

X-WoF II Pro

Integrated and partly algorithmic Music System



X-Wheel of Fortune II Pro is an integrated, partly algorithmic VSTi music system for creating tracks based on 8 instruments-parts offering a huge sound potential: Pad 1 synthesizer, Pad 2 synthesizer, Bass synthesizer, Hi Sq Synthesizer, Perc1 (HiHat), Perc2 (various percussion instruments), Kick and Vario Sq for OneShot samples. Each patch/preset is actually a complete musical track being arranged quite easy by means of the inbuilt sequencers, 42 different musical scales and harmonical steps within these scales.

There are 66 selectable PCM waves for the Pad synthesizers, 45 Oneshot samples, 68 Percussion instruments and Kick drums. In addition different User soundfonts can be loaded for Percussion instruments and Oneshots which are stored into dedicated slots so you can switch directly between internal and User sounds.

It's a tool for incredibly easy track creation for nearly all types of electronic music.

There are 64 editable presets/patches available which will take you more than six hours when listening from 1st to end of last one.

Note on the evaluation version

The evaluation version is fully functional except there is a short noise signal added to Audio Out at varying bars and a reminder screen is displayed about this version.

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

The basic concept:

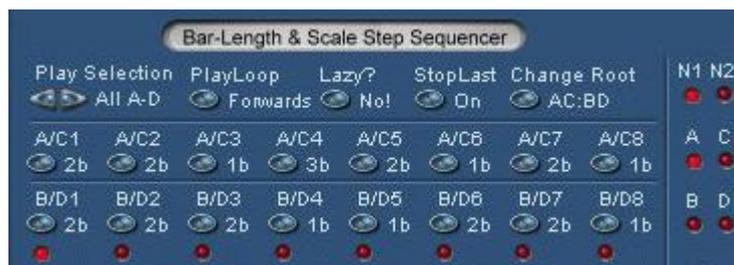
The X-WoF II series machines are based on two types of sequencers in order to create dedicated tracks.

The **Bar Length / Scale Step Sequencer** controlling the length (from 1 to 4 bars) to be played for a scale step selectable from one of the inbuilt musical scales (or editable User scale). There are two rows of eight steps each for Step Length and two corresponding rows to select a scale step. As both rows are played as a loop in succession the rows for Step Length are named A, B, C & D so A and C as B and D will play the same sequence in length with the rows for selecting a scale step related accordingly. As two rootnotes can be selected for a track the change from one to the other can be set to be valid for AB & change for CD or same rootnote for A and C & change at B and D.

To get the instrument parts playing in the arrangement of a track there is the **Bar Group Event Sequencer** which gives you control over 8 dedicated soundsections to be activated or muted within a Bar-Group (a Bar Group is a subdivision of four steps of the Bar Length Sequencer (A1 - A4, A5 - A8, B1 - B4, B5 - B8, C1 - C4, C5 - C8, D1 - D4 and D5 - D8). Just a simple example you can have Pad 1 playing from A1 to A4, change to Pad 2 playing from A5 to A8 and both Pads playing from B1 - B4. As there are 8 soundsections you have a huge number of possible combinations within the 8 x 8 matrix to be played. Even more for Bass and Perc2 a different subtempo can be set allowing further variations within in a track.

The eight soundengines are: 2 Pad synthesizer, 1 HiSequence synthesizer, 1 Bass synthesizer, 1 Perc2 section with three different selectable percussion instruments, 1 Perc1-part for HiHat-like sounds, 1 Kick part and one Vario Seq part (vSq) for adding oneshot samples within the arrangement, which often is the 'salt to the soup'.

Bar Length / Scale Step Sequencer



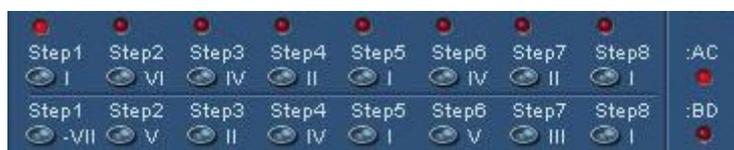
This sequencer is based on two rows (A and B, C=A, D=B) with adjustable steplengths for a selectable number bars (1 to 4 / 1 to 3 for A1/C1) for octavated chords to be played by the pad-synthesizers. Within X-WoF II Pro you can also determine the direction to be played (forwards, backwards, Bounce1 and Bounce2) and even select only a single row or half of it to be played - this is quite helpful to adjust settings within a track-preset. Furthermore you can also select rows to be played in succession e.g. AB, BC, ABC, BCD or CD.

Note: basically changing these selections while playing will change to the new setting when the startpoint or endpoint of the prior setting is reached otherwise you have to stop and restart the machine. While performing a track this offers a quite flexible way to rearrange or elongate a track seamlessly or you can start at A1 and make a selection for looped playback later.

Activate the Lazy function for Bar Length, Bar Step or both to start with new settings at the beginning of each loop.

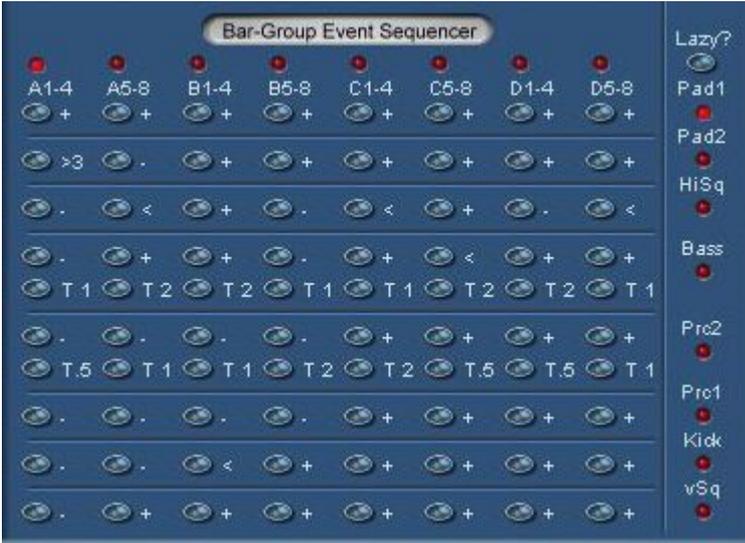
As you can have two different rootnotes within a track-preset there is an option for change at A and B or A and C so the first rootnote can be valid for row A and B or A and C, the second rootnote for row C and D or B and D.

The next two rows (Step1 to Step8) serve to set up the harmonical steps from the selected scale (see below) in Roman numerals (I=1, II=2, III=3, IV=4, V=5, VI=6, VII=7, I+= 1 octave up, also -VII, -VI, -V and -IV).



Bar-Group Event Sequencer:

This is the probably most important control in the brain of X-WoF II Pro as here it is determined what part will sound actually during playback in the sequence at position groups of 4 steps (half of each row A to D).



The interface shows a grid of buttons for bar groups (A1-4, A5-8, B1-4, B5-8, C1-4, C5-8, D1-4, D5-8) and various instrument parts. The parts listed on the right are:

- Pad1: Pad 1 Synthesizer
- Pad2: Pad 2 Synthesizer
- HiSq: HiSq Hi Sequence Synthesizer
- Bass: Bass Synthesizer
- Prc2: Prc2 three diff. percussion instruments
- Prc1: Prc1 = HiHat generator
- Kick: Kick - Kick drum or another perc instr.
- vSq: vario or OneShot Sequencer

The Bar-Group Event Sequencer is giving you control what parts are playing in sections of A1 to D8 for a range of barsteps each. For Bass and Prc2 part you can even determine a different subtempo for faster and slower periods in a track.

Explanation of signs displayed at the buttons within the Bar Group Sequencer:

- this bar group is muted
- + this bar group will play within the whole range (is active)
- < start one bar before this group and play current bar group
- >2 start on 2nd bar (only on bar group A1-4)
- >3 start on 3rd bar (only on bar group A1-4)

T.5 is half subtempo, T 1 is normal tempo and T 2 is double subtempo for Bass and Perc 2

Due to this system of two sequencer groups you can have quite a lot variation within a track in muting/activating certain parts. Or simply use the Lazy button to get new settings as idea to work on.

The Main-Control:

Tempo can be used from Internal or Host clock. **Coarse** selector is used for coarse internal tempo setting while the knob is for a detailed setting. **Run/Stop** is obvious and by setting this to **Transp.** you can control Start/Stop by hostsequencer transport control. **On PrgChng** you can set the machine to stop playing on Program change.



Ind. Out lets you switch between just Stereo-Out (summed) or six stereo outputs as controlled by the 6 volume knobs below the four selectors for instrument sections.



Test is a special switch to be used when the machine's sequencer is stopped and you want to edit instrument settings using the dedicated test switches in every instrument section. This switch was necessary as now the

Fade out option is controlled by Run/Stop so on Stop the overall output will be faded or muted. In this state you would not hear what you are editing thus the Test switch allows you to bypass the mute state in Stop-Mode.

The **Fade Out** button lets you fade out the machine at any moment without stopping it while the fade time is determined by the **F-Time** knob. Press it again to get the sound being heard instantly.

There four bigger bttons to switch between the different instrument section e.g. for editing. Below the knobs are the volume knobs to the 6 basic instrument sections. Within the percussion section itself there are three more different volume knobs to adjust the respective levels. Finally to the right there is the knob for main volume. This one works with Ind. Out set On and Off so to say in both modes.

Note: Settings for *Tempo Sync*, *Run/Stop*, *On Prog Chng* and *Ind. Out* are global settings not memorized within a preset.

Select a **Scale & RootNote**:

As indicated above you may select one of 41 different musical scales to be used for your track and set two possible RootNotes. Due to this setting the chords and bass- and HiSq variations will be based on.



Two rootnotes can be selected to be changed at [AB]:[CD] or [AC]:[BD]

If you select the user-scale as 42nd scale you can set and change at realtime.



To set up a pentatonic scale simply set step VI and VII to C. Even 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.

Note: there can be a different user-scale within every preset which is stored within a preset! So you are not limited in this matter.

The Instrument parts:

Pad 1 and Pad 2 Synthesizer



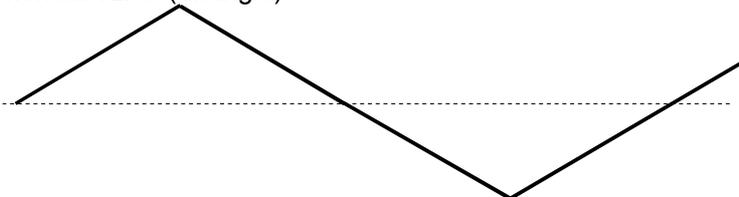
Both pad parts are the same and what is probably most important to be known here is you can edit the Pad-Parts via MIDI-KB: use Stop-Mode and Test On, set current position in bar group sequencer (eg. A1-4 for Pad1) to + (this one is active then) and Pad2 to - (that's muted now!) or of course viceversa if you want to edit pad part 2; check if MIDI-Channel of KB and PadChan match (MIDI-In port of host active?). The switch for PadBaseOct allows you to select a base octave for both pad parts while each oscillator can be switched from -2,-1, 0 and 1 octave setting relative to base octave.

Alternatively you can use the TestPad1 and TestPad2 buttons in TestMode but there is need to switch the current position in the bar group sequencer to + or - in order to activate or mute the other pad. So this offers the option to check both pads the same time. Changing RootNote needs switching on/off again to be heard.

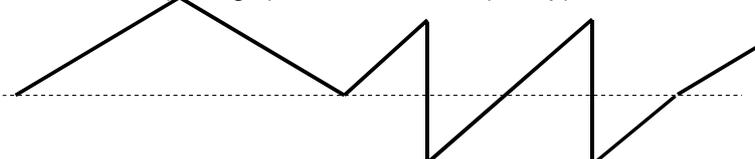
Take a bit care when using the mod-knobs as best results are achieved by subtly interacting mod-amounts by S&H and LFO in order to have vivid pads played. Also Keep in mind that lowering the Env(elope)-amount on Filter (Env>F) will give more room to mods from S&H and LFO to Filter. Also the Mod to mix between oscillators will provide nice results if carefully adjusted. Mod knobs and Env>F slider have a range from - to 0 (=midposition) to + (not 0 to max).

An addition for even more variety of long flowing modulations with the sophisticated vLFO:

normal vLFO (Triangle)



normal vLFO (Triangle) switches to LFO (Ramp) at zero crossing and back to vLFO



Within the Pro version the Pad synths have been enhanced with an quite unique feature: the vLFO (for very low frequency modulations) serves also to switch to a second mod-source (LFO or S&H) when crossing the zero-level. So first 'half' of the vLFO is modulating the Filter until zerolevel is reached, then the modulation is switched to be used from LFO or S&H according to their respective amount settings. By the Offset knob You can adjust the position for the zerolevel in order to balance the time for the mod by vLFO and the 2nd Modsource. the Mod Bal(ance) knob serves to adjust the amounts between vLFO and normal LFO and S&H mod.

By this you can have varying LFO pattern which are best suited for modulating pads over several bars. Also, looking at the graphic you can imagine how the Offset knob is working as shifting the zerolevel upward will increase the time for the LFO to be active, while moving down the time for the vLFO to be active will increase as it will take more time to cross the zerolevel.

Bass

Use **BassMode** to switch between playing alternating octaves or alternating octaves with variations on 3 and 4. **BassFold** allows you to keep the bass with the low range as higher notes (from 1.5, 2 and 2.5 octaves up) will be transposed down by 2 octaves. You can also disable this neat little feature. By **PattChange** you can determine how more or less the bass-pattern will change during playback.



What is important to be known here:

There is a quite unique feature to Bass (HiSq and Perc2 too) section as the amount of delay-level is controllable by tempo! Thus at a tempo .5 set at the bargroup sequencer you'll have more amount of delay while at multiplicator 1 and 2 there will be less 'echoes'!! Turning the T>Del knob to right decreases the amount of delay-level corresponding to tempo. While T>Dec modulates the Decay of Envelope depending on tempo.

The HiSq synthesizer for High sequencer sounds



Basically the same as the Bass Synthesizer but it uses a Phase Modulation Oscillator which has two waveform outputs and 8 selectable waveforms so this one is suited better for Hi sequencer sounds.

The Percussion section



The Prc1-HiHat is based on a noise generator with modulated Filter, separate delay and tempo setting. Prc2 is based on sampled instruments within a Soundfont (SF2-file). This section is in some way simplified as of X-WoF but it is offering a more convenient way to select and edit each percussion instrument. Use the Test button to activate continuous repetition of an instrument to tweak it in Pitch, Pitch Mod, Delay level, Tempo-mod on Delay level, pan and volume. DlyGrv adds a certain Groove-factor to the delay as it shifts the tempo around +/- 10%. Play with this one to add more groove into the percussion!

Also there is a pitch modulation for a more humanlike or vivid playback controlled by an LFO with adjustable waveform and tempo.

Please take into consideration the DlyLvl and T>Del knobs are interacting. With T>Del you have an adjustable control on the level of the Delay amount thus in order to have no delay at all this T>Del knob has to be set to zero also (down leftside).

New here is the Kick part like on X-WoF Pro so You can set up a basic pattern for e.g. Kickdrum

Also there is the option to load User-SF2 into a second slot which is visible after pressing the button **Internal** So you can have two different sets of percussion instruments at hand just by switching to and fro. Please take into consideration loading an SF2 file into a slot will be valid for all presets. More on SF2 files see Appendix II.

The Vario - Seq

will let you add the 'Salt to the Soup' i.e. will give more character to a track as it allows to add oneshot samples at various points within a track. Basically these 10 samples are played in succession but this is controlled by three sources:

Play on Bar/s

active in Bargroup-sequencer or not

and selected range of samples (1 to 10, 2 - 5 or so) as well as Direction of playback (forwards, backwards, Bounce 1 and Bounce 2).



Each sample has its own setting for Pitch, Delay Level, Feedback for Delay, Pan and Volume. Also each sample can be muted. The knob Prog is there to select the sample then being displayed in the Soundfont box. Using a knob allowed it to "store" different preset-numbers for this sequenced playback.

There is a second slot for adding a User SF2 file with oneshot samples (which will be limited to 45 presets max.) and you can switch directly between internal and User OneShots. Please take into consideration loading an SF2 file into a slot will be valid for all presets. More on SF2 files see Appendix II.

Explicit thanks go to:

Vera Kinter for doing the graphic design and patches (VK)
Dimitri Schkoda for patches (DS)
Rene Ebenhan for patches (R) and additional support ;-)
Paul of ManyTone Music (www.manytone.com) for patches (MT)
Ralph Phraner for bugreporting and supplying additional info

This VSTi was created with SynthEdit by Jeff McClintock using further modules by David Haupt, Dan Worrall, and Lance Putnam - thank you guys ;-)

Have fun
H.G. Fortune
www.flomo-art.de/se

More VSTi by H.G. Fortune: STS-17 Transition Synthesizer, Swamp Timbre Modulation Synthesizer, ASET-2121 Mythospheric Space Synthesizer and the X-WoF series of Magic Music Machines.
Further tracks by H.G. Fortune's algorithmic work are available for free download at:
<http://www.hgf-algorithmics.net.tc/>

Appendix I:

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)

List of inbuilt scales:

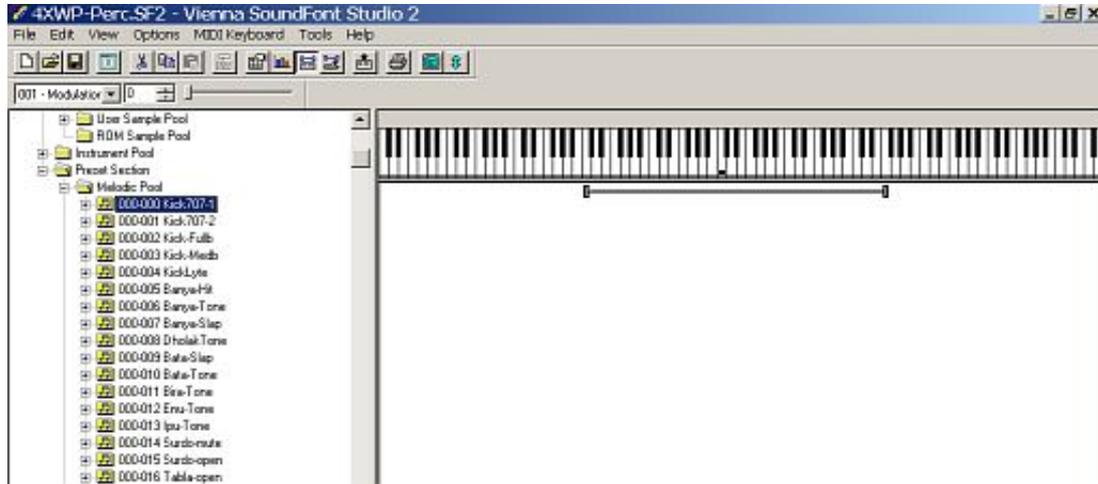
Romanian: c - d d# - f# g - a a# -
Major: c - d - e f - g - a - b
Minor: c - d d# - f - g g# - a# -
AscHrmMinor: c - d d# - f - g g# - b
Blues: c - d# e f - g - a a# -
Ravel: c c# - d# e - f# - g# - a# -
Enigmatic: c c# - e - f# - g# - a# b
Javanese: c c# - d# - f - g - a a# -
Romanian: c - d d# - f# g - a a# -
HungGyp: c - d d# - f# g g# - a# -
Arabian: c - d - e f f# - g# - a# -
Lead\Whole: c - d - e - f# - g# - a# b
HarmMajor: c - d - e f - g# a - b
Oriental: c c# - e f f# - a a# -
Marva\nd: c c# - e - f# g - a - b
Todi\nd: c c# - d# - f# g g# - b
Persian: c c# - e f f# - g# - b
Byzantine: c c# - e f - g g# - b
Hindu: c - d - e f - g g# - a# -
Ethiopian: c - d - e f - g g# - b
UltraLoc: c c# - d# e - f# - g# a - b
Phryg-Maj: c c# - e f - g g# - a# -
LocrNat2nd: c - d d# - f f# - g# - a# -
Mixolyd-Aug: c - d - e f - g# a a# -
LydianMin: c - d - e - f# g g# - a# -
LydianDom: c - d - e - f# g - a a# -
LydianAug: c - d - e - f# - g# a a# -
NeapMaj: c c# - d# - f - g - a - b
NeapMin: c c# - d# - f - g g# - b
HungMaj: c - d# e - f# g - a a# -
HungMin: c - d d# - f# g g# - b
Indianish: c c# - d# e - g g# - a# -
Lyd/OldEgypt: c - d - e - f# g - a - b
Dorian: c - d d# - f - g - a a# -
Phrygian: c c# - d# - f - g g# - a# -
Mixolydian: c - d - e f - g - a a# -
Locrian: c c# - d# - f f# - g# - a# -
DesHrmMin: c c# - e f - g g# - a# -
MelodicMinor: c - d d# - f - g - a - b
ChromPhryg: c - d# e f - g# - a# b
Arabian2: c - d - e f - g# - a# b
Major Inv: c c# - d# - f - g g# - a# -
- User-Scale -

Appendix II

Notes on Soundfonts

You can use different Soundfonts (.SF2 files) within the parts Perc2, Kick and VSq but the files have to meet two basic rules:

1. each percussion instrument or Oneshot sample is a **Preset** within the **Melodic Pool** of a soundfont
2. the range for the sample to be played should be -2 oct and +2 oct from MIDI note 60 (C3).



There is a freeware program Viena (note: only one *n* !) by Kenneth Rundt allowing you to edit Soundfonts without the need of having a special Soundblaster (tm) Soundcard (Live or Audigy) installed as it works with any sound device installed.

SF2 files should be stored in the subdirectory created by X-WoFII Pro as the VSTi starts searching there for files. Anyway the name and location of a User SF2 files being used is not stored within a preset. So you got to load it manually if needed within the next session unless the host recalls the settings which some or even most actually do.

Appendix III:

MIDI Implementation

Volume (Overall Volume)	CC # 7	0 – 127	Volume
Pad 1 Volume	CC # 16	0 – 127	
Pad 2 Volume	CC # 17	0 – 127	
Bass Volume	CC # 18	0 – 127	
Hi Sq Volume	CC # 19	0 – 127	
Perc Volume	CC # 20	0 – 127	
VSq Volume	CC # 21	0 – 127	
Run/Stop	CC # 4	0 – 127	Foot Pedal

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.

Note on the evaluation version

The evaluation version is fully functional except there is a short noise signal added to Audio Out at varying bars and reminder screen is displayed about this version. The Evaluation version is just there to let You check the program whether it fits Your needs. There is a smaller free version available.

The (nagfree) registered version can be obtained from my website (www.hgfortune-vsti.net.tc) via Paypal or via Shareit. The registration fee is only 35 Euro until June, 30th. 2005 as introductory offer, later 45 Euro.

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May 22nd, 2005