

X-Wheel of Fortune 6 (X-WoF 6) Pro

Multipart algorithmic Music System



X-Wheel of Fortune 6 (X-WoF 6) is a multipart music system with inbuilt cell step control sequencer for creating tracks of various types of music e.g. Ambient. E.g. just set up certain basics and let the machine create variations for you for there several inbuilt algorithms just for this purpose.

X-WoF 6 is based on a great variety of more than 250 inbuilt scales using harmonical scale steps for fairly easy composition and even learn more about harmony in music. Additionally you might assign your own - even experimental - User scale for each patch.

There are 10 inbuilt soundengines: two synthesizers for Pad parts, one for Bass, one for HiSq (high sequences), one for Athmo-loops and OneShot sounds plus 5 percussion instruments.

For overall interactive realtime control there are two XY SuperModulation pads plus one XY Master Control pad with the option to control the other two from here.

This is a complete new X-WoF with hardly any remaining stuff from the prior version 4.1 and just for the record the source code file of ver. 6 is more than twice the size of the previous version. Now you might imagine a little about the changes and amount of new stuff put into this one. The major aim had been from the start to have everything built around the new cell step control sequencer which was intended to give the best possible overview and functionality.

The Cell Step Control Sequencer is the heart of the machine offering good overview and fairly easy access to it's various features. It is called cell step control sequencer because in fact every step is a cell of variable play length in bars (from 1 to 8) plus options to set up different subtempo settings for Bass, HiSq, HiHat and Perc 3-5 part and assigning an Athmo or One Shot wave for every 2nd step with adjustable level und tuning!

At the top row of the cell step control sequencer you can determine the harmonical scale step to be used for each step independantly. These scale steps are derived from the currently selected scale. On every 8th step there is the option to set up a different base note to transpose the next 7 steps accordingly. The resp. values are then displayed in the row labeled transpsd..

Major differences between registered i.e. enhanced Pro and the free version:

- * presets/patches: Pro = 64 / Free = 4 fully useable and 28 with additional voice overs at varying intervals during playback and forced switching of edit panels - anyway switching back to any other panel is possible;
- * Athmo/One shot Part: Pro 100 waves / Free = only 60 waves
- * MIDI Out: Pro for all internally generated note events / in Free = not present
- * MIDI In: Free only for MID CC while Pro offers MIDI In for playing notes and triggering of instruments

General hint as a thumbrule: all buttons labeled in light blue are to be clicked unless the values obviously will exceed the number of four selections then like other buttons (labelled in more yellow/golden color) are to be dragged by mouse.

X-WoF 6 explained in it's sections:

Control section Start/Stop, Tempo and host control



From left to right:

the **Reset** button allows to reset the sequencer control at any time

Host Sync allows to enable tempo sync to the host program

Host Control allows to enable Start/Stop via space bar on PC keyboard as is default in most hosts

Start / Stop is quite obvious to start and stop the sequencer

Tempo lets you set the internal tempo by dragging with mouse on the displayed number within recommended range

Bars simply displays the number of total bars played from start of each patch.

Remark: These settings are global settings and are not memorized within a preset instead valid for the whole bank.

Control section of the cell step sequencer



From left to right:

Start Step allows to determine the 1st step for the sequence to start (from 1 to 32) - drag with mouse up or down

The **Step range display** can be used to set up start and End step too by dragging with mouse too.

Above is a display for the current bar played at each step

the **Mode Button** may be used to change the play direction of teh sequencer: forward, backward and bounce.

Step End determines the last step played before loop looping back to Start Step (simply move Start Step up to exclude steps used for 'intro' as soon as the intro steps have been played).

Also with this control system of Start and End step you can play / edit dedicated step ranges directly by setting Start and End Step accordingly, e.g. Start 13 and End 15 will just loop these three steps even a singel step is possible.

Select a scale type and scale



Click on the button displaying as example Major Pentatonic pops up a selector to choose a scale while the button below serves to select a scale type (Pentatonic [5 notes], Hexatonic [6 notes] and Heptatonic [7 notes]). There are 72 Pentatonic, 95 Hexatonic and 95 Heptatonic scales inbuilt.

Next to label Scale you see the button to switch between internal and User scale. The row next the scale selector display the related notes to the harmonical steps while the row below shows the transposed data. The current note for the step is displayed as Cur. Note on the right. Below is a button to switch to Algorithmic Play mode i.e. on every 2nd loop new scale steps values will be set to each step plus new note values for transposition at step 9,17 and 25.

A closer look at the Cell Step Control Sequencer

Step No.	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	
ScaleStep	RV	A	III	III	III	I	I	II	I	a#	- V	- V	- V	- V	I	I	-VII
StepLen Bars	2 Bar	2 Bar	2 Bar	2 Bar	2 Bar	2 Bar	2 Bar	2 Bar	2 Bar	2 Bar	2 Bar	2 Bar	4 Bar	4 Bar	4 Bar	4 Bar	
Pad 1 Part																	
Pad 2 Part																	
Bass Part																	
HiSeq Part																	
Kick Part																	
HiHat Part																	
Perc 3-5 Part																	
Tempo	Perc	Hhx1	Prcx1	Hhx1	Prcx1	Hhx1	Prcx1	Hhx1	Prcx1	Hhx4	Prcx4	Hhx4	Prcx4	Hhx4	Prcx4	Hhx4	Prcx4
AthOs	Level	075	00	059	00	066	00	013	00	100	00	068	00	090	00	050	00

The **Cell Step Control Sequencer** offers **32** steps with variable play length from one to eight bars. the currently played step is indicated by the lit blue LED in the top row.

Next row **ScaleStep** allows to set a base note on 1st, 9th, 17th and 25th step to be used for the following resp. 7 steps. On 1st, 9th, 17th and 25th step you can assign different base notes for transposing the following 7 steps. The transposed data will be displayed respectively as already explained above. The button **RV** serves to generate new values for scale steps except for the 1st step.

In the following row **StepLen** you can determine the length of each step from 1 to 8 bars thus are total range from 32 bars to 256 bars actually played per one loop cycle is available.

The next seven rows are dedicated to the seven instrument parts **Pad1**, **Pad2**, **Bass**, **HiSq**, **Kick**, **HiHat** and **Perc3-5** to be set active or not i.e. to be played or not at the resp. step.

The row labeled **Tempo** allows to set a different subtempo for Bass, HiSq, HiHat and Perc3-5 for two steps. The button labeled Perc / Bs Hi is used to switch between temposettings for Bass and HiSq, and HiHat and Perc 3-5 settings. The subtempo options are x1, x2, x4 as multipliers for the current bpm data.

The final row **AthOS** is dedicated to the Athmo/OneShot part for a segment of two steps as well. Each darker button pops up a selector with numbers to assign a wave to be played while the selector slider in lighter blue allows to set up a level or tuning (+/- 18 semitones) amount for each wave. The selection between Level and Tuning is done by the resp. button labeled Tune / Level. To mute a wave simply select wave #001 which is a mut wave or set level to 0. See also at MIDI for a supplementary note.

Note: Athmo-Loops are played as long as resp. a two step segment is playing, while a OneShot is played only once.

Master Out section



There is a Fade In/Out with one slider to adjust Attack (Fade In) and Release (Fade Out) so there is always an audio Fade In but to Fade Out the resp. button has to be pressed. Pressing the Fade Out button simply fades down the levels off all parts but it doesn't stop the running sequencer.

Next follows the mixer to adjust levels for each instrument part Pad1, Pad2, Bass, HiSequences, Percussion and Athmo / OneShot. Each part has got a Mute button below its slider which actually switches off the internal control so no sound is produced. Finally there is a slider for overall main volume but a button to switch between Stereo Out and 6 Part Stereo Multi Out.

The four Synthesizer engines for Pad 1, Pad 2, Bass and HiSq

are basically the same with some minor differences Both Pad engines are powered by PCM waves while Bass and HiSq engines are powered one VA and one PCM oscillator featuring a rather single cycle type of waves to add some digital flavour here too. The Basic structure is: Oscillators - Osc-Mix - Filter with ADSR EG - Mix Osc direct signal to Filter signal - Amp with ADSR EG - Delay - Pan Out.



8 voice Pad Synth engines



There are two PCM wave oscillators with independent octave settings and an optional semitone offset for osc 2. The output of both oscillators can be mixed and this mix can be modulated by selectable sources. The resonant 24dB Low Pass filter can be modulated by its ADSR EG and a further selectable modsource e.g. LFO. the output of the filtered signal can be mixed to the direct signal of the Osc. Mix signal with the option to modulate this too. The Amp ADSR EG provides a level contour shape for signal. The delay can be set at selectable BPM related settings, provides Feedback and a Delay Level knob. Pan serves to set the panorama position from left to right with the option to have the delayed signal panned to opposite direction which is activated by the small button below the knob.

Use the SF2 button on the left to load other sf2 files.

Monophonic Bass and HiSq Engines



Oscillator 1 is a VA oscillator with Triangle, Sine, Pulse, Saw and Ramp waves while Oscillator 2 features 32 different PCM waves of a single cycle type. The Octave setting of osc. 2 is an offset to osc. 1 to +/- 1 octave. The output of both oscillators can be mixed and this mix can be modulated by selectable sources. The resonant 24dB Low Pass filter can be modulated by its ADSR EG and a further selectable modsource e.g. LFO. the output of the filtered signal can be mixed to the direct signal of the Osc. Mix signal with the option to modulate this too. The Amp ADSR EG provides a level contour shape for signal. The delay can be set at selectable BPM related settings, provides Feedback and a Delay Level knob. Pan serves to set the panorama position from left to right with the option to have the delayed signal panned to opposite direction which is activated by the small button below the knob.

For the VA oscillator there is Pulse Width Modulation for the Pulse wave available which is controlled by the modsource selected at Osc1:2 Mix.

The Bass engine features a special Bass Enhance knob while the HiSq engine has a special Saturate Knob.

Quite important at both engines are the Gate Len(gth) knob which control the actual length of a gate event being On. Gate Length is also related to tempo setting the higher the tempo the shorter the length will become thus compensating long gate settings which are no longer distinguishable on increased tempo. Gate Len is even more important than the ADSR settings in order to have fairly short events. The Gate Mod knob allows to set an amount of modulation for the Gate length with the relative pitch of the current note used as source: the lower the longer, the higher the shorter within a range of approx. 2 octaves.

An SF2 button on the left allows to load other sf2 files for the 2nd oscillator.

There are three more button selectors:

Pattern: to select a dedicated pattern for Gate events to be played like oooo which is all four events are being played or o_o_o with only 1st and 3rd event being played. Use P: Algorithm to let the machine vary the patterns.

Playmodes with 15 selections:

Algorithmic (notes i.e. pitch values are selected by internal algorithm based on scale steps)

Alg+oct1 like this: C Alg(selected) c' alg'

Alg+oct2 like this: C C' Alg alg'

Alg+oct3 like this: C alg' Alg c'

Lolo 1Note

Alt Oct this simple C c' C c'

some using dedicated scalesteps:

III,V,Oct : C, III, V, c'

III,VI, V : C, III,VI, V

V,II,Oct : C, V, II, c'

Oct,V,III : C, c', V, III

III,Oct,V : C,III,c',V

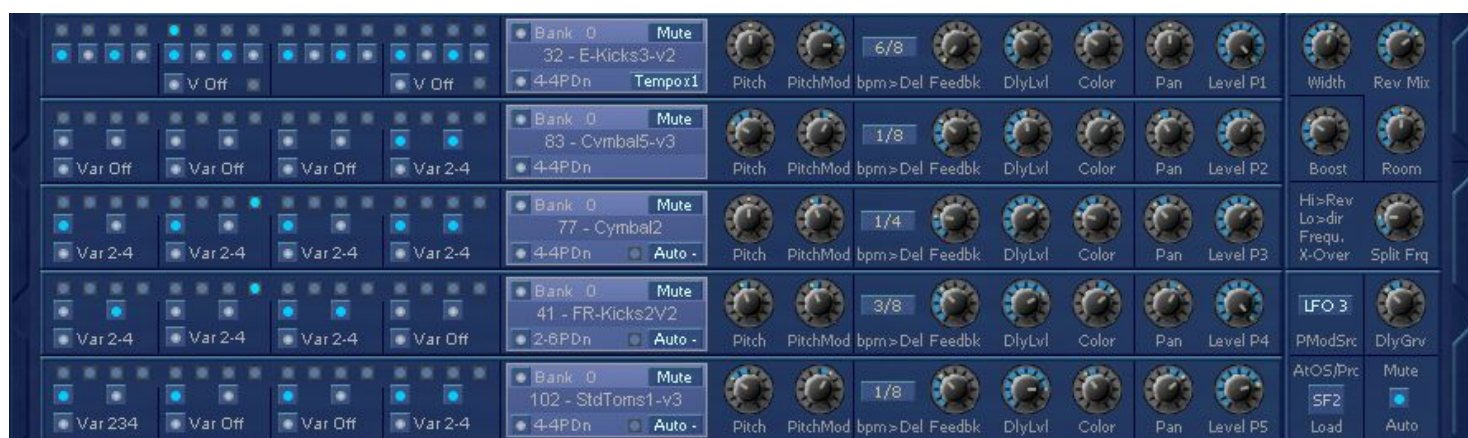
IV,III,V : C,IV,III,V

V,II,IV : C,V,II,IV

IV,II,V : C,IV,II,V

HGF Special : C & ;-)

The Percussion engines and controls



There are five percussion instrument slots each with its dedicated little control sequencer.

For the 1st instrument as Kick Part you can set 16 steps with optional variations for steps 6 to 8 and 14 to 16



If a variation is chosen it adds events (unless set already) on every third loop like this:

Var 1: adds on 8th or 16th step resp.

Var 2: adds on 7th or 15th step resp.

Var 3: adds on 6th and 8th or 14th and 16 step resp.

Var 4: adds on 7th and 8th or 15th and 16 step resp.

For the remaining 4 slots HiHat Part and Perc 3-5 these options are present

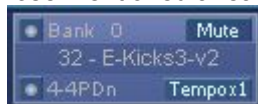


You can set every odd step manually and have Variations selected for step 2 to 4 in each segment of four beats:

Var 2-4 is adding on step 2 and 4, while Var 234 is adding on step 2,3 and four BUT an internal algorithm determines that not

necessarily every step is actually being played. This is because this machine is intended to do variations on it's own in order not to have too static beats being played throughout all steps. And please keep in mind it's not made for 808 or 909 type of beats but rather for percussion like loops which do require some variation.

The oscillators for the instruments have a dedicated Mute button, a bank select option for changing the banks in sf2 files plus for the Kick part a basic Tempo selector similar to those mentioned already at the control sequencer.



For Perc 3-5 instruments there is an option to Auto Mute a part at varying intervals which provides another nice option for variations in the percussion section. this can be activated at each of the P3, P4 and P5 slots independantly with a general activation button Mute Auto on the lower right corner of the perc section.



There is a further selector below the instrument selector which provides a fairly handy option to get a more pronounced play as it does set pitch down on steps 2 or 4 in every 4 beat group or the 2nd 4 beat group indicated by using 8 and 6 in the display. So you have PDnOff, 4-4PDn, 2-4PDn, 2-8PDn, 4-2PDn, 2-2PDn and 2-6PDn. This pitch down is quite common for percussion instruments where the lower note or drum is played on 'weak' or last beats.



The sound settings for all instruments are the same: Pitch adjustment about +/- 1.5 octaves, Pitch modulation via selectable source with zero modulation at centre positins of the resp. knob, Delay with bpm related settings, Feedback and Delay Level, Color to emphasis lower or higher frequencies, Pan and a Level knob.

Delay is fairly important as it allows quite easily to add some more Groove to the rhythm played. Anyway it is advisable not to have the bpm related settings being very different among the instruments. The DlyGrv knob in output section is used to set the delay a little off exact timing.



Also at the output section there is the selector for the Pitch Mod source, the SF2 Load Button for Percussion plus the Athmo/OneShot part and the overall button for Auto Mute.

The overall signal of the percussion section can be enhanced by a Boost knob and a Reverb with settings for Room, Width and Reverb Mix. Quite important is the Frequency crossover used here as it allows to remove lower frequencies from the signal sent to the reverb which is then sent to direct out instead with no reverb added. This reverb does add a nice spatial impression on the percussion.

Additional 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 between 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 one percussion instrument.

Athmo/OneShot engine



Here you can set up some basic settings for the Athmo loops and OneShot waves to be played. There is a resonant 24db Lowpass filter which can be modulated by a selectable source and a Mix knob to mix between direct and filtered signal. Also there is a Spook fx with spook Modulation, Spook Q and Spook mix with selectable modulation. The delay and output Pan will look very familiar as it does feature the same options as with the Pad synth engines. Also you might set an overall basic level for the Waves. The Pan Variation section allows to select a Mod source to modulate Pan and there is a button to switch Pan on every 2nd event to opposite direction of current position.

Play & Performance Controls



There are three XY Pads for Super Modulation with the middle one being the Master Control being capable to control both others too! So you might have a very powerful control on virtually one control item.

Left and right XY Super Modulation Pads are for Pad1 & 2 = left and Bass and HiSq = right with 4 selectable destination of each of the targeted parts Osc 1:2 Mix, Filt LFO:EG Mix, Bypass:Filter signal mix and Pan. Plus selectable Auto Modulation for X and Y driven by selectable sources (Manual and some LFO) each. The amount of modulation to each destination is adjustable and the source incl. direction of the joystick ball selectable.

The Master Control is manual controlled only and does offer twelve destinations: Pad1/2 X Mod, Pad1/2 Y Mod, Bass/HiSq X Mod and Bass/HiSq Y Mod which are the master controls for left and right pad. Further direct modulation control is offered for: Athmo/OneShot Byp:Filter Mix, Athmo/OneShot Mod Cut as well as Bass and HiSq Gate Length. While the bottom row has a selector to choose between two destinations: Athmo/OneShot Spook Mod or Perc Reverb Room; Athmo/OneShot SpookMix or Perc Reverb Width; Athmo/OneShot Delay level or Perc Reverb Mix; Athmo/OneShot feedback or PercPitch down (if activated at the resp. Percussion part/s).

At Manual Master XY Control the control of the other two pads: the more the amount is raised the more Master Control affects the destinations e.g. with amount set to 10 there is the same amount at the destination as within Master Control itself. This is also useful to give the other two an offset when these are used in Auto Mode.

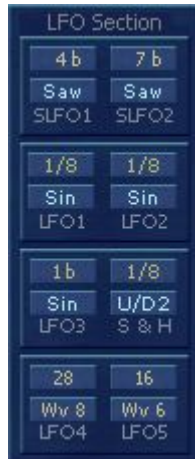
Although it is basically not wrong to use quite a number of actually active destinations at an XY Pad it is usually preferable to have less active for a more pronounced interaction esp. if you are performing with X-WoF 6. It simply depends on which instrument part you want to feature as prominent.

Also it is a good idea to have the resp. destination's knobs set to mid position to have most possible range for modulation. As SuperModulation give an Offset to the current setting of the related knob you can also 'limit' the range e.g. a knob completely turned to right will have a range via SuperModulation til about mid position and v.v. for a knob completely to the right.



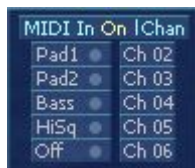
As you will have already figured out these three buttons serve to switch among the different sub panels for Play Perform, Synthesizers and Percussion plus Atmos/OneShot section.

LFO Section



There are two Slow LFO (SLFO 1 & 2), 3 conventional LFO with Tri, Sin, Saw and Ramp waves plus one S&H with bpm related tempo settings. While LFO 4 & 5 offer 9 more complex waves with non bpm related (free) tempo setting.

MIDI



In contrary to prior version X-WoF 6 has got MIDI In and this in a very convenient and flexible way so you might even use the inbuilt synth engines as 4 times multitimbral sound module with 6 voices for each Pad part and monophonic for Bass and HiSq.

Usage: Click button Ext MIDI In (lower left corner) and the selectors appear for part and MIDI channel by default the channels are set to 2 (Pad1), 3 (Pad2), 4 (Bass), 5 (HiSq) and 6 (Athmos & Perc). Setting this to one channel (or All) will work too thus there are selectors for Pad1, Pad2, Bass, HiSq and the subselectors for AthOS, kick, etc. these can be set active to adress a specific part. Even more parts will work simultaneously. MIDI In is working even if the Seq is not running so X-WoF 6 can be used as multitimbral soundengine.

If the Seq is running and one wants to mute the internal triggers for Pad1 and Pad2 simply press the resp. Mute button (at output mixer) as this sets the resp. internal control to off.

MIDI In for Bass and HiSq deactivates the Gate Len settings and internal control by the sequencer for complete control via MIDI kb.

For the AthOS MIDI In uses Gate and Pitch while for the five perc instruments only gate as trigger but no pitch data. It should be noted that if AthOS is set On here (=lit) then this overrides the internal level settings per step.

All internally generated Note events are sent to MIDI out of the VSTi (in Pro version only!) on the channel set up at Ext. MIDI In. As Athmo/OneShot and percussion part do share one channel but Athmo/OneShot is from MIDI note no. 42 upward Kick part is set to MIDI note no. 36, HiHat Part to 37, Perc 3 to 38, Perc 4 to 39 and Perc 5 to 40.

How to start a new track or patch and some further hints and tips:

Probably the most easy way to start is modifying an existing patch first in changing steps at the part rows at the cell step control sequencer, selecting a different scale and change scale steps, even by using the **RV** button for new 'random' values. Sometimes even changing the length of bars to be played for certain steps may change a lot to an existing patch.

Next step might be to change the sounds in use. At the pad parts simply changing the waveforms in use will give suitable results already. Changing filter and it's related modulation settings will serve to finetune the sound.

At Bass and HiSq Parts changing filter and it's related modulation settings plus adjusting the Gate length and finetuning the ADSR settings at each envelope generator may lead to the wanted results. Also some attention maybe spent on the delay settings to match. Recommended octave settings are at the Pad parts 2, at Bass 1 and at HiSq 3. While editing the synthezines keep in mind there are Mute buttons to mute other parts. And, be careful in using semitones at Pad oscillators 2 as these might give partly strange sounding results with several scales. In general it might be advisable to use more familiar western scales of major/minor type rather than the more exotic Ragas or so in the beginning if you are not that familiar with scales.

As of the percussion parts it is advisable to think more of relaxed, groovy and more or less vivid percussion than of 'nailing' 808/909 beats with their predominant Kicks and Hihats. Thus it is probably better to set up a Hihat or even maracas/shaker pattern first before adding Perc 3 -5 and kick. Instead you might as well choose a patch to start from with percussion already set up as close as you want it and then alter settings for all the other parts.

If you are intending to use the XY controls for performing these should be set at the final stage as these settings might require to adjust a few other settings at this or that soundengine. For most noticeable changes at live performing it is advisable to select only few destinations at the XY controls so these will appear more prominent then. Using LFO:EG or ByP:Filter as destination is helpful to have some kind of two different sounds at hand to be controlled, one with e.g. special and modulated filter settings the other one without so XY can be used to blend over or 'morph' in newspeak.

Explicit thanks go to:

Patches were kindly contibuted by

Dimitri Schkoda (DS or no sign), Carlos Needham (CRN, Bob ODonnell (BM), Lloyd McKay (lk).

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

Have fun

H.G. Fortune

more VSTi on:

www.hgf-synthesizer.de

on MySpace:

<http://www.myspace.com/hgfortune>

Appendix 1:

List of waves for the Pad Synths

000 [Cpl]Aphrodisia	032 [Cpl]Nightwalking	064 [Orc]FatQuyer	096 [SFx]Haunted
001 [Cpl]A-Romantica	033 [Cpl]SitArc	065 [Orc]FineStrngs	097 [SFx]Horrifical
002 [Cpl]Aspiration	034 [Cpl]SlowMagic	066 [Orc]FLX-Aaahh	098 [SFx]MetalNse
003 [Cpl]AtkPadSoft	035 [Cpl]Softpudding	067 [Orc]FLX-Strgbrite	099 [SFx]Mystery
004 [Cpl]Ayesha	036 [Cpl]SoftWhisper	068 [Orc]FLX-Strngsoft	100 [SFx]NoiseChord
005 [Cpl]Azimuth	037 [Cpl]SpaceBirds	069 [Orc]FLXtring	101 [SFx]TalkLoop
006 [Cpl]BeautyDream	038 [Cpl]Spheroidia	070 [Orc]FrankHorn2	102 [SFx]TubeNse
007 [Cpl]BellSpaceX	039 [Cpl]SynAthmo	071 [Orc]FullStacked	103 [SFx]Tunnellizer
008 [Cpl]BowTension	040 [Cpl]TadukiVision	072 [Orc]Huuooouh	104 [SFx]VoxyNse
009 [Cpl]Cinematic	041 [Cpl]Tanofir	073 [Orc]Kwaier	105 [SFx]Wateryfonic
010 [Cpl]Complexity5	042 [Cpl]TimeLag	074 [Orc]LongAhhh	106 [SFx]Zirkonauts
011 [Cpl]Darkness	043 [Cpl]TimeTunnel	075 [Orc]LongOoouh	107 [Syn]Bellatrix
012 [Cpl]DeepSpaceX	044 [Cpl]UltraFloat	076 [Orc]LowVox	108 [Syn]Belltronic
013 [Cpl]DeuSixty	045 [Cpl]Underneath	077 [Orc]Monks(Lo)	109 [Syn]BendInOh6T
014 [Cpl]Enigmatic	046 [Cpl]Vertex	078 [Orc]OrcStrings	110 [Syn]BigClassic1
015 [Cpl]Exotica	047 [Cpl]Voc2Syn	079 [Orc]RealViolins	111 [Syn]Chord2
016 [Cpl]FemBreath	048 [Cpl]VoxObscura	080 [Orc]SadFemale	112 [Syn]DigisynDark
017 [Cpl]FLX-SpkIStr	049 [Cpl]Whereisit	081 [Orc]Stringelized	113 [Syn]FogHorn
018 [Cpl]Forlorn	050 [Cpl]Wonderland	082 [Orc]Stringsys	114 [Syn]HybridBras
019 [Cpl]GlassBlojob	051 [Cpl]WonderWorld	083 [Orc]Unstringed	115 [Syn]LiteBrite
020 [Cpl]GlassLayer	052 [Cpl]Yggdrasilir	084 [Orc]VoxStrings	116 [Syn]LuckyEddie
021 [Cpl]GlassyZone	053 [Cpl]Zephir	085 [Orc]XtraOrchst	117 [Syn]ModChord
022 [Cpl]HeavenlyOhh	054 [Orc]AirVoice	086 [SFx]AlienSpectr	118 [Syn]OpenJaws
023 [Cpl]KS-EthnoBlo	055 [Orc]Angelics	087 [SFx]ArcanRealms	119 [Syn]PropheticV
024 [Cpl]LadyNature	056 [Orc]ArtVox	088 [SFx]AtckSphere	120 [Syn]ProphetSaws
025 [Cpl]LiteStar	057 [Orc]AsiaBlown	089 [SFx]Distorter	121 [Syn]PS6-FatSaw
026 [Cpl]LostInSpace	058 [Orc]AsianMetal	090 [SFx]DistSync	122 [Syn]PWM-6T
027 [Cpl]MilkyWay	059 [Orc]BigOrchStr	091 [SFx]FatOnFloor	123 [Syn]SawsWet
028 [Cpl]MinorAtm2	060 [Orc]Bowed	092 [SFx]FlowLoop	124 [Syn]SoftDigiBell
029 [Cpl]MircalePad	061 [Orc]Ensemblon	093 [SFx]FLX-PStorm	125 [Syn]SynWoodWnd
030 [Cpl]Mythosfer	062 [Orc]EthnicVoc	094 [SFx]GlissHarp	126 [Syn]Voices
031 [Cpl]NebulousPad	063 [Orc]FakeVox	095 [SFx]HadesLoop	127 [Syn]WarmAnalog

List of single cycle type waves at 2nd oscillator of Bass and Hi Sq

000 Clavikhan	008 Inharm-015	016 Inharm-XI	024 Metallic
001 Corasca	009 Inharm-032	017 InHrmDrill 1	025 Quirib
002 Cormons	010 Inharm-045	018 InHrmDrill 2	026 Shadizar
003 Farrancolin	011 Inharm-213	019 InHrmDrill 3	027 Suleyka
004 Fedirun	012 Inharm-282	020 InHrmDrill 4	028 Tedalda
005 FM-D035	013 Inharm-IX	021 InHrmSync	029 Trianna
006 FM-F055	014 Inharm-V	022 Lorda	030 Trimari
007 FM-F057	015 Inharm-VI	023 Lormarin	031 XPulsed

List of waves in Athmo/OneShot section (060 to 099 only in Pro version!)

000 [0]-Mute	025 [FxS]XP-32Swurp	050 [Prc]CicadaRattle	075 [ZFxS]DecayWobble
001 [FxL]AlienLife	026 [FxS]XP-34Tøngg	051 [Prc]Crensc Cymbal	076 [ZFxS]DiverTm
002 [FxL]JetNse	027 [FxS]XP-35Zurshh	052 [Prc]Gong2	077 [ZFxS]Drill
003 [FxL]Z-Bubbles	028 [Nat]Birdies2	053 [Prc]Gongo	078 [ZFxS]FloatFade
004 [FxS]Breezing	029 [Nat]Flowater	054 [Prc]LiteGong	079 [ZFxS]FromDeep
005 [FxS]Crystalline	030 [Nat]InTheWoods	055 [Prc]RareBell	080 [ZFxS]HiWobble
006 [FxS]GlassBounce	031 [Nat]Jungle	056 [Prc]Spookbell	081 [ZFxS]NoizUpWobble
007 [FxS]In Motion	032 [Nat]LightningL	057 [Prc]StrangeBell	082 [ZFxS]SitaricAtck
008 [FxS]Mysteries	033 [Nat]PowWow	058 [Prc]VCymb-Backw	083 [ZFxS]SpaceOrcHit
009 [FxS]Passing By	034 [Nat]Rain-Crackle	059 [Prc]VRattleTension	084 [ZFxS]SplashGun
010 [FxS]PassingBy3	035 [Nat]RainyDay	060 [ZFxL]AlienPlanet	085 [ZFxS]Trashy
011 [FxS]PassingBy5	036 [Nat]SeaSide	061 [ZFxL]ClockTicking	086 [ZNat]Brook
012 [FxS]PassingBy6	037 [Nat]StormWind	062 [ZFxL]DropsInCave	087 [ZNat]Geese
013 [FxS]SparkleGls	038 [Nat]Voegelei	063 [ZFxL]Ligetica	088 [ZNat]Jungle-Lp
014 [FxS]XP-00ADripp	039 [Nat]Water-Birds	064 [ZFxL]SeaHunt	089 [ZNat]NoxTropica
015 [FxS]XP-03Døng	040 [Nat]Wateryshore	065 [ZFxL]Sonar-2.5sec	090 [ZNat]Sea2
016 [FxS]XP-08Flish	041 [NtS]BigThunder	066 [ZFxL]SteamTrain	091 [ZNat]Seagulls
017 [FxS]XP-10Flosch	042 [NtS]Bird of Prey	067 [ZFxS]6T-Whirled	092 [ZNat]Stream2
018 [FxS]XP-11Flush	043 [NtS]Birdie	068 [ZFxS]AlienLaugh	093 [ZNat]WindyWaves
019 [FxS]XP-13Gøng	044 [NtS]Owl	069 [ZFxS]Artefacts	094 [ZPrc]BellArp
020 [FxS]XP-15Jieek	045 [NtS]VBigRoar	070 [ZFxS]CreepyDoor	095 [ZPrc]BellGliss
021 [FxS]XP-17Klackk	046 [NtS]Werewolf	071 [ZFxS]CyberBell	096 [ZPrc]BigBell
022 [FxS]XP-18Slurp	047 [Prc]AsiaBell5	072 [ZFxS]CyberDrop	097 [ZPrc]K-Bell
023 [FxS]XP-25Snarp	048 [Prc]AsiaPrc5	073 [ZFxS]CyberSaurus	098 [ZPrc]K-Blow
024 [FxS]XP-26Ssakk	049 [Prc]ChinaBell	074 [ZFxS]CyberTube	099 [ZPrc]PitGong

List of percussion waves - Bank 0 (Kicks, Hihats, Snares, Toms etc.)

000 StdKicks1-v2	032 E-Kicks3-v3	064 HHOpen V2	096 Snare-5-v2
001 StdKicks2	033 E-Kicks4	065 HHOpen V2-v2	097 Snare-5-v3
002 StdKicks2-v2	034 E-Kicks4-v2	066 HHOpen V2-v3	098 Snare-7-v2
003 StdKicks2-v3	035 FR-TiteKicks1	067 HHOpen1	099 Snare-8-v3
004 StdKicks3-v3	036 FR-TiteKicks1-v2	068 HHOpen1-v2	100 StdSnare2
005 StdMedKick1	037 FR-TiteKicks2-v3	069 HHOpen1-v3	101 StdToms1-v3
006 StdMedKick2	038 FR-TiteKicks3	070 HHOpen2	102 StdToms2
007 StdMedKick2-v2	039 FR-TiteKicks3-v3	071 HHOpen2-v2	103 StdToms2-v2
008 StdMedKick2-v3	040 FR-Kicks2V2	072 HHOpen3	104 StdToms2-v3
009 StdLiteKicks1	041 FR-Kicks2V2-v2	073 HHOpen3-v3	105 Toms 2-v2
010 StdLiteKicks1-v3	042 FR-Kicks2V2-v3	074 HHOpCym-v3	106 TRToms
011 StdLiteKicks2-v3	043 FR-Kicks5V2	075 Cymbal1	107 TRToms-v3
012 StdLiteKicks4-v3	044 FR-Kicks5V2-v2	076 Cymbal2	108 ShortDrumLo
013 StdHvyKicks1-v2	045 HGNoiseHH1	077 Cymbal2-v2	109 ShortDrumM
014 StdHvyKicks1-v3	046 HGNoiseHH2	078 Cymbal2-v3	110 OrchDrum
015 StdHvyKicks2	047 HGNoiseHH4	079 Cymbal3	111 Wadaiko
016 StdHvyKicks2-v2	048 HGNoiseHH7	080 Cymbal3-v2	112 Med2Dr2hg1
017 StdHvyKicks2-v3	049 HHCclose1	081 Cymbal3-v3	113 Med3Dr2hg1
018 StdHvyKicks3	050 HHCclose1-v3	082 Cymbal5-v3	114 DuoDr1hg1
019 StdHvyKicks3-v2	051 HHCclose2	083 HH-CupRim	115 E-FMTom
020 LoStdKicks	052 HHCclose2-v2	084 Rim-v2	116 MetalRim
021 LoStdKicks-v2	053 HHCclose2-v3	085 RimShot	117 CymbSwish
022 LoStdKicks-v3	054 HHCclose3	086 RimShot-v2	118 ArtifSnr1hg
023 ResoKick	055 HHCclose3-v2	087 RimShot-v3	119 ArtifblipSnrhg
024 VarKicks-v2	056 HH-Close V2-1	088 Stick-1	120 ArtifblipSnr2hg
025 SimonsKicks-v2	057 HH-Close V2-1-v2	089 Stick-1-v2	121 BriteRes1
026 DumbKicks1	058 HH-Close V2-1-v3	090 Stick-1-v3	122 BriteRes2
027 DumbKicks1-v2	059 HH-Close V2-3-v2	091 Stick-2	123 AvantgdHH
028 DumbKicks1-v3	060 HH-Close V2-4-v2	092 Stick-2-v2	124 AvantResHH
029 DumbRKicks	061 HHCclose V2-5	093 StdSnare2-v2	125 AvantgdSnr
030 E-Kicks1-v2	062 HHCclose V2-5-v2	094 Snare-1-v2	126 AvantgdSnr2
031 E-Kicks3-v2	063 HHCclose V2-5-v3	095 Snare-2-v2	127 HardStick

List of percussion waves - Bank 1 (Ethnic and small percussion)

000 Shaker	032 FM-Perc-v3	064 Banyidhg2b	096 AnvilBells
001 Shaker-v2	033 E-Perc1#2	065 Timbalidhg1	097 LongBell
002 Shaker-v3	034 E-Perc1#2-v2	066 Banya Skin	098 Bell-Cup
003 Cabasa	035 E-Perc1#2-v3	067 Banya-Rim	099 NoiseCup
004 Cabasa-v2	036 E-Perc2#2	068 Banya-Slap	100 CannyDrhg1
005 Cabasa-v3	037 E-Perc2#2-v2	069 Tabla	101 CanmtlDr2hg
006 Maracas	038 E-Perc2#2-v3	070 Tabla-v2	102 Woodstick
007 Maracas-v2	039 Blips	071 Tabla-Snap	103 DryStick
008 Maracas-v3	040 Blips-v2	072 Bata	104 DuoDr2hg
009 Cabaserie	041 Blips-v3	073 Bata-v2	105 AsiaDrumLo
010 Cabaserie-v2	042 E-Clap	074 Bata-v3	106 AsiaDrumHi
011 Cabaserie-v3	043 E-Clap-v2	075 Udu-1	107 AsiaDrRoll
012 Tambourin	044 E-Clap-v3	076 Udu-1-v2	108 Conguduhg1
013 Tambourin-v2	045 Claps	077 Udu-1-v3	109 Uduiqehg
014 Tambourin-v3	046 Claps-v2	078 Udu-2	110 Artifuduhg
015 IndiaPerc1	047 Claps-v3	079 Udu-2-v2	111 ArtifDr2hg1
016 IndiaPerc1-v2	048 Rattlings	080 Tabloid	112 ArtifDr3hg1
017 IndiaPerc1-v3	049 Rattlings-v2	081 Udu-Ou-up	113 E-Metal
018 IndiaPerc2	050 Rattlings-v3	082 Udu-Ouup	114 Swishyhg
019 IndiaPerc2-v2	051 Rattlings2	083 Udu-Mix	115 WetBody
020 IndiaPerc2-v3	052 Castanett	084 Udu-Snap	116 AsiaMtl1a
021 IndiaPerc3	053 Tambouria	085 Udu-Mix-v2	117 BlipBlop
022 IndiaPerc3-v2	054 CastanettP	086 Udu-Mix-v3	118 MetlBlop
023 IndiaPerc3-v3	055 FishStroke	087 Tabludu-up	119 MetlBlop2
024 AsiaPerc1	056 Rattlings3-v3	088 Tabludu-Mid	120 TaBlop
025 AsiaPerc1-v2	057 Conga-Lo	089 Tabludu-Lo	121 Bloppy
026 AsiaPerc1-v3	058 Conga-Hi	090 MetlSnap	122 Snappy
027 AsiaPerc2	059 Conga-Snap	091 MetalCan	123 KalimPalam
028 AsiaPerc2-v2	060 Bongo-Lo	092 BellBlip	124 Droppy
029 AsiaPerc2-v3	061 Bongo-Hi	093 HiBell	125 Snapcup
030 FM-Perc	062 Bongo-Snap	094 Smallbell	126 MetlBody
031 FM-Perc-v2	063 Banyidhg2	095 ShortBell	127 TriStrok

A total amount of 516 waves.

Appendix 2:

Available MIDI CC #s plus assignments

07 - Main Volume						
08						
09	Bass	Pad 1	Pad 2	Master Out Lvl	Athmo/OneShot	HiSq
10	20 - Osc 1 Wave	70 - Osc 1 Wave	80 - Osc 1 Wave	90 - Pad 1		110 - Osc 1 Wave
11	21 - Osc 2 Wave	71 - Osc 2 Wave	81 - Osc 2 Wave	91 - Pad 2		111 - Osc 2 Wave
12	22 - Osc Mix	72 - Osc Mix	82 - Osc Mix	92 - Bass	102 - Level	112 - Osc Mix
13	23 - CutOff	73 - CutOff	83 - CutOff	93 - HiSq	103 - Cutoff	113 - CutOff
14 Master X	24 - Resonance	74 - Resonance	84 - Resonance	94 - Perc	104 - Resonc.	114 - Resonance
15 Master Y	25 - Mix LFO:EG	75 - Mix LFO:EG	85 - Mix LFO:EG	95 - AthmOS	105 - Mod Cut	115 - Mix LFO:EG
16 Pads X	26 - Mix Dir:Filt	76 - Mix Dir:Filt	86 - Mix Dir:Filt		106 - Dir:Filt	116 - Mix Dir:Filt
17 Pads Y	27 - DelayLevel	77- DelayLevel	87- DelayLevel		107 - SpookMd	117- DelayLevel
18 BassHiSq X	28 - Pan	78 - Pan	88 - Pan		108 - SpookQ	118 - Pan
19 BassHiSq Y	29 - GateLength	79	89		109 - SpookMix	119 - GateLength
	30 - Master: Fade Time					
	31 - Fade Out Button					

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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