Oscillator Devices Goblin
Quick Reference

MIDI Channel

The ***Goblin***'s MIDI channel is selectable. To change the MIDI channel, proceed as follows

1. Disconnect the device from the power supply
2. Press the button of the configuration port (normally port 1) and restore the power supply while it is pressed. The device starts to flash its LED after the startup delay has elapsed.
3. Press the button according to the number of the desired channel (e.g. twice for channel 2). The Goblin acknowledges this by emitting short flashing impulses according to the number of the channel.
4. Once the desired channel is set, press the button and hold it down until the Goblin switches off completely.
5. Disconnect supply voltage. The next time the Goblin is started, it reacts to the selected MIDI channel.

To put the Goblin in omni mode (i.e. it responds to every channel) skip step 3.

MIDI Commands for Role Switch and Relay

It is possible to switch all ports to a defined state at the same time. If one or more ports are not switches, they are ignored.

CC	#	Port1	Port 2	Port 3
00	00	Off	Off	Off
	01	**On**	Off	Off
	02	Off	**On**	Off
	03	**On**	**On**	Off
	04	Off	Off	**On**
	05	**On**	Off	**On**
	06	Off	**On**	**On**
	07	**On**	**On**	**On**

In addition, the ports can be controlled individually. The command “Hold”, or MIDI clock synchronous commands, are interrupted by pressing the switch.

CC Port1	CC Port2	CC Port3	#	Function	#	Function
10	**30**	**50**	00	Port off	15	Toggle to the beat of the MIDI clock in 1/32 notes
			01	Port on	16	Toggle to the beat of the MIDI clock in 1/2 notes
			02	Port toggle (e.g. Tap Tempo)	17	Toggle to the beat of the MIDI clock in whole notes
			03	Port hold (Corresponds to a pressed and held switch)	18	Toggle to the beat of the MIDI clock every 2nd whole note
			04	Port release (Release held switch)	19	Toggle to the beat of the MIDI clock every 3rd whole note
			10	Toggle to the beat of the MIDI clock in 1/4 notes	20	Toggle to the beat of the MIDI clock every 4th whole note
			11	Toggle to the beat of the MIDI clock in 1/8 notes	21	Toggle to the beat of the MIDI clock every 5th whole note
			12	Toggle to the beat of the MIDI clock in triplet notes	22	Toggle to the beat of the MIDI clock every 6th whole note
			13	Toggle to the beat of the MIDI clock in 1/16 notes	23	Toggle to the beat of the MIDI clock every 7th whole note
			14	Toggle to the beat of the MIDI clock in dotted 1/8 notes	24	Toggle to the beat of the MIDI clock every 8th whole note

Some effects devices react strangely when a tap tempo signal is constantly being sent. There is the possibility to only give a limited number of impulses. Enough for the effect to take over the beat. With these commands, an automatic MIDI clock detection is carried out. If the MIDI clock changes by more than approx. 1%, the pulses are sent again.

CC Port1	CC Port2	CC Port3	#	Function	#	Function
11	**31**	**51**	0-19	1-20 times toggle to the beat of the MIDI clock in 1/4 notes	100-104	1-5 times toggle to the beat of MIDI clock 1/2 notes
			20-39	1-20 times toggle to the beat of the MIDI clock in 1/8 notes	105-109	1-5 times toggle to the beat of the MIDI clock every whole n.
			40-59	1-20 times toggle to the beat of the MIDI clock in triplet notes	110-114	1-5 times toggle to the beat of MIDI clock every 2nd whole n.
			60-79	1-20 times toggle to the beat of the MIDI clock in 1/16 notes	115-119	1-5 times toggle to the beat of MIDI clock every 4th whole n.
			80-99	1-20 times toggle to the beat of the MIDI clock in dot. 1/8th n.	120-124	1-5 times toggle to the beat of MIDI clock every 8th whole n.

MIDI Commands for Role TRS

Line-specific Commands

Each line has a set of identical commands.

CC Tip	CC Ring	#	Function	#	Function
Port1: 10 Port2: 30 Port3: 50	Port1: 20 Port2: 40 Port3: 60	00	**Set „Open“**		
		01	**Set „Closed“**		
		02	Single pulse		
		03	Toggle		
		10	Pulse MIDI clock 1/4	30	Toggle MIDI clock 1/4
		11	Pulse MIDI clock 1/8	31	Toggle MIDI clock 1/8
		12	Pulse MIDI clock triplets	32	Toggle MIDI clock triplets
		13	Pulse MIDI clock 1/16	33	Toggle MIDI clock 1/16
		14	Pulse MIDI clock dotted 1/8	34	Toggle MIDI clock dotted 1/8
		15	Pulse MIDI clock 1/32	35	Toggle MIDI clock 1/32
		16	Pulse MIDI clock 1/2	36	Toggle MIDI clock 1/2
		17	Pulse MIDI clk every whole note	37	Toggle MIDI clock every whole note
		18	Pulse MIDI clk every 2nd whole note	38	Toggle MIDI clock every 2nd note
		19	Pulse MIDI clk every 3rd whole note	39	Toggle MIDI clock every 3rd note
		20	Pulse MIDI clk every 4th whole note	40	Toggle MIDI clock every 4th note
		21	Pulse MIDI clk every 5th whole note	41	Toggle MIDI clock every 5th note
		22	Pulse MIDI clk every 6th whole note	42	Toggle MIDI clock every 6th note
		23	Pulse MIDI clk every 7th whole note	43	Toggle MIDI clock every 7th note
		24	Pulse MIDI clk every 8th whole note	44	Toggle MIDI clock every 8th note

Pulse

It is also possible to send a certain number of pulses, e.g. to select a preset.

CC-Tip	CC-Ring	#	Function
Port1: 11 Port2: 31 Port3: 51	Port1: 21 Port2: 41 Port3: 61	0	1 pulse
		1	2 pulses
		n	n+1 pulses
		127	128 pulses

MIDI Clock Pulse

Some Tap Tempo effects react strangely when the Tap Tempo Pulse is sent continuously. It is therefore possible to only send a limited number of pulses until the effects device has recognized the tempo. With these commands, an automatic MIDI clock detection is carried out. If the MIDI clock changes by more than approx. 1%, the pulses are sent again automatically.

CC-Tip	CC-Ring	#	Function	#	Function
Port1: 12 Port2: 32 Port3: 52	Port1: 22 Port2: 42 Port3: 62	0-19	1-20 pulses MIDI clock 1/4 notes	100-104	1-5 pulses MIDI clock 1/2 notes
		20-39	1-20 pulses MIDI clock 1/8 notes	105-109	1-5 pulses MIDI clock every whole note
		40-59	1-20 pulses MIDI clock triplet notes	110-114	1-5 pulses MIDI clock every 2nd whole note
		60-79	1-20 pulses MIDI clock 1/16 notes	115-119	1-5 pulses MIDI clock every 4th whole note
		80-99	1-20 pulses MIDI clock dotted 1/8 notes	120-124	1-5 pulses MIDI clock every 8th whole note

Pulse Length

The standard length of a pulse is approx. 80 ms. If this is too short for some devices, the pulse length can be set in 10 ms steps.

CC-Tip	CC-Ring	#	Function
Port1: 15 Port2: 35	Port1: 25 Port2: 45	n	Pulse length in 10ms steps

MIDI Commands for Role Expression

Only Port 3 of the Goblin-EXP can act as Expression.

CC	#	Function
50	0...127	Expression out from heel (0) to toe (127)
51	0...127	Expression out from toe (0) to heel (127)
52	0...127	Expression out from heel (0) to middle position (127)
53	0...127	Expression out from middle position (0) to toe (127)

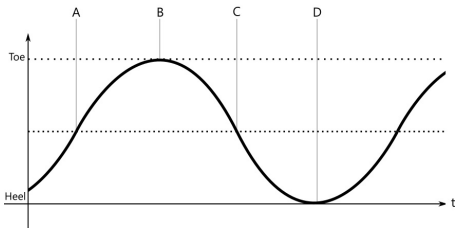
LFO-Waveforms

In addition, the Goblin-EXP has an internal, MIDI clock synchronous, LFO engine with 3 waveforms to drive the Expression/CV.

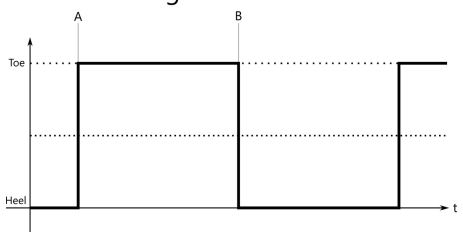
CC	#	Function
60	0	Stop LFO
	1	Restart LFO
	10	LFO sine wave with starting point A
	20	LFO sine wave with starting point B
	30	LFO sine wave with starting point C
	40	LFO sine wave with starting point D

CC	#	Function
60	50	LFO rectangle wave with starting point A
	60	LFO rectangle wave with starting point B
	90	LFO ramp forward with starting point A
	100	LFO ramp forward with starting point B
	110	LFO ramp backward with starting point C
	120	LFO ramp backward with starting point D

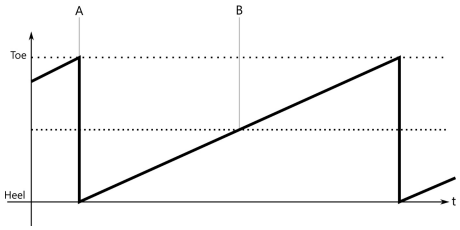
LFO Sine wave



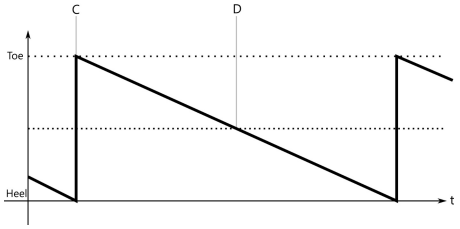
LFO Rectangle wave



LFO Ramp wave forward



LFO Ramp wave backward



The LFO starts immediately at the specified start point. Resending the commands will reset the engine to start over from the starting point.

LFO-Speed

The speed of the LFO relative to MIDI clock can be increased or decreased. The commands above perform one pass of the waveform per 1/4 note. The commands to change the speed are determined by adding to the basic command (CC 60 10, CC 60 20 etc.).

- Basic Command: Normal speed
- Basic Command+1: Half speed
- Basic Command+2: Double speed
- Basic Command+3: Quarter speed
- Basic Command+4: Quadruple speed

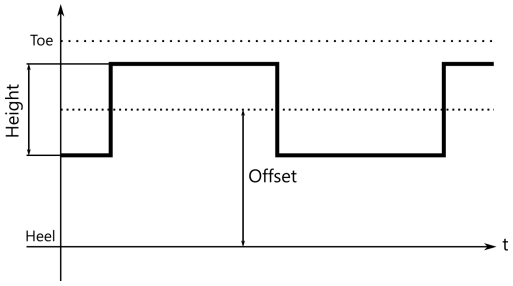
For example:

CC	#	Function
60	10	LFO sine wave with starting point A, speed normal (1/4 Note)
	11	LFO sine wave with starting point A, half speed (1/2 Note)
	12	LFO sine wave with starting point A, double speed (1/8 Note)
	13	LFO sine wave with starting point A, quarter speed (Ganze Note)
	14	LFO sine wave with starting point A, quadruple speed (1/16 Note)

This procedure can be applied to all waveforms and starting points. E.g. rectangle with starting point B in 1/8 notes: CC 60 62.

LFO-Parameter

The waveforms set this way always run through the entire range, from heel to toe. The range can be reduced and moved.



The waveforms are shifted in 13 steps, with step 6 being the waveform in the middle. This corresponds to the *Offset* in the graphic.

CC	#	Funktion
61	00	Offset 0. The middle of the waveform is at Heel
	60	Offset middle: The middle of the waveform is right between the heel and toe (default)
	120	Offset Max: The middle of the waveform is at Toe

All values in increments of 10 are valid.

- Basic Command: Normal Height
- Base Command+1: Half Height
- Base Command+2: Quarter Height
- Base Command+7: Height 1/128

For example:

CC	#	Funktion
61	60	No constraint on height, waveform sweeps full range (default)
	61	Waveform height halved
	62	Waveform height 1/4
	63	Waveform height 1/8
	...	
	67	Waveform height 1/128

The *Offset* and *Height* settings are global, so they persist across a new waveform. Reset with CC 61 60.

MIDI Commands for Role Encoder

Only Port 2 of the Goblin-3PDT can act as Encoder.

CC		Function
30	0	Preset decrement
	1	Preset increment

To select a certain preset, the PC command is used.

PC	Function
0	Leave preset mode
1...n	Select preset n