

# STS-24 Pro – 2012 Free

## Advanced Space Transition Synthesizer



This synthesizer is featuring Wave-Transition method for absolute unique atmospheres, soundscapes, pads & textures. A very straight userinterface with 3 "Lazy"-Buttons for randomizing different sets of parameters so programming this synthesizer is incredibly easy. The Transition method adds a stunning new dimension and motion for an evolving sound changing completely it's characteristics. Although this is an amazingly "simple" structured synthesizer it gains its astounding sound from the Transition method between the oscillators.

The basic features are:

**New:** 30 new internal waves added

Four digital PCM-wave oscillators powered by 127 selectable waveforms

X-Torsion function for oscillators

two resonant filters (24db Lowpass and 12 db Highpass)

three ADSR-style envelope generators

two LFO (bpm-synced)

one LFO with shapeable and even patternlike waveforms (bpm-synced)

one Sample & Hold (bpm-synced)

**New:** LFO 4 with more than 40 patternlike waveforms

**New:** Stereo delay now with Cross delay option

**New:** Stereo flanger with very flexible modulations and resonant LPFilter

**New:** Space rotation for sound rotating in stereo width

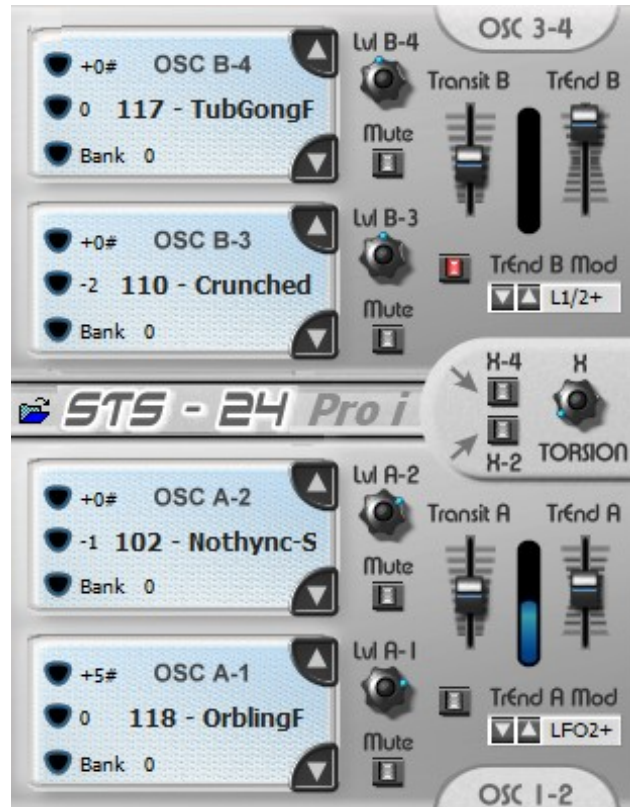
**New:** Both filters with Filter FM driven by two osc. sources each

# The features of the STS-24 Synthesizer in detail

## The sound-sources

Four **digital oscillators** (in sections: A-1, A-2 and B-3, B-4) have a set of 127 selectable PCM-waves as soundsources. Each oscillator has a **[Level:]**-knob and can be set to -2/-1/0/+1/+2 octaves and shifted up by 11 semitones.

The outstanding feature of this synthesizer is the adjustable transition from one wave to the next via the **[Transit]** sliders and with the advanced system with adjustable **[TrEnd]**point plus modulation on this separate for each section. Modulation is affected after the transition has reached it's end (or upper oscillator) and if **End** setting is lower fallen back to this point. The **End** point is determined by the resp. TrEnd slider setting so in middle position both oscillator will sound equally. Transition can be switched on/off by the buttons left of TREnd Mod.



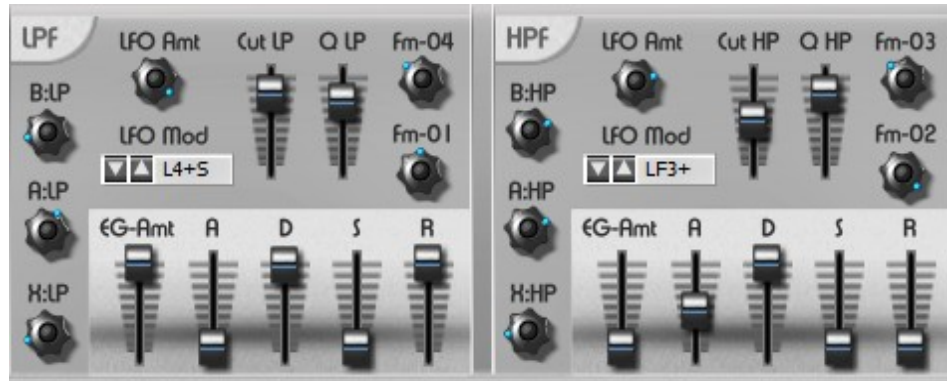
The X-Torsion is a variant of Ring- & Crossmodulation of the Oscillator-outputs. This signals goes directly to the outputsection and it's level is determined by the X-Torsion knob. Also You can add or remove Osc A2 and B4 to be used within this function. Sometimes the effect of X-Torsion is more noticable if not all oscillators are used. Also it might occur at some wave-combinations that the effect is less prominent than with other combination. Finally it should be noted that in a few cases the output level of this function might lead to go beyond 0dB (indicated by peak LED flashing red) - in such cases lower the the knobsetting of the X-Torsion knob.

Release of VCA EG is controlling the 'bouncing back to zero position' of Transition after release of keys - thus you can control this behaviour to a certain extend.

## Filter section

With the STS-24 each filter has a premix to adjust levels from each oscillator section (A and B) plus extra knob for X-Torsion through filters.

The signal of digital oscillators can be routed to a 24 dB LowPass and/or 12dB High-Pass Filter both with resonance (Q). Cutoff frequency **[Cut]** and Resonance **[Q]** are adjustable for each filter separately with the respective sliders.

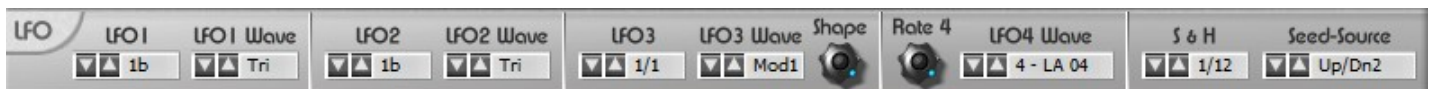


Both **[A]** **[D]** **[S]** **[R]** envelope generators let you adjust the way the filter works on the incoming signal with **Attack**, **Decay**, **Sustain** and **Release** providing the shape on filtering. With the **[EnvAmt]** – slider you can adjust the amount of this modulation on the filter. You won't need Release here much or this envelope at all, as the modulations by LFO and S&H provide a far more interesting motion in sound. Release is quite CPU-hungry.

As further modulation-source serves a selectable LFO (one with patternlike waveforms too plus Shape knob!) and a Sample & Hold generator synced to host-clock (see LFO section below). The **[LFOMod]** buttons activates the modulation-source to the respective destinations with an adjustable amount from the **[LFOAmt]** knobs. (+ is normal modulation while '-' (minus) is inverted modulation.)

Also both filter support Filter-FM by two oscillator sources each: LP- Osc A-1 / B-4 and HP Osc A-2 / B-3.

## LFO section



There are 4 LFO and 1 Sample&Hold for different modulations.

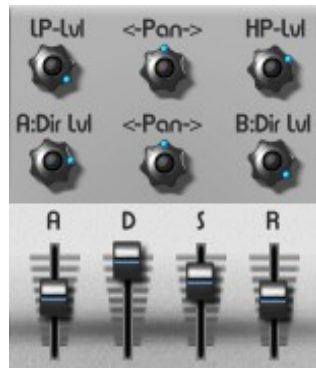
LFO1 and LFO2 are basically meant for the Transition function but can be used as mod source for filters and flanger too.

LFO3 is featuring patternlike waveforms plus Shape knob

LFO4 has a set of more than 40 patternlike waveforms and Rate is freely adjustable.

The **Sample & Hold** generator provides a random modulation signal like pulses at varying levels instead of a continuous / foreseeable modulation from a selected wave of the **LFO**. With the **[Seed-Src]** button you can change the characteristics of the S&H pulses: Less (peaks), More (peaks) and Up & Dn types for ascending or descending motion preferably at lower rates.

## The Output section (VCA, Effects & Main)



The VCA has a premix to adjust output from LP and HP filter plus adjustable direct signal from oscillator sections A and B. The Pan knobs are working in 'opposite' mode so only two knobs were needed here. Opposite mode is e.g. turning LP to left forces HP to right channel and viceversa.

The output section provides an [ **A** ] [ **D** ] [ **S** ] [ **R** ] envelope generator for shaping the overall signal with **A**ttack, **D**ecay, **S**ustain and **R**elease.



New to STS-24 is the stereo Flanger with highly versatile modulations and options to invert modulations between channels. There is also a modulatable LP-Filter with resonance.

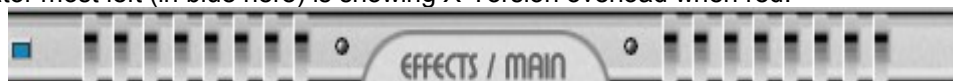
A Stereo delay with Cross delay option is synced to host clock with several selectable division-settings for left and right separately. Also Feedback amount is adjustable separately for left and right. Use DlyLvl to adjust the amount of delay to output.

Really amazing is Space Rotation (SpcRota) providing the impression of sound rotating in stereo width - not bouncing to and fro as with a simple LFO modulated pan! This one is more sophisticated and also synced to bpm tempo. There are two modes available which simply change the 'sequence' of sections (output from LP, HP, DirA and DirB) moving. Note: Make sure that levels are set properly at VCA premix - if a level knob is set to zero this will lead to a 'gap' in the 'sequence' of rotation.

Three [**Lazy?!**] buttons serve to change settings of different sections. Left: Oscillators; middle: Filters; right: all sections.

**Note:** Although output level will hardly exceed 0dB it might occur under certain conditions that you experience internal clipping indicated by the two LEDs (left & right of Effects / Main Label) flashing red - please remind there are quite a number of level knobs to adjust for proper and appropriate level settings!

The LED indicator most left (in blue here) is showing X-Torsion overload when red.



**Hint:** Using long release settings will increase CPU-usage - remedy: lower release at filter ADSR, lower release at ADSR in master section and raise delay MixLvl instead. So in most cases a release just below half way up of the slider will be sufficient to get a fading on the sound.

**Hint for programming patches:** Raise Levels at oscillators as much as possible and needed, next, raise levels at filters as much as possible and needed also at VCA-premix - there is a Main volume knob to lower if output is too much.

**Hint:** Switching between patches might lead to some sound artefacts by Delay when done while sound is still playing. In order to have a clean switching the sound of current patch should have faded to zero level before switching to next patch.

**Note: !! Patches from other/prior STS versions can't be used within the STS-24 !!**

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## Credits and further info

The STS-24 Synthesizer has been created by H. G. Fortune with Synthedit by Jeff McClintock.

Thanks go to:

Patches were kindly done by  
Vera Kinter (VK)  
Annabelle (ANN)  
Dimitri Schkoda (DS or no sign)  
Phil Garrison (PG) [ [www.complexlogicrecordings.com](http://www.complexlogicrecordings.com) ]

Vera Kinter for doing the GUI Graphics

This VSTi uses further modules by David Haupt and Lance Putnam

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Thanks to all who have helped and do support my work!

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# List of internal PCM-Waveforms

001.MovinJaws	046.FX-Stopper	New in STS-24:
002.Fat-5th	047.FX-Tumble	091.Nocturnal
003.AnLead	048.KS-Spectral	092.SpeedTube
004.3FatOsc	049.KS-Nebulous	093.BadGirl-LB
005.AnFatSync	050.KS-EthnoBlo	094.ArcaneFX
006.DistSync	051.JapFlute1	095.TwistdB-LB
007.MetalSync	052.HuanFlute	096.IrishPoly-LB
008.6T-SloSub	053.BottleVox	097.ColdPolyLB
009.6T-Fatt	054.CathOrg	098.SmokeH2O
010.6T-Horned	055.NoiseChord	099.Hard-FM-LB
011.QQH-Waving	056.NoiseOne	100.Hyperdrive
012.Digital_X	057.JetNse	101.Nothync-H
013.AuraWave	058.TubeNse	102.Nothync-S
014.MinAtmo	059.VoxyNse	103.Nothync-B
015.XtraOrchst	060.MetalNse	104.TunnelBel
016.Symphonic	061.OrganaVox	105.SpookBell
017.OrcStrings	062.DrawbarOrg	106.GhostBel
018.BreathVoc	063.FarFeesa	107.DeuSixty
019.HallVox	064.FullPipes	108.FogHorn
020.TubeVox	065.CS+Orch	109.OutWired
021.VoxOouh	066.4Score	110.Crunched
022.LowVox	067.BrassFake	111.SixTeeth
023.Gregor-Oh (=split of 2 sounds)	068.RealBrass	112.TurbleXF
024.FakeVox	069.ShiverBras	113.TurblinvF
025.TubeBell	070.Trumping	114.SlapSaxF
026.BellPad	071.GongyFlute	115.MetAtkF
027.BellWave	072.FNV-Syn	116.ExoFluteF
028.MovinBell	073.CleanDigi-Z	117.TubGongF
029.DropDown	074.FuzzDigi_Z	118.OrblingF
030.BongBell	075.FlowLoop	119.FM-BellyF
031.PitchGong	076.TalkLoop	120:QiGongF
032.ArcaneBells	077.MoltenBell	121.Gemmond
033.CharmLoop	078.BigGongL	122.Gonglion
034.AlienSpectr	079.LightningL	123.Robotik
035.SpaceRide	080.DXEP-Base	124.Reserved
036.FarHorizon	081.SwellStrs	125.Flowater
037.FroAndTo	082.JustAFlute	126.Jungle
038.Tundra	083.Octavian	127.Falcon
039.InTheWoods	084.AtkSyn	128.BigRoar
040.Rain&Crackle	085.AsianMetal	
041.FX-OscStorm	086.SynAthmoL	
042.FX-Flash	087.Mythosfer	
043.FX-Scrubber	088.ArcaNostra	
044.FX-Riser	089.OmziFMyth	
045.FX-U-F-O	090.OmziFSteps	

In total there are **127 internal waves** selectable in the STS-24 Pro - among are more than 30 completely new waves not been published before in a VSTi of mine.

## Appendix on Soundfonts SF2

**General note:** place all SF2 and wavefiles you want to use into the subdir which has been created by the STS (e.g. C:\somewhere\VSTplugins\HGF\STS-xx\ ) you can also have subdirs there. The VSTi will automatically point to this STS subdir so it is more convenient to load files from there.



### Note on SF2-files:

Although you can use basically any SF2 around there are two limitations: the internal SF-Player does support only one layer from an SF2-preset or instrument (the bottom one as seen in Vienna) and the synthfunctions of the SB-hardware are not supported as a specific SB soundcard is not needed.

If You load a Soundfont file e.g. into slot for osc. 1 this is valid for the whole patchbank i.e. this soundfont will be used in all patches osc.1 settings switched to SF2 - while set to internal the internal waves remain valid. For each osc. you can use a different soundfont being valid for all patches of course. Saving the bankfile will keep the resp. settings. Thus using different bankfiles you can manage more than three soundfonts in usage at all.

In order to make SF2-files from Your wavefiles You can use the freeware tool **Viena** by Kenneth Rundt - <http://www.saunalahti.fi/kru99/index.htm>

Viena does not require a Creative Soundblaster Live or Audigy Card to assemble SF2-files and please note there is only one 'n' in Viena (unlike *Vienna* from Creative Labs)

As a freeware Wave-Editor with capability to set looppoints you can use Yamaha's TWE Ver. 2.3.1 which is running on Windows XP systems.

**MIDI-Implementation of Continuous Controllers (CC) for sliders & knobs**  
=CC# (recognized data valid from 0-127)

Main Vol	= 7	LP:		Amp	
DirA:B-Pan	= 8	Cut	= 70	A	= 90
LP:HP-Pan	= 10	Q	= 71	D	= 91
A:Dir	= 11	A	= 72		
B:Dir	= 12	D	= 73	Fdbck L	= 92
A:LP	= 13	S	= 74	Fdbck R	= 93
B:LP	= 14	EnvAmt	= 75	DlyLvl	= 94
A:HP	= 15	LFOMod	= 76	FlngrMix	= 95
B:HP	= 16	LFOAmt	= 77	FlngrDepth	= 1 (ModWheel)
X:LP	= 17	LPLvl	= 78	FI-Feedbak	= 102
X:HP	= 18			FI-Cut	= 103
X-Torsion	= 19	HP:		FI-C-Mod	= 104
		Cut	= 80	FI Q	= 105
Transit A	= 20	Q	= 81		
Transit B	= 21	A	= 82	LFOs	
End A	= 22	D	= 83	1 Sync	= 106
End B	= 23	S	= 84	1 Wav	= 107
Mod A	= 24	EnvAmt	= 85	2 Sync	= 108
Mod B	= 25	LFOMod	= 86	2 Wav	= 109
		LFOAmt	= 87	3 Sync	= 110
Wav 1	= 26	HPLvl	= 88	3 Wav	= 111
Wav 2	= 27			3 Shape	= 112
Wav 3	= 28	Fm-O1	= 31	SH Sync	= 113
Wav 4	= 29	Fm-O4	= 32	SH Wav	= 114
		Fm-O2	= 79	4 Rate	= 115
Wave-Lvl1	= 116	Fm-O3	= 89	4 Wave	= 30
Wave-Lvl2	= 117				
Wave-Lvl3	= 118				
Wave-Lvl4	= 119				
changed & updated to STS-24: 16.03.06					



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