

Scylla



User Manual

© Copyright of de la Mancha / Singing Crane Audio - 2008

INTRODUCTION

Scylla (pronounced sil-uh) is a multi-layered **VSTi** synthesizer capable of producing synthesized audio combined with playback of custom samples and waveforms. Scylla includes three different types of oscillators that can be modified to a wide variety of styles. Three built-in samplers can accommodate .wav audio samples of which can be modified through additional settings. Scylla also includes a powerful combination of LFO, ADSR and filter envelopes, Ring-Modulation, and Unison. What sets Scylla apart from other synthesizers is its unique Granular capabilities, both globally, and locally at the sample level.

The idea behind Scylla is to have an instrument capable of synthesizing audio through means of subtractive synthesis combined with sample-playback, ring-modulation, and granular synthesis. This allows for a wide variety of sonic possibilities ranging from lush pads to far-out soundscapes and effects. Scylla can be used for most any application and is only limited by the user's imagination.

INSTALLATION

Download the rar file and **extract the *entire contents*** of the archive to the folder you have set up as your VST directory. Doing so will extract **Scylla.dll** and a folder structure containing samples and waveforms for use with the instrument. Ensure your host can see Scylla as an instrument and load it as you would any other instrument.

*It is VERY important that the entire contents of the rar file are extracted to the VST directory, ensuring that the folder structure is maintained. This allows the plugin to find the included samples and waveforms that are used with the factory presets.

To uninstall Scylla, just delete the Scylla.dll and folder structure that was extracted to the VST directory.

By using this software, the user must abide by the rules set forth in the **License Agreement** found at the end of this manual.

FEATURES

- * Three layers of programmable audio sources
- * Each layer consists of:
 - * Sample player capable of loading full-length samples and custom waveforms
 - * Oscillator (Dual-OSC with cross-modulation, Morphing OSC, Spectral OSC)
- * Each sampler consists of:
 - * Playback: Oscillate, Play-Once, Loop-Release
 - * Basic audio playback features (normalize, stereo to mono, zero-crossing)
 - * Customizable Loop points
 - * Granular feature that breaks up the sample into 'grains' for added playback effect
- * All audio sources have independent tune, volume, and pan
- * Ring-Modulation per layer
- * Variable stage Filter per Layer
- * Adjustable Amp and Filter Envelopes per layer (Envelope contours can be changed)
- * Layer Assignable Granulator engine
- * 2 layer assignable LFO effects for modulating ring-mod, cutoff (filter), and phase of one LFO
- * Adjustable Global Amp Envelope
- * Mix level of each audio source can be adjusted
- * Mix level of each layer can be adjusted
- * Master Volume
- * Each audio source, envelope, ring-mod and filter can be switched off to save CPU
- * Midi CC support

USER INTERFACE OVERVIEW

Scylla is divided up into 4 windows for user interaction: Layers 1, 2, 3, and a Global window 'G'. Each layer can be accessed by clicking the appropriate circled number in the top right corner of the GUI.



Radial buttons can be selected or deselected to enable or disable a feature:

* **Deselected** 


* **Selected** 

All of the knob controls can be modified by either turning the knob, or entering the required number directly in the display.



Some features require the user to access a drop-down menu containing additional options. These drop-down menus are indicated by a downward pointing arrow, and once clicked the menu will appear.



Lastly, for the Sample Players, clicking on the folder icon  allows the user to browse for samples locally on the computer's hard-drive.

SAMPLE PLAYER



The **sample player** in each layer is identical. This section of the interface includes a graphical representation of the sample loaded, custom looping functions, sample playback functions, granular functions, and tune, vol and pan controls. The sample player can double over as an oscillator when custom waveforms are loaded. To enable each sample player, select the radio button located above the '**Sampler**' title for each layer.

Clicking on the '**File**' folder icon will open a dialogue where the user can browse for samples and waveforms. Samples and waveforms of any length can be loaded for playback. **File types are limited to .wav format, stereo or mono, at 16, 24, or 32-bit.**

There are three types of playback '**Modes**':

- * **oscillator** – plays the sample and when it gets to the loop, it just repeats the loop until release is finished
- * **play once** – plays the sample once and stops playback ***customize** *must be enabled* and *loop points set* for this to work correctly*
- * **loop release** – as per oscillator, but when sustain is over it plays the rest of the sample after the loop section

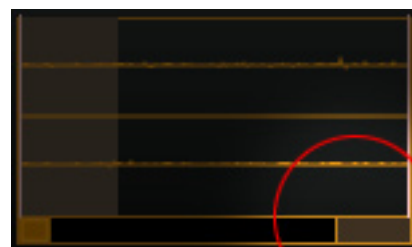
An option for '**custom loop**' is also available which overrides the embedded loop data. Click on the '**customize**' radio button to enable this feature. Choose starting points and ending points for playback, and loop start and end points for looping the audio. When adjusting these settings, the graphical display will update with lines reflecting these changes. (**Hint**: use the '**zero-cross**' feature to reduce clicks in the audio playback)

- * **alternate** – plays forward and then reverse through the loop.

**When using custom waveforms or samples other than those included with Scylla, make sure that each sample has embedded loop data. If there is no embedded loop, then the sample won't play unless the 'customize' option is enabled and loop points are set manually.

A zoom feature is included with the graphical display of the waveform. By clicking the box in the lower right corner of the display and dragging the cursor up or down will increase and decrease (respectively) the zoom level.

There is also a sliding bar directly under the display that can be dragged left and right for viewing different portions of the loaded waveform. This is a great way to align loop points with zero-crossing points in the waveform.



The sampler can be played back at different bit-rates for that ever cool low-fi effect...or to save some CPU during playback. These settings can be found under the '**Quality**' drop-down menu:

- * **normal** – plays back at normal quality of the sample loaded
- * **half** – plays back at half the bit-rate of the loaded sample's normal bit-rate (i.e. a 16-bit sample is played back at 8-bit)
- * **quarter** – sample is played back at one-quarter of the normal bit-rate
- * **eighth** – sample is played back at one-eighth of the normal bit-rate
- * **sixteenth** – sample is played back at one-sixteenth of the normal bit-rate

Below the **Quality** drop-down menu are additional playback options:

- * **normalize** – normalizes the sample audio to peak level
- * **mono** – changes a stereo sample to mono
- * **zero cross** – playback of loop occurs from the nearest zero crossing point in the sample
- * **granular** – modulates the position of the loop points within the total sample; here's how:
 - * set the custom loop where you want it (e.g. 0%-25%)
 - * this mode then calculates how many loops can fit in the entire sample (in this case 4) and then modulates which bit of sample it plays, 1, 2, 3 or 4
 - * mode plays back the sample: forwards, back, fwd+back, back+fwd or random
 - * rate of playback in beats: 32, 24, 16, 12, 8, 6, 4, 3, 2, 1, 1/2, 1/3, 1/4, 1/6, 1/8, 1/12, 1/16, 1/24, 1/32
 - * completely automatic - if your loop is 0-12.5%, it now has 8 possible slices to play etc.

Scylla additionally has three options for playback of the sample's pitch. These options can be found in the dropdown menu directly below the graphical display. These options include:

- * **Midi** - sample plays at the pitch of the midi note; the 'tune' knob will then change the pitch of the sample in semitones.
- * **Sample** - plays sample at the original sample pitch as it was recorded with no pitch modulation. This is useful for percussion samples that may not require the pitch to change when different midi keys are triggered. The tune knob also applies to this feature changing the pitch of the sample in semitones.
- * **Tempo** - plays sample at the pitch defined by the tempo; a tempo box replaces the 'tune' knob where a specific tempo can be entered in bpm. Enter the tempo at which the sample was recorded. Scylla will then adjust the pitch to match the host tempo (i.e. if the original loop is a 4 bar loop recorded at 120bpm, enter 120 in the tempo box. If the project in the host sequencer is at 180bpm, Scylla will change the pitch of the loop so it is still 4 bars, resulting in the audio being played back at the host tempo. Likewise, if the tempo is set at half of the original sample's tempo, then the sample will be played twice as fast with a higher pitch - double the tempo and it plays at half the speed with a lower pitch).

Each sample player has tune (adjust pitch), volume and pan knobs that can be adjusted for blending the audio.

OSCILLATOR TYPES

Each layer has a different oscillator type for a wide variety of sounds:

- * **Layer 1: Dual Oscillator with cross-modulation** – modulates two oscillator types
- * **Layer 2: Morphing Oscillators** – morphs between two oscillator types
- * **Layer 3: Spectral Oscillator** – user customizable waveform by way of altering the level of the first 8 harmonics

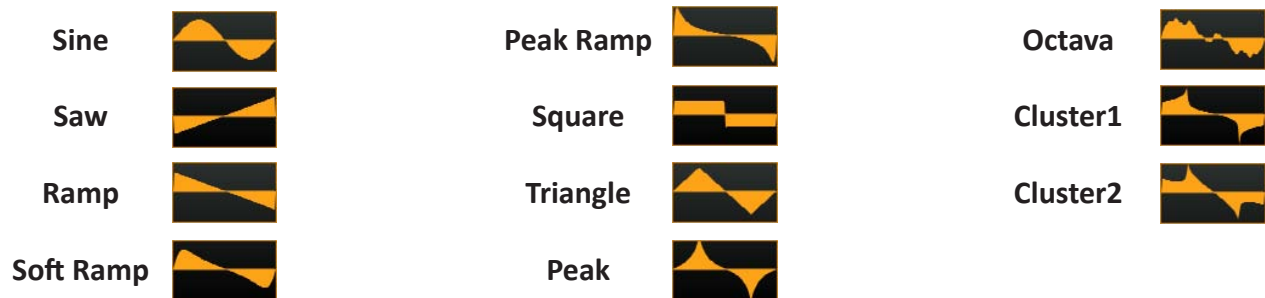
Each oscillator type has tune (adjust pitch), volume and pan knobs that can be adjusted for mixing the audio. To enable each oscillator, select the radio button located above the 'Osc' title for each layer.

LAYER 1 – Dual Oscillator with cross modulation



This is in effect two oscillators where one will modulate the other to give extra complexity and movement. The oscillator types can be selected through the drop-down menus labeled 'Wave C' or 'Wave D'. A graphical representation appears to the right as each type is selected.

Oscillator types:



Modulation occurs through these types (found under the 'Mode' drop-down menu):

- * **Wave C** – plays only oscillator C for simple single osc sounds
- * **Wave C+D** – plays C and D together for simple dual osc mode
- * **Wave C-D** – subtracts D from C
- * **C/D mix** – plays a mix of C and D, where mix knob controls how much
- * **Ph Diff C+D** – plays C and D together with a phase offset between the two
- * **Ph Diff C-D** – subtracts C from D with a phase offset between the two
- * **Ring Mod** – multiplies C x D
- * **Ring Mod+C** – multiplies C x D and adds to C
- * **Phase Distortion*** – D distorts the phase of C, for Casio PD sounds

Each mode will change the label for each knob that adjusts the amount of cross modulation, either phase (both oscs), phase diff (offset), phase distort or mix (cross fade). This knob value can also be modulated by LFO1 by adjusting the 'osc1' knob.

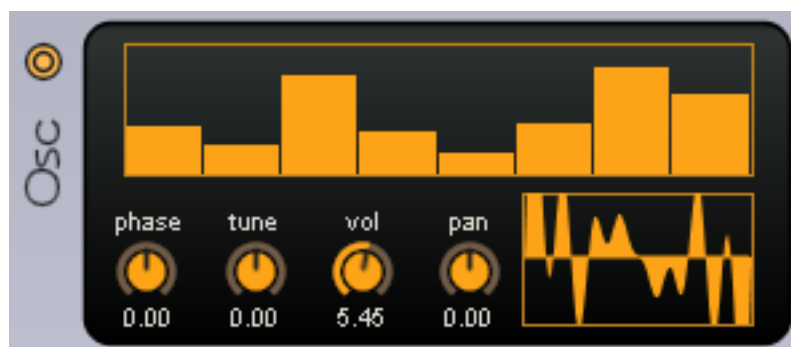
LAYER 2 – Morphing Oscillator



This oscillator works by morphing between two oscillator types at a specified rate that is synced to the host tempo. The oscillator types are the same as the modulated oscillator. The rate at which the sound morphs between oscillators (its cycle) is selectable through the drop-down menu labeled '**Morph**'. Rates of playback (in beats) include: **16, 12, 8, 6, 4, 3, 2, 1, 1/2, 1/3, 1/4, 1/6, 1/8, 1/12, 1/16, 1/24, 1/32**.

Manual Mode: in the 'Morph' drop-down menu, there is a 'manual' option available that allows the rate of the morph cycle to be set manually. Setting the rate to manual enables a new nob for this purpose. The manual option allows for the morph cycle to be set at a preferred rate. This also provides the functionality where the morph knob can be controlled by a MIDI controller (see CC channel assignments) and can also be automated through the host sequencer, providing greater control and flexibility of the morph cycle.

The oscillator types can be selected through the drop-down menus labeled '**Wave A**' or '**Wave B**'. A graphical representation appears to the right as each type is selected.



LAYER 3 – Spectral Oscillator

This oscillator type allows the user to customize the waveform by way of altering the level of the first 8 harmonics. Adjust the shape by way of moving the eight sliders up or down. A graphical display updates with the calculated shape from these adjustments.

The phase of the waveform can be adjusted by means of the 'phase' knob. This change is also reflected in the graphical display.

RING-MODULATION

Ring Modulation is simply multiplying one signal with another. Each sampler signal can be ring modulated by a choice of either the oscillator in that layer, or an independent ring mod osc with a fixed frequency (although it can be modulated by the LFO). There is a choice of ring modulation modes to give different tonal variations, and a choice of waveforms for the ring mod osc.

To turn on the **Ring-Mod**, select the radio button located above the 'Ring Mod' title for each layer. The Ring-Mod can function in different ways. These methods include:

- * **Standard**
- * **Tonal 1** through **11**
- * **Sum**
- * **Difference**
- * **Bypass**



To choose which source to modulate to, select the preferred option under the **Source** drop-down menu. When **Ring Osc** is selected, a knob appears that allows the user to adjust the frequency of the oscillator.

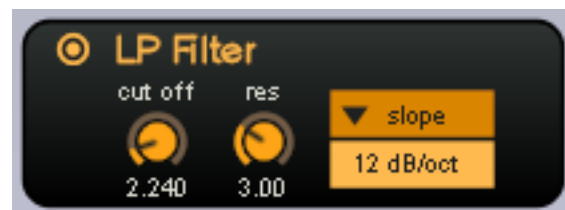
The ring oscillator types include the same waveform shapes used in both the Dual Oscillator and Morphing Oscillator. The drop-down menu labeled Ring Osc contains a list of these available shapes. The graphical display will update with the selected waveform. Additionally, a 'mix' knob is available for mixing the signal level of the ring oscillator into the audio.

FILTER

Each of Scylla's layers contains a variable stage **low-pass filter** that can be adjusted for subtractive synthesis. **Cutoff** and **Resonance** can both be adjusted for these filters. The **slope** of the filter can be set by means of the drop-down menu. To turn on the filter, select the radio button located to the left of the '**LP Filter**' title.

Slope types:

- | | |
|-------------|-------------|
| * 12 dB/oct | * 60 dB/oct |
| * 24 dB/oct | * 72 dB/oct |
| * 36 dB/oct | * 84 dB/oct |
| * 48 dB/oct | * 96 dB/oct |



ENVELOPES

Scylla features flexible **ADSR** envelopes for both **Volume** and **Filter**. An additional ADSR envelope may be applied globally to the final output of the audio (which can be found on the layer labeled 'G').

The ADSR envelopes are set up with adjustable parameters for **Attack**, **Decay** and **Release** in milliseconds

(ms). **Sustain** is a level (0-10) for the volume to be held during the sustain phase. Each envelope can be modified to have a different contour for the **attack**, **decay** and **release** phases to vary the sound produced. Clicking on the Volume or Filter titles will change the focus and highlight the name for the envelope of that type.

Available contours**:

- | | |
|-------------|------------------|
| * Linear | * Inv. Exp. Root |
| * Exp | * S_crv |
| * Inv. Exp | * Inv. S_crv |
| * Exp2 | * S_crv2 |
| * Root | * Inv. S_crv2 |
| * Inv. Root | * Step |
| * Exp. Root | |

**As you select each contour, the display will update with the contour type.

The **Filter** envelopes can all be enabled or disabled by means of a radio button to the left of the graphical display. The global **Amp Envelope** can also be enabled or disabled by a radio button.



GLOBAL LAYER ('G')

GRANULATOR



Scylla provides a **granulator** effect that each layer can be assigned to, allowing for granular synthesis. By applying the granulator, the assigned layer's audio will then be broken up into 'grains' that can then be further manipulated by a number of settings.

To enable the **granulator**, click the radio button to the left of the '**Shape**' label. Once turned on, each layer assigned will then be routed directly through it. To assign a layer, click one of the numbered squares **1**, **2** or **3**. A selected layer will then be highlighted. To deselect, simply click a highlighted number and the layer will no longer be routed through the granulator.

Different shape types can be applied to each of the 'grains' giving the sound a unique quality:

- * **None** – no shape is applied
- * **Sine**
- * **Gaussian**
- * **Quasi-Gaussian**
- * **Rectified Sine**
- * **Triangle**
- * **Trapezoid**

Additional settings that can be applied to each 'grain':

- * **size ms** – the size of the 'grains' in milliseconds (ms)
- * **rate ms** – rate in milliseconds of playback speed
- * **tune** – adjustable pitch of the audio output
- * **phase** – phase at which the 'grains' are played back (as in the phase of a waveform)

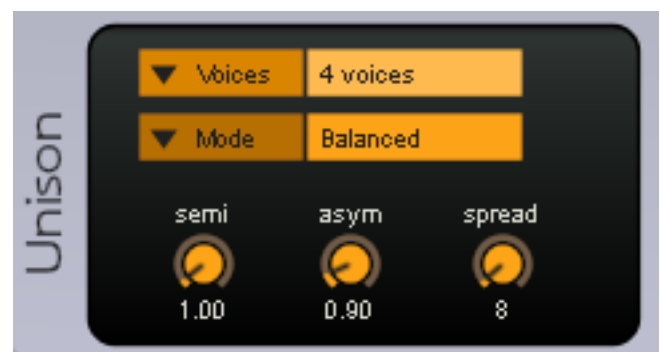
Size, **rate**, and **tune** all have an associated random feature (**rnd**) that randomizes the effect of each option.

UNISON

The **unison** effect provides a way for essentially multiplying the midi-in signal (before reaching the oscillators) that is fed into the device. Up to 8 additional voices can be added to the audio stream, thickening up the sound of the audio output. *Unison occurs before the granulator in the signal chain. The unison acts as the very first effect in the signal chain, and is quite late in the chain, after the ring mod and filter for each layer.

Unison Modes:

- * **Rising** – detuned above root pitch
- * **Centred Root** – detuned above and below root, root stays fixed
- * **Centred Detuned** - detuned above and below root, root is detuned
- * **Balanced** – even balance around root pitch



Additional options:

- * **semi** – pitch in semi-tones
- * **asym** – pitch spread is not linear, ie not the same gap between each voice
- * **spread** – delay in the playback of each voice; the higher the number the longer the playback between each voice, creating an echo effect at larger numbers

LFO

Scylla comes equipped with two **LFO** effects for modulating various parameters throughout the instrument. Both LFO modules contain the same features with one difference between them: **LFO 2** can modulate the phase of **LFO 1**. To enable each LFO, click on the radial buttons located to the left of the title name.

Both LFO effects modulate the sound of the audio coming through the instrument by modulating the filter **cutoff** and **ring-mod**. Both the filter cutoff and ring-mod can be assigned to modulate any of the layers, selected by the numbered boxes above the control knobs for these functions. Additionally, the phase at which the modulation is applied can be controlled by the '**phase**' knob. These knobs control the amount of modulation occurs, so a setting of zero equals no modulation. Once modulation occurs, the user may choose to enable the option '**note sync**' which syncs the modulation to restart with each new note triggered (i.e. each key pressed on a keyboard, etc.).

The frequency at which modulation is applied occurs in number of beats synced to the host tempo at these intervals: **1/32, 1/24, 1/16, 1/12, 1/8, 1/4, 1/3, 1/2, 2/3, 3/4, 1, 4/3, 3/2, 2, 3, 4, 6, 8, 12, 16, 24, 32**. These intervals are found under the drop-down menu '**Freq**'.

Modulation is applied through the use of waveforms found under the drop-down menu '**Shape**'. The shapes included are:

- | | |
|--------------------|---|
| * Sine | * Peak |
| * Tri | * Dip |
| * Pulse | * Hump |
| * Saw | * Shark |
| * RipSaw | * Dolphin |
| * SawRip | * Random – randomly applies different shapes |
| * Ramp | |
| * RipRamp | |
| * RampRip | |
| * Trapezoid | |
| * Trapeze | |
| * Trapezee | |



LFO 1 has the option to modulate the oscillator present in Layer 1 by way of adjusting the knob labeled 'osc1'. Again, the amount of modulation that occurs is set here, so zero equals no modulation. ***This is very important to remember when enabling LFO 1.** If the **osc1** knob has any amount other than zero, modulation WILL apply to the oscillator in Layer 1. Set it to zero if no modulation is preferred.

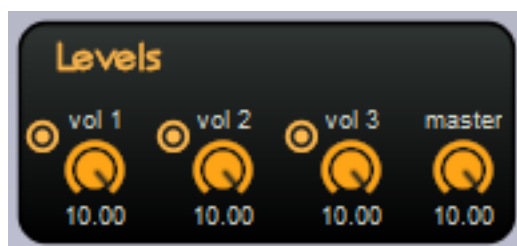
LFO 2 has the option to modulate the phase of LFO 1. What this means is that when this feature is enabled, the phase of LFO 1 becomes modulated by LFO 2 at the specified settings. This can create some very interesting sounds in the mix!

AMP ENV

A final envelope can be applied to the amp of the complete audio signal. This envelope can be enabled or disabled by clicking the radio button located above the Amp Env name. This envelope is identical to the other envelopes found throughout Scylla. However, there is no Filter envelope (no global filter).

LEVELS

Finally as the audio is routed out to the host, each layer's audio level can be mixed, and the final output level of all audio can be adjusted.



Use the knobs labeled '**vol 1**', '**vol 2**', '**vol 3**' to control the mix of Layers 1 through 3 respectively. Once a preferred mix has been achieved, the '**master**' knob can be adjusted for the final output of the audio.

*Adjusting the master knob can potentially eliminate clipping in the host sequencer's output if the volume is too high.

USER LICENSE AGREEMENT

This Software is **copyright © 2008 de la Mancha / Singing Crane**. The Software is not public domain, and is protected by the copyright laws of the UK and reciprocal laws of the international community. In downloading the Software, you are not obtaining title to the Software or any copyrights. You may not sublicense, rent, lease, convey, distribute, copy, modify, translate, convert to another programming language, decompile, or disassemble the Software for any purpose. You may only redistribute the Software with the Authors prior written permission. Where redistribution is authorised in writing by the Author, the Software must be redistributed in its original archive format, and must not be modified in any way. All such authorised redistribution must be accompanied by clear messages stating the origin of the software as a product by the Author, this license, a link to the Website, and a further message saying that updates of the Software are available from the Website. By using the Software, you are agreeing to this disclaimer and license.

CREDITS

Thanks go to the beta test team for testing bug hunting and patch creation. Thanks also to Jeff McClintock for creating SynthEdit and to the 3rd party SE module developers, without which this plug-in wouldn't exist. Special thanks to Brian Botkiller for patch creation and Whiskey Priest for sample content.

VST is a trademark of **Steinberg Soft- und Hardware GmbH**

LINKS

FLipside Forum <http://www.theflipsideforum.com>

SynthEdit <http://www.synthedit.com/>

Dave Haupt Modules <http://www.dehaupt.com/SynthEdit/semodules.htm>

KD Lynch Modules <http://www.rubyhex.com/synthedit/>

Chris Kelly Modules <http://www.chriskerry.f9.co.uk/>

Scoofster Audio Modules <http://scp.web.elte.hu/synthedit/modules.html>

Brian Botkiller <http://www.brianbotkiller.com>

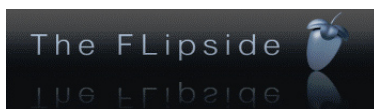
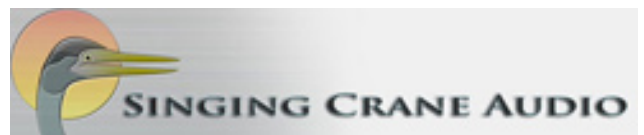
Whiskey Priest <http://www.myspace.com/liquiduniverseproductions>

ABOUT THE DEVELOPERS

de la Mancha lives, eats, dreams and breathes VST plugins, seeking to bring randomization and modulation to the masses. He is also a producer of odd-skool breakbeat, downtempo glitchy beats and other assorted bleeps and noises. You can find his music at www.papadodo.co.uk **www.3x0.co.uk** and **www.mono-log.co.uk**

Singing Crane is a US based musician who dabbles in a wide range of genres and styles. Apart from original music, photography and web design have become fundamental in the inspiration and creation process of Singing Crane Audio - **www.singingcrane.com** (S.C. just so happens to also be the founder of The FLipside FL Studio forum).

Scylla is a VST instrument developed by **de la mancha** and **Singing Crane** for Microsoft Windows.



Sign up for the newsletter if you want to be kept in touch about plug-in releases and updates:
www.delamancha.co.uk/contact.htm