



Gotharman's gear

September 2017 V2

specs/comparison list

Gotharman's
Musical Instruments

	PolySpaze	Anamono X	Anamono Xmini	Fuzion	FX deFormer
					
Type	Polyphonic/multi-timbral synth/sampler with analog filters, effects and sequencer	Modular synthesizer with memory, 2 exchangeable analog filters, sampler, sequencer and granular effects	Modular synthesizer with memory, 1 exchangeable analog filter, sampler, sequencer and granular effects	Music Workstation with advanced sequencer, synthesizers, samplers and effects	Granular effects processor with sampler, sequencer and line/guitar input
No. of re-writable presets	1024	1024	1024	1024	512
No. of re-writable songs	1024	1024	1024	1024	0
Oscillators/samplers					
Polyphony	4 voices	5 voice semi-polyphonic via its modular structure	4 voice semi-polyphonic via its modular structure	8 voices	1 voice
Max number of oscillators at the same time	8 (2 per voice)	5	4	8 (1 per voice)	0
Max number of samplers at the same time	4 (1 per voice)	5	4	8 (1 per voice)	1
Number of sample slots per preset –Selectable samplings within the samplers	16 -4 per sampler	20 -4 per sampler	16 -4 per sampler	8 -1 per sampler	1
No. of selectable chops per sampling	64	64	64	1	0

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Oscillator waveforms	<p>Osc1: Morphable from sine to triangle to saw to square to feedback wave. PW affects all waveforms.</p> <p>Osc2: Selectable sine, triangle, saw, square, noise. PW affects all waveforms, except for noise.</p>	Morphable from sine to triangle to saw to square to feedback wave. PW affects all waveforms.	Morphable from sine to triangle to saw to square to feedback wave. PW affects all waveforms.	<p>Osc: Morphable from sine to triangle to saw to square to feedback wave. PW affects all waveforms.</p> <p>Noise: Tunable noise, affected by PW.</p> <p>Percussion Oscillator: Multiple sinewaves and noise mixed together and detuned for fat percussion sounds.</p>	-
Oscillator FM	Yes, 2>1	Yes, on any oscillator parameter	Yes, on any oscillator parameter	No	-
Oscillator Sync	Yes, 1>2	Yes	Yes	No	-
Can modulate the parameters of:	Osc/Sampler 1 pitch, VCF1-8 cutoff frequency.	Osc1-5, VCF1-2, VCA1-4, Ring VCA1-4, ENV1-8, LFO1-4, EFX1-4, CV out 1-4, Seq note track 1-8.	Osc1-1, VCF, VCA1-4, Ring VCA1-4, ENV1-8, LFO1-4, EFX1-4, CV out 1-4, Seq note track 1-4.	None	None
Sub Oscillator	No	Yes	Yes	Yes	No

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Ring Modulators					
No. of Ring Modulators	4 (1 per voice).	4 Ring VCA. Also functions as modulation sources amount modulation	4 Ring VCA. Also functions as modulation sources amount modulation	0	0
Placement	Between Osc1 and Osc2	Anywhere in the modular chain	Anywhere in the modular chain		
Can modulate the parameters of:	None	Osc1-5, VCF1-2, VCA1-4, Ring VCA1-4, ENV1-8, LFO1-4, EFX1-4, CV out 1-4, Seq note track 1-8.	Osc1-1, VCF, VCA1-4, Ring VCA1-4, ENV1-8, LFO1-4, EFX1-4, CV out 1-4, Seq note track 1-4.	None	None

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Filters					
No. of Analog Filters	8 (2 per voice)	From 1 to 8 - Exchangable	From 1 to 4 - Exchangable	0	0
Max no. of digital filters	4 –In the effects processors	4 –In the effects processors	4 –In the effects processors	16 (2 per voice)	1
Analog filter types	24dB HPF + 24dB LPF per voice, Filterbank with 8 filters.	Depends on, what filterboards are installed: VCF1: 12dB LPF, BPF, HPF. VCF2: 12dB LPF, BPF,HPF + BPF. VCF3: 12dB LPF + BPF + HPF or 3xBPF. VCF4: 12dB LPF,BPF,HPF special. VCF5: 6dB,12dB,18dB,24dB LPF, that can be mixed to form other filter types. VCF6: 24dB LPF+6/12bit conversion. VCF7: 12dB Tube LPF,BPF,HPF. VCF8: 2x24dB HPF, 2x24dB LPF.	Depends on, what filterboard are installed: VCF1: 12dB LPF, BPF, HPF. VCF2: 12dB LPF, BPF,HPF + BPF. VCF3: 12dB LPF + BPF + HPF or 3xBPF. VCF4: 12dB LPF,BPF,HPF special. VCF5: 6dB,12dB,18dB,24dB LPF, that can be mixed to form other filter types. VCF6: 24dB LPF+6/12bit conversion. VCF7: 12dB Tube LPF,BPF,HPF. VCF8: 2x24dB HPF, 2x24dB LPF.	-	-

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G-Ray (Gotharman Ray) feedback	Yes	Yes	Yes	No	No
Digital filter types	LPF, BPF, BPF8, HPF, BEF, ADD, BASS, LOFI, LPF2, BPF2, BPF8-2, HPF2, BEF2, ADD2, BASS2, LOFI2, Peq1, Peq2.	LPF, BPF, BPF8, HPF, BEF, ADD, BASS, LOFI, LPF2, BPF2, BPF8-2, HPF2, BEF2, ADD2, BASS2, LOFI2, Peq1, Peq2.	LPF, BPF, BPF8, HPF, BEF, ADD, BASS, LOFI, LPF2, BPF2, BPF8-2, HPF2, BEF2, ADD2, BASS2, LOFI2, Peq1, Peq2.	LPF, BPF, BPF8, HPF, BEF, ADD, BASS, LOFI, LPF2, BPF2, BPF8-2, HPF2, BEF2, ADD2, BASS2, LOFI2, Peq1, Peq2.	Lpf, Bpf, Bp8, hpf, Add, Bef, Bass, LoFi.
Digital filter adjust, to alter the shape of the filter	Yes	Yes	Yes	Yes	Yes
Analog filter FM	Yes	Yes, on any filter parameter	Yes, on any filter parameter	-	-
Digital filter FM	No	Yes	Yes	No	No

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VCA's					
No. of VCA's	4 (1 per voice)	4	4	8 (1 per voice)	0
Assignable to:	Output 1 + 2, EFX 1 + 2, EFX 3 + 4.	Output 1, Output 2, Output 1 + 2, modular matrix.	Output 1, modular matrix.	Output 1 + 2, output 3 + 4, global EFX 1, global EFX 2.	Output 1.
Envelopes					
No. of envelopes	8 (2 per voice)	8	8	24 (3 per voice)	0
Envelope types	ADSR –Attack, decay, sustain, release.	ADSR –Attack, decay, sustain, release.	ADSR –Attack, decay, sustain, release.	ADHSRR – attack, decay, hold, sustain, repeats, release.	-
Can modulate the parameters of:	Osc1-2, VCF1-2, VCA, ENV1-2, LFO1-4, EFX1-4, CV out 1-4, Seq note track 1-4.	Osc1-5, VCF1-2, VCA1-4, Ring VCA1-4, ENV1-8, LFO1-4, EFX1-4, CV out 1-4, Seq note track 1-8.	Osc1-1, VCF, VCA1-4, Ring VCA1-4, ENV1-8, LFO1-4, EFX1-4, CV out 1-4, Seq note track 1-4.	Osc, VCA, ENV1-3, LFO1-2, Instrument effect.	-
LFO's					
No. of LFO's	4 (1 per voice)	4	4	16 (2 per voice)	4
LFO waveforms	Morphable from triangle to saw to square to FM waveform.	Morphable from triangle to saw to square to FM waveform.	Morphable from triangle to saw to square to FM waveform.	Morphable from triangle to saw to square to FM waveform.	Morphable from triangle to saw to square to pulse to random.
Can modulate the parameters of:	Osc1-2, VCF1-2, VCA, ENV1-2, LFO1-4, EFX1-4, CV out 1-4, Seq note track 1-4.	Osc1-5, VCF1-2, VCA1-4, Ring VCA1-4, ENV1-8, LFO1-4, EFX1-4, CV out 1-4, Seq note track 1-8.	Osc1-1, VCF, VCA1-4, Ring VCA1-4, ENV1-8, LFO1-4, EFX1-4, CV out 1-4, Seq note track 1-4.	Osc, VCA, ENV1-3, LFO1-2, Instrument effect.	Sampler, filter, effects.

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Random Generators					
No. of Random Generators	4 (1 per voice)	4	4	8 (1 per voice)	0
Can be triggered by:	Note on's, LFO's.	Note on's, LFO's.	Note on's, LFO's.	Note On's.	-
Can modulate the parameters of:	Osc1-2, VCF1-2, VCA, ENV1-2, LFO1-4, EFX1-4, CV out 1-4, Seq note track 1-4.	Osc1-5, VCF1-2, VCA1-4, Ring VCA1-4, ENV1-8, LFO1-4, EFX1-4, CV out 1-4, Seq note track 1-8.	Osc1-1, VCF, VCA1-4, Ring VCA1-4, ENV1-8, LFO1-4, EFX1-4, CV out 1-4, Seq note track 1-4.	Osc, VCA, ENV1-3, LFO1-2, Instrument effect.	-

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Effects Processors					
No. of Effects Processors	4	4	4	10	1
Effects placement	Each effect can be placed as Instrument insert or as global output effect.	Anywhere in the modular chain.	Anywhere in the modular chain.	8 effects are fixed as Instrument insert effects, 2 are fixed as global output effects.	Fixed as global output effect.
Effect types	<ul style="list-style-type: none"> -Digital filter/EQ (18 types) -FAT -Chorus -Pitch-Shifter -Stretcher -FM -Resonator -Distortions (4 types) -Pitch Shaper 1 -Glitch Shifter (2 types) -Wave Shaper -Granulator -Variator -Delay -Roto Delay -Bright Delay -Bright Roto Delay -Reverb 	<ul style="list-style-type: none"> -Digital filter/EQ (18 types) -Chorus -Pitch-Shifter -Stretcher -FM -Resonator -Distortions (4 types) -Pitch Shaper (2 types) -Glitch Shifter (2 types) -Wave Shaper -Granulator -Variator -Delay -Roto Delay -Bright Delay -Bright Roto Delay -Reverb 	<ul style="list-style-type: none"> -Digital filter/EQ (18 types) -Chorus -Pitch-Shifter -Stretcher -FM -Resonator -Distortions (4 types) -Pitch Shaper (2 types) -Glitch Shifter (2 types) -Wave Shaper -Granulator -Variator -Delay -Roto Delay -Bright Delay -Bright Roto Delay -Reverb 	<ul style="list-style-type: none"> -FAT -Chorusses -Distortions -Bit Crusher -Resonators -Pitch Shifters -Stretcher -FM -Reverb -Delay -Granulator -Reso Reverb 	<ul style="list-style-type: none"> -Reverb (2 types) -Delay (2 types) -Glitch Shifter (2 types) -Granulator -Variator -PitchShaper -Sample Pitch -Time Stretch -Abstract0 -Chorus -Distortion (4 types)

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Sample Recorder					
Max no. of samplings excluding chop samplings	256	476	256	6.144	127
Max no. of samplings including chop samplings, when using the "Load Samples As Chops" function	16.384	30.464	16.384	-	-
Total sample time	22 minutes	47 miutes	22 minutes	300 minutes	10 minutes
Single sampling max length	12 minutes	27 minutes	12 minutes	200 minutes	10 minutes
Recording sources	Input 1-2, Output 1-2, USB import	Input, Output, USB import	Output, USB import	Input 1-2, Output 1-4, USB import	Input, USB import via optional USB box
Stereo Samples	Recording and playback	Playback of left or right channel	Playback of left or right channel	Recording and playback	No
Sample Edit	Start,length, chops, chop no, tune, FM	Start,length, chops, chop no, tune, FM	Start,length, chops, chop no, tune, FM	Start, length, tune, tempo for Sample Remix function	Start, length, tune
Sample Chop system	Yes	Yes	Yes	Simple Sample Remix system	No
Samples held in memory after switch off	Yes	Yes	Yes	Yes	Yes
FLASH memory type	NOR	NOR	NOR	NAND	NOR

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Sequencer					
Sequencer Type	Step sequencer	Step sequencer	Step sequencer	Advanced event sequencer w/audio tracks	Step sequencer
No. of note tracks	4	8	4	-	1
No. of control event tracks	8	16	8	-	3
No. of event tracks for any events	-	-	-	16	-
No. of audio tracks	-	-	-	8	-
Max no. of recordable events per preset	768	1.536	768	8.000	64
Max track length	64 steps -4 bars	64 steps -4 bars	64 steps -4 bars	128 bars	16 steps -1 bar
Max resolution	1/32	1/32	1/32	1/96	1/16
Note recording methods	Realtime, draw steps	Realtime, input via knobs	Realtime, draw steps	Realtime, step time, input via knobs/notegrid, editing via knobs	Input via knobs
Controller event recording methods	Draw steps	Input via knobs	Draw steps	Realtime, step time, input via knobs/eventgrid, editing via knobs	Input via knobs
Event types supported	Notes, MIDI CC's, internal events	Notes, MIDI CC's, internal events	Notes, MIDI CC's, internal events	Notes, MIDI CC's, program change, pitch bend, aftertouch, internal events	Notes, internal events
Sequencer controller events can modulate the parameters of:	Osc1-2, VCF1-2, VCA, ENV1-2, LFO1-4, EFX1-4, CV out 1-4, Seq note track 1-4.	Osc1-5, VCF1-2, VCA1-4, Ring VCA1-4, ENV1-8, LFO1-4, EFX1-4, CV out 1-4, Seq note track 1-8.	Osc1-1, VCF, VCA1-4, Ring VCA1-4, ENV1-8, LFO1-4, EFX1-4, CV out 1-4, Seq note track 1-4.	Osc, VCA, ENV1-3, LFO1-2, Instrument effect.	Sampler, filter, effects.

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Transmits notes via MIDI out	Yes	Yes	Yes	Yes	No
Transmits controller events via MIDI out	Yes	Yes	Yes	Yes	No
Polyphony	4	8	4	128	1
Morphing system					
Morph between 2 layers of synth parameters	Yes	Yes	Yes	No	No
Morph between 2 layers of sequencer parameters	Yes	Yes	Yes	No	No
No. of Morph knobs	1 (assignable to synth, seq or both)	2 (separate knobs for synth and seq)	1 (assignable to synth, seq or both)	-	-
User interface					
Interface type	Touch navigation	Quick navigation via buttons	Touch navigation	Quick navigation via buttons	Navigation via buttons
Display	3.2" capacitive touch	3.2" resistive touch, industrial grade.	3.2" capacitive touch	4.7" resistive touch, industrial grade.	2x16 character LCD
Touch screen keyboard	Adjustable, 1 to 8 octaves	8 adjustable notes	Adjustable, 1 to 8 octaves	12 adjustable notes	No
Parameter edit	Via 4 knobs	Via 8 knobs	Via 4 knobs	Via 8 knobs	Via 3 knobs
Quick edit knobs	6	8	6	0	0
Trigger buttons	4	8	4	8	1 (Play button are assignable)

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Trigger system					
Setup	Fixed, no setup.	Advanced and very flexible. Triggers must be set up to which oscillators, samplers, envelopes and random generators, they shall trigger. To make things easier, you can start with the memorized presets.	Simple. Each trigger will always trigger something. It is possible to set which trigger should trigger which oscillator, sampler, envelope and random generator, but it is not mandatory.	Fixed, no setup.	Fixed, no setup.

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USB					
USB functions	<ul style="list-style-type: none"> -Import wav file -Import LD sampling -Import preset -Import song -Import all files from directory (samples, presets and songs) -Reload all files from directory (Imports all samples, presets and songs to their original slots) -Import all samples from directory as chops (generates one sampling from all of the samplings in the directory, and sets a chop point at each samplings start point) -Export sample wav -Export all samplings -Export preset -Export all presets -Export song -Export all songs -Create directory -Delete file -Update firmware 	<ul style="list-style-type: none"> -Import wav file -Import LD sampling -Import preset -Import song -Import all files from directory (samples, presets and songs) -Reload all files from directory (Imports all samples, presets and songs to their original slots) -Import all samples from directory as chops (generates one sampling from all of the samplings in the directory, and sets a chop point at each samplings start point) -Export sample wav -Export all samplings -Export preset -Export all presets -Export song -Export all songs -Create directory -Delete file -Update firmware 	<ul style="list-style-type: none"> -Import wav file -Import LD sampling -Import preset -Import song -Import all files from directory (samples, presets and songs) -Reload all files from directory (Imports all samples, presets and songs to their original slots) -Import all samples from directory as chops (generates one sampling from all of the samplings in the directory, and sets a chop point at each samplings start point) -Export sample wav -Export all samplings -Export preset -Export all presets -Export song -Export all songs -Create directory -Delete file -Update firmware 	<ul style="list-style-type: none"> -Import wav file -Import preset -Import song -Import all files from directory (samples, presets and songs) -Export sample wav -Export all samplings -Export preset -Export all presets -Export song -Export all songs -Create directory -Delete file -Update firmware 	<ul style="list-style-type: none"> Via optional USB box. -Import wav file -Import LD sampling -Import preset -Import all files from directory (samples, presets and songs) -Export sample wav -Export all samplings -Export preset -Export all presets -Create directory

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MIDI					
MIDI events received	Note, CC, pitch bend, program change, mono aftertouch, clock, start/stop	Note, CC, pitch bend, program change, mono aftertouch, clock, start/stop	Note, CC, pitch bend, program change, mono aftertouch, clock, start/stop	Note, CC, pitch bend, program change, mono aftertouch, clock, start/stop	Note, CC, pitch bend, program change, mono aftertouch, clock, start/stop
MIDI events transmitted	Note, CC, clock, start/stop	Note, CC, clock, start/stop	Note, CC, clock, start/stop	Note, CC, pitch bend, program change, mono aftertouch, clock, start/stop	CC
Assignable MIDI CC's	1-29 for each part. 32= bank change.	1-9. 32= bank change.	1-9. 32= bank change.	1-19 for each part.	1-6. 32= bank change. 14= effect bypass.
Controller events can modulate the parameters of:	Osc1-2, VCF1-2, VCA, ENV1-2, LFO1-4, EFX1-4, CV out 1-4, Seq note track 1-4.	Osc1-5, VCF1-2, VCA1-4, Ring VCA1-4, ENV1-8, LFO1-4, EFX1-4, CV out 1-4, Seq note track 1-8.	Osc1-1, VCF, VCA1-4, Ring VCA1-4, ENV1-8, LFO1-4, EFX1-4, CV out 1-4, Seq note track 1-4.	Osc, VCA, ENV1-3, LFO1-2, Instrument effect.	Sampler, filter, effects.
CV					
No. of CV inputs	4 (optional)	4	4 (optional)	0	4 via optional AnaX
No. of CV outputs	4 (optional)	4 (optional)	4 (optional)	0	2 via optional AnaX
CV inputs can modulate the parameters of:	Osc1-2, VCF1-2, VCA, ENV1-2, LFO1-4, EFX1-4, CV out 1-4, Seq note track 1-4, trigger 1-4.	Osc1-5, VCF1-2, VCA1-4, Ring VCA1-4, ENV1-8, LFO1-4, EFX1-4, CV out 1-4, Seq note track 1-8, trigger 5-8.	Osc1-1, VCF, VCA1-4, Ring VCA1-4, ENV1-8, LFO1-4, EFX1-4, CV out 1-4, Seq note track 1-4, trigger 1-4.	-	Sampler, filter, effects.
CV outputs can transmit	Any modulation source, trigger 1-4.	Any modulation source, including audio, trigger 5-8.	Any modulation source, including audio, trigger 1-4.	-	Any modulation source.

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Connections					
Audio inputs	2 –Assignable to sample recording (mono or stereo), and to the analog filters and the effects processors	1 –Assigned to sample recording (mono) and to the modular audio system.	1 –Always assigned to the analog filter.	2 –Assignable to sample recording (mono or stereo), and to the digital filters and the effects processors.	1 –Assigned to sample recording and the effects.
Audio outputs	2	2	1	4	1
MIDI inputs	1	1	1	2	1
MIDI outputs	1	1	1	2	1
Power Supply	9V, 2A	9V, 2A	9V, 2A	9V, 2A	9V, 660 mA
Audio system					
Inputs	24 bit, 44.1 KHz	24 bit, 44.1 KHz	24 bit, 44.1 KHz	24 bit, 44.1 KHz	24 bit, 44.1 KHz
Outputs	24 bit, 44.1 KHz	24 bit, 44.1 KHz	24 bit, 44.1 KHz	24 bit, 44.1 KHz	24 bit, 44.1 KHz
Internal system	32 bit, 44.1 KHz	32 bit, 44.1 KHz	32 bit, 44.1 KHz	32 bit, 44.1 KHz	40 bit, 44.1 KHz
Sampler	16 bit, 44.1 KHz	16 bit, 44.1 KHz	16 bit, 44.1 KHz	16 bit, 44.1 KHz	16 bit, 44.1 KHz
Size and weight					
Size	22 x 12.5 x 5 cm	23 x 16 x 6 cm	22 x 12.5 x 5 cm	23 x 16 x 6 cm	17 x 10 x 6 cm
Weight	0.9 Kg	1.3 Kg	0.9 Kg	1.3 Kg	0.5 Kg
Price					
	From EUR 1.560,-	From EUR 1.680,-	From EUR 1.159,-	EUR 1.898,-	EUR 549,-