Synth Controller manual addendum for edition 'ND2' for Clavia Nord Drum2 & 3P

The edition is optimized for **Nord Drum 2 and 3**. It will not work at all with the (first) four voiced **Nord Drum 1,** which unfortunately does not offer any parameter editings over midi.

In the meantime we offer a specialized firmware and faceplate for the **ND3**, please see last chapter for details.

Update in Firmware V1.6: The knob ATK RATE for „Delay Rate/Feedback" in the ND3-Firmware always sends on the learnt start-midi channel because the Delay Rate and Feedback are global for all voices. For being able to adjust „Delay Rate/Feedback" please set the global channel of your ND3 to same channel like the one you've sent into the Controller.

Update in Firmware V1.8: the voice's midichannels are not longer fixed to 1-6 and the Controller's global channel is not fixed to 10 anymore. Instead you learn a starting-midichannel into the Controller which is considered to be the Controller's global channel. The six voices listen to the following 6 channels above this global channel.

Example: you set the Controller in CHANNEL LEARN MODE and send a note on channel 3 into the MIDI IN. 3 is the global channel now where to send the notes for unpitched triggering of the voices, on ND3 this channel is also used to adjust DELAY RATE & FEEDBACK. Voice 1 now listens to midi channel 4 for pitched playing over the keyboard range, Voice 2 on channel 5 etc. The highest allowed global channel is 10. Incoming notes on channel 11-16 will be ignored in CHANNEL LEARN MODE.

To learn the global channel on the Controller: hold buttons 2 & 3 for a second, all 3 LEDs start to flash. Now send a midinote on the desired start-midichannel into the Controller. It will restart then, the channel is written into memory and will be restored on next powerup. You can leave the CHANNEL LEARN MODE anytime by pressing one of the 3 buttons.

Settings

The parameter changes of the Controller will be sent on midichannels 1-6 above the global channel. Accordingly the Nord Drum 2's voices need to be addressable on these channels which can be set in the MIDI menu of the ND2. The Nord Drum's Midi parameter „CC" (Control Change) has to be set to „r" (=receive) or „Sr" (=send & receive).

Midichannels

Midi sequencer data for triggering the voices on the global midichannel will always be forwarded by the Controller. Accordingly you should set the NordDrum's global channel (midi menu, parameter 2 „GL.") to the same channel you have sent into the Controller in CHANNEL LEARN MODE.
Firmware V1.5 introduced user selectable filtering of notes on the voice's channels to allow playing the tones pitched over the keyboard.

Button combination:
- pass note data on voice channels: on powerup hold the 2nd button until the LED lights up, release the button.
- filter note data on voice channels: on powerup hold the 3nd button until the LED lights up, release the button.

The selected option will be saved in EPROM and will be restored automatically on next startup. Midi data above or below the voice channels will always be forwarded by the Controller.

Selection of edited voice

The Controller only allows to edit one voice (on the Nord Drum it's called 'channel') at a time. After startup voice 1 is active, the first LED on the Controller is on and editings are being sent to Voice 1. Press NEXT and the second LED is on, all changes on the Controller now edit the second voice of the NordDrum. This continues up to voice 6. With PREV you go back in the number of voices.

Parameter layout and LOWER PARAM

The parameter layout on the Controller follows the layout of the NordDrum itself to make orientation easier. The LOWER PARAMETERs will be found on the same positions as well. To edit the LOWER PARAMETER keep the LOWER PARA down while you want to edit it, As soon as you release LOWER PARA, the white parameter will be active again.

Some label positions do not perfectly represent the knob position when the value is actually selected. The labels for CLICK TYPES (N1-9 ... C1-9) or NOISE FILTER MODES (L12 ... HC) should be considered as helpful reminders.

Center dots

Some parameters have a little dot in the middle, some in the white layer (e.g. NOISE FILTER ENV or MIX TONE / NOISE), some in the red layer (e.g. EQ GAIN or PAN). The dot indicates there is a middle position for this parameter. The middle position for EQ GAIN of the equalizer means neutral because the set frequncy is neither attenuates nor boosted.

TONE WAVES

The order of the Wave-algorithms when being selected over midi-CC strangely does not correnspond the order when being set on the Nord Drum 2 in any way. We therefore did not print any algo abbreviations on the faceplate. For editing sessions we recommend to select the parameter SPECTRA/WAVE on the Nord Drum. The chosen WAVE is displayed in the right half of the display even when the LOWER PARA button of the NordDrum is not held down. WAVE changes on the Controller will be reflected the the ND2 display directly.

Envelope types for TONE DECAY, NOISE DECAY

Tone Decay is offered gwith the envelope characteristic linear or exponential. If you set this parameter on the NordDrum itself it starts with „EXPO short" goes up to „EXPO long" to suddenly jump with the next step into „LINEAR short". We intentionally reversed the behaviour on the Controller. This prevents having a large decay time jump from long to short (or vice versa) when flipping from linear to expo (or back).

The same will be found in NOISE DECAY where additionaly GATE comed into play and will be found in the last fifth of the knob turning span. The flipping from LINEAR to GATE characteristics is in the short decay range here.

Value span of NOISE DECAY

NOISE DECAY has a parameter resolution of 0-50 on the Nord Drum 2, offered in three

envelope characteristics: LINEAR, EXPONENTIAL and GATE. Because we wanted envelope characterstic and decay time to be accessible as convenient as possible, the time range which can be set on the Controller is (for technical reasons) limited to 0-39 for LIN and EXPO and 0-21 for GATE. In most cases this is long enough for drum sounds. If you need even longer decay please keep in mind you can set the full decay range on the NordDrum itself.

Cascading multiple Synth Controllers

If you are lucky to own more than one Synth Controller you can cascade them for editing more than one voice at a time. Simply daisy chain them together and plug the Nord Drum 2 to the end.

GLOBAL MODE

While performing or recording it's risky and impractical to switch between the voices because of weird parameter jumps. Most often there are just 2 or 3 parameters making sense in musical context (e.g. Volume, Spectra, Decay). This is where GLOBAL MODE comes into play.

The white numbers with the black outline sstand for the 6 voice's pot columns. In GLOBAL MODE you can adjust two parameters (the knob above and below the number) for voices 1 & 2 and three parameters for voices 3-6 at the same time.

GLOBAL MODE splits in GLOBAL LEARN and GLOBAL PLAY. PLAY will be activated by pressing the buttons 1 and 3, all 3 LEDs will light up. You can leave GLOBAL PLAY anytime by pressing one of the 3 buttons.

GLOBAL LEARN will go active when the first 2 buttons are held, the LED combination for the currently active voice starts to flash. The voices still can be changed with PREV / NEXT without having to leave GLOBAL LEARN. To jump out of GLOBAL LEARN press the button combination again: the upper 2 buttons. The assignments of desired global parameters for the voices will be saved in the Controller to continue where you stopped after the last power down.

Assignment of voice parameters for GLOBAL MODE

In GLOBAL LEARN you select the 2 or 3 parameters for the currently selected voice in a special order. When switching between the voices the counter for the assignes parameters is reset. The moved knobs after having switched to a voice will be assiged to this voice:
  • the first moved knob's parameter will be used for the lower row
  • the second moved knob lands in the middle row
  • the third mopved knob will be used for the upper row (only voices 3-6)
  • followed knob movements will be ignored
  • using LOWER PARA for selecting parameters is allowed

Some examples how to use GLOBAL MODE:

- While being in GLOBAL LEARN MODE step through all the voices and move the knob for VOLUME on each voice. In GLOBAL PLAY the lower row now offers VOLUME for all the 6 voices at the same time
- If you want VOLUME in the lower and PAN in the middle row: step from voice to voice. After each voice change first move the knob for VOLUME, hold LOWER PARA (to select the red parameter) and move VOLUME again. *Note: each voice can be assigned ANY parameter, it does not have to be the same for the complete knob row as this example suggests.*
- For voice 5 we want NOISE DECAY, TONE BEND and NOISE/TONWE MIX from bottom to top:
    - in GLOBAL LEARN move to voice 5
    - move NOISE DECAY
    - hold LOWER PARA and move TONE BEND to assign the red parameter TIME
    - finally move NOISE/TONE MIX
    - exit GLOBAL LEARN

Nord Drum 3

Der ND3 differs from the ND2 in several point. It does not support (software-/midi-) ECHO anymore but introduces DELAY. TONE MIX of the ND2 was split into TONE LEVEL and NOISE LEVEL. TIMBRE is now called TONE FREQUENCY, TIMBRE DECAY and TONE DECAY LO disappeared and PUNCH was integrated in the TONE DECAY envelope.

The CC assignements also were mexed up:

ND2	ND3
Noise Attack/Rate	Noise Level
Noise Attack Mode	Tone Level
	Noise Mode
Noise Decay Lo	x
Echo Feedback	x
Echo Amount	x
Echo BPM MSB	x
x	Delay Rate
x	Delay Feedback
Tone Timbre Decay	Delay Amount
Tone Punch	Reverb Amount
Tone Decay low	x
Mix Balance	x
Echo BMP LSB	x