Anvilia Pro

VSTi Synthesizer with Enhanced Colorizer

Anvilia VSTi Synthesizer features:
2 Oscillators with 128 inbuilt waveforms each
1 enhanced Colorizer incl. HP Filter and EG to add additional 'spectral color' layers
6 LFO and 1 Sample&Hold incl. 1 dedicated pitch mod LFO
1 24db LowPass filter with resonance and EG (ADSR)
1 Amp EG (ADSR)
1 Delay bpm synced and modulateble by selectable source
LKO function for Delay (LastKeyOff unleashes full delay amount as set by DlyLvl)
LoBoost & Saturator
Pan modulateble by selectable LFO and option to switch between normal Pan and Delay to opposite direction
4 Lazy buttons
10 Selectable background skins

The Oscillators

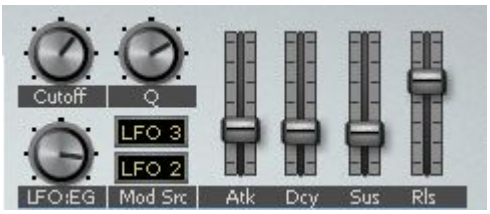
Both oscillators can be set to octave range from -2 to +2 plus semitone up to 11. Next is a Mute button to mute each oscilltor. Below this are two arrows poiting left and right these are the volume/level attentuators for each oscillator. In general a setting of +0 is best suited for sounds to be played as chords, but for sounds being played with one key only you might set it to +3. Also this attentuators are helpful if You want to lower the level of one oscillator in the relation to the other. The output of both oscillators can be balanced or mixed by the Osc1:2 knob which can also be modulated by selectable sources via Mod Mix selector. Below this is a Detune knob to set an amount of detuning bewteen both oscillators which can be modulated by varoius sources - NOTE: modulation of Detune is quite CPU hungry! As of pitch modulation by Modwheel you can select as target both or one oscillator only. The display left shows MIDI CC# number and value of currently edited knobs or selectors on GUI or incoming MIDI (this is an inbuilt MIDI implementation chart too).

The enhanced Colorizer

This one is even more complex than with the 'shuniji' Pro VSTi from which it has been derived. First of all it's got a dedicated HP-filter with Peak (or resonance) which could replace the 2nd and 3rd color of the 'shuniji' Pro system while offering an enhanced sound potential. As the colorizer is based on delay with rather short modulatable rate and adjustable Feedback ('Physical Modeling light') the results range from pitchshifterlike, metalic, sitarlike to resonant effects achieved at high setting of Peak.
Let's get to terms on this one. In the top row there is a level knob for adjusting the amount of the Colorizer. Next is a SoftClip knob to supply some Soft Distortion followoed by the knob balancing the output between LowPass filter and direct to 3 way switch at Amp setcion. This can be modulated by a selectable source. In the next row below there is the Color knob in the mid which can also be modulated by a selectable source even the EG below in positive or negative way. This is quite nice to get certain metallic attacks on first keystroke. Above the Modsource selector is a Mode switch which feeds the signal in twoe different ways into the colorizer with Mode 2 having enforced high frequencies. The wave of the modsource can be smoothened by the ModColLag knob on the left of this row. This might be handy to prevent from too sudden i.e. harsh changes. There are two Peak knobs controlling the feedback-resonance of teh delay with the right one (Peak Fine) being present for a more convenient fine adjustment of the upper range.
The following HiPass filter with peak or resonance works simply as one would expect it. As it can be modulated by the EG and a selectable source this provides another possible 'layer' within the soundcolors of this synthesizer. Above the modsource selector there is a button to switch between normal and inverted modulation. Note: Mode 3 at Mod Col bypasses the Color section and feeds the signal directly to the HPFilter.

General Note: Be careful with high settings of Peak at Color and HP Filter as under certain conditions you might experience e.g. feedback drones. In such a case simply lower knobs for Peak and color til the drone disappears. There could have been precautions to prohibit this behaviour but this would have meant to castrate the general variety of this function.

The Filter



This is a 24db Lowpass filter with Resonance (Q) and dedicated ADSR EG and two slectable LFO for modulation. The LFO:EG knob adjusts between the amount of LFO and EG. The two selectors for LFO ModSrc are: upper=primary source, lower=secondary source which is mixing or balancing between primary and EG amount.

The Amplifier (VCA) section

There are LoBoost to enhance Bass and Saturate to give some saturation to the sound.
There is a Balance / Mix knob to mix between the unfiltered signal from the oscillators and/or colorizer and the filtered signal. The resp. source (both, Col or Osc) is selected by the switch above the modsource selector. Also this can be modulated by selectable sources. The output signal is shaped by the VCA ADSR EG.

The Delay & Output section

The amount of delay is adjusted by the DlyLvl knob. Also there is a Color knob (DlyCol) to have the delayed signal more dark or light. The delay itself is synced to BPM in various fractions of note values even with three options Grv1 to Grv3 which are a bit out of note related values - this might provide a more groovy delay. Also if Delay Mod Source is set to Man you can set an offset value related to the current bpm->Delay setting thus speeding up the delay more or less manually. **Note:** Delay modulation might cause (by nature) at certain settings some additional noise thus use it with care. Also you might use Delay Color to left to filter out higher frequencies.

A very special and unique feature is the LKO function. In fact these options serve to supress too extensive delay clouds until the last key is released from keyboard. So you can play along without too much delay until you release the last key then having the full amount of delay as set by DlyLvl.
Also the dley can be modulated by selectable sources which provides some more than just spooky sounds if set appropriately. The Amount knob turned fully to the left = 0 (zero) modulation. Also the DlyModSrc selector can be set to off. **NOTE:** It should not be overused and some settings may require delicate finetuning. As with LFO1, LFO 2 or SLFO as modsource you might experience Attack clicks if the respective LFO KeySync button is set to 'On'. In such a case switch it to Off.

The Output section

The Pan is a bit tricky though it can be used as normal Pan when set to L<-->R and ModSrc to Man.
If set to <-P-> thenPan sets undelayed signal to one side while the delayed signal is panned to opposite side. This provides a very spatial sound without any complex settings needed. Also the Pan can be modulated by selectabe sources for the sound to 'fly' or 'move' between left and right.

The LFO section

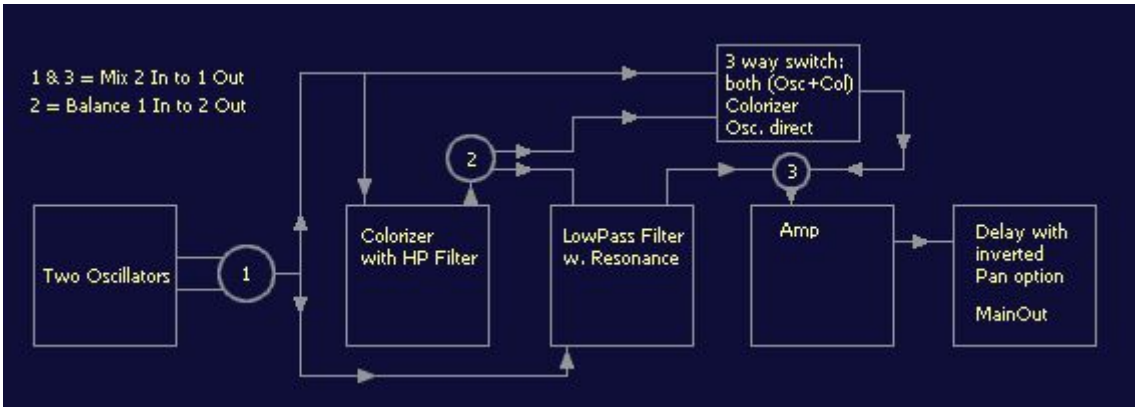
comprises of a dedicated pitch LFO (PLFO) with it's amount **controlled by Modwheel**

The SLFO is a rather slow LFO for longterm modulations. LFO 1 and LFO 2 are identical while LFO 3 features more complex waves plus a shaping knob, Sample&Hold hast got several modes and a variation knob, and LFO4 has a set of 21 complex waveforms with a Rate knob, so this one's tempo is manually adjustable and not synced to BPM as the others are.
Also PLFO, LFO1, LFO2 can be synced to first keypress thus these will restart on first keypress but continue as long as at least one key is pressed. This is quite useful esp. for pitchmodulation as You can have a dedicated pitch up using e.g. a Ramp (Rmp) wave when starting to play. As KeySync is crucial on Delay Modulation I made it switchable - thus there are buttons at LFO 1, LFO 2 and PLFO.
The visual displays of the current waveform state can be switched off by LLit on/oof switch left of the Lazys:

4 Lazy buttons

Lazy A is for All lazy parameters while Lazy L is for the LFO settings. The upper left Lazy button is for oscillator waves only while the left one is for oscillator, Colorizer & filter section parameters only.

Schematics of the audio signal flow:



This image should help You understand the flow & routing of the audio signal: The output of both oscialltors are mixed (or balanced) to one signal which is then routed straight to the LowPass filter and the Colorizer while a third line goes to the 3 way selector switch. This switch determines what kind of signal can be balanced to the LowPass filter output. This maybe both output of driect signal from oscillators plus the output of the colorizer, the output of Colorizer solely or the output of oscillator mix solely. Also you can see the Colorizer has an option to mix or balance this signal more to the LowPass Filter or the 3 way switch. In this configuration these are the most flexible routing options. Anyway there is a minor drawback as it is possible to do a setting with no output at all: If the 3 way switch is set to Col (only) and the balance at 3 in the image is set to Src only (knob turned full to left) and the level of Colorizer is set to 0 - then You can't expect any sound by nature of the system.

You can change among 10 different background skins by the respective buttons - thus your favourite skin is only one click away after start up - so you can change immediately according to your mood etc.

One final remark:
This synthesizer does offer quite a lot of modulation options but as in most cases using less is often more to the resulting sound. Thus modulations should be selected with consideration.

Explicit thanks go to:

Patches were kindly created by Dimitri Schkoda, Scott Solida and HGF

Parts of four images have been used from the ESA/Nasa Hubble Spacetelescope projekt
http://www.spacetelescope.org/

This VSTi was created with SynthEdit by Jeff McClintock using further modules by Kelly D. Lynch, David Haupt, and Peter Schoffhauzer - 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: STS-26 Space Transition Synthesizer, ProtoPlasm21, X-Wheel of Fortune 4, Umbra Waveset + free VSTi player

Appendix 1:
List of 128 waves in Internal ROM (HGF-rom5.sf2)

000 AlienQuark	032 DXEP-Base	064 MarimInkosi	096 ShiverBell
001 ArcanRealms	033 EthnicVoc	065 MedBrass	097 Simplify
002 Asianic	034 FakeVox	066 Metallic	098 Sixteeth
003 AsianMetal	035 FarFeesa	067 MetalSync	099 Narrowsyn
004 AtkPadSoft	036 Farrancolin	068 MetAtkF	100 SmokeH2O
005 Azimuth	037 FatOnFloor	069 Mirsalon	101 Soloid
006 BassBrite	038 FatQuyer	070 Mirkheim	102 SparklyGls
007 Bellatrix	039 Flowater	071 ModChord	103 SparklyWnd
008 BelInharm	040 FlyingPad	072 MoltenBell	104 SpeedTube
009 BellMagic	041 FM2Slow	073 MovinBell	105 Spheroidia
010 BellPad	042 FogHorn	074 Mythosfer	106 SpookBell
011 Belltronic	043 FogString	075 Nopia	107 Suleyka
012 BellWave	044 Fulgor	076 NoiseBug	108 Symphonic
013 Belphegor	045 FuzzDigi Z	077 NoiseChoir	109 Syndenfall
014 Bishtorg	046 Gebel	078 NoiseChord	110 Synphony
015 BongBell	047 GhostBel	079 NoiseOne	111 Synthorn
016 BottleVox	048 GlassyZone	080 Nothync-H	112 TimeLag
017 BowedStrs	049 GoodLow	081 NoVocal	113 TimeTunnel
018 BriteFive	050 gOrgantic	082 OrcStrings	114 TubeBell
019 Britetish	051 Hard-FM-LB	083 OrganaVox	115 TubeNse
020 BroadBras	052 HiGhouls	084 OutWired	116 TunnelBel
021 Chord2	053 Huuoouh	085 PSynHit	117 Turimac
022 Clavikhan	054 InTheWoods	086 Quirib	118 UnOrganic
023 ColdPolyLB	055 IrishPoly-LB	087 Rain-Crackle	119 UltraFloat
024 Corasca	056 JetNse	088 RhoAtkPad	120 UnNatural
025 Cormons	057 Jungle	089 RhodesIsle	121 Unstringed
026 Crunched	058 Kwaier	090 Roaring60s	122 VoxPlus
027 CS-Analog	059 LadyNature	091 Rodikhan	123 Nasalic
028 Darkness	060 LightningL	092 SawsWet	124 Mystery
029 DeuSixty	061 LiteBrite	093 Sawysaid	125 XPulsed
030 DistSync	062 Lorda	094 Shadizar	126 Z-Bubbles
031 DrawbarOrg	063 LowXsaw	095 ShipLiftOff	127 Zephir

Appendix 1b:
List of 128 waves in HGF-Rom6 (HGF-rom6.sf2) only with Anvilia Pro Premium edition!

000 Amsoria	032 HeavenlyOhh	064 NarrowPad	096 SoftWhisper
001 AnvilBrass	033 HeavyPad	065 NarrowStab	097 SteelWhisper
002 ArcaneSphere	034 Heliopolis	066 NebulousPad	098 StraightVoicyPad
003 Ascending	035 Hermaphrodites	067 NewBrass	099 StretchedBells
004 Bellspheres	036 HighlyPraised	068 NoiseBeamer	100 StringedVoice
005 BestChoir	037 HighOrgan	069 NoiseFlight	101 SubBass
006 BigChoir	038 HomesickBass	070 NotLordJohn	102 SunsetFlight
007 BigFantasy	039 Ice Cone 31	071 OhhhStrings	103 SuperSoftVoice
008 BrassyOrgan	040 IncenseOrgan	072 OnTheCatwalk	104 SynAtckChoir
009 Brastrings	041 InharmBellPad	073 OrcHitPad	105 SynAtckMorphPad
010 BriteHeavenly	042 Intrusion	074 OrchTuning	106 TemplePad
011 BriteWhisper	043 Labyrinth	075 OrganLite	107 TensionVoice
012 Cathedralon	044 LateSunset	076 OrganPlus	108 TimeShift
013 Choiresque	045 LightAtckPad	077 OutOfTune	109 Transgression
014 Cosiness	046 LightPad	078 Palmyra	110 TroubledParadise
015 CrossMorphed	047 Limbodrift	079 PerilousBells	111 TwinP6Organ
016 DeepCaveDive	048 Luminiscense	080 PolyBrass	112 TwistedSinister
017 DigiHollow	049 LuringVoice	081 Polyphemic	113 Underwater
018 DoubleMorph	050 Lush	082 RichOrgan	114 Vacuumizer
019 Dramatique	051 MediumPad	083 Romantica	115 Vectorial
020 Dreamshift	052 MetalAtckPad	084 RoyalCourt	116 VenusianOrgan
021 DrifterSH	053 MetalWhirl	085 Salvation	117 VividVoicyPad
022 ElevationOrgan	054 MorningStar	086 Samoira	118 VocalFlute
023 Enigmatic	055 MorningSun	087 SarahElissa	119 VoiceOfFantasy
024 Essential	056 MourningSH	088 ShakuBirds	120 VoiceViolin
025 FairyMaid	057 MultiMorph	089 SharpEdge	121 WarmBritePad
026 FakeDungeon	058 MurmWhisper	090 Skywardbound	122 WarmFatPad
027 FreeGliding	059 MysticCavern	091 SloRotator	123 WhiteClouds
028 FullBlown	060 Mythlorien	092 SlowBrass	124 WhitePad
029 GenericPolySyn	061 NarrowAtckPad	093 SoftBrite	125 WideOpen
030 GlasAtckPad	062 NarrowEdge	094 SoftHeavenly	126 WoodAtckPad
031 HardAtckPad	063 Narrownics	095 SoftOrgan	127 Zirkonauts

Appendix 2:

List of implemented MIDI CC

Oscillator	**Filter**	**Amp**	**Delay**	**Colorizer**
Wave 1 = 20	Cutoff = 70	LoBoost = 80	DlyModLag = 13	Level = 32
Wave 2 = 21	Q = 71	Saturate = 81	DlyModSrc = 14	Dir : Filt = 79
Osc 1:2 = 22	ModLFO:EG = 72	Byp:Filt = 82	ModAmount =15	Color = 90
ModSrc = 23	Mod Src = 73	ModSrc = 83	bpm->Delay = 16	Peak = 91
Detune = 24	LFO Src = 74		Feedback = 17	Peak Fine = 92
Detune modsrc = 25	Attack = 75	Attack = 85	DlyColor = 18	ModColLag = 93
	Decay = 76	Decay = 86	DlyLvl = 19	HP Filter Mod = 94
Osc1 Mute = 68	Sustain = 77	Sustain = 87	DelayMode/LKO= 31	HPF Peak = 95
Osc2 Mute = 69	Release = 78	Release = 88		HP Mod Src = 89
				ColModSrc = 84
		Main Out:		**Colorizer / HP EG**
LFO		Overall Volume = 7		Attack = 26
LFO3 Shape = 102		Pan = 10		Decay = 27
S&H Variation = 103		Pan Mod Src = 12		Sustain = 28
LFO4 Rate = 104				Release = 29
				LFO:EG = 30

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.

Multiple instances are not possible on multicore CPU systems. Work on solving this is progressing.

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April 28th, 2008