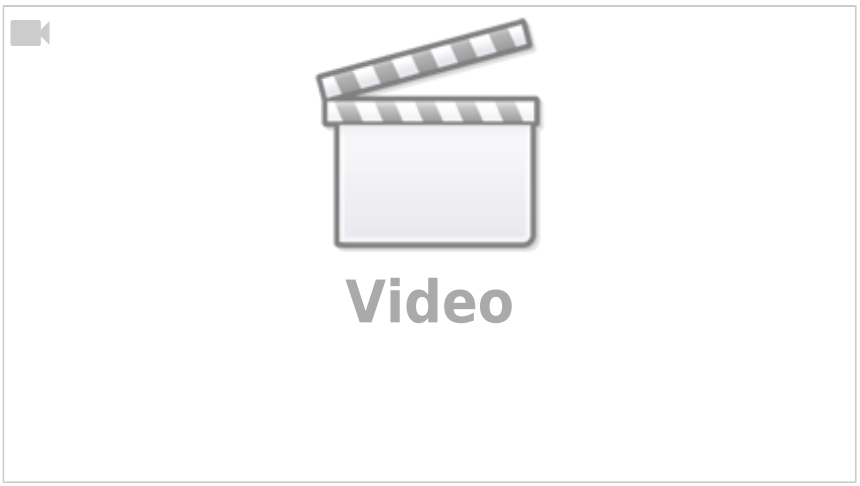
MSQ-CC-BCR

MotionSeQuencer for ControlChanges for BCR2000 by wireing it to MBHP Synth-Patch-Editor & Motion-Sequencer 4 ControlChange (= CC-Automation)



Introduction

Controls and automate my Nord Drum2 NORD DRUM 2
Realized by connect a BlackBox between Sequencer & Synthesizer
This Box is called MSQ_CC_BCR: **M**otion **S**equencer for Midi**C**ontrol**C**hange controlled via a **BCR**2000 Midicontroller

It acts as:
- **Midi Merger** NTE,CLK,PC merge with CC... & CCinput is a thing between MSQ_CC_BCR and BCR only since we have intelligent UI with Pages
- **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)
For the BCR i only can provide 8×29, because i need some controlls to control the MB Program itself
- **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** use a footpedal connected to FSW1 on the backside of the BCR, to ARM/Disarm it... so you can tweedle 2 ore more CC @ once... but you dont have to, BCR-onboard is also a Button for it
- **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_BCR 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)
- Many of this features, especially the **System Settings** would need a UI, but that would it make bigger, more expensiv, and maybe more complex to use… it is set once, for one multipart-synth+bcr2000, MSQ_CC_BCR 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, it is a black box loadet via Programchange! … minimal is better here, there will be other **MSQs** outthere, be prebered for the MSQ_CC_2xLRE & MSQ_CC_ELO

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
- Midicontroller: 1x BCR2000

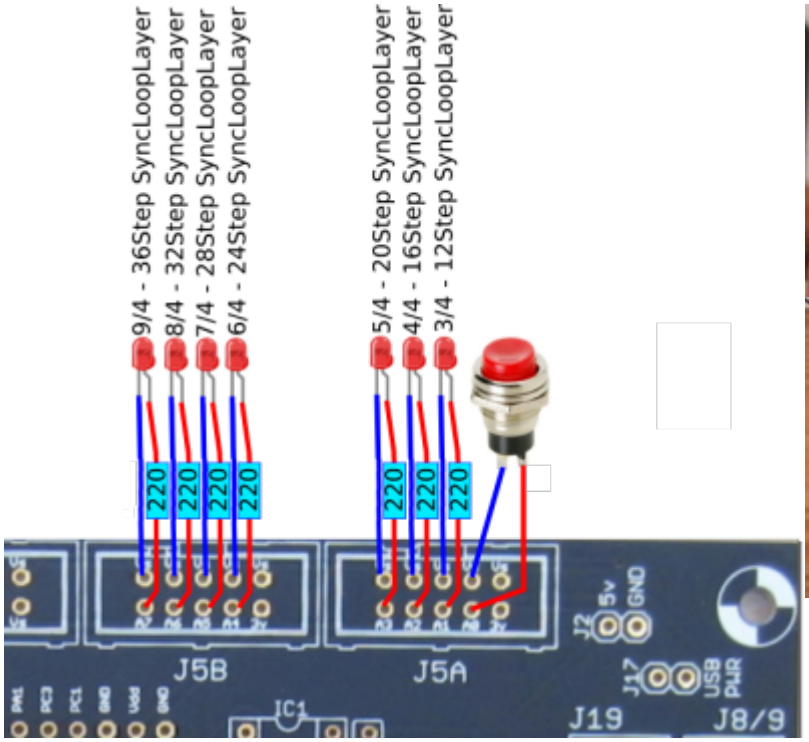
Midibox:

- core32
- 1xMidi IO connect 1 midicontroller and 1 Note/Clock-Source/Destination
- SD-Card, formated with FAT32, and the file “bcr1.syx” on it
- Soldering Iron, Wires, PCB….
- USB Power Supply… I tried to use the Midi-BUS-Power from BCR2000 but it is too weak!

Visual Feedback directly from MBHP

- a Momentary Switch Connected to J5A Pin0
- 7 LEDs in serial with 220Ohm each to GND connected to J5A Pin1-3 and J5B Pin0-4

The LEDs show via Gestic (Patterns) if something is wrong, done, busy, & show the Rythm structure: The Switch switches as Radio-Button thru the Rythm Structures (4/4, 5/4…), the LED-Indicating this. By Holding the Switch and Powering the Core, it will Dump Out a Sysex Template to your BCR.



Why BCR2000

because I have 3 of them but they are to old dirty, damaged... i cant get a good price for it, so better hold it and make something with it.

Setting up a BCR2000

Cabeling

MidiIO PortA Out »> BCR Midi IN
AFTER Uploading the Sysex, and restarting the BCR connect:
MidiIO PortA In »> BCR Midi OUT A

Upload the Sysex-Template

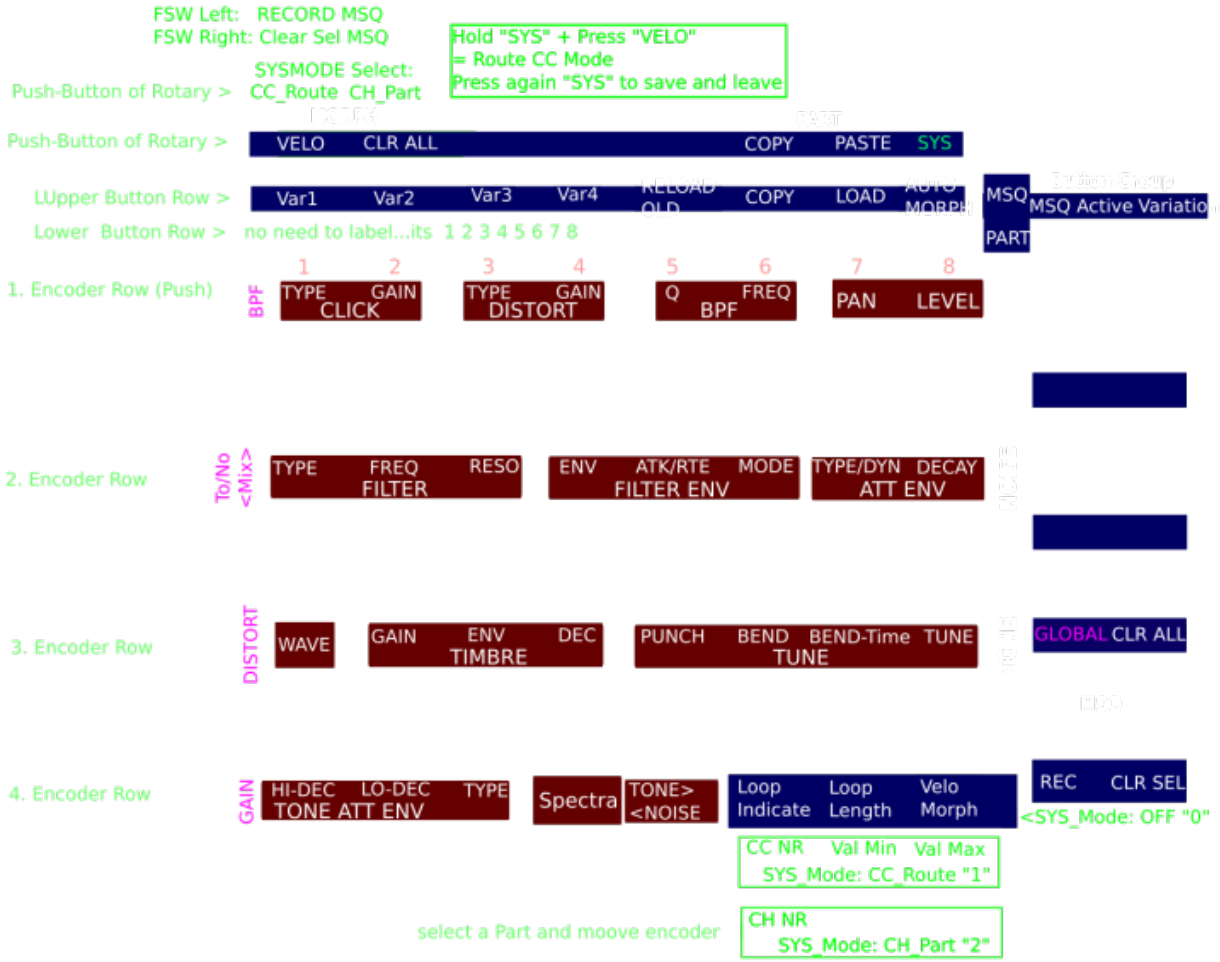
1. unpack msq_cc_bcr_v1.norddrum2.zip and put “bcr1.syx” on a SD-Card (root level)
2. Put SD-Card into CORE32
3. bridge J5A Pin0 to ground, or connect a switch to it, that you will need if you want to sequence other song structures then 4/4 (which is default)!
4. Power the core up.
...if the filestructure (patches) are already existent...then it takes less then half a minute to dump the BCR-2000 Layout Data...
You dont have to save the preset, it will make it automatic
...when no filestructure... then it will take a minute or so... the core has to make 256 Patches, since i dont need more (i can only access on my 16x16BLM 16×16 Patches = 256...)\\... but better:
* Faking a filestructure: make a empty folder “sq” and put it on SD-Card, make the syx.dump, make

your first simple standart patch, = the sound you will start with...to the next 256 Patches ;) so choose carefully, young jedi... then remove the Card, earse the “s” folder on the card, and put it into the core again, now it will copy your “standart patch” to 256 others

Frontpanels

BCR2000 Stickers

The Blue Elements are the MBHP Remotes... the Rest is for the Synth



UNTESTET, NOT SCALED!!!!

In Order to better understand the Routing of the Internal CCs to externals:

Deep Edit Mapping

PART 1-6 Nord Drum2

	Click		Distortion		BPF		Attenuator			
	Type	Gain	Type	Gain	Q	Freq	Pan	Level		
Group									MASTER	
Label										
CC-Nr-Synth	57	56	24	23	26	25	10	7		255: „not used“
Min Value	0	0	0	0	0	0	0	0		
Max Value	127	127	127	127	127	127	127	127		
CC-Nr-BCR	0	1	2	3	4	5	6	7		

	Filter			Filter Envelope			ATT-ENV			
	Type	Q	Frequence	ENV	ATK/RTE	MODE	TYP/DYN	DECAY		
Group									NOISE	
Label										
CC-Nr-Synth	15	17	14	16	18	19	20	21 oder 22?		255: „not used“
Min Value	0	0	0	0	0	0	0	0		
Max Value	127	127	127	127	127	127	127	127		
CC-Nr-BCR	8	9	10	11	12	13	14	15		

		TIMBRE			TUNE				
	WAVE	Gain	ENV	Decay	Punch	Bend	Bend Time	Tune	
Group									TONE
Label									
CC-Nr-Synth	46	52	53	47	48	54	55	12?7	255: „not used“
Min Value	0	0	0	0	0	0	0	LSB61	
Max Value	127	127	127	127	127	127	127	MSB31	
CC-Nr-BCR	16	17	18	19	20	21	22	23	

	TONE ATT ENV TONE			TONE	<MIX>	Motion Sequencer			
	HI-Decay	LO-Decay	Decay Type	Spectra	Tone/Noise	Indicator	Length	Morph	
Group									TONE & MIX
Label									
CC-Nr-Synth	50	51	49	30	58	255	255	255	255: „not used“
Min Value	0	0	0	0	0	0	0	0	
Max Value	127	127	127	127	127	127	127	127	
CC-Nr-BCR	24	25	26	27	28	29	30	31	

Channel Strip Mapping

each Vertical Row can be thougt copied 8 times per Map, i just wrote them on one Sheet to see what each Map can do

Channel Strip 1 - Mixer

	Click	Noise Filter	Noise						
Group									
Label	Gain	Q	LO-Decay						
Re-Map	1	8	15				255	255	255: „not used“
CC-Nr-BCR	0	1	10	3	4	5	6	7	

	<MIX>	Noise Filter	Timbre						
Group									
Label	Noise/Tone	Frequence	LO-Decay						
Re-Map	28	9	19				255	255	255: „not used“
CC-Nr-BCR	8	9	10	11	12	13	14	15	

	Distortion	BPF	Tone						
Group									
Label	Gain	Q	HI-Decay						
Re-Map	3	4	24				255	255	255: „not used“
CC-Nr-BCR	16	17	18	19	20	21	22	23	

	Attenuator	BPF	TONE						
Group									
Label	Level	Freq	LO-Decay						
Re-Map	7	5	25				255	255	255: „not used“
CC-Nr-BCR	24	25	26	27	28	29	30	31	

MBHP

Software

Firmware

V1. from 17.02.2018msq_cc_bcr_v1.norddrum2.zip
hardcodet for a NordDrum2 (also newest sysex for the BCR includet)

CC Routing to Synths

MSQ_CC_BCR 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.
this array could be saved and loadet from SD-Card aka “SYS settings”, and this array could be editet by a simple editor… 

i dont have a glue about this, nor time no interest in doing this…
the format of this setting is simple, the file starts with (converted from hex) mq04 and then the Routing array starts [32][127] for those how know how to program a simple interface for it?

To Do

Nothing it is done!

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

BCR-Manual
BCR-SYSEX-GUIDE
TOKEN-Reference
BC-Convert Convert SYX into Textfile to Edit and reverse… better then every BCR Editor! But Windows only… i run a oracle virtualbox with a VM-W7 under Linux, with a shared folder

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!!!