X-WoF 4

Multipart algorithmic Music System
(X-Wheel of Fortune 4)

X-Wheel of Fortune 4 is a multipart integrated algorithmic VSTi music system for creating tracks based on 8 instruments-parts: Pad 1 synthesizer, Pad 2 synthesizer, Bass synthesizer, Hi Sq Synthesizer, Kick, HiHat, Perc3 to Perc5 and Variable Oneshot Sq. Each patch/preset may be a complete musical track, a track for backing a live performance etc. All this can be arranged in two different ways using the algorithmic Wheel mode for free floating or the Scale step mode for harmonically prestructured tracks.

There are 180 PCM waves (taken from STS-26, ProtoPlasm21 and 'shuniji') for the Pad synthesizers, about 200 Percussion instruments and drums. In addition Sf2 files can be loaded at pad parts and wavefiles for percussion. Now with more than 250 inbuilt scales!

It's a tool for incredibly easy track creation for many types of electronic music, or create playbacks in skipping e.g. the HiSq part.

Major differences between free and registered i.e. advanced Pro version:
* editable presets/patches: Pro = 64 / Free = 32
* PCM waves:Pro = 2 x 90 (as external SF2) plus option to load SF2 / Free = 1 x 90 (internal not changeable)
* Editable Sections: Pro = 4 (A - D) / Free = 2 (A - B) note: in free sections C & D will play but you can't edit!
* Free version with no dedicated MIDI CC assigned except #7 for overall volume

Note: this manual is reffering to the Pro version 4.1 being a superset of the free version 4.0!

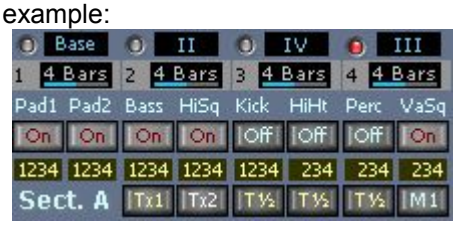
Quickstart & Manual

Quickstart: everything is easy if you know a few essentials!

The basic concept:

Most important to understand is the X-WoF 4 consists of four equal sections (A - D) to be played in selectable order via the 4 x 4 section segment sequencer.

Lets have a look at one section for example:



Each section is divided into four adjustable bar ranges (each from 1 to 8 bars selectable) to be played thus a section can be set to play from 4 (4x1) to 32 (4x8) bars each. In the image below it is 16 bars (4 x 4) to be played.

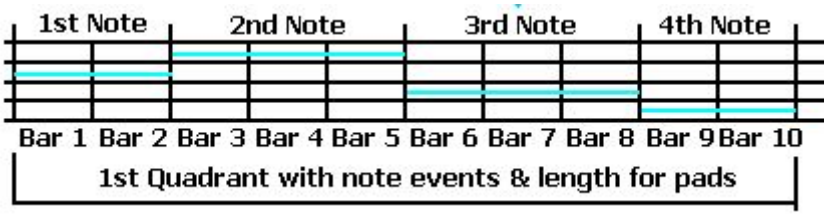
(Note: In this example image You see also Base, II, IV and III which are the settings for harmonical steps when Compose Mode of X-WoF4 is set to Scale Step - more on that later.)

What is this good for? As in the image displayed the pad parts will play for four bars with the given note resp. harmonic step. So one might have played C for four bars followed by D for four bars then F and finally E in common Major scale.

This image shows a different setting: 3, 2, 5 and 1 bar to be played in this section:

in terms of linear note length being played it looks like this:

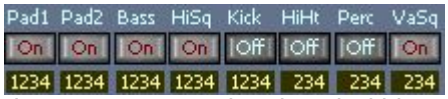
|___|__|_____|_ C = 3 bars, again C = 2 bars, D = 5 bars and F = 1 bar (in C Major)



This is another example showing 2bars, 3 bars, 3bars and 2 bars = 10 bars played in this section
Please keep in mind each corresponding note to the scale steps of the selected scale is displayed on the GUI - see below

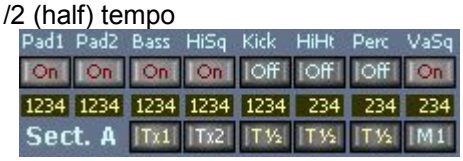
Next each section is featuring 8 instrument parts: Pad1, Pad2, Bass, HiSq, Kick, HiHat, Perc(3-5) and VaSq

these instrument parts can be set to On (=play) or Off (=mute)



Even more You can determine each instrument part to be played within certain range of the section via switches below the On/Off Row. In the image above HiHt, Perc and VaSq will be played only in the range from 2 to 4 within the section. By using these switches you can easily create quite sophisticated arrangements.

In addition you can set a different tempofactor for Bass, HiSq, Kick, HiHat, Perc3-5:
Tx1 (normal), Tx2 (double) and T1/2 (half) tempo



While VaSq has a Mode switch (M1 to M4) explained later.

4 x 4 Section Segment Sequencer

There are four section segments where the sequence of sections A, B, C, and D can be arranged in different order for playback. The first segment has a special function as you can restrict the playback to play only the 1st slot, from 1st to 2nd, 1st to 3rd or 1st to 4th slot. This is helpful when editing the soundengines as you can determine certain sections (A, B, C or D) to be played in loop. While set to All Sects. as diplayed all four segments will be played in sucession and repeat to do so until stop or patch change.

Thus one can build section sequences like: A D B A B B A B C B A B A D D C

Also for each segment a different base note can be set in order to transpose the notes to be played. Keep in mind you can change this at realtime while X-WoF 4 is playing.

When using mode Algorithmic you need not care for scale steps as these will be selected by an internal algorithm.

Compose Mode & Scales Section

On the left the note curretly played by the pad/s is displayed.
Next to this is the Button to toggle between two Compose Modes Scale Step or Algorithmic.

There are three different internal scale types Pentatonic (72), Hexatonic (95) and Heptatonic (95) each with a lot of different scales to be selected from the dropdown list selector box below. On the right the respective notes within the current scale are displayed. As for pentatonic and hexatonic scales two resp. one more notes are displayed (octave step up and/or down) this is simply done for a simplified internal processing.

If you switch from Intern to User You can set up your own User scale which is memorized per patch. To set up a pentatonic scale simply set step VI to c' and VII to C. You can create quite experimental scales as the input system is based on notesettings from C to B and not distances in number of halftones between two steps. See some of the internal patches for it's creative usage.

The Main controls

The internal Tempo can be set from 50 to 140 by simply dragging with mouse up or down.
Play / Stop buttons are obvious to start and stop X-Wof 4 playing.
Note: Using a host program with Transport control you can play / stop with that control anyway **Play/Stop must be set to Play in this case.** Be sure to check the setting for Run Intern / Extern at the Global settings explained below.
Adjustable Fade In and Fade Out is useful to start and/or end a track. To end a track simply click on the button **Fade** ... the machine does not stop on this so if you click that button again it will fade in still playing.

Mixer and Output

You can set levels for six parts here as well as the overall or main volume. Also you can mute each of the six parts here by clicking on the respective button below the knobs.

Global Settings (are not memorized per patch)

Switch Run Intern to Host Run if You want to start playback via Transport control of Host seuencer.
Switch Clock Intern to Clock Host for syncing to Host Clock of e.g. a sequencer.
Switch Stereo Out to 6 Part Out for having 6 stereo output pairs.
Switch PrgChngCont to PrgChngStop to stop playback on ProgramChange.
Note: Settings for *Tempo Clock Sync*, Play*/Stop*, *On Prog Chng* and Stereo *Out* are global settings not memorized within a preset.

The Instrument parts:

Note: there are 4 special patches (6th to 9th) which are soloed to Pad1, Bass, HiSq and Percussion in order to get familiar with the sound capabilities by changing settings. I truly recommend to experiment and edit each part seperately to get a better feeling for the sound potential.

The Synthesizer engines for Pad 1, Pad 2, Bass and HiSq have basically the same structure with only minor differences

Both Pad engines are powered by PCM waves while Bass and HiSq engines are powered by a PhaseDistortion oscillator each. The modifiers to control the sound are quite identical with the exception that there is a Mix modulation for the two PCM waves within the Pad Synth engines while Bass and HiSq feature control of Phasemodulation instead and the latter two show two further mode switches to be explained later.

Lets have a closer look at a pad synth engine:

On a first glance nothing really peculiar as it is a twin oscillator engine with LowPass filter, filter Bypass, two ADSR EG and Delay. The special and quite versatile soundshaping option are within the modulation controls of filter and oscillator mix by selectable LFO sources or manual setting.For the Filter You can select one LFO

as basic LFO modifier but at ModMix Eg:LFO amount you can choose another LFO to modulate this thus you can have a modulated LFO control on the Filter which is really quite versatile.
Within the registered version You can switch between two banks of PCM waves each with 90 waves.There is an option to load soundfont (SF2) files via SF2-Load button.

There is a common LFO section for all synths engines LFO 1, LFO 2, LFO 3, LFO 4 S&H and SLFO for very slow modulation up to 32 bars!

At LFO 2 & 3 one can change the shape of the wave thus featuring more variety for modulation. With S&H there is a variation knob to have more or less events. LFO 4 shows several more complex waveforms plus a non bpm synced rate knob.

Bass and HiSq Engines

The oscillator is featuring two waveform outputs and 8 selectable waves which can be phasemodulated by different sources. The button above the oscillator serves to select different play modes for the bass part while the switch below the oscillator can be used to set to play 1 pattern (P1) instead of internally selected pattern at PA (all pattern possible)

The **HiSq** synthesizer for High sequencer sounds

The button above the oscillator serves to select different play modes for the bass part while the switch below the oscillator can be used to select one pattern (P1 to P3) instead of internally selected pattern at PA (all pattern possible)

The **VaSq** for variable atmospheric and spacey one shot sequencer sounds and some other one shot waves.

This one adds the flavour of more or less spacy sounds as one shots to the music playing. You can specify LFO to filter modulation, set the workingpoint of the resonance filter and shape by Attack & Release. The delay time can be modulated using the D1 to D4 switch above the delay time factor setting.
Use the Triger button to trigger a sound for editing. This engine is mainly automatic also in terms of selecting its waveform to be modified by filter. This was the best way to keep variations rather simple to set up. Anyway I recommend not to overuse this one.
The lower part has four slots for selecting four different waves from a set of 15. These are mainly percussive waves like Gong etc. with adjustable tuning, delay and delay amount per slot.

The Percussion section

The whole section comprises 5 slots for percussion instruments which can be selected from 67 list entries but as each entry features 3 variations (Var1, Var2 and Var3) there are around 200 different percussion sounds inside. Also you can load wavfiles into each slot.

The first slot is intended to be used for Kickdrum to setup a basic rhythm on 16 selectable beats. The Var button offers three different variations to be played from beats 14 to 16 on every second loop.

The 2nd slot is intended for HiHat sounds while slot 3 to 5 are intended to play like a percussionist does. But of course you can go beyond this basic intention and use different sounds. Keep in mind the actual pattern played at slot 2 to 5 is calculated by a quite tricky internal algorithm so slots 3 to 5 will not play always at the same time but instead in different combinations.

Pitch of each instrument can be adjusted around +/- 1 octave and each slot has got it's separate delay, pan and volume setting.

Additional modulations for the percussion section:

There are two LFO for Pitch modulation with the P-LFO output is also mixable to one selectable LFO from the LFO section of the synth engines plus option to invert the polarity. Thus there are three selectable source to modulate pitch within the percussion parts.

DlyGrv adds a certain Groove-factor to the delay as it is moved + or - out of exact bpm timing thus avoiding a mechanical beat. In combination with Pitch modulation by LFO you'll get even some more human factor into the percussion. Finally using the Accent knob will lead to decrease level on the non pronounced beats the more you move knob to right. These settings may need a bit more attention.

There is also an external SF2 file (4Percmacha.sf2) containing the waves for percussion so You can add more waves to it. As there was no apt place on the GUI to add loading slots this was the only way to make this file open for editing purposes. It is recommended to make changes to this file only if you understand it's internal structure.

Please note that mod knobs with a red dot showing up at mid position have a -/+ range thus the modulation can be inverted when moving knob to the left from mid position.

Addtional notes:
Some settings for the delay time factor are labelled as Grv1, Grv2 and Grv3 these do not match a note length relating setting instead these are in beween certain settings thus providing more floating groove to the system. Anyway not to be overused. In most cases you might choose to use it on bass OR percussion.

Please keep in mind that You can change settings at realtime thus you might change the settings for the section segment sequencer, change length of bars to be played etc.

Explicit thanks go to:

Most patches were kindly created by
Dimitri Schkoda (DS or no sign)

This VSTi was created with SynthEdit by Jeff McClintock using further modules by Kelly D. Lynch, David Haupt, Peter Schoffhauzer and Lance Putnam - thank you guys ;-)

Have fun
H.G. Fortune
www.hgf-synthesizer.de
on MySpace:
http://www.myspace.com/hgfortune
demotrack videos on YouTube:
http://www.youtube.com/HGFortune

More VSTi by H.G. Fortune: 'shuniji' the Rainbow Modulation Synthesizer, STS-26 Space Transition Synthesizer, ProtoPlasm21

Appendix 1:

List of waves in Bank 0

000:000 AiryVoices	000:018 Chord2	000:036 FatQuyer	000:054 Haunted	000:072 Metallic
000:001 Aphrodisia	000:019 Clavikhan	000:037 FatStringy	000:055 HiGhouls	000:073 MetalNse
000:002 ArcaneFX	000:020 Clusterbell	000:038 Fedirun	000:056 Horrifical	000:074 MilkyWay
000:003 ArcanRealms	000:021 ColdPolyLB	000:039 FineStrngs	000:057 HotMotion	000:075 Mirsalon
000:004 Asianic	000:022 Corasca	000:040 Flowater	000:058 Huuoouh	000:076 Morphomat
000:005 AsianMetal	000:023 Darkness	000:041 FLX-Aaahh	000:059 Hyperdrive	000:077 NoiseChord
000:006 AtkPadSoft	000:024 DeepSpaceX	000:042 FLX-PStorm	000:060 InTheWoods	000:078 NoiseOne
000:007 Ayesha	000:025 DeuSixty	000:043 FLX-SpkIStr	000:061 JetNse	000:079 OmniSaw
000:008 BelInharm	000:026 Distorter	000:044 FLX-Strgbrite	000:062 Jungle	000:080 OmziFMyth
000:009 Bella Donna	000:027 DistSync	000:045 FLX-Strngsoft	000:063 LadyNature	000:081 OrcStrings
000:010 BellMagic	000:028 DrawbarOrg	000:046 FLXtring	000:064 Lesbos	000:082 OrganaVox
000:011 BellPad	000:029 Ensemblon	000:047 FogHorn	000:065 LightningL	000:083 OutLand-2
000:012 Bishtorg	000:030 EthnicVoc	000:048 Forlorn	000:066 LiteOrg	000:084 PSynHit
000:013 BottleVox	000:031 Exotica	000:049 FroAndTo	000:067 LongAhhh	000:085 Rain-Crackle
000:014 Bowed	000:032 FakeVox	000:050 Fulldrive	000:068 LongOoouh	000:086 SadFemale
000:015 BowedStrs	000:033 Farrancolin	000:051 GlassBlojob	000:069 Lormarin	000:087 SawsOff
000:016 Britetish	000:034 FastStrngs	000:052 gOrgantic	000:070 LowXsaw	000:088 Saxorguitar
000:017 CathOrg	000:035 FatOnFloor	000:053 Guevercin-I.	000:071 MegaStrngs	000:089 Shadizar

List of waves in bank 1 (only in Pro version!)

001:000 4Score	001:018 GoodLow	001:036 She	001:054 SynAthmoL	001:072 UltraFloat
001:001 AaaOhhhs	001:019 Gorgue	001:037 ShiverBell	001:055 Synphony	001:073 Unexpected
001:002 Arcanasque	001:020 HadesLoop	001:038 SitArc	001:056 TadukiVision	001:074 UnNatural
001:003 Aspiration	001:021 HeavyOrgI	001:039 Sixteeth	001:057 TalkLoop	001:075 Unstringed
001:004 BassBrite	001:022 HeavyOrgIIb	001:040 SmokeH2O	001:058 Tanofir	001:076 Voc2Syn
001:005 Bellatrix	001:023 HeavyOrgIII	001:041 SpaceRide	001:059 Technoidon	001:077 VoxObscura
001:006 BellSpaceX	001:024 HyperVox	001:042 SpacingOut	001:060 Tedalda	001:078 Voxodont
001:007 Bitdisorder	001:025 InsideTube	001:043 SparkleStr	001:061 Trianna	001:079 VoxyNse
001:008 BreathVoc	001:026 KS-Nebulous	001:044 SparklyGls	001:062 Trimari	001:080 Wateryfonic
001:009 ChipTalk	001:027 LostInSpace	001:045 SparklyWnd	001:063 Trumping	001:081 Whereisit
001:010 CS+Orch	001:028 MachinaX	001:046 SpeedTube	001:064 TubeBell	001:082 WideSaws
001:011 DelaySpaceX	001:029 ManyClocks	001:047 Spheroidia	001:065 TubeNse	001:083 WideStrngs
001:012 DlySurprise	001:030 MinAtmo	001:048 Stringelized	001:066 TubGongF	001:084 Wonderland
001:013 DuoSound	001:031 NoiseBug	001:049 Superstr	001:067 Tundra	001:085 WonderWorld
001:014 FlowLoop	001:032 OuterChoirB	001:050 Surreal1	001:068 TunnelBel	001:086 XPulsed
001:015 FlyingPad	001:033 OuterPad	001:051 Surreal4	001:069 Tunnellizer	001:087 XtraOrchst
001:016 FogQuyer	001:034 RisingHigh	001:052 Surreal5	001:070 TurbleXF	001:088 Y-Guayer
001:017 FXGameNoiz	001:035 SawsOff	001:053 Symphonic .	001:071 TurblinvF	001:089 ZAbstract-1S

Appendix 2:

List of implemented MIDI CC

Pad 1	**Pad 2**	**Bass**	**HiSq**	**Global LFO**
Wave 1 = 14	Wave 1 = 24	Wave 1 = 74	Wave 1 = 84	LFO2 Shape = 102
Wave 2 = 15	Wave 2 = 25	Wave 2 = 75	Wave 2 = 85	LFO3 Shape = 103
Cutoff = 16	Cutoff = 26	Cutoff = 76	Cutoff = 86	S&H Variation = 104
Q = 17	Q = 27	Q = 77	Q = 87	LFO4 Rate = 105
ModLFO:EG = 18	ModLFO:EG = 28	ModLFO:EG = 78	ModLFO:EG = 88	**VaSq**
ModMix Osc = 19	ModMix Osc = 29	ModMix Osc = 79	ModMix Osc = 89	LFO-F = 106
ModByp:Filt = 20	ModByp:Filt = 30	ModByp:Filt = 80	ModByp:Filt = 90	CutQ = 107
FEG Sust. = 21	FEG Sust. = 31	FEG Sust. = 81	FEG Sust. = 91	

Overall Volume = 7	Pad 1 Level = 22	Bass Level = 82	Percuss. Level = 93	
Start/Stop = 4	Pad 2 Level = 32	HiSq Level = 92	VaSq Level = 94	

Appendix 3:

Scales

Possible scale steps selectable within X-WoFII Pro (example on Major scale)

Scale	f	f#	g	g#	a	a#	b	C	c#	D	d#	E	F	f#	G	g#	A	a#	B	C1	
Major	-IV		-V	-	-VI	-	-VII	I	-	II	-	III	IV	-	V	-	VI	-	VII	I+	

You can set scale steps from -IV to I+ , in this example from f to C1 covering about one and a half octave. So the notes in the Bar step sequencer can 'move' around the rootnote approx. minus a half octave and 1 octave up.

You may ask, what is the musical use these of scale steps? In any key, a typical musical cadence might start with a Supertonic chord (II), then move next to a Dominant (V), before resolving to a Tonic or Root chord of the key (I). There are many other cadence formulas, (such as IV II V I, or II VII I, or II VI V I, ... etc.) and their use is similar. They punctuate or announce the completion of a musical phrase. If you have questions, there are many sources for further study of musical harmony. (by Ralph Phraner)

For alternative scale names than used in X-WoF 4 please have a look at the accompanying file:
Scale-names-list.pdf

Known bugs: loading a single patch program (*.fxp) to first program number (and only there) may change the waveform of the oscillators. This does not apply when loading a patchbank file (*.fxb)! This has to be fixed in the development-environment.

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Alfter (Germany)
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