



01/IV by The Division Department is a 4-channel analog drum synthesizer, capable of producing a wide palette of sounds. From usual drum hits like kicks, snares, claps, toms, hi-hats and cymbals to unconventional tones such as modulated drone textures, complex percussive noises, or even basslines.

The concept of the 01/IV (zero-one-four) is unique. It has four identical voice channels, and each one of them can generate any desired sound. Channels can be combined, can modulate each other in pairs (FM) or can be layered. The sound creation is achieved with a series of pots and slide switches controlling carefully calibrated synthesizer elements and a flexible routing structure.

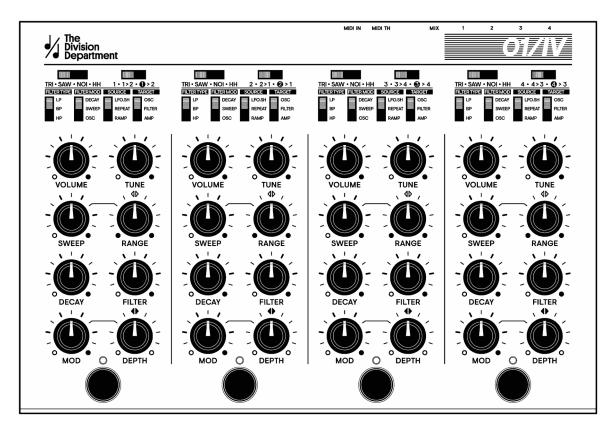
It has a true analog audio path, as well as a digital modulation system featuring a multifunction LFO, a ramp envelope and a re-trigger generator. The provided MIDI implementation lets the 01/IV be triggered via MIDI, which makes it a powerful piece of equipment in a setup. 01/IV inherited genes from legendary drum machines and drum synthesizers like the Pollard Syndrum, the Roland 808 & 909, and Pearl Syncussion SY-1.

Key Features:

60 panel controls: Knobs - Switches - Trigger Buttons 4 Voices - Chromatic via midi Drone Mode Midi note triggers and partial Midi CC controls Mix / Individual outputs Compact size / Light weight

CONTENTS

INTRODUCTION - Overview	p. 4
INTRODUCTION - Workflow	4
SYNTHESIS - General	5
SYNTHESIS - Basic Routing	6
SYNTHESIS - Envelopes: Sweep - Repeat	7
SYNTHESIS - Modulators: LFO/S&H - Ramp	8
SYNTHESIS - Voice to Voice FM	9
SYNTHESIS - Drone Mode	9
MIDI - Operation	10
MIDI - Implementation	11
MIDI - Triggers to MIDI	12
AUDIO - General	13
AUDIO - Patches	13
SPECIFICATIONS - General	14
SPECIFICATIONS - Important safety and usage instructions	15
APPENDIX	16



The 01/IV can be used standalone while using the trigger buttons or can be sequenced by other MIDI devices.

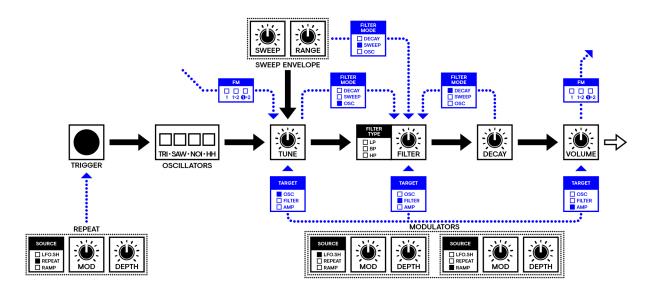
The workflow is flexible, either structured or free-form. Quick access of all functions without menu diving or patch cabling lets you focus on sound creation and tweaking. Sounds can be defined individually per voice. Another option is to create more sophisticated sounds by stacking and triggering the 4 voices together. The 01/IV can also be used in drone mode, generating evolving textures without the need of an external sequencer. Lastly, sequencing the 01/IV with chromatic MIDI, sending MIDI CC messages and using diverse functions such as repeat, can lead to very complex and sometimes unexpected patterns. The key is practising, and experimenting.

INTRODUCTION - Workflow

The 01/IV can be used standalone while using the trigger buttons or can be sequenced by other MIDI devices.

The workflow is flexible, either structured or free-form. Quick access of all functions without menu diving or patch cabling lets you focus on sound creation and tweaking. Sounds can be defined individually per voice. Another option is to create more sophisticated sounds by stacking and triggering the 4 voices together. The 01/IV can also be used in drone mode, generating evolving textures without the need of an external sequencer. Lastly, sequencing the 01/IV with chromatic MIDI, sending MIDI CC messages and using diverse functions such as repeat, can lead to very complex and sometimes unexpected patterns. The key is practising, and experimenting.

SYNTHESIS - General



The synthesis path includes various sound sources and modulation possibilities that favor sonic explorations.

Classic analog audio path with Voltage Controlled Oscillator - Voltage Controlled Filter -Voltage Controlled Attenuator - Mixer. Selection of 2 analog oscillator waveforms and 2 digital noise sources including a TR-808 like hi-hat noise. Multimode filter with low-pass, band-pass, high-pass option.

Two envelopes, one for pitch with up or down direction and one for amplitude with variable hold time. For the filter, either of the two envelopes can be selected as modulation source or - as a third option - the oscillator can modulate the filter frequency for audio range filter excitement. Powerful LFO for dynamic variations with frequency of 0.03 Hz to 2000 Hz, selectable waveform of triangle, ramp, sample and hold, just one shot or cycling. LFO can be routed to VCO, VCF, or VCA.

SYNTHESIS - Basic Routing



TRIGGER

The trigger button is used to preview the sound.

OSCILLATORS

There are 4 waveforms on each voice to choose from.

TRI: Triangle waveshape (analog)

SAW: Sawtooth waveshape (analog)

NOI: White noise (digital - common for all voices)

HH: Hi-hat noise (digital - common for all voices)

<u>TUNE</u>

The TUNE knob allows for base frequency adjustment of the oscillator between 18 Hz - 3000 Hz. When a noise type waveform is selected, it controls the filter cutoff thus allowing to shape the noise.

FILTER

The filter type can be selected via Slide Switch.

LP: Low Pass (12db slope) useful for bass oriented sounds

BP: Band Pass (6db slope) with middle frequencies enphasized

HP: High Pass (12db slope) useful for high frequency tones

The FILTER knob allows for dynamic cutoff frequency adjustment of the filter.

DECAY

The DECAY knob sets the duration of the sound produced. The range is between 1ms - 5s.

VOLUME

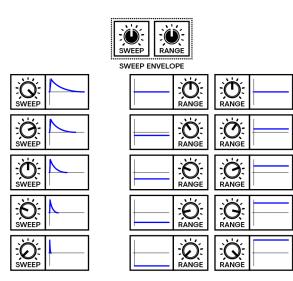
The Volume knob sets the output level of the produced sound.

SYNTHESIS - Envelopes: Sweep - Repeat

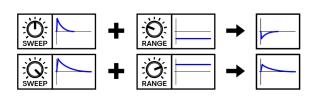
SWEEP ENVELOPE

The sweep envelope is used to create a decreasing or increasing pitch in the attack section of the sound. The combination of the Sweep and Range knobs allow to shape the effect.

- Sweep modifies the duration of the envelope.
- Range affects the intensity of the envelope. Left: increasing Right: decreasing.



Sweep Envelope operation

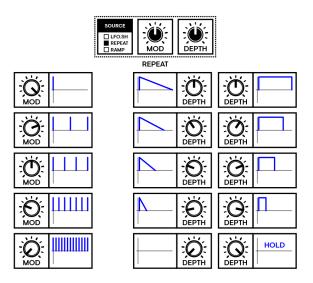


Examples for the Sweep Envelope

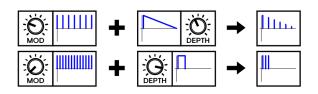
REPEAT

The repeat function can be activated to generate multiple triggers: rolls, flams, diddles. This feature is useful when emulating handclaps, snares or can be used in more unconventional sound creations.

- Mod sets the interval between the repeats.
- Depth defines the duration of the effect. Left: fading out - Right: constant.



Repeat Envelope operation



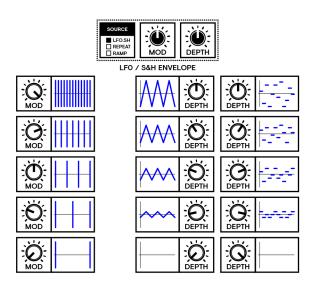
Examples for the Repeat Envelope

SYNTHESIS - Modulators: LFO/S&H - Ramp

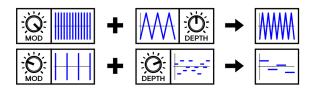
<u>LFO / S&H</u>

The digital LFO and S&H envelope can modulate certain parameters of the sound. The LFO waveform is by default set to triangle, other shapes are available via a dedicated midi CC. LFO can reach the audio range

- Mod sets the speed of the oscillation.
- Depth defines the intensity of the effect. Left: LFO - Right: S&H.



LFO / S&H Envelope operation

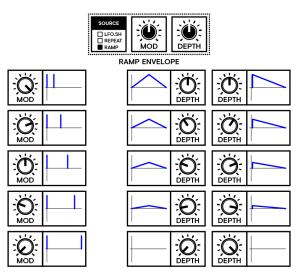


Examples for the LFO / S&H Envelope

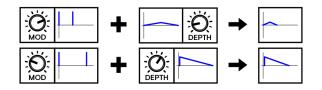
<u>RAMP</u>

The ramp is a one shot envelope that is sync'ed to the trigger, that can be routed to VCO, VCF, or VCA. It is useful to create more defined filter or tune effects.

- Mod sets the length of the envelope.
- Depth defines its intensity. Left: triangle Right: ramp.



Ramp Envelope operation



Examples for the Ramp Envelope



VOICE TO VOICE FM

Voices can modulate each other. This experimental feature is useful in drone mode as well as in a more classic usage, as it adds some sound interferences when 2 voices are emitting sounds at the same time. Voice 1 & 2, and voice 3 & 4 can be linked and cross-feed each other. Results are sometimes unpredictable, unexpected harmonics and noises can occur, which can add character to the patterns. When the FM switch is set at the middle position, the output of the voice is send both to the Mix output and to the linked voice.



VOICE TO VOICE FM - MUTE

With the FM switch set at the right position, the output of the voice is only sent to the linked voice. In some cases, and with particular settings, some high frequency noises can remain audible.

SYNTHESIS - Drone Mode

DRONE MODE 1

With the target switch set on AMP, the VCA is released and the sound is heard continuously. Pitch, filter or AMP itself can be driven by LFO or Ramp. This mode produces interesting results used in conjunction with cross voice FM.

DRONE MODE 2

Another option for drones is to use the Repeat mode set to Hold. By setting knobs Depth and Mod to their maximum positions. The decay becomes infinite. It is then possible to manually switch on and off sounds.

MIDI - Operation



MIDI ADAPTER

For MIDI control, use the included MIDI Adapter (DIN to 3.5mm - TRS B type) to plug your MIDI sequencer, controller or DAW to the MIDI Input on the 01/IV.

The 01/IV receives MIDI messages and CCs on a single MIDI channel. By default, the 01/IV is set to MIDI Channel 1, but it can be set to receive on any MIDI Channel (1-16).

MIDI CHANNEL

To change the MIDI Channel:

- 1. Connect your MIDI sequencer, controller or DAW to the 01/IV.
- 2. Adjust the sequencer, controller or DAW to transmit on the desired MIDI Channel.
- 3. Switch on the 01/IV while pressing down the trigger button of voice 4. The 01/IV will be in MIDI channel learn mode.
- 4. Once in learn mode, send MIDI data from your sequencer, controller or DAW. The 01/IV will set its MIDI channel to match the channel being sent.

Changes to the MIDI channel are remembered on power down.

MIDI - Implementation

MIDI

The 01/IV responds to both MIDI Notes and MIDI Control Change CC messages, on a single MIDI channel for the 4 voices.

Some additional synthesis parameters are available via CC messages, such as LFO shape, or HH oscillator tune, amongst others.

This allows to create very rich, complex evolving sounds and rhythmical sequences.

The 01/IV has a MIDI thru port for plugging other MIDI devices.

MIDI NOTES

Each voice of the 01/IV can be played chromatically within a range of 2 octaves. The target slide switch needs to be positioned on OSC. Repeat function is not available when playing sounds chromatically.

voi	CE 1 -	CHRC	MATI	с																			
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
C-2	C#-2	D-2	D#-2	E-2	F-2	F#-2	G-2	G#-2	A-2	A#-2	B-2	C-1	C#-1	D-1	D#-1	E-1	F-1	F#-1	G-1	G#-1	A-1	A#-1	B-1
TDIO	GERS												EAT TR	1005									
24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	.RS 39	40	41	42	43	44	45	46	47
24 C0	25 C# 0	26 D0	2/ D#0	28 E 0	29 F 0		GO	32 G# 0			35 B0	36 C1		- 38 D1			41 F1	42 F#1	43 G1	44 G#1			4/ B1
						F# 0		G# U	A0	A# 0			C#1		D#1	E1					A1	A#1	
1	1+2	2	2+3	3	4	3+4	1+2+3	\bowtie	2+3+4	K	1+2+3+4	1	1+2	2	2+3	3	4	3+4	1+2+3	\bowtie	2+3+4	\bowtie	1+2+3+4
VOI	CE 2 -	CHR	оматі	с																			
48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
C 2	C#2	D 2	D#2	E 2	F 2	F#2	G 2	G# 2	A 2	A# 2	B2	C3	C# 3	D 3	D# 3	ЕЗ	F3	F# 3	G 3	G# 3	Α3	A# 3	В3
	CE 3 -			-																			
72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
C 4	C# 4	D 4	D# 4	E 4	F 4	F# 4	G4	G# 4	Α4	A# 4	B 4	C 5	C# 5	D 3	D# 5	E 5	F 5	F# 5	G5	G# 5	Α5	A# 5	В5
VOI	CE 4 -	CHR	OMATI	с				_	-		_				_		_	_	-				_
96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119
C 6	C#6	D 6	D# 6	E6	F 6	F# 6	G6	G# 6	Α6	A# 6	B6	C7	C#7	D7	D#7	Ε7	F7	F# 7	G7	G#7	Α7	A# 7	Β7
UTIL	ITIES.																						
120	121	122	123	124	125	126		b: mute	all voi	ffset (vo ces (deo	cay=O)												
C 8	C# 8	D 8	D# 8	E 8	F 8	F# 8		d: reset	t HH os	ffset (vo cillators ffset (vo	3												
a	Ь	с	d		f			f: reset															

MIDI CC

MIDI CC messages per voice include: LFO Speed-Depth-Shapes-Offset / Hold time / Repeat Interval-Time

		vo	ICE					
	1	2	3	4	FUNCTION		VALUES	
	27	37	47	57		CONSTANT REPEAT TIME	0: no repeat → 127: 4 seconds	s repeat
	26	36	46	56	REPEAT	FADED REPEAT TIME	0: no repeat → 127: 4 seconds	s repeat
	25	35	45	55		REPEAT INTERVAL	0: 400 Hz → 127: 0.8 Hz	
	24	34	44	54	HOLD TIME	0: no hold → 126: 1 second ho	Id before decay \rightarrow 127: infinite	hold - drone mode
	23	33	43	53	LFO OFFSET	0: min \rightarrow 64: default \rightarrow 127:	max	
н						FREE / SYNC. LFO	ONE SHOT / RAMP	SYNC. LFO
CC MESSAGE NUMBER	22	32	42	52	LFO MODE	LFO speed < 3: free running LFO speed > 3: sync. to trigger 0: Triangle (cente start) 1: Saw 2: Reverse Saw 3: Square (bottom start) 4: Triangle (top start) 5: Reverse Saw + Saw 7: Square (top start) 64: Sample and Hold	One shot Always sync. to trigger 8: Triangle 9: Saw 10: Reverse Saw 11: Square (top start) 15: Square (bottom start)	Cycling Always sync. to trigger 16: Triangle 17: Saw 18: Reverse Saw 19: Square
	21	31	41	51	LFO DEPTH	0: no LFO \rightarrow 127: max LFO int	ensity	
	20	30	40	50	LFO SPEED	0:60 seconds → 127:2000 H	z	

MIDI CC-HH

The Hi-Hat digital oscillator is a combination of 6 square waves. Those can be tuned independently or globally with MIDI CC messages.

			нн оз	GILL	ATOR	6			
	1	2	3	4	5	6	ALL	FUNCTION	VALUES
8	60	61	62	63	64	65	66	TUNING	0: - 1 oct → 12: default (808) → 24: + 1 oct

MIDI CHART

For the full MIDI implementation chart, refer to the APPENDIX.

MIDI - Triggers to MIDI

TRIG31 MODULE

We recommend using VPME's TRIG31 module for interfacing with a modular setup.

AUDIO - General

MIX OUT

All the voices of the 01/IV are combined to the Mix output (3.5mm jack mono)

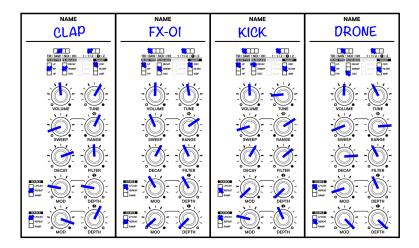
INDIVIDUAL OUTS

Each voice has a dedicated output (3.5mm jack mono), plugging a cable in the individual output removes the voice from the general mix output. This is particularly useful when using external effects to further process the individual sounds.

AUDIO - Patches

GETTING STARTED

Here's a few examples of sound patches to get you starting exploring with the 01/IV.



BLANK SHEET

Write down your own patches using the empty patch sheet provided in the APPENDIX.

SPECIFICATIONS - General

HARDWARE

Aluminum casing Dimensions: W 260 × D 178 × H 35 mm (10.25" × 7" × 1.4") (including knobs) Weight: approximately 1 kg Maximum operating temperature: +40C (+104F)

CONNECTIONS

MIDI In/Thru via 3.5mm stereo jacks Main outputs level: +14 dBu peak-to-peak Output impedance: 1K Ω unbalanced 1 × 3.5mm audio out mono jacks - Mix out 4 × 3.5mm audio out mono jacks - Individual Voices out

ELECTRICAL

Power inlet: Center positive 5.5×2.1 mm barrel jack (12mm), 12 V DC, 1 A Unit power consumption: 5 W typical

SPECIFICATIONS - Important safety and usage instructions

WHEN USING THE 01/IV, THESE BASIC PRECAUTIONS SHOULD BE FOLLOWED AT ALL TIMES

This product, in combination with an amplifier and speakers or headphones, is capable of producing sound levels that could cause permanent hearing loss.

Do not operate for a long period of time at a high volume or at a level that is uncomfortable. The 01/IV should be connected to a power supply only with the provided adapter.

Connect the 01/IV to an easily accessible electrical outlet close to the unit. Protect the power cord from being walked on or pinched.

Unplug the 01/ĬV when it is left unused for long periods of time, or during lightning storms.

Make sure you place the unit on a stable surface before use.

Do not use the 01/IV near water. Care should be taken so that liquids are not spilled into the 01/IV.

Keep the 01/IV away from heat sources, such as radiators, heat registers, or any other equipment producing heat.

Never use aggressive cleaners on the casing. Remove dust and dirt with a soft, dry and nonabrasive cloth.

The 01/IV should be only serviced by qualified technicians. Servicing is required when the 01/IV has been damaged in any way, when liquid has been spilled or the 01/IV has been exposed to rain or moisture, when it does not operate normally, or when it has been dropped.

DO NOT OPEN THE CHASSIS - THERE ARE NO USER SERVICEABLE PARTS INSIDE - REFER ALL SERVICING TO QUALIFIED TECHNICIANS ONLY

APPENDIX

APPENDIX - MIDI Chart - MIDI Notes	17
APPENDIX - MIDI Chart - MIDI CC Messages	18
APPENDIX - Blank Patch Sheet	19

VOICE 1 - CHROMATIC																						
	•	MATIC	G																			
5		3	4	5	9	7	8	6	10	11	12	13	14	15	16	17	18	19	20	21	22	23
C#-2 D-2		D#-2	E-2	F2	F#-2	G-2	G#-2	A-2	A#-2	B-2	2	Ŧ	F	D#-1	Ξ	Ξ	F#-1	G-1	C#-1	A-1	A#-1	8
TRIGGERS											REPE	REPEAT TRIGGERS	IGGE	RS								
	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
C# 0	DO	0 # 0	ЕО	ЪО	F# 0	0 0	G# 0	ΑO	A# 0	ВO	C1	C#1	D1	D#1	E1	F1	F#1	G1	G#1	A1	A#1	B1
	2	2+3	м	4	3+4	1+2+3	\square	2+3+4	ig >	1+2+3+4	-	1+2	2	2+3	м	4	3+4	1+2+3	ig	2+3+4	X	1+2+3+4
0	HRC	VOICE 2 - CHROMATIC	с																			
	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	4
C#2	D 2	D#2	E2	F2	F# 2	G 2	G# 2	A 2	A# 2	B2	C 3	C#3	D3	D#3	E3	F3	F# 3	G 3	G# 3	A 3	A# 3	B3
Ŭ,	CHRC	VOICE 3 - CHROMATIC	U																			
	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	06	91	92	93	94	95
C# 4	D 4	D# 4	E 4	F 4	F# 4	G4	G# 4	A 4	A# 4	B 4	C 5	C# 5	D 3	D#5	E5	F5	F# 5	G5	G#5	A 5	A# 5	B5
Q	HRC	VOICE 4 - CHROMATIC	U																			
	98	66	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119
C# 6	D 6	D#6	E 6	F 6	F# 6	G 6	G#6	A 6	A# 6	Вб	C7	C# 7	D7	D#7	E7	F7	F# 7	G7	G# 7	А7	A# 7	B7
	122	123	124	125	126		a: reset b: mute	reset LFO offset (voice 1) mute all voices (decay=0)	fset (vo es (dec	ice 1) ay=0)												
C# 8	D 8	D# 8	E 8	F 8	F# 8		c: reset d: reset a: reset		rset (vo illators feet (vo	106 Z)			cuvito	MIDI LEARN	EARN	bild						
	υ	p	θ	f	g		f: reset o: reset	reset LFO & repeat (voice 4) reset LFO & repeat (all voices)	fset (vo	ice 4)	(se		press	pressing down the trigger button of voice 4	n the tri	gger		the	divisio	onden	thedivision department.com	it.co

Department

MIDI CC MESSAGES - 01/IV

	2	VOICE						
	2	5	4	2	FUNCTION		VALUES	
27	37	47	57			CONSTANT REPEAT TIME	0 : no repeat \rightarrow 127 : 4 seconds repeat	onds repeat
26	36	46	56		REPEAT	FADED REPEAT TIME	0 : no repeat \rightarrow 127 : 4 seconds repeat	onds repeat
25	35	45	55			REPEAT INTERVAL	0: 400 Hz → 127: 0.8 Hz	
24	34	44	54	Ĭ	HOLD TIME	0 : no hold \rightarrow 126 : 1 second	\rightarrow 126: 1 second hold before decay \rightarrow 127: inf	→ 127: infinite hold - drone mode
23	33	43	53	LF	LFO OFFSET	0 : min \rightarrow 64 : default \rightarrow 127 : max	<i>7</i> : max	
						FREE / SYNC. LFO	ONE SHOT / RAMP	SYNC. LFO
						LFO speed < 3 : free running LFO speed > 3 : sync. to trigger	One shot Always sync. to trigger	Cycling Always sync. to trigger
22	32	42	52	Ľ	LFO MODE		8: Triangle 9: Saw	
						 Reverse Saw Square (bottom start) Triandle (too start) 	10: Reverse Saw 11: Square (top start) 15: Square (hottom start)	18: Reverse Saw 19: Square
						7: Square (top start)		
						64: Sample and Hold		
51	31	4	51		LFO DEPTH	0: no LFO → 127: max LFO intensity	intensity	
20	30	40	50	L	LFO SPEED	0: 60 seconds → 127: 2000 Hz	2 Hz	
1								
		ЮНН	SCILL	HH OSCILLATORS				
	5	ñ	4	2 L	6 ALL	FUNCTION	VALUES	
60	61	62	63	64 6	65 66	TUNING 0: - 1 oct	\rightarrow 12: default (808) \rightarrow 24:	24 : + 1 oct





