

NOVA



NOVA Owners Manual Addendum

For Operating System Version 4.0

Introducing

DoubleSaw



 **novation**
In music, anything is possible.

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Polyphony increase

The maximum polyphony available for the Nova Laptop has been increased from 12 to 16 voices.

Page button auto-repeat

The Page Up and Page Down buttons now auto-repeat if they are pressed and held. This makes navigation around large menus (such as the Global Menu) easier.

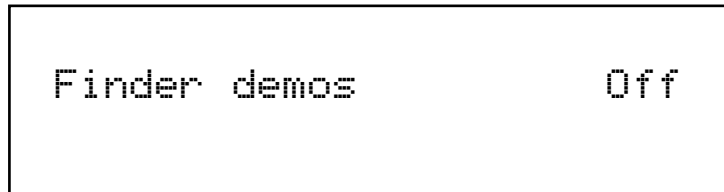
Several new functions have been added to the Global Menu.

Finder demo switch

There is a new parameter in the Global Menu which allows the finder demos to be disabled when searching for Programs using the Demo/finder button.

Global - Button

Page 10 looks like so:



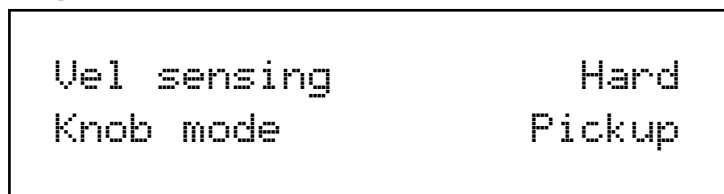
The higher parameter is "Finder demos". In this case with a value of Off.

This parameter determines if the "Finder" plays a demo or not when activated. Use the higher Data knob to adjust this parameter. In the On position whenever the Finder mode is activated a small demo tune will play in the style of the category currently assigned to the selected program. In the Off position the finder function still works but no demo plays. This is useful when working with an external sequencer & auditioning sounds while the sequencer is running. The range of this parameter is On & Off. This parameter is memorised as Global.

Knob sensing mode

There is a new parameter in the Global Menu which determines how all knobs behave on the Nova's front panel.

Page 11 looks like so:



The higher parameter is "Vel sensing". In this case with a value of Hard.

This parameter alters the velocity response of the Nova. Use the upper Data knob to adjust this parameter. This is global & applies to all modes. In the Hard position, large Velocity changes are required to create a big change in response. This is good for weight-ed & semi-weighted keyboard actions. In the Soft position, not so large Velocity changes are required to create a big change in response. This is good for cheaper keyboard actions. The range of this parameter is Hard & Soft. This parameter is memorised as Global.

The lower parameter is "Knob mode". In this case with a value of Pickup.

This parameter determines if the values of Knob parameters jumps immediately to the actual position of the Knob as soon as it is turned or if the Knob has to pass "through" the value of the edited parameter before the Knob starts editing the parameter. Use the lower Data knob to adjust this parameter. In the Normal position the value of the parameter being edited jumps to the value of the Knob as soon as a Knob is turned. This is good when creating sounds as parameters are always "Live". In the Pickup position no change to the parameter being edited will take place until the Knob is turned so that it has passed "through" the value of the edited parameter, thereby "picking it up". The Knob then becomes "live" & will start editing the parameter & will start to transmit the appropriate controller. The range of this parameter is Normal & Pickup.



NOTE:

When this parameter is set to "Pickup" mode no controller data will be sent & no edits to the parameter by Knob movements will occur until the Knob parameter has been picked up.

Global MIDI transmit options

There are two new parameters available on a new page in the Global Menu which determine whether the Nova will transmit certain types of MIDI information.

Page 14 looks like so:

Prog change TX	On
Controllers TX	On

The higher parameter is “Prog change TX”. In this case with a value of On.
This parameter determines if the Nova transmits MIDI program change & Bank messages when a new Program or Performance is selected (This includes program changes within a Part of a Performance). Use the higher Data knob to adjust this parameter. In the On position whenever a new Program or Performance is selected the appropriate Program change message & Bank message is sent on the appropriate channel. In the Off position no Program change or Bank change messages will be transmitted. The range of this parameter is On & Off. This parameter is memorised as Global.

The lower parameter is “Controllers TX”. In this case with a value of On.
This parameter determines if the Nova transmits Controller messages. Use the lower Data knob to adjust this parameter. In the On position whenever a knob, slider or switch is manipulated appropriate Controller messages are sent on the appropriate channel. In the Off position no Controller messages will be transmitted. The range of this parameter is On & Off. This parameter is memorised as Global.

Improved Arpeggiator pattern editing

The editing of User arpeggio patterns has been improved with all step editing parameters (Step, Note, Vel and Gate) now available all on a single page in the Global Menu.

Page 18 looks like so:

Step	Note	Vel.	Gate
01	01	127	Norm

The higher parameter is "Step Note Vel. Gate". In this case with a value of Note.

This parameter determines what type of pattern parameter is going to be edited with the lower Data knob. Use the upper Data knob to select the parameter to be edited. The cursor indicates the current selection, in this case Note. When this parameter is set to "Step" the value of the parameter below it determines the step to be edited. Use the lower Data knob to adjust this parameter. The range of this parameter is 01 to 64 but depends on the value set in the "No of Steps" parameter above. When this parameter is set to "Note" the value of the parameter below it determines the note value of the currently selected step. Use the lower Data knob to adjust this parameter. The range of this parameter is 01 to 12 for the User Monophonic patterns (000 to 063) & -36 to +36 for the User Polyphonic patterns (064 to 127) When this parameter is set to "Vel." the value of the parameter below it determines the velocity of the note at the currently selected step. Use the lower Data knob to adjust this parameter. The range of this parameter is 1 to 127. When this parameter is set to "Gate" the value of the parameter below it determines the gate time of the note at the currently selected step. In the Normal position the gate equals one step unless the following step is a tie. In the Tie position the notes are tied together. Use the lower Data knob to adjust this parameter. In the Rest position the note is silent. In the Glide position the Portamento effect is engaged as it does in Autoglide. The range of this parameter is Norm, Tie, Rest, Glide. These parameters are memorised as Pattern data.



NOTE:

The Note parameter can only be accessed if the current step's gate is set to Norm or Glide.



NOTE:

To write any changes to the currently selected pattern into memory press the "Write" button while any of the pattern edit pages are displayed. Also note the "Memory Protect" has to be set to "Off" for this to be possible.

OSCILLATOR SECTION

Double saw oscillator waveform

This new waveform is available for all three oscillators. It is selected for an oscillator by pressing the 'special' button in the Oscillator section on the front panel and selecting "Double saw" using the lower fast data knob.

Saw Waveform	-	Button
Sq waveform	-	Button
Special Waveform	-	Button

This is a menu of oscillator waveforms for the oscillator selected with the Osc 1, 2, & 3 buttons. To adjust the waveform of oscillator 1 press the "Osc 1" button & select the waveform required. The selected waveform will light. The Saw button selects a Sawtooth waveform, the Sq button selects a Square waveform & the Special button selects either Audio input 1, Audio input 2 or the DoubleSaw "special" waveform.



When the DoubleSaw wave form is selected, the currently selected Oscillator actually becomes 2 Saw waves that can be independently phase shifted or detuned with the use of an LFO. If all Oscillators are set to Double Saw then each voice has effectively 6 Oscillators. This has no effect on total Polyphony & can allow Unison type sounds to be created without the need to use the Unison feature, thereby saving voices, but then again it is possible to Unison a Double Saw Program to create truly HUGE sounds. (Whoever said size does not matter is deluding themselves!)



NOTE:

All the functions like Mix, Pitch, Sync & Hardness still apply but modulate both Saw waves simultaneously.

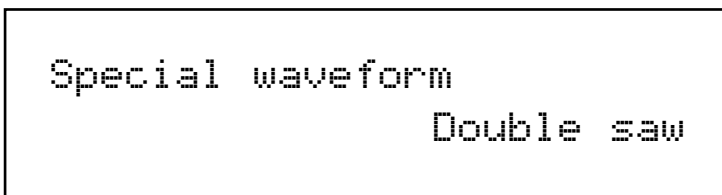


NOTE:

Sync sounds can cause clicks when LFOs are used to detune Double Saw waves. This will happen when the modulating LFO is set to anything BUT Tri waves.

Special Waveform	-	Button
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When the Special button in the Oscillator Section is pressed the Display shows:



The parameter is "Special waveform" In this case with a value of Double saw.

This parameter determines what special waveform the currently selected oscillator is going to have. Use the lower Data knob to adjust this parameter. If this parameter is set to Audio input (1), Audio input 1 will be substituted for the standard Oscillator. If this parameter is set to Audio input (2), Audio input 2 will be substituted for the standard Oscillator. If this parameter is set to Double saw the Double saw waveform as described above will be substituted for the standard Oscillator. The range of this parameter is Audio input (1), Audio input (2) & Double Saw. This parameter is memorised with a Program.

How to use the Double Saw waveform

Width	-	Button
Level	-	Knob

When the Double Saw wave is selected the Width part of the matrix is used to control the "Difference" in phase between the 2 Saw waves. The Level control controls the static phase difference between the 2 Saw waves. When this is set to 000 there is no difference in phase between the waves and so at this setting Double Saw waves sound just the same as a standard Saw wave.



NOTE:

As both waves are adding together exactly when no phase difference is set between the 2 Saw waves the resulting "Single" Saw wave is twice as loud as a standard Saw wave. This can be handy when severe filtering is being employed.

When this parameter is set to a positive value the phase difference between the 2 Saw waves is modulated by a positive amount. Similarly negative values produce a negative phase shift between the 2 Saw waves. Fully clockwise or fully anticlockwise the phase shift is 180° & has been shifted positive or negative respectively. The range of this parameter is -64 to +63. This parameter is memorised with a program.

The key way to understand how this works is to understand that detuning can be expressed as a continually accelerating (or decelerating) phase shift. When looking at the waves of detuned Oscillators on an Oscilloscope it can be clearly seen that one waveform accelerates (or decelerates, the result is the same) in respect to the other. The greater the detuning the greater the difference in phase shift acceleration or deceleration between the two Oscillators.

So how is this done? The answer is with an LFO. Because the modulation of an LFO has been tailored to modulate a Double Saw wave exactly from 0° phase shift to 360° when set to FULLY positive or negative modulation (180° phase shift of modulation of each positive & negative cycle are used providing 360° of phase shift) continuous detuning effects can be reproduced.

To create straight pitch shift detuning effects use a Saw wave on the modulating LFO. Moderate speed is required. Typically 110 when set to "Slow". Slow speeds produce small pitch shifts. Fast speeds produce large ones.

To create chorus like detuning effects use a Tri wave on the modulating LFO. Fairly slow speeds are all that is required.



NOTE:

Anything less than FULL positive or negative modulation will result in less than 360° phase shift and clicks will occur.

Tips and Tricks

Try setting the modulating LFOs Keysync parameter to Keysync to get really percussive attacks to Double Saw sounds. This simulates all the Oscillators starting in phase. Setting this parameter to Freewheel means all Oscillators will start at random phase locations.

Below is an example of how to set up a detuning effect using a Double Saw wave.

Width	-	Button
Mod Depth	-	Knob
LFO 1	-	Button

This combination can be used to create a Pitch shift using LFO 1. The first thing that needs to be done is set (in this case LFO 1) to a Saw wave running at a moderate speed, i.e. 110 when set to Slow, turning the Mod Depth Knob clockwise introduces a pitch shift in one of the Saw waves in a positive direction. Turning the Mod Depth Knob anticlockwise introduces a pitch shift in one of the Saw waves in a negative direction. In the "Mid" position there is no modulation at all. The range of this parameter is -64 to +63.



NOTE:

This is actually set up in Program B126 "DOUBLE SAW Init" in the new voice set that came with this manual addendum. In this program LFO1 is used positively and negatively on 2 oscillators & LFO2 is used at a slightly different speed to make sure all 6 oscillators are at different pitches.



NOTE:

The detune effect will not be smoothly produced if anything other than a modulation level of -64 to +63 is used. Anything else may produce clicky artifacts, But these in themselves may be interesting.

This parameter is memorised with a Program.



NOTE:

These buttons do not apply to the Ring Mod Oscillators (1*3 & 2*3) or the Noise Generator.

New Special Filter types

Nine new special filter types are available by pressing the 'special' button in the Filter section on the front panel. Press the button and use the upper fast data knob to select the desired filter type.

Each special filter is made up from two filter blocks. The types available are :

Res LPF, Res BPF, Res HPF, Notch, LPF + LPF, BPF + BPF, HPF + HPF, LPF + BPF and BPF + HPF.

Special - Button

When the special filter button is pressed the display shows:

Filter type	Res LPF
Filter width	00

The higher parameter is "Filter type". In this case with a value of Res LPF.

This parameter determines what type of Special filter is applied. Use the Higher data knob to adjust this parameter. There are 9 different special filters. Each one is made up of 2 filter blocks. The "Hyper Resonant" types are in series & are the Res LPF, Res BPF & Res HPF filters. These types are very resonant & the Filter width parameter allows the Cutoff frequencies of each filter block to be set at different frequencies. The rest of the filter types have the 2 filter blocks in parallel. Again the Filter width parameter allows the Cutoff frequencies of each filter block to be set at different frequencies. The range of this parameter is Res LPF, Res BPF, Res HPF, Notch, LPF + LPF, BPF + BPF, HPF + HPF, LPF + BPF, & BPF + HPF. This parameter is memorised with a program.

The lower parameter is "Filter width". In this case with a value of 00.

This parameter determines the spacing/offset in filter cutoff frequencies between the two elements of the "Special" filters. This is a duplicate of the Special type filter width parameter that is displayed on page 6 of the Filter menu. The reason for this is that it was found to be nice for the display to jump back to this parameter when editing & as this parameter is duplicated in the Filter menu it will do that when the Filter menu is selected. This can provide "Formant" type filters & speech like qualities can be easily realised. The Filter width is calibrated in semitones and a range of pre-set intervals are available. The range of this parameter is 00, 08, 16, 24, 32, 40, 48 & 56. Note that the Resonance modulation Knob in the Filter Modulation Matrix actually modulates the "Filter width" parameter & not the resonance when the "Special" filters are selected. The Resonance knob still retains its function as filter Resonance when in this mode. This parameter is memorised with a program.



NOTE:

Adjusting the value of this parameter will alter the value in the Filter menu. It is not possible to have different values set in the 2 pages.

Menu - Button

Page 5 looks like so:

Special type	
filter width	00

The parameter is "Special type filter width". In this case with a value of 00.

This parameter determines the spacing/offset in Filter cutoff frequencies between the two elements of the "Special" filters. This is a duplicate of the Filter width parameter that is displayed when the Special Filter page is active. The reason for this is that it was found to be nice for the display to jump back to this parameter when editing & as this parameter is duplicated here in this menu it will do exactly that. This can provide "Formant" type filters & speech like qualities can be easily realised. The Filter width is calibrated in semitones and a range of pre-set intervals are available. The range of this parameter is 00, 08, 16, 24, 32, 40, 48 & 56. Note that the Resonance modulation Knob in the Filter Modulation Matrix actually modulates the "Filter width" parameter & not the resonance when the "Special" filters are selected. The Resonance knob still retains its function as filter Resonance when in this mode. This parameter is memorised with a program.



NOTE:

Adjusting the value of this parameter will alter the value in the Special page. It is not possible to have different values set in the 2 pages.

Voice Unison

A new unison mode is now implemented. This is accessed by a new page in the Trigger Menu. Unison can be used to considerably “fatten up” a sound by using more than one voice for each note sounded. It is possible to assign between 2 and 8 voices per note, but beware that large voice values will eat up the available polyphony drastically !

Trigger - Button

Page 5 looks like so:



The higher parameter is “Unison”. In this case with a value of Off.
This parameter activates the Unison mode. Use the upper Data knob to adjust the value of this parameter. When this parameter is set to Off only one voice is used per note in a Program. When this parameter is set to On more than one voice is used per note in a Program. The number of voices used per note is determined by the Unison mode parameter on the lower line of this page. The range of this parameter is On & Off. This parameter is memorised with a Program.

The lower parameter is “Unison mode”. In this case with a value of 2 voice.
This parameter determines the number of voices used on one note when the Unison mode is active. Use the lower Data knob to adjust the value of this parameter. Larger values tend to create fatter sounds. The range of this parameter is 2 to 8. This parameter is memorised with a Program.



Large voice settings of the Unison mode can be quite polyphony hungry. For example a setting of 8 voice will produce a fat sound but 2 notes will consume all 16 voices.

DCO / VCO mode

This new feature can be used to influence how the oscillators behave.

Constant gate

This new feature is available on a new page in the Trigger Menu and enables a Program to constantly be sounding a note (middle C) without being triggered by a MIDI keyboard or sequencer. While Constant Gate is "On", the envelopes are triggered as normal and will ramp down to their sustain levels.

Trigger - Button

Page 6 looks like so:

DCO / VCO mode	VCO
Constant gate	On

The higher parameter is "DCO / VCO mode". In this case with a value of VCO.

This parameter determines how the tuning of all the oscillators behaves. Use the higher Data knob to adjust this parameter. When this parameter is set to DCO the tuning between the oscillators is perfect. This is the case on "DCO" (Digitally Controlled Oscillator) synthesisers such as the Roland Juno 106* or Juno 60*. Setting this parameter to VCO recreates the classic "VCO" (Voltage Controlled Oscillator) characteristics of imperfect oscillator tuning. The range of this parameter is DCO & VCO. This parameter is memorised with a Program.

* Juno 106 & Juno 60 are trademarks copyright of Roland Corp. Japan.

The lower parameter is "Constant gate". In this case with a value of On.

This parameter determines if the envelopes are "constantly" gated on as if C3 was being played and held down. Use the lower Data knob to adjust this parameter. When this parameter is set to On the signals fed into the Inputs (& that are assigned as Special waveforms to the Oscillators) are passed through the Nova's synthesis engine without requiring a MIDI Note message to trigger the envelopes. Also this feature can be used to create sustained sound effects that require no trigger note. When a Program that has this parameter set to On is selected, the Program will sound straight away as if C3 was played. This will continue until another program is selected. When this parameter is set to Off normal operation occurs. i.e. a note on message is required to trigger the envelopes before any sound can be heard. The range of this parameter is On & Off. This parameter is memorised with a Program.



NOTE:

When the Arpeggiator is active Constant gate no longer functions.

Improved Distortion

The Distortion effect has now been made much more aggressive. This will be particularly noticeable when the “Distortion drive” parameter is set to a very high level.

When OS4 is first installed on your Nova, all Programs and Performances in flash memory will have their distortion levels scaled down accordingly so they will continue to sound the same as they did before OS4 was installed.

Extra Delay ratio options

The available range of Delay ratios has been extended. Extra options are “1:Off” (no delay is heard on the right-hand side) and “Off:1” (no delay is heard on the left-hand side).

Menu - **Button**
Delay - **Button**

Page 2 looks like so:

Stereo width	010
Delay ratio	1:1

The higher parameter is “Stereo width”. In this case with a value of 010.
This parameter determines how wide the stereo image of the delay is. Use the upper Data knob to adjust this parameter. In the 000 position the Delay is mono. In the 127 position the delay is fully stereo. The range of this parameter is 000 to 127. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part’s “Part FX” parameter.

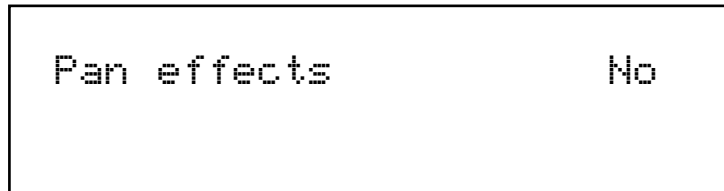
The lower parameter is “Delay ratio”. In this case with a value of 1:1.
This parameter determines the relationship of the Delay times in the Delay. In the 1:1 position the Left & Right channel Delays are the same Delay time. In the 1:0.5 position the Right Delay is half the time of the Left Delay. In the 0.5:1 position the Left Delay is half the time of the Right Delay. In the Off:1 position there is no output from the Left Delay & there is an output from the Right Delay at the specified delay time. The range of this parameter is 1:1, 1:0.75, 0.75:1, 1:0.66, 0.66:1, 1:0.5, 0.5:1, 1:0.33, 0.33:1, 1:0.25, 0.25:1, 1:Off & Off:1. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part’s “Part FX” parameter.

Pan effects

This new parameter can be found on a new page within the Pan Menu. This parameter allows the stereo effects (reverb, chorus and delay) to be panned along with the main dry signal and mono effects (such as distortion). In previous Nova operating systems, the stereo effects always remained stereo regardless of the pan position and so it was not possible to pan a sound into a single mono output if it was using any of the stereo effects.

Menu - **Button**
Pan - **Button**

Page 3 looks like so:



The higher parameter is "Pan effects". In this case with a value of No.

This parameter determines how the Effects behave when a sound is Panned between Left & Right in the Stereo image. Use the higher Data knob to adjust this parameter. When this parameter is set to No the sound is panned as it would be on a mixing desk. i.e. the sound can be panned hard Left or Right but *Stereo* effects such as the Comb filter, Phaser/Flanger/Chorus/Ensemble/Rotary Speaker, Delay & Reverb will cause effects to appear on *both* the Left & Right channels (just like Aux returns on a mixing desk). Setting this parameter to On *forces* the Stereo effects to be panned as well as the source sound. i.e. if a sound is panned hard Left and this parameter is set to On, then only the Left side of the Stereo effects are heard. The range of this parameter is Yes & No. This parameter is memorised with a Program in Program Mode or memorised with a Program or Performance in Performance Mode depending on the value of the Part's "Part FX" parameter.



NOTE:

This is particularly handy when using the separate audio outputs as *Mono* outputs. Normally the audio outputs are treated as "Stereo pairs" when the "Pan effects" parameter is set to "No" as the "Pan" parameter behaves like it does on a Mixing console with effects routed via an Aux return. Setting the "Pan effects" parameter is set to "Yes" allows the user to pan *the sound & the effects to a single Mono output*.



NOTE:

If the "Pan effects" parameter is set to "Yes" and the sound is panned hard to the Left, then only the Left channel of the Stereo effects (the Comb filter, Phaser/Flanger/Chorus/Ensemble/Rotary Speaker, Delay & Reverb) will be heard. In the case of the Phaser/Flanger/Chorus/ Ensemble/Rotary Speaker effect this may introduce a slight "Wobbling" sensation to the sound. This is due to the Stereo nature of the effect and is normal (If you monitor only one side of a Stereo version of the sound on your Mixer you will experience the same thing).

Extra sustain options

The available range of sustain message options for each Part in Performance Mode has been extended.

Midi - Button

Page 1 looks like so:

Sustain	Enable
Midi channel	Global

As can be seen the higher parameter is "Sustain". In this case with a value of Enable.

This parameter determines how the selected Part will respond to incoming MIDI Sustain pedal data. (Controller 64). This parameter is adjusted using the higher Fast Data knob. If this parameter is set to "Enable" the Envelopes are held at their sustain phases if a MIDI Sustain pedal message of "On" is received. (This is similar to the Damper pedal on a Piano) . The Sustain pedal message can be set to do other things as well though. If this parameter is set to "Arp Latch" the Arp latch function will be switched on when a Sustain pedal message of "On" is received and switched "Off" when a pedal "off" is received. Similarly if this parameter is set to "Arp Mute" or "Part Mute" the respective mute function will be controlled in the same way. Some manufacturers have different polarity pedals which can make this parameter behave in reverse so inverse parameters have been added as an option.

Additionally it is often useful when layering 2 or more Parts to have one Part enabled and the other(s) disabled so an "Off" option is available. If this parameter is set to "Program + 1", the Part's Program advances by one when the pedal is pressed & if set to "Program - 1", the Part's Program decreases by one when the pedal is pressed. If this parameter is set to "Pattern + 1", the Part's arpeggiator pattern increases by one when the pedal is pressed & if set to "Pattern - 1," the Part's arpeggiator pattern decreases by one when the pedal is pressed. The range of this parameter is Enable, Arp Latch, Arp Mute, Part Mute, Enable (I), Arp Latch (I), Arp Mute (I), Part Mute (I), Program + 1, Program - 1, Pattern +1 , Pattern - 1 & Off. This parameter is memorised with the Performance.

Data compatibility with SN II series

Limited provision has been made for the Nova Laptop to load system exclusive dumps from a Supernova II Keyboard, Nova II Keyboard or Supernova II Rack.

However, it will not be possible to take across all of the parameters into the Nova Laptop. Certain features such as FM algorithms, extended envelope parameters and extended effects parameters are unique to the 2nd generation series and cannot be taken across. These features will be ignored if taken across via Sysex.

Other features such as special filter width and unison are common to both series, but are available in a reduced form on the Nova Laptop. In such cases, the settings will be approximated as closely as possible when taken across via Sysex.

New features common with 2nd generation series (can be taken across) :

- Osc special waveform : Double saw
- Filter special types (all)
- Unison on/off
- Unison voices
- Special filter width modulation
- Pan effects
- Constant gate
- Global prog change tx option
- Global controllers tx option
- Global finder demo switch
- Global knob mode



NOTE:

The Pan effects, Special Filter width & VCO Drift parameters can only be transferred successfully if the transmitting Supernova II or Nova II has the forthcoming OS 2 or above installed.

COMPATIBILITY

New features common with 2nd generation series in limited form (can be taken across) :

Unison detune (default unison detune value applied when Unison is on)
Special filter width (rounded to nearest pre-set value)
VCO drift (converted to DCO/VCO mode)
Arp gate time (rounded to nearest pre-set value)

Features unique to 2nd generation series (cannot be taken across) :

FM configurations
Envelope level tracking
Envelope level note
Envelope A-D repeat
Envelope sustain rate
Envelope sustain time
Oscs start phase
Arp output channel
Filter overdrive curve
Oscs filter bypass
Effects bypass
Comb filter speed
Comb filter depth
Comb filter spread
Comb filter freq wheel
Comb filter boost wheel
Distortion output level
Distortion gain compensate
Distortion curve
Chorus delay
Chorus LFO wave
Chorus speed 2
Chorus inertia
Chorus stereo width
Chorus type : Ensemble
Chorus type : Rotary speaker
LFO delay fade
LFO slew amount
Drum played as
Global input/switch settings
Global aftertouch tx option
Global velocity tx option
Global arp kbd note tx option
Global sysex tx delay
Global temp display time
Arp transpose zone settings
All external part settings
Drum maps
Digital i/o card options

Squarewave pulse width compatibility

Before OS4.0, maximum or minimum setting of "width" (+63 or -64) for an oscillator set to square wave gave a 5% pulse width. For compatibility with series 2, this has changed to 0% (ie silence). OS4.0 does not automatically adjust this.

Few programs use these extreme settings and it is unlikely that any change will be heard.

However, if upgrading to OS4.0 has made any of your programs silent or distinctly different, please check oscillators using square wave and reduce extreme settings of width by 3 or 4 counts.

New sound banks are included in this archive. To install the new sounds follow the procedure below. This is actually very similar to upgrading the OS in your Nova.

- 1 - Connect the MIDI out of the sequencer to the MIDI in of the Nova.
- 2 - Turn the Memory Protect OFF (in page 7 of the Global mode) & make sure your Nova is set to Global MIDI channel 1. (page 1 of the Global mode)
- 3 - Load the total.mid file into your sequencer.
- 4 - Play the sequence. (The display will show the status of incoming messages)



NOTE:

If you experience problems with this file, it is probably due to similar problems that can occur when updating the OS. Please Refer to page 19 "Problems that can occur when updating an OS & sounds".

UPDATING THE OPERATING SYSTEM

Please follow the instructions below for details on how to upgrade you Nova's Operating System.

- 1 - BACK UP YOUR DATA.
Make a backup of your data to computer. By this I mean everything. Use the "Total data" setting in the Sysex transmission parameter in global mode.
- 2 - VERIFY YOUR BACKUP.
Change the name of one of the sounds & write the change in. Then reload your sounds from YOUR BACKUP that you have just made. If the name has changed back to what it was when you made the backup, chances are the backup is OK.
- 3 - SWITCH THE NOVA OFF.
- 4 - CONNECT MIDI OUT OF THE SEQUENCER TO MIDI IN ON THE NOVA.
- 5 - LOAD THE NovaOS40.mid FILE INTO YOUR SEQUENCER.
- 6 - HOLD DOWN PART MUTE BUTTON & SWITCH THE NOVA ON WHILE STILL HOLDING IT DOWN.

The display should show:



```
Waiting for midi O/S
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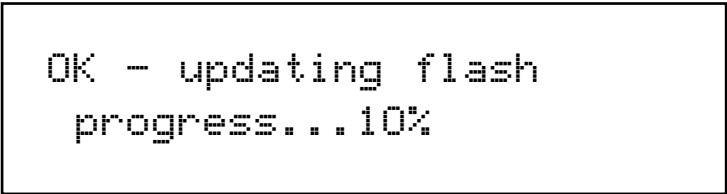
- 7 - PLAY THE SEQUENCER.

If everything is OK you'll get a display like so indicating the amount of file received.



```
Receiving OS 4.0  
progress...10%
```

Once the file has reached 100% the display will show:



```
OK - updating flash  
progress...10%
```

The Nova is now updating the OS in Flash Memory.



NOTE:

Under no circumstances switch off the Nova while this procedure is happening. Doing so may result in very erratic behaviour & may lead to the Nova needing to be sent back for service! Once the Flash has been loaded the Nova will automatically reboot as normal running the new OS.

While we have taken every precaution in designing the OS to be upgraded trouble free, sometimes problems can occur. This is not solely down to us but in almost all cases rests with the sequencer/hardware used to perform the upgrade.

If an error occurs during the upgrade process the display will show:

Packet error!!
Switch off and re-try

This is an indication that an error has occurred in the download process that does not make any sense to the Nova.



NOTE:

This is not caused by the Nova but by the transmitting device. This is caused by the software or the hardware used to transmit the OS to the Nova. Do what it says, switch the Nova off & re-try.

If the problem re-occurs, then please look below.

PCs

PCs have the most problems. As said above this is not a fault in the Nova but the transmitting device.

In these devices it seems to be a compound problem with hardware & software. Some applications will work with some MIDI interfaces & not with others.

Solution 1 is try another sequencer / application.

Solution 2 is try another MIDI interface.

Solution 3 is try another sequencer / application with a different MIDI interface.

Cubase works most of the time depending on the version & interface.

Cakewalk works sometimes depending on the version & interface.

Logic works most of the time depending on the version & interface.

Media Player works sometimes depending on the version & interface.

Freeloder works most of the time depending on the version & interface.

Some USB MIDI interfaces do seem to have problems handling this data. Please contact the manufacturer to get the latest Drivers / Operating systems for the interfaces. At the point of writing no USB interface known can reliably do this.

If none of this works...Try a different computer. Feel free to ask the sequencer manufacturer why large sysex files as .mid files are incompatible with their application. (.mid files are meant to be an international standard)

Macintosh

Mac's seem to be relatively trouble free. I have encountered some problems with older ones though. The same solutions apply.

Solution 1 is try another sequencer/application.

Solution 2 is try another MIDI interface.

Solution 3 is try another sequencer / application with a different MIDI interface.

Some USB MIDI interfaces do seem to have problems handling this data. Please contact the manufacturer to get the latest Drivers / Operating systems for the interfaces. At the point of writing no USB interface known can reliably do this.

If none of this works...Try a different computer. However this is rarely necessary.

ATARI

Never had a problem ever, an 8meg 16 bit machine can cream the lot of them.

AMIGA

Bars & Pipes Pro works but it could be down to the interface.

WORKSTATIONS

Workstations such as KORG's Trinity/X-series/O1w & ROLAND Workstations do not to our knowledge at this stage support sysex as .mid files. They have Utility modes which can load sysex files but not in the Midi File format.

Basically this means the files downloadable from our site are not compatible with your workstation. You will have to use a computer to upgrade your unit with this file.



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