthermore, while chorus and reverb can be found among the multieffects types, the following chorus and reverb are handled with a different system. In Performance mode, three types of multi-effect can be used simultaneously; these are referred to as MFX1, MFX2, and MFX3. In Patch mode, you can use one multi-effect. Patch Tone Multi-Effects Chorus Reverb Rhythm Set A0 C8 Rhythm Tone Multi-Effects Chorus Reverb Chorus Chorus adds depth and spaciousness to the sound. You can select whether to use this as a chorus effect or a delay effect.

Reverb Reverb adds the reverberation characteristics of halls or auditoriums. Five different types are offered, so you can select and use the type that suits your purpose. Effects in Performance Mode The multi-effects, chorus and reverb effects can be set individually for each performance. The intensity of each effect will be set for each part. When you apply effects in Performance mode, the effect settings of the patch or rhythm set assigned to each part will be ignored, and the effect settings of the performance will be used. Thus, the effects for the same patch or rhythm set may differ when played in Patch mode and in Performance mode. However, depending on the settings, you can have effect settings for a patch or rhythm set assigned to a part applied to the entire performance. Performance Part 1 Part 16 Patch Tone Multi-Effects Chorus Reverb 12 Overview About Memory Patch and performance settings are stored in what is referred to as memory. There are three kind of memory: temporary, rewritable, and non-rewritable. USB Memory Rewritable Memory User Memory User memory is where you normally store the data you need.

To store a performance, execute Performance Write (p. 57). To store a patch, execute Patch Write (p. 24). To store a Rhythm Set, execute Rhythm Set Write (p. 45). Song SMF Audio File System Patch Rhythm Set Performance System Memory System memory stores system parameter settings that determine how the JUNO-Di functions. To store system parameters, execute System Write (p. 5). USB Memory The following settings can be backed up together to USB memory. · User patches (rhythm sets) · User performances · System settings Restore Backup JUNO-Di System Non-Rewritable Memory Preset Memory Data in Preset memory cannot be rewritten. However, you can call up settings from preset memory into the temporary area, modify them and then store the modified data in rewritable memory.

Preset Performance User Patch GM (GM2) Rhythm Set Patch Patch Rhythm Set Rhythm Set Performance Select Select Select Select Write Temporary Area Temporary Memory Temporary Area This is the area that holds the data for the patch or performance that you've selected using the panel buttons. When you play the JUNO-Di, sound is produced based on data in the temporary area. When you edit a patch or performance, you do not directly modify the data in memory; rather, you call up the data into the temporary area, and edit it there. Settings in the temporary area will be lost when the power is turned off or when you select another patch/performance. To keep the settings you have modified, you must write them into user memory. 13 SYSTEM Parameters COMMON] Parameter MASTER LEVEL MASTER TUNE Value 0127 415.3466.2 Hz PATCH REMAIN OFF, ON MASTER KEY SHIFT PERFORM CTRL CH (Performance Control Channel) PATCH RX/TX CH (Patch Rx/Tx Channel) RCV PC (Receive Program Channel) RCV BS (Receive Bank Select) SYSTEM CTRL SRC 14 (System Control Source 14) -24+24 116, OFF Explanation Volume of the entire JUNO-Di Overall tuning of the JUNO-Di The display shows the frequency of the A4 note (center A).

Specifies whether currently sounding notes will continue sounding when another patch or rhythm set is selected (ON), or not (OFF). When this is "ON," changes produced by incoming MIDI messages such as Volume or Pan (CC 5, 7, 10, 65, 68, 7174, RPN 0, 1, 2, MONO ON, POLY ON), as well as tonal quality and volume changes produced by the various controllers will be inherited. * Effects settings change as soon as you switch to a new patch or rhythm set, without being influenced by the Patch Remain setting. Because of this, certain effects settings can cause notes that were until then sounding to no longer be heard, even though Patch Remain has been set to "ON." Shifts the overall pitch of the JUNO-Di in semitone steps. Selects the MIDI receive channel used during switching of performances when MIDI messages (Program Change/Bank Select) are sent from an external MIDI device. Set this to "OFF" if performances are not to be switched from an external MIDI device. * If only a program change is received, and if this parameter setting coincides with the MIDI receive channel of a part, priority will be given to switching the performance. Channel used to transmit and receive MIDI messages for the Keyboard part in Patch mode Specifies whether Program Change messages will be received (ON) or not (OFF). Specifies whether Bank Select messages will be received (ON) or not (OFF).

Selects the MIDI message used as the System Control. OFF: The system control knob will not be used. CC0195: Controller numbers 195 PITCH BEND: Pitch Bend AFTERTOUCH: Aftertouch 116 OFF, ON OFF, ON OFF, CC0195, PITCH BEND, AFTERTOUCH System Control This function, which departs from previously used methods, and instead allows you to use MIDI messages to change tone settings in realtime, is called the Matrix Control (p. 42). Similarly, the function allowing you to use MIDI messages to change multi-effects settings in realtime is called the Multi-effects Control (p. 21). Normally, the Matrix Control is used for making patch settings, and the Multi-effects Control for making settings to patches, rhythm sets, and performances. System Control applies to the entire JUNO-Di. For example, if you want the same MIDI message to always be used for matrix control for other patches as well, select that MIDI message as SYSTEM CTRL SRC 1, and select "SYS-CTRL 1" as the CONTROL SOURCE for the other patches. With these settings, even if you need to change the MIDI message used for matrix control, all you need to do is simply choose a different MIDI message as the SYSTEM CTRL SRC 1.

In other words, you could call the System Controls global Matrix Control/Multi-effects Control for the entire JUNO-Di. You can use up to four System Controls. 14 SYSTEM Parameters SCALE TUNE for Patch Mode Parameter Value Explanation PATCH SCALE TUNE The JUNO-Di allows you to play the keyboard using temperaments other than equal temperament. The pitch is specified in one-cent units relative to the equal tempered pitch. One-cent is 1/100th of a semitone. One set of Scale Tune settings can be created in Patch mode. In Performance mode, this can be set for each part of the performance (p. 63). * The selected scale applies to MIDI messages received from an external MIDI device. SCALE TUNE SWITCH OFF, ON Turn this on when you wish to use a tuning scale other than equal temperament.

CB -64+63 Make scale tune settings for Patch mode. Equal Temperament This tuning divides the octave into 12 equal parts, and is the most widely used method of temperament used in Western music. The JUNO-Di employs equal temperament when the Scale Tune Switch is set to "OFF." Note name C C <Example> Equal temperament 0 0 0 0 0 0 0 0 0 0 0 0 Just intonation 0 -8 +4 +16 -14 -2 -10 +2 +14 -16 +14 -12 Arabian scale -6 +45 -2 -12 -51 -8 +43 -4 +47 0 -10 -49 Just Intonation (Tonic of C) Compared with equal temperament, the principle triads sound pure in this tuning. However, this effect is achieved only in one key, and the triads will become ambiguous if you transpose. D E E F F G G A B B Arabian Scale In this scale, E and B are a quarter note lower and C#, F# and G# are a quarter-note higher compared to equal temperament. The intervals between G and B, C and E, F and G#, Bb and C#, and Eb and F# have a natural third-the interval between a major third and a minor third. On the JUNO-Di, you can use Arabian temperament in the three keys of G, C and F. 15 EFFECTS Parameters Applying Effects How Effects are Handled in Each Mode Patch mode (p. 23) In Patch mode, you can apply multi-effects (MFX), chorus, and reverb to each patch or rhythm set; the same effect will be applied to each tone.

By adjusting the amount of signal that is sent from each tone to each effect, you can control the depth of the effect for each tone. The patch or rhythm set's effect settings that you edit will be lost when you select a different patch or rhythm set. If you want to keep your edited settings, press [WRITE] to save the patch or rhythm set settings as a user patch (p. 24, p. 45).

Performance mode (p. 57) In Performance mode, you can apply three multi-effects (MFX1, MFX2, MFX3), one chorus, and one reverb to each performance. The three multi-effects, chorus, and reverb can each operate according to the effect settings of the performance, or according to the effect settings of the patch or rhythm set assigned to the part you specify. In addition, the three multi-effects can not only be used individually but also as a combination of multi-effects. The effect settings of a performance you edit will be lost when you select a different performance.
If you want to keep your edited settings, press [WRITE] to save the performance settings as a user performance (p.

57). "About the Effects" (p. 12) in "Overview." Applying Effects When you click the following buttons in the Navigation block, the content shown in the Main block will change, allowing you to edit the effect settings. · Performance mode: The buttons shown below [PERFORM EFFECTS] · Patch mode: The buttons shown below [PATCH EFFECTS] 16 EFFECTS Parameters PATCH EFFECTS In Patch mode you can use one multi-effect (MFX), one chorus, and one reverb. Signal Flow and Parameters (ROUTING) Here you can make overall settings for effects, such as the output destination and level of the various signals. Parameter TONE SELECT (KEY NAME) Range 14 (A0C8) Explanation The tone (rhythm tone) to edit If you've selected a rhythm set, this will be KEY NAME. Specifies how the unprocessed sound of the patch (rhythm set) will be output If you've selected a rhythm set, this will be RHYTHM OUTPUT ASSIGN. MFX: Output in stereo via the multi-effect.

Chorus and reverb can also be applied after the multieffect. L+R: Output in stereo from the OUTPUT jacks without passing through the multi-effect L: Output in mono from the OUTPUT L jack without passing through the multi-effect R: Output in mono from the OUTPUT R jack without passing through the multi-effect TONE: Output according to the settings of each tone Specifies how the unprocessed sound of each tone will be output MFX: Output in stereo via the multi-effect. Chorus and reverb can also be applied after the multieffect. L+R: Output in stereo from the OUTPUT jacks without passing through the multi-effect L: Output in mono from the OUTPUT L jack without passing through the multi-effect R: Output in mono from the OUTPUT R jack without passing through the multi-effect * The setting you specify here is valid only if PATCH OUTPUT ASSIGN is set to "TONE." * If STRUCTURE (p. 30) is set to TYPE 02-10, the settings for tone 1 (3) will follow the settings of tone 2 (4). (This is because the outputs of tones 1 and 2 are combined into tone 2, and the outputs of tones 3 and 4 are combined into tone 4.) Level of signal sent from each tone to the destination specified by OUTPUT ASSIGN Level of signal sent from each tone to the chorus Level of signal sent from each tone to the reverb Type of multi-effect to use (choose one of 79 types) For details on each multi-effect, refer to "Multi-Effects Parameters (MFX13, MFX)" (p. 64). Volume of the sound that has been processed by the multi-effect Amount of chorus applied to the sound that has been processed by the multi-effect Amount of reverb applied to the sound that has been processed by the multi-effect Type of chorus OFF: Chorus/delay will not be used CHORUS: Chorus DELAY: Delay GM2 CHORUS: GM2 chorus Volume of the sound that has been processed by the chorus Output destination of the sound that has been processed by the chorus MAIN: Output in stereo to the OUTPUT jacks MAIN+REV: Output in stereo to the OUTPUT jacks and in mono to the reverb REV: Output in mono to reverb PATCH OUTPUT ASSIGN (RHYTHM OUTPUT ASSIGN) MFX, L+R, L, R, TONE TONE OUTPUT ASSIGN MFX, L+R, L, R TONE OUTPUT LEVEL TONE CHORUS SEND LEVEL TONE REVERB SEND LEVEL MFX (Type) MFX OUTPUT LEVEL MFX CHORUS SEND LEVEL MFX REVERB SEND LEVEL 0127 0127 0127 079 0127 0127 0127 CHORUS (Type) OFF, CHORUS, DELAY, GM2 CHORUS 0127 MAIN, MAIN+REV, REV CHORUS LEVEL CHORUS OUTPUT SELECT 17 EFFECTS Parameters Parameter Range OFF, REVERB, SRV ROOM, SRV HALL, SRV PLATE, GM2 REVERB 0127 Explanation Type of reverb OFF: Reverb will not be used REVERB: Basic reverb SRV ROOM: Reverb that simulates the reverberation of a room in greater detail SRV HALL: Reverb that simulates the reverberation of a hall in greater detail SRV PLATE: Simulation of a plate echo (a reverb device that uses a metal plate) GM2 REVERB: GM2 reverb Volume of the sound that has been processed by the reverb REVERB (Type) REVERB LEVEL 18 EFFECTS Parameters PERFORM EFFECTS In Performance mode you can use three multi-effects (MFX1, MFX2, MFX3), one chorus, and one reverb.

The three multi-effects, chorus, and reverb can each use the effect settings of the performance, or the effect settings of the patch or rhythm set assigned to the specified part. In addition, the three multi-effects can not only be used individually but also as a combination of multi-effects. Signal Flow and Parameters (ROUTING) Here you can make overall settings for effects, such as the output destination and level of the various signals. * The parameters listed below in MFX13 (Type), MFX OUTPUT LEVEL, MFX CHORUS SEND LEVEL, MFX REVERB SEND LEVEL and MFX13 SOURCE can be edited for each of the three multi-effects (MFX1MFX3). Parameter PART Range 116 MFX, L+R, L, R, PAT 0127 0127 0127 MFX13 079 0127 0127 0127 OFF, CHORUS, DELAY, GM2 CHORUS 0127 MAIN, MAIN+REV, REV Explanation The part for which to make settings Specifies how the unprocessed sound of each part will be output MFX: Output in stereo via the multi-effect.

Chorus and reverb can also be applied after the multieffect. L+R: Output in stereo from the OUTPUT jacks without passing through the multi-effect L: Output in mono from the OUTPUT L jack without passing through the multi-effect R: Output in mono from the OUTPUT R jack without passing through the multi-effect PAT: Output according to the settings of the patch or rhythm set that's assigned to the part Level of signal sent to the destination specified by PART OUTPUT ASSIGN Level of signal sent from each part to the chorus Level of signal sent from each part to the reverb Multi-effect used by the part (choose one of MFX 13) Type of multi-effect to use (choose one of 79 types) For details on each multi-effect, refer to "Multi-Effects Parameters (MFX13, MFX)" (p. 64). Volume of the sound that has been processed by the multi-effect Amount of chorus applied to the sound that has been processed by the multi-effect Amount of reverb applied to the sound that has been processed by the multi-effect Type of chorus OFF: Chorus/delay will not be used CHORUS: Chorus DELAY: Delay GM2 CHORUS: GM2 chorus Volume of the sound that has been processed by the chorus Output destination of the sound that has been processed by the chorus MAIN: Output in stereo to the OUTPUT jacks MAIN+REV: Output in stereo to the OUTPUT jacks and in mono to the reverb REV: Output in mono to reverb Type of reverb OFF: Reverb will not be used REVERB: Basic reverb SRV ROOM: Reverb that simulates the reverberation of a room in greater detail SRV HALL: Reverb that simulates the reverberation of a hall in greater detail SRV PLATE: Simulation of a plate echo (a reverb device that uses a metal plate) GM2 REVERB: GM2 reverb Volume of the sound that has been processed by the reverb How MFX 13 will be combined PART OUTPUT ASSIGN PART OUTPUT LEVEL PART CHORUS SEND LEVEL PART REVERB SEND LEVEL PART OUTPUT MFX SELECT MFX13 (Type) MFX OUTPUT LEVEL MFX CHORUS SEND LEVEL MFX REVERB SEND LEVEL CHORUS (Type) CHORUS LEVEL CHORUS OUTPUT SELECT REVERB (Type) OFF, REVERB, SRV ROOM, SRV HALL, SRV PLATE, GM2 REVERB 0127 116 REVERB LEVEL MFX STRUCTURE 19 EFFECTS Parameters Parameter MFX13 SOURCE Range PERFORM, 116 PERFORM, 116 PERFORM, 116 Explanation Multi-effect parameter settings used by the performance PERFORM: Use the multi-effect settings of the performance 116: Use the multi-effect settings of the patch or rhythm set assigned to the specified part Chorus parameter settings used by the performance PERFORM: Use the chorus settings of the performance 116: Use the chorus settings of the patch or rhythm set assigned to the specified part Reverb parameter settings used by the performance PERFORM: Use the reverb settings of the performance 116: Use the reverb settings of the patch or rhythm set assigned to the specified part CHORUS SOURCE REVERB SOURCE If you've specified a part number as the MFX SOURCE, CHORUS SOURCE, or REVERB SOURCE If you specify a part number as a Source so that the settings of the patch or rhythm set will be used, those settings will be shown in the effect setting screen of the performance, and can be edited.

If you want to keep the changes you made, save the settings of the patch or rhythm set (p. 24, p. 45). Then you must also save the settings of the performance (p. 57). 20 EFFECTS Parameters Multi-Effect Settings (MFX, MFX 13) Parameter ON/OFF TYPE OUT SEND LEVEL CHO REV Parameters for each MFX type Range OFF, ON 00: THROUGH 79: VOCODER 0127 0127 0127 Explanation Turns the multi-effect on/off * The effect on/off settings cannot be saved. Selects the type of multi-effect used by MFX. Choose "00: THROUGH" if you don't want to apply a multi-effect. Volume of the sound that has been processed by the multi-effect Amount of chorus applied to the sound that has been processed by the multi-effect Amount of reverb applied to the sound that has been processed by the multi-effect Edit the parameters of the MFX type you've selected. Refer to "Multi-Effects Parameters (MFX13, MFX)" (p. 64).

Controlling a Multi-Effect via MIDI (CONTROL SOURCE/DESTINATION/SENS) Multi-Effect Control In order to control the multi-effect's volume or delay time from an external MIDI device, you would normally need to transmit system exclusive messages (MIDI messages that are specific to the JUNO-Di). However, system exclusive messages are more complex to set up, and require a larger amount of data to be transmitted. For this reason, the JUNO-Di allows you to use control changes and other common MIDI messages to control the most important multi-effect parameters. For example, you might use the pitch bend lever to control the degree of distortion, or use keyboard touch to change the delay time. The parameters that can be controlled in this way are predetermined for each type of multi-effect; such parameters are indicated by a "#" in the parameter lists in "Multi-Effects Parameters (MFX13, MFX)" (p. 64). "Multi-effect control" is the capability of using MIDI messages in this way to control multi-effect parameters in real time. You can specify up to four multi-effect control assignments for each MFX 13. In order to use multi-effect control, you'll need to specify which MIDI message (SOURCE) will control which parameter (DESTINATION) by what amount (SENS). As a substitute for multi-effect control, you can also use matrix control (p. 42) to control important multi-effect parameters in real time. Parameter Range OFF, CC0131, CC3395, PITCH BEND, AFTERTOUCH, SYS CTRL 14 Refer to "Multi-Effects Parameters (MFX13, MFX)" (p. 64) Explanation Specifies the MIDI message that will control the corresponding MFX control parameter. OFF: MFX will not be used. CC0131: Controller number 131 CC3395: Controller number 3395 PITCH BEND: Pitch bend AFTERTOUCH: Aftertouch SYS-CTRL 14: Use the controller that is assigned by the System setting SYSTEM CTRL SRC 14 (p. 14). Selects the multi-effect parameter that will be controlled by CONTROL SOURCE. The type of parameters that can be selected will depend on the type of multi-effect you've selected in MFX Type. Specifies the depth of multi-effect control. Specify a positive (+) value if you want to change the value of the assigned destination in a positive direction (larger, toward the right, faster, etc.), or specify a negative value (-) if you want to change the value in a negative direction (smaller, toward the left, slower, etc.). Larger values will allow a greater amount of control. CONTROL SOURCE (14) DESTINATION (14) SENS (14) -63+63 A patch or rhythm set contains parameters that specify whether pitch bend, controller number 11 (expression), and controller number 64 (hold 1) will be received for each tone or rhythm tone (p. 43, p. 50). If these settings are "ON," receiving that MIDI message will not only change the setting of the assigned destination parameter, but will also apply the corresponding pitch bend, expression, or hold 1 effect. Leave them "OFF" if you only want to control the multi-effect parameter. 21 EFFECTS Parameters A performance contains parameters that specify whether specific MIDI messages will be received for each MIDI channel (p. 62).

If you want to use multi-effect control, make sure that reception is enabled for the corresponding MIDI message. If MIDI messages cannot be received, multieffect control will not work. Chorus Settings (CHORUS) Parameter ON/OFF Range OFF, ON OFF, CHORUS, DELAY, GM2 CHORUS 0127 MAIN, MAIN+REV, REV Explanation Turns the chorus on/off * The chorus on/off setting cannot be saved. Type of chorus OFF: Chorus/delay will not be used CHORUS: Chorus DELAY: Delay GM2 CHORUS: GM2 chorus Volume of the sound that has been processed by the chorus Output destination of the sound that has been processed by the chorus MAIN: Output in stereo to the OUTPUT jacks MAIN+REV: Output in stereo to the OUTPUT jacks and in mono to the reverb REV: Output in mono to reverb TYPE LEVEL OUTPUT SELECT Parameters for each chorus type Set the parameters of the selected chorus type. Refer to "Chorus Parameters" (p. 91). Reverb Settings (REVERB) Parameter ON/OFF Range OFF, ON OFF, REVERB, SRV ROOM, SRV HALL, SRV PLATE, GM2 REVERB 0127 Explanation Turns the reverb on/off * The reverb on/off setting cannot be saved. Type of reverb OFF: Reverb will not be used REVERB: Basic reverb SRV ROOM: Reverb that simulates the reverberation of a room in greater detail SRV HALL: Reverb that simulates the reverberation of a hall in greater detail SRV PLATE: Simulation of a plate echo (a reverb device that uses a metal plate) GM2 REVERB: GM2 reverb Volume of the sound that has been processed by the reverb TYPE LEVEL Parameters for each reverb type Set the parameters of the selected reverb type. Refer to "Reverb Parameters" (p. 92).

22 Detailed Editing for a Patch (PATCH Parameters) "Editing" is the process of modifying the values of the JUNO-Di's various settings (parameters). This chapter explains the procedure for patch editing, and how the patch parameters work. The JUNO-Di's patches are organized into two groups: User and Preset. Editing a Patch Select from the "EDIT" menu. PRST (Preset) These are the sounds that are built into the JUNO-Di. This group contains 256 GM2-compatible patches. You can modify the currently selected sound and WRITE (save) it at number 501 and following. Initializing a Patch The "Initialize" command initializes the settings of the currently selected patch. The Initialize command will initialize only the currently selected patch. If you want to return all settings to their factory-set values, execute a Factory Reset on the JUNO-Di itself. USER These are sound numbers 501 and following in the JUNO-Di. When you WRITE (save) the currently selected sound, it will be saved at number 501 or following. Copying/Pasting Patch Settings The "Copy" command copies the settings to the clipboard.

The "Paste" command pastes the settings from the clipboard to the copy destination you select. How to Edit a Patch You can create a new patch by editing an existing patch. A patch consists of up to four "tones." Before editing a patch, you should listen to each tone individually to familiarize yourself with the role it plays in creating the overall sound of the patch. TONE SWITCH/SELECT Use TONE SWITCH (SW) 1--4 to turn each of the four tones on/off. Use TONE SELECT 1--4 to select the tone that you want to edit. Four tips when creating patches Choose a patch that's close to what you have in mind If you're trying to create a new patch, it will be difficult to make progress if you simply select any old patch and start making changes blindly.

It's important to start by selecting a patch that's close to what you have in mind. Decide which tones you'll use When creating a patch, it's very important to decide which tones you're going to use. In the edit screen, use the TONE SWITCH 14 settings to specify whether each tone will be heard (on) or silent (off). Turning off unneeded tones is also an important way to conserve polyphony. Check the structure setting (p. 30) The STRUCTURE parameter is a very important one; it specifies how the four tones will be combined. Before you begin actually editing the tones, you must understand the relationship between the tones. Turn the effects off (p. 16) The JUNO-Di contains a diverse array of effects, allowing you to process the sound in sophisticated ways. Effects have a major impact on the sound, and simply turning off the effects may produce an entirely different impression.

Turning off the effects will allow you to hear the sound of the patch itself, which makes it easier to hear the result of the changes you make. In some cases, editing the effect settings may be enough to create the sound you want. [SUMMARY] and [LFO] editing screens · The main window will show the settings of the first selected of the currently selected tones (its button will be lit more brightly than the others). · You can select multiple tones by clicking a TONE SELECT button while holding down your computer's Shift key. · When you edit the settings of a tone, the settings of the currently selected tones will change simultaneously.

[WG], [TVF], [TVA], and [CONTROL SW] editing screens · You can select multiple tones by clicking a TONE SELECT button while holding down your computer's Shift key. · When you edit the settings of a tone, the settings of the currently selected tones will change simultaneously. · Unselected tones can be edited independently. 23 Detailed Editing for a Patch (PATCH Parameters) Stereo Wave Settings Some of the waves that make up a tone key are stereo. @@@@1.

2. 3. 4. Select a patch. Make sure that [SUMMARY] or [WG] is selected in the Navigation block. Use WAVE NUMBER L to select the left-channel wave of the stereo wave. Double-click WAVE NUMBER R. The corresponding right-channel wave will be selected. @@@@@@One-shot: These are sounds with a short decay time. @@@@Loop: These are sounds with a long decay, or sustaining sounds.

@@These sounds also include numerous component sounds, such as a vibrating piano string or a resonating pipe. The following illustration shows an example of a sound created by combining a one-shot waveform with a loop waveform. (This example is of an electric organ.) fig.Waveform1-e.eps TVA ENV for looped Organ waveform (sustain portion) Level TVA ENV for one-shot Key -click waveform (attack portion) Resulting TVA ENV change Saving a Patch Changes you make are temporary, and will be discarded when you turn off the power or select another patch. If you want to keep a patch you've modified, save it at number 501 or following in the internal memory. When you click the [WRITE] button located in the top line of the main window, the data will be written to the JUNO-Di. If you've edited a patch in Performance mode, you should also save the performance after saving the patch (p. 57).

When you save, the data that previously occupied the save destination will be overwritten. Never turn off the power while data is being saved. + Note off Time = Note off Note when selecting a one-shot waveform It's not possible to use the envelope settings to give a one-shot waveform a longer decay than the original waveform contains, or to make it a sustaining sound. Even if you made this type of envelope setting, you would be trying to bring out something that doesn't exist in the original waveform. Note when selecting a looped waveform Many acoustic instruments such as piano or sax are marked by a sudden change in timbre at the very beginning of the sound, and this rapid change is what gives the instrument its distinctive character.

When using these waveforms, it's best to use the complex tonal changes in the attack portion of the sound without attempting to modify them; use the envelope only to modify the decay portion of the sound as desired. If you use the envelope to modify the attack as well, the envelope settings will be affected by the attack of the waveform itself, and you may not get the result you intend. fig.Waveform2-e.eps Level Looped portion Tone change stored with the wave Time Envelope for the TVF filter Resulting tone change 24 Detailed Editing for a Patch (PATCH Parameters) PATCH Parameters SUMMARY SYSTEM COMMON Parameter MASTER LEVEL PATCH RX/TX CH (Patch Rx/Tx Channel) Value 0127 116 Explanation Volume of the entire JUNO-Di Channel used to transmit and receive MIDI messages for the Keyboard part in Patch mode PATCH COMMON Parameter LEVEL MONO/POLY PORTAMENT ON PORTAMENT TIME Value 0127 MONO, POLY OFF, ON 0127 Explanation Volume of the patch MONO: Only the last-played note will sound.

This setting is effective when playing a solo instrument patch such as sax or flute. POLY: Two or more notes can be played simultaneously. Specifies whether the portamento effect will be applied (ON) or not (OFF). Specifies the time over which the pitch will change. LFO1 Parameter marked with a "" can be controlled using specified MIDI messages. (Matrix Control, p. 42) Parameter Value Explanation Waveform of the LFO SIN: Sine wave TRI: Triangle wave SAW-UP: Sawtooth wave SAW-DW: Sawtooth wave (negative polarity) SQR: Square wave RND: Random wave BEND-UP: Once the attack of the waveform output by the LFO is allowed to develop in standard fashion, the waveform then continues without further change. BEND-DW: Once the decay of the waveform output by the LFO is allowed to develop in standard fashion, the waveform then continues without further change. TRP: Trapezoidal wave S&H: Sample & Hold wave (one time per cycle, LFO value is changed) CHS: Chaos wave VSIN: Modified sine wave. The amplitude of a sine wave is randomly varied once each cycle.

STEP: A waveform generated by the data specified by LFO Step 116.

This produces stepped change with a fixed pattern similar to a step modulator. * If you set this to "BEND-UP" or "BEND-DW," you must turn the KEY TRIGGER parameter (p. 40) to "ON." If this is "OFF," it will have no effect. Modulation speed of the LFO If you want the LFO rate to be synchronized with the tempo, this should be set in terms of a note value. * This setting will be ignored if the WAVEFORM parameter is set to "CHS." Time elapsed before the LFO effect is applied (the effect continues) after the key is pressed (or released) When using violin, wind, or certain other instrument sounds in a performance, rather than having vibrato added immediately after the sounds are played, it can be effective to add the vibrato after the note is drawn out somewhat. * Set this according to your purpose as described in "How to Apply the LFO" (p. 40).

How deeply the LFO will affect pitch How deeply the LFO will affect the cutoff frequency How deeply the LFO will affect the volume How deeply the LFO will affect the pan WAVEFORM SIN, TRI, SAW-UP, SAW-DW, SQR, RND, BEND-UP, BEND-DW, TRP, S&H, CHS, VSIN, STEP RATE 0127, Note DELAY 0-127 DEPTH PITCH DEPTH TVF DEPTH TVA DEPTH PAN -63+63 -63+63 -63+63 -63+63 25 Detailed Editing for a Patch (PATCH Parameters) WG Parameter marked with a "" can be controlled using specified MIDI messages. (Matrix Control, p. 42) Parameter Value Explanation Basic waveform for a tone When in monaural mode, only the left side (L) is specified. When in stereo, the right side (R) is also specified. To select a left/right pair of waveforms, first select the left (L) wave number, then doubleclick the wave number of the right (R) wave to select it.

Gain (amplification) of the waveform The value changes in 6 dB (decibel) steps--an increase of 6 dB doubles the waveform's gain. * If you intend to use the Booster to distort the waveform's sound, set this parameter to its maximum value (p. 31). When you wish to synchronize a Phrase Loop to the clock (tempo), set this to "ON." * When this parameter is set to "ON," set the TONE DELAY TIME parameter (p.

33) to "0." This sets whether FXM will be used (ON) or not (OFF). How FXM will perform frequency modulation Higher settings result in a grainier sound, while lower settings result in a more metallic sound. Depth of the modulation produced by FXM Pitch of the tone's sound (in semitones, +/-4 octaves) Pitch of the tone's sound (in 1-cent steps; one cent is 1/100th of a semitone) Depth of the Pitch envelope Higher settings will cause the pitch envelope to produce greater change. Negative (-) settings will invert the shape of the envelope. Pitch envelope times Higher settings will result in a longer time until the next pitch is reached. This will modify ENV T1 (p. 34). Pitch envelope times This will modify ENV T3 (p. 34).

Pitch envelope levels Specify how the pitch will change at each point, relative to the pitch set with COARSE TUNE or FINE TUNE. This will modify ENV L3 (p. 34). Pitch envelope times This will modify ENV T4 (p. 34). WAVE NUMBER L (Mono)/R Off, 1 GAIN -6, 0, +6, +12 TEMPO SYNC FXM ON FXM COLOR FXM DEPTH TUNE COARSE TUNE FINE PITCH ENV DEPTH (Pitch Envelope Depth) PITCH ENV A (Pitch Envelope Attack) PITCH ENV D (Pitch Envelope Decay) PITCH ENV S (Pitch Envelope Sustain) PITCH ENV R (Pitch Envelope Release) OFF, ON OFF, ON 14 016 -48+48 -50+50 -12+12 0127 0127 -63+63 0127 TVF Parameter marked with a "" can be controlled using specified MIDI messages. (Matrix Control, p. 42) Parameter Value Explanation Type of filter OFF: No filter is used. LPF: Low Pass Filter. This reduces the volume of all frequencies above the Cutoff Frequency in order to round off, or unbrighten the sound.

BPF: Band Pass Filter. This leaves only the frequencies in the region of the Cutoff Frequency, and cuts the rest. This can be useful when creating distinctive sounds. HPF: High Pass Filter. This cuts the frequencies in the region below the Cutoff Frequency.

This is suitable for creating percussive sounds emphasizing their higher tones. PKG: Peaking Filter. This emphasizes the frequencies in the region of the Cutoff Frequency. You can use this to create wah-wah effects by employing an LFO to change the Cutoff Frequency cyclically. LPF2: Low Pass Filter 2. Although frequency components above the Cutoff Frequency are cut, the sensitivity of this filter is half that of the LPF. This filter is good for use with simulated instrument sounds such as the acoustic piano. LPF3: Low Pass Filter 3. Although frequency components above the Cutoff Frequency are cut, the sensitivity of this filter changes according to the Cutoff Frequency. While this filter is also good for use with simulated acoustic instrument sounds, the nuance it exhibits differs from that of the LPF2, even with the same TVF Envelope settings. * If you set "LPF2" or "LPF3," the setting for the Resonance parameter will be ignored. TYPE OFF, LPF, BPF, HPF, PKG, LPF2, LPF3 26 Detailed Editing for a Patch (PATCH Parameters) Parameter CUTOFF (Cutoff Frequency) RES (Resonance) FILTER ENV DEPTH (Filter Envelope Depth) FILTER ENV A (Filter Envelope Attack) FILTER ENV D (Filter Envelope Decay) FILTER ENV S (Filter Envelope Sustain) FILTER ENV R (Filter Envelope Release) Value 0127 Explanation Frequency at which the filter begins to have an effect on the waveform's frequency components Emphasizes the portion of the sound in the region of the cutoff frequency, adding character to the sound * Excessively high settings can produce oscillation, causing the sound to distort. Depth of the TVF envelope Higher settings will cause the TVF envelope to produce greater change. Negative (-) settings will invert the shape of the envelope. TVF envelope times Higher settings will lengthen the time until the next cutoff frequency level is reached.

This will modify ENV T1 (p. 36). TVF envelope times This will modify ENV T3 (p. 36). TVF envelope levels Specify how the cutoff frequency will change at each point, relative to the Cutoff Frequency value. This will modify ENV L3 (p. 36). TVF envelope times This will modify ENV T4 (p. 36). 0127 -63+63 0127 0-127 0127 0127 TVA Parameter LEVEL PAN AMP ENV A (Amp Envelope Attack) AMP ENV D (Amp Envelope Decay) AMP ENV S (Amp Envelope Sustain) AMP ENV R (Amp Envelope Release) SEND LEVEL OUT (Output Level) CHO (Chorus Send) REV (Reverb Send) CHO (Chorus Send) REV (Reverb Send) Value 0127 L64063R 0127 Explanation Volume of the tone This setting is useful primarily for adjusting the volume balance between tones. Left/right position of the tone TVA envelope times Higher settings will lengthen the time until the next volume level is reached.

This will modify ENV T1 (p. 38). TVA envelope times This will modify ENV T3 (p. 38).

TVA envelope levels Specify how the volume will change at each point, relative to the LEVEL value. This will modify ENV L3 (p. 38). TVA envelope times This will modify ENV T4 (p. 38).

*Level of the signal that is sent to the output destination specified by OUTPUT ASSIGN (p. 38) 0127 0127 0127 0127 SEND LEVEL (OUTPUT ASSIGN = MFX) 0127 0127 0127 0127 Level of the signal sent to chorus for each tone if the tone is sent through MFX Level of the signal sent to reverb for each tone if the tone is sent through MFX Level of the signal sent to chorus for each tone if the tone is not sent through MFX Level of the signal sent to reverb for each tone if the tone is not sent through MFX SEND LEVEL (OUTPUT ASSIGN = non MFX) 27 Detailed Editing for a Patch (PATCH Parameters) COMMON Parameter marked with a "" can be controlled using specified MIDI messages. (Matrix Control, p. 42) Parameter PATCH NAME CATEGORY LEVEL PAN Value -- -- 0127 L64063R MFX, L+R, L, R, TONE -3+3 -48+48 -50+50 Explanation Patch name Type (category) of the patch * If you select "NO ASSIGN" as the category, it won't be possible to select the patch on the JUNODi itself. Volume of the patch Left/right position of the patch Specifies how the direct sound of each patch will be output. MFX: Output in stereo through multi-effects. You can also apply chorus or reverb to the sound that passes through multi-effects. L+R: Output in stereo to the OUTPUT jacks without passing through the multi-effect L: Output in mono to the OUTPUT L jack without passing through the multi-effect R: Output in mono to the OUTPUT R jack without passing through the multi-effect TONE: Outputs according to the settings for each tone. Pitch of the patch's sound (in units of an octave) Pitch of the patch's sound (in semitones, +/- 4 octaves) Pitch of the patch's sound (in 1-cent steps; one cent is 1/100th of a semitone) Stretched tuning (a system by which acoustic pianos are normally tuned, causing the lower range to be lower and the higher range to be higher than the mathematical tuning ratios would otherwise dictate) OFF: Equal temperament 13: Higher settings will produce the greater difference in the pitch of the low and high ranges. Degree of pitch change in semitones when the Pitch Bend lever is all the way right (in semitones) Degree of pitch change in semitones when the Pitch Bend lever is all the way left (in semitones) OUTPUT ASSIGN OCTAVE SHIFT TUNE COARSE TUNE FINE STRETCH TUNE DEPTH OFF, 13 PITCH BEND RANGE UP PITCH BEND RANGE DOWN Stretched Tuning fig.*

06-011.e 0+48 -480 Pitch difference from equal temperament Parameter value 3 2 1 OFF OFF 1 2 3 Low note range High note range Parameter CUTOFF RES (Resonance) OFFSET (Modify) ATTACK TIME RELEASE TIME VELOCITY SENS Value -63+63 -63+63 -63+63 -63+63 -63+63 Description CUTOFF (p. 27) RES (p. 27) TVF Envelope Time 1, TVA Envelope Time 1 (p. 36, p. 38) TVF Envelope Time 4, TVA Envelope Time 4 (p. 36, p. 38) Cutoff Velocity Sens, Velocity Sens (p. 36, p. 37) 28 Detailed Editing for a Patch (PATCH Parameters) Parameter Value Explanation How notes will be managed when the maximum polyphony is exceeded (128 voices) LAST: The last-played voices will be given priority (Notes will be turned off in order, beginning with the first-played note.

) LOUDEST: The loudest voices will be given priority (Notes will be turned off, beginning with the lowest-volume voice.) MONO: Only the last-played note will sound. This setting is effective when playing a solo instrument patch such as sax or flute. POLY: Two or more notes can be played simultaneously. This setting specifies whether the Legato Switch will be used (ON) or not (OFF).

*LEGATO SW is valid when the Mono/Poly parameter is set to "MONO." With the LEGATO SW "ON," pressing a key while continuing to press a previous key causes the note to change pitch to the pitch of the most recently pressed key, sounding all the while. This creates a smooth transition between notes, which is effective when you wish to simulate the hammering-on and pulling-off techniques used by a guitarist. The setting determines whether sounds are replayed (ON) or not (OFF) when performing legato. The LEGATO RETRIGGER is valid when the Mono/Poly is set to "MONO" and the LEGATO SW is set to "ON." Normally you will leave this parameter "ON." When "OFF," when one key is held down and another key is then pressed, only the pitch changes, without the attack of the latter key being played. Set this to "OFF" when performing wind and string phrases or when using modulation with the mono synth keyboard sound. Let's say you have the LEGATO SW set to "ON," and the LEGATO RETRIGGER set to "OFF." When you try to sound a legato (by pressing a higher key while a lower key is held down), the pitch may sometimes not be able to rise all the way to the intended pitch (stopping instead at an intermediate pitch). This can occur because the limit of pitch rise, as determined at the wave level, has been exceeded. Additionally, if differing upper pitch limits are used for the waves of a Patch that uses multiple tones, it may stop being heard in MONO. When making large pitch changes, set the LEGATO RETRIGGER to "ON." PRIORITY LAST, LOUDEST MONO/POLY MONO, POLY SW (Switch) OFF, ON LEGATO RETRIGGER OFF, ON ANALOG FEEL SW MODE PORTAMENTO 0127 OFF, ON NORMAL, LEGATO RATE, TIME PITCH, NOTE 0127 Depth of 1/f modulation (a pleasant and naturally-occurring ratio of modulation that occurs in a babbling brook or rustling wind) * You can simulate the natural instability characteristic of an analog synthesizer by adding this "1/f modulation." Specifies whether the portamento effect will be applied (ON) or not (OFF).*

NORMAL: Portamento will always be applied. LEGATO: Portamento will be applied only when you play legato. RATE: Speed of pitch change is uniform (the time required for the pitch change will correspond to the distance of the pitch change) TIME: The time it takes will be constant, regardless of how far apart in pitch the notes are. PITCH: Starts a new portamento when another key is pressed while the pitch is changing. NOTE: Portamento will begin anew from the pitch where the current change would end. Specifies the time over which the pitch will change. TYPE START TIME fig.PortaStart.e Portamento is an effect which smoothly changes the pitch from the first-played key to the next-played key. Portamento Start: PITCH Pitch Portamento Start: NOTE Pitch C5 C5 D4 C4 Time press D4 key press C5 key press C4 key D4 C4 Time press D4 key press C5 key press C4 key PART MODULATION OFF, ON Specifies whether the part's modulation depth range setting (the value specified by RPN) will be enabled (ON) or disabled (OFF).