MSQ-CC-LRE V2

MotionSeQuencer for ControlChanges
for 2xLRE8x2 Boards
for 1x LRE5-LCD2 Boards
Synth-Patch-Editor & Motion-Sequencer 4 ControlChange (= CC-Automation)

Introduction

Controls and automate a Nord Drum2 (Drum-Synth)NORD DRUM 2

It acts as:
- **Midi Merger** NTE,CLK,PC merge with CC... - **Patch Manager** it replaces the Synths internal Patch Storage, each PC Number from your Sequencer is added by the BANK CC (CC 32), where each Nr is ADD 128 PC Numbers more...
- **Motion Sequencer** Record your Controller Movements in a Sequence in 32th Resultion @ maximal 256 Steps length

Features

- **Remote your Synths** by: 8x Midichannels with up to 32x Control Change (CC)
- **Save the Patches** and dump it to Synth
- **Load hundrets of Patches** via received Program Change + the Bank-CC (CC32)
- **Save Patches** vie CC24 + CC value 0-127... when sending before a BankCC32 you can expand that to 128×128 patches
- **Record CC-Motion-Sequences** - **PLAY Motions-Sequences** up to 256 steps @ 32th rate - **VELOCITY MORPH** Add Velocity-Ammount to CCs
- **MERGE** incoming Midi-Notes/Clock/Pitchbend with Automated CCs
- **Set Sequencer Beatstructure** - how to interprete Clock-ticks (4/4, 5/4, 6/4, 7/4...) - CC23
- **Global Page**: for example you use 8 simular Drum-Voices, with the Global you have 8 channel strips with dedicated Controlls, for example:
8xVolume, 8xTone/Noise-Mix, 8xDistortion, 8xClick
if you have one Synth over 2xMSQ_CC_LRE Tracks(booth set to MidiChannel 0, to get 64CCs instead of 32), then the Global Page: have the abillity to show/edit a parameter from Track1Voice on Track1Global, and from Track2Voice on Track2Global... it depends how you set the Midichannel in the Systemsettings (which are hardcodet but via Mapping Array changeable)
- for one multipart-synth, MSQ_CC_LRE do all the Preset Store, and Automations, so it is one Unit > to use the Unit in a other way would make all the Patches (128×128 patches) useless, so once done, its bound to it, load all with Programchange! minimal is better here, there will be other **MSQs** outthere see MSQ-CC-BCR

Hardware Requirements

External Requirement:(for example)

- Melody/Clock Source with ProgramChange-Output: midibox_seq_v4l oops that dont do PC...
- Melody/Clock Destination: NordDrum 2

Midibox:

- 1x core32
- 1x LRE5-LCD2
- 2x mb-lre8x2cs_pcb
- 8x LRE-OLED-Bar AND 2x Frontpanel for Eurorack
- 17x SSD1306 OLED Screens (smalles variant, 7 Pin)
- 1x DINX4
- 1x 1xMidi IO or 1x Euro-Midi-IO
- SD-Card, formated with FAT32
- Soldering Iron, Wires, PCB....
- USB Power Supply

Setting

Cabeling MIDI

MidiIO PortB Out »> Synth Midi IN
MidiIO PortB In »> Clock+Notes

Cabeling Modules



Frontpanels

MBHP

Software

Firmware

V1. from 9.05.2018msq_cc_lre_v0.norddrum2.zip
hardcodet for a NordDrum2 - but change-able in Mapping via a Array in Sourceode:
this is the maping which says wich of the 32 internal CCs are one of the outhernal CCs (0-127):

```
// 4 CC_Route Mode = 0:    = 1x Synthediter
const u8 CC_Map0[8][32] = { // CC_Map0 [Part]       [Internal CC Nr] = value of external CC   >>
                            // CC_Map1 [MidiChannel] [Remote/Source]  = Value of Synth/Destination
          //  1st Row Horizontal      (top-row)      //  2nd Row Horizontal                    //  3rd Row Horizontal                    //  4th Row Horizontal
// CC-no-LRE:  0   1   2   3   4   5   6   7       8   9   10  11  12  13  14  15      16  17  18  19  20  21  22  23      24  25  26  27  28  29  30  31
            { 57, 56, 24, 23, 26, 25, 10,  7,     15, 17, 14, 16, 18, 19, 20, 21,    46, 52, 53, 47, 48, 54, 55, 254,    50, 51, 49, 30, 50, 255, 255, 255},  // Nord Drum 2   Voice 1   MidiCh  7
            { 57, 56, 24, 23, 26, 25, 10,  7,     15, 17, 14, 16, 18, 19, 20, 21,    46, 52, 53, 47, 48, 54, 55, 254,    50, 51, 49, 30, 50, 255, 255, 255},  // Nord Drum 2   Voice 2   MidiCh  8
            { 57, 56, 24, 23, 26, 25, 10,  7,     15, 17, 14, 16, 18, 19, 20, 21,    46, 52, 53, 47, 48, 54, 55, 254,    50, 51, 49, 30, 50, 255, 255, 255},  // Nord Drum 2   Voice 3   MidiCh  9
            { 57, 56, 24, 23, 26, 25, 10,  7,     15, 17, 14, 16, 18, 19, 20, 21,    46, 52, 53, 47, 48, 54, 55, 254,    50, 51, 49, 30, 50, 255, 255, 255},  // Nord Drum 2   Voice 4   MidiCh 10
            { 57, 56, 24, 23, 26, 25, 10,  7,     15, 17, 14, 16, 18, 19, 20, 21,    46, 52, 53, 47, 48, 54, 55, 254,    50, 51, 49, 30, 50, 255, 255, 255},  // Nord Drum 2   Voice 5   MidiCh 11
            { 57, 56, 24, 23, 26, 25, 10,  7,     15, 17, 14, 16, 18, 19, 20, 21,    46, 52, 53, 47, 48, 54, 55, 254,    50, 51, 49, 30, 50, 255, 255, 255},  // Nord Drum 2   Voice 6   MidiCh 12
            { 255, 255, 255, 255, 255, 255, 255, 255,   255, 255, 255, 255, 255, 255, 255, 255,   255, 255, 255, 255, 255, 255, 255, 255,   255, 255, 255, 255, 255, 255, 255, 255},  //not in Use
            { 255, 255, 255, 255, 255, 255, 255, 255,   255, 255, 255, 255, 255, 255, 255, 255,   255, 255, 255, 255, 255, 255, 255, 255,   255, 255, 255, 255, 255, 255, 255, 255}};  //not in Use
```

This Mapping says which one of the 32 internal CCs are positioniered in the Mixer/Overview/Channelstrip-Mode

```
// 4 CC_Route Mode = 1: = 8x Channelstrip
  const u8 CC_Map1[8][32] = { //CC_Map1 [Active_Strip_Set] [CC to remap to Map0]
          //  1st Row Horizontal                    //  2nd Row Horizontal                    //  3rd Row Horizontal                    //  4th Row Horizontal
            {  1,  1,  1,  1,  1,  1, 32, 32,     26, 28, 28, 28, 28, 28, 32, 32,     3,  3,  3,  3,  3,  3, 32, 32,     7,  7,  7,  7,  7,  7, 32, 32 },   // Channel-Strip-Set1 (Mixer)
            {  8,  8,  8,  8,  8,  8, 32, 32,     9,  9,  9,  9,  9,  9, 32, 32,     4,  4,  4,  4,  4,  4, 32, 32,     5,  5,  5,  5,  5,  5, 32, 32 },   // Channel-Strip-Set2 (Filter)
            { 15, 15, 15, 15, 15, 15, 32, 32,     19, 19, 19, 19, 19, 19, 32, 32,     24, 24, 24, 24, 24, 24, 32, 32,     25, 25, 25, 25, 25, 25, 32, 32 },   // Channel-Strip-Set2 (Decay)
            { 32, 32, 32, 32, 32, 32, 32, 32,     32, 32, 32, 32, 32, 32, 32, 32,     32, 32, 32, 32, 32, 32, 32, 32,     32, 32, 32, 32, 32, 32, 32, 32 },   //not used
            { 32, 32, 32, 32, 32, 32, 32, 32,     32, 32, 32, 32, 32, 32, 32, 32,     32, 32, 32, 32, 32, 32, 32, 32,     32, 32, 32, 32, 32, 32, 32, 32 },   //not used
            { 32, 32, 32, 32, 32, 32, 32, 32,     32, 32, 32, 32, 32, 32, 32, 32,     32, 32, 32, 32, 32, 32, 32, 32,     32, 32, 32, 32, 32, 32, 32, 32 },   //not used
            { 32, 32, 32, 32, 32, 32, 32, 32,     32, 32, 32, 32, 32, 32, 32, 32,     32, 32, 32, 32, 32, 32, 32, 32,     32, 32, 32, 32, 32, 32, 32, 32 }};  //not used
        // CC_Map1[0][0]=1 > shows CC_Map0[x][1] = Synth-CC:56 = ClickLevel-CC

// to get:   CC_Map0[0-7][ CC_Map1[0][0-7] ] = 56CC-Nr.= ClickGain  CC_Map0[0-7][ CC_Map1[0][8-15] ] = 58CC-Nr. = Bal      in the End: CC_Map0[0-7][ CC_Map1[Active_Strip_Set][0-32] ] = ..CC-Nr.
//                                                  26                                                                                                                                                  28
// to get:   CC_Map0[0-7][ CC_Map1[1][0-7] ] = 15CC-Nr.= N.Filt     CC_Map0[0-7][ CC_Map1[1][8-15] ] = 17CC-Nr.= N.Res     For Value:  beat[0].CC_Store[32]
//                                                   8                                                                                                                                                  9
// to get:   CC_Map0[0-7][ CC_Map1[2][0-7] ] = 21CC-Nr.= N.Decay    CC_Map0[0-7][ CC_Map1[2][8-15] ] = 47CC-Nr.= TimDec
//                                                  15                                                                                                                                                  19
// to get:   CC_Map0[0-7][ CC_Map1[3][0-7] ] = 255CC-Nr.= Nothing-will be filtered out! > blank out LEDRING
//                                                  32
```

there are 8 deep edit pages, and 8 overview pages.

CC Routing to Synths

MSQ_CC_LRE internal i have 8×32 CCs, they are always identical.
but with a simple input output matrix i can decide which CC it gets in real world.
each of the 8 Part can have midichannle 0-15…
So we talking about Mapping… in the moment it is made in the source code with a simple array.

To Do

Since we have 18 Screens, write the code for it - special the labeling > Sys
Make a System Menue to set CC NRs on the fly…

maybe scale min max values for CC: for example different synths have only 0-3value instead of 0-127, by different functions like WAVEFORM…) - this will be interesting when using other synths then nord drum…

Resources

Community users working on it

- **Phatline** = Programming, Documentation…

Just let a Private message on the forum to user already involved, the sourcecode is includet in the firmware .zip!!!

From:
https://midibox.org/dokuwiki/ - **MIDIbox**

Permanent link:
https://midibox.org/dokuwiki/doku.php?id=msq-cc-lre-v2&rev=1643334031

Last update: **2022/01/28 01:40**